FrSky X20S

FrSky Tandem X20S Transmitter User Manual

Model: X20S
Brand: FrSky

1. Introduction

The FrSky Tandem X20S is a dual-band telemetry radio system designed for remote control applications. It integrates both 900MHz and 2.4GHz RF technologies into a single system, offering reliable communication with low latency. This transmitter features an ergonomic design, a color touch screen display, and operates on the ETHOS operating system, providing a flexible user experience.
This manual provides essential information for the proper setup, operation, and maintenance of your FrSky Tandem X20S Transmitter.

2. Product Overview

The Tandem X20S transmitter is equipped with a high-resolution color touch screen and various controls for precise operation.



Figure 2.1: Front view of the FrSky Tandem X20S Transmitter. This image shows the main display, gimbals, and control buttons, with the screen displaying the ETHOS system menu.



Figure 2.2: Angled view of the FrSky Tandem X20S Transmitter. This image highlights the ergonomic design and the placement of the gimbals and switches, resting on a clear stand.

3. Key Features

- **Built-in TD 900M/2.4G Dual-Band Internal RF Module:** Supports multiple working modes including 2.4G ACCST D16 (V2 or later FW), 2.4G ACCESS, 900M ACCESS (R9 868/915MHz Receivers), and 2.4G & 900M TD Mode. Capable of simultaneous operation under ACCESS mode.
- **Performance:** Offers super-low latency and long-range control with telemetry, achieving reliable end-to-end 4ms latency.
- **Display:** Features an 800x480 pixel color touch-screen display.
- **Controls:** Includes 6 quick-mode custom buttons on the front and 2 momentary buttons on the rear. All CNC metal trims and knobs.
- **External Module Bay:** Lite type external module bay for connecting additional devices (e.g., R9M Lite, XJT Lite).
- **Sensors:** Built-in 6-axis gyroscope sensor.
- **Alerts:** Haptic vibration alerts and voice speech outputs. Supports SWR Indicator Warning.
- **Battery System:** Supports recharge system for 2S Li-ion battery via USB Type-C interface.
- **Wireless Connectivity:** High-speed PARA Wireless Training System (compatible with FreeLink App3.0) and built-in Audio Wireless Module (compatible with Bluetooth Audio Device).
- **Gimbals:** All CNC high-precision Hall-sensor gimbals with 10 ball-bearings, adjustable 45° to 60° stick travel, and 8° rotatable panel.
- **Operating System:** ETHOS, a powerful, flexible, and intuitive OS with clear UI design, dual operation modes (touch and non-touch), multi-language switching, and LUA script support.

4. Setup

4.1 Initial Power-Up and Battery Charging

The Tandem X20S uses a 2S Li-ion battery. Before first use, ensure the battery is adequately charged. Connect the transmitter to a USB Type-C power source using the provided cable. The charging status will be indicated on the display.

4.2 Binding Receivers

To establish communication between the transmitter and a receiver, a binding process is required. The X20S supports TD, ACCESS, and ACCST D16 protocols.

1. Power on the transmitter and navigate to the Model Setup menu.
2. Select the internal RF module and choose the desired protocol (TD, ACCESS, or ACCST D16).
3. Initiate the binding process on the transmitter.
4. Place your receiver into binding mode (refer to your receiver's manual for specific instructions).
5. Once bound, power cycle both the transmitter and receiver to confirm the connection.

4.3 External Module Installation

The Lite type external module bay allows for the installation of compatible external RF modules (e.g., FrSky R9M Lite, XJT Lite). To install, align the module with the bay and gently push until it clicks into place. Ensure the module is securely seated before operation.

4.4 ETHOS Operating System Navigation

The ETHOS OS features a clear and intuitive user interface. Use the color touch-screen for direct interaction or the navigation buttons and scroll wheels for non-touch operation. The main menu provides access to model settings, system configurations, and telemetry data.

5. Operation

5.1 Model Creation and Configuration

To create a new model, access the Model Setup menu in ETHOS. Follow the on-screen prompts to configure aircraft type, channel assignments, mixes, and flight modes. The 6 quick-mode custom buttons on the front can be assigned to frequently used functions or flight modes for rapid access.

5.2 Gimbal Adjustment

The Hall-sensor gimbals offer adjustable stick travel (45° to 60°) and an 8° rotatable panel for personalized comfort and control. Adjustments can typically be made by accessing the gimbal calibration menu or through physical adjustments as described in the detailed product manual (not included here).

5.3 Telemetry Functions

The Tandem X20S provides real-time telemetry data from compatible receivers. This data, such as battery voltage, signal strength, and GPS information, can be displayed on the screen and configured for voice alerts or haptic feedback.

5.4 Wireless Training System

Utilize the high-speed PARA Wireless Training System by connecting to a compatible FreeLink App3.0. This feature allows for wireless trainer/student setups, enhancing learning and instruction.

5.5 Bluetooth Audio

The built-in Audio Wireless Module enables connection to Bluetooth audio devices for voice alerts and other audio outputs, providing a hands-free experience during operation.

6. Maintenance

6.1 Battery Care

Regularly charge the 2S Li-ion battery using the USB Type-C port. Avoid over-discharging or over-charging the battery to prolong its lifespan. Store the transmitter with the battery at approximately 50% charge if not used for extended periods.

6.2 Cleaning

Clean the transmitter's exterior with a soft, dry cloth. For the touch screen, use a microfiber cloth specifically designed for electronics. Avoid using harsh chemicals or abrasive materials that could damage the finish or screen.

6.3 Storage

Store the FrSky Tandem X20S Transmitter in a cool, dry place, away from direct sunlight and extreme temperatures. Use a protective case to prevent physical damage during transport or storage.

7. Troubleshooting

7.1 Power Issues

- **Transmitter does not power on:** Ensure the battery is fully charged. Check the USB-C connection if attempting to charge.
- **Short battery life:** Verify battery health. Ensure no background processes are excessively draining power.

7.2 Binding and Signal Issues

- **Unable to bind receiver:** Confirm both transmitter and receiver are in binding mode. Ensure the correct RF protocol (TD, ACCESS, ACCST D16) is selected on the transmitter. Check receiver compatibility and firmware versions.
- **Loss of signal:** Perform a range check. Ensure antennas are properly positioned on both transmitter and receiver. Check for potential interference sources.
- **SWR Indicator Warning:** If the SWR (Standing Wave Ratio) indicator shows a warning, it suggests an issue with the antenna system. Check the transmitter antenna for damage or improper connection.

7.3 Display and Control Issues

- **Touch screen unresponsive:** Try restarting the transmitter. Ensure the screen is clean and free of debris.
- **Gimbal calibration issues:** Access the calibration menu in ETHOS OS and follow the instructions to recalibrate the gimbals.

8. Specifications

Feature	Specification
Brand	FrSky
Model Number	FRS-3010136
RF Module	Built-in TD 900M/2.4G Dual-Band Internal RF Module

Feature	Specification
Operating System	ETHOS
Display	800*480 Color Touch-Screen
Gimbals	CNC High-Precision Hall-Sensor Gimbals (adjustable 45°-60° travel, 8° rotatable)
External Module Bay	Lite Type
Battery Type	2S Li-ion (rechargeable via USB Type-C)
Connectivity Technology	Bluetooth, USB
Item Weight	3.94 pounds
Package Dimensions	12.48 x 10.12 x 5.16 inches
Number of Channels	4

9. Official Product Videos

No official product videos from the seller are available for embedding at this time.

10. Warranty and Support

For warranty information and technical support, please refer to the official FrSky website or contact your authorized FrSky dealer. Keep your proof of purchase for warranty claims.
Regularly check the FrSky website for firmware updates for both the transmitter and compatible receivers to ensure optimal performance and access to the latest features.

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Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question