

CCS Pic-C: Interrupts

External interrupt (INT_EXT) is edge sensitive. The `ext_int_edge (edge)` function is used to respond to an external interrupt on rising edge of the interrupting signal if the constant edge is `H_TO_L` or falling edge of the interrupting signal if edge is `L_TO_H`. The constants `H_TO_L` and `L_TO_H` are defined in .h file. Shortly, following function calls are used to select edge for the external interrupt.

`ext_int_edge (H_TO_L)`

`ext_int_edge (L_TO_H)`

In contrast to assembly language there is no need for context saving (i.e. as storing the state of WREG, STATUS or user defined registers). C compiler takes care of the state of the MCU during ISR. Also note that interrupt service routines have void return type and they do not have any input parameters!

CCS Pic-C: TIMERO Module

PIC16F87XA TimerO module is the same timer/counter module used in PIC16F84A

TIMERO module can be setup for timing and counting applications using built-in function `setup_timer_O (mode)` function, where `mode` may be one or two of the constants defined in the devices .h file. These constants are `RTCC_INTERNAL`, `RTCC_EXT_L_TO_H` or `RTCC_EXT_H_TO_L`, referring to internal or external clock source selection. Hence, the counter can be clocked by an external pulse train or from MCU oscillator. In the case of external clock source, `TMRO` register being on 8-bit register in the TimerO module can be incremented during low-to-high (rising edge) or high-to-low (falling edge) source signal transitions on RA4/TOCKI pin. Prescaler that is used to divide the clock signal frequency input to the TMRO counter is obtained by

`RTCC_DIV_2,`

`RTCC_DIV_4,`

`RTCC_DIV_8,`

`RTCC_DIV_16,`

`RTCC_DIV_32,`

`RTCC_DIV_64,`

`RTCCDIV128,`

`RTCCDIV256.`

