Instruction Manual for FrSky TD MX Receiver

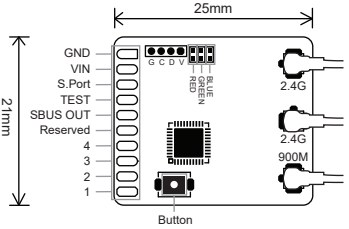
Introduction

Neither like other FrSky 2.4G receivers nor 900M receivers, the Tandem dual-band series receivers work simultaneously at both 900M and 2.4G frequencies that means it can give not only low latency signal control but long control range with an enhanced level of high reliability and anti-interference performance.

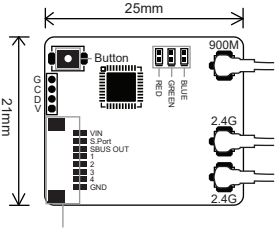
The Tandem series receivers adopt the triple antenna design that can give the multi-directional coverage as wide as possible for the remote signal. The 900M antenna comes with a newly designed small form factor, but it has the equivalent high-performance as the original 900M antenna.

TD MX offers 4 PWM channels on a small board with lightweight, and it also has multiple ports onboard like SBUS Out, S.Port. With the FBUS protocol, the Tandem series receivers can open up the possibility of seamlessly pairing with multiple telemetry devices (Neuron ESC, Advance Sensors, etc.) as well as simplifying the builds setup. In addition, the data (Power & Signal related) under unusual status during the flight can be recorded by Tandem receivers through the built-in black-box function.

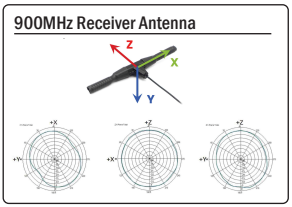
Overview



TD MX w/o wire connector



TD MX w/ wire connector



Specifications

- Frequency: 2.4GHz & 900MHz
- Dimension: 25*21*4mm (L*W*H)
- Weight: 7.1g
- Operating Voltage: 3.5-10V (Please ensure the supplied voltage exceed 2.8V during the use.)
- Operating Current: ≤185mA@5V
- Compatibility: Tandem series transmitter & TD protocol capable RF module
- Triple 2.4G/900M Antenna
- – 2*External 2.4G antenna (IPEX1)
- – 1*Newly designed 900M antenna

It only matches with the Tandem series transmitters with dual-band transmitter module.

Features

- Simultaneous working dual-band TD mode
- Triple antenna design for multi-directional coverage
- Black Box function
- 4ms Race Mode with Telemetry
- Long control range
- Over-The-Air (OTA) FW update
- 4 PWM channels
- S.Port (with the FBUS protocol)
- SBUS Out

Registration & Automatic binding

Follow the step below to finish the Registration & binding procedure:
1. For TANDEM X20 as an example,enter into the Model, select RF System, turn on the internal module, select status [ON] and TD MODE(Type). You can select Internal / External antenna and the power as you need, then select [Register].
2. Connect the battery to the receiver while holding the button on the receiver. The RED LED and GREEN LED on the receiver will be on, indicating into the [Reg] status.
3. When it shows the Register ID, RX name and UID,click [Register]. The RED LED and GREEN LED on the receiver will flash, and the transmitter displays [Registration OK].
4. Turn off the receiver.
5. Move the cursor to select any one of the 3 receivers [Bind].
6. Connect the battery to the receiver.
7. Select the RX, the GREEN will keep lit and the BLUE will flash. Then the transmitter displays [Bind successful].

Note: Once the receiver is registered, the button is not needed anymore in the binding process.

LED state

Green LED	Blue LED	Red LED	Status
On	Off	On	Register
Flash	Off	Flash	Register successfully
On	Off	On	Bind
On	Flash	Off	Bind successfully
On	Flash	Off	Working normally
Off	Off	On	Failsafe

How to switch the S.Port/F.Port/FBUS (F.Port2)

Enter into the Set-Options, click the Telem.Port, and select S.Port/F.Port/FBUS (F.Port2).

How to switch SBUS channel mode

Enter into RX Settings, click [SBUS], then select SBUS-16 mode or SBUS-24 mode.

How to enter into the Race mode (down to 4ms)

Enter into Model-RF system, select the Channel Range as CH1-CH8. Click [Switch Positions] and select a switch to start the race mode.

About OTA function

For TANDEM X20 as an example, go to the [File manager], and select the FW, press the enter button, select [Flash RX by int.OTA].Power on the receiver, select the RX, go to the [ENTER], complete the flash process, the transmitter will display [Success]. Wait for 3 seconds,the receiver works properly at the moment.

Note: Please do not do the binding operation in the near range while the firmware upgrading in progress.

Note: Update the firmware after the receiver getting registered (OTA).

Failsafe

Failsafe is a useful feature which is for a preset channel output position whenever control signal is lost for a period. Follow the steps to set Failsafe for channels necessary:
Failsafe for receiver supporting TANDEM can be set via transmitter interface, which support no pulse, hold and custom three modes for each channel.
For TANDEM X20 as an example, turn on the transmitter, go to: MODEL SETUP/Internal RF/Failsafe.

FCC STATEMENT

Product certificated FCC ID：XYFTDMR2409
1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
   1) This device may not cause harmful interference.
   2) This device must accept any interference received, including interference that may cause undesired operation.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate transmitter frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to transmitter communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to transmitter or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced transmitter/TV technician for help.