



PIKO F4 OSD

Flight Controller

USER MANUAL VERSION 1.0



Please contact us if you need further assistance:

Tech support: tech@furiousfpv.com

Sales support: sales@furiousfpv.com

Website: <http://furiousfpv.com/>



Contents

Introduction	2
Features & Specifications.....	2
Board Layout	3
Dimensions.....	3
Connections	4
Connect with Receiver:	4
❖ Using with R-XSR:	4
❖ Using with XSR:.....	4
❖ Using with SPD15:	5
❖ Using with XM+:	5
❖ Using with TBS Micro Rx:	6
Connect with VTx:	6
❖ Using with Stealth Mini:	6
❖ Using with Innova V4:	7
❖ Using with Tramp HV:	7
❖ Using with Stealth Race:.....	8
❖ Using with Stealth Long Range:.....	9
❖ Using with TBS Unify 5G8:.....	10
Connect with GPS:	11
Connection of Piko F4 OSD - Stealth Mini - ESC 4in1 Combo:	12
Basic Configuration	13
Tips	15
Guideline configuration OSD with betaflight	15
How to open Betaflight OSD by Transmitter	16
VTx configuration by Transmitter	17
PIDs tuning on Betaflight OSD.....	17

Introduction

Furious FPV PIKO F4 OSD - Seeing Is Believing

Step into the latest OSD via Furious FPV - the all new PIKO F4 OSD. Feature loaded with maximum functionality, this brutal little beast is FPV bliss, ready & waiting to push your FPV to the ultimate extreme.

Integrated with a built in current sensor, the PIKO F4 OSD is the 1st of its kind to offer this full size monitoring capability. Yet even with such a minimal footprint, the PIKO F4 OSD offers a massive array of functionality, such as (5) UARTS, Inrush Voltage Protection, 5V@1.5A integrated BEC, integrated driver for SBUS & Smart Port Connection.

Massively capable, the PIKO F4 OSD is able to completely power the Rx via USB port, supporting up to (6) ESC ports for usage, including hexcopters. With flexibility as the ultimate key, the PIKO F4 OSD offers it all, with the ability to easily connect to a 4 in 1 ESC.

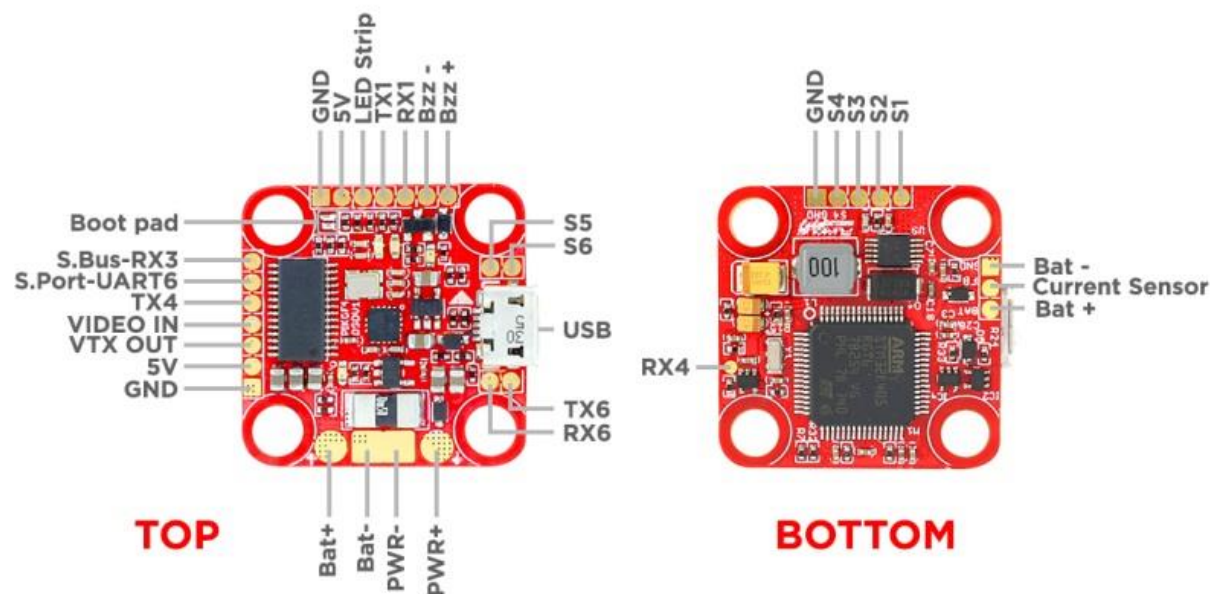
Don't settle for less and step into the ultimate OSD with the Furious FPV PIKO F4 OSD - a massive game changer with an ultra-compact layout.

Features & Specifications

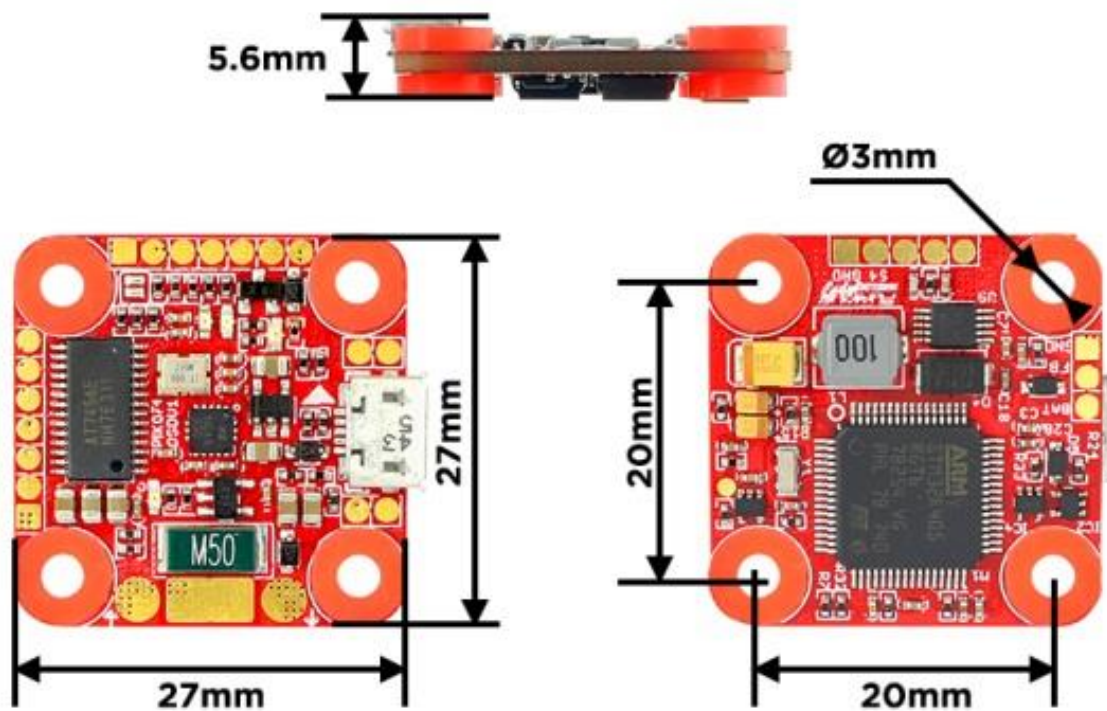
- Built-in OSD
- Built-in Current sensor (maximum 75A)
- Invensense 20602 gyro for high speed 32khz, lowest noise floor and highest sensitivity
- Can be used hexcopters
- Full UART1, UART4, UART6
- Camera can only be used with 5V
- Supports Betaflight Peripheral configuration
- Five UARTs for Simultaneous Connections of USB, S.BUS, S.PORT, TBS Micro Rx or GPS Antenna, Telemetry VTX
- Built-In Driver Inverter for S.BUS and Smart PORT Connection
- Integrated Soft Mount Silicone Damping for Maximum FC Functionality
- Inrush Voltage Protection Input & Output via Transient Voltage Suppressor
- High Quality 5V@1.5A BEC w/ 2S - 6S Voltage Input Range
- Fully Capable to Power Rx via USB Port
- Clean and Easy to connect with 4in1 ESC
- Dimensions: 27x27x5.6mm
- Weight: 4.7gr
- Voltage Range: 2S-6S LiPo



Board Layout



Dimensions



Connections

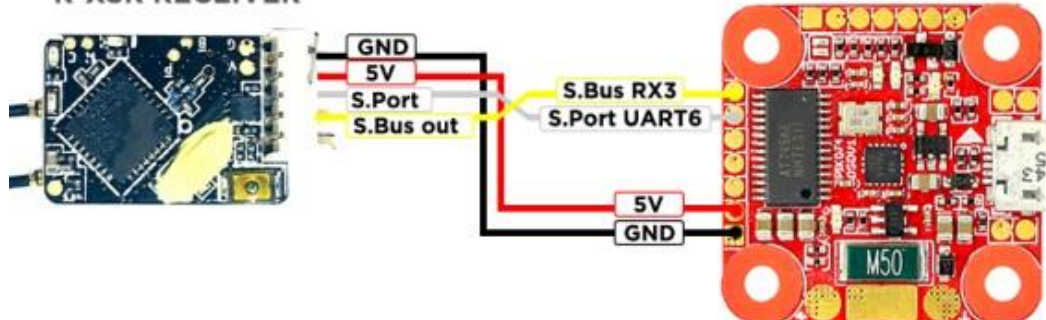
***WARNING:** Piko F4 OSD can support up to 6S LiPo battery but make sure other devices also support it.

Connect with Receiver:

❖ Using with R-XSR:

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☒	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART6	☐ 115200 ▾	☐	SmartPort ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾

R-XSR RECEIVER



PIKO F4 OSD

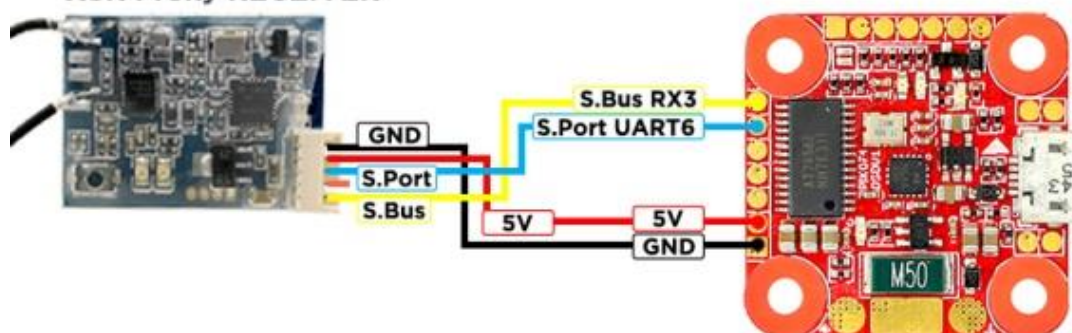
Connection with R-XSR



❖ Using with XSR:

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☒	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART6	☐ 115200 ▾	☐	SmartPort ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾

XSR FrSky RECEIVER



PIKO F4 OSD

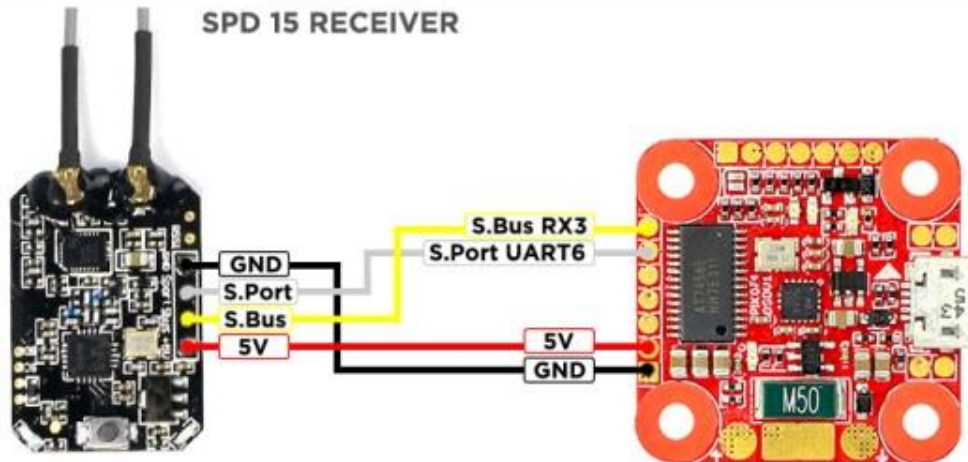
Connection with XSR Frsky



❖ Using with SPD15:

Note: not all combinations are valid. When the flight controller firmware detects that the serial port configuration will be reset.
 Note: Do **NOT** disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

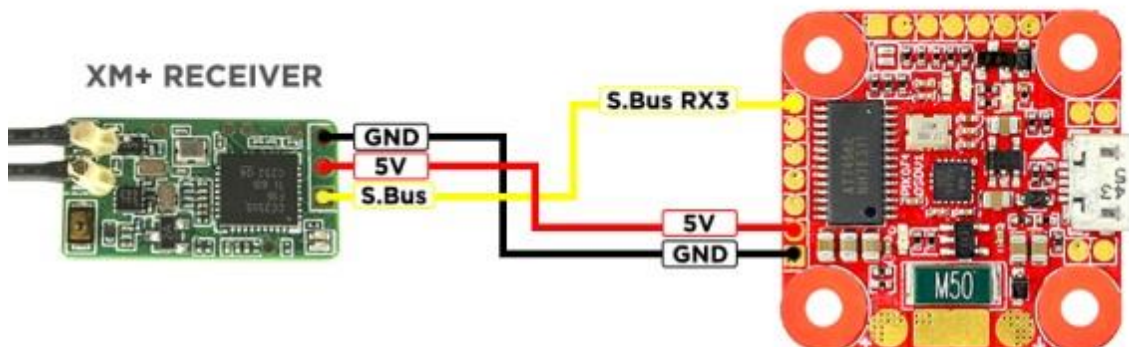
Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☒	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART6	☐ 115200 ▾	☐	SmartPort ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾



PIKO F4 OSD
 Connection with SPD 15
FURIOUS FPV

❖ Using with XM+:

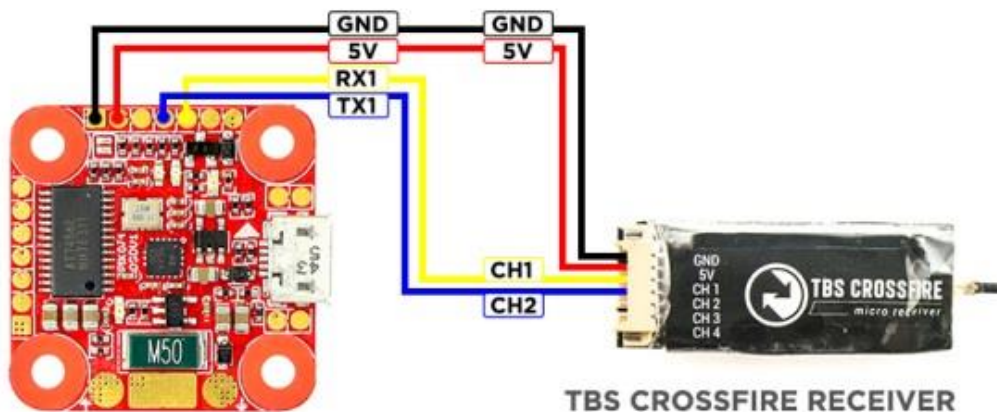
Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☒	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART6	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾



PIKO F4 OSD
 Connection with XM+
FURIOUS FPV

❖ Using with TBS Micro Rx:

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200	☒	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART6	☐ 115200	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾

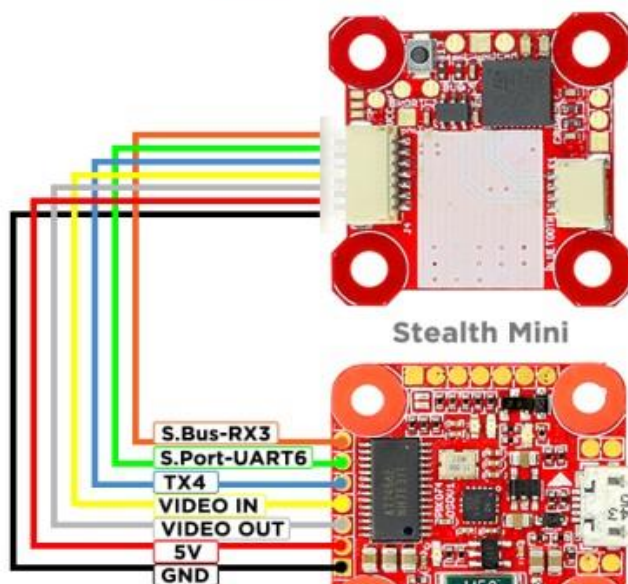


Connect with VTx:

❖ Using with Stealth Mini:

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
 Note: Do NOT disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200	☒	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	IRC Tramp ▾ AUTO ▾
UART6	☐ 115200	☐	SmartPort ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾

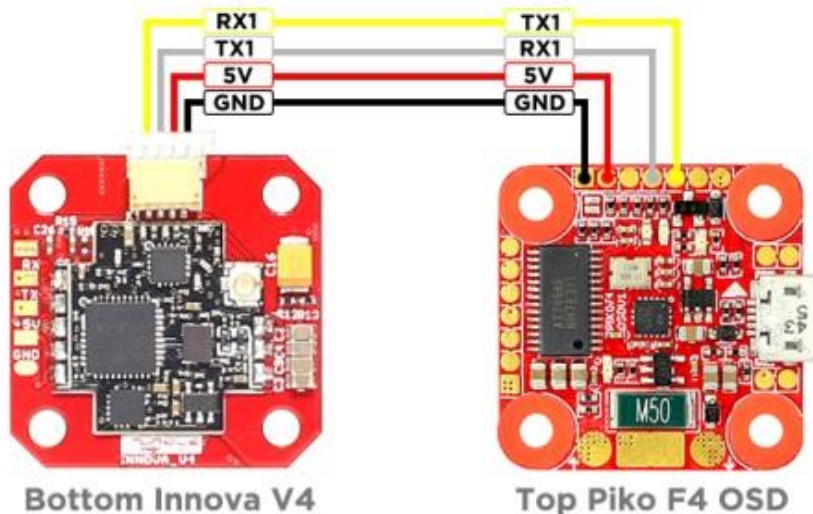


PIKO F4 OSD
Connection with Stealth mini

FURIOUS FPV

❖ Using with Innova V4:

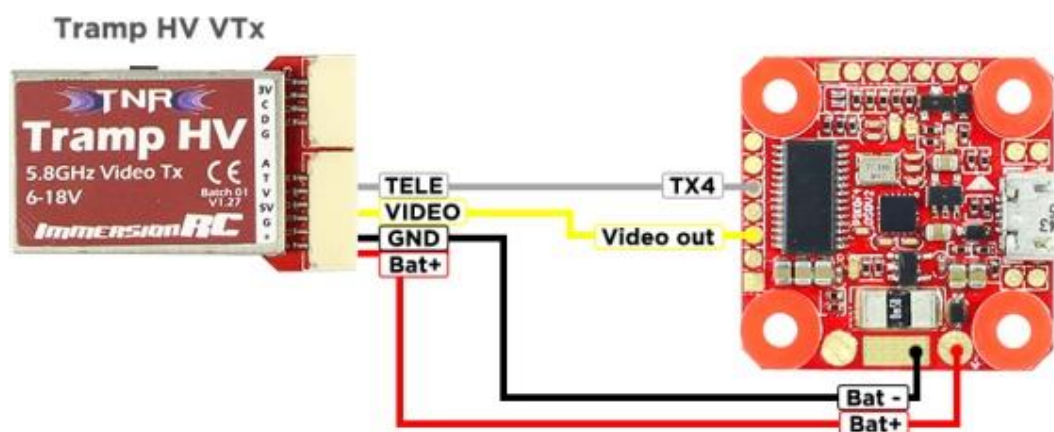
Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART6	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾



PIKO F4 OSD
 Connection with INNOVA V4
FURIOUS
FPV

❖ Using with Tramp HV:

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	IRC Tramp ▾ AUTO ▾
UART6	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾



PIKO OSD
 Connection with Tramp HV VTx
FURIOUS
FPV

❖ Using with Stealth Race:

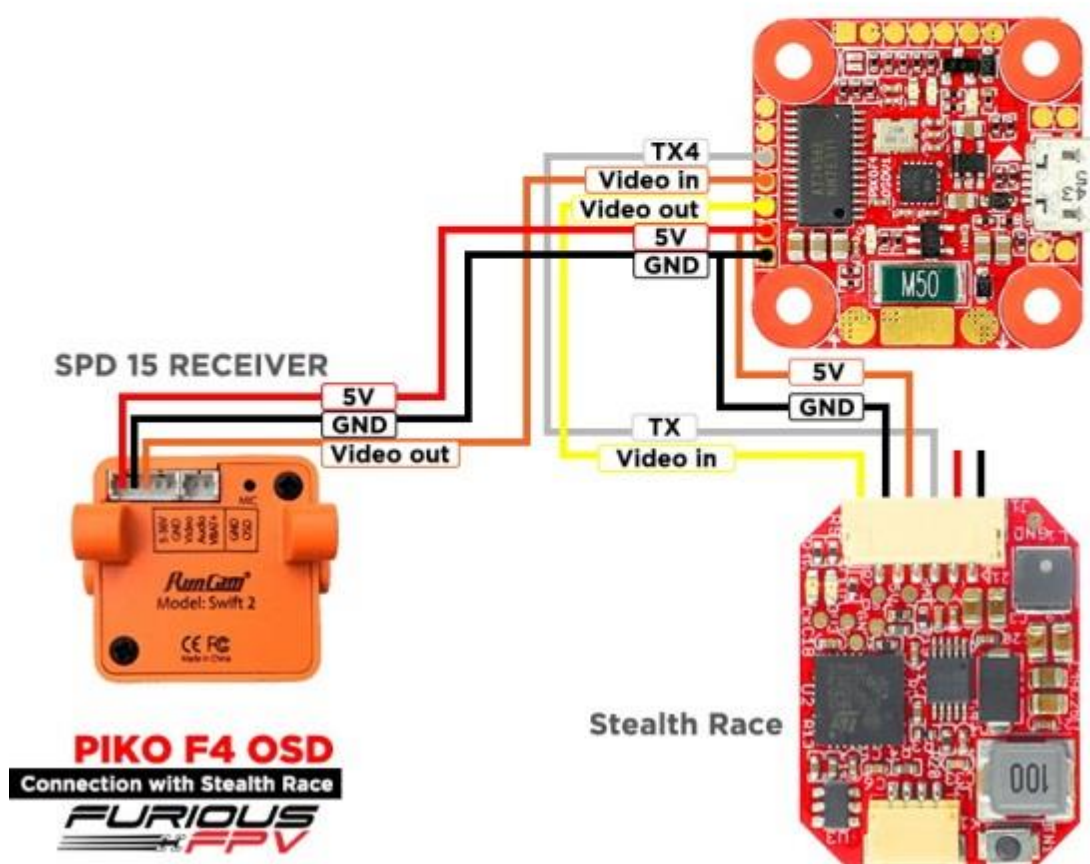
Ports

[Wiki](#)

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.

Note: Do **NOT** disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	IRC Tramp ▾ AUTO ▾
UART6	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾

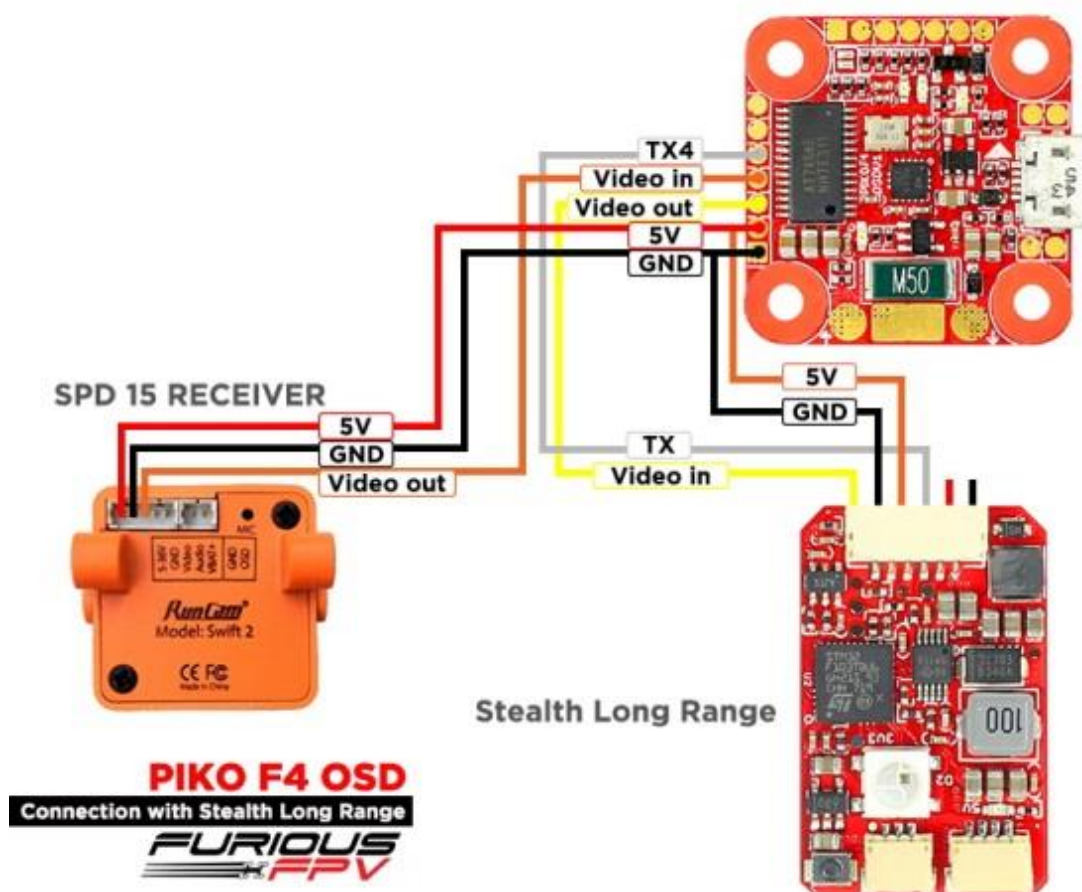


❖ Using with Stealth Long Range:

Ports WIFI

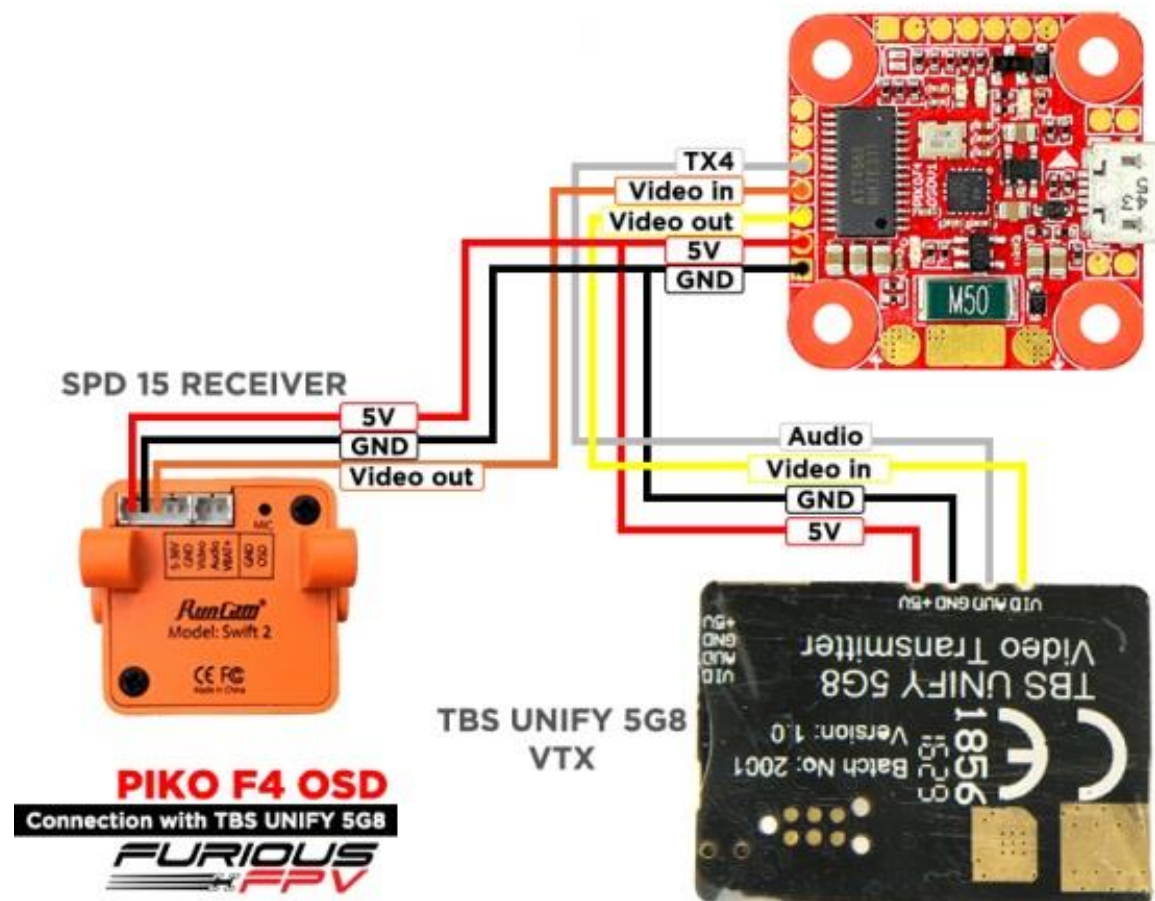
Note: not all combinations are valid. When the flight controller firmware detects that the serial port configuration will be reset.
 Note: Do **NOT** disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USE VCP	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	IRC Tramp ▾ AUTO ▾
UART6	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾



❖ Using with TBS Unify 5G8:

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	TBS SmartAuc ▾ AUTO ▾
UART5	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾



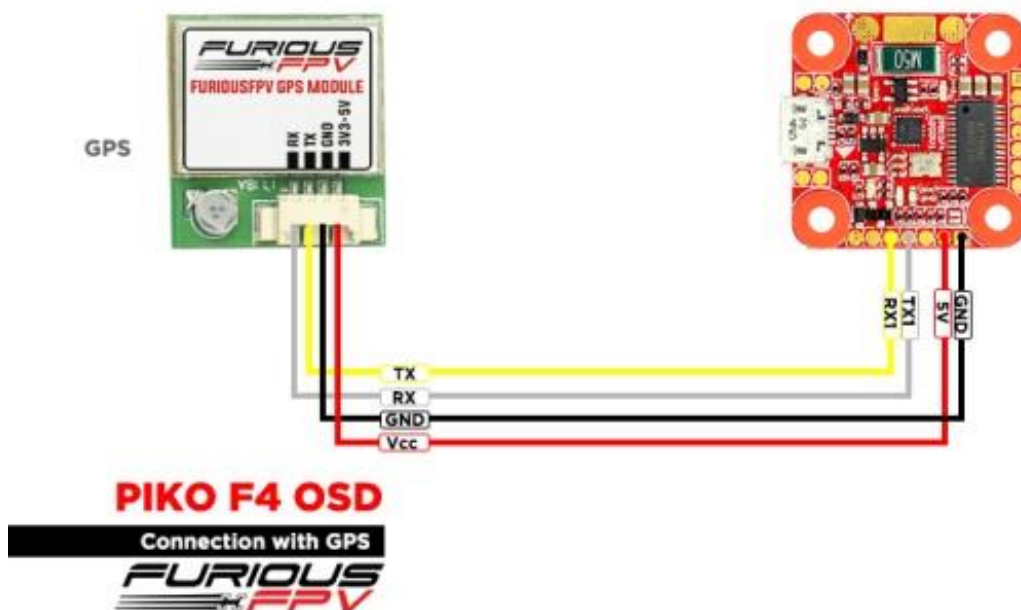
Connect with GPS:

***Warning:** For the first time set up and whenever you change your location. You need to leave the Wing or Airplane on the field for approximately 5 minutes so that the GPS is updated

Ports WIKI

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do **NOT** disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	GPS ▾ 57600 ▾	Disabled ▾ AUTO ▾
UART3	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART6	☐ 115200 ▾	☐	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾



Open **Betaflight Configurator** → Click **Configuration** tab → Drag to **GPS** and configure as the picture below:

Setup
Ports
Configuration
Power & Battery
PID Tuning
Receiver
Modes
Motors
OSD
Blackbox

Note: Not all features are supported by all flight controllers. If you enable a specific feature, and it is disabled after you hit 'Save and Reboot', it means that this feature is not supported on your board.

- ☐ INFLIGHT_ACC_CAL In-flight level calibration
- ☐ SERVO_TILT Servo gimbal
- ☐ SOFTSERIAL Enable CPU based serial ports
- ☐ SONAR Sonar
- ☒ TELEMETRY Telemetry output
- ☐ LED_STRIP Multi-color RGB LED strip support
- ☐ DISPLAY OLED Screen Display
- ☐ CHANNEL_FORWARDING Forward aux channels to servo outputs

☐ 3D 3D mode (for use with reversible ESCs)

GPS

☒ GPS GPS for navigation and telemetry

Note: Remember to configure a Serial Port (via Ports tab) when using GPS feature.

UBLOX ▾ Protocol

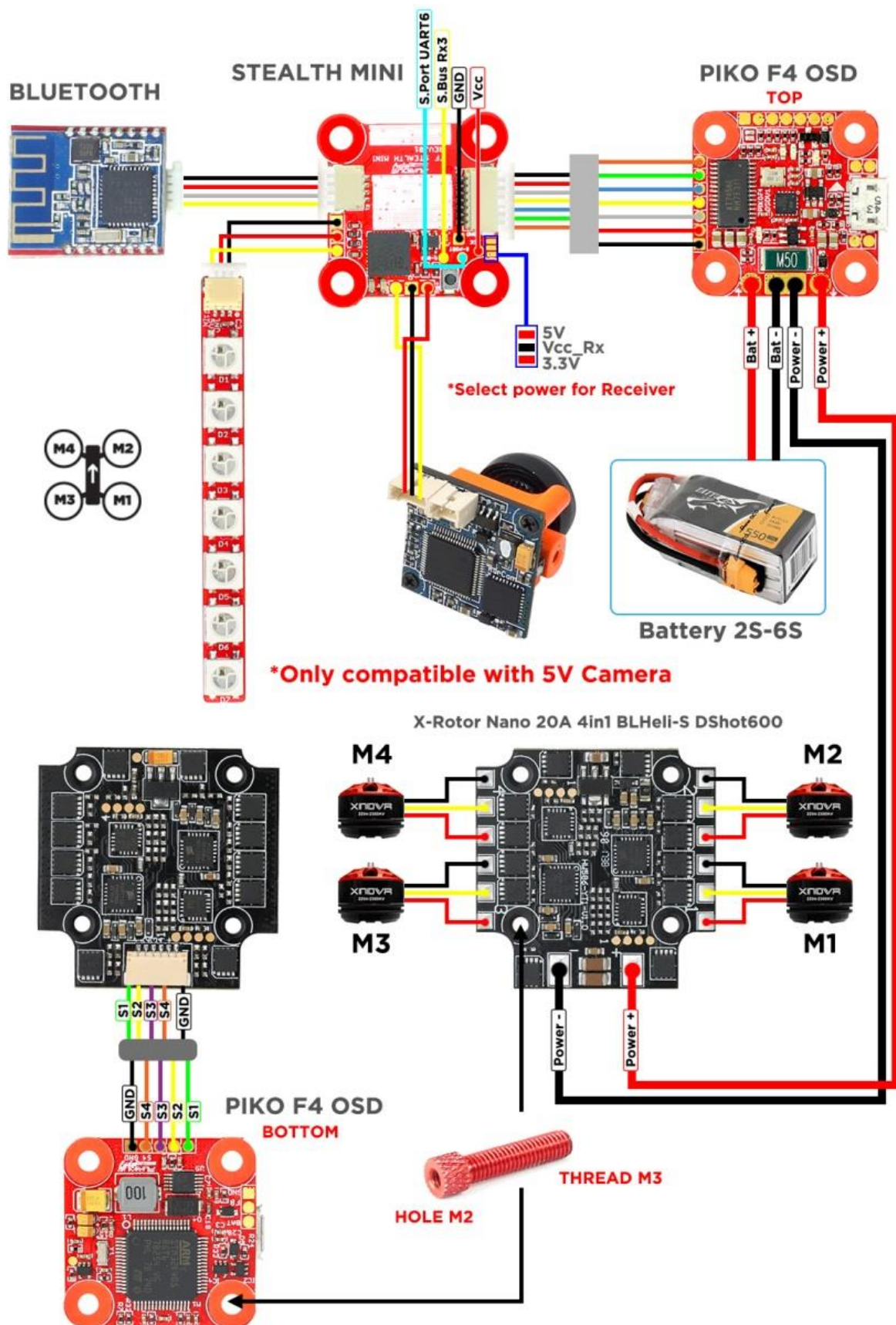
☒ Auto Baud

☒ Auto Config

Auto-detect ▾ Ground Assistance Type

0.00 ▴▾ Magnetometer Declination [deg]

Connection of Piko F4 OSD - Stealth Mini - ESC 4in1 Combo:



Basic Configuration

Please follow carefully these next steps and always **remove** propellers when configuring your quad

STEP 1: Connect Piko F4 OSD with the computer via **USB** cable and then **Open** Betaflight

STEP 2: Configure Ports.

(1) Configure with Receiver:

- **Turn ON** Serial Rx of **UART** which connected to use **Receiver Mode**
- Select **Smart Port** of **UART** which connected to use **S.Port**

Ports WIKI

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do **NOT** disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART1	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART3	☐ 115200 ▼	☒	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART4	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART6	☐ 115200 ▼	☐	SmartPort ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼

*** NOTE:** Please make sure that all the connections are correct.

(2) Configure with VTx:

In Peripherals of UART4:

- Select **IRC Tramp** for Tramp HV, Stealth Mini, Stealth Race and Stealth Long Range

Ports WIKI

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do **NOT** disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART1	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART3	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART4	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	IRC Tramp ▼ AUTO ▼
UART6	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼

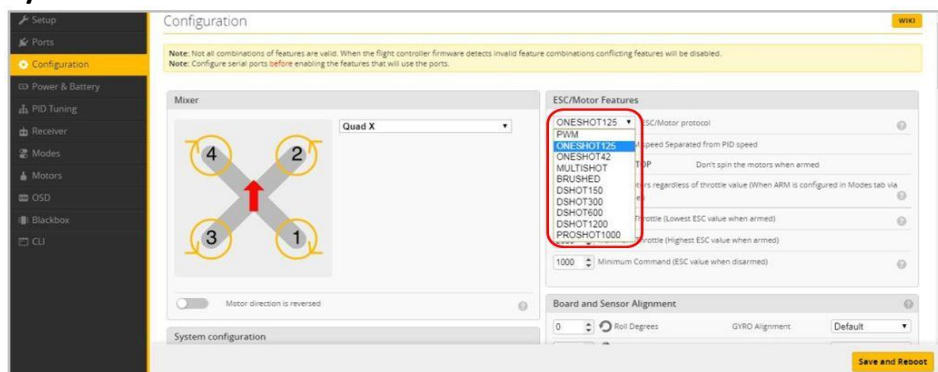
- Select **TBS SmartAudio** for TBS Unify 5G8

Ports WIKI

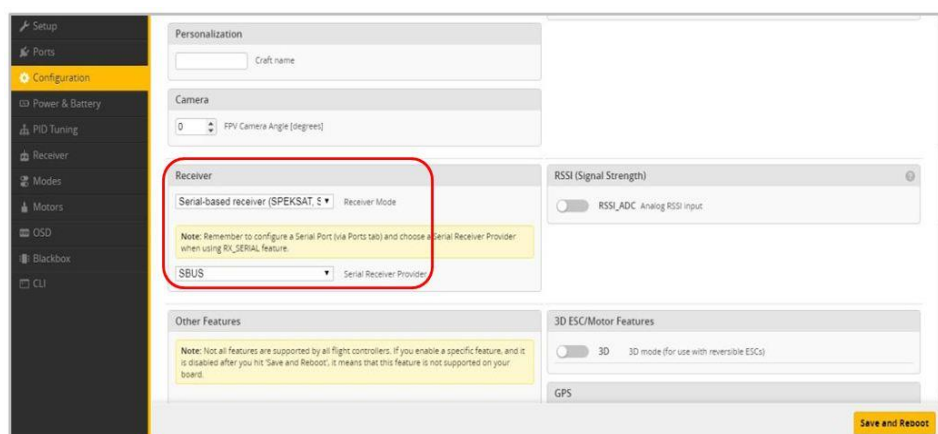
Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do **NOT** disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART1	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART3	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART4	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	TBS SmartAuc ▼ AUTO ▼
UART6	☐ 115200 ▼	☐	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼

STEP 3: Go to **Configuration** tab and choose **ESC/Motor** protocol in **ESC/Motor Features**



STEP 4: Select **Serial- based receiver** in **Receiver Mode**

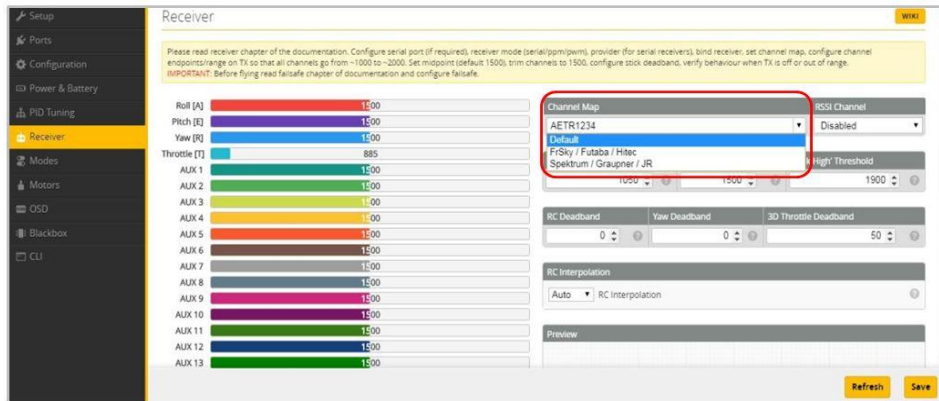


If you are using SBus, iBus or a Spektrum Satellite, you will need to pick your Serial Receiver Provider. Follow this table:

RX Type	Serial Receiver Provider
DSM2 1024bit/22ms	SPEKTRUM1024
DSM2 2048bit/11ms	SPEKTRUM2048
DSMX 1024bit/22ms	SPEKTRUM1024
DSMX 2048bit/11ms	SPEKTRUM2048
FrSky RX	SBUS
Futaba RX	SBUS
FlySky RX	IBUS
Turnigy RX	IBUS

Click **“Save and Reboot”**.

Finally, go to the **Receiver** tab. Pull down the drop down that says “Channel Map” and select the “JR / Spektrum / Graupner” option.



Once again, click “Save”.

Tips

Guideline configuration OSD with betafight

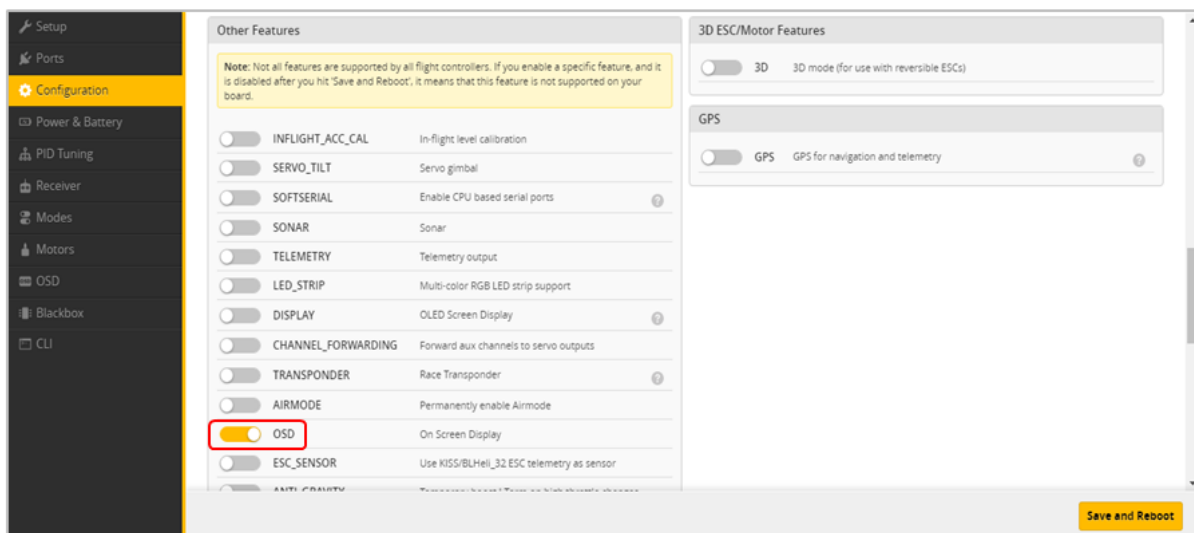
Step1: Connect Piko F4 OSD into PC via USB

Step2: Open Betaflight Configurator on Google Chrome

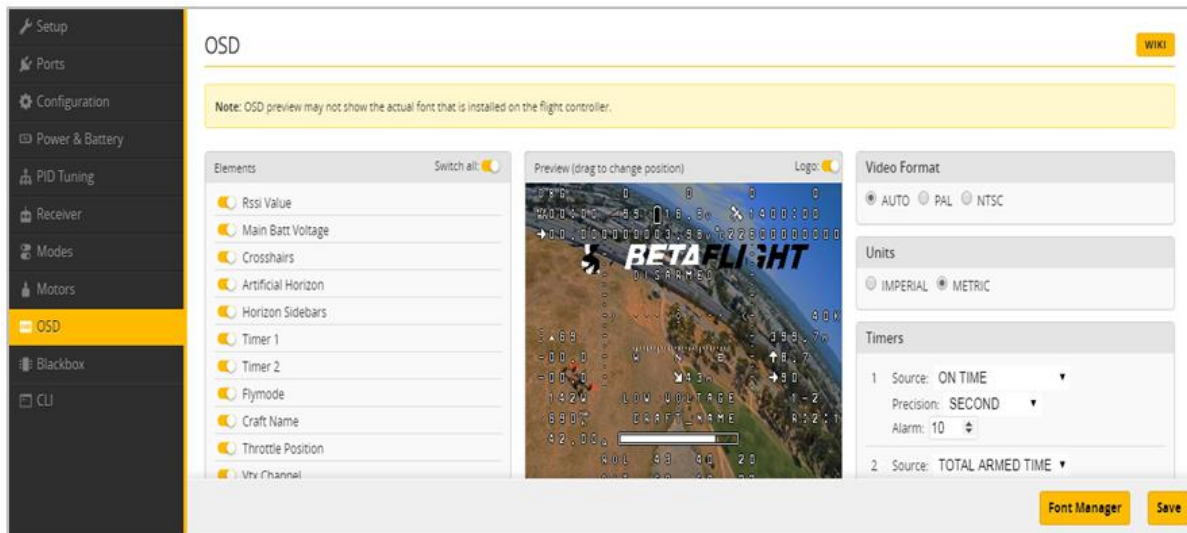


Betaflight

Step3: Click Connect on Betaflight interface and go to “Configuration” tab. Then, turn **ON** “OSD” in “Other Features”



Step4: After configuring OSD, please click **Save** to save your c+onfiguration



How to open Betaflight OSD by Transmitter

Stick command:

- **THROTTLE MIDDLE + YAW LEFT + PITCH FULL + ROLL MIDDLE**



To navigate through menu:

- PITCH/ROLL sticks are used to navigate
- YAW stick is used to adjust / change values



VTx configuration by Transmitter

From Betaflight OSD menu use stick go to: **Main menu > Features**

- Select **VTX SA** if using TBS Unify Pro VTx
- Select **VTX TR** if using Tramp HV, Stealth Mini, Stealth Race, Stealth Long Range



PIDs tuning on Betaflight OSD

From Betaflight OSD menu use stick go to: **Main menu > Profile > PID**

