

DT 2.4GHz RECEIVER INSTRUCTIONS

Rx30 (6ch solder tabs)

Battery may be connected with correct orientation to designated points (6v max).

The Red dots in the diagram below are Positive (+).

The Blue dots are Negative (-).

The Green dots are signal connections/outputs.

Care is needed to avoid short circuits under the board.

The Tx/Rx may be switched On/Off in any order but startup scans are usually quicker if the Tx is switched on before the Rx.

Led On = perfect reception (real-time indicator).

Led Off = not perfect (useful for range tests/interference indicator).

1 flash = scanning (~2sec between flashes; wrong model if never stops).

2 flash = brownout (receiver voltage went too low; check battery/servo load).

4 flash = failsafe (signal lost for >1s eg: Tx switched off before Rx).

5 flash = watchdog (program recovery mechanism; should never happen).

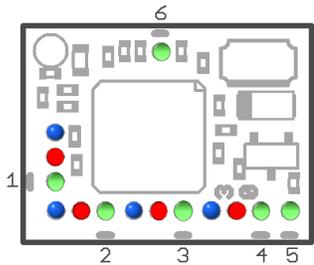
Note: Flashes are also used in Programming Mode (usually faster flashes).

FAILSAFE:

Outputs are not driven (do nothing) on startup and while scanning.

Outputs 'hold' on short signal losses (<1sec) and then do nothing (>1s).

The 'ESC' output requires throttle to be closed on startup to arm.



AUTO BIND (default mode):

1. The Rx will go into Bind mode 30 seconds after being switched on if no Tx signal is recognised; led will flash rapidly.

2. Switch Tx on in bind mode; led will go off and may flash.

3. Rx is bound and ready for use once led stays On.

4. If led does not come on within 20sec or continues flashing every 2sec (=scanning), the bind has failed. Allow several flashes then switch Tx and Rx off, move them closer or further apart and start again. Binding is more reliable with no other Tx's on.

MANUAL BIND:

If auto bind has been disabled, connect the Pin 6 to ground (-) while switching Rx on; led will flash rapidly. Pin 6 can be connected to either adjacent component/pad on the edge of the board. This connection may be removed once the Rx is powered up.

MODES OF OPERATION:

By default, the Rx is set up to drive six servos in what is called 'Mode 1'. The Rx can also be configured to drive external Fet's when set to 'Mode 2'. Both modes have options:

Mode 1 (default):

Pad1: Throttle	PPM (for servo/external ESC) (default) or pwm to drive external FET (for brushed motor/A1442)
Pad2: Aileron	PPM (for servo)
Pad3: Elevator	PPM (for servo)
Pad4: Rudder	PPM (for servo/external gyro)
Pad5: Gear	PPM (for servo)
Pad6: Aux1	PPM (for servo)

Mode 2:

Pad1: Throttle	PPM (for servo/external ESC) (default) or pwm to drive external FET (for brushed motor/A1442)
Pad2: Aileron	pwm to drive external A3901 (for actuator) - Rudder optional
Pad3: Aileron	pwm to drive external A3901 (for actuator) - Rudder optional
Pad4: Elevator	pwm to drive external A3901 (for actuator)
Pad5: Elevator	pwm to drive external A3901 (for actuator)
Pad6: Aux1	PPM (for servo)

The pwm output for throttle only requires an external Fet/protection diode to drive a brushed motor or A1442-type single-phase brushless controller. The output acts like an ESC; ie: close throttle to arm on startup and 3.0v LVC which can be disabled.

PROGRAMMING APPROACH:

Modes and other options are selected over radio link using the Elevator stick. High/Low selects alternatives and mid-stick then confirms a choice and moves on. 'High' means pushing the elevator stick towards the top of the Tx (if not reversed).

The led flashes the option currently being set (eg: single-flash 1sec apart).
The Rx assigns a value to each option (Low elevator=0; High=option number).
The Rx flashes the sum of all options once complete to confirm settings (eg: High on options 3 and 4 will yield 7 flashes after Tx switched off).

PROGRAMMING PROCEDURE ('Auto' mode):

1. Bind Rx to Tx and led will come on solid.
2. Keeping the Tx ON, switch the Rx OFF then ON until it reconnects again (led on).
3. Perform step 2 three times until led flashes the first program option (single-flash).
4. Use High/Low Elevator to make choices and mid-stick to confirm and move on
5. Switch Tx off at any time to save settings.
6. The led will then flash the sum of new program settings; switch Rx off when done.
7. Switch Rx off before Tx at any time to exit without saving changes.
8. To restore defaults, perform steps 1-3 and switch the Tx off (or select Low elevator on all options). The led will not flash after switching the Tx off because all options are reset to 0/Low.

PROGRAMMING PROCEDURE ('Manual' mode):

To enter program mode 'manually', Rx must already have been bound to Tx:

- 1B. Connect Pad1 to Pad2 while switching Rx ON; led will stay off.
- 2B. Switch Tx ON and wait for Rx to flash the first program option (single flash).
(the led will stay off if Tx is not bound or on wrong model memory)
- 3B. Perform steps 4-8 above.

PROGRAM OPTIONS/FLASHES (L=0=Default or not applicable):

1. L = Mode: 1 = PPM outputs (to drive servos/external esc's)
H = Mode: 2 = PWM outputs (to drive external actuator/esc board)
2. L = Pin1: PPM Throttle output to drive servo/external ESC
H = Pin1: PWM Throttle output to drive external FET (eg: for A1442)
3. L = Mode2 Pins2/3: AILERON (Pins 4/5=Elevator)
H = Mode2 Pins2/3: RUDDER (Pins 4/5=Elevator)
4. L = ESC low voltage cutoff: ENABLED
H = ESC low voltage cutoff: DISABLED
5. L = Bind & Program mode entry: AUTO
H = Bind & Program mode entry: MANUAL