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·VOLUME1·PART4·

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Surrounds you with sound for £99.95

**SAVE
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PRICE

Experience cinema style sound surround in your own home. Incorporating the Dolby Surround Sound System, the Maplin Dolby Surround Processor is designed for use in the domestic environment. Now you can listen to films such as 'Raiders of the Lost Ark', the 'Star Wars' trilogy and 'Back to the Future' as they were originally intended to be heard. Suitably encoded Dolby Surround material includes many of the feature films that have been produced in Dolby Stereo and subsequently released on video cassette and video disc. Encoded feature films are also broadcast via satellite television, which has stereo capability and on terrestrial television in NICAM Digital Stereo.

The Maplin Dolby Surround Sound Processor offers a host of facilities to anyone who wants to add Dolby Surround to their existing AV system. With the Maplin Dolby Surround Processor, selecting the 'Dolby Surround' mode activates the decoding circuitry allowing

surround sound to be reproduced from suitably encoded material.

Apart from decoding Dolby Surround encoded movies, the unit also provides 'Matrix' and 'Hall' modes. 'Matrix' provides a pseudo-stereo effect for use with mono programmes and films. 'Hall' provides reverberation and ambience to stereo programmes and films that are not Dolby Surround encoded.

A 'Monitor' switch is also provided, which is used to switch to the tape monitor input sockets on the processor. This facility is provided so that when the processor is connected into your existing AV system, the tape deck can still be used without having to swap cables.

The Maplin Dolby Surround Sound Processor offers a great value for money introduction into the world of Dolby Surround Sound, and provides greater realism to movies on the 'small screen'.



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30th APRIL 1991

YU59P Surround Sound Processor **£99.95**.
A list of movies released in Dolby Stereo is
available from Maplin. Order as XL15R Dolby
Film List 40p.



£7 OFF
CATALOGUE PRICE
WAS £16.95 NOW
ONLY £9.95
YU16S

SAVE £20
ON CATALOGUE
PRICE OF £59.95
NOW **£39.95**
YU42V

YU41U

Headliners

Sounds great! Slimline headphones with an adjustable headband. Construction is of the semi-enclosed type and has high quality samarium cobalt magnets.
YU16S Slimline headphones £9.95.

Enclosed headphones for a closer performance. High quality stereo headphones with large driver elements (50mm Diameter), samarium cobalt magnets and enclosed construction deliver an evenly balanced sound with good performance at both the high and low frequency ends of the spectrum.
YU41U Enclosed headphones **A** £24.95.

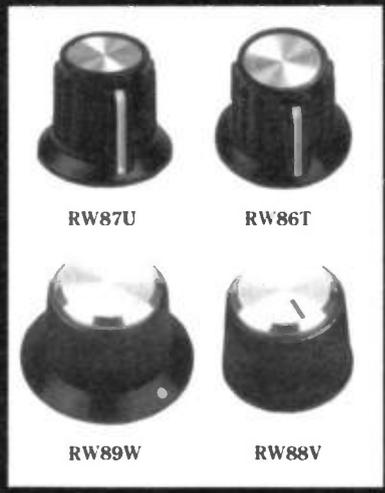
The Sound Speaks Volumes... Professional quality stereo headphones with double

drive system using a 30mm tweeter and 50mm woofer in each earpiece, with titanium plated diaphragms and samarium cobalt magnet for powerful low bass and superb high frequency response. The flat oxygen-free copper (OFC) cable enters separately on the left and right sides and is terminated in a 3.5mm gold plated stereo jack plug. The fully enclosed double earpad construction provides good isolation from external sound sources and the gimbal support ensures that the headphones sit comfortably but firmly on the listeners head. 'Strongly recommended', What Hi-Fi, Nov '89 issue.

YU42V Dble drv'r headphones **A** £39.95

KNOBS

RW87U and RW86T are two knobs with white pointer line and a skirt. Sides have narrow raised ridges for the firm grip. Fitted with a spun aluminium insert. KB3 has a recess for control fixing nut. KB4: Diameter 20mm. Height 17mm. KB3: Diameter 35mm. Height 22mm. RW87U Knob KB4 38p. RW86T Knob KB3 48p.
RW89W and RW88V are an identical pair of knobs except that one has a skirt and one has not. Both are fitted with a spun aluminium cap and have serrated sides. They have a recess for control fixing nut. Skirted M2 version has a white indicator spot on the skirt. M1: Diameter 19mm. Height 16mm. M2: Diameter 25mm. Height 16mm.
RW88V Knob M1 48p. RW89W Knob M2 48p.



RW87U

RW86T

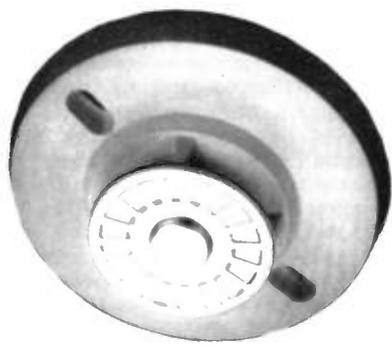
RW89W

RW88V

PROTECTION

Heat Detector

A heat sensor comprising an encapsulated bi-metal strip acting as a normally open single pole make switch. The round metal sensor is mounted on a white, bevelled patress. The bi-metal strip operates at 60°C ±5°C. Contacts are rated at 0.3A at 24V DC. Dimensions: 100mm diameter x 35mm deep. Sensor unit is 47mm diameter. Has two pairs of screw terminals. Fixing slots are 4 x 9mm on 71mm centres.



FK47B HEAT DETECTOR
WAS £4.95 NOW £3.95

Glass Break Detector



A sensitive glass-break detector which uses a strong adhesive pad to fix to the glass. The sensor may be positioned to give a make or break action. The sensor must be mounted at least 75mm from a corner or edge of the pane. The sensor is first fixed to the glass, then the central screw loosened slightly which allows the sensor to be rotated to the desired position in accordance with the enclosed instructions for use. The two-core cable which is approx. 250mm long can then be terminated on a junction box mounted on the window-frame for example. Dimensions 34mm diameter x 21mm high.

FP11M GLASS BREAK SENSOR
WAS £2.20 NOW £1.95
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DOWN IN PRICE!

Vibration Sensor

A simple mechanical vibration sensor comprising a weighted moving contact which can be adjusted by a set-screw for varying degrees of sensitivity. Usually the screw setting is chosen for the contacts to be normally closed; physical displacement of the unit causing the contacts to open since the weighted movable portion remains inert relative to the body of the unit. The detector reacts best to a displacement in the same direction as the moving contact's natural direction of movement (it will operate with a displacement applied at right-angles, but to a lesser degree). Greatest sensitivity can be achieved by mounting the unit vertically with the bob-weight of the movable contact uppermost (cable entry hole at top).



To ensure equal sensitivity in both directions two such units may be used mounted vertically with one turned 90° to the other. The two units are then wired together in series. In addition, a second contact is provided in series with the movable contact which is normally held closed by the cover so that the cover cannot be removed without triggering the alarm. Readily applicable to automotive security systems, for example.
Dimensions: 66.5mm long x 21mm wide x 18mm deep.

FK78K VIBRATION DETECTOR
WAS £2.35 NOW £2.10
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Camcorder Batteries



Portable VCR/ Camcorder Batteries

Rechargeable replacement batteries compatible with original equipment portable VCR's and Camcorders. The batteries are supplied discharged for transit and must be charged before use. Each battery includes a 'charge marker' beneath a small sliding cover which indicates the battery's state of charge and which can be red (discharged) or black (fully charged). Four types are available:

VP66 6V 1700mAh. Replacement for Fisher FVC901, Fuji F610, Nikon VN9000, Pentax PVC840, PVC840E, Ricoh R610, R630, Sanyo VMD3, VMD5, Sony CCDV88, CCDV90, CCDV95, CCDF330, CCDF335, CCDF340, SP5, Tamron CX7. Equivalent replacement for Sony NP55, NP77, Fuji NP55, NP77, Sanyo NP55, NP77, Tamron NP77, Pentax PVBT810, PVBT820, Ricoh NP55.

VP22H 6V 1700mAh. Replacement for Fisher PVCP801, Fuji P300AF, P600AF, Pioneer VEM8, Sanyo VMD1, VM8, VCR88, Sony CCDM8E, V8, V8AF, V7, V30, V50, V100, V200, M10, EVC8, MPKM8, Vivitar Magic 8. Equivalent replacement for Fuji NP22, Fisher NP22, Sanyo NP22, Vivitar NP22, Pioneer VXA101, Sony NP22H, NP22.

VP752 9-6V 1500mAh. Replacement for Akai PVC8, Ferguson 3V50, 3C03, JVC GRC2, GRC7, Mitsubishi HSC20, Nordmende CV2102, CV2201, Philips VKR6830, Sharp VLC3HA, VCC50, Telefunken VM2895, 1890, Toshiba SK60P. Equivalent replacement for Ferguson VA318, VA283, JVC NBP6U, NPB8U, Mitsubishi BY-C101, Sharp BT73, Telefunken VZ933, Akai BPN6.

VP962 9-6V 1000mAh. Replacement for Bauer Bosch VCC606AF, VCC616AF, VCC656AF, Ferguson FC05, FC06, FC07, FC08, FC15, JVC GRC9, GRC11, GRC30, GRC45, GRC60, GRS77E, Minolta C50, Nordmende 2201, RP3000, Philips VKR6835, VKR6841, Panasonic VMC6, VMC10, MS50, Telefunken VM2895, VM2892, VM4000, VM4100, Toshiba A1420BK. Equivalent replacement for Bauer Bosch, Ferguson VA314, VA315, JVC BNV6GU, BNV7GU, Panasonic VVWBC1E, Telefunken V2932, Nordmende AC1100, Minolta VBP501, VBP500.

| | |
|---------------------|--------|
| JU61R VC Batt VP66 | £29.95 |
| JU62S VC Batt VP22H | £24.95 |
| JU63T VC Batt VP752 | £29.95 |
| JU64U VC Batt VP962 | £34.95 |

CAMCORDER MONITORING

Video Camera Colour Monitor Adaptor



An innovative adaptor kit for use with LCD Colour TV's JR20W, YT77J, JR21X and JR22Y, which allows them to be used as a monitor on a colour video camera. The adaptor kit contains a swivel bracket, shoe mount, inter-connecting lead, two cable adaptors and a small cross point screwdriver. Now at last, recordings can be monitored in full colour.

YT82D OS-51 [A] £34.95

3.3 Inch Compact LCD Colour TV/Monitor



LCD Colour TV/Monitor



Video Compatible 2 Inch Screen Pocket LCD TV



4 Inch Screen LCD Colour TV

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(Makes a superb colour monitor)

A V101-5mm (4 inch) screen LCD colour TV measuring 104 x 111 x 48.5mm and weighing 525g. It has electronic auto search tuning with on screen indicator and a telescopic aerial. An external aerial jack is provided with an earphone jack (3.5mm), audio/video jack for camera or recorder, and a power socket for external 9V DC source from mains adaptor or car adaptor. Controls are ON/OFF, volume, brightness and colour. Power requirements are 6 AA size alkaline batteries (FK64U), battery life approximately 2½ hours. Supplied with 6 test batteries (1 hour life), an earphone and a soft case. TV is compatible with U.K. standard PAL UHF transmissions.

JR22Y Casio TV-8500 [A] £234.95

JR21X:- A compact V84mm (3.3 inch) screen colour TV. An internal speaker gives good quality sound reproduction and for private listening a headphone jack socket is provided. JR21X [A] £199.95

YT77J:- A desk-top colour TV using up-to-the-minute technology and featuring a large V66mm flat LCD display. Electronic auto search tuning with an on-screen tuning indicator and a telescopic aerial. Other controls are on/off, volume, brightness and colour. YT77J [A] £149.95

JR20W:- Pocket sized and with a V49mm (2 inch), flat LCD screen with an electroluminescent backlight. Powered by 4 x AA sized alkaline cells (FK64U), this TV is compatible with U.K. standard PAL UHF transmissions. JR20W [A] £99.95

Note: The screen sizes for all the above LCD TVs have been quoted as Vnmm where n is meant to indicate the actual viewing area as measured diagonally across opposite corners.

Go on punk... ...mic my day!

When used properly external microphones usually offer an improvement over your camera's own built-in microphone. The unidirectional microphone (YU36P), featured far right, will help to alleviate a certain degree of background noise that can detract from the finished soundtrack. The camcorder microphone pictured below, is a good quality, basic, cost-effective microphone, specifically intended for use with video camera recorders.

Electret Condenser Camcorder Microphone

This microphone is specifically intended for use with video camera recorders. The microphone uses an electret condenser capsule and has omnidirectional characteristics. The body is made from black anodised turned aluminium and has an integral on/off switch. The lower part of the microphone unscrews to facilitate fitting of a AA cell. Two connecting cables are supplied: One is short and coiled, intended for use when the microphone is attached to the camcorder (microphone holder supplied). The other cable is 7.6m long and is for hand held use of the

Electret Condenser Super Cardioid Unidirectional Microphone with Zoom

This microphone is specifically intended for use with video camera recorders. The microphone uses an electret condenser capsule and has selectable super cardioid (tele) or cardioid (normal) response pattern. Thus when you zoom in for a close-up, you can switch the microphone to 'tele' and the sound too will zoom in like the picture. The body is made from black anodised turned aluminium and has an integral tele/normal/off switch. The lower part of the microphone unscrews to facilitate fitting of a AA cell. Two connecting cables are supplied: One is short and coiled, intended for use when the microphone is attached to the camcorder (microphone holder supplied). The other cable is 7.6m long and is for hand held use of the microphone. Both cables have locking connectors at the 'microphone' end, which prevents the cable from becoming detached accidentally. Cables are terminated in 3.5mm mono jack plugs. Also supplied, a microphone windshield and rigid carrying box. AA size battery not included.

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was £19.95 NOW £14.95

microphone. Both cables have locking connectors at the 'microphone' end, which prevents the cable from becoming detached accidentally. Cables are terminated in 3.5mm mono jack plugs. Also supplied, a microphone windshield and rigid carrying box. AA size battery not included.

YU35Q Camcorder Microphone £14.95

Specification

Frequency response: 80Hz-12kHz
Impedance (normal): 1kΩ
Impedance (tele): 2k3Ω
Sensitivity (normal): -70dB (±3dB)
Sensitivity (tele): -56dB (±3dB)
Size: 285 x 21mm dia.
Weight: 105g (excluding battery)
Power supply: 1.5V AA cell

YU36P Spr Cardioid Cam Mic £32.95

CAMCORDER ACCESSORIES

A range of camcorder accessories can be found in the Maplin catalogue including great value-for-money microphone mixers and camcorder audio mixers.





AT LEAST
20%
 OFF CATALOGUE PRICES
 ON ALL SILVER OXIDE
 BATTERIES FEATURED
 ON THIS PAGE

Silver Oxide Batteries

Especially recommended for quartz watches and small calculators where the long and stable discharge characteristics are important. Nominal voltage of all types 1.5V.

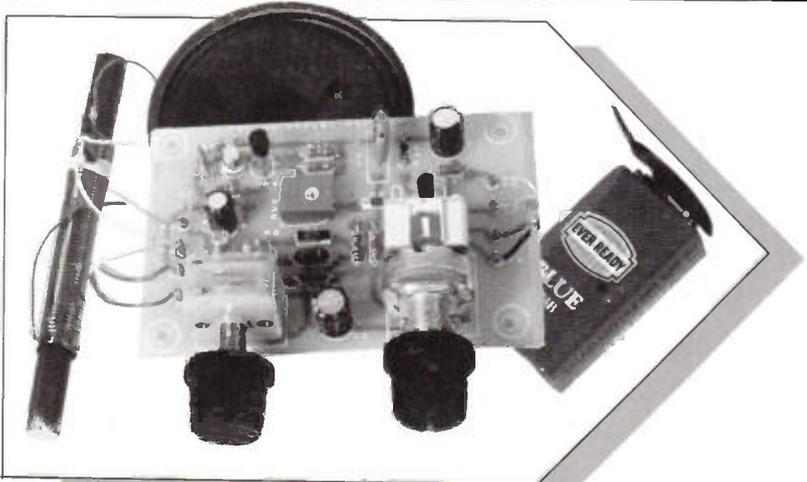
| Type | Dimensions (dia. x h mm) | Nominal capacity | Mass |
|-----------|--------------------------|------------------|-------|
| CX521 | 5.8 x 2.1 | 10mAh | 0.3g |
| CX616 | 6.8 x 1.6 | 8mAh | 0.3g |
| SG1 | 6.8 x 2.1 | 12mAh | 0.34g |
| CX626/SG4 | 6.8 x 2.6 | 20mAh | 0.4g |
| CX716 | 7.9 x 1.6 | 15mAh | 0.4g |
| CX721 | 7.9 x 2.1 | 16mAh | 0.45g |
| SG2 | 7.9 x 2.6 | 23mAh | 0.5g |
| SG3 | 7.9 x 3.6 | 30mAh | 0.7g |
| SG5 | 7.9 x 5.4 | 58mAh | 1.1g |
| CX921 | 9.5 x 2.1 | 25mAh | 0.6g |
| CX926 | 9.5 x 2.6 | 34mAh | 0.75g |
| CX936 | 9.5 x 3.6 | 52mAh | 1.0g |
| SG8 | 11.6 x 2.1 | 35mAh | 0.9g |
| SG10 | 11.6 x 3.1 | 64mAh | 1.3g |
| SG12 | 11.6 x 4.2 | 110mAh | 1.8g |
| SG13 | 11.6 x 5.4 | 150mAh | 2.7g |

| Type | Will directly replace types |
|-------|--|
| CX521 | SR521SW, 379, 50 |
| CX616 | SR616SW, 321, 38 |
| SG1 | SR621SW, 364, 51, 531, D364, RW320, SR60 |
| CX626 | SR626SW, 377, 37, SG4 |
| CX636 | SR636SW |

| | |
|-------|--|
| CX716 | SR716SW, 315, 40 |
| CX721 | SR721SW, 361/362, 19/46, 532, D361, RW310/RW410, SR58 |
| SG2 | 396/397, 26/29, 536/556, D396, RW311/RW411, SR59 |
| SG3 | 384/392, 2/10/49, 527/547, D384/D392, RW37/RW47, SR41 |
| SG5 | 309/393, 15/16, 526/546, D309/D393, RW38/RW48, SR48, WS6 |
| CX921 | SR920SW, 371, 30, 537, RW316, SR69 |
| CX926 | SR926SW, 395/399, 25/35, 523/543, RW313/RW413, SR57 |
| CX936 | SR936SW, 394, 27, 524, D394, RW33, SR45 |
| SG8 | SR1120SW, 381/391, 23/24, 533/553, D381/D391, RW30/RW40, SR55 |
| SG10 | SR1130SW, 389/390, 11/17, 534/554, D389, RW39/RW49, SR54, SW10 |
| SG12 | 301/386, 1/6, 528/548, D301/D386, RW34/RW44, SR43 |
| SG13 | 303/357, 7/9, 521/541, D303/D357, RW32/RW42, SR44, WS14 |

| | | Normally | NOW |
|-------|-------------------|----------|-----|
| JK33L | Silver Batt CX521 | 48p | 38p |
| JG82D | Silver Batt CX616 | 48p | 38p |
| FM36P | Silver Batt SG1 | 32p | 25p |
| JG83E | Silver Batt CX626 | 56p | 44p |
| JG85G | Silver Batt CX716 | 56p | 44p |
| FM33L | Silver Batt CX721 | 60p | 48p |
| FM35Q | Silver Batt SG2 | 32p | 25p |
| FM30H | Silver Batt SG3 | 32p | 25p |
| FM32K | Silver Batt SG5 | 36p | 28p |
| FS76H | Silver Batt CX921 | 60p | 48p |
| FS75S | Silver Batt CX926 | 60p | 48p |
| FS74R | Silver Batt CX936 | 60p | 48p |
| FS73Q | Silver Batt SG8 | 38p | 30p |
| FM31J | Silver Batt SG10 | 56p | 44p |
| FM29G | Silver Batt SG12 | 68p | 54p |
| FM28F | Silver Batt SG13 | 80p | 64p |

Watch as you build...



Prices may change after 30th April 1991. [A], [B] etc. against price indicates there is an additional carriage charge for this item; see Order Coupon in Magazine for details.

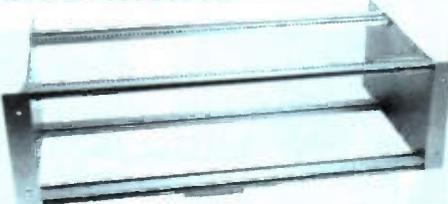
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25% OFF
 CATALOGUE PRICE
 ON ITEM XM74R
WAS £35.95 NOW
ONLY £26.95

19 INCH MODULAR EUROCARD SUB-RACK SYSTEM (DIN 41494)

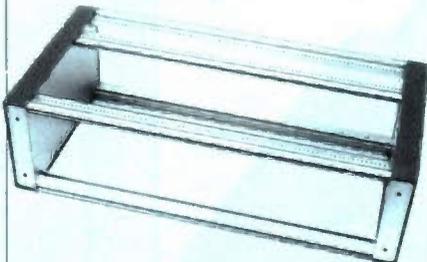
A very high quality modular sub-rack system (conforming to DIN 41494) for housing Eurocard modules and cards. The user can tailor the layout of the sub-rack to suit a particular application. As well as the sub-rack units themselves, a wide range of accessories are available, including mounting plates for DIN 41612 connectors.

Sub-Rack Frames and Enclosures



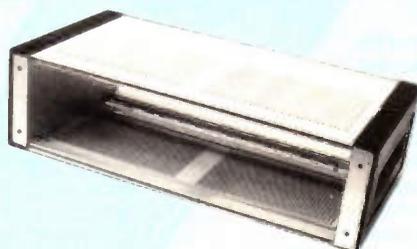
A range of 19 inch, 84E, 3U/single height eurocard sub-racks. All three types are modular and are constructed from anodised aluminium panels and extrusion. A wide range of accessories, such as guide rails, handles, plates, covers, etc. are available

separately. The basic version is a 'skeleton sub-rack', which has four horizontal fixing bars, two side plates and 19 inch rack mounting 'ears'. The 'free standing sub-rack' is as the 'skeleton sub-rack', but also has two rear panel fixing bars, two extra mounting 'ears' and two carrying handle/end cheeks. The 'enclosed sub-rack' is as the 'free standing sub-rack', but also has top and bottom panels. These panels are punched to assist ventilation.



| Type | Dimensions |
|------------------------|-------------------|
| Skeleton Sub-rack | 483 x 132 x 237mm |
| Free Standing Sub-rack | 486 x 136 x 243mm |
| Enclosed Sub-rack | 486 x 136 x 243mm |

Sub-racks are supplied flat packed and assembly fixings are supplied.



| | | |
|--------------|---------------------------|-----------------|
| XM74R | 19in Skeleton Rack | C £26.95 |
| XM76H | 19in Free Std Rack | C £49.95 |
| XM75S | 19in Enclosed Rack | D £59.95 |

19 Inch Rack Mounting Instrument Cases



A range of high quality rack mounting cases, fabricated in mild steel and finished in a hard wearing semi-matt black epoxy coating. The base plate is punched with a matrix of holes for securing PCBs, transformers etc, and the top cover is provided with ventilation slots to assist cooling. The black anodised aluminium front panel has two handles and there are four holes punched to facilitate fixing the case in a rack. The cases are supplied flat packed and are easy to assemble. Available in 1U, 2U, 3U and 4U standard sizes.



Dimensions mm:

| Type | External | Internal | Front panel |
|------|-----------------|-----------------|-------------|
| 1U | 437 x 42 x 305 | 432 x 40 x 293 | 483 x 44 |
| 2U | 437 x 80 x 305 | 432 x 78 x 293 | 483 x 88 |
| 3U | 437 x 122 x 305 | 432 x 120 x 293 | 483 x 132 |
| 4U | 437 x 168 x 305 | 432 x 166 x 293 | 483 x 177 |

| | | |
|--------------|--------------------------|-----------------|
| XM69A | 19in Rack Case 1U | B £24.95 |
| XM68Y | 19in Rack Case 2U | B £28.95 |
| XM70M | 19in Rack Case 3U | C £33.95 |
| XM71N | 19in Rack Case 4U | D £39.95 |

BOX CLEVER FOR THE BEST SOLUTION

One important aspect of building an electronic project is often not covered in any great detail in the constructional notes, namely choosing a suitable box or enclosure to put it in. Whereas specific kits or projects do actually recommend or include a case, there are many available 'building block' type modules which can be chosen and combined to produce a working system according to the builder's specification, but for which it is impossible to suggest a suitable enclosure, and may require some ingenuity in layout.

Metal-working skills may be required, and a set of suitable tools is necessary in addition to your usual pliers, wire cutters etc. These might comprise one or two sheet metal punches for the most common sized holes ($\frac{3}{16}$ in., $\frac{1}{2}$ in. etc.), a nibbling tool, junior hacksaw together with a set of good twist drills and a range of shaped files. Such tools, once purchased, will pay for themselves over and over. If your requirements are too unorthodox there will probably be no alternative but to make your own case from sheet aluminium.

A COMPLETE EDUCATIONAL 'BUILD-IT-YOURSELF' ELECTRONIC STARTER KIT WITH FULL STEP BY STEP VIDEO INSTRUCTIONS

Enables the inexperienced to construct a working loudspeaker radio receiver.

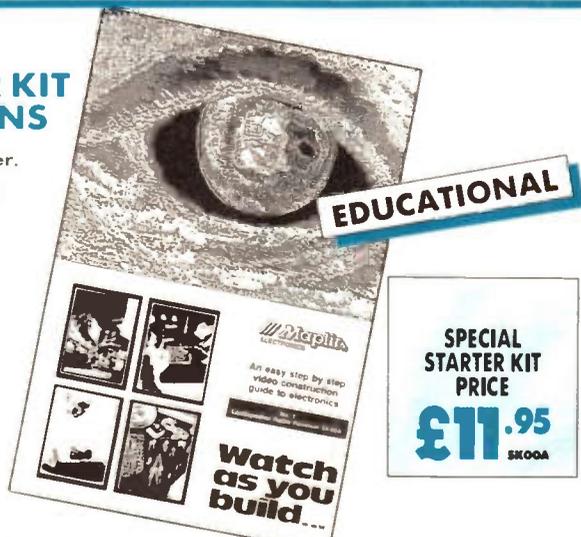
Ideal introduction to the mysteries of Electronics. The NEW video starter kit will help to unravel its unique features and includes:

- ★ Component identification
- ★ Circuit board construction
- ★ Soldering
- ★ Testing and applications
- ★ Fault finding
- ★ Kit comprises – Instructional Video and all loudspeaker radio receiver parts (PP3 battery not included).

Maplin ELECTRONICS

CREDIT CARD HOTLINE – 0702 554161

Item subject to availability, and will be on sale in our shops in Birmingham, Bristol, Leeds, Hammersmith, Edgware, Manchester, Nottingham, Newcastle-upon-Tyne, Reading, Southampton and Southend-on-Sea. Price includes VAT.



EDUCATIONAL

SPECIAL STARTER KIT PRICE

£11.95
SKOBA

Watch as you build...

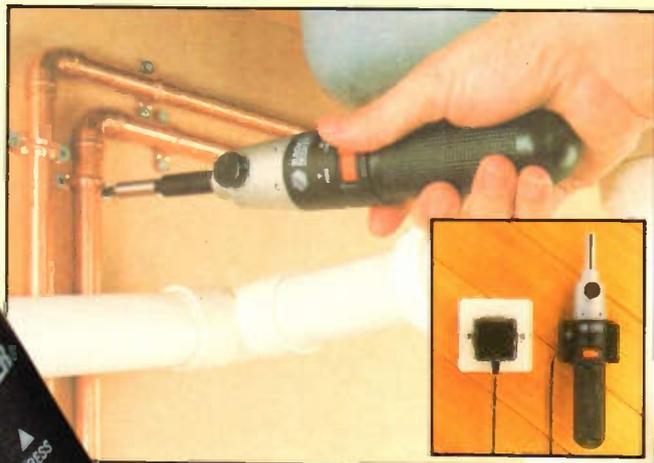
SCREWING

Cordless Power Screwdriver Black & Decker

- ★ 2.4V battery pack
- ★ Reversing
- ★ Shaft lock
- ★ Wall mounting
- ★ Supplied with charger
- ★ Supplied double-ended screwdriver bit

A compact, yet powerful, cordless screwdriver with numerous applications where screws need to be inserted or removed. Shaft rotational speed 130 R.P.M. The screwdriver is easy to use; with one switch that selects the direction of rotation by sliding to the left or right and applies power when pressed. With the switch in the centre 'neutral' position power cannot be applied, thus acting as a safety lock against accidental operation. A shaft lock is provided so that screws can still be driven home if for any reason the battery pack runs flat during a job. Supplied with a double-ended screwdriver bit, suitable for Philips and slotted screws; and a wall mounting bracket/charging receptacle. Recharge time is 12 hours.

XP15R Cordless Driver 9018 [A] £18.95



TOOLS



Open/Ring Spanner Set

A set of 11 spanners which have both open and ring ends, the spanners are supplied complete with tool roll for storage. Sizes are 8, 9, 10, 11, 12, 13, 14, 15, 17, 19 and 22mm.

YZ46A Open/Ring Spanner Set [C] £9.95

7 Piece Screwdriver Set

A 7 piece screwdriver set that comprises of 4 flat blade screwdrivers and 3 crosspoint screwdrivers.

YZ44X 7pc Screwdriver Set £4.95

MADE EASY!

Cordless Power Screwdriver with Clutch

Black & Decker



- ★ 3-6V battery pack
- ★ Reversing
- ★ Adjustable clutch
- ★ Wall mounting
- ★ Supplied with charger
- ★ Supplied double-ended screwdriver bit

A compact, yet powerful, cordless screwdriver with numerous applications where screws need to be inserted or removed. Shaft rotational speed 180 R.P.M. The screwdriver is easy to use; with one switch that selects the direction of rotation by sliding to the left or right and applies power when pressed. With the switch in the centre 'neutral' position power cannot be applied, thus acting as a safety lock against accidental operation. An adjustable clutch is provided so that screws can be tightened by the correct amount. Supplied with a double-ended screwdriver bit, suitable for Philips and slotted screws; and a wall mounting bracket charging receptacle. Recharge time is 12 hours.

XP16S Cordless Driver 9019 [A] £25.95

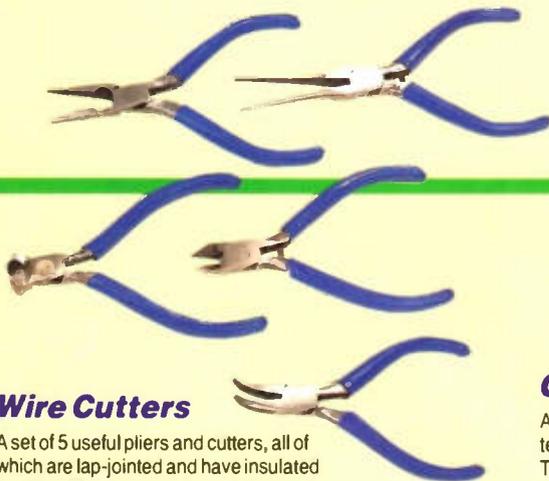


Screwdriver Bits for Cordless Screwdrivers and Variable Speed Drills
Black & Decker



A set of 10 screwdriver bits, housed in a dial-a-bit storage drum. These bits are suitable for use with Black & Decker cordless screwdrivers and variable speed drills. The set consists for 4 slotted bits, 3 Pozidrive, 2 Philips bits and 1 magnetic bit holder.

JU86T 10pc Screw Bit Set £7.95



Wire Cutters

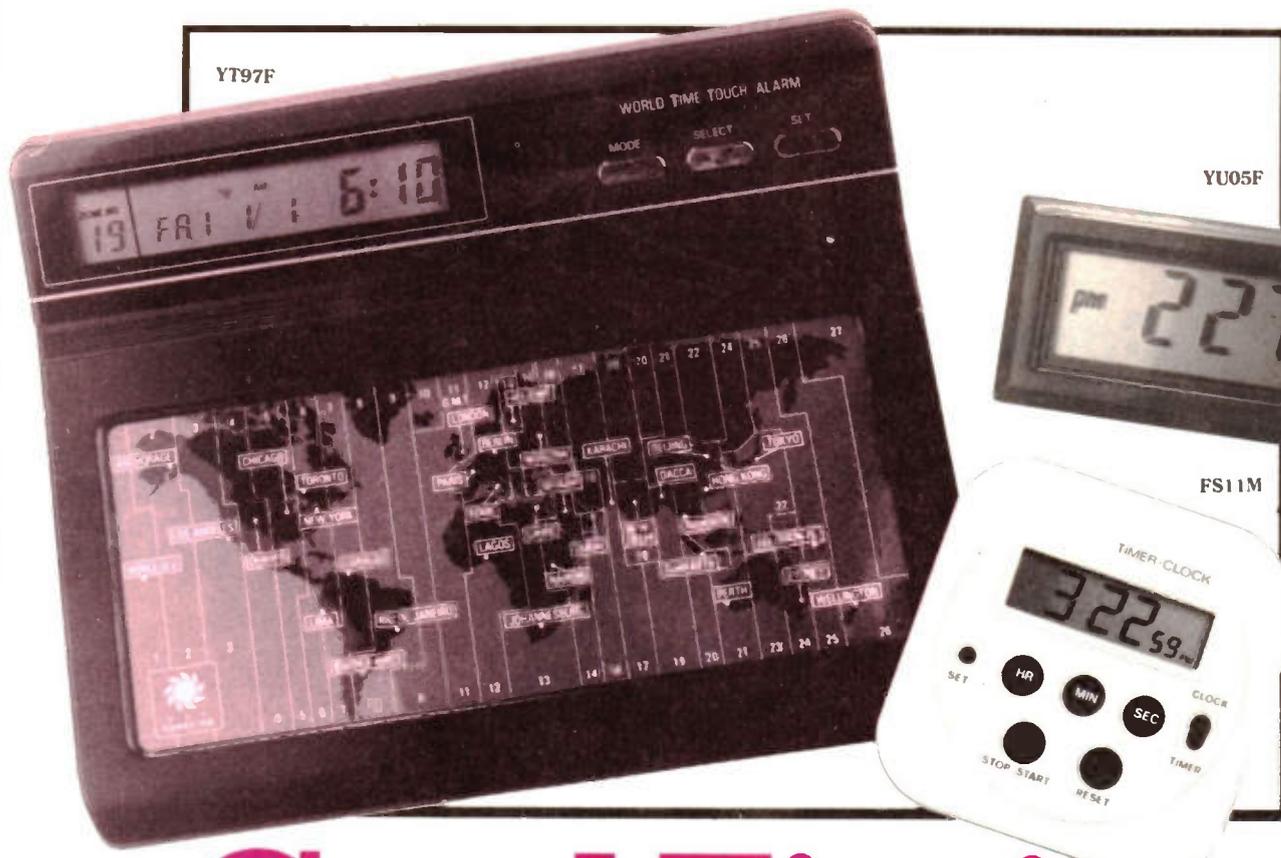
A set of 5 useful pliers and cutters, all of which are lap-jointed and have insulated handles. The set comprises of: A pair of long-nose pliers with serrated jaws and integral wire cutter. A pair of extra-long-nose pliers with smooth jaws. A pair of curved long-nose pliers with smooth jaws. A pair of side cutters. A pair of end cutters. The side cutters and extra-long-nose pliers have spring returns fitted.

YZ45Y Plier & Cutter Set £8.95

Cable Tie Gun

A cable tie wrap gun that tensions and cuts cable ties. The cable tie is simply placed around the cables in the normal way and the 'tail' is inserted into the cable tie gun. Operating the trigger tensions the cable tie and automatically cuts the tail off, all in one fast, simple, action. Ideal for production environments where quick, accurate assembly is important.

JU29G Cable Tie Gun £5.95



Good Timing

Clocks for timing, clocks for sport, clocks for panels, clocks for work, clocks for play, clocks for fun! The choice is yours.

SAVE £3

World Calendar Clock Alarm

A very smart desk-top 24 hour clock calendar showing the date, day of the week, month and year from 1988 to 2037 on a 85mm wide LCD display. A world map measuring 170 x 75mm is marked with a total of 27 time zones, and by just touching one of these zones the relative zone time will be displayed. In addition a special zone allows for the British Summer time 1 hour offset and while active a sun symbol appears in the display. The clock will prove invaluable to anyone required to make international telephone calls on a regular basis for example. The major cities indicated on the world map include Anchorage, Honolulu, Chicago, Toronto, Los Angeles, Denver, New York, Caracas, Lima, Rio De Janeiro, Buenos Aires, London, Paris, Helsinki, Berlin, Moscow, Rome, Lagos, Cairo, Nairobi, Johannesburg, Riyadh, Karachi, Dubai, New Delhi, Dacca, Beijing, Bangkok, Hong Kong, Tokyo, Djakarta, Solomon Islands, Perth, Sydney and Wellington. Powered by just two AA size batteries. The alarm operates with 'normal' time only and sounds for 30 seconds maximum or until disabled, and would normally be used as a time of day reminder for appointments etc. The clock calendar is housed in a gloss black plastic case with non-slip rubber feet.
Overall dimensions: 200 x 165 x 58mm.
YT97F World Clock
WAS £22.95 NOW ONLY B £19.95

Up/Down Timer Clock

An LCD interval timer and clock, ideal for timing events that require an audio alarm such as cooking,

meter parking, photography etc. After setting the interval time the display will count down to zero. At zero a buzzer will sound for one minute and at the same time the counter will start to count up from zero, giving a direct indication of the time elapsed since the alarm was triggered. The timer may be stopped at any point during the count down and if not reset will continue where it left off. A memory function automatically sets the last delay time, unless reset manually. Conventional timing from zero upwards is also possible but without the alarm facility. The timer/clock is supplied in white plastic with the setting controls in black soft touch plastic.

Specification

- Display: 6 digit LCD for timer and clock
- Timer: Count up to 23hrs 59mins
Count down to 23hrs 59mins
- Resolution: 1 second
- Battery: B-SR43H (FM29G) or equivalent (included)
- FS11M Up/Down Timer Clock £8.95

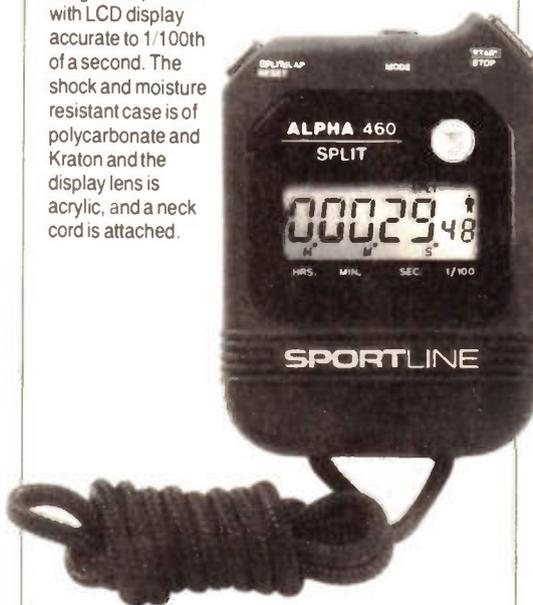
Small Clock Module FM-882

A compact digital clock module identical in construction and dimensions to the small temperature modules FM-880LP and FM-880LPEX. A tuning fork type quartz crystal clock is employed for best accuracy, achieving in the order of $\pm 15s/month$. Four digits show hours and minutes for a 12 hour period with AM and PM indicators. Operates on one GE-13 silver oxide type button cell battery for a total current drain not exceeding 5-5 μ A giving a battery life of approximately 1 year. The clock has an integral flanged bezel and can be snapped into a panel cut-out of 50 x 25mm. Makes an ideal small, low cost and accurate digital clock with all sorts of uses.

YU05F Small Clock Module £5.95

Precision Digital Stop-watch

A digital stop-watch with LCD display accurate to 1/100th of a second. The shock and moisture resistant case is of polycarbonate and Kraton and the display lens is acrylic, and a neck cord is attached.



This multipurpose stop-watch is easy to use and accurate for all sports activities, and can display 'LAP' time and reset and restart counting from zero for the next lap while holding last lap display, or continue with current time and hold display only, as well as be able to pause counting during a 'time out' period and resume counting from current held time. The timing range is from zero to 9 hours, 49 minutes and 59.99 seconds. Recommended operating temperature is -10°C to +59°C.
Dimensions: 80 x 57 x 17mm.

YU03D Stop-watch £12.95

Prices may change after 30th April 1991. A, B etc. against price indicates there is an additional carriage charge for this item; see Order Coupon in Magazine for details.

BOLDER SOLDERS

**SAVE
£3 OFF
CATALOGUE PRICE
WAS £37.95 NOW
ONLY £34.95**



**Soldering
Station
PSU24**

An attractively styled soldering station, similar in appearance to solder station TCSU-D but which does not provide temperature control. The unit is powered from 240V AC mains and provides a 24V AC output to power 24V CS and 24V XS irons (see below). This unit provides isolation between the mains supply and soldering iron output, thus providing low voltage safety and very low leakage currents. The unit incorporates a mains on/off switch and a mains fuse.

Note: soldering irons must be purchased separately. Included with the unit is a detachable sponge tray and a coil spring iron holder.

XM79L Solder Station PSU24 **E** £34.95

LOW VOLTAGE SOLDERING IRONS

17W 24V CS Iron for PSU24



A 17W precision miniature soldering iron intended for use with the above soldering station PSU24. The double shaft element ensures minimal leakage current whilst retaining good mechanical strength. This iron is designed for use with modern miniature components. Supplied with Bit No. 1100.

Note: this iron must not under any circumstances be directly connected to 240V AC mains. Fitted with 1.8m of cable. The iron requires a plug (JU67X) for connection to XM79L.

Specification

Operating voltage: 24V
Power consumption: 17W
Breakdown voltage: >2,500V
Leakage current: <2µA
Max bit temperature: 390°C
Length: 183mm
Weight: 26g

YZ15R 24V 17W CS Iron **E** £8.95

Replacement Elements

Replacement heating elements for the 17 watt 24V CS iron and the 25 watt 24V XS iron.

| | | |
|-------|--------------------|-------|
| JR42V | 24V 17W CS Element | £4.65 |
| JR43W | 24V 25W XS Element | £4.65 |

25W 24V XS Iron for PSU24



A 25W precision miniature soldering iron intended for use with the above soldering station PSU24. The double shaft element ensures minimal leakage current whilst retaining good mechanical strength. This iron is designed for use with modern miniature components. Supplied with Bit No. 51.

Note: this iron must not under any circumstances be directly connected to 240V AC mains. Fitted with 1.8m of cable. The iron requires a plug (JU67X) for connection to XM79L.

Specification

Operating voltage: 24V
Power consumption: 25W
Breakdown voltage: >2,500V
Leakage current: <1µA
Max. bit temperature: 420°C
Length: 193mm
Weight: 42g

YZ16S 24V 25W XS Iron **E** £9.25

MAINS SOLDERING IRONS

12W Miniature Soldering Iron Type M



A 12W miniature 240V AC soldering iron which has a heating element contained in a stainless steel shaft, such that the heat is transferred to the bit with maximum efficiency. The soldering bit (No. 10 fitted) can be easily removed from the shaft for replacement. Ideal for SMD rework and other applications where not too much heat is required. Fitted with 1.8m of mains cable.

Specification

Power consumption: 12W
Breakdown voltage: 1250V
Leakage current: <5µA
Max. bit temperature: 370°C
Length: 147mm
Weight: 21g

YU90X Iron M **E** £8.75

Type M Replacement Element

A 240V mains replacement element for the M model iron.

JR55K M Element 240V 12W **E** £4.65

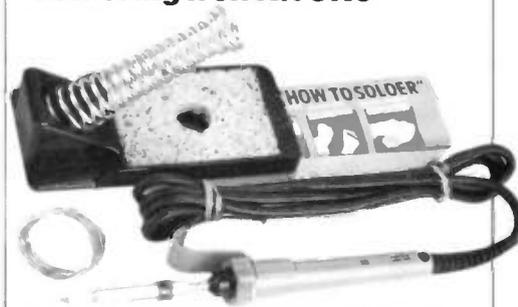
Soldering Iron Kit SK5



An attractive presentation kit that makes the perfect present for the beginner. A superb 17W 240V CS soldering iron and a Stand ST4 neatly packaged with full instructions on how to use the iron as well as some general hints on soldering.

FY68Y CS Kit SK5 **E** £11.95

Soldering Iron Kit SK6



An attractive presentation kit that makes the perfect present for the beginner. A superb 25W 240V XS soldering iron and a Stand ST4 neatly packaged with full instructions on how to use the iron as well as some general hints on soldering.

FY69A XS Kit SK6 **E** £11.95

MAPLIN SHOPS NATIONWIDE

For personal service, visit our shops at:
Birmingham Sutton New Road, Erdington.
Brighton 65 London Road.
Bristol 302 Gloucester Road.
Leeds Carpet World Building, 3 Regent Street.
London 146-148 Burnt Oak Broadway, Edgware.
London 159-161 King Street, Hammersmith.
Manchester 8 Oxford Road.
Newcastle-upon-Tyne Inside Bennetts Electrical Superstore, 136-168 Shields Road, Byker.
Nottingham 86-88 Lower Parliament Street.
Reading 129-131 Oxford Road.
Southampton 46-48 Bevois Valley Road.
Westcliff-on-Sea 282-284 London Road.
All items subject to availability.

FLOPPY POWER



A very high quality range of floppy disks manufactured by Nashua, one of the world's leading manufacturers of magnetic media for computers. These disks are guaranteed against any defect in manufacture for five years in addition to your statutory rights. And we can attest to the quality of Nashua products since we use them almost exclusively with our own office equipment. We chose Nashua, and we can confidently recommend that you make Nashua your number one choice.

Specification:

5 1/4 in.
 Outer jacket size: 13.335 (±0.038)cm
 Thickness: 1.816 (±0.165)cm
 Material: Vinyl chloride with a non-skidding synthetic fibre lining
 Disk outer diameter: 13.017 (±0.008)cm
 Inner diameter: 2.857 (±0.002)cm
 Nominal thickness: 0.0076cm
 Material: Mylar with $\gamma\text{Fe}_2\text{O}_3$ coating
 Coating thickness nominal: 2.8 μm
 Surface roughness: 0.076 μm
 Operating and storage temperature range: 10°C to 53°C
 Relative humidity: 8% to 80%

3 1/2 in.
 Outer jacket size: 9.4 x 9mm
 Thickness: 0.33cm
 Operating and storage temperature range: 10°C to 60°C

Diskettes should be held at room temperature for one hour before use.

The following types are available:

| | TPI | BPI | Tracks/Surface | Storage capacity (Bytes) |
|---------------------------------|-----|-------|----------------|--------------------------|
| 5 1/4 in. diskettes: | | | | |
| Double-sided, Double-density | 48 | 5536 | 40 | 500,000 |
| Double-sided, Quad-density | 96 | 5536 | 80 | 1,000,000 |
| 3 1/2 in. diskettes: | | | | |
| Double-sided, Double-density | 135 | 8717 | 50 | 1,000,000 |
| Double-sided, High-density | 135 | 14200 | 79 | 1,400,000 |
| IBM 5 1/4 in. diskettes: | | | | |
| Double-sided, High-density | 96 | 9650 | 77 | 1,600,000 |

These disks are for use with IBM PC AT compatible disk drives. They are made to a very high standard and guaranteed 100% error free and capable of 10 million passes without deterioration in performance. They feature 600 Oersted coercivity and can store 985,088 bytes after initialisation with IBM format.



All types are available singly or in boxes of ten.

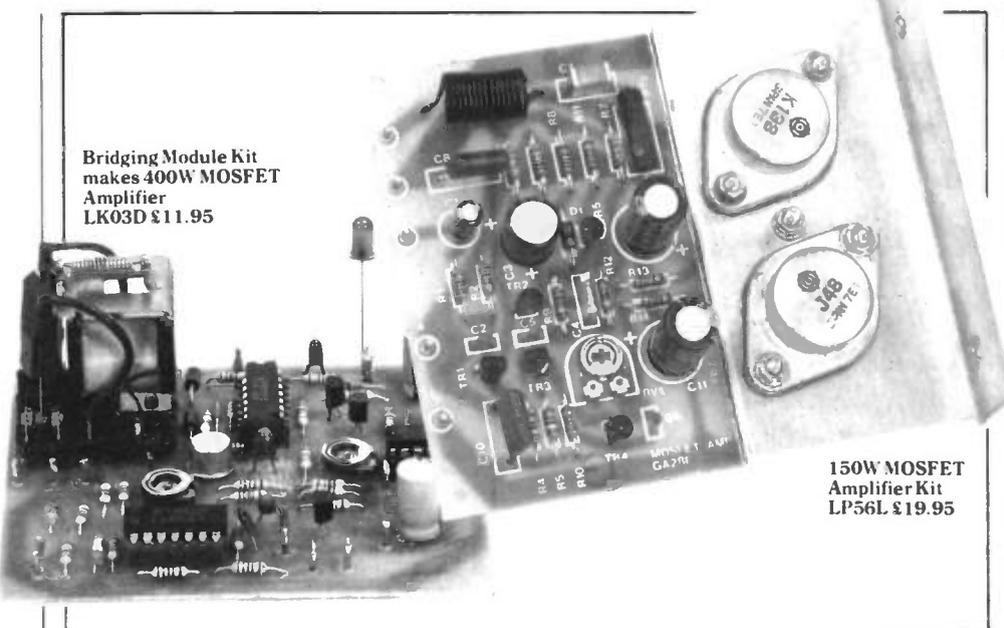
| | |
|----------------------------|--------|
| FT80B D/S D/D Disk 5-25 | 86p |
| YJ70M 10 D/S D/D Disk 5-25 | £7.95 |
| FT82D D/S Q/D Disk 5-25 | £1.28 |
| YJ72P 10 D/S Q/D Disk 5-25 | £10.45 |
| FT84F D/S D/D Disk 3-5 | £1.56 |
| YJ74R 10 D/S D/D Disk 3-5 | £13.95 |
| JC26D D/S H/D Disk 3-5 | £3.65 |
| YP88V 10 D/S H/D Disk 3-5 | £32.95 |
| FD27E D/S H/D Disk 5-25 | £1.48 |
| YM82D 10 D/S H/D Disk 5-25 | £12.65 |

15% OFF
 CATALOGUE PRICE

A handy miniature vacuum cleaner ideal for removing dust from computer keyboards etc. It's supplied with two heads - one angled and one straight - two brushes and an easy to empty bag. The vacuum cleaner requires two AA cells (not supplied) or alternatively it can be powered from an AC adaptor (3V at 300mA) e.g. XX09K.

YU26D ONLY £4.95

SAVE 15% AGAINST CATALOGUE PRICE



Bridging Module Kit
makes 400W MOSFET
Amplifier
LK03D £11.95

150W MOSFET
Amplifier Kit
LP56L £19.95

ing heavy currents very fast, which can give rise to instability problems. The supply and earth rails must be both low impedance and low inductance, requiring all wiring to be kept as short as possible. Lengths up to 300mm are usually alright to keep inductance to a minimum – for minimum resistance the wires must be very thick, much thicker than you would normally suppose to be necessary, and solid core 30A heavy duty cable is recommended, such as flat mains conductor for electric cookers. This equally applies to the 0V wire, naturally. In addition both '+' and '-' supply rails should be fused to protect the module.

All 0V connections, including the speaker earth return, must connect to the same place in the power supply, the best place for this is the common point where the 0V terminals of both reservoir capacitors join. This prevents eddy currents flowing between different 0V points, preventing hum and noise.

HEATSINKING

The right-angled bracket fitted to the MOSFET amp module is just that, a bracket, and *not* the complete heatsink! A suitably sized heatsink must be provided, to which the bracket is attached to provide thermal conduction directly to the MOSFETs. The size of the heatsink required depends on the power output required; at low power levels the flat panel of an aluminium case may suffice, but flat panels do not radiate heat readily and so should include an extruded alloy, finned heatsink attached to the other side. This method neatly combines both mechanical attachment of the module with adequate heatsinking. For maximum efficiency the MOSFETs must remain as cool as possible, and the heatsink cannot be too large. For regular high power outputs or in a confined space this ought to be augmented with forced air cooling using a blower fan. The need for adequate heatsinking is probably one of the least well known subjects, and it is not always advisable to look at how it is done in some commercial equipment, where surprisingly often it is not really enough, compromised as it is by the need to keep production costs to a minimum!

Another myth is that a power amplifier of a given maximum output can be expected to continuously output that maximum level. In truth music material is not like that, with the possible exception of organ music which has many constant amplitude tones. The maximum output rating of an amplifier is more realistically a guide as to its maximum 'headroom', and if it is operated at substantially lower levels then transients are more or less guaranteed not to overdrive the amplifier and it will perform better, being less stressed and with lower distortion levels etc.

If more output power is required then to achieve the same reserve some alternative method must be found. For the 150W MOSFET amp module a 400W Bridging Module can be used to combine two MOSFET amps to make one full bridge type amplifier, where the speaker load is connected between the outputs and the amplifiers are driven in antiphase. This results in a doubling of the output voltage and a *quadrupling* of the output power, up to 400W RMS, but load impedance must not be less than 8Ω (as opposed to 4Ω with a single amplifier).

AMPLIFIER ACTION

The Maplin MOSFET amplifier was originally developed for use as a guitar amplifier in the late seventies, and first saw the light of day as a 75W version in a combo amplifier project. Shortly afterwards, and by popular demand, it became an individually available module and has remained one of our best selling projects for over a decade!

The design is not meant to reflect current state-of-the-art in Hi Fi, as the original requirement was for a rugged, easy to build project that would offer good reliable performance and, to quote from the early advertising blurb, be "virtually bomb-proof like the best valve amps." Whether there are many of us left who can remember how 'bomb-proof' such valve amps might have been however (or even what valve amps *were*) will determine how much sense that comparison makes.

One wonderful feature of the valve amplifier was its ability to tolerate output short circuits, again due to the use of the output transformer. In fact an open circuit was probably a more worrying accident, especially with high power, A-B class valve output stages. This is the complete opposite of a bipolar output transistor amplifier, where open circuits are no problem but short circuits not tolerated at all.

Thermally, the MOSFET has an advantage over the bipolar transistor. As a bipolar transistor heats up in use, the collector current increases due to the positive temperature coefficient of the device. If the temperature rise were allowed to continue then 'thermal runaway' could ensue and the transistor could be destroyed or at least seriously impaired. A MOSFET however exhibits a *negative* temperature coefficient, and as the device heats up the drain-source current *decreases* due to an increasing internal resistance, since the FET works like a voltage controlled resistor, as,

coincidentally, does the valve.

The device's temperature will also reduce in turn and the drain-source current will rise again. Used in the output stage of a power amplifier, this self regulating effect is able to offer a high degree of immunity to misuse, i.e. high loads, and in *this* respect the MOSFET output amplifier is similar to the old valve variety.

The devices used in the MOSFET power amp are complementary (N channel and P channel) *enhancement* types, meaning that they are forced into conduction by applying an electric field to the gate. Because it is a voltage controlled device the MOSFET requires very little power to drive it, a quality which allows for much simpler driver designs to be produced, as complex biasing and quiescent current compensation arrangements are not required, as is usually the case with bipolar transistors. The typical Total Harmonic Distortion (THD) of the MOSFET is very low for output levels up to 50W. At higher frequencies and power levels approaching 100W the THD levels increase, although this is insignificant in real terms.

UPDATED

The design of the 150W MOSFET amplifier kit was improved during late 1990, so that the 1990 catalogue description of the project is now no longer accurate. Note also that the Order Code number for the kit is different to avoid confusion (now LP56L). However the design remains essentially the same, having only a few minor improvements made to ease assembly and improve reliability. Although, as mentioned earlier, it was not originally intended to perform to a Hi Fi standard, it nevertheless possesses some creditable features even in its earliest 75W guise.

Power MOSFETs are capable of switch-

GET THE BEST FROM YOUR RECORDER

Maxell and TDK, great names in audio tapes. Read about how you could improve your recordings using the best names in tape.

NORMAL ?

Cassette tapes utilising a fine-grained ferric-oxide coating for high sensitivity and minimum background noise. The D and UR types are an ideal low cost choice for general purpose usage with consistently good performance. The AD and UDI types offer improved high frequency response with lower background noise, and the AR-X features an extended treble response with low distortion, having ultra-fine particle layers which allow more powerful bass response and very high saturation levels. The XLI-S offers the

best performance from recorders using normal bias and equalisation, having wide bias latitude and a performance nearly equal to chrome-dioxide, and has a precision injection moulded cassette shell designed to preserve phase accuracy. All types available with total playing times of 90 minutes and some with 60 minutes.

CHROME-DIOXIDE

Chrome-dioxide tapes provide a frequency response, dynamic range and signal-to-noise ratio much superior to ferric-oxide tapes. Cassette shells are precision injection moulded for best phase characteristics. Types SA and UDII will accept high recording levels over the full audio band providing high output with very low inherent tape noise. The SA-X and XLII types offer an even better signal-to-noise ratio and crystal clear clarity. All types available in 90 minute sizes and some in 60 minute.

The XLII-S offers slightly more dynamic range and 0.5dB less noise, with a wider bias latitude.

METAL MANIA

Cassette tapes of the modern high performance metal formulation can offer a dynamic range of up to twice the capability of CrO₂ tapes, with all other parameters to match, able to accept extremely high recording levels, with a high tolerance for inexact bias latitude, giving recordings of great clarity and detail. Metal tapes are resistant to oxidation, ensuring optimum long life performance with any metal compatible cassette deck. The MA-XG90 cassette comprises tape as MA-X type contained in a precision die-cast alloy cassette shell.

| | | |
|-------|-----------------|-------|
| CT02C | TDK D-60 | 98p |
| CT03D | TDK D-90 | £1.28 |
| CT09K | TDK AD-90 | £1.56 |
| CT15R | TDK AR-X60 | £1.48 |
| CT16S | TDK AR-X90 | £1.86 |
| CT23A | TDK SA-60 | £1.75 |
| CT24B | TDK SA-90 | £2.10 |
| CT26D | TDK SA-X60 | £2.10 |
| CT27E | TDK SA-X90 | £2.65 |
| CT35Q | TDK MA-X90 | £4.25 |
| CT39N | TDK MA-XG90 | £8.95 |
| CT05F | Maxell UR-C90 | £1.20 |
| CT11M | Maxell UDI-C90 | £1.48 |
| CT20W | Maxell XLI-S90 | £1.98 |
| CT25C | Maxell UDII-C90 | £1.56 |
| CT29G | Maxell XLII-C90 | £2.20 |
| CT41U | Maxell XLII-S60 | £1.86 |
| CT42V | Maxell XLII-S90 | £2.45 |
| CT36P | Maxell MX-C60 | £2.85 |
| CT37S | Maxell MX-C90 | £3.75 |

Featured below:

Left: A-H Chrome-dioxide cassette tapes.

Right: I-P Ferric-oxide cassette tapes.

Centre: 1-4 Metal formulation cassette tapes.

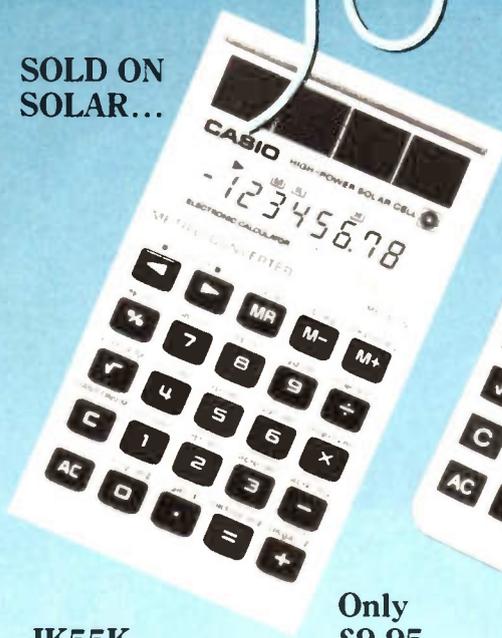


Prices may change after 30th April 1991. [A], [B] etc. against price indicates there is an additional carriage charge for this item; see Order Coupon in Magazine for details.

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C-POWER
8+2**

**SOLD ON
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JK55K

Solar powered metric calculator has four basic functions and 20 imperial to metric and 20 metric to imperial conversions.

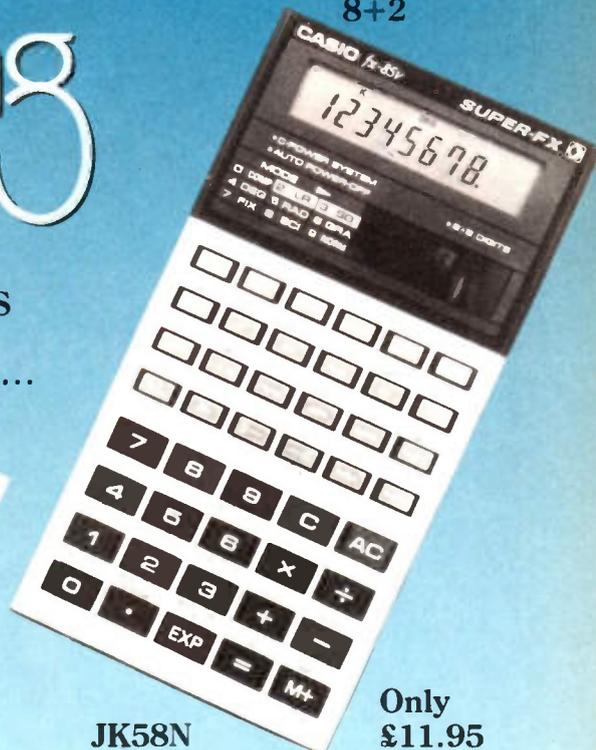
**Only
£9.95**



JK53H

Basic four function calculator with memory, operating from a solar cell, 8-digit LCD display, batteries not required.

**Only
£2.95**



JK58N

**Only
£11.95**

A 128-function scientific calculator with true algebraic logic (i.e. the formula can be entered in the same sequence as it is written), and up to six levels of parenthesis. Other features include a single key for display of kilo, mega, micro etc, fluent conversion between polar and rectangular co-ordinates, easy statistics through standard deviation and regression analysis and 3-mode angular measurements (degree, radian and grad), and many other features and functions needed for modern day calculi.

£2 OFF
CATALOGUE PRICE
1991 CATALOGUE WAS
£35.95 NOW £33.95



SCIENTIFIC FORMULÆ

A 288-function calculator including 128 scientific formulæ built in. This unit has in addition to 27 electronic and electrical formulæ, 40 mathematical formulæ including quadratic equations, sum of squares, area of triangle, rectangle, circle, ellipse, volume of sphere, pyramid etc, 35 physics formulæ including acceleration, gravitation, circular and harmonic motion, simple pendulum, sound intensity, Doppler effect etc, 9 statistical formulæ and 17 mechanics formulæ. A programming function allows you to enter up to 12 other formulæ for long-term retention and built-in formulæ can be copied to this memory area for editing into a different configuration. In addition the calculator has ten constant memories and 13 physical constants, and the statistics section includes regression analysis. A rounding function where you can set the number of significant digits is also included.

The liquid crystal display has two lines. The upper line is a 14-column dot matrix display for formulæ and messages. The lower line has two dot matrix characters and a 10 digit mantissa and 2 digit exponent display. During formula execution the two dot matrix characters are used to form an interactive input system. The calculator gives around 790 hours use from the CR2032 lithium battery included.

Size: 131 x 72 x 9.2mm. Weight: 93g.

JK61R FX-5000

£33.95

TVFX

Television Effects Unit

CONVERTS YOUR HI-FI SOUND INTO A SPECTACULAR LIGHT DISPLAY USING YOUR COLOUR TV OR MONITOR



Montage of screen displays produced by TVFX unit.

A SOUND TO LIGHT SPECTACULAR THAT IS THE ULTIMATE LIGHT SYSTEM. BRINGS YOUR HI-FI ALIVE AND MAKES YOUR COLOUR TV OR MONITOR DANCE!

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★Internal Clock or Audio Triggering

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PROJECT FROM MAPLIN**