Notes:

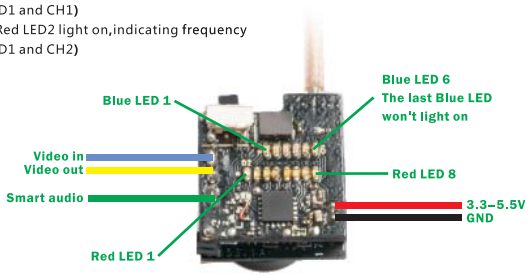
1.The receiver signal will be unstable while the MSP(Connect to Betaflight) Connection established
2.The PID loop frequency must be 2kHZ at this firmware version, will update soon .

Specifications

Brand Name: Happymodel
Mode Name: Mobula7
Item Name: 2S brushless whoop Racing Drone Frsky EU-LBT version
Wheelbase: 75mm
Size: 98mm*98mm*36mm
Weight: 27g(without battery)

VTX Bands and Channels setup

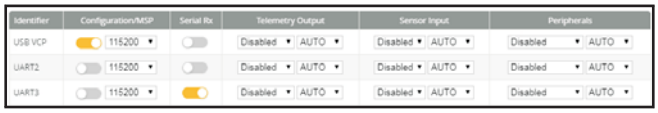
Blue LED1 and Red LED1 light on,indicating frequency 5865MHZ(BAND1 and CH1)
Blue LED1 and Red LED2 light on,indicating frequency 5845MHZ(BAND1 and CH2)



Frequency and channel frequency table:

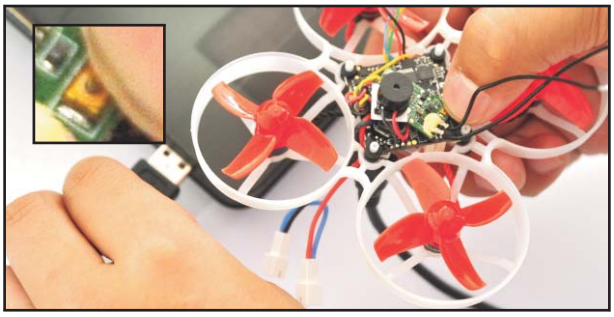
FR \ CH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
Band1	5865M	5845M	5825M	5805M	5785M	5765M	5745M	5725M
Band2	5733M	5752M	5771M	5790M	5809M	5828M	5847M	5866M
Band3	5705M	5685M	5665M	5665M	5885M	5905M	5905M	5905M
Band4	5740M	5760M	5780M	5800M	5820M	5840M	5860M	5880M
Band5	5658M	5695M	5732M	5769M	5806M	5843M	5880M	5917M

There are 2 ways to switch the vtx channels:
1.Short press to choose the VTX channel, press and holding the button to choose the VTX Band (Can't save , it will lost the channel while power off)
2.Go to Betaflight CLI ,type the command:
Set vtx_band=3
Set vtx_channel=1
Set vtx_freq=5705
save
Notes: The vtx_freq should match the vtx_band and vtx_channle as the VTX Channel list shows.
For example, if you set vtx_freq=5732, you should set vtx_band=5 and vtx_channel=3
3.Notes: Since UART3 was used for XM+ Receiver , so smartaudio was unavailable for Mobula7 XM+ Version



Binding procedure

1.Connect the usb to the computer while holding and press the binding button of the Frsky xm+ receiver , the red and green Led will getting to be solid, this indicate the Receiver is in binding mode .

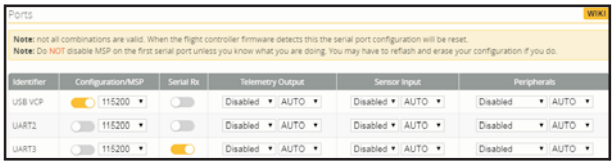


2.Turn on your Frsky EU-LBT Transmitter and move to BIND option from setup menu, choose receiver mode D16

3. EN [BND] to binding with the XM+ Receiver, then the red LED of the XM+ Receiver will start blinking, this indicate binding successfully. Exit binding procedure , and power the Mobula7 with battery . The green led of the XM+ receiver will getting to be solid, this indicate working normal.

Receiver configuration

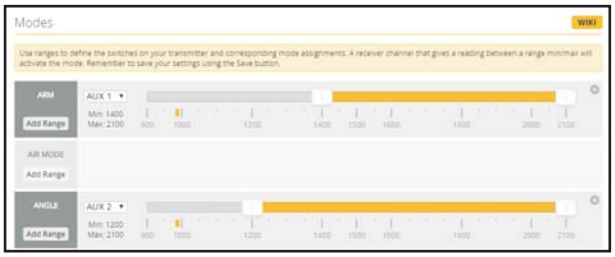
1.Please Enable serial RX for UART3, don't enable Smartaudio for UART3 since RX3 has been used for serial RX.



2.Please set Receiver mode to be serial-based receiver from the Configuration tab of Betafligt configurator, then select SBUS provider

Arm/Disarm the Motor

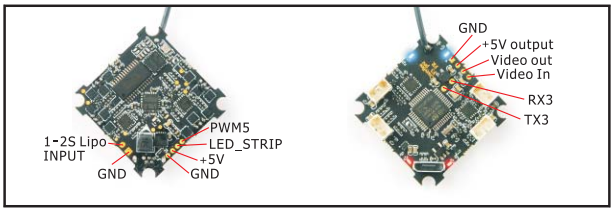
1. The Default Arm/Disarm switch for Mobula7 is AUX1(Channel 5),and you can also customize it with Betaflight Configurator.

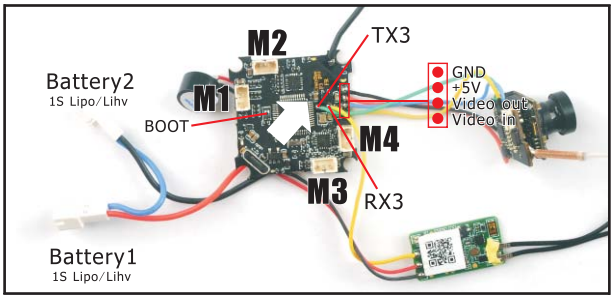


2.Turn on the Frsky transmitter (use X-lite as an example) and move to the MIXER interface, Set "SA" or "SB" switch etc. for Ch5 to ARM/DISARM the motor.

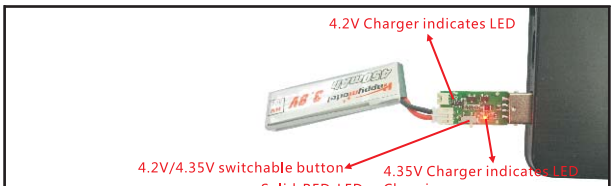
3.The default channel map for Mobula7 Frsky version is TAER1234 and AUX12 is set to be RSSI channel. Please make sure your transmitter is matched, otherwise it will can't be armed. Toggle the AUX1 Switch ,the Green LED on the flight controller will getting to be solid, this indicates the motor was armed . And also you can found "Armed" displayed on your FPV Goggles or the FPV Monitor. Please make sure keep the Mobula7 level before arming .Be careful and enjoy your flight now !

Flight controller connection diagram

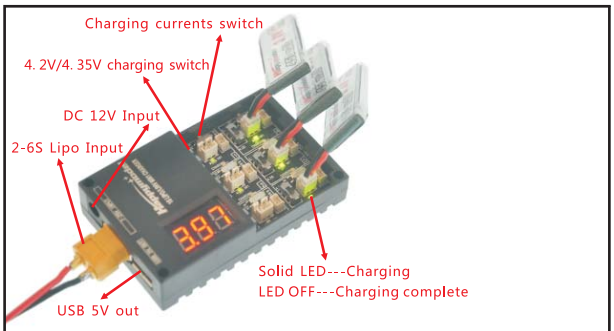




Charger the Lipo Battery

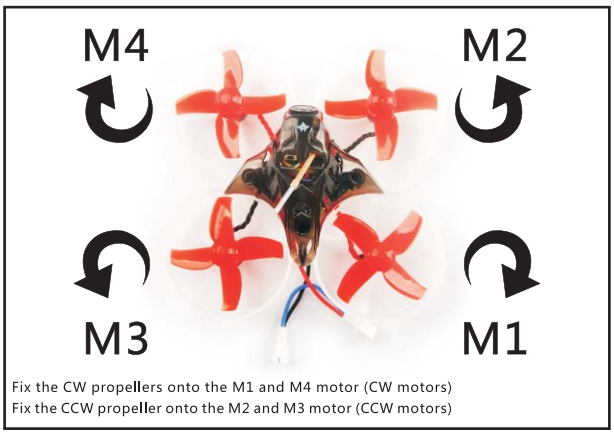


⚠CAUTION: Once charging is complete, immediately remove the battery. Never leave a battery connected to the charger.

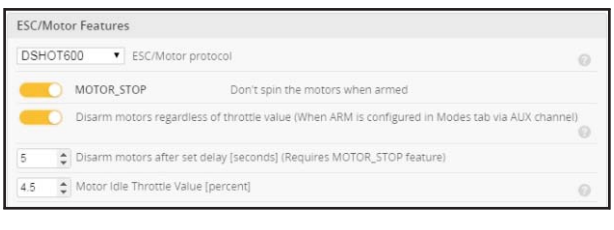


⚠ Ports are numbered 1-6. Do not put more than one battery on a single port. For example: do not insert one battery on the Picoblade 1.25 plug and another on the same port with the PH 2.0 plug.

Mixer type and ESC/motor protocol

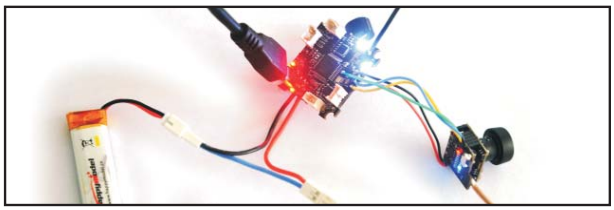


Fix the CW propellers onto the M1 and M4 motor (CW motors)
Fix the CCW propeller onto the M2 and M3 motor (CCW motors)

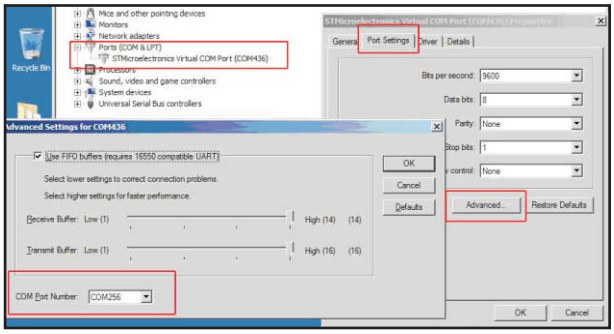


ESC Check and Flash firmware

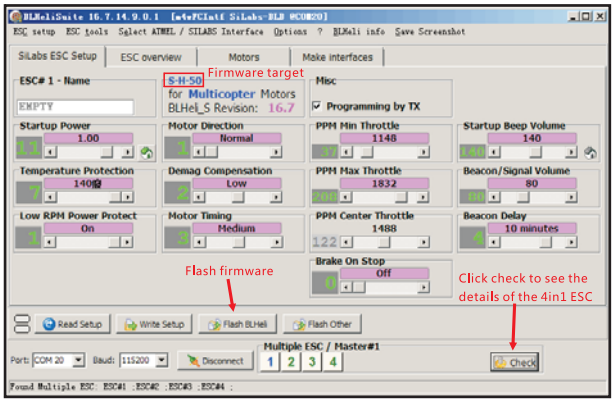
1.Download New release Blhelisuite from:
https://www.mediafire.com/folder/dx6kfaasyo24l/BLHeliSuite
2.Connect the Crazybee F3 PRO flight controller to computer and power for it with battery



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 :

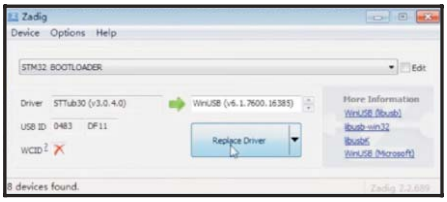


4.Open the BLHELISUITE, Select SILABS BLHeli Bootloader (Cleanflight) from the third tab on the top side. Then Select the right Serial com port and Click connect. You can also Flash the new release BLHeli_s firmware via the BLHEILISUITE, the firmware Target is "S-H-50"



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 "CrazybeeF3FR",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.



*We will update the firmware for Crazybee F3 PRO and release to our website in time.

"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.