Introduction
The TANDEM X20 is a pioneering dual-band radio transmitter. It draws on feedback and experience with previous radios and adds many new features such as color touch screen, an ergonomic design that provides unprecedented comfort in the hand. On the RF side, we have given it the powerful RF system: the TD dual RF system, which does not simply replicate the combined features of the FrSky900MHz and 2.4GHz RF systems. The TD is characterized by its true simultaneous dual-band remote control with telemetry, enabling incredible and unmatched end-to-end latency. This radio ships with ETHOS, a completely new system that provides users with a powerful, intuitive, and flexible experience that maximizes the fun of the hobby.

Layout

Features
- **2.4GHz ACCESS Mode**: Super-low latency and long-range control with telemetry
- **Infinity 24 Antenna**: Up to 50 to 100km range and down to 4ms end-to-end latency
- **2.4G ACCST D16 Mode**: 900MHz ACCESS Mode (Compatible with ACCESS R9 868/915MHz Receivers)
- **Supports Multiple Working Modes**: 2.4GHz ACCESS Mode (Compatible with ACCESS Receivers), 900MHz ACCESS Mode (Compatible with ACCESS R9 868/915MHz Receivers)
- **Supports Running LUA Scripts**: Supports running LUA Scripts (in progress)
- **Supports Recharge System**: Supports Recharge System for 2S Li-ion Battery (USB Type-C Interface)
- **Plug and Play**: Supports Dual Operation Modes of Radio Display (Touch and Non-Touch)
- **High-Precision Hall-Sensor Gimbals**: High-Precision Hall-Sensor Gimbals with All-CNC Metal Panel
- **High-speed PARA Wireless Training System**: Supports PARA Wireless Training System (Compatible with FreeLink App3.0)
- **Supports Multi-Language Switching**: Supports Multi-Language Switching
- **Supports Recharge System**: Supports Recharge System for 2S Li-ion Battery (USB Type-C Interface)
- **Supports Dual Operation Modes**: Supports Dual Operation Modes of Radio Display (Touch and Non-Touch)
- **Supports Recharge System**: Supports Multi-Language Switching
- **Supports Multi-Language Switching**: Supports Recharge System for 2S Li-ion Battery (USB Type-C Interface)
- **Supports Recharge System**: Supports Multi-Language Switching
- **Supports Dual Operation Modes**: Supports Dual Operation Modes of Radio Display (Touch and Non-Touch)
- **Supports Recharge System**: Supports Multi-Language Switching
- **Supports Dual Operation Modes**: Supports Dual Operation Modes of Radio Display (Touch and Non-Touch)

Navigation Controls
The left navigation control does RTN, SYS, MDL, DISP and Page UP/Down. The right navigation control does RTN, SYS, MDL, DISP and Page UP/Down. The right navigation control does RTN, SYS, MDL, DISP and Page UP/Down.

25 Li-battery balance charging via USB-C:
The Green LED indicator states:
- LED on: in Charging/Discharging/End of charge/flash: charge fault
Battery capacity size: 84*41.5*20mm (L*W*H)

Step 1: Create the model
Step 2: Configure the model channel and create the model name.

Switch
- SA: 3 positions: Short Lever
- SB: 3 positions: Long Lever
- SC: 3 positions: Long Lever
- SD: 3 positions: Long Lever
- SE: 2 positions: Short Lever
- SF: 2 positions: Short Lever
- SG: 2 positions: Long Lever
- SH: 2 positions: Momentary, Long lever

You can choose the Switch and define its position in the HARDWARE menu.
1. Micro SD card is not provided with shipment.
2. USB port is for upgrading, reading/writing Micro SD card and internal memory of radio contents and charging.
3. Smart Port is for firmware upgrade for all FrSky SPort devices.

Specifications
- **Dimension**: 212*200*95 mm (L*W*H)
- **Weight**: 909g (without battery)
- **Operating system**: ETHOS
- **Internal RF module**: TANDEM
- **Number of Channels**: 24 channels
- **Operating Voltage Range**: 6.5 ~ 8.4V (2S Li-battery)

Note: Please keep the aircraft in the optimal radiation range of the directional antenna at all times.

Infinity 24 Antenna
Recommended 2.4GHz optional high-gain antenna for achieving higher performance and further range.

Zip9 (868MHz / 915MHz) Antenna
Recommended 900MHz optional high-gain antenna for achieving higher performance and further range.

Supports running LUA Scripts (in progress)

Hardware/Software Version and Factory Version Detection
- Supports Multi-Language Switching
- Supports Recharge System for 2S Li-ion Battery (USB Type-C Interface)
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Micro SD Card Port
External 2.4G Antenna

USB Adaptor Voltage: 5V+0.2V
~60 ℉ (14 ℃)

Model Setup Procedure-Internal Module
Step 1: Touch the screen or use the navigation keys to enter the RF system menu.

Choose the INT MODULE. Then turn ON INTERNAL RF, select the OUTSIDE or INSIDE ANTENNA (Dual internal antennas and external antenna work simultaneously while selecting the OUTSIDE ANTENNA).

Set the Mode for TANDEM X20 internal RF corresponding to your receiver (ACCESS, ACCST D16)

Supported Channels: 1-24 channels

The TANDEM RF module supports 24 channels, the channel range is configurable, and it needs to be double checked before use.

**Note**: Please keep the aircraft in the optimal radiation range of the directional antenna at all times.

Visit our website for more information on the TANDEM X20 Manual.
FrSky TANDEM X20 Manual

Version 1.0

FCC

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.

CE

The product may be used freely in these countries: Germany, UK, Italy, Spain, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway, France and Iceland.

Flying Safety

> Warning: To ensure the safety of yourself and others, please observe the following precautions:

> 1. Never use a transmitter in a hazardous environment or near flammable materials.
> 2. Do not operate your transmitter near power lines, buildings, or other tall structures.
> 3. Keep your transmitter away from water, high temperatures, and direct sunlight.
> 4. Always wear personal protective equipment when operating your transmitter.

Battery

> Use a fully charged battery (DC 6.5~8.4V). A low battery will cause loss of control.
> Do not charge your battery in a damp or humid environment.

Range Check

Range refers to TANDEM X20 range check mode. A pre-flight range check should be done before each flying session.

Model Setup for TANDEM X20 External RF Module

The external RF module can be powered on or off by software. The setup process is the same as that for the internal RF. External modules should be closed when not in use.

Updates

FrSky is continuously adding features and improvements to our radio systems. Updating (via USB Port or the Micro SD card) is easy and free. To get the most from your new transmitter, please check the download section of the FrSky website for the latest firmware and guide for adjusting your sticks. (www.frsky-c.com)

Step 3: Set the Receiver Number

The system will assign you the receiver number automatically, and you can change it if needed. This can be easily changed. The range of the Model ID is 00-63, with the default number being 01. Once the receiver number is set, it is not required to change in the future.

Step 4: Registration

In ACCESS model, select the STATE [Registered] into Registration status on radio side. Then Press the F/F button and power on your receiver, and select the RX name XX and [REGISTER] to complete the registration process.

Step 5: Automatic binding (Smart Match)

Move the cursor to RX1[BIND], and select it, power your receiver, select the RX, and complete the process. The system will confirm “Bind succeed.” (Pressing the “F/F” button is not required in ACCESS to bind. Please refer to the receivers manual for details).

Step 6: Set FailSafe mode

There are 3 failsafe modes when enabled: No Pulse, Hold, Custom.

Step 7: Range

Range refers to TANDEM X20 range check mode. A pre-flight range check should be done before each flying session.

Stop flying long before your batteries become over discharged. Do not rely on your radio’s low battery warning systems, intended only as a precaution, to tell you when to recharge. Always check your transmitter and receiver batteries prior to each flight.

Where to Fly

We recommend that you fly at a recognized model airplane flying field. You can find model clubs and fields by asking your nearest hobby dealer.

Always pay particular attention to the flying field’s rules, as well as the presence and location of spectators, the wind direction, and any obstacles on the field. Be very careful flying in areas near power lines, tall buildings, or communication facilities as there may be radio interference in their vicinity.

At the flying field

> 1. Turn off your transmitter before you use your transmitter.
> 2. Do not fly if you have never flown before.
> 3. Use a transmitter and receiver approved for use at this location.
> 4. Use a certified transmitter and receiver.

FrSky is continuously adding features and improvements to our radio systems. Updating (via USB Port or the Micro SD card) is easy and free. To get the most from your new transmitter, please check the download section of the FrSky website for the latest firmware and guide for adjusting your sticks. (www.frsky-c.com)