micron radio control

Uplands House, Castle Howard Road, Malton YO17 6NJ
www.micronrc.co.uk
+44 (0)1653 696008

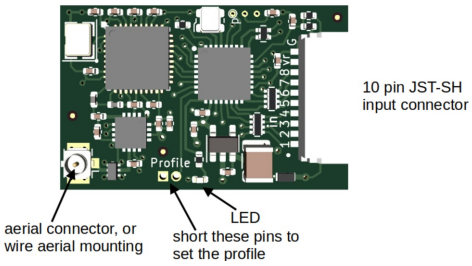
Micron MT01b Transmit Module (from v1.1)

MT01b is a radio module which can be used to make a 7 channel DSM2 2.4GHz transmitter. It is compatible with all Micron and Deltang receivers and the range is suitable for indoor and small outdoor sites.

THIS DOCUMENT IS INCOMPLETE. The current firmware functionality mirrors the Deltang Tx2 for profiles 1, 5, 6 and 7. Please contact Micron if you have any questions about usage.

Connections

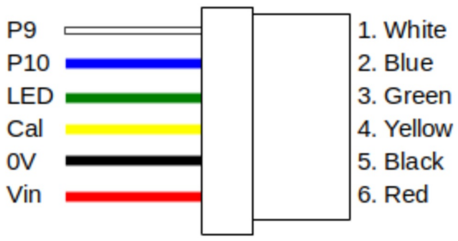
The module has 3 JST-SH connectors: a 10 pin for inputs, GND/0V and 3.3V regulated supply for analogue controls; a 6 pin for battery input and indicator LED; and a 3 pin for future serial input. All connectors have unused pins which are for future enhancements.



The MT01b on-board LED is repeated to an external LED via the JST-SH 6p, pin 3. This will need a series LED appropriate to the LED current and required brightness. A 1K ohm resistor is used on Micron transmitters - see one of the wiring diagrams below for an example LED connection. The on-board LED is switched off after 60 seconds.

6 pin power connector

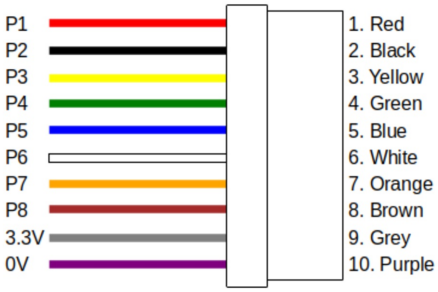
The only usable pins with the current firmware release are 3, 5 & 6 (LED, 0V, Vin). Pin 6 should be connected to the battery via an on/off switch; there is a diode on the MT01b board to protect against reverse polarity. P9, P10 and Cal will be supported in a future firmware release.



10 pin signal connector

Pins 1 to 7 are the control inputs, either analogue or digital depending on the selected profile. The max analogue input voltage for full control range is 1.65V. Any unused analogue inputs should be connected to negative to avoid input noise affecting adjacent analogue channels.

Pin 8 is not used by the current firmware release. Pin 9 provides a regulated 3.3V output for use with analogue controls; a voltage divider should be used so that the analogue input voltage varies between 0V and 1.65V - i.e. a 10k ohm potentiometer should have a 10k ohm resistor in series.



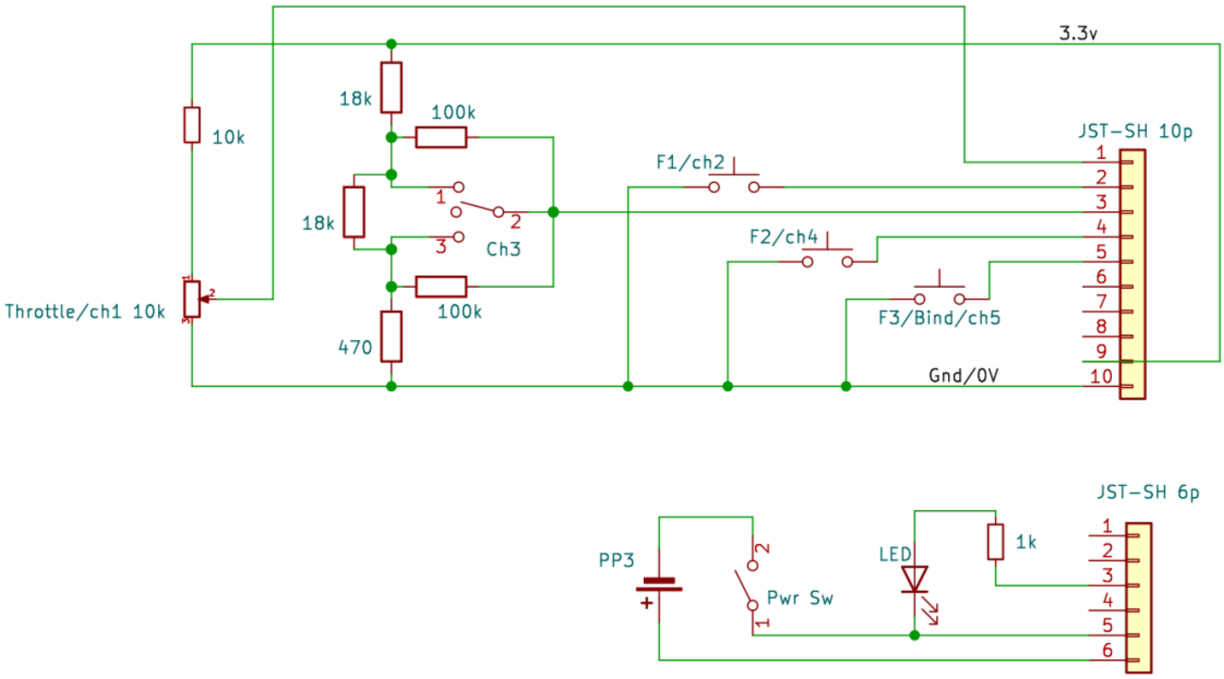
Profiles

MT01b profiles provide a collection of input types and are modelled on the Deltang Tx2. The current firmware version implementation supports only profiles 1, 5, 6 and 7; the other Deltang profiles will be added in a future firmware release.
Profile selection is made by:

- short the 'Profile' pads, e.g. with needle nose tweezers
- apply power to MT01b (JST-SH6p, pins 5 and 6)
- the LED will flash the current profile twice
- while the short is in place, the LED will scroll through the profile options (1, 5, 6)
- remove the short to select a profile
- switch off when the LED stays on

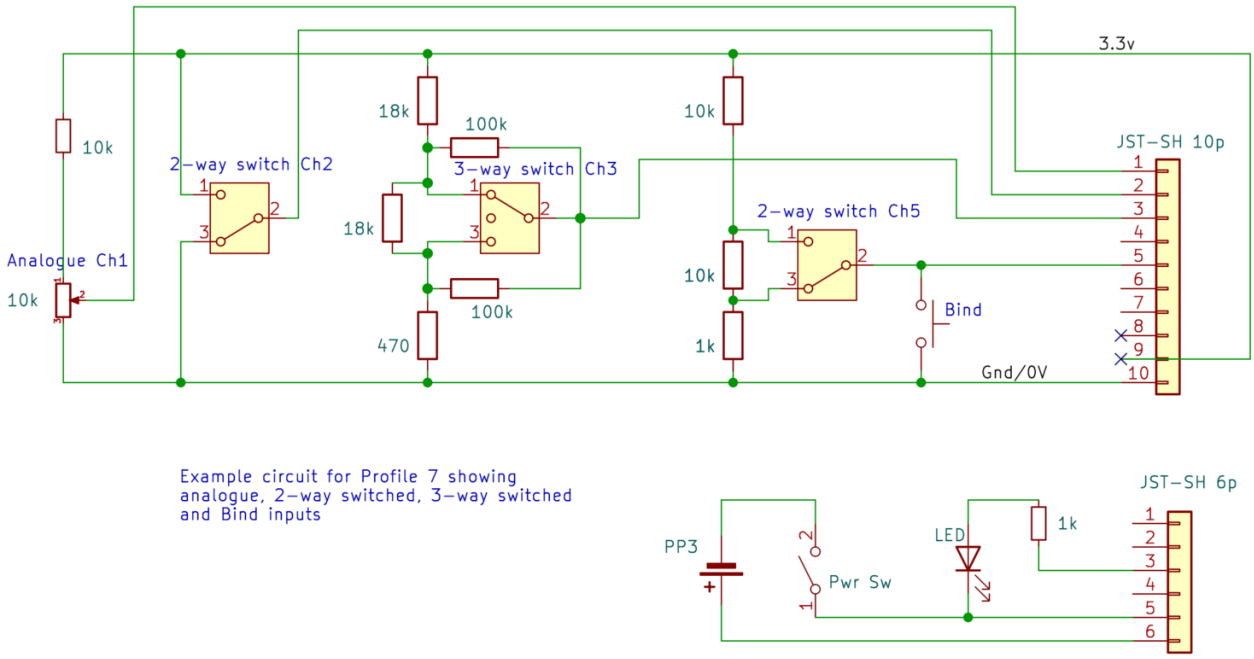
Tx20 Circuit - Profile 5

Tx20 is a model train controller and requires profile 5.



Profile 7

Profile 7 provides 7 analogue channels with no special features. Input 5 is dual purpose - analogue R/C ch5 and bind; thus, the input circuit should ensure that setting the analogue control to minimum should not place 0V on the input. This can be achieved using a low value resistor between the control and 0V, as on the example circuit below.



Example circuit for Profile 7 showing analogue, 2-way switched, 3-way switched and Bind inputs