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Mahendra's Digi Notes

VERSION 2.0

Computer Knowledge

MOTHERBOARD

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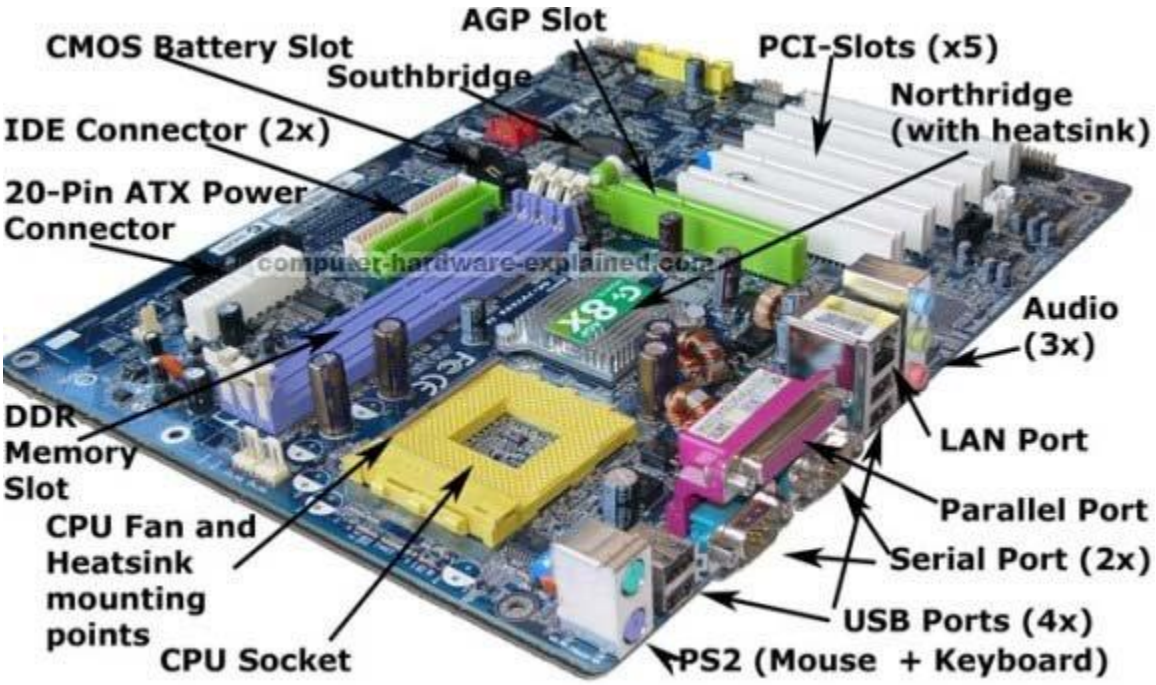
MOTHERBOARD



A motherboard (sometimes alternatively known as the mainboard, system board, baseboard, planar board or logic board, or colloquially, a mobo) is the main printed circuit board (PCB) found in general purpose microcomputers and other expandable systems.

It holds and allows communication between many of the crucial electronic components of a system, such as the central processing unit (CPU) and memory, and provides connectors for other peripherals.

Unlike a backplane, a motherboard usually contains significant sub-systems such as the central processor, the chipset's input/output and memory controllers, interface connectors, and other components integrated for general purpose use.

Motherboard specifically refers to a PCB with expansion capability and as the name suggests, this board is often referred to as the "mother" of all components

attached to it, which often include peripherals, interface cards, and daughter cards: sound cards, video cards, network cards, hard drives, or other forms of persistent storage; TV tuner cards, cards providing extra USB or FireWire slots and a variety of other custom components.

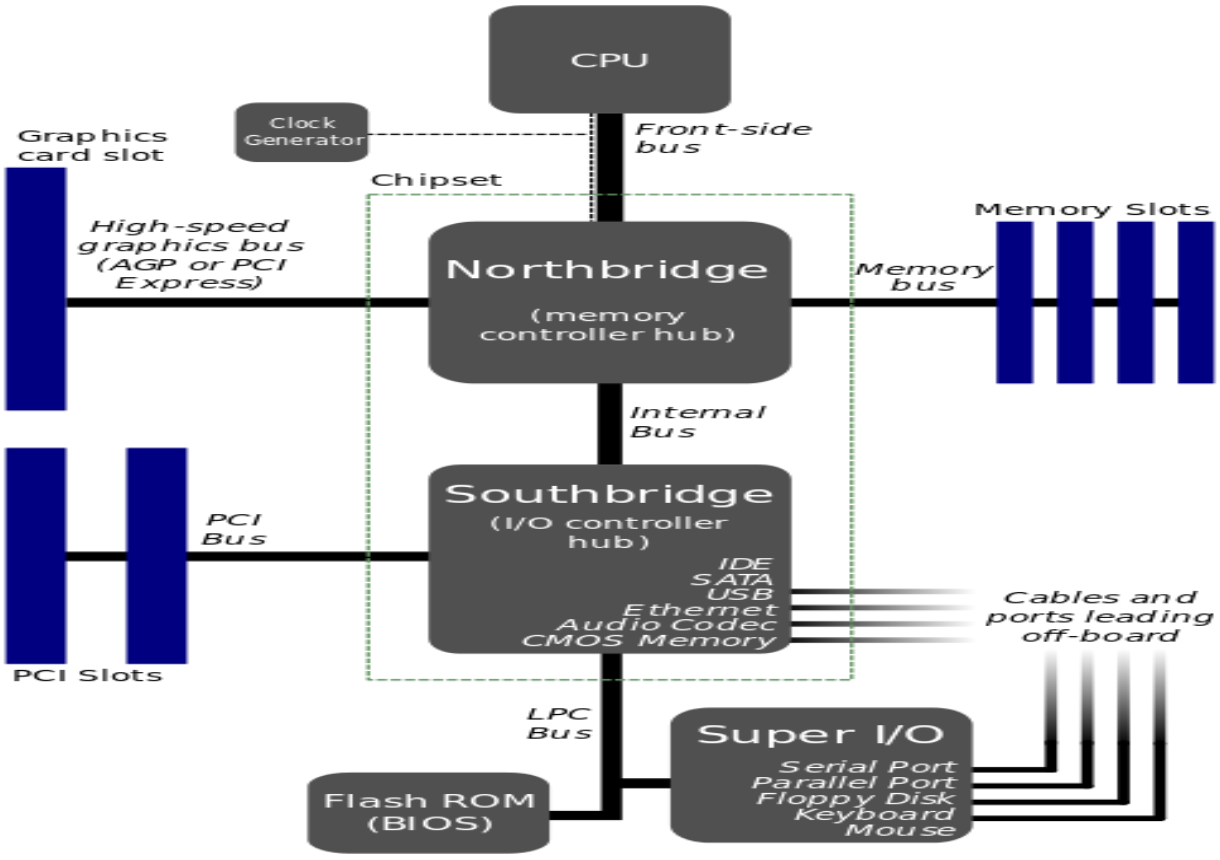
Similarly, the term mainboard is applied to devices with a single board and no additional expansions or capability, such as controlling boards in laser printers, televisions, washing machines and other embedded systems with limited expansion abilities.

PARTS OF MOTHERBOARD

1. PROCESSOR CIRCUIT
2. POWER CONNECTOR
3. MEMORY SLOT
4. VIDEO CARD SLOT
5. EXPANSION SLOT
6. CMOS BATTERY
7. NORTHBRIDGE AND SOUTHBRIDGE
8. ETHERNET PORT
9. KEYBOARD PORT
10. MOUSE PORT

Prior to the invention of the microprocessor, a digital computer consisted of multiple printed circuit boards in a card-cage case with components connected by a backplane, a set of interconnected sockets. In very old designs, copper wires were the discrete connections between card connector pins, but printed circuit boards soon became the standard practice. The Central Processing Unit (CPU), memory, and peripherals were housed on individual printed circuit boards, which were plugged into the backplane. The ubiquitous S-100 bus of the 1970s is an example of this type of backplane system.

During the late 1980s and 1990s, it became economical to move an increasing number of peripheral functions onto the motherboard. In the late 1980s, personal computer motherboards began to include single ICs (also called Super I/O chips) capable of supporting a set of low-speed peripherals: keyboard, mouse, floppy disk drive, serial ports, and parallel ports. By the late 1990s, many personal computer motherboards included consumer grade embedded audio, video, storage, and networking functions without the need for any expansion cards at all; higher-end systems for 3D gaming and computer graphics typically retained only the graphics card as a separate component. Business PCs, workstations, and servers were more likely to need expansion cards, either for more robust functions, or for higher speeds; those systems often had fewer embedded components.



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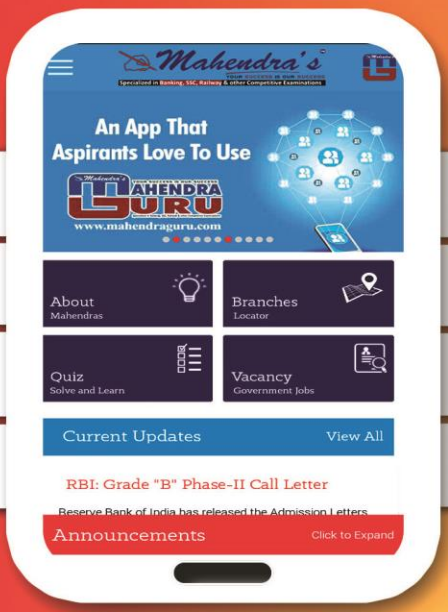

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