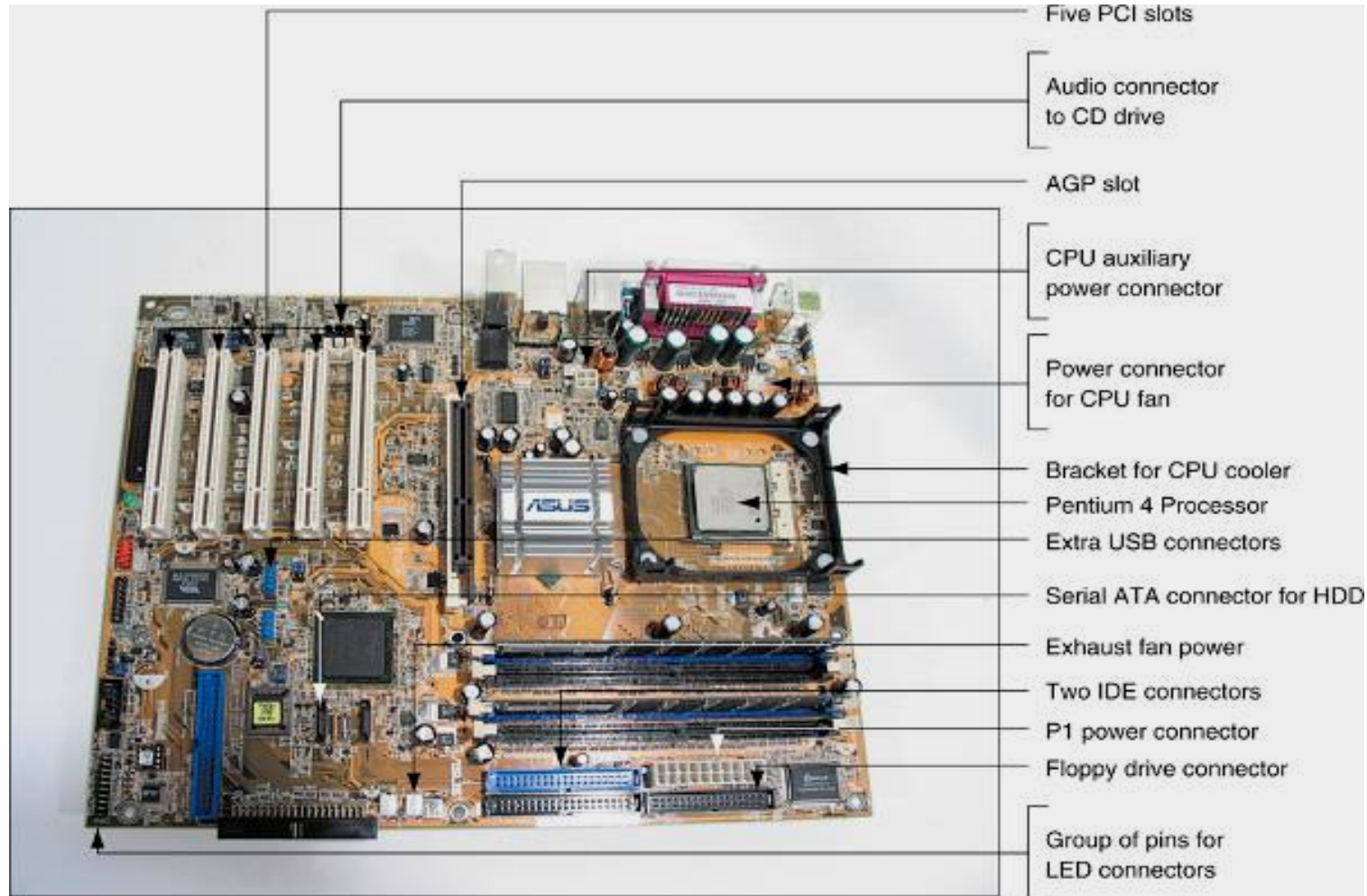
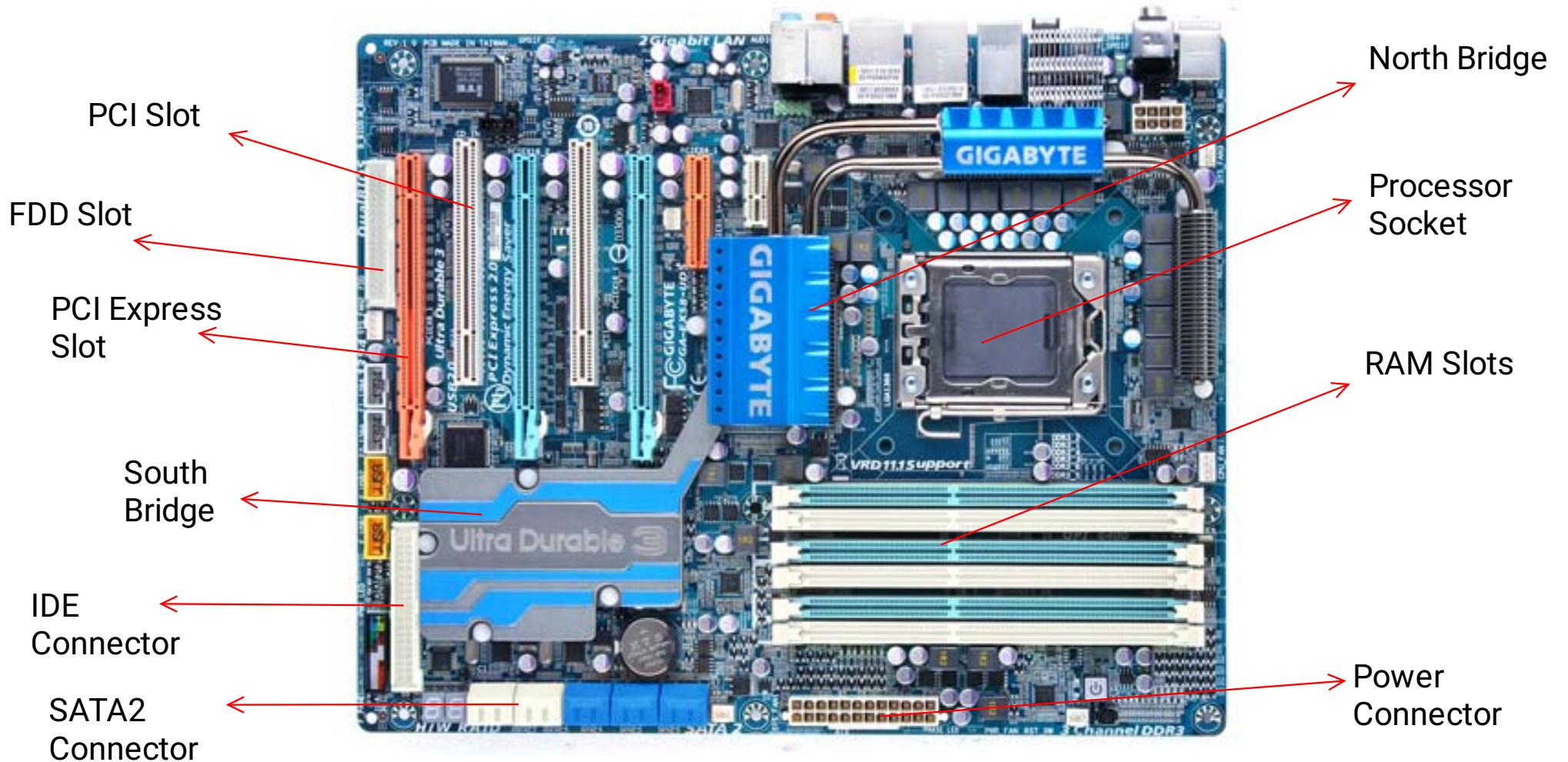


Computer Motherboard Parts & Basic Working

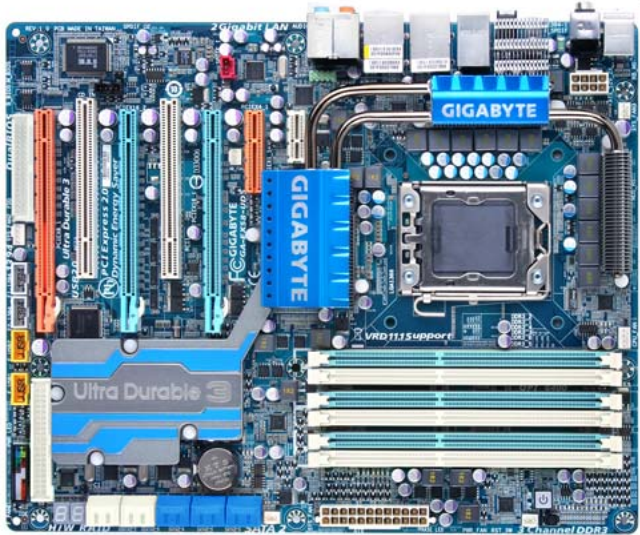
Motherboard and its parts (Old)



Motherboard and its parts (Old & New)



Motherboard Form Factor



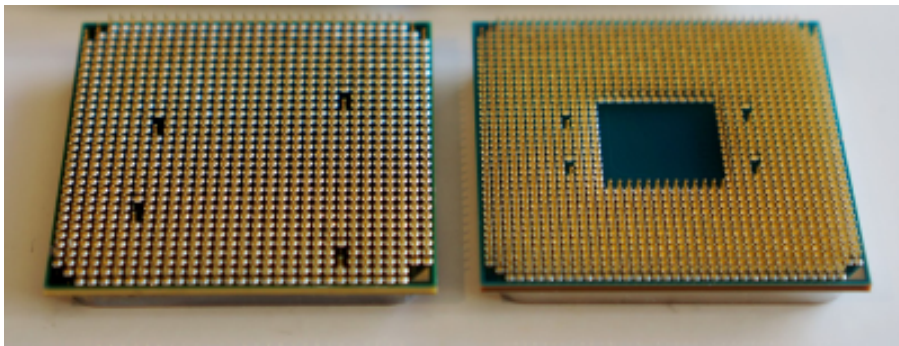
Full ATX Motherboards



Micro ATX Motherboards

Processor Sockets and Types

- Pin Grid Arrey (Left: AMD FX, Right: AMD Ryzen)

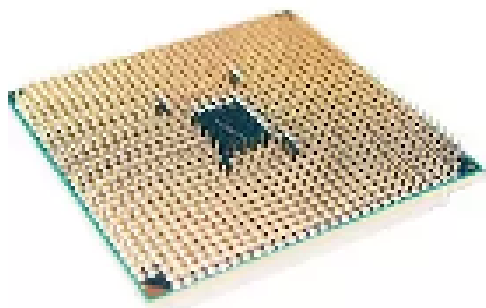


AMD Ryzen Socket on Motherboard

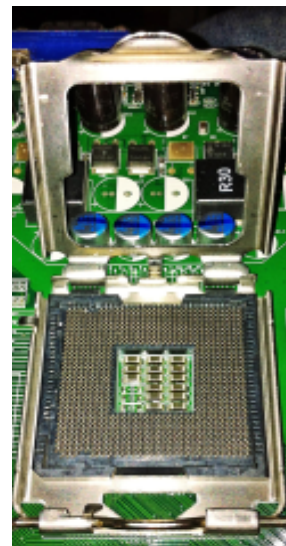


- Land Grid Arrey

AMD

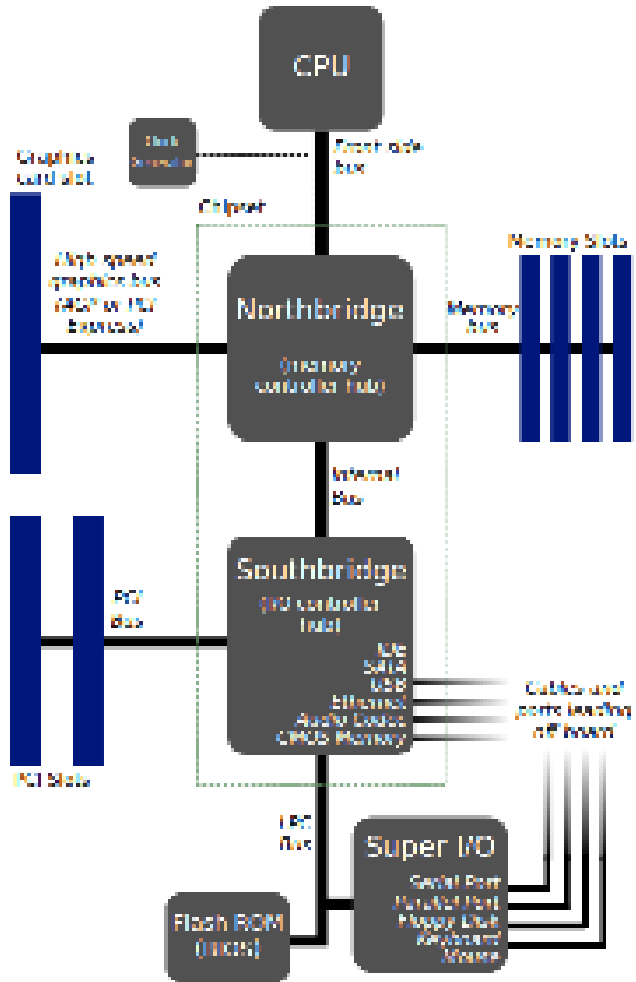


intel



Intel Socket LGA 775

Motherboard Chipset and BUS Layout



Usual Chipset features

- Bus Speed - GT/s (Giga Transfer per Second)
- Chip Size - nm (Nano Meters)
- TDP - Watts (Thermal Design Power)
- # DIMMs per Channel - RAM Slots Count
- # of Displays Supported - Monitor Connectors
- Expansion Slot Capability - Types of PCI, PCIe
- # of USB Ports
- RAID Support - Redundant array of independent disks
- Advanced Technologies - VT Support, HD Audio, Rapid Storage..etc
- Security Features

Parts of Motherboard and Specifications

RAM Model	Frequency Min	Frequency Max	Size min	Size Max
DDR1	100Mhz	200Mhz	128mb	1Gb
DDR2	100Mhz	266Mhz	256mb	2Gb
DDR3	800Mhz	2133Mhz	512mb	8Gb
DDR4	2133Mhz	2666Mhz	4GB	32Gb

- PCI - Peripheral Component Interconnect
 - Parallel interface with speed upto 133MB/s
- PCIe - PCI Express
 - Serial interface with speeds upto 16GB/s
- AGP - Accelerated Graphics Port
 - Parallel Interface with speed between 266Mbps to 1.07Gbps

- HDMI - High-Definition Multimedia Interface With Audio
 - HDMI 1.4 - 3820x2160-pixel @ 30FPS
 - HDMI 2 - 4K @ 60FPS
- DP - Display Port With Audio
 - 3840x21600 @ 60FPS

- IDE - Integrated Drive Electronics
 - PATA - Parallel Advanced Technology Attached
 - Max Data Transfer Speed 133MB/s
- SATA - Serial ATA
 - SATA1 - 1.2GBit/s (150MB/s)
 - SATA3 - 6GBit/s (600MB/s)

- USB - Universal Serial Bus
 - USB2 - 480MBits/s (60MB/s)
 - USB3 - 5GBits/s (640MB/s)
- Firewire - 400 to 800 MBits/s
- Thunderbolt - 20GBits/s

- DVI no Audio
 - 1920x1200 (Single Link)
- VGA no Audio
 - 2048x1536 (Max)

PSU - Power Supply Unit or SMPS



CPU 8 Pin x 1



Motherboard 24 Pin x 1



5 Pin to SATA x 8



Peripheral x 7



Floppy x 2



PCI-e 6 Pin x 6



CPU 4 Pin x 1



PCI-e 8 Pin x 3

