

November '88

ERIC IRVINE
P.O. THORNH VIC 3726



ALL ELECTRONIC COMPONENTS

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Telephone: (03) 662 3506 Fax: (03) 663 3822

KIT LIST and Short-Form Catalogue

NOTE:

Kits are continually being added each month. Please ask for information on any kits, etc. not listed herein.

STEREO

S 1	ETI 480	50 WATT AMPLIFIER (Less H/S & Bracket)	DEC 76	\$33.76
S 2	ETI 480	100 WATT AMPLIFIER (Less H/S & Bracket) An updated version of the very reliable ETI 422 Amplifier redesigned for simplicity in construction.	DEC 76	\$39.55
S 3	ETI 482A	PRE-AMPLIFIER BOARD	JAN 77	\$32.82
S 4	ETI 482B	TONE CONTROL BOARD 50W/channel, incorporates modular construction, filters, and CMOS switching.	JAN 77	\$31.19
S 5	ETI 470	60 WATT STEREO AMPLIFIER Particularly designed with low transient intermodulation distortion in mind.	MAY 79	\$48.48
S 6	ETI SERIES 4000	60 WATTY AUDIO AMPLIFIER MODULE (Incl. H/s) A high performance 60 watts per channel stereo amplifier using the ETI 470 modules and the ETI 471 preamp control unit.	JUL 79	\$349.95
S 7	ETI 455	STEREO LOUDSPEAKER PROTECTOR (3W - 100W) Has the advantage of removing coupling capacitors from the signal path, decreasing parts count and improving performance at low frequencies.	MAR 80	\$59.70
S 8	ETI 476	SERIES 3000 STEREO AMPLIFIER (20W/CHANNEL) A compact stereo amplifier which delivers 20W/Channel and has low distortion.	NOV 80	\$191.80
S 9	ETI 453	GENERAL PURPOSE AMPLIFIER This module will work from a wide range of supply voltages, has good sensitivity, is robust and reliable - easy to build.	APR 80	\$20.37
S10	ETI 477	MOSFET POWER AMP MODULE (100W/CHANNEL) Rated to deliver 150W RMS maximum and features extremely low, harmonic, transient and inter- modulation distortion.	JAN 81	\$97.21
S11	ETI 442	MASTER PLAY STEREO (Less Panel & Turntable, Case) A small, low cost stereo amp/record player unit - easy to build and delivering over 30 watts (peak) per channel.	SEP 84	\$126.23
S12	EA	100 WATT SUB-WOOFER MODULE (Incl. H/S) Specifically designed for use as a sub-woofer driver amplifier in a tri-amped hi-fi system. Capable of up to 120 watts RMS into 4 ohm loads and up to 80 watts RMS into 8 ohm loads.	JUL 82	\$172.13

S13	EA	HEADPHONE AMPLIFIER FOR MUSICIANS	FEB 84	\$48.12
		Will let you practise for hours without upsetting the household. Or you can use it to monitor your own performance whilst playing in a group.		
S14	AEM 6500	60 WATT UTILITY AMPLIFIER MODULE (incl. bracket)	JUL 85	\$74.87
		A high performance general purpose unit for use in a wide variety of applications. Can be configured with either 2 or 4 output devices to provide output powers of around 60w and 100w and into 8 ohms.		
S15	AEM 6500	100 WATT UTILITY AMPLIFIER MODULE	JUL 85	\$110.77
		As above.		
S16	AEM 3500	LISTENING POST	JUL 85	\$35.52
		Attaches between the audio output of a shortwave receiver and the input part of a computer. Allows decoding and printing out of morse code, radioteletyping (RTTY) and FAX.		
S17	EA	1 WATT UTILITY AMPLIFIER	NOV 84	\$15.44
		A general purpose audio amplifier. Easy to build.		
S18	EA	20 WATT UTILITY AMPLIFIER (less H/Ss)	NOV 84	\$24.72
		A higher powered general purpose audio amplifier, also easy to build.		
S19	ETI 426	RUMBLE FILTER - STEREO	OCT 74	\$17.25
		Active filter design improves clarity of bass reproduction.		
S20	EYI 457	SCRATCH AND RUMBLE FILTER (STEREO VERSION)	SEP 80	\$53.36
		If you wish to transcribe your collection of 78s on to tape, this scratch and rumble filter project should help improve the sound quality.		
S21	HE 121	SCRATCH AND HISS FILTER	OCT 81	\$24.60
		If your records are a bit scratched and noisy, this is just what you need. Will also cut down hiss from cassettes.		
S22	ETI 451	HUM FILTER FOR HI-FI SYSTEMS 50 or 100 Hz	JUL 79	\$22.12
		Remove that hum from your hi-fi system!		
S23	EA	FILTER FOR ADD-ON AM STEREO DECODER	OCT 84	\$36.81
		For quiet, clean stereo reception.		
S24	EA	ADD-ON DECODER FOR AM STEREO (less filter)	OCT 84	\$35.04
		This add-on decoder works with the Motorola C-Quam system. Add it to your tuner.		

(19.95)
D SMTH

S25	ETI 438	AUDIO LEVEL METER	DEC 75	\$24.73
		Peak and average audio levels are indicated by a bar of light. This level meter can be arranged to indicate levels in either "VU meter" format or in output power format.		
S26	ETI 458	VU LEVEL METER (incl. pre-mounted leds)	JUN 81	\$58.58
		This LED level meter though originally designed for the Series 5000 Pre-amp, is ideal for any application requiring a wide dynamic range level display.		
S27	ETI 455	STEREO LOUDSPEAKER PROTECTOR (3w - 100w)	MAR 80	\$59.70
		As you know, carelessness with a high power amplifier can damage voice coils. The 455 is designed for 100w! However, it will handle 150w-peak and up to 400w transients.		
S28	ETI 494	LOUDSPEAKER PROTECTOR (MONO)	OCT 82	\$30.40
		DC and over-power protection of loudspeakers or loudspeaker systems rated at up to 1500 watts.		
S29	ETI 479	BRIDGING ADAPTOR FOR SERIES 5000	MAR 82	\$29.81
		Will operate the two ETI 477 MOSFET power amplifier modules in the Series 5000 amp in bridge configuration.		
S30	EA	BRIDGE ADAPTOR	JUN 85	\$21.00
		This simple circuit makes it possible for any stereo amplifier to deliver four times its single channel power into a single load.		
S31	EA	STEREO SIMULATOR	APR 83	\$24.28
		A simple circuit which can produce simulated stereo sound from virtually any monophonic source. Can be a self-contained unit, or installed inside an existing piece of equipment.		
S32	EA	STEREO SIMULATOR - STAND ALONE	APR 83	\$37.95
		See above.		
S33	EA	DIGITAL STYLUS TIMER	OCT 80	\$74.50
		Counts up to 999 hours of stylus use. Standby batteries maintain the count when the turntable is turned off.		
S34	ETI 1405	STEREO ENHANCER (incl. Errata parts)	MAR 85	\$166.68
		Creates an 'enhanced stereo effect' with a small unit which attaches to the amp.		
S35	EA	LED BAR GRAPH DISPLAY (STEREO VERSION)	DEC 81	\$170.93
		A Peak/Average Signal Monitor which displays a signal range of 60 dB in 3 dB steps. (Peak is depicted by a moving dot, and Average by a varying bar.)		

S36	EA	INFRA-RED T.V. SOUND CONTROL	JAN 83	\$71.25
A T.V. sound control which provides remote control of volume. Gives 8 steps of control, including full off.				
S37	AEM 6503	ACTIVE CROSSOVER (Less parts to be selected)	FEB 86	\$67.88
A popular unit. Divides the audio spectrum of your loudspeaker system into frequency bands.				
S38	ET I 464	GENERAL PURPOSE IC AUDIO AMPLIFIER MODULE	JUL 83	\$15.38
An ideal project for the beginner. A general purpose small audio amplifier with many useful applications, e.g. intercom, 'baby minder' etc.				
S39	ETI 412	LED AUDIO PFAK PROGRAMME DISPLAY	OCT 83	\$33.63
Features a 10-LED bargraph array and has thousands of applications as an add-on to a hi-fi system.				

AUDIO TEST UNITS

AT 1	ETI 441	AUDIO NOISE GENERATOR	JAN 76	\$16.33
Simple circuit generates both white and pink noise.				
AT 2	HE 105	BENCH AMPLIFIER (Less Case)	JUL 81	\$22.20
Invaluable for testing all your audio projects, this amplifier is a well-proven design with low distortion and high reliability.				
AT 3	EA	AUDIO TEST UNIT FOR CASSETTE DECKS	OCT 81	\$87.76
Allows you to set your cassette recorder's bias for optimum frequency response for a given tape or alternatively, it allows you to find out which tape is best for your recorder.				

LED's

Light Emitting Diodes are a special type of diode which lights up when a voltage is applied. They are available in red, green, yellow, orange and in various sizes and shapes. LEDs are polarized, and can be damaged by reverse connection. As a general rule, the longer lead is the positive

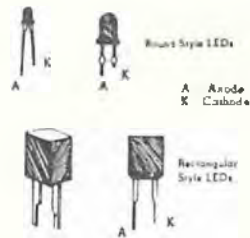
COLOUR	RED	ORANGE	YELLOW	GREEN
V _F (TYPICAL)	1.8V	2.0V	2.1V	2.2V

TABLE 1 Typical forward voltage characteristics of standard LEDs with forward current set at 20 mA.



OPERATING LED FROM DCV

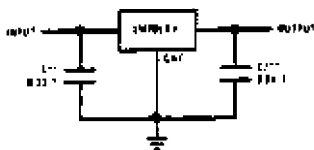
$$R = \frac{V_s - V_f}{I_f}$$



PRE-AMPLIFIERS & MIXERS

P 1	ETI 445	STEREO PRE-AMPLIFIER A general purpose stereo pre-amplifier using a single LM382 IC which can be tailored for use with magnetic pickups, tape recorders or microphones by changing a few components.	JUL 76	\$18.48
P 2	ETI 471	HIGH PERFORMANCE STEREO PRE-AMPLIFIER (Incl. Panel) This stereo preamplifier is designed to drive two 60 watt low distortion amplifier modules.	JUN 79	\$122.75
P 3	ETI 449	BALANCE MIC PRE-AMPLIFIER This simple preamplifier will accept balanced inputs directly.	NOV 76	\$13.46
P 4	ETI 461	BALANCED PRE-AMPLIFIER A versatile little pre-amp with a host of applications in the audio-and-beyond range, not the least of which would be as a balanced mic pre-amp.	DEC 82	\$27.71
P 5	ETI 478MM	MOVING MAGNET PRE-AMPLIFIER (SERIES 5000) The moving magnet or moving coil cartridge represents a non-linear source of impedance to the input stage of a pre-amplifier.	SEP 81	\$47.31
P 6	ETI 478MC	MOVING COIL PRE-AMPLIFIER (SERIES 5000) See above.	SEP 81	\$50.37
P 7	ETI 473	MOVING COIL CARTRIDGE PRE-AMPLIFIER The design of this type of moving-coil cartridge gives a number of advantages over the more usual phono cartridge. Inverts the roles of the pick-up coils and magnet.	OCT 79	\$101.00
P 8	EA	MOVING COIL PRE-AMPLIFIER (BATTERY) Less holders This fine pre-amplifier uses well-matched monolithic transistor pairs to achieve very low noise. The circuit can be battery operated.	JUL 81	\$51.60
P 9	ETI 453	GENERAL PURPOSE AUDIO AMPLIFIER MODULE A handy 'tool' for the electronics experimenter. Will work from a wide range of supply voltages, has good sensitivity, is robust, reliable - easy to build.	APR 80	\$21.06
P10	ETI 446	AUDIO LIMITER A simple, effective unit which can be used as a limiter, automatic volume control or voltage controlled amplifier.	AUG 76	\$21.57

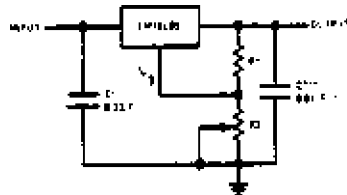
- P11 ETI 474 HIGH TO LOW IMPEDENCE INTERFACE JAN 80 \$10.15
(Incl. Optionals)
This interface provides the necessary impedance conversion to allow medium to high output impedance pre-amps to mate with the ETI 470 60 watt amp.
- P12 ETI 1404 4 CHANNEL MIXER (SHORTFORM) JUL 85 \$145.69
Provides four balanced inputs and stereo output. Designed to be easy to use with noise and distortion figures good enough for recording or broadcast use.
- P13 HE 112 MICRONIXER SEP 81 \$26.12
This simple audio mixer packs a big performance into a small box.
- P14 ETI 467 4 INPUT GUITAR/MIC. PRE-AMP JUL 80 \$97.47
(Suits ETI 466) (Incl. POWER SUPPLY)
Features simple construction and versatile operation, this pre-amp has been designed to mate with the ETI 300W 'Brute' power amp.
- F15 EA VOCAL CANCELLOR APR 82 \$30.29
Enables you to cancel out the lead vocal on almost any stereo record and substitute your own voice or musical instrument.
- P16 ETI 1406 PARAMETRIC EQUALISER AUG 86 \$45.70
A module which can be used by itself on individual instruments or ganged to equalise your music system.



*Requires 100µF electrolytic capacitor for input filter supply filter

**See page 2 for more information on ETI 1406

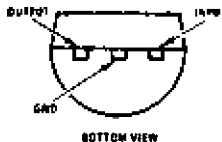
Fixed Output Regulator



$V_{OUT} = 5V + (V_{IN} - 5V) \frac{R1 + R2}{R1}$
5V IN 2A max regulator current (R1 = R2 = 1K 0.1W 5%)

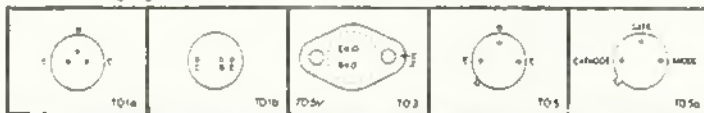
Adjustable Output Regulator

Plastic Package



GUITAR UNITS

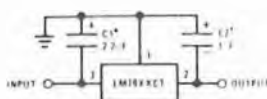
G 1	ETI 452	GUITAR PRACTICE AMPLIFIER This project has been designed to enable guitarists to put in long hours of practice without using a high power amp.	JAN 80	\$107.72
G 2	ETI 447	AUDIO PHASER (DIECAST CASE) A six stage phaser to make your electric guitar sound really spacey!	SEP 76	\$64.16
G 3	ETI 466	300 WATT AMPLIFIER MODULE (Less H/S and Transformer) A 'super power' module - a high power amp. with a dynamic range.	FED 80	\$134.11
G 4	EA	GUITAR BOOSTER PRE-AMPLIFIER This pre-amplifier will allow you to use your guitar with a normal stereo amplifier. It has treble and gain controls and is powered by a 9 volt battery.	JUN 82	\$29.50
G 5	ETI 1410	BASS GUITAR AMPLIFIER (150 WATT) Features many facilities found on expensive 'bought' amplifiers. Delivers 150 watts into 4 ohms, has a 6-band graphic limiter, line out and bi-amp facilities.	AUG 84	\$692.24
G 6	ETI 1424	VERSATILE GUITAR PRE-AMP Intended to provide high quality pre-amplification especially tailored for the electric guitar. Features include a top boost and normal input for guitars, two pre-eq line inputs, bass and treble controls, effects send and return, a sweep eq section, four post-eq line inputs and a master level control.	NOV 87	\$103.00
G 7	ETI 454	FUZZ SUSTAIN (Less Foot Switch) For those who like their music loud. Offers three distinctive sounds in addition to the 'straight through' option - sustain fuzz with sustain, or fuzz without sustain.	APR 80	\$61.08
G 8	ETI 450A	BUCKET BRIGADE An audio delay line suitable for various effects.	DEC 77	\$48.35
G 9	ETI 450B	MIXER FOR BUCKET BRIGADE See above.	DEC 77	\$19.57
G10	SONICS ME 2	WAH WAH PEDAL (Less Pedal Assy.) This easily constructed unit can be used to produce the popular and well known waa-waa effect by placing the pedal between an electric guitar and its amplifier. (Includes case)	JUL/ SEP 82	\$44.60
G11	EA	EFFECTS UNIT Easy to build - enables you to create phasing, flanging, echo, reverb and vibrato effects.	JUN 83	\$156.99



STAGE

ST 1	ETI 592	LIGHT SHOW CONTROLLER (3 channel 1000 W/Ch) (No panel) A simplified dimmer system. The control circuitry is isolated from the mains and control of light level is effected by a variable voltage between zero and 10 volts.	AUG 78	\$147.28
ST 2	ETI 593	COLOUR SEQUENCER (For use with ETI 592) This unit interfaces with the ETI 592 Light Show Controller to give a rainbow sequence of colour.	DEC 78	\$35.99
ST 3	EA	LIGHT CHASER 3 CHANNEL 900 W/Ch A Light Chaser for 240V lamps.	AUG 80	\$114.59
ST 4	EA	TWIN TREMOLO FOR ORGANS/STAGE AMPS An alternative to rotation speaker systems.	SEP 80	\$76.53
ST 6	ETI 499	150 WATT MOSFET P.A. MODULE A high power, general purpose power amplifier module for guitar and P.A. applications employing rugged, reliable MOSFETS in the output.	MAR 82	\$144.80
ST 7	ETI 498/ 499	150 WATT PUBLIC ADDRESS AMPLIFIER Features 'speech filtering' and ALC on the mic inputs to improve intelligibility, an 'insert' input and a power MOSFET output stage delivering 150W RMS maximum output to 100V, 70V or low impedance lines.	JUN 82	\$425.51
ST 8	ETI 588	THEATRICAL LIGHTING CONTROLLER A high quality dimming system suitable for schools or the theatre. A modular system with units plugged into a 19" rack.	NOV 77- MAR 78	P.O.A.

Fixed Regulator

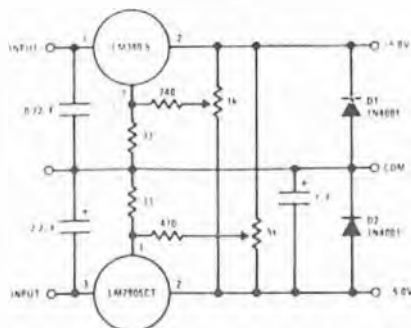


* Required if regulator is separated from filter capacitor by more than 3". For value given, capacitor must be solid tantalum. 25µF aluminum electrolytic may be substituted.

† Required for stability. For value given, capacitor must be solid tantalum. 25µF aluminum electrolytic may be substituted. Values given may be increased without limit.

For output capacitance in excess of 100µF, a high current diode from input to output (1N4001, etc.) will protect the regulator from momentary input shorts.

Dual Trimmed Supply



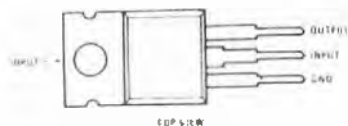
TO 220 Package

Order Numbers:
LM7805CT
LM7912CT
LM7915CT

See NS Package T03B

Plastic Package
TO 220 (TI)

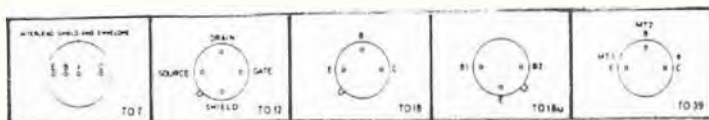
Order Numbers*
LM7805CT
LM7812CT
LM7815CT
See Package T03B



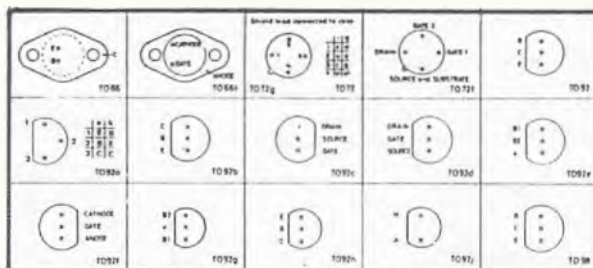
COMMUNICATION EQUIPMENT

CE 1	ETI 711	REMOTE CONTROL TRANSMITTER SWITCH	JUL 76	\$72.44
		Operate up to eight devices such as the garage door, curtains or outside lighting with this remote control system.		
CE 2	ETI 711R	REMOTE CONTROL RECEIVER	SEP 76	\$41.67
		Receiver for the above.		
CE 3	ETI 711D	REMOTE CONTROL DECODER	SEP 76	\$37.65
		Decoder for the above.		
CE 4	ETI 711B	SINGLE CONTROL	OCT 76	\$29.37
		See above.		
CE 5	ETI 711C	DOUBLE CONTROL	OCT 76	\$27.14
		See above.		
CE 6	ETI 711P	POWER SUPPLY	OCT 76	\$19.47
		See above.		
CE 7	EA	27 MHz PRE-AMPLIFIER	MAY 77	\$53.97
		Operates from 12 volts and connects directly in series with the co-axial antenna cable. Boosts weak incoming signals or attenuates excessively strong signals. Also switches to a straight-through connection.		
CE 8	ETI 1517	VIDEO DISTRIBUTION AMPLIFIER (Incl. Power Supply)	SEP 83	\$54.27
		A simple low-cost project which will allow you to drive, say, five video monitors from one source, such as a video cassette recorder or a computer.		
CE 9	ETI 1517/ 151B	VIDEO DISTRIBUTION AMP/ENHANCER	SEP/DEC 83	\$99.50
		A simple low cost project which allows you to drive several video monitors from one source.		
CE10	ETI 1518	VIDEO ENHANCER	DEC 83	\$67.08
		Features three controls for curing video 'image ills' - floor, which cuts off the low level noise that causes snow; ceiling, which ensures that high level signals are not enhanced, causing ringing; enhancement, to crisp up signals, providing up 8dB of boost.		
CE11	EA	VIDEO ENHANCER	OCT 83	\$66.12
		Improve your on-screen picture with this simple but effective build-it-yourself video enhancer.		
CE12	EA	VIDEO EFFECTS (Lens Case & Panel)	APR 85	\$83.74
		Special effects for your home movies. Provides the following features: inverse video, colour removal, lithographic pictures, and contrast enhancement.		
CE12A	EA	VIDEO AMPLIFIER (Lens Plug Pack)	AUG 83	\$32.00
		Bothered by smeary colours, signal beats and RF interference on your computer display? This video amplifier is for computers & VCRs.		

CE13	ETI 1405	STEREO ENHANCER Creates an enhanced stereo effect, with a small unit which attaches to your amp.	MAR 85	\$162.95
CE14	EA	ADD ON DECODER FOR A.M. STEREO This add on decoder works with the Motorola C-Quan system.	OCT 84	\$41.20
CE15	EA	VCR SOUND PROCESSOR (Less Whistle Filter) Give the sound from your VCR a lift. Main features include an effective stereo simulator circuit, a 5-band graphic equaliser, and noise filtering.	APR 84	\$85.99
CE16	ETI 490	AUDIO COMPRESSOR (Incl. Die Cast Case) Quickly responds to the voice, when speaking into a microphone, with a fast attack (gain reduction) and slow decay (gain increase) while remaining at a level to prevent amplification of background noise during speech pauses.	DEC 78	\$64.24
CE17	EA	MATHEAD PRE-AMPLIFIER (Incl. Power Supply) This could be your answer to poor TV reception. Can also be used for FM & LHF reception.	AUG 79	\$71.95
CE18	ETI 729	U.H.F. TV MATHEAD PRE-AMPLIFIER (Incl. all cases) Covers the UHF TV bands IV and V, extending from 526 MHz to 814 MHz. Provides nearly 18dB of gain and has a noise figure typically around 6dB.	APR 81	\$65.36
CE19	ETI 735	U.H.F. TO V.H.F. TV CONVERTER (Incl. Power Supply) Will convert TV station transmissions in the UHF band down to unoccupied channels in the VHF TV band.	MAY 81	\$95.54
CE20	ETI 733	RADIO TELETYPE CONVERTER FOR MICROBEE Allows you to hook up your Microbee to a receiver and print radioteletype messages on the VDU screen. Can also be adapted for use on other Z80 based systems.	APR 83	\$48.00
CE21	ETI 755	COMPUTER DRIVEN RADIO TELETYPE TRANSCIVER A full transmit/receive system for a computer-driven radio teletype station. Designed to team with the Microbee, however, the project gives tips to interface the unit to other computers.	NOV 84	\$204.25
CE22	ETI 731	R.T.T.Y. MODULATOR Transmits with a tone modulator board that generates 2 standard tones - 2125 & 2295 Hz. Also useful for recording teletype signals on cassette tape.	SEP 79	\$32.46

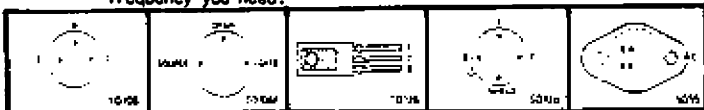


- CE23 EA PHONE MINDER (Less Power Supply) FEB 84 \$55.20**
A versatile telephone bell extender and/or paging unit. Of value for people with hearing problems.
- CE24 EA TELEPHONE HOLD DEC 85 \$12.89**
Protect private conversations! Enables you to replace the handpiece without disconnecting the line.
- CE25 EA MOTORCYCLE INTERCOM FEB 84 \$65.60**
Converse with your passenger while you are on the move. There are no push-to-talk buttons and the circuit is easy to build.
- CE 26 ETI 721 AIRCRAFT BAND CONVERTER MAR 79 \$46.63**
(Less X'tals)
Simplifies the requirements for listening to the AM aircraft band or for those hobbyists who wish to have a receiving system to monitor a channel/s for various reasons.
- CE27 EA VOICE OPERATED RELAY APR 82 \$29.82**
Can be used to control a tape recorder, as VOX circuit for a transmitter, or to control a slide projector. Can be used with any low or high impedance mic, or a high level source such as tape recorder.
- CE28 ME106 RADIO MICROPHONE (Less Case) JUL 81 \$11.91**
An amazing little microphone/transmitter. Only needs an ordinary FM radio to detect its signals. Can be used for any kind of remote monitoring of sounds.
- CE29 ETI 708 ACTIVE ANTENNA MAR 76 \$44.04**
(Incl. Dia Cast Case)
Simple broadband antenna covers 0.5 to 30 MHz - or can be used to boost single stations in the broadcast band.
- CE30 ETI 703 ANTENNA MATCHING UNIT JUN 75 \$23.86**
Peak up your short-wave signals with this simple antenna matching unit.
- CE31 ETI 291 TELEPHONE INTERCOM POWER UNIT FEB 88 \$72.63**
If you have just substituted the latest in touch dial wonders for your old series 800 rotary dial phone from Telecom, don't throw them away. This project shows you how to turn them to good use.



AUTOMOTIVE UNITS

A 1	EA	IGNITION KILLER FOR CARS A cunning anti-theft device: effective and easy to fit.	FEB 84	\$33.76
A 2	ETI 081	TACHOMETER Operates on both positive and negative earth vehicles and will operate successfully and without modification with most types of electronic ignition systems as well as the more common electro mechanical systems.	MAR 77	\$25.74
A 3	ETI 318	DIGITAL CAR TACHOMETER (Less Metalwork) Compact unit offers both 10 rev resolution and short response time. Can be set up to work on 4, 6 or 8 cylinder motors.	JUL 78	\$62.34
A 4	ETI 555	LIGHT ACTIVATED TACHOMETER Measures rotational speed without physical contact by picking up reflected light. Great for model aircraft.	NOV 78	\$88.52
A 5	ETI 324	TWIN RANGE TACHOMETER (Less Case) Features a bar graph display of 20 rectangular L.E.D.s, incorporates an over-rev alarm and a high/low switch.	AUG 80	\$65.84
A 6	ETI 316	TRANSISTOR ASSISTED IGNITION A reliable type of electronic ignition which uses either the existing points in the distributor or home made light beam points.	MAY 77	\$40.25
A 7	EA	TRANSISTOR ASSISTED IGNITION With dwell extension and full protection. Results in a hotter spark at high engine speeds and is directly compatible with electronic tachometers. (Die Cast Case)	DEC 79	\$55.21
A 8	ETI 301	VARI-WIPER (RELAY OUTPUT) A periodic screen wiping system.	MAY 71	\$23.87
A 9	ETI 319A	VARI-WIPER MkII (for non dynamic braking) This pulsed windscreen wiping circuit can be used on cars fitted with most types of modern wiper motors.	SEP 78	\$26.47
A10	ETI 319B	VARI-WIPER MkII (for dynamic braking) See above.	SEP 78	\$27.08
A11	ETI 335	WIPER CONTROLLER Push one or two buttons to get the exact wiping frequency you need.	MAR 83	\$51.00



A12	ETI 328	L.E.D. OIL TEMPERATURE METER (Leas V.D.O. probe) Employs a readily available dipstick probe with a thermostat mounted in it as a sensor and displays temperature on a row of L.E.D.s.	JAN 81	\$22.59
18	A13	L.E.D. EXPANDED VOLTMETER Monitor your battery 'condition' with this expanded scale voltmeter. A novel but useful project for vehicles, battery chargers etc.	SEP 80	\$21.97
7	A14	EXPANDED SCALE VOLTMETER Can be built into power supplies or used as a portable or fixed 'battery condition' monitoring meter. Simple to build.	DEC 81	\$43.44
	A15	BATTERY CONDITION INDICATOR Indicates the condition of your car battery with yellow, green and red indicator lights.	APR 79	\$11.00
	A16	LOW BATTERY VOLTAGE INDICATOR This simple project will give you early warning of power failure, and makes a handy beginner's project.	MAR 85	\$13.05
	A17	EA LOW FUEL INDICATOR When the car's fuel reserve falls below a preset minimum level, the circuit sounds a buzzer and lights a lamp to warn drivers that fuel is low. Can be easily fitted to most cars.	MAR 82	\$26.38
	A18	ETI 327 TURN & HAZARD INDICATOR This 'electronic flasher' is a great improvement on the electro mechanical flashers fitted as standard equipment on most cars. Features a stable flash rate, high reliability & the ability to drip up to 144 watts worth of indicator lamps.	OCT 80	\$42.22
	A19	ETI 332 STETHOSCOPE (Leas Headphones) A very handy tool for those who work with mechanical contrivances - anything from tractor engines to drill presses to watch mechanisms.	AUG 81	\$61.84
	A20	ETI 325 AUTO PROBE FOR TESTING VEHICLE ELECTRICAL SYSTEM (6 to 12 VOLT) (Leas Case) A highly convenient probe, useful in those hard-to-get at places, simple to build and inexpensive.	MAY 80	\$13.97
	A21	ETI 329 ANMMETER (EXPANDED SCALE) Can be installed without disturbing the vehicle's existing wiring, will operate on 12V or 24V systems. Easy to read scale indicating charge and discharge currents up to 45 amps.	FEB 81	\$41.58
	A22	ETI 240 HIGH POWER EMERGENCY FLASHER (Leas Housing) Truly portable battery-operated unit generates immensely bright flashes about 50 times a minute for up to 20 hours.	MAY 76	\$52.47

A23	ETI 321	AUTO FUEL LEVEL ALARM	JAN 80	\$44.24
		This alarm is designed for use in vehicles fitted with 12V electrical system. It is driven from the vehicle's existing fuel gauge system and operates a L.E.D. and an alarm (optional) when the fuel level falls below a pre-set value.		
A24	ETI 333	REVERSING ALARM	JAN 82	\$33.10
		This little reversing alarm will let people know, in no uncertain fashion, to watch out when you are reversing.		
A25	ETI 337	AUTOMATIC CAR AERIAL CONTROLLER	SEP 84	\$36.89
		Automatic raising and lowering of the aerial when the radio or radio cassette is turned on and off.		
A26	ETI 345	DEMISTER TIMER	JUN 86	\$29.43
		Now you don't have to remember to switch off your car demister - just instal this great little Demister Timer!		
A27	EA	TURBO COOL DOWN TIMER	SEP 86	\$35.50
		When the ignition is switched off, this Timer keeps the engine running for approximately 90 seconds to stop the turbocharger from overheating. A temperature sensor ensures that the circuit operates only when the engine reaches a preset temperature.		

MODEL TRAIN

MT 1	ETI 541	MODEL TRAIN CONTROLLER	JUN 76	\$82.15
		A simple project offering auto-reverse, inertia, emergency brake and loop track facilities.		

BIO-FEEDBACK

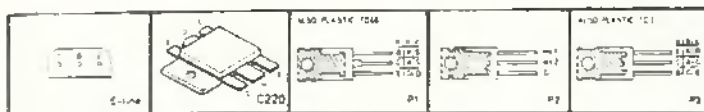
BF 1	ETI 546	G.S.R. MONITOR (Less Probes)	MAR 77	\$91.45
		Learn to reduce tension levels with this galvanic skin response meter. Simple to use.		
BF 2	ETI 544	HEART RATE MONITOR	SEP 76	\$80.50
		An invaluable tool for the bio-feedback experimenter or for the assessment of athletes.		
BF 3	ETI 576	ELECTROMYOGRAM	SEP/ OCT 79	\$163.88
		Senses the tiny electrical impulses associated with muscle activity and provides an indication of activity via a meter and sound output.		
BF 4	AEM 5504	ELECTROMYOGRAM	MAR 86	\$73.51
		Detects small voltages induced on the surface of the skin due to muscle activity. Gives an audible indication of muscle activity.		

COMPUTER & DIGITAL UNITS

4	C 1	ETI 633	VIDEO SYNCH BOARD * This simple sync generator produces both line and frame pulses which are derived from a master clock. Intended for use with the VDU project, it is also suitable for TV games and similar applications.	JAN 77	\$28.07
	C 2	ETI 688	PROGRAMMER FOR FUSIBLE LINK BI-POLAR PROMS (Less Z.I.F. & PLUGPACK) Will configure an array of differing memory chips of differing capacities without resorting to multiple decoders. 7-segment display shows more than the usual 0-9 digit information.	JUN 83	\$55.83
	C 3	EA	EPROM PROGRAMMER (2716/2758) (Less Panel) This simple unit operates without the need for a personal computer or microprocessor system. Data entry is via a hexadecimal keypadd and the address and data readout is indicated with L.E.D.s in binary code. Suitable for 2716/2758 EPROMs, constructed on a single P.C.B., has provision for future expansion.	JAN 82	\$110.00
	C 4	ETI 631-2	KEYBOARD ENCODER * This encoder is a 16-line matrix encoder. Can be used with the ETI 632 V.D.U.	APR 77	\$35.00
	C 5	ETI 668	MICROBEE EPROM PROGRAMMER Plugs into the MicroBee's I/O port and enables you to save programs in any of 5 different & common EPROMs. Can be used with any other system employing the same I/O port as the MicroBee.	FEB 83	\$65.20
	C 6	ETI 736	RADIO FAX COMPUTER DECODER MICROBEE This project allows you to decode the signals of shortwave stations transmitting 'radio facsimile' weather maps and satellite pictures and then reproduce them on your dot-matrix printer.	SEP 83	\$29.92
	C 7	AEM 3503	WEATHER SATELLITE DECODER (Less Panel & Connector) Satellites take continuous images of the Earth as they pass over, continuously transmitting the pictures built up on V.H.F. around 137 MHz. With simple equipment (like a scanner), and simple software, you can print weather pictures.	NOV 87	\$31.51
	C 8	ETI 730	GETTING GOING ON RADIO TELETYPE Ideal for two-way communication on the amateur bands etc.	AUG 79	\$48.15
	C 9	ETI 733	RADIO TELETYPE COMPUTER DECODER This simple project allows you to hook up your MicroBee to a receiver and print radioteletype messages on the VDU screen. Can also be adapted to other Z80 based systems. (MICROBEE CONVERTER)	APR 83	\$45.30

* ALL VDU units priced less connectors

- C10 ETI 637 CUTS CASSETTE INTERFACE JAN 78 \$37.00
Allows you to program your microprocessor from a prerecorded cassette or to record your own program for later use.
- C11 ETI 659 VIC 20 CASSETTE INTERFACE MAY 84 \$26.70
With this project you can use an ordinary, cheap, audio cassette player to load and save programs on the VIC 20 home computer.
- C12 AEM 3502 SIGNAL OPERATED CASSETTE RECORDER MAR 86 \$19.00
Use your scanner or shortwave receiver to record transmissions, automatically turning your cassette recorder on at the start of the transmission, and off when it finishes.
- C13 ETI 676 RS 232 FOR MICROBEE FEB 84 \$42.40
Enables the RS 232 port to implement the negative-going portion of its output signal (TXD).
- C14 ETI 678 ROM READER FOR MICROBEE MAR 84 \$34.38
Enables your favourite games or utilities to be loaded into your MicroBee very quickly and cheaply - transfer them to EPROM and load them with the ROM Reader.
- C15 ETI 675 MICROBEE SERIAL-PARALLEL INTERFACE JAN 84 \$68.85
(Lots optional parts, but includes R/A DB & Centronics plugs)
Will suit any application requiring an interface between an RS232C port and a Centronics interface.
- C16 ETI 651 BINARY TO HEX NUMBER CONVERTER JUN 79 \$56.80
A handy project for those ploughing their way through the number systems used in microprocessor equipment or for those with the tedious chore of converting binary numbers into microprocessor opcode instructions.
- C17 ETI 760 VIDEO R.F. MODULATOR OCT 81 \$29.44
Although this modulator was designed to team with the ETI 660 Learners' Microcomputer, it has many applications in such things as video games, TV pattern generators etc. Features a very stable oscillator and low modulation distortion.
- C18 EA VIDEO AMPLIFIER FOR COMPUTERS & VCRs AUG 83 \$29.50
Bothered by smeary colours, signal beats and RF interference on your computer display? Instead of your RF modulator, use a direct video connector.



C19	ETI 699	300 BAUD DIRECT MODEM Makes your computer a remote terminal on some of the most exciting systems around!	MAY 85	\$161.48
C20	AEM 4600	DUAL SPEED MODEM Get into computer communications with this simple to build and operate modem. Features both 300/300 and 1200/75 baud operation which covers the majority of popular applications.	DEC 85	\$171.32
C21	ETI 683	MINDMASTER - HUMAN COMPUTER LINK Developed as a unit which provides control of a computer by using the mind. Operates by monitoring certain body processes - biofeedback.	DEC 84	\$78.54
C22	ETI 1601	RS232 FOR COMMODORE (Incl. Connectors) A simple project to give your Commodore RS232 compatibility.	JUL 86	\$42.18
C23	AEM 3500	LISTENING POST Attaches between the audio output of a shortwave receiver and the input port of a computer. It allows decoding and printing out of morse code, radioteletype (RTTY) and radio facsimile pictures.	JUL 85	\$39.97
C24	EA	TELELINK MODEM Let your computer talk to the world with this data modem. Not only limited to telephone use, will also run from a single DC power supply rail.	OCT 87	\$164.72
C25	EA	TELELINK MODEM - Short Form See above.	OCT 87	\$115.83
C26	ETI 181	"BOB" RS232 BREAK OUT BOX The BreakOut Box (BOB) is one of the fundamental pieces of test equipment for testing RS232 parts. This is a simple but flexible version of the idea.	NOV 87	\$268.00
C27	AEM 4601	BAUD RATE CONVERTER (Including Optional Part) The widely used V.23 data communications standard, particularly common on 'dub' modems, provides 'split' transmit and receive baud rates of 1200 bps and 75 bps. This project overcomes the problem, maintaining the serial port communications at the same rate in and out(Tx and Rx), while communicating with the modem at different rates.	NOV 87	\$47.12
C28	AEM 4601	BAUD RATE CONVERTER (Less Optional Part) See above.	NOV 87	\$31.51
C29	AEM 4501	8-CHANNEL RELAY INTERFACE Enables your computer to control up to eight relays from your computer's parallel I/O port or the 8-bit bus, switching on or off according to a program you can write yourself.	OCT 85	\$123.62

TEST EQUIPMENT

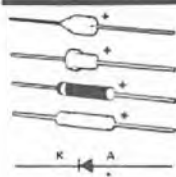
TE 1	ETI 124	TONE BURST GENERATOR A valuable tool for testing loudspeakers.	NOV 75	\$47.06
TE 2	ETI 704	CROSS HATCH DOT GENERATOR Inexpensive unit for converging colour T.V. set	AUG 75	\$49.88
TE 3	ETI 166	LABORATORY STANDARD FUNCTION/ PULSE GENERATOR Features variable frequency ranges. LCD display, external sweep, variable pulse width and shape. Five common output voltage ranges available, as is DC offset. Has in-circuit wideband amplifier. Housed in a sturdy, attractive metal cabinet with a silk screened panel, this is a professional lab. standard kitset.	SEP 83	\$371.86
TE 4	ETI 120	LOGIC PROBE (Less Case) The servicing of digital equipment is greatly simplified by the use of a logic pulser and logic probe, for these two instruments enable you to follow circuit operation stage by stage.	SEP 75	\$22.31
TE 5	ETI 121	LOGIC PULSER (Less Case) See above.	SEP 75	\$15.51
TE 6	ETI 148	VERSATILE LOGIC PROBE (Less Case) Invaluable for debugging logic circuitry. May be used both with TTL and CMOS circuitry & indicates HI or LO conditions as well as pulse trains above 1 MHz. Will also detect short, isolated pulses having widths down to 500 ns.	JUL 79	\$21.85
TE 7	ETI 487	REAL TIME AUDIO ANALYSER Equalise systems for room acoustics accurately using this neat piece of 'test' gear.	FEB 78	\$187.22
TE 8	ETI 489	REAL TIME AUDIO ANALYSER 2 Has the advantage of portability. L.E.D. display for compact, easy-to-build unit.	APR 78	\$294.45
TE 9	EA	TRANSISTER TESTER (Incl. Bi-Polar & FETs) Intended mainly for checking bipolar transistors and FET. can also be used to test most other discrete semiconductor devices. Easy to build.	JUL 78	\$46.67
TE10	ETI 183	OP-AMPLIFIER TESTER Designed to be a simple stand-alone unit which will tell you, in terms of a few LEDs, whether or not your op-amp is usable.	APR 85	\$56.83
TE11	ETI 184	IN-CIRCUIT DIGITAL I.C. TESTER This very simple project allows digital integrated circuits to be tested whilst in circuit.	AUG 87	\$42.44

TE12 EA	3MHz FREQUENCY COUNTER	MAY 78	\$111.25
	Of basic design and using the minimum of components, this low-cost frequency counter is capable of good performance. Can be considerably improved, if desired, by adding circuitry.		
TE13 ETI 591	UP DOWN PRE-SETTABLE COUNTER	JUL 78	111.25 \$65.18
	A 4-digit counter-latch-decoder driver needing no external exponents except the displays. Is also an up-down counter which can be preset to any number. Also has a separate register which can be set to any number & comparators which give outputs when the counter is equal to the register and when it is zero.		
TE14 ETI 589	DIGITAL TEMPERATURE METER	DEC 77	\$64.00
	Will allow transistor temperatures to be measured and the appropriate heatsink chosen. Measures liquid or gas temperature, especially where the readout needs to be physically separate from the sensor.		
TE15 ETI 135	PANEL METER	OCT 77	\$56.00
	This simple, economical yet highly accurate voltmeter uses a large liquid crystal display for easy reading and low power consumption.		
TE16 HE111	OHM METER	SEP 81	\$43.85
	Invaluable for measuring resistances, testing continuity and checking diodes and investigating dubious solder joints. Has four ranges of measurement - up to one million ohms - and features a linear scale.		
TE17 ETI 161	DIGITAL PANEL METER	AUG 82	\$60.54
	A versatile digital panel meter with liquid crystal display. Can be used as the basis of many test instruments or as a stand-alone meter to measure voltage (as low as 200mV) or current.		
TE18 ETI 572	P.H. METER (DIGITAL)	DEC 80	\$179.00
	Features a $\frac{3}{2}$ digit liquid crystal display, simple construction & straightforward operation. Has many applications - chemical analysis, soil analysis (gardening); swimming pool chlorination; care of tropical fish, etc.		
TE19 ETI 255	ELECTRONIC TEMPERATURE METER (ANALOGUE) (Incl. Plugpack)	NOV 80	\$69.55
	This handy little thermometer can be used for local or remote indication of temperatures. Can stand alone or can be mounted in a desk top or even in the dash of a car.		

TE20	EA	MEGOHM METER (Loss Panel & Scale)	JUL 85	\$66.22
		Featuring an in-built transistor inverter power supply, this Megohm Meter tests at 1000V and covers the range from 2Mohm to 2000Mohm. Handy for checking appliances and electrical wiring.		
TE21	ETI 483	SOUND LEVEL METER	FEB 78	\$97.58
		Gives accurate results to allow noise levels to be monitored and controlled. An 'A' weight response is provided as well as the 'flat' mode.		
TE22	ETI 724	MICROWAVE OVEN LEAK DETECTOR (Loss Panel)	JUL 79	\$23.05
		Simple to build, this project will indicate if your microwave oven is safe - or not.		
TE23	ETI 590	DIGITAL DIAL (Loss Case & Panel) INCLUDES ETI 591 (12V.)	AUG 78	\$69.00
		Gives a direct readout of the station being received allowing for easy identification and selection		
TE24	EA	TV C.R.O. ADAPTOR (Loss Power Pack)	MAY 80	\$66.84
		For beginners and enthusiasts alike. A plug-in adaptor that converts any TV into a useful low frequency oscilloscope. Can display signals from 10Hz up to 300kHz with a sensitivity of 100mV rms for full-screen deflection.		
TE25	ETI 157	CRYSTAL MARKER (Loss Panel)	OCT 81	\$53.13
		Crystal marker generator for receiver and CRO calibration. Useful test equipment for calibrating and aligning receivers, transceivers and oscilloscopes. Portable, battery operated and simple.		
TE26	AEM 5505	MASH BARRIER	APR 86	\$190.50
		An effective mains filter. Can be used with a personal computer (and its peripherals), hi-fi or other audio equipment, and sensitive radio receivers.		
TE27	EA	SIGNAL TRACER (Loss Panel)	AUG 85	\$46.05
		A valuable servicing aid which can be used to troubleshoot both RF and audio circuits. Features an RF probe, battery operation and an in-built loudspeaker.		
TE28	EA	FUNCTION GENERATOR (DIGITAL DISPLAY)	APR 82	\$160.56
		An attractively housed Function Generator which produces sine, triangle and square waves over a frequency range from below 20Hz to above 160kHz with low distortion and good envelope stability. Has an inbuilt 4-digit frequency counter.		
TE29	EA	OMEGA DERIVED FREQUENCY STANDARD (Short Form)	MAY 87	\$198.46
		Capable of providing a high degree of frequency accuracy and stability.		

METAL DETECTORS

- MD 1 ETI 549 INDUCTION BALANCE METAL DETECTOR MAY 77 \$72.00**
 Uses two coils arranged in such a way that there is virtually no inductive pick-up between them. A modulated signal is fed into one, when metal is brought near, the electromagnetic field is disturbed and the other coil picks up an appreciably higher signal.
- MD 2 ETI 561 METAL LOCATOR MAR 80 \$57.49**
 (Less Dowel, Tubing & Pot/Plant stand)
 Combines the following features:
 good sensitivity; excellent stability;
 good pinpointing ability, loudspeaker output;
 simple construction and set up; tuning allows for ground.
- MD 3 ETI 1500 DISCRIMINATING METAL DETECTOR DEC 80 \$307.00**
 (Blank case)
 The top-of-the-range metal detector kitset. Operates just like the 'bought ones'!
 Features three 'discriminate' ranges plus VLF operation and includes an 'auto-tune' button. A very popular and successful project.
- MD 4 ETI 562 GEIGER COUNTER (WITH ZP 1310 TUBE) APR 80 \$165.15**
 This project is simple to construct and should prove of great interest to science teachers, students and anyone generally interested in radioactivity. Designed as a general purpose geiger counter.

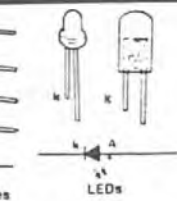
MORE PINOUTS

Diodes and Zener diodes

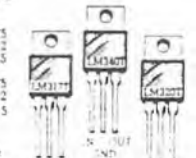
Positive
 5V '805 or LM340T5
 12V '912 or LM340T12
 15V '915 or LM340T15

Negative
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 12V '912 or LM320T12
 15V '915 or LM320T15

LM317K is a variable
 (A requires 2.30V)

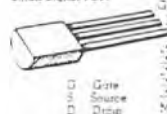


LEDs



VOLTAGE REGULATORS

Small Signal FETs



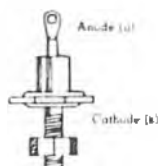
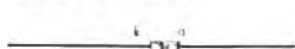
Tantalum capacitors

Programmable Unijunction
 Transistors (PUT)
 2N6027/D137

**Diodes**

Diodes are used to rectify current and also to detect signals. They are generally rated in terms of voltage and current.

Most diodes are about 3-10mm long and cylindrical. They may be black or clear. Diodes are always polarized. The positive or cathode is marked with a black or silver stripe. You can check whether or not a diode is destroyed by measuring its resistance with an ohmmeter. If the diode is OK it will have an extremely high resistance in one direction and a low resistance in the other direction. When testing, don't touch the leads with your fingers. This will give misleading readings.



WARNING SYSTEMS

WS 1	ETI 528	HOME BURGLAR ALARM A simple burglar alarm with superior performance. It has a power requirement of only 12 volts and a current consumption of 1 mA.	JAN 75 / T.P.Bk 3	\$38.40
WS 2	ETI 582	HOUSE ALARM Includes facilities for a wide variety of sensors. Has two main sections, a perimeter circuit covering all external doors and windows and an internal circuit covering interior doors, pressure mats, etc.	JUL 77	\$106.26
WS 3	EA	DRIVEWAY SENTRY Mk.2 (Incl. LDRS & P/S) Activated by your car's headlights, this Driveway Sentry Mk.2 automatically turns on an outside light. Uses a light dependent resistor (LDR) to detect your car's headlights.	MAR 85	\$66.40
WS 4	ETI 313	CAR ALARM Uses one single IC and a minimum of other components. When activated, will blow the horn at one second intervals, and will continue to do so until deactivated by a key switch, etc.	NOV 74	\$34.40
WS 5	ETI 330	CAR ALARM 'Current trip' car alarm features exit/entry delay & no false alarms. Uses the battery earth strap as a sensor to detect when a 'courtesy' light or other electrical load occurs when a thief enters a vehicle.	JUL 81	\$48.19
WS 6	EA	DELUX CAR ALARM (Incl. battery, sensors & speaker) Features keyswitch operation, delayed entry and exit, automatic reset, and provision for an auxiliary battery. Sounds an alarm if an attempt is made to gain access to the vehicle.	MAY 84	\$176.00
WS 7	ETI 340	CAR ALARM (Incl. Resonance Mic. & Siren) Vehicle protection from virtually any sort of interference - from hub-cap stealing to being towed away! Uses 'resonance microphones'. Protects driving lights and racks, etc., too. Meets the major requirements of car alarms set down by the National Roads and Motorists Assoc.	APR 84	\$126.91
WS 8	EA	"THE SCREECHER" CAR BURGLAR ALARM A low cost car alarm which sounds inside the car to deafen the thief and make it too uncomfortable for illegal occupants of your car. A very popular car alarm.	AUG 86	\$45.86

WS 9 EA	10 GHz RADAR BURGLAR ALARM	JUL 77	\$121.38
	This simple microwave unit will detect moving objects at up to 10 metres range. Employs the Philips CL8963 Doppler module and a circuit comprising two I.C. and 4 transistors.		
WS10 EA	LIGHT BEAM RELAY (Less Plugpack)	NOV 80	\$37.42
	Has many uses - from a serious alarm system to darkroom monitor, to door monitor, to turning outside lights at dusk. Or instal it for fun and novelty!		
WS11 ETI 570	INFRA-RED 'TRIP' RELAY (Incl. Plugpack)	JAN 82	\$79.26
	Cut the beam of invisible light and 'trip' a relay or alarm - this simple project can be used as an automatic 'door minder', door opener, burglar alarm or whatever. Comprises a transmitter which emits a beam of infrared radiation and a receiver which detects that radiation.		
WS12 ETI 583	GAS ALARM (MARINE)	AUG 77	\$86.99
	This versatile alarm prevents the motor being started or electrical equipment used if there is a build up of petrol vapour or LP gas, thus protecting your boat against fire.		
WS13 ETI 247	SOIL MOISTURE INDICATOR (Less Panel)	NOV 80	\$20.40
	Don't drown your plants or dry them out! This instrument makes use of the fact that the resistance of soil decreases as the soil gets wetter.		
WS14 ETI 585	T & R ULTRASONIC SWITCH	SEP 77	\$51.86
	Two-board design forms basis for a wide range of applications from door-bells to data transmission! Uses a high frequency acoustical beam, well above the range of human hearing.		
WS15 EA	ULTRASONIC MOVEMENT DETECTOR	AUG 84	\$35.75
	Designed to mate with the Car Burglar Alarm, this ultrasonic movement detector will trigger the alarm if a window is broken or if there is any movement inside the vehicle.		
WS16 ETI 278	DIRECTIONAL DOOR MINDER (Incl. ORP 12) (Less Front Panel)	NOV 84	\$57.90
	Will sound a buzzer (flash a light, operate a counter, etc.) when a person either enters or leaves a room via the door being monitored. Senses the direction in which the person is moving.		

WS17	EA	MULTI SECTOR HOME SECURITY SYSTEM	FEB 85	\$243.67
		Easy to build, features eight separate inputs, individual sector control, battery backup and a self-test facility.		
WS18	EA	INFRA-RED LIGHT BEAM RELAY	APR 81	\$49.45
		Capture spectacular photographic shots with this infra-red relay unit. Can also be used as a shop entry monitor, an "invisible" burglar alarm, or even as a target game.		
WS19	EA	DOOR WAY MINDER	FEB 85	\$22.95
		Ideal project for beginners. Could be used as shop minder or for a number of domestic applications. Simple, uses a visible beam.		
WS20	ETI 1527	4 SECTOR BURGLAR ALARM (Incl. Panel & Hardware)	MAY 85	\$73.58
		This alarm has four inputs which allow four separate alarm circuits to be wired up. Each circuit can contain a number of sensors.		
WS21	ETI 284	VCR THEFT ALARM	NOV 86	\$23.49
		This project will take only a couple of hours to build. The alarm circuit is mounted inside the case of your VCR at any convenient spot.		

TIMERS

T 1	ETI 650	STAC TIMER (DIGITAL DISPLAY)	NOV 78	\$184.59
		Provides a 24 hour clock with four digit display. Has four control outputs which may be programmed to turn on, turn off, or to retain their current status at any one of four pre-set times during the day. Can 'skip' certain selected days within a seven or eight day cycle.		
T 2	ETI 540	UNIVERSAL TIMER	MAY 76	\$104.44
		1/10th of a sec. to 99 hours. Both on and off times programmable. Manual or auto., resettable at any time.		
T 3	ETI 265	POWER DOWN MAINS APPLIANCE TIMER	JUL 83	\$50.30
		A press-button mains appliance timer. Plug the project into a wall socket, plug in the appliance, press the button to turn it on, and at a later pre-determined time, the project will automatically turn off the appliance.		
T 4	EA	DIGITAL PHOTO TIMER	AUG 86	\$129.71
		Can precisely time your photographic processing from one second up to 9 minutes 59 seconds, in increments of one second. Includes an LED readout, plus several refinements - 3 digits with individual setting pushbuttons for each digit, a Start/Stop pushbutton and Hold and Focus toggle switches to control the timer operation.		

POWER SUPPLIES

PS 1	ETI 132	EXPERIMENTER'S POWER SUPPLY (METER VERSION) This power supply is suitable for the experimenter. It has fully adjustable output voltage and current limiting. A single meter can be switched either to voltage or current while an LED will indicate an overload.	FEB 77	\$98.56
PS 2	ETI 581	DUAL POWER SUPPLY (HIGH POWER VERSION) This simple regulated supply is suitable for most projects requiring a dual voltage.	JUN 77	\$32.97
PS 3	ETI 131	POWER SUPPLY (0-20v; 0-2.5amp VERSION) This versatile general purpose supply produces up to 2.5 amps from zero to 20 volts - or up to 1.25 amps from zero to 40 volts. Current limiting is adjustable over the entire range for either output option.	APR 76	\$169.70
PS 4	EA	1976 REGULATED POWER SUPPLY Using only a single I.C., this little power supply can provide voltages up to 30V, and currents exceeding 2A. It is completely protected against excessive currents and thermal overloads, and has current and voltage metering. Simple to build.	AUG 76	\$97.16
PS 5	EA	C.B. POWER SUPPLY POWER MATE FOR TRANSCEIVERS Puts out 13.6V at up to 1.5 amps, can also be used to power other 12V appliances such as tape players, provided their current drain is 1.5 amps or less. Circuit is simple.	JAN 77	\$49.89
PS 6	ETI 142	dc POWER SUPPLY 0-30v, 0-15 amp (FULLY PROTECTED) Has high current, high voltage capability. Allows a high power output while retaining a small physical size. Gives an overload indication warning, shutdown and has a maximum output (not continuously) 24V 15 A; 26V 12.5A; 28V 11A; 30V 8Am.	FEB 79	\$495.00
PS 7	ETI 472	POWER SUPPLY (Incl. Transformer) SERIES 4000 Suits ETI 470 modules	JUL 79	\$104.20
PS 8	ETI 577	DUAL 12v SUPPLY (+ 12V at 1 amp) DIE CAST CASE This power supply provides the +/-12 volts needed by the Series 4000 moving coil cartridge pre-amplifier. The supply delivers positive and negative 12V dc at 1A, while the IC series regulators provide short circuit & temperature protection.	OCT 79	\$82.36

PS 9 EA	POWER SAVER	AUG 80	\$72.58
	Monitors the phase difference between the motor voltage and current. If it senses a large phase difference, characteristic of a no-load condition, the circuit reduces the input voltage to the motor.		
PS10 ETI 480PS	POWER SUPPLY FOR ETI 480 (100 watt AMP) (Incl. Transformer)	DEC 76	\$98.97
	Suits ETI 480 modules.		
PS11 EA	BENCHMATE UTILITY AMPLIFIER/ POWER SUPPLY	JUN 81	\$85.86
	A handy piece of equipment for your test bench. Incorporates an audio amplifier cable of delivering a little over 1 watt RMS together with a variable regulated power supply which can deliver voltages between 1.25V and 16V at currents of up to 1 amp.		
PS12 ETI 163	0-40V, 0-5 Amp POWER SUPPLY	JUN 83	\$364.87
	A laboratory standard power supply featuring regulated output from 0-40 volts capable of delivering a massive 5A across the whole voltage range, plus current limiting variable from 0-5A. Two meters monitor voltage and current and regulator dissipation is reduced by employing an automatic transformer switching circuit.		
PS13 ETI 162	1.3-30 volt FULLY ADJUSTABLE (Incl. goof proof)	DEC 82	\$125.89
	Easy to build power supply features full protection, variable voltage output from 1.3 to 30 volts, variable current limit from zero to one amp plus metering of both voltage and current output.		
PS14 EA	DUAL TRACKING POWER SUPPLY	MAR 82	\$201.69
	Built around positive and negative 3 terminal regulators, this versatile dual-tracking power supply can provide voltages from $\pm 1.3V$ to $\pm 22V$ at currents up to 2A. The supply also features a fixed +5V 0.9A output and is completely protected against short circuits, overloads and thermal runaway.		
PS15 ETI 251	OP-AMP POWER SUPPLY	AUG 85	\$106.17
	An ideal supply for op-amp experimenters and those with solderless breadboards. Provides $\pm 12V$ rails at 1A and solves those 'split rail blues'.		

ELECTRICAL FORMULAE

OHM'S LAW The relationship between resistance, voltage and current is defined by Ohm's Law
The formulae are -

$$E = I \times R$$

$$I = E/R$$

$$R = E/I$$

Where
E - Volts
R - Resistance in Ohms
I - Current in Amps

Series and Parallel Connections

Resistors in series

$$R_{total} = R1 + R2 + R3 \dots$$

Resistors in parallel

$$R_{total} = \frac{1}{1/R1 + 1/R2 + 1/R3 \dots}$$

Capacitors in series

$$C_{total} = \frac{1}{1/C1 + 1/C2 + 1/C3 \dots}$$

Capacitors in parallel

$$C_{total} = C1 + C2 + C3 + \dots$$

POWER IN A CIRCUIT

The relationship between current flowing through a given resistance at any voltage is defined by -

$$P = E \times I$$

$$E = P/I$$

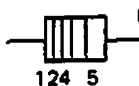
$$I = P/E$$

where E = volts
P = power
I = current

VOLTAGE/CURRENT CONTROLS

V 1	ETI 481	12 VOLT TO \pm 40 VOLT D.C. 100 WATT INVERTER This unit is capable of driving two 50 watt or one 100 watt ETI 480 module.	MAY 77	\$75.26
V 2	ETI 1509	UNIVERSAL DC-DC INVERTER Can be configured to suit a wide variety of applications - powering audio amplifier modules from a 12V battery, powering 12V equipment from a 24V or 32V battery, deriving a high voltage supply from a low voltage dc source etc.	SEP 82	\$71.37
V 3	ETI 1505	FLUORESCENT LIGHT INVERTER Will drive two 20W, one 40W or one 20W fluorescent tube from a 12V battery. Light output is some three times that of an equivalent power incandes- cent globe and efficiency is very high.	AUG 82	\$104.95
V 4	EA	FLUORO LIGHT STARTER Gives a smooth, rapid start every time you switch on your fluorescent light. All parts are housed in a standard starter case so the light wiring does not have to be modified.	OCT 82	\$14.72
V 5	EA	ELECTRIC FENCE Mains or battery powered, based on an automotive ignition coil, operation conforms to the relevant clauses of Australian Standard 3129.	SEP 82	\$33.88
V 6	ETI 1512	ELECTRIC FENCE TESTER (Leas Panel) Indicates the presence of each pulse from the energiser, and can be used in either calibrated or uncalibrated mode.	FEB 83	\$24.96
V 7	EA	ELECTRIC FENCE CONTROLLER Features higher output power and lower current drain than the '82 design (V5 above), and has been specially designed for use in rural areas. Can be used with either 6V or 12V batteries.	DEC 85	\$69.74
V 8	ETI 525	DRILL SPEED CONTROLLER Variable speed control maintains constant (adjust- able) speed regardless of load, from zero to about 75% of full speed. Has a switch to allow normal full-speed operation without disconnecting controller.	OCT 74	\$29.16
V 9	EA	HEAT & TEMPERATURE CONTROLLER - HEAT Can reduce the average power delivered. For use with many appliances - e.g. heaters, vertical grillers, electric blankets etc.	JUL 84	\$55.83
V10	ETI 1506	XENON PUSH BIKE FLASHER A high visibility bicycle flash.	JUL 82	\$53.34

- V11 ETI 1532 TEMPERATURE CONTROL FOR SOLDERING IRONS SEP 86 \$59.37**
Provides fully regulated, adjustable temperature control over a reasonably wide temperature range. Will work with just about any conventional 240V soldering iron rated from 20W to 75W and can be easily adapted for use with higher powered soldering irons.
- V12 EA HIGH VOLTAGE INSULATION TESTER JUN 85 \$41.88 (Less Panel)**
Test components for leakage with this Insulation Tester which has an internal 500V supply.
- V13 HE 126 NI-CAD CHARGER NOV 81 \$26.84**
Has five current ranges that allow it to be used with several different sizes of battery. Uses a DC plug pack.
- V14 ETI 563 FAST NI-CAD CHARGER JUL 80 \$99.74 (Less Front Panel)**
Will charge your Ni-Cad batteries to near rated capacity when you need them in a hurry. Can't overcharge either! A constant current source delivers about 2.4A, controlled by a timer.
- V15 EA DEEP CYCLE NI-CAD BATTERY CHARGER MAR 87 \$112.11**
Provides correct charging conditions - can be configured to charge four AA, C or D cells, two 9V battery types, or a combination of two cells and one 9V battery.
- V16 ETI 569 SOLAR GENERATOR DEC 87 \$20.51**
A cheap, no fuss way to trickle charge a battery. Designed to charge any standard 12V lead acid car battery in any area where mains power is unavailable.
- *****

**RESISTOR COLOUR CODE.**

For resistance values
with 2 significant
figures - e.g. 39K

For resistance values
with 3 significant
figures - e.g. 39.6K

Colour	1 1st Digit	2 2nd Digit	3 3rd Digit	4 Multiplier	5 Tolerance
Black	0	0	0	1	
Brown	1	1	1	10	1%
Red	2	2	2	100	2%
Orange	3	3	3	1000	
Yellow	4	4	4	10000	
Green	5	5	5	100000	0.5%
Blue	6	6	6	1000000	
Violet	7	7	7	10000000	
Grey	8	8	8	100000000	
White	9	9	9	1000000000	
Gold	-	-	-	0.1	5%
Silver	-	-	-	0.01	10%
None	-	-	-	-	20%

PHOTOGRAPHIC

PH 1	ETI 532	PHOTO TIMER	JUN 75	\$69.64
		Versatile and accurate unit which displays progress through time interval. Divides the total selected time into eight equal periods.		
PH 2	EA	DIGITAL PHOTO TIMER	AUG 86	\$129.71
		Precisely times your photographic processing from one second up to 9 minutes 59 seconds, in increments of one second. LED readout, 3 digits with individual setting pushbuttons for each digit, a Start/Stop push button and Hold and Focus toggle switches to control the timer operation.		
PH 3	ETI 594	DEVELOPMENT TIMER	APR 79	\$33.00
		Utilizes the Watkins Factor method of development. This device will make an interesting addition to the darkroom of any photographer - amateur or professional.		
PH 4	ETI 553	TAPE SLIDE SYNCHRONIZER	OCT 78	\$66.59
		This unit will let you tape record a commentary for your slide show. Allows a control tone (100 Hz) to be recorded on the tape along with the normal voice recording; when replayed the tone will activate a relay which will change the slide while a notch filter removes the tone so it is not heard through the speaker.		
PH 5	EA	SYNC-A-SLIDE AUTOMATIC SLIDE ADVANCE	JUN 76	\$43.72
		Synchronises a slide series with a recorded commentary on tape. Uses a low frequency tone recorded either on the second track of a stereo pair, or along with the commentary, to actuate the advancing mechanism of an automatic projector.		
PH 6	ETI 513	TAPE SLIDE SYNCHRONIZER	APR 72	\$50.45
		This unit automatically changes slides on an automatic projector. It does this at predetermined times, synchronizing with the commentary prerecorded on a two-channel, cassette or reel-to-reel tape recorder.		
PH 7	ETI 182	DIGITAL LUX METER	MAR 85	\$102.59
		A portable, battery operated device for measuring illumination. Covers light levels from below 1 lux up to 20k lux in two ranges, includes low battery indication.		
PH 8	ETI 279	DARKROOM EXPOSURE METER	JAN 85	\$34.30
		A low-cost, compact exposure meter which features battery operation, 3 LEDs to indicate under, over or correct exposure and a photodiode/op-amp as the sensor.		

PH 9	ETI 1521	DIGITAL ENL. EXPOSURE METER (Less Pluggack) With digital readout. Simple to operate, consists of a remote probe (light detector), 3-digit display and a 'calibration' control on the front panel.	MAR 84	\$92.00
PH10	EA	SOUND TRIGGERED PHOTO FLASH Enables you to take spectacular shots (e.g. splashing liquids) with almost any normal camera and electronic flash unit by using this easy to build trigger unit. Has a constantly variable sensitivity over a wide range, together with a constantly variable time delay over a range 1 ms to about 120 ms.	SEP 79	\$35.87
PH11	ETI 5148	SOUND LIGHT FLASH TRIGGER This flash trigger sets off any standard electronic flash unit a predetermined & adjustable time after a specific change in light or sound has occurred.	MAY 76	\$42.96

SOUND EFFECTS

SE 1	ETI 607	SIMPLE SOUND EFFECTS Produces a realistic array of sound effects - gunshots, bomb whistles and explosions, etc.	AUG 81	\$22.75
SE 2	ETI 492	AUDIO SOUND BENDER This project is capable of modifying an audio signal to produce tremolo effects on music or those peculiar, metallic robot voices found in shows like 'Dr. Who', 'Star Wars', 'Star Trek', etc.	FEB 82	\$46.60
SE 3	ETI 469A	PERCUSSION SYNTHESISER (Less Pluggack) With this instrument you can simulate drums, cymbals, snares and bongos, as well as making an assortment of 'wonderful' noises.	APR 82	\$119.63
SE 4	ETI 469B	SEQUENCER FOR SYNTHESISER See above. This sequencer enables you to 'program' a rhythm sequence of up to eight steps on the percussion synthesiser for automatic accompaniment.	JUN 82	\$37.13
SE 5	EA	VERSATILE EFFECTS UNIT Enables you to create phasing, flanging, echo, reverb and vibrato effects. Easy to build.	JUN 83	\$156.99

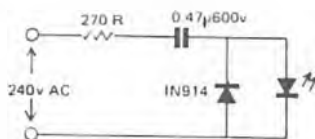
ELECTRONIC GAMES

- EG 1 ETI 043 HEADS OR TAILS OCT 76 \$8.00**
Play electronic two-up with this simple project and learn the basics of multivibrator circuits.
- EG 2 ETI 068 LED DICE OCT 76 \$9.70**
A simple dice circuit using the 555 timer IC and a digital - logic device of the CMOS family.
- EG 3 EA ELECTRONIC ROULETTE WHEEL (Leaa case) FEB 76 \$87.56**
Fully solid state, and functioning in a suitable random manner, this will keep you amused for hours at a time.
- EG 4 ETI 557 REACTION TIMER FEB 79 \$31.15**
Check your reflexes with this simple project. Gives a random time interval between tests. Reaction time - 0 to 0.99 seconds; delay between tests - 1/2 to 10 seconds (random).
- EG 5 EA SLECTALOTT DEC 80 \$46.27**
Without bias or superstition this unit will select random numbers far better than you can yourself for your Tattsлото etc. entry!
- EG 6 HE 107 ELECTRONIC DIE AUG 81 \$16.00**
What rolls more than 300 times a second and never rolls under the table? This electronic die, of course. Build this fun project and learn about digital circuits.
- EG 7 EA PHOTON TORPEDO SEP 81 \$53.48**
A low-cost alien exterminator with sound effects! Has a space theme - a starship, hostile aliens, and a means of destroying the aliens - exciting sound effects!
- EG 8 HE 123 ALIEN INVADERS NOV 81 \$27.78**
This game starts off easily enough, but to build up to a high score you need a cool head and quick reflexes.

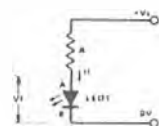
LEDS

COLOUR	RED	ORANGE	YELLOW	GREEN
V _F (TYPICAL)	1.8V	2.0V	2.1V	2.2V

TABLE 1 Typical forward voltage characteristics of standard LEDs with forward current set at 20 mA

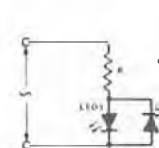
OPERATING DIRECTLY FROM 240V AC MAINS

The above circuit results in a LED current of approximately 16mA.



OPERATING LED FROM DCV

$$R = \frac{V_s - V_f}{I_f}$$



OPERATING LED FROM ACV AS AN INDICATOR

$$R = \frac{0.5(V_s - V_f)}{I_f}$$

The above formulas should be used in conjunction with Table 1 to determine the required series resistance to operate LEDs at 20mA.

MISCELLANEOUS

M 1	ETI 287	'KITTE' LED LIGHT CHASER	OCT 87	\$52.27	A versatile project - can be used as a normal light chaser or for stage etc. effects. Simple to construct and understand with an immense variety of applications.
M 2	ETI 604	ACCENTUATED BEAT METRONOME (Less Panel)	SEP 77	\$38.85	This metronome design accentuates one beat out of every bar to help with complex rhythms.
M 3	EA	DIGITAL METRONOME	JUL 76	\$40.51	Simple to construct. Uses digital logic chips to generate an accented pulse starting at the correct time, as well as a digital noise source.
M 4	EA	SIMPLE METRONOME (Less Panel)	JAN 82	\$25.70	Has low current drain and drives a loudspeaker as well as a LED indicator and even at maximum volume from the loudspeaker the current drain is still less than one milliamp.
M 5	AEM 1500	SIMPLE METRONOME (Less Panel)	AUG 85	\$23.58	A simple, practical project for 'starters' in electronics. Can be built in a couple of hours. Employs a simple oscillator circuit, sound from a loudspeaker, with the beat rate being set by a variable control.
M 6	ETI 606	ELECTRONIC TUNING FORK (Less Front Panel)	NOV 79	\$38.50	Tune your instruments electronically for perfect pitch!
M 7	EA	ELECTROCHUNE KEYLESS ORGAN	JUL 81	\$134.49	Easy to put together, capable of a surprising variety of harmonious sounds. Has a range of almost two octaves, together with sharps and flats, and has six controls for varying sound output.
M 8	ETI 547	TELEPHONE BELL EXTENDER	JUN 77	\$51.04	A simple project which allows you to leave the phone unattended as you move about the house.
M 9	ETI 602	MINI ORGAN (Less Case)	AUG 76	\$75.91	Has all the electronics on one pcb - easy to build - has features like touch keyboard, variable tremolo, two voices and a full two-octave range.
M10	ETI 044	TWO TONE DOORBELL	OCT 76	\$12.00	Press the control button once for a two-tone doorbell sound which is produced by the speaker driven directly from the I.C.

N11	EVI 539	TOUCH SWITCH Offers toggle action and complete safety. Touch-on, touch-off, capacitance triggering, 450VA resistive, 450VA inductive.	MAR 76	\$72.48
N12	ETI 249	COMBINATION LOCK (Less Lock - Panel) Neither too simple nor too complex this combination lock employs a solenoid lock.	APR 79	\$26.58
N13	EA	LISSAJOUS PATTERN GENERATOR Uses just three I.C.s to generate an endless variety of Lissajous figures on your oscilloscope. Can also be used to produce some very interesting sound effects.	SEP 80	\$22.60
N14	ETI 247	SOIL MOISTURE ALARM (Less Panel) Take some of the guesswork out of watering with this alarm. A constant current is fed through the soil between two electrodes or a probe and the voltage drop between them is measured.	NOV 80	\$20.40
N15	EA	POOLS/LOTTO SELECTOR Features a two-digit LED display and switch selectable Pools/Lotto operation.	JUL 81	\$41.59
N16	ETI 256	HUMIDITY METER Can be built to give a readout of relative humidity either on a LED dot-matrix display or a conventional meter.	MAY 81	\$60.00
N17	ETI 257	UNIVERSAL RELAY DRIVER BOARD This versatile relay driver unit is intended to be used with projects or devices not normally providing a switched relay output. Permits a relay to be switched in a variety of ways and from a variety of inputs.	MAY 81	\$26.32
N18	ETI 1501	NEGATIVE ION GENERATOR (Less case, perspex, plugpack) Provides a good basis for experiment. Unit works from a 12-15 volt supply, employing a dc-ac inverter and voltage-multiplier rectifier.	APR 81	\$57.45
N19	ETI 1516	SURE START FOR MODEL AEROPLANES This 'glow plug regulator' ensures a lively start for that model petrol engine in your model aeroplane, boat etc.	JUN 83	\$93.53
N20	ETI 1515	MOTOR SPEED CONTROLLER Electric drills, saws, grinders, food blenders etc. can all benefit from speed control with this simple, effective project.	APR 83	\$44.67
N21	ETI 1520	WIDEBAND AMPLIFIER Is capable of driving a 50 ohm load with an output capability of 10V peak-to-peak. Can improve the sensitivity of a CRO or a counter, as a video amplifier or boost the output of a signal generator.	JUL 83	\$30.19

M22	ETI 145	PROTOTYPE BREADBOARD This is just the thing for lashing up circuits, experimenting with circuit techniques and component values, trying out circuit ideas, attempting circuit modifications etc.	JUL 82	P.O.A.
M23	EA	PEST OFF (Incl. Power Supply) (Less Panel) An ultrasonic pest repeller which operates from a supply voltage of between 9 and 12V DC.	NOV 85	\$58.97
M24	AEM 5501	NEGATIVE ION GENERATOR (Less Connector) For those who wish to explore the effects of negative ions on air pollutants, plant growth or your own health, here's a simple-to-build project.	SEP 85	\$45.57
M25	AEM 5503	BED-WET-ECTOR Provides an alternative solution in training 'bedwetters'.	MAR 86	\$31.62
M26	ETI 569	SOLAR GENERATOR A cheap, no fuss way to trickle charge a battery. Designed to charge any standard 12V lead acid car battery in any area where mains power is unavailable.	DEC 87	\$20.51



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 ALUMINIUM - brackets, extrusion, heatsinks and cases :
 AMPLIFIERS - kitset - guitar, mono, stereo, P.A. :
 AUDIO ADAPTORS : A.F. CHOKES : AUDIO MIXERS : AUDIO TRANSFORMERS : ARTWORK TAPE
- B** BALUNS : BANANA PLUGS & SOCKETS: BATTERIES : BATTERY CHARGERS & KITS : BATTERY
 CLIPS & HOLDERS : BEADS (FERRITE) : BEZELS :
 BOARDS - P.C., breadboard, Eurocard, prototyping, vero :
 BOXES - aluminium, die-cast, instrument, mini, plastic :
 BRIDGE RECTIFIERS : BULBS
- C** CABLE - audio, co-axial, hook-up, microphone, speaker, T.V., copper enamelled winding wire :
 CABLE CLIPS : CLAMPS :
 CAPACITORS - ceramic, block, electrolytic, polycarbonate, polyester, styrofoam, tantalum,
 variable, monolithic :
 CASES : CERAMIC FILTERS AND RESONATORS : CHEMICAL SPRAY AIDS :
 CHOKES -AF, RF, & special :
 COILS - slugs, cans, bases and winding wire :
 CONNECTORS : CORD - dial : COUPLERS - extension, flexible : CRYSTALS
- D** DE-SOLDERING - wick and pumps : DIACS : DIALS : DIE-CAST BOXES : DIN PLUGS & SOCKETS :
 DIODES - light emitting, infra-red, power, signal, photo, varactor, zener, fast recovery,
 shottky, hot-carrier, microwave flashing LEDs
- E** EARPIECES : E-CORES : EDGE CONNECTORS : EDGE METER : ENAMELLED WINDING WIRE (10 to 40 B&S) :
 EXTENSION SHAFTS
- F** FEED-THRU CAPACITORS : FEEDER RIBBON : FEET : FERRIC CHLORIDE :
 FERRITE - baluns, beads, cores, rods, toroids :
 FILTERS : FLEX : FRONT PANELS : FUSES : FUSEHOLDERS
- G** GLOBES : GREASE (SILICON) : GROMMETS : GUITAR UNITS - kitsets
- H** HARDWARE : HEATSINKS : HOOK-UP WIRE
- I** INTEGRATED CIRCUITS - all major brands :
 INDICATORS : I.C. SOCKETS - wire wrap, ZIF, machined, dual wipe
- J** JACKS - plugs, sockets
 JUMPER LEADS - light duty, automotive
- K** KITS - huge range and variety
- L** LABELS : LAMPS : LAMP HOLDERS : LEADS : LUBRICANTS : LUGS : LOGIC PROBES
- M** MARKING PENS : MATRIX BOARDS & ACCESSORIES : METERS : MICROPHONES & CONNECTORS :
 MIXERS : MOUNTING PANELS : MULTIMETERS
- N** NEON LAMPS & INDICATORS : NEOSID COIL ASSEMBLIES : NICHROME WIRE
- O** OILS - contact & cleaning : OSCILLATOR COILS :
 OUTPUT - plugs, sockets & transformers

- P** PANEL METERS : PANELS : PRINTED CIRCUIT BOARDS : PHONO PLUGS & SOCKETS :
 PHOTO DIODES & TRANSISTORS : PILOT LIGHTS : PLASTIC CASES : PLASTIC & HEATSHRINK
 TUBING : PLUGS & SOCKETS : POLYESTER : POLYCARBONATE : POLYSTYRENE CAPACITORS :
 POTENTIOMETERS - single, ganged, multi-turn, wire-wound, close tolerance, rotary,
 slider, tab & trim :
 POWER DIODES : POWER SUPPLIES : POWER TRANSFORMERS : POWER CHOKES : PROBES
- Q** QUERIES ? Please contact us for further information
- R** RCA PLUGS & SOCKETS : RECTIFIERS : RF CHOKES : RELAYS : RESISTORS
 RESISTORS - carbon, metal film, high stability, power film, wire-wound, 1/4 to 200 watt :
 RESONATORS : RODS - ferrite : ROCKER & ROTARY SWITCHES : RUBBER FEET & GROMMETS
- S** SILICON CONTROLLED RECTIFIERS : SCREW TERMINALS :
 SEMICONDUCTORS - signal diodes, power & zener diodes, diacs, triacs, transistors,
 photodiodes & transistors, rectifiers & bridges :
 SWITCHES : SLUGS : SOCKETS : SOLDER : SOLDERING IRONS & STATIONS : SPACERS : SLEEVING &
 SPAGHETTI : SPEAKERS : SPEAKER TRANSFORMERS : STEP-DOWN TRANSFORMERS
- T** TRANSFORMERS : T.V. ACCESSORIES : TERMINAL STRIPS : TOOLS : TANTALUM CAPACITORS :
 TERMINALS : TEST PROBES : THERMISTORS : THYRISTORS : TOGGLE SWITCHES : TRANSISTORS :
 TRIACS : TRIMPOTS : TEST EQUIPMENT
- U** ULTRASONIC TRANSDUCERS : UTILITY CASES : UNIUNCTION TRANSISTORS
- V** VALVES & SOCKETS : VARIABLE CAPACITORS : VEROBOARD : VOLTMETERS : VARISTORS
- W** WIRE - hook-up, co-axial, T.V., nichrome, shielded, speaker, ribbon, computer,
 enamelled copper
- X** XENON TUBES & TRIGGER TRANSFORMERS
- Y** YU FONG TEST EQUIPMENT
- Z** ZENER DIODES



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Errors and Omissions Excepted

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														MONEY ORDER		
EXPIRY DATE																
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TOTAL A \$

PLEASE RETURN THIS FORM WITH YOUR REMITTANCE
ITEMS QUOTED ARE SUBJECT TO STOCK AVAILABILITY AT TIME OF
CUSTOMER ORDER



ALL ELECTRONIC COMPONENTS
 118-122 Lonsdale Street, Melbourne, Vic. 3000
 Telephone: (03) 662 3506 Fax: (03) 663 3822

KITSET SPECIALISTS

Phone : (03) 662 3506

Fax : (03) 663 3822

Name _____
 Address _____
 P/Code _____
 Phone: Bus. _____ A/Hours _____

Quotation valid for
 21 days from date
 shown.

DATE

MAIL ORDER QUOTATION FORM

Qty.	DESCRIPTION	PART NUMBER	A \$ EACH	A \$ TOTAL

Errors and Omissions Excepted

CHEQUE
 MONEY ORDER
 CARD NUMBER

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EXPIRY DATE

SIGNATURE

Bankcard : American Express ; Diners Club

SUB
 TOTAL

HANDLING &
 CERTIFIED POST

TOTAL A \$

**PLEASE RETURN THIS FORM WITH YOUR REMITTANCE
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 CUSTOMER ORDER**

Dear Customer.

Thank you for your enquiry. We are forwarding particulars of the kitset, or quotation, as requested. Please read the information set out below to assist you and avoid delay to your order.

QUOTATIONS

All quotations are valid for 21 days from date of issue. Prices quoted include Sales Tax. Sales tax exemption will be granted only on the receipt of an official order quoting Sales Tax Exemption Certificate number. The exception to this is a quotation or price for goods being sent out of Australia, in which case goods are Sales Tax free.

KITSETS

Where a kitset is supplied to any 'Electronics Australia', 'Electronics Today International', 'Hobby Electronics' or 'Australian Electronics Monthly' project, circuitry etc. is not provided, unless specifically requested with the order. Also, due to copyright, a copy of any kitset project from a magazine cannot be supplied unless that particular kitset is purchased. It is important to know that all kitsets are costed to the specific parts list for the nominated project and issue. Any extra parts not included in the parts list but required by the customer would be charged as additional items.

COMPONENT PARTS

Only first grade components are stocked and supplied by this company and are covered by the manufacturer's warranty. Where an item may be considered "suspect" by the customer, we can forward it to the manufacturer for evaluation and replacement if warranted. However, if the fault is considered due to some abuse or operation of the item beyond its ratings, the part would not be replaced, and freight charges incurred would be payable by the customer.

CREDIT RETURNS

Where customers find they have ordered incorrectly any item or items supplied by this company, they must notify us in writing of their reason and obtain approval before credit is allowed. This does not apply where goods may have been supplied incorrectly by us.

REMITTANCES

All cheques, etc. should be payable to : ALL ELECTRONIC COMPONENTS
Money Orders to be made payable at : Russell Street, Melbourne, Post Office
Credit Card orders must be authorised in writing by the customer.
We are able to accept : BANKCARD, AMERICAN EXPRESS, DINERS CLUB, Credit Cards.

MAIL AND TELEPHONE ORDERS

All orders are processed as soon as possible after receipt of order.
Orders paid by cheque will be despatched upon clearance of cheque.
Note - Packing and Freight charges will be shown separately on your quotation.

CHARGE ACCOUNTS

There is a minimum invoice value of \$50.00.
Goods are sent Certified Post within Australia, unless special arrangements are made to use a courier.
Goods sent outside Australia are registered, insured and air mailed.

SCHOOLS

Special attention is paid to school requirements for the young student.

Thank you, your custom is appreciated.