

## Parameters

### Flight controller parameters:

F4 flight control, integrated OSD function, flight control and OSD program integrated in a MCU, no additional SCM control OSD, while the OSD tuning software and flight control parameters together, using ICM-20608 sensor and through the SPI bus To increase the sampling rate of the sensor, to improve the operating frequency of the MCU master program, to provide higher control accuracy and faster response speed, the new firmware will open the 32K function. Input voltage 2S-4S, comes with BEC-5V output 3A current, support the market mainstream PPM, SBUS, DSM2 / DSMX, IBUS and other receivers. There is LED\_STRIP interface, active buzzer interface. There are LC filters that support DSHOT ESC. Cleanflight, Betaflight online tuning, support the latest betaflight\_3.2.0 version of the firmware (does not support the following firmware version 3.2.0, please do not brush the firmware version). There is the latest DSHOT1200, PROSHOT ESC protocol.

### Receiver configuration:

DSM receiver input, please configure RX1 as the input interface, take power from 3.3V.

SBUS, when receiving the receiver, please configure RX6 as the input interface.

The SBUS / IBUS and PPM receivers take power from 5V.

Factory firmware: betaflight\_3.2.0\_OMNIBUSF4SD

### Features:

CPU: STM32F405RGT6

Sensor: ICM-20608 three-axis accelerometer / three-axis gyroscope (SPI connection)

Power supply: 2-4S battery input

BEC: Built-in 5V / 3A

Receiver: support Sbus or serial port RX interface, Spektrum 1024/2048, SBUS, IBUS and so on.

Supports 3.3v Spektrum satellite receiver

Supports PPM receivers

Buzzer interface

Supports programmable LED\_Strip (turns off Transponder before use)

Support BLheli suite ESC programming

Built-in voltage detection, alarm

Built-in OSD function, BF online tuning

Equipped with ICM-20608 F4 flight control acceleration faster; integrated 5V / 3A BEC, integrated OSD. (This version is 6DOF, no barometer and electronic compass)

1. Specifically designed for small-scale through the machine to adapt to the following size 280mm frame for special, especially within the 130mm rack can play a small and functional full advantage;

2. This board provides all the features, weighs only 4 grams, the size of only 27 \* 27MM, fixed hole for the 20MM (M2.5 hole);

3. For four-axis models tailored, built-in LC filter, support BF firmware (Omnibus F4 firmware);

4. Using STM32F405RGT6 microcontroller, ICM-20608 sensor SPI interface connection, faster operation rate;

5. Support 2-4S power input;

6. Built-in 5V 3A output BEC;

7. Support SBUS / PPM / DSMX and other mainstream mainstream receiver;

8. Buzzer / programming LED / voltage monitoring / BLHELI ESC programming;

### **BS-28A 4 IN 1 BLHELI\_S ESC**

Technical parameters:

1. Input voltage: 2-4s lithium polymer / 2-4s lithium polymer HV
2. BEC output: none
3. Single-current continuous working current: 28A (maximum current: 30A 5 seconds)
4. Four-in-one electrical adjustment size: 27 \* 31 mm (including the maximum size of the welding disc and protruding points) of 20 \* 20MM
5. weight: 4.0g
6. Firmware: BLHELI\_S
7. Support: DShot, Oneshot,
8. Processor: SILABS EFM8BB21F16G
9. MOS tube: AON7418
10. Drive: a new generation of three-in-one MOS driver

### **RunCam Micro Swift 2**

Image Sensor: 1/3" SONY Super HAD II CCD

Horizontal Resolution: 600TVL

Lens: 2.3mm Lens(M8) FOV145°

Signal System: NTSC

S/N Ratio: >60dB (AGC OFF)

Electronic Shutter Speed : 1/60~100,000

Auto Gain Control (AGC) : Yes

Back Light Compensation (BLC): Yes

Min. Illumination: 0.01Lux@1.2F

WDR: D-WDR

DNR : 2DNR

Day/Night: Color/Auto/B&W

Power: DC 5-36V

Net Weight: 5.6g

Dimensions: 19mm\*19mm\*19mm

Transmission frequency group::

Frequency band: 5362-5945MH

Channel: 48

A:Ch1:5740MHz	Ch2:5760MHz	Ch3:5780MHz	Ch4:5800MHz
Ch5:5820MHz	Ch6:5840MHz	Ch7:5860MHz	Ch8:5880MHz
B:Ch1:5705MHz	Ch2:5685MHz	Ch3:5665MHz	Ch4:5645MHz
Ch5:5885MHz	Ch6:5905MHz	Ch7:5925MHz	Ch8:5945MHz
C:Ch1:5865MHz	Ch2:5845MHz	Ch3:5825MHz	Ch4:5805MHz
Ch5:5785MHz	Ch6:5765MHz	Ch7:5745MHz	Ch8:5725MHz
D:Ch1:5658MHz	Ch2:5695MHz	Ch3:5732MHz	Ch4:5769MHz
Ch5:5806MHz	Ch6:5843MHz	Ch7:5880MHz	Ch8:5917MHz
E:Ch1:5733MHz	Ch2:5752MHz	Ch3:5771MHz	Ch4:5790MHz

Ch5:5809MHz      Ch6:5828MHz      Ch7:5847MHz      Ch8:5866MHz  
F:Ch1:5362MHz      Ch2:5399MHz      Ch3:5436MHz      Ch4:5473MHz  
Ch5:5510MHz      Ch6:5547MHz      Ch7:5584MHz      Ch8:5621MHz  
Modulation type: FM  
Ambient temperature: 25°C  
Video input voltage: 1.0Vp-p, (75Ω)

## Receiver

### Compatible:

- 1.DSM2 Receiver Support Spektrum/JR(DSM2 protocol) DEVO10/DEVO 7E(with deviation firmware).
- 2.Frsky Receiver Support FRISKY taranis X9D/X9D PLUS(D16 mode),and XJT (D16 Mode),DJT DFT DHT Transmitter.
- 3.Flysky Receiver Support FS-I6FS-I6X.FS-I6S.FS-TM8.FS-TM10.FS-I10 and other second-generation AFHDS 2A protocol remote control
- 4.Futaba Receiver Support TM7,TM8, TM10, TM14 T6EX-2.4G,7C-2.4G,T8FG,T10CG ,T12FG.T14SG.

## Receiver Setup and Binding Methods

### Quads with DSM Compatible Receivers

Binding method for Spektrum radios:

Pair code: (for code, not external battery)

1. The receiver for the Cleanflight, Betaflight firmware flight control, you can enter the CLI command line
2. (set spektrum\_sat\_bind = 9 ) carriage return,
3. In the input (save) carriage return.
4. Disconnect the USB cable, re-power to the flight control, the receiver orange indicator light will flash, said the receiver into the code waiting mode.
5. Open the remote control, the remote control into the code mode, the success of the code, the orange light is always bright, no signal, orange light off.

### Quads with FrSky Receivers

Binding with FrSky Taranis X9D Plus Transmitter

- 1.Turn on your Taranis X9D Plus transmitter, goto “ Model Setup ” (Press MENU and PAGE button once).In the “ Internal FR ” section, choose Mode=D16, Channel Range=CH1-16, Receiver No.01, and then click “ Bind ” ,the transmitter will start beeping.
- 2.Power up the XM+ receiver while holding the F/S buttn(aka.Bind button).The LED on the receiver will start flashing,that means binding has completed.
- 3.Power off Transmitter and Receiver
- 4.Turn on the transmitter and power on the Receiver,you should see the Greed LED on the receiver,that means it has bound with your transmitter.

### Quads with FlySky Receivers

Binding method for FlySky radios:

Support radios with the second generation protocol (AFHDS 2A).

1. Enter the binding mode in the radio.

2. Hold the binding button on receiver, and power it on. Rapid flash of LED indicates the receiver is in binding mode. If binding is successful, the LED light will change to slow flash.

3. Exit binding mode of the radio. The LED light on receiver should become solid, indicating completion of binding.

Enable s.Bus mode:

Output modes can be switched in lieu of normal communication between radio and receiver.

Hold the binding button for 2 seconds to change to s.Bus mode. If LED light flashes rapidly two times and off for 1 second, then it is successfully changed to s.Bus output mode.

### **Quads with Futaba Compatible Receivers**

Binding method for Futaba radios:

Compatible with Futaba radios support FASST.

1. Set the radio to FASST mode. Hold the binding button on receiver and then power it on. The red LED should flash rapidly. Release binding button the LED should flash red and green alternately, and then turns to solid green to indicate a successful binding. It may require several trials to complete a binding. A solid red LED indicates the binding is not established.

2. Fail safe can be setup in the radio, and can be set after binding process. Hold the binding key for 2-3 seconds, the LED indicator of failsafe will flash rapidly and then turns to solid green, indicating it is in fail safe mode.