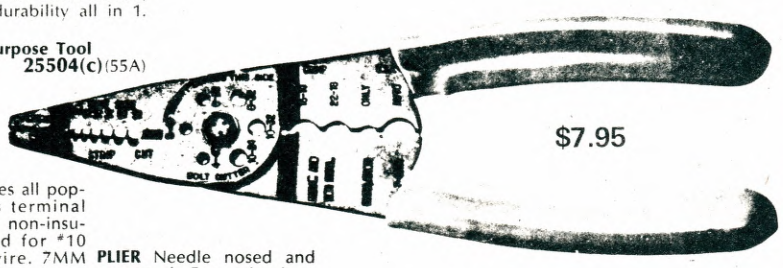
Hunter Tools

5 IN 1 5 tools in 1 convenient package. Ideal for technician, trade and production use. Convenience, versatility and durability all in 1. 8½" long.

5 in 1 Multipurpose Tool
25504(c) (55A)



$7.95

CRIMPER Handles all popular solderless terminal types including non-insulated, insulated for #10 through #24 wire. 7MM automotive ignition.

PLIER Needle nosed and serrated. For gripping, bending and pulling.

STRIPPER 6 wire stripping holes out front where the work is. Hand ground for size and sharpness. Ideal for stripping AWG solid wire in gauges #12 - #22 and stranded wire #14 - #24.

CUTTER Out front and easy to use. Shear cut style accommodates variety of wire sizes. High leverage action makes cutting easy and reduces fatigue. Cutting edges are hand ground to insure close tolerances.

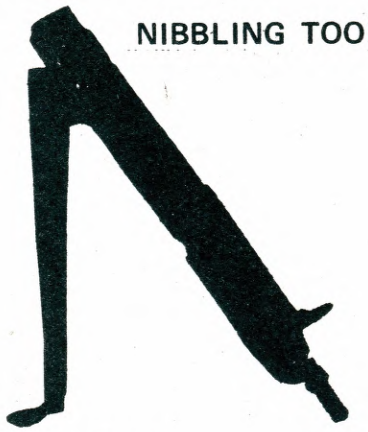
SCREW CUTTER Cuts 6 most common screw sizes found in electrical and lugging operations. 4-40, 5-40, 6-32, 8-32, 10-32, 10-24.

HANDLE Heavy plastic sleeve provides cushion grip. Reduces fatigue in production and other high volume applications.

This Nibbling Tool is perfect for cutting, trimming, or notching sheet metal up to 18 guage.

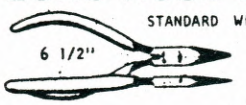
It operates like a punch and die and also works well on aluminum or plastic up to 1/16" thick. We feel that this tool can be a real time-saver for our customers when working on chassis, printed circuit boards and prototype model parts.

NIBBLING TOOL



Nibbling Tool $7.95
Replacement Punch $3.75 Each

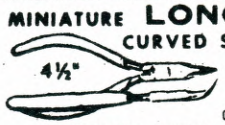
LONG NOSE PLIERS



STANDARD WIRE BENDING, FORMING AND HOLDING TOOL.

STOCK NO.	PRICE EACH 1	10
20208	$6.09	$5.44

MINIATURE LONG NOSE CURVED SMOOTH JAW



CURVED NOSE GETS INTO THOSE TIGHT SPOTS. PARTICULARLY SUITED TO P.C. BOARD REWORK.

STOCK NO.	PRICE EACH 1	10
21029	$9.23	$8.25

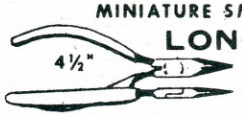
NEEDLE NOSE SUPER THIN

SMOOTH JAWS, RADIUS EDGED

FOR PRECISION BENDING, REACHING, CLAMPING AND FORMING.

STOCK NO.	PRICE EACH 1	10
20114	$7.54	$6.74

MINIATURE SMOOTH JAW LONG NOSE

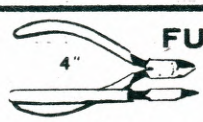


FOR EXTRA FINE WORK.

FOR BENDING, FORMING OR HOLDING DELICATE PARTS AND ASSEMBLIES

STOCK NO.	PRICE EACH 1	10
20144	$8.40	$7.51

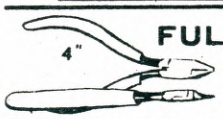
FULL FLUSH CUTTER REGULAR JAW



FOR #24(.020") OR SMALLER COPRER WIRE. IDEAL FOR SHAVING SOLDER AND CUTTING LEADS IN PRINTED CIRCUIT

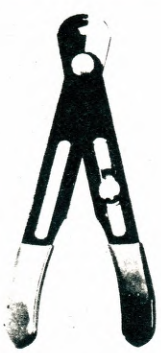
STOCK NO.	PRICE EACH 1	10
20199	$8.82	$7.88

FULL FLUSH CUTTER TAPERED JAW



MINIATURE SLIM TAPERED NOSE DESIGN BUT WITH THIN GROUND BACK FOR CLEARANCE IN CONFINED AREAS. DESIGNED FOR #24(.020") OR SMALLER WIRE.

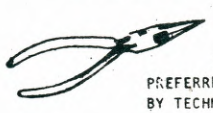
STOCK NO.	PRICE EACH 1	10
20192	$9.78	$8.73



STRIPPER AND CUTTER Similar to #25508 but without return spring. A high quality economy tool to do the job.

Stripper and Cutter no spring
$2.50 | **25506(c)** (55B)

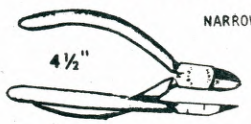
COMBO LONG NOSE PLIERS SIDE CUTTER



TWO HANDY TOOLS IN ONE. WITH 1/2" CUTTING BLADE PREFERRED IN INDUSTRY AND BY TECHNICIANS

STOCK NO.	PRICE EACH 1	10
20261	$7.54	$6.74

DIAGONAL CUTTER HEAVY DUTY GENERAL PURPOSE



NARROW JAWS FOR USE IN CONFINED AREAS.

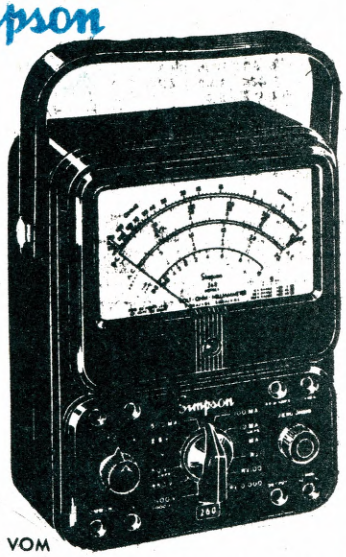
STOCK NO.	PRICE EACH 1	10
20294	$7.19	$6.42

ELECTRICIANS THIN BLADE (Cabinet Tip) Favored by electrical and electronic craftsmen where clearance and precision are a factor. Tips are exact width of blade.

CABINET STYLE

Part No.		Blade D" x L"	Handle D" x L"
30340*	$1.25	3/32 x 3	5/8 x 2-1/4
30342*	1.35	3/32 x 4	5/8 x 2-1/4
30320	1.65	1/8 x 6	7/8 x 2-3/4
30322	1.85	1/8 x 8	7/8 x 2-3/4
30324	1.99	1/8 x 10	7/8 x 2-3/4
30328	1.85	3/16 x 3	1 x 3-3/4
30330(c)	2.10	3/16 x 4	1 x 3-3/4
30332(c)	2.25	3/16 x 6	1 x 3-3/4
30334	2.85	3/16 x 8	1 x 3-3/4
30336	2.99	3/16 x 10	1 x 3-3/4

Simpson



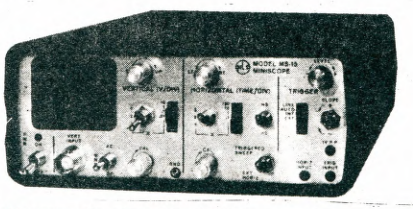
260-6
260 SERIES VOM

Model 260-6 Volt-Ohm-Milliammeter. Features a varistor protected rugged taut-band movement. Multi-purpose screw-on test leads with combination probe and alligator clips. Requires only two batteries: one 9-volt NEDA 1604 and one 1.5-volt "D" cell NEDA 13F. **Batteries supplied.** Polarity reversing switch allows faster, more convenient DC measurement. Full-wave bridge rectifier provides accurate AC voltage measurements. **Specifications**—20,000 ohms/volt DC, 5000 ohms/volt AC, Scale length: 4.2", Dimensions 5¼" x 7" x 3". **Ranges**—DC volts: 0-0.25; 0-1; 0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000. AC volts: 0-2.5; 0-10; 0-50; 0-250; 0-500; 0-1000. DC microamperes: 0-50 (250 mV drop). DC milliamperes: 0-1; 0-10; 0-100; 0-500. DC amperes: 0-10 (250 mV drop). DB scale (1 mW 600 ohm reference): −20 to + 10; −8 to + 22; −6 to + 36; + 20 to + 50. **Resistance: Rx1; Rx100; Rx10K. With batteries, test leads and manual included.**
62F300. NET $89.95

SCOPES & DVM'S

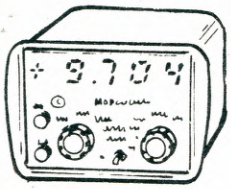
MS-15 MINISCOPE $289

With Rechargeable Batteries & Charger Unit



- 15 megahertz bandwidth.
- External and internal trigger.
- Time base — .1 microsec. to 0.5 Sec/div - 21 settings . ± 3%.
- Battery or line operation.
- Automatic & line sync modes.
- Power consumption < 15 watts.
- Vertical Gain — .01 to 50 V/div - 12 settings ± 3%.
- Viewing area 1.1" x 1.35".
- Case size 2.7"H x 6.4"W x 7.5"D, 3 pounds.

Parts & Labor guaranteed 1 year
10 to 1, 10 meg probe $24.50
Leather carrying case $30.00



LM3A 3 dig 1% DC ..... **$125.**
LM3.5A 3½ dig .5% DC ..... **$147.**
LM40A 4 dig .1% DC ..... **$190.**
LM4A 4 dig .03% DC **$227**

- Rechargeable batteries and charger included
- Measures DC Volts, AC Volts, Ohms and Current
- Automatic polarity, decimal and overload indication
- Rechargeable batteries and charger
- Measures DC Volts, AC Volts, Ohms and Current
- Automatic polarity, decimal and overload indication
- No zero adjustment and no full-scale ohms adjust
- Battery-operated — NiCad batteries; also AC line operation.
- Large LED display for easy reading without interpolation
- Size: 1.9"H x 2.7"W x 4"D

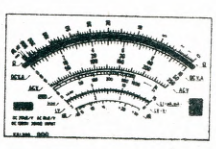
Parts & labor guaranteed 1 year
Tilt stand option ..... $ 3.50
Leather case $16.00

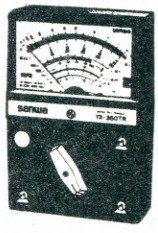
YX-360TR WITH hFE RANGE $29.95

- Multifarious application — as transistor circuit analyser with optional connector
- Wide-range measurement — minimal 0.1V DC & 0.2Ω with excellent resolution
- Series capacitor terminal (OUTPUT+) — AC signal isolation for TV servicing
- Operation security — safe switchboard arrangement

DCV 0-0.1-0.5-2.5-10-50-250-1000 (20kΩ/V) ±3%, 25k (w/HV probe)
DCA 0-50μA 0-2.5-25mA 0-0.25A (100mV & 250mV) ±3%
ACV 0-10-50-250-1000 (8kΩ/V) ±4% Freq. 30Hz to 30kHz
Ω x1 x10 x1k x10k (max. 20M) Batt. 1.5Vx2 & 9Vx1
dB −10 to +62

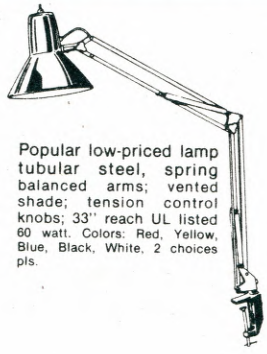
ICEO 0-150μA 0-15-150mA ±5%
hFE 0-1000 ±3% (w/connector)
150x100x57mm 420gr





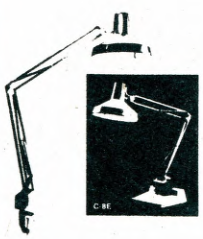
LAMPS

$23.95 ***LEDU*** **SPECIAL**
Model XL-334A
Econo-Lamp



Popular low-priced lamp tubular steel, spring balanced arms; vented shade; tension control knobs; 33" reach UL listed 60 watt. Colors: Red, Yellow, Blue, Black, White, 2 choices pls.

Combination C SERIES

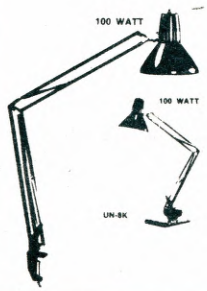


Has fluorescent & incandescent lamps in one vented shade; independent or simultaneous operation; true color rendition

Colors: Baked Enamel Finishes — Gray, Black, White and Chocolate Brown for #C-10 only.
Add Orange for #C-10 only.
Selection of brackets, bases, floor stands, accessories available (see back page).
Uses one 60 watt bulb and one 22 watt T-9 Circline tube.
Shipping weight with bracket: 8 lbs. Four to a master carton.
Model #C-10, 42" reach.* Model #C-8, 34" reach.*

MODEL	Your Price
C-10A, B or C	$75.00
C-10D	78.50
C-8A, B or C	73.50
C-8E (table base model)	89.50

Uni-Lamp UN SERIES

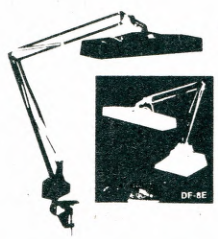


Heavy gauge steel arms, spring-balanced. Vented shade, wide arc light distribution, stay-put positioning; 2 tension control knobs, 2-conductor cord.

Colors: Baked Enamel Finishes — Blue, Avocado, Red, Orange, Gray, White, Black, Yellow and Chocolate.
Selection of brackets, bases and accessories available (see back page).
U.L. listed for 100 watt. Shipping weight with bracket: 5 lbs.
Six to master carton.
Model #UN10, 40" reach.* Model #UN-8, 33" reach.*

MODEL	Your Price
UN-10A, B or C	$38.50
UN-10D	42.00
UN-10K (table base model)	49.00
UN-8A, B or C	37.00
UN-8K (table base model)	47.50

Fluorescent DF SERIES

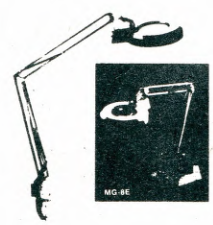


Features a durable, thermoplastic resin shade that stays 20% cooler than metal shades, and is stain and crack resistant. Fully adjustable. Instant start switch.

Colors: Gray, Black, White and Tan.
Selection of brackets, bases, floor stands and accessories available (see back page).
Uses two 15 watt T-8 fluorescent tubes. Shipping weight with bracket: 8 lbs.
Six to master carton.
Model #DF-10, 40" reach.* Model #DF-8, 33" reach.*

MODEL	Your Price
DF-10A, B or C	$64.00
DF-10D	67.00
DF-8A, B or C	62.00
DF-8E (table base model)	75.00

Magnifier IM SERIES



Perfectly balanced fluorescent lighting with precision magnifier lens. For prof'l, techn'l, & related uses. Has die cast protective shade, instant starting.

Colors: Baked Enamel Finishes — Gray, Black, White and Chocolate Brown.
Selection of brackets, bases, floor stands, accessories available (see back page).
Uses one 22 watt T-9 Circline fluorescent tube. 3 diopter lens standard. 5 diopter lens optional. Shipping weight with bracket: 8 lbs.
Six to master carton.
Model No. IM-10, 42" reach* Model #MG-8, 36" reach.*

MODEL	Your Price
IM-10A, B or C	$85.00
IM-10D	88.50
IM-8A, B, C	83.50
IM-8E (table base model)	99.50

3 diopter lens — standard.
5 diopter lens — add $10.00 to List Price.

***"Reach" is the length from point of entry into bracket or base to center of bulb or shade.**

DISCOUNT COMPUTER

THAT'S RIGHT WE ARE NOW DISCOUNT

5% MINIMUM DISCOUNT ON ANY COMPUTER PRODUCT; PC BOARD, KIT OR ASSEMBLED. EXCEPTIONS ARE THOSE PRODUCTS ALREADY OFFERED AT SPECIAL DISCOUNT PRICE.

10% DISCOUNT ON THE FOLLOWING PRODUCT FAMILIES

APPLE	NORTH STAR
CROMEMCO	SOROC
IMSAI	SWTP
TDL	SEALES

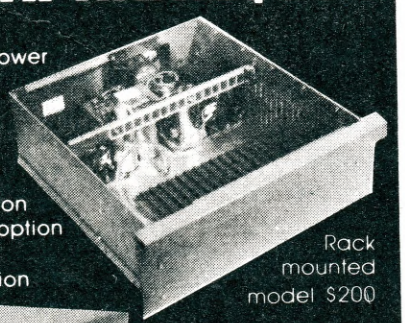
Take a look at a few of our Discount Specials

	LIST	YOUR PRICE
Soroc IQ 120	995.00	895.00
Imsai w/22 Slots Kit	699.00	629.00
Imsai PCS-80/30 Kit	1199.00	1079.00
Heuristics Speechlab Assbld.	299.00	269.00
Logos 8K Memory Kit	125.99	113.40
TDL Video Display Bd.	369.00	332.00
Cromemco Z-2 Kit	595.00	536.00
Cromemco 16K Prom Kit	145.00	131.00
Cromemco Tuart Kit	195.00	176.00
Xitan Alpha 1	769.00	693.00
North Star Horizon 1 Kit	1590.00	1439.00
North Star Horizon 2 Kit	1999.00	1799.00
North Star Micro Disk	699.00	599.00

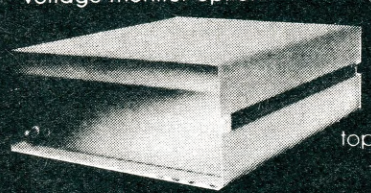
S-100 MAINFRAME $200

S-100 MAINFRAME $200

- NOT A KIT
- 8v@15A, ±16v@3A power
- Rack mountable
- 15 slot motherboard
- Card cage
- Fan, line cord, fuse, switch, EMI filter
- Desk top version option
- 8v@30A, ±16v@10A option
- SS-50 bus option
- voltage monitor option



Rack mounted model $200

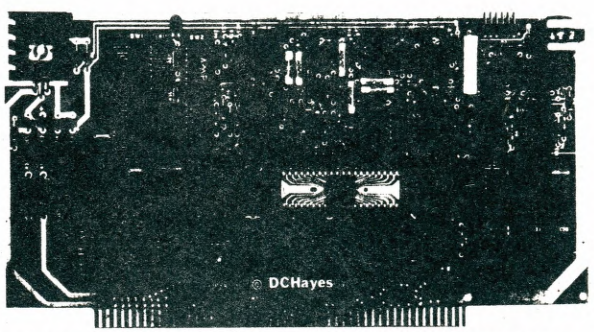


Desk top model $235

Write or call for a copy of our detailed brochure which includes our application note BUILDING CHEAP COMPUTERS.

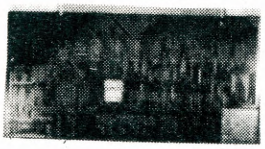
INTEGRAND

80-103A DATA COMMUNICATIONS ADAPTER



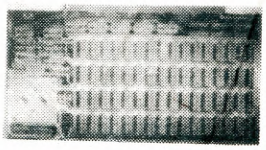
- FULLY PROGRAMMABLE FEATURES
- AUTOMATED DIALING AND ANSWER
- ORIGINATE OR ANSWER MODE
- 110-300 BIT/SEC DATA RATES
- CHARACTER FORMAT AND PARITY
- ERROR DETECTION
- FULLY BUFFERED, OUTPUTS DRIVE 25 S-100 BUS LOADS
- STANDARD U.S. FREQUENCIES
- FULL TELCO COMPATIBILITY WHEN ATTACHED TO DAA
- COMPATIBLE WITH EXISTING TELETYPES AND TIME SHARING MODEMS
- ALL DIGITAL MODULATION AND DEMODULATION. NO ADJUSTMENTS REQUIRED.

PRICES:
Assembled 80-103A with 48 hour burn in and 90 day warranty is $279.95
Bare Board with manual is $49.95



S-100 PRODUCTS

COMPUTER DISCOUNTS 10% OFF (See Page 33)



COMPUTER SYSTEMS

		Kit	Assembled
I-8080/EXP22	IMSAI 8080 CPU w/22 Slots	699	931
I-8048CC-EROM	IMSAI 8048 Control Computer	449	549
I-8048CC-ROM	IMSAI 8048 ROM Cont. Computer	299	349
I-VPP-80/1000	IMSAI Video Display Processor	N/A	5995
I-VPP-80/1050	VDP-80/1000 with 64K	N/A	6745
I-PCS-80/30	Computer with 5" CRT	1199	1499
I-PCS-80/34	80/30 with Minifloppy	1649	1899
I-PCS-8035	80/30 with two Minifloppys	1995	2245
C-Z2	Cromemco Z-2 w/Z80, 21 slots	595	995
C-Z20	Z-2 w/1 disk drive / controller	1495	2095
N-H-1	North Star Horizon 1	1599	1899
N-H-2	North Star Horizon 2	1999	2349
N-H	North Star Chassis w/PS, CPU, MB	599	799
T-XI	TDL Xitan alpha 1	769	
T-XI5	TDL XITAN alph 1.5		
T-X2	TDL XITAN alph 2	1369	
T-X3	TDL XITAN alph 3		
T-X4	TDL XITAN alph 4		

(See Pg. 37)

MOTHERBOARDS

S100-8MBB	S100 Expandable 8 slot PCB	34.95	—
S100-8MB	S100 Expandable 8 slot MB w/9 conn	69.96	79.95
W-QMBB	Quiet Mother 12 Slot MB	35.00	
W-QMB	Quiet Mother 12 slot w/12 conn.	85.00	99.50
8803	Vector 8803 11 slot MB	29.95	
8803K	Vector 8803 w/connectors	79.95	99.95

SYSTEM BOARDS/SPECIALTY BDS

N-FPD	North Star Floating Point Board	359	459
N-FPBD	North Star FPB Documentation	—	10
T-SMB	TDL System Monitor Board	295	395
CT100	COMPUTIME real time clock	199	245
PS-08	Promsetter 1702A/2708 Programmer	210	375
PS-16	Promsetter w/2716 Adapter	260	425
M-M6	Newtech Model 6 Music Board S-100		59.95

CPU CARDS

I-MPUA	IMSAI 8080 CPU Card	190	350
C-Z80CPU	Cromemco Z80 MPU (2-4MH_z)	295	395
N-CPU	North Star Z-80, Vector Int	199	299
T-ZPU	TDL ZPU Card, Z-80	269	369
T-Z80	Ithaca Z-80 CPU PCB	35	—
I-Z80K	Ithaca Z-80 CPU (2MH_z)	129.95	—
I-Z80KA	Ithaca Z-80 CPU (4MH_z)	149.95	—
DI-Z80	Digital Innovations Z-80 CPU	129.95	—
T-C80	8080 CPU PCB	35.00	—
W-C80K	8080 CPU Eight Level V.I.	99.95	—

VIDEO INTERFACES

I-VI0A	Upper/Lower Case 2K refresh	275	405
I-VI0C	Upper/Lower Case, 2K refresh, ROM	325	465

CABLES

I-CABLE A	18" Cable-Board to EIA	18	18
I-CABLE C	5' Cable w/2 Male EIA	25	25
I-CABLE M	MIO Board to Cassette Recorder	12	12
C-TRT-CBL	Cromemco Tuart Cable	15	15

EXTENDER BOARDS

A-EXT	Advanced Computer Extender w/conn	15.95	29.95
I-EXT	IMSAI Extender w/conn	29.95	39.95

EPROM/ROM BOARDS

C-16KPR	Cromemco 16K Eprom Board	145	245
C-BSK	8K Byteuser PROM Programmer	145	245
A-8K	Advanced Computer Producrs 8K EPROM PCB	23.95	
A-8KK	Advanced Computer Products 8K EPROM PCB	64.95	99.95
MR-8	Microdesign MR-8 8K EPROM/ RAM	99.50	129.50
I-16K	Ithaca 2708/16 EPROM Board	29.95	

PROTOTYPE BOARDS

ACP-PT	Advanced Computer Products S100 Proto Board	—	27.95
I-GP-88	IMSAI GP Protoboard	—	39.00
8800VDP	Vector S100 Protoboard		19.95

INTERFACE BOARDS

I-MIO	IMSAI Mult I/O (2 Parallel, 1 serial, cassette)	195	350
I-SIO2-2	2 port serial I/O	156	299
I-SIO1-1	1 port serial I/O	125	235
I-PIO4-4	4 port parralel I/O	156	299
I-PIC-8	Priority Interrupt/Interval Clock	125	238
C-TRT	Cromemco TUART 2 serial, 2 parralel	195	295
C-DT7A	Cromemco D to A/A to D Card	145	245
C-DZ	Cromemco T.V. Dazzler	215	350
T-CIK	Tarbell Cassette Interface	120	160
T-CI	Tarbell Cassette PCB		40
80-103A	D.C. Hayes Data Communications Adapter PCB		49.95
80-103AA	D.C. Hayes w/48 hr. Burn-in assembled		279.95

MEMORY BOARDS - DYNAMIC

C-16KZ	Cromemco 16K Ram	495	795
N-16K	North Star 16K RAM	399	499
SD-32	SD Expando 32K Dynamic	475	575

ENCLOSURES

C-Z2	Cromemco Z2 Cabinet	195	
LCB	8 slot Low Cost Bus w/P.S.	159.95	189.95
LCB-E	Enclosure for LCB		25.00
V-VPI	Vector "Altair" Style perpend. mount		128.30
V-VP2	Vector "IMSAI" Style parallel mount		134.30
I-RM	Integrand S100 Mainframe Table Mtd		200
I-TM	Integrand S100 Mainframe Table Mtd		235
T-	TEI		
T-	TEI		
T-	TEI		
T-	TEI		

(See Pg. 36)

MEMORY BOARDS—STATIC

LOGOS I	Advance Computer Products 8K Static 450ns	125.99	179.95
LOGOS IZ	Advanced Computer Products 8K Static 250ns	149.95	199.95
16K	S100 16K Static 450ns	420.00	520.00
32K	S100 32 Static 450ns	740.00	840.00
Z16K	TDL Z16K Static 250ns	569.00	669.00
Z8K	TDL Z8K Static 250ns	295.00	395.00
C0023245	Ind. Micro 8K Static 250ns	—	249.95
C00232	Ind Micro 8K Static 450ns	—	229.95
C00282HS	Ind Micro 16K Static 250ns	—	495.95
C00282	Ind. Micro 16K Static 450ns	—	439.95
16450	Microbyte 16K Static Ram 450ns.	—	395.00
16250	Microbyte 16K Static Ram 250ns.		425.00
32450	Microbyte 32K Static Ram 450ns.		840.00
32250	Microbyte 32K Static Ram 250ns.		895.00

SOFTWARE

ESP-1	8080 Assembler, Monitor and Editor cassette Electric Pencil I	29.50
SS,SV,SP	TTY(Sol/Cuter, VDM-1Tarbel, VII/Tarbel)	100.00
SSN,SVN,SPN	TTY (Sol/Nstar,VDM-1/Nstar, VII/Nstar)	125.00
DS,DV,DP	Diablo (Sol/Cuter,VDM-1/Tarbel, VII/Tarbel)	150.00
DSN,DVN,DPN	Diablo (Sol/Nstar,VDM-1/Nstar,VTI/Nstar) Electric Pencil II on CP/M Dos	175.00
	Hardware Must Inc. 8080/Z80, Printer, Video Display (VDM-1, VTI, Sol) CP/M supported Dos or Nstar or Tarbel Cassette	
SP	Standard printer Version	225.00
DP	Diablo Printer Versicn	275.00
TB680R	Tiny Basic for Mikbug & Most 6800 Systems P/T	9.95
TB650K	Tiny Basic For Kim, Tim and Most 6502 Systems P/T	9.95
TB680P	Tiny Basic For Ami Proto; includes I/O routine P/T	9.95
TB650W	Tiny Basic For Apple, Includes I/O routine P/T	9.95
TB650T	Tiny Basic for Kim 4K Memory P/T	9.95
	Microsoft Extended Basic on Disk	500.00
	Microsoft for Tran on Disk	350.00

ACCESSORY ITEMS

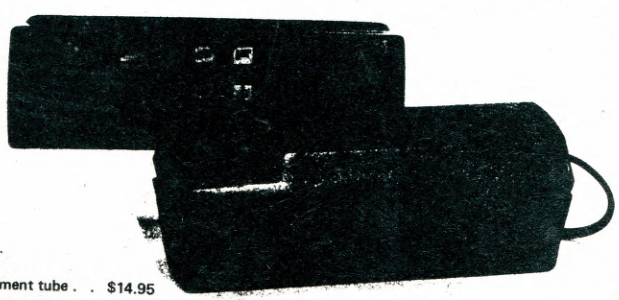
		Kit	Assembled
I-FM	Standard Cooling Fan	—	29.00
C-JS-1	Joystick Console w/speaker	65.00	95.00
11C-E	Low Cost UV Prom Eraser		59.95

DISK DRIVES

		Kit	Assembled
N-MD	North Star Micro Disk System	699.00	799.00
N-S	Second Drive (Assembled)	—	425.00
N-DC	North Star Disk Cabinet	—	39.00
N-DPS	North Star Disk Power Supply	—	39.00
N-DOC	North Star MDS Documentation	—	10.00
P-277	Persci Model 277 Dual Disk	—	1230.00
P-1070	Persci 1070 Floppy Controller	—	840.00
P-PSC	Persci case with poer supply, fan	—	345.00
S-801	Shugart Model 801 Disk Drive	—	575.00
C-410	Cal Comp recond. Model 140	—	525.00

NEW!

UVS-11E Low Cost EPROM Erasing Lamp



$59.95
replacement tube . . $14.95

This is the first UV erasing system to offer simple operation and foolproof safety features at an affordable price. Like all UVP products, the UVS-11E is quality-built and backed by 45 years of UV technology.

$59.95

Simple to Use!
Just plug into the nearest outlet, load with chips and go!

Complete With Holding Tray!
Holds up to 4 chips and maintains constant exposure distance of 1". Special conductive foam liner eliminates electrostatic build-up and protects EPROM from possible static charge build-up.

Special UV Absorber!
Holding tray is formulated of a special material which absorbs all UV exposure. Provides protection against short wave UV while transmitting visible light.

Exclusive Safety Interlock System!
Eliminates accidental UV exposure. Lamp will not operate unless properly seated in the holding tray. When lifted from the tray, the lamp automatically shuts off.

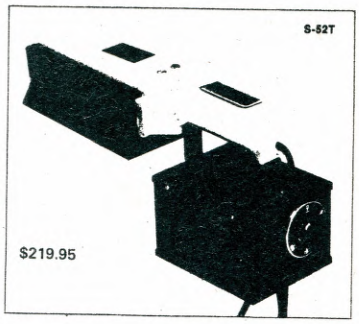
ALSO AVAILABLE.

S-52T — THE FASTEST, MOST POWERFUL UV ERASING SYSTEM

- Unmatched intensity at 254nm
- Special formulation for ozon[illegible] UV transmittance
- Tube life in excess of 10,000 hours
- Complete erasure in minutes

This short wave powerhouse provides 3 feet of exposed, grid-formed tubing for quick erasure. It will erase up to 16 chips at one time in about seven minutes. The timer assembly provides a stable base for the lamp maintaining the tube surface at a constant height above the work surface. When used separately from the timer assembly, it is lightweight and evenly balanced for convenient hand use.

Model S-52T	$239.95
Same for 220V	289.95
Replacement Filter (2 rep'd)	Each 21.75
Replacement tube	83.50

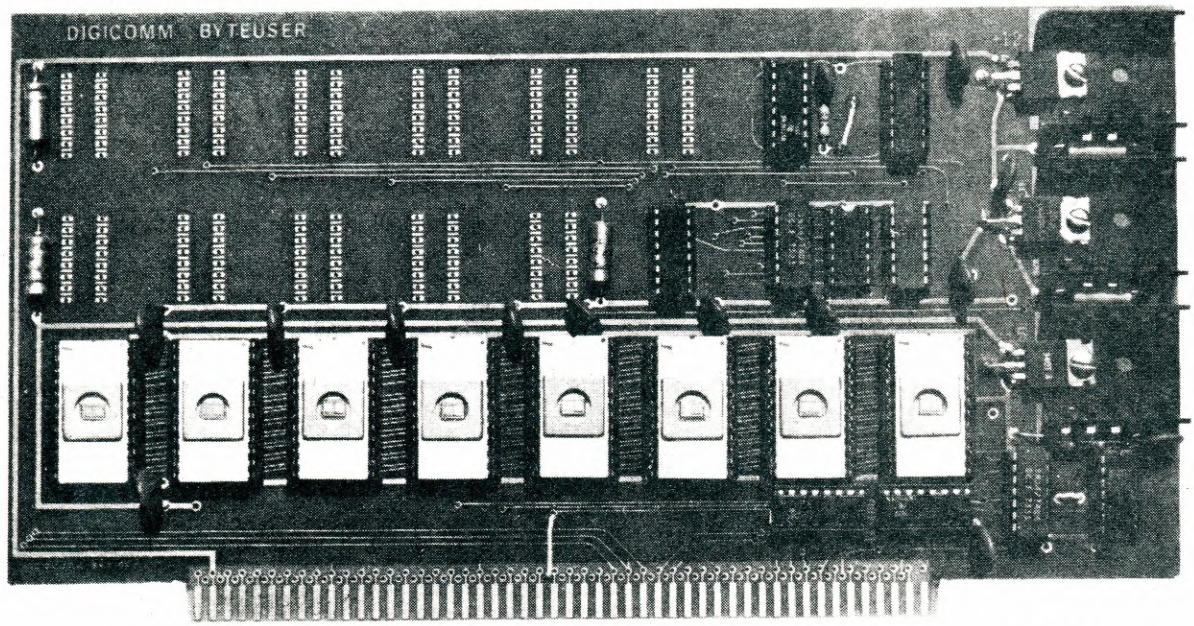


$219.95

ONLY $64.95

BYTEUSER
8K EPROM with Power on Jump/Reset Jump

ONLY $64.95



WORKSPACE ON BOARD FOR ELEVEN WIRE WRAP SOCKETS WHICH COULD BE USED FOR 1K RAM, VECTOR INTERRUPT KEYBOARD, INPUT/OUTPUT PORT, SIMPLE CASSETTE INTERFACE OR PROM PROGRAMMER.

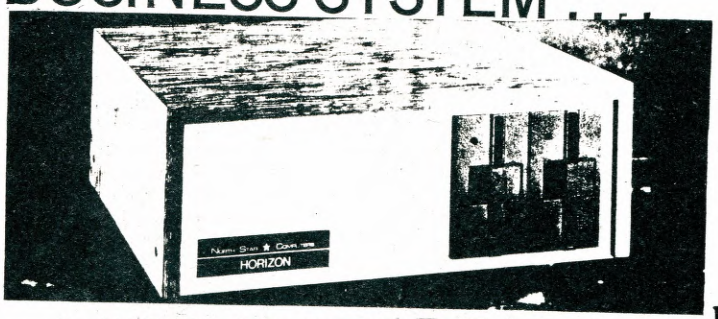
SPECIFICATIONS

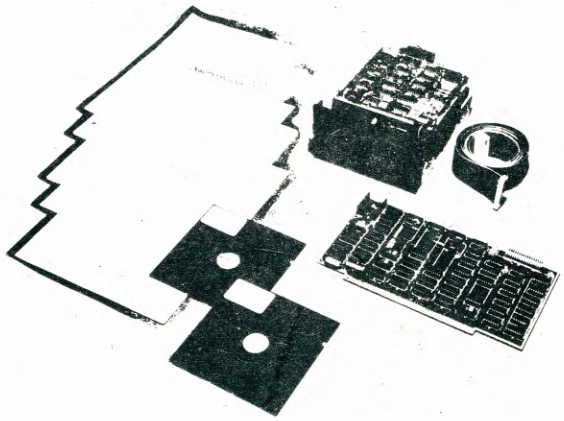
- S-100 BUSS
- 8K EPROM (2708)
- GOLD PLATED EDGE CONNECTOR
- SOLDER MASK
- ALL SOCKETS
- HEAT SINKS
- WAIT STATES
- POWER ON JUMP
- RESET JUMP
- INPUT VOLTAGES:
  +8VDC
  +16VDC
  −16VDC

BYTEUSER 8K EPROM KIT	Only	$ 64,95
PCB only		$ 23.95
8K EPROM (8pcs 2708 Eproms)		$112.00
1K RAM (8pcs. 21L02-1 Ram)		$ 12.40
Qty 11 16 Pin 3 Level w/w Sockets		$ 3.89

New Low Cost ULTRAVIOLET LAMP for erasing PROMS ONLY $59.95

A Z-80 BASED SYSTEM FOR A PERSONAL COMPUTER OR FULL BUSINESS SYSTEM . . .





Look To The North Star HORIZON Computer.

HORIZON™ — a complete, high-performance microprocessor system with integrated floppy disk memory. HORIZON is attractive, professionally engineered, and ideal for business, educational and personal applications.

To begin programming in extended BASIC, merely add a CRT or hard-copy terminal. HORIZON-1 includes a Z80A processor, 16K RAM, minifloppy™ disk and 12-slot S-100 motherboard with serial terminal interface — all standard equipment.

WHAT ABOUT PERFORMANCE?

The Z80A processor operates at 4MHZ — double the power of the 8080. And our 16K RAM board lets the Z80A execute *at full speed*. HORIZON can load or save a 10k byte disk program in less than 2 seconds. Each diskette can store 90K bytes.

AND SOFTWARE, TOO

HORIZON includes the North Star Disk Operating System and full extended BASIC on diskette ready at power-on. Our BASIC, now in widespread use, has everything desired in a BASIC, including sequential and random disk files, formatted output, a powerful line editor, strings, machine language CALL and more.

EXPAND YOUR HORIZON

Also available — Hardware floating point board (FPB); additional 16K memory boards with parity option. Add a second disk drive and you have HORIZON-2. Economical serial and parallel I/O ports may be installed on the motherboard. Many widely available S-100 bus peripheral boards can be added to HORIZON.

QUALITY AT THE RIGHT PRICE

HORIZON processor board, RAM, FPB and MICRO DISK SYSTEM can be bought separately for either Z80 or 8080 S-100 bus systems.

HORIZON-1 $1599 kit, $1899 assembled.
HORIZON-2 $1999 kit, $2349 assembled.

16K RAM — $399 kit, $459 assembled. Parity option $39 kit, $59 assembled. FPB $259 kit, $359 assembled. Z80 board $199 kit, $259 assembled. Prices subject to change. HORIZON offered in choice of wood or blue metal cover at no extra charge.

NORTH STAR ⁘ COMPUTERS

COMPLETE FLOPPY DISK SYSTEM FOR YOUR ALTAIR/IMSAI

~~$699~~ $599*

That's right, complete.

The North Star MICRO-DISK SYSTEM™ uses the Shugart minifloppy™ disk drive. The controller is an S-100 compatible PC board with on-board PROM for bootstrap load. It can control up to three drives, either with or without interrupts. No DMA is required.

No system is complete without software: we provide the PROM bootstrap, a file-oriented disk operating system (2k bytes), and our powerful extended BASIC with sequential and random disk file accessing (10k bytes).

Each 5" diameter diskette has 90k data byte capacity. BASIC loads in less than 2 seconds. The drive itself can be mounted **inside** your computer, and use your **existing** power supply (.9 amp at 5V and 1.6 amp at 12V max). Or, if you prefer, we offer a power supply ($39) and enclosure ($39).

Sound unbelievable? See the North Star MICRO-DISK SYSTEM at your local computer store. For a high-performance BASIC computing system, all you need is an 8080 or Z80 computer, 16k of memory, a terminal, and the North Star MICRO-DISK SYSTEM. For additional performance, obtain up to a factor of ten increase in BASIC execution speed by also ordering the North Star hardware Floating Point Board (FPB-A). Use of the FPB-A also saves about 1k of memory by eliminating software arithmetic routines.

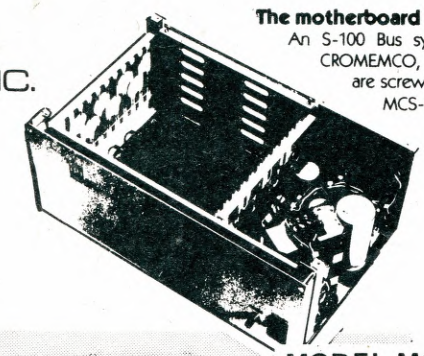
Included: North Star controller kit (highest quality PC board and components, sockets for all IC's, and power regulation for one drive), SA-400 drive (assembled and tested), cabling and connectors, 2 diskettes (one containing file DOS and BASIC), complete hardware and software documentation, and U.S. shipping.

		OUR PRICE ⁘
MICRO-DISK SYSTEM	~~$699~~	$599
(ASSEMBLED)	~~$799~~	$699
ADDITIONAL DRIVES	~~$425~~ ea.	$359
DISKETTES	$4.50 ea.	
FPB-A	~~$359~~	$320
(ASSEMBLED)	~~$499~~	$449

⁘ DISCOUNT PRICE

$599

TEI INC.



The motherboard

An S-100 Bus system high quality mother board with 100-pin edge connectors. Compatible with IMSAI, MITS, CROMEMCO, TDL and other S-100 bus configured circuit boards. Plug connections for reset switch. Voltage terminals are screw type to power supply leads. All card guides are provided. 12 slots for MCS-112 model and 22 slots for MCS-122 model.

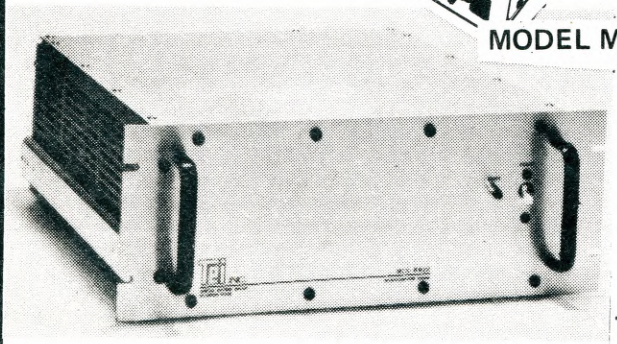
Edge connectors

High quality edge connectors factory mounted and wave soldered to eliminate this nuisance for you. Completely checked out for shorts or open traces. ALL edge connectors furnished, 12 for the MCS-112 and 22 for the MCS-122. No additional expense when you expand your system.

The power supply

One of a kind . . . using a constant voltage transformer (CVT) with a very high immunity to input line noise . . . greater than 100 db rejection. Line regulation better than ± 1% from an input of 95 to 140 Volt AC at full load to 85 to 140 Volt AC at three quarter load. Designed to meet UL-478 specifications (EDP SPECS). Individual fusing on all input and output voltage lines. See specifications below for power ratings.

MODEL MCS112 $395.00



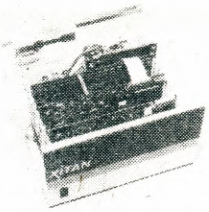
MCS-RM12 (12 S lot Ruggedized S-100 card cage rack mount) $545.00

TEI PRICING

MODEL NO.	DESCRIPTION	LIST
MCS-VCB	Video control board 24 x 80 format	475.00
MCS-3P+3S	I/O board 3 parallel, 3 serial ports	295.00
MCS-RM12	Rack mounted mainframe, 12 slots	545.00
MCS-RM22	Rack mounted mainframe, 22 slots	675.00
MCS-112	The original mainframe, 12 slots	395.00
MCS-122	The original mainframe, 22 slots	495.00
MCS-KB	Keyboard only, detached	250.00
MCS-PC	Processor controller only, w/keyboard	695.00
MCS-TFD	Triple mini drive cabinet only	375.00
MCS-TFD140NC	Triple mini drive cabinet w/1 drive only	800.00
MCS-TFD240NC	Triple mini drive cabinet w/2 drives only	1225.00
MCS-SA400	Mini drive only	425.00

TECHNICAL DESIGN LABS

TDL COMBINES THEIR RECOGNIZED LEADERSHIP IN SOFTWARE WITH THE MOST COMPACT HARDWARE DESIGN YET.



ONLY $769.00

XITAN alpha 1

When we combined our highly praised ZPU board and our System Monitor Board, we defined the standard for the industry; we integrated more power and flexibility in two slots of our motherboard than most other systems can muster using five or more boards. When we put this setup into our rugged aluminum case we created the first XITAN system, the *alpha 1*. By adding a CRT terminal and/or teleprinter you will have a complete computer system.

KIT: $769 ASSEMBLED & TESTED: $1039

XITAN alpha 2

By adding a Z16 memory module and our PACKAGE A software to the *alpha 1* we created a second XITAN system, the *alpha 2*. Thus, a complete and extremely powerful micro-computer system emerges well worthy of you who are operating at the most sophisticated levels. The XITAN *alpha 2* provides you with 18K of RAM, 2K of ROM, 2 serial I/O ports, 1 parallel I/O port, our 1200 baud audio cassette interface as well as our extraordinarily powerful software package which includes 8K Basic, the Text Output Processor, the Zapple Text Editor and the Relocating Macro-Assembler. Add your own I/O device and GO . . . with the most powerful and flexible micro-computer package ever offered.

KIT: $1369 ASSEMBLED & TESTED: $1749

TDL's ZPU

$269 kit $345 Assembled

Here it is, TDL's ZPU the highest point of technology for an Altair/IMSAI system. Now, you can multiply your present capabilities without creating costly obsolescence. Take advantage of the wide range of existing hardware backup for your current system. The ZPU is compatible and dependable with many plus features you'll want to know about.

The Z-80 offers you the greatest power of any micro-158 instructions, 696 opcodes, 22 registers, single voltage power requirements, and static operation allowing clock speeds from DC up to 4MHz or greater. (NOTE: Zilog is not yet certifying Z-80 operation above 2.5 MHz. Most Z80s operate up to 4MHz. When certifies 4MHz parts are available they will be included in the ZPU.)

the Z-80 System Monitor Board

$295 Kit $395 Assembled

This single board, in conjuction with your processor and memory, provides all the support that your system needs to get up and running in a sophisticated but easy to use configuration.

Using other boards to duplicate the functions of the System Monitor Board isn't easy — it requires at least 4 other boards, several hundreds more dollars in cost, and a good bit of expertise to create an equivalent fully integrated operating system. The System Monitor Board does it for you.

Z16 — the most advanced memory module available / 16K for $574 Assembled $674

It is loaded with more features and more versatility than any other memory on the market . . . at a price that makes it a real bargain. TDL has the fastest and lowest power static ram boards going. Full 16K memory on one cad.

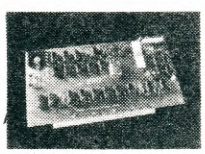
Z8K — 8K for $332.00 Assembled $433.00

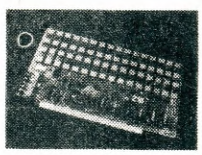
ALSO AVAILABLE

	Kit:	Assembled & Tested
alpha 1.5	$ 868.00	$1138.00
alpha 3	1134.00	1464.00
alpha 4	1694.00	2149.00
Xitan Mainframe	259.00	359.00

VIDEO DISPLAY BOARD
80 char./line
25 lines/screen
6 x 9 dot matrix
64 characters

ONLY $369.00 Assembled





Software - TDL's user support program is unmatched in the micro industry

Zapple Monitor P/T 25.00 Cassette 20.00

Designed to allow the user the maximum is versatility and system executive control. It is capable of supporting 4 logical devices (Console, Reader, Punch and List Device) each of which supports 4 alternate I/O devices including N number of user defined devices. The reader and punch may be any device - cassette, memory, disk, etc.

It is also efficient, providing 27 commands (3 of which are user defined) while occupying only 2K of core. Additionaly, ZAPPLE is relocatable, romable, and expandable due to its modular organization. The documentation includes the complete source listing as well as a comprehensive user guide.

Text Editor P/T 35.00 Cassette 30.00

A most versatile tool for both the programmer and the word processor.

Both line and character oriented; it features an internal pointer that can be moved through the text line by line and character by character. Wherever the pointer is located, both characters and lines may be inserted, deleted or changed at will, in both forward and backward directions.

Like all TDL software, the Zapple Text Editor is relocatable, uses either the Zap or Zapple Monitors for its I/O handling, and is supplied on paper tape complete with a user guide.

Text Output Processor P/T 50.00 Cassette 40.00

A WORD-PROCESSOR for the Z-80 system. It occupies 3K of core. It is used in conjunction with the Text-Editor and Monitor to provide a POWERFUL word-processing capability.

The Processor has numerous commands which you simply enter into the text while you are editing. Then, you take the output of the editor, run it through the Processor, and its output will be formatted EXACTLY as you have commanded.

The variety of possible applications for this sort of word processing power are limited only by your imagination.

Macro-Assembler P/T 50.00 Cassette 40.00

TDL's relocating macro-assembler is by far the most sophisticated programming tool yet developed for a micro-processor. In terms of number of funcations, scope of abilities, and usefullness, it has no comparison.

Zapple Basic P/T 50.00 Cassette 40.00

Here's something you've been waiting for — Zapple Basic! It can hold its head up among the finest Basic interpreters ever written - backed by the speed and power of the Z-80. And it works . . .

Zapple Basic occupies 8K of core and utilizews the I/O handling of the Zap or Zapple Monitor routines. Therefore you get unequalled I/O handling verstaility and a large degree of hardware independence. Of course, Zapple Basic is relocatable — so you can load it anywhere in memory. (Minimum loading address 200 hex - to allow a fixed buffer from 100H to 1FFH.)

Super Basic P/T 95.00 Cassette 79.00

One of the latest additions to the fantastic software offerings by TDL is their new Z-80 SUPER-BASIC. This is a powerful 12K Basic Interpreter which has all the features of ZAPPLE 8K BASIC and many more.

Fortran IV complete ANSI
Standard Fortran IV only on disc $349.00

SOFTWARE PACKAGE DEALS

PACKAGE A (Basic, Zapple Monitor, Text Editor Macro-Assembler, Output Processor

$169.00 Papertape
$149.00 Cassette
$189.00 Disk

PACKAGE A with Super Basic Add $30.00

PACKAGE B (Output Processor, Text Editor, and the Zapple Monitor)

$ 85.00 Papertape
$ 60.00 Cassette

PACKAGE C (The Macro-Assembler, Monitor and text editor)

$ 85.00 Papertape
$ 60.00 Cassette

Z-TEL Text Editor $50.00 P/T $40.00 Cassette
Data Base Management System on Disk $1250.00

BASE PRICE: VDP-80/1000 with 32K RAM, dual floppy. $5995.00

□ **Powerful, High-Speed, Central Processor.** 3 mHz Intel 8085 microprocessor. 32K RAM memory (expandable to 196K). Parallel and serial I/O. Asynch, synch and bisynch communications. Programmable baud rates (.05-56 KB).

□ **Megabyte Mass Storage.** PerSci dual floppy, double density disk drive standard. One million byte storage capacity. Three floppy disk drives can be added-on, providing 4 million bytes of on-line storage.

□ **Drives Printers, Plotters, Terminals, Modems and Tape Drives.** Supports up to six terminals or modems, and four tape drives. Drives plotters, serial printers and line printers (up to 300 lpm)

□ **Commercial BASIC, FORTRAN IV, DOS Software.** Built-in ROM monitor allows extensive debugging and diagnostics. BASIC, interactive or compiler version. FORTRAN IV level 2 ANSI compiler. DOS-enhanced CP/M.**

IMSAI PRICE LIST	P/N	KIT	ASSEMBLED
IMSAI 8080 with 22 slot motherboard	I2-03	699.00	1049.00
plus 10 additional edge connectors	I2-22	50.00	95.00
plus 20 additional edge connectors	I2-23	200.00	190.00
S102-1 Serial I/O one port	I2-55	125.00	187.00
plus one additional port	I2-53	156.00	236.00
SIO cable (one per port)	I2-63		18.00
SIO socket kit		7.00	
PI01-1 Parallel I/O one port	I2-49	93.00	140.00
plus one additional port	I2-48	115.00	173.00
plus three additional ports	I2-47	156.00	233.00
PIO cable (two per board)	I2-52		22.00
PIO socket kit	I5-12	7.00	
MIO Multiple I/O board	I2-28	189.95	292.00
MIO cable (requires up to 3)	I2-63		18.00
MIO socket kit	I5-26	12.50	
PIC-8 Priority Interrupt board	I2-25	125.00	187.00
PIC-8 socket kit	I5-14	7.00	
IMSAI MPU board (as available)	I2-05	165.00	235.00
MPU socket kit	I5-10	10.00	
Muffin Fan	I2-15		22.00
16K Dynamic Memory	I2-38		679.00
32K Dynamic Memory	I2-39		1099.00
65K Dynamic Memory	I2-40		3899.00
Intelligent Memory Manager	I2-41	299.00	399.00
4K Static Ram Board	I400	129.95	169.95
Logos I 8K Static Ram Board	I800	179.95	199.95

VDP-80/1000	Video Data Processor	N/A	5995.00
VDP-80/1050	80/1000 with 64K RAM	N/A	6745.00
PCS-80/30	Table Top Computer w/CRT	1199	1499.00
PCS-80/34	80/30 with Minifloppy	1649.00	1899.00
PCS-80/35	80/30 with dual Minifloppy	1995.00	2245.00
VIOA	Video Interface Board	275.00	405.00
VIOB	VIOA uppercase only w/ROM	275.00	405.00
VIOC	VIOA with firmware (ROM)	325.00	465.00
VIO	1K refresh uppercase	190.00	335.00

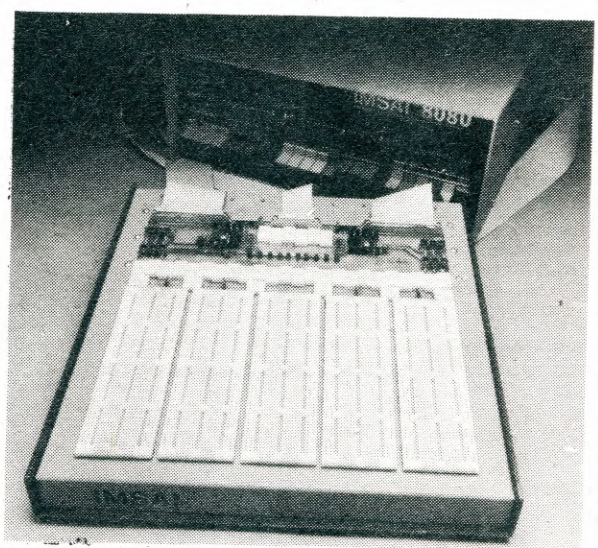
IMSAI

PCS-80/30 only $1499.00 Assembled

IMSAI 80/30 Integrated Video Computer (with Intelligent Keyboard—IKB-1) Standard Features:

□ **Price assembled $1499.** IMSAI is the only S-100 bus manufacturer that offers a microprocessor driven keyboard with "N" key roll over, 2¼K of RAM, 8 expansion slots, choice of 4K, 16K, 32K and 64K RAM expansion boards, 3K ROM monitor, synch/asynch serial interfaces, parallel and serial ports, high resolution CRT monitor, 24 x 80 display with graphic editing and data entry features, and 28 amp power supply for the incredibly low price of $1499.

Compare the features of our S-100 bus system, the industry standard, to anyone else. After you've taken them apart piece by piece, you'll know why IMSAI is the system you can grow with. At a price you can live with.



The IMSAI Intelligent Breadboard, like the IMSAI 8080, is as affordable as it is useful: $435 kit; $625 assembled. Immediate delivery.

Introducing Apple II™ the personal computer.

DISCOUNT PRICE
$896 w/4K

DISCOUNT PRICE
$1198 w/16K

Apple II is a complete, self-contained, ready to use computer. Standard features include BASIC and Monitor in ROM (8K bytes), Color Graphics, up to 48K bytes RAM (4K included), cassette interface, Apple GAME I/O connector, typewriter-style ASCII keyboard, high-efficiency switching power supply and plastic molded case. Also included as standard are: 1 demonstration cassette tape, and detailed operations manual.

MICROPROCESSOR:
6502 operating at 1 MHz clock.

VIDEO DISPLAY
The Apple II video display section displays memory as either text, *color graphics,* or *high-resolution graphics* (completely transparent memory access). Both graphics modes can be selected to include 4 lines of text at the bottom of the display area. *All display modes are software selectable.* In addition, the user can select under software one of two memory blocks to be displayed.

Text
- 40 characters/line, 24 lines.
- 5 x 7 upper case characters.
- Normal, inverse or flashing characters.
- Extensive display control software in ROM.
- Full cursor control.
- Fast display—1000 cps.

Color Graphics
- 40h x 48v resolution or 40h x 40v with 4 lines text.
- 15 colors—color generated digitally.
- BASIC commands to use graphics easily: COLOR=, PLOT x, y, HLIN, VLIN SCRN.

High Resolution Graphics
- 280h x 192v resolution or 280h x 160v with 4 lines text.
- 4 colors—black, white, violet, green.
- Displays 8K bytes (requires 12K minimum RAM).

MEMORY
RAM is organized into 3 increments. Each increment can be either 4K bytes using 4K chips or 16K bytes using advanced 16K chips. Memory may be easily increased by inserting an additional increment of chips. From 4K to 48K bytes of RAM can be contained on the single board. 8K bytes of ROM are supplied which permanently store Apple BASIC (6K) and a powerful system monitor (2K). Two additional ROM sockets are provided for future Apple software.
- Up to 48K bytes on-board RAM—no peripheral memory boards!
- Unique automatic RAM refresh system, completely transparent.
- Uses 4096, 2104 type 4K and 4116, 2116 type 16K RAMs.
- Fast memory—350ns access time.

HERE'S HOW TO ORDER

Systems	P/N	Unit Price
Complete Computer—4K Bytes RAM	A2S004X	$ 995.00
Complete Computer—8K Bytes RAM	A2S008X	1095.00
Complete Computer—16K Bytes RAM	A2S016X	1445.00
Complete Computer—32K Bytes RAM	A2S032X	1895.00
Complete Computer—48K Bytes RAM	A2S048X	2345.00
Memory		
Add-In Memory—4K Bytes (4K RAMs)	A2C004X	49.95*
Add-In Mem.—16K Bytes (16K RAMs)	A2C016X	256.00*
Memory Configuration Blocks (Set of 3)		
4K, 4K, 4K Basic	A2C020X	10.00
16K, 4K, 4K	A2C022X	10.00
16K, 16K, 16K	A2C024X	10.00
Accessory Items		
Vinyl Carrying Case	A2M0009X	29.95
Game Paddles	A2M0007X	30.40
Protoboard	A2B0001X	24.00
Parallel Interface	A2B0002X	180.00
Literature		
Operators Manual	A2L0001X	10.00
6502 Hardware Manual	A2L0002X	10.00
6502 Software Manual	A2L0003X	10.00

LOW

SPECIAL APPLE DISCOUNT
APPLE II w/16K
regular price 1445.00
ACP SUPER DISCOUNT PRICE
$1198.00

COMPU/TIME CT 100

COMPU/TIME offers
A
Real Darn Clever
Enhancement to users of
IMSAI/ALTAIR Microprocessors

S100 BUS COMPATIBLE

TIME & CALENDAR
Microprocessors need the power that a real-time clock can offer. Date and time becomes instantly available. **COMPU/TIME** does not have to be initialized every time the system is powered up. It possesses a crystal-controlled time base to obtain superior accuracy and has two setable coincidence counters. Time, date, and counters are set via software.

COMPUTATIONAL FUNCTION
Microprocessors need to be complimented by hardware arithmetics to free up memory pages dedicated to floating point routines and mathmatical software. **COMPU/TIME** provides a 40 function calculator array so that algebraic, trigonometric, basic arthmetic problems can be solved without the need of developing sophisticated software.

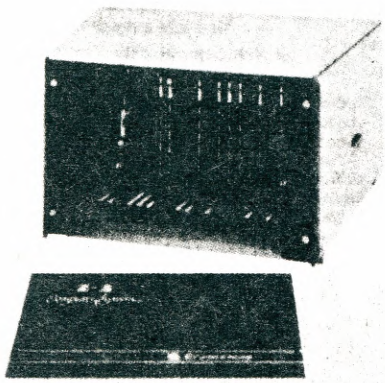
Buy It Your Way

COMPU/TIME	CT100	$199 Kit	$245 Assembled
COMPU only	C101	$149 Kit	$189 Assembled
TIME only	T102	$165 Kit	$205 Assembled
COMPU/TIME PC Board only			$ 80

CROMEMCO — Stocked and Serviced by Advanced Computer Products, Inc.

Z-2 Computer System

only $595 kit



This new Cromemco Z-2 Computer System provides the engineer, businessman, educator or experimenter with the industry's fastest and most powerful microcomputer in an economical package for dedicated work.

The Z-2 makes available Cromemco's fast Z-80 microprocessor card and a 21-card motherboard in a form such that an almost endless variety of memory, I/O and other peripherals can easily be plugged in — thereby forming a computer tailored to your particular job whether in the laboratory, on the production line, or in an educational time-sharing setup.

Z-2 System

Here are some of the leading features you get in the new Cromemco Z-2 Computer System:

- The industry's fastest μP board (4 MHz or 250-nanosecond cycle time).
- The power and convenience of the well-known Z-80 microprocessor chip.
- A full-length *shielded* motherboard with 21 card slots to let you plug in almost any conceivable combination of memory, I/O, or your own custom circuits.
- An extremely heavy duty power supply providing 30A from +8V and 15A from +18 and −18V. This will not only power a full set of 21 cards but also has ample additional power for other peripherals such as a floppy disk drive.
- Power-on jump circuitry to begin automatic program execution when power is turned on.
- S-100 bus — important because it is widely supported by a host of peripherals manufacturers. Thus you get the widest possible array of compatible peripherals.
- All-metal chassis and dust case.
- Card retainer that secures cards in sockets.
- Standard rack-mount style construction suited to dedicated applications. Upward compatible with larger systems. Usable with a variety of cabinets. Bench cabinet optional.
- 110 or 220-volt operation.

Rack/Cabinet mounting

The basic Z-2 is supplied in a black-anodized metal case for mounting in a standard 19-inch relay rack. A quality stylized bench cabinet in an attractive blue color is also available.

$195

TECHNICAL SPECIFICATIONS Z-2 COMPUTER SYSTEM

Processor: 4 MHz version Z-80
Cycle time: 250 nanoseconds
Minimum instruction execution time: 1 microsecond
Instruction set: 158 instructions including the 78 instructions of the 8080
System bus: industry standard S-100
Board capacity: 21 boards
Power supply: +8 volts @ 30A, +18 volts @ 15A, −18 volts @ 15A
Power: Operates from 110/220 volts; 50/60 cycles.
Operating environment: 0-55°C
Dimensions: 12¼" H x 19" W x 20¾" D (31.1 x 48.3 x 52.7 cm)
Weight: 39 lbs (18 kg)
Mounting: For rack mounting (optional bench cabinet available)

Price: Z-2 kit $595
Z-2 Assembled $995

Software

• BASIC. Cromemco 3K Control BASIC is a compact intger-only BASIC interpreter designed specifically for microcomputer control applications. Control BASIC allows the user to read and write specific memory and I/O locations and call machine language subroutines. There are 36 commands and functions available:

CALL	NEXT	TO
EPROM	NULL	WIDTH
FOR	OUT	ABS
GOTO	PRINT	AND
GOSUB	PUT	GET
IF	QUIT	IN
INPUT	RETURN	LOC
LET	REMARK	OR
LIST	RUN	RND
LOAD	SAVE	SIZE
LOCK	STEP	SGN
NEW	STOP	XOR

Control BASIC requires 3K of memory space beginning at location E400. It is available on paper tape (Model CB-PT) or in 3 2708 PROMs (Model CB-308).
Model CB-PT paper tape $15

Model CB-308
in 3 2708 PROMs $150

• MONITOR The Cromemco Z-80 Monitor is a powerful tool for use in software development. It allows the user to examine and alter register and memory contents, set program break points, move blocks of memory, program PROMs (using the Cromemco BYTESAVER), and read and punch paper tapes – all under keyboard control.

There are 12 Monitor commands:

DSPM	READ	MOV
DSPR	WRIT	OUT
SUBM	GO	PRGM
SUBR	GO (breakpoints)	VRFY

The Monitor resides in memory space from E000 to E3FF and is available on either paper tape (Model ZM-PT) or in one 2708 PROM (Model ZM-108).
Model ZM-PT paper tape. $15

Model ZM-108 in 2708 PROM . . . $50

• ASSEMBLER/RESIDENT OPERATING SYSTEM. The Cromemco assembler and resident operating system allows the user to create and edit Z-80 source code, assemble the source code, and create object code files. There are 43 operating system commands:

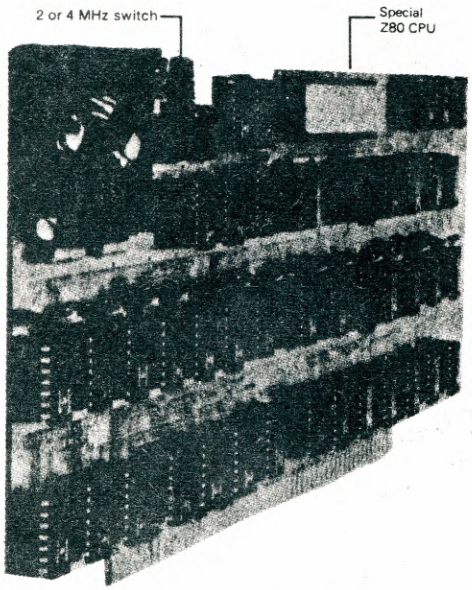
CFIL	NFOR	WBIN	ENTE	PSTA
LFIL	AUTO	RBIN	MOVE	STAB
CURR	RENU	WCBN	VMEM	ASMB
DFIL	DELE	ECBN	PRAM	ASMC
VFIL	LIOD	RCBN	BANK	ASMU
MFIL	IODR	WCHX	ECUS	EXEC
LIST	DIOD	ECHX	LCUS	PROM
TEXT	SYSI	RCHX	DCUS	
FORM	LEAD	DUMP	RENA	

The assembler/resident operating system resides in memory space from address A000 to BFFF. It is available on paper tape (Model ZA-PT) or in 8 2708 PROMs (Model ZA-808).
Model ZA-PT paper tape. $30

Model ZA-808
in 8 2708 PROMs $400

4 MHz CPU card

- Uses special Z80 microprocessor
- Fast—4 MHz clock rate
- Does not require front panel for operation



Z80-CPU kit $295
Z80-CPU assembled $395

ALTAIR/IMSAI COMPATIBLE WITHOUT MODIFICATION

Yes, the new CPU is plug-compatible with the Altair 8800 and IMSAI 8080. Just remove the existing CPU, plug in the Z80/CPU, and you're up and running.

INCLUDES FREE SOFTWARE

The CPU comes with our powerful Z-80 monitor, complete documentation, source code, and paper tape object code. The monitor is also available in PROM ($50) for use in our BYTESAVER or 16 KPR memory boards.

TECHNICAL

PROCESSOR: 4 MHz version of the Z-80.
CLOCK RATE: 2/4 MHz (switch selectable).
INSTRUCTION SET: 158 instructions including the 78 instructions of the 8080.
POWER-ON JUMP: jumper wire enabled.
POWER-ON JUMP LOCATIONS: 16 locations switch selectable.
WAIT STATE GENERATION: 0 - 4 wait states jumper wire selectable.
M1 WAIT STATE: jumper wire selectable.
BUS: S-100.
POWER REQUIREMENTS: +8 volts @ 1.1 A.
OPERATING ENVIRONMENT: 0 - 55°C.

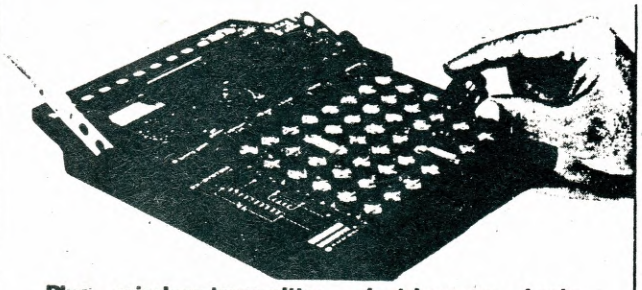
ALSO FROM CROMEMCO

	KIT	ASSEMBLED
TV DAZZLER - a computer interface that lets a color TV be your computer display terminal	215.00	350.00

DAZZLER PAPERTAPE PROGRAMS

Life	15.00	Space War	15.00
Kaleidoscope	15.00	4D Tic-Tac-Toe	15.00
Cro-Doc-Dazwr.	15.00	Tank War	15.00
Dazzle-Matton	15.00	Chase*	15.00
Tic-Tac-Toe	15.00	Track*	15.00
Dazzle Doodles	15.00	*Require JS1 Joystick below	

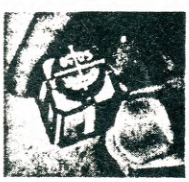
JOYSTICK CONSOLE WITH SPEAKER	65.00	95.00
TUART - Digital Interface	195.00	295.00
EXTENDER CARD	35.00	45.00
WIRE WRAPBOARD	35.00	45.00
BYTESAVER - Memory Board and Prom Programming	145.00	245.00
(8) 2708 Eproms for Bytesaver	160.00	
D+7A I/O Multiple Channel I/O Interface	145.00	245.00
BYTEMOVER - Prom Program	50.00	
CROMEMCO 16K DYNAMIC MEMORY	495.00	595.00



Plus...wireless transmitter...electric organ...basic binary computer...in fact, 150 electronic devices you can build yourself!

The EX-150 from Denshi-Gakken.

We are surrounded by electronic marvels most of us know little about. Computers, television, radio . . . the list is endless. If you've long been intrigued by electronics—or have a school-age youngster eager to learn—the Denshi-Gakken EX-150 could be the first step toward a lifelong fascination with this all-important science. Containing all the materials necessary to perform 150 ingenious and exciting experiments, the kit is a working electronics laboratory. And, quite possibly, the finest electronics teaching aid now available.



Ideal for Home or Classroom

As you can see, the EX-150 is not a toy, but a superb learning tool. Made with the same high-quality materials as the finest electrical products and ruggedly constructed, it is ideal for home or classroom use. The tough plastic casing contains a built-in antenna, speaker, volume control, IC amp meter, and photoelectric cell. Also included are a microphone, earphone and antenna wires. There is nothing else to buy. The 58-piece kit, complete with 158-page easy-to-follow instruction manual, is $74.95.

With the EX-150, you can create the devices mentioned above, plus . . .

- A transistor radio operated by light.
- An organ that works on the same principle as the Mogg (TM) synthesizer.*
- An electronic bird.
- A sphygmometer to measure the pulse of blood—and many others.

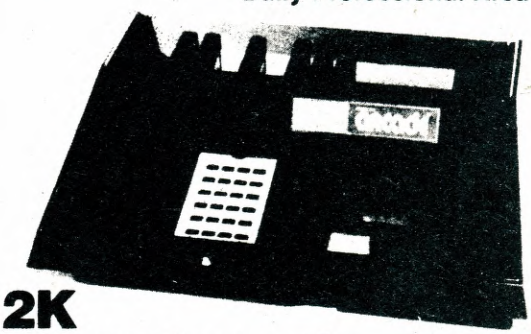
Projects range from simply lighting a bulb to creating complex photoelectric circuitry. You advance at your own pace. You need no prior knowledge, no additional equipment to enjoy the EX-150. The kit includes a safe battery-powered circuit board with 50 snap-in components: transistors, resistors, diodes, coils, capacitators and transformers. Each component is in a transparent plastic cube, clearly marked with standard electronic symbols, and fits easily into the circuit board. The kit is absolutely safe—there is never a need to solder or splice. Therefore, all projects can be built and dismantled over and over again.

A Set for Every Age Level! Additional Components Available!

There is no upper age limit for those who can enjoy and learn from the EX-150. However, for younger children, simplified kits are also available at correspondingly lower prices. These kits can be up-graded by adding additional components later.

Kit#	Experiments	Pieces	Age Level	Price
EX-150	150	58	12-Adult	$74.95
EX-100	100	43	8-16	52.95
EX-30	30	38	8-12	36.95

Bally Professional Arcade™



12K Computer only $299.95 POSTPAID

Order today and get all this for $299.95

The processing power of the Z-80 is multiplied 5 to 10 fold by custom NMOS chips containing the equivalent of 600 SSI and MSI IC's. The Bally Arcade™ comes with all these features: 5 function, 10 memory calculator; Gunfight, Checkmate, Scribbling games with color, action, and sound; 24 key keyboard; 4 pistol grip control handles; connects to black and white or color T.V. set. 16,000 dot picture image (vs. closer to 4,000 for most other video games). 1 year limited warranty. NCE and Bally service depots.

Get Tiny Basic FREE!

One of the optional ROM cassettes for the Arcade is Palo Alto Tiny Basic. Includes keyboard overlay, 4K ROM cassette, and instruction booklet. Features: music, graphics and color; programs up to 1,800 characters. "Token" feature enabling substituting a single character for an instructional word or phrase. 66 characters from the keyboard. Displays 11 lines of 28 characters/line. Buy Tiny Basic now for $49.95 and when you buy the expansion package return Tiny Basic and get a full refund of $49.95. This limited time offer is available only from NCE/Compumart.

Expandable

- 48K, Full keyboard and display at an unbelievably low price.

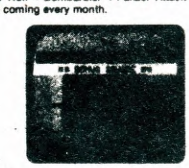
In the third quarter a $350 expansion package is scheduled. Preliminary specifications include: Full Basic and assembly language. Provision for 2 audio cassette drives. Graphics and Music. Additional 16K RAM. Additional ROM. Industry standard keyboard. 25 x 80 characters with monitor. IEEE port. Price, delivery, and specifications subject to change without notice. Future contemplated options include printers, acoustic coupler, temperature and light control, telephone dialers, disks, Selectric interfaces, digital tape decks and, of course, extensive software.

Software

Includes the most popular selections from Bally's professional arcade games, educational programs for the entire family, and functional programs for home, business and the arts. NCE 10 day return privilege applies to Bally Videocades® of course. Videocade® series includes: STRATEGY — $19.95 each • Black Jack • Draw Poker • Acey - Deucy • SPORTS - $24.95 each • Baseball (available now) • Tennis • Hockey • Handball • EDUCATION - $19.95 each • Bingo Math (available now) • Speed Math • Word Math • Word Hunt • Scramble • ACTION/SKILL - $19.95 each • 280 Zzzzap (available now) • Dodgem • Sea Wolf • Bombardier • Panzer Attack • Red Baron. OTHERS coming every month.

Scramble*

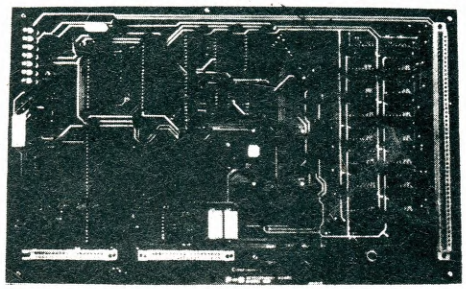
Bingo Math*



Word Match*

F-8 MICROCOMPUTER ON SINGLE BOARD

WITH F-8 CPU, FAIRBUG PSU, 3853 SMI-DEVELOPED FOR DESIGN ENGINEERS AND SERIOUS HOBBYISTS



F-8 MICROCOMPUTER Model 1080

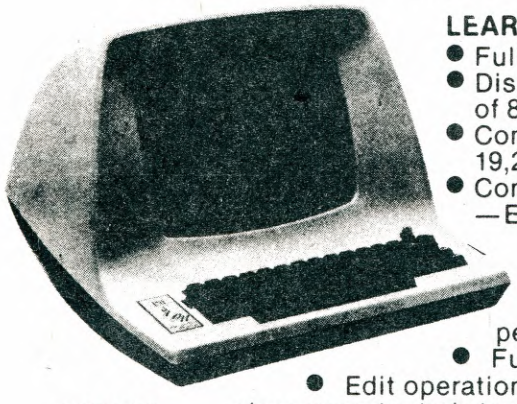
Design Features Include:

- Buffered address and data bus to S-100 expansion connector • 4K program memory - 2708 sockets • 2K onboard page selectable static RAM • FAIRBUG monitor plus 1K 2708 custom monitor • Independent FAIRBUG scratch pad RAM • Memory protect switches • Buffered high speed data input port • I/O/interface selection (all 4 ports available) • Two sockets for I/O expansion • 20 ma or RS 232 interface • Quality solder masked PC board • Program control timers • Documentation • 64K addressing range • Prime parts

KIT: $249.00

TERMINALS

Everything you need in small computer systems with special emphasis on TERMINALS! Look at these units...compare price, quality, delivery, service...and you'll see why you don't have to look anyplace else!



LEAR SIEGLER ADM 3A TERMINAL

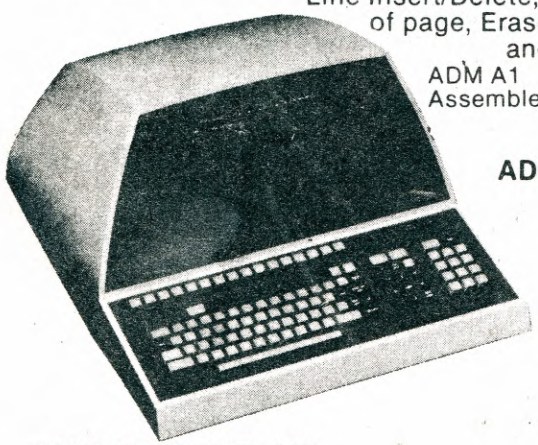
- Full addressable cursor
- Display format—24 lines of 80 characters per line
- Communications rates—75 to 19,200 Baud
- Computer interfaces —EIA standard

ADM 3A Kit **$739.95**
ADM 3A Assembled .. **849.95**
Lower Case option **69.00**

ADM 1A TERMINAL

- Display Format —80 characters per line by 24 lines
- Full cursor control
- Edit operations: clear screen, clear unprotected character type-over. (Options are Character Insert/Delete, Line Insert/Delete, Erase to end of page, Erase Line/Field) and much more

ADM A1 Assembled **$1398.00**



ADM 2A TERMINAL

- 1920 character display (24 x 80)
- 16 function keys for 32 commands
- Separate keyboard—119 keys
- 10 key numeric pad
- Single key edit operations
- Page, field or line edit
- Security, protected fields and much more

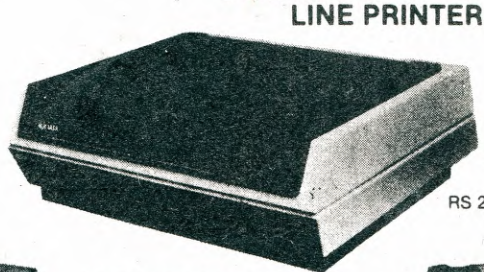
ADM 2A Assembled ... **$1895.00**

OKIDATA MODEL 110 LINE PRINTER

- 110 CPS dot matrix

Friction Feed ... **$1149.00**
Tractor Feed **1279.00**
RS 232C Serial Interface ... **260.00**

OKIDATA MODEL 22 LINE PRINTER

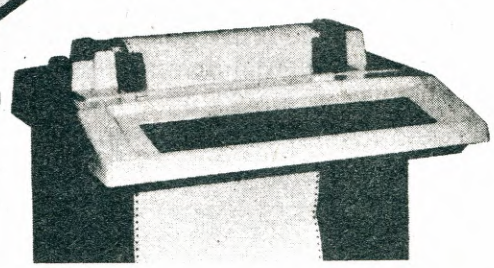


- 125 lines per minute 132-column print line
- Upper/lower case
- 8 different character sizes
- 12 IPS paper slew

Tractor Feed **$2249.00**
RS 232C Serial Interface... **379.00**

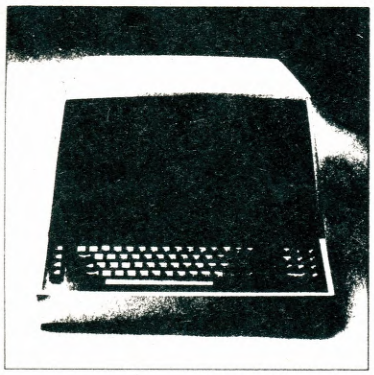
DECWRITER II

- 132 column printing
- 10-30 CPS
- Full keyboard
- Tractor feed



$1475.00*
(discount price)

WE HAVE EVERYTHING IN TERMINALS AND MONITORS



A CAPABLE LOW COST, APPROACH TO REMOTE VIDEO DISPLAY TERMINALS.

SOROC IQ 120 TERMINAL

- Cursor Control Keys Standard
- Numeric Key Pad Standard
- Line and Page Erase Standard
- Addressable Cursor Standard
- Switch Selectable Transmission from 75 to 19,200 bps Standard
- Communication Mode: HDX/FDX/Block
- Interfaces: Printer Interface/ RS232 Extension
- RS232C Interface
- Non-Glare Read Out Screen
- Protect Mode Standard
- Tab Standard

PRICE BREAKTHROUGH!
Assembled SOROC as above
NOW
$995 COMPLETE

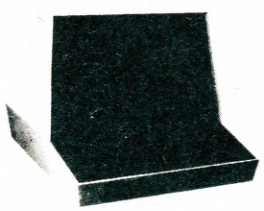
OLD PRICE	~~$1295.00 Assembled~~
NEW PRICE	$ 995.00 Assembled

Price Includes
- Block Mode
- Lower Case
- 24 Line Option
- and shipping charge is on us.

Block Mode add $70.00

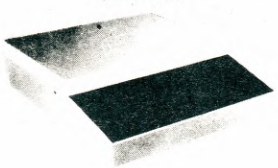
The Perfect Cover-Up!!!

For The Computer Designer and Builder



VTE 101
TERMINAL ENCLOSURE
$79.95

KBE 101
KEYBOARD ENCLOSURE
$26.95

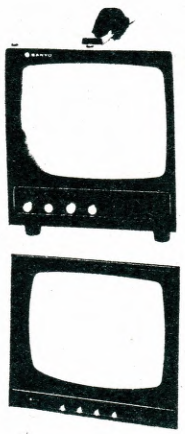


TVT 101
TYPEWRITER ENCLOSURE
$49.95

. . . AND THESE FEATURES ARE STANDARD:

- High Impact Structural Plastic Construction
- Flame Retardant
- Attractive Professional Appearance
- Easily Machinable Using Ordinary Woodworking Tools
- Highly Adaptable to Your Needs
- Ribs & Bosses for Component Mounting
- Molded Ventilation Grills
- Removable Keyboard Mounting Plate
- Available Unfinished or in Three Standard Colors

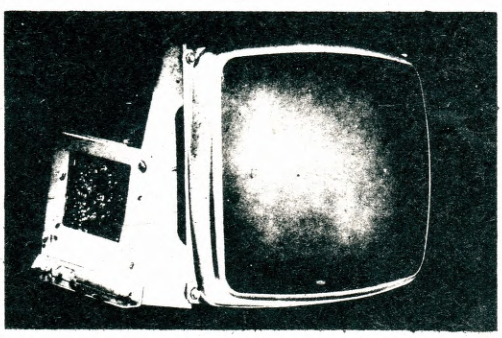
SANYO



VM-4209 High Performance, 9 Inch Video Monitor
Performance engineered for use in CCTV and VTR applications, this dependable video monitor features a 40 sq. inch viewing screen, high resolution, DC restoration and video input bridging with switchable 75 ohm termination. **$195.00**

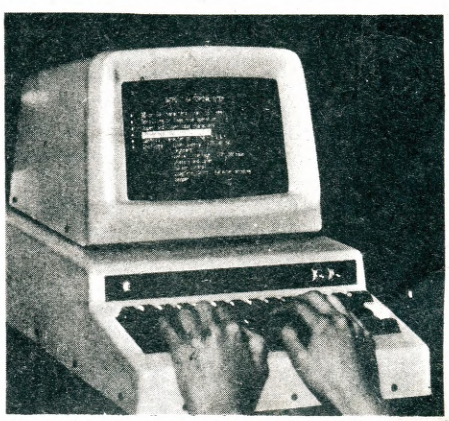
VM-4215 High Performance, 15 Inch Video Monitor
Designed to provide dependable performance in a wide range of CCTV and VTR applications, this high resolution monitor features a 118 sq. inch viewing screen, DC restoration and video input bridging with switchable 75 ohm termination. **$275.00**

MOTOROLA Data Products



MOTOROLA Model 3560-155
12" P4, High Resolution Monitor
15.72 KHZ, 800 lines, 22 MHZ BW
Composite Video Input
Price $219.95

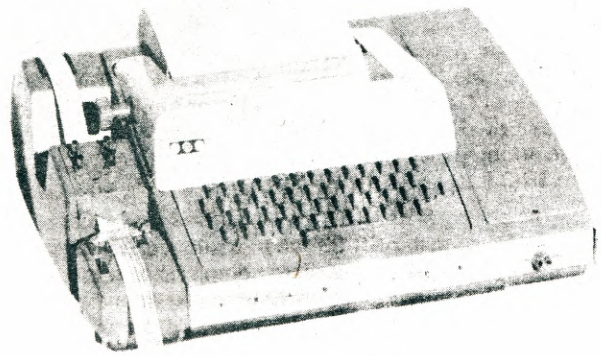
$500 Terminal/Monitor
The CT-64 terminal kit offers these premium features: 64-character lines, upper/lower case letters, switchable control character printing, word highlighting, full cursor control, 110-1200 Baud serial interface, and many others. Separately the CT-64 is $325, the 12 MHz CT-VM monitor $175.



TELETYPE

TTY

Teletype machines are available from us in three categories: USED(but always in tested, working condition when shipped), RECONDITIONED (meaning the machine has been carefully inspected, lubricated and any obvious defects or worn parts have been replaced). and REBUILT (the machine has been totally torn down, completely inspected, all worn or possibly worn parts replaced, completely cleaned and reassembled, and is in equal-to-new working condition).



RO-33 TELETYPE PRINTING MECHANISM

An RO-33 printing mechanism is available to fit inside the RM cabinet:

RO-33 Printing Mechanism, USED	$ 440.00✡
RO-33 Printing Mechanism, RECONDITIONED	490.00
RO-33 Printing Mechanism, REBUILT	540.00
Skin-tight metal case for above, USED	14.95

In conventional KSR-type Teletype enclosure, with power supply, add $30.00.

RO-33 in conventional Teletype enclosure, NEW (ideal print-out computer device)	599.95

MODEL 33 TELETYPES

KSR-33 Teletype, USED	$ 499.95✡
KSR-33 Teletype, RECONDITIONED	549.95
KSR-33 Teletype, REBUILT	599.95
ASR-33 Teletype, USED	739.95
ASR-33 Teletype, RECONDITIONED	789.95
ASR-33 Teletype, REBUILT	839.95

Modems available for above machines for direct connection to phone lines for $50 additional. Conventional friction-feed or pin-feed machines usually available at same price (subject to availability, please state your preference).

ASR-33 TWX with modem (for use on Western Union telecommunications network), USED	$ 1,145.00✡
ASR-33 TWX with modem, RECONDITIONED	1,295.00

MODEL 35 SPECIALS

Substantial inventories are available at present and we are offering them to the user at far below their market value. These rugged machines, built for continuous duty, will last forever and require a minimum of maintenance. They run quieter than 33's.

RO-35 Printer only, in enclosure, REBUILT	$ 595.00✡
KSR-35 Teletype, USED	795.00
KSR-35 Teletype, NEW	1,095.00
ASR-35 Teletype, LIKE-NEW	1,295.00
ASR-35 TWX machine, RECONDITIONED	1,895.00

TELETYPE CORPORATION 43 TELEPRINTER

When it comes to **economy, versatility** and **reliability** you'll find the Teletype® 43 teleprinter is in a class by itself. This low-cost communications terminal delivers true 30 character per second throughput, up/low printing and 132 column format capability on 11" wide fanfold paper.

FEATURES

Operator Selectable Controls & Indicators

- **— Local**
- **— Term Ready**
- **— Line**
- **— Interrupt**
- **— Alarm**
- **— Printer Test**
- **— Parity Off/On**
- **— Half or Full Duplex**
- **— 30 or 10 cps.**

Printer

- **Prints up to 132 char/line with characters spaced horizontally at approximately 13/inch and lines vertically at 6/inch.**
- **Accomodates up to 3-ply fanfold paper 12" wide by 8½" long. Becomes convenient 8½" by 11" size by removing serrated tear margins.**
- **Characters formed by a 9-wire matrix impact printhead printing a combination of up to 7 out of 9 dots vertically and up to 4 dots horizontally. Prints full 94 ASCII character set (upper/lower case) plus parity error symbol.**
- **Last character visibility.**
- **Print position indicator with scale.**
- **End-of-line indicator (bell sounds 8 characters before and at EOL).**
- **Ribbon cartridge (continuous inking) for easy replacement.**

Keyboard

- **Typewriter-like solid-state keyboard generates all 128 ASCII code combinations.**
- **Back Space, operator and on-line.**
- **Caps Lock Feature.**
- **Adjustable margins, operator (keyboard) and on-line.**
- **Repeat Key**
- **N - key rollover permits multiple key depression without error.**

4320 KEYBOARD PRINTER (KP)

Interface	Catalog Number	Price✡
TTL (Digital)	4320 AAA	$1134.95
FSK (Analog)	4320 AAB	1580.00
EIA (RS232)	4320 AAC	1370.00

w/assem. & tested direct interface to S-100 bus: **$1,199.00✡**

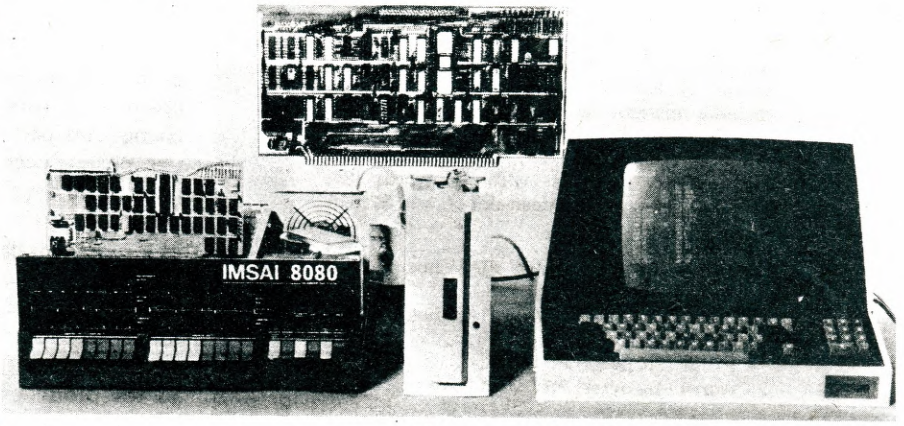
Delivery Stock to 60 days

✡ DISCOUNT PRICE

FLOPPY'S & INTERFACES

TARBELL FLOPPY DISC INTERFACE

- Plugs directly into your IMSAI or ALTAIR* and handles up to 4 standard single drives in daisy-chain.
- Operates at standard 250K bits per second on normal disc format capacity of 243K bytes.
- Works with modified CP/M Operating System and BASIC-E Compiler.
- Hardware includes 4 extra IC slots, built-in phantom bootstrap and on-board crystal clock. Uses WD 1771 LSI Chip.
- 6-month warranty and extensive documentation.
- PRICE:
  Kit $190 . . . . . Assembled $265

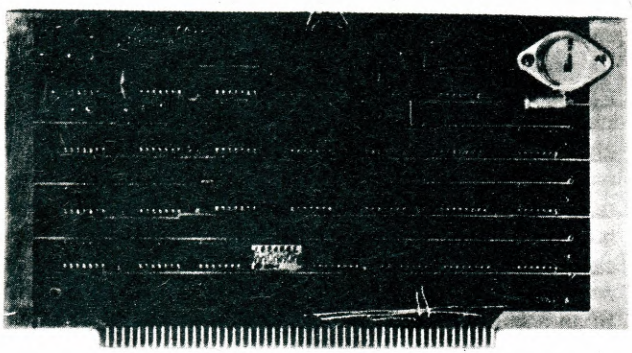


Compatible Disc Drives

our disc drives priced as low as $525.

Floppy Disk Interface Manual	5.00
CP/M System Manual Set (6)	25.00
CP/M Operating System (on disk)	70.00
BASIC-E Compiler Manual	5.00
Bare Floppy Sidk Interface Board	40.00
Board with all parts (kit)	190.00
Assembled Floppy Disk Interface	265.00
Western Digital 1771 FDC IC	39.95

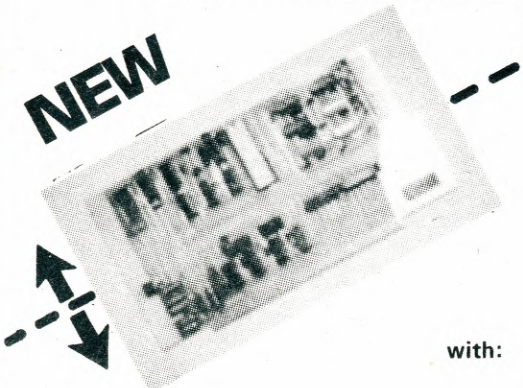
PerSci 277 Dual Floppy Disk Drive	1230.00
Power Supply for PerSci 277	125.00
Case, Cord, and Power Supply for PerSci	345.00
Calcomp Model 401 Floppy Disk Drive	525.00
Shugart Model 801 Floppy Disk Drive	599.00



TARBELL CASSETTE INTERFACE

- Plugs directly into your IMSAI or ALTAIR*
- Fastest transfer rate: 187 (standard) to 540 bytes/second
- Extremely Reliable—Phase encoded (self-clocking)
- 4 Extra Status Lines, 4 Extra Control Lines
- 37-page manual included
- Device Code Selectable by DIP-switch
- Capable of Generating Kansas City tapes also
- No modification required on audio cassette recorder
- Complete kit $120, Assembled $175, Manual $4

NEW



VERSATILE 8040 FLOPPY DISK CONTROLLER

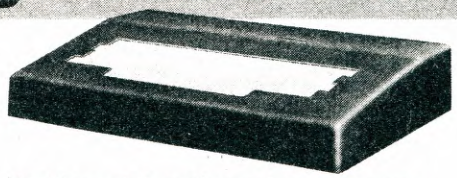
Runs with any system bus by changing host adapter board.
Talks to 6 eight bit parallel ports on the host adapter.
Host adapter board can be upgraded with its own microprocessor.
Specify Host Adapter desired (TRS-80, S-100 Z-80 S-100 8080.

with: **IBM 3740 Format or Your own**
soft or hard sectored Read/Write
speeds up to 2mhz 5" or 8" Drives
One or two-sided drives
Compatible to CP/M or Opus Software
Solder Mask, socketed, no jumpers
assembled and tested.

DISCOUNT PRICING

8040 Controller BD	$165.00
Host Adapter	
For S-100 8080	$ 45.00
For S-100 Z80	$ 45.00
For TRS-80	$ 65.00

GRI Professional Keyboard Kit



Optional keyboard enclosure

Durable enclosure made of long-lasting ABS plastic, custom fit for the Model 753. Complete with all hardware. Color: Medium grey.

LOW COST! Model 753 ASCII Keyboard *Kit or Assembled*

- 53 Keys, popular ASR-33 format
- Rugged G-10 P.C. Board
- Tri-mode MOS encoding
- Two-Key Rollover
- MOS/DTL/TTL Compatible
- Upper Case lockout
- Data and Strobe inversion option
- Three-User Definable Keys
- Low contact bounce
- Selectable Parity
- Custom Keycaps • MORE!

Pricing Information

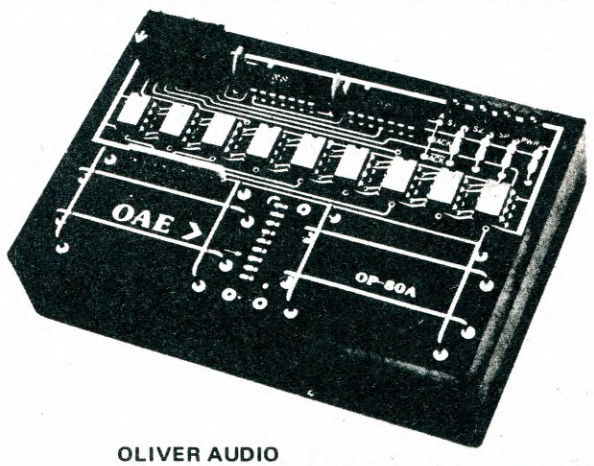
Model 753 (Assembled)	$71.25
Model 753K (Kit).....	59.95
Model 701 Enclosure.....	14.95

KEYBOARD $32.95

63 key array, terminal keyboard, unencoded with high quality switches. Black w/white legends.

Special Offer: Buy now and we will give you a free calculator type keyboard.

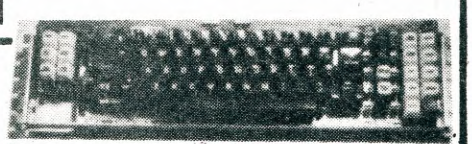
AY52376 Keyboard Encoder: Only **$14.95**

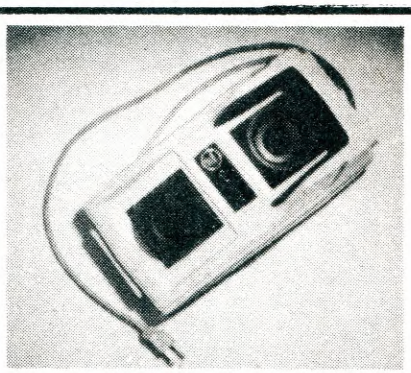


OLIVER AUDIO

OP-80A, Manual Paper tape reader . . . $74.50 (Kit)
Assembled $95.00

NOW! HEX PAD KEYBOARD
A 19 key Number Keyboard compatible with our 63 Key Keyboard. Same manufacture and design. Keys for 0 to 9 and 110,300, FDX/HDX, minus Auto LF, Line Loc, Alt Char set and Char set lock.
ONLY $11.95 FIRST TIME OFFERED
(Identical to our 63 Key as pictured except 19 keys.)





ASCII ENCODED KEYBOARD KIT

$64.95 P/N EW-100-B $64.95

Complete Kit using the 63 key keyboard is pictured. Utilizes 17-3/16" x 5 PCB. The full ASCII set is produced; all the control functions, upper and lowercase Alpha numeric functions as well. Fully TTL compatible. Requires single 5 volt supply and only 300ma max. power.

KEYBOARDS – Limited Supply

High Quality Microswitch NEW Keyboards used in Xerox word processing system. ASCII II encoded. Some documentation available. Only 45 more available. $59.95 each

OMNITEC MODEMS

New condition. TTY or RS232 Input. Only 30 units available. While they last $99.00

Calculator Keypad
Small 3" x 4" 4 x 5 array
Keypads $1.25 each

MORE COMPUTER PERIPHERALS

SANYO TAPE RECORDER

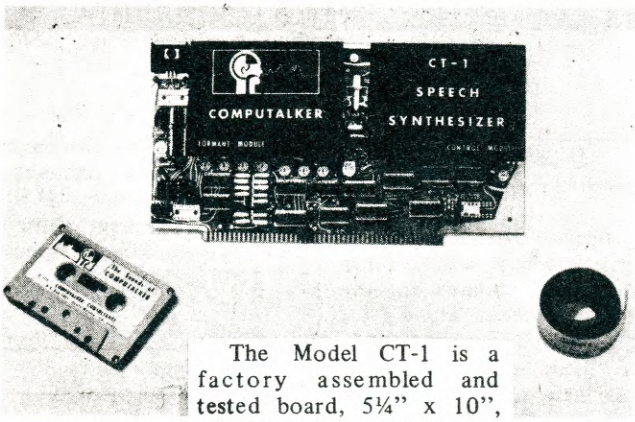
SUPERB

M2522A
AC/DC CASSETTE TAPE RECORDER WITH
DIGITAL TAPE COUNTER

DISCOUNT PRICE
ONLY $44.95

SPECIFICATIONS

Tape speed	1⅞ips
Wow and flutter	0.3%RMS
S/N ratio	35dB
Frequency response	60-8kHz
Power output	800mW max.
Power source	AC: 120V 60Hz DC: 5 "C" cells 7.5V external
Dimensions	5½"W x 9⅞"D x 2⅞"H



OUR PRICE
$385.00

The Model CT-1 is a factory assembled and tested board, 5¼" x 10", which occupies a single slot on the Hobbyist Standard Altair bus. It requires a block of 16 output locations, one byte (8 bits) each, relocatable to any hex boundary via on on-board selector switch. Power requirements are +8 V unreg. (or +5 V reg.) at 170 mA typ., 250 mA max, and ±16 V unreg. (or ±12 V reg) at 85 mA typ.

The CT-1 Speech Synthesizer sells for $395 and the CSR1 Synthesis-by-Rule software package is $35

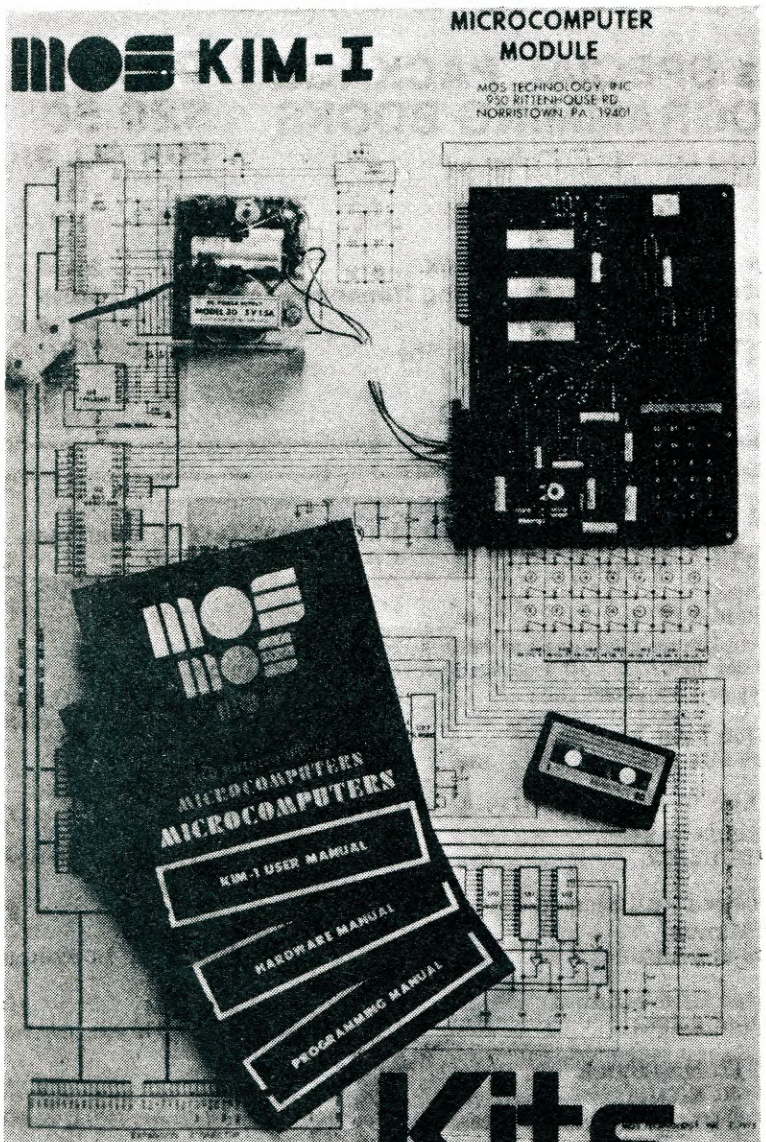
Talk to your computer for $299.

SpeechLab™ lets you talk to and control any S-100 bus computer... Sol, Altair, IMSAI, etc. Use for computer input, research, vocal control and games. Price, $299 assembled and tested. Complete hardware/software system, 275 page lab and 95 page hardware manuals.

From **Heuristics** INC.

ADVANCED COMPUTER PRODUCTS
Super Kits & Assembled Cards Designed To Get You Started Right.

- **Fully Assembled**
- **Fully Tested**
- **Fully Warranted**



- **KIM-1** — Computer Module from MOS Technology 1K RAM, 2K ROM continuing system executive, complete audio cassett interface, 15 bidirectional I/O lines, a 24-key keyboard, and a six-digit LED display.
- **System Power Supply** (plus 5V at 1.2A, plus 12V at 0.1A) with power line and switch.
- **Documentation** — "The best programming and hardware manuals in the business," **Interface,** Mar. '76.
  KIM-1 User manual
  KIM-1 System Schematic, wall size
  6500 Hardware Manual
  6500 Programming Manual
  6500 Programmer's Reference Card

Priced separately

KIM1	$245.00
Power Supply	34.95
Documentation	29.95*

Evaluate the KIM by purchasing the documentation and if you buy at KIM1 within 90 days from date of purchase we will deduct $29.95 from purchase price.

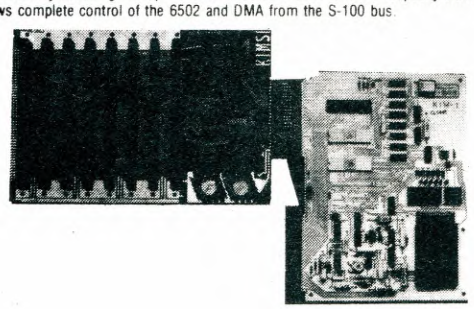
NATIONAL SC/MP

SCAMP COMPUTER KIT	$99.00
~~N/A SCAMP KEYBOARD KIT 95.00~~	
SCAMP MOTHERBOARD	99.00
MOTHERBOARD EXT' KIT.	25.00
SCAMP MANUAL	5.00
72 pin CONNECTOR	6.95

Kits

KIM S-100

Escape the single source blues. The Kimsi is the easy was to expand your KIM-1 system with readily available S-100 boards. Forethought Products has interfaced the 6502 to the S-100 bus by decoding the top 4K for IN and OUT instructions. Full capacity interfacing allows complete control of the 6502 and DMA from the S-100 bus.



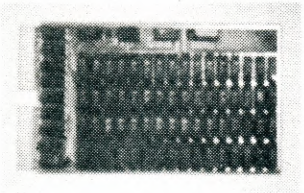
Item		Kit price	Assembled price
Kimsi Backplane/S-100 Adapter	8 slots for S-100 available	$125	$165
KIM to Kimsi Connector Set	Includes recorder cables	8	11
S-100 Edge Connector	Kimsi accepts 8; 1 is supplied	4.75	7
Cassette Recorder for KIM-1	Hundreds sold for KIM use	N/A	44.95

COMPUTER KIT SELECTION GUIDE

Type of Microprocessor	Kit	Unit Price
6502	Kim 1 (assembled)	$245.00
8080	Intel SDK-80	299.00
6800	Motorola MEK 6800D2	235.00
6800	AMI EVK99	145.00
Z-80	Zilog Z-80CPU Card (assembled)	849.00
6100	Intercept Jr.	287.50
1802	RCA COSMAC	295.00
9900	Technico 9900 Kit	299.00

PDP11 COMPATIBLE PRODUCTS

NEW!

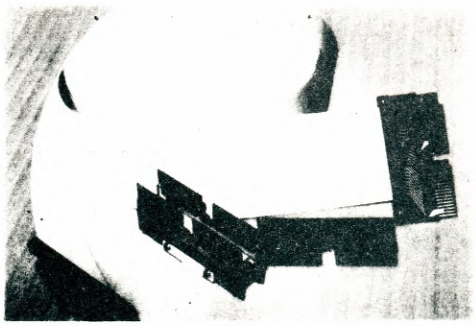


LSI-11 / HEATH H-11 16K x 16 STATIC MEMORY

New Totally Compatible Static H-11 Memory Card
Meets all DEC Specifications for Loading and Bus Drive.
4 independently moppable 4K blocks
Addressed at 4 increments of 32 words
18 bit Address Bus
Memory Management

INTRODUCTORY PRICE*
$1250.00 Assembled
$1160 Kit
***discounts do not apply**

NEW HARD TO FIND DEC PRODUCTS

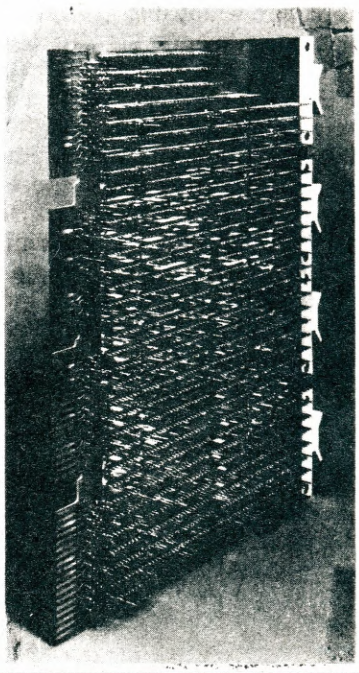


PDP11 UNIBUS CABLE

Available in 5' & 10' lengths
5' length P/N11A-05 $129.95
10' length P/N11A-10 $159.95

CONNECTOR MODULE
P/NM920 . . . $74.95

UNIBUS TERMINATOR MODULE
P/NM930 . . . $59.95



PLUS FROM ALPHA MICROSYSTEMS THE AM100

S-100 COMPATIBLE

16Bit CPU that uses the PDP11 instruction set.

HIGH DENSITY WIRE-WRAP MODULES

(Quad Module pictured)

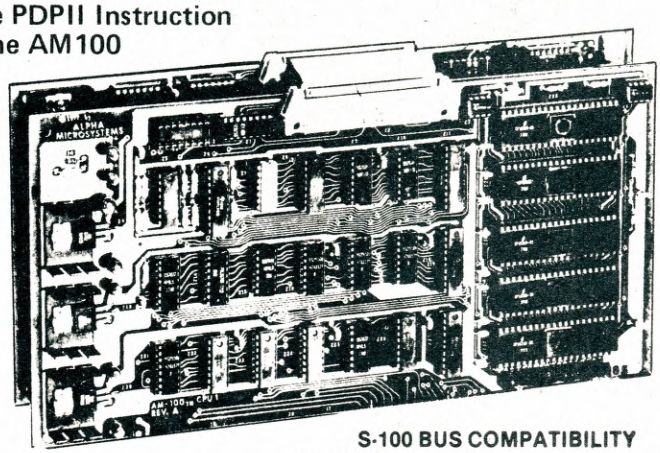
Dual W/W BD W940 . . . $ 74.95
Quad W/W BD W9301 . . . 195.00
Hex W/W BD W9302 . . . 295.00

ALPHA MICROSYSTEMS AM 100

If your into the PDPII Instruction Set you need the AM100

NOW IN STOCK

ONLY $1495.00 (includes software)



AM-100* 16-BIT CPU

The AM-100* by Alpha Microsystems replaces your 8080 microprocessor in the S-100 bus computer with a 16-bit microprocessor CPU (2 card set) that gives you Minicomputer power.

- Eight 16-bit multipurpose registers.
- Multi-level DMA and vectored interrupt system.
- Real-time clock on the CPU board.
- Hardware supported totally relocatable object code.
- Multi-user, multi-tasking timeshared operating system.
- True priority system in time-sharing operations.
- Multi-user structured file system with passwords.
- Multiple pass macro assembler and linking loader.
- Floppy disk file management system and utilities.
- Up to 10 times the throughput of an 8080 system.
- Fully supports most S-100 peripherals without modification.
- AlphaBasic* extended compiler and run-time system (not an interpreter).
- Free-form text editor and letter-writing text formatter.
- System generation program to create custom operating system monitors.
- Completely device independent with logical file I/O calls.

AM200 Floppy I/O	$695.00
AM300 Interface	$695.00

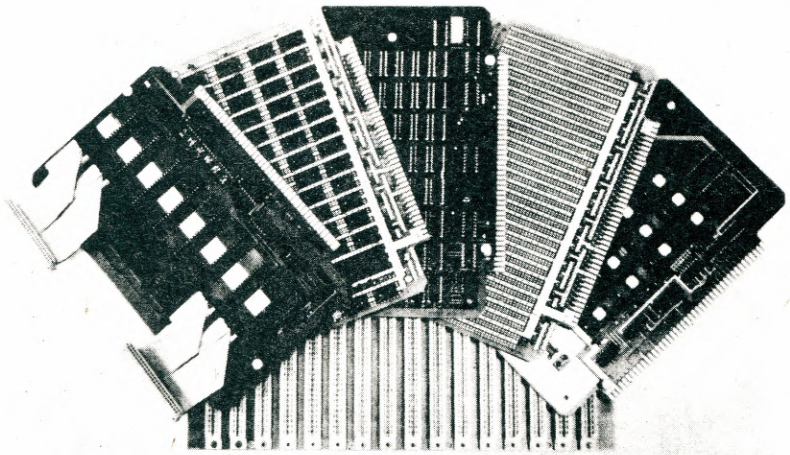
S-100 BUS COMPATIBILITY

This 16 bit processor system interfaces to the popular S-100 8 bit bus by an advanced multiplexing method. This multiplexing function is totally transparent to the user. Most standard S-100 compatible products are supported by the AM-100*

ATTENTION MOTOROLA & ZILOG USERS

MOTOROLA EXORCISER, MEK6800D1 & D2 COMPATIBLE CARDS

We'll Stack The Deck



IN YOUR FAVOR

with our Family of

EXORciser* compatible cards.

SPECIAL OFFER

PURCHASE A
MEK6800D2 KIT
AND WE WILL
GIVE YOU A BIG 15%
DISCOUNT
ON OUR 9626K 8K RAM
MEMORY KIT

HERE'S OUR DEAL

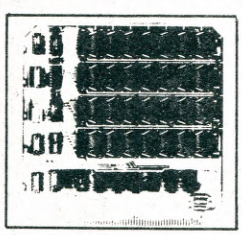
The 9600 Family of Support Modules is a set of generalized building block hardware designed around the M6800 Microprocessor. The cards are pin and outline compatible with the Motorola EXORciser* and Micromodules,* the MEK6800D1 and MEK6800D2 Evaluation Kits, and with other industry standard cards.

We'll save you time and money with our low cost, ready-to-use Support Modules. Use them to build your data communications, industrial control, or other microprocessor-based system and give it personality with software or plug them into your EXORciser* to expand memory and I/O capacity.

SUPPORT MODULE			1 - PRICE
9600	6800 MPU Board	NEW	$495.00
9601	16 Slot Mother Board		175.00
9602	Card Cage		75.00
9603	8 Slot MB		36.00
9604	System Power Supply		250.00
9610	Utility Prototype Board		36.00
9615	4K Erasable PROM Module		350.00
9615K	4K EPROM Kit of Parts		275.00
9620	16 Port Parallel I/O Module		375.00
9626	8K Static RAM Module		295.00
9626K	8K RAM Kit of Parts		225.00
9630	Extender Card		60.00
9640	Multiple Programmer Timer	NEW	395.00
9650	8 Port Duplex Asyn. Serial I/O		395.00
	Motorola MEK 6800D2 Kit		235.00
	Motorola Exorciser Connectors W/W		6.50
	Motorola Exorciser Connectors S/T		6.25
9660	Power Supply for Exorciser		275.00
	A/N on Expansion of 6800D2		3.95

MEM
16/65 K MEMORY BOARD

NEW



$595*

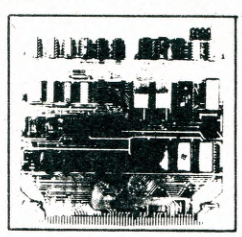
The MEM board has been designed for compatibility with the Zilog MCZ microcomputer bus. The memory is pin and outline compatible with the RMB of the Zilog microcomputer family.

The MEM board features 4K or 16K dynamic RAMS with switch selectable addressing throughout any segment of the 65K address space. Excellent noise immunity has been achieved with address latching and careful attention to the printed circuit design.

Features
- 16/65K Bytes Per Board
- One Switch Selects any 4K Address Boundary
- 8 Watt Power Dissipation
- High Noise Immunity

ZPU
MICROCOMPUTER BOARD

NEW



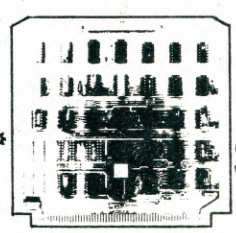
$395*

The ZPU microcomputer board has been designed for compatibility with the Zilog microcomputer bus. The ZPU is pin and outline compatible with the Zilog microcomputer family.

The ZPU board features the Z-80 CPU with a 158 instruction set. Sockets are provided on the board to accomodate 4 - 2708 PROMS or 4 - 2716 PROMS. These PROMS can be placed anywhere in the 65K address space and can be switched in or out of service under software control. Two asynchronous full duplex channels with switch selected baud rates are also provided. A complete stand-alone microcomputer can be configured with a ZPU and MEM board set.

ZDC
DISC CONTROLLER

NEW



$395*

The ZDC board has been designed for compatibility with the Zilog MCZ microcomputer bus. The disc controller is pin and outline compatible with the MDC board of the Zilog microcomputer family.

The ZDC can control up to 8 floppy disc drives. All formatting and control is performed under the direction of the powerful Z80 microprocessor. A 16 bit CRC cyclic redundancy check circuit is included in the hardware of the ZDC. Optional software is available to provide hard sectored control for most popular floppy disc drives.

*DISCOUNT PRICE

Also Available

MUX-Multiple purpose I/O card which can be added to Zilog MCZ System. $395.00*

MOM-Motherboard for above cards $195.00*

PWR-Power Supply +5V,+12V $250.00*

DISC-Sugart SA800/801 $595.00

AMI EVK 99

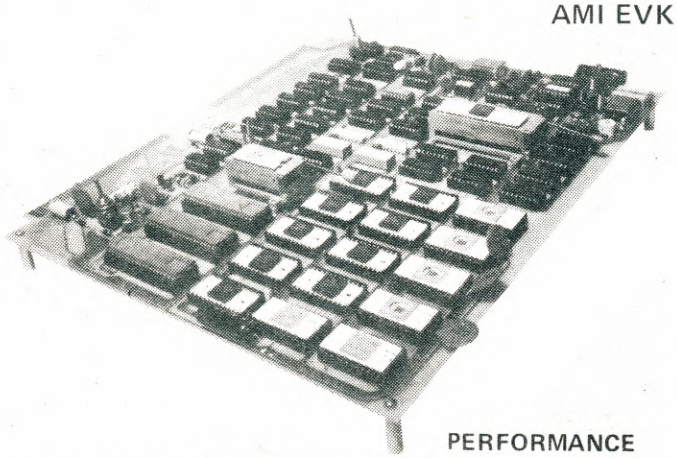


Photo of expanded EVK 99 Board

PERFORMANCE
VERSATILITY
COST EFFECTIVE

EVK 99 6800 Powered
MICROCOMPUTER SYSTEM
(the truly expandable 6800 microsystem)
ENGINEERS TEACHERS HOBBYISTS

You can use the EVK to design your next microcomputer based system. The EVK is software and firm ware supported and supported and comes complete with comprehensive instruction manual and handbook. The kit has been field tested and accepted by users in all fields of endeavor.

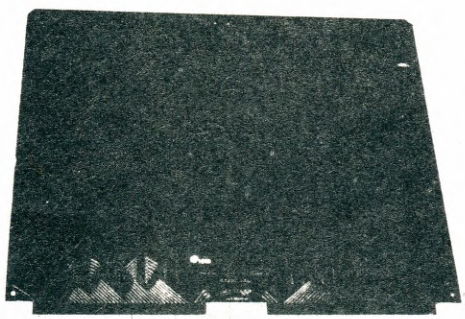
ONLY
$145.00*

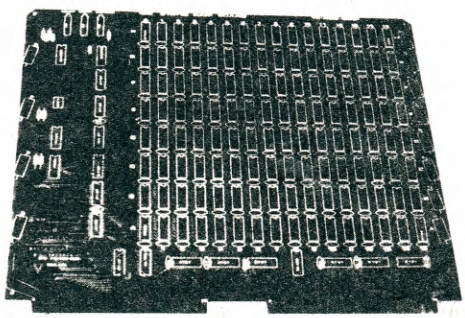
EVK 99 Kit	$145.00 *
EVK 100	285.00
EVK 200	449.95
EVK 300	699.00
Universal Kluge Board	95.00
16K Byte RAM Board	75.00
16K RAM Kit	399.99
6 Slot Motherboard	35.00
Extender Board	45.00
Video Board	95.00
Connectors . . . $6.50	12/ 59.95
Solid Frame Chassis	120.00
Frame Chassis	69.95
Micro Assembler ROM	30.00
Proto ROM	30.00
Tiny Basic Papertape	20.00
Tiny Basic EPROM	125.00

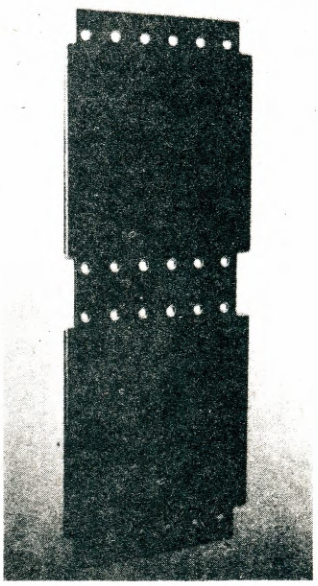
AMI EVK 99 6800 BASED
MICROCOMPUTER

Ask the Home-Brew Computer Club and the 6800 users Club in Santa Clara, California why they choose the EVK 99 Microcomputer. They now have over 250 systems. The reasons are clear: **Performance, versatility** and **cost** effectiveness.

* DISCOUNT PRICE







UNIVERSAL
KLUGE BOARD $95.00

Completely compatible to the EVK system. This board allows the user to add any additional parts he desires. It has 5400 holes, holds 94 16 pin IC's or others on.2, .4, .6, 9" or greater centers. 2 - 50 pin, 1 - 20 pin RS232 connector.

16K BYTE RAM BOARD $75.00

16K x 8 or 8K x 16 organization. Uses 2102's or 21L02's and adapts to slow memory.

Qty. (128) 2102's only **$1.19 ea.**
Qty. (128) 21L02's only **$1.35 ea.**

COMPLETE KIT
16K ONLY $399.99

6 SLOT
MOTHER BOARD $35.00

Connectors mount on .75" May be plugged together for expanded applications. Uses wire-wrap sockets and has buss signals and power distributed.

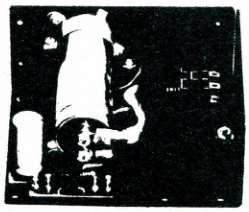
Buy Complete EVK System
Includes: Fully populated EVK Kit
16K Byte Ram Board Kit
6 Slot Mother Board w/11 Connectors
Tiny Basic on EPROM
Microassembler on ROM

ONLY
$1049.95

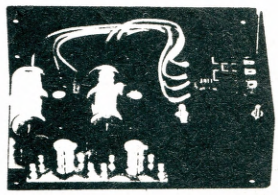
ELEXON POWER SYSTEMS

ELPAC

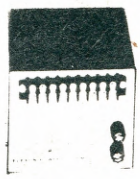
MICROPROCESSOR APPLICATION	SUGGESTED POWER SUPPLY
COSMOS 1802 IM 6100 MC 6800 F8 (3850) MK 5065 2650 3001, 3002 PPS4, PPS8 CP1600 5701, 6701 TMS 1000 PACE, SCAMP 4040 8080 8008	USE EITHER MODEL PS 35 PS 45 PS 50
8080 w/5501 3850 or F8 with Memory IMP4, 8, 16 TMS 5501 LSI-11 FSC 9400 SIG 3000 AMD 2900	USE EITHER MODEL PS 65 PS 90 PS 110



OLV 30



PS-30



ELV 75

OLV 15* OUTPUT RATINGS

Volts	Amps
5V	3A
12V	1.5A
15V	1.2A
18V	1.0A
24V	0.75A

OLV 30 OUTPUT RATINGS

Volts	Amps
5V	6A
12V	4A
15V	3.3A
18V	2.6A
24V	2.0A

OLV 60 OUTPUT RATINGS

Volts	Amps
5V	12A
12V	8A
15V	6.6A
18V	5.2A
24V	4.0A

OLV 90 OUTPUT RATINGS

Volts	Amps
5V	18A
12V	12A
15V	9.8A
18V	7.6A
24V	6A

OLV 120 OUTPUT RATINGS

Volts	Amps
5V	24A
12V	16A
15V	13A
18V	10A
24V	8A

μPS 12 ★(applies to both outputs) OUTPUT RATINGS

Volts	Amps
5/5V	.8/.8A
5/12V	.8/.5A
5/15V	.8/.5A
5/18V	.8/.4A
5/24V	.8/.25A
12/12V	.5/.5A
12/15V	.5/.5A
15/15V	.5/.5A

μPS 20 ★(applies to second output only) OUTPUT RATINGS

Volts	Amps
5/5V	3/.8A
5/12V	3/.5A
5/15V	3/.5A
5/18V	3/.4A
5/24V	3/.25A
12/12V	1.5/.5A
12/15V	1.5/.5A
15/15V	1.2/.5A

μPS 30 OUTPUT RATINGS

Volts	Amps
5/5V	3/3A
5/12V	3/1.5A
5/15V	3/1.2A
5/18V	3/1A
5/24V	3/.75A
12/12V	1.5/1.5A
12/15V	1.5/1.2A
15/15V	1.2/1.2A

μPS 35 ★(applies to second and third outputs) OUTPUT RATINGS

Volts	Amps
5/12/12V	3/.5/.5A
5/12/15V	3/.5/.5A
5/12/18V	3/.5/.4A
5/12/24V	3/.5/.25A
5/15/15V	3/.5/.5A
5/15/18V	3/.5/.4A

μPS 45 OUTPUT RATINGS

Volts	Amps
5/9/12V	3/2/1.5A
5/12/12V	3/1.5/1.5A
5/12/15V	3/1.5/1.2A
5/12/18V	3/1.5/1.0A
5/12/24V	3/1.5/.75A
5/15/15V	3/1.2/1.2A
5/15/18V	3/1.2/1.0A

μPS 50 ★(applies to second and third outputs) OUTPUT RATINGS

Volts	Amps
5/12/12V	6/.5/.5A
5/12/15V	6/.5/.5A
5/12/18V	6/.5/.4A
5/12/24V	6/.5/.25A
5/15/15V	6/.5/.5A
5/15/18V	6/.5/.4A

μPS 65 OUTPUT RATINGS

Volts	Amps
5/9/12V	6/2/1.5A
5/12/12V	6/1.5/1.5A
5/12/15V	6/1.5/1.2A
5/12/18V	6/1.5/1.0A
5/12/24V	6/1.5/.75A
5/15/15V	3/1.2/1.2A
5/15/18V	3/1.2/1.0A
120 Vac*	240 Vac*

μPS 90 OUTPUT RATINGS

Volts	Amps
5/9/12V	12/2.0/1.5A
5/12/12V	12/1.5/1.5A
5/12/15V	12/1.5/1.2A
5/12/18V	12/1.5/1.0A
5/12/24V	12/1.5/.75A
5/15/15V	12/1.2/1.2A
5/15/18V	12/1.2/.75A
120 Vac*	240 Vac*

μPS 110 OUTPUT RATINGS

Volts	Amps
5/9/12V	18/2.0/1.5A
5/12/12V	18/1.5/1.5A
5/12/15V	18/1.5/1.2A
5/12/18V	18/1.5/1.0A
5/12/24V	18/1.5/.75A
5/15/15V	18/1.2/1.2A
5/15/18V	18/1.2/1.0A
120 Vac*	240 Vac*

ELV 25 OUTPUT RATINGS

Volts	Amps
5V	5A
12V	2.6A
15V	2.4A
18V	2A
24V	1.5A

ELV 75 OUTPUT RATINGS

Volts	Amps
5V	15A
12V	7A
15V	5.8A
18V	5A
24V	4A

ELV 125 OUTPUT RATINGS

Volts	Amps
5V	25A
12V	12A
15V	9.6A
18V	8A
24V	6A

ELV 250 OUTPUT RATINGS

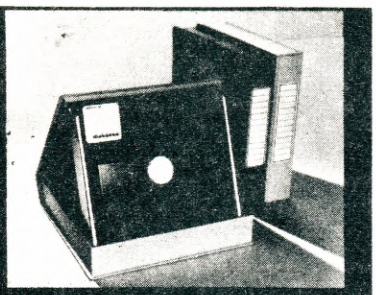
Volts	Amps
5V	50A
12V	20A
15V	17A
18V	14A
24V	10.4A

ELEXON POWER SYSTEMS PRICE LIST

UNIT	1 - 9	10 - 49	50 - 99	OPTION	SHIPPING CHARGE
OLV – OPEN FRAME LOW VOLTAGE					
SOLV15	33.50	30.00	27.00	Standard	3.00
SOLV30	56.00	52.00	47.00	OVP1	4.50
SOLV60	88.00	80.00	72.00	OVP2	6.00
OLV15	31.25	28.50	25.25	OVP1	
OLV30	54.00	50.00	45.00	OVP1	3.50
OLV60	86.00	78.00	70.00	OVP2	4.50
OLV90	114.00	103.00	92.00	OVP3	8.00
OLV120	149.00	135.00	122.00	OVP3	10.00
OVP – OVER VOLTAGE PROTECTION (Note 2)					
Fixed OVP1	4.00	3.50	3.00		
OVP1	8.00	7.00	6.00		
OVP2	10.00	9.00	8.00		
OVP3	12.00	11.00	10.50		
ELV – ENCLOSED LOW VOLTAGE (Note 1)					
ELV25	99.00	89.00	79.00	Standard	6.00
ELV75	129.00	117.00	103.00	Standard	8.00
ELV125	175.00	155.00	135.00	Standard	10.00
ELV250	265.00	245.00	217.00	Standard	12.00
PS – MICROPROCESSOR POWER SUPPLY (Note 3)					
PS12	49.00	42.00	37.00	OVP1	3.50
PS20	61.00	54.00	48.00	OVP1	5.00
PS30	63.00	55.00	48.00	fixed OVP1	6.00
PS35	64.00	57.00	52.00	OVP1	6.00
PS45	95.00	84.00	77.00	fixed OVP1	7.00
PS50	99.00	92.00	84.00	OVP1	8.00
PS65	112.00	104.00	94.00	Output 1 - OVP1 Output 2,3 - fixed OVP1	10.00
PS90	146.00	135.00	123.00	Output 1 - OVP2 Output 2,3 - fixed OVP1	11.00
PS110	165.00	150.00	140.00	Output 1 - OVP3 Output 2,3 - fixed OVP1	12.00
BFS SERIES	**BRUT FORCE SERIES – UNREGULATED SUPPLIES**				
BFS15	19.50	18.50	17.50		3.00
BFS30	23.50	22.00	20.00		3.00
BFS100	43.75	41.00	37.00		4.00
BFS200	58.75	56.50	53.00		5.00
DC – LOW COST DC TO DC CONVERTERS					
DC+512, DC-512	VIn=3-7VDC 12VDC 0-25ma		6.75	6.00	5.50 5.00
DC+515, DC-515	VIn=3-7VDC 15VDC 0-20ma		6.75	6.00	5.50 5.00

Notes:
(1) OVP's standard on ELV series.
(2) Fixed OVP1 available as option on PS30, PS45, PS65, PS90.
(3) Stock standards for dual output power supplies are 5/5, 5/12, 5/15, 5/18, 5/24, 12/12, 12/15, 15/15.
(4) Stock standards for triple output power supplies are 5/9/12, 5/12/12, 5/12/15, 5/12/18, 5/12/24, 5/15/15, 5/15/18.
(5) All series carry one-year warranty.
(6) FOR PRICES 100 PIECES AND UP, WRITE FOR PRICING

SUPPLIES



The KASETTE/10 library case provides an ideal means of handling, storing and shipping diskettes, made of High Impact Plastic for long use.

DISKETTES – **"SKOTCH" Brand, Available in IBM Compatible (soft sector) or Shugart Compatible (hard sector) Formats**

IBM COMPATIBLE

740S	Single Diskette	$ 6.95
740M	Diskette Mailer	6.95
740P	5 Pak Box	31.95
740/2	2 Sided 10 Pak Box	85.00

32 SECTOR –SHUGART

740S-32	Single Diskette	7.50
740P-32	10 Pak Box	59.95
740/2-32	10 Pak Box	85.00

MINIDISKETTES

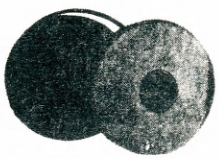
MD525-01	(Soft Sectored)	4.95
MD525-10	(10 Sector, Hard)	4.95
MD525-16	(16 Sector, Hard)	4.95

KASETTE/10 Library Case

Holds 10 Diskettes Only $4.95 each
if ordered with 10 Diskettes above add only $3.00

FLOPPY DISC VINYL ENVELOPE PUNCHED FOR 3 RING BINDER PKG. of 10 P/N 97-560 $6.50

PAPER TAPES



11/16 WIDTH ROLL – 8" DIAMETER – UNPRINTED – 40 ROLLS/CASE – 50 LBS.
Teletype Model 28

Stock Number	Color	Each	Carton
30-34072	Buff	1.49	46.95

7/8"WIDTH ROLL – 6 LEVEL, 8" DIAMETER – UNPRINTED - 32 ROLLS/CARTON – 50 LBS.

30-35082	Buff	1.49	46.95

1" WIDTH ROLL – 8" DIAMETER – UNPRINTED – 28 ROLLS/CARTON – 50 LBS.
HP Punches, Teleprinters & Others using rolled tape

30-36092	Buff	2.25	46.95
30-86092	P.E. Blk.	2.65	55.95
30-C6092	Colors	2.25	49.95

Available Colors - Red, Green, Yellow, Blue & Grey

HAVING TROUBLE ROLLING UP YOUR PAPER TAPE. SEND $1.95 FOR HAND SPOOLER. ORDER P/N HS101

1" WIDTH ROLL – 8" DIAMETER – PRINTER TOP ARROW – 28 ROLLS/CASE – 50 LBS.

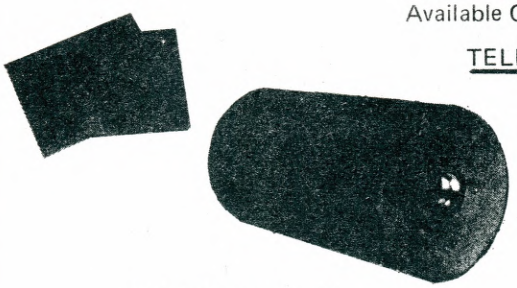
33-36092	Buff	2.49	51.95
33-86092	P.E. Blk	2.85	60.00
33-C6092	Colors	2.50	53.95

Available Colors - Red, Green, Yellow, Blue & Grey

1" WIDTH FANFOLD 8 LEVEL – 8½" FOLDS – 1000'/Pack – 18Packs/Carton – 30 LBS.
For DEC & Data General, and other high speed fan fold punches

37-30990	Buff	4.50	58.95
37-80990	P.E. Blk	5.25	72.95
37-C0990	Colors	4.75	65.95

Available Colors - Red, Green & Blue



TELETYPE ROLLS – 8-7/16" WIDTH – 12 ROLLS/CARTON – 1" CORE – 40 LBS

Paper	Color	Stock No.	Unit Price	12
Groundwood	White	40-18303	2.49	24.95
	Canary	40-68303	2.49	26.95
Bond	White	41-18303	3.95	37.95
	Canary	41-68303	4.25	41.95
Bond*	White	41-18303	5.95	54.95

*Sprocket Feed

THERMAL ROLLS

Use	Color	Width	Roll Dia.	Rolls	Wt.	Stock No.	Unit Price	12
NCR, CDC	Blue	8¾"	2"	36	31	01-19820	2.75	74.95
			4"	9	29	01-19840	12.00	79.95
TI	Black	8½"	2"	18	15	01-17902	5.95	77.95
Silent 700		3½"	3½"	12	30	01-17935	11.95	105.00
TI & FACIT Calculator	Blue	2¼"	2"	60	15	01-13920	1.25	54.95
UNICO, Rockwell Calculator	Blue	2¼"	2¾"	30	12	01-13827	1.49	32.95
HP	Blue	2¼'	3"	64	34	01-13830	1.99	96.95

RIBBONS & INK ROLLS

For DecWriters LA30, 36, Okidata, Memorex 1200
1/2" x 40 yds. Nylon, black.
P/N $100 ..... $ 3.50
Same – Carton of 12 pieces
P/N R100-12 ..... 34.95
For Dec LS8, LS11, LS01, Data Gen 4034C, Wang, Centronics, Sycor, Singer 51, Quantel
1" x 36 yds, twin-spool, Nylon Black
P/N R200 ..... 6.75
Same – Carton of 12 pieces
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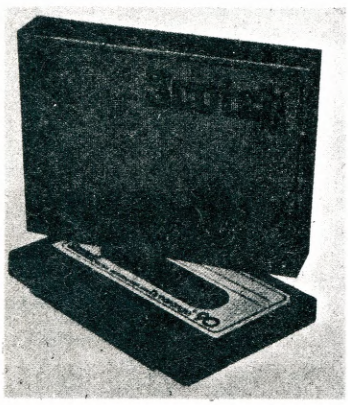

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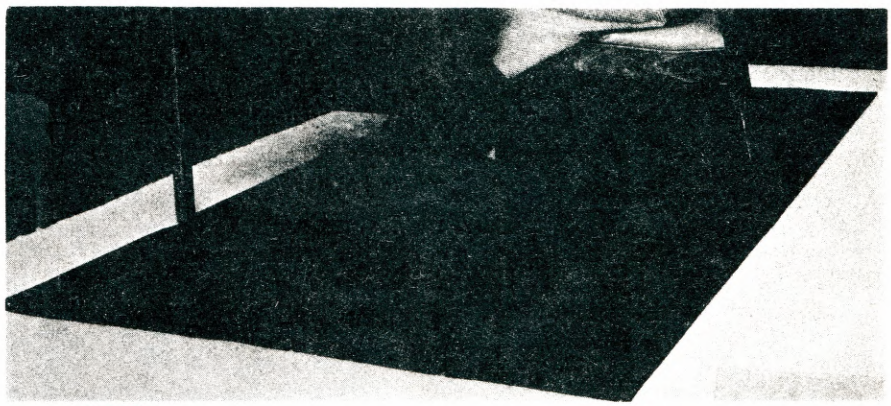

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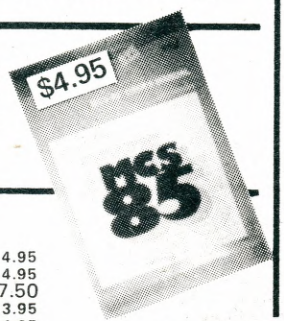

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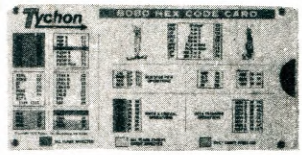

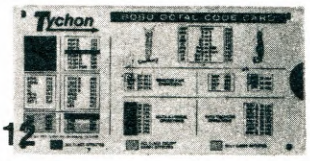

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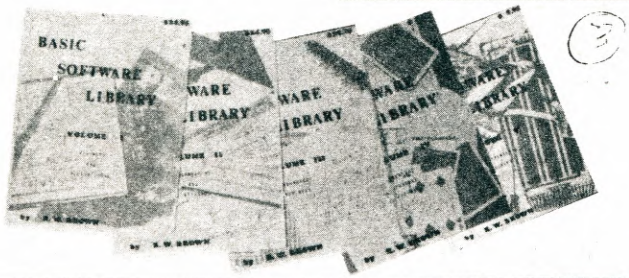

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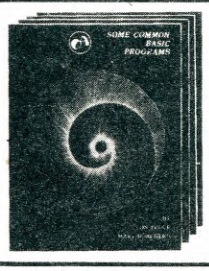

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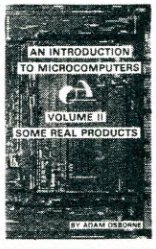

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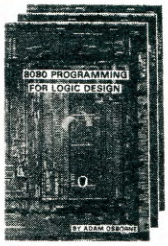

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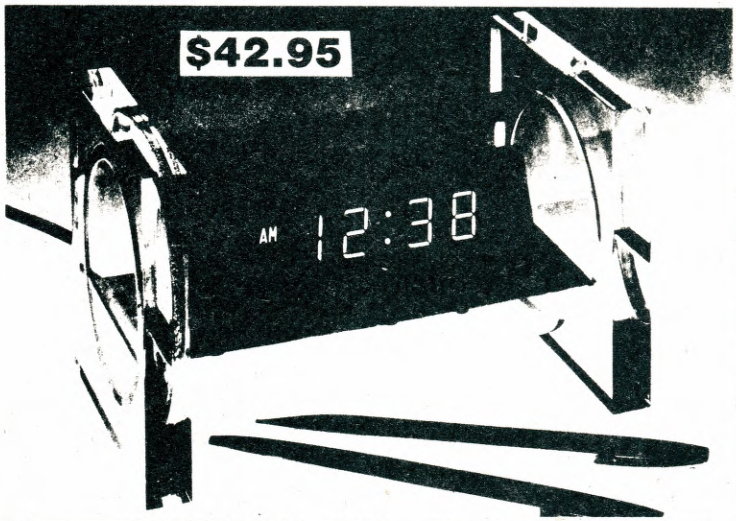

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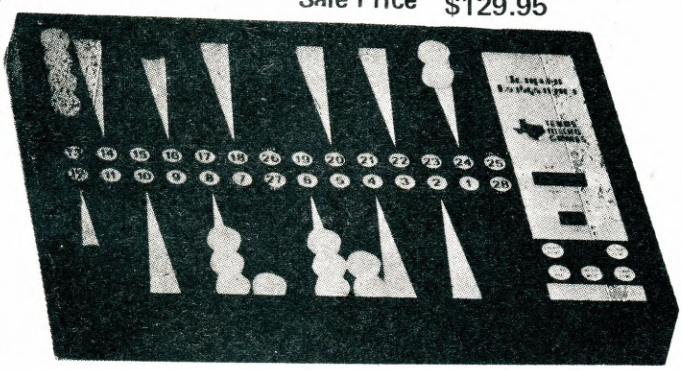

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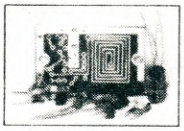

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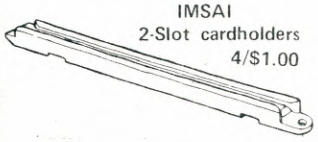

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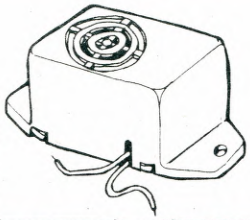

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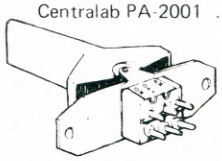
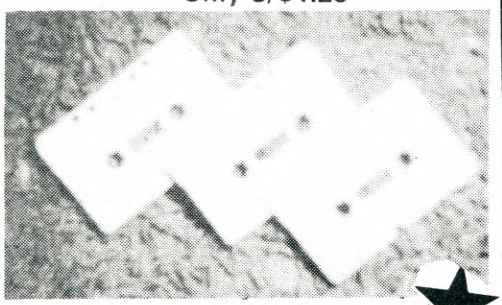


C&K V 25
Bat handle
toggle switch
$1.50

DIGITAL CASSETTES
Manufactured for digital applications
Only 3/$4.25



SWITCHES

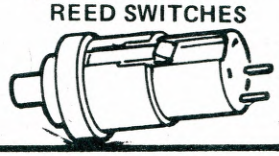
DIP SWITCHES

	1 - 9	10 - 99
4 POSITION	$1.40	$1.25
5 POSITION	1.45	1.40
6 POSITION	1.65	1.50
7 POSITION	1.99	1.69
8 POSITION	1.99	1.69
9 POSITION	2.20	1.99
10 POSITION	2.25	1.99

PUSH BUTTON SWITCHES
(5) Colors, red, blue, green, yellow, & white
Only 3/$1.00

KEY SWITCHES
by Electrol 10/3.90

REED SWITCHES



MINISWITCHES (Toggle)
3A 125 VAC

SPST	$1.35 ea
SPDT	$1.55 ea

SOLDER

Part No.	Wire Dia.	Price/ 1 Pound Spool
SN60	.031	7.99/Spool
SN60	.040	7.49/Spool

"The Solder Blotter"
QUICK SOLDER REMOVER

SOLDER REMOVER FOR
MICRO-LOGIC AND
MICRO-MINIATURE CIRCUITRY

	SIZE	PRICE
CAT. NO. 500	1/8"	$1.49 ea.
CAT. NO. 600	1/32"	$1.49 ea.
CAT. NO. 700	1/16"	$1.59 ea.
CAT. NO. 800	1/4"	$1.69 ea.

SPECIAL CLOSEOUTS — WHILE THEY LAST

Switchcraft Button Switch P/N 913	.69
P & B PCIIA DPDT 7.5A 120VAC Relay	2.49
C & K 7107 Toggle Switch	1.25
Switchcraft SPDT Up Down Lever Switch	1.99
C & K U31 Switch	2.95
C & K 7201 Switch	1.95
C & K 7101 Switch	1.49
C & K 8125 Switch	1.95
C & K 7211 Switch	1.95
Single Pole Reset Switch Whte	.99
Standoffs 3/8"	10/1.00
Standoffs 1/2"	10/1.00
Standoff 1"	4/1.00
Centralab RV4NAYSD503A 50K POT	4/5.00
AB RV4NAYSD253A 25K POT	4/5.00
Carbon Pot Assortment 5 types	2.99
Panaplex 9 Digit Readouts w/Holder	.99
Sperry/Backman 3 Digit Readout w/connector	2.95
Thermalloy to-5 Transistor Pads	100/.99
Sola Constant Voltage Transformers 120V out 250VA	29.95
Kooltronic Blower Large for Mainframes	5.95
Solar Cells 3/4" Square 43V 200ina	1.10 ea.
AMP Xlo. 18 Crimp Style Terminal Lug	20/1.00
Hubbell 3 wire midget male cap P/N 7485	10/2.99
Plessey 94375-RF-9925-25 RF Connector	1.49
Amphenol UG-261 C/U 74868 RF Connector	1.49
Sealectro 51-075-000 RF Connector	1.49
Bendix UG909 A/U 95712 RF Connector	1.49
Specialty Connector 24931, 33J & 106-1 RF Connector	1.49
Gremar 19268 RF Connector	.99
Automatic 94375-RF-0721-25	1.49
Gremar 6022 RT. Angle RF Connector	1.50
Dage UG-290 A/U RF Connector	.99

ORDER SHEET

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TWX/TELEX 910 595 1565
Telephone (714) 558-8813

SHIP TO: NAME _____ PHONE NUMBER _____

STREET ADDR. _____ P. O. NUMBER _____

CITY _____ STATE _____ ZIP _____

Item No.	QTY.	PART NUMBER	DATA SHEETS	EACH	EXTENDED
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
		$5.00 MINIMUM ORDER			
		TOTAL DATA SHEETS		@.25 ea.	

SUB TOTAL	
Add 6% Sales Tax (Cal. Residence)	
Postage & Handling Add 5% for less than $100 2.5% over $100	
*Insurance .50 Additional	
TOTAL	

Add $.25 per each Data Sheet Requested

ALL FOREIGN ORDERS MUST
BE PAID BY CERTIFIED CHECK
OR MONEY ORDER ONLY (Add 8% postage)

*We are not responsible for uninsured parcels.

PLEASE SEND ME A CATALOGUE! ☐

Master Charge No. _____ Expires _____

Bank Americard No./Visa _____ Expires _____

Check or Draft No. _____

DO NOT HOLD FOR BACK ORDERS ☐

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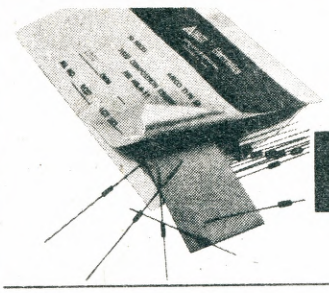
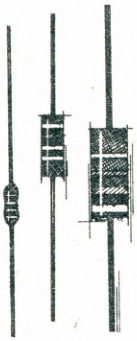


the Color Coded Resistor Group



1/4 W 5% RESISTORS

Must be ordered in EXACT multiples of 5, 100 or 1000.

1.0	10	100	1.0K	10K	100K
1.1	11	110	1.1K	11K	110K
1.2	12	120	1.2K	12K	120K
1.3	13	130	1.3K	13K	130K
1.5	15	150	1.5K	15K	150K
1.6	16	160	1.6K	16K	160K
1.8	18	180	1.8K	18K	180K
2.0	20	200	2.0K	20K	200K
2.2	22	220	2.2K	22K	220K
2.4	24	240	2.4K	24K	240K
2.7	27	270	2.7K	27K	270K
3.0	30	300	3.0K	30K	300K
3.3	33	330	3.3K	33K	330K
3.6	36	360	3.6K	36K	360K
3.9	39	390	3.9K	39K	390K
4.3	43	430	4.3K	43K	430K
4.7	47	470	4.7K	47K	470K
5.1	51	510	5.1K	51K	510K
5.6	56	560	5.6K	56K	560K
6.2	62	620	6.2K	62K	620K
6.8	68	680	6.8K	68K	680K
7.5	75	750	7.5K	75K	750K
8.2	82	820	8.2K	82K	820K
9.1	91	910	9.1K	91K	910K
					1.0M

1/2 W 5% RESISTORS

Must be ordered in EXACT multiples of 5, 100, or 1000.

1.0	10	100	1.0K	10K	100K
1.1	11	110	1.1K	11K	110K
1.2	12	120	1.2K	12K	120K
1.3	13	130	1.3K	13K	130K
1.5	15	150	1.5K	15K	150K
1.6	16	160	1.6K	16K	160K
1.8	18	180	1.8K	18K	180K
2.0	20	200	2.0K	20K	200K
2.2	22	220	2.2K	22K	220K
2.4	24	240	2.4K	24K	240K
2.7	27	270	2.7K	27K	270K
3.0	30	300	3.0K	30K	300K
3.3	33	330	3.3K	33K	330K
3.6	36	360	3.6K	36K	360K
3.9	39	390	3.9K	39K	390K
4.3	43	430	4.3K	43K	430K
4.7	47	470	4.7K	47K	470K
5.1	51	510	5.1K	51K	510K
5.6	56	560	5.6K	56K	560K
6.2	62	620	6.2K	62K	620K
6.8	68	680	6.8K	68K	680K
7.5	75	750	7.5K	75K	750K
8.2	82	820	8.2K	82K	820K
9.1	91	910	9.1K	91K	910K
					1.0M

PRICING
SAME FOR 1/4 W or 1/2 W

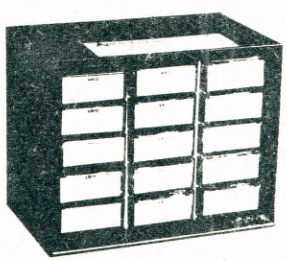
(Less than $.01½ each)

Multiples of 5 pcs./value = (5-95) 5 cents each (100-495) 4 cents each (500 up) 3 cents each.

Multiples of 100 pcs./value = $1.69 per package of 100

Multiples of 1000 pcs./value = $14.90 per package of 1000

CARBON FILM RESISTOR LAB KIT



½ or ¼ watt 5%

60 Ohmic Values—100 Each

2.2	47	660	5.6K	56K
2.7	68	680	6.8K	82K
3.9	75	820	8.2K	100K
4.7	100	1.0K	10K	120K
6.8	120	1.2K	12K	150K
9.2	150	1.5K	15K	220K
10	180	1.8K	18K	270K
18	220	2.2K	22K	390K
22	270	2.7K	27K	470K
27	330	3.3K	33K	560K
33	390	3.9K	39K	1.0M
39	470	4.7K	47K	2.2M

TOTAL 6000 Resistors

Your Cost **$79.00** (specify ½W or ¼W)

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