# Add Arduino controlled Rotary Encoder to 9Xtreme

For this, you need an Arduino Pro Mini, either '328 or '168 will do, but it MUST be a 3.3V, 8Mhz version.
The Arduino connects to the 9Xtreme using the I2C bus. The I2C connections are on the 9Xtreme Expansion connector. If you are using the "COM3" function on this for a bluetooth module, then the I2C connections are NOT available.

Here is a picture showing the wiring to the Arduino:



At the top (IO2, IO3 and IO4) are the connections to the encoder. The wire colours are:
Brown: Ground.
Purple: The two quadrature signals.
Yellow: The encoder switch.

At the bottom are the connections to the I2C on the 9Xtreme. The wire colours are:
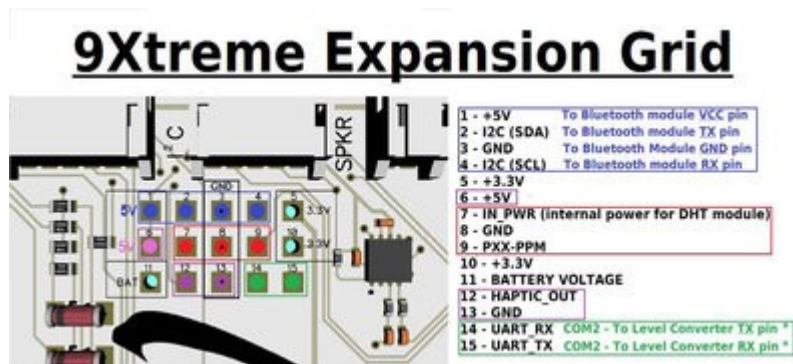Black: Ground.
Red: VCC (3.3V)
Brown: To A4, SDA.
Yellow: To A5, SCL.

The I2C bus on the 9Xtreme does NOT have any pull up resistors, so you will need to add these to the Arduino. Here is a picture showing where to add them:

On the 9Xtreme itself, the connections on the Expansion Grid are those on the top row labelled SDA, SCL, GND and (in light blue) +3.3V, on the picture below:



If you have an appropriate connector, these connections are also available on J9, just above the Expansion Grid.

To enable the I2C bus in ersky9x, go to the Hardware menu and set "I2C Function" to I2C.

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