TYPES OF MEMORY MODULES

SIMMS

SIMM stands for Single In-Line Memory Module. Like other types of memory modules, a SIMM consists of memory chips soldered onto a modular printed circuit board (PCB), which inserts into a socket on the motherboard. 72 pin SIMMs transfer 32 bits of data at a time, therefore in modern microcomputers with a 64-bit data bus two SIMMs have to be paired up in order to function.

DIMMS

Dual In-line Memory Modules, or DIMMs, closely resemble SIMMs. Like SIMMs, most DIMMs install vertically into expansion sockets. The principal difference between the two is that on a SIMM, pins on opposite sides of the board are "tied together" to form one electrical contact; on a DIMM, opposing pins remain electrically isolated to form two separate contacts.

168-pin DIMMs transfer 64 bits of data at a time and are typically used in computer configurations that support a 64-bit or wider memory bus. Some of the physical differences between 168-pin DIMMs and 72-pin SIMMs include: the length of module, the number of notches on the module, and the way the module installs in the socket. Another difference is that many 72-pin SIMMs install at a slight angle, whereas 168-pin DIMMs install straight into the memory socket and remain completely vertical in relation to the system motherboard. The illustration below compares a 168-pin DIMM to a 72-pin SIMM.

Comparison of a 72-pin SIMM and a 168-pin DIMM.
SO DIMMS

A type of memory commonly used in notebook computers is called SO DIMM or Small Outline DIMM. The principal difference between a SO DIMM and a DIMM is that the SO DIMM, because it is intended for use in notebook computers, is significantly smaller than the standard DIMM. The 72-pin SO DIMM is 32 bits wide and the 144-pin SO DIMM is 64 bits wide.

Comparison of a 72-pin SO DIMM and a 144-pin SO DIMM.

RIMMS AND SO-RIMMS

RIMM is the trademarked name for a Direct Rambus memory module. RIMMs look similar to DIMMs, but have a different pin count. RIMMs transfer data in 16-bit chunks. The faster access and transfer speed generates more heat. An aluminum sheath, called a heat spreader, covers the module to protect the chips from overheating.

A 184-pin Direct Rambus RIMM shown with heat spreaders pulled away.

An SO-RIMM looks similar to an SO DIMM, but it uses Rambus technology.

A 160-pin SO-RIMM module.