# TYR0129

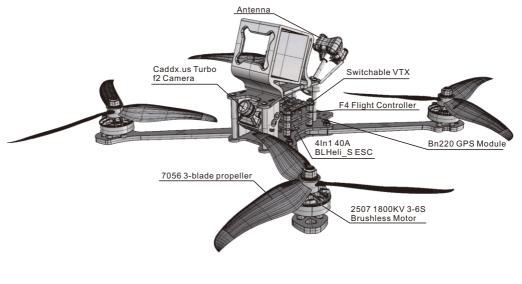
# QUICK START GUIDE (DIY)





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





# Contents

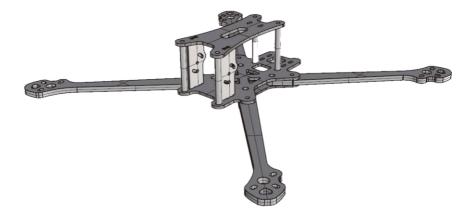
1.0	Frame kit	04
2.0	Motor	04
3.0	Esc	05
4.0	Flight controller	06
5.0	Camera	07
6.0	Switchable VTX	07
7.0	Antenna	08
8.0	Eachine BN-220 GPS Module	08
9.0	Screws	08
10.0	) Assembly drawing	09
11.0	Adjusting parameter	10-11



TYRD129 QUICK START GUIDE

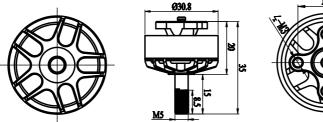
#### 1.0 Frame kit

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:  $\phi$ M5 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;

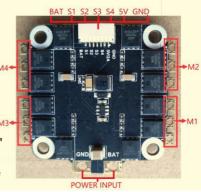
ESC can support DShot150/300/600 digital throttle mode and common PWM, OneShot125, OneShot42, MultShot throttle mode;

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:  $\geq 0.5$ km@25mW,  $\geq 1$ km@200mW,  $\geq 2$ km@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:  $\leq 7g(except antenna)$ 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
В	5733	5752	5771	5790	5809	5828	5847	5866
С	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.

TYRD129 QUICK START GUIDE

#### 7.0 Pagoda Antenna

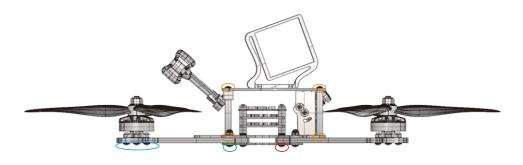
Description: Brand name: Eachine Item name: antenna Quantity: 1 PC Conncetor: RP-SMA Male



#### 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



0	8xM3*8	0	12xM3*8
$\bigcirc$	4xM3*12	$\bigcirc$	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.

Ports	Ports					W		
Configuration				ware detects this the serial port configur. what you are doing. You may have to refl.	ation will be reset. ash and erase your configuration if you do			
	Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals		
	USB VCP	115200 •		Disabled • AUTO •	Disabled • AUTO •	Disabled • AUTO •		
	UART1	115200 •	.2	Disabled • AUTO •	Disabled • AUTO •	Disabled • AUTO •		
	UART2	115200 •	•	Disabled • AUTO •	Disabled • AUTO •	Disabled • AUTO •		
	LIART3	115200 •		Disabled V AUTO V	Disabled . AUTO .	Disabled • AUTO •		

## 3: Click CONFIGURATIN to change to dshot600.

Ja i di ca		
<ul> <li>Configuration</li> </ul>	Note: Not all combinations of features are valid. When the flight control Note: Configure serial ports before enabling the features that will use the	lier firmware detects invalid feature combinations conflicting features will be disabled.
D Power & Battery	Note: Conligue senal ports before enabling the reactives that will use th	e pors.
A PID Tuning	Mixer	ESC/Motor Features 3
d Receiver	Quad X	DSHOT600 ESC/Motor protocol
2 Modes	TA OT	MOTOR_STOP Don't spin the motors when armed
& Motors		Disarm motors regardless of throttle value (When ARM is configured in Modes
CSD SD	+	tab via AUX channel)
I Blackbox		4.5 C Motor Idle Throttle Value (percent)
🖾 CLI		

## 4: Click CONFIGURATIN; change to SBUs

	Serial-based receiver (SPEKSAT, 5  Receiver Mode	RSSLADC Analog RSSI input
<ul> <li>Configuration</li> </ul>	Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.	
D Power & Battery	SBUS	
♣ PID Tuning		
d Receiver	Other Features	3D ESC/Motor Features
2 Modes	Note: Not all features are supported by all flight controllers. If you enable a specific feature, and it is disabled after you hit Save and Reboot', it means that this feature is not	3D 3D mode (for use with reversible ESCs)

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

க் PID Tuning	ARM	AUX 1 .								0
de Receiver	Add Range	Min: 1300 Max: 1700	'   900 1000	1200	14	00 1500 1600	-	1800	2000 2100	
🗧 Modes		1100		5						
🛔 Motors	ANGLE	AUX 2 🔻								O
📾 OSD	Add Range	Min: 1300 Max: 1700	900 1000	1200	14	00 1500 1600		1800	2000 2100	
I Blackbox			1000	1.00			_			

#### 11.Adjusting parameter

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

2 Modes					Metors								Ser	vos			
A Motors		-	-			0	7	8		1	2	3	4	5	6	7	8
CSD SD	1000	1000	1000	1000	0	0	0	0		1500	1500	1500	1500	1500	1500	1500	1500
: Blackbox		6															
🖽 CLI										_		_	_	_	_	_	-
										Movin up.	Test Mode / a	r arming your	craft with t				to spin
	<b>E</b>			<b>D</b>						In ord	er to prevent in	njury remove	ALL prope	llers before	using this fe	ature.	
	L-1000-	1000	1000	1000	1000	1000	1000	1000	Master	00.1	understand t	he risks, prop	ellers are re	emoved - Eni	ible motor o	ontrol and a	rming.

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

2018-08-30 @ 17:42:42 Arml		OSD Font Manager						×		
虜 Ports	OSD	Font presets:	Default Bold	Large Extra Large	Becafight	Digital Clarity	Open Font F	le la		WIKI
Configuration	Note: OSD p									
D Power & Battery		- © \$≤FT€D (: 88::≪E> <b>@</b> ADES								
🚓 PID Tuning	Elements	88 (	))\$ """"00			69 · 645 00 8	1444-0100			
de Receiver	OB Rssi Va				- 7			AL O N		
2 Modes	CIII Main B			Upload Font						
🛓 Motors	I Artificia			Opload Pont				METRI		
	I Horiza									
Blackbox	OR Timer 1						Timers			
	Olli Timer 2						1 50	urce: ON TIME		
E cu	CIII Flymod						Pri	cision: SECO	ND *	
	OID Craft N						Ala	rm: 10 0		
	CIII Throttie						2.50		RMED TIME *	
	CIII Vox Cha	nnel								
									Font Manage	er Save

8: Click setup, calibrate accelerometer

2018-08-30 @ 17:42:42 Craft P 2018-08-30 @ 17:42:42 Armin				
🎤 Setup	Setup			WIKI
	Setup	8		WINI
	Calibrate Accelerometer	Place board or frame on leveled surface, proceed with calibration, ensure platform is not moving during calib	oration period	
	Calibrate Magnetometer	Move multirotor at least 360 degrees on all axis of rotation, you have 30 seconds to perform this task		
	Reset Settings	Restore settings to default		
	Backup Restore	Backup your configuration in case of an accident, CLI settings are not included - See 'dump' cli command		
	Heading: 6 deg Pitch: -0.5 deg	Reset Z axis, offset: 0 deg	Info Arming Disable Flags:	2.16
📼 OSD	Roll: 0 deg		Arming Disable Hags:	2,10