Notice: The HDZERO whoop lite vtx and nano lite camera can only working while battery was connected. USB couldn't supply for the whoop lite vtx module and nano lite camera.

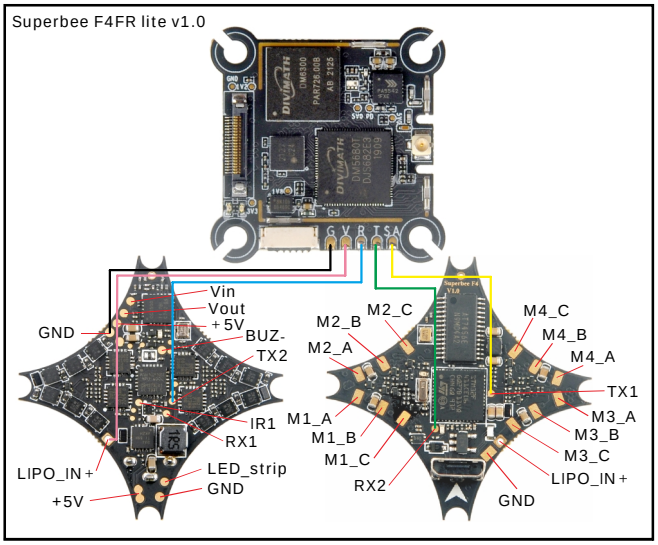
Specifications

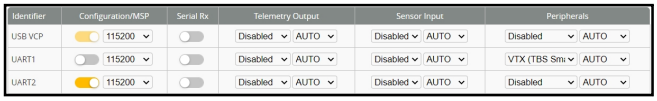
Brand Name: Happymodel
Model: Mobula6 HDZERO
Frame wheelbase: 65mm
Weight: 23.5 gram without battery
Size: 80mm*80mm*50mm
Receiver option:
SPI ELRS 2.4GHz
SPI FRSKY 2.4GHz
Compatible with 1S Lipo battery or Lihv battery
Battery Plug: PH2.0

Package includes

Item Name	Qty
Mobula6 65mm frame+Canopy	1
SPI Receiver Option1: SuperbeeF4 Lite FC built-in ExpressLRS SPI RX SPI Receiver Option2: SuperbeeF4 Lite FC built-in Frsky SPI RX	1
EX0802 KV19000 Unibell brushless motor	4
Gemfan 1210 31mm propeller(4cw+4ccw)	1
HDZero Nano Lite Camera	1
HDZero Whoop Lite VTX	1
Spare Canopy	1
Propeller disassemble tool	1
Screw driver	1

Flight controller connection diagram



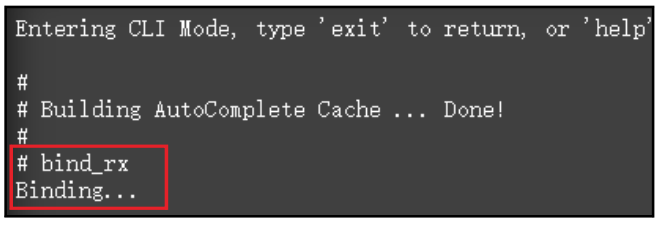


TX1 pad was used for Smartaudio
TX2 and RX2 were used for MSP

Binding procedure

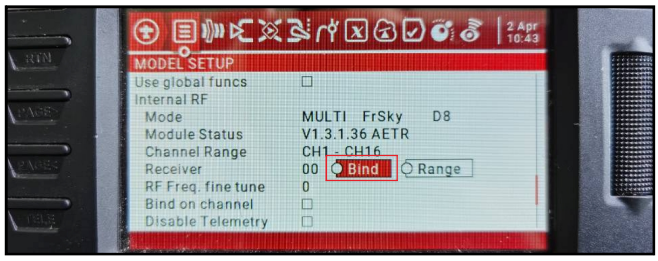
Bind procedure video
https://bit.ly/39SvE0r

1). Connect Mobula6 HDZERO with computer by Plug USB. Running Betaflight configurator and then move on Receiver tab then hit "Bind Receiver". Or move to CLI command and then type " bind_rx" code .The Red LED on the flight controller would get to be solid, it means the onboard SPI Frsky receiver is in bind mode.



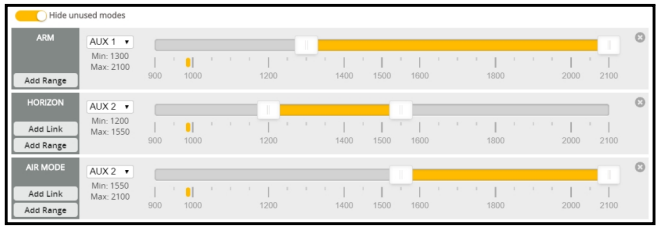
2).The default SPI Receiver provider is set to Frsky_D, that means you need to bind with your Frsky D8 radio transmitter or other radio with Frsky D8 tx module. Turn on your radio and move to model setup ,then hit Bind. The RED LED of the flight controller would start to blinking , it means bind successfully.

**If you want to use other protocol , Please change Receiver provider to "FRSKY_X" for D16 radio, and Change to "REDPINE" or "SFHSS" to match REDPINE TX module or Futaba Radio.



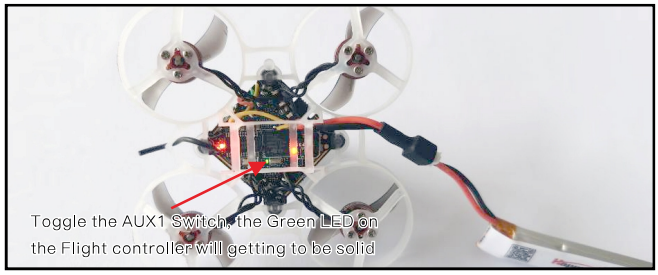
Arm/Disarm the Motor

1. The Default Arm/Disarm switch for Mobula6 HDZERO is AUX1(Channel 5),and you can also customize it with Betaflight Configurator.



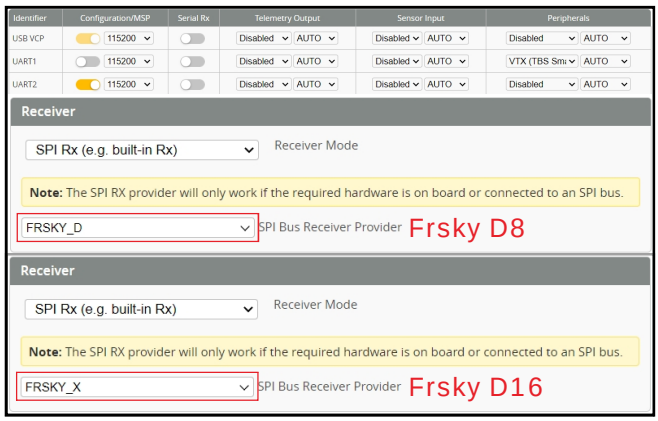
2.Turn on the Radio transmitter (Use TX16S as an example) and move to the MIXES interface, Set CH5 channel to "SF" or other aux channel to ARM/DISARM the motor

3.The default channel map for Mobula6 HDZERO version is TAER1234. Please make sure your transmitter is matched, otherwise it wouldn't be armed. Toggle the AUX1 Switch ,the Green LED on the flight controller will getting to be solid, this indicates the motor was armed . And also you can found"Armed" notice displayed on your FPV Goggles or the FPV Monitor. Please make sure keep the Mobula6 HDZERO level before arming .Be careful and Happy flying !

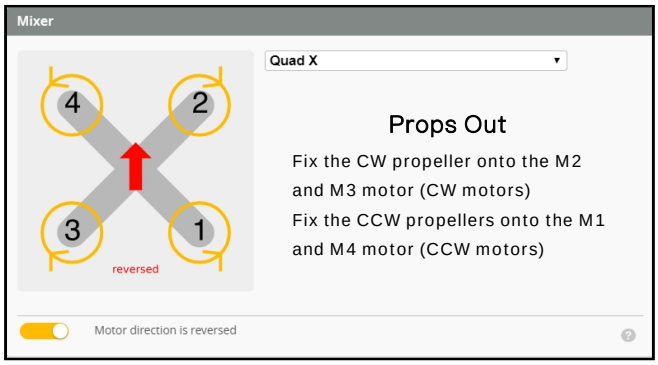


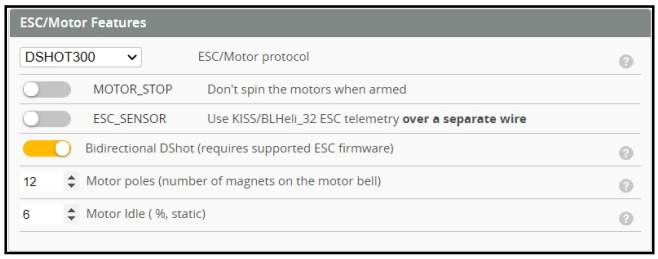
Receiver configuration

The following settings are reserved from out of factory. Sometimes maybe you need it after you updated firmware.Please set Receiver mode to be SPI RX Support from the Configuration tab of the Betaflight Configurator, then select Frsky_D for Frsky D8 protocol or Frsky_X for Frsky D16 protocol .Don't enable Serial RX since the Superbee F4 Frsky Flight controller is integrated SPI Receiver.

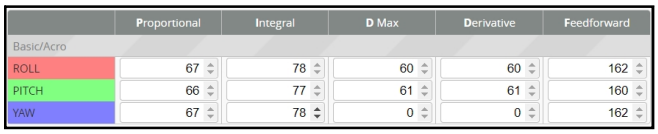


Mixer type and ESC/motor protocol



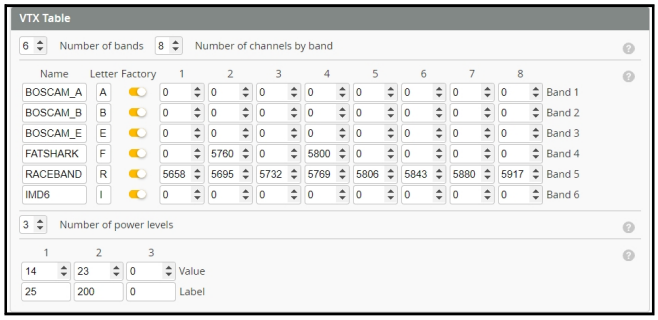


Default PID setting



Board and Sensor Alignment

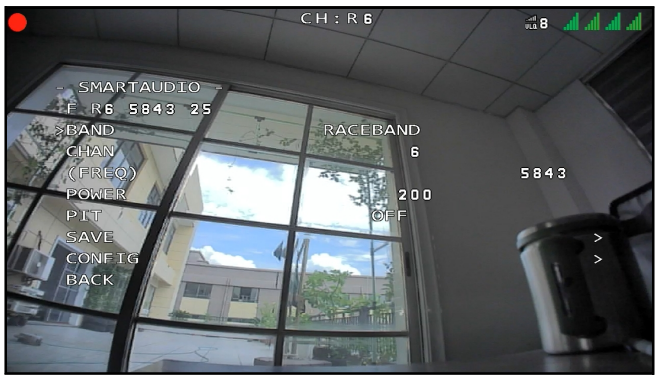
VTX Bands and Channels setup



There are 2 ways to switch the vtx channels:

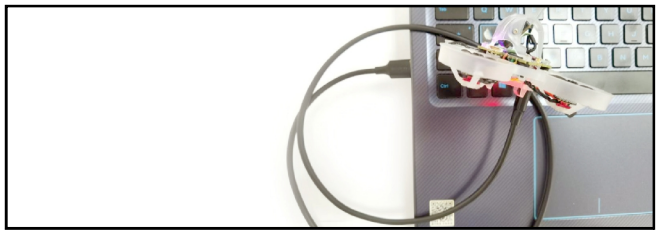
1. Connect battery for Mobula6 HDZERO then plug USB, go to Video Transmitter tab and select band and channel then hit "save"

2.Disarm the Mobula6 HDZERO and then move the stick of the transmitter(THR MID+YAW LEFT +PITCH UP)to enter OSD Menu,Enter to Features,then enter to VTX SA to set VTX Band and channel

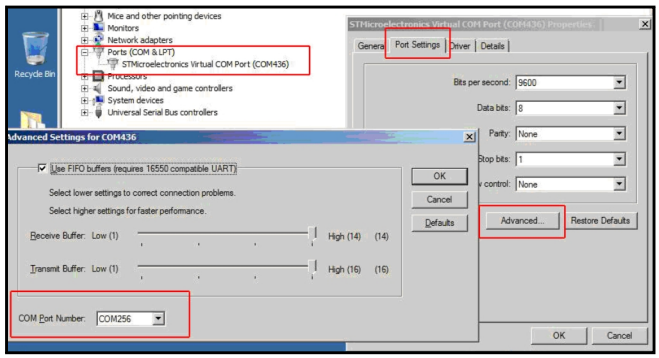


ESC Check and Flash firmware

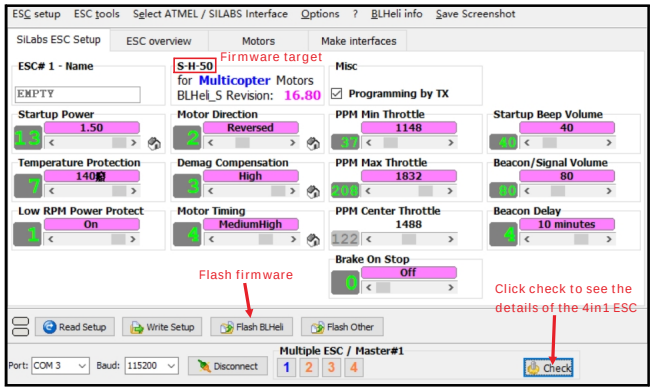
1.Download New release Blhelisuite from:
https://www.mediafire.com/folder/dx6kfaasyo24l/BLHeliSuite
2.Plug the usb and connect the flight controller to computer



3.Open the Device Manager of your computer, find the Ports, please make sure the Com port Serial Number is under 255, otherwise it will can't connect to the BLHELISUITE. You can change the port serial number like the bellowing step :

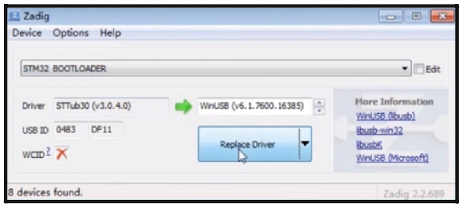


4.Open the BLHELISUITE, Select SILABS BLHeli Bootloader (Cleanflight) from the third tab on the top side. Then Select the right Serial com port and Click connect. You can also Flash the new release BLHeli_s firmware via the BLHEILISUITE, the firmware Target is "S-H-50"
Notes: RPM Filter has been enabled for the Mobula6 HDZERO, so the ESC firmware is from JazzMaveric (16.80 BLS) Link :https://bit.ly/3A1sguU



Flight controller firmware update

1.Install latest STM32 Virtual COM Port Driver
http://www.st.com/web/en/catalog/tools/PF257938
2.Install STM BOOTLOAD Driver (STM Device in DFU MODE)
3.Open Betaflight configurator and choose firmware target "CRAZYBEEF4FR",then select the firmware version.
4.There are 2 ways to get in DFU Mode: 1). solder the boot pad and then plug USB to computer 2). loading betaflight firmware and hit "flash", then it will getting into DFU Mode automatically.
5.Open Zadig tools to replace the drivers from STM32 Bootloader to WINUSB Driver.
6.Reconnect the flight controller to the computer after replace driver done , and open Betaflight Configurator, loading firmware and flash.



"Flip over after crash" procedure

Set one channel of your radio transmitter to activate the Flip over function in the Mode tab of Betaflight configurator. The default Switch for Activate "Flip" is AUX4(Channel8)