Happymodel

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 .

| 8 kHz ▼ | Gyro update frequency |
| 2 kHz ▼ | PID loop frequency |

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
Flysky version support both AFHDS and AFHDS-2A Protocol Flysky transmitter
Head lights ready
Camera angle adjustable

Components

Components	Basic Version	Standard Version	Part. NO.
Snapper 6 Frame	1	1	SP601
Crazybee F3 Flight controller Flysky	1	1	SP602FL
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)

Blue LED 1
Blue LED 6
Video Out
Video In
GND
3.3-5.5V
Red LED 1
Red LED 8

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 while holding the bind button, the LED Combo(2 red led and 2 white LED) will blinking Fast, this indicate the Crazybee F3 Flight controller flysky version is in binding mode and then release the bind button

2.Turn on your Flysky transmitter, and Choose receiver mode AFHDS-2A or AFHDS according to your Betaflight receiver configuration(**A7105_Flysky_2A=AFHDS-2A**, **A7105_Flysky=AFHDS**)
3.ENT RX [BIND] to binding with the Crazybee Flight controller, the LED Combo(2 red led and 2 white led) will getting to be solid on the flight controller ,this indicate binding successfully, the AFHDS-2A radio will auto exist the binding mode but the AFHDS radio should exist binding mode by yourself.
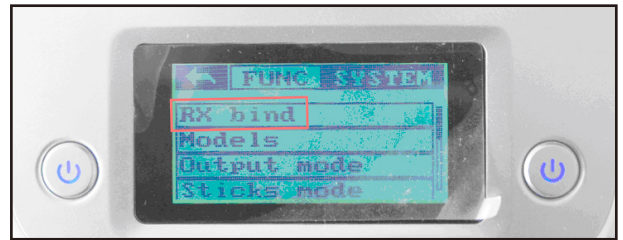
Receiver configuration

Please set Receiver mode to be SPI RX Support from the Configuration tab of the Betaflight Configurator, then select A7105_Flysky_2A Provider for AFHDS-2A Protocol Radio transmitter or Select A7105_Flysky Provider for AFHDS Protocol Radio transmitter, 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.
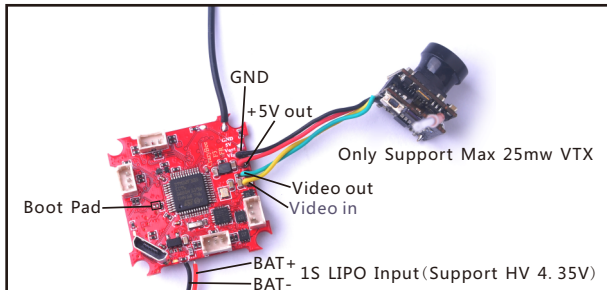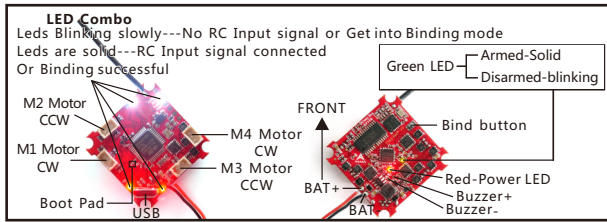

2. Set Arm/Disarm switch for your Flysky Radio: Move to the Aux.channels interface, Set "SWA" or "SWB" or "SWC" switch etc. for Ch5 to ARM/DISARM the motor.
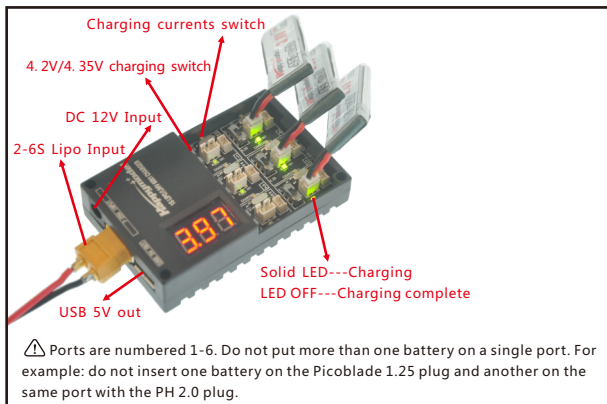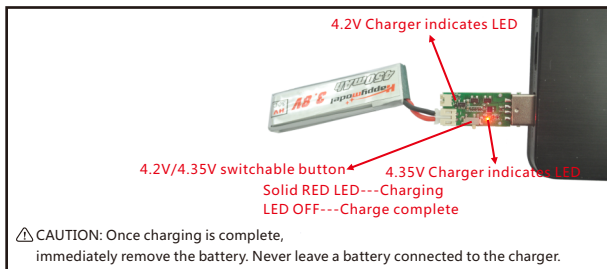

3.The default channel map for Snapper 6 Flysky version is AETR1234, please make sure your transmitter is matched , otherwise it will can't be armed. Toggle the AUX1 Switch ,the Green LED on the flight controller will getting to be solid, this indicates the Snapper 6 was armed . And also you can found "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!
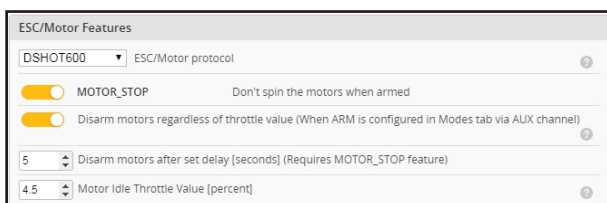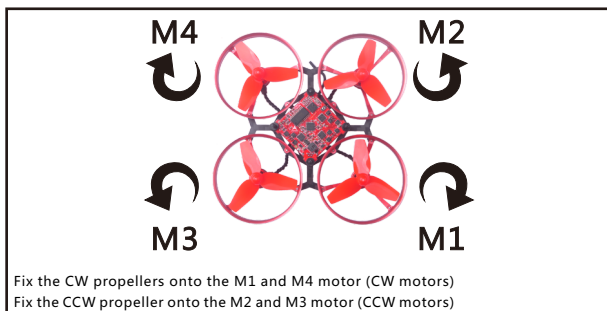

Toggle the AUX1 Switch, the Green LED on the Flight controller will getting to be solid

Flight controller connection diagram

LED Combo
Leds Blinking slowly---No RC Input signal or Get into Binding mode
Leds are solid---RC Input signal connected
Or Binding successful

Green LED ─┬─Armed-Solid
           └─Disarmed-blinking

M2 Motor CCW
M1 Motor CW
FRONT
M4 Motor CW
M3 Motor CCW
Bind button
Red-Power LED
Buzzer+
Buzzer-
Boot Pad
USB
BAT+
BAT-

GND
+5V out
Only Support Max 25mw VTX
Video out
Video in
Boot Pad
BAT+
BAT-
1S LIPO Input（Support HV 4. 35V）

Charger the Lipo Battery

4.2V Charger indicates LED
4.2V/4.35V switchable button
4.35V Charger indicates LED
Solid RED LED---Charging
LED OFF---Charge complete

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

Charging currents switch
4. 2V/4. 35V charging switch
DC 12V Input
2-6S Lipo Input
Solid LED---Charging
LED OFF---Charging complete
USB 5V out

⚠ 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

M4   M2
M3   M1

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/Motor Features
DSHOT600 ▼ ESC/Motor protocol
MOTOR_STOP   Don't spin the motors when armed
Disarm motors regardless of throttle value (When ARM is configured in Modes tab via AUX channel)
5   Disarm motors after set delay [seconds] (Requires MOTOR_STOP feature)
4.5   Motor Idle Throttle Value [percent]

ESC Check and Flash firmware

1.Download New release Blhelisuite from:
https://www.mediafire.com/folder/dx6kfaasyo24I/BLHeliSuite
2.Connect the CRAZYBEE flight controller to computer and power for it with 1S Lipo battery
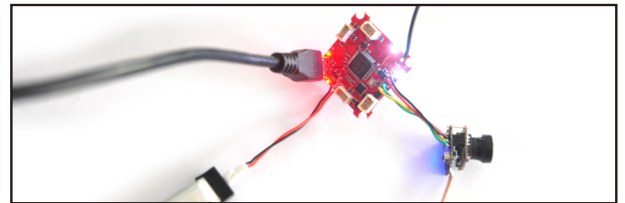
3.Open the Device Manager of your computer, find the Ports, please make sure the Com port Serial Number is under 255, otherwise it will can't connect to the BLHELISUITE. You can change the port serial number like the bellowing step :
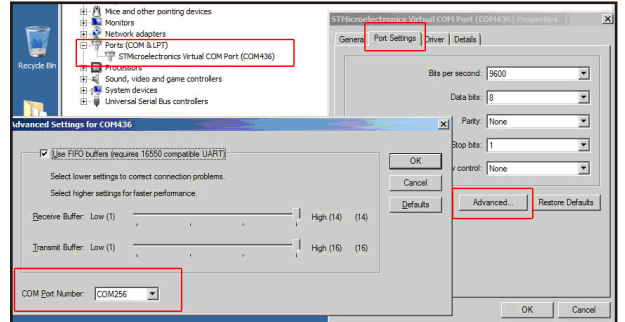

4.Open the BLHELISUITE, Select SILABS BLHeli Bootloader (Cleanflight) from the third tab on the top side. Then Select the right Serial com port and Click connect. You can also Flash the new release BLHeli_s firmware via the BLHEILISUITE, the firmware Target is "O-L-05"
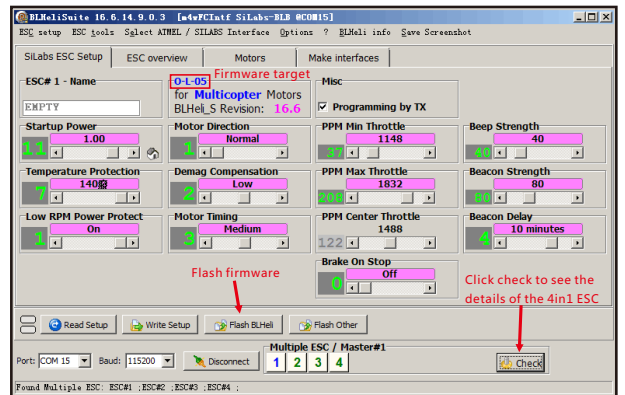
Flight controller firmware update

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 "CrazybeeF3FS" ,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.
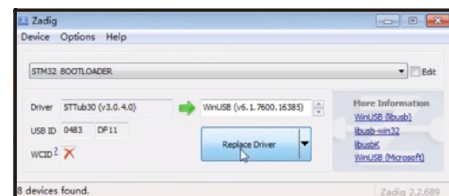
*We will update the firmware for Crazybee F3 and release to our website in time.

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.