

## UNIT II

### EMBEDDED NETWORKING

#### 2. IO port types-Serial and parallel IO ports

A port is a device to receive the bytes from external peripheral(s) [or device(s) or processor(s) or controllers] for reading them later using instructions executed on the processor to send the bytes to external peripheral or device or processor using instructions executed on processor.

A Port connects to the processor using address decoder and system buses. The processor uses the addresses of the port-registers for programming the port functions or modes, reading port status and for writing or reading bytes.

Example

- SI serial interface in 8051
- SPI serial peripheral interface in 68HC11
- PPI parallel peripheral interface 8255
- Ports P0, P1, P2 and P3 in 8051 or PA, PB, PC and PD in 68HC11
- COM1 and COM2 ports in an IBM PC

#### IO Port Types

Types of Serial ports

- Synchronous Serial Input
- Synchronous Serial Output
- Asynchronous Serial UART input
- Asynchronous Serial UART output (both as input and as output, for example, modem.)
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Types of parallel ports

- Parallel port one bit Input
- Parallel one bit output
- Parallel Port multi-bit Input
- Parallel Port multi-bit Out PUT