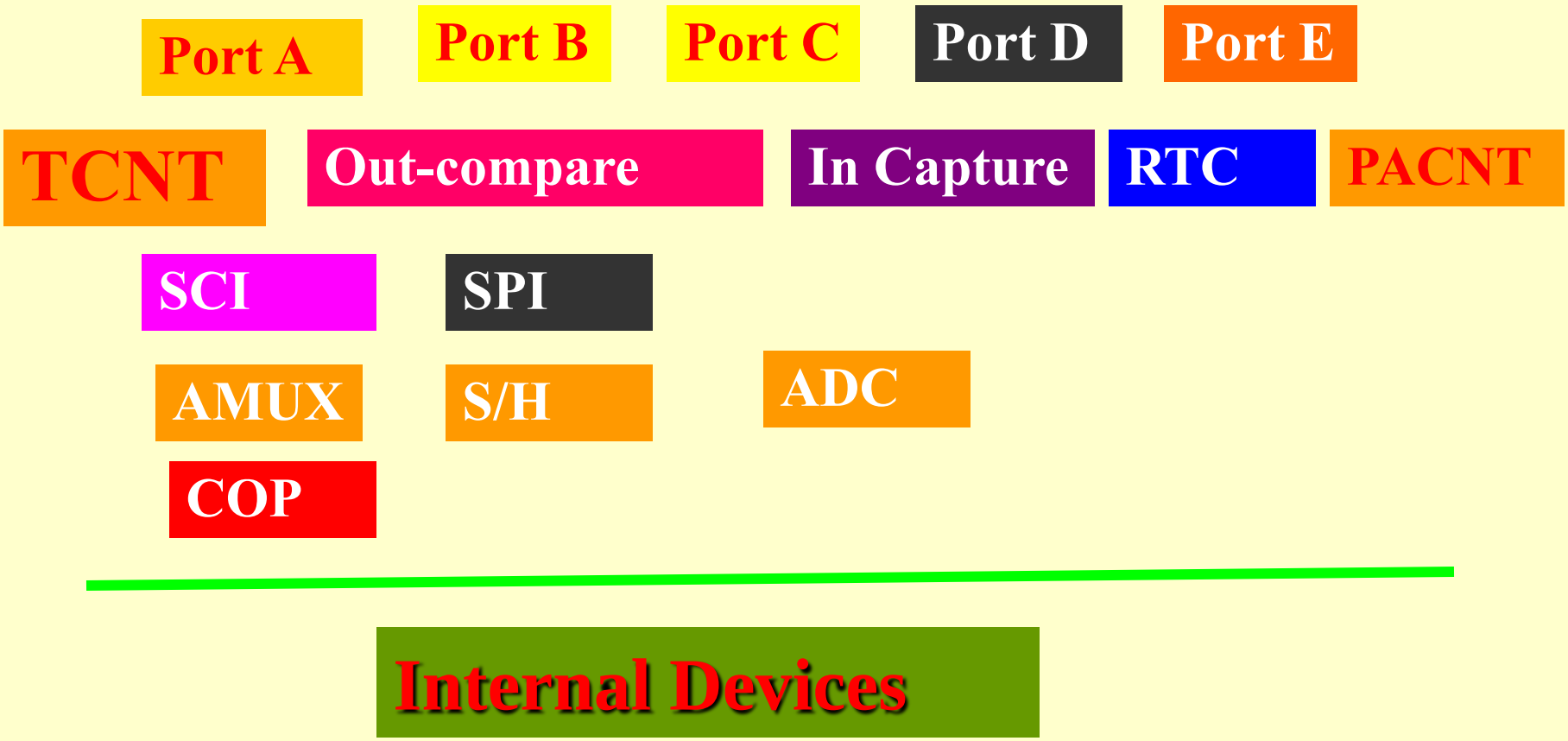
Chapter 16

Motorola MC68HC11 Family MCU Architecture

Lesson 10

ADC Devices


Port A
Port B
Port C
Port D
Port E
TCNT
Out-compare
In Capture
RTC
PACNT
SCI
SPI
AMUX
S/H
ADC
COP
Internal Devices

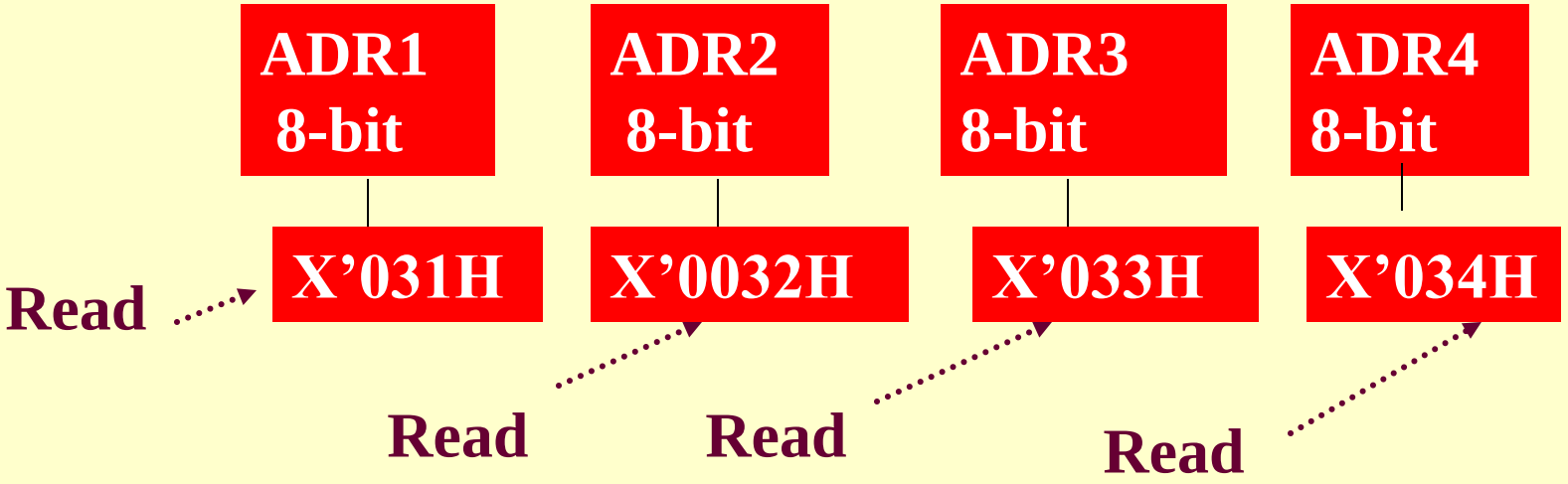
ADC Multi Channel Device

- ADC device has inputs at Port E
- Multi channels give multiplexed input to ADC. S/H does the sample hold
- ADC can be programmed in single scan or multi scan mode, In Vref/2 mode in place of Vref

ADC Multi Channel Device Registers

- ADCTL/AD Status
- ADR1
- ADR2
- ADR3
- ADR4

Four ADC Channels Result Registers and the Addresses

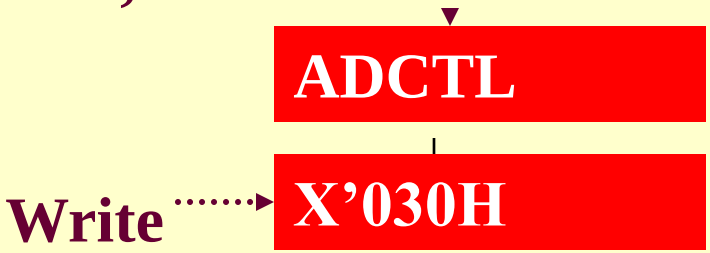


ADC outputs for Channels 1, 2, 3, 4

X' four bits are as per init register

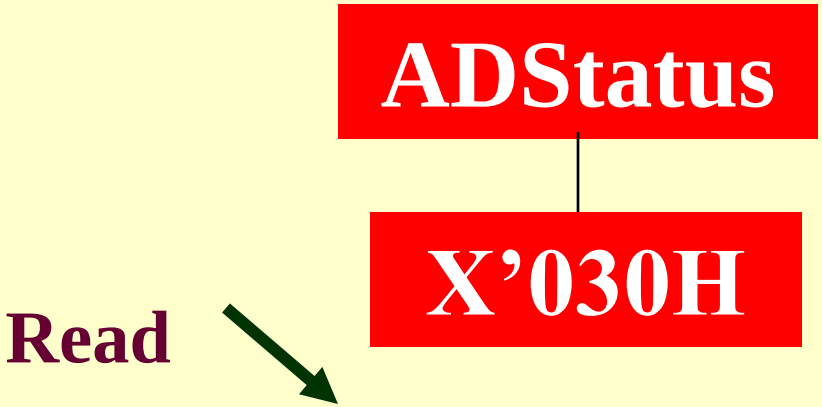
ADC Device Control Register and the Address

Channel Status 4- bits CA, CB, CC,CD , and MULT, SCAN, CCF



X' four bits are as per init register

ADC Device Register for the Status (Address same as ADCTL)



ADC Device Control Register Bits

- **Channel Status 4- bits CA, CB, CC,CD , and**
- **MULT, SCAN, CCF:Conversion over**

- **Select Channel b3-b3-b1-b0 CD, CC, CB,CA , b3-b3-b1-b0 = 1110 means Vref/2 is input reference and MULT: Multiple scan , SCAN:Scan start**

Summary

We learnt

ADC Multi Channel Device registers

- ADCTL
- ADR1
- ADR2
- ADR3
- ADR4

End of Lesson 10

ADC