

## Features

The lightest 1s 75mm brushless whoop
Powerful and efficiency
The lightest 1s AIO 5IN1 F4 flight controller
New Unibell EX0802 brushless motors
Low profile Canopy design
VTX power switchable 25mw-400mw

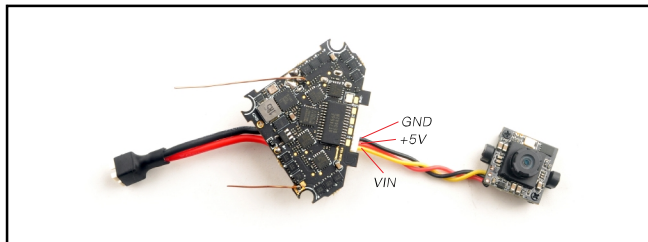
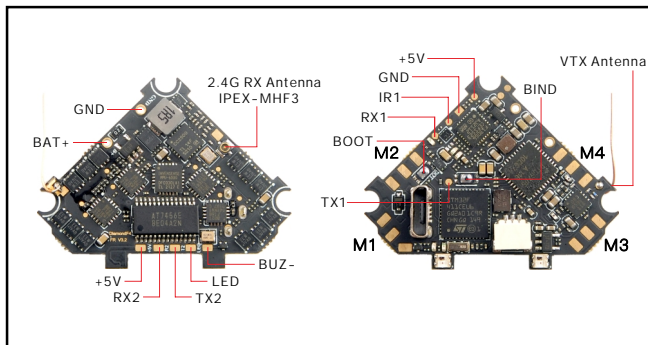
## Specifications

Brand Name: Happymodel
Item Name: Moblite7 1S 75mm ultra light brushless whoop
Wheelbase: 75mm
Size: 97mm*97mm*25mm
Weight: 19.5g (without battery)
Max takeoffs weight: 55 gram

## Package includes

Item Name	Qty
75mm Frame	1
Option1: DiamondF4 ELRS built-in SPI ELRS receiver	1
Option2: DiamondF4 FR built-in SPI Frsky receiver	
EX0802 KV19000 Unibell brushless motor	4
Gemfan 40MM 1610-2 propeller(4cw+4ccw)	1
Runcam Nano3	1
Built-in 5.8G 48ch 25mw-400mw openvtx	1
1S 650mah Lipo battery	2
Propeller disassemble tool	1
Screwdriver	1
Happymodel Carry case	1

## Flight controller connection diagram



## Binding procedure

1.Plug USB to the flight controller and connect to Betaflight configurator.  
Go to the CLI command tab from Betaflight configurator then type "bind\_rx" or  
Go to Receiver tab from Betaflight configurator then hit "Bind Receiver",  
the red LED on the flight controller will getting to be solid ,that means the receiver is in bind mode.

Entering CLI Mode, type 'exit' to return, or 'help'

```
#
# Building AutoComplete Cache ... Done!
#
# bind_rx
Binding...
```

Threshold	Stick Center	'Stick High' Threshold
1050 ?	1500 ?	1900 ?
nd	Yaw Deadband	3D Throttle Deadband
0 ?	0 ?	50 ?
<div> <div>Bind Receiver</div> <div>Refresh</div> <div>Save</div> </div>		

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)we recommend use D8 mode



3.ENT [Bind] to binding with the Moblite7 ,the red LED at the bottom of the flight controller will blinking slowly ,this indicate binding successfully, and then exist binding mode of your Frsky transmitter, the red LED at the bottom of the flight controller 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 DiamondF4 Flight controller is integrated SPI BUS Receiver

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	115200		Disabled	AUTO	Disabled
UART1	115200		Disabled	AUTO	Disabled
UART2	115200		Disabled	AUTO	TBS SmartAuc

Receiver	SPI RX support	Receiver Mode
<p>Note: The SPI RX provider will only work if the required hardware is on board or connected to an SPI bus.</p>		
FRSKY_X	SPI Bus Receiver Provider	FRSKY D16 MODE
Receiver	SPI RX support	Receiver Mode
<p>Note: The SPI RX provider will only work if the required hardware is on board or connected to an SPI bus.</p>		
FRSKY_D	SPI Bus Receiver Provider	FRSKY D8 MODE

## Arm/Disarm the Motor

1. The Default Arm/Disarm switch for Moblite7 is AUX1(Channel 5),and you can also customize it with Betaflight Configurator.

ARM	AUX 1	Min: 1300 Max: 2100
HORIZON	AUX 2	Min: 1200 Max: 1550
AIR MODE	AUX 2	Min: 1550 Max: 2100

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 Moblite7 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 Moblite7 level before arming .Be careful and enjoy your flight now !



## VTX Bands and Channels setup

**VTX Table**

Number of bands: 8 Number of channels by band: 2

Name	Letter	Factory	1	2	3	4	5	6	7	8	
BOSCAM_A	A		5865	5845	5825	5805	5785	5765	5745	5725	Band 1
BOSCAM_B	B		5733	5752	5771	5790	5809	5828	5847	5866	Band 2
BOSCAM_E	E		5705	5685	5665	5645	5625	5605	5585	5565	Band 3
FATSHARK	F		5740	5760	5780	5800	5820	5840	5860	5880	Band 4
RACEBAND	R		5658	5695	5732	5769	5806	5843	5880	5917	Band 5
LOWRACE	L		5333	5373	5413	5453	5493	5533	5573	5613	Band 6

Number of power levels: 5

1	2	3	4	5	Value	Label
10	2	14	20	26		
0	RCE	25	100	400		

There are 2 ways to switch the vtx channels:

1.If we need to use Channel 5769 then we should Go to Betaflight CLI,type the command:

Set VTX\_band=5

Set VTX\_channel=4

save

2.Disarm the Moblite7 and then move the stick of the transmitter(THR MID+YAW LEFT+PITCH UP) to enter OSD Menu,Enter to Features,then enter to VTX SA to set VTX Band and channel

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> 115200	<input type="checkbox"/>	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART2	<input type="checkbox"/> 115200	<input type="checkbox"/>	Disabled AUTO	Disabled AUTO	TBS SmartAuc AUTO



## Mixer type and ESC/motor protocol

**Mixer**

Quad X

Props Out

reversed

Motor direction is reversed

**ESC/Motor Features**

DSHOT300 ESC/Motor protocol

☐ MOTOR\_STOP Don't spin the motors when armed

☐ ESC\_SENSOR Use KISS/BLHeli\_32 ESC telemetry over a separate wire

☐ Bidirectional DShot (requires supported ESC firmware)

5.5 Motor Idle ( % , static)

## Default PID settings for Betaflight 4.3.0

	Proportional	Integral	D Max	Derivative	Feedforward
Basic/Acro					
ROLL	59	119	59	39	151
PITCH	64	126	64	42	160
YAW	63	126	0	0	151
Mode:	Low	Default	High		
Master Multiplier:	1.4				
PD Balance:	1.2				
P and D Gain:	1				
Stick Response Gain:	1.2				
Angle/Horizon					
Angle		Strength	50	Transition	
Horizon		50		75	
Angle Limit			55		

## ESC Check and Flash firmware

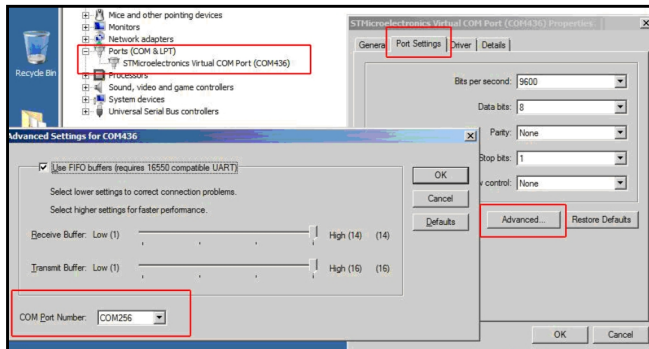
1.Download New release BLHeliSuite from:

<https://www.mediafire.com/folder/dx6kfaasyo24i/BLHeliSuite>

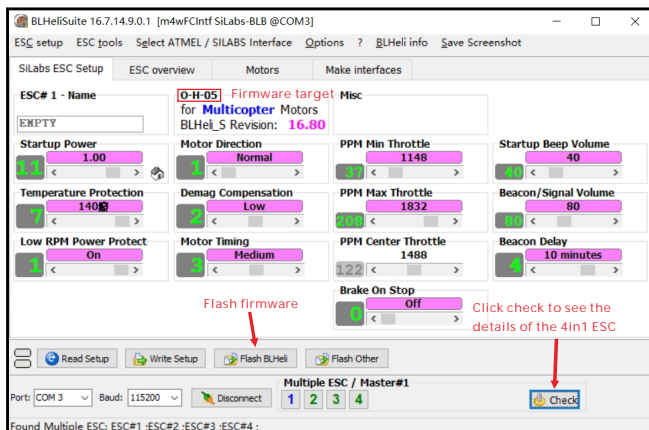
2.Plug the usb and connect the flight controller to computer then plug battery



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-H-05"



## Flight controller firmware update

1.Install latest STM32 Virtual COM Port Driver

<http://www.st.com/web/en/catalog/tools/PF257938>

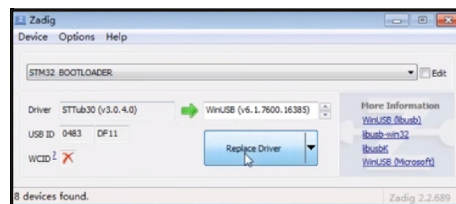
2.Install STM BOOTLOAD Driver (STM Device in DFU MODE)

3.Open Betaflight configurator and choose firmware target "CRAZYBEEF4FR",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.



## "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.

The default Switch for Activate "Flip" is AUX3(Channel7)

