

Racewhoop30

FPV Racing Drone

Manual



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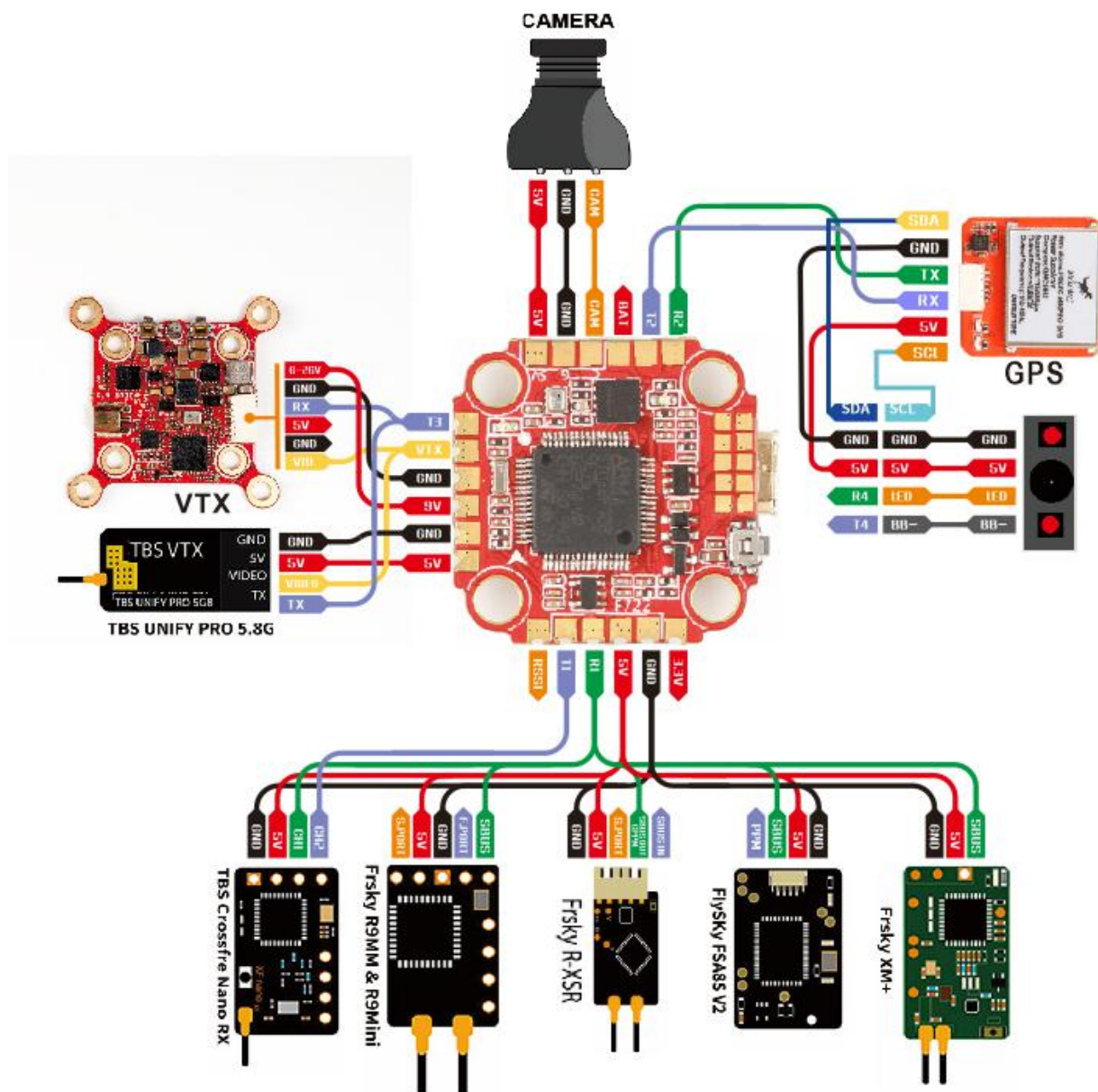
Package Included

Racewhoop30 FPV Racing Drone*1	Accessory Package*1
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1.Product Specifications

Product parameters	
Model	Racewhoop30 VTX FPV Racing Drone
Frame Kit	Racewhoop30 Frame Kit
Flight Controller	Zeus F722 mini Flight Controller
ESC	28A 4in1 ESC
VTX	Zeus VTX 350mW
Motor	2105.5 Motor 4S KV3600 6S KV2800
Support Neceiver	SBUS .DSMX.CRSF
Input Voltage	3-6S Lipo

2.Interface Description



3. Check the flight control drive

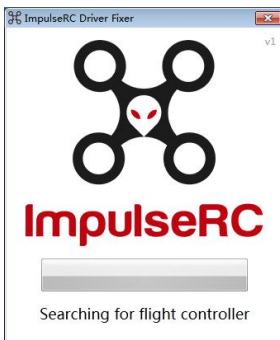
1. Long Press BOOT buttons.connect USB.The system automatically install the driver



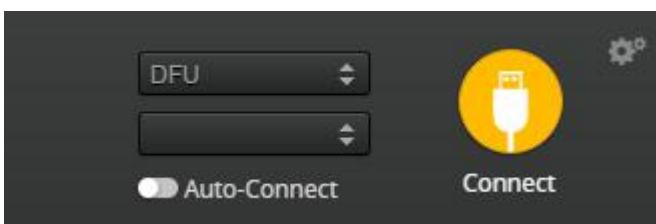
2.Driver cannot be installed, please download ImpulseRC_Driver_Fixer



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



4.open betafight configurator , enter DFU mode



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

☐ Show unstable releases

HGLRCF722 ▼

4.2.0 - 14-06-2020 14:40 ▼

☒ No reboot sequence

☐ Flash on connect

☒ Full chip erase

☒ Manual baud rate 256000 ▼

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

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

COM18 ▼

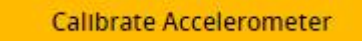
115200 ▼

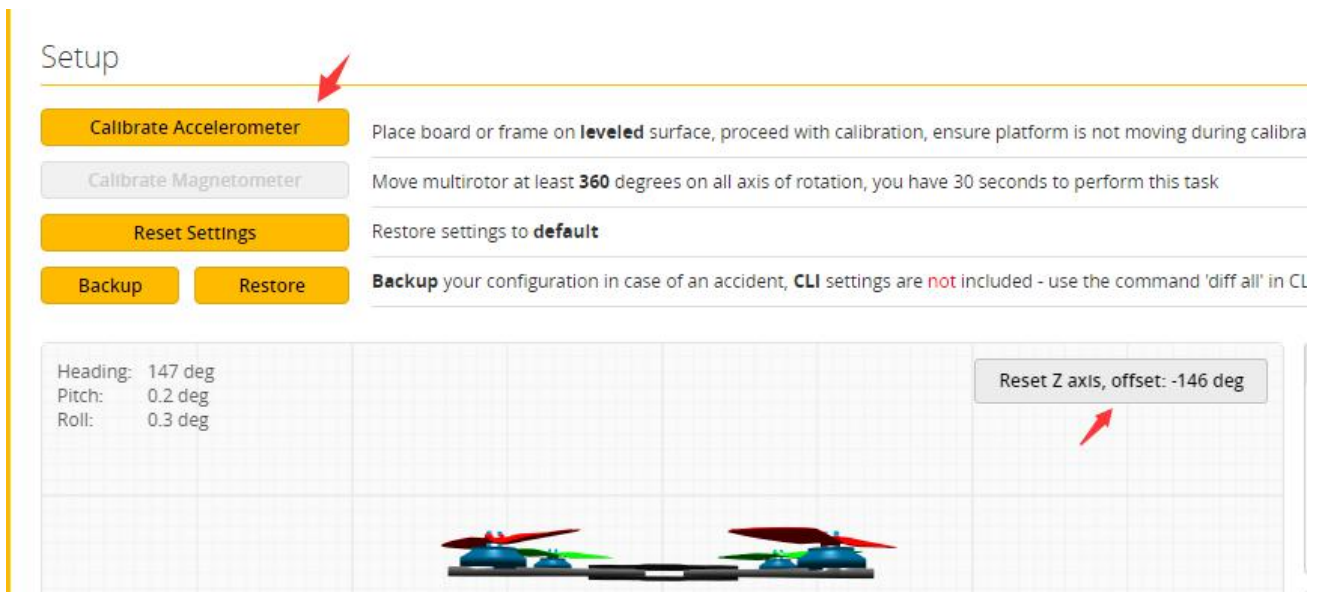
☐ Auto-Connect

 Connect

4. Calibration accelerometer

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

Click again 

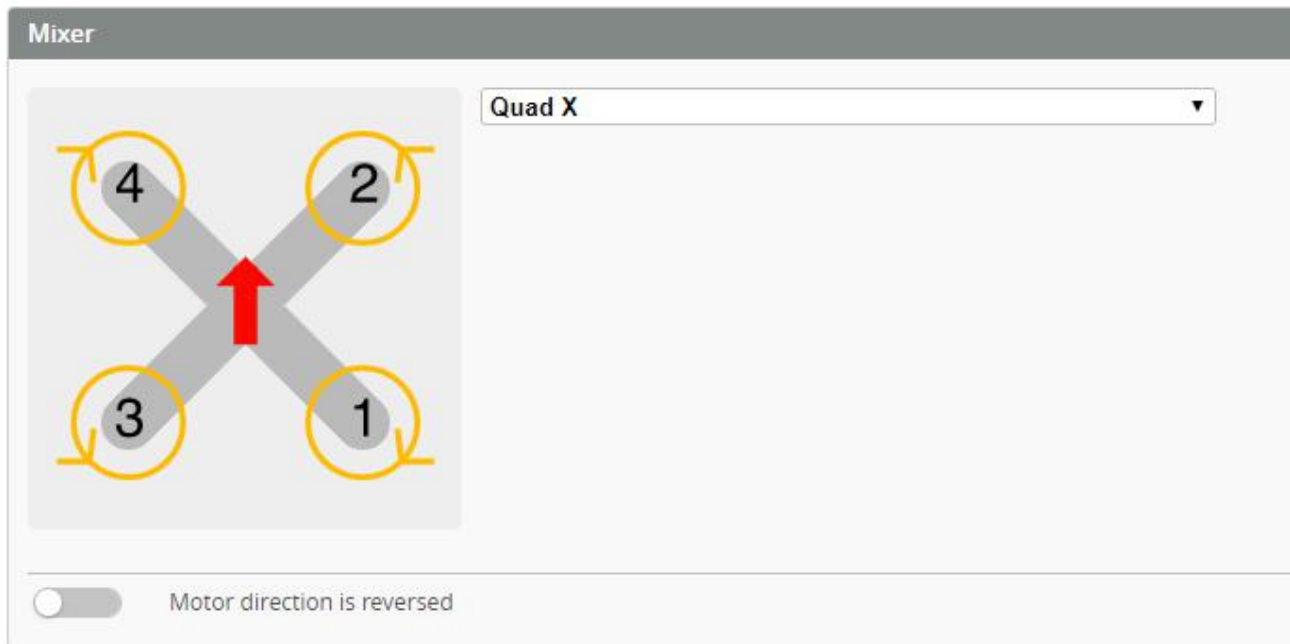


5. UART serial port use

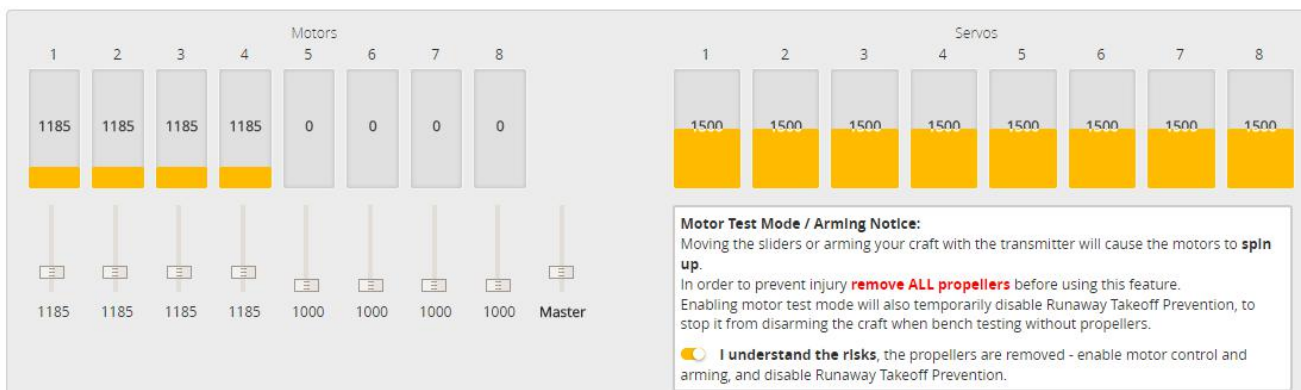
1. UART1 uses the receiver
2. UART2 uses GPS
3. UART3 uses 5.8G VTX
4. UART4 uses DJI
5. UART6 uses ESC telemetry

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.

ESC/Motor Features	
DSHOT600	ESC/Motor protocol 
☐ MOTOR_STOP	Don't spin the motors when armed
☒ ESC_SENSOR	Use KISS/BLHeli_32 ESC telemetry over a separate wire
☐ Bidirectional DShot (requires supported ESC firmware)	
14	Motor poles (number of magnets on the motor bell)
5.5	Motor Idle Throttle Value [percent]

8. Voltage and current parameters setting

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

Power & Battery

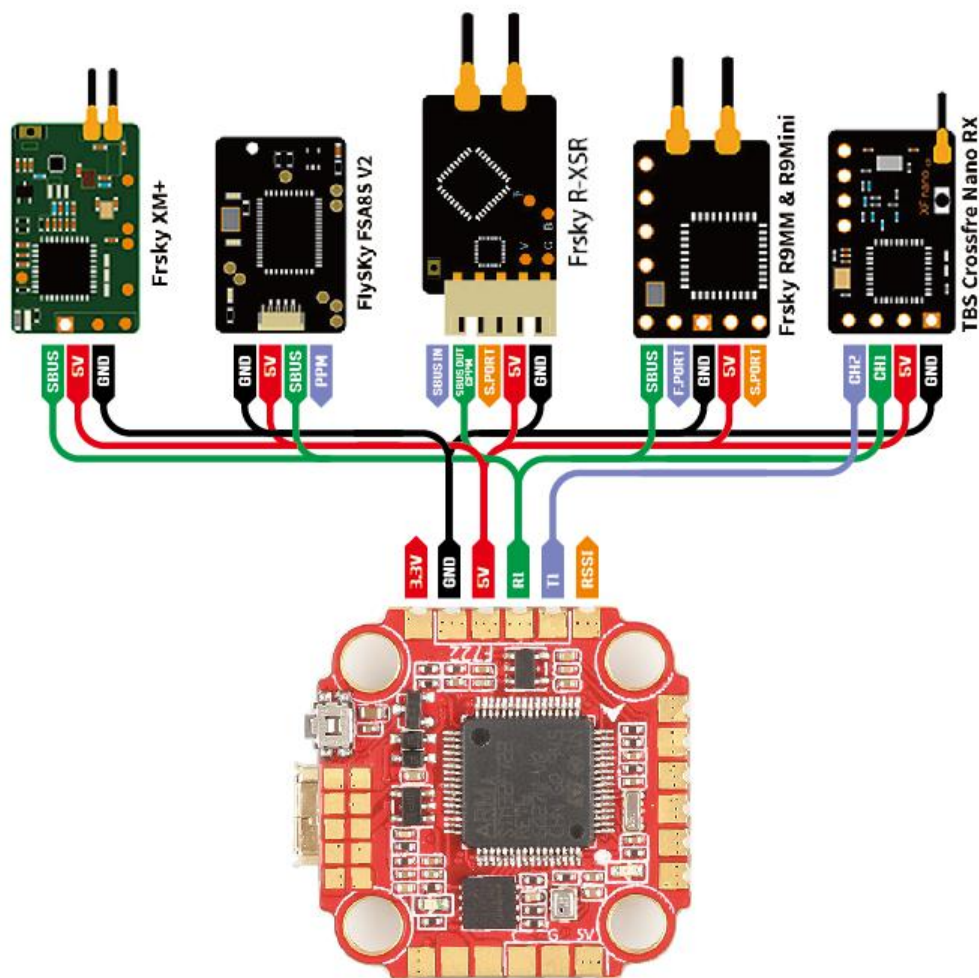
Battery	
Onboard ADC	Voltage Meter Source
Onboard ADC	Current Meter Source
3.3	Minimum Cell Voltage
4.3	Maximum Cell Voltage
3.5	Warning Cell Voltage
0	Capacity (mAh)

Voltage Meter	
Battery	0.3 V
110	Scale
10	Divider Value
1	Multiplier Value

Amperage Meter	
Battery	0.00 A
279	Scale [1/10th mV/A]
0	Offset [mA]

9.Setting up the receiver

1.Receiver connection diagram



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

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 ▼
UART2	 115200 ▼		Disabled ▼ AUTO ▼	GPS ▼ 115200 ▼	Disabled ▼ AUTO ▼
UART3	 115200 ▼		Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	VTX (IRC Tran ▼ AUTO ▼
UART4	 115200 ▼		Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼	Disabled ▼ AUTO ▼
UART6	 115200 ▼		Disabled ▼ AUTO ▼	ESC ▼ AUTO ▼	Disabled ▼ AUTO ▼

3. Set the SBUS receiver

Receiver

Serial-based receiver (SPEKSAT, § ▼
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 DSMX receiver

Receiver

Serial-based receiver (SPEKSAT, § ▼
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

5. Set the CRSF receiver

Receiver

Serial-based receiver (SPEKSAT, § ▼
Receiver Mode

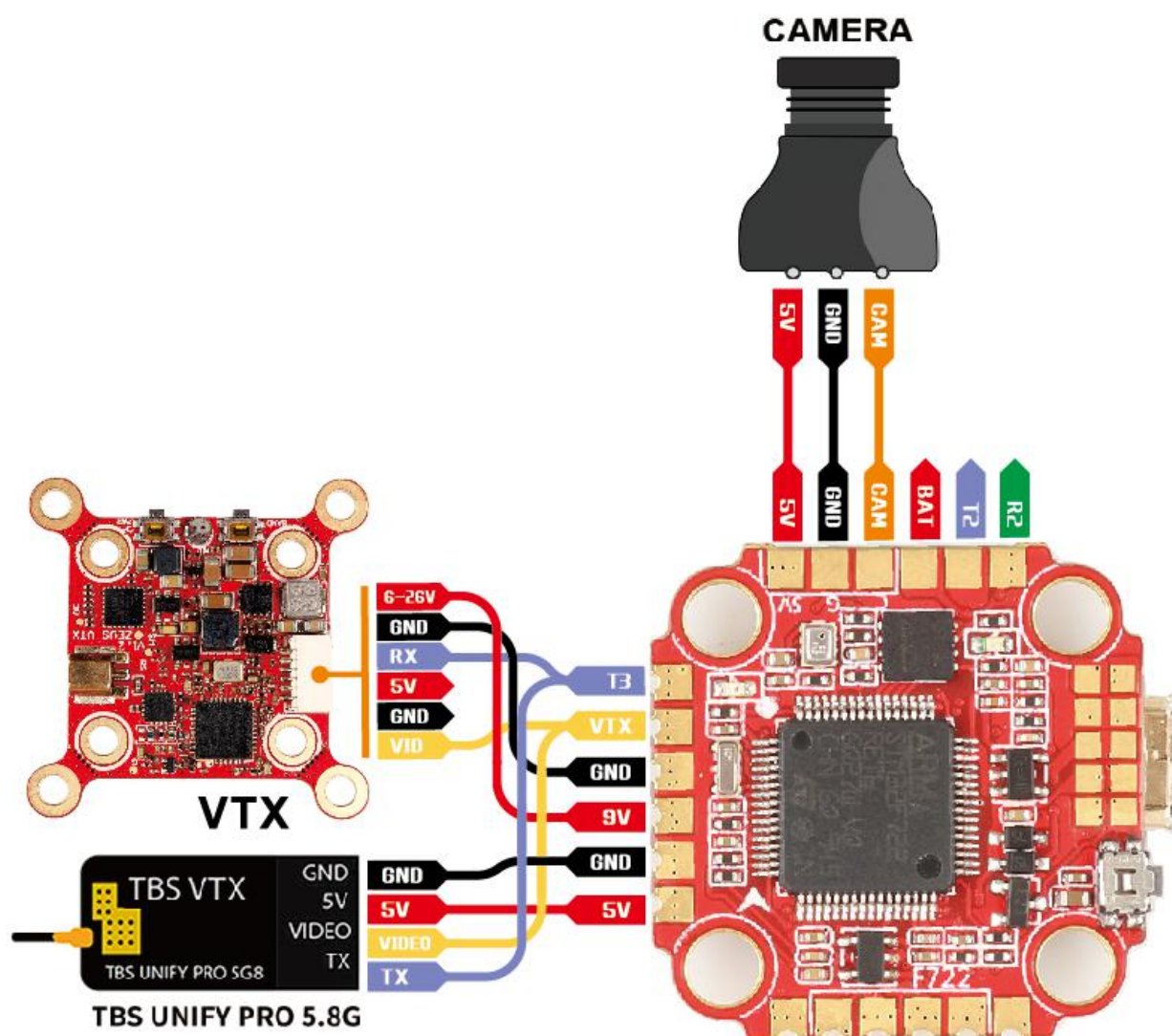
Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.

CRSF ▼
Serial Receiver Provider

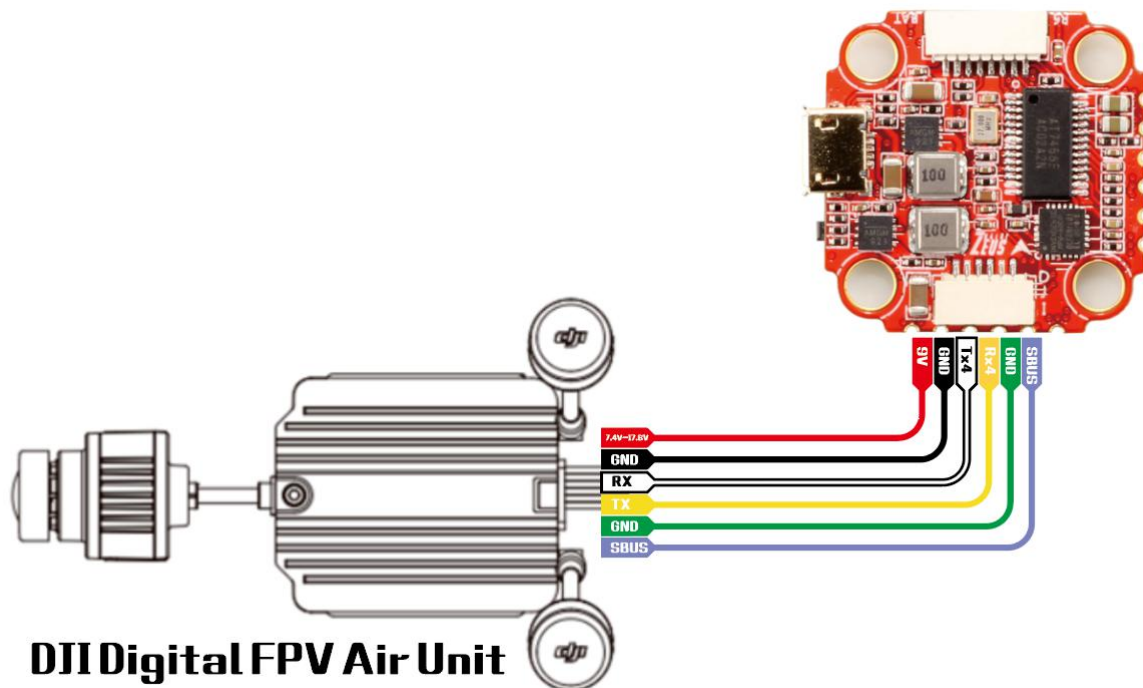
10.VTX serial port use wiring .

DJI serial port use wiring

1. 5.8G VTX connection



2. DJI FPV Air Unit wiring



3. 5.8G VTX serial port opens. The protocol is selected according to its own VTX protocol.

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
UART2	☐ 115200	☐	Disabled AUTO	GPS 115200	Disabled AUTO
UART3	☐ 115200	☐	Disabled AUTO	Disabled AUTO	VTX (IRC Tran) AUTO
UART4	☐ 115200	☐	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART6	☐ 115200	☐	Disabled AUTO	ESC AUTO	Disabled AUTO

4. DJI serial port opens

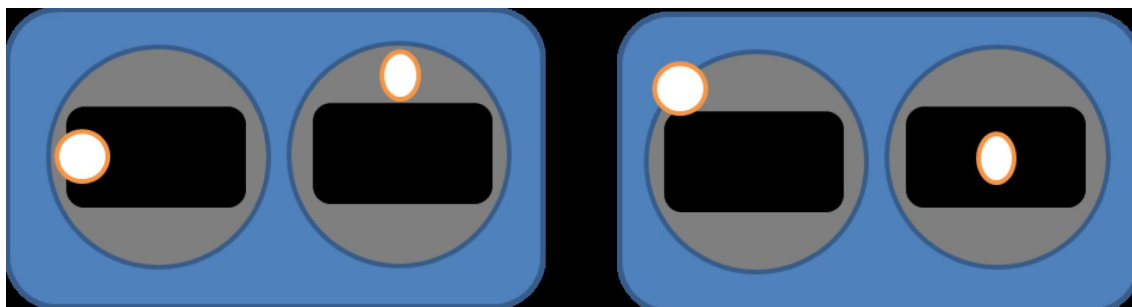
Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	☒ 115200	☐	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	☐ 115200	☒	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART2	☐ 115200	☐	Disabled AUTO	GPS 115200	Disabled AUTO
UART3	☐ 115200	☐	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART4	☒ 115200	☐	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART6	☐ 115200	☐	Disabled AUTO	ESC 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.

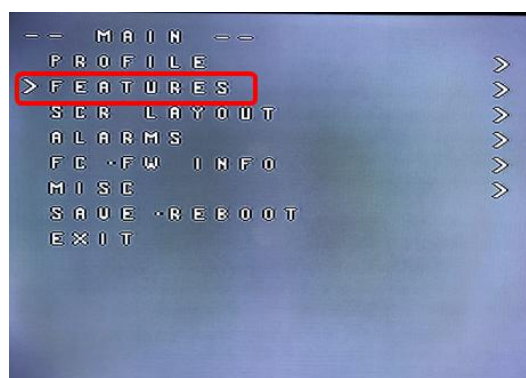
MODE2

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.

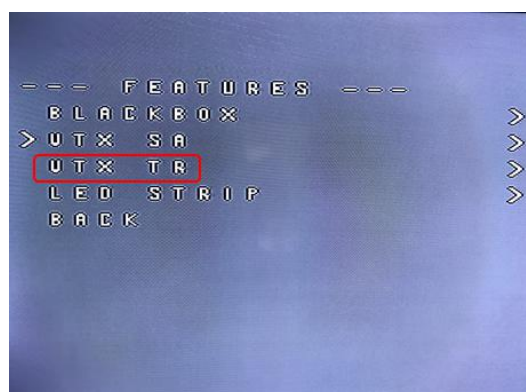


If you are using a video transmitter that supports remote configuration, enter the “Features” menu to configure the vTX. From there, enter either “VTX SA” if you are using SmartAudio (TBS Unify) or “VTX TR” if you are using IRC Tramp Telemetry.

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

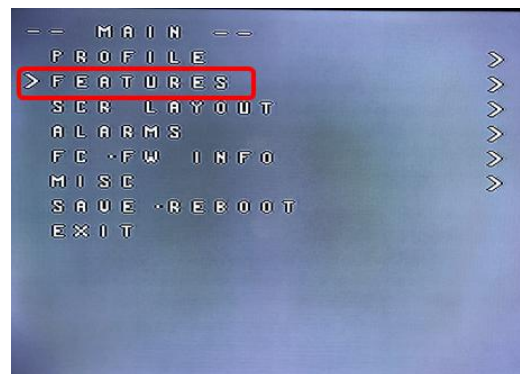
In the “Scr Layout” sub-menu, you can move the OSD elements (like battery voltage, mAh, and so forth) around on the screen.

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.



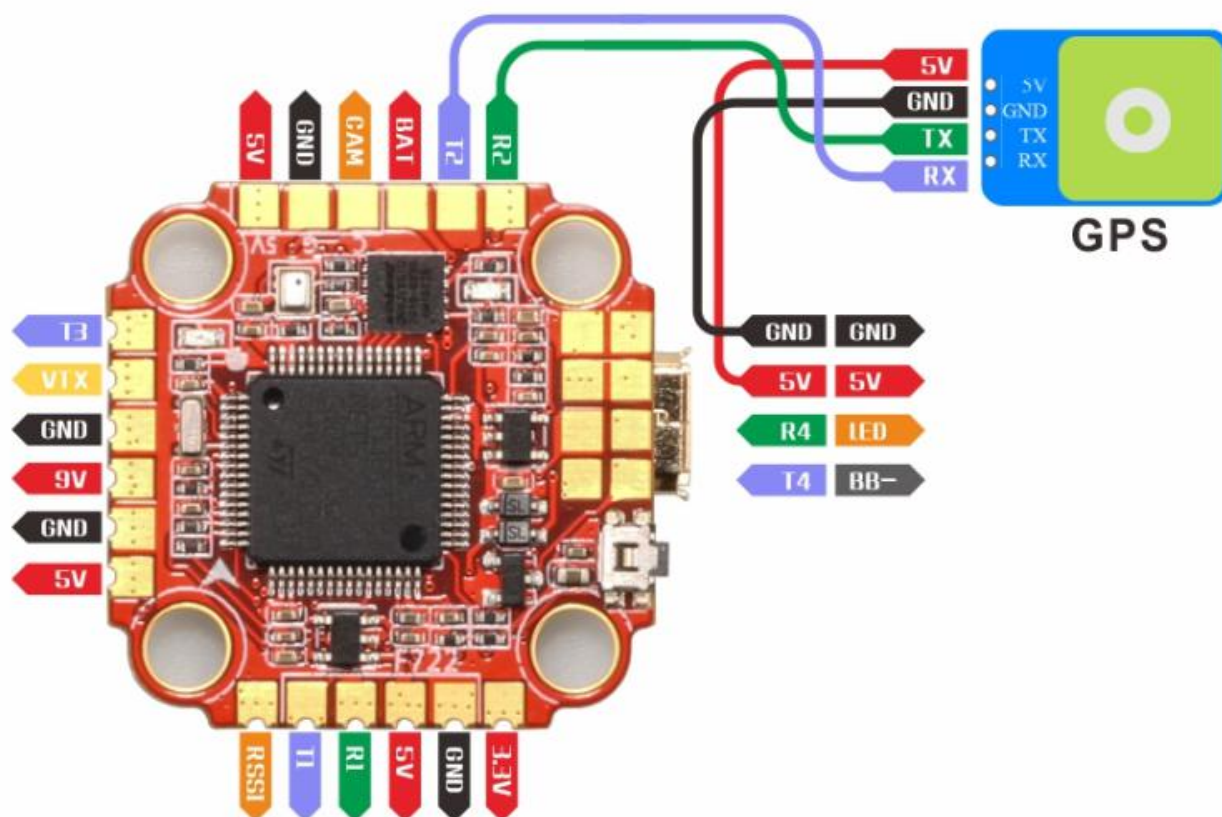
When a parameter can be modified, the parameter's current value will be shown on the right-hand side of the screen. In this case, roll left/right will adjust the parameter up and down.

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.GPS parameters setting

1.GPS connection diagram



2. Open the GPS serial port

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
UART2	☐ 115200	☐	Disabled AUTO	GPS 115200	Disabled AUTO
UART3	☐ 115200	☐	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART4	☐ 115200	☐	Disabled AUTO	Disabled AUTO	VTX (IRC Tran AUTO
UART6	☐ 115200	☐	Disabled AUTO	ESC AUTO	Disabled AUTO

3. When using the GPS function, remember to configure the serial port (via the Ports tab).

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

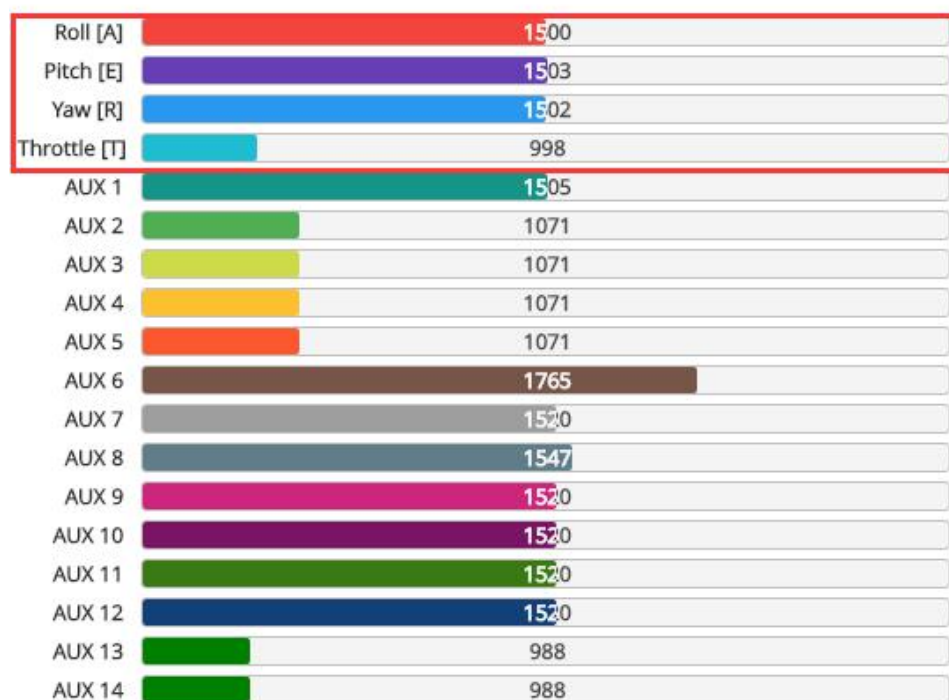
Ground Assistance Type

0.00

Magnetometer Declination [deg]

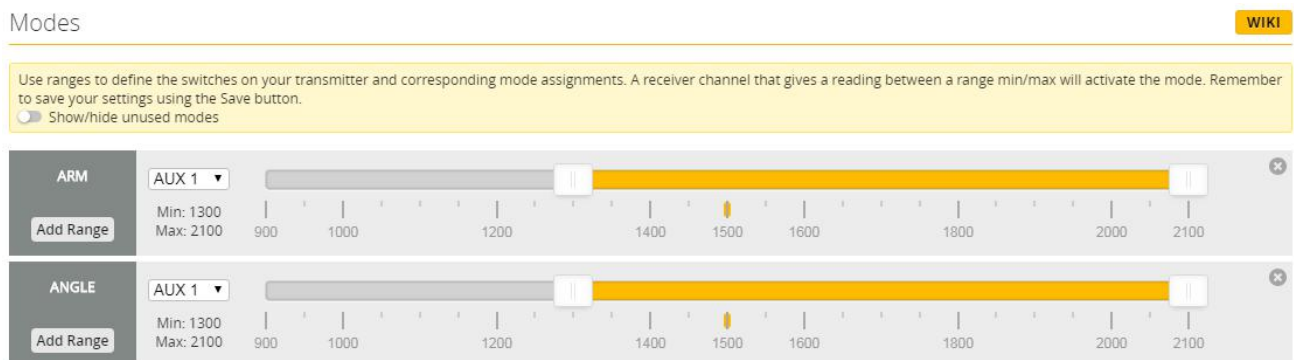
12. Check receiver signal

1. Click  Receiver Check the remote control output signal



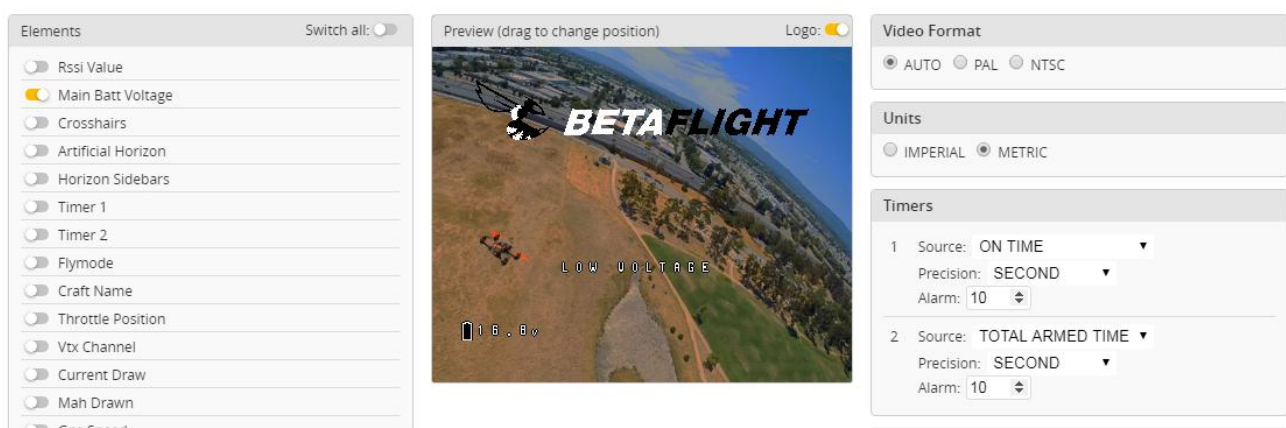
13. Select flight mode startup mode

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



14. OSD settings

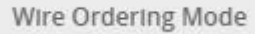
1. Click  **OSD** the OSD Settings, according to the need to choose, drag the OSD schematic diagram of the parameters can be adjusted.



15.LED settings

1.Click  Configuration Turn on LED support



2.Click  LED Strip .Click  set according to need



16.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 8K/8K.

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