EE2361 - Lecture 34

11/30/16

Output Compare:

PIC24F FRM Section 16
(DS39706A)

dsPIC33/PIC24 FRM
(DS70005157A)

Last time – Single Compare Match

Set a value in OCxR ←

match with TMRy then the output on the OCx pin changes in a way specified by the selected mode (OCM bits in OCxCON)

---

summarize last lecture

Dual Compare Match Mode

compare TMRy value to **both** OCxR, OCxRS registers

This can be used

- Single Output Pulse
- Continuous Series of Output pulses

Same idea as previous but now have two potential matches that can change the value on the OCx pin

With single pulse mode

OCxR determines the rising edge of output

OCxRS determines the falling edge of the output.

Special Cases

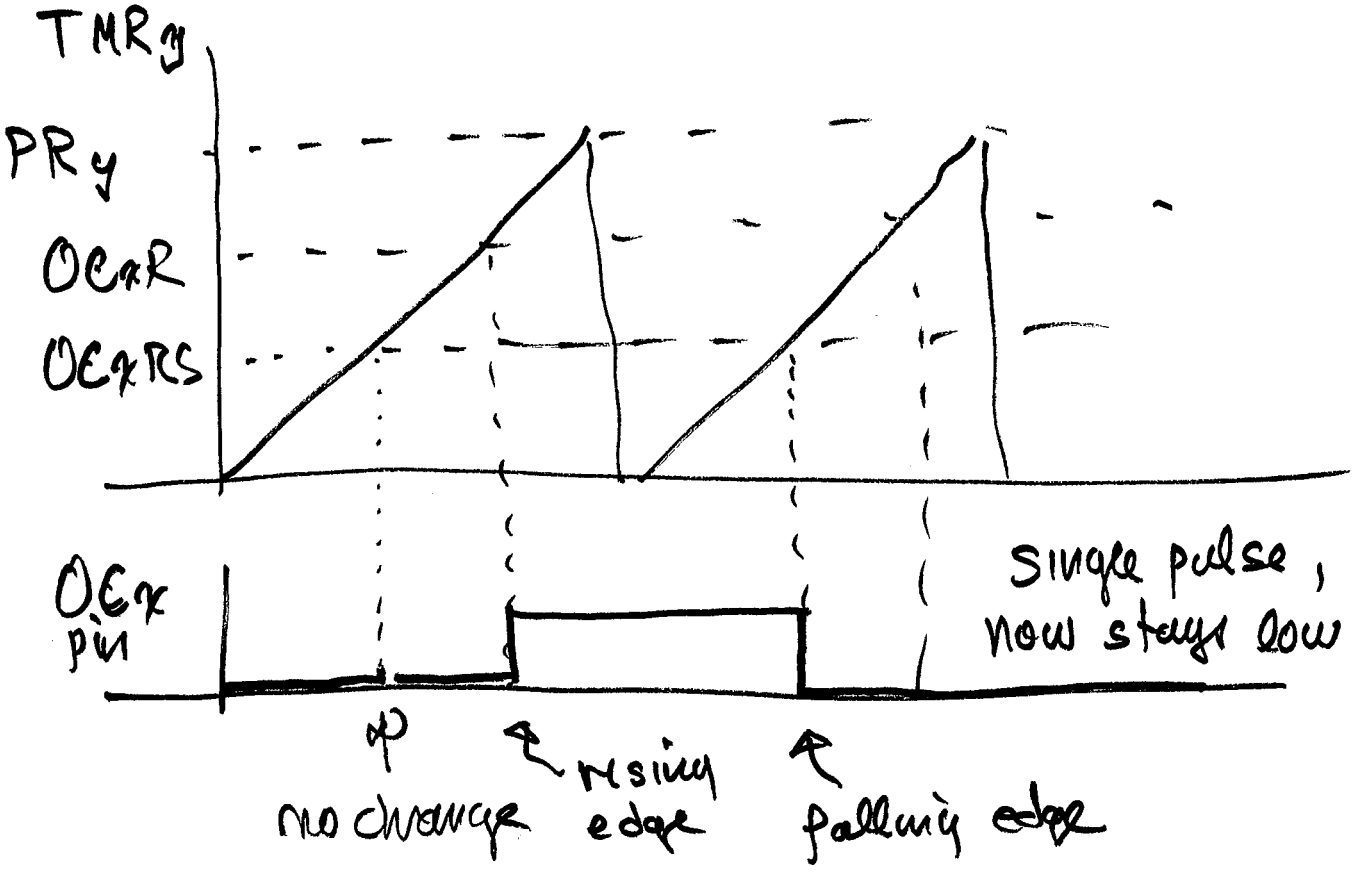
$OC_x R < PR_y$ and $OC_x RS > PR_y$

OC_x goes high and stays there

$OC_x R$ and $OC_x RS > PR_y$

No matches, OC_x doesn't change

What about $OE_x RS < OE_x R < PR_y$

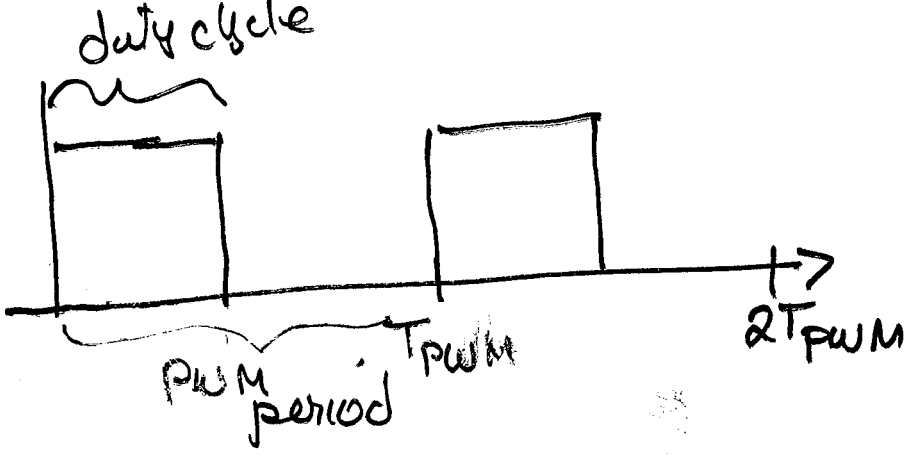

TMRy
PRy
OCxR
OCxRS
OCx pin
Single pulse, now stays low
no change
rising edge
falling edge

Dual Compare Mode Continuous Output Pulses

- Similar to single pulse mode with both OCxR, OCxRS
- Using a different value of the mode bits the pulse occur repeatedly on all register matches.

PWM Pulse Width Modulator

PWM frequency - fixed
PWM duty cycle - expressed as % of the period



For more detail see:

PIC24F FRM Section 16
(DS39706A)

Section 16.3.2 on Dual Compare Match Mode, pp. 16-10 to 16-20

Next move on to PWM