# VIDEO DISPLAY UNITS


755


757

755  12" medium resolution low cost green screen monitor          £99
757  12" high resolution green screen with anti-glare filter 18MHz  £139
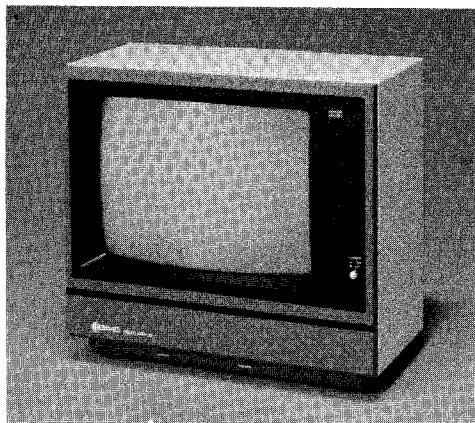

760
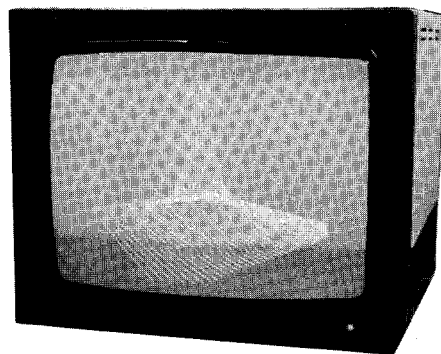

761/762

760  Standard resolution colour monitor - 400 dots/line, TTL input  £295
761  Medium resolution colour monitor - 600 dots/line, TTL input    £395
762  High resolution colour monitor - 800 dots/line, TTL input      £495

# EPSON MX RANGE OF MATRIX PRINTERS



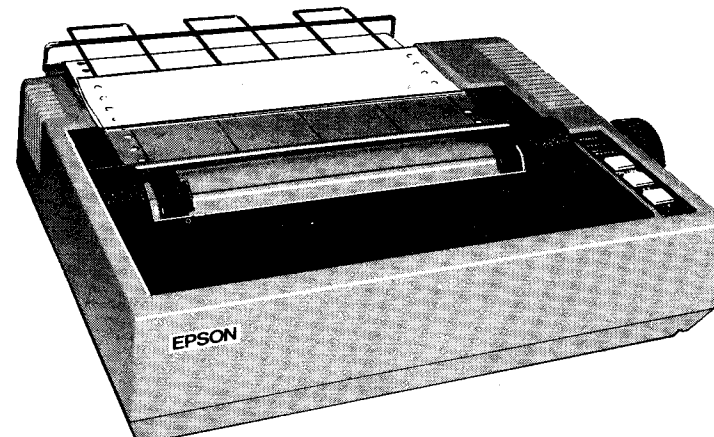This is claimed to be the worlds most successful range of computer printers, and certainly its adoption with only a change of badge as the printer for the IBM, Sharp, PET and HP microcomputers lends weight to the idea.

482  Epson MX 80 F/T type I                                          £395

This version has a 9x9 dot matrix which allows true descenders, operates at 80 ch/s, programmable font variation to give 40, 66, 80 and 132 characters per line, plus emphasised and enlarged characters. The unit comes with a tractor feed mechanism which be easily detached and then cut sheets of paper used as in an ordinary typewriter. The rubber plattern helps to reduce the printing noise, and improves the standard of printing. "Chunky" graphics are also standard on this version.

480  Epson MX 80 F/T type II                                         £425

This is broadly similar to the MX 80 F/T model I, but has high resolution graphics capability with individual dot addressablity.

245  Epson MX 82                                                     £415

Again similar to MX 80 types above, but with true 1:1 ratio screen dump. ie a circle is printed as a true circle. The high resolution graphics give 1152 dots to the line. This version does not have friction feed.

246  Epson MX 82 F/T                                                 £455

As the Epson MX 82 above but with the choice of demountable tractor drive or friction feed.

483  RS232 interface for MX 80 range                                £45
484  Universal IEEE to Centronics interface                         £69
250  RS232 interface with 2k FIFO (required for hi-res graphics)    £79
251  RS232 interface with2k FIFO and "x" on "x" off                 £105
487  Spare cartridge ribbon for MX 80 series                        £9
488  Printer cable Acorn to Centronics                              £15

# EPSON MX 100 PRINTER

**NEW TYPE III**
**CHEAPER AND BETTER!**
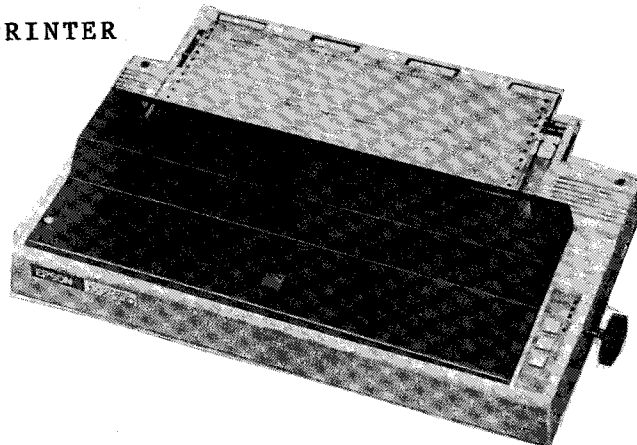
What could be better than increased performance coupled with lower price? MX 100/3 is upgraded from 80 to 100 characters/sec, and has had more programmable features added that includes subscripts and superscripts, improved graphics, auto underlining and enhanced aesthetics. At the same time the price has been decreased from £575 to £495, to what must be one of the best buys around in matrix printers.
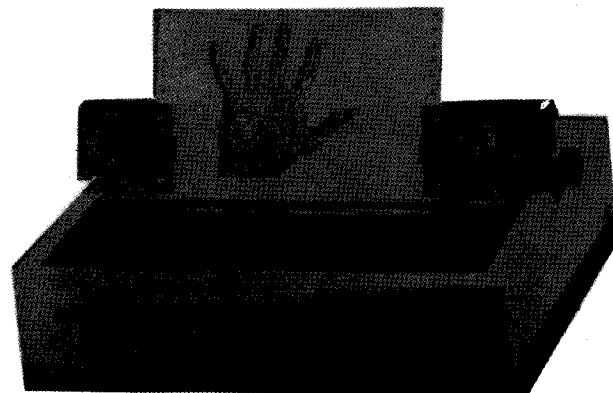
| | | |
|---|---|---|
| 100 ch/s | 15" wide carriage | Bit Image Printing |
| 32 Print Fonts | 96 ascii Characters | 8 international character sets |
| Correspondance Quality Printing | | True descenders on lower case |

| | | |
|---|---|---|
| 247 | Epson MX 100/3 | £495 |
| 248 | Epson MX 100 spare cartridge ribbon | £11 |

# INTEGREX CX 80 COLOUR PRINTER

This printer produces text and graphics in 7 colours by single, double and treble printing using a three colour ribbon (magenta, yellow and cyan). Each printer dot is individually addressable for high resolution colour graphics. The text format is 5x7 matrix for the 96 standard ASCII characters, 6x7 matrix for 64 PET graphics characters, plus 15 user programmable characters.

| | | |
|---|---|---|
| 240 | Integrex colour printer | £875 |
| 241 | Integrex spare colour ribbon | £15 |

# TEC STARWRITER MODELS 40 AND 55
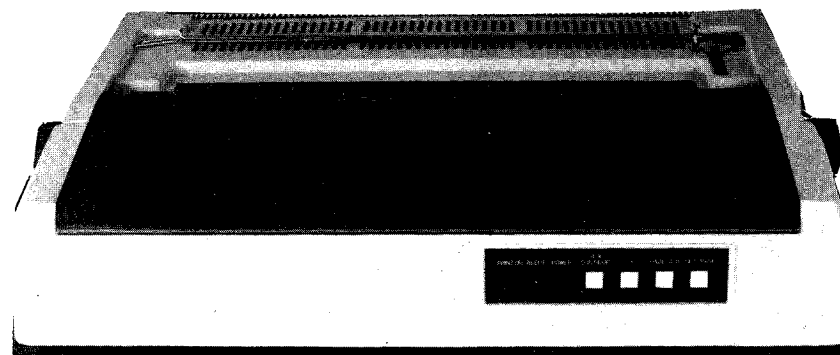
This one of the most competitively priced daisy wheel printers on the market, and yet offers a wide range of sophisticated features. It is provided with a standard 2K print buffer, and internal software which achieves compatibility with word processing and wordstar programs.

Facilities include:-

shadow overprinting
bold overprinting
automatic underlining
proportional spacing
half line feed for superscripts and subscripts
variable character pitch and variable line feed pitch
vertical and horizontal tabs
programmable form length
software controlled red/black ribbon (model 55 only)
high-resolution graphics
bi-directional printing with high speed vertical and horizontal movement when not printing, and short line logic seeking

The standard models have a rubber platten and are designed to be used with single sheets of paper like an ordinary typewriter, although motorised paper advance makes paper loading exceptionally quick and easy. Alternatively, a tractor option is available which handles standard computer paper with holes along the edge. There is also an automatic loader for single sheets of cut paper, called a sheet feeder.

| | | | |
|---|---|---|---|
| 493 | TEC Starwriter model 40 (40 c/s) parallel Centronics interface | | £1199 |
| 494 | TEC Starwriter model 40 (40 c/s) serial RS232 interface | | £1199 |
| 256 | TEC Starwriter model 55 (55 c/s) serial RS232 interface | | £1499 |
| 255 | TEC Starwriter model 55 (55 c/s) parallel Centronics interface | | £1499 |
| 497 | Tractor feed mechanism for standard computer paper | | £140 |
| 498 | BDT cut sheet automatic feeder | | £750 |
| 499 | Multistrike carbon ribbon for all TEC models above | each | £4 |
| 503 | Multistrike carbon ribbon for all TEC models above | box of six | £18 |
| 504 | Spare daisy wheel – 12 character per inch printing | | £10 |
| 506 | Spare daisy wheel – 10 character per inch printing | | £10 |

# RACKING SYSTEMS AND ENCLOSURES

CUBE and Acorn systems are standardised on the Eurocard arrangement of printed circuit cards, and on the Vero KM6 rack system in particular, using a 1" pitch between cards. In this section, the parts that make up racking systems are described and listed. Note that front panels appear on page 3.15.

Cards are accommodated by identical top and bottom card guides which snap into the rails of the subrack. Disk modules use four identical module guides (two top and two bottom). The same arrangement using the same guides is true both of the subrack unit which fits into the Eurorack enclosures, and of the caseframe unit.

## SUBRACKS FOR EUROCARDS
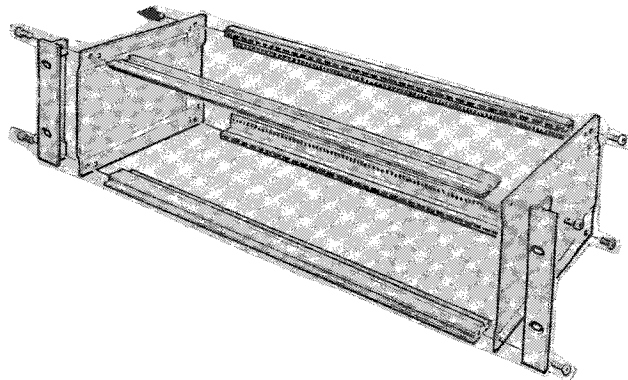


| | | |
|---|---|---|
| 2960 | Eurorack - metal work only, packed flat | 24.00 |
| 700 | Eurorack with buffered backplane and eight sockets, guides for eight cards and one disk module assembled and tested | 72.00 |
| 705 | Eurorack with buffered backplane and 14 sockets, with card guides, assembled and tested | 98.00 |
| 710 | Rack assembled, with module guides for two disk units | 30.00 |

## ENCLOSURES FOR EURORACKS
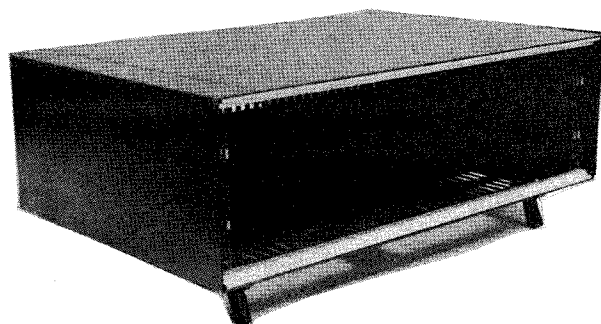


These enclosures are designed to take subracks as shown on Page 2.14

| | | |
|---|---|---|
| 415 | Enclosure for one Eurorack. 15cm high x 37cm deep x 49cm wide | 42.00 |
| 420 | Enclosure for two Euroracks (total height 6U, ie 30cm. 32cm deep, 49cm wide) | 60.00 |

## CASEFRAME
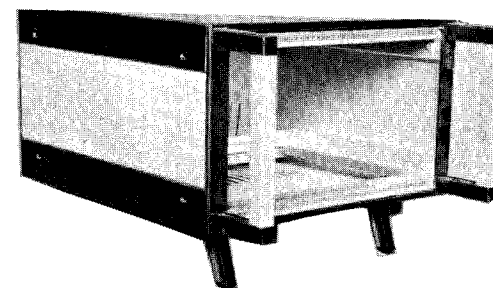


(Supplied in flat pack without backplane or card or module guides)

Integrated card frame and enclosure used by us for Eurocard systems. They are constructed from aluminium and black vinyl covered steel. Our backplanes are on a 1" pitch, so the maximum number of cards that can be accomodated in the three sizes are 8, 12 and 16, but the maximum number of slots on a backplane is 14. There is space available for other equipment (eg. a power supply) behind the backplane. This space is shown below as the usable depth, less the 200 mm approx required by the Eurocards and backplane.

| | | |
|---|---|---|
| 2260 | Small 8.4" usable width, 240mm usable depth | 43.00 |
| 2262 | Medium 12" usable width, 240mm usable depth | 46.00 |
| 2261 | Large (std 19"). 16.8" width, 360mm depth | 49.00 |

| | | | |
|---|---|---|---|
| 2380 | Card guide (use two per card) | each | 0.30 |
| 2600 | Module guide (use 4 for disk module) | each | 0.30 |

## CASEFRAMES WITH BACKPLANES

Fully assembled and tested with card guides fitted, plus module guides where appropiate.

| | | |
|---|---|---|
| 417 | 19" caseframe, 8 skt backplane, space for disk unit | 99.00 |
| 418 | 19" caseframe, 14 socket backplane. | 129.00 |
| 419 | 12" caseframe, 6 card slots, one disk module slot (This is the case used on System 10) | 80.00 |

## CASEFRAMES WITH BACKPLANE AND POWER SUPPLY

| | | |
|---|---|---|
| 380 | 19" caseframe, 8 skt backplane, space for disk unit with CUPS-3 power supply (5v, 5A; 25v, 0.5A; 12v, 2A) fitted & tested | 187.00 |
| 381 | 19" caseframe, 14 socket backplane with CUPS-3 power supply (5v, 5A; 25v, 0.5A; 12v, 2A) fitted & tested | 217.00 |
| 382 | 12" caseframe, 6 card slots, one disk module slot with CUPS-3 power supply (5v, 5A; 25v, 0.5A; 12v, 2A) fitted & tested (Same unit as supplied with the System 10) | 168.00 |
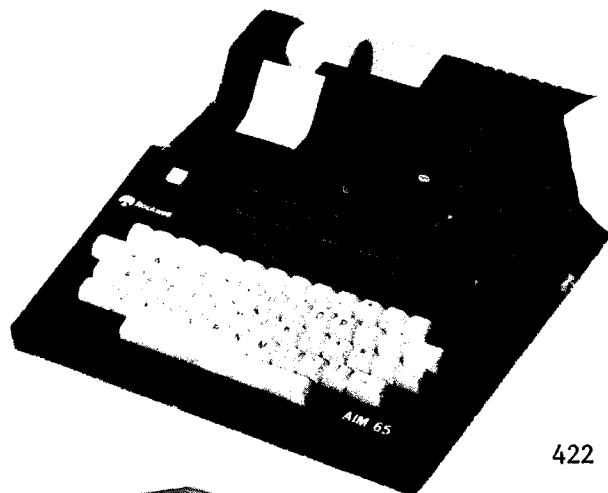
422
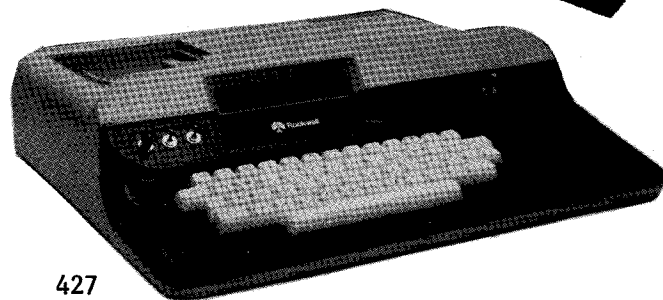


427

422   Injection moulded enclosure with aluminium chassis, very dark brown in colour, 33cm wide, 40cm deep, 10cm high. Designed to take a purpose built power supply (code 439), but without space for CUBIT       80.00

427   Foam moulded enclosure with steel chassis. 47cm wide, 46 cm deep, 12cm high. Room for CUPS-2 power supply. CUBIT can be accommodated with a the removal of a small amount of the material under the paper tray (invisible from outside) or by using the AIM 65 COMPATIBILITY module (section 20). Chocolate/cream.       65.00
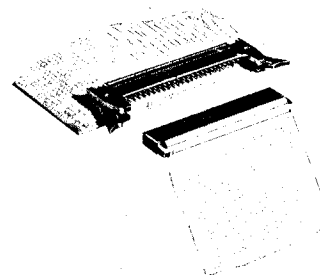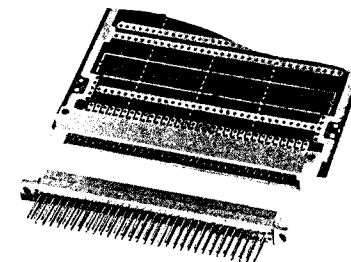
latching plug pcb right angle male for ribbon



DIN 41612 right angle male pcb mounting

ribbon cable socket with strain relief clip

DIN 41612 wire wrap tail socket



pcb pin side and end butting 0.1" spacing gold plated

16 position rotary switch
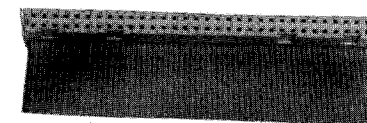
DIN 41612 socket for ribbon

| | | |
|---|---|---|
| 2324 | DIN plug right angle male pcb mounting | 1.50 |
| 2325 | DIN plug right angle male pcb mounting   64 way (rows a + b) | 2.50 |
| 3370 | DIN socket 64 way straight pcb tails | 3.30 |
| 3371 | DIN socket 64 way straight wire wrap tails | 3.60 |
| 3350 | DIN socket for ribbon cable 64 way idc | 4.50 |
| 2362 | Plug right angle male pcb mounting for ribbon sockets 20 way | 2.40 |
| 2363 | Plug right angle male pcb mounting for ribbon sockets 26 way | 2.60 |
| 2364 | Plug right angle male pcb mounting for ribbon sockets 40 way | 3.60 |
| 3342 | Socket for ribbon cable, with strain relief, 20 way | 2.00 |
| 3343 | Socket for ribbon cable, with strain relief, 26 way | 2.60 |
| 3344 | Socket for ribbon cable, with strain relief, 34 way | 3.40 |
| 3345 | Socket for ribbon cable, with strain relief, 40 way | 3.70 |
| 2913 | PCB pin for 0.1" spacing, side & end buttable, 50 way strip | 1.60 |
| 3408 | Rotary switch, 16 position binary encoded | 3.00 |
| 2220 | Crystal 1 MHz | 2.50 |
| 2221 | Crystal 4 MHz | 2.20 |
| 2222 | Crystal 6 MHz | 2.10 |
| 2223 | Crystal 14 MHz | 2.10 |

# INTEGRATED CIRCUITS
### NOTE - SAME SERVICE AS RS, BUT CHEAPER!
PRICES OF MANY IC's ARE FALLING. PLEASE RING US FOR THE LATEST PRICE.

| Code | Device | Type | 1 - 4 | 5 - 9 | 10 - 24 | 25 - 99 | 100 up |
|------|--------|------|-------|-------|---------|---------|--------|
| 1000 | Microprocessor 1MHz | 6502 | 3.90 | 3.75 | 3.50 | 3.30 | 3.10 |
| 1001 | Microprocessor 6502 1MHz | | 4.90 | 4.75 | 4.40 | 4.20 | 3.90 |
| 1005 | P.I.A. 16 ch i/o 6520/6821 | | 2.00 | 1.80 | 1.60 | 1.40 | 1.20 |
| 1010 | V.I.A. i/o + timers | 6522 | 3.40 | 3.20 | 3.00 | 2.90 | 2.80 |
| 1015 | R.I.O.T ram:i/o:timer | 6532 | 4.50 | 4.25 | 4.00 | 3.90 | 3.80 |
| 1020 | RAM low power 450ns | 2114L | 1.60 | 1.50 | 1.40 | 1.30 | 1.10 |
| 1025 | EPROM 4k x 8 | 2716 | 3.00 | 2.90 | 2.75 | 2.55 | 2.35 |
| 1030 | EPROM 4k x 8 | 2532 | 5.00 | 4.50 | 4.00 | 3.50 | 3.25 |
| 1031 | EPROM 4k x 8 | 2732 | 5.00 | 4.50 | 4.00 | 3.50 | 3.25 |
| 1036 | Dynamic RAM 5v only | 4816 | 4.20 | 3.80 | 3.30 | 2.90 | 2.40 |
| 1037 | Dynamic RAM 5v 64Kbit | 4864 | 7.00 | 6.00 | 5.50 | 4.90 | 4.40 |
| 1040 | RAM 2k x 8 450ns | 4802/2016 | 6.00 | 5.50 | 5.00 | 4.75 | 4.50 |
| 1045 | CMOS RAM 2k x 8 450ns | 5516 | 10.00 | 9.00 | 8.00 | 7.50 | 7.00 |
| 1055 | Microprocessor 1 MHz | 6809 | 17.00 | 14.00 | 12.00 | 10.50 | 9.50 |
| 1060 | Microprocessor 1 MHz | 6802 | 8.00 | 7.00 | 6.00 | 5.40 | 4.50 |
| 2478 | CRT Controller chip | 6845 | 15.00 | 13.00 | 11.50 | 10.00 | 9.00 |
| 2477 | Buffer 8304/8208 | | 3.00 | 2.80 | 2.50 | 2.30 | 2.10 |
| 2479 | Buffer | 81LS95 | 4.00 | 3.80 | 3.50 | 3.20 | 3.00 |
| 2480 | Timer chip | 555 | 0.50 | 0.45 | 0.38 | 0.33 | 0.27 |
| 2482 | Analog/digital ADC0816CCN | | 40.00 | 35.00 | 30.00 | 25.00 | 20.00 |
| 2481 | Analog/digital ADC0817CCN | | 20.00 | 17.00 | 15.00 | 13.00 | 12.50 |
| 2483 | Digital/analog ZN425E | | 6.00 | 5.00 | 4.25 | 3.75 | 3.50 |
| 2489 | Floppy Disk Controller 8271 | | 38.00 | 35.00 | 33.00 | 31.50 | 30.75 |
| 2490 | Graphics Processor EF9366C | | 70.00 | 62.00 | 56.00 | 50.00 | 44.00 |
| 4000 | TTL | 74LS00 | 0.50 | 0.40 | 0.35 | 0.30 | 0.25 |
| 4002 | TTL | 74LS02 | 0.50 | 0.40 | 0.35 | 0.30 | 0.25 |
| 4003 | TTL | 74LS03 | 0.50 | 0.40 | 0.35 | 0.30 | 0.25 |
| 4004 | TTL | 74LS04 | 0.50 | 0.40 | 0.35 | 0.30 | 0.25 |
| 4005 | TTL | 74LS05 | 0.50 | 0.40 | 0.35 | 0.30 | 0.25 |
| 4014 | TTL | 74LS14 | 1.00 | 0.90 | 0.70 | 0.60 | 0.50 |
| 4032 | TTL | 74LS32 | 0.50 | 0.45 | 0.35 | 0.30 | 0.25 |
| 4042 | TTL | 74LS42 | 1.00 | 0.90 | 0.70 | 0.60 | 0.50 |
| 4074 | TTL | 74LS74 | 0.50 | 0.45 | 0.35 | 0.30 | 0.25 |
| 4130 | TTL | 74LS30 | 0.50 | 0.45 | 0.35 | 0.30 | 0.25 |
| 4133 | TTL | 74LS133 | 1.00 | 0.90 | 0.70 | 0.60 | 0.50 |
| 4136 | TTL | 74LS136 | 1.00 | 0.90 | 0.70 | 0.60 | 0.50 |
| 4139 | TTL | 74LS139 | 1.00 | 0.90 | 0.70 | 0.60 | 0.50 |
| 4156 | TTL | 74LS156 | 1.50 | 1.20 | 1.00 | 0.80 | 0.60 |
| 4166 | TTL | 74LS166 | 2.70 | 2.40 | 2.10 | 1.80 | 1.50 |
| 4244 | TTL | 74LS244 | 1.50 | 1.20 | 1.00 | 0.80 | 0.60 |
| 4245 | TTL | 74LS245 | 2.70 | 2.40 | 2.10 | 1.80 | 1.50 |
| 4373 | TTL | 74LS373 | 2.70 | 2.40 | 2.10 | 1.80 | 1.50 |
| 4374 | TTL | 74LS374 | 2.70 | 2.40 | 2.10 | 1.80 | 1.50 |

# EPROM PROGRAMMING AND ERASURE EQUIPMENT

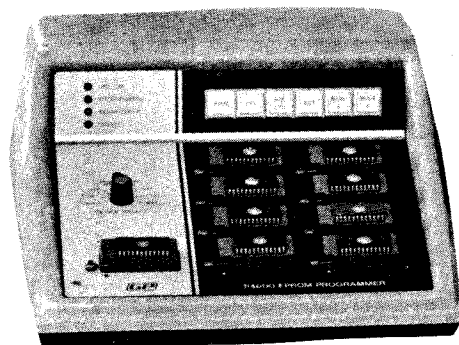## EP4000 EMULATING PROGRAMMER



FEATURES:

PROGRAMS TRIPLE RAIL PROMS - 2704, 2708, 2716
PROGRAMS SINGLE RAIL PROMS - 2508, 2758, 2516, 2716, 2532, 2732
PROGRAMS BIPOLAR PROMS VIA BP4 SLAVE UNIT
PROGRAM SEQUENCE - SELF CHECK / BLANK CHECK / PROGRAM / VERIFY
NO PERSONALITY MODULES REQUIRED TO SELECT PROM TYPE - JUST SET SWITCH
SAFE TO LOAD AND REMOVE EPROMS WHILE SYSTEM SWITCHED ON BUT NOT PROGRAMMING
4K INTERNAL RAM EMULATION OF PROM VIA INTERFACE CABLE
CONNECT TO YOUR COMPUTER VIA TTL OR RS232 SERIAL PORT, 20mA CURRENT LOOP,
BIDIRETIONAL HANDSHAKE STROBED OR PARALLEL PORT.
OUTPUT TO TV MONITOR (1v STANDARD) OR TO TV VIA BUILT-IN UHF MODULATOR
DIRECT CASSETTE INTERFACE TO STANDARD AUDIO CASSETTE
BUILT-IN LED DISPLAY OF HEX STATUS ADDRESS AND DATA
EXTRA 1K RAM FOR BLOCK MOVING
SPARE INTERNAL 4K EPROM SOCKET FOR CUSTOMER PROGRAMS
BUILT-IN FIRMWARE FOR COMPREHENSIVE RANGE OF DATA MANIPULATION

1210  EP4000 EPROM Emulator/Programmer                    £545

# P4000 PRODUCTION PROGRAMMER



**FEATURES:**

PROGRAMS UP TO EIGHT EPROMS SIMULTANEOUSLY FROM MASTER COPY
PROGRAMS TRIPLE RAIL PROMS - 2704, 2708, 2716
PROGRAMS SINGLE RAIL PROMS - 2508, 2758, 2516, 2716, 2532, 2732
PROGRAM SEQUENCE - SELF CHECK / BLANK CHECK / PROGRAM / VERIFY
NO PERSONALITY MODULES REQUIRED TO SELECT PROM TYPE - JUST SET SWITCH
SAFE TO LOAD AND REMOVE EPROMS WHILE SYSTEM SWITCHED ON BUT NOT PROGRAMMING
MASTER SOCKET COMPLETELY ISOLATED FROM PROGRAMMING VOLTAGES
INDEPENDENT BLANK AND VERIFY CHECKS OF ALL EIGHT SOCKETS
STATUS INDICATIONS FOR ALL FUNCTIONS
SOUNDER INDICATES CORRECT KEY ENTRIES AND END OF PROGRAMMING RUN

| | | |
|---|---|---|
| 1201 | P4000 EPROM Production Programmer | 545.00 |

## EPROM ERASERS
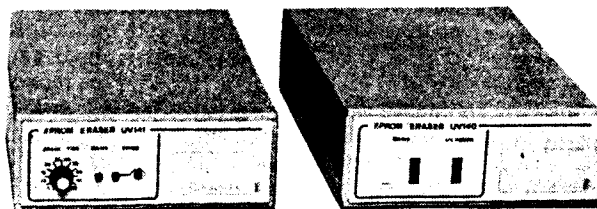


| | | |
|---|---|---|
| 1220 | EPROM Eraser with timer, takes fourteen EPROMs | 78.00 |
| 1230 | EPROM Eraser without timer, takes fourteen EPROMs | 68.00 |

P 15.2

---

# MEDIA

## DISKETTES AND DISKETTE ACCESSORIES

| | | |
|---|---|---|
| 515 | Box of 10 single sided 5.25", 35/40 tracks, reinforced centre | 22.00 |
| 520 | Individual single sided disk, same spec as 515. | 3.00 |
| 516 | Box of 10 double sided 5.25" disks, 4 track, reinforced centre | 33.00 |
| 521 | Individual double sided disk, same specification as 516 | 4.00 |
| 519 | Head cleaning disk, 5.25" single sided | 16.00 |
| 521 | Head cleaning disk, 5.25" double sided | 16.00 |
| 508 | Head alignment disk, 5.25" | 27.00 |
| 509 | Disk mailing packs - corrugated paper post protection - 10 pcs | 12.00 |
| 516 | Locking storage case for 40 5.25" diskettes | 21.00 |
| 517 | Locking storage case for 80 5.25" diskettes | 32.00 |
| 518 | Mini disk file - stores 50 5.25" disks - hinge lid - patent lift device permits labels on five adjacent disks to be seen at once | 52.00 |

## COMPUTER STATIONERY AND STATIONERY ACCESSORIES

| | | |
|---|---|---|
| 260 | Plain single part fanfold stationery, 11" x 8.5" wide (approx A4) 60 gsm. 2000 sheets boxed | 25.00 |
| 261 | Music ruled single part fanfold stationery, 11" x 8.5" wide (approx A4) 60 gsm. 2000 sheets boxed | 25.00 |
| 262 | Plain double part fanfold stationery, 11" x 8.5" wide (approx A4) 60 gsm. 1000 sheets boxed. Uses one-time carbon | 25.00 |
| 263 | Music ruled double part fanfold stationery, 11" x 8.5" wide (approx A4) 60 gsm. 1000 sheets boxed. Uses one-time carbon | 25.00 |
| 264 | Plain triple part fanfold stationery, 11" x 8.5" wide (approx A4) 60 gsm. 700 sheets boxed. Uses one-time carbon | 25.00 |
| 265 | Music ruled triple part fanfold stationery, 11" x 8.5" wide (approx A4) 60 gsm. 700 sheets boxed. Uses one-time carbon | 25.00 |

SELF ADHESIVE COMPUTER LABELS 3 1/2" X 1 7/16", 12" PAGE THROW,
1 1/2" VERTICAL PITCH, 1/4" HORIZONTAL GAP BETWEEN LABELS, BROWN
SHINEY KRAFT BACKING - EASY PEEL.

| | | |
|---|---|---|
| 271 | Labels as above one wide, 8000 labels in a box | 44.00 |
| 272 | Labels as above two wide, 8000 labels in a box | 44.00 |
| 273 | Labels as above three wide, 12000 labels in a box | 50.00 |
| 270 | Thermal paper roll, blue print 8.5" x 300ft, 3/8" dia hole ea | 8.00 |

PAPER FOR ROCKWELL AIM 65

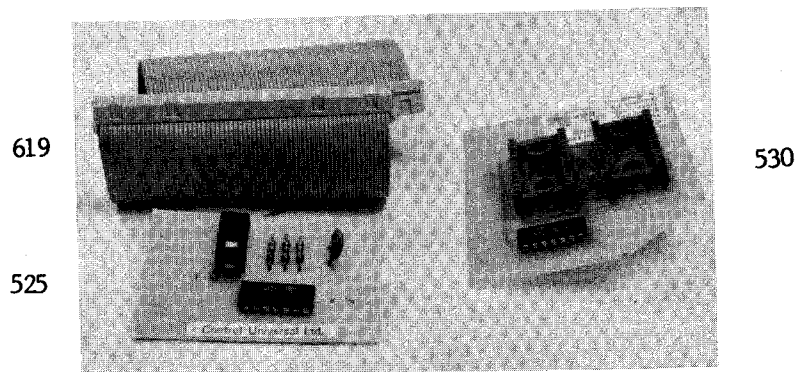| | | |
|---|---|---|
| 605 | Box of 10 x 250ft thermal paper rolls, blue print | 23.00 |
| 510 | Box of 20 x 250ft thermal paper rolls, blue print | 43.00 |
| 511 | Box of 20 x 66ft thermal paper rolls, black print | 16.00 |

BINDERS

| | | |
|---|---|---|
| 276 | Binder for unburst fanfold stationery up to approx 1/2" pad | 5.00 |
| 277 | Ring binder for burst stationery up to approx 2 1/2" pad | 5.00 |

P 16.1

# THE ODD SPOT

## MISCELLANEOUS ACCESSORIES



619

525

530

| | | |
|---|---|---|
| 615 | 64 Way interface cable, DIN socket at each end, 50 cm long | £19 |
| 619 | 64 Way interface cable, DIN socket at each end, 10 cm long | £17 |
| 614 | 64 Way interface cable, DIN socket at one end, 50 cm long | £12 |
| 617 | 64 Way interface cable, one DIN socket at one end, two DIN sockets 3cm apart at the other end, total length 50 cm | £26 |
| 620 | Spare DIN socket for 64 way ribbon cable | £7 |

| | | |
|---|---|---|
| 525 | Vector-start module - redirects power-on vector to a variety of optional changed addresses. Board 1" x 1.5", solders to data bus | £10 |
| 530 | PROM daughter module - wire wrap tails plug into 4k socket to allow the use of two 2k devices in two 24 pin sockets. Board 2" x 3" | £10 |

## BARGAINS
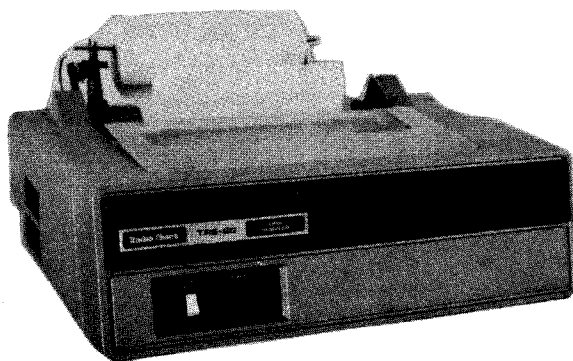


| | | |
|---|---|---|
| 491 | TANDY LINEPRINTER 1 | £199 |

Special purchase of six of these extremely robust units. Use teletype paper on roll with friction feed. Upper case only, complete with floor stand.

---
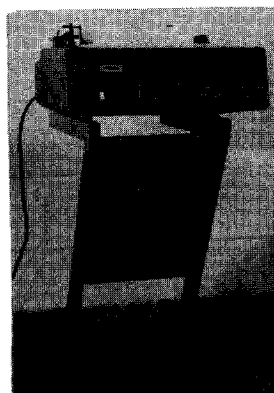
# MORE BARGAINS

## COMPAS DISK SYSTEM FOR AIM 65

Complete system with one disk drive, 16k RAM, Exorcisor type motherboard with 3 vacant slots, power supply and software for linked file assembly.

Cost over 1200.00 new, now offered in guaranteed working condition for 450.00

## USED AIM 65 SYSTEMS

1K NMOS RAM + 1K BATTERY BACKED CMOS RAM
Plastic enclosure
Built-in power supply
Has non-standard keyboard fitted, but standard keyboard supplied for purchaser to fit.

Compare new price of AIM 65 and accessories:-
        AIM 65          289.00
        Enclosure        65.00
        Power supply     50.00

               total    404.00

        Offered for   185.00 each

## AIM 65 KEYBOARDS

Some are the old type, some are the new type but with scratched keys, although new. All are offered at 15.00 instead of the price for new units at 30.00

## COMPUTERIST MEMORY PLUS

AIM 65 compatible memory extension, complete with connection cable to AIM 65 expansion connector. Has 8K RAM, VIA and on-board EPROM programmer. Was a total price of 220.00 with connctor; now this last one is offered at 50.00

## CHEAP VIDEO

Not terribly good black and white monitor, American standard, 12" screen, picture a bit wobbly, but very cheap at 35.00

# LOCAL AREA NETWORKS

Control Universal are now setting up  plans and completing designs to treat local area  networks as a  speciality. The  general concept of  the product range  will be  to offer  an extremely  low  cost network  system which  is compatible with ALL computers. Arrangements already exist for linking ZX81, AIM 65, Atom, and BBC computers on to the same network. The data transmission rate  will be deliberately slow  - 9600 baud,  which transfers approximately 1k bytes/sec. This is about one quarter of the speed of usual mini-floppy disk transfers, but in practice the 4 sec transfer time for the typical 4k file is of no consequence. The vital advantage of this relatively slow transmission  rate is the avoidance  of bandwidth problems, junction reflections and other negative aspects of high speed transmission.

Physically, the Piconet module will be like a standard CUBE/Acorn Eurocard, with the same connector, but shorter  to allow its accommodation inside the enclosures of  the host  systems. It  will therefore  plug directly  into a CUBE/Acorn  rack, and  will connect  conveniently to  an Atom.  A range  of COMPATIBILITY products  (see section  20) wil  be available  soon to  allow other computers such as those mentioned above to be connected onto Piconet.

In addition, the development is in hand for a range of input/output modules capable  of  detecting both  high  voltage  and  low voltage  signals,  and switching currents of  several amps both dc  and ac, which will  operate on the network so avoiding expensive wiring costs.

The master unit is intended to have the feature of offering disk storage to all  computer in  the network,  and a  printer  interface with  a 48k  byte buffer,  allowing  the dumping  of  printer  data  at  1000 ch/s  and  then returning control to the  computer while the printer works away  at its own speed, usually in the range 40 - 100 ch/s

# CUSTOM DESIGN SERVICE

Control Universal have  devoted part of their business to  a product design and manufacture  service. This  can take  the form  of designing  a product unique  to  a  customer,  or  agreeing with  a  customer  with  a  quantity requirement  the specification  of a  product  which will  fit the  Control Universal  sales range.  In  this case  the  design fee  may  be waived  in consideration of a quantity order. An  example of this kind of co-operation is the  CUBAN analog  interface, which  is part  of the  CU range,  but was produced at the instigation of MEDC, Paisley College.

In the case of products produced specifically for a client, the service can be  for  just an  unenclosed  computer  unit,  or  for a  full  service  of enclosure, software  and packaging, in addition  to the computer  board. In cases requiring  styling of an enclosure  we rely on the  co-operation with our industrial designers, Morgan Odell Partnership, London.

| Project | Quantity | Computer | Software | Enclosure | Packaging |
|---|---|---|---|---|---|
| Dartmaster | 200 | * | * | | |
| Log-on box | 100 | * | * | * | * |
| Foreign Exchange Calculator | 24 | * | | * | |
| Audiometer | 80 | * | | * | |
| Pharmacists Label Printer | 600 | * | | | |

We welcome suggestions about special  purpose projects from our prospective clients, and would suggest that our strengths are in speed of execution and economic performance,  in addition  to a breadth  of services  rarely found under one roof.