EE4390 Microprocessors

Lessons 27, 28

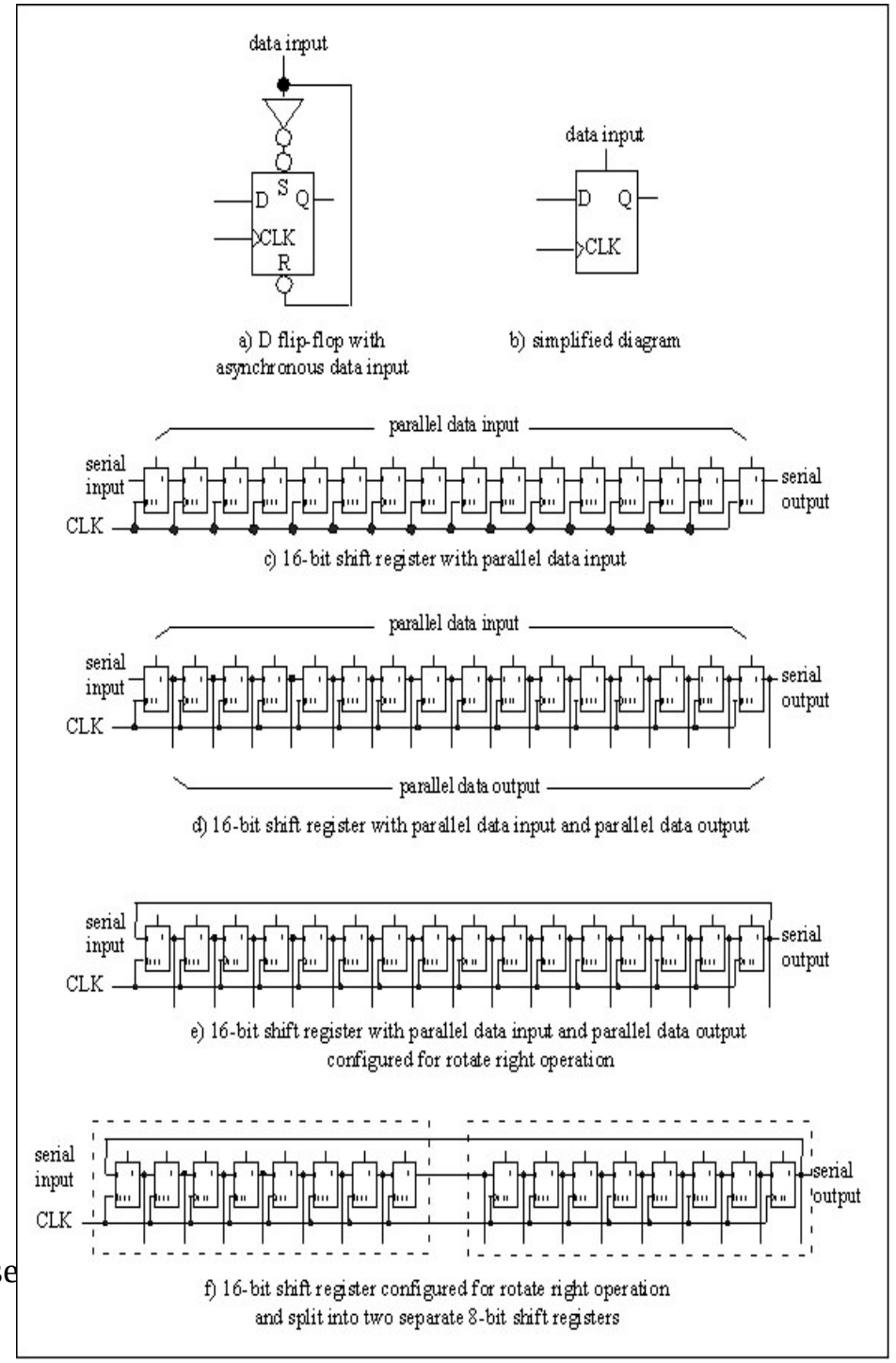
Serial Peripheral Interface

Serial Peripheral Interface

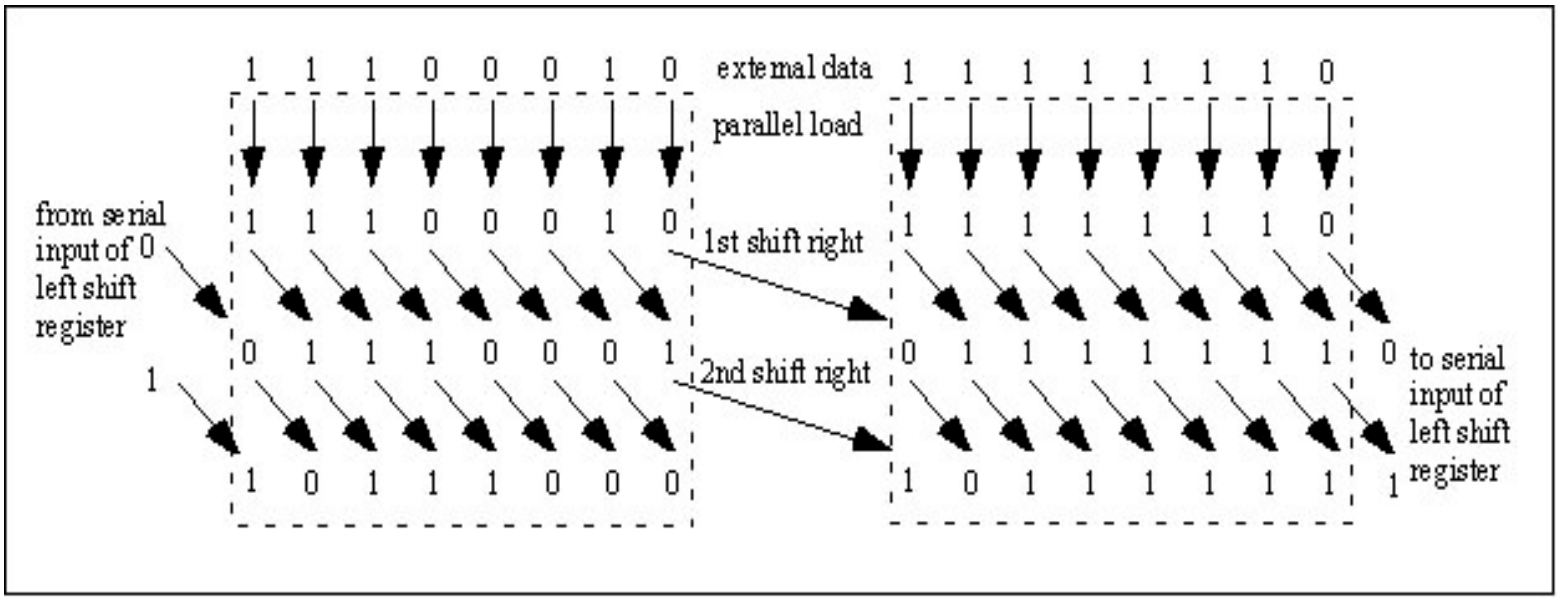
- Synchronous serial communication system
- Transmitter and receiver share common clock
- Clock signal provided by **Master** configured device and fed to **Slave** configured devices
- SPI data link is considerably faster than the SCI at the expense of an additional line
- SPI operates as a geographically distributed shift register

Serial Peripheral Interface

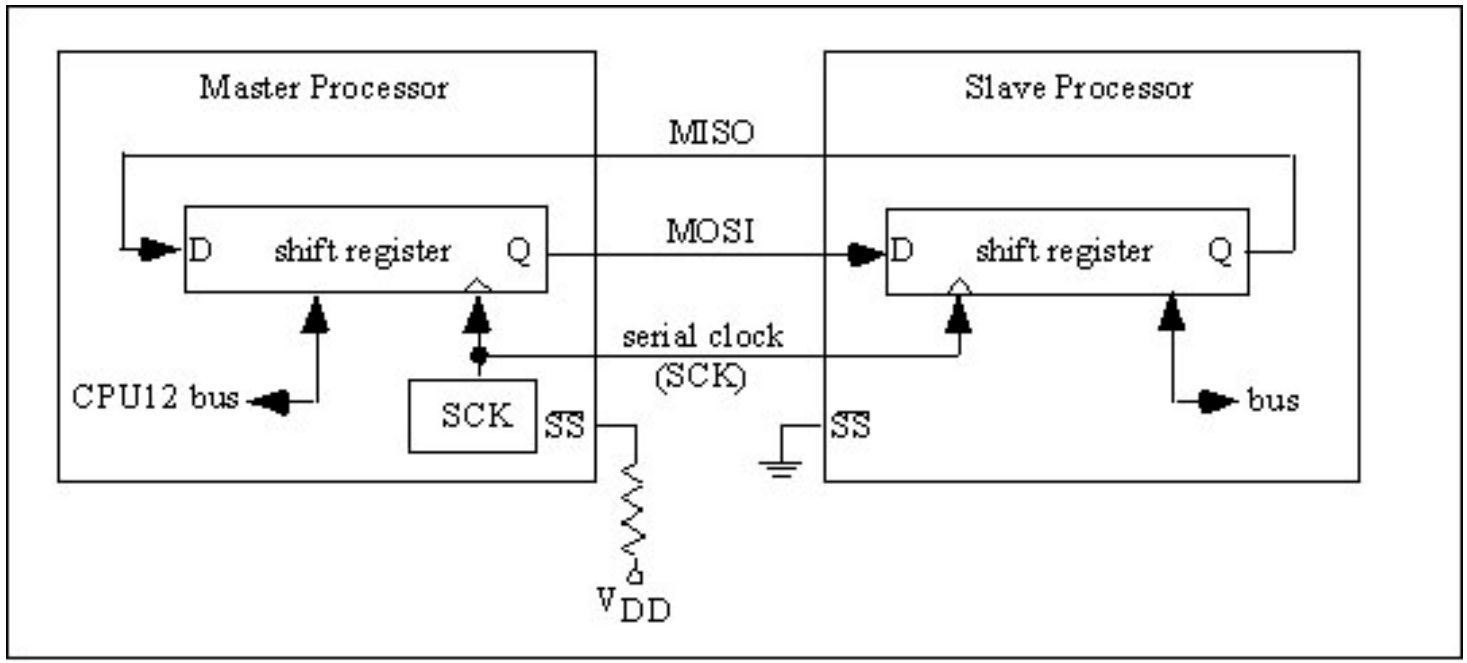
- SPI acts as 16-bit distributed shift register
- Shares common clock (SCK) provided by Master configured device
- Signals
  - SCK
  - MOSI
  - MISO
  - Slave Select (SS)



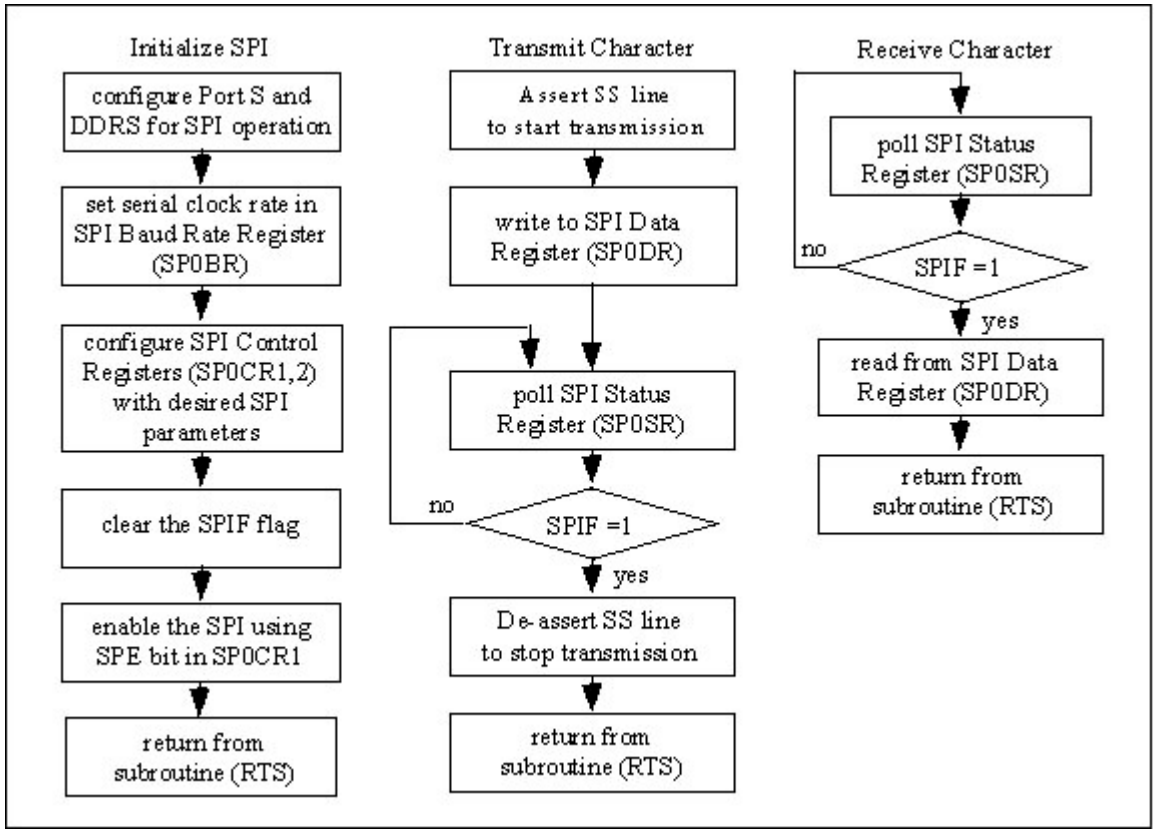
Serial Peripheral Interface



Serial Peripheral Interface



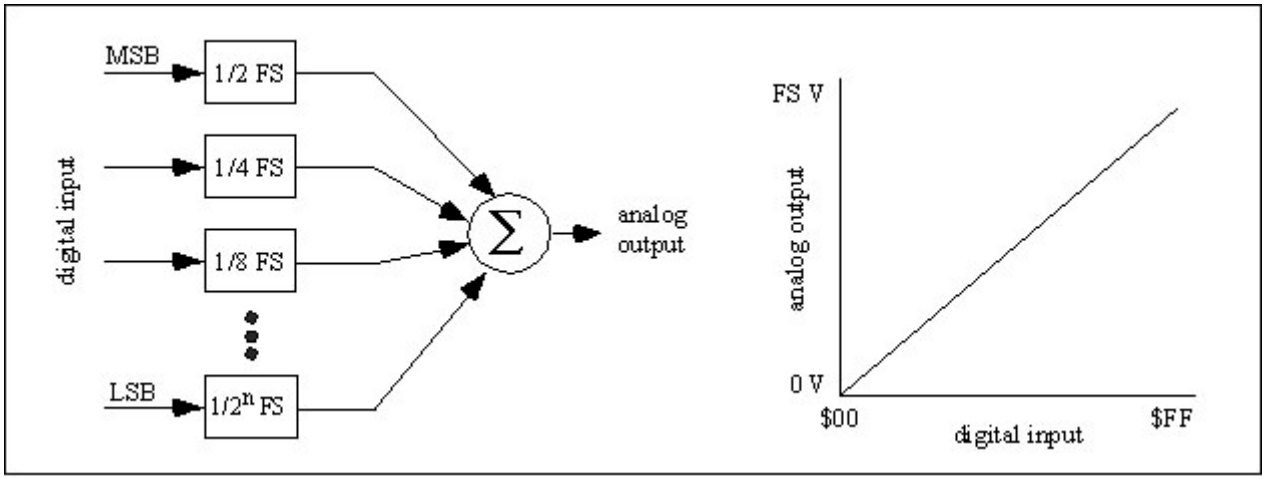
SPI Activities



SPI Applications

- Extend features of 68HC12
  - additional memory components
  - Additional ports
  - Real-time clock
  - Phase-locked loop
  - FM transmitter/receiver
  - high-resolution analog-to-digital
  - LCD display
  - multi-channel digital-to-analog converter

SPI Applications
- multi-channel digital-to-analog converter -



SPI Applications
- multi-channel digital-to-analog converter -