

2650 HOME COMPUTER SELECTION GAME

DO YOU WANT TO BUILD A POWERFUL, LOW COST HOME COMPUTER

START HERE

SELECT A BASIC SYSTEM

A. EA BABY 2650 \$75.00
 B. KT 9500 COMPLETE \$199.00
 C. EA 2650/KT9500 CONVERSION \$142.00

LOW COST TV TERMINAL

A MUST TO GET THE MOST OUT OF YOUR SYSTEM – INCLUDES AUTOMATIC SCROLLING, CURSOR, FULL EDIT FACILITIES

ETI 632 VDU PLUG IN VERSION \$180.00
 632 ECONOMY VERSION..... \$135.00

POWER SUPPLY DECISION

+5, -12V

A. 1A LCPS KIT \$15.00
 B. AT 512 ASSEMBLED UNIT -12 \$27.50
 C. AT 1250 HI-CURRENT \$47.50

CASSETTE INTERFACE
 For Low Cost Bulk Storage

LIMITED QUANTITY ONLY

CT750 (Assembled) \$37.50
 Radio Electronics low cost kit with test tape and instructions \$22.50

SOFTWARE GAMES PACK

TAPE WITH LISTINGS \$12.50

ASTRO TREK, HANGMAN, NIM, POKER MACHINE, MASTERMIND ETC

MEMORY

4K STATIC RAM KIT \$100.00
 1K RAM STICKS \$ 25.50

2650 USERS GROUP

INITIAL MEMBERSHIP INCLUDES PROFESSIONAL DOCUMENTATION PACKAGE CONTAINING A MOST COMPREHENSIVE SOFTWARE LISTINGS INCLUDING

TEXT EDITOR
 ASSEMBLER
 BLOCK MOVE
 ASTRO TREK
 BAUDOT ROUTINES
 VARIOUS GAMES
 SORTING ROUTINES
 MATHEMATICS PACKAGES ETC, ETC \$40.00

ALSO INCLUDES UP DATE SERVICE

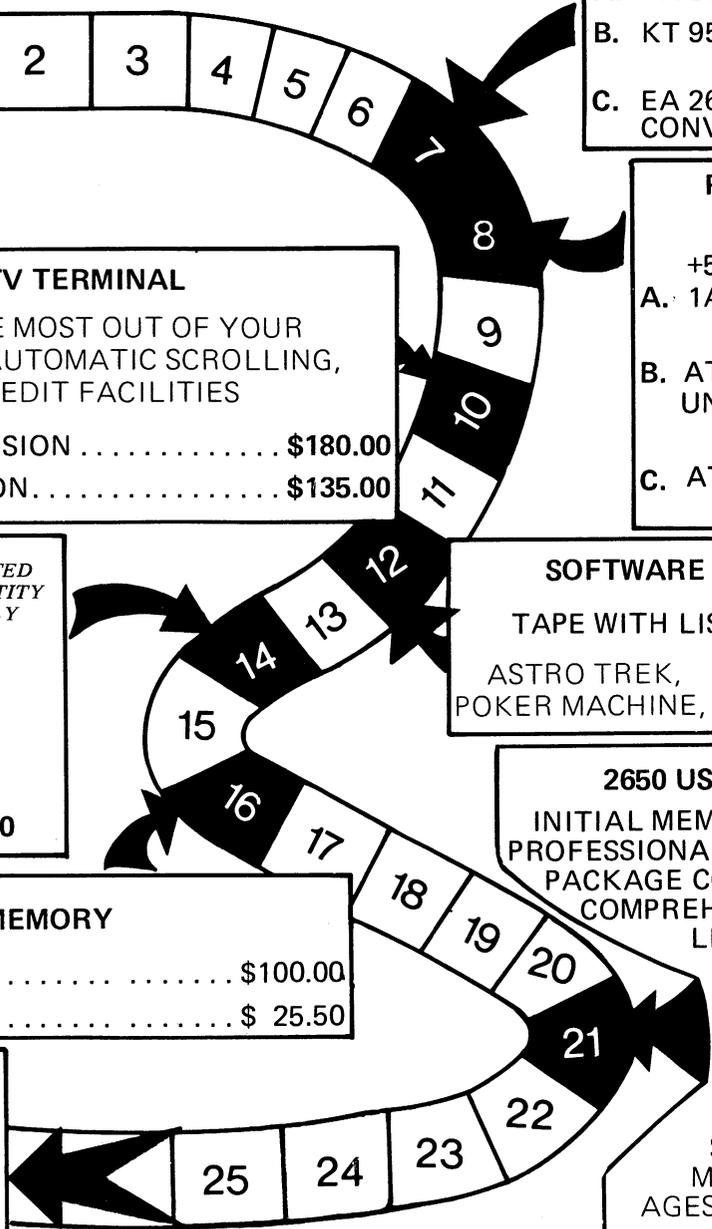
★ **YOU WIN !!** ★

YOU NOW HAVE A MOST COST EFFECTIVE HOME COMPUTER SYSTEM

2650 HOME STUDY PROGRAMMING COURSE
 CASSETTES AND WORKSHOP NOTES

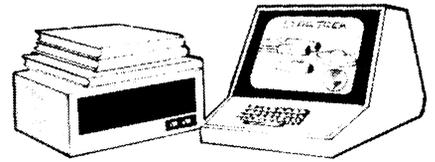
Available soon

NEED MORE INFO send \$1.00 and return address for full details



APPLIED TECHNOLOGY P/L
 109-111 Hunter St., Hornsby 2077.
 Phone: 476 4758, 476 3759
 Hours: Mon – Fri. 9 – 5, Sat All Day.

Microcomputer News & Products

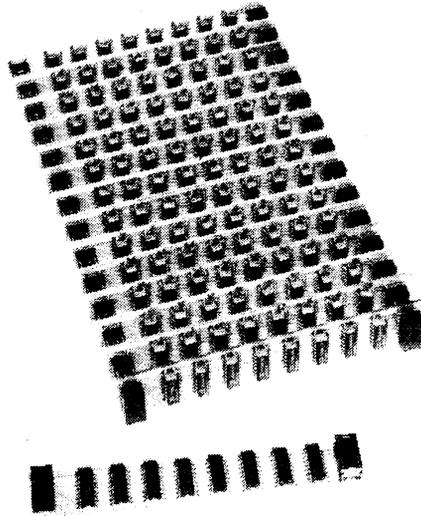


RAM "sticks"

An innovative memory product designed for the home computer market has just been released by Applied Technology. It is a 1k x 8-bit RAM "stick" module, whose design allows ready stacking for memory system expansion.

Announcing the new product David Brown, Applied Technology's sales manager, said the RAM stick filled a real need for the microprocessor user who wanted to build up his system's memory in convenient, practical and easily affordable increments. "We chose low power 2102 chips for the design because these are one of the most cost effective RAMs on the market today — and being static they are by far the easiest to use."

The RAM sticks are supplied fully assembled, 100% tested and burned-in for 24 hours using a processor-controlled test routine. The test routine checks continually for fundamental memory errors as well as complex "pattern errors" which plague some memory systems.



Applied Technology has also designed a 32k x 8-bit memory unit with power supply and standby rechargeable battery, which mounts in a standard instrument case or rack mounting. The memory can also be configured as 16k x 16 bits for use with 16-bit microprocessors.

Enquiries to Applied Technology Pty Ltd, 109 Hunter St, Hornsby, NSW 2077.

ECONOMY POWER SUPPLY

Ideal for microprocessors, this kit supplies +5v/10A, +12v/1A, -12v/1A fully regulated (S100 users can use the +8v. \pm 16v unregulated outputs as well) and optional overvoltage protection can be fitted. This comprises of transformer, bridge rectifier and all diodes, filter capacitors, PCB. regulators and full assembly instructions. Can be readily adapted to fit any metal work.

\$49.50 KIT EPS.100
Package and Post \$3.50

CASSETTE INTERFACE

Adapted from a design described in Radio Electronics, this 300 baud interface uses the Kansas City standard 1200/2400 Hz. encoding. Easily constructed, using standard TTL chips and a special test tape is supplied to simplify alignment. Kit is supplied with PCB, all components, test tape and full instructions.

\$22.50 KIT R.E.C.I.
Pack and Postage \$1.00

S100 PROTOTYPE BOARD

This is an ideal card for any prototype work. Consists of top quality tin plated PCB with hard gold S100 edge fingers. Will suit virtually any IC package, has power and ground plane and provision for on card voltage regulator.

\$19.50 S100 PROTO BOARD
Pack and Postage \$1.00

S100 MOTHER BOARD

This 8 slot S100 Mother Board will greatly simplify construction of your S100 system. Has provision for power distribution and bypass capacitors. Also accepts 16 PIN DIL connections to adapt to other systems.

\$22.50 S100 MOTHER BOARD
Pack and Postage \$1.00

LOW COST V.D.U.

As described in E.A. February, this compact V.D.U. is an ideal peripheral for microprocessor systems.

- 32 characters/line. 16 lines.
- parallel ASCII (TTL) input.
- video output.
- 1K on board memory.
- Automatic scrolling, carriage return, line feed.
- screen clear facility.
- uses low power TTL and MOS devices.
- requires +5v at 800 M.A.
 - 12v at 30 M.A.
- Plated through hole PCB.
- supplied with full instructions and trouble shooting guide and Xtal.

\$99.50 LOW COST V.D.U.
Pack and Postage \$2.50

TRISTATE LOGIC PROBE

This very simple device works with TTL circuits and TTL compatible levels from microprocessors and identifies

LOW LOGIC STATE

HIGH LOGIC STATE.

FLOATING OR H1 Z INPUT.

EXCESSIVE OR INSUFFICIENT VCC.

Also doubles as a pulse injector!

Kit consists of PCB, IC's, LEDS, RESISTORS/CAPACITORS and full instructions.

\$2.50 POST FREE

OR

FREE with any order over \$20.00 (offer expires April 15, 1978).

SC/MP ON S100 CARD

Interested in expanding your Miniscamp to a more useful system? This handy PCB. makes it possible to connect the SC/MP (N or P Channel) to the hobby standard S100 buss. Has provision for Xtal clock and full buffering of the chip, and of course on-card regulators. Board is top quality fibre glass tin plated with hard gold S100 edge fingers.

\$19.50 S100/SCMP BOARD
Pack and Postage \$1.00



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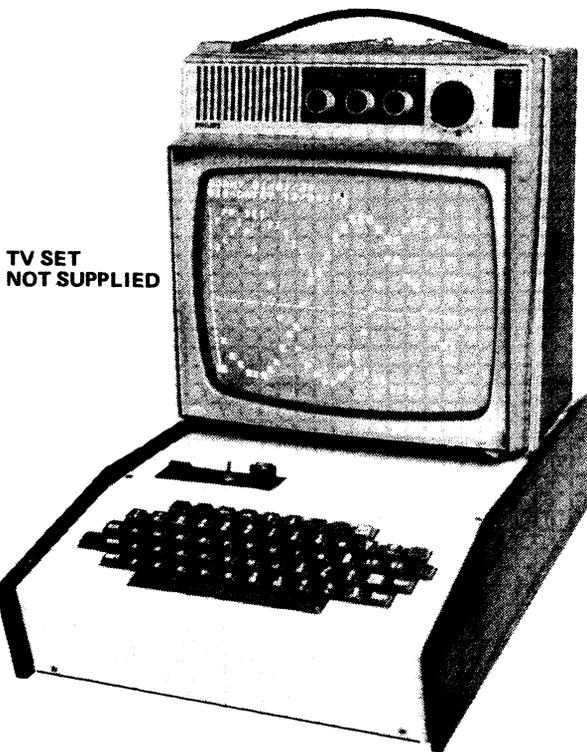
INTRODUCING MULTI-P 2650

The easily affordable expandable multi-purpose home computer. Based on the new 2650 Mini Computer described in E.A. May, 1978, the MULTI-P 2650 is the first Australian designed home computer available ASSEMBLED AND TESTED ready for use. All you have to do is connect a T.V. set and any low cost cassette recorder and the system is ready for use. Using the resident "PIPBUG" minitor you can enter your own programs in machine language or better still, you can select programmed tapes from the large 2650 program library and load programs of your choice. The MULTI-P is supplied with the invaluable 2650 programming course and a test cassette which contains sample computer games for you to play.

Technically speaking the MULTI-P 2650 is manufactured and serviced locally by Applied Technology Pty. Ltd and is based on the popular Signetics 2650 microprocessor. The main CPU board is as described in E.A. May, 1978 and utilises the latest 4K RAM chips. The basic version of MULTI-P 2650 is supplied with 1K RAM and provision has been made to add a further 3K by plugging more RAMs into the sockets provided and is housed in a specifically designed case providing room for further expansion to be described in E.A. in the near future. The VDU has also been described in E.A. Feb., 1978 and produces an easily readable 32 character by 16 line display. The input to the computer is via the full function keyboard which also controls the cassette interface and the reset functions. The power supply is designed around a special transformer which can apply 10A at 5V, 1A at +12V, 1A at -12V to provide for any future expansion.

The MULTI-P 2650 is supplied with complete technical documentation including detailed assembly language programming/technical manual, sample programs to run and the 2650 programming course.

MULTI-P 2650 \$375.00 with 1K RAM
 \$450.00 with 4K RAM



TV SET
NOT SUPPLIED

INDIVIDUAL KITS

2650 MINI COMPUTER: as described in E.A. May, 1978 this kit includes all PCB components, 1K RAM, PIPBUG, 2650 and sockets for all ICs \$89.50

EA LOW COST VDU: As described in E.A. Feb., 1978 this set of kits can be used as a complete terminal for any microprocessor system. BASIC VDU (includes xtal, plated thru PCB, all components and assembly/troubleshooting manual) . . . \$99.50
MODULATOR KIT . . . \$4.50

ASCII KEYBOARD/ENCODER KIT (supplied with all components including UART and ENCODER but not transformer). \$39.50

KEYBOARD KIT: KB04 \$59.50

CASSETTE INTERFACE. R.E.C.I. (complete with full instructions and test tape for easy accurate alignment) . . . \$22.50

HEAVY DUTY TRANSFORMER: AT4120 \$19.75

2650 PROGRAMS

Games Tape 1: play games like astrotrek, number guessing, nim, hangman, chomp, target shoot etc. \$12.75

Games Tape 2: NEW RELEASE—This cassette includes software for fascinating games such as funny farm races, solitaire, biorythm, lunar lander, mindreader, etc. \$12.75

Utility Tape 1: contains very useful programs for rapid loading, relocating programs, finding programs, etc. \$12.75

2650 USERS GROUP

For the complete enthusiast we recommend joining the 2650 USERS GROUP. Membership fee entitles each user to a complete listing of all the programs at present in the library as well as many useful hardware notes. Members also receive updated programs periodically. \$40.00

STOP PRESS

2650 PROGRAMMING COURSE \$12.50

Designed by 2650 experts to assist the 2650 user in the first steps of programming at the machine language level. The course starts by explaining and using all of the 2650's monitor program (Pipbug) commands. It goes on to assist you to write a number of programs and explains each individual step used. The programs have been specially designed to use a great many of Pipbug's sub-routines. This is an ideal starting place for those wishing to learn computer programs, and will lead you eventually into Course 2 (available later) which explains assembly language etc. and then on to Course 3, Basic Language (available later).



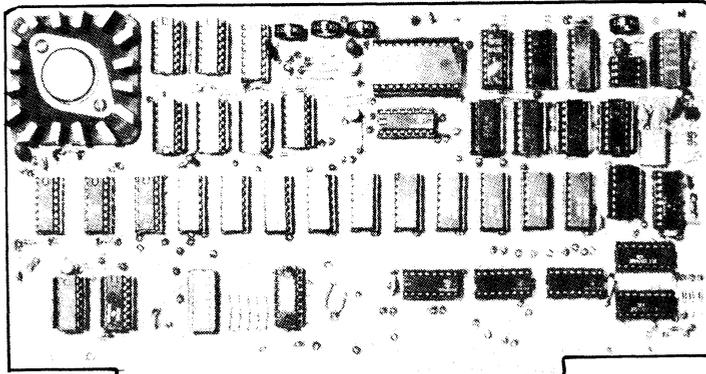
POST & PACKAGING \$2.00 all orders
 CERTIFIED MAIL 0.50 extra
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PHONE: (02) 476 4758 General Enquiries — (02) 476 3759 (Technical Information)
 PRICES & SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



DG 640 SOFTWARE CONTROLLED VDU



This superb design by David Griffiths and described in ELECTRONICS TODAY April, May, and June issues is possibly one of the most useful peripherals you can add to any microprocessor system.

Conforming to the hobby computer standard S100 bus, the DG640 is software controlled to produce

- 16 lines of 64 characters
- Upper and Lower case
- Black on white reversed characters
- Flashing characters
- Chunky graphics
- Direct RAM access

We are pleased to offer our EXCLUSIVE DG640 OWNERS MANUAL which expands the original ETI articles and covers such things as; step-by-step assembly, setting up and troubleshooting procedures typical waveforms, address decoding and software examples for use with 2650, 6800, 8080, Z80 microprocessors.

ATTENTION 2650 USERS: Ian Binnie has written a special operating system called "BINBUG" which is specifically designed to operate with the DG640 VDU and emulate "PIPBUG" thus ensuring that all software in the 2650 USERS GROUP is fully compatible and no I/O changes need be made. BINBUG is documented in the DG640 users manual and occupies 1K of RAM. Cassette tapes and a preprogrammed 2708 EPROM are available on request.

We are proud of the quality of the DG640 which uses a top grade plated through fibreglass PCB, reflow solder tinned and hard gold plated edge connectors. All components are prime quality and sockets are provided for all RAMS and the character ROM. The DG640 is not a beginners project but will suit even the most demanding microprocessor enthusiast. Each kit is backed by our famous technical support and warranty service (full details with each kit).

DG 640 KIT COMPLETE WITH MANUAL	\$140 (tax paid)	DG 640 PCB with manual	\$35 (tax paid)
	\$126 (tax exempt)		\$31.50 (tax exempt)
BINBUG CASSETTE FOR 2650	\$5.00	BINBUG IN PREPROGRAMMED EPROM	\$25.00

2650 SYSTEMS

EA2650 expandable to 4K as described in E.A. May and using the latest 2114 4K RAMS an ideal beginners project. We supply all parts except case and transformer (suitable cases and transformers available separately).

E.A. 2650 with all components and 1K RAM **\$89.50**

KT9500 FULLY BUFFERED CPU

This popular kit enables you to expand your 2650 system to a fully buffered system with 2 8 bit bidirectional I/O ports, RS232 interface, TTY interface and on board clock.

..... **\$199.00**

NEW E.A. VIDEO DISPLAY TERMINAL

Described in E.A. Feb/April 1978 this is an ideal serial terminal for microprocessor applications. It is not software controlled like the DG640 and is ideal for beginners who need only a serial interface to the computer.

KIT 1: VDU LOGIC BOARD complete with all components, plated through PCB, assembly and troubleshooting manual **\$99.50**

KIT 2: ENCODER/UART/78UT4 complete kit with all components and instructions but without transformers (see Kit 5 option) **\$39.50**

KIT 3: KEYBOARD KB04. A top quality keyboard kit with our own PCB designed to simplify construction and interface directly with the 78UT4 ENCODER **\$59.50**

KIT 4: MODULATOR connects video signal to TV Aerial inputs **\$4.50**

KIT 5: HEAVY DUTY TRANSFORMER supplies 8V @ 10 Amps + and - 16V at 1 Amp (ideal for later expansion to S100) **\$22.00**

KIT 6: METALWORK. For a really professional finish we now have available limited stocks of a timber sided, marvplate/aluminium extrusion keyboard enclosure. This enclosure has adequate room for all kits and is cut out to fit the keyboard. A microprocessor can also fit in the case resulting in a complete home computer **\$49.50**



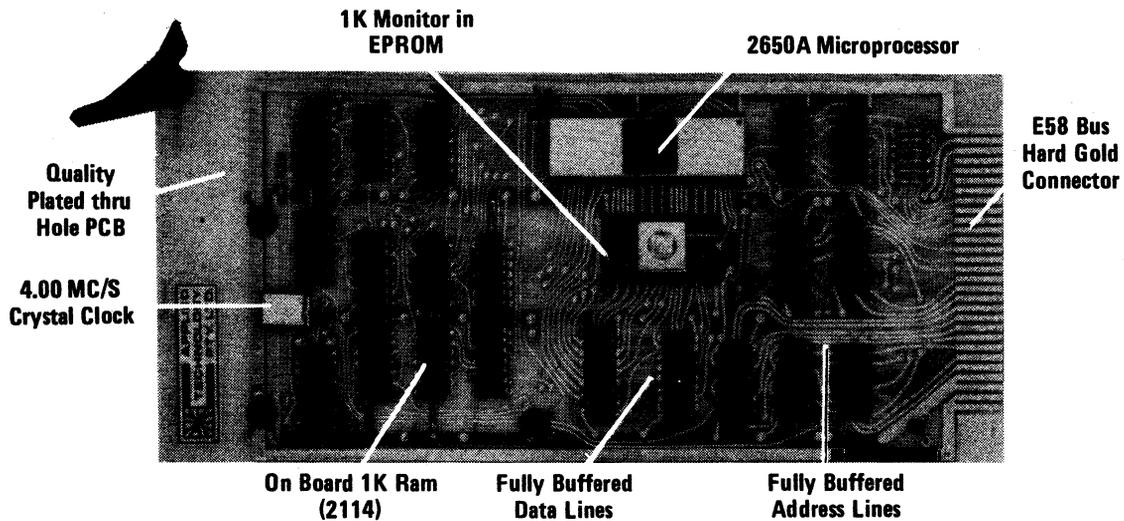
POST & PACKAGING \$2.00 all orders
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PHONE: (02) 476 4758 General Enquiries — (02) 476 3759 (Technical Information)
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Educational, Hobbyist, Business, Industrial, Microcomputer users . . .



...EUROCARD 2650: a professional quality, expandible single card computer engineered to meet today's needs.

COMPLETE COMPUTER

The DB1001 is the heart of an incredibly flexible computer system based on the 2650 microprocessor. Designed by BOB ARMSTRONG the DB1001 features; on board 1K RAM, 1K EPROM monitor, serial I/O, 4.00 crystal clock, fully buffered address and data lines.

Memory expansion and extra I/O devices can be readily connected using the E58 BUS which is also Z80 and S-100 compatible. The 1K EPROM can be readily reprogrammed to various operating systems such as 1200 BAUD PIPBUG or BINBUG V3.6.

The DB1001 is available in kit form or assembled and tested. Conversion kit is available to convert the EA2650 starters kit (DB1001 Kit \$135.00*)

DATA/BYTE 100: ENORMOUS EXPANDABILITY

DATA/BYTE100 is the system configuration using the DB1001 CPU card. Additional memory and I/O cards

readily plug into a mother board to produce an enormously versatile main-frame which can also incorporate floppy disc drives and high speed printer. By selecting from the individual modules you can design a DATA/BYTE 100 system to meet your exact specifications.

NOW AVAILABLE

DB1006; a 6K RAM card which with the 1K RAM and 1K ROM on the DB1001 becomes a full 8K system. (Kit \$140.00*)

DB1008; a 8K static RAM card configured as 2 separate 4K byte blocks selected with DIP SWITCHES for each address boundary. (Kit \$175.00*)

DB1048; a dual 4/8K ROM and high speed cassette interface card. Accepts 2708 or 2716 EPROMS with your resident software. Also contains 2708 containing the full software to generate the cassette interface and digitally controlled dual cassette system together

with full file handling. (Kit \$130.00*)

DB1500; a plug in power unit supplying 5V @ 5A regulated, -5V, ±12V 750mA from an external DB1505 transformer and bridge rectifier. (Kit \$45.00, transformer \$27.00*)

DB1202; a wire wrap card for custom applications. (Kit \$25.00)

DB1203; an extender card for trouble shooting the E58 BUS. (Kit \$25.00)

EASY TO USE:

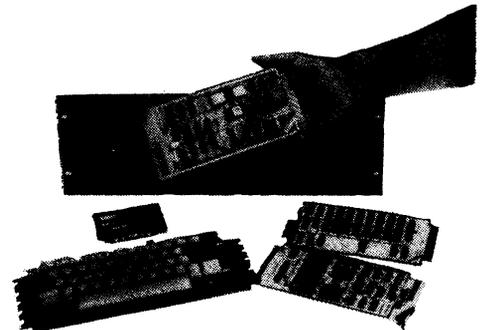
No matter what your application, DATA/BYTE 100 system is easy to use and understand. You can select from the extensive software base for the 2650 or use the newly released MICRO-WORLD BASIC which is a powerful MICROSOFT™ compatible 8K BASIC which will run in ROM or RAM on your system. The soon to be released 16K dynamic memory card and floppy disc controller will enable you to build your system to over 100K capacity!

*Prices include sales tax. Please allow \$2.00 post and package.

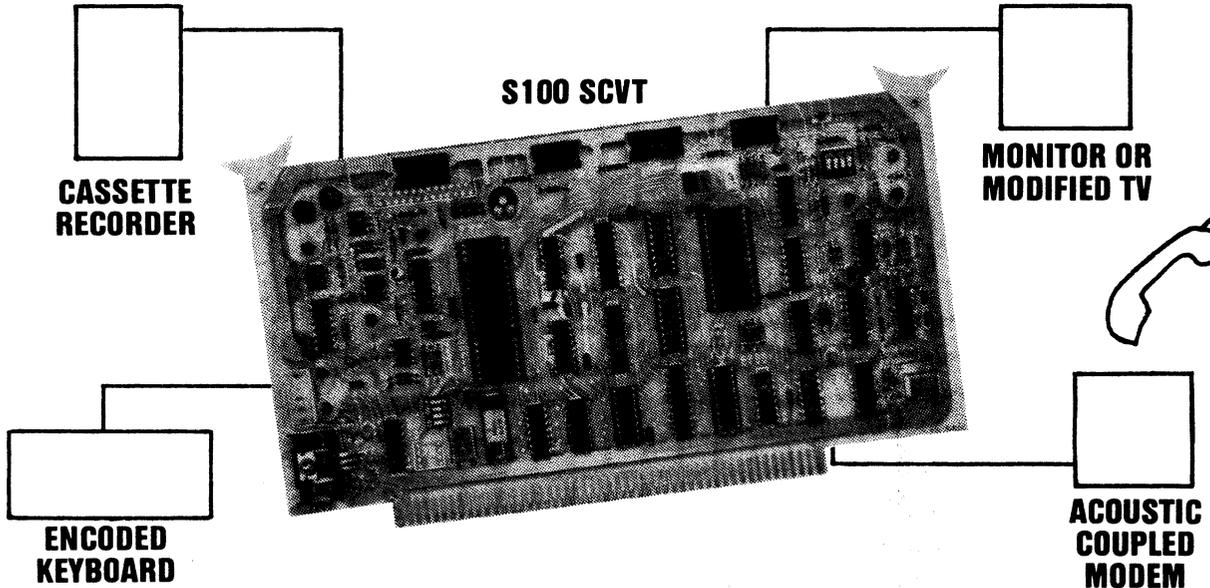
**FOR MORE INFORMATION
SEND \$1.00 FOR OUR
1979 CATALOGUE:**



APPLIED TECHNOLOGY, 1A PATTISON AVE., WAITARA. (02) 487 2711 (3 lines)
SHOWROOM 9-5 MON TO SATURDAY
MAIL ORDERS P.O. BOX 355, HORNSBY 2077.



BUILD THIS POWERFUL SERIAL MICRO COMPUTER TERMINAL



APPLICATION NOTE: SELF CONTAINED REMOTE VIDEO TERMINAL

- * 50 to 100 BAUD SERIAL COMMUNICATOR.
- * STANDARD 64 CHARACTER BY 16 LINE FORMAT.
- * DISPLAYS FULL 128 CHARACTER ASCII DATA SET.
- * FULL CURSOR CONTROL.
 - HOME CURSOR/ERASER PAGE.
 - NON DESTRUCTIVE CURSOR UP, DOWN, LEFT, RIGHT.
 - CARRIAGE RETURN/ERASE LINE.
- * ON BOARD KANSAS CITY INTERFACE.
- * HALF/FULL DUPLEX OPERATION.
- * 25 PIN "D" CONNECTOR RS232, CURRENT LOOP INTERFACE.
- * ON BOARD UART AND CRYSTAL LOCKED BAUD RATE.
- * INDUSTRIAL QUALITY PLATED THROUGH PCB.
- * SINGLE S100 BOARD CONSTRUCTION.
- * COMPATIBLE WITH E.A. MODEM.

At last a full featured, powerful communications video terminal for the kit constructor. As described in E.A. September, October 1980 the S100-SCVT uses the latest LSI IC's to provide a complete terminal for micro computer use. Just add an encoded keyboard, modified T.V. and connect to your computer via the serial RS232 output or plug in E.A. Acoustic Coupler and you have a self-contained remote access terminal at a fraction of the cost of assembled units.

- * S100-SCVT complete kit including all components, sockets for all IC's, PCB and comprehensive Owners manual. **\$189.50**
- * CLARE C70 Keyboard. **\$165.00**
- * E.A. MODEM (Kit) complete with all components, box and plug pack. **\$69.50**

All prices include Sales Tax.



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PO Box 355, Hornsby 2077.
Please add \$2.00 per order towards cost of post and packing.

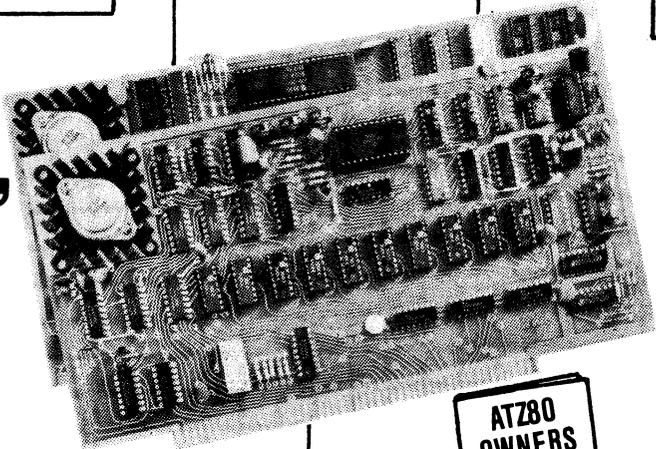
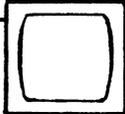
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1a Pattison Avenue, Waitara 2077.
Hours: 9-5 Monday to Saturday
Telephone: 487 2711



\$399

EXPANDABLE, AFFORDABLE, LEARN AS YOU BUILD MICROCOMPUTER

CASSETTE
INTERFACE



ATZ80
OWNERS
MANUAL

Z80
PROGRAMMING
COURSE

KEYBOARD

The 1980's is the age of computer technology. Update your knowledge of computer hardware and software with the ATZ80, S100 modular building blocks. Start with the basic Z80/CPU/VDU/Keyboard package and E-X-P-A-N-D later as your needs increase.

WHY Z80? It's the world's most powerful and popular 8-bit micro and consequently has by far the largest software support (and believe us, this counts!)

WHY S100? It has now evolved as the widest used standard supported by equipment manufacturers world wide. Another big plus is that each S100 card is a functional module, easy to service and, above all, easy to understand and use.

KIT OR ASSEMBLED/TESTED. The ATZ80 micromodular system is available in kit form or assembled and tested. By far the biggest advantage is the flexible expandability that means you build up the system you need when you need it. Start with the \$399 ATZ80/4 package and you can learn programming, build useful control systems such as a burglar alarm, time switch, robot controller even an intelligent visual display unit (VDU). If you need more memory, add the AT16K static ram board, the SECI cassette interface controller and you can load games programs such as Target, Space Trek or Microworld Z80 Basic... even the Microworld Z80 Editor/Assembler. You now have a professional quality computer system to challenge the "ready made" systems like the TRS80, Apple and The Sorcerer at a fraction of the cost!

NO EXPENSIVE EXPANSION INTERFACE REQUIRED! Why spend \$500 or more for a S100 interface for the so called "popular" computers? The ATZ80 is already on the S100 bus so you can spend your expansion dollars on more powerful hardware such as floppy discs or a high speed line printer.

THE ATZ IS VERSATILE... whether you want a low cost teaching machine, a word processor, a small business system, a dedicated controller or even a full process control system you can select the modular building blocks to suit your needs... and save yourself a bundle as well.

THE ATZ80 IS A PROVEN AUSTRALIAN DESIGN, fully supported with service and technical backup. Designed by David Griffiths, the DGZ80 was described in ETI Nov., 1979 and is the most popular single board S100/Z80 CPU in Australia. Applied Technology, leaders in microcomputer kits since 1976, selected the DGZ80 as the most suitable kit for hobbyists, but other users include Govt. Depts., Educational Institutions and industry. IBM even bought a DGZ80 for evaluation!

SPECIAL OFFER: \$399 ATZ80 STARTER'S KIT Package deal includes DGZ80/CPU Kit, DGOS Monitor Program in ROM, DG40/VDU kit, fully encoded ASCII keyboard, complete assembly instructions, Z80 programming course and detailed experiments/programs to run. You just connect a simple power supply (details provided) and a modified TV set or monitor.

SUPPORT MODULES

	Kit	Assembled/ Tested
TCT16K Static Ram Kit	\$259.00	\$ 299.00
IA32K ROM (without EPROMS)	-	\$ 110.00
ET1681 PCG (Graphics) Kit	\$140.00	\$ 165.00
SECI Cassette Interface	-	\$ 27.50
S100 Protoboard	-	\$ 21.75

PERIPHERALS

Micropolis 1043/Quad Density 5" Disc system complete with drive, controller, cables, power supply and software		\$1275.00
8300 High Speed Printer		\$ 950.00
12" Monitor		\$ 149.50

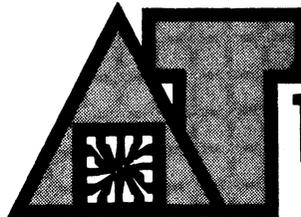
PACKAGING/HARDWARE

JC100 S100 Motherboard 9 slot	\$49.50
JC200 Cage Kit	\$49.50
EPS250 Heavy duty power supply kit	\$65.00
Computer desk unit and cabinet	(write for details)

SOFTWARE (SUPPLIED ON CASSETTE TAPE WITH OWNERS MANUALS)

Microworld Z80 12K Basic	\$14.75
Microworld Z80 Assembler	\$14.75
Games Pack 1	\$14.75
Utility Pack 1	\$14.75

All prices include Sales Tax.



APPLIED TECHNOLOGY PTY. LTD.

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PO Box 355, Hornsby 2077.

Please add \$2.00 per order towards cost of post and packing.

AND NOW AT GOSFORD -

1 Debenham Road, West Gosford (behind the Pizza Hut)

OFFICE/SHOWROOM

1a Pattison Avenue, Waitara 2077.

Hours: 9-5 Monday to Saturday
Telephone: 487 2711



To Me
from Santa



BUILD A COMPUTER FOR XMAS FROM \$399

Discover the exciting world of microcomputers, profit from programming and applying these technological wonders. With the Applied Technology MICROMODULE family you can learn as you build these affordable, versatile and powerful kits. Based on the popular Z80 microprocessor and the industry standard S100 bus, MICROMODULES can be built up to any configuration from a simple 2 board system (INSTRUCTOR 80) to 64K systems with floppy disks, high speed printer suitable for process control, word processing and business systems.

INSTRUCTOR 80

The ideal starter system comprises DGZ80 kit with 1K RAM and DGOS ROM operating system; DG640 VDU kit, full function ASCII keyboard, 3 slot mother board and 2 x S100 sockets. Full assembly manuals are included, together with a simple programming course and sample programs to run. You add a simple power supply (8V) and a modified TV set and you have a complete computer system.

INSTRUCTOR 80 KIT \$399.00.

SOFTWARE.

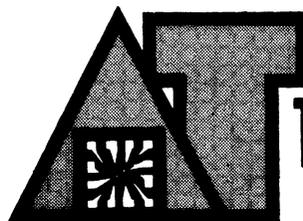
Microworld 12K Basic for Z80. If purchased with DGZ80. \$14.75.
 Microworld Editor/Assembler. \$14.75.
 Games Pack 1. (Target, Trek). \$14.75.
 Utility Pack 1. \$14.75.
 PCG Chess (If purchased with PCG). \$5.50.

NOTE. PRICES INCLUDE SALES TAX. Specifications and prices subject to change without notice.

MICROMODULE FAMILY.

HARDWARE.

DGZ80 CPU Kit with 1K RAM	\$199.25.
DG640 VDU Kit - 64 characters x 16 line format upper/lower case and graphics	\$149.50.
TCT 16K EXPANDA RAM using static RAMS.	
- with 4K RAM.	\$139.50.
- with 8K RAM.	\$179.50.
- with 16K RAM.	\$259.00.
TCT PCG (ETI June 1980) adds fine graphics to DG640	\$140.00.
SCVT-100 (EA Oct. 1980) Serial Terminal.	\$189.50.
2650-S100 2650 on the S100 bus.	P. O. A.
JC100 9 slot mother board plated through holes and provision for power supply.	\$49.50.
JC200 Card Frame for JC100 mother board.	\$49.50.
JC300 S100 Power Supply 8V/8A, 15V/15V 2A with computer grade components.	\$67.50.
SECI Cassette Interface.	\$24.50.
EA/MODEM 300 BD Modem Kit (See EA September 1980)	\$69.50.
Clare C70 Keyboard.	\$165.00.



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AND NOW AT GOSFORD -
 1 Debenham Road, West Gosford (behind the Pizza Hut)



SAVE A BUNDLE ON MICROCOMPUTER MODULES

16K RAM KIT ON S100 BUS
\$209.00

No, this is not a misprint! The AT16K RAM kit uses low power 2114 RAMS to achieve the lowest cost memory yet released in Australia. Board can be configured in 4K blocks and can be located at any 4K boundary. Has built in phantom and can be strapped for write protect. Kit comes with full manual and all components including sockets for all IC's. AT16K KIT \$209.00 (\$239.00 assembled and tested).

SCVT-100 KIT
\$189.50

As described in EA October this full featured S100 terminal is a ready to use serial terminal including cassette interface, baud rate generator and keyboard port.

EA MODEM KIT
\$69.50

Get your computer on line with this 300 baud acoustic coupled Modem. Ideal for any microprocessor system with a serial output/-input capability, this Modem is a must for serious experimentors.

AT MICRO MODULES
\$399.00

Based on the S100 bus and designed around the Z80 microprocessor, these powerful cards are the ideal starting point for microprocessor users. The ATZ80 is an ideal starting point and you can add cards as your needs increase.

The advantages of the ATZ80 Micromodule approach:

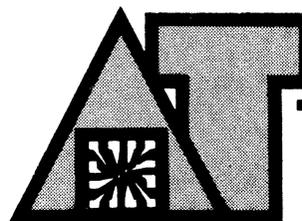
No doubt you can see for yourself the ATZ80 Micromodules represent probably the most flexible and cost effective approach to building up a modular, expandable Z80 based Microcomputer System on the S100 Bus. Applied Technology have been leaders in the Microprocessor Kit market in Australia since 1976 and consequently these products benefit from the vast experience gained. All products sold are backed up with full warranty and service support. New products are continually in development and during 1980 expansion moves have included a new outlet at Gosford (N.S.W.) a factory for assembling micromodules and further research and development facilities are now operational. Special courses in microprocessor practical applications are also available through Applied Technology training division and details will be supplied on request.

The Micromodule approach enables the user to configure a powerful Z80 based computer to suit any particular requirement from process control, education, development tool, to complete business system.

ATZ80 OPTION PRICING:

	Kit	Assembled/ Tested
DGZ80	\$199.00	\$249.00
DG640	\$149.00	\$159.00
AT16K	\$209.00	\$239.00
ATPCG	\$140.00	\$165.00
JC100 Mother Board	\$49.50	
JC200 Card Frame	\$49.50	
JC300 Power Supply	\$69.50	
USCI Cassette Interface		\$25.50
Clare C70 Keyboard		\$165.00
Clare C72 Keyboard		\$179.50
DGOS IN 2516 ROM		\$40.00
Microworld Basic		\$25.00
Microworld Assembler		\$35.00
Games Tapes		\$15.00
1043 Disc System		\$1275.00
8300 Serial Printer		\$950.00

All prices include Sales Tax.



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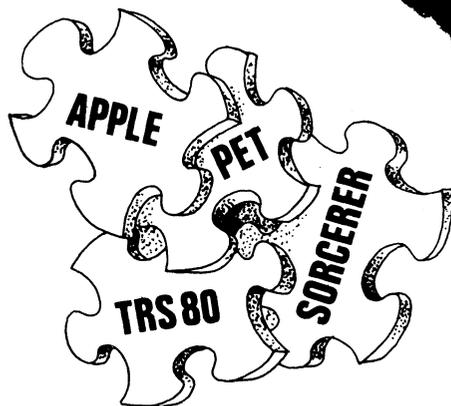
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Puzzled? Which computer to buy? The solution . . .



At Applied Technology we do things a little differently. Our market research has shown that a lot of people buy their first computer mainly to learn the basic concepts involved. Once they have mastered the basic principles only then can they effectively apply the computer to carry out their specific requirements.

We believe that a first computer must start small and be expandable and at the same time be supported with enough documentation and examples so that a user can master both hardware and software concepts at his own pace. Unless you can get "hands on" experience and actually make a computer actually do something like switch on a relay or play a musical tune you will find mastering the microcomputer a difficult, time consuming battle.

With this in mind we have designed a series of computer boards each with a specific function and yet fully compatible with each other. You can have fun and build each from kits (or buy them assembled and tested) and when a board is ready to go, plug it into the S100 BUSS (the hobby standard!) and you are ready to explore the fascinating world of the microcomputer. Some users of our Z80 system have already developed sufficient expertise to set up their own business writing software and designing industrial control systems. You could easily do the same!

\$399 INSTRUCTOR 80

An ideal starting point and a powerful self-contained computer on two S100 cards. The kit includes DGZ80 CPU (with on-board ROM and RAM and adequate I/O for most applications), the DG640 VDU (64 character/line display

with upper and lower case and graphics facility), a full feature RCA keyboard, 3 slot motherboard with edge connectors. The kit comes with complete manuals, a step by step programming course and sample programs to run. All you need to do is connect a simple power supply and a monitor/modified TV to complete the unit. Our exclusive warranty service and technical backup are readily available.

ADD ON S100 CARDS AND PERIPHERAL EQUIPMENT

The Instructor 80 can be readily expanded using cards from our wide range of S100 boards. You can, for example add 16K or more of reliable static memory using our AT16K RAM boards or add fine detail graphics/programmed screen characters and connect joy stick controls with the TCT PCG (see ETI July 1980). A full set of hardware is available to house your S100 computer system and if required we have just developed a professional quality 12" monitor with an easy-on-the-eye green phosphor and resolution to cater for up to 132 characters/line! A full range of peripheral equipment including printers and high capacity floppy discs is available as your needs arise.

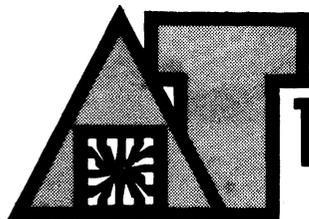
SOFTWARE SUPPORT

The Z80 is probably the most popular 8 Bit microprocessor in the world and has an abundant software base including business packages, word processing and languages such as CP/M, PASCAL, FORTRAN, FORTH. We have developed cassette based programs including Microworld Basic, Microworld Editor/Assembler, Utility Package and many exciting and challenging games. Courses

in microprocessor applications and programming are run regularly. Please enquire for more details.

PRICE LIST

DGZ80 S100 CPU Kit	\$199.00
Assembled	\$249.00
DG640 S100 VDU Kit	\$149.00
Assembled	\$159.00
DGOS Operating System in 5Volt EPROM	\$40.00
AT16K Memory Module	
Assembled	\$199.00
TCT 16K Static RAM Kit	\$209.00
Assembled	\$229.00
TCT PCG Kit	\$140.00
USCI Cassette Interface	
Assembled	\$25.50
JC100 9 Slot Motherboard	\$49.50
JC200 Card Cage	\$49.50
JC300 Power Supply	\$69.50
JC400 Desk Mount Cabinet	\$69.50
Clare C70 Keyboard	\$165.00
NT300 Hires Monitor	\$230.00
Software now available on cassette tape (DGOS format)	
Microworld Z80 Basic 2.1T Package	\$25.00
Microworld Editor/Assembler Package	\$35.00
Utility Tape 1	\$14.75
Battle Games (Target Trek)	\$14.75
Competitive Games	\$14.75
Learning and Challenging Games	\$14.75
Chess (suitable for PCG only)	\$5.00
Experimenters Pack 1 (Stac Timer)	\$17.50
Experimenters Pack 2 (Music Generation)	\$17.50
Experimenters Pack 3 (I/O Controller)	\$17.50



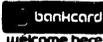
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Note: All prices include sales tax and are subject to change without notice.



MEMORY PRICES TUMBLE

Expand your microcomputer now. Applied Technology now have two reliable, proven 16K Static Memory micromodules ideally printed to expand any S100 system or in many cases to expand TRS80, SYSTEM80 or SORCERER with little, if any, modification.

Memory has become our No. 1 product and as a result of the large volume of orders we are able to pass on savings to you. Both micromodules are on standard S100 memory boards, through hole plated with solder mask and hard gold edged fingers. They require only low power single voltage supply (+8v) and all memory chips are fully socketed.

TCT 16K MODULAR MEMORY.

The TCT 16K is arranged as four blocks of memory, each equipped with write protect and can be located at any 4K boundary in memory. The board can be configured to be higher or lower priority memory through the use of the phantom line and all address and data lines are fully buffered. The kit is supplied with all components, fully socketed and with a comprehensive owners manual.

Assembled/Tested versions are available with 450 ns and 300 ns memory.

NEW FOR 1981 – INTRODUCTORY OFFER.

AT 16K ECONOMY STATIC MEMORY

At last a no fuss, easy-to-use reliable 16K STATIC memory at the price of dynamic memory but without all the hassles. The AT

16K ESR is configured as one 16K block and can be located in memory at any 16K boundary. The board also features bank select and phantom memory priority control. The AT 16K is supplied assembled, tested and burned in and guaranteed for 12 months from date of purchase.

The AT 16K is ideal for DGZ80, 2650 SBC micromodules as well as all other S100 standard systems.

PRICING.

TCT 16K Kit	\$209.00
TCT 16K assembled (450 ns)	\$239.00
TCT 16K assembled (300 ns)	\$279.00
INTRODUCTORY OFFER.	
AT 16K assembled (450 ns)	\$199.00
AT 16K assembled (300 ns)	\$249.00



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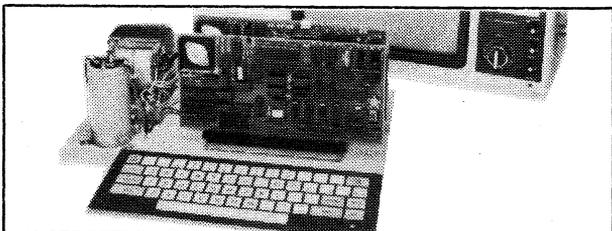


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FOR FULL DETAILS SEE OUR 1981 CATALOG IN ETI MARCH 1981

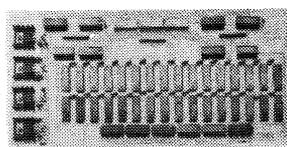
MOST WANTED

S100 MICROMODULES: AFFORDABLE, COMPATIBLE, EXPANDABLE...

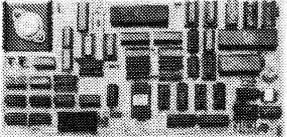


INSTRUCTOR 80:
Ideal starting package. Uses DGZ80 CPU, DG640 VDU, RCA Keyboard and comes complete with manuals and programming course. S100 based system needs no special interface to expand to any configuration. Don't be fooled with single board imitations, the Instructor 80 is fully software supported with basic, assembler, games and even Pascal and CP/M!
IN-Z80-K INSTRUCTOR 80 KIT **\$399.00**

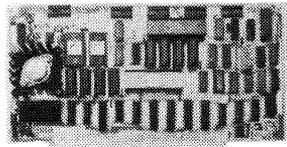
TCT 16K BLOCK LOCATABLE RAM:
This versatile 16K ram module is configured in four independent 4K blocks each with write protect and independently locatable at any location in 64K address space. The board is fully socketed and includes dip switches for easy location.
TCT-16K-K TCT16K IN KIT FORM **\$209.00**



DGZ80 Z80/S100 SINGLE BOARD COMPUTER:
Most popular Z80/S100 SBC in Australia. Features Z80 CPU, PIO, CTC for powerful I/O and timing, 2K ROM/2K RAM on board, 2 or 4 MHz operation. With DGOS Monitor in ROM the DGZ80 needs only a keyboard and DG640 VDU for minimum system.
DG-Z80-2K 2MHZ DGZ80 KIT **\$199.00**
DG-OS-14 DGOS MONITOR IN ROM **\$40.00**



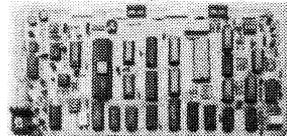
2650/S100 SINGLE BOARD COMPUTER
Released at last this top class design now brings the 2650 to the S100 bus. Feature laden board contains 2650 CPU, 8255 PPI, serial and parallel ports, on-board ram (to 4K), on-board rom and bank select facility to address up to 512K. The 2650/SBC is available in kit form or as a PCB with manual and control ROM.
SBC-2650-K 2650-SBC KIT WITH MANUAL **\$209.00**
SBC-2650-SK 2650-SBC PCB/MANUAL/ROM **\$80.00**



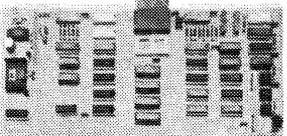
DG640 VISUAL DISPLAY UNIT:
This super functional S100 PCB is an industry standard. Generates 64 characters per line, 16 lines per page, full upper/lower case and graphics. Built in crystal time base locks onto TV sync. Watch out for outdated "El Cheapo" 32 character/upper case only displays, they just don't suit most software requirements...
DG-640-K DG640 KIT **\$149.50**



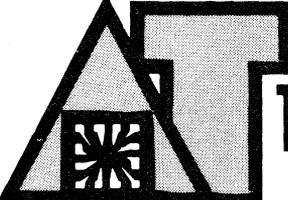
SCVT S100 SERIAL VIDEO TERMINAL
Described in EA Oct 1980, the SCVT uses the Thomson-CSF VDU Controller to produce this versatile serial terminal. Features on board UART with BAUD rate generator (50 to 1200), cassette interface, RS232 ASCII encoded keyboard to output to monitor or modified TV set. Format is 64 characters/16 lines and attributes include reverse or flashing characters, cursor addressing and hardware scrolling. With a keyboard such as the Clare C/O, and a suitable TV set, the SCVT becomes a cost effective "Dumb" terminal suitable for many microprocessor applications.
SCV-T100-K SCVT TERMINAL KIT **\$189.50**



TCT PCG HIGH RESOLUTION GRAPHICS:
Need high resolution graphics and programmable characters? The TCT PCG option connects to the DG640 to produce 512x256 bit resolution. Supplied with StarWars and table tennis programs on cassette and has built in joy stick interfaces.
PCG KIT **\$140.00**

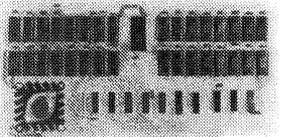


Full product descriptions and specifications are detailed in our 1981 catalog (see ETI March 1981). Note that prices quoted include sales tax. Please add \$4.00 to cover packaging and registered postage.



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AT16K ECONOMY 16K STATIC MEMORY:
Just released, the AT16K uses proven 2114 static memory chips to produce a 16K block locatable ram module with write protect and bank select (port or switch controlled). AT16K is supplied burned-in and tested ready for years of trouble free service!
AT-16K-4A ASSEMBLED/TESTED AT16K (450NS) **\$199.00**



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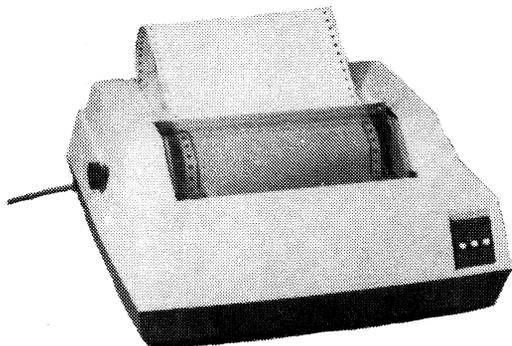
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AT.010

Hardware/Software

OUR BIGGEST SELLING PRINTER!

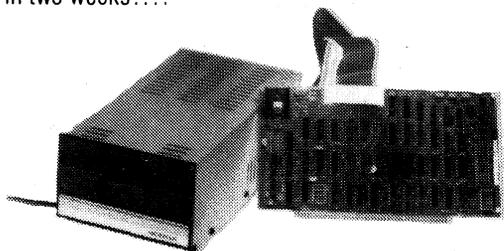


Suits DGZ80, TRS80, SYSTEM 80, and SORCERER with appropriate interface cables the ITOH 8300 dot matrix printer produces very readable and reliable output on tractor feed with up to 3 carbon copies. Has built in microprocessor to control line buffer and system handshaking to produce 125 ch/sec 132 ch/line format with upper/lower case ASCII standard. Available in parallel (8300P) or serial (8300R) at no extra charge.

8300 PRINTER **\$875.00** save \$\$\$\$ over competition. Also available (not illustrated) ITOH 1541 which is same as 8300 but with adjustable paper width from 115mm to 380mm. 1541P or 1541R available \$925.00.

MICROPOLIS DISK DRIVE (S100) SYSTEM

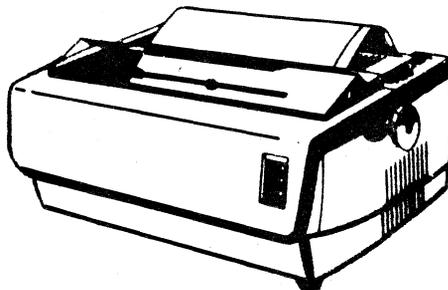
..... new stocks just in... our first shipment sold out in two weeks....



Save a bundle, these MICROPOLIS 1043/11 drives are one of the best known in the world and store an incredible 315K bytes on a single 5.25 inch disk! System supplied consists of drive unit cased with power supply, S100 controller card, connecting cables, superb documentation and software including MDOS and MBASIC (24K). Note the MICROWORLD RES is required for DGZ80 systems and this is available for \$80 extra.

***MICROPOLIS 1043/II **\$995.00** that's over \$150 cheaper than others!

FOR WORD PROCESSING...



The superb TEC TE1 500-P Daisy wheel printer accepts sheet paper, company letterheads, etc. or continuous stationery up to 400mm wide. Uses standard DIABLO Print Wheels, Ribbon cartridges with wide range of fonts. Prints about twice as fast as golfball type printer and much more reliable. Uses standard CENTRONICS interface.

TEC TE1500-P only **\$1850.** that's \$100 cheaper than our nearest competitor!!

NEW RELEASE

MW2516 16K EPROM board on the S100 bus. Easy to use intended specifically for MICROWORLD LEVEL II BASIC ROM set, but suits 2516/2532 ROMS. Kit is supplied with full manual, all parts **\$99.00**

SOFTWARE for DGZ80 SYSTEMS

MICROWORLD 12K Level II BASIC on cassette	\$20.00
MICROWORLD 12K Level II BASIC in ROM	\$75.00
MICROWORLD EDIT/ASSEM (Z80) cassette	\$20.00
Games tape 1 TARGET/T REK, etc	\$14.75
Games tape 2 MULTIPLE GAMES	\$14.75
Games tape 3 CHESS/SOLITAIRE	\$14.75
SPACE INVADERS	\$14.75
Utility tape 1: memtest, display, disassembler	\$14.75
DGOS ROM with listing	\$40.00

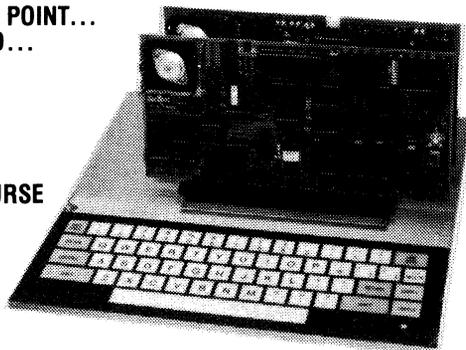
S100 HARDWARE

DGZ80 CPU KIT	\$199.00
MW640 VDU A/T	\$149.50
TCT 16K RAM	\$209.00
AT 16K RAM A/T	\$199.00
MW2516 16K ROM KIT	\$99.00
SBC 2650 KIT	\$209.00
SCV-T100 SERIAL TERMINAL KIT	\$189.50
DG 750K. I/O BOARD	\$195.00
MW S100 MB. 10 Slot Mother Board	\$49.50
MW S100 CF. Card Frame	\$49.50
MW S100 PS. Power Supply	\$75.00

Tired of waiting?

**NOW AVAILABLE: AUSTRALIA'S MOST POPULAR KIT COMPUTER
...THE SUPER INSTRUCTOR 80 Z80/S100 microcomputer...**

**THE IDEAL STARTING POINT...
LEARN AS YOU BUILD...
Z80 BASED...
S100 BUS FOR
EASY EXPANSION...
VERSATILE...
PROVEN DESIGN...
PROGRAMMING COURSE
AND FULL
INSTRUCTIONS
INCLUDED.**



exclusive to A.T.!
**NEW IMPROVED
MODEL**
\$399

Based on the DGZ80 single board Z80/S100 computer published in ETI, November 1979, the INSTRUCTOR 80 is a complete computer that enables you to learn as you build and once you have mastered the basic concepts, you can readily expand your computer as your needs and budget allow. INSTRUCTOR 80 is not just a cheap "throw away toy" but is a no compromise, professional quality package that will form the basis of your soundest computer investment for years to come. Your INSTRUCTOR 80 is supplied with our unique programming course and already has a large library of supporting software. With suitable system configurations you can use your INSTRUCTOR 80 to play games such as SPACE INVADERS, CHESS or program in MICROWORLD 12K Level II BASIC. Add disk drives and you can run CP/M 2.2 and have access to virtually all business software or program in PASCAL, COBOL, RPG or FORTH.

SPECIFICATIONS:

CPU	Z80 2MHZ (4MHZ Option)
I/O	8 BIT INPUT PORT, 2 Programmable I/O PORTS 4 Channel Counter/Timer all interrupt driven On board provision for cassette and printer interface
VDU	64 characters/line, 16 lines/screen, 128 upper/lower case characters with graphics.
MEMORY	On board 2K ROM/2K RAM expandable to 64K with low cost/reliable STATIC S100 Ram boards.
KEYBOARD	Full ASCII (upper/lower case) with audible tactile feedback...preassembled/tested.
EXPANSION	S100 bus. Motherboard has 4 slots, options to 10 slots.

BUILD IT YOURSELF & SAVE A BUNDLE!

By adding optional S100 cards you can build a system to match virtually any "ready made" such as TRS80, SYSTEM 80, SORCERER, APPLE or PET at a fraction of the cost!!! The INSTRUCTOR 80 is also available Assembled/tested for \$449.00.

BEWARE OF CHEAP IMITATIONS

Instructor 80 uses the Z80 at full speed (2MHz). VDU produces 64 characters/line UPPER/LOWER CASE and GRAPHICS. INSTRUCTOR 80 uses only proven STATIC MEMORY-expandable to 64K. Full software support including BASIC, ASSEMBLER and GAMES now available.

REMEMBER:

Applied Technology is 9 years old and we have been microcomputer specialists for over 5 years. All our products are proven and our exclusive technical support/warranty service applies.

All items expected to be available and prices correct at time of going to press. Please phone for confirmation of price and availability.

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TIRED OF WAITING? THE \$399 COMPUTER IS HERE NOW.

**\$399 EXPANDABLE, AFFORDABLE...
LEARN AS YOU BUILD S100-Z80 COMPUTER...
A LOGICAL INVESTMENT...**

The New "Super Instructor 80"

Build your own computer! The INSTRUCTOR 80 is an ideal starting point designed to save a bundle for the newcomer to micro-processors. This proven design is available in kit form or assembled and tested and includes FULL INSTRUCTIONS and our unique step-by-step PROGRAMMING COURSE and our full technical backup and warranty service. We won't let you fail!

Best of all the INSTRUCTOR 80 is part of the MICROWORLD family of compatible modules all designed to conform to the S100 bus. This ensures you can expand your computer to virtually any configuration you may require! Watch out for cheap "throw-away" non-expandable imitations, the INSTRUCTOR 80 is based on the proven DGZ80 (ETI Nov. 1979) and has a large SOFTWARE base AVAILABLE NOW. You can add the required memory and run MICROWORLD 12K LEVEL II BASIC, EDITOR/ASSEMBLER, play games such as CHESS, SPACE INVADERS, TARGET and many more. More than that DGZ80 is also a useful microprocessor controller and you can experiment with ROBOTICS, SPEECH SYNTHESIS and MACHINE CONTROL. When expanded to include disk drives, your DGZ80 based computer will become a full business system capable of running world class software such as CP/M 2.2, WORDSTAR, and a host of powerful financial/inventory control packages.

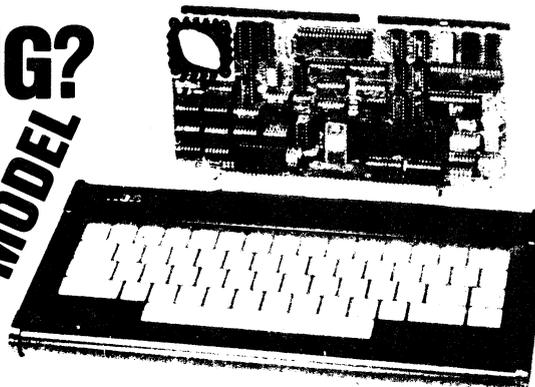
The INSTRUCTOR 80 package includes the DGZ80 single board CPU, MW640 VDU, RCA keyboard complete with case, 4-slot motherboard, all necessary sockets and cables and, of course, full construction manuals and PROGRAMMING COURSE. Add a cassette interface such as the USCII and more memory such as the AT16K and you have what we consider to be the most cost effective and versatile 16K home computer available in Australia today. To operate your INSTRUCTOR 80 you need only connect a simple 8V power supply and connect to a video modulator or a video monitor such as the NT50.

The INSTRUCTOR 80 sets new standards for price and performance in a kit computer. The central processor is the powerful Z80 microprocessor, backed by a wealth of software worldwide. Full S100 expandability is a big feature of the INSTRUCTOR 80. Because we use the S100 bus from the word "GO" there is no need to purchase any \$500 type expansion interface. Load and save programs using a reliable cassette interface such as the USCII and you can even connect a printer to the powerful PIO port. The VDU generates the full ASCII character set (UPPER and LOWER case with descenders!) and 64 characters/line 16 lines to the screen. Under software control you can generate "chunky graphics" with 128 x 64 bit resolution. Optional S100 modules enable you to use such options as PROGRAMMABLE GRAPHICS (512 x 256 bit resolution), SPEECH SYNTHESISERS, additional memory to 64K including RAM and EPROM boards. You can add disk drives and convert your INSTRUCTOR 80 into a WORDPROCESSOR or SMALL BUSINESS COMPUTER.

INSTRUCTOR 80 is TOTALLY UPWARD COMPATIBLE. You can go on adding modules to build your computer to suit virtually any application. You learn as you build your own INSTRUCTOR 80 and then once you have mastered the world of the microcomputer it becomes a sound basis for future expansion. The INSTRUCTOR 80 is your LOGICAL INVESTMENT that will introduce you to the FASCINATING and REWARDING world of the MICROPROCESSOR. INSTRUCTOR 80 in kit form complete with all manuals and programming course:

\$399 or \$459 assembled and tested.

NEW MODEL



MICROWORLD S100 MODULES and ASSOCIATED EQUIPMENT

DGZ80 single board CPU kit	\$199
MW640 64 char/16 line VDU	\$159
AT16K 16K STATIC RAM (ass/tested)	\$199
TCT16K Block locatable RAM kit	\$219
TCTPCG Programmable graphics generator	\$140
SBC2650 2650 CPU on the S100 bus (kit)	\$209
SCVT100 Serial terminal (EA Oct. 80)	\$195
DG750 I/O 2 serial, 24 parallel bits	\$175
MWWRP Wirewrap card	\$ 25
MW2516 EPROM card	\$ 99
MWEXT Extender card	\$ 30
MW1550 10 slot motherboard	\$ 49.50
MW S100 CF Card frame kit	\$ 49.50
MW S100 PS 8V @ 10A, 15-0-15 @ 2A	\$ 75
MW S100 EC Desk top cabinet	\$ 65
MW S100 FP Front Panel	\$ 15
MW USCII Cassette interface	\$ 30
NT50 12" VIDEO MONITOR	\$139.50

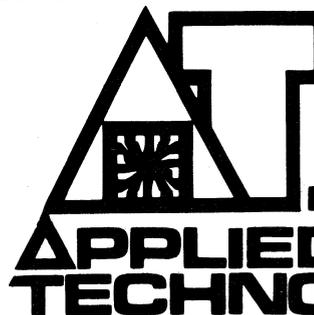
SOFTWARE: (DGOS Format on cassette)

MICROWORLD LEVEL II BASIC with manual	\$19.75
MICROWORLD Z80 EDITOR/ASSEMBLER with manual	\$19.75
GAMES PAK #1 TARGET/TREK	\$14.75
GAMES PAK #2 MULTIPLE GAMES	\$14.75
MW-640 CHESS (two versions with/without PCG)	\$14.75
MW-INVAD MICROSPACE INVADERS the arcade game	\$14.75
MW-UTILITY Useful test and display programs	\$14.74

SOFTWARE: (EPROMS)

MICROWORLD LEVEL II 12K BASIC with manual	\$65
DGOS Monitor program for DGZ80	\$40

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TIRED OF WAITING?

THE \$399 COMPUTER IS HERE NOW.

**\$399 EXPANDABLE, AFFORDABLE...
LEARN AS YOU BUILD S100-Z80 COMPUTER...
A LOGICAL INVESTMENT...**

The New "Super Instructor 80"

Build your own computer! The INSTRUCTOR 80 is an ideal starting point designed to save a bundle for the newcomer to microprocessors. This proven design is available in kit form or assembled and tested and includes FULL INSTRUCTIONS and our unique step-by-step PROGRAMMING COURSE and our full technical backup and warranty service. We won't let you fail!

Best of all the INSTRUCTOR 80 is part of the MICROWORLD family of compatible modules all designed to conform to the S100 bus. This ensures you can expand your computer to virtually any configuration you may require! Watch out for cheap "throw-away" non-expandable imitations, the INSTRUCTOR 80 is based on the proven DGZ80 (ETI Nov. 1979) and has a large SOFTWARE base AVAILABLE NOW. You can add the required memory and run MICROWORLD 12K LEVEL II BASIC, EDITOR/ASSEMBLER, play games such as CHESS, SPACE INVADERS, TARGET and many more. More than that DGZ80 is also a useful microprocessor controller and you can experiment with ROBOTICS, SPEECH SYNTHESIS and MACHINE CONTROL. When expanded to include disk drives, your DGZ80 based computer will become a full business system capable of running world class software such as CP/M 2.2, WORDSTAR, and a host of powerful financial/inventory control packages.

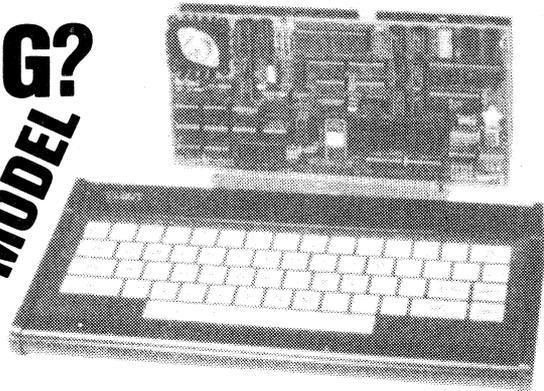
The INSTRUCTOR 80 package includes the DGZ80 single board CPU, MW640 VDU, RCA keyboard complete with case, 4-slot motherboard, all necessary sockets and cables and, of course, full construction manuals and PROGRAMMING COURSE. Add a cassette interface such as the USCII and more memory such as the AT16K and you have what we consider to be the most cost effective and versatile 16K home computer available in Australia today. To operate your INSTRUCTOR 80 you need only connect a simple 8V power supply and connect to a video modulator or a video monitor such as the NT50.

The INSTRUCTOR 80 sets new standards for price and performance in a kit computer. The central processor is the powerful Z80 microprocessor, backed by a wealth of software worldwide. Full S100 expandability is a big feature of the INSTRUCTOR 80. Because we use the S100 bus from the word "GO" there is no need to purchase any \$500 type expansion interface. Load and save programs using a reliable cassette interface such as the USCII and you can even connect a printer to the powerful PIO port. The VDU generates the full ASCII character set (UPPER and LOWER case with descenders!) and 64 characters/line 16 lines to the screen. Under software control you can generate "chunky graphics" with 128 x 64 bit resolution. Optional S100 modules enable you to use such options as PROGRAMMABLE GRAPHICS (512 x 256 bit resolution), SPEECH SYNTHESISERS, additional memory to 64K including RAM and EPROM boards. You can add disk drives and convert your INSTRUCTOR 80 into a WORDPROCESSOR or SMALL BUSINESS COMPUTER.

INSTRUCTOR 80 is TOTALLY UPWARD COMPATIBLE. You can go on adding modules to build your computer to suit virtually any application. You learn as you build your own INSTRUCTOR 80 and then once you have mastered the world of the microcomputer it becomes a sound basis for future expansion. The INSTRUCTOR 80 is your LOGICAL INVESTMENT that will introduce you to the FASCINATING and REWARDING world of the MICROPROCESSOR. INSTRUCTOR 80 in kit form complete with all manuals and programming course:

\$399 or \$459 assembled and tested.

NEW MODEL



MICROWORLD S100 MODULES and ASSOCIATED EQUIPMENT

DGZ80 single board CPU kit	\$199
MW640 64 char/16 line VDU	\$159
AT16K 16K STATIC RAM (ass/tested)	\$199
TCT16K Block locatable RAM kit	\$219
TCTPCG Programmable graphics generator	\$140
SBC2650 2650 CPU on the S100 bus (kit)	\$209
SCVT100 Serial terminal (EA Oct. 80)	\$195
DG750 I/O 2 serial, 24 parallel bits	\$175
MWWRP Wirewrap card	\$ 25
MW2516 EPROM card	\$ 99
MWEXT Extender card	\$ 30
MW1550 10 slot motherboard	\$ 49.50
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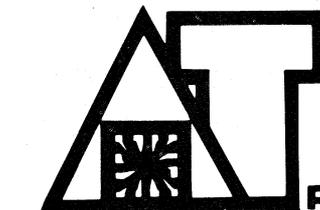
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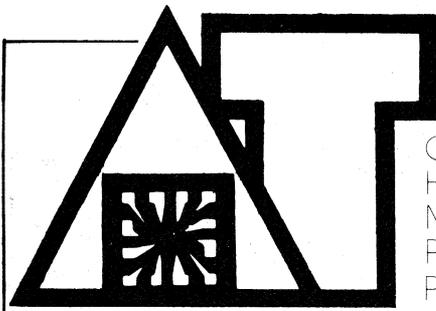
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Please add \$2.00 per order to cover packing and postage.

Prices correct and goods in stock at time of going to press.

A REAL COMPUTER FOR \$399

With the NEW SUPER INSTRUCTOR 80 we offer you the finest take-off point in personal computing today. If you need a machine which offers unparalleled facilities for learning computer basics and the ability to expand as your needs and interests grow, then the INSTRUCTOR 80 is for you. The INSTRUCTOR 80 is a complete Z80 computer, fully expandable on the \$100 bus, backed a wide range of powerful software now available.

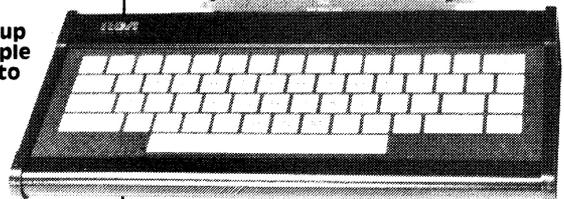
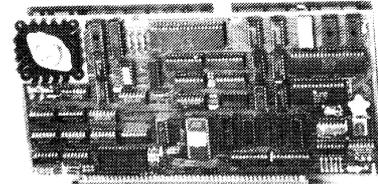
Compare the INSTRUCTOR 80 with virtually any similarly priced machine and there really isn't any comparison. The heart of the computer is the incredibly powerful DGZ80 single card S100 CPU. It gives you on-board RAM, a brilliant monitor program in EPROM, an 8-bit input port, two programmable 8-bit input/output ports, power-on-jump and of course uses the powerful Z80 microprocessor at 2MHz or more. No wonder the DGZ80 has become Australia's fastest selling Z80/S100 computer! In the video department, the INSTRUCTOR 80 is no slouch either. The MW640 S100 video display unit (VDU) gives you the full set of upper and lower case characters with true descenders with a crisp display of 64 characters wide and 16 lines on the screen and as a further

bonus, the MW640 offers user programmable graphics in a 128x64 format. Watch out for cheap imitations offering upper case only, 32 characters per line and 'flickering' displays: they are far too restrictive for today's demanding world of computers.

The Super INSTRUCTOR 80 includes

* RCA touch keyboard with audible feedback	\$89.50
* 4 slot motherboard with two S100 sockets	\$45.00
DGZ80 CPU card kit	\$199.00
DGOS monitor ROM with manual	\$40.00
* New improved MW640 VDU (Built and tested)	\$159.00
Normal full price:	\$518.00
Package deal price:	\$399.00
Save:	\$119.00

The INSTRUCTOR 80 is supplied with a full set of manuals, a unique programming course and our full technical and warranty support. We won't let you fail! Most of the INSTRUCTOR 80 is prebuilt and tested and the assembly of the DGZ80 computer board is a breeze because sockets are supplied for every IC and a top quality, solder masked and plated through PCB will ensure a perfect job every time.



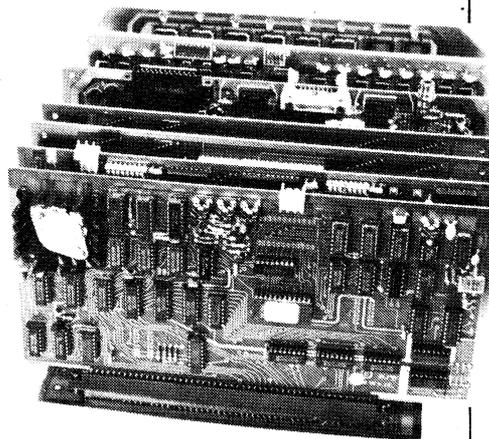
To get your INSTRUCTOR 80 up and running you need a simple 8 volt/2A power supply and to connect it to a TV monitor. An optional 8V/2A power supply and a modulator are available if required.

INSTANT PLUG IN EXPANSION ON THE S100 BUS.

One of the strongest reasons for buying our machine is that it gives you proven S100 expandability from the word 'GO' at no extra cost. We supply a full motherboard and S100 sockets—not just 100 holes in a PCB board! All our boards just plug into the S100 mother board. If you need a printer just plug one into the DGZ80 powerful PIO port. There are no hidden costs in expanding your Super INSTRUCTOR 80 and the APPLIED TECHNOLOGY wide range of cost-effective S100 cards make for exciting and painless expansion.

NEED MORE MEMORY? . . . Just plug in up to 64K of super reliable STATIC RAM. Choose from AT16K block locatable RAM at \$199 (assembled and tested) or TCT16K 4 x 4K independently locatable blocks at \$209 (kit form). The MW2516 S100 ROM card stores programs permanently in up to 16K of low cost 2516 EPROMS. Built and tested the MW2516 costs \$99 or \$160 complete with MICROWORLD BASIC in EPROMS.

NEED HIGH RESOLUTION GRAPHICS? . . . You need our TCTPCG (programmable character generator) which expands your graphics to a fantastic 512x256 bit resolution! You can produce graphs, bar charts and even develop your own TV games! The board comes with extensive documentation, joystick interfaces and controls and even 2 game programs on cassette. Kit price is \$140.



INPUT/OUTPUT . . . The powerful DG750 I/O card is now available. This connects 3 further programmable 8-bit ports, 2 serial ports and on-board baud rate generation. Kit price \$195.

SERIAL TERMINAL . . . If you need a remote terminal then use the SCVT100 as described in EA Oct 1980. This board offers a serial input and output, keyboard port, cassette interface and RS232 on one board for \$190 (kit form).

MISCELLANEOUS CARDS . . . Other cards available include 2650SBC (see ET1 Sept 81), Extender card and wire wrap cards and the newly released DIGITALKER card to give your computer a voice for \$149.50 (kit form).

EVERYTHING COMPLETE

APPLIED TECHNOLOGY'S commitment to its products means that once you get started, you can get all the extras you need from us. One stop computer shopping is here.

- USCI CASSETTE INTERFACE . . . Designed for trouble free operation with the DGZ80, this interface is supplied tested and ready to go complete with test tape. Just plug into port B and connect to your tape recorder. A built in relay controls the motor. \$30.00
- MW1550 IO SLOT MOTHER BOARD . . . If you intend expanding to a big system this is a wise investment. Quality plated through hole PCB with solder mask and easy access terminals for power and reset ensure that this is a quiet and trouble free mother board. \$49.50
- MS S100 CARD CAGE . . . This high quality card frame accepts the MW1550 mother board and MW S100 POWER SUPPLY to produce a solid support for your system with excellent air circulation. \$49.50
- MW EURO STYLE DESK TOP CABINET . . . Newly released, this top quality cabinet houses your system and matches any commercial computer on the market. Stocks are expected on September 22. The MW EURO STYLE Cabinet costs \$189.00 complete with quality anodized front panel.

GIVE YOUR COMPUTER A VOICE FOR \$150

Give your computer a voice for less than \$150!! Why pay over \$300 to experiment with the latest speech synthesis technology?

The MICROWORLD DIGITALTALKER is based on a speech processing unit and encoded ROMs from NATIONAL SEMICONDUCTOR. Although it is on an S100, the MICROWORLD DIGITALTALKER is port oriented and can be readily adapted to interface with virtually any microprocessor such as INSTRUCTOR 80, TRS80, Sorcerer or SYSTEM 80.

The DIGITALTALKER is supplied complete with technical application notes on the

state of the art in speech synthesis and typical software to drive it under machine code or BASIC. The DT-S100 has a master word list of 143 individually addressable expressions and these can be combined to produce a vocabulary limited virtually by your imagination. National Semiconductor have given us advance information on the soon-to-be released expansion ROM set and the DT-S100 has provision to accept these optional ROMs as soon as they are released. These extra ROMs increase the basic library to 256 expressions on one board! Actually this is all stored in 32K

bytes of ROM using the new maxiroms.

DIGITALTALKER type speech synthesis one of the fastest growing areas of microprocessor technology now is your chance to learn about this fascinating area. Applications include keyboards for the blind, control systems and computer games. The DT-S100 is an ideal project for school and is also sure to impress all who hear the high quality speech with natural inflection and emphasis.

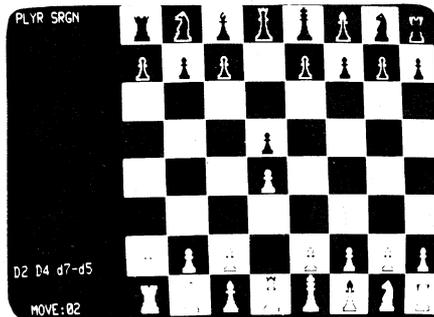
DT-S100 DIGITALTALKER kit complete with technical notes and full instructions. \$149.50

POWERFUL SOFTWARE-|||➔ WITH FULL SUPPORT

Unlike other companies who either "buy in" ready packaged software or give you little or no support, we at Applied Technology realise that a computer product is only as good as the software program behind it. Subsequently, we support our products with a continuing program of software expansion and improvement.

The INSTRUCTOR 80 is fully supported with a wide range of software available world wide. You can select from the wide range of games and utility programs in machine code, add the MICRO-WORLD EDITOR/ASSEMBLER and write your own programs. Or you can add the MICRO-WORLD 12K LEVEL II BASIC (available in ROM or cassette) and enter the fascinating world of BASIC using prepared programs or writing your own.

NEW MicroWorld Level II 12K Basic. New, incredibly powerful Basic. Has advanced error reporting—you can correct errors as you proceed. MicroWorld Basic is fully interactive and gives you a powerful tool whether you're learning or writing programs. Cassette version \$20 including tape and manual. S100 ROM Basic \$160



As your needs may grow you can add disk drives such as the 315K MICROPOLIS 1043 and enter the world of word processors, business and other data base systems. INSTRUCTOR 80 will support CP/M 2.2 and consequently the world wide software base associated with it.

No wonder INSTRUCTOR 80 is the fastest selling S100/280 based kit computer on the AUSTRALIAN market today!

THE ADVANCED PRO COMPUTER SYSTEM

Expand your INSTRUCTOR 80 to suit your needs. Below is a suggested application as a word processor. The configuration uses 48K of RAM, MICROPOLIS 1053 615K dual disk, 1500 Daisy Wheel Printer with the INSTRUCTOR 80 and is running WORDSTAR

under CP/M 2.2 This is more than a match for some of the so-called professional systems and will save you a fortune! As a guide, this system with all hard ware and software costs less than \$5000.

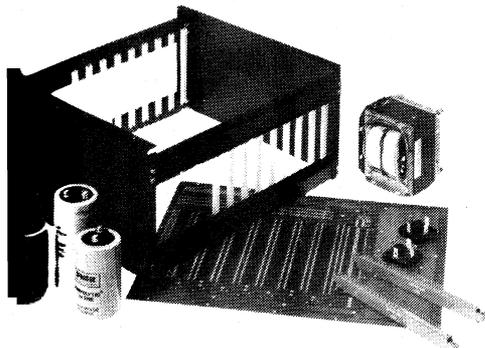
**SUPER LOW PRICE ON
ITOH M8500 GRAPHIC
PRINTER.
\$895**

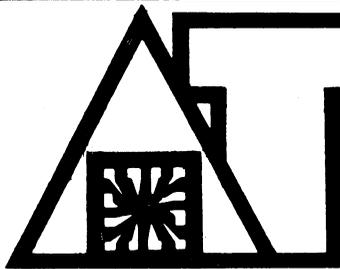


YOU NEED TO YOUR SYSTEM

Micropolis 1043 QUAD DENSITY DISK SYSTEM ... Plug in S100 card and you have 315K of disk memory. Includes diskettes and software/documentation package. (\$995 complete).

PRINTERS ... We have a wide range of quality ITOH printers ranging from Model 8300 dot matrix at \$875.00, to 8500 dot matrix with GRAPHICS for \$895.00 right up to the word processor quality 1500 DAISY WHEEL unit at \$1895.00





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 Please add \$2.00 per order to cover packing and postage.
 Prices correct and goods in stock at time of going to press.



PROFESSIONAL Z80/S100 COMPUTER \$1095 ANNOUNCING SYSTEM Z.A.T.

Here it is at last! A fully built and tested business quality computer system at less than the cost of its single board non S100 competitors. The Applied Technology SYSTEM Z.A.T. offers the business and home computer user an unbeatable combination of computing power both in the basic machine and in flexible and inexpensive hardware and software expansion. Our extensive range of S100 support cards, peripherals and world standard software means the SYSTEM Z.A.T. will suit the most demanding user now and in the future.

The basic SYSTEM Z.A.T. is supplied with our fast Z80A single board computer, 16K of RAM, MW640 memory-mapped VDU with 16 lines of 64 characters (upper/lower case plus graphics), a IO slot mother board and a heavy duty power supply. The whole machine is mounted in a professional rack width EURO-STYLE desk cabinet (illustrated). The keyboard is a stand alone unit featuring full 70 key set and its own attractive case. The Z.A.T. comes with the powerful DGOS monitor resident in ROM so you can enter programmes, set the in-built real time clock, save and load on cassette as well as make block moves, compare memory and search for bytes in memory. The system Z.A.T. requires only a video monitor or modified TV for immediate use. Peripherals such as serial printers and various I/O devices can be interfaced directly with the Z80A card-no extra interfaces are needed. Programmes can be run and developed in powerful MICROWORLD LEVEL II BASIC, either from cassette with our fantastic USCL interface or you can fit the MW2516 EPROM CARD and have your programmes in EPROM. The MW1632 S100 EPROM programmer allows programmes you have developed to be put into ROM for immediate access!

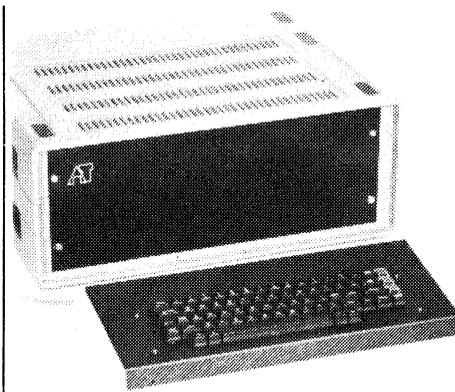
Our machine differs fundamentally from single board computers such as SORCERER and APPLE. It uses all S100 plug in boards right from the start. For \$1095 you are not buying a machine which is basically one big PC board. You are buying a powerful S100 machine with a very heavy power supply and seven slots waiting for expansion. Your S100 expansion unit is built in at no extra cost.

When you buy our machine, you are investing in the best value, most flexible personal computer on the market today.

SYSTEM Z.A.T. FOR BUSINESS

With the addition of extra memory, disc drives, a printer and support software, a system Z.A.T. can form the ideal basis of an office system. A configuration for virtually any small or medium size business is pictured. It comprises a SYSTEM Z.A.T. with

48K RAM, word processor daisy wheel printer, Micropolis 1053 Mod II 630K Disk Drive system, high resolution green screen monitor and support software including CP/M 2.2 disk operating system, MDOS, 24K MBASIC, and various utility programmes. With the addition of any of the widely available programme packages for accounting, inventory control, word processing etc., the SYSTEM Z.A.T. (48K/WP/DD) configuration is equal to and in some cases superior to commercial systems being marketed for over \$10,000. Because the SYSTEM Z.A.T. is on the S100 bus and will run CP/M without modification, you are assured of a machine which will not become obsolete and which will run the finest business and scientific packages.



The comparison chart below shows clearly why the SYSTEM Z.A.T. is the best value Z80/CPM computer available today.

BASIC UNIT	Apple II 16K	Sorcerer 32K	SYSTEM Z.A.T.
Memory	16K	32K	16K
Cost (with tax)	\$1524	\$1395	\$1095
Processor	6502	Z80	Z80A
Memory type	dynamic	dynamic	static
VDU	40 x 16	64 x 30	64 x 16
S100 expansion	n/a	\$575	built-in
48K CP/M	\$3664(1)	\$4116(2)	\$3170

NOTES: For comparison we have selected the 48K/CP/M configuration as this is the most common basis for business systems. Popular ROM/BASIC machines such as the TRS80 and SYSTEM 80 need substantial conversion and a special version of CP/M and the reader is asked to make his own comparison. Prices used have been taken from current advertising for all models.

(1) To convert the Apple you need 32K of RAM (\$110), Z80 softcard (\$330), disks (\$786 + \$594), CP/M (\$160).

(2) To convert the Sorcerer we used S100 expansion interface (\$575), 16K RAM card (\$199), MICROPOLIS 1043 (\$1149) and 1023 (\$649) disk drives and CP/M (\$149).

(3) To equip the SYSTEM Z.A.T. you need 32K RAM (\$400) and MICROPOLIS 1053 MOD II 615K package with CP/M 2.2 (\$1,675).

WHY CP/M?

CP/M is a powerful disk operating system from DIGITAL RESEARCH that has become the industry standard system for virtually all 8 bit microcomputers. Although only suited to Z80/8080 processors you can now buy a Z80 plug-in for the APPLE (about \$300), the SOFTBOX for the PET (\$900), mods for the TRS80

and no doubt the Atari in the near future. Hewlett Packard's new HP-125 uses the Z80A and CP/M and also the Xerox Model 820 features CP/M with the Z80! This formidable line-up suggests that to produce a worthwhile computer system you really need a system capable of running CP/M on a Z80. The enormous library of powerful and proven software is fully transportable between CP/M systems and means that any CP/M user has this at his fingertips.

The SYSTEM Z.A.T. is available with customised BIOS program to suit any configuration required. The soon-to-be released MICROWORLD MECAMEMORY hard disk system will come with multi-user MP/M and will pave the way for networking under CP/M as well. In the fast-moving world of micro-computing, three significant milestones have been the Z80 chip, the S100 bus and CP/M operating system and SYSTEM Z.A.T. employs them ALL.

APPLIED TECHNOLOGY have a wide range of cost-effective S100 cards which make expansion exciting and painless.

MEMORY

We offer two choices of proven reliable static memory. Both cards have very low power consumption, one voltage (between +7 and +14 Volts) and suit all S100 systems as well as SORCERER, TRS80 and SYSTEM 80.

AT16K

Uses reliable 2114 static RAMS and may be configured to any 16K boundary using on-board select logic. Board also has bank select, provision for write select and phantom line memory priority control. Fully built and tested. Assembled and tested \$199.00

TCT 16K

Memory arranged in four independent 4K blocks. Three DIP switches locate memory at any location in 64K address space. Can be configured to higher or lower priority memory through use of phantom line. Kit form \$209.00

ROM CARD

MW2516 S100 ROM card stores programmes permanently in up to 16K of low cost 2516 EPROMS. Built and tested \$99.00
Also available with MICROWORLD 12K BASIC plugged in \$160.00

HIGH RESOLUTION GRAPHICS

Our TCTPCG (programmable character generator) will expand your graphics to a fantastic 512 x 256 bit resolution! You can produce graphs, bar charts, even develop your own TV game! Board comes complete with extensive documentation, joystick interfaces and controls and even two game programmes on cassette. Kit price \$140.00

INPUT/OUTPUT

With the powerful DG750 I/O card you can connect 3 further programmable 8-bit ports, 2 serial interfaces and have on board baud rate generation. Kit price \$195.00

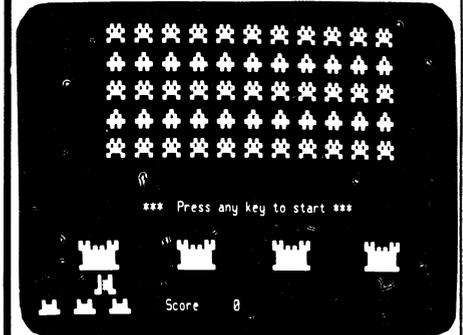
SERIAL TERMINAL

The SCVT100 (as described in EA Oct. 1980) gives a serial input and output, keyboard port, cassette interface and RS232 on one board. Kit price \$190.00

DIGITALKER

Give your computer a voice for under \$150.00 The MICROWORLD DIGITALKER uses the latest speech processing unit and speech ROMs from NATIONAL SEMICONDUCTOR. Although it is on S100, the DIGITALKER can be readily adapted to interface with virtually any micro, including SORCERER, TRS80 and SYSTEM 80. DIGITALKER comes complete with applications notes and typical software. DIGITALKER Kit with notes and full instructions \$149.50

SOFTWARE NEW RELEASES



- DGOS format on Cassette Tape. Cassette with documentation.
- WUMPUS. The popular cave hunting game. \$5.50
- LIFE. A fascinating use of graphics on the VDU. \$5.50
- CALENDAR-MAKER. Prints calendars for any year you want to. \$5.50
- MAZE-MAKER. Prints mazes to any specified width and length. \$5.50
- BANNER-PRINT. Prints your name in big characters. \$5.50
- BIG VDU. Converts the MW640 to produce large characters on the screen. \$5.50
- BYORHYTHM. Impress your friends and print out their points at a party game. \$5.50
- TYPE DRILL - Teach yourself to touch type. \$5.50
- ELIZA. The first artificial intelligence program. \$5.50
- HEXAPAWN. A chess type game, but the computer learns by its mistakes. \$5.50
- PILOT. The simplest to use language. Ideal for education and string oriented application. \$14.75
- MICROWORLD LEVEL II. Basic 12K of powerful program on cassette. \$19.75
Or in ROMS. \$75.00

PERIPHERALS

PRINTERS

NEW RELEASE. ITOH 8500 GRAPHICS/DOT MATRIX.

A little beauty! This latest printer from ITOH is a clever microprocessor controlled unit that uses a dot matrix head to produce top quality characters and graphics.

Printing at a rate of 100 characters/second (44 lines/minute full 80 character print) this is an ideal printer which has built in friction feed and sprocket feed for all paper types. Features true ascenders and logic seeking circuitry for extra speed. \$895.00

FOR WORD PROCESSING

TEC TE 1500 Daisy wheel printer accepts sheet paper, Company letterheads etc. or continuous stationery up to 400 mm wide. Uses standard DIABLO print wheels and ribbon cartridges.

A wide range of fonts is available. Prints about twice as fast as a golfball printer and is now available with RS232 or Centronics interface.

TEC TE 1500 RS232 \$1,895.00
TE 1500 Centronics \$1,865.00

DISK DRIVES

Proven Micropolis Quad Density Drives are one of the best known 5 1/4" drive packages on the market. They store 315K on a single disk and are fully S100 compatible.

1043 MOD 11.

S100 controller, drive package in cabinet with power supply, and full software includes 24K BASIC, MDOS and MICROWORLD RES.

\$995.00
Add on Drive \$645.00

1053 MOD 11.

Dual drive package has 630K of storage in top quality case with power supply and S100 controller.

Now available with full software plus CP/M 2.2 and MICROWORLD RES. \$1,675.00

REAL COMPUTERS START FROM \$399

Do you want to build a computer which won't end up limiting your needs and interests? Then the SUPER INSTRUCTOR 80 offers you the finest take-off point in personal computing today. While offering you unparalleled facilities for learning computer basics now, the SUPER INSTRUCTOR has the built-in S100 facilities of the Z.A.T. system, but without the power supply, case and memory board of the latter. It gives you an ultra powerful CPU board with built-in printer and other interfaces, and a professional VDU board with upper and lower case (and a screen which doesn't flicker each time you key something in).

- The SUPER INSTRUCTOR 80 includes
- RCA touch keyboard \$89.50
- 4 slot motherboard with two S100 sockets \$45.00
- DGZ80 CPU card kit \$199.00
- DGOS monitor ROM with manual \$40.00
- MW640 VDU (built and tested) \$159.00

Normal full price \$532.50
Package Price \$399.00
SAVE: \$133.50

ADVANCED 16K BASIC SYSTEM

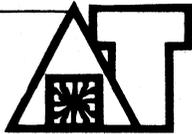
As a special deal to SUPER 80 buyers, we are offering our AT16K RAM card plus the MW2516 ROM card with MICROWORLD BASIC in ROM for an all-up price of only \$269, a saving of \$90 on the normal price for the two boards. Your INSTRUCTOR 80 with BASIC 80 pack outclasses TRS80, SYSTEM 80 and SORCERER and you don't have to spend \$500 if you want to expand memory or go to disk.

INSTRUCTOR 80 \$399 plus
BASIC 80 PACK \$269 equals

POWERFUL 16K/BASIC S100/Z80 processing

12K BASIC + 16K RAM \$269





APPLIED TECHNOLOGY -

The Starter Pack

Do you want to build a computer which won't end up limiting your needs and interest? Are you tired of 'packaged' systems which are never exactly what you want? Do you want to get into computing for as little as \$349 and have a machine which can run some of the most powerful software available? Do you want a full \$100 expandable machine? Then you need to know about Applied Technology's Z80/S100 computer cards and systems.

As Australia's largest manufacturer and designer of Z80/S100 cards we have the know-how to offer a range of systems tailored to suit you. You can start with low cost kits and modules (all backed with the finest technical support), and build up to a full disk based system running CP/M and the world's finest software.

With two extremely powerful \$100 cards, mother board and sockets, you get into computers without compromise and you're already on the \$100 bus.

The pack includes:

The ultra-powerful DGZ0 \$100 CPU board (kit form). This board offers features such as built in printer interfaces, an

extremely powerful monitor in ROM, an 8-bit input port, two programmable I/O ports, a real time clock (yes you can have the computer perform time related tasks, as many of our industrial customers are doing now). The MW640 VDU Board. This is a professional VDU board offering upper and lower case (and a screen that doesn't flicker every time you key something in). It produces 16 lines of 64 characters. Chunky graphics are also available.

We can't do justice here to the power and flexibility of these cards. We believe they will give you the finest takeoff point available in personal computing today. Learning to operate them, with AT's technical and software backup will give you more computer understanding than on any other Micro.

You also get a 4-slot Motherboard and \$100 sockets. All you need to get the system up and running is a simple 7V/2A power supply and an ASCII encoded keyboard.

Save \$94.00 on normal price of components.

\$349

ADVANCED 16K/BASIC SYSTEM

Once you have mastered your base system, the addition of our BASIC in ROM + 16K RAM package will allow you to run longer programs and learn to program in the fantastically powerful 12K MICROWORLD BASIC. This BASIC is a truly interactive language which actually gives you feedback as you program - your skill and familiarity will increase very quickly.

The package includes the MW2516 ROM card with BASIC in ROM and the AT16K RAM card with proven static memory. Being on the \$100 system, you just plug these straight in to your motherboard. With these two packages you have a machine which outclasses TRS-80, SYSTEM 80 and SORCERER in terms of instructional power, expandability and cost of expansion.

16K RAM + 12K BASIC ROM. Save \$80 on normal price of boards

\$279

KEYBOARDS FOR STARTER PACK

RCA Touch keyboard (complete with its own case). **\$89.50**

OR

Clare Model 70 Microprocessor controlled keyboard (serial and parallel outputs) **\$169.00**
Case to suit Clare **\$27.50**

\$100 BOARDS

2650 SBC Complete CPU based on the 2650 microprocessor. Includes 4K static RAM, 3 parallel ports.

Complete kit **\$209.00**

SCVT Serial Video Terminal uses Thomson CSF dedicated VDU controller.

Complete kit **\$189.50**

DGZ80 CPU Complete CPU with Z80 CPU, CTC and PIO.

Complete kit **\$199.00**

Assembled & tested **\$239.00**

AT16K RAM 16K of reliable static RAM.

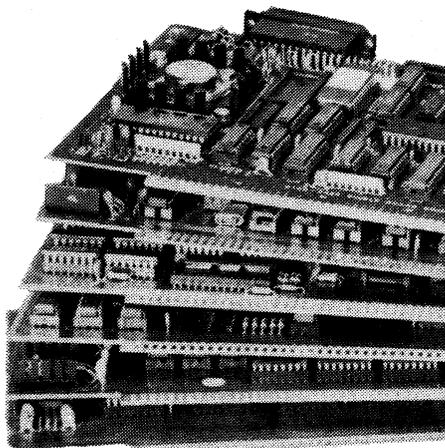
Assembled & tested 450nS **\$199.00**

TCT Block Lockable RAM 16K of RAM arranged in 4 independent 4K blocks.

Assembled & tested 450nS **\$249.00**

MW640 VDU Memory mapped, 64x16 lines, upper/lower case, chunky graphics.

Assembled & tested **\$169.50**



PERIPHERALS PRINTERS

Itoh 8500 Graphics/Dot matrix. 100 characters per second (44 lines per minute full 80 character print). True descenders and logic seeking circuitry.

Parallel interface **\$895.00**

TEC TE1500 Daisy wheel. 400mm wide, standard Diablo print wheel.

RS232 interface **\$1,895.00**

Centronics interface **\$1,865.00**

MICROPOLIS DISK DRIVES

5 1/4" - \$100 compatible - 315K per drive

1043 MOD II: single drive including controller board, power supply, 24K BASIC, MDOS & MICROWORLD RES. **\$995.00**

1023 MOD II add on drive **\$665.00**

1053 MOD II Dual drive. Other features as per 1043 Plus CP/M 2.2 **\$1,675.00**

DIGITAL TALKER

The MICROWORLD DIGITAL TALKER is based on a speech processing unit and encoded ROMs from National Semiconductor. Although an \$100 device, the Digitaltalker is port oriented and can be readily adapted to interface with virtually any microprocessor such as INSTRUCTOR 80, TRS-80, SORCERER or SYSTEM 80.

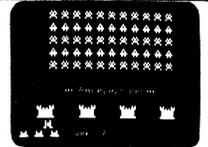
Comes complete with technical applications notes. It has 143 addressable expressions, giving

it a huge vocabulary. **\$149**

WOULD YOU LIKE TO KNOW MORE?

Then send for our catalogue of computer products. It gives full technical details and introduces you to our wide range of \$100 products, software and peripherals. Find out about our Newsletter - keep informed about new developments and applications for the MicroWorld range.

SOFTWARE NEW RELEASES



\$5.50 each!

DGOS format on cassette tape. **Cassette with documentation.**

WUMPUS. The popular cave hunting game.

LIFE. Fascinating use of graphics on the VDU

CALENDAR-MAKER. Prints calendars for any year you want.

MAZE-MAKER. Prints mazes to any specified width and length.

BANNER-PRINT. Prints your name in big characters.

BIG VDU. Converts the MW640 to produce large characters on the screen.

BIORHYTHM. Impress your friends and print out their points at a party game.

TYPE DRILL. Teach yourself to touch type.

ELIZA. The first artificial intelligence program.

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MICROWORLD LEVEL II BASIC. 12K of powerful program on cassette. **\$19.75**

Or in ROMs **\$75.00**

PILOT. The simplest to learn language. Ideal for education & string oriented applications. **\$14.75**

YOUR COMPUTER SUPERMARKET



PRICE LIST AVAILABLE

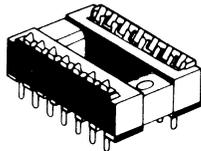
Because we are a major Australian manufacturer of S100 computer products, we buy huge quantities of digital and computer related ICs and hardware. You benefit from our technical knowledge and buying power. You can now buy the same components that we use in our own manufacturing (so they have to be good) at prices which make most 'computer suppliers' look very expensive. The items on this page show only a few of our lines, which now total over 5,000!! We have compiled a price list. Send or phone for it today!

IC SOCKETS

New Super Low Prices!

All our S100 boards use sockets, so we buy in huge volume - 50,000 at a time, and for reliability we only buy the best - TI and Scanbe. Try and buy quality sockets at these prices!

8 pin DIL 20¢ each
14 pin DIL 24¢ ea
16 pin DIL 28¢ ea
18 pin DIL 35¢ ea
20 pin DIL 40¢ ea
24 pin DIL 45¢ ea
28 pin DIL 50¢ ea
40 pin DIL 75¢ ea



Wirewrap

14 pin DIL 80¢ ea
16 pin DIL 85¢ ea
18 pin DIL 95¢ ea

For further range, phone or write for our catalogue.

S100 Socket

\$7.95 each or a set of 5 for only \$35.00 - Save \$4.75!

All these prices are current until 31st December
We buy at OEM prices and you reap the benefit!

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These ones won't drain your power supply or your wallet!

74LS00 20¢
74LS367 80¢
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74LS241 \$1.20
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LEDs

Rectangular 15¢
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Computer Grade Cassettes

Australian manufactured to our specifications.

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C20 \$1.20
C30 \$1.30
C45 \$1.60
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Assemble your own RS232 interface using these top quality standard 25 way connectors.
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DB-25-S 25 way socket \$8.75
DB-25-H hood for plug/socket \$2.75



Unbelievable discount prices

Z80A CPU \$7.95
Z80 PIO \$6.95
Z80 CTC \$6.95

Don't pay \$15.95 for a Z80 CPU. Buy from the computer specialists and save.

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2114/4 RAM \$2.75
8 for \$20.00!

82S/123 32x8 PROM \$3.95
NEW 6116 CMOS RAM \$19.75

Send for our data applications package on these fantastic 6116 RAMs. Only \$2.50. It will show you how to build your own non-volatile memory - yes battery backup is possible with these incredible new chips. Another AT first!

UARTS

1854AE CMOS UART \$7.95
5330 MOS UART \$6.95

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TO220 Fixed voltage regulators

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7806	7912
7808	7915
7812	7918
7815	7924
7818	All \$1.50 each
7824	

All \$1.10 each
LM317T Variable \$1.95
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All standard values from 3.3V to 30V/1W rating
Only 20¢ each - Don't pay 29¢ each

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How can we offer professional S100 systems and high quality components at such low prices and still stay in business? We can do this because we sell direct, we don't have dozens of expensive outlets and we sell a large percentage of our goods through our fast and efficient Mail Order Department. This allows us to keep our costs down and operate on much lower profit margins. This, plus strong buying power for our manufacturing operation means you benefit.

Blue Ribbon Mail Order Service

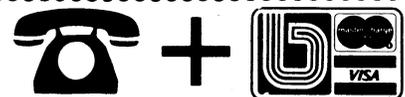
Join our 10,000 active mail order customers. Including some very big names - Racal, BHP, Mt. Isa Mines, ICL, even IBM!!! Our fast mail order division is ready to despatch orders received by mail. The standard charge is \$2.00 per order to cover package and postage. Mail orders to

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Interstate?

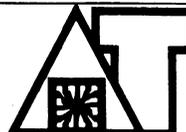
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APPLIED TECHNOLOGY

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\$100 CPU, VDU I/O CARDS

Whether you're a hobbyist or professional user of S100 cards and systems, you should know about Applied Technology's range of S100 products. We design and manufacture some of the world's most innovative (yet inexpensive) S100 products right here in Australia. Our 'MEGAMEMORY' static memory card and the powerful MW6545 programmable VDU card are recognized industry leaders.

DGZ80 Z80/S100 CPU

Now a legend in its class. And it's easy to see why. The DGZ80 is about the most powerful single board computer on the S100 bus. A powerful on-board monitor (DGOS), on-board RAM, and Z80 CPU, PIO and CTC means the DGZ80's interfacing power is fantastic. You get two 8 bit programmable I/O ports, four timer channels, a further input port, and power-on-jump. Real time clock facility is on-board under DGOS. Well over 1,000 DGZ80's are now in the field, in a range of applications from industrial control to business to instructional use. DGZ80 built and tested with DGOS in ROM

\$249.00

MW640 Professional VDU

This superb memory mapped VDU works under the DGOS monitor of the DGZ80 for fast easy programming. The crisp 64 characters by 16 lines display has upper/lower case, flashing characters black on white and 128x64 'chunky' graphics.

MW640 VDU built and tested

\$159.00

TCT PCG HiRes Graphics

If you need programmable high resolution graphics, this boards gives 512x256 bit resolution. It works in with the MW640 and comes complete with two joystick ports.

TCT PCG (kit form)

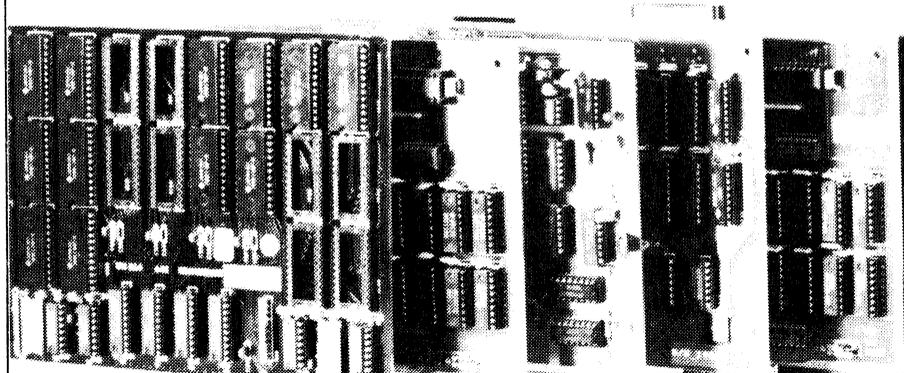
\$140.00

DG750 I/O

This versatile I/O board has 2 programmable serial I/O lines (RS232) and 3 programmable 8 bit I/O lines, all controlled by a programmable interrupt controller. The number of serial and parallel lines can be easily doubled.

DG750 I/O card Built and tested

\$195.00



\$100 STATIC MEMORIES

AT16K 16K Static Memory

The AT16K gives you reliable static memory, inexpensively. It can be located at any 16K boundary using on-board select logic. Write protect and phantom line memory priority control are included.

AT16K Built and tested

\$165.00

MW864 MEGAMEMORY

Our Megamemory card is a breakthrough in static memory performance. It's combination of high speed (6MHz), and low power (it uses only 4W fully populated) with low cost, have made it the industry leader. And we designed it here in Australia!! Available in 32K, 48K and 64K formats. Megamemory uses the popular 6116 CMOS RAMs. These RAMs are pin compatible with standard 2516 EPROMs. The board is fully IEEE compatible and features extended bank addressing, and phantom. The top 8K of memory can be deselected as 2K 'windows' to enable monitors and disc drives to be used.

32K built and tested

\$325.00

48K built and tested

\$425.00

64K built and tested

\$495.00

MW6545 Programmable VDU

One of our newest and most powerful products, the MW6545 is built around the 6545 programmable VDU chip. So the screen format can be programmed to 64x16, 80x24, 132x40 etc. Light pen facility is built in and there's extended addressing and port controls. The display is full professional format, with upper/lower case, built in programmable graphics and transparent screen refresh. A colour option is in the pipeline and a special ROM is now available to replace DGOS if you are running a DGZ80. The ROM gives you normal MW640 format on startup but you can change to 80x24 format under MicroWorld 56K CP/M. So you get the best of both worlds!!

MW6545 built and tested

\$325.00

MW ROMBLASTER

This memory mapped EPROM programmer suits 2516, 2716, 2532 and 2732 single voltage EPROMs. Programming supply is on-board. The RomBlaster can be located anywhere in memory and ROMs can be verified under DGOS. Programming is very easy, just make a single block move under DGOS.

MW ROMBLASTER

\$195.00

\$100 CARD FRAMES

MW300 Wirewrap Card

This general purpose wirewrap card conforms to standard IEEE696 S100 bus standard. The board has built in address and data buffers and accepts T0-3 and T0-220 regulators, 50, 34, 26, 10 pin headers and has provision for in-line resistor packs for pull up or pull down terminations.

MW300 card

\$39.50

SCVT, 2650 Cards

We still have stocks of these cards, (see article in EA and ETI for details). Please write for details.

MW1550 Mother board

This 10 slot mother board now comes with S100 sockets soldered in ready for use. The board can be connected to the MW800 power supply. It fits the MW600 card frame.

MW1550 ready for use

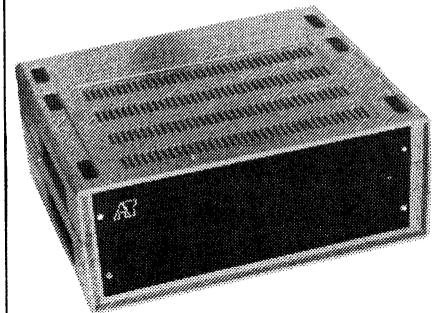
\$100.00

MW600 Card Frame

This card frame accepts the MW1550 mother board and has provision for internal power supply, cooling fan and I/O connectors. The frame takes standard 19" rack mount hardware.

MW600 card frame

\$100.00

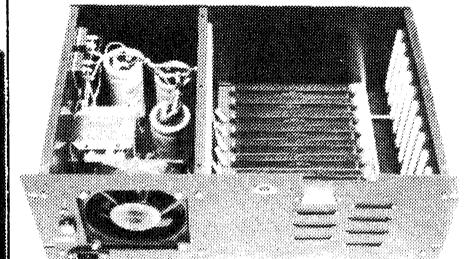


Euro Case

This professional desk top case is the best we've seen. Moulded from high impact plastic, it features adjustable mounting feet, ventilation, carrying handles and comes with an anodized front panel and reset button. The card frame slides into the Eurocase, providing superb protection and appearance.

Eurocase

\$200.00



Complete Cardframe/Eurocase

The cardframe, 10 slot mother board, full 10A S100 power supply and Eurocase are available complete and ready to use. This combination offers outstanding value.

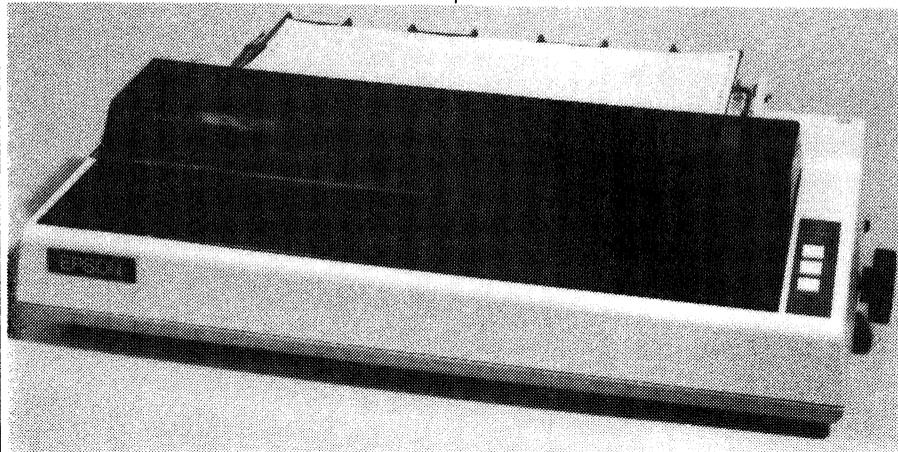
Eurocase/cardframe

\$450.00

PRINTERS EPSON MX100

We are delighted to be selling Epson's new range of dot matrix printers. Examine the constructional quality and print output of these machines and you'll quickly appreciate why they are by far the best value dot matrix printer you can buy.

The print output of both the MX80 and MX100 is a full 9x9 matrix with true descenders. Condensed, enlarged and emphasized printing is selectable. The resulting performance is more in keeping with a machine in the \$3,000 bracket. Now you can have a correspondence quality machine without paying out a



fortune. Not surprisingly, Epson have been selling over 50,000 of these printers per month to the American market. There's simply nothing else like them.

Epson MX100

Epson's newest model, the MX100, is the most powerful printer in its class.

First class mechanicals have been combined with an incredible range of features. The full 96 character ASCII set has true descenders. And there's 8 international character sets with switch selection for font variation. The printer also offers ultra high resolution bit image printing up to 1632x8 dots per line. Normal, condensed and enlarged printing is available and is further programmable. Form feeding is programmable up to 127 lines and 12 horizontal and 8 vertical tabs are available.

The MX100 has a full 15 inch carriage and will handle single sheets or continuous stationary. Paper feed is by adjustable sprocket feed or by friction feed, with a normal typewriter style platter. The MX100 has a standard Centronics 8 bit parallel port. Both the MX100 and the MX80 share a versatile range of interfacing options. Printing rate of the MX100 and the MX80 is a fast 80cps in text mode. Printing is bidirectional with logic seeking.

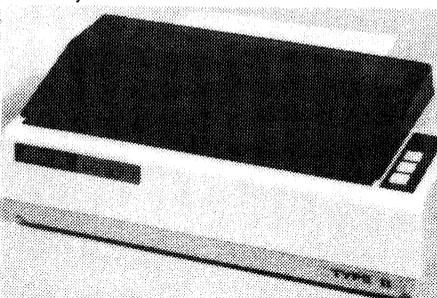
PRINTERS EPSON MX80

The MX80 is currently the world's top selling printer. It differs from the MX100 only in its paper handling size and the range of paper handling formats. The base MX80 Model I is straight tractor feed. The slightly more expensive MX80 II FT is both friction and tractor feed and incorporates the incredible graphics capability of the MX100. Both MX80 machines take up to 9.5 inch paper (tractor feed). Both come standard with Centronics parallel interface. They accept all the interface options with the MX100.

The MX80 provides up to 80 column (132 column condensed) printing. We currently have an MX80 on demonstration with the MicroBee and we recommend them as a really superb combination.

Model	
MX80 Model I (tractor feed)	\$795.00
MX80 Model II FT (plus graphics)	\$915.00
MX100 FT (with graphics)	\$1195.00
Options	
8141 Serial Interface	\$95.00
MicroBee Cable	\$55.00
TRS80/System 80	\$110.00
IEE488 PET	\$135.00
Apple II (Model I)	\$135.00
Apple II (Model II)	\$170.00

All prices include user manuals and 90 day warranty.



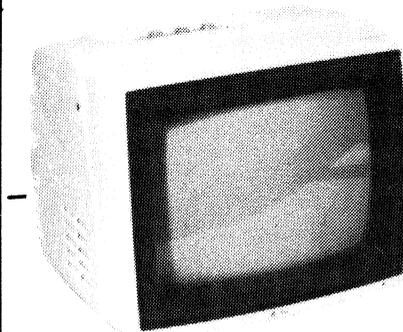
MONITORS NEW HIGH RES.

New High Resolution Monitor

Yes! A high resolution monitor which doesn't cost a fortune. We have been able to obtain supplies of these superb Green Screen monitors at way below normal price. The P31 phosphor, wide (18MHz) bandwidth and removable anti glare screen means higher resolution and less eye strain. If you're using professional screen formats or high resolution graphics (such as those on the MicroBee) then we recommend the HiRes monitor.

HiRes Monitor

\$299.00



Low Cost Video Monitor

This low cost 12" white phosphor monitor provides an excellent video display for hobbyist use. It is suitable for use with the MicroBee or any other Personal Micro.

Low cost monitor

\$129.00

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BUILD A COMPUTER KIT AND SAVE



KB05 FULLY ENCODED KEYBOARD

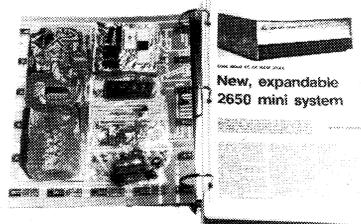
Eliminates messy wiring between keyswitches and encoder. The KB05 is a full featured keyboard kit fully encoded for all 128 ASCII characters. Based on a design published in ELEKTOR November, 1978, it is an ideal low cost keyboard for microcomputer use. This clever design uses a single sided PCB to connect the switches and the encoder IC and few links are required. The kit includes 2 spare user definable keys and a metal mounting bracket to hold each switch accurately in place. The switches are supported on this bracket **not** on the PCB as with inferior designs. Spare mechanisms, cursor option and number pads are available.



KB05 encoded keyboard kit \$84.00
 KB06 cursor option \$4.95
 KB07 number pad \$11.95

EA2650 STARTERS KIT

Described in EA May, 1978, this is an ideal project ideal for the beginner or educational applications. The kit comes complete with all instructions for assembling and running the 2650 computer, all components including 2650 microprocessor, PIPBUG ROM and 1K of RAM. The kit can be expanded to 4K and requires a serial terminal such as the EA LOW COST VDU detailed below. Sample programs are included for you to run and a cassette interface can be readily added so that programs can be stored on low cost cassettes.



EA2650 starters kit \$65.00

EA LOW COST VDU SELLOUT!

This low cost stand alone VDU was described in EA February, 1978. Accepts parallel ASCII input and produces 16 lines with 32 characters per line with onboard sync generation and video driver. Supplies direct video to a converted TV set or to an RF modulator if required. The kit includes sockets for the RAM and character generator IC's, all components plated thru PCB, and step by step instruction manual.

EA VDU sellout (until stocks cleared)
\$75.00 save \$22.50!!

All prices include sales tax and are subject to change without notice. Our full technical support and service backup is available on all these kits.

Mail Orders: Box 355, P.O. Hornsby 2077. Please allow \$2.00 towards post and packing.

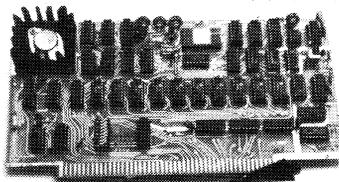
Applied Technology Pty. Ltd.,
 1a Pattison Ave., Waitara N.S.W.
 (9 to 5 Mon. to Sat.)

DG640 VDU ON S-100 BUS

A most professional unit for serious micro-computer users. Features 16 lines and 64 characters (32 with strap select), upper and lower case with chunky graphics and full S-100 bus standard.

This is not a half kit! The DG640 kit includes:

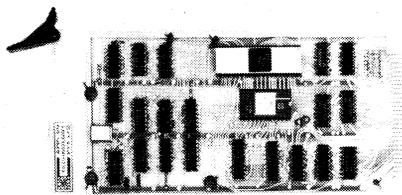
- professional quality plated thru hole PCB with hard gold edge connector.
- all prime quality guaranteed components.
- sockets for all integrated circuits.
- 12,000M/C crystal.
- comprehensive owners manual (54 pages) describing assembly, troubleshooting, and operating software for 2650, Z80, 8080, 6800.



DG640 kit \$149.50 (PCB with manual \$35.00)

EUROCARD 2650 SINGLE BOARD EXPANDABLE 2650 COMPUTER

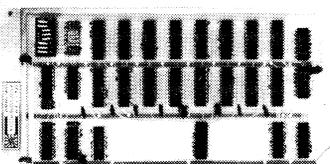
This professionally engineered 2650 single board computer is the answer to all those who want a systematically expandable computer system. The DB1001 uses a simple E58 bus which is readily adapted to S100 and Z80 bus requirements. The DB1001 uses the 2650A chip and has fully buffered address and data lines, on board 1K operating system in Eprom (PIPBUG SUPPLIED but easily reprogrammed), 1K RAM and a crystal controlled clock on a top quality plated thru PCB with hard gold edge connector. Readily expanded on the E58 bus for more memory, I/O and will accept floppy discs and high speed printer. The kit is supplied with all components, owners manual and full service backup. A conversion kit for the EA2650 is available.



DB1001 single board computer \$135.00
 (\$35.00 PCB with manual)
 DB1001/EA2650 conversion kit \$99.00

DB1008 8K STATIC 2114 RAM

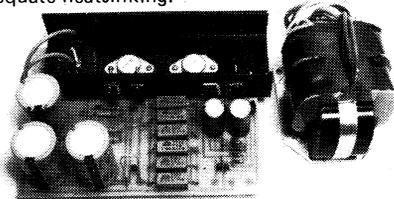
A very useful add on memory module to support the DB1001 computer on the E58 bus, this 8K RAM is fully buffered and has been arranged as 2 4K blocks with DIP switch address boundary selection. The kit is supplied with all components, sockets for all memory IC's and a plated thru PCB with hard gold edge connectors and full instruction manual.



DB1008 8K memory kit \$175.00
 (\$35.00 PCB with manual)

EPS100 ECONOMY POWER SUPPLY

This popular modular power supply kit is ideal for use with micros. Based on the EA "BRUTE" power supply the EPS100 supplies 5V @10A regulated, +, - 12V @1A regulated as well as unregulated 8V, +, - 16V for the S100 BUS. The module includes an on board heatsink which must be mounted on a suitable metal case for adequate heatsinking.



EPS100 power supply kit \$60.00

ET1632 UART/BAUD RATE GENERATOR

Converts serial to parallel and parallel to serial. This low cost baud rate generator can be set for any speed from 50 to 9600 BAUD (continuously adjustable with multi turn trimpot) and can be set for 5 to 8 bits per character with 1 or 2 length stop bits. Requires +5V, -12V. and kit includes all components and 40 pin socket.

632U with full instructions \$18.50

ETI 630 HEX ENCODER/DISPLAY

This simple kit includes a pair of 4 bit encoder/latches driving large .5" digits to display the HEX equivalent of any 8 bit data word. Ideal for troubleshooting and also programming in machine code.

ET1630 HEX DISPLAY \$14.50

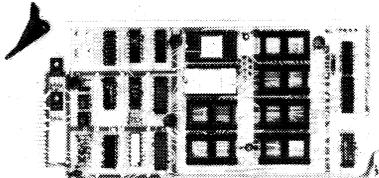
SECI CASSETTE INTERFACE

This reliable unit is easily aligned without a CRO and is KANSAS CITY STANDARD useable up to 1200 Baud. The SECI uses top quality multitrans trimpots for accurate long-term timing adjustments and is supplied with the clock preset to 4800 Hz. A computer generated test tape is included so that you can readily check the operation at any time. Connects directly to a low cost tape recorder and has TTL level input/output for connection to the microprocessor. Requires +5V and provision for optional regulator has been made on the PCB.

SECI Cassette interface kit \$24.50

DB1048 4/8K ROM BOARD WITH HIGH SPEED CASSETTE INTERFACE

This card supports the DB1001 on the E58 bus and has provision for 2708 or 2716 EPROMS. Included on the board is a software controlled cassette interface (300 characters/sec!) controlling two tape recorders with full file handling. The DB1048 is supplied with a preprogrammed EPROM with the tape interface software, a utility tape with useful routines, all components, plated thru PCB and owners manual.



DB1048 ROM Board/Cassette interface \$130.00