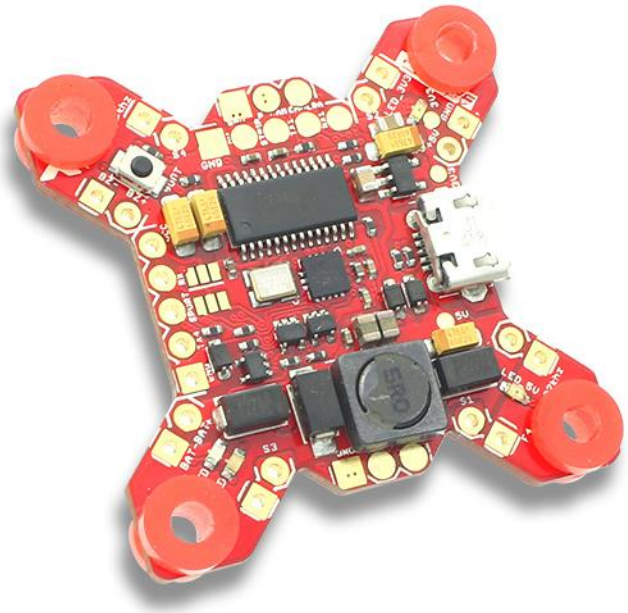
FORTINI F4 OSD

Flight Controller

USER MANUAL VERSION 1.2



Please contact us if you need further assistance:
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Sales support: sales@furiousfpv.com
Website: http://furiousfpv.com/

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Change Log

v1.1

- Add External device:

  - Connect Runcam Split2 using Stealth Race VTx

  - Connect Runcam Split2 using Tramp HV VTx

  - Connect Runcam Split2 using TBS Unify Pro VTx

  - Connect with GPS

v1.2

  - Change Camera OSD Control to ues LED_Strip

Introduction

Building upon the powerful Fortini F4, Furious FPV introduces the all new Fortini F4 OSD, introducing new capability & functionality to simplify setup & redefine your next FPV experience. Hold on - it's about to get really good.

Utilizing the cutting edge & feature packed Fortini F4 platform, we have introduced BetaFlight OSD, with the full ability to alter every setting you need direct via your transmitter. No need for your PC - just a few simple stick movements, and you're there - simple and straightforward, just the way it should be.

From PID's, camera settings, VTx power and beyond, the Fortini F4 OSD builds upon the previous F4 with powerful and easy to use operating capability without the need of a PC. Need more? We added a built in LC filter for even greater video image, allowing you to push the ragged edge with your next FPV ride.

Designed to be nothing but the very best, the Fortini OSD utilizes high performance, low noise 32kHz Invensense 20602 gyros, (5) UARTS, built in Input / Output Inrush Voltage Protection, and the capability to allow S.PORT direct connection with the receiver without any aspect of receiver modification. This massive feature dense packaging offers everything you could ever want from the most sophisticated flight controller available today.

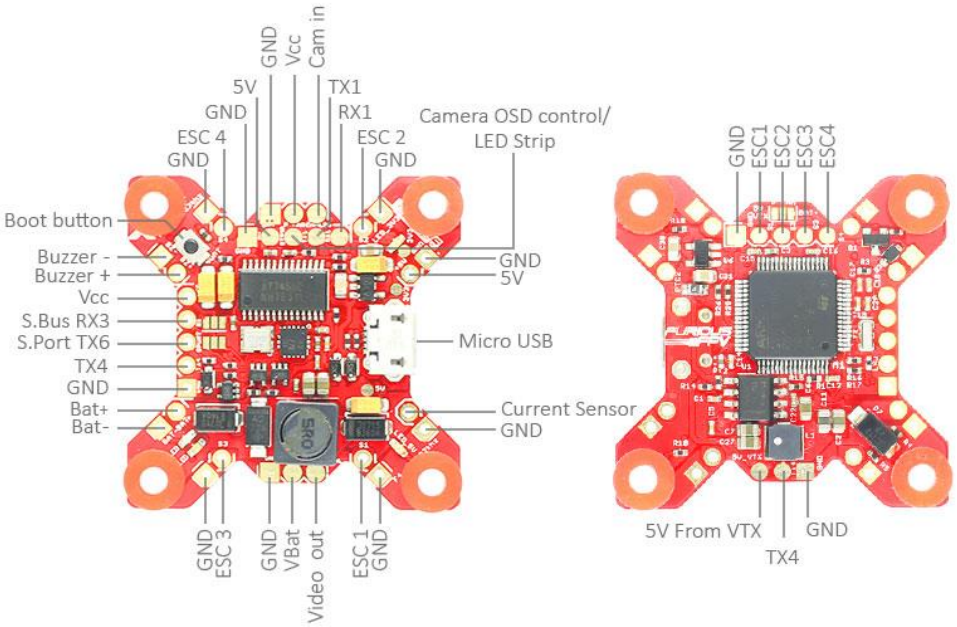
Feature rich and ultra-powerful, the Fortini is the full up package, breaking new ground in true FC brilliance. Toss compromise out the window and open your FPV world to the most functional and feature packed FC you have ever seen before.

Features

- Built-in OSD
- Built-in Camera OSD Control for FPV camera
- Selectable 3.3V or 5V voltage for RX
- Silicone damper for better anti-vibration
- Fortini F4 OSD modifies camera settings by transmitter
- 5x Serial UARTs for USB, SBUS, SPORT, TBS Receiver or GPS, Telemetry VTX
- Separate power supply for gyro with LDO low noise and high accuracy
- Built-in driver inverter for S-bus and Smart-Port connection directly to FC
- Inrush voltage protection input and output by transient voltage suppressor

- Invensense 20602 gyro for high speed 32khz, lowest noise floor and highest sensitivity
- Weight: 5.5gr

Pinout



Dimensions

Connections

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

Connect with Receiver:

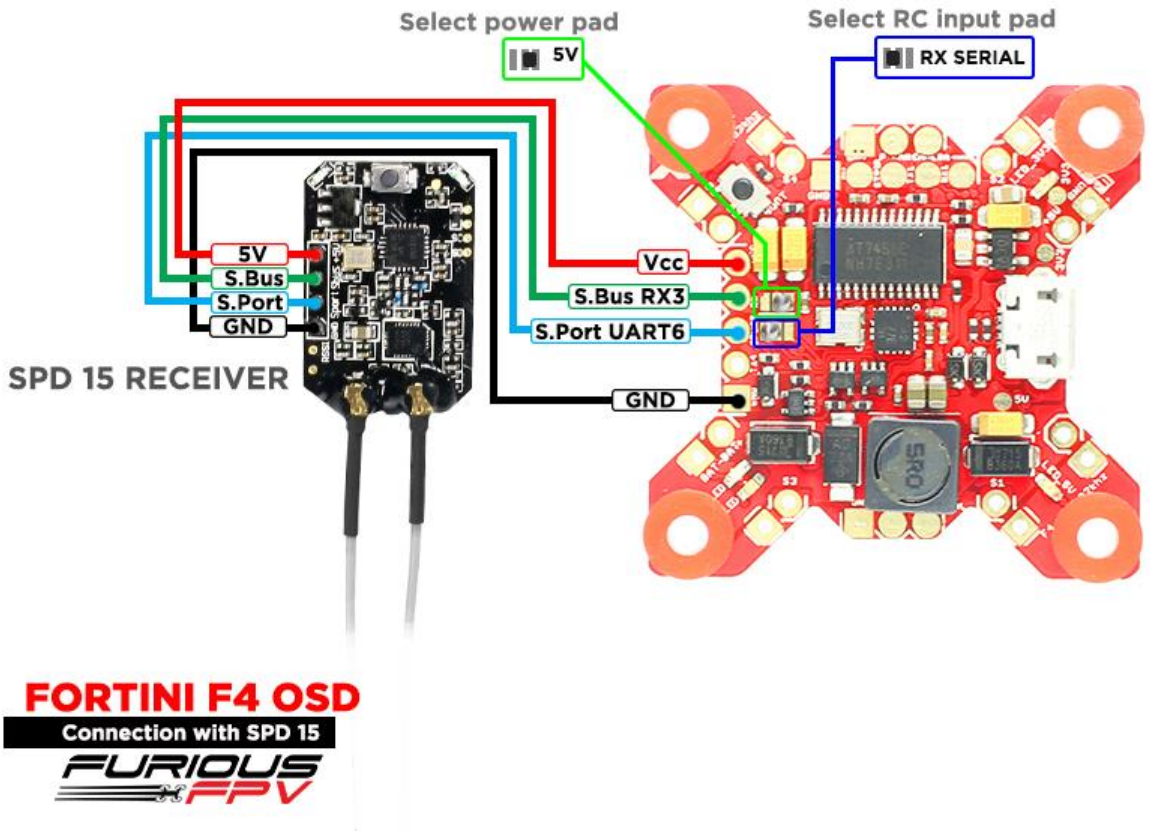
❖ Using SPD15 Receiver:

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



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

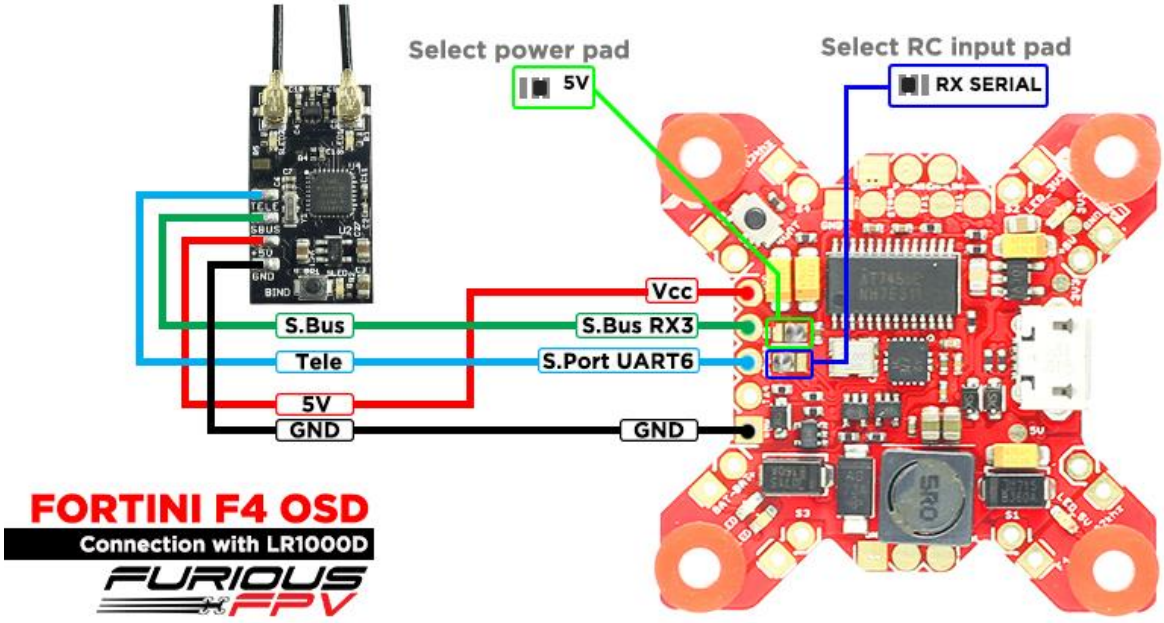
❖ Using LR1000D Receiver:

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		FrSky AUTO	Disabled AUTO	Disabled 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:

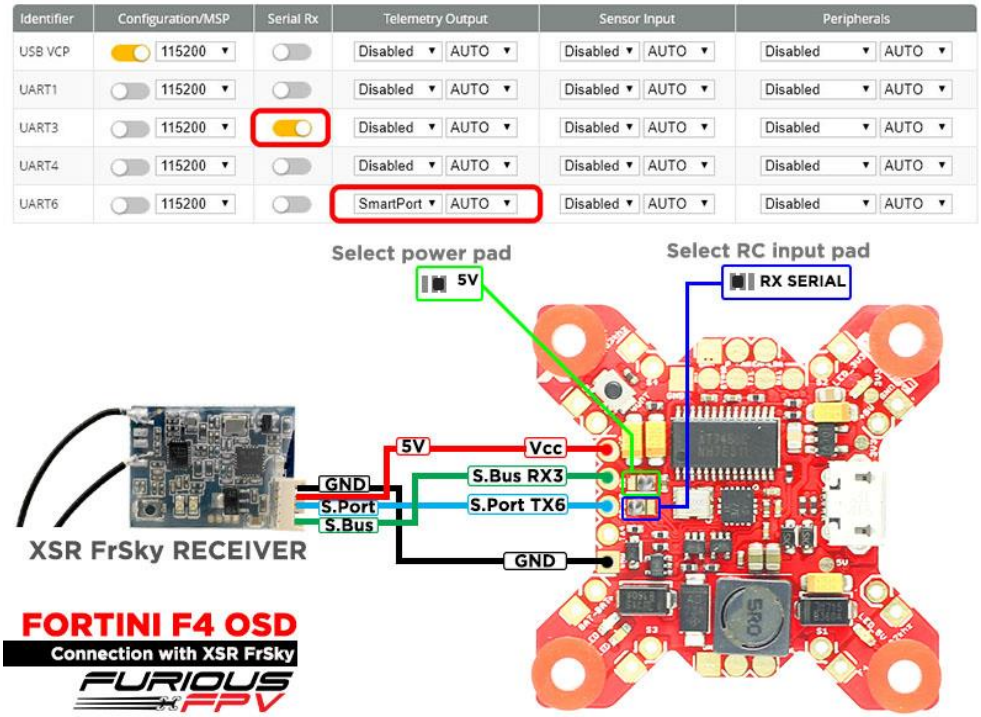
set sbus_inversion = OFF

save

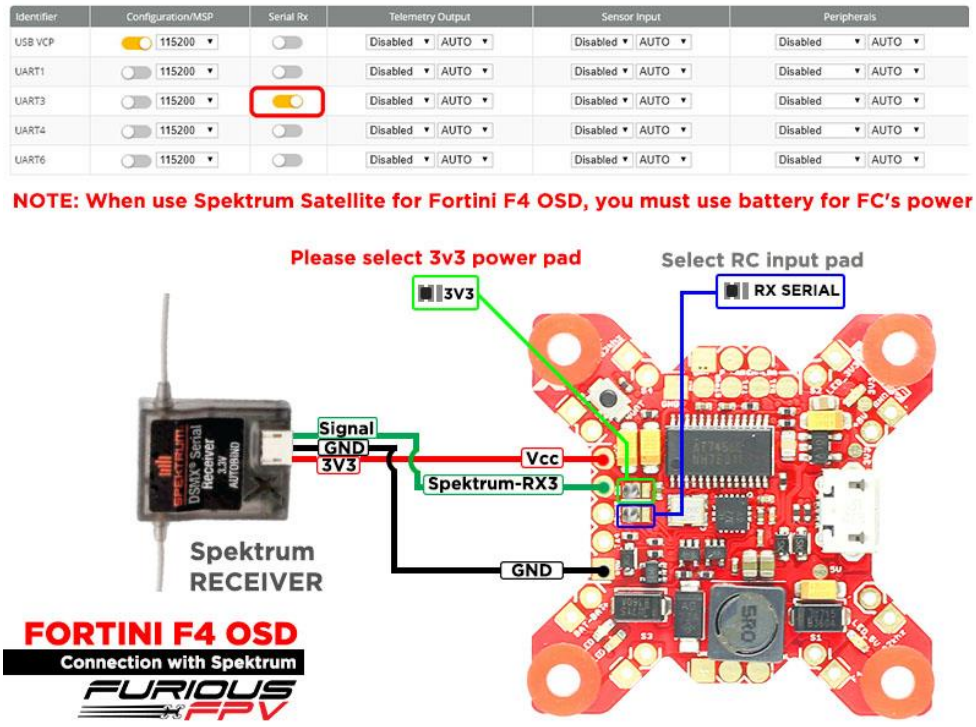
❖ Using XSR FrSky Receiver:

***NOTE:** If **telemetry** of XSR is **not working** with FORTINI F4 OSD, please **update firmware** for XSR receiver

Download firmware here: https://goo.gl/t1LMT5



❖ Using Spektrum Satellite Receiver:



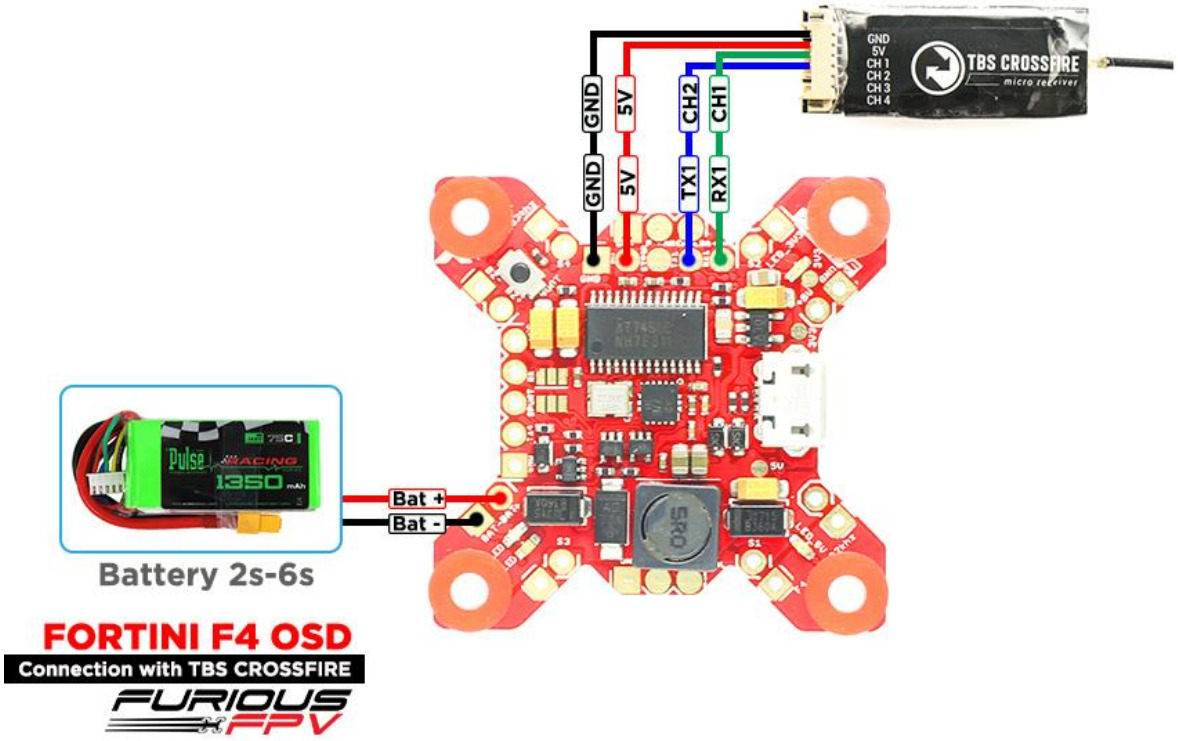
NOTE: When use Spektrum Satellite for Fortini F4 OSD, you must use battery for FC's power

❖ Using TBS Crossfire Receiver:

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		Disabled AUTO	Disabled AUTO	Disabled AUTO



Receiver

Serial-based receiver (SPEKSAT, S ▼ Receiver Mode

Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.

CRSF ▼ Serial Receiver Provider

Connect with Video Transmitter:

❖ Using Stealth Race VTx:

- **Using 5V from VTx to power Camera**

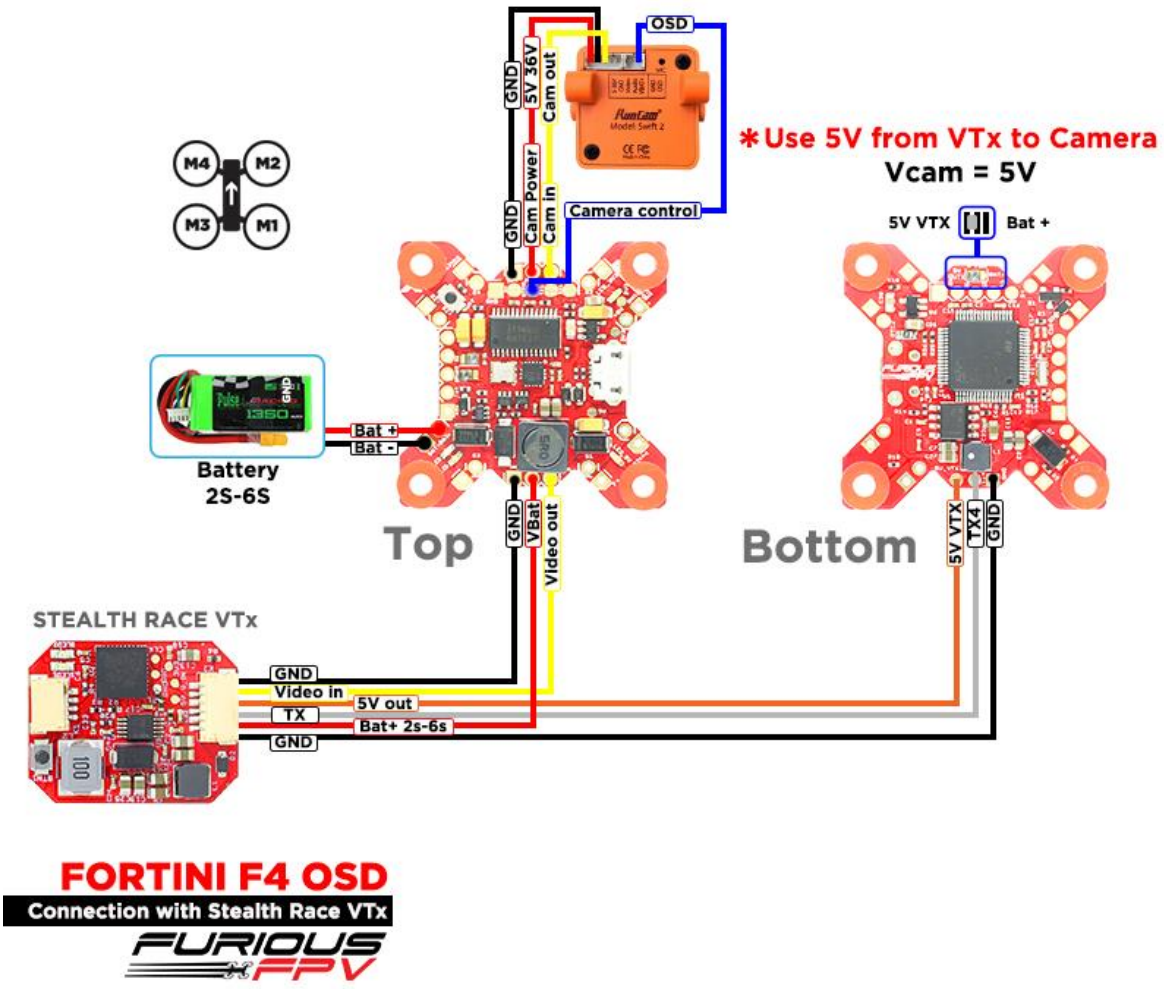
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**

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



FORTINI F4 OSD
Connection with Stealth Race VTx

- **Using Battery from VTx to power Camera**

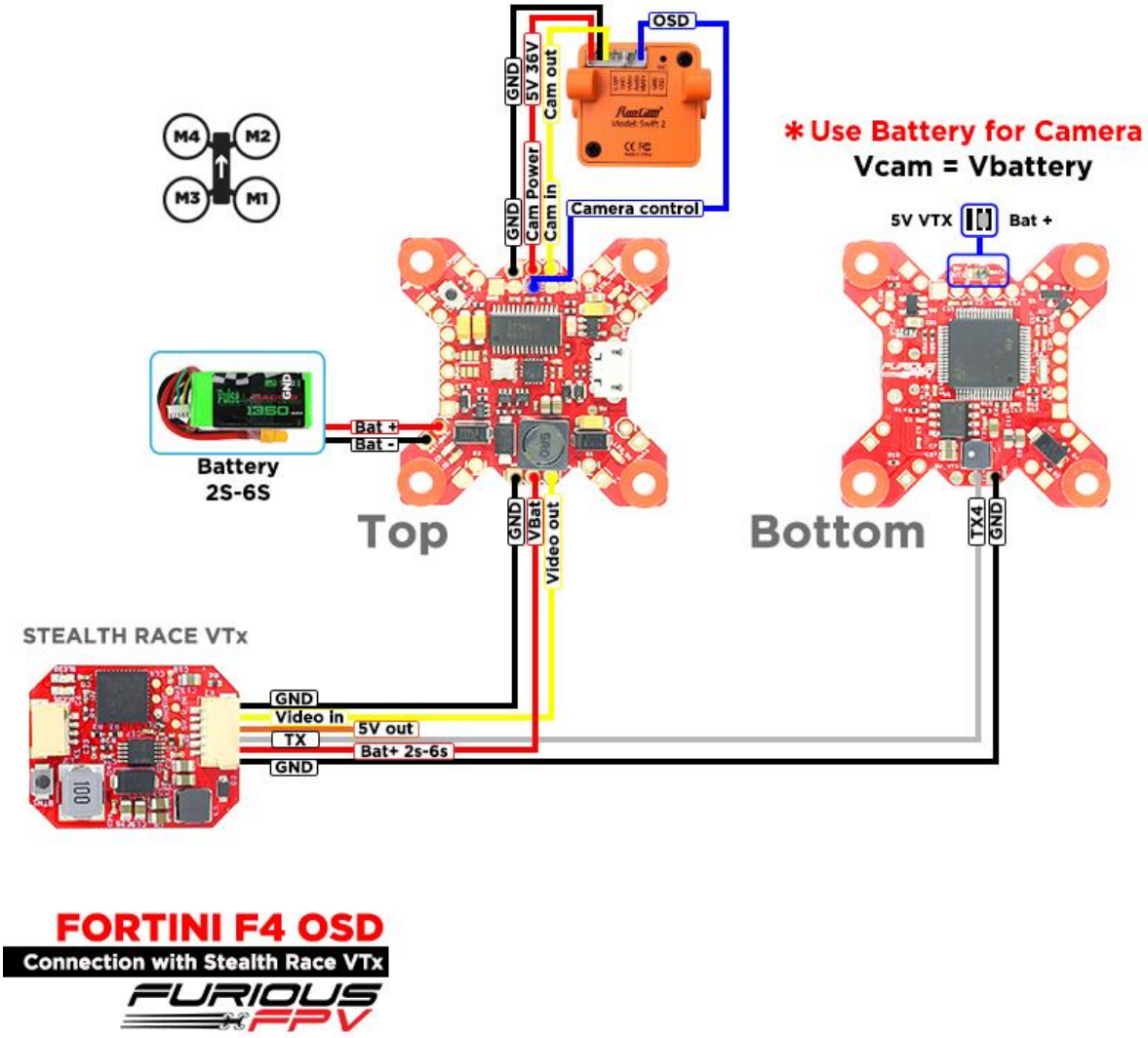
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**

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



FORTINI F4 OSD
Connection with Stealth Race VTx

❖ Using Tramp HV VTx:

- **Using 5V from VTx to power Camera**

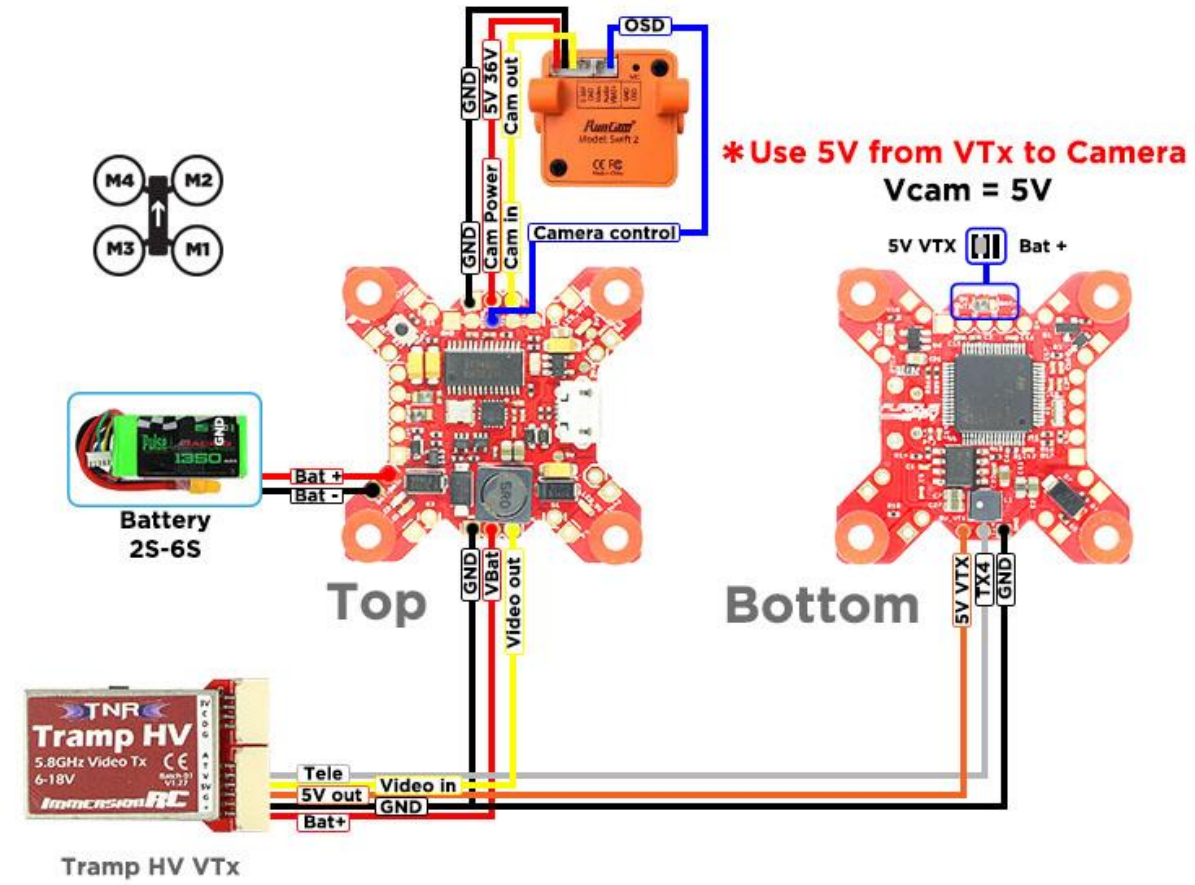
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**

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



FORTINI F4 OSD
Connection with Tramp HV VTx

- **Using Battery from VTx to power Camera**

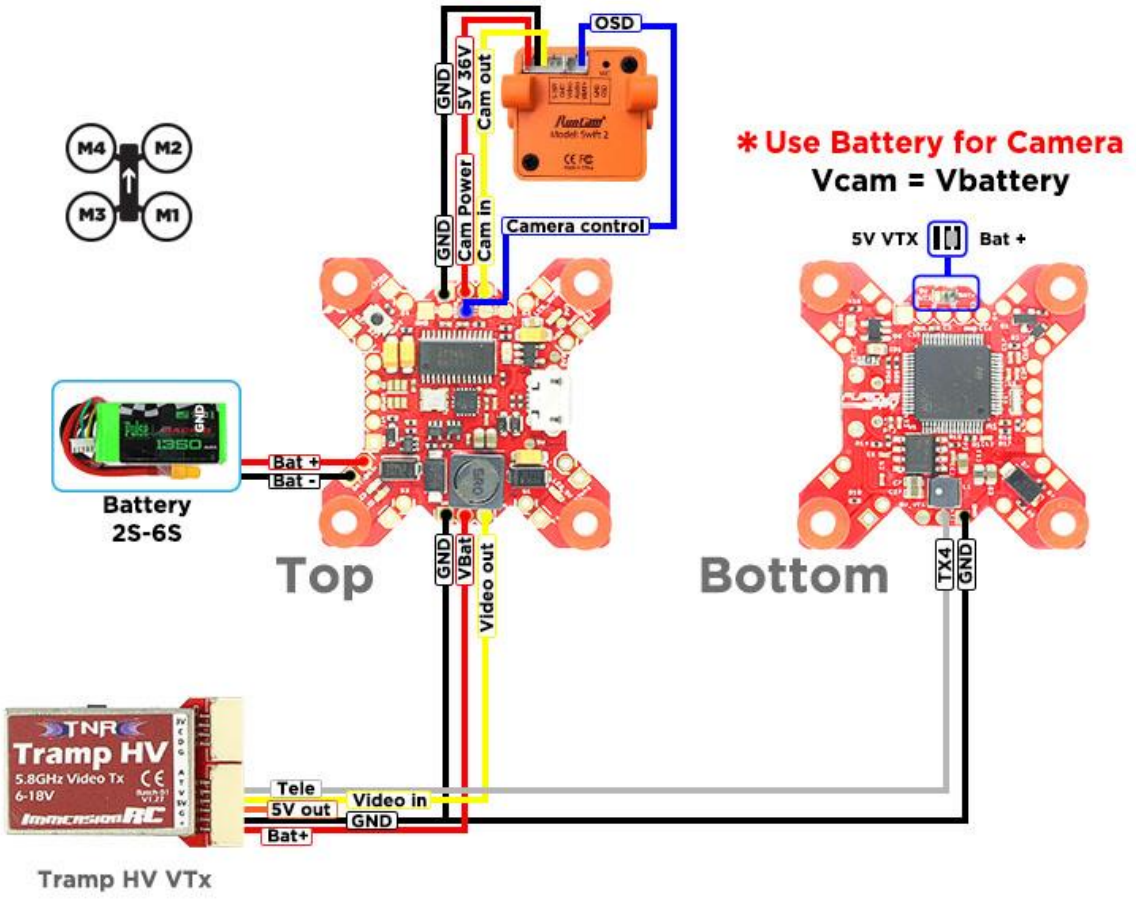
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**

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



FORTINI F4 OSD
Connection with Tramp HV VTx

❖ Using TBS Unify Pro VTx:

- **Using 5V from VTx to power Camera**

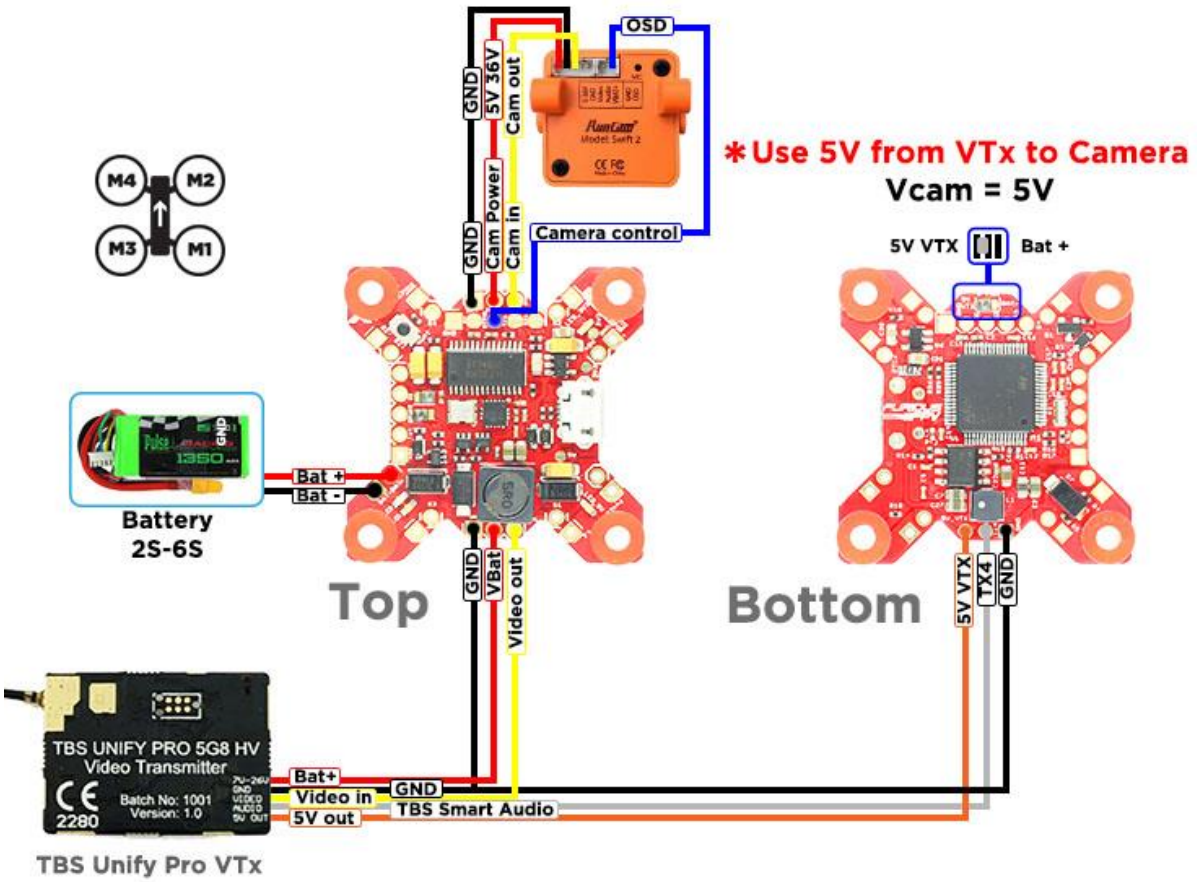
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**

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



FORTINI F4 OSD
Connection with TBS Unify Pro VTx

- **Using Battery from VTx to power Camera**

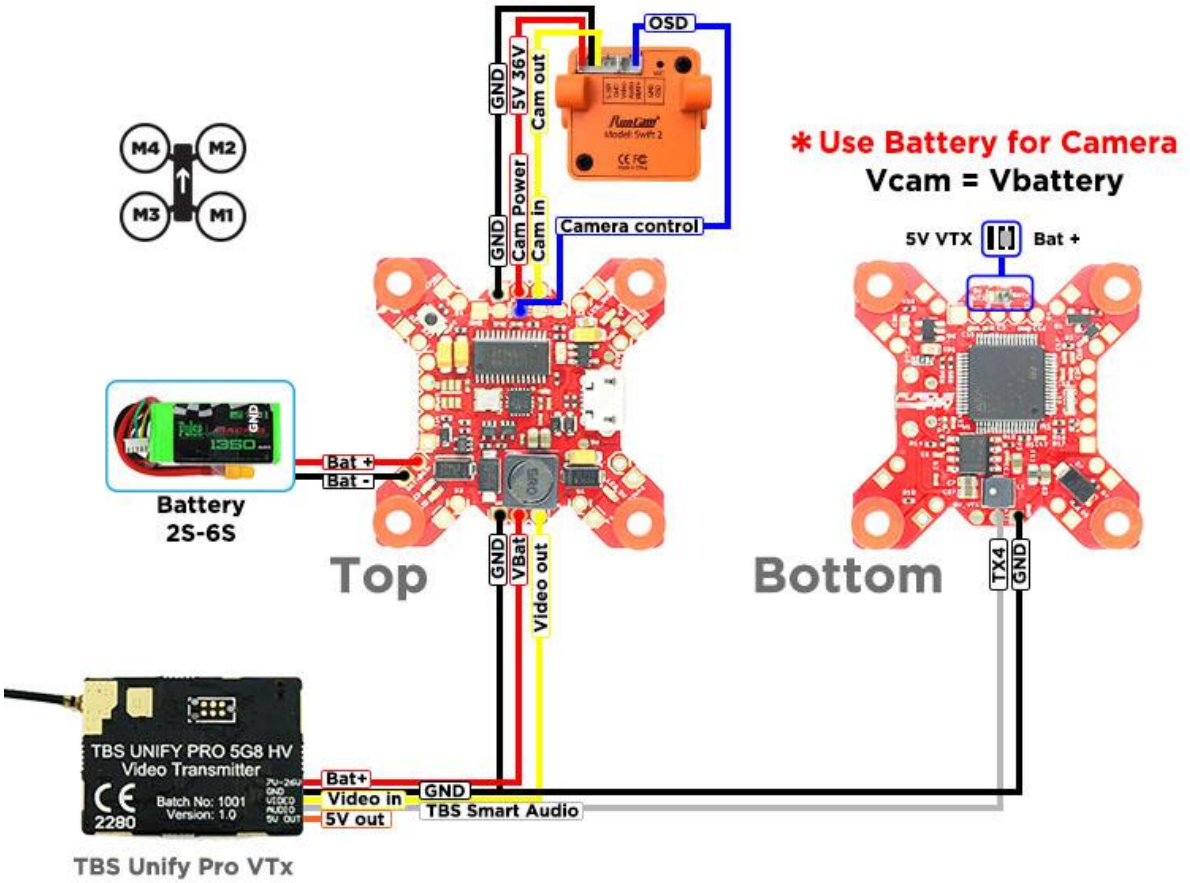
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**

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



FORTINI F4 OSD
Connection with TBS Unify Pro VTx

❖ Using FX FX799T:

- **Using 5V from VTx to power Camera**

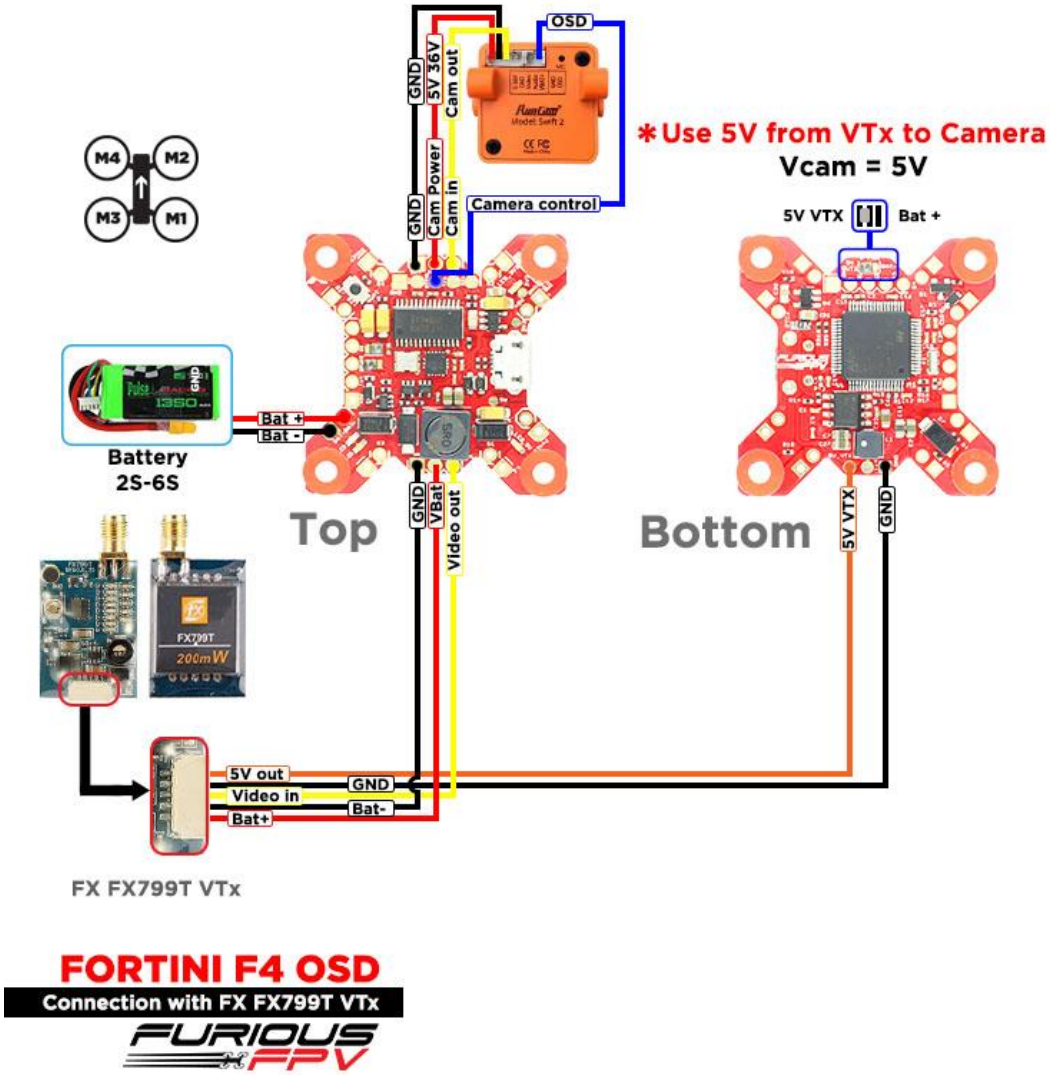
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**

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		Disabled AUTO	Disabled AUTO	Disabled AUTO



- **Using Battery from VTx to power Camera**

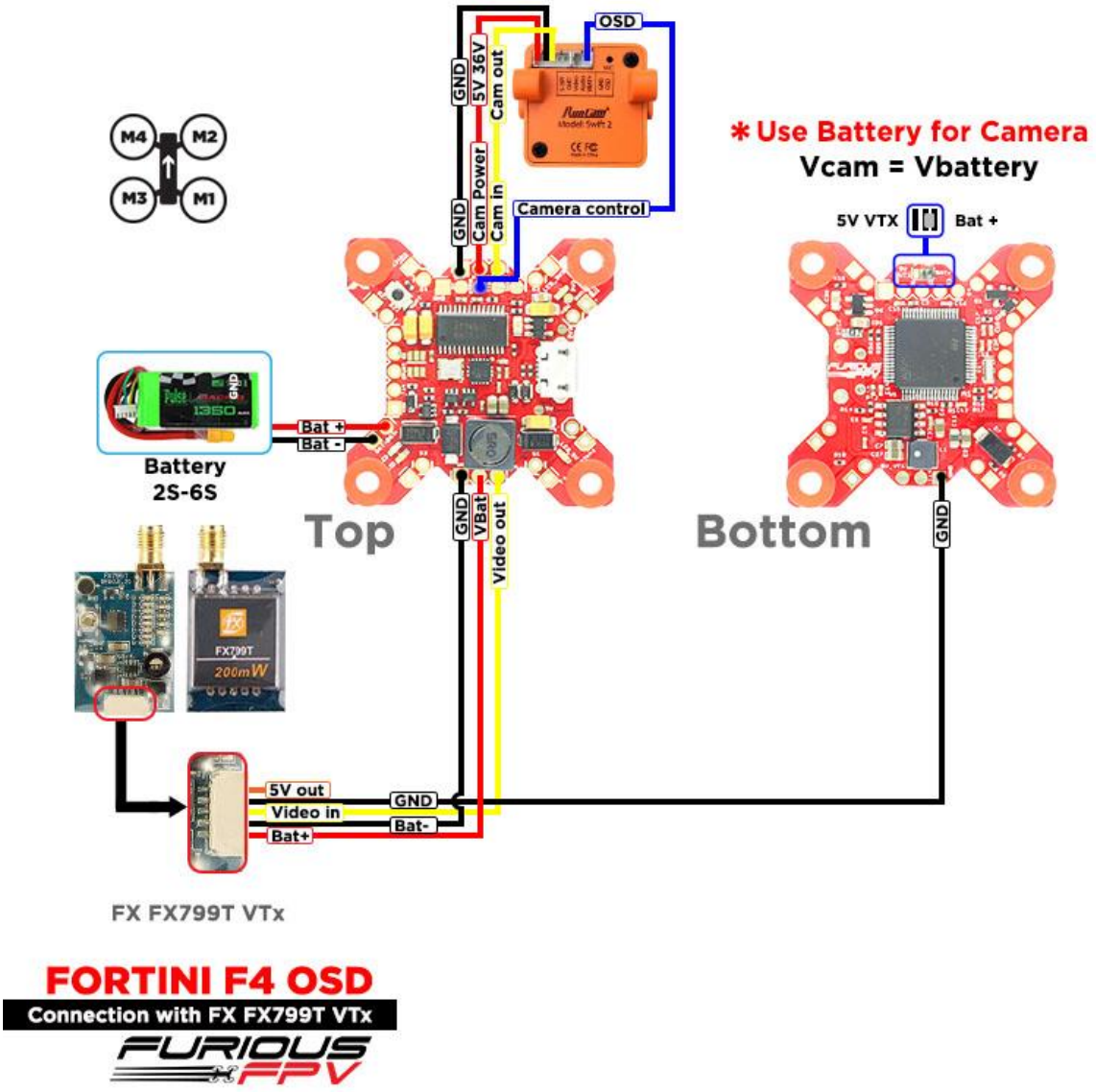
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**

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		Disabled AUTO	Disabled AUTO	Disabled AUTO



External Device:

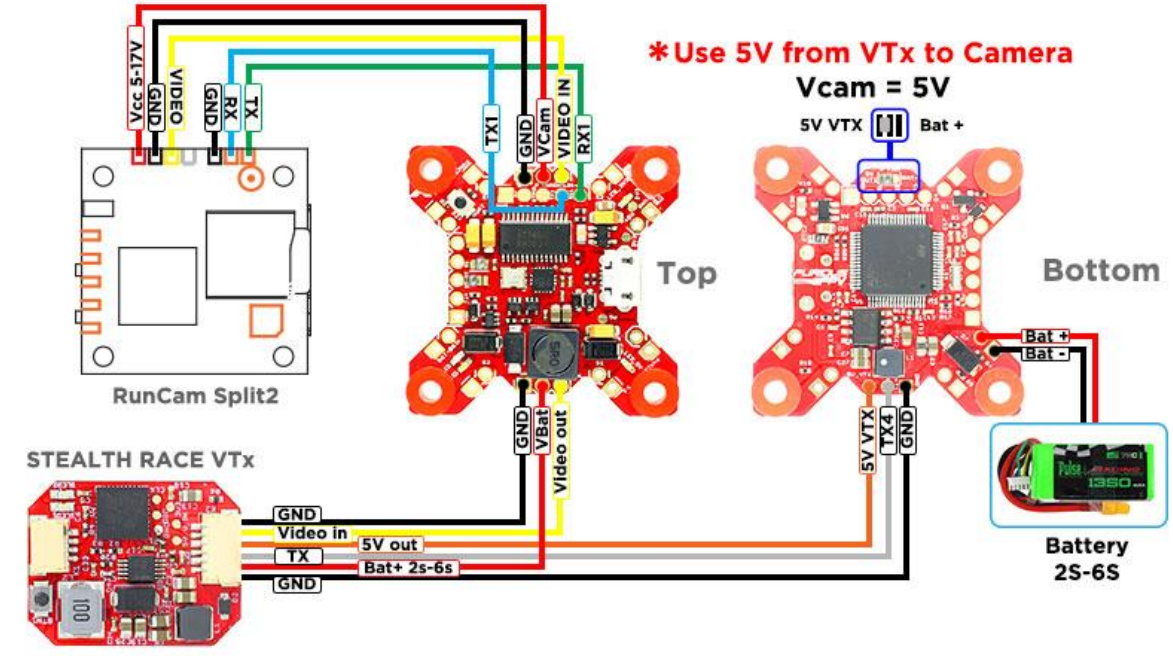
❖ Connect Runcam Split2 using Stealth Race VTx

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	RunCam Split 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



FORTINI F4 OSD
Connection with RunCam Split 2

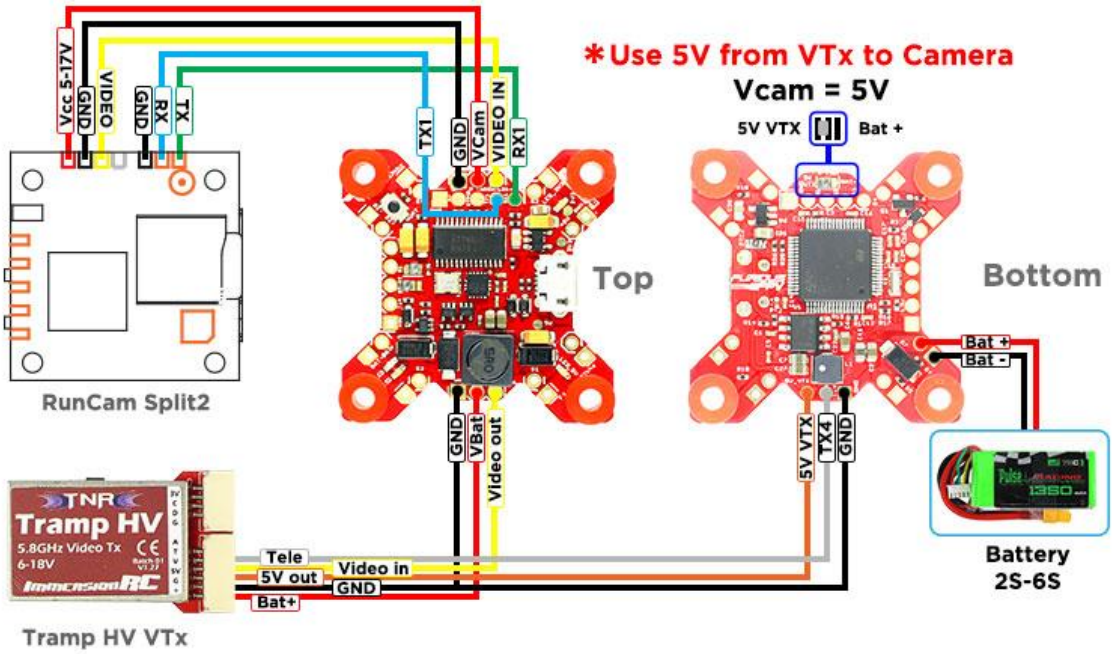
❖ Connect Runcam Split2 using Tramp HV VTx

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	RunCam Split 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



FORTINI F4 OSD

Connection with RunCam Split 2 + Tramp HV

FURIOUS FPV

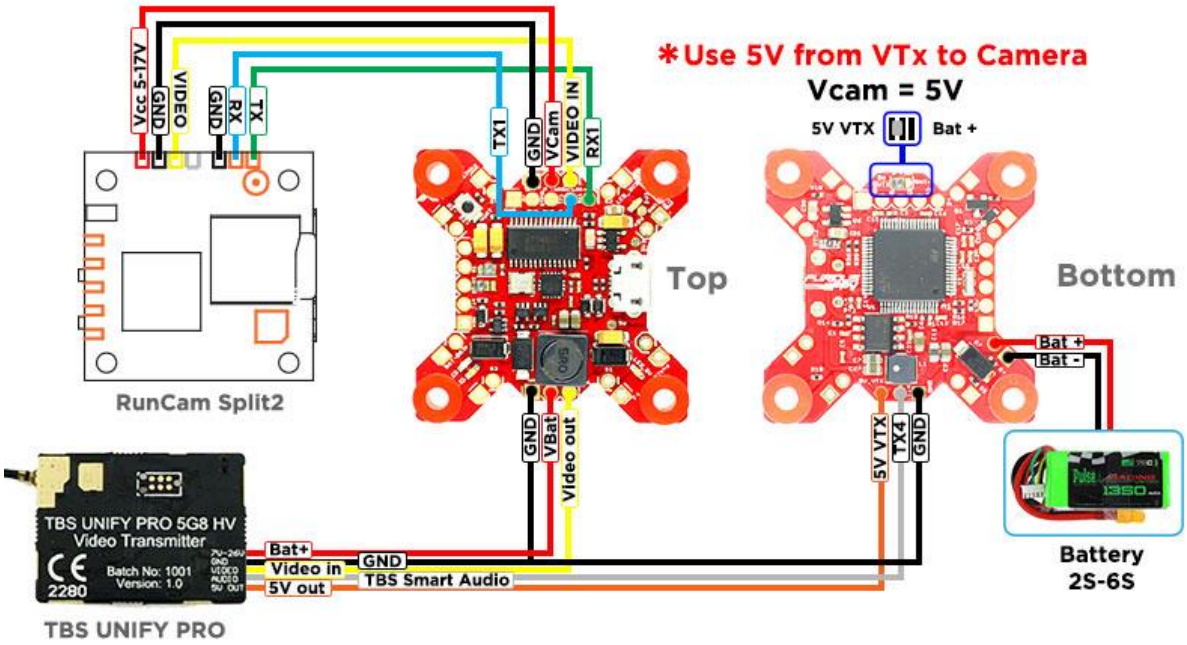
❖ Connect Runcam Split2 using TBS Unify Pro VTx

Ports

WIKI

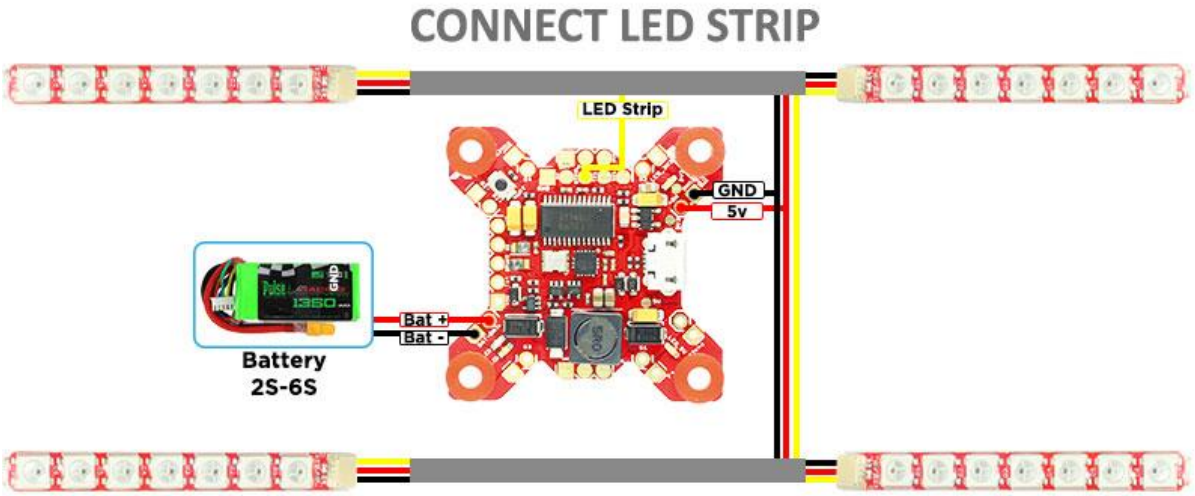
Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do NOT disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

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	RunCam Split 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



FORTINI F4 OSD
Connection with RunCam Split 2 + Unify

❖ Change Camera OSD Control to ues LED_Strip



Change Camera OSD Control to use LED_Strip

Go to CLI in Betaflight paste this string:

Resource CAMERA_CONTROL none
Resource LED_STRIP 1 B07
Save

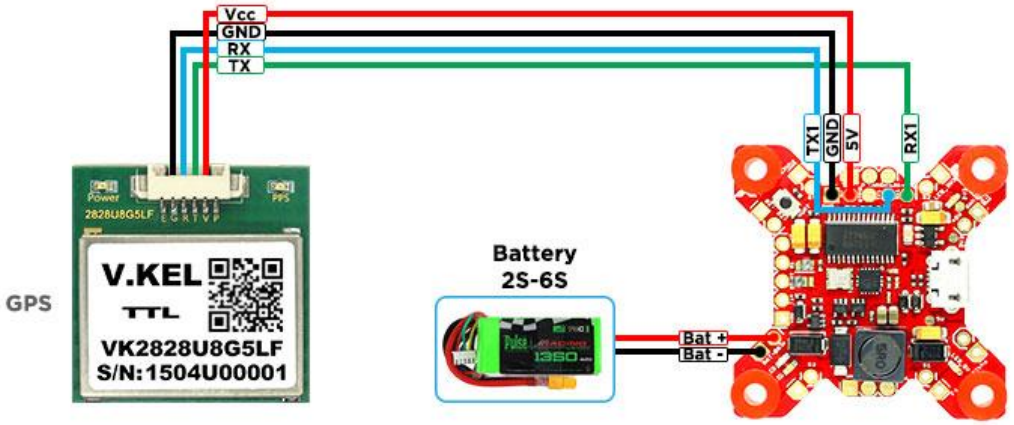
❖ Connect with GPS

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

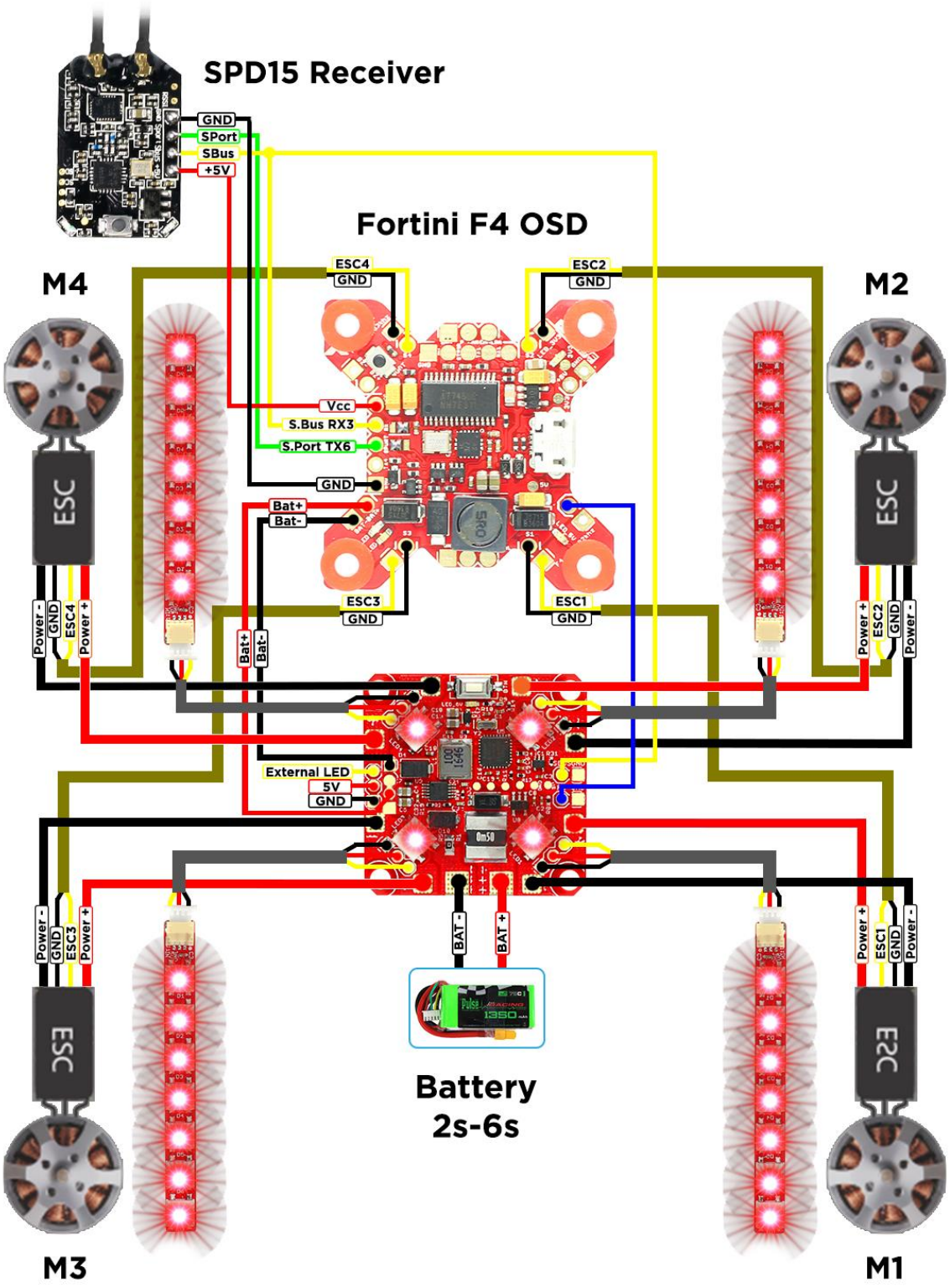


FORTINI F4 OSD

Connection with GPS

Connect with Lightning PDB:

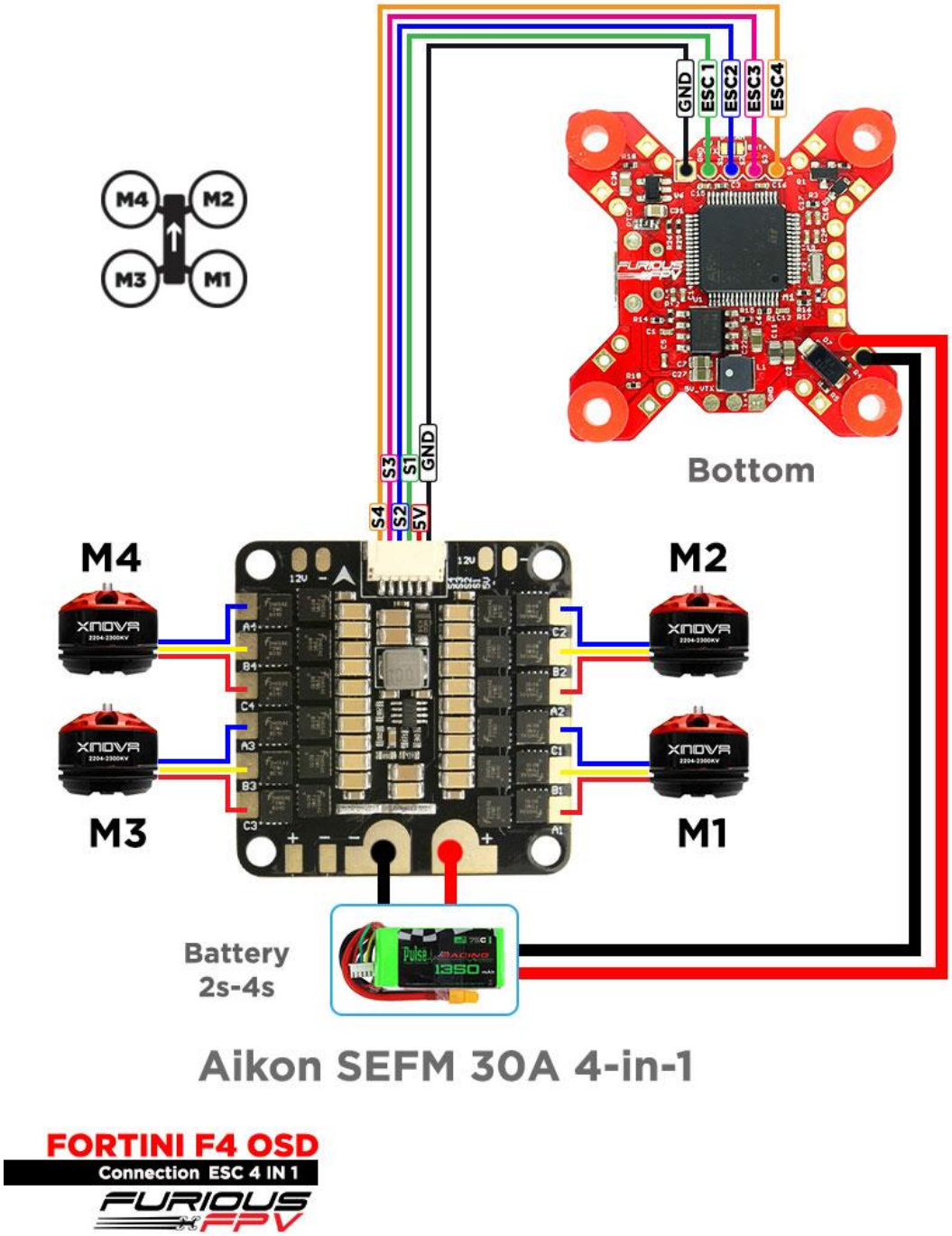
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**



Connect with ESC 4 in 1:

❖ Using Aikon SEFM 30A:

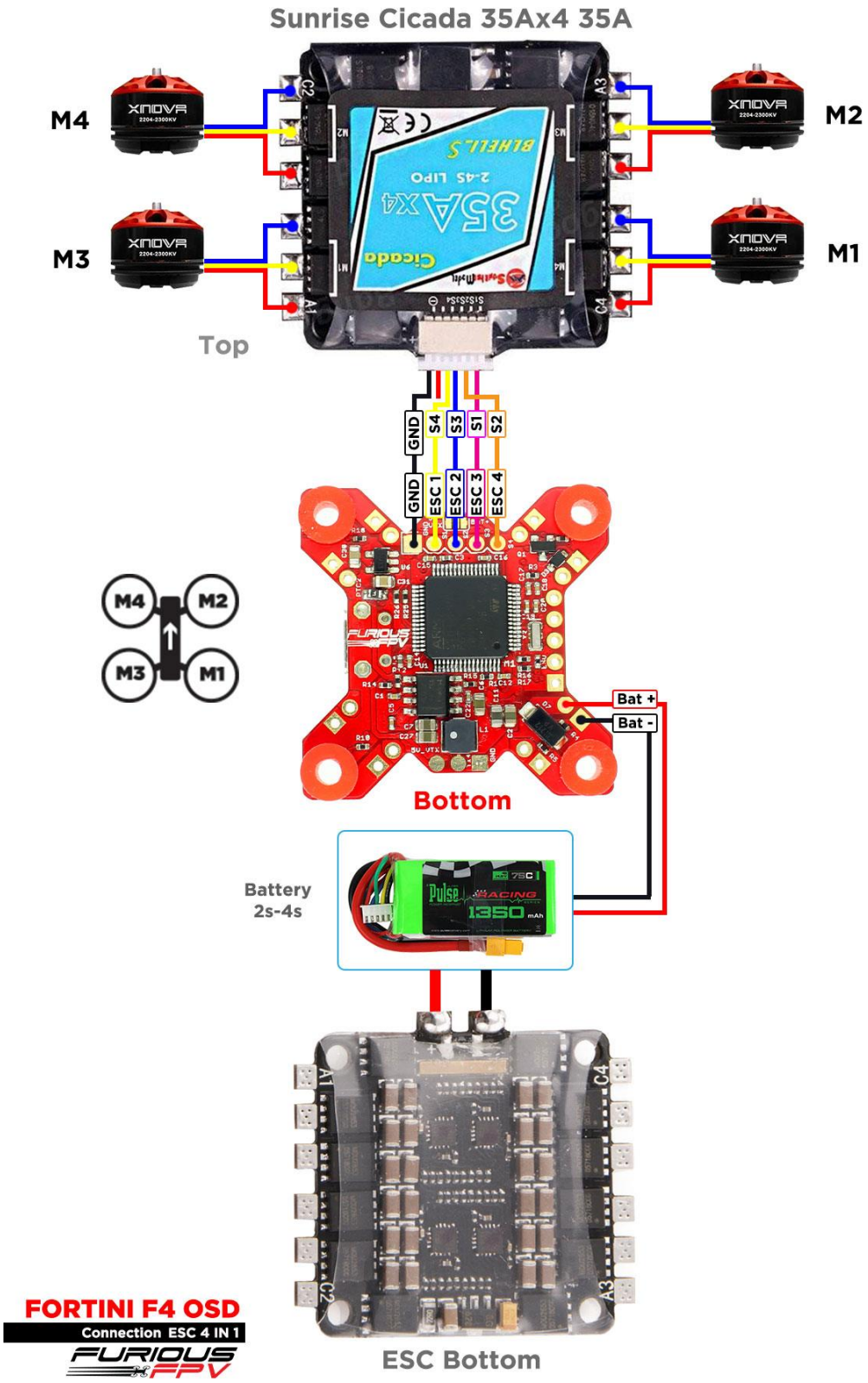
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**



FORTINI F4 OSD
Connection ESC 4 IN 1
FURIOUS FPV

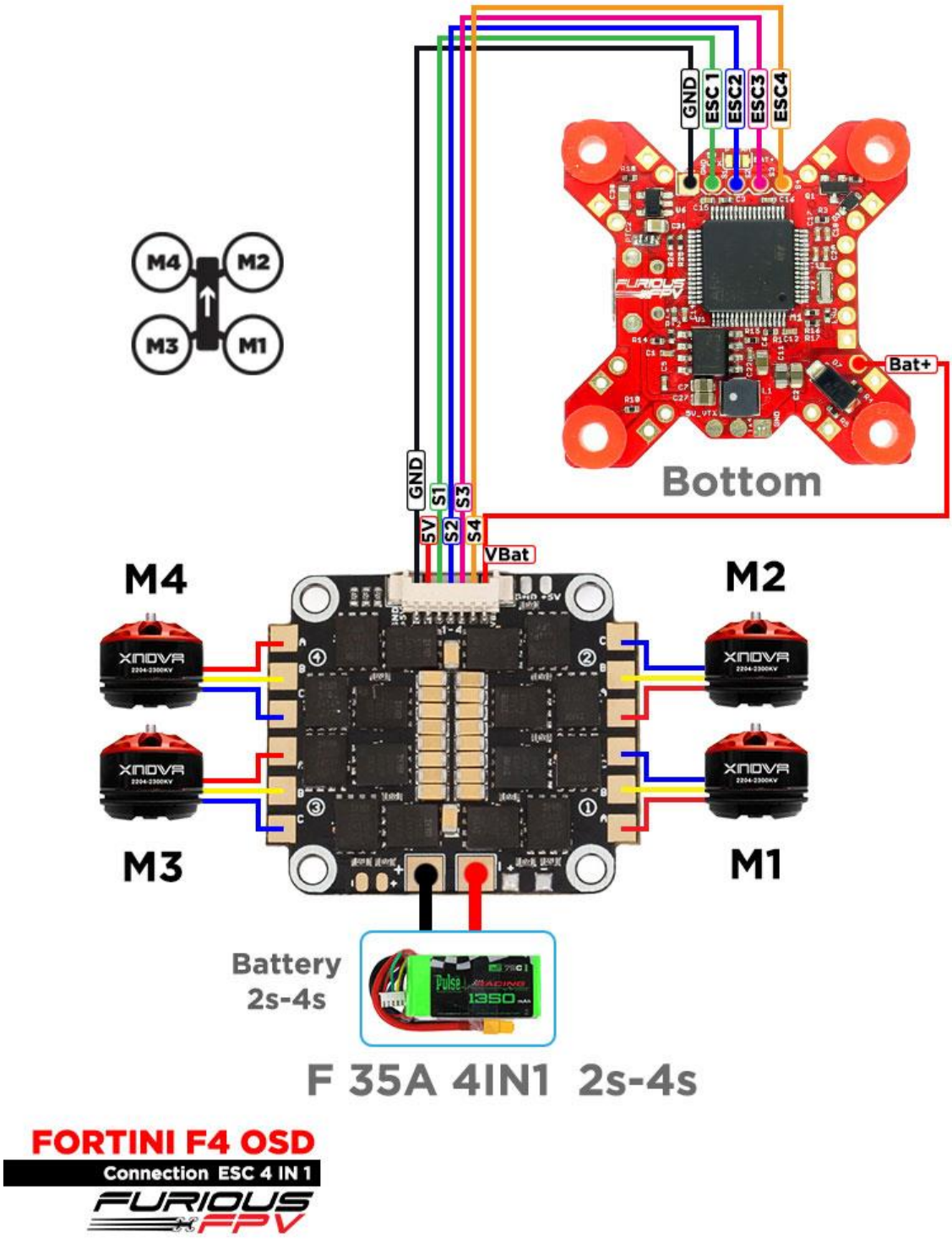
❖ Using Cicada 35x4 35A:

***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**



❖ Using T-Motor F 35A 4IN1-4S:

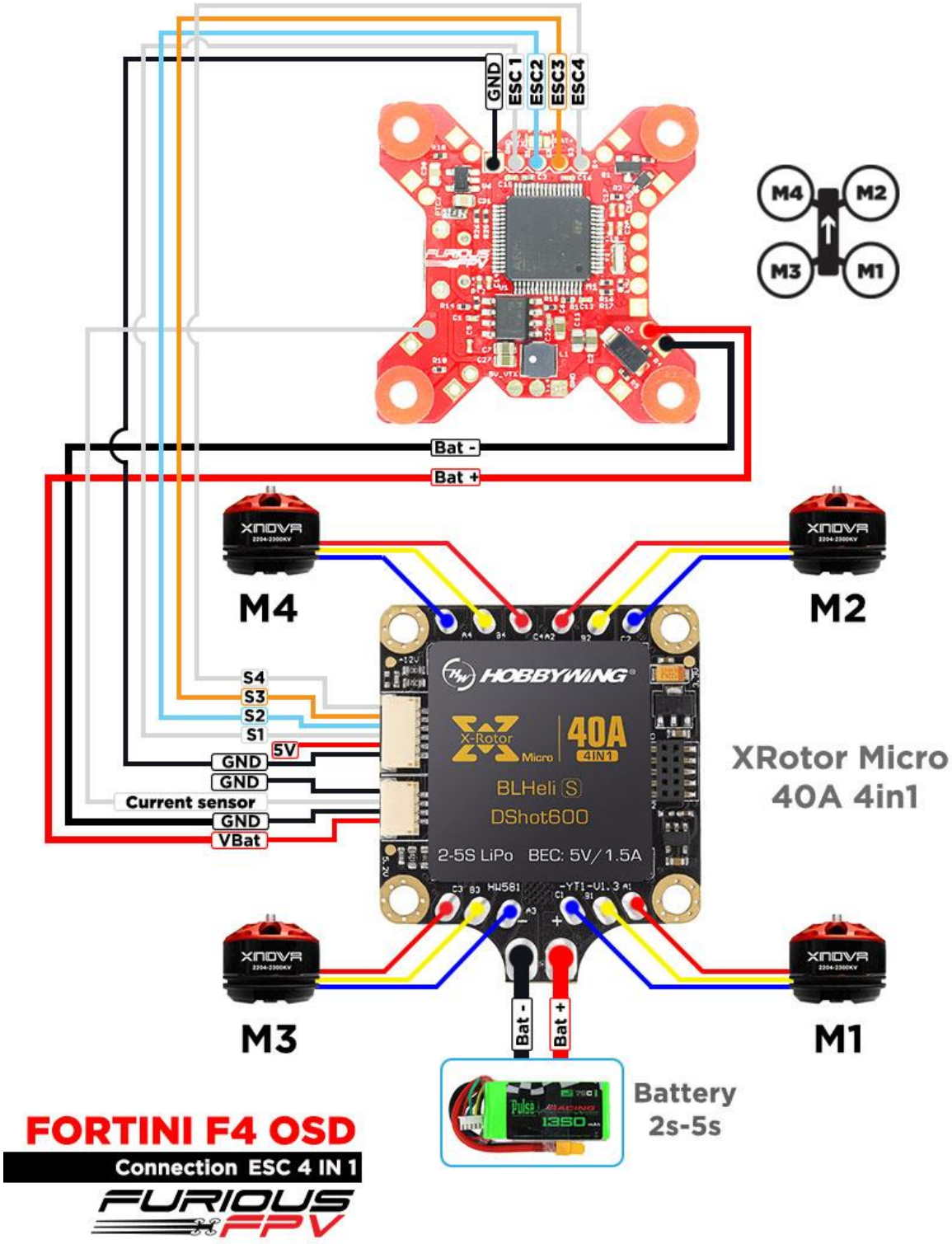
***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**



FORTINI F4 OSD
Connection ESC 4 IN 1

❖ Using Hobbywing XRotor Micro 40A 4in1:

***NOTE:** **Fortini F4 OSD can support up to 6S Lipo battery but make sure other devices also support it.**



Basic configuration

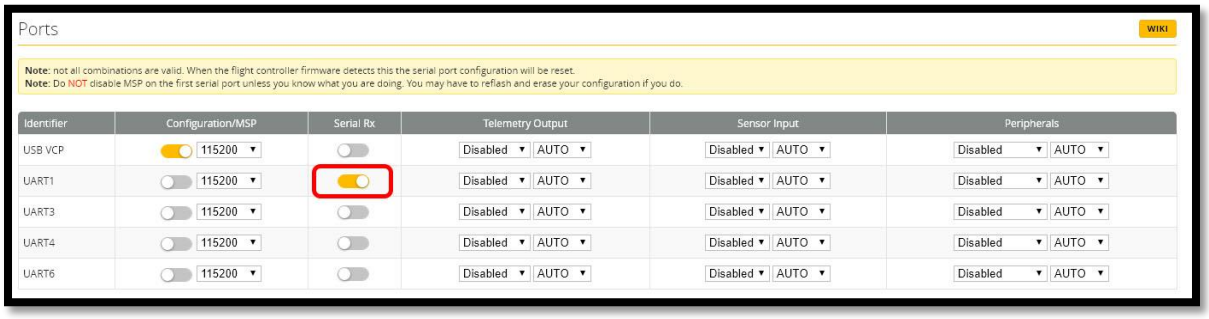
Please follow carefully these next steps, and always **remove** your propellers when you're configuring your quad

STEP 1: Connect Fortini F4 OSD with computer via **USB** cable and then **open** BetaFlight

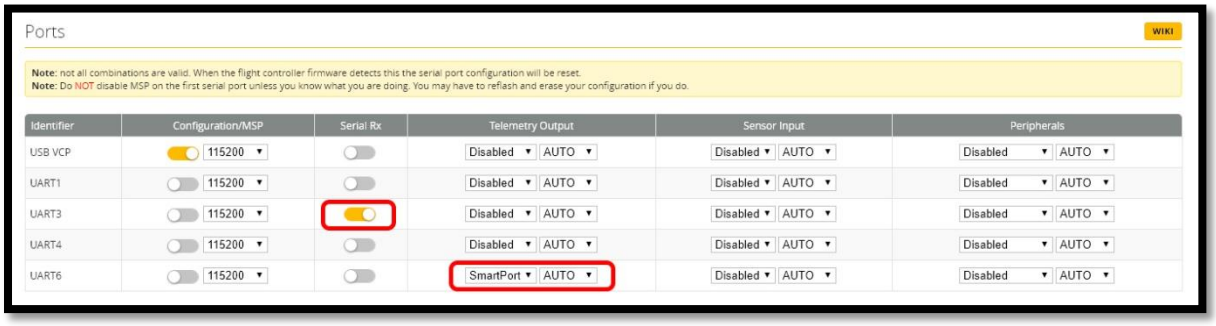
STEP 2: Configure **Ports.**

(1) Configure Receiver:

- **With TBS Crossfire Receiver**: Turn on **Serial Rx** of **UART 1** to use **Receiver Mode**

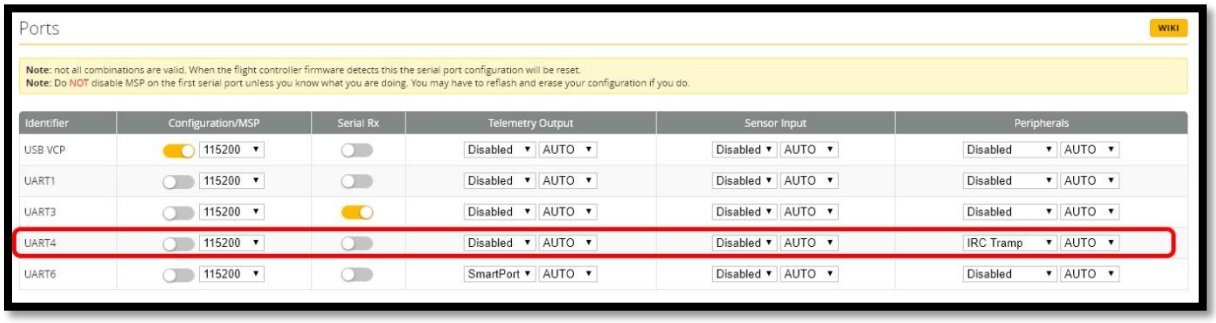


- **With RX Serial**:
  - Turn on **Serial Rx** of **UART 3** to use **Receiver Mode**
  - Select **SmartPort** of **UART 6** to use S.Port **TX 6**

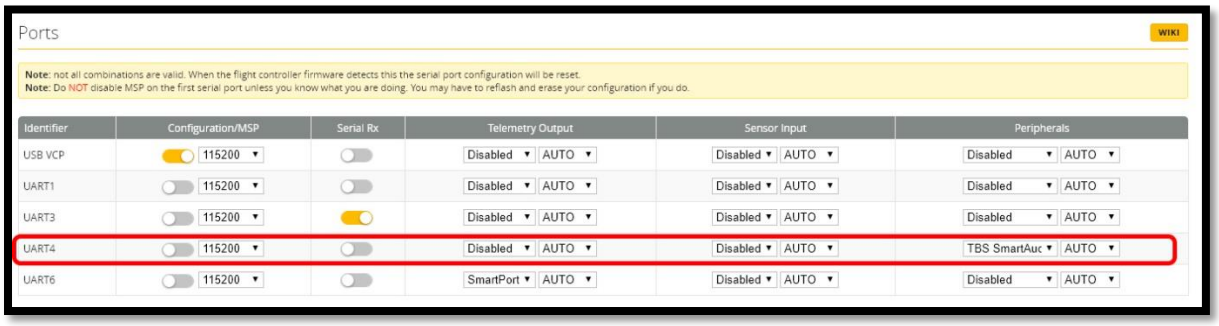


(2) In Peripherals of **UART 4:**

- Select **IRC Tramp** for **Tramp HV VTx** and **Stealth Race VTx**

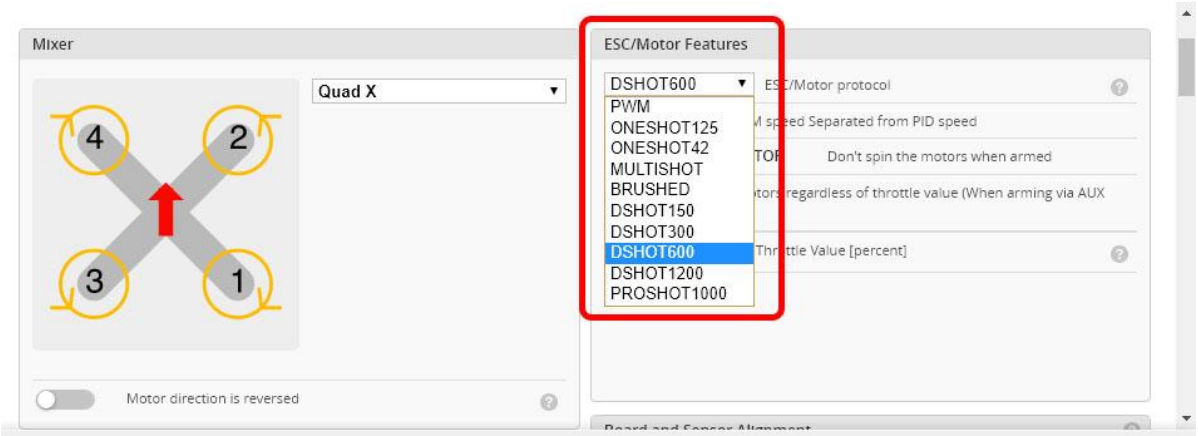


- Select **TBS Smartaudio** for **TBS Unify Pro VTx**

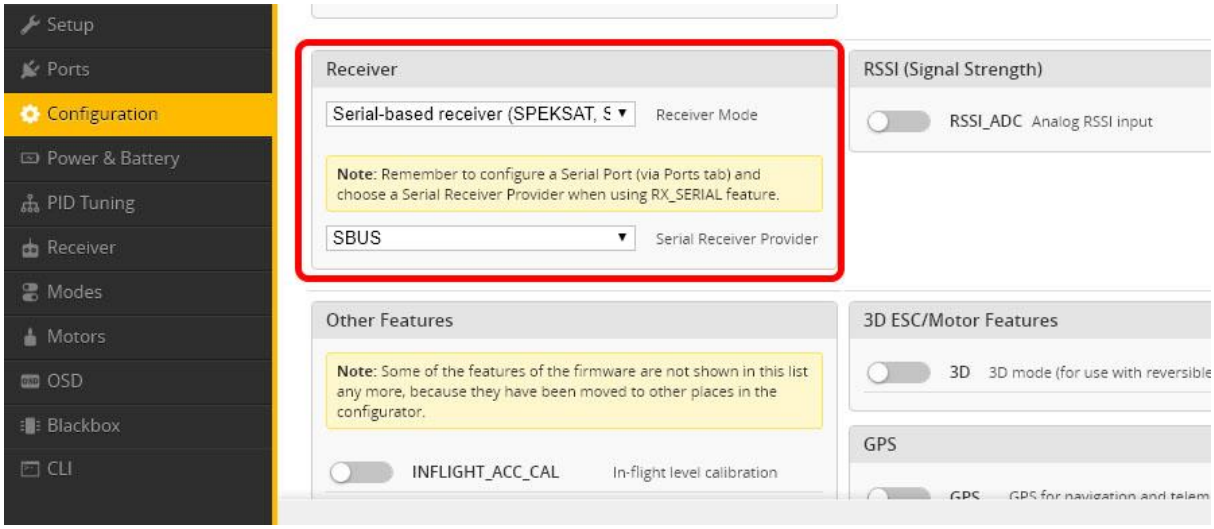


* **NOTE:** Please make sure that all the connections are correct.

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



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

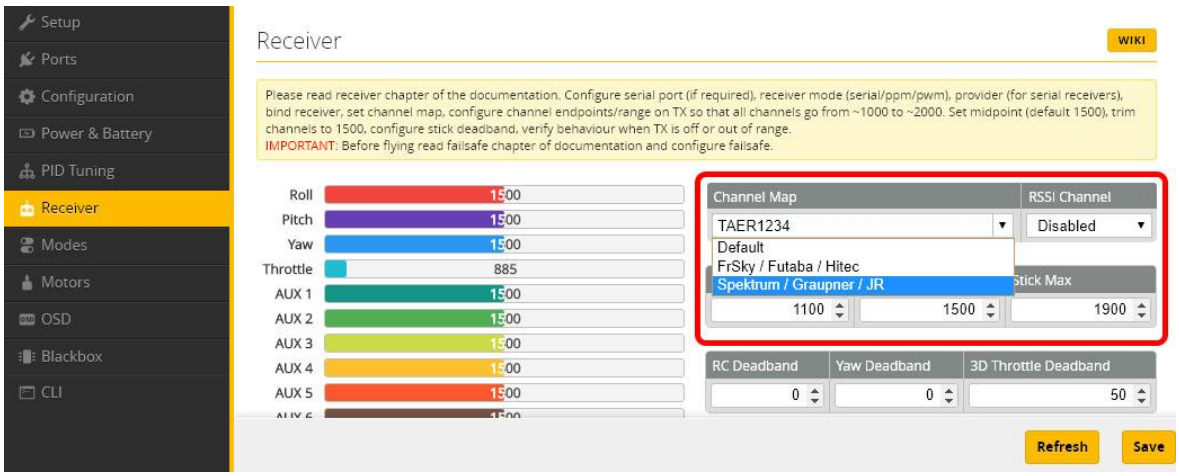


If you are using SBus, iBus or a Spektrum Satellite, you will need to pick your Serial Receiver Provider. Follow below table:

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 suitable option with your RX.



Once again, click “**Save**”.

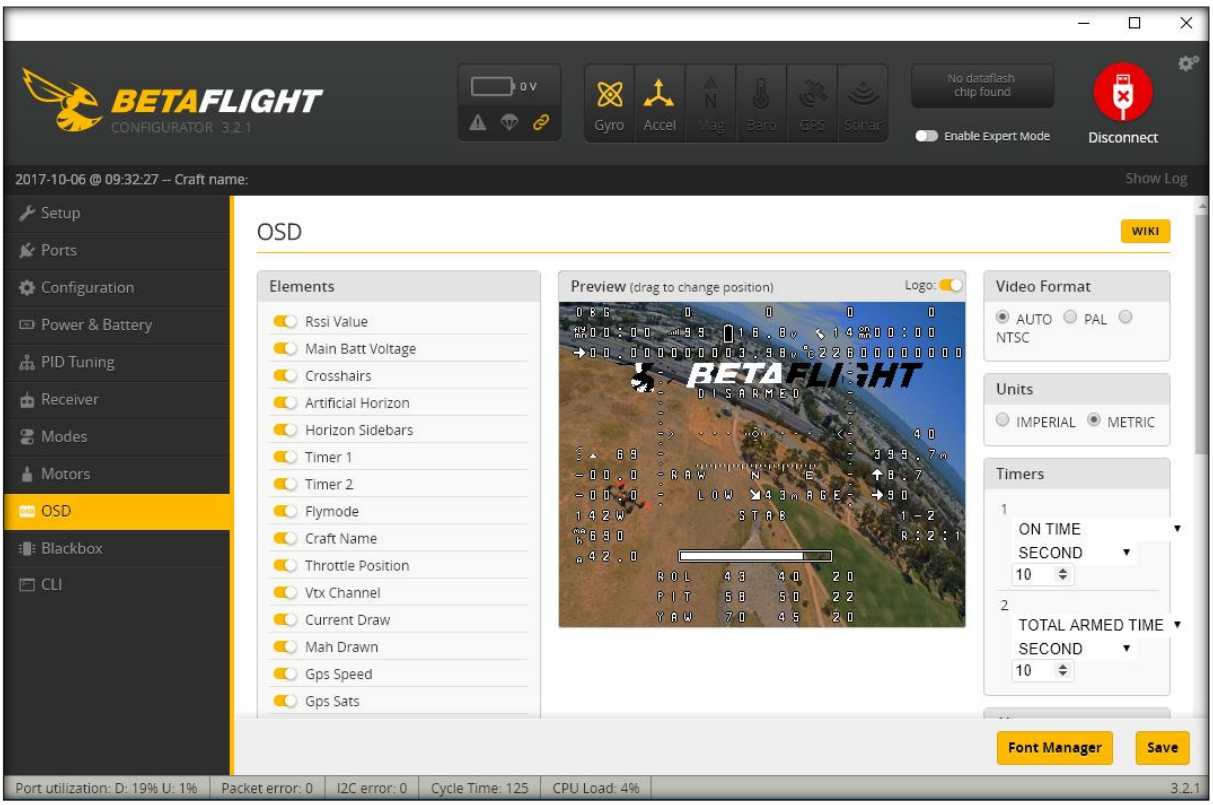
Tips

Guideline configuration OSD with BetaFlight

STEP 1: Connect Fortini F4 OSD with PC via USB cable.

STEP 2: Open **Betaflight configurator** on Google Chrome.

STEP 3: Click **Connect** on **Betaflight** interface then go to **OSD** tab to configure.

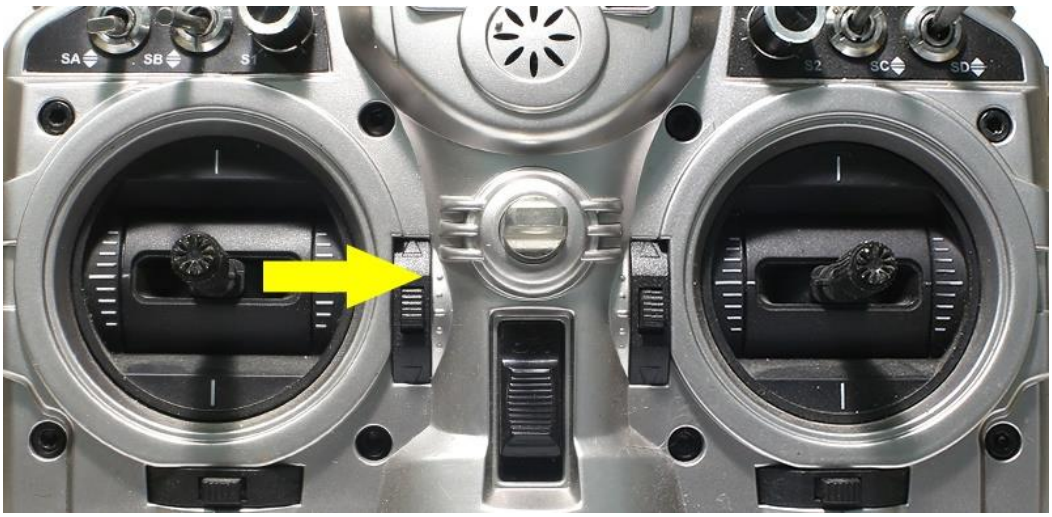


STEP 4: After configuring OSD please click **Save** to save your configuration.

How to open camera setting by Transmitter

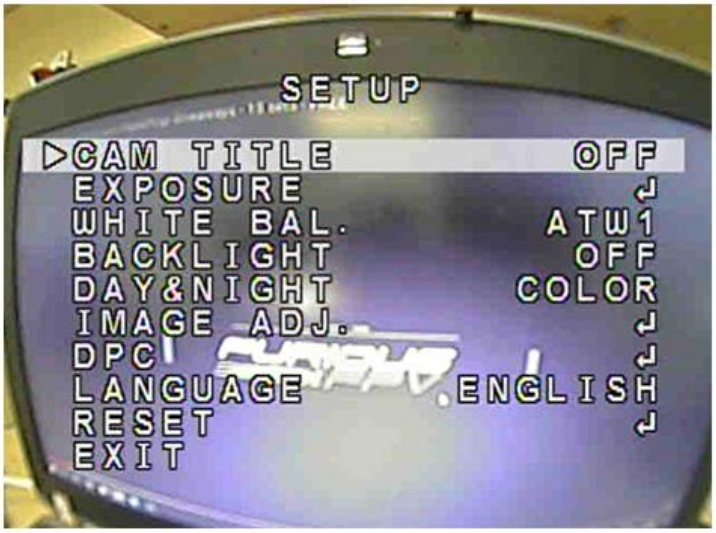
Stick command:

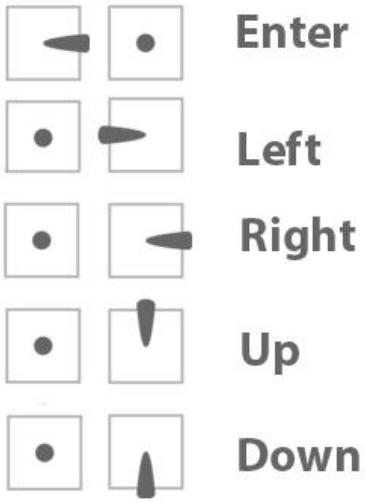
- THROTTLE MIDDLE
- YAW RIGHT
- PITCH MIDDLE
- ROLL MIDDLE



To navigate through menu:

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





How to open Betaflight OSD by Transmitter

Stick command:

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

To navigate through menu:

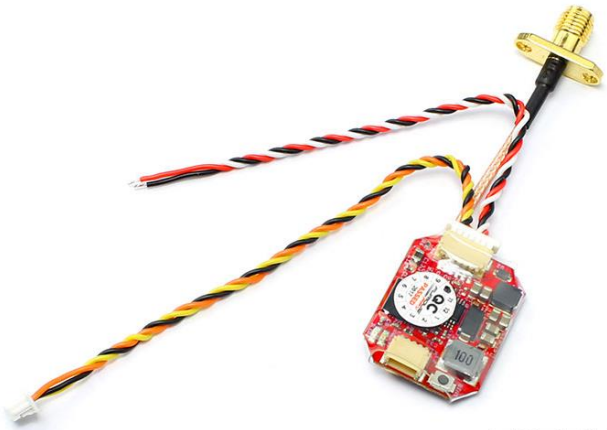
- **PITCH/ROLL** sticks are used to navigate
- **YAW** stick is used to **adjust / change** values

VTx configuration by Transmitter

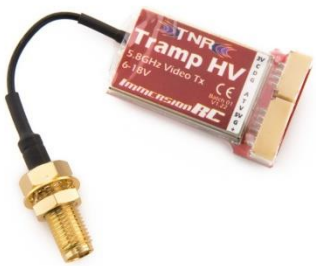
From **Betaflight OSD** menu use stick go to**: Main menu > Features**

- Select **SA** if using **TBS Unify Pro VTx**

- Select **TR** if using **Stealth Race VTx** or **Tramp HV VTx**



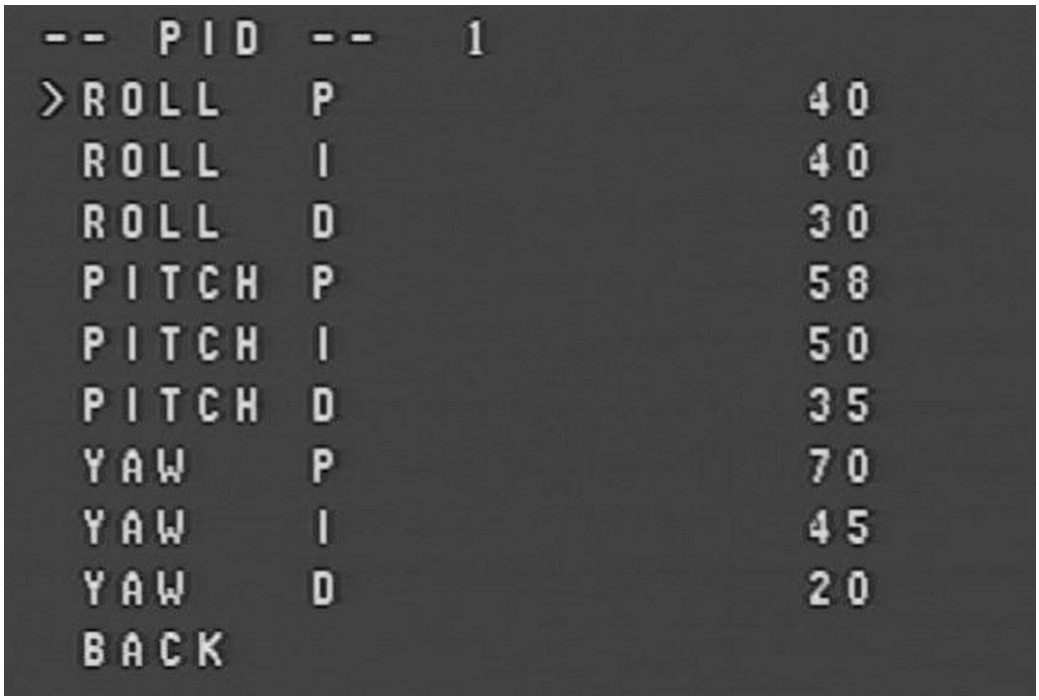
STEALTH RACE VTX



TRAMP HV VTX

PIDs tunning on Betaflight OSD

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



Thanks for using our product