Sub250

Nanofly16

User Manual & Setup Guide

V1.0

Contents

Overview:

HELLO everyone, Welcome to Sub250 Shop. We are very happy to introduce our first Ultra-light Freestyle FPV Drone Sub250 1s Nanofly 16 to you. it is very quiet, and suitable for both indoors and outdoors. Currently available in 2 versions: ELRS 2.4G, TBS 915 Mhz.

The design concept of Nanofly 16 quad is lightweight, small in size, has good hand feels, and is suitable for a variety of flight scenarios FPV traversing aircraft. Obviously, it exceeded the design specifications. We designed a 1.5mm carbon fiber body with a 3D-printed upper shell for the Nanofly 16. The fuselage has high strength and is very crash-resistant. We did a lot of tests and selected the Ant lens with better effect, which has a better imaging effect and less wide-angle distortion. We developed a 0803-19000KV strong magnetic motor with 40mm propellers, it has strong power and smooth throttle, which is very suitable for flying freestyle.

Nanofly16 has an ultra-light body weight with the latest 1S 380mAh high-voltage battery. The take-off weight of a drone is only 38.0g, and the flight time is 4.5 minutes. Equipped with a 3D printed battery holder, it is convenient and quick to replace the battery.

The most important thing is that Nanofly16 is very quiet to fly, like a dragonfly, you can both fly it at home and freestyle in the yard and even set up a few gantries for racing practice. Trust me, you'll love this small, portable, and quiet mini FPV drone after you fly it.

Specification:

Brand Name： Sub250
Model: Nanofly 16
Frame: NF 16
Wheelbase size: 77mm
Arm thickness: 1.5mm
Motor: M1 0803-19000KV
Weight： 28.0g (ELRS)
Camera: Ant
MCU： STM32F411
IMU： ICM20689(SPI)
ESC: BLheli_S 4IN1 5A ESC
VTX: VX 5.8G 250mW
Propeller: HQ 40mm-2
OSD： BetaFlight OSD w/AT7456E chip
Antenna: UFL 5.8G stick VTX antenna

Flight Controller:: F411-1S AIO/250mW/ELRS
Receiver Version: ELRS 2.4G \ TBS 915 Mhz
Battery: Recommend 380mAh 1S 90C LiHV battery (Not include)
Flight Time: 4 minutes and 45 seconds flight time with Sub250 latest 1S 380 Mah!

Features:

1. 1.6-inch tiny size & lightweight, just 28.0g

Includes a full set of high-quality 3D printed parts for a superior flying experience

2. It is equiped with a new F411-1S AIO/250mW/ELR Flight controller. Reliable & stable and easy to use.

3. Ant camera with high-quality image. Clear and clean.

4. With a new 1S 380mAh battery with plenty of power output

5. The latest light 0803 - 19000KV motor is matched with 40 mm-2 propellers proving maximum power and efficiency

6. It is quiet, like a dragonfly, suitable for both indoors and outdoors.

7. Suitable for both freestyle and racing.

Warranty Policy:

1. If the quadcopter is damaged or has unknown issues, please contact Sub250. We'll do our best to get this taken care of as quickly as possible.

2. Any impact damage, product liquid damage, high-temperature damage, or other artificial damage, not attributable to the quality of the product is not covered by a warranty.

PS:

a. All components had been strictly inspected and tested before shipping.

b. If you have any problems, please cooperate with our engineers to figure out solutions. (E-mail: support@sub250.com.)

Install Betaflight:

Although your quadcopter comes from the factory nearly completely ready to fly, you still need to install Betaflight to facilitate your subsequent use of Betaflight for debugging.
Installation package download link:

https://github.com/betaflight/betaflight-configurator/releases

Open the web page, pull to the bottom, and select the appropriate installation package to download. File extensions for different OS. .exe - Windows system, .dmg - MacOS system, .rpm / .deb - Linux system, .apk - Android system.

Install Drivers:

If you are on windows, you must install the drivers manually.

CP210x Drivers:

https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers

STM USB VCP Drivers:

http://www.st.com/en/development-tools/stsw-stm32102.html

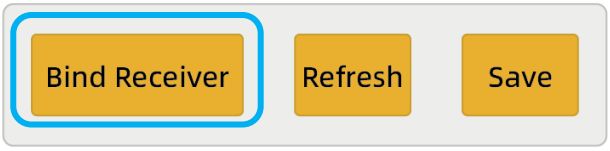
Zadig:

http://zadig.akeo.ie/

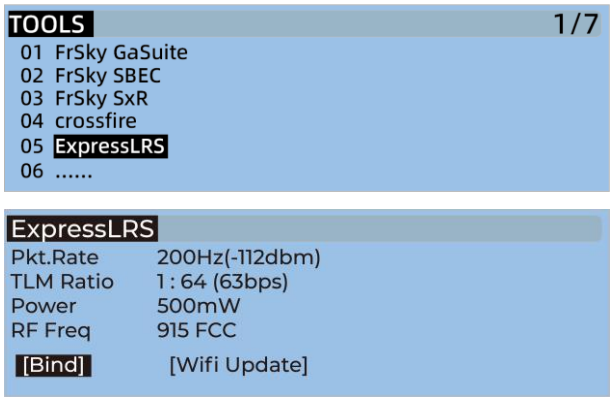
Bind ELRS Receiver

The ELRS 2.4GHz receiver used by Nanofly16 is integrated on the FC. It needs to be connected to the Betaflight 10.8.0 version to bind the receiver.

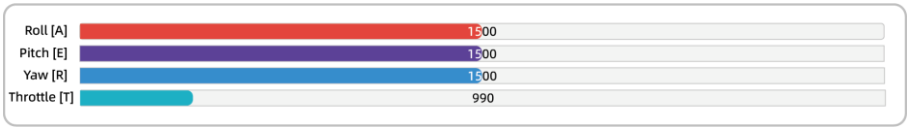
1. Connect the FC to Betaflight, enter ‘Receiver’ Options, and click on "Bind Receiver".



2. Turn on the power of the remote control, enter TOOLS – ExpressLRS , and select Bind.

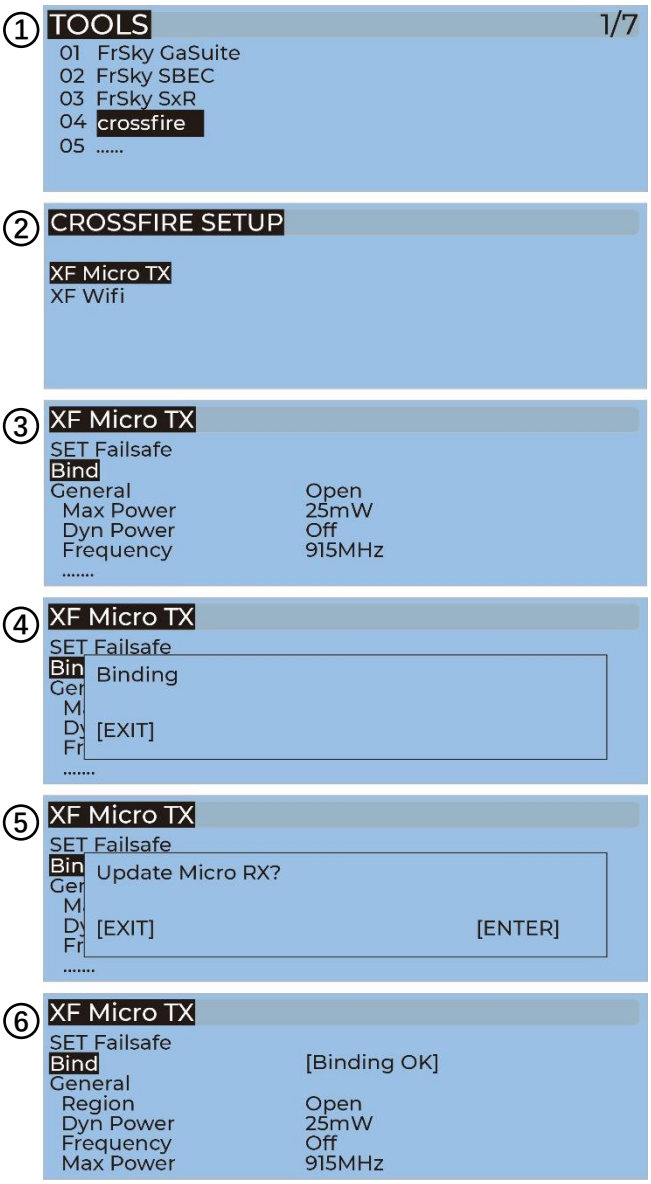


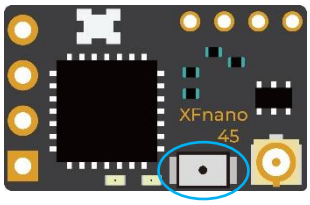
3. Wait for 5 seconds, push the remote control lever, the preview indicator bar changes with the movement of the lever, indicating that the binding is successful.



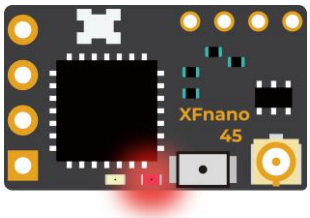
Bind TBS NanoRX:

1. Turn on the power of the remote control, enter TOOLS – CROSSFIRE SETUP – XF Micro TX, and finally select Bind.
2. Press and hold the Bind button of the receiver while turning on the power until the green light of the receiver flashes quickly and releases the bind button. Press and hold the Bind button on the receiver again for 8 seconds and release it, wait for the green light of the receiver indicator to turn off, the red light to flash slowly, and the remote control screen will display "Update micro RX?", and then select "ENTER".
3. Wait for the update to complete, and the frequency will be automatically paired. The remote controller will display "Binding OK" when the linking is successful, and the indicator light of the Black Sheep receiver is green.





Bind Button

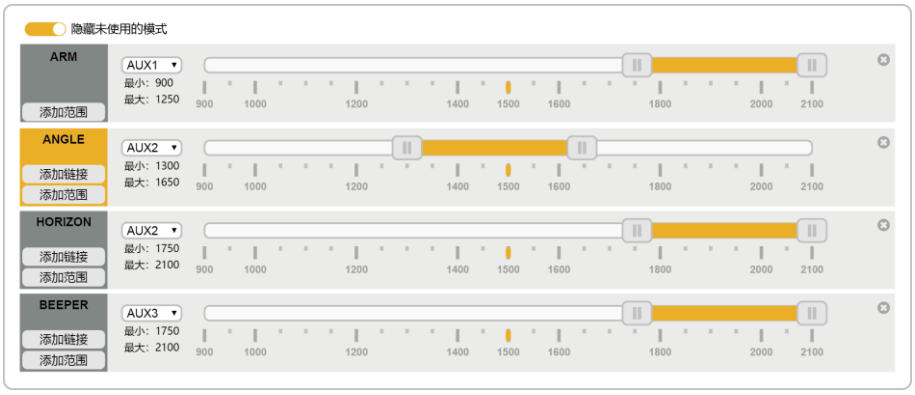


Binding

Binding Successful

ModePreset：

1. The model will be preset in the factory



2. Using the OpenTX remote control, you can enter MENU – MIXES to view the current channel mapping settings.

3. CH1-CH4 corresponds to four channels of rocker

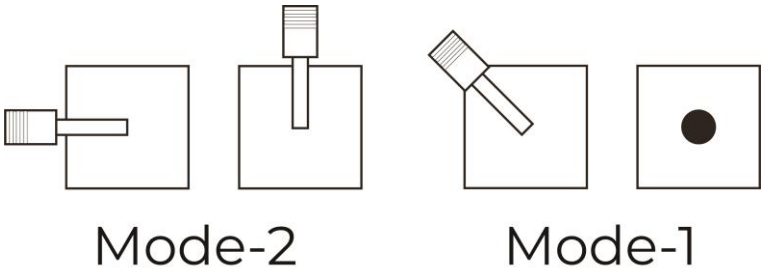
   CH5（SF）→AUX1（ARM）

   CH6（SG）→AUX2（MODES）

   CH7（SA）→AUX3（BEEPER）

IRC Tramp (Analog):

Turn on the transmitter, THR middle, YAW left, PITCH up, enter the OSD menu.



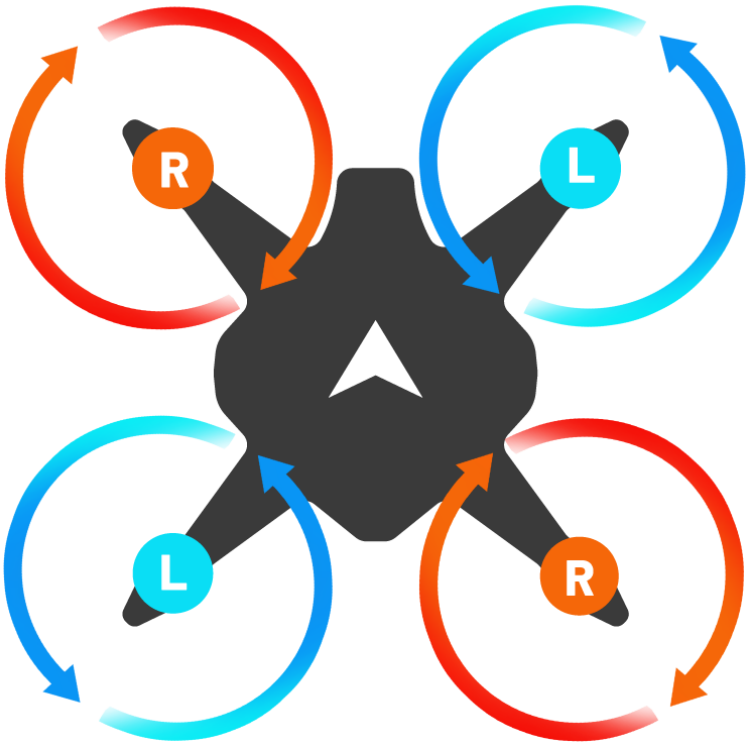
The PITCH moves the cursor up and down, and the ELE right to enter the next item. Now, save and exit.

Frequency table:

Universal frequency table (BAND)	CH							
	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
1, A (BOSCAM)	5865Mhz	5845M	5825M	5805M	5785M	5765M	5745M	5725M
2, B (BOSCAM)	5733Mhz	5752M	5771M	5790M	5809M	5828M	5847M	5866M
3, E (BOSCAM)	5705Mhz	5685M	5665M	5645M	5885M	5905M	5925M	5945M
4, F (FATSHARK)	5740Mhz	5760M	5780M	5800M	5820M	5840M	5860M	5880M
5, R (RACEBAND)	5658Mhz	5695M	5732M	5769M	5806M	5843M	5880M	5917M

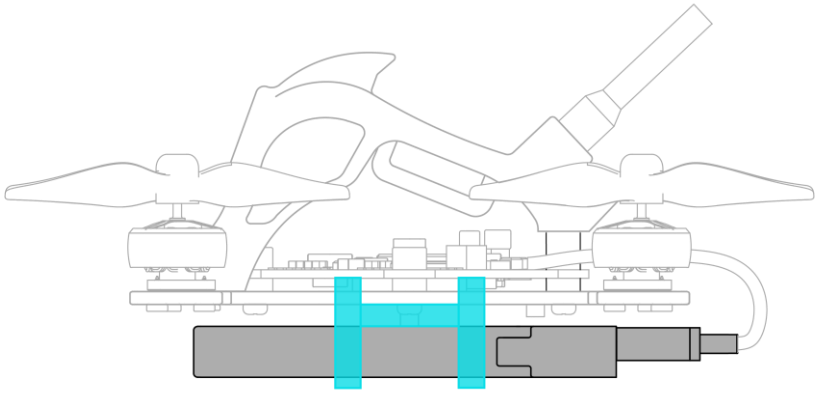
Install Propellers:

Although the propellers of Nanofly16 had already been installed in the factory, we strongly advise, that the direction of the propellers are checked before taking off.



Install Battery:

Nanofly16 uses 3D printed battery holders.



Pre-flight check:

In many cases, the cause of a crash is a lack of pre-flight check. For the sake of everyone's safety, we suggest that you conduct a thorough check before every flight. The steps are as follows:

1. Turn on the transmitter and select the correct mode. Please confirm that the arming switch on the transmitter is in the "disarmed" position and the throttle is all the way down;
2. Please perform a physical inspection of the quadcopter for any visible damage. If there is damage, please fix it first;
3. Please confirm the propeller is in the right direction and the propeller nut is locked tight, otherwise there is a risk of crash;
4. Check LiPo battery voltage. A fully-charged LiPo should be about 4.2 volts per cell, or about 12.6 volts for a 3S, or 16.8 volts for a 4S;
5. Please confirm the battery is securely attached to the aircraft by the strap. And secure the balance lead to eliminate a possibility of it being struck by the props;
6. Please check the flight area for any safety issues that might be present, such as people, animals or other objects;
7. Verify that you have clean, strong video in your FPV goggles or screen. If you see interference or you see another pilot's feed, resolve this issue before flying;
8. Arm the quadcopter. Listen for the props, make sure they aren't cutting into anything and spinning freely;
9. At this stage, take off and enjoy flying.

Note: if you choose to fly close to water, please pay attention to the flight safety. It is difficult and even dangerous to salvage a quadcopter when it falls into the water, and liquid damage is not covered by the warranty.

Include:

1 x Nanofly16

4 x HQ 40mm-2 propellers (pair)

1 x 3D printed battery holder

1 x Phillips-head screwdriver

1 x 1.5 mm screwdriver

4 x M1.4*3 Phillips screws

3 x M2*2 nylon nuts

Contact:

https://sub250.com/