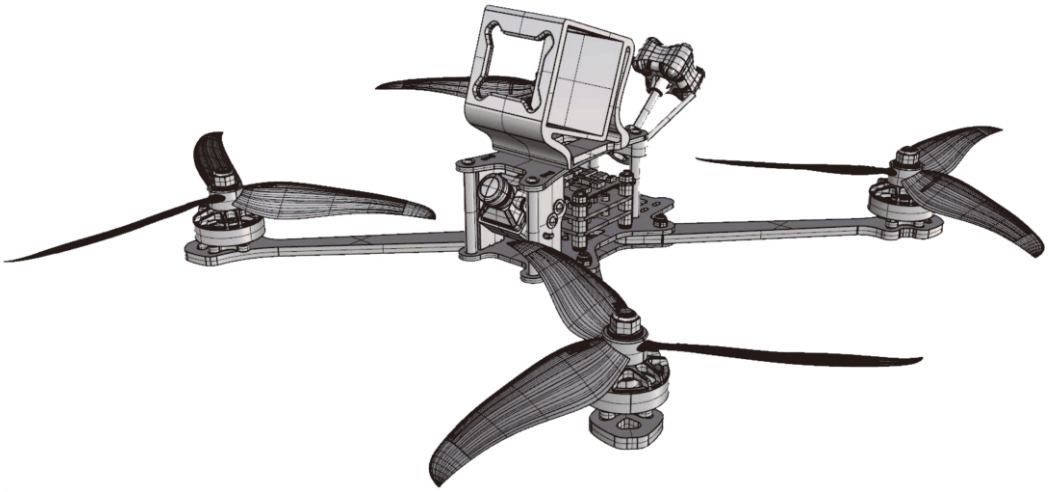
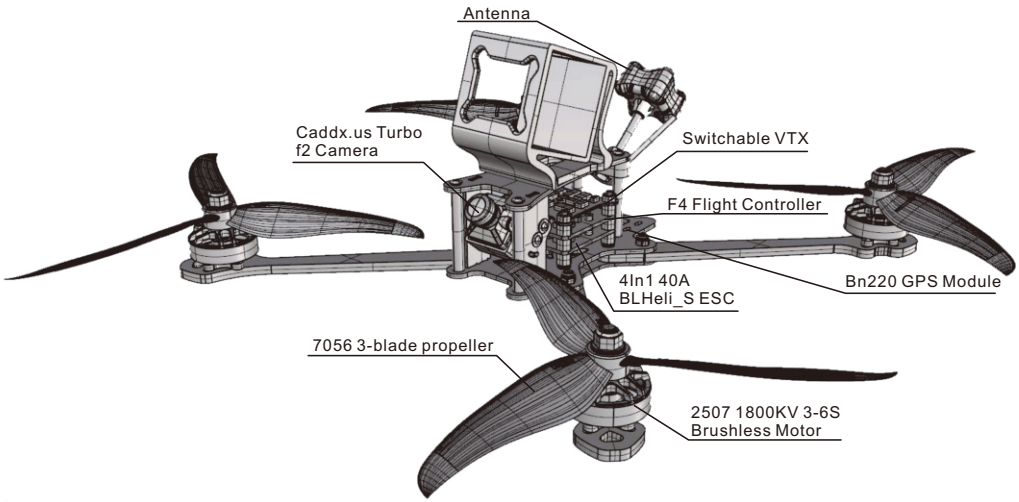
TYRO129

QUICK START GUIDE (DIY)



EACHINE

Package Included:
1 x frame kit
2 x 2507-1800KV brushless motor CW
2 x 2507-1800KV brushless motor CCW
1 x 4In1 40A BLHeli_S ESC
1 x F4 Flight Controller
1 x Caddx.us Turbo f2 Camera
1 x 5.8G 40CH 25/100/200/600mw switchable VTX
1 x Antenna
1 x BN220 GPS Module
2 x 7065 3-blade propeller CW
2 x 7065 3-blade propeller CCW
1 x Antenna Fixing Seat Mount 3D Printing
1 x Gopro Fixing Seat Mount 3D Printing

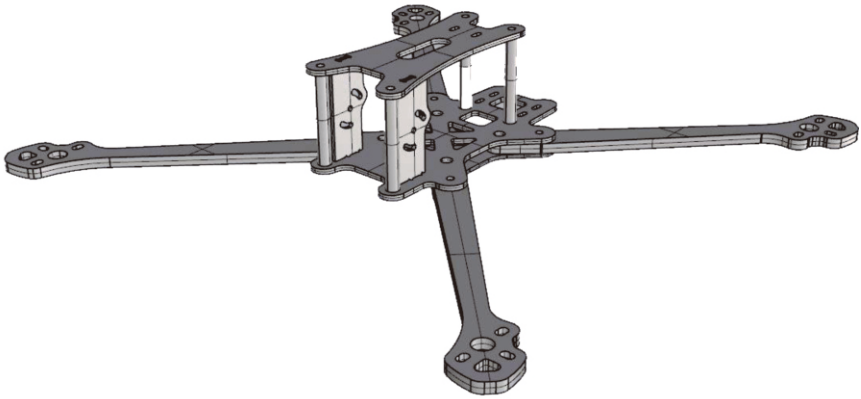


EACHINE

Contents

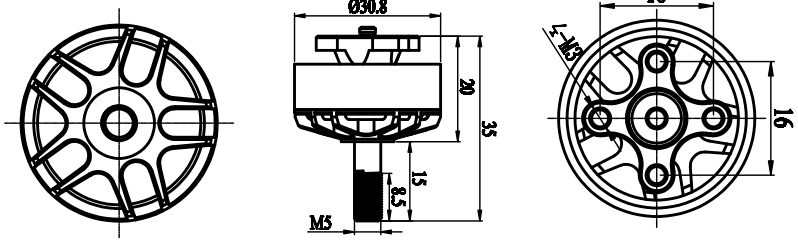
1.0 Frame kit

Wheel base: 280mm
Frame arm thickness: 5mm
Bottom plate thickness: 2mm
Side plate thickness: 1.5mm
Frame kit material: 3K carbon fiber



2.0 Motor

KV: 1800KV
Lipo cell: 3-6S
Weight: 39g
Whole shaft length: 35mm
Maximum pull: 1488g (4S 7inch propeller)
Maximum power: 840W
Configu-ration: 12N/14P
Mounting holes distance: 16*16mm
Mounting holes: φM5
Recommend propeller: 6-7 inch



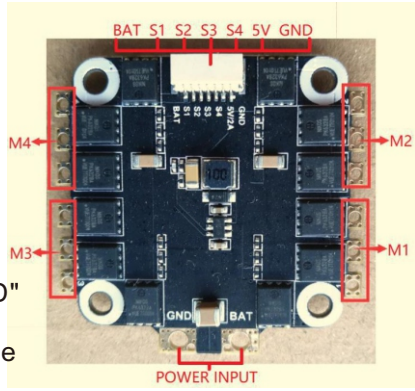
3.0 ESC

Continuous current: 40A
Peak current: 45A (10S)
BEC output: no
Input voltage: 2-6S
Main control chip: 48mhz EFM8BB2
Firmware upgrade: Supports Dshot150-600/Multishot/Oneshot/PWM
Size: 37.5x37.5mm
Mounting Hole: 30.5x30.5mm

Features:
High-performance EFM8BB21F16G microprocessor with operating frequency up to 48MHz;
Japan's Toshiba 5×6 package MOSFETs are more reliable than 3×3 package MOSFETs;
6-layer high TG 3OZ copper-thick PCB board, which greatly reduces heat generation and is more efficient;
Use the BLHeli_S open source program to upgrade the firmware or change the ESC parameters via the throttle signal line to support all BLHeli_S functions;
ESC can support DShot150/300/600 digital throttle mode and common PWM, OneShot125, OneShot42, MultShot throttle mode;
Built-in 5V@2A BEC, can supply power for flight control, camera, image transmission, LED lights, etc.

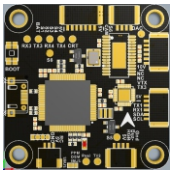
Interface definition chart:

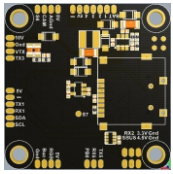
BAT: power positive electrode;
GND: power negative electrode;
5V:5V regulated power supply output interface,maximum current 2A;
S1-4: throttle signal input interface, S1 corresponds to M1.S2 corresponds to M2, S3 corresponds to M3, S4 corresponds to M4.Number electric adjustment;
POWER INPUT: power line pads, "GND" corresponding power supply.The line negative pole, "BAT" corresponds to the positive pole of the power supply line.



4.0 Flight controller

Flight Control Name: EACHINE F4 Flight Controller
Size: 37 × 37mm
Mounting hole: 30.5 × 30.5mm
Firmware version: MATEKF405
5V: 5V regulated power supply output interface, maximum current 2A (non-flying control, need to use Eachine BLHeli_S 40A 4in1 ESC)
4.5V: Receiver power interface (voltage only when USB is powered)
3.3V: 3.3V output (requires flight control to input 5V before output)
NC: floating pin, no network connected
CRT: current monitoring port
S6, DAC: camera tuning pin (selected according to the flight control firmware version)
CAM: camera input interface
VTX: graph transmission out interface
RGB: RGB light strip interface
Buz-: connect the buzzer negative pole, positive pole to 5V
TX2: Receiver SmartPort interface
Rssi: Rssi signal input port





Introduction to Flight Control:
168MHz STM32F405 main control chip, can run higher rate PID;
The SPI bus mode MPU6000 gyroscope provides fast response time and excellent shock absorption;
Onboard OSD chip, you can use BetaFlight assistant software to adjust parameters;
Onboard Bosch BMP280 high precision barometer;
MicroSD BlackBox;
Reserve 5 serial ports and I2C interface for easy GPS access;
Onboard 10V BEC provides a cleaner image display for images;
Reasonable layout, according to the installation requirements of most of the flying hands, put the functional pads together to avoid jumpers;
All interfaces are available in socket and pad options and are suitable for different groups of people;

5.0 Camera

Case size: 19x19x16mm
Weight: 5.5g
Signal system: NTSC / PAL (Switchable)
Resolution ratio(horizontal center): 1200TVL
Video output Signal: cvbs
Image: 16:9
Synchronization method: inter-sync
Camera lens: standard 2.1mm
Lens operating voltage: DC 4.5-40V
S/N Ratio: >52dB (AGC OFF)
Audio: YES

6.0 Switchable VTX

Output power & transmission distance: ⩾0.5km@25mW, ⩾1km@200mW, ⩾2km@600mW
Transmitting power: 0mW/25mW/200mW/600mW
Full video format: NTSC /PAL
Input voltage & power dissipation: 7V~24V, +12V/260mA@600mW
Size: 20*30*9mm
Weight: ⩽7g(except antenna)
With output power self-check function.
Nixie tube SCAN: frequency point (1-8), frequency band (A-E), power (1-3, 0=0mw, 1=25mw, 2=200mw, 3=600mw)

Frequency control method:
Button frequency control (1-8): press the button for 2 seconds to enter the frequency setting, and press the button to change the frequency CH1-8.Change the frequency band (A-E), set the frequency, press the button for 2 seconds, then press the button to change the frequency group FR (A-E).

Band	1	2	3	4	5	6	7	8
A	5865	5845	5825	5805	5785	5765	5745	5725
B	5733	5752	5771	5790	5809	5828	5847	5866
C	5705	5685	5665	5665	5885	5905	5905	5905
D	5740	5760	5780	5800	5820	5840	5860	5880
E	5658	5695	5732	5769	5806	5843	5880	5917

Points for attention:
The antenna is installed at the output terminal before power up, so as not to damage internal components.Note that the input voltage is within the specified range and is positive or negative, so as not to damage internal components.If the antenna is replaced, choose a standing wave and a good gain antenna to obtain a longer transmission distance.Attention should be paid to electrostatic protection during transportation and installation.

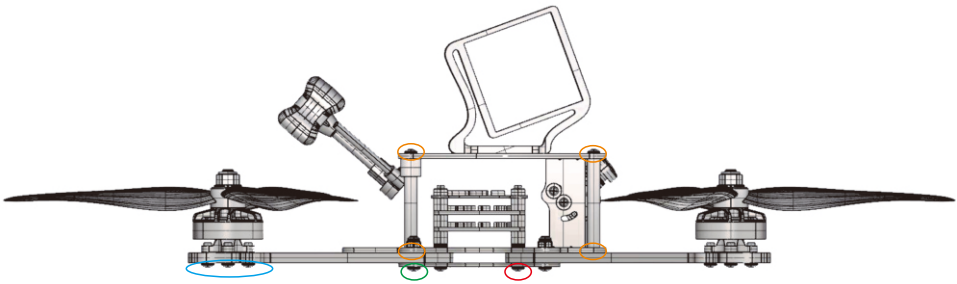
7.0 Pagoda Antenna

Description:
Brand name: Eachine
Item name: antenna
Quantity: 1 PC
Conncetor: RP-SMA Male

8.0 Eachine BN-220 GPS Module

Brand Name: Eachine
Model: BN-220
Item Name: BN-220 GPS+GLONASS Dual GPS module
- Built-in FLASH, TTL
Data Protocol: NMEA-0183
Output Rate: 9600bps, 1HZ
Size: 22mm*20mm*6mm
1.TX LED:blue.The data output, TX LED flashing
2.PPS LED:red.PPS LED not bright when GPS not fixed, flashing when fixed

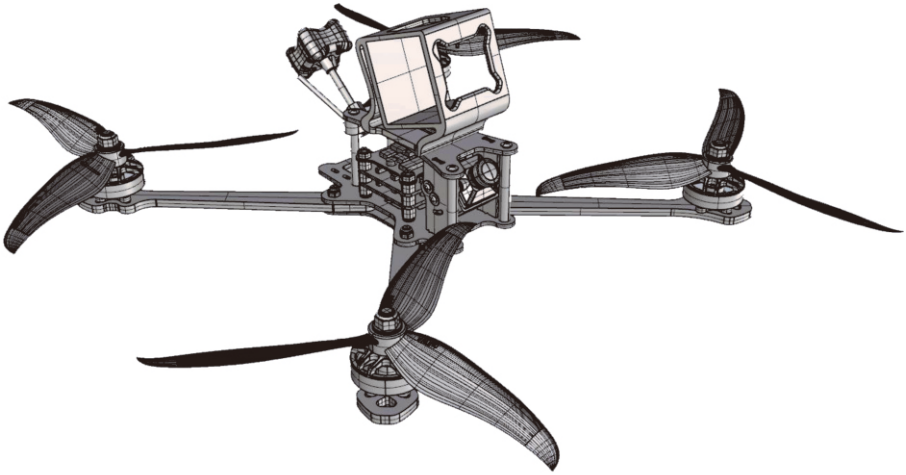
9.0 Screws

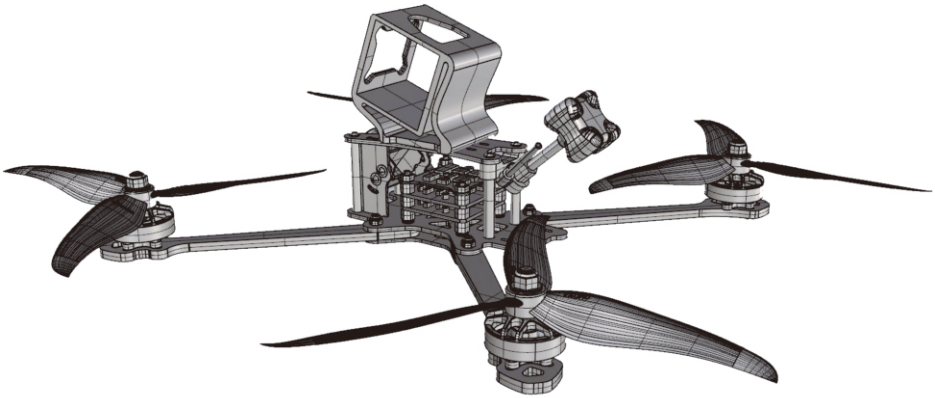


○ 8xM3*8 ○ 12xM3*8

○ 4xM3*12 ○ 4xM3*14

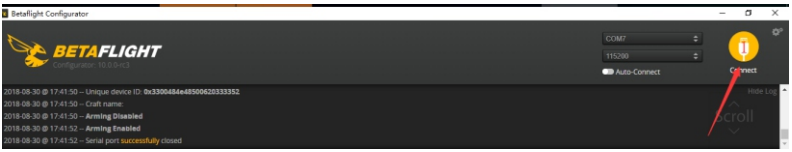
10.Assembly drawing



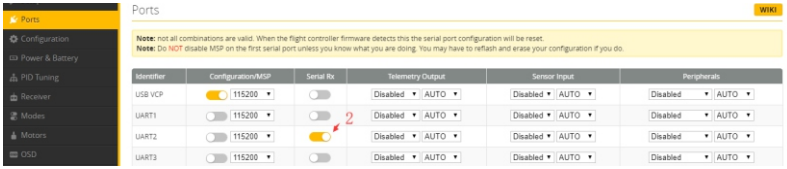


11.Adjusting parameter

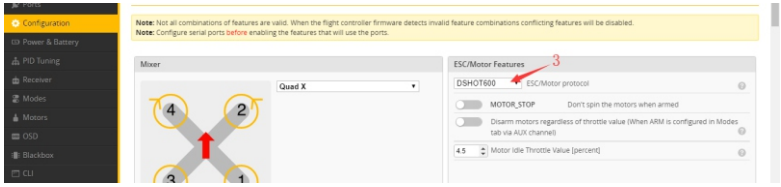
1.Click connect connection



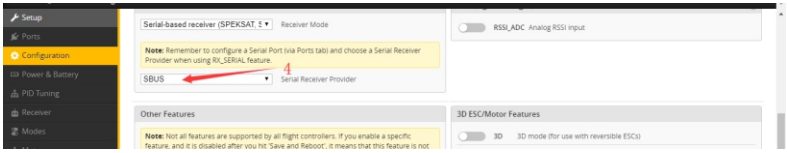
2: Click the RX interface under UART2 under the ports option, as shown in the figure.



3: Click CONFIGURATIN to change to dshot600.



4: Click CONFIGURATIN; change to SBUs

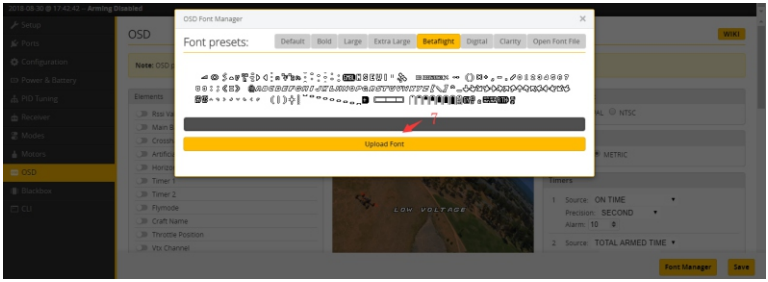


5: Click modes, add arm and angle, drag the slider between 1300 and 1700, and set arm to AUX1 and angle to aux2

11.Adjusting parameter

6: Push the slider to test the positive and negative rotation of the motor, such as error,

7: Click font manager, select betaflight, click upload font



8: Click setup, calibrate accelerometer