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**LITTLE BOARD/PC™
BY AMPRO**

PC/CLONE FOR USE INSIDE THE TI. P.E. EXPANSION BOX...OR THE NEW VIDEOFLEX
XPANSION SYSTEM, built by Phil Jordan, Mfg. by Miller Communications and SOLD
THROUGH THE QUEEN ANNE COMPUTER SHOPPE!!! CALL (206)522-6558, OR
(206)622-9400..24-HR BBS AT (206)361-0895 ADDRESS FOR MORE INFORMATION: 6102
ROOSEVELT WAY N.E., SEATTLE, WASHINGTON, 98115, ATTN: BARBARA WIEDERHOLD
COMPLETE AND READY TO USE.....
LITTLE BOARD/PC™ CLONE ON A CARD..Model 4B-1...768K CARD IS..\$599.00
PLUS THE BELOW CABLES AND VIDEO CONTROLLER.....309.65

LITTLE BOARD™/PC

COMPACT CMOS PC-COMPATIBLE COMPUTER MODULE

DESCRIPTION: The CMOS Little Board/PC represents a significant breakthrough in
microcomputer technology, providing system designers with a highly compact,
self-contained, low power, "PC-compatible" system module in the space of a half
height 5-1/4" disk drive. Everything BUT THE KEYBOARD, MONITOR, DISK DRIVE, AND
POWER SUPPLY is included!

The CMOS Little Board/PC is ideally suited for embedded microcomputer
applications where IBM(™) PC software and bus compatibility are required and
where low power consumption, small size, and high reliability are critical.
Typical applications include:..Network file servers..Diskless
workstations..Portable instruments..Remote data logging..Protocol
conversion..Point-of-sale terminals..Telecommunications..Industrial process
control..Security systems..Distributed processing..Intelligent terminals..Harsh
environments.

This Little Board/PC is the latest member of the popular AMPRO Little Board
family which features the same footprint, mounting hole pattern, and power
connections as the industry standard 5-1/4" disk drive. The Little Board form
factor makes floppy or hard disk-based system integration easy and efficient.
INCLUDED WITHIN THE 5.75" X 8" X 1" Little Board/PC COMPUTER MODULE are an
ENHANCED CMOS 8088-COMPATIBLE MICROPROCESSOR, A FULL COMPLEMENT OF RAM AND EPROM
MEMORY, SERIAL PRINTER, KEYBOARD, AND SPEAKER PORTS, A HIGH PERFORMANCE FLOPPY
DISK CONTROLLER, TWO SYSTEM EXPANSION BUSES, AND A MULTI-MODE VIDEO DISPLAY
CONTROLLER.

ADDITIONAL COST TO YOU IS:\$149.95

OPTIONAL CMOS VIDEO MODULE ATTACHES DIRECTLY TO THE LITTLE BOARD/PC, fitting
entirely within the module's outline dimensions. Complete software
compatibility and flexibility are assured by the video module's four modes of
operation, which include: STANDARD PC MONOCHROME, CGA, HERCULES MONOCHROME
GRAPHICS, AND A UNIQUE HIGH RESOLUTION(400 line) GCA mode. \$149.95

INCLUDES:

TWO INDUSTRY STANDARD SYSTEM EXPANSION BUSES -- a PC Bus and an SCSI Bus--provide
unequaled flexibility. The PC Bus allows the use of a wide variety of low cost
PC add-on cards, including display controllers, communications interfaces, LAN's
, industrial I/O memory, and many more. In addition, a Small Computer System
Interface (SCSI) provides an industry standard interface for external
peripherals such as hard disk, tape, scanners, optical disks, RAM disks,
printers, and LAN's.

FEATURES:

HIGHLY INTEGRATED...Complete PC-compatible Single Board System...in less space
than a half-height 5-1/4" disk drive!...Powerful NEC V40(8088 superset)
microprocessor with DMA and counter/timers...Complete system memory:up to 768K
RAM-up to 128K EPROM space...Complete set of PC-compatible peripheral ports and
controllers:

ports, parallel printer port, keyboard port, and speaker port...Onboard
four-mode videocontroller(option)...PC-DOS compatible ROM-BIOS with hard disk
support...Battery-backed real time clock(option)...Mounts directly to a 5-1/4"
disk drive.

LOW POWER:..State of the art CMOS technology..Draws less than 3 watts of
power!..Single supply operation (+5V only) COMPATIBLE..Runs standard IBM PC
software, including:..Operating systems (PC-DOS,UNIX,XENIX..)..Applications
(Lotus 1-2=3, dBASE, Flight Simulator...)..Languages(C, Pascal, Fortran,
Basic..)...

8088, 8086,80186 instruction set compatible: 8080 emulation mode.

Onboard video module supports four video protocols:..Standard PC
monochrome..Hercules monochrome graphics..CGA...High resolution CGA (400 line
double scan).



EXPANDABLE: Two industry standard expansion buses:..PC bus for connection of standard IBM (tm) PC add-on cards..SCSI bus for addition of Disk/Tape/Optical-RAM drives, Scanners and LAN interfaces, and external peripheral devices. SPECIFICATIONS:
CPU/DMA/CTC

MEMORY:
(F8000h-FFFFh) (2)8k-64K PROM/EPROM 9C0000h-CFFFFh) (3) 8K-32K PROM/EPROM/RAM/NOVRAM (F0000h-F7FFFh)
SERIAL PORTS:
(2)V40-based OEM serial port (TX/RX data, CTS)..software controlled baud rates.

FLOPPY DISK INTERFACE:
SCSI BUS INTERFACE:
MISCELLANEOUS I/O:
THE LITTLE BOARD/PC SELLS FOR:
256K COMPLETE....(VIDEO OPTIONAL)..\$499.00
(VIDEO ADDITIONAL COST OF: \$149.95)
CABLES OPTIONAL.(SEE ABOVE)
768K COMPLETE....(VIDEO OPTIONAL)..\$599.00
(VIDEO ADDITIONAL COST OF: \$149.95)
CABLES OPTIONAL.(SEE ABOVE)

OPTIONS:
BATTERY--BACKED REAL TIME CLOCK WITH SUPPORT SOFTWARE \$69.95
FOUR-MODE VIDEO DISPLAY CONTROLLER COST: \$149.95
(1)STANDARD PC Monochrome (80 characters X 25 rows)
(2)Hercules monochrome graphics (720 X 350 pixels)
(3)CGA (640 X 200 pixels)
(4)High resolution CGA (640 X 400 pixels)
CABLES REQUIRED: SEE ABOVE
FULL TECHNICAL SUPPORT..MANUAL,SOFTWARE, ETC..
YOU NEED YOUR OWN KEYBOARD, FLOPPY DISK DRIVE AND MONITOR...

LITTLE BOARD/PC CABLE ACCESSORIES:
MODEL 4FDC...FLOPPY (INTERNAL).....24.95
MODEL 4PPC...PRINTER (DB25S).....24.95
MODEL 4UC....POWER LED, RESET BUTTON, PC KEYBOARD, SPEAKER.....44.95
MODEL 4DS....V40 SERIAL (DB9P), PC SERIAL (DB25P)dual serial....24.95
MODEL 5VC...VIDEO (DB9S)Cable.....24.95
MODEL 1AC...SERIAL CABLE FOR EXTERNAL MODEM.....14.95
MODEL 5A-0...3-MODE CMOS VIDEO CONTROLLER (Mono/Herc./CGA for 4B.....149.95
TOTAL COST BEFORE TAX AND SHIPPING.....908.65

The following comes from Compuserve and applies to all Geneve owners, as well as those with Supercarts, where the lithium battery is soldered directly to the circuit board. When the battery does go, I'd suggest installing a battery holder, in place of the lithium battery.-Ed.

WARNING ! ! ! ! !

-from: Gerard P. Dombroski [73167,664]

If you have TI's Mini Memory Module, and it no longer works, BEFORE trying to replace the Lithium cell, REMOVE THE CELL BY CUTTING IT OUT!!!!

DO NOT, DO NOT APPLY HEAT TO THE CELL!!

CLEAN THE AREA AROUND THE REMAINING SOLDER CONNECTIONS THOURGHLY, THE DEPOSITS LEFT BY A LEAKING CELL CAN AND DO EXPLODE!!!!!!

If it were not for my safety glasses, which I use while soldering, I would be in a hospital emergency room right now! instead I could just scratch off the now cool solder that splashed on my lenses and everywhere.

I did cut out the cell but the deposits left by the leaking cell exploded, sending molten solder as far as six feet!

Please read and heed this warning, I would like you all to be able to see what you are typing in the future....

CONSOLE XBASIC By CHUCK REINHART-LTI USERS GROUP

XBASIC IN THE CONSOLE PROJECT INTRODUCTION:

Since more and more programs are loading from XBASIC (example: TI-WRITER, DM 1000, MENU), it would make good sense to put the XBASIC cartridge in the console. This would

also reduce lockups that are due to a dirty cartridge port. (The XBASIC cartridge causes most of the lockups)

The following project will mount the XBASIC CARTRIDGE in the console. In the project 2 ribbon cables are soldered to the cartridge port pins on the main board. The XBASIC cartridge circuit board is removed from it's case and soldered to the other end of the ribbon cables. The cables are then routed around the back of the main board and the XBASIC cartridge is mounted on the top of the metal shield. There is plenty of clearance to the left of the cartridge port. A switch is also installed to allow operation with XBASIC or an intalled cartridge. XBASIC will not function if a cartridge is installed in the port. The switch can be installed in the back center or top of the console cover.

PARTS REQUIRED:

- 1 56K RESISTOR 1/4 WATT
- 1 DPDT MINI SWITCH (Radio Shack 275-626)
- 2 8 in PIECES OF RIBBON CABLE WITH 17 CONDUCTORS IN EACH (Radio Shack 278-772)
- 5 8 in PIECES OF WIRE

NOTES:

- 1- I do not accept responsibility for problems resulting from this project. The risk is yours.
- 2- *** This is not a simple project *** Do not attempt this project unless you are familiar with electronics and are experienced in soldering.
- 3- Use solder sparingly. There are land patterns that run between the pins. Also use a small soldering iron.
- 4- After this modification you will not be able to have a cartridge installed while you are running XBASIC.
- 5- Read the instructions fully before starting the modification.

INSTRUCTIONS:

-- Remove the main board from the console. -- Remove the cartridge port and metal shield from the main board. -- Remove the XBASIC circuit board from it's case.

-- Take the two pieces of ribbon cable and separate the wires in the four ends back 1 inch. Then strip all of the wires 1/8 inch

and tin the bare ends. Mark one cable TOP and the other BOTTOM.

-- Place the main board component side down with the side port connector on the right. Locate the two rows of pins that go to the cartridge port (see main board diagram).

-- Take the cable marked BOTTOM and mark a 1 on the edge at both ends. Then solder the wires from one end of the cable to the bottom row of pins skipping pin #4. Keep the wires in order with pin #1 on the right (see main board diagram). Solder one of the 8 in wires to pin #4 and one 8 in wire to pin #9 (pin #9 will have 2 wires). Place a piece of black electrical tape on the circuit board under the cable to prevent shorts.

-- Take the cable marked TOP and mark a 1 on the edge at both ends. Then solder the wires from one end of the cable to the top row of pins skipping pin #2. Keep the wires in order with pin #1 on the right (see main board diagram). Solder one of the 8 in wires to pin #2.

-- Place the XBASIC circuit board with component side up and connector facing the cable marked TOP. Solder the wires to the connector skipping contact #2 (see circuit board diagram). Solder an 8 in wire to contact #2.

-- Turn the circuit board over and solder the wires from the cable marked BOTTOM skipping contact #4 to the contacts on the foil side of the XBASIC cartridge (pin #1 TOP should line up with pin #1 BOTTOM). Solder an 8 in wire to contact #4.

-- Solder the 5 wires and 56k resistor to the switch (see switch diagram).

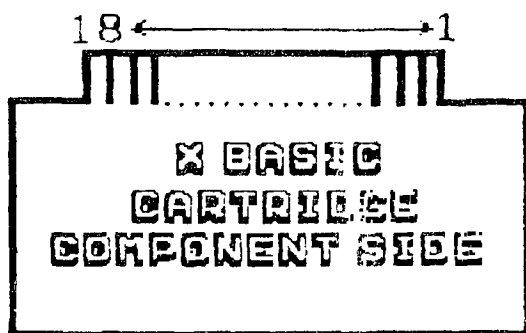
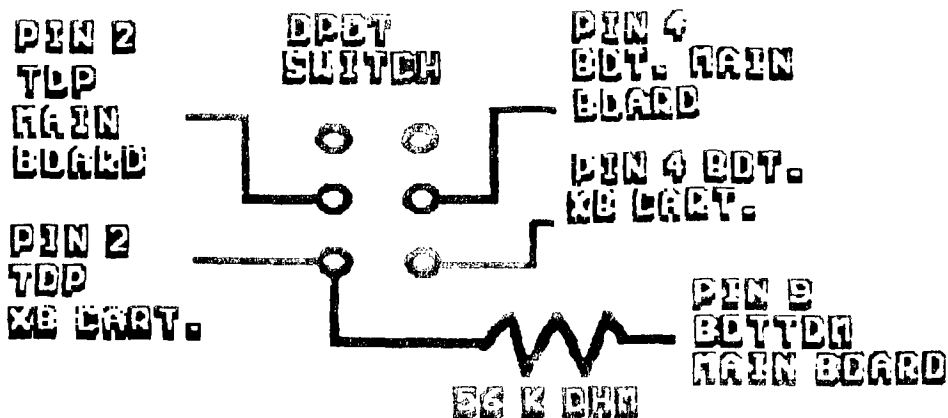
-- Bend the edge of the metal shield to allow room for the cable to pass. Mount the XBASIC cartridge on a piece of cardboard and tape it to the top of the metal shield to the left of the cartridge port. -- Mount the switch in the back of the console cover near the center.

-- Check the wiring with an OHM METER from the cartridge port to the XBASIC circuit board connector. -- Clean the side port and cartridge port. -- Reassemble the console and test the switch in both positions.

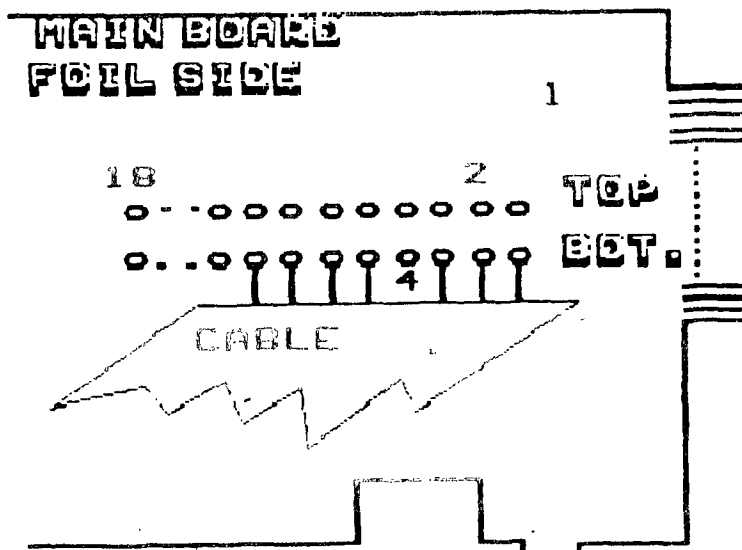
-- THE END ** GOOD LUCK -----

CONSOLE XBASIC

BY CHUCK REINHART



TOP= COMPONENT SIDE
BOT= FOIL SIDE



PEB 32K MEMORY TEST

by Joe Nuvolini and John Willforth
reprinted from WEST PENN 99'ers

Probably two years or more ago Joe Nuvolini wrote an extended basic program to use in troubleshooting memory problems with your TI Memory Expansion Card (in PEB). The program functioned quite well in about 80% of the memory failures related to the 4116 chips them-selves. But when you had a stuck "ON" bit, the program told you that the good chips were BAD and the bad chip was OK. Well I did not correct that defficiency in the program, but I will issue a warning to the effct that on a particular ROW being tested, if you are told that all are BAD but one, assume that that one is the BAD chip. If you would like to know why send a SASE, and I will tell you why this is true.

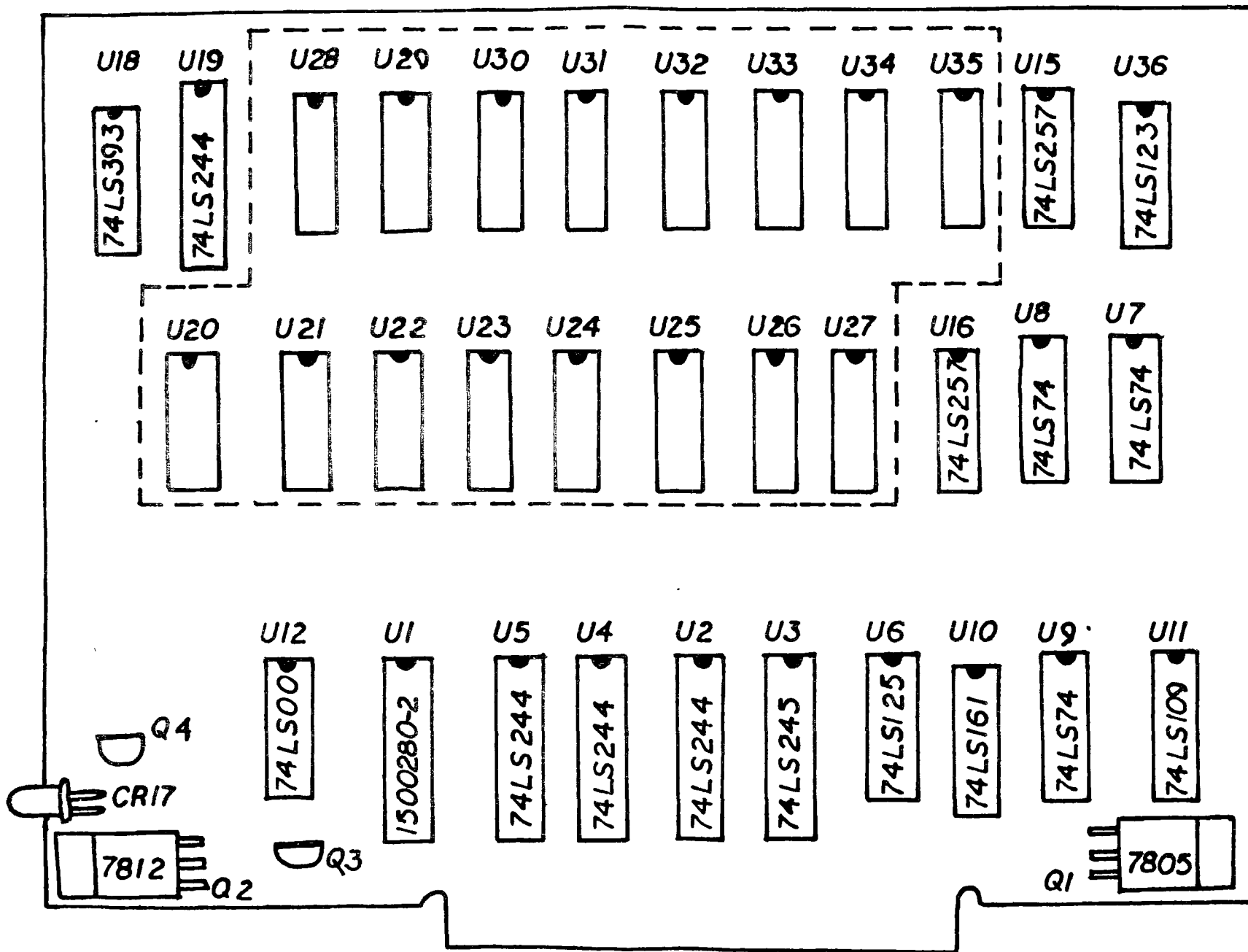
This program will only check for the column and row type failures in a chip (the highest percentage of failures), and is very reliable in telling you the failing chip by "Uxx", which can be referenced against the chart below. A much more extensive program would have to be written to check each "BIT", and the slowness would discourage you in use of it. This program should save you more than \$30 by pointing to a 75 cent chip. You will also note that it is NOT in Extended Basic any longer but in BASIC for the MINI-MEMORY. This makes it possible to load directly from cassette or disk and run. If you had a defective 32K memory and had this program on cassette or disk, you would not be able to load and run it, because it would have loaded into the Expansion Memory (which is broken). Being in BASIC, you have two options. If you want to use Extended Basic, you'll, have to : "CALL INIT" and "CALL LOAD(-31868,0,0) to turn "OFF" the Expansion Memory first, then load the program on the left into your machine from cassette or disk. Even though you turned it OFF, the machine can test it! NEAT!

I hope that this is just what you were looking for to get your old 32K running well again. There are components that can fail, maybe next month I'll give a little more insight on troubleshooting the other problems.

TI 32K MEMORY EXPANSION TEST PROGRAM AND
LOCATOR

```
100 REM WRITTEN BY JOE NUVOLINI (303) 596-6938, MODIFIED BY  
JOHN WILLFORTH  
110 N=0  
120 CALL CLEAR  
130 CALL SCREEN(13)  
140 PRINT " MEMORY EXPANSION CHECKER FOR THE MINIMEMORY":  
150 PRINT "SINCE PROGRAMS LOADED FROM DISK IN XB LOAD INTO  
THE 32K MEMORY, THIS PROGRAM SHOULD BE KEYEDIN IF YOU DON'T  
OWN"  
160 PRINT "A MINIMEMORY UNIT":  
170 PRINT " TO USE THE INFORMATION PROVIDED BY THIS TEST,  
ORIENT YOUR MEMORY EXPANSION CARD WITH THE TWO ROWS OF 4116  
CHIPS AT THE TOP"  
180 PRINT " ENTER :": " 1 TO CHECK TOP ROW ":" 2 TO CHECK
```

```
BOTTOM ROW ":" 3 TO END"  
190 CAL KEY(0,K,S)  
200 IF S=0 THEN 190  
210 IF K<49 THEN 190  
220 IF K>51 THEN 190  
230 R=K-48  
240 IF R=1 THEN 700  
250 IF R=2 THEN 720  
260 IF R=3 THEN 680  
270 IF R=1 THEN 300  
280 N=27  
290 GOTO 310  
300 N=35  
310 V=N  
320 CALL CLEAR  
330 IF R=1 THEN 350  
340 GOTO 370  
350 PRINT "TEST OF TOP ROW OF 4116'S"  
360 GOTO 380  
370 PRINT "TEST OF BOTTOM ROW OF 4116'S"  
380 PRINT "READING FROM RIGHT TO LEFT.":  
390 FOR T=1 TO 2  
400 FOR I=0 TO 7  
410 IF T=1 THEN 440  
420 IN=2 I  
430 GOTO 450  
440 IN=0  
450 CALL LOAD(A,IN)  
460 CALL PEEK(A,D)  
470 IF IN=D THEN 510  
480 PRINT " CHIP U";STR$(N); " IS BAD"  
490 CALL SCREEN(10)  
500 GOTO 520  
510 PRINT " CHIP U";STR$(N); " IS OK"  
520 H=N-1  
530 PRINT "WRITTEN =";IN;" READ =";D  
540 NEXT I  
550 GOSUB 740  
560 CALL CLEAR  
570 IF T=1 THEN 610  
580 PRINT "END OF SECOND PASS":  
590 GOSUB 740  
600 GOTO 640  
610 PPINT "END OF FIRST PASS":  
620 GOSUB 740  
630 N=V  
640 NEXT T  
650 PRINT  
660 INPUT "PRESS ENTER TO CONTINUE ":"X$  
670 GOTO 100  
680 CALL CLEAR  
690 END  
700 A=-12288  
710 GOTO 270  
720 A=12287  
730 GOTO 270  
740 FOR DELAY 1 TO 600  
750 NEXT DELAY  
760 RETURN
```



USE THIS DRAWING TO LOCATE DEFECTIVE CHIPS
ON THE 32 K MEMORY EXPANSION BOARD

=====

THE PRINTERS APPRENTICE

A COMMAND REVIEW

By Rick Alston

MADHUG Dec. '87

=====

I have found The Printers Apprentice to be a most fascinating program. It is available by sending \$22.50 to McCann Software P. O. Box 34160 Omaha, NE 68134. It is relatively complex but is also much more versatile than other programs of its type on the TI market to date. This shouldn't scare you away from this outstanding program, since it alone allows you to do things that aren't possible with other "Printshop" type programs, TI or non-TI. Your imagination is your only limitation. I found the documentation to be rather difficult to follow, with no consolidated command listing. This means you have to leaf through the pages of the manual to locate the appropriate information through a series of "Descendents", which for me was confusing.

What follows is not complete enough to replace the manual, but is a consolidated list of commands with a brief explanation of those functions not plainly described in the manual. These should hopefully get you into the program a little more simply, allowing you to experience the vast power and versatility of The Printers Apprentice.

NOTE: The following programs are a must to fully utilize The Printers Apprentice:
 T-I Artist with companion disks.
 CSGD complete set of disks.
 TPA font disk, TPA Toolbox.

>>>> PICTURE EDITOR <<<<

Page 11 - 14 of manual.

Prefixes are F=Fctn / C=Ctr]

- F-S Cursor left
- F-D Cursor right
- F-E Cursor up
- F-X Cursor down
- I Erase cursor left
- L Erase cursor right
- , Erase cursor down
- S Draw cursor left
- D Draw cursor right
- E Draw cursor up
- X Draw cursor down
- M Reflect picture horizontal axis
- N Reflect picture vertical axis
- F-1 Reduce horiz width of paint brush
- F-2 Increase horiz width of paint brush

- F-3 Reduce vert height of paint brush
 - F-8 Increase vert height of paint brush
 - F-4 Clear screen, erase all drawings
- NOTE: Use of the red marker is outlined on page 13

- F-5 Toggles red marker on and off (shaped like white cursor)
- F-7 Draws / Erases a line between cursor and red marker
- F-8 Increase vert height of paint brush
- F-9 Exit to picture editor exit menu
- F-0 Toggles between draw and erase mode
- F-C Draws/erases a circle centered at marker position outer edge at cursor
- C-9 Toggles row column counter
- C-= Klipper allows a 24x24 pixel area to be saved into a font file assigned to a corresponding letter. pg 14.
- C-B Load/Save pg 12
- C-P Print/Picture option pg 12

>>>> CHARACTER EDITOR <<<<

Page 6 - 10 of manual.

- F-S Cursor left
 - F-D Cursor right
 - F-E Cursor up
 - F-X Cursor down
 - I Erase cursor left
 - L Erase cursor right
 - , Erase cursor down
 - S Draw cursor left
 - D Draw cursor right
 - E Draw cursor up
 - X Draw cursor down
 - F-1 Delete column at cursor
 - F-2 Insert column at cursor
 - F-3 Delete row at cursor
 - F-4 Clear screen
 - F-5 Switch editing windows for OUSH editing
 - F-6 Reflect character through vertical axis
 - F-7 Reflect character through horizontal axis
 - F-8 Insert row at cursor and duplicate
 - F-9 Escape to character editor menu
 - C-R Redraw small window to screen
- NOTE: Printer/file name and variables have to be set before using the next option. (see print options pg 9)
- C-P Print the current character
 - C-1 Delete pixel in current row
 - C-2 Insert pixel space in current row
- NOTE: Select S or D before going to the next two options. (S=single strike 1-479 dots per line), (D=overunder strike 1-959 dots per line).
- C-9 Character save and load control
 - C-= Font height control

D Directory catalogs selected drive
X escape

Space character requires creation and blanking in all font files. Font upgrade, page 11.

>>>> FORMATTER <<<<

Page 15 - 20 of manual.

X Main TPA menu
F-4 Stops printing
F-6 Gets next page of directory
F-9 Escape to main formatter menu
T Allows renaming DSK?.Textfile
B Buffer file
E Extrnfile for use with Scheduler
F Allows renaming DSK?.Fontfile
G Go executes formatter
H Allows user to hyphenate during printing
See page 18
J Allows loading/creating text via the Jotter.

>>>> JOTTER COMMANDS <<<<

F-1 Delete character
F-2 Insert character
C-R Reformat
F-3 Delete line
F-4 Roll down
F-6 Roll up
F-8 Insert blank line
F-9 Jotter main menu
F-S,D,X,E move cursor
Use "CR" at end of text (pg 19)
P Printer command (Star PIO.CR.LF)

>>>>NOTICE!!! <<<<<

Configure the next section before creating any EXTRNFILES.

V Variables allows redefinition of parameters
NOTE: Commands for this should be as follows for Star printers.

Prntr type- G emini E pson
Density S or D
Font Sdsh-Oush-S or U (whichever font you are using)
Linefeed size _0
Space Width Ascii32-4
Intercharacter width-2
Font/Ascii-F or A
Wrap/Fixed-W (best) or F
Ragged/Microadjust - R or M (best)

NOTE: When entering the following information keep in mind that any graphics to be printed left, right or center will require special handling of the text. ie: 1st determine how many pixels wide the graphics will be including any margins, and whatever is left of the page is available for text. For example, centered graphics will require separate text files, one for the left side, one for the right side, one below, and possibly one above the graphics. Any other "Broken" text will require separate text files which must be converted to an "EXTRNFILE" for use in the Scheduler. Any file name you choose will work, just remember them and their order to be printed.

S Single density
D Double density
Q Quad density

NOTE: The numbers shown are how many pixels it takes to print across a page.

Left margin - (S 0-479) or (D-Hs 0-959)
Right margin - Same (Q 0-1919)
Next breakpoint -0 (see pg 17)

>>>> SCHEDULER <<<<

Page 21 - 24 in manual.

E Toggles Printer/Extrnfile
G Go initiates command shown on screen
M Modify data: Select letter

NOTE: The maximum number of files that can be "Scheduled" for printing in one document is 75. These files consist of files created using "GRAPHIC ART" (artwork) converted to "EXTRNFILES" using the formatter. The "SCHEDULER" ties it all together by allowing you to place the various files in the order and location you want them printed on the page.

E Edit
Row enter how far down page printing should begin for each file. (microlinefeeds "pixels")
Col enter how far from left margin printing is to begin for each file. (pixels)
#Reps enter how many times the file will be printed (works well for borders)
U Up scrolls back through file names in the reverse order they will be printed, (can be edited)
D Down scrolls forward through file names in the order they are to be printed. (can be edited also)
I Insert a blank file name
A Active jumps to the selected Disk Directory Window
F E/X enabled, (helps to recall file names)
P Prints contents of "SCHEDULER" including headers.

PROTO CARDS

Downloaded by STEVE TUORTO

John Willforth of the West Penn 99'ers with the help of Scott Coleman has designed and had fabricated P-Box PROTO CARDS.

A number of TI enthusiasts were contacted before finalizing a design. (including the author) I believe that this board will go a long way in helping us expand the hardware options for our machine. This new proto board will be usefull not only to the "hardware hacker" but to the average user who knows little about designing or constructing projects. Once designed and tested by others, projects can be written up in newsletters such as ours and constructed either in groups or individually by members.

Some of the possible uses at this time are: Battery backed clock, DSR ram, Memory LED project, Buss extender, Forti music, Memory expansion, P Box speech, 6000 & 4000 ram, A/D convertor, etc.

Boards include complete documentation, hints and project .deas. NOTE: not all of the above projects are documented

The boards may be ordered from COMPUTER BUG, 5075 CLAIRTON BLVD., PITTSBURGH PA 15236 (412) 882-3374 Price: 1-4 \$35 5 to 9 \$30 add \$3.50 shp/hdl John Willforth (412) 527-6656

(confirms contents). Use PID.CR.LF for Star printers.

- S Size reads the row and column information stored in an EXTRNFILE header into the Row/Col (this helps during layout)
- B Blockmove allows a "Block" of contiguous files to be moved horizontally or vertically as a unit.
- Z Zap deletes current data item
- E Exit to main Scheduler menu
- C Clears data
- D Disk directory (select drive) F-E/X scrolls file names
- R ReadS the EXTRNFILS currently shown on screen including Row/Col/#Reps. (useful for confirmation/editing)
- W WriteS over the EXTRNFILE shown on screen after editing of Row/Col/#Reps. (be careful)
- X Exits to Main Menu.

FONT OF THE MONTH: By Rick Kellogg

Here is font #3 in the series of fonts presented for you to try and use in screen displays in your programs. As stated before, these fonts are not always complete, so feel free to modify and/or expand them to meet your requirements.

FONT #3: *ITALIC UPPER CASE:*

LETTER	ASCII	HEX CODE
A	65	001C22227C444488
B	66	001C22227C4444F8
C	67	001C222040404438
D	68	003C222244444478
E	69	003E20207C404078
F	70	003E20207C404040
G	71	001C222040404438
H	72	002222227C444444
I	73	001C081010102070
J	74	0004040408084830
K	75	0024242870484848
L	76	0010101020204078
M	77	0022362A54444444
N	78	00222232544C4C44
O	79	001C222242444438
P	80	003C22227C404040
Q	81	001C222242544836

R	82	003C22227C484444
S	83	001C202010080870
T	84	003E081010102020
U	85	0012121224244878
V	86	0012121224242810
W	87	0022222254546C44
X	88	0012121408142424
Y	89	002222241C080810
Z	90	001E020408102078

0	48	0018242448484830
1	49	0008081010102020
2	50	0018240408102038
3	51	0018240418084830
4	52	0012122438081010
5	53	001C102038080870
6	54	0008101038242438
7	55	001E020404080810
8	56	001C22227E444438
9	57	001C22221E040808

THESE FONTS ARE BEING PRESENTED TO YOU COURTESY OF THE CIN-DAY USER GROUP. WE HOPE THAT YOU WILL ENJOY AND USE THESE FONTS IN SOME OF YOUR PROGRAMS!!!

FROM TYPEWRITERS TO TYPESETTERS

One of the things I like about computers is the way I can type, make mistakes, and change them so easy. Handwriting was always slow for me and maybe readable when I was done and I have never been fast on a keyboard so I dislike having to rewrite or retype anything so having a computer to print out my thoughts after I have given up making changes, corrections and revisions of ideas (for instance, I have backed up, made changes a dozen times already, make that 13 now) is really great for my non-nimble fingers. After using the old manual typewriter, an electric Brand "X" BM typewriter was terrific. Then came TI 99 and TI Writer with a dot matrix printer. The quality of printing wasn't that great but it was so much faster. Of course we have the good quality daisy wheel and letter quality dot matrix, with the much more expensive computer systems with laser printers. My dream of real printing was still out in never-never land. In my early learning on the TI 99, I spotted a comment in 99er Magazine (which I still miss in spite of it's shortcomings) that they used the TI 99 to typeset the magazine. AH-H-H Wouldn't that be the ultimate! Now I am not talking about a letter to poor Uncle Fred (rich Uncle Charlie maybe) but things that are to be in print, like a computer newsletter. Now since I am a teacher, have a printed information sheet, work sheet or TEST that can be read without being impossible to read because it is a xerox copy of a ditto copy of a mimeo copy of something out of an old book. Now it has been my privilege to set up a totally new Graphic Arts lab which eventually included a CompuGraphic MCS5 Typesetter. They are very expensive and cost extra to get connections to operate off of a modem which was not one of the options we ended up with. By talking with the school newspaper sponsor who obtained a program called TRANSFER JR., he was able to convert IBM MS DOS text files to the special files used by the MCS5. Now the potential of using a modem. But wait !! The Chicago TI FAIRE is here and a wise young man from the east by the name of MIKE DODD brings a program called PC TRANSFER that converts TI writer files to MS Dos! You just need a double density system. My CorComp didn't work well on double density so I sent it off and is now working fine. WILL THIS PROGRAM WORK? Well you are READING the results of this combination of programs that ends up on the typesetter.

Is that all there is to it? No, not Quite. I am sitting at home slowly typing this out (while thinking even slower) leaving out double spaces and any special commands. It will be saved to a TI file and then converted to MS Dos which I will take to school, put on a Leading Edge computer to change to the MCS5 disk. When I bring it up on the typesetter screen, I will have to add four parameters to the program. First the size of the letters. It will go from 6 points to 72 points. Second the amount of space between lines is set. The length of the line is also set and the the style of type is picked. Any and all of this can be changed at any time in the typing. The keyboard has three extra sets of keys that are just commands to operate the system. You can't even use it as a computer, it is strictly a typesetter. A Word Processor is available but that would have cost extra. It's a great system as it is, but as it's name is the Modular Composition System (MCS), you can add on without discarding what you have.

Here are some samples of what it can do.

By giving commands you can go in size from 6 points to **72** points.

One command changes type styles like this.

This is Old English. Then this is Floridian Script. This is the Triumvirate family with Regular, *Italic* and **Bold style of type**. This is the Times family of Regular, *Italic* and **Bold** styles.

Neat? I think so!

Many other styles of type are available and the school newspaper will help provide some more fonts in the near future. If any other newsletters would like an original copy of this article from the photo processor, write to me and give me your full page size and I will try to make it fit your format if it isn't too unusual. The photo paper costs about \$1.00 a page. Send your addressed, pre-stamped business envelope to Roger M. Helm 133 Joliet Rd., Plainfield, IL 60544.

Roger M. Helm

From

THE PHILADELPHIA AREA TI-99/4A USERS' GROUP (MAR. '88)

```
950 DISPLAY AT(24,3):"Use A  
row Keys To Select"  
-----  
960 CALL HCHAR(3+AA*2,7,134)  
-----  
970 CALL KEY(0,H,D):: IF D=0  
THEN 970  
-----  
980 IF H=88 OR H=120 OR H=69  
OR H=101 THEN CALL HCHAR(3+  
AA*2,7,32)  
-----  
990 IF H=88 OR H=120 THEN AA  
=AA+1  
-----  
1000 IF H=69 OR H=101 THEN A  
A=AA-1  
-----  
1010 IF AA=0 THEN AA=9  
-----  
1020 IF AA=10 THEN AA=1  
-----  
1030 IF H<>13 THEN 960  
-----  
1040 ON AA GOTO 1050,1050,13  
10,550,1100,1270,1440,1830,1  
280  
-----  
1050 DISPLAY AT(24,1):"FILEN  
AME: DSK1.CARD" :: ACCEPT AT  
(24,14)BEEP SIZE(-15):K$  
-----  
1060 K$="DSK"&K$ :: OPEN #1:  
K$ :: FOR A=1 TO 21  
-----  
1070 IF AA=1 THEN LINPUT #1:  
L$ :: A$(A)=SEG$(L$,1,28)::  
B$(A)=SEG$(L$,29,28)  
-----  
1080 IF AA=2 THEN PRINT #1:A  
$(A);B$(A)  
-----  
1090 NEXT A :: CLOSE #1 :: G  
OTO 840  
-----  
1100 DISPLAY AT(1,8)ERASE AL  
L:"PRINTER MODES": "P:PRINTER  
NAME: PIO"  
-----  
1110 ACCEPT AT(3,15)BEEP SIZ  
E(-14):J$  
-----  
1120 DISPLAY AT(5,1):"<N> NL  
B ON": "<N> NLB OFF": "<N> PIC  
A MODE": "<N> ELETE MODE"  
-----  
1130 DISPLAY AT(9,1):"<N> CO  
NFIGURED MODE": "<N> EXPANDED  
MODE ON"  
-----  
1140 DISPLAY AT(11,1):"<N> D  
DOUBLE STRIKE ON"  
-----  
1150 DISPLAY AT(13,1):"<N> D  
DOUBLE STRIKE OFF"  
-----  
1160 DISPLAY AT(14,1):"<N> E  
MPHASIZED ON": "<N> EMPHASIZE  
D OFF"  
-----  
1170 DISPLAY AT(16,1):"<N> 1  
/6 INCH LINE SPACING: "<N> 7  
/27 INCH LINE SPACING"  
-----  
1180 DISPLAY AT(18,1):"<N> 1  
/8 INCH LINE SPACING: "<N> U  
NI-DIRECTION PRINT ON"  
-----  
1190 DISPLAY AT(20,1):"<N> U  
NI-DIRECTION PRINT OFF: "<N> E  
NTER OTHER LINE SPACING"  
-----  
1200 FOR A=5 TO 20 :: ACCEPT  
AT(A,2)VALIDATE(Z$)BEEP SIZ  
E(-1):I$  
-----  
1210 IF I$="Y" OR I$="y" THE  
N OPEN #1:J$ :: PRINT #1:D$(  
A-4):: CLOSE #1  
-----  
1220 NEXT A :: ACCEPT AT(21,  
2)VALIDATE(Z$)BEEP SIZE(-1):  
I$  
-----  
1230 IF I$="N" OR I$="n" THE  
N 840  
-----  
1240 DISPLAY AT(21,1):"NEW L  
INE SPACING =12/72 inch"  
-----  
1250 ACCEPT AT(21,19)VALIDAT  
E(DIGIT)BEEP SIZE(-2):I :: O  
PEN #1:J$  
-----  
1260 PRINT #1:H$&"A"&CHR$(I)  
:: CLOSE #1 :: GOTO 840  
-----  
1270 FOR A=1 TO 21 :: A$(A),  
B$(A)=" " :: NEXT A :: GOTO 8  
40  
-----  
1290 DISPLAY AT(24,1):"  
WFE YOU SUFE? " N"  
-----  
1290 ACCEPT AT(24,21)VALIDAT  
E(Z$)BEEP SIZE(-1):I$ :: IF  
I$="N" OR I$="n" THEN 840  
-----  
1300 CALL CLEAR :: END  
-----  
1310 DISPLAY AT(1,7)ERASE AL  
L:"SPECIAL GRAPHICS"  
-----  
1320 DISPLAY AT(4,3):CHR$(12  
6)&" = FCTN W "&CHR$(127)  
&" = FCTN V"  
-----  
1330 DISPLAY AT(6,3):CHR$(12  
8)&" = CTRL "&CHR$(129)  
&" = CTRL A"  
-----  
1340 DISPLAY AT(8,3):CHR$(13  
0)&" = CTRL B "&CHR$(131)  
&" = CTRL C"  
-----  
1350 DISPLAY AT(10,3):CHR$(1  
32)&" = CTRL D "&CHR$(133)  
&" = CTRL E"  
-----  
1360 DISPLAY AT(12,3):CHR$(1  
34)&" = CTRL F "&CHR$(135)  
&" = CTRL G"  
-----  
1370 DISPLAY AT(14,3):CHR$(1  
36)&" = CTRL H "&CHR$(137)  
&" = CTRL I"  
-----  
1380 DISPLAY AT(16,3):CHR$(1  
38)&" = CTRL J "&CHR$(139)  
&" = CTRL K"  
-----  
1390 DISPLAY AT(18,3):CHR$(1  
40)&" = CTRL L "&CHR$(141)  
&" = CTRL M"  
-----  
1400 DISPLAY AT(20,3):CHR$(1  
42)&" = CTRL N "&CHR$(143)  
&" = CTRL O"  
-----  
1410 DISPLAY AT(24,4):"PRESS  
ANY KEY TO EDIT."  
-----  
1420 CALL KEY(0,D,H):: IF H=  
0 THEN 1420  
-----  
1430 GOTO 430  
-----  
1440 DISPLAY AT(1,9)ERASE AL  
L:"CATALOG DISK" :: CALL HCH  
AR(2,1,132,32)  
-----  
1450 DISPLAY AT(5,1):"DRIVE?  
[0-5]: <1>"  
-----  
1460 ACCEPT AT(5,16)VALIDATE  
("012345")BEEP SIZE(-1):M$  
-----  
1470 IF M$<>"0" THEN 1490 EL  
SE DISPLAY AT(5,1):"DEVICE N  
AME? < >"  
-----  
1480 ACCEPT AT(5,15)BEEP SIZ  
E(-13):M$  
-----  
1490 M$="DSK"&M$&" " :: DISP  
LAY AT(6,1):"OUTPUT TO PRINT  
ER? [Y/N]: N"  
-----  
1500 ACCEPT AT(6,27)VALIDATE  
(Z$)BEEP SIZE(-1):I$ :: IF I  
$="y" THEN I$="Y"  
-----  
1510 IF I$<>"Y" THEN 1530 EL  
SE DISPLAY AT(6,1):"PRINTER  
NAME: PIO"  
-----  
1520 ACCEPT AT(6,15)BEEP SIZ  
E(-14):J$  
-----  
1530 DISPLAY AT(8,1):"READIN  
G...": : : : : "A TO ABORT"  
-----  
1540 CALL HCHAR(10,2,126)::  
CALL HCHAR(10,3,127,28):: CA  
LL HCHAR(11,2,129)  
-----  
1550 CALL HCHAR(10,31,128)::  
CALL HCHAR(11,31,130):: CAL  
L HCHAR(12,2,131)  
-----  
1560 CALL HCHAR(12,3,132,28)  
:: CALL HCHAR(12,31,133)  
-----  
1570 OPEN #1:M$,INPUT,RELAT  
IVE,INTE=N$: :: INPUT #1:N$,  
6,6,D :: FOR A=1 TO 127  
-----  
1580 CALL KEY(0,J,H):: IF J=  
65 OR J=97 THEN 1640  
-----  
1590 INPUT #1:O$,K,L,M :: IF  
LEN(O$)=0 THEN 1640  
-----  
1600 G$(A)=O$&RPT$(" ",11-LE  
N(O$))&STR$(L)&RPT$(" ",5-LE  
N(STR$(L)))&F$(ABS(K))  
-----  
1610 IF ABS(K)<5 THEN P$=" "  
&STR$(M):: G$(A)=G$(A)&SEG$(  
P$,LEN(P$)-2,3)  
-----  
1620 IF K<1 THEN G$(A)=G$(A)  
&" Y"  
-----  
1630 DISPLAY AT(11,1):G$(A):  
: NEXT A  
-----  
1640 CLOSE #1  
-----  
1650 CALL CLEAR :: IF I$="Y"  
THEN OPEN #1:J$  
-----  
1660 PRINT TAB(9):"A TO ABOR  
T";TAB(9):"P TO PAUSE": :  
-----  
1670 PRINT M$; " - DISKNAME=  
";N$;"AVAILABLE=";D;"USED=";  
G-D  
-----  
1680 IF I$="Y" THEN PRINT #1  
:M$; " - DISKNAME=";N$;"AVAI  
LABLE=";D;"USED=";G-D  
-----  
1690 PRINT : " FILENAME SIZE  
FILETYPE P-----  
-----  
1700 IF I$="N" THEN 1720  
-----  
1710 PRINT #1:" FILENAME SI  
ZE FILETYPE P:-----  
-----  
1720 FOR A=1 TO A :: CALL KE  
Y(0,D,H):: IF D=65 OR D=97 T  
HEN 1760  
-----  
1730 IF D=80 OR D=112 THEN 1  
810  
-----  
1740 PRINT G$(A):: IF I$="Y"  
THEN PRINT #1:G$(A)  
-----  
1750 NEXT A  
-----  
1760 IF I$="Y" THEN CLOSE #1  
-----  
1770 PRINT : "LIST AGAIN [Y/N  
]?"  
-----  
1780 CALL KEY(0,D,H):: IF H=  
0 THEN 1780  
-----  
1790 IF D=89 THEN 1650  
-----  
1800 GOTO 840  
-----  
1810 FOR D=1 TO 50 :: NEXT D  
:: CALL KEY(0,D,H):: IF H=0  
THEN 1810  
-----  
1820 GOTO 1740  
-----  
1830 DISPLAY AT(24,1):"SCREE  
N COLOR? [2-16]: <2 >"
```

1840 ACCEPT AT(24,24)VALIDATE(DIGIT)BEEP SIZE(-2):I	1860 ACCEPT AT(24,24)VALIDATE(DIGIT)BEEP SIZE(-2):A	1 TO 14 :: CALL COLOR(I,A,1) :: NEXT I	ROR, RE-BOOTING... * :: RUN
1850 DISPLAY AT(24,1):"LETTER COLOR? [2-16]: <16>"	1870 IF A=1 THEN 1830	1890 GOTO 840	
	1880 CALL SCREEN(I):: FOR I=	1900 CALL CLEAR :: PRINT "ER	

```

100 REM WHITE DOT AND COLOR
110 REM BAR GENERATOR
120 REM BY FRANK A. PASSINI
130 CALL CLEAR
140 PRINT TAB(10);"WHITE DOT
"
150 PRINT TAB(15);"0"
160 PRINT TAB(10);"COLOR BAR
"
170 PRINT TAB(10);"GENERATOR
"
180 PRINT " : : : : :
190 PRINT TAB(8);"1-WHITE DOT"
200 PRINT TAB(8);"2-COLOR BAR"
205 PRINT TAB(8);"3-CROSSHATCH"
207 PRINT TAB(8);"4-VIDEO BURSTS" :
210 PRINT "ENTER CHOICE 1,2,3 OR 4^^^^ENTER ANY OTHER^KEY TO EXIT^":IN PROGRAM^HIT^ANY KEY^^^^^^^^^^FOR^MENU
"
220 CALL KEY(0,K,S)
222 IF S=0 THEN 220
224 IF K<49 THEN 960
226 IF K>52 THEN 960
250 ON VAL (CHR$(K))GOTO 260,370,660,770
260 CALL CLEAR
270 AS="0000001818000000"
280 CALL CHAR(32,A$)
290 CALL COLOR(1,16,1)
300 CALL SCREEN(2)
310 CALL KEY(0,KEY,STATUS)
)
320 IF STATUS=0 THEN 310
330 CALL CHAR(32,"0000000000

```

```

000000")
340 CALL COLOR(1,2,1)
350 CALL SCREEN(4)
360 GOTO 100
370 CALL CLEAR
380 FOR I=16 TO 4 STEP -1
390 CALL COLOR(I-2,I,1)
400 NEXT I
410 CALL CLEAR
420 CALL SCREEN(2)
430 A=48
440 FOR I=0 TO 7
450 FOR W=1 TO 4
460 CALL VCHAR(1,(I*4)+W,A,1)
470 NEXT W
480 A=A+8
490 NEXT I
500 FOR I=0 TO 7
510 FOR W=1 TO 4
520 CALL VCHAR(13,(I*4)+W,A,12)
530 NEXT W
540 A=A+8
550 IF A<=136 THEN 570
560 A=48
570 NEXT I
580 CALL KEY(0,KEY,STATUS)
590 IF STATUS=0 THEN 580
600 FOR I=2 TO 14
610 CALL COLOR(I,2,1)
620 NEXT I
630 CALL SCREEN(4)
640 GOTO 100
660 CALL CLEAR
670 AS="FF8181818181FF"
680 CALL CHAR(32,A$)
690 CALL COLOR(1,16,1)
700 CALL SCREEN(2)
710 CALL KEY(0,KEY,STATUS)

```

```

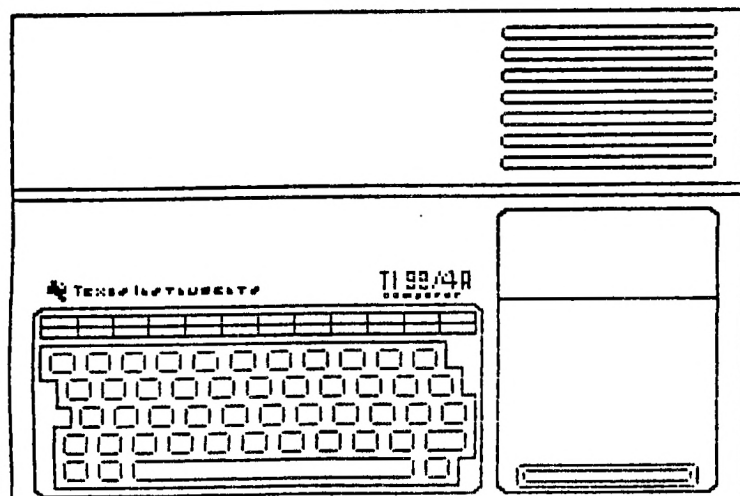
720 IF STATUS=0 THEN 710
730 CALL CHAR(32,"0000000000000000")
740 CALL COLOR(1,2,1)
750 CALL SCREEN(4)
760 GOTO 100
770 CALL CLEAR
780 CALL CHAR(33,"FFFFFFFFFFFFFFFF")
790 CALL CHAR(34,"0F0F0F0F0F0F0F0F")
800 CALL CHAR(35,"3333333333333333")
810 CALL CHAR(36,"5555555555555555")
820 CALL SCREEN(2)
830 FOR I=1 TO 24
840 PRINT " ! ! ***** ###
#^###$ "
850 NEXT I
860 CALL COLOR(1,16,1)
870 CALL KEY(0,KEY,STATUS)
880 IF STATUS=0 THEN 870
890 CALL CHAR(33,"00101010101000010")
900 CALL CHAR(34,"0028282800000000")
910 CALL CHAR(35,"0028287C287C2828")
920 CALL CHAR(36,"0038545038145438")
930 CALL COLOR(1,2,1)
940 CALL SCREEN(4)
950 GOTO 100
960 END

```

**K*3 TI USERS GROUP
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KANKAKEE, IL 60901**

MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7				1	2	3	4
8	9	10	11	12	13	14	5	6	7	8	9	10	11
15	16	17	18	19	20	21	12	13	14	15	16	17	18
22	23	24	25	26	27	28	19	20	21	22	23	24	25
29	30	31					26	27	28	29	30		

MEETING DATES



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