

Flywoo

CineRace20 DJI HD

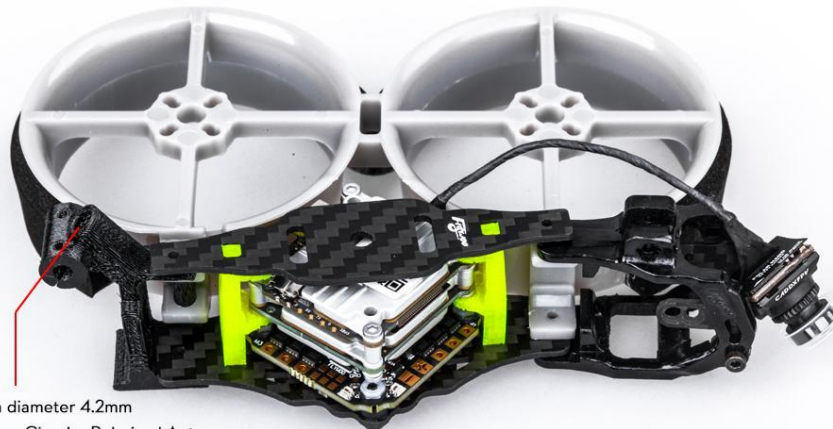
Manual



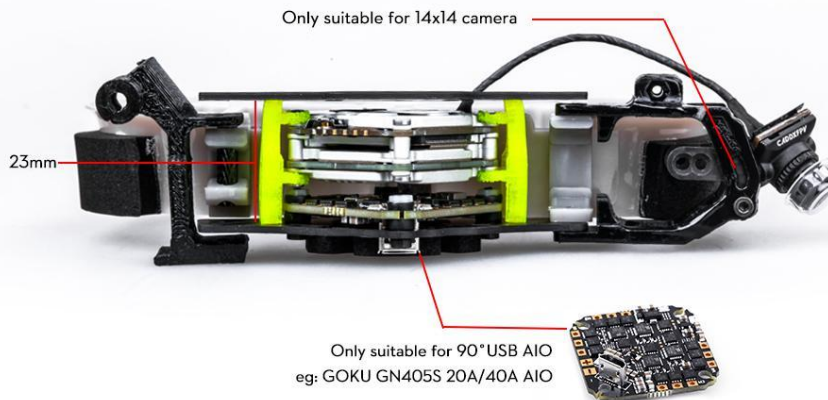
1/ drone introduction

CineRace20 a new concept and more than a cinewhoop . Inspired by RaceWhoop designed by Free Zillion. This is a combinathion of CineWhoop and RaceWhoop! CineRace is double duct design , not a simple guard anymore. . It can fly as flexible as a racing drone, and as stable as Cinewhoop. Pilots can quietly enjoy the fun of shooting a video without jelly and up to 12 minutes Super long flight time with Flywoo's latest 4S HV 900mah Battery !

All in all, this is an all-round drone that can not only Racing , but also shooting a video stably , and at the same time achieve a super long flight time!



Antenna diameter 4.2mm
eg: Flywoo Circular Polarized Antenna



23mm

Only suitable for 14x14 camera

Only suitable for 90° USB AIO
eg: GOKU GN405S 20A/40A AIO



Features

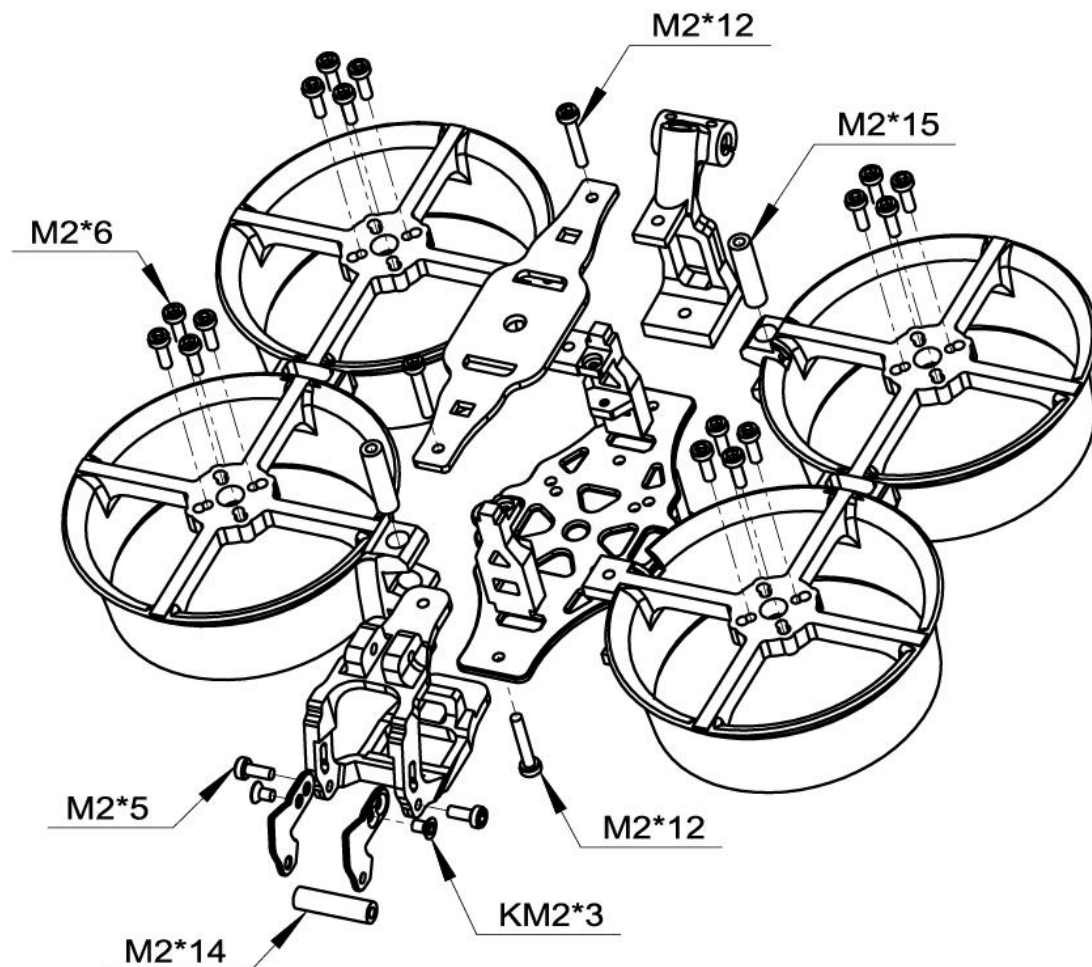
1. Almost all parts are injection molded. ABS\PC material. More sturdy and durable.
2. Very easy to disassemble and install, only fixed by two aluminum columns.
3. Pilots can freely combine their favorite colors to be more individual
4. Efficient power configuration and reasonable structural design ensure CineRace20 flight stability, low noise, and super long flight time up to 12mins
5. No Propellers in view, NO Jello flight Footage, stable flight picture
6. With its own power cable output to the SMO camera (If you are using a gopro 6/7/8 camera, you need to buy an adapter cable)
7. Add Flywoo Bt-nano Bluetooth Module

You can use mobile devices to set the parameters of the flight controller.

Personalization Frame Kit

You can freely combine the color frame you like! (Please note : you need to replace the Ducts yourself , all Pre-build Drone colors are determined.)

Link: [CineRace Frame kit Parts](#)





Specification

Item: CineRace20 DJI HD w/ Caddx Polar Nano Digital HD System

Weight: 112g (without battery)

FC & ESC : GOKU GN 405S 20A AIO

Frame: CineRace20 Frame Kit

Motors: NIN V2 1203PRO 3400Kv

Props: Gemfan D51 -5

HD digital camera & VTX: Caddx Polar Nano HD System

Antenna: Flywoo Circular LHCP 5.8Ghz Ant (UFL-Length: 115mm \ Tube 45mm)

Battery: Explorer 4S HV 300mAh / Explorer 4S HV 900mAh battery (Not including)

Highly recommended battery

Explorer 4S HV 300mah Battery (You will get good flight time and fly quite flexible)
 Explorer 4S HV 900mah Battery (You will get a super long flight time, and the flight will be more stable)

Includes

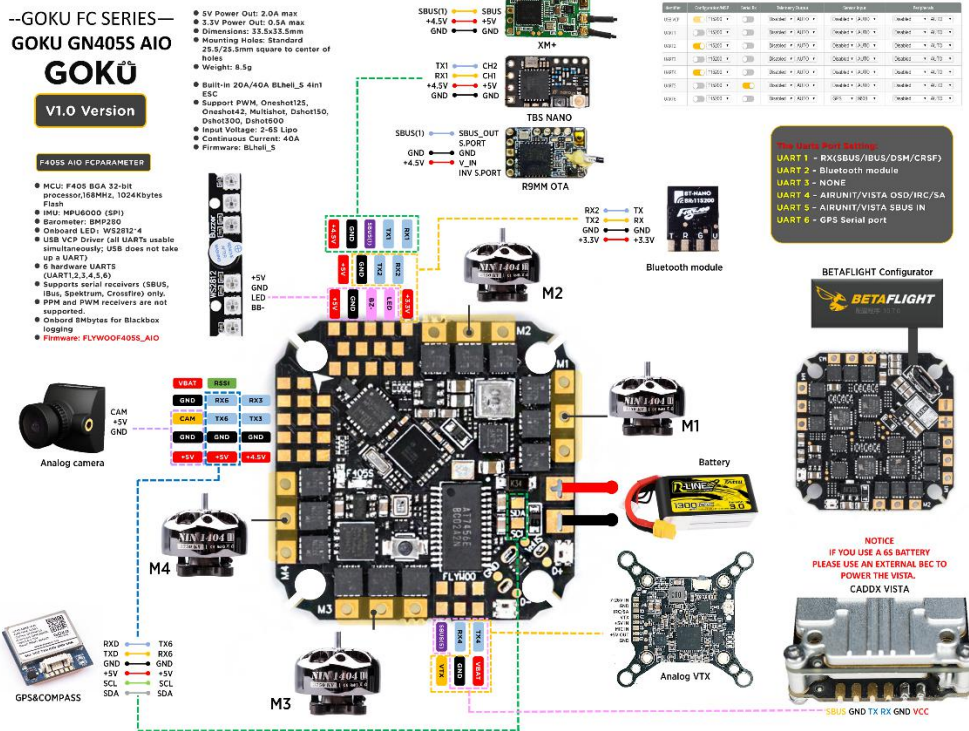
1x Prebuilt and tested CineRace20 Quadcopter
 4x D51-5 Props (Pairs)
 2x Battery Strap
 1x Hardware Set



Package List

2/ Configuration and wiring diagram description

Flight control wiring diagram



PID and filter settings

PID Profile Settings | Rateprofile Settings | Filter Settings

CAUTION: Current slider positions may cause flyaways, motor damage or unsafe craft behaviour. Please proceed with caution.

	Proportional	Integral	D Max	D Min	Feedforward
Basic/Acro					
ROLL	99	119	99	66	113
PITCH	109	126	109	71	120
YAW	108	126	0	0	113

	Low	Default	High
Master Multiplier: 1.4			
PD Balance: 1.2			
P and D Gain: 1.7			
Stick Response Gain: 0.9			

CAUTION: Current slider positions may cause flyaways, motor damage or unsafe craft behaviour. Please proceed with caution.

	More Filtering	Default Filtering	Less Filtering
Gyro Filter Multiplier: 1.9			
D Term Filter Multiplier: 1.9			

Default serial port settings

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 checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART3	<input type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART4	<input checked="" type="checkbox"/> 115200 ▾	<input type="checkbox"/>	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾
UART5	<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 ▾

UART1: ELRS/TBS/R9M/XM+/DSMX/SBUS receiver

UART2: Bluetooth module, the default baud rate is 115200

UART3: NULL

UART4: VISTA OSD TX/RX

UART5: VISTA SBUS RX (Only use DJI remote control to turn on, and turn off RX1)

UART6: NUL

3/ Receiver binding

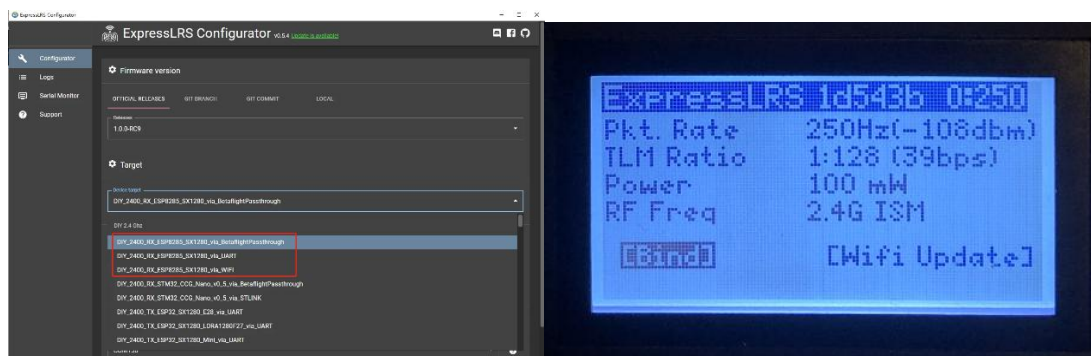
TBS NANO 915:

When the USB is connected, the green light of the receiver flashes, and then bind according to the picture operation.

https://www.youtube.com/watch?v=-iNkVcOLITM&ab_channel=Danimal3D



ELRS 2.4G RX:



Bind procedure:

- Supply power to the EL24E/EL24P rx, wait until the LED on the RX is off, immediately

turn off the power, and then repeat again the above steps. When the RX is powered on for the third time, the LED light will start to double-flash, which means that the RX enters the binding mode

- Insert the 2.4G ELRS TX to Radio transmitter, and choose External RF mode to CRSF protocol, then you can find ELRS menu from the Radio systems(Need to copy the ELRS.LUA file to the SD-Card tools first), Enter into ELRS and press [Bind], the LED on the RX module will getting to be solid if bind successfully.

- Receiver LED status meanings:

EL24E/EL24P RX: LED solid means bind successful or Connection established; LED double-flash means in bind mode; LED flash slowly means no signal connection from the TX module; LED flash fast means in WIFI hotspot mode, you can connect the WIFI of the RX and upgrade firmware of the RX via visit 10.0.0.1 from the web browser(password: expresslrs)

R9MM FCC ACCESS OTA:

Make sure your remote control supports ACCESS protocol, then follow the link to register and bind

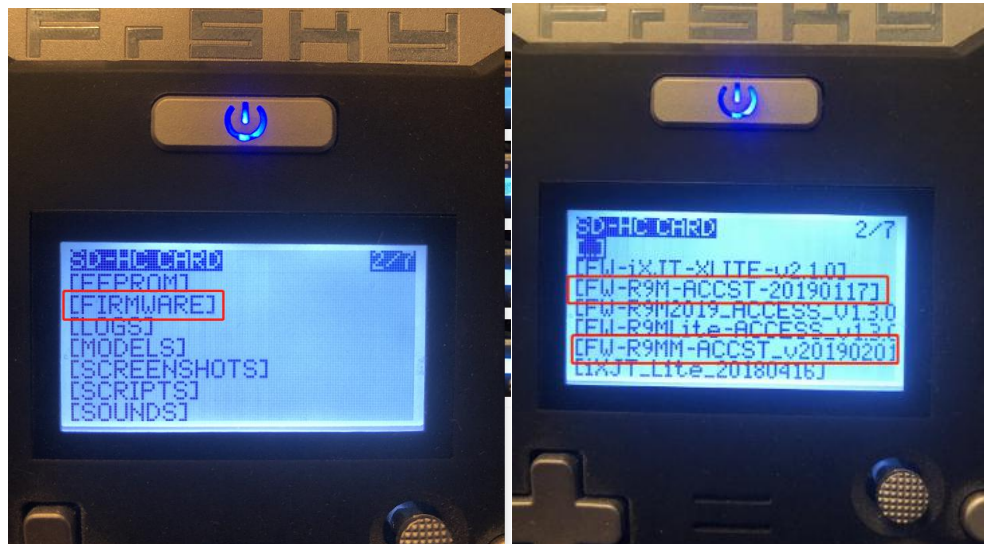
https://www.youtube.com/watch?v=az5hDdNBcjg&t=9s&ab_channel=FrSkyRC

If the remote control is ACCST protocol, please bind as follows:

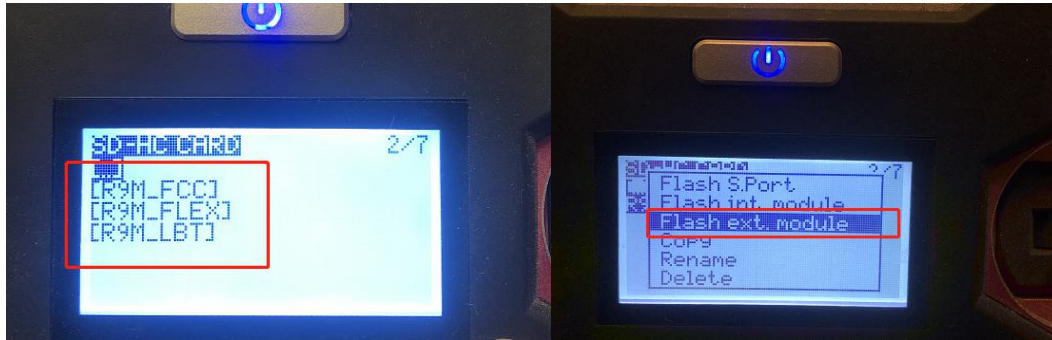
1/ Put these two files into the firmware directory of the SD card of the remote control.

R9MM firmware: FW-R9MM-ACCST_v20190201

R9M TX module: FW-R9M-ACCST-20190117



2/ Insert the R9M TX module and write the firmware you need



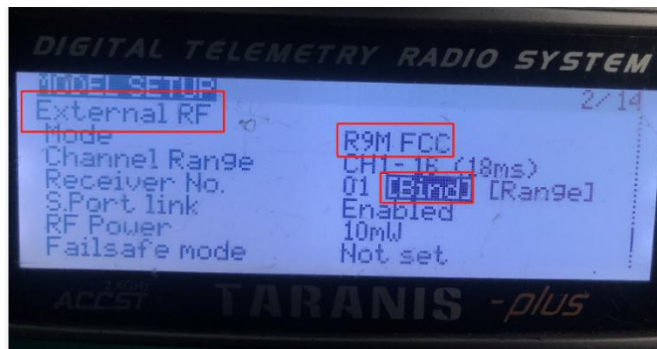
3/ To write the firmware of the R9MM receiver, you need to remove the R9MM receiver, and then write the firmware by connecting to the S.PORT port.



4/ After both R9M TX and R9MM RX are written into the ACCST firmware.

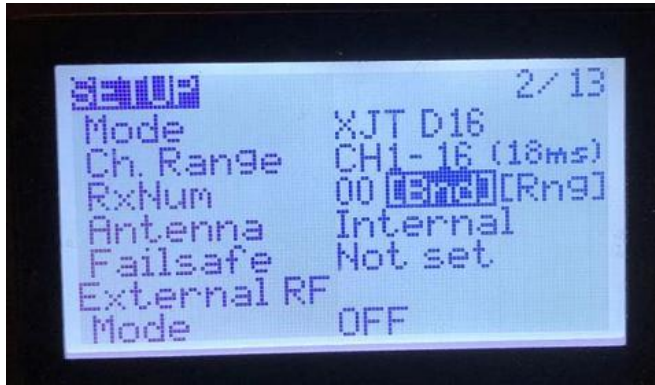
Binding method:

- 1/ Press and hold the button of RX, power on, the red and green lights are always on.
- 2/ Then after R9MM selects binding, RX red light flashes, and then exit
- 3/ RX is powered on again, and only a green light is displayed, indicating that the binding is successful.

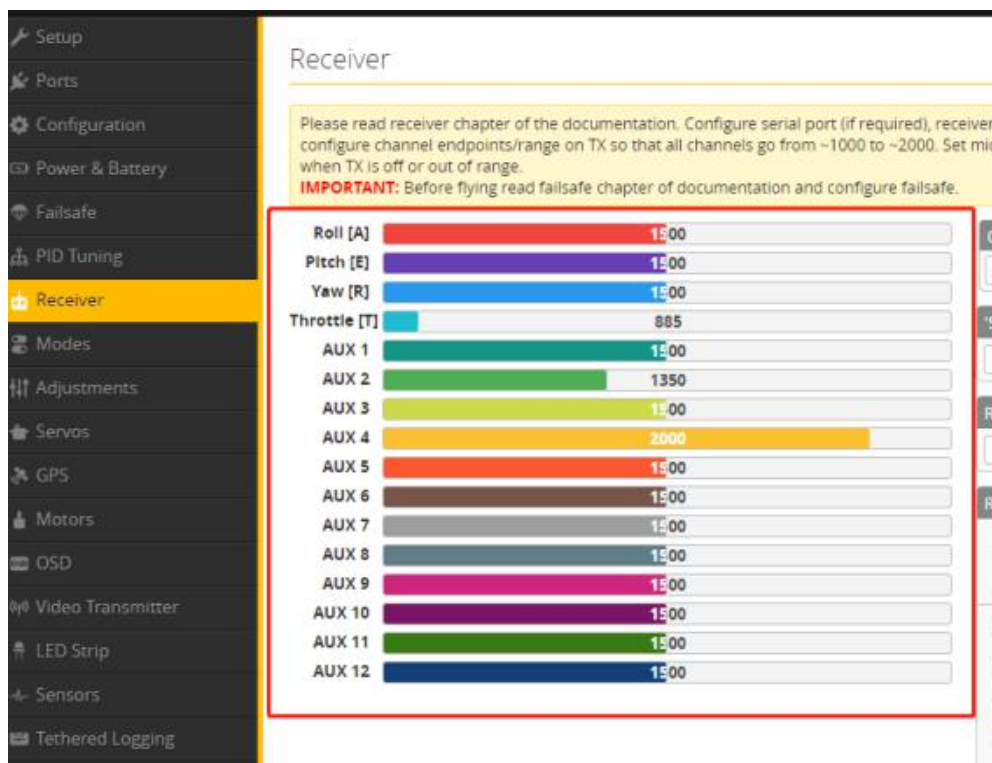


XM+ receiver:

- 1/ Press the XM+ receiver button, USB power supply, the red and green lights are always on
- 2/ The remote control turns on the binding mode, the green light flashes to indicate successful binding, turn off and restart

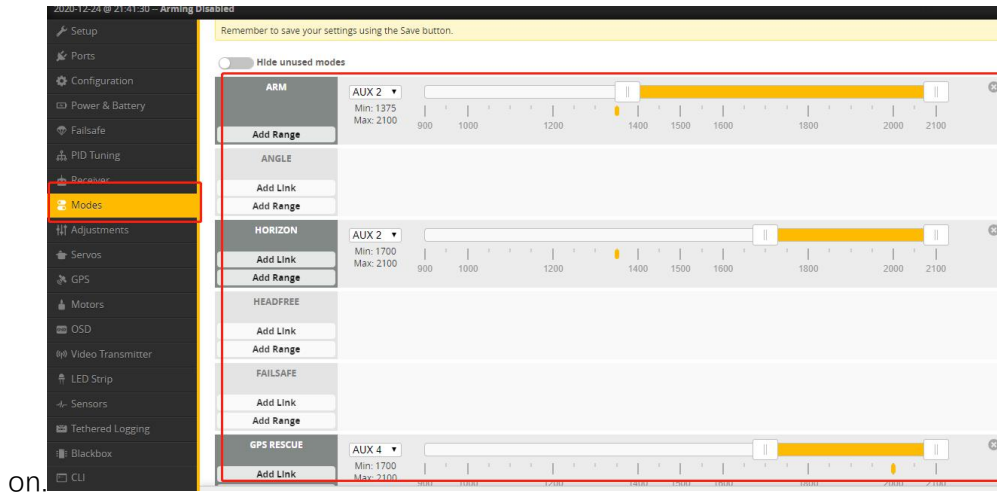


3-1/ Then set the corresponding serial port and receiver protocol to ensure the normal output of each channel of the receiver.



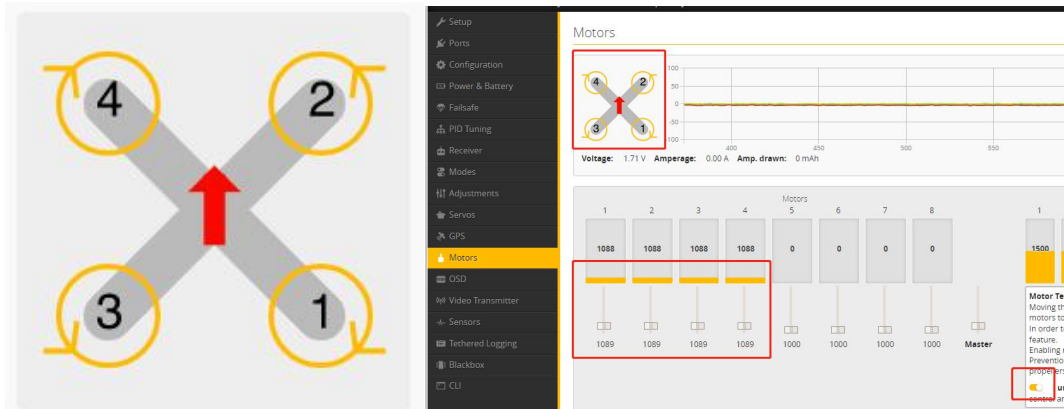
4/ Mode setting:

Set the ARM switch and flight mode switch, AUX* corresponds to the remote control switch, and the yellow area mark is turned



5/ Motor test:

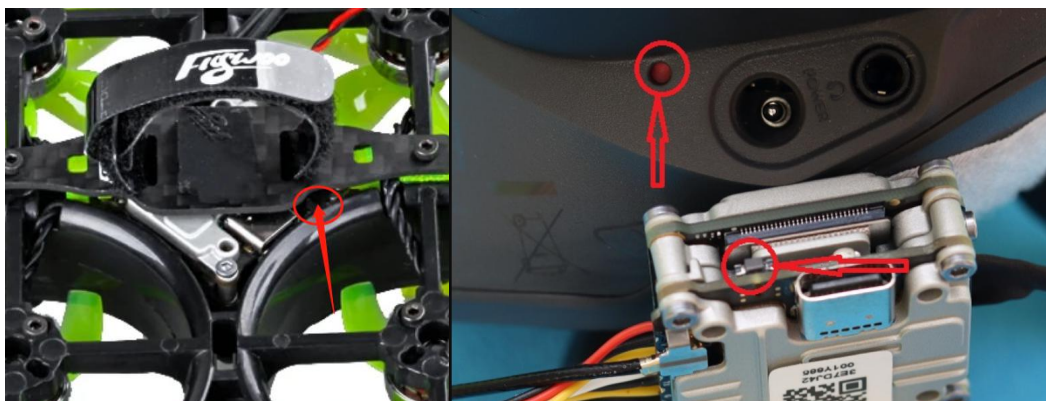
Unload the propeller, test the rotation direction of the motor, turn on the safety switch, and test the rotation of the motors one by one.



6/ VISTA activation and binding

Tip: For the convenience of use, VISTA has been activated by default at the factory and updated to the latest version of the firmware. The BNF version can be used directly without updating again.

https://www.youtube.com/watch?v=nptTbbWKMZs&ab_channel=DJITutorials



7/ Bluetooth function



Betaflight APP

The image displays three screenshots of the Speedy Bee Betaflight APP interface, illustrating the Bluetooth connection and configuration process.

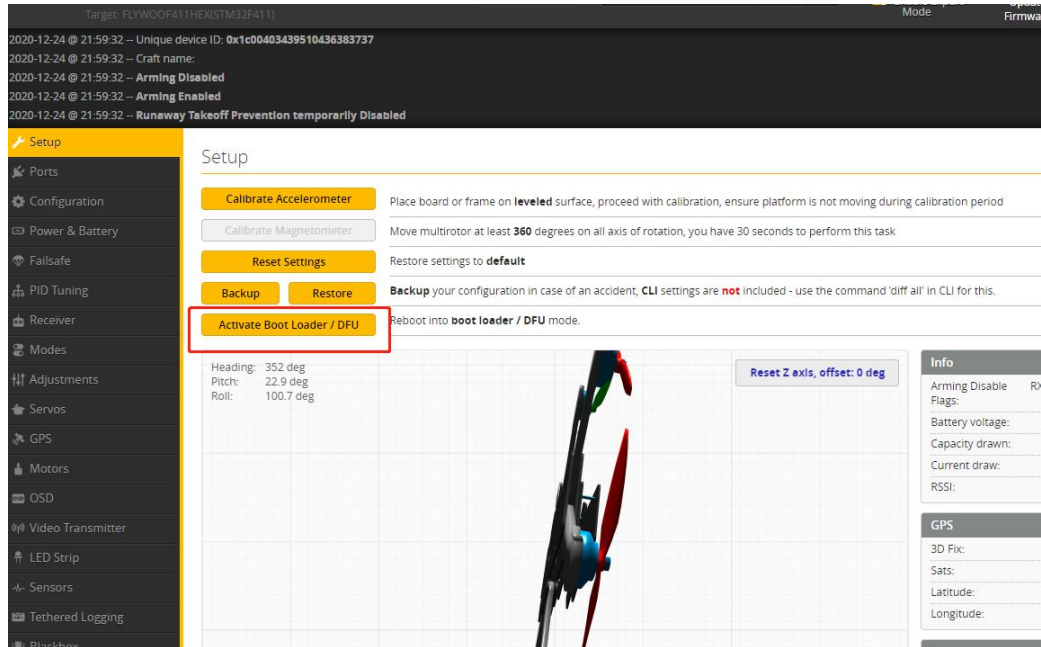
Top Screenshot: Device Discovery
 The interface shows a list of other BLE devices under the heading "其他 BLE 设备". A device named "FLYWOO-BTNANO V2" is listed with a Bluetooth icon. The top status bar includes a battery level of 15.5 V and various sensor icons (gyro, accelerometer, magnetometer, barometer, GPS, audio). A "断开连接" (Disconnect) button is visible in the top right corner.

Middle Screenshot: OSD Configuration
 This screen is titled "OSD 屏幕叠加显示" (OSD Screen Overlay Display). It features a preview window showing the Betaflight OSD layout with the "BETAFLIGHT" logo and various data fields. Below the preview, there are configuration options for "元素" (Elements) and "当前配置文件" (Current Profile). The "元素" section includes checkboxes for "Rssi Value", "Main Batt Voltage", and "Crosshairs". The "当前配置文件" section shows "OSD Profile 1" selected. A "全屏" (Full Screen) button and a "保存" (Save) button are at the bottom.

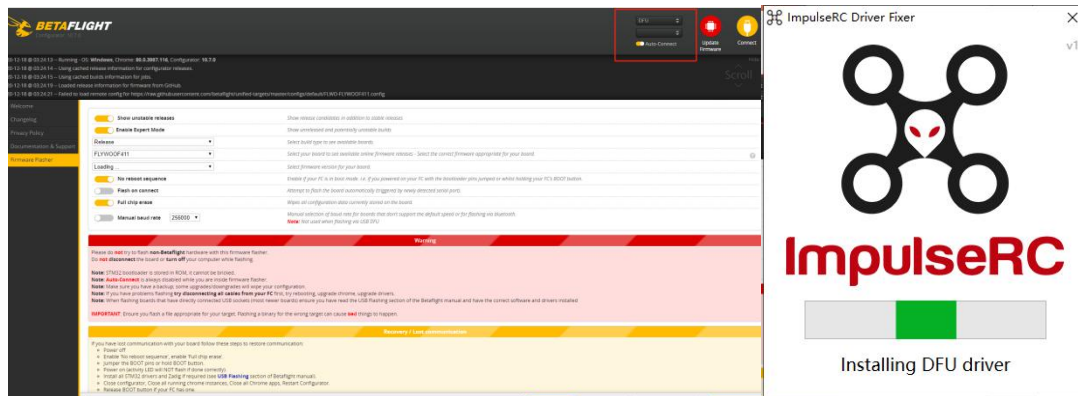
Bottom Screenshot: Settings and Information
 This screen is divided into two main sections: "设置" (Settings) and "信息" (Information).
 The "设置" section shows flight attitude data: Heading: 11.0 度, Pitch: 11.7 度, Roll: -12.3 度. It also includes a "重置 Z 轴, 补偿: 0.0 度" (Reset Z-axis, compensation: 0.0 degrees) option and a 3D model of the drone with colored axes.
 The "信息" section displays system status: "禁止解锁标志" (Prohibit unlock flag) at 2, 15; "没有检测到有效的接收器信号" (No valid receiver signal detected); "MSP 连接处于活动状态 (USB 连接中...)" (MSP connection is active (USB connected...)); "电池电压" (Battery voltage) at 15.46 V; and "已用容量" (Used capacity) at 13 mAh.

8/ Flight firmware upgrade and write default CLI

1/ Activate DFU mode



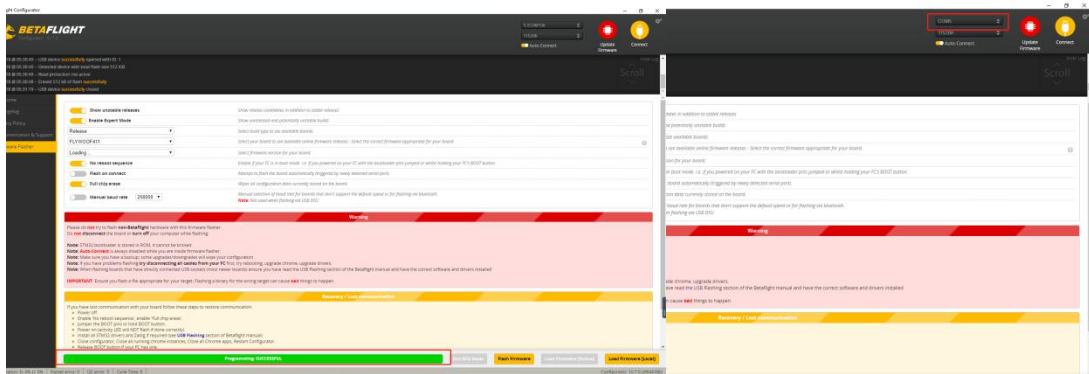
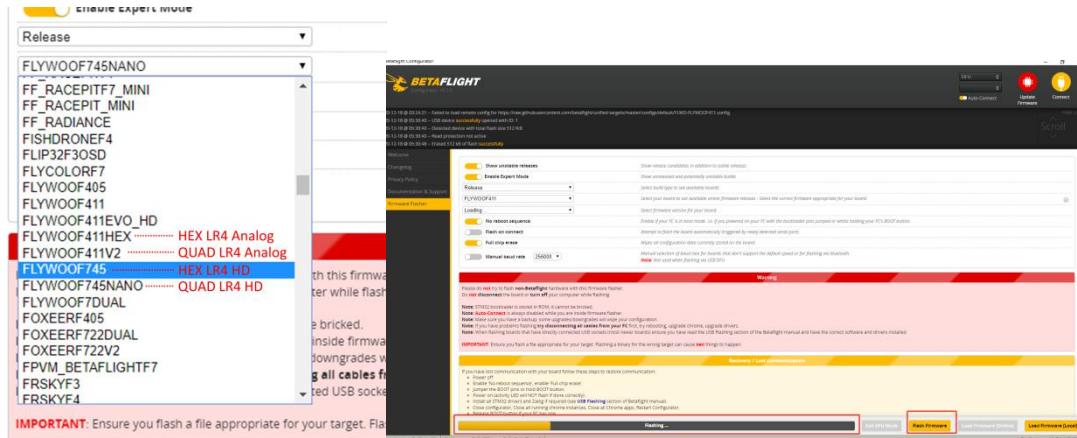
2/ BF Configurator will display to enter DFU mode. If it does not enter DFU mode, it may be that the driver is not installed. The driver can be installed using IMPULSE RC software



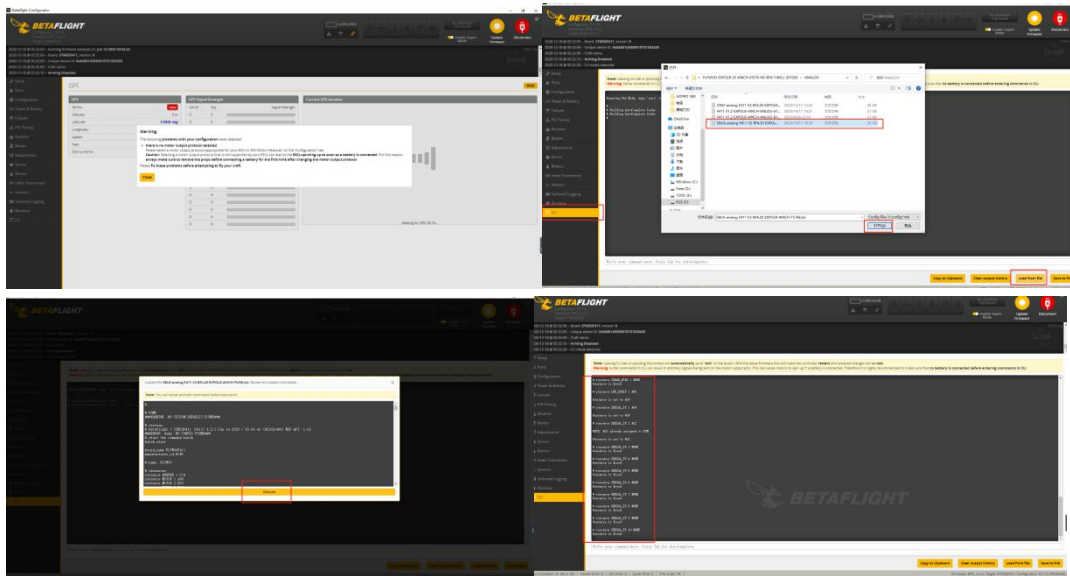
Driver software:

https://impulserc.blob.core.windows.net/utilities/ImpulseRC_Driver_Fixer.exe

3/ Then load the local HEX firmware and wait for the flashing to complete. A green progress bar is displayed to indicate completion, and DFU will become a COM port



4/ After the connection is entered, it is a blank interface, you need to write CLI commands, Factory CLI LINK: <https://flywoo.net/pages/manual>



5/ If the command is not restarted after writing the command, please write SAVE and press Enter to save, and the FC will restart

9/ Configuration table

CineRace20 Analog		CineRace20 Analog Pro		CineRace20 Polar Nano	
Color	Grey	Color	Yellow	Color	Black
FC\ESC	GOKU 413SAIO 13A AIO	FC\ESC	GOKU 405S 20A AIO	FC\ESC	GOKU 405S 20A AIO
Camera	Caddx Ant	Camera	Caddx Baby Ratel V2	Camera	Polar Nano
VTX	VTX625 450mw	VTX	HM850 850mw	VTX	Vista
Antenna	Flywoo circular RHCP 5.8Ghz Antenna (UFL--Length: 115mm \ Tube 45mm)	Antenna	Flywoo circular RHCP 5.8Ghz Antenna (UFL-- Length: 115mm \ Tube 45mm)	Antenna	Flywoo circular LHCP 5.8Ghz Antenna (UFL --Length: 115mm \ Tube 45mm)
Motor	Nin V2 1203PRO 3400kv	Motor	Nin V2 1203PRO 3400kv	Motor	Nin V2 1203PRO 3400kv
Propller	Gemfan D51-5 blade	Propller	Gemfan D51-5 blade	Propller	Gemfan D51-5 blade
Bluetooth, module	\	Bluetooth, module	YES	Bluetooth, module	YES
Microphone module	\	Microphone module	YES	Microphone module	\
Battery	Explorer 4S 300mah HV Explorer 4S 900mah HV	Battery	Explorer 4S 300mah HV Explorer 4S 900mah HV	Battery	Explorer 4S 300mah HV Explorer 4S 900mah HV
Flight Time (Without Caddx Peanut)	300mAh\7mins 900mAh\15mins 30s	Flight Time (Without Caddx Peanut)	300mAh\7mins 900mAh\15mins 30s	Flight Time (Without Caddx Peanut)	300mAh\6mins 900mAh\12mins 30s
Flight Time (With CaddxPeanut)	300mAh\4mins 30s 900mAh\12mins	Flight Time (With CaddxPeanut)	300mAh\4mins 30s 900mAh\12mins	Flight Time (With CaddxPeanut)	300mAh\3mins 30s 900mAh\10mins
Weight	93.2g (Without Battery)	Weight	94.7g (Without Battery)	Weight	111.7g (Without Battery)