



TYR069

QUICK START GUIDE (DIY)



Package Include

- 1x integrated frame with 2.0mm plate thickness and 3D printing camera Mounting base
- 4X 1104 8600 kV (orange) motors
- 1X tyro69 20A 4 in1 ESC 1X tyro69 flight controller (main control chip: f411)
- 1X Caddx beetle V2 camera AIO FPV Transmitter
- 20X Paddle Blade

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1.1 Frame kit

Axle Base: 105mm

Arm thickness: 2mm

Supporting maximum wheelbase: 2.5 inches

Spacing of mounting holes for supporting motors: 9mm

Material: 3K Carbon Fiber and TPU 3D Printing

2.1 Motor

Model: 1104/8600 kV

Groove Series: 9N/12P

Stator diameter: 11mm

Stator Height: 4mm

Axis Diameter: 1.5mm

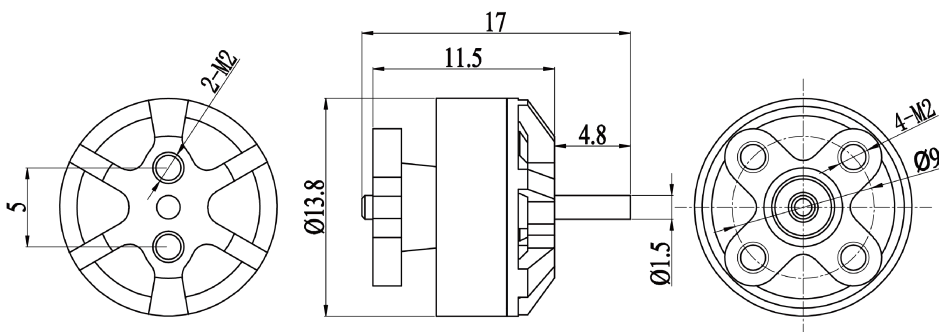
Weight: 4.3G

Support supply voltage: 2-3s

Maximum power: 144W

Installation hole: M2

Installation hole spacing: 9mm



3.1 ESC

Continuous current: 20A

Peak current: 25A (10s)

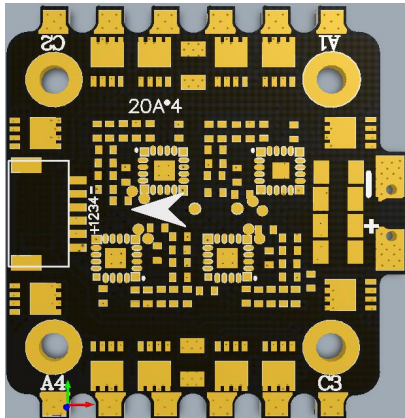
BEC output: none

Input voltage: 2-6 s

Main Control Chip: EFM8BB21F16G

Firmware upgrade: support dshot600/blheli_S/Oneshot125

MOS: 3*3



4.1 Flight Controller

Main control chip: stm32f411

IMU: MPU 6000 6 axis sensor

On-board integrated OSD

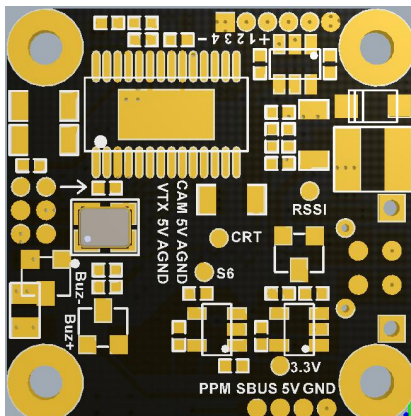
BEC:5V2A

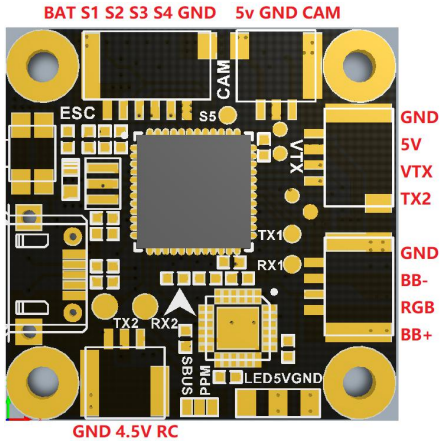
DSMx/IBUS/sbus/UAR Sharing: UART1-RX

Installation Size: 20*20

Weight: 24g

Support firmware: betafight/cleanflight/inav







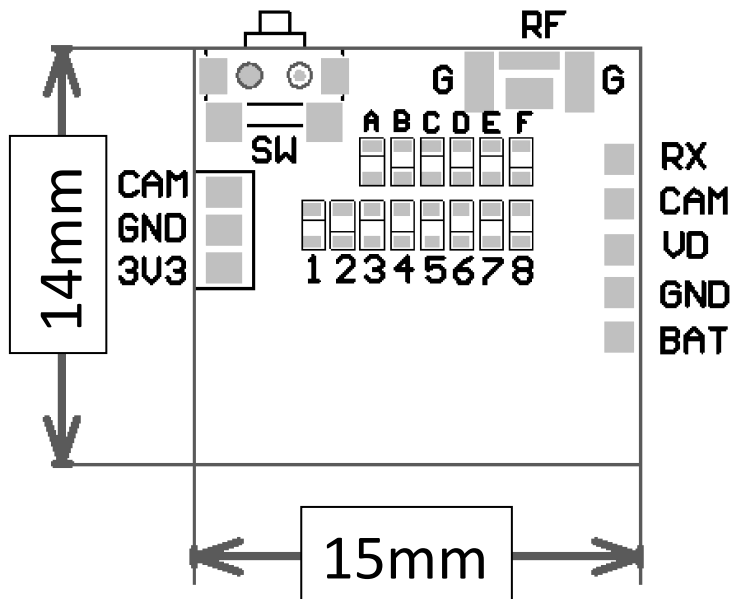
ATTENTION



Note: Be sure to weld the receiver protocol selection pad

5.1 Camera image transmission

- Output power: 25 MW
- Support frequency: 48ch
- Support TBS Smart Audio
- Support voltage: 2.9v-5.5v
- Graphic size: 15mm X14mm
- Image Sensor: 1/3 "CMOS Sensor"
- Horizontal Resolution: 1200 TVL
- TV System: PAL
- IMAGE: 4:3
- Lens: 2.1mm
- Dimensions: 14mm*14mm*16mm
- Weight: 4.1G (Camera + VTX)
- Picture from Miniature Antenna with Welded Copper Tube



6.1 Two-bladed propeller

Material: Imported PC
 Installation aperture: 1.5MM
 Weight: 0.8g/pair
 Quantity: 10 pairs
 Color: translucent black/Black/Red/random

7.1 Recommended power supply

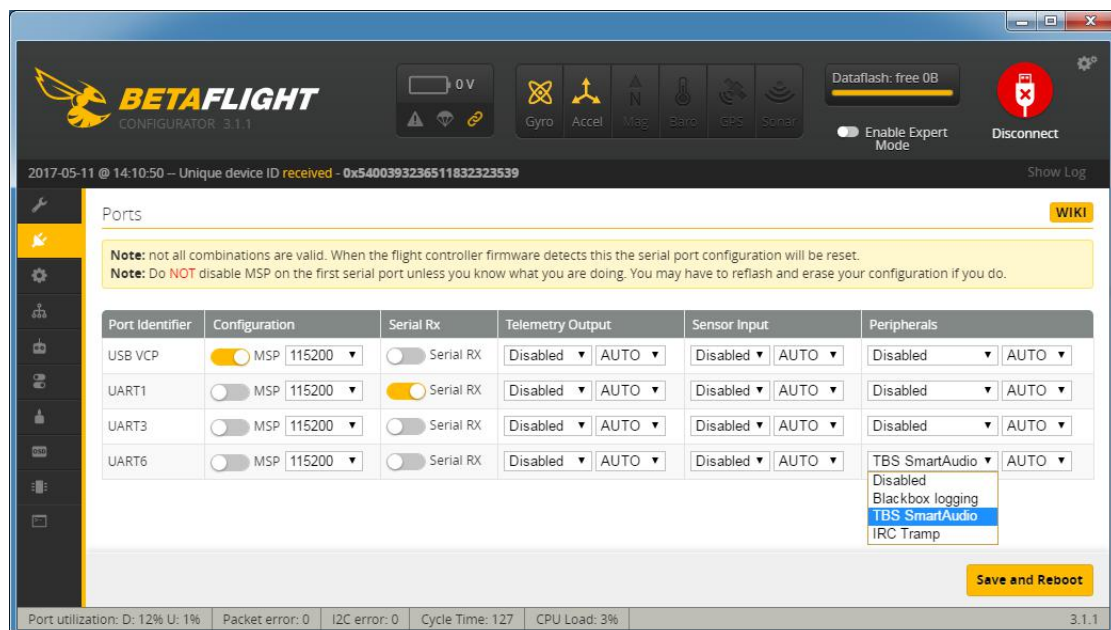
Recommended voltage: 3S
 Recommended capacity: 350-450 Mah

8.1 Adjusting parameter

(1) Configuration of UART port parameters

Enter the Ports item, select the UART port (UART6 in this case), and then select the TBS Smart Audio item (Figure 1) in the Peripheral column to complete the configuration of the flight control image serial port.

If the connection between the image transmission and the selected flight control UART port remains unchanged, this step only needs to be operated once.



2017-05-11 @ 14:10:50 -- Unique device ID received - 0x540039323651183232539

Ports WIKI

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do NOT disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Port Identifier	Configuration	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	<input checked="" type="checkbox"/> MSP 115200	<input type="checkbox"/> Serial RX	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	<input type="checkbox"/> MSP 115200	<input checked="" type="checkbox"/> Serial RX	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART3	<input type="checkbox"/> MSP 115200	<input type="checkbox"/> Serial RX	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART6	<input type="checkbox"/> MSP 115200	<input type="checkbox"/> Serial RX	Disabled AUTO	Disabled AUTO	TBS SmartAudio AUTO

Save and Reboot

Port utilization: D: 12% U: 1% Packet error: 0 I2C error: 0 Cycle Time: 127 CPU Load: 3% 3.1.1

(2) Frequency grouping and channel number configuration

① Enter OSD parameter menu

When VTX1 image transmission, corresponding image transmission receiver display screen and flight control are powered on, the information shown in Figure 2 will appear on the receiving screen.



Figure 2 Electrical display information

At this time, according to the screen prompt operation THR MID (throttle center), YAW LEFT (YAW rocker to the left), PITCH UP (PITCH rocker to the top) into the OSD parameter adjustment menu (Figure 3).

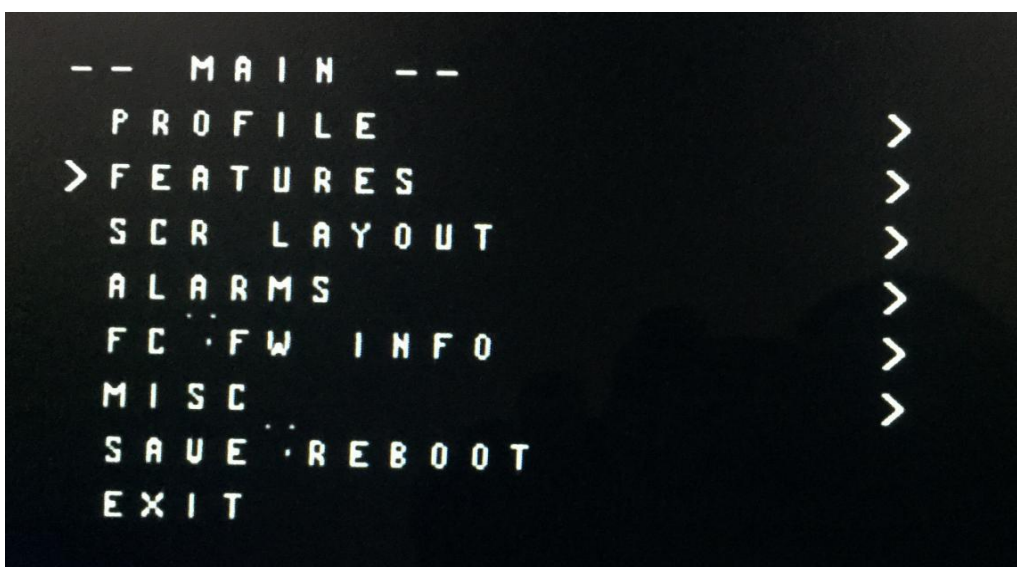


Figure 3 OSD parameter menu

② Start grouping and channel configuration

Under the OSD MAIN menu, the PITCH rocker can move the cursor arrow up and down to select the menu item, select the FEATURES item, then select the ROLL rocker to the right, and enter the lower configuration menu (Fig. 4).

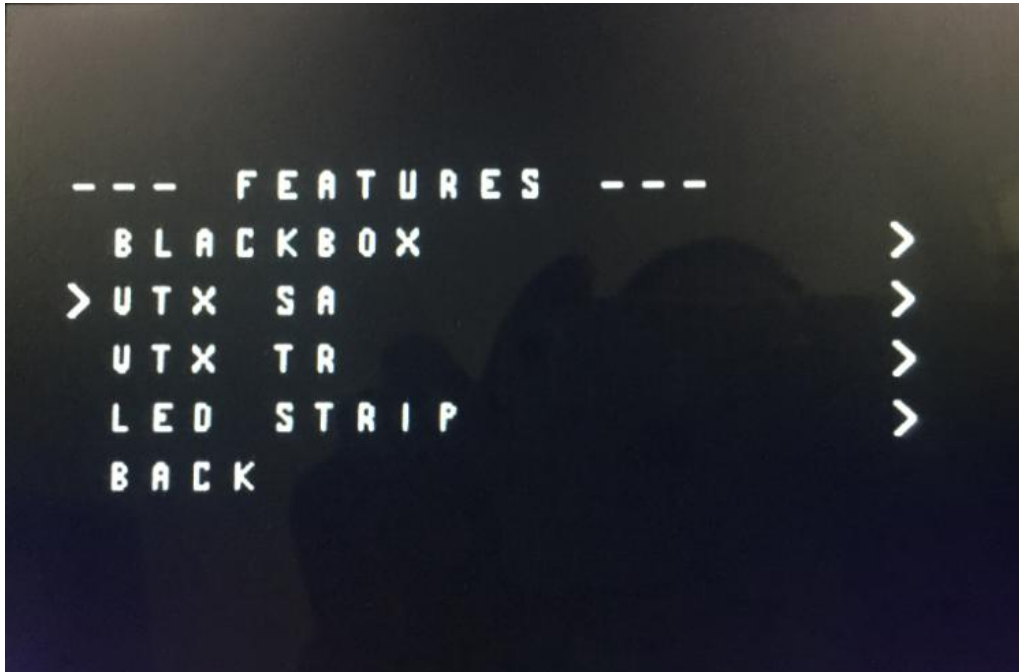


Figure 5 FEATURES Menu

In the menu of Figure 4, select the desired frequency grouping BAND and channel CHAN by swinging the ROLL rocker left and right.

Note: Because VTX1 supports 48 channels, users can select any of the 48 channels by pressing keys. But at present, Betaflight's OSD parametric function only supports 40 channels, so users can only configure 40 channels on the OSD screen.

If the user chooses one of the eight channels that OSD parameters do not support and enters OSD parameters, the system will automatically change the user's original channel to A1 channel on our frequency table (5865 Mhz), that is, the user can configure only 40 channels with OSD parameters.

After configuring the grouping and channel, you need to enter the SET item and select YSE to take effect (Figure 6).



Figure 6 Grouping and channel configuration validation

③ Output power configuration

As in the previous section, the POWER item can be entered by remote control selection, and the required transmission power can be selected (Fig. 7). VTX1 currently supports only 25 mW power options, while the POWER menu with OSD parameters has four options: 25 mW, 200 mW, 500 mW and 800 mW. Therefore, users need to pay attention to the choice of 200 mW, 500 mW, 800 mW options will be VTX1 set to 25 mW transmission power.

Note: Unlike configuring BAND and CHAN, POWER settings do not need to enter the SET entry confirmation, and take effect immediately.

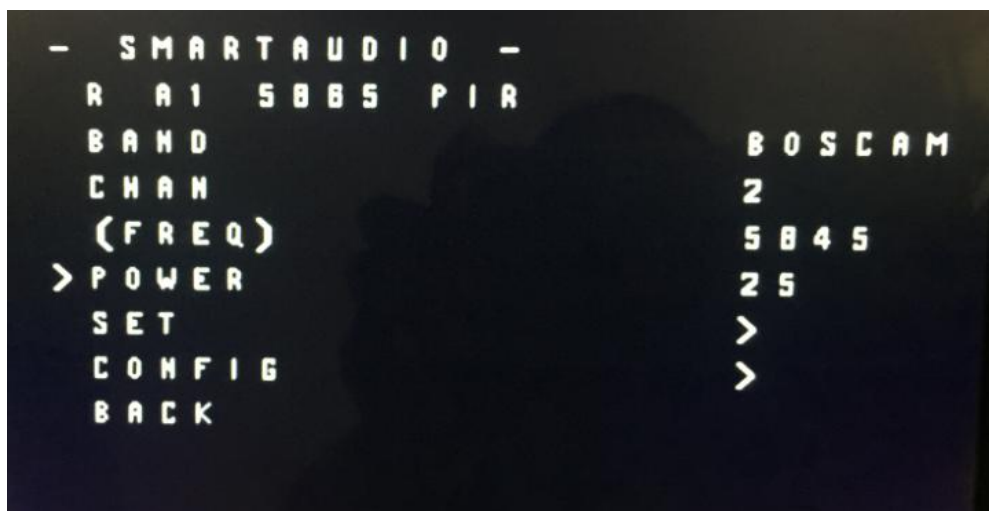


Figure 7 Transmission Power Selection

④ Channel number indication

The LED lamp displays the set grouping and channel, and the corresponding working frequency is shown in the table below.

BAND	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
A (BOSCAM)	5865M	5845M	5825M	5805 M	5785 M	5765 M	5745 M	5725 M
b (BOSCAM)	5733 M	5752 M	5771 M	5790 M	5809 M	5828 M	5847 M	5866 M
C (BOSCAM)	5705 M	5685 M	5665 M	5645 M	5885 M	5905 M	5925 M	5945 M
d (FATSHAR)	5740 M	5760 M	5780 M	5800 M	5820 M	5840 M	5860 M	5880 M
E (RACEBAN)	5658 M	5695 M	5732 M	5769 M	5806 M	5843 M	5880 M	5917 M
<i>F</i>	<i>5362M</i>	<i>5399M</i>	<i>5436M</i>	<i>5473M</i>	<i>5510M</i>	<i>5547M</i>	<i>5584M</i>	<i>5621M</i>

Note: Group F channel in italic part is not supported in Betaflight OSD configuration.