



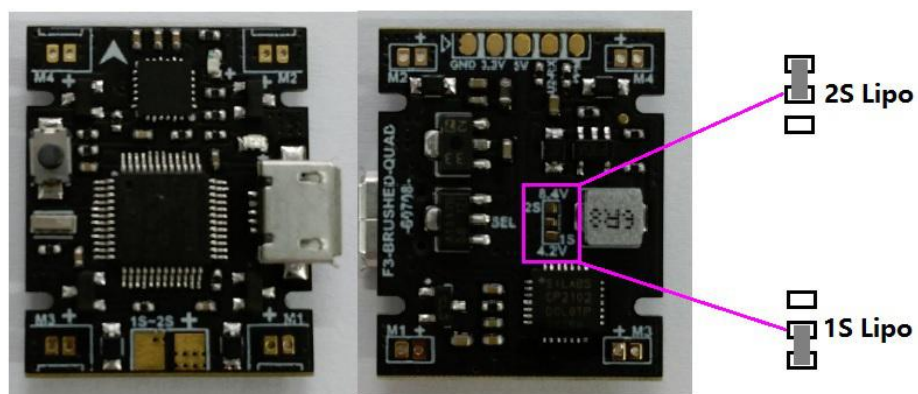
## *F3 Brushed Motor Flight Controller*

User Manual

Version 1.0-61102E

Thanks for purchasing our F3 Brushed Motor Flight Controller. This FC use SPRACINGF3 6DOF hardware, software compatibility with SPRACINGF3 in BetaFlight configurator. The FC use 3oz 4 lays high quality PCB, support 1s or 2s lipo power mode(power mode don't select default, **Notice! If power mode don't select, FC can't connect to PC**), each brushed motor continuous working current up to 6A.

W=21mm, H=26mm, Weight=3g



Support 1s and 2s power mode, power don't select default

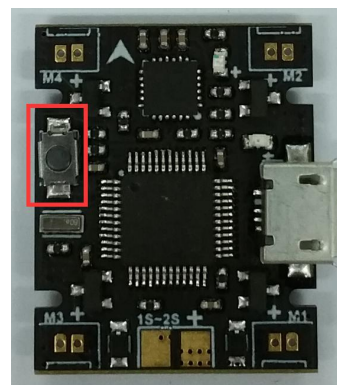
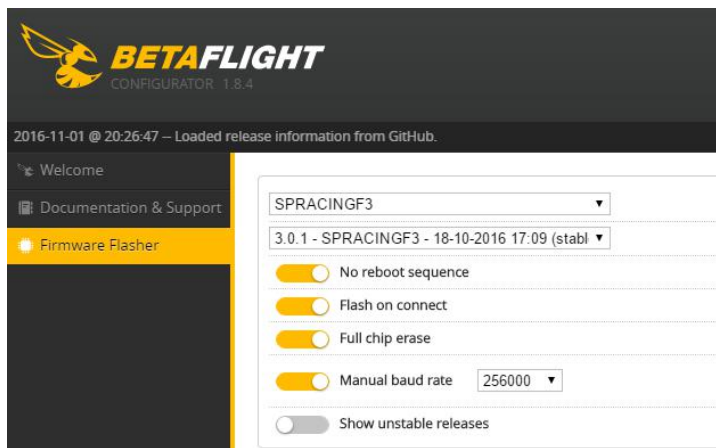
**Notice! if power mode don't select, FC can't connctet to PC**

<b>Hardware Base</b>	F3 flight controller use MPU6050 and STM32F303CB micro controller (128Kbytes flash memory, 20Kbytes SRAM, ARM 72Mhz Cortex-M4 )
<b>Battery Input</b>	1s or 2s lipo (depend on user select )
<b>Onboard Brushed ESC</b>	Total 4 ways, 6A maximum each way
<b>Onboard 5V BEC</b>	1s power mode: Convert 1s battery input to 5V for RX receiver or other equipment , current output 400mA maximum, this 5V/400mA BEC can working reliable when input voltage from 1.8V to 4.35V 2s power mode: Convert 2s battery to 5V use LDO, current output 500mA maximum

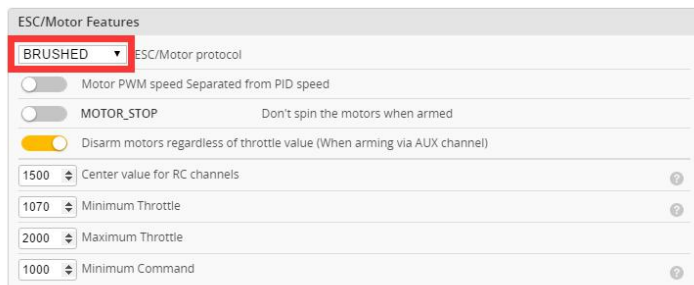
### Flash Firmware to F3 Brushed Motor FC

As show there is a button in F3 Brushed Motor FC, press this button then power on the FC will trigger STM32 MCU into bootloader mode.

Actually this button connect to BOOT0 pin in STM32, press this button connect the BOOT0 pin of STM32 to 3.3V. The firmware please select "SPRACINGF3" in BetaFlight configurator as following.

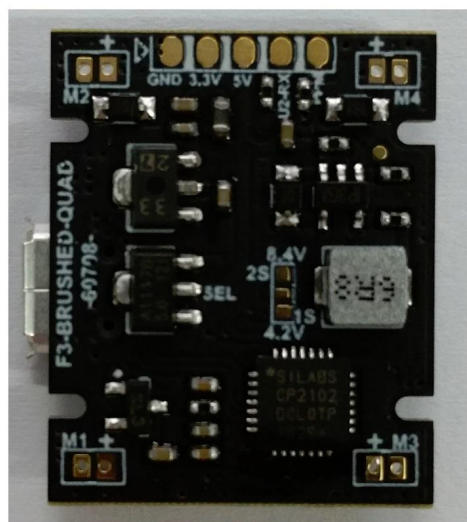


User need change the ESC/Motor protocol to "BRUSHED", If don't change this setting when power on the brushed motor will start running and can't stop.



## Hardware Connection Diagram

1	2	3	4	5
GND	3.3V	5.0V	UART2-RX	PPM



地平线卫星接收机 SPEKTRUM SATELLITE RX	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #cccccc;"> <th>1</th> <th>2</th> <th style="text-decoration: line-through;">3</th> <th>4</th> <th style="text-decoration: line-through;">5</th> </tr> </thead> <tbody> <tr> <td>GND</td> <td>3.3V</td> <td style="text-decoration: line-through;">5.0V</td> <td>UART2-RX</td> <td style="text-decoration: line-through;">PPM</td> </tr> </tbody> </table>	1	2	3	4	5	GND	3.3V	5.0V	UART2-RX	PPM
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GND	3.3V	5.0V	UART2-RX	PPM							
FUTABA S.BUS接收机 FUTABA S.BUS RX	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #cccccc;"> <th>1</th> <th style="text-decoration: line-through;">2</th> <th>3</th> <th>4</th> <th style="text-decoration: line-through;">5</th> </tr> </thead> <tbody> <tr> <td>GND</td> <td style="text-decoration: line-through;">3.3V</td> <td>5.0V</td> <td>UART2-RX</td> <td style="text-decoration: line-through;">PPM</td> </tr> </tbody> </table>	1	2	3	4	5	GND	3.3V	5.0V	UART2-RX	PPM
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