The EMS-5150 is installed similar to other cards installed in your PC computer. Instead of listing all the different types of computer cases we assume you can remove the cover of your computer successfully. Please remember to turn off all power and wait for at least 15 seconds before removing or installing any expansion board. Further, please insure that all power cords are removed from the wall outlets.

With the cover removed from your computer you should see at least one open expansion slot. If you don't have an open lot available you will be unable to continue.

Locate the open expansion slot. Remove the metal back cover to release the space required by the EMS-5150 mounting bracket. Insert the EMS-5150 board so that the board card edge slides into the socket on the mother board. This should place the metal bracket into its slot on the back of the computer's case.

Press the card into the slot insuring that it is inserted all the way inside the connector. Then fasten the bracket to the computer with the screw removed from the blank metal cover.

Now proceed with BOARD CHECK OUT!

## Installation EMS Module:

The EMS Module is installed similar to the other in your PC computer. Instead of listing all the different types of computer cases we assume you can remove the cover of your computer successfully. Please remember to turn off all power and wait for at least 15 seconds before removing or installing any expansion board. Further, please insure that all power cords are removed from the wall outlets.

The difference in installation of the EMS Module resides in the fact that the module will connect to a row of pins on another card. This installation is fairly fail safe. The only major thing to watch for is shorting of the board on the mother board and other surrounding boards. Also watch for bending of pins when inserting the EMS Module on the mother board.

## Board Check Out:

The EMS boards are verified for operation at the factory but, there are methods which you may verify the operation of the EMS environment in your computer. the EMS software documentation will cover the test procedures more thoroughly.

Installation of RAM Chips in the EMS Board:

Both EMS boards from Micro Main frame accept the additional RAM chips in the same fashion. the diagram below will show you the position where the chips should be placed for expansion. Please note that all pins one locators are to be placed towards the top of the board when the connector of the EMS board is facing you.

EMS RAM Position Diagram:

		Bank Number 4's Last Chip
RAM Bank Number 3 (8	B) Chips	RAM Bank Number 6 (8) Chips (1)
RAM Bank Number 1 (8	3) Chips	RAM Bank Number 7 (8) Chips (1)
RAM Bank Number 2 (8	3) Chips	RAM Bank Number 4 (7) Chips
RAM Bank Number 0 (8	3) Chips	RAM Bank Number 5 (7) Chips

As you can see from the above diagram it is divided into different sections. Each of the sections divides the EMS RAM into 256K byte areas of EMS memory. To see this examine the table below. This table will show how the additional banks add to the total EMS RAM available.

BANK NUMBER	TOTAL EMS RAM AVAILABLE
0	256K
1	512K
2	768K
3	1024K
4	1280K
5	1536K
6	1792K
7	2048K

You MUST begin expanding the EMS boards by starting at the lowest bank and fill toward bank number 7. (from lower bank number to higher bank number.) Not only is this normal but, it will increase the speed of the LIM software. The only other consideration is that each bank MUST BE completely full of RAM chips. That is to say you must install all eight (8) chips for the bank installed.

It is also recommended, depending upon the speed of your computer, that you use 150ns or better chips. These are available from several sources. Check with Micro Mainframe for availability.

(jej-05/11/94)