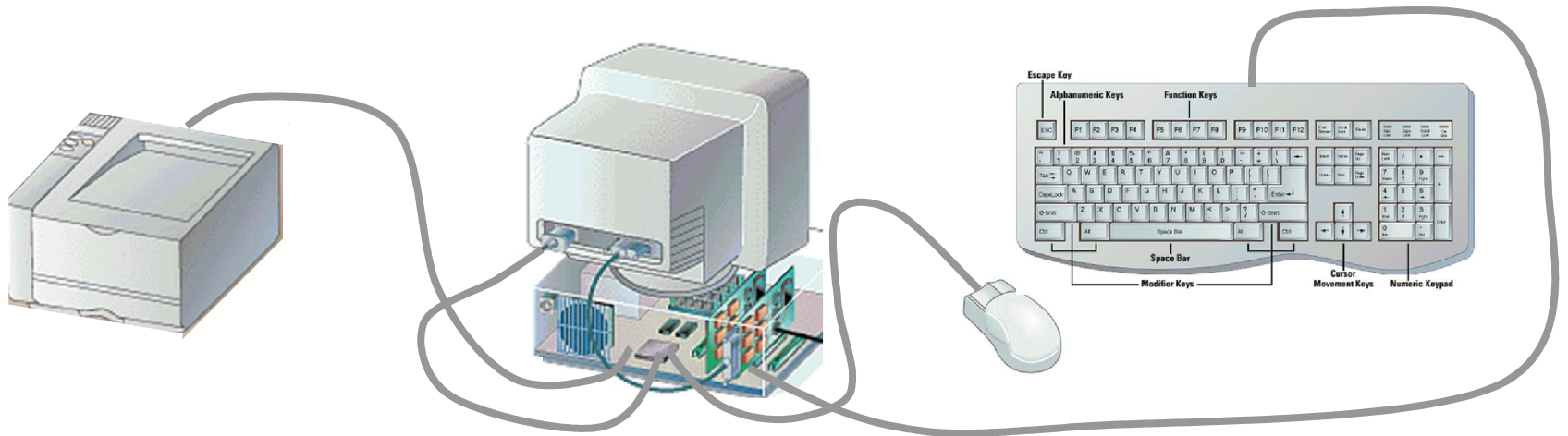


Input & Output Devices



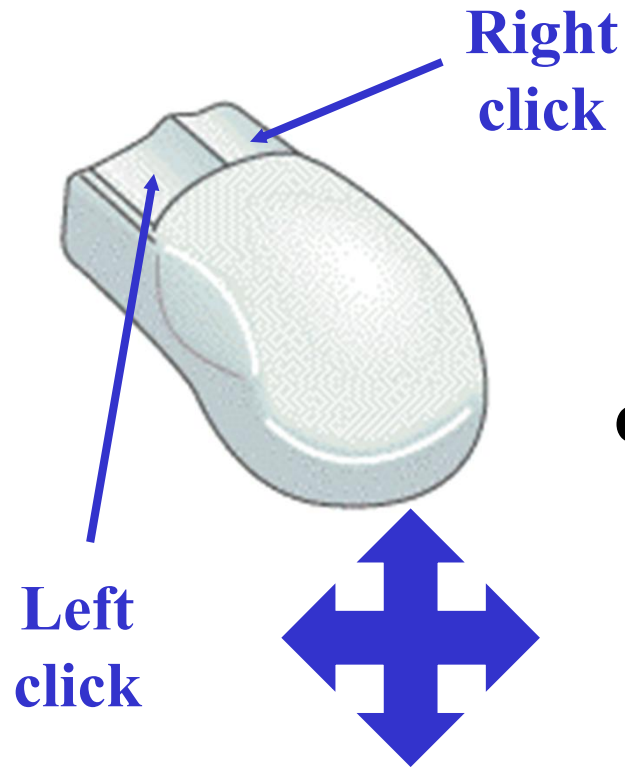
Learning Objectives:

- List at least three common input and output devices.
- Name the processes a video monitor uses to displays images.
- Name the components of a mouse and list the common techniques used to maintain a mouse.
- Name three types of printers and list the advantages and disadvantages of each.
- Explain how input and output devices communicate with the other parts of the computer.

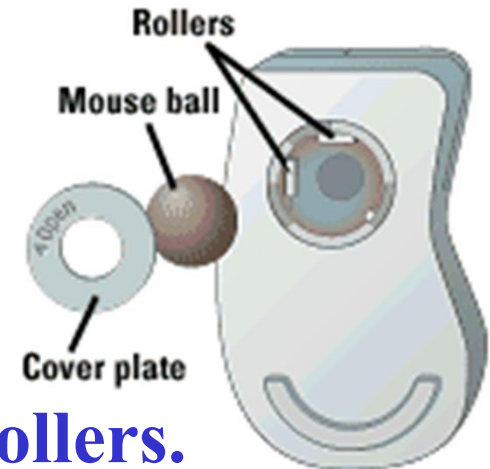
I/O Devices:

- Keyboard
- Mouse
- Trackball
- Trackpad
- Pen
- Touch Screen
- Bar Code Reader
- Image Scanner
- Microphone
- Video

The mouse is a fairly intuitive input device.



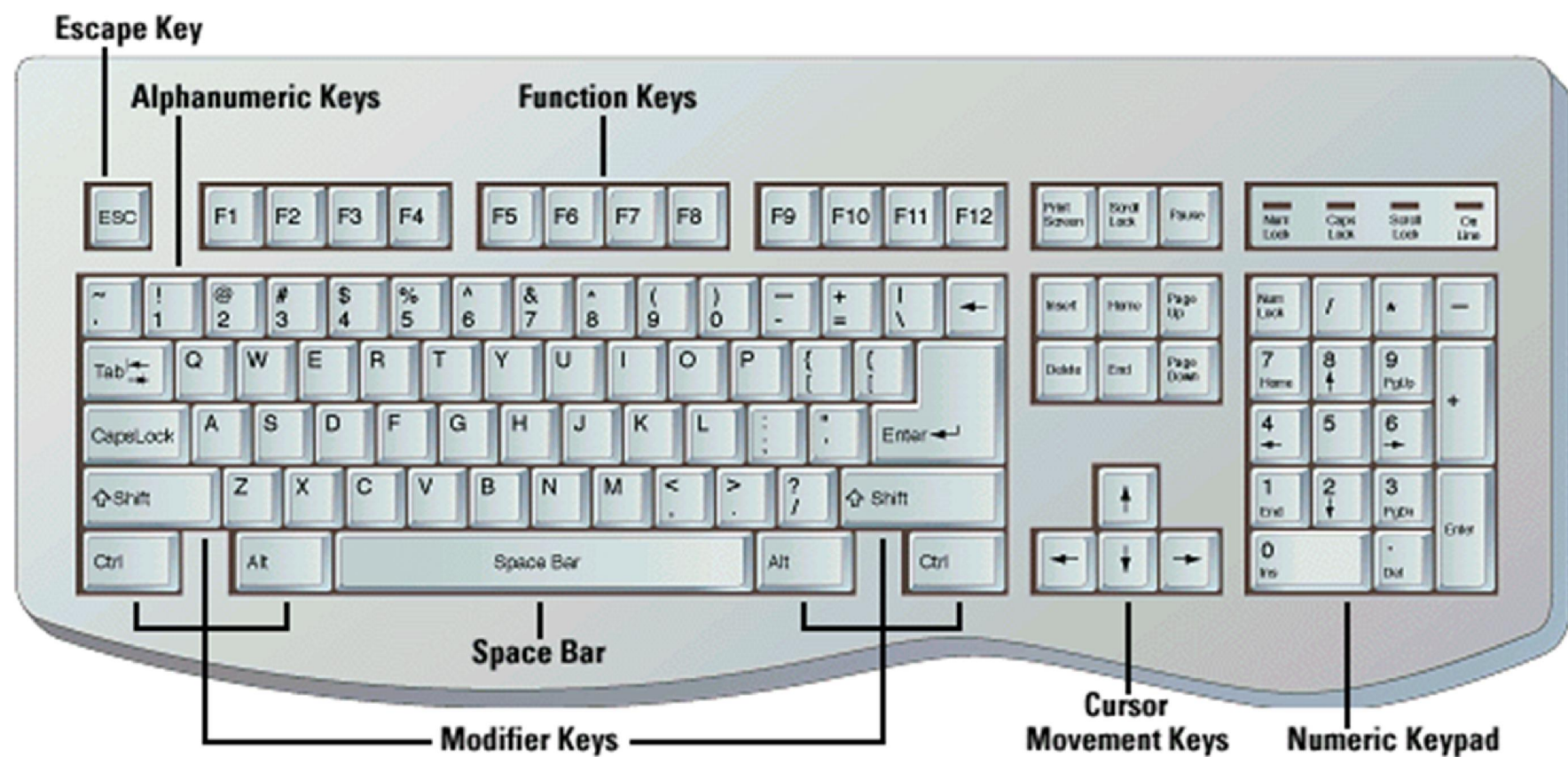
When it gets sluggish, turn it over and remove the cover plate.



Carefully clean the ball and rollers.

Parts of a Keyboard:

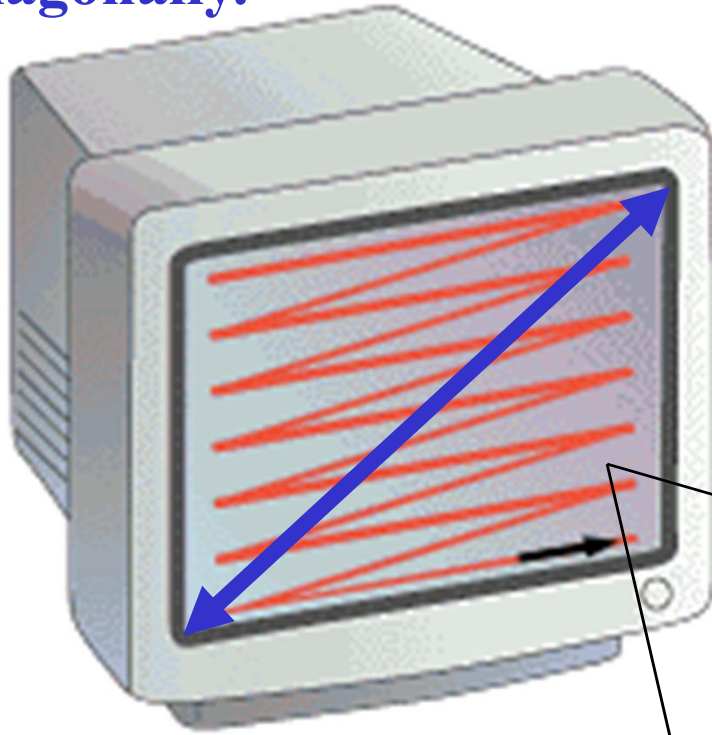
- Alphanumeric Keys
- Modifier Keys
- Numeric Keypad
- Function Keys
- Cursor-movement Keys
- Escape Key
- Special-purpose Keys



Factors Affecting Monitors:

- Size
- Resolution
- Refresh rate
- Dot pitch

Size is measured diagonally.

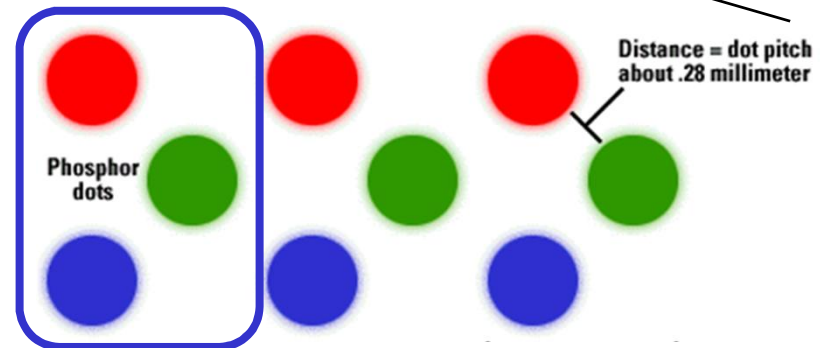


The picture is scanned from left to right and from top to bottom.

One complete set of scan lines is called a frame.

Refresh rate = number of frames in one second

Resolution = no. of pixels (i.e. 1024 x 768)



1 pixel in a color monitor

Flat-Panel Monitors:

- **LCD** (Liquid Crystal Display)
 - Passive Matrix
 - Active Matrix

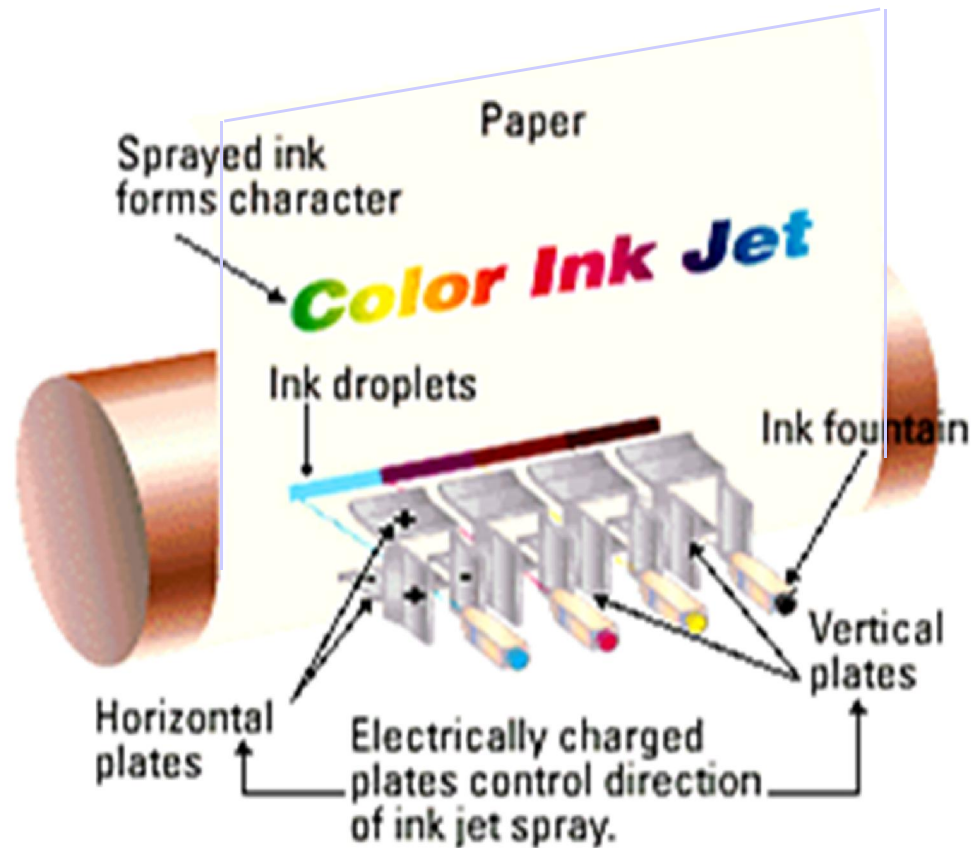
(Notebooks use LCD displays)



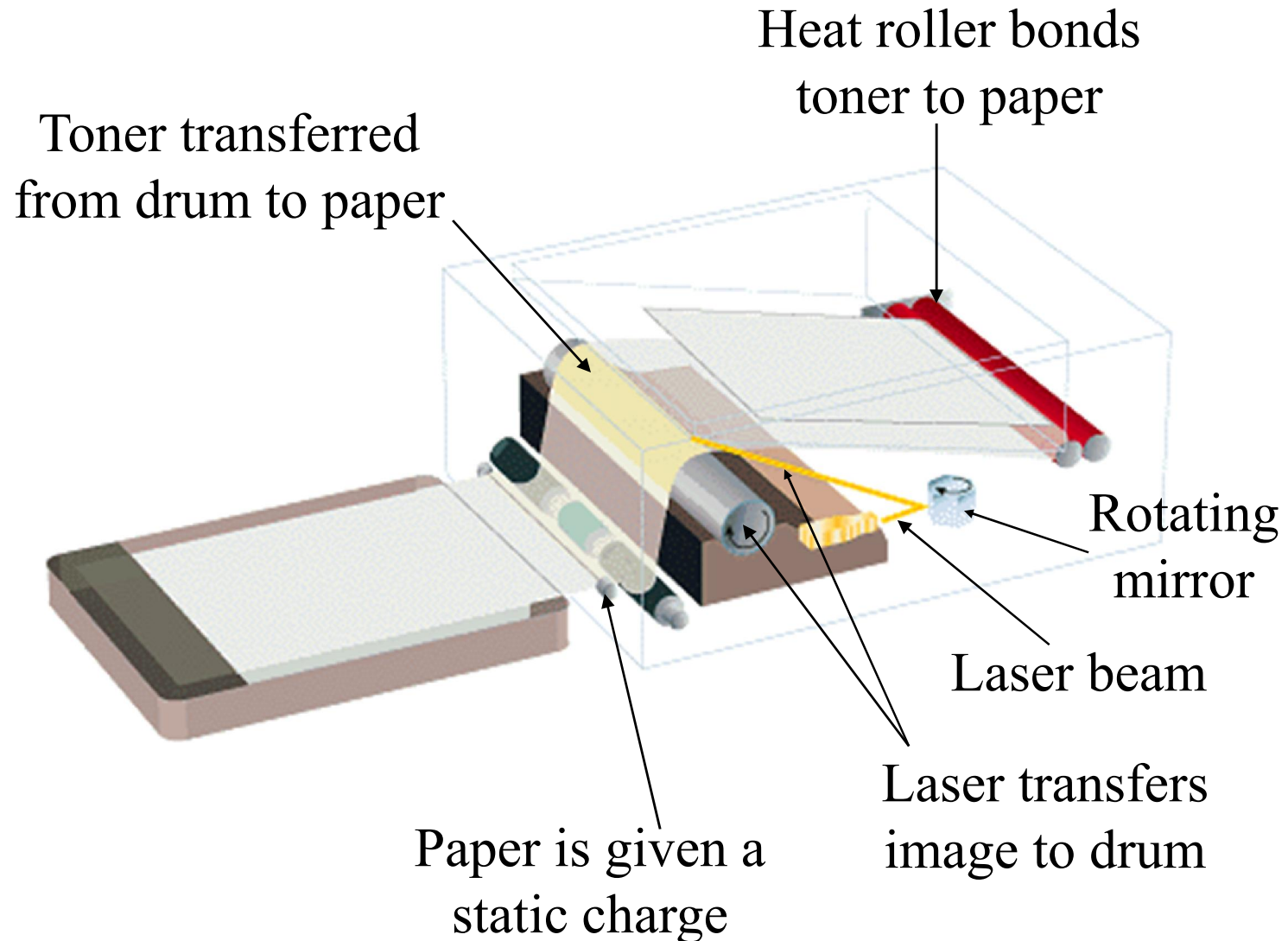
Types of Printers:

- Ink Jet
- Laser
- Dot-Matrix
- Thermal-Wax
- Dye-Sub
- Fiery
- IRIS
- Plotter

Ink jets are popular because of their relatively low cost and color capability.



Laser printers are faster and capable of high resolution.



Printer Criteria:

- Image Quality
- Speed
- Initial Cost
- Cost of Operation

Types of Interfaces:

- Serial
- Parallel
- Centronics
- SCSI

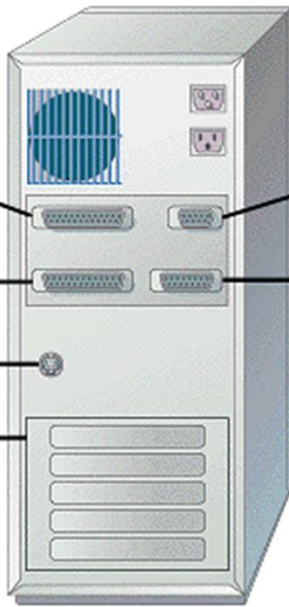
UART

Receiver

Transmitter

Control

**RS232
Driver**



To modem

**Serial data transmission
is relatively slow!**

The serial ports transfer data one bit at a time.

PIA

Receiver

Transmitter

Control

Drivers

25-pin
serial port

25-pin
parallel port

Keyboard port

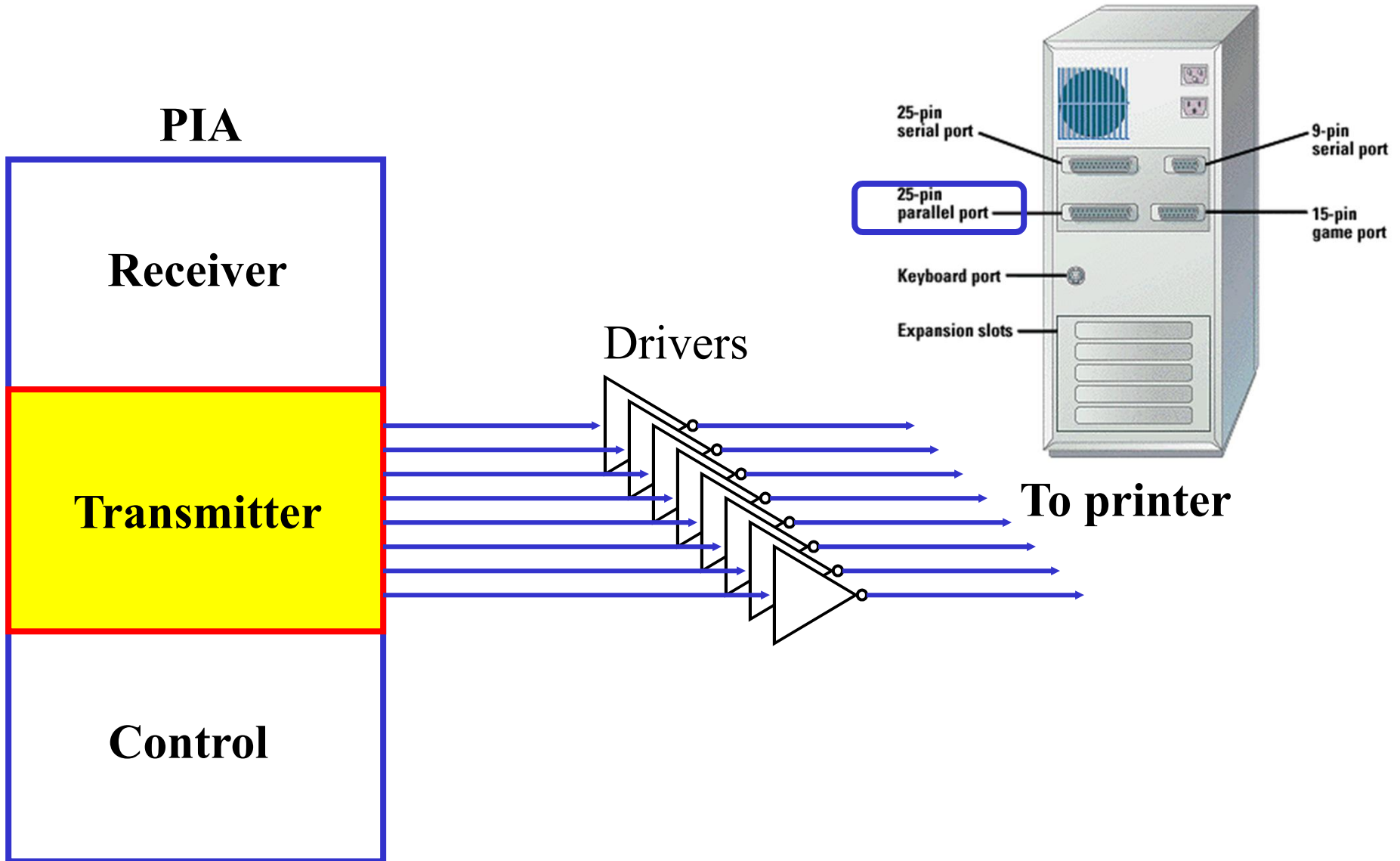
Expansion slots

9-pin
serial port

15-pin
game port

To printer

The parallel port transfers data one byte at a time.



A SCSI card can be plugged into an expansion slot. SCSI devices can be daisychained.

