

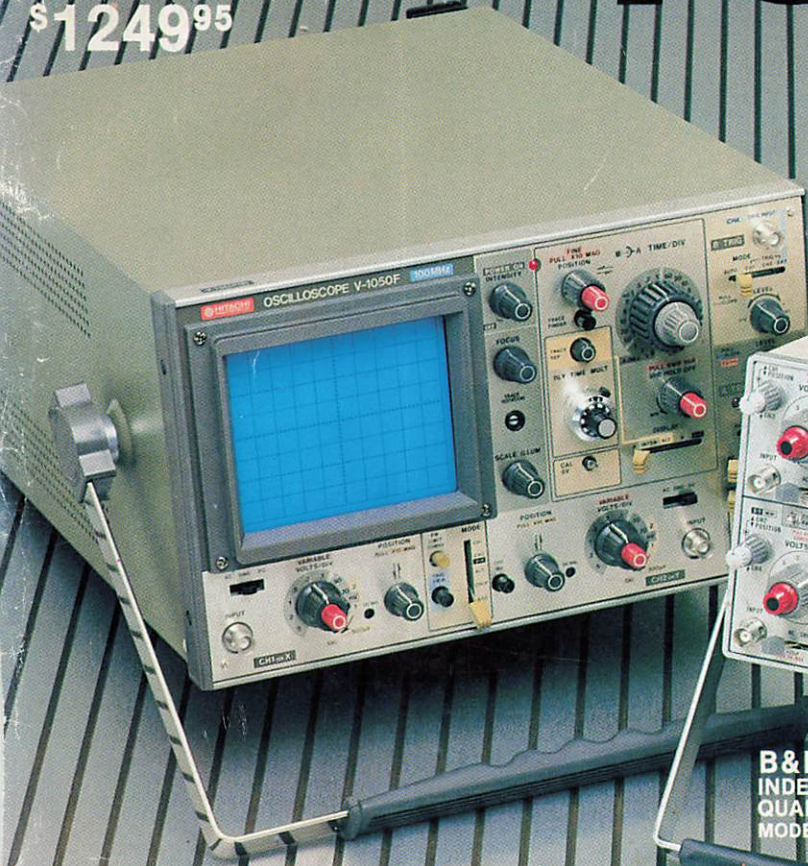
HITACHI 100 MHz QUAD TRACE  
DELAYED SWEEP SCOPE  
MODEL V-1050F See page 17 for details  
OUR PRICE

**\$1249<sup>95</sup>**

# Fordham

## 1986

Winter Special!



B&K PRECISION 150 MHz, DUAL  
INDEPENDENT TIME BASE  
QUAD INPUT SCOPE  
MODEL 1596

OUR PRICE  
**\$1695<sup>00</sup>**



TEKNIKA STEREO TELEVISION CONVERTER  
MODEL TVC-22 (STEREO SOUND DECODER)

See page 115 for details  
OUR PRICE

**\$1299<sup>95</sup>**



BP 3-WAY MINI SPEAKERS  
MODEL HF-9 See page 6 for details  
OUR PRICE

**\$299<sup>50</sup>**  
per pair

Out of State Toll Free  
**800-645-9518**  
NYS Toll Free  
**800-832-1446**



**NEW!**

## TDP SATELLITE SYSTEM

**AUTOMATIC MOTORIZED SATELLITES with REMOTE CONTROL**

**TOTALLY COMPLETE PACKAGE for EASY INSTALLATION**

**NEW!**

MODEL TDP-1051 10 1/2 ft. OUR PRICE **\$1499.95**

MODEL TDP-851 8 1/2 ft. OUR PRICE **\$1349.95**

### FEATURES

- 10 1/2 ft. (TDP-1051), or 8 1/2 ft. (TDP-851), mesh expanded aluminum dish.
- Remote Control. • Receiver (infrared remote).
- Dish drive power supply.
- Feed horn. • LNB 85 Degree.
- Automatic Actuator Gear Motor - with coupler.
- Cable (125 ft. 9 wire molded with gold connectors).
- Pole Mount (TDP-1051 57" high — TDP-851 45" high) with adjustable leveling -4 1/2" dia.
- Receiver has block down conversion to allow easy multiple set hook-up; polarity, skew and audio pre-programmed for 16 satellites; built in A/B switch for outside antenna or cable viewing.
- Shroud. • All Installation Hardware included.
- Freight Pre-Paid. • UL Approved.

### ANTENNA CONSTRUCTION

The ribs and rims are precision formed of aluminum extrusion providing exceptional accuracy and structural integrity. Bronze bushings, stainless steel hardware and a cast aluminum mount assure years of trouble free entertainment.

### FEATURES

- Resistance to high winds.
- Clean uncluttered appearance.
- Quality coating.
- Low assembly and installation time.
- Stainless steel hardware.

### MOUNT

- Cast aluminum polar mount with adjustable declination for accurate tracking.
- 18" actuator stroke for more than 90° of travel.
- Oil impregnated bushing on all moving parts.

### REFLECTOR

- Narrow beam width.
- High strength aluminum extrusions.
- Accurately formed ribs and double curvature mesh.
- Mesh held in deep grooves. No wire clips or exposed edges. No holes to drill.

### HAND REMOTE

From the comfort of your easy chair TDP's infrared wireless remote enables you to control the volume, fine tune your TV set, select the satellite, change channels and mute the sound. • LED: lights when any button is pressed. • Channel Select Buttons: direct access to any channel. • Video: fine tune the picture. • Power: on/off switch. • Mute: Silence the audio. • Volume control. • Channel Scan: scan up and down through channels. • Satellite: select up to 16 different satellites. • Run: activates remote dish drive to selected satellites.

**ACCESSORIES INCLUDED: FEED HORN** This high quality feedhorn ensures clarity performance on both vertical or horizontal positions. **ADVANCED LNB** Combined low noise amplifier/down converter eliminates the need for expensive connecting cables. 85° amplifier means exception signal clarity. **ACTUATOR MOTOR AND COUPLER** 27 Volt DC motor provides over 625 in./lbs. breakaway torque. Has adjustable internal limit switches. **AUTOMATIC POWER DRIVEN ACTUATOR ARM** Dependable acme screw gives long life and low turning effort. Full 18" of adjustment satisfies most positioning requirements. A heavy duty UL approved DC motor system to provide maximum breakaway torque.



**SATELLITE RECEIVER MODEL TDP-500**

### DESCRIPTION

Dual micro processor circuitry allows the user to preset satellite position, video fine tuning, audio sub-carrier frequencies and polarities into memory. Block down converter allows easy multiple receiver hook up. TDP-500 provides automatic switching between satellite and standard TV/cable reception. Baseband and descrambler outputs provide easy connections to monitors, VCR's, stereo processors and descramblers. UL Approved

### FEATURES

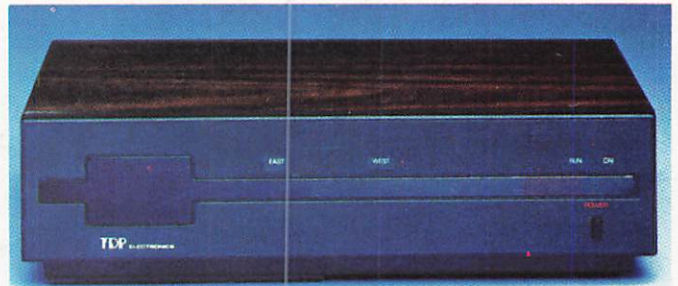
- Digital channel indicator. • Signal strength meter. • Channel Scan. • Memory. • Power switch.
- Satellite indicator. • Dish Drive. • Polarity inverter to adjust horizontal and vertical format.

### SPECIFICATIONS

**ANTENNA:** Type: Prime Focus Parabolic. **Diameter:** 10 1/2 and 8 1/2 ft. dishes. **Finish:** Black Baked Acrylic. **Gain:** TDP-851 38.8 dB. TDP-1051 40.4 dB. **F/D:** TDP-851 .38. TDP-1051 .300. **Efficiency:** 63%. **Mechanical Focal Length:** 37". **2° Spacing:** TDP-851 greater than -15 dB. TDP-1051 greater than -20 dB. **Cross Polarization:** TDP-851 greater than -18 dB. TDP-1051 greater than -22 dB. **MOUNT:** Type: Polar Cast Aluminum. **Wind Load Rating:** Designed to survive winds in excess of 100 m.p.h. **RECEIVER:** Input level: -5 dBm to -54 dBm. **Threshold:** 8 dB C/N. **IF Bandwidth:** 25 MHz. **Control System:** Microprocessor voltage synthesis with permanent memory. **Polarization:** Polarotor® 1 with skew correction. **Video:** Impedance: 75 ohm. **S/N @ 14 dB C/N:** 50 dB 1/2. **Output Level:** 1 Vpp. **Audio:** Output level: 1 V RMS. **Signal to noise:** 45 dB. **Range:** 5.0 to 8.0 MHz tunable. **Impedance:** 600 ohm. **IF Bandwidth:** 350 KHz nominal. **Controls:** Volume, Mute, 2 presets, tunable. **Descrambler Output:** Unclamped, demodulated. **Composite Output:** Unclamped, unmodulated. **LNB:** RF Frequency: 3.7-4.2 GHz. **IF Frequency:** 430-930 MHz. **VSWR OUTPUT:** 2.0:1 (75 ohm). **RF to IF GAIN:** 60 dB Min. **RF to IF FLATNESS:** ± 3 dB Max. **Oscillator Frequency:** 3270 ± 1 MHz @ 25°C. **Oscillator Stability:** ± 3 MHz Over Operating temperature. **Supply Voltage:** + 15 to 24 VDC 210 mA Typ. 220 mA Max. **Operating Temperature:** -40 to +60°C. **Input Connector:** CPR 229G. **Output Connector:** "F" Connector. **Noise Temperature @ 25°C:** 85°K. **Image Rejection:** 20 dB Min. 25 dB Typ. **FEED HORN:** Polarotor® 1. **I. /D Range:** .33 to .45 (.28 to .33 with Golden Ring). **Frequency Range:** 3.7 to 4.2 GHz. **VSWR:** 1.25:1. **Isolation:** 35 dB. **RF Ports:** WR 229 Compatible. **Weight:** 2.7 lbs. **Length:** 8.13". **Diameter:** 6.5". **Skew Range:** 165°. **DISH DRIVE POWER SUPPLY:** **Power Requirements:** 105-130 VAC 60 Hz. 150 Watts nominal @ 2.5 Amp Motor Load. **Motor Circuit Protection:** 3 Amp Circuit Breaker. **Maximum ambient operating temp.:** +50°C. **Power output drive capability @ 25°C:** 117 VDC 60 Hz. 27 VDC @ 1.5 Amp. **Constant Duty. 27 VDC @ 3 Amp:** 50% Duty Cycle not to exceed 5 minute period (5 min. run; 5 min. off). **DOUBLE BEARING ACTUATOR:** Stroke Length: 18". **Maximum Thrust Capacity:** 1,000 lbs. **Motor Voltage:** approx. 25 VDC. **Amp Draw:** 4.8 Amps at 1000 lb. load. **Sensor Reed Switch:** .03125" Travel = Pulse. **Operable Temp. Range:** -50° to +200°F. **Stroke Limits:** Preset, Adjustable Limit Switches.

\*Gain group delay and differential phase specification are compatible for MA/COM 2000-E TVRO receiver interface requirements.

Polarotor® 1 is a registered trademark of Chaparral Communications



**DISH DRIVE POWER SUPPLY MODEL TDP-501**

### DESCRIPTION

The Dish Drive Power Supply was designed to interface exclusively with the TDP-500 Receiver and Remote actuator. It provides the necessary power for the actuator to move the dish to any one of the broadcast satellites without leaving the comfort of your easy chair.

### FEATURES

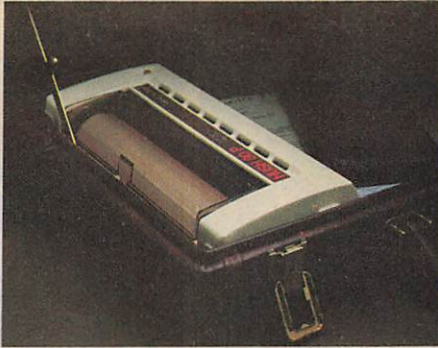
- Antenna Travel: shows the travel of the antenna East-West.
- Power On/Off: turns power on or off to the DDPS.



## ERGO HUSH™ 80 PORTABLE SILENT PRINTER

### FEATURES

- One of the quietest printers ever made. It has fewer working parts makes it quieter and more reliable.
- It has an 80 character-per-second bidirectional printing capability, prints across and back.
- Compatible with Commodore, Centronics Parallel, or RS232 interfaces.
- Internally stored paper means it's always ready to print.
- Printer includes pre-loaded paper supply and interface cable.
- Optional: Rechargeable battery operated version; HUSH-80PR & HUSH-80SR are AC/DC.
- Weighs less than 2 lbs., fits edge-on in a briefcase and takes up no more space than a phone on a desk.
- When you find yourself running out of paper the HUSH 80 can print 160 characters per line in its condensed print mode.



### SPECIFICATIONS

- Full 80-column dot-matrix thermal printer (8-1/2" paper width).
- Dot-addressable graphics.
- 80 character-per-second bidirectional printing speed.
- Programmable line space.
- Up to 192 characters and symbols.
- Media: Thermal roll paper (8-1/2" x 90").
- Compact and lightweight, only 25 oz.
- Quiet, less than 56 db.
- 6 month warranty.
- Fixed free after-warranty repair program.
- Available with Centronics Parallel, RS232 or Commodore interfaces.

**NEW!**

MODEL	INTERFACE TYPE	OUR PRICE
HUSH-80CD	Commodore	SPECIAL! \$ 79.95
HUSH-80P	Centronics Type	119.95
HUSH-80S	Serial RS232	119.95
HUSH-80PR	Centronics/Battery	139.95
HUSH-80SR	Serial/Battery	139.95

Ergotherm Brand Paper (90 ft. roll) Equal 100 letter sheets per roll model ETP-1 ..... \$6.49

## BP FLOPPY DISKETTE STORAGE CASE

MODEL COMP-70

### FEATURES

- Holds 70 Floppy Diskettes.
- Contemporary Flip Design Case.
- Smoke Plastic Lid.
- High Impact ABS Plastic Base.
- Index Dividers with Adjustable Tabs.

OUR PRICE **\$14.95**

## DELUXE FLOPPY DISKETTE STORAGE CASE

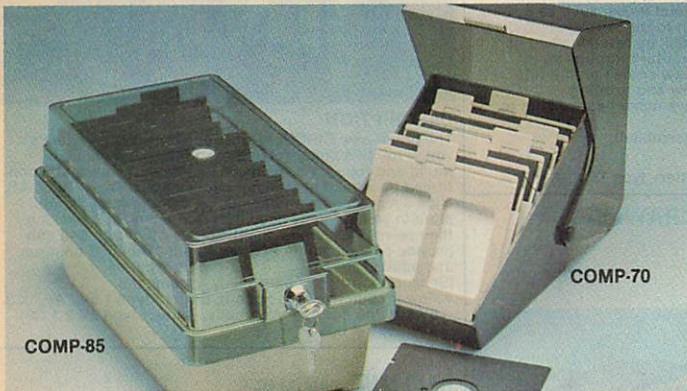
MODEL COMP-85

### FEATURES

- Holds 85 Floppy Diskettes.
- Smoke Plastic Top.
- High Impact ABS Base.
- Two Piece Contemporary Design.
- Index Divider with Adjustable Tabs.
- Lock with Two Keys.

OUR PRICE **\$19.95**

**NEW!**



## LEDU COPY HOLDER

MODEL 3600R

OUR PRICE **\$29.95**

### DESCRIPTION

Whether you're typing a letter or entering data into your personal computer, the Copy Director is the best way to keep your information in order. The 3600R has an adjustable holder which can be maneuvered to a desired position for comfortable viewing. The soft green cursor bar magnifies copy for easy reading. The 9 1/4" H arm is mounted in a heavy duty base. Comes in chocolate brown with beige copyboard.

MODEL 3600C

OUR PRICE **\$29.95**

### DESCRIPTION

The 3600C copyholder attaches to table or desk edge by a large adjustable clamp. Its 33" arm allows you to move the copyboard to a desired position. It also has a soft green cursor bar which magnifies the copy for easy reading.



## SEIKO PC DATAGRAPH

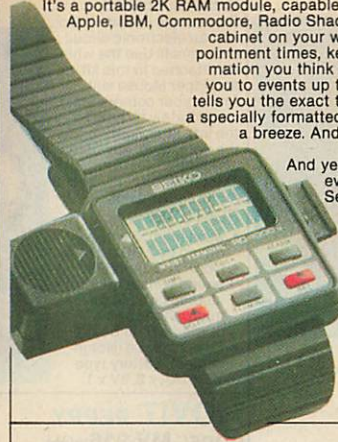
The World's Smallest Computer Terminal

**NEW!**

### DESCRIPTION

It's a portable 2K RAM module, capable of storing and recalling virtually any kind of data from Apple, IBM, Commodore, Radio Shack and other popular personal computers. It's like a file cabinet on your wrist, with 12 distinct data files for travel schedules, appointment times, key dates, foreign word translations — any kind of information you think of. It's a powerful wrist alarm you can program to alert you to events up to a year in advance. And a true "world" timepiece that tells you the exact time of day in 80 cities around the globe. It comes with a specially formatted, menu-driven software program that makes data input a breeze. And a special cable that hooks directly to your computer's RS232C serial output port.

And yes, it is a watch — the most sophisticated quartz watch ever developed. Which is exactly what you'd expect from Seiko®. Because when it comes to new ideas, the world is coming to Seiko.



MODEL	OUR PRICE
RC-1000-1 for Apple IIC	\$119.95
RC-1000-2 for Apple II, II+, IIE	\$119.95
RC-1000-3 for Commodore 64	\$119.95
RC-1000-4 for IBM PC, PC JR., IBM Compatibles	\$119.95
RC-1000-5 for Radio Shack TRS-80 model 100, NEC 8201	\$119.95

## BP COMPUTER BACK CHAIRS WITH OAK VENEER CHAIR

MODEL CH-95 OUR PRICE **\$29.95**

MODEL CH-96 OUR PRICE **\$36.95**

New Adjustable Model!

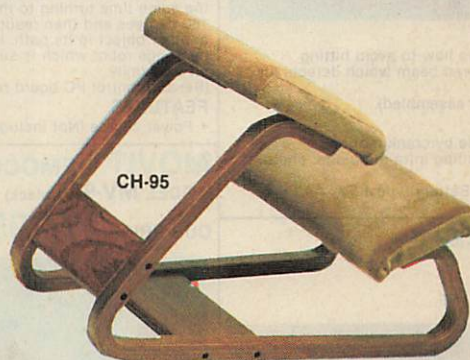
### DESCRIPTION

Now you can ease yourself into the New Oak adjustable Back Chair or if you prefer the traditional Back Chair where you'll be sitting pretty. With the new adjustable Back Chair you can raise or lower the seat to correspond with the varying levels of your computer, typewriter, desk for the most comfortable position. Each chair can help alleviate annoying back pain after sitting several hours at home or office. Either Back Chair relieves the discomfort of a conventional chair by changing the stress points on the body. Instead of sitting at a 90° angle forcing your weight to be supported by the lower back, the Back Chair balances your weight proportionally through your lower body and legs. No back rest is needed because your spine naturally straightens to its proper position. You're able to relax and concentrate more efficiently without hunching over and tiring quickly. It's a perfect addition to your home computer set-up, artists table or for the working executive.

**NEW!**



CH-96



CH-95



## HANDSOME TWO DRAWER OAK FILE

MODEL CF-22

OUR PRICE **\$89.95**

### DESCRIPTION

This beautiful, functional, solid wood, two drawer oak file, is a magnificent addition to any home or work place. Its pleasing simple lines blend with any interior bringing warmth to its surroundings. Use it to organize business or personal files. The cabinet drawers are 13" deep and have hanging steel rails to fit stand files. Dimensions: 28-1/4" H x 16-1/4" W x 17" D.



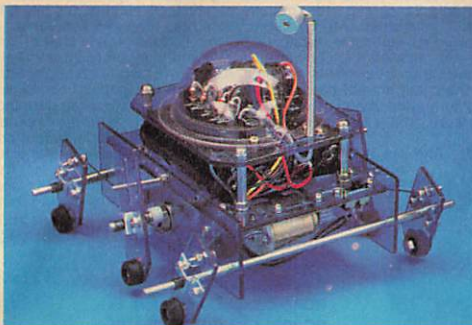
**NEW!**



## MOVIT TURN BACKER

MODEL MV-911 (blue)

OUR PRICE **\$39.95**



### DESCRIPTION

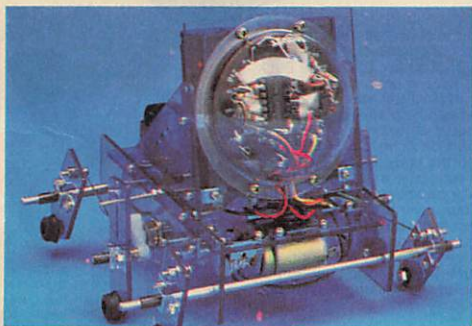
When this robot is about to hit a wall, just cry "Look out!", and the robot will immediately turn to the left. (Sensor/control PC board ready assembled).

### FEATURES

- Movement: 3 legs on each side by crank motion.
- Control: Sound sensor including condenser microphone and printed circuit board.
- Power source (Not included): Battery type 1.5V "AA" x 4.

## MOVIT AVOIDER

MODEL MV-912 (blue) OUR PRICE **\$44.95**



### DESCRIPTION

An intelligent robot which knows how to avoid hitting walls. This robot emits an infra-red beam which detects an obstacle in front. (Sensor/control PC board ready assembled).

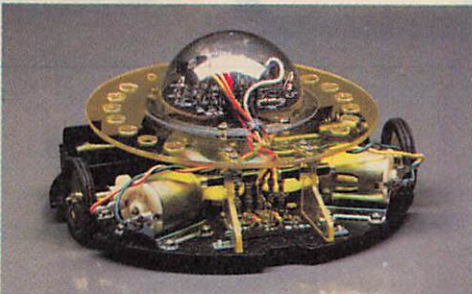
### FEATURES

- Movement: 3 legs on each side by crank motion.
- Control: Infra-red sensor including infra-red diode/ photo diode/IC.
- Power source (Not included): Battery type 1.5V "AA" x 4 9V x 1.

## MOVIT LINE TRACER II

MODEL MV-913 (yellow)

OUR PRICE **\$39.95**



### DESCRIPTION

Guided by an infra-red light sensor this robot will automatically follow any black line drawn on white paper. (Sensor/control PC board ready assembled).

### FEATURES

- Movement: 3 wheels driven by 2 DC motors.
- Control: Infra-red sensor including infra-red diode/photo diode/IC.
- Power Source (Not included): Battery type 1.5V "AA" x 2, 9V x 1.
- How to Play: Draw a black line on white paper board. Line width should be 10 mm minimum wide. Narrowest turning radius must be at least 15 cm.

## MOVIT PIPER-MOUSE

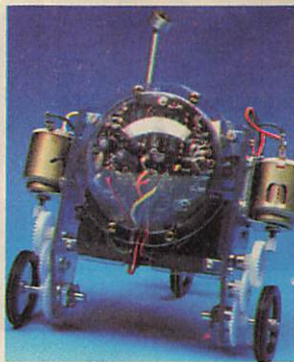
MODEL MV-915 (blue) OUR PRICE **\$34.95**

### DESCRIPTION

This is a Supersonic-Robot controlled by a Supersonic sound sensor and an electronic circuit (1 channel). Use the whistle attached to this kit and Piper Mouse will follow your commands immediately turning to the left, stop, turning to the right, stop, advance and stop. (Sensor/control PC board ready assembled).

### FEATURES

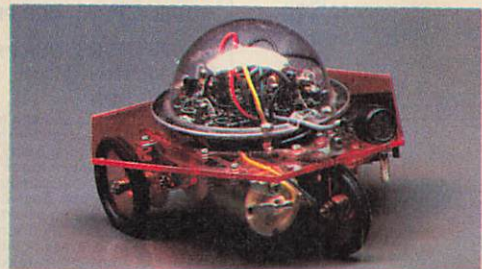
- Movement: 3 wheels driven by 2 DC motors.
- Control: Supersonic sound sensor including condenser microphone and printed circuit board.
- Power source (Not included): Battery type 1.5V "AA" x 2, 9V x 1.



## MOVIT PEPPY

MODEL MV-916 (pink)

OUR PRICE **\$24.95**



### DESCRIPTION

The PEPPY has a two-way sensor that is susceptible to noise and also to solid objects in its path. When the sensor located in front comes into contact with a wall or other obstacle or hears a loud noise, such as a hand-clap, it will automatically turn to the left. The PEPPY, after contacting the wall, by reversing and at the same time turning to the left will turn through 90 to 180 degrees and then resume its new course until it hits another object in its path. It's a new and exciting micro-robot which is sure to give many happy hours to all the family. (Sensor/control PC board ready assembled).

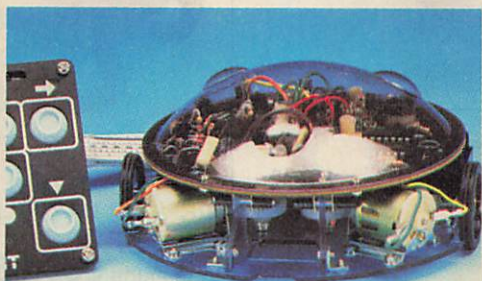
### FEATURES

- Power source (Not included): Battery type 1.5V "AA" x 2.

## MOVIT MEMOCON CRAWLER

MODEL MV-918 (black)

OUR PRICE **\$74.95**



### DESCRIPTION

This robot is memory controlled through the key board included in this kit and runs as per the program you input using this key board.

The key board has 5 different switches, forward, to the right, to the left, pause, sounds a buzzer and lights up (beams). This robot employs a sequence function static RAM 256 x 4 bit memory.

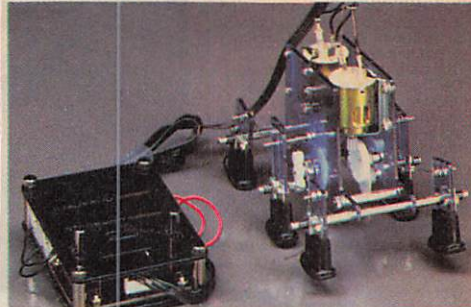
### FEATURES

- Movement: 3 wheels driven by 2 DC motors.
- Control: Memory/Electronic circuit (through the Key Board). Element: 4 bit Static RAM. Modes: Right/Left/Forward/Pause/Buzzer/Beams (LED). Steps: 256 Steps (no repeat steps) approx. 0.7—0.3 sec./1 step.
- Power Source (Not included): Battery Type 1.5V "AA" x 2 9V x 1.

## MOVIT MR BOOTS MAN

MODEL MV-931 (blue)

OUR PRICE **\$32.95**



### DESCRIPTION

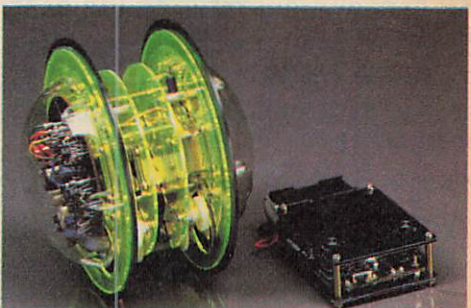
The MR. BOOTS MAN has six insect-like legs, 2-speed movement, and includes a control box. The unique MR. BOOTS MAN has six funny legs and can walk or run forwards or backwards, left or right, and when the leg movement on one side is reversed and the other side continues its forward action the MR. BOOTS MAN can execute 360 degree turns. You can use MR. BOOTS MAN for thrilling games of football or even pushing matches, and you can even program your own games. Why not try it!

- Power source (Not included): Battery type 1.5V "AA" x 2.

## MOVIT CIRCULAR

MODEL MV-935 (green)

OUR PRICE **\$69.95**



### DESCRIPTION

The brand new CIRCULAR model has two large wheels which roll this super robot left and right, forwards, or round and round. All the movements can be perfectly controlled by a hand-held remote control box. The CIRCULAR slips silently and smoothly along, making your friends stare in wonder, how does it move they must be asking themselves? It's a new robot from another age and can provide endless hours of amusement for all the children, and adults too!

(Sensor/control PC board ready assembled).

- Power source (Not included): Battery type 1.5V "AA" x 3, 9V x 1 Pce, for use Main body. Battery type 9V x 1 for use control box.

## MOVIT MEDUSA

MODEL MV-939

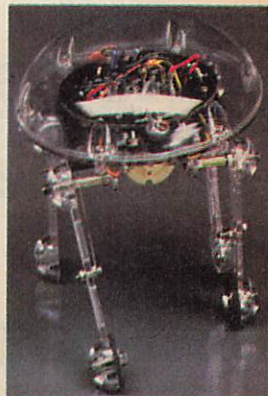
OUR PRICE **\$29.95**

### DESCRIPTION

MOVIT MEDUSA is a walking robot with an electronic brain. Registering your command, this robot starts to hobble on its 4 legs and stops automatically after a preset time. (Sensor/control PC board ready assembled).

### FEATURES

- Movement: 2 legs on each side by crank shaft.
- Control: Sound sensor including condenser microphone/transistor.
- Power Source: (Not included): Battery type: 1.5V "N" x 2.





## MOVIT S-CARGO

EDUCATIONAL  
ELECTRONIC  
ROBOT KITS  
MODEL MV-936

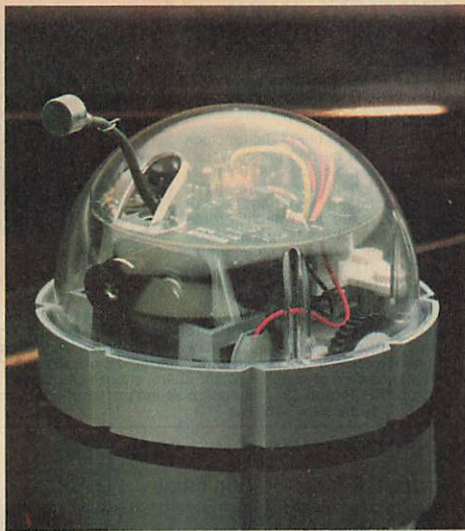
OUR PRICE

**\$39.95**

**NEW!**

### DESCRIPTION

This is a sound sensor robot controlled by a condenser microphone and printed circuit board. Use the hand held sound activator that is included with this educational kit and the S-Cargo will follow your commands by immediately rotating left, stop, forward and stop. Power source: "AA" x 2, 9V x1 (not included).



## MOVIT NAVIS

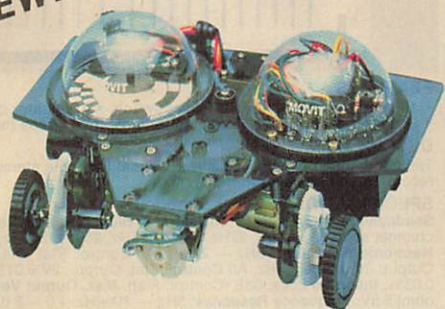
EDUCATIONAL  
ELECTRONIC  
ROBOT KITS  
MODEL MV-938

OUR PRICE **\$49.95**

### DESCRIPTION

This clever robot moves by reading the running commands, (white and black markings you determine on a disk), with its infrared sensor. You control the robot by making your own programming disk. Make several disks with varying sequences of movements by darkening and skipping spaces. Movement: wheels, 2 motors. Control Method: Sensor/control circuit, Sensor—Infrared sensor, Element—photo interlamp, Control circuit IC + Transistors. Power source: 1.5V "AA" x 2, 9V x 1. (not included).

**NEW!**



## MOVIT WAO

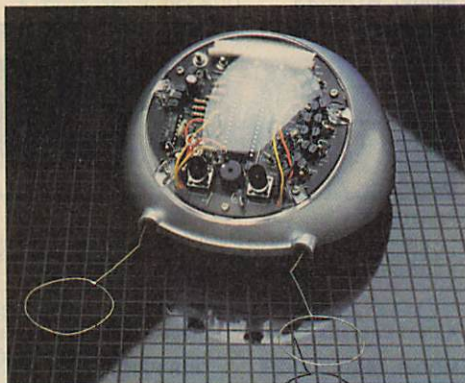
EDUCATIONAL  
ELECTRONIC  
ROBOT KIT

MODEL MV-9511

OUR PRICE **\$99.95**

### DESCRIPTION

The new "WAO" (Wise, Argent, Orb) robot, can teach the fundamentals of computer programming (i.e. flowcharts), perform graphics, and develop an awareness to robotics. WAO has a custom micro computer chip planted inside its body. The micro computer stores a system program in ROM (2 K bytes) and a user program in RAM (128 X 4 bits). WAO has the ability to perform any high grade programs, set in branch, interruption and sub-routines. The robot has a penholder set at the center of its mechanism, this permits WAO to perform graphics. The more you get associated with WAO, the more you shall be enabled to draw flow charts, and the system-thinking becomes your own. What performance WAO is nothing other than your own thinking. WAO will undoubtedly teach you the joy of computer programming by means of building an educational robot kit.



## THOROUGHbred HORSE RACE ANALYZER™ COMPUTER

Handicap a thoroughbred race in about 20 minutes!

MODEL 1670

REG. \$59.95

OUR PRICE **\$44.95**

### DESCRIPTION

Computerized handicapping! Use it at home—take it to the track! The Thoroughbred HORSE RACE ANALYZER is programmed for 3 year or older horses running on a fast dirt or firm turf track, at distances of 6 furlongs or longer. It is not designed to handicap harness races (trotters or pacers), quarter horse races, dog races or "Maiden" races. In a computer study at a leading university, on a sample of 946 races, this computer's top rated horse finished 1st, 2nd or 3rd...58% of the time!. Uses 9 volt battery (not included).



## SERVITRON ROBOTS™

MODEL BUTLER

OUR PRICE **\$59.95**

MODEL CHEF

OUR PRICE **\$59.95**

**NEW!**

### FEATURES

- Radio remote controlled with forward and reverse/turn functions.
- Stands 40" high x 20" wide x 18" Deep.
- Comes complete with uniform and aluminum serving tray.
- Durable base with traction tread wheels.
- Runs on pile carpets, hard floors, and other surfaces.

### DESCRIPTION

These marvelous robots are radio remote controlled and operate at distances over 75 feet. The motor is driven by four "D" cell batteries (not included) and the transmitter is powered by one 9-volt battery (not included) for hours of entertainment. The transmitter features forward and reverse/turn functions. Lightweight and easy to assemble, they are ready to go in just minutes. Imagine the fun as you mystify and delight your friends at your next party or special event! Makes a great gift item for the person who has everything.



## TTC HEAROID™

THE WORLD'S FIRST VOICE-

PROGRAMMABLE ROBOT

MODEL 2010

OUR PRICE **\$299.95**

**NEW!**

### DESCRIPTION

Hearoid is here! His brain is a sophisticated voice recognition computer that makes him respond to your spoken words. He understands 10 different commands in any language or accent, and that's all he needs to perform an infinite variety of actions. He's easily programmable and can learn complex programs up to 45 minutes long. With his tape and computer memory, you can keep a library of tasks for him to perform. You can even program him for future tasks by using his on-board programmable alarm clock.

### FEATURES Voice Command, Hearoid Can:

- Go forward and back, turn left and right, stop.
- Turn on or off his headlight eyes.
- Play, rewind, stop and fast forward on his cassette deck with built-in microphone.
- Be programmed by voice to perform an unlimited number of complex tasks, each up to 45 minutes in duration.

### Hearoid Can:

- Learn to recognize and respond to the voices of two users.
- Carry objects or messages with his grasping hand or removable tray.
- Play standard cassette tapes.

### Hearoid Is:

- More than 18" tall. • Rechargeable, built-in power cell.
- Programmable alarm clock. • Runs on most surfaces, from one to another.
- Uses 6 "AA" batteries, not included. • Built-in cassette recorder.
- Has a transmitter that can be used as a wireless microphone, allowing user to talk through him.
- Has a mouth display that lights in sync to his sounds.
- Has a remote override on his Voice Command Module for panic stops.
- Built-in condenser microphone. • On/Off/Timer switch. • Power on light.
- Low battery light. • Detachable serving tray. • Headlight eyes.
- Manual grasping hand. • Self-leveling poseable arms. • Speaker. • Mode switch.
- Flashing strobe mouth. • Adjustable volume control. • Cassette deck release.
- Rechargeable battery charger included. • 90-day limited warranty.
- Recommended for all kids from 9 to 90.

### Optional Accessories

Model 2155 Ultrasonic Sensor ..... **\$49.95**      Model 2165 Infrared Sensor ..... **\$35.00**  
Model 2160 Trace Tape Sensor ..... **\$34.95**      Model 2170 Dust Buster Attachment... **\$19.95**





# AUDIO/STEREO EQUIPMENT

## PROTON 300 AM/FM TABLE RADIO AND 301 POWERED LOUDSPEAKER SYSTEM

MODEL 300/301

### DIMENSIONS:

300: 11-3/8"W x 6-5/8"H x 8-1/4"D  
301: 11-1/2"W x 6-1/2"H x 8-1/4"D

### DESCRIPTION

The Proton Model 300 AM/FM table radio, with its elegantly understated appearance, simple operation and exceptional performance, is the product of choice for anyone desiring a compact and stylish tabletop receiver with uncompromised FM and AM reception. The three-gang J-FET front-end Schottz Tuner provides noise-free reception of weak and distant stations and virtually eliminates the multipath-distortion problems that plague urban FM reception.

**Bi-amplification:** A 4-1/2 inch acoustic-suspension woofer powered by a 20 watt amplifier is electronically crossed over to a 1-3/4 inch ferrofluid-cooled tweeter driven by its own 5-watt amplifier. Each amplifier is rated at less than 0.03% total harmonic distortion. Bi-amplification achieves a substantial reduction in the distortions typical of small two-way systems and provides a wide frequency range and a startling clarity of reproduction. The 300's low-frequency amplifier employs two special circuits from Proton's component amplifiers: Bass EQ and Anti-Clipping. Acting in concert, the two circuits provide an extended, distortionless bass response with startling depth and solidity. **Stereo Performance:** Simply plug in a model 301 powered speaker and the Proton 300 becomes a stereo radio of exceptional performance with over 50 watts of clean power. Far more than just an extension speaker, the 301 includes the same sophisticated bi-amplification technology and drivers used in the 300. Additional 301 Powered Speaker Systems can be connected to provide full stereo performance in up to ten locations simultaneously, all controlled simply and accurately from the 300 Radio.

OUR PRICE **\$369.95**



## PROTON AM/FM DIGITAL CLOCK RADIO

MODEL 320

OUR PRICE **\$98.00**

### DESCRIPTION

The Proton 320 AM/FM digital clock radio goes far beyond the conventional clock radio into the realm of designer high-fidelity performance. The exceptional FM performance of the 320 is made possible by a three-gang FET input fronted tuning section. The tuner delivers an enormous selection of noise-free FM stations and provides freedom from multipath and other interference. The audio section provides a 3-watt output at 1 kHz with less than 1% total harmonic distortion and a frequency range of 80 to 18,000 Hz. The special high-compliance, wide-range 5" speaker produces music with clarity and tonal quality. The electronic digital clock has large LED numerals that dim automatically by photoelectric control; date readout; 2 independent programmable wake-up settings; choice of radio or buzzer alarm; snooze-bar; sleep switch preset turn off; battery backup. The Proton 320 is a superb sounding, functional, product that compliments any decor. Dim. 302: 10-1/2"W x 5-1/2"H x 3"D.



## SANYO AM/FM STEREO RADIO/CASSETTE RECORDER WITH 5-BAND GRAPHIC EQUALIZER, AUTO REVERSE (RECORD & PLAY), METAL TAPE CAPABILITY, AND DOLBY\* NOISE REDUCTION

MODEL C-60

OUR PRICE **\$219.95**

### FEATURES

- 5-Band Graphic Equalizer.
- Metal Tape Capability.
- Full Logic Interlock Transport Controls.
- Line-In & Line-Out Jacks.
- AC/DC Operation.
- Auto Reverse Record & Playback.
- Dolby Noise Reduction.
- 5-Segment LED Vu Meter.
- Matching Detachable 2-Way Speakers.



## SANYO AM/FM STEREO RADIO/CASSETTE RECORDER WITH DUAL CASSETTE TRANSPORT MECHANISMS, 5-BAND GRAPHIC EQUALIZER, DOLBY NOISE REDUCTION AND METAL TAPE CAPABILITY

MODEL C-40

OUR PRICE **\$159.95**

### FEATURES

- 2 Tape Transport Mechanisms.
- Dolby Noise Reduction.
- Detachable 2-Way Speakers.
- Stereo Headphone Jack.
- Synchronized Dubbing System.
- Continuous Playback Mechanism.
- Line-In & Line-Out Jacks.
- 5-Band Graphic Equalizer.
- Metal Tape Capability.
- Auto Stop Mechanism.
- Battery Life Indicator.



## BP THREE-WAY MINI SPEAKER WITH BRACKETS

MODEL HF-9

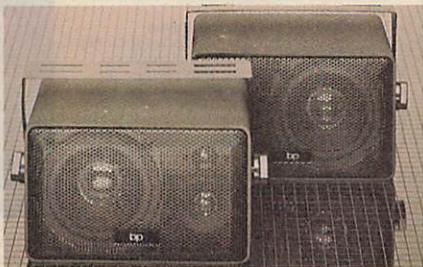
OUR PRICE **\$29.95** per pair

### DESCRIPTION

The mini speaker with maxi sound

### SPECIFICATION

- Die cast aluminum.
- 3" Long throw woofer.
- 1" Soft dome tweeter.
- 2" Extended midrange speaker.
- Frequency response 80-20,000 Hz.
- Impedance: 8 ohms.
- Maximum power: 50 watts.
- Dimensions: 7-1/4"W x 4-1/2"H x 4-3/8"D



## SANYO AUDIO CASSETTE DECK

MODEL RD-7

OUR PRICE **\$59.95**

### FEATURES

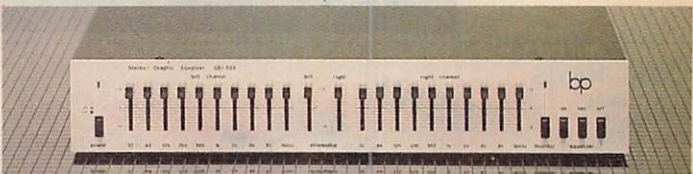
- Metal and CrO<sub>2</sub> Tape Capability.
- Dolby Noise Reduction.
- Single Motor DC Servo Drive.
- Twin 5-Segment LED Vu Meters.
- Stereo Headphone Jack.
- 2 Mic Inputs.
- Line-In & Line-Out Jacks.
- Digital Tape Counter with Reset Button.
- Soft Eject Cassette Door.



## BP STEREO GRAPHIC EQUALIZER

MODEL GE-333

OUR PRICE **\$89.95**



### FEATURES

- 10 band stereo equalizer.
- Power switch.
- Attenuator control.
- Equalizer On/Record switch.
- Equalizer off switch.
- Tape monitor indicator.
- Tape monitor switch.
- Octave controls.

### DESCRIPTION

Ten band stereo Graphic Equalizer is ideal for home stereo use and a necessity for home recording and listening to music.

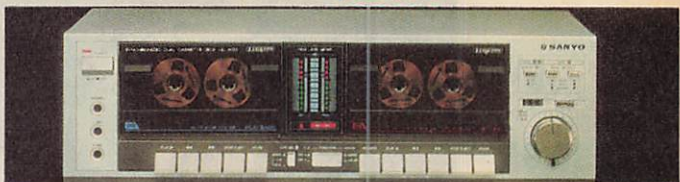
### SPECIFICATIONS

**Semiconductors:** ICs: 12. **Transistors:** 2. **Diodes:** 3. **Equalizer Section:** Equalizer Range (Individual channel adjust): ±12dB, 32Hz, 64Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz. **Total Harmonic Distortion:** 20Hz — 20kHz, All Control; Flat. Output: 1V 0.01%. 1kHz, All Control; Max. Output: 3V 0.01%. 1kHz, All Control; Flat. Output: 2V 0.01%. 1kHz, All Control; Min. Output: 1V 0.03%. **Insertion Loss:** 0dB (Control; Flat). **Max. Output Voltage:** (1kHz, THD: 0.02%, RL 47k ohm) 5.5V. **Frequency Response:** 5Hz — 100kHz +0 — 3 dB. **Signal to Noise Ratio:** (IHF, A Network, short circuited, 1V Output) 85dB. **Input Impedance:** 50k ohm. **Output Impedance:** 600 ohm. **Miscellaneous:** Power Requirement: LE model; AC220-240V, 50/60 Hz LU model; AC 110V-120V, 50/60 Hz. **Power Consumption:** 15W. **Dimensions (WHD):** 450 x 80 x 240 mm, 17-5/8 x 3-1/8 x 9-4/8 in. **Weight (without package):** 3.5 kg., 7 lb. **Furnished Parts:** Operating Instructions: 1.

## SANYO DUAL TRANSPORT STEREO CASSETTE DECK

MODEL RDW-33

OUR PRICE **\$89.95**



### FEATURES

- Synchronized Dubbing.
- Metal Tape Capability.
- 5-Segment/2-Color LED Level Meters.
- 2 External Mic Inputs.
- Dolby Noise Reduction.
- Auto Stop Mechanism.
- Stereo Headphone Jack.
- 3-Digit Tape Counter.

## YORX COMPUTER-CONTROLLED AUDIO SYSTEM A Dual Cassette System with Wireless Remote that's Wall Mountable

MODEL MX-4500-29

OUR PRICE **\$279.95**



The Yorx Computer-Controlled Audio System is a breakthrough in sight and sound. This ultra slim, unit can be free standing or it can mount on your wall. Control it from your most comfortable position with its wireless remote.

### FEATURES

- Wall-mounting or free standing.
- Digital synthesized tuner.
- 15 function wireless remote, includes power, volume, mute, 10 preset station, cassette pause.
- Fluorescent display — clock and AM/FM readout.
- LED music level meter, FM stereo and cassette pause indicators.
- Double cassette system with soft touch controls, soft eject.
- Continuous relay play from tape A to tape B, tape dubbing.
- S29 Fullrange, slimline speakers.
- Dimensions: 12 3/4"H x 17"W x 2 3/4"D.



# CLOCK RADIOS/STEREO CASSETTE DECKS

## RANDIX DIGITAL CLOCK CUBE

MODEL RCC-86 OUR PRICE **\$69.95**

### DESCRIPTION

The digital cube is an AM/FM/TV1/TV2 bands - Calendar Dual Alarm Cassette Clock Radio with a battery back up.

### FEATURES

- Bright fluorescent readout.
- Wake to music, alarm or cassette.
- Dual alarm settings, with calendar.
- Dual alarm gives ultimate convenience of two wake-up calls.
- Battery back-up.
- Large, easy to use touch sensor snooze and Cassette player.
- Hi-Lo brightness jack.
- Earphone jack.
- Dimensions: 5 3/4" W x 5 3/4" H x 5 3/4" D.
- Lighted radio dial.

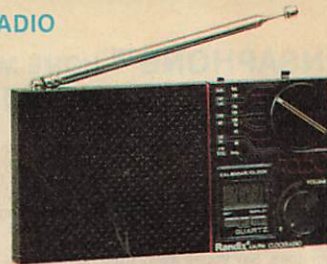


## RANDIX TRAVEL CLOCK RADIO

MODEL RCL-50  
OUR PRICE **\$19.95**

### FEATURES

- All the features of a standard alarm clock plus: AM/FM radio.
- Calendar.
- AM/PM indicator.
- Slide off-alarm-on selector switch.
- Direct dial scale.
- Mono headphone jack.
- 12 hour LCD digital display.
- Dimensions: 6" W x 3" H x 1" D.



## RANDIX PORTABLE STEREO DUAL CASSETTE DECK WITH AM/FM

MODEL SCR-610  
OUR PRICE **\$79.95**

### DESCRIPTION

The Randix® portable stereo dual cassette deck with AM/FM stereo receiver is a compact system that lets you record from one tape to another.

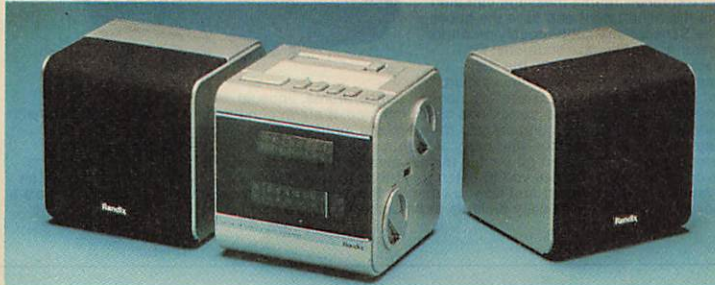
### FEATURES

- Dual front loading.
- Tape A playback.
- Tape B playback/record.
- 3 digit counter/reset.
- Continuous playback from Tape A to Tape B.
- Tape A to Tape B dubbing.
- Rotary volume/balance/tone control.
- Stereo headphone jack.
- Built-in condenser microphone.
- Led power/record level meter.
- Indicators include: power on, stereo, continuous play, dubbing, tape A and tape B.
- UL/FCC approved.
- Dimensions: 21" W x 7" H x 5" D.



## RANDIX MUSIC CUBE

MODEL RCC-85S OUR PRICE **\$79.95**



### DESCRIPTION

The ultimate AM/FM Stereo Clock Radio with Stereo Cassette Player and Matching Speakers.

### FEATURES

- Wake to buzzer alarm, radio or cassette.
- 59 minute sleep switch.
- Fluorescent green clock display.
- Power failure indicator.
- Top load-cassette.
- Snooze bar.
- Matching full range speakers.
- Hi/lo tone switch and hi/lo dimmer switch.
- Dimensions: 5 3/4" W x 5 3/4" H x 5 3/4" D.

## SANYO AM/FM STEREO CASSETTE RECORDER

MODEL M-7100K  
OUR PRICE **\$69.95**

**SPECIAL!**



### FEATURES

- Built-In Microphone.
- Pause Control.
- Stereo Expander Circuitry.
- Auto Stop.
- LED Record/Battery Check Indicator.
- Tape Counter.
- Variable Monitoring.
- AC/DC Operation.
- Multi-Voltage Capability.
- Jacks For Headphones & Speakers.

## SANYO AM/FM STEREO CASSETTE RECORDER

MODEL M-7735 OUR PRICE **\$119.95**

**SPECIAL!**



### FEATURES

- Automatic Music Select System.
- Metal Tape Capability.
- 3-Digit Tape Counter.
- One-Button Recording.
- Full Auto Stop Mechanism.
- Timer Standby.
- Line-In & Line-Out Jacks.
- Built-In Condenser Microphones.
- AC/DC Operation.
- 6-Way Speaker System.

## RANDIX AM/FM CLOCK RADIO, CASSETTE PLAYER TELEPHONE

MODEL CP-700  
OUR PRICE **\$99.95**

**NEW!**



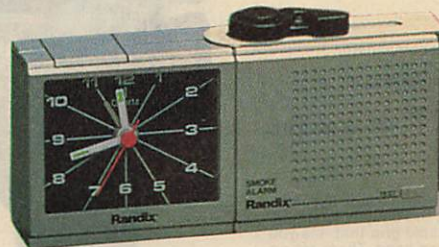
### DESCRIPTION

Randix's has configured arranged telephone, AM/FM clock radio and cassette player into one. This unique configuration fits neatly into the smallest of places or leaves plenty of room in your larger spaces. The telephone is designed in their new "Folding Fone" fashion which can be used as a speakerphone for hands-free conversation. The phone includes pulse dialing, mute and last number redial features. The AM/FM clock radio has an alarm, or you can wake up to music, a cassette player and a bright fluorescent readout with dimmer and a battery back-up (battery not included). Its dimensions are 8-1/2" x 5" x 5". This new innovative design gives you the items you desire without the clutter.

## RANDIX TRAVEL CLOCK/SMOKE DETECTOR

MODEL QCS-40  
OUR PRICE **\$24.95**

**NEW!**



### DESCRIPTION

Sometimes when travelling, whether on vacation or business, the unfortunate happens, a fire. Sleep sounder with the added protection of the Randix Smoke Detector/Alarm Clock. This detector is small, has an alarm test button and low battery alarm tone. Its power source is DC 9V battery. The clock is an analogue quartz, has an adjust alarm knob in rear and sounds off a buzzer at the preset time. Its power source is DC 1.5V. Dimensions: 5-1/4" W x 2-3/8" H x 1-1/8" D



## SENSAPHONE™ HOME MONITORING SYSTEM

MODEL SC-145 OUR PRICE **\$169.95**

### DESCRIPTION

Sensaphone answers a basic need. Now you can protect your home, your vacation cabin, the security of your office...or virtually any property you own...with a Sensaphone System. Locks and alarms are important but limited. Having a Sensaphone System monitoring your property when you're away is the next best thing to being there. What the Sensaphone System does. Say you're away from home. A fire breaks out and your smoke alarm goes off. Who hears it? The Sensaphone does. Automatically, and in sequence, it can phone you, your office, a neighbor, or a relative until its warning message is received. Now the person receiving the message can alert the fire department and save the house. The Sensaphone continuously monitors major environmental conditions. Connected to your telephone, the Sensaphone system is continuously alert for power failures, excessively high or low temperatures, unusual sounds...and three other conditions of your choice. If alarm conditions develop, the system will automatically dial the numbers you have entered, until answered. When answered, the Sensaphone talks to the receiving party. It identifies itself, gives the time, says exactly what's wrong, then switches on its built-in microphone so unusual sounds, if any, can be heard. The microphone also enables you to listen to sounds in your home while away. Just telephone the system and it will report and let you listen to the room sounds. Keeps working, even if there's a power failure. Automatically dials up to 8 numbers. A snap to install.



## SEIKO TFT POCKET 2" COLOR TELEVISION

MODEL T-102  
OUR PRICE **\$299.00**

### DESCRIPTION

Seiko introduces a brilliant idea: the flat screen color TV. A technological first from Seiko. They call it TFT TV because 52,800 thin film transistors power the wafer-thin 2-inch diagonal screen. The result is a color picture of stunning high resolution and clarity.

### SPECIFICATIONS

**PICTURE ELEMENT:** Display type: Transparent TFT type TN color LCD - color filter system. Pixels: 52,800 (200 x 240).

**Screen size:** 2" diagonal (38.4 x 28.6mm). **BACKLIGHT:** Internal fluorescent tube or natural light. **RECEPTION:** VHF: 1-12, UHF: 13-69. **ANTENNA:** 26" telescoping rod antenna. **SPEAKER:** 1-3/8" round speaker. **POWER SUPPLY:** 4-way system: DC (5 "AA" batteries), AC adaptor (7.5 volt, optional), Rechargeable battery pack (optional), Car battery adaptor (optional). **BATTERY LIFE:** AA batteries: approx. 6 hrs. natural light/3 hrs. internal. Rechargeable: approx. 2.5 hrs. natural/1.3 hrs. internal. **POWER CONSUMPTION:** 1.9 watts. **DIMENSIONS:** 6-3/8" L x 3-1/8" H x 1-1/4" D. **WEIGHT:** less than 1 lb. (AA batteries not included). **INPUT/OUTPUT:** Video input & output jacks, Earphone jack.

**ACCESSORIES INCLUDED:** Batteries, Earphone, Carrying strap and Custom Carrying Case.

### OPTIONAL ACCESSORIES

TD-05 AC adaptor ..... **\$24.95**  
TD-98 Car adaptor ..... **\$29.95**



## KONICA COLOR VIDEO AUTO-FOCUS CAMERA

MODEL CV-601

OUR PRICE **\$499.95**

### FEATURES

- Zoom control.
- Auto-Focus.
- Color temperature compensator.
- Eyesight correction lens.
- Unidirectional microphone.
- Eyepiece shutter.
- Viewfinder indicators.
- Size 66mm x 225mm x 122mm (WxDxH) (2.6" x 8.9" x 4.8").
- Weight 1.6 lbs.

### DESCRIPTION

The Konica CV-601 doesn't look like any other video camera, the body is long and slim with a comfortable grip that lets you hold it firmly with one hand. There are no troublesome adjustments, just set a single selector to one of four easily understood selector positions. With the Konica CV-601 even beginners can make beautiful professional looking recordings with ease.

### Optional Soft Case

model #CB-100 ..... **\$19.95**

### Optional Accessorie

To Adapt Camera For Use With Beta/VCR model#TD-A ..... **\$69.95**



## LIGHTWATCH LIGHTWATCH II

MODEL LC-1/2

OUR PRICE

**\$149.95**

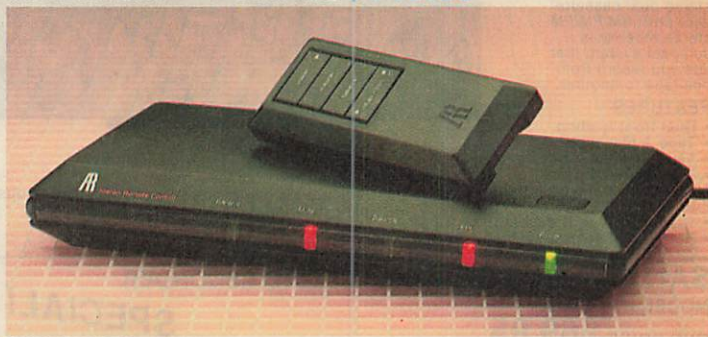
### DESCRIPTION

LightWatch II LC1/2 is the top-of-the-line automatic outdoor lighting control device which detects persons or vehicles by a passive infrared detector as they enter its field of view. It then turns it off automatically at a later, pre-set time. The weatherproofed unit is mounted directly on an outdoor wall or post and is aimed at the desired area to be monitored. It has two integral floodlamp holders in addition to the sensor/control head. All three parts are independently adjustable, so that each can be directed to an area as desired.



## ACOUSTIC RESEARCH STEREO REMOTE CONTROL SYSTEM

MODEL AR-SRC OUR PRICE **\$149.95**



### DESCRIPTION

The AR-SRC adds remote control convenience to virtually all component stereo and video systems. It allows you to control 15 functions from anywhere in the room via infrared commands from a wireless remote handset. This means that critical adjustments—of volume and balance—can be made from the one place in the room that counts, the listening position.

### FEATURES

- Compatible with all component audio systems. (Receivers or integrated amplifiers which allow for connection of tape deck or between separate preamps and power amps.
- 8-bit custom programmed microprocessor. • 15 function hand held module.
- Remote functions include: system on/off, volume control, balance control, -20dB mute, full audio mute, source switching via remote tape monitor, left vs right speaker comparison, sleep timer.
- Full memory of control settings with power off. • Studio quality specifications.
- Adds a second tape loop to your system. • Operating range of 40 feet nominal.
- Phono cables, battery and instruction manual included. • 1 year limited warranty.

### APPLICATIONS

The AR-SRC simplifies interconnection of video and audio components for enhanced sound while viewing movies and music videos. It may be used as a high quality preamplifier for high output components such as digital disc players, tape decks, VCRs (audio signal), and tuners. Signal Processors may be switched in and out of the audio circuit, allowing instant comparisons for adjusting equalizers, time delay systems, or dynamic range expands from the listening position.

## SEIKO 2" B&W POCKET TELEVISION

MODEL LVD-012

OUR PRICE **\$149.95**

### DESCRIPTION

It's the most pocket-sized TV ever, a remarkable achievement of Seiko® ingenuity. Barely 7 ounces in weight equipped with a built-in screen protector, it's built to travel like no other TV on the market. And with Seiko's patented TFT screen, it boasts a picture that actually gets brighter in daylight, and a battery life of 10 hours, nearly twice that of other pocket sets. Slip it into your shirt pocket, with room to spare. Slip it out anywhere, and catch a TV picture as bright as the light around you, indoor or out.

### SPECIFICATIONS

**Screen Size:** 2" dia. **Reception:** VHF:1-13, UHF:14-69. **Antenna:** 16-3/4". **Power Source:** 2 "AA" dry cells (included). **Accessories included:** Batteries, Earphone, Carrying strap, Carrying Case. **Dimensions:** 2.8"W x 4.6"L x 0.9"D.





## WELLER WTCPR CONTROLLED OUTPUT SOLDERING STATION

MODEL WTCPR

OUR PRICE **\$79.95**

### DESCRIPTION

The Weller WTCPR is a transformer powered soldering station complete with a low voltage, temperature controlled soldering pencil. The unique Weller 'Closed Loop' method of controlling maximum tip temperature is employed, protecting temperature sensitive components while the grounded tip protects voltage and current sensitive components.



Model	Description	Our Price
TC-201	Soldering Pencil with PTA 7 tip.	\$44.95
TC-202	Power unit only includes sponge, iron holder and tip tray.	61.95
TC-204	Iron holder with funnel.	2.95
TC-205	Sponge.	1.50
TC-206	Tip tray.	1.50

## WELLER SOLDERING STATION MODEL EC-1000

OUR PRICE **\$129.95**

The Weller EC-1000 Soldering Station is identical to the EC-2000 in all specifications except the LED Digital temperature readout. The EC-1000 is dial controlled. Meets government specification requirements for contract work.

## WELLER SOLDERING STATION MODEL EC-2000

OUR PRICE **\$169.95**

The Weller EC-2000 has continuously variable tip temperature from 350 to 850°F. A positive temperature coefficient sensor inside the tip provides temperature feedback to maintain tip temperature at a set point. Zero crossing control of heater current to eliminate RFI/EMI and accurate time proportioning to reduce tip temperature hysteresis are features of the control circuit. Has plug-in soldering irons with positive plug lock, grounded tip, and room temperature compensation that are interchangeable with all EC power units without recalibration of the temperature settings. Temperature adjusting control can be locked at any desired temperature. Power unit, provided with extra large sponge, iron holder tip holding tray, solder drip shield, over current protection (circuit breaker) and lighted on/off switch. Nine different tip styles are available. The EC-2000 has three large digit LED display for accurate setting of desired tip temperature, and instantaneous tip temperature readings are available by setting a selector switch to 'read' position.



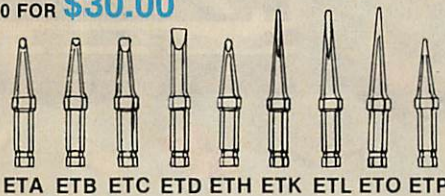
## WELLER POPULAR TIPS

MODELS EC-1000, EC-2000

OUR PRICE **\$3.50** each 10 FOR **\$30.00**

### DESCRIPTION

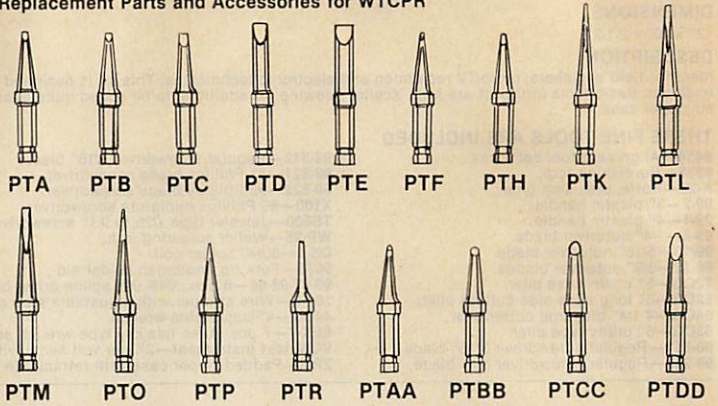
ETA Tip 1/16" screwdriver  
 ETB Tip 3/32" screwdriver  
 ETC Tip 1/8" screwdriver  
 ETD Tip 3/16" screwdriver  
 ETH Tip 1/32" screwdriver  
 ETK Tip 3/64" long screwdriver  
 ETL Tip 5/64" long screwdriver  
 ETO Tip 1/32" long conical  
 ETP Tip 1/32" conical



## WELLER 700° TIPS FOR WTCPR

OUR PRICE **\$3.50** each 10 FOR **\$30.00**

Replacement Parts and Accessories for WTCPR



## WELLER PORTABLE DESOLDERING STATIONS MODEL DS-600

OUR PRICE **\$449.95**

### DESCRIPTION

Here's the professional desoldering station that has everything. Except a fixed place. The low maintenance, self contained vacuum/air pump in this small smart unit now lets the station travel to the job. And there isn't any place that Weller expertise cannot reach.

The DS-600 Portable Power Desoldering Station is a self contained system which requires only a 120 volt 60 Hz AC power source for operation. This station has been designed for use in industrial applications where portability or a lack of a suitable vacuum source requires a self contained unit. The station is supplied with a carrying handle, power storage cord, and a built in desoldering iron storage compartment to enhance portability. Other features include lighted on/off switch, quick connect/disconnect locking plug and receptacle, built in iron holder, and circuit breaker.



**FREE**  
**WTCPR WITH**  
**PURCHASE OF DS-600**

## WELLER ELECTRONICALLY CONTROLLED SOLDERING/DESOLDERING STATION MODEL DS-2000

REG. \$1175.00

OUR PRICE **\$995.00**

Introducing a unit which incorporates the very latest in soldering and desoldering technology. The DS-2000 is a fully electronic soldering/desoldering station that utilizes high precision electronic systems to control tip temperatures for both soldering and desoldering. Three digit LED readouts, for both soldering and desoldering provide digital temperature setting and digital readout. Precision platinum sensors are used in both the desoldering and soldering tool. Tools are unplugged and replaced without affecting the calibrated accuracy of the station. Temperature control and dynamic response to load are fast and noise free. Zero crossing or optically isolated electronic circuitry is used throughout the unit for controlling all pumps, solenoid valves, and other functions. This is to ensure that no voltage transients are generated to endanger sensitive, high reliability electronic circuitry. A unique electronic system is used to detect proper air flow in the desoldering intake line. When flow is not within acceptable limits a written warning is illuminated on the panel to give the operator indication of tiplet restriction or low vacuum. This feature eliminates the aggravation of trying, unknowingly, to desolder with a partially restricted tiplet.

The DS-2000 is a full feature soldering/desoldering station that allows use with internal vacuum pump or external shop air supply to create vacuum. When the internal vacuum pump is selected, an electronically controlled circuit controls the pump motor and keeps it actuated for a short time delay after each desoldering operation to hold full vacuum available for the next desoldering operation.



## WELLER CLEAN-O-POINT

Improved soldering tip cleaning by Weller

MODEL WCP-1 OUR PRICE **\$45.00**

The new Weller WCP-1 Clean-O-Point for fast more efficient solder tip cleaning.

### FEATURES

- Rotating dampened sponge rollers clean the solder tip without turning or twisting.
- Clean-O-Point takes only seconds to clean the soldering tip.
- Removed solder is collected and can be recycled.





# COMPLETE TOOL CASES

## FORDHAM COMPACT TOOL KIT With A Padded Zipper Case

MODEL FTK-16 OUR PRICE **\$179.95**

### DIMENSIONS

12" x 10" x 2-1/2"

### DESCRIPTION

Ideal for field engineers, radio-TV repairmen and electronic technicians. This kit is designed for the professional electronic technician or field engineer. Basic tools in the kit are from Xcelite allowing for additions to be added quite easily. The tools are furnished in an attractive padded zipper case.

### THESE FINE TOOLS ARE INCLUDED

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>8454—Alignment tool set 5 pcs.</li> <li>9338—Burnishing tool.</li> <li>K-22—Knife, precision type.</li> <li>99-2—3" plastic handle.</li> <li>99-1—4" plastic handle.</li> <li>99-8—1/4" nutdriver blade.</li> <li>99-10—5/16" nutdriver blade.</li> <li>99-12—3/8" nutdriver blades.</li> <li>72CG—5" chain nose plier.</li> <li>52CG—6" long nose side cutting plier.</li> <li>84CG—4-1/4" diagonal cutter plier.</li> <li>53CG—6" utility type plier.</li> <li>99-811—Regular screwdriver 3/16" blade.</li> <li>99-250—Regular screwdriver 1/4" blade.</li> </ul> | <ul style="list-style-type: none"> <li>99-312—Regular screwdriver 5/16" blade.</li> <li>99-821—#1 Phillips blade screwdriver.</li> <li>99-822—#2 Phillips blade screwdriver.</li> <li>X100—#0 Phillips miniature screwdriver.</li> <li>TS600—Jeweler type .025 tp 0.1" screwdriver set.</li> <li>WP-25—Weller soldering iron.</li> <li>DS-1—60/40 solder coil.</li> <li>9073—Fork tip and brush solder aid.</li> <li>99-61-99-66—6 pcs. .048-.096 spline driver blade set.</li> <li>101-S—Wire stripper with adjustable stop screw and spring.</li> <li>44CG—4" adjustable wrench.</li> <li>SLK-7—7 pcs. Allen hex key type wrench set.</li> <li>VOM test instrument—2K per volt sensitivity.</li> <li>ZP-5—Padded zipper case with retractable handles.</li> </ul> |
|--|---|



## FORDHAM SOLDERING & SERVICEMAN'S AID KIT

MODEL FTK-17 OUR PRICE **\$169.95**

### THESE FINE QUALITY TOOLS ARE INCLUDED

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>US140—Universal Soldapullit</li> <li>9069—Reamer &amp; Scraper Tip</li> <li>9074—Brush &amp; Scraper Tip</li> <li>AA—Solder Wick</li> <li>AB—Solder Wick</li> <li>BB—Solder Wick</li> <li>FH-80—Desoldering Tool</li> <li>WM120—Pencil Thin Soldering Station</li> <li>91CG—Extra Thin Long Needle Nose</li> <li>108CG—Diagonal Full-Flush Cutting Pliers</li> </ul> | <ul style="list-style-type: none"> <li>101S—Wire Stripper &amp; Cutter</li> <li>HD100A—Heavy Duty Clip Leads</li> <li>K22—Knife</li> <li>DS-1—Dispenser Pack Solder</li> <li>BCR10—Solder Cream</li> <li>5090P—Shockproof Inspection Mirror</li> <li>99-1—Handle</li> <li>99-8—1/4" Nutdriver Blade</li> <li>99-10—5/16" Nutdriver Blade</li> </ul> | <ul style="list-style-type: none"> <li>99-12—3/8" Nutdriver Blade</li> <li>99-14—7/16" Nutdriver Blade</li> <li>99-821—#1 Phillips Screwdriver Blade</li> <li>99-822—#2 Phillips Screwdriver Blade</li> <li>99-125—1/8" Slotted Screwdriver Blade</li> <li>99-250—1/4" Slotted Screwdriver Blade</li> <li>DP-1—Pen Lite</li> <li>99X10—10" Extension</li> <li>ZP-5—Padded zipper case with retractable handles. 13 x 10 x 2-1/2".</li> </ul> |
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## FORDHAM

## DELUXE SOLDERING & ELECTRONIC TECHNICIAN SERVICE KIT

MODEL FTK-18 OUR PRICE **\$199.95**

### THESE FINE QUALITY TOOLS ARE INCLUDED

- |   |   |   |
|---|---|---|
| <ul style="list-style-type: none"> <li>WP40—Weller Soldering Iron</li> <li>9073—Brush &amp; Forked Tip</li> <li>9075—Straight Reamer &amp; Forked Tip</li> <li>AA—Solder Wick</li> <li>AB—Solder Wick</li> <li>BB—Solder Wick</li> <li>XD16—Extractor Pliers</li> <li>DS-1—Solder (Dispenser Pack)</li> <li>DS40—Professional Desoldering/Repair Tool</li> <li>91CG—Extra Thin Long Needle Nose</li> <li>101S—Wire Stripper &amp; Cutter</li> </ul> | <ul style="list-style-type: none"> <li>108CG—Diagonal Full-Flush Cutting Pliers</li> <li>80V—Heat Sink</li> <li>US140—Desoldering Tool</li> <li>BCR10—Solder Cream</li> <li>K22—Knife</li> <li>HD100A—Clip Leads</li> <li>DP-1—Pen Lite</li> <li>99-6—3/16" Nutdriver Blade</li> <li>99-7—7/32" Nutdriver Blade</li> <li>99-8—1/4" Nutdriver Blade</li> <li>99-9—9/32" Nutdriver Blade</li> </ul> | <ul style="list-style-type: none"> <li>99-10—5/16" Nutdriver Blade</li> <li>99-11—11/32" Nutdriver Blade</li> <li>99-12—3/8" Nutdriver Blade</li> <li>99-811—3/16" Screwdriver</li> <li>99-250—1/4" Slotted Screwdriver Blade</li> <li>99-821—#1 Phillips Screwdriver Blade</li> <li>99-822—#2 Phillips Screwdriver Blade</li> <li>99X5—4" Extension</li> <li>99-1—Regular Handle For 99 Series</li> <li>ZP-5—Padded zipper case with retractable handles. 13 x 10 x 2-1/2".</li> </ul> |
|---|---|---|



## FORDHAM COMPUTER & ELECTRONIC TECHNICAL TOOL KIT

MODEL FTK-24 OUR PRICE **\$499.95**

### THESE FINE QUALITY TOOLS ARE INCLUDED

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>WM120—Weller Soldering Iron</li> <li>52CG—Long Nose Pliers</li> <li>101S—Wire Stripper &amp; Cutter</li> <li>108CG—Diagonal Full Flush Cutting Pliers</li> <li>91CG—Extra Thin Long Needle Nose</li> <li>72CG—Midget Chain Nose</li> <li>X100—#1 Phillips</li> <li>R3168—3/16" Screwdriver</li> <li>R-184—1/8" Screwdriver</li> <li>X101—#2 Phillips</li> <li>R5168—5/16" Screwdriver</li> <li>R-144—1/4" Screwdriver</li> <li>8725—Illuminated Dental Mirror</li> <li>DS-017—Deluxe Soldavac</li> <li>XD16—Extractor Pliers</li> <li>99-1—Handle</li> <li>99-61 thru 99-86—Bristol 6-Flute Multiple Spline Driver Blade Set</li> <li>99-21 thru 99-26—Allen Hex Socket Type Screwdrivers</li> <li>LBM—1/4" Extra Long Magnetic Nutdrivers</li> <li>L10M—5/16" Extra Long Magnetic Nutdrivers</li> <li>K22—Knife</li> <li>XL75—Midget Ratchet Offset Kit</li> <li>TS600—Precision Screwdriver Kit</li> <li>7950—Three GC Tweezer Kit</li> <li>HD100A—Heavy Duty Clip Leads</li> <li>99-6—3/16" Nutdriver Blade</li> <li>99-7—7/32" Nutdriver Blade</li> </ul> | <ul style="list-style-type: none"> <li>99-8—1/4" Nutdriver Blade</li> <li>99-9—9/32" Nutdriver Blade</li> <li>99-10—5/16" Nutdriver Blade</li> <li>99-11—11/32" Nutdriver Blade</li> <li>99-12—3/8" Nutdriver Blade</li> <li>99-14—7/16" Nutdriver Blade</li> <li>99-16—1/2" Nutdriver Blade</li> <li>FH-80—Desoldering Tool</li> <li>80V—Heat Sink</li> <li>BCR10—Solder Cream</li> <li>DS-1—Dispenser Pack Solder</li> <li>AA—Solder Wick</li> <li>AB—Solder Wick</li> <li>BB—Solder Wick</li> <li>DP-1—Pen Lite</li> <li>42-H—Xcelite Seizers</li> <li>78C—Combination Slip-Joint Pliers</li> <li>DP51—B&amp;K Digital Probe</li> <li>MOS 1416—DIP IC Insertion Tools with Pin Straightener (14-16 Pin)</li> <li>MOS 2428—DIP IC Insertion Tools with Pin Straightener (24-28 Pin)</li> <li>INS 1416—DIP IC Insertion Tools with Pin Straightener (14-16 Pin)</li> <li>TC-6800—Tool Case</li> <li>DVM-638—New Scope Meter!</li> </ul> |
|--|--|



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## VACO SUPER CASE

MODEL 70260

### DESCRIPTION

Popular assortment of 48 precision engineered tools. Includes screwdrivers, nutdrivers, electrical tools, pliers and specialty tools on two custom-fitted pallets. Ample storage space in bottom for meters, power tools and other equipment. Large pocket in lip holds catalogs, manuals, guides. Black simulated leather covers sturdy case. Measures: 19 x 14-1/2 x 6". Shipping Weight: 20 lbs.

### THESE FINE QUALITY TOOLS ARE INCLUDED

#### Hollow Shaft Nut Drivers

- S6—3/16" socket, black handle
- S8—1/4" socket, red handle
- S10—5/16" socket, amber handle
- S11—11/16" socket, green handle
- S12—3/8" socket, blue handle
- S14—7/16" socket, brown handle
- S16—1/2" socket, red handle

#### Electrical Tools & Testers

- WS-150 Adjustable wire stripper & cutter
- 1963—Crimping tool with bolt slicer
- 70008—Continuity tester with wire lead and clip.
- 70219—100-500 volt twin lead tester.
- 70129—100-500 volt circuit tester.
- AN2—RF tester.

#### Problem Solving Tools

- 70128—8 ft. measuring tape.
- HK-17—Folding hex key wrench set.
- P120—Phillips tips offset screwdriver.
- VO2—Slotted tips offset screwdriver.
- TT31—3-in-1 tapping tool.
- ST49—Spring tool.
- 220—External snap ring plier.
- 700035—Magnetic screwdriver.

#### Pliers and Wrenches

- 88202—5" diagonal pliers.
- 88203—6" diagonal pliers.
- 88102—6" long needle nose plier.
- 88105—6" long nose pliers.

OUR PRICE **\$349.95**



- 88602—6-1/2" Vacugrur adjustable pliers.
  - 70301—4" electronic chain nose pliers.
  - 70303—4" electronic diagonal pliers.
  - 7706—6" adjustable wrench.
  - 1214—3/8 x 7/16" ratchet box wrench.
- #### Screwdrivers
- A130—2-1/8" slotted driver.
  - A132—1/4" slotted stubby driver.
  - BD144—1/4" Bull Driver
  - P1—#1 Phillips driver.
  - P2—#2 Phillips driver.
  - P6—#1 Phillips stubby driver.
  - 74164—1/4" slotted cushion grip driver.
  - 71002—#2 Phillips cushion grip driver.
  - R10—#1 square recess driver.
  - R20—#2 square recess driver.
  - CH540—5/32" clutch head driver.
  - F710—Frearson driver.
  - DU2—3/16" slotted x #1 Phillips reversible blade driver
  - DUH4—1/4" slotted x #2 Phillips reversible blade driver
  - K23—1/8" slotted tip screw holding driver
  - K34—3/16" slotted tip screw holding driver
  - K46—1/4" slotted tip screw holding driver
  - K15—Phillips tip screw holding driver

## VACO SUPER ZIP

MODEL 70390

OUR PRICE **\$175.00**

### DESCRIPTION

This compact assortment holds 36 popular professional tools. Includes interchangeable 90 Series handle and screwdriver, nutdriver and hex-driver blades plus pliers, electrical tools and offset and regular screwdrivers. Zippered vinyl case is tough and lightweight. Measures: 12-1/2 x 10-1/4 x 1-3/8". Shipping Weight: 8 lbs.

### THESE FINE QUALITY TOOLS ARE INCLUDED

#### Handles and Extension

- 90-1—Full size handle.
- 90-x10—10" blade extension.

#### Screwdriver Blades

- 90-811—3/16" slotted.
- 90-250—1/4" slotted.
- 90-821—#1 Phillips.
- 90-822—#2 Phillips.

#### Nutdriver Blades

- 90-6—3/16" socket.
- 90-8—1/4" socket.
- 90-10—5/16" socket.
- 90-11—11/32" socket.
- 90-12—3/8" socket.
- 90-14—7/16" socket.
- 90-16—1/2" socket.

#### Offset Screwdrivers

- VO1—Slotted.
- P120—Phillips.

#### Hex Blades

- 90-20—.050" hex.
- 90-21—1/16" hex.
- 90-22—5/64" hex.
- 90-23—3/32" hex.
- 90-764—7/64" hex.
- 90-24—1/8" hex.



- 90-964—9/64" hex.
- 90-25—5/32" hex.
- 90-26—3/16" hex.

#### Screw Holding Drivers

- K23—1/8 x 3" slotted tip.
- K15—Phillips tip.

#### Screwdriver

- PO1—#0 Phillips.

#### Electrical Tools & Testers

- WS-150 Adjustable wire stripper & cutter
- 1963—Crimping tool with bolt slicer

#### Pliers and Wrenches

- 70277—Electronic 4" diagonal plier.
- 70280—Electronic 5" long reach plier.
- 88105—6" long nose plier.
- 88601—5" Vacugrur adjustable plier.
- 88602—6-1/2" Vacugrur adjustable pliers.
- 70195—External snap ring plier.
- 7704—4" adjustable wrench.

## XCELITE ATTACHE TOOL CASES

MODEL TCM-100/ST

REG. \$499.95 OUR PRICE **\$379.95**

### DESCRIPTION

Largest, most elaborate of the three cases. Contains 53 individual tools, 31 Series 99® interchangeable screwdriver/nut-driver blades and handles, and 2 specialized screwdriver/nut-driver sets and kits, as listed. Case (19-1/2 x 13-1/2 x 6-3/4") covered with attractive, tough, heavy duty ABS material.

Removeable three-panel, hinged pallet and tray outfitted with pocket tool holders. Solid brass locks, latches, and hardware. Padded handle. Partitioned bottom compartment for other tools.

### CONTENTS

#### Interchangeable Screwdrivers, Nutdrivers, Other Tools and Handles

- 99-1, 1-R, & 4-R—Handles (regular, straight and Tee ratchets).
- 99X5 & X10—Extensions.
- 99-61 thru 69—Bristol 6-flute multiple spline blades (9).
- 99-20 thru 26 & 99-765—Allen hex-socket type blades (9).
- 99-125, 250, 312 & 811—Slotted screw blades.
- 99-820, 821 & 822—Phillips screw blades.
- 99-38—Reamer.

#### Pliers, Wrenches, Cutters

- 42H—Straight nose Seizer™
- 46CG—Adjustable wrench (6")
- 50CG—Midgert slip joint plier (5")
- 51CG—Long nose plier (6-1/2")
- 53CG—Utility plier (7")
- 54CG & 66CG—Diagonal pliers (4" & 6")
- 57CG—Needle nose plier (5-1/2")
- 59CG—Chain nose plier (8")
- 86CG—Electronic snips.
- 103-S—Wire stripper/cutter.
- K-22—Electrician's knife.

TC-100/MT

EMPTY CASE

**\$139.95**



#### Sets and Kits

- M-60—Mini Drivers.
- XL-75—Offset ratchet screwdrivers.
- 600—Combination dual nutdriver handle and SB1 dual reversible screwdriver blade.

#### Screwdrivers

- R-144—Slotted screwdriver.
- R-146—Slotted screwdriver.
- R-181—Slotted screwdriver.
- R-184—Slotted screwdriver.
- R-3164—Slotted screwdriver.
- R-3166—Insulated Slotted screwdriver.
- R-3323—Slotted screwdriver.
- R-5325—Slotted screwdriver.
- R-388—Slotted screwdriver.
- R-3161—Slotted screwdriver.
- R-5161—Slotted screwdriver.
- R-5166—Slotted screwdriver.
- SX-101—Phillips screws.
- XST-100—Phillips screws.
- XST-101—Phillips screws.
- XST-102—Phillips screws.

#### Nutdrivers

- HS-6, 8, 10, 11, 12, 14, 16, 18—Hollow shaft 8M and 10M magnetic.
- P3 thru P12—Compact convertible drivers (10) and TA-2 torque amplifier handle.

## FORDHAM

### TOOL KIT

MODEL FTK 23

REG. \$499.95

### OUR PRICE

**\$349.95**

### DESCRIPTION

Fordham Tool Kit is made up of Vaco tools. FTK Tool Kits are the leaders in the electronic industry. Ideal for field engineers, technicians and laboratories. These are more than 100 fine tools of the highest quality. All are in a handsome gray attache case. Dimensions: 18" x 13" x 7"

## EXTRA SPECIAL!



### THESE FINE QUALITY TOOLS ARE INCLUDED

- 90-1—Standard Handle
- 90-1R—Reversible Ratcheting Standard Interchangeable Handle
- 90-4R—Reversible Ratcheting Interchangeable T Handle
- 90-X5—5" Extension Blade
- 90-X10—10" Extension Blade
- 90-61 thru 90-69—.048", .060", .069", .070", .076", .096", .111", .145", .183" 6 Flute Blade
- 90-20 thru 90-964—.050", 1/16", 5/64", 3/32", 1/8", 5/32", 3/16", 7/64", 9/64", 1/4" Hex Blade
- 90-125—1/8" Slotted Blade
- 90-250—1/4" Regular Blade Driver
- 90-312—5/16" Ft. Screw Driver Blade
- 90-811—3/16" Regular Blade Driver
- 90-820—No. 0 Phillips Blade
- 90-821—No. 1 Phillips Blade
- 90-822—No. 2 Phillips Blade
- 70296—Straight Forceps
- 7706—6" Adjustable Wrench
- 88601—VACUGRUR Pliers 5 Adjustable
- 88102—Long Needle Nose Plier
- 88602—VACUGRUR Plier 6
- 88201—Diagonal Cutter 4-1/2
- 88203—Diagonal Cutter 6
- 88105—Long Nose Plier
- 88106—Long Reach Plier
- P657—Metal Strip
- WS150—Wire Strapper & Cutter
- 70394—Knife 2 Blade Boxed
- M60—Mini Drivers
- VL75—Ratchet Screw Driver Set
- 70175—Handles only for DU2
- 70184—Blade only for DU5
- A416-4—1/4" x 4" Round Keystone style Blade

- A416-6—1/4" x 6" Round Keystone style Blade
- A130-2—1/8" x 2" Pocket Clip Round Blade
- A216-4—9/64" x 4" Cabinet Style Blade
- BD364—3/16" x 4" Round Bull Driver
- VR361—3/16" x 6" Insulated Screw Driver Blade
- A116-3—3/32" x 3" Pocket Clip
- 7 pcs. Hollow Shaft Nut Drivers
- C68—Heavy Duty Square Blade 3/8" x 8"
- A135—Stubby Style Screw Drivers 1-1/4" x 2-1/8"
- C56—Square Blade Screw Driver Med. Duty 5/16" x 6"
- P6—Stubby Phillips Blade Screw Driver 1-1/8" x 1-3/4"
- P01—Regular Phillips Blade 5/8" x 2-3/4" Screw Driver
- P10—Super Hard Phillips Screw Driver 1-1/8" x 4-3/8"
- P20—1-1/8" x 4-3/8" Super Hard Phillips Screw Driver
- P18—Extra Long Phillips Screw Driver 7/8" x 1-3/4"
- S18—Extra Large Hex Blade 4" Shaft Length 1-1/16" x 4"
- S8M—Magnetic Nut Drivers 1" x 3-5/8" Red
- S10M—Magnetic Nut Drivers 1" x 3-5/8" Amber
- TS3 thru TS12—3/32", 1/8", 5/32", 3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/8" Nut Driver
- 70112—Torque Commander Handle Case



# ATTACHE CASES with TOOLS

## FORDHAM Tool Cases with Hand Held Digital Multimeter.

All Fordham Tool Cases contain primarily Weller Xcelite tools. FTK Tool Cases are the leaders in the electronic industry. Ideal for field engineers, technicians and laboratories. There are more than 100 fine tools of the highest quality. All are in a handsome attache case of your choice.

### THESE FINE QUALITY TOOLS ARE INCLUDED IN ALL MODELS BELOW

99-20 thru 99-26—Allen hex Driver Blade Set. 7 pcs.  
 Alignment Tool Kit—5 pcs.  
 9338—Burnishing Tool  
 70219—Circuit Tester—twin lead type 60-500 volts  
 1963—Crimping Tool with bolt cutter and stripper  
 6980—Dip Extractor  
 TE101—Electrical Tape—UL approved 60' x 3/4"  
 Flashlight—Heavy duty industrial type, 2 cell  
 Hammer—(ball pein)—8 oz. head  
 99-1—Handle for hex, spline and nutdriver blades 4"  
 99-2—Handle for hex, spline and nutdriver blades 3"  
 99-4—Handle for hex, spline and nutdriver blades tee type  
 80—Heat Sink  
 70148—Hex Key Set—folding type .050—3/16"  
 K-22—Knife—multipurpose electrician's type  
 5090—Mirror—dental type  
 99-8 thru 99-12—Nutdriver Blade Set—3/16" thru 1/2" 7 pcs.  
 PO1—Oiler—precision type  
 55CG—Pliers—diagonal 5"  
 72CG—Pliers—instrument type chain nose 5"  
 52CG—Pliers—long nose with side cutter  
 84CG—Pliers—miniature cutter 4" with pointed nose  
 58CG—Pliers—special purpose radio and TV 6"  
 56CG—Pliers—needle nose 6" slim jaw  
 63CG—Pliers—utility type 10"  
 70195—Pliers—convertible snap ring, adjust for internal or external snap rings  
 TS600—Screwdriver—jeweler's kit 6 pcs. .025-1"  
 VO2—Offset Screwdrivers—6—10 screws  
 X100—Screwdriver—Phillips -0.2" blade

X101—Screwdriver—Phillips -1.3" blade  
 X102—Screwdriver—Phillips -2.4" blade  
 SX102—Screwdriver—Phillips Stubby -2.1-5/16" blade  
 R3322—Screwdriver—regular 3/32", 2" blade  
 R148—Screwdriver—regular 1/8", 8" blade  
 R3163—Screwdriver—regular 3/16", 3" blade  
 R144—Screwdriver—regular 1/4", 4" blade  
 R5323—Screwdriver—regular 5/32", 3" blade  
 R5166—Screwdriver—regular 5/16", 6" blade  
 S141—Screwdriver—regular stubby 1/4", 1-1/4" blade  
 K34—Screwdriver—screwholding type 3/16" 4" blade  
 42H—Seizure—6" straight nose—serrated  
 86CG—Snips—6-1/2" pointed, 1-1/2" blade  
 99-81 thru 99-86—Spline Driver Blade Set—6 pcs. .048—.096  
 WP-25—Soldering Iron—Weller  
 9073—Solder Aid—fork tip and brush  
 AC303P—Solder Aid—desoldering bulb  
 AB—Solder Aid—solder wick  
 DS-1—Solder—small coil .031  
 8010—Tape Measure—10 ft. long, 1/2" wide  
 7993—Tweezer—fine point 4-1/8" long  
 101-S—Wire Stripper/Cutter—with adjustable screw stop and spring  
 XL70—Wrench Sets—1/4" drive sockets with ratchet, spinner and extensions  
 44CG—Wrench—4" length adjustable  
 48CG—Wrench—8" length adjustable  
 DVM-634—Scope Digital Multimeter



New Scope DVM-634 is supplied with each tool case.

## FORDHAM TOOL CASES

### MODEL FTK-20SD (Super Deep)

OUR PRICE **\$489.95**

#### DESCRIPTION

##### DELUXE ELECTRONIC & INDUSTRIAL TOOL CASE.

This executive attache case contains all the tools described above. The deluxe case features hardwood construction and brass hardware. Spacious compartments are provided in the bottom of the case for tools, spare parts, and service manual. Two Removable Pallets. Color: Bourbon Brown.

Dimensions: 8-3/4" x 13-1/2" x 7-1/2".

EMPTY CASE AVAILABLE MODEL TC-9000XL ..... \$99.95

### MODEL FTK-20MLD

OUR PRICE **\$449.95**

#### DESCRIPTION

##### DELUXE MOLDED TOOL CASE.

This tool kit contains exactly the same type quality tools described above. However, this tool kit comes with a heavy-duty molded case. For many reasons, this is the finest plastic tool case ever offered. One piece magnesium frame for upper and lower balance. Extra durable plastic walls. Color: Black. This kit also comes with two removable tool pallets for your convenience.

Dimensions: 18-3/4" x 12-3/4" x 5-3/4".

EMPTY CASE AVAILABLE MODEL TC-6800 ..... \$69.95

### MODEL FTK-20PSD

OUR PRICE **\$489.95**

#### DESCRIPTION

##### SUPER DEEP TOOL CASE.

This tool kit contains all of the above tools described. This case is made of rough and tough high impact polyethylene shell. Attache style case. Color: Gray. This kit also comes with two removable tool pallets for your convenience. Recommended for the technician that needs spaciousness.

Dimensions: 18" x 13" x 8".

EMPTY CASE AVAILABLE MODEL ST-8 ..... \$109.95

### MODEL FTK-20TW

OUR PRICE **\$499.95**

#### DESCRIPTION

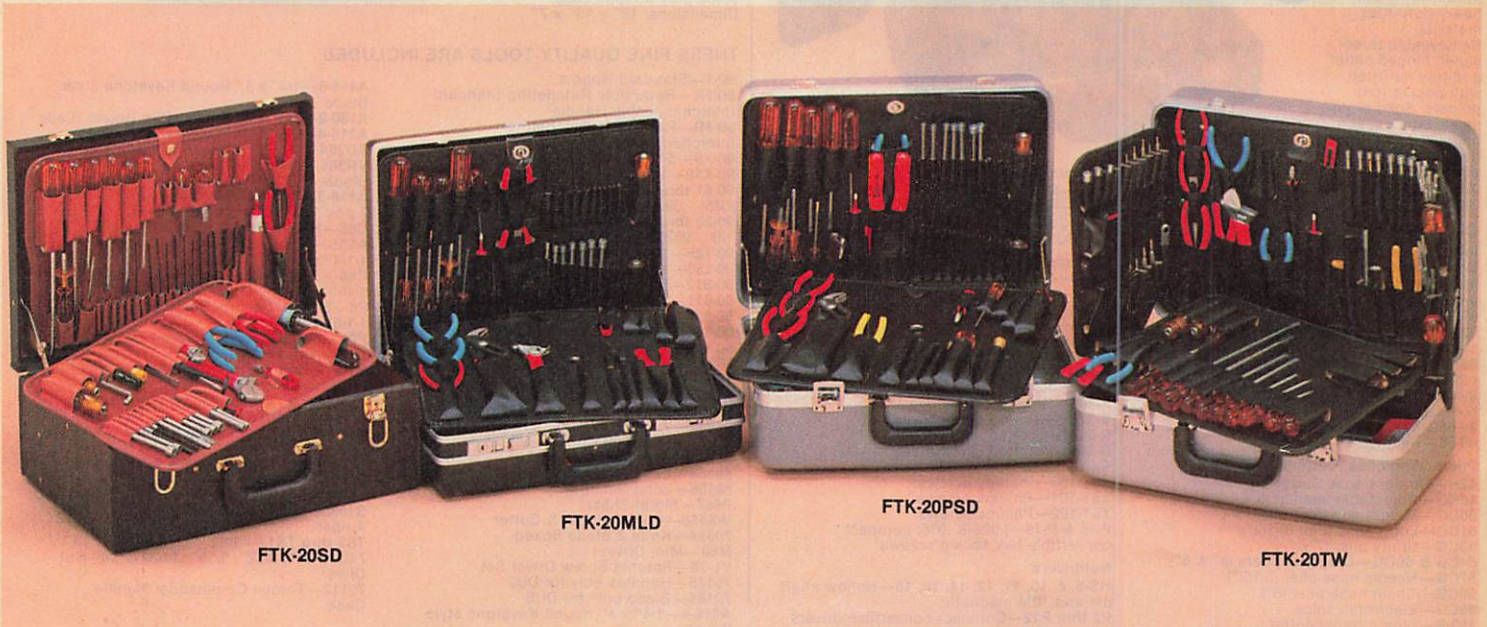
##### WING CASE

This tool kit contains all of the above tool described. Its case is made of heavy duty, high impact polyethylene shell with 2 pallets and wings for extra storage. Color: Gray.

Dimensions: 19-1/2" x 13-1/4" x 8".

EMPTY CASE AVAILABLE MODEL ST-12 ..... \$139.95

TOOLS LISTED AT TOP OF PAGE ARE CONTAINED IN EACH CASE



FTK-20SD

FTK-20MLD

FTK-20PSD

FTK-20TW



## OK FUNCTION GENERATOR

MODEL 202 OUR PRICE **\$219.95**

### FEATURES

- 0.02 Hz to 200 kHz Function Generator. • TTL output.
- Sine, Square, Triangle Waveforms. • 1000:1 External sweep mode
- Variable DC Offset. • Variable 10V 600 ohm output.
- Switchable -40 dB output attenuator.

### SPECIFICATIONS

**Frequency Range:** less than 0.02 Hz to 200 kHz in 5 overlapping decade ranges with fine adjustment by a calibrated vernier. **Sine Distortion:** Less than 1% on 10, 100, 1k and 10 k ranges, typically 0.5%; less than 2% on 100 k range. **Amplitude flatness:**  $\pm 0.2$  dB to 200 kHz. **Triangle Linearity:** Better than 99% to 200 kHz. **Power Requirements:** Input Voltage: 110/120 volts AC nominal 50/60 Hz or 220/240 volts AC nominal 50/60 Hz adjustable internally. **Size:** 10.2" W x 6" D x 2" H. **Weight:** 2.6 lbs.

## FUNCTION GENERATOR

MODEL 203 OUR PRICE **\$269.95**

### FEATURES

- 0.2Hz to 2MHz Function Generator. • Compact, Stackable.
- Sine, Square, Triangle, Waveforms. • Dual BNC Output.
- TTL and Variable 20V p-p 50 ohm outputs.
- Variable DC offset. • Switchable -20 dB attenuation.
- External FM sweep capability is greater than 1000:1 and the TTL output can drive up to 20 standard TTL loads.

### SPECIFICATIONS

**Frequency Range:** Less than 0.2 Hz to 2 MHz in 6 overlapping decade ranges with fine adjustment by a calibrated vernier. **Sine Distortion:** Less than 0.5% on 100, 1 k and 10 k ranges; less than 1% on 100 k ranges; all harmonics greater than 25 dB below fundamental on 1 M range. **Amplitude flatness:**  $\pm 0.2$  dB to 200 kHz,  $\pm 1$  dB to 2 MHz. **Triangle Linearity:** Better than 99% to 200 kHz. **Power Requirements:** Input Voltage: 110/120 volts AC nominal 50/60 Hz or 220/240 volts AC nominal 50/60 Hz adjustable internally. **Size:** 10.2" W x 6" D x 2" H. **Weight:** 2.6 lbs.

## PULSE GENERATOR

MODEL 204

OUR PRICE **\$249.95**

### FEATURES

- 5Hz to 5MHz in 6 ranges. • 3-Outputs: a dual-range 50 ohm output with adjustable voltage 0.1 to 10V; TTL output capable of driving 20 TTL loads; and a SYNC output for triggering applications.
- Trigger/gate input and can operate in continuous, triggered, gated, and one-shot modes. • Squarewave mode fixes the mark:space ratio at 1:1 automatically. • Dual BNC Output.

### SPECIFICATIONS

**Period Range:** 200 nsec to 200 msec (5 MHz to 5 Hz) in 6 overlapping decade ranges, with separate vernier providing continuously variable control within each range. **Jitter:** Less than 0.1%. **Duty Cycle:** greater than 60% and approaching 100% with complement. **Rise/Fall times** typ. 10 ns in 50 ohm load. **Size:** 10.2" W x 6" D x 2" H. **Weight:** 2.6 lbs.

## FUNCTION GENERATOR

MODEL 205-OK

OUR PRICE **\$499.95**

### FEATURES

- .005Hz-5MHz Frequency Range. • Sine, triangle, square, pulse, ramp, haversine outputs. • TTL and 50 BNC Output. • Variable Start/Stop Phase. • Continuous, Trigger Gated One-Shot Modes.
- Variable symmetry (duty cycle) in all modes with 19:1 range. • FM external sweep and trigger/gate inputs. • 20V output from 50 ohm with variable DC offset; TTL output.

### SPECIFICATIONS

**OPERATING RANGE:** Frequency - .005 Hz to 5 MHz in 7 overlapping decade ranges with fine adjustment by calibrated vernier. **EXTERNAL (SWEEP) MODE:** Sweep Range - 1000:1 within each range. **Switchable Attenuation:** -20 dB and -40 dB is standard. **FUNCTIONS:** (Specifications apply for vernier between 0.5 and 5.0 and output 10V peak-to-peak into 50 ohm termination). **SINE:** Distortion - Less than 0.5% to 50 kHz; less than 1% to 500 kHz; all harmonics greater than 30 dB below fundamental on 1M range. **Amplitude Flatness:**  $\pm 0.2$  dB to 500 kHz;  $\pm 1$  dB to 5 MHz. **TRIANGLE:** Linearity - Better than 99% to 500 kHz. **SQUAREWAVE:** Rise and Fall Times - Less than 40ns. **Mark: Space Ratio:** 1:1  $\pm 1\%$  to 100 kHz,  $\pm 5\%$  to 5 MHz. **DC Range:**  $\pm 10$  V from 50 ohm. **POWER REQUIREMENTS:** Input Voltage - 110/120 volts AC nominal 50/60 Hz or 220/240 volts AC nominal 50/60 Hz  $\pm 10\%$  internal. **SIZE:** 12" W x 4" H x 9.2" D. **WEIGHT:** 7.5 lbs. Rugged, Metal, RFI Shielded Enclosure

## 5MHZ SWEEP/FUNCTION GENERATOR

MODEL 206

OUR PRICE **\$799.95**

### FEATURES All Model 205-OK Features Plus:

- 1000:1 Linear or 10,000:1 log sweep with marker. • Precise dial and enter settings of sweep limits. • Single Sweep, Sweep Reset, Sweep Hold. • Sweep and Pen-Lift Outputs.
- Continuously variable symmetry (duty cycle) to 19:1 trigger/gate modes with variable phase -90° to +90°. • Size: 12" W x 5.8" H x 9.2" D. Weight: 9.2 lbs.
- Switchable attenuation -20 dB and -40 dB, and 4 outputs: TTL, 50 ohm variable, 600 ohm sweep out, and TTL plotter pen lift.
- Power Requirement: Input voltage - 110/120 volts AC nominal 50/60 Hz or 220/240 volts AC nominal 50/60 Hz adjustable internally. Power consumption - less than and equal to 30VA max.

## 5MHZ PULSE/FUNCTION GENERATOR

MODEL 207

OUR PRICE **\$799.95**

### FEATURES All Model 205-OK Features Plus:

- Continuously variable symmetry (dual cycle) to 19:1 • Trigger/gate modes with variable phase -90° to +90°, external sweep input to 1000:1, and 2 outputs.
- TTL and 50 ohm variable amplitude and DC offset to  $\pm 10$  V (20V p-p) with switchable -20 dB and -40 dB attenuation. • Pulse width is variable 50 ns to 50 ms and delay is variable 100 ns to 50 ms.
- Modes include normal, double pulse (output capability to 10 MHz), square (sets duty cycle at 50%), and delayed, which offsets the output relative to the trigger input. Output pulse include normal, complement, HI and low clamped to baseline.
- Symmetrical, positive or negative going outputs with adjustable baseline. • Size: 12" W x 5.8" H x 9.2" D. Weight: 9.2 lbs.
- Power Requirements: Input Voltage - 110/120 volts AC nominal 50/60 Hz or 220/240 volts AC nominal 50/60 Hz  $\pm 10\%$  Hz adjustable internally.



## OK TOOLS UNIVERSAL COUNTER

MODEL 510-OK OUR PRICE **\$349.95**

### FEATURES

- 8 Digit 1/2" LCD. • Accurate 0.3 ppm Timebase. • Frequency, Time Average, Totalized & reset.
- External Clock Facility. • 2 Ranges, 5 Gate Times. • AC or DC Powered.

## FREQUENCY COUNTER

MODEL 515-OK OUR PRICE **\$299.95**

### FEATURES

- 8 Digit 1/2" LED Display. • 600 MHz in 3 Ranges, 3 Gate Times.
- 10 Mv Typical Sensitivity. • AC or DC Powered Unit Includes AC Adaptor.

## COUNTER

MODEL 512 OUR PRICE **\$129.95**

### FEATURES

- Low Cost, High Performance 8 Digit Counter. • Hand-Held Configuration with 2 BNC Inputs.
- 20Hz-200MHz Frequency Range. • 2 Ranges, 4 Gate Times. • Uses 9V Alkaline or AC Adaptor.

## OK TOOLS 10 MHz ULTRA-PORTABLE MINI-SCOPE

MODEL 1010

OUR PRICE **\$349.95**

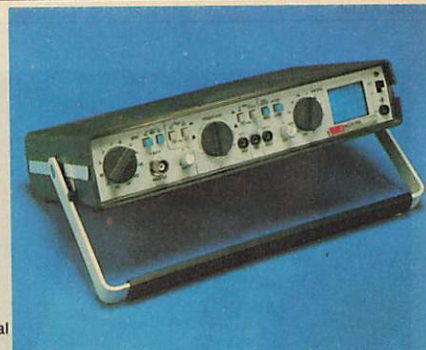
### FEATURES

- DC to 10 MHz bandwidth.
- 12 sensitivity ranges, 21 timebase ranges.
- Vertical sensitivity from 10 mV/div to 50V/div.
- Enclosed in rugged ABS housing.

### SPECIFICATIONS

**TIMEBASE:** Sweep Times: 0.1 usecs/div to 0.5 secs/div in 21 ranges. Calibration accuracy  $\pm 3\%$  for 0.2u secs/div to 0.5 secs/div ranges  $\pm 10\%$  for 0.1 usecs/div.

**TRIGGERING CIRCUIT:** Source: Internal or external switchable. **Coupling:** AC, DC, TV Frame, or TV Line filtering. **Level:** Continuously variable over waveform. **TRIGGERING CIRCUIT:** Slope: + or - selectable on level control. **Sensitivity:** Less than 1 div for internal trigger, Less than 1 volt for external trigger. **Modes:** Bright line: Timebase free runs until synchronized by trigger circuit. Trigger: Timebase reset with display blanked until sweep initiated by trigger circuit. Economy: Instrument switches to a power saving mode with display blanked until timebase is started by trigger circuit. External: As for bright line but with external trigger input. **VERTICAL DEFLECTION (Y INPUT):** Bandwidth: DC to 10 MHz  $\pm 3$  dB at 1 div. **Coupling:** Switchable DC, AC or ground AC coupling -3 dB at 2 Hz. **Sensitivity:** 10mV/div to 50V/div in 12 ranges. Calibration accuracy  $\pm 3\%$ . **Input Impedance:** 1M ohm in parallel with 47 pF. **Maximum Input:** 350V (DC + peak AC) provided DC component does not exceed 250V. **HORIZONTAL DEFLECTION (X INPUT):** Bandwidth: DC to 2 MHz  $\pm 6$  dB. **Coupling:** DC. **Sensitivity:** Approximately 0.5 volts/div. **Input Impedance:** 1Mohm in parallel with 10 pF. **Maximum Input:** 2.5 volts, protected to 250V rms 50/60 Hz. **Display:** Screen Dimensions: 1.3" x 1.1". **Graticule Divisions:** 5 horizontal x 4 vertical (6mm). **Phosphor:** Blue-white, medium persistence. **Calibrator:** Square wave output of amplitude 1 volt pk-pk  $\pm 5\%$  Frequency 1 kHz  $\pm 30\%$ . **Power Requirements:** 4V to 10V DC via disposable batteries, rechargeable batteries, or AC adaptor. **Size:** 10.2" W x 6" D x 2" H. **Weight:** 2 lbs.





# DIGITAL MULTIMETERS/FUNCTION GENERATOR

## SCOPE HAND-HELD DIGITAL MULTIMETERS

### MODEL DVM-634

OUR PRICE **\$48.75**

7 Function, 32 Ranges—Including:  
Transistor Measurement

### MODEL DVM-638

OUR PRICE **\$79.95**

11 Function, 38 Ranges—Including:  
Logic Level Detector, Audible Visual  
Continuity, Capacitance Measurement,  
Conductance Measurement

### MODEL DVM-636

OUR PRICE **\$62.75**

8 Function, 37 Ranges—Including:  
Capacitance Measurement

### DESCRIPTION

The new Scope line of digital multimeters are completely portable for use by Technicians, Servicemen, Students and Hobbyists.

High accuracy and rugged reliability make them the first choice of servicemen who require a multi-function meter designed for easy handling and is cost effective.

### FEATURES

- Overload Protection.
- Auto-decimal LCD readout.
- Polarity Indication.
- 300 hour battery life with 9V transistor battery.
- Low battery indication.

### OPTIONAL

CA-92 Deluxe Padded Case for DVM meters. . . **\$8.95**

### MODELS

	DVM-634	DVM-636	DVM-638	Input Impedance	Overload Protection
<b>DC VOLTAGE</b>	<b>ACCURACY</b>				
Range: 200mV, 2V, 20V, 200V, 1000V Resolution: 100uV, 1mV, 10mV, 100mV, 1V	0.5% + 1	0.5% + 1	0.5% + 1	10M ohm on all ranges	1000V dc/peak ac on all ranges
<b>AC VOLTAGE</b>	<b>ACCURACY (50Hz—500Hz)</b>				
Range: 200mV, 2V, 20V, 200V 750V Resolution: 100uV, 1mV, 10mV, 100mV, 1V	1% + 4 1.5% + 4	1% + 4 1.5% + 4	1% + 4 2% + 4	10M ohm on all ranges capacitance less than 100pF	1000V Except DVM-638 750V rms on all ranges except 200mV ac range
<b>DC CURRENT (200uA DVM-636 only)</b>	<b>ACCURACY</b>			<b>Burden Voltage</b>	
Range: 2mA, 20mA, 200mA Resolution: 1uA, 10uA, 100uA 1mA, 10mA	0.8% + 1 1.5% + 4	0.8% + 1 1.5% + 1	0.8% + 1 1.5% + 1	0.3V max. 0.7V max.	Up to 250V fused 10A range not fused
<b>AC CURRENT (200uA-DVM-636 only)</b>	<b>ACCURACY (50—500Hz)</b>				
Range: 2mA, 20mA, 200mA 2000mA, 10A Resolution: 1uA, 10uA, 100uA 1mA, 10mA	1% + 4 1.5% + 4	1% + 4 1.5% + 4	1% + 4 1.5% + 4	0.3V max. 0.7V max.	Up to 250V fused 10A range not fused
<b>RESISTANCE</b>	<b>HI</b>	<b>ACCURACY HI</b>	<b>HI</b>	<b>OPEN VOLTAGE</b>	<b>Overload Protection</b>
Range: 200 ohms 2K ohm, 20K ohm, 200K ohm, 2000K ohm 20M	0.8% + 3 0.5% + 1 1.5% + 1	0.8% + 3 0.5% + 1 1.5% + 1	0.8% + 3 0.5% + 1 1.5% + 1	Less than 3.5V Hiv less than 3.5V Low less than 0.25V	250V dc/rms on all ranges
	<b>LOW</b>	<b>LOW</b>	<b>LOW</b>		
Range: 200 ohm 2K ohm, 20K ohm, 200K ohm, 2000K ohm Resolution: Range 200 ohm 2K ohm, 20 K ohm, 200K ohm, 2000K ohm 20m	N/A 0.8% + 2	N/A 0.8% + 2	N/A 0.8% + 2		
<b>CAPACITANCE</b>		<b>ACCURACY</b>		<b>Test Signal</b>	<b>Max. Input</b>
Range: 2nF, 20nF, 200nF, 2000nF, 20uF Resolution: 1pF, 10pF, 100pF, 1nF, 10nF	NA	3% + 10 1% + 4		512Hz 32mV rms	3V dc/peak ac on all ranges
<b>CONDUCTANCE</b>		<b>ACCURACY</b>		<b>Test Signal</b>	<b>Overload Protection</b>
Range: 200ns Resolution: 0.1ns	NA	3% + 10		5Mohm-10,000Mohm	250V dc/rms

## SCOPE DIGITAL CAPACITANCE METER

### MODEL DCM-602

OUR PRICE **\$69.95**

### FEATURES

- Digital display easy and correct readout.
- High accuracy: 100 PPM 0.5%.
- LSI-circuit provides high reliability and durability.
- LCD display provides low power consumption.
- LCD display allows clear read-out even in bright light.
- Compact, light-weight, and easy to operate.
- Crystal time base.
- Use the push buttons for easy one hand operation.
- Broad test range to measure high and low capacitance values.
- Protected against damage from charged capacitors.
- Fast sampling time.
- Portable.

### GENERAL SPECIFICATIONS

Display: 13mm (0.5") LCD (liquid crystal display) Max. indication 1999. Range: 8 ranges with full scale values from 200pF to 2000uF. **Overload indication:** Indication of "1". **Calibration adjustments:** One internal adjustment for accuracy. One front panel adjustment for zero. **Zero adjustment:** External knob adjustment for zero value of the display. This is limited to  $\pm 20$  pF. **Out-of-range indication:** Indication of "1". **Sampling times:** 0.5 second. **Operating temperature:** 0°C to 40°C (32°F to 102°F). **Operating humidity:** Less than 80% RH. **Power supply:** 9V battery. **Battery life:** Approximately 200 hours on alkaline or 100 hours on carbon zinc battery with normal usage. (Typical consumption current 3-4mA on 200pF-200uF range). **Dimensions:** 18 x 8.2 x 3.8cm (7.1 x 3.3 x 1.5"). **Weight:** 280g (0.62 lbs/including battery). **Standard accessories:** 1 pair of test alligator clips (red and black), Spare fuse (0.2A), instruction manual.

### ELECTRICAL SPECIFICATIONS

Normal Range	Max. In-Range Display	Resolution	Test Frequency	Normal Range	Max. In-Range Display	Resolution	Test Frequency
200 pF	199.9 pF	0.1 pF	800Hz	2 uF	1.999 uF	1000 pF	800Hz
2 nF	1.999 nF	1 pF	800Hz	20 uF	19.99 uF	0.01 uF	80Hz
20 nF	19.99 nF	10 pF	800Hz	200 uF	199.9 uF	0.1 uF	8Hz
200 nF	199.9 nF	100 pF	800Hz	2000 uF	1999 uF	1 uF	8Hz

pF = picofarad ( $10^{-12}$ ) nF = nanofarad ( $10^{-9}$ ) uF = microfarad ( $10^{-6}$ )

Accuracy (25°C  $\pm$  5°C) 0.5% of full scale  $\pm$  1 LSD (least significant digit) on 200 pF to 200 uF ranges 1% of full scale  $\pm$  1 LSD on 2000 uF range.

Excitation Voltage 2.8(DCM-601) 3.2(DCM-602) volts peak, maximum. Positive input terminal's voltage is always higher than Negative terminal.

Zero Adjustment It is only limited  $\pm 20$  pF.

Protection The meter is protected against damage from charged capacitors (more than DC 50 volts) by the fuse (0.2A).

## SWEEP FUNCTION GENERATOR

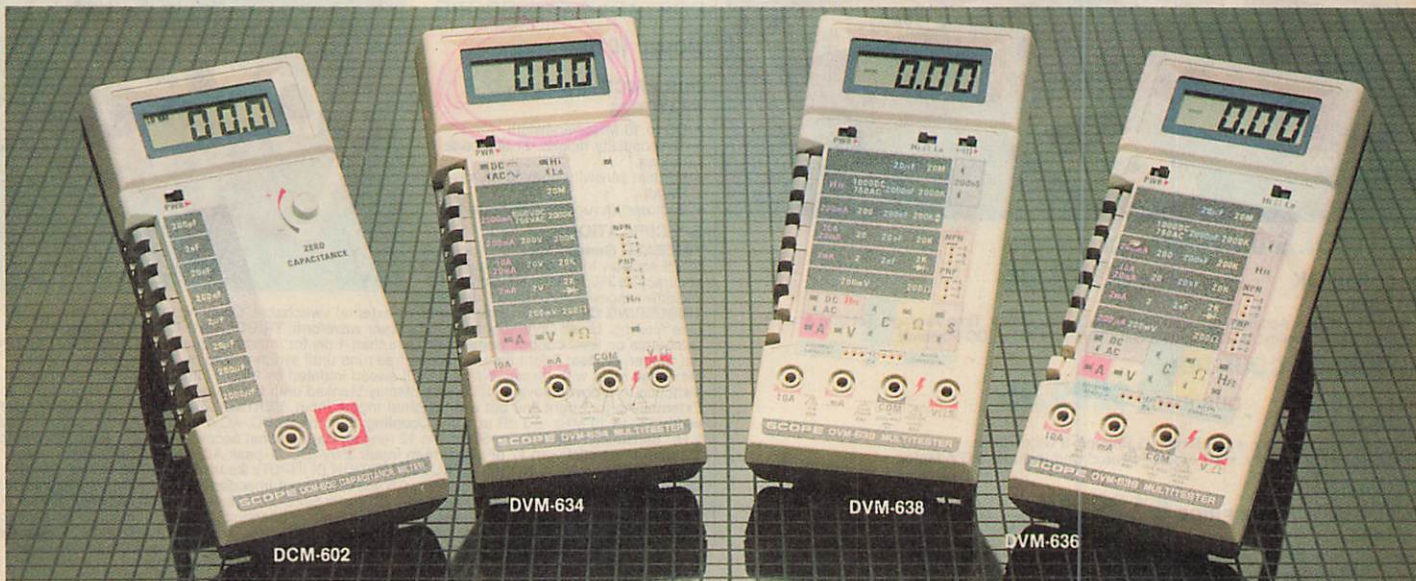
### MODEL FG-801

REG. \$289.95

OUR PRICE **\$199.95**

### SPECIFICATIONS

**MAIN GENERATOR Frequency Range:** 0.2Hz to 2MHz (7 Ranges). **Frequency Accuracy:**  $\pm 5\%$  of length scale. **V.C.F. (Voltage Controlled Frequency):** approx. 0 to 10 Voltage input for 1000:1 (3 decades) frequency ratio input impedance, approx. 10 kohm. **MAIN OUTPUT Wave Forms:** Sine, triangle, square, pulse TTL, CMOS, and ramp unsymmetrical sine wave. **Amplitude:** > 20V p-p open circuit. > 10V p-p in to 50 ohms. **Attenuation:** -20dB & continuously Variable. **DC Offset:** Variable +10 to -10V open circuit, +5 to -5V into 50 ohm. **Sine Wave:** Distortion: 0.2Hz to 200kHz  $\leq 1\%$ . Response: 0.2Hz - 200kHz  $\leq 0.1$ dB, 200kHz - 2MHz  $\leq 0.5$ dB. **Square Wave:** Rise Time < 100 ns, **PULSE OUTPUT Rise Time:** < 25 ns will Sink 20 TTL loads. **Level:** Amplitude Fixed > +3V open circuit. **CMOS Level:** 5V - 15V adjustable TTL, CMOS Switch Selector. **INT, EXT:** Switch Selector. **Accuracy:** 1000:1 Ratio MAX. and adjustable. **Time Base:** 0.5S - 30S adjustable. **LIN, LOG** operation. **HI/LO** range can set. **Power Source:** AC 115/230V  $\pm 10\%$  50/60 Hz. **Accessories:** Test lead GTL-101x2, Instruction Manual x 1. **Dimension:** 200(W) x 160(H) x 280(D) mm. **Weight:** 3.0 kg.



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## SCOPE 3-1/2 DIGIT LCD METER WITH MAXI SPEC'S

MODEL DVM-630

OUR PRICE **\$29.95 SPECIAL!**

### FEATURES

- 0.5% accuracy. • DC Voltage.
- AC Voltage. • DC Current.
- Resistance. • Diode Test. • Battery Test.
- Battery Life 300 hours. • Test Leads Included.

### SPECIFICATIONS

**Display:** 3-1/2 Digit LCD with a maximum reading of 1999. **Polarity:** Automatic, (-) negative polarity. **Over range indication:** Highest digit of (1) or (-1) is displayed. **Measuring rate:** 3 Measurements per second, nominal. **Zero adjustment:** Automatic. **Low Battery indication:** The (LO BAT) is displayed when the battery voltage drops below the operating voltage. **Storage temperature:** -20°C to +60°C, 0-80% RH with battery removed. **Operating temperature:** 0°C to +50°C, 0-70% RH. **Power:** Single, standard 9-V battery (NEDA 1604, JIS 0069, IEC 6F22). **Battery Life:** High-power alkaline 300 hrs. Ordinary zinc-carbon 150 hrs. **Dimensions:** 126mmL x 70mmW x 24mmH. **Deluxe zippered carrying case Model CC-30 ..... \$4.50**



### DC VOLTAGE

Range	Resolution	Accuracy 1 Year 18° to 28°C
200mV	0.1mV	±0.5% of rdg ± 2d
2V	1mV	±0.5% of rdg ± 2d
20V	10mV	±0.5% of rdg ± 2d
200V	100mV	±0.5% of rdg ± 2d
1000V	1V	±0.5% of rdg ± 2d

### BATTERY TEST

Range	Resolution	Approximate Load Current
1.5V	0.001V	1.5mA DC at 1.5V DC

### DC CURRENT

Range	Resolution	Accuracy	Max. Full Scale Voltage Drop
200µA	0.1µA	±0.75% of rdg ± 2d	0.25V
2mA	1µA	±0.75% of rdg ± 2d	0.25V
20mA	10µA	±0.75% of rdg ± 2d	0.25V
200mA	100µA	±0.75% of rdg ± 2d	0.25V
2A	1mA	±1.2% of rdg ± 2d	0.25V

### AC VOLTAGE

Range	Resolution	Accuracy	Frequency Range
200V	100mV	±1.2% of rdg ± 5d	45 Hz - 450 Hz
750V	1mV	±1.2% of rdg ± 5d	45 Hz - 450 Hz

### DIODE

Range	Resolution	Accuracy	Max. Test Current	Max. Open Circuit Voltage
	1mV	±(2.0% rdg + 5 dgt)	1.5mA	3.2V

## SCOPE POCKET SIZED AUDIO SIGNAL GENERATOR

MODEL RC-555

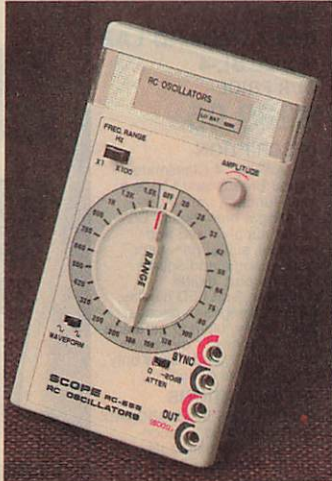
OUR PRICE **\$69.95**

### DESCRIPTION

The RC-555 is completely portable, low distortion sine-wave signal, 46 step of selected frequency for use by technician, serviceman, students, and hobbyists who require an instrument that is accurate, reliable, and always ready for use. It is powered by a standard 9V transistor radio type battery, providing 50 operating hours, depending upon the type of battery and usage. It has rugged structure design, good feeling held in operator's hand for convenient use.

### SPECIFICATIONS

**GENERAL:** Frequency Range: x 1 range 20 Hz to 1.5 kHz, x 100 range 2 kHz to 150 kHz with 23 step of selected frequency both. **Output Control:** 0 dB, -20 dB, and fine adjuster. **Output Impedance:** 600 ohm ± 10%. **Waveform:** Sine wave, Square wave. **SINE WAVE CHARACTERISTICS:** Output Voltage: 1.2V rms maximum (no load). **Output Flatness:** 20 Hz to 150 kHz ± 0.5 dB (reference frequency 1 kHz). **Distortion:** 200 Hz to 15 kHz 0.05% (THD) or less, 50 Hz to 30 kHz 0.1% (THD) or less, 20 Hz to 100 kHz 0.5% (THD) or less. **Frequency Accuracy:** 20 Hz to 100 kHz (± 3% or less), 100 kHz to 150 kHz (± 5% or less). **Output Impedance:** 1 k ohm ± 5%. **SQUARE WAVE CHARACTERISTICS:** Output Voltage: 3 Vp-p maximum (when on load). **Rise & Fall Time:** less than 0.5µs. **Sag:** less than 5% at 20 Hz. **Over Shoot:** less than 2% at maximum output. **Duty Ratio:** 50% ± 5%. **Frequency Accuracy:** 20 Hz to 100 kHz (± 5% or less), 100 kHz to 150 kHz (± 7% or less). **GENERAL INFORMATION:** Operating Temperature: 0°C to +50°C, specification apply from 10°C to 30°C. **Storage Temperature:** -20°C to +60°C, battery removed. **Power Requirements:** 9V battery, NEDA 1604. **Battery Life:** Up to 50 hours typical with Alkaline. Up to 30 hours with typical Zinc carbon. **Battery Indicator:** LED lamp indicates when approximately 20% of battery life remains. **Dimensions:** 6" L x 3.3" W x 0.9" H, (15cm L x 8.2cm W x 2.1cm H) approx. **Weight:** 7 oz. (200 grams) including battery. **Accessories supplied:** User's manual, test leads, 9V zinc-carbon battery.



## A.W. SPERRY 20 MHz DUAL TRACE OSCILLOSCOPE

MODEL 620C

OUR PRICE **\$369.95**

**SPECIAL!**



### FEATURES

- Built-in Component Checker. • Internal Graticule CRT. • TV Video Sync Filter. • Z-Axis Input.
- High Sensitivity X-Y mode. • Low Power Consumption. • Front Panel Trace Rotator.

### DESCRIPTION

The A.W. Sperry 620C is a dual trace (two channel) 20 MHz oscilloscope featuring a built in component checker. The component checker emits a 60 Hz sine wave, voltage and current limited, and allows the resultant voltage and current to be displayed on the CRT. The voltage and current can be displayed in either a time mode or X-Y mode. In the X-Y mode, the voltage (X) and current (Y) of the component under test result in a VI plot on the CRT. The user can quickly view VI characteristics of individual components as well as combinations of components to quickly and efficiently detect and isolate defective components. This valuable feature saves hours of troubleshooting time.

### SPECIFICATIONS:

**Vertical System CH. A and CH. B - Deflection Factor,** 5mV/div-20V/div (±3%) 12 steps. **Frequency response,** DC-20MHz (-3dB). **Risetime,** 17ns or less. **Maximum input voltage,** 300V (DC + AC peak). **Input Impedance,** 1M ohm ±5% 20 pF ±3pF. **Invert,** CH.-B only. **Operating modes,** CH.-A, CH.-B, Dual, ADD, X-Y. **Internal Horizontal System (Sweep Operation) - Time base,** 0.2µs/div-0.5s/div (±3%) 20 steps. **Magnification,** 5X. **Trigger System Sources,** INT, CH.B LINE. **EXT. Modes,** Norm, Auto. **Coupling,** AC, HF reJ, TV. **Slope,** + or - **Sensitivity,** INT: 1 div or better, EXT: 1V p-p or better. **Z Axis Modulation Internal Calibrator - Output,** 0.5V p-p (±5%), 1KHz (±5%) square wave. **CRT Display - Phosphor,** P31. **Graticule,** Internal 6x10 div (1 div = 10mm). **Accelerating Potential,** 2KV **Component Tester - Open Circuit Voltage,** 9Vrms. **Short Circuit Current,** 0.6-Arms **Power Requirements - Voltage,** 120Vrms 50/60HZ. **Physical-Size,** 162H x 294W x 352D mm. **Weight,** 7Kg approx. (15.4 lbs.). **Environment Operating Temperature,** 0° to 40°C (32° to 104°F). **Packaging:** comes with AC linecord model PC-1, Two test probes models TP-60, 2-year warranty, operating instructions.

## SCOPE 4-1/2 DIGIT, BENCH DIGITAL MULTIMETER

MODEL DVM-6005

REG. \$249.95

OUR PRICE **\$199.95**

### FEATURES

- 4-1/2 Digit LCD, 0.4" high characters.
- Conversion Period: 500 milliseconds.
- Polarity: Automatic, (-) negative polarity.
- Overload Indication: Highest digit of (1) or (-1) is displayed.
- Power supply: Six 1.5V D size batteries
- "LO BAT" Indicator.
- Environment: 0 to 50°C operating, -20 to +60°C storage; 80% RH max.
- Dimensions: 8.4"W x 10.4"D x 3.9"H (214 x 265 x 100mm).
- Weight: 677 oz. (1900 grams) including batteries.
- Accessories supplied: Test lead set, operator's manual, batteries, spare fuse.

### SPECIFICATIONS

**DC VOLTAGE:** Ranges: ±200MV, ±2V, ±20V, ±200V, ±1000V. **Resolution:** 0.5%µV on lowest range, 1V on 100V range. **Accuracy:** ±(0.05% of reading + 2 digits) on all ranges. **Response Time:** less than 1 second. **Input Impedance:** 10Mohm on all ranges, except 11Mohm on 2V range. **Normal Mode Noise Rejection:** greater than equal to 60 dB at 50 Hz or 60 Hz. **Common Mode Noise Rejection:** greater than equal to 90 dB at DC, 50Hz and 60Hz with 1kOhm unbalance. **Overload Protection:** 1000V DC or peak AC, continuous. **AC VOLTAGE (Average Sensing, RMS Calibrated Sinewave):** Accuracy: ±(% of reading + no. of digits) 50 Hz to 10 KHz, 0.5% + 10, 10KHz to 20KHz, 0.1% + 10, 50KHz 5% + 30. **Response Time:** less than equal to 3 seconds. **Input Impedance:** 10M ohm in parallel with less than 100 pF, except 11M ohm or 2 V range. **Common Mode Noise Rejection:** greater than 60 dB at 50 Hz and 60 Hz with 1k ohm unbalance. **Overload Protection:** 1000V DC or rms AC, continuous, not to exceed the volt/hertz product of 10, except 200 mV AC range (10 seconds maximum above 250 Vrms). **Volt-Hz Product:** 10<sup>7</sup> max. (200V max. 50 KHz). **DC CURRENT:** Ranges: ±200µA, ±2mA, ±20mA, ±200mA, ±2000mA, ±10A. **Resolution:** 10nA on lowest range, 1mA on 10 A range. **Accuracy:** ±(0.5% of reading + 10 digits) on all ranges, except ±(0.75% of reading + 10 digits) on 200 mA, ±2% of reading + 10 digits) on 2000mA, 10 A ranges. **Response Time:** less than equal to 1 second. **Burden Voltage:** 0.7V max. on 2A, 10A ranges, 0.3V max. on all other ranges. **Overload Protection:** 2A/250V fuse protected, 10A range not fused, 10A max. **AC CURRENT:** Ranges: 200µA, 2mA, 20mA, 200mA, 2000mA, 10A. **Resolution:** 10nA on lowest range, 1mA on 10A range. **Accuracy:** ±(0.75% of reading + 10 digits), 50Hz-50Hz, 200µA through 200mA ranges, (±2% of reading + 10 digits), 50Hz-5KHz, 2000mA, 10 A ranges. **Response Time:** less than equal to 3 seconds. **Burden Voltage:** 0.7V max. on 2A, 10A ranges, 0.3V max. on all other ranges. **Overload Protection:** 2A/250V fuse protected, 10A range not fused, 10A max. **RESISTANCE:** Ranges: 200ohm, 2Kohm, 20Kohm, 200Kohm, 2000Kohm, 20Mohm. **Accuracy:** ±(0.2% of reading + 20 digits) on 200ohm range, ±(0.15% of reading ± 2 digits) on 2Kohm through 200Kohm ranges, ±(0.2% of reading + 2 digits) on 2000Kohm range, ±(2% of reading + 2 digits) on 20Mohm range. **Response Time:** 10 seconds maximum on 20Mohm range, 2 seconds maximum on all other ranges, to rated accuracy. **Open Circuit Voltage:** less than 3.5V on all ranges. **Overload Protection:** 250V DC or rms AC on all ranges.





# DIGITAL MULTIMETERS/BREADBOARD LAB

## BBC GOERZ METRAWATT DIGITAL FOLDING SCOPE MULTIMETERS

**SPECIALS!**

**MODEL M-2050-01** REG. \$1595.00  
Digital Folding Scope Without Hardcopy Output

**OUR PRICE \$1249.95**

**MODEL M-2050-02**  
REG. \$1995.00

**OUR PRICE \$1599.95**

Digital Folding Scope  
With Hardcopy Output

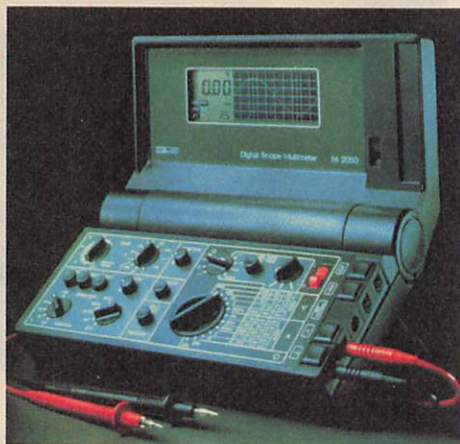
### FEATURES

- Digital Multimeter
- Digital Oscilloscope
- Transient recorder

### DESCRIPTION

The digital multimeter provides you 32 measurement ranges for voltage current and resistance. True RMS for both AC and AC/DC. Has 15 measurement ranges for voltages up to 650V, and 15 measurement ranges for currents up to 10 A and 2 resistance ranges. Overload protection in current and resistant measurement ranges up to 500V (except for 10 A input). The digital oscilloscope provides a flat screen with high-contrast graphic resolution due to 128 x 64 dot matrix. Compatible with both external or internal triggering and continuous adjustment of trigger level and selection of positive or negative signal slope for triggering. With 8 time deflections from 0.1 ms/DIV to 6 min/DIV optimum display is attainable for every input. 6 min/DIV time deflection provides 1 hour of total viewing time, permitting very slow changing input to trigger on any disturbances in slow-motion display. The transient recorder provides long term memory up to 6 months even when instrument is off. To record the input 2 memories of each 0.5K x 8 bit are incorporated. Each memory content can be saved to prevent it from being accidentally overwritten. Two models to choose: Model M-2050-01 does not have hardcopy output. Model M-2050-02 has hardcopy output for hardcopy documentation of measurements. Battery operation: Four rechargeable NiCad batteries, C-size (not included). Power line operation with power supply adaptor. Dimensions: 257mm x 169mm x 88mm, instrument folded. Weight: 1.95 kg without batteries. Both models come complete with neck strap for handsfree operation, power supply adaptor NA-4/400, operation manual and test leads.

**F-821 Carrying Case** ..... \$79.00



## A.W. SPERRY 2-CHANNEL DATA LOGGING DIGITAL MULTIMETER

**MODEL DML-4020**

**OUR PRICE \$849.95**

The DML-4020 is a micro-processor controlled unit, containing two 3 1/2 digit autoranging digital multimeters and a data logging dot matrix printer. The multimeters can be used individually or simultaneously to read or display similar or dissimilar functions. With the DML-4020's built in comparator, you can set high and low limits. An array of five LED's will indicate your readings as compared to your limits previously set. The built in dot matrix printer will show you both a numerical graph printout of the values you are measuring, (highest and lowest), number of times the samples were taken and the average of the function. The DML-4020 will automatically sample a function on any one of 12 different time intervals from every 5 seconds to once per hour. Readings can be taken over an extended period of time (up to 30 days). The DML-4020 contains a rechargeable nickel cadmium battery.

### FEATURES

- Dot matrix printer. • Level, batt low, error indicators. • 3 1/2" LCD display. • Power switch.
- Stop: discontinues measurements and prints tally of calculator data if selected.
- Start: initiates one sample and print command I MAN mode or starts timer in AUTO mode.
- Enter: enters comparator limits, time interval and printer mode titles when depressed.
- Paper feed: advances paper 11 dot lines when momentarily depressed, or continuously when held.
- Comparator range switch: adds and subtracts a percentage of the mid range interval.
- Measurement time interval: initiates sample and print commands at equally spaced intervals.
- Auto/Man: when set to manual, the start key activates the sample and print commands. When set to auto, the Measurement Interval Timer activates the sample and print commands.
- Calculator on/off switch: gives a printout of average ( $\bar{x}$ ) min. and max. calculations of up to 500 samples then terminates printing.
- Print mode switch: select one of four; AB Text, A Graph, A Text, or No print modes.
- Comparator decimal point: controls position of decimal point of the limits set on comparator.
- H-CMP/Level set/L-CMP Level set: sets comparator limit.
- H-CMP, L-CMP polarity switches: sets polarity of the comparator limit switch.
- Function switches: voltage, resistance, and current function for each channel independently.
- AC/DC, LP ohm/ohm: switches between AC and DC voltage or current ranges and between low and normal power resistance ranges.
- Range: auto and manual modes and selects desired ranges.
- Offset Adj: stores a reading up to 99 digits as an offset, it's then subtracted from subsequent readings.
- Option connector: 5-pin DIN input terminal for 0-200mV ac/dc inputs including decimal point control of LCD and printer.
- V-ohm-mA input Jack (CH.A). • COM input Jacks.
- Battery Charger input Jack. • V-ohm-mA input Jack (CH. B).
- Comparator Output Jack: 8-pin Din connector provides digital outputs corresponding to comparator levels. Also provides an input for a remote start signal.

### SPECIFICATIONS

DC VOLTS Range: 200mV, 2V, 20V, 200V, 300V. AC VOLTS Range: 2V, 20V, 200V, 300V. DC CURRENT Range: 20mA, 200mA. AC CURRENT Range: 20mA, 200mA. RESISTANCE Range: 200 ohm, 2k ohm, 20k ohm, 200k ohm, 2000k. LOW POWER RESISTANCE Range: 2k ohm, 20k ohm, 200k ohm, 2000k ohm. Power Source: 4 Ni-Cd rechargeable batteries. A 10 recharge cycle will provide 5 hours of continuous operation. Can be used while recharging. Battery Life: Batteries will accept 500 recharge cycles giving a total of 2,500 hours of operation. Dimensions: 10.24" W x 7.09" D x 1.77" H. Weight: 38.8 oz. Comes with TL-46 test leads (one black, two red), SBC-2 battery charger, PA-850 roll of paper, two F-13 fuses, one F-15 fuse, spare fuses. Form #160 operating instructions and one year warranty card.



## BBC GOERZ METRAWATT 4 3/4 DIGIT SYSTEM & PORTABLE DMMS

**MODEL MA-5D** REG. \$595.00 **OUR PRICE \$495.00**

**NEW!**



### FEATURES

- 38 Ranges
- True RMS Measurement

### DESCRIPTION

Bench or portable digital multimeter operates from standard 110V AC or rechargeable batteries, 38 ranges for AC and DC voltage, current resistance, capacitance, and dB measurements. True RMS measurements to 20kHz. dB measurements on the range from -60 to +80 dB. Sturdy, high impact plastic case with carrying handle that provides a flexible tilt-stand and also serves as a carrying handle for transport. Safety test leads and sockets protect against accidental contact. Large 4 3/4 digit LCD display with upper range limit of 29999 digits. Overload protected to 1000V AC/DC on voltage and dB ranges; to 250V AC/DC on all other ranges. Ranges Include: DC Voltage: 300mV, 3V, 30V, 300V, 1000V; AC Voltage: 300mV, 3V, 30V, 300V, 1000V; AC/DC Current: 300uA, 3mA, 30mA, 300mA, 3000mA, 20A; Resistance: 3 kohm, 30 kohm, 300 kohm, 3000 kohm, 20 Mohm. Two input sockets for all ranges except 20A AC/DC range. Built-in battery charger. Complete with test leads, NiCad batteries, instruction manual and 2-year warranty. Dimensions: 10" x 3.3" x 8.4" Weight: 4 lbs. approx.

**F-813 Carrying Case** ..... \$48.00 **RW-5 19" Rack Mount Adapter** ..... \$134.00

**M-2110-01 System DMM with IEEE-488 Interface** ..... \$695.00

**M-2110-02 System DMM with V-24/RS-232-C Interface** ..... 695.00

**M-2110-03 System DMM with Centronics Interface** ..... 695.00

## A.W. SPERRY CLASSMATE DIGITAL BREADBOARD LAB

**MODEL BL-4**

**OUR PRICE**

**\$299.95**

### DESCRIPTION

The AWS BL-4 Classmate Digital Breadboard Lab is a multi-function unit, incorporating a breadboard, DC power supply (fixed and variable), signal generator (sine, triangle and square wave output), digital voltmeter, 8-bit LED display, BCD to 7 segment decoder and display, flip-flop gate and logic switches. It measures on 11" x 13", and needs only one electrical outlet.

### SPECIFICATIONS

#### SOLDERLESS BREADBOARD:

**Tie Points:** 1680 interconnected, nickel-plated tie points. **Spacing:** Fits all DIP sizes. **Size:** Fits AWG #22-30 (0.3 to 0.8mm), Distribution strip: 100 tie points. Terminal strip: 640 tie points. **DC POWER SUPPLIES:** Variable Supplies: Output voltage: 0 to +15 Vdc and 0 to -15Vdc. Max. Output Current: 300mA ( $\pm 15V$ ). Line Regulation: less than 0.05%. Load Regulation: less than 30mV. **+5V Supply:** Output Voltage: 5V  $\pm 0.25Vdc$  (no load to full load). Max. Output Current: 1A. Line Regulation: less than 50 mV. Load Regulation: less than 100mV. **-5V Supply:** Output Voltage: -5V  $\pm 0.25Vdc$  (no load to full load). Max. Output Current: 0.1A. Line Regulation: less than 25mV. Load Regulation: less than 30mV. **FUNCTION GENERATOR:** Waveforms: Sine, triangle and square wave. **Frequency Ranges:** 1-10Hz, 10-100Hz, 100-1kHz, 1k-10kHz, 10k-100kHz. **Sine Wave Output:** 0 to 10V p-p (variable). **Triangle Wave Output:** 6V p-p (fixed). **Square Wave Output:**  $\pm 5V$  (fixed). **Accuracy:**  $\pm 3\%$  F.S. **DIGITAL VOLTMETER (DVM):** Ranges: 0-200mV, 2V, 20V, 200V. **Input Impedance:** 10M ohms (all ranges). **Display:** 3 1/2 digit LED display. **ADAPTORS:** Connecting Jacks (4): Point tip to banana jacks.





## HITACHI 35 MHz DUAL TRACE OSCILLOSCOPE

MODEL V-355 (Probes Included)

REG. \$899.95 OUR PRICE **\$599.95**

Hitachi's new scope provides an unbeatable combination of lightweight scope and high performance that's destined to set new standards in cost plus performance. Its thin, light, compact design features a large 6 inch rectangular, internal graticule CRT, with percent calibrations, autofocus, scale illumination and photographic bezel.

### Specifications

Effective Area 8 x 10 div (1 div = 1 cm). Acceleration Potential 12kV. Focus Adjustment automatic. External Intensity Modulation - Effective Bandwidth DC to 2 MHz. Input Impedance 47 ohm (typ). Max Input Voltage 30V (DC + AC peak). Voltage 5V p-p or more. VERTICAL DEFLECTION Sensitivity 5 mV/div to 5V/div  $\pm 3\%$ , 10 calibrated steps, 1mV/div to 1V/div  $\pm 5\%$  (when using x5 amplifier) Uncalibrated continuous control between steps 1: less than 2.5 (provided with lock positioning). Uncal Lamp Front panel lamp indicates the uncalibrated condition. Frequency bandwidth DC to 35 MHz, -3 dB (at 8 div) DC to 7 MHz, -3 dB (at 8 div) (when using x5 amplifier). Risettime 8.8 ns (50 ns for x5 magnification). Signal delay line Permits viewing leading edge of displayed waveform. Maximum input voltage 500Vp-p or 300Vp-p (DC + AC peak at 1 kHz) Input Coupling AC, GND, DC (lever switch) Input Impedance Direct 1M ohm approximately 30 pF Operating modes CH1, CH2, ALT, CHOP, ADD. Polarity Switching CH2 only. X-Y Operation CH1: X-axis, CH2: Y-axis. Sensitivity 5 mV/div to 5 V/div (when using x5 magnifier: 1 mV/div to 1V/div). Phase Difference DC to 50 kHz within 3°. X-axis bandwidth DC to 500 kHz, -3 dB. Dynamic range 8 div or more. CH1 output Provided to enable frequency measurement using an external frequency counter. Output voltage 20 mV/div or more. Frequency bandwidth 50 Hz to 5 MHz, 1.3 dB. Output Impedance Approx 50 ohm. HORIZONTAL DEFLECTION Trigger modes AUTO, NORM, TV-V, TV-H. Trigger source INT (CH1, CH2, V-MODE), LINE, EXT. Trigger coupling AC. TV Sync Internal 1 div or more (vertical sync signal) External 1 VP-p or more (vertical sync signal). Trigger Sensitivity Frequency 20 Hz to 5 MHz, Internal 0.5 div, External 200 mV. Trigger Sensitivity Frequency 5 to 35 MHz, Internal 1.5, External 800 mV. AUTO low bandwidth 25 Hz Trigger slope  $\pm$ . External trigger input - Input Impedance Approx. 1M, Approx. 30pF. Maximum input voltage 300 V (DC + AC peak at 1 kHz). Sweep time 0.2 us/div to 0.2s/div  $\pm 3\%$ , 19 calibrated steps, Uncalibrated continuous control between steps 1:less than 2.5 (provided with lock-positioning). Uncal lamp Front panel lamp indicates the uncalibrated condition. Sweep time magnifier 10 times ( $\pm 5\%$ ). Maximum sweep time 20 ns/div. CALIBRATOR Waveform Approx. 1 kHz squarewave (duty cycle: 48:52 or more). Voltage 0.5 V  $\pm 3\%$ . POWER REQUIREMENTS AC 100/120/220/240  $\pm 10\%$  connector selectable, 50/60 Hz App. power. 45W. DIMENSIONS 310(W) x 130(H) x 370(D) mm, Approx. 6.5 kg. TEMPERATURE Limits of operation 0 to +40° Rated range of use +10 to +35°C. MTBF 20,000 hours (target value). Accessories AT-10AK 1.5 probes (10:1 1:1). .2, Power Cable. .1, Instruction Manual. Probes included.

**SPECIAL!**



**FREE LP-189 Logic Probe with purchase of V-355**

## HITACHI PORTABLE OSCILLOSCOPES DC to 20 MHz, 1 mV/div, DUAL TRACE

MODEL V-212 REG. \$615.00 OUR PRICE **\$449.95**

### DESCRIPTION

Hitachi's new series of scopes provides an unbeatable combination of high performance and light weight, and are destined to set a new standard in cost plus performance.

### FEATURES

- Thin, light and compact design. • Large 6-inch rectangular, internal graticule CRT. • Probes Included.
- High accuracy— $\pm 3\%$ . • High sensitivity—1 mV/div. • Stable, low-drift design.
- 8 divisions of displayed dynamic range and accurate, distortion-free waveform measurements.
- All models have a special TV sync separation circuit enables quick measurements of video signals.
- Built-in signal delay line for observation of the leading edge of fast-risetime signals.
- A convenient X-Y operation mode allows phase difference measurements between two waveforms.

### SPECIFICATIONS

VERTICAL DEFLECTION—Sensitivity: 5 mV/div to 5 V/div  $\pm 3\%$ , 10 calibrated steps. 1 mV/div to 1 V/div  $\pm 5\%$  (when using X5 amplifier). Uncalibrated continuous control between steps 1: less than 2.5 (provided with lock-positioning). Frequency bandwidth: DC to 20 MHz, -3 dB (at 8 div) DC to 7 MHz, -3 dB (at 8 div) (when using X5 amplifier). Risettime: 17.5 ns (50 ns for X5 magnification). Maximum input voltage: 500 Vp-p or 300 Vp-p (DC + AC peak at 1 kHz). Input coupling: AC, GND, DC (lever switch). Input impedance: Direct: 1 Mohm, approx. 30 pF. Operating modes: CH1, CH2, ALT, CHOP, ADD. Polarity switching: CH2 only. X-Y operation: CH1: X-axis, CH2: Y-axis. Sensitivity: 5 mV/div to 5 V/div (when using X5 magnifier: 1 mV/div to 1 V/div). Phase difference: DC to 50 kHz within 3°. X-axis bandwidth: DC to 500 kHz, -3 dB. Dynamic range: 8 div or more. CH1 output: Provided to enable frequency measurement using an external frequency counter. Output voltage: 20 mV/div or more. Frequency bandwidth: 50 Hz to 5 MHz, -3 dB. Output impedance: Approx. 50 ohm. HORIZONTAL DEFLECTION—Trigger modes: AUTO, NORM, TV-V, TV-H. Trigger source: INT (CH1, CH2, V-MODE), LINE, EXT. Trigger coupling: AC. TV sync: TV sync separation circuit. Internal: 1 div or more (vertical sync signal). External: 1 VP-p or more (vertical sync signal). Trigger sensitivity: Frequency: 20 Hz to 2 MHz. Internal: 0.5 div. External: 200 mV. Frequency: 2 to 20 MHz. Internal: 1.5 div. External: 800 mV. AUTO low bandwidth: 25 Hz. Trigger slope:  $\pm$ . External trigger input: Input impedance: Approx. 1M, Approx. 30pF. Maximum input voltage: 300 V (DC + AC peak at 1 kHz). Sweep time: 0.2 us/div to 0.2s/div  $\pm 3\%$ , 19 calibrated steps. Uncalibrated continuous control between steps 1:less than 2.5 (provided with lock-positioning). Sweep time magnifier: 10 times ( $\pm 5\%$ ). Maximum sweep time: 100 ns/div. (20 ns/div and 50 ns/div are uncalibrated) CALIBRATOR—Waveform: Approx. 1 kHz squarewave (duty cycle: 48:52 or more). Voltage: 0.5 V  $\pm 3\%$ . POWER REQUIREMENTS: AC 100/120/220/240 V  $\pm 10\%$ , connector selectable, 50/60 Hz Approx. 45W. DIMENSIONS (WxHxD): 310 x 130 x 370mm. Approx. 6.0 kg.

**SPECIAL!**



## HITACHI 60 MHz, DUAL TRACE DELAYED SWEEP SCOPE

MODEL V-650F REG. \$1195.00 OUR PRICE **\$949.95**

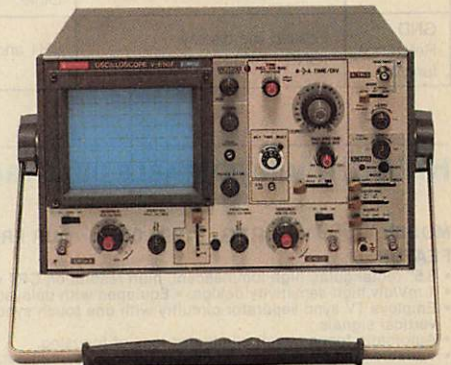
### FEATURES

- 6" rectangular CRT with internal graticule. • 1 mV/div high sensitivity design.
- Triple trace—convenient for checking synchronous signals and relationship and timing between observed waveforms.
- Equipped with delayed sweep function capable of magnification of any part of wave under observation by a factor of hundreds to thousands.
- Employs TV sync separator circuitry with one touch synchronization of both TV horizontal and vertical signals.
- Automatic focus circuit eliminates loss of focusing. • Single sweep function.
- Variable hold-off circuitry facilitates pulse measurement.
- Trace rotation system for easily adjusting trace inclination caused by terrestrial magnetism.
- X-Y operation convenient for measurement of phase difference between two signals.
- Delayed sweep function with one touch control 10X magnification.
- Signal output: CH1 output terminal to frequency counter, etc. • Probes included.

### SPECIFICATIONS

CRT = 6" square with 10kV acceleration potential • Vertical Deflection = Sensitivity: 5mV/div to 5V/div  $\pm 3\%$ , Max. Sensitivity: 1mV/div  $\pm 5\%$  x 5 Magnifier extends, Bandwidth: DC to 60 MHz, DC to 60MHz, DC to 10MHz at x 5 Magnifier extends, Modes: CH1•CH2•ALT•CHOP•ADD (DIFF) • Horizontal Deflection = A Time Base: 50ns/div to 0.5s/div  $\pm 3\%$ , B Time Base: 50ns/div to 50ms/div  $\pm 3\%$ , Max. Sweep Rate: 2ns/div at x 10 Magnifier extends, Display Modes: A, A inten, B • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 50kHz • Dimensions = 310(W) x 180(H) x 410(D) mm/12.2 x 7.1 x 16.1 in. • Weight = 9.3kg/20.5 lb.

**SPECIAL!**



## HITACHI 100 MHz, QUAD TRACE DELAYED SWEEP SCOPE

MODEL V-1050F REG. \$1980.00 OUR PRICE **\$1249.95**

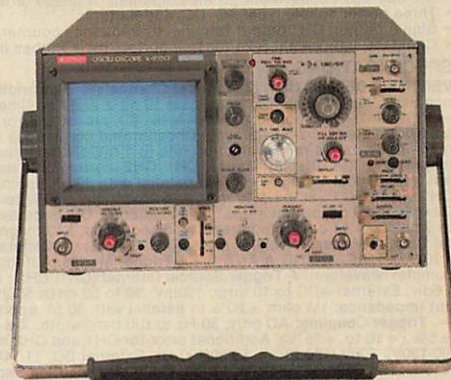
### FEATURES

- Use of low halation dome mesh and large 6" rectangular CRT with internal graticule enables easy measurement even for quad trace waveforms. Screen is illuminated with newly developed phosphor for bright measurement at 20 kV acceleration potential.
- 500 uV/div high sensitivity design. • Quad-trace. • Equipped with delayed sweep function.
- Alternate sweep function permits enlarged waveform (delayed sweep) and entire original waveform (Main sweep) to be simultaneously displayed on the CRT screen.
- Employs TV sync separator circuitry with one touch synchronization of both TV horizontal and vertical signals.
- Automatic focus circuits eliminates loss of focusing. • Single sweep function.
- Variable hold-off circuitry facilitates pulse measurement.
- Trace rotation system for easily adjusting trace inclination caused by terrestrial magnetism.
- X-Y operation convenient for measurement of phase difference between two signals.
- Delayed sweep function with one touch control 10X magnification. • Probes included.

### SPECIFICATIONS

CRT = 6" square with 20kV acceleration potential • Vertical Deflection = Sensitivity: 5mV/div to 5V/div  $\pm 2\%$ , Max. Sensitivity: 0.5mV/div  $\pm 4\%$  at x 10 Magnifier extends, Bandwidth: DC to 100MHz (-3dB), DC to 5MHz (-3dB) at x 10 Magnifier extends, Modes: CH1•CH2•ALT•CHOP•ADD (DIFF) • Horizontal Deflection = A Time Base: 20ns/div to 0.5s/div  $\pm 2\%$ , B Time Base: 20ns/div to 50ms/div  $\pm 2\%$ , Max Sweep Rate to 2ns/div at x 10 Magnifier extends, Display Modes: A, A inten, ALT, B • X-Y Operation (CH1: X, CH2: Y) = Phase Error: 3° from DC to 2MHz • Dimension = 310 (W) x 180(H) x 410 (D)mm • Weight = 9.3kg/20.5 lb.

**SPECIAL!**





# OSCILLOSCOPES

## HITACHI 100MHz READOUT OSCILLOSCOPE

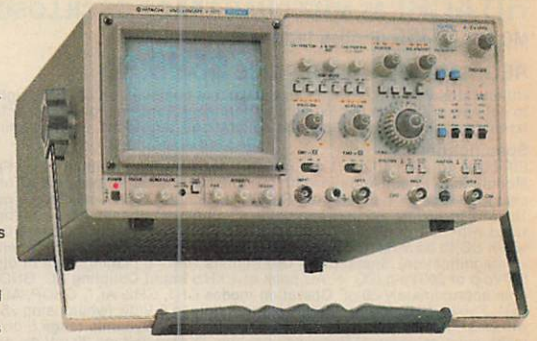
MODEL V-1070 REG. \$1995.00 OUR PRICE **\$1599.95**

### DESCRIPTION

Character readouts simplify measurement values and increase accuracy and reading time. The scope digitally displays vertical and horizontal-axis setting values. Mis-setting errors are dramatically reduced. The ability to record setting conditions as well as waveforms is an extremely convenient feature in ensuring the value of oscilloscope photographs. It features electronic switching of delay time enables digital setting of this important setup parameter, enabling smooth, accurate setting. The set delay time is digitally displayed on the screen, eliminating the troublesome task of reading a multitrace potentiometer.

### SPECIFICATIONS

• **Four independent traces** 1. Independent position controls are provided for all four channels. 2. Selectable input coupling even on CH3 and CH4. 3. CH3 and CH4 sensitivity switchable between 0.1V and 0.5V/div, ideal for TTL and ECL levels. 4. Guaranteed equal bandwidth (100MHz) and Guaranteed equal bandwidth (100MHz) and accuracy (2%) for CH3 and CH4 as well as CH1 and CH2. 5. Channel-to-channel time skew of a mere 0.5ns between CH1 and CH2 and 1.0ns between other channels. • **Wide variety of settable trigger conditions.** 1. Microcomputer controlled switching combines with an LED display to enable quick, easy setting of trigger conditions. 2. Built-in TV sync circuit (TV-V, TV-H). 3. HF REJ and LF REJ triggering. 4. Alternate triggering, ensures stable triggering, even with signals of different frequencies applied to CH1 and CH2. 5. A and B triggering selectable for all channels as required. 6. With TV-V selected for A trigger, B triggering is automatically selected as TV-H (enabling the observation of any desired line.) 7. With A triggering as TV-H, B triggering is automatically selected as AUTO. • **Alternate sweep** 1. Simultaneous observation of main and delayed sweeps. 2. Four-trace alternating sweep enables effective 8-trace operation. • **Variable holdoff** ensures stable triggering of even complex pulse trains. • **A trace finder** enables a trace off the screen to be found quickly. • **In the NORM trigger mode**, if the coupling of the channel selected as the trigger source is set to GND, the ground level will automatically sweep the trace. • **Maximum sensitivity:** 1mV/div (using x5 MAG) • **Maximum sweep rate:** 2ns/div (using x10 MAG) • **Independent variable intensities** for main sweep, delayed sweep and character display. • **A dynamic focus circuit** is used which automatically provides compensation of character and waveform focus occurring with changes in intensity. • **Low drift and DC offset.** • **Sufficient frequency bandwidth margin** to ensure undistorted squarewave response.

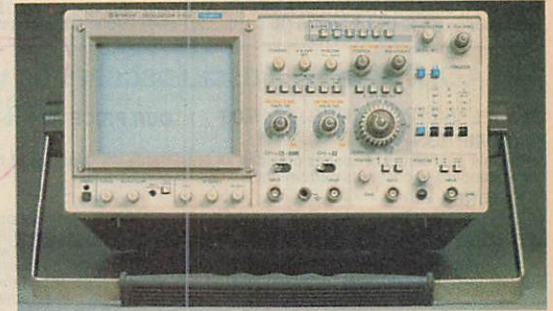


## HITACHI PORTABLE 100MHz OSCILLOSCOPE with CRT READOUT AND BUILT-IN MICRO-COMPUTER

MODEL V-1100 REG. \$2500.00 OUR PRICE **\$2249.95**

The exclusive Hitachi V-1100 features:

Readout functions	Digital Measurement functions	DVM	DC voltage: Corresponds to screen AC voltage: 50Hz to 10MHz	CH1 only	Display: 3 digits + units
		Frequency counter	Frequency: 120Hz to 99.9MHz		
	Cursor Readout function	REF, Δ cursors	Voltage Vabs: REF to GND Voltage V: Δ to REF Amplitude ratio: % (5 div = 100%) Time T: Δ to REF Time duty ratio: % (5 div = 100%) Phase: Deg (5 div = 360°) Frequency: 1/T = Δ to REF		
	Panel setting Value displays		Vertical axis: V/div, INVERT, ADD, BWL, UNCAL, MAG Sweep speed: s/div, UNCAL, MAG Other: delay time and A trigger source		
GND Reference function	Ground line display (GND LINE)		CH1 and CH2 displays are available.		



### FEATURES

Features include quad channel (CH. 1,2,3,4) with independent position controls, 8 trace with alternate sweep, 18kV-6" rectangular CRT, minimum deflection factor 1mv/div, maximum sweep time 2ns/div, TV-sync, X-Y operation up to 1 MHz (3° or less), variable hold-off, gate output for A and B sweep, CH 1 signal output to 100 MHz (-3dB)...plus much more.

### DESCRIPTION

Research, electronics, medical equipment development, military applications, or just general troubleshooting...the Hitachi V-1100 Oscilloscope offers the ultimate in high-tech, high-versatility and high-value. The Intelligent Scope is the smartest choice you can make. This innovative state-of-the-art system is ruggedly engineered for enhanced reliability in the lab or out in the field. Compare and you'll see why the Hitachi V-1100 is an incomparable value.

## HITACHI MINI-PORTABLE DUAL-TRACE OSCILLOSCOPE

MODEL V-509 REG. \$1399.00 OUR PRICE **\$995.00**

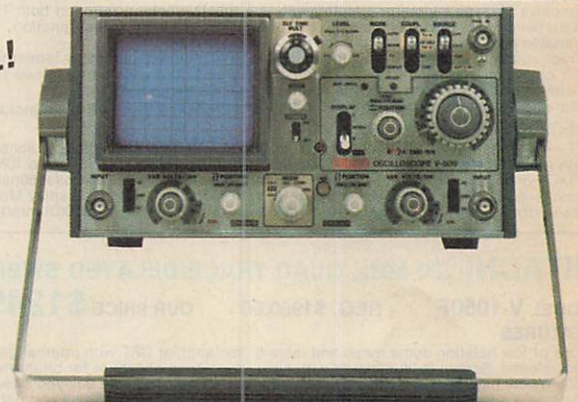
**SPECIAL!**

### FEATURES

- 3.5" rectangular, high luminescent, high resolution CRT with internal graticule.
- 1 mV/div high sensitivity design.
- Equipped with delayed sweep function.
- Single sweep function.
- Employs TV sync separator circuitry with one touch synchronization of both TV horizontal and vertical signals.
- Automatic focus circuit eliminates loss of focusing.
- Variable hold-off circuitry facilitates pulse measurement.
- Trace rotation system for easily adjusting trace inclination caused by terrestrial magnetism.
- X-Y operation convenient for measurement of phase difference between two signals.
- Three power supply type: AC, DC, and battery.
- Signal output: CH1 output terminal to frequency counter, etc.
- Compact, lightweight 5 kg for true portability.
- Probes included.

### SPECIFICATIONS

**VERTICAL DEFLECTION (2 Identical Channels)—Bandwidth and Rise Time:** DC to at least 50 mHz and rise time 7.0ns or less. DC to at least 10 mHz and rise time 35ns or less at magnifier extends. Lower -3dB point, AC coupling 10 Hz or less. 10X probe: 1 Hz or less. **Deflection Factor:** 5mV/div to 5V/div in 10 calibrated steps, 1-2.5 sequence. Uncalibrated continuous control between steps 1:less than 2.5. X5 magnifier extends min. deflection rate to 1 mV/div. **Accuracy:** ±3% (+10 to +35°C). Additional error for magnifier ±2%. **Display Modes:** CH1, CH2 (normal or invert) Alternate, chopped (250 kHz rate). Added. **Input Impedance:** 1M ohm ±2% in parallel with 30 pF approx. **Maximum Input Voltage:** 250V (DC + peak AC). **Delay Line:** Permits viewing leading edge of displayed waveform. **CH1 Out:** CH1 out is DC to at least 10 mHz and 25 mV/div ±30% terminated into 50 ohm, and 50 mV/div ±30% terminated into 1 Mohm. **HORIZONTAL DEFLECTION—Time Base A:** 0.1us/div to 0.2s/div in 20 calibrated steps, 1-2.5 sequence. Uncalibrated continuous control between steps 1:less than 2.5. X10 mag. extends fastest sweep rate to 10ns/div. **Time Base B:** 0.1us/div to 2ms/div in 14 calibrated steps 1-2.5 sequence. X10 magnifier extends fastest sweep rate to 10ns/div. **Accuracy:** ±3% (+10 to +35°C). Additional error for magnifier ±2%. **Horizontal Display Modes:** A only, A intensified, B delayed. **Calibrated Sweep Delay:** Continuous calibrated control between 0.5 and 10 time base A setting. **Delay Time Jitter:** Better than 1:20,000. **TRIGGERING A AND B—A Trigger Modes:** Automatic, Normal, Single sweep, TV-V, TV-H. **A Trigger Hold-off:** Adjustable control permits a stable presentation of repetitive complex waveform. **A Trigger Source:** Internal (CH1, CH2), Line, External, External +10. **A Trigger Slope:** + or -. **A Trigger Sensitivity:** Internal—DC to 10 mHz: 0.5div, 10 to 50 mHz: 1.5div, External—DC to 10 mHz: 150mV, 10 to 50 mHz: 500mV. **A Trigger Coupling:** AC: 30 Hz to full bandwidth, HF Rej: 30 Hz to 10 kHz, DC: 0 to full bandwidth. **A External Trigger Input Impedance:** 1M ohm ±20% in parallel with 30 pF approx. **Maximum Input Voltage:** 250V (DC + peak AC). **B Trigger Modes and Source:** Automatic, Normal. **B Trigger Slope:** + or -. **Trigger Coupling:** AC only; 30 Hz to full bandwidth. **X-Y OPERATION (CH1; Horiz, CH2; Vert)—Deflection Factor:** Same as vertical deflection. **Accuracy:** Y: ±3% (+10 to +35°C), X: ±5% (+10 to +35°C). Additional error for CH1 and CH2 magnifier ±2%. **Bandwidth:** DC to at least 500 kHz. **Phase Error:** 3° or less from DC to 100 kHz. **POWER—Line Voltage:** 100V (90-130V), 200V (180-260V), 50/60/400 Hz. External DC: 11-14V, 1.5A. Battery operation: 2 hours continuous use with the AD-509 (option). **DIMENSIONS—Size (WHD):** 8.5 x 4.3 x 13.8" (215 x 110 x 350mm). **Weight:** 11 lbs. (5 kg). **Accessories Supplied:** Two AT-10AH1.5 probes (10:1, 1:1 switchable), fuse, power cable, front cover, operation manual.



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## HITACHI PORTABLE DUAL TRACE 1MV/DIV OSCILLOSCOPES

MODEL V-222 (20 mHz)  
REG. \$715.00 OUR PRICE **\$549.95**

MODEL V-422 (40 mHz)  
REG. \$895.00 OUR PRICE **\$699.95**

### DESCRIPTION

Hitachi's new series of scopes provides an unbeatable combination of high performance and light weight, and are destined to set a new standard in cost plus performance.

### FEATURES

- Thin, light and compact design. • Large 6-inch rectangular, internal graticule CRT.
- Autofocus circuit and scale illumination. • DC offset function.
- Voltage and frequency reading outputs. • Alternate magnify function. • VERT mode triggering. • High accuracy— $\pm 3\%$ .
- High sensitivity—1 mV/div. • Stable, low-drift design.
- 8 divisions of displayed dynamic range and accurate, distortion-free waveform measurements.
- All models have a special TV sync separation circuit enables quick measurements of video signals.
- Built-in signal delay line for observation of the leading edge of fast-risetime signals.
- A convenient X-Y operation mode allows phase difference measurements between two waveforms. • Probes included.

### SPECIFICATIONS

**VERTICAL DEFLECTION**—Sensitivity: 5 mV/div to 5 V/div  $\pm 3\%$ , 10 calibrated steps. 1 mV/div to 1 V/div  $\pm 5\%$  (when using X5 amplifier). Uncalibrated continuous control between steps 1: less than 2.5 (provided with lock-positioning). **UNCAL Lamp:** Front panel lamp indicates the uncalibrated condition. **Frequency bandwidth:** DC to 40 mHz, —3 dB (at 8 div) DC to 7 mHz, —3 dB (at 8 div) (when using X5 amplifier). **Risetime:** 8.8 ns (50 ns for X5 magnification). **Signal delay line:** Permits viewing leading edge of displayed waveform. **Maximum input voltage:** 500 Vp-p or 300 Vp-p (DC + AC peak at 1 kHz). **Input coupling:** AC, GND, DC (lever switch). **Input impedance:** Direct: 1 Mohm, approx. 30 pF. **Operating modes:** CH1, CH2, ALT, CHOP, ADD. **Polarity switching:** CH2 only. **X-Y operation:** CH1: X-axis, CH2: Y-axis. **Sensitivity:** 5 mV/div to 5 V/div (when using X5 magnifier: 1 mV/div to 1 V/div). **Phase difference:** DC to 50 kHz within 3°. **X-axis bandwidth:** DC to 500 kHz, —3 dB. **Dynamic range:** 8 div or more. **DC offset function:**  $\pm 1$  to  $\pm 100$  V (direct). **Voltage reading output:** Provided to enable voltage measurement using an external DMM. **CH1 output:** Provided to enable frequency measurement using an external frequency counter. **Output voltage:** 20 mV/div or more. **Frequency bandwidth:** 50 Hz to 5 mHz, —3 dB. **Output impedance:** Approx. 50 ohm. **HORIZONTAL DEFLECTION**—Trigger modes: AUTO, NORM, TV-V TV-H. **ALT/MAG functions:** Selectable simultaneously. **Trigger source:** INT (CH1, CH2, V-MODE), LINE, EXT. **Trigger coupling:** AC, TV sync: TV sync separation circuit. **Internal:** 1 div or more (vertical sync signal). **External:** 1 Vp-p or more (vertical sync signal). **Trigger sensitivity:** Frequency: 20 Hz to 5 mHz. Internal: 0.5 div. External: 200 mV. Frequency: 5 to 40 kHz. Internal: 1.5 div. External: 800 mV. **AUTO low bandwidth:** 25 Hz. **Trigger slope:**  $\pm$ . **External trigger input:** Input impedance: Approx. 1M, Approx. 30pF. **Maximum input voltage:** 300 V (DC + AC peak at 1 kHz). **Sweep time:** 0.2 us/div to 0.2s/div  $\pm 3\%$ , 19 calibrated steps. Uncalibrated continuous control between steps 1: less than 2.5 (provided with lock-positioning). **UNCAL lamp:** Front panel lamp indicated the uncalibrated condition. **Sweep time magnifier:** 10 times ( $\pm 5\%$ ). **Maximum sweep time:** 20 ns/div. **CALIBRATOR—Waveform:** Approx. 1 kHz squarewave (duty cycle: 48:52 or more). **Voltage:** 0.5 V  $\pm 3\%$ . **POWER REQUIREMENTS:** AC 100/120/220/240 V  $\pm 10\%$ , connector selectable, 50/60 Hz Approx. 45W. **DIMENSIONS (W x H x D):** 310 x 130 x 370mm. Approx. 6.5 kg.

### SPECIFICATIONS (V-222 only)

Frequency bandwidth: DC to 20 mHz, —3 dB (at 8 div). DC to 7 mHz, —3 dB (at 8 div) (when using X5 amplifier). **Risetime:** 17.5 ns (50 ns for X5 magnification). **Trigger sensitivity:** Frequency: 20 Hz to 2 mHz. Internal: 0.5 div. External: 200 mV. Frequency: 2 to 20 mHz. Internal: 1.5 div. External: 800 mV. **Maximum sweep time:** 100 ns/div (20 ns/div and 50 ns/div are uncalibrated).



V-222



V-422

## HITACHI MINI PORTABLE DUAL TRACE OSCILLOSCOPE

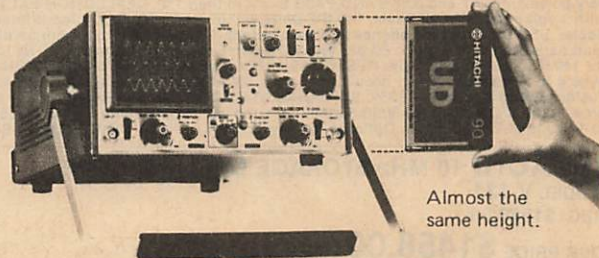
MODEL V-209 REG. \$995.00 OUR PRICE **\$790.00**

### FEATURES

- 3.5" rectangular, high luminescent, high resolution CRT with internal graticule.
- 1 mV/div high sensitivity design.
- Employs TV sync separator circuitry with one touch synchronization of both TV horizontal and vertical signals.
- Automatic focus circuit eliminates loss of focusing.
- Trace rotation system for easily adjusting trace inclination caused by terrestrial magnetism.
- X-Y operation convenient for measurement of phase difference between two signals.
- Three power supply type: AC, DC and battery. Effective for maintenance and servicing of electronic equipment outdoors.
- Compact, lightweight 4.5 kg for true portability.
- Probes included.

### SPECIFICATIONS

**CRT:** 3.5" square with 1.5kV acceleration potential. **Vertical Deflection:** Sensitivity: 5mV/div to 5V/div  $\pm 3\%$ , Max Sensitivity: 1mV/div  $\pm 3\%$  at x 5 Magnifier extends, Bandwidth: DC to 20 MHz (-3dB), DC to 5MHz (-3dB) at x 5 Magnifier extends Modes: CH1, CH2, ALT, CHOP, ADD (DIFF). **Horizontal Deflection:** Time Base: 0.5 us/div  $\pm 3\%$ , Max Sweep Rate: 50 ns/div at x 10 Magnifier extends. **X-Y Operation (CH1: X, CH2: Y):** Phase Error 3° from DC to 100 kHz. **POWER—Line Voltage:** 100V (90-130V), 200V (180-260V), 50/60/400 Hz. External DC: 11-14V, 0.8A. Battery operation approx. 2 hours continuous use with the AD-209. **Dimension (WHD):** 215 x 110 x 350mm (8.5 x 4.3 x 13.8"). **Weight:** 4.5 kg (9.9 lbs.). **Accessories Supplied:** Two AT-10AF1.5 probes (10:1, 1:1 switchable), fuse, power cable, DC power cable, operation manual, AD-209 battery pack.



Almost the same height.

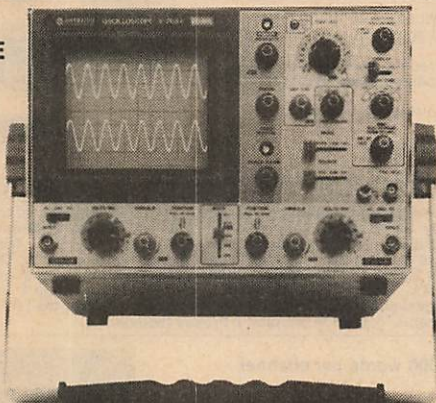
## HITACHI DC 20MHz DUAL TRACE DELAYED SWEEP OSCILLOSCOPE

MODEL V-203F  
REG. \$749.00

OUR PRICE **\$635.00**

### SPECIFICATIONS

• CRT = 5.5" square with internal graticule • **Vertical Deflection** = Sensitivity: 5mV/div  $\pm 3\%$ , Max. Sensitivity: 1mV/div to 1V/div  $\pm 5\%$  at x 5 Magnifier extends, Bandwidth: DC to 20MHz (-3dB), DC to 7MHz (-3dB) at x 5 Magnifier extends, Modes: CH1•CH2•DUAL•ADD (DIFF) • **Horizontal Deflection** = Sweep Time: 0.2us/div to 0.2s/div  $\pm 3\%$ , Delay Time: 1us to 100ms, Max. Sweep Rate: 100ns/div at x 10 Magnifier extends, Display Mode: NORM, INTEN, DELAY • **X-Y Operation (CH1: X, CH2: Y)** = Phase Error: 3° from DC to 50 kHz • **Dimensions** = 275(W) x 290(H) x 400(D)mm/11 x 7.5 x 15.8 in. • **Weight** = 8.5kg/18.8 lb.

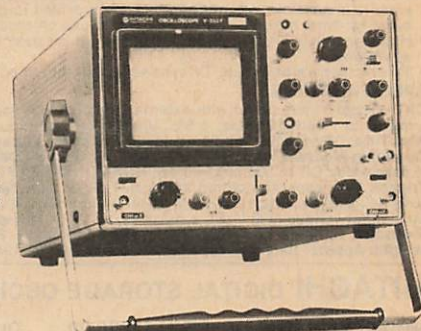


## HITACHI DC 35MHz DUAL TRACE DELAYED SWEEP OSCILLOSCOPE

MODEL V-353F  
REG. \$949.95  
OUR PRICE **\$799.95**

### SPECIFICATIONS

• CRT = 5.5" square with internal graticule • **Vertical Deflection** = Sensitivity: 5mV/div to 5V/div  $\pm 3\%$ , Max. Sensitivity: 1mV/div  $\pm 5\%$  at x 5 Magnifier extends, Bandwidth: DC to 35MHz (-3dB), DC to 7MHz (-3dB) at x 5 Magnifier extends, Modes: CH1•CH2•DUAL•ADD (DIFF) • **Horizontal Deflection** = Sweep Time: 0.2us/div to 0.2s/div  $\pm 3\%$ , Delay Time: 1us to 100 ms, Max. Sweep Rate: 20ns/div at x 10 Magnifier extends, Display Modes: NORM, INTEN, DELAY • **X-Y Operation (CH1: X, CH2: Y)** = Phase Error: 3° from DC to 50kHz • **Dimensions** = 275 (W) x 190 (H) x 400 (D)mm/11 x 7.5 x 15.8 in. • **Weight** = 8.5kg/18.8 lb.



## HITACHI ACCESSORIES

Model	Description	Our Price	Model	Description	Our Price
AD-099	Ni-Cad Rechargeable Battery for V-099/V-089	\$250.00	6512	Dust Cover for V-222, V-422 (DC-4222, V-355)	39.95
AD-209	Ni-Cad Rechargeable Battery for V-209	75.00	6513	Dust Cover for V-212, V-211 (DC-2121)	39.95
AD-509	Ni-Cad Rechargeable Battery for V-509	300.00	6701	Accessory Pouch for V-650F and V-1050F (AP-5010)	40.00
B-654	Viewing Hood for V-353F, V-203F, V-134 (VH-3510)	10.00	6702	Accessory Pouch for V-509 and V-209 (AP-5020)	35.00
B-354	Viewing Hood for V-509 and V-209 (VH-5020)	10.00	6704	Accessory Pouch for V-422, V-355, V-222, V-212, V-211 (AP-4222)	40.00
B-653	Viewing Hood for V-650F and V-1050F (VH-6010)	10.00	6803	Front Cover for V-650F and V-1050F (FC-5010)	20.00
B-353	Viewing Hood for V-089, V-099 (VH-8999)	10.00	6804	Front Cover for V-509 and V-209 (FC-5020)	18.00
RM-099	Triple V-099/V-89 Rack Mount	200.00	6806	Front Cover for V-422, V-355, V-222, V-212, V-211 (FC-4222)	26.95
6509	Dust Cover w/Accessory Pocket (DC-2035) For V-203F V-203F, V-353F, V-134	35.00			
6507	Dust Cover w/Accessory Pocket (DC-6010) For V-650F and V-1050F	35.00			

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# OSCILLOSCOPES

## HITACHI VECTORSCOPE

MODEL V-089

REG. \$1684.00

OUR PRICE **\$1514.00**

### FEATURES

- Compact and lightweight, able to be stored three to a 19" rack.
- Able to use three different power sources.
- Internal or external switching of synchronization possible. External sync input possible by loopthrough.
- Autofocus function.

### SPECIFICATIONS

**CHROMINANCE PROCESSING—Chrominance Bandwidth:** Subcarrier Frequency (Fsc): 3.579545 MHz. Upper—3 dB point: Fsc + 500 kHz  $\pm$  100 kHz. Lower—3 dB point: Fsc - 500 kHz  $\pm$  100 kHz. **Vector Phase Accuracy:** Within 2°. **Pull-In range:** Within 100 Hz of Fsc. **Pull-In Time:** Within 1 second with subcarrier frequency within 100 Hz of Fsc. **Phase Shift with Subcarrier Frequency Change:** Within 1° from Fsc to Fsc + 50 Hz, or from Fsc to Fsc - 50 Hz. **Phase Shift with Burst Amplitude Change:** Within 2° from nominal burst amplitude to +6dB, or from nominal burst amplitude to -6 dB. **Phase Shift with Input Channel Change:** Within 1°. **Phase Shift with Front Panel Gain Control Change:** Within 1° from unity to 2 times unity, or from unity to one-half unity. **Phase Control Range:** 360° continuous rotation. **Burst Jitter:** Within 2°. **AMPLIFIER CHARACTERISTICS—Input Amplitude Range:** 1V  $\pm$  6dB. **Maximum Input Voltage:**  $\pm$  5V. **Variable Gain Control Range:** X0.5, X5.0. **Gain Stability:** Within 2%. **Position Control Range:** HORIZ. and VERT.  $\pm$  40°  $\pm$  20 IRE. **Clamp Stability:** (Spot centered within 1/8"). **Center Spot Movement with Rotation of PHASE Control:** Within 1/64". **Input Isolation:** At least 40dB between channels. **Input Return Loss:** At least 40dB down, 5 MHz. **Input Impedance:** 1M ohm or more. **Input Coupling:** AC. **External Sync:** Input signal requirement 1.6 to 4.5V composite sync. **Input Impedance 15 Kohm  $\pm$  10%.** **POWER—Line Voltage:** AC 100 or 120V volts within 10%. **Line Frequency:** 50 to 400 Hz. **Power Consumption:** Approx. 30 watts at normal line voltage. **External DC Source:** DC 11.5 to 14 volts at EXT terminal. **Optional Battery:** 2 hours or more. **Dimensions (W x H x D):** 145 x 88 x 395mm. **Weight:** Approx. 4kg. (without battery pack). Approx. 2.5kg. (battery pack).



## HITACHI NTSC TELEVISION WAVEFORM MONITOR

MODEL V-099

REG. \$1350.00

OUR PRICE **\$1215.00**

### FEATURES

- Compact and lightweight—able to be stored three to a 19" rack.
- IRE unit graticule for convenient measurement of video signals.
- Able to use three different power sources.
- DC restorer maintains blanking level constant even with changes in video signal amplitude.
- Four sweep modes for observation of various sections of waves.
- Internal or external switching of synchronization possible. External sync input possible by loopthrough.
- Autofocus function.

### SPECIFICATIONS

**VERTICAL DEFLECTION—Frequency response at 1V Full Scale or 4V Full Scale Flat:** Response from 25 Hz to 5 MHz within  $\pm$  5% of response at 50 kHz. **IRE:** Response per 1958 IRE STD 235-1  $\pm$  10%. **3.58 Band Pass:** Response at 3.58 MHz does not vary between FLAT and 3.58 BAND PASS by more than 1%. **DEFLECTION FACTOR—1V Full Scale:** 140 IRE units within 2% with 1 volt input. **4V Full Scale:** 140 IRE units within  $\pm$  3%. **Maximum Input Level (AC coupled):** 1V Full Scale:  $\pm$  5V DC. 4V Full Scale:  $\pm$  5V DC. **Input Impedance (not terminated):** 1V Full Scale: 15K ohm paralleled with approx. 50 pF. 4V Full Scale: 60K ohm paralleled with approx. 50 pF. **Video Output: Frequency Response:** 25 Hz to 5 MHz within  $\pm$  8%. **Nominal Output Impedance:** 75 ohm  $\pm$  10%. **DC Level on Output:** 1V within 15% for 140 IRE units display with RESPONSE at FLAT. **HORIZONTAL DEFLECTION—2V Sweep: Repetition Rate:** Equal to frame rate at applied video or external sync. **Length (when sync'd to video signal):** 12.1 div within  $\pm$  1 div. **2V MAG Sweep: Magnification:** X20 within  $\pm$  10%. **2H Sweep: Repetition Rate:** Equal to half line rate of applied video or external sync. **1us/div Sweep Accuracy:**  $\pm$  3%. **EXTERNAL SYNC—Input Signal Requirement:** 1.5V to 4.5V composite sync will synchronize sweeps. **Input Impedance:** 15K ohm in parallel with approx. 10 pF. **POWER—Line Voltage:** AC 120 volts within 10%. **Line Frequency:** 50 to 400 Hz. **Power Consumption:** Approx. 30 watts at normal line voltage. **External DC Source:** DC 11.5 to 14 volts at EXT terminal. **Optional Battery:** 2 hours or more. **DIMENSIONS—Size (WHD):** 145 x 88 x 395mm. **Weight:** Approx. 4 kg. AD-099 Battery Pack...\$250.00



## HITACHI 10 MHz STORAGE OSCILLOSCOPE

MODEL V-134

REG. \$1620.00

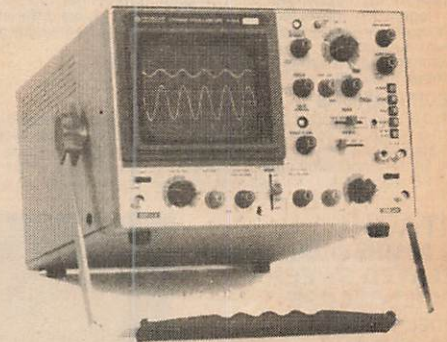
OUR PRICE **\$1458.00**

### FEATURES

- 50 div/ms stored writing speed (Fast mode). Writing possible at standard writing speed of 25 div/ms and at double speed of 50 div/ms by Fast mode function.
- Clear waveform observation. Employs a BHD direct-viewing storage tube resistance to burnouts or shock and capable of providing clear, high contrast waveform observation.
- Advanced high sensitivity design. Incorporates the high sensitivity basic design which has made Hitachi oscilloscopes famous: 1 mV/div vertical sensitivity realized.
- Capable of being used as a 10 MHz oscilloscope, V-134 is capable of use as a dual trace oscilloscope with DC-10 MHz bandwidth, and an 8 div. dynamic range (ensuring screen waveform linearity). Changeover to storage function is effected by simple operation.
- Autoerase function, remote erase terminal. Erase time is variable from 0.5 to 10 sec. Automatic repetition of recording and erasure is possible. A remote terminal is provided to enable erasure by outside signals. The autoerase function and remote erase terminal make the V-134 optimal for use on production lines.
- High sensitivity X-Y operation. X-Y operation is possible, convenient for measurement of phase differences of two waveforms.
- TV sync-separator circuit. TV sync-separator circuit enabling speedy measurement of video signals is built in.

### SPECIFICATIONS

**CRT—Type:** 5 inch, round with external graticule and scale illumination. **VERTICAL DEFLECTION—Sensitivity and Frequency Bandwidth:** 5 mV/div to 5 V/div (10 steps)  $\pm$  3%. With X5: 1 mV/div to 1V/div (10 steps)  $\pm$  5%. Uncalibrated continuous control between steps 1: less than 2.5. DC to 10 MHz -3 dB (8 div standard). With X5: DC to 7 MHz -3dB (8 div standard). **Rise Time:** 35 ns, when X5; 50 ns. **Input Withstand Voltage:** 500 Vp-p or 300V (DC + AC peak, at 1 kHz). **Input Connection:** AC, GND, DC. **Input Impedance:** Direct: 1 Mohm, 30 pF. **Operating Mode:** CH1, CH2, DUAL, ADD, DIFF, X-Y Operation: CH1: X-axis, CH2: Y-axis. **Sensitivity:** Same as vertical deflection sensitivity. **Phase Difference:** Within DC to 50 kHz 3°. **X Bandwidth:** DC to 500 kHz -3 dB. **HORIZONTAL DEFLECTION—Trigger Mode:** AUTO, NORM, SINGLE, TV (-). **Trigger Source:** CH1, CH2, LINE, EXT. **Trigger Coupling:** AC, DC, TV. **Trigger:** Sync-separator circuit. **Internal:** 1 div or more (vertical sync signal). **External:** 1 Vp-p or more (vertical sync signal). **Trigger Sensitivity:** Frequency: DC to 5 MHz; Internal: 0.5 div; External: 200 mV. Frequency: 5 to 10 MHz; Internal: 1.0 div; External: 800 mV. **Auto Low Bandwidth:** 20 Hz. **Trigger Slope:**  $\pm$ . **External Trigger Input:** Input impedance: 1 Mohm, 30 pF. **Max. input voltage:** 300 V (DC + AC peak, at 1 kHz). **Sweep Time:** 2 us/div, to 2 sec/div (10 steps)  $\pm$  3%. Uncalibrated continuous control between steps 1: less than 2.5. **Sweep Magnifier:** 10 times. **Maximum Sweep Time:** 200 ns/div. **Power:** 100/120/220/240V  $\pm$  10%, with changeover switch 50 to 60 Hz, 60W. **Dimensions (approx.) (W x H x D):** 275 x 190 x 400mm. **Weight:** Approx. 10kg. **Accessories Supplied:** Two AT-10AF1.5 probes (10:1/1:1 switchable), Power cable, operation manual. • Probes included



## HITACHI DIGITAL STORAGE OSCILLOSCOPE 1 MHz/2 channels, 1000 words per channel

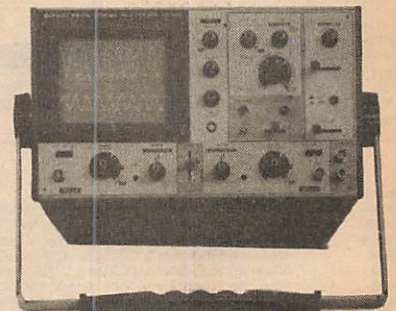
MODEL VC-6015 REG. \$2095.00 OUR PRICE **\$1895.95**

### DESCRIPTION

A full-feature digital storage scope from Hitachi. Study the specifications and you will agree that Hitachi is serious about high-performance storage scopes.

### FEATURES

- Usable as both a conventional oscilloscope and a digital storage scope. By merely changing the display mode, the VC-6015 can be used as a 10 MHz, dual-trace oscilloscope.
- Pretriggering allows capture of events before the trigger point. Recording of an input waveform is begun by the input of a trigger pulse. For measurements on waveforms from such events as collisions, explosions and earthquakes, the pretrigger function enables the capture of an event before the trigger pulse occurs, a feat that is impossible with conventional CRT-storage type storage scopes. The pretrigger position may be set at 0, 2, 5, or 8 divisions, and the trigger point is displayed on the CRT as an intensified point, allowing the user to determine its relationship to the captured waveform.
- Convenient free-run mode for use in recording repeating events. The free-run mode may be used to continuously observe repeating events, and the display time may be varied between 1 to 5s.
- A hold function maintains one stored waveform while another is captured. By selecting the convenient hold mode, the waveform stored from channel 1 may be held in memory while that from channel 2 is captured, and the reverse hold function is possible as well. This allows separate hold of channel 1 and channel 2 waveforms.
- Recording function enables a pen recorder to be used to create a hard copy of stored waveforms. The waveforms stored in memory from channels 1 and 2 may be simultaneously output to a pen recorder to provide a hard copy record of the waveforms. An X-axis sweep signal usable with X-Y recorders is also output during this recorder output period.
- Power requirements: AC 100/120/220/240 V  $\pm$  10% (Switch selectable) 50/60 Hz. • Dimensions: (WHD) 310mm x 180mm x 410mm. • Weight: 22 lbs.
- Accessories supplied: 2-AT-10AK 1.5 probes, 1-dust cover and instruction manual.



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## B&K PRECISION NTSC WAVEFORM MONITOR

MODEL 1265 REG. \$1995.00 OUR PRICE **\$1695.00**

### FEATURES

- Half-rack design. • 12kV accelerating voltage for bright, crisp waveform display.
- Illuminated, internal graticule with IRE unit and modulation percentage scales. • Calibrated, buffered vertical output.
- Selectable A or B inputs with loop-through BNC connections and built-in 75 ohm terminations.
- Blanking output for synchronized line examination. • 1V or 4V p-p calibrated vertical sensitivity.
- Uncal LED and variable vertical gain control. • Selectable FLAT response undistorted view of luminance and chroma components.
- IRE filter conforms to IRE Standard 235-1. • CHROMA filter for viewing the chroma component only. • RGB/YRGB monitoring.
- DIFF GAIN mode to amplify chroma component for easier measurement of differential gain.
- Line selector for examining VITS or VIR waveforms - Line 13 through Line 22 of Field 1 or Field 2.
- Built-in, selectable 1V p-p square wave generator checks calibration accuracy. • Optional rack mount kit available.

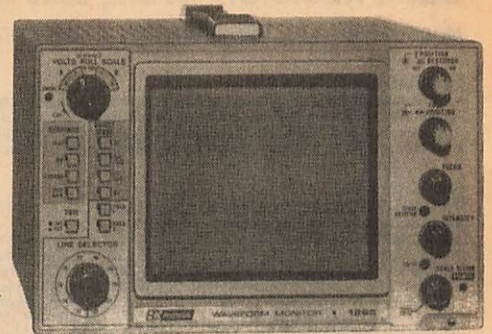
### APPLICATIONS

Monitor video signal from video camera to video tape recorder or from video tape recorder to video monitor...monitor video signal between two video cameras or between video camera and video tape recorder...designed for professional video applications such as television transmitting, video studios, video signal distribution centers, cable television installations, CCTV networks, large MATV networks, video product design laboratories and video product manufacturing and testing facilities...monitors white, grey and black and chroma levels...checks burst, sync level and vertical blanking.

### SPECIFICATIONS

**GENERAL:** Compliance with EIA standard RS-170 and tentative standard RS-170-A. **VERTICAL SECTION:** Input: A or B, switch selectable; each with two BNC jacks on rear panel (input and loop-through). **Sensitivity:** (for 140 IRE full scale factor): **Ranges:** 1V and 4V p-p (calibrated), each with continuously variable vernier (uncalibrated). **Accuracy:** 1V Range: 1V  $\pm 2\%$ , 4V Range: 4V  $\pm 3\%$ . **Variable Range:** 1V Range: 0.25v or less to 1V., 4V Range: 1V or less to 4V. **HORIZONTAL SECTION:** **Sweep Modes:** 2H-Displays two horizontal lines (10us/div 3%), 1us/DIV-1 us/div  $\pm 3\%$  (displays two horizontal lines magnified 10 times), 2V-Displays two vertical fields, magnified 20 times  $\pm 10\%$ . **Linearity:**  $\pm 3\%$ . **Sweep Length:** 12  $\pm 0.7$  div in 2V mode. **Line Selector:** Field 1 or Field 2, Line 13 to Line 22. **Blanking Signal Output:** (BNC jack on rear panel), Period of Selected Line: 0.V. Period of Unselected Lines: 2V. **RGB/YRGB:** RGB standard convertible to YRGB. **CALIBRATOR:** Amplitude: 1V  $\pm 1\%$ . Frequency: 2 cycles with 2H sweep. **CRT Type:** 6" rectangular tube internal graticule. **POWER REQUIREMENTS:** Voltage: 100, 120, 220, or 240 VAC  $\pm 10\%$ . Frequency: 50/60 Hz. **Power Consumption:** 50 watts. **Dimensions:** (HWD) 5-3/4" x 8-1/2" x 17-1/2" includes all protrusions. **Weight:** 16 lb. **Optional Rack Mount Adaptor RM-25...**\$150.00

**NEW!**



## B&K PRECISION NTSC VECTORSCOPE

MODEL 1270 REG. \$1995.00 OUR PRICE **\$1695.00**

### FEATURES

- Half-rack design. • 12 kV accelerating voltage for bright, crisp display. • Illuminated, internal graticule.
- Selectable, loop-through or 75 ohm terminations for A, B and ext CW input. • Gain control with UNCAL LED.
- Selectable external or internal subcarrier. • 75% or 100% switchable color saturation.
- Z axis input terminal for blanking to measure VITS and VIRS.

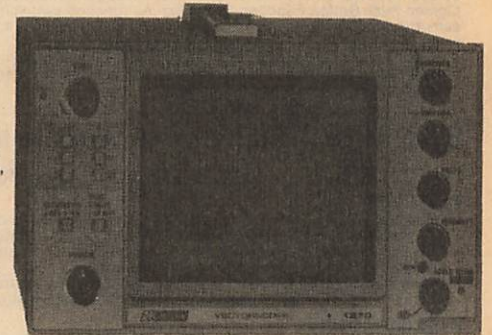
### APPLICATIONS

Displays phase and amplitude of NTSC composite video signals...designed for professional video applications such as television transmitting, video studios, video signal distribution centers, cable television installations, CCTV networks, large MATV networks, video product design laboratories, and video product manufacturing and testing facilities.

### SPECIFICATIONS

**CRT Type:** 6" rectangular tube, PDA. **Acceleration Voltage:** 12kV. **Graticule:** Internal, multiple scale. **Circle:** 80mm, diameter, scaled in degrees. Radius represents 100% IRE amplitude. **NTSC Color Bar:** Scaled for each NTSC color bar. **Crosshair:** Calibration reference. **Inner Perimeter:** Amplitude  $\pm 2.5\%$  IRE, Phase  $\pm 2.5^\circ$ . **Outer Perimeter:** Amplitude  $\pm 20\%$  IRE, Phase  $\pm 10^\circ$ . **Burst Axis:** Calibration reference scaled for 75% and 100% saturation modes. **SENSITIVITY:** Calibration Value (Input A and B): Selectable 75% or 100% color saturation. **Amplitude:** 1V p-p full scale for 75%, 1.24V p-p full scale for 100%. **Variable Range:** 0.5 to 5 times calibrated value. **EXT CW:** 2V p-p  $\pm 6$  dB. **CHROMA:** Bandwidth: 3.579545 MHz  $\pm 500$  kHz. **Accuracy:** Phase Shift:  $\pm 2$  degrees. **Amplitude:**  $\pm 3\%$ . **Differential Phase:**  $\pm 1$  degree. **Differential Gain:**  $\pm 1\%$ . **VECTOR MEASUREMENT:** Color Saturation: 75% or 100%. **Other:** Phase and amplitude or chroma signal. **SYNC:** Horizontal Source: Horizontal sync signal of composite video input from input A or B. **POWER REQUIREMENTS:** Voltage: Selectable 100, 120, 220, 240 VAC  $\pm 10\%$  50/60 Hz. **Power Consumption:** 45 Watts. **ENVIRONMENTAL:** Operating Temperature: 0 to 40°C, 80% or less RH; specifications apply 10 to 35°C. Storage Temperature: -20 to +60°C. **Dimensions:** (HWD) 5-3/4" x 8-1/2" x 17-1/2". **Weight:** 16 lbs.

**NEW!**



## B&K PRECISION

### 150 MHz, DUAL INDEPENDENT TIME BASE QUAD INPUT OSCILLOSCOPE

MODEL 1596 REG. \$2095.00 OUR PRICE **\$1695.00**

### FEATURES

- 1 mV sensitivity to full bandwidth. • 500 uV/div cascade sensitivity to 70 MHz. • 23 calibrated sweeps. • 20 kV accelerating voltage.
- Rectangular CRT with internal graticule and scale illumination. • V Mode - displays four signals unrelated in frequency.
- Alternate timebase operation. • Signal delay line. • 20 MHz bandwidth limiter. • Lighted pushbutton function switching.
- Voltage and current probe calibrators. • Video sync separators. • Channel 1 output. • 2% vertical and horizontal sweep accuracy.

### DESCRIPTION

The B&K PRECISION Model 1596, 150 MHz, quad input eight trace oscilloscope brings high performance standards and a vast array of features into one efficient package.

**High Brightness CRT** All signals are displayed on a high brightness domed mesh rectangular CRT with 20 kV accelerating potential, internal graticule with full 8 x 10 div., and illuminated graticule.

For applications requiring extremely high single-channel sensitivity, the 1596 provides 500 uV vertical sensitivity in cascade operation. The channel 1 vertical amplifier output is connected to the channel 2 input in this mode.

**Dual Independent Time Base.** When in the DUAL Mode, the 1596 provides independent operation of the A Sweep and B Sweep circuits. In the mode of operation the A Sweep is operated by the A trigger section and the B Sweep is operated by the B trigger section. Dual independent time base operation allows the 1596 to act like two 150 MHz oscilloscopes and to display signals unrelated in time with their own independent trigger sections. An example of this is to use channels 1 and 3 in conjunction with the A time base and channels 2 and 4 with the B time base.

**Four Input Channels.** A significant feature that sets the 1596 apart from other scopes in its price class is four input operation. The most common application for quad display is to use channels 3 and 4 to display the external triggering signals applied to channels 1 and 2. Another useful application of the four channel inputs is to display four digital signals. For example, in analyzing a digital circuit or microprocessor-based circuit controlled by one time base, digital signals can be observed at four circuit points simultaneously. When operated in the "V-mode," four signals not related in frequency can be displayed in-sync simultaneously. Any of the channels can be displayed or deleted. For channels 1 and 2, the vertical input attenuator offers ten ranges in the conventional 1-2-5 sequence, with vernier provided. As channels 3 and 4 are intended for supplemental use, two position vertical input attenuators are provided.

**Full Delayed-Sweep.** In delayed-sweep operation, the delayed signal can be viewed as a second trace or superimposed on the non-delayed signal. Dual intensity controls are provided for the delayed and original time-base signals. The sweep range for time base A is calibrated from 20 ns/div to 0.5 s/div in 23 steps; time base B covers 20 ns/div to 50 ms/div in 20 steps. The sweep vernier provides continuously variable adjustment between the 1-2-5 sequence time base steps. An additional X10 sweep magnifier is also featured.

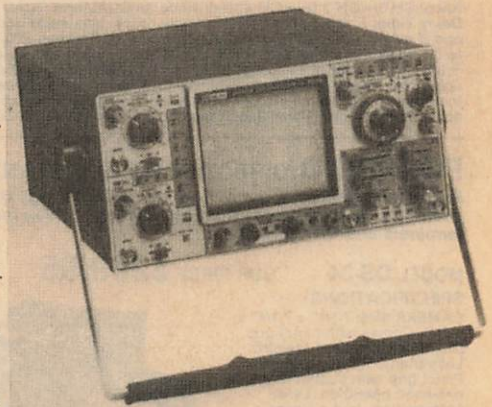
**20 MHz Bandwidth Limiter.** While the 1596 is ready to handle signals up to 150 MHz, B&K PRECISION engineers realize that often, many signals observed are under 20 MHz. For that reason, a selectable 20 MHz bandwidth limiter circuit was designed into the 1596. When activated, this circuit restricts -3dB bandwidth to 20 MHz filtering out extraneous signals at higher frequencies.

**Rear-Panel Output Jack.** For simultaneous frequency measurement of signals observed on the 1596, a buffered rear-panel output jack is included to interface with a conventional frequency counter. With an impedance of 50 ohms, this convenient output eliminates the need to use a T adaptor or to buy costly frequency counter/oscilloscope combinations.

**Lighted Push-Button Function Switching.** All function switching on the 1596 is performed by soft touch, lighted pushbuttons that control full-logic switching circuits. When a touch-sensitive function button is activated, a red LED illuminates it. This unique design provides a positive display of the operation selected. Also, the switch position is maintained in memory when the power is off by a separate battery power source.

Other features include a beam finder button, LED UNCAL indicators, single sweep operation, variable hold-off as well as alternate or chop operation with two selectable chop frequencies. Probe calibrators for both current and voltage probes are included. A and B gate outputs are provided on the rear panel, supplying gating pulses from the A and B time bases for interface with external circuits.

**NEW!**  
**SPECIAL!**





# OSCILLOSCOPES/CAMERA

## B&K PRECISION 100 MHz, QUAD INPUT DUAL INDEPENDENT TIME BASE OSCILLOSCOPE

MODEL 1590A REG. \$1995.00 OUR PRICE **\$1499.95**

### FEATURES

- 1mV/division sensitivity to full bandwidth. •500uV/division cascade sensitivity to 70 MHz. •23 calibrated sweeps.
- Signal delay line •Channel 1 output. •Video Sync. separation. •20 MHz bandwidth limiter.
- Power Req: 90-264VAC; 45 to 400 Hz. approx. 56W. •Dimensions: 5-1/4"H x 11-1/4"W x 15-3/4"D, Weight: 16-1/4 lbs.
- Comes with 2-10:1 probes, spare fuses, probe holder, instruction manual.

### DESCRIPTION

The B&K PRECISION Model 1590A, 100 MHz quad input eight trace oscilloscope brings high performance standards and a vast array of features into one efficient package.

**High Brightness CRT:** All signals are displayed on a high brightness domed mesh rectangular CRT with 20 kV accelerating potential, internal graticule with full 8x10 div., and illuminated graticule.

**1 mV/div Vertical Sensitivity:** The 1590A provides 1 mV/div vertical sensitivity over its entire 100 MHz bandwidth. Response at 120 MHz is down only -6dB. For applications requiring extremely high single-channel sensitivity, the 1590A provides 500uV vertical sensitivity in cascade operation. The channel 1 vertical amplifier output is connected to the channel 2 input in this mode.

**Dual Independent Time Base:** When in the DUAL Mode, the 1590A provides independent operation of the A Sweep and B Sweep circuits. In this mode of operation the A Sweep is operated by the A trigger section and the B Sweep is operated by the B trigger section. Dual independent time base operation allows the 1590A to act like two 100 MHz oscilloscopes and to display signals unrelated in time with their own independent trigger sections. An example of this is to use channels 1 and 3 in conjunction with the A time base and channels 2 and 4 with the B time base.

**Four Input Channels:** A significant feature that sets the 1590A apart from other scopes in its price class is four input operation. The most common application for quad display is to use channels 3 and 4 to display the external triggering signals applied to channels 1 and 2. Another application of the four channel inputs is to display four digital signals. For example, in analyzing a digital circuit or micro-processor-based circuit controlled by one time base, digital signals can be observed at four circuit points simultaneously. When operated in the "V-mode," four signals not related in frequency can be displayed in-sync simultaneously. Any of the four channels can be displayed or deleted. For channels 1 and 2, the vertical input attenuator of full ten ranges in the conventional 1-25 sequence, with vernier provided. As channels 3 and 4 are intended for supplemental use, two position vertical input attenuators are provided.

**Full Delayed-Sweep:** In delayed-sweep operation, the delayed signal can be viewed as a second trace or superimposed on the non-delayed signal. Dual intensity controls are provided for the delayed and original time-base signals. The sweep range for time base A is calibrated from 20 ns/div to 0.5 s/div in 23 steps; time base B covers 20 ns/div to 50 ms/div in 20 steps. The sweep vernier provides continuously variable adjustment between the 1-25 sequence time base steps. An additional X10 sweep magnifier is also featured.

**20 MHz Bandwidth Limiter:** While the 1590A is ready to handle signals up to and beyond 100 MHz, B&K-PRECISION engineers realized that often, many signals observed are under 20 MHz. For the reason, a selectable 20 MHz bandwidth limiter circuit was designed into the 1590A. When activated, this circuit restricts -3dB bandwidth to 20 MHz filtering out extraneous signals at higher frequencies.

**Rear-Panel Output Jack:** For simultaneous frequency measurement of signals observed on the 1590A, a buffered rear-panel output jack is included to interface with a conventional frequency counter. With an impedance of 50 ohms this convenient output eliminates the need to use a T adaptor or to buy costly frequency counter/oscilloscope combinations.

**Lighted Push-Button Function Switching:** All function switching on the 1590A is performed by soft touch, lighted pushbuttons that control full-logic switching circuits. When a touch-sensitive function button is activated, a red LED illuminates it. This unique design provides a positive display of the operation selected. Also, the switch position is maintained in memory when the power is off by a separate battery power source.

**And much more...** Other features include a beam finder button, LED UNCAL indicators, single sweep operation, variable hold-off as well as alternate or chop operation with two selectable chop frequencies. Probe calibrators for both current and voltage probes are included. A and B gate outputs are provided on the rear panel, supplying gating pulses from the A and B time bases for interface with external circuits.



## B&K PRECISION QUAD-INPUT 80 MHz DUAL TIME BASE OSCILLOSCOPE

MODEL 1570-A REG. \$1395.00 OUR PRICE **\$1095.00**

### FEATURES

- 1mV/division sensitivity to 70 MHz. •500 uV/division cascade sensitivity to 40 MHz.
- 22 calibrated sweeps. •Rectangular CRT with internal graticule and scale illumination.
- 12 kV accelerating voltage. •V Mode—displays four signals unrelated in frequency.
- Alternate timebase operation. •Signal delay line.
- Lighted pushbutton function switching. •Video sync separators.
- Comes with 2-10:1 probes, spare fuses, probe holder, instruction manual.

### SPECIFICATIONS

**Vertical Amplifiers (CH1 and CH2) Deflection Factor:** Standard: 5mV/div in 10 ranges, 1-2-5 sequence, each with vernier adjustment. X5 Gain: 1 mV/div to 1 V/div. Cascaded (CH1 to CH2): 500uV/div. Accuracy:  $\pm 3\%$  ( $0^{\circ}\text{C}$  to  $+35^{\circ}\text{C}$ ),  $\pm 5\%$  ( $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ ),  $\pm 8\%$  (cascaded operation, CH1 to CH2). **Frequency Response:** (X1 or X5 vertical gain) DC: DC to 80MHz (-3dB). DC to 40 MHz (cascaded). AC: 5Hz to 80MHz (-3dB). 7 Hz to 40 MHz (cascaded). **Rise Time:** 5 ns or less. **Bandwidth Limiting:** Frequency response can be limited to approximately 20 MHz by bandwidth limit switch. **Input Impedance:** 1 Megohm  $\pm 2\%$  shunted by approx. 28 pF. **CH 2 Polarity:** Normal or Inverted. **Maximum Input Voltage:** 250V (DC + AC Peak) or 500 VAC p-p. **Crosstalk:** -40 dB minimum. (CH 3 and CH 4) **Deflection Factor:** 0.1 V/div.  $\pm 3\%$ . **Frequency Response:** DC to 80 MHz (-3dB). **Rise Time:** 5 ns or less. **Input Impedance:** 1 Megohm  $\pm 2\%$  shunted by approx. 28 pF. **Input Coupling:** DC only. **Maximum Input Displayed:** DC Component— $\pm 0.5\text{V}$ . AC Component—1V p-p. **Maximum Input Voltage:** 50V (DC + AC peak) (CH 1 thru 4) **Operating Modes:** CH 1—CH 1, single trace. CH 2—CH 2, single trace. DUAL—CH 1 and CH 2, dual trace. ADD—algebraic sum of CH 1 + CH 2, single trace (CH 1—CH 2 thru CH 4, four trace. In DUAL and QUAD modes, alternating or chopped traces selectable with ALT and CHOP switches. **Chop Frequency:** Approx. 250 kHz. **Signal Delay Time:** Fixed, approx. 20 ns visible delay. **Maximum Undistorted Amplitude:** 8 divisions. **SWEEP SYSTEM Modes:** A—A sweep. ALT-A sweep (intensified for duration of B sweep) and B sweep alternating. A-INT-B—Duration of B sweep is displayed as an intensified portion of the A sweep. B DLY'D—Delayed B sweep. X-Y—X-Y display mode. **A Sweep:** 50 ns/div to 0.5 s/div in 1-2-5 sequence, 22 steps. Vernier control provides fully adjustable sweep time between gaps. **B Sweep:** 50 ns/div to 50 ms/div in 1-2-5 sequence, 19 steps. **Accuracy:**  $\pm 3\%$  ( $+10^{\circ}\text{C}$  to  $35^{\circ}\text{C}$ ),  $\pm 6\%$  ( $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ ). **Sweep Magnification:** 10X,  $\pm 5\%$  ( $+10^{\circ}\text{C}$  to  $+35^{\circ}\text{C}$ ),  $\pm 7\%$  ( $0^{\circ}$  to  $+50^{\circ}\text{C}$ ). **Linearity:**  $\pm 3\%$ ; 10X,  $\pm 5\%$ . **Holdoff:** Continuously adjustable.  $\pm 3\%$  for A sweep (NORM to more than 5 times normal). **Trace Separation:** 0 to 4 divisions, continuously adjustable. **Delay Method:** Continuously delay or trigger delay. **Delay Time:** 0.2 to 10 times A Sweep Time/Div setting, continuously adjustable. **Time Difference Measurement Accuracy:**  $\pm 2\%$  ( $+10^{\circ}\text{C}$  to  $+35^{\circ}\text{C}$ ),  $\pm 4\%$  ( $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ ). **Delay Jitter:** 1/20,000 of full scale sweep time. **Power Requirements:** 90-264VAC; 45 to 400 Hz, Approx. 55W. **Dimensions:** (HxWxD) 5-1/4" x 11-1/4" x 15-3/4". **Weight:** 16-1/4 lbs.



## POLAROID DIRECT SCREEN INSTANT CAMERA

Polaroid introduces, a convenient way to make high quality photographic hard copies from oscilloscopes video monitors, computer terminals and CRT displays.

MODEL DS-34 OUR PRICE **\$299.95**

### SPECIFICATIONS

**CAMERA Size:** 7-1/4" x 7-1/4" x 4-3/4". Comes with pistol grip (Hood not included.) **Weight:** Less than 2-1/2 lbs. **Handle:** Pistol grip with built-in trigger for one-hand operation. **Lens:** 105mm, f/4.5, four element, specially-coated glass. **Shutter:** Copal press #0. **Shutter release:** Single-stroke trigger, no cocking. **Shutter speeds:** B, 1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125.

**Diaphragms:** f/4.5, f/5.6, f/8, f/11, f/16, f/22, f/32. **Focus:** Fixed.

**Back:** Polaroid CB-103. **Mounting:** Hoods snap on and off camera housing for convenient storing and shipping. **Warranty:** Three years parts and labor. **FILM:** Color or black and white. **Format:** 3-1/4" x 4-1/4". **Image size:** 2-7/8" x 3-3/4". **Images per pack:** 8. **ACCESSORIES:** Interface Mount, model 34-40, Color Filter Kit, model 34-80.

**Black & White Film model 667** . . . . . \$11.95 per twin pack.

### Optional Hood Accessory

Hoods: 6" model 6HP...\$49.00 9" model 9HP...\$90.00  
13" model 13HP...\$109.00



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## B&K PRECISION 60 MHz TRIPLE TRACE OSCILLOSCOPE

MODEL 1560 REG. \$1150.00 OUR PRICE **\$899.95**

### FEATURES

- 1 mV/div sensitivity.
- 22 calibrated sweeps.
- Rectangular CRT with internal graticule and scale illumination.
- Signal delay line.
- Video sync separators.
- X-Y operation.
- Z axis input.
- 16 kV accelerating voltage.
- X10 sweep magnification.
- Delayed sweep/dual time base.
- Single sweep.
- Auto focus.
- V mode—displays two signals unrelated in frequency.
- Sum & difference capability.
- Channel 1 output.
- Includes probes.

### DESCRIPTION

The B&K Precision Model 1560, 60 MHz triple trace oscilloscope is a dual time base, delayed sweep unit that includes a built-in signal delay line to permit clear viewing of information appearing during the very short rise times of high frequency waveforms.

In addition, the variable trigger holdoff feature permits stable observation of complex pulse trains. The user can select from 22 calibrated sweep time ranges—0.5 s/div to 0.05  $\mu$ s/div. Sweep time is fully adjustable between calibrated ranges.

To allow closer examination of waveforms, a X10 sweep magnification feature is provided.

Model 1560 incorporates a FIX trigger mode that automatically sets the trigger threshold at the center of the waveform.

The versatile triggering circuitry offers five trigger sources: CH1, CH2, LINE, EXTERNAL, and V MODE.

In V MODE each waveform displayed becomes its own trigger thereby allowing steady display of three signals unrelated in frequency.

Other features include front panel X-Y operation, Z axis input, Channel 1 output on rear panel for driving frequency counter or other instruments, sum and difference capability of Channel 1 and Channel 2 waveforms displayed as a single trace, sweep gate and sweep output, auto focus, and single sweep for viewing and photographing one-time events.

### SPECIFICATIONS

**VERTICAL AMPLIFIERS**—(CH1 and CH2): Deflection Factor: 1 mV/div to 5 V/div,  $\pm 3\%$ , in 12 steps, 1-2-5 sequence with vernier adjustment. Frequency Response: 1 mV/div., 2 mV/div.—DC: DC to 20 MHz, —3 dB. AC: 5 Hz to 20 MHz, —3 dB. 5 mV/div to 5 V/div.—DC: DC to 60 MHz, —3 dB. AC: 5 Hz to 60 MHz, —3 dB. Rise Time: 5.8 ns or less. (60 MHz), 17.5 ns or less (20 MHz). Input Impedance: 1 Mohm  $\pm 2\%$  approx. 20 pF. Maximum Input Voltage: 500 Vp-p or 250 V (DC + AC peak). Maximum Non-Distorted Amplitude: More than 8 div., DC to 60 MHz. CH3—Deflection Factor: 0.1 V/div and 1 V/div.  $\pm 3\%$ . Frequency Response: DC: DC to 60 MHz, —3 dB. AC: 5 Hz to 60 MHz, —3 dB. Rise Time: 5.8 ns or less. Input Impedance: 1 Mohm  $\pm 2\%$ , approx. 27 pF. Maximum Input Voltage: 50 V (DC + AC peak). Operating Modes: CH1—Single Trace. CH2—Single Trace. ADD—CH1 + CH2 Single Trace. DUAL—CH1 and CH2, Dual Trace. TRIPLE—CH1, CH2, CH3, triple trace. ALT—Dual or triple trace, alternating sweep. CHOP—Dual or triple trace, chopped sweep. CHOP Frequency: Approx. 250 kHz. Channel Polarity: Normal or inverted, channel 2 only inverted. Crosstalk: —40 dB minimum. Signal Delay Time: Approx. 20 ns on the CRT screen. SWEEP SYSTEM—Mode: NORM—Triggered sweep. AUTO—Sweep free runs in absence of trigger. FIX—Same as AUTO except trigger level is automatically fixed at center of waveform. SINGLE—Permits viewing and photographing of onetime events. Sweep Time: A—0.05  $\mu$ s/div to 0.5 s/div,  $\pm 3\%$  in 22 ranges, in 1-2-5 sequence with vernier adjustment. B—0.05  $\mu$ s/div to 50 ms/div., in 19 ranges, in 1-2-5 sequence. Sweep Magnification: X10,  $\pm 5\%$ . Extends max. sweep rate to 5 ns/div. Linearity:  $\pm 3\%$  all ranges.  $\pm 5\%$  on 0.05  $\mu$ s/div to 0.1  $\mu$ s/div ranges at X10 magnification. Holdoff: Continuously variable (NORM to greater than 10X). Trace Separation: Continuously variable, up to 4 divisions. Delay Method: Continuous (Starts after delay), Trigger, Zero (delay time zero). Delay Time: Continuously adjustable (500 ns to 0.5 s), 0.2 to 10 times the A sweep time setting. Delay Jitter: 1/20000 of times of A sweep time setting. TRIGGERING—Source: V MODE—Trigger selected by vertical MODE switch. CH1—Triggered by CH1 signal. CH2—Triggered by CH2 signal. CH3/EXT—Triggered by CH3 signal. LINE—Triggered by line voltage. Coupling: AC, HFrej; DC, VIDEO Frame, VIDEO Line. Automatic: Sweep is obtained without an input signal. Normal: Sweep is not obtained without an adequate trigger signal. Fix: Sweep is obtained without an input signal. Trigger threshold is automatically set at center of trigger signal. Single: Single sweep operation. Slope: Sweep can be set to trigger on the positive or negative going slope on the trigger waveform. Level: Fully adjustable. Video Sync: Vertical and horizontal sync separator circuitry allows any portion of complex video waveform to be synchronized and expanded for viewing. Video Line—horizontal sync pulses are selected as triggers. Video Frame—vertical sync pulses are selected as triggers. Sensitivity: DC—DC-60 MHz, 1 div. internal or 0.1 Vp-p external. AC—20 Hz-60 MHz: 1 div internal or 0.1 Vp-p external. EXTERNAL TRIGGER INPUT—Maximum Input Voltage: 50 V (DC + AC peak). Input Impedance: 1 Mohm  $\pm 2\%$ , approx. 28 pF. HORIZONTAL AMPLIFIER—Deflection Factor: Same as vertical amp (CH2). Frequency Response: DC: DC to 2 MHz, —3 dB. AC: 5 Hz to 2 MHz, —3 dB. Maximum Input Voltage: Same as vertical amp (CH2). X-Y Operation: Operating mode selectable with HORIZ DISPLAY switch. CH1=Y axis, CH2=X axis. Power Requirements: 100/120/220/240 VAC  $\pm 10\%$ , 50/60 Hz, approx. 65W. Dimensions (WHD): 11.97 x 6.3 x 15.8" (304 x 160 x 410mm). Weight: 24.2 lbs. (11 kg). Accessories supplied with Oscilloscope: Two 10:1 probes.



## B&K PRECISION 40 MHz DUAL TRACE OSCILLOSCOPE

MODEL 1540 REG. \$950.00 OUR PRICE **\$799.95**

### FEATURES

- 1 mV/div sensitivity. • 21 calibrated sweeps. • Rectangular CRT with internal graticule and scale illumination. • Signal delay line.
- Video sync separators. • X-Y operation. • Z axis input. • 12 kV accelerating voltage. • X10 sweep magnification.
- Delayed sweep/dual time base. • Single sweep. • Auto focus. • V mode—displays two signals unrelated in frequency.
- Sum & difference capability. • Channel 1 output. • Includes probes.

### DESCRIPTION

The B&K Precision Model 1540, 40 MHz dual trace dual time base, delayed sweep oscilloscope includes features used in a wide range of service, design and industrial applications. The user can select from 21 calibrated sweep time ranges—0.5 s/div to 0.1  $\mu$ s/div. Sweep time is fully adjustable between calibrated ranges. To allow closer examination of waveforms, a X10 sweep magnification feature is provided.

A built in signal delay line allows viewing of the leading edge of high frequency and fast risetime pulses. In addition, the variable trigger holdoff feature permits stable observation of complex pulse trains. Model 1540 incorporates a FIX trigger mode that automatically sets the trigger threshold at the center of the waveform. The V MODE triggering feature permits steady display of two signals unrelated in frequency. Other features include front panel X-Y operation, Z axis input, Channel 1 output on rear panel for driving frequency counter or other instruments, sum and difference capability of Channel 1 and Channel 2 waveforms displayed as a single trace, sweep gate and sweep output, auto focus, and single sweep for viewing and photographing one-time events.

### SPECIFICATIONS

**VERTICAL AMPLIFIERS**—(CH1 and CH2): Deflection Factor: 1 mV/div to 5 V/div,  $\pm 3\%$ , in 12 steps, 1-2-5 sequence with vernier adjustment. Frequency Response: 1 mV/div., 2 mV/div.—DC: DC to 15 MHz, —3 dB. AC: 5 Hz to 15 MHz, —3 dB. 5 mV/div to 5 V/div.—DC: DC to 40 MHz, —3 dB. AC: 5 Hz to 40 MHz, —3 dB. Rise Time: 8.8 ns or less. (40 MHz), 23.4 ns or less (15 MHz). Input Impedance: 1 Mohm  $\pm 2\%$  approx. 20 pF. Maximum Input Voltage: 500 Vp-p or 250 V (DC + AC peak). Maximum Non-Distorted Amplitude: More than 8 div., DC to 40 MHz. Operating Modes: CH1—Single Trace. CH2—Single Trace. ADD—CH1 + CH2 Single Trace. DUAL—CH1 and CH2, Dual Trace. ALT—Dual Trace, alternating sweep. CHOP—Dual Trace, chopped sweep. CHOP Frequency: Approx. 250 kHz. Channel Polarity: Normal or inverted, channel 2 only inverted. Crosstalk: 40 dB minimum. Signal Delay Time: Approx. 20 ns on the CRT screen. SWEEP SYSTEM—Mode: NORM—Triggered sweep. AUTO—Sweep free runs in absence of trigger. FIX—Same as AUTO except trigger level is automatically fixed at center of waveform. SINGLE—Permits viewing and photographing of onetime events. Sweep Time: A—0.1  $\mu$ s/div to 0.5 s/div,  $\pm 3\%$  in 21 ranges, in 1-2-5 sequence with vernier adjustment. B—0.1  $\mu$ s/div to 50 ms/div., in 18 ranges, in 1-2-5 sequence. Sweep Magnification: X10,  $\pm 5\%$ . Extends max. sweep rate to 10 ns/div. Linearity:  $\pm 3\%$  all ranges.  $\pm 5\%$  on 0.05  $\mu$ s/div to 0.1  $\mu$ s/div ranges at X10 magnification. Holdoff: Continuously variable (NORM to greater than 10X). Trace Separation: Continuous adjustable, up to 4 divisions. Delay Method: Continuous (Starts after delay), Trigger, Zero (delay time zero). Delay Time: Continuously adjustable (500 ns to 0.5 s), 0.2 to 10 times the A sweep time setting. Delay Jitter: 1/20000 of ten times of A sweep time setting. TRIGGERING—Source: V MODE—Trigger selected by vertical MODE switch. CH1—Triggered by CH1 signal. CH2—Triggered by CH2 signal. EXT—Triggered EXT TRIG signal. LINE—Triggered by line voltage. Coupling: AC, HFrej; DC, VIDEO Frame, VIDEO Line. Automatic: Sweep is obtained without an input signal. Normal: Sweep is not obtained without an adequate trigger signal. Fix: Sweep is obtained without an input signal. Trigger threshold is automatically set at center of trigger signal. Single: Single sweep operation. Slope: Sweep can be set to trigger on the positive or negative going slope on the trigger waveform. Level: Fully adjustable. Video Sync: Vertical and horizontal sync separator circuitry allows any portion of complex video waveform to be synchronized and expanded for viewing. Video Line—horizontal sync pulses are selected as triggers. Video Frame—vertical sync pulses are selected as triggers. Sensitivity: DC—DC-40 MHz, 1 div. internal or 0.1 Vp-p external. AC—20 Hz-40 MHz: 1 div internal or 0.1 Vp-p external. EXTERNAL TRIGGER INPUT Maximum Input Voltage: 50V (dc + ac peak). Input Impedance: 1 M ohm, approx. 27 pF. HORIZONTAL AMPLIFIER (Input thru CH2, X10 MAG not included)—Deflection Factor: Same as vertical amp (CH2). Frequency Response: DC—DC: to 2 MHz, —3 dB. AC: 5 Hz to 2 MHz, —3 dB. Input Impedance: Same as vertical amp (CH2). Maximum Input Voltage: Same as vertical amp (CH2). X-Y Operation: Operating mode selectable with HORIZ DISPLAY switch. CH1=Y axis, CH2=X axis. X-Y Phase Difference: 3° or less at 100 kHz. Dimensions (WHD): 11.97 x 6.3 x 15.8", (304 X 160 X 401mm) Weight: 24.2 lbs. (11 kg). Accessories supplied with Oscilloscope: Two 10:1 direct probes.



## B&K PRECISION 20 MHz DUAL TRACE TRIGGERED SWEEP OSCILLOSCOPE

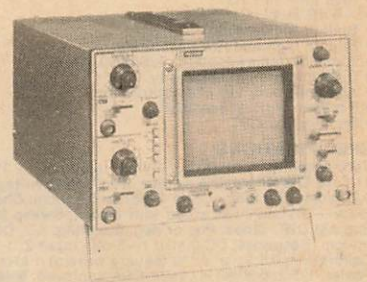
MODEL 1522 REG. \$695.00 OUR PRICE **\$569.95**

### FEATURES

- 1 mV/div sensitivity. • 20 calibrated sweeps. • Rectangular CRT with internal graticule and scale illumination.
- Video sync separators. • X-Y operation. • Z axis input. • 6 kV accelerating voltage. • X10 sweep magnification.
- Auto sweep. • V mode—displays two signals unrelated in frequency. • Sum & difference capability.
- Channel 1 output. • Includes 2—10:1 direct probes, Spare fuses 2—0.8A, 2—0.5A, Instruction manual.
- Power Req: 100/120/220/240 VAC  $\pm 10\%$ , 50/60 Hz approx. 43 W. • Dimensions: (WxHxD) 10-1/4" x 7-1/8" x 18-1/8". • Weight: 19-1/2 lbs.

### DESCRIPTION

The B&K Precision Model 1522, 20 MHz dual trace oscilloscope is a lab scope built for the demands of industry. With 1 mV/div vertical sensitivity (to 10 MHz) and conservatively rated 20 MHz bandwidth, the 1522 easily surpasses most industrial needs. The user can select from 20 calibrated sweep time ranges—0.5 s/div to 0.2  $\mu$ s/div. Sweep time is fully adjustable between calibrated ranges. To allow closer examination of waveforms, a X10 sweep magnification feature is provided. Model 1522 incorporates an AUTO sweep feature that provides sweep without trigger input and automatically reverts to triggered sweep operation when an adequate trigger signal is applied. The versatile triggering circuitry offers five trigger sources: CH1, CH2, LINE, EXTERNAL, and V MODE. In V MODE, each waveform displayed becomes its own trigger thereby allowing steady display of two signals unrelated in frequency. Other features include front panel X-Y operation, Z axis input, Channel 1 output on rear panel for driving frequency counter or other instruments, sum and difference capability of Channel 1 and Channel 2 waveforms displayed as a single trace, and VIDEO SYNC selectable FRAME or LINE triggering for observing composite waveforms.





# TEST INSTRUMENTS

## B&K PRECISION 10 MHz SINGLE AND DUAL TRACE OSCILLOSCOPES

**MODEL 1466AP SINGLE TRACE**  
REG. \$475.00 OUR PRICE **\$399.95**

**MODEL 1476AP DUAL TRACE**  
REG. \$545.00 OUR PRICE **\$459.95**

### FEATURES 1466AP/1476AP

- 1 mV/div sensitivity. •19 calibrated sweep rates. •Rectangular CRT with internal graticule. •Video sync separators.
- X-Y operation. •Z axis input. •X10 sweep magnification. •Auto Sweep. •Electronic trace rotation. •Includes probes.
- Accessories: 10:1 direct probe (1-1466AP, 2-1476AP), spare fuses, instruction manual.

### FEATURES 1476 (only)

- Dual trace. •Sum and difference capability. •Expanded internal triggering. •V Mode—displays two signals unrelated in frequency.

### APPLICATIONS

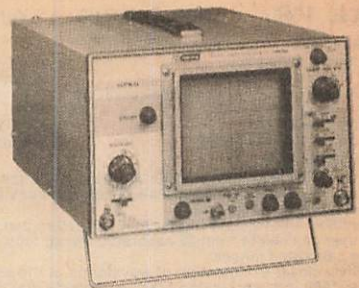
Logic and digital design and troubleshooting...check divider networks of any system using TTL, CMOS, and most ECL logic... Display characters directly from TTL drive equipment...Use Video (Line) and Video (Frame) circuits to monitor video and accurately set sync, video and color burst levels, compare amplifier input/output waveforms...lock in and expand Vertical Internal Test Signal (VITS) for viewing...display "back porch" of horizontal sync with color burst information, automatically synchronized...accurately reproduce high frequency (3.58 MHz) color burst.

### DESCRIPTION

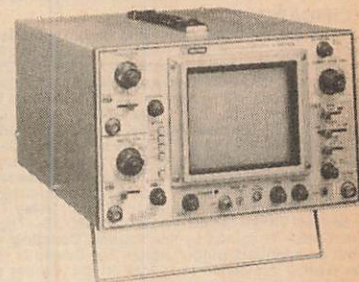
The B&K Precision Model 1476AP (Dual Trace) and Model 1466AP (Single Trace) provide excellent measurement capability in the 10 MHz bandwidth. The Model 1476AP, used in the single trace mode, and the Model 1466AP, can be used to measure DC voltage, peak-to-peak voltage, time, frequency, pulse width, relative voltage and relative period. Dual trace measurements include time and phase difference; and elimination of an undesired signal component through the use of the difference mode. Both the 1476AP and 1466AP can be used in the X-Y mode for phase and frequency response measurements. All measurement procedures are explained in the instruction manual.

### SPECIFICATIONS

**VERTICAL AMPLIFIERS**—(CH1 and CH2 on 1476AP) **Deflection Factor:** 1 mV/div to 5 V/div,  $\pm 3\%$ , in 1-2-5 sequence, 12 steps, with vernier adjustment. **Frequency Response:** DC to 7 MHz,  $-3\text{dB}$ ; AC: 5 Hz to 7 MHz,  $-3\text{dB}$ . 2 mV/div to 5 V/div—DC: DC to 10 MHz,  $-3\text{dB}$ ; AC: 5 Hz to 10 MHz,  $-3\text{dB}$ . **Rise Time:** 1 mV/div—50ns or less. 2 mV/div to 5 V/div—35 ns or less. **Overshoot:** 5% or less, 100 kHz square wave. **Input Impedance:** 1 Mohm  $\pm 2\%$  shunted by approx. 35 pF. **Maximum Input Voltage:** 500 Vp-p or 250 V (DC + AC peak). **Maximum Non-Distorted Amplitude:** More than 6 div., DC to 10 MHz. **Operating Modes (1476AP):** CH1—single trace. CH2—single trace. **ADD**—CH1 + CH2 single trace. **ALT**—Dual trace, alternate sweep. **CHOP**—dual trace, chopped sweep. **Chop Frequency (1476AP):** Approx. 250 kHz. **CH2 Polarity (1476AP):** Normal or inverted. **Crosstalk (1476AP):**  $-40\text{dB}$  minimum. **SWEEP SYSTEM**—(Common to CH1 and CH2 on 1476AP). **Mode:** NORM—Triggered sweep. **AUTO**—Sweep free runs in absence of trigger. **Sweep Time:** 0.5 us/div to 0.5 s/div,  $\pm 3\%$  in 19 ranges, 1-2-5 sequence with vernier adjustment. **Sweep Magnification:** X10,  $\pm 5\%$ . Increases max. sweep rate to 50 ns/div. **Linearity:**  $\pm 3\%$  all ranges.  $\pm 5\%$  at X10 magnification. **TRIGGERING**—Source (1476AP): V MODE, CH1, CH2, LINE, EXT. (1466AP): INT, LINE, EXT. **Coupling:** AC, VIDEO Frame, Video Line. **Automatic:** Sweep is obtained without an input signal. **Normal:** Sweep is not obtained without an adequate trigger signal. **Slope:** Sweep can be set to trigger on the positive or negative going slope on the trigger waveform. **Level:** Continuously variable, selecting trigger amplitude. **Video Sync:** Vertical and horizontal sync separator circuitry allows any portion of complex video waveform to be synchronized and expanded for viewing. **VIDEO LINE**—horizontal sync pulses are selected as triggers—sweep time of .10 us/div. **VIDEO FRAME**—vertical sync pulses are selected as triggers—2 ms/div for viewing fields of video, 5 ms/div for complete frames. **Sensitivity:** AUTO—20 Hz to 10 MHz: 1 div. internal or 0.1 Vp-p external. **NORM**—5 Hz to 10 MHz: 1 div. internal or 0.1 Vp-p external. **VIDEO—FRAME or LINE:** 1 div internal or 0.1 Vp-p external. **EXTERNAL TRIGGER INPUT**—Maximum input voltage: 50 V (DC + AC peak). **Input Impedance:** 1 Mohm  $\pm 2\%$ , approx. 35 pF. **HORIZONTAL AMPLIFIER (X10 MAG not included)**—**Deflection Factor:** 1476AP—1 mV/div to 5 V/div,  $\pm 3\%$ . 1466AP—100 mV/div. **X-Y Operation:** X-Y mode selectable with TRIG MODE switch. 1476AP—CH1 = Y axis, CH2 = X axis. 1466AP—VERT INPUT = Y axis. EXT TRIG INPUT = X axis. **CRT**—Type: Rectangular with internal graticule. **Power Requirements:** 100/120/220/240 VAC  $\pm 10\%$ , 50/60 Hz, approx. 41W-1476AP, 37W-1466AP. **Dimensions (W x H x D):** 10-1/4 x 6-3/8 x 15-3/4" (260 x 160 x 400mm). 10-1/4 x 7-1/8 x 18-1/8" (260 x 180 x 460mm) including all projections. **Weight:** 1476AP 18-1/2 lbs., 1466AP 18 lbs.



1466AP



1476AP

## B&K PRECISION DUAL-TRACE 5" 15 MHz TRIGGERED SWEEP SCOPE

MODEL 1477

REG. \$595.00 OUR PRICE **\$499.95**

### FEATURES

- Automatically shifts between Chop and Alternate as sweep time changes.
- Bright P31 phosphor.
- Flat in-band response.
- Maintains calibration 105-130 VAC.
- Front panel X-Y operation.
- Algebraic addition and subtraction.
- Differential input capability.
- 19 calibrated sweeps.
- Video sync separators.

### SPECIFICATIONS

**Vert. Amplifier:** Sensitivity 10mV/cm to 20 V/cm,  $\pm 5\%$  in 11 ranges. **Response:** DC, DC-15 MHz ( $-3\text{dB}$ ); AC, 2 Hz-15 MHz ( $-3\text{dB}$ ). **Rise Time:** 24 nsec. **Input Z:** 1M ohm/22 pF ( $\pm 3\text{pF}$ ). **Max. Input Voltage:** 300V, DC + AC peak or 600 V p-p. **Modes:** CH A, CH B dual trace (A and B). A + B (single-trace sum of A and B). A-B (single-trace difference of channels A-B). **Sweep:** Auto and triggered 0.5 usec/cm to 0.5sec/cm  $\pm 5\%$  in 19 ranges. **Sweep Mag.:** 5X. **Triggering:** Source: CH A and CH B. 1 cm deflection min. Ext: 1 V p-p sens. **Slope:** Pos and neg. **Coupling:** AC, DC, LF reject, HF reject. **Horiz. Amplifier:** (Input thru CH B, vert. input) Sensitivity: 10mV/cm, to 20V/cm.  $\pm 5\%$  in 11 ranges. **Response:** DC to 1 MHz ( $-3\text{dB}$ ); **Input Protection:** 300 VDC + AC peak or 600 V p-p. **General:** Calibration: 1 kHz square wave. **Z-Axis:** 20 V p-p min. **Probes:** Two 10:1/direct probes supplied. **Power:** 115/230 VAC, 50/60 Hz, 23W; CSA approved three-wire line cord. **Size:** HWD (18.4 x 25.3 x 36.9cm) (5-3/8 x 10-1/8 x 14-3/4"). **Weight:** 8.8 kg. (19.6 lbs.). **Options:** LC-74 protective cover...\$36.95

LC-133 carrying case...\$65.55 available.



## B&K PRECISION DUAL-TRACE 30 MHz SCOPE WITH SIGNAL DELAY

MODEL 1479B

REG. \$795.00 OUR PRICE **\$639.95**

### FEATURES

- Rise time 11.7 ns.
- $-6\text{dB}$  at 49 MHz typical.
- Built-in AM detector.
- Built-in high and low pass filters.
- 20 calibrated sweeps—0.2uS/cm/0.5S/cm.
- Differential input capability.
- Algebraic addition and subtraction.
- 5 mV/cm vertical sensitivity.
- Rectangular CRT.

**SPECIAL!**

### SPECIFICATIONS

**Vert. Amplifier:** Sensitivity: mV/cm to 5V/cm,  $\pm 3\%$ . **Response:** DC, DC-30 MHz ( $-3\text{dB}$ ); AC, 10 Hz-30 MHz ( $-3\text{dB}$ ). **Rise Time:** 11.7 ns. **Overshoot:** 3% or less. **Max. Input Voltage:** 300V, DC + AC peak or 600 V p-p. **Modes:** CH A, CH B dual, add, subtract, alt 0.2uS/cm-0.5 mS/cm. **Chop** 1 mS/cm-0.5 S/cm. **Chop Freq.:** 200 kHz  $\pm 20\%$ . **Signal Delay:** Fixed-12 ns. **Sweep Time:** 0.2uS/cm-0.5 S/cm  $\pm 3\%$  in 20 cal. steps with vernier. **Sweep Mag.:** 5X  $\pm 5\%$ . **Linearity:** 3% or better. **Triggering:** Source: Int, CH A, CH B, and Ext; AM DET. **Slope:** Pos or neg. **Coupling:** AC, DC, LF reject, HF reject. **Horiz. Amplifier:** (Input thru CH B, vert. input). **Sensitivity:** 5 mV/cm. **Response:** DC-2 MHz ( $-3\text{dB}$ ). **Input Z:** 1 Mohm, 22 pF ( $\pm 3\text{pF}$ ). **Input Protection:** 300 VDC + AC peak or 600 Vp-p. **General:** Calibration: 0.5 Vp-p  $\pm 1\%$  (square wave at 1 kHz  $\pm 10\%$ ). **CRT:** PDA, P31 phosphor. **Z-axis:** +5V (TTL compatible). DC-5 mHz. **Power:** 115/230 50/60 Hz 25W. CSA approved. **Size:** HWD (18.4 x 25.3 x 36.9cm) (7-3/8 x 10-1/8 x 14-3/4"). **Weight:** 8.8 kg. (19.6 lbs.). **Probes:** Two 10:1/direct probes included. **Options:** LC-74 protective cover...\$36.95 LC-133 carrying case...\$65.55.



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## B&K PRECISION PORTABLE DIGITAL CAPACITANCE METER

MODEL 820

REG. \$205.00

OUR PRICE **\$169.95**

### FEATURES

- Measures to 1 Farad in 10 ranges.
- Resolves to 0.1 pF.
- 4 digit LED display.
- 0.5% accuracy.
- Lead and banana jacks.
- Fuse protected.
- Overrange indication.

### APPLICATIONS

- Measure unmarked capacitors.
- Cable capacitance.
- Trimmer capacitors.
- Capacitance in switches and other components.
- Capacitor tolerance for incoming inspection, QA; design use.

### SPECIFICATIONS

Capacitance: Range: 1.0 pF to 1 Farad. Accuracy: 0.5% of FS,  $\pm 1$  digit to 100uF; 1% of FS,  $\pm 1$  digit from 1000uF to 1000mF. Resolution: 0.1pF on lowest range. Reading Time: 0.6 sec to 10mF; 35 sec max. at 1000mF. Power: (4-6 volts) 4 'C' cells (batteries and charger optional). Battery Life: 8 hours min. Operating Temp.: 0°C to 50°C. Size: (HWD) 16 x 11 x 6cm (6.4 x 4.4 x 2.375"). Weight: 675g (1.15 lbs.) with batteries. Options: BC-28 charger, BP-28 rechargeable battery pack, LC-28 carry case.

BC-28 Adaptor/Charger.....\$20.00

BP-28 Rechargeable Battery Pack.....\$15.00

LC-28 Carrying Case.....\$16.00



## B&K PRECISION PORTABLE AUTORANGING CAPACITANCE METER

MODEL 830-B

REG. \$249.00

OUR PRICE **\$212.50**

### FEATURES

- Automatically measures to 0.1 pF to 200 mF.
- 0.2% accuracy.
- Range hold switch.
- 3-1/2 digit LCD display.
- Banana and lead jacks.
- Fuse protected.
- With tilt stand.

### APPLICATIONS

- Measure unmarked capacitors.
- Cable capacitance.
- Trimmer capacitors.
- Capacitance in switches and other components.
- Capacitor tolerance for incoming inspection, QA; design use.

### SPECIFICATIONS

Capacitance: Range: 0.1 pF to 200 mF in 10 auto selected ranges. Accuracy: 0.2% of rdg,  $\pm 0.5$  pF,  $\pm 1$  digit to 19.19 uF, 1% of rdg. Resolution: 0.1pF on lowest range. Reading Time: 0.4-1.0 sec to 0.2mF; 6 sec at 200mF. Display: 3-1/2 digit LCD. Power: 4 'C' cells, nicad or disposable, (batteries and adaptor charger optional). Battery Life: 20 hours min. continuous use. Operating Temp.: +15° + 50°C. Size: (HWD) 16 x 11 x 6cm (6.4 x 4.4 x 2.375"). Weight: 725g (1.6 lbs.) with batteries. Options: BC-28 charger, BP-28 rechargeable battery pack, LC-28 carry case.

LC-28 Carrying Case.....\$16.00

BC-28 Adaptor/Charger.....\$20.00

BP-28 Recharger Battery Pack.....\$15.00



## B&K PRECISION FM MULTIPLEX STEREO SIGNAL GENERATOR

MODEL 2007

REG. \$350.00

OUR PRICE **\$297.50**

### FEATURES

- Metered Deviation and voltage outputs.
- Selectable frequency ranges 83 to 87 MHz, 96 to 100 MHz.
- Built-in 1kHz stereo modulator.
- Selectable pre-emphasis 50us and 75us or off (flat).
- Externally adjustable level and phasing of 19 kHz pilot signal.
- 40dB channel separation.
- Compact, portable size.

### DESCRIPTION

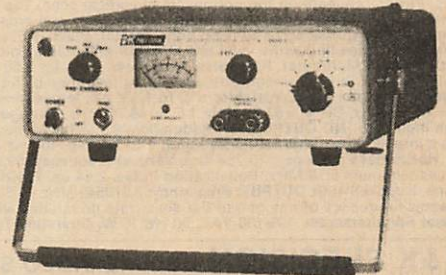
The B&K PRECISION FM Multiplex Stereo Signal Generator Model 2007 is designed to conform with FM Multi-Stereo Broadcasting Standards of the FCC.

Model 2007 signal output is selectable for L, R, L+R, L-R, or L&R (line) modes. The instrument can also be used as a signal source to demonstrate stereo FM receiver operation.

### SPECIFICATIONS

RF Output: Carrier frequencies: 83 to 87 MHz and 96 to 100 MHz, (2 bands), continuously adjustable. Output voltage: 100mV or more, open circuit. Output impedance: 300ohm balanced. Antenna jack: Use antenna to simulate broadcast signal. Modulation: 0 to  $\pm 75$  kHz deviation, adjustable and monitored on front panel meter. Modulation distortion: 2% or less. Signal-to-noise ratio: -40dB or more (for L+R signal at 75kHz deviation) Modulation Signals: Composite, L, R, L-R, L+R, Internal (1kHz) or External. External Modulation: Modulating frequency: 50 Hz to 15 kHz. Input impedance: 100 k ohms or more. Max. Input voltage: 2V. Pre-emphasis: Within  $\pm 2$ dB for both 50 and 75us. Metering: Signal output: All outputs monitored on front-panel meter. (0 to 2V). Deviation: Deviation of r-f output signal monitored on front-panel meter ( $0$  to  $\pm 75$ kHz deviation) Signal Output: (Monitored on front-panel meter) Frequency response: 100 Hz to 10 kHz  $\pm 1$ dB, 50 Hz to 15 kHz  $\pm 2$ dB. Output voltage: 0 to 2 Vrms, continuously adjustable. Output impedance: 600 ohm Distortion: 1% or less Sub-Carrier Output: Carrier frequency: 38 kHz  $\pm 4$  Hz. Frequency response: 23 to 53 kHz  $\pm 3$ dB Composite Signal Outputs L, R, L+R, L-R, L&R. Channel isolation: 40dB or better, 100 Hz to 10 kHz 30dB or more. 38kHz leakage: -40dB or more at maximum output Power Requirements: Source voltage: 100, 117, or 230V AC; 50 or 60 Hz. Power consumption: 5 watts.

Dimensions: (WHD) 9" x 3.35" x 12". Weight: 4.4 lbs. Accessories supplied: hookup cable (dual banana to alligator clips), antenna, instruction manual, schematic and parts list.



## B&K PRECISION 5 MHz SOLID STATE 3" OSCILLOSCOPE

MODEL 1405

REG. \$315.00

OUR PRICE **\$268.00**

### FEATURES

- 5 MHz with high sensitivity.
- Direct deflection input for waveforms to 150 mHz.
- Sharp bright trace.
- DC amplifiers on both axes.
- 10 mV/div vertical sensitivity.
- Weighs only 8.5 lbs.

### DESCRIPTION

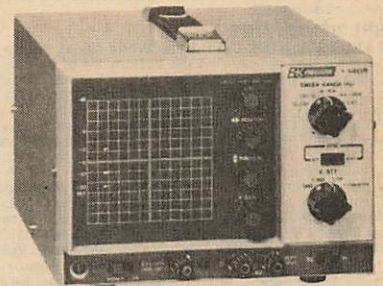
The 1405 is an outstanding value. Bandwidth extends to 5 MHz with a sensitivity of 10mB/div or better. With high brightness CRT and smoked-glass filter, waveforms are clear and easy to observe. The graticule features dB and division indexing. Very compact, rugged cabinet.

### SPECIFICATIONS

Vertical Amplifier: Sensitivity: 10mV/div or better. Response: DC, DC-5 mHz ( $-3$ dB); AC, 2Hz-5 mHz ( $-3$ dB). Max. Input: 600V peak-to-peak. Input Impedance: 1 meg shunted by 35pF. Attenuator: 1, 1/10, 1/100 multiplier,  $\pm 5\%$ . Gain Control Range: Greater than 22 dB. Horizontal Amplifier: Sensitivity: 300mV/division or better. Response: DC-250 kHz. Max Input: 100V p-p. Sweep System: Type: Recurrent. Time Base Ranges: 10-100 Hz, 100-1000 Hz, 1-10 kHz, 10-100 kHz; continuously variable between ranges. Sweep Linearity:  $\pm 5\%$ . Sync: Internal, negative, external. Direct Deflection Terminals: 10V/division sensitivity or better. General: Intensity Modulation: 25V p-p. Power: 117/234VAC, 50-60Hz, 10W; three-wire grounded line cord. CSA approved. Accessories Include: Leads, spare fuse, instructions. Size: (HWD) 13.1 x 18 x 29cm (5.25 x 7.25 x 11.5"). Weight: 3.8kg. (8.5 lbs.). Optional Accessories: PR-21 probe, LC-14 case.

LC-14 Carrying Case.....Our Price \$22.00

PR-21 Probe.....Our Price \$25.00





# TEST INSTRUMENTS

## B&K PRECISION PORTABLE IC COLOR PATTERN GENERATOR

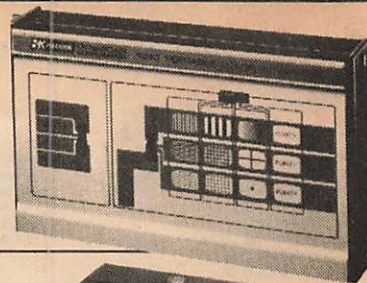
MODEL 1211A REG. \$185.00 OUR PRICE **\$157.25**

### FEATURES

- Generates 10 stable patterns including cross-hatch, 7 x 11 dot, gated rainbow and purity. • Compact for field service convenience.
- Very rugged aluminum and steel case. • Selects outputs on 2 channels. • Adjustable RF output into 75 ohm load.
- Adjustable video output up to 1V p-p into 75 ohm load.

### SPECIFICATIONS

**Line Width—Horizontal:** 1 horizontal line. **Vertical:** Pre-set to 0.3 micro sec. **CHROMA** Uses frequency of 3.579545 MHz minus 1 horizontal line (15,750 Hz or 3.563795 MHz,  $\pm 0.001\%$ ). **Color level control:** Adjustable from 0-100% with side panel control. **RF OUTPUT Channels:** Factory pre-set positions are switch selectable to channels 3, 4, or 7. User may readjust unit for channels 3-6 and 7-13. **SIGNAL SYNTHESIS Progressive scan system:** uses CMOS digital logic elements to derive all sync and pattern information. **GENERAL Power requirements:** 9-volt battery (supplied—DA-006P type or equiv.), or external 9VDC. **Battery life:** Approx. 16 hrs. cont. **Dimensions:** (HWD) 3.6" x 6.5" x 1.37". **Weight:** 1 lb.



## B&K PRECISION DIGITAL IC COLOR GENERATOR/ANALYST

MODEL 1248 REG. \$285.00 OUR PRICE **\$242.50**

### FEATURES

- Nine patterns. • RF, IF, video, sync and sound outputs. • Stable crystal-controlled RF and IF outputs.
- Sync level independent of video level control. • LSI MOS chip generates all patterns and logic functions.
- Switchable horizontal and vertical sync output. • Switchable 4.5 MHz sound carrier. • Lightweight.

### SPECIFICATIONS

**Patterns:** Purity, 7 x 11 dots, 7 x 11 crosshatch, crosshair, horizontal line; R-Y, B-Y, (R-Y); single dot, gated rainbow, vertical line. **LINE WIDTH—Horizontal:** One horizontal scan line. **Vertical:** Preset to .25uSEC, internally adjustable from 1 to .8uSEC. **COLOR SUBCARRIER:** Adjustable 0 to 150%. **SIGNAL SYNTHESIS:** Progressive scan system derives all sync and video. **SYNC PULSES—Output:**  $\pm 5V$  peak horizontal or vertical. **OUTPUT CARRIERS—Frequencies:** Channel 3, channel 4, 45.75 MHz IF (all crystal controlled) and 4.5 MHz  $\pm 0.2\%$  unmodulated audio, all switch selectable. **VIDEO OUTPUT—0 to  $\pm 1.5V$  p-p,** into 75 ohm; amplitude and polarity continuously variable. **Operating Temperature Range:**  $-25^{\circ}C$  to  $+75^{\circ}C$ . 105-130VAC, 60 Hz. **Power Requirements:** 105-130 VAC, 60 Hz, CSA approved version available. **Size (HWD):** 5.7 x 17.8 x 28.8cm (2.25 x 7 x 9.38"). **Weight:** 1.8 kg (4 lbs.) **Accessories supplied:** instruction manual, carrying case that has cable storage.



## B&K PRECISION NTSC COLOR BAR GENERATOR

MODEL 1251 REG. \$995.00 OUR PRICE **\$849.95**

### FEATURES

- Standard NTSC color bars. • Multiburst - full field and variable.
- -IWQ signal. • Assorted signal outputs for various applications.
- Staircase - 5 step. • Convergence and raster patterns.

### DESCRIPTION

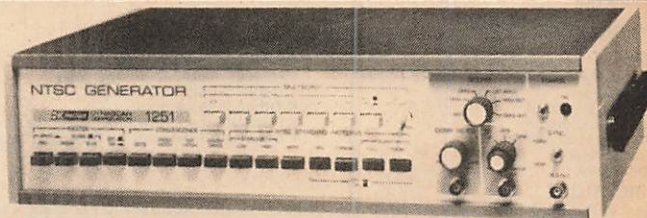
The B&K-PRECISION Model 1251 NTSC Color Bar Generator generates a wide variety of test signals and patterns for comprehensive testing, servicing and adjustment of virtually all types of television and video equipment.

Video patterns include standard NTSC color bars, -IWQ, and staircase at two levels of burst phase chrominance (each with chroma, full burst, or partial burst on-off selection); a full assortment of convergence patterns, raster colors; and gated or full field multiburst. In addition to video signals, Model 1251 generates 1 kHz and 3 kHz audio tones and accepts external audio, any of which can be used to FM modulate the rf output with the standard 4.5 MHz intercarrier. The 1 kHz and 3 kHz audio tones are also available for external use.

The Model 1251 NTSC Generator has the precision required for broadcast studios or transmitting equipment, closed circuit television studios and networks, design labs, and production test facilities, yet due its moderate cost is practical for service shop applications.

### SPECIFICATIONS

**PATTERNS: NTSC Color Bars:** White (75%), yellow, cyan, green, magenta, red, blue, black (7.5% set up). **-IWQ:** -I, white (100%), Q, black. Switch selectable on or off with NTSC color bars. Pattern appears on the bottom 1/4 of vertical scan. **Top Burst Off:** Switch selectable (top 1/4 of vertical scan). **Full Burst Off:** Switch selectable. **Chroma Off:** Switch selectable. **Dots:** 19 X 15. **Crosshatch:** 19 X 15. **Dot Hatch:** Dots and crosshatch. **Center Cross:** 1 vertical and 1 horizontal line. **Linear Staircase:** 5 equal steps. **High or Low Chroma Staircase:** Burst phase chroma, 40 or 20 IEEE units. **Raster:** Black (7.5%), red, blue, green, yellow, cyan, magenta, white (75%). **MULTIBURST:** Pattern: 0.5, 1.5, 2.0, 3.0, 3.58 and 4.2 MHz. Six bursts with a leading white level and ON-OFF selectable color burst. Selection of any one of the six bursts for full field display. One variable frequency selectable as full field or the sixth burst of Multiburst. **Frequency Accuracy:**  $\pm 4\%$  for 3.58 and 4.2 MHz,  $\pm 5\%$  for 1.5, 2.0, and 3.0 MHz,  $\pm 6\%$  for 0.5 MHz. Var 2.5 MHz to 4.2 MHz (5.0 MHz typical). Accuracy stated at  $25^{\circ}C \pm 5^{\circ}$ . Temperature coefficient less than 0.05 times the accuracy per  $^{\circ}C$ . **Amplitude:** 90% to 100% of leading white level. **Flatness:**  $\pm 1$  dB to 4.2 MHz. **VIDEO OUTPUT:** Voltage: Preset 1 V p-p. Variable: = 0 to 1.5 V p-p. **Impedance:** 75 ohms. **Polarity:** Positive (negative sync). **RF OUTPUT:** Modulation: Negative. **Carrier Frequency:** Crystal controlled; CH 3 = 61.25 MHz, CH 4 = 67.25 MHz, I-F = 45.75 MHz. **Voltage:** Approximately 10 mV rms (no load). **Impedance:** 75 ohms. **External Video Input:** Switch selectable; requires 1 V p-p, 75 ohm input. **SOUND OUTPUT: RF Modulation:** 4.5 MHz FM modulated intercarrier ( $\pm 25$  kHz deviation with internal 3 kHz audio signal). **Internal Signal:** 3 kHz or 1 kHz. **Audio Output:** 3 V p-p into 1k ohm. **External Audio Input:** 1 to 3 V p-p, 100 Hz to 10 kHz, pre-emphasis of 75 us. **Input Impedance:** 10k ohm. **SYNCHRONIZATION: Type:** 60 Hz field of 525 lines, interlaced. **Horizontal Frequency:** 15.734 kHz. **Vertical Frequency:** 59.94 Hz. **Horizontal Blanking:** 10.76 us. **Vertical Blanking:** 1.33 ms. **Horizontal Sync:** 4.89 us. **Front Porch:** 1.47 us. **Burst:** 8 cycles minimum 3.58 MHz. **Equalization Pulse:** 2.44 us. **TRIGGER OUTPUT: Type:** Horizontal or vertical sync pulse, switch selectable. **Voltage:** Approx. 1 V p-p, no load. **Impedance:** 75 ohms. **SUBCARRIER OUTPUT: Frequency:** 3.579545 MHz ( $\pm 50$  Hz  $0^{\circ}$  to  $+50^{\circ}C$ ). **Setability:**  $\pm 1$  Hz. **Voltage:** Approx. 1 V p-p, no load. **Impedance:** 75 ohms. **MULTIBURST OUTPUT: Frequency:** Frequency of any one of the six bursts or variable when Multiburst ON-OFF switch is OFF. **Voltage:** Approx. 2.5 V p-p no-load. **Impedance:** 1k ohm. **MISCELLANEOUS: Input Power Requirements:** 105-130 VAC, 60 Hz, 19 W. **Operating Temperature:**  $0^{\circ}$  to  $+50^{\circ}C$ . **Dimensions (HWD):** 4-1/2 X 18 X 12" (115 X 460 X 305 mm). **Weight:** 11 lbs. (5 kg).



## B&K PRECISION DELUXE VIDEO SIGNAL GENERATOR

MODEL 1260 REG. \$1695.00 OUR PRICE **\$1440.75**

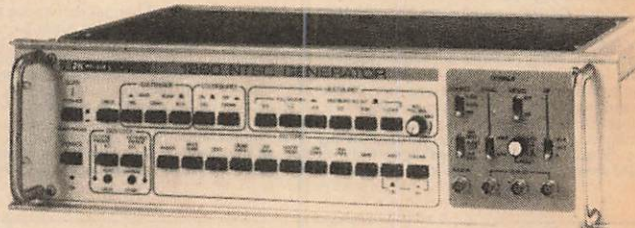
- TCXO Master Oscillator stability Exceeds Broadcast Requirements.
- NTSC Color Bars - with or without -IWQ signal.
- Five step linear staircase; selectable high/low chroma.
- Selectable chroma and burst. • Circle pattern.
- Multiburst pattern - full field, stepped or variable.
- Convergence patterns - dot, cross-hatch, dot-hatch, center cross.
- Raster patterns-eight EIA colors. • RGB outputs.
- Interlaced or progressive scan. • Gen Lock.
- Crystal Oscillator - 1-F CH 3, CH 4 and sync generator.
- Composite video output. • RF output.
- External Video input.
- Sound output-1kHz or 3kHz.
- External audio input and output
- Black Burst output. • Sync Pulse output.
- Subcarrier output. • Multiburst output.
- Composite blanking output.
- Rugged rack-mount cabinet design.

### APPLICATIONS

Television studio and transmitting station set-up and maintenance. . . CATV, MATV, CCTV system installation, adjustment, service and maintenance. . . Color or black and white video monitor or RGB color monitor installation, adjustment, and service. . . television, VTR, VCR and Video disc testing, service and adjustment. . . Production line testing of nearly any type of video product. . . video product design lab.

### SPECIFICATIONS

**PATTERNS: NTSC Color Bars:** White (75%), yellow, cyan, green, magenta, red, blue, black (7.5% set up). **-IWQ:** -I, white (100%), Q, black. Switch selectable on or off with NTSC color bars. Pattern appears on the bottom 1/4 of vertical scan. **Top Burst Off:** Switch selectable (top 1/4 of vertical scan). **Full Burst Off:** Switch selectable. **Chroma Off:** Switch selectable. **Circle:** May be superimposed on any pattern. **Dots:** 19 X 15. **Crosshatch:** 19 X 15. **Dot Hatch:** Dots and crosshatch. **Center Cross:** 1 vertical and 1 horizontal line. **Linear Staircase:** 5 equal steps. **High or Low Chroma Staircase:** Burst phase chroma, 40 or 20 IEEE units. **Raster:** Black (7.5%), red, blue, green, yellow, cyan, magenta, white (75%). **MULTIBURST: Gated Multiburst:** Six fixed frequencies (0.5, 1.5, 2.0, 3.0, 3.58 and 4.2 MHz) with a leading white level. **Full Field:** Any one of the six frequencies selectable for full field display. **Variable Frequency:** One selectable variable frequency may be substituted for 4.2 MHz ( $\pm 5\%$ ) with a leading white level. **Voltage:** less than 2.4 V p-p into open circuit. **Impedance:** 1 k ohm. **VIDEO OUTPUT: Composite Video Voltage:** Preset = 1 V p-p. Variable = 0 to 1.5 V p-p. **Impedance:** 75 ohms. **Polarity:** Positive (negative sync). **RF OUTPUT Modulation:** Negative. **Carrier Frequency:** Crystal controlled CH 3 = 61.25 MHz, CH 4 = 67.25 MHz, I-F = 45.75 MHz. **Voltage:** 5 mV rms min. into 75 ohm. **Impedance:** 75 ohms. **External Video Input:** Switch selectable; requires 1 V p-p, 75 ohm input. **SOUND OUTPUT: RF Modulation:** 4.5 MHz FM modulated intercarrier ( $\pm 25$  kHz deviation with internal 3 kHz audio signal). **Internal Signal:** 3 kHz or 1 kHz. **Audio Output:** 3 V p-p into 1k ohm. **External Audio Input:** 1 to 3 V p-p, 100 Hz to 10 kHz, pre-emphasis of 75 us. **Input Impedance:** 10k ohm. **SYNCHRONIZATION: Type:** 59.94 Hz field of 525 lines, interlaced scan; 262 lines non-interlaced scan. **Horizontal Frequency:** 15.734 kHz. **Vertical Frequency:** 59.94 Hz. **Horizontal Blanking:** 10.76 us. **Vertical Blanking:** 1.33 ms. **Horizontal Sync:** 4.89 us. **Front Porch:** 1.47 us. **Burst:** 8 cycles minimum 3.58 MHz. **Equalization Pulse:** 2.44 us. **TRIGGER OUTPUT: Type:** Horizontal or vertical sync pulse, switch selectable. **Horizontal Sync:** pulse available on rear panel. **Impedance:** 75 ohms. **Polarity:** negative going sync. **SUBCARRIER OUTPUT: Frequency:** 3.579545 MHz ( $\pm 5$  Hz  $0^{\circ}$  to  $+40^{\circ}C$ ). **Setability:**  $\pm 1$  Hz; TCXO. **Voltage:** Approx. 1 V p-p, no load. **Impedance:** 75 ohms. **GEN LOCK:** Generator synchronizes horizontal and vertical sync and color burst with external NTSC video input. Adjustments on front panel for horizontal delay and chroma phase. BNC connector or rear panel for loop through. **Composite Sync Output:** -4V into 75 ohm. **RGB OUTPUT: Outputs:** Red, green, and blue outputs to drive 525 line color monitors. **Video Patterns:** Convergence, full field raster, multiburst, circle, and staircase. **Voltage:** High/low selectable. Use low level for staircase. Low level approx. 1V p-p into 75 ohms. High level less than 2.4 into open circuit (TTL). **Sync:** Horizontal and vertical sync; less than 2.4V into open circuit (TTL). **Polarity:** Positive sync. **Positive RGB. MISCELLANEOUS Input Power Requirements:** 105-130VAC, 60Hz, 25W. **Operating Temp.:**  $0^{\circ}$  to  $+50^{\circ}C$ . Specifications apply for operating temp. of  $+18^{\circ}$  to  $+28^{\circ}C$  unless otherwise noted. Temperature coefficient less than 0.1 times the stated accuracy per  $^{\circ}C$ . **Dimensions (HWD):** 5-5/16 x 19 x 14". **Weight:** 14 lbs. **Accessories Supplied** are Instruction Manual, Schematic Diagram & Parts List.



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## B&K PRECISION PORTABLE TRANSISTOR TESTER

MODEL 510 REG. \$155.00 OUR PRICE **\$131.75**

### FEATURES

- Fast Go/No-Go in-circuit transistor testing. • Fast and thorough Good/Bad out-of-circuit testing.
- Tests FET's and SCR's in-circuit or out-of-circuit. • Connect any test clip to any component lead.
- Gives positive emitter-base-collector identification in Lo drive — positive base identification in Hi drive.
- Light-emitting Diodes indicate NPN-OK or PNP-OK. • Pocket size — Over 100 hours of testing from single set of "AA" cells.
- Digital stability — no adjustments; nothing to go out of calibration.
- Power required: 6VDC from four "AA" cells, not supplied. Standby current, 4mA; average testing current, 12mA.
- Size (HWD): 9.5 x 4.4 x 16.8cm (3.75 x 1.75 x 6.63"). • Weight: .45kg. (1 lb.) (less batteries).
- Accessories supplied: three test leads with mini-lock clips, carrying case, and instruction manual.

Optional DynaFlex Probe FP-5.....\$27.00 Carrying Case LC-18.....\$14.95



## B&K PRECISION DYNAPEAK TRANSISTOR TESTER

MODEL 520B REG. \$275.00 OUR PRICE **\$233.75**

### FEATURES

- Fast testing. • Now with Hi/Lo drive. • Works in-circuit when others won't. • Identifies leads of biolars and FET's. • Random lead connection.
- Audible test OK 'beep'. • Automatic NPN/PNP and Si/Ga identification. • Tests diodes, SCR's, FET's, and Darlingtons.
- Hi/Lo drive. • Automatic leakage measurement. • Includes: Color coded test leads with spring loaded clips; instruction manual.
- Power: 105-125VAC, 50-60 Hz. CSA and 230V version available. • Size (HWD): 17 x 20 x 8.9cm (7 x 8 x 3.5"). • Weight: 2.27kg. (5 lbs.)
- Optional accessories: Model FP-5 probe see model 510 above.

### IN-CIRCUIT TESTS

- Good/Bad Test: For PNP and NPN transistors, FET's and SCR's. • Identifies: NPN or PNP.

### OUT-OF-CIRCUIT TESTS

- Good/Bad Test: For PNP and NPN transistors, FET's, SCR's, leakage and loss. • Identifies: NPN or PNP; silicon or germanium transistors.
- Measures: Reverse leakage from 0.1 uA to 5 mA.



## B&K PRECISION LAB-QUALITY SEMICONDUCTOR TESTER

MODEL 530 REG. \$497.00 OUR PRICE **\$425.00**

### FEATURES

- Measures transistor beta or FET Gm. • Measures transistor cut-off frequency up to 1500 mHz. • Will test power FET's.
- Nondestructive testing of transistor and diode breakdown voltages. • Measures Ices and Idss.
- Fast testing of transistors, FET's and SCR's — in or out-of-circuit. • No biasing information required.
- Identifies all leads of transistors and SCR's. • Automatic identification of PNP/NPN types and N or P channel FET's.

### IN-CIRCUIT TESTS

- Good/Bad Test: For biolar transistors, FET's and SCR's.

### OUT-OF-CIRCUIT TESTS

- Measures: Transistor beta using two collector current ranges (low-power beta 0-600; high-power beta, 15-200).
- Gm of FET's: Including high-power devices (low-power, 0-30 millimhos; high-power, 30-425 millimhos).
- Ft: Three ranges (0-100 mHz, 0-500 mHz, 0-1500 mHz).
- BVces, Ices, PIV: of diodes and gate leakage of FET's (.5uA to 5 mA at 10 V; .5uA to 100uA at 10 V-100 V). Automatic current limiting prevents damage to device under test.
- Idss of FET's: (.5uA to 5 mA at 10 V). • Accuracy: Within 10% for B, gm and 25% ft tests.
- High power beta and gm tests: Special 300 uS, 1% duty cycle current pulses enable testing a 2 amps without over dissipation of device under test.
- Indicators: Audible tone for Good indication. LED lamps identify device polarity. Panel indicator and test switch identifies all leads of transistors and SCR's and gate of lead of FET's.
- Meters indicate other device parameters.
- Optional: FP-5 Dynaflex three-lead, one-hand probe for easy in-circuit testing.
- Power Required: 105-125 VAC, 60 Hz, 10 watts. • CSA and 230V version available. • Size (HWD): 10 x 33.6 x 25.6cm (4 x 13.5 x 10.25"). • Weight: 2.3 kg. (5 lbs.).



## B&K PRECISION VHF/CATV SIGNAL LEVEL METER

MODEL 425 REG. \$550.00 OUR PRICE **\$467.50**

### FEATURES

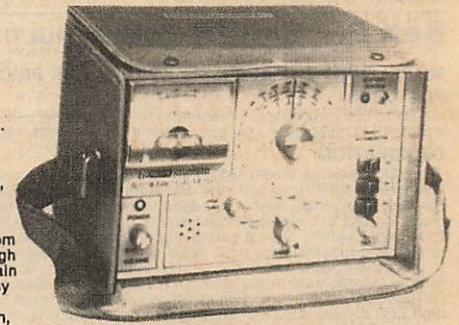
- 50 to 450 MHz frequency coverage. • Designed for field use. • Supplied with rechargeable NiCad battery and charger.
- -30 dBmV to +60 dBmV measurements. • Large easy-to-read meter. • Easy tuning. • Automatic turn-off. • Three 20 dB attenuators.
- Dimensions: (WDH) 9-3/4"x 6-1/4"x 8-3/4". • Weight: 8 lbs.

### APPLICATIONS

Television and FM antenna installation and servicing...satellite antenna site selection and installation...MATV and CATV installation, maintenance and service...checking rf output on video cassette recorders, home computers, video games, etc.

### DESCRIPTION

The B&K PRECISION Model 425 Signal Level Meter covers all VHF television broadcast frequencies and all cable TV frequencies from 50 MHz to 450 MHz in three bands. Model 425 utilizes a double conversion superheterodyne design that provides good sensitivity, high signal-to-noise ratio, and high image rejection. Three 20 dB attenuators provide measurements from -30dBmV to +60 dBmV. The main tuning dial and fine tuning control allow easy tuning of the desired frequency. Narrow I-f bandwidth and I-f shape factor make it easy to separate adjacent channel signals, even when the signal is 30 dB below the adjacent channel. A built-in audio amplifier and speaker help identify the video and audio carrier. To conserve battery life and limit battery drain if the unit is unintentionally left on, Model 425 automatically turns off after 15 minutes. All measurements are displayed on a large easy-to-read meter calibrated in dBmV. The input signal is terminated into a 75 ohm, Type F connector. Model 425 is housed in a rugged impact resistant case that includes an integral cover to protect the front panel and an adjustable carrying strap which can be used as a handle, shoulder strap or neck strap. The unit is powered by a rechargeable Ni-Cad battery. Battery and charger are supplied.



## B&K PRECISION VHF/UHF/CATV SIGNAL LEVEL METER

MODEL 430 REG. \$850.00 OUR PRICE **\$722.50**

### FEATURES

- 50 to 450 MHz, 470 to 810 MHz frequency coverage. • Designed for field use.
- Supplied with rechargeable NiCad battery and charger. • -30 dBmV to +60 dBmV measurements.
- Built-in rf signal source. • Large easy-to-read meter. • Easy tuning. • Automatic turn-off. • Three 20 dB attenuators.
- Dimensions: (WDH) 9-3/4"x 6-1/4"x 8-3/4". • Weight: 8 lbs.

### APPLICATIONS

Television and FM antenna installation and servicing...satellite antenna site selection and installation...MATV and CATV installation, maintenance and service...checking rf output on video cassette recorders, home computers, video games, etc.

### DESCRIPTION

The B&K PRECISION Model 430 Signal Level Meter covers all VHF/UHF television broadcast frequencies and all cable TV frequencies from 50 MHz to 450 MHz; and all UHF television broadcast frequencies from 470 MHz to 810 MHz in four bands. Model 430 utilizes a double conversion superheterodyne design that provides good sensitivity, high signal-to-noise ratio, and high image rejection. Three 20 dB attenuators provide measurements from -30 dBmV to +60 dBmV. The main tuning dial and fine tuning control allow easy tuning of the desired frequency. Narrow I-f bandwidth and I-f shape factor make it easy to separate adjacent channel signals, even when the signal is 30 dB below the adjacent channel. A built-in audio amplifier and speaker help identify the video and audio carriers. In addition the Model 430 has a built-in rf signal source and calibrated signal level for checking meter calibration and for testing equipment and distribution networks where a signal must be injected. To conserve battery life and limit battery drain if the unit is unintentionally left on, Model 430 automatically turns off after 15 minutes. All measurements are displayed on a large easy-to-read meter calibrated in dBmV. The input signal is terminated into a 75 ohm, Type F connector. Model 430 is housed in a rugged impact resistant case that includes an integral cover to protect the front panel and an adjustable carrying strap which can be used as a handle, shoulder strap or neck strap. The unit is powered by a rechargeable NiCad battery. Battery and charger are supplied.





# TEST INSTRUMENTS

## B&K PRECISION 100 MHz FREQUENCY COUNTER

MODEL 1803 REG. \$169.00 OUR PRICE **\$144.50**

### FEATURES

- 5 Hz to 100 MHz range. • 8 digit LED display. • Leading zero blanking. • Low pass filter. • BNC Connector Input.
- Overflow Indicator. • Battery or AC powered. • Charger/AC Adaptor included with Model 1803.
- Dimensions: (HxWxD) 2" x 6.5" x 6.75". • Weight: approx. 24 oz.

### DESCRIPTION

The B&K-PRECISION Model 1803 100 MHz frequency counter provides accurate measurement at an economical price. Designed to operate on both battery and AC power, the Model 1803 meets a wide range of "in-the-field" and "on-the-bench" applications. Data readouts are displayed with leading zero blanking on the 8 digit LED display. An OVERFLOW indicator lights whenever the range of the display (99,999,999 MHz) is exceeded. To provide reliable low frequency counting by reducing the effects of high frequency noise, a front panel switchable 100 kHz low pass filter is incorporated in the counter. Input for all measurements is through a front panel mounted female BNC connector (1 M ohm, less than 40 pF). An AC adaptor/charger is included with Model 1803. The unit can also be powered by six user-installed "AA" batteries (Alkaline or NICAD) or DC source (7.5-10 V DC at 400 mA).



## B&K PRECISION 80 MHz MULTIFUNCTION COUNTER

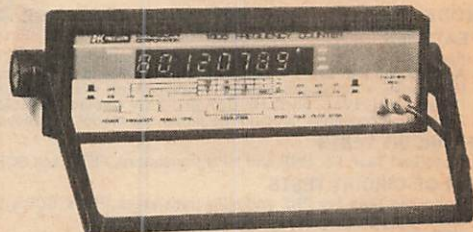
MODEL 1805 REG. \$290.00 OUR PRICE **\$246.50**

### FEATURES

- 5 Hz to 80 MHz range. • Frequency, period, period average and totalize functions. • Selectable resolution.
- 8 digit LED display. • Switchable X1/X10 input attenuator. • Switchable low pass 100 kHz filter.
- Display hold and reset feature. • Dimensions: (HxWxD) 3.25 x 11.57 x 7.5". • Weight: 2.75 lbs.

### DESCRIPTION

The B&K Precision Model 1805 Multi-Function counter provides frequency, period and totalized measurements. Frequency is measured from 5 Hz to 80 MHz. Resolution may be selected from .1 Hz for frequencies below 10 MHz to 1 Hz resolution for frequencies up to 80 MHz. The period mode can be used to more accurately measure low frequencies from 5 Hz to 2 MHz. The totalize mode is used to count individual events at 5 Hz to 10 MHz rates. This mode is helpful in applications where a specific number of cycles occurs, such as gated tone bursts. To provide reliable low frequency counting by eliminating high frequency components, a front panel switchable 100 kHz low pass filter is incorporated in the counter. All operating modes, resolution ranges and functions are front panel selectable. Model 1805 incorporates a switchable X10 attenuator, HOLD switch to freeze the display at the present reading, and a RESET switch to clear the display and initiate a new measurement. A 10 MHz time base generated by a crystal controlled oscillator provides good stability with regard to temperature (better than .001%  $\pm$  10ppm-0°C-50°C) and line voltage variations (less than 1ppm with  $\pm$  10% line voltage variation). Data readouts are displayed with automatic decimal point placement and leading zeros blanking on the 8 digit LED display. LED indicator lights annunciate kHz, MHz, uSEC and overflow modes. Input impedance is 1 Mohm (less than 40 pF) through a standard BNC connector located on the front panel. Model 1805 operates on 108 to 132 VAC, 60 Hz or 100V, 120V, 220V, 240 VAC 50/60 Hz with internal pc jumpers. Model 1805 includes power cord, instruction manual.



## B&K PRECISION 175 MHz UNIVERSAL COUNTER

MODEL 1822 REG. \$450.00 OUR PRICE **\$382.50**

### FEATURES

- 5 Hz to 175 MHz range. • Frequency, period, period average, totalize, frequency ratio, and time interval functions.
- Selectable resolution. • 8 digit LED display. • Self-test mode. • Trigger level and slope switch signal controls.
- Switchable low pass 10 kHz filter. • Switchable X1/X10 input attenuator. • Display hold and reset feature.
- Dimensions: (HWD) 3.75" x 9.5" x 12.6". • Weight: 5.6 lbs.

### DESCRIPTION

The B&K-PRECISION Model 1822 Universal Counter provides frequency, period, frequency ratio, time interval, and totalize measurements. Frequency is measured from 5 Hz to 175 MHz. Resolution may be selected from .1 Hz for frequencies below 10 MHz to 1 Hz for frequencies up to 175 MHz. The period mode can be used to more accurately measure low frequencies from 5 Hz to 2 MHz. The frequency ratio mode compares the frequencies of two input signals and displays their ratio. In the time interval mode, the counter measures the elapsed interval from a selected edge of one input signal to a selected edge of another. The totalize mode is used to count individual events from 0 to 99,999,999 plus overflow LED. The counting process can be gated, either manually by a front panel switch, or by a gating signal applied to a rear panel jack, for more exact electronic control. A self test mode is also provided to enable a quick check of several facets of instrument operation. Signal conditioning controls include edge selectors and selectable X10 attenuator for both channels and a 10 kHz low-pass filter and variable threshold control for Channel A. All operating modes, resolution ranges and functions are front panel selectable. Model 1822 also incorporates a HOLD switch to freeze the display at the present reading and a RESET switch to clear the display and initiate a new measurement. A 10 MHz time base generated by a crystal controlled oscillator provides a good stability with regard to temperature ( $\pm$  10 ppm, 0°C to 50°C) and line voltage variation ( $\pm$  1 ppm, for 10% variation). Model 1822 operates on 108 to 132 VAC, 60 Hz or 100/120/ 220/240 VAC all  $\pm$  10% set by internal PC jumpers, 50/60 Hz 20 Vac.



## B&K PRECISION 520 MHz MULTIFUNCTION COUNTER

MODEL 1851 REG. \$575.00 OUR PRICE **\$489.00**

### FEATURES

- 5 Hz to 520 MHz range. • Frequency, period, period average, and totalize functions. • Selectable resolution.
- 8 digit LED display. • Low pass filter. • Display hold. • Switchable X1/X10 attenuator. • Remote start-stop.

### DESCRIPTION

The B&K Precision Model 1851 multifunction counter provides frequency, period, period average and totalize measurements. Frequency is measured from 5 Hz to 520 MHz. Resolution may be selected from .1 Hz for frequencies below 10 MHz, 1 Hz resolution to 80 MHz, and 10 Hz resolution to 520 MHz. The period mode can be used to more accurately measure low frequencies from 5 Hz to 2 MHz. The totalize mode is used to count individual events from 0 to 99,999,999 plus overflow LED. The counting process can be gated, either manually by a front panel switch, or by a gating signal applied to a rear panel jack, for more exact electronic control. All operating modes, resolution ranges and functions are front panel selectable. Model 1851 incorporates a switchable X10 attenuator, HOLD switch to freeze the display at the present reading, and a RESET switch to clear the display and initiate a new measurement. To provide reliable low frequency counting by eliminating high frequency components, a front panel switchable 100 kHz low pass filter is incorporated in the counter. A 10 MHz time base generated by a temperature-compensated crystal oscillator (TCXO) provides exceptional stability with regard to temperature ( $\pm$  1ppm, 0°C to 50°C) and line voltage variation (0.1ppm for 10% variation). Data readouts are displayed with automatic decimal point placement and leading zero blanking, on the 8 digit LED display. LED indicator lights annunciate kHz, MHz, uSEC, GATE, and overflow modes. The Model 1851 features a special 50 ohm terminated input for use in high frequency systems (UHF), as well as a standard 1 Mohm input for frequency measurements to 80 MHz. Model 1851 operates on universal AC power capability 100V, 120V, 220V, 240V (all  $\pm$  10%), 21W, 50/60 Hz, set by internal PC jumpers.

### TIME BASE CHARACTERISTICS

Standard Type: TCXO (temperature compensated crystal oscillator). Frequency: 10 MHz. Setability:  $\pm$  0.1 ppm ( $\pm$  1 Hz). Line Voltage Stability: Less than  $\pm$  0.1 ppm with  $\pm$  10% line voltage variation. Temperature Stability: Less than  $\pm$  .0001% ( $\pm$  1 ppm from 0°C to 50°C ambient). Maximum Aging Rate:  $\pm$  1 ppm/year. Power Requirements: Universal AC, 100, 120, 200, 240 V all  $\pm$  10%, 50/60 Hz, 21W set by internal PC jumpers. Weight: 5.31 lbs. Dimensions: (HWD) 3.75" x 9.5" x 12.6".



## B&K PRECISION 1.2 GHz MULTIFUNCTION COUNTER

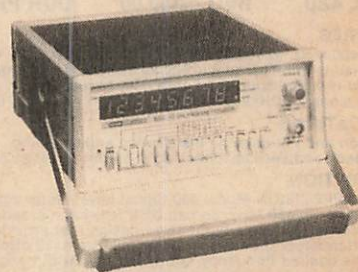
MODEL 1855 REG. \$750.00 OUR PRICE **\$637.50**

### FEATURES

- 5 Hz to 1.2 GHz range. • Frequency, period, period average, and totalize functions. • Selectable resolution. • 8 digit LED display.
- Low pass filter. • Display hold. • Switchable X1/X10 Attenuator. • Remote start-stop.
- Dimensions: (HxWxD) 3.75" x 9" x 12.6". Weight: 5.44 lbs.

### DESCRIPTION

The B&K-PRECISION Model 1855 multifunction counter provides frequency, period, period average and totalize measurements. Frequency is measured from 5 Hz to 1.2 GHz. Resolution may be selected from .1 Hz for frequencies below 10 MHz, 1 Hz resolution to 80 MHz, and 10 Hz resolution to 1.2 GHz. The period mode can be used to more accurately measure low frequencies from 5 Hz to 2 MHz. The totalize mode is used to count individual events from 0 to 99,999,999 plus overflow LED. The counting process can be gated, either manually by a front panel switch, or by a gating signal applied to a rear panel jack, for more exact electronic control. All operating modes, resolution ranges and functions are front panel selectable. Model 1855 incorporates a switchable X10 attenuator, HOLD switch to freeze the display at the present reading, and a RESET switch to clear the display and initiate a new measurement. To provide reliable low frequency counting by eliminating high frequency components, a front panel switchable 100 kHz low pass filter is incorporated in the counter. A 10 MHz time base generated by a temperature-compensated crystal oscillator (TCXO) provides exceptional stability with regard to temperature ( $\pm$  1ppm, 0°C to 50°C) and line voltage variation (0.1ppm for 10% variation). Data readouts are displayed with automatic decimal point placement and leading zero blanking, on the 8 digit LED display. LED indicator lights annunciate kHz, MHz, uSEC, GATE, and overflow modes. The Model 1855 features a special 50 ohm terminated input for use in high frequency systems (UHF/microwave), as well as a standard 1 Mohm input for frequency measurements to 80 MHz. Model 1855 operates on universal AC power capability 100V, 120V, 220V, 240V (all  $\pm$  10%), 21W, 50/60 Hz, set by internal PC jumpers.

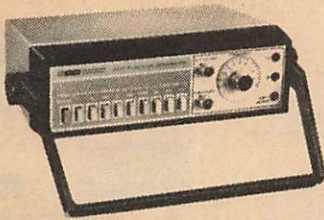


FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## B&K PRECISION LOW DISTORTION FUNCTION GENERATOR

MODEL 3010  
REG. \$239.00  
OUR PRICE  
**\$199.95**



### APPLICATIONS

- Frequency response tests.
- Amplifier performance evaluation.
- Bias signal source.
- Analog/digital signal substitution.
- Receiver alignment.
- Check linearity of test instruments.
- Check resonant circuits for ringing inductors.

### FEATURES

- Generates sine, square and triangle waveforms.
- Variable amplitude and fixed TTL squarewave outputs.
- 0.1 Hz to 1 MHz in six ranges.
- Typical sine wave distortion under 0.5% from 0.1 Hz to 100 kHz.
- Variable DC offset for engineering applications.
- VCO external input for sweep-frequency tests.

### SPECIFICATIONS

#### FREQUENCY

- Range: 0.1 Hz to 1 MHz in six ranges. (Each range provides greater than 100:1 freq. control).
- Ext Control: Greater than 100:1 on any range with 0.5-5V input.
- Accuracy: 5% of f.s.
- Stability: .05% (after 15 min.).

#### SQUARE WAVE

- Symmetry: 99% to 100 kHz.
- Rise/Fall Time: Less than 100 ns.
- TTL Square Wave: Less than 25ns rise/fall time.

#### TRIANGLE WAVE

- Linearity: 99% to 100 kHz.

#### SINE WAVE

- Distortion: Less than 1% 0.1 Hz to 100 kHz; Less than 0.5% typical.
- Amplitude Flatness: Less than 0.3 dB to 1 MHz at max. output.

#### OUTPUT

- Amplitude: 20V p-p open circuit, 10V p-p into 600 ohm. Continuously variable, greater than 30 dB range.
- Output Z: 600 ohm  $\pm$  5%.
- DC offset: Var. to max of  $\pm$  10V open circuit or  $\pm$  5V at 600 ohm.

#### GENERAL

- Operating Temp: 0-50°C.
- Power: 105-130 VAC, 60 Hz, 8W.
- Size (HWD): 8.1 x 29 x 20cm (3.2 x 11.3 x 7.8") incl. handle.
- Weight: 1.3 kg. (2.9 lbs.).
- CSA listed. 230V version available.

## B&K PRECISION SWEEP/FUNCTION GENERATOR

MODEL 3015  
REG. \$289.00  
OUR PRICE  
**\$240.00**



### FEATURES

- Frequency: 2 Hz to 200 kHz, in 3 ranges.
- Outputs: Sine, square or triangle.
- Variable Amplitude: 15 V p-p, open circuit; 7.5 V p-p into 600 ohms.
- Pulse Output: Fixed amplitude, TTL level, logic high greater than 3 volts.
- Accuracy:  $\pm$  5% F.S., to 20 kHz.
- Sine Distortion: 1%, 2 Hz to 20 kHz.
- VCF: Approximately 0 to 1 input for 1000:1 frequency ratio.
- Internal Sweep: Linear or logarithmic.
- Internal Sweep Rate: 2.5 ms to 25 s.
- Operating Environment: 0° to 50°C.
- Power: Supplied with 120 VAC or 220 VAC adaptor.
- Size: 7-3/8" x 2-7/8" x 8-1/2" (187 x 73 x 216mm).
- Weight: 2 lbs. (0.9 kg).

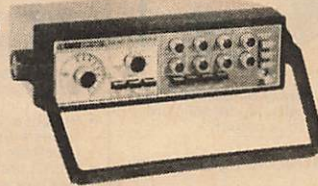
There is no direct competition for the B&K-Precision Model 3015. Three factors combine to make it such a unique instrument:

- Three functions.
- Lin/log sweep.
- Low cost.

The 2 Hz to 200 kHz frequency range has traditionally been the domain of audio and signal generators with their limitation to sine—or at best—sine/square functions. Also, the most important function of this unit is its lin/log, adjustable rate, sweep function, which previously was available only on more costly function generators.

## B&K PRECISION SWEEP/FUNCTION GENERATOR

MODEL 3020  
REG. \$399.00  
OUR PRICE  
**\$339.95**



### FEATURES

- Sweep generator, function generator, pulse generator, tone-burst generator.
- Low distortion high-accuracy outputs.
- Internal linear and log sweeps.
- Programmable tone-burst output.
- Variable symmetry for almost any wave shape.
- Most complete low frequency signal source in its price range.

### SPECIFICATIONS

#### FREQUENCY

- Range: .02 Hz to 2 MHz (1000:1 freq. control).
- Ext Control: VCG range Greater than 1000:1 (linear) with 0-10V input.
- Accuracy:  $\pm$  5% of f.s.
- Stability: .05% (after 15 min.).

#### SQUARE WAVE

- Variable/fixed TTL output.
- Symmetry: 99% to 100 kHz.
- Rise/Fall Time: Less than 100 ns.
- TTL Square Wave: Less than 25ns rise/fall time. (logic 0 less than 0.4V; logic 1 greater than 2.4V).

#### SINE WAVE

- Distortion: Less than 1% .02 Hz to 100 kHz; Less than 0.5% typical.
- Flatness: Less than  $\pm$  0.3 dB to 2 MHz at max. output.

#### TRIANGLE WAVE

- Linearity: 99% to 100 kHz.
- Variable Symmetry: 40:1 range.

#### SWEEP

- Internal: Lin. or log.
- Rate: 0.5 Hz to 50 Hz.
- Width: Var. 10:1 to 1000:1.

#### TOPE BURST

- Width: Adj. from 5-90% of period of int. gating freq. Ext. gating burst width det. by TTL gating pulse.
- Rep Rate: 0.5 Hz to 50 Hz

#### OUTPUT

- Amplitude: 20V p-p open circuit, 10V p-p at 50 ohm.
- Control: Cont. var. greater than 20 dB. Fixed, 0-40 dB in 3 steps; total 60 dB attenuation.
- Output Z: 50 ohm  $\pm$  5%.
- DC offset: Cont. variable, 0 to  $\pm$  10V or  $\pm$  5V into 50 ohm.

#### GENERAL

- Operating Temp: 0-50°C.
- Power: 105-130 VAC, 60 Hz, 22W. Three-wire cord.
- Size (HWD): 8.1 x 29 x 20cm (3.2 x 11.3 x 7.8") incl. handle.
- Weight: 1.35 kg. (3.1 lbs.).
- CSA listed. 230V version available.

## B&K PRECISION SWEEP FUNCTION GENERATOR

MODEL 3025  
REG. \$475.00  
OUR PRICE  
**\$399.95**



### FEATURES

- Frequency: 0.005 Hz to 5 MHz in 7 ranges.
- Outputs: Sine, square, triangle or haversine.
- Variable Amplitude: 20 V p-p, open circuit; 10 V p-p, into 50 ohms.
- Accuracy:  $\pm$  5% F.S.
- Sine Distortion: Less than 0.5%, 1 Hz to 100 kHz.
- VCF: Approximately 0 to 5 volts input for 1000:1 frequency ratio (linear).
- Internal Sweep: Linear or logarithmic.
- Sweep Rate: 10 ms to 1 min.
- Triggered Operation: Tone burst, single cycle and haversine.
- Sync Output: TTL compatible.
- Sweep Limits: Start and Stop controls for 4 decades log and 3 decades linear sweep; sweeps up or down.
- DC Offset:  $\pm$  10 VDC (open circuit).
- V/f Output: 0 to 5 volts for 10,000:1 log sweep range.
- Sweep Output: 0 to 5 volt ramp.
- Power: 100/120/220/240 VAC, 50/60 Hz, 25 watts.
- Size: 8.3" x 3.5" x 11" (210 x 89 x 280mm).
- Weight: 5 lbs. (2.3 kg).

## BK PRECISION SWEEP FUNCTION GENERATOR

MODEL 3030-B  
REG. \$699.00  
OUR PRICE  
**\$595.00**



### FEATURES

- Frequency: 0.001 Hz to 5 MHz in 8 ranges.
- Outputs: Sine, square, triangle, pos/neg square, pos/neg ramp.
- Variable Amplitude: 20 V p-p, open circuit; 10 V p-p, into 50 ohms.
- Accuracy:  $\pm$  (1.5% setting + 1% F.S.), 0.001 Hz to 1 MHz;  $\pm$  (2% setting + 2% F.S.), 1 MHz to 5 MHz.
- Sine Distortion: Less than 0.5%, 1 Hz to 100 kHz.
- VCF: Approximately 0 to 5 volts input for 1000:1 frequency ratio (linear).
- Internal Sweep: Linear or logarithmic. Sweep limit set by precision Kelvin-Varley dividers.
- Sweep Rate: 10 ms to 100 s.
- Triggered Operation: Tone burst and single cycle.
- Sync Output: TTL compatible.
- DC Offset:  $\pm$  10 V (open circuit).
- V/f Output: Approximately 0 to 5 volts for 10,000:1 log sweep range.
- Sweep Output: 0 to 5 volt ramp.
- Variable Symmetry: 5:95 to 95:5 variable symmetry divides frequency by approximately 10.
- Attenuator: 60 dB in 10 dB steps, plus 20 dB variable (total 80 dB).
- Trigger Input: +1.4 volts,  $\pm$  90°.
- Power: 100/120/220/240 VAC, 50/60 Hz, 30 watts.
- Size: 12-1/2" x 5" x 11" (318 x 127 x 279mm).
- Weight: 10 lbs. (4.5 kg).

## B&K PRECISION 5 MHz PULSE GENERATOR

MODEL 3300  
REG. \$399.00  
OUR PRICE  
**\$339.95**



### FEATURES

- Pulse period range of 200ns to 1s frequency range of 5 MHz to 1 Hz.
- Identical pulse width and delay ranges of 100ns to 1s.
- Can be used with an oscilloscope for adjustable sweep delay.
- Rise time is less than 15ns.
- 50 ohm/600 ohm outputs.
- Adjustable DC offset.
- TTL output.
- Pulse-burst capability for testing counters and shift registers.

### SPECIFICATIONS

**PULSE CHARACTERISTICS**—Pulse Width: 100ns to 1 sec. **Trigger Delay or Pulse Delay:** Rep. Period: 200ns to 1 sec. **Freq. Range:** 5 MHz to 1 Hz. **Duty Cycle:** Up to 100% D.C. **Trigger Input:** Selectable threshold from -18 to +18V. **Outputs:** TTL, 50 ohm, 600 ohm. **OUTPUT CHARACTERISTICS** **TTL:** 50 ohm; 0 to 5V with 50 ohm load. 600 ohm: -15V to +15V linear adjust with D.C. offset. **Rise and Fall Times:** TTL less than 25ns; 50ohm 15ns; 600 ohm less than 75ns. **MODES:** Free running, triggered, pulse amplifier, external gate, trigger delay (post trigger), pulse delay, manual, fixed delay, square wave. **GENERAL** **Overlap Indicator:** LED. **Operating Environment:** 0-50°C. **Power:** 117/234 VAC, 50/60 Hz 28W. Three-wire cord. **Size (HWD):** 8.1 x 29 x 20cm (3.2 x 11.3 x 7.8") incl. handle. **Weight:** 1.35 kg. (3.1 lbs.). CSA listed.

LC-50 Carrying case. . . . . **\$32.00**



# TEST INSTRUMENTS

## B&K PRECISION ISOLATED AC POWER SUPPLY

MODEL 1604

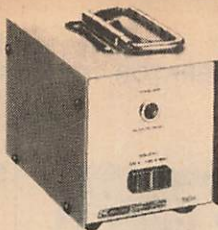
REG. \$65.00

OUR PRICE **\$59.95**

### FEATURES

- Outputs: 1 isolated 117-124V (minimal) (120 V input).
- Overload protection: Circuit breaker.
- Power cord: Three prong grounded.

- Handle: Metal.
- Size: 4 x 4 x 5-1/2".
- Weight: 6 lbs.



### DESCRIPTION

The B&K Precision Power Supply line is the Model 1604 Isolated AC Power Supply. This rugged, compact portable unit is ideal for service shop or home service calls. Model 1604 provides 117-124 V (nominal) isolated AC (with 120 V input), 1.25A continuous output, (2A intermittent).

Other features include sturdy carrying handle, convenient circuit breaker overload protection, and 3 prong grounded power cord.

## B&K PRECISION ISOLATION TRANSFORMER

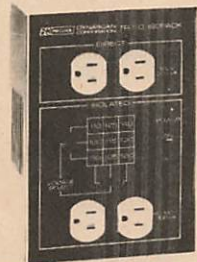
MODEL TR-110

REG. \$105.00

OUR PRICE **\$95.00**

### FEATURES

- Isolated outputs rated at 500 VA intermittent and 350 VA continuous.
- Isolated AC output from 90 to 140 volts in 9 steps.
- Direct voltage outputs rated at 500 VA.
- A "must" for safe testing of transformerless sets.
- Simulates "brown outs" for power supply regulation tests.
- Permits over-voltage testing to help detect intermittent faults.
- Fuse protected for added safety.
- Detailed operations and technical description provided.



### SPECIFICATIONS

**Input Requirements:** 105-130 VAC, 60 Hz. **OUTPUT POWER RATING—Direct:** 500 VA continuous. **Isolated:** 350 VA continuous, 500 VA intermittent. **CONNECTIONS—Direct:** Duplex outlet (3-conductor). **Isolated:** Duplex outlet (3-conductor). **OUTPUT SELECTION—Direct:** Convenience duplex outlet provides line voltage for auxiliary equipment up to 500 VA. **Isolated:** Two 3-position slide switches provide 9 combinations of voltage selection from 90 to 140 volts, up to 350 VA continuous or 500 VA intermittent. Self-contained power switch with pilot lamp. **Regulation:** No load to full load (350 VA), voltage change is less than 4%. **Isolation:** Complies with UL standard 1012, May 1977. **Size (HWD):** 14 x 13 x 20cm (5-1/2 x 5-1/8 x 8") **Weight:** 11 lbs. (5 kg.)

## B&K PRECISION ISOLATED VARIABLE AC POWER SUPPLY

MODEL 1653

REG. \$165.50

OUR PRICE

**\$149.95**

### FEATURES

- Variable isolated 0-150 VAC, 2 amp continuous output
- Displays voltage or current readings
- Isolation transformer to eliminate shock hazard while servicing "hot chassis" equipment
- Compact, rugged



### DESCRIPTION

The B&K-PRECISION Model 1653 is an isolated-variable (0-150 V) AC power supply with a built-in isolation transformer for to eliminate shock hazard while servicing "hot chassis" equipment. It displays voltage and current readings.

### SPECIFICATIONS

**Voltage Adjustment Range:** 0-150 VAC, with input at 120 VAC. **Output Isolation:** leakage less than 0.1 mA (25°C, 50% relative humidity) **Current Range:** 0-2 A. **Maximum Current (Isolated):** 2 A continuous. **Voltage/Current Sensing:** Sine wave average, calibrated in RMS. **Meter:** 3 1/2", overrange protected. **Meter Accuracy:** ± 5% of full scale. **Power Requirements:** 120 VAC ± 10%, 60 Hz 300 VA. **Dimensions:** 8 1/2" x 3 3/4" x 8" (216 x 95 x 203 mm) **Weight:** 12 lbs. (5.5 kg.)

### APPLICATIONS

Performance testing at normal, low and high line voltages... troubleshooting equipment that blows fuses at normal line voltage... bench testing and repair of equipment which operates at other than 120 VAC (e.g. 24 VAC Class II industrial control equipment)... troubleshooting of defects that occur only at low or high line voltages... testing excessive or normal current drain in equipment... incoming inspection of equipment to verify its electrical load specification.

## B&K PRECISION LAB POWER SUPPLY

MODEL 1650

REG. \$399.00

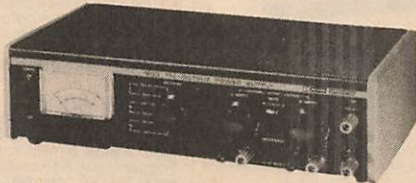
OUR PRICE **\$339.95**

### APPLICATIONS

- Digital circuits.
- Solid-state engineering work.
- Microprocessors.
- Production testing.
- Schools.
- Service applications.
- Experimenters and hobbyists.

### FEATURES

- Functions as three separate power supplies.
- 5 VDC, 5A fixed-output plus two separate 0 to 25 VDC outputs at 0.5A.
- Fully automatic, current-limited overload protection.
- 25 volt supplies can be operated independently or electronically coupled for single-knob control.



- All terminals are fully isolated in all modes.
- Output may be connected in series or parallel for higher voltage or current.
- 'B' supply can be set to track 'A' supply directly or in any ratio from 0-100%.

### SPECIFICATIONS

**Output Voltages:** 5 VDC ± 3%. **A Supply:** 0-25 VDC. **B Supply:** 0-25 VDC. **Output Current:** 5 volt supply, 5A max.; **A&B Supplies:** 0.5A. **Load Regulation:** Less than 0.1% (25mV) from no-load to full-load on 25V supplies. Less than 3% (150mV) from 10 mA to 5A on 5V supply. **Line Regulation:** Less than 0.2% (50mV) for line change of 20V on 25V supplies. Less than 0.4% (20mV) on 5V supply. **Ripple:** Less than 5mV RMS on 25V supplies; Less than 10mV RMS on 5V supply. **General—Size (HWD):** 3.9 x 14.1 x 10cm (3.9 x 14.13 x 10"). **Weight:** 11 lbs. (5 kg.). **Input Voltage:** 105-125 VAC, 60 Hz. CSA listed.

## B&K PRECISION

### ISOLATED VARIABLE AC POWER SUPPLY

MODEL 1655

REG. \$350.00

OUR PRICE **\$297.50**

### FEATURES

- Power Line Leakage Tester
- Variable-Isolated output-0-150 VAC
- 3 amp continuous, 4 amp intermittent output
- Built-in solid state soldering iron temperature control
- Expanded leakage scale
- Circuit breaker overload protection
- Displays volts, amps, VA, leakage
- Two volt-amp ranges (0-240, 0-480) for convenient load requirements



### DESCRIPTION

The B&K-PRECISION Model 1655 is an isolated-variable (0-150 V) AC power supply with a built-in isolation transformer for safe servicing of "hot chassis" equipment. It includes a leakage test capability and a built-in solid state soldering iron temperature control.

### SPECIFICATIONS

**Voltage Adjustment Range:** 0-150 VAC, with input at 120 VAC. **Output Isolation:** leakage less than 0.1 mA (25°C, 50% relative humidity) **Current Range:** 0-2 A, 0-4 A. **Maximum Current (Isolated):** 3 A continuous, 4 A intermittent (0-130 V). **Peak Current (Inrush):** 30 A max. (inrush limited to one cycle at 30 A). **Voltage/Current Sensing:** Sine wave average, calibrated in RMS. **Volt-Amp Ranges:** 0-240 VA, 0-480 VA, (voltage set at 120) **Leakage Range:** 0 to 5,000 microamps (expanded in 100-500 microamp portion, compressed to 5 mA full scale). **Meter:** 4 1/2", multicolor scales, overrange protected. **Meter Accuracy:** ± 5% of full scale (volts and current) ± 5% @ 500 microamps (leakage) **Solder Iron Temperature Control:** 70%-99% of power line (100 W max.). **Power Requirements:** 120 VAC ± 10%, 60 Hz 600 VA at maximum output. **Dimensions (HWD):** 12" x 6" x 11" (305 x 152 x 280 mm) **Weight:** 22 lbs. (10 kg.)

### APPLICATIONS

Performance testing at normal, low and high line voltages... troubleshooting equipment that blows fuses at normal line voltage... bench testing and repair of equipment which operates at other than 120 VAC (e.g. 24 VAC Class II industrial control equipment)... troubleshooting of defects that occur only at low or high line voltages... testing excessive or normal current drain in equipment... incoming inspection of equipment to verify its electrical load specification.

Power line chassis leakage testing to verify compliance or OSHA, UL and CSA leakage requirements... locate dielectric breakdowns with leakage test. Ideal OEM and MRO instrument.

## B&K PRECISION

### REGULATED LAB POWER SUPPLIES

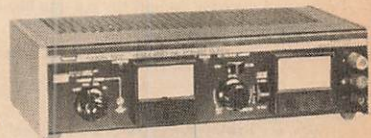
MODEL 1601

REG. \$389.00

OUR PRICE **\$324.75**

### FEATURES

- 0-50 VDC output, continuously variable with single control.
- 0-2A, fully regulated.
- Standby switch disconnects load.
- On/off/voltage output control assures initial zero output.



Advanced-design supplies for schools, service, labs and production feature simplified current limit setting that does not require shorting output terminals. Fail safe overload protection shuts unit down when current exceeds preset level. Pushbutton restores operation.

### SPECIFICATIONS

**Load Regulation:** Maximum 0.1%; typical, 0.07%. **Line Regulation:** 0.02% typical at max. output ratings, 105-125 VAC. CSA listed and 230V version available. **Ripple:** 5 mV p-p max. **Size (HWD):** 3.8 x 14.1 x 10". **Weight:** 11 lbs. (5 kg.).

## B&K PRECISION LOW-VOLTAGE SUPPLY FOR DIGITAL NEEDS

MODEL 1654

REG. \$349.00

OUR PRICE **\$296.65**

### FEATURES

- Continuously variable 2.0 to 6.0 volt output with vernier control.
- Remote sensing feature eliminates regulation error by monitoring output directly at load.
- Complete overvoltage/overload protection circuitry.
- High-current 10 amp output capability.

### APPLICATIONS

- Power TTL logic circuitry.
- Power microcomputer projects.
- Drive low-voltage servo systems.
- Power opto-electronic devices.
- General purpose digital power applications.

### SPECIFICATIONS

**Input Voltage:** 100, 120, 220, or 240 VAC ± 10%, 50/60 Hz; 140W max. at full rated load. External line voltage selection from rear panel. **Output:** 2.0V (typical) to 6.0 VDC at 0 to 10A. Continuously variable with coarse and vernier controls. **Noise and Ripple:** Less than 15mV RMS, or 60mV p-p, measured differentially across (+) and (-) output terminals, outputs not shorted to SENSE terminals. **Load Regulation, No Load to Full Load:** 0.5%, measured across output. **Line Regulation:** 0.4%, for line variation of ± 10% from 120 VAC. **Transient Load Response:** Within 50mV in 200 uS, maximum excursion 400mV, (50% change; 5A to 10A). **Overvoltage Protection:** SCR protection circuit set to crowbar between 6.5 and 7.0 VDC. **Reverse Polarity Protection:** Diode protected. **Current Limiting:** Current limiting at approximately 15A if output is short circuited or overloaded. Output voltage drops to 0.18V for short circuit. **GENERAL—Metering:** Switchable to output voltage or current. 0 to 7V and 0 to 11A ranges. **Meter Accuracy:** ± 5% of full scale. **Cooling:** Convection. **Operating Temperature:** 0° to +40°C (32° to 104°F) at full rated load. Max. current is derated 200mA per degree C above +40°C to a max. operating temperature of 50°C. **Size (HWD):** 21.9 x 16.2 x 24.1cm (8-5/8 x 6-3/8 x 9-1/2"), including knob projection. **Weight:** 5.75 kg (12-3/4 lb.).





## B&K PRECISION CRT RESTORER/ANALYZER

With High Speed Multiplex Technique

MODEL 467

REG. \$550.00 OUR PRICE **\$467.50**

### FEATURES

- Restores color and b/w picture tubes like new! Uses the most powerful restoration method known with minimal danger to the CRT. You can guarantee it with confidence.
- Exclusive multiplex test technique tests all three guns of color CRT's simultaneously under actual operating conditions, even CRT's with common G1 and G2, with real dynamic tests.
- Checks all CRT's with identical procedure—including all 'in-line' and 'one-gun' types.
- Instant, automatic tracking test at the push of a button.
- Guaranteed speed, accuracy and reliability from automatic digital circuit techniques.
- Exclusive! Test focus electrode.
- Nothing to look up after the initial set-up—no calculations, charts or replugging needed.
- Test indications are clear enough to be understood by your customers.
- Size (HWD): 34 x 25 x 14cm (10 x 13-1/2 x 5-1/4"). • Weight: 4.5 kg (10 lbs.).
- Power: 117 VAC, 60 Hz, 40 watts. CSA and 230V 50 Hz version available.



## B&K PRECISION CRT RESTORER/ANALYZER

Same Powerful Restoration Method As 467

MODEL 470

REG. \$395.00 OUR PRICE **\$335.75**

### FEATURES

- Restores color and b/w picture tubes like new! Uses the most powerful restoration method known with minimal danger to the CRT. You can guarantee it with confidence.
- Exclusive technique tests guns of color CRT's under actual operating conditions, even CRT's with common G1 and G2, with real dynamic tests.
- Checks all CRT's with identical procedure—including all 'in-line' and 'one-gun' types.
- Instant, automatic tracking test at the push of a button.
- Large 5" meter with multicolor scales for accurate display of tube condition to the customer.
- Nothing to look up after the initial set-up—no calculations, charts or replugging needed.
- Size: 34 x 25 x 14cm (10 x 13-1/2 x 5-1/4" thick). • Weight: 3.7 kg (7 lbs.).
- Power: 117VAC, 60 Hz, 40 watts. CSA and 230V 50 Hz version available.
- CRT ADAPTORS AVAILABLE!**



## B&K PRECISION 3 1/2 DIGIT AUTORANGING uC DMM

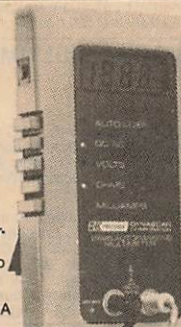
MODEL 2845 REG. \$125.00 OUR PRICE **\$49.95**

### FEATURES

- Fully automatic, autoranges on all functions.
- Range lock holds any range. • 0.1% accuracy. • Fast reading.
- 0.5" LCD display. • Autozeroing. • Autopolarity on all ranges.
- Audible continuity indicator. • Varistor & fuse overload protection.
- RF shielded. • Meets UL 1244 safety standards.

### SPECIFICATIONS

**AC/DC VOLTAGE-Ranges:** ±1V, 10V, 100V, 1000V. Input Z: 10M ohm. Circuit Protection: 1000 VDC or DC + AC peak (metal oxide varistors and fuse). **Overrange:** (Full scale) 100% on all ranges except 1000V, limited to 750V rms max. **Protection:** 1000V peak or DC + AC peak (metal oxide varistors and fuse). **AC/DC CURRENT-Ranges:** ±1mA, 10mA, 100mA, 1000mA. **Overrange:** (Full scale) 100% on all ranges, limited to ±2000 mA max. **Protection:** Fuse and diodes. **RESISTANCE-Ranges:** 1K ohm, 10K ohm, 100K ohm, 1000K ohm 10M ohm. **Protection:** +1000V to 450 VDC or 300 VAC, all ranges. **Overrange:** (Full scale) 100% on all ranges. **ACCURACY-Basic DC Voltage Accuracy:** ±0.1% of reading, ±1 LSD on all ranges. **Basic AC Voltage Accuracy:** (50-200 Hz) ±0.5%, ±3LSD; (200 Hz-1 kHz) ±2%, ±3 LSD; (1-5 kHz) ±1 dB. **DC Current:** ±0.75% of reading, ±1 LSD on all ranges. **AC Current:** ±1% of reading ±3 LSD, 50 Hz to 1 kHz. **Resistance:** ±0.3% of reading, ±1 LSD, on 1K ohm-1000K ohm ranges; ±0.6% reading, ±1 LSD on 10M ohm range. **Readout:** 3-1/2 digits. 0.5" LCD, with K ohm/M ohm, polarity and low battery indication. **GENERAL-Temp. Range:** 0 to 55°C. **Power:** 9V battery (NEDA 1604 or equiv.), or optional battery eliminators. **Battery Life:** 100 hrs. (typical) with alkaline batteries. **Size (HWD):** 7 x 3-3/4 x 1-9/16". **Weight:** 1 lb. (0.4kg). **Accessories Included:** 2 safety test leads, spare fuses, built-in tilt stand.



## B&K PRECISION AUTO-RANGING PROBE TYPE DIGITAL MULTIMETER

MODEL 2802 OUR PRICE **\$49.95**

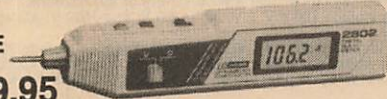
- 0.7% DCV accuracy. • Auto-ranging on all function. • Low battery indicator.
- 3 1/2 digit LCD display with annunciators. • Audible continuity check.
- Data hold switch latches reading into display. • Rugged case with RF/EMI shielding.
- Comes complete with two interchangeable probe tips (long & short), batteries, ground lead and alligator clip. • PRO-73 Carrying case...\$2.95

### DESCRIPTION

The B&K Precision model 2802 probe type digital multimeter is an economical 3 1/2 digit DMM ideally suited for in-the-field, shop or hobby applications. All measurements are displayed on a 3 1/2 digit LCD display with annunciator for function, unit, polarity, decimal and low battery. Continuity checks are announced by an audible tone. A Data Hold switch feature permits meter reading after probe tip is removed from the point of measurement. Model 2802 is overload protected and indicates overrange on all ranges.

### SPECIFICATIONS

The following electrical specifications are valid for an operating temperature of +18°C to +28°C at relative humidity up to 80%. **DC Voltage (auto ranging):** 2V, 2V, 20V, 200V, 500V (700 Overload Protected), Resolution 1mV (100uV) on 2V range. **AC Voltage (auto ranging):** 2V, 20V, 200V, 500V. (Overload Protected) 500V RMS Resolution 1mV 2V range. **Resistance (auto ranging)** 200 ohm, 2k, 20k, 200k, 2M ohm, 20M ohm. (Overload Protected 250V) Resolution 0.1 ohm on 200 ohm range. **Resistance Accuracy** 1.2% MEG range, 2.0% 20 MEG Range **Audible Tone Continuity Check** below 150 ohm. **Data Hold** Holds reading when data hold is pressed. **Display** 3 1/2 LCD. **Auto Polarity** (+) indicated, (-) implied. **Power Requirements** Two cells, 1.5V each, NEDA 1166A (alkaline), or NEDA 1131S0 (silver oxide). **Weight** 2.32 oz. (65g). **Size** 6" L x 3/4" W x 1 1/4" H. **Probe Tips** 1/2" and 2".



## B&K PRECISION 50 MHz DIGITAL PROBE

MODEL DP-51

REG. \$79.00 OUR PRICE **\$67.50**

### DESCRIPTION

The B&K-Precision Model DP-51 DC-to-50 MHz Digital Probe is designed for fast analysis of multi-family logic circuits. The rugged, lightweight digital probe is compatible with TTL, MOS, CMOS, HTL, DTL, RTL and high-noise immunity logic (OHI Nil). The unit is fully overload-protected and will withstand ±50 VDC at the input tip.

### APPLICATIONS

- Analyzing digital circuits for design.
- Simplifies and speeds debugging of multi-family digital circuits.
- Tracing a pulse throughout a digital circuit.
- Quick evaluation of digital design changes or circuit modifications.
- Isolating faulty circuits or components.
- Instructional aid for a better understanding of logic circuits.
- Power Requirements: 5 to 15VDC (30ma @ 5VDC; 90ma @ 15VDC) protected to +20VDC.
- Dimensions: (HWD) 6.5" x 1.25" x .75". • Weight: 3.5 oz.



## B&K PRECISION DIGITAL PULSAR PROBE

MODEL DP-101 REG. \$109.00

OUR PRICE **\$92.00**

### DESCRIPTION

The B&K-Precision Model DP-101 Digital Pulsar is a truly modular approach to troubleshooting digital circuits. It features the capabilities of stimulating test nodes and creating complementary conditions for logic circuit evaluation. This handheld instrument has increased versatility by providing stimulation for a multitude of digital families: TTL, MOS, CMOS, RTL, DTL, and Hi Nil. The DP-101 facilitates digital circuit analysis and integrated logic system debugging.

### APPLICATIONS

- Injection of substitute logic pulses to aid in digital circuit debugging.
- Quick evaluation of digital changes or circuit modification.
- Aid in development of microprocessor or digital systems.
- Isolate faulty circuits or components.
- Logic circuit stimulation. Instructional aid for a better understanding of logic circuit operations.
- Power Requirements: 5 to 15 volts (1mA @ 5VDC; 20 mA @ 15VDC).



## B&K PRECISION 3-1/2 DIGIT LAB DMM

MODEL 2831

REG. \$255.00

OUR PRICE **\$222.00**

- Bright 3-1/2 digit high-efficiency LED.
- 0.1% DC accuracy.
- 100 mV AC & DC ranges. • Autozeroing
- 100uV, 100 nA, .01 ohm resolution.
- Completely overload protected.
- AC operation standard with DC power pack option.
- Easily installed optional battery pack.
- Built-in 10 amp current shunt.
- Protected against RF interference.
- AC Volts: 100mV, 1V, 10V, 100V, 1000V.
- DC Volts: 1V, 10V, 100V, 1000V. • DC Current: 100uA, 1mA, 10m, 100mA, 10A.
- AC Current: 100uA, 1mA, 10mA, 100mA, 10A.
- Resistance: 10 ohm, 100 ohm, 1Kohm, 10Kohm, 1Mohm, 10Mohm, low power ohm range. (1000V circuit protection).
- Includes two test leads, detachable 3-wire power cord, detailed manual.
- Power: 115/230 VAC, 50/60 Hz. CSA listed. • Weight: 1.5kg. (3 lbs.)
- Size (HWD): 8.1 x 29 x 19cm (3.25 x 11.6 x 7.5") incl. handle.

**OPTIONAL:** BP-30 Battery pack...\$54.60 PR-21 Direct/isolation probe...\$21.95 PR-23 RF-demodulator probe...\$23.95



## B&K PRECISION DELUXE PROBES

MODEL PR-40

OUR PRICE **\$38.00**

### APPLICATIONS

- For oscilloscopes.
- For frequency counters.

### DESCRIPTION

The B&K Precision deluxe probes designed for use with wideband oscilloscopes to 100 MHz. All are lightweight slim-body probes of precision construction.

### SPECIFICATIONS

**PR-40 X-10 Position:** Frequency response: 100 MHz, Input Z: 10M ohm; input compensation 15-40pF. Rise Time: 3.5ns. **X-1 Position:** Frequency response: 15 MHz, Input impedance: 1M ohm, plus scope capacity. Rise time: 24ns. **Working Voltage:** X-10, X-1: 500 VAC or 250 VDC plus AC peak. **Connector:** BNC. **PR-45** Same as X-10 for PR-45, except 20p40pF compensation and no X-1 position.



## B&K PRECISION HIGH-VOLTAGE DIRECT READING 40K VDC PROBE

MODEL HV-44

REG. \$75.00

OUR PRICE **\$65.00**

### FEATURES

- Extreme reliability and user safety.
- Voltage measurements up to 40,000 volts.
- Calibrated at 25 kV and should never need recalibration.
- Accuracy at 25 kV is ±2% and ±3% at full scale.
- Meter is unaffected by common outside magnet fields and is highly shock resistant.





# TEST INSTRUMENTS

## B&K PRECISION 3 1/2 DIGIT AUTO OR MANUAL RANGING DIGITAL MULTIMETER

MODEL 2804 REG. \$60.00 OUR PRICE **\$49.95**

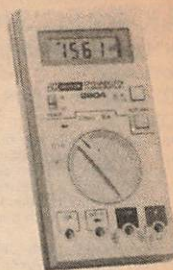
**SPECIAL!**

### FEATURES

•0.7% DCV accuracy. •500 hours continuous battery life. •Auto-ranging/manual ranging on Volt and Ohm scales. •10 A AC and DC ranges. •3 1/2 digit LCD display with annunciators. •Single rotary switch operation. •Low-battery indicator. •Diode check. •Audible continuity check. •Dimensions: D 1.34" x W 3.15" x H 6.61". •Weight: approx. 8 oz. •Complete with test leads, 2 "AA" batteries, spare fuse, and instruction manual, optional carrying case (see below).

### DESCRIPTION

The B&K-PRECISION Model 2804 handheld digital multimeter provides accurate measurements at an economical price. The Model 2804 provides auto-ranging or manual range selection when measuring volts and ohms. DC voltage measurement ranges include 200 mV, 2000 mV, 20 V, 200 V, and 1000 V. AC voltage ranges include 2000 mV, 20 V, 200 V, and 750 V. Input impedance is 10 Mohm. Ohm ranges include 200 ohm, 2 kohm, 20 kohm, 200 kohm, 2000 kohm, and 20 Mohm. The Model 2804 provides manual range selection for AC and DC amp measurements — 200 mA and 10A. A diode test measures the forward voltage drop of a semi-conductor junction at approximately 0.6 mA. Reverse drop reads approx. 1400 counts. Continuity checks are announced by an audible tone. Power is provided by 2 "AA" type cells; 1.5 V each. Battery life: 500 hours.



## B&K PRECISION 3 1/2 DIGIT AUTO OR MANUAL RANGING DIGITAL MULTIMETER

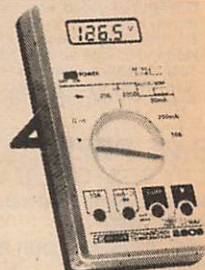
MODEL 2806 REG. \$75.00 OUR PRICE **\$63.75**

### FEATURES

•0.7% DCV accuracy. •500 hours continuous battery life. •Auto-ranging/manual ranging on Volt and Ohm scales. •10 A AC and DC ranges. •3 1/2 digit LCD display with annunciators. •Single rotary switch operation. •Low-battery indicator. •Diode check. •Audible continuity check. •Transient and overload protected. •High energy fuse. •Ruggedized case with safety-designed test lead system. •Complete with test leads, 2 "AA" batteries, spare fuse, and instruction manual, Optional carrying case (see below). •Dimensions: D 1.54 x W 3.46 x H 6.61" (39mm x 88mm x 168mm). •Weight: approx. 1 lb.

### DESCRIPTION

The B&K-PRECISION Model 2806 handheld digital multimeter is an economical 3 1/2 digit DMM that is ideally suited for field, shop and hobby applications. The Model 2806 provides auto-ranging or manual range selection when measuring volts and ohms. DC voltage measurement ranges include 200 mV, 2000 mV, 20 V, 200 V, and 1000 V. AC voltage ranges include 2000 mV, 20 V, 200 V, and 750 V. Input impedance is 10 Mohm. Ohm ranges include 200 ohm, 2 kohm, 20 kohm, 200 kohm, 2000 kohm, and 20 Mohm. The Model 2806 provides manual range selection for AC and DC amp measurements. Ranges are 200 uA, 2000 uA, 20 mA, 200 mA, and 10 A. A diode test measures the forward voltage drop of a semi-conductor junction at approximately 0.6 mA. Reverse drop reads approx. 1400 counts. Continuity checks are announced by an audible tone. A high energy fuse is incorporated in the unit. Power is provided by 2 "AA" type cells; 1.5 V each. Battery life: 500 hours.



## B&K PRECISION 3 1/2 DIGIT AUTO OR MANUAL RANGING DIGITAL MULTIMETER

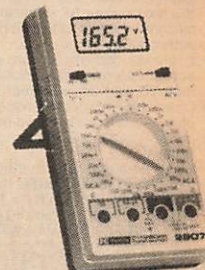
MODEL 2807 REG. \$115.00 OUR PRICE **\$97.75**

### FEATURES

•0.5% DCV accuracy. •500 hours continuous battery life. •Auto-ranging/manual ranging on Volt and Ohm scales. •10 A AC and DC ranges. •Convenient single rotary switch function/range selector. •3 1/2 digit LCD display with annunciators. •Low-battery indicator. •Diode check. •Audible continuity check. •Transient and overload protected. •High energy fuse. •Ruggedized case with safety-designed test lead system. •Complete with test leads, 2 "AA" batteries, spare fuse, and instruction manual, optional carrying case (see below). •Dimensions: D 1.54" x W 3.46" x H 6.61" (39mm x 88mm 168mm).

### DESCRIPTION

The B&K-PRECISION Model 2807 is a full function handheld digital multimeter that provides 0.5% DCV accuracy, overload and transient protection, diode check, audible continuity check, and convenient single rotary switch to meet a wide variety of applications. The Model 2807 provides auto-ranging or manual range selection when measuring volts and ohms. DC voltage measurement ranges include 200 mV, 2000 mV, 20 V, 200 V, and 1000 V. AC voltage ranges include 200 mV, 2000 mV, 20 V, 200 V, and 750 V. Input impedance is 10 Mohm. Ohm ranges include 200 ohm, 2 kohm, 20 kohm, 200 kohm, 2000 kohm, and 20 Mohm. The Model 2807 provides manual range selection for AC and DC amp measurements. Ranges are 200 uA, 2000 uA, 20 mA, 200 mA, and 10 A. A diode test measures the forward voltage drop of a semi-conductor junction at approximately 0.6 mA. Reverse drop reads approx. 1400 counts. Continuity checks are announced by an audible tone. The 2807 is overload and transient protected. A high energy fuse is incorporated in the unit. Power is provided by 2 "AA" type cells; 1.5 V each. Battery life: 500 hours.



## B&K PRECISION 3 1/2 DIGIT AUTO OR MANUAL RANGING DIGITAL MULTIMETER

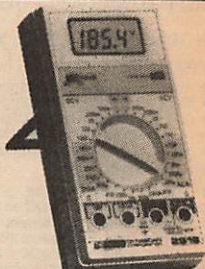
MODEL 2816 REG. \$150.00 OUR PRICE **\$127.50**

### FEATURES

•0.25% DCV accuracy. •500 hours continuous battery life. •Auto-ranging/manual ranging on Volt and Ohm scales. •10 A AC and DC ranges. •Convenient single rotary switch function/range selector. •3 1/2 digit LCD display with annunciators. •Low-battery indicator. •Diode check. •Audible continuity check. •Transient and overload protected. •High energy fuse. •Ruggedized case with safety-designed test lead system. •Complete with test leads, 2 "AA" batteries, spare fuse, and instruction manual, optional carrying case (see below). •Dimensions: D 1.54" x W 3.46" x H 6.61" (39mm x 88mm x 168mm) •Weight: Approx 1 lb.

### DESCRIPTION

The B&K-PRECISION Model 2816 is a full function handheld digital multimeter that provides 0.25% DCV accuracy, overload and transient protection, diode check, audible continuity check, and convenient single rotary switch to meet a wide variety of applications. The Model 2816 provides auto-ranging or manual range selection when measuring volts and ohms. DC voltage measurement ranges include 200 mV, 2000 mV, 20 V, 200 V, and 1000 V. AC voltage ranges include 200 mV, 2000 mV, 20 V, 200 V, and 750 V. Input impedance is 10 Mohm. Ohm ranges include 200 ohm, 2 kohm, 20 kohm, 200 kohm, 2000 kohm, and 20 Mohm. The Model 2816 provides manual range selection for AC and DC amp measurements. Ranges are 200 uA, 2000 uA, 20 mA, 200 mA, and 10 A. A diode test measures the forward voltage drop of a semi-conductor junction at approximately 0.6 mA. Reverse drop reads approx. 1400 counts. Continuity checks are announced by an audible tone. The 2816 is overload and transient protected. A high energy fuse is incorporated in the unit. Power is provided by 2 "AA" type cells; 1.5 V each. Battery life: 500 hrs.



## B&K PRECISION 3 1/2 DIGIT PEAK HOLD DIGITAL MULTIMETER

MODEL 2817-B REG. \$175.00 OUR PRICE **\$148.75**

### FEATURES

•0.1% DCV accuracy •1000 hours continuous battery life •Peak Hold on Volt and Amp scales •10A AC and DC ranges •3 1/2 digit LCD display with annunciators •Single rotary switch operation •Low-battery indicator •Diode check •Audible continuity check •Transient and overload protected •High energy fuse •Ruggedized case with safety-designed test lead system •Complete with test leads, battery spare fuse and instruction manual, optional carrying case (see below). Dimensions: D 1.54" x W 3.46" x H 6.61". Weight: 1 lb.

### DESCRIPTION

The B & K PRECISION Model 2817 is a full function handheld digital multimeter that provides 0.1% DCV accuracy, peak hold for measuring current and voltage surges, audible continuity check, diode check, overload and transient protection, and convenient single rotary switch to meet a wide variety of applications. The Model 2817 provides manual range selection for all functions. DC voltage measurement ranges include 200 mV, 2 V, 20 V, 200 V, and 1000 V. AC voltage ranges include 200 mV, 2 V, 20 V, 200 V, and 750 V. Input impedance is 10 Mohm. Ohm ranges include 200 ohm, 2 kohm, 20 kohm, 200 kohm, 2 Mohm, and 20 Mohm. AC and DC current ranges include 200 uA, 2 mA, 20 mA, 200 mA, and 10 A. A diode test measures the forward voltage drop of a semiconductor junction at approximately 0.6 mA. Reverse drop reads approximately 1400 counts. Continuity checks are announced by an audible tone. The 2817 is overload and transient protected. A high energy fuse is incorporated in the unit. Power is provided by a 9 V battery (NEDA 1604) type.



## B&K PRECISION 3 1/2 DIGIT TRUE RMS PEAK HOLD DIGITAL MULTIMETER

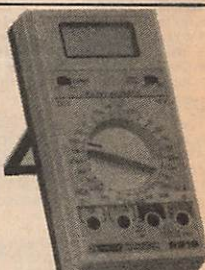
MODEL 2818 REG. \$215.00 OUR PRICE **\$182.75**

### FEATURES

•0.1% DCV Accuracy •1000 hours continuous battery life •True RMS-sensing AC Volt and Amp Ranges •Peak Hold on Volt and Amp Scales •10A AC and DC ranges •3 1/2 digit LCD display with annunciators •Single rotary switch operation •Low-battery indicator •Diode check •Audible continuity check •Transient and overload protected •High energy fuse •Ruggedized case with safety-designed test lead system •Complete with test leads, battery, spare fuse and instruction manual, optional carrying case (see below). Dimensions: D 1.54" x W 3.46" x H 6.61". Weight: 1 lb.

### DESCRIPTION

The B&K PRECISION Model 2818 is a full function digital multimeter that provides 0.1% DCV accuracy, True RMS AC voltage and current readings, peak hold for measuring current and voltage surges, audible continuity check, diode check, overload and transient protection, and convenient single rotary switch to meet a wide variety of applications. The Model 2818 provides manual range selection of all functions. DC voltage measurement ranges include 200 mV, 2 V, 20 V, 200 V, and 1000 V. AC voltage ranges include 200 mV, 2 V, 20 V, 200 V, and 750 V. Input impedance is 10 M ohms. Ohm ranges include 200 ohm, 2 kohm, 20 kohm, 200 kohm, 2 Mohm and 20 Mohm. AC and DC current ranges include 200 uA, 2 mA, 20 mA, 200 mA, and 10 A. A diode test measures the forward voltage drop of a semiconductor junction at approximately 0.6 mA. Reverse drop reads approximately 1400 counts. Continuity checks are announced by an audible tone. The 2818 is overload and transient protected. A high energy fuse is incorporated in the unit. Power is provided by a 9 V battery (NEDA 1604) type.



### THESE OPTIONAL ACCESSORIES APPLY TO MODELS ABOVE

Carrying Case, model LC-110.....	Our Price \$23.00	Replacement Test Leads, model FP-30.....	Our Price \$15.00
Demodulator Probe, model PR-23.....	Our Price \$30.00	Temperature Probe, model TP-28.....	Our Price \$84.75
Isolation Direct Probe, model PR-21.....	Our Price \$25.00	Thermocouple Temperature Probe, model TP-30B.....	Our Price \$84.75

**FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788**



## LEADER 4 MHz BANDWIDTH COMPACT 3" PORTABILITY

MODEL LBO-310A

REG. \$305.00

OUR PRICE **\$239.95**

### FEATURES

- DC to 4 MHz vertical bandwidth. • 20 mV sensitivity, Z axis modulation. • AC/DC coupled vertical input.
- Monitors waveforms to 450 MHz on direct connection at 10 v-p or better. • 10 Hz to 100 kHz, sweep range, 4 steps, continuously adjustable.
- Bright, easy-to-read display. • Use in multiples to broaden display capability.

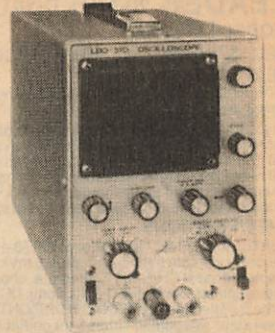
### DESCRIPTION

The LBO-310A is a compact, general purpose instrument designed to provide long, reliable service in production test, repair, and educational applications. Its simple front panel with a minimum of controls makes it ideal for use by production personnel, students, and non-technical operators. Its low cost opens up many applications where waveform monitoring might otherwise be economically prohibitive.

### SPECIFICATIONS

**VERTICAL DEFLECTION Bandwidth**—(3 dB, 4 div) DC: DC to 4 MHz, AC: 2 Hz to 4 MHz. **Input Sensitivity Control**: x100, x10, x1 and variable (20 mV max). **Input Impedance**: 1Mohm, 40 pF. **Direct CRT Drive**: 10V p-p sensitivity up to 100 MHz. **EXTERNAL HORIZONTAL DEFLECTION Bandwidth**—(3 dB, 10 div): DC to 250 kHz. **Input Sensitivity**: 300 mV/div. **INTERNAL HORIZONTAL DEFLECTION (Sweep Mode) Sweep Type**: Recurrent. **Sweep Rates**: 10 Hz to 100 kHz, four ranges. **Z-AXIS (INTENSITY) MODULATION Sensitivity**: 20V p-p. **CRT DISPLAY Area**: 8 x 10 div, 1 div = 6 mm. **Accelerating Potential**: 1200V. **Phosphor**: P 1. **POWER REQUIREMENTS**: 100, 120, 200, 240 VAC ± 10%, 50/60 Hz, approx. 12 VA. **Dimensions (WHD)**: 5" x 7-1/2" x 12". **Weight**: 8.6 lbs. **Accessories Supplied**: instruction manual, three test leads.

**SPECIAL!**



## LEADER 15-MHz SINGLE AND DUAL TRACE HIGH-SENSITIVITY OSCILLOSCOPES

MODEL LBO-513A

REG. \$470.00

OUR PRICE **\$399.95**

MODEL LBO-514A

REG. \$595.00

OUR PRICE **\$469.95**

### FEATURES

- 1 mV Sensitivity. • 5" CRT. • 0.1 us Sweep Speed. • X-Y Mode.

### DESCRIPTION

The single trace LBO-513A and the dual trace LBO-514A are compact 5-inch oscilloscopes that offer maximum performance at low cost. Equipped with both vertical and horizontal magnifiers, they have 1-mV sensitivity with X5 magnification and a maximum sweep speed of 0.1 us/cm (0.2 s/cm to 0.5 us/cm in 18 calibrated steps plus X5 magnification). Rise time of both oscilloscopes is 23 ns with normal and automatic, + or - triggering. The LBO-514 provides both chop and alternate dual trace displays. The model LBO-514AP is available with a higher intensity CRT and internal graticule.

### SPECIFICATIONS

**VERTICAL DEFLECTION—Bandwidth**—(3 dB, 6 cm): DC: DC to 15 MHz, AC: 2 Hz to 15 MHz. **Rise Time**: 23 ns. **Deflection Coefficients**: 5 mV/cm to 10 V/cm in 11 calibrated steps, 1-2-5 sequence, continuously variable sensitivity increased to 1 mV/cm by X5 vertical magnifier. **Accuracy**: ± 3% (0.40°C). **Input Impedance**: 1 M ohm, 35 pF. **INTERNAL HORIZONTAL DEFLECTION (SWEEP MODE)**—0.5 us/cm to 200 m/s/cm in 18 calibrated steps, 1-2-5 sequence, continuously variable between steps. **Magnifier**: Times 5 magnifier extends maximum sweep rate to 100 ns/cm. **Accuracy**: ± 5% (+5% with magnifier). **TRIGGERING**—Internal CH-1. Internal CH-2 (LBO-514 only). External. **Maximum Input**: 600 V (DC plus AC peak). **Display Modes (LBO-514 only)**: CH-1, CH-2, alternate, chop. **EXTERNAL HORIZONTAL DEFLECTION (X-Y MODE) LBO-513—Input**: Via external trigger connector. **Deflection Coefficients**: 200 mV/cm to 5 V/cm. **Bandwidth (3dB, 10 cm)**: DC-250 kHz. **Rise Time**: 1.4 us. **EXTERNAL HORIZONTAL DEFLECTION (X-Y MODE) LBO-514—Input**: Via CH-1 vertical input connector. **Deflection Coefficients**: See vertical specifications. **Bandwidth (3dB, 10 cm)**: DC-800 kHz. **Rise Time**: 440 ns. **Phase Shift**: Less than 3° at 100 kHz. **TRIGGERING—Sources**: Internal CH-1. Internal CH-2 (LBO-514 only). External. **Modes**: Auto (greater than 50 Hz). Normal. **Coupling**: AC, HF-Reject (TV-V). **Slope**: + or -. **Sensitivity**: Internal: 1 cm. External: 200 mV p-p. **External Input Impedance**: 100 K ohm, 50 pf. **Maximum Level**: 100 V (DC plus AC peak). **Z-AXIS (INTENSITY) MODULATION—Input Level**: TTL compatible. **Maximum Input**: 50 V p-p. **INTERNAL CALIBRATOR—Output Level**: 0.5 V p-p, ± 3%. **Waveforms**: Square wave, 1 kHz. **CRT DISPLAY—Phosphor**: P31. **Graticule**: External (internal on LBO-514AP), 8 x 10 cm with rise-time calibration. **Accelerating Potential**: 1.8 kV (5.8/1.8 kV on LBO-514AP). **Trace Alignment**: Front panel trace rotation control. **POWER REQUIREMENTS**—115/230 VAC ± 13%, 50 to 60 Hz, 33 VA. **PHYSICAL—Size (WHD)**: 11-3/8 x 6-7/8 x 14-3/4". (290 x 160 x 375 mm). **Weight**: 17 lbs., 7.7 kg. **ENVIRONMENTAL—Temperature (Operating)**: 0 to 40°C. **Vibration**: 2 mm p-p displacement at 12 to 33 Hz. **Shock**: 30 g. **SUPPLIED ACCESSORIES**—Instruction Manual, Type LP-16AX switchable X1/X10 Probes, (two with LBO-514A, one with LBO-513A).

**AVAILABLE ACCESSORIES**—LP-2004A Probe Pouch...\$20.00. LC-2014 Protective Front Cover...\$40.00. LRA-508 Rack Mount Adaptor...\$85.00



LBO-513A



LBO-514A

## LEADER 100 MHz 3-CHANNEL OSCILLOSCOPE

MODEL LBO-516

REG. \$1395.00

OUR PRICE **\$1299.95**

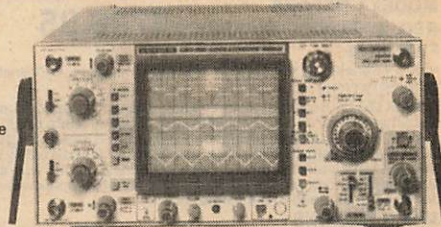
### DESCRIPTION

This new Dual Time Base Oscilloscope offering from LEADER features full three channel capability, alternate triggering for simultaneous display of two asynchronous signals, alternate time base and eight trace capability. The LBO-516 also features variable trigger holdoff, line triggering for observation of line related signal components and auto, normal and single sweep modes. The vertical input section of this scope offers 500 uV sensitivity, and add, subtract and X-Y modes. The dome mesh PDA CRT with 20 kV/2 kV accelerating potential provides a bright, crisp trace, even at high sweep rates. And, a CH-1 output is provided on the front panel so that an additional instrument, such as a frequency counter, may be easily connected.

### SPECIFICATIONS

**CRT Accelerating Voltage**: 20 kV/2 kV (PDA), **Display** 8 x 10 Div (1 Div = 1 cm). **VERTICAL DEFLECTION CH-1, CH-2 Deflection Sensitivity**: 5 mV/Div - 5 V/Div 500 uV/Div (MAG x 10 ON). **Bandwidth**: DC - 100 MHz, -3 dB, **Rise Time**: 3.5 ns. **CH-3 INPUT TERMINAL (A EXT TRIG IN) Deflection Sensitivity**: 0.2 V/Div, 2 V/Div. **Bandwidth**: DC - 100 MHz, -3 dB, **Input Coupling**: DC, AC, **Modes**: CH-1; CH-2 ADD (CH-1 ± CH-2); DUAL (ALT, CHOP) CH-1, CH-2; Triple (ALT, CHOP) CH-1, CH-2; Quad (ALT, CHOP) CH-1, CH-2, CH-3, (CH-1 ± CH-2). **CH-1 OUTPUT TERMINAL**: Output voltage is 25 mV p-p/Div. **HORIZONTAL DEFLECTION Sweep Modes**: Triggered Sweep, Automatic Triggered Sweep, Single Sweep, Continuously Delayed Sweep, Triggered Delayed Sweep, Single Delayed Sweep, Alternate Sweep, A intensified by B, A Sweep Time: 20 ns/Div - 0.5S/Div, B Sweep Time: 20 ns/Div - 50 mS/Div. **Hold—Off Time**: To greater than one sweep, **Delayed Sweep Jitter**: 1/20000, **Sweep Magnification**: 10 times, **Max. Sweep Time**: 2 ns/Div (MAG x 10 ON), **Trigger Source**: A Sweep: CH-1, ALT, CH-2, LINE, EXT 0.2 V/Div, EXT 2V/Div, B Sweep: A sweep source is used. **Trigger Coupling**: A Sweep: AC, HF-REJ, DC, TV-V, TV-H, B Sweep: A sweep coupling is used. **Trigger Sensitivity**: DC-10 MHz INT-0.4 Div, EXT 0.1 V, 10 MHz-100 MHz INT-1.5 Div, EXT-0.4 V. **Power Requirements**: 100, 120, 200, 240, VAC, 50/60 Hz, 65 W. **Dimensions (WHD)**: 12" x 5-3/4" x 15-3/4". **Weight**: 19-3/4 lbs. **Accessories Supplied**: instruction manual, 2-100 MHz X10/X1 probes, LP-100X, 2-BNC to post adaptors., 1-extra fuse.

**SPECIAL!**



## LEADER 100 MHz QUAD CHANNEL ALTERNATE TIME BASE OSCILLOSCOPE

MODEL LBO-518

REG. \$2050.00

OUR PRICE **\$1799.95**

**SPECIAL!**

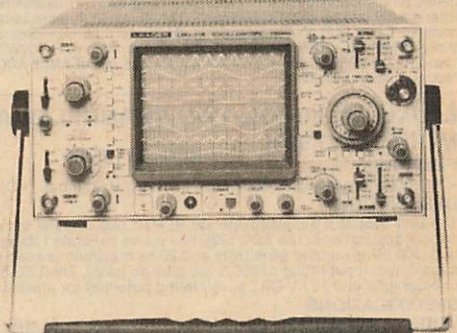
### DESCRIPTION

The versatile LBO-518 is a 100 MHz quad channel, alternate time base oscilloscope featuring front panel 4 channel operation, simultaneous display of main and delayed time bases, and alternate channel triggering for viewing non-frequency related signals simultaneously. Separate, independent comprehensive triggering facilities for both the main and delayed time base include HF reject, LF reject, video sync separator, alternate channel triggering and trigger level control with preset in addition to variable trigger hold-off, line triggering for observation of line related signal components and auto, normal and single sweep modes. Separate vertical positioning and input connectors for 4 channel operation are front panel accessible as are the main and delayed sweep intensity and trace separation controls.

A dome mesh PDA CRT with 20 kV accelerating potential allows critical observation of fast rise time signals with low repetition rates and similar events which are often difficult to observe due to limited trace brightness. The vertical input section of the scope features 0.5mV sensitivity, 20 MHz bandwidth limiter, beam finder and add/subtract modes. While offering these additional capabilities, small size has been retained allowing the LBO-518 to be stored under the seat or in the overhead compartment on most commercial jet liners.

### SPECIFICATIONS

**VERTICAL DEFLECTION—Bandwidth**—(3 dB, 8 div): DC: 0 Hz to 100 MHz, AC: 10 Hz to 100 MHz. **Rise Time**: 3.5 ns. **Deflection Coefficients**: (CH-1, CH-2): 5 mV/cm to 5 V/cm in 10 steps, 1-2-5 sequence, continuously variable between steps, uncalibrated warning lights. X10 multiplier provides 0.5 mV/cm sensitivity up to 5 MHz (CH-3, CH-4). 0.2 V/Div, 2 V/Div. **Accuracy**: ± 3% (0.40°C), ± 5% with X10 mag. **Input Impedance**: 1 M ohm, ± 2%, 28 pF ± 3 pF. **Maximum Input**: 600 V (DC plus AC peak). **Signal Delay**: 20 ns, leading edge can be observed. **Display Modes**: CH-1, CH-2, alternate, chop, add, subtract (CH-2 invert), triple, quad. **BW Limiter**: 20 MHz bandwidth limiter limits vertical response to 20 MHz (-3 dB). **Output**: CH-1 output on rear panel of 50 mV/cm deflection into 50 ohm. **INTERNAL HORIZONTAL DEFLECTION (SWEEP MODE)—Display Modes**: Main time base, main time base intensified by delayed time base, alternate main and delayed time base, delayed time base. **Main Time Base**: 0.02 uS/cm to 0.5 S/cm in 23 steps, 1-2-5-sequence, continuously variable between steps, uncalibrated warning light. **Delayed Time Base**: 0.02 uS/cm to 0.5 S/cm in 23 steps, 1-2-5-sequence. **Magnifier**: Times 10 magnifier extends maximum sweep rate to 2 ns/cm. **Accuracy**: ± 3% (± 5% with magnifier). **Power Requirements**: 100, 120, 200, 240 VAC ± 10%, 50/60 Hz, 65 W. **Dimensions (WHD)**: 12" x 5-3/4" x 15-3/4". **Weight**: 21 lbs. **Accessories Supplied**: instructions manual, 2-LP-100X 100 MHz X1/X10 probes, 2-BNC to post adaptors.



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# TEST INSTRUMENTS

## LEADER 20-MHz DUAL TRACE OSCILLOSCOPE

MODEL LBO-522

REG. \$795.00

OUR PRICE **\$549.95**

### FEATURES

•500 uV Sensitivity. •Variable Hold-off. •8 x 10 cm Display with Internal Graticule. •Alternate Triggering.

### DESCRIPTION

The LBO-522 is an economical 20 MHz oscilloscope versatile enough for almost any lab or field work within its frequency range. The input sensitivity of 0.5 millivolts allows observation of extremely low level signals easily on its 8 x 10 cm rectangular CRT equipped with an internal graticule. Alternate triggering provides a stable display of two waveforms, unrelated in frequency, simultaneously. The unit features a full range of triggering controls including HF reject to filter unwanted noise from the display and line triggering for the observation of line frequency related signal components. A CH-1 rear panel output is standard which permits using the LBO-522 as a sensitive, accurate pre-amplifier to drive other less sensitive instruments. The units "human engineered" front panel ensures easy, error-free operation.

### SPECIFICATIONS

**VERTICAL DEFLECTION-Bandwidth:** (-3 dB, 8 cm): DC: DC to 20 MHz, AC: 10 Hz to 20 MHz. **Rise Time:** 17.5 ns. **Deflection Coefficients:** 5 mV/cm to 5 V/cm in 10 calibrated steps, 1-2-5 sequence, continuously variable between steps. 0.5 mV/cm by X10 magnifier to 5 MHz. **Accuracy:** ± 3% (0-40°C), ± 5% with X10 mag. **Input Impedance:** 1 M ohm, 30 pF. **Maximum Input:** 600 V (DC plus AC peak). **Display Modes:** CH-1, CH-2, alternate, chop, add, subtract (CH-2 invert). **Output:** CH-1 output on rear panel of 0.1 V/cm deflection. **EXTERNAL HORIZONTAL DEFLECTION (X-Y MODE)-Input:** Via CH-1 vertical amplifier. **Bandwidth:** (-3 dB, 8cm): DC: DC to 1 MHz, AC: 10 Hz to 1 MHz. **Rise Time:** 350 ns. **Phase Shift:** Less than 3° at 100 kHz. All other external horizontal deflection specifications are identical to vertical deflection. **INTERNAL HORIZONTAL DEFLECTION (SWEEP MODE)-Deflection Coefficient (Sweep Rate):** 0.2 us/cm to 0.2 s/cm in 19 calibrated steps, 1-2-5 sequence, continuously variable between steps. **Magnifier:** Times 5 magnifier extends maximum sweep rate to 40 ns/cm. **Accuracy:** ± 3% (± 5% with magnifier). **TRIGGERING-Sources:** CH-1, CH-2, alternate, line, external. **Modes:** Auto, Normal. **Coupling:** AC, HF rej, TV-V, TV-H. **Slope:** + or -. **Sensitivity:** **Bandwidth:** Norm 30Hz-10MHz 2Hz-20MHz. Auto 30Hz-10MHz 30Hz-20MHz. **Internal:** Norm 0.5 div. 1.5 div. Auto 0.5 div. 1.5 div. **External:** Norm 0.2 Vp-p. 0.6 Vp-p. Auto 0.2 Vp-p. 0.6 Vp-p. **External Input:** Maximum Input: 600 V (DC plus AC peak). **Hold-off:** Variable sweep hold-off control permits stable triggering on complex waveforms. **Z-AXIS (INTENSITY) MODULATION-Input Level:** TTL compatible. **Maximum Input:** 50 V p-p. **INTERNAL CALIBRATOR-Output Level:** 0.5 V p-p, ± 2%. **Wave Shape:** Square wave, 1 kHz, nominal. **CRT DISPLAY-Phosphor:** P31. **Graticule:** Internal, illuminated, 8 x 10 cm, rectangular. **Accelerating Potential:** 2 kV. **Trace Alignment:** Front panel trace rotation control. **POWER REQUIREMENTS-115/240 VAC ± 13%, 50 to 60 Hz, 55 W. PHYSICAL-Size (WHD):** 11-3/8 x 6-7/8 x 14-3/4". (290 x 160 x 375 mm). **Weight:** 16.5 lbs. **SUPPLIED ACCESSORIES-** Instruction Manual, Type LP-16AX switchable X1X10 Probes. **AVAILABLE ACCESSORIES-** LP-2013 Probe Pouch...\$25.00 LC-2014 Protective Front Cover...\$40.00. LH-2015 Viewing Hood...\$10.00. LRA-508 Rack Mount Adaptor...\$85.00



## LEADER 35 MHz DUAL TRACE OSCILLOSCOPE

MODEL LBO-523

REG. \$895.00

OUR PRICE **\$749.95**

**SPECIAL!**

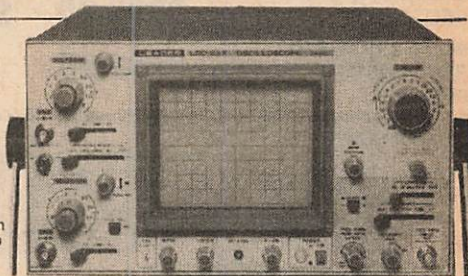
•7 kV Accelerating Potential. •Auto Focus. •500 uV Sensitivity.

### DESCRIPTION

The LBO-523 is a 35 MHz Oscilloscope economically designed for applications requiring medium bandwidth and extensive triggering facilities where costly features such as delayed sweep and signal delay lines are impractical. Trigger controls include variable hold-off, alternate channel triggering, HF reject, vertical and horizontal TV coupling and line source triggering. The vertical input sensitivity of 0.5 mV, add and subtract modes and a CH-1 output connector add to the units total capability. Complex waveforms can be viewed easily even at highest sweep rates without readjusting the front panel controls due to its bright PDA CRT with 7 kV accelerating potential and an auto focus feature. The LBO-523 is well suited for many design, production, repair and educational test requirements.

### SPECIFICATIONS

**VERTICAL DEFLECTION-Bandwidth:** (-3 dB, 8 cm): DC: DC to 35 MHz, AC: 10 Hz to 35 MHz. **Rise Time:** 10.0 ns. **Deflection Coefficients:** 5 mV/cm to 5 V/cm in 10 calibrated steps, 1-2-5 sequence, continuously variable between steps. 0.5 mV/cm by X10 magnifier. **Accuracy:** ± 3% (0-40°C), ± 5% with X10 magnifier. **Input Impedance:** 1 M ohm, 30 pF. **Maximum Input:** 600 V (DC plus AC peak). **Display Modes:** CH-1, CH-2, alternate, chop, add, subtract (CH-2 invert). **Output:** CH-1 output on rear panel of 0.1 V/cm deflection. **EXTERNAL HORIZONTAL DEFLECTION (X-Y MODE)-Input:** Via CH-1 vertical amplifier. **Bandwidth:** (-3 dB, 8 cm): DC: DC to 1 MHz, AC: 10 Hz to 1 MHz. **Rise Time:** 350 ns. **Phase Shift:** Less than 3° at 100 kHz. All other external horizontal deflection specifications are identical to vertical deflection. **INTERNAL HORIZONTAL DEFLECTION (SWEEP MODE)-Deflection Coefficient (Sweep Rate):** 0.2 us/cm to 0.2 s/cm in 19 calibrated steps, 1-2-5 sequence, continuously variable between steps. **Magnifier:** Times 10 magnifier extends maximum sweep rate to 20 ns/cm. **Accuracy:** ± 3% (± 5% with magnifier). **TRIGGERING-Sources:** CH-1, CH-2, alternate, line external. **Modes:** Auto, Normal. **Coupling:** AC, HF, REJ, TV-V, TV-H. **Slope:** + or -. **Sensitivity:** **Bandwidth:** Norm 30Hz-10MHz 2Hz-20MHz. Auto 30Hz-10MHz 30Hz-20MHz. **Internal:** Norm 0.5 div. 1.5 div. Auto 0.5 div. 1.5 div. **External:** Norm 0.2 Vp-p. 0.6 Vp-p. Auto 0.2 Vp-p. 0.6 Vp-p. **External Input:** Maximum Input: 600 V (DC plus AC peak). **Hold-Off:** Variable sweep hold-off control permits stable triggering on complex waveforms. **Z-AXIS (INTENSITY) MODULATION-Input Level:** TTL compatible. **Maximum Input:** 50 V p-p. **INTERNAL CALIBRATOR-Output Level:** 0.5 V p-p, ± 2%. **Wave Shape:** Square wave, 1 kHz, nominal. **CRT DISPLAY-Phosphor:** P31. **Graticule:** Internal, illuminated, 8 x 10 cm, rectangular. **Accelerating Potential:** 7 kV/2kV. **Trace Alignment:** Front panel trace rotation control. **POWER REQUIREMENTS-115/240 VAC ± 13%, 50 to 60 Hz, 55 W. PHYSICAL-Size (WHD):** 11-3/8 x 6-7/8 x 14-3/4". (290 x 160 x 375 mm). **Weight:** 16.5 lbs. **SUPPLIED ACCESSORIES-** Instruction Manual, Type LP-16AX switchable X1X10 Probes. **AVAILABLE ACCESSORIES-** LP-2013 Probe Pouch...\$25.00 LC-2014 Protective Front Cover...\$40.00 LH-2015 Viewing Hood...\$10.00 LRA-508 Rack Mount Adaptor...\$85.00



## LEADER 40 MHz DUAL TRACE/DUAL TIME BASE OSCILLOSCOPE

MODEL LBO-524

REG. \$995.00

OUR PRICE **\$799.95**

MODEL LBO-524L

(Single delay line)

REG. \$1050.00

OUR PRICE **\$869.95**

### FEATURES

•500 uV Sensitivity. •Calibrated Delayed Time Base. •Alternate Triggering. •CH-1 Output.

### DESCRIPTION

The LBO-524 is designed to meet a broad range of applications in design, testing and servicing of both analog and digital circuits and equipment. Its large 8 x 10 cm PDA CRT provides sharp bright displays even at highest sweep rates. Comprehensive triggering controls including holdoff, alternate triggering and delayed sweep triggered functions permit stable displays for even the most complex signals. With 0.5 millivolt sensitivity, extremely low level signals can easily be observed. A channel 1 output is available on the rear panel to drive other less sensitive instruments such as a frequency counter with an input level as low as 500 microvolts. The dual time base permits accurate observation and time interval measurements of complex waveforms. The Model LBO-524L is also equipped with signal delay lines to allow observation of pre-trigger information.

### SPECIFICATIONS

**VERTICAL DEFLECTION-Bandwidth:** (-3 dB, 8 cm) DC: DC to 35 MHz, AC: 10 Hz to 1 MHz. **Rise Time:** 10 ns. **Signal Delay:** 140 ns. **Deflection Coefficients:** 5 mV/cm to 5 V/cm in 10 calibrated steps, 1-2-5 sequence, continuously variable between steps; 0.5 mV/cm by X10 magnifier to 5 MHz. **Accuracy:** ± 3% (0-40°C), ± 5% with X10 MAG on. **Input Impedance:** 1M ohm, 30 pF. **Maximum Input:** 600 V (DC plus AC peak). **Signal Delay (LBO-524L only):** 140 ns. **Display Modes:** CH-1, CH-2, alternate, chop, add, subtract (CH-2 invert). **Output:** CH-1 output on rear panel of 0.1 V/cm deflection. **EXTERNAL HORIZONTAL DEFLECTION (X-Y MODE)-Input:** Via CH-1 vertical amplifier. **Bandwidth:** (-3 dB, 10 div.): DC: DC to 1 MHz, AC: 10 Hz to 1 MHz. **Rise Time:** 350 ns. **Phase Shift:** less than 3° at 100 kHz. All other external horizontal deflection specifications are identical to vertical deflection. **INTERNAL HORIZONTAL DEFLECTION-Display Modes:** Main time base, main time base intensified by delayed time base, delayed time base, delayed time base triggered. **Main Time Base:** 0.2 us/div to 0.2 s/div in 19 steps, 1-2-5 sequence, continuously variable between steps. **Delayed Time Base:** 0.2 us/div to 0.5 ms/div in 11 steps, 1-2-5 sequence. **Magnifier:** Times 20 magnifier extends maximum sweep rate to 20 ns/div. **Accuracy:** ± 3% (± 5% with magnifier). **MAIN TIME BASE TRIGGERING-Sources:** Internal CH-1 and CH-2, Alternate, Line External. **Modes:** Auto, Normal. **Coupling:** AC, HF rej, TV-V, TV-H. **Slope:** + or -. **Sensitivity:** **Bandwidth:** Norm 30Hz-10MHz 2Hz-35MHz. Auto 30Hz-10MHz 30Hz-35MHz. **Internal:** Norm 0.5 div. 1.5 div. Auto 0.5 div. 1.5 div. **External:** Norm 0.2 Vp-p. 0.6 Vp-p. Auto 0.2 Vp-p. 0.6 Vp-p. **External Input:** Maximum Level: 600 V (DC plus AC peak). **Hold-Off:** Variable sweep hold-off control permits stable triggering on complex waveforms. **DELAYED TIME BASE TRIGGERING-Modes:** Immediate: delayed time base begins immediately after delay time. Triggered: delayed time base begins on the first trigger after the delay time. **Z-AXIS (INTENSITY) MODULATION-Input Level:** TTL compatible. **Maximum Input:** 50 V p-p. **INTERNAL CALIBRATOR-Output:** 0.5 V p-p, ± 2%. **Wave Shape:** Square wave, 1 kHz nominal. **CRT DISPLAY-Phosphor:** P31. **Graticule:** Internal, illuminated 8 x 10 div (1 div = 1.0 cm). **Accelerating Potentials:** 7 kV and 2 kV (post deflection). **Trace Alignment:** Front panel trace rotation control. **POWER REQUIREMENTS-117 VAC, ± 13%, 50 to 60 Hz, 50W. PHYSICAL-Size (WHD):** 11-3/8 x 6-1/4 x 14-3/4" (290 x 160 x 375 mm). **Weight:** 16.5 lbs. **SUPPLIED ACCESSORIES-** Instruction Manual, Type (2) Type LP-16AX switchable, X1X10 Probes. **AVAILABLE ACCESSORIES-** LP-2013 Probe Pouch...\$25.00 LC-2014 Protective Front Cover...\$40.00 LH-2015 Viewing Hood...\$10.00 LRA-508 Rack Mount Adaptor...\$85.00



## LEADER 50 MHz TWO CHANNEL DUAL TIME BASE OSCILLOSCOPE

MODEL LBO-525L

REG. \$1195.00

OUR PRICE **\$989.95**

### FEATURES

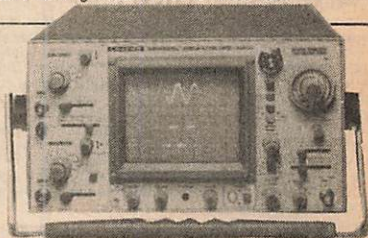
• Alternate Triggering. • 600V (dc + ac Peak) Max. Input. • Dimensions: (WHD) 11-3/8" x 6-1/4" x 14-3/4". • Weight: 21 lbs.

### DESCRIPTION

The LBO-525L is a simple-to-operate 50 MHz two channel oscilloscope that still offers all of the flexibility and advanced features required for critical applications. The LBO-525L has a true calibrated delayed time base with both run after A and trigger after A modes for jitter-free operation. 500 uV maximum sensitivity and 20 ns maximum sweep speed allow analysis of low level and high frequency signals, while still offering a maximum input rating of 600 V (dc plus ac peak). The LBO-525L has an illuminated internal graticule for precise measurements and photography and 12 kV CRT accelerating potential for maximum trace intensity even when observing transients at high sweep speeds.

### SPECIFICATIONS

**VERTICAL DEFLECTION:** **Bandwidth:** (-3 dB) dc: dc to 50 MHz, ac: 10 Hz to 50 MHz. **Rise Time:** 7 ns. **Signal Delay:** 20 ns approximate. **Deflection Coefficients:** 5 mV/cm to 5 V/cm in 10 calibrated steps, 1-2-5 sequence, continuously variable between steps; 0.5 mV/cm by 10X magnifier to 5 MHz. **Accuracy:** (0-40°C): ± 3%, ± 5% with X10 MAG on. **Input Coupling:** AC, GND, DC. **Input Impedance:** 1 M ohm ± 1.5%, 30pF ± 5 pF. **Maximum Input:** 600 V (dc plus ac peak). **Display Modes:** CH-1, CH-2, alternate, chop, add, subtract (CH-2 invert). **Display Modes:** CH-1, CH-2, alternate, chop, add, subtract (CH-2 invert). **Output:** CH-1 output on rear panel, 0.1 mV per cm of CRT deflection (50 ohm termination). **EXTERNAL HORIZONTAL DEFLECTION (X-Y MODE):** Input: Via CH-1 vertical amplifier. **Bandwidth:** (-3 dB): DC: DC to 1 MHz, ac: 10 Hz to 1 MHz. **Phase Shift:** less than 3% at 100 kHz. All other external horizontal deflection specifications are identical to vertical deflection. **INTERNAL HORIZONTAL DEFLECTION:** **Display Modes:** Main time base, main time base intensified by delayed time base, delayed time base, delayed time base triggered. **Main Time Base:** 0.5 us/cm to 0.2 s/cm in 19 steps, 1-2-5 sequence, continuously variable between steps. **Delayed Time Base:** 0.2 us/cm to 0.5 ms/cm in 11 steps, 1-2-5 sequence. **Magnifier:** Times 10 magnifier extends maximum sweep rate to 20 ns/div. **Delay Time Jitter:** 1 part in 5,000. **Delay Time Dial Accuracy:** ± 3%. **Accuracy:** ± 3%, ± 5% with X10 MAG on. **Power Requirements:** 100, 120, 200, 240 Vac ± 10%, 50/60 Hz, 55W. **Accessories supplied:** Instruction manual, 2 type LP-050X X10 probes.



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## LEADER LABORATORY FREQUENCY COUNTERS

**MODEL LDC-822 (80 MHz)**  
REG. \$320.00 OUR PRICE **\$299.95**

**MODEL LDC-824S (520 MHz)**  
REG. \$550.00  
OUR PRICE **\$499.95**

**MODEL LDC-823S (250 MHz)**  
REG. \$450.00 OUR PRICE **\$399.95**

### LDC-822 80 MHz Counter

The seven digit, 80 MHz LDC-822 is the simplest and least expensive bench-type counter from Leader. It has a time base accuracy of 5 ppm, offering high performance at a cost effective price.

#### SPECIFICATIONS LDC-822

**FREQUENCY MEASUREMENTS Range:** 10Hz-80 MHz. **Gate Time:** 0.1, 1, 10s. **Resolution:** 10 Hz, 1 Hz, 0.1 Hz. **Accuracy:** ± 1 count, ± time base accuracy. **PERIOD MEASUREMENT Range (X1):** 100 ms to 1 us. **Multiplication Factors:** Times 10, 100, and 1,000. **Resolution:** 10, 1, 0.1 us. **Accuracy:** ± 1 count, ± time base accuracy, ± trigger error + mult. factor. **INPUT SECTION: Sensitivity:** 20 mV rms. **Attenuator:** Times 1, 10, and 100. **Coupling:** ac. **Impedance:** 1 Mohm nominal. **Maximum Input:** 10 to 400 Hz; 100 V rms., 400 Hz to 100 kHz; 20 V rms., 100 kHz to 80 MHz; 5 V rms. **TIME BASE Frequency:** 10 MHz. **Temp. Stability (0-40°C):** 5 ppm. **Aging Rate:** 5 ppm/yr. **GENERAL Display:** 7 digits, 0.5" fluorescent. **Operating Temperature:** 0-40°C (32-104°F). **POWER REQUIREMENTS:** 100, 120, 200, 220, 240 Vac ± 10%, 50/60 Hz, 10 VA. **Dimensions:** (WHD) 8" x 3" x 10". **Weight:** 5 lbs. **Accessories supplied:** One pair of test leads.

### LDC-823S 250 MHz Counter

The LDC-823S has a standard time base accuracy of 1 ppm from 10 Hz to 250 MHz. It is also available with an ovenized time base which gives 0.03 ppm stability.

#### SPECIFICATIONS

**FREQUENCY MEASUREMENTS Range:** 10 Hz-250 MHz in two ranges. **Gate Time:** 0.1, 1, 10s. **Resolution:** 80 MHz-1 Hz, 0.1 Hz, 0.01 Hz, 250 MHz-100 Hz, 10 Hz, 1 Hz. **Accuracy:** ± 1 count, ± time base accuracy. **PERIOD MEASUREMENT Range:** 100ms to 1 us. **Multiplication Factors:** Times 10, 100 and 1,000. **Resolution:** 10, 1, 0.1 us. **Accuracy:** ± 1 count, ± time base accuracy, ± trigger error + mult. factor. **INPUT SECTION: Sensitivity:** 20 mV (50 mV above 100 MHz) **Attenuator:** Times 1 and 10. **Coupling:** ac. **Impedance:** 1 Mohm or 50 ohm switchable. **Maximum Input:** 10 to 400 Hz; 100V rms., 400 Hz to 100 kHz; 20 V rms., 100 kHz to 250 MHz; 5 V rms. **TIME BASE Frequency:** 10 MHz. **Temp. Stability (0-40°C):** 1 ppm (0.03 ppm optional\*). **Aging Rate:** 1ppm/yr. (0.02 ppm/day optional\*). **Output:** 1 Vp-p, 10 MHz. **External Input:** 1 to 10 Vp-p. **Display:** 8 digits, 0.5" fluorescent. **Operating Temperature:** 0-40°C (32-104°F). **POWER REQUIREMENTS:** 100, 120, 200, 220, 240 Vac ± 10%, 50/60 Hz, 10 VA. **Dimensions:** (WHD) 8" x 3" x 10". **Weight:** 6 lbs. **Accessories supplied:** One pair of test leads.

### LDC-824S 520 MHz Counter

The LDC-824S has a standard time base accuracy of 1 ppm (0.03 ppm optional) over its 10 Hz to 520 MHz frequency range.

#### SPECIFICATIONS

**FREQUENCY MEASUREMENTS Range:** 10 Hz-520 MHz in two ranges. **Gate Time:** 0.1, 1, 10s. **Resolution:** 80 MHz-1 Hz, 0.1 Hz, 0.01 Hz, 520 MHz-100 Hz, 10 Hz, 1 Hz. **Accuracy:** ± 1 count, ± time base accuracy. **PERIOD MEASUREMENT Range:** 100 ms to 1 us. **Multiplication Factors:** Times 10, 100, and 1,000. **Resolution:** 10, 1, 0.1 us. **Accuracy:** ± 1 count, ± time base accuracy, ± trigger error + mult. factor. **INPUT SECTION: Sensitivity:** 20mV (50 mV above 80 MHz); **Attenuator:** Times 1 and 10. **Coupling:** ac. **Impedance:** 1 Mohm or 50 ohm switchable. **Maximum Input:** 10 to 400 Hz; 100 V rms., 400 Hz to 100 kHz; 20 V rms., 100 kHz to 520 MHz; 5 V rms. **TIME BASE Frequency:** 10 MHz. **Temp. Stability (0-40°C):** 1 ppm (0.03 ppm optional\*). **Aging Rate:** 1 ppm/yr. (0.02 ppm/day optional\*). **Output:** 1 Vp-p, 10 MHz. **External Input:** 1 to 10 Vp-p. **Display:** 8 digits, 0.5" fluorescent. **Operating Temperature:** 0-40°C (32-104°F). **POWER REQUIREMENTS:** 100, 120, 200, 220, 240 VAC ± 10%, 50/60 Hz, 10 VA. **Dimensions:** (WHD) 8" x 3" x 10". **Weight:** 6 lbs. **Accessory supplied:** One pair of test leads.



LDC-822  
(80 MHz)



LDC-823S  
(250 MHz)



LDC-824S  
(520 MHz)

## LEADER 1 GHz DIGITAL COUNTER

**MODEL LDC-825** REG. \$1295.00 OUR PRICE **\$1165.00**

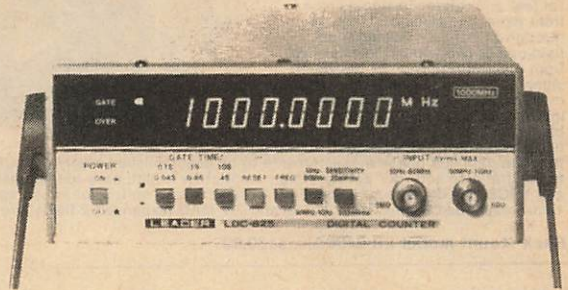
### DESCRIPTION

The LDC-825 has the widest frequency range of any Leader counter; 10 Hz to 1 GHz. It also has the highest time base accuracy (± 0.03 ppm), making it the ideal counter for critical, high-frequency requirements. Two input impedances, 1 Mohm (10 Hz to 80 MHz) and 50 ohm (50 MHz to 1 GHz) are available for precise matching to the device under test.

#### SPECIFICATIONS

##### FREQUENCY MEASUREMENTS

**Range:** 10 Hz to 1 GHz in two ranges. **Gate Time:** 0.1 s; 1 s; 10 s; 0.04 s; 0.4 s; 4 s. **Accuracy:** ± time base accuracy ± 1 count. **PERIOD MEASUREMENTS Range:** 100 ms to 1 us. **Multiplication Factors:** X10, X100, X1000. **Resolution:** 10 us, 1 us, 0.1 us. **Accuracy:** ± time base accuracy ± trigger error ± 1 count. **INPUT SECTION Input Impedance:** 1 Mohm at 10 Hz to 80 MHz, 50 ohm at 50 MHz to 1 GHz. **Coupling:** ac. **Attenuator:** Times 1, 10 (10 Hz-80MHz). **Sensitivity:** 10 Hz to 80 MHz: 20 mV rms into 1 Mohm, 50MHz to 1GHz: 50mV rms into 50 ohms. **Max. Input Voltage:** 100 V rms at 10 Hz to 400 Hz into 1 Mohm, 20 V rms at 400 Hz to 100 kHz into 1 Mohm, 5 V rms at 100 kHz to 80 MHz into 1 Mohm, 5 V rms at 50 MHz to 1 GHz into 50 ohms. **TIME BASE Frequency:** 1 MHz, crystal controlled. **Accuracy:** ± 0.03 ppm, 0° to 40°C.



## LEADER 4 1/2 DIGIT — 150 MHz PORTABLE COUNTER

**MODEL LDC-831** REG. \$210.00 OUR PRICE **\$178.50**

### DESCRIPTION

The LDC-831 is a 4 1/2 digit 150MHz battery powered counter. Its small size and portability make it ideal for field service application. An optional AC adaptor converts it to bench use. Simple controls and a large, bright LED display make it easy to operate. For high frequency applications, the LDC-831 can provide up to 6 1/2 digits of resolution. The five most significant digits are displayed using the 0.01 second gate time. By then switching to the 1 second gate, all four digits to the right of the decimal point are displayed. The combination of the two readings yields 6 1/2 digits of resolution. The LCD-831, with its wide frequency range, 10 ppm accuracy and quality construction will give years of reliable service.

#### SPECIFICATIONS

**Frequency Range:** 5 Hz to 150 MHz. **Resolution:** Low Range: 100 Hz (0.01 s gate time), 1 kHz (1 s gate time). High Range: 10 kHz (0.01 s gate time), 100 Hz (1 s gate time). **Display:** 4 1/2 digit LED. **Time Base:** Frequency: 3.2768 MHz. **Accuracy:** 10 ppm, 23 ± 3°C, 50 ppm, 0-40°C. **Sensitivity:** Low Range: 5 to 10 Hz 50 mV rms, 10 Hz to 1 MHz 35 mV rms. **Input Impedance:** Low Range: 1 Mohm nominal (AC coupled), High Range: 2.5 kohm nominal (AC coupled). **Operating Temperature:** 0 to 40°C. **Power Requirements:** 4 "C" cells (supplied). **External power via LPS-166F, AC adaptor (optional).** **Dimensions:** (WHD) 6-3/16" x 2-1/4" x 4-3/4". **Weight:** 1.1lbs.

**Optional Accessories:** LPS-166F AC Adaptor...\$9.95 CC-851 Carrying Case...\$12.95





# TEST INSTRUMENTS

## LEADER NTSC VIDEO GENERATOR

MODEL LCG-396

REG. \$995.00 OUR PRICE **\$845.75**

### DESCRIPTION

The LCG-396 is a versatile NTSC video generator suitable for testing, servicing and evaluating a broad range of video systems including video tape recorders, CATV and MATV systems, video monitors and television receivers. It provides 11 test patterns including the standard NTSC color bars for measuring and adjusting color or purity, white balance, luminance, chrominance, and convergence. Outputs include composite video, H or V scope trigger, subcarrier and RF (CH 5 or CH 6). Other features include variable chroma, luminance and set-up levels, and selectable interlaced or progressive scanning.

### SPECIFICATIONS

**PATTERNS NTSC Color Bars:** Split field color bars with upper 75% white, yellow, cyan, green, magenta, red, blue, and black; lower 25% Q, —1, and 100% white (IQW). **Full Field Color Bars:** As above without IQW. **Rasters:** Separate red, blue, green and white. **Stair Case:** Obtained from color bars with chrominance component deleted. **Crosshatch:** 21 vertical x 16 horizontal white lines centered on black raster and one center dot. **Dots:** 20 vertical x 15 horizontal white dots equally spaced on black raster. **SYNCHRONIZATION Type:** 60 Hz field of 525 lines interlaced with equalizing pulse, switchable to progressive scanning. **Horizontal Scanning Frequency:** 15.734 kHz. **Vertical Scanning Frequency:** Interlaced 59.94 Hz and progressive 60.05 Hz. **Horizontal Blanking Pulse Width:** 11.3 us. **Vertical Blanking Pulse Width:** Interlaced 1.24 ms and progressive 1.21 ms. **Horizontal Sync:** 4.61 us. **Front Porch:** 1.3 us. **Burst:** 8 cycles min. **COMPOSITE VIDEO OUTPUT Level:** 0 to 1.5 V p-p, 1 V p-p in present position. **Impedance:** 75 ohm. **Polarity:** Positive (sync signal is negative). **RF OUTPUT Frequencies:** CH 5, 77.25 MHz  $\pm$  0.5%; CH 6, 83.25 MHz  $\pm$  0.5%. **Level:** 10 mV rms. **Impedance:** 75 ohm unbalanced. **Modulation System:** Negative modulation. **SUBCARRIER OUTPUT Frequency:** 3.579545 MHz  $\pm$  100 Hz (calibration to  $\pm$  5 Hz is possible). **Level:** 1 V p-p (no load). **Impedance:** 75 ohm. **Power Requirements:** 117 Volts. **Dimensions:** (W x H x D) 7-7/8 x 4-3/4 x 11-7/8 in. 200 x 120 x 300mm. **Weight:** 7 lbs., 3.2 kg.



## LEADER NTSC VIDEO GENERATORS

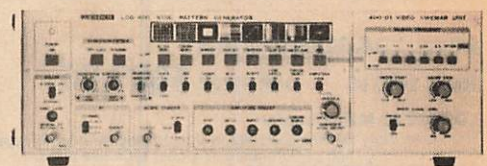
MODEL LCG-400M (MULTIBURST)

MODEL LCG-400S (SWEEP)

REG. \$1995.00 OUR PRICE **\$1755.00**

### DESCRIPTION

The LCG-400 provides both gen-lock and internal synchronization with the full range of video signals needed for testing and adjusting monitors, cameras, VTR's and overall performances of color and B&W TV systems. It is available with either multiburst (LCG-400M) or sweepmarker (LCG-400S) generators. The LCG-400 will sync with all standard composite video signals including those from quad head and helical scan VTR's. Patterns include EIA and full field color bars, 5-step stair case, 8 color rasters, crosshatch and dot convergence, circle and corner marker with on/off control of chroma and luminance. Both interlace and progressive scanning are provided. Outputs include composite video, subcarrier, black burst, vertical and horizontal drive, and CH 5/6 RF. Units are supplied for either bench-top or rack mounting.



### SPECIFICATIONS

**System:** NTSC-M. **PATTERNS EIA Color Bar:** EIA standard RS-189A 75% amplitude — 100% saturated color bar with gray (75% white), yellow, cyan, green, magenta, red, blue —1, 100% white, "Q" and black. **Full Field Color Bar:** 75 amplitude — 100% saturated color bar with gray (75% white), yellow, cyan, green, magenta, red, blue, and black. **Stair Case:** 5 step. **Raster:** 8 colors — red, green and blue (combined), white (100% and 75%), yellow, cyan, green, magenta, red, blue and black. **Window:** White window on black background. **Convergence:** Crosshatch 17 x 13 dot; dot 16 x 12, and center. **Alignment:** Crosshatch 9 x 7, circle, and corner marker. **Multiburst Frequency (LCG-400M only):** 0.5, 1.5, 2.0, 3.0, 3.58, 4.2 MHz ( $\pm$  3% adjustable) with 100% white reference level at left end of burst; 50 and 100% amplitude with  $\pm$  1 dB flatness. **Video Sweep (LCG-400S only):** 50 kHz to 7 MHz synchronized with field; amplitude is 50 or 100% fixed or 0 to 100% variable with  $\pm$  1 dB flatness; 0.5, 1.0, 2.0, 3.5, 3.58, and 4.2 MHz marker frequencies. **SYNC SIGNAL:** EIA standard RS-170A. **Scanning System:** Interlace and progressive. **Number of Scanning Line:** Interlace 525 and progressive 262. **Line Frequency:** 15.734 kHz. **Field Frequency:** Interlace 59.94 Hz and progressive 60.05 Hz. **Gen-Lock:** Synchronized to video signal input. **Horizontal Delay:** Continuously variable. **Sub-Carrier Phase:** 0-360° continuously variable. **SOUND Inter-carrier system:** F3 (FM). **Carrier Frequency:** 4.5 MHz. **Int. Mode:** 1 kHz sine wave. **1 kHz Output:** 3 V p-p. **Output Impedance:** 600 ohm. **EXT. MODE Frequency:** 50 Hz - 10 kHz. **Input Voltage:** 3 V p-p. **Input Impedance:** 600 ohm. **Pre-Emphasis:** No. **COMPOSITE VIDEO OUTPUT Polarity:** Negative Sync. **Voltage:** 1 V fixed and 0-1V variable. **Impedance:** 75 ohm. **SUBCARRIER OUTPUT Frequency:** 3.579545 MHz  $\pm$  5 Hz (0° —40°C). **Voltage:** 2 V p-p. **Impedance:** 75 ohm. **BLACK BURST OUTPUT Voltage:** Sync signal 286 mV and burst 286 mV. **Impedance:** 75 ohm. **RF OUTPUT Channel:** CH 5, 77.25 MHz  $\pm$  0.5%. CH 6, 83.25 MHz  $\pm$  0.5%.

## LEADER NTSC WAVEFORM MONITOR

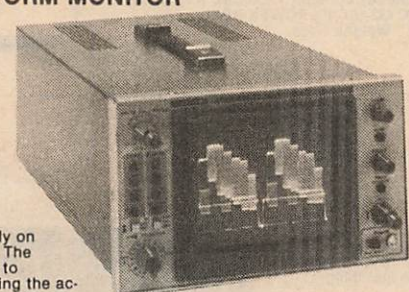
MODEL LBO-5860A

REG. \$2050.00

OUR PRICE **\$1850.00**

### DESCRIPTION

The LBO-5860 Waveform Monitor permits displaying the vertical interval test and reference signals by a front panel line selector. Lines 14 through 21 can be selected from field one or two without interference from the active portion of the video signal, a feature normally available only on more expensive, full rack mount units. The instrument also has a blanking output to blank the companion Vectorscope during the active portion of the video signal, allowing differential gain and phase measurements to be accomplished easily. The CRT features an internal grid and 7 kV accelerating potential for bright, easy-to-read displays. Total RGB and YRGB (YRGB optional) capability is available and horizontal sweep speeds of 2 H (2 line), 1u/div (expanded 2 line), 2 V (2 fields) and 2 V MAG (expanded 2 fields) are standard.



Rack Mount model LR-2400AI....\$180.00

## LEADER OSCILLOSCOPE CALIBRATOR

MODEL LOC-7005

OUR PRICE **\$1295.00**

### FEATURES

- Amplitude calibration 0.25 mV-100 V.
- Time mark output 0.05 us-1.0 S.
- Fast Rise Time Square Wave.

### DESCRIPTION

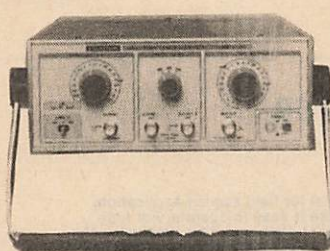
The LOC-7005 is an oscilloscope calibrator which combines the functions most needed to test, repair, and calibrate oscilloscopes into one compact instrument. The LOC-7005 provides three outputs:

1. An amplitude output to calibrate the vertical axis of an oscilloscope. It provides a .25mV-100 V square wave in a 1-2.5-5 step sequence. Output frequencies are 100 Hz, 1 kHz and 10 kHz with a 100 ns rise time.
2. A time marker output to calibrate the time base (sweep speed) of an oscilloscope. The marker interval is from 0.05 us-1 s in a 1-2.5 step sequence at 0.1 V p-p.
3. A fast rise time square wave to check the pulse response and rise time of an oscilloscope. The rise time of the square wave is less than 3 ns at amplitudes of 20 mV, 40 mV or 80 mV. The output frequency is 100 kHz.

The LOC-7005's small size and versatility make it the ideal instrument for service and calibration facilities who must maintain their own field service and general purpose oscilloscopes.

### SPECIFICATIONS

**TIME BASE: Frequency:** 3.2768 MHz. **Power:** Batteries (not supplied) "C" cell x 4 (6V) Ext power to 12V, 200 mA. **Size and Weight:** 160(W) x 58(H) x 122(D) mm, 500g (without batteries).



## LEADER NTSC VECTORSCOPE

MODEL LVS-5850B

REG. \$2050.00

OUR PRICE **\$1850.00**

### DESCRIPTION

The LVS-5850 Vectorscope provides a convenient method for observing and measuring the relative phase and amplitude of chrominance signal components. It utilizes a unique technique which electronically displays the 'inner boxes' which represent error limits of  $\pm 2.5^\circ$  and  $\pm 2.5$  IRE units. This improves the accuracy of phase and amplitude adjustments by eliminating errors due to CRT non-linearities. The LVS-5850 includes three loop-through inputs including a dedicated external subcarrier reference input which is front panel selectable. Either of the two composite video loop-through inputs can also be selected as the reference signal and all three inputs can be displayed individually. The unit is also equipped with a Z-axis blanking input to provide blanking during the active portion of the video signal and unblanking during the VITS signal for a stable, jitter-free display. A test circle pattern is also selectable for a quick calibration check of the instrument. Another front panel push button provides for either 100% or 75% amplitude levels. A gain control, with a detented calibrated position, provides for continuous amplitude adjustment. A phase control permits rotating the display through 360°.

Rack Mount model LR-2400AI....\$180.00



## LEADER DIGITAL LCR METER

MODEL LCR-745

REG. \$1395.00

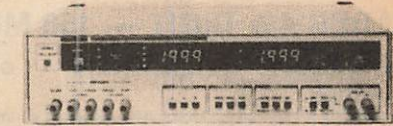
OUR PRICE **\$1275.00**

### FEATURES

- Auto Ranging.
- Equivalent circuit test, series and parallel.
- Simultaneous display of inductance and Q, capacitance and D.

### DESCRIPTION

The LCR-745 is a digital LCR Meter with automatic ranging. Direct resistance, capacitance, and inductance measurements of components and equivalent series and parallel circuits can be obtained with the CPU controlled instrument. The unit's wide automatic measurement ranges greatly reduce the time associated with performing these component and circuit measurements with a manually operated LCR Bridge, making it ideal for QC, production and incoming inspection applications where ease of operation or high volume testing is required. Quality (Q) and Dissipation (D) factor measurements are displayed simultaneously with inductance and capacitance parameters. An automatic zero offset function compensates for stray capacitance and residual resistance and inductance. Two test frequencies, 1 kHz and 120 Hz are selectable, allowing highly accurate measurements of troublesome electrolytic capacitors to be accomplished easily. The instrument's basic accuracy is  $\pm 0.35\%$  of reading.





## LEADER DISTORTION METER FOR AUDIO CIRCUITS

MODEL LDM-170B

REG. \$690.00

OUR PRICE **\$620.00**

### FEATURES

- Distortion to 0.01%.
- Signal to noise ratio to 70 dB.
- Audio level measurements to 100 uV.

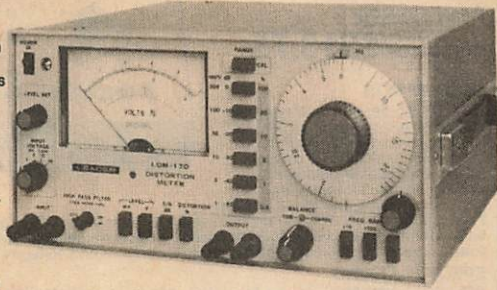
### DESCRIPTION

The LDM-170 is a compact, versatile instrument for measuring distortion, signal-to-noise ratio and signal levels in audio equipment and systems.

Total distortion measurements of 0.01 to 100% can be made over a frequency range of 20 Hz to 20 kHz. Signal to noise ratio measurements can be made up to 70 dB with signal levels from 0.35 to 30 V rms. Audio level measurements from 100 uV to 300 V rms can be made up to 200 kHz with  $\pm 5\%$  full scale accuracy.

### SPECIFICATIONS

**DISTORTION MEASUREMENTS**—Ranges: 0.3, 1, 3, 10, 30 and 100% full scale. Accuracy: Within 0.05 times full scale. Frequency Range: 20 Hz to 20 kHz in three ranges. Input Level Range: 0.35 to 30 Vrms. Input Impedance: 100K ohm, 50 pF. Fundamental Frequency Suppression: Over 70 dB. Residual Distortion: 0.03% max. **SIGNAL TO NOISE RATIO MEASUREMENTS**—Range: 0 to 70 dB below ref. level. Input Level: 0.35 to 30 V rms. **LEVEL MEASUREMENTS**—Range: 1 mV to 300 V rms full scale in 12 ranges, minimum reading 100uV. Accuracy:  $\pm 5\%$  of full scale. **PHYSICAL**—Size (WHD): 11-3/4 x 5-7/8 x 9-7/8" (300 x 150 x 250mm.). Weight: 13 lbs. (6 kg.).



## LEADER WOW & FLUTTER METER

MODEL LFM-3610

REG. \$655.00

OUR PRICE **\$590.00**

### FEATURES

- Measures Wow and Flutter and Drift.
- Selectable JIS, CCIR and DIN.
- Crystal controlled reference oscillator.
- Selectable frequency ranges for flutter measurements.

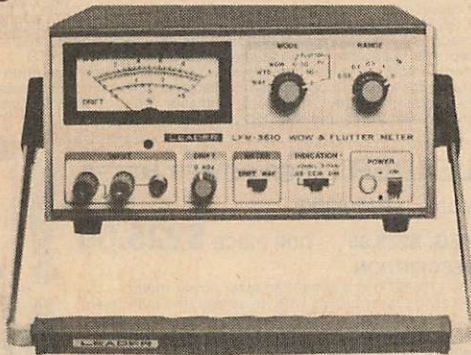
### DESCRIPTION

The LFM-3610 is a wow and flutter/drift meter designed primarily for the service, testing and repair of turntables and record/playback equipment. Selectable flutter test frequency ranges permits isolating the trouble area to the capstan, motor or belt quickly and accurately. Measurements to JIS, CCIR and DIN standards are front panel selectable.

The unit's frequency selector measurement feature greatly reduces the troubleshooting and testing time normally associated with the repair of turntables and record/playback equipment. The unit's reference frequency oscillator is crystal controlled for precise, repeatable test results. The LFM-3610 will measure drift, and wow and flutter either separately or combined.

### SPECIFICATIONS

**INPUT REQUIREMENTS**—Frequency: 3 kHz  $\pm 10\%$ , JIS, CCIR; 3.15 kHz  $\pm 10\%$ , DIN. Level: 50mV-5 V rms. Meter Indication: Wow/Flutter and Drift switchable. **DRIFT MEASUREMENTS**—Range: 0 to  $\pm 5\%$ . Accuracy:  $\pm 5\%$  full scale. **WOW AND FLUTTER MEASUREMENTS**—Range: 0.003 to 3% in 5 ranges. (0.03, 0.1, 0.3, 1, 3% full scale). Accuracy:  $\pm 8\%$  full scale. **PHYSICAL**—Size (HWD): 98 x 200 x 300mm. Weight: 2.5 kg.



## LEADER AUDIO DUMMY LOAD

MODEL LD-21

REG. \$79.95

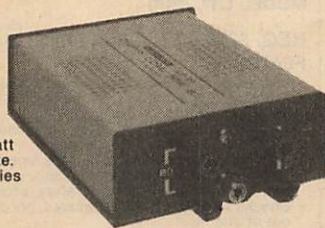
OUR PRICE **\$69.95**

### DESCRIPTION

The LD-21 provides two, non-inductive 8-ohm, 50-watt loads. Ideal for testing stereo amplifiers and the like. Loads may be connected in parallel (4-ohms) or series (16-ohms) for 100-watt dissipation.

### SPECIFICATIONS

- Channels: Two.
- Impedance: 8 ohm.
- Power: 50 watts per channel.
- Connectors: Combination binding post, banana jack.
- Size (W x H x D): 4-3/8 x 2 x 6-1/2 In. 110 x 50 x 165mm.
- Weight: 1 lb., 0.45kg.



## LEADER WOW & FLUTTER METER

0.005% to 3% MEASUREMENTS

MODEL LFM-39A

REG. \$899.95

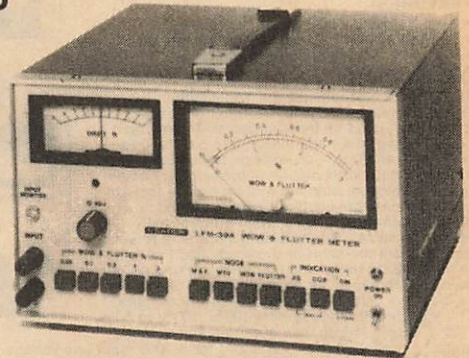
OUR PRICE **\$799.95**

### FEATURES

- Standard 3.0 kHz oscillator included; 3.15 kHz oscillator optional.
- Use with any scope to observe wow and flutter content.
- Controls on face panel for maximum convenience.
- Measures center frequency at 3.0 or 3.15 kHz.
- Provides 3 weighted modes — JIS, CCIR & DIN.
- Separate wow, flutter and drift readings; combined wow and flutter readings.

### SPECIFICATIONS

**Input Frequency:** JIS, CCIR, 3 kHz  $\pm 10\%$ , DIN 3.15 kHz  $\pm 10\%$ . **Input Voltage Range:** 15 mV to 10 Vrms. **Input Impedance:** Over 300K ohm, unbalanced. **Drift (tape speed) Measurement:** Range:  $\pm 5\%$ . Accuracy: within  $\pm 5\%$  of end scale value. **Wow Flutter Measurements:** Range: 0.03%, 0.1%, 0.3%, 1% and 3% rms. Full scale 5 ranges Accuracy: within  $\pm 5\%$  of full scale. **Mode:** W & F (flat); JIS 0.5-200 Hz ( $-3$  dB;  $\pm 1$  dB). CCIR 0.3-200 Hz ( $-3$  dB  $\pm 1$  dB). DIN 0.3-300 Hz ( $-3$  dB  $\pm 1$  dB) weighted in accordance with JIS and CCIR & DIN specifications. **Scope Output:** Output voltage—Output level, 1 Vrms  $\pm 10\%$  full scale—for JIS standards; 0.7 Vrms  $\pm 5\%$  full scale for CCIR & DIN standards. **Output Impedance:** 2K ohm  $\pm 20\%$ . **Reference Oscillator:** Frequency: 3 kHz, within  $\pm 0.1\%$  (JIS & CCIR) 3.15 kHz, within  $\pm 0.1\%$  (DIN). **Output Voltage:** 0.3 Vrms  $\pm 10\%$ . **Output Impedance:** Less than 3K ohm. **Distortion:** Less than 2%. **Recorder Output:** Output Voltage: 1V  $\pm 10\%$  at meter full scale. **Output Impedance:** 2K ohm  $\pm 20\%$ . **Power Supply:** 115/230V; 50/60 Hz; 15 VA, approx. Size: 6"H x 9-3/4"W x 9-3/4"D. Weight: 2-1/2 lbs. approx.



## LEADER 2 MHz SWEEP/FUNCTION GENERATOR

MODEL LFG-1300S

REG. \$495.00

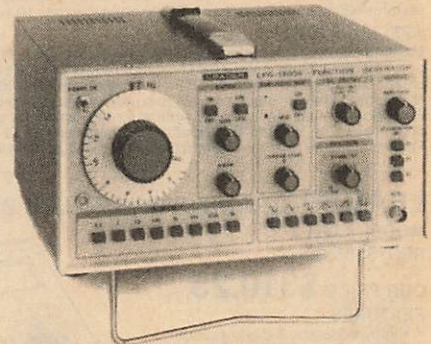
OUR PRICE **\$445.00**

### DESCRIPTION

The LFG-1300S is a general purpose signal source with a broad range of research, design and service applications. Outputs include sine, square, triangle, ramp and pulse signals. Pulse symmetry is variable over a 9:1 range and, unlike many other instruments, changing the symmetry does not appreciably affect the output frequency. Linear and logarithmic sweep frequency outputs are available with sweep widths up to 1,000:1. Output level is controlled by a calibrated 70 dB attenuator (10 dB/step) with continuous adjustment between steps. The output may be frequency or amplitude modulated by an external signal. A level control also provides suppressed carrier outputs. The LFG-1300S is housed in a sturdy metal housing with a 'human engineered' front panel for convenient, simple operation.

### SPECIFICATIONS

- **Frequency:** Ranges (0.02 Hz—2 mHz in 8 ranges, uncalibrated to 0.002 Hz): 0.02 Hz-0.2 Hz; 0.2 Hz-2 Hz; 2 Hz-20 Hz; 20 Hz-200 Hz; 200 Hz-2 kHz; 2 kHz-20 kHz; 20 kHz-200 kHz; 200 kHz-2 MHz. Accuracy: 0.02 Hz to 200 kHz:  $\pm 3\%$  of reading,  $\pm 3\%$  full scale 200 kHz to 2 MHz:  $\pm 5\%$  of reading,  $\pm 3\%$  full scale.
- **Waveforms:** Sine Wave Voltage: 20 V p-p (7 Vrms) open circuit. Distortion: 0.02 Hz-100 kHz less than 1%, 100 kHz-2 mHz less than 3%. Flatness: 0.02 Hz-2 mHz within  $\pm 0.3$  dB. Triangle Voltage: 20 V p-p open circuit. Symmetry: 1% (0.02 Hz to 100 kHz). Sawtooth Voltage: 20 V p-p open circuit. Symmetry: 15:85 or 85:15 fixed. Square Wave Output Voltage: 20 V p-p open circuit. Symmetry: 1% (0.02 Hz to 100 kHz). Rise Time: Less than 100ns. TTL Output: Fan Out: 20 TTL. DC Level: Controlled by DC offset:  $\pm 10$  V. Pulse Voltage: 20 V p-p open circuit. Symmetry: 1:1-40:1 continuously variable. Polarity: + and -.
- **Sweep Capabilities:** Type: Linear or logarithmic. Rate (duration): 0.5 Hz to 50 Hz (2s to 20 ms). Width: 1,000:1 max, continuously variable. Ramp Output (for oscilloscope H-input): 0 to  $\pm 10$  V. AM Capabilities: Modulation Level: 0 to 100% continuously variable. Carrier Level: Adjusted by front panel control.
- **Output Level Control:** Attenuator: 10, 20, 40 dB (0-70 dB, 10 dB steps). Impedance: 50 ohm. Max Level: 20 V p-p adjustable.
- **Rear Panel Inputs:** VCO: Input for external frequency control signal. Mod: Input for AM signal. GCV: Output for oscilloscope H-axis. TTL: Fixed level TTL output, fan out = 20.





# TEST INSTRUMENTS

## LEADER TRIPLE OUTPUT DC POWER SUPPLIES

MODEL LPS-151  
REG. \$359.00 OUR PRICE **\$360.00**

MODEL LPS-152  
REG. \$495.00 OUR PRICE **\$449.95**

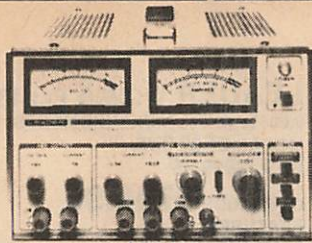
- FEATURES**
- Auto tracking. • Half rack mountable.
  - Metered output. • Less than 3 mV p-p ripple.
  - Current limited with automatic recovery.

### DESCRIPTION

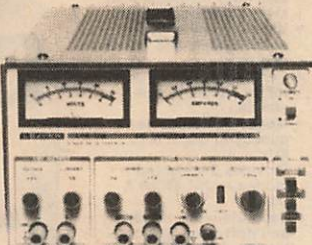
The LPS-151 and LPS-152 are Triple Output DC Power Supplies which can be either half rack mounted or used on the test bench. The metered output voltages are adjustable, 0 to 6 volts, 0 to +25 volts and 0 to -25 volts on both models making them ideal for computer subassembly, circuit board, semiconductor and system burn-in test applications. All three outputs have independent adjustable current limiting with an auto recovery feature which allows the output voltage to return to normal when the short or overload condition is removed. Both units also feature a tracking output mode which allows an adjustable ratio of positive vs. negative voltage between the 25 volt outputs. The adjustment range is from 100% -100% to 50% -100%. Ripple is less than 3 mV p-p and output stability is rated at less than 3 mV for  $\pm 10\%$  input line voltage variation and 0 to 100%. Both power supplies carry Leader's full Two Year Warranty.

### SPECIFICATIONS

**OUTPUT: Voltage:** 0 to +6 V adjustable, 0 to +25 V adjustable, 0 to -25 V adjustable. **CURRENT:** LPS-151, 0 to 6 V output -3.0 A max.  $\pm 25$  V outputs -0.5 A max. LPS-152, 0 to 6 V output -5.0 A max,  $\pm 25$  V output -1.0 A max. **Power Requirements:** 100, 120, 200, 220, 240 VAC  $\pm 10\%$ , 50/60 Hz., LPS-151 approx. 120 VA, LPS-152 approx. 220 VA. **Dimensions:** (WHD) LPS-151 8-1/2" x 5-1/4" x 13", LPS-152 8-1/2" x 5-1/4" x 14-1/8". **Weight:** LPS-151 13-1/2 lbs, LPS-152 15-3/4 lbs.



LPS-151



LPS-152

## LEADER SEMICONDUCTOR CURVE TRACER

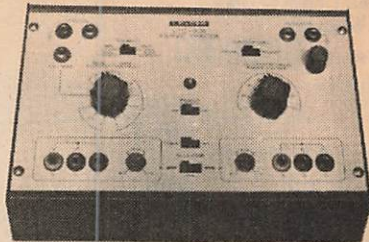
MODEL LTC-905  
REG. \$255.00  
OUR PRICE **\$216.75**

### DESCRIPTION

The LTC-905 permits displaying the characteristic curves of all types of semiconductors (NPN, PNP, triacs, SCR's, FET's, MOSFET's, zener, signal, and rectifier diodes, etc.) on virtually any oscilloscope. Used in labs, classrooms, and for production-line testing, the LTC-905 will measure (both in and out-of-circuit) gain (beta), cutoff, leakage and output admittance. The LTC-905 provides 8 selectable collector sweep voltages from 10 to 100 volts along with a full set of step-generator currents and voltages.

### SPECIFICATIONS

**COLLECTOR/SWEEP—Sweep Frequency:** 120 Hz. **Sweep Waveform:** Full wave rectified waveform. **Sweep Voltage:** 10, 20, 30, 40, 50, 60, 80 and 100 V selectable in 8 steps,  $\pm 10\%$ . **Current:** 100 mA maximum. **Step Polarity:** + or - . **Disipation Limiting Resistor:** Small-signal devices-1,000 ohm. Power devices-100 ohm. **STEP GENERATOR—Current Ranges:** 10, 20, 50  $\mu$ A and 0.1, 0.2, 0.5, 1, 2mA per step,  $\pm 5\%$ . **Voltage Ranges:** 0.1, 0.2, 0.5 V per step,  $\pm 5\%$ . **Number of Steps:** 7. **Ext. Bias:** Write one curve, using external bias supply. **H. Length:** Horizontal gain control for oscilloscope. **Dimensions:** (WHD) 9-3/8" x 3-1/2" x 6-1/4". **Weight:** 7 lbs. **Accessories Supplied:** Instruction manual, Two test cables, Three oscilloscope cables with alligator clips, LP-11 three point probe for in-circuit testing.



## LEADER ALL CHANNEL SWEEP MARKER GENERATOR

MODEL LSW-333  
REG. \$775.00  
OUR PRICE **\$695.00**

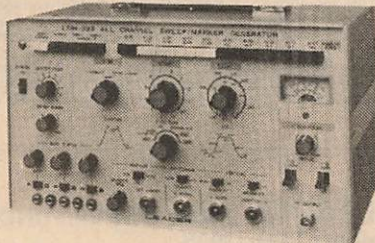
### DESCRIPTION

For checking and aligning all tuned circuits in TV-VHF/UHF and FM receivers, quickly and accurately. Unique solid state circuitry allows the LSW-333 with the aid of a scope, to align tuners, video, sound and IF amplifiers in half the time. Sweep section covers TV CH's 2 to 13 & 14 to 83. Video sweep modulation is available for VIF and chroma circuit checking. FM-IF and RF sweeps are also included. The marker section is unusually accurate, permitting use of 100 kHz and 1 kHz side markers on all marker signals. Trap adjustments and alignments are easier thru the use of 10 VIF markers with horizontal and vertical tilt plus a 1 kHz AM modulation signal. Polarity reversal switches for inverting both vertical and horizontal traces plus 3 bias supplies are also present. Vertical gain features X5 mag. while sweep output voltage is over 100mV/RMS into 75 ohms.

**MARKING METHOD:** Post injected Birdy type. **Sweep Rate:** 60 Hz. **Sweep Linearity:** Within 10%. (3 point method). **Output Voltage:** Over 100 mVrms into 75 ohms. **Output Impedance:** 75 ohms, unbalanced. **Output Control:** 30 dB in 10 dB steps and variable (40 dB range) 30 dB in 10 dB steps (UHF only). **Marker Size:** 0 to 1 volt/p-p, adjustable. **Marker Tilt:** Vertical or horizontal. **Display Polarity:** Normal or inverted for vertical and/or horizontal axes. **Bias Supplies:** Two to  $\pm 25$ V, one 0 to  $\pm 75$ V. **Horizontal Output:** 10 V/p-p, special 15.75 kHz filter for line rate suppression. **Power:** 115, 50/60 Hz, 8VA. **Size (HWD):** 8-1/2" x 13-7/8" x 8-1/2". **Weight:** Approx 11 lbs.

### SPECIFICATIONS

**Marking Method:** Post injected Birdy type. **Sweep Rate:** 60 Hz. **Sweep Linearity:** Within 10%. (3 point method). **Output Voltage:** Over 100 mVrms into 75 ohms. **Output Impedance:** 75 ohms, unbalanced. **Output Control:** 30 dB in 10 dB steps and variable (40 dB range) 30 dB in 10 dB steps (UHF only). **Marker Size:** 0 to 1 volt/p-p, adjustable. **Marker Tilt:** Vertical or horizontal. **Display Polarity:** Normal or inverted for vertical and/or horizontal axes. **Bias Supplies:** Two to  $\pm 25$ V, one 0 to  $\pm 75$ V. **Horizontal Output:** 10 V/p-p, special 15.75 kHz filter for line rate suppression. **Power:** 115, 50/60 Hz, 8VA. **Size (HWD):** 8-1/2" x 13-7/8" x 8-1/2". **Weight:** Approx 11 lbs.



## LEADER TRANSISTORIZED LCR BRIDGE

MODEL LCR-740  
REG. \$365.00  
OUR PRICE **\$310.25**

### FEATURES

- Highly accurate, 3 digit readout.
- Operates on one 9V battery or with AC adaptor.
- Measures inductance, capacitance, resistance and loss factor.

### SPECIFICATIONS

**Inductance Measurement:** Range: 0.1 $\mu$ H-1100H, 10 $\mu$ H, 100 $\mu$ H, 1 mH, 10 mH, 100 mH, 1 H, 10 H, 100 H, 8 ranges. Over-Range: 10%. Resolution: 0.1 $\mu$ H. Accuracy: 100H-10H range  $\pm(0.5\% + 0.1\% FS)$  100 H range  $\pm(1\% + 0.1\% FS)$  10 $\mu$ H range  $\pm(3\% + 0.1 FS)$ . Loss Factor Ranges: (D) 0.01 to 30 in 2 ranges. Accuracy  $\pm(10\%$  of reading + 3 minor divisions of scale) 1 kHz. Frequency: Int. 1 kHz  $\pm 50$  Hz Ext. 50 Hz-40 kHz.

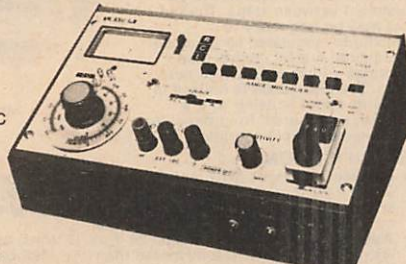
**Capacitance Measurement:** Range: 1 pF-11,000  $\mu$ F, 100 pF, 1,000 pF, 0.01  $\mu$ F, 0.1  $\mu$ F, 1  $\mu$ F, 10  $\mu$ F, 100  $\mu$ F, 1,000  $\mu$ F in 8 ranges. Over-Range: 10%. Resolution: 1 pF. Accuracy: 100 pF-100  $\mu$ F range  $\pm(0.5\% + 0.1\% FS)$  100 pF range  $\pm(1\% + 0.1\% FS)$  1,000  $\mu$ F range  $\pm(3\% + 0.1\% FS)$ . Residual: Approx. 3 pF.

**Resistance Measurement:** Range: 0.001 ohm-11M ohm, 0.1 ohm, 1 ohm, 10 ohm, 100 ohm, 1K ohm, 10K ohm, 100K ohm, 1M ohm in 8 ranges. Over-Range: 10%. Resolution: 1M ohm. Accuracy: 1 ohm-100K ohm range  $\pm(0.5\% + 0.1\% FS)$  1M ohm range  $\pm(1\% + 0.1\% FS)$  0.1 ohm range  $\pm(2\% + 0.1\% FS)$ . Residual Resistance: Approx. 3M ohm.

**Power Supply:** One 9V battery, CR AC adaptor.

**Size:** 3-3/8" H x 9-1/2" W x 6-3/4" D. • **Weight:** 5 lbs.

• Comes with instruction manual, cable for external input, miniature earphone (for null detecting), and 9V transistor battery.

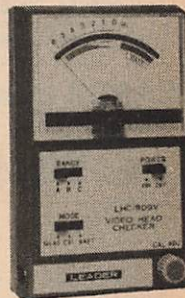


## LEADER VTR HEAD CHECKER

MODEL LHC-909B (BETA)  
MODEL LHC-909V (VHS)  
REG. \$99.95 OUR PRICE **\$89.95**

### DESCRIPTION

The LHC-909 provides a fast, convenient method for checking videotape recorder head wear electronically. This is accomplished by a bridge type inductance meter using a 1 MHz test signal. Three measurement ranges are available. The analog meter scale "7 to 0" indicates headwear. Typically, any reading below "0" indicates heads require replacement although the inductance range and acceptable headwear tolerance should be specified by the VTR manufacturer. The instrument's small size and battery operation allows for excellent portability and requires minimum bench space. Two versions of the LHC-909 are available; the LHC-909B for Beta and Umatic VTR's and the LHC-909V for VHS heads.



## LEADER LASER POWER METER

MODEL LPM-8000  
REG. \$239.95 OUR PRICE **\$225.00**

### DESCRIPTION

The LPM-8000 is a simplified laser power meter. Receiving laser beams with its sensor, the instrument indicates measured values on the meter. Measuring range for wavelength can be selected between two ranges, 632.8nm (633nm) and 750-820nm, and the measuring range for power voltage can be selected in range from 0.3W to 3mW. The measuring level of 633nm is available for the measurement of helium-neon ray apparatus; while, the measuring range of 750-820nm for the measurement done for digital audio disc players.

### SPECIFICATIONS

**Measuring Range for Wavelength:** 632.8nm (633nm) or 750nm to 820nm, 2 ranges. **Measuring Range for Power Voltage:** 0.3mW to 3mW. **Power Range:** Converted among 0.3mW, 1mW, and 3mW. **Measuring Accuracy:**  $\pm 5\%$  or less of whole measuring scale (when joined to sensor). **Sensor Section:** Light-catcher area: 10mm (Allowable dissipation of silicon photodiode: 200mW). **Main Body Size:** 90(W) x 31(H) x 140(D) mm. **Sensor Section Size:** 18(W) x 4(H) x 40(D) mm, movable with an 80 cm cable. **Indicator Section:** Coil-type meter with a moving needle. **Weight:** 9-1/2 lbs. **Accessories Supplied:** Protective Carrying Case.

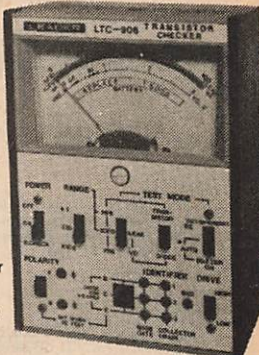


## LEADER AUTOMATIC TRANSISTOR CHECKER

MODEL LTC-906  
REG. \$220.00 OUR PRICE **\$187.00**

### FEATURES

- Lights up, sounds off, measures, identifies, displays.
- Automatically identifies Germanium or Silicon, plus emitter base and collector.
- LED displays plus audible tone indicates defective or good performance.
- Absolute meter readout of DC parameters.
- A multipurpose, portable, transistor checker automatically better for laboratory, shop and school.
- Checks transistors, FET's, diodes, good or bad and in or out of circuit.
- Automatically tests a broad range of parameters with simple, program on-off switches—no confusing buttons or lead changes.
- Dimensions: (WHD) 4-1/4" x 6" x 2-1/8". • **Weight:** 1 lb.
- Comes with 9V transistor battery, test cable with 3 alligator clips, instruction manual.





## LEADER SINGLE AND DUAL CHANNEL AC MILLIVOLTMETERS

MODEL LMV-181A SINGLE CHANNEL  
REG. \$260.00

OUR PRICE **\$221.00**

MODEL LMV-182A SINGLE CHANNEL  
REG. \$309.00 (High Sensitivity)

OUR PRICE **\$262.25**

MODEL LMV-185A DUAL CHANNEL  
REG. \$420.00

OUR PRICE **\$357.00**

### FEATURES

- 5 Hz to 1 mHz.
- Amplified output signal terminals.
- Calibrated in Millivolts and dB.
- 30 uV or 100 uV sensitivity.

### DESCRIPTION

The LMV-181A and LMV-185A are general purpose average responding AC voltmeters with a measurement range of 100 uV to 300 V. The LMV-182A is an average responding AC voltmeter with increased sensitivity featuring an effective measurement range of 30 uV to 100 V. Bandwidth is 5 Hz to 1 mHz permitting use in a broad range of applications including audio, IF and ultrasonic circuits and systems. The meter scales are conveniently calibrated in both millivolts and dB (0 dB = 1 V and 0 dB = 0.775 V). Output terminals on all three models permit using these instruments as sensitive, accurate pre-amplifiers. The LMV-185A is a dual channel instrument employing a dual movement meter and concentric range switches for each channel. This permits convenient measurement and comparison of input/output levels and direct indications of gain/attenuation. The LMV-181A, LMV-182A and LMV-185A are accurate to within  $\pm 2\%$  F.S.

### SPECIFICATIONS

**METER—Sensitivity (LMV-181A/LMV-185A):** 100uV. (LMV-182A): 30uV. **Voltage Range (full scale) (LMV-181A/LMV-185A):** 1 mV to 300 V in 12 ranges —60 to +50 dB. (LMV-182A): 300 uV to 100 V in 12 ranges —70 to +40 dB. **Accuracy:**  $\pm 2\%$  of full scale at 1 kHz or 400 Hz. **Frequency Response (1 kHz ref.):** 5 Hz to 1 mHz,  $\pm 10\%$ ; 10 Hz to 500 kHz,  $\pm 5\%$ ; 20 Hz to 200 kHz,  $\pm 2\%$ . **Input Impedance:** 10M ohm, 50 pF. **Maximum Input:** 600V (DC plus AC peak). **Noise:** Less than 2% full scale. **AMPLIFIER—Output:** 1 V (no load) corresponds to a full scale indication on each range. **Frequency Response (1 kHz ref.):** 10 Hz to 500 kHz, —3 dB. **Output Impedance:** 600 ohm,  $\pm 20\%$ . **Distortion (1 kHz):** Less than 1% full scale. **ENVIRONMENTAL—Operating Temperature:** 0-40°C. **Operating Humidity:** 85%. **POWER REQUIREMENTS:** Normally supplied for 115 VAC operation. **Dimensions:** (HWD) 5-7/8 x 5-1/4 x 9-7/8" (150 x 132 x 250mm). **Accessories supplied:** (LMV-181A & LMV-182A) instruction manual, test cable (banana plugs to alligator clips), adaptor, UHF to banana jack. (LMV-185A) instruction manual, 2-test cables (banana plugs to alligator clips), 2-adaptors, UHF to banana jack.



LMV-181A  
SINGLE  
CHANNEL



SINGLE CHANNEL  
(High Sensitivity)  
LMV-182A



DUAL CHANNEL  
LMV-185A

## LEADER FM MULTIPLEX STEREO GENERATOR

MODEL LSG-231 REG. \$420.00 OUR PRICE **\$378.00**

### FEATURES

- RF, Composite and Audio outputs.
- Checks separation, balance and alignment in the field or on the bench.
- 19 kHz pilot signal,  $\pm 2$  Hz accuracy. • 1 kHz audio signal,  $\pm 1\%$  accuracy.
- Composite stereo output; 67 kHz, S.C.A. switch selectable.
- External modulation capability. • Selectable pre-emphasis.
- Modulation level, phase and scope phase adjustment. S.C.A. input jack.

### SPECIFICATIONS

**RF SIGNAL: Frequency:** 100 mHz  $\pm 1$  mHz (variable). **Output:** 10mV, 1mV, 0.1mV (3 steps). **Impedance Frequency Deviation:** 75 ohm (balun: 75 ohm to 300 ohm provided). **Pilot Signal:** 7.5 kHz (10% modulation). **Composite Signal:** 0 to 75 kHz (100% modulation). **COMPOSITE SIGNAL: Pilot Signal Frequency:** 19 kHz  $\pm 2$  Hz accuracy. **Output Voltage:** 0.8 Vrms. **Output Impedance:** 150 ohm unbalanced. **AUDIO SIGNAL: Frequency:** 1 kHz  $\pm 1\%$  accuracy. **Output Voltage:** 1 Vrms. **Output Impedance:** 1K ohm. **Distortion:** Less than 0.5%. **Signal Separation:** 50 dB. **EXT. MODULATION: Frequency:** 50 Hz to 15 kHz pre-emphasis, 50usec., or 75usec. (switch selectable). **Input Impedance:** 100K ohm (pre-emphasis at off). **Input Level:** 1 Vrms (pre-emphasis at off). **Separation:** 100 Hz to 3 kHz, 45 dB, 50 Hz to 15 kHz, 35 dB. **Power Requirements:** 100, 120, 200, 220, 240 Vac  $\pm 10\%$ , 50/60 Hz, 10 VA. **Dimensions:** (WHD) 8" x 3-1/8" x 10". **Weight:** 5 lbs. **Accessories supplied:** Instruction manual, Type LBN-06 Dummy antenna with BNC connector, 2-test cables, miniature plug to alligator clips, 2-miniature plugs.



## LEADER 101 dB AUDIO ATTENUATOR

MODEL LAT-45

REG. \$225.00

OUR PRICE **\$202.50**

### FEATURES

- Reliable, 101 dB maximum, 0.1 dB per step measurements of power levels and gain-loss characteristics.
- Controls power levels and voltages for audio equipment testing.
- Suitable for industrial, laboratory, education and service use.

### SPECIFICATIONS

**Attenuation Range:** 0 to 101 dB in 0.1 dB steps. **Accuracy:** Within +2% at 1 kHz. **Input/Output Impedance:** 600 ohm; unbalanced. **Frequency Characteristic:** DC to 100 kHz (70 dB). DC to 50 kHz (101 dB). **Internal Termination:** Open or 600 ohm, switched. **Maximum Input:** 0.5W (17 Vrms or DC, or +27 dBm). **Size & Weight:** 4"H x 11-13/16"W x 5-3/8"D; (100 x 300 x 150mm); 4 lbs approx.



## LEADER AM/FM RF SIGNAL GENERATORS

MODEL LSG-215A OUR PRICE **\$2795.00**

MODEL LSG-216 OUR PRICE **\$2245.00**

### DESCRIPTION

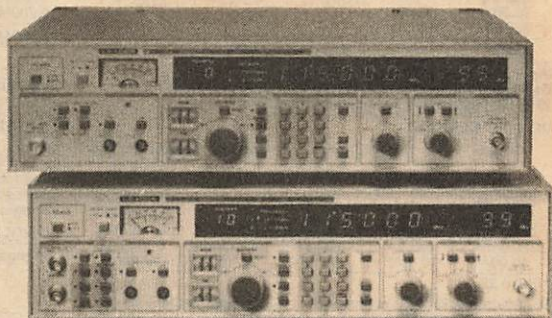
This new series of programmable signal generators feature convenient keyboard control of frequency and output level. Semi-automatic operation is available by pre-programming up to 100 different test conditions. 2 k bytes of memory stores frequency, output level and modulation (0 to 100% AM, 0 to 100 kHz FM) data for each test condition. The front panel display includes LED displays for frequency (5-1/2 digits), output level (2 digits LSG-215/216), and memory address (00 to 99). A phase locked loop synthesizer ensures extremely stable frequency outputs (5 x 10<sup>-9</sup>). Single digits of the output frequency can be selected and changed using the digit select key without disturbing other operating parameters of the generator. The output level can be controlled up or down in increments of 10 dBuV using the output level step up/down control. 1 dBuV changes are accomplished using a vernier control. AM and FM modulation is available internally at 1 kHz and 400 Hz as well as external. The generator's RAM memory is protected by 1 month battery backup in case of AC line interrupt. A ROM unit (215-u01) is available as an optional accessory for identical programming for multiple test stations.

### SPECIFICATIONS

**LSG-215A AM/FM SYNTHESIZED SIGNAL GENERATOR:** 0.1 to 30 mHz (100 Hz steps). 75 to 115 mHz (1 kHz steps). —9 to 99 dBuV (1 dB steps).

**LSG-216 AM/FM SYNTHESIZED SIGNAL GENERATOR WITH FM STEREO:** FM stereo signal generation with L, R, MAIN and SUB functions. 0.1 to 30 mHz (100 Hz steps). 75 to 115 mHz (1 kHz steps). —9 to 99 dBuV (1 dB steps).

**GENERAL SPECIFICATIONS FOR BOTH MODELS:** Power Requirements: 100, 120, 200, 220, 240 Vac  $\pm 10\%$ , 50/60 Hz approx. 28 VA. **Dimensions:** (WHD) 15-3/4" x 3-7/8" x 11-3/4". **Weight:** 14.8 lbs. (LSG-215A). 13.8 lbs. (LSG-216). **Accessories supplied:** BNC (50 ohms) cable (one).



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# TEST INSTRUMENTS

## FLUKE DIGITAL MULTIMETERS & VOLTMETERS

MODELS - 73, 75, and 77-F.

### FEATURES

- 3½ digits (3200 counts).
- Analog bar graph display.
- Single rotary switch, fast autoranging.
- Compact, rugged, soil-resistant case.
- 2000 hour battery life, single 9V battery.
- "Sleep Mode" if battery not switched off.
- 3-year warranty, 1-year calibration cycle.
- UL 1244 listed, VDE listed.
- Dimensions: (LWH) 6.55" x 2.95" x 1.12". Weight: .63 lbs.
- Accessories supplied: TL-70 test leads, manual, battery, spare fuse (installed). C-70 holster for Fluke 77 only.

### DESCRIPTIONS

These three microprocessor-based handheld multimeters are a distinctive new family. They represent the latest in what high technology can do to reduce cost — without compromising quality or capability. And they have features never before found in other DMMs, even the most expensive models. A proprietary A-to-D converter chip designed and built in Fluke microcircuit laboratories, and proprietary software developed by Fluke engineers make it possible. Operating any of the 70-Series Multimeters is exceptionally simple: choose the function you want, connect the test leads, and the meter automatically selects the best range. The display reminds you what is being measured, AC or DC, volts, amps, ohms, etc. But the most unique part of the display is a linear 32-segment LCD scale that corresponds to the full scale of an analog meter and the 3200-count numerical readout. The length of the scale, like the length of a bar graph, is proportional to the value being represented. The bar graph is updated ten times faster than the numerical display and allows you to follow changes faster than you can read numbers—the same as with a conventional analog meter. So it excels at making critical "peaking" or "dipping" circuit adjustments.

### MODEL 73

OUR PRICE **\$74.95**

### FEATURES

- All the distinctive features mentioned above.
- Resistance.
- AC Current (Average-Sensing, RMS-Indicating).
- AC Voltage (Average-Sensing, RMS-Indicating).
- DC Current.
- DC Voltage.
- Six functions including diode test.
- 0.7% basic dc accuracy.
- Current range to 10A, DC or AC.

### DESCRIPTION

The Fluke 73 is the least expensive handheld multimeter, and has all the distinctive features described above.

### MODEL 75

OUR PRICE **\$89.95**

### FEATURES

- All the features of Fluke 73 plus:
- Seven functions including diode and continuity beeper.
- Three current ranges: 10A, 320 mA, 32 mA.
- 0.5% basic DC accuracy.
- Range-hold for manual ranging, autoranging.

### DESCRIPTION

The Fluke 75 Multimeter has three DC and AC current ranges, five DC voltage ranges, four AC voltage ranges, six resistance ranges, and an audible tone for fast diode or continuity testing. It also has a pushbutton for range hold and manual ranging. Repetitive go, no-go checks are accomplished faster using just one range. So are many peaking and dipping checks using the 32-segment analog scale. Touching the pushbutton once prevents the meter from changing ranges. Pushing the button momentarily a second time advances the range. Holding the pushbutton down for a couple of seconds restores autoranging. A continuous audible tone provides a fast check on the continuity of current paths of about 150 ohms or less. A brief tone indicates a voltage-drop of about 0.6 volts, the normal voltage for a forward biased semiconductor junction passing about 500 uA.

### MODEL 77-F

OUR PRICE **\$119.95**

### FEATURES

- All the features of the Fluke 75 plus:
- "Touch-Hold" function (patent pending).
- 0.3% basic DC accuracy.
- Multipurpose protective "holster" included.

### DESCRIPTION

The Model 77-F Multimeter, besides having all of the features of the Model 75, has better accuracy and a unique means of holding a reading after a test lead has been removed from a circuit or test point. As soon as the contact and the source is stable, the meter makes a distinctive audible chirp and holds the reading. The user can then remove the test leads and check the reading. Full attention may be devoted to touching the right test point and nothing else. Touch-Hold reduces the chance of circuit damage when a probe tip slips and contacts two points at one time; reduces risk of electrical shock. Also, Touch-Hold gives the user time to log the reading if needed or refer back to the reading before the next test. The multipurpose holster is made of a tough semiflexible plastic that snaps over the DMM. Both test probes may be snapped into the holster to keep meter and leads from getting separated. And one probe may be snapped into the holster in a position so just one hand may hold both the meter and probe tip in contact with a test point. You can hang the multimeter on your belt, tilt it back on a bail for bench use, or use the neck strap and belt clip for easy viewing while probing.

### OPTIONAL ACCESSORIES:

C-70 Holster for models 73 and 75 only... \$9.00

C-71 Soft carrying case... 9.00

TL-70 Extra test leads... 5.00



## FLUKE 20 SERIES HANDHELD DIGITAL MULTIMETERS

**NEW!**

MODEL 21-F OUR PRICE **\$89.95**

MODEL 23-F OUR PRICE **\$129.95**

MODEL 25-F OUR PRICE **\$209.95**

MODEL 27-F OUR PRICE **\$229.95**

### DESCRIPTION

The Fluke 20 Series are high-energy-protected multimeters capable of accurately tackling the toughest measurement problems of today's high-technology industries. Each meter includes battery, spare fuse, TL-70 test leads, two insulated alligator clips, and operator's manual.

### SPECIFICATIONS

Display: 3200 counts plus polarity indication. Analog: 31 segment bar graph plus polarity indication. MIN/MAX recording and Relative Mode: Fluke 27 only.

### DC VOLTAGE:

Range	Resolution	Accuracy		
		21	23	25 & 27
320.0 mV	100 uV			
3.200V	1 mV	0.5% + 1	0.3% + 1	0.1% + 1
32.00V	10 mV			
320.0V	100 mV			
1000V	1V	0.6% +	0.4% +	

Input Impedance: 10 Mohm nominal.

Overload Protection: 25 & 27: 1000V; 500V on 320mV range. 21 & 23: 1000V dc, 750V ac, 500V on 320 mV range.

### DC & AC CURRENT

Range	Resolution			Nominal Burden Voltage		
	21 & 23	25 & 27		21 & 23	25 & 27	
320.0 uA	—	0.1 uA	—	—	0.5 mV/uA	—
3200 uA	—	1 uA	—	—	0.5 mV/uA	—
32.00 mA	10 uA	10 uA	6 mV/mA	6 mV/mA	6 mV/mA	—
320.0 mA	100 uA	100 uA	6 mV/mA	6 mV/mA	6 mV/mA	—
10.00A	10 mA*	10 mA	50 mV/A*	50 mV/A*	50 mV/A*	—

\*Fluke 23.

DC Accuracy: 25 & 27: within 0.75% + 2. 21 & 23: within 1.5% + 2. 2% + 2 on 320 mA range. AC Accuracy: 25 & 27: within 1.5% + 2. 21 & 23: within 3% + 2. Overload Protection: 10A range: 20A 600V fuse, 100,000A interrupt rating. mA range (also uA ranges in Fluke 25 & 27): 630 mA 250V fuse, 1500A interrupt rating. In series with a 3A 600V fuse, 10,000A interrupt rating (Fluke 23 uses 0.36ohms fusible resistor instead of 3A 600V fuse).



### OHMS

Range	Resolution		Accuracy		
	21 & 23	25 & 27	21	23	25 & 27
320.0	0.1 ohm	0.1 ohm	0.7% + 2	0.5% + 2	0.3% + 2
3.200K	1 ohm	1 ohm			
32.00K	10 ohms	10 ohms	0.7% + 1	0.5% + 1	0.2% + 1
320.0K	100 ohms	100 ohms			
3.200M	1 kohm	1 kohm			
32.00M	10 kohm	10 kohm	2.5% + 1	2% + 1	1% + 1
32.00 nS	—	0.01 nS	—	—	2% + 10

Overload Protection: 500V rms. Test Voltage: greater than 420 mV dc full scale up to 3.2 Mohm; greater than 1.3V up to 32 Mohm; greater than 2.8V open circuit. DIODE TEST & CONTINUITY: Diode Test Indication: Displays voltage drop; 0.5mA nominal test current at 0.6V; 2.0V full scale. Momentary tone for test voltage dropping below 0.7V (typical silicon diode threshold). Continuity Indication: Continuous audible tone for test resistance below approx. 150 ohm. Open Circuit Test Voltage: greater than 3.3V. Overload Protection: 500 rms.

### AC VOLTAGE

Range	Resolution	Accuracy		
		25 & 27		
3.200V	1 mV			
32.00V	10 mV	0.5% + 3	2% + 3	4% + 10
320.00V	100 mV			
1000V	1 V	1% + 3	3% + 3	Not spec.

### AC VOLTAGE

Range	Resolution	Accuracy
320.0mV	100 uV	—
3.200V	1 mV	
32.00V	10 mV	2% + 2
320.00V	100mV	
1000V**	1 V	2% + 2

\*500 Hz on 3.2V range

\*\*750V on Fluke 21 or 23

Conversion Type: AC coupled, average sensing, calibrated to read the rms value of a sine wave. Input Impedance: 25 & 27: 10 Mohm nominal, greater than 100 pF. 21 & 23: 10 Mohm nominal, greater than 50 pF. Overload Protection: 10, Volt-Hertz maximum. 25 & 27: 1000V, 500V on 320 mV range. 21 & 23: 1000V dc, 750V ac. GENERAL Maximum voltage to be applied to any terminal: 1000V with respect to earth ground. Battery: 9V NEDA 1604. Symbol when 60 hours remain. 25 & 27: Typically 1,300 hours with alkaline. 21 & 23: Typically 2,000 hours with alkaline. Instrument Size: 25 & 27: 2.2"H x 3.75"W x 8"L. 21 & 23: 1.12"H x 2.95"W x 6.55"L. Weight: 25 & 27: 1.6 lbs. 21 & 23: 75 lbs. Warranty: 25 & 27: Two years parts and labor. 21 & 23: Three years parts and labor.

### Carrying Cases

- C-20 Hard Case for 25 & 27... \$20.00
- C-25 Ruggedized Soft Case for 23, 25, & 27... 15.00
- C-70 Holster for 21, included with 23... 9.00
- C-71 Compact Soft Case for 21 & 23... 9.00

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## FLUKE HANDHELD DIGITAL MULTIMETER

MODEL 8020B REG. \$199.00 OUR PRICE **\$179.95**

Your John Fluke Model 8020B is a pocket-size digital multimeter that is ideally suited for application in the field, lab, shop or home.

### FEATURES

- DC Accuracy 0.1%. • Power: Single 9V battery, NEDA 1604 (supplied).
- All VOM functions plus conductance and continuity (8 in all) are included as standard. **DC Voltage**—100 uV to 1000V, AC Voltage - 100uV to 750V. **DC Current**—1 uA to 2000 mA, AC Current - 1 uA to 2000 mA. **Resistance**—0.1 ohm - 20 M ohm. **Diode Test. Conductance**—0.1 ns to 200 ns and .001 ms to 2 ms (S = siemens = 1/ohm). **Continuity**—Provides an immediate audible indication when continuity is detected.
- Conductance - A new multimeter function that allows fast, accurate, noise free resistance measurements up to 10,000 M ohm.
- A high contrast 3 1/2 digit liquid crystal display that can be easily read from across the room. No more worries about bent needles, parallax, etc.
- Each range has: Full auto-polarity operation, Overrange indication. Extensive overload protection with 600V double-fused current input.
- Dual slope integration measurement technique to ensure noise-free measurements.
- Long term calibration stability - 2 years. Easy calibration -few adjustments.
- Lightweight - 369 grams (13 ounces). • Dimensions: (LWH) 7.1"x 3.4"x 1.8".
- Up to 200 hours of continuous operation can be expected from a single, inexpensive, 9V alkaline battery (transistor radio/calculator type).
- Low battery voltage automatically detected and displayed.
- Line operation is possible using a Model A81 Battery Eliminator. (See accessories at bottom of page)
- Protected test leads - finger guards on the probes and shrouded contacts on the connectors discourage accidental contact with circuit voltages.
- Accessories supplied: Manual, test leads (Y-8132), 9V battery, spare 2A fuse, operator's card, statement of calibration. See facing page for optional accessories.



## FLUKE HANDHELD DIGITAL MULTIMETER

MODEL 8022B REG. \$154.00 OUR PRICE **\$139.95**

Your John Fluke Model 8022B is a pocket-size digital multimeter that is ideally suited for application in the field, lab, shop or home. Your 8022B offers all standard VOM measurement functions: AC and DC volts, Alternating and Direct Current, and Resistance.

### FEATURES

- DC accuracy 0.25%. • Single 9V battery, NEDA 1604 (supplied).
- A high contrast 3 1/2 digit liquid crystal display, that can be easily read from across the room. No more worries about bent needles, parallax, etc.
- Each range has: Full auto-polarity operation, Overrange indication, Effective protection from overloads and transients.
- Dual slope integration measurement technique to ensure fast, accurate, noise-free measurements.
- Long term calibration stability - 2 years. Easy calibration -few adjustments.
- Lightweight - 369 grams (13 ounces). • Dimensions: (LWH) 7.1"x 3.4"x 1.8".
- Up to 200 hours of continuous operation can be expected from a single, inexpensive, 9V, alkaline battery (transistor radio/calculator type).
- Low battery voltage automatically detected and displayed.
- Line operation is possible using a Model A81 Battery Eliminator. (See accessories at bottom of page)
- Protected test leads - offer less change of measured signal exposure at the DMM input terminals than standard banana test lead tips.
- Accessories supplied: Manual, operator's card, test leads (Y-8132), 9V battery, spare fuse, statement of calibration. See facing page for optional accessories.



### HANDHELD DMM

MODEL 8021B REG. \$159.95 OUR PRICE **\$149.95**

All of the features of the 8022B with the high-speed continuity beeper.

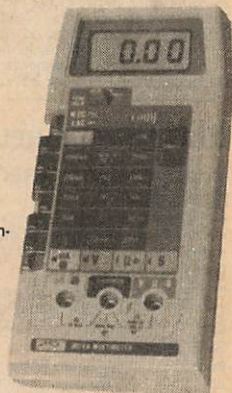
## FLUKE HANDHELD DIGITAL MULTIMETER

MODEL 8024B REG. \$249.00 OUR PRICE **\$225.00**

Your John Fluke Model 8024B is a pocket-size digital multimeter that is ideally suited for application in the field, lab, shop or home.

### FEATURES

- FUNCTIONS: All standard VOM measurement functions -AC/DC voltage, AC/DC current, resistance — plus:  
 Conductance: A new multimeter function that allows fast, accurate, noise-free resistance measurements up to 10,000 M ohm.  
 Temperature: Used with a K-type thermocouple, this function provides direct display in degrees Celsius for K-type thermocouples.  
 Peak-Hold: Provides short-term memory for capturing the peak value of transient AC or DC signals such as motor starting current.  
 Continuity: Provides an immediate visual and audible indication when continuity is detected (use for passive circuit testing).  
 Level Detector: Senses logic levels and other active signals less than 250 V DC or AC rms. Visual and audible indications of the results are provided.
- DC accuracy 0.1%.
- Range for each function has: Full autopolarity, Overrange indication, Effective protection from overloads, Dual slope integration measurement technique to ensure noise-free measurements.
- Operation Convenience: 3 1/2 digit liquid crystal display: A high contrast display that can be easily read from across the room. No more worries about bent needles, parallax, etc.
- Long term calibration stability: 2 years. Easy calibration -few adjustments
- Lightweight: 482 kg (17 ounces). Dimensions: (LWH) 7.1"x 3.4"x 1.8". Power: Single 9V battery, NEDA 1604 (supplied).
- Safety designed test leads: Finger guards on the probe and shrouded contacts on connectors reduce the chance of accidental contact with circuit voltages.
- Power: Up to 100 hours of continuous operation can be expected from a single inexpensive, 9-volt, alkaline battery (transistor radio/calculator type).
- Low battery voltage is automatically detected and displayed. The low battery indication, BT, appears in the display when about 10 hours of operation remain.
- Line operation is possible using a Model A81 Battery Eliminator. (See accessories at bottom of page).
- Accessories supplied: Manual, test leads (Y-8132), 9V battery, operator's card, spare fuse, statement of calibration. See facing page for optional accessories.



## FLUKE HANDHELD DIGITAL MULTIMETER

MODEL 8026B REG. \$219.00 OUR PRICE **\$199.95**

Your John Fluke Model 8026B is a pocket-size digital multimeter that is ideally suited for application in the field, lab, shop or home.

### FEATURES

- All VOM functions plus conductance and continuity (8 in all) are included as standard.
- **DC Voltage**—100 uV to 1000V, AC Voltage - 100uV to 750V. **DC Current**—1 uA to 2000 mA, AC Current - 1 uA to 2000 mA. **Resistance**—0.1 ohm - 20 M ohm.
- **Diode Test. Conductance**—0.1 ns to 200 ns and .001 ms to 2 ms (S = siemens = 1/ohm). **Continuity**—Provides an immediate audible indication when continuity is detected.
- DC Accuracy - 0.1%. • Power: Single 9V battery, NEDA 1604, (supplied).
- True rms AC measurement for signals up to 10 kHz.
- Conductance - Allows fast, accurate, noise free resistance measurements up to 10,000 M ohm.
- An easy-to-read high contrast 3 1/2 digit liquid crystal display.
- Each range has: Full auto-polarity operation, Overrange indication, Effective protection from overloads.
- Dual slope integration measurement technique to ensure noise-free measurements.
- Easy calibration - few adjustments. • Lightweight - 369 grams (13 ounces). • Dimensions: (LWH) 7.1"x 3.4"x 1.8".
- Up to 200 hours of continuous operation can be expected from a single, inexpensive, 9V, alkaline battery (transistor radio/calculator type).
- Low battery voltage automatically detected and displayed.
- Line operation is possible using a Model A81 Battery Eliminator.
- Protected test leads-finger guards on the probes and shrouded contacts on the connectors discourage accidental contact with circuit voltages.
- Accessories supplied: Manual, test leads (Y-8132), 9V battery, spare 2A fuse, operator's card, statement of calibration. See facing page for optional accessories.





# DIGITAL MULTIMETERS

## FLUKE PORTABLE BENCH-TYPE, DIGITAL MULTIMETER

### MODEL 8010A

REG. \$279.95 OUR PRICE **\$249.95**

MODEL 8010A-01 (With rechargeable battery)

REG. \$319.00 OUR PRICE **\$279.95**

### MODEL 8012A

REG. \$359.00 OUR PRICE **\$339.95**

MODEL 8012A-01 (With rechargeable battery)

REG. \$399.00 OUR PRICE **\$369.95**

#### FEATURES

- True RMS measurement of AC signals -the only accurate way to directly measure ac signals other than noise-free pure sine waves.
- 3 1/2 digit liquid crystal display - a high contrast display that can be read easily from across the room. No more worries about bent needles, parallax, etc.
- Each range has: Full auto-polarity operation. Overrange indication. Effective protection for overloads and transients. Dual slope integration measurement technique to insure fast, accurate, noise-free measurements.
- The conductance ranges allow accurate, noise-free measurement up to 10,000 M ohm.
- Long term calibration stability - 1 year. Easy calibration -few adjustments.

#### DESCRIPTION

The Fluke Models 8010A and 8012A are portable bench-type, digital multimeters with 3 1/2 digit liquid crystal display (LCD). Both offer as standard measurement functions the five basic DMM functions (AC/DC voltage, AC/DC current, and resistance) and a new measurement function-conductance. In addition, if you bought the 8010A, you have a high current measurement function of up to 10A. If you bought an 8012A, you have two ranges of low resistance measurements -20 ohm and 2 ohm. The 8010A and 8012A are the same instrument with one exception each - the 8010A has the 10 amp function and the 8012A has the LO RANGE ohm function. If a portion of the text deals with just the 8010A or just the 8012A, then we'll say so. Otherwise, the text applies to both instruments.

#### GENERAL SPECIFICATIONS

**Power Requirements:** 90 to 132V ac or 200 to 264V ac, 50 or 60 Hz, 2W for standard models. With battery version (-01), voltage and frequency range is selectable with internal switches, 3.5W. Rechargeable NiCd batteries and recharge circuits installed in -01 versions. **Dimensions:** (HWD) 2.5"x 8.5"x 10". **Weight:** 2.38 lbs for standard models. 3.13 lbs. for -01 versions with batteries. **Accessories supplied:** Manual, line cord, test leads (Y-8132), statement of calibration.



## FLUKE PORTABLE BENCH-TYPE DIGITAL MULTIMETER

### MODEL 8050A

REG. \$389.00 OUR PRICE **\$369.95**

#### DESCRIPTION

The Fluke Model 8050A is a portable, bench-type digital multimeter with a 4-1/2 digit liquid crystal display (LCD). The 8050A can make dB voltage measurements (AD and DC) and conductance measurements (1/ohm) in addition to the usual DMM measurements—AC/DC volts, DC current, and resistance.

#### SPECIFICATIONS

**True RMS measurement of AC signals:** True RMS measurement is the only accurate way to directly measure AC signals that are not noise-free pure sine waves. The 8050A measures AC voltage frequencies up to 50 kHz. **SEVEN MEASUREMENT FUNCTIONS—AC and DC Volts:** Standard linear voltage measurements from 10uV to 1000V DC and 10mV to 750V AC true RMS. **dB Voltage (dB, dBm, dBW, and dBV):** Allows voltage measurements in decibels referenced to any user selected reference level or any 1-of-16 selectable reference impedances. **AC and DC Current:** Standard current measurements from 10nA to 2A DC and 10uA to 2A AC true RMS. **Resistance:** Standard resistance measurements from 10M ohm to 20M ohm. **Conductance (1/ohm):** Allows fast, noise-free resistance measurements of up to 100,000M ohm. **Each Measurement Range Has:** Autopolarity operation, overrange indication, effective protection from overloads and transients, dual slope integration measurement technique to insure fast, accurate and noise-free measurements. **Relative:** Allows you to store any input signal as an offset or relative reference value. Subsequent measurements are displayed as the difference between the input level and the reference level. Relative reference works for all measurement functions. **Diode Test:** Range of the resistance function that will turn on PN junctions allowing testing of diodes and transistors. These ranges are marked with a diode symbol on the front panel of the 8050A. The preferred 2K ohm range is marked with the largest diode symbol. **In Circuit Resistance Checks:** Are possible with all resistance ranges that are not marked with a diode symbol on the 8050A front panel. **Improved Test Leads:** Finger guards on the probes and shrouded contacts on the input terminals decrease the possibility of accidental contact with circuit voltages. **Power Requirements:** 90 to 110V ac, 105 or 132V ac, or 200 to 264V ac, 47 to 440 Hz, With rechargeable version (-01), the line voltage range is field-changeable. 4W max, 6W max. **Dimensions:** (WHL) 8.5"x 2.5"x 10". **Long-Term Calibration Stability:** 1 year. **Accessories:** Manual, line cord, test leads (Y-8132), see optional accessories below.

## DIGITAL MULTIMETER WITH RECHARGEABLE BATTERY

### MODEL 8050A-01

REG. \$439.00 OUR PRICE **\$419.95**



## FLUKE HANDHELD 4-1/2 DIGIT MULTIMETER

MODEL 8060A REG. \$349.00 OUR PRICE **\$325.00**

#### FEATURES

- True RMS measurements for AC signals up to 100 kHz. • Frequency measurements up to 200 kHz.
- Voltage measurements in dB referenced to 600 ohm or in dB relative to an operator-selected reference.
- Resistance measurements up to 300M ohm. • Ability to store any input signal as an offset or relative reference value. • .04% Accuracy.

#### DESCRIPTION

The Fluke Model 8060A is a handheld, microcomputer-based 4-1/2 digit multimeter that is ideally suited for use in the field, laboratory, shop or home. The 8060A has all the features that have become accepted standards for quality handheld multimeters, as well as some new features that have not been offered before in a handheld multimeter.

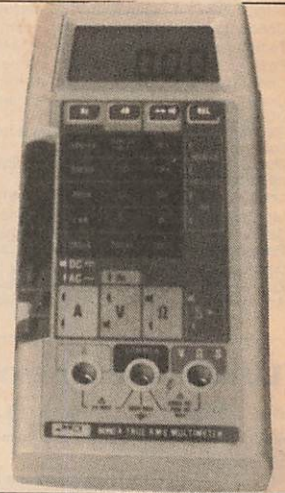
#### SPECIFICATIONS

**Functions:** All standard DMM measurement functions, such as AC and DC volts and AC and DC current, as well as resistance, conductance, continuity and diode test. **Ranges:** Leading zero suppression. Automatic polarity. Overrange indication. Protection from overloads and transients up to 6 kV. Dual-slope integration a/d conversion to ensure noise-free measurements. Autoranging M ohm resistance range (to 300M ohm), as well as four fixed resistance ranges from 200 ohm to 200K ohm. **Operator Convenience:** 4-1/2 digit liquid crystal display. Software-controlled self-test routines for quick verification of internal circuitry and operation. **Power:** 170 hours of continuous operation can be expected from a 9V alkaline battery (NEDA 1604). Low battery voltage is automatically detected and displayed. The low battery indication, BT, appears on the display when about 20% of the battery life remains. Ordinary line operation is possible using a Fluke Model A81 battery eliminator. A full line of accessories is available to enhance the capabilities of the 8060A. **Power Requirements:** Single 9V battery (supplied), NEDA 1604, typically 170 hrs of operation with alkaline type. **Dimensions:** (LWH) 7.1"x 3.4"x 1.8". **Weight:** .90 lbs. **Accessories supplied:** Manual, Y-8132 test leads, 9V battery, operator's card, spare fuse, statement of calibration.

MODEL 8062A REG. \$295.00 OUR PRICE **\$269.95**

#### FEATURES

- .05% accuracy. • True RMS. • 30 kHz bandwidth. • Relative measurements. • Beeper.



### THIS FULL LINE OF ACCESSORIES EXTENDS THE RANGE AND SCOPE OF EACH INSTRUMENT

A-81-100 Battery Eliminator (100V ac line) . . . . .	\$ 20.00
A-81-115 Battery Eliminator (115V ac line)* . . . . .	20.00
C-90 Carrying Case for all hand held meters . . . . .	12.00
Y-8100 200A DC/AC Clamp-On Current Probe*** . . . . .	229.00
Y-8101 150A AC Current Probe*** . . . . .	75.00
Y-8102 Sheathed Type K Thermocouple . . . . .	80.00
Y-8103 Bead Type K Thermocouple . . . . .	25.00
Y-8104 Thermocouple Termination Kit . . . . .	10.00
Y-8132 Replacement Test Leads (Safety-Designed)** . . . . .	10.00
Y-8134 Deluxe Test Lead Kit*** . . . . .	20.00
Y-8134 Deluxe Test Lead Kit (Safety-Designed) . . . . .	20.00
Y-8140 Slim-Flex Test Leads*** . . . . .	20.00

Y-8205 Carrying Case for 8010, 8012, 8050 . . . . .	\$ 39.00
80I-600 600 A AC Clamp-On Current Probe*** . . . . .	99.00
80J-10 20A AC/DC Current Shunt*** . . . . .	30.00
80K-6 6,000 High Voltage Probe*** . . . . .	45.00
80K-40 40,000 High Voltage Probe*** . . . . .	80.00
80T-H Touch/Hold Probe . . . . .	45.00
80T-K Thermo Couple . . . . .	59.00
80T-SP Surface Type K Thermocouple . . . . .	95.00
80T-150C Temperature Probe (°C)*** . . . . .	120.00
80T-150F Temperature Probe (°F)*** . . . . .	120.00
83RF Radio Frequency Probe*** . . . . .	49.00
85RF Radio Frequency Probe*** . . . . .	85.00

\*UL Recognized.

\*\*Listed by UL to Safety Standard UL 1244.

\*\*\*Factory Mutual Approved.

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## CIRCUITMATE by BECKMAN DIGITAL MULTIMETER

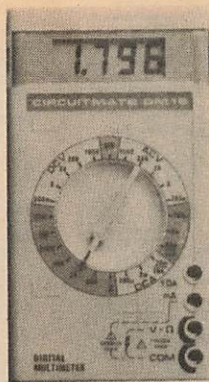
MODEL DM-15 OUR PRICE **\$59.95**

### FEATURES

- 6 functions and 25 ranges. • 0.8% basic VDC accuracy.
- Diode/transistor test function. • Pocket size.
- Auto-polarity, auto-zero, and auto-decimal.
- Single function and range selector switch.
- 10 amps AC and DC current capability.

### SPECIFICATIONS

Accuracies are  $\pm$ (% reading + number of digits) at 23°C  $\pm$  5°C, less than 70% RH. **Digits:** 3-1/2. **Functions:** DC volts, AC volts, DC amps, AC amps, Resistance, Diode test, DC VOLTS—Ranges: 5 (2V to 1000V). **Accuracy:** 8% of reading + 1 digit. **Input Impedance:** 10M ohm. **AC VOLTS—Ranges:** 5 (2V to 1000V). **DC CURRENT—Ranges:** 4 (200uA, 2mA, 20mA, 10A). **RESISTANCE—Ranges:** 6 (200 to 20M ohm). **CAPACITANCE—Ranges:** N/A. **Accuracy:** N/A. **AC CURRENT—Ranges:** 4 (200uA, 2mA, 20mA, 10A). **Dimensions:** (HWD) 5-7/8" x 3-1/4" x 7/8". **Weight:** 5.75 oz. **Accessories supplied:** test leads, battery, instruction manual. Case not included.



## CIRCUITMATE by BECKMAN DIGITAL MULTIMETER

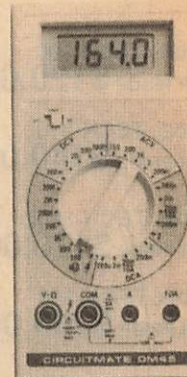
MODEL DM-45 OUR PRICE **\$89.95**

### FEATURES

- 7 functions and 30 ranges. • 0.5% basic VDC accuracy.
- Diode/transistor test function. • Full size with tilt ball.
- Auto-polarity, auto-zero, and auto-decimal.
- Single function and range selector switch.
- Continuity beeper. • 10 amps AC and DC current capability.

### SPECIFICATIONS

Accuracies are  $\pm$ (% reading + number of digits) at 23°C  $\pm$  5°C, less than 70% RH. **Digits:** 3-1/2. **Functions:** DC volts, AC volts, DC amps, AC amps, Resistance, Diode test, Continuity (beeper). **DC VOLTS—Ranges:** 5 (2V to 1000V). **Accuracy:** 5% of reading + 1 digit. **Input Impedance:** 10M ohm. **AC VOLTS—Ranges:** 5 (2V to 750V). **DC CURRENT—Ranges:** 6 (200uA, 2mA, 20mA, 200mA, 2A, 10A). **RESISTANCE—Ranges:** 6 (200 to 20M ohm). **CAPACITANCE—Ranges:** N/A. **Accuracy:** N/A. **AC CURRENT—Ranges:** 5 (200uA, 2mA, 20mA, 200mA, 2A, 10A). **Dimensions:** (HWD) 6-7/8" x 3-1/2" x 1-3/8". **Weight:** 9 oz. **Accessories supplied:** test leads, battery, instruction manual. Case not included.



## CIRCUITMATE by BECKMAN DIGITAL MULTIMETER

MODEL DM-20 OUR PRICE **\$69.95**

### FEATURES

- 8 functions and 30 ranges. • 0.8% basic VDC accuracy.
- Diode/transistor test function. • Pocket size.
- Auto-polarity, auto-zero, and auto-decimal.
- Single function and range selector switch.
- 10 amps AC and DC current capability.
- Conductance. • Transistor gain test (hFE).

### SPECIFICATIONS

Accuracies are  $\pm$ (% reading + number of digits) at 23°C  $\pm$  5°C, less than 70% RH. **Digits:** 3-1/2. **Functions:** DC volts, AC volts, DC amps, AC amps, Resistance, Diode test, HFE test, Conductance, DC VOLTS—Ranges: 5 (2V to 1000V). **Accuracy:** 8% of reading + 1 digit. **Input Impedance:** 10M ohm. **AC VOLTS—Ranges:** 5 (2V to 1000V). **DC CURRENT—Ranges:** 5 (200uA, 2mA, 20mA, 200mA, 10A). **RESISTANCE—Ranges:** 6 (200 to 20M ohm). **CAPACITANCE—Ranges:** N/A. **Accuracy:** N/A. **AC CURRENT—Ranges:** 5 (200uA to 10A). **Dimensions:** (HWD) 5-7/8" x 3-1/4" x 7/8". **Weight:** 5.75 oz. **Accessories supplied:** test leads, battery, instruction manual. Case not included.



## CIRCUITMATE by BECKMAN DIGITAL MULTIMETER

MODEL DM-73  
OUR PRICE **\$59.95**

### FEATURES

- 3 1/2-digit LCD display. • Autoranging.
- 0.5% basic Vdc Accuracy.
- Overload Protection. • Resistance.
- DC Volts. • AC Volts.
- Continuity Beeper.
- Low Battery Voltage Indicator.
- Single Function Selector Switch.
- Compact pen-style case for convenient carrying and use.

### DESCRIPTION

The Circuitmate Model DM73 is a completely portable 3 1/2 digit multimeter with an autoranging feature for fast and easy operation. This multimeter is designed for use by technicians, servicemen, and hobbyists who expect accuracy, reliability, and easy operation. The Model DM73 is equipped with four functions. A single switch selects the function, and the autoranging feature will automatically adjust the display to the proper range. The liquid crystal display is easy-to-read, both indoors and outdoors, even in direct sunlight. The touch hold feature makes reading the display easy and convenient.

### SPECIFICATIONS

**Operating temperature range:** 0°C to + 40°C. **Storage temperature range:** -20°C to +60°C with battery removed. **Display:** 3 1/2-digit liquid crystal display (LCD) with a maximum reading of 1999. **Power:** Two 1.5-volt, button batteries, Type LR-44 or SR-44. **Battery Life (Typical)** 100 hours (with SR-44 batteries). **Measurement Rate:** Two measurements per second. **Dimensions:** 5.25 inches (13.3 cm) long x .90 inches (2.3 cm) wide x 0.63 inches (1.6 cm) high. **Weight (including batteries)** 1.9 ounces (55 grams). **Standard Accessories:** Batteries (installed), Test lead set, Operator's manual. **Electrical specifications:** Accuracy at 18°C to 28°C, 80% maximum relative humidity. **PRO-73 Carrying case....\$2.95**



## CIRCUITMATE BY BECKMAN DIGITAL MULTIMETER

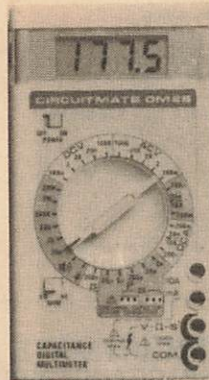
MODEL DM-25 OUR PRICE **\$79.95**

### FEATURES

- 8 functions and 30 ranges. • 0.5% basic VDC accuracy.
- Diode/transistor test function.
- Auto-polarity, auto-zero, and auto-decimal.
- Single function and range selector switch.
- 10 amps AC and DC current capability.
- Conductance. • Capacitance. • Pocket size.

### SPECIFICATIONS

Accuracies are  $\pm$ (% reading + number of digits) at 23°C  $\pm$  5°C, less than 70% RH. **Digits:** 3-1/2. **Functions:** DC volts, AC volts, DC amps, AC amps, Resistance, Diode test, Conductance, Continuity (beeper), Capacitance. **DC VOLTS—Ranges:** 5 (2V to 1000V). **Accuracy:** 5% of reading + 1 digit. **Input Impedance:** 10M ohm. **AC VOLTS—Ranges:** 5 (2V to 1000V). **DC CURRENT—Ranges:** 4 (200uA, 2mA, 20mA, 200mA, 10A). **RESISTANCE—Ranges:** 6 (200 to 20M ohm). **CAPACITANCE—Ranges:** 5 (20mF to 20uF). **Accuracy:** 5% of reading + 4 digits. **AC CURRENT—Ranges:** 4 (200uA to 10A). **Dimensions:** (HWD) 5-7/8" x 3-1/4" x 7/8". **Weight:** 5.75 oz. **Accessories supplied:** test leads, battery, instruction manual. Case not included.



## CIRCUITMATE by BECKMAN

### DIGITAL MULTIMETER MODEL DM-77

OUR PRICE **\$69.95**

### FEATURES

- 3 1/2-digit LCD display. • Overload Protection.
- DC Volts. • AC Volts. • Resistance.
- Dual Voltage Resistance. • Autoranging.
- DC Amps. • AC Amps. • 10 Amps AC and DC.
- Continuity Beeper. • 0.5% basic dc Accuracy.
- Low Battery Voltage Indicator.
- Single Function Selector Switch.

### DESCRIPTION

The Circuitmate Model DM-77 is a completely portable, 3 1/2-digit multimeter with an autoranging feature for fast and easy operation. The DM-77 is designed for use by technicians, servicemen, and hobbyists who expect accuracy, reliability, and easy operation. The DM-77 is equipped with seven functions, with autoranging and an easy-to-use rotary selector switch. A single switch selects the function, and the autoranging feature will automatically adjust the display to the proper range. The liquid crystal display is easy-to-read, both indoors and outdoors, even in direct sunlight.

### SPECIFICATIONS

**Operating temperature range:** 0°C to + 40°C. **Storage temperature range:** -20°C to +60°C with battery removed. **Display:** 3 1/2-digit liquid crystal display (LCD) with a maximum reading of 1999. **Power:** Two standard 1.5 volt, AA batteries. **Battery Life (Typical)** 300 hours. **Measurement Rate:** Two measurements per second. **Dimensions:** 6.30 inches (16.0 cm) long x 3.35 inches (8.5 cm) wide x 1.5 inches (2.9 cm) high. **Weight (including batteries)** 8.4 ounces (239 grams). **Standard Accessories:** Batteries (installed), Spare fuse, Test lead set, Operator's manual. **Electrical specifications:** Accuracy at 18°C to 28°C, 80% maximum relative humidity.



## CIRCUITMATE by BECKMAN DIGITAL MULTIMETER

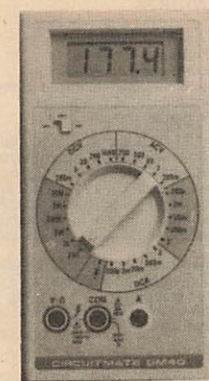
MODEL DM-40 OUR PRICE **\$69.95**

### FEATURES

- 6 functions and 27 ranges. • 0.8% basic VDC accuracy.
- Diode/transistor test function. • Full size with tilt ball.
- Auto-polarity, auto-zero, and auto-decimal.
- Single function and range selector switch.

### SPECIFICATIONS

Accuracies are  $\pm$ (% reading + number of digits) at 23°C  $\pm$  5°C, less than 70% RH. **Digits:** 3-1/2. **Functions:** DC volts, AC volts, DC amps, AC amps, Resistance, Diode test, DC VOLTS—Ranges: 5 (2V to 1000V). **Accuracy:** 8% of reading + 1 digit. **Input Impedance:** 10M ohm. **AC VOLTS—Ranges:** 5 (2V to 750V). **DC CURRENT—Ranges:** 5 (200uA, 2mA, 20mA, 200mA, 2A). **RESISTANCE—Ranges:** 6 (200 to 20M ohm). **CAPACITANCE—Ranges:** N/A. **Accuracy:** N/A. **AC CURRENT—Ranges:** 5 (200uA, 2mA, 20mA, 200mA, 2A). **Dimensions:** (HWD) 6-7/8" x 3-1/2" x 1-3/8". **Weight:** 9 oz. **Accessories supplied:** test leads, battery, instruction manual. Case not included.





# TEST INSTRUMENTS

## BECKMAN 3-1/2 DIGIT MULTIMETERS

MODEL TECH-300  
OUR PRICE **\$120.00** each

MODEL TECH-310  
OUR PRICE **\$140.00** each

MODEL TECH-320B  
OUR PRICE **\$170.00** each

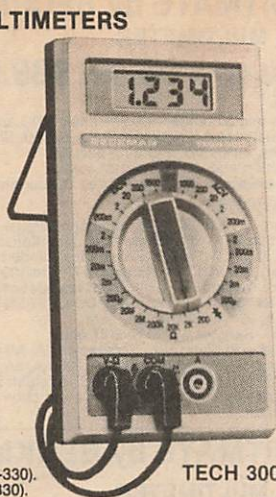
MODEL TECH-330  
OUR PRICE **\$209.00** each

### FEATURES

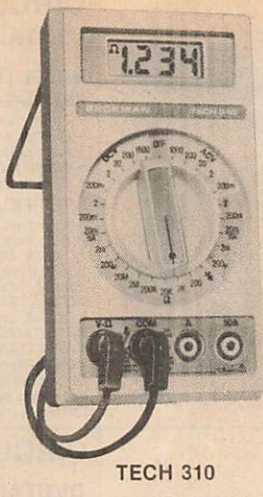
- Bright, 0.5 inch LCD readout.
- Continuity test function (TECH-310 & TECH-330).
- 10-Amp current ranges (TECH-310 & TECH-330).
- 1500 V overload and 6 kV transient protection.
- 2 years normal operation from common 9 V battery.
- Low power ohms in all ohms ranges for in-circuit resistance measurements.
- Diode/transistor test function with in-circuit junction test capability.
- 22Megohm input resistance on all DCV ranges.
- 10 kHz frequency response on all AC volts (20 kHz on TECH-330).
- Autopolarity autozeroing.
- Rugged design — survives even a 6 foot drop.
- Complete with battery, spare fuse, manual and safety designed test leads.
- True RMS measurement capability to 20 kHz (TECH-330).

### DESCRIPTION

Recessed display and single rotary switch prevent damage while in tool box or on the job. Case keeps out dirt, fluids and other contaminants. Insta-Ohms Continuity Function (Model TECH-310 and TECH-330) makes electrical continuity checks with the speed and ease of an analog meter, but with no needle movement to break. In any resistance range, an ohm symbol appears in the display the instant continuity is established with test leads. 22 megohm input resistance on all DCV ranges reduces reading errors caused by circuit loading. The model TECH-330 measures both AC voltage and current in true RMS (AC + DC). Signals with high harmonic content and complex waveforms, such as switching power supplies and SCR regulators, can be measured easily and accurately. Measure up to 10 amps (TECH-310 and TECH-330) or 2 amps (TECH-300) AC or DC continuously, without adding special adapters. All voltage ranges are protected for inputs above 15000 VDC or 1000 V rms. All resistance ranges protected to 300 VDC or V rms. Both voltage and resistance ranges protected against voltage transients up to 6 kV. The 2-amp current input of all models is protected by an easy-to-replace fuse. The 10-amp current input (TECH-310 and TECH-330) is rated for up to 20 amps for 30 seconds. Two year battery life under typical use. Common 9 V battery provides up to 2,000 hours of continuous operation. Decimal point blinks during last 200-hours of battery life. One single center switch makes the instrument easier to use and more reliable than pushbutton digital multimeters. In-circuit diode test function allows accurate measurements of forward voltage drops across diode and transistor junctions with 5 mA test current. Semiconductor junctions can also be measured while in-circuit with all three as 200 ohms shunt resistance. Low-power ohms in all



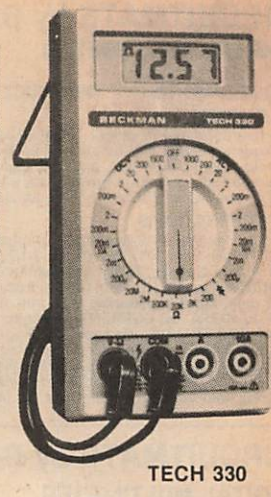
TECH 300



TECH 310



TECH 320B



TECH 330

resistance ranges permits accurate measurements of resistors in or out of circuit. Low test voltage ignores common diode and transistor junctions for in-circuit measurements. Test leads designed to protect operator from accidental shock hazards. Weighs only 16 oz. Fits easily in tool box or attache case. Convenient, built-in tilt-ball snaps open for hanging or bench use. Anti-skid pads keep instrument solidly in place when measurements are being made. Custom Beckman CMOS LSI chip, 100% instrument burn-in and factory test of every function and range assure traditional Beckman high reliability. Specified accuracies are guaranteed for a full year. Choice of three models. TECH-310 has 7 functions and 29 ranges, plus 0.25% VDC accuracy. TECH-330 has 7 functions and 29 ranges, plus 0.1% VDC accuracy and true RMS capability (AC + DC). TECH-300 has 0.5% VDC accuracy and all the features of TECH-310, except the continuity test function and 10-amp current ranges. A variety of accessories available for use with all models.

### SPECIFICATIONS

- DC Volts: 0.2-1500 V in 5 ranges; 100 uV resolution.
- AC Volts: 0.2-1000 V in 5 ranges; 100 uV resolution.
- Current (AC or DC):  
TECH-300: 200 uA to 2 A in 5 ranges; 100 nA resolution.  
TECH-310 and TECH-330: 200 uA to 10 A in 6 ranges; 100 nA resolution; Measurements between 10 and 19.99 A for 30 sec. max.
- Resistance: 200 ohms to 20 megohms in 6 ranges; 0.1 ohm resolution.
- Diode test: 0-2 V, 1 range; 1 mV resolution.

### ACCURACY

Guaranteed Accuracy Specifications: ± (% of reading + no. of digits) for 1 year at 25°C ± 5°C (see table below).

Function	TECH-300	TECH-310	TECH-330
DC volts	(0.5% + 1)	(0.25% + 1)	(0.1% + 1)
AC volts	(1.5% + 4)†	(0.75% + 1)†	(0.6% + 3)†
DC current	(1.0% + 1)	(0.75% + 1)‡	(0.35% + 1)
AC current	(2.0% + 4)†	(1.5% + 1)†	(0.9% + 3)†
Resistance	(0.75% + 1)*	(0.5% + 1)†	(0.2% + 1)*
Diode Test	(0.5% + 2)	(0.25% + 2)	(0.1% + 2)

‡ Except 10 A range, (1.5% + 1). § Except 10 A range, (2.0% + 3) 45-400 Hz only. \* Except 20 megohm range, (1.5% + 1). † Accuracy at 45 Hz to 2 kHz.

### GENERAL SPECIFICATIONS

- Operating Temperature Range: 0°C to +50°C.
- Temperature Coefficient: Less than 15% of applicable accuracy specification per °C (0°C to 20°C, 30°C to 50°C).
- Battery Life (9 V alkaline): 2,000 continuous hours typical.
- Size: 1.8"H x 3.65"W x 6.85"L.
- Weight: 16 oz. with battery.

### TECH-320B

The TECH-320B Model has all the features just described including the Insta-Ohms Quick Continuity test function and ten ampere AC/DC current ranges plus audible indication of continuity. It has an accuracy of ±0.1% of reading in DC volts.

Model	Description	Our Price
VC-201	Vinyl Carrying Case.....	<b>\$ 10.00</b>
DC-205	Deluxe Carrying Case.....	<b>29.00</b>
HV-211-10	50 kV High Voltage Probe.....	<b>55.00</b>
HV-211-22	50 kV High Voltage Probe.....	<b>55.00</b>
RF-221	200 MHz RF Probe.....	<b>45.00</b>
CT-231	150 AMP AC Current Clamp.....	<b>69.00</b>
CT-232	1000 AMP AC Current Clamp....	<b>169.00</b>
DL-243	Deluxe Test Lead Kit.....	<b>12.00</b>

## BECKMAN 4 1/2-DIGIT HANDHELD MULTIMETER MODEL 4410

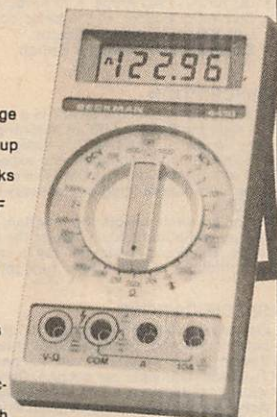
OUR PRICE **\$225.00**

### FEATURES

- Increased accuracy of up to 0.05% basic DC voltage.
- Easy to use single rotary switch makes function and range selection less confusing than with push-buttons.
- Built-in 10 amp AC/DC capability allows you to measure up to 10 amps AC or DC without special adapters.
- Insta-Ohms® continuity function means continuity checks with the speed and ease of an analog meter.
- RF shielding to assure accurate readings around high RF energy fields.
- True RMS for 4 1/2-digit precision and non-sinusoidal waveform measurement, rely on the Model 4410. It calculates the true RMS value of all signal regardless of waveform. Pulse trains, triangular waves or distorted sinewaves, for example, can cause measurement error when read with a standard digital multimeter or analog meter—which are calibrated to measure pure sine waves only.

### DESCRIPTION

You get 4 1/2-digit precision measurements in all meter functions, not just on DC voltage. You get a product made of first-rate materials, that's easy to operate. And you get high performance features, including true RMS, and high reliability.



## CIRCUITMATE PORTABLE DIGITAL CAPACITANCE METER MODEL CM-20

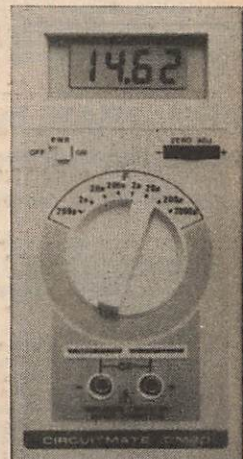
OUR PRICE **\$129.00**

### FEATURES

- 8 ranges: 0.1pF to 1999µF.
- 0.5% basic accuracy.
- Overrange indicator.
- Low battery indicator.
- Separate lead insertion jacks and banana jacks.
- Optional AC/DC adapter.

### DESCRIPTION

The CM-20 is a portable digital capacitance meter handy for field servicing or bench-top use. The hand-held size CM-20 measures capacitance ranging from 0.1pF to 1999µF and is convenient and easy to use. With only one knob, eight ranges may be selected: 200pF to 2000µF full-scale. A zero-adjust knob improves the accuracy of small value measurements and cancels stray capacitance caused by wiring. Other features include an easy-to-read 3 1/2 digit, 1/2-inch high LCD display, and tilt ball and anti-skid pads to keep the meter steady for easy reading on bench tops. Capacitance readings are made quickly at a rate of 2 1/2 measurements per second.





## SIMPSON METERS MODEL 260-6XL

OUR PRICE **\$129.50**  
FEATURES

- [X] for extra ranges and features.
- [L] for low-power ohms capabilities.
- Direct dial reading of Amp-Clamp ranges.
- External access battery and fuse compartment.
- Clip-type fuse holder and extra fuse.
- Optional 5 kV slip-on safety probe.
- Multi-purpose, test leads with combination probe and alligator clips.
- Only two batteries... one 9-volt NEDA 1604 and one 1.5-volt "D" cell NEDA 13F. Batteries supplied.
- Rugged taut band movement, varistor protected.

### EXTRA FEATURES

- Extra large viewing area with four-color, color-keyed scales.
- Extra drop-resistant, high-impact custom-molded panel and case.

### EXTRA RANGES

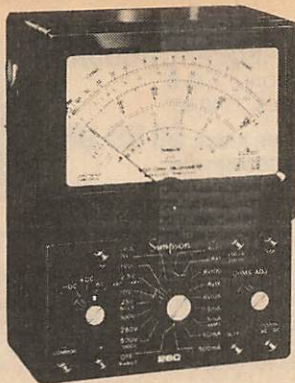
- DC Volts: 0-25 and 0-100.
- AC Volts: 0-25 and 0-100.
- DC Milliamperes: 0-5 and 0-50.
- DC Amperes: 0-5 (250 mV drop).
- dB Scale: -1 to +29 and +11 to +41 (1mW 600 ohm reference).
- Standard Resistance: RX1 (6 ohm center scale); RX100 (600 ohm center scale).
- RX1K (6,000 ohm center scale).
- RX10K (60,000 ohm center scale).
- Low Power Resistance: RX1 (20 ohm center scale); RX10 (200 ohm center scale).
- Max. open circuit voltage only 100 mV. Max. measuring power only 0.125 mW.

### DESCRIPTION

Simpson developed the 260-6XL to answer the need for a volt-ohm-milliammeter with extra features including drop resistant construction, low-power ohms and additional voltage, current and resistance ranges. It has an extra large viewing area, 4-color, color-keyed scales and 33 measuring ranges plus all of the deluxe features of the famous 260. Complete with batteries, color-coded test probe leads with screw-on clips and instruction manual.

### ADDITIONAL MODELS

- 260-6XL, complete with batteries, test leads and manual... **Our Price \$129.50**
- 260-6XLM, with mirror scale... **Our Price \$147.00**



- 260-6XLP, complete with batteries, test leads and manual... **Our Price \$190.00**
- Reset pushbutton releases when overload exists. Will not reset until overload condition is eliminated.
- 260-6XLP, with mirror scale... **Our Price \$198.00**

### SPECIFICATIONS

- DC Volts: [X] 0-0.250; 0-1; 0-2.5; 0-10; 0-25; 0-100; 0-250; 0-500; 0-1000.
- AC Volts: [X] 0-2.5; 0-10; 0-25; 0-100; 0-250; 0-500; 0-1000.
- DC Microamperes: [X] 0-50 (250 MV drop); 0-0.5; 0-5; 0-50; 0-500.
- DC Amperes: [X] 0-5 (250 MV drop).
- AC Amperes: [X] 6 ranges from 0-5 to 0-250 with optional Model 150 Amp-Clamp adaptor.
- DB Scale (1 MW 600 ohm Reference): [X] -20 to +10; -9 to +21; -1 to +29; +11 to +41; +19 to +49.
- Resistance (standard power): [X] Rx1 (6 ohm center scale), Rx100 (600 ohm center scale), Rx1K (6000 ohm center scale), Rx10K (60,000 ohm center scale).
- Resistance (low power): [XL] Rx1 (20 ohm center scale), Rx10 (200 ohm center scale). Max. open circuit voltage only 100 mV. Max. measuring power only 0.125 mW.

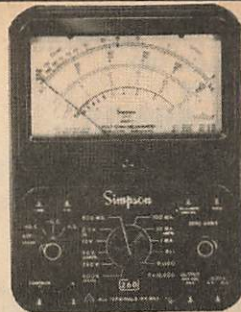
## SIMPSON METER MODEL 260-7

OUR PRICE **\$109.95**  
FEATURES

- Fast, accurate measurements of 28 time-proven ranges.
- Direct dial reading of Amp-Clamp ranges.
- External access battery and fuse compartment.
- Clip-type fuse holder and extra fuse.
- Only 2 batteries... one 9-volt NEDA 1604 and one 1.5-volt "D" cell NEDA 13F. Batteries supplied.
- Rugged taut band movement, varistor protected.
- Optional 5 kV slip-on safety probe.
- Multi-purpose test leads with combination probe and alligator clips.
- Large, continuous analog display for directly indicating trends and for quick, easy nulling and peaking.
- Quick, positive "yes/no" checks for voltage, current and continuity.
- Reliable and rapid checks of semiconductor junctions and forward/reverse resistance tests.
- High-current, low-resistance range pin-points marginal bad contacts and cold solder joints.
- Wide, dynamic, continuous resistance ranges, not limited by the number of display digits.
- Built-in wide-range -20 to +50 dB measurement facilities.
- Superior AC frequency response to 100 kHz.
- High immunity to voltage transients and RF interference—no expensive chips to wipe out.
- Does not generate RF radiation to cause interference or to trigger external sensitive circuits.
- Needs no external power, avoids common mode problems.
- Fully passive voltage, current and dB tests, independent of any internal or external power source.
- Simple design for lowest maintenance costs and highest reliability.

### SPECIFICATIONS

- DC Volts: 0-0.25; 0-1; 0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000.
- AC Volts: 0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000.
- DC Microamperes: 0-50 (250 MV drop).
- DC Milliamperes: 0-1; 0-10; 0-100; 0-500.
- DC Amperes: 0-10 (250 MV drop).
- AC Amperes: Up to 250 with optional Model 150 Amp-Clamp adaptor.
- DB Scale (1 MW 600 ohm reference): -20 to +10; -8 to +22; -6 to +36; +20 to +50.
- Resistance: Rx1; Rx100; Rx10K.
- Size: 5-1/4"W x 7"L x 3-1/8"D.



### ADDITIONAL MODELS

- All models complete with batteries, color-coded test probe leads with screw-on clips and instruction manual.
- 260-7 (varistor protected meter)... **\$109.95**
  - 260-7M (with mirror scale)... **\$127.00**
  - 260-7RT (in roll top protected case)... **\$139.00**
  - 260-7MRT (with mirror scale, in roll top case)... **\$147.00**
  - 260-7P (relay overload protected)... **\$170.00**
  - 260-7PM (relay overload protected with mirror scale)... **\$178.00**
  - 260-7PRT (relay overload protected in roll top case)... **\$190.00**
  - 260-7PMRT (relay overload protected with mirror scale and roll top case)... **\$198.00**
  - 00043 extra test leads... **\$12.00**

### 260 FAMILY ACCESSORIES

Accessory	For Series 3,4,5,6	7	Price
Temperature probe	00758	00758	120.25
Model No.150-2 amp-clamp adaptor	00541	00545	48.00
40 KV DC probe	00168	00411	38.00
10 KV DC probe	00034	00412	38.00
10 KV AC probe	00036	00413	38.00
5 KV DC probe	00795	00795	13.00
5 KV AC probe	00794	00794	13.00
Low power ohms probe	00735	00414	48.75
Extra test leads with screw-on clips	00125	00043	12.00
Extra probe tip leads	07538	----	7.25
Alligator clips	07500	----	6.75
Roll top case	00248	00248	30.00
Leatherette case with storage space	00549	00549	37.00
Molded top hinged case	00812	00812	35.00
Leatherette Every-Redy hard case drop front	00805	00805	35.00
Vinyl sheath case	01818	01818	30.00
Molded snap-on front dust cover	02163	02163	29.00
Model 151-2 line splitter	00544	00544	15.00

## SIMPSON 470™ FULL FUNCTION 3-1/2 DIGIT HAND-HELD DMM

MODEL 470-S  
REG. \$139.00 OUR PRICE **\$124.95**

### FEATURES

- 26 ranges. • Professional-Grade Design and Construction.
- Measures 100 uV to 1 kV DC, 200 uV to 750 V AC, 100 nA to 2000 mA AC/DC, 0.1 ohm to 20 Mohm.
- Full Measurement Capability-100uV to 1000 V DC, 100 uV to 750 V AC, 0.1 ohm to 19.99 Mohm, AC/DC current up to 10A.
- 0.5", High-Contrast LCD Display with auto low-battery indication.
- Wide Temperature/Humidity Operating Range-up to +55°C at 70%, up to 90% humidity at +35°C.
- Audible Tone-for quick continuity checks. • 0.15% DC V Accuracy.
- Diode Test-for "good-bad" semiconductor tests.
- Transient Protection-all V & ohm ranges protected to 6kV up to 100 mcs.
- Double Fusing System-for low & high energy overload protection
- Built-in Tilt Stand-for convenient bench or hanging-upright viewing.
- Anti-Skid Pads-keeps the instrument firmly in place when making measurements.
- Thumbwheel Knobs-for easy range and function selection.
- UL-Recognized Test Leads-complete with screw-on, insulated alligator clips.
- Full Line of Optional Accessories-including high-voltage, temperature and RF probes, two "universal" test lead systems, and UL-recognized Amp-Clamp adaptor.

### SPECIFICATIONS

DC Voltage: 200 mV - 1000 V, AC Voltage: 200 mV - 750 V, Resistance: 200 ohm - 20 Mohm, DC Current: 2 mA - 10 A, AC Current: 2 mA - 10 A, Dimensions: 1.8 x 3.4 x 7.1" (45.7 x 86.4 x 180 mm), Weight: Approx. 1 lb. (454 kg)

00821 Deluxe Carrying Case for 470-S... \$27.00 00822 Carrying Case for 470-S... \$20.00



## SIMPSON 474™ 4 1/2 DIGIT DIGITAL MULTIMETER

MODEL 474  
REG. \$219.95 OUR PRICE **\$199.95**

- 0.03% basic DC accuracy. • Audible & Visible continuity indication. 10uV, .01 ohm uA Resolution. • 10 Amp AC/DC Current Ranges.
- Full Measurement Capability to 1000 V DC, 750 V AC, 20 M ohm, and AC/DC current to 10 A.
- 6 kV Transient Protection, 100 uses, on all V and ohm ranges.
- Double Fusing System-Low/high energy overload protection.
- High Contrast 0.4" Liquid Crystal Display.
- Wide Temperature/Humidity Operating Range-up to +55°C at 70% humidity, up to 90% humidity at +35°C.
- Diode Test-for "good-bad" semiconductor junction checks.
- Two-Way Tilt Stand-for bench use or hanging upright.
- Thumbwheel Knobs-for positive range and function selection.
- 9-V Battery-approx. 1-year life with average use, Low battery indicator.
- High-Impact Molded ABS Case-two-tone Brown or Gray.
- UL Recognized Test Leads-with screw-on, insulated alligator clips.
- Full Line of Optional Accessories-including high-voltage, temperature and RF probes, two "universal" test lead systems and UL recognized amp-clamp adaptor.

00821 Deluxe Carrying Case for 474... \$27.00 00822 Carrying Case for 474... \$20.00



## SIMPSON FUNCTION GENERATOR MODEL 420A 120V For AC line operation only

REG. \$205.00 OUR PRICE **\$185.00**

New portable generators for audio and communications servicing, laboratory and production use.

### FEATURES

- Has sine, triangle, square, DC and TTL output. • Continuously variable DC offset with off position. • Compact portable signal source for bench or field
- Full day's operation on batteries, recharge overnight. • Wide 0.1 Hz to 1 mHz coverage in 7 ranges. • Voltage-controlled generator input for sweep.

### SPECIFICATIONS

Basic Outputs: Sine, triangle, square, DC and TTL (separate BNC). Frequency Range: 0.1 Hz to 1 mHz in 7 ranges. Amplitude: 20 V p-p open circuit (10 V p-p into 600 ohms). Amplitude Control: Continuously variable, greater than 30 dB; fixed attenuation, 10-30 dB. VCG Input: ±20 V maximum, 2K ohm input impedance. Frequency decreases from dial setting with negative voltage. DC Offset: Continuously variable with off position. Dial Accuracy: ±5% fs. Sine Wave Distortion: Less than 1% 10 Hz to 100 kHz, less than 2% at all other frequencies. Triangle Wave Non-linearity: Less than 1% up to 100 kHz. Square Wave Rise/Fall Time: Less than 100 nsec into 600 ohms/20 pF. Square Wave Non-Symmetry: Less than 1% up to 100 kHz. VCG Range: Greater than 300:1 with 0 to -5 V external signal with 1000:1 capability. TTL Output: Fixed TTL compatible output will drive up to 10 TTL loads. Less than 25 nsec rise/fall time. DC Offset: Continuously variable, maximum of 10 V open circuit or ±5 V into 600 ohms (maximum V AC + V DC without clipping). Off position is provided. Output Impedance: 600 ohms, ±5%. Amplitude Flatness: ±0.1 dB up to 20 kHz, ±0.3 dB overall, sine wave. Square Wave Aberration: Less than 3%. Temperature Stability (after 15 minute warm up): Frequency: ±0.1%/C; Amplitude: ±0.05 dB/C. Line Voltage Stability Frequency: ±0.1% per ±10 VAC variation. Amplitude: ±0.05 dB per ±10 VAC variation. Operating Temperature: 0 to +50°C. Power Requirements: 120/220/240 V AC ±10%, 50/60 Hz, 6 VA. 4 "C" size nickel batteries for D version only (8 hours of operation per full charge). Size: 2.7"H x 8.4"D x 9.0"W. Weight: 420A 3 lbs., 420D 4 lbs. with batteries. (batteries not included). Optional carrying case model 01617... \$45.00

## MODEL 420D 120V For AC line & Rechargeable battery operation

OUR PRICE **\$220.00**



CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446



# TEST INSTRUMENTS

## GLOBAL SPECIALTIES CORP.

### FREQUENCY COUNTER

MODEL MAX 100  
REG. \$115.00

OUR PRICE **\$99.95**

The MAX-100 portable frequency counter is designed for field service, laboratory, communications, and monitoring applications. It features an eight-digit multifunction display, 5 Hz to 100 MHz.



#### SPECIFICATIONS

**FREQUENCY CHARACTERISTICS**—Range: 20 Hz to 100 MHz (guaranteed); 110 MHz typical. **Gate time:** 1 sec. providing 1 Hz resolution throughout freq. range. **Accuracy:** +, -1 count + time base error. **INPUT CHARACTERISTICS**—Impedance: 1M ohm shunted by 56 pF. **Connector:** Phone Jack. **Coupling:** AC. **Sine Wave Sensitivity:** 30 mV rms; 10 Hz-50 MHz; 100 mV rms, 50 mHz to 80 mHz; 300 mV rms, 80 mHz and above. **Maximum Input:** 200V peak, 20 mHz-500 Hz; 100V peak, 500 Hz-1 kHz; 75V peak, 1 kHz-10 MHz; 50V peak, 10 mHz and above. **INTERNAL TIME BASE CHARACTERISTICS**—Frequency: 3.579545 MHz crystal oscillator. **Stability:** +, -3ppm at 25°C. **Trimmer Adjustment:** +, -4ppm. **Temperature Stability:** Better than 0.2ppm/°C, 0 to 50°C. **Maximum Aging Rate:** 10ppm/year. **DISPLAY CHARACTERISTICS**—Display: Eight 6" high LED digits, with anti-glare window. **Lead-Zero Blanking:** Decimal point automatically appears between sixth and seventh digit when input frequency exceeds 1 MHz. **Overflow:** When input signal exceeds 99,999,999 Hz the most significant (left) hand digit flashes, allowing user to read in excess of 100 MHz. **Display Update:** Fixed 1/6 second plus 1 second gate time. **Low Battery Indicator:** When batteries or power supply falls below 6.6 VDC, all eight displays flash at once a one Hz/Second rate. During battery operation, flashing display extends operating time of unit. **GENERAL—Power Requirements:** 6 AA alkaline or NiCad batteries (internal battery compartment). **External:** 110-220V AC battery eliminator; automobile cigarette lighter adaptor for both charging and operating; 7.2 to 10 VDC external power supply. **Battery Life:** Alkaline, 3 hrs. cont. use; 8 hours intermittent use. NiCad, 3 hrs. cont. use, 6 hrs. intermittent use. **Battery Charging:** 12-14 hrs. required for full charge. **Size (HWD):** 1.75 x 5.63 x 7.75" (4.45 x 14.30 x 19.69cm). **Weight:** Less than 1.5 lb (0.68 kg.) with batteries. **Accessories included:** 100 IPC clip lead input cable; detailed applications/instructions manual.

#### ACCESSORIES

100-MWA Mini-whip antenna.....\$9.00 100-CLA Cigarette lighter adaptor.....\$6.95  
100-LLC In-line RF signal tap (50 ohm).....\$20.00 100-CC Vinyl carrying case.....\$12.95  
100-CA1 117 VAC 60 Hz charger/adaptor\$12.95

## GLOBAL SPECIALTIES CORP.

### 3-1/2 DIGIT 0.1% DIGITAL CAPACITANCE METER

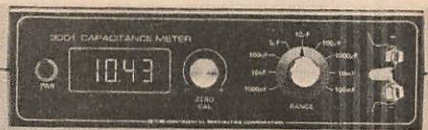
MODEL 3001

REG. \$325.00

OUR PRICE **\$275.00**

#### SPECIFICATIONS

Range: 9 ranges, from 1999 pF to 199,900 uF full scale. **Accuracy:** ±0.1% of reading ±1 digit ±1 pF on 7 lower ranges, ±0.5% of reading ±1 digit on 2 upper ranges determined at 23 ± 5°C. **Temperature Coefficient:** ±0.01%/°C in all ranges. **Technique:** Measures T<sub>v</sub> (dual threshold slope integration), zero calibrate adjustment. **Zero-Calibrate Offset Adjustment Range:** Greater than 100 pF. This allows nulling of any stray or cable capacitance appearing at the input, e.g., as when cable connects unit to high volume test fixture; permits max. 18" cable. **Display:** 3-1/2 digit high brightness 0.5" character height LED. **Overrange Indication:** Display flashes at approximately 2 Hz. **Underrange Indication:** Zeros displayed. **Input Protection:** 1/2 amp 250 volt fuse. **Input Connection:** Twin banana jacks. Mating plug-in spring tensioned Test Clips and Test Cable included. **Calibration Adjustment:** One internal range calibration adjustment. **Power Requirements:** 105-125 VAC, 50/60 Hz, 6 watts; 220-240 VAC, 50/60 Hz optional. **Operating Temperature:** 5-45°C (40-110°F). **Size (W x H x D):** 10 x 3 x 7 inches. (254 x 76 x 178mm). **Weight:** 3 lbs. (1.4 kg.).



## GLOBAL SPECIALTIES CORP.

### DIGITAL CAPACITANCE METER

MODEL 3000

REG. \$124.95

OUR PRICE **\$112.50**

#### FEATURES

- Lo-Bat Indication. • Power Switch.
- Range Switches. • 3-1/2 Digit Display.
- Zero ADJ Turn-Wheel.
- Low Insertion Force Test Jacks.
- Recessed Banana Jack Input Terminals.

#### DESCRIPTION

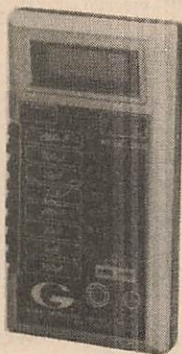
The Global 3000 offers 3-1/2 digit resolution, accuracy to 0.2% of reading, capacitance measurement from 1 pF to 2000 uF, and switch selection of capacitance range. The 0.5 inch high numeric LCD display has annunciators to indicate low battery and excessive compensation of stray capacitance (- indication). A front panel Zero ADJUST control permits nulling of stray and incidental capacitance, as might be associated with a cable lead to a test fixture. Also included is a tilt stand for positioning of the unit.

#### APPLICATIONS

Applications for the 3000 include sorting capacitors by value, selection of precision values, checking capacitor tolerances, matching sets of capacitors, and measuring unmarked capacitors. It can be used to measure cable capacitance, cable length by capacitance, capacitance of switches and other electronic components, capacitive coupling between printed circuit faces or wires, stray capacitance, capacitance of antenna components and systems, and capacitance of networks. The 3000 also demonstrates the physics of capacitance, especially in process control and educational/instructional applications.

#### SPECIFICATIONS

Range: 8 ranges with full scale values from 200 pF with a resolution of 0.1 pF, 1 nF with a resolution of 1 pF, 20 nF with a resolution of 10 pF, 200 nF with 100 pF, 2uF with a 1 nF and 10 uF with 100 nF. All the ranges listed above have an accuracy of ±(0.5% + 1 dgt + 0.5 pF). Other ranges including 200 uF with a Resolution of 100 nF are accurate by ±(1.0% + 1 dgt). The eighth range is 2000 uF with a resolution of 1 nF accuracy of ±(2.0% + 1 dgt). **Power Requirements:** Single standard 9V battery. **Dimensions (HWD):** 6.85" x 3.54" x 1.42" (174 x 90 x 36 mm). **Weight:** 340g including battery 0.75 lbs. (12 oz.). Tilt stand included for added flexibility.



## FORDHAM 550 MHz FREQUENCY COUNTER

MODEL FM-8

REG. \$249.95

OUR PRICE **\$169.95**

#### DESCRIPTION

The FM-8, 8-digit high frequency counter is easy to use, with a switch selectable input using a single BNC. Nothing to build. It comes completely assembled, pre-calibrated and pretested.

#### SPECIFICATIONS

•5 Hz to 550 MHz. •High intensity 8-digit LED display (easy-to-read .43" high). •Crystal (± 3 ppm at 25°C) controlled 0.1 or 1.0 sec. gate times. •Convenient benchtop size (7 x 10 x 3") durable attractive case. •1 megohm input impedance. 5 Hz to 100 MHz. 50 ohm input impedance. 30 mHz to 550 MHz. **Sensitivity:** •Low Frequency Input: 70 mV rms to 20 Hz; 20 mV rms to 25 mHz; 25 mV rms to 80 mHz; 80 mV rms to 100 mHz. •High Frequency Input: 250 mV rms—30 mHz to 40 mHz; 200 mV rms—50 mHz to 1000 mHz; 150 mV rms—100 mHz to 300 mHz; 250 mV rms—300 mHz to 500 mHz; 350 mV rms—500 mHz to 550 MHz. •Line Powered: 110 VAC 60 Hz.



## GLOBAL SPECIALTIES CORP.

### FREQUENCY COUNTER

MODEL 6000-G

REG. \$425.00

OUR PRICE **\$369.95**

#### FEATURES

- 5Hz to 650MHz range.
- Switchable low pass 60KHz filter.
- Selectable 0.1, 1.0 and 10 sec. gate times.
- Easy-to-read 8 digit LED display.
- Easy-touch push button controls. • Stream-lined ultrafunctional front panel.



#### DESCRIPTION

Global's New 650 MHz Frequency Counter—The Model 6000-G—offers outstanding performance and ease of operation in a value-packed instrument. The 6000-G features a trimmed front panel with optimally accessible controls, push-button operation, bright LED display and extremely accurate frequency measurement from less than 5 Hz to more than 650 MHz. The standard Model 6000-G Frequency Counter has a 3.579545 MHz temperature compensated crystal oscillator time base. This frequency counter features two front panel mounted BNC input connectors which allow greater flexibility in frequency measurement. The A input accepts signals from 5 Hz to 100 MHz with an input impedance of 1 megohm @ 25 pF. A switchable lowpass filter, with an LED indicator light, provides a 3 dB per octave rolloff at 80 KHz to facilitate audio and ultrasonic measurements. The B input is used for signals from less than 40 MHz to over 650 MHz with an input impedance of 50 ohm @ 10 pF. Selection of A or B input is via a simple push-button control with LED indicators. The 6000-G also features three switch selectable gate times, with simple push-button operation and LED indicators. This enables the user to choose gate times of 0.1 second with 10 Hz resolution, 1 second with 1 Hz resolution or 10 second with 1/10 Hz resolution. LED indicators for "GATE OPEN" and "OVERFLOW" provide additional user convenience.

## GLOBAL SPECIALTIES CORP.

### 1 GHz FREQUENCY COUNTER

MODEL 6002

REG. \$525.00

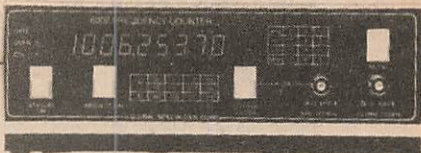
OUR PRICE **\$449.95**

#### FEATURES

- Switchable low pass 60 kHz filter.
- 5 Hz to 1 GHz frequency range.
- Easy-touch, push-button controls. • Measures period 100 ns to 200 ms.
- Three selectable resolutions in each mode. • Easy-to-read, 8 1/2-digit LED display.

#### DESCRIPTION

Bull's eye! High Frequency, Low Price! Now, you can afford frequency measurement from 5 Hz to 1 GHz with Global's New 6002 Frequency Counter. It's our alternative to high-priced GHz counters and others that "miss the mark" by not meeting your high frequency needs. The 6002 is right on target for ALL of your frequency requirements. And we aimed to give you more. The 6002 provides the added convenience of period measurement from 100 ns to 200 ms. For "bull's-eye" accuracy, a 10 MHz crystal oven oscillator timebase assures ±0.5 ppm (10-40°C), ±1 ppm/year stability. The 6002 also scores high on quality, performance, and features. Two AC-coupled, BNC connectors are mounted on front panel for added flexibility. The A input accepts signals from 5 Hz to 100 MHz with 10 Hz, 1.0 Hz and 0.1 Hz resolutions and an input impedance of 1M ohm at 20 pF. A switchable low pass filter provides a 6 db/octave roll-off at 60 kHz to facilitate audio and ultrasonic measurements. The 6002 even lets you engage a x100 multiplication mode to speed up the measurement and display of low frequencies (5 Hz to 10 kHz). The B input accepts signals from 80 MHz to 1 GHz with a 50 ohm at 10 pF input impedance and 1 kHz, 100 Hz and 10 Hz resolutions. Choose from three resolutions in the A input, B input and Period modes. Simply depress the push-button control and LED indicators confirm your selection. A clean front panel and easily accessible push-button controls allow "marksman-ship" operating efficiency. The easy-to-read, 8 1/2-digit, 0.43-inch display features leading zero blanking and a contrast enhancement filter to ensure that you never miss a reading. LED indicators for "Gate Open", "Oven Ready" and "Overflow" provide additional user convenience, and a flip-up leg allows added flexibility for benchtop use. Now, frequency measurement doesn't have to be a "shot in the dark" routine. The 6002 delivers the highly-accurate readings you need for audio, communications, data processing, RF design, digital design and quality control. With Global Specialties new 6002 Frequency Counter you get the frequency range you need, the performance you demand, and the quality you expect.



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## GLOBAL SPECIALTIES CORP. FUNCTION GENERATOR MODEL 2001 REG. \$169.95

OUR PRICE **\$139.95**

### FEATURES

- Sine, square, triangle and separate TTL square wave output.
- Frequency range: 1Hz-100kHz.
- Frequency sweepable over 100:1 range.
- Pushbutton range, function and DC offset selection.
- Low distortion. • Variable output to 10V P-P. • Shortproof outputs.

### SPECIFICATIONS

**Frequency Range:** Hz to 100 kHz in five overlapping decade ranges, pushbutton selectable, with a 10:1 50-increment vernier dial: 1-10 Hz, 10-100 Hz, 100-1000 Hz, 1-10 kHz, 10-100 kHz. **Dial Accuracy:** Calibrated at 10 Hz, 100 Hz, 1 kHz and 10 kHz—frequency accurate to  $\pm 5\%$  of dial setting. **Waveform Characteristics:** Sine wave, less than 2% THD over frequency range; triangle wave linearity, better than 1% over range; square wave rise and fall times less than 100 nsec. with 600 ohms—20 pF termination. **Time Symmetry:** Less than  $\pm 2\%$ ; TTL square wave output, constantly available, with rise and fall times less than 25 nsec. **Sweep Range:** Maximum 100:1; maximum linear range, 10:1 from either end of dial. **Sweep Input:** 0 to  $\pm 10V$  via banana jacks. VCO may be shifted or swept from any position of frequency dial. **Input Impedance:** 22K ohm **Main Output:** Sine, square and triangle waveforms, pushbutton selectable; HI level:  $1V-10V$  p-p open ckt.,  $0.5V-5V$  p-p into 600 ohms; Lo level ( $-40$  dB): 1-100 mV, open ckt.,  $5-50$  mV into 600 ohms; amplitude control: variable greater than 40 dB range; amplitude flatness: less than  $\pm 5$  dB; DC offset controls; variable  $\pm 5V$  into open circuit; pushbutton on/off control. Maximum DC offset (AC+DC components before clipping): HI output  $\pm 10V$  max; Lo output  $\pm 1V$  max, DC offset is independent of amplitude control setting. **TTL Square Wave Output:** 0 TTL loads, rise and fall times less than 25 nsec. **Dimensions:** (HWD) 3"x10"x7". **Weight:** 2.2 lbs.



## GLOBAL SPECIALTIES CORP. PULSE GENERATOR MODEL 4001 REG. \$265.00

OUR PRICE **\$239.95**

### FEATURES

- 0.5 Hz-5 mHz frequency range.
- Synchronous output gating.
- 100 mV-10 V position output; less than 30 nanosecond rise/fall times.
- Independent TTL-compatible output (rise-fall times less than 25 nsec.).
- Square wave output mode. • Compliment (polarity inverted) output.
- Independent pulse width and spacing controls. 10:1 duty cycle range.
- Continuous and manual one-shot operation. • External triggering, DC to 10 mHz.

### SPECIFICATIONS

**Frequency Range:** 0.5 Hz to 5 mHz. **Pulse Width and Spacing Controls:** 100 nsec. —1 sec. in 7 overlapping decade ranges. Independent variable width and spacing controls. Two concentric, single turn verniers provide continuous adjustment between ranges. **Duty Cycle:** 10:1 to 1 range, continuously adjustable, 0.5 Hz-5 mHz. **Accuracy:**  $\pm 5\%$  of control settings calibrated at min. and max. vernier settings. **Jitter:** Less than  $.1\% + 50$  ps. **Operating Modes (pushbutton selectable):** Run: 0.5 Hz to 5 mHz, frequency settable thru pulse width/spacing controls; Trig: DC to approximately 10 mHz from external source; Gate: Generator starts synchronously with leading edge of gate signal—'One Shot' pushbutton can manually activate gate mode; One Shot: momentary pushbutton for single-pulse operation; pulse occurs each time button is depressed. **Square Wave:** square wave may be obtained at the outputs by depressing 'Sq Wave' pushbutton. **Complement:** outputs may be inverted by depressing the 'Compl' pushbutton, without losing sync time reference. **Note:** pulse spacing controls not active during Trigger, Gate and One Shot modes. **Trig/Gate Input Requirements:** TTL compatible; sine waves 2V p-p; pulses 1V peak greater than 40 nsec wide; input impedance approximately 10K ohm DC coupled; max. input  $\pm 10V$ . **Outputs:** Var Out: amplitude, 0.1-10V, adjustable via single turn vernier; rise/fall time, less than 30 nsec; impedance, 400 ohm max. TTL Out: fan out, 40 TTL loads; sink, 16 mA at 0.8V maximum; rise/fall time: less than 20 nsec. Sync Out: amplitude, 2.4V minimum; fan out, 10 TTL loads; sink, 16 mA at 0.8V maximum; rise/fall time, less than 20 nsec; pulse width, greater than 20 nsec; sync pulse lead time greater than 20 nsec. **Dimensions:** (HWD) 3"x10"x7". **Weight:** 2.2 lbs.



## GLOBAL SPECIALTIES CORP. SCOPE MULTIPLEXER MODEL 8001-GS REG. \$450.00

OUR PRICE **\$379.95**

### FEATURES

- New.
- Analog and digital applications.
- Broad bandwidth to 20 mHz.
- Built in calibration.
- Built in scope synchronization.
- Unique trigger circuitry.

### DESCRIPTION

The 8001-GS low cost eight channel Multiplexer extends the versatility of laboratory oscilloscopes from one or two channels into an eight channel analog or digital display unit, permitting a direct comparison of events occurring simultaneously and in direct time relationship to each other.

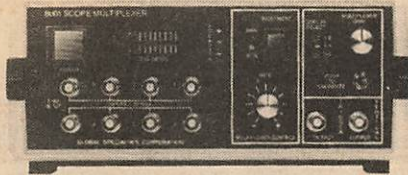
The 8001-GS Multiplexer scans the eight BNC inputs sequentially at a user adjustable rate. The scan rate is adjustable by the front panel mounted 'Multiplexer Rate' control. The sampled waveforms are summed with an internally generated staircase waveform. After buffering, the composite signal is fed to the vertical output channel. A front panel mounted 'Gain Control' varies the output amplitude of all eight channels simultaneously. All eight traces may be selected for viewing or the user may step through each of the eight waveforms by means of a manual mode which is provided via a front panel push button. Channels 1-8, 1-4, 5-8 may be selected via a front panel control.

Display synchronization is accomplished by processing input channel #1 waveforms. . . selecting a threshold level between  $\pm 5$  Vp-p which is adjustable over the entire signal range. . . selecting either the positive or negative signal slope, i.e. any point from +5V going negative to the slope selected and the trigger voltage level set, the 8001-GS generates a TTL, compatible pulse of either 0.1 sec or 1.0 usec in width (internally selectable) at the trigger output BNC. For ease of use, the 8001-GS has built-in zero calibration for referencing display channels to '0 volts' for display positioning. Zero base lines for all eight channels is obtained by depressing the 'Zero Cal' button located on the front panel.

The 8001-GS eight channel Multiplexer is a versatile diagnostic display tool for use in all phases of analog or digital systems and circuit designs, testing and troubleshooting.

### SPECIFICATIONS

**INPUTS:** Eight. **Bandwidth:** Flat to 12 mHz,  $-3$  dB at 30 20 mHz. **Impedance:** 1 Meg ohm at 30 pF (outside maximum input voltage range impedance drops to 10K ohms. **Input Voltage:**  $\pm 5$  Vp-p; beyond specified range input signals are clipped; absolute maximum input voltage  $\pm 50$  VDC (100 Vp-p). **OUTPUTS—Vertical Output:** Staircase waveform summed with 8 input signals, 0 to 350 mV. **Staircase Step:** 50 mV/step. **Signal Voltage/Step:** Variable 0 to 75 mV. **Impedance:** 100 ohms. **Amplitude:** Minimum 2.4V open circuit. **Pulse Width:** 0.1 usec or 1 usec internally selected. **Impedance:** 100 ohms. **CONTROLS:** Sampling frequency 40 kHz to 1 mHz; Trigger threshold adjustable  $-5VDC$  to  $+5VDC$ ; Trigger polarity  $+/-$  edge, switch selectable; Display select 1-8, 1-4, 5-8 traces or manual; Manual pushbutton increments display one trace at a time; Zero calibration pushbutton zeros all traces; Vertical gain adjusts signal amplitude of displayed traces. **POWER:** 105-135 VAC, 57-63 Hz (215-250 VAC, 50-60 Hz optional). **DIMENSIONS (HWD):** 4 x 10 x 7 (102 x 254 x 178mm). 5.0 lbs. (2.3kg). **OP TEMP:** 0-40°C, calibrated at 25°C  $\pm 5\%$ .



## GLOBAL SPECIALTIES CORP. COUNTER-TIMER

MODEL 5000  
REG. \$500.00

OUR PRICE **\$425.00**

### FEATURES

- Measures Frequency, Period and Pulse Width.
- Unique automatic reset logic.
- Handheld.
- LCD display.
- Battery operated completely portable.
- Self diagnostic internal test mode.
- Full signal conditioning—attenuation, slope selection, AC or DC coupling, variable trigger level.

### DESCRIPTION

The 5000 will measure any period from 40 nsec to 10 seconds and deliver a single cycle measurement or an average of 10, 100, or 1000 cycles. Time will be displayed in usec. Plus Width measurement from 25 nsec to 10 seconds can be made. Either the high or low portion of the input signal can be selected.

The 5000 Counter-Timer has 3 modes of operation: Frequency, Period and Pulse Width. Signal input is via BNC connector —input impedance is 1 megohm @ 25 pF for all modes.

The 5000 features a unique automatic master reset logic. This time-saving reset function instantly clears the display and initiates a new measurement cycle eliminating erroneous partial measurement.

A self-diagnostic function performs analysis of internal logic and provides instant assurance of accurate operation.

Now, all of the important features and performance capabilities of a benchtop counter-timer combined with the convenience of a fully portable, battery-operated hand-held instrument. Global's new 5000 Counter-Timer is the first instrument of its type. Designed to deliver extreme accuracy and exceptional reliability, the 5000 measures a mere 7.6 x 3.75 x 1.7" and weighs in at 14 oz.

As for performance—the 5000 is designed to measure frequency, period and pulse width. It features full signal conditioning including: attenuation (x1, x10, x100); slope selection (+ or - edge for pulse width measurement); AC or DC coupling and variable trigger level.



## GLOBAL SPECIALTIES CORP. UNIVERSAL COUNTER-TIMER

MODEL 5001 REG. \$399.00

OUR PRICE **\$339.95**

### DESCRIPTION

Designed for the electronic measurement and display of frequency, period, interval and counted events. Unique full input signal conditioning on both channels, including attenuators, slope selection and variable trigger level. Variable delay between measurements. Measurement capabilities of the 5001 suggest broad applications in industry, laboratories, education, process control and production.

### SPECIFICATIONS

**INPUTS:** 2 inputs, A and B, DC coupled, BNC connector. **Impedance:** 1 MegOhm + 25 pF. **Response:** 10 mHz max at A, 2 mHz max at B. **Sensitivity:** 20mV rms. **Controls:** x1/x10/x100 at attenuators, slope select, variable trigger level. **REFERENCE:** 10 mHz crystal oscillator,  $\pm 4$  ppm from 5-35°C. **MODES—Frequency:** 10 mHz max, 4 ranges with gate times of 0.1/0.1/1/0.1/0.1 secs, display kHz. A input only. **Period:** 400 nsec to 10 sec, 4 ranges with 1/10/100/1000 cycle average, display in microseconds, A input only. **Frequency Ratio:** 10 mHz max at A, 2 mHz max at B, 4 ranges, counts cycles at A during 1/10/100/1000 cycles at B. **Time Interval:** 200 nsec to 10 sec, 4 ranges, measurement starts with signal at A, ends on 1st/10th/100th/1000th signal at B. **Unit Count:** Max count 10<sup>6</sup>, max freq 10 mHz, A input only, 1 range. Run button starts and displays running count or returns display to running count. Hold button freezes display while running count continues. Reset button resets count to zero. **CONTROLS:** Power, 5 mode selector switches, 4 range selector switches, Run, Hold, Reset, Display Delay, plus Trigger Level Slope Select and Attenuator in both A and B input channels. **DISPLAY:** 8-digit 7-segment 0.43-inch LED display, decimal point indicates time in microseconds, frequency in kHz; discrete LEDs indicate Overflow (counter overflow) and Gate (gate open); Delay feature varies period between measurement cycles from 75 msec to 7.5 sec with Delay control, detent position holds next measurement reading indefinitely. **POWER:** 105-135 VAC, 57-63 Hz, 10 VA maximum (215-250 VAC, 50-60 Hz version available). **DIMENSIONS (HWD):** 3 x 10 x 7" (76 x 254 x 178mm). 3.0 lbs. (1.4kg). **OP TEMP:** 0-50°C, calibrated at 25°C  $\pm 5\%$ . Includes: Instruction manual.





# TEST INSTRUMENTS

## GLOBAL SPECIALTIES CORP. LOGIC PROBE

MODEL LP-1 REG. \$29.95 OUR PRICE **\$24.95**

### FEATURES

- Compact, circuit-powered multifunction logic probe.
- Multi-family compatibility—DTL/TTL/HTL/CMOS.
- Detects pulses as short as 50 nanoseconds.
- Stretches and latches for easy pulse detection.
- 100K input impedance.
- Traces logic levels and pulses through digital circuitry.
- Instantly recognizes high, low or intermediate levels; open circuits, pulsing nodes.

### DESCRIPTION

A compact, versatile design and test tool for digital applications. By simply connecting the clip leads to the circuit power supply, setting the logic family switch to the proper position (TTL/DTL or CMOS) and touching the probe tip to the IC pin in question, the LP-1 will give an instant picture of circuit conditions. Two level detector LED's (HI for logic '1' and Lo of logic '0') and a blinking Pulse detector LED display the signal activity. One-shot, low repetition rate, narrow pulses are stretched to 1/3 second. A Pulse/Memory switch allows one shot events positive or negative transitions to be stored indefinitely. High frequency signals cause the Pulse LED to blink on and off at a 3 Hz rate. When the high frequency signals are unsymmetrical, there is an additional indication. Duty cycles less than 30% activate the Lo LED; duty cycles above 70% activate the HI LED.

### SPECIFICATIONS

**Input Impedance:** 100,000 ohms. **Threshold:** DTL/TTL, 2.25V ± 0.15V equals 'logic 1', 0.80V ± 0.01V equals 'logic 0'; HTL/CMOS, 70% of VCC equals 'logic 0', 30% of VCC equals 'logic 1'. **Minimum Detectable Pulse Width:** 50 nanoseconds. **Input Frequency:** Up to 10 MHz. **Input Overload Protection:** ± 50V continuous, 117 VAC for less than 15 seconds. **Size:** 5.8" L x 1.0" W x 0.7" D. **Weight:** 3 oz. **Power required:** 30mA at 5 VDC; 40mA at 15 VDC; 36V max. with polarity reversal protection. **CSC Model LP-1 Logic Probe—Complete.**



## GLOBAL SPECIALTIES CORP. LOGIC PROBES

MODEL DP-1  
REG. \$59.95

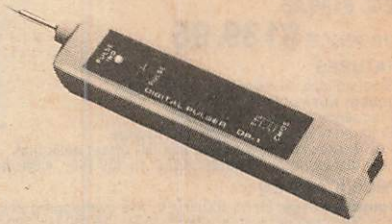
OUR PRICE **\$49.95**

### DESCRIPTION

Completely automatic, pencil-size lab/field pulse generator. Pulse any family of digital circuits.

### SPECIFICATIONS

**Input Impedance:** Output Tri State. **Minimum Detectable Pulse:** Auto-polarity pulse sensing. **Maximum Input Signal (freq):** Sink and source 100 mA. **Pulse Detector (LED):** Pulse Train: 100 pps. **Pulse Memory:** LED indicator flashes in single pulse. Stays on on pulse train.



## GLOBAL SPECIALTIES CORP. 16 CHANNEL LOGIC MONITOR

MODEL LM-2A  
REG. \$175.00

OUR PRICE **\$148.75**

### DESCRIPTION

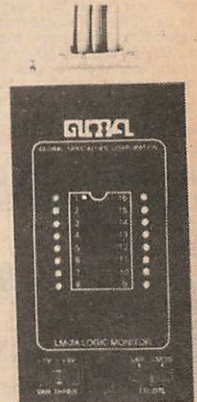
The LM-2A is a 16 channel digital test instrument specifically designed to monitor the logic states of 8, 14 and 16 pin DIP IC's.

### FEATURES

- Monitors up to 16-pin DIP IC's.
- Bright LED logic state display for each pin.
- Ideal for DIP troubleshooting.
- Multi logic family compatibility.

### SPECIFICATIONS

**INPUT:** 16 channels thru right angle header, 24" mating ribbon cable and 16-pin test clip. **Impedance:** 1.0 MegOhm. **Voltage Range:** ± 26 VDC max. **VCC INPUT:** Samples Vcc of circuit under test thru case mounted connector. **Impedance:** Greater than 20K ohm. **Voltage Range:** -0.7 VDC to 20 VDC max. **THRESHOLD REFERENCES:** Threshold voltage for 16 input channels are determined by the setting of the threshold mode selector. **TTL:** 2.3 VDC ± 0.1 VDC. **CMOS:** 70% Vcc ± 0.2 VDC. **Variable:** Adjustable 1.0 VDC to 9.0 VDC. **CONTROLS:** Threshold mode select (TTL, CMOS, Variable). **Variable threshold.** **CONNECTORS:** Signal, Vcc sense, power input, threshold voltage reference test point. **DISPLAY:** 16 high intensity LED's; on when corresponding input exceeds threshold; off when input below threshold or floating. Partial intensity inductive of signal duty cycle. **POWER:** 9.3 VDC at 115 mA max. **DIMENSIONS (LWH):** 5.9 x 3.2 x 1.2 (150 x 81 x 30mm). 15 oz. (425 gm). **OP TEMP:** 0-40°C. **INCLUDES:** Instruction manual, LDA-8 Vcc Sense Cable, MMAC2 AC adaptor, LMA-8 16-Conductor input ribbon cable.



## GLOBAL TRIPLE POWER SUPPLY

MODEL 1301-G  
REG. \$245.00

OUR PRICE **\$199.95**

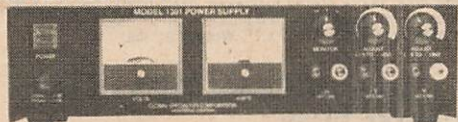
### FEATURES

- Short circuit protected
- 5 VDC (fixed), and two variable 5 to 18 VDC outputs
- Constructed in trimline durable metal case
- Two front panel meters monitor current and voltage
- Fully regulated triple power supply

### DESCRIPTION

The Global Specialties Model 1301-G Power Supply is a fully regulated triple output power source designed to meet virtually all of your DC voltage requirements. For product development, testing, quality control, servicing, and education, the Model 1301-G is an indispensable tool. This power supply is especially useful for analog and digital circuit design and offers a fixed 5 VDC output which is optimal for TTL applications.

The Model 1301-G features three completely isolated voltage supplies; a fixed 5 VDC, 1.0 A output, and two variable 5 to 18 VDC, 0.5 A outputs are available via front panel, color-coded binding posts. The V<sup>+</sup> and V<sup>-</sup> outputs are continuously variable and each has a separate voltage Ad-just control. Two front panel meters allow you to monitor voltage from 0-20V and current from 0-1A; the Monitor control lets you select which of the three supplies is metered. Current limiting protects against short circuit, and the outputs may be interconnected to increase voltage range without short circuit damage. This power supply is designed to perform with laboratory precision and delivers exceptional line and load regulation, as well as low ripple. The 1301-G delivers excellent performance at an exceptional price. If you are looking for a triple power supply to meet your voltage requirements, the 1301-G can't be beat.



## GLOBAL SPECIALTIES CORP. LOGIC PROBES

MODEL LP-3  
REG. \$59.95

OUR PRICE **\$49.95**

High speed logic probe captures pulses as short as 10 ns.

### SPECIFICATIONS

**Input Impedance:** 500,000 ohms. **Minimum Detectable Pulse:** 10 ns. **Maximum Input Signal (freq):** 50 MHz. **Pulse Detector (LED):** High speed train or single event. **Pulse Memory:** Pulse or level transition detected and stored.



## GLOBAL SPECIALTIES CORP. LOGIC MONITOR 1

MODEL LM-1  
REG. \$79.95 OUR PRICE **\$69.95**

### FEATURES

- Automatically and accurately displays static and dynamic logic states of digital IC's.
- Works with DTL, HTL, TTL and CMOS dual-inline IC's.
- Bright 16 LED display eliminates guesswork.
- Circuit-powered design eliminates hunting for power leads and worries about accidental shorts or grounding.

### DESCRIPTION

Trace signals through all types of digital circuits. Unit clips over any DIP IC up to 16 pins. Each of its 16 contacts connects to a single-bit level detector that drives a high intensity, numbered LED readout activated when the applied voltage exceeds a fixed 2V threshold. Logic '1' turns LED on; logic '0' keeps LED off. A power-seeking gate network automatically locates supply leads and feeds them to the LM-1's internal circuitry. Saves minutes, even hours in design, troubleshooting, debugging of equipment.

### SPECIFICATIONS

**Voltage threshold:** 2V ± 0.2V. **Input Impedance:** 100,000 ohms. **Input Voltage Range:** 4-15V max. across any two or more input. **Current Drain:** 200mA at 10V. **Size:** 4" L x 2" W x 1.75" D. when open. **Weight:** 3 oz. **CSC Model LM-1 Logic Monitor—Complete.**



## GLOBAL SPECIALTIES CORP. 40-CHANNEL LOGIC MONITOR

MODEL LM-4  
REG. \$250.00

OUR PRICE **\$212.50**

### FEATURES

- Easy to use.
- Bright LCD display.
- Handheld, portable.
- Multi-family compatibility.
- 40 independent input channels.

### DESCRIPTION

The LM-4A is a new pocket-sized logic monitor when clipped to a 40-pin DIP, displays the static or dynamic logic status of all 40 pins simultaneously. The dual threshold instrument can be used to monitor any device or combination of devices or up to 40 physically independent points having TTL or CMOS signal levels.

The LM-4A logic monitor has a 40-segment liquid crystal display arranged in two 20-segment rows corresponding to DIP pin numbers. Pin numbers are displayed for all points at logic state ONE, and the appropriate display segments are blanked for points at logic state ZERO.

The LM-4 will instantly and clearly display the logic states of any digital IC of up to 40 pins or any of up to 40 independent circuit points when used with its standardly supplied connector cable terminated with a 40 pin IC test clip or one of the optional multi-point universal test cables.

The LM-4A may be used to troubleshoot and diagnose microprocessors, ROM's, RAM's, and other MSI LSI chips. It can be fitted with two optional 16-pin IC test clips for comparison testing between known good IC's and IC's under test. It can also be used as a clip-on display for microcomputers and minicomputers during design and testing. An optional universal cable kit is available for special interfacing. The monitor features a high input impedance (1 MegOhm) and low power usage.

### SPECIFICATIONS

**INPUT:** 24" ribbon cable terminated in a 40-pin Proto-Clip IC test clip. **Impedance:** 1 MegOhm at 30 pF with 24" cable. **Logic One Threshold (Switch Selectable):** TTL 2.2V ± 0.2V; CMOS 70% of sampled Vcc. **Absolute Maximum Input:** + 17 VDC, - 10 VDC for - 30 sec. **Maximum Input (Operating):** 0 to + Vcc. **Readout:** 40 segment numerical low-power, high intensity, liquid crystal display. **Power:** Reverse protected to - 75 VDC. **CONTROL:** TTL/DTL—CMOS slide switch sets threshold levels corresponding to selected logic family. **POWER:** Derived from circuit under test; 4.28 VDC minimum to + 15 VDC maximum; current drain (typical) 10 mA. **OP TEMP:** 0-50°C. **STORAGE TEMP:** - 30°C to + 80°C. **DIMENSIONS (LWH):** 5.9 x 3.2 x 1.2" (150 x 81 x 30mm) 12 oz. (336 gm). **INCLUDES:** LM-4; 24" 40-conductor ribbon cable terminated in 40-pin Proto-Clip IC Test Clip; instruction manual; high impact plastic carrying case.

**Optional Accessory:** Model LMA-5 24" 40 conductor ribbon cable unterminated, PC-14, PC-16, PC-24, PC-40 test clips, 10 black and 10 red clip hooks....\$95.00





## UNIVOLT by BP DIGITAL MULTIMETER

MODEL DT-840A  
REG. \$49.95

OUR PRICE **\$39.95**

### FEATURES

- Full autoranging 3½ digit LCD.
- Built-in continuity buzzer.
- Easy to read ½" digit LCD display.
- Overload protection.
- Battery operated (approx. 300 hours, 2-AA size 1.5V battery).
- 0.8%, 1.35% DC V reading error.
- Low battery indication.

### DESCRIPTION

Voltage, current and resistance can be measured accurately using the BP DT-840A digital multimeter. Precision is enhanced by the high voltage sensitivities—10 megohms on all DC and AC ranges. All readings are made using ½", easy to read LCD digits. While all accurate DC measurements to 1,000 volts can be made on four ranges, four ranges accurately measure AC to 600 volts. Fuse-protected DC range is provided to enable you to make precise current measurements to 200 mA while four zener diode protected resistance settings permit accurate readings from very low resistance up to a high of 2,000K ohms. The AC voltmeter ranges, in conjunction with a shunting resistor, can be used to determine the amount of AC current flowing through a circuit. When used in conjunction with a power supply, the CP DT-840A can be used to measure capacitance and inductance. Banana jacks are provided so that low resistance contacts can be made with the plugs on the test leads supplied. Standard AA size batteries are required.



## A.W. SPERRY POCKET-SIZE MULTIMETER

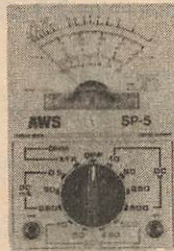
MODEL SP-5 OUR PRICE **\$9.95**

### FEATURES

- Diode Protected Meter Movement.
- High Impact Thermoplastic Case.
- Easy-to-Read Mirror Scale.

### SPECIFICATIONS

RANGES: DC Voltage: 0-10/50/250/500 Vdc AC Voltage: 0-10/50/250/500 Vac DC Current: 0-0.5/50/250 mAdc Resistance: 0-1Mohm (5Kohm mid-scale) Decibels: -20 to +56 dB (on ACV ranges) Sensitivity: 2Kohm/V AC/DC Accuracy: ±4% F.S. (DCV,DCA) ±4% Arc Length (ohm) 5% F.S. (ACV) Power Source: One (1) 1.5V AA size battery AWS Part NO. B-1 Size: 3.5"L X 2.4"W X 1.3"D Weight: 3.7 oz.



## A.W. SPERRY AUTORANGING DIGITAL PROBE MULTIMETER

MODEL DM-6590

OUR PRICE **\$49.95**

### FEATURES

- Autoranging in AC & DC Volts & Manual Range Selection; Normal Power & Low Power Ohms.
- Custom designed 3½ digit LSI/LCD Display, with large 10mm (.4") high digits for easy, accurate readings. Includes Function indication.
- Easy to understand Front Panel.
- Flashing Overrange Indication.
- Comes ready to use with Test Lead, Batteries, and Insulated Alligator Clip.
- Advanced Circuitry Design and Engineering.
- Continuity Buzzer.
- Data Hold freezes readings.
- Auto Polarity (+) sign when minus.
- 200 hours continuous operation (with 1107 SO batteries).
- Low Battery Indicator ("BATT").
- Shock resistant ABS Plastic Housing.
- Handy pocket-size.
- DC volts and AC volt range: 1mV - 500V. Resistance: 1 ohm - 2000k ohm.
- PRO-73 Carrying case...\$2.95

### SPECIFICATIONS

DISPLAY Numerical Display: 3½ Digit, maximum reading 9999. Unit & Sign: V, Kohm, Continuity Test, BATT, AC, DC, —. Range Selection: Auto ranging on VOLT & OHM. Polarity: Auto polarity, (-) minus sign when minus. Zero Adjustment: Autozeroing. Overrange Indication: MSC "1" Blinks. Battery Warning: BATT sign shows. Sampling Rate: Two (2) times per second. Power Consumption: 3mW typically. Power Supply: Two (2) AWS B-6 batteries, 1.5V button type. (NEDA No. 1166A or 1177 SO). Battery Life: 200 hrs cont. operation with 1107 SO batteries. Accuracy Coefficient: Add 0.04% per deg. C to applicable Accuracy spec. for 0-18°C and 28-40°C. Operating Temperature: 32°F to 104°F (0°C to +40°C). Operating Humidity: Below 80%. Storage Temperature: -4°F to +140°F (-20°C to +60°C). Buzzer Continuity Test: Visual and audible indication at slightly less than 1.5K ohm to 15K ohm. Response Time, approx. 1m sec. Data Hold: Reading can be held on V & ohm by DH Pushbutton Switch. Buzzer Warning Signal-Function Keyswitch Warning: buzzer sound when Function (AC/DC) Keyswitch is depressed. Volt Range Warning: Buzzer sounds when range is going up on Volts. Dimensions: 6.4"L (including test prod in housing) x 1.1" W x 0.75"D (including mode switch tab). Weight: 1.9 ounces (54.5g) Instrument Only. With Batteries, Carrying Case, Instrument, Test Lead and Detachable Alligator Clip, 3.4 ounces (95g).



## DRAGON LINEMAN'S TEST SET MODEL TS-21

### FEATURES

- Choice or Touch Tone or Rotary Dial Output.
- Totally Line-powered.
- L.E.D. Polarity Indication.
- Optional Features and Cords are available.

### DESCRIPTION

The TS-21 Lineman's Test Set employs the latest in integrated circuit design to provide either a DTMF (touch tone) or a dial pulse output with just the flip of a switch. This unique butt-in test set offers many features including totally line-powered operation with two LED's for positive and instant lipping polarity indication. However the TS-21 works even if the polarity is reversed. There is a Talk/Monitor switch for establishing an off hook condition for dialing and talking or line-monitoring without disrupting conversation, data or signaling. The TS-21 butt-in test set is a standard in many telephone companies and offers these optional models:

- Mute Switch. This momentary push button when depressed shorts the transmitter and all sidetones to the receiver are eliminated.
  - Multi-Purpose Cords for central office application.
  - Ground start Models are also available.
- Model 21800-02 Standard TS-21 Test Set with 5 foot cord and 2 alligator clips... **\$249.95**  
Model 21800-021 TS-21 Test Set with Mute Switch, 5 foot cord and 2 alligator clips... **\$269.95**  
Model 21800-027 TS-21 with mute button and ground start button with a 5 foot, three conductor cord and alligator clips... **\$299.95**



## BP DIGITAL TRAINER

MODEL DT-01 REG. \$149.95

OUR PRICE **\$99.95**

### DESCRIPTION

The object of designing DT-01 Digital Trainer is to provide the junior colleges, research organizations, training centers, factories and amateur hobbyists with the most convenient way of logic circuit training and design equipment. Schools and training centers can use the DT-01 as a teaching aid. It encompasses the following items: Breadboarding, Digital Circuits, Flip-flops and Monostable Multivibrators, Counters, Encoders, Decoders, Multiplexers, Demultiplexers and Sequencer, Registers, LED and 7 Segments LED Displays, Memory Devices, etc. The Digital Trainer can be connected to an oscilloscope, signal generator and any other apparatus through two BNC jacks and two BANANA jacks. Most tests can be performed by the logic probe supplied.

By using the breadboard and crib sheet the user can insert any circuit onto the breadboard to proceed with an experiment for testing without soldering. All the components can be used repeatedly. The DT-01 is not dependent on AC power, the battery holder contains 4 AA cell batteries for portable use.

### SPECIFICATIONS

AC ADAPTOR JACK: 1/2 DC +12V, 800mA. POWER SW: AC Adaptor, 4 AA Cell batteries. PULSE SW: Two bounce-free pushbuttons. LOGIC SW: Eight logic level switches in DIP type. DC O/P: DC +5V, 750mA for user. D-023 BREADBOARD: Solderless breadboard with 1580 interconnected tie points. CLIP TERMINAL: Logic probe clip terminal. BATTERY HOLDER: 4 AA cell batteries. LED DISPLAY: Eight LED buffered logic level indicators. BNC JACKS. SELECT SW: Clock range selection L: 10 - 40 Hz; H: 1K - 20K Hz. BANANA JACKS. CLOCK ADJ.: Fine adj. of clock frequency. STANDARD ACCESSORIES: AC Adaptor, Logic Probe, Battery Holder.



## GC ELECTRONICS CAPACITANCE SUBSTITUTION UNIT

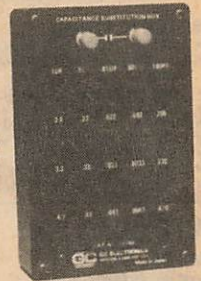
MODEL 20-102 OUR PRICE **\$59.95**

### DESCRIPTION

A must for troubleshooting, maintenance, lab use, prototype and experimental use. Great for circuit development... simply place wires into the unit and adjust to the desired capacitor value ... then remove the wires and add the value capacitor required. Wide range of capacitance (5 decades). Dual contact slide switches allow adding or subtracting to the value needed. Rugged, sturdy design—conveniently sized: 5-1/2 x 3-1/2 x 1-5/16".

### SPECIFICATIONS

Range: 100 pF to 4.7 mFd. Precision: 10% capacitors throughout. Voltage: 200 VDC, non-polarized. Residual Capacitance: 100 pF internal, 100 pF to ground. Terminals: Push type.



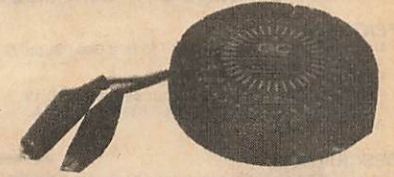
## GC ELECTRONICS RESISTANCE WHEEL

MODEL 20-104 (Formerly H3-456)

OUR PRICE **\$14.95**

### DESCRIPTION

Helps select resistors for any circuit. Color-coded, insulated alligator clips attach easily to circuit; easily readable dial indicates resistor value when rotated. 1/4 watt, 5% resistor values (5 ohms—1M ohm), 100 V. max.



## ENCO HIGH-VOLTAGE PROBE

MODEL PHV-1

OUR PRICE **\$39.95**

### FEATURES

- 40k ohms/vdc.
- DC Current 400mA.
- One hand operation by having the meter in the handle.
- Measures 40,000 volts DC and 400mA DC safely & individually; simply with the flick of a switch.
- Carrying Case included.



## HITACHI 3½ DIGIT DIGITAL MULTIMETER

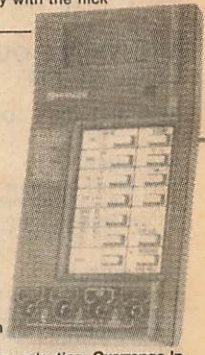
MODEL VR-3550 OUR PRICE **\$49.95**

### FEATURES

- VR-3550 Accuracy: ±0.5%.
- Up to eight measurement functions.
- Data hold function.
- Complete overload protection for fail-safe operation.
- Built-in stand for work bench use.
- 10 amp input.
- The use of a custom IC chip makes the VR-3550 easy-to-operate, and provides automatic and manual ranging.
- Power-saving IC's & LCD yield long continuous operation.
- High legibility LCD & function indicators provide error-free measurements.

### SPECIFICATIONS

RANGES: DC Voltage: 0.1mV - 1000V. AC Voltage: 1mV - 750V. Resistance: 0.1 ohm - 20 Mohm. DC Current: 0.1 uA - 10A. AC Current: 0.1 A - 10 A. Diode Test: 0—1000 mV. Continuity Check: 0—200 ohm. Temperature: -20°C + 700°C. (Differs depending upon the temperature measurement range of the probe used). Measurement Method: Integration type. Display: 3-1/2 digit LCD, max. display of 9999, with units and sign. Range selection: Autoranging (except for current ranges) and manual range selection. Overrange Indicator: Only the highest digit show '1'. Polarity switching: Automatic (minus sign only). Battery Indicator: 'B' indicated when the battery voltage falls below 1.3V ±0.075V. Sampling rate: Two times per second. Operating temperature: 0 to +50°C. Guaranteed accuracy: +18 to +28°C. Humidity: 80% RH or less (0 to 35°C). 70% RH or less (0 to 50°C) no condensation. Power supply: 1.5V x 2 (Two AA batteries). Size (WxHxD): 3.4 x 1.3 x 6.9". Weight: 9.5 oz.



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# TEST INSTRUMENTS

## VIZ POWER SUPPLY (DUAL 0-20V, 0-200mA)

MODEL WP-702A

REG. \$199.00 OUR PRICE **\$169.95**

### DESCRIPTION

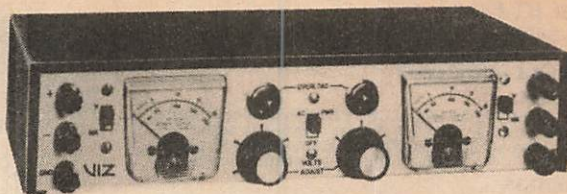
The WP-702A is a solid-state, constant-voltage DC power supply. This versatile bench-type unit is ideally suited for use in circuit design, servicing, industrial and educational applications.

### FEATURES

- Continuously adjustable voltage output down to 0 volts.
- Electronic short-circuit protection — short across the output terminals won't harm the supplies.

### SPECIFICATIONS

- Output: 0 to 20 volts, at 0 to 200 mA.
- Input: 105-135 V AC, 50-60 Hz (may be rewired for 220-240 V AC).
- Line Regulation: Less than 30 mV change in output voltage with power-line variation of 105-135 V AC.
- Load Regulation: Less than 50 mV voltage change for a 200 mA load change.
- Ripple: Less than 500  $\mu$ V RMS.
- Meter Functions: 0-20 volts 0-200 mA (function selected with panel switch).



- Controls: Continuously variable voltage adjustment.
- Output Terminals: Three; DC + DC-, GND. Positive or negative output can be obtained.
- Short Circuit Protection: External short circuit load will not damage supply.
- Overload Indicator: Panel lamp glows when current level nears 200 mA rating.
- Power Cord: 3-wire power-line cord.
- Dimensions: 6" x 12" x 3" (152mm x 305mm x 76mm).
- Weight: WP-702A: 3 lbs., 10 oz. (2.2 kg).

## VIZ POWER SUPPLY

MODEL WP-703A

REG. \$139.00

OUR PRICE **\$125.00**



### DESCRIPTION

The WP-703A is a solid-state, constant-voltage DC power supply. This versatile bench-type unit is ideally suited for use in circuit design, servicing, industrial and educational applications.

### FEATURES

- Continuously adjustable voltage output down to 0 volts.
- Electronic short-circuit protection — short across the output terminals won't harm the supplies.

### SPECIFICATIONS

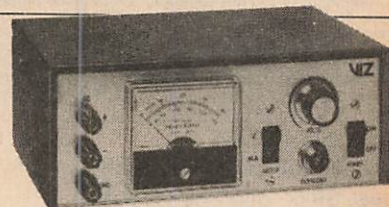
- Output: 0 to 20 V, 0 to 500 mA.
- Line Regulation: 7 mV (Max. change in output level with power-line variation of 110 to 135 V AC).
- Load Regulation: Less than 10 mV change for a 500 mA load change.
- Ripple: Less than 200  $\mu$ V rms.
- Meter Functions: 0 to 20 V, 0 to 500 mA (Function selected with panel switch).
- Controls: Continuously variable voltage adjustment, Power on/off, Meter selector V/mA.
- Output Terminals: DC +, DC-, GND. (pos. or neg. output).
- Short Circuit Protection: Protected from damage due to external short circuit.
- Overload Indicator: Panel lamp glows when current approaches max. level.

## VIZ POWER SUPPLY

MODEL WP-704A

REG. \$149.00

OUR PRICE **\$129.95**



### DESCRIPTION

The WP-704A is a solid-state, constant-voltage DC power supply. This versatile bench-type unit is ideally suited for use in circuit design, servicing, industrial and educational applications.

### FEATURES

- Continuously adjustable voltage output down to 0 volts.
- Electronic short-circuit protection — short across the output terminals won't harm the supplies.

### SPECIFICATIONS

- Output: 0 to 40 V, 0 to 250 mA.
- Line Regulation: 15 mV (Max. change in output level with power-line variation of 110 to 135 V AC).
- Load Regulation: Less than 20 mV change for a 250 mA load change.
- Ripple: Less than 500  $\mu$ V rms.
- Meter Functions: 0 to 40 V, 0 to 250 mA (Function selected with panel switch).
- Controls: Continuously variable voltage adjustment, Power on/off, Meter selector V/mA.
- Output Terminals: DC +, DC-, GND. (pos. or neg. output).
- Short Circuit Protection: Protected from damage due to external short circuit.
- Overload Indicator: Panel lamp glows when current approaches max. level.

## VIZ SUPPLYIST

MODEL WP-711

REG. \$289.00

OUR PRICE **\$259.00**

MODEL WP-712

REG. \$299.00

OUR PRICE **\$269.00**

MODEL WP-713

REG. \$389.00

OUR PRICE **\$359.00**

### FEATURES

- It's a DC power supply. (WP-713 is a Dual Supply).
- It's a dual DC voltmeter.
- Excellent line and load regulation.
- Fully adjustable voltage output settable to 0.1V.
- Fully adjustable current 0-1A settable to 0.01A (WP-712, 0-2A).

- Automatic short circuit shut down (current limiting) with 'Reset' button.
- LED overload indicators.
- Dual (2) 3 digit LED readouts monitor voltage/current.
- Dual (2) external DC digital voltmeters.
- Complete with test leads.

### DESCRIPTION

The VIZ family of fully regulated DC Power Supplies was designed to give 'Laboratory' type performance. They are ideally suited for use in servicing a wide variety of electronic equipment as well as production testing, circuit design and educational applications.

Each supply has current limiting, and voltage adjust controls.

Careful consideration has been given in the design to provide complete protection to both the load and the power supply.

Both voltage and current can be monitored simultaneously on the two digital panel meters provided on the WP-711 and WP-712. On the WP-713 Dual Supply the two digital panel meters can be switched to monitor voltage and/or current of either output, also the two outputs can be externally connected in series to give 0-40V at up to 1A.

Each Supplyist is also a dual DC digital voltmeter. Separate inputs on the front panel allow the measurement of two independent DC voltages up to 99.9 volts.



WP-711  
[0-40V, 0-1 amp]



WP-712  
[0-20V, 0-2 amps]



WP-713  
[DUAL 0-20V,  
0-1 amp]

## VIZ TRIPLE OUTPUT

MODEL WP-714

REG. \$419.95 OUR PRICE **\$369.95**

### FEATURES

- It's a triple DC Power Supply.
- It's a dual DC Voltmeter.
- Three separate completely isolated DC power supplies: two 0-20V at .75A, one fixed 5V at 4A.

### DESCRIPTION

The VIZ Model WP-714 is a fully regulated, triple DC power supply designed to give 'Laboratory' performance. It is ideally suited for use in circuit breadboarding, production testing, servicing and repair, and educational applications. Its excellent regulation and protection circuitry make it ideally suited for use with Microprocessors.

The two variable supplies have adjustable current limiting and controls for setting output voltages from 0 to 20V DC. These can be externally connected in series to give 0-40V DC at up to .75A.

TRIPLE DC SUPPLY  
0-20V @ .75 amp  
0-20V @ .75 amp  
Fixed 5 volt @ 4 amp



The third supply is a fixed output capable of delivering up to 4 amperes at 5V DC. The fixed supply also has built-in voltage sensing which assures the best possible regulation at the load.

Dual digital panel meters, with high efficiency .56" red LED indicators, monitor output voltage or current

The WP-714 Supplyist is also a dual DC digital voltmeter. Separate inputs on the front panel allow the measurement of two independent DC voltages up to 99.9 volts.



## VIZ DC POWER SUPPLY/DUAL DC VOLTMETER/DUAL SUPPLY

MODEL WP-705  
REG. \$369.00

OUR PRICE **\$325.00**

MODEL WP-706  
REG. \$369.00

OUR PRICE **\$319.95**

MODEL WP-707  
REG. \$479.00

OUR PRICE **\$419.95**

### FEATURES

- Excellent line and load regulation.
- Fully adjustable voltage output settable to 0.1V.
- Fully adjustable current 0-2A settable to 0.01A (WP-706, 04A).
- Automatic short circuit shut down (current limiting) with 'Reset' button.

- LED overload indicators.
- Dual (2) 3 digit LED readouts monitor voltage/current.
- Dual (2) external DC digital Voltmeters.
- Complete with test leads.

### DESCRIPTION

The VIZ family of fully regulated DC Power Supplies was designed to give 'Laboratory' type performance. They are ideally suited for use in servicing a wide variety of electronic equipment as well as production testing, circuit design and educational applications.

Each supply has adjustable current limiting and dual concentric controls for setting output voltage. Careful consideration has been given in the design to provide complete protection to both the load and the power supply.

Both voltage and current can be monitored simultaneously on the two digital panel meters provided on the WP-705 and WP-706. On the WP-707 Dual Supply the two digital panel meters can be switched to monitor voltage and/or current of either output, also the two outputs can be externally connected in series to give 0-50V at up to 2A.

Each supply is also a dual DC digital voltmeter. Separate inputs on the front panel allow the measurement of two independent DC voltages up to 99.9 volts.

### SPECIFICATIONS

**Output Current:** 0-2 amps (0-4A, WP-706) over entire voltage range; full load. **Load Regulation:** 0.75% max. (0.1%, WP-706) over full operating range. **DC Voltmeter Input:** 99.9V DC full scale, 0.1V resolution. **Input Impedance:** 5 megohms. **Panel Meters:** 3 digit, 43" LED, resolution 0.1V and 0.01A, accuracy 1% ± 1 digit. **Size (HWD):** 4 x 15 x 9-1/2" (10 x 38 x 24cm). **Supplied:** WP-705, WP-706: One WG-413A test leads with dual banana plug. WP-707: Two WG-413A test leads with dual banana plug.



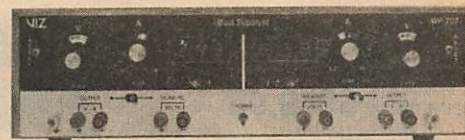
WP-705

[50V, 0-2A]



WP-706

[25V, 0-4A]



WP-707

[Dual 25V, 0-2A]

## VIZ DC TRIPLE POWER SUPPLY

MODEL WP-708

REG. \$539.95

OUR PRICE **\$459.95**

**Triple Supply  
It's a DC Power Supply  
It's a DUAL DC Voltmeter**

### FEATURES

- It's a dual DC Voltmeter.
- It's a triple DC Power Supply.
- Three separate completely isolated DC power supplies: two 0-20V at 0-2A, one fixed 5V at 4A.
- Excellent line and load regulation.
- Fully adj. current limiting on the two variable supplies.

- Automatic short circuit shut down (resettable) on the two variable supplies and current fold-back on fixed supply.
- (LED) overload indicators.
- Dual (2) 3 digit LED readouts monitor voltage/current.
- Dual (2) external DC digital voltmeters.
- Remote sensing on fixed 5V supply.
- Complete with test leads.



• Three separate completely isolated DC power supplies: two 0-20V @ 0-2A, one fixed 5V @ 4A.

### DESCRIPTION

The VIZ Model WP-708 is a fully regulated triple DC power supply designed to give 'laboratory' type performance. It is ideally suited for use in circuit breadboarding, production testing, servicing and repair and educational applications. It's excellent regulation and protection circuitry make it ideally suited for use with Microprocessors.

The two variable supplies have adjustable current limiting and dual controls for setting output voltages from 0 to 20 VDC. These can be externally connected in series to give 0-40 V DC at up to 2 amps.

The third supply is a fixed output capable of delivering up to 4 amperes at 5 V DC. The fixed supply also has built-in voltage sensing which assures the best possible regulation at the load.

Dual digital panel meters, with high efficiency .43" red LED indicators, monitor output voltage or current.

The WP-708 supply is also a dual DC digital voltmeter. Separate inputs on the front panel allow the measurement of two independent DC voltages up to 99.9 volts.

### SPECIFICATIONS

**DUAL VARIABLE OUTPUTS—Output Current:** 0-2 amps over entire voltage range, full load. **Load Regulation:** 0.075% max. over full operating range. **Output Impedance:** Greater than 2 ohms DC to 10 kHz. **Input Impedance:** 5 megohms. **Panel Meter:** 3 digit, 43" LED, resolution 0.1V and 0.01A, accuracy 1% ± 1 digit. **Size (HWD):** 4 x 15 x 9.5" (10 x 38 x 24cm). **Weight:** 16.5 lbs. (7kg). **FIXED OUTPUT—Output Current:** 0 to 4A max. **Load Regulation:** 0.05% max. **Output Impedance:** Greater than 2 ohm DC to 10 kHz (no reset). **Input Impedance:** Not applicable. **Panel Meter:** Not applicable.

## VIZ 7.5 AMPERE DC POWER SUPPLY

MODEL WP-709

REG. \$389.95 OUR PRICE **\$339.95**

### DESCRIPTION

The WP-709 is ideally suited for 5V logic work where a heavy current source is needed—or most automotive electronic needs where a 5V or 13.5V supply is needed for equipment such as communications transceivers, AM/FM radios, tape players or 'on board' microprocessors. Pretesting of entire auto HI FI systems before installation including power antennas can be performed, as this is within the power handling capability of the WP-709.

### FEATURES

- Output: Adj. 5 ± 1.5V or 13V ± 1.5V switch selectable. Current to 7.5 settable to 0.1A.
- Load Reg.: 0.1%. Line Reg.: 0.05%.
- Ripple: 10 mV PP max.

- Output Impedance: Less than 2 ohms DC to 10 kHz.
- Load Protection: Current foldback auto shutdown.
- Temp. Rise at Full Load: 50°F (26°C).
- Weight: 17 lbs.

### SPECIFICATIONS

**Output Voltage:** 3.5-6.5V or 11.5-14.5V (switch selectable). **Output Current:** 0-7.5A full load. **Load Regulation:** 0.1% max. **Line Regulation:** 0.05% max. full load from 110-125 VAC. **Ripple:** 15mVrms max. **Overshoot:** No overshoot at turn-on, turn-off or reset. **Output Impedance:** Less than 2 ohm DC to 10 kHz. **Output VS Temp.:** 0.05% per degree C. **Load Protection:** Current foldback and automatic shut down. **DC Voltmeter Input:** 99.9 full scale, .1V resolution. **Input Impedance:** 5 megohms. **Panel Meter:** 3 digit .56" LED, resolution 0.1V and 0.02A, accuracy 2% ± 1 digit. **Size (HWD):** 4 x 15 x 9-1/2" (10 x 38 x 24cm). **Weight:** 17 lbs. (7.7kg). **Power Required:** 110/120, 50/60 Hz, 220/240, 50/60 Hz.



[4-15V, 0-7.5 amps]



# TEST INSTRUMENTS

## VIZ MONITOR ISO-V-AC II MODEL WP-30 REG. \$369.00

OUR PRICE **\$325.00**

### DESCRIPTION

The Viz WP-30 Monitor ISO-V-AC is designed to provide isolated AC output variable from 0 to approximately 150 volts. It can supply a continuous 5 amp output current to a maximum of 650 VA. The output current can be set to the maximum output desired, at which point, a latching relay will open circuit and reduce output volts and amps to zero. Two parallel, three prong AC sockets are provided to allow the operator to use the unit for more than one load. The WP-30 also includes a leakage tester that can measure AC leakage current in electrical/electronic equipment in order to verify if the leakage is within limits established by UL, CSA. The WP-30 is supplied with two 3 1/2 meters. One monitors line or output voltage and the other can display output current or leakage. For safety, the metal case of the WP-30 is connected to the power line ground through the three conductor AC power cord. The AC input is separately fused.

### SPECIFICATIONS

Input 110 to 130VAC 60 Hz. Output Isolated Voltage (120 VAC Input) 0 to 150 VAC. Output Isolated Current 0 to 5.0 Amps Max. (see performance curve). Total Maximum Output 650VA (Resistive Load) Output Isolation Less than 0.1MA (Meet ANSI Spec. C101.1, 1971) Leakage Range: 0-2.5 MA. Meters Two 3 1/2" Taut Band. Meters Accuracy  $\pm 3\%$  of full scale on voltage,  $\pm 2\%$  of full scale on current and leakage. Protection AC Input-Fuse, AC Output-Adjustable current relay with manual Reset. Temp. Rise (Outside case, full load 130V, 5A) 10°C (50°F). Dimensions (HWD) 6" x 14" x 12 1/2". Weight 25 lbs.



## VIZ ISOTAP (ISOLATION TRANSFORMERS) REG. \$109.95 MODEL WP-26A

OUR PRICE **\$94.95**

### FEATURES

- Both units have primary and isolated secondary windings.
- Primary to secondary current leakage less than 0.1 mA.
- WP-26A load rating isolated 400 VA max continuous operation.
- 3 position voltage selector sw., 3 wire AC cord.

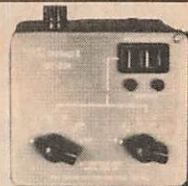


## VIZ ISOTAP II REG. \$113.00 MODEL WP-27A

OUR PRICE **\$99.95**

### FEATURES

- Provides isolated output voltages from 25 VAC to 150 VAC in 5V steps. Up to 400 watt res. load.
- Ideal for safety, service TV SCR deflection systems. 3 wire AC cord, jacks for V monitor.



## VIZ MULTI-COUNTER MODEL WD-755

REG. \$299.00

OUR PRICE **\$259.95**

### DESCRIPTION

Viz Model WD-755 is a 125 mHz Multi-Counter. The Viz WD-755 Multi-Function Counter is a lab quality multi-counter capable of frequency, period, totalize, ratio and time-interval measurements. A combination of CMOS, TTL, low power Schottky and LSI technology have been utilized to keep power consumption and cost low, while maintaining optimum circuit characteristics. Some valuable features of the WD-755 include bright LED 8-digit display with leading zeros blanked, automatic input triggering level, convenient switchable attenuator, selectable low-pass filter, pushbutton reset switch, and rear panel BNC clock input/output connector. All critical circuits are enclosed in shielded metal chassis to reduce E.M.I./R.F.I.

### SPECIFICATIONS

OPERATING RANGES—Frequency: Channel 'A'—5 Hz to 125 mHz, 5 Hz to 10 mHz with LFP at less than 10 mHz position. Period: Channel 'A'—5 Hz to 2 mHz. Unit Count: Channel 'A'—5 Hz to 10 mHz. Frequency Ratio: A/B—Channel 'A': 5 Hz to 10 mHz, Channel 'B': 5 Hz to 2 mHz. Time Interval: A-B—5 Hz to 2 mHz. CHARACTERISTICS—CHANNEL 'A'—Input Impedance: 1 megohm shunted by less than 30 pF. Sensitivity: 5 Hz to 5 kHz, 25mV RMS. 5 kHz to 100 mHz, 15mV RMS. 100 mHz to 125 mHz, 25mV RMS. CHANNEL 'B'—Input Impedance: 100 k ohms. Sensitivity: 5 Hz to 2 mHz Sine Wave input-20mV RMS. TIME BASE—Crystal: 10 mHz parallel resonance, precision grade. Calibration Tolerance:  $\pm .001\%$  (10 PPM). Stability Tolerance (Temperature & Aging):  $\pm .002\%$  (20 PPM). Overall Frequency Accuracy:  $\pm .003\%$  (30 PPM)  $\pm 1$  digit. Input Level: TTL. Output Level: Approx. 50mV peak to peak. Power Requirements: 105 to 125 V AC 50/60 Hz, 6W.

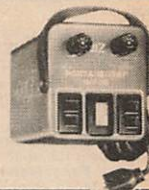


## VIZ PORTA-ISOTAP MODEL WP-28

REG. \$69.00

OUR PRICE **\$59.95**

Compact, lightweight unit. Ideal for TV servicing. Easily carried for house calls. Has two fused outlets: (1) Isolated, 150 VA continuous for solid state TV; (2) Direct, 500 VA, a convenient power source for service instruments. Comes with accessory cords to take power from TV set back. No need to hunt for wall outlet. Weight 8 lbs. Dimensions 3-3/4" x 3-3/8" x 5-3/8".



## VIZ MONITOR ISOVAC MODEL WP-29A

REG. \$189.00

OUR PRICE **\$160.65**

### FEATURES

- Supply Line: 110 to 130V. 60Hz.
- Power Rating (resistive load): 300VA.
- Isolated Output: 0 to 150V. 60 Hz.
- Leakage: Less than 0.1 mA.
- Isolated Current: 0-2.25A max.

- Meter: Taut band 3-1/2"  $\pm 2\%$  F.S.
- Size: 3-3/8" x 8-5/8" x 9-1/2".
- Weight: 15" lbs.



## VIZ FREQUENCY COUNTER MODEL WD-754

REG. \$259.00

OUR PRICE **\$220.15**

### DESCRIPTION

The Viz WD-754 is a lab quality frequency counter capable of Frequency measurements from 5 Hz to 100 MHz. A combination of CMOS, TTL, low power Schottky and LSI technology have been utilized to keep power consumption and cost low, while maintaining optimum circuit characteristics. Some valuable features of the WD-754 include bright LED 8-digit display with leading zeros blanked, automatic input triggering level, convenient switchable attenuator, and selectable low-pass filter. All critical circuits are enclosed in shielded metal chassis to reduce E.M.I./R.F.I.

### SPECIFICATIONS

OPERATING RANGES Frequency: Channel 'A': 5 Hz to 10 Mhz, 5 Hz to 100 MHz with IPF at no less than 10 MHz position. CHARACTERISTICS CHANNEL 'A' Input Impedance: 1 megohm shunted by less than 30 pf. Coupling: A.C. Sensitivity: 5 Hz to 5 kHz-25mV RMS, 5 kHz to 100 MHz-15mV RMS. Attenuator: "OUT" = direct (no attenuation), "IN" = input signal decreased to 1/10th value. Low Pass Filter: Manually selectable, for input signals under or over 10 MHz. Trigger Level: Automatic. Overload Level: AC + DC 125V peak to peak. RESOLUTION GATETIME: .01, sec. 1 sec, 10 sec., Frequency under 10 MHz: 100 Hz, 10 Hz, 1 Hz, .1 Hz. Frequency over 10 MHz: 1000 Hz, 100 Hz, 10 Hz, 1 Hz. TIME BASE Crystal: 10 MHz Parallel, Resonance, Precision Grade. Calibration Tolerance:  $\pm .001\%$  (10 PPM) Stability Tolerance (Temperature and Aging):  $\pm .002\%$  (20 PPM). Overall Frequency Accuracy:  $\pm .003\%$  (30 PPM)  $\pm 1$  digit. Power Requirements: 105 to 125V A.C., 50-60 Hz, 6W. Temperature: Operating 0°C to 35°C (32°F to 95°F), Storage -20°C to 50°C (-4°F to 122°F).



## VIZ ISOLATION TRANSFORMER MODEL WP-31A

REG. \$179.00 OUR PRICE **\$160.00**

### DESCRIPTION

Viz Model WP-31A is a 1.05 KVA, 120 VAC, Single Phase, Continuous Duty, Isolation Transformer. The WP-31A features three fixed 350 VA outputs, each isolated from line and each other.

### FEATURES

- Frequency range: 50-60 Hz.
- Number of phases: 1.
- Harmonic distortion at 1.0 P.F. Full Load: 1%.
- Leakage current from any of three sections to ground does not exceed 10 nano amps.

- Primary voltage: 110-125 VAC.
- Regulation: 4% at 115 VAC.
- Max. temperature: 55°C.
- Intermittent overload: 30% for 5 mins.
- Duty cycle: Continuous.
- Type of cooling: Air.



Model No.	Description	Our Price
WP-31B	1.05 KVA, HI (130V)/MED (115V)/LOW (105V)	\$160.00
WP-31C	1.05 KVA, VAR. 0 to 155 Volt	185.00
WP-31D	1.05 KVA, VAR. 190 to 260 Volt	189.00

## VIZ MULTI-COUNTER

MODEL WD-757

REG. \$525.00

OUR PRICE **\$446.25**

### FEATURES

- Frequency mode.
- Period mode.
- Total mode - causes signal gate to be opened and closed by input signal-useful for counting switch closures, cycles contained in an RF burst, contact bounce of a relay, items passing on an assembly line.
- Frequency Ratio A/B mode - gives direct numerical readout of Lissajous pattern relationships, accuracy of frequency dividers and multipliers.
- Time Interval A-B mode - counts the elapsed time between two pulses.

### DESCRIPTION

The Viz WD-757 is a lab quality multi-counter capable of Frequency, Period, Totalize, Ratio and Time-Interval measurements. A combination of CMOS, TTL, low power Schottky and LSI technology have been utilized to keep power consumption and cost low, while maintaining optimum circuit characteristics. Some valuable features of the WD-757 include bright LED 8-digit display with leading-zeros blanked, automatic input triggering level, convenient switchable attenuator, selectable low-pass filter, push-button reset switch, and rear panel BNC clock input/output connector. All critical circuits are enclosed in shielded metal chassis to reduce E.M.I./R.F.I.



## VIZ FREQUENCY COUNTER MODEL WD-756

REG. \$449.00

OUR PRICE **\$384.95**

### DESCRIPTION

The Viz WD-756 is a lab quality frequency counter capable of frequency measurements from 5 Hz to 1 GHz. A combination of CMOS, TTL, low power Schottky and LSI technology have been utilized to keep power consumption and cost low, while maintaining optimum circuit characteristics. Some valuable features of the WD-756 include bright LED 8 digit display with leading-zero blanked, automatic input triggering level, convenient switchable attenuator and selectable low-pass filter. All critical circuits are enclosed in shielded metal chassis to reduce E.M.I./R.F.I.

### SPECIFICATIONS

OPERATING RANGES Frequency: Channel 'A' 5 Hz to 100 Mhz, 5 Hz to 10 MHz with LFP at no less than 10 MHz position. Channel 'B' 100 Mhz to 1000 Mhz. CHARACTERISTICS CHANNEL 'A' Input Impedance 1 megohm shunted by less than 30 pf. Coupling A.C. Sensitivity 5 Hz to 5 kHz 25mV RMS, 5 kHz to 100 MHz 15mV RMS. Attenuator "OUT" = direct (no attenuation), "IN" = input signal decreased to 1/10th value. Low Pass Filter Manually selectable, for input signals under or over 10 MHz. Trigger Level Automatic. Overload Level AC + DC 125V peak to peak. CHANNEL 'B' Input Impedance 50 ohms (nominal). Coupling D.C. Sensitivity 50 mV RMS sine wave, 100 Mhz to 1000 Mhz. Trigger Level Automatic. Overload  $\pm 25V$  D.C., 1V RMS A.C. RESOLUTION GATETIME: .01 sec., 1 sec 1 sec 10 sec. Frequency under 10 MHz: 100 Hz 10 Hz 1 Hz .1 Hz. Frequency over 10 MHz: 1000 Hz 100 Hz 10 Hz 1 Hz. TIME BASE Crystal 10 MHz Parallel Resonance, Precision Grade. Calibration Tolerance:  $\pm .001\%$  (10 PPM) Stability Tolerance (Temperature and Aging):  $\pm .002\%$  (20 PPM) Overall Frequency Accuracy:  $\pm .003\%$  (30 PPM)  $\pm 1$  digit. Power Requirements: 105 to 125V A.C., 50/60 Hz, 7W. Temperature: Operating 0°C to 35°C (32°F to 95°F), Storage -20°C to 50°C (-4°F to 122°F).



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## VIZ SCOPE DUAL-TRACER MODEL WM-541A REG. \$110.00

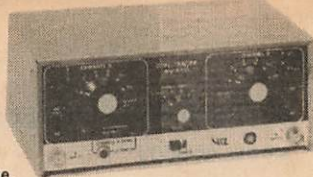
OUR PRICE **\$39.00 SPECIAL!**

### FEATURES

- Choice of variable Alternate or Chopped switch rate.
- 1, 2, 5 ratio attenuators, CMOS circuitry, BNC connectors.
- Convert single trace scope to dual trace.
- Frequency response DC to 4 MHz —3 dB, input imp. 1M ohm shunted by 45 pF.

### SPECIFICATIONS

- Frequency Response: Usable DC to 10 MHz (DC to 4 MHz, —3 dB).
- Attenuators: Compensated 6-step (1, 2, 5 ratio), each channel.
- Maximum AC Signal Input: 50 V p-p (500 V p-p with 10X probe).
- Maximum Signal Output: 1 V p-p. • Noise Level: Less than 10 mV p-p.
- Input Impedance: 1 M ohm shunted by 45 pF. • Switching Modes: Chopped or Alternate.

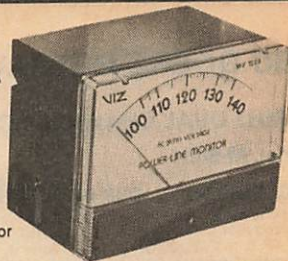


## VIZ POWER LINE MONITOR MODEL WV-120B REG. \$59.95

OUR PRICE **\$49.95 SPECIAL!**

### FEATURES

- Continuous AC line voltage readings.
- True rms reading even on distorted sine waves.
- Fast meter action reveals "bounces" caused by motor turn on.
- 3 wire AC plug with 3 conductor female socket for "in-line" use.

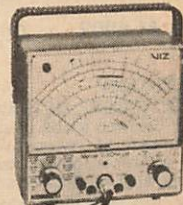


## VIZ MASTER VOLTOHMYST MODEL WV-510A REG. \$279.95

OUR PRICE **\$239.95**

### FEATURES

- Excellent stability.
- Battery or AC operated.
- Measures from 0.01 milliamperes to 1.5 amperes in 7 ranges.
- Measures from 0.2 ohms to 1000 megohms in 7 ranges.
- Measures from 0.01 volt to 1500 volts DC in 8 ranges.
- Measures from 0.2 to 1500 rms AC volts in 7 ranges.
- Measures peak-to-peak voltages of complex waveforms from 0.5 to 4200 volts in 7 ranges.
- 21-megohm resistance on all DC ranges, 3% f.s. accuracy all function.
- Supplied with DC/AC ohms probe with flexible shielded in-put cable (BNC connector), and current test leads.
- Mirror scale meter—movement electrically protected against burnout.



## VIZ AC LEAKAGE TESTER MODEL WT-540B REG. \$42.95

OUR PRICE **\$34.95 SPECIAL!**

### FEATURES

- Sharp probe point pierces dirt, grease, oxide, etc.
- Easy to use — only 1 range, no switches or dials.
- Red and green meter scale indicates "safe" or "unsafe" leakage.
- Fuse-protected against excessive current — panel lamp signals blown fuse.



## VIZ CABLE IDENTIFICATION PROBE MODEL WG-8629 REG. \$39.95

OUR PRICE **\$29.95 SPECIAL!**

### DESCRIPTION

VIZ WG-8629 Stationman Probe... Designed for use by telephone/communications servicemen or installer to quickly identify cable pairs within a crowded cable/bundle terminal without breaking the circuit installation. An audible tone is injected in the line pair to be identified, the stationman attaches his headset to the probe "ears" to activate the probe, and listens for the pair with the tone signal input. The detected pair will radiate a signal level higher than any adjacent pair. Comes with interchangeable duck bill probe for checking large or tightly bundled cables. **Frequency range:** 10 Hz to 1 MHz. **Input Impedance:** 1 meg. **Output Impedance:** 220 ohms. **Output level:** 100 mV at 1000 Hz. **Battery:** 9 volt NEDA 1611 (not supplied). **Size:** 7" long x 1" dia. (approximately). **Shipping weight:** 1 lb.

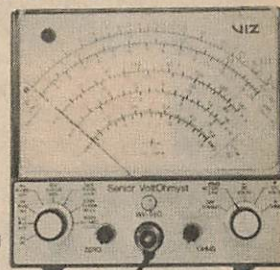


## VIZ SENIOR VOLTOHMYST MODEL WV-98C REG. \$227.95

OUR PRICE **\$189.95**

### FEATURES

- 3 color meter face and panel for positive function identification peak to peak and rms scales.
- Meter electronically protected against overload.
- Response to 3 MHz, 11M ohm input resistance.
- Die-cast aluminum case.
- Easy-to-read 6-1/2" (16.4cm) mirror-scale meter.
- Measures from 0.2 ohm, 0.01 VDC, 0.05 VAC to 1000M ohm, 1500 volts DC and AC,  $\pm 3\%$  accuracy all functions.

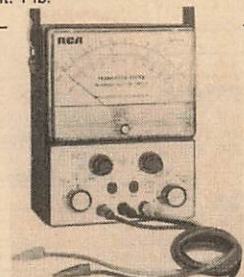


## RCA PORTABLE TRANSISTOR/DIODE TESTER MODEL WT-501A REG. \$49.95

OUR PRICE **\$24.95 NEW!**

### FEATURES

- Measure DC beta (hFE) 1 to 1000  $\pm 5\%$ .
- Collector current 100  $\mu$ A to 1A.
- Collector to base leakage to 100 A, collect to emit-leakage 1A.
- Large 4" meter, built-in NPN & PNP sockets plus leads.



## VIZ AUDIO SINE/SQUARE WAVE GENERATOR MODEL WA-504B/44D REG. \$199.95

OUR PRICE **\$169.95**

### FEATURES

- Output 20 Hz to 200 kHz in 4 ranges, stability  $\pm 0.5\%$  and  $\pm 5\%$  dial cal.
- Voltage output 4 ranges 0.01 to 10V at 600 ohm.
- Sine wave harmonic distortion 0.15% square wave rise and fall 150 ns., tilt 2%.
- All solid-state, throughout, 3 wire AC cord.



## VIZ DIGITAL POWER LINE MONITOR MODEL WD-121 REG. \$109.95

OUR PRICE **\$89.00 SPECIAL!**

### DESCRIPTION

Similar to WV-120B except, easy-to-read 3 digits LED display has large bright 0.8-in. digits. Indicates brown-out condition. Instantly shows line voltage fluctuations. Range from 0 to 600 VAC. Frequency 50 Hz to 60 Hz. Current limit 8A. Compact—approximately 4 x 5 x 3". Weight 1-1/2 lbs.



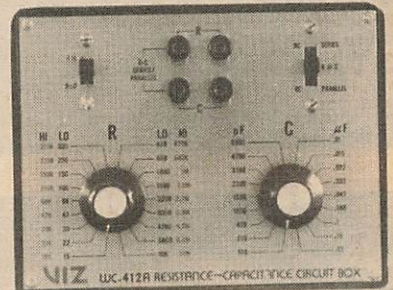
## VIZ RC CIRCUIT BOX MODEL WC-412A REG. \$85.00

OUR PRICE **\$72.50**

### FEATURES

- 36 resistor in standard values from 15 ohms to 10 megohms (1 watt power rating, tolerance  $\pm 10\%$ ).
- 18 capacitors from 100 pF to 0.22  $\mu$ F (600 V rating, tolerance  $\pm 10\%$ ).
- Includes test leads.

The WC-412A (formerly the WG-412A) provides a convenient selection of standard resistor and capacitor values available either separately or in series or parallel RC combinations.



## VIZ RF SIGNAL GENERATOR MODEL WR-50C REG. \$189.00

OUR PRICE **\$159.95**

### FEATURES

- Tunable on fundamental 6 ranges 85 kHz to 40 MHz  $\pm 2\%$  with sweep output at 455 kHz and 10.7 MHz plus external xtal.
- RF output 0.05V rms, 2 step 10 to 1 plus fine adj. attenuator.
- Internal modulating frequency 600 Hz adj. to 80%.
- Audio output 6V rms across 15K ohm load.
- FET amplifier for rugged stability, 3 wire AC cord.



## VIZ FUNCTION GENERATOR MODEL WR-550B REG. \$189.00

OUR PRICE **\$169.95**

### FEATURES

- Sine, sawtooth and square wave output 1 Hz to 1 MHz.
- Peak to peak output 0-20V at 600 ohm plus 10V adj. offset.
- 10 to 1 freq. sweep with ext. sweep voltage of any wave form.
- Freq. stability 200 PPM/C, accuracy to 100 kHz  $\pm 5\%$  of dial above 100 kHz  $\pm 8\%$
- TTL and CMOS compatible with sq. and sawtooth fix output 4 VDC.
- 3 wire AC cord.



CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446



# OSCILLOSCOPES

## BBC GOERZ METRAWATT DUAL TRACE OSCILLOSCOPES

### 20 MHz DUAL-CHANNEL SCOPE

MODEL M-6001

REG. \$589.00 OUR PRICE **\$499.00**

**NEW!**

### 60 MHz DUAL CHANNEL SCOPE With DELAYED SWEEP

MODEL M-6003

REG. \$1095.00 OUR PRICE **\$899.00** **SPECIAL!**

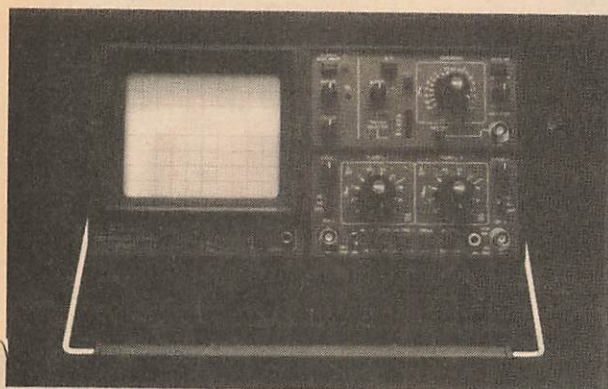
### 20 MHz DUAL-CHANNEL SCOPE With DELAYED SWEEP

MODEL M-6002 OUR PRICE **\$789.00**

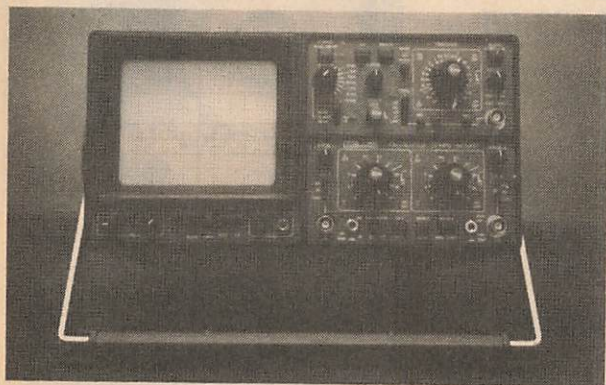
#### DESCRIPTION

The BBC (GOERZ METRAWATT) oscilloscopes are superior quality German made oscilloscopes which keeps in mind high performance at low cost. These units have easy to read, state of the art, rectangular tubes with internal gratitudes which prevent parallax reading errors.

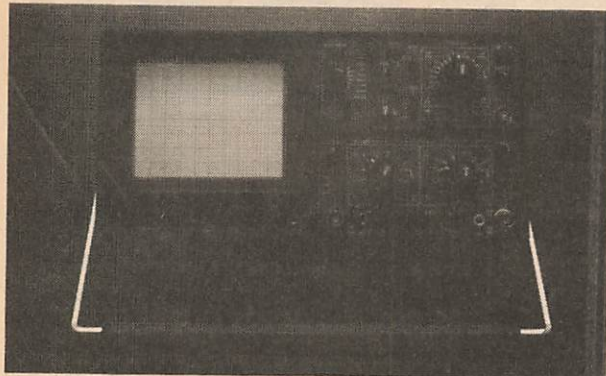
The scopes lend themselves to laboratory work, servicemen and maintenance repair operations. Compare the specifications of each of these scopes and choose the unit which will fill your most demanding requirements.



M-6001



M-6002



M-6003

	M-6001	M-6002	M-6003
<b>Cathode ray tube</b>			
Dimensions	Rectangular, 8 x 10 div. 1 div. = 10 mm		
Graticule	Internal graticule, div. spacing: 0.2 sub division markings on major horizontal and vertical axes 10% and 90° markings for rise time measurements		
Graticule illumination	adjustable in 2 stages		
Acceleration potential	2 kV		14 kV
Intensity modulation (Z-axis)	positive TTL level, high = bright		
Trace rotation, intensity, focus	adjustable on front panel		
<b>Display availability</b>			
Single channel	channel I, channel I inverted, channel II		
Dual channel	alternate, chopped, sum and difference ( $\pm$ channel I + channel II)		
XY mode	horizontal: channel II vertical: channel I same sensitivity ranges		
X-Y phase difference	3° (below 300 kHz)	3° (below 120 kHz)	3° (below 100 kHz)
<b>Horizontal amplifier (chan. II)</b>			
Frequency range (-3 dB)	0-2.5 MHz	0-1.8 MHz	0-5 MHz
<b>Y amplifier (vertical)</b>			
Bandwidth (-3 dB) (for all deflection factors)	0-20 MHz		0-60 MHz 1 mV: 0-15 MHz
Rise time	$\leq 17.5$ ns (overshoot max. 1%)		$\leq 5.8$ ns (overshoot max. 1%)
Deflection factors	12 positions (1-2.5), 5 mV/div...20 V/div		
cal.			
var.	$1: \geq 2.5 (\leq 2$ mV/div.)	$\geq 2.5:1 (\geq 50$ V/div.)	
Magnifier	-		x5, $\pm 5\%$ , 0-15 MHz (3-dB)
Accuracy (cal. settings)	$\leq 3\%$		
Input voltage	max. 400 V (DC + AC peak)		
Input RC	DC-AC-GND		
Input impedance	1 M ohm // 30 pF		
Output	-	channel I or channel II (according to set trigger source) approx. 90 mV/div.	
Overscan	-	2 LED overscan indication	
<b>Time base</b>			
Range positions (1,2,3 sequence)	18 positions	21 positions	23 positions
Ranges			
cal.	0.5 us/div...0.2 s/div.	0.1 us/div...0.5 s/div.	0.005 us/div...1 s/div.
var.	$1: \geq 2.5 (\leq 0.2$ us/div.)	$\geq 2.5:1 (2.5:1 \geq 125$ s/div.)	$\geq 2.5:1 (\geq 2.5$ s/div.)
Magnifier	x5, $\pm 5\%$ approx. 40 ns/div.	approx. 10 ns/div.	x10, $\pm 5\%$ approx. 5 ns/div.
Accuracy (cal. settings)	$\leq 3\%$		
Delayed time base (sweep delay)	-	7 stages, decadic, 100 ns-0.1 s cal., var. 10:1 (max. 1 s)	
Holdoff	-	variable x1 to x10	
Ramp output	-	O to approx. 5 V, positive rising	
<b>Trigger</b>			
Trigger sources	INT: channel I, channel II, line/EXT.		
Internal trigger	AUTO or normal pos./neg. slope, trigger level continuously adjustable	AUTO to peak or normal	
Trigger RC	DC, AC, LF, HF filter		
Trigger bandwidth	0-40 MHz	0-50 MHz	0- $\geq 80$ MHz
Trigger bandwidth			
int.	$\leq 5$ mm		
ext.	0.6 V	0.3 V	0.05 V
Single sweep	-	yes	yes
<b>Calibrator</b>			
Waveform	squarewave	squarewave, rise time 5 ns	
Amplitude	0.2 V ( $\pm 1\%$ )	selectable: 0.2 V and 2 V ( $\pm 1\%$ )	
Frequency	approx. 1 kHz	selectable: approx. 1 kHz and approx. 1 MHz	
<b>Component tester</b>			
Test voltage	max. 8.5V rms (no-load)		
Test current	max. 24 mA rms (short-circuit)		
Test frequency	line frequency		
Potential	Test circuit grounded (line safe conductor)		
<b>General</b>			
Class protection	Class protection I as per German electrical code VDE 0411 or IEC 348		
Power requirement	110V AC, 125 V AC, 220 V AC, 240 V AC 10% / 50...60Hz		
Power consumption	approx. 36 VA	approx. 38 VA	approx. 40 VA
Size	285 mm x 145 mm x 380 mm (W x H x D)		
Weight	approx. 7 kg.	approx. 7.5 kg	approx. 8 kg



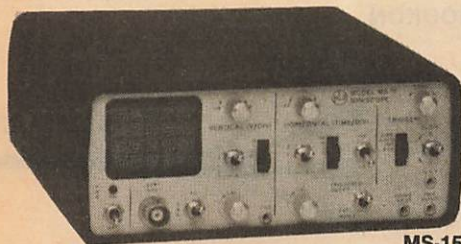
## NON-LINEAR SYSTEMS

PORTABLE OSCILLOSCOPES  
15 MHz TRIGGERED MINISCOPE

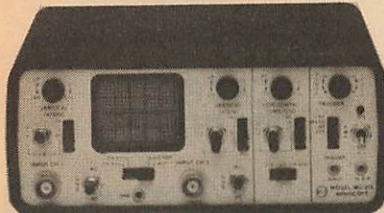
MODEL MS-15  
REG. \$466.00      OUR PRICE **\$379.95**

15 MHz DUAL TRACE TRIGGERED  
MINISCOPE

MODEL MS-215  
REG. \$596.00      OUR PRICE **\$479.95**



MS-15



MS-215

### SPECIFICATIONS

#### VERTICAL

- Bandwidth: DC to 15 MHz,  $\pm 6$  dB at 1 division deflection. Typical 3 dB point is 8 MHz at 2 division deflection. Normal maximum frequency for full scale (4 div) deflection is 2 MHz.
- Coupling: AC, DC or ground switch selectable. Low frequency 3 dB point on AC is 3 Hz.
- Rise Time: Approximately 23 nSec at 1 division deflection.
- Deflection Factor: 10 mV/div to 50 V/div in 12 calibrated ranges. Accuracy is 3% of full scale with vernier in full clockwise position.
- Input Impedance: 1 megohm in parallel with 50 pF.
- Maximum Input Voltage: 350 (DC and peak AC) provided DC component does not exceed 250V.

#### HORIZONTAL

- Mode: Internal time base or external horizontal, switch selectable.
- Time Base: 0.1  $\mu$ Sec/div to 0.5 Sec/div in 21 calibrated ranges. Accuracy is 3% FS with vernier in full clockwise position.
- Dual Trace: 2-channel; separate, chopped or alternate modes.
- External and internal trigger.
- Amplifier Bandwidth: DC to 200 kHz ( $\pm 3$  dB).
- Coupling: MS-15—DC, MS-215—AC, DC or ground, switch selectable; low frequency point on AC is 3 Hz.
- Deflection Factor: MS-15—Approximately 1 V/div. MS-215—10 mV/div uncalibrated.
- Input Impedance: 1M in parallel with 50 pF.
- Maximum Input Voltage: MS-15—100V (DC and peak AC). MS-215—Same as vertical amplifier.

#### TRIGGER

- Modes: Internal, external and line (line not functional when instrument operates on batteries). Input impedance is 1M ohm on external trigger.
- Slope: + or —, switch selectable.
- Coupling: MS-15—DC, MS-215—AC.
- Sensitivity: Less than 1 div for internal trigger and less than 1 volt for external trigger.
- Level: Trigger level control permits continuous adjustment of trigger point.

#### CALIBRATOR

- A square-wave signal of 1 volt p-p is provided. Voltage accuracy is  $\pm 5\%$ , frequency is approximately 12 kHz for the MS-15 and approximately 1 kHz for the MS-215.

#### DISPLAY

- Graticule: 4 x 5 div, each division is 0.25 inch.
- CRT: Bluish-white phosphor, medium persistence. CRT uses low power filament for low battery drain.

#### ENVIRONMENT

- Operating Temperature: 0° to 40°C.

#### FURNISHED ACCESSORIES

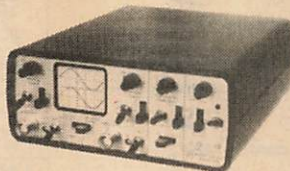
MS-15: Shielded input cable with BNC connectors and alligator clips, four mini-banana plugs and plug-in transformer (battery charger).

MS-215: Two shielded input cables with BNC connectors and alligator clips, three mini-banana plugs and plug-in transformer (battery charger). All models include rechargeable batteries and charger.

Model 41-140 Leather Case ..... **\$45.00**  
Model 41-141 10:1 Probe ..... **30.00**

## NON-LINEAR SYSTEMS 30 MHz DUAL TRACE TRIGGERED MINISCOPE

MODEL MS-230      OUR PRICE **\$639.95**  
REG. \$779.00



### SPECIFICATIONS

#### VERTICAL

- Mode: CH 1, CH 2, CH 1 & CH 2 (chopped) & CH 1 & CH 2 (alternate). (The following specifications apply to each channel.)
- Bandwidth: DC to 30 MHz,  $\pm 3$  dB at 3 division deflection.
- Coupling: AC, DC or ground, switch selectable. Low frequency 3 dB point on AC is 3 Hz.
- Rise Time: Approximately 10 nSec at 3 division deflection.
- Deflection Factor: 10 mV/div to 50 V/div in 12 calibrated ranges. Accuracy is 3% of full scale with vernier in full clockwise position. Vernier provides continuously variable deflection factor between fixed ranges, uncalibrated.
- Input Impedance: 1 megohm in parallel with 50 pF.
- Maximum Input Voltage: 250V (DC and peak AC).

#### HORIZONTAL

- Mode: Internal time base or external horizontal, switch selectable. In the XY mode, vertical input is through CH 1 and horizontal input through CH 2.
- Time Base: 0.05  $\mu$ Sec/div to 0.2 Sec/div in 21 calibrated ranges. Accuracy is 3% of full scale range with vernier in full clockwise position. Vernier provides continuously variable settings between fixed ranges, uncalibrated.
- Amplifier Bandwidth: DC to 1 MHz ( $\pm 3$  dB).
- Coupling: AC, DC or ground, switch selectable. Low frequency point on AC is 3 Hz.
- Deflection Factor: 10 mV/div to 50 V/div in 12 calibrated ranges. The ranges can be calibrated with the CH 2 gain control.
- Input Impedance: 1M ohm in parallel with 50 pF.
- Maximum Input Voltage: 250V (DC and peak AC).

#### TRIGGER

- Modes: Automatic (trigger is disabled, time base free runs). Internal (in the dual trace modes, the internal trigger source is CH 1). External and line (line not functional when MS-230 operates on batteries). Input impedance is 1 megohm on external trigger.
- Slope: + or —, switch selectable.
- Coupling: AC.
- Sensitivity: Less than 1 div for internal trigger and less than 1 volt for external trigger.
- Level: Trigger level control permits continuous adjustment of trigger point in all modes except Auto.

#### FURNISHED ACCESSORIES

MS-230: Two shielded input cables with BNC connectors and alligator clips, three mini-banana plugs and plug-in transformer (battery charger). All models include rechargeable batteries and charger.

Model 41-180 Leather Case ..... **\$45.00**  
Model 41-141 10:1 Probe ..... **30.00**

## NON-LINEAR SYSTEMS

THE DYNATRACER      REG. \$150.00

MODEL DT-1      OUR PRICE **\$135.00**



### DESCRIPTION

Produces signature patterns for dynamic troubleshooting of solid-state circuitry and components — both in and out of circuit, with no external power applied. A working partner for your oscilloscope.

### FEATURES

- Designed for use with any oscilloscope cable of X-Y mode of operation.
- Ideal for component and circuit testing, through visual comparisons of signature patterns.
- Provides for normal scope input operation of DT-1/scope input operation by switching arrangement.
- Three impedance ranges: Lo, medium, high.
- Troubleshooting and production test applications.
- Tests and visually detects faulty IC's, diodes, bridge rectifiers, zeners, FET's, Darlingtons, LED's voltage regulators, transistors, capacitors, unijunctions, SCR's, & triacs as well as opens and shorts.
- Complete with BNC to BNC cables for attachment to scope plus test lead assembly and component test adaptor.

## NON-LINEAR SYSTEMS THE TOUCH/TEST 20 MULTIMETER

A Truly Remarkable Test Lab in a Three-pound Package.

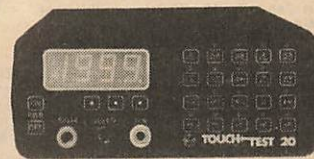
MODEL TT-20  
REG. \$495.00      OUR PRICE **\$420.75**

MODEL TT-20B with batteries and charger  
REG. \$537.00      OUR PRICE **\$456.45**

Now Available

MODEL TT-21 with LCD readout  
REG. \$553.00      OUR PRICE **\$470.00**

MODEL TT-21B with LCD readout, batteries and charger  
REG. \$595.00      OUR PRICE **\$505.75**



### FEATURES

- Touch selection and control of functions, ranges and power.
- Large (0.55" high) LED readout.
- Automatic polarity and overload indication.
- In-circuit test capabilities.
- LED indication of function in use.
- Rechargeable-battery or line-operation models.
- Test leads, temperature probe and resistor/capacitor test adaptor.
- Size: 2.9"H x 6.4"W x 7.5"D.
- Weight: Less than 3.0 lbs (without batteries).
- Parts and labor guaranteed for one year.

### SPECIFICATIONS

#### VOLTAGE MEASUREMENTS

- AC volts and AC millivolts: Each function has three ranges; measurements from 10 microvolts to 750 VRMS.
- DC volts and DC millivolts: Each function has three ranges; measurements from 10 microvolts to 1000 VDC.

#### TEMPERATURE MEASUREMENTS

- Degrees Celsius & Fahrenheit: Two ranges; measurements from  $-40^{\circ}$  to  $+150^{\circ}$  or  $-40^{\circ}$  to  $+302^{\circ}$ F.

#### CONDUCTANCE MEASUREMENTS

- Measurements from 0.01 nanosiemens to 1.999 nanosiemens which is equivalent to: from 5 megohms to 100,000 megohms.

#### CAPACITANCE MEASUREMENTS

- Microfarads, nanofarads and picofarads: six ranges combined; measurements from 1.0 picofarad to 200 microfarads.

#### CURRENT MEASUREMENTS

- AC amperes and AC milliamperes: Four ranges; measurements from 10 microamperes to 10 amperes.
- DC amperes, DC milliamperes and DC microamperes: Seven ranges combined; measurements from 0.01 microamperes to 10 amperes.

#### RESISTANCE MEASUREMENTS

- Megohms, kilohms and ohms: Seven ranges combined; measurements from 10 milliohms to 20 megohms.

#### OTHER TESTS

- Diode Test: A simple quantitative means of checking diode and transistor junctions in both conduction and non-conducting directions.
- Continuity Test: Provides capability for audibility checking conductors and solder joints for shorts and open circuits, plus a go-no-go measurement of the amount of resistance from 10 milliohms to 2000 ohms.

### ACCURACY SPECIFICATIONS

- DC Voltage: DC volts and DC millivolts  $\pm(0.2\%$  of reading + 1 digit).
- AC Voltage: AC volts and AC millivolts  $\pm(0.5\%$  of reading + 2 digits) —50 Hz to 10 kHz.
- DC Current: DC amps, DC milliamps and DC microamps  $\pm(1\%$  of reading + 1 digit).
- AC Current: AC amps and AC milliamps  $\pm(1.5\%$  of reading + 2 digits) —50 Hz to 10 kHz.
- Temperature:  $^{\circ}$ C and  $^{\circ}$ F  $\pm(3^{\circ}$ C from  $-40^{\circ}$ C to  $+150^{\circ}$ C).
- Resistance: Ohms, kilohms and megohms  $\pm(0.25\%$  of reading + 1 digit).  
Test Current: 100 nA, 10  $\mu$ A and 1 mA.  
Test Voltage: 0.2V max. at FS up to 2 megohms.
- Conductance: Nanosiemens  $\pm(0.2\%$  of reading + 2 digits).
- Capacitance: Microfarad, nanofarad and picofarad  $\pm(1\%$  of full scale).
- Diode Test:  $\pm(0.2\%$  of reading + 1 digit).  
Test Current: 1 mA  $\pm 2\%$ . Temperature range for above accuracy specifications is from  $+18^{\circ}$ C to  $+28^{\circ}$ C (some off-set adjustments may be required). Instrument operating temperature range:  $0^{\circ}$ C to  $+45^{\circ}$ C.



# TEST INSTRUMENTS

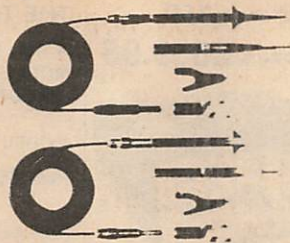
## TPI PROFESSIONAL TEST LEAD SET MODEL TLS-2000

OUR PRICE **\$24.95**  
FEATURES

- Safety engineered.
- High voltage rating.
- Burn resistant highly flexible cable.

### SPECIFICATIONS

Maximum Voltage: 2000 V RMS. Maximum Current: 20 A. Plug Type: 4 mm; fits standard banana jacks; retractable safety sleeve. Cable Length: 1.5 meters. Included Accessories: (1 black, 1 red) 2 cables, 2 probes, 2 sprung hooks, 2 alligator clips, 2 spade terminals.

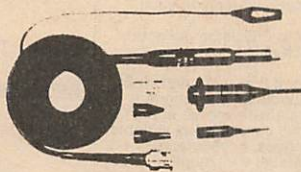


## TPI X1, X10 and GND REFERENCE 100 MHz BANDWIDTH TEST LEADS MODEL SP-100

OUR PRICE **\$38.00**

### SPECIFICATIONS

X1 SWITCH POSITION—Bandwidth: DC to 10 MHz. Rise time: 1 M ohm (oscilloscope input). Input Capacity: 40 pF (plus oscilloscope capacity). Maximum Input Voltage: 600 V (DC + peak AC). REFERENCE SWITCH POSITION—Grounding: Probe tip grounded via 9 M ohm resistor; oscilloscope input grounded. X10 SWITCH POSITION—Bandwidth: DC to 100 MHz. Rise time: 3.5 nsec. Input Resistance: 10 M ohms when used with oscilloscopes which have 1 M ohm input resistance (probe resistance is 9 M ohm  $\pm 1\%$ ). Input Capacity: 16.5 pF when used with oscilloscopes which have a 30 pF input capacity (17.5 pF for 2SP100; 18.5 pF for 3SP100). Compensation Range: 10 pF to 60 pF. Maximum Input Voltage: 600 V (DC + peak AC). Cable Length: 1.5 meters.

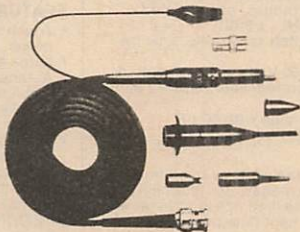


## TPI RF DETECTOR PROBE MODEL M-12DM

OUR PRICE **\$69.00**

### SPECIFICATIONS

Bandwidth: 100 kHz to 500 MHz  $\pm 1$  dB. 100 kHz to 750 MHz  $\pm 3$  dB. Input Capacitance: Approx. 5 pF. Maximum AC Input Voltage: 50 volts RMS. DC Isolation Voltage: 200 volts DC including peak AC. Diode Turn On Voltage: 250 mV. Working Temp. Range: -25 to +70°C. Cable Length: 1.2 meters. Also available with 4mm plugs (type M12DM4) and lengths of 2 and 3 meters, details on request.

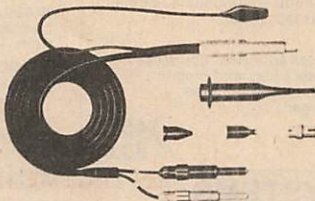


## TPI X10 ATTENUATION 100 MHz BANDWIDTH TEST LEADS MODEL P-100

OUR PRICE **\$36.00**

### SPECIFICATIONS

Bandwidth: DC to 100 MHz. Rise time: 3.5 nsec. Input Resistance: 10 M ohms when used with oscilloscopes which have 1 M ohm input resistance (probe resistance is 9 M ohms  $\pm 1\%$ ). Input Capacity: 15.7 pF when used with oscilloscopes which have a 30 pF input capacity (16 pF for 3P100). Compensation Range: 10 pF to 60 pF. Maximum Input Voltage: 600 V (DC + peak AC). Cable Length: 1.5 meters (3 meters for 3P100).



## BP HEAVY DUTY CLIP LEADS MODEL HL-100A

OUR PRICE **\$2.69** per pkg. 10 FOR **\$22.50**

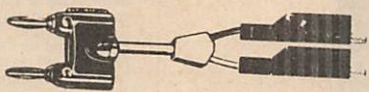
### DESCRIPTION

Two each, five different color leads. 22" long, tip to tip, clip length 1-1/8". Jaws open to 7/4". 10 leads, 20 alligator clips.



## BP ALLIGATOR CLIPS TO DOUBLE BANANA PLUG MODEL 1531

OUR PRICE **\$7.95**



## BP ALLIGATOR CLIPS TO BNC MALE MODEL 1587

OUR PRICE **\$7.95**



## BP UNIVERSAL TEST LEAD KIT MODEL UTL-325

OUR PRICE **\$4.95**

### FEATURES

- 4 alligator clips (2 red, 2 black).
- 2 spade lugs.
- 2 needle tips.
- 2 banana plugs.
- 2 test probes.

### DESCRIPTION

Every combination you could possibly use for your testing needs.



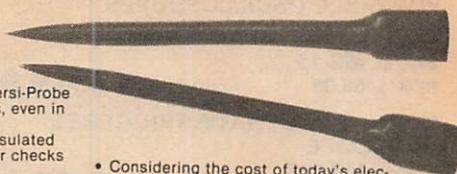
## VERSI-PROBE TEST PROBES FOR SPACE AGE ELECTRONICS

MODEL VP-1  
OUR PRICE **\$4.95**

### FEATURES

- Total insulation feature of the Versi-Probe guards against accidental shorts, even in the most crowded circuit areas.
- Sharp point allows piercing of insulated P.C. boards and wires. Make your checks without removing insulation.
- Using standard insulated alligator clips change quickly from clip to probe—or probe to clip.

- Considering the cost of today's electronics, Versi-Probes with the unique micro-tip can pay for themselves with one prevented "Short"!



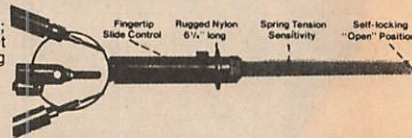
## HH SMITH THE HOOKON MODEL 3070

OUR PRICE **\$5.95** each 6 FOR **\$30.00**

### FEATURES

- Hooks on to bare wires; component leads; wire-wrap tails; connector terminals; turret terminals, etc. Holds no-hands with spring tension.
- Probes P.C. pads and runs; soldered terminals; connector tips; finger contacts, etc. Hook locks forward for ease in probing.
- Slides on .025" square and .025 x .050 wire-wrap tails; up to 8 gauge solid wire tails, holds no-hands without extending contact.

- Fits between terminals spaces down to .100"; I.C. socket tails.
- Supplied one each in plastic container.



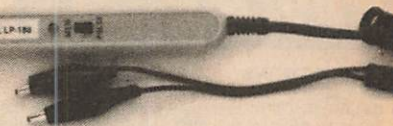
## BP LOGIC PROBE MODEL LP-188

OUR PRICE **\$16.95**

**EXTRA  
SPECIAL!**

### SPECIFICATIONS

Input Impedance: 1 Mohm. Minimum detectable pulse width: 30 nS. Maximum input frequency displayable: 15 MHz. Logic threshold: TTL: Logic 1 - 2.3V  $\pm 0.2V$ , CMOS: Logic 1 - 70% Vcc. TTL: Logic 0 - 0.8V  $\pm 0.2V$ , CMOS: Logic 0 - 30% Vcc. Input overvoltage protection:  $\pm 220V$  DC/AC/15 sec. Pulse lead flashing time: 500 mS. Power supply protection:  $\pm 20V$ . Operating supply voltage range: TTL (5V), CMOS (5 - 15V). Maximum input voltage:  $\pm 50V$ . Free air operating temperature: 0 - 50°C. Dimensions: 205mm x 18mm x 16.5mm. Flexible coiled cord, slim easy to handle styling.



## OK TOOLS LOGIC PULSAR

MODEL PLS-500 OUR PRICE **\$59.95**

- Multi-Family (DTL, TTL, MOS, CMOS, Microprocessors).
- Multi-Mode. • Circuit Powered.
- High input, Low output, Impedance.
- Over/undervoltage indicators & protection.
- Reverse polarity protection.
- No adjustments required.
- Detachable coiled power cord.
- Switchable 0.5 Hz/500 Hz Rate.
- 2 usec pulse rate.
- 1000 mA (1 Amp) output polarity.
- Automatic outputs, polarity & voltage.
- Sync Out, Sync In, and GND for Triggered/Triggering uses.

### DESCRIPTION

The PLS-500 is a test instrument which is used to inject a signal into a circuit node so that the response of the circuit may be observed, (typically using a Digital Logic Probe such as PRB-50), to determine if the device at the node is working correctly. This eliminates the need to isolate the device by unsoldering it or by cutting circuit traces on the printed circuit board.

### SPECIFICATIONS

Pulsar output impedance: 2 ohm. Pulsar input impedance: 10M ohm. SYNC OUT (TRIGGER OUT): Pulse width @ 0.5 Hz. 100 msec. low, 1900 msec high (typ.); (95% duty cycle). Pulse width @ 500 Hz: 1 msec low, 1 msec high (typ.); (50% duty cycle). Output current (source): 4 mA @ Vcc = +15V, 2mA @ Vcc = +5V. Input impedance: 100k ohm. Input overvoltage protect:  $\pm 120V$  (10 sec). EXT SYNC IN (TRIGGER IN) Input impedance: 1M ohm. Max. input voltage:  $\pm 120V$  (continuous). Max. input current: 1.2 mA. Input Frequency: DC-100 KHz. Operating power supply: +3.5 - +18V.



## LEADER 100 MHz X10 PROBE MODEL LP-18AX

OUR PRICE **\$34.95**

### SPECIFICATIONS

- Bandwidth: 100 MHz.
- Rise Time: 3.5 nanoseconds.
- Input Resistance: 10M ohm when used with oscilloscopes with 1M ohm input (probe resistance 9M ohm  $\pm 1\%$ ).

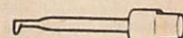


## VANCO MINI-GRABBER TEST PRODS MODEL MG-3

OUR PRICE **\$1.95**

### DESCRIPTION

1-9/16" long tiny mini-grabber. Injector type prods firmly clip onto small or large components. Frees hands for meter reading or other work for extended time. Red or black.

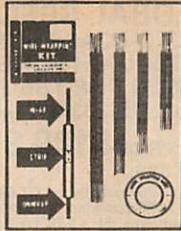




## OK TOOLS WIRE WRAPPING KIT

### CONTAINS

- Hobby wrap tool WSU-30.
- (50 ft.) roll of wire.
- Pre-stripped wire 1" to 4" lengths (50 wires per package) stripped 1" both ends.



Model	Color	Our Price
WK-2-Y	Wire-Wrapping Kit (Yellow)	\$17.40
WK-2-W	Wire-Wrapping Kit (White)	17.40
WK-2-R	Wire-Wrapping Kit (Red)	17.40
WK-2-B	Wire-Wrapping Kit (Blue)	17.40

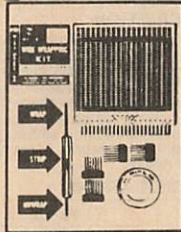
## OK TOOLS WIRE WRAPPING KIT

### MODEL WK-3 blue

OUR PRICE **\$21.95**

### CONTAINS

- Hobby wrap tool WSU-30.
- Roll of wire R-30B-0050.
- (2) 14 DIP's.
- (2) 16 DIP's.
- Hobby board H-PCB-1.



## OK TOOLS WIRE WRAPPING KIT

### MODEL WK-4 blue

OUR PRICE **\$32.95**

### CONTAINS

- Hobby wrap tool WSU-30M.
- Wire dispenser WD-30-B.
- (2) 14 DIP's.
- (2) 16 DIP's.
- Hobby board H-PCB-1.
- DIP IC insertion tool INS-1416.
- DIP IC extractor tool EX-1.
- PC Edge connector CON-1.



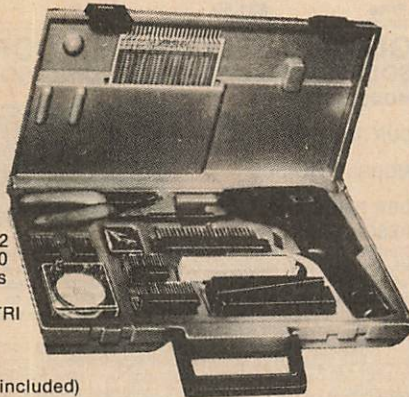
## OK TOOLS WIRE WRAPPING KIT

### MODEL WK-5

OUR PRICE **\$79.95**

### CONTAINS

- Battery Tool BW-630
- Hobby Wrap Tool WSU-30M
- PC Edge Connector CON-1
- DIP/IC Extractor Tool EX-1
- DIP/IC Insertion Tool INS-1416
- PC Card Guides & Brackets TRS-2
- Mini-Shear with Safety Clip MS-20
- 14, 16, 24 and 40 DIP PIN Sockets
- Terminals WWT-1
- Tri-Color Wire Dispenser WD-30-TRI
- Hobby Board H-PCB-1
- Product Catalog



Use "C" size Ni-Cad batteries (not included)

## OK TOOLS PC BOARD

### MODEL H-PCB-1

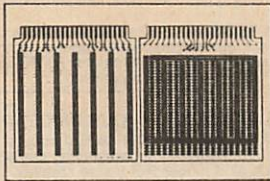
OUR PRICE **\$7.95**

### DESCRIPTION

The 4 x 4.5 x 1/16 inch board is made of glass coated EPOXY Laminate and features solder coated 1 oz. copper pads. The board has provision for a 22/44 two sided edge connector, with contacts on standard .156 spacing. Edge contacts are non-dedicated for maximum flexibility.

The board contains a matrix of .040 in. diameter holes on .100 inch centers. The component side contains 76 two-hole pads that can accommodate any DIP size from 6-40 pins, as well as discrete components. Typical density is 18 of 14-Pin or 16-Pin DIP's. Components may be soldered directly to the board or intermediate sockets may be used for soldering or wire-wrapping.

Two independent bus systems are provided for voltage and ground on both sides of the board. In addition, the component side contains 14 individual busses running the full length of the board for complete wiring flexibility. These busses enable access from edge contacts to distant components. These busses can also serve to augment the voltage or ground busses, and may be cut to length for particular applications.



## OK TOOLS HOBBY WRAP TOOL

MODEL WSU-30 regular wrap

OUR PRICE **\$9.30**



MODEL WSU-30M modified wrap

OUR PRICE **\$10.65**

### DESCRIPTION

Wire-wrapping, stripping, unwrapping tool for AWG 30 on .025 (0.63mm) square post.



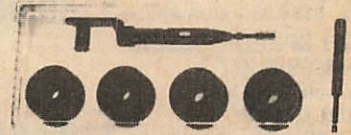
## OK TOOLS JUST WRAP KIT

### MODEL JWK-6

OUR PRICE **\$36.00**

### CONTAINS

- JUST WRAP Tool
- Roll of Blue Wire, 50 ft.
- Roll of White Wire, 50 ft.
- Roll of Yellow Wire, 50 ft.
- Roll of Red Wire, 50 ft.
- Unwrapping Tool



## OK TOOLS JUST WRAP TOOL

### MODEL JW-1

OUR PRICE **\$21.95**

With one 50 ft. roll wire

## OK TOOLS WIRE DISPENSER

### FEATURES

- With 50 ft. roll of AWG 30 KYNAR® wire-wrapping wire.
- Cuts the wire to length.
- Strips 1" of insulation.



Model	Color	Our Price
WD-30-B	Blue Wire	\$7.95
WD-30-Y	Yellow Wire	7.95
WD-30-W	White Wire	7.95
WD-30-R	Red Wire	7.95

## OK TOOLS DISPENSER REPLACEMENT ROLLS

### DESCRIPTION

Wire for wire-wrapping. AWG-30 (0.25mm) KYNAR® wire, 50 ft. roll, silver plated, solid conductor, easy stripping.



Model	Color	Our Price
R-30B-0050	30-AWG Blue 50 ft. roll	\$4.95
R-30Y-0050	30-AWG Yellow 50 ft. roll	4.95
R-30W-0050	30-AWG White 50 ft. roll	4.95
R-30R-0050	30-AWG Red 50 ft. roll	4.95

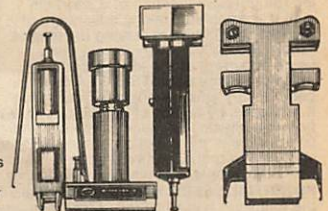
## OK TOOLS IC INSERTION/EXTRACTION KIT

### MODEL WK-7

OUR PRICE **\$43.40**

### DESCRIPTION

Widely used by major retailers—electronic service personnel. A new kit of DIP IC extractors and inserters to accommodate all IC's from 8-40 pins. All tools that engage conductive surfaces are CMOS safe and include grounding lugs where appropriate. Kit contains extractors EX-1 that extracts all LSI, MSI and SSI devices from 8 to 24 pins; EX-2 removes 24-40 pin IC's, .600" centers; plus inserter INS-1416 DIP/IC 14-16 pin with narrow profile, pin straightener built into tool, and automatic ejector; inserter MOS-40 aligns bent-out pins; inserter MOS-2428 for 24-28 pin IC's; and inserter MOS-1416 for 14-16 pin IC's.





# TEST INSTRUMENTS

## GLOBAL SPECIALTIES CORP. LOGIC PROBE KIT

MODEL LPK-1  
REG. \$29.95

OUR PRICE **\$24.00**

### DESCRIPTION

Build your own GSC logic probe. Easy to follow directions make this a one night project. Logic levels in a digital circuit are translated into light from the hi or lo LED, pulses as narrow as 300 nanoseconds are stretched into blinks of the Pulse LED, triggered from either leading edge. Probe deeper into logic with the LPK-1, one of the smarter tools from GSC.

### SPECIFICATIONS

Input Impedance: 300,000 ohms. Thresholds: LO 30% Vcc; HI 70% Vcc. Maximum Speed: 300 nsec., 1.5 mHz. Input Protection: ± 50 VDC continuous, 117 VAC for 15 sec. Power: 30 mA at 5V, 40 mA at 15V; 25V max.; reverse voltage protected; 36" cable with color coded clips included. Operating Temp: 0-50°C. Dimensions (L x W x D): 5.8 x 1.0 x 0.7 in. (147 x 25 x 18mm). Weight: 3 oz. (85 gr).



## GLOBAL SPECIALTIES CORP. STANDARD LOGICAL ANALYSIS KIT

Measures To 10 MHz

MODEL LTC-1

REG. \$186.95 OUR PRICE **\$169.95**

## HIGH SPEED LOGICAL ANALYSIS KIT

Measures To 60 MHz

MODEL LTC-2

REG. \$228.90 OUR PRICE **\$199.95**

### DESCRIPTION

For high speed applications, you'll need our LTC-2. It captures pulses less than 10 nanoseconds, rep rates to 60 MHz. If your application is less demanding, the LTC-1 is ideal. It's good to 30 nsec and 10 MHz.

### SPECIFICATIONS

LTC-1 Includes: LP-1 Logic Probe, one 3" (76mm) ground lead with alligator clip. LTC-2 Includes: LP-3 Logic Probe, two 3" (76mm) ground leads with alligator clips. Both Models Include: LM-1 Logic Monitor, Digital Pulser, two 1-1/2" (38mm) probe tips, two 2-1/2" (64mm) probe tips, one 3" (76mm) 'easy-clip' adaptor for use in place of probe tip, one probe tip to 'easy-clip' converter, and one probe tip to banana plug converter, two 36" (914mm) power/ground leads with alligator clips, complete manuals for each instrument, custom-molded case. Dimensions (L x W x D): 9.1 x 7.5 x 2.25 inches. (231 x 191 x 57mm). Weight: 23 oz. (652gr.).



## GLOBAL SPECIALTIES CORP. PROTO CLIPS

Wherever you use DIP's, you need GSC Proto-Clip connectors. The clip-on, short-proof way to bring up leads from crowded circuit boards, for fast signal-tracing, signal injection... even wiring unused circuits into existing boards. In time (and components) saved, they'll pay for themselves the very first time they're used.

PC-14 (14 pin) \$4.95 PC-16 (16 pin) \$5.95 PC-24 (24 pin) \$10.00 PC-40 (40 pin) \$14.95



## GLOBAL SPECIALTIES CORP. WIRE JUMPER KIT

MODEL WK-1

OUR PRICE **\$14.95**

### DESCRIPTION

There's no method of breadboarding that's quicker or simpler than solderless, and there's no method of solderless breadboarding that pulls it all together better. Now for added simplicity and increased design time don't strip down wires, use our Model WK-1 wire jumper kit. Use with our Quick Test Sockets and Bus Strips, Experimentor Solderless Breadboards, Proto-Boards, Matchboard, anywhere!

Pre-cut, pre-stripped, pre-formed AWG No. 22, insulated solid hookup wire in fourteen color-coded lengths, complete with a compartmented plastic case. 25 pieces in each of fourteen lengths: 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 2.0, 3.0, 4.0 and 5.0 inches (length does not include 1/4 inch ends, stripped and bent 90°). Plastic case is divided into compartments, lid is hinged.



## GLOBAL SPECIALTIES CORP. SHORTSQUEEK

MODEL SQ-1

REG. \$79.95

OUR PRICE **\$69.95**

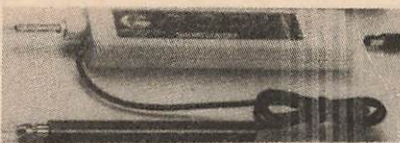
### DESCRIPTION

SHORTSQUEEK is a special type of ohmmeter that responds to very low values, and very small changes, of resistance. Therefore, it is an ideal tool for determining the physical location of a short circuit. It does this by taking advantage of the fact that there are varying degrees of "short circuits", the very lowest resistance occurring at the exact location of the short. Since SHORTSQUEEK can respond to very small changes in resistance it indicates, by means of an audio tone, whether its probe tip is being moved towards or away from the physical location of the short circuit. One simply moves the probe along the wire or PC board trace in the direction of the higher tone. When the pitch is the highest, the probe is at the short. If the probe is moved beyond the short, the tone will begin to drop again. Since use of the unit is so simple, it is learned very quickly.

**POTENTIAL USERS:** Generally, Test, Quality Assurance, Repair, and Field Service operations of the following types of firms: Manufacturers of all types of PC boards; Independent electronic test and repair services; Manufacturers of equipment which utilize PC boards (computer electronic control systems, machine tools, process machinery, etc.); Manufacturers of high density wired systems (electronic backplanes, communications switching networks, etc).

### SPECIFICATIONS

Power: 6 to 20 VDC, 50 mA. filtered. Tone Shift: 1200 to 4000 Hz, typical. Range: 1 ohm to 0.01 ohm, typical.



## GLOBAL SPECIALTIES CORP. PROTO-BOARD WITH BUILT-IN REGULATOR POWER SUPPLY

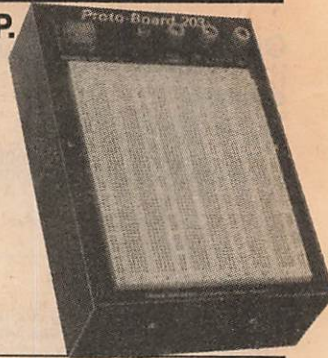
POWER FOR THE PROFESSIONAL

MODEL PB-203A-W (wired)

OUR PRICE **\$149.95**

### FEATURES

- 3 QT-59S sockets. • 4 QT-59B bus strips.
- 1 QT-47B bus strip. • Fuse, power switch.
- Power-on light. • 9.75" L x 6.6" W x 3.25" H.
- Weight: 5 lbs. • 5V, 1 amp regulated power supply.
- +15V, 1/2 amp regulated power supply.
- -15V, 1/2 amp regulated power supply.
- Output Voltage: 15V, internally adjustable.
- Ripple and noise: At 1/4 amp, 10 millivolts.
- Load regulation: Better than 1%.



## GLOBAL SPECIALTIES CORP. PROTO-BOARD® BREADBOARDING SYSTEMS

### DESCRIPTION

Proto-boards are QT or UBS sockets and bus strips mounted on back plates. Circuit changes can be made in minutes by simply moving components from one place to another. Packaged systems incorporating proto-boards are easy to use, almost universally applicable, and eliminates many of the assembly procedures associated with circuit board design.

### SPECIFICATIONS

	PB-102	PB-103	PB-104	PB-105
Sockets	2/QT47S	3/QT59S	4/QT59S	6/QT59S
Bus Strips	1/QT35B 3/QT47B	1/QT47B 4/QT59B	7/QT59B	4/QT47B 7/QT59B
IC Capacity	12	24	32	48
Terminals	248	450	612	912
Tie Points	1240	2250	3060	4560
Binding Posts	1	4	4	5
Backplate	Aluminum	Aluminum	Aluminum	Aluminum
Length	7.4"	9.0"	9.8"	9.2"
Width	4.5"	6.0"	8.0"	11.4"
Height	1.4"	1.4"	1.4"	1.4"
Weight	10.0 oz	21.0 oz	29.0 oz	29.0 oz
Price	<b>\$31.50</b>	<b>\$59.95</b>	<b>\$79.95</b>	<b>\$99.95</b>



**NEW!**

## GLOBAL SPECIALTIES CORP. UBS SERIES SOLDERLESS BREADBOARDING SOCKETS

MODEL UBS-100

OUR PRICE **\$17.95**

MODEL UBS-500

OUR PRICE **\$9.50**

### DESCRIPTION

Start your circuit designing with Global's newest solderless breadboarding sockets. They enable you to insert your electronic components directly into a spring contact matrix, without adaptors, for instant circuit construction. All components will lead sizes from 20 to 26 gauge insert directly. Even the smallest diodes to plug-in DIP packages to 40 pins and resistors to 1/2 watt can be inserted directly into the board. All interconnections are made with solid 22 gauge wire, eliminating the need for special jumper sets.

The UBS-100 contains 64 pairs of 5 common spring contacts for principle circuit construction and 8 bus strips of 25 common contacts for power, ground, and input/output connection, for a total of 840 contact points. A new mold and new forming die provides improved and more dependable contact. A permanent molded-in tie-point numbering system provides easy reference when constructing complex circuits. Dimensions: (LWH) 6.5" x 2.2" x .33" (16.5 x 5.6 x 0.9 cm) 6 mounting holes 1.46" (3.7 cm) across width x 3.08" (7.8 cm) from vertical center line out to each end.

The UBS-500 has all the features of the UBS-100 in a smaller size, with 33 pairs of 5 common contact points, (totaling 430 contact points). The modest price tag makes it especially attractive for classroom use. Dimensions: (LWH) 3.4" x 2.2" x .33" (8.6 x 5.6 x 0.9 cm) 4 mounting holes 1.48" (3.7 cm) center to center.



**NEW!**

MODEL PB-10 OUR PRICE **\$19.95**

The PB-10 has one UBS-100, 840 contact point, socket permanently mounted on a compact panel. It has three rugged binding posts to facilitate power ground, or input/output connections. Its non skid rubber feet insure stability. Dimensions: (LWH) 7" x 4" x 1.3" (17.5 x 10 x 3.2 cm).

## FORDHAM REGULATED TRIPLE POWER SUPPLY

Assembled and tested...and it's short circuit proof!

MODEL FM-6

REG. \$149.95 OUR PRICE **\$89.95**

### SPECIFICATIONS

A fully assembled and tested triple benchtop power supply. Includes fixed 5V at 1 amp, 5V to 15V at 0.5 Amp and -5V to -15V at 0.5 AMP. All supplies regulated, short proof. Each supply has a power on indicator LED. Complete and ready for use in a durable (8 x 6 x 3-1/2") metal case.





## A.P. PRODUCTS POWER SUPPLIES WITH BREADBOARDS

All models below feature: 1680 solderless, plug-in tie points . . . will hold up to 18 14-DIPs; Breadboard elements accept all DIP sizes including RTL, DTL, TTL and CMOS devices, TO-5's and discretes with leads up to .032" dia.; All connections to/from switches, indicators, power supplies and meters are made via solderless, plug-in, tie-point blocks on control panels; Interconnect with any solid 20 to 30 AWG wire; Breadboard elements are mounted on ground planes . . . ideal for high-frequency and high-speed/low-noise circuits; Short-circuit-proof fused power supplies; Operate on 110 to 130VAC at 60 Hz; Space-age compact styling and high-grade components permit convenient, organized and quick prototyping. All three models are 7-1/2" (19.05cm) wide, 11-1/2" (29.21cm) deep and 4.0" (10.16cm) high at rear but only 3/4" (1.9cm) high at the front for working level convenience. Weight is 2-1/2 lbs. (1.13kg).



MODEL 101

## A.P. PRODUCTS TRIPLE-OUTPUT POWER SUPPLY

For Prototyping Both Linear And Digital Circuits  
MODEL 101-AP

OUR PRICE **\$119.95**

Power supply is regulated and adjustable from +5 to +15VDC at 600mA. Ripple/noise is less than 10mV at full load. Line and load regulation is less than 3%. Meter is built in 0-15VDC. Inputs are accessible at tie-point blocks on control panel which allows monitoring of power supply or circuits. Meter accuracy is 5% of full scale.

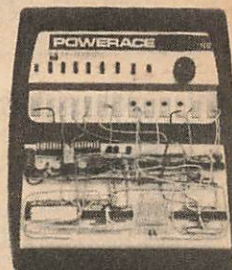
## A.P. PRODUCTS GENERAL PURPOSE POWER SUPPLY

The complete digital prototyping lab with FREE logic probe built in!  
MODEL 102-AP

OUR PRICE **\$165.00**

Power supply is regulated +5VDC at 1 amp. Ripple/noise is less than 10mV at full load. Line and load regulation is less than 1%. Pulse Detection with memory is built in. Will detect positive or negative going pulses as short as 10 nanoseconds. Memory is reset by momentary switch on control panel. Three logic indicators (LED's) have buffered inputs that require 1 microamp max. Two logic switches, momentary, with debounce circuitry. Both Q and Q outputs can sink 15mA and source 5mA. Four data switches with logic 1 or logic 0 outputs have unlimited sinking capabilities and can source 10mA. Clock generator has the following frequencies available: 1 Hz, 10 Hz, 100 Hz, 1 kHz, 10 kHz with a 50% duty cycle. C output will sink 15mA and source 5mA. C output will sink or source 50mA. One-shot pulse generator has output of 7ms pulse, positive or negative going. Both Q and Q outputs can sink 15mA and source 400 microamps.

MODEL 102



## A.P. PRODUCTS GENERAL PURPOSE POWER SUPPLY

Triple-output power supply for prototyping both linear and digital circuits.  
MODEL 103-AP

OUR PRICE **\$165.00**

Triple-output power supply has outputs of: +5VDC at 750mA; +15VDC at 250mA; and -15VDC at 250mA. Ripple/noise is less than 10mV at full load for all outputs. Line and load regulation is less than 1% for all outputs. ±15-volt outputs track. Meter is built in 15-0 15VDC. Input is accessible at tie-point block on control panel which allows monitoring power supplies or circuits. Meter accuracy is 5% of full scale. Two logic indicators (LED's) have buffered inputs that require 1 microamp max. Two logic switches, momentary, with debounce circuitry. Both Q and Q outputs can sink 15mA, and source 5mA. Two data switches with logic 1 and logic 0 outputs have unlimited sinking capabilities and can source 10mA.



MODEL 103

## IET DIGITAL SUBSTITUTERS

### DESCRIPTION

Digital substituters for resistance, capacitance, inductance. Economical, indispensable tools for a variety of uses in engineering, design, troubleshooting, or service.

### FEATURES

- Direct reading — no fumbling with multiple slide or rotary switches. The IET family of digital substituters uses convenient side by side thumbwheel switches. Simply dial in the desired value and use.
- Wide range. Resistance from 1 ohm to 9,999,999 ohms, capacitance from 100 pF to 99,999.99uF, and inductance from 1 mH to 9.999 H.
- Accurate. Resistors are 1% tolerance, capacitors are 4% tolerance, and inductors are 2% tolerance. Precision models are also available.
- Error proof. Since the impedance values are set and read directly, no mistakes can be made as with rotary or slide switch decade boxes. No need to examine and sum groups of switches — simply read one number.
- Color coded. Different colored switches separate the various impedance ranges.
- Compact, convenient, and rugged. Made of high impact plastic, these substituters are very portable and reduce clutter on a busy lab bench.
- Options: Shielded case with grounding post, Panel mounted versions, Special combinations and configurations.

RS-200



CS-300



LS-400



RCS-500

Model	Type Of Substituter	Number Decades	Range	Accuracy	Type Of Components	Rating	Residual Impedance	Dimensions	Weight	Our Price
RS-200	Resistance	7	1 ohm-9,999,999 ohm	1%	Metal film resistors	0.5 watt	0.3 ohm	3.2 x 3.1 x 2.2" (8.1 x 7.9 x 5.6mm)	6.5 oz. (184g)	\$119.95
RS-201	Precision Resistance	7	1 ohm-9,999,999 ohm	0.1%	Metal film resistors	0.5 watt	0.3 ohm	3.2 x 3.1 x 2.2" (8.1 x 7.9 x 5.6mm)	6.5 oz. (184g)	239.95
CS-300	Capacitance	6	100pF-99.9999uF	4%	100pF: Mica .001uF: Polystyrene .01uF: Polycarbonate 1uF: Polycarbonate 1uF: Stacked film Polyester 10uF: Tantalum	100 volts (20 volts for 10-100 uF scale)	30pF	4.7 x 3.1 x 2.2" (12 x 7.9 x 5.6cm)	8.3 oz. (235g)	129.95
CS-301	Precision Capacitance	6	100pF-99.9999uF	1%	100pF: Mica .001uF: Polystyrene .01uF: Polycarbonate 1uF: Polycarbonate 1uF: Stacked film Polyester 10uF: Tantalum	100 volts (20 volts for 10-100 uF scale)	30pF	4.7 x 3.1 x 2.2" (12 x 7.9 x 5.6cm)	8.3 oz. (235g)	259.95
RCS-500	Resistance-Capacitance	*	*	*	*	*	*	7.4 x 4.3 x 2.4" (18.8 x 11 x 6cm)	14.5 oz. (411g)	239.95 479.00
LS-400	Wide range Inductance	4	1mHz-9.999Hz	2%	Toroidal inductors	---	0.2 ohm	4.7 x 3.1 x 2.2" (12 x 7.9 x 5.6cm)	8.7 oz. (247g)	479.00
LS-400A	Inductance	3	1mHz-999mHz	2%	Toroidal inductors	---	0.2 ohm	4.7 x 3.1 x 2.2" (12 x 7.9 x 5.6cm)	7.9 oz. (223g)	359.00

\* Model RCS-500 combines the features and specifications of the RS-200 and the CS-300.  
Model RCS-502 combines the features and specifications of the RS-201 and the CS-301.



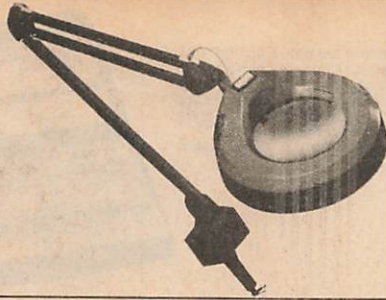
# LAMPS & VISES

## BP MAGNIFIER LAMP MODEL MG-180

OUR PRICE **\$69.95**

### DESCRIPTION

Offers large viewing area for fine details, component assembly and other close work. Has unique double tension control. Die cast shade guards against dents and bulb breakage. Magnification lens is precision ground and polished. Instant starting. In grey, black, white and tan. Uses one 22 watt T-9 circline fluorescent tube. Three diopter, 13" focus standard on all models. (45" reach).

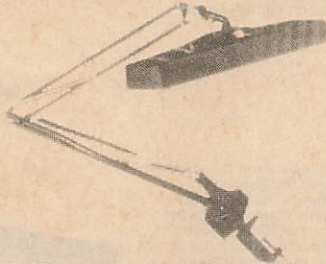


## LEDU FLUORESCENT MODEL DF-10D

OUR PRICE **\$89.95**

### DESCRIPTION

This fluorescent lamp features a durable, thermoplastic resin shade that stays 20% cooler than metal shades, and is stain and crack resistant. Fully adjustable. Instant start switch. Comes in White with two 15 watt fluorescent tubes.

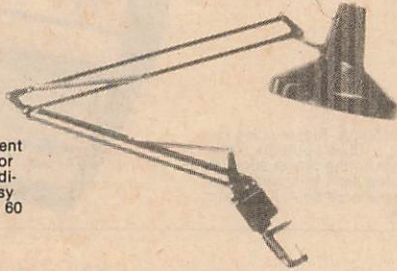


## LEDU COMBINATION MODEL C-10D

OUR PRICE **\$89.95**

### DESCRIPTION

This lamp has fluorescent and incandescent lamps in one vented shade; independent or simultaneous operation for true color rendition. Shade has convenient handle for easy positioning of lamp. Comes in White with 60 watt bulb and 22 watt fluorescent tube.



## BP ECONOMY LAMP MODEL XL-334

OUR PRICE **\$14.95** each 4 FOR **\$50.00**

### DESCRIPTION

Popular, low-priced bench lamp made with the same attention to quality as well as all BP lamps. Tubular steel, spring balanced arms; vented shade; tension control knobs, 2-conductor cord.

Colors: baked enamel finishes—red, yellow, blue, black, oyster white.

UL listed for 60 watt. Shipping weight with bracket: 3-1/2 lbs. (33" reach).



## LEDU MAGNIFIER LAMP WITH BASE MODEL IM-8K

OUR PRICE **\$110.00**

### DESCRIPTION

This lamp has perfectly balanced fluorescent lighting with precision magnifier lens. Tough thermoplastic shade. Easy lens removal. New wire clip design permits easy installation and removal of fluorescent tube. Comes with plastic shield to protect tube from soiling and damage. Comes in White with 22 watt circline fluorescent tube.



## LUXO

### EXHAUST FAN LAMP

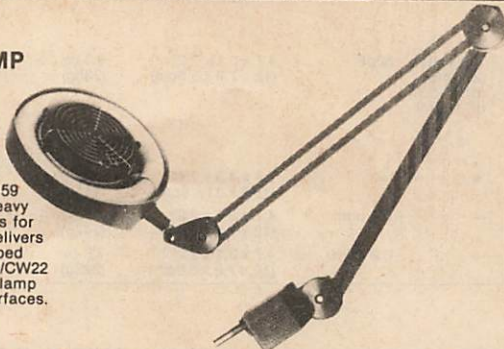
MODEL 16159

REG. \$139.95

OUR PRICE **\$99.95**

### DESCRIPTION

Exhaust Fan Lamp Model 16159 comes on a 45" adjustable heavy duty K-arm. Separate switches for fan and lamp. 4 bladed fan delivers 100 CFM at 2900 RPM. Equipped with 3 conductor cord. FC8T9/CW22 watt fluorescent tube and a clamp for mounting to horizontal surfaces.



## BP MAGNIFIER LAMP

MODEL ML-2A CLAMP ON LAMP

OUR PRICE **\$24.95**

Lamp attaches to table or desk edge with large adjustable 4-way bracket clamp. 30" arm allows you to maneuver the lamp to a desired position.

MODEL ML-2B DESK TOP **NEW!**

OUR PRICE **\$36.95**

Lamp is mounted in a weighted base. It sits on desk or table.

### DESCRIPTION

The new BP magnifier utility lamp has a 3-3/4" diameter lens supplemented by a 40-watt standard appliance bulb. The A-15 incandescent bulb enlarges and illuminates allowing for hands free work or inspecting the viewing area clearly and comfortably. This lamp in sold in black only, it includes a factory installed 3-diopter lens, suited for most magnification requirements. Same magnification as the MG-180.



## LEDU ASYMMETRIC LAMP MODEL IPL-600

OUR PRICE **\$74.95**

### DESCRIPTION

Scientifically designed lighting for information processing task areas. Eliminates eye strain. Perfect for word processing and CRT applications. The shade swivels 360° on a horizontal plane. Comes in Almond with long-life 13 watt mini-fluorescent tube with same output as 75 watt incandescent bulb.



## PANAVISE THE PANAVISE WORK CENTER

MODEL 324

REG. \$59.95

OUR PRICE **\$45.00**

### DESCRIPTION

Hold circuit board holder on standard base Model 300. Tilts, turns and rotates to any position, then locks firmly in place. Fits on Model 312 Tray Base Mount.

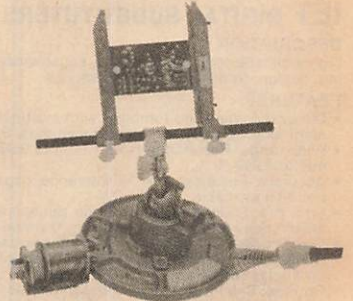
Hold standard base, parts and tools on Model 312 Tray Base Mount, a wide 8-1/2" with 6 slip resisting feet which also holds the All New Model 371 Solder Station.

Hold spools of wire and solder on the solder holder with self centering slot. Keeps the rolls handy and secure without Rollaround.

Hold PC boards, electronic parts in the Circuit Board Holder Model 315.

Hold 25 watt solder irons in the iron holder. Proper angle maintains constant heat. Safe and handy. Use left or right handed.

Hold nib sponge right in one of the convenient trays. Self purging slits permit single stroke cleaning action.

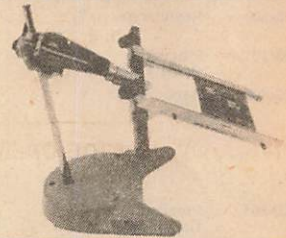


## PANAVISE RAPID ASSEMBLY CIRCUIT BOARD HOLDER MODEL 333-P

OUR PRICE **\$37.95**

### DESCRIPTION

This circuit board holder features eight position rotating adjustment and six positive lock positions in the vertical plane. Cross bars are available up to 30 inches in length to hold circuit boards up to 28 inches in width. Extra arms can be added for dual or multiple board holding. Spring loaded, the 333 features tilt angle adjustment, height adjustment and quick board rotations for easy component insertion and soldering.



## PANAVISE

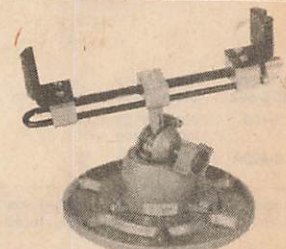
### MULTI PURPOSE WORK CENTER

MODEL 350

OUR PRICE **\$39.95**

### DESCRIPTION

Self Centering Extra Wide Opening Head. Double action jaws provide fast opening and closing and support of heavy loads. Opens to a full 9 inches. Ribbed on one side and "V" grooved on the other, the 376's reversible jaw pads firmly hold cylindrical or odd.





# VISES-BUY THE HEAD THAT FITS THE BASE

## PANAVERSE ORIGINAL BASE MODEL 300 OUR PRICE \$14.95

### DESCRIPTION

Designed for all normal permanent installations. Three lugs spaced 120 degrees apart provide maximum mounting stability. Overall height: 3-13/16" (97mm). Base diameter 5" (127mm).



## PANAVERSE LOW PROFILE HEAD MODEL 304

### OUR PRICE \$20.95

### DESCRIPTION

Provides extremely low profile work positioning, especially when used with MODEL 305 Low Profile Base. Replaceable steel jaws.



## PANAVERSE LOW PROFILE BASE MODEL 305

### OUR PRICE \$14.95

### DESCRIPTION

Permits working close to bench top. Straight front flushes to edge of working surface. Overall height: 2-5/8" (67 mm). Base diameter: 5" (127 mm).



## PANAVERSE TRAY MOUNT AND SOLDER STATION MODEL 312-P

### OUR PRICE \$14.95

### DESCRIPTION

HOLD STANDARD BASE, PARTS AND TOOLS on Model 312 Tray Base Mount, a wide 8-1/4" with 6 slip resisting feet which also holds Model 371 Solder Station.



## PANAVERSE VACUUM BASE MODEL 380

### OUR PRICE \$21.95

### DESCRIPTION

Attaches instantly and securely to any smooth, non-porous surface. Ideal for a variety of set-ups. Half turn of mounting lever attaches and releases powerful suction pad. Overall height: 3-3/16" (81 mm). Base dimensions: 5" x 4-1/4".

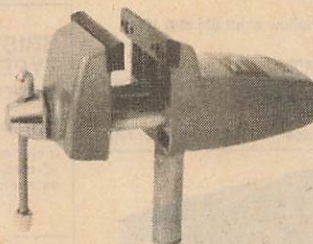


## PANAVERSE ORIGINAL VISE HEAD MODEL 303

### OUR PRICE \$18.95

### DESCRIPTION

Wide 2-1/2" (63 mm) jaws open to 2-1/4" (57 mm). Head is pressure diecast aluminum alloy, with steel and brass inserts. Hammertone gray/green finish. Replaceable nylon jaws.



## PANAVERSE WEIGHTED BASE MOUNT MODEL 308

### OUR PRICE \$16.75

### DESCRIPTION

This cast iron mount weighs 5 lbs. (2.3 kg) and has neoprene non-marring, anti-skid feet.

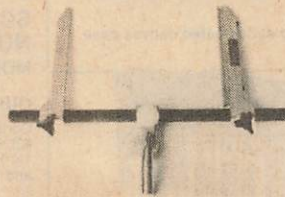


## PANAVERSE CIRCUIT BOARD HOLDER MODEL 315

### OUR PRICE \$20.45

### DESCRIPTION

Holds p.c. boards exactly where you want them. Spring loaded arm for quick board changes. V grooves for boards to 5/32 (4 mm) thick. Second set of lateral grooves near tip ends for exceptionally small p.c. boards and small electronic parts. Standard model holds p.c. boards up to 8" (203 mm). Cross bars up to 30" (762 mm) and extra arms are available for multiple board use.

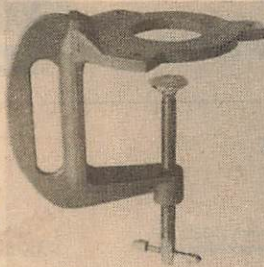


## PANAVERSE BENCH CLAMP MOUNTING BASE MODEL 311

### OUR PRICE \$21.95

### DESCRIPTION

Securely clamps to the edge of a work bench or counter. Attaches with a clamp screw which opens to a maximum 3-1/2" (89 mm).



## PANAVERSE SELF-CENTERING EXTRA WIDE OPENING HEAD MODEL 376

### OUR PRICE \$22.45

### DESCRIPTION

Double action jaws provide opening and closing and support of heavy loads. Opens to a full 9". Ribbed on one side and "V" grooved on the other, the 376's reversible jaw pads firmly hold cylindrical or odd shaped items. Fits all of the Series 300 bases.



## PANAVERSE WIDE OPENING HEAD MODEL 366

### OUR PRICE \$19.95

### DESCRIPTION

Grip range to 6-1/2" (165 mm). Reversible and replaceable pads are neoprene. These are ribbed on one side, and a wide "v" configuration on the other to firmly hold cylindrical objects. This multi-purpose vise has a matte black finish to reduce eye fatigue.



## PANAVERSE SOLDER STATION

### MODEL 371 OUR PRICE \$6.95

### DESCRIPTION

A combination soldering iron holder and controlled-feed holder for standard spools of solder and wire plus two nib sponges with self-purging slits. The station attaches right to the PanaVerse Tray Base or weighted Base Mount which, with any Panaverse, creates a most convenient and functional work center. Parts, tools, wire, solder, and iron are all exactly where they should be. The Solder Station is also designed to be used separately as a free standing unit and can be conveniently attached to a bench or wall. It can be easily changed for left-handed use. Holds standard 25 watt irons.



## PANAVERSE WIDE OPENING HEAD AND BASE MODEL 396

### OUR PRICE \$33.95

### DESCRIPTION

Designed specifically for holding electrical and electronic products in any position for assembly or repairs. The Panaverse 396 is a combination of the 366 Wide Opening Head and the 300 Standard Vise Base. Each full turn of the insulated handle permits micro-adjustments to the exact pressure required.



## PANAVERSE BASE AND HEAD MODEL 301

### OUR PRICE \$32.95

### DESCRIPTION

The Standard Panaverse Model 301 tilts, turns, and rotates. This general purpose vise, consisting of the Standard Base Model 300 and Model 303 Head, has nylon jaws with a satin finish for a firm grip. All this versatility simplifies work procedures. Just one convenient control knob locks work in any desired position.



## PANAVERSE VACUUM BASE AND HEAD MODEL 381

### OUR PRICE \$39.95

### DESCRIPTION

Panaverse 380 Vacuum Base combines with the Model 303 Standard Panaverse Head to create the same versatility of the Standard Panaverse with portability. Half turn of the mounting lever attaches and releases powerful suction pad to allow set-ups in a variety of locations with smooth non-porous surfaces.



## PANAVERSE VACUUM MOUNT MODEL 379

### OUR PRICE \$14.95

### DESCRIPTION

A heavy duty suction pad which attaches firmly to any nonporous smooth surface. It is pre-drilled for attaching your own instruments or devices with 3 holes two inches apart. Flat surface 3" x 3-1/4".



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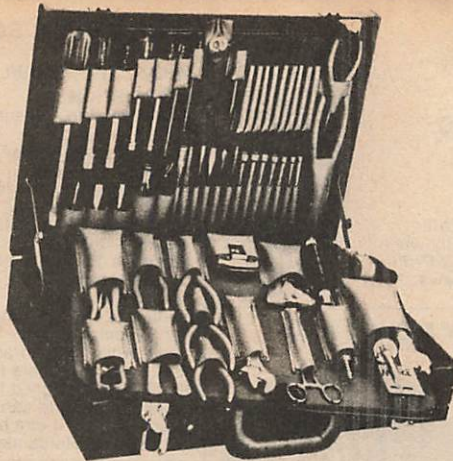


# TOOL KITS/CASE

## XCELITE ATTACHE TOOL CASES MODEL TC-150/ST REG. \$385.00

OUR PRICE **\$309.95**  
DESCRIPTION

A carefully selected, intermediate assortment of Xcelite hand tools plus Weller® Soldering Iron for those making field repairs to electronic circuits. Contains 24 individual hand tools, 24 Series 99® interchangeable screwdriver/nutdriver blades and handles, measuring tape, soldering iron, and solder, as listed. Case (18-3/4 x 13-1/2 x 5") covered with durable, eye-catching, whiskey-tan Marvelon. Removeable pallets in lid and base outfitted with tool pockets. Base has ample room for additional, personally selected tools, with 14 x 9-1/2" partition. Solid brass hardware and padded handle.



### CONTENTS

#### Interchangeable Screwdrivers, Nutdrivers, Other Tools and Handles

99-1 & 99-4—Handles (regular and Tee).  
99X5—Extensions.  
99-20 thru 26 & 99-784—Allen hex-socket type blades (9).  
99-6 thru 12—Hex nutdriver blades (7).  
99-250 & 99-811—Slotted screw blades.  
99-821 & 822—Phillips screw blades.  
99-38—Reamer.

#### Pliers, Wrenches, Cutters

42H—Straight nose Seizer®.  
48CG—Adjustable wrench (6").  
50CG—Midget slip joint plier (5").  
51CG—Long nose plier (6-1/2").  
53CG—Utility plier (7").  
54CG—Diagonal pliers (4" & 6").  
55CG—5" diagonal.  
57CG—Needle nose plier (5-1/2").  
59CG—Chain nose plier (8").

86CG—Electronic snips.  
101-S—Wire stripper.  
K-22—Electrician's knife.

#### Screwdrivers

R-181—Slotted screwdriver.  
R-184—Slotted screwdriver.  
R-3323—Slotted screwdriver.  
S-3161—Slotted screwdriver.  
S-5161—Slotted screwdriver.  
S-5168—Slotted screwdriver.  
SX-101—Phillips screws.

#### Nutdrivers

HS-14 & HS-16—Hollow shaft 8M and 10M magnetic.

#### Soldering Equipment

WC-100—Weller cordless iron with recharger.  
RC-60—Rosin core solder.

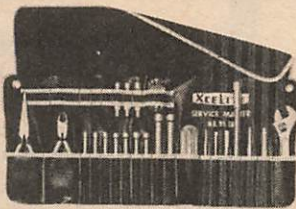
#### Tapes

TM-120—10-foot tape. TM-385—50-foot tape.

## XCELITE SERVICE MASTER TOOL KIT MODEL 99-SM

OUR PRICE **\$64.95**  
DESCRIPTION

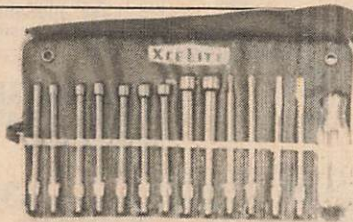
24-piece kit contains 99-1 (regular) and 99-3 (stubby) handles, nine regular and three stubby nutdrivers (99-6 thru 99-18), two slotted screwdrivers (99-811, 99-250), two Phillips screwdrivers (99-821 and 99-822), one reamer (99-38), extension blade (99-X10), 6" long nose cushion grip plier (52CG), 5" diagonal cushion grip plier (55CG), 6" adjustable wrench (48CG), plastic-coated canvas case (99SMK).



## XCELITE ROLL KIT MODEL 99-PR

OUR PRICE **\$33.95**  
DESCRIPTION

Contains nine regular nutdrivers (99-6, 7, 8, 9, 10, 11, 12, 14 and 16), 99-811 and 99-250 (slotted) and 99-821 and 99-822 (Phillips) screwdriver blades, 99-1 handle (regular), 99K plastic fabric case.



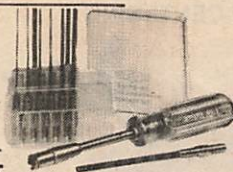
## WELLER XCELITE SERIES "99" PLASTIC VIEW KITS

Each set contains a Series "99" regular handle and various Series "99" interchangeable blades and extension. Plastic case with see-thru cover is pocket-size. Flat base permits use as a bench stand.

### HEX SOCKET SCREWDRIVER SET MODEL 99PS-40

OUR PRICE **\$19.95**

Includes nine Allen hex type screwdriver blades (99-20 thru 99-26), 99-X5 extension blade, 99-1 handle.



### METRIC HEX SOCKET SCREWDRIVER SET

MODEL 99PS-41MM OUR PRICE **\$19.95**

Includes seven metric Allen hex type blades (99-71MM thru 99-77MM in min. sizes 1.27, 1.5, 2, 2.5, 3, 4, 5), 99-X5 extension blade, 99-1 handle and plastic case with see-thru cover.

### BALLPOINT HEX SOCKET SCREWDRIVER SET

MODEL 99PS-40BP OUR PRICE **\$29.95**

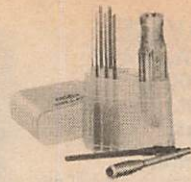
Includes nine Ballpoint Allen hex type screwdriver blades (99-20BP thru 99-26BP), 99-X5 extension blade, 99-1 handle.

## FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788

## METRIC BALLPOINT HEX SOCKET SCREWDRIVER SET MODEL 99PS-41MMBP

OUR PRICE **\$24.95**

Includes seven screwdriver blades (99-71MMBP thru 99-77MMBP in mm. sizes 1.27, 1.5, 2, 2.5, 3, 4, 5), 99-X5 extension blade, 99-1 handle, and plastic case with see-thru cover.



## NUTDRIVER/SCREWDRIVER SET MODEL 99PS-50

OUR PRICE **\$24.95**

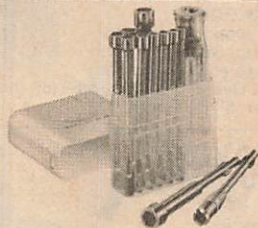
Includes seven regular nutdriver blades (99-6 thru 99-12), two slot tip screwdriver blades (99-811 and 99-250), two Phillips screwdriver blades (99-821 and 99-822), 99-X5 extension blade, 99-1 handle.



## METRIC NUTDRIVER SET MODEL 99PS-51MM

OUR PRICE **\$27.95**

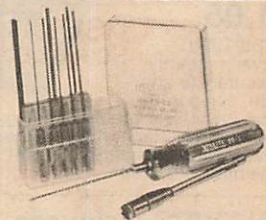
Includes 10 metric nutdriver blades (99-4 thru 99-11 in mm. sizes 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11), 99-X5 extension blade, 99-1 handle, and plastic case with see-thru cover.



## BRISTOL MULTIPLE-SPLINE TYPE SCREWDRIVER SET MODEL 99PS-60

OUR PRICE **\$19.95**

Includes nine Bristol Multiple-Spline type screwdriver blades (99-61 thru 99-69), 99-X5 extension blade, 99-1 handle.



## WELLER XCELITE COMPACT CONVERTIBLE NUTDRIVER AND SCREWDRIVER SETS

Black plastic torque amplifier handle (1" x 3-1/8") slips over handles of pocket size (3-1/2") nutdrivers and screwdrivers. Provides larger grip, extends reach and increases driving power to that of standard size tools. Plastic case with see-thru cover fits pocket, stands upright on bench.

### SCREWDRIVER/ NUTDRIVER SET MODEL PS-130

OUR PRICE **\$17.95**

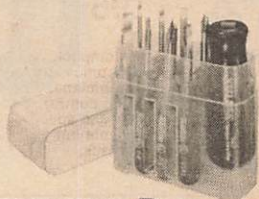
Contains two Phillips screwdrivers (#1 and #2), three slotted screwdrivers (1/8", 3/16" and 1/4"), five nutdrivers (3/16", 1/4", 5/16", 11/32" and 3/8"), torque handle.



### SCREWDRIVER SET MODEL PS-88

OUR PRICE **\$13.95**

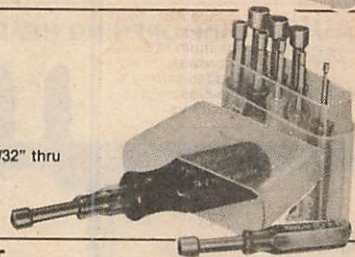
Contains five slot tip screwdrivers (3/32", 1/8", 5/32", 3/16", 1/4"), three Phillips screwdrivers (#0, 1, 2), torque handle.



### NUTDRIVER SET MODEL PS-120

OUR PRICE **\$16.95**

Contains 10 color coded nutdrivers (3/32" thru 3/8"), torque handle.



### METRIC NUTDRIVER SET MODEL PS-121MM

OUR PRICE **\$20.95**

Contains 10 drivers (hex sizes 3mm, 3.5mm, 4mm, 4.5mm, 5mm, 5.5mm, 6mm, 7mm, 8mm, 10mm), torque handle.



# EMPTY TOOL CASES, KITS & POUCHES

## CHICAGO CASE CO. POLYETHYLENE TOOL CASE

With Two Pallets (Empty)  
MODEL ST-6

MODEL ST-8

OUR PRICE **\$99.95**

OUR PRICE **\$109.95**

Dimensions: 18" x 13" x 6".

Dimensions: 18" x 13" x 8".

### FEATURES

- High impact polyethylene shell.
- Extra heavy-duty gauge aluminum frame with interlocking tongue and groove design.
- All hardware riveted through frame.
- Full length piano hinge.
- Steel core padded handle.
- Presto spring loaded drawbolt locks.
- Polyethylene feet molded into outer shell.
- Gray or black with two pallets.



## CHICAGO CASE CO. POLYETHYLENE TOOL CASE WITH DOUBLE WING PALLETS (EMPTY)

MODEL ST-10

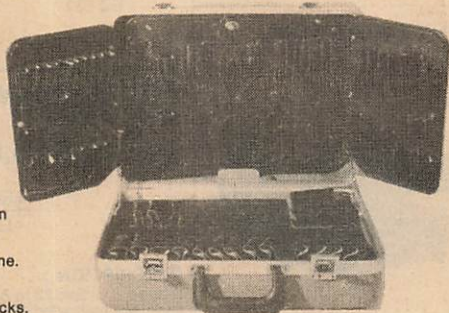
OUR PRICE **\$129.95**  
DIMENSIONS: 18" x 13" x 6".

MODEL ST-12

OUR PRICE **\$139.95**  
DIMENSIONS: 18" x 13" x 8".

### FEATURES

- Two pallets.
- High impact polyethylene shell.
- Extra heavy-duty gauge aluminum frame with interlocking tongue and groove design.
- All hardware riveted through frame.
- Full length piano hinge.
- Steel core padded handle.
- Presto spring loaded drawbolt locks.
- Polyethylene feet molded into outer shell.
- Gray or black with two pallets.



## FORDHAM TOOL CASE SPECIAL!

With Double Pallets (Empty)  
MODEL TC-6800

OUR PRICE **\$69.95**

### DESCRIPTION

Our most popular case. Compact, versatile design is perfect for electronics, computer and office equipment technicians. Steel core padded handle for carrying comfort. Pallets equipped with 50 pockets and specifically designed for interchangeable nut driver and hex key blades. Case is black. 18" x 13" x 5-3/4".

### FEATURES

- Constructed of heavy gauge ABS material.
- Fiberglass reinforced corners.
- One piece extruded aluminum radius valance.
- All nickel plated steel hardware attached to aluminum valance for added strength.
- Interchangeable positive closure locks.
- Three hinges for heavy duty use.

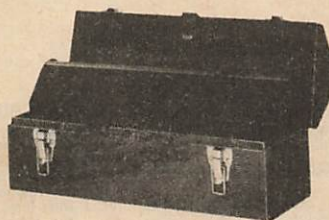


## KLEIN DEEP-TOP TOOL BOX MODEL 54404

OUR PRICE **\$27.95**

### DESCRIPTION

High hip-roof permits extra-deep tote tray for bulky drills, long hand tools, or a large wrench set. Tray has big handle, no partitions. Two drawbolts plus hasp and staple. Red baked enamel finish. Dimensions: 19 3/4" (50 cm) long, 7" (18 cm) deep, 8" (20 cm) high.

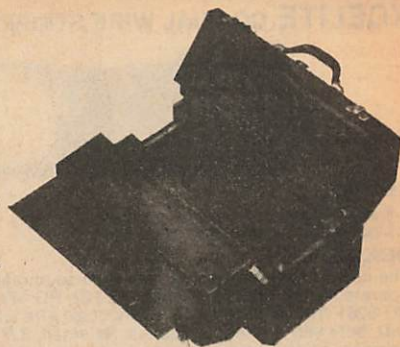


## KLEIN JUMBO FOUR-TRAY TOOL BOX MODEL 54405

OUR PRICE **\$57.95**

### DESCRIPTION

Four generous cantilever trays open wide for full access to bottom of box. Two top trays have hinged covers to keep parts and tools from spilling out. Three special reinforcing straps on box bottom make it strong enough to handle big loads. Trays move smoothly on heavy, plated metal links. Top trays have socket dividers. Extra-high hip-roof cover. Two drawbolts plus hasp and staple for locking. Brown baked enamel wrinkle finish. Dimensions: 18" (46 cm) long, 10 1/8" (26 cm) deep, 12 3/4" (32 cm) high.

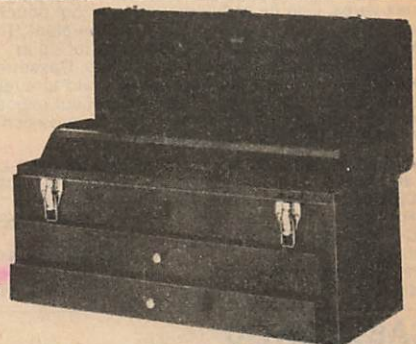


## KLEIN PORTABLE TWO-DRAWER BOX MODEL 54407

OUR PRICE **\$56.00**

### DESCRIPTION

Carries like a hand box, but functions like a chest. Keeps tools separated, easier to see and reach. Full-size tote tray with socket divider and easy-grip handle. Two drawers work on heavy-duty slides and lock automatically when cover is closed. Double drawbolts plus center hasp and staple. Drawers measure 17-7/8" X 7-3/8" X 2-1/4" (45 X 19 X 6 cm). Box dimensions: 20" (51 cm) long, 8-1/2" (22 cm) deep, 9-1/2" (24 cm) high.



## PADDED ZIPPER CASE (Empty) MODEL ZP-5

REG. \$59.95

OUR PRICE **\$39.95**

Dimensions: 10" x 13" x 2-1/2" (with retractable handles).

### DESCRIPTION

Ideal for the technician or supervisor who needs a compliment of small tools. Padded sides protect tools and give a professional appearance. Each model has 29 pockets. Available in brown. Also with or without handles.



## KLEIN TOOL POUCH MODEL 5178

OUR PRICE **\$24.95**

### DESCRIPTION

A roomy pouch for electricians, servicemen and maintenance workers. Five large utility pockets for a wide variety of tools such as pliers, wrenches, wire cutters. Smaller pockets for screwdrivers, scratch awls. Knife snap, chain tape thong and tape rule holder are conveniently located on the front.



## CHICAGO CASE CO. SOFT-SIDE TOOL CASES

Looks Like Soft-Side Designer Luggage But It's Really a TOOL TOTE

MODEL CD-29

OUR PRICE **\$44.95**

MODEL CD-48

OUR PRICE **\$54.95**

### FEATURES

- Cases made of Cordura®, a nylon fiber that's washable, water resistant and durable.
- Has Sturdy Web Handles.
- Heavy Duty Industrial Zipper.

MODEL CD-29

• Dimensions: 13" x 10" x 2 1/2"

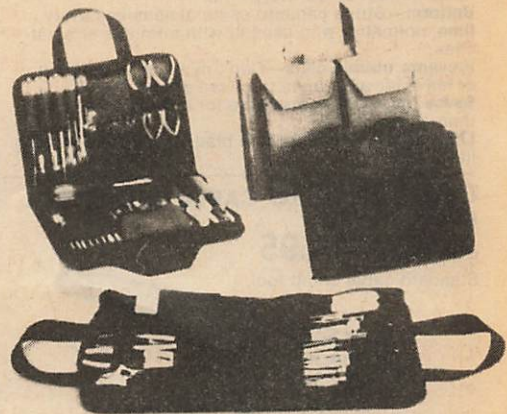
• Holds 29 tools & test meter.

• Outside expandable pocket 11" x 10" x 2 1/2".

MODEL CD-48

• Dimensions: 15 1/2" x 11 1/4" x 2 1/2"

• Holds 48 tools & test meter. • Outside expandable pockets: 6" x 10 1/2" x 2 1/2" & 11" x 10" x 2 1/2".





# SPECIALITY TOOLS

## XCELITE COAXIAL WIRE STRIPPER



### FEATURES

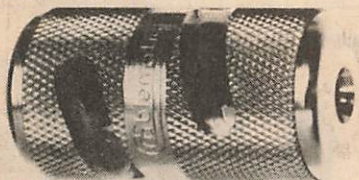
- Fast, precise and easy to operate.
- Lightweight—weighs only 1 ounce.

### DESCRIPTION

The coaxial wire stripper is fast, precise and easy to operate. Will do RG 58, RG 59, RG 122, RG 174 and RG 8281. This tool will strip every coax wire with an O.D. between .14 and .30 inches. Its small, 3.5" long, compact body allows the operator to use it in many areas which previously prevented post-stripping coax wires. Can be easily carried in a tool pouch or pocket and utilized in the field or in the plant. The removable cassette blades are rated for up to 10,000 strips and give clean, crisp cuts. Cassette number 2C-B (blue) will cut exposed braid to a length of .24 (6mm), number 2C-Y (yellow) will cut exposed braid to a length of .48 (12mm). Tool body is constructed of fiberglass reinforced nylon.

- 2CS5962-B Coax tool w/blue cassette, for BNC & TNC conn..... Our Price \$34.95  
 2CS5962-Y Coax tool w/yellow cassette, for UHF conn..... Our Price \$34.95  
 2C-B Replacement blue cassette..... Our Price \$13.75  
 2C-Y Replacement yellow cassette..... Our Price \$13.75

## CABLEMATIC



### COAX CABLE STRIPPER MODEL UT-5800

OUR PRICE \$14.95

Prepares cable for installation of PL-259 with UG-175/U on RG-58 cable.

### MODEL UT-5900

OUR PRICE \$14.95

Prepares cable for installation of "F" connectors on RG-59 size cable.

### MODEL UT-5901

OUR PRICE \$14.95

Prepares cable for installation of PL-259 with UG-176/U adapter or TV wall plate on RG-59 cable.

### UT SERIES COAX CABLE STRIPPERS

**Precise**—Machined to precision tolerances.

**Simple**—Two step operation. Even the unskilled make perfect strips every time.

**Uniform**—Strips cable to same dimensions every time, no matter who uses it, without nicks or scratches.

**Prevents trouble calls**—Can't nick center conductor or leave loose strands to cause shorts.

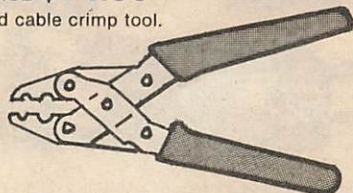
**Saves time**—Prepares cable for connector in less than 15 seconds.

**Lifetime use**—Replaceable blades designed for long life.

## CABLEMATIC CABLE CRIMP TOOL MODEL CR-595A

OUR PRICE \$14.95

Standard cable crimp tool.



## PALADIN AUTOMATIC HAND WIRE STRIPPER

MODEL PA-1100

OUR PRICE \$42.95



### FEATURES

- Cuts and strips single or multiple conductor cables.
- Built-in cutter, self-adjusting stripping jaws.

### DESCRIPTION

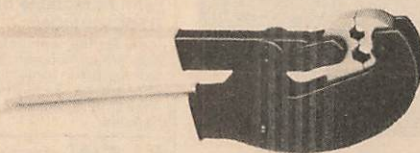
This innovative automatic hand wire stripper has a built-in sensor which enables it to strip No. 28 through No. 12 AWG wire, solid or stranded without adjustment. Its fiberglass re-inforced nylon body is virtually indestructible and electrically insulated from any shock hazards. The built-in self-sharpening cutter allows the operator to cut and strip in one operation with one tool. The front feed gives freedom of use in the tightest of spaces. The stainless steel, self-adjusting, stripping blades are industrially tough and built for up to 100,000 strips or more. Will do as many as six conductors simultaneously in bonded or molded cables. Stripping length: adjusts up to 7".

PA2101 Replacement stripping jaw..... Our Price \$13.75

## CABLEMATIC HEX CRIMP TOOL

MODEL CR-596A

OUR PRICE \$29.95



### DESCRIPTION

The Hex Crimp tool was functionally designed for the CATV and MATV installer. It is lightweight and fits the installer's belt.

Ratchets are eliminated by the design of the "positive homing action" for the tool to assure a full crimp every time.

The hex dimension for the RG-59/U is .262" and RG-6/U is .324", on a flat-to-flat measurement.

## XCELITE MINI-CRIMPER THE MECHANICAL CRIMPING TOOL

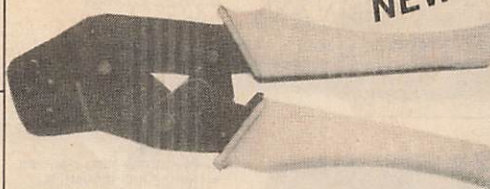
MODEL MIC-58

OUR PRICE \$74.95

MODEL MIC-2214

OUR PRICE \$59.95

**NEW!**



### DESCRIPTION

The smallest professional crimping tool of its kind. Angled jaws offer the greatest comfort in simultaneously locating connectors and crimping. The ratchet insures a full-cycle complete crimp every time. Overall Length: 7.68"/195mm. Handle Spread at Gripping Points: 3.66"/93mm.

MIC-58—Field of application: RG-58 BNC/TNC connectors. Weight: .55 lbs.

MIC-2214—Field of application: Insulated Terminals size AW-22-14 (.75-2.5mm). Weight: .55 lbs.

## AEG CORDLESS

### RECHARGEABLE SCREWDRIVER

MODEL EZ-502

OUR PRICE \$79.95

### DESCRIPTION

Cordless power for remote screwdriving applications.

### FEATURES

- Forward/Reverse operation.
- Adjustable 2-position hinged-handle.
- Four-stage torque control.
- Compact, lightweight design.
- One-hour quick-charging battery pack.
- The tool for tight spaces and out-of-the-way places.
- Includes: 2 phillips head bits and 1 slotted bit.

## CORDLESS RECHARGEABLE DRILL/DRIVER

MODEL EZ-505

OUR PRICE \$119.95

Cordless Drill/Driver Power Goes Anywhere!

Built for professional performance and simple convenience, AEG drill/drivers carry the power to handle tough drilling and screwdriving jobs anywhere your work takes you. Perfect for various outdoor work including boats, electrical, air conditioning and telephone installation. Battery pack recharges in only one hour. Chuck size 1/16"-3/8". Includes phillips and slotted bits, and drill chuck.



EZ-502

EZ-505

## VACO AUTOMATIC WIRE STRIPPER

MODEL 70334

OUR PRICE \$16.95



### DESCRIPTION

Stripper handles 22 to 8 gauge solid or stranded wire with ease. Spring-loaded design keeps dies open ready for use. Single-squeeze action removes insulation up to 7/8". Holding jaws grip wire until handles are released. Removable strip length guide adjusts for repeated equal length stripping. Cushion grip handles.

## VACO SELF-ADJUSTING WIRE STRIPPER

MODEL 70353C

OUR PRICE \$18.95



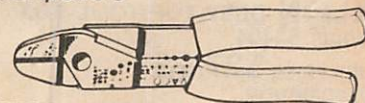
### DESCRIPTION

A wire stripper so simple to use it automatically adjusts itself to the diameter of the wire. The cutting blades never touch the conductors; damage to the wire is impossible. Spring action returns stripper to the ready-to-use position. Strips all wire automatically from No. 18 to No. 10 AWG sizes.

## VACO WIRING TOOL

MODEL 1963

OUR PRICE \$9.95



### DESCRIPTION

Patented, all purpose wiring tool cuts wire, strips wire, crimps insulated and non-insulated terminals and slices 6 sizes of bolts (4-40, 5-40, 6-32, 8-32, 10-32 and 10-24). Special features include end positioned wire cutter for reaching into hard-to-get-at places, and new bolt slicing principle that permits less hand pressure for slicing bolts with no burrs to file. Plastic comfort grip handles.



# SPIKE PROTECTORS & OUTLET STRIPS

## BP HEAVY DUTY SPIKE PROTECTOR WITH SURGE PROTECTION MODEL NF-728

OUR PRICE **\$4.95**

10 FOR **\$40.00**

### FEATURES

- Protects all valuable equipment.
- Single outlet with noise filter and surge protection.
- Gold and Silver plating.
- Limits voltage transients.



**NEW!**

## GENERAL ELECTRIC VOLTAGE SPIKE PROTECTOR MODEL GESP-752

OUR PRICE **\$8.95** each

10 FOR **\$80.00**

### DESCRIPTION

Voltage Spike Protector limits voltage transients that might damage equipment. It plugs into a 120-volt grounded AC receptacle and protects TV's, stereos, and other sensitive electronic equipment against lightning strikes that cause high-voltage surges. Contained within is a varistor that permits only a safe voltage level to enter protected equipment and does not interfere with normal current flow, or add to energy cost.



## SGL WABER DATAGARD DG-115 SERIES SPIKE PROTECTION ONLY MODEL DG-115P

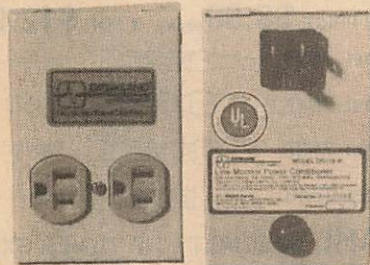
OUR PRICE **\$35.00**

Wall Plug-In Unit.

### MODEL DG-115S

OUR PRICE **\$45.00**

12" Strip for Multiple Plug-In.



### DESCRIPTION

The DG-115 Series includes two models — a plug-in unit and a 12" multiple outlet strip. Both units have a single-stage spike filter and provide protection to each outlet. These two units are designed to protect your equipment from low energy voltage spikes commonly caused by electric motor startups and shutdowns.

### MODEL DG-115P SPECIFICATIONS

**Outlets:** Includes one "U" ground duplex (2 outlets). **Male load plug:** Conveniently plugs into any 120 volt outlet (normal house current). **Voltage spike protection:** Single stage filter. **Pilot light** shows when unit is operable. **Overload protection:** 15 amp circuit breaker. **Case:** Fabricated steel with baked-on beige finish. **Component colors:** Outlets — beige, circuit breaker — beige, male load plug — black, pilot light — white. **Case dimensions:** 4-27/32" L x 3-1/4" W x 1-5/16" D. **Mounting:** Plugs into wall receptacle. **Shipping weight:** 1-1/2 lbs.

### MODEL DG-115S SPECIFICATIONS

**Outlets:** Includes 3 "U" ground duplexes (6 outlets). **Power supply cord:** 9 foot 14/3 SJT. **Voltage spike protection:** Single stage filter on each duplex. **Switch:** Master switch with built-in amber pilot light. **Overload protection:** 15 amp circuit breaker. **Case:** Seamless steel case with baked-on beige finish. **Component colors:** Outlets — beige, circuit breaker — gray, power supply cord — beige, switch — beige. **Case dimensions:** 11-15/16" L x 2-5/16" W x 1" D. **Mounting:** Keyhole slot flush mounting — 10-15/16" center. **Shipping weight:** 2 lbs.

## GENERAL ELECTRIC SPIKE PROTECTOR MODEL GESP-753

OUR PRICE **\$29.95**

### DESCRIPTION

Now you can plug into the double-duty protection for your sensitive personal computer! General Electric's GESP-753 Voltage Surge Suppressor guards valuable equipment two ways: against voltage spike and noise—all in one device!

With a GESP-753 Voltage Surge Suppressor, you can also guard against potentially damaging transient voltages and prevent the generation of additional noise from being sent down the power line by your equipment. Reduce unexplained data loss block interference that raises havoc with audio or TV reception.

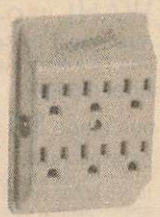


## SGL WABER® LINEGARD® MODEL LG-10

OUR PRICE **\$19.95**

### DESCRIPTION

LINEGARD® protects against brief, high voltage spikes that occur in any electrical system. These spikes can damage electronic components. LINEGARD® acts as a "shock absorber" by limiting potentially damaging spikes, without interfering with normal current flow. LINEGARD® is easy to use. Just plug it into any 15A, 125VAC outlet, then plug your computer, TV or other electronic equipment into the LINEGARD®.



## SGL WABER POWER MASTER

MODEL LM-2100

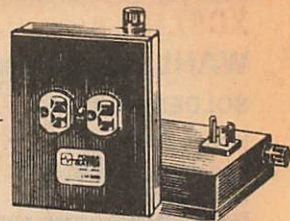
OUR PRICE **\$79.95**

### DESCRIPTION

A wall plug-in unit for use at wall receptacle providing two filtered outlets. 3 stage spike filter and 3 stage noise filter prevent spikes and noise. Each outlet has isolated spike protection. Noise filtration provided in the transverse mode. Unit designed for two wire (hot and neutral) devices requiring filter protection.

### SPECIFICATIONS

**Outlets:** One "U" ground duplex (2 outlets); **Male Load Plug:** Plugs into 110/120 volt (normal house current) outlet; **Case:** Fabricated steel with baked-on black finish; **Overload Protection:** 15 amp fuse (slow-blow); **Voltage Spike and Noise Protection:** Six-stage filter network (each outlet has isolated spike protection); **Component Colors:** Outlets-black; fuse holder-black, male load plug-black; **Electrical Phase:** Single; **Case Dimensions:** 5-1/2" L x 4-1/2" W x 1-5/16" D; **Mounting:** Plugs into wall receptacle; **Shipping Weight:** 4 lbs.



## SGL WABER POWER MASTER

MODEL LM-2200

OUR PRICE **\$119.95**

### DESCRIPTION

Has 8 outlets with power supply cord. Ideal where additional outlets are required. Master on/off switch with built-in amber light controls power to outlet. 3 stage spike filter and 3 stage noise filter prevent spikes and noise. Each outlet has isolated spike protection. Noise filtration provided in the transverse mode. Unit designed for two wire (hot and neutral) devices requiring filter protection.

### SPECIFICATIONS

**Outlets:** 4 "U" ground duplexes (8 outlets); **Power Supply Cord:** 9 foot 14/3 SJT; **Case:** Fabricated steel with baked-on beige finish; **Component Colors:** Outlets-beige, power supply cord-beige, master on/off switch-beige housing with built-in amber pilot light; fuse holder-black; **Overload Protection:** 15 amp fuse (slow-blow); **Voltage Spike and Noise Protection:** Six-stage filter network (each outlet has isolated spike protection); **Dimensions:** 20" L x 2" W x 1" D; **Mounting Dimensions:** End slots 19-3/4" centers; **Electrical Phase:** Single; **Shipping Weight:** 6 lbs.



## SGL WABER MULTIPLE OUTLET STRIPS

MODEL UL25PCB-6

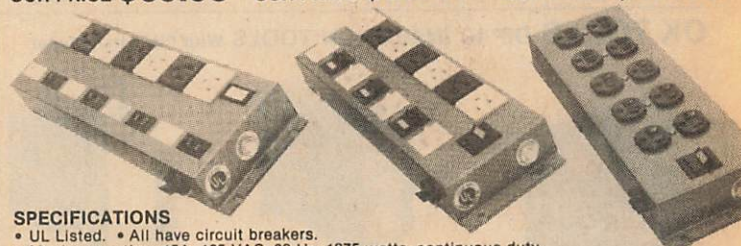
MODEL UL25CB-6

MODEL UL800CB-6

OUR PRICE **\$69.95**

OUR PRICE **\$52.95**

OUR PRICE **\$44.95**



### SPECIFICATIONS

- UL Listed. • All have circuit breakers.
- Maximum rating: 15A, 125 VAC, 60 Hz, 1875 watts, continuous duty.
- Outlets: "U" ground duplex, beige color. • Seamless steel case with baked-on beige finish.

### DESCRIPTION

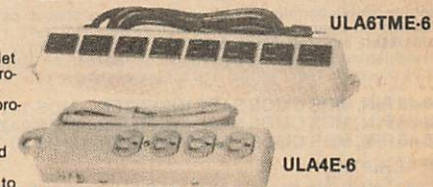
Three models comprise the deluxe group. Model UL800CB has 10 "U" ground outlets controlled by a master on-off switch. A pilot light shows when power is on. The Models UL25CB and UL25PCB provide 7 color keyed switch outlet groups, circuit breaker, master switch, and master pilot light. The "P" series has switches with built-in pilot lights. All deluxe models are available in 6 foot cord-sets. Shipping weight is 3 pounds for 6 foot cord-set and 4 pounds for 15 foot cordset models. Size is 13-3/8" L x 4-1/8" W x 1-1/2" H.

## SGL WABER MULTIPLE OUTLET STRIPS

The Premier Group

### DESCRIPTION

The Premier Group of multiple outlet strips is ideal for organizing and providing electrical power for all your plug-in micro-computer and word processing equipment. Use a multiple outlet strip to eliminate expensive professional installation costs. And each model has a unique push-to-reset safety circuit breaker button to prevent overloading. All units feature a decorator beige finish with color-coordinated components. Choose from six models, all utilizing 120 volt current.



Model	Outlets	Master Switch with pilot light	Cord length	Circuit breaker	Our Price
ULA4E-6	4	No	6 ft.	Yes	\$19.95
ULA4TME-6	4	Yes	6 ft.	Yes	24.95
ULA6E-6	6	No	6 ft.	Yes	28.00
ULA6TME-6	6	Yes	6 ft.	Yes	27.95

## OUTLET STRIP

MODEL COMP-731 WITH CIRCUIT BREAKER

OUR PRICE **\$19.95** 10 FOR **\$180.00**

### SPECIFICATIONS

- Circuit breaker built-in. • Outlets: "U" ground-Six.
- Size: 13-1/8" L x 2-3/8" W x 1-1/2" H. • Overload protection.
- Case length (excluding mounting tabs): 11-15/16".
- Max rating: 15A, 125VAC, 60Hz, 1875W continuous duty.
- 6 Ft. cord. • UL listed. • Reset mini breaker.
- Seamless steel case with baked-on finish.



CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446

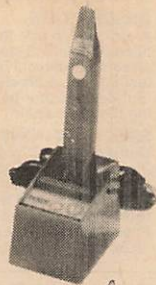


## WAHL ISO-TIP® "60" CORDLESS SOLDERING IRON

MODEL 7800  
OUR PRICE **\$44.95**

### DESCRIPTION

Fastest recharging cordless soldering iron on the market. Solders up to 125 electronic joints\* per charge. Recharges fully in one hour — or enough for reuse in a few minutes. Allows "20% continuous use" when kept in charger between uses. Iron switches automatically to energy-saving trickle-charging rate when battery becomes full. LED indicator shows when battery is charged. Cannot overcharge. Kit contains cordless soldering iron, recharging stand. #7577 tip, #7545 tip and instructions.



## WAHL "QUICK CHARGE" ISO-TIP® CORDLESS SOLDERING IRON

MODEL 7700  
OUR PRICE **\$34.95**

### DESCRIPTION

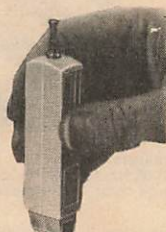
Recharges completely in 3 to 4-1/2 hours. A partially discharged battery returns to full capacity in an hour or two. Long lasting, premium quality nickel cadmium battery withstands high-rate charging without damage. Fully charged unit can make up to 125 electronic joints\* per charge. Cannot overcharge. Kit contains cordless soldering iron, recharging stand. #7545 tip, #7546 tip and instructions.



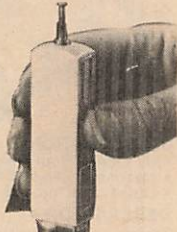
## OK TOOLS DIP IC INSERTION TOOLS With PIN Straightener



STRAIGHT PINS



INSERT



PICK-UP

14-16 PIN DIP/IC INSERTER  
MODEL INS-1416 OUR PRICE **\$5.95**

### DESCRIPTION

Narrow profile permits tool to work on densely spaced patterns, while unique insertion mechanism assures accuracy as well as excellent "feel". Finally, the tool includes a remarkable pin straightener built into the handle. Simply insert the IC, rock it on the straightening saddle, and push down on the tool. An automatic ejector delivers the IC ready to be placed in the insertion end for installation in your board or socket.

14-16 PIN, MOS CMOS SAFE INSERTER—MOS-1416 ..... \$11.45  
24-28 PIN, MOS CMOS SAFE INSERTER—MOS-2428 ..... 11.45  
36-40 PIN, MOS CMOS SAFE INSERTER—MOS-40 ..... 12.95

### DESCRIPTION

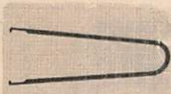
Ground strap may be easily attached for highly sensitive MOS and CMOS IC's. Durable chrome plated ABS construction features precision parts for long life and easy one-hand operation. (Ground strap not included.)

## OK TOOLS DIP IC EXTRACTOR TOOL MODEL EX-1

OUR PRICE **\$3.95**

### DESCRIPTION

Extracts all LSI, MSI and SSI devices from 8 to 24 pins.

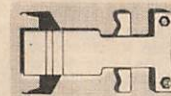


## OK TOOLS 24-40 CMOS-SAFE EXTRACTOR TOOL MODEL EX-2

OUR PRICE **\$13.95**

### DESCRIPTION

Removes 24-40 pin IC's, .600" centers. CMOS safe. Includes terminal lug for attachment of ground strap.

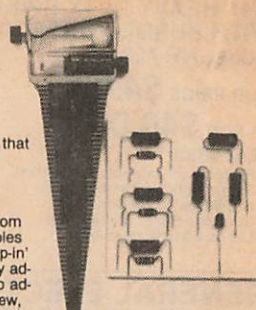


## OK TOOLS COMPONENT LEAD BENDER MODEL LB-100

OUR PRICE **\$16.95**

### DESCRIPTION

The new LB-100 component lead bender is totally unique in that it also contains a remarkable and handy lead crimper. The LB-100 handles all common axial components including resistors, diodes and capacitors, and can be used on many radial and "TO" packages as well. The lead bending section enables simple right-angle layover of leads of any centers from 0.375 to 1.500" (9.5-38.1mm) while an additional feature enables "vertical" bends. For applications requiring "stand-off" or "snap-in" lead forms, just use the built-in crimper. This device is easily adjusted for both lead diameter and crimp size and requires no additional tooling or die changes. Simply set the adjusting screw, insert the lead and crimp. Provides all the versatility of expensive automatic machines at a fraction of the price. May be hand-held or mounted in a vise. Ideal for prototype, laboratory, and light production applications.



## OK TOOLS DIAL-A-STRIP Wire Stripping Tool MODEL ST-400

OUR PRICE **\$17.95**

### DESCRIPTION

The ST-400 is a totally unique micrometer-adjustable wire stripping tool which can accommodate both solid and stranded wire from 18 AWG through 30 AWG (1.0-0.25mm). Simply turn the micrometer knob until the desired wire size is shown on the dial window. This automatically adjusts the stripping blades for a precise and nick-free strip. Slip the wire between the blades, using the handy molded-in scale to set the strip-off length. Then simply rotate the tool once or twice and pull to remove the insulation. Compatible with all common types of insulation including PVC, Kynar and Teflon. Hardened steel blades for long life. Extremely compact and lightweight for comfort and portability. Ideal for field service, laboratory, light production or personal use.



## WAHL TIPS FOR CORDLESS IRON

OUR PRICE **\$3.50** each 4 FOR **\$12.00**

MODEL 7566 Micro Soldering Tip 1/64" (.4mm).

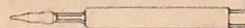
MODEL 7545 Fine Tip 1/16" (1.6mm).

MODEL 7535 Regular Tip 5/32" (4mm).

MODEL 7546 Heavy Duty Tip high wattage 3/16" (4.8mm).

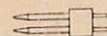
## WAHL SPECIALTY TIP TUNER EXTENSION TIP Diameter 1/16"

MODEL 7556 OUR PRICE **\$5.95**



## WAHL CIRCUIT BREAKER TIP

MODEL 7541 OUR PRICE **\$3.95**



## WAHL TIPS FOR MICRO SOLDERING STATIONS- MODELS 7230 and 7470

OUR PRICE **\$2.95** each 10 FOR **\$25.00**

Copper Alloy Nickel Plated

MODEL DIAMETER

MODEL DIAMETER

7252 5/32"

7255 1/25"

7253 3/32"

7257 1/25"

7254 1/16"

7258 1/25"

7255 1/16"

## WAHL THERMAL-SPOT CIRCUIT TESTER

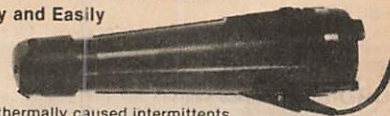
Finds Faulty Components Quickly and Easily

MODEL 5800

OUR PRICE **\$49.95**

### DESCRIPTION

The tester approaches the problem of thermally caused intermittents logically—no heating and then artificially cooling the component with sprays. The tester directs heat to the suspected capacitor or transistor, one component at a time and heats them as in normal operation.



## WAHL ISO-TIP® PC DRILL

Attachment To Convert Your

Iron To a Portable Drill

MODEL 6500

OUR PRICE **\$15.95**

### DESCRIPTION

Interchanges with Wahl snap-in tips, providing a .046 (No. 56) drill with 10,000-12,000 operating rpm. Ideal for cleaning solder from circuit boards when replacing components or providing new holes for PC board repair. Often eliminates need to remove board to make a repair.





## UNGAR HOT VAC DESOLDERING SYSTEM

MODEL 4000-U

REG. \$599.95

OUR PRICE **\$419.95**

**FREE! UNGAR 9100**

with purchase of UNGAR 4000-U

### DESCRIPTION

The built-in vacuum pump eliminates the need for shop air. Its compact design and portability make it ideal for use at any location where there is an AC electrical plug-in outlet. What makes UNGAR's Hot Vac 4000 truly unique are a number of exclusive engineering features which add up to system reliability, greater productivity and operator efficiency.

**Self-Contained, Super-Quiet Air Pump:** The vacuum pump is not only virtually maintenance free, it is remarkably quiet. The pump operates only when the handle switch is actuated. Sound is further reduced by its low-noise exhaust system and UNGAR's new method of pump mounting, which effectively absorbs noise and vibration.

**Temperature Control:** The Hot Vac 4000 has a variable solid-state control that adjusts the tip temperature from 500°-1000°F. approx. (250°-500°C). A non-magnetic load modulated heater provides instantaneous temperature recovery. An electric circuit assures that transient spikes are fully suppressed thereby making the system safe for desoldering voltage-sensitive components. Collected solder is stored in a built-in visible reservoir which may be emptied, even when the heater is hot.



## UNGAR ELECTRONIC TEMPERATURE CONTROLLED SOLDERING SYSTEM

MODEL 9100

OUR PRICE

**\$119.95**

### FEATURES

System 9100 includes: base unit with built-in controller, micro-size handle with THERMO-DURIC heater, 1/16" #9012 screwdriver tip, sponge and tip tray, sponge, and Iron Holder.

### DESCRIPTION

When your requirements demand variable temperature control, but you're on a limited budget, look to our System 9100. Incorporating many of the great design features highlighted in the System 9000, the System 9100 offers a lower cost alternative in an operator-adjustable, temperature controlled soldering system. And its compact size makes it easy to use in any environment.

### SYSTEM 9100 HIGHLIGHTS

- Electronic, closed-loop temperature control for maximum precision.
- Temperature is operator-adjustable from 400°F to 800°F.
- Continuous, variable control so you can select the exact temperature you need.
- Neon "on-off" light.
- Flexible, heat-resistant cord.
- IronHolder can be right- or left-hand mounted to accommodate all operators.
- The trim Micro-Size handle reduces operator fatigue and the efficient thermal transfer characteristics of the THERMO-DURIC heater delivers the heat to the tip and away from the handle for cooler operation.



## UNGAR 700° MICRO-SOLDERING KIT

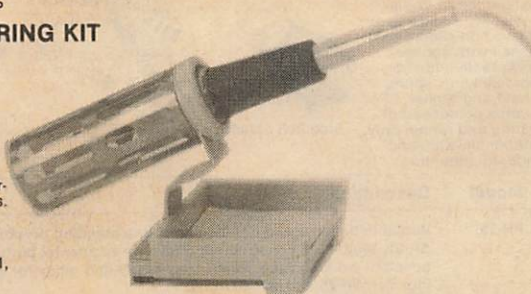
MODEL 9375

OUR PRICE

**\$44.95**

### DESCRIPTION

Specially designed for micro electronic soldering, fully grounded tips. Includes Model 9370 Soldering Iron, 3 interchangeable long-life tips, Models 9010, 9011, and 9012. Model 9800 non-slip iron holder cleaning sponge and tray.



## WELLER PROFESSIONAL SOLDERING TOOLS

MODEL WTCP-E

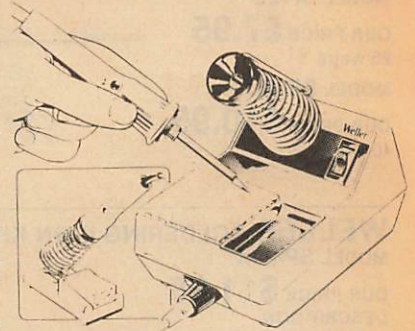
OUR PRICE **\$109.95**

### DESCRIPTION





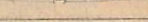




Weller improved professional soldering tools. WTCP-E soldering station has power unit and WEC24 iron with temperature control built into its handle. WEC 120-3 iron designed for use by direct connection to 120V power supply for use with PHWEC bench stand.

Weller introduces the WEC series of electronic soldering tools. Fully proportional electronic temperature control circuitry gives preciseness and excellent response. Although factory calibrated to 700°F., these tools are adjustable over a range of 400°F. to 800°F. The WTCP-E is a complete soldering station, but the WEC24 iron can be bought separately to be used with existing 24V power units.

The WEC120-3 is designed for direct connection to a 120V power supply. The WTCP-E, WEC24 and PHWEC stand all include our new long-lasting ceramic funnel. Any job can be handled with the full line of Weller ET series tips for use with the WEC24, or WET series tips for use with the WEC120-3.



Models	Description	Our Price
WTCP-E	Complete unit with TC202 power unit and WEC24 soldering iron.	<b>\$109.95</b>
WEC-24	Soldering iron only.	<b>59.95</b>
WEC 120-3	Soldering iron for 120 volt use.	<b>60.00</b>
PHWEC	Bench stand for WEC 120-3.	<b>12.95</b>

Model	Description	WET Series Tips
WETA	1/16" tip screwdriver	
WETB	3/32" tip screwdriver	
WETC	1/8" tip screwdriver	
WETD	3/16" tip screwdriver	
WETH	1/32" tip conical	
WETP	1/32" tip long screwdriver	
WETK	3/64" tip long screwdriver	
WETL	5/64" tip long screwdriver	
WETS	1/64" tip long conical	

OUR PRICE **\$3.50** each 10 FOR **\$30.00**

## WELLER SPECIALIZED SOLDERING KIT

Electronic Tool Kit

MODEL 250-K

OUR PRICE **\$47.50**

### DESCRIPTION

12 pieces. For the kit-builder, hobbyist, budding technician, handyman, or general use in dozens of electronic jobs. Contains Weller WP25 Soldering Iron with 1/16" screwdriver tip, 1/32" conical and 3/32" screwdriver extra tips, soldering aid tool, and rosin-core solder, plus Xcelite 1/4" nutdriver, 1/8" slotted-screw driver, No. 1 Phillips-type driver, 4" short chain-nose pliers, 4" diagonal cutting pliers, wire stripper/cutter, and plastic carrying case. UL listed. Packed individually, 6/carton.



## WELLER ALL-PURPOSE SOLDERING GUN KIT

100/140 watts

MODEL 8200PK<sub>KIT</sub>

OUR PRICE **\$19.95**

### DESCRIPTION

8-piece kit includes Weller® Model 8200 dual heat soldering gun. Three copper soldering tips, tips changing wrench, flux brush, soldering aid tool, coil of 60/40 rosin core solder — all contained in a sturdy, plastic carrying case. Also included is a comprehensive, illustrated "Soldering Tips" manual of practical soldering procedures.





# SOLDERING EQUIPMENT

## WELLER XCELITE MARKSMAN SOLDERING IRONS MODEL SP-23

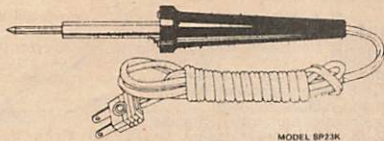
OUR PRICE **\$7.95**

25 watts

MODEL SP-40

OUR PRICE **\$10.95**

40 watts



MODEL SP-23K

## WELLER SOLDERING IRON KIT MODEL SP-23K

OUR PRICE **\$11.95**

DESCRIPTION

Includes Weller® SP23 iron, three different pre-tinned 1/8" diameter tips of plated copper. 40/60 rosin core solder. Helpful hints and instructions on back of card. Carded. UL listed. Card size: 8" x 11" x 1-1/4". Packed 12 cards per master carton weighing 6 lbs. and measuring 8" x 7-1/4" x 11-1/8".



## WELLER DE-SOLDERING BULB MODEL AC-303P

OUR PRICE **\$6.25**



## PALADIN SOLDER SCOOTER MODEL PA-1707

OUR PRICE **\$26.95**

DESCRIPTION

Paladin's new Solder Scooter Model PA-1707 is the lowest cost electric desoldering tool in the world. The one tool that replaces two...it heats and desolders. The Solder Scooter makes desoldering single or two sided PC boards a snap. Its compact design and unique features makes it an ideal tool for field repair, and re-work jobs. The ceramic substrate heater quickly melts the solder joint, this and the integral vacuum pump pulls solder from the board quickly, quietly and thoroughly.

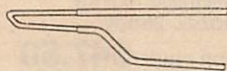


## WELLER COPPER SOLDERING TIP MODEL 7135

OUR PRICE **\$1.65** per card

10 CARDS **\$15.00**

Most popular tip. 2 per display card. For Models WS-100, WD-135, S-400, D-440, 8100, 8200, 8100B

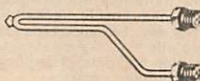


## WELLER COPPER SOLDERING TIP WITH TIP NUTS MODEL 7135N

OUR PRICE **\$1.65** per card

10 CARDS **\$15.00**

One per display card.

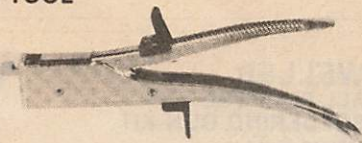


## GC ELECTRONICS NIBBLING TOOL MODEL 805

OUR PRICE **\$9.95**

DESCRIPTION

This unique hand operated nibbling tool cuts sheet metal very similar to a chassis punch. Simply start with a 3/8" hole and nibble to shape and size desired. Easy to use, yet it cuts up to 18 Ga. (.046 max.) steel, 1/16" copper aluminum and plastic.



## UNGAR EXTRACTOR PLIERS MODEL 6980

OUR PRICE **\$16.95** each

2 FOR **\$30.00**

DESCRIPTION

Extracts DIP's from sockets and desoldering printed circuit boards.

FEATURES

- DIP's easily removed—spring loaded, self activating one hand operation.
- Versatile—removes 4-48 pin DIP's.
- Lifts DIP's vertically. Does not bend leads.



## WELLER PENCIL THIN SOLDERING STATION MODEL WM-120

OUR PRICE **\$22.95**

DESCRIPTION

The Weller WM120—12 watt miniature packs quality features standard from Weller into a lightweight, pencil thin soldering iron with a break-resistant stay-cool handle.

Designed for soldering miniature heat and voltage sensitive components where precision touch is essential, the WM120 weighs .7 ounces and measures 7" less tip. It develops a tip temperature of 800°F and accommodates the Weller MP series of automatic slide-in tips.



## WELLER SOLDERING TOOL STAND MODEL PHM-120

For WM-120 Iron  
MODEL PHM-120

OUR PRICE **\$12.95**

DESCRIPTION

Soldering tool stand with base, sponge and receptacle.

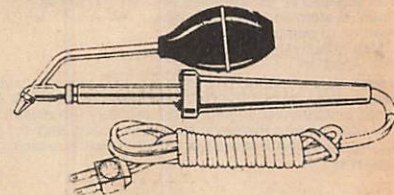


## WELLER PROFESSIONAL DESOLDERING/REPAIR TOOL MODEL DS-40

OUR PRICE **\$39.95**

DESCRIPTION

Invaluable repair tool. A must for servicing modern printed circuit boards and solid state electronics. Remove and replace components quickly with less chance of heat damage. Complete tool includes handle, vacuum bulb, desoldering assembly and tip with .063 in. opening. 40W. 120V. 2 wire cord.



## WELLER PROFESSIONAL SOLDERING IRONS (Series WP)

For Industrial Applications, Tradesmen, Hobbyists

DESCRIPTION

Top quality, industrial grade. Rugged stainless steel barrel. Long life double coated tips. Popular pencil styling. Light blue handle with black heat shield, cool comfortable grip. Only 7-7/8" long; 1-3/4 oz. Blister pack. UL listed.

MODEL WP-25

OUR PRICE **\$19.95**

25 watt. 1/16" screwdriver tip. 2-wire cord. 120V. One per card.

MODEL WP-40 OUR PRICE **\$24.95**

35 watt. Screwdriver tip. 2-wire cord. One per card.



## WELLER CONTROLLED OUTPUT INDUSTRIAL SOLDERING IRONS (Series W)

DESCRIPTION

High quality tools with controlled temperature. Selection (600°, 700°, or 800°F) by changing tips. New blue color. 120V 50/60 Hz. Use only with Weller PH and SF series soldering tool stands to effect a complete soldering station. These are automatically controlled tools and should be used with 'non-heat-sinking' Weller stands. Use of improper metallic stands will affect life of tool and tip. Boxed.

MODEL W-60

OUR PRICE **\$36.95**

DESCRIPTION

Versatile 60-watt iron, a compact 7-1/4" long and lightweight at 2-1/2 oz. Furnished with 700°F, 1/16" screwdriver tip No. CT5A7 and 2-wire cord.



MODEL W-100

OUR PRICE **\$42.95**

DESCRIPTION

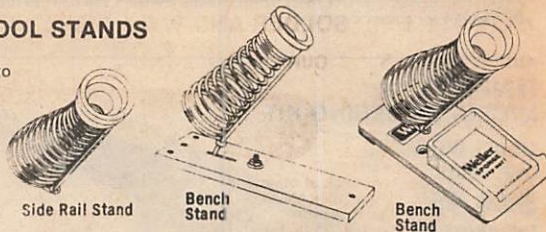
For heavier-duty use, this 100-watt iron is 8-1/4" long and weighs 3-1/2 oz. Furnished with 700°F, 3/8" screwdriver tip No. CT6F7 and 2-wire cord.



## WELLER SOLDERING TOOL STANDS

DESCRIPTION

Specifically designed to extend life of Weller tools. PH stands have heavy non-sliding cast bases with sponge receptacle and "non-heat-sinking" spring stand and funnel. SF stands comprised of spring and funnel only, for bench, wall, and side rail mounting.



Model	Description	Our Price
PH-25	Versatile bench stand can be either free standing or mounted. Sturdy aluminum construction. Prevents accidental burns on bench or work surface. Keeps iron handy and ready for soldering. For WP-25 and WP-40 irons.	<b>\$9.95</b>
PH-60	Soldering Tool Stand, with base and sponge. For W-60, WP-25, WP-40, WPS and irons with barrel diameters up to 15/32".	<b>\$11.95</b>
PH-100	Soldering Tool Stand, with sponge. For W-100 and irons with barrel diameters up to 19/32".	<b>\$13.95</b>



## BP PENCIL SOLDERING IRON MODEL FS-30

OUR PRICE **\$2.50** each 10 FOR **\$22.50**

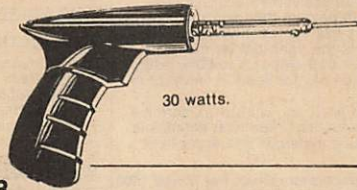
### DESCRIPTION

Lightweight 30-watt general purpose iron is designed for industrial and hobbyist use. Ideal for printed circuit work and kit-building. 250° tip temperature.  
• Display package.



## BP PISTOL GRIP SOLDERING IRON MODEL FS-32

OUR PRICE **\$3.99**  
10 FOR **\$30.00**



30 watts.

## BP DISPENSER PACK SOLDER MODEL DS-1

OUR PRICE **79¢** each  
5 FOR **\$3.50**

### DESCRIPTION

60/40 rosin core type. Diameter: 0.050". The best for all electronic soldering.



## BP ROSIN CORE SOLDER

Model	Alloy	Wt.	Dia.	Our Price
31	60/40	1 lb.	.031	\$12.50

### Flux Properties

The 'instant action' behavior of BP Rosin is a most outstanding property and even more important and more significant is the fact that the flux is completely non-corrosive and electrically non-conductive. Throughout its long years of wide usage in the electric and electronic industry, involving countless billions of soldered connections, there has never been a known case of corrosion by the flux residue.



## GC ELECTRONICS SILICON SUPER HEAT SINK COMPOUND MODEL 8109-S

OUR PRICE **\$3.95**

### DESCRIPTION

Zinc oxide filled silicone grease with outstanding heat transfer properties. It does not soften under elevated temperature and will not dry out or harden. Provides a heat sink when mounting transistors to chassis and metallic heat sinks. For use in the production of transistorized equipment as well as in the service industry whenever a semi-conductor requires replacement. Temperature ranges -65°F to +400°F. Will not dry out or harden—Z-9 type. 8109-S 1 ounce tube (carded).



## GC ELECTRONICS FINE LINE BURNISHING TOOL

MODEL 9337 OUR PRICE **\$1.50**

MODEL 9338 OUR PRICE **\$1.50**

### DESCRIPTION

An ideal device for cleaning oxide as well as corrosion from contacts in compact relays, switches, and other miniature components. The No. 9337 burnishing tool is extremely useful. Thin, only .120" wide, this tool affords easy access.



## EDSYN BURNISHING TOOL MODEL BT-028

OUR PRICE **\$6.95**

### DESCRIPTION

A combination tool with a fine abrasive blade at one end, a high-quality magnifying lens at other end.



wt. 78 oz. (22g)

## EDSYN TWIP SOLDER AND WICK DISPENSER

MODEL TW-308 OUR PRICE **\$15.95**

### DESCRIPTION

Convenient dispensing of soldering supplies with minimum waste. Positive action thumbwheel feeder ejects solder at one end; manual pull dispenses wick at other end. Reduces tangles, keeps solder and wick clean. Viewing window allows quick check of contents. Durable corrosion resistant plastic construction. Comes complete with 1 roll .031 resin core solder (approx. 25 ft) and 1 roll size 3 .080 wide resoldering wick (5 ft). Solder alloy: 63/37Sn per Fed. Spec. QQ-S-571 type W. Solder Spool P/N SSS94 (approx 25 ft). Resoldering wick P/N SW091 (5 ft).



## EDSYN SOLDAPULLT Deluxe Desoldering Tool MODEL DS-017

OUR PRICE **\$18.95**

### DESCRIPTION

Extremely rugged for volume desoldering. Heavy duty plastic barrel and trigger housing for long, dependable operation. Simple twist-lock separation for fast cleaning. Oversize plunger fully enclosed for safety. Heavy mainspring creates high vacuum pulse. Dynamic damping reduces kickback.



## EDSYN SOLDAPULLT Universal Desoldering Tool MODEL US-140

OUR PRICE **\$9.95**

### DESCRIPTION

Compact tool for convenient tool box storage. Precision molded plastic barrel and low mass plunger creates rapid vacuum impulse with negligible coil. Three position plunger adjusts loading span to fit large or small hands. Ample vacuum for most circuit board desoldering requirements.



## EDSYN SOLDAPULLT Low Static Potential Desoldering Tool MODEL AS-196

OUR PRICE **\$22.95**

### DESCRIPTION

Designed for low static work stations to protect components from effects of static electricity. Low static electrical characteristics providing ground path via operator, reducing discharge to susceptible components. Special material protects operator from a direct electrical short or shock.



## EDSYN SOLDAPULLT III Portable Desoldering Tool MODEL PT-109

OUR PRICE **\$14.95**

### DESCRIPTION

Sturdy tool for routine desoldering. Slim profile without sacrifice in performance has Deluxe Model features; fully enclosed plunger shaft; dynamic damping for very low recoil. Preferred by many technicians. Quickly desolders average size components and wiring.



## EDSYN STANDARD SOLDAVAC MODEL SV-026

OUR PRICE **\$10.95**

### DESCRIPTION

The standard Soldavac is the hobbyist and handyman's tool, featuring one hand loading, swift vacuum, and low recoil action.



## EDSYN MICRO TIPPED SOLDAPULLT III MODEL PT-209

OUR PRICE **\$17.95**

### DESCRIPTION

The Micro tipped version is identical in size and performance to the smooth acting PT-109 Soldapull III, however, the smaller 3/32" I.D. tip orifice (vs 1/8" I.D. standard) is better suited for high density circuit boards. The smaller tip orifice provides higher vacuum velocity which helps pull solder from difficult to reach circuit pads. The more slender profile of the tip is ideal for close-in work of TO-92 size transistors, DIP and round pattern IC's, multipin connectors, etc. Replacement tip: MRT-16. Replacement 'O' ring: OSB32.



## EDSYN MICRO TIPPED UNIVERSAL SOLDAPULLT

MODEL US-240 OUR PRICE **\$14.95**

### DESCRIPTION

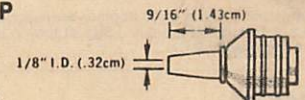
Has all the same features as the US-140 Universal SoldapullT except equipped with a smaller 3/32" I.D. tip for micro desoldering of round pattern and DIP IC's, TO-92 transistors, miniature connectors, and high density PCB's with .062 Dia. and smaller pads. The micro tip allows higher vacuum velocity for better solder removal where it is difficult to get close to the connection. Replacement tip: MRT-16. Replacement 'O' ring: OS143.



## EDSYN REPLACEMENT TIP MODEL SRT-12

OUR PRICE **\$2.95**

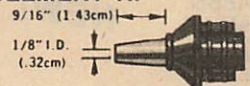
Fits DS-017, DS-101, PT-109, US-140, SV-026.



## EDSYN LOW STATIC REPLACEMENT TIP MODEL LS-197

OUR PRICE **\$4.95**

Also fits AS-196.

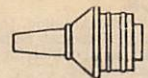


## EDSYN LONG LIFE HARD TIP MODEL SCT-99

OUR PRICE **\$4.95**

### DESCRIPTION

Tip made from ceramic material for very long life. Please note several considerations: Hard ceramic can possibly damage delicate parts if bumped severely. Also solder is not released as readily as with Teflon tips. Color code end cap is white.



## EDSYN MICRO REPLACEMENT TIP MODEL MRT-16

OUR PRICE **\$3.95**

### DESCRIPTION

Same durable no-stick Teflon tip as SRT-12 replacement tip, however, with smaller 3/32" I.D. tip orifice for desoldering up to .075 Dia. pads, TO-92 case transistors, multipin connectors, etc. Color code end cap is gray.





# HEAT GUNS/SOLDERING ACCESSORIES

## MASTER APPLIANCE MASTER HEAT GUN HEAVY-DUTY FLAMELESS TORCHES

### DESCRIPTION

The Master Heat Gun delivers up to 2250 f.p.m. at temperatures up to 1000°F. without the dangers of open flame! Its many features include an adjustable air intake for controlling the air blase temperature; a double jacketed heater housing; a sturdy die-cast aluminum housing and an 8 ft. neoprene jacketed 3-wire cord and plug that is oil and grease resistant. Turbo type fan blade is efficient and quiet in operation. Ideal for shrinking sleeving, for soldering, and for drying cements and potting compounds.



### SPECIFICATIONS

Overall height, 8". Nozzle air opening, 1-5/32" diameter. Base plate, triangular, 5-3/4 per side. Delivers 15-1/2 c.f.m. air volume at 2250 f.p.m. velocity. For 115V. 50/60 cycles AC or DC. 10B107 has a NEMA 6-20P plug.

Model	Temperature	Amps	Our Price
HG-301	300/500°F.	12	\$74.95
HG-501	500/700°F.	14	84.95
HG-751	750/1000°F.	20	96.95

### Attachments & Accessories for HG & VT Series

MODEL	DESCRIPTION	OUR PRICE
51309	1/4" Pinpoint attachment	\$ 9.95
A-160-HG	For shrink tubing up to 3/4" O.D.	9.95
A-170-HG	For shrink tubing from 3/4" up to 2" O.D.	9.95
A-203-HG	Extra-wide (8") for shrink tubing up to 3/4" O.D.	21.95
A-205-HG	For shrink boots up to 1-3/4" O.D.	21.95
51024	Shrink wrap packaging attachment 8" wide	21.95
51013	Molded carrying case	21.95
30202	Solder preform attachment	16.95

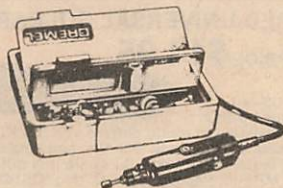
## DREMEL® MOTO-TOOLS AND KITS Variable Speed Moto-Tool® Kit

### MODEL 3801

OUR PRICE **\$89.95 NEW!**

### DESCRIPTION

Most popular kit for do-it-yourselfers and hobbyists. It contains top-of-the-line ball bearing Moto-Tool model 380 with variable speed control (5,000 to 28,000 R.P.M.) motor, 0.9 amps., 115 V., 60 Hz., AC. Includes large assortment of 40 popular accessories in deluxe, double compartment storage case. Size of tool: 7-1/4" long x 1-7/8" diameter; weight 2 lbs.



## DREMEL® MOTO-TOOLS DRILL PRESS ATTACHMENT

**NEW!**

### MODEL 210

### OUR PRICE

**\$34.95**

### DESCRIPTION

Perfect for drilling and routing. The press is only 12 in. high. Table can be raised or lowered; locks in any position for accurate depth adjustment. For models 250, 270, 280, 370 and 380 Moto-Tools. Moto-Tool not included with drill press.



## DREMEL ELECTRIC ENGRAVER

### MODEL 290

OUR PRICE **\$19.95**

### DESCRIPTION

Writes like a pencil on material from hardened steel to glass. Calibrated stroke adjustment regulates depth of engraving from fine lines to deep marks. 115V., 0.2 AMP, 60 Hz., AC only.



## VARITEMP® HEAT GUN

### MODEL 1500

OUR PRICE **\$99.95**

### FEATURES

- 1080 watt element.
- Lightweight 2.2 lbs.
- Dialing a new temperature from ambient to 650°F.

### DESCRIPTION

The Varitemp heat gun features an exclusive electronic non-stepping temperature control with permits the user to dial-in just the right temperature for any heating job. Five special use attachments make this model just the right tool for many applications. Unit draws a maximum of 9 amps up to 50% less than their competitive models. Can pay for itself in one year in electricity saving. Now you can shrink tubing, weld plastics, repair vinyl, shrink & terminate insulated solder preforms, terminate heat shrinkable environmental splices, weld roofing materials and apply heat to small areas.

### Attachments, Dial Settings & Temperature Chart For Model 1500

Model	Attachment Description	Max Dial Setting	Avg. Temp at Attachment		Our Price
			F	C	
51102	Shrinking tubing heat shrink tubing	650	650	343	\$ 7.00
50875	Pin point-weld plastic & repair vinyl	150	800	427	14.95
30273	Solder - preform w/reducer-terminate & encapsulate preforms	400	700	371	19.95
30302	Roofing w/reducer-1-1/16" wide slot 45° angle, weld roofing	350	850	454	29.95
50874	Reducer only-5/8" dia. apply heat to small areas.	400	650	343	9.95



**NEW!**

## VARITEMP® HEAT GUN

**NEW!**

Electronic temperature control may be dialed to any setting ambient to maximum. May be locked in place for continuous production line use.

### MODEL VT-750A

OUR PRICE **\$109.95**

### APPLICATIONS

The Ultimate flameless electric heat tool for hundreds of electronic/industrial uses:

- Shrink tubing. • De-solder.
  - Melt solder preforms.
  - Heat shrink packaging. • Activate adhesives.
  - Soften floor covering. • Strip paint and varnish.
  - Defrost freezer coils. • Repair and install vinyl.
- Wherever a fast, portable flameless heat is the need.

### DESCRIPTION

Temperatures from ambient to 750°F/400°C may be dialed in. Setting may be locked in place for continuous production line use. Reinforced ceramic heating element with double jacketed heater housing for protection. Rugged, die-cast aluminum housing with externally replaceable carbon brushes. 3-wire oil resistant cordset. Power 120 Volts, 14 amps.



## MASTER APPLIANCE MASTER-MITE HEAT GUN

### MODEL 10008

### OUR PRICE

**\$69.95**

### APPLICATIONS

The compact, light but rugged "Master-Mite" is designed for electronic and electrical benchwork such as shrink tubing, melting solder preforms, activating and curing adhesives and epoxies, preheating flux, etc. Air velocity is just right for benchtop use; it won't blow connectors and small components around the work area.

### CONSTRUCTION FEATURES

High impact GE "Noryl" housing withstands hard knocks. Brushless shaded pole continuous duty motor. 7-ft. 3-wire grounded cord-set. Draws only 4.5 amps. maximum. Slip-on heat-shrink attachment and 650°F element standard.

Model	Description	Voltage 50/60Hz	Amps	Ship Wt.
10008	Heat gun with 650°F element & deflector attachment	120	4.5	3 lbs



## DREMEL® MOTO-TOOLS AND KITS Constant Speed Moto-Tool® Kit

### MODEL 2701

OUR PRICE **\$69.95 NEW!**

### DESCRIPTION

A special tool for special jobs in home, hobby and craft applications. Contains 30 useful accessories in a tough polyethylene storage case. Cut, sharpen, polish, rout, grind, carve, engrave and more. Contains model 270 Moto-Tool with permanently lubricated bronze sleeve bearings. 0.8 amp. motor, 115V., 60 Hz., AC., 5-foot 3-conductor cord. Size of tool: 7-1/4" long X 1-7/8" diameter; weight 2 lbs.



## DREMEL® MOTO-TOOLS

FOR HANDICRAFTS, WOODWORKING, CARVING, ETCHING, GRINDING AND MUCH MORE!

### MODEL 250 OUR PRICE \$49.95

Constant speed 30,000 R.P.M. Moto-Tool is quiet and smooth running. Lubricated bronze sleeve bearings. Series wound motor provides dependable power, consistent performance. Amps 0.8s.

### MODEL 270 OUR PRICE \$56.95

Constant speed 30,000 R.P.M. Moto-Tool runs cool under load conditions. Permanently lubricated bronze sleeve bearings. Reliable permanent magnet motor for steady, reliable power. Amps 0.8

### MODEL 280 OUR PRICE \$68.95

Constant speed 30,000 R.P.M. Ball bearing construction for long life and smooth operation. Amps 0.8

### MODEL 370 OUR PRICE \$69.95

Variable speed Moto-Tool, 5,000 - 28,000 R.P.M. allows user to select the right speed for every job. Life-time lubricated bronze sleeve bearings. Permanent magnet motor for steady power, smooth operation. Amps 0.75 low speed, 0.9 high speed. External caps allow for easy replacement of motor brushes.

### MODEL 380 OUR PRICE \$79.95

Variable speed Moto-Tool 5,000 - 28,000 R.P.M. allows user to select the right speed for every job. 100% ball bearing construction for long life, smooth operation. Permanent magnet motor provides steady, dependable power. Amps 0.75 low speed, 0.9 high speed. External caps allow for easy replacement of motor brushes.

### TABLE TOP SPEED CONTROL FOR MOTO-TOOLS

### MODEL 219 OUR PRICE \$34.95

Lets you dial speeds up to full R.P.M. 5 AMP capacity.

## BP HEAT SHRINK TUBING

### MODEL H3-462

### OUR PRICE

**\$1.45** per pkg.

10 PKGS FOR

**\$12.50**

### FEATURES

- Heat shrinkable tubing.
- 10 assorted diameters per pack.
- Shrinks 50% in diameter. • Shrinks 5% in length at 120° C.

### DESCRIPTION

Shrinks to half its original size when heated. Use it for insulating terminals, connectors, tool handles, wire splices. Use heat gun, oven, barrel of soldering iron or just a match. Assorted sizes and colors.

## COL-FLEX HEAT SHRINKABLE TUBING

### DESCRIPTION

Polyvinylchloride (PVC) tough, flexible and snug fitting over splices, terminals and components. Shrinks 50% of I.D. size. Use heat blower, solder iron or match. Available in 10 ft. coil.



Model	Inside Diameter	Our Price
HS-1	1/8"	\$3.00
HS-2	3/16"	3.25
HS-3	1/4"	3.50
HS-4	5/16"	3.95



## SOLDER CREAMS MODEL BCR-10

OUR PRICE **\$3.95**  
DESCRIPTION



A homogenous mixture of pre-alloyed solder powder (60/40-tin/lead) and proper rosin flux percentage forming a cream (paste). Cream is tacky and can be used as a temporary adhesive to hold parts in place until solder is melted. The flux residue is non-corrosive and need not be removed after soldering. It can be used for printed circuits; radio and TV repairs, kit wiring, circuit repairs, flat packs; micro-circuits; and all types of electrical wiring and circuits.

## MULTI-CORE FLUX PASTE

MODEL RF-10 Ersin®

OUR PRICE **\$3.50**  
DESCRIPTION



For use with general purpose solid wire solder. Select the type flux depending on your application. Ersin® Rosin for electronic/electrical and Arax® Acid for general metal joining. Flux is in paste form and can be easily applied to area to be soldered. It is fast acting and the non-corrosive residue need not be removed after soldering. Used for all types of electrical wiring and circuits; printed circuits; radio and TV repairs; and kit wiring.

## ELECTRONICS LUBRIPLATE

MODEL GC10-2302 OUR PRICE **\$3.95**



### DESCRIPTION

White Grease Lubricant. High-grade industrial lubricant in a tube for motors, gears and bearings of all kinds. 1-3/4 oz. tube.

## GC ELECTRONICS SILICONE-LUBE HIGH VOLTAGE JELLY

MODEL GC10-568 OUR PRICE **\$3.95**



### DESCRIPTION

In a disposable dispenser. An excellent heat transfer between power transistor and heat sync. Prevents flyback and picture tube arcing up to and beyond 60,000 volts. Never dries out. Will not crack, chip, peel, run, melt, freeze, break, harden, burn or lose effectiveness. Unconditionally guaranteed. Stops Corona Leakage.

## GC ELECTRONICS 5 MINUTE DUAL BOND EPOXY

MODEL GC-5

OUR PRICE **\$4.95**



## BP PLASTIC ELECTRICAL TAPE

MODEL TE-101

OUR PRICE **\$79¢** each  
10 FOR **\$7.50**



### DESCRIPTION

Black plastic electrical tape offers thousands of uses. High dielectric and tensile strengths. Extra flexible stretch, snug wrap, water-proof and resistant to gasoline, oil, salt water, sunlight and alkalis. 3/4" wide, 66 feet long. Cello wrapped with label. UL APPROVED.

## ASSORTED SPAGHETTI KIT

MODEL 550

OUR PRICE **\$1.49** each 10 FOR **12.50**

### DESCRIPTION

An assortment of 9" to 12" lengths of spaghetti sleeving. 25 lengths to the kit. Sizes from 17 wire to 3/8" OD.

## BP SOLDER WICK

For desoldering component leads from a pc board or removing solder from virtually any joint. Solder wick removes the solder by capillary action. Simple to use. Place solder wick on defective connection, apply soldering iron to wick for a second. Remove wick and soldering iron simultaneously. \*Pull-out\* wick supplied in a special covered reel.



Model	Application	Description	Our Price
AA (yellow)	Electronic: PC boards; thin wires	1/16" wide.	\$1.75 10 for \$12.00
AB (green)	General purpose	3/32" wide.	\$1.75 10 for \$12.00
BB (blue)	Electrical: large wires	1/8" wide.	\$1.75 10 for \$12.00

## TECH SPRAY BLUE STUFF FOR TUNERS

MODEL 1639-8S

OUR PRICE 8 oz.

**\$3.95** each 12 FOR **\$36.00**

### DESCRIPTION

The finest tuner care product available. It's unique formula makes it the superior long term protective material for tuner contacts. Contains millions of tiny MINISCRUBBERS® dispersed throughout it's thick lubricant.

## BP TEFLON® TUBING ASSORTMENT

MODEL H3-461

OUR PRICE **\$2.50** per pkg.

10 PKGS. FOR **\$20.00**

### DESCRIPTION

Assortment of high quality Teflon® tubing in a variety of diameters. Heat resistant.

## TECH SPRAY BLUE SHOWER

MODEL 1657-12S

OUR PRICE 12 oz. **\$3.95** each

12 FOR **\$42.00**

MODEL 1657-24S

OUR PRICE 24 oz. **\$5.95** each

12 FOR **\$60.00**

### DESCRIPTION

A tough cleaner and degreaser for tuner, flyback and chassis as well as all components and assemblies. Will completely restore detuned tuners. Will clean the worst dirt, yet is gentle to plastics.



## TECH SPRAY MINUS 62 INSTANT CHILLER

MODEL 1669-15S

OUR PRICE 15 oz. **\$4.95** each

MODEL 1669-30S

OUR PRICE 30 oz. **\$5.95** each

### DESCRIPTION

The best trouble-shooting aid for use in tracking down intermittents. Locates cracks in printed circuit boards. May be used to separate or join tight-fitting metal parts.



## TECH SPRAY INSTANT STICK

MODEL 1673

OUR PRICE 3 Gm. tube **\$1.25** each

5 FOR **\$6.00**

### DESCRIPTION

Sets fast, makes firm bonds in seconds to minutes. Joins virtually any combination of materials. Ready to use — no mixing. Contact pressure sufficient for bond. Cures at room temperature.



## TECH SPRAY IMPROVED SLIP STOP

Anti-Slip Compound

MODEL 1614-2

OUR PRICE 2 oz. **\$3.50** each

### DESCRIPTION

New improved formula anti-slip compound. Apply to phone drives, as well as dial cords, to prevent slipping. Also used for auto radio clutch facings. Will not get gummy with age. Fast, easy to use and is economical.



## TECH SPRAY BLUE HIGH VOLTAGE PUTTY

MODEL 1624-X

OUR PRICE 2 oz. **\$4.95** each

### DESCRIPTION

A soft, pliable material used to rebuild tires on flybacks transformers. Protects against corona and arcs. Use on anode buttons, yokes and damper tube sockets. Contains silicone. Ready to use — no mixing.



## TECH SPRAY PLASTI-PATCH

MODEL 1626-X

OUR PRICE Set

**\$4.95** each

### DESCRIPTION

A repair kit for plastics. Rebuilds broken cabinets, shafts and knobs, as well as screw mounts. Replaces missing sections of cabinets.



## TECH SPRAY INSTANT STRIPPER

MODEL 1644-16S

OUR PRICE 16 oz. **\$4.95** each

### DESCRIPTION

Ideal for use in research labs, pilot production and short-run production. Safely and efficiently removes all types of flux deposits from electronic circuitry. Excellent for use on computer and calculator printed circuit boards, microwave and telephone carrier circuitry. Not harmful to nylon, teflon or polyethylene.



## FORDHAM RADIO COMPONENT COOLER

MODEL FR-16

OUR PRICE 16 oz. **\$4.50** each

12 FOR **\$48.00**

### DESCRIPTION

Pinpoints and locates intermittent resistors, condensers and coils by lowering their temperature under operating conditions. Chills the leads of transistors and phone cartridges to reduce possibility of heat damage during soldering. Non-flammable and easy to use.



## FORDHAM RADIO TUNER CLEANER

MODEL TC-6

OUR PRICE 6 oz. **\$2.25** each

12 FOR **\$24.00**

MODEL TC-16

OUR PRICE 16 oz. **\$2.95** each

12 FOR **\$30.00**

### DESCRIPTION

Safely cleans and removes oxidation from all color TV tuners. Lubricates and protects tuners and their components. Safe for all plastic parts. Non-flammable.



## FORDHAM RADIO TUNER DEGREASER

MODEL TD-24

OUR PRICE 24 oz. **\$4.95** each

12 FOR **\$48.00**

### DESCRIPTION

Powerful jet spray safely cleans and degreases equipment motors and switches. Tuner degreaser dries instantly, leaving it perfectly clean and dry. Safe for all plastics, will not detune, and is non-flammable. Leaves no dust-catching film when dry. Easy to use and economical.



## TECH SPRAY INSTANT KLEEN-ALL

MODEL 1604-16S

OUR PRICE 16 oz. **\$4.95** each

### DESCRIPTION

Cleans all types of electric equipment without disassembly even while in operation. So safe you can put out a match with the spray. Non-conductive, can't short or arc. Instantly cleans relay and switch contacts without danger. Designed for cleaning only, contains no oily additives that prevent thorough cleaning.



## TECH SPRAY RID ARC

MODEL 1609-8S

OUR PRICE 8 oz. **\$4.95** each

### DESCRIPTION

Renews insulation. Dries rapidly to a tough red film that is permanent. Stops arcing and corona discharge. Will not harden or dry up in can or bottle. Use on color chassis. Use for protecting and insulating printed circuit boards.





## HITACHI 9" B&W MONITOR

MODEL VM-906A

OUR PRICE **\$233.75**

### DESCRIPTION

9" B&W Solid State monitor with high resolution of 700 lines; Small (8.6" w x 8.6" h x 9.2" d) and lightweight (14.3 lbs.), two units fit in standard 19" rack with optional rack mount; Deflection linearity is less than 1%; DC restoration switch; Built-in 75 ohm termination switch for loop through; Brightness, Contrast, Vertical Hold, Horizontal Hold, Power On/Off; Composite video input; UHF connector; 117v/60Hz.

MODEL VM-910

OUR PRICE **\$179.95**

### DESCRIPTION

9" B&W Solid State monitor with 500 lines resolution. Same size as VM-906A (8.6" w x 8.6" h x 9.2" d) and lightweight (13.2 lbs.), two units fit in standard 19" rack with optional rack mount; Linear deflection less than 2%; Other specs similar to VM-906A.

MODEL VM-900 OUR PRICE **\$129.95**

### DESCRIPTION

B&W Solid State monitor with 500 lines resolution; Portable (9.6" w x 9.2" h x 9.3" d) and lightweight (13.5 lbs.) Deflection linearity of less than 2%. Other specs similar to VM-906A.

## HITACHI 12" B&W MONITOR

MODEL VM-129

OUR PRICE **\$297.50**

### DESCRIPTION

12" B&W Solid State monitor with high resolution of 700 lines; Deflection linearity of less than 1%; Built-in 75ohm termination switch; DC restoration; External sync operation modification available; Composite video, negative sync, UHF connector; Brightness, Contrast, Vertical Hold, Horizontal Hold, Power Off/On; (12.5" w x 11.2" h x 12.4" d) and weighing 22 lbs.; 117v/60Hz. Optional rack mount available.

## HITACHI 17" B&W MONITOR

MODEL VM-173

OUR PRICE **\$325.00**

### DESCRIPTION

17" B&W Solid State monitor with high resolution of 700 lines; Deflection linearity of less than 1%; Built-in 75 ohm termination switch; DC restoration; External sync operation modification available; Composite video, negative sync, UHF connector; Brightness, Contrast, Vertical Hold, Horizontal Hold, Power Off/On; (15.9" w x 15.2" h x 11.5" d) and weighing 37.5 lbs.; 117v/60Hz. Optional rack mount available.

## HITACHI

ALL SOLID-STATE CCTV CAMERA WITHOUT LENS

MODEL KP-230 DC Powered

OUR PRICE **\$1695.00**

MODEL KP-231 AC Powered

OUR PRICE **\$1695.00**

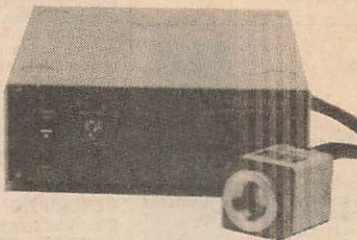
### DESCRIPTION

The Hitachi KP-230/231 is a solid-state black and white TV camera which employs a solid-state imaging device instead of a conventional pick-up tube.

The KP-230/231 is designed to be separate type of an ultra-compact camera and a camera control unit.

### FEATURES

- This camera features a MOS two-dimensional photo sensor array with 384 horizontal and 485 vertical picture elements, developed especially by Hitachi, as the solid-state imaging device, and this device provides the high resolution of 450 TV lines and high picture quality.
- "The blooming" can be greatly reduced as compared with a conventional camera.
- 2:1 interlaced scanning is employed according to the EIA standard.
- The MOS solid-state imaging device ensures no deflection distortion or burning, and also a low level of lag. Moreover, the service life is prolonged and the reliability of the camera has been upgraded.
- Max cable length is 10m. Camera head with incl. cable: 2m  
Camera extension cable: 8m (option).
- Easy system configuration: The KP-230/231 is used with external units and peripheral units, since the clock pulse, horizontal and vertical sync signals and composite sync signal are supplied from the camera control unit (CCU).
- Besides the internal non-line-lock system, external sync may also be employed. The switch-over to external sync is automatic with the supply of the external drive signal and so there is no need to operate any switches.



## HITACHI LOW LIGHT NEWVICON TYPE CCTV CAMERAS

MODEL HV-725N

OUR PRICE **\$495.00**  
Commercial AC power input

MODEL HV-726N

OUR PRICE **\$495.00**  
24V AC power unit

### FEATURES

- Automatic Beam Control(ABC)—Automatic circuitry eliminates need for periodic readjustment of beam throughout life of camera tube.
- A white suppressor circuit ensures faithful reproduction on the video monitor, even for subjects with strong contrast.
- Camera mounting screws are provided at the top and bottom of the camera, facilitating mounting of the camera.
- Switchover to external synchronization takes place automatically when an external drive signal is input, hence no switch operation is necessary.
- These cameras are high sensitivity type for a Newvicon\* tube, to suit the particular applications and place where it is to be used. They employ a Line-lock, 2:1 interlace scanning system, providing a more stable and clearer image.
- Standard Composition: Camera, EE lens connecting clamp 2.5d, 3.5d (mm), operation manual.

\*Trademark



**NEW!**

WITHOUT LENS

## HITACHI CCTV CAMERA

MODEL KP-120

OUR PRICE **\$895.00**

### DESCRIPTION

Ultra-small black and white CCTV camera using solid state MOS pick-up device instead of tube, small (2.2" x 1.7" x 4.6") and lightweight (1.6 lbs.); Long life and reliability due to 50% fewer parts; MOS imaging device eliminates deflection, distortion, and sticking, plus minimizes lag; Resolution of 240 lines and S/N 52dB; C mount with power for auto iris lens; 2:1 interlace; externally driveable; Power through AC adaptor, camera uses 9 volts.



WITHOUT LENS

## HITACHI CCTV CAMERA (VIDICON TUBE) SPECIAL! WITH MULTIPLEX UNIT

MODEL HV-240 OUR PRICE **\$269.95**

### FEATURES

- By using a single video cable system it has been made possible to connect the camera to the multiplex unit with only a single coaxial cable. It is not necessary to perform commercial AC power wiring at the location where the camera will be installed. The maximum length of the coaxial cable is 420m (1,380 feet) in the case of the RG-59U and 700m (2,300 feet) in the case of the RG-11U.
- By using a 2/3-inch separate mesh vidicon tube and a 2:1 interlace system with a crystal oscillator, high sensitivity, high resolution (550 lines or better in the horizontal center) picture is obtained.
- Since the ASC circuit is built-in, a stable video signal is obtained when illumination on the subject varies into the range or 10 to 100,000 lux.
- A number of different 2/3-inch and 1-inch C mount type lenses can be used.

### DESCRIPTION

Easy system expansion. A single video cable connects the camera and the multiple units for easy installation and use. A single coaxial cable is used to connect the camera to the multiplex unit. This cable not only provides the DC power required by the camera from the multiplex unit, but provides connections to the video signal of the camera as well. It is thus not necessary to provide power supply wiring at the camera site.

It is simple to add cameras to the Remote Eye. Systems range from one-camera, one-monitor configuration to four-camera systems which can monitor a number of locations from the centralized location. The addition of cameras and use of either centralized or distributed monitoring systems allows the Remote Eye system to be configured to suit the particular monitoring requirement with just the capabilities needed.



Camera Mount

WITHOUT LENS

## HITACHI CCTV CAMERAS

MODEL HV-720

OUR PRICE **\$139.95**

MODEL HV-721

OUR PRICE **\$139.95**

### FEATURES

- Owing to the use of an automatic sensitivity adjusting circuit, the only necessary camera operation is focusing.
- A white suppressor circuit ensures faithful reproduction on the video monitor, even for subjects with strong contrast.
- Camera mounting screws are provided at the top and bottom of the camera, facilitating mounting of the camera.
- Switchover to external synchronization takes place automatically when an external drive signal is input, hence no switch operation is necessary.

### SPECIFICATIONS

- Synchronizing System: Line-lock 2:1 interlace. • Pick-up tube: Vidicon tube.
- HV-720—Power Supply input: Commercial AC power input.
- HV-721—Power Supply input: 24V AC power input.

• Optional Accessory: TC-1324 - 24 Volt transformer. . \$12.95



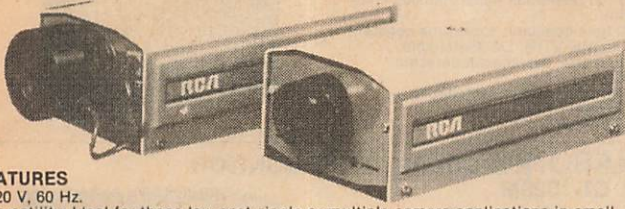
INCLUDES LENS



**RCA CLOSED-CIRCUIT VIDEO EQUIPMENT WITH VIDICON TUBE**

MODEL TC-1501 120V, 60 Hz.  
OUR PRICE **\$159.95**  
WITHOUT LENS

MODEL TC-1502 24V, 60 Hz.  
OUR PRICE **\$159.95** WITHOUT LENS



**FEATURES**

- 120 V, 60 Hz.
- Versatility: Ideal for those low-cost single or multiple camera applications in small businesses, home surveillance, apartment security, video equipment leasing, etc.
- Sensitivity: Usable pictures at only 0.45 fc scene illumination. Full video at only 4.5 foot-candles.
- Resolution Capability: To 550 lines.
- Dynamic Range: 20 000:1 automatic light range.
- EIA RS-170 or CCIR Sync: 2:1 Interlace. Phase locked to power line zero crossing for smooth switching and Time Lapse Video Tape Recording.

**DESCRIPTION**

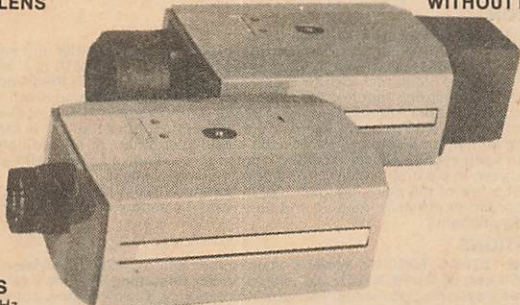
Short-Proof Low Voltage Power Supply, Automatic Focus Tracking, Controlled Filament Voltage, Ten Step Grey Scale, Auto Black plus Keyed Clamp, White Clipper, Horizontal Drive Loss Protection, Top and Bottom Mount Holes, Balanced Camera Mounting, Lens Options, High Reliability Large Scale Integration (LSI) technology incorporates the majority of circuit functions on two IC's.

**NOW AVAILABLE!**

MODEL TC-1501U, TC-1502U      OUR PRICE **\$549.95** each  
Low light version with Ultracon tube.      WITHOUT LENS

**RCA ECONOMICAL GENERAL PURPOSE 2/3" CCTV CAMERA WITH VIDICON TUBE**

With Premium Camera Features and High Reliability LSI Technology  
MODEL TC-2011 120V, 60 Hz.      MODEL TC-2012 24V, 60 Hz.  
OUR PRICE **\$249.95**      OUR PRICE **\$249.95**  
WITHOUT LENS      WITHOUT LENS



**FEATURES**

- 120 V, 60 Hz.
- EIA RS-170 or CCIR Sync: 2 to 1 interlace. Utmost flexibility and freedom from sync problems in multi camera/multi equipment systems.
- Phase Locked Loop: Synchronizes camera to AC power line zero crossing. Provides clean switching, splitting and time lapse VCR performance.
- Genlock: Accepts external composite sync or H&V drives for system synchronization. 60 Hz models lock to RS-170, RS-330 or Random Interlace sync. 50 Hz models lock to CCIR sync.
- Automatic Light Range: Includes selectable 10:1 variable AGC gain/bandwidth amplifier for increased sensitivity and better signal-to-noise performance peak/average response weighting. **Vidicon Cameras:** 100,000:1 AGC plus Automatic Target Control (ATC). Target voltage limiting minimizes tube lag and burn.
- Auto Track Electronic Focus: Automatically tracks electrode voltage of the magnetic focus camera tube — provides high picture quality with no need for readjustment during the life of the camera tube.
- Other Features: Automatic Beam Control (ABC), Auto-Black plus Keyed Clamp, Gamma Correction, Vidicon Positioning Adjustment and Lock, Top or Bottom Mounting, Wide Environmental Range.

**DESCRIPTION**

Designed using the latest, high reliability LSI technology, RCA TC2000 Series cameras include the more useful features of premium cameras in an economical, compact and attractive design for general purpose use. They are offered in a wide variety of configurations to suit the needs of most installations.

**NOW AVAILABLE!**

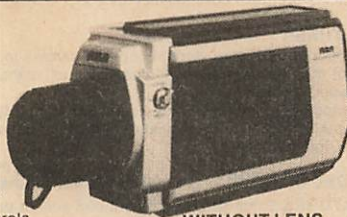
MODEL TC-2011U, TC-2012U      OUR PRICE **\$649.95** each  
Low light version with Ultracon tube.      WITHOUT LENS

**RCA COLOR CAMERA**  
For Surveillance applications  
MODEL TC-5000 Series

OUR PRICE **\$849.95**

**FEATURES**

- Uses Newvicon camera tube.
- Requires only 6 fc scene illumination for full video and only 1 fc for usable picture.
- Automatic white balance.
- Color temperature and color balance controls.



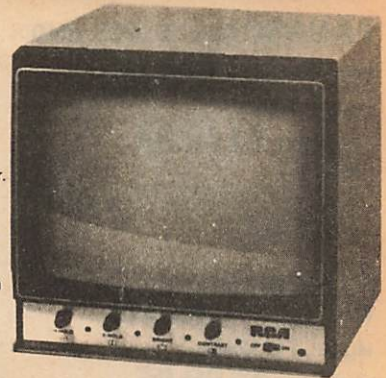
WITHOUT LENS

**RCA VIDEO MONITOR MODEL TC-1910**

OUR PRICE **\$169.95** each  
5 & UP **\$159.95** each

**SPECIFICATIONS**

- Resolution: 750 lines nominal.
- High voltage: 10 kV. • Linearity: 3% or better.
- DC restoration: Pedestal clamp (switchable on/off).
- Synchronization: Internally derived.
- Picture Tube: 9 in. (diagonal), 44-sq. in. viewing area. Integral Implosion protection.
- Input: 0.5 to 1.5 V p-p, sync-negative, composite video. High impedance or 75 ohm termination.
- Connectors: Two UHF for looped-through video.
- Front Panel Controls: Rotary—Brightness, contrast, V-Hold, H-Hold. Rocker—On/Off switch (LED power indicator).
- Rear Panel Controls: Slide Switch—Hi Z/75 ohm, DC restoration On/Off. Video sharp/soft (picture/data).
- Supply Voltage: 108 to 132 V, 60 Hz, or 12 to 16 VDC.
- Power: 32 watts at 120 VAC, 17 watts at 12 VDC.
- **Optional Accessory: Rack Mount model TC-1910MK... \$49.95**



**RCA 9" DESK TOP MONITOR MODEL TC-1109**

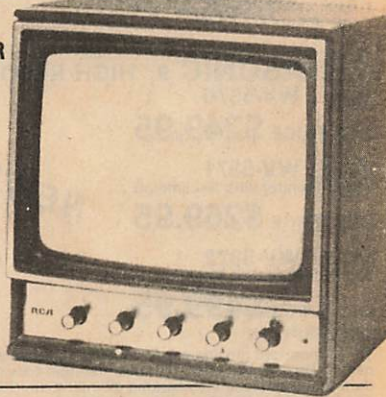
OUR PRICE **\$159.95**

**FEATURES**

- 9" (Diagonal) Monochrome Monitor.
- Outstanding Picture Quality.
- Solid State Reliability.
- Fast Acting AFC for Stable VTR Playback.
- Quick Start. • 700 Line Resolution.

**DESCRIPTION**

Suitable for surveillance, industrial, remote installation, VTR playback and many other applications. Up-front rotary operating controls. 11 kV high voltage. Regulated power supply. Automatic Frequency Control.



**RCA 12" MONOCHROME VIDEO MONITOR MODEL TC-1112**

OUR PRICE **\$219.95**

**FEATURES**

- For surveillance and industrial applications.
- High quality pictures: 700 line resolution. DC restoration. Bright 14.0 kV display. Regulated supply.
- Reliable: Solid state circuits. Stable playback display of VCR.
- Video input bridging with switchable 75 ohm termination.
- Quick-start without CRT preheating.
- Isolation power transformer.
- LED power indicator.



**RCA MONOCHROME VIDEO MONITORS MODEL TC-1115**

15" 525 lines, 120 V, 60 Hz.

OUR PRICE **\$269.95**

MODEL TC-1119

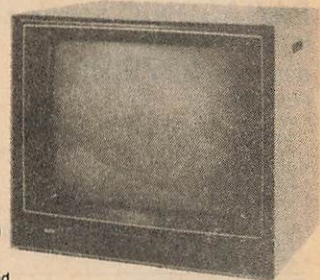
19" 525 lines, 120 V, 60 Hz.

OUR PRICE **\$349.95**

**DESCRIPTION**

TC-1115 - High resolution 800 line monitor with video selector switch for optimum picture. Switchable DC restoration, regulated power supply, and video bridging (switchable 75 ohm termination).

TC-1119 - High resolution 800 line monitor suitable for time-lapse VCR's. Regulated supply, DC restoration, and video input bridging (switchable 70 ohm termination).

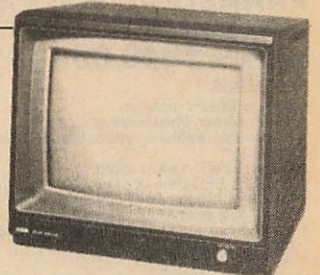


**RCA 10-INCH COLOR MONITOR MODEL TC-5510AU**

OUR PRICE **\$349.95**

**FEATURES**

- Automatic degaussing.
- 22 kV picture power.
- Video sharpness control for optimum picture.
- Built-in audio.
- Fast warm-up time—less than 7 seconds.





# CCTV MONITORS/SWITCHERS

## PANASONIC BLACK AND WHITE CCTV MONITOR

MODEL TR-930

OUR PRICE **\$149.95**

### FEATURES

- 9" (measured diagonally) desktop monitor front panel operating controls more than 700 lines at center.
- All solid state.



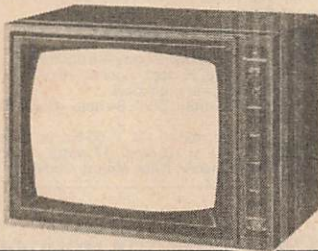
## PANASONIC BLACK AND WHITE CCTV MONITOR

MODEL TR-124M

OUR PRICE **\$199.95**

### FEATURES

- 12" (measured diagonally) monitor.
- Front mounted operating controls.
- More than 700 lines at center.
- All solid state.
- Rack mountable with optional EIA 19" rack mount (TY-K124).



## PANASONIC 9" HIGH RESOLUTION MONITORS

MODEL WV-5370

OUR PRICE **\$249.95**

MODEL WV-5371

Single Monitor with Rackmount

OUR PRICE **\$269.95**

MODEL WV-5372

Two Monitors with Rackmount

OUR PRICE **\$499.95**

### DESCRIPTION

These monitors provide crisp, detailed pictures with a horizontal resolution of 750 lines at center. Unipotential picture tubes maintain focus under variable brightness settings. Standard features include selectable scan and short H. AFC time constant for VTR playback. The WV-5370 features a ready-connector for integration into alarm activated systems. A built-in cable compensator boosts picture quality over extended distance.

**NEW!**



## PANASONIC 5" HIGH RESOLUTION B/W MONITORS

MODEL WV-5200B

OUR PRICE **\$249.95**

MODEL WV-5203B

Triple Video Rack Mount

OUR PRICE **\$795.00**

### DESCRIPTION

The desk top model WV-5200B and the triple rack mount model WV-5203B both have highly detailed pictures with a horizontal resolution of 600 lines at center. Each provides a stable black reference with switchable DC restoration preventing excessive contrast while preserving shadow detail.

**NEW!**



## PANASONIC BLACK AND WHITE CCTV MONITOR

MODEL WV-5410

OUR PRICE **\$279.95**

### FEATURES

- 12 3/4" screen (measured diagonally) desktop video monitor.
- Horizontal resolution 850 lines at center.
- DC restoration switchable.
- Short H. AFC time constant.
- Looping through BNC connectors for video and sync input and output.
- Rackmountable with optional rack angle bracket (WV-Q20).
- All solid state.



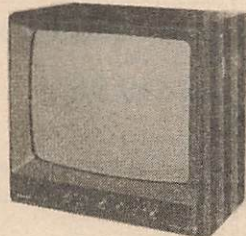
## PANASONIC BLACK AND WHITE CCTV MONITOR

MODEL WV-5470

OUR PRICE **\$349.95**

### FEATURES

- Deluxe Studio monitor.
- 16 1/4" screen (measured diagonally).
- Horizontal resolution more than 850 lines at center.
- DC restoration switchable.
- Short H. AFC time constant.
- Looping through BNC connectors for video and sync input and output.
- Rack mountable with optional rack angle bracket (WV-Q22).
- All solid state.



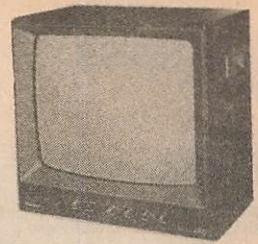
## PANASONIC BLACK AND WHITE CCTV MONITOR

MODEL WV-5490

OUR PRICE **\$399.95**

### FEATURES

- Deluxe studio monitor.
- 19 1/4" (measured diagonally).
- Horizontal resolution more than 850 lines at center.
- H-AFC time constant: short time constant for industrial VTRs, L/S switchable.
- Scanning size: overscan/underscan switchable.
- DC restoration: on/off switchable.
- High voltage 16KV.
- All solid state.



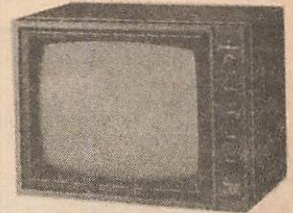
## PANASONIC COLOR VIDEO MONITOR

MODEL CT-1020M

OUR PRICE **\$349.95**

### FEATURES

- 10" (measured diagonally) Quntrix II in-line picture tube with Quick-on picture.
- Black Matrix configuration.
- ColorPilot.
- BNC-type video connectors.
- Panabrite control.
- Three-prong power plug.
- Sturdy metal cabinet.
- Commercial UL listing.



## PANASONIC 1/2" TIME LAPSE VIDEO CASSETTE RECORDER

MODEL AG-6010

OUR PRICE **\$1795.00**

### FEATURES

- VHS Mode/Time Lapse Mode Recording.
- Recording System Versatility.
- Timer Recording.
- Recording-Lock.
- Built-in Time/Date Generator.
- Automatic Repeat Recording.
- Automatic Recording After Power Failure.
- Alarm Recording.
- Hour Meter.
- Multiple Search Functions.
- High Reliability and Durability.
- Built-in RF Converter.

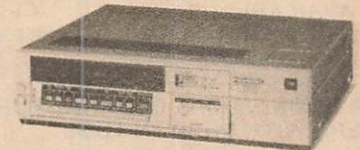
### DESCRIPTION

#### A NEW ERA IN TIME LAPSE RECORDING.

The new AG-6010 1/2" Time Lapse Video Cassette Recorder is a versatile unit equipped with multiple search functions and a built-in time/date generator. The AG-6010 is a reliable, economical time lapse video recorder for CCTV Systems. In addition to the 24-hour and 72-hour time lapse recording features for observation and surveillance applications, this new model also includes 2-hour standard play and 6-hour super-long play VHS modes. The recording lock function prevents external tampering of the system after the unit is in the recording mode, and the built-in time/date generator adds a valuable feature at no additional cost. An advanced four-head system allows recorded images to be reviewed easily with excellent reproduction, even in clear still, clear slow and frame shift modes. These are just a few of the many features that make the AG-6010 the ideal Time Lapse Video Cassette Recorder for efficient, reliable and fully versatile economical surveillance and monitoring requirements.

### SPECIFICATIONS

Power Source: 120V AC, 60/50 Hz. Power Consumption: Approx. 45W. Television System: EIA Standard (525 lines, 60 fields) NTSC color signal. Video Recording System: 2 rotary heads, helical scanning system, Luminance: FM azimuth recording, Chrominance: converted sub carrier phase shift recording. Audio Track: 1 track. Tape Format: Tape width 1/2 inch (12.7 mm), VHS tape. Tape Speed: SP: 1-5/16 i.p.s. (33.35 mm/s) SLP: 7/16 i.p.s. (11.12 mm/s). Record/Playback Time: 2/6/24/72-hour mode with NV-T 120 tape. FF/REW Time: Less than 4.5 min. with NV-T 120 tape. Input Level: Video (BNC): 1.0Vp-p, 75 ohms unbalanced, Audio (RCA): -20dB, 47 kohms unbalanced, Alarm Signal input: contact closure for alarm, Alarm Reset input: +12V (min. current 2mA). Output Level: Video (BNC): 1.0Vp-p, 75 ohms unbalanced, Audio (RCA): -6dB, 1 Kohms unbalanced, Alarm Recovery output: +5V, 220 ohms, RF Modulated: Channel 3 or 4 (selectable) 66.5dBu (open voltage), 75 ohms unbalanced. Video Horizontal Resolution: (on monoscope test pattern) Monochrome: more than 300 lines, Color: more than 240 lines. Audio Frequency Response: 50-12,000Hz (SP mode). Signal-to-Noise ratio: (Rohde & Schwarz Noise Meter) Video more than 45dB (SP mode), Audio: more than 43dB (SP mode). Operating Temperature 41°F - 104°F (5°C - 40°C). Operating Humidity: 35%-80%. Weight: 25.3 lbs. (11.5 kg). Dimensions: 18-15/16" (W) x 4-9/16" (H) x 14-11/16" (D), 430(W) x 115(H) x 372(D) mm. Specifications are subject to change without notice.



## PANASONIC SEQUENTIAL SWITCHERS

MODEL WJ-521

OUR PRICE **\$289.95**



### FEATURES

- Sequential Switcher, accepts up to 6 camera inputs, two video outputs: sequential and spot monitor; front panel indicator lamps; manual selection of any camera for display on second monitor.
- Switching interval manually adjustable from 1 to 30 seconds.
- 12-pin connector for optional remote selection of the spot monitor output.
- BNC connectors.

MODEL WJ-523

OUR PRICE **\$329.95**

FEATURES Same as above plus it can accept up to 10 camera inputs.



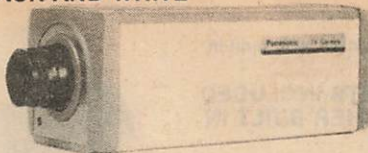
## PANASONIC VIDICON BLACK AND WHITE

CCTV CAMERAS *WITHOUT LENS*  
MODEL WV-1410

OUR PRICE **\$179.95**

### FEATURES

- 2/3" general purpose Vidicon Camera without lens.
- Switchable line lock random interlace or internal 2:1 EIA RS-170 sync.
- Automatic focus control.
- Automatic beam control.
- Adjustable vertical phase accepts optional camera identification generator board (model WV-Q90).
- 120V AC, 60Hz.



MODEL WV-1414

OUR PRICE **\$179.95**

### FEATURES

- Same as above. • 24V AC, 60 Hz.
- 1/3" general purpose low voltage Vidicon Camera.

## LOW LIGHT NEWVICON CAMERA

MODEL WV-1460. . . \$599.95  
Same features as the WV-1410

## LOW LIGHT NEWVICON CAMERA

MODEL WV-1464. . . \$599.95  
Same features as the WV-1414

## PANASONIC VIDICON BLACK AND WHITE

CCTV CAMERAS

*WITHOUT LENS*

MODEL WV-1500

OUR PRICE **\$269.95**

### FEATURES

- 2/3" high performance Vidicon Camera with 16mm, f/1.6 C-mount lens, line lock random or internal 2:1 interlace (RS-170) or external sync (Genlock RS-170).
- Black clamp, L.L. Phase video level control.
- AGC on/off switch.
- Accepts optional camera identification generator board (model WV-Q90).
- Accepts optional splitter board (model WV-Q91).
- 120V AC, 60Hz.



MODEL WV-1504

OUR PRICE **\$269.95**

### FEATURES

- Same as above.
- 2/3" high performance low voltage Vidicon Camera.
- 24V AC, 60Hz.

## PANASONIC HIGH RESOLUTION CAMERAS BLACK AND WHITE (BODY ONLY)

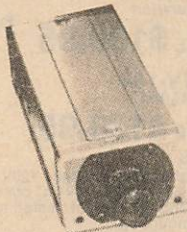
*WITHOUT LENS*

MODEL WV-1800

OUR PRICE **689.95**

### FEATURES

- 1" separate mesh Vidicon camera (body only without lens).
- Horizontal resolution more than 800 lines at center.
- Built-in EIA. • RS-170 LSI sync generator.
- Genlock feature.
- Automatic Beam Control (ABC).
- Automatic electronic focus control.
- Automatic gain control (AGC).
- Automatic switching of internal/external sync modes.
- Internal sweep reversal connector for mounting position flexibility.



- Sweep protection circuit.
- Heavy duty die-cast chassis
- 120V AC, 60Hz.

MODEL WV-1804

OUR PRICE **\$689.95**

### FEATURES

- Same as above. • 24V AC, 60Hz.

## PANASONIC LOW LIGHT LEVEL CCTV, 1" NEWVICON® CAMERAS (BODY ONLY) WITHOUT LENS

LUNAR LIGHT 600 LINES HORIZONTAL RESOLUTION

MODEL WV-1900

120V AC

OUR PRICE **\$4495.00**

MODEL WV-1904

24V AC

OUR PRICE **\$4495.00**

### DESCRIPTION

Panasonic Video Systems supplements its outstanding line of CCTV products with the arrival of the WV-1900 series of low light level cameras, designed both for security and other specialized video applications where minimum of light is required or desirable. The WV-1900 and its 24 volt AC low voltage counterpart, the WV-1904, are Lunar Lite cameras which provide usable video pictures under moonlight conditions. The WV-1900 series cameras incorporate sensitive 1" Newvicon® tubes with fiber optics and an image intensifier which ensures high performance in minimum lighting conditions.

The WV-1900 series cameras also feature standard EIA RS-170 sync with LSI circuitry, various automatic control circuits for quality adjustment-free pictures; genlock capability through composite sync or composite video signal; Auto-Black/AGC circuitries for accurately clear pictures in poor contrast situation; automatic internal/external sync switching, built-in protection circuitry for the tube and image intensifier; automatic circuitry control for the lens iris and both the video and image intensifier gain; and a rugged die-cast chassis to protect the cameras from rough handling in normal usage. The WV-1900 series cameras are available in either standard line voltage 120 volt AC versions or in low voltage 24 volt AC models, which affords power requirement versatility. These new additions to the Panasonic CCTV product line are important advances in low light level camera technology. Besides security implementation, other applications include: certain industrial instrumentation applications; uses in mines and tunnels; at docks or in harbors at night; various medical lab operations involving TV microscopy; engineering lab procedures requiring a minimum of light; and any security applications where additional expensive lighting is prohibitive. The WV-1900 series of Lunar Lite cameras are the obvious choices for those desiring quality video in minimum illumination conditions.

**NEW!**



## PANASONIC COLOR SURVEILLANCE CAMERAS

(BODY ONLY) *WITHOUT LENS*

MODEL WV-4050

OUR PRICE **\$899.95**



### FEATURES

- Color camera without lens.
- 1/2" 3.9MHz Newvicon tube.
- Sync: 2:1 internal interlace.
- Horizontal resolution 270 lines at center.
- Video output: 1.0Vp-p/75 ohm BNC connector.
- Minimum illum. 1 footcandle (10 lux).
- S/N better than 46dB.
- Controls: indoor/outdoor select switch on camera, F/B gain control (on camera and RCU, model WV-4052), auto white balance control (momentary push button on camera and RCU).
- DC 12V 0.3A.

## PANASONIC SOLID-STATE CHARGES PRIMING DEVICE (CPD) CAMERA (BODY ONLY)

*WITHOUT LENS*

MODEL WV-CD10

OUR PRICE **\$749.95**

### FEATURES

- Black and White.
- Body only (without lens).
- Horizontal resolution more than 280 lines at center.
- No burn in and very short lag.
- No image distortion.
- Minimum fixed pattern noise as compared to MOS image sensors.
- Compact size, lightweight.



- Rugged construction for protection against shock and vibration.
- Separate power supply.
- Use optional "WV-LA" series lenses.

## PANASONIC SINGLE CABLE COMPACT CCTV CAMERA SYSTEMS

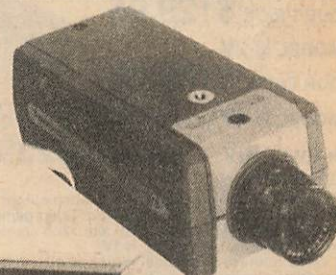
*INCLUDES LENS*

MODEL WV-1600/KT1

OUR PRICE **\$279.95**

### FEATURES

- Single-cable 2/3" Vidicon Camera with 16mm, F/1.6C-mount lens, internal line lock random interlace.
- Comes with AC power Camera Control box, AC 120V, 60 Hz.
- Includes Lens.



MODEL WV-1600/KT2

OUR PRICE **\$279.95**

### FEATURES

- Single-cable 2/3" Vidicon Camera with 16mm, F/1.6C-mount lens, internal random



- Comes with DC power Camera control box, DC 12V.
- Includes Lens.

## PANASONIC CPD COLOR CAMERA (BODY ONLY) WITHOUT LENS

MODEL WV-CD120

OUR PRICE **\$1395.00**

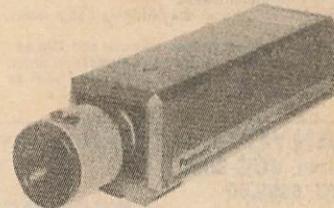
### FEATURES

- Solid-state CPD offers extremely long-life and high reliability as compared to conventional tubes.
- No image distortion, burn-in, lag, or blooming.
- Compact, lightweight construction with protection against shock and vibration.
- Minimum fixed pattern noise as compared to MOS image sensors.
- Broader dynamic range than conventional CCD image sensors.
- A Line Sequential Color Differential System is employed with a highly precise mosaic color filter on the CPD imaging area to pick-up the 4 primary colors (Green, Cyan, Magenta and Yellow).

### DESCRIPTION

Panasonic complements its already outstanding line of CPD CCTV cameras with the introduction of the WV-CD120. The WV-CD120 is a quality, compact color camera that offers some of the most advanced features available today. Incorporating Innovative Charged Priming Device (CPD) single-chip sensors, this camera performs superbly and offers improved maintenance-free operation. In addition, the compact design of the WV-CD120 allows it to be mounted in areas of limited space. Applications for the WV-CD120 CPD CCTV camera are virtually endless. The WV-CD120 is perfect for use in the new field of Robotics because it does not produce image distortion like conventional cameras. This makes the WV-CD120 a highly accurate camera for scanning, measurement and observation purposes. Expanded CCTV applications also include medical, scientific, military, and general surveillance operations.

**NEW!**





## PANASONIC MINI-CCTV SYSTEM

The Economical "Do-It-Yourself" Surveillance system includes: Two WV-80 Vidicon Cameras with 18mm, F 1.6 lens, 9"(meas. diag.) monochrome monitor with built-in sequential switcher and camera mounting brackets.

MODEL WV-80/KT2

OUR PRICE **\$689.95**

### DESCRIPTION

**Virtually Endless Applications** The Panasonic Mini-CCTV System can be used for virtually unlimited applications. In the home, you can monitor from your kitchen your child's bedroom, the front door, or just about any area which could use surveillance. The basic system features two CCTV cameras, but for more demanding applications you can expand the system to six cameras.

Other important applications include convenience stores, gift shops, or any retail outlet that could use CCTV system is also perfect for light industry, warehousing and educational applications. Thanks to its design, this system requires a minimum of wiring, and its main monitor unit is easy to use and offers high quality performance.

**Design Your Own System** The Mini-CCTV System is simple to install and easy to operate. Just attach the camera mounting bracket to the wall or ceiling, aim the camera and focus. A single coaxial cable between the camera and the monitor carries the video signal from the camera and supplies it with power.

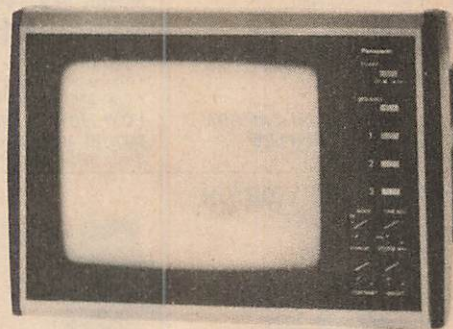
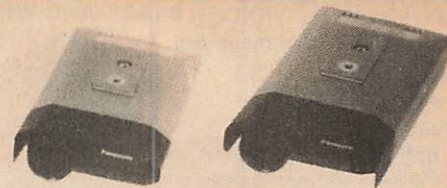
The system is completely versatile for it will connect with alarms, intercoms, up to six cameras (with optional adaptor) and a time lapse recorder.

### FEATURES for the CCTV Camera WV-80

- Single cable connection.
- Cable distance from camera to monitor can be extended up to 2640 ft. (with proper cable).
- Camera uses BNC connector.
- Automatic light compensator allows use under broad variety of lighting conditions.
- Excellent picture quality with horizontal resolution of 500 lines.
- Compact, lightweight and handsomely styled.
- 2/3" high sensitivity pick-up tube with minimum illumination of only 1 foot-candle.

### CCTV Monitor

- As many as three cameras can be connected to one monitor/switcher unit.
- Video output displays each camera in sequence or any camera manually selected.
- Monitor has a 9" (mea. dia.) monochrome screen.
- Sequential switching interval manually adjustable from 1 to 60 seconds.
- Inputs for three monitor controls: intercom, alarm sensor and switch.
- Built-in camera/monitor protection circuit.
- Alarm control output for warning buzzer or chime.
- Alarm period manually adjustable from 1 to 30 seconds.



**Additional Cameras**  
model WV-80 . . . . **\$169.95** each  
Comes with Wall Mount

### OPTIONAL ACCESSORIES

- Camera Extension Unit model WV-83 . . . . . \$250.00
- Remote Control Box model WV-438 . . . . . \$125.00
- Wide Angle Lens Adaptor model VZ-ML10 (Picture Angle without VZ-ML10P H-30°, V-23°. With VZ-ML10P H-57°, V-44°) . . . . . \$40.00

- Panning Head model WV-435 . . . . . \$110.00
- Weather-proof Housing WV-95 . . . . . \$125.00

## CHANNELPLUS MULTIPLEXER

Now Your Video Sources Can Have Their Own Channels On All Your TVs For Home, Hospitals, Hotels, Motels or Any Multiple TV Systems

MODEL H-1V

OUR PRICE **\$129.95**

MODEL H-2V

OUR PRICE **\$199.95**

MODEL H-3V OUR PRICE **\$269.95**

MODEL HRV OUR PRICE **\$239.95**

### DESCRIPTION

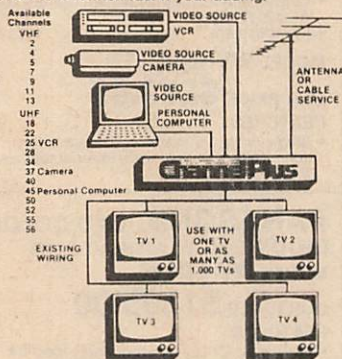
ChannelPlus actually adds new channels right to your existing antenna or cable wires. Take each of your video sources—VCRs, video games, video disks, home computers, color and black & white cameras, satellite dish, etc., and connect them to ChannelPlus. If you adding:

- 1 Video Source use model H-1V
- 2 Video Sources use model H-2V
- 3 Video Sources use model H-3V
- 1 Video Source & 1 RF (Pay TV) use model HRV.

With ChannelPlus, there's no loss of video quality. Channel Plus uses the latest high frequency technology to solve video distribution problems that switchers can't.

### FEATURES

- **Channel selection at every TV location.** The individual tuner of each TV is used to make program selections.
- **Use your remote control.** With ChannelPlus, you can use the remote control on your TV or VCR to switch between all broadcast and ChannelPlus channels.
- **Easy to use.** It's as easy to install as a video splitter.
- **Hook up as many video sources and TVs as you wish.** Depending on the model you order, you're not just limited to 2 TVs and 1 VCR as with most switch boxes.



## SANYO HIGH TECHNOLOGY CCV CAMERA, 12 VDC

MODEL VDC-3800  
REG. \$899.00

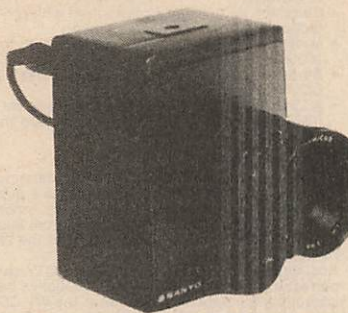
OUR PRICE **\$569.95**

### FEATURES

- 2/3" image device.
- Low power consumption.
- All solid state camera — including image device.
- Built-in Sanyo original frame transfer CCD image device.
- No interference from magnetic or electrostatic field.
- High performance — 420 lines horizontal resolution with no image burn.
- Small lightweight camera for applications where space is limited.
- Uses standard "C" mount lens.

### DESCRIPTION

Compact CCD image device camera. Completely solid state, high resolution, 2:1 interlace, external synchronization, suitable for use in all CCTV applications.



## PANASONIC CCTV CAMERAS

MODEL WV-140  
120V AC Operation

OUR PRICE **\$139.95** **NEW!**

MODEL WV-144  
24V AC Operation

OUR PRICE **\$139.95**

### FEATURES

- A choice of models WV-140 - 120V AC operation or WV-144 - 24V AC operation.
- Compact and lightweight design for versatile mounting.
- Highly sensitive mesh 1/2" Vidicon pickup tubes in both cameras.
- Internal or line locked sync system.
- Minimum illumination of one foot-candle (10 lux) with F1.4 lens.
- Automatic light compensation circuit allows use under a wide variety of lighting conditions.
- Mechanical focus externally adjustable.
- Top or bottom mounting flexibility.
- Standard C-mount allows for use of interchangeable lenses.
- White clip circuit.

### DESCRIPTION

The Panasonic WV-140 and WV-144 black and white CCTV cameras have been specifically designed to provide reliable, cost effective operation without compromising on performance quality. The Highly sensitive 1/2" separate mesh Vidicon tubes that are incorporated in these cameras offer a minimum illumination of only one foot-candle so they perform extremely well under most lighting conditions. In addition, both cameras offer more than 500 lines of horizontal resolution for highly detailed image reproduction. And, the WV-140, and WV-144 can be easily installed. Reliability is key factor when purchasing CCTV cameras. The WV-140 and WV-144 black and white CCTV cameras are the result of extensive research and development on behalf of Panasonic to provide high quality CCTV systems components.



## SANYO COLOR CCV CAMERA WITH CONTROL MODULE

MODEL VCC-3700  
REG. \$990.00

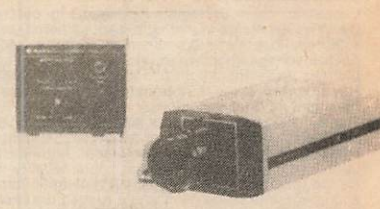
OUR PRICE **\$699.95** **NEW!**

### FEATURES

- High-performance 2/3" newcovision tube.
- 10 lux minimum illumination requirement.
- NTSC compatible video output.
- Two piece system with built-in cable equalization.
- External sync input connector.
- White balance adjustment.
- C-mount lens interchangeability.

### DESCRIPTION

Today's rapidly changing commercial and industrial environment has made security maintenance and monitoring extremely critical. Sanyo is pleased to introduce an all-new video camera geared to meet a broad range of applications. The VCC-3700 has been designed as a two-piece unit to keep camera size small and performance high. The camera unit itself can be mounted up to a quarter mile from the control module, providing added flexibility. This exceptionally compact camera also offers top or bottom mounting capability and a minimum illumination requirement of only 10 lux.





## RCA SCANNING SYSTEM ALLOWS REMOTE OR AUTOMATIC SCANNING MODEL V-3000

OUR PRICE **\$299.95**  
FEATURES

- Comes Complete With:
- Wall mount (RV-1600WM).
- Scanner (RV-3200AP).
- Remote box (RV-130AP).

### DESCRIPTION

The contemporary styled V3200AP Scanner Package incorporates Vicon's years of experience in producing dependable, economically priced scanners. Simple adjustable snap-on stops assure ease of installation and flexibility in selecting area coverage. The Desk-Top Control shown provides a dual control combination for automatic scanning or manual modes of operation. Requires 4 conductor cable between control box and scanner.

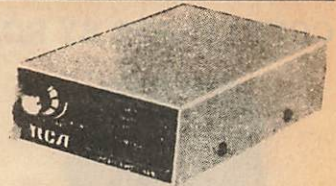


## RCA SEQUENTIAL SWITCHER MODEL TC-1404

OUR PRICE **\$179.95**

### FEATURES

- Low Cost. • 4 Camera. • Vertical-Interval.
- Sequential switcher. • Reliable CMOS IC's.
- Low power consumption. • Alarm Call-up.
- Up to 4 camera inputs automatically sequenced to one monitor.
- Instant selection with positive key-action switch for each camera.
- Variable dwell time can be set for 3 to 70 seconds from front panel.
- Alarmed camera call-up from motion detectors or alarm closures.
- Camera identification with front panel tally lights to indicate displayed camera.
- Simplified controls, human engineered for quick, logical operation.



- Small size. Desk top-or quarter-panel rack mount with additional RCA Switchers, Motion Detector or Time and Date Generator.

### MODEL TC-1408

OUR PRICE **\$595.00**

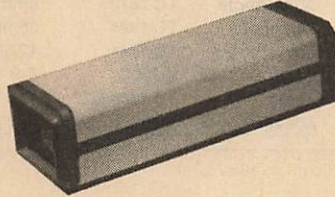
Same as above plus alarm features, 8 position

## RCA INDOOR HOUSINGS MODEL V-8600H

OUR PRICE **\$95.00**

### DESCRIPTION

The V8600H is a durable and compact indoor housing, designed to protect cameras from dust in high-visibility installations. Constructed of lightweight aluminum and plastic, the attractively styled housing accommodates most 2/3-inch CCTV cameras, fixed focal length and auto-Iris lenses, and all 2/3-inch ComPacLens zoom lenses.

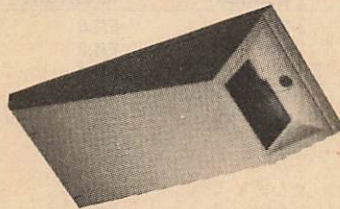


## RCA CEILING ENCLOSURE MODEL V-8660H

OUR PRICE **\$114.95**

### DESCRIPTION

The compact Model V8660H Ceiling Enclosure provides an inconspicuous and versatile ceiling housing for CCTV cameras. The sturdy injection molded plastic housing is constructed so that the camera can be easily adjusted and the lens focused from below the ceiling. Electrical connections are made through openings in the top, and a duplex outlet is provided for camera power.

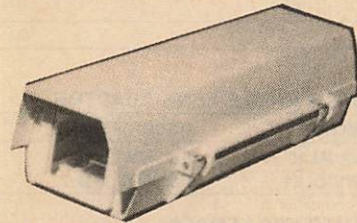


## RCA ENVIRONMENTAL ENCLOSURE MODEL V-8300H

OUR PRICE **\$179.95**

### DESCRIPTION

The Model V8300H Enclosure is a compact enclosure specifically designed for outdoor use and will accommodate most 2/3-inch CCTV cameras and lenses. The enclosure can be ordered with a thermostatically controlled blower, Model V-8300H-B, and heater, Model V-8300H-H, which maintain temperatures within operating limits for the enclosed equipment. A sunshield, Model V-8300H-S, may also be ordered if required.



V-8300H-B Blower ..... \$63.00  
V-8300H-H Heater ..... \$63.00  
V-8300H-S Sunshield ..... \$63.00

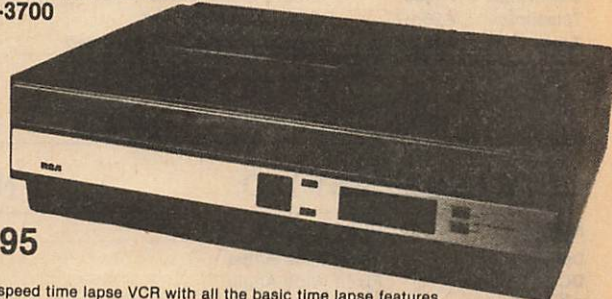
## RCA TIME LAPSE VIDEO RECORDER NTSC MONOCHROME AND COLOR MODEL TC-3700

NEW!

OUR PRICE **\$1599.95**

### FEATURES

- Standard 10-speed time lapse VCR with all the basic time lapse features.
- Easy-to-Use for those "everyday" CCTV applications. • Time-of-Alarm memory and recall.
- High speed visual search - forward or reverse. • Ten playback speeds - forward or reverse.
- Still field and field-advance playback. • 24 hour memory protection.
- Electronic security lockout. • Programmable lockout.
- Usable audio at 2 and 12 hour speeds. • "Alarm On" and "Recording On" Outputs.



## RCA VIDEO PRINTER MODEL TC-800

OUR PRICE **\$499.95**

### DESCRIPTION

Instant printed copies of video pictures on your monitor or from your Video Recorder. This compact thermal printer produces positive or negative prints. It has adjustable video level and contrast and gives approximately the same resolution as a TV receiver.

TC-801 Thermal paper  
for TC-800 ..... \$24.95  
4 rolls per package.

NEW!



## RCA DATE AND TIME GENERATOR PUT DATE AND TIME ON YOUR VIDEO SIGNAL IDEAL FOR TIME-LAPSE RECORDING MODEL TC-1440B

OUR PRICE **\$395.00**

### FEATURES

- Power line accuracy.
- No cumulative errors.
- Latest CMOS technology and conservative design assures trouble free operation.
- Standby electronic "flywheel" during brief power failures-no loss of timing information.
- Zoom character size control - 5 to 15% of picture height.
- Looped-through video unaffected by generator - even if off.
- Display positioned anywhere on screen - stacked or horizontal.
- Manual brightness control plus...automatic adaption to changes in background brightness level.
- Usable with random or positive interface camera - color or monochrome.
- Recessed dual-action front panel switches set date and time.
- Built-in calendar tracks days, months, and years (including leap-years) automatically.
- No accidental turn off - powered with line cord insertion - no power switch.



## RCA WALL AND CEILING MOUNTS GENERAL PURPOSE MOUNT

MODEL TC-9200 OUR PRICE **\$19.95**

An economical 8" General Purpose Mount for loads up to 20 lbs. (9 kg), used as a wall mount. It has an aluminum finish and a sleeve ball mount clamp.

NEW!

## GENERAL PURPOSE MOUNT

MODEL TC-9201 OUR PRICE **\$24.95**

A deluxe 8" General Purpose Mount for loads up to 20 lbs. (9 kg), used as a wall mount. It has a glossy black finish and a lever type ball mount clamp for quick adjustments of camera position.



## WALL MOUNT

MODEL TC-9202 OUR PRICE **\$29.95**

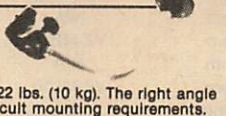
A Wall Mount extendable from 9.6" to 16.3" (244 mm to 414 mm). It can accommodate loads up to 22 lbs. (10 kg) in both the short and the fully extended configuration.



## UNIVERSAL WALL/CEILING MOUNT

MODEL TC-9203 OUR PRICE **\$44.95**

An 8.7" (220 mm) Universal Wall/Ceiling Mount for loads up to 22 lbs. (10 kg). The right angle curve in the support arm can accommodate many otherwise difficult mounting requirements.



## WALL MOUNT

MODEL TC-9204 OUR PRICE **\$49.95**

### DESCRIPTION

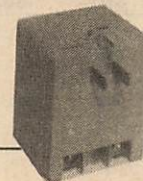
A sturdy, medium duty 9.8" (250 mm) Wall Mount for loads up to 33 lbs. (15 kg).



## RCA 24 VOLT TRANSFORMER MODEL TC-1324

OUR PRICE **\$12.95**

24 V, 60 Hz transformer. Provides low voltage power for one TC1500 family 24 VAC camera. Plugs into standard wall receptacle.



## 24 VOLT TRANSFORMER MODEL TC-1334

OUR PRICE **\$16.95**

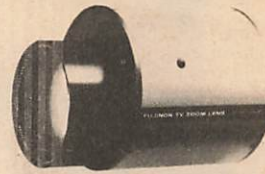
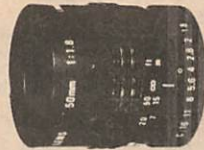
Same purpose as TC1324 except will operate one TC2000 family, one TC1005 family or two TC1500 family 24 VAC cameras.





# CCTV LENSES

## CCTV LENSES BY RCA



### RCA LENSES FOR TC-1501, TC-1502, TC-2011, and TC-2012

TYPE	MODEL	DESCRIPTION	OUR PRICE
Standard	TC-1886	16mm (No Iris) Fixed	\$ 20.00
Wide Angle	T-1888	8mm (No Iris) Fixed	69.95
Telephoto	V-35-1.7	35mm (No Iris) Fixed	85.00
Zoom	V-12.5-75m	12.5-75mm (No Iris) Motorized	619.00

### RCA LENSES

FOR TC-1501U, TC-1502U, TC-2011U, and TC-2012U, TC-5002, KP-120

TYPE	MODEL	DESCRIPTION	OUR PRICE
Standard	TC-1816	16mm (Auto Iris) Fixed	\$189.00
Wide Angle	TC-1810	8mm (Auto Iris) Fixed	225.00
Telephoto	TC-1824	25mm (Auto Iris) Fixed	199.95
Zoom	TC-1841	12.5-75mm (Auto Iris) Motorized	799.00
Zoom Control	V-100C	For Above Lenses	179.95
Zoom	TC-1846/D2	11-110mm Outdoor Zoom	1095.00
Zoom Control	V-100ZF	For Above Lenses	192.00

## CCTV LENSES BY D.O.

**NEW!**

MODEL	DESCRIPTION	FOCAL LENGTH	LENSES	APERTURE	OUR PRICE
DO-3818	Fixed Wide Angle	3.8mm	2/3"	F/1.8	\$115.00
DO-813	Fixed Wide Angle	8 mm	2/3"	F/1.8	69.95
DO-1213	Fixed Wide Angle	12mm	2/3" - 1"	F/1.3	89.95
DO-1616	Normal Lens	16mm	2/3"	F/1.3	20.00
DO-2514	Normal Lens	25mm	2/3" - 1"	F/1.4	49.95
DOZ-13M	Zoom Lens	12.5-75	2/3"	F/1.8	149.95
DOH6X12.5GMD-3	Motorized Zoom with Focus and Iris	12.5-75			599.95
DOH6X12.5G-SND	Motorized Zoom with Focus and Auto Iris	12.5-75			699.95
PH-935	Pin Hole Lens	9.5mm	2/3"	F/3.5	199.95
AI-9	Auto Iris Fixed Lens	8.5mm	2/3"		199.95
AI-16	Auto Iris Fixed Lens	16mm	2/3"		169.95

## CCTV LENSES BY PANASONIC

**NEW!**

### FIXED-IRIS LENSES

MODEL	DESCRIPTION	OUR PRICE
WV-LM16	Standard lens 16mm, f/1.6 fixed iris	\$20.00
WV-LM12/2	Standard lens 12mm, f/1.4 fixed iris	90.00

### MANUAL-IRIS LENSES

MODEL	DESCRIPTION	OUR PRICE
MN-518	Telephoto lens 50 mm, f/1.8 with iris	\$80.00
MN-815	Wide angle lens 8.5mm, f/1.5 with iris	95.00

### MOTORIZED ZOOM LENS

MODEL	DESCRIPTION	OUR PRICE
C10X16ASND	For 1" camera, Focal length 16 to 160 mm (10X) Auto-iris, with focus and zoom control CZ-50C	\$3200.00
C10X16AMND	For 1" camera, Focal length 16 to 160 mm (10X) Iris, focus and zoom control CZ-40C	3000.00

### WIDE ANGLE LENS ADAPTOR

MODEL	DESCRIPTION	OUR PRICE
VZ-ML10	For WV-LM16	\$ 40.00
WV-CL51	For WV-LM12/2	180.00

### AUTO-IRIS LENSES

MODEL	DESCRIPTION	OUR PRICE
WV-LA16A	Standard lens 16mm, f/1.4	\$235.00
WV-LA8A	Wide angle lens 8mm, f/1.4	270.00
WV-LA25A	Telephoto lens 25mm, f/1.4	245.00
WV-LA50A	Telephoto lens 50mm, f/1.8	245.00
KF-LA16A	Standard lens 16mm, f/1.4	320.00
KF-LA8A	Wide angle lens 8mm, f/1.4	350.00
KF-LA25A	Telephoto lens 25mm, f/1.4	340.00
KF-LA50A	Telephoto lens 50mm, f/1.8	340.00
CF-25BSND	Standard lens 25mm, f/1.4	450.00
CF-125ASND	Wide angle lens 12.5mm, f/1.4	450.00
CF-50BSND	Telephoto lens 50 mm, f/1.4	475.00

### RECOMMENDED LENSES FOR PANASONIC CAMERAS (Prices Listed Above)

MODEL	TUBE SIZE	LENS SUPPLIED	NORMAL LENS	WIDE ANGLE LENS	WIDE ANGLE LENS ADAPTOR	TELEPHOTO LENS	LONG TELE. PHOTO LENS
WV-140/144	1/2"	No	WV-LM 12/2, 12mm	MN-815, 8.5mm	WV-CL51	WV-LM16, 16mm	MN-518, 50mm
WV-1410/1414	2/3"	No	WV-LM16, 16mm	MN-815, 8.5mm	VZ-ML10	N/A	MN-518, 50mm
WV-1460/1464	2/3"	No	WV-LA16A, 16mm	WV-LA8A, 8mm	N/A	WV-LA25A, 25mm	WV-LA50A, 50mm
WV-1500/1504	2/3"	Yes, Standard	Supplied, 16mm	MN-815, 8.5mm	VZ-ML10	N/A	MN-518, 50mm
WV-1550/1554	2/3"	No	WV-LA16A, 16mm	WV-LA8A, 8mm	N/A	WV-LA25A, 25mm	WV-LA50A, 50mm
WV-1600	2/3"	Yes, Standard	Supplied, 16mm	MN-815, 8.5mm	VZ-ML10	N/A	MN-518, 50mm
WV-1800/1804	1"	No	CF25B, 25mm	CF12.5A, 12.5mm	N/A	CF-50B, 50mm	N/A
WV-1850/1854	1"	No	CF25BSND, 25mm	CF125ASND, 12.5mm	N/A	CF50BSND, 50mm	N/A
WV-1900/1904	1"	No	CF25BSND, 25mm	CF125ASND, 12.5mm	N/A	CF50BSND, 50mm	N/A
WV-CD10	Solid State Element	No	WV-LA16A, 16mm	WV-LA8A, 8mm	N/A	WV-LA25A, 25mm	WV-LA50A, 50mm



## BOGEN® C SERIES P.A. AMPLIFIERS RELIABILITY • VERSATILITY • ECONOMY

### MODEL C-10

OUR PRICE **\$129.95**

Power Output (RMS @ 1000 Hz):  
10 w., UL & CSA Listed

### MODEL C-20B

OUR PRICE **\$149.95**

Power Output (RMS @ 1000 Hz):  
20 w., UL & CSA Listed

### MODEL C-35B

OUR PRICE **\$209.95**

Power Output (RMS @ 1000 Hz):  
35 w., UL & CSA Listings Pending

### MODEL C-60B

OUR PRICE **\$249.95**

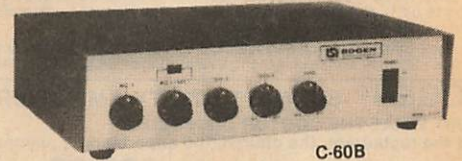
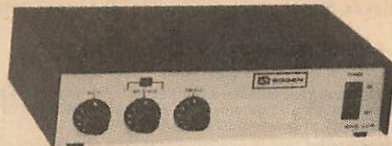
Power Output (RMS @ 1000 Hz):  
60 w., UL & CSA Listings Pending

### MODEL C-100B

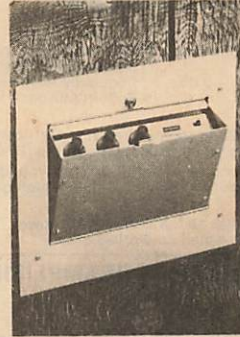
OUR PRICE **\$299.95**

Power Output (RMS @ 1000 Hz):  
100 w., UL & CSA Listings Pending

C-10  
C-20B



C-60B



### WALL MOUNTING CABINET

MODEL WMK-1

OUR PRICE

**\$114.90**

### 200 OHM PLUG IN TRANSFORMER

MODEL TM-200

OUR PRICE

**\$19.95**

### FEATURES

- C-100B, C-60B, C-35B: simultaneous mixing of 3 input signals; two high- or low-impedance (unbalanced) microphones and a tuner, tape recorder or phonograph, or one microphone and two auxiliary inputs. (C-20A, C-10 can mix 1 high-impedance mic. and 1 aux. input.)
- Outputs include balanced constant voltage 25 V. center-tapped and 70 V. as well as standard speaker impedances. C-100B, C-60B, C-35B have outputs for tape or booster amplifier and 500/600 ohm zero level line (with optional WMT-1 transformer.)
- Two similar amplifiers' outputs can be combined into one load for effective doubling of available power.
- Built-in MIC precedence over AUX 2 channel in C-100B, C-60B, C-35B. (Requires SPST switch.)
- Active mixing in C-100B, C-60B, C-35B.
- All microphone inputs equipped with filters to protect against RF interference.
- All-silicon solid state. Advanced complementary transistor circuitry to assure highest reliability of power transistors.
- Special circuitry protects the amplifiers at both inputs and outputs against accidental misuse, overload or short circuit.
- Circuit breakers.
- AC convenience outlet, except C-10.
- Accessories for extremely flexible operation, including WMK-1 wall-mounting cabinet for C-20A or C-10 as shown.

### DESCRIPTION

One of the most widely used lines of P.A. amplifiers, the economical "C" series is better than ever! Retaining the features that have made them so versatile and reliable, the new C-100B, C-60B and C-35B incorporate microphone precedence, input connections for low-impedance as well as high-impedance microphones, a switchable input permitting choice of either 2 mic./1 aux. or 1 mic./2 aux. operation, and active mixing for minimum interaction between controls. Advanced, all-silicon, solid-state design enables the "C" series amplifiers to operate continuously at extremes of temperature and greatly increases their overall stability and useful life. They are the logical choice for maximum value in P.A. amplifiers.

## BOGEN® ACOUSTA-MASTER® CT SERIES P.A. AMPLIFIERS

BUILT-IN ANTI-FEEDBACK EQUALIZER • BUILT-IN ELECTRONIC COMPRESSOR 4 MIC CHANNELS

### MODEL CT-60B

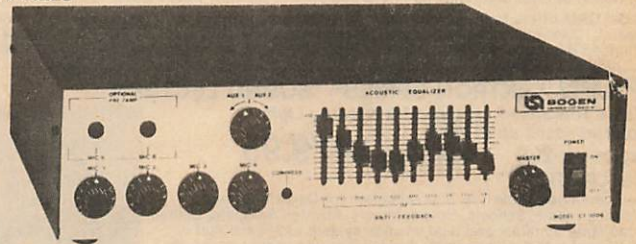
OUR PRICE **\$499.95**

### MODEL CT-100B

OUR PRICE **\$549.95**

### FEATURES

- Simultaneous mixing of 5 input signals (expandable to 7 with optional accessory PMM-2B); four microphones (expandable to six) and a tuner, tape/cassette player, or phonograph with a ceramic cartridge.
- Ten frequency equalizer filters (offering 12dB boost and/or 12dB cut); slide controls, with detented flat positions, provide unique anti-feedback and tone-control circuit.
- Balanced LO-Z, transformer-isolated mic inputs, convertible to HI-Z inputs by means of jumpers.
- Professional 3-pin female XLR type microphone connectors.
- Built-in phantom supply for condenser microphones.
- Volume of the AUX and four MIC channels (expandable to five) can be controlled from a remote point by means of accessory RVC-2B's (one for each channel).
- Built-in microphone precedence: AUX and other MIC channels can be muted for special announcements. (Requires SPST switch.)
- Built-in electronic compressor (screwdriver adjustable through front panel) assures constant output for a wide variation in input level.
- PMM-2B, optional front-panel-mounted preamplifier, adds two balanced low-impedance MIC inputs (built-in mic input transformers), convertible to high-impedance inputs (one with built-in circuitry for MIC precedence or remote control).



- 500/600 ohm telephone line can be fed either to input or from output by use of accessory WMT-1 transformer. Outputs include tape, tape/booster, constant voltage balanced 25 V center-tapped and 70 V, 4 (CT-100B), 6-8, 16 ohms.
- Two similar amplifiers' outputs can be bridged to double the number of inputs.
- Two similar amplifiers' outputs can be combined into one load for effective doubling of a available power.
- All solid state; IC's, silicon transistors and diodes used exclusively.
- Special circuitry protects the amplifiers at both inputs and outputs against accidental misuse, overload or short circuit.
- Lighted power switch.
- AC convenience outlet.
- Accessories for extremely flexible operation.

## BOGEN® CHS-B SERIES P.A. AMPLIFIERS BALANCE LOW-Z INPUTS • HIGH FLEXIBILITY • POPULAR PRICE

### MODEL CHS-35B

OUR PRICE **\$279.95**

Power Output (RMS @ 1000 Hz): 35 w., UL & CSA Listings Pending

### MODEL CHS-60B

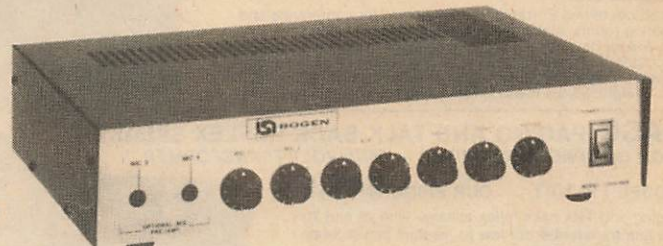
OUR PRICE **\$329.95**

Power Output (RMS @ 1000 Hz): 60 w., UL & CSA Listings Pending

### MODEL CHS-100B

OUR PRICE **\$369.95**

Power Output (RMS @ 1000 Hz): 100 w., UL & CSA Listings Pending



### FEATURES

- Simultaneous mixing of 4 inputs signals (expandable to 6); two microphones and two high level signals.
- Built-in microphone input transformers for low-impedance balanced microphones, convertible to high impedance inputs by means of jumpers.
- Professional 3-pin female XLR microphone connectors.
- Built-in phantom supply for condenser microphones.
- Built-in microphone precedence: two aux. channels, one mic. channel can be muted for special announcements. (Requires SPST switch.)
- One mic. can be remotely controlled, using RVC-2B remote controller.
- Optional front panel-mounting pre-amplifier, PMM-2B, adds 2 more balanced low-impedance mic. inputs (one with built-in circuitry for mic. precedence or remote control).
- Two separate aux. inputs, with 2 separate controls, and provision for remote control.

### DESCRIPTION

The new CHS-B series amplifiers combine advanced operating features with conservative design, utilizing integrated circuits and silicon transistors and diodes. They offer outstanding performance at surprisingly moderate cost. Two input channels are provided for low-impedance balanced microphones, convertible to high-impedance. One mic. channel has built-in circuitry for precedence or remote control. An optional accessory, PMM-2B, designed to mount on the front panel, provides two additional low-impedance balanced microphone channels. Two auxiliary channels, with separate controls, are provided for a tuner, tape-cassette player, or phonograph with ceramic cartridge.

- Outputs for tape recorder, booster amplifier, balanced constant voltage 25 V. and 70 V., plus low-impedance output transformer taps.
- Two similar amplifiers' outputs can be combined into one load for effective doubling of available power.
- Lighted power switch.
- In and out connectors for acoustic equalizer or reverb unit.
- All Solid State; silicon transistors and diodes used exclusively.
- Protection against circuit damage caused by accidental shorting or disconnecting of loudspeaker lines.
- Circuit breakers.
- Thermal breaker protects out transformers.
- Accessories for extremely flexible operation.



# AMPIFIERS/HORNS

**BOGEN® TWO-WATT UTILITY AMPLIFIER** "Music-on-Hold" makes waiting easier for callers—this dependable, economical amplifier makes M-o-H easier to provide. (It's great, too, for headphones, monitor speaker, remote line amplifier.)

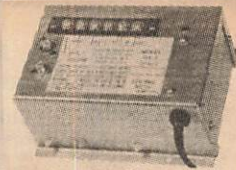
**MODEL GA-2 OUR PRICE \$59.95**

## DESCRIPTION

When the application calls for a rugged, reliable amplifier to feed "music-on-hold" to a telephone line, the GA-2 is the answer. Versatile as well as economical, this amplifier also can drive a remote telephone line, multiple headphones or a monitor speaker. It delivers 2 watts of power into an 8-ohm load.

The GA-2 has a high-impedance input that is available at both a phono jack and screw terminals. Only 50 mV input is required for full output. Distortion is less than 2% at watts and drops to 0.2% at 1.5 watts, into 8 ohms. Wide frequency response and low hum and noise further contribute to excellent performance. A screwdriver-adjustable volume control is provided on the chassis.

The GA-2 offers a choice of outputs, 8 ohms or 600 ohms, on screw terminals. The outputs may be used simultaneously (for example, to drive a telephone line and monitor headphones.) Sturdily constructed of galvanized steel (#20 gauge), the amplifier is compact and easily mounted on a wall or in any convenient location.



## BOGEN® SIX-WATT UTILITY AMPLIFIER

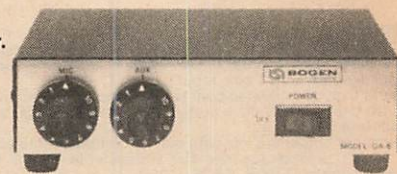
"JUST WHAT THE DOCTOR ORDERED..."

and the restaurant, the church, the supermarket, anyone looking for versatility and value in a PA. or music amplifier.

**MODEL GA-6A OUR PRICE \$89.95**

## FEATURES

- Rated output of 6 watts rms at not more than 2% THD from 45-15,000 Hz.
- Frequency response 30-12,000 Hz +0 dB, -3 dB.
- Two individually controlled inputs: Lo-Z balanced or unbalanced MIC, and wide-frequency AUX music input.
- Built-in mixing.
- Microphone dynamic range 46 dB.
- Internally selectable tone settings.
- 8 ohm, 25V and 70V output taps.



## DESCRIPTION

Background music in a doctor's waiting rooms... relaying fast-food restaurant orders from counter to kitchen...amplifying the service in a small church...reaching stockroom clerks for quick action...these are only a few of the applications for the GA-6A.

This versatile six-watt amplifier offers inputs for both a low-impedance microphone (balanced or unbalanced) and a program source such as a tuner or tape deck. The inputs can be mixed. Wide frequency response and low distortion assure high quality performance on both music and speech. For reliability, the GA-6A employs proven solid-state circuitry and rugged construction.

An illuminated rocker-type front panel switch controls AC power. The chassis is fabricated from sturdy cold-rolled galvanized steel. The brush-aluminum front panel is coated with protective epoxy; the cover is black vinyl-clad cold-rolled steel.

## BOGEN® ACTIVE MIXER—PREAMPLIFIER

### MODEL CAM

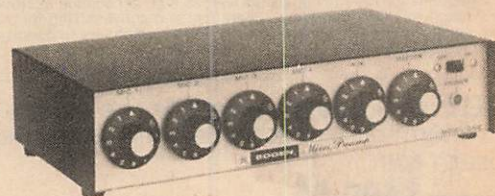
**OUR PRICE \$199.95**

## DESCRIPTION

Add all the microphones you need, easily and economically. Mix and fade all inputs. Drive power amplifiers. Bogen's mixer-preamplifiers are designed for superb performance and reliability.

The CAM features ACTIVE MIXING usually found only in more expensive mixers and studio consoles. This gives you constant microphone sensitivity regardless of the number of inputs, negligible control interaction and minimum system mixing noise. Several units may be interconnected to multiply mic. inputs.

Model CAM offers four microphone inputs and one auxiliary input with individual volume controls plus master volume control. CAM mic. receptacles are professional, three-conductor XLR-type for high or low impedance balanced or unbalanced microphones, with individual impedance selector switches. UL & CSA listed.



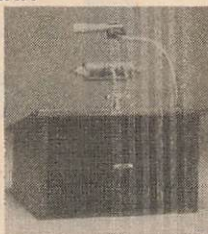
## PASO LEKTRON SERIES® SOUND LECTERN

Table Top Sound Lectern with Reading Light for Audiences up to 2000

**MODEL L-260 OUR PRICE \$479.95**

## DESCRIPTION

Self-contained Table Top Sound Lectern for Conference and Meeting rooms, Schools, Hotels, Motels, Private Clubs, etc. Built-in solid state amplifier and dual speaker system. Unidirectional microphone and reading light. Acoustically engineered to provide clear voice reproduction with uniform sound coverage. Two microphone inputs and auxiliary input for tape or tuner. Finish: Walnut veneer laminate. Power output: 40 watts. Dimensions: 33"H, 21"W, 17"D. Weight: 45 lbs. Operates on AC or external 12V. battery supply.



## BOGEN® POWER AMPLIFIERS, FAILURE DETECTOR

**MODEL MT-125 (125 Watts)**

**OUR PRICE \$479.95**

**MODEL MT-250C (250 Watts)**

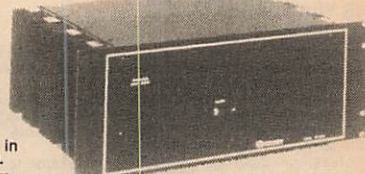
**OUR PRICE \$799.95**

## DESCRIPTION

The MT-C power amplifiers will serve superbly in virtually any sound reinforcement or public address application, as well as in emergency communications, schools, and other systems where reliable, continuous operation is essential. Rated at 125 watts and 250 watts (RMS continuous output), the new MT-C series power amplifiers meet new reliability standards.

## FEATURES

- Standard 19" rack mounting—no additional accessories required.
- At rated output, total harmonic distortion is less than 2%, 50 to 15,000 Hz. Frequency response is  $\pm 2$  dB, 20 to 20,000 Hz.
- A switch selects high-impedance unbalanced input or balanced input for low impedance or bridging. (Balanced input requires accessory plug-in transformer - see TL600, TL10LK, TL100.)
- Protection is built in against shorted output terminals, overloads, AC line surges, abnormal heat buildup.
- If overload should occur, front panel LED gives indication and amplifier shuts down automatically. • All-silicon solid state design.



## PASO LEKTRON SERIES® PORTABLE SOUND LECTERN

For Audiences up to 1000

**MODEL TA-8**

**OUR PRICE \$399.95**

## DESCRIPTION

A self contained Portable Sound Lectern for conference and meeting rooms, classrooms, product demonstration, symposiums, etc. Indoor or outdoor use. Dual speaker system, complete with microphone. Operates on 10 size D batteries or AC with optional adapter. Power output: 40 watts. Dimensions: 16 1/2" X 16 1/2" X 10". Weight: 25 lbs. Case finish: Deep brown cushioned vinyl.



## PASO PAGING AND TALK BACK REFLEX SPEAKER

HIGH COMPRESSION DRIVER — 25/70 VOLT TRANSFORMER

**MODEL TR-10/T OUR PRICE \$49.95**

Paging and Talk back reflex speaker with 25 and 70 volt line transformer for low to medium power levels.

## SPECIFICATIONS

Rating: 20 watts. Response: 275-14,000 Hz. SPL: 122 dB. Impedance: 31-45-125-250-500-1000-2000-4000 ohms. Dimensions: 10-1/4"W x 6-1/4"H x 11"D. Color Finish: Light Beige.



## PASO INDOOR/OUTDOOR HI-FI SPEAKER

FULLY WEATHERPROOF - HIGH MUSICAL QUALITY

**MODEL C-50/U OUR PRICE \$39.95**

Weatherproof HI-FI speaker for high quality musical applications indoor or outdoor. The water and weatherproof construction allows permanent use outdoors without deterioration. Speaker will not rust, corrode, or discolor with time. Ideal for music reproduction and paging in high humidity environments.

## SPECIFICATIONS

Rating: 20 watts. Response: 50-18,000 Hz. Impedance: 16 ohms. Dimensions: 8" dia. 11"D. Weight: 8 lbs. Finish: Ivory.



## TOA "TALK-BACK" SPEAKER

VOICE COIL IMPEDANCE PLUS DUAL 25/70 VOLT TRANSFORMER

**MODEL TC-302 OUR PRICE \$59.95**

## DESCRIPTION

The TC Series of 30 Watt (rated) paging horns are designed to penetrate the noisiest environments with maximum speech intelligibility, and when called upon can deliver power considerably above their normal ratings. Their larger bell diameter, coupled with power reserve and frequency shaping audibly improves their ability to project musical program material and increases efficiency as a talk back speaker. The TC-302 has a voice coil impedance of 8 ohms and is recommended for all high power, direct coupled low impedance applications.

## FEATURES

- Aluminized voice coil construction for less heat, higher power handling and longer life.
- Clear voice penetration of the noisiest environments. • Improved music program response.
- Completely weather-proof. • Universal swivel bracket saves installation time.



**MODEL TC-373 OUR PRICE \$79.95**

## DESCRIPTION

Same as the above plus: The new TC-373 is equipped with a dual 25/70 volt line matching transformer and a built-in 6 position power tap selector switch that is screwdriver-slot adjustable and they come with swivel mount brackets. The model TC-373 has protected screw terminals and provides a nominal 45 ohms and 600 ohms for console or high level intercom and talk-back applications.

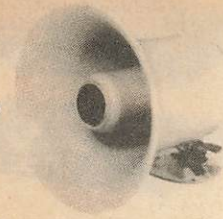
## FEATURES

- Six transformer power taps, screwdriver adjust switch.
- Highly articulate as a "talk-back" speaker. Nominal 45 and 600 ohms.

**FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788**



IH Series



## BOGEN PAGING AND TALK BACK SPEAKERS

### DESCRIPTION

Compact, high-intelligibility, double re-entrant type speakers ideal for indoor or outdoor installation. Speaker assembly is weatherproof, with a rigid, reliable mounting bracket adjustable on both the vertical and horizontal planes. Sturdy construction, "IH" series high-impact molded plastic, "SP" series all metal.

### FEATURES

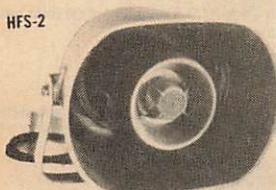
- High intelligibility.
- Rugged construction.
- Wide Frequency Response.
- Built-in driver.
- Weatherproof.
- Omni-purpose bracket.



SP Series

MODELS	IH-8	IH-45	SP-8	SPT	SPT-15
Power Capability (RMS)	15 watts	15 watts	30 watts	30 watts Vari-Tap selector switch adjustable @ 70 V to 1.8, 3.7, 7.5, 15, or 30 W. Adjustable @ 25 V to 1.8, 3.7, 7, or 15 W	15 watts Vari-Tap selector switch adjustable @ 70 V to 9, 1.8, 3.8, 7.5, or 15 W. Adjustable @ 25 V to 48, 94, 1.8, 7.5, or 15 W
Freq. Response	350-12,000 Hz	350-12,000 Hz	225-14,000 Hz	225-14,000 Hz	275-14,000 Hz
Impedance	8 ohms	45 ohms	8 ohms	Vari-Tap selector switch adjustable to 2500, 1300, 666, 333, 167, 89, or 45 ohms	Vari-Tap selector switch adjustable to 5000, 2500, 1300, 666, 333, 89, or 45 ohms
Dispersion	130	130	100	100	110
Sound Level	120 dB	120 dB	125 dB	125 dB	121 dB
Magnet	Ferrite	Ferrite	Ferrite (self-aligning field-replaceable diaphragm)		
Finish	Beige		Metal Grey		
Dimensions	6 1/2" bell dia x 6 3/4" D (16.5 x 16.8 cm)		10" W x 10 1/2" D x 9 1/2" H (25.4 x 26.7 x 24.1 cm)		8" W x 9" D x 8" H (20.3 x 22.9 x 20.3 cm)
Shipping Wt.	2 1/2 lbs (1.1 kg)	2 1/2 lbs (1.1 kg)	7 lbs (3.2 kg)	6 lbs (2.7 kg)	4 lbs (1.8 kg)
Our Price	<b>\$44.95</b>	<b>\$59.95</b>	<b>\$64.95</b>	<b>\$79.95</b>	<b>\$66.95</b>

HFS-2



## BOGEN ALL-WEATHER HIGH FIDELITY COAXIAL PROJECTOR MODEL HFS-2

OUR PRICE **\$119.95**

### DESCRIPTION

Model HFS-2 is designed for use in areas exposed to weather conditions and/or where high fidelity, high efficiency sound reproduction is a requisite. Incorporates environment-protected Woofer, compression type tweeter, two drivers, crossover filter and dividing network. Supplied with a rugged steel bracket for all type mounting applications. Recommended for auditoriums, athletic fields, motels, shopping centers, country clubs, etc.

### SPECIFICATIONS

- Power Capability: 15 watts continuous.
- Frequency Response: 150-15,000 Hz.
- Sound Level: 117 dB.
- Dispersion Angle: 130° x 110°.
- Impedance: 8 ohms.
- Finish: Baked Beige enamel.
- Dimensions: 13 1/4" W x 10" D x 10 3/4" H (33.7 x 25.4 x 27.3 cm).
- Shipping Weight: 10 lbs. (4.5 kg).

## BOGEN PROJECTOR HORN

For use with "DR" series, 1 3/8" - 18 thread, high-compression driver units

### MODEL BAH

OUR PRICE **\$99.95**

### DESCRIPTION

Bi-axial horn with gimbal mount — Bi-axial sectoral horn, with computer-calculated exponential flare rate, provides uniform wide angle coverage. Gimbal mounts permits focusing sound within 180° directional arc. High efficiency non-resonant projector is molded of vibration-free rigid structural material. Re-entrant design assures true, lobe-controlled, horizontal dispersion pattern required for high quality voice and music systems.



BAH



WAH

## BOGEN WIDE ANGLE PROJECTOR MODEL WAH

OUR PRICE **\$99.95**

### DESCRIPTION

Non-resonant, all-purpose, exponential reflex type projector horn. Weatherproof fiberglass bell, heavy duty positive-lock mounting bracket.

MODELS	BAH	WAH
Low End Cut-Off	200 Hz	115 Hz
Dispersion	130 x 60	120 x 60
Air Column Length	2.8 (85.3 cm)	4 1/2 (137.2 cm)
Bell Size	21" x 10 1/4" (53.3 x 26 cm)	23" x 13" (58.4 x 33 cm)
Horn Length	10 1/4" (27.3 cm)	17" (43.2 cm)
Shipping Weight	10 lbs. (4.5 kg)	14 1/2 lbs. (6.6 kg)
Our Price	<b>\$99.95</b>	<b>99.95</b>



DR-30T



DR-40T

## BOGEN DRIVER UNITS

### DESCRIPTION

Designed specifically for systems where high-intelligibility and wide mid-range response are required. Magnets are Alnico V D.C. Double weather-sealing. Superb conversion efficiency. Excellent for replacement use on any loudspeaker with standard 1 3/8" - 18 threads.

Sturdy construction and weather-sealing make the "DR" series ideal for indoor or outdoor applications in factories, garages, transportation terminals, race tracks. Finish is grey baked enamel.

MODELS	Power (Cont.)	Power (Eqld.)	Frequency (Hz)	Sound Level	Impedance (ohms)	Power Taps (watts)	Ship Wt.
DR-30T	30 W, RMS	40 W	120-14,000	126 dB	2500, 1300, 666, 333, 167, 89, 45	70 V line 1.8, 3.7, 7.5, 15, 30 25 V line 1.8, 3.7, 7.5, 15	5 lbs (2.3 kg)
DR-40T	40 W, RMS	60 W	80-12,000	131 dB	2000, 1000, 500, 250, 125, 16	70 V line 2.5, 5, 10, 20, 40	8 lbs (3.6 kg)

DR-30T ..... **\$ 69.95**  
DR-40T ..... **106.60**

## BOGEN SOUND COLUMNS

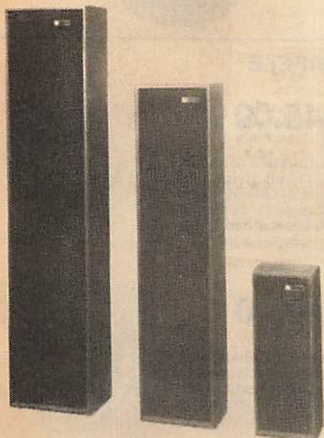
MODEL SCW-20 OUR PRICE **\$89.95**

MODEL SCW-35 OUR PRICE **\$169.95**

MODEL SCW-80 OUR PRICE **\$259.95**

### DESCRIPTION

These carefully engineered wall-mounted sound columns provide the practical, economical answer to difficult sound reinforcement installations. By precisely restricting sound projection to a narrow vertical pattern, the sound columns greatly reduce dispersion of sound into undesirable areas. This effectively minimizes reflections which produce feedback "howl", simplifies microphone placement and prevents "blasting" of audience near the loudspeakers. Excellent for churches, auditoriums, night clubs, . . . and all locations where acoustic conditions present difficult problems which cannot be resolved by the use of conventional loudspeakers.



MODEL	SCW80	SCW35	SCW20
Wattage Rating (continuous)	80 watts	35 watts	20 watts
Frequency Response	50-15,000 Hz	70-14,000 Hz	120-10,000 Hz
Speakers	Six - 8	Six - 6	Four - 5
Impedance	8 ohms		
Dispersion	Vertical 25, Horizontal 120		Vertical 45, Horiz. 90
Length of effective throw	200	130	50
Terminals	2-screw terminal strips (polarized)		
Construction	1/2" particle board, glued, fastened, with mounting hardware		3/4" particle board, glued, fastened with mtg. hardware
Finish	Simulated oiled walnut, black grille		
Dimensions	52 H x 7 1/4" D x 11 1/2" W (132.1 x 18.4 x 29.2 cm)	42 H x 6 D x 9 1/2" W (106.7 x 15.2 x 24.1 cm)	20 H x 5 D x 7 1/2" W (50.8 x 12.7 x 19.1 cm)
Shipping Weight	48 lbs. (21.8 kg)	31 lbs. (14.1 kg)	12 lbs. (5.4 kg)
Our Price	<b>\$259.95</b>	<b>169.95</b>	<b>89.95</b>



# MICROPHONES/AUDIO ACCESSORIES

## BOGEN FLOOR STAND MODEL SF-2

OUR PRICE **\$26.95**

### FEATURES

- Grip-action clutches for positive locking control.
- Bases weighted toward outer rim for greater stability.
- Tubing chrome plated for durability and resistance to rust.
- Standard 5/8"-27 threads for convenient attachment of microphone.

### SPECIFICATIONS

- Base: 10" (25.4 cm) Dia. Charcoal Wrinkle.
- Tube Assembly: Bright Chrome.
- Height: 35" to 63" (88.9 to 160 cm).
- Shipping Wt: 10 lbs. (4.5 kg).

## BOGEN BOOM ATTACHMENTS MODEL MB-1

OUR PRICE **\$16.95**

### DESCRIPTION

Single positive-action triangular knob to control motion and positioning of diecast one-piece universal swivel. For use with any 5/8"-27 threaded adjustable microphone stand. Chrome tube 31" (78.7 cm) long. Tapered, black epoxy-coated counterweight. Recessed cable guide for professional appearance. 3lbs. (1.4 kg).

## MODEL MB-2

OUR PRICE **\$32.95**

### DESCRIPTION

Operational flexibility, rugged construction, professional styling. Diecast swivel with individual knobs to control motion and orientation. Chrome tube expandable from 31" to 47" (78.7 to 119 cm), with grip-action clutch. Swivel and tapered counterweight finished in non-reflective charcoal. For use with 5/8"-27 threaded stands. Shipping Weight 4 1/2 lbs. (2 kg).

## BOGEN DESK STAND MODEL DS-3

OUR PRICE **\$9.95**

### DESCRIPTION

General purpose stand. 4" (10.2 cm) high chrome tube. 6" (15.2 cm) dia. cast iron charcoal base. Shipping Weight 2 lbs. (0.9 kg).

## BOGEN GOOSENECKS

### DESCRIPTION

Strong, flexible "goose-necks" fit all stands and flanges. 5/8"-27 male and female threads. Bright chrome finish.

- Model BG-6 6 inches (15.2 cm); Shipping Wt. 1/4 lb. .... \$7.95
- Model BG-13 13 inches (33 cm); Shipping Wt. 1/2 lb. .... \$9.95
- Model BG-19 19 inches (48.3 cm); 1 lb. .... \$13.95

## BP TRUMPET HORN SPEAKER MODEL BP-5100

OUR PRICE **\$16.95**

### SPECIFICATIONS

- Impedance: 8 ohms.
- Maximum power: 25 watts.
- 5" x 8" rectangular trumpet speaker.

## BP 100 WATT L PAD WITH PLATE

### MODEL AT-41

OUR PRICE **\$6.95** each

10 FOR **\$60.00**

## BP HOME AUDIO LEVEL CONTROL MODEL AT-40

OUR PRICE **\$2.95** each 10 FOR **\$25.00**

### SPECIFICATIONS

- 8 ohm.
- Monaural L pad.

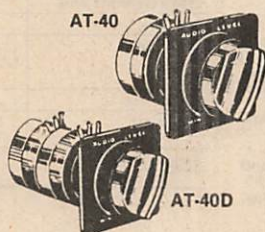
## MODEL AT-40D

OUR PRICE **\$4.95** each 10 FOR **\$45.00**

### SPECIFICATIONS

- 8 ohm.
- Stereo L pad.

**NEW!**



## BOGEN® FM/AM TUNERS MODEL TP-50

OUR PRICE **\$129.95**

### FEATURES

- AM and FM.
- Signal strength indicator.
- Center-station, precise tuning indicator.
- Muting switch.
- AFC, with defeat switch.
- Flywheel tuning.
- Solid state, compact, rugged design.
- Two output jacks permit connection to amplifier and tape recorder.
- Supplied with FM dipole antenna and built-in AM loopstick.
- Connections for external FM and AM (FM 75 ohm unbalanced or 300 ohm balanced).
- Supplied with two audio patch cords.



TP-50



TP-100



TP-200

MODEL TP-100 OUR PRICE **\$179.95**

### FEATURES

- AM, FM and FM-Stereo, with indicator lights.
- Digital display of station frequency.
- Signal strength indicator.
- Center-station, precise tuning indicator.
- AFC/Muting switch.
- Flywheel tuning.
- Solid state, compact, rugged design.
- Supplied with FM dipole antenna and built-in AM loopstick.
- Connections for external FM and AM antennas (FM 75 ohm unbalanced or 300 ohm balanced).
- Supplied with audio patch cords and Y-connector for mono use.

MODEL TP-200 OUR PRICE **\$249.95**

### FEATURES

- AM, FM-Stereo.
- Digital display of station frequency.
- Push buttons for 5 pre-set stations.
- Choice of automatic or manual tuning. (On "automatic", the TP-200 scans up or down the band, locks on when it detects signal).
- Signal strength indicator.
- Frequency lock loop circuit.
- Built-in muting.
- Stereo indicator.
- Solid state, compact, rugged design.
- Supplied with FM dipole antenna and built-in AM loopstick.
- Connections for external FM and AM antennas (FM 75 ohm unbalanced or 300 ohm balanced).
- Supplied with audio patch cords and Y-connector for mono use.

## MODELS TP-50, TP-100, TP-200

### FEATURES

- Excellent sensitivity, image rejection, frequency response.
- Extremely low hum, noise, distortion.
- Easy precision tuning with visual indicators.
- Only 1 3/4" high, rack-mountable.
- Solid state, high reliability circuitry.
- FM-Stereo and digital frequency readout in TP-100 & TP-200.

### DESCRIPTION

Bogen's new TP-50, TP-100 and TP-200 Tuners will delight all who want sensitive, precise tuning and superior signal quality. All three models provide AM and FM monophonic reception, and the TP-100 and TP-200 offer FM-Stereo reception as well. All incorporate state-of-art solid-state circuitry for dependable, continuous operation. The TP-50, TP-100 and TP-200 have FM sensitivity of 1.8, 1.8, and 1.6 microvolts, respectively. Distortion is less than 1%. Hum and noise are -60 dB. Each tuner is extremely compact and, rack-mounted with our RPK-46 kit, requires only 1 3/4" of panel height.

## BP UNIVERSAL LINE MATCHING TRANSFORMER Match 4-8 Ohm Speakers with Standard Taps

- MODEL LT 70-5 70 volt 5 watt
- MODEL LT 70-10 70 volt 10 watt
- MODEL LT 25-10 25 volt 10 watt

OUR PRICE **\$2.95** each 10 FOR **\$25.00** any assortment



## BP METAL CEILING GRILL 8" SPEAKER MODEL CL-82W

OUR PRICE **\$3.95**

### SPECIFICATIONS

- 12-7/8".

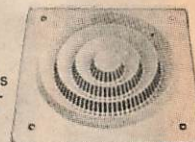


## LOWELL CEILING SPEAKER BAFFLE MODEL ADS-80P

OUR PRICE 1-9 **\$5.25** each 10 FOR **\$45.00**

### DESCRIPTION

Lowell Model ADS80-P ceiling baffle has become a standard of the industry. In addition to being molded of durable high impact styrene, this ceiling speaker baffle has been engineered to provide excellent dispersion of sound. This has been accomplished by unique slots located in the circular fins of the grille. Speaker is mounted to back of baffle by means of self-tapping screws eliminating unsightly speaker screws.



## MODEL CR-80P

OUR PRICE 1-9 **\$4.50** each 10 FOR **\$40.00**

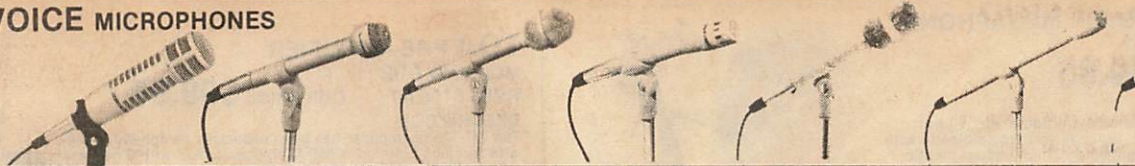
### DESCRIPTION

Ideal baffle designed for either ceiling or wall recessed installations. Model CR80-P is molded of durable high-impact styrene and is available in white only. Self-tapping screws are used to mount speaker to back of grille, thus eliminating visible speaker mounting screws. All mounting hardware is furnished.





## ELECTRO-VOICE MICROPHONES



model:	RE-20	RE-15	RE-16	CS-15P	DS-35	RE-55	635A
type:	Cont. Variable-D® cardioid dynamic	Cont. Variable-D® super-cardioid dynamic	Cont. Variable-D® super-cardioid dynamic	single-d cardioid electret condenser	single-d cardioid dynamic	omni-directional dynamic	omni-directional dynamic
response:	45-18k Hz	80-15k Hz	80-15k Hz	40-18k Hz	60-17k Hz	40-20k Hz	80-13k Hz
impedance:	lo-z	lo-z	lo-z	lo-z	lo-z	lo-z	lo-z
output:	-57 dB	-56 dB	-56 dB	-45 dB	-60 dB	-57 dB	-55 dB
finish:	fawn beige	fawn beige	fawn beige	fawn beige	fawn beige	fawn beige	fawn beige
applications:	highest quality wide-range recording/p.a.	hand, stand, or boom/broadcast/recording/p.a.	close-up handheld vocal	highest quality p.a./recording	prof. entertainer/broadcast/p.a./recording	highest quality p.a./recording	hand or stand vocal/instrumental broadcast/recording
OUR PRICE	\$419.95	\$225.00	\$249.95	\$239.95	\$139.95	\$225.00	\$89.95



model:	644	664	671BL or BH	627C	631B	647CL	647CH
type:	unidirectional line dynamic	super-cardioid Variable-D® dynamic	single-d cardioid dynamic	single-d cardioid dynamic	omni-directional dynamic	lavalier dynamic	lavalier dynamic
response:	40-10k Hz	90-13k Hz	60-14k Hz	60-13k Hz	80-13k Hz	70-10k Hz	70-10k Hz
impedance:	dual hi-z/lo-z	dual hi-z/lo-z	dual hi-z/lo-z	dual hi-z/lo-z	dual hi-z or lo-z	specity hi-or lo-z	hi-z
output:	-53 dB	-56 dB	-57 dB	-58 dB	-55 dB	-60 dB	-61 dB
finish:	satin chrome	satin chrome	satin chrome	satin chrome	satin chrome	gray	gray
applications:	long-range pickup, stage/classrooms	entertainers' p.a./recording	entertainers' p.a./recording	entertainers' p.a./recording	entertainers' p.a./recording	concealed/walkaround p.a.	concealed walkaround p.a./broadcast
OUR PRICE	\$235.00	\$119.95	\$99.95	\$89.95	\$99.95	\$99.95	\$99.95

### SHURE DISPATCHER MICROPHONE MODEL 450

OUR PRICE **\$69.95**

#### DESCRIPTION

The new modern design of this rugged omnidirectional Dispatcher Microphone fits every decor for dispatching



### BP MICROPHONE With 3P. XLR Plug

MODEL DM-6002 OUR PRICE **\$49.95**

#### SPECIFICATIONS

30-18,000Hz, 250 Ohm, -76dB ± 3dB at 1 KHz. Zinc diecast/370g 55 φ x 165mm.

### BP 24K GOLD PLATED MICROPHONE

With 3P, XLR Plug  
MODEL DM-6003 OUR PRICE **\$49.95**

#### SPECIFICATIONS

40-17,000Hz, 500 Ohm, -75dB ± 3dB at 1 KHz. Zinc diecast/260g 52 φ x 170mm.

### BP DUAL IMPEDANCE DYNAMIC MICROPHONE

MODEL DM-410

OUR PRICE **\$16.95**

#### SPECIFICATIONS

- Dual impedance 500 ohm or 50K ohm.
- Frequency response: 80-15,000 Hz.
- Sensitivity: HI imp — 52 dB; Low imp — 72 dB.
- Brushed chrome finish. • Built in on/off switch.
- Black vinyl case. • 1/4" plug. • 20 ft. cable.

### BP DUAL IMPEDANCE DYNAMIC MICROPHONE MODEL DM-416

#### SPECIFICATIONS

- Dual impedance 600 ohm and 50K ohm.
- Built-in on/off switch.
- 20 ft. single conductor shield cable.
- Frequency response: 50-15,000 Hz.
- Sensitivity: HI imp — 56 dB; Low imp — 74 dB.
- Excellent reproduction of voice and music.
- Black vinyl case. • 1/4" plug. • Brushed chrome finish.

OUR PRICE **\$29.95**

### BP MATCHED PAIR STEREO MICROPHONES

MODEL DM-705

OUR PRICE

**\$9.95** per pair

#### SPECIFICATIONS

- Dynamic microphones for cassette tape recorder.
- Matched pair for stereo.
- Low impedance.
- Sensitivity: -70 dB at 1 kHz. • Response: 60-12,000 Hz.
- 4-1/2 foot cable. • With 3.5mm plug. • Blister package.

### BP ELECTRET CONDENSER MICROPHONE MODEL EM-106

OUR PRICE **\$19.95**

#### FEATURES

- The Super mini microphone with tie clasp is suitable for application on school teaching, public speaking, and recording.
- High sensitivity and wide frequency response.
- With one UM-3 battery, it can work 10,000 hours continuously.

#### SPECIFICATIONS

- Directionality: Omni-directional. • Impedance: 1000 ohm.
- Sensitivity: -65 dB at 100 Hz.
- Frequency response: 18 Hz—20 kHz.
- Power supply: UM — 3 (1.5V) x1. • Weight: 110 gr.(with plug)
- Dimensions: 13x23mm. • Material: Aluminum & copper.
- Cord: 4M. • 1/4" plug.

### BP VIDEO CAMERA MICROPHONE

MODEL V-6502 OUR PRICE **\$34.95**

#### SPECIFICATIONS

- Super Cardioid. • Electret Condenser. • 80-12,000Hz.
- 520 Ohms (For long distance). • 2.3 Kohm (For short dis.).
- -66dB (Short dis. IV u bar 1KHz).
- -56dB (Long dis. IV u bar 1KHz).
- 3 position: (Normal cardioid. Super cardioid. Off.)
- 130g. • Aluminum. • Curl cable.
- DC 1.5v one AA size battery. • 220 o x 280mm.

### SOUND GRABBER®

MICROPHONE  
MODEL SG-111 OUR PRICE **\$49.95**

#### DESCRIPTION

The Sound Grabber is built on a new concept in microphone design. The Sound Grabber captures direct and reflected sound waves at the precise moment they reinforce each other. This new microphone design provides the extra clarity and range you need for better quality recording with video cameras or audio cassettes. It makes your own recorder sound like a more expensive component. The Sound Grabber will accurately pick up sounds coming from any direction in front of the mike, and does not have to follow the action closely. This makes it ideal for conferences, churches, or family picnics—wherever the sound source tends to wander. The Sound Grabber is rugged, durable and light. It is equipped with a 18" mike plug on a ten-foot cord. Adaptors are included so you can use the mike with any recorder.



# MEGAPHONES/WIRELESS MICROPHONES & ACCESSORIES

## BP TRANSISTOR MEGAPHONE MODEL MP-351

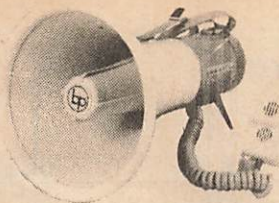
OUR PRICE **\$69.95**

### DESCRIPTION

Ideal for boats, stadiums, outdoors, etc. 10-watt rated power output. Projects your voice clearly with excellent range. Lightweight, high impact plastic. Uses 6 'C' cell batteries (not included). Speaker edges are protected by a rubberized plastic.

### FEATURES

- Designation: 10W, shoulder type transistorized megaphone.
- Power output: Rated: 10W Maximum: 16W. • On/off switch.
- Power consumption: Below 16W (at rated output). • Rotary volume control.
- Effective distance: Approx. 270 ft. • Power source: 6 C size cells.
- Power duration: Approx. 6 hours. • Microphone: Anti-howling, dynamic type microphone.
- Coiled cord. • Convenient shoulder belt and mike hangers on body and belt.



## BP TRANSISTOR MEGAPHONE MODEL MP-352

OUR PRICE **\$59.95**

### DESCRIPTION

Ideal for boats, stadiums, outdoors, etc. 10-watt rated power output. Projects your voice clearly with excellent range. Lightweight, high impact plastic. Uses 6 'C' cell batteries (not included). Speaker edges are protected by a rubberized plastic.

### FEATURES

- Designation: 10W, combination-type transistorized megaphone.
- Power output: Rated: 10W Maximum: 16W. • Pistol grip.
- Power consumption: Below 16W (at rated output). • Effective distance: Approx. 750 ft.
- Power source: 6 C size cells. • Power duration: 6 hours. • On/off switch.
- Microphone: Anti-howling, dynamic type microphone (combined to the main body).
- Rotary volume control. • Easy-to-carry shoulder belt.



## PASO FM WIRELESS MICROPHONE SYSTEM MODEL MA-22/R2

REG. \$669.00

OUR PRICE **\$489.95**

### DESCRIPTION

The Paso Model MA22/R2 is a complete wireless microphone system, consisting of a crystal controlled transmitter and a matching receiver. The receiver can be connected directly into an existing PA system or amplifier. The wireless system offers the advantages of total mobility, by transmitting voice via FM radio waves to the receiver, without the restrictions of cumbersome microphone wires. The wireless microphone effective range is well over 200 feet from the receiver antenna.

### FEATURES

- Crystal controlled. • High stability.
- Wide frequency response. • Total mobility.
- Plug-in unidirectional electret microphone.
- Pop-filter and wind screen.
- Two positions sensitivity switch.
- Hand-held, lavalier or tie clip use.

### ACCESSORIES

- Tie clip. • Microphone extension cord.
- Lavalier attachment. • Wind screen.

### TECHNICAL DATA

#### Wireless Microphone

- Transmitting Frequency: 40.68 MHz. Crystal controlled (other frequencies up to 42 MHz available on request).
- Microphone Type: Unidirectional electret.
- Frequency Response: 40-16,000 Hz.
- Controls: 2 position sensitivity.
- Pilot Light: LED.
- Power Source: 9 volt radio battery (Mercury or alkaline type is recommended).
- Finish: Black.
- Dimensions: 97 x 24 x 66mm. (3-3/4" H x 1" D x 2-1/2" W).
- Net Weight: 140 grams (6 oz.).

#### Receiver

- Receiving Frequency: 40.68 MHz.
- Sensitivity: 2 uV (-30 dB S/N).
- Controls: Squelch, volume.
- Audio Output: 2 volts max.
- Antenna: Telescopic.
- External Antenna: Input provided.
- Power Source: 105-125 VAC 50-60 Hz. or 12 DC with 8 size AA batteries (mounted internally).
- Signal Control: RF meter.
- Finish: Charcoal grey.
- Dimensions: 245 x 175 x 9mm. (9-1/2" W x 6-1/2" D x 3-1/2" H).
- Net Weight: 2 kg. (4.4 lbs.).



## PASO AUDIOVOICE™ WIRELESS PORTABLE SOUND SYSTEM MODEL TA-22

OUR PRICE **\$499.95**

### DESCRIPTION

Complete wireless portable sound system consisting of an amplifier/receiver unit with speaker and a separate wireless microphone. The wireless system offers the advantages of total mobility. Built in wireless receiver. Volume and Tone controls. Shoulder strap and telescopic antenna. Operates on 8 size D batteries and 9 V. radio battery. Power output: 15 Watts — Weight: 5 lbs. — Dimensions: 12" W, 8" H, 3 1/2" D. — Range: 200 ft. — Finish: Light grey.



## TOA PRE-AMPLIFIER MODEL WT-02

REG. \$158.00

OUR PRICE **\$99.95**

### DESCRIPTION

The WT-02 Pre-amplifier has been especially designed for use with wireless tuner units (WTA), in conjunction with 2 wireless mikes of different frequencies. Two separate connectors allow operation through any existing PA system, amplifier or tape recorder.

Designed for portable or fixed installation. Power from AC or DC. An extremely wide operational range is offered with AC. Equipped with whip antenna, external antenna connector and power on/off switch. Optional accessories include stand-mounted whip, wall or ceiling and mobile antennas. IC solid state and silicon circuitry for low noise, wide frequency response and reliable wireless performance. Complete with slide volume and squelch controls. Weighs as little as 3.9 Lbs. An easy, economical short cut into the wonderful world of wireless equipment for those who have already installed PA equipment.

\*Photo shows WT-02 Pre-amplifier with 2 optional tuner units plugged in.



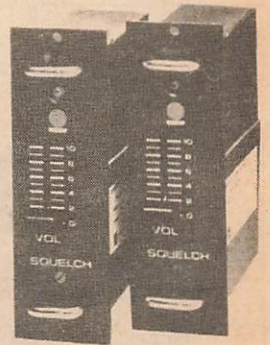
## TOA WIRELESS TUNER UNIT MODEL WTA

REG. \$280.00

OUR PRICE **\$168.00**

### DESCRIPTION

The STA is a plug-in type wireless tuner unit designed specifically for the WT-02 pre-amplifier. With this simple plug-in addition, the meeting amplifier takes on full wireless mike versatility. When used in conjunction with the WT-02 pre-amplifier, even existing PA equipment can be quickly and economically converted to include a wireless function. These plug-in units employ a crystal-controlled VHF band (30 — 50 MHz) FM tuner for exceptionally stable performance under virtually any circumstances. Unlike conventional wireless equipment, drift and interference have been almost completely eliminated. Complete with FET, IC and silicon circuitry, rapid-action slide volume controls, tune-in LED indicators and squelch function. \*FCC certified.



## TOA WIRELESS MICROPHONE MODEL WME

REG. \$431.00

OUR PRICE **\$249.95**

### DESCRIPTION

The WME is a crystal controlled Lavalier microphone-pocker type transmitter which also employs FET, IC and silicon circuitry. The omnidirectional electret microphone allows complete freedom of movement. The unit consists of two sections, a microphone and a transmitter. FCC Type accepted



## TOA WIRELESS MICROPHONE MODEL WMA

REG. \$375.00

OUR PRICE **\$199.95**

### DESCRIPTION

Model WMA is a crystal controlled handheld microphone transmitter employing FET, IC and silicon circuitry for superb sound fidelity. The microphone element is of the dynamic unidirectional (Cardioid) type. Equipped with a compressor-limiter circuit and audio sensitivity control. FCC Type accepted



## PASO AUDIOVOICE™ PORTABLE SOUND SYSTEM MODEL TA-2

Over 200 yards coverage

MODEL TA-2

OUR PRICE **\$125.00**

### DESCRIPTION

Complete portable sound system for indoor or outdoor applications. Ideally suited for guided tours, schools field trips, information to visitors, product demonstrations, passengers' traffic control, auctioneers, etc. Compact and lightweight, the Audiovoice is easy to store. Complete with unidirectional microphone and shoulder strap. Volume and Tone controls, auxiliary input for tape/tuner. Operates on 8 size D batteries. Power Output: 15 Watts — Weight: 4 lbs. Dimensions: 12" W, 8" H, 3 1/2" D. Finish: Light grey.





## BP 4" SPEAKER 10 OZ. CERAMIC MAGNET MODEL BP-1000-4

OUR PRICE **\$6.95** each 2 FOR **\$12.00**

### SPECIFICATIONS

- Air suspension.
- 3/4" voice coil.
- Frequency response: 120-10,000 Hz.
- Impedance: 8 ohms.
- Display package.



## BP 6" SPEAKER 10 OZ. CERAMIC MAGNET MODEL BP-1000-6

OUR PRICE **\$7.95** each

2 FOR **\$14.00**

### SPECIFICATIONS

- Air suspension with foam edge.
- Impedance: 8 ohms.
- Maximum power: 20 watts.
- Frequency response: 50-15,000 Hz.
- Display package.



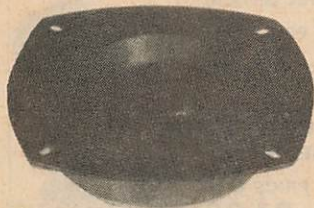
## BP 4" DOME TWEETER MODEL BP-4400

OUR PRICE **\$7.95** each

2 FOR **\$14.00**

### SPECIFICATIONS

- 4.5 oz. magnet
- Impedance: 8 ohms.
- Maximum power: 50 watts.
- Crossover frequency: 4000-2000 Hz.
- Display package.



## BP 5-1/4" DOME MIDRANGE MODEL BP-4550

OUR PRICE **\$12.95** each

2 FOR **\$20.00**

### FEATURES

- 11 ounce ceramic magnet.
- 50 watts maximum input.
- Frequency range 600-14,000 Hz.
- 2" mylar diaphragm.
- Sensitivity: 93 dB.
- Impedance: 8 ohms.



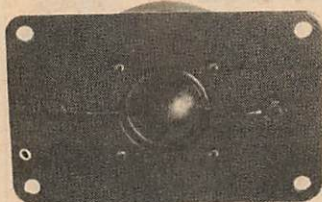
## BP SOFT DOME TWEETER MODEL BP-4600

OUR PRICE **\$12.95** each

2 FOR **\$20.00**

### FEATURES

- Measures 4-1/2" x 3" 1/4"
- 5.3 ounce ceramic magnet.
- 50 watt maximum input.
- Frequency range: 2,000-20,000 Hz.
- Impedance: 8 ohms.



## BP 3-WAY CROSSOVER NETWORK MODEL BP-737

OUR PRICE **\$7.95** each 2 FOR **\$14.00**

### SPECIFICATIONS

- Impedance: 8 ohms.
- Crossover: 700 Hz. 5 kHz.
- Maximum power input: 40 watts.
- Roll-off: 6 dB/oct.
- Dimensions: 95 x 60 x 25mm.
- Display package.



## BP 3-WAY CROSSOVER NETWORK MODEL BP-747

OUR PRICE **\$10.95** each 2 FOR **\$20.00**

### SPECIFICATIONS

- Impedance: 8 ohms.
- Crossover: 800 Hz. 5 kHz.
- Maximum power input: 50 watts.
- Roll-off: 12 dB/oct.
- Dimensions: 113 x 93 x 30mm.
- Display package.



## BP 8" SPEAKER 20 OZ. CERAMIC MAGNET MODEL BP-2000-8

OUR PRICE **\$9.95** each

2 FOR **\$18.00**

### SPECIFICATIONS

- Air suspension with foam edge.
- Impedance: 8 ohms.
- Maximum power: 40 watts.
- Frequency response: 50-15,000 Hz.
- Display package.



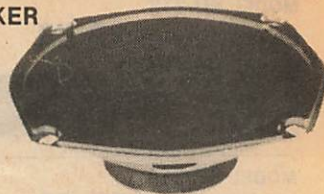
## BP 6" GENERAL PURPOSE SPEAKER MODEL BP-300-6

OUR PRICE **\$3.95** each

2 FOR **\$7.00**

### FEATURES

- 6" general purpose speaker with dust cover.
- 3 oz. ceramic magnet.



## BP 8" SPEAKER 3 OZ. CERAMIC MAGNET MODEL BP-300-8

OUR PRICE **\$3.95** each

2 FOR **\$7.00**

### SPECIFICATIONS

- Frequency response: 70-15,000 Hz.
- Impedance: 8 ohms.
- Maximum power: 15 watts.
- Display package.



## BP 8" COAXIAL SPEAKER 10 OZ. CERAMIC MAGNET

MODEL BP-1000-8CX

OUR PRICE **\$9.95** each

2 FOR **\$18.00**

### SPECIFICATIONS

- Cloth roll air suspended woofer.
- Separate 3" high efficiency tweeter.
- Frequency response: 70-15,000 Hz.
- Impedance: 8 ohms.
- Maximum power: 15 watts.



## BP 10" SPEAKER 20 OZ. MAGNET MODEL BP-1020

OUR PRICE **\$19.95** each

2 FOR **\$36.00**

### SPECIFICATIONS

- Air suspension with foam edge.
- 2" voice coil.
- Frequency response: 30-10,000 Hz.
- 45 watt M.P. 90 P.P.
- Impedance: 8 ohms.
- Maximum power: 60 watts.



## 12" SPEAKER 10 OZ. CERAMIC MAGNET

MODEL BP-1210 OUR PRICE **\$12.95** each 2 FOR **\$24.00**

### SPECIFICATIONS

- Air suspension speaker with foam edge.
- Impedance: 8 ohms.
- Maximum power: 25 watts.
- Frequency response: 30-8000 Hz.

## 12" SPEAKER 20 OZ. CERAMIC MAGNET

MODEL BP-1220 OUR PRICE **\$19.95** each 2 FOR **\$36.00**

### SPECIFICATIONS

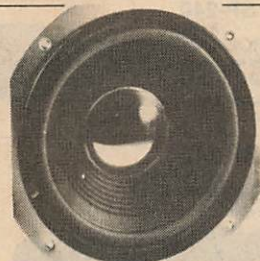
- Air suspension speaker with foam edge.
- Impedance: 8 ohms.
- Maximum power: 50 watts.
- Frequency response: 30-8000 Hz.

## BP 12" HIGH COMPLIANCE SQUARE SPEAKER 40 OZ. CERAMIC MAGNET MODEL BP-1240

OUR PRICE **\$29.95** each

### SPECIFICATIONS

- Air suspension with foam edge.
- 2" voice coil.
- Frequency response: 30-10,000 Hz.
- 45 watt M.P. 90 P.P.
- Impedance: 8 ohms.
- Maximum power: 60 watts.



## BP 12" HIGH COMPLIANCE ROUND SPEAKER MODEL BP-1242

OUR PRICE **\$29.95** each

### SPECIFICATIONS

- 40 oz. ceramic magnet.
- Air suspension.
- Foam edge.
- 2" voice coil.
- Frequency response: 30-10,000 Hz.
- Maximum power: 60 watts.



CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446



# CONNECTORS

## MODEL SP-218

OUR PRICE 10 For **\$2.50**  
100 For **\$20.00**

Long handle plastic mini plug 3.5mm.



## MODEL SJ-215

OUR PRICE 10 For **\$2.50**

Plastic mini jack 3.5mm.



## MODEL AP-201

OUR PRICE **79¢**  
10 For **\$6.90**

Molded RCA jack to 1/4" standard phone plug adaptor.



## CB CONNECTOR

### MODEL CB-570

OUR PRICE **\$1.75**

10 For **\$15.00**

Lighted dummy. Load for 5 watts.



## MODEL SP-219

OUR PRICE 10 For **\$4.50**  
100 For **\$40.00**

3.5mm stereo plug.



## MODEL SJ-223

OUR PRICE 10 For **\$3.50**  
100 For **\$30.00**

RCA shielded jack.



## MODEL AP-202

OUR PRICE **79¢**  
10 For **\$6.90**

Molded both ends RCA jack.



## N CONNECTOR

### MODEL N-10

OUR PRICE **\$3.75**

10 For **\$35.00**

"N" Type Male to BNC Female



## MODEL SP-222

OUR PRICE 10 For **\$3.50**  
100 For **\$30.00**

RCA shielded plug.



## MODEL SJ-223A

OUR PRICE 10 For **\$3.00**  
100 For **\$25.00**

RCA plastic jack.



## CB CONNECTOR

### MODEL SP-245

OUR PRICE **99¢**  
10 For **\$9.00**

3 pin connector.



## N CONNECTOR

### MODEL N-30

OUR PRICE **\$2.75**

10 For **\$25.00**

"N" Type Crimp Male Connector For RG-59U



## MODEL SP-222A

OUR PRICE 10 For **\$2.50**  
100 For **\$20.00**

RCA plastic plug.



## MODEL SJ-226

OUR PRICE **49¢**  
10 For **\$4.00**

Standard 1/4" slim inline phone jack molded handle Color: black, gray, red.



## CB CONNECTOR

### MODEL SP-250

OUR PRICE **99¢**  
10 For **\$9.00**

4 pin connector.



## N CONNECTOR

### MODEL N-40

OUR PRICE **\$3.25**

10 For **\$30.00**

"N" Type Male to Male Inline Connector



## MODEL SP-225

OUR PRICE 10 For **\$3.50**  
100 For **\$30.00**

Standard mono 1/4" phone plug screw terminal.



## MODEL AP-156

OUR PRICE **79¢**  
10 For **\$6.90**

Molded adaptor, 3.5mm plug to RCA phono jack.



## CB CONNECTOR

### MODEL SP-551

OUR PRICE **69¢**  
10 For **\$4.90**

PL-259 plug.



## N CONNECTOR

### MODEL N-90

OUR PRICE **\$3.25**

10 For **\$30.00**

"N" Type Double Female



## MODEL SP-228

OUR PRICE 10 For **\$6.50**  
100 For **\$60.00**

1/4" shielded metal phone plug.



## MODEL AP-160

OUR PRICE **79¢**  
10 For **\$6.90**

Molded adaptor, RCA phono plug to 3.5mm jack



## CB CONNECTOR

### MODEL SP-265

OUR PRICE **\$1.20**  
10 For **\$10.00**

5 pin connector for Cobra CB.



## N CONNECTOR

### MODEL N-140

OUR PRICE **\$3.25**

10 For **\$30.00**

"N" Type Right Angle Male-Female.



## MODEL SP-230

OUR PRICE **69¢** 10 For **\$6.00**

Stereo 1/4" standard phone plug screw terminal.



## MODEL AP-163

OUR PRICE **99¢**  
10 For **\$9.00**

1/4" stereo jack to 3.5mm stereo plug.



## CB CONNECTOR

### MODEL CB-552

OUR PRICE **89¢**  
5 For **\$4.00**

(SO-239) chassis connector.



## MODEL SP-231

OUR PRICE 10 For **\$8.00**  
100 For **\$75.00**

1/4" shielded metal phone plug.



## MODEL AP-164

OUR PRICE **99¢**  
10 For **\$9.00**

Molded adaptor 3.5mm stereo jack to 1/4" stereo plug.



## CB CONNECTOR

### MODEL CB-553

OUR PRICE **99¢**  
10 For **\$9.00**

(PL-258) double female.



## N CONNECTOR

### MODEL N-130

OUR PRICE **\$3.95**

10 For **\$37.50**

"N" Type Male to UHF Female



## MODEL SP-240

OUR PRICE **89¢**  
10 For **\$7.90**

Standardized female microphone connector.



## MODEL AP-171

OUR PRICE **79¢**  
10 For **\$6.90**

Molded adaptor 3—conductor 1/4" phone plug to 3.5mm jack.



## CB CONNECTOR

### MODEL CB-555

OUR PRICE 10 For **\$1.80**

(UG-175/U) adaptor for RG-58/U cable.



## MODEL SP-242

OUR PRICE **\$2.95**  
'Cannon type', 3-pin female.



## MODEL AP-172

OUR PRICE **79¢**  
10 For **\$6.90**

Molded adaptor, 3.5mm plug to 3—conductor 1/4" phone jack.



## CB CONNECTOR

### MODEL CB-556

OUR PRICE 10 For **\$1.80**

(UG-176/U) adaptor for RG-59/U cable.



## N CONNECTOR

### MODEL N-160

OUR PRICE **\$3.75**

10 For **\$35.00**

"N" Type Female To UHF Male



## MODEL SP-243

OUR PRICE **\$2.95**  
'Cannon type, 3-pin male.



## MODEL AP-182

OUR PRICE **79¢**  
10 For **\$6.90**

Molded adaptor, 1/4" phone plug to 3.5mm jack.



## CB CONNECTOR

### MODEL CB-560

OUR PRICE **\$2.50**  
5 For **\$10.00**

(M-358) T-connector.



## N CONNECTOR

### MODEL N-190

OUR PRICE **\$3.95**

10 For **\$37.50**

2 "N" Type Females to "N" Type Male





## BP UNIVERSAL AC ADAPTOR MODEL AC-900

OUR PRICE **\$3.95** each

10 FOR **\$37.50**

### SPECIFICATIONS

- Adaptor for 4, 5, 6, 7.5 or 9 volts.
- Universal 4-way outlet plug.
- Polarity reverse switch.
- Display package.
- Input: 117 volts AC.
- Output: 3.4-1/2, 6.7-1/2 or 9 volts 300 MA.



## BP AC ADAPTOR FOR TV & ATARI GAME MODEL AC-1500

OUR PRICE **\$5.95** each

10 FOR **\$50.00**

### SPECIFICATIONS

- Adaptor for 9 volts.
- 500 mA.
- Universal 4-way outlet plug.
- Polarity reverse switch.
- Replacement game switch.
- Display package.
- Input: AC 117V 60 Hz.
- Output: DC 9V 500 mA.
- Negative or positive polarity connector.



## POCKET BATTERY TESTER MODEL 0333

OUR PRICE **\$7.95** each

5 FOR **\$35.00**

- Small and Handy; easy to use.
- Test: 9V and any 1.5V batteries; plus button batteries.
- Meter shows if batteries are good, low or in need of replacement.



## BP INTERFERENCE FILTER MODEL NF-724

OUR PRICE **99¢** each

10 FOR **\$9.00**

### DESCRIPTION

Instantly stops or reduces noise interference transferred by electrical lines. Plug any 117V AC radio, TV, record player, CB set into filter and plug filter into wall outlet. Display package.



## BP NOISE FILTER MODEL NF-725

OUR PRICE **99¢** each

10 FOR **\$9.00**

### DESCRIPTION

Eliminates or reduces TV interference caused by amateur radio, police, CB, auto ignition, neon signs, diathermy, etc. Connects between TV antenna lead and set. Screw terminals. Display package.



## BP 20 FT. MAGNETIC EARPIECE MODEL EP-3

OUR PRICE **90¢** each

10 FOR **\$7.50**

### DESCRIPTION

For private listening. Ideal for transistor radios, TV sets, tape recorders, etc. With ear hanger. Twisted cable.



## BP 15 FT. REMOTE AC ON/OFF SWITCH MODEL AC-15

OUR PRICE **\$3.95**



## BP ANTI-STATIC CARBON FIBER DISC BRUSH MODEL RC-1020

OUR PRICE **\$4.95**

### FEATURES

- Conductive carbon fibers.
- Eliminates static charges.
- Removes even finest dust particles.
- Record disc cleaner.



## BP CASSETTE TAPES MODEL CT 603

OUR PRICE **99¢** per pkg.

10 pkg. FOR **\$8.00**

60 minute cassettes. Low noise, high output blank cassettes. Full frequency, dynamic range. 3 cassettes per package.



## BP CASSETTE TAPES MODEL CT 903

OUR PRICE **1.25** per pkg.

10 pkg. FOR **\$10.00**

90 minute cassettes. Low noise, high output blank cassettes. Full frequency, dynamic range. 3 cassettes per package.



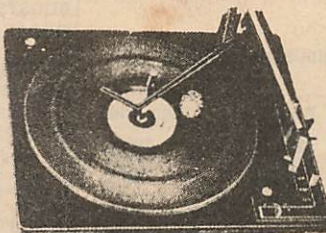
## BSR LATEST ECONOMY MODEL RECORD CHANGER

MODEL BSR-129 OUR PRICE **\$36.95** each

4 FOR **\$140.00**

### DESCRIPTION

Designed for shallow installations. Ideally suited for replacement use or for use in a budget HI-FI system. Complete with latest type low mass tubular tone arm with slim line integrated head, stereo ceramic cartridge. 2-speed 33, 45. Dimensions: 13"W x 11-1/4"D x 4-7/8"H



## BP UNIVERSAL PLUG IN HEADSHELL MODEL HS-96 black

OUR PRICE **\$2.95** each

5 FOR **\$12.50**

### MODEL HS-97 chrome

OUR PRICE **\$3.25** each

5 FOR **\$15.00**



- Fits all the latest turntables.
- Display package.

## BP FM INDOOR ANTENNA MODEL FM-400

OUR PRICE **75¢** each

10 FOR **\$6.90**

100 FOR **\$59.00**



### DESCRIPTION

Folded dipole design. 60" dipole and 60" lead. Connects to terminals on radio, improves FM and multiplex—stereo reception. Display package.

## BP PILLOW SPEAKER MODEL PS-11

OUR PRICE **\$4.95**

DESCRIPTION

With volume control and 10 ft. cord with 3.5mm plug. Can be connected to TV, radio, phonograph or tape recorder.



## CHANNEL SCAN TV REMOTE CONTROL MODEL CHAN-1

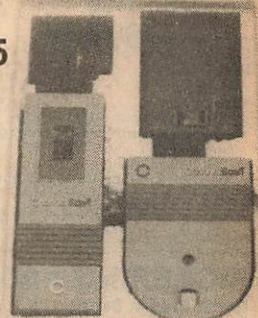
OUR PRICE **\$19.95**

### FEATURES

- Changes VHF channels.
- No tools required.
- No special wiring (just plug into outlet).
- You install in minutes.
- Turns set On and Off.
- Illuminated channel indicator.
- Fully assembled (with 25 ft. low voltage wire).
- Easy to use.

### DESCRIPTION

Introducing ChannelScan...The patented power remote control you add to your present TV. You do it all yourself easily. Because to install ChannelScan, you don't need a TV technician or repairman. Or buy anything else. Not even batteries. Works on most TV's, color or black and white, portable or console. ChannelScan converts any TV with a turret tuner (rotary knob)—regardless of make or model—into remote control in minutes. Not suitable for sets with pushbutton channel selection.



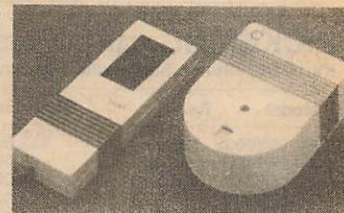
## CHANNELSCAN WIRELESS TV REMOTE CONTROL HAS SLEEP SHUT-OFF!

MODEL SC-50

OUR PRICE **\$39.95**

### DESCRIPTION

ChannelScan wireless remote control turns your existing TV, with rotary dial selection, into a remote control model. Its exclusive automatic sleep shut-off allows you to fall asleep without worrying about the TV being on all night. Just set the control for 30 or 60 minutes and at those respective times the TV will shut itself off. It installs easily and works up to 20 feet away. You'll have the convenience of controlling your TV from your most comfortable chair or bed. The infrared wireless handset will change the channels in an upward or downward direction. It also requires a 9 volt battery which is included. This remote control will not work with push button electronic tuning, it cannot be converted.



## WINEGARD FM BACK OF THE SET SIGNAL BOOSTERS MODEL FM-3000

OUR PRICE **\$26.95**

### DESCRIPTION

BA series amplifiers are an economical, convenient method of improving reception where signal levels are low. BA amps are an ideal solution to marginal reception problems. 300 ohm input/output 88 to 108 mHz.



## AMPLI-TENNA ANTENNA AMPLIFIER MODEL 0300

OUR PRICE **\$19.95**

Delivers high-powered performance with any indoor antenna.

### ADVANTAGES

- Sharper, clearer color and black and white reception.
- Greatly improves VHF or UHF reception.
- Reduces "snow".
- Actually brightens picture.
- Improves color stability.
- Brings in cleaner FM and FM stereo sound.

### FEATURES

- Advanced solid state amplifier for UHF, VHF or FM.
- UL approved, low-voltage, AC power supply.
- Delivers up to 15 dB gain.
- Excellent signal-to-noise ratio.
- Extremely accurate impedance match (VSWR 2:1).
- 300 ohm input and output.
- Compact, easy-to-mount units.
- Twinlead and spade lugs provided.





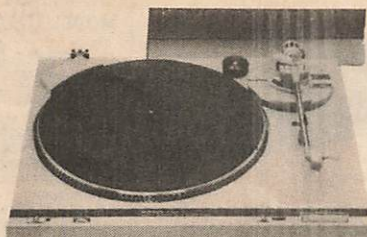
# STEREO EQUIPMENT/AUDIO ACCESSORIES

## TECHNICS P-MOUNT BELT DRIVE TURNTABLE MODEL SL-B100

OUR PRICE **\$79.95**

### FEATURES

- Manual.
- Belt drive.
- New Plug-in cartridge design.
- Straight tonearm with 4 point gimbal suspension.
- Low profile design.
- All front panel controls including cueing.
- Electronic speed switching.
- Variable pitch controls  $\pm 6\%$  with strobe.
- Cartridge not included.



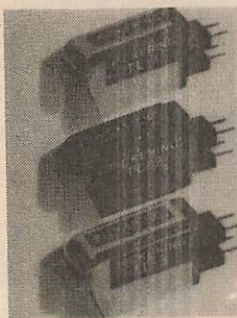
## PICKERING P-MOUNT CARTRIDGES

### Direct Plug-In Series

Model	Retail	Our Price
TL-3	\$125.00	\$34.00
TL-2S	100.00	25.00
TL-2E	60.00	19.80
TL-1	60.00	17.95

### Special Plug-in Series

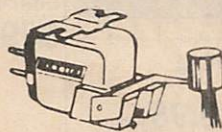
Model	Retail	Our Price
TLE	\$ 45.00	\$9.95



## PICKERING CARTRIDGES

### XV-15 DCF Stereo Series with Dustamatic®

Model	Retail	Our Price
XV-15/1200E	\$92.00	\$42.00
XV-15/750E	74.75	38.00
XV-15/625E	69.00	24.00
XV-15/400E	62.95	24.00



### Low Impedance Cartridge Series

Model	Retail	Our Price
XLZ/7500S	220.00	\$95.00
XLZ/4500S	150.00	70.00
XLZ/3500E	125.00	50.00

### XSV Series with Stereohedron Stylus Tip®

Model	Retail	Our Price
XSV/5000	\$200.00	\$99.95
XSV/4000	160.00	77.00
XSV/3000	115.00	59.00

## PICKERING CARTRIDGES

Model	Pkg.	Retail	Our Price
P/ATE	Boxed	\$24.95	\$9.95
P/AT	Boxed	19.95	8.00
P/AC	Boxed	17.95	5.95

### SPECIAL! MODEL P/AC

OUR PRICE 5 FOR **\$25.00**



### MODEL RR-6S

OUR PRICE **99¢** each 10 FOR **\$9.00**

6 ft. shielded cable—RCA plug on both ends (gray).



### MODEL RJ-6S

OUR PRICE **99¢** each 10 FOR **\$9.00**

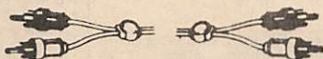
6 ft. shielded cable—RCA plug to RCA jack (gray).



### MODEL RR-6SC

OUR PRICE **\$1.20** each 10 FOR **\$10.00**

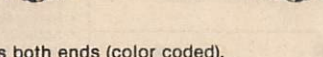
6 ft. double shielded cable—Two RCA plugs both ends (color coded).



### MODEL RR-3SC

OUR PRICE **99¢** each 10 FOR **\$9.00**

3 ft. double shielded cable—Two RCA plugs both ends (color coded).



## BP STEREO PRE-AMP

### MODEL PA-420

OUR PRICE **\$7.95** 10 FOR **\$69.00**

### DESCRIPTION

Solid state preamp allows use of stereo magnetic cartridge on any console or portable record player. RIAA equalization. Standard phono inputs and outputs. Blister package.



## PARSEC FM ANTENNA MODEL 7403

OUR PRICE **\$69.95**

### DESCRIPTION

The PARSEC FM antenna appreciably improves the performance of your FM stereo regardless of its location. When radio signals are too strong they often interfere with each other. PARSEC's FM antenna isolates the signals providing perfect reception on each station. When radio signals are very weak or too weak to be received in stereo, PARSEC's FM antenna amplifies the signals for better reception. PARSEC FM antenna is the first and only indoor FM antenna which is omnidirectional (you do not have to change the position of the antenna when tuning in different stations). It can also amplify signals received by your stereo up to 24dB. 17" high.



## WINEGARD STEREOTRON

MODEL FM-4400 REG. \$74.95

OUR PRICE **\$39.95**

### DESCRIPTION

Even the most expensive FM receiver needs a high quality antenna to deliver clean, undistorted signals for maximum listening pleasure. This unique antenna is the perfect alternative for stereo lovers who can't put up a large outdoor FM antenna. The built-in solid state circuit amplifies FM/stereo signals (88-108 MHz) an average of 5.6 times, while providing optimum signal-to-noise ratio and proper phasing of signals. Receptor bar rotates for directivity. The housing is walnut brown with gold tone receptor bar and measures 6-1/2" x 5-1/2" x 3-1/2". Width of bar is 19 inches. Complete with 6' coaxial cable and matching transformer to complete installation to FM receiver. Convenient on/off switch and red LED. Operates on 110-117 VAC.



## FORDHAM FM INDOOR SIGNAL AMPLIFIER

BOOSTS FM SIGNAL FOR BETTER STEREO SOUND

MODEL FM-3018

OUR PRICE **\$19.95**

### DESCRIPTION

This amplifier increases FM signal reception in "fringe" areas. It is a high gain RF amplifier with low noise figure, which can result in good FM stereo sound. A strong local FM station may produce interference in the FM receiver. The amplifier provides 18 dB of gain and uses less than 5 watts of power. For 75 or 300 ohm receiver inputs. AC operation.



## RECOTON CASSETTE HEAD CLEANING CARTRIDGE MODEL 71TC

OUR PRICE **89¢** each 10 FOR **\$7.50**

### DESCRIPTION

Fits all type players. Avoids costly repairs by removing dirt and oxide from tape head. Easy to use. Cleans instantly.



## BP AUDIO CABLE MODEL RR-12-24

OUR PRICE **95¢** each

10 FOR **\$7.50**

- 24 AWG: 12 ft. brown speaker cable.
- RCA plug on both ends



## AUDIO CABLE MODEL RR-25-24

OUR PRICE **\$1.20** each 10 FOR **\$10.00**

- 24 AWG: 25 ft. brown speaker cable. • RCA plug to RCA plug.

## BP AUDIO CABLE MODEL RR-24-24C2

OUR PRICE **\$2.25** each

10 FOR **\$20.00**

- 24 AWG: Two 25 ft. clear cable.
- RCA plug to RCA plug, poly with header.



## AUDIO CABLE MODEL RR-40-24C2

OUR PRICE **\$2.50** each 10 FOR **\$22.50**

- 24 AWG: Two 40 ft. clear cable. • RCA plug to RCA plug, poly with header.



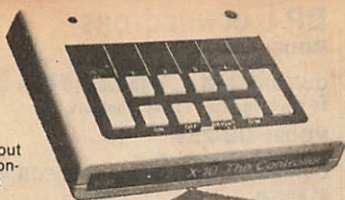
# SECURITY SYSTEMS/INTERCOMS

## BSR SYSTEM X-10 MINI CONTROLLER MODEL MC-260

OUR PRICE **\$19.95**

### DESCRIPTION

Instantly control 4 lights and appliances throughout the house with the push of a button. From one convenient location. Special features, dim and bright key, all lights on key, all units off key.



## BSR SYSTEM X-10 TIMER CONSOLE

MODEL TC-211 OUR PRICE **\$49.95**

### DESCRIPTION

Automatically turns lights and appliances on and off at the times you want. Special feature keys, daily, once, security, sleep, now, all lights on, clear key.



## NIGHT SENTRY SOLID STATE TIMER

MODEL WT-341B

OUR PRICE **\$19.95** each 2 FOR **\$38.00**

Single Pole 1 Switch

MODEL WT-343B

OUR PRICE **\$24.95** each 2 FOR **\$48.00**

3-way 2 Switches

### DESCRIPTION

A totally new concept in light timers combines space age features with total solid state technology.

### FEATURES

- Convenient.
- Reliable.
- Do-it-yourself, installs in minutes. Uses your existing switch plate.
- Memory Module . . . sets itself automatically.
- Turns on and shuts off lights . . . inside and outside, like you do when you're home.
- Protects your property, keeps your house safe from burglars.



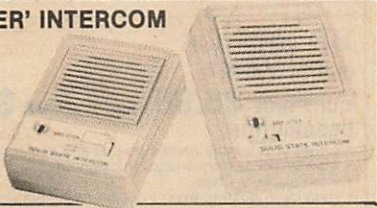
## BP SOLID STATE 'BABY SITTER' INTERCOM

MODEL IN-1001

OUR PRICE **\$9.95** per pair

### DESCRIPTION

Economical intercom system, ideal for home use, especially as a babysitter. Slave unit with push-to-talk button. Master unit has on/off volume control plus push-to-talk button. Operates on 9-volt battery (not included).



## BOGEN MASTER STATION INTERCOM

MODEL IE-4B OUR PRICE **\$70.00**

REMOTE STATION  
MODEL REI-1B

OUR PRICE **\$22.95**

### FEATURES IE-4B

- Instant dependable, economical voice communication.
- Master plus up to 3 remotes.
- Tone signal announces calls.
- Annunciator lights show which REI-1B is calling master.

### FEATURES REI-1B

- Remote converses hands-free.
- Solid state reliability, IC amplifier.
- Compact, attractive design.
- Volume control.
- AC or battery operation.
- Simple installation and operation.



## BOGEN SERIES IE INTERCOMS

MODEL IE-5

MODEL IE-10

OUR PRICE **\$85.50**

OUR PRICE **\$106.50**

### FEATURES

- Push-button communication for offices, business or plant.
- All-master or single master/multiple remote systems.
- Multiple channels permit several simultaneous conversations.
- Conference calls.
- Choice of 5 or 10 button masters.
- 'Talk-lock' button for dictation or nursery monitoring with 'reminder' light.
- High reliability solid-state circuitry.
- Combine private and nonprivate remotes as you require.
- Tie into paging system for direct paging from master stations.
- Optional relay (TBR-4A) allows PA system to provide talk-back capability.
- AC powered-single power supply per system.
- Optional operation from 12 VDC supply with reduced power.
- Masters wired with 6 foot cable and junction box.
- All connections made externally.
- Modified all-master system provides 'common' remote or 'dedicated' remotes to each master.

### DESCRIPTION

Offices, stores factories and homes are only a few of the applications for the hardworking Bogen IE-5 and IE-10 intercoms. You can choose either a single master/multiple remote system (up to 10 remotes, which can operate hands-free) or an all-master system of any size, in which each station can call up to 10 others selectively. In an all-master system, several conversations can take place simultaneously, between different pairs of stations (100% trunkage). Conference calls including several stations are possible too. The IE master are private at all times; they cannot be monitored. Remotes can be private (Model RE-1 releases privacy button for hand-free operation) or non-private. If you wish, you can substitute one remote for a master in an IE-5 all-master system, or two in an IE-10 system for hands-free reply to master. (These remotes cannot originate calls.) You can tie into your PA system for paging from IE masters or—using the TBR-4A accessory—page through two pre-selected speakers which can reply hands-free. Each IE system operates from a single power supply, Model PRS-20.

### ACCESSORIES FOR BOGEN INTERCOMS

REI-1B Remote for IE-4B . . . . .	\$22.95
RE-1 Remote for IE-5 & IE-10. Can originate call to master in single-master . . . . .	\$28.50
systems and function private or nonprivately (hands-free) as desired. Incorporates speaker/microphone, call and privacy buttons. 16 ohms. Styled to match masters.	
PRS-20 Power supply for IE-5 & IE-10 . . . . .	\$64.95

## BSR SYSTEM X-10 WALL SWITCH With Push Button Control MODULE

MODEL WS-711 OUR PRICE **\$17.95**



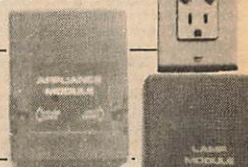
## BSR SYSTEM X-10 WALL RECEPTACLE MODULE WITH CUSTOM PLATE

MODEL SR-227 OUR PRICE **\$24.95**



## BSR SYSTEM X-10 2 PIN POLARIZED APPLIANCE MODULE

MODEL AM-286 OUR PRICE **\$16.95**



## BSR SYSTEM X-10 LAMP MODULE

MODEL LM-501/511 OUR PRICE **\$16.95**



## BSR SYSTEM X-10 HEAVY DUTY 220 VOLT APPLIANCE MODULE 15A Pin Configuration

MODEL HD-243 OUR PRICE **\$32.00**



## BSR SYSTEM X-10 HEAVY DUTY 220 VOLT APPLIANCE MODULE 20A Pin Configuration

MODEL HD-245 OUR PRICE **\$34.95**



## BP TRI-COM 3 CHANNEL WIRELESS FM INTERCOM MODEL IN-338

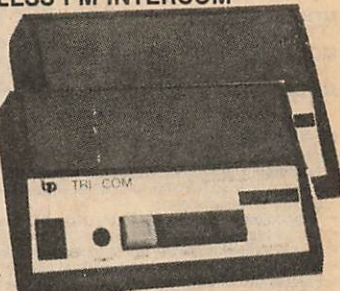
OUR PRICE **\$45.55** per pair

### FEATURES

- A.B.C. channel selector for 4 station operation.
- Solid state phase lock loop circuitry.
- Lock key for continuous talking or monitoring.
- Frequency modulation to eliminate static.
- Plug into AC outlet. No installation required.

### DESCRIPTION

Lock switch permits continuous talking for dictation or monitoring. No warm-up. Simply plug into AC outlets on same side of distribution transformer wiring. System allows four stations operation and can be expanded with add-on units. Units have pilot light and on/off volume control.



## BP AUTO-COM AUTOMATIC 2 CHANNEL WIRELESS FM INTERCOM MODEL IN-828

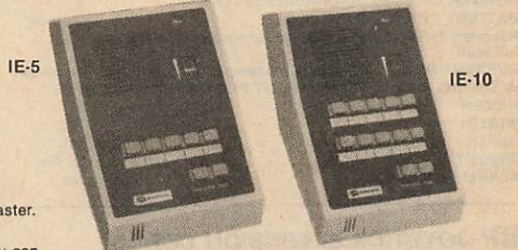
OUR PRICE **\$49.95** per pair

### FEATURES

- Fully automatic.
- Lock switch for continuous two-way conversations.
- A.B. channel selectors.
- Automatic squelch control for noise free operation.
- On/off light indicator.
- Phase lock loop circuitry.

### DESCRIPTION

Once you press down lock buttons of both units, the whole system becomes completely hands-free. It can also be used as a normal intercom that is press to talk and release to listen. Operates on VHF and flat = om-to-room or between houses on same AC electrical wiring.



TBR-4A Paging accessory for IE-5 and IE-10 . . . . .	\$59.95
AWG 22 Cable (Ship. wt. per 100'/30m)	
3SC 3-conductor wire (unshielded); Ship wt.: 2 lbs. (9 kg) . . . . .	\$14.95
7SC 7-conductor wire (unshielded); Ship wt.: 4 lbs. (1.8 kg) . . . . .	\$26.00
12SC 12-conductor wire (unshielded); Ship wt.: 5 lbs. (2.3 kg) . . . . .	\$39.95

CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446



# COMPUTER ACCESSORIES

## TEKNIKA 13" COLOR DISPLAY MONITORS Composite & Separated Video MODEL MJ-22

OUR PRICE **\$299.95**

### DESCRIPTION

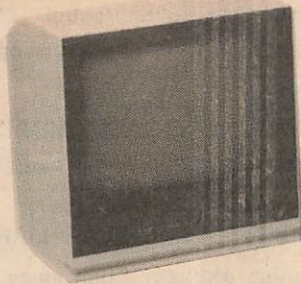
The Teknika MJ-22 is a 13" color display monitor designed for maximum value and flexibility. It accepts RGB, composite or separated video from virtually any personal computer. High resolution RGB inputs (506 x 240) are provided for the IBM PC, PCjr, Apple IIe, Apple III and their compatibles. The RGB display features exceptional reproduction of 16 colors that actually match their names presented in the computer's test pattern. Brown is brown, aqua is aqua, yellow is yellow — not just the approximations of most other monitors. Computers with NTSC composite video also perform best with the MJ-22. Graphics and text displays are presented with unsurpassed brilliance and full color. With computers that provide separate chroma and luminance signals, such as the Commodore 64 and Atari 800, even sharper, more defined images are possible. The unique capability of the MJ-22 to accept RGB or composite (or separated video) signals is enhanced with an RGB/Composite push button that allows immediate selection of either input type — particularly useful on the IBM PC and PCjr for switching between full RGB color and monochrome text. For viewing comfort, the screen is adjustable within a 0-8° range. A built-in speaker and audio amplifier accommodates game and instructional software. Accessory cables are available to easily connect the monitor with most major computer. Apple IIe users can upgrade their system even further by adding a Teknika 80 column RGB board. Besides providing the extra medium and high resolution graphic modes, the board allows the user to choose amber, green, blue or white text characters. U.L. listed, FCC Class B and DHHS approved.

### OPTIONAL ACCESSORIES MJ-22

MODEL MA-20 Cable set for Commodore, Atari, TI, Timex-Sinclair, etc. (5-pin DIN) \$24.95.

MODEL MA-21 Cable for IBM, PC, PCjr \$39.95.

MODEL MA-23 Cable for Apple IIe (RGB board required) or Apple III \$39.95.

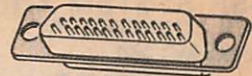


## BP D CONNECTORS

MODEL DB-25P

OUR PRICE **\$2.95** each 10 FOR **\$25.00**

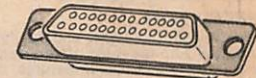
25 Pin Plug, Gold Plated Contacts.



MODEL DB-25S

OUR PRICE **\$2.95** each 10 FOR **\$25.00**

25 Socket.

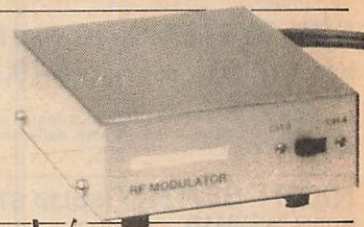


## BP VIDEO/COMPUTER RF MODULATOR MODEL COMP-022

OUR PRICE **\$19.95**

### DESCRIPTION

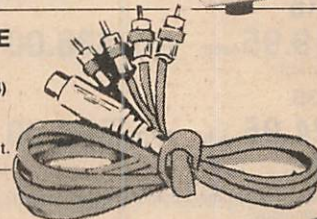
Converts Audio/Video output from color processors, computer, TV games and video cameras to channels 3 or 4 on any TV.



## BP MONITOR CABLE WITH ADAPTOR MODEL COMP-707 (RR-54)

OUR PRICE **\$2.95**

Universal High Resolution, 4 feet.



## BP JOYSTICK

MODEL V-8801

OUR PRICE **\$4.95** each 2 FOR **\$8.00**

### DESCRIPTION

The joystick can be used with Atari® Home Video Game and the Atari® 400 and 800 Home computers.

Atari® is a registered trademark of Warner Communications.



## BP JOYSTICK

MODEL V-8802

OUR PRICE **\$6.95** each 2 FOR **\$12.00**

### DESCRIPTION

- Large grip handle gives positive and comfortable action.
- Membrane switches used throughout.
- Four suckers fitted.
- Individual boxing, export carton holds 50 pcs. Cubic capacity 3.8 cubic feet.



## TRIPP LITE EMERGENCY POWER SYSTEMS

POWER OUTAGE SOLUTIONS! (Batteries Not Included)

MODEL SB-200 OUR PRICE **\$219.95**

MODEL SB-400 OUR PRICE **\$319.95**

MODEL SB-1000 OUR PRICE **\$649.95**



### FEATURES

Each Unit Includes:

- Automatic, heavy duty, regulated battery charger for trouble-free recharging after a power failure
- Automatic load transfer switch, for virtually uninterrupted power when your line voltage fails, as fast as 10 milli-seconds
- Rugged rectangular wave form, DC to AC inverter for reliable AC power
- Circuit breaker and/or fuse on the DC line to protect equipment from overload
- Status indicating power lights to indicate presence of line power or battery power.
- Multiple receptacles to handle all your power needs.
- Frequency controlled 60 Hz ± 1/2 Hz (except for models SB-200 & SB-400)

### DESCRIPTION

During normal conditions, line power feeds directly through the transfer relay to the load being powered. It also flows to the battery charger circuit, which converts high voltage AC to regulated low voltage DC. This control circuit monitors the battery charger, and cuts off the charge current when the battery is fully charged, thus minimizing premature battery aging and water loss. It will also shut down the entire system when the battery drops to 10V (in a 12V system, or 20V in a 24V system), thus preventing damage to battery through over discharge.

These SB models are designed for a variety of applications, such as telephones, computers, paging systems, and answering systems. Batteries are not included, so the individual user can select the type and size of battery most suitable for his individual needs. The back-up time on the SB Series is only limited to the amount of battery power you connect to it. SB units are the proper choice when the smaller self-contained BC units cannot operate for an adequate time. Complete battery selection information is included with each system.

### SPECIFICATION

	SB-200	SB-400	SB-1000
CAPACITY (wattage)	200 VA	400 VA	1000 VA
INPUT VOLTAGE (DC)	12	12	12
Maximum, automatic transfer time from line power to battery power or back again	10 ms	10 ms	12 ms
OUTPUT VOLTAGE (AC)	117	117	117
FREQUENCY (Hz)	60 Hz	60 Hz	60 Hz (± 1/2)
NUMBER OF AC PLUG-IN RECEPTACLES	2	2	2
BATTERY CHARGE RATE (max)	2 amps	2 amps	8 amps
Recovery ratio (recharge time to running time @ full load)	8:1	16:1	10:1
CURRENT DRAW AT FULL LOAD (amps)	18 amps	35 amps	85 amps
IS THE AC INPUT OVER-CURRENT PROTECTED	YES	YES	YES
HEIGHT	3 3/4"	3 3/4"	5"
WIDTH	7 1/2"	7 1/2"	10"
DEPTH	11 1/2"	11 1/2"	14"
WEIGHT	10 lbs.	16 lbs.	34 lbs.
ALARM INCLUDED	No	No	No

## BP JOYSTICK EXTENSION CORDS

MODEL V-4555 6' length

OUR PRICE **\$2.50** each

MODEL V-4556 12' length

OUR PRICE **\$2.95** each

### DESCRIPTION

For use with all joysticks and where adaptors are necessary.



## BP COMPUTER CABLES

MODEL COMP-740

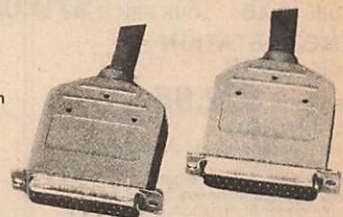
OUR PRICE **\$19.95**

10 Ft. RS-232 — RS-232 cable with DB-25 pin male to DB-25 pin male

MODEL COMP-741

OUR PRICE **\$19.95**

10 Ft. RS-232 — RS-232 cable with DB-25 Pin Male - DB-25 Pin Female



## BP COMPUTER CABLES

MODEL COMP-742

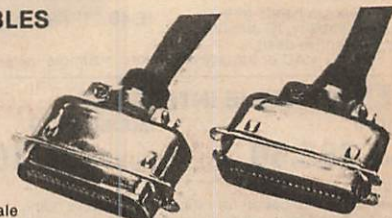
OUR PRICE **\$19.95**

10 Ft. 36 Pin Male - 36 Pin Male Centronic Type

MODEL COMP-743

OUR PRICE **\$19.95**

10 Ft. 36 Pin Male - 36 Pin Female Centronic Type



## SNAPIT

AMP AC FAULT FINDER

MODEL 49662

OUR PRICE **\$5.95** each

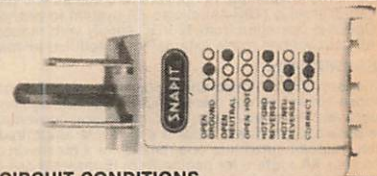
10 FOR **\$50.00**

CHECKS ALL THESE ELECTRICAL CIRCUIT CONDITIONS

- Open Ground • Open Hot • Open Neutral
- Correct • Hot/Ground—Reversed • Hot/Neutral—Reversed

### DESCRIPTION

This revolutionary AC Fault Finder has indicator lights and chart on both sides to describe the condition for each lighting arrangement. Plug in add illuminated signals indicate: reverse polarity, faulty wiring, missing grounds and/or correct wiring conditions.





## PPG/KITS SIGNAL INJECTOR MODEL 802 Parts Kit\*

OUR PRICE **\$4.95**  
MODEL 702 Circuit Board  
OUR PRICE **\$3.50**



### DESCRIPTION

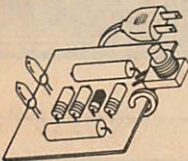
The 802 Signal Injector is an important and fundamental piece of test equipment. Thus, it belongs on any serious technician's test bench. The circuit is basically an astable multivibrator or free-running oscillator, and as such it is one of the more popular types of oscillators in use today. The signal injector puts out a 1,500Hz signal that can be used as an aid in the troubleshooting of audio equipment such as radios, stereos, and tape players.

### WHAT YOU WILL LEARN:

- R/C timing circuits.
- Transistor switching circuits.
- Astable multivibrators.

## PPG/KITS DECISION MAKER MODEL 808 Parts Kit\*

OUR PRICE **\$4.95**  
MODEL 708 Circuit Board  
OUR PRICE **\$2.95**



### DESCRIPTION

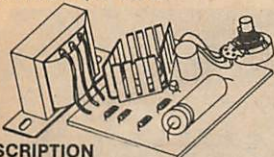
The 808 Decision Maker makes for an interesting heads-tails, or yes-no game. When power is applied to the circuit the neon bulbs will blink; that is, they will alternately flash on and off. When switch S1 is pressed (opened) only one of the bulbs will stay lit. Label one bulb yes, the other no and you're ready to make major decisions.

### WHAT YOU WILL LEARN:

- Neon bulbs.
- R/C timing circuits.
- Relaxation oscillators.
- Voltage drop.

## PPG/KITS 0-15 VOLT POWER SUPPLY MODEL 830-PPG Parts Kit\*

OUR PRICE **\$18.95**  
MODEL 730 Circuit Board  
OUR PRICE **\$7.95**



### DESCRIPTION

The 830 is one of the most useful, low cost, transistor regulated power supplies an experimenter can build. It will supply voltages with the necessary current to run transistor radios, portable tape recorders, electronic games, and a host of PPG projects. The 830 is a very reliable variable power supply that will give you many years of good service. (300 ma max. output)

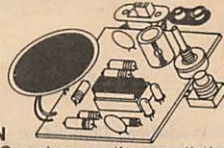
### WHAT YOU WILL LEARN:

- Rectification.
- Transformer action.
- Filtering.
- Voltage regulation.

\* ALL PARTS KITS DO NOT  
CONTAIN A CIRCUIT BOARD.

## PPG/KITS SPACE WAR GUN MODEL 803-P Parts Kit\*

OUR PRICE **\$9.95**  
MODEL 703 Circuit Board  
OUR PRICE **\$4.95**



### DESCRIPTION

The Space War Gun gives you those realistic sight and sound effects you expect from such a "weapon" at a super low cost. The "gun" can be placed in a rapid-fire or stun (one-shot) mode. In either position two LEDs give a visual indication of impulse frequency while a 8-ohm speaker transmits the audio tone. In both modes a potentiometer allows for quick and easy adjustment of output pitch, or firing rate.

In the rapid-fire mode switch S2 remains closed while the pressing of S1 generates the "rapid fire". In the "stun" condition, S2 is left open and the pressing of S1 produces the output tone.

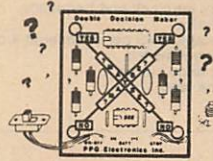
### WHAT YOU WILL LEARN;

- Clock circuitry.
- 555 and 556 timer circuits.
- R/C timing circuits.
- VCOs (voltage controlled oscillators).

## PPG/KITS DOUBLE DECISION MAKER MODEL 811 Parts Kit\*

OUR PRICE **\$7.95**

MODEL 711  
Circuit  
Board  
OUR PRICE  
**\$4.95**



### DESCRIPTION

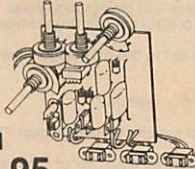
The 811 project is an advanced version of the familiar heads-tails game. However, your project is a decision maker with a "second opinion". When switch S1 is closed, four LEDs "blink" at two separate rates. Press switch S2 and two of the four LEDs remain on while the others turn off. The lit LEDs will indicate a "yes", "no" or "maybe". If it's a "maybe", you'll want to try again. It's a great conversation piece and makes an excellent and unusual gift. Why not make two or three and give them out to friends and relatives on birthdays or other appropriate occasions? That should be a simple decision.

### WHAT YOU WILL LEARN:

- Clock circuits.
- RS flip-flops.
- R/C timing circuits.
- JK flip-flops.
- D flip-flops.
- LEDs.

## PPG/KITS 3-CHANNEL, 4-CONTROL COLOR ORGAN MODEL 836 Parts Kit\*

OUR PRICE **\$14.95**  
MODEL 736  
Circuit Board  
OUR PRICE **\$6.95**



### DESCRIPTION

The 3-Channel Color Organ gives a dramatic effect by flashing three strings of light (each one a different color) to the sound of music. Each string responds to its own frequency range; one for the low or bass, another for the mid-range, and a third for the high or treble frequencies. Any FM radio, stereo, phonograph, or tape player can be used as a signal source; one just connects the output, (speaker leads) directly to the color organ. Up to 150 watts of light per channel may be used. That is over 20 Christmas lights for each channel, or 60 bulbs in all. When enclosed behind a light diffusing piece of plastic, the display can be very impressive.

### WHAT YOU WILL LEARN:

- SCRs (silicon controlled rectifiers).
- Audio transformers.
- Voltage dividers.
- Neon bulbs.
- Filter networks.

## PPG/KITS LOGIC PROBE MODEL 805-PPG Parts Kit\*

OUR PRICE **\$7.95**  
MODEL 705 Circuit Board  
OUR PRICE **\$4.95**



### DESCRIPTION

The PPG Logic Probe is a compact and reliable piece of test equipment to be used with all digital logic families. It gives a clear indication of HIGH OR LOW condition, indicates when a pulse is present at the point of test, and obtains power from the circuit under test. Furthermore, it is portable, easy to use, and inexpensive. It's a must for any serious electronics hobbyist or technician. Operating range - D/C to 100 Hz.

### WHAT YOU WILL LEARN:

- 555 timer.
- TTL and CMOS ICs.
- Logic gates.
- LED indicators.

## PPG/KITS SIREN OSCILLATOR MODEL 812 Parts Kit\*

OUR PRICE **\$9.95**  
MODEL 712 Circuit Board  
OUR PRICE **\$4.95**



### DESCRIPTION

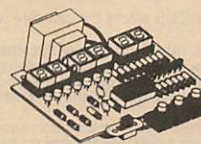
The 812 Siren/Code Oscillator is really two projects in one. With switch S3 open, the device functions as an excellent code practice oscillator. Pressing S2 produces a tone of varying pitch. S2, in turn, could be replaced with a regular code key for serious practice. The project is also a siren. With S3 closed, pressing S2 results in a steadily rising tone from the 8-ohm speaker. When S2 is released, the tone descends in pitch. Thus you control the overall rising and falling pitch of the siren with the closing and opening of S2.

### WHAT YOU WILL LEARN:

- Voltage dividers.
- R/C timing circuits.
- VCOs (voltage controlled oscillators).
- Amplifiers.

## PPG/KITS 6-DIGIT DIGITAL CLOCK MODEL 876 Parts Kit\*

OUR PRICE **\$49.95**  
MODEL 776-PPG Circuit Board  
OUR PRICE **\$10.00**



### DESCRIPTION

Digital clocks have come along way in the past few years. The first ones had dozens of transistors, two or three ICs and were very expensive. Today, things are a bit different. The PPG Six Digit Digital Clock uses the popular and readily available 6314 chip. Within this large-scale IC is the equivalent of over 450 transistors. It is a true wonder of modern solid-state technology.

The 876 has many special features such as: 50Hz or 60Hz timebase operation, 12 or 24 hour mode, slow/fast/hold buttons for easy setting, seconds display, color LEDs to separate hours and minutes, and finally bright seven-segment LED displays. This is a clock you will be proud to build and own.

### WHAT YOU WILL LEARN:

- Switching transistors.
- Power transformers.
- Rectification.
- 7-segment displays.
- LSI (large scale integration) ICs.

## PPG/KITS BURGLAR ALARM MODEL 806 Parts Kit\*

OUR PRICE **\$6.95**  
MODEL 706 Circuit Board  
OUR PRICE **\$2.95**



### DESCRIPTION

The 806 Dual Burglar Alarm is designed to be used with normally open (S3) and normally closed (S2) switches. If, after the alarm is set, (closing S1) the normally closed switch is opened or the normally open switch is closed, the alarm device will sound. It will remain on even if switches S2 and S3 are reset. The only way to turn off the alarm is to open S1. S1 could be a key switch if you prefer. Many types of connections could be used for the N/O and N/C switches. Thumb tacks read switches, magnetic switches, or security foil are just a few suggestions. And by placing N/C switches in series and N/O switches in parallel, an almost infinite number of areas can be protected. Comes complete with a large 9-volt buzzer.

### WHAT YOU WILL LEARN:

- SCR (silicon controlled rectifier).
- Diode operation.
- Alarm devices.

## PPG/KITS ROBOT BLINKER MODEL 814 Parts Kit\*

OUR PRICE **\$4.95**  
MODEL 714 Circuit Board  
OUR PRICE **\$4.95**



### DESCRIPTION

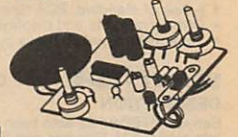
The LED Robot Blinker alternately flashes a pair of LEDs at a rate of about two "blinks" per second. Even though the project is a toy, there is a great deal of electronic knowledge to be gained by understanding how it works. The circuit is basically an astable multivibrator or free-running oscillator, and as such it is one of the more popular types of oscillators in use today. You'll have fun building, displaying, and learning about the LED Robot Blinker.

### WHAT YOU WILL LEARN:

- Free-running oscillators.
- R/C timing circuits.
- Switching transistors.
- LEDs.

## PPG/KITS DIGITAL BIRD MODEL 878 Parts Kit\*

OUR PRICE **\$10.95**  
MODEL 778 Circuit Board  
OUR PRICE **\$4.95**



### DESCRIPTION

There are all kinds of birds in this world, singing all kinds of songs. But neither you nor they have probably heard anything quite like this. The 878 Digital Bird produces sounds from a "tweeting" canary to a silly chicken, all with the turn of a few pots. It's fun unusual and entertaining. Moreover, the 878 is a good introduction to sound synthesis; and a knowledge of that could lead you in many exciting directions.

### WHAT YOU WILL LEARN:

- Oscillators.
- Logic circuits.
- Transistor amplifiers.
- Voltage dividers.



# AUTO STEREOS

## MIDLAND IN-DASH AUTO-STOP CASSETTE PLAYER WITH AM/FM/STEREO RADIO

MODEL 67-434 OUR PRICE **\$39.95**

### DESCRIPTION

Radio with illuminated frequency scale in cassette door, local/distant switch, FM stereo light. Cassette player with pushbutton fast-forward/eject. Amplifier with tone and balance controls. 5 watts RMS per channel. Fully adjustable shafts, 130 mm to 160mm. Chassis Size: 6 11/16" x 1 3/4" x 4 3/4". 170mm x 47mm x 120mm.

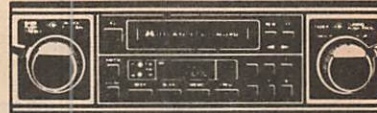


## MIDLAND IN-DASH AUTO REVERSE CASSETTE PLAYER AND AM/FM/MPX RADIO WITH ELECTRONIC TUNE

MODEL 67-430 OUR PRICE **\$119.95**

### DESCRIPTION

Model 67-430 has an electronic digital clock and digital station scanner with 6 station memory lock-in positions. Controls for speaker balance, bass, treble, scan, seek, fast forward, rewind, eject, fader, local/distant. 5 watts per channel. Chassis size: 7" x 2" x 4 15/16". 178mm x 50mm x 125mm.

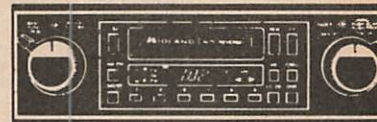


## MIDLAND AM/FM/MPX AUTO-REVERSE IN-DASH CAR RADIO WITH DOLBY

MODEL 67-450D OUR PRICE **\$169.95**

### DESCRIPTION

Full digital display for radio and clock (time and date). Features six pushbuttons for AM and FM, auto scan of radio frequencies, auto reverse cassette and noise reduction control. 20 watts per channel. Full feature. Chassis size: 7" x 2" x 4 15/16". 178mm x 50mm x 125mm.



## MIDLAND DIGITAL E.T.R. AM/FM/MPX RECEIVER WITH AUTO STOP CASSETTE PLAYER

MODEL 67-490 OUR PRICE **\$99.95**

### DESCRIPTION

Auto-stop deluxe mechanism, electronic digital clock, tape fast forward and eject, fader and balance controls, local-distance switch, ten preset memory lock in, automatic station scan & seek, illuminated liquid crystal, illuminated back panel in high-tech green. 10 watts total power. Chassis size: 7" x 2" x 4 15/16". 178mm x 50mm x 125mm.



## MITSUBISHI CAR AUDIO ELECTRONIC AM/FM CASSETTE MODEL RX-735 II

OUR PRICE **\$199.95**

### FEATURES

- Diamond chassis (2 X 7 X 4-3/4").
- Quartz PLL Frequency Synthesizer Circuitry.
- 6-AM and 6-FM electronic programmable memory.
- Automatic SEEK locates next strongest stations.
- Automatic SCAN scans the strongest stations.
- Rotary manual tuning.
- Super DX/LOC circuit.
- Distance/Local Mono/Stereo switch.
- Muting switch.
- Auto-Reverse tape mechanism.
- Cassette door and panel illumination.
- Locking fast forward and fast rewind.
- Tape program selector.
- "Pinch-off" tape protection.
- Digital display for clock and frequency.
- Adjustable shafts.
- Maximum 8 watts RMS per channel at 4 ohms.
- Loudness control switch.
- Fader and balance controls.
- Power antenna lead.



## MITSUBISHI CAR AUDIO 60 WATT EQUALIZER/AMPLIFIER

MODEL CV-23 OUR PRICE **\$79.95**

**NEW!**

### FEATURES

- Six-position graphic equalizer.
- Two-channel amplifier produces 30 watts RMS maximum per channel.
- Fader and balance control.
- Two-channel power level indicator.
- Plug-in adaptability with CX-21 deck.
- Compatible with Auto Modules Using KIT DIN-3.
- Compatible with Regular Power "RX" Series HI-Level connection using KIT—LEAD-21.
- Note: CV-23 is not a compatible power source for CZ-757.



## SANYO AM/FM STEREO CASSETTE RECEIVERS WITH ELECTRONIC TUNING, AUTO REVERSE AND MORE

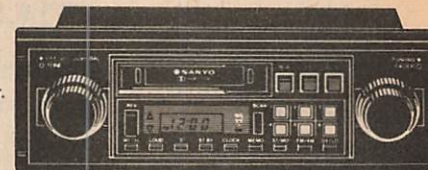
MODEL FTE-20 OUR PRICE **\$189.95**

### FEATURES

- State-of-the-art electronic tuner uses phase lock loop circuitry to accurately zero in on even distant stations; also features memory presets which can be programmed to instantly access 12 of your favorite stations, AM or FM.
- Built-in Auto Reverse mechanism changes tape directions automatically at the end of the cassette, providing greater continuous listening enjoyment. May also be manually reversed at any point.
- Dolby noise reduction circuit improves overall signal-to-noise ratio as much as 10dB by reducing tape hiss and background noise.
- Built-in 9.5-watt per channel power amplifier (RMS) easily drives 4 speakers with full, rich sound. Fader control adjusts front-to-rear speaker balance.
- All new common sense Key-Off/Eject feature automatically ejects the cassette when the ignition key is set to the off position; prevents unnecessary wear and tear.
- Plays normal ferric oxide and high-performance metal tapes with proper equalization.
- Innovative Tape Standby feature lets you listen to the radio whenever a cassette is being fast forwarded or rewind.
- Push-button loudness control provides an extra measure of contour and presence.
- Sanyo's FM Optimizer combines Soft Muting, Stereo Noise Control and Automatic Tone Quality Control circuits to assure ideal FM reception.
- A pair of standard, RCA-type line output terminals make it easy to connect onboard components, such as an equalizer or a power amplifier.
- Primary controls and displays are backlit, making them clearly visible, day or night.
- Stereo/Mono switch helps pull in stations too weak to receive in stereo.



FTE-20



FTED-6

MODEL FTED-6 OUR PRICE **\$199.95**

### DESCRIPTION

Sanyo's FTED-6 has also been outfitted with a revolutionary face plate which permits installation in virtually any car utilizing the DIN standard plus many recent domestic cars. That includes most late model GM, Chrysler and Ford automobiles as well as the vast majority of currently available European and Japanese imports. Now you can enjoy the convenience of what may be the world's most ergonomically designed receiver, no matter what you drive. The flat-face design of the FTED-6 makes it extremely easy to operate tuner and tape transport functions.

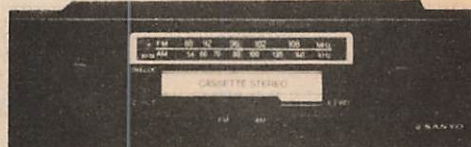
## SANYO AM/FM STEREO CASSETTE PLAYER

MODEL FTU-5 REG. \$69.95

OUR PRICE **\$54.95**

### FEATURES

- Mini-size chassis.
- Auto-stop at end of tape (from play mode).
- Locking fast forward.
- Fixed control shafts (130mm).
- EZ-C install mounting system.
- Local/distant switch.
- Automatically switches from stereo to mono in weak signal areas.
- Pushbutton eject.
- Separate volume, balance, and tone controls.
- Built-in antenna socket.
- AM/FM band selector.
- Bright, easy-to-see tape play indicator.
- Dimensions (HWD): 1-11/16" x 6-1/4" x 4-1/2".



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## SUNSENTRY SONIC ALERT

MODEL VPSA-82

OUR PRICE  
**\$69.95**

### FEATURES

- High-low European siren with over 100 decibels.
- Solid state sensor/control module with built-in, adjustable sound sensor, entry delay and automatic shut-off and reset.
- In-line fuse. • Simple installation instructions.
- Wire, terminals and mounting hardware. • Full one year warranty.

### DESCRIPTION

Combining easy installation with the theft-deterrent protection of an audible alarm, Sonic Alert is SunSentry's latest innovation in automotive security systems. Sonic Alert's compact sensor/control module quickly mounts out of the way in most any vehicle interior. Its built-in micro-sensor eliminates the need for mounting trigger switches to door jambs by distinguishing the sounds of forced entry and sounding the piercing "high-low" siren before a thief has the chance to steal the vehicle or its contents. The alarm automatically shuts off after a few minutes and resets itself to guard against further theft attempts. Adjustable sensitivity virtually eliminates false alarms and an adjustable entry delay allows the vehicle owner time to enter and deactivate the alarm while giving potential thieves too little time to search for the turn-off switch. For additional protection, this system may be combined with most other SunSentry systems/sirens and accessories. Easily installed in any car, van truck, or RV with 12-volt, negative ground electrical system.



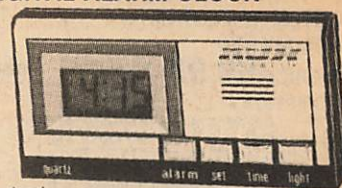
## AUDIOVOX MICRO LCD DIGITAL ALARM CLOCK

MODEL LCD-6

OUR PRICE **\$12.95**

### FEATURES

- Quartz regulated accuracy.
- LCD display of time/day—month/alarm set time.
- Audible tone for alarm.
- Self-contained battery.
- Adheres to dash with Velcro adhesive pad for easy removal. • Built-in desk-top stand.



## SNAP IT POSI CHARGE

Charge Your Battery Without Lifting Hood

MODEL POS-1

OUR PRICE **\$19.95**

### DESCRIPTION

You don't even have to lift your car hood. Just plug one end into your car's lighter and run the cable across and into the running car's lighter. Wait a few minutes, then start right up!



## PAGE ALERT RADIO FREQUENCY TRANSMITTER

MODEL 4000

OUR PRICE **\$99.95** each

4 OR MORE **\$89.95** each

### DESCRIPTION

PAGE ALERT SYSTEM's new PAGE ALERT 4000 is an individually coded 4 WATT radio frequency Transmitter and Pocket Pager Receiver. It is designed to "personally alert" you when your vehicle is being stolen or vandalized. The PAGE ALERT 4000 will call you, and only you, within a transmission range of more than 8 miles (12672 m), depending upon terrain, antenna and atmospheric conditions. Its new digital system allows you to set your own code, which can be changed in seconds. The Page Alert units are passively operated. This enables the vehicle to always be protected whenever the occupants leave, no forgetting to turn the alarm on. Also, the instructions are written in both English and Spanish. Passive operation may enable you to get a reduction in insurance.



## BP UNIVERSAL DC ADAPTOR

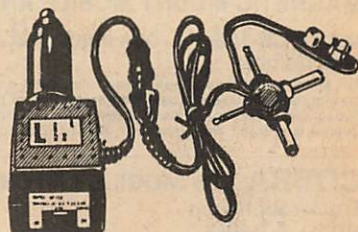
MODEL CB-200C

OUR PRICE **\$4.95** each

10 FOR **\$40.00**

### DESCRIPTION

3 way switch gives instant selection of 12 volt to 6V., 7.5V., 9V. DC at 300 MA output. Use your own car or boat battery to power your portable tape player. CB set, portable radio, etc. Plugs in cigarette lighter receptacle. Comes with 4 way universal plug and battery snap. Contains slide switch and polarity reverse. Pag packaged.



MODEL CB-280 • 800 mA. OUR PRICE **\$6.95** each 5 FOR **\$30.00**

## BP INDOOR/OUTDOOR WEATHER RESISTANT 5" HORN

MODEL BP 5000

OUR PRICE **\$6.50** each 5 FOR **\$30.00**

### FEATURES

- 12 watts peak power.
- 10 ft. cord. • 3.5mm plug. • Used for C.B. and stereo systems.



## BP 6" x 9" SPEAKER KIT

MODEL BP-2000-69CXD

OUR PRICE **\$19.95** pair

### SPECIFICATIONS

- 20 oz. ceramic magnet.
- Cloth roll air suspended woofer.
- Separate 3" high efficiency tweeter.
- Frequency response: 70-15,000 Hz.
- Maximum power: 25 watts.
- Impedance: 8 ohm.
- Two 6" x 9" coaxial speakers, custom padded grilles, hardware, cables and instructions.



## BP 7 BAND GRAPHIC EQUALIZER

MODEL GE-7000

OUR PRICE **\$35.00**

### FEATURES

- 60 Watts. • 7 Bands. • Deluxe model.
- Fader. • Stereo.



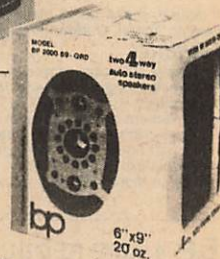
## BP 6" x 9" 4-WAY SPEAKER KIT

MODEL BP-2000-69QRD

OUR PRICE **\$29.95** pair

### SPECIFICATIONS

- Two 6" x 9" 4-way speakers.
- Two 1" horn tweeters.
- One 3" midrange.
- Chrome bridge — foam roll.
- Deluxe grilles and cables.

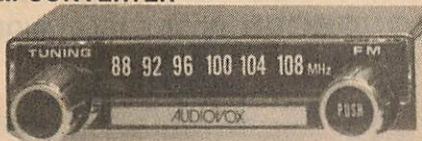


## AUDIOVOX MICRO-FM CONVERTER

MODEL FMC-1C

OUR PRICE **\$14.95**

The most popular FM converter on the market today! Converts an AM car radio to an FM radio. The FMC-1C is so small it can be mounted under the dash, out of sight to avoid theft.

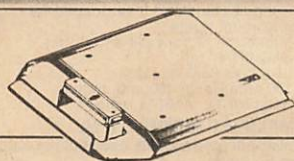


## BP C.B. LOCK MOUNT BRACKET

MODEL CB-500

OUR PRICE **\$4.95**

For C.B. stereos, radios, etc. Display package.



## AUDIOVOX "LE CLOCK" QUARTZ AUTO DIGITAL CLOCK

MODEL LED-80

OUR PRICE **\$12.95**

- Quartz regulated accuracy to one minute a year.
- Brilliant LED display panel.
- Convenient time-set pushbuttons.
- Beautifully gift packaged in woodgrain display carton.
- Includes indash mounting bezel.
- Micro-sized for in, on or underdash mounting.



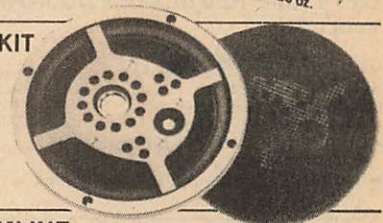
## BP 3-WAY 5-1/4" SPEAKER KIT

MODEL BP-5900

OUR PRICE **\$24.95** pair

### SPECIFICATIONS

- Two 5-1/4" 3-way speakers.
- 20 oz. magnet.
- Chrome bridge - foam roll.
- Deluxe grilles and cables.



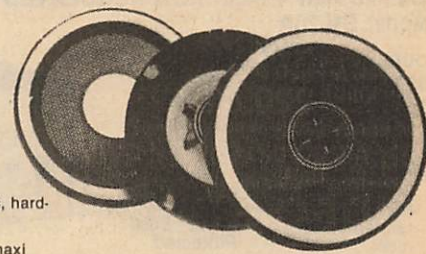
## BP 5-1/2" COAX EXTRA SLIMLINE STEREO SPEAKER KIT

MODEL BP-6000

OUR PRICE **\$19.95** pair

### SPECIFICATIONS

- 5-1/2" two-way speaker system.
- 5.3 oz. ceramic magnet.
- 1" dome tweeter.
- Frequency response: 80-18,000 Hz.
- Maximum power: 15 watts.
- Impedance: 8 ohms.
- Complete with metallic mesh grilles, hardware and instructions.
- Designed for imported cars.
- Deluxe acoustical design to give maxi sound.



CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446



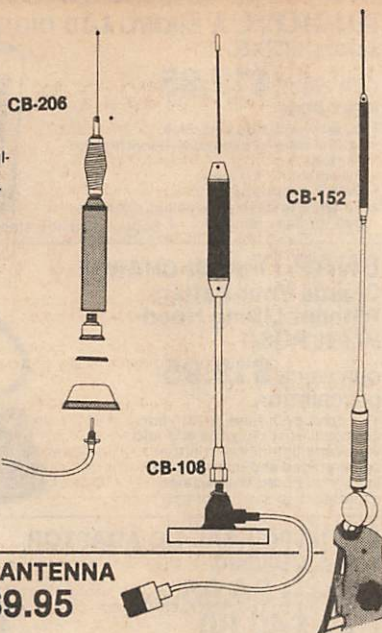
# AUTO ANTENNAS

## BP TRUNK LIP MOUNT MOBILE ANTENNA MODEL CB-206

OUR PRICE **\$9.95**

### DESCRIPTION

For 27 MHz CB transceivers. Base-loaded, fully weather-proof, easy to install "top of the line" antenna. Overall length: 43-1/2". Rod adjusts for lowest SWR heavy duty stainless steel whip and shock spring. Includes 16 ft. coax cable and PL-259 connector.



## RAIN GUTTER MOUNT MOBILE ANTENNA MODEL CB-152

OUR PRICE **\$9.95**

### DESCRIPTION

For 27 MHz CB transceivers. Get easy installation with this 26" antenna. Gutter mount manufactured from heavy gauge, corrosion free chrome-plated metal. Clamps securely to many rain gutters for no-hole installation. Includes adjustable 180° swivel ball for vertical position of the antenna. Ready for easy installation with 10 ft. top quality RG-58/U coax cable and PL-259 connector.

## MAGNETIC MOUNT MOBILE ANTENNA

MODEL CB-108 OUR PRICE **\$9.95**

### DESCRIPTION

For 27 MHz CB transceivers. Powerful magnet grips firmly to flat metal surface. Special coating on magnet base keeps scratching or marring of painted surface. Center coil-loaded and completely weather-proof, tunes to lowest SWR stainless steel whip chromeplated support rod. Overall length 26". Includes 10 ft. RG-58/U coax cable and PL-259 connector.

## COBRA LTD MOBILE ANTENNAS

Trunk/roof mount  
MODEL AT-40C

OUR PRICE **\$15.95**

MAGNETIC MOUNT

MODEL AT-50

OUR PRICE **\$16.95**

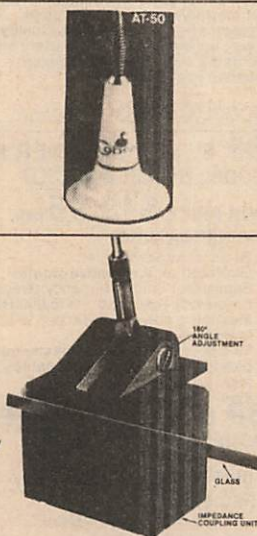
## AVANTI MOON FANTOM

MODEL AV-240 OUR PRICE **\$39.95**

A deluxe, super range, glass mounted mobile antenna. Easy to install. Outstanding performance.

### FEATURES

- 1/2-wave CB antenna design.
- Requires no ground plane, works on metal or fiberglass vehicles.
- Convenient on-glass design lets you mount AV-240 on any vehicle with a windshield, rear or side windows — even through fiberglass. Works great on vans, motorcycles, even apartment windows.
- Easy to install. Mounts in minutes. No tools needed.



## BP 4 AMP REGULATED DC POWER SUPPLY MODEL SU-4A

OUR PRICE **\$19.95**

### SPECIFICATIONS

Binding Post Terminals

- Input: 115V AC 60 Hz.
- Output: 13.8V DC - 3 AMP constant - 5 AMP surge.
- Short-Circuit Protection.



## BP 20 AMP PRECISION REGULATED DC POWER SUPPLY MODEL SU-20A

OUR PRICE **\$79.95**

### SPECIFICATIONS

- Output: 13.8V DC - 20 AMP fully regulated low ripple.
- Electronic overload protection with instant automatic reset.
- Input: 117V. AC 60 Hz - Fuse Protected.



## HARADA ANTENNAS

### UNIVERSAL AM/FM POWER ANTENNAS

MODEL XMQ-1 OUR PRICE **\$19.95**

Semi-automatic power antenna with flush mount, 5-section, 31" ext, 55" cable

MODEL XMX-1 OUR PRICE **\$29.95**

Semi-automatic front fender mount, chrome plated, 5-section, 31" mast, 55" cable

MODEL XMX-2 OUR PRICE **\$34.95**

Fully automatic front fender mount, chrome plated antenna, 4-section, 21" mast, detachable 55" cable.

MODEL MCB-40 OUR PRICE **\$16.95**

For rear mount add extension cable.

### UNIVERSAL AM/FM/CB POWER ANTENNAS

MODEL XMT-1 OUR PRICE **\$42.95**

Semi-automatic front fender mount, replaceable mast, flush mounting head, 5-section mast extends 42".

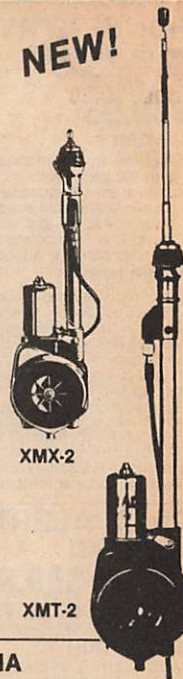
MODEL XMT-2 OUR PRICE **\$54.95**

Fully automatic front fender mount, replaceable mast, flush mounting head, 5-section mast extends 42".

MODEL MCR-200 OUR PRICE **\$16.95**

For rear mount add extension cable.

**NEW!**



## AVANTI ON-GLASS AM/FM AUTO ANTENNA

MODEL AFM-1

OUR PRICE **\$29.95**

### DESCRIPTION

A revolutionary new technical advancement in the autosound communications field. Featuring Avanti's exclusive "on-glass" design, the AFM-1 offers superior gain performance, significant reduction of picket fence fading and improved AM performance. The AFM-1 can be mounted on any vehicle with a windshield, rear or side windows—even through fiberglass. There are no damaging holes to drill, and no water leaks to worry about. Comes equipped with a 48" solid stainless steel whip.

MODEL AFM-2 OUR PRICE **\$29.95**

### DESCRIPTION

Includes all of the outstanding performance benefits of the Avanti AFM-1, except it is equipped with a high quality, automotive telescoping whip that is adjustable from 18" to 48".

## DUAL-FUNCTION CB METER

MODEL CB-170C

OUR PRICE **\$12.95**

**NEW!**

### SPECIFICATIONS

- SWR Scale: 1:1—1:3 VSWR.
- FS Scale: 0-5 relative scale.
- Frequency Range: 3.5—150 MHz.
- Impedance: 52 ohms.
- Antenna: 5-section telescopic.



## LONGHORN MOBILE TELEVISION ANTENNA FOR VIDEO

### FEATURES

- Super Wing Design.
- Ideal for autos, trucks, vans, boats, RV's, and limos.
- 3 mounts to choose from: trunk, permanent, magnetic.
- Range Extending Linear loaded for maximum range.
- Minimizes picture roll and flutter.
- Only 6-1/4" tall.
- Low loss coaxial cable.
- 100 Mile Range (50 mile radius).
- Used for TV, AM/FM radio.

### AMPLIFIED MODELS (PB)

Power boosted models have built-in amplifier. +12 dB gain, 50-800 MHz covers VHF-UHF TV and FM radio.

### MODEL

720-PB Permanent mount with amplifier .....	OUR PRICE <b>\$69.95</b>
721-PB Trunk mount with amplifier .....	<b>\$74.95</b>
722-PB* Magnet mount with amplifier .....	<b>\$74.95</b>

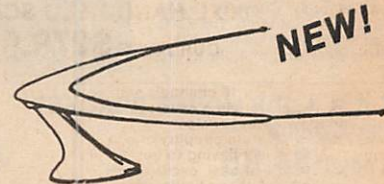
Not for aluminum or fiberglass vehicles.

### UNAMPLIFIED MODELS

### MODEL

720-L "LONGHORN" permanent mount 9' cable and connector .....	OUR PRICE <b>\$39.95</b>
721 "LONGHORN" trunk mount 15' cable and connector .....	<b>\$39.95</b>
722* "LONGHORN" magnet mount 15' cable and connector .....	<b>\$44.95</b>

\*Not for aluminum or fiberglass vehicles



**NEW!**



## BEARCAT 20/20

Aircraft, marine and public service—all within pushbutton reach.

MODEL 20/20

OUR PRICE **\$299.95**

### FEATURES

- **40 Channels/2 Positions.** Monitor 20 channels at a time by use of a two-position switch, for a total of 40 channels.
- **7 Bands.** Your coverage includes Low, High, UHF and UHF-T public service bands, the 2-Meter and 70 cm Amateur bands, plus the Aircraft communications band.
- **Aircraft Search.** Push a single button to search the Aircraft band for any activity.
- **Marine Search.** Search the entire VHF Marine band by pushing a single button.
- **Automatic Search.** Find new frequencies you may have been missing.
- **Limit/Hold.** You choose the upper and lower limits of the search range.
- **Decimal Display.** • **Dual Scan Speed.** Scan either 5 or 15 channels each second.
- **Patented Selective Scan Delay.** Adds a two-second delay on desired channels.
- **Automatic Lockout.** • **Manual.** • **Priority.** • **Patented Track Tuning.** • **Crystalline.**
- **Direct Channel Access.** Advance directly to a desired channel
- **Automatic Squelch.** • **FCC Certified, UL Listed.**



### SPECIFICATIONS

Frequency ranges: 30-50 MHz Low Band, 118-136 MHz Aircraft, 144-148 MHz 2-Meter Amateur, 148-174 MHz High Band, 421-450 MHz 70 cm Amateur, 450-470 MHz UHF Band, 470.0125-512.450 MHz "T" Band. Size: 10 5/8" W x 3 1/2" H x 8" D.

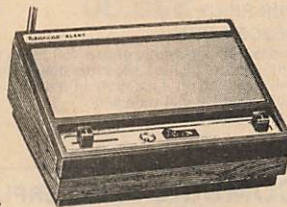
## BEARCAT ALERT Warning Radio

MODEL ALERT

OUR PRICE **\$39.95**

### DESCRIPTION

When there's a weather emergency, the National Weather Service sends out a special tone signal that will actually turn on the Bearcat ALERT in your home—warning you first with a loud siren, then with a detailed broadcast of the impending threat. National Weather Service even suggests what actions you should take to assure the safety of you and your family.



## BEARCAT 180

MODEL 180 OUR PRICE **\$179.95**

### DESCRIPTION

Police and fire calls. Ham radio transmissions. Business and transportation communications. Even news crawls reporting. You can hear it all on a Bearcat 180 scanner radio. Imagine the thrill of hearing a major news event unfold even before the news organizations can report it. And the security of knowing what's happening in your neighborhood by hearing police and fire calls in time to take precautions. There's nothing like scanning to keep you in-the-know, and no better way to get scanner radio performance at a value price than with the Bearcat 180.



### SPECIFICATIONS

Frequency Range: 30-50 MHz Low Band, 138-144 MHz Military Land Mobile, 144-148 MHz 2-Meter Amateur, 148-174 MHz High Band, 406-420 MHz Federal Government Land Mobile, 420-450 MHz 70-cm Amateur, 450-470 MHz UHF Band, 470-512 MHz UHF "T" Band. Size: 9" W x 3" H x 9 1/2" D. Weight: 3lbs., 8oz.

## BEARCAT FIVE-SIX

Professional police, emergency and aircraft monitoring, to go.

MODEL 56 OUR PRICE **\$129.95**

### DESCRIPTION

The Bearcat FIVE-SIX covers five bands and six channels, including VHF High and Low, UHF and UHF-T, plus VHF Aircraft, scanning eight channels per second.

### SPECIFICATIONS

Frequency Range: 33-47 MHz Low Band, 118-136 MHz Aircraft (AM), 152-164 MHz High Band, 450-470 MHz UHF Band, 470-512 MHz "T" Band. Size: Approx. 2 7/8" W x 6 5/8" H x 1 5/8" D. Weight: 12 ounces



## BEARCAT 100XL HAND HELD SCANNER

MODEL 100XL OUR PRICE **\$279.95**

### FEATURES

- **16 Channels.** Program 16 channels with your choice of frequencies.
- **9-Band Coverage.** Including coverage of Military and Federal Government Land Mobile frequencies.
- **Crystal-Free.** Solid state circuitry allows selection of public service frequencies without ever having to buy a crystal.
- **Search.** Seek and find new, exciting frequencies automatically.
- **Limit.** Set upper and lower limits of search range. Also used to "step down" through frequencies in manual search.
- **Hold.** Stop on any frequency while searching. Also used to "step up" through frequencies when in manual search.
- **Automatic Lockout.** Skip channels not of current interest for faster scanning cycle.
- **Manual.** Allows direct channel access. Advance directly to a desired channel or step one channel at a time.
- **Patented Track Tuning.** • **Patented Selective Scan Delay.**
- **Direct Channel Access.** • **Liquid Crystal Display.**
- **Battery Low Indicator.** Tells you when it's time to recharge.
- **DC Power.** Uses 6 AA nickel-cadmium batteries.
- **FCC Certified with UL Approved Charger.** Tested for safe, quality design and manufacture.
- **AC/Adapter/Battery Charger.** charging batteries and using scanner with AC power.



### SPECIFICATIONS

Frequency Range: 30-50 MHz Low Band, 118-136 MHz Aircraft, 138-144 MHz Military Land-Mobile, 144-148 MHz 2-Meter Amateur, 148-174 MHz High Band, 406-420 MHz Federal Govt. Land-Mobile, 420-450 MHz 70 cm Amateur, 450-470 MHz UHF Band, 470-512 MHz "T" Band. Size: 3" W x 7" H x 1 1/4" D

## UNIDEN® BEARCAT®

210XW SCANNER

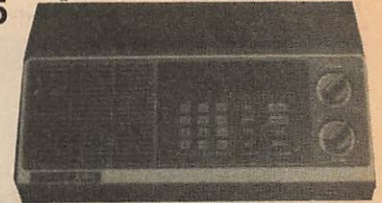
MODEL 210XW

FEATURES OUR PRICE **\$219.95**

- **Eight Bands:** Including Military, two "Ham" bands, Federal Government and more.
- **20 Channels:** Program to your choice of frequencies.
- **Instant Weather:** Automatically finds the National Weather Service broadcast in your area.
- **Automatic Search:** Finds new frequencies automatically.
- **Synthesized:** Simple keyboard command of all functions.
- **Track Tuning:** Patented feature allows scanner to peak on each transmission.
- **Scan Delay:** Patented feature adds three-second delay on desired channels to prevent missed transmissions.
- **Automatic Squelch:** Factory set for easier operation. Use manual for closer adjustment.
- **Direct Channel Access:** Go directly to any channel without stepping through other channels.

### SPECIFICATIONS

Band Coverage: 8 bands + weather channel. Frequency Range: Low band 30—50MHz, Military land mobile 136—144MHz, 2-meter "Ham" band 144—148MHz, High band 148—174MHz, Federal Government land mobile 406—420MHz, 70cm "Ham" band 420—450MHz, UHF band 450—470MHz, "T" band 470—512MHz. Channels: 20 channels. Scanning Speed: 15 channels per second. Display: Vacuum fluorescent decimal display. Controls/Switches: Volume and squelch controls. Power Requirements: 117VAC or 13.8VDC.



NEW!

## BEARCAT 300

MODEL 300-B OUR PRICE **\$369.00**

### DESCRIPTION

The Bearcat 300. It's the most advanced automatic scanning radio yet developed. It's also the easiest to operate.

### FEATURES

- **Service Search:** Push-button access to specific interest categories. Eleven Service Search keys for immediate searching of eleven specific interest
- **50 Channels/5 Banks:** Program 50 Channels from infinite frequency combinations.
- **7 Band Coverage.** • **Dim Control.** • **Priority.** • **Automatic Search.**
- **Limit:** Sets upper and lower frequencies of search range.

### SPECIFICATIONS

Frequency Reception Range: 32-50 MHz Low Band, 118-136 MHz Aircraft, 144-148 MHz 2 meter Amateur, 148-174 MHz High Band, 421-450 MHz 75 cm Amateur, 450-470 MHz UHF Band, 470-512 MHz "T" Band. Size: 12 1/4" W x 3 7/8" H x 7" D. Weight: 6lbs. 8ozs.



## UNIDEN® BEARCAT® 40 CHANNEL SCANNER

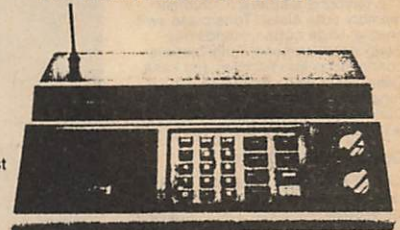
MODEL 800XL

OUR PRICE **\$349.95**

- **12 Bands:** Including 800 MHz, aircraft, military, "Ham", public safety and Federal Government.
- **40 Channels:** Two bands of 20 channels.
- **Instant Weather:** Automatically finds the National Weather Service broadcast in your area.
- **Priority:** Channel one checked every 3-seconds to prevent missing important calls.
- **Synthesized:** Enter frequency of your choice.
- **Track Tuning:** Patented feature allows scanner to peak on each transmission.
- **Scan Delay:** Patented feature adds three-second delay on desired channels to prevent missed transmissions.
- **Automatic search:** Find new frequencies automatically.
- **Direct Channel Access:** Go directly to any channel without stepping through other channels.
- **Automatic Squelch:** Factory set for easier operation. Use manual for closer adjustment.
- **Channel Lockout:** Allows you to skip channels you don't want to hear.
- **UL Listed/FCC Certified:** Tested for safe, quality design and manufacture.

### SPECIFICATIONS

Band Coverage: 10 bands + weather channel. Frequency Range: 10 meter "Ham" band 29—29.7MHz, Low band 29.7—50MHz, 6 meter "Ham" band 50—54MHz, Aircraft 118—136MHz, Military land mobile 136—144MHz, 2 meter "Ham" band 144-148MHz, High band 148-174MHz, Federal Government land mobile 406—420MHz, 70cm "Ham" band 420—450MHz, UHF Band 450—470MHz, "T" Band 470—512MHz, 800 band 806—912MHz.



## BEARCAT SHORTWAVE RADIO

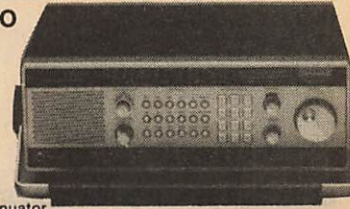
MODEL DX-1000

OUR PRICE **\$489.95**

- **Direct Access Tuning.**
- **10 Channel Memory.**
- **Two Time Zone 24-Hour Clock.**
- **AF Gain.** • **Timer.**
- **Two Noise Blankers.**
- **Selectable Filter Bandwidths.**
- **Manual Step-up/Stepdown.**
- **Two Position Automatic Gain Control.** • **RF Attenuator.** • **Squelch.**
- **Tuning Knob.** • **Variable Tuning Rate Button.** • **Fine Tuning.** • **Tone Control.**
- **Calibrated Signal Meter.** • **Mode Buttons.** • **Dimmer Button.** • **Tone Control.**
- **LED Indicators.** • **Battery Back-up System.** • **Portable Battery Operation.**
- **Front Mounted Speaker.** • **Antenna Terminals.** • **Auxiliary Jacks.**
- **AC Cord.** • **Record Output.** • **Mute Terminal.** • **Ground Terminal.**

### DESCRIPTION

The Bearcat DX-1000 makes dialing in London as easy as dialing a phone. With its direct access keyboard tuning, the Bearcat DX-1000 is one of the easiest shortwave radios to operate. Each time you turn on your shortwave radio, you have the opportunity to listen in on a newsbreaking event. But not everything on shortwave is of a serious nature. By dialing in 15,170 kHz any evening, you can delight to the exotic South Pacific sound of Radio Tahiti. Jazz enthusiasts will enjoy the rhythmic West African "high life" music that is readily available from stations like Radio Togo on 5,047 and Radio Cameroon on 4,850 kHz. Every moment of every day and night shortwave radio brings into your home an absorbing new interest—a fascinating way to keep up with international events.



CHARGE IT—VISA•MASTER CARD•AMERICAN EXPRESS • Toll Free 800-645-9518 • NYS Toll Free 800-832-1446



# TELEPHONES/PAGER

## LINEAR COMMUNICATIONS PAGE COMMAND™

MODEL PACOM-2 OUR PRICE **\$169.95** **NEW!**



### DESCRIPTION

PAGE COMMAND can be applicable for any home. Beep your children to come home. The bedridden can beep a family member or neighbor. Panic beeper for retirees, baby sitter, etc. Instant Communication. Keep in touch with key people. When an intrusion occurs the pager will beep you. It can also beep you when your smoke detector goes off, doorbell buzzes or phone rings.

### FEATURES

- Many uses: Homes, Schools, Industry, Hospitals, Hotels/Motels, Restaurants.
- Special Security Features: Intrusion alert. Beep you, or your neighbor in your absence.
- Complete System - Transmitter plus 2 Pocket Pagers.
- Transmission Range: Up to ¾ mile (Antenna Included).
- Easy installation — Just plug it in.

## UNITECH DATA PHONE COMPUTER COMMUNICATION

MODEL TMS-1A OUR PRICE **\$99.95** **NEW!**

### DESCRIPTION

The Unitech Data Phone lets you hook your computer with an integrated telephone modem system to a universal interface for computer communications by telephone. It is also an attractive full featured functional telephone. Its simple fine line design is functional and pleasing. The modem features: 300 Baud, Bell 103 Compatible, Originate/Answer mode automatically selected, Connects directly to computer, Appropriate interconnect cables available for most computers and telephone models (not included).

The telephone features: 10 number memory auto dialer, Tone/pulse switchable, Mute button, Hands-free 2-way speakerphone, Fully modular connections into handset and base, Desk-top or wall mountable, Pause function for PBAX. Dimensions: 7-13/16" W x 4-5/8" H x 8-13/16" D. Weight 2 lbs. 4 oz.

### Optional Accessories

- CABLE A For Apple, Kapro ... **\$14.95**
- CABLE B For TI 99/4, OSBORNE ... **\$14.95**
- CABLE C For Atari® ... **\$14.95**
- CABLE D For IBM, Heath, Zenith ... **\$14.95**
- CABLE E For Radio Shack TRS-80 Color Only ... **\$14.95**
- CABLE F Commodore ... **\$14.95**



## COMDIAL SLENDERET® II WITH DIALER

MODEL 4230

OUR PRICE **\$59.95**

### FEATURES

- Dial and disconnect button in handset.
- Phone line powered illuminated dial.
- Last number redial button.
- Hold button. • Eight-number dialer.
- Electronic ringer with h/lo/off switch.
- Desk/wall mountable. • Almond.
- Tone/pulse switchable.

## SLENDERET® II WITH DIALER & TWO LINES

MODEL 4330-C

OUR PRICE **\$69.95**

### FEATURES

- Two-line capacity.
- Conference button to have a three-way conversation.
- dial and disconnect button in handset.
- Phone line powered illuminated dial.
- Last number redial. • Hold button. • Eight-number dialer.
- Electronic ringer with h/lo/off switch.
- Desk/wall mountable. • Almond. • Tone/pulse switchable.



## AUDIOVOX TWO PIECE CORDED TELEPHONE

MODEL AT-115

REG. \$59.95

OUR PRICE **\$29.95**

### DESCRIPTION

Bell ringer on/off. Mute. LED flickers to indicate number is being dialed. Audible dial tone. Last number redial.



## AUDIOVOX CORDED TELEPHONE WITH AM/FM RADIO, DIGITAL/ALARM CLOCK

MODEL AT-8

REG. \$120.00

OUR PRICE **\$35.00**

### DESCRIPTION

Pushbutton electronic phone, full alarm with snooze. Lighted slide rule dial scale. Bell ringer on/off. Last number redial. Mute. Audible dial tone and redialing pulses.



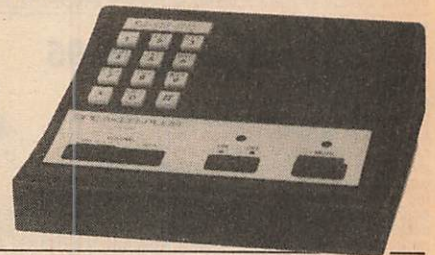
## COMDIAL SPEAKERPLUS® WITH DIAL

MODEL 4510

OUR PRICE **\$49.95**

### FEATURES

- Adjunct speakerphone with dial to originate calls.
- Mute button with LED indicator.
- Last number redial.
- Tone/pulse switchable.
- Auxiliary jack for phone.
- On/off button with LED indicator.
- Desk/wall mountable.



## HALLICRAFTERS

6 KEY PHONE WITH 4 LINE CAPABILITY

MODEL 412 OUR PRICE **\$149.95**

**NEW!**



### DESCRIPTION

A revolutionary system that employs advanced technology. Looks like the phone you've always used, but far different. The six-key phone is a total system with the capability to handle 4 lines—and up to 12 instruments. All without expensive common equipment (KSU), and costly cabling. Nothing else like it for simplicity, ease-of-installation and price-performance. The Hallcrafters 412 makes expensive, complex systems obsolete.

### FEATURES

- Hold Button: to put a call on hold.
- AUX RJ-11 Jack: connects directly to the selective line; can be used for auxiliary devices.
- Intercom Button: One intercom path, dial select, maximum of 12 stations.
- No KSU: All switching and control circuitry built into the base of the telephone. No common equipment. No external parts to fail, eliminating costly maintenance problems.
- One Small Central Power Supply: for all the telephones. Power supply and intercom lines connected through a standard 4/6-pin modular jack.
- 12-Button Key Pad: for Tone Dialing. • Tone/Pulse Switch.
- Ringer On-Off Switch: Electronic Ringer has a pleasant sounding tone.
- Line Status Indicator LED: Flashes in sequence with ringer to indicate incoming calls, flashes rapidly when line is on hold, is steady when line is in use.
- Telephone Line Select Buttons: Telephone lines connected through an 8-pin modular jack. Installation is simple and easy using one pair of wire for each telephone line. No more 25-pair cables to install. Wiring can be individual home run or single loop.
- Options Available: Speaker Phone, 9-Number Memory, Battery Backup, Long Distance Tone Button.

Optional Power Supply Model PS-413. . . \$75.00

FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



## BP TWO WAY LINE ADAPTER MODEL TA-1351

OUR PRICE **\$16.95** **SPECIAL!**

### DESCRIPTION

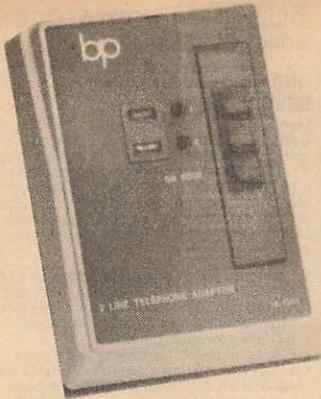
The TA-1351 is ideal for residential, professional or small business use. It permits incoming phone call on either line of two-line system to be answered by a single line telephone.  
Dimensions: 1-3/4"H x 4-5/8"W x 6-1/4"D.

## TWO WAY LINE ADAPTER WITH CONFERRING MODEL TA-1352

OUR PRICE **\$24.95**

### DESCRIPTION

Same as above, but also has conferencing.



## BP TELEPHONE LINE TAP DETECTOR

MODEL TA-1356 OUR PRICE **\$29.95** **NEW!**

### FEATURES

- Silently tells you whether someone else is listening to your phone conversation!
- Indicates presence of tapping device, if line is busy or extension is being monitored.
- Makes phone more secure, alerts you to unauthorized listeners.
- Prevents interruptions and provides peace of mind.
- Works on all outgoing or incoming calls.
- Use on any phone — no interference with normal operation.
- Adjusts for all telephone installations. • No power required.
- Dimensions: 1-1/4"H x 3-1/4" W x 5-1/2"D.



## BP TELEPHONE AMPLIFIER MODEL TA-1353

OUR PRICE **\$19.95** **SPECIAL!**

### DESCRIPTION

Allows you to conduct telephone conversations while working without tying up your hands. Also, it will allow your family and friends to participate in phone conversation together.  
Dimensions: 1-3/4"H x 4-5/8"W x 6-1/4"D.



## BP AUTO CALL RECORDER MODEL TA-1357

OUR PRICE **\$29.95** **NEW!**

### DESCRIPTION

Electronic marvel tapes phone calls automatically/legally. Keep a permanent record of all phone conversations. The TA-1357 starts your recorder only when your phone, or extension, is lifted and stops when you hang up.  
Dimensions: 1-1/4"H x 3-1/4"W x 5-1/2"D.



## B&K PRECISION TELEPHONE LINE ANALYZER

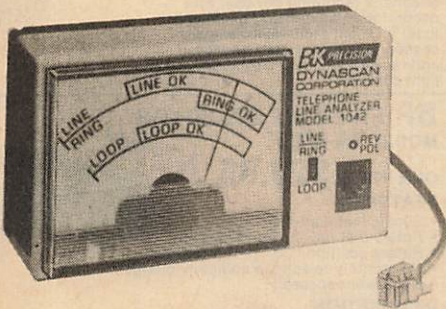
MODEL 1042

REG. \$19.95

OUR PRICE **\$17.95**

### FEATURES

- Provides fast indication of telephone line parameters that affect telephone operation.
- Easy-to-use.
- No batteries to replace; no external power required.
- Verifies telephone line polarity that can affect polarity sensitive telephones.
- Verifies ring and line voltage levels.
- Checks condition of telephone line from Central Office to user's telephone jack.
- Can be used to verify basic telephone functions.
- Can be used to test condition of telephone line cord.
- Dimensions: (HWD) 2.75"x 5" x 1.5". • Weight: 7.5 oz.



**NEW!**

## SELETRONICS ULTRADIAL™ PORTABLE AUTOMATIC PHONE DIALER

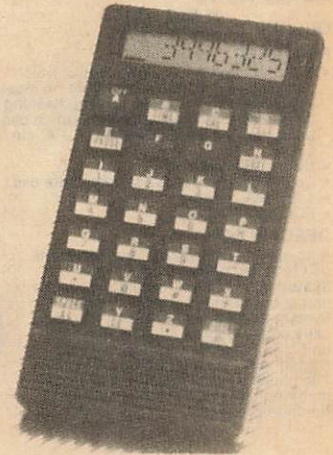
MODEL AD-85

OUR PRICE

**\$59.95**

### DESCRIPTION

ULTRADIAL is the smallest portable automatic dialer with an alpha-numeric keyboard. It features an electronic phone directory, four function, eight digit calculator and a time clock. It's small and lightweight, can fit in your pocket and only weighs 4 oz. Works on most phone systems, rotary or pulse. It's compatible with alternate long distance services. Has a pause feature and holds up to 32 digits per number. To place a call simply enter the name or 1st character of name and ULTRADIAL will search for it. Then hold it up to the phone mouthpiece and push dial. It will automatically dial at unbelievable speed. And there's automatic last number redial as well.



## SUPERCALL 2 LINE MULTIFUNCTION COMPUTER TELEPHONE MODEL HT-660/2

OUR PRICE **\$209.95**

### FEATURES

- 2 line system.
- 3 way conference calling.
- Hold key for either line.
- Speaker phone with mute.
- Tone/Pulse switchable works on all systems good for alternate long distance service.
- 60 memories, 32 digits (works on all systems).
- Call timer. • Clock with alarm.
- Digitron Readout for all functions.
- Last number redial. • Calculator.
- Auto repeat dialing (busy signal) up to 16 times, 32 digits.
- Usable on PABX systems.
- AC adaptor available.
- Hi Low ringer switch.
- Permanent ni-cad emergency back-up battery.



MODEL HT-660

OUR PRICE **\$179.95**

Single Line Multifunction Computer Telephone.

MODEL SH-10B

OUR PRICE **\$79.95**

Optional 10 button key strip for multi-line capability.

## SUPERFONE AUTOMATIC CALL DIVERTER

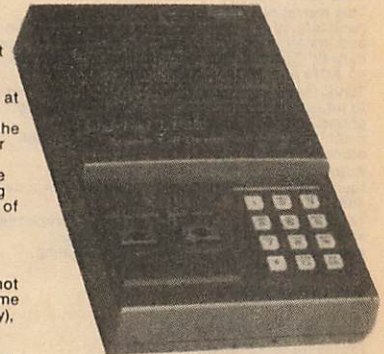
TRANSFER ANY IN-COMING CALL  
TO ANY OUT-GOING NUMBER YOU WISH

MODEL TA-220

OUR PRICE **\$99.95**

### DESCRIPTION

Expecting an important call and you just can't be in two places at the same time? Now you don't have to be! With the new SuperFone Automatic Call Diverter you can receive a call at any location you choose to be. When a recorded message just won't do and the personal touch is a must, use the Call Diverter to service you. The Call Diverter requires two line service, one as an in-coming line, the other as an out-going line. Simply program in the telephone number of the place where you will be located. The Call Diverter will receive your in-coming call and transfer it to you at the pre-programmed number. It features a timer which you can choose to set for 4 minutes or 16 minutes or not at all. Once a call is diverted to you, you become the initiator of that call, (not the original party), and will be charged as such. The timer allows you to monitor the time spent on the call and will clear the line when the allotted time is up. It is switchable from tone to pulse dialing. It can be placed on a desk or wall mounted.



**NEW!**



# TELEPHONE ACCESSORIES

## BUSCOM INDEX DIALER MODEL 2430

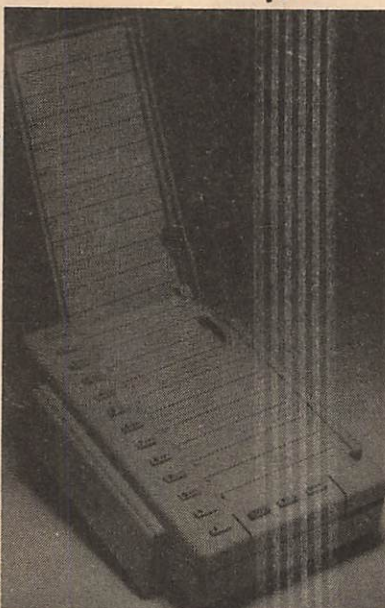
OUR PRICE **\$109.95**

### DESCRIPTION

The Index Dialer offers the type of advanced features usually found only on expensive office phones. Buffered Dialing lets you dial any combination of automatic and manual numbers as fast as you can press the keys. Automatic Redial offers one-button dialing of last number. Hold key lets you resume your call from any extension on the line. Toll Restriction prevents unauthorized persons from placing local and long distance calls. And the Busy Buster automatically redials a busy line until free, or up to 15 times. The Index Dialer is compatible with all standard phones. You can select tone or pulse dialing, which ever suits your system. It has a memory capacity to store 355 directory numbers of 11 digits, or you can combine memories for one-touch dialing. Special memories let you store 2 numbers using the access code for your long distance services. Then, anytime you dial a long distance number in the directory, it automatically uses that discount number. Because it's compact (8 x 5-3/4 x 2") and light weight (1-1/2 lbs), the Index Dialer sits neatly on any desk at a 10° angle, or can be wall mounted with an optional kit. The unit is powered with a battery back-up (batteries not included), and includes a ten foot modular cord for fast installation.

Optional Wall Mount Kit

MODEL 305 ..... \$9.95



**NEW!**

## BUSCOM PORTATOUCH TONE DIALER MODEL 2112

OUR PRICE **\$27.95**

### DESCRIPTION

Manual touch-tone keypad in ultra-slim styling. Batteries are included. This model plays its high quality tone signal directly in the mouthpiece of the telephone. Lightweight and pocket portable, it is ideal for on the go users of services like: discount long distance, paging and voice mail, remote dictation and answering machines, AT&T calling card, bank-by-phone and others.

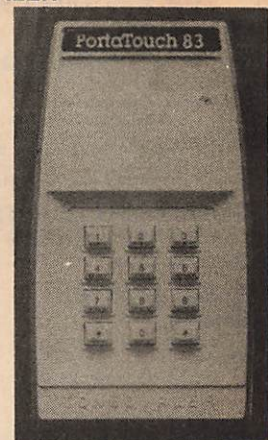
### FEATURES

- Provides touch-tone dialing for use of Sprint or MCI, bank-by-phone, voice mail, remote dictation, paging, credit checks, order entry and other touch-tone telephone services.
- Battery powered (included).
- Plays the touch-tones into the phone.
- Super-thin styling makes it easier to use and carry than any other portable keypad.

MODEL 2123

OUR PRICE **\$39.95**

Stores up to 22 most frequently called numbers plus redial.



## TT KEY-SYSTEM ADAPTOR WITH BUILT-IN ELECTRONIC RINGER MODEL TA-10

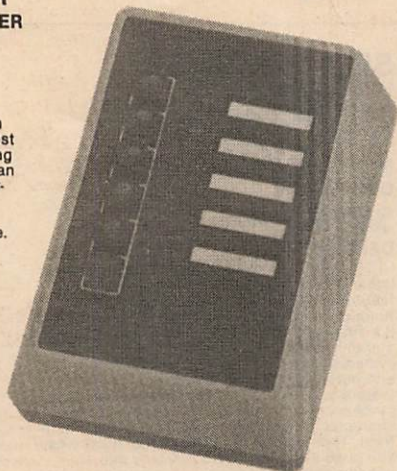
OUR PRICE **\$55.00**

### FEATURES

- Manufactures A + A' light control which automatically controls the lights on most key systems. Eliminates ringing, flashing lights and false hold problems which can be caused by devices without A + A' circuitry.
- No installation cost.
- Connects in seconds for immediate use.
- 1 full year warranty.
- FCC approved.

### DESCRIPTION

Ring selector switch options. When the unit is in the off position, the Key System Adaptor will not ring. When the unit is in the SEL position, the Key System Adaptor will ring for incoming calls on the depressed line. When the unit is in the COM position, the Key System Adaptor will ring on any line. The phone system must have the common ringing feature for this setting to function properly.



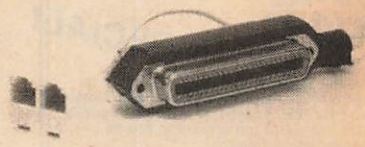
**NEW!**

## BP MULTILINE ADAPTOR SWITCH MODEL TA-2000

OUR PRICE **\$19.95 NEW!**

### DESCRIPTION

The TA-2000 allows line connection of single line telephones, wireless phones dialers or answering machine to multiline systems utilizing MICRO-Ribbon type connection.

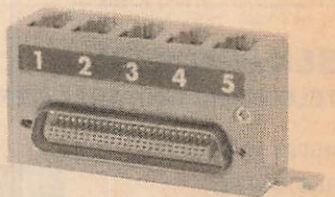


## BP FIVE LINE CONNECTOR MODEL TA-5000

OUR PRICE **\$24.95 NEW!**

### DESCRIPTION

Separate items can be plugged in simultaneously. Perfect for use with telephone answering system, telephone recording devices, with decorator and extension telephones. Ideal for most multi-telephone accessory equipment. Can be moved and re-used anytime. Wired for A + A light control.



## BP FIVE-LINE SELECTOR MODEL TA-6000

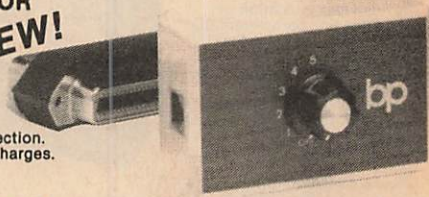
OUR PRICE **\$29.95 NEW!**

### FEATURES

- Simple installation.
- Rotary dial for choice of line 1-5.
- Rotary position "off" for disconnection.
- No monthly telephone company charges.
- No power necessary.

### DESCRIPTION

Perfect for use with telephone recording devices telephone answering system and with decorator and extension telephone.



## BUSCOM SOFTTOUCH MODEL 2012

OUR PRICE **\$34.95**

### DESCRIPTION

This model attaches directly onto standard handsets by ITT, Stromberg or Western Electric and install in about 10 seconds with no extra expenses. Gives easy handheld dialing and takes no extra space in your work area.

ToneDialers add manual Touch-Touch® dialing to let rotary phones use services like: bank-by-phone, remote dictation and answering machines, discount long distance, voice mail, order entry, and more.

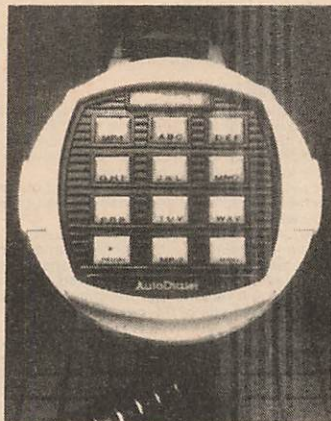
AutoDialers provide high speed dialing for touch-tone phones and rotary phones with tone lines.

Touch-tone keypad with built-in hi-fi microphone so you talk through the keys. Custom pyramid-shaped keys for easy touch dialing. Operates on telephone line power.

MODEL 2023

OUR PRICE **\$49.95**

Stores up to 22 most frequently called numbers plus redial.

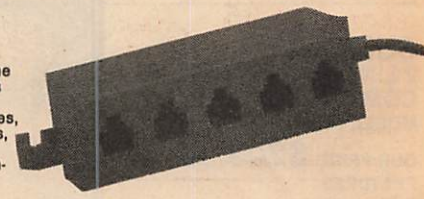


## BP FIVE LINE JACK ADAPTOR MODEL TA-1345

OUR PRICE **\$9.95**

### DESCRIPTION

Five modular jacks on one end and one modular plug on the other end. Allows addition of up to five extension telephones or telephone related devices, (answering systems, recording devices, etc.). The modular plug allows direct connection to any current modular interface or an existing modular jack without use of tools.



**NEW!**

## BP AMPLIFIED HANDSET MODEL TA-1390

OUR PRICE **\$14.95**

### FEATURES

- Volume control, to strengthen the sound of weak signal or to hear over sounding noise.
- An asset for the hearing impaired.
- Easy installation, Fully modular.
- Cannot replace handsets with dialers on the handset.





# TELEPHONE ACCESSORIES

## BP MODULAR TELEPHONE ADAPTOR PLUG

MODEL TA-1300

OUR PRICE **\$1.49** each  
10 FOR **\$10.00**

### DESCRIPTION

Modular telephone adaptor plug. Converts 4-pin phone jack to accept modular connector. Ivory plastic body.



## BP MODULAR TELEPHONE JUNCTION BOX

MODEL TA-1301

OUR PRICE **\$1.99** each  
10 FOR **\$15.00**

### DESCRIPTION

Converts standard junction box to modular system without soldering. Spade lug connections and single screw mounting.



## BP MODULAR SURFACE JACK

MODEL TA-1302

OUR PRICE **\$1.95** each  
10 FOR **\$15.00**

### DESCRIPTION

Modular surface jack takes the place of old connecting block. Station wires connect terminals. Cover snaps on. Two mounting screws attached on solderless. "Quick Connect" terminals easily and quickly without stripping.



## BP MODULAR PHONE COUPLER

MODEL TA-1305

OUR PRICE **\$1.99** each  
10 FOR **\$15.00**

### DESCRIPTION

Allows two telephones to be plugged into a single modular jack.



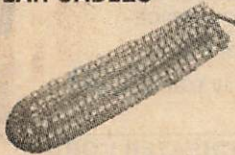
## BP COILED MODULAR CABLES

MODEL TA-1309

OUR PRICE **\$3.95**

### DESCRIPTION

Connects Handphone with modular connector to base with modular connector. 25ft. Colors: white, brown, beige and red.



## BP MODULAR TELEPHONE CABLES

MODEL TA-1310 15 ft.

OUR PRICE **\$1.95**

MODEL TA-1311 25 ft.

OUR PRICE **\$2.95**

### DESCRIPTION

Connects modular phones to wall jacks. Has modular plug on each end. 25 feet long.



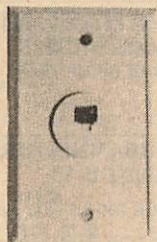
## BP MODULAR WALL OUTLET JACKS

MODEL TA-1313

OUR PRICE **\$1.75** each  
10 FOR **\$15.00**

### DESCRIPTION

Easily converts standard phones to modular system. No soldering required.



## BP MODULAR TELEPHONE CABLES

With Spade Lugs

MODEL TA-1312 15 ft.

OUR PRICE **\$1.95**

MODEL TA-1314 25 ft.

OUR PRICE **\$2.95**

### DESCRIPTION

Spade lugs on one end connect to standard wall junction box or to standard 4 prong plug or jack. Other end has modular plug



## BP MODULAR TELEPHONE CABLES

With 4 Prong Jack

MODEL TA-1317 2 ft.

OUR PRICE **\$1.95**

MODEL TA-1319 25 ft.

OUR PRICE **\$3.95**

### DESCRIPTION

Connects standard 4 prong telephone plug to modular telephone jack.



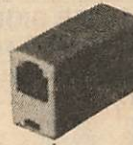
## BP IN LINE COUPLER

MODEL TA-1320

OUR PRICE **\$1.75** each  
10 FOR **\$12.50**

### DESCRIPTION

Back to back modular jack to connect 2 modular base cords.



## BP MODULAR TELEPHONE EXTENSION CORD

MODEL TA-1327

OUR PRICE **\$2.95**

### DESCRIPTION

25 ft. With one end plug and one end single jack.



## BP MODULAR TELEPHONE EXTENSION CORD

MODEL TA-1328

OUR PRICE **\$3.95**

### DESCRIPTION

25 ft. With one end plug and one end duplex jack.



## BP MODULAR WALL PHONE JACK

MODEL TA-1330

OUR PRICE **\$2.95** each

10 FOR **\$25.00**



## BP TELEPHONE EXTENSION CORD

T-50 50 ft. .... 2.95

T-100 100 ft. .... 4.95



### DESCRIPTION

25' 3 conductor wire makes any phone portable. Available in white. Easy to install. Instructions included. Peg packaged.

## BP PORTABLE TELEPHONE JACK

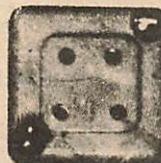
MODEL TJ-22

OUR PRICE **70c** each

10 FOR **\$6.00**

### DESCRIPTION

Surface mount telephone jack. Molded ivory plastic, with mounting screws. Instructions included. Peg packaged.



## BP PORTABLE TELEPHONE PLUG

MODEL TP-20

OUR PRICE **70c** each

10 FOR **\$6.00**

### DESCRIPTION

Standard telephone plug for indoor or outdoor use. Molded Ivory plastic. Instructions included. Peg packaged.



## BP TELEPHONE EXTENSION CABLE

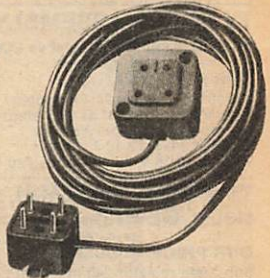
MODEL TP-30

OUR PRICE **\$3.99**

5 FOR **\$15.00**

### DESCRIPTION

30 ft. (molded) flexible ivory extension cable with T-1 plug on one end and T-2 jack on the other. Allows telephone to go anywhere. Peg packaged.



## BP TELEPHONE PICK-UP SUCTION CUP

MODEL TP-55

OUR PRICE **\$1.99** 10 FOR **\$15.00**

### DESCRIPTION

Picks up both sides of phone conversation to tape recorder. No connection to telephone is needed. With 5 ft. shielded cord and plug. Display package.



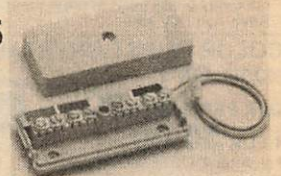
## BP TELEPHONE WIRING BLOCK

MODEL TA-1308

OUR PRICE **\$4.95**

### DESCRIPTION

For modular or old style wiring.



## BP TELEPHONE RING CONTROLLER

MODEL TA-1342

OUR PRICE **\$4.95**

### DESCRIPTION

The Ring Controller stops your phone from ringing when you don't want to be disturbed: bedtime, meals, illness, concentrated work hours, or even for quiet evenings at home.



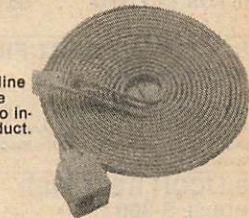
## BP TWO LINE CONVERTER

MODEL TA-1343

OUR PRICE **\$4.95**

### DESCRIPTION

Converts two separate single line telephone jacks into a two line telephone jack, allowing you to install a two line telephone product.



## BP DUPLEX WALL JACK

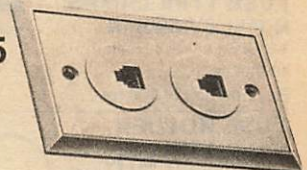
MODEL TA-1332

OUR PRICE **\$1.95**

10 FOR **\$17.50**

### DESCRIPTION

Flush mounted/modular.





# TV PARTS

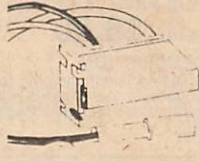
## TV FOCUS ASSEMBLY, HIGH VOLTAGE DIVIDER

MODEL GE-FR 10 replaces ECG HI-DIV 3

OUR PRICE **\$6.95**

### SPECIFICATIONS

- Resistance: 300 megohms.
- Tapped Resistance: 50 megohms.
- Replacement For: Admiral 61A66-10, GE GEFFR-10, Sylvania ECG HI-DI-3, Zenith 63-9893, 63-9894, 63-9895, 63-9896, 63-9897, 63-9898, 63-9898-01, 63-9898-02, 63-9898-03, 63-9898-04.



## TV FOCUS ASSEMBLY

MODEL GE-FR9 replaces ECG HI-DIV 2

OUR PRICE **\$6.95**

- Substrate resistor 24.4 megohm high voltage tapped at 46.5 ohm. Exact replacement for: Warwick (Sears) 13-9-4, 13-10-4, 13-11-4, 13-12-4, 13-18-4, 13-19-4 and 13-20-4.

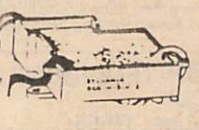


## TV FOCUS ASSEMBLY

MODEL GE-FR8 replaces ECG HI-DIV 1

OUR PRICE **\$6.95**

- Substrate resistor 240 megohm high voltage tapped at 40 megohm. Replaces: Admiral 750C871-1 thru -8, 61C86-1 thru -10, Curtis Mathes 08A161-001 thru -003, Magnavox 230199-1, -2 and -4 and others.



## EXACT REPLACEMENT KINODE

MODEL R12-C

OUR PRICE **\$6.95** each

2 FOR **\$12.00**

### SPECIFICATIONS

- Style: E-32.
- Function: High voltage rectifier.
- Replaces: Zenith No. 103-215, Motorola No. 48D69723A01, Electrochrome No. 28-31-00.
- This high voltage (45kV) pulse rectifier with corona ring, is presently being used in hybrid and solid state large screen B&W, color TV sets.



## COLOR BURST CRYSTAL

MODEL CX-3

OUR PRICE **\$1.80** each

4 FOR **\$6.00**

- For color TV, 3.58 MC (3579.545 KC). For replacement in almost all color TV sets.



## SILICON RECTIFIER

MODEL S-250

OUR PRICE 25 FOR **\$5.00**

100 FOR **\$15.00** 200 FOR **\$25.00**

### SUPER SPECIAL

- 2.5 amp—1 KV equivalent to 1R-250, Mallory M2.5, HEP 170, IN1565A, IN1568A, IN490 series.



## HEAVY DUTY FOCUS RECTIFIER

MODEL R-6000

OUR PRICE **95¢** each

10 FOR **\$9.00** 20 FOR **\$15.00**

- 6.5 KV.



## B + BOOST RECTIFIER

MODEL S-1200

OUR PRICE **90¢** each 10 FOR **\$7.00**

- Replacement for Admiral, Andrea, CGE, Curtis Mathes, Delco, Emerson, GE, Heath, Magnavox, Packard Bell, RCA color TV.



## SILICON RECTIFIER

MODEL S-300

3 amp—1 KV.

OUR PRICE

25 FOR **\$7.50**



## FUSE TYPE LAMPS

MODEL 8V-300mA

1-9 Qty. . . . . **49¢** ea.

10-99 Qty. . . . . **39¢** ea.

Buy one box of 100 for . . . . . **\$35.00**



## FUSE HOLDER

MODEL FH-1

OUR PRICE **50¢** each

- Fuse holder with 18" wire for all standard 1/4" fuses. Peg packaged.



10 FOR **\$4.00**

100 FOR **\$35.00**

## SAFETY COMPONENT CAPS

BUY ANY PARTICULAR SAFETY CAP PRICED AT

OUR PRICE **\$3.75** each

5 FOR **\$17.50**

10 FOR **\$30.00**



### MAGNAVOX MODEL

- 250663-11 .0086-1600V
- 250663-13 .0096-1600V
- 250663-17 .0815-1200V
- 250663-19 .0195-1200V

### GENERAL ELECTRIC MODEL

- EP25X55 .0062-1200V
- EP25X90 .0051-1200V
- EP25X75 .0075-1200V
- EP25X78 .0068-1200V
- EP25X69 .0056-1200V
- EP25X79 .0047-1200V

### PHILCO/SYLVANIA MODEL

- 45-41506-4 .0082-1600V

### SEARS MODEL

- 20-887-1 .0068-1600V

## SAFETY CAP FOR ZENITH

MODEL 800-860

OUR PRICE **\$3.50** each

5 FOR **\$15.00**



## RECTIFIER DIODES

MODEL IN-4000 series

OUR PRICE 10 FOR **\$2.00**

Model

- |         |           |         |            |
|---------|-----------|---------|------------|
| IN-4001 | 50 volt.  | IN-4005 | 600 volt.  |
| IN-4002 | 100 volt. | IN-4006 | 800 volt.  |
| IN-4003 | 200 volt. | IN-4007 | 1000 volt. |
| IN-4004 | 400 volt. |         |            |



## SWITCHING DIODES

MODEL IN-4148

OUR PRICE 10 FOR **\$1.00**

100 FOR **\$8.00**



## DUAL DIODE

MODEL SD4

OUR PRICE 10 FOR **\$5.90** any assort.

- Leads are 20 gauge wire common cathode. Equivalent to P15, GE-6GC1, ITT-K1615, IRC-D4, IR-DD04.



## DUAL DIODE

MODEL SD5

OUR PRICE 10 FOR **\$5.90** any assort.

- Series connected. Equivalent to P16, GE-6GD1, ITT-K1616, IRC-D5, IR-DD05.



## BLUE-LATERAL PURITY

MAGNET ASSEMBLY

MODEL MA-90

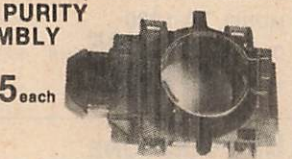
OUR PRICE **\$2.25** each

5 FOR **\$10.00**

- DESCRIPTION: Designed to universally meet the requirements of color TV sets using 15 through 25 inch 90° color picture tubes.

### SPECIFICATIONS

- Blue gun-up or blue gun-down operation.
- Easy one finger adjustment of blue control.
- Thin-line construction.
- Flame retardant polypropylene.



## COLOR TV UNIVERSAL CIRCUIT

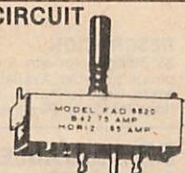
BREAKER Dual Purpose

MODEL FAD

OUR PRICE **\$2.90** each

10 FOR **\$25.00**

- B + Break current.
- 2.75 amp horizontal.
- Break current .65 amp.
- Replaces RCA No. 1207B4 and others for RCA chassis No.'s CTC22B and CTC22C.

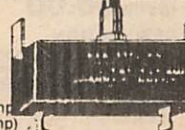


## CIRCUIT BREAKERS

OUR PRICE

10 FOR **\$8.90** any assortment

- FA2 (2 amp) FA3 (3 amp) FA4 (4 amp)
- FA5 (5 amp) FA6 (6 amp) FA7 (7 amp)



## FUSE HOLDER

MODEL FS-50

OUR PRICE 2 FOR **\$1.50**

10 FOR **\$6.90**

### DESCRIPTION

- Holds 1/4" x 1-1/4" fuses. Can be used on panels up to 5/16" thick. Has bayonet type knob. No screwdriver required.



## TV SNAP-ON FUSE HOLDER

MODEL 529

OUR PRICE 2 FOR **\$1.00**

### DESCRIPTION

- Snap fuse clip over burned out fuse. Insert new fuse without soldering.



## ALLIGATOR CLIPS

MODEL CP-365

OUR PRICE **\$2.95** per pkg.

### DESCRIPTION

- Alligator clip with screw terminal and molded handle. Color: Black and red. Net weight: 20 gr. 20 pcs. per package.



## CHEATER CORD

MODEL C-60

OUR PRICE

**69¢** each

10 FOR **\$4.90**



### FEATURES

- 6 foot cord.
- 18/2 SPT-1.
- Standard.
- Standard w/ears.
- Brown.

## CHEATER CORD

MODEL PC-60

OUR PRICE

**69¢** each

10 FOR **\$4.90**



### FEATURES

- 6 foot cord.
- 18/2 SPT-1.
- Polarized.
- Polarized w/ears.
- Brown.

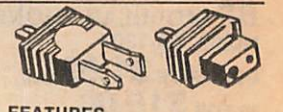
## CHEATER CORD

MODEL PL-60

OUR PRICE

**79¢** each

10 FOR **\$5.90**



### FEATURES

- 6 foot cord.
- 18/2 SPT-1.
- Polarized.
- Polarized C clip.
- Brown.

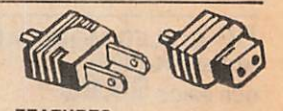
## CHEATER CORD

MODEL L-60

OUR PRICE

**79¢** each

10 FOR **\$5.90**



### FEATURES

- 6 foot cord.
- 18/2 SPT-1.
- Standard.
- Standard C clip.
- Brown.

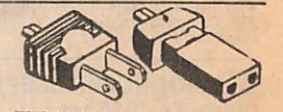
## CHEATER CORD

MODEL LC-6

OUR PRICE

**99¢** each

10 FOR **\$7.90**



### FEATURES

- 6 foot cord.
- 18/2 SPT-1.
- Standard.
- Standard C clip.
- Long nose.
- Brown.

## SONY 6 FOOT POWER CORD

MODEL AC-224

OUR PRICE **99¢** each

10 FOR **\$7.90**



### FEATURES

- Poly with header.
- For Sony, radios, tape recorders, etc.

## PANASONIC 6 FOOT POWER CORD

MODEL AC-225

OUR PRICE **99¢** each

10 FOR **\$7.90**



- Poly with header.
- For Panasonic, radios, tape recorders, etc.

## SUB-MINIATURE BULBS

MODEL E-13

OUR PRICE **50¢** each

10 FOR **\$3.50**

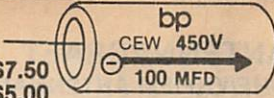


- 12 volt 75 mA. Two conductor wire with 8-3/4" leads, pilot lamp used in channel selector or sliding rule scale indicator on UHF television, Hi-Fi, radio.



# TV REPLACEMENT PARTS

## BP CAPACITORS

40 MFD x 450 VOLTS	\$ .90 each 10 FOR \$7.50	
47 MFD x 350 VOLTS	\$ .75 each 10 FOR \$5.00	
80 MFD x 450 VOLTS	\$1.50 each 10 FOR \$12.00	
100 MFD x 450 VOLTS	\$1.75 each 10 FOR \$15.00	
200 MFD x 200 VOLTS	\$1.25 each 10 FOR \$10.00	
200 MFD x 300 VOLTS	\$1.75 each 10 FOR \$15.00	
200 MFD x 175 VOLTS	\$ .80 each 10 FOR \$6.50	

## AG 'NORMAL BLO' FUSES

Voltage Rating 250

AG-1/4 Amp	50 pcs. for \$6.00	AG-1 1/2 Amp	50 pcs. for \$6.00
AG-3/8 Amp	50 pcs. for \$6.00	AG-2 Amp	50 pcs. for \$6.00
AG-1/2 Amp	50 pcs. for \$6.00	AG-3 Amp	50 pcs. for \$6.00
AG-3/4 Amp	50 pcs. for \$6.00	AG-4 Amp	50 pcs. for \$6.00
AG-1 Amp	50 pcs. for \$6.00	AG-5 Amp	50 pcs. for \$6.00

## MD 'SLO-BLO' FUSES

Voltage Rating 250

MD-1/4 Amp	50 pcs. for \$10.00	MD-1 1/2 Amp	50 pcs. for \$10.00
MD-3/8 Amp	50 pcs. for \$10.00	MD-2 Amp	50 pcs. for \$10.00
MD-1/2 Amp	50 pcs. for \$10.00	MD-3 Amp	50 pcs. for \$10.00
MD-3/4 Amp	50 pcs. for \$10.00	MD-4 Amp	50 pcs. for \$10.00
MD-1 Amp	50 pcs. for \$10.00	MD-5 Amp	50 pcs. for \$10.00

## DUO-TONGS

MODEL 9356

OUR PRICE \$2.50

Shock proof, molded nylon universal fuse pullers. Accommodates all kinds and types of fuses, including household screw-in plug type and industrial cartridge fuses up to 3/4" or 100 amp capacity. Non-conductive, inflammable and virtually unbreakable.



## TYPE Q BLOCKS With Quick Connect Terminals

MODEL 350-329

OUR PRICE 89¢ each 10 FOR \$8.00

MODEL 350-330

OUR PRICE 99¢ each 10 FOR \$9.00

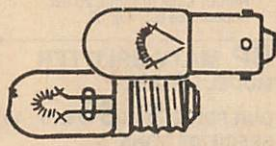
### FEATURES

- Type Q 3AG blocks may be provided with 1/4" quick connect terminals.
- Mounting Hole: .142"/.147" diameter.
- Clips: Nickel plated spring brass.
- Terminals: Plated brass.



## PILOT LIGHTS

Model	Our Price Per Box	Model	Our Price Per Box
PR2	\$2.50	130	\$3.00
12	\$3.50	159	\$3.00
44	\$2.50	194	\$2.50
46	\$2.50	222	\$3.50
47	\$2.50	239	\$6.95
51	\$2.50	259	\$3.50



10 per box

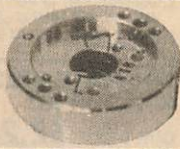
## VIDEO CASSETTE HEAD

MODEL VEH-0070

OUR PRICE \$59.95

### DESCRIPTION

VHS video tape head used in Panasonic, JVC, RCA and others.



## COLOR BRIGHTNER AUTOFORMER TYPE

70° Shell Base

MODEL CR-200

OUR PRICE \$7.95 each

90° Button Base

MODEL CR-250

OUR PRICE \$6.95 each

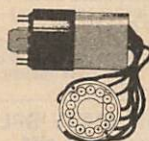
Sony 8 Pin Type

MODEL CR-260

5 FOR \$30.00

OUR PRICE \$5.95 each

Designed for Sony Trinitron



## THORDARSON PROFESSIONAL DEGAUSSING COIL

MODEL 9317

OUR PRICE \$27.95 each 2 FOR \$50.00

### FEATURES

- Durable molded high-impact case.
- High quality momentary switch-current only when you need it.
- Will last a lifetime. Degaussing coil, 13" dia.

### DESCRIPTION

Eliminates stray magnetic fields in color TV sets as required prior to purity adjustment. Indispensable in all color TV service work. Coil is made to standard industry specifications and completely enclosed in molded plastic. Supplied with 8' cord and momentary contact switch which permits de-energizing of coil without pulling plug. Attractive hang-up package.



## GE RAYTHEON

6GH8 10 For \$22.50

6JE6 50 For \$225.00  
50 For \$80.00

6BK4 50 For \$225.00

Model	Our Price	Model	Our Price	Model	Our Price
1B3	10 for 40.00	6CG8	10 for 45.00	8AW8	10 for 55.00
1K3	10 for 40.00	8DW4	10 for 35.00	8CG7	10 for 30.00
1V2	10 for 28.50	8EA8	10 for 40.00	10CW5	10 for 35.00
1X2	10 for 45.00	8EH7	10 for 40.00	12AX7	10 for 35.00
2AS2/2BV2	10 for 40.00	8EJ7	10 for 40.00	12BY7	10 for 35.00
2AV2	10 for 30.00	8EM7	10 for 50.00	12GN7/12HG7	10 for 55.00
3A3	10 for 35.00	8GF7	10 for 50.00	17BF11	10 for 80.00
3AT2	10 for 35.00	8GH8	10 for 22.50	17JZ8	10 for 40.00
3GK5	10 for 38.00	8GK5	10 for 50.00	21GY5	10 for 50.00
3HA5	10 for 38.00	8GM6	10 for 45.00	21JS6	10 for 70.00
3HQ5	10 for 50.00	8GX6/8GY6	10 for 35.00	21JZ6	10 for 55.00
5GH8	10 for 42.00	8J10/8Z10	10 for 80.00	23Z9	10 for 55.00
6BA11	10 for 50.00	8JB8	10 for 80.00	24JE6	10 for 75.00
6BK4	10 for 55.00	8JC6	10 for 45.00	33GY7	10 for 65.00
6CE3/6CG3	10 for 35.00	8JF6	10 for 70.00	38K86	10 for 75.00
6CG7	10 for 28.00	8KD6	10 for 70.00	38HE7	10 for 65.00

## SEMI-CONDUCTORS

### TRANSISTOR

MODEL 25C1308K

(replaces ECG-238)

10 FOR \$20.00

Model	Price each	Price 10 for	Model	Price each	Price 10 for
108	.75	\$ 5.00	198	1.50	13.00
123A	.75	5.00	230	3.95	35.00
124	1.75	15.00	231	4.25	40.00
128-S	.80	7.00	291	1.95	15.00
129	1.00	9.00	292	1.95	16.00
130	1.95	16.50	310	4.95	45.50
165-S	4.70	45.00	375-S	1.75	15.00
152	.90	8.00	199	.50	4.00
153	1.00	9.00	238	5.25	49.00
154	1.40	13.00	276	8.95	80.00
157-S	1.00	9.00	277-S	8.95	80.00
159-S	.60	5.00	25C1308	2.75	22.50
162	5.25	50.00	AN-214	1.75	15.00
163A	4.95	45.00	AN-315	2.50	20.00
175	1.50	14.00	TA-7205P	1.75	15.00
196	1.00	9.00	1058	7.00	60.00
197	1.50	12.00			

## MINIATURE ALUMINUM ELECTROLYTIC

### RADIAL LEAD

Type	Mfd.	Volts	Our Price
MR5-15	5	15	\$1.12
MR10-15	10	15	.12
MR25-15	25	15	.12
MR50-15	50	15	.18
MR100-15	100	15	.18
MR250-15	250	15	.18
MR500-15	500	15	.25
MR1000-15	1000	15	.25
MR2000-15	2000	15	.25
MR2-25	2	25	.12
MR5-25	5	25	.12
MR10-25	10	25	.12
MR25-25	25	25	.15
MR50-25	50	25	.15
MR100-25	100	25	.15
MR250-25	250	25	.25
MR500-25	500	25	.35
MR1000-25	1000	25	.40
MR2000-25	2000	25	.50

### AXIAL LEAD

Type	Mfd.	Volts	Our Price
MX5-15	5	15	\$1.15
MX10-15	10	15	.15
MX25-15	25	15	.20
MX50-15	50	15	.25
MX100-15	100	15	.30
MX250-15	250	15	.35
MX500-15	500	15	.40
MX1000-15	1000	15	.50
MX2000-15	2000	15	.60
MX2-25	2	25	.15
MX5-25	5	25	.15
MX10-25	10	25	.20
MX25-25	25	25	.25
MX50-25	50	25	.30
MX100-25	100	25	.35
MX250-25	250	25	.40
MX500-25	500	25	.50
MX1000-25	1000	25	.80
MX2000-25	2000	25	1.00
MX3000-25	3000	25	1.20
MX4000-25	4000	25	1.35
MX5000-25	5000	25	1.50

Type	Mfd.	Volts	Our Price
MR1-50	1	50	.15
MR2-50	2	50	.15
MR5-50	5	50	.15
MR10-50	10	50	.20
MR25-50	25	50	.25
MR50-50	50	50	.25
MR100-50	100	50	.30
MR250-50	250	50	.40
MR500-50	500	50	.50
MR1000-50	1000	50	.60
MR2000-50	2000	50	.80

MIN. 10 PCS. PER TYPE

## FUSE WIRE

MODEL F-24

OUR PRICE 2 Pkg. \$1.00

### DESCRIPTION

(5 pieces—3' long). No. AWG 24 Solderize coated wire. Used in Zenith and other sets as a fuse.



MODEL F-26 OUR PRICE 2 Pkg. \$1.00

### DESCRIPTION

(5 pieces—3' long). No. AWG 24 Solderize coated wire. Used in RCA and other sets as a fuse.

CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446



# ANTENNAS/ACCESSORIES

## TDP MINI-STATE ANTENNAS UHF & VHF 35 mile range antenna MODEL 5MS-740

OUR PRICE **\$89.95**

A revolutionary new TV antenna system for home or apartment.

## AC/DC MINI-STATE ANTENNA UHF & VHF MODEL 5MS-750

OUR PRICE **\$99.95**

A revolutionary new Recreational antenna system for boat or camper.

### DESCRIPTION

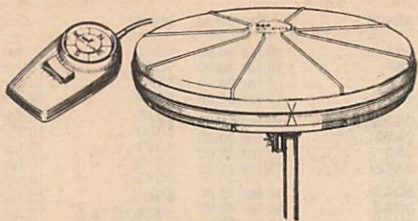
The New TDP Mini-State Antenna Systems are improved versions of the 5MS-440 and 5MS-550 Mini-State antennas. They have been engineered to bring in sharp, clear TV reception with a new VHF/UHF broadband amplifier. The new amplifier now amplifies the UHF band and has higher gain on VHF. These improvements have also greatly improved the signal to noise ratio of the antenna. The power supply for the new systems has been redesigned to allow easy hook up of additional outlets.

### FEATURES for 5MS-740

- Ideal for home or apartment. • Compact (21" diameter and 7" high) and light (6 lbs.).
- Attaches to roof, chimney, window or balcony. • Full circle rotation for trouble-free operation.
- Can also be used indoors in attic or on closet shelf.
- Solid state circuitry for trouble-free operation.
- Everything weather protected in a rugged plastic radome.
- Hand held remote control has unique direction indicator light.
- Includes built-in rotating antenna, amplifier, power supply, remote control unit and hardware.
- Plus 60 feet lead in cable, housing, co-axial cable and rotator wire.

### FEATURES for 5MS-750

- Recreational antenna that can be used for boat or camper. • Designed for outdoor use.
- Power: 120VAC, 12DC. • Enables you to operate from dockside, campsite or home.
- All other features are the same as Model 5MS-740.



## ANTENNACRAFT UHF/VHF/FM ANTENNAS

MODEL 5886

OUR PRICE **\$49.95**

Boom length 120"  
32 Electronic elements  
Fringe area

MODEL 5885

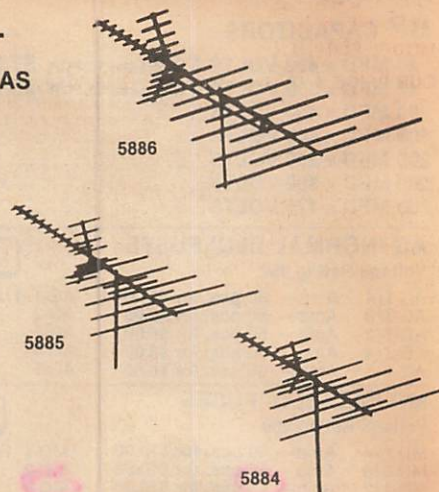
OUR PRICE **\$39.95**

Boom length 90"  
28 Electronic elements  
Medium fringe area

MODEL 5884

OUR PRICE **\$29.95**

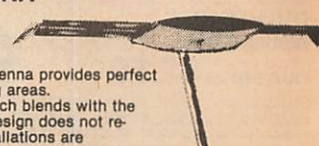
Boom length 58"  
20 Electronic elements  
Suburban area



## WINEGARD HOME TV ANTENNA MODEL SR-20A

OUR PRICE **\$49.95**

Winegard's ultra compact Sensor 82-channel TV antenna provides perfect color and black and white reception in most viewing areas. The Sensor antenna has elegant modern styling which blends with the decor of any home setting. Compact, unobtrusive design does not require elaborate mounting hardware, yet Sensor installations are stronger than that of conventional antennas with comparable performance. Unique bi-directional characteristics of a Sensor antenna provides excellent reception in areas where stations are in different directions. Eliminates the need for an antenna rotor in most locations. Recommended for viewing areas up to 50 miles from transmitters... even farther depending on mounting height and signal strength. The SR-20A features built-in solid state modular amplifier, plus power-supply and band separator. Requires 117VAC power.



## JERROLD QUADRAPHONIC 300-OHM FM ANTENNA MODEL QFM-9

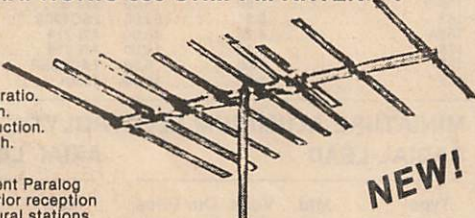
OUR PRICE **\$44.95**

### FEATURES

- High-gain, high front-to-back ratio.
- Minimize multi-path distortion.
- Rugged square boom construction.
- Special "Golden Armor" finish.

### DESCRIPTION

Jerrold introduces a nine-element Paralog FM antenna designed for superior reception of all FM stereo and FM monaural stations while preparing you for Quadraphonic broadcasts. Flat bandwidth and high gain assures excellent reception of distant stations and a high front-to-back ratio minimizes multi-path distortion. 300-ohm.



**NEW!**

## BP CATV SPLITTER MODEL CA-2111

OUR PRICE **\$1.50** each 10 FOR **\$10.00**

### SPECIFICATIONS

- Bandwidth: 5-400 MHz.
- Splitter Loss (max.): 3.5 dB.
- Isolation Port to Port (min.): 30 dB.
- Power Pass: No.
- Return Loss (match): 20 dB.
- Impedance (ohms): 75.
- Number of Outputs: 2.

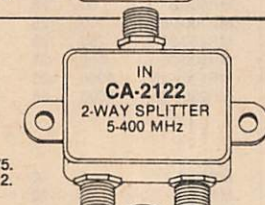


## BP CATV SPLITTER MODEL CA-2122

OUR PRICE **\$1.95** each 10 FOR **\$15.00**

### SPECIFICATIONS

- Bandwidth: 5-400 MHz.
- Splitter Loss (max.): 3.5 dB.
- Isolation Port to Port (min.): 30 dB.
- Return Loss (match): 20 dB.
- Impedance (ohms): 75.
- Number of Outputs: 2.
- Power Pass: No.

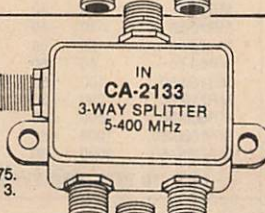


## BP CATV SPLITTER MODEL CA-2133

OUR PRICE **\$2.25** each 10 FOR **\$18.00**

### SPECIFICATIONS

- Bandwidth: 5-400 MHz.
- Splitter Loss (max.): 1 Port 3.5 dB; 2 Port 7.0 dB.
- Isolation Port to Port (min.): 25 dB.
- Return Loss (match): 20 dB.
- Impedance (ohms): 75.
- Number of Outputs: 3.
- Power Pass: No.

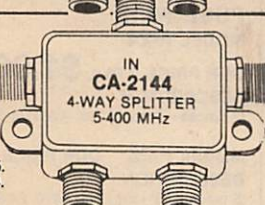


## BP CATV SPLITTER MODEL CA-2144

OUR PRICE **\$2.95** each 10 FOR **\$25.00**

### SPECIFICATIONS

- Bandwidth: 5-400 MHz.
- Splitter Loss (max.): 7.0 dB.
- Isolation Port to Port (min.): 25 dB.
- Return Loss (match): 20 dB.
- Impedance (ohms): 75.
- Number of Outputs: 4.
- Power Pass: No.

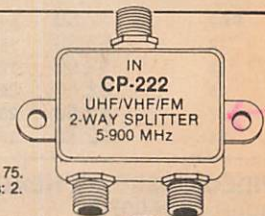


## BP MATV SPLITTER MODEL CP-222

OUR PRICE **\$1.95** each 10 FOR **\$15.00**

### SPECIFICATIONS

- Bandwidth: 5-900 MHz.
- Splitter Loss (max.): 3.5 dB.
- Isolation Port to Port (min.): VHF—25 dB; UHF—20 dB.
- Return Loss (match): VHF—20 dB; UHF—15 dB.
- Impedance (ohms): 75.
- Number of Outputs: 2.
- Power Pass: Yes.

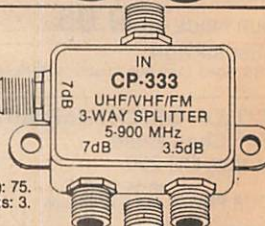


## BP MATV SPLITTER MODEL CP-333

OUR PRICE **\$2.25** each 10 FOR **\$18.00**

### SPECIFICATIONS

- Bandwidth: 5-900 MHz.
- Splitter Loss (max.): 1 Port 3.5 dB; 2 Port 7.0 dB.
- Isolation Port to Port (min.): VHF—25 dB; UHF—20 dB.
- Return Loss (match): VHF—20 dB; UHF—15 dB.
- Impedance (ohms): 75.
- Number of Outputs: 3.
- Power Pass: Yes.



## BP MATV SPLITTER MODEL CP-444

OUR PRICE **\$2.95** each 10 FOR **\$25.00**

### SPECIFICATIONS

- Bandwidth: 5-900 MHz.
- Splitter Loss (max.): 7.0 dB.
- Isolation Port to Port (min.): VHF—25 dB; UHF—20 dB.
- Return Loss (match): VHF—20 dB; UHF—15 dB.
- Impedance (ohms): 75.
- Number of Outputs: 4.
- Power Pass: Yes.



## CP CATV DIE-CAST HYBRID SPLITTER MODEL CA-2311

OUR PRICE **\$1.50** each 10 FOR **\$10.00**

### SPECIFICATIONS

- Bandwidth: 5-400 MHz.
- Splitter Loss (max.): 3.5 dB.
- Isolation Port to Port (min.): 30 dB.
- Return Loss (match): 22 dB.
- Impedance (ohms): 75.
- Number of Outputs: 2.
- Power Pass: No.





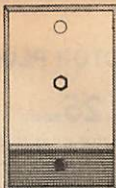
# ANTENNA ACCESSORIES

## BP COAXIAL CABLE OUTLET

With F81C  
MODEL MA-1010

OUR PRICE **79¢** each 10 FOR **\$6.90**

Flush-mounted feed through, 75 ohm cable output, 75 ohm input receptacle. Constant impedance. Incorporates crimp-on ferrule connection for lead-in. F59A female connection both ends. With use of F81C connector.

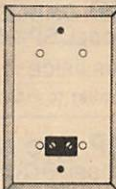


## BP MATCHING TRANSFORMER

MODEL MA-1020

OUR PRICE **\$1.95** each 10 FOR **\$17.50**

Flush-mounted VHF/UHF/FM tap-off. Single 300 ohm output with no strip piercing screws from 75 ohm thru line. Dual isolation 12/17 dB or 17/23 dB, lower isolation as supplied. Clip (2) wires for higher isolation. Supplied with mounting screws.

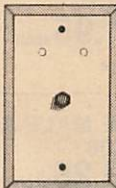


## BP MATCHING TRANSFORMER

MODEL MA-1030

OUR PRICE **\$1.95** each 10 FOR **\$17.50**

Flush-mounted VHF/UHF/FM tap-off. Single 75 ohm output from 75 ohm thru line. Dual isolations 12/17 dB or 17/23 dB. Lower isolation as supplied. Clip (1) wire for higher isolation. Supplied with mounting screws.



## BP TV/FM WALLPLATE AND PLUG

MODEL MA-1040

OUR PRICE **99¢** each 5 FOR **\$4.50**

Single output, matches standard 300 ohm twin lead. Fits standard outlet box or can be mounted with brackets supplied. Individually packed with hardware and instructions. Ivory color.

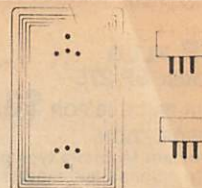


## BP TWIN OUTPUT WALLPLATE

MODEL MA-1050

OUR PRICE **\$1.25** each 5 FOR **\$5.00**

Complete with two polarized plugs for 300 ohm twin lead. Fits standard outlet box, or can be wall-mounted with brackets supplied. Hardware and instructions included. Ivory color.

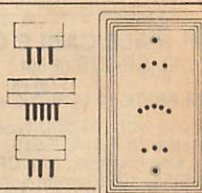


## BP ANTENNA ROTATOR & TWIN LEAD OUTLET

MODEL MA-1060

OUR PRICE **\$1.50** each 5 FOR **\$6.00**

Has outlet for 5-wire rotator leads plus two twin lead TV/FM outputs. Complete with 5-prong plug, two 3-prong plugs and all mounting hardware. Fits standard outlet box, or can be wall-mounted with brackets supplied.



## BP VHF/UHF MATCHING TRANSFORMER

MODEL MA-1070

OUR PRICE **\$1.95** each 10 FOR **\$17.50**

Flush-mounted VHF/UHF/FM matching. Excellent match. AC/DC blocking. Use no strip piercing screws. Mounting screws included.



## BP 75 OHM COAX FEED THRU PLATE

MODEL MA-1080

OUR PRICE **30¢** each 10 FOR **\$2.50**

Flush-mounted feed-thru wall plate. Ivory color.

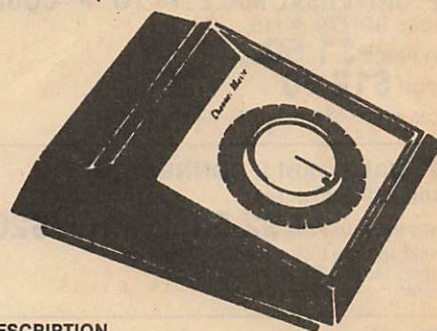


Model	Cable and Wire	Description	Standard Pkg.	Our Price
RG-59U	Coax cable 59U	Solid, 22 gauge copperweld	500 ft. spool	\$35.00
CF-500	300 Twin Lead Foam 20	7 strand, 20 gauge bare copper	500 ft. spool	\$26.95
CF-100			100 ft. poly bag	6.95
CF-50			50 ft. poly bag	3.95
520 7/500	Rotor Cable 20-5/C	7 strand, 20 gauge bare copper, one outside conductor identified for polarity	500 ft. spool	\$39.95
520 7/100			100 ft. poly bag	9.95
520 7/50			50 ft. poly bag	5.95
420 7/500	Rotor Cable 20-4/C	7 strand, 20 gauge bare copper, one outside conductor identified for polarity	500 ft. spool	\$34.95
420 7/100			100 ft. poly bag	8.95
420 7/50			50 ft. poly bag	4.95
2055/M	Twin Lead Royalty 100	20 strand, 21 gauge bare copper	1000 ft. spool	\$37.95
2055/100			100 ft. poly bag	6.95
2055/50			50 ft. poly bag	3.95
1036/M	Speaker Wire JSW-24	7 strand, 24 gauge bare copper, one conductor identified for polarity	1000 ft. spool	\$20.00
1036/100			100 ft. spool	2.95
1036/50			50 ft. spool	1.75
18/SW1000	Speaker Wire JSW-18	16 strand, 18 gauge bare copper, one conductor identified for polarity	1000 ft. spool	\$39.95
18/SW100			100 ft. spool	7.95
18/SW50			50 ft. spool	4.95
JPA-222/500	Microphone Cable	16 strand T.C. 22 AWG 2 conductor, T.C. braid .025 PVC. For use with low impedance microphones. Suggested working voltage is 1000 V.	500 ft. spool	\$119.95
JPA-222/100			100 ft. hank	29.95
JPA-222/50			50 ft. hank	17.95
JPA-125/500	Microphone Cable	7 strand T.C. 25 AWG 1 conductor, T.C. braid .037 PVC. For use with low impedance microphones. Suggested working voltage is 1000 V.	500 ft. spool	\$59.95
JPA-125/100			100 ft. hank	14.95
JPA-125/50			50 ft. hank	9.95

## CHANNEL MASTER AUTOMATIC COLOROTOR

MODEL 9510

OUR PRICE **\$49.95**



### DESCRIPTION

Channel Master Automatic Colorotors fine tune the color back in, and even let you pick up out of town channels, by aiming the antenna to hit TV signals head on! There's an antenna mounted drive unit and a control box inside by your set. When the color's out of tune, just turn the dial and fine tune your antenna to perfect color every time!

## GEMINI STRATO ANTENNA ROTOR

MODEL SX-500

OUR PRICE **\$59.95**



### FEATURES

- Automatic. No realignment or resynchronization ever required.
- Fast, simple installation.
- Rugged construction for longer life.
- Easy to operate.
- Accurate to within one degree.
- More stations available.
- Sharper pictures—better color.
- Reduces interference.
- Stays on target in 70 MPH winds.



# CONNECTORS

## BP PLUG MODEL SP-275

OUR PRICE 10 FOR **\$3.00** 100 FOR **\$25.00**

### DESCRIPTION

Standard Motorola type plug use for auto antenna and master TV antenna systems.



## BP MALE CABLE CONNECTOR MODEL SP-276 (F 59)

OUR PRICE 10 FOR **\$2.00** 100 FOR **\$15.00**

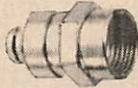
For use with RG-59/U type cable. Mates with F-61A, F-81B, A-61. 75 ohm use. Use crimping tool CR-596 or CR-595A. 1051 ferrule supplied.



## BP MALE CABLE CONNECTOR MODEL SP-277 (F 59A)

OUR PRICE 10 FOR **\$2.00** 100 FOR **\$15.00**

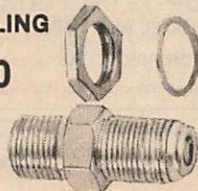
Similar to type F-59 except unit has a built-on ferrule.



## BP UNIVERSAL FEMALE "F" TO "F" COUPLING MODEL SP-278 (F 81C)

OUR PRICE 10 FOR **\$4.90** 100 FOR **\$39.00**

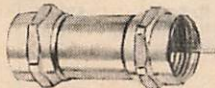
Universal center clutch will adapt to all sizes of cable, RG-59 through RG-11. Accepts F-56 or F-56A, F-59 or F-59A, SF-59 or SF-56.



## BP UNIVERSAL MALE "F" TO "F" COUPLING MODEL SP-279 (F 71B)

OUR PRICE **\$1.50** each  
10 FOR **\$12.00**

Mates with F-61A or F-81C. Single pack.



## BP MALE CABLE CONNECTOR MODEL SP-280 (F 56A)

OUR PRICE 10 FOR **\$2.50** 100 FOR **\$20.00**

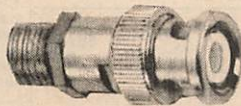
Similar to type F-56 except unit has a built-on ferrule. Built-on CAC size ferrule.



## BP ADAPTOR MODEL SP-281 (BNC-F)

OUR PRICE **\$3.50** each 10 FOR **\$25.00**

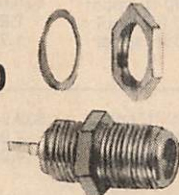
For use where units such as test equipment must be connected to "F" fittings. Single pack.



## BP UNIVERSAL "F" CHASSIS CONNECTOR MODEL SP-282 (F-61A)

OUR PRICE 10 FOR **\$3.50** 100 FOR **\$28.00**

Accepts F-59, F-59A, F-56, F-56A, F-659, SF-56, SF-59, TR-75F and AF-101. Mounts in 3/8" diameter chassis hole. Uses clutch type collet. 75 ohm.



## BP ALL CHANNEL TERMINATOR MODEL SP-283 (TR 75F)

OUR PRICE 10 FOR **\$2.50** 100 FOR **\$22.00**

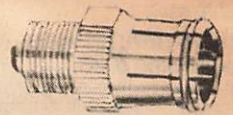
This precision 75 ohm terminator for F-61A or F-81 connectors should be used for VHF, UHF and all channel systems. Frequency range: 54 to 216 and 470 to 890 mHz. Maximum VSWR: 1.06:1 (30 dB minimum return loss) for VHF range. 1.2:1 (25 dB minimum return loss) for UHF range.



## BP CONNECTOR PLUG MODEL SP-284

OUR PRICE **\$1.25** each 10 FOR **\$10.00**

Push on F connector plug to F jack.



## BP CABLE CONNECTOR MODEL SP-285 (F 59-AH)

OUR PRICE 10 FOR **\$2.50** 100 FOR **\$22.00**

Similar to F 59 connector.



## BP BNC MALE CONNECTOR MODEL BC-2501

OUR PRICE **\$1.95** each 10 FOR **\$17.50**

• Blister package



## BP DOUBLE MALE ADAPTOR MODEL BC-2506

OUR PRICE **\$3.25** each 10 FOR **\$27.50**

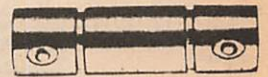
• Blister package



## BP DOUBLE FEMALE ADAPTOR MODEL BC-2516

OUR PRICE **\$2.95** each 10 FOR **\$27.50**

• Blister package



## BP BNC MALE TO UHF FEMALE ADAPTOR MODEL BC-2520

OUR PRICE **\$2.75** each 10 FOR **\$25.00**

• Blister package



## BP UHF MALE TO BNC FEMALE ADAPTOR MODEL BC-2521

OUR PRICE **\$2.25** each 10 FOR **\$20.00**

• Blister package



## BP T-CONNECTOR 2 FEMALE BNC 1 MALE BNC MODEL BC-2522

OUR PRICE **\$3.50** each 10 FOR **\$25.00**

• Blister package



## BP BNC PLUG TO BNC FEMALE RIGHT ANGLE ADAPTOR MODEL BC-2523

OUR PRICE **\$3.75** each 10 FOR **\$32.50**

• Blister package



## BP BNC TO F CONNECTOR MODEL BC-2525

OUR PRICE **\$3.50** each 10 FOR **\$25.00**

• Blister package



## BP RCA PLUG TO "F" JACK MODEL BC-2727

OUR PRICE **\$2.95** each 10 FOR **\$25.00**



## BP BNC PLUG TO RCA JACK MODEL BNC-2529

OUR PRICE **\$2.50** each 10 FOR **\$20.00**



## BP VIDEO ADAPTOR "F" PLUG TO RCA JACK MODEL BC-2732

OUR PRICE **\$2.95** each 10 FOR **\$25.00**

• Blister package.





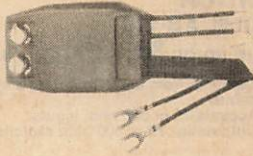
# SPLITTERS AND MATCHING TRANSFORMERS

## BP VHF/UHF SEPARATOR MODEL SP-702BL

OUR PRICE **\$1.50** each 10 FOR **\$12.50**

Uses behind TV set to split the VHF/UHF signals to the TV set from a single 300 ohm down lead. Piercing washer terminals eliminate the need to strip wire ends.

- Blister package.

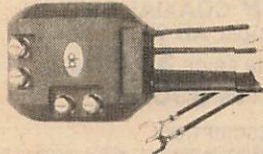


## BP VHF/UHF/FM SEPARATOR MODEL SP-703BL

OUR PRICE **\$1.75** each 10 FOR **\$15.00**

Uses behind TV set to split the VHF/UHF/FM signals to the TV set or FM receiver from a single 300 ohm down lead. Piercing washer terminals eliminate the need to strip wire ends.

- Blister package.

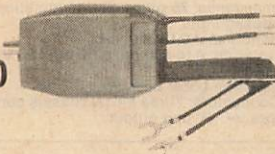


## BP VHF/UHF SEPARATOR- TRANSFORMER MODEL SP-802BL

OUR PRICE **\$1.75** each 10 FOR **\$15.00**

Used behind TV set to split the VHF/UHF signals to the set from a single 75 ohm coaxial cable input. One F-59 connector supplied.

- Blister package.

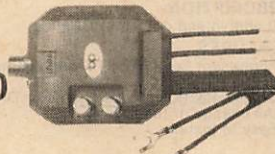


## BP VHF/UHF/FM SEPARATOR- TRANSFORMER MODEL SP-803BL

OUR PRICE **\$1.95** each 10 FOR **\$17.50**

Used behind TV set to split the VHF/UHF/FM signals to the set or FM receiver from a single 75 ohm coaxial cable input. One F-59 connector supplied.

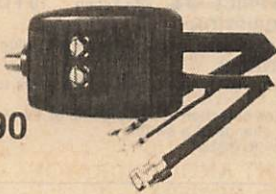
- Blister package.



## BP VCR/TV SEPARATOR VHF/UHF/FM SPLITTER & BALUN MODEL SP-903

OUR PRICE **\$2.50** each 10 FOR **\$19.90**

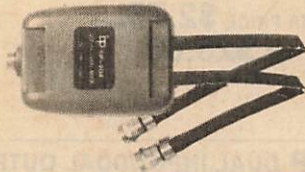
- 75 ohm input. W/F conn.
- 75 ohm and 300 ohm output.
- Blister package.



## BP VCR/TV SIGNAL MIXER MODEL SP-904

OUR PRICE **\$2.50** each  
10 FOR **\$19.90**

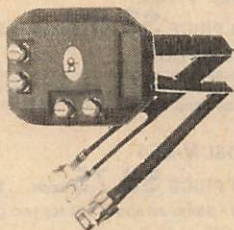
- 75 ohm input.
- 75 dual output.



## BP VCR/TV SEPARATOR UHF/FM SPLITTER & BALUN MODEL SP-905

OUR PRICE **\$1.95** each 10 FOR **\$17.50**

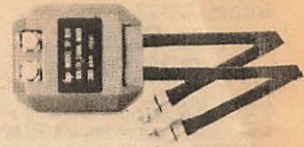
- 300 ohm input.
- 300 ohm TV and FM output.
- 75 ohm output.



## BP VCR/TV SIGNAL MIXER MODEL SP-906

OUR PRICE **\$2.25** each 10 FOR **\$20.00**

- 300 ohm input.
- Dual 75 ohm output.



## BP VHF/UHF MATCHING TRANSFORMER MODEL MT-1

OUR PRICE **75¢** each  
10 FOR **\$5.00** 100 FOR **\$39.00**

**DESCRIPTION**  
VHF/UHF 75-300 ohm matching unit. Miniature size completely shielded and balanced for reduction of direct pick-up. AC/DC blocking.

### SPECIFICATIONS

- Frequency range: 5-900 mHz.
- Circuit: 3 capacitors on PC board.
- Response:  $\pm 0.25$  dB.
- Insertion loss: 0.5 dB max.
- Return loss: 20 dB min.
- Balance ratio: 35 dB min.
- Case material: Aluminum
- Connector material: Machined brass.
- Terminal lugs: Crimped & soldered.



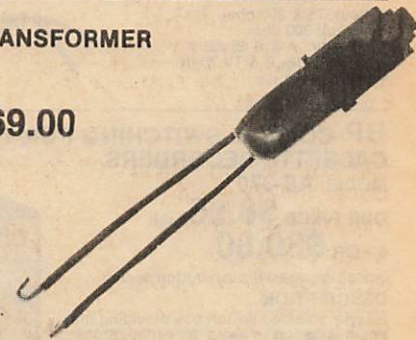
## BP VHF/UHF MATCHING TRANSFORMER MODEL MT-2

OUR PRICE **\$1.00** each  
10 FOR **\$9.00** 100 FOR **\$69.00**

**DESCRIPTION**  
Completely plastic molded construction for weather-proofing. Supplied with rubber boot.

### SPECIFICATIONS

- Frequency range: 0-900 mHz.
- Circuit: 2 capacitors on PC board.
- Case material: Molded plastic.
- Connector material: Machined brass.
- Terminal lugs: Crimped & soldered.



## BP VHF/UHF MATCHING TRANSFORMER MODEL MT-3 (outdoor)

OUR PRICE **\$1.19** each  
10 FOR **\$9.90** 100 FOR **\$79.00**

**DESCRIPTION**  
Completely plastic molded construction for weather-proofing.

### SPECIFICATIONS

- Frequency range: 0-900 mHz.
- Circuit: 2 capacitors on PC board.
- Case material: Molded plastic.
- Connector material: Machined brass.
- Terminal lugs: Crimped & soldered.

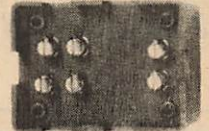


## BP CP-2 TWO SET COUPLER MODEL CP-202

OUR PRICE **\$1.75** each 10 FOR **\$12.50**

VHF/UHF/FM low loss two set coupler. 300 ohm input. Two 300 ohm outputs. Power passive, excellent match. Features no strip piercing screws. Supplied with mounting screws. Excellent for color, black and white TV & FM stereo.

- Blister package.



## BP CP-4 FOUR SET COUPLER MODEL CP-404

OUR PRICE **\$2.75** each 10 FOR **\$22.50**

VHF/UHF/FM low loss four set coupler. 300 ohm input. Four 300 ohm outputs. Power passive, excellent match. Features no strip piercing screws. Supplied with mounting screws. Excellent for color, black and white TV & FM stereo.

- Display package.



CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446



# VIDEO ACCESSORIES

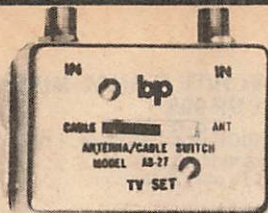
## BP COAX AB SWITCH

MODEL AB-27

OUR PRICE **\$2.95** each

10 FOR **\$20.00**

- Input: 75 ohm.
- Output: 75 ohm.
- Isolation: A & B 85 dB; A & TV 85 dB; B & TV 85 dB.
- Blister package.



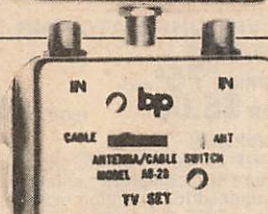
## BP COAX AB SWITCH

MODEL AB-28

OUR PRICE **\$2.95** each

10 FOR **\$20.00**

- Input: 75 ohm.
- Output: 300 ohm.
- Isolation: A & B 70 dB; A & TV 75 dB; B & TV 75 dB.
- Blister package.



## BP COAX AB SWITCH

MODEL AB-29

OUR PRICE **\$2.95** each

10 FOR **\$20.00**

- Input: 75 & 300 ohm.
- Output: 300 ohm.
- Isolation: A & B 65 dB; A & TV 70 dB; B & TV 70 dB.
- Blister package.



## BP COAXIAL SWITCHING FOR TV AND VIDEO

CASSETTE RECORDERS

MODEL AB-370

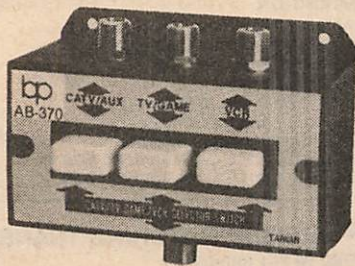
OUR PRICE **\$6.95** each

5 FOR **\$30.00**

3-position coaxial push-button switch.

### DESCRIPTION

Heavily shielded switch box providing maximum isolation to avoid 'bleeding' of one strong channel into another during TV viewing. Four 'F' connectors accept 75 coaxial cable with F59 fittings for switching to various selections of TV and antenna combinations. Pushbutton switches are located conveniently on top of the attractive, deep blue metal cabinet having keyhole cutouts for flush wall mounting. Three 75 ohm resistors properly terminate any unused position. Overall size: 3-9/16" x 2-3/4" x 2". Individually boxed.



MODEL AB-380

OUR PRICE **\$6.95** each

5 FOR **\$30.00**

3-position coaxial push-button switch.

### FEATURES

- Three inputs: Two F connectors and one RCA jack. One output: F connector.
- All other features are the same as AB370.

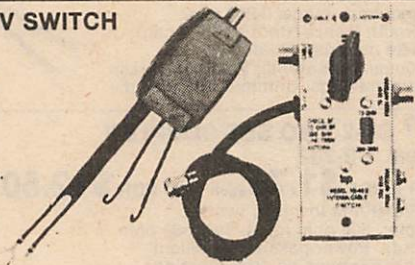
## BP ANTENNA/CABLE TV SWITCH

MODEL AB-400

OUR PRICE **\$7.95** each

10 FOR **\$65.00**

- Switches from cable to antenna system instantly.
- Accepts 75 ohm or 300 ohm inputs.
- Outputs for 75 or 300 ohm (VHF/UHF splitter balun supplied.)



## BP ANTENNA/CABLE TV SWITCH

MODEL AB-410

OUR PRICE **\$6.95** each 10 FOR **\$60.00**

- Switches from cable to antenna system instantly.
- Accepts 75 or 300 ohm inputs.
- Outputs for 75 or 300 ohm switchable.



## BP COAXIAL SWITCH

MODEL AB-30

OUR PRICE **\$5.95** each

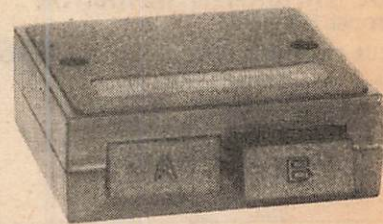
10 FOR **\$50.00**

### DESCRIPTION

A versatile product, with a range of consumer and MATV applications. Highly reliable with only one moving part. Individually packed, less cable connectors. Twelve units per standard carton.

### SPECIFICATIONS

- Impedance: 75 ohms, self-termination of unused input.
- Band Pass: 0 to 890 MHz.
- Isolation: 0 to 300 MHz, 90 dB, 300 to 90 MHz, 80 dB.
- Insertion Loss: Less than 0.2 dB.
- Connectors: Three F-61A chassis connectors 'A', 'B' and output.



### APPLICATIONS

- Dual CATV and MATV A/B cable systems.
- Home TV antenna systems.
- With video cassette recording systems.
- The exceptionally high isolation between A & B of Model AB-30 permits its use in any A/B situation without concern about possible co-channel interference.

## BP TV GAME SWITCH

MODEL V-450

OUR PRICE **\$2.50** each 10 FOR **\$20.00**

### DESCRIPTION

300 ohm in and out with RCA plug.

### FEATURES

- Permanent hook-up of TV video game to set.
- Quick selection of video game or TV at the change of the switch.
- Easy to install.



## BP TV GAME SWITCH

MODEL V-451

OUR PRICE **\$2.95** each 10 FOR **\$25.00**

### DESCRIPTION

75 and 300 ohm in and out with RCA plug.

### FEATURES

- Permanent hook-up of TV video game to set.
- Quick selection of video game or TV at the change of a switch.
- Easy to install.



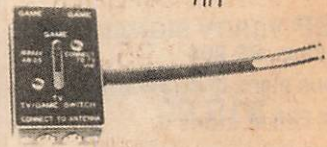
## BP TWO GAME TV SWITCH

MODEL V-452

OUR PRICE **\$2.75** each

10 FOR **\$25.00**

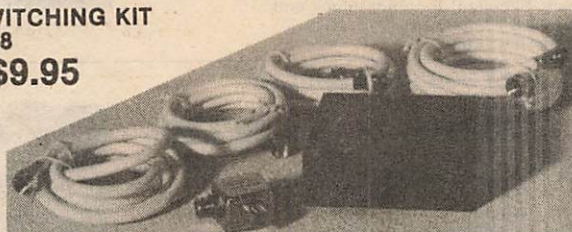
- Two RCA Jack.



## CABLE SWITCHING KIT

MODEL V-488

OUR PRICE **\$9.95**



### DESCRIPTION

Easy to install - Economical way to record any pay channel - while viewing any standard channel. Consists of 3— F-3F, 1— F-6F, 1—A/B Switch, 1—CA-2111

## BP DUAL INPUT/DUAL OUTPUT

TV GAME SWITCHES

MODEL V-453

OUR PRICE **\$3.50** each 10 FOR **\$30.00**

### DESCRIPTION

Universal switch permits connection of TV game to TV with either 75 or 300 ohm input. May be used with 75 or 300 ohm antenna input.

MODEL V-454

OUR PRICE **\$3.75** each 10 FOR **\$32.50**

V-454 - Same as above but for two games.





# DISTRIBUTION AMPLIFIERS & ACCESSORIES

## BP DISTRIBUTION AMPLIFIER UHF/VHF/FM MODEL DA-412

OUR PRICE **\$34.95** each

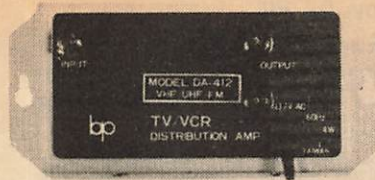
4 FOR **\$120.00**

### DESCRIPTION

UHF/VHF/FM broadband distribution amplifier with high input capability. Features low noise, high overload capacity, lightning protection, heavy gauge metal case, on-off indicator light.

### SPECIFICATIONS

Bandwidth (MHz): 54 to 216, 470 to 890. Gain (dB): 12 (VHF) (2 outputs), 10 (UHF) (2 outputs). Noise Figure (dB): 6 (VHF), 7.7 (UHF). Input Capability: 40 dBmV (100 mV) for VHF, 20 dBmV (10mV) for UHF. 3 CH in LB, 3 CH in HB, 3 CH in UHF. Present simultaneously with no perceptible distortion. Input: 75 ohm coaxial. Output: 75 ohm x 2 coaxial. Temperature Range: -40° to +140°F. Power Requirements: AC 117V, 60Hz. Dimensions: 6-5/8" x 3-3/32" x 1-7/16".



## BP DISTRIBUTION AMPLIFIER VHF/UHF/FM With FM Trap MODEL DA-425

OUR PRICE **\$29.95** each 4 FOR **\$100.00**

### FEATURES

- Designed for TV/VCR multiple-set installations.
- Provides high gain to improve TV reception on VHF/UHF channels 2-83.
- Integrated circuit.
- Low noise.
- High overload capacity.
- Extra lightning protection at RF input.
- Heavy gauge metal housing.
- On/off indicator light.
- Switchable FM trap.

### SPECIFICATIONS

Band Width: VHF 54-900 mHz, UHF 470-890 mHz. Gain (dB): VHF 24 dB, UHF 22 dB. Maximum Input (at 7 VHF channels and 4 UHF channels) Simultaneous Operation: VHF 15 dBmV, UHF 17 dBmV. Maximum Output (at 7 VHF channels and 4 UHF channels) Simultaneous Operation: Cross Modulation at -46 dB; VHF 40 dBmV per channel, UHF 40 dBmV per channel. Noise Figure: VHF Low 5.4 dB, High 6.2 dB, UHF 14 dB. FM Trap: Attenuation Rejection Band: -20dB (switchable) 95-105 mHz. Temperature Range: -40°F to +140°F. Input: 75 ohm - 'F' type coaxial cable. Output: 75 ohm - 'F' type coaxial cable. Power Requirement: AC 117 V, 60 Hz. Housing Dimensions: 3-3/32" x 6-5/8" x 1-7/16". Length of Power Cord: 6 ft.



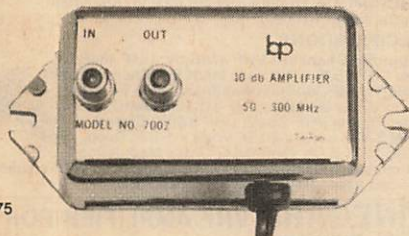
## BP VHF/FM AMPLIFIER MODEL 7002

OUR PRICE **\$9.95** each

5 FOR **\$45.00**

### SPECIFICATIONS

- All solid state signal amplifier boosts weak signals.
- Signal gain: 10 dB.
- Bandwidth: 50-300 mHz.
- Volts: 110-120V AC. • Impedance: 75 ohm.
- Outputs: One. • Display package.

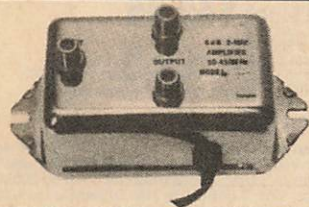


## BP VHF/FM AMPLIFIER MODEL 7003

OUR PRICE **\$12.95**

### FEATURES

- All solid state signal amplifier boosts signals.
- Signal Gain: 8 dB. • Bandwidth: 50-400 MHz.
- Volts: 110-120 VAC. • Impedance: 75 OHM.
- Outputs: Two. • Display Pkg.



## BP VHF/FM AMPLIFIER MODEL 7004

OUR PRICE **\$12.95** each

5 FOR **\$60.00**

### SPECIFICATIONS

- All solid state signal amplifier for up to 4 sets.
- Signal gain: 3 dB 50-300 mHz.
- Impedance: 75 ohm.
- Outputs: Four.
- Display package.



## BP GROUNDING BLOCK MODEL GB-1

OUR PRICE **49¢** each

10 FOR **\$3.90**



## SPECIAL!

## BP SUPER COLOR TV BOOSTER MODEL V-7300

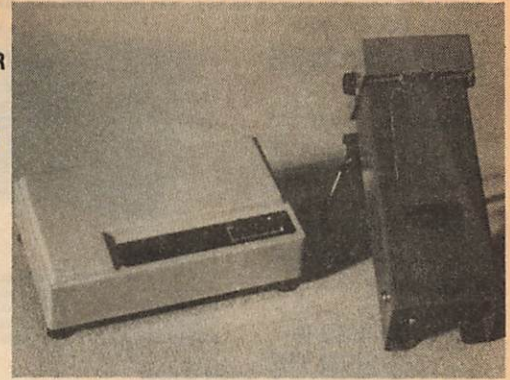
OUR PRICE **\$24.95**

### FEATURES

- High Gain.
- Low Noise.
- High Power.
- Full Lightning Protection.
- Environmental Stability.
- Easy To Mount.

### SPECIFICATIONS

Band Width: 40-860 MHz. Gain: V:26 dB U:22 dB. Max. Output Level: 105 dBuV. Input Impedance: 75/300 ohms. Output Impedance: 75/300 ohms. Noise Figure: 4 dB/below AT500 MHz. Applicable Temp.: -20°C — +50°C. Dimensions: 143 x 82 x 68mm 330g.



## CHANNEL MASTER UHF/VHF/FM RF ATTENUATORS MODEL 7270

OUR PRICE **\$6.95** SPECIAL!

### DESCRIPTION

These highly stable, in-line, fixed and variable attenuators can be used anywhere needed, for adjusting or equalizing signal levels. Model 7270 is a variable unit providing 0 to 21 dB attenuation in convenient 3 dB steps.



## CHANNEL MASTER BAND REJECTION FILTERS

MODEL 7203

OUR PRICE **\$9.95**

Sub-Band Filter

MODEL 7204

OUR PRICE **\$9.95**

FM Band Filter

MODEL 7205

OUR PRICE **\$9.95**

Mid-Band Filter

### DESCRIPTION

The Channel Master models 7203, 7204 and 7205 are 75 ohm Band Rejection Filters with typical attenuation of 15-35 dB. They are designed to attenuate signals in the sub, FM and Mid band frequencies while passing signals in the VHF/UHF TV band with minimum loss. These traps are designed for indoor surface mounting. Putting two traps in the same line for very strong interfering signals will provide attenuation of 25 to 50 dB.

## BP GHOST ELIMINATOR 75-OHM VARIABLE ATTENUATOR

MODEL V-460 OUR PRICE **\$6.95** SPECIAL!

### FEATURES

- Eliminates Ghosts in TV reception.
- Reduce interference in TV reception from a weaker TV station on the same frequency or multipath interference from a single station.
- The attenuator allows you to fine-tune each station for the best signal strength.
- Install this model at the 75-ohm terminal on back of TV, using a coaxial cable with "F" connectors. (Not Included).
- If your TV has only a 300 ohm screw terminal, use a 300 to 75 ohm transformer. (Not Included).



## BP CABLE CLAMPS MODEL V-425

OUR PRICE **\$1.50** per pkg.

For 75 ohm coax cable.

### DESCRIPTION

For securing cable to wood, cement, plaster, brick, almost any surface. Tough, non-corrosive plastic. Complete with corrosion resistant hardened steel nails. Pkg. of 25.



## BP ANTENNA CLOTHES PIN MODEL CP-1

OUR PRICE 20 FOR **\$5.00**

100 FOR **\$20.00**

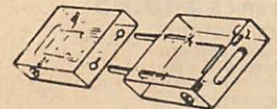


## BP TWIN LEAD CONNECTORS MODEL V-265

OUR PRICE 2 FOR **\$1.00**

### DESCRIPTION

Bulk packaged. Clear polystyrene twin lead connectors make joining 300 ohm twin lead a snap.





# AMPLIFIERS

## BLONDER-TONGUE STARFIRE SERIES

MODEL DA-475 U/V

OUR PRICE **\$52.50**  
Four Outputs

MODEL DA-475 V

OUR PRICE **\$39.95**  
Four Outputs

MODEL DA-4300 U/V

OUR PRICE **\$49.95**  
Single Output

MODEL DA-4300 V

OUR PRICE **\$39.95** Single Output



### FEATURES

- High input capability combined with low noise.
- Models available for all applications (VHF/FM, UHF/VHF/FM—75 ohm and 300 ohm).
- Patented ICEF circuit for extra wide VHF dynamic range.
- Amplifies four TV's/FM sets.

Model	Description	Input Capability (dBmV)	Noise Figure (dB)	Gain (dB)	Input Ohms	Output Ohms
DA-475u/v	For 75 ohm coax cable. All channels VHF/UHF thru CH 8 & FM	35 (VHF) 30 (UHF)	4.6 (VHF) 4.5 (UHF)	7 (VHF) 10 (UHF)	75 300	75 300
DA-4300u/v	All VHF/UHF (14-83) channels plus FM 300 ohm twinlead input & outputs	35 (VHF) 28 (UHF)	5.5 (VHF) 5.7 (UHF)	6 (VHF) 9 (UHF)	300	300
DA-475v	CH 2-13 & FM amp. with 75 ohm coax cable input and outputs	35 (VHF)	4.6 (VHF)	6 (VHF)	75	75
DA-4300v	300 ohm input & outputs. Amps VHF (2-13) & FM.	37 (VHF)	5.6 (VHF)	5 (VHF)	300	300

## BLONDER-TONGUE UHF/VHF DISTRIBUTION AMPLIFIER MODEL MUVB-15

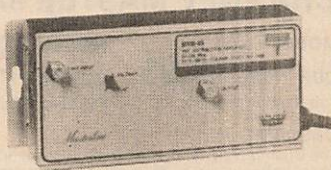
OUR PRICE **\$49.95**

### SPECIFICATIONS

- Output Capability (dBmV): VHF = 50; UHF = 47.
- Gain: VHF = 15 dB; UHF = 18 dB.

### DESCRIPTION

Our least expensive Masterline® UHF/VHF amplifier. Excellent for small home all-channel distribution systems. Full CH. 2-83 operation including CATV midband for premium channels. Adjustable built-in FM trap to attenuate strong local FM stations. A low-cost professional solution to residential TV systems for technically discriminating home owners.



## BLONDER-TONGUE VHF DISTRIBUTION AMPLIFIER MODEL MVB-15

OUR PRICE **\$39.95**

### SPECIFICATIONS

- Output Capability (dBmV): VHF = 50.
- Gain: VHF = 15 dB.

### DESCRIPTION

Our least expensive Masterline® VHF-only amplifier. Ideal for small home TV distribution systems or for that little bit of extra power to solve end-of-the-line MATV situations. Full CH. 2-13 operation including CATV midband for premium channels. Adjustable built-in FM trap to attenuate strong local FM stations and minimize TV interference. A low-cost professional solution to residential TV systems for technically discriminating home owners.



## BLONDER-TONGUE UHF/VHF DISTRIBUTION AMPLIFIER MODEL MUVB-25

OUR PRICE **\$59.95**

### SPECIFICATIONS

- Output Capability (dBmV): VHF = 50; UHF = 48.
- Gain: VHF = 27 dB; UHF = 29 dB.

### DESCRIPTION

A professional quality amplifier for large homes and small commercial VHF and UHF on-channel MATV systems. Excellent for TV showrooms when demonstrating UHF in addition to VHF channel performance. Provides low-cost CATV midband amplification for premium channel distribution. Full UHF range to 890 MHz—ideal for translator reception. Switchable FM band stop filter eliminates TV interference from strong local FM stations.



## BLONDER-TONGUE VHF DISTRIBUTION AMPLIFIER MODEL MVB-25

OUR PRICE **\$49.95**

### SPECIFICATIONS

- Output Capability (dBmV): VHF = 50.
- Gain: VHF = 27.

### DESCRIPTION

A professional quality amplifier for large homes and small commercial MATV systems. Provides a larger end-of-the-line kick than the MVB-15. Excellent for TV showrooms in VHF-only areas. Provides low-cost CATV midband amplification for premium channel distribution. Switchable FM band stop filter eliminates TV interference from strong local FM stations.



## WINEGARD VHF AMPLIFIER (75 OHM) MODEL DA-205

OUR PRICE **\$33.95**

For all channels 2-13 plus mid and super bands. High input levels make efficient use of strong signals in metropolitan areas and solve overload problems. UHF bypass.

### SPECIFICATIONS

Output Per Channel\*: VHF 47dBmV, UHF NA. Gain: VHF 16dB, UHF 3dB. Input Per Channel\*: VHF 31dBmV, UHF NA. Bandpass: VHF 50 to 88 MHz; 108 to 300 MHz. UHF 470-890 MHz. Noise Figure: VHF 2.9dB, UHF NA. Input Connections: 1—75 ohm. Dimensions: 5-1/2" Long x 3-1/2" Wide x 1-1/2" Deep.

\*7 Ch. VHF, 5 Ch. UHF 0.5% Cross Modulation. †All models which amplify VHF are equipped with a special FM circuit which prevents overload from strong local stations



## WINEGARD UHF AMPLIFIER (75 OHM) MODEL DA-405

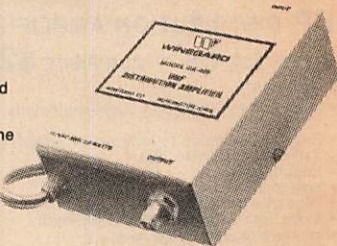
OUR PRICE **\$49.95**

### DESCRIPTION

High gain, low noise distribution amplifier designed for use in deep fringe UHF signal areas. The very low noise figure of the DA-405 provides clear UHF pictures where other amplifiers would only make the snow brighter. Input and output are thru 75 ohm, F type connections. VHF signals are bypassed with negligible loss.

### SPECIFICATIONS

Output Per Channel\*: VHF NA, UHF 44dBmV. Gain: VHF 0.4dB avg., UHF 21.6dB avg. Input Per Channel\*: VHF NA, UHF 23dBmV. Bandpass: VHF 54-216MHz, UHF 470-890MHz. Noise Figure: VHF NA, UHF 3.2dB. Input Connections: 1-75 ohm. Dimensions: 5-1/2" Long x 3-1/2" Wide x 1-1/2" Deep. \*7 Ch. VHF, 5 Ch. UHF 0.5% Cross Modulation



## WINEGARD VHF-UHF AMPLIFIER (75 OHM) MODEL DA-8050

OUR PRICE **\$39.95**

### DESCRIPTION

Designed especially for strong signals areas. The DA-805 features straight forward design. Amplifies Mid and Super bands.

### SPECIFICATIONS

Output Per Channel\*: VHF 47dBmV, UHF 48dBmV. Gain: VHF 16dB, UHF 9dB. Input Per Channel\*: VHF 31dBmV, UHF 39dBmV. Bandpass: VHF 54 to 88 MHz; 108 to 300MHz. UHF 410 to 810MHz. Noise Figure: VHF 2.8dB, UHF 8.5dB. Dimensions: 5-1/2" Long x 3-1/2" Wide x 1-1/2" Deep. \*7 Ch. VHF, 5 Ch. UHF 0.5% Cross Modulation †All models which amplify VHF are equipped with a special FM circuit which prevents overload from strong local stations



## WINEGARD VHF AMPLIFIER FOR CATV MODEL DA-2155

OUR PRICE **\$42.95**

### DESCRIPTION

Special model to use with 30 channel CATV inputs. Extended bandpass from 50 to 300MHz covers mid and super bands and FM band.

### SPECIFICATIONS

Output Per Channel\*: VHF 41dBmV\*\*, UHF NA. Gain: VHF 11dB, UHF NA. Input Per Channel\*: VHF 30dBmV\*\*, UHF NA. Bandpass: VHF 50-300MHz. Noise Figure: VHF 5.8dB, UHF NA. Dimensions: 5-1/2" Long x 3-1/2" Wide x 1-1/2" Deep. \*7 Ch. VHF, 5 Ch. UHF 0.5% Cross Modulation \*\*30 Ch. VHF 0.5% Cross Modulation



## BLONDER TONGUE GALAXY PREAMPLIFIERS ALL CHANNEL • UHF/VHF/FM • MAST MOUNTED

A complete NEW LOOK line of superior performance rated, mast mounted pre amplifiers for any home installation requirement. Galaxy units feature modern design; high-impact polypropylene case; simplified mounting and all-channel range (thru ch. 83 on UHF). A compact indoor power supply is included with all models.

### FEATURES

- Lowest UHF noise figure on any preamp available plus lower VHF noise figure. (4.5 dB)
- Three way split-band amplifier sections (VHF 2-6, 7-13 and UHF) to eliminate low band signal interference with high band and to optimize dynamic range.
- Each Galaxy is protected from lightning and power line surges.
- Gain: VHF 15 dB, UHF, 20 dB

MODEL 5120 15-20 dB Gain OUR PRICE **\$54.95**  
All channel amplifier. Accepts single 300-ohm UHF/VHF input. Single output.

MODEL 5123 15-20 dB Gain OUR PRICE **\$54.95**  
Ultra high performance all-channel amplifier for lightning prone areas. Single UHF/VHF antenna input. 75-ohm output.

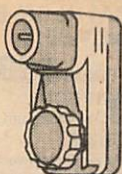




**BP QUICK CONNECT "F" PLUG & BALUN**  
MODEL V-400

OUR PRICE **\$1.50** each 10 FOR **\$12.50**

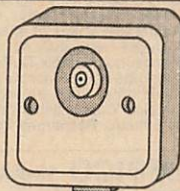
Adds mobility to your VCR & TV. Converts 300 ohm input to 75 ohm output. No wiring necessary. Peg pkgd.



**BP QUICK CONNECT "F" WALL JACK**  
MODEL V-401

OUR PRICE **\$1.75** each 10 FOR **\$15.00**

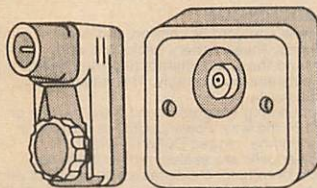
Adds mobility to your VCR & TV. Mates directly with "F" antenna plugs.



**BP VCR-TV QUICK CONNECT "F" SET**  
MODEL V-402

OUR PRICE **\$2.75** each  
10 FOR **\$25.00**

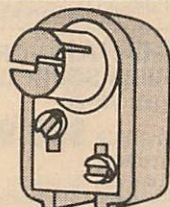
Adds mobility to your VCR-TV. Push on/pull off antenna connectors allow instant switching for multi-purpose installations. Instructions included. Peg packaged.



**BP QUICK CONNECT "F" PLUG & BALUN**  
MODEL V-403

OUR PRICE **75¢** each 10 FOR **\$6.00**

Adds mobility to your VCR & TV. For 75 ohm cable. No wiring necessary. Instructions included. Peg pkgd.



**BP QUICK CONNECT "F" PLUG & BALUN**  
MODEL V-404

OUR PRICE **\$1.50** each 10 FOR **\$10.00**

Adds mobility to your VCR & TV. Converts 300 ohm input to 75 ohm output. No wiring necessary. Peg pkgd.



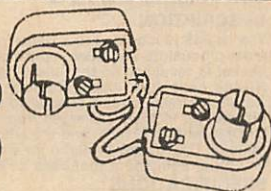
**BP QUICK CONNECT "F" PLUG**  
RG 59U  
MODEL V-4033

OUR PRICE **\$1.95** each 10 FOR **\$17.50**

MODEL V-4036

OUR PRICE **\$2.50** each 10 FOR **\$22.50**

3 ft. or 6 ft. Push-on Quick Connect "F" plug on both ends. Blister packaged.



**BP QUICK CONNECT RIGHT ANGLE PUSH ON CABLES**  
MODEL V-3533

OUR PRICE **\$2.75** each 10 FOR **\$25.00**

3 ft. RG-59 cable with right angle Push-on "F" plug on both ends.

MODEL V-3534 with Gold Connectors

OUR PRICE **\$3.75** each 10 FOR **\$35.00** 3 FT.

Same as above With Gold Connectors on Both Ends

MODEL V-3566

OUR PRICE **\$2.95** each 10 FOR **\$27.50**

6 ft. RG-59 cable with right angle Push-on "F" plug on both ends.

MODEL V-3567 with Gold Connectors

OUR PRICE **\$3.95** each 10 FOR **\$37.50**

Same as above With Gold Connectors on Both Ends 6 FT.

MODEL V-3588

OUR PRICE **\$3.50** each

10 FOR **\$30.00**

12 ft. RG-59 cable with right angle Push-on "F" plug on both ends.

MODEL V-3589 with Gold Connectors

OUR PRICE **\$4.50** each

10 FOR **\$40.00**

12 ft. RG-59 cable with right angle Push-on "F" plug Gold Connectors on Both Ends



**BP 75-OHM CABLE RG 59U**  
MODEL V-3303

OUR PRICE **\$2.95** each 10 FOR **\$27.50**

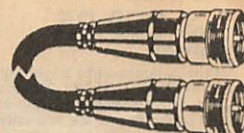
3 ft., UHF plug to UHF plug. Blister package.

75-OHM CABLE

MODEL V-3310

OUR PRICE **\$3.50** each 10 FOR **\$30.00**

10 ft., UHF plug to UHF plug. Blister package.



**BP 75-OHM CABLE RG 59U**  
MODEL V-3403

OUR PRICE **\$3.50** each 10 FOR **\$30.00**

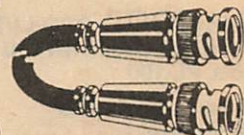
3 ft., BNC plug to BNC plug. Blister package.

75-OHM CABLE

MODEL V-3410

OUR PRICE **\$3.95** each 10 FOR **\$35.00**

10 ft., BNC plug to BNC plug. Blister package.



**BP 75-OHM CABLE RG 59U**  
MODEL V-3506

OUR PRICE **\$1.95** each 10 FOR **\$17.50**

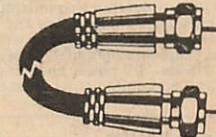
6 ft., "F" connector both ends. Blister package.

75-OHM CABLE

MODEL V-3512

OUR PRICE **\$2.95** each 10 FOR **\$27.50**

12 ft., "F" connector both ends. Blister package.



**BP 75-OHM CABLE RG 59U**  
MODEL V-3606

OUR PRICE **\$1.75** each 10 FOR **\$15.00**

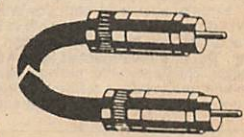
6 ft., RCA plug both ends. Blister package.

75-OHM CABLE

MODEL V-3612

OUR PRICE **\$2.50** each 10 FOR **\$22.50**

12 ft., RCA plug both ends. Blister package.



**BP 75-OHM CABLE RG 59U**  
MODEL V-3703

OUR PRICE **\$1.95** each 10 FOR **\$17.50**

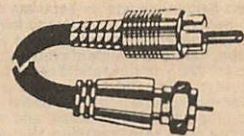
3 ft., RCA plug to "F" connector. Blister package.

75-OHM CABLE RG 59U

MODEL V-3710

OUR PRICE **\$2.50** each 10 FOR **\$22.50**

10 ft., RCA plug to "F" connector. Blister package.



**BP COAXIAL JUMPER CABLE**

MATV Application RG59/U Cable F59 Connector—F59 Connector

MODEL F-3F 3 ft. length

OUR PRICE **\$1.25** each 10 FOR **\$10.00**

MODEL F-6F 6 ft. length

OUR PRICE **\$1.50** each 10 FOR **\$12.00**

MODEL F-12F 12 ft. length

OUR PRICE **\$2.50** each 10 FOR **\$20.00**

MODEL F-20F 20 ft. length

OUR PRICE **\$2.99** each 10 FOR **\$25.00**

MODEL F-50F 50 ft. length

OUR PRICE **\$6.95** each

MODEL F-100 100 ft. length

OUR PRICE **\$12.95** each





# VIDEO EQUIPMENT/ACCESSORIES

## HARWOOD PRO-LUX/250 VIDEO CAMERA LIGHT MODEL PL-250

**NEW!**



OUR PRICE **\$59.95**

### DESCRIPTION

This compact, lightweight bright light weighs only 18 oz. EYH-FKT 200-hour, 250-watt quartz halogen lamp and etched aluminum reflector provide intensity and uniformity over a larger area. This unit features full venting for cooler operation; heat resistant safety glass; hand-grip camera shoe mount permits bounce of light from 0° to 90° vertically; adjustable flood to spot beam control; heavy duty power cord for use in any 110-120 volt AC outlet.

## HARWOOD PRO-LUX/100 DC VIDEO CAMERA LIGHT MODEL PL-100

**NEW!**



OUR PRICE **\$49.95**

### DESCRIPTION

Designed for easy portability, this compact, lightweight 15 oz. light is engineered to provide the "fill-in" lighting needed to bring out desired details in situations where available light is not quite adequate. This light features an etched aluminum reflector; a hand grip camera shoe mount that swivels from 0° to 90° vertically; a bright FCR 12-volt 100-watt quartz halogen lamp with 3300° Kelvin color temperature and heat resistant safety glass. Equipped with coiled cord and "cigarette lighter" type plug for use with 12 volt, DC power pack or auto or boat 12 volt cogarette lighter receptacle.

## ACME-LITE TWINLITES

**NEW!**

MODEL 42-A OUR PRICE **\$119.95**

### DESCRIPTION

Acme-Lite introduces the Twinlite, two individually switched lamps in tandem. One 100w operates on 12v battery; the other 250w operates on 115v wall outlet. Unit can be used with either type of power source. Both lamps can be used simultaneously on both power sources when additional light and wider beam angle is needed. They're two power cords, one for the battery and one for the wall outlet. The new rim-mounted lamp has its own built-in reflector. The heavy yoke provides easy swivelling and bouncing and includes a fitting that will mount directly on to video camera for fit any light stand from 3/8" to 5/8".



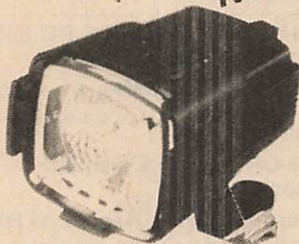
## AMBICO AC/DC FOCUSING VIDEOLIGHT MODEL V-0190

**NEW!**

OUR PRICE **\$99.95**

### DESCRIPTION

Quartz-halogen lamps for accurate color reproduction. Separate sets of cords and lamps for AC and DC avoid hazard of bursting bulbs with wrong voltage. Includes standard plug and 200 watt AC lamp for 120 Volt household receptacle. Cigarette lighter-type plug and 100 watt DC lamp for car lighter receptacle or 12 volt battery pack. Heat-absorbing glass Saffey-Shield and vented housing for extra cool, safe operation. Wide-Spot switch for adjusting from wide beam to spot light.



## BP PORTABLE VCR CIGARETTE LIGHTER ADAPTORS

### MODEL V-469

Cigarette lighter plug to coaxial connector  
1.8 meter (6 feet)

OUR PRICE **\$2.95**

### MODEL V-470

Cigarette lighter plug to 4 pin din plug  
1.8 meters (6 feet)

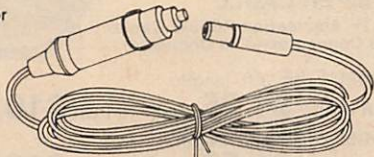
OUR PRICE **\$2.95**

### DESCRIPTION

DC power cables designed to provide an alternate power supply for your portable VCR when away from home. You no longer have to worry about power supply problems while "on location". Each model contains a cigarette lighter plug on one end for easy use in your car or boat and on the other end, contains a connector for use with a particular VCR. Instructions and specific cross reference information are included. Display package.

### General usage is as follows:

V-469- Fits most RCA, Panasonic, Magnavox, Quasar, Philco, Hitachi, and Sylvania portable VCR's.  
V-470 - Fits most Sony, JVC, Akai, and commercial Panasonic portable VCR's.



## AMBICO DECATHLON BATTERY MODEL V-0810

OUR PRICE **\$99.95**

### DESCRIPTION

New Nickel Cadmium Power-Pack for all video applications.

### FEATURES

- Six-times the power of standard VCR batteries.
- Extra long life: can be recharged up to 1,500 times.
- Only 3 lbs. — very high power-to-weight ratio.
- Fused for extra safety. • Cannot be damaged by under or over charging.
- Adjustable straps fit either shoulder or around waist-for greatest flexibility-most comfort.
- Includes heavy-duty AC charger for greater dependability.
- Handsome, durable DuPont Cordura case protects against bad weather.
- Cigarette-lighter receptacle connects to any VCR with accessory car-battery cord. Also accepts other video accessories, such as light, voltage meter etc.
- Ambico Video's 6-month warranty, too! Powers 100w videolight for up to 40 minutes, VCR up to 6 hours. Recharges from any household 110/120v outlet in 12 hours.



## AMBICO 10-AMP BELT POWERPACK MODEL V-0805

OUR PRICE **\$79.95**

### DESCRIPTION

A new standard of comfort and convenience. These battery packs are worn around the waist, distributing their weight evenly and comfortably. The waistbelt is adjustable.

Connecting colicords don't hang loosely or get in the way. Powerpacks are covered in handsome, rugged DuPont Cordura.

Power cells are sealed, rechargeable lead-acid in rugged, shock-resistant, polypropylene cases. They have a high cycle-life, excellent recovery rate, and tolerate wide temperature and climatic variations. For even greater dependability and safety, power receptacle is fused. 12V, 10-amp. Powers VCR 8-10 hours, 100 watt light almost 1 hour. Weighs less than 8 pounds. Recharger included.

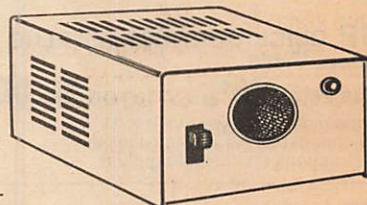


## VDO-PAK VCR/CAMERA POWER SOURCE MODEL VP-20

OUR PRICE **\$39.95**

### FEATURES

- A compact, lightweight power source for all portable VCR/camera combinations.
- Solid-State, fully regulated ultra clean power, with auto-reset over-voltage/short-circuit protection device.
- UL and CSA approved, designed specifically for use with VHS and Beta format portable video recorders.
- Push cigarette lighter type plug in and operate.



## NI-PAK POWER PACK Lightweight Carry on Shoulder or on Belt Rechargeable 12 Volt Nickel Cadmium Power Pack MODEL NP-480

OUR PRICE **\$99.95**

ONLY **3 1/2 LBS.!**

### DESCRIPTION

The Ni-Pak is moulded in a flame retardant, high impact ABS plastic housing. The flush mount standard cigarette lighter socket is recessed so that the plugs do not protrude beyond the NI-PAK case. It is usable either on a belt or shoulder strap. Automatic reset circuit breaker to protect from short circuit conditions. Up to 1500 recharges from the durable NICKEL-CADMIUM BATTERIES and the whole package weighs only 3 1/2 pounds. Cables are available for virtually all portable VCR's and any other equipment that uses an external battery pack.

### SPECIFICATIONS

Capacity: 6-8 hours -VCR, 35-40 minutes -light. Weight: 3.6 lbs. without charger. Size: 8" x 6" x 1.5". Life: 1,000 to 1,500 recharge cycles. Power Cell: Sealed, high-density nickel cadmium, rechargeable. Output: 4.4 amp hours. Protection Device: 20 amp circuit breaker, auto reset. Charging Time: 14 hours maximum. Charging Type: Sealed unit, UL and CSA approved. 120 volt AC as available (220 volt available) Case: Injection molded, flame retardant, high impact ABS plastic. Power Connection: Universal cigarette-lighter connector (female).



## NI PAK JR. MODEL NP-200 OUR PRICE **\$79.95**

### SPECIFICATIONS

- 2.4 amp. • 2-2.5 hours—recording. • 3-5 hours—VCR.
- 20 minutes—light (75W). • 2.3 lbs. without charger. • Dimensions: 7"x6"x1.5".

### CIGARETTE LIGHTER ADAPTER CORDS WITH 3 AMP FUSE

Model CLM-1 Old Sets: Hitachi VR6500, VT 6300; RCA VGP 170, VF 170; Pentax Minolta	<b>\$7.50</b>
Model CLM-2 Smaller Bore: RCA VJP-900; Hitachi VT-7P	<b>\$8.50</b>
Model CLM-4 Panasonic NV 8410, 3000, 4000; Quasar 5410; Magnavox 8377; Sylvania VC VC 4515; Philco V 1715; G.E.; Akai VPS 7350; Panasonic 4500	<b>\$7.50</b>
Model CLM-5 Sony SL 2000; Zenith VR 9800, VR 9500	<b>\$7.50</b>
Model CLM-8 JVC HR 2200U	<b>\$7.50</b>
Model CLM-10 Panasonic 5500, 6500, 6600; Canon; Nikon; Olympus; G.E.; Philco; Sylvania; Quasar 5420; Magnavox	<b>\$8.50</b>
Model CLM-11 Panasonic 5800, 8110, 8484, 8485, 8500, 9600; Magnavox 8474, 8475; J.C. Penny 5110, 5115; Canon 30A; Sylvania 4525, 4540; G.E. 5022, 5026, 5028, 5024; Olympus 105, 106; Philco 1728; Quasar 5440, 5442, 5740, 5747	<b>\$14.95</b>
Model CLM-14 JVC HR 2650U	<b>\$8.50</b>



## ACME-LITE LOW VOLTAGE VIDEOLITE FOR BATTERY OPERATION MODEL 7PB

OUR PRICE **\$49.95**

### DESCRIPTION

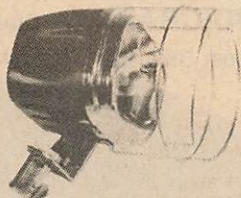
For use with 12BB or 12BL Batterybelt or any 12-volt system battery. Compact and Lightweight for mounting directly on top of camera. Includes 3/8 Stand fitting (see #25 #94B for camera mounting). Fitted with male cigarette lighter plug at end of 6-ft. coil cord for connecting to battery. Includes DZB Quartz Lamp, 100-w, 12-v, 3200K, 50-hr lamp life.



## ACME-LITE QUARTZ LAMP MODEL 708G

OUR PRICE **\$39.95**

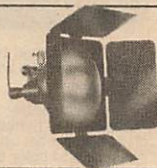
600 watt quartz lamp, 3200K, 75 hour rated life. Ideal for most lighting situations including large rooms and groups. Includes wire safety guard, built-in switch, bounce bracket. Lamp included.



## ACME-LITE BARNDOR QUARTZ LAMP MODEL 640BD

OUR PRICE **\$54.95**

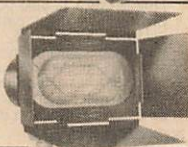
600 watts. Includes 4-leaf barndoors and lamp. Silver reflector. Broad beam, medium intensity.



## ACME-LITE BARNDOR QUARTZ LAMP MODEL 710SL

OUR PRICE **\$74.95**

1000 watt. 75 hour includes barndoors and quartz lamp.



## ACME-LITE OPTIONAL ACCESSORIES

**HANDLE model 94** ..... \$14.95

For cameras having no mounting for light. Camera attaches to handle platform and light mounts on handle post.

**SHOE ADAPTOR model 25** ..... \$5.95

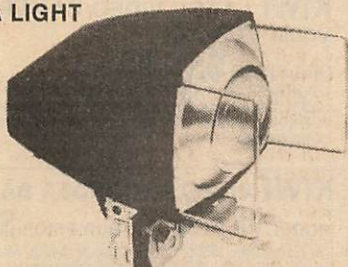
For cameras having shoe mounting on top. Adaptor inserts into camera shoe and light mounts on post.

## HARWOOD VIDEO CAMERA LIGHT MODEL VL-6

OUR PRICE **\$24.95**

### DESCRIPTION

100 Watt Video Camera Light with newly developed BDK lamp. Housed in a durable, lightweight, Bakelite case. On-off switch. Extended double wire guard. This is an excellent "fill-in" where available light is not quite bright enough to bring out desired details. Heavy duty supply cord. UL and CSA approved.



HANDLE AND BRACKET INCLUDED

## HARWOOD VIDEO CAMERA LIGHT MODEL VL-4

OUR PRICE **\$29.95**

### DESCRIPTION

Molded high impact Phenolic case provides cool operation. High gain reflector assures sharper details. Beam control lever adjusts from wide angle to telephoto coverage. Heavy duty supply cord, on-off switch, wire guard. Ideal for weddings, banquets, and any situation of large groups of large rooms. Equipped with 600W DYH quartz Bromine lamp for 110-120V.



HANDLE AND BRACKET INCLUDED

## HARWOOD PROFESSIONAL VIDEO CAMERA LIGHT MODEL VL-1H

OUR PRICE **\$36.95**

### DESCRIPTION

Includes handle side mounting bracket. Aluminum die-cast housing. Exclusive Harwood Ellipsoid reflector provides greater light intensity and uniformity over larger area than ordinary reflectors while protecting lamp. Phenolic radiating chamber for cool operation. Equipped with 600W DYH Quartz Bromine Lamp for 110-120V. Heavy duty supply cord, on-off switch.



HANDLE AND BRACKET INCLUDED

## VELBON VIDEO TRIPOD

MODEL SGB-32 OUR PRICE **\$79.95**

Our heavy-duty model, the SGB-32 is designed with a 2-way spring counter balanced panhead. The SGB-32 features an adjustable friction controlled center column and radial leg braces for maximum stability. Measures: Min. height 20", Max. height 63-1/2".



SGB-32

VIDEO TRIPOD  
MODEL VGB-32C OUR PRICE **\$59.95**

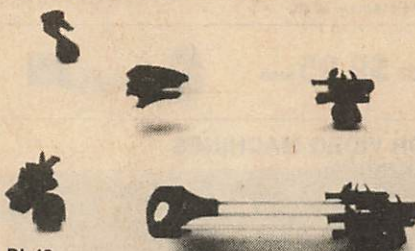
The VGB-32C is Velbon's popular medium weight video tripod. With center leg braces for stability, a geared center column for precise vertical adjustments and a 2-way spring counter balanced panhead, the VGB-32C will help take the shake out of your home video productions. Measures: Min. height 21", Max. height 58".



VGB-32C

LIGHTWEIGHT DOLLY  
MODEL DL-10 OUR PRICE **\$69.95**

The DL-10 is Velbon's newly developed lightweight dolly with wide wheel design for easy movement over flooring. DL-10 for V and DV-Series photo and video tripods.



DL-10

## ACME-LITE HEAVY DUTY VIDEO TRIPOD

MODEL VIDIPOD-T OUR PRICE **\$109.95**

### DESCRIPTION

Vidipod-T includes 30 mm heavy duty tubular legs for extra strength for larger cameras including leg braces and positive locking collets plus massive spring head and long panning handle. Tripod includes crank & gear elevator column, large camera platform, swivel feet. Measurements: Min. height 24-1/2" — Max. height 62".



MODEL VIDIPOD-TF OUR PRICE **\$119.95**

### DESCRIPTION

Same tubular leg tripod but with FluidTorq head substituted instead of spring head for adjustable counterbalance and smoother head movement. Measurements: Min. height 24" — Max. height 63".

## ACME-LITE HEAVY DUTY VIDEO KING MODEL VT-940

OUR PRICE **\$149.95**

### DESCRIPTION

Extra strong 3-sec. tubular tripod with 30mm diam. legs and extra large leg spread for sturdy support. Features quick disconnect platform which attaches to camera for fast mounting or dismounting. Oversize gearing and large crank to adjust heavy cameras with friction control to prevent slippage. Head pans on leaf spring for constant drag and tilts on heavy tension coil spring. Long pan handle has adjustable angle and is reversible. Measurements: Min. height 23" — Max. height 59-1/2".



## STITZ 4-SECTION SELF-STAND MONOPOD

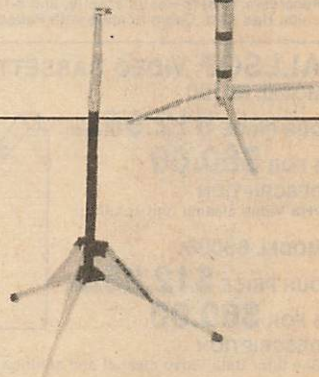
MODEL UBH-1

OUR PRICE

**\$39.95**

### DESCRIPTION

The Stitz monopod has a versatile design that can be transformed from a monopod to a tripod by reversing the bottom section of the stand. Measures: Min. height 21" — Max. height 61".



## STITZ 4-SECTION TUBULAR COMPACT LIGHT STAND MODEL LS-1

OUR PRICE

**\$29.95**

### DESCRIPTION

With the S-1 shoe adaptor (for Movie and Video lights). Optional holders with multi-threaded screw-adapters to attach the extension microphones are also available. The LS-1 Measures: Min. height 25" — Max. height 66".



# VIDEO EQUIPMENT

## BP VIDEO EXTENSION CABLE

MODEL V-5525 25 Ft.

OUR PRICE **\$39.95**

MODEL V-5550 50 Ft.

OUR PRICE **\$59.95**

25 ft. or 50 ft. cable. The video extension cable allows an additional 25 or 50 feet of mobility. 10 pin male to 10 pin female. Display package.



## BP VIDEO CAMERA EXTENSION

MODEL V-5625

OUR PRICE **\$44.95**

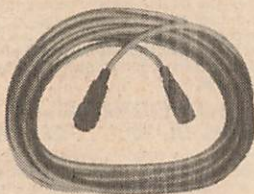
14 pin male to 14 pin female for Sony Betamax. 25 ft.

## VIDEO CAMERA EXTENSION

MODEL V-5650

OUR PRICE **\$64.95**

14 pin male to 14 pin female for Sony Betamax. 50 ft.



## BP VIDEO PLUG

MODEL V-5500

OUR PRICE **\$9.95** each

10 pin video plug.



## BP PLASTIC COVER FOR VIDEO MACHINES

MODEL V-6601

OUR PRICE

**\$3.95**

### FEATURES

- Fits almost all VCR's.
- See thru front.



## BP PLASTIC COVER FOR 2 PIECE PORTABLE VCR

MODEL V-6602

OUR PRICE **\$4.95**

### FEATURES

- Fits almost all two piece portable VCR's
- See Thru Front



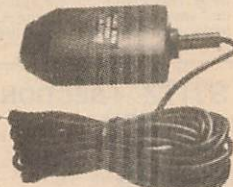
## BP VIDEO/AUDIO PAUSE CONTROL

MODEL V-5055

OUR PRICE **\$7.95**

### DESCRIPTION

Start-Stop Control at the push of a button. Provides smooth editing, dubbing, and recording. Permits you to eliminate unwanted commercials while video and audio taping. Can be used with most Video Cassette Recorders and Audio Recorders, Reel-to-Reel, Cassette, and 8-Track Cartridge Units. Has 12 ft. Cable to mate with Pause Control Jack of most recorders.



## ALLSOP VIDEO CASSETTE RECORDER CLEANERS

MODEL 60100

OUR PRICE **\$12.95** each

5 FOR **\$60.00**

### DESCRIPTION

VHS Video cleaner and solution.

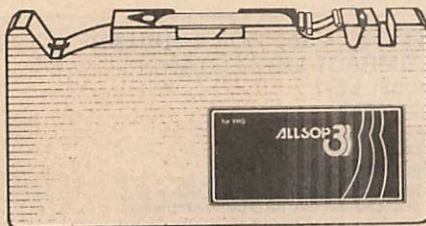
MODEL 66000

OUR PRICE **\$12.95** each

5 FOR **\$60.00**

### DESCRIPTION

Gen II/for Beta Video cleaner and solution for all Beta VCR's.



## BP BETA CLEANER

MODEL V-6671

OUR PRICE **\$9.95**

### FEATURES

- Beta Video Cassette Cleaner



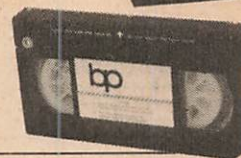
## VHS CLEANER

MODEL V-6672

OUR PRICE **\$9.95**

### FEATURES

- VHS Video Cassette Cleaner



## VIDICRAFT SPECIAL EFFECTS GENERATOR

MODEL SEG-100

OUR PRICE **\$399.95**



Vidicraft's advanced technology has created the most versatile Special Effects Generator for home video use. As with all Vidicraft products you get an extended warranty and full service.

### FEATURES

- Finger-touch pattern menu for selection of effects.
- Automatic or manual control over all fades, wipes and cuts. Effect patterns can be retained on-screen for set-up prior to using the automatic mode.
- Fade/wipe to color backgrounds witch are variable using a simple slide control. Standard fade-to-black is also possible.
- Create "soft-edge" patterns and vary from a hard clean pattern edge to a soft, halo-like effect using a slide control.
- Variable pattern shapes using the slant angle slide control. A virtually infinite variety of shapes and patterns are possible.
- Automatic transition time for fades and wipes is variable from one-half to as long as 5-sec.
- For the more technical user, video sources can be either synchronous...any video source can be used—VCR's and cameras.

### SPECIFICATIONS

**VIDEO Color System:** NTSC. **Input:** Connectors: RCA phono jacks. Level: 1V nominal, 0.4V to 1.4V p-p. **Input Impedance:** 75 ohms. **Output:** Connectors: RCA phono jacks. Gain: Unity  $\pm$  1 dB (into 75 ohms). **Frequency Response:**  $\pm$  1 dB to 4.2 MHz. **Distortion:** Diff Phase (10-90% APL): less than 2 degrees. Diff Gain: (10-90% APL): less than 5%. **Tilt:** less than 2%. **Channel Isolation:** greater than -55 dB @ 3.58 MHz. **AUDIO:** Connectors: RCA phono jacks. **Frequency Response:** 20-20kHz  $\pm$  1 dB. **Gain:** Unity. **Hum and Noise:** -60 dB max. **Crosstalk:** -60 dB max. **Output Level:** 4V p-p max. **GENERAL:** Inputs: 2 video, 2 pair stereo audio. **Outputs:** 1 Effects video, 1 Preview video, 1 pair stereo audio. **Power Requirements:** 115 Vac 50-60 Hz, 10.0 W. **Size:** 16.79" W x 2.97" H x 9.88" D. **Weight:** 8.44 lbs.

## KIWI LARGE VIDEO CAMERA BAG

MODEL VCR-200

OUR PRICE **\$55.00**

17 x 10 x 12. 3-3/4 lbs. Our most popular Video Bag, holds most medium and large cameras—only 3 inches higher than the VCR-100. No need to collapse handles or microphones—always camera-ready.



## KIWI VIDEO RECORDER BAG

MODEL VR-1150 OUR PRICE **\$55.00**

For Panasonic (5500, 6600), Quasar (5420), Magnavox (8382), Canon, Nikon, Olympus, GE, Philco and Sylvania. Video Recorder Bag converts from shoulder bag to back-pack. 10 x 4 x 10". 1 lb.

MODEL VR-1175 OUR PRICE **\$55.00**

For Panasonic (8500, 6400), Quasar (5420), Magnavox (8382), Canon, Nikon, Olympus, GE (CVP4022), Philco, Sylvania

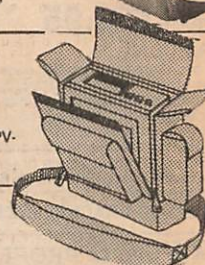


## KIWI VIDEO RECORDER BAG

MODEL VR-1250

OUR PRICE **\$55.00**

For RCA (VJP900, VDP150), Hitachi (VT3P, VT7A), Pentax (PV-R1000A) and Minolta. Video Recorder Bag converts from shoulder bag to back-pack. 12 x 5 1/2 x 10 1/2" 1 lb. 4 ozs.



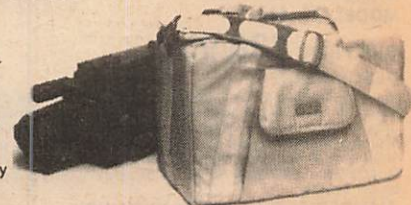
## BP VIDEO CAMCORDER BAG FITS ALL TYPES OF CAMCORDERS AND VIDEO CAMERAS

OUR PRICE **\$49.95**

MODEL VC-20

### DESCRIPTION

This unique video case has three adjustable dividers which let you compartmentalize the bag for your own needs. The case is made of Cordura<sup>®</sup>, a durable nylon fiber created by Monsanto. The fabric is lightweight, extremely durable, highly abrasion resistant, unaffected by rot or mildew. Has shoulder strap or hand grip for easy carry. Outside dimensions: 15-3/4" W x 8-1/2" D x 10" H.





## JNEL CORP. "CABLEMASTER™" CABLE/VCR PROGRAMMER

MODEL CM-1 OUR PRICE **\$99.95**

### FEATURES

- 14-day, 8-event timer. • Quartz clock.
- Displays week, day, time, channel and mode of operation.
- Automatic sequencing of programmed events. • No installation.
- Eliminates the need for cable-ready VCR. • Simple, easy programming.
- Unique personality plug-in modules assure compatibility with any make and model of infrared cable TV converter/descrambler.

### DESCRIPTION

The CableMaster cable/VCR programmer solves your problem by adding its 8-event, 2-week time-control feature to your converter/descrambler which allows the unattended recording of any combination of channels (including "paid-for" premium services). CableMaster controls your cable converter/descrambler by transmitting infrared codes similar to those "sent" by hand-held remotes. Thus, there are no connections to be made to either the converter/descrambler or to your VCR.

A "personality" module that plugs into CableMaster's rear panel carries the necessary codes to control the specific converter/descrambler used in your area. This unique approach makes it possible for CableMaster to add its time-control features to virtually any converter/descrambler that has infrared capability. Should you move or should your cable company ever change "boxes", you simply buy the corresponding personality module and plug it in. Personality modules will also be available for controlling satellite receivers with infrared features.

### CableMaster's Personality Modules

MODEL	COMPATIBLE CABLE CONVERTERS	OUR PRICE
PM-010	Jerrold 400 (DRX series) Jerrold LCC-58 Jerrold LCC-91	<b>\$29.95</b>
PM-011	Jerrold 450 (DRZ series)	<b>29.95</b>
PM-020	Oak RTC-56 Oak RKDM-400	<b>29.95</b>
PM-021	Oak Sigma	<b>29.95</b>
PM-140	Teknika 6510	<b>29.95</b>
PM-150	Archer 15-1285	<b>29.95</b>

**Restore Programmability  
To Your VCR!**

**NEW!**



## BP UHF CABLE CONVERTER WITH FINE TUNING 46 CHANNEL

MODEL V-5746 OUR PRICE **\$19.95**

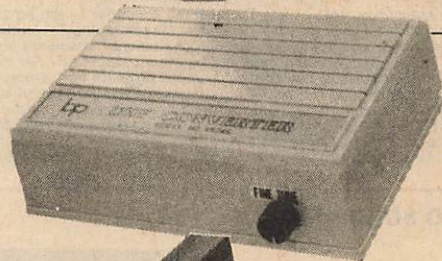
DIMENSIONS (WHD): 6-1/2" x 2-1/8" x 4-1/2".

### FEATURES

- 46 channels. • Fully shielded oscillator eliminates herring bone distortion.
- For Beta/VHS recording. • High performance at an economy price.
- Record and use TV's remote control. • Allows complete programming of VTR.
- Super color quality for watching or recording and selectable channels.
- Receives midband, superband and all VHF TV channels on UHF, for all kinds of TV set.
- Trimmer allows frequency adjustment of  $2 \pm$  mHz.

**SPECIAL!**

**FOR  
CABLE TV**



## BP VIDEO CONTROL CENTER

MODEL V-4802 OUR PRICE **\$19.95**

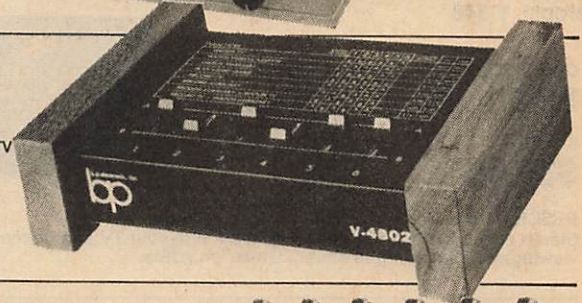
### DESCRIPTION

The Video Control Center Model V-4802 provides remote control access of all your Video, TV or Cable inputs to your TV set or Big Screen TV from one convenient location by merely flipping a switch.

### FEATURES

- No need to change cables to access your desired Video or TV input to your TV set.
- One output, your TV set or Big Screen TV. • Four inputs can handle whatever you desire to send to your TV set.
- Small, compact, lightweight. • Completely passive, i.e. no AC power required to operate.
- Auxiliary input and output provides added flexibility to complete your control center. • Cables Not Supplied

**EXTRA SPECIAL!**



## BP VIDEO SWITCHER

MODEL V-4801 OUR PRICE **\$19.95**

### DESCRIPTION

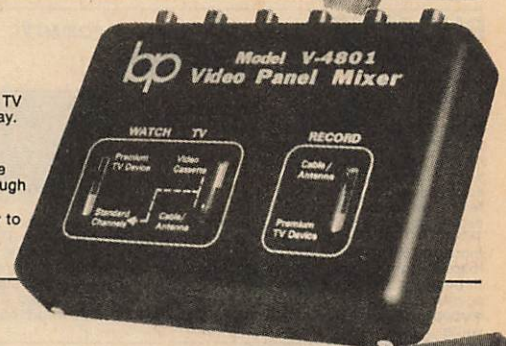
Now all you do is flip a switch to watch a program on any channel, while simultaneously recording a program on any cable or pay TV channel, or vice versa. Plus, you can use your recorder's programming feature to record cable or pay TV programs while you're away. The Switcher also allows you to use your remote control device while recording. That's something you can't do on many video systems.

The Switcher is a completely pre-assembled unit that you simply 'plug into' your system using the special cables, included. Anyone can do the job in less than 5 minutes—with no need for special tools or technical know-how. Best of all, the Switcher is small enough (5 x 7 x 1") and good looking enough to fit in beautifully with your video components.

With the sizable investment you have in your TV, VCR and Cable/Pay TV systems, the Switcher gives you an easy, inexpensive way to greatly increase the value and enjoyment of that investment.

- Cables Not Supplied

**EXTRA SPECIAL!**

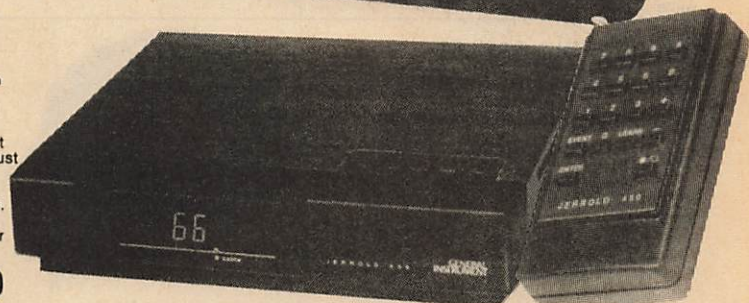


## JERROLD 68 CHANNEL CORDLESS CATV CONVERTER with BUILT-IN A/B SWITCH FOR DUAL CABLE SYSTEMS

MODEL DRZ OUR PRICE **\$99.95**

### FEATURES

- Convenience—You can remotely control your TV set from virtually any viewing distance. There is no cord that ties you to your TV. No cord to limit your TV viewing position.
- Entertainment—You may receive up to 68 TV channels. Your channel capacity is limited only by the number of channels your cable company carries.
- Remote TV Control—You can change channels, turn your TV set on or off, or even fine tune your set without leaving your comfortable viewing position. Constant interruptions previously required to adjust your set are a thing of the past.
- On/Off button. • Channel selection.
- Channel Stepping: By depressing either the '+' or '-' channel button, change channels up or down.
- Fine Tuning: Ensure that the AFC (or AFT) control on your TV set has been turned off.
- Secondary Controls: Secondary controls on the top of the receiver are provided so that the converter may still be used even if the transmitter is misplaced or its battery fails.



For Dual Cable Systems Order Optional A/B Adaptor MODEL A/B OUR PRICE **\$20.00**

**CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446**



# STEREO SIMULATORS

## BP TV TO STEREO AUDIO ADAPTOR/ENHANCER

MODEL V-2250  
OUR PRICE **\$19.95**

### DESCRIPTION

The V-2250 easily connects to any TV and Stereo Amplifier — letting you enjoy simulated stereo sound from all your favorite TV shows. Makes taping TV Audio simple — TV can be located any distance from stereo. Delivers two channels of simulated stereo.

### FEATURES

- The V-2250 gives you simulated stereo from all your favorite TV shows.
- With noise eliminator and special output level controls.
- Frequency response: 50 Hz - 15,000 KHz.



PERFECT FOR MTV

### SPECIFICATIONS

- Insertion Loss - 3dB max.
- Volume Effect - 40dB min.
- Noise Elimination: 6dB min.
- Dimensions: W 5 1/8" x H 2 1/2" x D 3 1/4".

## RHOADES STEREO TO TV ADAPTOR

MODEL TE-200  
OUR PRICE **\$24.95**

PERFECT FOR MTV

### FEATURES

- Teledapter gives you simulated stereo from all your favorite TV shows.



### DESCRIPTION

The TE-200 Teledapter easily connects to any TV & Stereo Amplifier — letting you enjoy simulated stereo sound from all your favorite TV shows. Makes taping TV Audio simple — TV can be located any distance from stereo. Delivers two channels of simulated stereo — Coupling network matches TV impedance to that required by stereo amplifier — to maintain frequency response — Transformer isolated input and output protects both stereo and TV units. Provides a constant impedance load for the TV output amplifier regardless of whether or not the TV speaker is used. Provides sufficient gain to drive the stereo safely and efficiently. Plugs into tape or auxiliary input of any amplifier, also AM tuners, mono records, video tape recorders or any source you wish to simulate stereo with. The TE-200 has a high level input along with an adjustable level control. Frequency Response: 50-13,000 kHz. Size: 5-1/4" x 1-1/2" x 3".

## BP TV STEREO SOUND SIMULATOR

MODEL V-646  
OUR PRICE **\$5.95** each

6 FOR **\$30.00**

PERFECT FOR MTV



### DESCRIPTION

Stereo sound simulator. Simple connection to your TV and stereo. Now enjoy TV viewing while listening in stereo. Great for VCR's.

## RHOADES TELE-AMP PERFECT FOR MTV! PERFECT FOR MTV NEW!

MODEL TA-450  
DESCRIPTION OUR PRICE **\$94.95**

The Stereo-Plex generator transforms the mono-audio signal into two sparkling left and right channels of Stereo-Plex. Mono sounds, even when played through two speakers, appear to come from one direction the center. Stereo and Stereo-Plex sounds come from two directions. If you already have a stereo TV or VCR, no problem. Just plug them in (TA-450). Since most TV and Cable programming is mono, the Stereo-Plex circuitry will pick up where your stereo TV or VCR stops short. When there is a stereo program present, just cut the Stereo-Plex off, and the stereo signal will go through the stereo amplifier only (TA-450). Drive most any size stereo speakers to room-splitting sound. Low distortion, 0.01% typical at full power, and a broad 20 to 20,000Hz frequency response assure smooth reproduction. The TA-450 Tele-Amp® operates on 110-120V AC @ 16 watts.



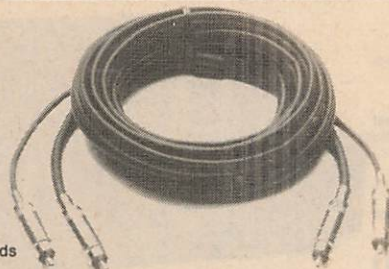
## BP DUBBING CABLES with GOLD CONNECTORS

MODEL V-3622  
OUR PRICE **\$12.95**

2 FOR **\$20.00**

### FEATURES

- Deluxe 10 Ft. Dubbing Cable for Video & Audio
- Two Gold Plated RCA Plugs on Both Ends



## RHOADES STEREO SYNTHESIZER AND STEREO SWITCHER

MODEL TE-250  
OUR PRICE **\$49.95**

### FEATURES

- Synthesizer bypass
- Two stereo inputs
- One mono low impedance isolated input
- Output level control



### DESCRIPTION

The TE-250 uses synthesizing stereo sound from mono sources, TV, VCR, record, tape, etc. Adding auxiliary inputs to stereo system.

### SPECIFICATIONS

Size: 7"W x 2"H x 6"D Frequency Response: 50 to 16,000 Hz Case: Aluminum

## RHOADES OMNI-PLEXER REAR CHANNEL DECODER/AMPLIFIER FOR SURROUND SOUND PROCESSING

MODEL TA-1001 OUR PRICE **\$99.95**

NEW!



### FEATURES

- Easy hookup to the front channel stereo amplifier speaker terminals.
- Rear channel volume is controlled by front channel amplifier volume control.
- Built in rear channel stereo amplifier to drive any rear channel speakers.
- Will decode rear channels from all stereo and synthesized stereo sources, TV, VCR, FM Tapes, Satellites and Records.

### DESCRIPTION

Most all stereo programming has information contained on the two channels, when properly decoded, which can provide two additional channels. These techniques are becoming widely used in movie theaters throughout the world. Regardless of the name they go by, the effect is to create, a surround type of sound, that provides ambience (delayed information), and a multi-channel wrap around effect, that literally adds a new dimension to stereo audio. Now, with the TA-1001 these same sound effects can be enjoyed at home.

## RHOADES STEREO SYNTHESIZER/AUDIO SWITCHER/ AMBIENCE PROCESSOR/NOISE REDUCTION UNIT

MODEL TE-600  
OUR PRICE **\$119.95**



### FEATURES

- Three stereo inputs; one mono high impedance input; one mono low impedance isolated input; tape monitor loop
- Off/On bypass for all sections
- Adjustable input level

### DESCRIPTION

Adds inputs to component stereo; synthesizing stereo sound from mono sources; adding ambience to stereo sources; dynamic noise reduction for mono or stereo sources.

### SPECIFICATION

Size: 9.5"W x 3"H x 7"D Frequency Response: 20 to 20,000 Hz Case: Black aluminum and walnut Power: 110V AC



## BP VIDEO-CINE CONVERTER

MODEL V-1701

OUR PRICE **\$34.95**

### Description

The BP Video-Cine Converter is an optical device that allows the easy transfer of slides, 8mm or 16mm movie film to VCR tape. The Video-Cine Converter's precision optics put the image from your movie or slide projector on a high-contrast, rear projection screen. Your video camera shoots that image, can color-correct faded pictures, add narration or other sound. Can be used with any video camera or slide projector. If your video camera lacks close-up capability, you will need a macro lens attachment.

### LENS ATTACHMENTS

Model	Description	Our Price
V-10	Fisheye	\$ 49.95
V-11B	Close-up/Wide-View	49.95
V-12	Telephoto	105.00
V-14	Macro Lens	12.95

Patent Pending



## REMOTE MAGIC Home Video Control Products

### VIDEO LINK REMOTE XTRA-LINK

MODEL 170

OUR PRICE **\$49.95**



### DESCRIPTION

It's like having an extra VCR or cable box—XTRA-LINK ends the endless walk between rooms. No other video accessory available today offers as much added control and convenience. It's common to feed video signals through coaxial cables from one room to another. But as everyone knows, the control tape, disc or channel selection is still located with the video components in the main viewing room.

XTRA-LINK provides full function remote control for any kind of remote controlled video component regardless of location. Once XTRA-LINK is installed on a TV—for example, in a bedroom—total control of VCR, Video Disc or Cable Selector is possible by simply using the hand-held wireless remote controller. No matter how far away the components are located in the house, you can stop, start, fast forward, or perform any function available on the controller.

## TEKNIKA STEREO TELEVISION CONVERTER

MODEL TVC-22

OUR PRICE **\$129.95**



### FEATURES

- Multi-Channel TV Sound Decoder: Provides for enjoyment of stereo and separated audio program, (for bilingual broadcasting), events.
- Easy To Connect: There are no internal connections, so you can hook up the Teknika TVC-22 to your TV set and stereo amplifier in minutes.
- CATV COMPATIBLE: Gives access to all VHF and UHF channels, plus cable midband A-1.
- Direct Channel Access: Favorite channel can be preset and then later accessed by using the 10 channel selector buttons.
- Electronic Synthesizer Tuning System: Built-in electronic tuning system with AFT (Automatic Fine Tuning), automatically locks onto the best reception point and holds it.

### SPECIFICATIONS

Power Source: AC 120V, 60 Hz. Power Consumption: 20W. Channel Coverage: VHF 2-13, UHF 14-69, CATV midband A-1. Controls: Power on/off switch, direct channel access buttons (10), SAP selector, forced mono switch, preset switch, fine up/down button, volume control (mechanical). Antennas: VHF and CATV 75 ohms (unbalanced), UHF 300 ohms (balanced). RF Output (to TV antenna): Channel 3 or 4, 75 ohms (unbalanced). Audio Output: Left and right (controlled), headphone (controlled). Indication: Channel number (7 segments), stereo (green), SAP (red), SAP ON (dot), forced mono (dot). AFT: Yes. Cabinet: Plastic front, metal top and rear. Dimensions: 11.41"W x 2.95"H x 7.48"D. Weight: 5.28 lbs. UL approved.

## BP DUBBING CABLES with GOLD CONNECTORS

MODEL V-3622

OUR PRICE **\$12.95**

2 FOR **\$20.00**

- Deluxe 10 Ft. Dubbing Cable for Video & Audio
- Two Gold Plated RCA Plugs on Both Ends



## BP VIDEO CASSETTE CABINET

MODEL V-6636

OUR PRICE

**\$29.95**



### FEATURES

- Stores 35 VHS or BETA cassettes.
- Each drawer holds 12 video cassettes.
- Keeps video cassettes clean and safe.
- Unlimited mounting.
- Center drawer lock comes with lock key.
- Dimensions: 26"W x 16-1/2"D x 6"H.

**SPECIAL!**

## BP VHS & BETA VINYL LIBRARY CASES

MODEL V-6650 VHS

OUR PRICE **\$1.50** each

10 FOR **\$12.50**

50 FOR **\$50.00**

MODEL V-6660 BETA

OUR PRICE **\$1.50** each

10 FOR **\$12.50**

50 FOR **\$50.00**

### FEATURES

- Single cavity VHS or BETA cassette album.
- Excellent for attractive home cassette storage or movie rental.



**NEW!**

## VIDEO LINK WIRELESS REMOTE SWITCHER

MODEL XL-400

REG. \$199.95

OUR PRICE **\$149.95**



### FEATURES

- Multi-purpose 4-input electronic switcher.
- Stand-alone 4-in, 3-output switcher switches TV-1, TV-2 and VCR to four selectable inputs (cable, antenna, VCR, video disc for example).
- Hand-held remote allows TV-1 source to be remotely switched.
- When used with Model 170 XTRA-LINK allows TV-2 source to be remotely switched with its own hand-held remote control.
- Pushbutton included for remote switching of VCR/TV-3 source.
- Three panel buttons sequentially select inputs.
- Active input for each output is announced on 12 LED matrix "scoreboard."
- Trouble-free, all electronic switching provides millions of operations.
- 75 dB of isolation for undisturbed TV pictures and VCR recording.
- Extremely low (7.5 dB) insertion loss. • XTRA-LINK ready.



## BP electronics

### STABILIZER/IMAGE ENHANCER/RF CONVERTER/VIDEO FADER/2-WAY DISTRIBUTION AMPLIFIER

All In One Video Processor  
MODEL V-1880

OUR PRICE **\$79.95**  
Dimensions: 13-1/4"W x 6-3/4"D x 2-3/4"H"

**SPECIAL!**

FOR VCR TAPES!  
CABLE KIT (Hook-up Cables) \$11.75  
Contains: 1 F-3F ..... \$1.25 each  
6 V-3606 ..... \$1.75 each

The model V-1880 is one of the most versatile video processors on the market today. It contains five units in one. The V-1880 Video Processor can be used as a stabilizer (video guard remover), image enhancer, video to RF converter, video fader for professional fade in and fade out scenes and a dual output distribution amplifier.

#### VIDEO PROCESSOR FUNCTIONS

**Stabilizer** - Place stabilizer switch in 'ON' position. The lock control will correct the entire range of copy guard distortion such as jitter, vertical roll or a black bar travelling through picture. With the lock control fully counterclockwise, slowly turn it clockwise until the picture locks vertically or the black bar disappears.

If the picture occasionally drifts vertically or a stationary black bar appears, turn control further clockwise. If the picture occasionally jitters vertically, slightly adjust the tracking control on your VCR. If that does not help, then try turning the lock control slightly counterclockwise. A stable picture will be obtained on about 1/4 of the controls range, but it is best to keep it near the counterclockwise end of this range.

Once set for a given type of tape, further adjustment should not be required.

**Enhancer** - The enhancer function is controlled by the Detail control. Minimum enhancement is in the full counterclockwise position. The Detail control will let you attain best picture for your own preference. Rotate clockwise until visible grain develops in the TV picture coming from the recording unit. Reduce gain control until picture is sharp and clear. Image Enhancer effectiveness will vary depending on the source material. The better the source material the greater the possible improvement. On the other hand, enhancement of very poor quality material will produce minimal results. You cannot expect a great deal of improvement from a low quality source as a third generation six hour tape.

**RF Converter** - The RF Converter allows your TV set to receive video and audio signals from your image enhancer, guard stabilizer, video camera, computer, VCR, etc. The outputs of many video components cannot be directly hooked up to the VHF antenna terminals on your TV set. This problem is solved by utilizing this feature.

The direct video signal from any video component is can be fed into the V-1880 and converted to a usable RF signal that can go to your TV antenna terminals.

**Video Fader** - This function can be used to produce professional fade ins and fade outs. Use it to make gradual transitions from full video to black and back to full video.

To fade out, simply place fader control in the 'OUT' position and the V-1880 will automatically perform a fade out function.

To fade in, simply place fader control in the 'IN' position and the V-1880 will automatically perform a fade in function.

### IMAGE ENHANCER

MODEL V-1860

OUR PRICE **\$49.95**

Dimensions: 8"W x 6 1/2"D x 2 1/4"H

CABLE KIT...\$10.50 Contains: 6 V-3606

The Model V-1860 Image Enhancer will dramatically improve the performance of video cameras and VCR's (off-the-air or second generation recordings), by compensating for deterioration of detail and sharpness. The detail control increases enhancement by improving the image sharpness, making detail more intense and flesh tones more natural. The gain control reduces snow and other low level luminance-noise brought up by too much enhancement. The gain control will also tune down the video signal eliminating excess signal which causes buzzing and distortion. Both detail and gain controls are inter-related. Adjustment of one can slightly effect the other. For use with two slave VCR's, simply connect the V-1860 in line between your camera or master VCR. The output of the V-1860 Image Enhancer has a video output. This video output cannot be directly attached to the antenna terminals of your TV set. Attachment requires the use of a V-1885 video to RF Converter.

The V-1860 Image Enhancer includes a video distribution amplifier with two video outputs, allowing you to make two copies at once without loss in signal level.

### VIDEO GUARD STABILIZER

MODEL V-1875

OUR PRICE **\$39.95**

Dimensions: 11-1/2"W x 7-1/4"D x 3-3/8"H"

FOR VCR TAPES!

CABLE KIT (Hook-up Cables) \$10.50  
Contains: 6 V-3606 ..... \$1.75 each

The Model V-1875 is a Video Guard Stabilizer that also has a self contained A&B switch and a bypass switch. Many movies, concerts and special programs available for sale or rental are copy guarded to prevent you from making copies. The V-1875 Video Guard Stabilizer removes the copy guard and allows you to make copies. Many TV sets will not play prerecorded tapes because the copy guard causes the picture to roll and jitter, turn to snow or disappear altogether. The Model V-1875 Video Guard Stabilizer stops this at the source by completely removing the copy guard from the signal.

The A/B switch enables quick selection of one or two VCR's without disconnecting cables. The bypass switch enables quick comparison of VCR output with or without a stabilizer.

### VIDEO GUARD STABILIZER/RF CONVERTER

MODEL V-1877

OUR PRICE **\$49.95**

Dimensions: 8"W x 6 1/2"D x 2 1/4"H

**SPECIAL!**

CABLE KIT ..... \$11.75  
Contains: 6 V-3606  
1 F-3F

The Model V-1877 is a Video Guard Stabilizer/RF Converter that also has a self contained A&B switch and a bypass switch. Many movies, concerts and special programs available for sale or rental are copy guarded to prevent you from making copies. The V-1877 Video Guard Stabilizer/RF Converter removes the copy guard and allows you to make copies. Many TV sets will not play prerecorded tapes because the copy guard causes the picture to roll and jitter, turn to snow or disappear altogether. The Model V-1877 Video Guard Stabilizer/RF Converter stops this at the source by completely removing the copy guard from the signal. The A/B switch enables quick selection of one or two VCR's without disconnecting cables. The bypass switch enables quick comparison of VCR output with or without a stabilizer. The built-in RF Converter gives the model V-1877 an RF output which can be fed directly to the antenna terminals of a TV set. This enables you to remove the copy guard from a pre-recorded tape and view it on a TV using only on VCR. Without a built-in RF converter, you would need two VCR units to accomplish this. If a second VCR is added at a future date, you can still use the V-1877. A separate video and audio output are provided for hook up to a second VCR.

Use as an RF Converter only.

By using the V-1877 Video Guard Stabilizer/RF Converter in conjunction with your TV, you can feed direct audio and video signals from any video device such as a video camera, computer, portable VCR, etc.

### RF CONVERTER

MODEL V-1885

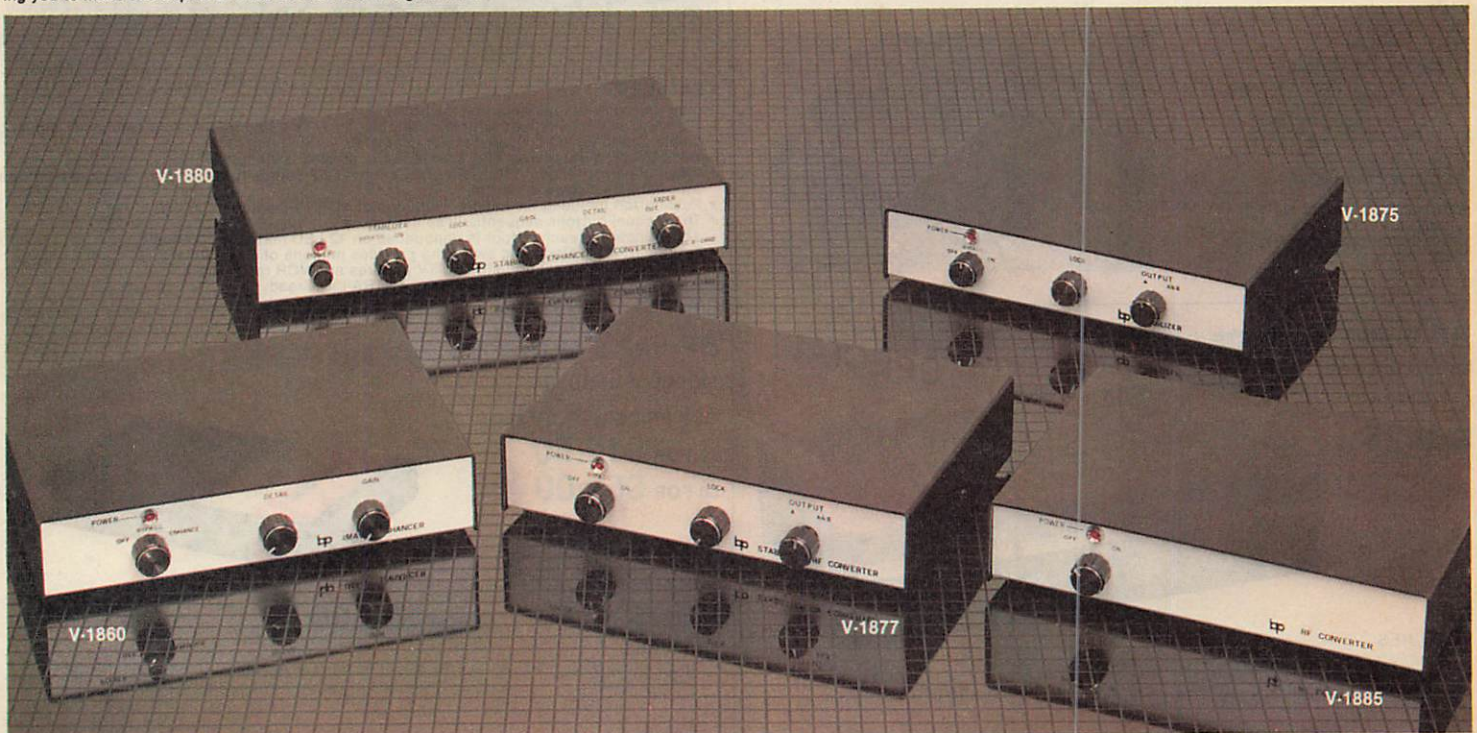
OUR PRICE **\$39.95**

Dimensions: 8"W x 6 1/2"D x 2 1/4"H

CABLE KIT ..... \$4.75  
Contains: 2 V-3606  
1 F-3F

The Model V-1885 RF Converter also known as an RF Modulator allows your TV set to receive video and audio signals from your image enhancer, guard stabilizer, video camera, computer, VCR, etc. The outputs of many video components cannot be directly hooked up to the VHF antenna terminals on your TV set. This problem is solved by using the Model V-1885 RF Converter.

The direct video signal from any video component is fed into the V-1885 RF Converter and is converted to a usable RF signal that can go to your TV antenna terminals. The V-1885 RF Converter allows your VCR output to feed two TV sets at the same time, with virtually no signal loss. It can also be used to feed a video switcher input.







## BP 61 CHANNEL WIRELESS REMOTE

MODEL V-7661

OUR PRICE **\$69.95**

FOR CABLE TV

### FEATURES

- Infrared remote control TV on/off, channel selection & fine tuning.
- Full 61 channel capability.
- LED digital channel display.
- Micro Processor controlled PLL operation.
- Provide convenient and comfortable TV program enjoyment.
- Converter panel controllable for channel up, down, on/off, fine tuning.
- Works with all TV models, compatible with MATV/CATV system.

### SPECIFICATIONS

CONVERTER: Input Bandwidth: 54-402 MHz. Output Channel: Channel 3. Input/Output Impedance: 75 ohms. Gain: 2-7 dB. Noise Figure: 11 dB nom. 13 dB max. Cross Modulation: -60 dB min. (60CH IN, each at + 15 dB mV). Fine Tuning Range: ± 3 MHz in 125 KHz steps. Frequency Stability: ± 50 KHz. Input Return Loss: 8 dB min. Output Return Loss: 10 dB min. Local Oscillator Leakage: -15 dBmV max. at input. Power Consumption: 12 watts at 120 Volts AC 60 Hz. TRANSMITTER: Range: 8m (25 feet) ± 30° Angle. Power: Standard 9V Volts battery.

## JERROLD 58 CHANNEL CORDLESS TV CONVERTER

MODEL LCC-58 (DRX-3-105)

OUR PRICE **\$89.95**

FOR CABLE TV

### FEATURES

- Convenience-You can remotely control your TV set from virtually any viewing distance. There is no cord that ties you to your TV. No cord to limit your viewing position.
- Entertainment-You may receive up to 58 TV channels. Your channel capacity is limited only by the number of channels your cable company carries.
- Remote TV Control-You can change channels, turn your TV set on or off, or even fine tune your set without leaving your comfortable viewing position. Constant interruptions previously required to adjust your set are a thing of the past.
- Adaptability-You may attach your Jerrold 400 to any age or model of TV set in minutes. No tools required.
- Channel Stepping: By depressing either the '+' or '-' channel button, channels may be changed up or down.
- Fine Tuning: Ensure that the AFC (orAFT) control on your TV set has been turned off.
- Secondary Controls: Secondary controls on the top of the receiver are provided so that the converter may still be used even if the transmitter is misplaced or its battery fails.
- On/Off button. • Channel Selection.
- Available in channel 2.

## TEKNIKA WIRELESS REMOTE CONTROL TV TUNER & CABLE CONVERTER

MODEL 6510-T

OUR PRICE **\$149.95**

For CABLE TV or UHF/VHF Antenna VOLUME CONTROL!

### FEATURES

- Works With Any TV Set - Converts any non-remote TV to full remote control, up to 140 channel capability. Provides improved picture quality and stronger reception capability with most sets. Perfect for easy chair, bedroom, or convalescent viewing. Serves as a simple, inexpensive repair for a TV's defective tuner.
- Off-Air and Cable Compatible - Allows reception of signals off-air (through a master, external or internal antenna system) and through cable. Offers up to 140 channel selection-off-air VHF 2-13, UHF 14-83; CATV: VHF 2-13, mid-band A-1, superband J-W, hyperband AA-ZZ, AAA-BBB and IRC 4'.
- Quartz Frequency Synthesizer Tuning - With added Phase Lock Loop (PLL) circuitry, the 6510-T automatically locks onto the best reception point and holds it.
- Direct Access/Memory Scan Selection System - Automatically tunes to the next channel set into memory when the UP or DOWN scan button is pressed.
- Ultra-Compact, Wireless Remote Control Hand Unit - Controls direct access/memory scanning, on/off, volume (in 48 steps), muting and A/B antenna switching.
- A/B Antenna Selection. • Quick and Easy To Install.
- Separate Video/Audio Outputs - Provided in addition to regular RF output to allow integration of the tuner with a hi-fi system and video monitor/TV. Direct connection delivers enhanced performance and minimizes signal loss.
- Stereo Broadcast Ready - Provided with a multiplex connector output (included).
- Advanced Design Elements - Include RF amp, shielded inputs/outputs, auto gain control (AGC) and auto frequency control (AFC) to maintain color purity and picture clarity.



V-7779  
V-7780

V-7777  
V-7778

## BP VHS & BETA TAPE REWINDERS with counter

MODEL V-7779 VHS OUR PRICE **\$59.95**

MODEL V-7780 BETA OUR PRICE **\$59.95**

### FEATURES

- Mechanical digit counter for tracking down desired tape positions.
- Fast Forward with soft button action. • Rewind: Controlled speed tape rewinding.
- Automatic off when rewinding is completed. • Stop/Eject: Soft hydraulic action ejection.
- Prevents accidental erasing, because it does not automatically erase.
- Prevents wear and tear on valuable tapes. • Shielded motor prevents demagnetization.

## VHS & BETA TAPE REWINDERS

MODEL V-7777 VHS OUR PRICE **\$39.95**

MODEL V-7778 BETA OUR PRICE **\$39.95**

### DESCRIPTION

Protect your valuable VCR heads with these AC operated, circuit protected tape rewinders. A key product for use by retail rental store locations.

### FEATURES

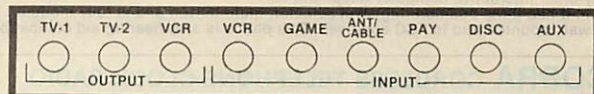
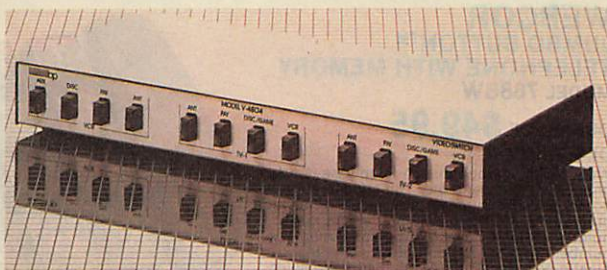
- Led "power on" indicator. • Dimensions: 6-1/4W x 13-1/4D x 5-3/4H".

## BP VIDEO SWITCH

MODEL V-4804

OUR PRICE **\$39.95**

RECORD A PAY CHANNEL WHILE VIEWING A STANDARD CHANNEL



BACK PANEL SETTINGS  
V-4804

Dimensions: 14-3/4W x 7-1/8D x 2-1/4H"

### DESCRIPTION

The BP V-4804 is a switcher that can accept six inputs and direct them to three outputs. By utilizing a switcher similar to the one used on home VCR's we avoid signal loss incurred by using splitters. The V-4804 eliminates the backbreaking chore of connecting and disconnecting cables in the back of your TV. You can record a premium channel while viewing a regular channel. Push button control of your Video Entertainment System gives you selection at the touch of a button. This system has the input for two TV sets simultaneously for a variety of video sources. You can connect an Antenna/Cable, VCR, Video Disc Player, Home Computer or Video Game.



# ANSWERING SYSTEMS

## TTC DIALESS I™

It Can Dial The Call At  
The Sound Of Your Voice  
MODEL 6010-T

OUR PRICE

**\$149.95**

### DESCRIPTION

Everybody in the family, from the youngest to the oldest, will love using the amazing Dialess I, the phone that lets users call anyone they wish by merely saying a name.

The secret ingredient of Dialess I is a powerful, state-of-the-art micro-computer right inside the telephone. Once told the names of he people to call, and then after recording their telephone numbers, the user never has to use his fingers or memory to dial them again. **Which numbers to store?** The Dialess I has 40 memories, enough for all family members to each have several of their own. Each memory has room for 21 digits to accommodate long distance prefixes. Store those numbers used most often, like emergency numbers for police or fire, or those which are most difficult to remember. The Dialess I even has a stackable memory for overseas, MCI or Sprint access codes.

### SPECIAL FEATURES

- **Advanced Computer technology:** Calls are dialed almost as quickly as the name is spoken.
- **High-tech styling & engineering.** • **Easy to install.**
- **Language adaptability:** The Dialess I can be used with any language or accent.
- **Visual confirmation of number:** Whether dialing verbally or by keying, The Dialess I gives an easy-to-read digital readout of the number as it is dialed.
- **Auto redial of last number:** The Dialess I, will automatically redial the last number called.
- **Built-in clock:** Alarm and call timer The Dialess I has a digital clock, an alarm to remind you of appointments or to make an important call, and a call timer to let the user know how long they've been on the telephone.



## AUDIOVOX COMPACT CORDLESS PHONE with NEW 46/49 MHZ FREQUENCY MODEL AT-12

OUR PRICE **\$49.95**

### FEATURES

- 46/49 Frequency improves the quality of your conversation.
- Pushbutton dialing.
- Works on rotary or tone lines.
- Up to 700 ft. range.
- 3 LED's on base indicating Power, Charge and In-use.
- 2 LED's on handset indicating "Battery Low" and "Talk" modes.
- Last number redial.
- Automatic lock-out feature when handset is in base.



## COBRA ANSWERBACK™ with BEEPERLESS REMOTE

DUAL CASSETTE TELEPHONE  
ANSWERING SYSTEM  
MODEL AN-8500

OUR PRICE **\$99.95**

### DESCRIPTION

The AN-8500 is a microprocessor-controlled answering system with beeperless remote control, dual cassettes, "VOX", Selectable "Toll Saver", LED call counter and "Memo Record" to record memo messages on incoming tape, at the machine.

MODEL AN-8400 OUR PRICE **\$89.95**

Same as above with Beeper Remote.

MODEL AN-8300 OUR PRICE **\$74.95**

### FEATURES

- Full microprocessor control features/functions. • "One-Touch" control for Auto-Answer and Auto-Play. • Automatic voice activation (VOX) for all messages. • "Electronic Bulletin Board" memo function to record household messages. • "Call Monitoring" to screen telephone calls at home.



## COBRA TELEPHONE ANSWERING SYSTEM MODEL ANP-3770

OUR PRICE **\$125.00**

### FEATURES

- **Remote Key**—puts telephone messages at your fingertips from anywhere in the world.
- **Save or Cancel Remote Mode Switch**—If you choose save, messages are retained for future reference. If you choose cancel, messages are automatically erased as new incoming messages are recorded.
- **Toll Saver**—lets you save the cost of a telephone call when calling in if you have no messages.
- **Microprocessor Control**—simplifies operation. Insures the quality the public expects from Cobra products.
- **Dual Cassette**—Outgoing and incoming message tapes you replace yourself without incurring costly charges.
- **Vox (voice activation)**—allows a caller to record messages up to 2 minutes long.
- **Disconnect Director**—The Cobra Answering system recognizes a dial tone and disconnects the phone line when a caller hangs up without leaving a message.

### TELEPHONE

- **Installs in seconds**—simply plug Cobra phone into Answering machine or into telephone jack.
- **End monthly telephone rental costs**—return your present phone to the telephone company.
- **10 foot coiled cord**—lets you walk while you talk.
- **Hook Switch**—allows hanging up on any flat surface.
- **Mute Button**—talk to someone in a room without putting your hand over mouthpiece.
- **Party on the line** cannot listen to your conversation.
- **Redial**—one button redial of last phone number called if you get a busy signal.

### SPECIFICATIONS

Announce tape: Endless cassette tape—20 sec. Incoming tape: C-60 cassette (leaderless), 2 minute max. per message, VOX controlled, automatic shutdown on hangup. **Tape speed:** RECORD/PLAYBACK: 1 7/8 inches/seconds FAST/FORWARD/REWIND: 120 sec. max time. **Dimensions:** 9 3/4" D x 3 5/8" H x 12 1/2" W. **Weight:** 6.5 lbs.



## TT SYSTEMS MESSAGE- MINDER 2-LINE ANSWERING MACHINE WITH REMOTE

MODEL MM-1802

OUR PRICE **\$119.95**

### FEATURES

- Simple installation - No monthly telephone charges.
- Monitor calls without caller's knowledge.
- Twin cassettes.
- Message received indicator.
- Two way record. • Adjustable ring delay. • Volume control. • Fast forward.
- Quick erase. • Power on indicator. • Built-in condenser microphone. • UL approved.

### DESCRIPTION

The Message-Minder is the first answerer capable of automatically taking call from two separate telephone lines. With the MM-1802 you can talk on one line while it takes in-coming calls on your unattached line. The line selector switch allow the user to choose: A) Line 1 operation only. B) Line 2 operation only. C) Automatic operation. When in the auto position, the Message-Minder will automatically take calls from either line. In-coming messages can be controlled by the calling party or voice-activated for a message up to 3.5 minutes. Dimensions: (MM-1802) 9"x11"x3", (Remote) 2-1/4"x2-1/2"x5/8"



## WEBCOR JUMBO BUTTON™ TELEPHONE WITH MEMORY MODEL 768SW

OUR PRICE **\$49.95**

### DESCRIPTION

Webcor Zip's jumbo button telephone is a fun phone for young and old. The style is contemporary and complements any decor. It has nine programmable memory numbers plus last number redial. Convenient personal memory number directory log on button with clear plastic covering. Pulse/Tone dial mode selector switch. It works on all dialing systems and is perfect for alternative telephone services or any other interactive computer telephone service. It has three position ring level selector, mute button and is fully modular. It can be desk or wall mounted and is FCC approved. This phone is also hearing aid compatible.



## COBRA CORDLESS TELEPHONE-CLOCK RADIO

MODEL RP-740S

OUR PRICE **\$59.95**

### FEATURES

- Makes and receives phone calls anywhere inside or outside your house (up to 100 ft. away from clock radio).
- No cords or wires to tie you down. • Automatically redials last telephone number called if you get busy signal.
- Mute: Allows you to talk to someone in the room without party on the line listening.

### AM-FM ELECTRONIC DIGITAL CLOCK RADIO FEATURES

- AM-PM indicator. • Easy to read large LED time display. Display High-Low dimmer switch. • Snooze alarm.
- Low silhouette design. • Attractive walnut styling. Slide rule dial indicator.

## CORDLESS TELEPHONE CLOCK-RADIO

MODEL RP-780S

OUR PRICE **\$135.00**

Mini Size Cordless Telephone-Clock Radio with Built-in Speakerphone.

- 9 Number Automatic Dialer with Computer Memory. • Last number redial. • Hands Free Conversation.
- The family can speak and listen to any caller.

OPTIONAL REMOTE RECHARGER (For recharging away from base unit) CA-21... \$12.95



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## COBRA FULL-FEATURED CORDED PHONES

MODEL ST-500

OUR PRICE **\$39.95**

### FEATURES

- Switchable pulse/tone dialing.
- 40 Number memory with last number redial.
- Battery back-up for memory.
- Fully modular design.
- Electronic ringer with HI, LO and OFF positions.
- Wall mountable.

**NEW!**



## COBRA FULL-FEATURED CORDED PHONE

MODEL ST-660

OUR PRICE **\$74.95**

### FEATURES

- Switchable pulse/tone dialing.
- 58 Number memory with last number redial.
- Hands free speakerphone.
- Clock • Call timer.
- Dialed number display.
- Alarm • Electronic hold.
- Fully modular.
- Battery back-up for memory.
- Wall mountable.



## COBRA FULL-FEATURED CORDED PHONE

MODEL ST-610

OUR PRICE **\$65.00**

### FEATURES

- Switchable pulse/tone dialing.
- 13 Number memory with last number redial.
- Hands free speakerphone.
- Clock • Call timer.
- Electronic hold.
- Fully modular design.
- Battery back-up for memory.
- Wall mountable.

**NEW!**



MODEL ST-662

OUR PRICE **\$89.95**

### FEATURES

- SAME AS ABOVE PLUS:
- 2-Line with conferencing capability.
  - Line status indication.
  - Separate ringer for each line.

## COBRA FULL-FEATURED CORDED PHONE

MODEL ST-600

OUR PRICE **\$59.00**

### FEATURES

- Switchable pulse/tone dialing.
- 13 Number memory with last number redial.
- Hands free speakerphone.
- Electronic hold.
- Fully modular design.
- Battery back-up for memory.
- Wall mountable.

**NEW!**



## COMDIAL 2001 PHONE

MODEL 2001-C

OUR PRICE **\$79.95**

### FEATURES

- Hands-free operation as a speakerphone while on desktop.
- Functions as handset when picked up.
- Four-number automatic dialer.
- Last number redial.
- Digital clock with timer.
- Display of number dialed.
- Electronic ringer with control.
- Programmable pause.
- Chain dialing.
- Hold button with LED indicator.
- Tone dial only. Desktop styling.



## COBRA ST-400 SERIES PIECE SLIMLINE CORDED PHONES

MODEL ST-401

OUR PRICE **\$17.95**

### FEATURES

- Works in conjunction with your present telephone system...touch button or rotary.
- Fully modular...plugs into wall jack no installation required. • Last number redial.
- Cancel key; disconnect without returning to base. • Mute key for privacy. • Lighted dial.
- Mechanical (bell type) ringer with on/off switch. • 10 foot coiled cord.

MODEL ST-407

OUR PRICE **\$24.95**

### FEATURES

- Switchable Pulse/Tone (DTMF) dialing. Works with MCI, Sprint\*, U.S. Telephone, All Net, etc.
- Cancel Key; to disconnect without returning to base.
- Mechanical (bell type) ringer with on/off switch.
- 10 foot coiled cord.
- Last number redial in pulse mode. • Fully modular. • No installation required.

MODEL ST-410

OUR PRICE **\$29.95**

- Switchable Tone or Pulse dialing allows telephone to be used on any phone system. Tone (DTMF) dialing work with alternate long distance services like MCI, Sprint\*, U.S. Telephone...All Net etc.
- Electronic memory stores up to 12 different telephone numbers for immediate access Fire, Police, Doctor, etc.
- Last number redial. • Cancel key.
- 10 foot coiled cord. • Mute key.
- 3 position ringer switch...tone, bell or off.
- Convenient lighted dial.
- Memory-index card with clear plastic cover.
- Fully modular. No installation required.

MODEL ST-412

OUR PRICE **\$59.95**

- 2-Line capability with hold and conferencing.
- Switchable tone or pulse dialing.
- Electronic memory for up to 12 different telephone numbers.
- 2 different sounds...bell type for line 1 and tone type for line 2.
- Memory-Index card with clear plastic cover.
- Last number redial. • Cancel key. • Mute key.
- 10 foot coiled cord. • Convenient lighted dial.
- Fully modular. No installation required.

All models: Cradle mounts easily on wall or sits on table or desk. Available in beige, brown or white.





# CORDLESS TELEPHONES

**COBRA ALL NEW CORDLESS TELEPHONES**  
46/49 MHz Make and Receive Calls. . Inside or Outside Up to 1,000 ft. From the Base Unit.

**COBRA FULL-SIZE CORDLESS PHONE**  
MODEL CP-440S

OUR PRICE **\$69.95**

**DESCRIPTION**

Full-size Cordless Phone, with 32 digital codes, one-way paging, call-waiting compatibility, SECUR-LOC, last-number redial and auto-standby.

MODEL CP-445S

OUR PRICE **\$89.95**

**DESCRIPTION**

Same as above, plus switchable tone/pulse dialing for use with MCI, Sprint, etc.

MODEL CP-447 OUR PRICE **\$110.00**

**DESCRIPTION**

Full-size Cordless Phone, with 32 digital security codes, switchable tone/pulse dialing for use with MCI, Sprint, etc; hands-free speakerphone, one-way paging, call waiting capability, last number redial; SECUR-LOC and auto-standby.

**COBRA FULL-SIZE CORDLESS PHONE**  
MODEL CP-450

OUR PRICE **\$129.95**

**DESCRIPTION**

Full-size Cordless Phone with 512 digital codes, selectable channels, switchable tone/pulse dialing, 9-number memory plus last-number redial, two-way paging and intercom, call waiting compatibility; "HOLD" key; SECUR-LOC and auto-standby.

MODEL CP-460

OUR PRICE **\$139.95**

**DESCRIPTION**

As above, plus speakerphone for hands-free conversation.

## COBRA REMOTE RECHARGER

MODEL CA-21  
Optional Remote  
Recharger For Charging  
Away From Base Unit.

**\$129<sup>95</sup>**



CP-447



CP-440S



CP-445S



CP-450-460



RD-4100



RD-3100



RD-5100

**NEW!**

## COBRA TRAPSHOOTER™ Super Heterodyne Radar Detector Series

Dual Band, Super Heterodyne, Super Sensitivity, Alarm-Audio, Visual & "Lockout"

MODEL RD-3100 OUR PRICE **\$99.95**

MODEL RD-4100 OUR PRICE **\$139.95**

MODEL RD-5100 OUR PRICE **\$179.95**

**DESCRIPTION RD-3100 TRAPSHOOTER**

So tiny yet sensitive and accurate. Perfect for any vehicle Cars, Trucks, Motorcycles

**FEATURES**

- Responds to "X" & "K" band speed radar frequencies, the only ones approved by the FCC.
- Cobra "LOCKOUT" reduces false alerts from out of band signals.
- Easy installation...just plug power cable into cigar lighter.
- Velcro fasteners with mounting bracket used for dash board installation.
- Reversible mounting bracket for Visor placement.
- Small and compact...only 4-1/8" x 3-1/8" x 1 3/16"H.
- Repetition rate of alarm increases with signal strength. The closer the detector gets to a radar source the faster the alarm turns on and off. When very close, the alarm remains on.
- 5 segment LED signal strength/Range meter.
- On/Off control.
- Volume control.
- Attention getting audible alarm.
- Highway/City switch.
- Alarm test button allows you to set alarm volume.

**DESCRIPTION RD-4100 TRAPSHOOTER PRO II**

All features of RD-3100 plus:  
EXCLUSIVE SIGNAL SENSOR Reduces annoying false alarms. This means fewer false alerts from low level transitory in-band signals. Signal Sensor operates in the city mode only where you are likely to come in contact with in-band interference from microwave intrusion alarms and microwave door openers. The Cobra Trapshooter Pro II incorporates; NO FALSE circuitry eliminates false alarms caused by poorly designed or dirty radar detectors. LOCKOUT circuitry reduces false alarms from out-of-band radar sources such as microwave and satellite links, and fast food microwave ovens. Both features are in operation 100% of the time regardless of the highway/city mode switch position.

**FEATURES**

- Cobra's Exclusive SIGNAL SENSOR.
- Velcro® fasteners for dash board.
- Easy to install without tools...just plug into cigar lighter.
- Detachable clip for Visor mounting.
- Small and compact...only 5-1/4"W x 1-5/8"H x 5"D.

**DESCRIPTION RD-5100 TRAPSHOOTER PRO II REMOTE**

All the features of the RD-3100 and RD-4100 plus:  
The RD-5100 is a remote mounted radar detector with "Disguise" Cover. The antenna module mounts behind the car's grille. The detector portion mounts underneath the dash and disguises the control with its cover. Dimensions: 4-3/8"W x 5-3/4"D x 1-1/2"H.

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## BEL MICRO EYE XKR-VII — DASH/VISOR MODEL

MODEL 834 OUR PRICE **\$169.95** *Specially Made For The Professional Driver*



### DESCRIPTION

The most sensitive and selective Superheterodyne dash/visor detector in the world, equipped with a completely new microprocessor, new circuitry, new antenna and new appearance.

### FEATURES

- Sensitivity maximized by RSD (Radar Signal Discriminator) to eliminate extraneous signals and our FILTER mode, designed for instant computerized analysis of incoming signals.
- Three operational switches: POWER: Off/On; RSD (Radar Signal Discriminator) with a LO (Local) and a LR (Long Range) position, and FILTER mode with LO and LR positions.
- Alarm: Red LEDs will light up in sequence as signal strength increases. When all Red LEDs are lit and signal strength continues to increase, all Red LEDs will flash simultaneously.
- Microprocessor controlled. • Multiple pitch sound.
- Amber LED pulses to indicate LO or LR position.
- Accessories Included: Adjustable Dash bracket, Visor clip, Velcro, Cigarette lighter plug.
- Compact Size: 1 1/2" H x 3 3/4" W x 4 1/4" L.

MODEL 834-S OUR PRICE **\$199.95**

### FEATURES Same as the above PLUS:

The Bel MICRO EYE XKR-LR - Dash/Visor, model 834-S is *hand-crafted* and *tuned* by specially trained technicians. All electrical components are matched for tolerance to give optimum performance. Critical components are individually tested to ensure they meet our rigid specifications.

## BEL MICRO EYE VECTOR

THE FIRST DETECTOR WITH GaAs DIODES

MODEL 870-B OUR PRICE **\$149.95**



### DESCRIPTION

Until now, GaAs diodes have only been used in sophisticated military radar equipment. The MICRO EYE VECTOR is the first consumer electronics product equipped with this new technology. Why GaAs diodes make the difference: lower threshold allows for a better signal to noise ratio, lower signal conversion loss, higher barrier reduces noise. Quite simply, GaAs diodes increase the sensitivity of the MICRO EYE VECTOR.

### FEATURES

- Separate audio alerts for X and K Band.
- Three operational switches: Power: On/Off; RSD (Radar Signal Discriminator) to minimize extraneous signals with a LO (local) position and a LR (long range) position; Filter mode designed for instant computerized analysis of incoming signals with LO and LR positions.
- Alarm: Red LEDs will light up in sequence as signal strength increases. When all Red LEDs are lit and signal strength continues to increase, all Red LEDs will flash simultaneously.
- Accessories included: Visor bracket, Velcro® Cigarette lighter plug.

### SPECIFICATIONS

Size: 3/4" H x 3-1/8" W x 4-1/2" L. Operating Frequencies: X Band: 10: 525 GHz, K Band: 24: 150 GHz ± 110 MHz. Antenna Type: Microwave horn, single ridge waveguide. Power Requirements: 12VDC nominal, 10-14V limits. Current: 190 mA. Temperature Range: -12°C to +70°C (+10°F to +158°F).

## BEL SUPREME DETECTOR-MIRROR

MODEL 850-B OUR PRICE **\$199.95**



## BEL MICRO EYE XKR-VR — REMOTE MODEL

MODEL 837  
OUR PRICE **\$179.95**



### DESCRIPTION

The smallest remote Superheterodyne model on the market. Very compact size enables easy installation in a variety of hidden locations.

### FEATURES

- Separate audio alerts for X and K band.
- Compact Antenna Unit (only 4 1/8" long) fits behind the grille of almost all foreign and domestic vehicles.
- 2-way switch, LO (Local) and LR (Long Range).
- Amber LED indicates Long Range position when On; Local position when OFF.
- Green LED indicates Power ON.
- Alarm: Red LED flashes, plus audible alarm for first 7 seconds. Then only an audible click is heard plus the Red and Green LEDs flashing alternately.
- Distance: The beep rate and flashing rate indicate distance to the radar source. The faster the rate, the closer the source.

### Accessories Included:

- Cigarette lighter plug. • Mounting accessories.
- Velcro for mounting ultra slim control unit.

### SPECIFICATIONS

Sub-Compact Control: 1/2" H x 3 3/4" W x 1 1/4" L. Antenna: 4 1/4" x 3 1/4" x 1 1/4". Operating Frequencies: X Band: 10:525 GHz ± 80 MHz, K Band: 24:150 GHz. Antenna Type: Half Hore and Microstrip. Power Requirements: 12VDC nominal, 10-14V limits. Current: 350 mA. Temperature Range: -20°C to +80°C (-4°F to +176°F).

## BEL MICRO EYE XKR-IX DASH/VISOR MODEL

MODEL 864 OUR PRICE **\$89.95**



### DESCRIPTION

Superheterodyne detection that fits in your pocket. A great performer with super value!

### FEATURES

- SIGNAL CONCENTRATOR® for Optimum performance.
- Pre-set for full-sensitivity.
- Separate audio alerts for X and K Band.
- Amber LED pulses to indicate operation of the built-in computer.
- Red LED indicates proximity to signal source: the faster the flash rate — the closer the source. (Police Radar).
- Visual and audio alerts for total protection.
- Accessories Included: Dash/Visor bracket, Velcro, Cigarette lighter plug.

### SPECIFICATIONS

Operating Frequencies: X Band: 10:525 GHz, K Band: 24:150 GHz ± 110 MHz. Antenna Type: Microwave Horn, single ridge waveguide. Power Requirements: 12VDC nominal, 10-14 V limits. Current: 190 mA. Temperature Range: -12°C to +70°C (+10°F to +158°F). Dimensions: 3/4" H x 3-1/8" W x 4-1/2" L.

### DESCRIPTION

The only combined radar detector and mirror Superheterodyne in the world! Microstrip antenna permits extraordinary thin design.

### FEATURES

- Separate audio alerts for X and K band.
- Microprocessor controlled, Superheterodyne Circuitry.
- Mounts easily over any existing rear view mirror with expanding spring-loaded clips.
- Front and rear signal detection.
- Four operational switches: POWER: Off and On; RSD (Radar Signal Discriminator) to maximize extraneous signals with an L (Local) position and LR (Long Range) position; FILTER mode, designed for instant computerized analysis of incoming signals with LO and LR positions; LEDs: ON and OFF.
- Alarm: Red LEDs will light up in sequence as signal strength increases. When all Red LEDs are lit and signal strength continues to increase, all Red LEDs will flash simultaneously.
- Removable cord with lighter plug.

### SPECIFICATIONS

Size: 1 1/4" H x 3 1/2" W x 1 1/2" L. Operating Frequencies: X Band: 10:525 GHz ± 80 MHz, K Band: 24:150 GHz ± 160 MHz. Antenna Type: Microstrip Antenna. Power Requirements: 12VDC nominal, 10-14V limits. Current: 350 mA. Temperature Range: -20°C to +80°C (-4°F to +176°F).



# CB RADIOS

## COBRA 40-CHANNEL CITIZENS BAND 2-WAY MINI-MOBILE RADIO

MODEL 19XS

OUR PRICE **\$39.95**

### FEATURES

- 40 Channels.
- Combination Squelch/PA/CB Control.
- ANL Switch automatically reduces the high-pitched noises that may accompany the received signal.

- S/R/F PWR Meter, Shows relative transmitter RF output power and input signal strength when receiving.
- Off/On/Volume.
- Public Address.

### SPECIFICATIONS

Frequency Range: 26.965 to 27.405 MHz. Frequency Control: Phase-Locked Loop (PLL) synthesizer. Frequency Tolerance: 0.005% Operating Temperature Range: -30°C to +50°C. Microphone: Plug-in type; dynamic Input Voltage: 13.8V DC nom.(only neg. ground) Weight: 2 lbs. 3 oz., (1.0 kg) Antenna Connector: UHF, SO-239 Semiconductors: 12 transistors, 18 diodes, 3 integrated circuits Meter: Illuminated; indicates relative power output and received signal strength. TRANSMITTER—Power Output: 4 watts Modulation: High- and low-level, Class B amplitude RECEIVER—Sensitivity: Less than 1uV for 10dB(S+N) Selectivity: 6 dB @ 7 KHz, 55 dB @ 10 KHz. Automatic Gain Control: less than 10 dB change in audio output for inputs from 10 to 50,000 microvolts. Squelch: Adjustable; threshold less than 1uV. Audio Output Power: 300 - 3000 Hz. Distortion: Less than 7% @ 3 watts @ 1000 Hz. Built-in Speaker: 8 ohms, round.



## COBRA AM CB RADIOS

MODEL 29LTD

REG. \$174.95

OUR PRICE **\$119.95**

### DESCRIPTION

"The Truckers Choice" with an instant emergency channel 9 switch — It's the industry standard. Cobra's 29LTD reflects the latest advances in CB technology to deliver maximum power output, 100 per cent modulation and fine receiver sensitivity. The 29LTD features: SWR bridge and antenna warning indicator, switchable automatic noise limiting/noise blanking to suppress ignition and external electrical interference. DynaMike modulation control delivers 100 per cent modulation at all speaking levels, RF gain control to adjust receiver sensitivity to match your needs, Delta Tune and illuminated S/R/F SWR meter with dimmer.



## COBRA AM CB RADIOS

MODEL 25LTD

REG. \$129.95

OUR PRICE **\$88.00**

### DESCRIPTION

Better by a country mile. The large, illuminated meter tells you how much power you're pushing out and the strength of the signal you're pulling in. Includes: DynaMike modulation control for 100 per cent modulation at all speaking levels. RF gain control to adjust receiver sensitivity to match your needs, sensitive squelch, automatic noise limiting/noise blanking to suppress ignition and external electrical interference, digital LED display channel with bright/dim control, instant emergency channel 9 switch, LED transmit/receive indicator, PA jack and external speaker jack.



## COBRA AM CB RADIOS

MODEL 21LTD

REG. \$114.95

OUR PRICE **\$79.95**

### DESCRIPTION

A big performer in a small package. The 21LTD has all the features necessary for accurate, reliable operation. Features like a large, illuminated meter to tell you exactly how much power you're pushing out and the strength of the signal you're pulling in, digital LED channel display, DynaMike modulation control to deliver 100 percent modulation at all speaking levels, automatic noise limiting to cut off annoying hiss and static caused by ignition and external electrical interference, dynamic microphone, sensitive squelch, PA capability, instant emergency channel 9 switch, external speaker jack.



## COBRA AM CB RADIOS

MODEL 18LTD

REG. \$79.95

OUR PRICE **\$55.00**

### DESCRIPTION

Cobra does it again! The most wanted CB features, plus a mobile transceiver that's small enough to fit under practically any dashboard. The 18LTD is a thrifty buy, yet still has the POWERFUL PUNCH that made Cobra the leader in CB's. The 18LTD features: illuminated S/R/F meter, digital LED channel display, plug-in dynamic microphone, sensitive squelch, external speaker jack, plus many more features.

**FREE!**  
Trunk Lip  
or Magnetic Antenna  
with Purchase of 18LTD



## COBRA AM CB RADIOS

MODEL 67LTD

REG. \$199.95

OUR PRICE **\$125.00**

### DESCRIPTION

Our newest hide-away mobile CB. The 67LTD remote mounts easily under the seat, on the firewall or in the trunk of your car, since it's only 1-5/8"(H), 4-3/4"(W) and 6-1/2"(D). The easy-to-use remote control dynamic microphone has all the controls right at your finger-tips for Loud & Clear transmission: LED transmit/receive indicator, digital LED channel display, on/off and volume control, channel selector, instant emergency channel 9 switch, push-to-talk bar, RF gain control, switchable ANL and so much more. The 67LTD comes complete with all the necessary brackets and hardware.

**SPECIAL!**



FORDHAM RADIO • 260 MOTOR PARKWAY • HAUPPAUGE • NEW YORK 11788



# WALKIE TALKIES/BASE STATIONS

## COBRA CB BASE STATION MODEL 90LTD

OUR PRICE **\$99.95**

### FEATURES

- Exclusive Cobar Dynamike Control.
- Oversized LED channel display.
- Illuminated S/R/F meter.
- Microphone connector.
- Instant Emergency channel 9 switch.
- Dynamic Microphone.
- CB/PA switch.
- Noise blander/off switch.
- Automatic noise limiter/off switch.
- LED transmit indicator.
- Antenna connector.
- P.A. speaker jack.
- External speaker jack.
- Built-in speaker.
- R.F. gain control.
- LED channel display.
- Channel selector switch.
- Power on/off switch.
- Dynamike control.
- Squelch control.
- Compact Size.
- Volume Control.



## COBRA COMMAND CALL WALKIE TALKIE VOICE ACTIVATED (VOX) or PUSH-TO-TALK

MODEL HC-200

OUR PRICE **\$34.95** each

**SPECIAL!**

### FEATURES

- Power Source: 9 VDC.
- Frequency Range: 49,830-49,890 mHz.
- Receiving System: FM dual conversion super heterodyne.
- Sensitivity: 0.5 uV min. (20 dB quieting).
- Power: Input 100 mW.
- Modulation: FM.
- Adjustable headphone with boom mike and antenna.
- Voice activated (VOX) transmitter.
- Removable spring loaded belt clip.

### DESCRIPTION

The easiest way to keep in touch with hands free 2-way communication. The range of 1/4 to 1/2 mile will give unlimited industrial/commercial and recreational uses...construction, surveying, security, back packing, fishing, and many more.



## COBRA S.O.S. 40 CHANNEL EMERGENCY 2-WAY RADIO MODEL 39LTD

REG. \$99.95 OUR PRICE **\$49.95**

**SPECIAL!**

### DESCRIPTION

The Cobra needs no installation. Wherever you are ... whatever the emergency. Whether it's on a remote, lonely highway or a bustling freeway — Cobra's S.O.S. comes to the rescue and puts you in touch. It's there when you need it. What's more — you can take this unique security with you from car to car because there's no installation. Simply plug it into your cigarette lighter and you're ready to go. And it's so convenient to operate, one hand's all it takes. The S.O.S. features a built-in microphone, LED channel display, emergency channel 9 indicator plus the features listed below.

### FEATURES

- The Cobra S.O.S. boasts a telescoping magnetic mount antenna that sets right on your car's roof. Nothing could be easier or more convenient. Plus, the attention-getting S.O.S. pouch slides right over the antenna and acts as an emergency flag!
- The S.O.S. power cable plugs into the cigarette lighter for a fast, easy hookup.
- Small enough to fit in many glove compartments or easily under the seat.
- Self-contained case: radio, antenna, power cable and handy S.O.S. flag.



## UNIDEN® BEARCAT® HAND-HELD SCANNER

MODEL 50XL OUR PRICE **\$149.95**

### FEATURES

- 10 Bands: including all public service bands, 4 "Ham" bands, federal and military land mobile bands.
- 10 Channels: program to your choice of frequencies.
- Keyboard Lock Switch: prevents accidental programming.
- 2-Digit LCD: shows channels being scanned and monitored.
- Review: check frequency entered on each channel.
- Channel Lockout: Skips channels you don't want to hear.
- Battery Low Indicator: beep tone every 4 minutes with automatic turn-off after 15 beeps.
- Memory Backup: Retains frequencies entered for 30 minutes.
- Built-In Delay: Adds 3-sec delay on all channels.
- Direct Channel Access: Go directly to any channel.
- Track Tuning: allows unit to peak on each transmission for better reception at band edges.

### SPECIFICATIONS

FREQUENCY RANGE: 10-Meter "Ham" Band 29-29.7 MHz. Low Band 29.7-50 MHz. 6-Meter "Ham" Band 50-54 MHz. Military Land Mobile 136-144 MHz. 2-Meter "Ham" Band 144-148 MHz. High Band 148-174 MHz. Fed. Gov't Land Mobile 406-420 MHz. 70cm "Ham" Band 420-450 MHz. UHF Band 450-470 MHz. "T" Band 470-512 MHz. BATTERY POWERED: Uses either 4 standard "AA" or 5 "AA" Nickel Cadmium rechargeable batteries (not included). SIZE (WxDxH) 2-5/8" x 1-1/2" x 6-3/4". WEIGHT: 10.5 oz. (without batteries).



## COBRA SSB BASE

MODEL 2000GTL

REG. \$549.95 OUR PRICE **\$349.95**

### DESCRIPTION

Here's a precision AM/SSB base station with attractive component styling. From its sleek aluminum front panel and over-sized dual meters, to its built-in 6-digit frequency counter, the 2000GTL is a real beauty, featuring: Volume, ON/OFF control, Squelch, coarse and fine Voice Lock, DynaMike Plus, RF gain, SWR, CAL control, tone control, Noise Blander, Noise Limiter, mode control (LSB/AM/USB), LED channel display and more.

## COBRA SSB BASE

MODEL 142GTL

REG. \$269.95 OUR PRICE **\$199.95**



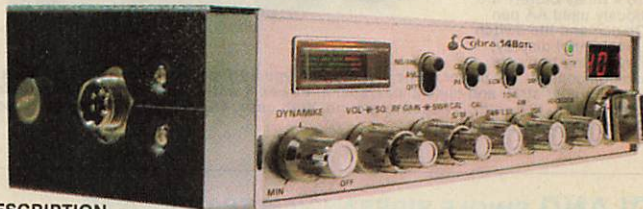
### DESCRIPTION

This precision AM/SSB base is designed for the budget minded CB operator who demands the quality he can depend on, at a price he can afford. It features: ON/OFF volume control, Squelch, RF gain, DynaMike, SWR CAL control, Voice Lock, LSB/AM/USB switch, switchable noise limiting and noise blanking. CB/PA switch, plus many more features.

## COBRA SSB MOBILE

MODEL 148GTL

REG. \$269.95 OUR PRICE **\$179.95**



### DESCRIPTION

The 148GTL is a no compromise, precision AM/SSB mobile unit for the discriminating citizen's band operator who demands maximum performance. The features speak for themselves: DynaMike, Volume, ON/OFF control, Squelch, RF gain, SWR CAL control, Voice Lock, S/RF/CAL/SWR switch, LSB/AM/USB mode switch, switchable automatic noise limiting and noise blanking, CB/PA switch, HI/LOW tone switch, meter and LED brightness control, channel selector, LED display, receive and transmit indicator, illuminated S/R/F/SWR meter, PA and external speaker outputs, maximum legal power plus plug-in mike and brackets.

## COBRA SSB MOBILE

MODEL 146GTL

REG. \$209.95 OUR PRICE **\$149.95**



### DESCRIPTION

This is for the value-minded AM/SSB mobile user. The 146GTL is for the citizen's band operator who appreciates quality and performance he can count on. Volume, ON/OFF control, Squelch, RF gain, Voice Lock, LSB/AM/USB mode switch, switchable automatic noise limiting and noise blanking, CB/PA switch, channel selector, LED display, receive and transmit indicator, illuminated S/R/F meter, PA and external speaker outputs, and more.

CHARGE IT—VISA•MASTER CARD•AMERICAN EXPRESS • Toll Free 800-645-9518 • NYS Toll Free 800-832-1446



# CB RADIOS/WALKIE TALKIE

## MIDLAND HIGH-TECH 40 CHANNEL CB

MODEL 77-145

OUR PRICE **\$59.95**

### Trunk Lip or Magnetic Antenna with Purchase of 77-145

#### DESCRIPTION

The Midland 77-145 is a compactly-engineered, high tech CB transceiver design. Only slightly larger than our sub-compact — and finished in matte black, featuring a cockpit-style control panel. It fits and looks good anywhere.

In an emergency the 77-145 is all business. Push the priority button for instant access to Channel 9 the official emergency channel. Its electronic tuning system gives you optimal channel dialing accuracy. A new, bright green LED digital channel indicator is easy to read at a glance. Signal strength and RF output can be monitored by a state-of-the-art LED bar meter. The advanced engineering gives you optimal "talk-power" and reception range. A pushbutton-controlled noise limiter (ANL) reduces noise. Installation is easy, with Midland's quick in-and-out bracket mount, snap-free power system and front-mounted mike.

#### SPECIFICATIONS

Size: 5" wide x 1 1/4" high x 6" deep (127 x 32 x 153mm) Receiver sensitivity: 0.8uV for 10dB (S + N)/N. Power output: 4 watts Power requirement: 13.8 VDC negative ground.



## MIDLAND 5-WATT, 3-CHANNEL HAND-HELD CB WITH SWITCHABLE HI/LO POWER.

MODEL 75-764B

OUR PRICE

**\$49.95**

#### DESCRIPTION

Operates on any 3 of the 40 CB channels. Channel 11 crystals installed, 2 channel positions open. Transmitter rated for nominal 5-watt input power operation with high level modulation-switchable to battery-saver 2-watt low power. Superheterodyne receiver has tuned RF stage, ceramic IF Filter, automatic gain control, variable squelch. Uses 12-volt power from eight "AA" dry cells, ten ni-cad "AA" cells or external sources (batteries not included). Pushbutton L.E.D. battery check light. Jacks for external power, charger, microphone, complete with carrying case. Metal cabinet 8 3/4" x 3 1/4" x 2 1/8".



## MIDLAND COMPACT 40-CHANNEL PORT-A-PAK MOBILE/PORTABLE TRANSCEIVER.

MODEL 77-805

OUR PRICE

**\$96.95**

#### DESCRIPTION

Convertible from in-vehicle use to true portable use, center-loaded antenna for use in portable mode, new high power 8 "C" cell battery pack for up to 4 times battery life of previously used AA pen cells, On-demand lite switch for L.E.D. channel display, mobile mounting brackets with quick disconnect DC power cable, lighted Bar-type S/RF power indicator, portable carry case with shoulder strap and mike clip, Transmit Power: 4 watts switchable to 1.0 watts for longer battery life. 13.8-volt DC negative ground. With case, 4 3/4" x 2 3/4" x 7", without case, 4" x 1" x 6". Batteries not included.



## MIDLAND READY RESCUE II 40 CHANNEL CB RADIO

MODEL 77-911

OUR PRICE **\$69.95**

#### FEATURES

- Electronic readout and tuning system.
- Use as primary CB radio in your car.
- Electronic LED "S-RF" meter.
- Operates from Standard 12-volt car battery.
- Optional battery pack gives you portable communications you can use anytime, anywhere, clips right on unit and fits in the sturdy carrying case provided.

#### DESCRIPTION

The Ready Rescue II is a full 4-watt, 40 channel CB Radio with priority channel 9 emergency built-in. Fits completely, along with antenna, in a compact carrying case.

The incredibly lightweight Ready Rescue II stores easily in your car or trunk when not in use. To operate: simply attach the antenna to the magnetic mount, and put on vehicle roof, or attach directly to unit for remote use; press the talk button and talk on any of the 40 CB channels. Press the EMERGENCY red button and you're on the priority 9 Channel! This kit comes equipped with a flexible antenna, car-top magnetic antenna mount with cable, cigarette lighter adaptor with cord, and a rugged carrying/storage case with handle.

#### SPECIFICATIONS

Size: 2-3/4" wide x 6-7/16" high x 1-3/8" deep. Receiver sensitivity: 0.7uV for 10dB (S + N)/N. Maximum output: 4 watts. Power requirements: 12 VDC.



## MIDLAND SINGLE SIDEBAND/AM TRANSCEIVER

MODEL 79-260

OUR PRICE **\$139.95**

#### FEATURES

- 40 AM channels / 40 Upper sideband channels / 40 Lower sideband channels.
- Selector switch for AM, Upper and Lower Sideband.
- Clarifier control fine-tunes and off-center SSB signals.
- Illuminated S/RF power meter.
- Front mounted mike.
- Easy installation. Quick disconnect.

#### DESCRIPTION

If you want to move away from the 40-channel CB crowd, then this Midland Model 79-260 is for you. Just a flip of the mode switch moves you from AM to upper and lower sideband, giving you the next best thing to your own, personal CB band. (Only other "single-sidebanders" have access to your transmission.)

The Midland 79-260 also reaches out with greater clarity—a potential lifesaver when you need help fast.

All told, the Midland SSB/AM TRANSCEIVER gives you the ultimate in CB performance, reliability and flexibility. Just look at these features.

#### SPECIFICATIONS

Size: 9-3/4" deep x 7-1/2" wide x 2-1/4" high. Receiver sensitivity: 0.5uV for 10dB (S + N)/N. Power output: AM-4 watts SSB-12 watts (PEP).



## SUPERCALL Eagle-1 FM/UHF MINI TRANSCEIVER

The Best Walkie-Talkie Ever Created!

MODEL Eagle-1

OUR PRICE **\$149.95** each

#### DESCRIPTION

Whether you're on the job or enjoying vacation, the Eagle-1 can assist you in both. It works in elevators, can go through steel. Communicate with children or friends while camping, fishing, or hiking. Speak to co-workers, foremen, managers on the job, in the warehouse, or on the construction site. For immediate communication use the Eagle-1 UHF band mini transceiver. It has 3 channels within a 10 MHz bandwidth, 200mW clean FM output power, suitable for local services; and low power consumption. It operates on 450 MHz UHF/FM, (1 crystal included), and takes 3 crystals. It uses four popular UM-3 batteries which are included. Comes with carrying case. Dimensions: 65mm W x 160mm H x 32mm D. Weight: approx. 420g. Range: approx. 1/4 mile





## UNIDEN 40-CHANNEL AM MOBILE

MODEL PC-33

REG. \$59.95

OUR PRICE

**\$39.95**

### FEATURES

- 40 Channel.
- Front panel mic connector, ANL, LED "S"/RF meter, Digital display, LED TX lite, ext. speaker jack.
- Dimensions: 6"W x 6"D x 1 7/8"H.
- Shp. Weight: 2.2 lbs.
- Power 13.8VDC, positive or negative ground.



## UNIDEN 40-CHANNEL AM/SSB MOBILE

MODEL PC-244

REG. \$199.95

OUR PRICE

**\$149.95**

### FEATURES

- 40 Channel.
- PA, NB/ANL, Ch. 9 brt/dim & mode switches, RF gain, mic gain & clarifier controls, LED TX/RX, Mode & Ch. 9 lites, digital display, "S"/RF meter.
- Dimensions: 7 5/16"W x 9 1/16"D x 1 5/16"H.
- Shp. Weight: 4.5 lbs. • Power 13.8 VDC, positive or negative ground.



## UNIDEN 40-CHANNEL REMOTE AM MOBILE

MODEL PC-22

REG. \$159.95

OUR PRICE

**\$119.95**

### FEATURES

- 40 Channel.
- Remote, all controls in microphone. Up/Down channel selector, digital display, TX/RX indicator, ext. speaker jack.
- Dimensions: 5 3/4"W x 7 7/8"D x 1 1/2"H.
- Shp. Weight: 3.5 lbs. • Power 13.8 VDC, positive or negative ground.



## UNIDEN 40-CHANNEL AM BASE STATION

MODEL ZACHARY-T

REG. \$199.95

OUR PRICE

**\$149.95**

### FEATURES

- 40 Channel.
- Tone HI-LO, ANL & PA-CB switches, mic gain & RF gain controls, "S"/RF meter, digital display, TX/RX indicator, PA, headphone & ext. speaker jacks.
- Dimensions: 13-1/3"W x 11-1/2"D x 4-3/4" H.
- Shp. Weight: 11.0 lbs.
- Power 13.8VDC, positive or negative ground & 117VAC.



## UNIDEN WASHINGTON 40-CHANNEL AM/SSB BASE STATION

MODEL WASHINGTON

REG. \$299.95

OUR PRICE

**\$219.95**

### FEATURES

- 40 Channel.
- NR/ANL-OFF, "S"/RF MOD, MODE & Ch. 9 switches, mic gain, RF gain & clarifier controls, headphone, PA & ext. speaker jacks, LED TX, RX, AWI, Mode & Ch. 9 lites, "S"/RF meter, SWR/Mod meter, digital clock, time set, alarm set, remote speaker.
- Dimensions: 13 1/2"W x 11"D x 5"H. • Shp. Weight: 13.3 lbs.
- 13.8VDC, positive or negative ground & 117VAC.



## UNIDEN RADAR DETECTOR

MODEL RD-35

OUR PRICE **\$79.95**

### DESCRIPTION

The RD-35 is a low cost, lightweight, and compact radar detector. It's dual Superheterodyne circuitry, Electronic Data Interference Terminator (E.D.I.T.), filters all unwanted signals for accurate radar detection.

### FEATURES

- Volume switch with Power On/Off Switch (3 position switch): Adjust volume from low to high or turn it off completely.
- Power LED: Lights when power is supplied to the unit.
- Audio and Visual Alarms: All models have both audible and visual alerts for radar reception. Internal audio alarm increases as radar signal strength increases.
- E.D.I.T. Electronic Data Interference Terminator Circuitry: Sophisticated state-of-the-art electronic circuitry filters unwanted radar signals and other sources of interference to help assure accurate radar detection.



**SPECIAL!**

## UNIDEN SUPER SLIM COMPACT DUAL SUPERHETERODYNE RADAR DETECTOR

WITH ELECTRONIC DATA INTERFERENCE (E.D.I.T.)

MODEL RD-9

OUR PRICE **\$225.00**

### FEATURES

- Continuous Volume. • Highway/City Switch.
- False Signal Protection E.D.I.T.
- Frequency Discriminator. • Power LED.
- Signal Meter. • X & K Band LED's.
- Automatic Dimmer Control and Alert Lamp.
- Dimensions: 107mm D x 70mm W x 18mm H.



**NEW!**

## UNIDEN BANDIT™ 55 ALL-BAND RADAR DETECTOR

MODEL 55

REG. \$189.95

OUR PRICE

**\$110.00**

### FEATURES

- Detects X and K bands Radar, E.D.I.T.
- Screens false alarms, audible & visual alarm.
- LED adjustable audio alert, LED signal meter.
- Hwy./city & brt/dim controls. • Cigarette lighter power connector.
- Dimensions: 5 1/8"D x 5 1/8"W x 1 1/2" H. • Shp. Weight: 1.2 lbs.



## UNIDEN BANDIT™ 95 REMOTE ALL-BAND RADAR DETECTOR

MODEL 95

REG. \$219.95

OUR PRICE

**\$169.95**

### FEATURES

- Mounts out of sight.
- Detects X & K band radar, E.D.I.T.
- Screens false alarms, audible and visual alarm, adj. audio alert.
- LED signal strength meter.
- Cig. ltr. power connector.
- Shp. Weight: 1.5 lbs.
- Dimensions: Remote — 2 1/2"D x 3 1/8" W x 1 1/8"H; • Receiver — 5"D x 3 3/8"W x 2 3/8" H.



## UNIDEN MADISON 40-CHANNEL AM/SSB BASE STATION

MODEL MADISON

REG. \$379.95

OUR PRICE

**\$289.95**

### FEATURES

- 40 Channel.
- NB/ANL, Ch. 9 & mode switches, PA, mic gain, RF gain, SWR/CAL & clarifier controls, headphone, PA & ext. speaker jacks, LED TX, RX, AWI, Mode & Ch. 9 lites, "S"/RF meter, SWR/Mod meter, digital clock, time set, alarm set, remote speaker.
- Dimensions: 14 7/8"W x 11 5/16"D x 4 3/4"H. • Speaker: 5 3/4"W x 11 5/16"D x 4 3/4"H.
- Shp. Weight: 18.0 lbs. • Power 13.8 VDC, positive or negative ground & 117VAC.







## AUDIOVOX 40 WATT "SOUND EXPLODER" STEREO POWER AMPLIFIER

MODEL AMP-500 OUR PRICE **\$19.95**

### FEATURES

- Increases stereo system power output to 40 watts.
- Slim-line design.
- Installs under dash.
- Pushbutton on-off switch with indicator light.
- Compatible with grounded output systems.
- 20-30,000 Hz response.



## MINI UNDER-DASH 40 CHANNEL CB TRANSCEIVER

MODEL MCB-20 OUR PRICE **\$55.00**

### FEATURES

- LED display.
- Built-in speaker with jack for external speaker.
- Illuminated signal strength/output power meter.
- CB-PA selector with PA speaker jack.
- Volume & squelch controls.
- Dual polarity.
- Hi-Low tone selector.
- Full 4-watt output power.
- Dimensions: 5 1/4" W x 2" H x 7 1/4" D.



## 50 WATT 7-BAND GRAPHIC EQUALIZER with DUAL POWER METERS

MODEL AMP-785 OUR PRICE **\$49.95**

### FEATURES

- Switchable sensitivity dual 5 segment LED power meters.
- 7-band graphic equalization.
- LED indicator slide controls.
- By-pass selector.
- Built-in fader.
- Can be used with any system including floating-ground and bridged types.
- 20-30,000 Hz response.

## SPEAKERS

### 100 WATT HI-PERFORMANCE 3-WAY 6" x 9" SPEAKER SYSTEM

MODEL TRY-100 OUR PRICE **\$59.95** per pair

#### FEATURES

- Powerful 27 oz. barium-ferrite magnets.
- Foam-roll woofer suspension.
- High temperature 1 1/2" aluminum voice coil.
- 2 1/2" Cone mid-range a 2" solid-state Piezo tweeter on bridgeless design support.
- For in-deck use in factory 6" x 9" opening.
- Self-studded metal-mesh grilles.
- 40-20,000 Hz response. • 4-8 ohm compatible.

### DELUXE COAXIAL 6" x 9" POLYPROPYLENE CONE SYSTEM

MODEL CX-120 OUR PRICE **\$29.95** per pair

#### FEATURES

- Standard 6" x 9" size fits factory opening in many rear decks.
- Vacuum-formed polypropylene woofer cone is resistant to environmental hazards yet reproduces sound with incredible accuracy.
- Powerful 20 oz. ceramic magnets. • Foam-roll air-suspension edge.
- Post-mounted 3" wide-dispersion tweeter. • Deluxe metal-mesh grilles.
- 100 watt maximum power capacity per speaker.
- 70-18,000 Hz response. • 4-8 ohm compatible.

### DELUXE COAXIAL 6" POLYPROPYLENE CONE SYSTEM

MODEL CX-20 OUR PRICE **\$29.95** per pair

#### FEATURES

- Popular 6" size for in-door or in-deck mounting.
- 5 1/4" polypropylene woofer cone for highest sound quality and resistance to environmental effects.
- 20 oz. ceramic magnets. • Foam-roll air-suspension edge.
- 100 watt maximum power capacity per speaker. • 2" cone tweeter.
- Deluxe molded grilles. • 90-18,000 Hz response. • 4-8 ohm compatible.



TRY-100



CX-120



CX-20



**AUDIOVOX**

**FLAT FACE ELECTRONICALLY-TUNED AM/FM/MPX RADIO, CASSETTE PLAYER & QUARTZ CLOCK.**

**MODEL AVX-210 OUR PRICE \$160.00**

**FEATURES**

- Auto-reverse cassette player.
- High style flat face design. • Quartz Clock.
- Locking fast-forward and rewind control. • 12-station electronic memory (6 AM/6 FM).
- Back-lit LCD panel for display of frequency, time, functions.
- Display priority switching for frequency or time readout.
- Built-in 5-band graphic equalizer for precise tonal adjustment.
- 4-way balance controls. • Built-in 40 watt power amplifier.
- Automatic SCAN and SEEK. • DNR® \* system for reduced noise on tape and radio.
- Dimensions: 6 1/4" W x 2" H x 5 1/2" D.

\*Dolby is a registered trademark of Dolby Laboratories

**ELECTRONIC-TUNING AM/FM RADIO WITH STEREO CASSETTE PLAYER AND QUARTZ CLOCK.**

**MODEL AVX-930 OUR PRICE \$99.95**

**FEATURES**

- Back-lit LCD read-out panel for display of frequency, time, and functions.
- 12 station electronic memory. • Locking fast forward function.
- Automatic SEEK function with Local/Distant sensitivity switching searches out next available station.
- Display priority switching for frequency or time readout.
- Full range tone control. • 14 watt maximum output power amplifier.
- Compact 5 1/8" deep chassis with "FLEX" installation capability for factory-installed appearance in domestic and imported cars.
- Dimensions: 6 1/4" W x 2" H x 5 1/4" D.

**ELECTRONICALLY-TUNED AM/FM/MPX RADIO, CASSETTE PLAYER & QUARTZ CLOCK**

**MODEL AVX-935 OUR PRICE \$125.00**

**FEATURES**

- Auto-Reverse cassette player with locking fast-forward and pushbutton eject.
- Multi-color back-lit LCD panel displays frequency, time and functions.
- Automatic SEEK tuning. • 4-way balance controls.
- 12-station (6 AM/6 FM) electronic memory with individual pushbuttons.
- Display priority switching for frequency or time read-out.
- 14 watt maximum output power. • Dimensions: 6 1/4" W x 2" H x 5 1/4" D.

**ELECTRONICALLY-TUNED AM/FM/MPX RADIO, CASSETTE PLAYER & QUARTZ CLOCK**

**MODEL AVX-945 OUR PRICE \$149.95**

**FEATURES**

- Auto-Reverse stereo cassette player and quartz clock.
- Back-lit LCD panel displays frequency, time and functions selected.
- Metal/CrO2 tape capability. • Locking fast-forward and rewind cassette.
- Super-Reach FM circuitry for optimum reception. • 12-station memory (6 AM/6 FM).
- SEEK function. • Display priority switching for frequency or time readout.
- Full range tone control. • 4-way balance controls.
- 14 watt max. output power. • Dimensions: 6 1/4" W x 2" H x 5 1/4" D.

**FLAT-FACE ELECTRONICALLY-TUNED AM/ CASSETTE PLAYER & QUARTZ**

**MODEL AVX-200 OUR PRICE \$139.95**

**FEATURES**

- Auto-Reverse cassette player. • High style flat-face design.
- Locking fast-forward and eject control. • 12-station electronic mem.
- Back-lit LCD panel for display of frequency, time, functions. • 4-way
- Automatic SEEK and SCAN tuning. • 14 watt maximum output power.
- Display priority switching for frequency or time readout.
- Dimensions: 6 1/4" W x 2" H x 5 1/2" D.

**HI-FI ELECTRONICALLY-TUNED AM/FM/MPX RADIO CASSETTE PLAYER & QUARTZ**

**MODEL AVX-965 OUR PRICE \$225.00**

**FEATURES**

- Back-lit LCD panel for display of frequency, time and functions.
- Dolby® \* noise reduction system and Metal/CrO2 tape capability.
- Logic-controlled cassette mechanism with key-off tape protection system.
- Music sensor automatically locates next tape selection in fast wind modes.
- Loudness contour and independent bass and treble controls.
- Super-Reach FM circuitry with Local/Distant and FM muting switch.
- 12-station memory and automatic SEEK function. • 4-way balance controls.
- Built-in 50 watt maximum power output amplifier. • Dimensions: 6 1/2" W x 2" H x 5 1/4" D.

**ELECTRONICALLY-TUNED AM/FM/MPX RADIO, CASSETTE PLAYER, EQUALIZER & QUARTZ CLOCK**

**MODEL AVX-989 OUR PRICE \$149.95**

**FEATURES**

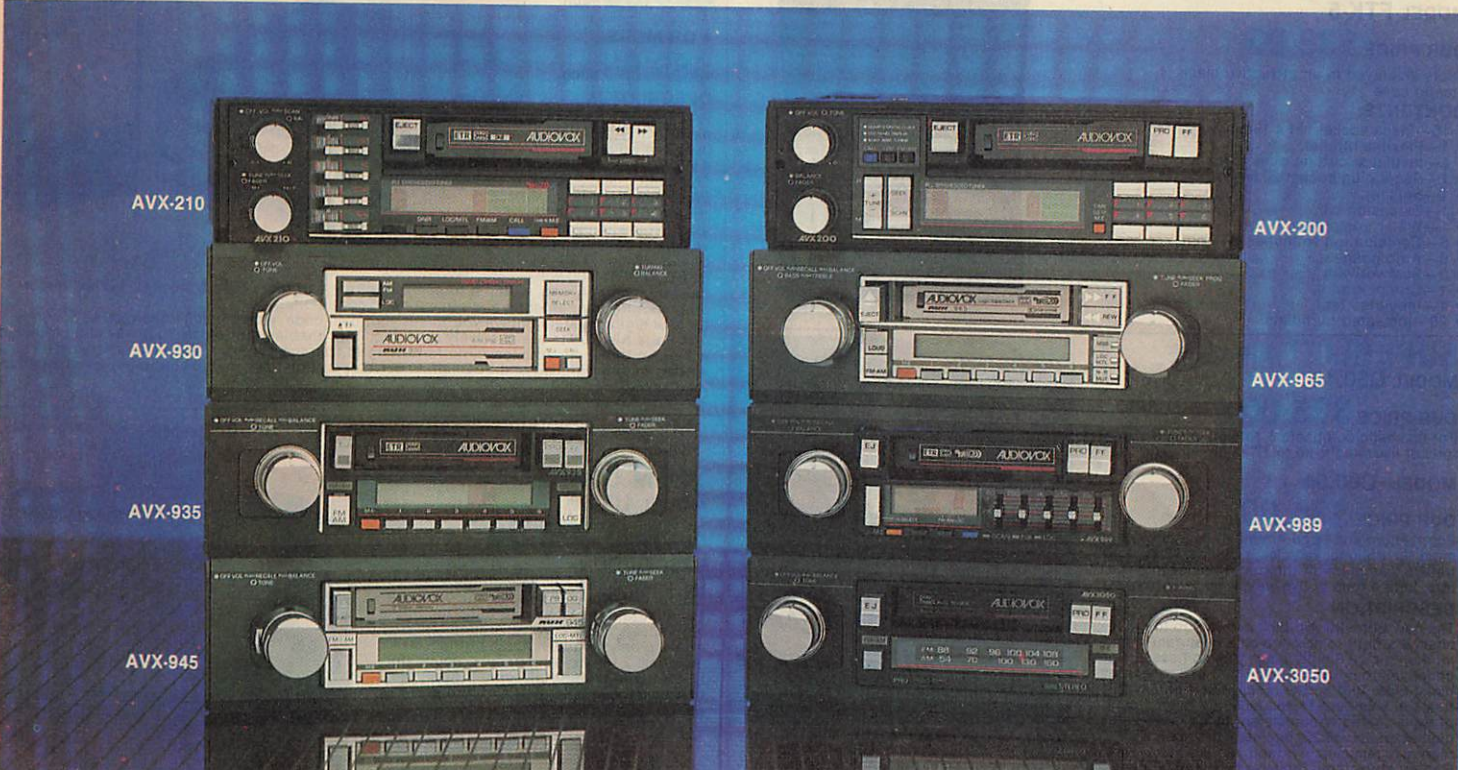
- Auto-Reverse cassette deck with locking fast-forward.
- Built-in 5-Band graphic equalizer for precise tonal adjustment.
- Synthesized electronic-tuning with 12-station memory (6 AM/6 FM).
- Automatic SEEK and SCAN. • Display priority switching.
- Back-lit LCD panel for display of frequency, time and functions. • 4-way balance controls.
- Built-in 40 watt power amplifier. • Dimensions: 6 1/4" W x 2" H x 5 1/4" D.

**AM/FM STEREO AUTO-REVERSE CASSETTE PLAYER**

**MODEL 3050 OUR PRICE \$59.95**

**FEATURES**

- Auto-reverse cassette player with locking fast-forward.
- Cassette program selector with LED indicator lights.
- Pushbutton band selector.
- FM local-distant reception switch.
- Stereo balance control.
- LED stereo indicator.
- 14 watts maximum output power.
- Adjustable shafts.
- Dimensions: 7" W x 2" H x 5" D.



**CHARGE IT—VISA•MASTER CARD•AMERICAN EXPRESS • Toll Free 800-645-9518 • NYS Toll Free 800-832-1446**



# TO ACCESSORIES

## FORDHAM ALL PURPOSE TOOL CASE

EL FTK-28

OUR PRICE **\$149.95**

52 PIECE SOCKET SET



### DESCRIPTION

This 92 piece all purpose tool case has a full range of assorted tools for use in the home or wherever you need them. It has two tool pallets with compartments behind each for storage. The handsome rugged carrying case keeps your tools in order for easy and fast use.

### This Kit contains:

- 1—5-1/4" long nose mini plier; 1—4-3/4" flat point mini plier; 1—4-1/2" diagonal mini plier; 7—piece screwdriver set (1-1/2"x6mm ±2, 1-1/2"x6mm, 6"x6mm ±2, 6"x6mm, 3"x5mm ±, 3"x5mm-, 3"x3mm); 1—10" water pump plier; 1—2M/12FT measuring tape; 1—Utility knife; 1-(6 pc/set) hex key wrench; 3—nut drivers (1/2", 7/16", 3/8"); 1—tire gauge; 1—Crimping tool 8"; 1—7" lineman cutting plier; 1—6" long nose plier; 1—8" diagonal cutting plier; 1—plastic terpedo level; 1—long nose vise grip plier 6"; 1—6" angle wrench; 1—6" slip joint plier; 1—auto tester; 6 piece combination wrench set (3/8", 7/16", 1/2", 9/16", 5/8", 11/16"); 1 bag (300cs) terminals; 1—3/8" Dr. Universal joint; 1—7" plier; 1—16oz. claw hammer; 1—10" hand saw; 1—10" pry bar; 52 piece socket set. Dimensions: 18 1/2" W x 6" H x 13" D

## FORDHAM 32 PIECE TOOL KIT

MODEL FTK-4

OUR PRICE **\$49.95**

Handy all purpose tool kit for the home or automobile, displayed in a beautiful heavy duty red case.

### CONTENTS:

- 5—Socket pieces, 1/2", 10mm, 12mm, 13mm, 17mm, 19mm.
- 1—1/2" DR. Ratchet handle with rubber grip.
- 1—Spark plug socket 1/2" x 21mm.
- 1—Extension bar 1/2" x 5".
- 1—4-Way cross wrench 5/8" x 15".
- 3—Screwdrivers, regular point.
- 3—Screwdrivers, phillips point.
- 1—Hammer 8 oz. • 1—Flexible light.
- 5—Combination wrenches 8-17mm.
- 1—Water pump plier 9-1/2".
- 1—Insulated cutting plier 6".
- 1—Auto voltage tester. • 1—Insulated tape.
- 4—Hex key wrenches 4-8mm.
- 1—Measuring tape 3m/10 ft.



## FORDHAM 69 PIECE TOOL KIT

MODEL FTK-5

OUR PRICE **\$39.95**

Tools displayed in an attractive black plastic case.

### CONTENTS:

- 15—Piece socket set 4-19mm.
- 1—Flexible ratchet.
- 1—Insulated cutting plier 150mm.
- 1—Spark plug socket 20.64mm.
- 1—Spinner.
- 1—Extension bar.
- 1—Water pump plier.
- 6—Combination wrenches 8-17mm.
- 6—Auto gauges.
- 3—Screwdrivers.
- 1—Crimping tool.
- 1—Insulated tap.
- 28—Insulated terminals.



## SUPERLIFT AIRJACK

MODEL C50.42

OUR PRICE **\$35.00**

For domestic compacts & foreign cars lifts 2-1/2 tons of live weight up to 17" high

MODEL C60.54

OUR PRICE **\$35.00**

For medium and large American cars as well as most recreational vehicles, pick-ups, vans, boat trailers, campers, off the road vehicles and tractors. Lifts 4 tons of live weight up to 25" high.

### DESCRIPTION

The new Superlift Air Jack allows you to change a flat tire anytime on any surface (sand, mud or snow). Simply place this no hassle jack under your car and connect the hose to your exhaust pipe, turn on the motor and it lifts and inflates in less than 14 seconds. It's constructed of triple-coated heat-resistant nylon mesh with high strength welded seams and comes with a one way valve that locks the air in until it's manually released. No tools required and when deflated it folds to a compact 10"x9"x5" size. Getting stuck is no longer a problem. If your vehicle is bogged down in mud, sand or snow all you do is simply jack it up and push the car sideways until it's clear of the rut.



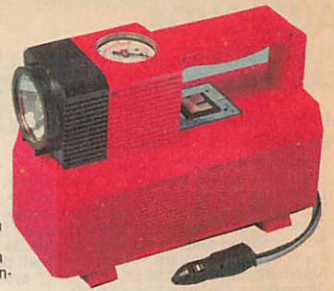
## AIR COMPRESSOR WITH WORKLIGHT PRESSURE GAUGE AND FLASHING HAZARD LIGHT SPECIAL!

MODEL AC-767

OUR PRICE **\$29.95**

### DESCRIPTION

Inflate tires, balls, boats, mattresses, etc., with this new Mini Compressor. It features: 12 ft. cord, with 12V lighter plug; 2.5 ft. air hose with positive lock valve; two nozzle adaptors, on sports needle; emergency light, for repair; flash signal light, pressure gauge, and low power consumption. Power required: 12V, 10 amps.



## SANYO CAR VACUUM CLEANER

MODEL ZC-18

OUR PRICE **\$29.95**

### DESCRIPTION

This exceptional car vacuum cleaner is prepared for your toughest interior. It comes from your DC 12V car cigarette lighter outlet to give you the added suction power you need. It comes with floor brush and crevice attachments. And, an added bonus, an inflator attachment to inflate beach balls, rafts, air mattresses, etc.



## DRIVEGUARD COMPUTERIZED ALCOHOL TESTER

MODEL R-100

OUR PRICE **\$59.95**

### DESCRIPTION

The R-100 is an effective breath-analyser which will give you an immediate read-out of your blood-alcohol level. If you know you're over the limit, you simply must not drive.

### FEATURES

- Latest solid-state circuitry.
- Simple 3 step operation.
- Night view illumination.
- Compact and self-powered.
- Warning indicator for over alcohol level.



## PAGE ALERT RADIO FREQUENCY TRANSMITTER

MODEL 4000

OUR PRICE

**\$99.95** each

4 OR MORE

**\$89.95** each

### DESCRIPTION

PAGE ALERT SYSTEM's new PAGE ALERT 4000 is an individually coded 4 WATT radio frequency Transmitter and Pocket Pager Receiver. It is designed to "personally alert" you when your vehicle is being stolen or vandalized. The PAGE ALERT 4000 will call you, and only you, within a transmission range of more than 8 miles (12672 m), depending upon terrain, antenna and atmospheric conditions. Its new digital system allows you to set your own code, which can be changed in seconds. The Page Alert units are passively operated. This enables the vehicle to always be protected whenever the occupants leave, no forgetting to turn the alarm on. Also, the instructions are written in both English and Spanish. Passive operation may enable you to get a reduction in insurance.



## WEN ORBITAL CAR WAXER

MODEL 10-W

OUR PRICE **\$69.95**

### DESCRIPTION

Get professional results with the Wen Orbital Car Waxer. Its random 3000 orbits per minute duplicates your hand motion at high speed. Tapered wrap-around textured non-slip handle allows flush buffing. It includes: 2 terry cloth bonnets; applicator bonnet; and luster buff bonnet. Apply wax evenly, remove oxidation and buff and polish for a brilliant finish.





## HAHNEL DB RANGE SCREEN TABLE TOP SLIDE VIEWER MODEL DB-200

OUR PRICE **\$99.95**

### DESCRIPTION

The Hahnel DB Range Screen Viewer is a new concept in slide viewing without the fuss of bulky projectors. The DB Range has its own built-in screen, big enough to allow the whole family to watch the show, even in broad daylight. Just pop your slides into the magazine, push in the lever for full colour pictures right before your eyes. It has a large colour corrected wide angle screen, 160 x 180mm. Manual slide change with automatic magazine advance and fast magazine advance without slide change. It uses standard magazine for 36 or 50 slides, 5x5 cm. The focusing lever allows for fine focus adjustment. Detachable screen housing for on-wall projection. Easy high adjustment by turning feet.



## HANIMEX WORLD TIME CALCULATOR MODEL HC-24

OUR PRICE **\$24.95**

### FEATURES

- Calculator: 8 digit display with one symbol digit. +, -, x, ÷. Operation in algebraic mode. Percent with automatic add-on/discount. Memory calculation with memory overflow protection.
- World-Time: displays 20 different time zones.
- Exchange rate calculations. • Automatic calendar to the year 2099.
- Stop Watch: can be read to the accuracy of 1/10 second.
- Has an hourly chime. • Alarm time which sounds for 60 seconds.
- Date, hour, minute, second, AM/PM and day of the week are displayed in time piece mode.
- Comes in handsome case. Size of case closed: 6" W x 1 1/2" H x 3" D.



## SHARP DIGITAL BLOOD PRESSURE MONITOR

MODEL MB-308HU OUR PRICE **\$49.95**



### DESCRIPTION

Monitor your blood pressure at home with the MB-308HU Digital Blood Pressure Monitor. It incorporates a microprocessor programed to correctly recognize the individual Korotkoff sound wave forms to automatically measure your systolic and diastolic blood pressure and pulse rate. This ensures that your blood pressure is measured with unprecedented ease and accuracy. It has an easy-to-read digital fluorescent display show complete blood pressure and pulse rate. It's simple operate so that everyone in the family will be able to take blood pressure and pulse rate measurements promptly and accurately. This kit contains electronic monitor, adult cuff, soft carrying case, instruction manual and record book. It operates on four "AA" batteries not included.

## SHARP BLOOD PRESSURE MONITOR WITH DATA PRINTOUT

MODEL MB-371H OUR PRICE **\$125.00**



The Sharp MB-371H incorporates a microprocessor programed to correctly recognize the individual Korotkoff sound wave forms to automatically measure your systolic and diastolic blood pressure and pulse rate. This ensures that your blood pressure is measured with unprecedented ease and accuracy.

The presettable cuff inflation pressure must be set in advance according to your individual blood pressure value. Should this pressure be too low, the MB-371H will automatically raise the cuff pressure by 30mmHg and remeasure. After positioning the cuff properly just push the inflate button. A built-in pump automatically inflates the cuff, eliminating hand pumping of an inflation bulb. Results are indicated automatically on the digital display. The air in the cuff is then automatically released. The super large liquid crystal display shows complete blood pressure and pulse rate or time/date display, plus it is accurately recorded with the printer. The kit includes printing electronic monitor, cuff, hard carrying case cover, instruction manual, two rolls of recording tape, and record book. It runs on 4 "C" size batteries (not included) or an optional AC adaptor (not included).

## MAXI RUB THE PERSONAL MASSAGE UNIT MODEL MR-2

OUR PRICE **\$79.95**

### DESCRIPTION

Maxi Rub is an effective 2-speed massage unit, for fast relief from tension, and minor aches and pains. This versatile massager can be applied to almost any part of the body with one hand. Massage the tens of thousand of nerve endings on the soles of the feet to relieve tired feet and stimulate the rest of the body. Improve your circulation, ease lower back pain and spasms. This unit even helps break down ugly, lumpy cellulite nodes by directly dissolving them and increasing circulation. The Maxi-Rub features a powerful, heavy-duty motor, thick contoured orbiting pad and maintenance-free design with strong, aluminum die-cast components and permanently sealed bearings.



## SANYO WET/DRY ELECTRIC SHAVER MODEL SVMW-700

OUR PRICE **\$19.95**

Now you have the choice of Wet or Dry shaving in one shaver!

### FEATURES

- Multi-perforated head offers knick-free comfort.
- Sharp vibrating-type cutter blades with 26 cutting edges.
- Runs up to 40 minutes on 2 "AA" batteries (not included).
- 2 Speed versatility.
- Weighs 4-1/2 oz. with batteries.



## WACO GOLDEN JACKPOT SLOT MACHINE MODEL 6764-B

OUR PRICE **\$39.95**

### FEATURES

- Mechanically operated—no batteries required.
- Heavy gauge metal body-plastic front panel.
- Plays with pennies, nickels, quarters or no money.
- If coins are used, machine will "Jackpot" when winning combination appears on center line.
- "Jackpot" rings a bell.
- Coin release button in back of machine.
- Fully assembled.
- Individually packed in a four color printed box.
- Dimensions: 11"H x 7-1/2"W x 6-1/2"D.



## WACO CASINO KING DELUXE SLOT MACHINE

MODEL 6930 OUR PRICE **\$89.95**

### FEATURES

- Light flashes and bell rings when winning combination appears on center line.
- Jumbo sized, heavy gauge metal body and front panel.
- See-thru coin reserve has built in coin separator that accommodates pennies, nickels, dimes, quarters and half dollars.
- Machine will pay with or without coins.
- Fully assembled.
- Four pay off combinations.
- Coin release button in back.
- Mechanically operated (light tower requires two "C" batteries, not included).
- Individually packed in a two color printed box with carry handle.
- Dimensions: 18"H x 12"W x 9"D.



CALL US/WE ACCEPT PHONE ORDERS • TOLL FREE 800-645-9518 • NYS TOLL FREE 800-832-1446



## FLEA SOUND COLLAR A Safe Way To Care For Your Pet MODEL FC-0033

OUR PRICE **\$59.95**  
DESCRIPTION

Rid your pet of annoying harmful ticks and fleas with a sound collar. A high pitched sound audible only to ticks and fleas which keeps them away. Now you can protect your pet from the chemicals and poisons of other flea collars and keep those pests away from your animal at the same time. It's water resistant and runs on a replaceable battery. Here's something really good you can do for your pet.



## BIOTECH ULTRASONIC HUMIDIFIER MODEL BT-200

OUR PRICE **\$99.95**  
FEATURES

- Easy maintenance and cleaning.
- Water Reservoir—full tank (4.9 litres, lasts up to 12 hours.
- Easy refilling.
- Automatic shut-off valve controls water flow into vaporization tray.
- Mist chamber.
- Nozzle swivels a full 360°.
- Control panel to select the desired direction.
- Carrying Handle • Durable Casing.

### DESCRIPTION

A compact humidifier for home or office use. Portable and lightweight, BT-200 ultrasonic humidifier fits into any decor. Unlike conventional humidifiers, the BT-200 works on the principle of ultrasonic vaporization, producing a cool mist. The maintenance is easy cleaning, no replacement of foam pads, less chance of bacteria build-up and very low power consumption—only 55 watts at full power.



## BP ATTACHE CASE with COMBINATION LOCK MODEL TC-7350R (Burgundy)

OUR PRICE **\$24.95**

### MODEL TC-7350B (Black)

OUR PRICE **\$24.95**

### DESCRIPTION

Finely crafted attache case with combination lock is an attractive accessory for the business person. The combination lock secures your belongings and insures your privacy. This case also features an expandable bottom when that little extra space is needed. The pocket divider is a helpful organizer for pens, pencils, calculator, pads and comes in either black or burgundy. Dimensions: 17½"W x 12½"H x 4"D.



## MINI-VAC MICRO-CLEANER

MODEL MN-1

OUR PRICE **\$24.95**

### DESCRIPTION

MINI-VAC, a revolutionary tool, is designed to remove minute particles of dust and debris. Unlike compressed air, which simply disperses the pollutants, MINI-VAC vacuums them safely away. Compact, efficient, versatile and completely portable. It has vacuum or blower power, finest quality lens brush and all purpose brush, interchangeable direction wands. AC or DC powered (adaptor optional). Use it for cleaning stereo equipment, computers, models, miniatures, video equipment, photography equipment, slides and projectors etc.



## BIOTECH BIONAIRE 500 AIR/PURIFIER/IONIZER

MODEL 500

OUR PRICE **\$99.95**

### DESCRIPTION

The Bionaire 500 AIR/PURIFIER/IONIZER is a technologically advanced filtration and ionization system. It's helpful to asthma, allergy and hayfever sufferers or anyone who finds it important to breathe particulate free air. Up to 95% effective on particles as minute as 0.01 micron and up to 99% effective on all other particulate pollutants. The patented, electrically charged filter and independently controlled ionizer work together to rid the air of particulate irritants such as tobacco smoke, pollen, dust, dirt, ragweed, mold spores, fungi and more. Cleans the average room (10' x 10') 3-1/2 times an hour. Lightweight and portable, only 4.4 lbs. Energy efficient, uses less electricity than a 45 watt light bulb. Quiet enough for bedroom use, while offering maximum control for working environments. Will not interfere with radio or TV reception. Tax deductible with a doctor's prescription. Dimensions: 11"W x 8-1/8"D x 5-1/16"H



**SPECIAL!**

## BIOTECH BIONAIRE 1000 MODEL 1000

OUR PRICE **\$249.95**

### DESCRIPTION

Bionaire 1000 is the air purifier which removes virtually all air pollution particles. It uses a technologically advanced filtration system with the latest solid state engineering to clean and freshen the air. It removes such particles such as: dirt, dust, soot, ragweed, pollen, mold spores, tobacco smoke and fungi. It cleans the air of an average size room over five times an hour. Quiet enough to use in a bedroom. Uses no more electricity than a 60 watt bulb. It's portable and weighs only 12 lbs. It will not interfere with radio or TV reception and is tax deductible with a doctor's prescription. Allergy, asthma and hay fever sufferers can breathe easier. It is indispensable for anyone who finds it important to breathe particle-free air.



## TRONICA CREDIT CARD SIZE CALCULATOR MODEL 218

OUR PRICE **\$7.95**  
2 FOR **\$10.00**

### FEATURES

- Powered by light, either indoors or outdoors.
- Liquid crystal display.
- On/AC key, CE/C key.
- Memory keys. • Automatic constant.
- 16 digit approximate calculation and overflow that lets your know how many digits overflow.

### DESCRIPTION

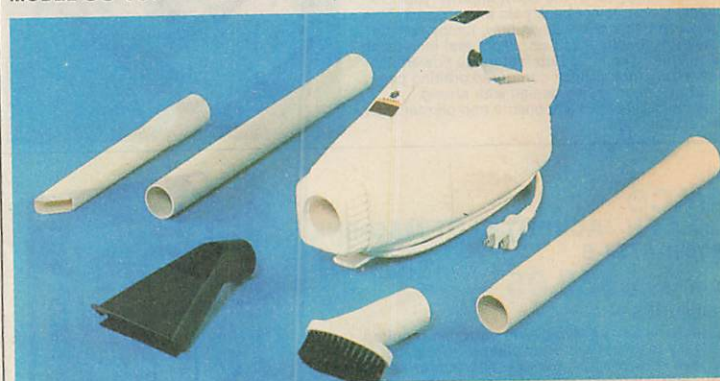
The Tronica's calculator is powered by light either natural or artificial, so it can be operated indoors or out. The power source can be a 30 watt florescent lamp or a 60 watt incandescent lamp.



## SANYO QUICK-CLEAN VACUUM CLEANER MODEL SC-181

OUR PRICE **\$39.95**

**NEW!**



### DESCRIPTION

Clean-ups made easy with the new lightweight hand grip vacuum by Sanyo. When a fast clean-up is necessary this hand vacuum allows you to maneuver effortlessly through your home providing you with ample power for a quick straighten. It weighs only 2 lbs. 5 ozs. and comes with the same accessories of most larger, more cumbersome vacuums. You are provided with a floor and crevice tool, round brush and two wands. The power cord hooks under the cleaner's body facilitating orderly storage. The vacuum is powered by a 140W motor. Dust disposal is as easy as a touch of a clamp. The power switch itself is located on top of the hand grip. All in all you get the power you need for a quick clean-up without the hassle dragging out the heavy duty cleaner.



## EMERSON 5" BLACK & WHITE TV, AM/FM/PSB/WB—3 WAY POWER PORTABLE COMBINATION WITH BUILT-IN BATTERY RECHARGER CIRCUIT.

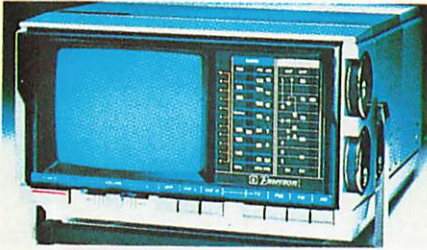
MODEL VR-35

OUR PRICE **\$99.95**

### FEATURES

- 5" "Ultra Bright" picture tube.
- Built-in sun shade and screen.
- Separate thumbwheel rotary TV and Radio tuning selectors.
- Receives Public Service Broadcasts and National Weather Control.
- Slide volume control.
- Pushbutton UHF/VHF & VHF H selector.
- 3-1/4" full range speaker.
- Top mounted telescoping TV/Radio antenna.
- Built-in battery recharger circuit.
- AC/DC (line cord) /DC 12 volt car adaptor included.
- Earphone jack (earphone included).
- Folding stand/handle combination.
- Dimensions: 10-1/2"W x 5-3/4"H x 11"D • Weight: 11 lbs.

Optional Custom Battery Pack model ERB-122 ..... \$39.95



**NEW!**

## EMERSON 5-1/2" COLOR TELEVISION—AM/FM PORTABLE RADIO COMBINATION WITH BUILT-IN BATTERY RECHARGER CIRCUIT

MODEL PC-5E

**NEW!**

OUR PRICE **\$249.95**

### FEATURES

- 5-1/2" "Ultra Bright" Color Tube.
- Rotary controls for contrast, vertical hold, brightness, tint and color.
- Wide "Easy Read" dial scale.
- Separate thumbwheel rotary TV/Radio tuning selectors.
- Slide volume and high/lo tone controls.
- Top mounted telescoping TV/Radio antenna.
- Built-in battery recharger.
- TV external 75 ohm antenna input with 300 ohm adaptor included.
- AC/DC/DC 12 volt adaptor included.
- Folding handle/stand combination.
- AM/FM radio receiver.
- 3" full range speaker.
- Earphone Jack (Earphone included).
- Dimensions: 9-3/4"W x 12"D x 5-1/2"H.
- Weight: 15 lbs.

Optional Custom Battery Pack model ERB-122 ..... \$39.95



## EMERSON 5" BLACK AND WHITE TV WITH AM/FM STEREO RECEIVER/CASSETTE PLAYER/RECORDER WITH BUILT-IN DETACHABLE SPEAKERS

MODEL XLC-555

OUR PRICE **\$199.95**

**NEW!**

### FEATURES

- High resolution 5" picture tube with sun screen.
- Built-in speaker in center section.
- Stereo "Feather Touch" cassette deck with auto stop and digital tape counter.
- Stereo AM/FM receiver with LED stereo indicators.
- Separate slide tone, balance and volume controls.
- Built-in battery recharger circuit.
- Stereo headphone jack.
- Phone input jack.
- Detachable full range modular speakers.
- Combination UHF/VHF/FM telescoping antenna.
- Operates on AC line cord / 10 "D" cell batteries (not included) / Recharge battery (not included).
- Car adaptor (12 volt).
- Dimension: 19-3/4"W x 10-1/2"H x 9-1/2"D.
- Weight: 14 lbs.



## EMERSON 13" COLOR TELEVISION WITH AM/FM STEREO CASSETTE PLAYER/RECORDER AND DIGITAL CLOCK

**NEW!**

AN AUDIO/VIDEO CENTER ALL IN THE SIZE OF A 13" COLOR TV  
MTS/SAP STEREO TV  
BROADCAST ADAPTABLE

MODEL AVC-13

OUR PRICE **\$319.95**

### FEATURES

- 13" Color television with dual full range speakers.
- 12 Station preset direct access electronic tuning.
- LED digital alarm clock with wake or sleep for TV or Radio.
- AM/FM stereo receiver section.
- Cassette stereo recorder/player.
- Automatic fine tuning.
- Stereo headphone jack.
- Dual microphone inputs.
- Slide, volume, balance, & tone controls.
- 75 ohm VHF & 300 ohm UHF & FM external antenna connectors.
- VHF & UHF antennas included.
- 75 to 300 ohm antenna adaptor included.
- Stereo Broadcast Adaptable: through MTS (Multi-Channel TV Sound) jacks. (Works with optional decoder. See TVC-22 page 115.) Stereo broadcasts and second audio programs (such as different language) can be received and played back through a conventional stereo audio system.
- Dimensions: 20"W x 17-5/8"H x 16"D.
- Weight: 30.8 lbs.



## EMERSON VHS 14 DAY/4 EVENT WIRELESS REMOTE VIDEO CASSETTE RECORDER

CABLE TV COMPATIBLE

MODEL VCR-870

OUR PRICE

**\$279.95** **NEW!**

### FEATURES

- 11 Function infra-red wireless remote control.
- 105 Channel cable hook-up.
- Compact "Slim-Line" design.
- Motorized front loading tape system.
- Program 4 different events for automatic recording within any two week period.
- Freeze frame and Speed search (forward/reverse).
- Picture sharpness control.
- Electronic digital timer/clock display.
- Preset up to 12 channels.
- Tracking control for aligning picture of any pre-recorded tape.
- Accessories supplied: infra-red remote control with batteries included, 75 ohm connector cable, 300 ohm to 75 ohm and 75 ohm to 300 ohm antenna connector, UHF feeder cable and Quick/easy-use guide.
- Dimensions: 16.9"W x 13.2"D x 4.5"H.
- Weight: approx. 20 lbs.



## TEKNIKA VHS MOVIE CAMERA RECORDING AND PLAYBACK/VHS VIDEO STANDARD

**NEW!**

MODEL C-5010 With Carrying Case

OUR PRICE **\$1299.95**

### FEATURES

- Instant playback.
- Autofocus.
- High-band Newvicon pickup tube.
- 6x Power zoom lens.
- Two-hour recording.
- Freeze frame speed search.
- Viewfinder warning—helps prevent shooting errors.
- Half-inch monochrome viewfinder—images can be monitored while shooting or during playback.

### DESCRIPTION

The VHS Movie was designed to help you make video recordings, even if you have never used a movie camera before. This means that except for making a selection or two, all of the recording conditions will be taken care of automatically. It also operates manually, to achieve the highest quality reproduction. It features instant playback, for on-the-spot viewing and checking. After you've recorded your scene, play it back immediately afterward through either the electronic viewfinder or a directly connected TV set. It also has a built-in high performance unidirectional microphone, image check function, easy low-angle shooting, one-touch white balance adjustment, auto or manual aperture adjustment, date recording mechanism, editing and dubbing capability, remote control terminal, and battery/household AC/car battery power source compatibility.



## EMERSON COMPACT DISC, MATCHED MODULAR AUDIO SYSTEM

**NEW!**

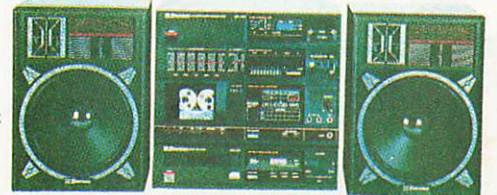
MODEL CD-1000P

OUR PRICE

**\$449.95**

### FEATURES

- Dual speed audible track search.
- 4 Digital multi-function LED display.
- Programmable compact audio digital disc player, with 3 beam laser pick-up system and 9 programmable memories.
- Programmable continuous repeat.
- Motorized front loading.
- Index & random music search.
- Speakers: 2-Way bookshelf size with 8" woofer and 2" tweeters in each enclosure.
- Audio Section: AM/FM stereo digital readout receiver section.
- Deluxe stereo cassette recorder/player.
- 5 Band graphic equalizer.
- Dimensions: 13-1/4"W x 13-1/2"H x 11"D. Speakers: 9-7/8"W x 13-1/2"H x 7-3/4"D (ea.).



## EMERSON 4 1/2" B&W TV, AM/FM ELECTRONIC DIGITAL CLOCK RADIO with BATTERY BACK-UP

MODEL BCR-45

OUR PRICE

**\$99.95**

### FEATURES

- 4 1/2" "Ultra Bright" B&W Picture Tube.
- LED Digital Clock Display.
- Wake to Music or TV.
- Separate Slide Tone & Volume controls.
- Separate Radio & Tuning controls.
- Wide Easy Read Dial Scales.
- Snooze/Sleep Functions.
- Retractable Pop Up Stand.
- Earphone Jack.
- Telescoping Swivel Antenna.
- External TV 75 ohms Antenna Jack.

### SPECIFICATIONS

Television Standard: NTSC. Power Input: 120V, 60Hz DC Volt Adaptable (adaptor not included). Antenna Impedance: 75 ohm unbalanced/300 ohm adaptor (included). Receives Channels: VHF 2-13, UHF: 14-83. Speaker: 3" Full Range. Picture Tube: 4 1/2" Short Neck Type. Dimensions: 9.6"W x 4.8"H x 6.4"D. Weight: 7 1/2 lbs. Earphone included.







**EMERSON 12" B&W PORTABLE TELEVISION  
MODEL B-121**

**FEATURES**

- All solid state design operates more efficiently.
- Automatic gain control.
- Low power consumption—Only 35 watts.
- Compact walnut grain cabinet.
- Separate brightness, contrast and volume controls.
- Separate detent UHF/VHF tuners.
- VHF telescoping swivel antenna/UHF loop antenna.
- Dimensions: 16" W x 12" H x 12" D.
- Weight: 18 lbs.

OUR PRICE

**\$69<sup>95</sup>**

**BP VIDEO-CINE  
CONVERTER**

**MODEL V-1701**

**Description**

The BP Video-Cine Converter is an optical device that allows the easy transfer of slides, 8mm or 16mm movie film to VCR tape. The Video-Cine Converter's precision optics put the image from your movie or slide projector on a high-contrast, rear projection screen. Your video camera shoots that image, can color-correct faded pictures, add narration or other sound. Can be used with any video camera or slide projector. If your video camera lacks close-up capability, you will need a macro lens attachment.

Model	Description	Our Price
V-10	Fisheye	\$ 49.95
V-11B	Close-up/Wide-View	49.95
V-12	Telephoto	105.00
V-14	Macro Lens	12.95
Patent Pending		

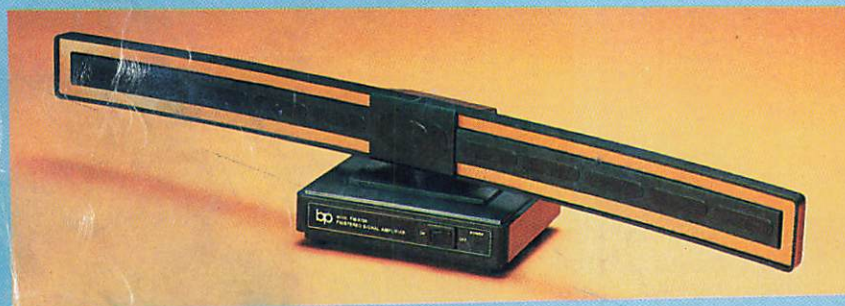
OUR PRICE

**\$34<sup>95</sup>**



Out of State Toll Free **800-645-9518**

NYS Toll Free **800-832-1446**



**BP FM/STEREO ANTENNA AMPLIFIER**

**MODEL FM-9700**

**DESCRIPTION**

Help your FM receiver deliver crisp, clean, undistorted sound, by using this new high quality FM antenna. You can enhance your listening pleasure without having to purchase large sitely outdoor antennas.

**SPECIFICATIONS**

FM/Stereo Signal: 88-108 mHz. Gain: 15dB. Output: 75 ohm or 300 ohm. Dimensions: 6"W x 4 1/4"D x 4 1/4"H, antenna bar 23 1/2"L. Comes with 6 ft. coaxial cable and matching transformer. Operates on 110-117 VAC.

OUR PRICE

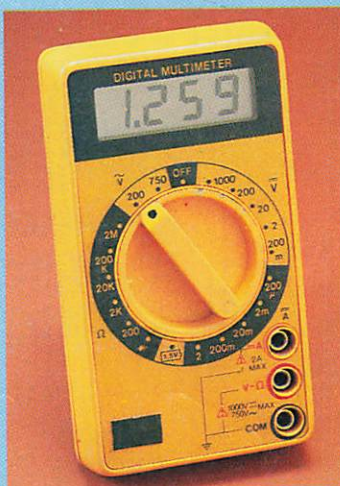
**\$34<sup>95</sup>**

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**BP 3 1/2 DIGIT LCD  
METER with MAXI SPEC'S  
MODEL DVM-630**

**FEATURES**

- 0.5% Accuracy.
- DC/AC Voltage.
- DC Current.
- Resistance.
- Diode Test.
- Battery Test.
- See page 15 for details.

OUR PRICE

**\$29<sup>95</sup>**

**BP LOGIC PROBE with AUDIO TONE**

**MODEL LP-189**

The LP-189 logic probe is a powerful troubleshooting tool, including a level detector, pulse detector, pulse memory, and audio tone which depends on what kind of logic signal inputs. It is compatible with TTL, DTL, RTL, HTL, CMOS, MOS. This compact probe is easy to handle in tight spaces. Three colored LED indicators display pulse presence and high-and-low logic states. In the same time, an audio tone is also coupled with different frequency to remind user to distinguish the logic states easily. It responds to pulses as narrow as 30ns, or pulse trains over 17MHz. Compatible with most logic families, the LP-189 is an indispensable troubleshooting tool.

**SPECIFICATIONS**

**MAX RATINGS:** Max. allowable supply voltage  $\pm 20V$ ; Max. input voltage  $\pm 50V$ ; Free Air operating temperature  $0-50^{\circ}C$ ; Operating supply voltage range TTL-5V, CMOS 5-15V **Input Impedance** 1Mohm **Min. detachable pulse width** 30ns **Max. input frequency** displayable 17MHz **Logic thresholds** TTL CMOS. LOGIC 1 (red LED lights) with beeper  $2.3V \pm 0.2V$  70%Vcc, LOGIC 0 (green LED lights) with beeper  $0.8V \pm 0.2V$  30%Vcc **Input overvoltage protection**  $\pm 220V$  DC/AC 15 sec. **Pulse LED (yellow) flashing time** 500ms **Power supply protection**  $\pm 20V$  **Size** 205x18x16.5mm **Weight** 60 g.

OUR PRICE

**\$24<sup>95</sup>**

