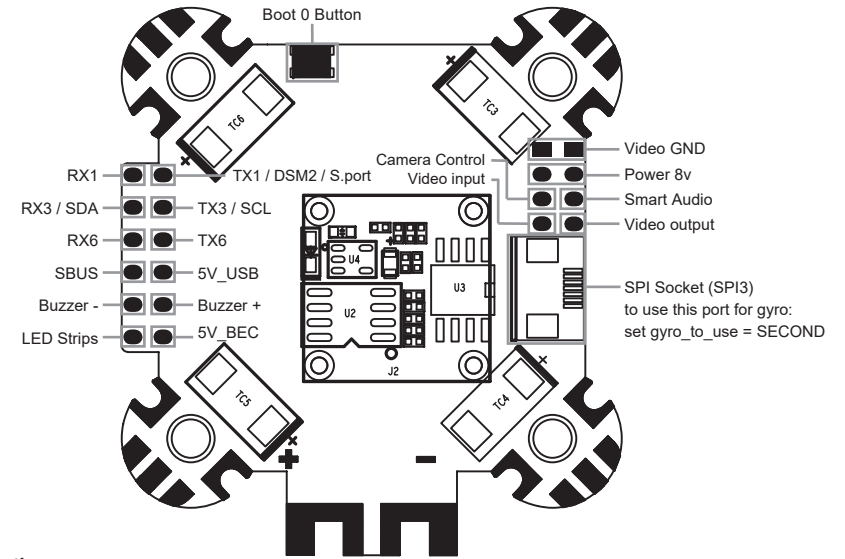
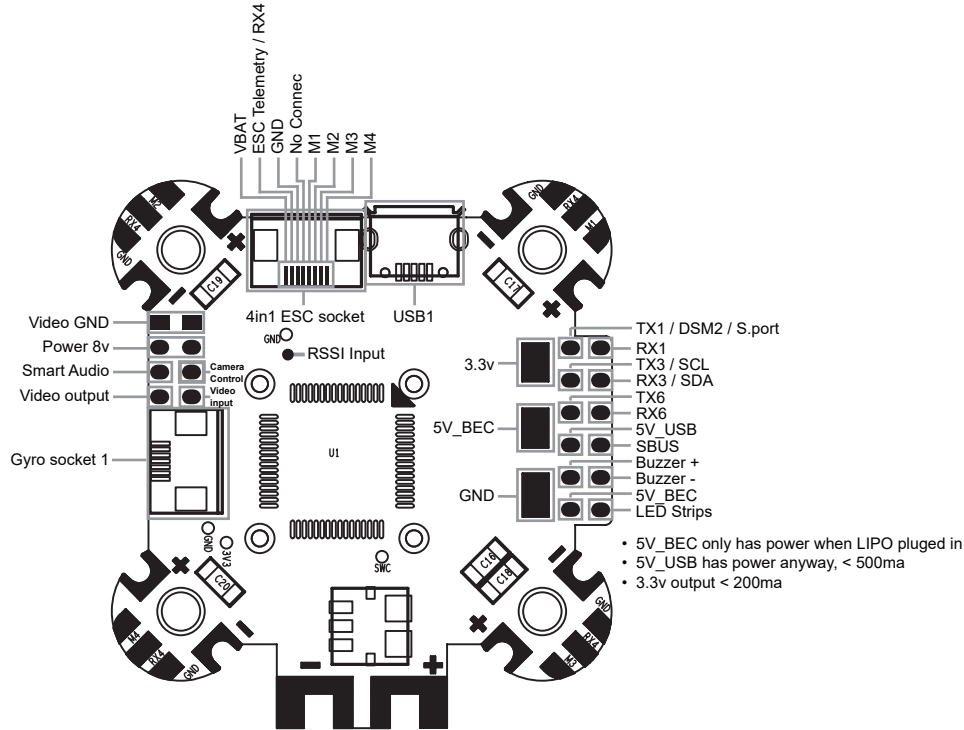


Introduction

The FrSky RXSR-FC (OMNIBUS F4 Fireworks V2) uses the ICM20608 over SPI to produce stable flight performance. Integrated with the RXSR receiver mounted on-board protection box, and the ICM20608 runs perfectly under 32k Gyro loop. Also onboard are a barometer and AB7456 OSD chip for the Betaflight integrated OSD.

The RXSR-FC (OMNIBUS F4 Fireworks V2) supports 3-6s Lipo direct input, built-in hall Current Sensor and Power Filter as well. The on Board PDB is tweaked by using 12-Layer PCB design. There is only 0.2-0.5 mohm internal resistance from input to each output pad.

Overview



Specification

- FrSky RXSR receiver in protection box
- ICM20608 over SPI Bus in dampening box (optional MPU6000)
- 30.5x30.5 mm mounting holes
- Supports Lipo direct plug-in (3-6S)
- Built-in sensor damper
- More caps to reduce power noise.
- STM32 F405 MCU, Runs Betaflight firmware (supported from v3.2)
- Supports 5V 1A BEC output (Buck)
- Supports 8V 1A BEC with LC filter output for the camera and VTX (Buck)
- STM32 controls OSD chip over SPI in DMA mode (Betaflight OSD)
- Built-in hall Current Sensor
- Built-in Professional Level PDB

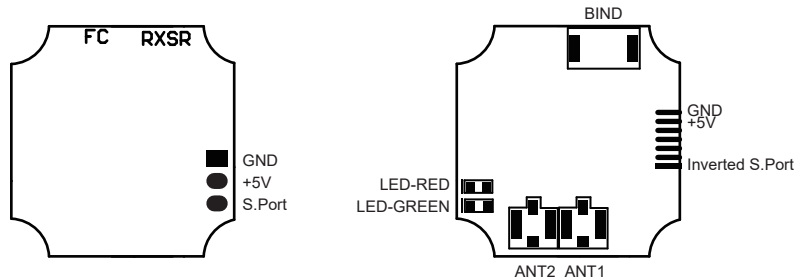
Features

- Tantalum Capacitors can be added to the board (not included)
- The orientation of IMU FPC optimized
- This board now has 5 UART ports
- Solder pads added for VTX and Camera Control (next to Video pads)
- Gyro ribbon cable redesigned to fit without extending outside the board
- Added an 8v BEC and LC Filter for the camera and VTX power

Resources

Function	Solder Pad Silk screen	Resources	MCU Pin	Notes
SBUS	RC	UART1	PA10	Build-in invertera
DSM2	TX1	UART1	PA9	CLI serialrx_halfduplex set to ON
Smart Audio VTX	S/A	UART2	PA2	
Smartport	TX1	Software serial	PA9	Invalid when using DSM2 RX
ESC Telemetry	RX4	UART4	PA1	
Camera Control	CAM_C		PB9	
IIC2_SDA	RX3	UART3	PB11	
IIC2_SCL	TX3	UART3	PB10	
GPS	RX6/TX6	UART6	PC7/PC6	
WS2812B LED	LED		PB6	
Buzzer	Bz-/Bz+		PB4	
Current sensor scale				175
Current sensor offset				-19700 (±2000)
Current range				default 150A extended by sample resistor up to 320A

Overview



Specifications

- Dimension: 12.4*12.8*3mm (L x W x H)
- Weight: 1g
- Number of Channels: 16Ch
- Operating Voltage Range: DC 4V~6V
- Operating Current: 100mA@5V
- Operating Range: Full range
- Firmware Upgradable
- Compatibility: FrSky X-series module & radios in D16 mode

Features

- F.Port enabled and supported telemetry data transmission
- Inverted S.Port enabled

Binding Procedure

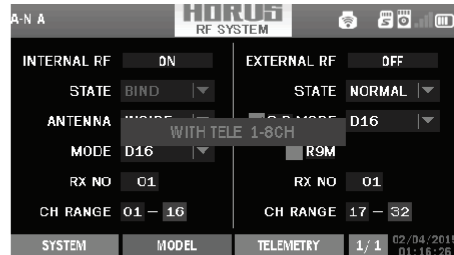
Binding is the process of uniquely associating receiver to a transmitter/transmitter RF module. A transmitter internal or external RF module can be bound to multiple receivers (not to be used simultaneously). A receiver can only be bound to one RF module. Follow the steps below to finish the binding procedure.

1. Put the transmitter/transmitter RF module into binding mode

1.1 For Taranis X9D/X9D Plus/X9E and Taranis Q X7/ Taranis X-Lite, turn on the radio, go to the MENU – MODEL SETUP – PAGE 2, choose Internal or External RF, and select BIND.



1.2 For Horus X12S/X10, turn on the radio, go to the RF SYSTEM, choose Internal or External RF, and select BIND under STATE.



- 1.3 For transmitter RF module (XJT as an example), turn on the radio while holding the FS button on the module, release the button and the RED LED on XJT module flash.
2. Connect battery to the receiver while holding the Bind button on the receiver, the RED LED flashing indicates binding successfully.
3. Reboot the receiver and go back to normal Mode of transmitter RF. Green LED constant on indicates linking normally. The receiver/transmitter module binding will not have to be repeated, unless one of the two is replaced.

Note: After binding procedure is completed , power on the radio and the receiver and check if the receiver is really under control by linked transmitter.

Note: For Horus X12S/X10, you can enable/disable telemetry and set channel Output for RXSR-FC in RF SYSTEM page.

Range Check

A pre-flight range check should be done before each flying session. Reflections from nearby metal fences, concrete buildings or trees can cause loss of signal both during range check and during the flight. Under Range Check Mode, the RF power would be decreased and Range distance to 1/30~1/10 that of Normal Model, about 30 meters.

1. Place the model at least 60cm (two feet) above non-metal contaminated ground(e.g on a wooden bench). The receiver antenna should be in vertical position.
2. For Taranis X9D/X9D Plus/X9E and Taranis Q X7/ Taranis X-Lite, turn on the radio and the receiver, go to : MODEL SETUP/Internal RF/Range.
3. For Horus X12S/X10, turn on the radio and the receiver, go to: MOL/RF SYSTEM/INTERNAL RF(ON)/STATE(Range).
4. For transmitter RF module, please refer to its manual.

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 D16 RF mode setting can be set via radio interface, which support no pulse, hold and custom three modes for each channel.

1. For Taranis X9D/X9D Plus/X9E and Taranis Q X7/ Taranis X-Lite, turn on the radio, go to: MODEL SETUP/Internal RF/ Failsafe.
2. For Horus X12S/X10, turn on the radio, go to: MOL/FAIL SAFE.

