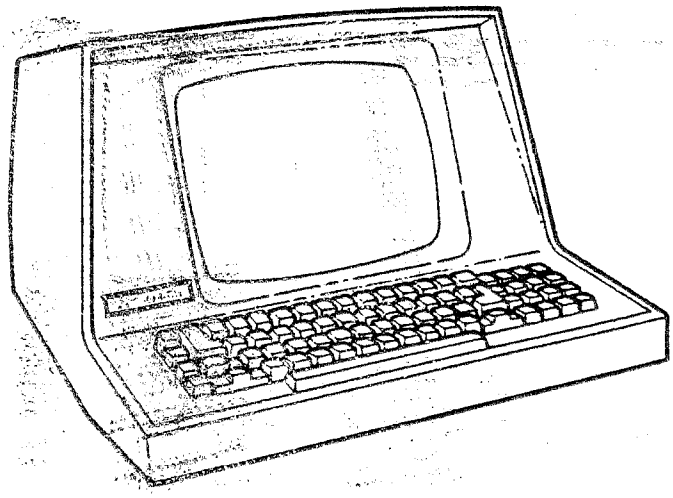
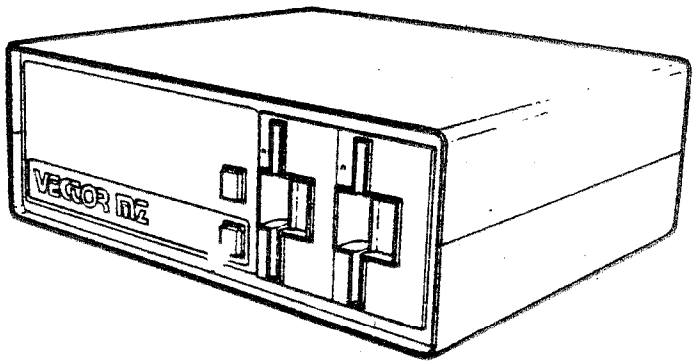
8K-UPDATE-56K

INSTALLATION MANUAL





VECTOR

VECTOR GRAPHIC, INC.

8K-UPDATE-56K

Revision 1

INSTALLATION MANUAL

Revision A

December 1, 1979

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FOREWARD

Audience

This manual is intended for computer suppliers, or others with at least a moderate technical knowledge of small computers and familiarity with the basic operation of the Vector Graphic system, who have a Vector Graphic 48K system which they wish to convert to a 56K system using an additional 8K board.

Scope

This manual will describe the contents of the 8K-Update-56K package, how to modify an existing 48K Vector Graphic system in order to make use of it, and how to install the components which require installation.

Organization

It assumes the user knows how to open up a Vector Graphic computer system, how to remove printed circuit boards from the chassis, how to install jumpers on those boards, and how to remove and install PROM chips.

TABLE OF CONTENTS

ITEMS IN THE 8K-UPDATE-56K PACKAGE

8K-Update-56K Installation Manual

56K (version 8.5 or later) MDOS System Diskette and manual

4.Ø (or later) Extended Systems Monitor and manual

Serialized CP/M 2 System Diskette and manual

(This CP/M 2 diskette can be used in either a 56K or 48K system.)

I PERSPECTIVE

This manual is intended for an owner of a 48K Vector Graphic System B, Memorite II, or MZ, as part of the 8K-Update-56K package used for the purpose of converting the system to a 56K system. This modification gives the system the same memory structure as in Vector Graphic systems shipped with 56K of memory. An article on this conversion appeared in Systems Bulletin #2 from Vector Graphic, but the points brought out there will be repeated here.

Notice that the package includes a version of CP/M and a version of MDOS which will run in the 56K system. The CP/M and MDOS diskettes and manuals you were using with the system when it had 48K should not be used anymore. If you decide to hold onto them, store them separate from active materials. Do not let them get mixed up with the 56K CP/M and MDOS diskettes and manuals.

The CP/M included with the package is the new CP/M 2 from Vector Graphic. The manuals for CP/M 2 explain the difference between this and the CP/M you may have been using on the 48K system. Most significantly, this CP/M is entirely owned and supported by Vector Graphic. Also, you will find the utilities and configuration routines much easier to use than before.

CP/M 2 can be used on the existing 48K system as well, as will be apparent in its manual. (This contradicts Systems Bulletin #2, which was incorrect on this point.) Further, CP/M 2 can be used with serial as well as memory mapped terminals. Therefore, even if you have an MZ using a serial terminal, you can use it. If you have been using the MZ without ever having purchased CP/M, this CP/M will be new to you, but there is no additional charge for it.

As mentioned in the systems bulletin, if you were using the Word Management System or Memorite II word processing on the system, you must order the new 56K word processing software to run on the converted system. If you have disk-based word processing software, then when ordering an update for it, return one of the serialized diskettes, labelling it "Update-56K." This is not required (or possible) if your word processing software is on PROM, in which case simply place your order for a 56K version. All 56K word processing software is disk-based. The price for updating word processing is nominal.

You do not have to order MZOS separately if you are only using the MZOS that comes on the word processing Demo diskette, because you will get a new Demo diskette as part of your word processing update package. However, if you are making use of the separate MZOS 1.5 diskette which comes with the System B, you can order the 56K version of it, for a nominal charge. As with CP/M and MDOS, you cannot use the old 48K word processing software diskettes, the word processing Demo diskette, the MZOS diskette, and respective manuals, and if you keep them, you should store them separately, not mixed up with your 56K versions! When you feel safe about it, dispose of these old materials completely.

The following are the differences between a 56K and a 48K system:

1. The 56K system has 56K of contiguous RAM, beginning at ØØØØH. The existing 48K board requires no modification. Using the 8K-Update-56K package, the additional 8K of RAM is provided by an 8K board addressed at CØØØH.

2. The PROM/RAM board is moved from a base address of CØØØH to EØØØH. Block A of PROM sockets (the 8K block of PROM) is disabled if currently in use, or readdressed to operate at CØØØH if desired.

3. The Flashwriter II board is moved from a base address of DØØØH to FØØØH.

4. The Disk Controller board is moved from a base address of D8ØØH to F8ØØH.

5. The Extended Systems Monitor is version 4, rather than 3.1 or earlier.

II HOW TO INSTALL COMPONENTS AND MODIFY THE SYSTEM

2.1 Preparation

Refer to the list of items included in the 8K-Update-56K package, found at the beginning of this manual. Make sure that you received everything.

Before making the conversion, make sure your system is operating perfectly. Any problems which arise after converting can be traced therefore to the process of converting itself.

Turn all power off to the computer and peripherals. Remove the cover of the computer by unscrewing the 2 upper screws on each side of the machine. Set the cover aside.

In the following procedures, you are going to remove several boards, make modifications to them, and return them to the system. To reduce electronic noise in the system, return each board to the same slot from which it is removed.

2.2 Micropolis Disk Controller board

Remove the Disk Controller board from the system. Note the slot it comes from. This board is the one with the very wide flat ribbon cable attached to the top of the board and running to the disk drives. Since this board does not have card extractor levers, you may have to reach into the system and jiggle the board loose from the bottom. Be careful not to apply any more upward pressure than necessary because you can conceivably damage it or yourself when it comes loose. Also beware that the regulator on the left top of the board could be hot to the touch if you have been using your system prior to this modification.

Refer to the diagram following the text. Find the four resisters above the number "4" printed at the bottom of the board. They are in the row of chips labelled "D" on the side of the board. Notice that below each resistor there are two jumper pads, one next to the left end and one next to the right end of the resistor. Then notice that there is a jumper connecting the top pair of pads and there is a jumper connecting the bottom pair of pads. Cut out the bottom jumper.

This is the only change. Leave the top jumper in place.

Return the board to the same slot in the motherboard.

2.3 PROM/RAM board

Find and remove the PROM/RAM board. This board is the one with the 8 large PROM sockets visible along the top edge of the board.

Find jumper Areas E and F near the bottom of the board. Look at the jumpers and compare them to the figure that follows the text in this manual. Jumper Area F will probably look the same, but the bottom jumper in Area E will be different. (Although the figure refers to the PROM/RAM III board, it applies in this case equally well to the PROM/RAM II board, if you have one.)

Unsolder and remove the bottom jumper in Area E. Then install a jumper running from the same left-hand pad, but connect it to the pad to its right and level with it, as shown in the figure.

Compare jumper Area F with the figure. If it is the same, then skip the rest of this paragraph. If it is different, install a jumper connecting the lowest pad on the far right side of Area F to one of the two pads on the far left side of Area F. This action effectively disables the 8 PROM sockets (Ø through 7) in the top row on the PROM/RAM board. These PROM's are known as Block A. You can now remove these PROM's from the board, though this is not required. It is a good idea to save them, in case at some time you wish to convert the system back to a 48K system.

Now, look at Block B, the bottom four PROM sockets. Remove ALL the PROM's presently found in these sockets. If you are using one of these sockets for a special PROM (other than the Extended Systems Monitor, the Word Management System "CONFIG" PROM's, or the Memorite II "CONFIG" PROM's), then you will have to arrange for this PROM to be relocated to the comparable location in memory between EØØØH and FFFF. If you are using the Word Management System or Memorite II, the CONFIG PROM's will not be needed in the 56K version.

Install the two Extended Systems Monitor (version 4) PROM's in the two left-hand sockets (numbers 8 and 9). Put the PROM labelled EØØØ in socket 8 and the PROM labelled E4ØØ in socket 9.

Return the PROM/RAM board to the same slot in the motherboard.

2.4 Flashwriter II board

Find the Flashwriter II board. It is the board with two cables attached - the video cable running from the molex connector at the top left-hand corner of the board, and the keyboard cable running from the bottom right-hand corner of the board. Before taking it out of the machine, disconnect the video cable, noting how the cable is oriented when connected. Extract the board from the socket, being careful not to pull on the keyboard cable. Then remove the connector at the end of the keyboard cable by prying it up with a screwdriver blade. Be careful not to bend any pins, as they are brittle and maleable.

Find Area F, near the left-hand side of the board, at the end of the third row of chips. Notice that pads 2 and 5 are connected by a short trace, and that pad two and the trace just above it are soldered together.

Cut the trace connecting pads 2 and 5, using a knife blade. The cut should be wide enough so that you are positive no connection remains. Make sure no metal chips get scattered around the board. Turn the board over and shake it to remove any chips adhering to the board.

Install a jumper from pad 2 to pad 9, soldering it in place. Make sure that it does not get soldered to pad 8 too. Also make sure that you do not lose the solder connection between pad 2 and the trace just above it.

Before inserting the board in the system, reconnect the end of the keyboard cable, using the same orientation as before. Then return the board to the same location in the motherboard, and reconnect the video cable in the same orientation as before.

2.5 8K board

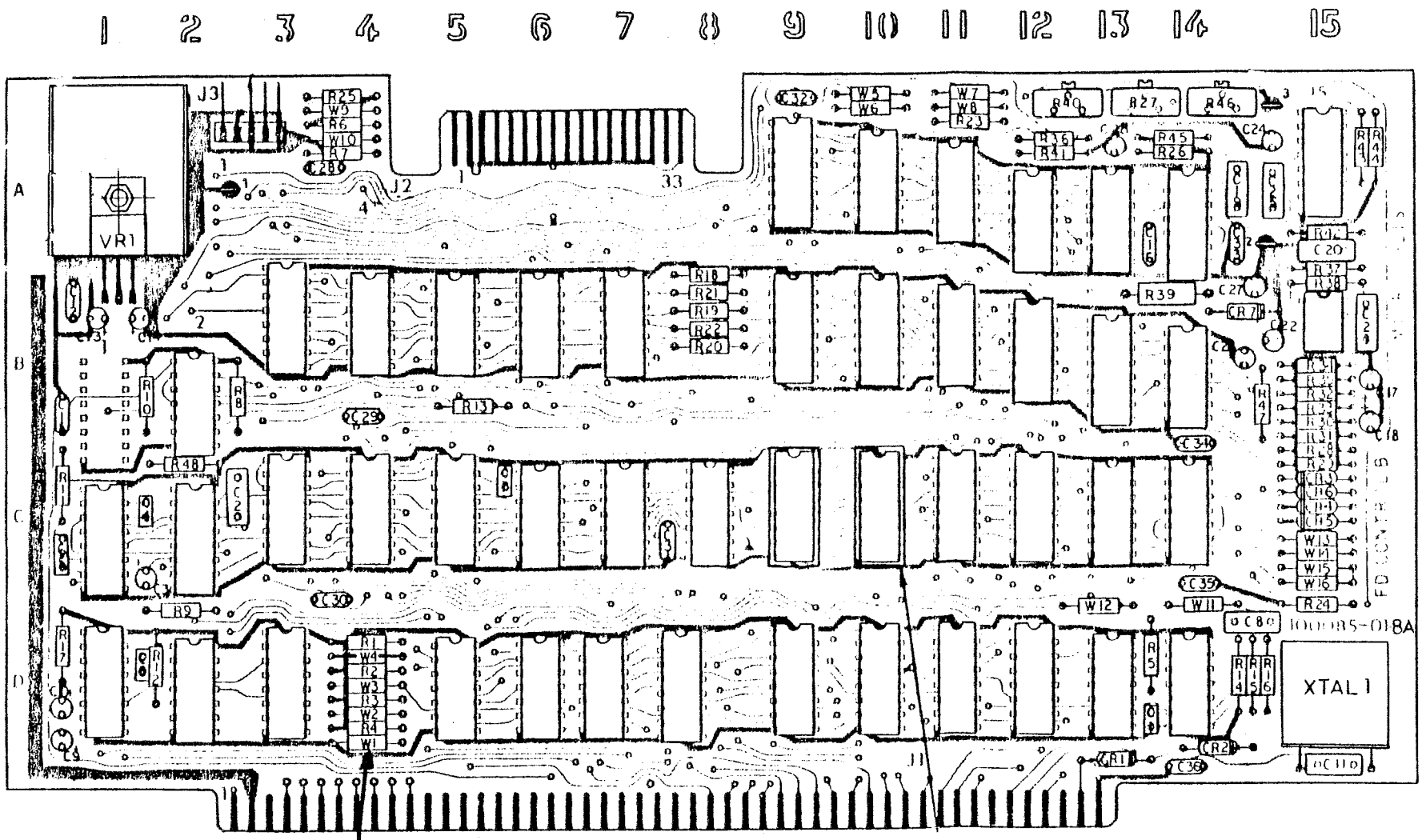
Set the 8K Static RAM board to occupy the address range CØØØH to DFFFH. To accomplish this, you will find a dipswitch in the upper right-hand corner of the board. There are four rockers in this switch. The three left-hand rockers control the addressing of the board. The right-hand rocker determines whether you can write onto the board (write-protect feature). Set the rockers from left to right as follows:

UP UP DOWN UP

"UP" means press the rocker in toward the upper side. This is the position opposite the "OPEN" label on the switch.

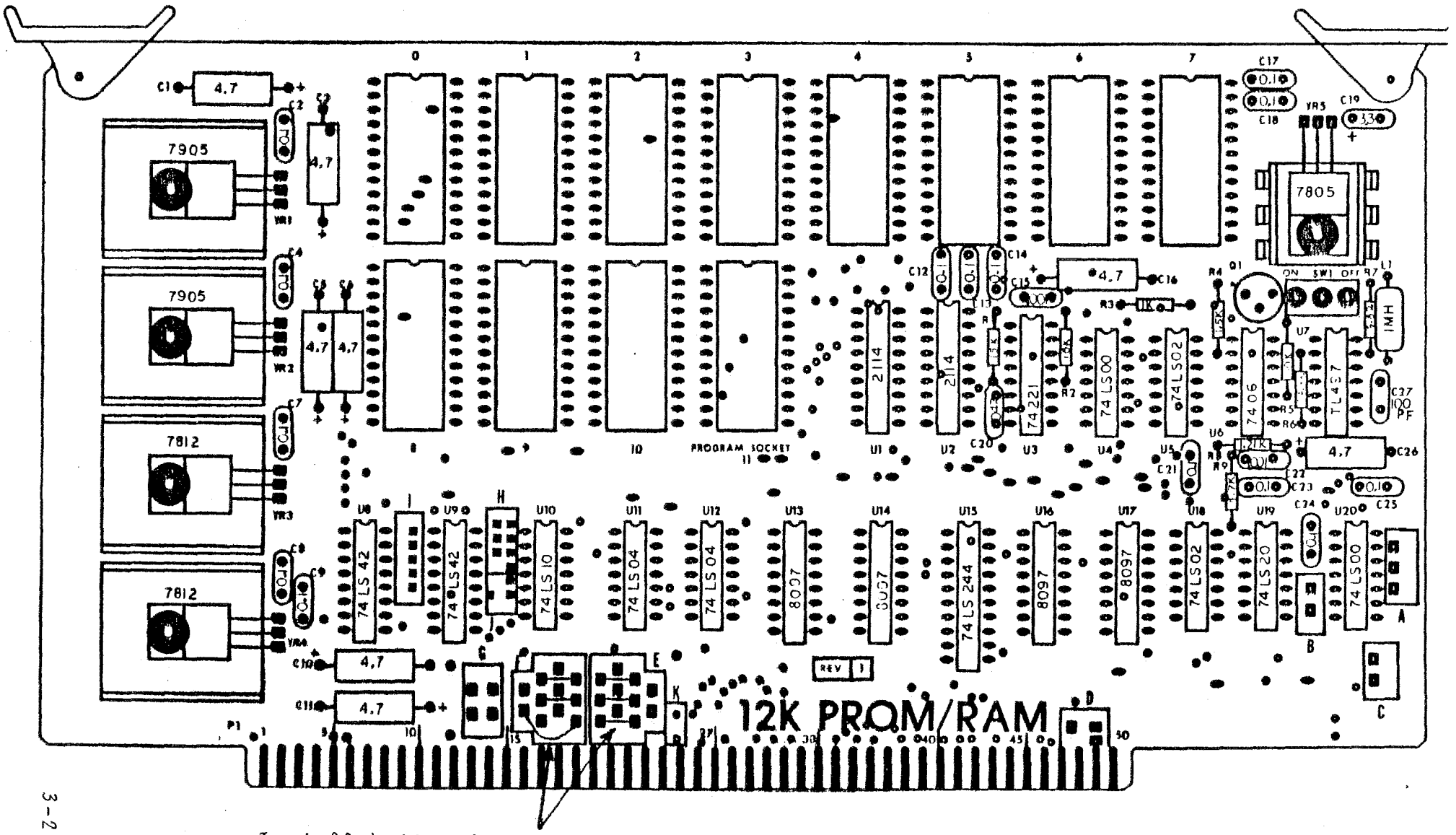
Insert the board in any convenient motherboard slot. If possible, insert it in a slot that is separated from the disk controller board by another board.

MICROPOLIS DISK CONTROLLER BOARD



Delete (remove) the bottom jumper ("w1").

12K PROM/RAM BOARD



Install bottom jumpers in Areas E and F as shown.

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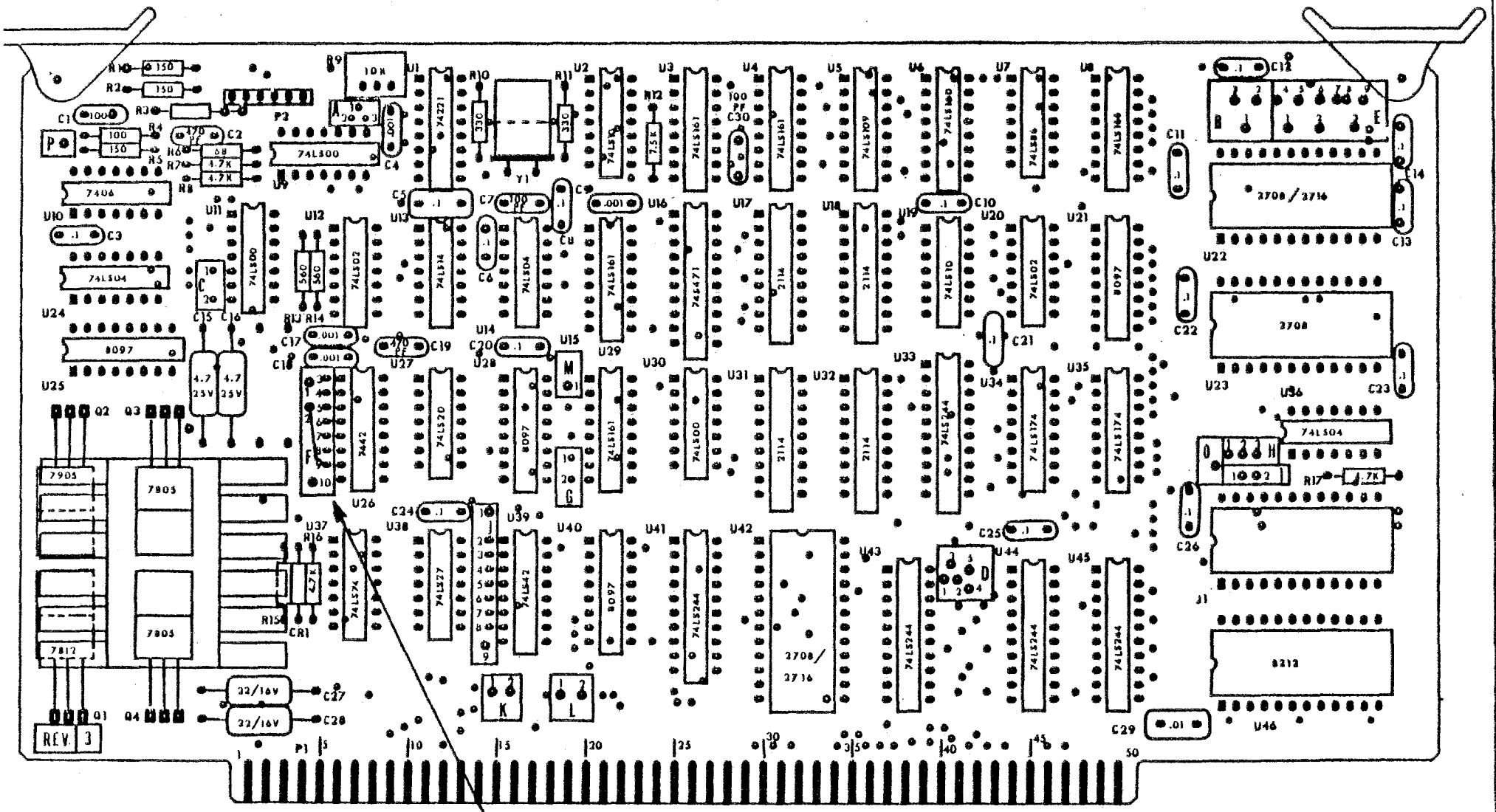

In jumper Area F, (1) cut jumper from 2 to 5, and (2) install a jumper from 2 to 9.

3-3

NOTES:
1. CAPACITOR VALUES IN MICRO FARADS
2. RESISTOR VALUES IN OHMS

SILKSCREEN
80 X 24 DISPLAY BOARD

DWN BY: ARTMASTER DESIGN SERVICES	VECTOR GRAPHIC INC. 31364 VIA COLINAS WESTLAKE VILLAGE, CA. 91361
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