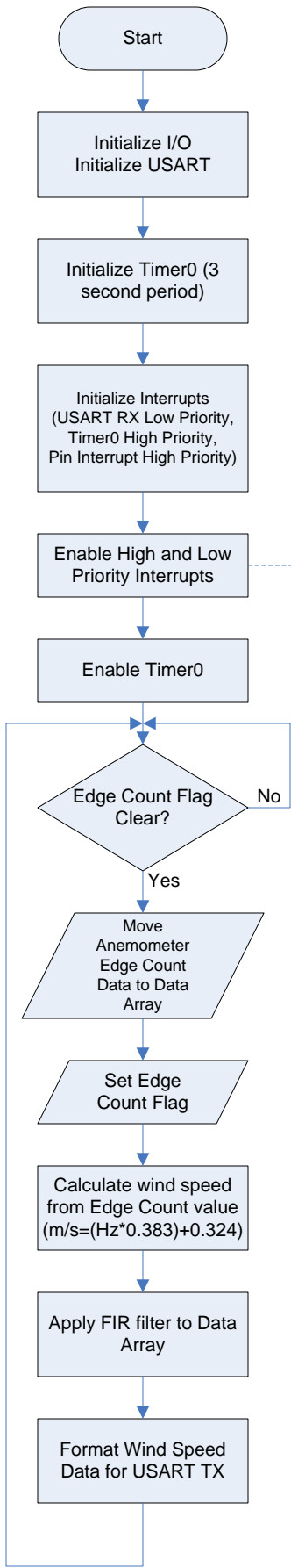


Anemometer Sensor Module Flowchart

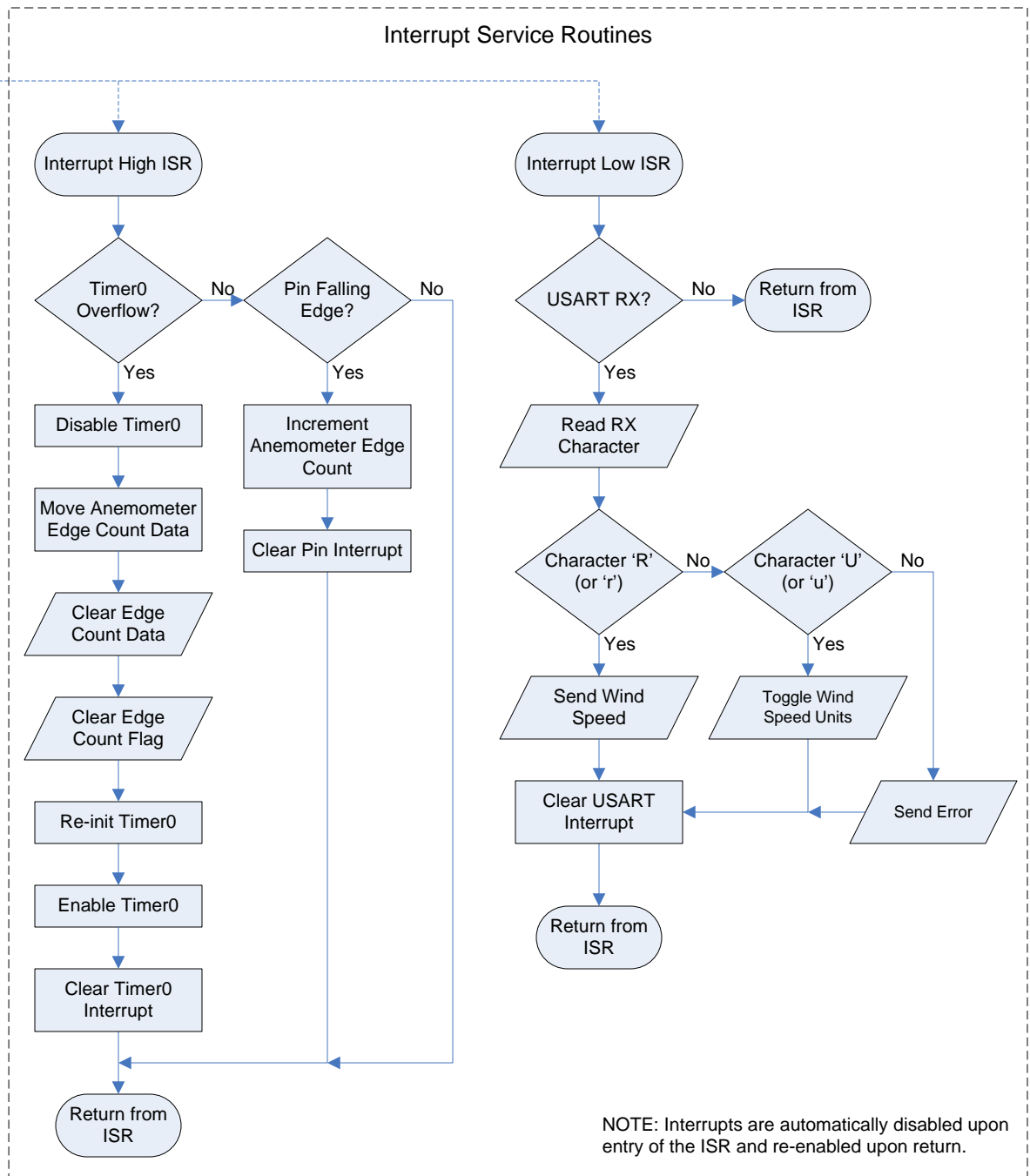


This is primarily an interrupt driven model. Once all peripherals and interrupts are initialized and enabled the processing program loop waits for a count flag to clear before processing the Anemometer rotation count. The count flag is cleared in the High ISR after Timer0 has overflowed (3 seconds have elapsed).

The Anemometer outputs 4 pulses per rotation. A single, fixed, reed switch and 4 magnets mounted on the Anemometer rotating body comprise the pulse output drive. Every pulse output causes an interrupt whereby the code increments a counter.

A High Priority Interrupt takes precedence over a Low Priority Interrupt. The firmware takes advantage of this so that the USART servicing doesn't delay the Anemometer pulse count increment or Timer0 overflow service.

Gust sample is wind speed over 3 second period. The FIR filter is a 20 sample moving average. Both the wind gust and the wind speed average are sent when requested.



NOTE: Interrupts are automatically disabled upon entry of the ISR and re-enabled upon return.