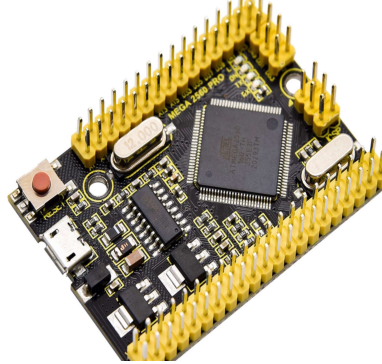


MEGA2560 PRO MINI

Speeduino Serial 0 HC-06 Bluetooth Mod

Note: this mod is not guaranteed to work with every Pro Mini and HC-06



The use of bluetooth connection to Tuner Studio as described in the Speeduino Wiki works on a full sized MEGA2560 board but not on the Pro Mini version. This is due to the value of the resistors that connect the USB-Serial chip to the TX0/RX0 pins on the mcu chip and header pins.

The full sized Mega2560 that use the 16U2 for USB-Serial conversion have 1K resistors, thus when you attach the bluetooth module as in the Speeduino Wiki it connects to the header pins and thus directly to the MCU pins. BUT the 16U2 chip is still attached to the TX0/RX0 pins through 1K resistors, the load produced by this can be overcome by the bluetooth module so it all works.

However the PRO MINI uses a CH340G usb-serial chip connected to the mcu and header pins through 22R resistors, this low resistance loads the TX/RX signals too much stopping the bluetooth working.

The fix I have found to work is to change the 22R (marked as 220 in SMD format) to 220R (either 221 or 2200 in SMD format). This reduces the loading on the bluetooth module enough to make it work.

I am not sure of the optimum resistor value or why it is 22R on the Pro Mini, to any electrical engineers out there who can calculate what we need please let me know.

The picture below shows the resistors to change.

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