

Chapter 16

Motorola MC68HC11 Family MCU Architecture

Lesson 8

PACNT Input and Overflow Flags and Interrupts

Port A

Port B

Port C

Port D

Port E

TCNT

Out-compare

In Capture

RTC

PACNT

SCI

SPI

AMUX

S/H

ADC

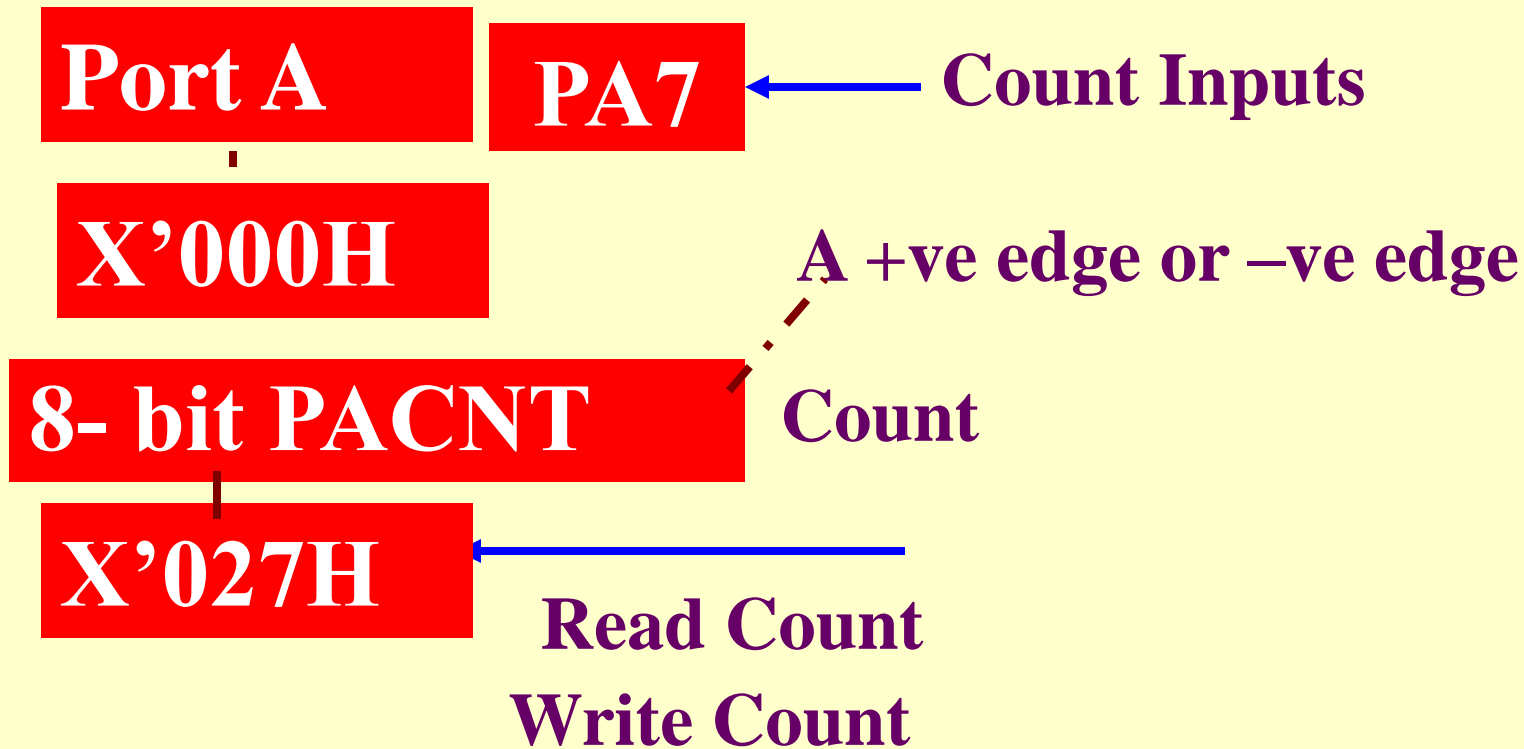
COP

Internal Devices

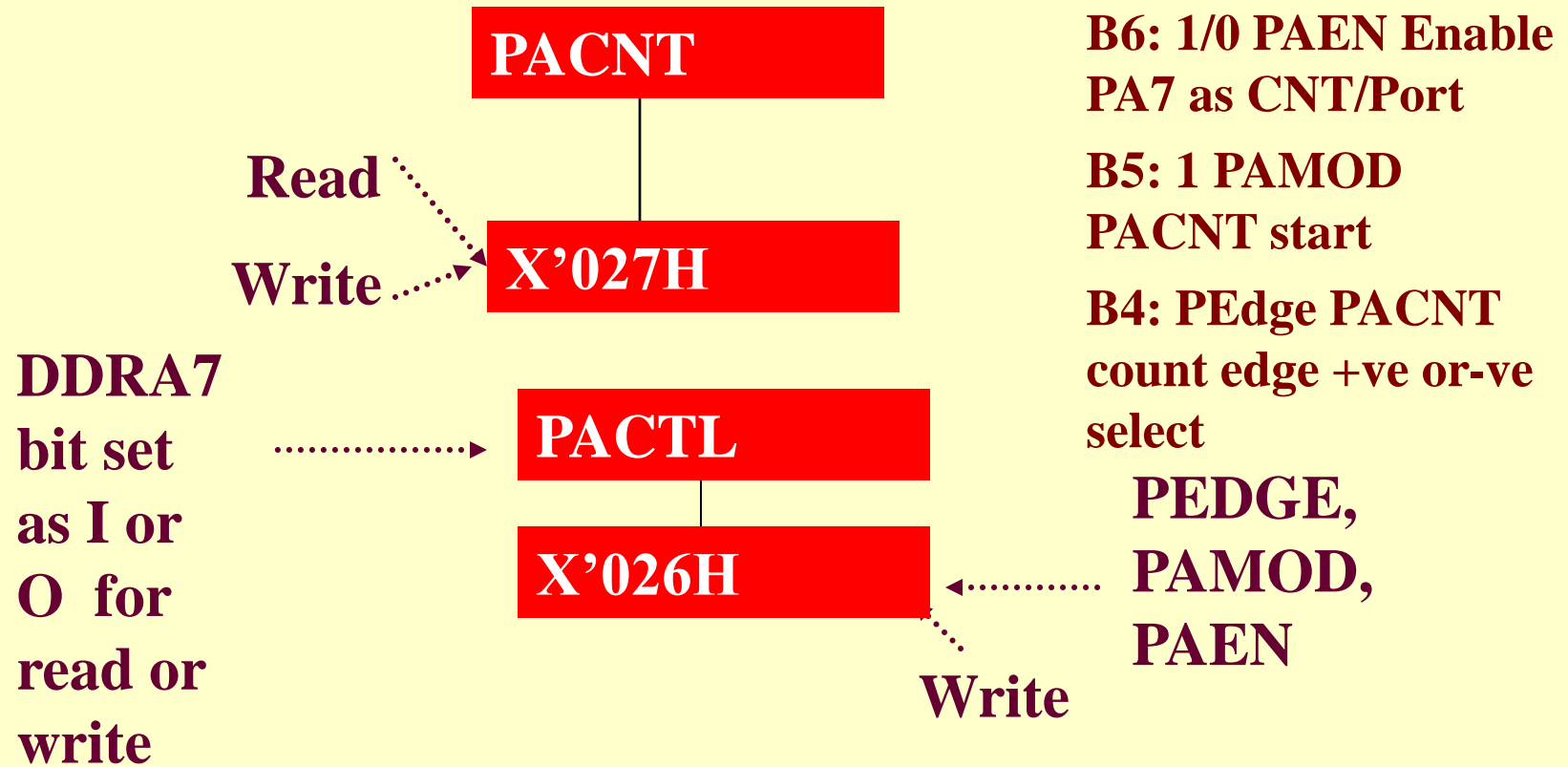
PACNT for counting inputs at external pin PA7 and PACTL Controlling Register

PACNT application option A:

Counts the pulses at an input pin PA7 and accumulates count at 8-bit PACNT and interrupt on overflow



Pulse Accumulation Count Device



X' four bits are as per init register

**Interrupt PACNT Input or PACNT
OV Interrupts and mask set bits
TMSK2**

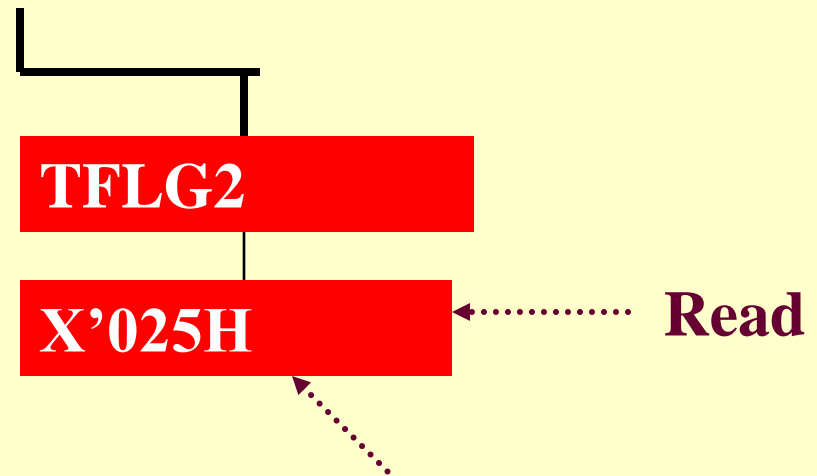


**Write TMSK2
2-bits**

**PAII and PAOVI
interrupt mask
bits at TMSK2 at
x'024H**

X' four bits are as per init register

Timer Flags for PACNT Input or PACNT OV Interrupt Action Occurrences

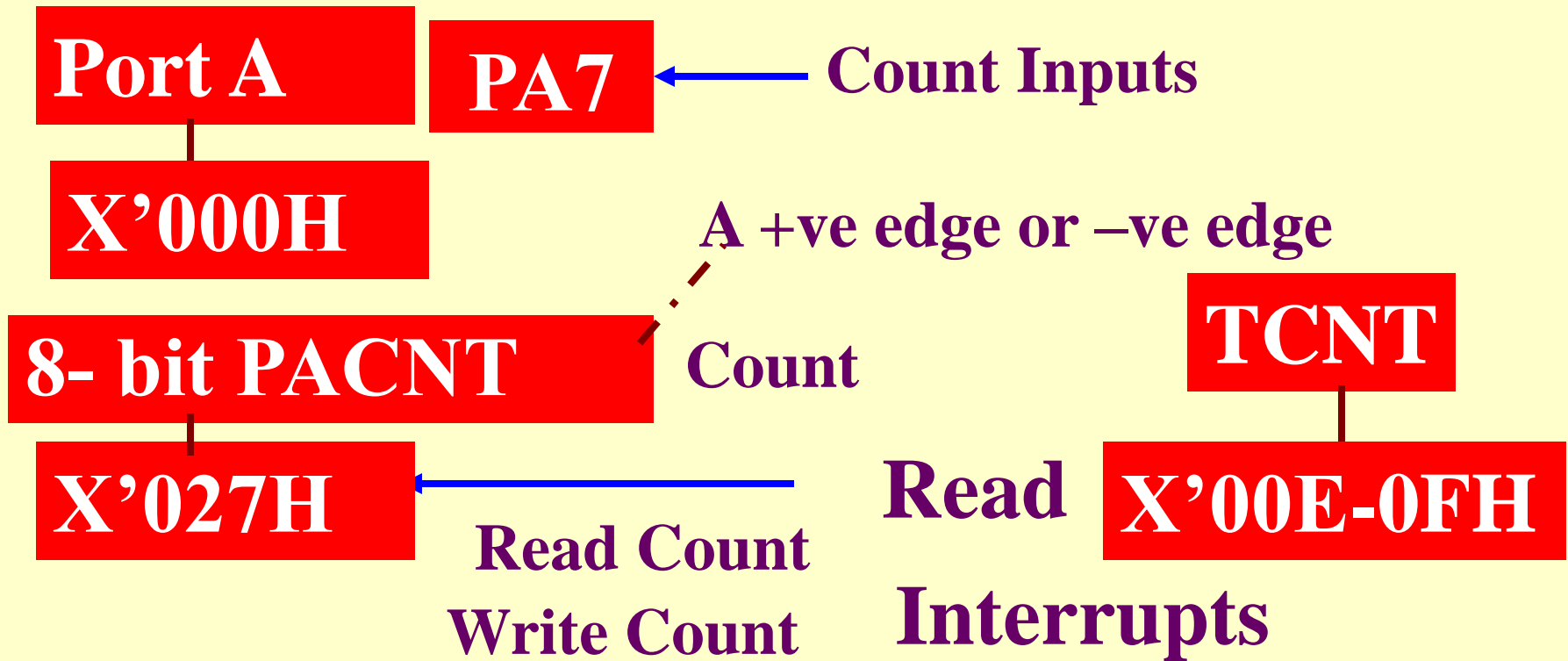


PAIF, PAOVF,
RTIF, TOF bits at
TFLG2 at X'025H

X' four bits are as per init register

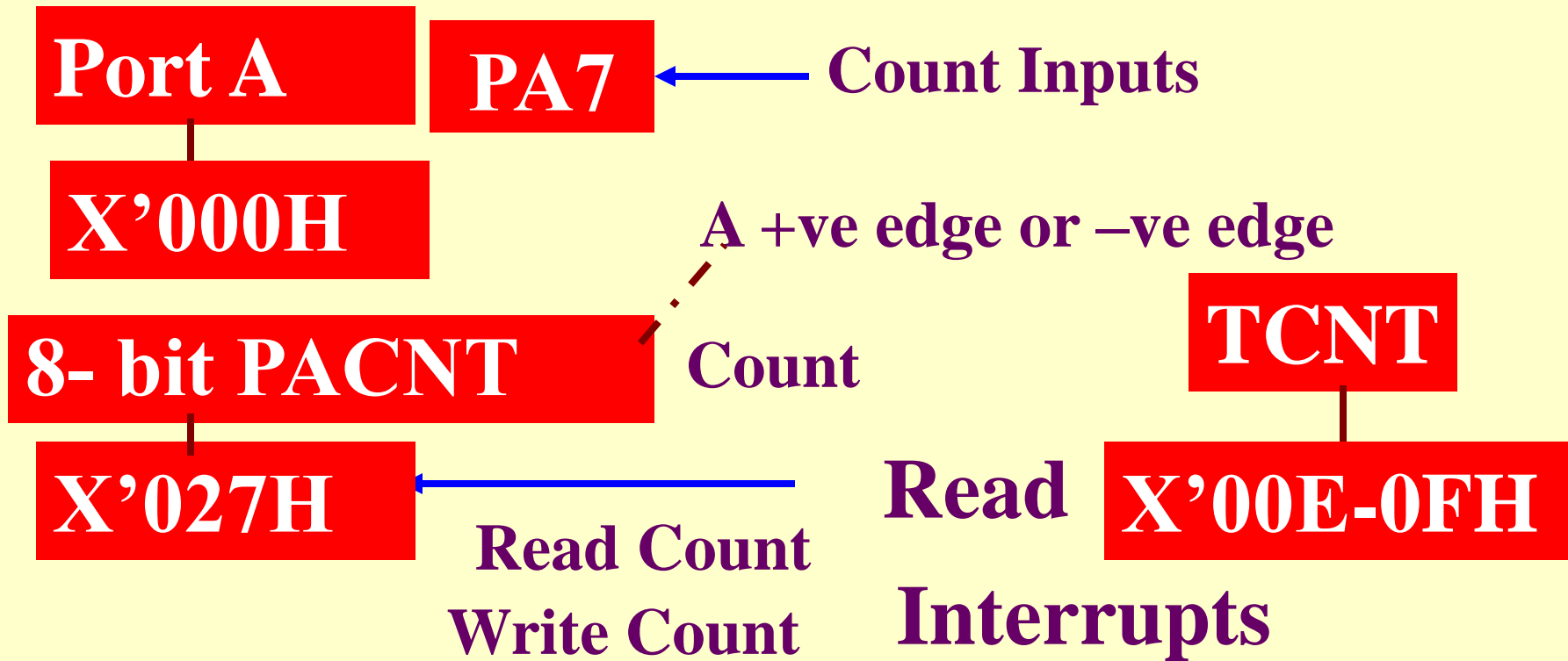
PACNT application option B:

Find pulse periods (intervals) by reading TCNT register on successive PACNT input +ve (or -ve) edge interrupts



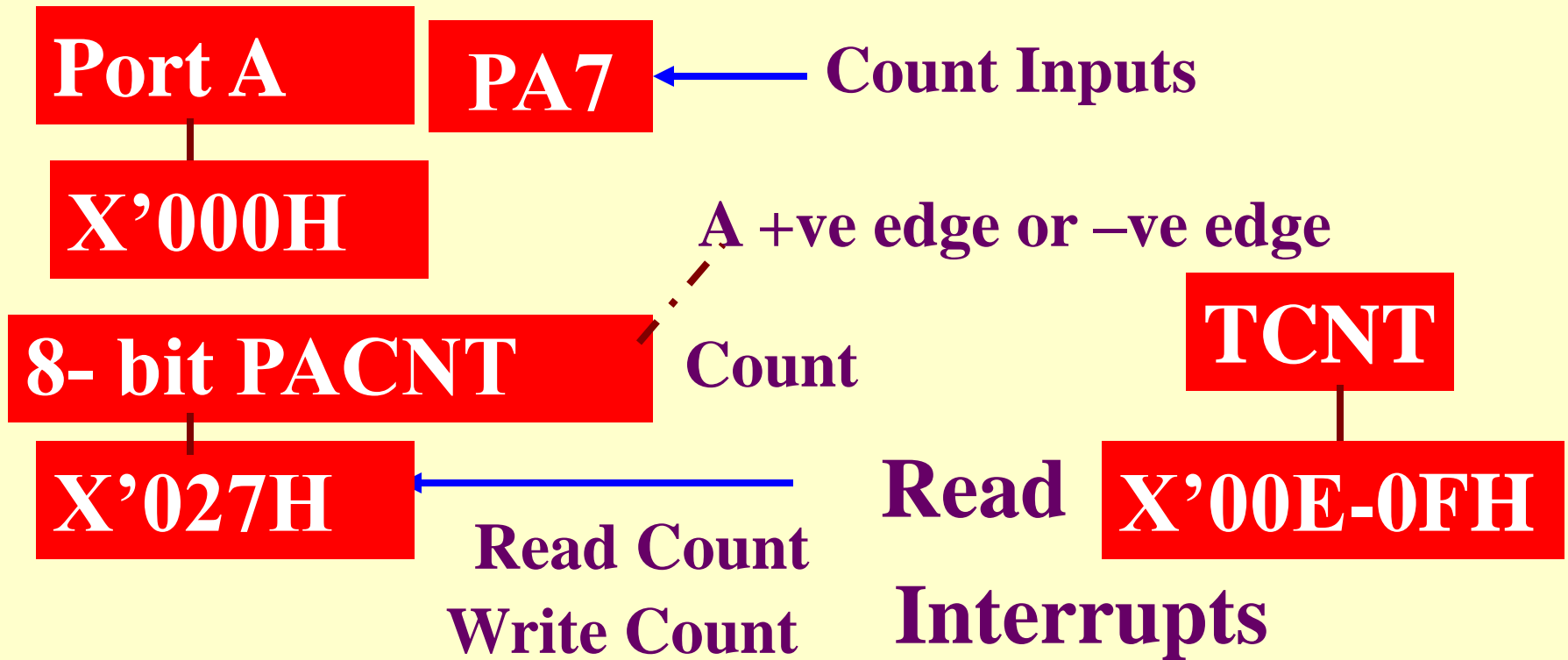
PACNT application option C:

Find pulse width by reading TCNT register on PACNT input +ve edge interrupt and then on -ve edge interrupt



PACNT application option D:

Find Frequency: Write PACNT on a TCNT TOV interrupt and start PACNT counts, TCNT read on a PACNT OVI interrupt



Summary

We learnt

- TCNT
- Pulse Accumulator registers
- PACTL
- PACNT
- TFLAG2
- TMSK2

End of Lesson 8 on 68HC11 MCU PACNT Input and Overflow Flags and Interrupts