



Kit Information

3299-K131 - 512 KB RAM Upgrade

This manual provides the necessary information for the installation of this kit (3299-K131) to the 512 KB Memory Expansion Board (3299-K130).

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512 KB RAM Upgrade

This kit may be used for expanding the memory capacity of the memory board 3299-K130. The kit increases the memory capacity of the board by 0.5 MB. Up to seven of these kits may be added to a memory expansion board, thus increasing the capacity of the board, in increments of 0.5 MB, up to a maximum of 4 MB.

This description is in two parts:

- Part 1, Memory Installation - This part describes the installation of the kit to the 512 KB Memory Expansion Board (3299-K130).
- Part 2, Memory Addressing - This provides the switch setting information of the memory expansion board that is needed to address the expansion memory correctly to the system.

First carry out the instructions given in "Memory Installation" to install the 512 KB RAM Upgrade to the memory expansion board; then you may refer to the second part for the switch setting information of the memory expansion board.

Specific information for the preparation of the memory expansion board and its installation to your PC is given in the kit information of kit 3299-K130.

MEMORY INSTALLATION

This kit could be damaged by electro-static discharge once it has been removed from its packing. To avoid such problems, follow the recognized procedures for electro-static discharge, such as:

- Always work in a static free area
 - Before handling the kit, discharge yourself by touching something that has a good connection to ground.
 - Do not touch the components on the boards unless you are instructed to do so.
 - Place the components of the kit on an anti-static, padded surface when preparing the installation.
1. Carefully examine the four small plug-in boards (PIBs) that are provided in this kit. The smaller pair of these PIBs have four integrated circuits (ICs) and 22 pins to each board. The larger pair of PIBs have five ICs and 24 pins to each board.
 2. Figure 1 shows the memory expansion area of the memory expansion board.

The larger pair of PIBs have to be installed in the left side of the memory expansion area, the smaller pair of PIBs are installed in the right side of the memory expansion area.
 3. Take the smaller pair of PIBs, be sure that none of the pins are bent.

Fit the PIBs into the two sockets in the right side of the next vacant area on the memory expansion board. Be sure that all the pins on the PIB align with the socket. Make sure that the new PIBs are inserted the same way round as the existing PIBs on the memory expansion board (see Figure 2).
 4. Using the same procedure, fit the larger pair of PIBs into the corresponding sockets in the left side of the same expansion area.

NOTE: When adding additional memory to the board, build up the board progressively. Do not leave any intermediate areas of the board unpopulated.

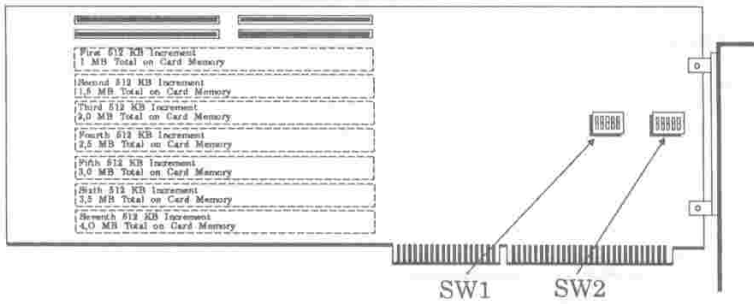


Figure 1

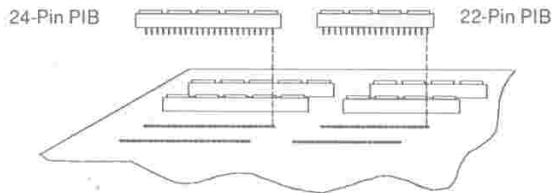


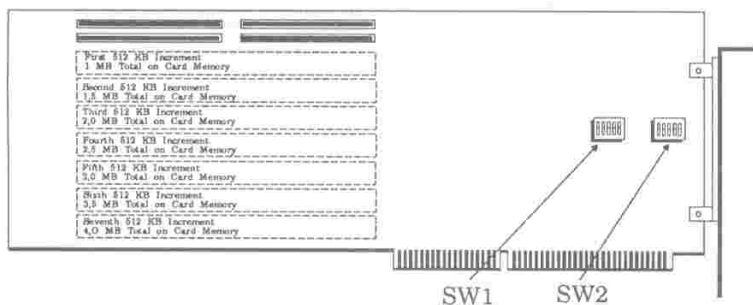
Figure 2

MEMORY ADDRESSING

The flexibility of your personal computer may allow to install memory boards of different capacities, at different times. Since this may not be the only additional memory board to be installed, it is not possible to provide fixed switch settings for this board.

Each memory board has two sets of switches:

- SW1 - For the start address of the memory on the board.
- SW2 - For the end address of the memory on the board.



To determine the switch setting(s) for a new board, use the following procedure:

1. Determine the amount of **additional memory** already installed (count in blocks of 0,5 MB) - do not include the memory contained on the main processor board (base memory: 640 KB or less).
2. Using the information from item 1 and the Switch Setting Table at the end of this chapter, select the **Start Address** for the board that you are installing. Set **SW1** to the desired start address.

NOTE: The switch position marks engraved on the switches may differ from those used in this description:

On = Closed Off = Open

3. Count the amount of memory on the board about to be installed - count in blocks of 0.5 MB. Add the on-board memory to the start address to determine the correct **End Address**. Set **SW2** to the desired end address.
 - Install the memory expansion board to your PC - follow the instructions given in the kit information of kit 3299-K130.

SWITCH SETTING EXAMPLES

Example 1

Your system has a memory expansion board (3299-K130) with 2.5 MB additional memory already installed, and you are about to add 1 MB (two kits 3299-K131) to this memory expansion board.

Start Address (0.0 MB)	SW1				
	1	2	3	4	5
	On	Off	On	On	On

End Address (3.5 MB)	SW2				
	1	2	3	4	5
	On	On	On	Off	On

Example 2

Your system already has 4MB of additional memory installed, and you are about to add a board with another 1 MB of memory (Kit 3299-K130 plus one Kit 3299-K131)

Start Address (4.0 MB)	SW1				
	1	2	3	4	5
	On	Off	On	Off	On

End Address (5.0 MB)	SW2				
	1	2	3	4	5
	Off	Off	On	Off	On

Switch Setting Table

Memory Size	Start Address Switch SW1					End Address Switch SW2				
	1	2	3	4	5	1	2	3	4	5
0.0MB	on	off	on	on	on	x	x	x	x	x
0.5MB	off	off	on	on	on	on	off	on	on	on
1.0MB	on	on	off	on	on	off	off	on	on	on
1.5MB	off	on	off	on	on	on	on	off	on	on
2.0MB	on	off	off	on	on	off	on	off	on	on
2.5MB	off	off	off	on	on	on	off	off	on	on
3.0MB	on	on	on	off	on	off	off	off	on	on
3.5MB	off	on	on	off	on	on	on	on	off	on
4.0MB	on	off	on	off	on	off	on	on	off	on
4.5MB	off	off	on	off	on	on	off	on	off	on
5.0MB	on	on	off	off	on	off	off	on	off	on
5.5MB	off	on	off	off	on	on	on	off	off	on
6.0MB	on	off	off	off	on	off	on	off	off	on
6.5MB	off	off	off	off	on	on	off	off	off	on
7.0MB	on	on	on	on	off	off	off	off	off	on
7.5MB	off	on	on	on	off	on	on	on	on	off
8.0MB	on	off	on	on	off	off	on	on	on	off
8.5MB	off	off	on	on	off	on	off	on	on	off
9.0MB	on	on	off	on	off	off	off	on	on	off
9.5MB	off	on	off	on	off	on	on	off	on	off
10.0MB	on	off	off	on	off	off	on	off	on	off
10.5MB	off	off	off	on	off	on	off	off	on	off
11.0MB	on	on	on	off	off	off	off	off	on	off
11.5MB	off	on	on	off	off	on	on	on	off	off
12.0MB	on	off	on	off	off	off	on	on	off	off
12.5MB	off	off	on	off	off	on	off	on	off	off
13.0MB	on	on	off	off	off	off	off	on	off	off
13.5MB	off	on	off	off	off	on	on	off	off	off
14.0MB	on	off	off	off	off	off	on	off	off	off
14.5MB	x	x	x	x	x	on	off	off	off	off

On = Closed Off = Open