

P11-129[®]

640K RAM CARD

NOTE

When unpacking and installing the adapter card you purchased, be sure to turn off the system first.

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I. INTRODUCTION

The 640K RAM CARD is designed to expand the memory on your IBM PC or PC compatible computer. The 640K RAM CARD uses three banks of 64K or 256K Dynamic RAM Chips. Each additional bank of 9 chips you install increases the board's capacity by 64K or 256K bytes to a maximum of 655360 bytes of RAM data storage. Each bank contains 8 data chips and one chip for the parity bit with the data chips marked D0 thru D7 (D0 is the least significant bit) and the parity chips marked with a parity at the end of the board.

- * Expand memory to 640K
- * 64K*1 or 256K*1 DRAMS
- * User upgradable
- * Parity checking standard
- * No wait states
- * Software independent
- * Fully tested

II. INSTALLING 640K RAM CARD

CAUTION
DISCONNECT POWER TO THE COMPUTER
AND ALL PERIPHERAL DEVICES BEFORE
INSTALLING ANY CARD

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INSTALLATION REQUIREMENTS:

- * RAM Card
- * RAM Card Operator's Manual
- Philips Screwdriver & Nutdriver or Pliers

To prepare for installation of the 640K RAM Card follow these steps:

1 Turn your computer off (make sure of this) and unplug all power cords connected to it or attached peripheral devices. This includes monitors, modems and expansion units.

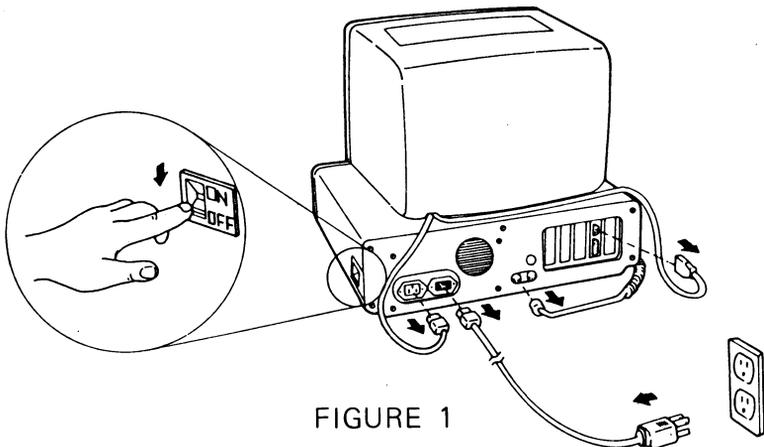


FIGURE 1

2 Clear the work area to give yourself room.

3 Move the keyboard out of the way and make sure that there is nothing on top of the computer. Turn the computer around so you can remove the cover.

4 If your computer's case does not have a hinged lid located the retaining screws (their number and location may vary from one machine to another). With a screwdriver or nutdriver, remove the screws and put them somewhere safe so you don't lose them. Remove the cover and put it on the floor, out of the way. If your computer's case has a hinged lid open it and disregard further instruction regarding it.

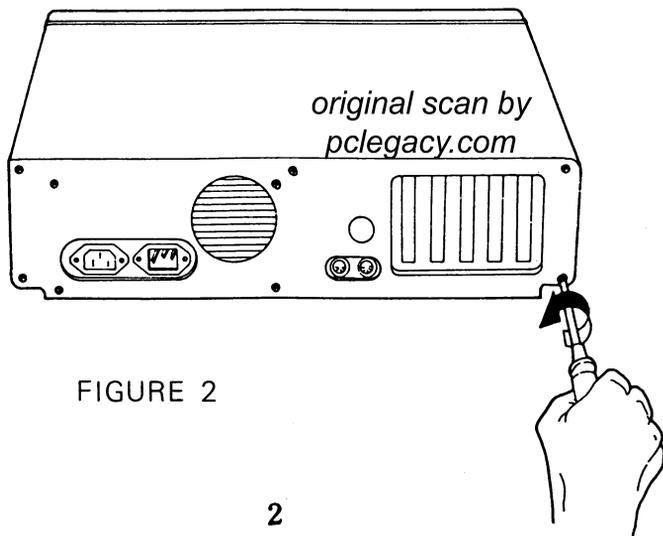


FIGURE 2

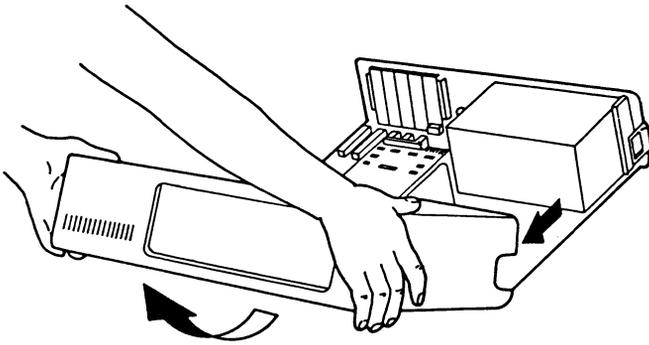


FIGURE 3

9 In Figure 4 we see the expansion slots as they are typically located in IBM PC or compatible machines. You may install your 640K RAM Card in any slot that is free but it is preferable to locate your RAM card in a position where it will get good air circulation. You are now ready install your 640K RAM Card so let's go on to the next section, "Installation procedure."

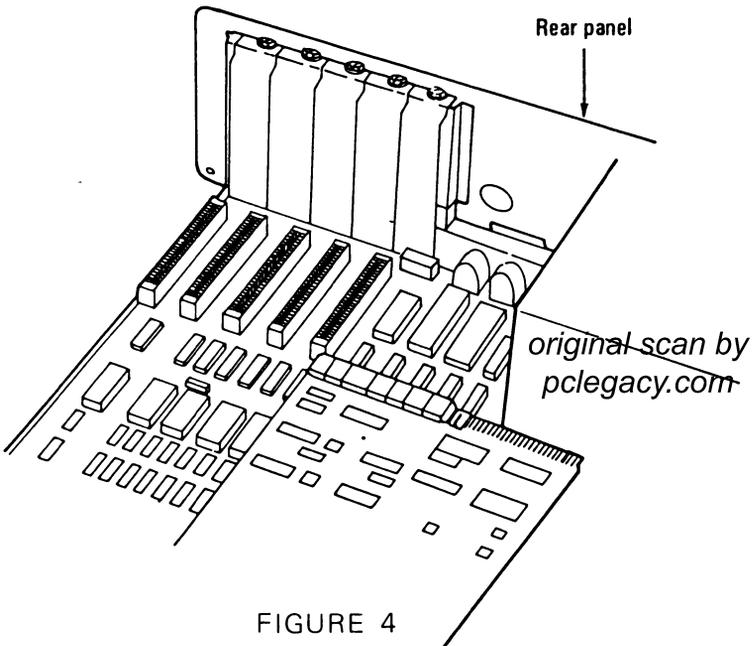
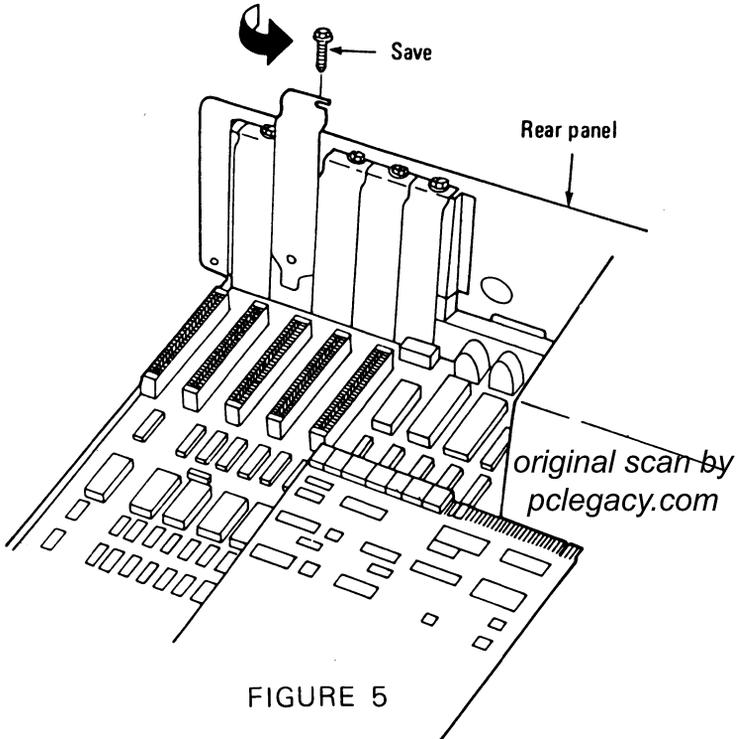


FIGURE 4

SECTION 3

INSTALLATION PROCEDURE

1 With a screwdriver or nutdriver (usually a small phillips screw) remove the cover for an unused slot as shown below. As before, save the removed screw in a safe place for later use (step 3).



BEFORE YOU PLUG IN THE BOARD, READ THIS CAREFULLY

WARNING: HANDLE YOUR 640K RAM CARD BOARD ONLY BY ITS NONCONDUCTIVE EDGES. Don't touch the connector contacts or any components with your hands. Some of the parts on the board are very sensitive to static electricity and their replacement can be expensive.

2 Touch the computer power supply with your hand to neutralize any electrostatic differential between you and the system's ground. Then with both hands as shown in Figure 6, below, plug your 640K RAM Card into the expansion slot. Make sure the board is seated securely.

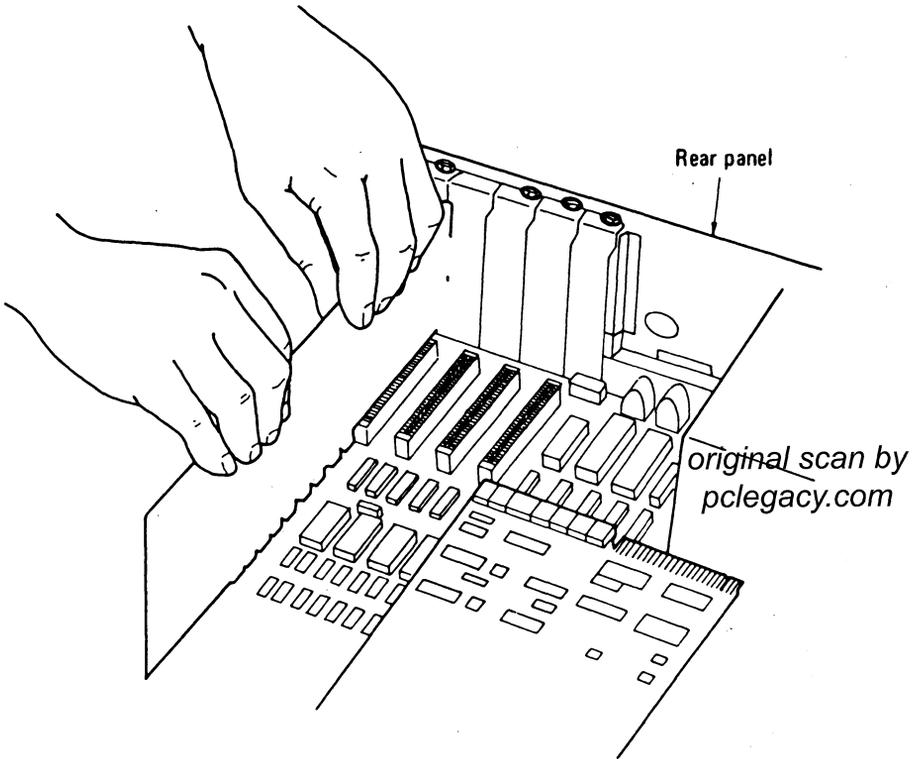


FIGURE 6

3 Align the hole in the mounting plate of the 640K RAM Card board with the hole in the rear panel as shown in Figure 7, below. Using the screw removed in step 1, attach the mounting plate of the board securely to the rear panel.

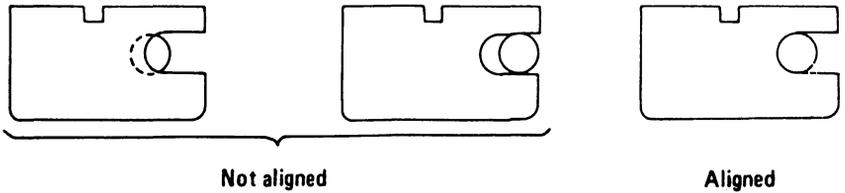


FIGURE 7

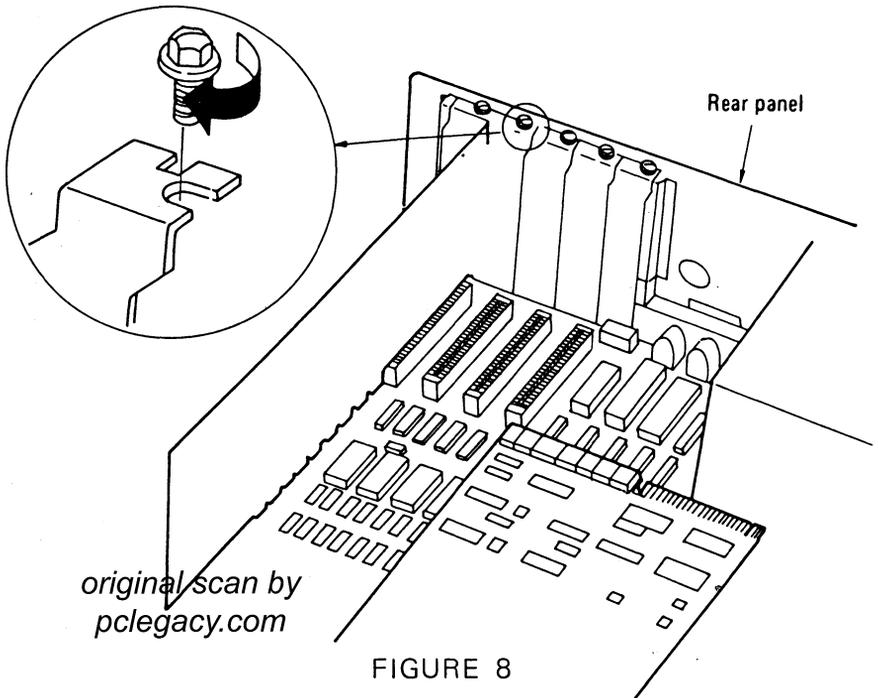


FIGURE 8

FINISHING UP

1 If you have any other cards to install in your computer, install them now (refer to the options manual for details-the procedures are similar and the warnings should contain the same cautions regarding static).

2 If your computer's case does not have a hinged lid, hold the cover as shown in Figure 9, below, and slide it back into place. Now replace the mounting screws you removed in step 4 of the preparation section and reconnect all cables and peripherals to the system unit. Reconnect the power and before turning on your system recheck all connections.

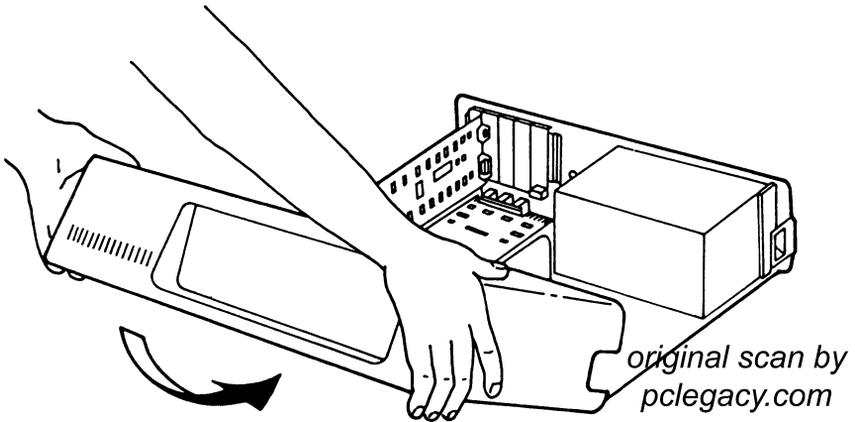


FIGURE 9

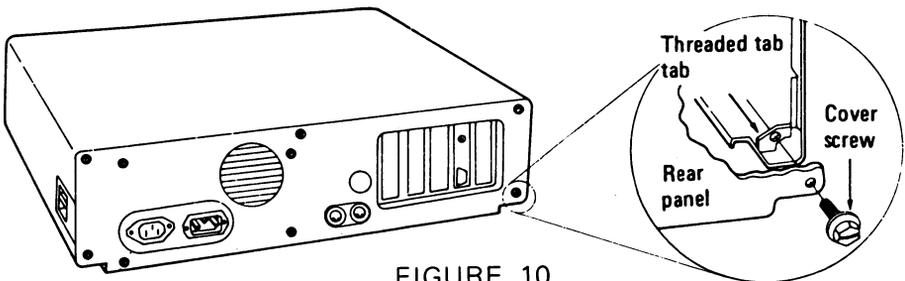


FIGURE 10

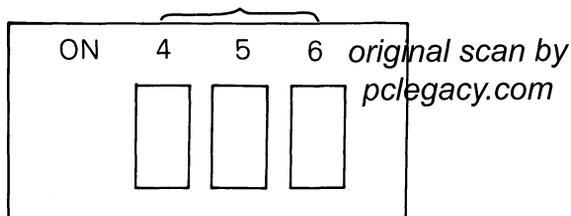
III. PII-129 MEMORY SWITCH SETTING

Jumper (JP1) and switch (SW1) control three functions related to the memory installed on your card. The three functions which must be configured are:

1. The starting address of the PII-129's RAM memory
2. The amount of memory installed on the PII-129
3. Parity checking (enable or disable)

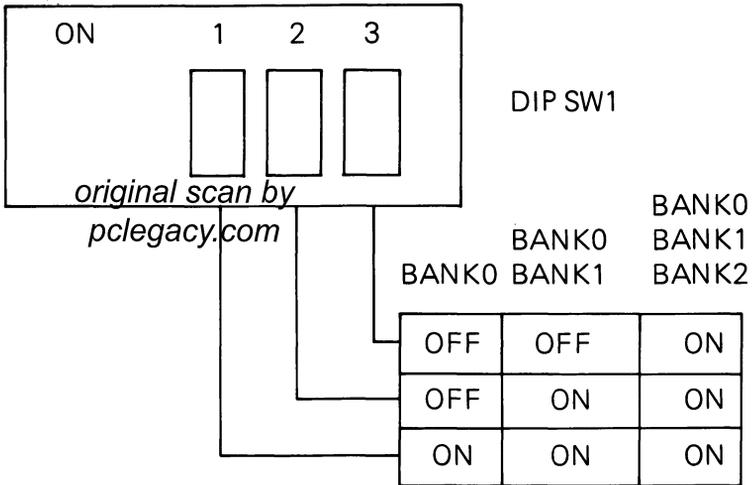
(1) Set the starting memory address and memory chips installed.

Starting Address	Switch (SW1)			Installed the Memory chips			Maximum RAM on PII-129
	S4	S5	S6	BANK0	BANK1	BANK2	
OK	ON	ON	ON	41256	41256	41256	640K
64K(I)	OFF	ON	ON	41256	41256	41256	576K
64K (II)	ON	OFF	ON	41256	41256	41256	576K
128K	OFF	OFF	ON	41256	41256	X	512K
256K (I)	ON	ON	OFF	41256	41256	X	384K
256K(II)	OFF	ON	OFF	41256	4164	4164	384K
512K(I)	ON	OFF	OFF	41256	X	X	128K
512K (II)	OFF	OFF	OFF	4164	4164	X	128K



Amount of Memory Installed.

(2).



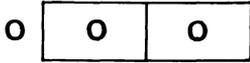
Amount of Memory Installed

Note:

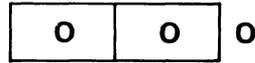
- The switches for all installed banks should be turned ON. Any unused bank should have it's switch set to the OFF position.
- If the switch is left in the ON position for an unused bank, a parity error will occur when the processor attempts to read that bank.
- Disabling a bank disables the data bus drivers when that bank is accessed. This allows other devices to use the same memory area as the RAM card if the appropriate RAM banks are not used.

(3). Parity Check Enable.

Jumper block (JP1) is used to enable/disable the memory parity check. It is set as follows:



Parity check enable



Parity check disable

IV. MEMORY MAP

The 640K memory card uses a 256*8 Bipolar PROM for address decoding and selection of the 3 banks of RAM. The use of a PROM allows any of the banks to be mapped to a valid area of the 8088's 1 megabyte of memory space, provided it is on a 64K or 256K boundary. The memory map of each PROM is as follows:

ADDRESS MAP

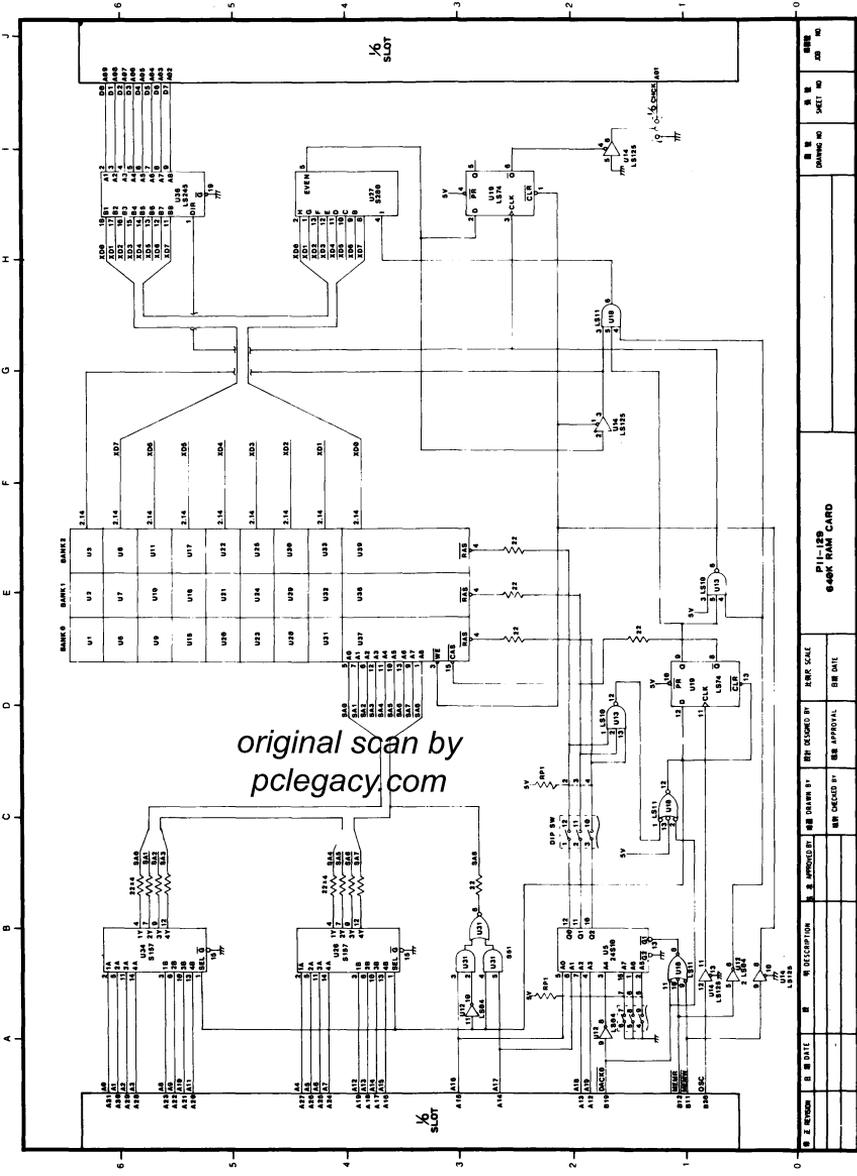
SW-6 SW-5 SW-4

	ON ON ON	ON ON OFF	ON OFF NO
BANK0	00000H-3FFFFH	10000H-4FFFFH	10000H-4FFFFH
BANK1	40000H-7FFFFH	50000H-8FFFFH	50000H-8FFFFH
BANK2	80000H-9FFFFH	90000H-9FFFFH	90000H-9FFFFH

	ON OFF OFF	OFF ON ON	OFF ON OFF
BANK0	20000H-5FFFFH	40000H-7FFFFH	40000H-7FFFFH
BANK1	60000H-9FFFFH	80000H-9FFFFH	80000H-8FFFFH
BANK2	-----	<i>original scan by</i>	90000H-9FFFFH

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	OFF OFF ON	OFF OFF OFF
BANK0	80000H-9FFFFH	80000H-9FFFFH
BANK1	-----	90000H-9FFFFH
BANK2	-----	-----



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6 5 4 3 2 1 0

J H G F E D C B A

K6 SLOT

U1 U2 U3 U4 U5 U6 U7 U8 U9 U10 U11 U12 U13 U14 U15 U16

3.3V 5V 3.3V 5V

CS RAS CAS WE OE

DIP 20A 20B 20C 20D 20E 20F 20G 20H 20I 20J 20K 20L 20M 20N 20P 20Q 20R 20S 20T 20U 20V 20W 20X 20Y 20Z

3.3V 5V 3.3V 5V

CS RAS CAS WE OE

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3.3V 5V 3.3V 5V

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