

Popular Electronics®

WORLD'S LARGEST-SELLING ELECTRONICS MAGAZINE

MAY 1979/\$1.25

PE Tests New "Sonic Hologram" Preamp
Open Refrigerator-Door Alarm Saves Energy
Build an R-F Impedance Bridge

The Upcoming New World of TV Reception

FARM PRICES AT CHICAGO CLOSING BOARD OF TRADE

WHEAT				
JUL	3.09	1/2 DOWN	00	3/4
SEP	3.13	3/4 UP	00	1/4
DEC	3.18	3/4 DOWN	00	3/4
MAR	3.21	UP	00	1/2
CORN				
JUL	2.55	1/2 DOWN	02	
SEP	2.56	3/4 DOWN	02	1/2
DEC	2.58	1/2 DOWN	03	1/2
MAR	2.64	1/2 DOWN	03	1/2

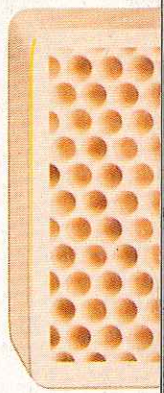
SEE MASSEY FERGUSSON FOR YOUR
NEW 1978 TRACTOR

TEMPERATURE CONVERSION CHART

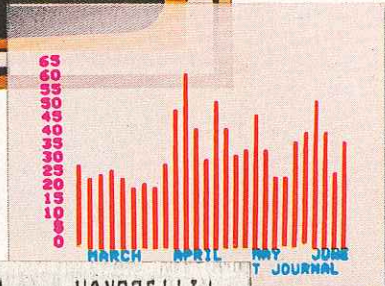
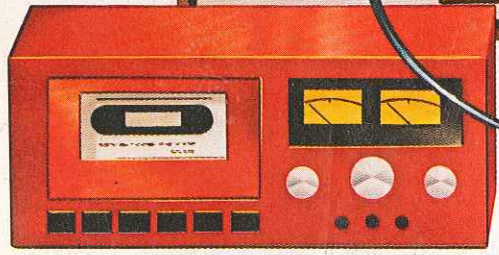
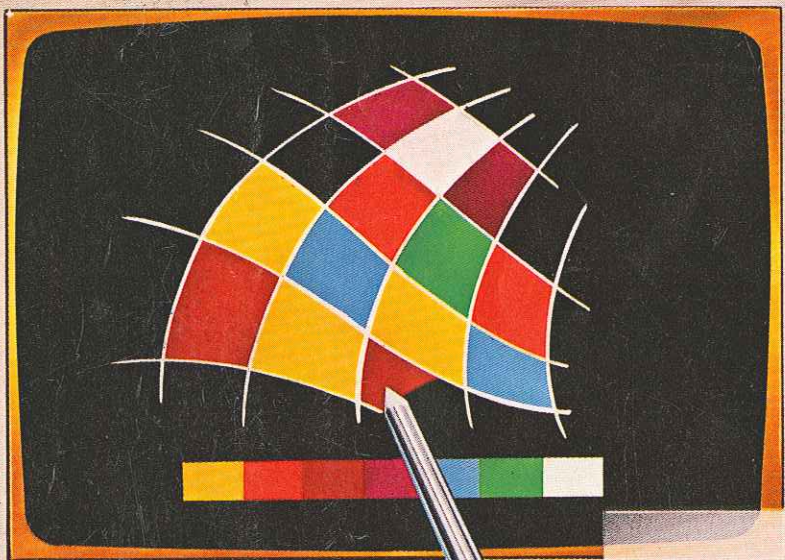
F	C	F	C	F	C
-20	-29.9	36	2.2	90	32.2
-16	-26.7	40	4.4	94	34.4
-12	-24.4	44	6.7	98	36.7
-8	-22.2	48	8.9	102	38.9
-4	-20.0	52	11.1	106	41.1
0	-17.8	56	13.3	110	43.3

THE TOP 7 ROCK SONGS AVAILABLE AT ALL K-MART STORES

- 1 SHADOW DANCING
ANDY GIBB
- 2 BAKER STREET
GERRY RAFFERTY
- 3 USE TA BE MY GIRL
O' JAYS
- 4 YOU BELONG TO ME
CARLY SIMON
- 5 IT'S A HEARTACHE
BONNIE TYLER
- 6 STILL THE SAME
BOB BEGER
- 7 WITH A LITTLE LUCK
WINGS



1 2 3
 ABC DEF
 GHI JKL MNO
 4 5 6
 PRS TUV WXY
 7 8 9
 * 0 #



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 845 KERRY HILL DRIVE
 PITTSBURGH PA 15234

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 Popular Electronics

**Tested
 In This
 Issue**

**Eumig Mo
 Pioneer T
 Sabtronics 8100 Frequency Counter**

Microcomputer Video Board Buying Directory

Make & Model	Price ¹ (\$)	Power Required (mA) ²			ASCII ³ char set	Char per line	Lines	Graphics	Remarks ⁴
		+8V	+16V	-16V					
S-100									
CGRS Microtech VB1B	130 (k) 170 (w)					64	16	128x48	Chars & graphics mixable.
Dynabyte Naked Terminal (VT801-1)	350 (w)	1.8A			128	80	24		BC, RV, AC, S; block-mode edit; KB interface; port-addressed, no driver software needed.
Electronic Sys. 6400	39 (b)	1.5A		30	128	64	16		BC, RV, AC.
IMSAI Basic VIO	190 (k) 335 (w)				96	80, 40	24 or 12	160	1K refresh memory; upper-case only (char set includes graphics chars); all standard screen formats exc. 80x24. 2K memory, all formats.
VIO-A	275 (k) 405 (w)				u/l				2K ROM firmware, all formats.
VIO-B	275 (k) 405 (w)				u				2K refresh memory; upper/lower-case; ROM firmware; all standard screen formats. Converts VIO-A to VIO-C. Converts VIO-B to VIO-C.
VIO-C	325 (k) 465 (w)				96	80, 40	24 or 12	160	Converts Basic VIO to VIO-C.
VIO-AC	60 (k)								
VIO-BC	60 (k)								
VIO-CC	150 (k)								
Interactive Micro Systems IMS64-100	225 (w)	X	X	X	128	32, 64	16	color*	*BC, RV, AC; optional 64x64, 16-color graphics; 6802 intelligence.
Ithaca Audio SVPM	25 (b)				128	64	16	no	BC, RV, AC.
Jade Computer JG-VB1B	35 (b) 100 (k) 150 (w)	2A			128	32, 64	16	128x48	BC, RV, AC; Erase to end-of-line; scroll; Greek chars.
Micro Diversions Screen-splitter	329 (k) 429 (w)	1.5A			128	86, 96	40	yes	BC, RV, AC; up to 3440 independent text "windows"; APL, Sci. & graphics character sets avail.; user-programmable char sets.
MSD-Micro Syst. Dev. MSDV-100	285 (k) 385 (k)	600	20	50	96	80	24	graph. char.	5x9 matrix for alpha, 6x10 for graphics & connected chars.; 32 graphics chars on ROM; gray scale; scrolling register; underline; programmable timer; 2 boards; BC, AV, AC.
Polymorphic VT1	210 (k) 280 (w)	1.6A	30	20	96	32, 64	16	64 (or 128) x48	Requires 2.5 MHz CRT bandwidth for 32-char line or 64-cell graphic line, 5.5 MHz for 64 char or 128-cell.
Processor Tech. VDM-1	199 (k) 295 (w)				u/l	64	16	no	BC, RV, AC, S.
Solid State Music VB1B	150 (k)	1.4A	30	15	128	64	16	128x48	RV, AC; composite & non-composite video.
VAMP Polygrafix	245* (w)					64	16	128-cell	*RV; 128 user-programmable char; piggy-back upgrade for Polymorphics VT1-64 card; \$525 w/VT1-64.

Make & Model	Price ¹ (\$)	Power Required (mA) ²			ASCII ³ char set	Char per line	Lines	Graphics	Remarks ⁴
		+8V	+16V	-16V					
Vector Graphic Flashwriter	235 (w)	1.2A			128	64	16	128x48	RV; 1/2-intensity; keyboard port; composite or separate video and sync.
Western Data Sys. Pro/Ex 1	296 (k)	2A	125	125	64	40	24	block	BC, RV, AC; with on-board r-f modulator, plus 8K 2716 EPROM, MICROBUG OS.
SS-50									
F&D Associates VDB-1	29 (b)				u	32, 64	16	no	RV, AC; can be modified for lower case; 6800 software for scroll; erase, etc.
Gimix VID	198 (w)	X	X	X	64	64	16	no	BC, AC.
VID2	298 (w)	X		X	256	80	24	640x384	BC, RV, AC; programmable char set; half-intensity; Eur. option.
Interactive Micro	225 (w)	X	X	X	128	32, 64	16	64x64	BC, RV, AC; 16-color, 64x64 color option; 6802 intelligence on-board.
Xitan VDB	369 (w)				96	80	25	160x75	Buffer memory holds two pages; keyboard port; lower-case descenders; 64 graphics chars; BC, RV, AC.
Xitek SCT-100	157 (k)	X			128*	64	16	limited	*Stand-alone, uses only 8V and ground from S-100 bus, interfaces via ports; ASCII or Baudot I/O; char set includes some Greek, graphics chars; part kit \$95.

- (b)=bare boards, (k)=kit, (w)=wired.
- in amps where indicated by "A".
- u=upper case; l=lower case.
- AC=Addressable Cursor; BC=Blinking Character; RV=Reverse Video; S=Scrolling.

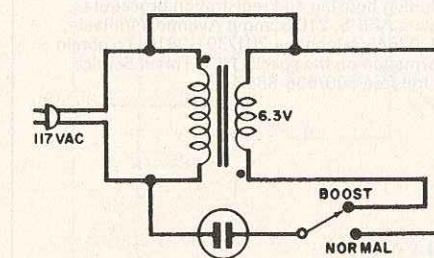
LINE-VOLTAGE COMPENSATOR

Boosts the power-supply voltage when it drops too low

BY HARRY J. MILLER

In areas where low power-line voltage is common, a filament transformer can be used as a voltage booster. A 6.3-volt transformer can be used as shown in the figure. When the switch is placed in the BOOST position, the transformer acts as an autotransformer, increasing the voltage across the socket terminals by about 6 volts. When selecting a filament transformer for this application, determine how much current in amperes the load will draw. Then select a transformer whose secondary winding can safely handle this load current.

The dots shown near the transformer denote phasing of the windings. If you



With the switch in BOOST, line voltage is raised about 6V.

do not know how the transformer is phased, you can determine this experimentally. Connect the secondary wires one way, power the circuit, place the switch in the BOOST position and measure the voltage across the power socket. If it is higher than the line voltage (the voltage across the primary), the transformer has been wired correctly. If the voltage across the socket is less than the line voltage, reverse the secondary wires. If the transformer has been incorrectly wired with respect to phase, it acts as a "bucking" autotransformer which has a lower output voltage than it has input voltage.