How to Connect F4 2S AIO Brushless FC with External RX on Beta85 Pro 2 / Beta75 Pro 2 / Beta65 Pro 2 / Beta75 Pro / Beta65 Pro

Created by: Technical Support
Modified on: Sat, 12 Oct, 2019 at 5:52 PM

Note: ONLY F4 2S AIO Brushless FC(No RX) (https://betafpv.com/collections/brushless-flight-controller/products/f4-2s-aio-brushless-flight-controller-frsky-rx-osd-esc?variant=13327259598892)can connect Frsky R-XSR. When you connect the receiver to FC, please don't forget to plug the battery, otherwise the reciver will not work at all because if you don't plug the battery, the reciver doesn't have any power to work.
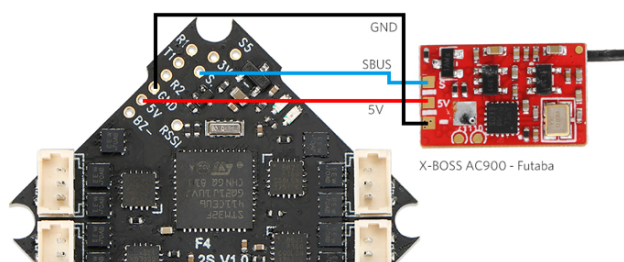
Receiver Connection

1) How to connect a receiver with SBUS signal output (Frsky XM+ (https://betafpv.com/collections/rx-tx/products/frsky-xm-sbus-mini-receiver) / AC900 Dual Mode Receiver (FrSky & FUTABA) (https://betafpv.com/collections/rx-tx/products/x-boss-ac900-dual-mode-receiver-frsky-rx-futaba-rx) for example).

Here are the connection diagrams with XM+ receiver and AC900 Dual Mode Receiver (FrSky & FUTABA)
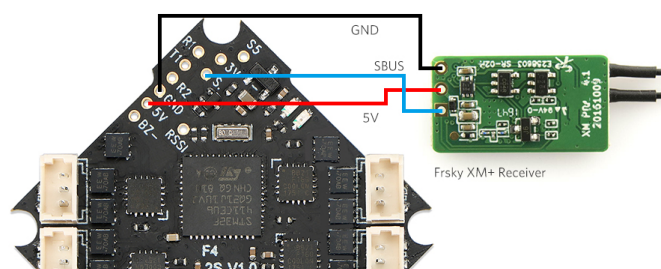
We use the AUX12 channel as the RSSI signal channel in XM+ receiver.

Step 1, on Betaflight GUI, configure the UART1 port to serial port in Ports tab. Then click the Save and Reboot button in the lower right corner.

Step 2, in the Configuration tab, for Receiver Mode, choose Serial_based receiver (SPEKSAT, SBUS, SUMD); Serial Receiver Provider, choose SBUS. And click the Save and Reboot button in the lower right corner.
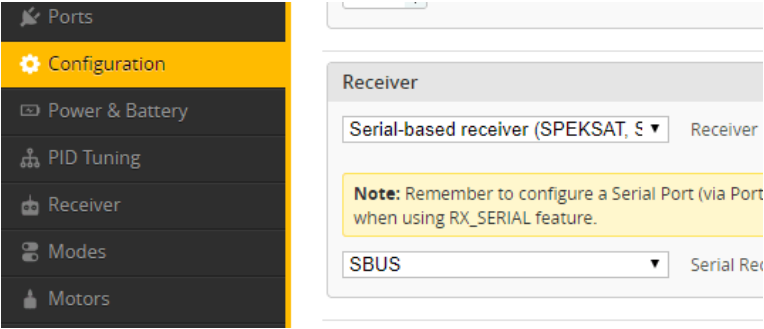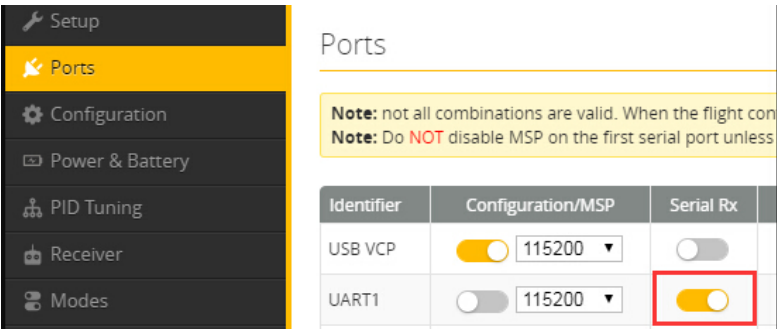

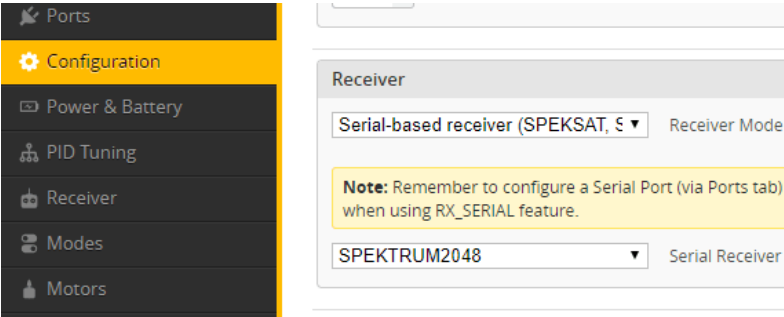## 2) How to connect a receiver with DSMX signal output.

Here is the connection diagram with micro DSMX receiver.
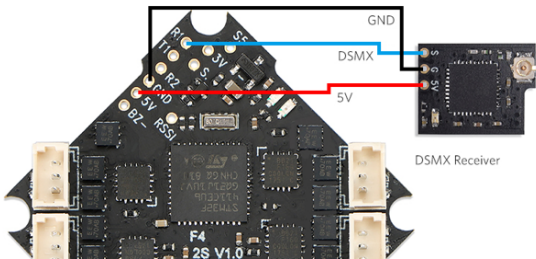
Step 1, on Betaflight GUI, configure the UART1 port to serial port in Ports tab. Then click the Save and Reboot button in the lower right corner.


Step 2, in the Configuration tab, for Receiver Mode, choose Serial_based receiver (SPEKSAT, SBUS, SUMD); Serial Receiver Provider, choose SPEKTRUM2048. And click the Save and Reboot button in the lower right corner.


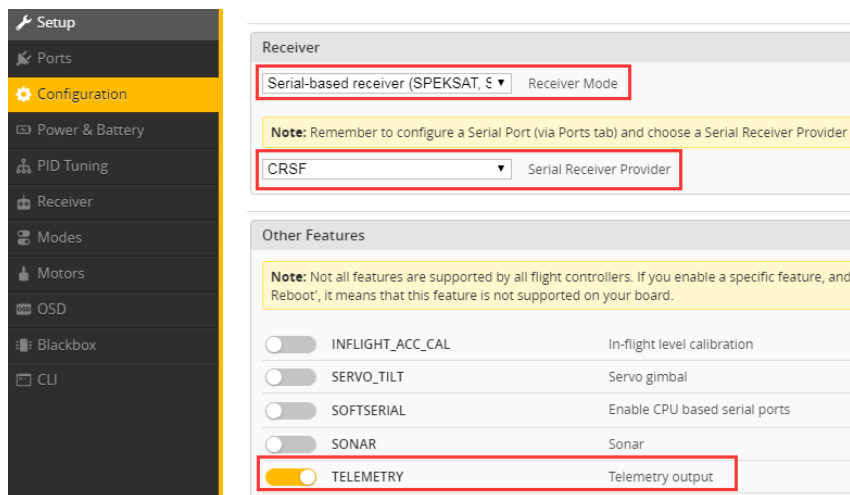## 3) How to connect a receiver with TBS Crossfire signal output (TBS Crossfire Nano Rx for example).

Here is the connection diagram with Crossfire Nano receiver. Using the UART1 on the FC board on the diagram below.

TBS CROSSFIRE NANO RX
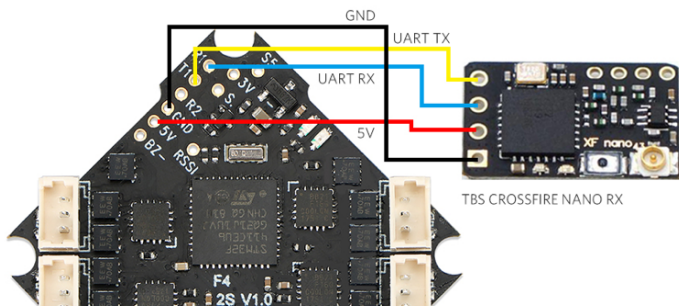
On Betaflight GUI, configure the UART1 port to recognise the Crossfire protocol. First, configure the UART1 port to serial port in Ports tab. Then click the Save and Reboot button in the lower right corner.
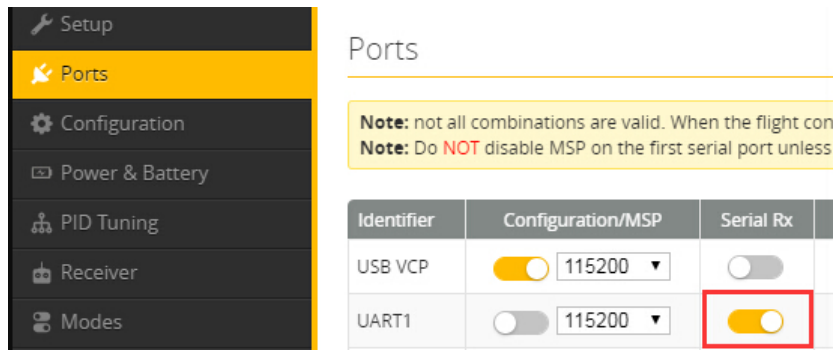
Second, go to the "Configuration" tab, under the "Receiver" Section, select "Serial-based receiver", and select "CRSF" in the second option. Don't forget to enable "Telemetry" feature too before pressing "Save".
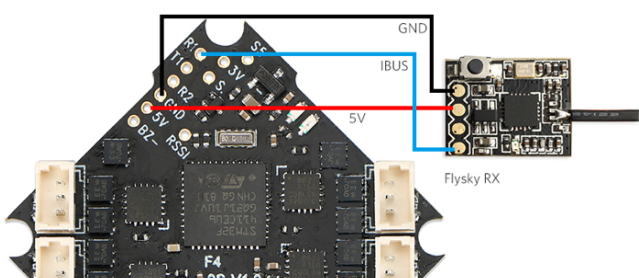

(https://s3.amazonaws.com/cdn.freshdesk.com/data/helpdesk/attachments/production/27008419240/original/Xq6dVrxHMbDLxUXLNAqZf0b-veHwtvYJBg.png?1532423240)

For more details about how to use TBS crossfire receiver, check **TBS CROSSFIRE SETUP WITH BETAFLIGHT (https://oscarliang.com/crossfire-betaflight/)** on OscarLiang.
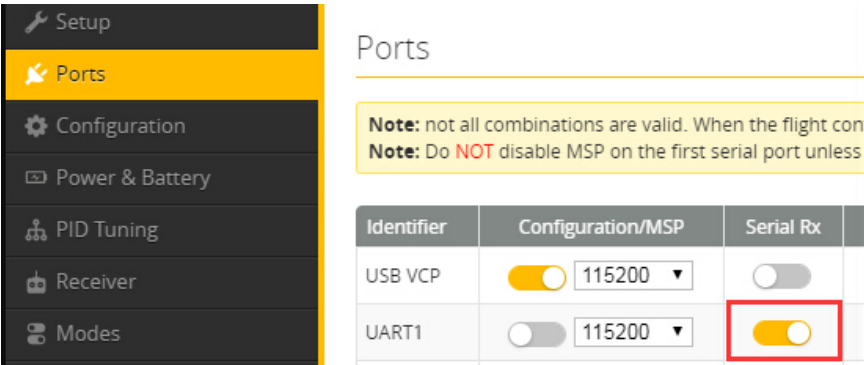
4) How to connect a receiver with Flysky IBUS signal output (Flysky FS-RX2A (https://betafpv.com/collections/rx-tx/products/flysky-rx2a-pro-receiver-for-micro-drone) for example).
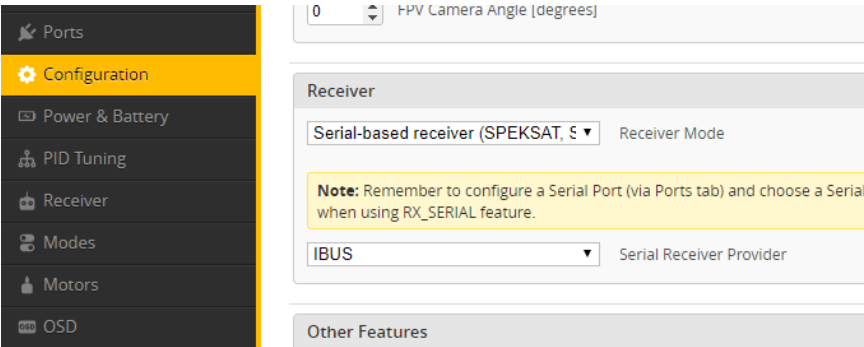
Here is the connection diagram with FS-RX2A receiver.

Flysky RX

Step 1, on Betaflight GUI, configure the UART1 port to serial port in Ports tab. Then click the Save and Reboot button in the lower right corner.


Step 2, in the Configuration tab, for Receiver Mode, choose Serial_based receiver (SPEKSAT, SBUS, SUMD); Serial Receiver Provider, choose IBUS. And click the Save and Reboot button in the lower right corner.
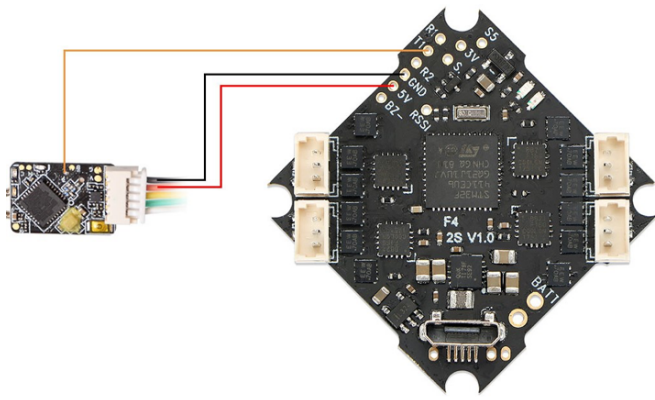

5) How to connect a receiver with Frsky R-XSR signal output

1 Please use the F-port function. Before using it, upgrade the receiver firmware to support Fport.
Click here (https://www.frsky-rc.com/r-xsr/) to download the firmware.
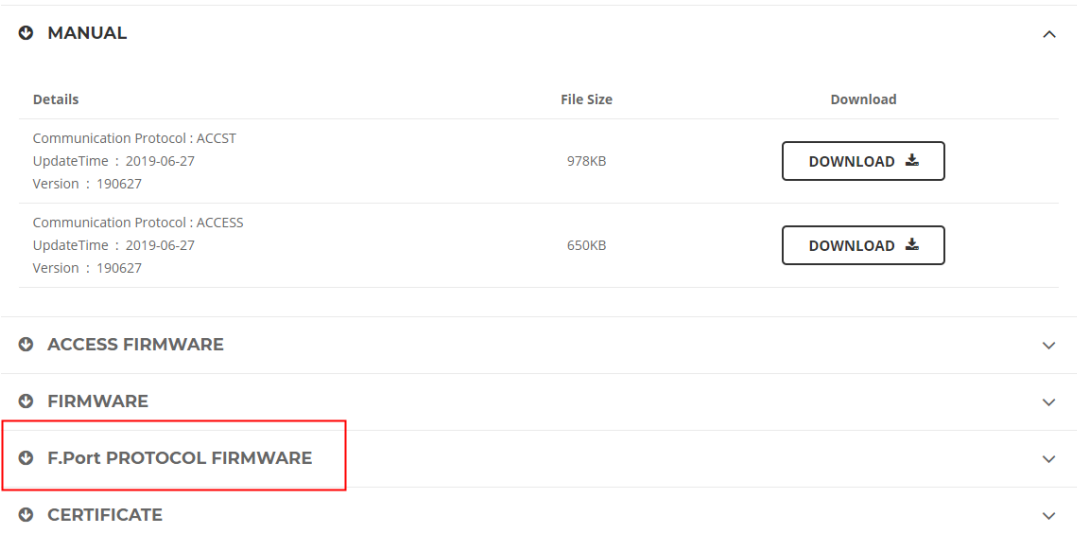
2 Here are the connection diagrams of Frsky R-XSR receiver with F4 2S AIO Brushless FC.

3 How to set BETAFLIGHT

Step 1. On the Betaflight GUI, configure the UART1 port as a serial port in the Ports tab. Then click the "Save and Restart" button in the lower right corner.

Step 2. On the "Configuration" tab, " for Receiver Mode, choose Serial_based receiver (SPEKSAT, SBUS, SUMD); For Serial Receiver Provider, choose Frsky FPort. Then turn on TELEMETRY. And click the Save and Reboot button in the lower right corner.

Step 3. On the "Receiver" tab, choose "Disabled" for RSSI Channel. And click the Save and Reboot button in the lower right corner.

Step 4 In the CLI tab, input command:
set serialrx_halfduplex = ON
set serialrx_inverted = OFF
save
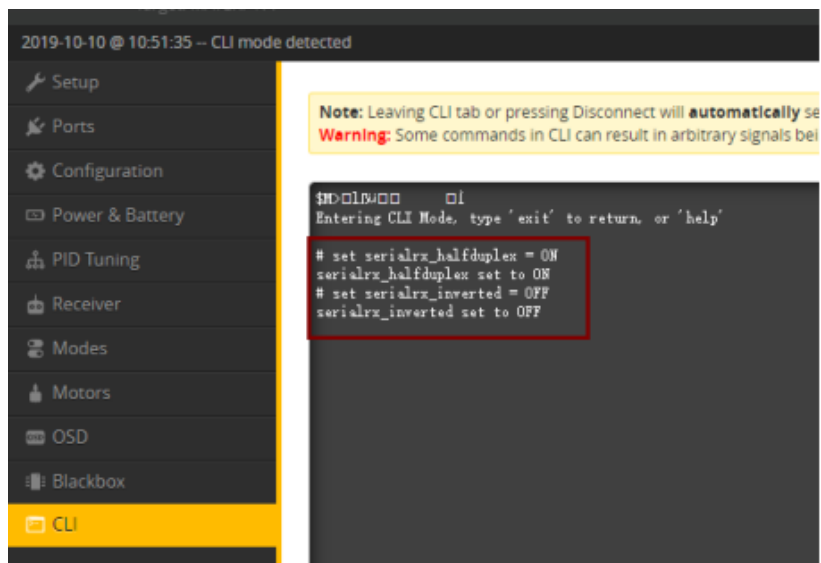
Note: The RSSI signal cannot be seen on the BETAFLIGHT, it can be seen on the OSD info. If you cannot see it on OSD info, please set an channel on your transmitter, such as : AUX12.

T   Technical is the author of this solution article.