

# Sector4 FR Freestyle FPV Drone Manual



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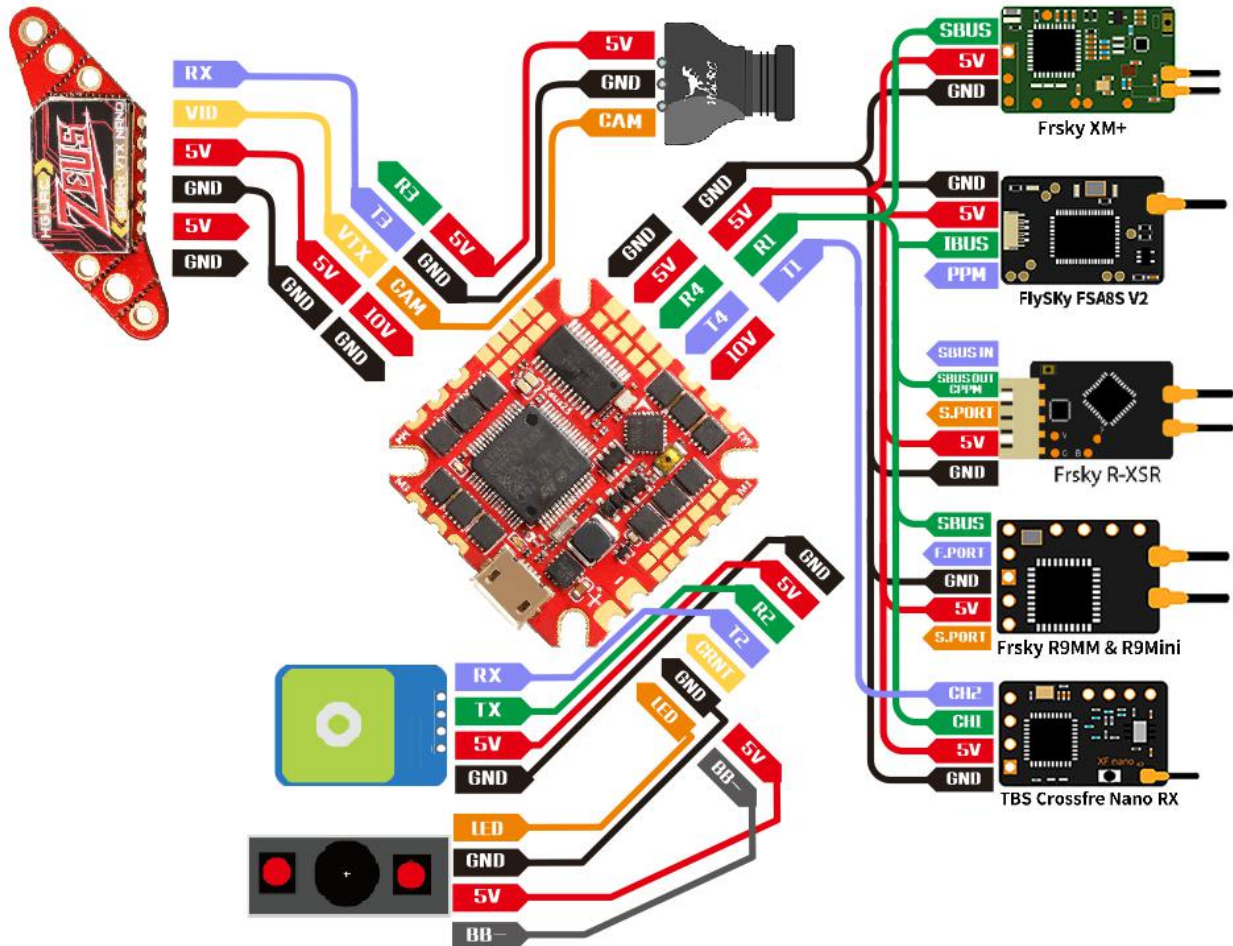
## Package Included

Sector4 FR Freestyle FPV Drone *1	Accessory Bag*1
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# 1. Product Specifications

Product parameters	
Model	Sector4 FR Freestyle FPV Drone
Frame Kit	Sector4 FR FPV Freestyle Frame Kit
Flight Controller	Zeus 25 AIO
VTX	Zeus nano 350mW
Motor	1804 Motor 4S KV3500
Support receiver	SBUS .DSMX.i.BUS
Input Voltage	3-4S Lipo
Weight	140.8g

# 2. Interface Description



## 3. Check the flight control drive

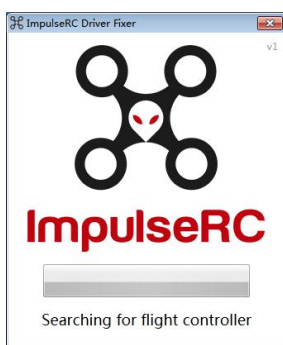
1. Long Press BOOT buttons.connect USB.The system automatically install the driver



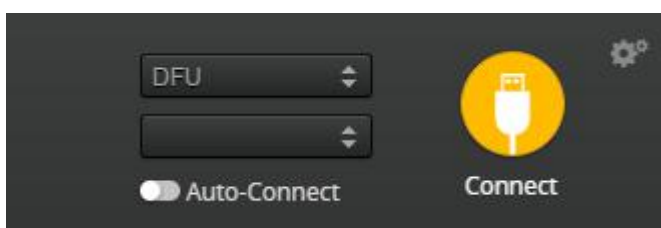
2.Driver cannot be installed, please download ImpulseRC\_Driver\_Fixer



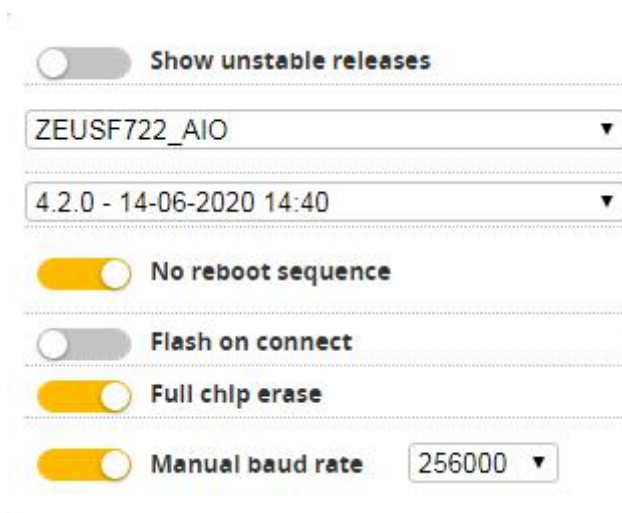
3.Double-click on the run(Plug in the flight controller to automatically install the driver)




4.open betaflyght configurator , enter DFU mode

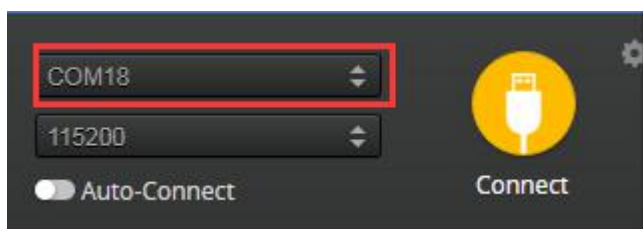


5. Click **Firmware Flasher** Select firmware version



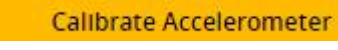
6. Click **Load Firmware [Online]** Load firmware. **Flash Firmware** Waiting for completion **Erasing ...** It will be prompted upon completion. **Programming: SUCCESSFUL**

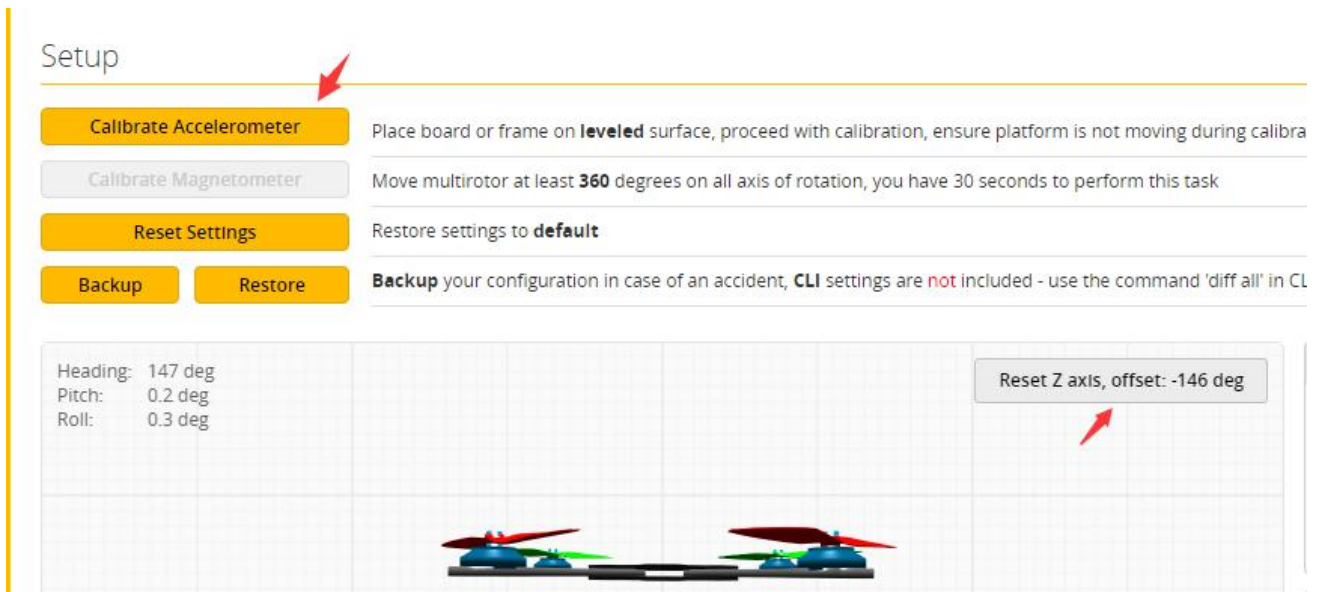
7. open betaflyght configurator  . Controller plugged into the computer. Betaflight Automatically assigned port, click “Connect” Enter setup interface (Different computer COM)



## 4. Calibration accelerometer

1. Put the aircraft horizontal and click “Reset Z axis”

Click again 



The screenshot shows the 'Setup' page of the HGLRC interface. It features a list of calibration options:

- Calibrate Accelerometer** (highlighted with a red arrow): Place board or frame on **leveled** surface, proceed with calibration, ensure platform is not moving during calibra
- Calibrate Magnetometer**: Move multirotor at least **360** degrees on all axis of rotation, you have 30 seconds to perform this task
- Reset Settings**: Restore settings to **default**
- Backup** and **Restore**: **Backup** your configuration in case of an accident, **CLI** settings are **not** included - use the command 'diff all' in CL

Below the buttons, there is a status panel showing:

- Heading: 147 deg
- Pitch: 0.2 deg
- Roll: 0.3 deg

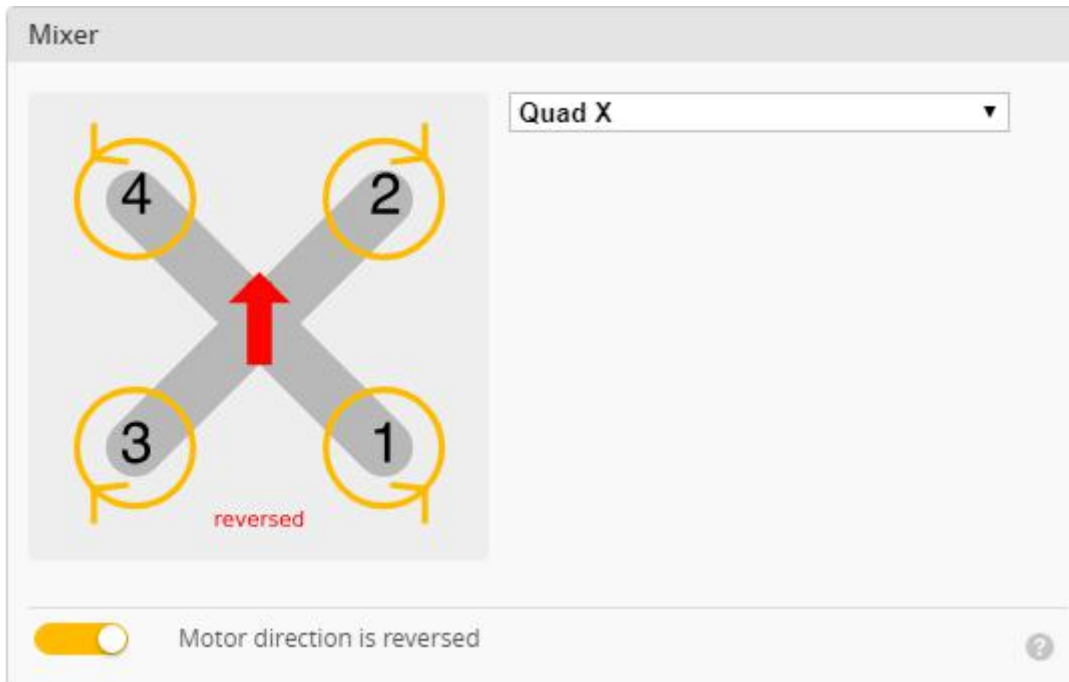
On the right side of the status panel, there is a button labeled "Reset Z axis, offset: -146 deg" with a red arrow pointing to it.


## 5. UART serial port use

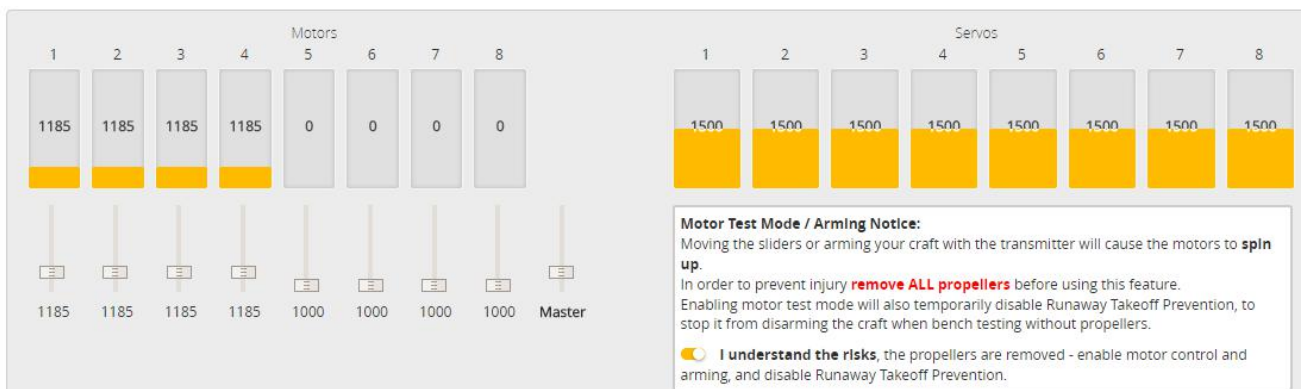
1. UART1 uses the receiver
2. UART2 uses GPS
3. UART3 uses VTX/DJI
4. UART4 uses WiFi module
5. UART6 uses ESC telemetry

# 6. Select aircraft model

1. Click  Configuration  Select model



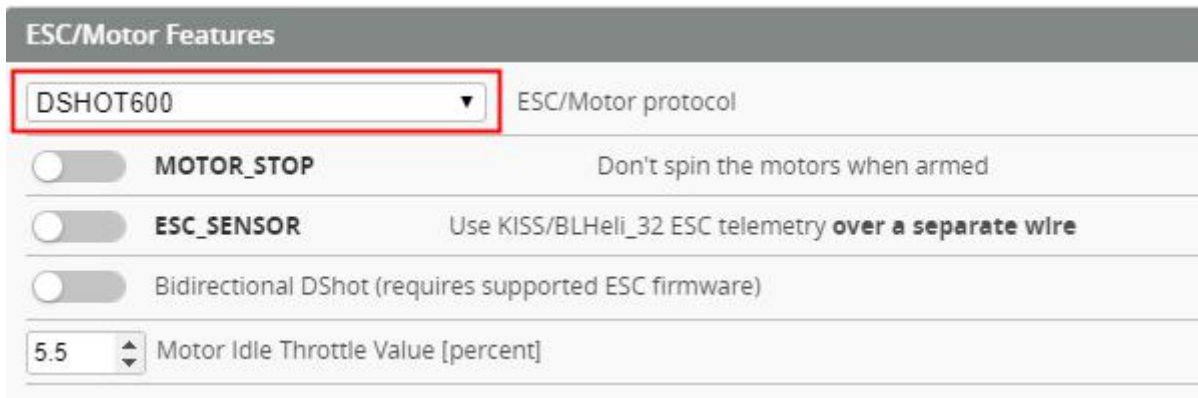
2. Click  Motors Click **“I understand the risks”** Push Master to check motor steering **“Master”** Steering can be changed at [BLHeliSuite](#)





# 7. Choose ESC protocol

1. Choose the right ESC protocol, the optional universal protocol DSHOT600.

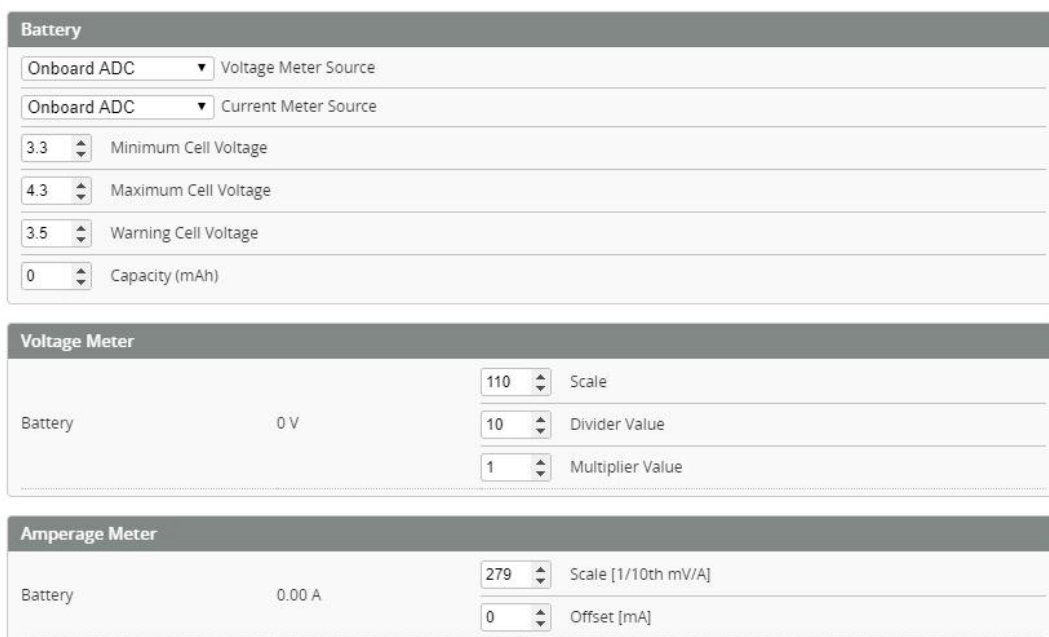


The screenshot shows the 'ESC/Motor Features' settings panel. A red box highlights the 'DSHOT600' dropdown menu, which is currently selected. Below the dropdown are three toggle switches: 'MOTOR\_STOP' (off), 'ESC\_SENSOR' (off), and 'Bidirectional DShot (requires supported ESC firmware)' (off). At the bottom, there is a numeric input field for 'Motor Idle Throttle Value [percent]' set to 5.5.

# 8. Voltage and current parameters setting

1. Click **Power & Battery** Setting parameters

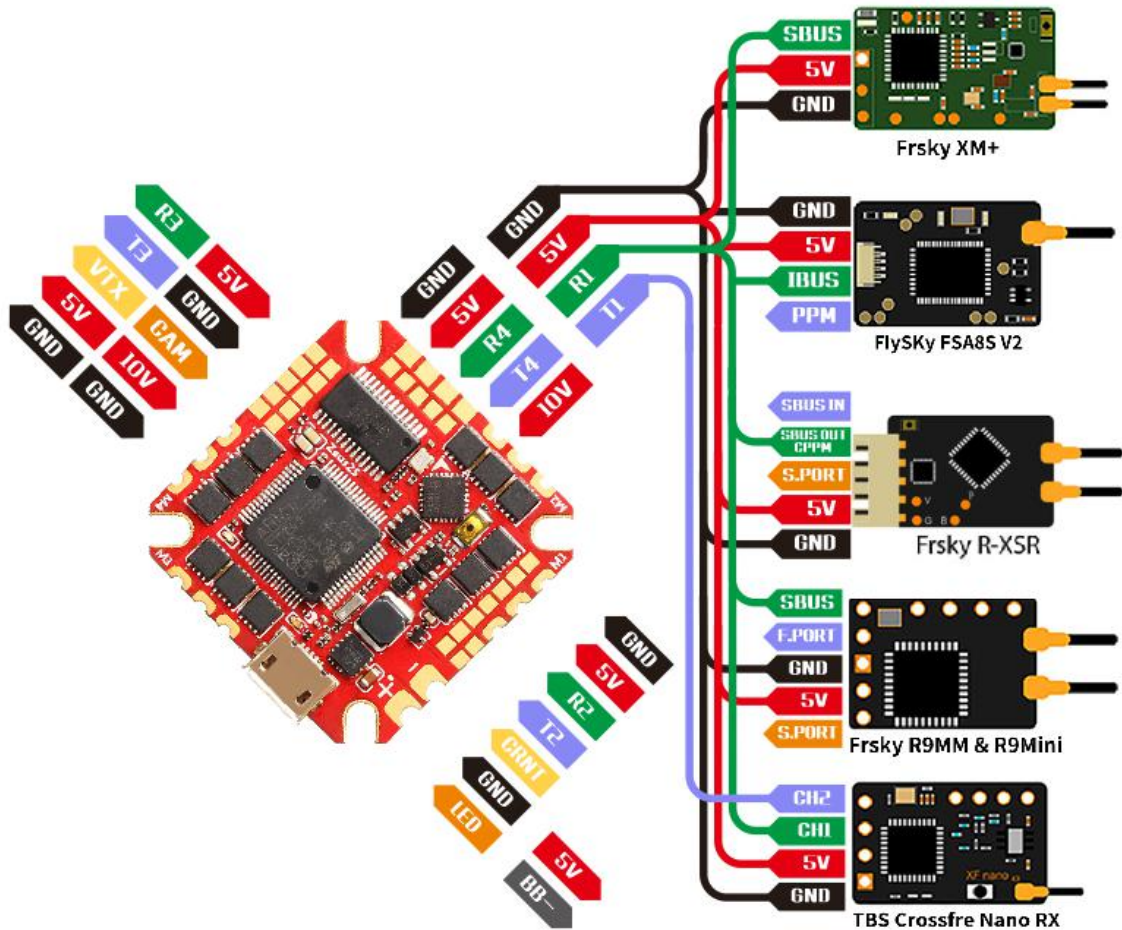
Power & Battery



The screenshot shows the 'Power & Battery' settings panel. It is divided into three sections: 'Battery', 'Voltage Meter', and 'Amperage Meter'.  
- **Battery**: Includes 'Onboard ADC' dropdown for both 'Voltage Meter Source' and 'Current Meter Source'. It also has numeric inputs for 'Minimum Cell Voltage' (3.3), 'Maximum Cell Voltage' (4.3), 'Warning Cell Voltage' (3.5), and 'Capacity (mAh)' (0).  
- **Voltage Meter**: Shows 'Battery' selected with a value of '0 V'. It has numeric inputs for 'Scale' (110), 'Divider Value' (10), and 'Multiplier Value' (1).  
- **Amperage Meter**: Shows 'Battery' selected with a value of '0.00 A'. It has numeric inputs for 'Scale [1/10th mV/A]' (279) and 'Offset [mA]' (0).

# 9. Setting up the receiver

## 1. Receiver connection diagram



2. Click Ports have found “UART1” Open the receiver serial port

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART1	<input type="checkbox"/> 115200 ▾	<input checked="" type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART2	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	VTX (IRC Tran ▾ AUTO ▾
UART4	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART6	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	ESC ▾ AUTO ▾	Disabled ▾ AUTO ▾

### 3. Set the **SBUS** receiver

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.

SBUS ▼ Serial Receiver Provider

### 4. Set the **i.BUS** receiver

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.

IBUS ▼ Serial Receiver Provider

### 5. Set the **DSMX** receiver

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.

SPEKTRUM2048 ▼ Serial Receiver Provider

### .Set the **CRSF** receiver

Receiver

Serial-based receiver (SPEKSAT, S ▼) Receiver Mode

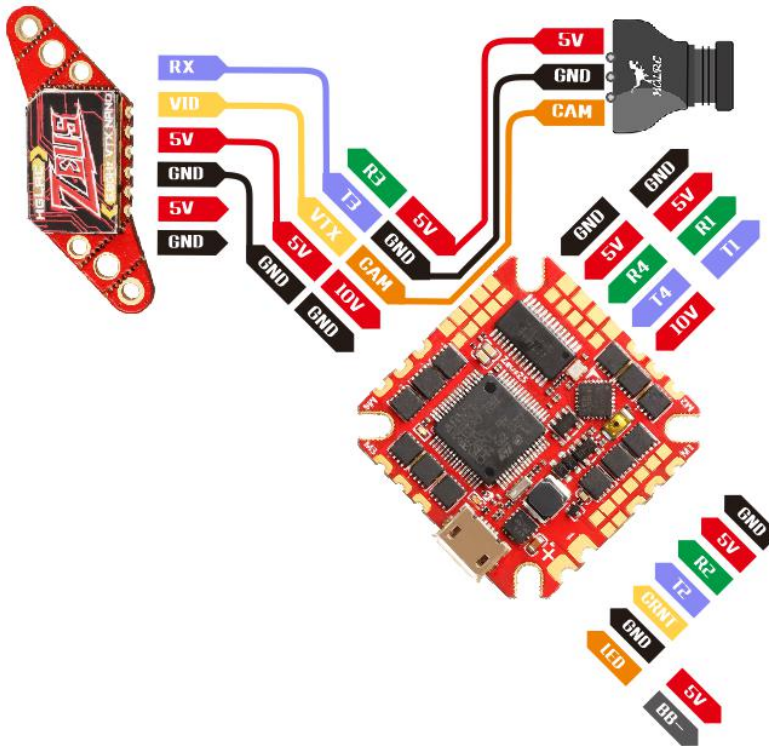
**Note:** Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX\_SERIAL feature.

CRSF ▼ Serial Receiver Provider

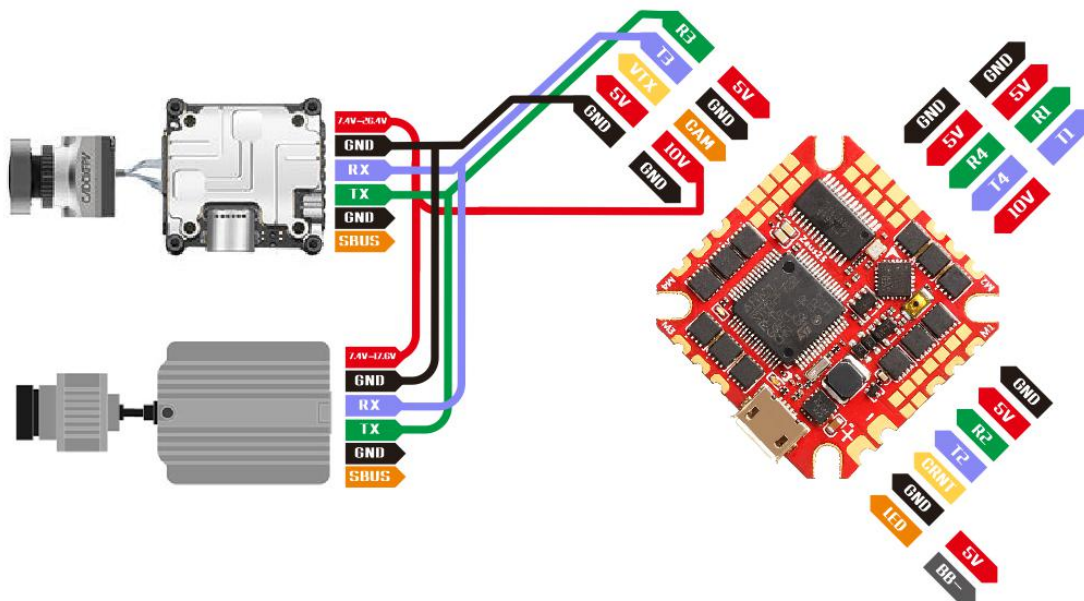
# 10.VTX serial port use wiring .

## DJI serial port use wiring

### 1. VTX connection



### 2. DJI FPV Air Unit wiring



### 3.VTX serial port opens. The protocol is selected according to its own VTX protocol.

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	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART1	<input type="checkbox"/> 115200 ▾	<input checked="" type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART2	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART3	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART4	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART6	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾

### 4. DJI serial port opens

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.

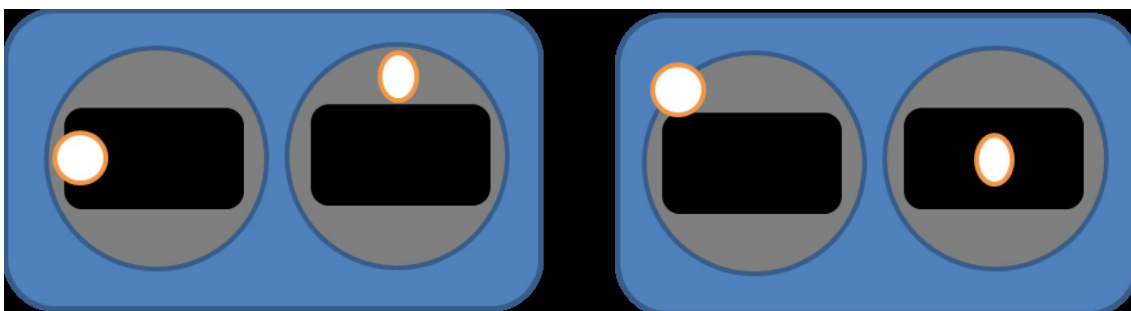
Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART1	<input type="checkbox"/> 115200 ▾	<input checked="" type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART2	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART3	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART4	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾
UART6	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾	Disabled ▾   AUTO ▾

### 5. Use OSD to adjust VTX

which displays information like battery voltage and mAh consumed while you fly. In addition, the Betaflight OSD can be used to configure the quadcopter, making in-field adjustments and tuning more convenient.

MODE2

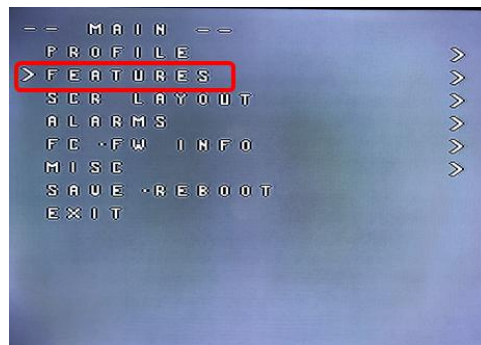
MODE1





The graphics above show the stick command to bring up the OSD menu. The stick command is: throttle centered, yaw left, pitch forward. The exact stick command therefore depends on which mode your transmitter sticks are in.

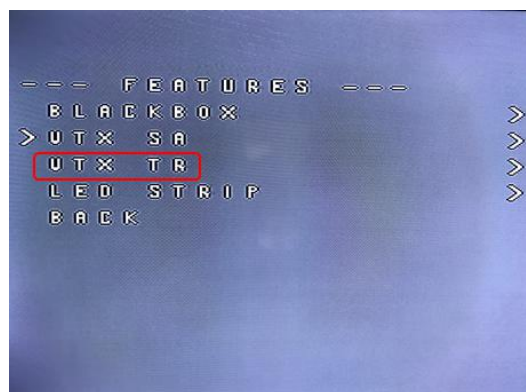
In the OSD menu, use pitch up/down to move the cursor between menu items. When a menu option has a > symbol to the right of it, this indicates that it contains a sub-menu. Roll-right will enter the sub-menu. For example, in the screen to the right, moving the cursor to “Features” and then moving the roll stick to the right will enter the “Features” sub-menu.



If you are using a video transmitter that supports remote configuration, enter the “Features” menu to configure the vTX. From there, enter either “VTX SA” if you are using SmartAudio (TBS Unify) or “VTX TR” if you are using IRC Tramp Telemetry.

To adjust PIDs, rates, and other tuning-related parameters, enter the “Profile” sub-menu.

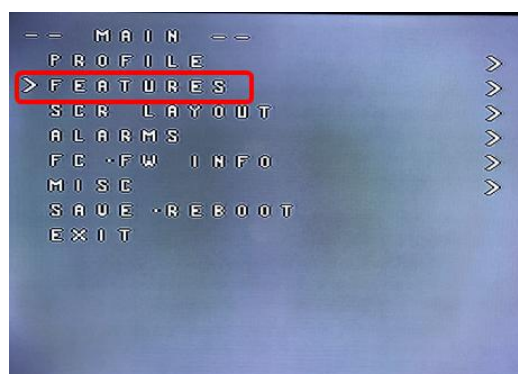
In the “Scr Layout” sub-menu, you can move the OSD elements (like battery voltage, mAh, and so forth) around on the screen.



The “Alarms” sub-menu lets you control when the OSD will try to alert you that battery voltage is too low or mAh consumed is too high.

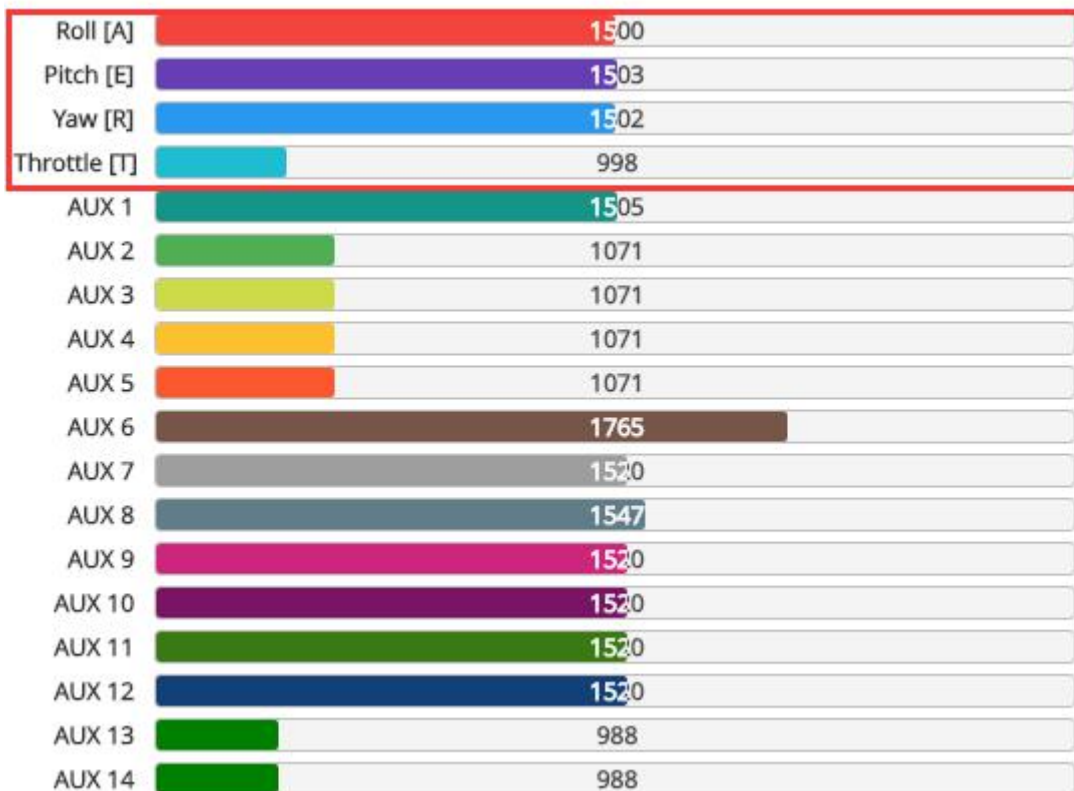
When a parameter can be modified, the parameter’s current value will be shown on the right-hand side of the screen. In this case, roll left/right will adjust the parameter up and down.

The screen to the right shows the current vTX settings. From here, you can change the frequency band, channel, and power level of the video transmitter. After making the changes, move the cursor to “Set” and press roll-right to confirm the settings.




# 11. Check receiver signal

1. Click  Receiver Check the remote control output signal



# 12. Select flight mode startup mode

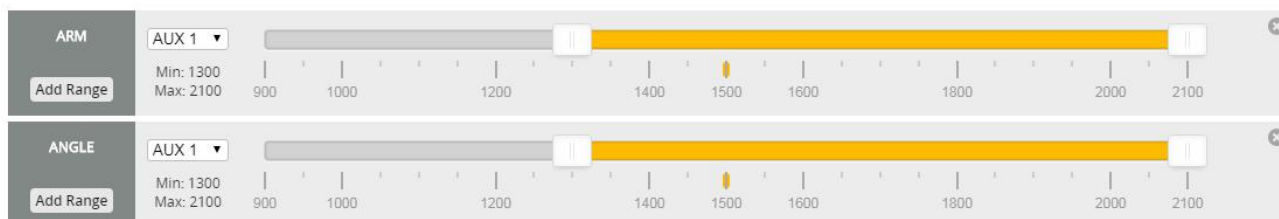
1. Click  Modes set up the function of remote control switch across the channel (below are for reference only)

Modes


WIKI

Use ranges to define the switches on your transmitter and corresponding mode assignments. A receiver channel that gives a reading between a range min/max will activate the mode. Remember to save your settings using the Save button.

Show/hide unused modes



# 13.OSD settings

1. Click  the OSD Settings, according to the need to choose, drag the OSD schematic diagram of the parameters can be adjusted.



The screenshot displays the OSD settings interface, which is divided into several sections:

- Elements:** A list of 15 items with toggle switches. The 'Main Batt Voltage' item is currently selected (checked).
- Preview (drag to change position):** A central window showing a live video feed of a drone in flight. The text 'BETAFLIGHT' is overlaid in the upper center, and 'LOW VOLTAGE' is overlaid in the lower center. A battery icon and '16.8V' are visible in the bottom left corner of the preview.
- Video Format:** Radio buttons for 'AUTO' (selected), 'PAL', and 'NTSC'.
- Units:** Radio buttons for 'IMPERIAL' and 'METRIC' (selected).
- Timers:** Two timer entries, each with a source dropdown, a precision dropdown, and an alarm value spinner.
  - Timer 1: Source: ON TIME, Precision: SECOND, Alarm: 10
  - Timer 2: Source: TOTAL ARMED TIME, Precision: SECOND, Alarm: 10

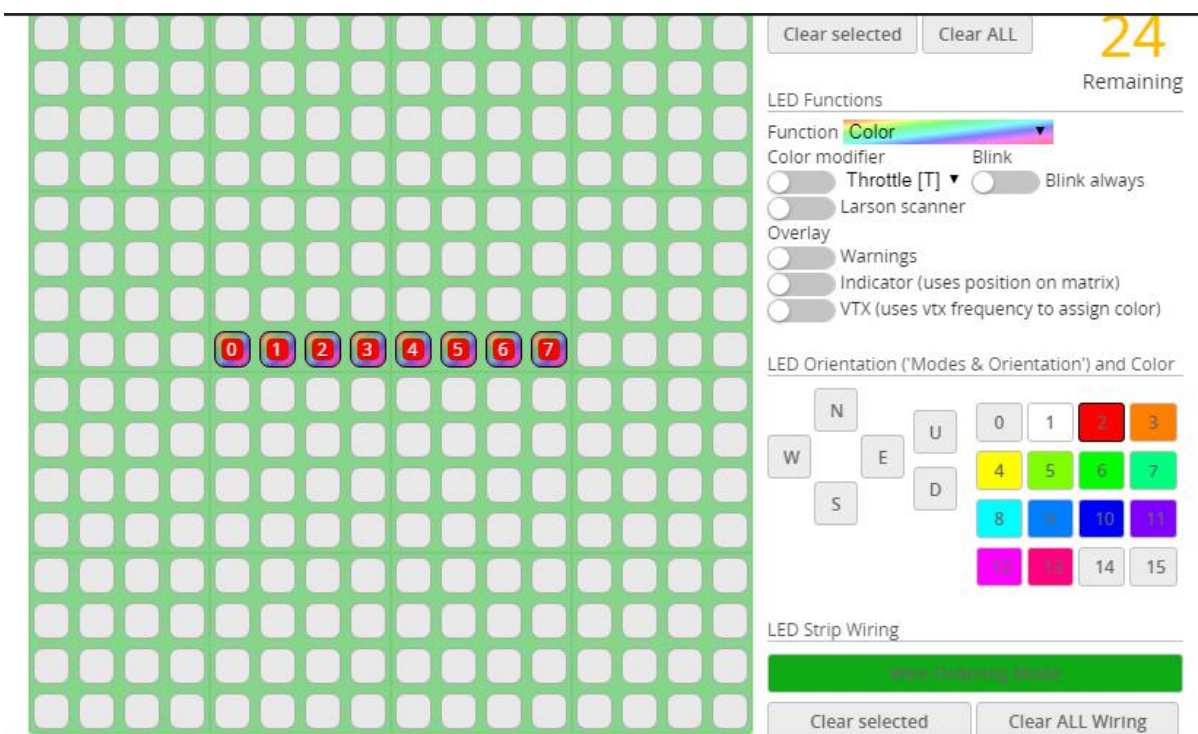


# 14.LED settings

1. Click  Configuration Turn on LED support



2. Click  LED Strip .Click  set according to need



# 15.Troubleshooting

## Warning:

Please read the cautions as follows, otherwise stability of your flight controller cannot be ensured, your flight controller will even get damaged.

- Keep focus on the polarity. Check carefully before power supply.
- Cut off the power when you connect, plug and pull anything.
- The refresh rate of PID and Gyroscope is up to 4K/4K.

## after sales question:

1. After receiving the goods, it is found that the product can not be used normally. If the return to the factory is a quality problem, the repair service will be provided free of charge.
2. If the product is damaged due to improper operation, the repair service may be provided under the condition that the inspection can be repaired.
3. For domestic customers, please contact the after-sales service personnel. For overseas customers, please contact the official website for after-sales service.

## Product daily problems

### 1.OSD garbled:

If you find garbled characters, please open Betaflight, click "OSD" .and click "Font Manager" clicks on "Upload Font" to update

1. When plugged in the battery, the aircraft does not pass the self-test without "BBB" sound. There is only one sound.

Please check if the ESC agreement is correct

### 3.The spin of the aircraft keeps spinning

1. Please check if the propeller is correct
2. Please check if the motor direction is correct