Introduction

The RB-35/RB-35S builds on the success of the previous trusted Redundancy Bus series by adding many new features, such as configurable dual power input, dual BEC outputs, overload / current detection, the new ADV stabilizer (RB-35S), etc. The RB-35/RB-35S system has been designed to meet the needs of users who want the ultimate flight-safe performance and safety for their RC Models.

Triple Receiver Redundancy & Dual Power Input

RB-35/RB-35S has been designed to offer both dual-power and triple-receiver redundancy. This provides the user triple receiver signal and telemetry redundancy by adding multiplex ports (RX1-3 IN / S.Port). Dual-power provides a safe and efficient way to power the system with your power sources connected via a pair of standard XT30 connections.

The dual-power consumption system can operate either in Balance or Backup mode. In Balance Mode (default), it consumes the power line from either power source depending on which has the higher voltage. When switching to the Backup Mode, the system consumes the power line with the priority that the user selected under the set voltage range.

Dual BEC Outputs & Overload Protection & Current Detection

The RB-35/RB-35S includes a built-in Dual BEC, each XT30 output port can be independently configured to provide between 5V to 8.4V output. The unit's BEC also can change channel output voltage for ports uses BEC1- VOut1 and Channels 1-9, and BEC2 - VOut2 and all other Channels and ports. All Channel ports are provided with overload protection, and in addition, Channels 1-9 support the current detection function.

Advanced Stabilizer (RB-35S)

The RB-35S offers an ADV Stabilizer function which is an upgrade over the original classical gyroscope stabilization modes. The ADV Stabilizer offers an advanced mode that provides more programmable stabilized channels and flexibility.

The classic stabilization mode has been enhanced with 5 additional stabilization channels, providing pin mapping to each channel in the multiple flight modes like Stabilization, Auto-Level, Hover, and Knife-Edge with an airplane model.

In the advanced stabilization mode, all the RB-35S output pins are configurable for stabilization and additional advanced features such as File Sharing, Programmable Parameters, Developer Access, etc.

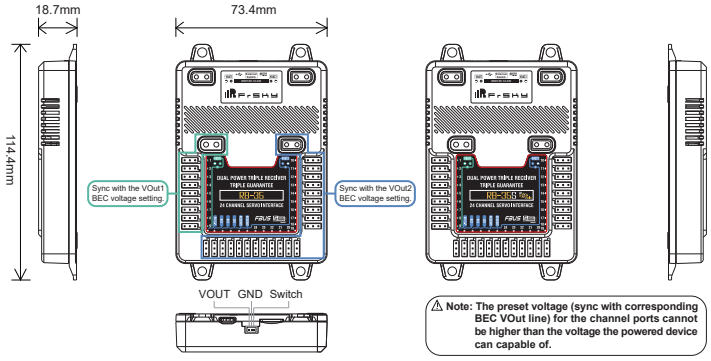
Diversified Sensor Telemetry

The RB-35/RB-35S also works as an extensive sensor module. It has various built-in sensors including diversified telemetry. The RB-35S includes high-precision telemetry sensors for monitoring altitude, vertical speed, etc. It can be used as an alternative to using a GR or S series receiver.

Power Switch Function

The built-in power switch function draws the support of using multiple types of external switches (e.g. NFC switch, Pin Plug, etc.) that enable flexible options on how the power can be switched on/off without the need to plug/unplug the battery connections.

Overview



Instruction Manual for FrSky RB-35 & RB-35S

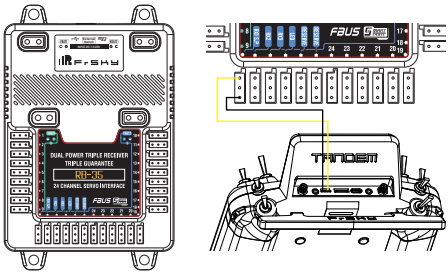
Specifications

- Dimension: 114.4*73.4*18.7mm (L*W*H)
- Weight: 98g (RB-35) / 99g (RB-35S)
- Number of Configurable Channel Ports: 24 (PWM/FBUS/S.Port/SBUS Out)
- 3 RX Input Ports & 1 LED Indicator Port
- Battery Input Voltage Range: DC7.4-26V (It is recommended to use 3S-6S Li batteries)
  (Note: 2S Li Batteries will not have sufficient input supply voltage to reach the 8.4V BEC output configuration.)
- Operating Current: 200mA@12V
- Continuous Current: 2*15A@5-8.4V (BEC Outputs)
- Operating Temperature: -20°C~75°C
- Battery Input & BEC Output Connector: XT30

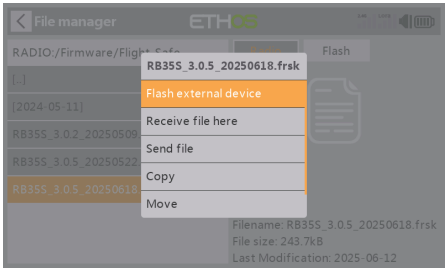
Features

- Dual Power Input & Triple Receiver Redundant Guarantee
- RX In | FBUS/SBUS/S.Port Auto Recognization
  (Note: Only the S.Port on the RX1 channel port can be used to upgrade firmware.)
- Built-in Advanced Stabilization Functions (RB-35S)
- Built-in High-Precision Telemetry Sensor (Altitude, Vertical Speed, etc.) (RB-35S)
- Built-in Power Switch Function | Match with Different External Switches (Optional)
- Dual Power Input (Balance / Backup mode)
- Independently Configurable Dual BEC Outputs
  (BEC 1: VOut1 & CH1-9 | BEC 2: VOut2 & CH10-24 & all other Ports)
- Overload Protection on Each Channel
- Channel1-9 with Current Detection
- Full Black Box Data Record Function
- Supports External LED Indication (RB-35S)

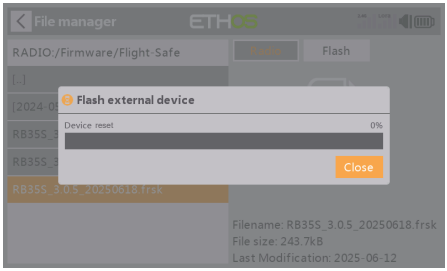
How to Update the Firmware for RB35/RB35S



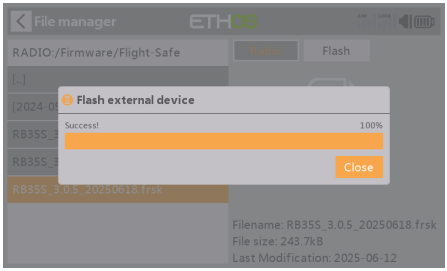
1. Disconnect the "+" wire, and connect only the Signal and "-" (ground) wires from RX S.Port to the S.Port of your ETHOS radio.



2. Copy the firmware file to your radio. Use the File Manager tool to locate it, then select the file and choose "Flash external device."

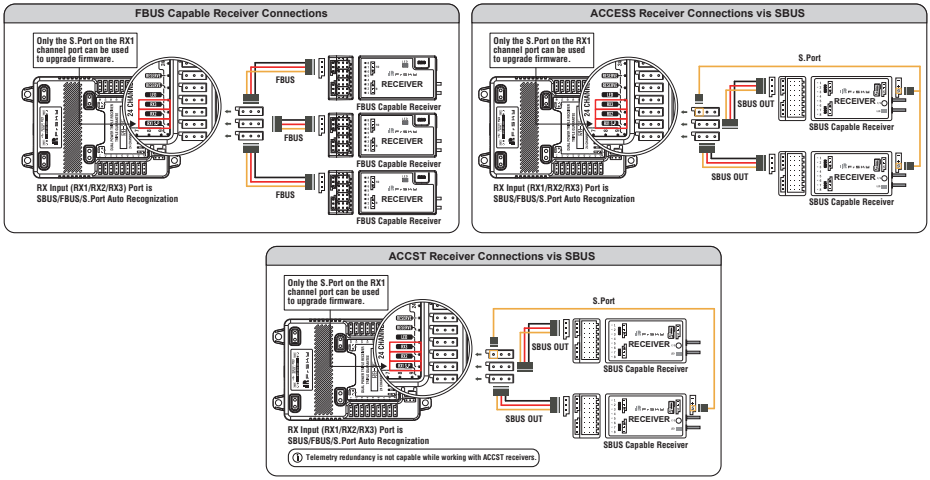


3. When a progress bar window appears with a "Device reset" message, wait approximately 3 seconds, then power on the RB35/RB35S.



4. When the message changes to "Flashing," simply wait until the process completes.

Setup Guide - Redundant Signal Control with Telemetry



How to set the RB35/RB35S functions.

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Setup Guide Suitable for

Firmware	v3.0.5 or later
Lua	v2.1.5 or later
ETHOS	v1.6.0 or later

New Version Notes

1. Added Heading Hold mode. (RB35S)
2. Added support for configuring up to 15 banks of Gyro parameter memories. (RB35S)
3. Introduced Gyro parameter Copy & Preset features. (RB35S)
4. Enhanced flexibility in Flight Mode settings (Enabling user-assignment of control channel and switch). (RB35S)
5. Enabled user-assignment ability of Gain Adjustment channel. (RB35S)
6. Added low-voltage read/write protection: To ensure the device operates properly, the device must be powered by BAT1 and/or BAT2, with at least one maintaining a voltage above 6.0V. Otherwise, any modifications made by LUA scripts will NOT be saved to storage.
7. Fixed known issues (including FBUS functionality, etc.) (RB35/RB35S)

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Setup Guide Suitable for

Firmware	v20240511 or before
Lua	v1.x
ETHOS	before v1.6.0

History Version Notes

1. It is recommended to update to the latest version (FW, Lua & ETHOS) for a more user-friendly configuration experience and access to new features (Heading Hold mode, Gyro Memory, etc.).

FrSky is continuously adding features and improvements to our products. To get the most from your product, please check the download section of the FrSky website www.frsky-rc.com for the latest update firmware and manuals