

Serial Port

A serial port is defined as a port used to provide read and write operation in which bits are transmitted one after other i.e., serial port employs a serial data transmission. The communication is carried out over a single transmission line at regular intervals of time, generated by a clock. The number of data signals determine the number of clock pulses required for transmission. It is used when the source and destination stations are located at short or long distances.

Parallel Port

A parallel port is a port in which read and write operations are carried over multiple transmission lines and all the bits are transmitted at once. The data is transmitted within a single clock pulse. It is used when the distance between source and destination station is short. A parallel port communicates between ICs or wires of the same board.

The classification of the I/O ports is as shown in figure below:

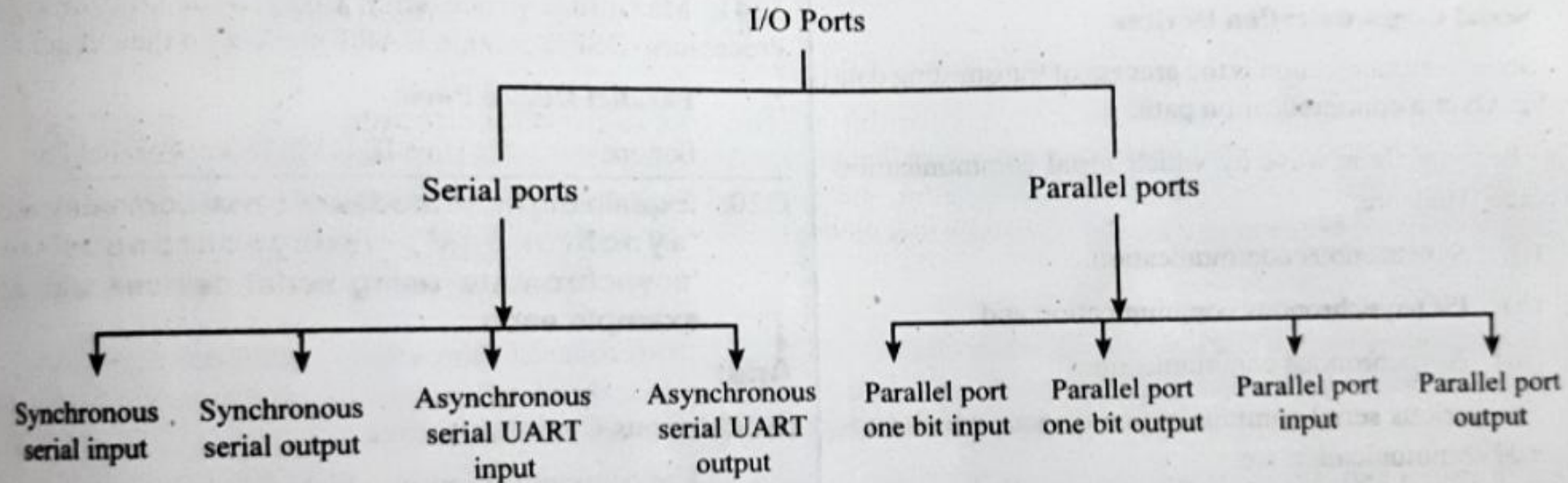


Figure: Classification of I/O Ports

Examples of various I/O Devices:-

I/O Device type

Example

1. Serial Input — Audio Input, video Input, Dial tone, Network Input, transceiver Input, Scanner, Remote i/p and serial I/O bus I/p.
2. Serial output — Audio output, video O/p, Dialing number, N/w O/p, Remote TV Control, transceiver O/p, multi-processor Communication and Serial I/O bus O/p.
3. Serial UART Input — Keypad, mouse, Keyboard, modem, character Inputs on Serial line.
4. Serial UART output — modem, printer, character O/p's on serial line.
5. parallel port single bit I/p — (i) Completion of a revolution of a wheel.
(ii) achieving preset pressure in a boiler.
(iii) exceeding the upper limit of the permitted weight over the pan of an electronic balance.
6. parallel port single bit output — (i) PWM O/p for DAC, which controls liquid level, temperature, pressure, Speed (R) angular position of a rotating shaft (R) a d.c motor Control.

7. parallel port Input - (i) ADC input from liquid level measuring sensor (ii) temperature sensor (iii) pressure sensor (iv) speed sensor.

8. parallel port output - (i) Multilane LCD display matrix unit in a cellular phone to display on the screen the phone number, time, messages, character inputs (ii) pictogram bit-images (iii) E-mail (iv) webpage.