

# EE 459Lx - Embedded System Design Laboratory

## AVR Interrupt Vectors

Below are tables of the interrupts available on the AVR microcontrollers used in class. The vector name is the identifier that should be used at the start of the the interrupt service routine (ISR). For example, the ISR for the ATmega328P Pin Change Interrupt Request 0 would look like this.

```
ISR(PCINT0_vect)
{
    // ISR code
}
```

Note: The names of the vectors are not always the same for the same interrupt in different processors. Check the table for the correct processor before writing the ISR.

### ATmega328P

Vector Number	Interrupt definition	Vector name
2	External Interrupt Request 0	INT0_vect
3	External Interrupt Request 1	INT1_vect
4	Pin Change Interrupt Request 0	PCINT0_vect
5	Pin Change Interrupt Request 1	PCINT1_vect
6	Pin Change Interrupt Request 2	PCINT2_vect
7	Watchdog Time-out Interrupt	WDT_vect
8	Timer/Counter2 Compare Match A	TIMER2_COMPA_vect
9	Timer/Counter2 Compare Match B	TIMER2_COMPB_vect
10	Timer/Counter2 Overflow	TIMER2_OVF_vect
11	Timer/Counter1 Capture Event	TIMER1_CAPT_vect
12	Timer/Counter1 Compare Match A	TIMER1_COMPA_vect
13	Timer/Counter1 Compare Match B	TIMER1_COMPB_vect
14	Timer/Counter1 Overflow	TIMER1_OVF_vect
15	Timer/Counter0 Compare Match A	TIMER0_COMPA_vect
16	Timer/Counter0 Compare Match B	TIMER0_COMPB_vect
17	Timer/Counter0 Overflow	TIMER0_OVF_vect
18	SPI Serial Transfer Complete	SPI_STC_vect
19	USART Rx Complete	USART_RX_vect
20	USART Data Register Empty	USART_UDRE_vect
21	USART Tx Complete	USART_TX_vect
22	ADC Conversion Complete	ADC_vect
23	EEPROM Ready	EE_READY_vect
24	Analog Comparator	ANALOG_COMP_vect
25	Two-wire Serial Interface	TWI_vect
26	Store Program Memory Read	SPM_READY_vect

### ATtiny4313

Vector Number	Interrupt definition	Vector name
2	External Interrupt Request 0	INT0_vect
3	External Interrupt Request 1	INT1_vect
4	Timer/Counter1 Capture Event	TIMER1_CAPT_vect
5	Timer/Counter1 Compare Match A	TIMER1_COMPA_vect
6	Timer/Counter1 Overflow	TIMER1_OVF_vect
7	Timer/Counter0 Overflow	TIMER0_OVF_vect
8	USART Rx Complete	USART0_RX_vect
9	USART Data Register Empty	USART0_UDRE_vect
10	USART Tx Complete	USART0_TX_vect
11	Analog Comparator	ANA_COMP_vect
12	Pin Change Interrupt Request 0	PCINT_B_vect
13	Timer/Counter1 Compare Match B	TIMER1_COMPB_vect
14	Timer/Counter0 Compare Match A	TIMER0_COMPA_vect
15	Timer/Counter0 Compare Match B	TIMER0_COMPB_vect
16	USI Start Condition	USI_START_vect
17	USI Overflow	USI_OVERFLOW_vect

18	EEPROM Ready	EEPROM_READY_vect
19	Watchdog Timer Overflow	WDT_OVERFLOW_vect
20	Pin Change Interrupt Request 1	PCINT_A_vect
21	Pin Change Interrupt Request 2	PCINT_D_vect

**ATtiny85**

Vector Number	Interrupt definition	Vector name
1	External Interrupt Request 0	INT0_vect
2	Pin Change Interrupt Request 0	PCINT0_vect
3	Timer/Counter1 Compare Match A	TIMER1_COMPA_vect
4	Timer/Counter1 Overflow	TIMER1_OVF_vect
5	Timer/Counter0 Overflow	TIMER0_OVF_vect
6	EEPROM Ready	EE_RDY_vect
7	Analog Comparator	ANA_COMP_vect
8	ADC Conversion Complete	ADC_vect
9	Timer/Counter1 Compare Match B	TIMER1_COMPB_vect
10	Timer/Counter0 Compare Match A	TIMER0_COMPA_vect
11	Timer/Counter0 Compare Match B	TIMER0_COMPB_vect
12	Watchdog Time-out	WDT_vect
13	USI Start Condition	USI_START_vect
14	USI Overflow	USI_OVF_vect

