

## Notes:

- The receiver signal will be unstable while the MSP(Connect to Betaflight) Connection established
- 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: URUAV
Mode Name: UR65
Item Name: 1S Brushless Whoop racer drone BNF
Wheelbase: 65mm
Size: 81mm*81mm*36mm
Weight: 21g(without battery)

## Features

Betaflight support , multi flight mode: ACRO/AIR/ANGLE
Powerful Brushless motor and Smooth ESC
High quality, lighter and durable whoop frame
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

	Basic Version	Standard Version	Part. NO.
UR65 Frame	1	1	UR651
Crazybee F3 FC (Frsky and Flysky option)	1	1	UR652
SE0603 KV17000 Motor	4	4	UR653
31mm 3-blades propeller(4cw+4ccw)	1	1	UR654
AIO Camera & VTX	1	1	UR655DX
3.8v 250mah 30C/60C battery	1	3	UR656
USB Lipo/LIHV Charger	1	0	UR657
1S06 6 way Lipo/LIHV charger	0	1	UR658
Propeller disassemble tool	1	1	UR659
Screwdriver	1	1	UR610

## VTX Bands and Channels setup

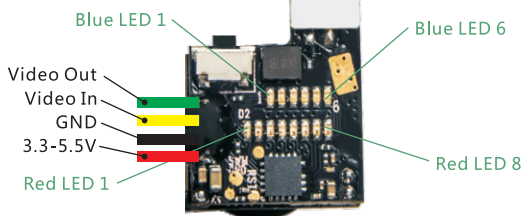
### Frequency switching:

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)

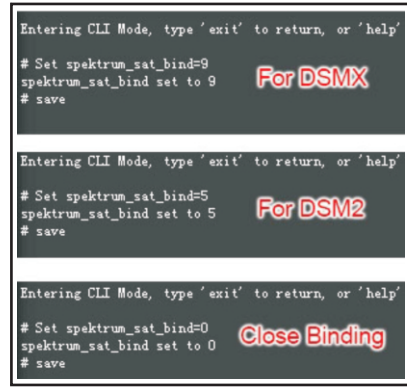
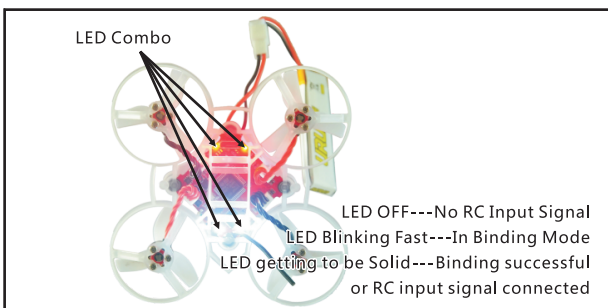


### Frequency and channel frequency table:

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

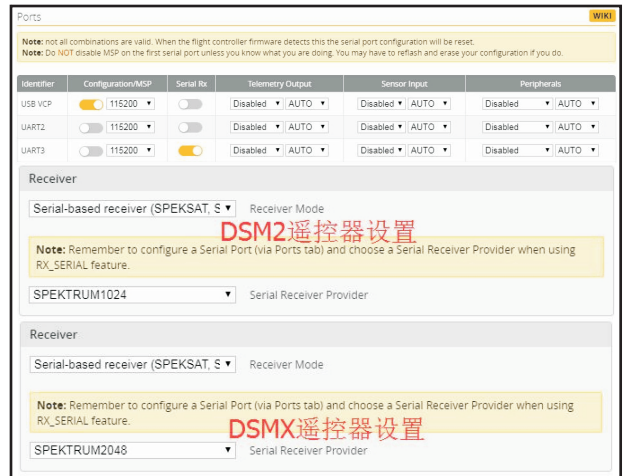
## Binding procedure

- 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
- Type "save" and after Flight controller reboot remove USB cable (=Power off the board)
- 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
- After binding satellite LED combo should be solid. Connect Betaflight and use receiver tab to test that satellite is working correctly.
- 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.



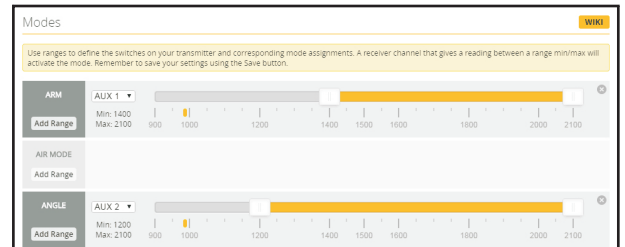
## Receiver configuration

We have configured the DSM2/DSMX receiver for the UR65 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.



## Arm/Disarm the Motor

1. The Default Arm/Disarm switch for UR65 is AUX1(Channel 5),and you can also customize it with Betaflight Configurator.



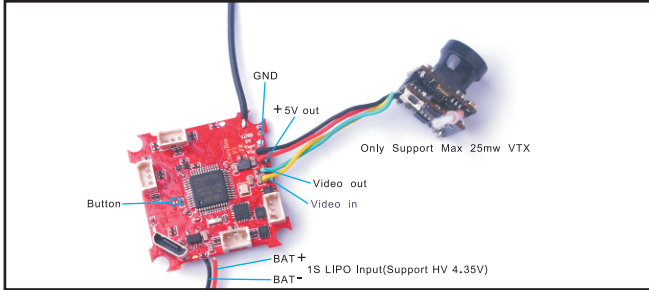
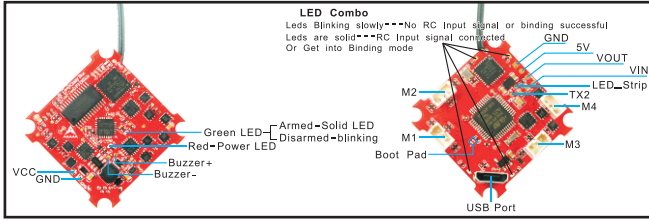
2. For most of Spektrum radio the default channel 5 is Gear switch and you can also customize it. Use DX9 for example, Go to menu and select SYSTEM setup ,then choose Channel sign.



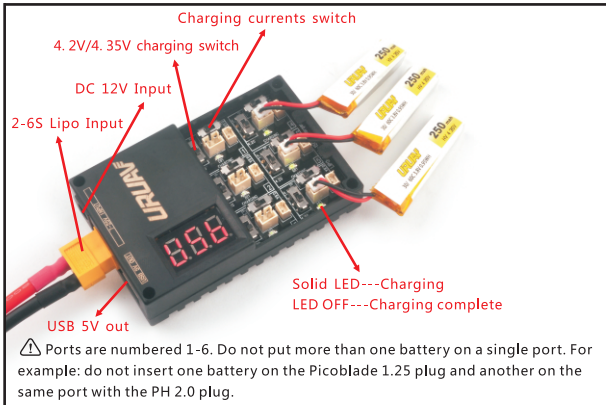
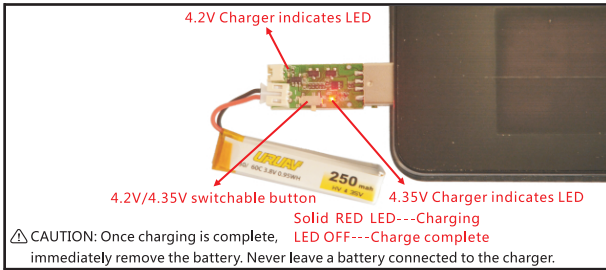
3. The default channel map for UR65 DSM2/X version is TAER1234, please make sure your transmitter is matched, otherwise it will can't be armed. Toggle the AUX1 Switch ,the Green LED on the flight controller will getting to be solid, this indicates the motor was armed . And also you can found "Armed" displayed on your FPV Goggles or the FPV Monitor. Please make sure keep the UR65 level before arming .Be careful and enjoy your flight now !



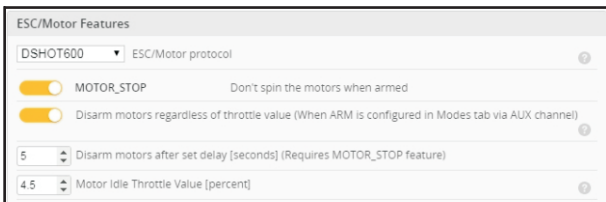
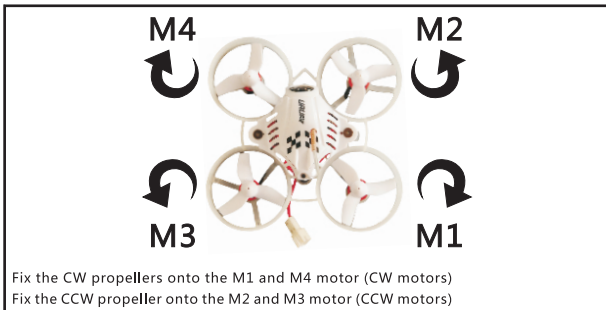
**Flight controller connection diagram**



**Charger the Lipo Battery**

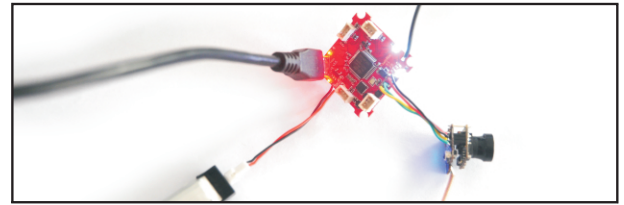


**Mixer type and ESC/motor protocol**

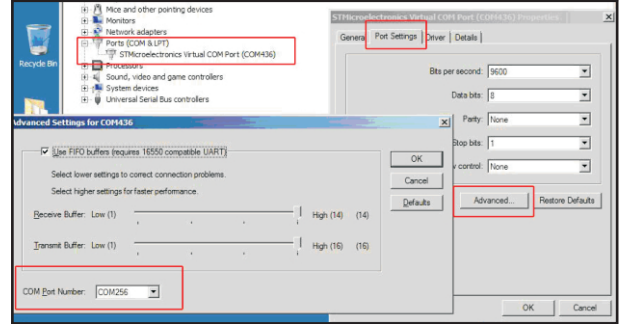


**ESC Check and Flash firmware**

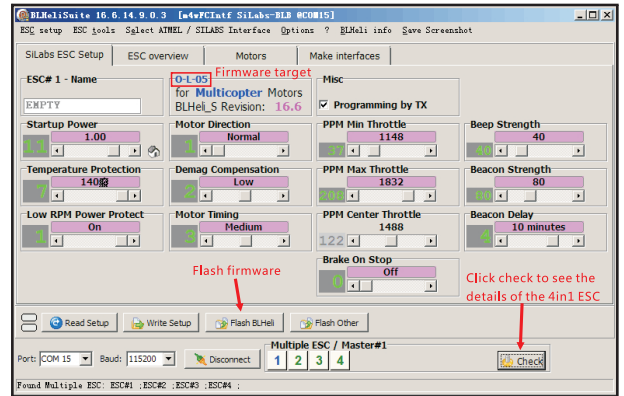
- 1.Download New release BHelisuite from: <https://www.mediafire.com/folder/dx6kfaasy024/BLHeliSuite>
- 2.Connect the CRAZYBEE flight controller to computer and power for it with 1S Lipo battery



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 following step :

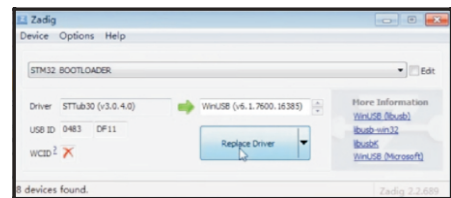


4.Open the BLHELISUITE, Select SILABS BLHeli Bootloader (Cleanflight) from the third tab on the top side. Then Select the right Serial com port and Click connect. You can also Flash the new release BLHeli\_s firmware via the BLHELISUITE, the firmware Target is "O-L-05"



**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.

