DIMM

**DIMM** is an abbreviation of **the Dual in-line Memory Module**. It is also a computer memory, which is commonly known as the RAM stick. It installs in the memory cells of the motherboard. It is a module which is used in laptops, personal computers (Pcs), printers, and other devices.

The memory chips of DIMM are DRAM (Dynamic Random Access Memory), which is the most common category of main memory.

As compared to SIMM (single in-line memory module), it has a 64-bit data path, which allows DIMMs to transfer data at a fast speed. DIMM is a module which comes in the replacement of SIMM. This memory module consumes 3.3 volts, which are comparatively lower.

The dual in-line memory module stores each bit of data in the separate memory cell.

Types of DIMM

Following are the most common types of DIMM:

* Unbuffered DIMM
* Fully-buffered DIMM
* Registered DIMM
* Load-reduced DIMM
* SODIMM
* MicroDIMM

Unbuffered DIMM (UDIMM)

This type of DIMM is also called as Unregistered Memory. It is that type of DIMM, which is usually used on laptops and desktops. Unbuffered DIMMs run faster, and the cost of them is low. Unlike the registered DIMM, it is not stable. In this type of DIMM, instructions are sent directly to the memory module from the memory controller.

Fully-buffered DIMM (FB-DIMM)

In the systems, FB-DIMM is used as primary memory, which requires large volumes, such as servers and workstations. The architecture of FB-DIMM specifies the 'Advance Memory Buffer' (AMB), which is presented between the memory module and the controller of memory.

Fully buffered DIMM uses the chips of advanced memory buffer (AMB) for increasing the reliability and maintaining the signal integrity. It is a memory technology which is also used for increasing the density of memory systems. The AMB bus is categorized into two buses. The first bus is a 14-bit read bus, and another is a 10-bit write bus.

Registered DIMM (RDIMM)

This type of DIMM is also called as buffered DIMM. Registered DIMM is commonly used in those servers and applications which require stability and robustness.

It is a good choice for our servers in most cases. The register memory module has a register which is presented between the DRAM modules and the memory controller of the system. As the additional circuit is required, so it is more expensive. Due to the use of buffers, the clock cycle is increased.

The cost of this memory module is more than the unregistered memory module. So, the manufacturers of computers mostly used unregistered memory in laptops and desktops.

Load-Reduced DIMM (LR-DIMM)

LRDIMM stands for the Load-Reduced Dual in-line Memory Module. This type of DIMM uses the memory buffer chip for reducing or minimizing the load on the memory controller and for increasing the memory speed.

LRDIMM also helps in reducing power consumption.

SO-DIMM

**SODIMM or SO-DIMM** is an abbreviation of **small outline dual in-line memory module**. This type of DIMM is present in both 72-pin and 144-pin configuration. It is widely used in those systems which have limited space, such as laptops and tablets.

It is a memory module, which is built using the ICs (Integrated circuits).

MicroDIMM

**MicroDIMM** is an abbreviation of **a micro dual in-line memory module**. It is a memory module which is smaller than the Small Outline DIMM.

This memory module presents in 144-pin SDRAM and 172-pin DDR. This type of DIMM is mainly used in notebook computers.

Difference between DIMM and SIMM

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| **DIMM** | **SIMM** |
| 1. DIMM is a short form of Dual In-Line Memory Module. | 1. SIMM is an abbreviation of the Single In-Line Memory Module. |
| 2. The pins of this memory module are independent. | 2. The pins in this memory module present on either side are connected. |
| 3. DIMM memory module supports a 64-bit channel for transmitting the data. | 3. SIMM memory module supports a 32-bit channel for transmitting the data. |
| 4. Dual In-Line memory module consumes only 3.3 volts of power. | 4. Whereas, Single In-Line memory module consumes 5 volts of power. |
| 5. The storage provided by DIMM is 32 MB to 1 GB. | 5. The storage provided by SIMM is 4 MB to 64 MB. |
| 6. As compared to SIMM, the performance of DIMM is good. | 6. As compared to DIMM, its performance is not good. |
| 7. Modern Pentium computers use this memory module. | 7. This memory module is used by both 486 CPU and early Pentium computers. |
| 8. Two notches are present in DIMMs. | 9. A single notch is present in SIMMS. |