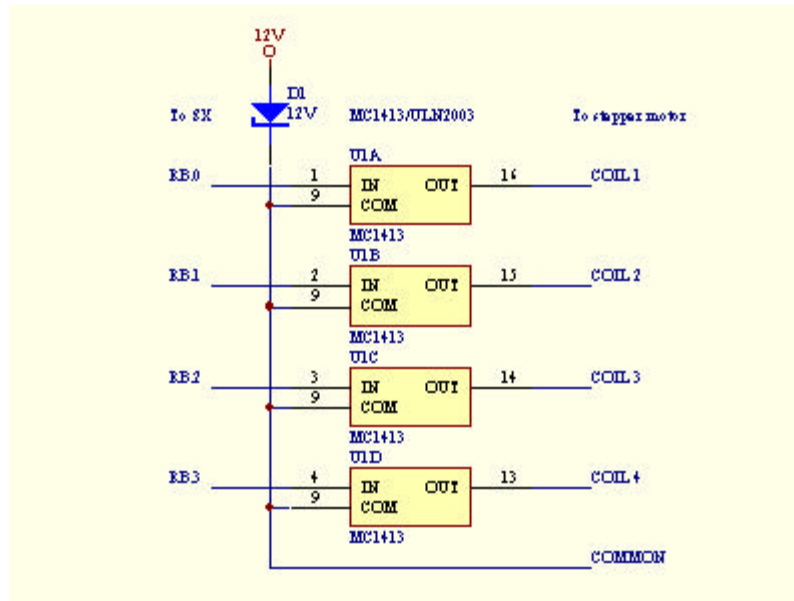


Stepper Motor Virtual Peripheral

This Virtual Peripheral adds the ability to control a stepper motor. This routine excites the stepper motor using half-step sequence but the excitation method can be changed to any sequence you choose simply by modifying the startstep lookup-table with the appropriate sequence of excite output.

The stepper motor can be connected to portb via the following circuit:



The stepper motor is controlled via the step_con register. The motor can be single stepped by setting the step_con.0 bit or run continuously by setting the step_con.1 bit. Modifying the step_lo and step_hi registers sets the rotation rate. To calculate the values of step_lo and step_hi for a desired revolution rate the following equation can be used:

$$\text{step_lo} \times \text{step_hi} = \text{delay}$$

$$\text{delay} = \text{desired rev. per second} / (\text{RTCC} \times \text{CLK}^{-1} \times \text{steps})$$

Where:

CLK = SX clock frequency

steps = number of steps/rotation for stepper used

(i.e. 360degrees / 7.5degrees per step = 48)