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: Snapper7	
Item Name: 1S Brushless Whoop racer drone BNF	
Wheelbase: 75mm	
Size: 98.5mm*98.5mm*36mm	
Weight: 28g(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 Voltage and other info from your goggles
Built-in DSMX/DSM2 Compatible satellite receiver
Head lights ready
Camera angle adjustable

Components	Quantity	Part. NO.
Snapper7 Frame	1	SP701
Snapper7 Canopy	1	SP702
0703 KV19000 motor	4	SP703
4 x 40mm Propeller	2	SP704
Crazybee F3 Flight controllr	1	SP705DX
3-IN-1 AIO vtx&camera	1	SP706
3.8v HV Lipo Battery	0	SP707
1S HV USB Charger	1	SP708
6-IN-1 Charger	0	SP708
Propeller tools	1	SP709

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：

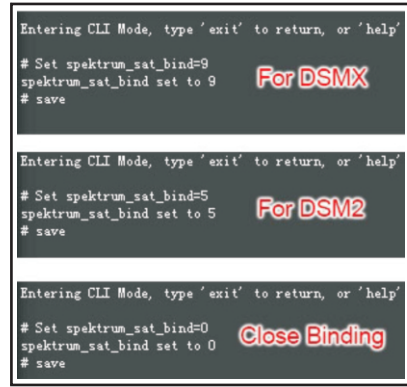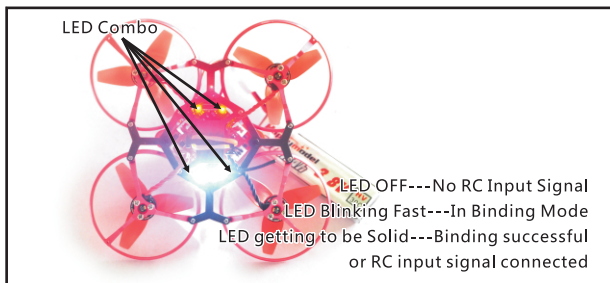Group 1：6 BLUE LED stand for bands
Group 2：8 RED LED stand for channels

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

- Blue 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
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

## Binding procedure

(1)Connect Crazybee F3 DSM2/DSMX Version to computer and open Betaflight configurator, From CLI tab type: "set spektrum_sat_bind = 9" for DSMX radio or "set spektrum_sat_bind = 5" for DSM2 radio
(2)Type "save" and after Flight controller reboot remove USB cable (=Power off the board)
(3)Wait a second and reconnect the USB cable. After cold start satellite led combo on the backside of the board (2 red led+2 white led) should start blinking and transmitter should be turned on while pressing the bind button
(4)After binding satellite LED combo should be solid. Connect Betaflight and use receiver tab to test that satellite is working correctly.
(5)Final step is to go to CLI tab and type "set spektrum_sat_bind = 0" and then type "save". This must be done so that satellite doesn't go back to binding mode when the flight controller is repowered again.


LED Combo

LED OFF---No RC Input Signal
LED Blinking Fast---In Binding Mode
LED getting to be Solid---Binding successful
or RC input signal connected

For DSMX
```
Entering CLI Mode, type 'exit' to return, or 'help'
# Set spektrum_sat_bind=9
spektrum_sat_bind set to 9
# save
```

For DSM2
```
Entering CLI Mode, type 'exit' to return, or 'help'
# Set spektrum_sat_bind=5
spektrum_sat_bind set to 5
# save
```

Close Binding
```
Entering CLI Mode, type 'exit' to return, or 'help'
# Set spektrum_sat_bind=0
spektrum_sat_bind set to 0
# save
```

Receiver configuration

We have configured the DSM2/DSMX receiver for the Snapper 7 before shipping. If you flashed the firmware ,Please setup as the following steps: Enable Serial_RX for UART3, then select RX_SERIAL from the RECEIVER Mode and set the Serial Receiver Provider to be Spektrum1024 for DSM2 radio and Spektrum2048 for DSMX Radio in Betaflight Configurator.

DSM2遥控器设置
DSMX遥控器设置
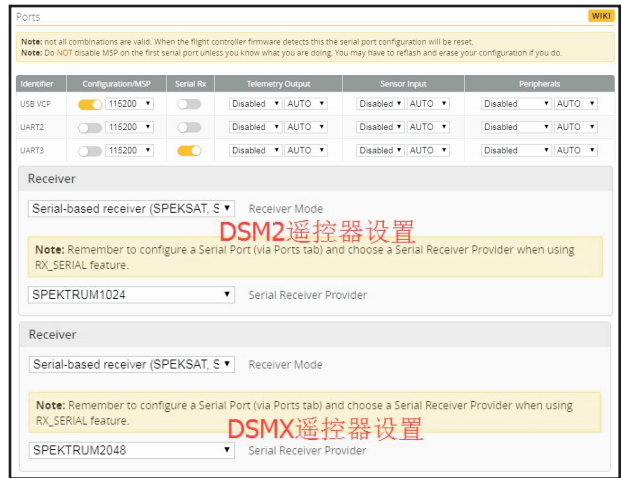
Arm/Disarm the Motor

1. The Default Arm/Disarm switch for Snapper 7 is AUX1(Channel 5),and you can also customize it with Betaflight Configurator.
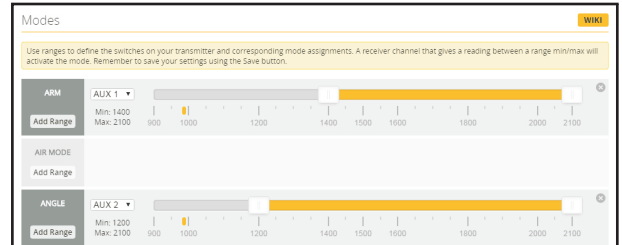
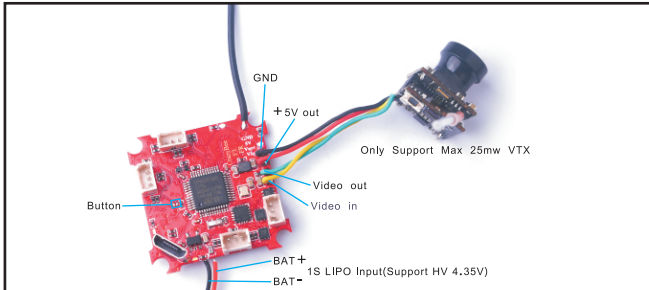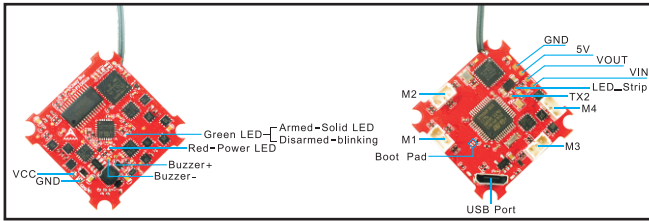

2.For most of Spektrum radio the default channel 5 is Gear switch and you can also customize it. Use DX9 for example, Go to menu and select System setup ,then choose Channel ssign.
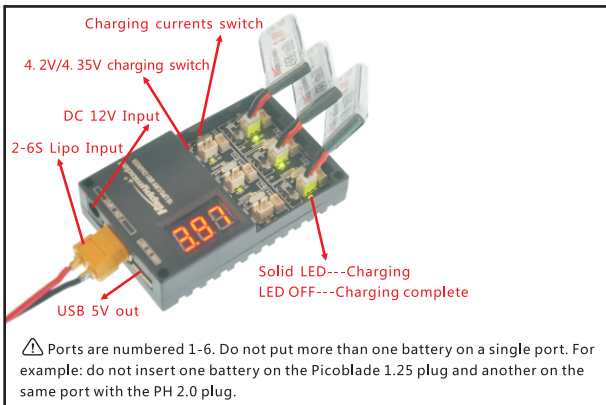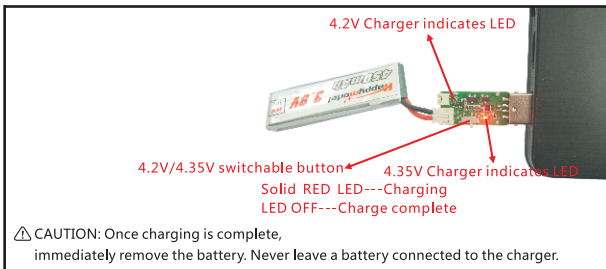

3.The default channel map for Snapper 7 DSM2/X version is TAER1234, please make sure your transmitter is matched, otherwise it will can't be armed. Toggle the AUX1 Switch ,the Green LED on the flight controller will getting to be solid, this indicates the motor was armed . And also you can found "Armed" displayed on your FPV Goggles or the FPV Monitor. Please make sure keep the Snapper 7 level before arming .Be careful and enjoy your flight now !
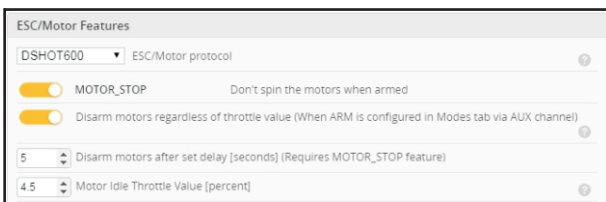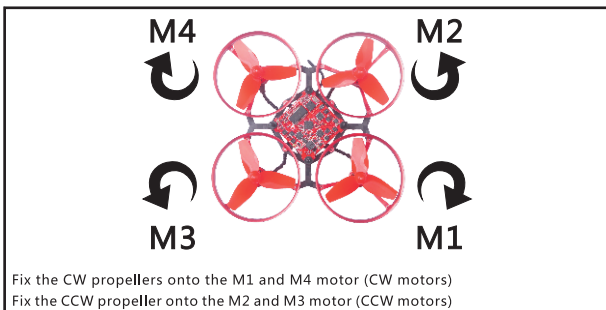

Toggle the AUX1 Switch, the Green LED on the Flight controller will getting to be solid

Flight controller connection diagram

GND
5V
VOUT
VIN
LED_Strip
TX2
M4
M2
M1
M3
Boot Pad

Green LED — Armed—Solid LED
Red—Power LED Disarmed—blinking
Buzzer+
VCC
GND Buzzer-

USB Port

GND
5V out
Only Support Max 25mw VTX
Video out
Button
Video in
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
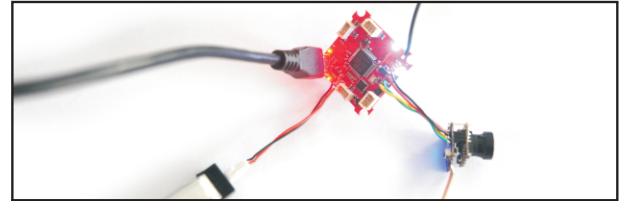
3.Open the Device Manager of your computer, find the Ports, please make sure the Com port Serial Number is under 255, otherwise it will can't connect to the BLHELISUITE. You can change the port serial number like the bellowing step :
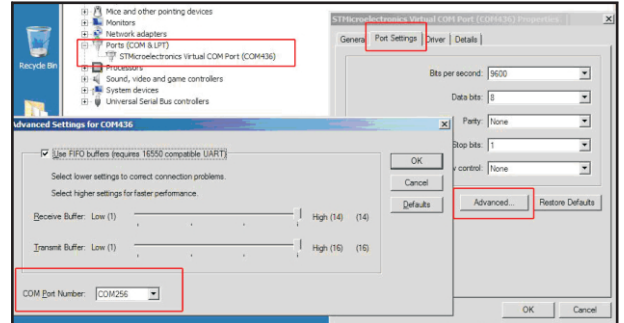

4.Open the BLHELISUITE, Select SILABS BLHeli Bootloader (Cleanflight) from the third tab on the top side. Then Select the right Serial com port and Click connect. You can also Flash the new release BLHeli_s firmware via the BLHEILISUITE, the firmware Target is "O-L-05"
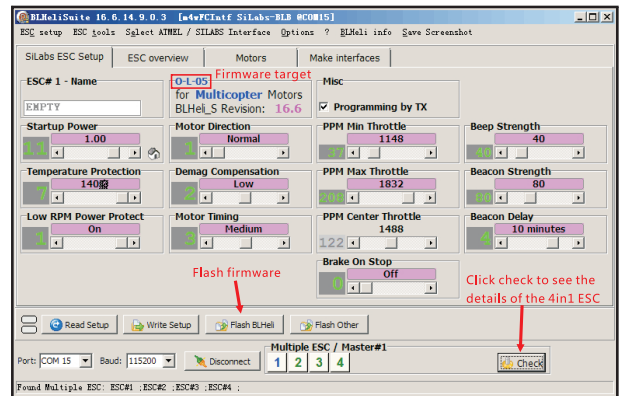
Flight controller firmware update

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 "Crazybeef3DX" ,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.
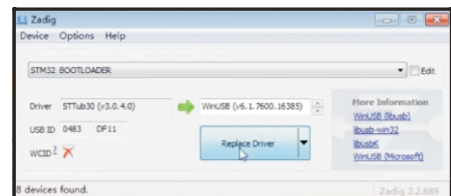
*We will update the firmware for Crazybee F3 and release to our website in time.

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.