

This is a PPM encoder which drives a conventional 2.4g RF module for the purpose of a remote, one-shot dethermaliser for free-flight model aircraft. The encoder is extremely simple but is based on well tested hardware and similar software to that used in the far more complex Single-Channel & Reeds Revival projects.

The original RDT encoder used an ICP07 PIC board, this particular revision uses the cheap Digispark Attiny85 board, simply because the ICP07 price has rocketed. Functionally, the two RDT boards are identical.

The DT trip encoder connects to almost any 2.4g RF module such as the Frsky DFT, Flysky RM002 or the very popular OrangeRx DSM2/DSMX module for Futaba which is available from HobbyKing for about £18.

Transmitter controls are simply an on-off switch and a DT trip-button. When first switched on, the servo is held in its 'rest' state. When the trip button is pressed, the DT servo operates for a short period then returns.

At the receiver, although there is only one function, four channels are provided for convenience as follows:

| Channel | Servo response                 |
|---------|--------------------------------|
| 1       | Normal direction, full throw   |
| 2       | Reversed direction, full throw |
| 3       | Normal direction, half throw   |
| 4       | Reversed direction, half throw |

In practise only one receiver channel will be used, the idea is to choose the channel which best suits the installation, although some receivers have failsafe only on channel 1, so this should be used if possible.

OrangeRx binding follows normal Spektrum procedure: Insert the bind plug into the receiver bind slot, and power up.

Whilst holding down the button on the module, power up the transmitter.

Once bound, the bind-plug can be removed.

Some micro-receivers enter bind mode automatically when powered up first before the transmitter.

Connections – the three-wire goes to the RF module, pos neg and PPM.

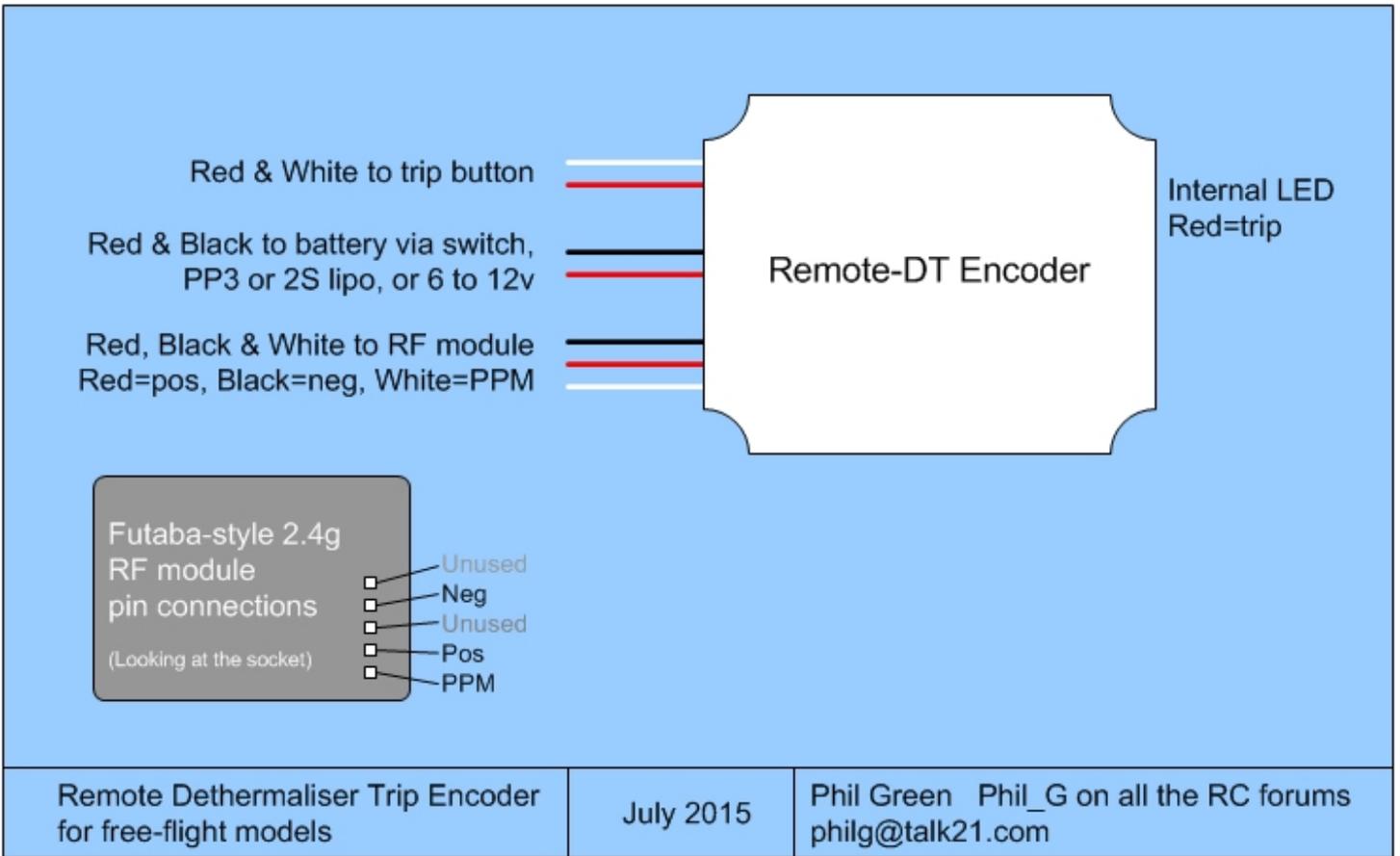
The two-wire red/black is switched battery power – a small 2S or 3S lipo is ideal, the battery type isn't critical – 8 nimh or even a PP3 Duracell will suffice.

The button connects to the red/white two-wire. The button itself is a normal single pole make contact and the on-off switch can be a small toggle or slide switch. Either can be changed to suit personal preferences.

Failsafe – may or may not be required, ie trip the DT on failsafe? Bear in mind that some receivers only have failsafe on channel 1 (normally throttle).

Any feedback would be appreciated, comments to [philg@talk21.com](mailto:philg@talk21.com) please.

Cheers  
Phil



Internal wiring:

