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: Snapper6
Item Name: 1S Brushless Whoop racer drone BNF
Wheelbase: 65mm
Size: 81mm*81mm*36mm
Weight: 23g(without battery)

Features

Betaflight support , multi flight mode: ACRO/AIR/ANGLE
Powerful Brushless motor and Smooth ESC
CNC aluminum alloy propeller guard
Betaflight OSD support ,easy to get RSSI , Voltage and other info from your goggles
Frsky version support both EU LBT and NON-EU Frsky transmitter
Head lights ready
Camera angle adjustable

Components	Basic Version	Standard Version	Part. NO.
Snapper 6 Frame	1	1	SP601
Crazybee F3 Flight controller Frsky	1	1	SP602FR
SE0603 KV19000 Motor 0.8mm shaft	4	4	SP603
31mm 3-blades propeller(4cw+4ccw)	1	1	SP604
AIO Camera & VTX	1	1	SP605
3.8v 250mah 30C/60C battery	1	3	SP606
USB Lipo/LIHV Charger	1	0	SP607
1S06 6 way Lipo/LIHV charger	0	1	SP608
Propeller disassemble tool	1	1	SP609
Screwdriver	1	1	SP610

VTX Bands and Channels setup

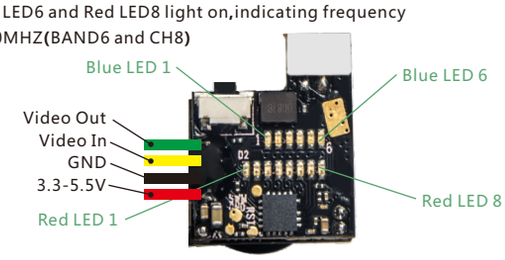
Frequency switching:

By one button, Short press the button to change channel, 1-8 adjustable. Press and hold the button for 2s to change bands, 1-6 adjustable.

Two groups of LEDs:

Group 1:6 BLUE LED stand for bands
Group 2:8 RED LED stand for channels

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)
Blue LED6 and Red LED8 light on,indicating frequency 5600MHZ(BAND6 and CH8)



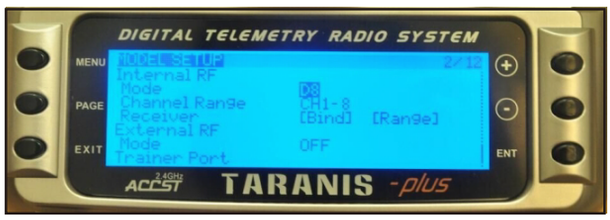
Frequency and channel frequency table:

FR \ CH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
Band1	5865M	5845M	5825M	5805M	5785M	5765M	5745M	5725M
Band 2	5733M	5752M	5771M	5790M	5809M	5828M	5847M	5866M
Band 3	5705M	5685M	5665M	5645M	5885M	5905M	5925M	5945M
Band 4	5740M	5760M	5780M	5800M	5820M	5840M	5860M	5880M
Band 5	5658M	5695M	5732M	5769M	5806M	5843M	5880M	5917M
Band 6	5474M	5492M	5510M	5528M	5546M	5564M	5582M	5600M

Binding procedure

1.Power for the Snapper 6 and the LED Combo(2 red led and 2 white LED) will blinking slowly, then Press and hold the bind button for 2 seconds, the LED Combo(2 red led and 2 white led) will getting to be solid, this indicate the Snapper 6 Quadcopter is in binding mode

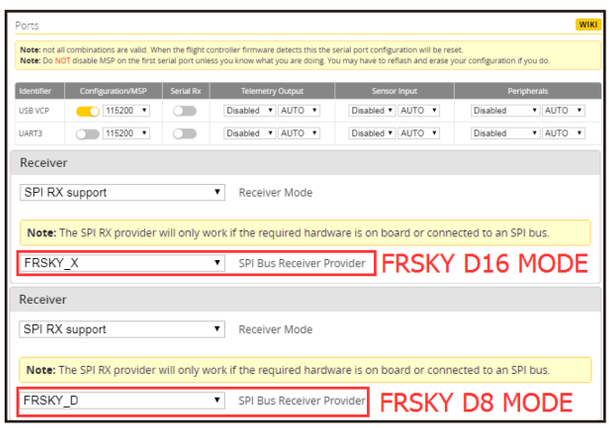
2.Turn on your Frsky Taranis transmitter, and move to BIND OPTION from SETUP MENU, Choose receiver mode D16 or D8 according to your Betaflight receiver configuration (Frsky_X = D16 mode, Frsky_D=D8 mode)



3.ENT [Bind] to binding with the Snapper 6, the LED Combo(2 red led and 2 white led) will blinking slowly on the flight controller ,this indicate binding successfully, and then exist binding mode of your Frsky transmitter, the LED Combo(2 red led and 2 white led) will getting to be solid again, this indicate working normal.

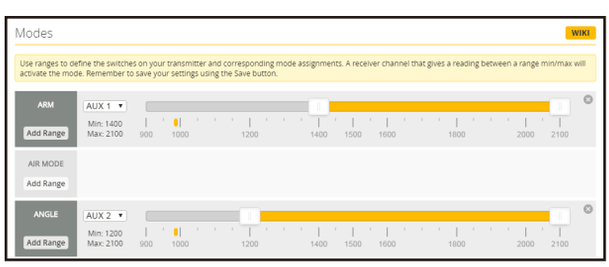
Receiver configuration

Please set Receiver mode to be SPI RX Support from the Configuration tab of the Betaflight Configurator, then select FRSKY_X Provider for FRSKY D16 MODE or Select FRSKY_D Provider for FRSKY D8 MODE, don't enable Serial RX since the CRAZYBEE Flight controller is integrated SPI BUS Receiver



Arm/Disarm the Motor

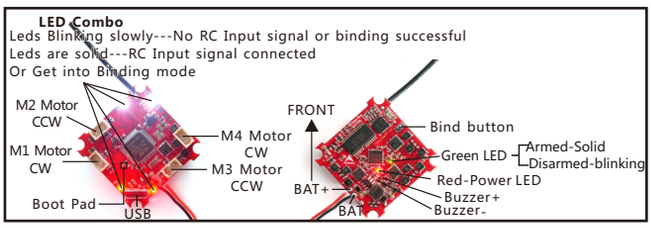
1. The Default Arm/Disarm switch for Snapper 6 is AUX1(Channel 5),and you can also customize it with Betaflight Configurator.

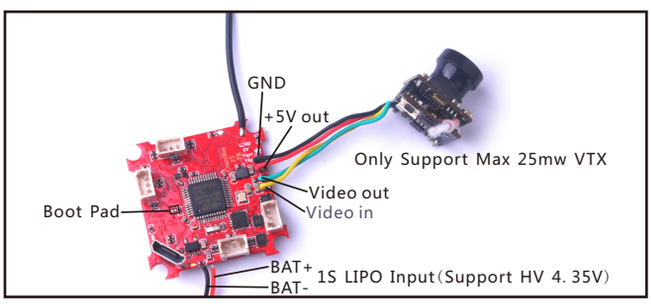


2.Turn on the Frsky transmitter (Use X9D+ as an example) and move to the MIXER interface, Set "SA" or "SB" switch etc. for Ch5 to ARM/DISARM the motor.

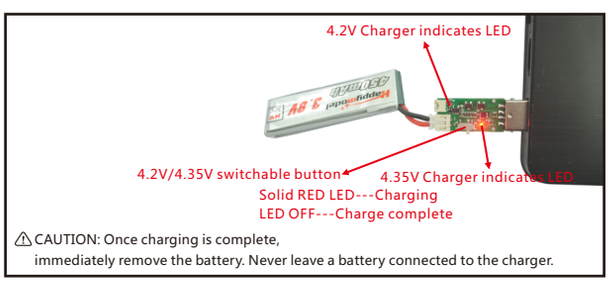
3.The default channel map for Snapper 6 Frsky version is TAER1234, please make sure your transmitter is matched, otherwise it will can't be armed. Toggle the AUX1 Switch ,the Green LED on the flight controller will getting to be solid, this indicates the motor was armed . And also you can found "Armed" displayed on your FPV Goggles or the FPV Monitor. Please make sure keep the Snapper 6 level before arming .Be careful and enjoy your flight now !

Flight controller connection diagram

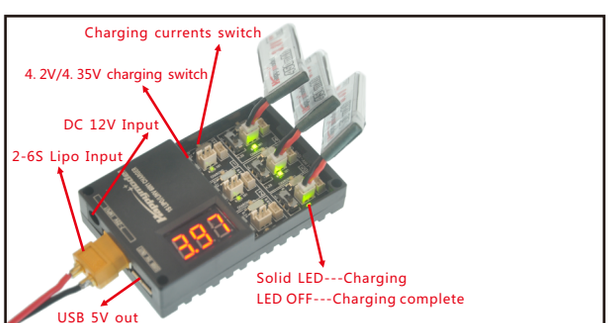




Charger the Lipo Battery

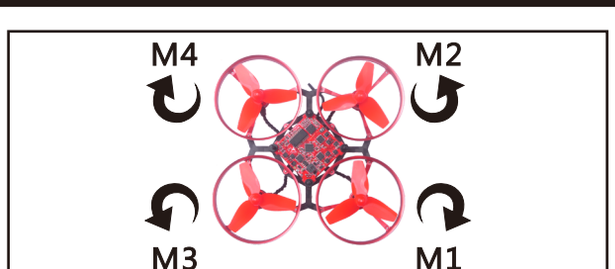


⚠CAUTION: Once charging is complete, immediately remove the battery. Never leave a battery connected to the charger.

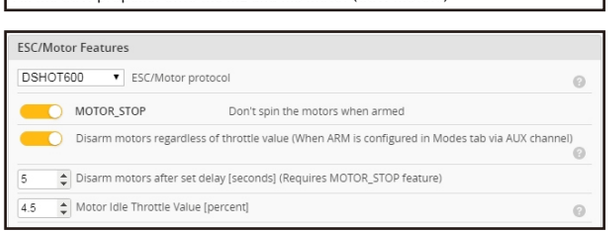


⚠ Ports are numbered 1-6. Do not put more than one battery on a single port. For example: do not insert one battery on the Picoblade 1.25 plug and another on the same port with the PH 2.0 plug.

Mixer type and ESC/motor protocol

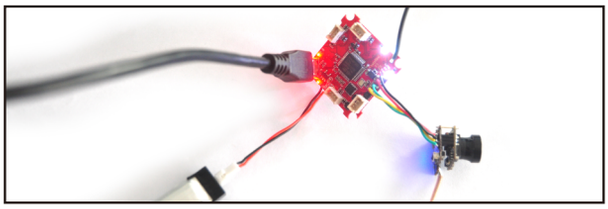


Fix the CW propellers onto the M1 and M4 motor (CW motors)
Fix the CCW propeller onto the M2 and M3 motor (CCW motors)

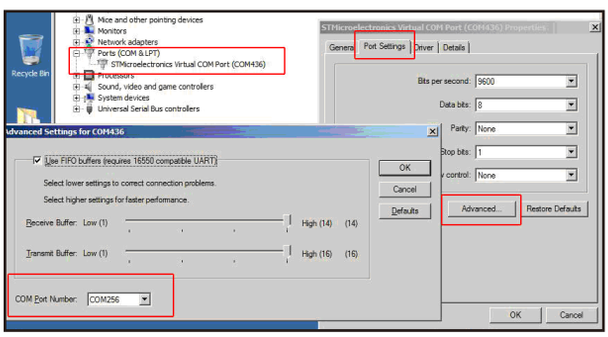


ESC Check and Flash firmware

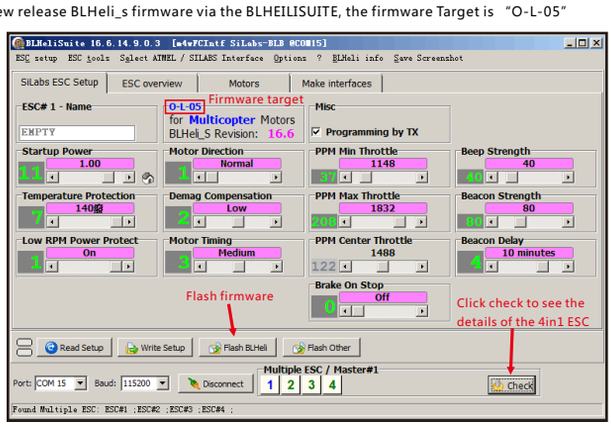
1.Download New release Blhelisuite from:
https://www.mediafire.com/folder/dx6kfaasyo24l/BLHeliSuite
2.Connect the CRAZYBEE flight controller to computer and power for it with 1S Lipo battery



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 :

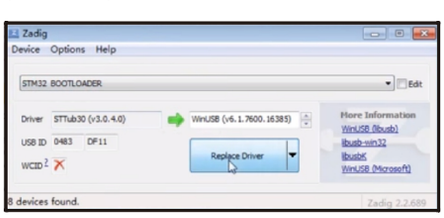


4.Open the BLHELISUITE, Select SILABS BLHeli Bootloader (Cleanflight) from the third tab on the top side. Then Select the right Serial com port and Click connect. You can also Flash the new release BLHeli_s firmware via the BLHEILISUITE, the firmware Target is "O-L-05"



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 and release to our website in time.

Betaflight OSD Configurations

Connect the flight controller to the computer , open Betaflight Configurator , move to the OSD option, then you can configure the layout of the OSD.