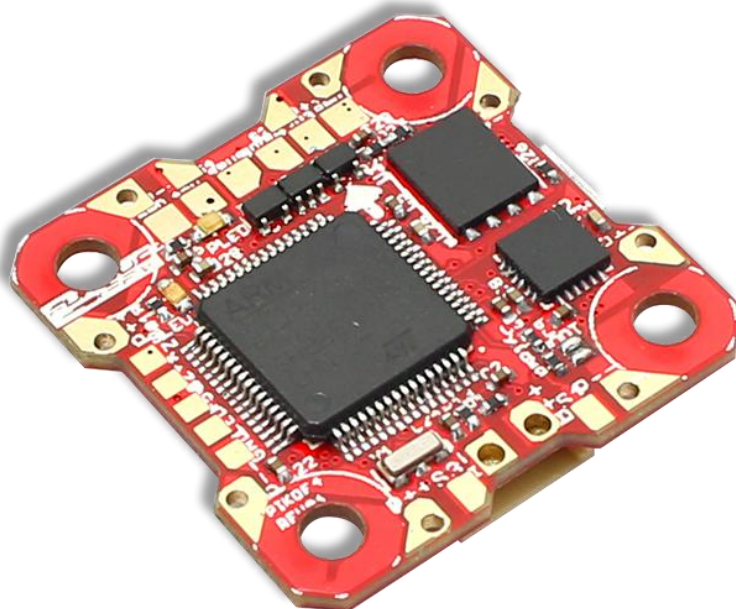




# PIKO F4

## Flight Controller

**USER MANUAL VERSION 1.0**



Please contact us if you need further assistance:

Tech support: [tech@furiousfpv.com](mailto:tech@furiousfpv.com)

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



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## Introduction

Revolutionizing the FPV scene, Furious FPV pushes it to the max with the all new PikoF4 Flight Controller, featuring a no compromise design that is ready to immerse itself into your favorite FPV machine.

Designed as a stackable unit with the feature packed INNOVA V4, the PikoF4 pushes the envelope of performance with F4 processing power that provides "on the rails" flight capability, augmented by an MPU6000 sensor package with ultra-high 8 kHz sampling rates. Furthermore, adding a massive 100A maximum built in PDB, the PikoF4 is designed for the extremes of ultimate FPV.

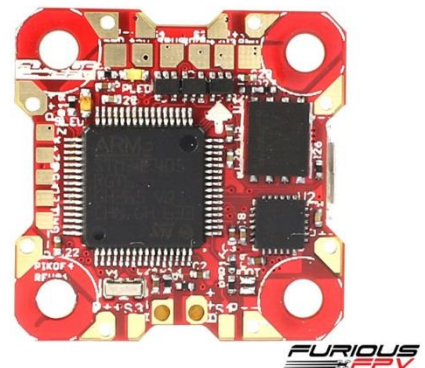
Featuring 16MB of Black Box flash memory for critical flight data breakdown, the PikoF4 is as cutting edge as it comes, featuring a built-in inverter for Smartport connection directly to the FC. Offering rich and brilliant feature when it comes to data feedback for optimal tuning & setup functionality, the PikoF4 is the tuners' dream for on demand in-flight feedback.

Integrated with an Inrush Voltage Protection system (Input & Output) via Transient Voltage Suppressor, the PikoF4 is wickedly technical & ready for anything. Add a built in driver inverter for S-bus & integrated buzzer driver with a 5V 1A integrated BEC, the PikoF4 is the all-in-one FC solution that provides everything your quad needs in an ultra-simplified design.

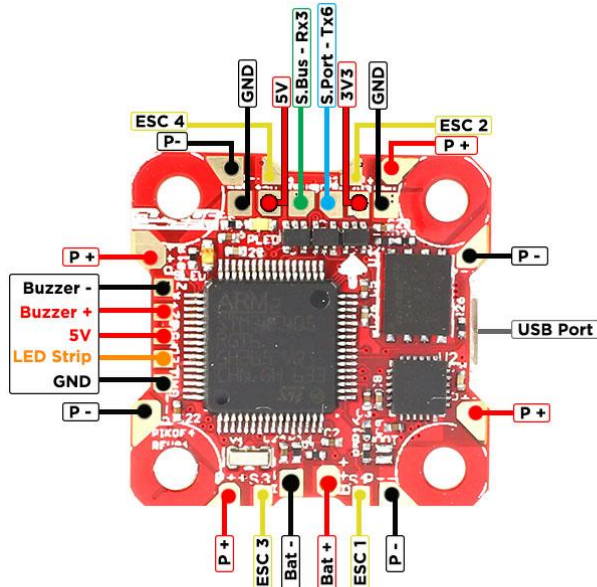
Step into the Furious FPV PikoF4 - potent capability coalesced with race winning functionality designed to push your FPV to the outer edges & beyond.

## Features

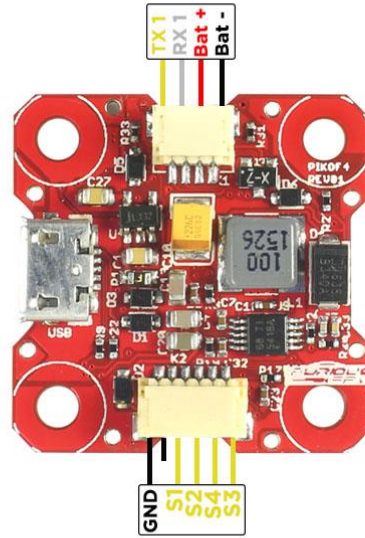
- Mini Size: 27mm x 27mm w/ 20mm x 20mm Mounting Holes
- F4 processing power
- Built In 100A maximum PDB
- MPU6000 6 axis sensor technology
- 16MB Black Box flash memory
- LED Driver for WS2812b programmable LED's
- Integrated buzzer driver
- Built in driver inverter for S-bus capability
- Integrated 5V 1A BEC w/ 2S 7.4V - 6S 22.2V LiPo power
- Inrush voltage protection input / Output via transient voltage suppressor
- Stackable w/ INNOVA V4
- Stackable ESC 4in1 10A
- Weight: 3.4gr



### Board Layout



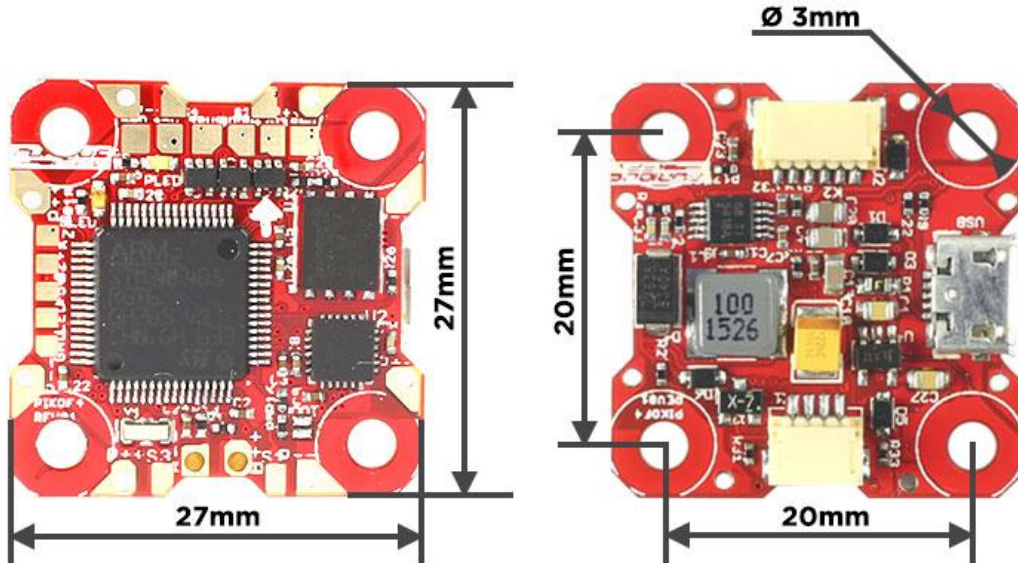
**TOP**



**BOTTOM**



### Dimensions



## Connections

**\*WARNING:** Piko F4 can support up to 6s Lipo battery but make sure other devices also support it.

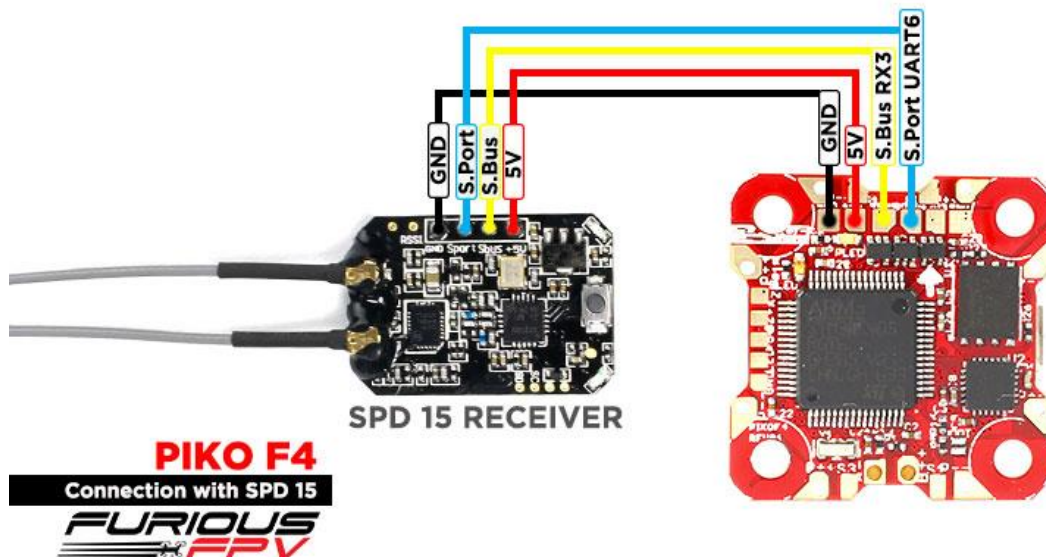
### Connect with Receiver:

#### ❖ Using SPD15 Receiver:

**\* NOTE:** If you are using S.Port with firmware 3.1.7, please enter CLI mode and type the following commands:

```
set_sport_halfduplex = OFF
save
```

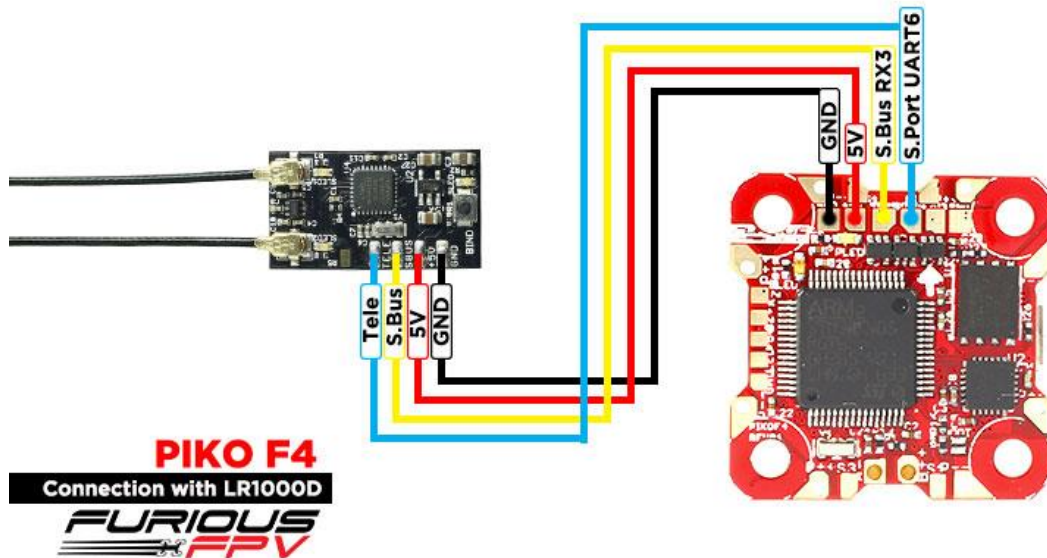
Port Identifier	Configuration	Serial Rx	Telemetry Output
USB VCP	<input checked="" type="checkbox"/> MSP 115200 ▼	<input type="checkbox"/> Serial RX	Disabled ▼ AUTO ▼
UART1	<input type="checkbox"/> MSP 115200 ▼	<input type="checkbox"/> Serial RX	Disabled ▼ AUTO ▼
UART3	<input type="checkbox"/> MSP 115200 ▼	<input checked="" type="checkbox"/> Serial RX	Disabled ▼ AUTO ▼
UART6	<input type="checkbox"/> MSP 115200 ▼	<input type="checkbox"/> Serial RX	SmartPort ▼ AUTO ▼



You can buy SPD15 Receiver right here: <https://goo.gl/FTnrpR>

## ❖ Using LR1000D Receiver:

Port Identifier	Configuration	Serial Rx	Telemetry Output
USB VCP	<input checked="" type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾
UART1	<input type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾
UART3	<input type="checkbox"/> MSP 115200 ▾	<input checked="" type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾
UART6	<input type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Serial RX	SmartPort ▾ AUTO ▾



You can buy LR1000D Receiver right here: <https://goo.gl/4Cr0HI>

\* **NOTE:** If you use LR1000D Receiver please go to CLI and type the following commands:

```
set sbus_inversion = OFF
```

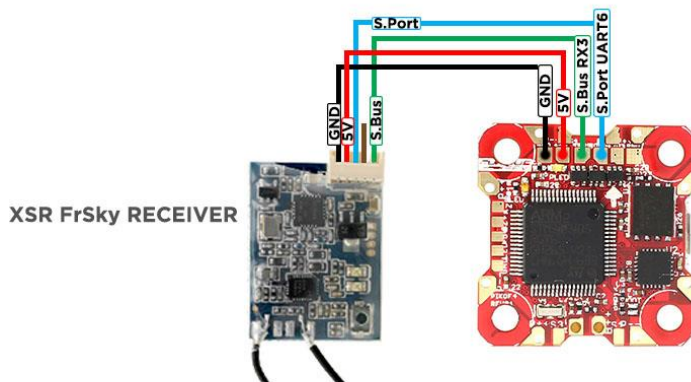
```
save
```

## ❖ Using XSR FrSky Receiver:

\* **NOTE:** If you are using S.Port with firmware 3.1.7, please enter CLI mode and type the following commands:

```
set sport_halfduplex = OFF
save
```

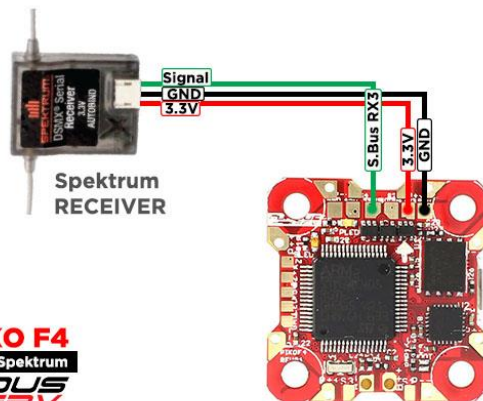
Port Identifier	Configuration	Serial Rx	Telemetry Output
USB VCP	<input checked="" type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾
UART1	<input type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾
UART3	<input type="checkbox"/> MSP 115200 ▾	<input checked="" type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾
UART6	<input type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Serial RX	SmartPort ▾ AUTO ▾



**PIKO F4**  
Connection with XSR FrSky  
**FURIOUS FPV**

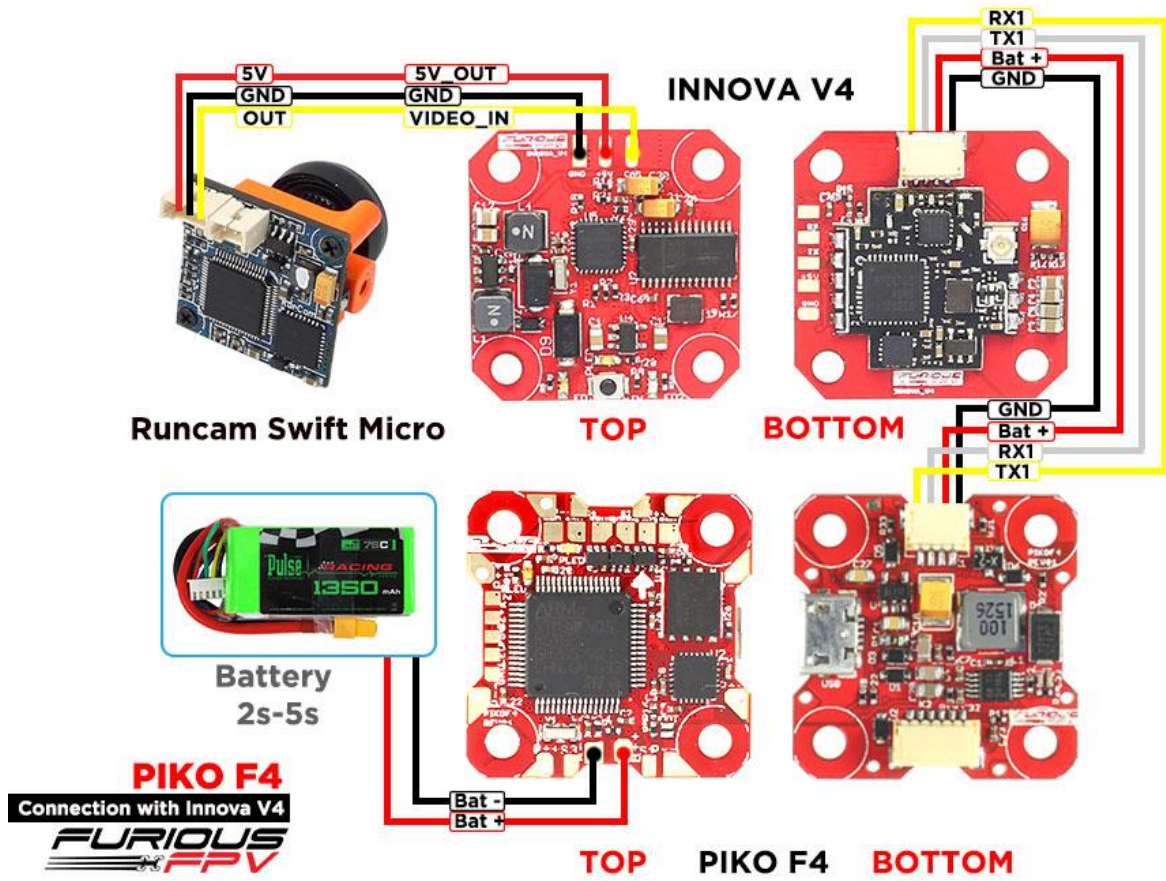
## ❖ Using Spektrum Satellite Receiver:

Port Identifier	Configuration	Serial Rx	Telemetry Output
USB VCP	<input checked="" type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾
UART1	<input type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾
UART3	<input type="checkbox"/> MSP 115200 ▾	<input checked="" type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾
UART6	<input type="checkbox"/> MSP 115200 ▾	<input type="checkbox"/> Serial RX	Disabled ▾ AUTO ▾

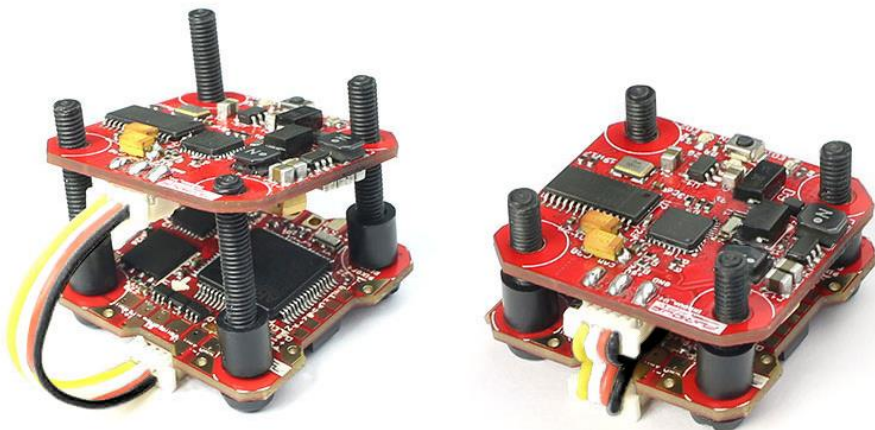


**PIKO F4**  
Connection with Spektrum  
**FURIOUS FPV**

## Connect with Innova V4 VTX/OSD Board:

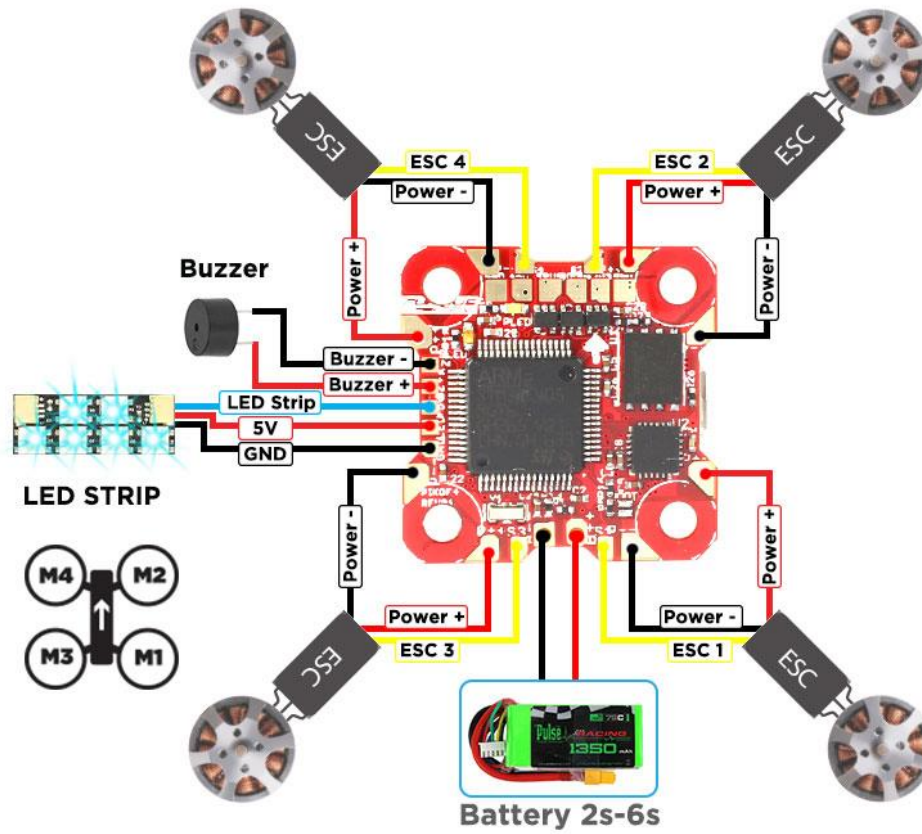


You can buy Innova V4 right here: <https://goo.gl/bNYRzT>



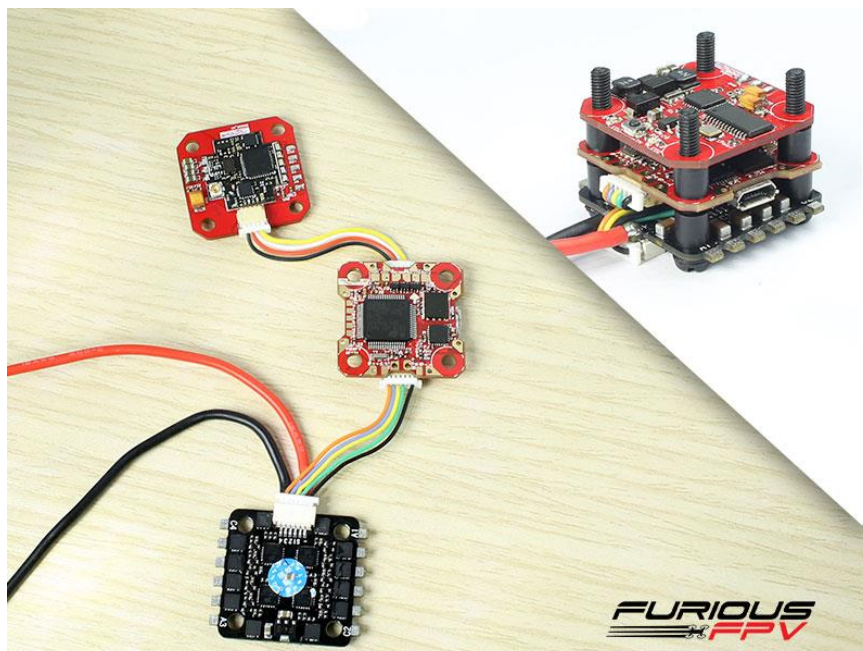


## Connect with other devices:



You can buy LED STRIP right here: <https://goo.gl/TXwSwl>

## Connect with ESC 4 in 1:



## Basic setup

Please, follow carefully these next steps, and always **remove** your propellers when you're configuring your quad

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

**STEP 2: Configure Ports.**

- (1) **Turn ON** MSP of **UART 1** to use OSD.
- (2) **Turn ON** Serial Rx of **UART 3** to use **Receiver Mode**
- (3) **Select** Smart Port of **UART 6** to use **S.Port**

Port Identifier	Configuration	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> MSP   115200	<input type="checkbox"/> Serial Rx	Disabled   AUTO	Disabled   AUTO	Disabled   AUTO
UART1	<input checked="" type="checkbox"/> MSP   115200	<input type="checkbox"/> Serial Rx	Disabled   AUTO	Disabled   AUTO	Disabled   AUTO
UART3	<input type="checkbox"/> MSP   115200	<input checked="" type="checkbox"/> Serial Rx	Disabled   AUTO	Disabled   AUTO	Disabled   AUTO
UART6	<input type="checkbox"/> MSP   115200	<input type="checkbox"/> Serial Rx	SmartPort   AUTO	Disabled   AUTO	Disabled   AUTO

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

**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

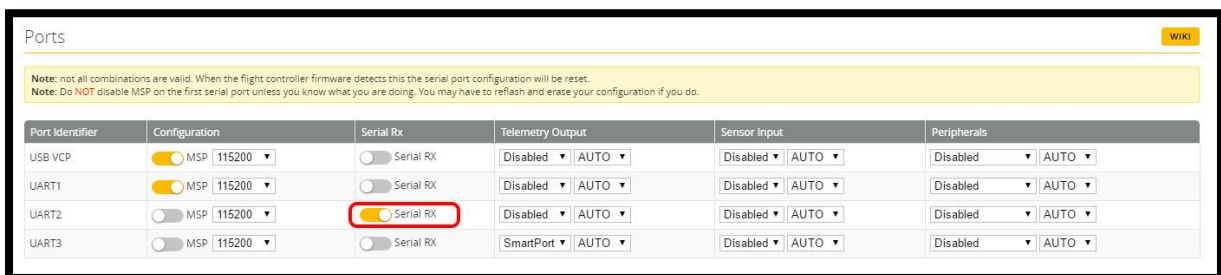
Click **“Save and Reboot”**.

## Tips

### How to configure your Spektrum RX with your Flight Controller

In Betaflight Configurator:

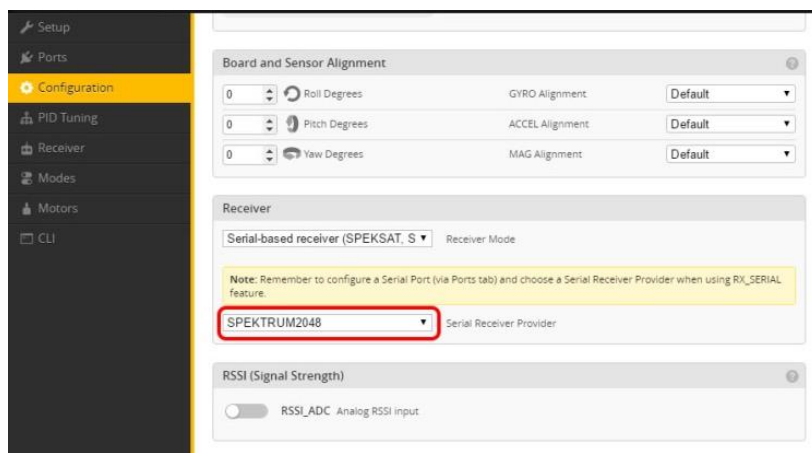
- Go to the **Ports** tab
- Enable **“Serial RX”** on the UART 2



Click **“Save”**.

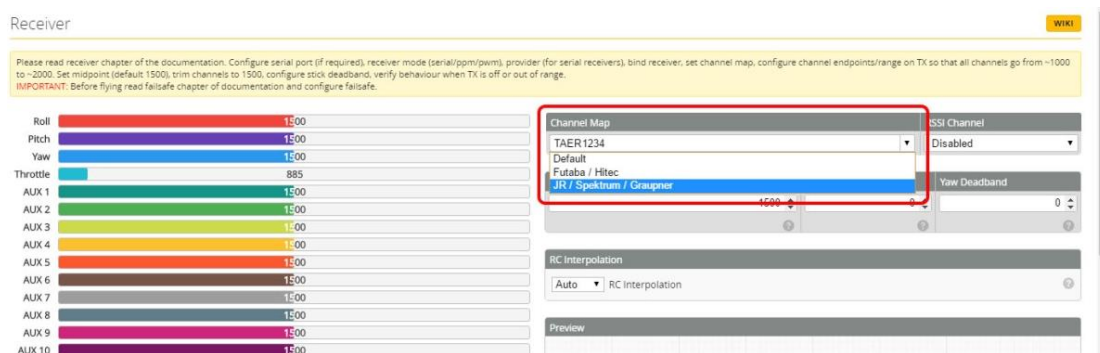
Then go to the **Configuration** tab. Under the section labeled **“Receiver”**, pick **Serial Receiver Provider** compare with your **RX Type**.

RX Type	Serial Receiver Provider
DSM2 1024bit/22ms	SPEKTRUM1024
DSM2 2048bit/11ms	SPEKTRUM2048
DSMX 1024bit/22ms	SPEKTRUM1024
DSMX 2048bit/11ms	SPEKTRUM2048



Click **“Save”**.

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”**.

## Guideline configuration Innova V4 VTX/OSD with TRUE VISION CONFIGURATOR V1.0

### Serial Pass Through don't need CLI in Betaflight

**DOWNLOAD:** [Guideline install and configuration TRUE VISION CONFIGURATOR](#)

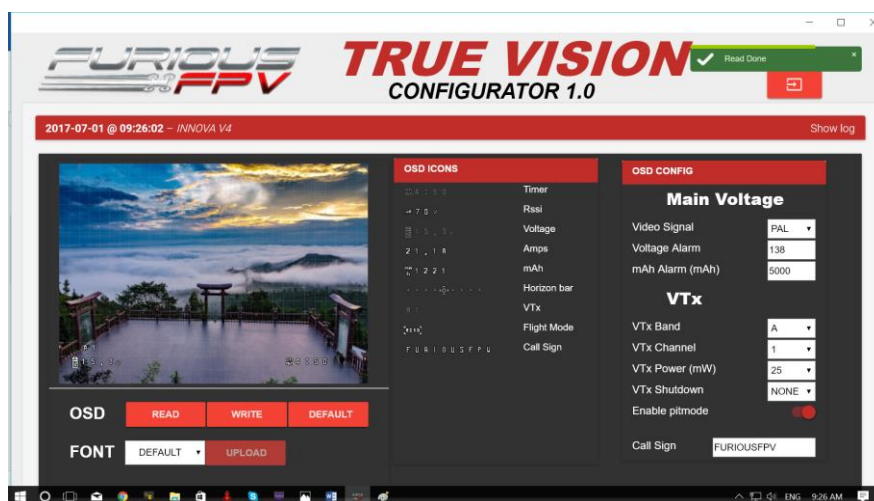
**STEP 1:** Connect PIKO F4 (connected with Innova V4) with PC via USB cable. Then plug battery for FC.

**STEP 2:** Open True Vision Configurator on google chrome.

**STEP 3:** Please select **Port COM (1)** correlative with your device, then select **UART 1 (2)** using for OSD.



**STEP 4:** Plug Battery for Piko F4, then click **Connect icon** on True Vision interface to connect and configuration OSD layout and setting.



**STEP 5:** After configuration device please click **WRITE** to save your configuration.

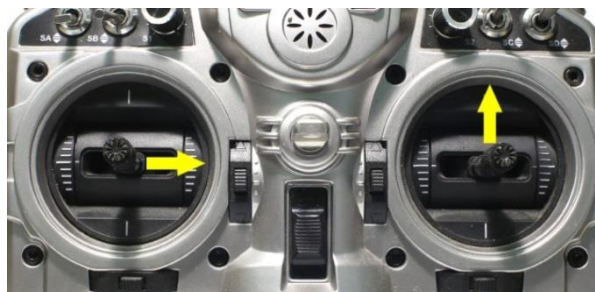
## How to open Innova V4 VTX/OSD menu by Transmitter

To access the in-built OSD menu in MW-OSD, disarm your quadcopter first.

- THROTTLE MIDDLE
- YAW RIGHT
- PITCH FULL

To navigate through menu in the OSD:

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



**OSD Menu Index:**

- PID Config/Profile 1/2 or 3:
  - Roll/Pitch/Yaw PID for many flight modes
- VTx Config:
  - Pit mode: On/Off
  - VTx Power: 25/200
  - VTx Shutdown: None/AUX1/AUX2/AUX3/AUX4
  - VTx Band: A/B/E/F/C/U/O/L/H
  - VTx Channel: 1/2/3/4/5/6/7/8
- RC Tuning (RC Rate, RC Expo, Pitch/Roll Rate, Yaw Rate, TPA (Throttle PID Att), Throttle Mid, Throttle Expo, TPA Breakpoint, Yaw RC Expo)
- OSD Config (Display Main Volts, Display Amps, Display mAH, Display RSSI, Horizon, Main Volts Alarm, mAH X100, Callsign)
- Statistics ( Fly Time, mAH Used, Max Amps, Voltage)

```

PID CONFIG/PROFILE 1
      P      I      D
ROLL    44    40    30
PITCH   58    50    35
YAW     70    45    20
  UTX CONFIG
PIT MODE                ON
UTX POWER                25
UTX SHUTDOWN            NONE
UTX BAND                 A
UTX CHANNEL              1
EXIT  SAVE+EXIT> <PAGE>
  
```



*Thanks for using our product*