Al-Mustaqbal University

College of Engineering and Technology

Department of Medical Instrumentation Techniques Engineering

Class: Third Class

Subject: Processor and Microcomputer Lab

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Lecture Address: MOTHERBORD

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Processor and Microcomputer Lab

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Motherboard: An electronic board, also called the “Mother Board,” which is called by manynames, such as the main board, the system board, and the printed wired board.

Where all computer components are connected to it
Its primary role is to connect computer components to each other, whether these componentsare hardware or software
It also connects all these components to each other, organizes their work, and organizes thetransfer of data between them

Figre 1 Motherboard

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Benefits and Functions of the MotherBoard

1- It allows the exchange of data between all parts of the computer.

2- It performs basic input and output operations to and from the hard disk or to any device connected to the computer.

3 - It is what determines the extent of the device's ability to be updated in order to increase its speed and capabilities in the future.

4- It determines the type of accessory devices that we can install. We cannot connect devices that do not fit the motherboard. They may work, but not with traditional efficiency.

A computer equipped with a good motherboard will perform faster than another computer with a bad motherboard, even if the other components, such as random memory and the processor, are identical.

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MotherBoard Components

The Power Connector : is a socket or port with holes connected to a cable to connect
the electrical current to the motherboard in order for it to start working.

Fig 2

CPU Socket: It is a square made of plastic that has slots or holes proportional to the number ofneedles in the processor. Different types of processors can be connected provided that the number of slots and the number
of needles in the processor are proportional.

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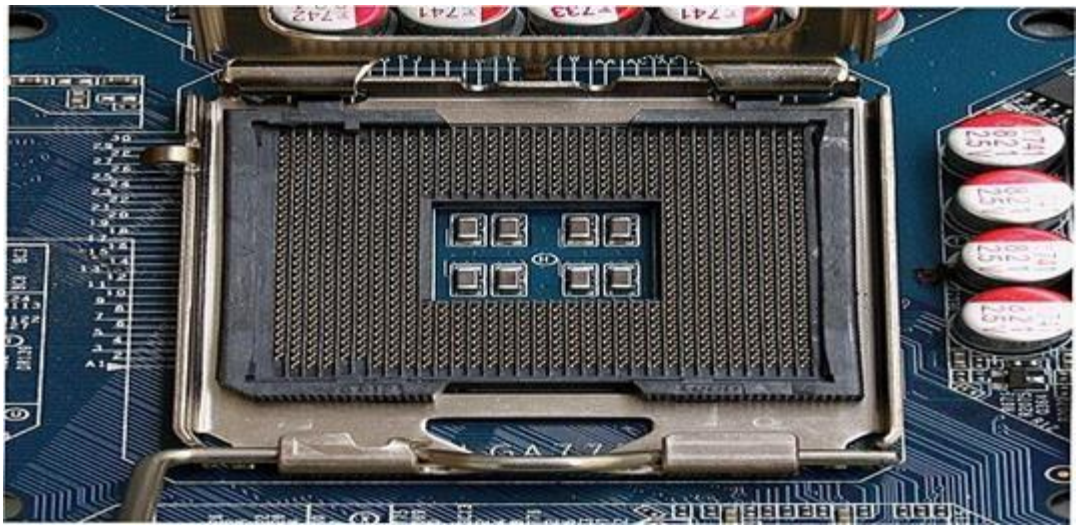

Fig 3 CPU Socket

Memory Slots: They are long slots whose function is to connect random access memory (RAM) to the motherboard. Their shape varies depending on the type of memory and are often located tothe right of the processor socket on most motherboards.

Fig 4 memory slots

BIOS:It is an abbreviation for (Basic Input Output System), and one of its most important functions is managing and operating the computer's hardware. It loads the operating system and also helps the operating system and its programs operate the computer's components

Fig 5 BIOS

CMOS: which is an abbreviation for the word Complimentary Mealie Semiconductor. It is a chip in which all BIOS information is stored

fig 6 CMOS

Expansion Slots :These are openings or slits located at the bottom of the motherboard, and their primary function is to connect the primary cards and secondary cards to the computer

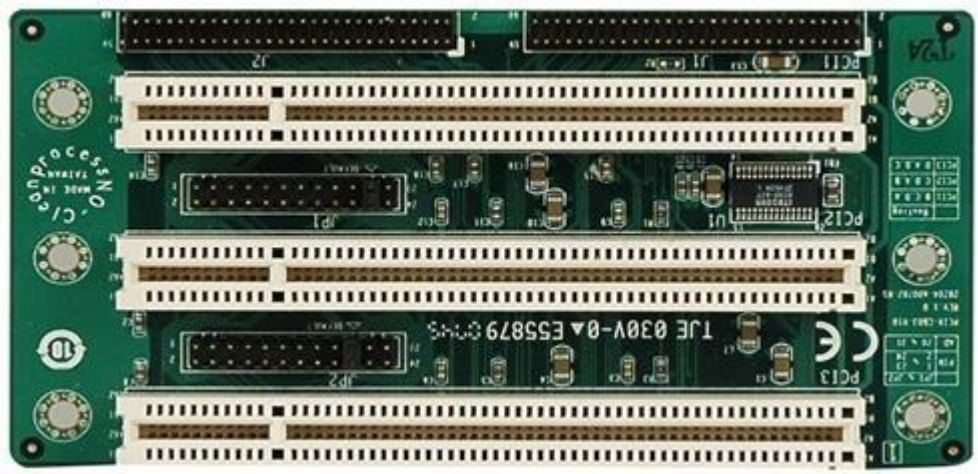

fig 7 Expansion Slots

Timing Signal:which is an electrical circuit that generates waves or pulses, which in turn works to create synchronization and compatibility between the motherboard circuits due to the difference involtage of the existing circuits

IDE Interface : It is used to connect any device that has an IDE interface (usually hard disks
and CD-ROMs

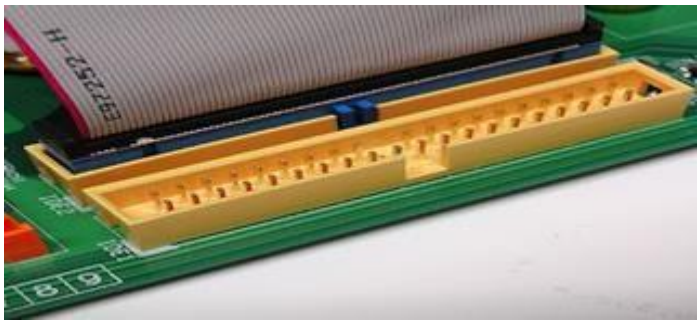

fig 8 IDE

sata ports: are considered an alternative to IDE ports and are used in modern motherboards sothat they are smaller, thinner and have the ability to transfer data more quickly.

Fig 8 SATA