

Turtlebee F3 brushed flight controller built-in Flysky RX/OSD/Current meter Manual

1.Specification:

MCU: STM32F303CCT6

Gyro& Accelerometer: MPU6000

Working Voltage:1s Lipo or LiHV

Firmware Target: Betaflight OMNIBUS

Motor Driver: Texas Instruments DRV8850

Continuous Current: 5A each

Peak Current: 8A each

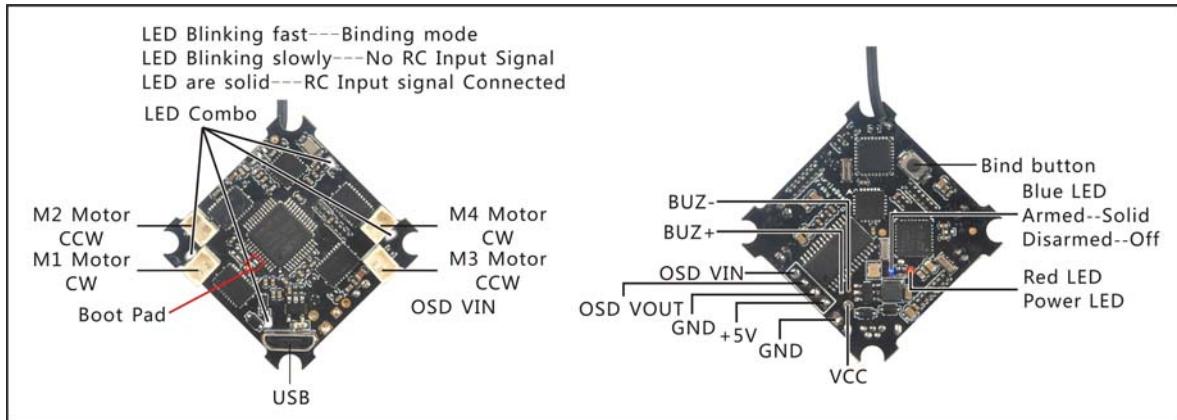
Receiver mode: Frsky D8/ Flysky AFHDS-2A/ DSM2 DSMX to choose

Motor Socket: JST 1.25MM 2pin

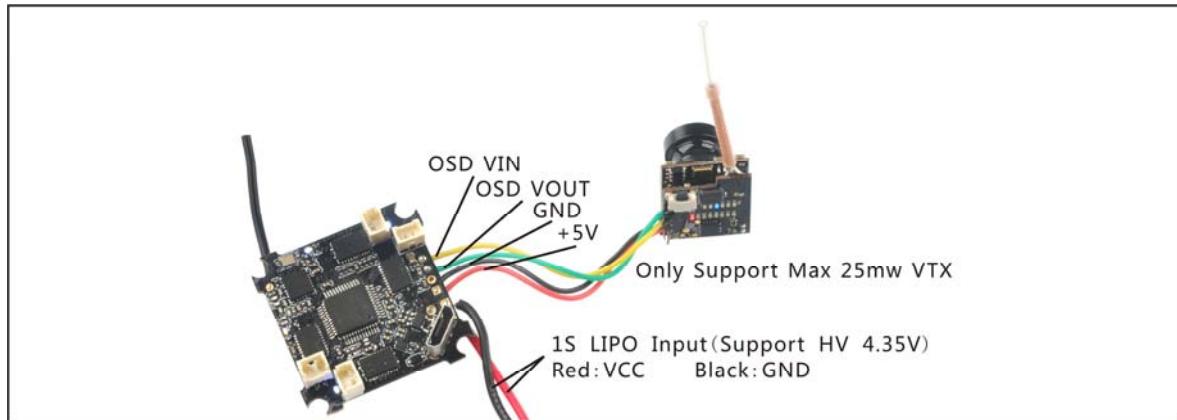
Weight:4g

Mounting Hole Distance:25.45*25.45mm

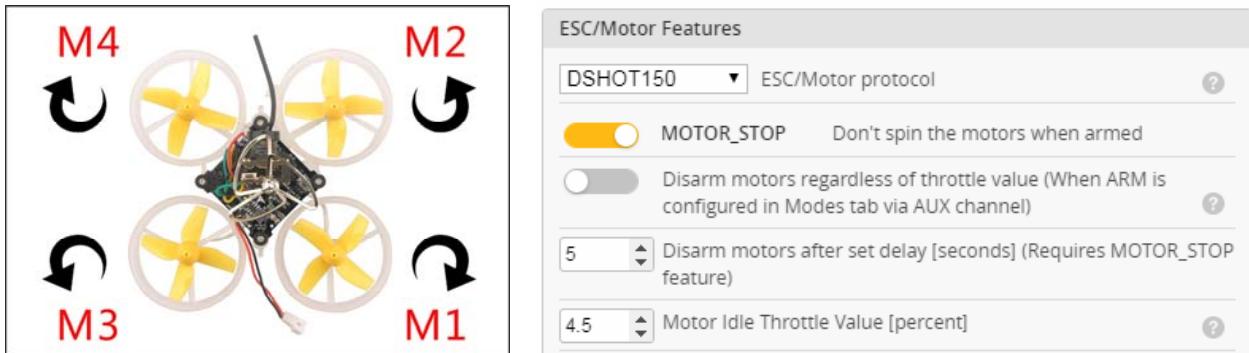
2.Connection and LED



3.Camera connection



4.Mixer type and ESC/Motor protocol



Notes: ESC protocol must be set to be Dshot150

5.Receiver configuration

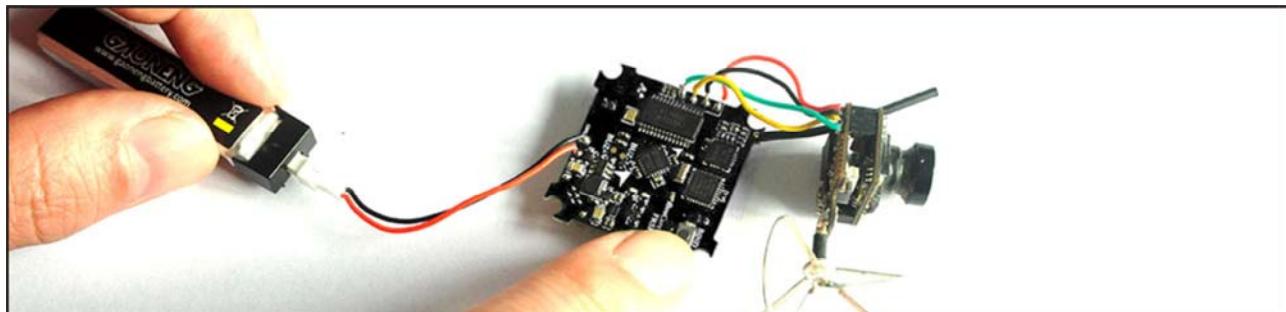
Ports and receiver mode sets like the bellowing diagram: First Enable Serial_RX for uart3 and Set Receiver mode to "RX_SERIAL", Select IBUS signal in Betaflight configurator . And the default channel map is "AETR1234", please check your RC transmitter channel map, make sure they are matched, otherwise it will not armed.

Ports						WIKI
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"/>	<input checked="" type="checkbox"/> 115200	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	
UART2	<input type="checkbox"/>	<input checked="" type="checkbox"/> 115200	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	
UART3	<input type="checkbox"/>	<input checked="" type="checkbox"/> 115200	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	Disabled ▾ AUTO ▾	

Receiver	Channel Map	RSSI Channel
Serial-based receiver (SPEKSAT, S ▾) Receiver Mode Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature. IBUS ▾ Serial Receiver Provider	AETR1234	Disabled ▾
'Stick Low' Threshold 1050 ▾ ?	Stick Center 1500 ▾ ?	'Stick High' Threshold 1900 ▾ ?

6.Binding procedure

a) Press and holding the bind button, then power on for the TURTLEBEE F3 FC, the LED Combo (2 Red and 2 White) will Blinking fast, this means the TURTLEBEE F3 FC is in binding mode, and then release the bind button

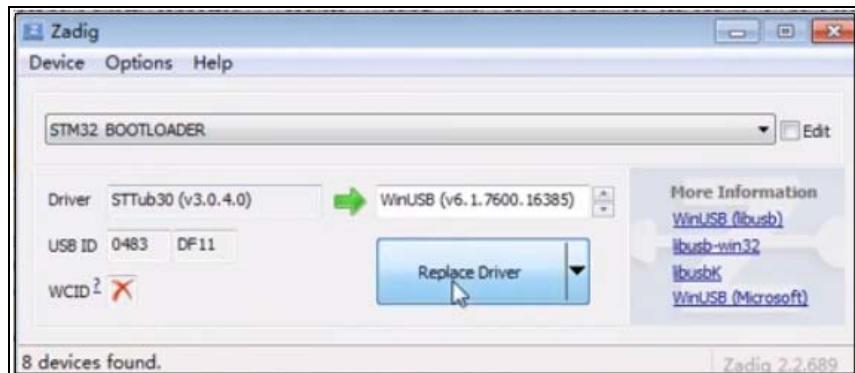


b) Enter to the RX setup and select AFHDS 2A Mode for your Flysky transmitter , turn off the transmitter and then turn on the transmitter while holding the bind button, the LED Combo (2 Red and 2 White) will first turning off and then starting to blinking slowly, this indicates binding successfully. Re-power for the TURTLEBEE F3 FC and turn on your transmitter again, the LED Combo (2 Red and 2 White) will getting to be solid ,this indicates the connection was established between TURTLEBEE F3 FC and your transmitter.



7.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 “OMNIBUS”,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.



8. “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

