

THE CATALOG 1981



Apparat, Inc.

“TOTAL COMMITMENT TO QUALITY, SATISFACTION AND SERVICE”



Apparat, Inc. is a dedicated group of professionals who manufacture, distribute and support many different hardware and software products for microcomputers. Selling Apparat manufactured products and brand name merchandise for many years, Apparat has grown at a dynamic pace, to become one of the leaders in the industry.

From its inception, Apparat has emphasized Quality, Satisfaction, Service and Dependability, plus price consciousness, maintaining a reputation respected industry wide.

Our continuing goal is to provide high quality products, technical support, equipment service and a total commitment to serving you, the microcomputer user; all at the best value possible for your money.

We would like to thank each and every customer for making Apparat a leader in the industry and for allowing us to serve you.



MOST ORDERS SHIPPED UPS SURFACE - FREE

All orders shipped within 2 business days -

We will notify you if out of stock

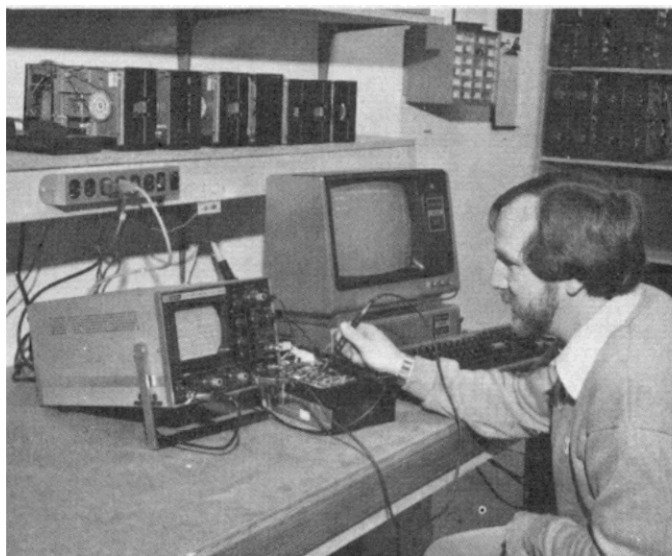
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APPARAT SERVICE CENTER*

Since the opening of our Denver Retail Store in late summer of 1980, APPARAT's highly trained, qualified service personnel have quickly developed and maintained a reputation for fast, thorough service without sacrificing quality. Our Service department takes pride in having equipment repaired, tested and back on its way to you within 48 hours of receipt, at reasonable rates for parts and labor, with customer satisfaction guaranteed. A partial list of equipment which APPARAT's service staff specializes in repairing contains such names as:

- | | |
|------------------|---------------------|
| ● APPLE | ● NEC SPINWRITER |
| ● ANADIX | ● OKIDATA |
| ● CENTRONICS | ● PERCOM |
| ● COMMODORE PET | ● PERSCI |
| ● DIABLO | ● PERTEC |
| ● EPSON | ● SHUGART |
| ● GENERAL ELECT. | ● SIEMENS |
| ● HAZELTINE | ● SOROC |
| ● HEATHKIT | ● TANDON |
| ● LEAR SIEGLER | ● TEAC |
| ● MICROPOLIS | ● TEXAS INSTRUMENTS |
| ● MICROTERM | ● TRS-80 |
| ● MPI | ● WANGCO |



IMPORTANT: Prior to shipping, call APPARAT to get a Return Authorization Number, which greatly expedites your order. Be sure to display prominently.

*Whether you purchased equipment from Apparat or elsewhere, let us solve your repair problems with fast, efficient, guaranteed service.

The TRS-80® Model III is Radio Shack's exciting new personal and business computer, replacing its highly successful Model I.

This fully expandable completely self-contained desk-top unit starts with a 4K Level I system and expands with your needs and with plenty of room for more memory.

RS-232 communications interface (for Level I) plus 1500 baud tape input under the Model III BASIC are some of the many features. Most Model I application software will run directly on the Model III under NEWDOS/80.

Level I or Model III BASIC in ROM includes:

- 4-48K memory
- 1500 baud Model III BASIC only and 500 baud cassette interface
- Parallel Printer Port
- RS-232 allows up to 4 mini disk drives providing up to 700K new bytes of storage each
- Z80, 1.8 MHz Processor and
- 64X16 Screen



COLOR BASIC. Disk storage and other additions are available. The Color Computer features:

- Color BASIC or Extended Color BASIC in ROM
 - 4K to 16K memory
 - 1500 baud cassette interface
 - RS-232 serial port
 - Joysticks, printers, disk expansion
 - 6809E microprocessor and
 - 32X16 screen
- Cat# 1-004..... \$375.00

TRS-80® Model II, Radio Shack's top-of-the-line small business computer, includes an 8" floppy disk, and twice the operating speed of Model I. Inexpensive business related software and accounting functions, plus SCRIPSIT® lets you put Model II to work immediately. ASSEMBLER, COBOL, FORTRAN, and BASIC compilers allow in-house programming. Can operate under CP/M and MP/M as a slave or single/multi-station master. Features include:

- 32K or 64K memory
 - 1 to 4, 8" Disk Drives (500K each, 600K each with CP/M)
 - Parallel Printer Port
 - Two RS-232C Serial Ports
 - Processor - Z80A; 4MHz and
 - 80X24 Screen
- Cat# 1-002..... \$3510.00



- 4K Model III, Level I
Cat# 1-308..... \$665.00
- 16K Model III, BASIC
Cat# 1-174..... \$949.00

- 48K Model III with two 40 track disk drives
Cat# 1-155..... \$2370.00

The **TRS-80® Color Computer** offers vivid color graphics for exciting visual displays covering a wide range of applications from personal finance to fast-moving action games via instant-load program pacs.

Attaches easily to any color TV. Programming is in COLOR BASIC or the very powerful EXTENDED

Radio Shack announces a battery-operated fully programmable personal computer that fits in the palm of your hand! The **Pocket Computer** loads programs from cassettes, or by using a modified, feature-packed BASIC allows you to write your own, keeping memory intact with the power off. An invaluable tool for today's professional and business persons, the Pocket Computer features:

- BASIC Language in ROM
 - 1.9K Continuous Memory
 - Cassette storage with expansion interface
 - Two Chip Set - Processor and
 - 24 Character LCD Display
- Cat# 1-006..... \$225.00

PMC-80 MICROCOMPUTER

An alternative to the TRS-80 Model I, Level II Computer. The PMC-80 Computer uses the 12K BASIC ROM from Microsoft which means it can run any BASIC program for the Model I from Radio Shack as well as programs from other software suppliers for the Model I.

The PMC-80 comes with 16K RAM and a built-in cassette player. Its expansion bus is fully compatible with the peripherals available for the Model I such as the Expansion Interface which allows for RAM memory up to 48K, disk controller, disk drives, RS-232 and printer interfaces.

The PMC-80 will run Apparat's NEWDOS/80 and other Model I operating systems. This new version of the PMC-80 now incorporates a complete set of arrow keys (left, right, up, down) and a clear key. **Making the keyboard completely compatible with the Model I.**

FEATURES

- Software compatible: Level II BASIC and SYSTEM tapes.
- Hardware compatible: with PMC 40-pin Interface Adapter
- Video output for both TV monitor and TV set (ch. 3)
- Unitized construction - just plug into power outlet and TV.
- Integrated cassette recorder has automatic volume control.
- Complete operating, instruction and programming manuals.

PMC-80	
Cat# 1-034	\$625.00
Lower Case Model	
Cat# 1-035	\$75.00
Printer output	
Cat# 1-044	\$95.00
S-100 Bus Expander with disk, printer & RS-232 interfaces	
Cat# 1-045	\$399.00
Fast load cassette Interface to 8000 baud	
Cat# 1-046	\$149.00

- RS-232 and IEEE SWITCHING and MONITORING UNIT by Giltronix, Inc. Interface three to five devices to a single computer or terminal. Units maybe cascaded allowing interfacing of more than five devices. Optional monitoring of the basic handshaking signals is available.

GRS-8 (Switch 8 common lines)	
Cat# 1-614	\$139.00
GRS-24 (Switch 24 lines)	
Cat# 1-615	\$179.00



MODEL I: HARDWARE

- Model I Expansion Interface with 32K memory, increase your memory and add interfaces for printers and disk drives.
Cat# 1-008 \$449.00
- RS-232 Interface, for use with modems and serial printers.
Cat# 1-035 \$99.00
- Lower Case Modification, generates word processor type characters.
Cat# 1-036 \$59.00
- Level I to Level II ROM, upgrades the BASIC in ROM to the powerful Level II BASIC.
Cat# 1-037 \$150.00
- Numeric Keypad, adds calculator style keys for fast entry of numeric data.
Cat# 1-038 \$79.00
- Model I Carrying Case, protect your computer while transporting it.
Cat# 1-039 \$75.00

MODEL I OR MODEL III: SOFTWARE

- VISICALC
Cat# 2-081 \$99.95
- PROFILE
Cat# 2-129 \$79.95
- MICROFILES
Cat# 2-130 \$99.95
- VERSAFILE
Cat# 2-131 \$29.95
- SCRIPSIT
Cat# 2-066 \$99.95

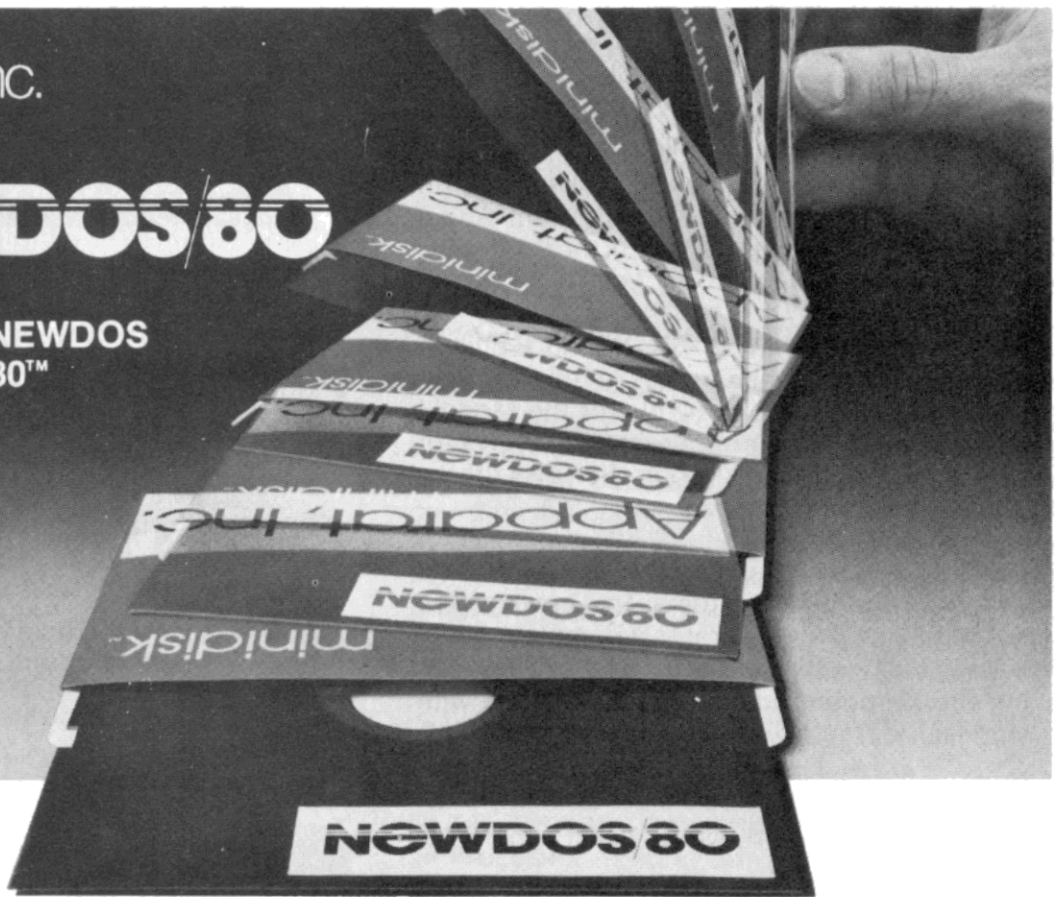
MODEL II: SOFTWARE

- PROFILE II
Cat# 2-132 \$179.00
- VERSAFILE
Cat# 2-133 \$69.00
- SCRIPSIT II
Cat# 2-134 \$299.00

Apparat, Inc.
introduces

NEWDOS/80

For the 80's —
an enhanced NEWDOS
for your TRS-80™
Model 1.



NOW AVAILABLE FOR MODEL III

Apparat, Inc., announces the most powerful Disk Operating System for the TRS-80®. It has been designed for the sophisticated user and professional programmer who demands the ultimate in disk operating systems.

NEWDOS/80 is upward compatible with NEWDOS 2.1 and is supplied on Diskette, complete with enhanced NEWDOS + utility programs and documentation. Some of the NEWDOS/80 features are:

- New BASIC commands that support files with variable record lengths up to 4095 Bytes long. Mix or match disk drives. Supports any track count from 18 to 96. Uses 35, 40 or 80 track 5" mini disk drives or 8" disk drives, or any combination.
- A security boot-up for BASIC or machine code application programs. User never sees "DOS READY" or ">READY" and is unable to "BREAK", clear screen, or issue any direct BASIC statement including "LIST".
- New editing commands that allow program lines to be deleted from one location and moved to another or to allow duplication of a program line with the deletion of the original.
- Enhanced and improved RENUMBER that allows relocation of subroutines.
- Powerful channing commands.
- Print Spooler.
- DFG function; simultaneous striking of the D, F and G keys will allow the user to enter a mini-DOS to perform some DOS commands without dis-

turbing the resident program (e.g. DIR while in Scripsit.)

- Includes machine language Superzap/80 and Apparat 2.1 utilities. New Disassembler
- Enter debug any time by pressing 123 keys. Also allows disk I/O.
- Diskette "Purge" command.
- Specifiable system options (limited sysgen type commands).
- Increased directory capacity.
- Copy by file commands.

MODEL I

NEWDOS/80 with all of the NEWDOS + utility programs, many of which have been enhanced, is priced at just \$149.00 and is available at most TRS-80 dealers.

Cat# 2-010 \$149.00

MODEL III

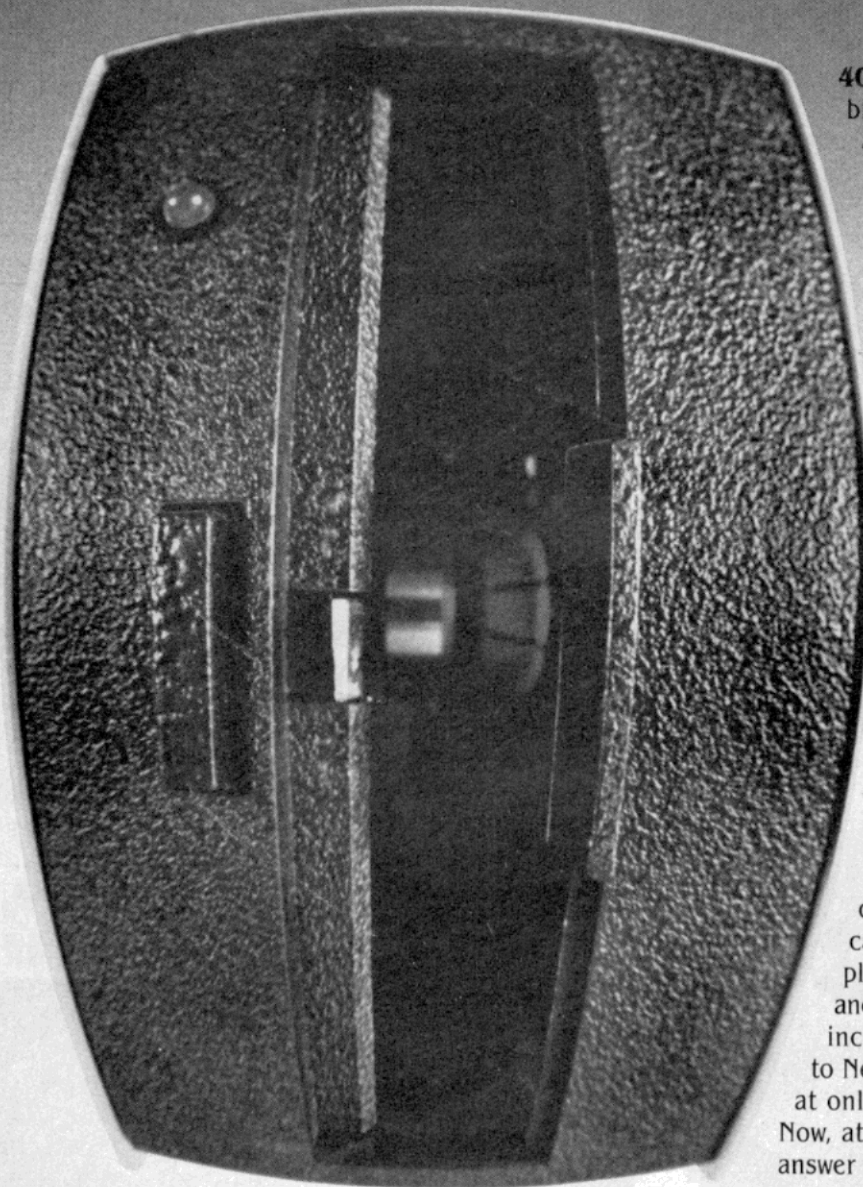
- The features of Model I on the Model III.
- Offers double density for twice the storage capacity of the Model I. NEWDOS/80 allows any mix of single or dual sided 40 or 80 track drives.
- Most BASIC and many assembly language programs written for the Model I will run without modification on the Model III. Includes a copy utility to convert Model I single density to Model III double density.

Cat# 2-001 \$149.00

NEWDOS/80 relies on the TRSDOS and Disk Basic Reference Manual published by Radio Shack. NEWDOS/80 documentation supports its enhancements and upgrades only.

APPARAT INTRODUCES

Now even more bytes per buck



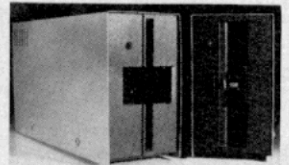
405 K/bytes of storage. Apparatus has combined its Newdos/80 operating system and a dual-sided 80 track mini-floppy drive to give you 405,000 bytes of storage in a single volume. Modification patches to Newdos/80 expands the capability of single density drives, so you'll have greater applications for your TRS-80 model 1.[®]

Drives plug directly into an expansion interface with no modification required so you can now have over 1 megabyte of storage on-line with standard mini-floppy diskettes. Each drive has 316 free grams, for a total of 948, on a maximum of three 80 track drives, which can be added to a TRS-80.


Upgrading to double density is possible by running under most double density controllers, (e.g. Percom's Doubler).

These drives can "read" standard 35 or 40 track diskettes with special software that skips every other track.

Drives come complete with case, power supply, interface cable and documentation including patches



to Newdos/80. The drive mechanism is priced at only \$699 (Cat. No. 1-705, specify I or III). Now, at 579 bytes per buck, it just might be the answer to your storage problems.

 **Apparatus, Inc.**

4401 So. Tamarac Parkway, Denver, CO 80237 (303) 741-1778



Now available for model III, 728K bytes of storage.

DISK DRIVES

- The TANDON TM 100 5¼ INCH FLOPPY DISK DRIVE is the drive mechanism used by Radio Shack in the TRS-80 model I and III computers. The patented double sided read/write head is the acknowledged industry standard, being used in more mini-floppy drives than any recording head. The TM 100 has field-proven dependability with over 200,000 drives performing with unparalleled read/write reliability and data integrity. Apparatus is pleased to offer these drives with power supply and chassis, fully checked out on the TRS-80 Models I and III.

MODEL I DISK DRIVES

with power supply and chassis:

40 TRACK

Tandon single sided	
Cat# 1-702	\$339.00
Shugart single sided	
Cat# 1-701	\$339.00
Tandon double sided	
Cat# 1-703	\$499.00

80 TRACK

Tandon single sided	
Cat# 1-704	\$549.00
Tandon double sided	
Cat# 1-705	\$699.00

Two drive standard cable

Cat# 1-714	\$29.95
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Four drive standard cable	
Cat# 1-715	\$39.95
Extender Cable	
Cat# 1-744	\$16.95

MODEL III DISK DRIVES

with external power supply, chassis and controller:

40 TRACK

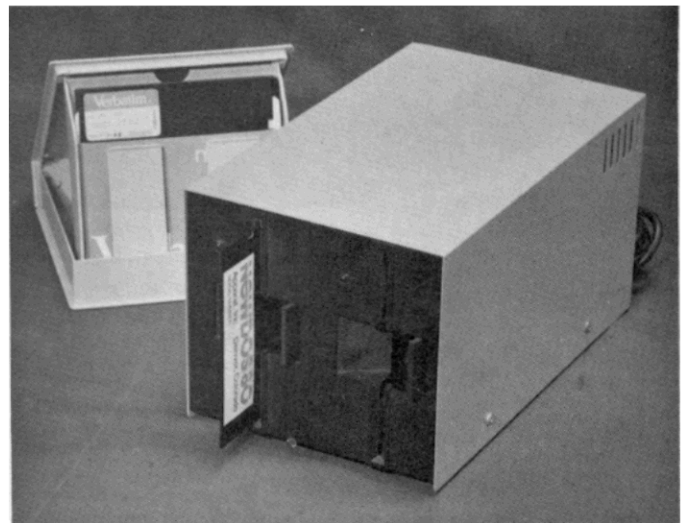
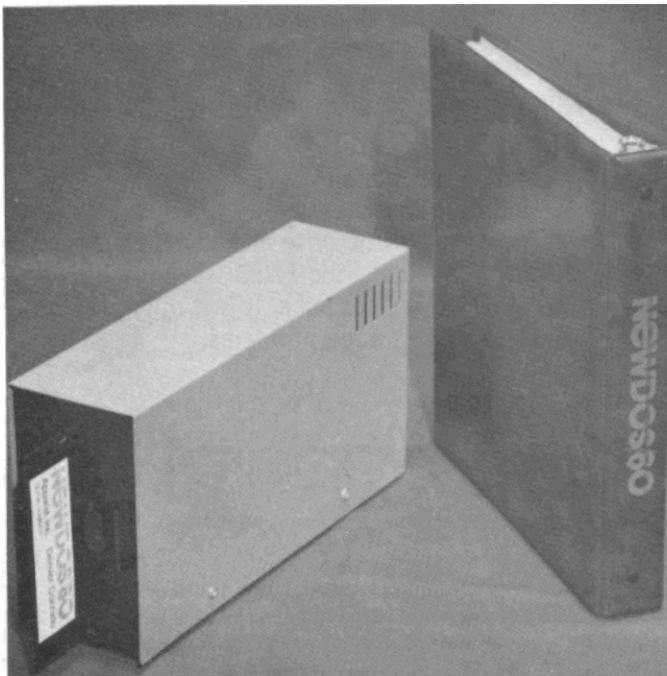
Tandon single sided	
Cat# 1-732	\$699.00
Shugart single sided	
Cat# 1-733	\$699.00
Tandon double sided	
Cat# 1-734	\$759.00

80 TRACK

Tandon single sided	
Cat# 1-735	\$849.00
Tandon double sided	
Cat# 1-736	\$949.00

Drive is mounted in a dual drive cabinet. Includes drive cable.

Optional four drive cabinet with power supply
Cat# 1-730 Additional \$59.00



DISK DRIVES

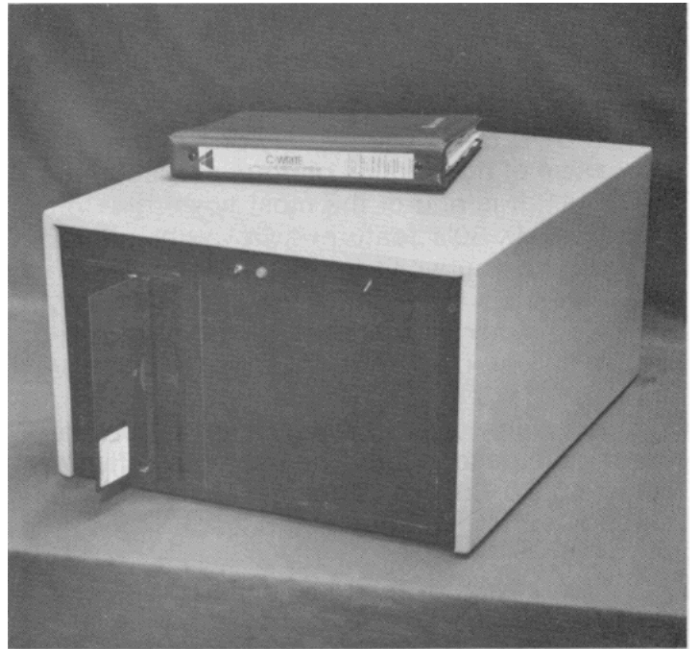
Additional drives without chassis or power supply:

Tandon single sided 40 Track	
Cat# 1-737	\$259.00
Shugart single 40 Track	
Cat# 1-738	\$259.00
Tandon dual 40 Track	
Cat# 1-739	\$379.00
Tandon single 80 Track	
Cat# 1-740	\$399.00
Tandon dual 80 Track	
Cat# 1-741	\$499.00

Internal disk drive kit. Includes chassis, controller, mounting hardware and cables.

Cat# 1-731	\$449.00
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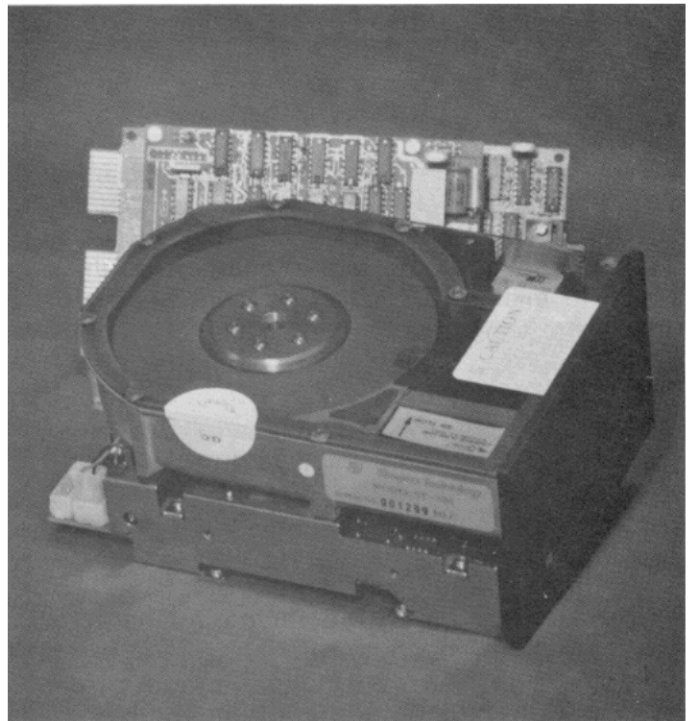
(Does not include disk drives. Select drives of your choice from those above.)



- **SINGLE DRIVE EXPANSION/TRIPLE CABINET -**
The Model II's attractive Shugart SA801 drive housed in a triple drive cabinet. (May also be used in a Model I 8" floppy disk) Self-contained power supply and cabling accommodates expansion to full complement of drives.
 Cat# 1-725..... \$1095.00
- **DOUBLE DRIVE EXPANSION/TRIPLE CABINET**
Same as above with two Shugart eight inch drives.
 Cat# 1-726..... \$1545.00
- **TRIPLE DRIVE EXPANSION/TRIPLE CABINET-**
Same as above with three Shugart eight inch drives.
 Cat# 1-727..... \$1995.00
- **ADDITIONAL DRIVES for the EXPANSION/TRIPLE CABINET.** Power supply, cabling, case not included.
 Cat# 1-728..... \$479.00

WINCHESTER DISK DRIVES

- **HARD DISK EXPANSION SYSTEM - CAMEO 10** megabyte fixed/removable hard disk expansion system for the Model II. Includes hard disk, hardware interfacing, cabinet, and modifications for TRSDOS
 Cat# 1-729..... \$6800.00
- Watch for our 5¼ Winchester Disk System with Controller, available in Spring/Summer 1981. Optional tape or floppy disk back-up.



PRINTERS

EPSON

(Free Cable with every Printer - Specify Computer Type)

MX-80

● The EPSON MX-80 is not only one of the least expensive of the parallel printers available from APPARAT, it is one of the most powerful! Compare the MX-80's features with other printers around and you won't find another printer that offers so much for so little! The MX-80 has a 50 million character life print head and can be replaced by the user for less than \$30.00. It prints 96 ASCII, 64 TRS-80 graphic, and 8 international characters in a crisp 9x9 matrix which provides lower case descenders. The user can software select 40, 80, 66, or 132 column character sizes and the printer puts them on paper at a fast 80 CPS bidirectionally with logic seeking! The MX-80's built in tractor feed mechanism will adjust from mailing label size up to 10" wide paper. All of that plus front panel line and form feed control and a built in self-test mode. A new option soon to be available is an upgrade allowing high resolution dot matrix graphics!! Hard to believe that a

printer that offers so much for so little is available! It is at APPARAT for only:

Cat# 1-403 \$645.00

MX-70

● If the low price of the MX-80 is still over your budget, try the new MX-70. Many of the same features of the MX-80 such as 64 TRS-80 graphics blocks and dot matrix graphics are still offered but it prints a 5x7 matrix character at 80 CPS unidirectionally. EPSON removed the front panel line and form feed switches and lowered the price even more!! Available from APPARAT for only:

Cat# 1-416 \$449.00

● Watch for the announcement of a new "full size" printer from EPSON in the late spring. It will have all the features of the MX-80 but will accept up to 15" wide paper!! Price expected to be under:
\$1000.00

ANADIX

DP-9500/DP-9501

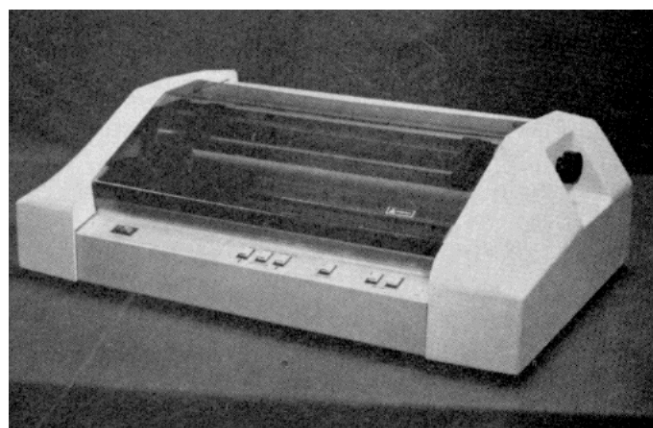
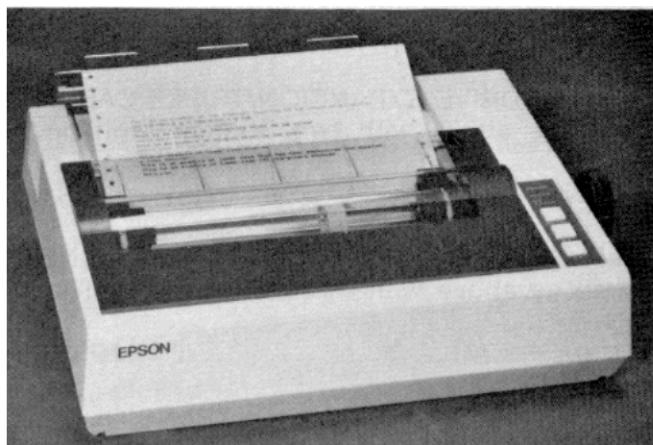
● The DP-9500 and DP-9501 printers offer 132/158/176 and 132/165/198/220 column printing, respectively, featuring the full standard ASCII 96 character set as well as high-resolution graphics. The 650 million character life print head zips across the paper at a rate up to 200 CPS and the printer offers a standard 600 character FIFO buffer with an additional 2K plug in buffer option available. The three ASCII compatible interfaces (parallel, RS-232-C, and 20 ma current loop) are standard providing fully software controllable features such as: 1.)6 or 8 lines per inch vertical spacing; 2.)Form length and width; 3.)Skip-over-perforation; 4.)Auto line feed (on/off); 5.)Vertical and horizontal tabs; 6.)Underlining; 7.)Character size; and much much more. Tractor feed is adjustable from 1.75 to 15.6 inches. Featuring front panel control of line and form feed, top-of-form setting, and a self-test feature that prints out a complete status of all selectable functions. All of this and more, available from APPARAT for only:

DP 9500

Cat# 1-400 \$1399.00

DP 9501

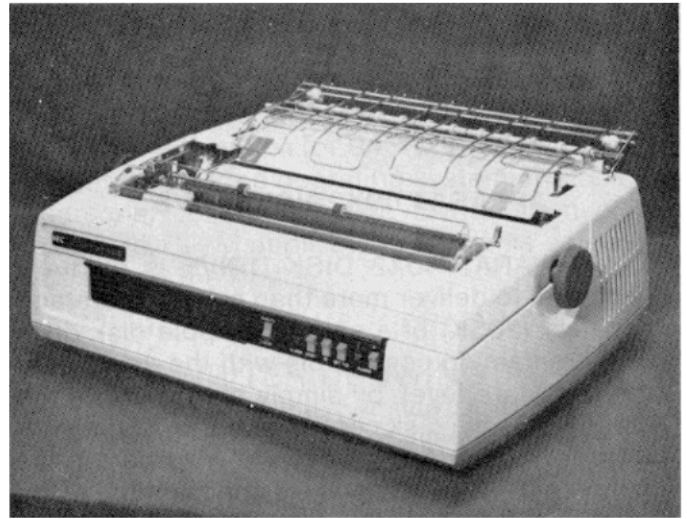
Cat# 1-401 \$1399.00



NEC SPINWRITER

- For the person looking for a high quality word processing printer, APPARAT offers the perfect solution - the NEC Spinwriter! The Spinwriter is available as a serial (Model 5510) or parallel (Model 5530) printer that prints at up to 55 CPS. The Spinwriter's unique light-weight printing "thimble" is made of fiberglass reinforced plastic consisting of 64 cylindrically arranged fingers. There are over 30 easily changeable thimbles available as well as an all black multi-strike film ribbon. If you are looking for the best in word processing printers, look no further. Available at APPARAT for only:

Cat# 1-405..... \$2549.00

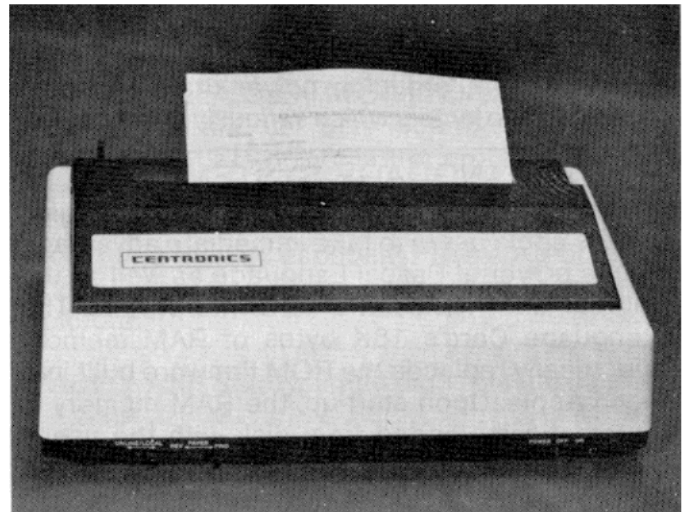


CENTRONICS

737-1

- Why not get the "Line Printer IV" at an APPARAT price? The 737-1's 7X9 dot matrix produces a quality print at a much lower price that approaches the quality provided by an impact printer. This parallel printer offers up to 80 CPS with four character sizes including underlining and bidirectional line feed control. The 737 offers friction feed or 9½" pin feed paper handling. The right margin justification mode allows near typeset quality at a low cost. See the FLEXTEXT ad for a sample print example. This highly popular printer is available from APPARAT for only:

Cat# 1-402..... \$839.00



OKIDATA

MICROLINE 80

- Okidata's MICROLINE 80 offers a quality 9X7 dot matrix head that is warranted for 200 million characters. It prints the full ASCII 96 character set and the full TRS-80 64 character graphics set at 80 CPS. The MICROLINE 80 offers software controllable features such as 6 or 8 lines per inch as well as four character sizes. Paper can be either friction fed or pin fed and an optional tractor feed is available. It comes standard with a parallel port but an optional serial RS232 interface is available. The Microline 80 is available for only:

Cat# 1-404..... \$525.00

Tractor feed option

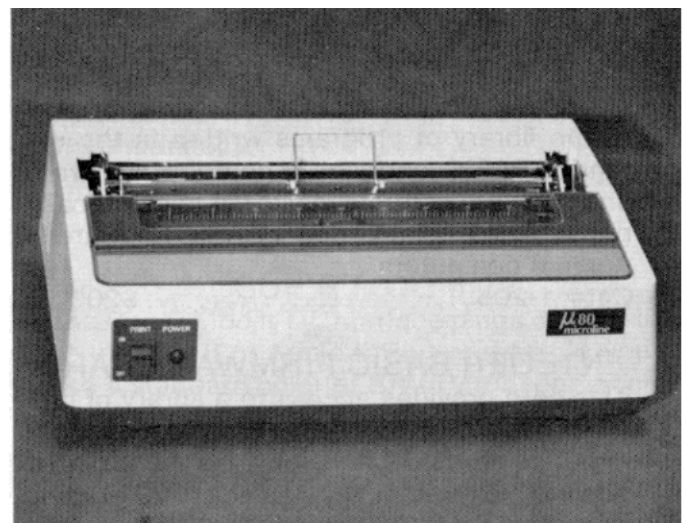
Cat# 1-408..... \$130.00

MICROLINE Model 82 adds bidirectional printing capabilities to the Model 80

Cat# 1-417..... \$699.00

MICROLINE Model 83 has 120 CPS bidirectional printing, 15 inch wide carriage and includes tractor feed.

Cat# 1-418..... \$1049.00



APPLE ADD-ON HARDWARE/SOFTWARE

APPARAT 40X2DISK DRIVE

- The APPARAT 40X2 DISK DRIVE is uniquely designed to deliver more than twice the storage capacity (205K) of a standard Apple disk drive while remaining compatible with the Apple II. At the hardware level by simply plugging into the standard Apple disk controller card. At the software level any Apple software will operate the Apparat 40X2 in exactly the same manner. At the media level any disk written on an Apple drive can be read by the Apparat 40X2 and vice-versa. Therefore, DOS, PASCAL, FORTRAN, Z80 soft-card, Visi-calc, etc., are applicable instantaneously. The Apparat 40X2 has its own integral power supply, reducing power drain and heat buildup -- two factors which seriously affect Apple's

performance. It has a double headed drive with 40 tracks per diskette side, the first 35 tracks corresponding to Apple's standard tracks. In order to use these extra tracks and the other side of the disk, special firmware is required, developed by Apparat, for use with Apple DOS 3.3. Firmware for use with DOS 3.2 and PASCAL is optional.

Cat#: 1-724 \$675.00

* Also available:

40 track single sided (102K)

Cat# 1-742 \$499.00

80 track double sided (410K)

Cat# 1-743 \$839.00

LANGUAGE SYSTEM

- This package includes the Language Card, which allows apple users to take immediate advantage of the powerful Pascal Language as well as the Integer and Applesoft BASIC interpreters. The Language Card's 16K bytes of RAM memory electrically replaces the ROM firmware built into each Apple. Upon start-up, the RAM memory is automatically loaded from disk with the user's choice of language, then electrically protected from change. Includes diskettes containing a language selection "Hello" program, Pascal, Applesoft BASIC, and all reference manuals.

Cat# 1-203 \$495.00

APPLESOFT FIRMWARE CARD

The Applesoft Firmware Card provides access to the library of programs written in the extended BASIC language. It contains hardware and software controls to allow it to electrically replace the existing Integer BASIC firmware in Apple II computers.

Cat# 1-205 \$200.00

INTEGER BASIC FIRMWARE CARD

This card provides access to a library of programs written in the Integer BASIC language. It contains hardware and software controls to allow it to electrically replace the existing Applesoft BASIC firmware in Apple II Plus computers.

Cat# 1-204 \$200.00

PROGRAMMERS AID #1

- Apple developed this set of ROM-based program routines to make it even easier for you to program in integer BASIC. The Programmer's Aid #1 includes Renumbering, Merging, Tape Verification, Memory Test, Musical Note Generation, and High-Resolution Graphics routines. An added bonus is the ability to relocate 6502 machine-language programs. This ROM is available for the original Apple II only. Apple II Plus owners must purchase the new Integer BASIC Firmware Card which includes the Programmer's Aid #1.

Cat# 1-277 \$50.00

DOS 3.3 TOOL KIT

- Includes the Applesoft Tool Kit and the Assembler/Editor to help utilize the full capabilities of the Apple II. This Kit is intended for the Experienced DOS 3.3 user (will not work on DOS 3.2). Also has the Hi-Res Character Generator, the Relocating Loader, and three demonstration programs.

Cat# 2-411 \$75.00

CENTRONICS PARALLEL INTERFACE

- The Centronics Parallel Interface Card includes cable and connector. Will interface with almost any printer that uses the Centronics parallel interface.

Cat# 1-207 \$225.00

PARALLEL PRINTER INTERFACE

- Designed to be used with printers that have parallel interfaces, it can also be used as a general 8-bit parallel output port. Selection from 40 to 255 column output and simultaneous output to printer and screen.

Cat# 1-206 \$180.00

COMMUNICATIONS INTERFACE

- Allows the Apple to be connected to a modem for use as a terminal in either full or half-duplex modes at either 110 or 300 baud. A perfect mate for the Novation CAT modem, the Com Card allows you to transfer programs over the phone.

Cat# 1-224 \$225.00

RS232 SERIAL INTERFACE

- Designed specifically for high-speed printers, though it can also be used for half-duplex communications at rates from 75 to 19,200 baud. It can automatically add a line feed to a carriage return or a carriage return delay to aid in interfacing almost any printer with serial interface. Input for the Apple II can be taken either from an external device, or from the Apple's keyboard, or from both simultaneously.

Cat# 1-223 \$39.95

WIREWRAP PROTOTYPING INTERFACE CARD

- Construct your own custom-designed interface circuits to plug into the Apple II bus.

Cat# 1-225 \$39.95

MICROSOFT RAM CARD

- Add 16K RAM to you Apple II with the addition of this card. Used in conjunction with the Microsoft Softcard, this card allows usage of 56K CP/M. Also allows loading of Integer BASIC from standard DOS 3.3 System Master, just as if there was a Language Card.

Cat# 1-218 \$195.00

MICROSOFT SOFTCARD

- Add the capabilities of running Z80 Microprocessor programs on your Apple. Includes CP/M 2.2 and Microsoft BASIC 5.0 which meets the ANSI qualifications for BASIC. CP/M is the most widely supported operating system available for personal computers. With the addition of the softcard, CP/M application programs can easily be run on the Apple.

Cat# 1-217 \$349.00

VERSAWRITER DRAWING TABLET

- VersaWriter is an inexpensive alternative to the Apple Graphics Tablet that allows for creation of full-color, high resolution graphic images. Images may be stored on disk, rotated, shrunk, enlarged, or even imbedded in programs. Includes two diskettes containing plotting and applications software. Requires at least 32K.

Cat# 1-226 \$252.00

LEEDEX MONITORS

- Three different 12" B/W monitors and a Color monitor that are designed for professionals and priced for the hobbyist. These highly reliable monitors feature a 12 MHz bandwidth for an 80 X 24 line display capability. The solid state circuitry assures a sharp, stable, and trouble free picture.

VIDEO 100: Sturdy, lightweight plastic cabinet

Cat# 1-609 \$169.00

VIDEO 100-6: Same as the 100 but Green Phosphor

Cat# 1-610 \$189.00

VIDEO 100-80: Rugged metal cabinet with mounting capability for a floppy disk drive and space for an 11" X 14" PC board for custom designed electronics.

Cat# 1-611 \$199.00

COLOR MONITOR: 13" High Resolution Solid State monitor

Cat# 1-612 \$399.00

SUP R MOD II

- The Sup R Mod II TV Interface plugs directly into your Apple II or Apple II Plus and allows you to use a standard color or B/W TV for your display. Operating on UHF channel 33, the package includes a coaxial cable and antenna transformer to insure safe isolation with a standard home TV set. Requires assembly

Cat# 1-208 \$29.95

BLUEBOOK SERIES

QUALITY

That elusive essence of professionalism which takes years to acquire has been captured once again by APPARAT's quest for excellence in an innovative series called BLUEBOOK. Reasonably priced hardware and software packages including advanced word processing, intelligent software packages and professional accounting systems (to illustrate just the tip of the iceberg) proudly stand beside NEWDOS/80 and APEX as powerful tools for TRS-80, APPLE, CP/M and MP/M systems. APPARAT is QUALITY. And we're proving it everyday with products presented in the BLUEBOOK series.



- **TRS-80 BUS EXTENDER** provides six slots supporting cards up to 3×5 inches. Can be connected to the TRS-80 Models I and III, enabling optional hardware additions. Connectors, 5 and 12 volt power supply, and an attractive metal case are provided. Specify Model I or III for appropriate cables. (NOTE: Most APPARAT hardware add ons for the TRS-80 can be plugged into the Bus Extender).

TRS-80

Cat# 1-025 \$169.00

- **DATA SEPARATOR** eliminates disk data errors which can occur on the TRS-80 Model I, especially in the densely packed inner tracks. One reason for these errors is the inability of an internal circuit in the FD1771 disk controller chip to function properly under some circumstances. APPARAT'S DATA SEPARATOR simply plugs into the expansion interface and solves the problem. No modifications are required to your Model I hardware or software.

TRS-80

Cat# 1-027 \$29.95

- **PROM BLASTER** programs 25XX and 27XX parts in the 1 to 4K range as well as single (5V) and multi-voltage types by using a 16 pin jumper which configures the programmer to the appropriate PROM type. A zero insertion force socket is provided for the PROM. Utility routines are provided for each PROM type to read, write and verify from/to any range of memory. Only a portion of a PROM may be written enabling programming even if it is not blank.

TRS-80

Cat# 1-022 \$149.00

Apple

Cat# 1-220 \$149.00

- **CLOCK CALENDAR/APPOINTMENT SCHEDULE** provides clock/calendar functions of hr/min/sec in a 12 hr format (AM or PM) and mo/day/yr/day of week, with (and here's the difference!) user's choice of two output modes, program requesting time/date, or time/date can be DMAed and automatically displayed. ALSO includes capability of setting approximately 100 time/dates which cause an interrupt upon matching time/date of theclock/calendar. A BASIC program can maintain an appointment schedule for one or more people, or alert persons to perform certain tasks.

TRS-80

Cat# 1-021 \$169.00

Apple

Cat# 1-219 \$169.00

- **REAL TIME EXPERIMENTOR MULTI-PROCESSOR** contains a National COPS 402 processor with 20 I/O lines, serial I/O, counter, 2716 PROM with 2048 bytes for program instructions and 1064 nibles (4 bits) of RAM. Included is a cross assembler and sample program source showing utility routines which handle I/O, memory, and other features. The COPS 402 may be read from or written to, may interrupt, or DMA (on Apple) to any place in the memory of the processor. May be used for any real time or process control requirements by incorporating a clock/timer routine.

TRS-80

Cat# 1-023 \$159.00

Apple

Cat# 1-221 \$159.00

- **SPEECH I/O HARDWARE MODULES** which allow speech (using a phoneme generator), Morse code, or alphanumeric data to be entered, digitized, stored, and reproduced will soon be available with applications for games, business, communications and many other activities. Support software is included with many application software packages available. Watch for announcements concerning applications and availability (for TRS-80 and Apple). Custom programming of voice output for commercial use will be offered.

- **APPARAT'S SCIENTIFIC ARITHMETIC PROCESSOR (ASAP)** provides faster processing of scientific functions when volume of calculations (number crunching) is beyond the computer's capacity during an acceptable time period. Handles interger or floating point numbers to 9½ digits of accuracy. Available are the following scientific functions: sin, cosin, tangent, logs, square root and many more.

Software designed to interface ASAP functions into BASIC or assembly language programs are provided.

TRS-80	
Cat# 1-024	\$399.00
Apple	
Cat# 1-222	\$349.00

- **INTEGRATED SALES & INVENTORY:** A total Manufacturer's Inventory Control System. Easy to use modular construction allows interfacing with Invoicing and Accounts Receivable. Manages inventory, sales and receivables with ease. Comfortably handles inventory as products comprised of components contained in the inventory. The system consists of the following modules which may be purchased separately:

Invoicing and Sales Subsystem

Model I/III	
Cat# 2-188	\$175.00
Model II	
Cat# 2-119	\$250.00
Apple Model II	
Cat# 2-427	\$175.00

Manufacturing Inventory Control Subsystem

Model I/III	
Cat# 2-120	\$175.00
Model II	
Cat# 2-121	\$250.00
Apple Model II	
Cat# 2-428	\$175.00

Accounts Receivable with Labeling Subsystem	
Model I/III	
Cat# 2-122	\$200.00

Model II	
Cat# 2-123	\$300.00
Apple Model II	
Cat# 2-429	\$200.00
Integrated Sales and Inventory System	
Model I/III	
Cat# 2-124	\$500.00
Model II	
Cat# 2-125	\$700.00
Apple Model II	
Cat# 2-430	\$500.00

- **PASCAL LEDGER** is a collection of programs that allows the user to have a complete computerized General Ledger system. It performs most of the tasks usually associated with computerized versions of the General Ledger system including: Up to 250 User Definable Accounts - Financial Reporting - Transaction Entry - Automatic Posting - Password Protection - Customization of Printer and Screen Characteristics for Turn-Key operation.

Included in the PASCAL LEDGER are the two system diskettes and complete documentation that shows step-by-step useage of the Pascal Ledger including Normal Daily Cycle, End-of-Week Cycle, End-of-Month Cycle, End-of-Quarter Cycle, End-of-Year Cycle. This General Ledger system is completely menu driven and does not require ANY computer programming knowledge. Comes already personalized with the user's company name installed on the system disks.

Cat# 2-431 for Apple II	\$149.00
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- **C-WRITE** is a CPA Client Write-Up System designed for use by professional accountants. Not a "warmed over" in house accounting system; this is a full accountants system designed for client batch entry. CP/M 8" standard disk.
 Cat# 2-821

- **"BIONIC BASIC"** selectively implants modules directly into your Basic, significantly increasing its power and usefulness. You may choose any of the following implants or use all, as you see fit.

BASIC STARTER PACKAGE, FEATURES

A flashing and/or repeating cursor, with user-definable repeat rate & cursor character, and ability to switch the cursor and repeat on and off.

Move information from one area of memory to another, such as from screen to protected memory.

Chain programs - Run or load a new program with previous program variables intact.

Labels and numeric instructions with GOTO or GOSUB statements.

Change strings from upper to lower case and vice-versa.

Alter the "RESTORE" command allowing specific line reading instead of the program's first data statement.

Two other BIONIC BASIC packages are also available:

"Editing Features" package allows you to: Search program text for a specific string or Basic keyword, move blocks of lines within a program, and compress resident programs by deleting unwanted spaces and remarks.

"Array Features" package allows you to: Redimension arrays, search an array for a specific entry, and sort any one-dimensional array, numeric or string, in ascending or descending order. (This sort is fast - one hundred items in less than a second!)

But the best feature of BIONIC BASIC is its modularity. You need only install those modules you want to install. If you find you do not need a particular module you can "pull" it at any time.

BIONIC BASIC starter package
Cat# 2-100 For TRS-80 Model I..... \$49.95
Editing Package
Cat # 2-101..... \$19.95
Array Package
Cat# 2-102 \$19.95
Special Offer - all three packages only
Cat # 2-103..... \$74.95

STOCK ANALYSIS is a user oriented set of programs for analyzing the following:

- The potential new and probable risk ratio of specific stocks
- The overbought/oversold condition of specific stocks.
- The overbought/oversold condition of the market in general.
- The running averages for specific stocks or for the Dow Jones Averages.

These routines will help you select stocks which meet your investment objectives.

Cat# 2-127 For TRS-80 \$49.95

- TRS-80 VOCAL SYNTHESIZER generates sounds from data files for the TRS-80 Synthesizer. Three output modes are available: Morse code, Spelled (both operate character by character), or Spoken (pronounces English or foreign language). Amazing results, considering the limitations of spelling versus pronunciation. (NOTE: Will also work with the Apparat synthesizer to be announced early summer.)

Cat# 1-026 \$49.00

- NEWTRIEVE replaces your BASIC sequential search with a machine language program. NEWTRIEVE is designed to be installed in any BASIC program that requires sequential searching of random access files for a particular string. NEWTRIEVE can search through 25,000 characters from the disk file to locate the string in question and identify the disk file record in which it is located in less than a second. Includes all documentation and sample programs. Also includes a utility program which simplifies installing NEWTRIEVE into your BASIC programs.

Cat# 2-090 For TRS-80 \$49.95

- SMART TERMINAL 80, an advanced, flexible, and unique program to make your TRS-80 an intelligent terminal for communicating with another TRS-80, FORUM 80's™, THE SOURCE™, MICRONET™, or any sophisticated mainframe system available to you.

Manuscripts, documents, etc., may be prepared for off-line transmission on-line in block form or in prompted line-by-line form.

SMART TERMINAL 80 will transmit and receive BASIC programs and Editor-Assembler files. It transmits not one but two auto log-on messages and incorporates a lower case driver which may be toggled on or off. It will open or close your buffer automatically or manually for storage of incoming data or for transmission generation, detect key-bounce, and you may format your screen for the line length YOU desire without regard for the line length transmitted by the other system.

SMART TERMINAL 80 can store more than 30K bytes of data in your memory depending on your system size. You may redefine keys in order to send special codes required by some systems such as the square brackets required by MICRONET. Everything coming in or going out may be sent to your printer when you command it. Communications protocol and parameters are at your fingertips and may be selected at will, including full or half duplex.

SMART TERMINAL 80 stands alone as a unique communications package and when combined with THE APPARAT CONNECTION will end your communication problems.

Cat# 2-104 \$79.00

- FLEXTXT II supports the NEC 5510/5520 Serial and the NEC 5530 Parallel Spinwriters while implementing all of the SCRIPSIT II special printing features, such as: space, word, and character justification, boldface, superscript, subscript, multi-column printing, single and double underlining, overstrike, strike-through, and SWAP. Also, FLEXTXT II allows alternate character sets (such as italics) available on some Spinwriter print thimbles, and switching between 10 and 12 pitch spacing during printing. FLEXTXT II is self contained, requiring no modification to SCRIPSIT II while it performs the initialization of the TRSDOS parallel or serial (also configuring the Model II, Channel B, RS232-C) printer drivers. Available for the Model II and Spinwriter.

Cat# 2-106 \$29.00

The TRS-80 Pocket Computer has been described as a solution looking for an application. Apparat announces the first in a series of application packages for the TRS-80 Pocket Computer - its Pocket-80® series.

The first offering in the Pocket-80 series is a games package. Games are not only fun, they are an introduction to what a computer - any computer - can do. The Pocket-80 Games Package will include:

- Guess - Guess the secret number. Not a sophisticated game by any means, Guess is included mainly to show how to simulate random numbers on the Pocket Computer.
- Hamurabi - The classic game where you rule the kingdom of Sumeria. This program, which will fit snugly into a 4K TRS-80 Model I, Level I, shows just how much you can get into a pocket computer!
- Safecracker - Another "Guess the Number" type game, this one has a twist; your mission is to open a safe, which could contain anything from the secret plans you came for to officer O'Malley of the FBI!
- Pig - A dice game that's fun, but watch out! The pocket computer is hard to beat!
- Psych - This one is also hard to beat; the Pocket Computer begins by randomly choosing "heads" or "tails", but as it goes along it begins making its decisions based on what you have guessed before.

Cat# 2-107 \$14.95

- CMDX PROCESSOR functions as an extension to the TRS-80 Model I and III 16K computers. Although it is usable on disk systems, it is especially designed for cassette only units. CMD (X) adds 10 commands to Level II or BASIC III systems; string search, hexadecimal conversions, memory & variable displays, renumber, alter RAM, etc.

Cat# 2-128 \$24.95

THE EXTENDER by Scott Knaster. With Apparat's new Apple software package, The Extender, you can use the full power of PRINT USING from Applesoft, determine the amount of free space remaining on a diskette from within your programs, generate automatic line numbers, and much more.

The Extender provides 15 powerful statements and functions to make Applesoft programming easier. These commands add to your capability in business applications, graphics, debugging, disk management, and advanced programming.

Here is a brief description of some of the commands provided by The Extender:

- PRINT USNG - Easily formats output in columns, with automatic rounding, floating dollar sign, asterisk fill, preceding or trailing sign, and more features than any other similar system.
- AUT - Provides computer-generated automatic line numbers.
- DEC and HEX - Provide built-in conversion between hex and decimal. These functions can be used with POKE, PEEK, and CALL statements for easy programming.
- DISKFR - Instantly computes the amount of disk space free on any standard DOS 3.2.1 or 3.3 diskette.
- EDIT - Allows easier editing of Applesoft program lines by providing full-width listings. Eliminates typing POKE 33,33 to eliminate spaces.

The Extender works with your Applesoft programs by using the '&' command. Just boot with the Extender disk, the run, edit, or change your programs as usual, with all the power of these 15 additions at your fingertips.

The Extender comes on a 3.2.1 diskette and is fully compatible with both DOS versions 3.2.1 and 3.3. The Extender requires an Apple II or Apple II Plus with at least 32K, Applesoft in ROM or Language System, and a minimum of one disk drive.

Complete documentation is included with examples of usage for clarity and ease of implementation.

Cat# 2-410 \$49.00

APPARAT ANNOUNCES A MERGER THE 737 LINE PRINTER AND SCRIPSITtm

Do you own a TRS-80tm Model I computer and the SCRIPSITtm Word Processing System? Do you own a Radio Shack LP IV (Centronics 737-1) line printer? Are you frustrated because you are unable to utilize the diverse capabilities of your 737-1 line printer with SCRIPSITtm?

If your answer is "yes" to all of the above, APPARAT has a nearly perfect solution. APPARAT introduces FLEXTXT, a product that brings SCRIPSITtm and the 737-1 printer together.

FLEXTXT is a software appendage to SCRIPSITtm that supports the use of all SCRIPSITtm provided print formats while exercising many expanded features of the 737-1 printer. Together, SCRIPSITtm and FLEXTXT make possible the dynamic selection of:

- * The proportional character set in normal and **extended** modes.
- * The compressed character set in normal and **extended** modes.
- * Right justified formatting using the proportional or compressed character sets (normal or **extended** modes).
- * Underlining in any of the SCRIPSITtm selectable formats, and FLEXTXT selectable character sets.
- * Your choice of ^{superscripts} or _{subscripts} in any supported character set.
- * The intermixing and combining of the expanded 737-1 features anywhere within a document.

This SCRIPSITtm and 737-1 line printer merging is possible now through APPARAT. FLEXTXT can be purchased for:

~~\$29~~⁹⁵

Note: You must own SCRIPSITtm to use FLEXTXT. FLEXTXT is a stand-alone program activated by a modified SCRIPSITtm "PRINT" command (the modification is programmatically performed - no accident prone manual "zapping" is required). No SCRIPSITtm documentation is provided.

FLEXTXT use requires at least 1 disk drive and a TRS DOS type operating system (preferably NEWDOS/80 with its MINI DOS feature, allowing DIR and other DOS commands while the resident SCRIPSITtm file remains undisturbed).

This advertisement was produced using SCRIPSITtm and FLEXTXT, driving a Centronics 737-1 line printer.

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MICROPERIPHERAL CORPORATION

SERVING YOUR COMMUNICATION NEEDS

THE CONNECTION

A series of direct connect modems with auto answer, receive and/or dial capabilities

- The Apparat Connection (Microconnection) eliminates need for an expansion interface and/or an RS232 board by decoding the TRS-80 bus and creating an RS232 port. Provides serial printer output. Requires software written for Z80 port 208, and an adapter cable for the Model III.
Cat# 1-028 \$249.00
- RS232 CONNECTION replaces obsolete acoustic coupled modems on any system having an RS232 serial I/O port. Requires RS232 cable.
Cat# 1-029 \$199.95
- COLOR CONNECTION converts Radio Shack Color Computer into a communications terminal providing serial printer output. Additional memory or extended BASIC not required. Cables provided.
Cat# 1-030 \$199.00
- AUTO CONNECTION (option) permits CONNECTIONS (except Color) to answer the telephone and/or dial numbers automatically. Dialer demonstration program provided.
Cat# 1-031 \$79.95
- EUROPEAN CONNECTION (option) modifies above units for European Standards.
Cat# 1-032 \$29.00
- MODEL III ADAPTER cable converts Model III 50 pin bus to 40 pins, used by Model I peripherals.
Cat# 1-033 \$29.00
- RS232 CABLE, four foot ribbon cable terminates with 25 pin male DB25 plugs.
Cat# 1-720 \$24.00

Microperipheral Corp. offers one of the most complete lines of communication hardware and software available in the microcomputer industry.

Besides the above Connections, other models are available for the Apple, Atari and other micro computers.

CONNECTION SOFTWARE SUPPORT MANUAL TERMINAL PROGRAMS (Specify Model I or III, with or without RS232, or Color)

- KEYCOM permits communications between your TRS-80 and virtually any other computer. Converts Level I, 4K, and Level II, 48K.
Cat# 2-112 \$19.95
- AUTOCOM is a user modified or expanded BASIC program with autodial routine (N/A for Color Computer).
Cat# 2-113 \$14.95
- TYPER routes LIST and LPRINT commands to serial printer connection for APPARAT/MICROCONNECTION or Color Computer.
Cat# 2-114 \$19.95
- SMART TERMINAL 80 is a flexible, unique program making your TRS-80 an intelligent terminal for communicating with any sophisticated main-frame system. Messages, manuscripts, documents, etc., may be prepared off-line for transmission, on-line in block form, or in prompted line-by-line form. Some of the many features are: Transmit and receive BASIC programs and Editor-Assembler files, transmit two auto log-on messages, automatic or manual storage of incoming data or transmission, auto repeat key, the ability to format line length you desire disregarding the transmitted line length, storage of more than 30K bytes of data in your memory (depending on system size), redefinable keys in order to send special codes, printer accessibility to incoming and outgoing data, and communications protocol and parameters, including full or half duplex, at your fingertips. The SMART TERMINAL 80 is a stand alone communications package, or can be combined with THE APPARAT CONNECTION for all your communication needs.
Cat# 2-104 \$79.00

COMPUTING POWER

MULTI- USER NETWORKING FOR THE TRS-80 AND APPLE

A COMPLETE, YET ECONOMICAL SYSTEM

(\$6,999 for a system having 1.2 megabytes of disk storage and four 64K user stations)

IF YOU NEED ANY OF THE FOLLOWING, OUR MULTI-USER NETWORKING SYSTEM IS FOR YOU

- * MORE THAN ONE COMPUTER
- * COMMON ACCESS TO THE SAME DATA FILES
- * PROGRAM DEVELOPMENT WHILE PERFORMING ONGOING APPLICATIONS
- * ACCESS TO DIVERSIFIED APPLICATION SOFTWARE PACKAGES
- * MINIMUM COST FOR MAXIMUM PERFORMANCE AND CAPACITY

FEATURES SOFTWARE

- MP/M™ with CP NET™ provides multi-user network system control.
- Each user station operates CP/M (Note: a Model I or III TRS-80 may also operate in a standalone mode under NEWDOS, TRSDOS™ or any comparable operating system.)
- Since MP/M and CP/M are the most widely used network and single user operating systems, respectively, an extensive selection of commercial quality application software packages are available.

HARDWARE

- The network control station is a 4 megahertz Z80 based system. Using MP/M, the controller shares disk and printer resources (the most costly elements of a microcomputer) among all users providing immediate access to common data files. Exceptionally useful in an interactive environment such as order entry or inventory control.
- Disk storage capacity may be easily increased at any time, meeting a wide range of budgetary and information requirements, to the following limits:
 - Mini-Floppy Disks. Up to four 5¼ inch mini-floppy drives. Double density mode operations with a 3.2 megabyte maximum capacity. Available in 40 track, single sided (200K per drive), 40 track, double sided or 80 track single sided (400K), or 80 track double sided (800K)
 - Floppy Disk. Up to four 8 inch floppy drives, Double density mode operations with a 5 megabyte capacity.

- Winchester disks. Up to four 5¼ inch mini-Winchester disk drives with a 40 megabyte maximum capacity. Also available with tape backup option.

- The network control station can control one or more printers operating either Centronics parallel or RS 232 serial (optional). The printer spooling program, with MP/M, efficiently shares the printer(s) among several users via a priority scheme.
- The network control station can simultaneously manage up to eight user stations. Each user station connects to the control station on its own parallel port, eliminating contention problems found in most polled network systems.
- User stations may be any Z80 based computer capable of running CP/M. The TRS-80 models I, II, and III, and Apple computers can be easily and inexpensively configured to run CP/M (allowing disk and/or printer peripherals for local use), or MP/M (for shared peripheral use by all users).
- CP/M User Station featuring 24 lines of 80 characters, attributes (inverse, blink, etc.), 64K RAM, full keyboard with numeric pad and function keys in an attractive, detached keyboard case out performs and under prices the Apple and TRS-80 computers. Attachable to any video monitor capable of 12 megahertz bandwidth, or may be purchased with a high quality 9, 12 or 15 inch video monitor.

PRICES

- Network Control System from \$1,499 (200K disk) to \$24,900 (43 megabyte disk)
- CP/M User Station \$899 (monitor not included)

NAS

COMMERCIAL GRADE SOFTWARE FOR TRS-80 MODEL II™

RUNS ON 2 MEG FLOPPY
OR OUR 10 MEG HARD DISK SYSTEM
RUNS UNDER TRSDOS™ UTILIZING
INTERACTIVE PACKAGES
25 MAN YEARS OF FIELD TESTING
READY FOR YOU NOW

ORDER ENTRY WITH SALES ANALYSIS/SINGLE LEVEL BILL OF MATERIALS
INVENTORY

ACCOUNTS RECEIVABLE WITH INTERFACING WORD PROCESSING
ACCOUNTS PAYABLE

GENERAL LEDGER FULL YEAR DETAIL

PACKAGE PRICES FOR FLOPPY \$850.00 EACH

OR OUR HARD DISK \$950.00 EACH

ALL SYSTEMS INCLUDE EXTENSIVE SITUATION ORIENTED USER MANUALS
WITH NAS CUT AN INVOICE THEN AUTOMATICALLY UPDATE

- | | |
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RAW MATERIALS EXPOSITION
FINISHED GOODS |
| ●GENERAL LEDGER
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INVENTORY ACCOUNTS
RECEIVABLES ACCOUNTS
COST OF GOODS ACCOUNTS | ●ACCOUNTS RECEIVABLE
BALANCE FORWARD
OPEN ITEM |

WHAT IS ON THE HORIZON?

HARK! A VOICE

YES FROM **NAS** SOFTWARE PACKAGES

FIRST TALKING TO YOU

LATER TALKING WITH YOU

EARLY 2nd QUARTER '81 SCHEDULED RELEASE

ALSO NAS WILL BE CONVERTING TO CP/M MID '81

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FOR THE TRS-80 Model II

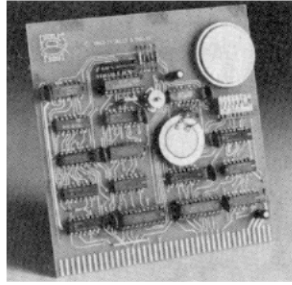
CCB-II

The CCB-II provides the following functions for a TRS-80 Model II:

A CLOCK
hour, minutes, second

A CALENDAR
day, day of week, month,
year

AN AUDIO ALARM



INFORMATIONS: The CCB-II mounts in the TRS-80 Model II and provides a machine readable clock/-calendar and an audio alarm. The clock and calendar are powered by a long-life lithium pacemaker battery which will give about 8 years of continuous operation.

The CCB-II is fully supported by P&T CP/M 2 - The system date and time are synchronized to the CCB-II each time the system is reset and the audio alarm can be sounded by sending an ASCII BEL character (control-G) to the console. For TRSDOS users, software is available which sets the system date and time by the CCB-II when the system is reset.

The CCB-II can be accessed directly from any language that allows direct port input and output. The user's manual for the CCB-II includes sample programs written in Microsoft Basic, CBASIC, Pascal/M, TRSDOS Basic, and assembler for directly accessing the CCB-II.

PRICES:

CCB-II
Cat# 1-042 \$175.00
TRSDOS software diskette
Cat# 2-126..... \$5.00

PLEASE NOTE: The installation of the CCB-II requires opening the Model II, which may void its warranty. We suggest that you wait until the warranty has expired before installing the CCB-II.

P&T CP/M 2

P&T CP/M 2 is an adaptation of the popular CP/M operating system for the TRS-80 Model II. P&T CP/M 2 has been carefully designed to utilize the hardware facilities of the TRS-80 Model II to maximum advantage. In addition to improved system performance, P&T CP/M 2 opens the door to using hundreds of currently available software packages that have been written for CP/M.

DISK STORAGE: P&T CP/M 2 supports standard single sided floppy drives (596K bytes of usable storage at double density), double sided expansion drives (1.2M bytes per disk), and the Cameo Electronics hard disk controller (10 - 80M bytes).

CRT CONTROL: The following built-in functions make console interaction easy: erase to end of line/screen, insert/delete line, cursor addressing, reverse video, split screen mode, read cursor location, and many more. The display capabilities are accessed by control codes, escape sequences, or simple system calls.

SERIAL I/O: The serial ports are tied into the normal CP/M I/O structure or can be accessed directly by programs with special I/O requirements. ETX/-ACK, XON/XOFF, and clear-to-send handshaking are fully supported. A special utility routine is provided to display the current status of the serial ports and allow the various parameters to be changed at will.

PARALLEL I/O: Options are provided for the Centronics port so that a printer with automatic line feed can be used with CP/M programs.

USEFUL SYSTEM FUNCTIONS: Also included are type-ahead buffer for keyboard input, automatic program execution, system time-of-day clock, system date, and access to the CCB-II.

UTILITIES: The standard CP/M utility programs are augmented by 14 utility programs that have been written specifically for the Model II.

DOCUMENTATION: P&T CP/M 2 comes with the standard Digital Research manuals plus the P&T CP/M 2 User's Manual which contains over 150 pages of information about CP/M and the additions and special utilities supplied by Pickles & Trout.

PRICES for P&T CP/M 2:

Single sided floppy version
Cat# 2-805 \$185.00
Double sided floppy version
Cat# 2-822 \$220.00
Cameo Hard disk controller version
Cat# 2-809 \$250.00
Manuals only (for evaluation)
..... \$35.00

DEALER INQUIRES ARE WELCOME



Distributed By: Apparat, Inc.



HIGH SPEED TRANSFER

Filetran is the fast, effective, easy to use file translation system that allows you to generate CP/M or TRSDOS compatible files. Filetran operates on a single computer system and transfers files bi-directionally between CP/M and TRSDOS operating systems using high speed disk-to-disk transfer techniques.

POWERFUL AUTOMATED FEATURES

- Filetran does much more than just transfer files. The lines function automatically finds and displays the program lines that contain incompatibilities between Level II BASIC and Microsoft's MBASIC 5.2 Making conversion to the more powerful MBASIC fast and easy. The lines function also allows the scan of any text file for all occurrences of any selected string. This provides the powerful capability of identifying any string sequence cross reference. The disk and MEM functions provide high-speed machine code disk sector and memory page displays in parallel HEX/ASCII format virtually at memory speed. The dir and files functions allow examination of both CP/M and TRSDOS directories without time-wasting system reload and the attendant disk switching operations. and for standard CP/M systems. A terminal configuration program is supplied which automatically configures filetran for use with the console terminal.

FEATURES

THE SOFTWARE PROFESSIONAL'S CHOICE

Selected sector disk displays

- Memory Displays
- Software Conversion Cost Analysis
- Program Conversion Aids

MANY POWERFUL APPLICATIONS

BASIC, FORTRAN, COBOL source language transfers to the operating system of your choice:

- Expand the Marketplace for Your Software to Include the "Other" Operating System
- If you're in the printing or typesetting business, expand your marketplace to include word-files made by the "other" operating system.

THE WORD PROCESSOR USERS SOLUTION

Use the Word Processing (WP) software of your choice and Filetran to meet your Client's needs:

- If you're doing "overflow" work then you can remain compatible with your client's system without additional equipment.
- If you're moving to new equipment, then Filetran your existing data to the new system.

- Take advantage of new WP developments without large transition costs!
- With Filetran you are able to pick the WP system that meets your needs and your pocketbook without limiting your potential customer base.

SPECIFICATIONS

- Single or bi-directional byte for byte file transfers of word processing files, high order language program files, assembly language source files, and data files.
- Transfers CP/M files to TRSDOS.
- Transfers TRSDOS files to CP/M.
- High speed machine code for disk & memory displays using video RAM capabilities.
- Special purpose disk I/O for TRSDOS MOD I directory compatibility.
- Terminal configuration feature for non-TRS80 terminals.
- Versions available for most CP/M based machines.
- Special versions available for TRS-80 MOD I & MOD II.

DISK ASSUMPTIONS

Assumptions are used primarily for warning.

- Filetran assumes standard TRSDOS formats for both TRS-80 Model I & Model II.
- For Model I, A & B are standard 5 1/4". 35 track, 10 or 18 sectors 128 or 256 bytes/sector.
- Drives C & D are standard 8", 77 track, 26 sector, 128 bytes/sector
- Custom disk configurations available on request
- Compatible with Omikron and Parasitic engineering hardware for mixed drive, standard CP/M systems.

REQUIREMENTS

CP/M operating system is mandatory (version 2.2 is recommended for systems other than TRS-80 Model I).

- Filetran is a machine language CP/M "COM" file.
- File transfers require dual disk.
- The system requires 48K of RAM (minimum).

Version 1.2 - Model I to CP/M only:

Cat# 2-823 \$99.00

Version 1.4 - Model I both directions

Cat# 2-824 \$149.00

Version 1.5 - Model II to CP/M only:

Cat# 2-825 \$99.00

**BUSINESS
MICRO
PRODUCTS**

609 S. Livermore Ave.
Livermore, CA. 94550
(415) 449-4412

Distributed By: Apparat

MICROSOFT

- BASIC-80 is probably the most extensive implementation of BASIC for CP/M. Release 5.0 supports new functions such as 40 character variable names, protected files, dynamic string space allocation, WHILE/WEND statements, chain and common, and variable length random file records.
(CAT # 2-810) \$350.00
- BASIC COMPILER, following the same syntax as the BASIC-80 INTERPRETER, allows writing of programs in interpretive BASIC for later compiling, and relocatable file mixing with FORTRAN-80, COBOL-80, and MACRO-80. Includes MACRO-80 Macro Assembler, CREF-80 Cross Reference Utility, and a BASIC library manager.
(CAT # 2-811) \$395.00
- COBOL-80 is a high speed COBOL compiler compatible with other Microsoft compilers, featuring MACRO-80, ANSI standard COBOL with STRING, UNSTRING, COMPUTE, SEARCH, PERFORM, ACCEPT/DISPLAY, and more.
(CAT # 2-812) \$750.00
- FORTRAN-80, a full ANSI FORTRAN X3.9-1966 FORTRAN, except COMPLEX data type, is compatible with other Microsoft Compilers. Includes MACRO-80.
(CAT # 2-813) \$500.00
- MACRO-80, an 8080 and Z80 Macro Assembler, including CREF-80 Cross Reference Facility and LINK-80 Linking Loader, is compatible with Microsoft Compilers.
(CAT # 2-814) \$200.00
- muLISP-80 is an Artificial Intelligence Development System, including muSTAR utility package and sample programs.
(CAT # 2-815) \$200.00
- muMATH/muSIMP. This symbolic math package computes to 611 digits with an exact solution of algebraic equations. Includes muSIMP symbolic and semi-numerical processing language.
(CAT # 2-816) \$250.00

CPAids

- NOTE: CPAids requires a small royalty fee for the use of Microsoft Compiled Code in their programs.
- MASTER TAX PROGRAM includes schedules A, B, C, D, E, F, G, R/RP, SE, TC, AND ES, plus forms 2106, 2119, 2210, 3468, 3903, 2441, 4625, 4726, 4792, 4797, 5695, and 6521, and features batch processing, input sheets and proforma.
(CAT # 2-817) \$995.00
- STANDARD TAX PROGRAM includes schedules B,C,D,E,F,G,R/RP, SE, TC and ES, plus forms 2106 and 2441.
(CAT # 2-818) \$495.00
- Apparat can supply nearly any CP/M software. If you don't see what you want, please call.

MICROPRO INTERNATIONAL

- WORD STAR is one of the most versatile word processors on the market today. Superscript, subscript, underline, boldface, strikethrough and much more! Completely menu driven, simple to learn command set. Supports most video devices and printers automatically, with easy to use patch facilities for any others.
(CAT# 2-801)..... \$495.00
- MAILMERGE, an add-on utility package for Word Star, allows insertion of variables from data files into form letters and mailing lists. Insertion from files into other text with rejustification. Requires Word Star.
(CAT# 2-802)..... \$150.00
- DATASTAR is a completely menu driven database manager provides for quick and easy data entry, retrieval, and updating. Files fully compatible with Word Star.
(CAT# 2-807)..... \$350.00
- SUPERSORT is a sophisticated high-speed data sorting utility. Multikey, compatible with Microsoft Relocatable files.
(CAT# 2-800)..... \$250.00

PLAY IT AGAIN . . . MAESTRO? WITH TRS-80 ORCHESTRA-80

- With no musical knowledge at all, you can now enjoy the sweet strains which soothes savage beasts on any 16K TRS-80 microcomputer. ORCHESTRA-80 is a music synthesis system written by Jon Bokelman, manufactured by SOFTWARE AFFAIR, and distributed by APPARAT.
- SOFTWARE includes:
 - ● DIGITAL SYNTHESIZER producing up to four simultaneous voices in a six octave range allows a trumpet, oboe, clarinet and organ to perform four part harmony. Or, alterations could modify any of the voices to imitate other instruments.
 - ● MUSIC LANGUAGE COMPILER lets you enter your favorite written music in any key or time signature with a simple and easy to use system language. Whole notes to sixty-fourth notes, single, double or triple dotted, triplets, single or double accidentals, staccato, pizzicato, repeats, second endings, retard and modulation are all possible.
 - ● FULL SCREEN EDITOR with blinking cursor provides easy entering of insert/delete characters, insert/delete lines, global character search, and automatic error detection/display.
- ● FILE MANAGER stores and retrieves named program files on tape or disk. Sequential ordering for automatic loading and playing lets you jump up to the conductor's stand.
- ● INITIALIZATION allows you to alter voices, selecting the standard four voice synthesizer, or a special high resolution, three voice version, or choose standard (1.77 MHz) or enhanced (2.66 MHz) clock rate.
- HARDWARE for ORCHESTRA-80 is a 1½x2 inch PC board containing the electronics necessary to convert the computer output into a high fidelity audio signal. Simply plug into the expansion interface connector, then connect your "orchestra" into the aux/tape/tuner input of any audio amplifier, and voila, music. No external power supply required.
- INCLUDED is tape and disk versions on cassette, completely assembled PC board, detailed instruction manual, and sample music programs.
- Available from APPARAT
(CAT# 1-020) \$79.95
MANUFACTURED BY:
SOFTWARE AFFAIR
SUNNYVALE, CA



MICRO CLUB MEMBERSHIPS

“How would you like to be one of the first to obtain new applications for your TRS-80® or Apple® and SAVE MONEY???”

A vast array of software, especially games, exists for your microcomputer, but software alone can only partially fulfill the power and usefulness of your computer.

You probably own a disk and a printer—hardware which also enhances the usefulness of your computer. Other than these common peripherals, relatively little hardware exists in comparison to software, and most of the hardware available is prohibitively expensive.

The MICRO CLUB has been established to meet this need for a variety of inexpensive hardware devices—tools which will help you get more satisfaction from your computer.

Each month the MICRO CLUB will announce one or more new hardware products complete with complementary software and comprehensive documentation. Some products to be offered in coming months include a DATE/TIMER event timer, an energy efficiency MEASURING INSTRUMENT, and

a PROM BLASTER. Best of all MICRO CLUB members will usually pay less than \$100.00 for products which will eventually retail for \$150.00 or more.

Membership in the MICRO CLUB costs \$10.00 for 12 issues of our new products newsletter describing our product of the month as well as other hardware and software specials available exclusively to MICRO CLUB members. Even the membership is fully refundable i.e.: you will receive a \$10.00 discount on your first selection. Although there's no obligation to purchase any product, you need make only two selections during the 12 month period to have your membership automatically extended for another year.



APEX - A NEW DISK OPERATING SYSTEM FOR THE APPLE

● After two years of extensive development, APARAT is proud to announce APEX, a completely professional, programmable, file maintenance disk operating system for the APPLE II. Some of the multitude of disk operations are: a command structure similar to CP/M and mainframe operating systems, containing 20 command words, plus the ability to treat external programs as transient commands to the operating system, simple communication channels between operating system and user program allowing easy interfacing, capability of handling both 5 and 8 inch disks on the same system, safety features which include backup files and directory, read-after-write and size limit checks protecting against data loss, speed 4 times faster than CP/M, automatic default structure eliminating tedious typing by automatically setting up command strings, file names and extensions, fully functional on single and multi-drive systems, with utilities for single or multi-drive file copy, and a device handler structure for interfacing non standard peripherals.

The basic APEX package includes a high speed (1900 line/minute) two pass resident assembler which generates an alphabetized symbol and

cross reference table, a powerful macro editor with 18 commands, 10 text buffers and the capability of performing complex editing tasks, plus all the necessary tools for a complete assembly language development system.

● The complete APEX package includes operating system, assembler, editor, user manuals, and a complete utility set to maintain files on single or multi-drive systems. Supplied on 5" diskette requiring a minimum of 48K and 1 disk.

Cat# 2-404 \$99.00

Some related software development tools available for the APEX system are:

● XPLO - A block structured PASCAL-like system language, now with floating point.

CAT# 2-405 \$79.00

● HANDY DISK #1 containing scrolling editor, disassembler and new set of handlers and system utilities.

Cat# 2-406 \$39.00

● A complete brochure detailing the APEX system and support software packages is available on request.

SOFTWARE FOR THE APPLE II

VISICALC

- Personal Software's Visicalc is a most exciting and popular business software package because of its extraordinary power, and the fact that you can configure it without previous computer experience. Visicalc allows you to construct a table of figures, define relationships between different rows and columns, and then modify these figures and relationships with simple commands. It's perfect for sales forecasting, engineering, real estate, accounting and countless other applications.

Cat# 2-416 \$149.00

DESKTOP PLAN

- This problem solving tool for the Apple II can be used for the development and analysis of budgets, cost and price analysis, sales forecasts, cash flow planning, capital budgeting, profit and loss projections, and a myriad of similar types of analyses. No knowledge or skills in computer programming are required to develop customized business planning and analysis systems.

Cat# 2-417 \$99.95

CCA DATA MANAGEMENT SYSTEM

- This database management system stores and retrieves information, sorts and deletes records, and prints reports. Simple to learn and use, the power of this system will amaze you. Multiple diskette capability for larger files: Up to 85,000 characters per file.

Cat# 2-418 \$99.95

APPLE CP/M SOFTWARE (Requires Microsoft Softcard)

- FORTRAN-80 is an enhanced version of Microsoft's CP/M FORTRAN.

Cat# 2-804) \$195.00

- COBOL-80. For more information on Microsoft's standard CP/M COBOL, check the CP/M software section.

Cat# 2-803) \$750.00

- BASIC-80 COMPILER. Release 5.2 of Microsoft BASIC for the Softcard. Available spring 1981.

Cat# 2-819) \$395.00

- ASSEMBLY LANGUAGE DEVELOPMENT SYSTEM. Contains macro assembler and linking loader for APPLE CP/M. Available spring 1981.

Cat# 2-810) \$125.00

WORD PROCESSING SYSTEMS

All word processing systems that are listed here have the usual text editing capabilities to edit memos, letters, and programs, enter text, delete mistakes, search through the text and replace letters, words, or phrases automatically or manually. Only the differences and special functions of each will be specified. All are machine language systems.

APPLE WRITER

- Perhaps the easiest to use of the word processors this one is also the least expensive.

Cat# 2-412 \$75.00

EASYWRITER

- This word processor by Captain Software has express tabbing and the ability to set up the print page for each application. Also configured so that all control characters that affect the print are visible.

Cat# 2-413 \$99.00

SUPER TEXT

- Thought by many to be the best word processor for the Apple, Super Text has complete tab control as well as a Math mode for calculations within a file, or to act as a direct 15 digit calculator.

Cat# 2-414 \$150.00

MAGIC WINDOW

- This word processor has two unique features found nowhere else: The ability to see the text EXACTLY as it is going to appear on the printer and keypressed sound. The Magic Window moves across the page as the text is typed, so the entire 80 columns are displayed as they will be printed, and the speaker on the Apple 'ticks' when a key is pressed, giving positive indication that a key has in fact been pressed.

Cat# 2-415 \$150.00

Entertainment Software

- ABM - Muse Anti-Ballistic Missiles
Cat# 3-521 Disk \$24.95
- SUPER INVADER - from Creative Computing
Cat# 3-502 Tape \$19.95 Apple
- FLIGHT SIMULATOR-Earn your wings courtesy of SubLogic
Cat# 3-476 Disk \$33.50 Apple
Cat# 3-475 Tape \$25.00 Apple

TRS-80 SOFTWARE

RACET PROFESSIONAL SOFTWARE

- INFINITE BASIC - Expand the power of your TRS-80® by performing such functions as sorting, copying, simultaneous equations plus STRING and MATRIX functions.
(CAT# 2-018) \$49.95
- BUSINESS ADD-ON MODULE - Allows user to specify heading and footing lines for output to printers. Performs arithmetic functions and hash encoded index for file retrieval.
(CAT# 2-020) \$29.95
- COMMAND PROCESSOR "COMPROC" - Extends the DOS-AUTO Command to perform multiple steps at power-up time or single user system command. Executes sequence commands, changes and saves script easily using facilities of BASIC plus many other features.
(CAT# 2-011) \$19.95
- DOSORT simplifies time-critical tasks of sorting and data comparisons with a BASIC control program. Includes GSF which effectively interfaces control program with machine language routines, allowing versatile sort-merge, multi-volume, two mode and presort features.
32K (CAT# 2-022)..... \$34.95
48K (CAT# 2-021)..... \$34.95
- GENERALIZED SUBROUTINE FACILITY (GSF) standardizes multiple machine language programs for easy access by TRS-80 BASIC users. Eighteen machine language subroutines and sorts are easily expandable. Description of conventions used.
16K (CAT# 2-012)..... \$24.95
32K (CAT# 2-109)..... \$24.95
48K (CAT# 2-110)..... \$24.95
- COPSYS duplicates valuable system tapes before they become damaged by providing bit-for-bit verification and merging of independently assembled object tapes into one load module. Generated from Radio Shack Editor-Assembler Program.
(CAT# 2-017) \$16.95

- REMODEL automatically restructures and renumbers program lines, relocates blocks of lines from one spot to another enhancing program readability and documentation for rapid creation and organization of programs.
- PROLOAD avoids recreating commonly used routines by selectively storing and retrieving data statements allowing individual or combination loading of BASIC programs. Increases programming productivity by handling fixed data more efficiently.
- 16K, 32K or 48K versions of REMODEL and PROLOAD on same tape.

16K (CAT# 2-014).....	\$34.95
32K (CAT# 2-015).....	\$34.95
48K (CAT# 2-016).....	\$34.95

MICROSOFT SYSTEM SOFTWARE

- FORTRAN, popular language for science, math and engineering.
(CAT# 2-050) \$99.00
- ASSEMBLY LANGUAGE PACKAGE includes Macro Assembler, Link Loader, Text Editor, Cross Reference.
(CAT# 2-052) \$99.00
- LEVEL III BASIC
(CAT# 2-071) \$45.00
- muMATH, symbolic math, algebra, trigonometry, calculus.
(CAT# 2-072) \$74.00
- muMATH EXTENDED, symbolic math up to 611 digits. Exact solution of algebraic equations.
(CAT# 2-111)..... \$249.00
- ADVENTURE, a popular game
(CAT# 3-112)..... \$29.00

UTILITIES SOFTWARE

- MICRO CLINIC FLOPPY DISK/MEMORY DIAGNOSTIC PACKAGE by Dave Stambaugh. Test 1 to 4 drives, single or double density and 35, 40, 77, or 80 tracks. Provides drive speed/alignment tests, and much more. Memory is tested by both conventional write/read and M-1 worm test.
(CAT# 2-115) \$24.95
- DDT-DISK TIMER for adjusting disk drive motor speed.
(CAT# 2-029) \$19.95

M. A. S. GENERAL LEDGER

- General ledger is very simple to use, with up to 200 accounts, detailed transaction files, trial balance reports, income statement and balance sheet. Outstanding features include: auto loading, batch up to 200 debit & credit entries and auto edit out-of-balance entries with unlimited daily entries. Compare periods and prepare your own depreciation schedules.

Cat# 2-088 \$159.00

ACCOUNTS RECEIVABLE

- The present system will handle up to 1600 customers with auto-billing, mailing labels, and many reports to help improve cash flow. Fast entry of charges and payments with discounting allowed, complete management reporting with true aging, bill-mail code, discount percent, total charges, payments, last payment date and amount, total discount and remaining balance, overdue account listings and many more features to assist you, including direct entry to general ledger.

Cat#2-087..... \$159.00

ACCOUNTS PAYABLES

- Will handle up to 300 vendors with checkwriting, mailing labels, and full reporting. The same features as accounts receivable: fast entry of charges and payments, with discounting allowed, complete management reporting with true aging, and much more. Also, auto posting to general ledger.

Cat# 2-086 \$159.00

Call or write for more information including sample reports.

BOOKS

Learning Level II
Cat# 4-221..... \$15.99

BASIC Handbook
Cat# 4-222..... \$14.99

Microprocessors from Chips to Systems by Rodney Zaks
Cat# 4-119..... \$10.95

Programming the 6502 By Rodney Zaks
Cat# 4-081..... \$12.95

Introduction to Pascal including UCSD Pascal by Rodney Zaks
Cat# 4-071..... \$12.95

Z80/8080 Assembly Language by Kathy Spraklen
Cat# 4-131 \$8.75

Pathways through the ROM
Cat# 4-084..... \$19.95

TRS-80® Disk & Other Mysteries
Cat# 4-139..... \$22.50

CHECK REGISTER

- Complete with reconciliation form. Has everything needed to keep an efficient checking account. Record checks written by hand, as well as writing checks automatically for Accounts Payable. Will handle up to 600 checks monthly. Record up to 200 separate checks or total deposits monthly. Print a check register with all checks and deposits, showing check numbers, payee memo, amount, and code. You can correct checks, make deposits, void checks, stop payment and more. Provides information as follows: amount of total checks, amount of total deposits, remaining balance, service charges and amount at beginning of month. Simple to use, with complete error detection and links to accounts payable.

Cat# 2-089 \$79.00

COMPLETE SYSTEM

- This is a complete accounting system for the small business. Trial balance, income statement, balance sheet, management report and complete transaction reports assure you full control of your cash flow and business position. All modules include full editing and complete prompting. The auto posting means all systems are fully integrated. Have your accounting information available at all times. Requires 48K and 3 disk drives for the Complete System. (Contains all modules)

Cat# 2-116 \$489.00

Microsoft Basic Decoded & Other Mysteries
Cat# 4-220..... \$29.95

CP/M Handbook by Rodney Zaks
Cat# 4-001..... \$13.95

Basic Computer Games
Cat# 4-006 \$7.95

More Basic Computer Games
Cat# 4-007 \$7.95

Katie & The Computer (for children 3-8)
Cat# 4-052 \$6.95

Microprocessor Interfacing Techniques
Cat# 4-109..... \$17.95

Z80 Gourmet Guide
Cat# 4-115..... \$14.00

6502 Gourmet Guide
Cat# 4-116..... \$10.00

SUPPLIES

DISKETTES

Diskettes are cardboard boxed unless otherwise noted. First price indicates box of 10, second price indicates case of 100 diskettes. Note: all diskettes are soft sectored.

BLANK LABEL

- 5¼" single sided double density 40 track certified. In a plastic library case.
Cat# 4-207..... \$25.95 \$210.00
- 5¼" single sided double density 40 track certified. In bulk packs of 100.
Cat # 4-208 N.A. \$180.00

BASF FLOPPY DISKETTES

- 5¼ single sided double density BASF label 40 track certified.
Cat # 4-206 \$24.95 \$190.00

VERBATIM FLOPPY DISKETTES

- 8" FD34-9000 single sided, single density Datalife critical certification.
Cat # 4-200 \$34.95 \$320.00
- 8" FD34-8000 single sided double density Datalife critical certification.
Cat # 4-201 \$44.95 \$410.00
- 5¼" MD525-01 single sided double density Datalife 40 Track certified.
Cat # 4-202 \$28.95 \$240.00
- 5¼ MD550-01 double sided double density Datalife, 40 Track certified.
Cat # 4-203 \$45.95 \$420.00
- 5¼ MD577-01 single sided quad density Datalife 77 Track certified.
Cat # 4-204 \$33.95 \$320.00
- 5¼ MD557-01 double sided quad density Datalife 77 Track certified.
Cat # 4-205 \$45.95 \$420.00

Novation D-CAT Modem

Cat# 1-601 \$179.95

DISK HEAD CLEANER KITS

- 3M Brand - Eliminates build up to avoid repairs.
5¼" Cat # 4-166..... \$29.95
8" Cat # 4-167..... \$39.95

FLIPSORTS

- Holds up to 50 diskettes.
5¼" Cat # 4-174..... \$29.95
8" Cat # 4-173..... \$39.95

PLASTIC LIBRARY CASES

- Holds up to 10 diskettes.
5¼" Cat # 4-172 \$3.95
8" Cat # 4-171 \$5.95

PAPER

- 9½"×11" Blank white tractor feed 3500 sheets.
Cat # 4-177 \$32.95
- 9½"×11" Carton blank white 1500 sheets.
Cat # 4-177 \$22.95
- 14⅞× 11½" Greenbar tractor feed 3500 sheets.
Cat # 4-178 \$42.95

PAPER SHIPPED FREE!

RIBBONS

- Complete line of Okidata, Anadex, Epson, Centronics, NEC, and MPI ribbons.
Call For Price!

NEC THIMBLES

- (over 30 styles available) Call For Price!

16K MEMORY EXPANSION KIT

- Easily and quickly increase the memory of your TRS-80 or Apple microcomputer to 32 or 48K. Comes with complete instructions. Our dynamic RAM GUARANTEED 6 months against defects.
Cat# 1-608 \$39.95

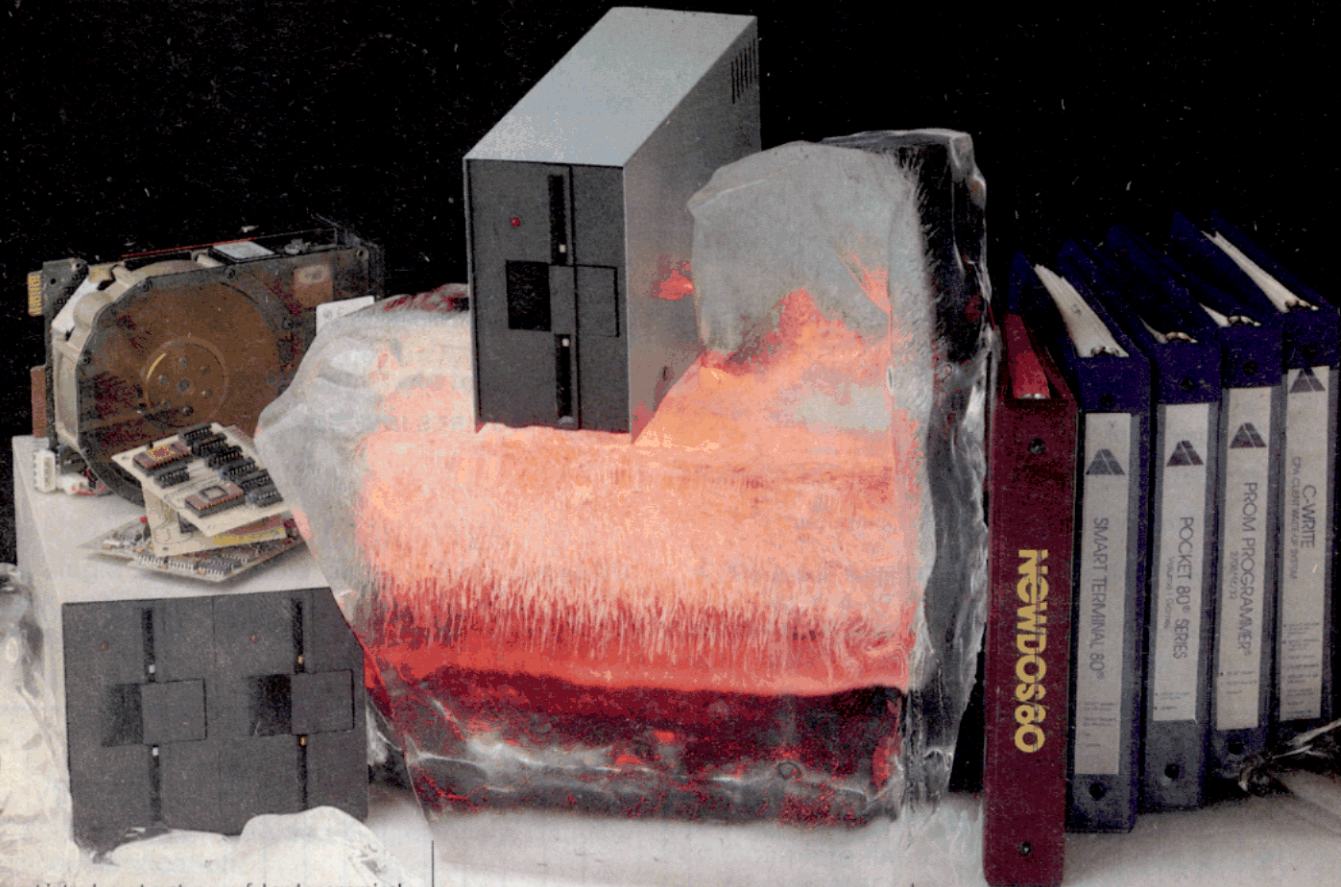
THE ISOLATOR POWER SOURCE

- Eliminate erratic errors and problems caused by "noise" on your electric lines. Filters out interference from air conditioners, electric motors, fluorescent lights, refrigerators and other electrical appliances.
Cat# 1-607..... \$49.95

Novation CAT Modem

Cat# 1-600..... \$159.95

Twenty new products for your TRS-80™ that are **so hot...**



Apparat introduces twenty powerful and economical add-ons for your TRS-80 system. Hardware and Software to increase your capabilities:

Software

SMART TERMINAL 80—Converts the Model I or III to an intelligent terminal.

NEWTRIEVE—Rapid search and retrieval of memory/disk for a character string of any length.

FLEXTEXT—Provides proportional spacing, compressed and extended characters, underlining and so on. Operates on the Centronics 737 printer in conjunction with SCRIPSIT for the Model I.

FLEXTEXT II—Provides proportional spacing, right justification and so forth, on the NEC Spinwriter 5500 series printers printing in conjunction with SCRIPSIT II®.

BIONIC BASIC—Add new functions to BASIC. Editing and array handling functions available.

POCKET 80 GAMES—For the Pocket Computer.

C-WRITE—Comprehensive client write-up system for the professional accountant.

NEWDOS/80—For the Model III—all the features available on the Model I plus double density.

VOCAL SYNTHESIZER—Provides Morse, Spelled and Spoken output of data files through the TRS-80® Vocal Synthesizer.

Hardware

INTEGRATED SALES AND INVENTORY SYSTEM—Provides inventory, sales and receivables for manufacturers.

Hardware

CLOCK/CALENDAR/APPOINTMENT

SCHEDULER—Time, date and up to 100 time/date appointment interrupts.

PROM BLASTER—Programs 25XX and 27XX 1 to 4K multi and single voltage PROM.

MULTI-PROCESSOR EXPERIMENTOR SYSTEM

—Provides a COPS 402 processor with I/O RAM, and a cross assembler for real time or process control requirements.

ASAP (APPARAT SCIENTIFIC ARITHMETIC PROCESSOR)—Fast processing of scientific functions.

TRS-80® BUS EXTENDER—Allows up to six hardware products to be plugged into Models I or III bus. Has self-contained power supply.

DISK SEPARATOR—Improves floppy disk performance required because of insufficient data separation on the Model I.

SPEECH I/O MODULES—Voice and sound input and output for the Models I and III.

APPARAT CONNECTION—Adds auto answer and auto dial modem capabilities to your TRS-80®


MODEL III FLOPPY DISK SYSTEM—Add one to four drives plus controller to your Model III with up to 2.8 megabytes capacity under NEWDOS/80.

WINCHESTER DISK SYSTEM—Five to forty megabyte storage with optional tape or floppy backup.

If you're going to upgrade your system, call us about our twenty new TRS-80 Products, or our complete line of add-ons for the TRS-80. You'll find our products innovative and our prices hard to beat. Dealer inquiries welcome. For more information on Apparat's new products, send \$1.00 (refundable on your first order) for our 1981 catalog, or call us at (303) 741-1778.

To order any product, call us toll-free (except Alaska, Colorado and Hawaii) at

800-525-7674.

 **Apparat, Inc.**

4401 So. Iamarac Parkway, Denver, CO 80237 (303) 741-1778

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