

Instruction Sheet for the HP 82907A 32K HP 82908A 64K HP 82909A 128K Memory Modules

The HP 82907A, HP 82908A, and HP 82909A Memory Modules provide expanded computer memory for programs and data. Up to four memory modules can be installed into the computer's plug-in ports. Each installed module increases available (random access) memory by the following amounts:

Module	Added Random Access Memory
HP 82907A 32K Memory Module	32,768 bytes
HP 82908A 64K Memory Module	65,536 bytes
HP 82909A 128K Memory Module	131,072 bytes

Each memory module is recognized by the system independently of other installed memory modules.

Note: The HP 82907A, HP 82908A, and HP 82909A Memory Modules cannot be used with the HP-83 and HP-85 Personal Computers. Conversely, the HP 82903A 16K Memory Module is designed for use in the HP-83 and HP-85 Personal Computers only.

Installing Memory Modules

WARNING

Do not place fingers, tools, or other foreign objects into the computer's plug-in ports. Such actions may result in minor electrical shock hazard and interference with pacemaker devices worn by some persons. Damage to the computer's port contacts and internal circuitry may also result.

1. Before installing any memory module, measure the amount of available memory in your system. This will allow you to determine the amount by which the module increases available memory, thus ensuring the module has been correctly installed and is operating properly. Available memory can be determined by typing `FRE (END LINE)` or by pressing the `(LIST)` key.

Note: Certain other plug-in modules (for example, ROM modules) reduce the amount of available memory by small amounts.

2. Turn off the computer and any connected peripheral devices.

CAUTION

Always turn off the computer and all connected peripheral devices *before* installing or removing memory modules. Failure to do so may cause damage to the system.

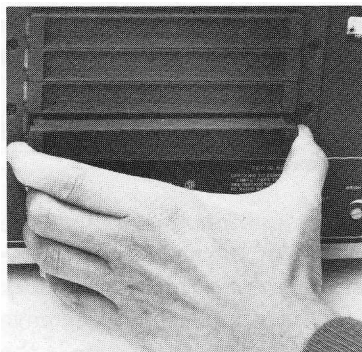


Figure 1

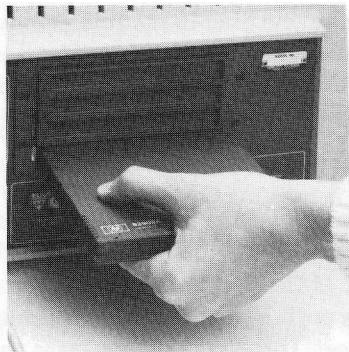


Figure 2

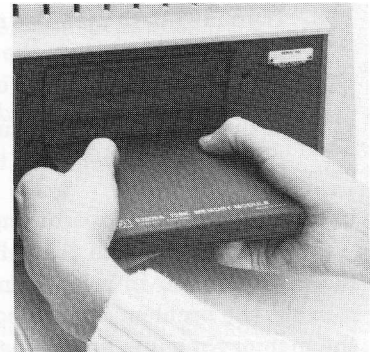


Figure 3

3. Remove the protective cover from any unused port (see figure 1). Unused ports should be kept covered.

CAUTION

Do not force a memory module into a port. If the module is upside-down, forcing it further may result in damage to the computer and/or the memory module.

4. Line up the module with the port opening as shown in figure 2, and gently slide the module into the port. When you feel a small amount of resistance, firmly press the module into the port until the module grips meet the side of the port. A slight side-to-side motion may be necessary to seat the module in the port.
5. Turn on the computer. Depending on the amount of random access memory installed, it will take from 10 to 45 seconds for the cursor to appear. When the cursor appears, use the **FRE** function or the **(LIST)** key to determine the current amount of available memory. The amount by which available memory has been incremented should match the appropriate entry in the table.
6. If you are installing more than one memory module, repeat the installation procedure.

Removing Memory Modules

To remove a memory module:

1. Turn off the computer and all connected peripheral devices.
2. Firmly grasp the module and pull it from the port (see figure 3). Store the module in its original container or where it will be safe from damage.

CAUTION

Static electricity could damage the memory module's circuitry.

3. Replace the port cover. Since plug-in modules can be plugged into any ports, it is not necessary to remove or rearrange any other modules in your system.

Maintenance

If, after installing a memory module:

- the amount of available memory is not increased by the proper amount;
- the computer returns **Error 23 : SELF TEST** at power-on; or
- the cursor fails to appear within 45 seconds after turning the power on;

perform the following operations to isolate the cause of the malfunction. The computer must be turned off while you perform each operation.

1. Check to see that the module is properly installed into the port. The grips should contact the port frame.
2. Install the module in a different port. If the module is recognized by the system, the computer may require servicing of the port in which the malfunction occurred.
3. If your system includes more than one plug-in module, remove all the modules and then install the memory module into the top port (port #1). If the computer now recognizes the memory module, one of the removed modules or one of the plug-in ports may be the source of the malfunction.
4. If the computer still returns **Error 23**, or if no cursor appears, remove all plug-in modules and turn the computer on. If the error condition persists, the computer requires servicing.

If, during computer operation, you suspect that the memory module may be malfunctioning, use the **(TEST)** key to perform the self-test. If the computer returns **Error 23**, repeat the self-test with the module installed in a different port. If the computer passes the self-test and recognizes the memory module, the problem originated in the port. However, if the computer again returns **Error 23**, remove the memory module and repeat the test. If the computer passes the self-test, the memory module is the source of the malfunction and requires servicing.