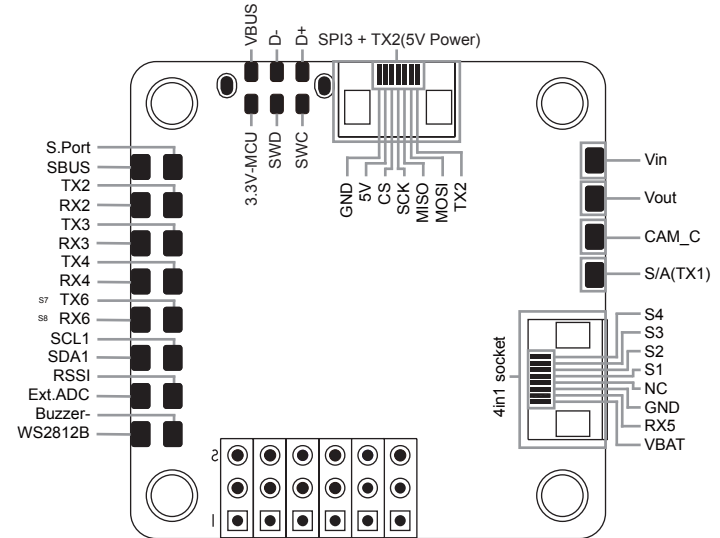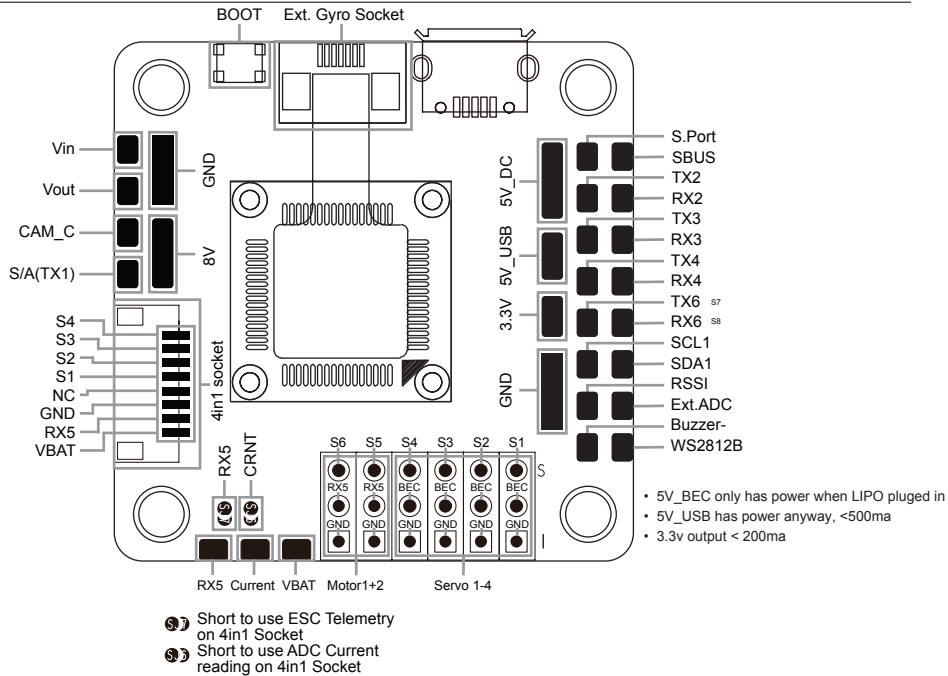## Introduction

The FrSky RXSR-FC (OMNINXT F7) is developed based on the newly designed NXT architecture. It is integrated with the RXSR receiver mounted in a dampening box, and uses the trusty MPU6000 Gyro with an additional ICM20608 on top. With the on-board protection box, the gyros run perfectly on 32k loop time. The NXT also comes with 2 different BECs and 6 UARTs.

The RXSR-FC (OMNINXT F7) supports 3-6s Lipo direct input, built-in BEC for camera / VTX and Power Filter. This FC is designed to be able to pair with 4in1 ESCs to form a powerful combo, and also has pins for individual ESCs.

Overview

- 5V_BEC only has power when LIPO pluged in
- 5V_USB has power anyway, <500ma
- 3.3v output < 200ma

Short to use ESC Telemetry on 4in1 Socket
Short to use ADC Current reading on 4in1 Socket

Specification

- F7 MCU processors
- FrSky RXSR receiver in dprotection box
- Two gyros onboard: MPU6000 for sampling up to 8khz and ICM20608 for sampling up to 32khz
- 30.5×30.5mm Mounting holes
- Supports 3-6S Lipo
- More caps to reduce power noise

- Built-in sensor damper
- Built-in 5V 1A BEC output (Buck)
- Built-in 8V 1A BEC with LC filter output for the camera and VTX (Buck)
- STM32 controls OSD chip over SPI in DMA mode (Betaflight OSD)
- Port for easy connection to 4-in-1 esc (SH1.0 8P)
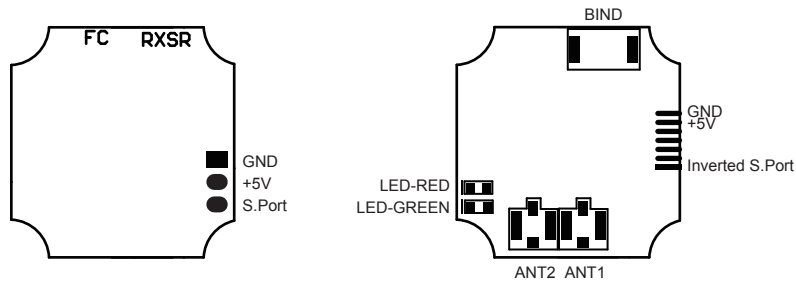- Solder pads added for VTXand Camera Control (next to Video pads)

Features

- RXSR Receiver
- Gyro #1: MPU6000 8kHz
- Gyro #2: ICM20608 32kHz
- STM32 F7 MCU Processor
- Integrated PDB & OSD (SPI/DMA)
- 6UART Ports
- Direct plug-in 3-6S Lipo
- 5V 1000mA BEC
- 8V 1000mA BEC with LC filter
- 3V max. 200mA

Resources

Function	Solder Pad Silk screen	Resouces	MCU Pin	Notes
SBUS				Any UART RX
DSM2				Any UART
Smart Audio VTX	S/A	UART1	PB6	
Smartport				Any UART TX as half duplex
ESC Telemetry	RX5	UART5	PD2	
Camera Control	CAM_C		PB15	
IIC1_SDA	SDA		PB9	
IIC1_SCL	SCL		PB8	
GPS				Any UART
WS2812B LED	LED		PA9	
Buzzer	Bz-/Bz+		PC13	
Current sensor scale				NONE
Current sensor offset				NONE
Current range				NONE

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.
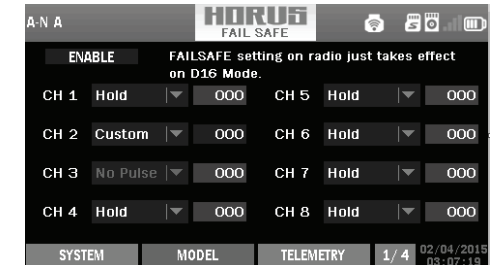
3. Failsafe can be set on receiver via short press Bind button while moving channel position to a preset value after binding.

Note: Failsafe setting via transmitter for channel output position just for D16 RF mode, and Failsafe setting via transmitter has higher priority to setting via receiver. A reasonable Failsafe setting can decrease falling risk and damage.

Much more operation and instruction please refer to radio manual.

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.