

Taking Timing Further

Brief information about interrupts, timer/counter operation, PWM pulse width modulation and CCS Pic-C applications on these topics.

- PIC16 F84A interrupts and TIMERO module
- PIC16 F877A interrupts and TIMERO, TIMER1, TIMER2 modules
- PIC16 F877A Capture/Compare/Pulse-width-modulation CCP module

Interrupts

Interrupts and timing are two most important topics in studying microcontrollers. Correct and efficient use of related hardware PIC MCU sources and software capabilities will ease many advanced engineering studies. CCS Pic-C compiler provides various high-level language features that may be utilized in related studies. Bearing in mind that, lecture notes, datasheet, compiler help and examples should be consulted for their proper use, the following information will serve as a guide to these studies.

16F84A Interrupt Structure

16 F84A has four maskable interrupt sources

- **External interrupt source:** This is the only external interrupt input. It is edge triggered. Associated pin: RBO/INT
- **Timer overflow interrupt:** Caused by the Timer 0 module. It occurs when the timer's 8-bit counter overflows
- **Port B interrupt on change:** This interrupt occurs when any of the higher 4 bits of Port B (RB7:RB4) changes.
- **EEPROM write complete:** Occurs when a write instruction to EEPROM memory is completed.