



IT Fundamentals

CHAPTER 2:

PERIPHERALS AND
CONNECTORS

Chapter 2: Peripherals and Connectors



- ▶ Throughput is a measure of the amount of data that can be transmitted through a communication channel per unit of time. Here are some common units of measure used to express throughput:

Chapter 2: Peripherals and Connectors

Bps (Bits per second): This unit of measure expresses the rate at which bits of data are transmitted through a channel per second. It is commonly used for measuring the speed of data transmission over wired and wireless networks.

Kbps (Kilobits per second): This unit of measure is equal to 1,000 bits per second. It is commonly used to express the speed of internet connections, as well as the speed of data transmission in other digital communication channels.

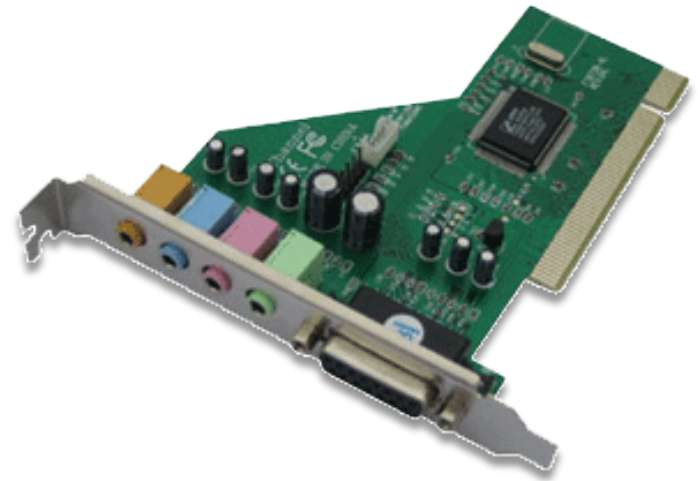
Mbps (Megabits per second): This unit of measure is equal to 1,000 Kbps, or 1,000,000 bits per second. It is commonly used to express the speed of high-speed internet connections, as well as the speed of data transmission in LANs (Local Area Networks).

Gbps (Gigabits per second): This unit of measure is equal to 1,000 Mbps, or 1 billion bits per second. It is commonly used to express the speed of data transmission in high-speed LANs, WANs (Wide Area Networks), and internet backbone networks.

Tbps (Terabits per second): This unit of measure is equal to 1,000 Gbps, or 1 trillion bits per second. It is commonly used to express the speed of data transmission in high-speed backbone networks that interconnect different parts of the internet.

Audio Connectors

- ▶ Sound cards
- ▶ Speakers use 1/8" (3.5mm) plugs
 - ▶ Usually green
- ▶ Older sound cards had a DA-15 game port for a joystick



Display Devices



- ▶ Four categories:
 - ▶ CRTs
 - ▶ Projectors
 - ▶ Flat screens
 - ▶ Touchscreens

Cathode Ray Tube (CRT)



- ▶ Older “deep” monitors
- ▶ Use electron guns
- ▶ Dot pitch
- ▶ Resolution

Projectors

- ▶ Can be CRT or Liquid Crystal Display (LCD)
- ▶ Often portable
- ▶ Output measured in lumens



Flat Screen Monitors and Touchscreens

- ▶ Flat screen technologies
 - ▶ LCD
 - ▶ Light-Emitting Diode (LED)
 - ▶ Plasma
- ▶ Touchscreens are flat screens that are sensitive to touch
 - ▶ Popular for laptops, tablets, smartphones
 - ▶ Considered input & output devices

Video Connectors



- ▶ Video Graphics Array (VGA)
- ▶ Digital Visual Interface (DVI)
- ▶ Universal Serial Bus (USB)
- ▶ High Definition Multimedia Interface (HDMI)
- ▶ Display Port
- ▶ Mini-DisplayPort
- ▶ Thunderbolt

External Storage Devices

- ▶ Flash drives
- ▶ Memory cards
- ▶ External hard drives
- ▶ External optical drives
- ▶ Network attached storage (NAS)



External Storage Connectors

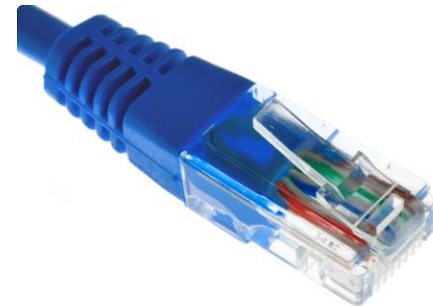


- ▶ USB
- ▶ external Serial ATA (eSATA)
- ▶ FireWire
- ▶ Thunderbolt



Communications Connectors

- ▶ Network connectors (RJ-45)
- ▶ Telephone connectors (RJ-11)



Primary Input Devices

- ▶ Keyboard
- ▶ Pointing devices
 - ▶ Mouse
 - ▶ Touchpad
 - ▶ Joystick
 - ▶ Stylus pen
 - ▶ Trackball



Printer Technologies



- ▶ Inkjet
- ▶ Laser
- ▶ Some printers include fax services
 - ▶ Multifunctional or all-in-one printer
 - ▶ Considered input & output device

Printer Connections



- ▶ Serial

In Serial Transmission, data-bit flows from one computer to another computer in bi-direction. In this transmission, one bit flows at one clock pulse. In Serial Transmission, 8 bits are transferred at a time having a start and stop bit.

- ▶ Parallel

In Parallel Transmission, many bits are flow together simultaneously from one computer to another computer. Parallel Transmission is faster than serial transmission to transmit the bits. Parallel transmission is used for short distance.

- ▶ USB

USB is an industry standard that establishes specifications for cables, connectors and protocols for connection, communication and power supply (interfacing) between computers, peripherals and other computers

- ▶ Network

An internet based connection through wifi.

Installing Internal Devices

1. Power the computer off
 - ▶ Can leave it plugged in
2. Remove the old component
3. Identify slot or connection for new device
4. Insert new device and attach power if needed
5. Turn the computer back on
 - ▶ After verifying functionality, put the case back together.



Installing External Devices



- ▶ Make sure there is an available port
- ▶ Plug it in to the computer
- ▶ Plug in to power if needed

Review of Connector Types

▶ Video

- ▶ VGA
- ▶ DVI
- ▶ USB
- ▶ HDMI
- ▶ Display Port
- ▶ Mini Display Port
- ▶ Thunderbolt

▶ General

- ▶ FireWire
- ▶ eSATA
- ▶ Thunderbolt
- ▶ USB
- ▶ PS/2
- ▶ Parallel
- ▶ Serial
- ▶ RJ-45
- ▶ RJ-11
- ▶ Audio

Chapter 2: Peripherals and Connectors

- ▶ Given a scenario, set up and install common peripheral devices to a laptop/PC
 - ▶ Devices
 - ▶ Printer
 - ▶ Scanner
 - ▶ Keyboard
 - ▶ Mouse
 - ▶ Camera
 - ▶ External hard drive
 - ▶ Speakers
 - ▶ Display
 - ▶ Installation types
 - ▶ Plug-and-play v.s. driver installation
 - ▶ Other required steps
 - ▶ IP-based peripherals
 - ▶ Web-based configuration steps