

# 90/130GTI

## 使用说明

使用教程和视频请登录：[WWW.LDARC.COM](http://WWW.LDARC.COM)

产品分类>>多旋翼>>GT系列PNP>>90/130GTI PNP



90/130GTI说明



卡录说明

配置

名称	90GTI(HD)	130GTI(HD)	90GTI(FPV)	130GTI(FPV)
飞控	F411+OSD			
电调	4in1 20A BLheliS			
图传	0/25/100/200mW 48CH			
接收机	AC2000双核三模(S-FHSS+D16 non-EU+D16 EU-LBT)			
摄像头	蜗牛小海龟V2(1080P)		C1200(1200TVL 1/3' COMS NTSC)	
轴距	98mm	133mm	98mm	133mm
电机	XT1105-5000KV	XT1406-3600KV	XT1105-5000KV	XT1406-3600KV
螺旋桨	2035 & 2045	3050	2035 & 2045	3050
电池	11.4V 530mAh 80C(XT30)	3-4S 600-800mAh	11.4V 530mAh 80C(XT30)	3-4S 600-800mAh
建议电压	3S	4S	3S	4S
重量	83.7g	139.1g	74.1g	128.4g
摄像卡录	1080P/60fps 16:9 64G	1080P/60fps 16:9 64G	-	-

重量不包括接收机,电池,桨和保护架;130GTI推荐LDARC 14.8V 650mAh 50C电池

90GTI(HD)



90GTI(FPV)



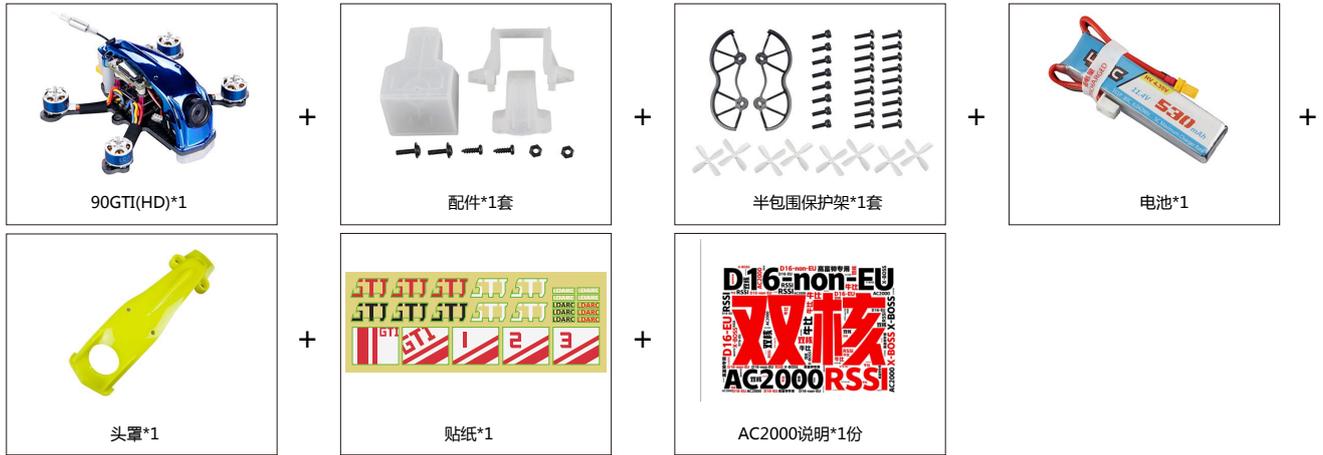
130GTI(HD)



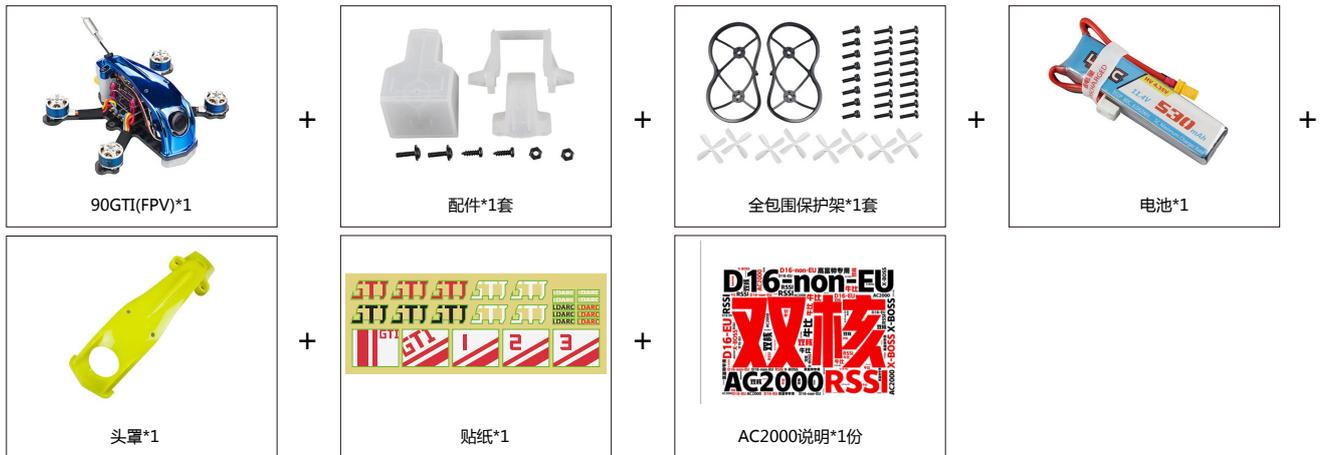
130GTI(FPV)



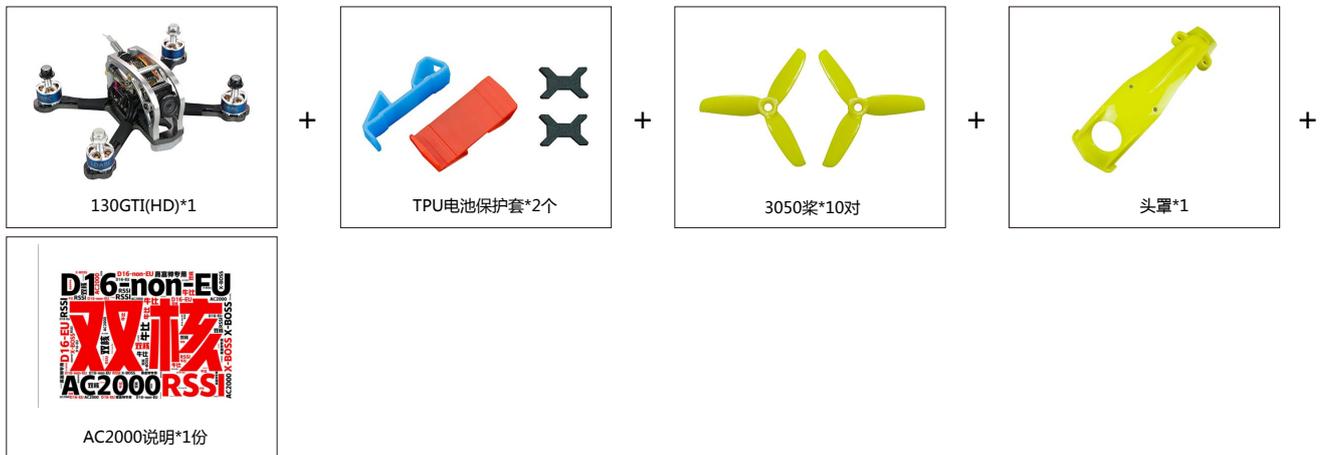
90GTI(HD)



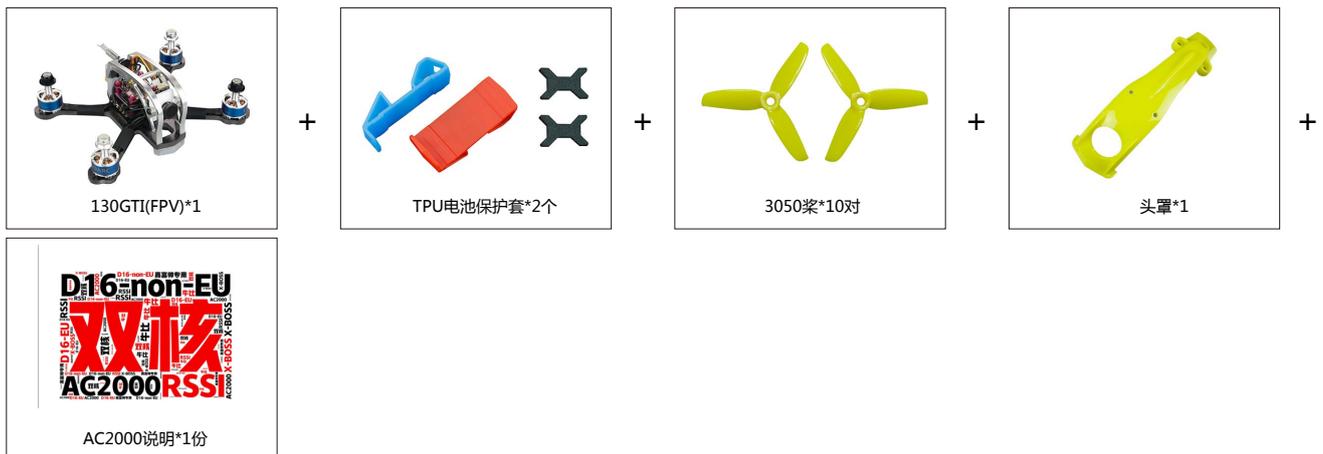
90GTI(FPV)

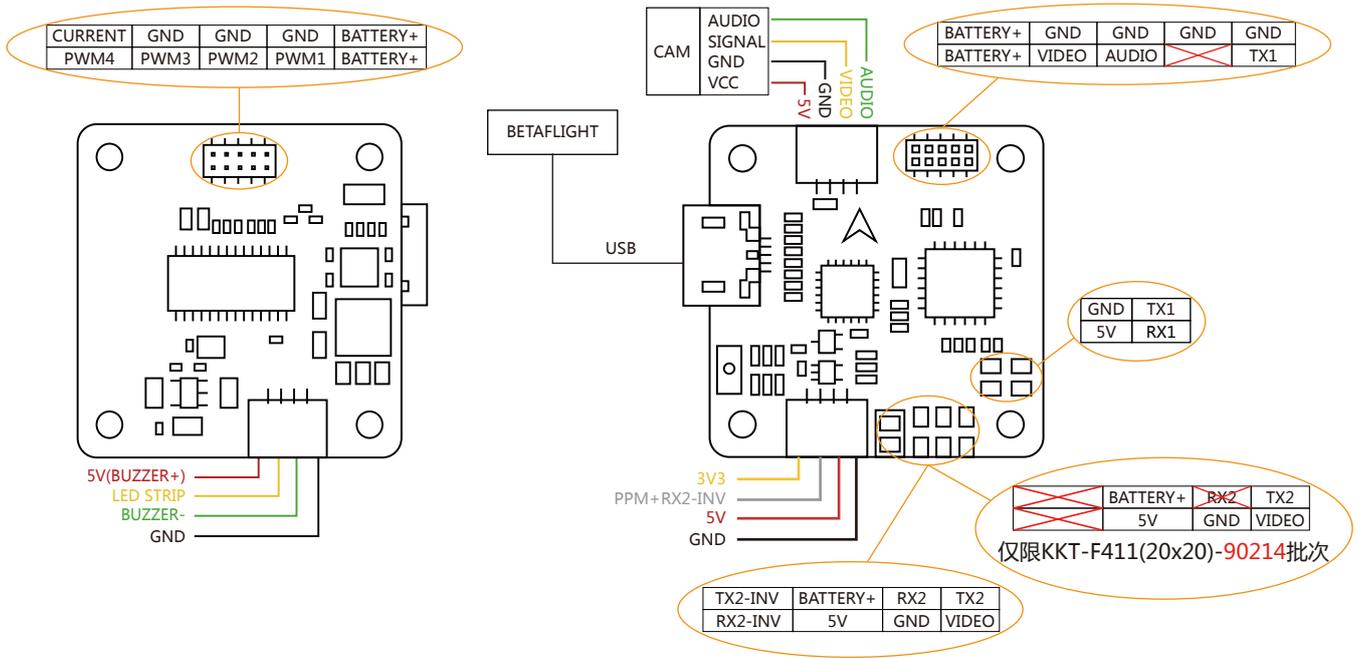


130GTI(HD)



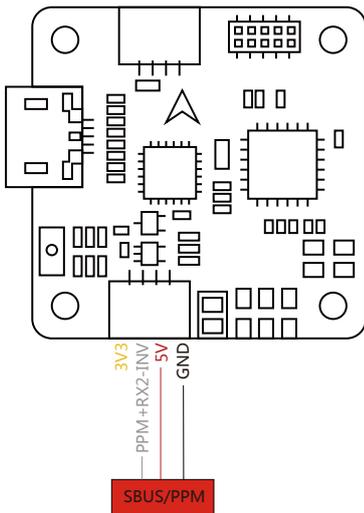
130GTI(FPV)





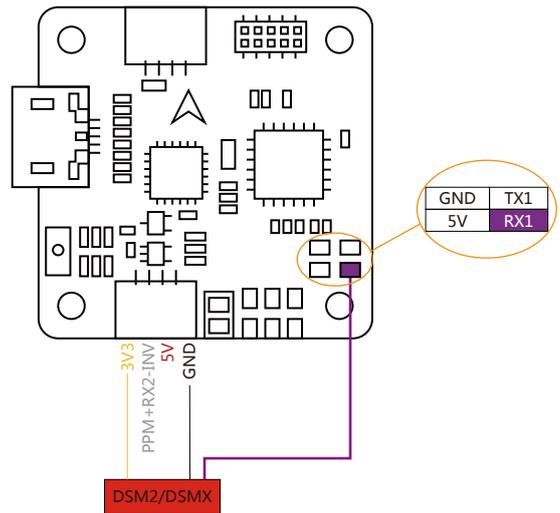
S.BUS和PPM接收机连接方式

供电电压为5V  
PPM或反向RX2信号输入



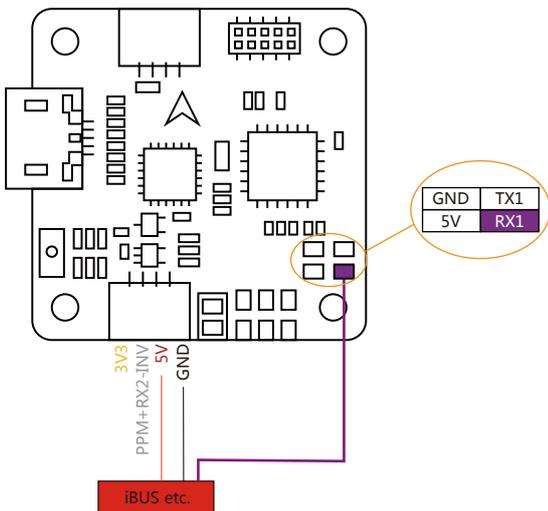
DSM2和DSMX接收机连接方式

供电电压为3.3V  
未反向RX1信号输入

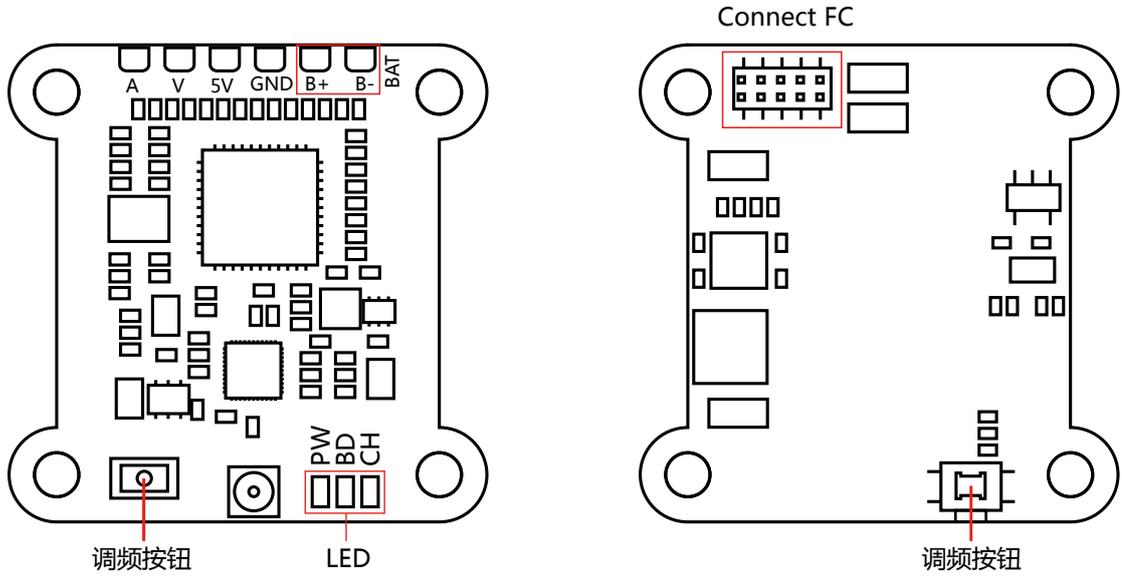


iBUS等接收机连接方式

供电电压为5V  
未反向RX1信号输入

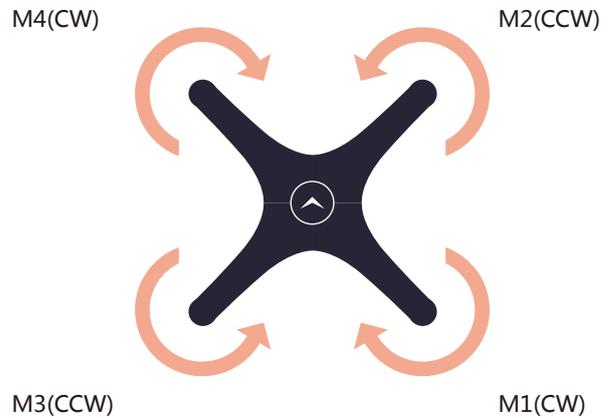
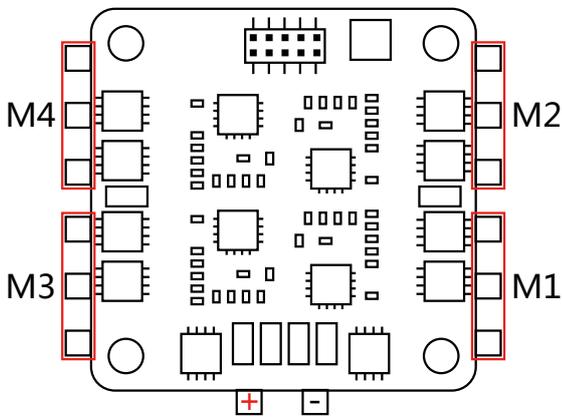


	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
Band A	5865	5845	5825	5805	5785	5765	5745	5725
Band B	5733	5752	5771	5790	5809	5828	5847	5866
Band E	5705	5685	5665	5645	5885	5905	5925	5945
Band F	5740	5760	5780	5800	5820	5840	5860	5880
Band H	5658	5695	5732	5769	5806	5843	5880	5917
Band R	5362	5400	5436	5473	5510	5547	5584	5620



1. 蓝色为频道 (CH) 指示灯, 闪烁1~8次指示CH1~8; 绿色频组指示灯 (BD), 闪烁1~6次指示BAND-A~F; 红色为功率指示灯 (PW), 闪烁1~3次, 指示25mW/100mW/200mW三档发射功率。

2. 正常模式时快速双击按钮可以开启或关闭图传, 三颗指示灯同步闪烁表示图传被关闭。长按按钮3秒后松手, 蓝色闪烁时点击按钮可以编辑频道 (CH), 再次长按绿灯闪烁时可以编辑组 (BD), 继续长按红灯闪烁时可以编辑发射功率。



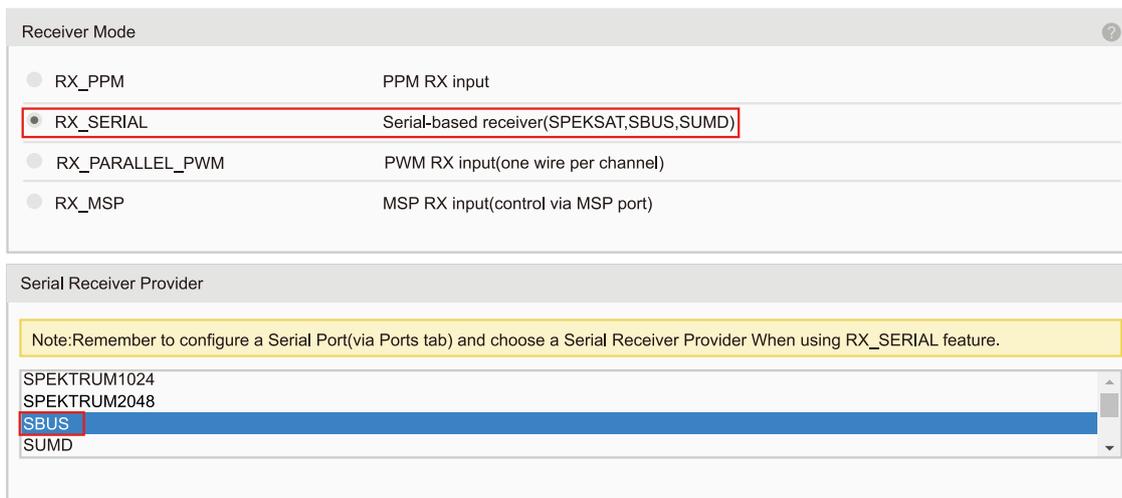
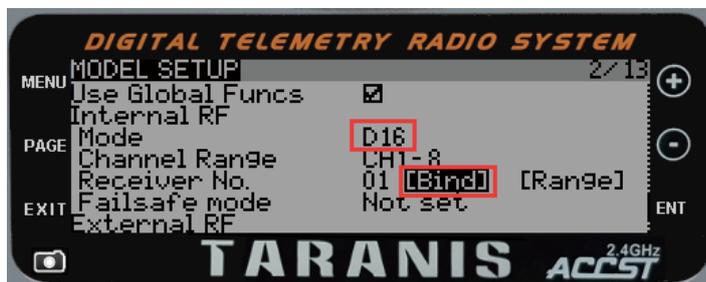
注意：安装桨叶时注意电机的旋转方向。

AC900(S-FHSS+D16)对码,示例遥控器(FRSKY X9D/Futaba T18SZ)

对码前请先检查当前接收模式,也就是上电第一次闪烁的指示灯颜色,■表示S-FHSS,■表示D16

FUTABA S-FHSS对码:打开遥控器电源,按住AC900上的按钮不放然后上电,接收机绿灯快速闪烁表示已经进入对码模式,用户可以松开按钮,当绿灯常亮表示对码完成并且已经正常工作。

FRSKY D16(无遥测)对码:按住AC900上的按钮不放然后上电,接收机绿灯快速闪烁表示已经进入对码模式,用户可以松开按钮。触发遥控器进入D16模式对码,接收机的绿灯熄灭红灯常亮表示对码成功,此时遥控器退出对码模式后接收机即可正常使用。



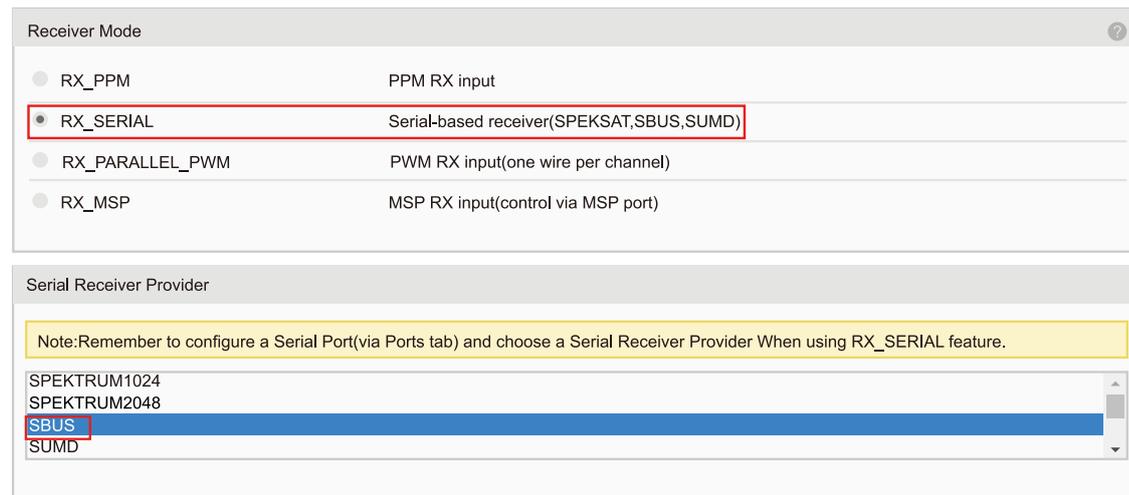
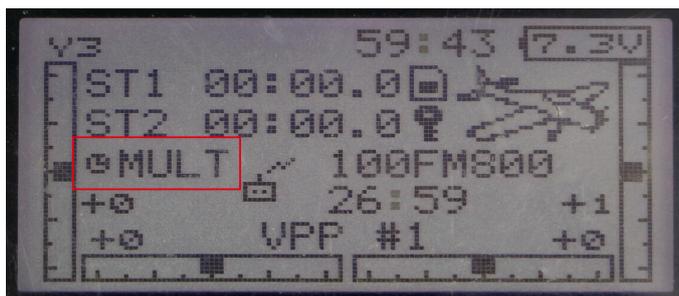
FM800对码(本机默认S.BUS模式,不支持PPM),示例遥控器(FUTABA T8FG)

打开遥控器,按住接收机上对频按钮不放然后上电,接收机绿色指示灯常亮表示对码成功。

S.BUS和CPPM模式切换

关闭遥控器,接收机红灯亮时按住对频按钮6秒,进入S.BUS和PPM模式切换松开。

- 1.绿灯快闪时,按下对频按钮并断开电源,重新上电,此时接收机进入S.BUS模式。
- 2.绿灯慢闪时,按下对频按钮并断开电源,重新上电,此时接收机进入PPM模式。



### DSM对码,示例遥控器(T-SIX)

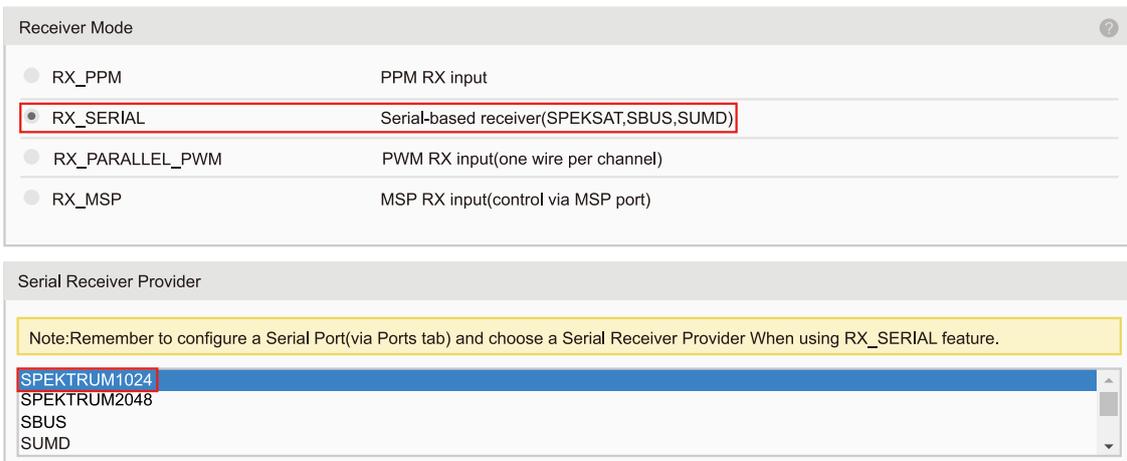
- 1.遥控器在关闭状态, 按住接收机上对码按钮然后上电。
- 2.接收机上指示灯快速闪烁后松开按钮, 此时已经进入对码模式。
- 3.打开遥控器对码模式, 对码成功后接收机指示灯常亮。

DSM2使用SPEKTRUM1024或SPEKTRUM2048协议, 根据遥控器型号选择对应的串口协议(这里以T-SIX遥控为例, 串口协议设定为SPEKTRUM1024)。

DSM2: 早期版的SPEKTRUM和JR遥控器协议, 广泛使用并且有较好的兼容性。

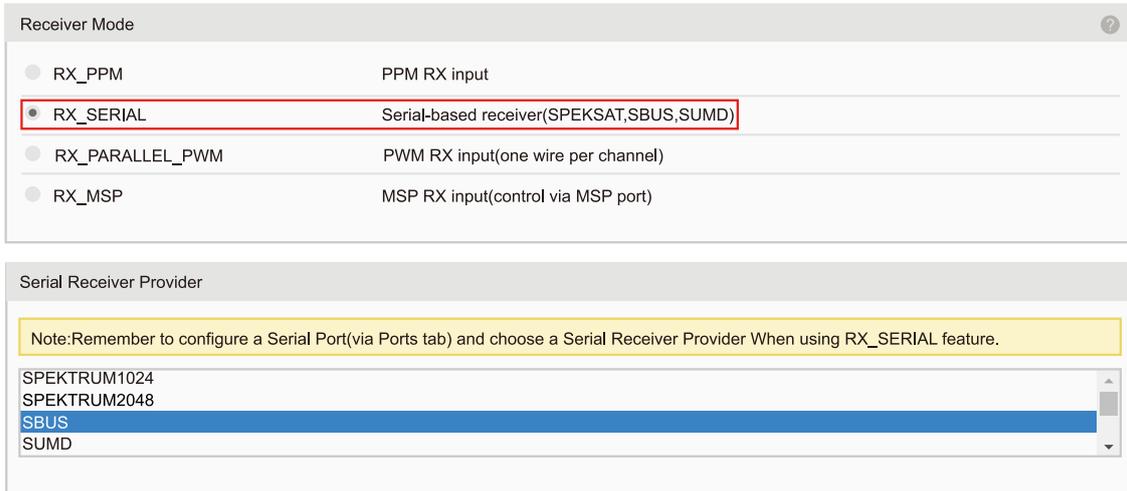
DSMX: 最新版的SPEKTRUM遥控器协议, DSMX向下兼容DSM2。

备注: DSMX 遥控器可以连接DSM2和DSMX 接收机, DSM2 遥控器仅能连接DSM2接收机。



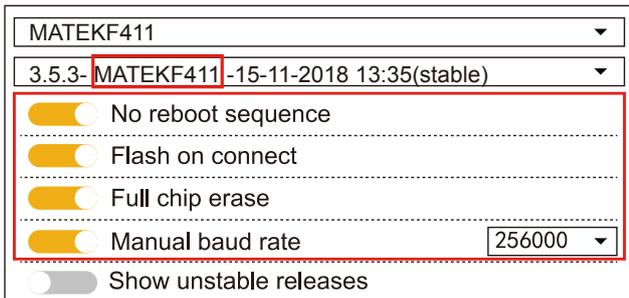
### RX2A PRO对码(S.BUS模式),示例遥控器(FLYSKY FS-i6)

按住接收机上的按钮不放然后上电, 绿色指示灯快速闪烁表示接收机已经进入对码模式, 用户可以松开按钮, 触发遥控器进入对码模式, 接收机的绿色指示灯熄灭, 红色指示灯常亮表示对码成功, 此时遥控器退出对码模式后接收机即可正常使用。



出厂已经刷BETAFLIGHT，请直接调参

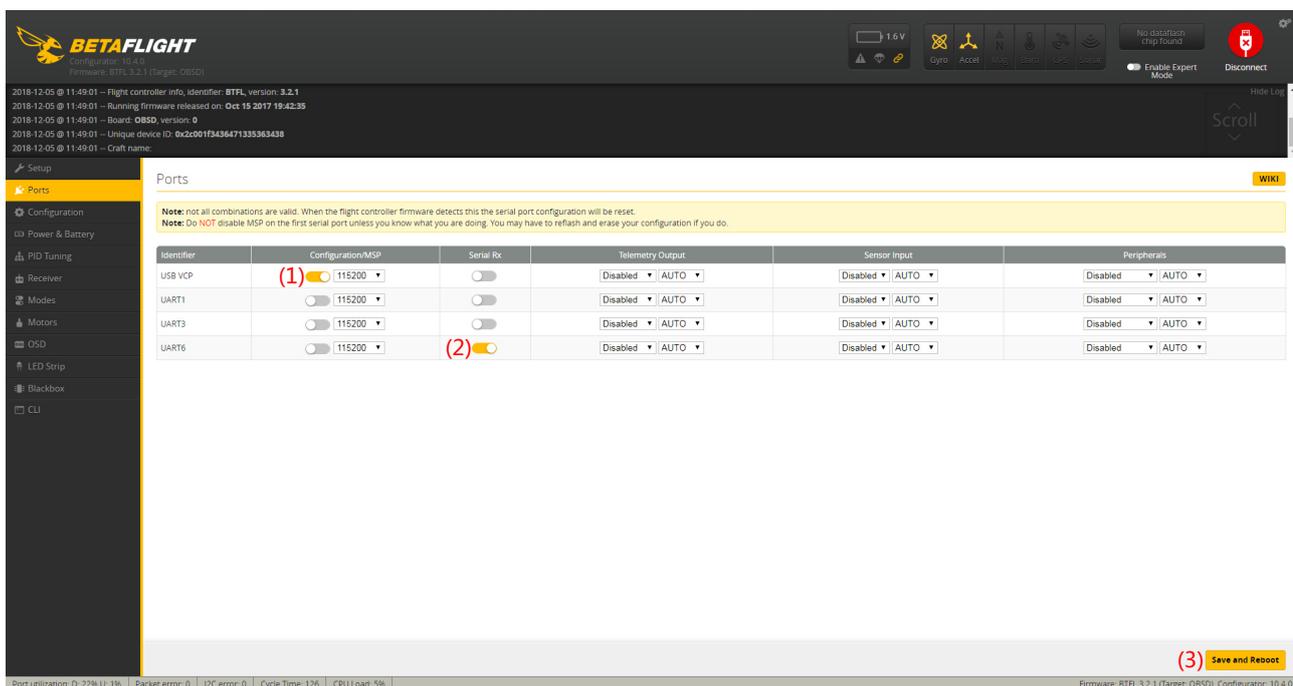
1.打开调参软件 ，然后点击  Firmware Flasher，选择固件版本



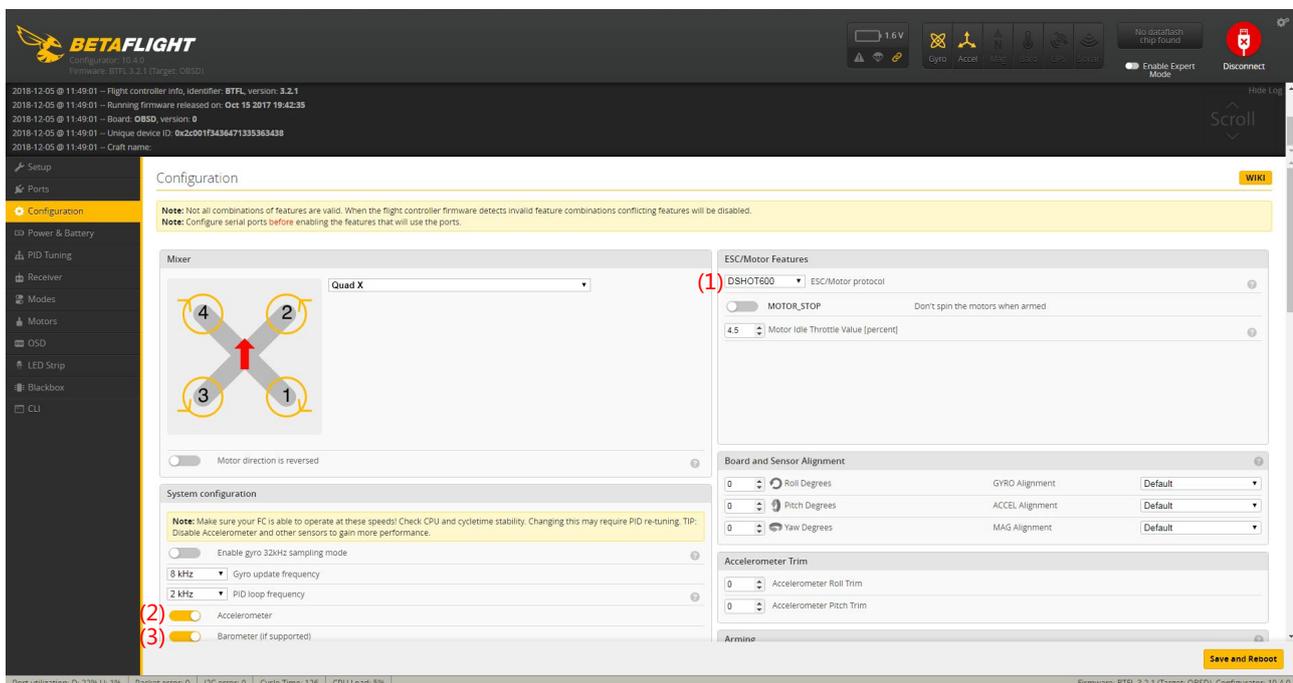
2.点击 **Load Firmware[Online]**，然后点击 **Flash Firmware** 下载固件到飞控，下载进度条完成以后，点击  进入调参界面

3.Setup，点击校准按钮 “Calibrate Accelerometer”

4.Port，打开UART6开关后保存



5.设置参数,选电调协议为DSHOT600,按顺序进行设置



**BETAFLIGHT** Configurator 10.4.0  
Firmware: BFL 3.2.1 (Target: OBSID)

2018-12-05 @ 11:49:01 - Flight controller info, identifier: BTFL, version: 3.2.1  
 2018-12-05 @ 11:49:01 - Running firmware released on: Oct 15 2017 19:42:35  
 2018-12-05 @ 11:49:01 - Board: OBSID, version: 0  
 2018-12-05 @ 11:49:01 - Unique device ID: 0x2c001f3436471335363438  
 2018-12-05 @ 11:49:01 - Craft name:

Setup  
Ports  
Configuration  
Power & Battery  
PID Tuning  
Receiver  
Modes  
Motors  
OSD  
LED Strip  
Blackbox  
CLI

**Other Features**

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 supported on your board.

- INFLIGHT\_ACC\_CAL In-flight level calibration
- SERVO\_TILT Servo gimbal
- SOFTSERIAL Enable CPU based serial ports
- SONAR Sonar
- TELEMETRY Telemetry output
- (4)  LED\_STRIP Multi-color RGB LED strip support
- DISPLAY OLED Screen Display
- CHANNEL\_FORWARDING Forward aux channels to servo outputs
- TRANSPONDER Race Transponder
- AIRMODE Permanently enable Airmode
- (5)  OSD On Screen Display
- ESC\_SENSOR Use KISS/BLHeli\_32 ESC telemetry as sensor
- ANTI\_GRAVITY Temporary boost I-Term on high throttle changes
- (6)  DYNAMIC\_FILTER Dynamic gyro notch filtering

**3D ESC/Motor Features**

- 3D 3D mode (for use with reversible ESCs)

**GPS**

- GPS GPS for navigation and telemetry

**Beeper Configuration**

- (7)  GYRO\_CALIBRATED Beeps when gyro has been calibrated
- (8)  RX\_LOST Beeps when TX is turned off or signal lost (repeat until TX is okay)
- (9)  RX\_LOST\_LANDING Beeps SOS when armed and TX is turned off or signal lost (autoland/autodisarm)
- (10)  PITCH\_BANGING Down servo during the Pitchmanoeuvre

(11) **Save and Reboot**

Port utilization: 0.22% U: 1% Packet error: 0 I2C error: 0 Cycle Time: 125 CPU Load: 5% Firmware: BFL 3.2.1 (Target: OBSID), Configurator: 10.4.0

## 6. PID设置

**BETAFLIGHT** Configurator 10.4.0  
Firmware: BFL 3.2.1 (Target: OBSID)

2018-12-05 @ 11:49:01 - Flight controller info, identifier: BTFL, version: 3.2.1  
 2018-12-05 @ 11:49:01 - Running firmware released on: Oct 15 2017 19:42:35  
 2018-12-05 @ 11:49:01 - Board: OBSID, version: 0  
 2018-12-05 @ 11:49:01 - Unique device ID: 0x2c001f3436471335363438  
 2018-12-05 @ 11:49:01 - Craft name:

Setup  
Ports  
Configuration  
Power & Battery  
PID Tuning  
Receiver  
Modes  
Motors  
OSD  
LED Strip  
Blackbox  
CLI

**PID Tuning**

Profile: Profile 1 Rateprofile: Rateprofile 1

Copy profile values Copy rateprofile values Reset all profile values Show all PIDs

(1) **PID Settings** Filter Settings

	Proportional	Integral	Derivative	RC Rate	Super Rate	Max Vel (deg/s)	RC Expo
Basic/Acro							
ROLL	40	40	30	1.00	0.70	667	0.00
PITCH	58	50	35	1.00	0.70	667	0.00
YAW	70	45			0.70	667	

Angle/ horizon Strength Transition

Angle 50  
Horizon 50  
Angle Limit 55

**PID Controller Settings**

0 D Setpoint Weight  
1 D Setpoint transition  
Vbat PID Compensation

**Anti Gravity Gain** Anti Gravity Threshold 350

**Rates Preview**

800 deg/s  
0 deg/s  
0 deg/s  
0 deg/s  
667 deg/s  
667 deg/s  
667 deg/s

Throttle MID 0.50 Throttle EXPO 0.00

Refresh Save

Port utilization: 0.37% U: 3% Packet error: 0 I2C error: 0 Cycle Time: 125 CPU Load: 5% Firmware: BFL 3.2.1 (Target: OBSID), Configurator: 10.4.0

**BETAFLIGHT** Configurator 10.4.0  
Firmware: BFL 3.2.1 (Target: OBSID)

2018-12-05 @ 11:49:01 - Flight controller info, identifier: BTFL, version: 3.2.1  
 2018-12-05 @ 11:49:01 - Running firmware released on: Oct 15 2017 19:42:35  
 2018-12-05 @ 11:49:01 - Board: OBSID, version: 0  
 2018-12-05 @ 11:49:01 - Unique device ID: 0x2c001f3436471335363438  
 2018-12-05 @ 11:49:01 - Craft name:

Setup  
Ports  
Configuration  
Power & Battery  
PID Tuning  
Receiver  
Modes  
Motors  
OSD  
LED Strip  
Blackbox  
CLI

**PID Tuning**

Profile: Profile 1 Rateprofile: Rateprofile 1

Copy profile values Copy rateprofile values Reset all profile values Show all PIDs

(2) **Filter Settings**

**Tuning tips**  
IMPORTANT: It is important to verify motor temperatures during first flights. The higher the filter value gets the better it may fly, but you also will get more noise into the motors. Default value of 100Hz is optimal, but for noiser setups you can try lowering Dterm filter to 50Hz and possibly also the gyro filter.

**Profile independent Filter Settings**

- (3)  90 Gyro Lowpass 1 Cutoff Frequency [Hz]
- PT1 Gyro Lowpass 1 Filter Type
- 0 Gyro Notch Filter 1 Center Frequency [Hz]
- 0 Gyro Notch Filter 1 Cutoff Frequency [Hz]
- 0 Gyro Notch Filter 2 Center Frequency [Hz]
- 0 Gyro Notch Filter 2 Cutoff Frequency [Hz]

**Profile dependent Filter Settings**

- (4)  100 D Term Lowpass 1 Cutoff Frequency [Hz]
- PT1 D Term Lowpass 1 Filter Type
- (5)  260 D Term Notch Filter Center Frequency [Hz]
- 160 D Term Notch Filter Cutoff Frequency [Hz]
- 0 Yaw Lowpass Cutoff Frequency [Hz]

Refresh (6) Save

Port utilization: 0.37% U: 3% Packet error: 0 I2C error: 0 Cycle Time: 125 CPU Load: 5% Firmware: BFL 3.2.1 (Target: OBSID), Configurator: 10.4.0

## 7.模式设置

**Modes** WIKI

Use ranges to define the switches on your transmitter and corresponding mode assignments. A receiver channel that gives a reading between a range min/max will activate the mode. Remember to save your settings using the Save button.

Show/Hide unused modes

<b>ARM</b> Add Range	AUX 1 Min: 1700 Max: 2100	<input type="text" value="900"/> <input type="text" value="2100"/>
<b>ANGLE</b> Add Range	AUX 1 Min: 900 Max: 2100	<input type="text" value="900"/> <input type="text" value="2100"/>
HORIZON Add Range		
ANTI GRAVITY Add Range		
HEADFREE Add Range		
HEADADJ Add Range		
BEEPER Add Range		

(3) **Save**

Port utilization: 0.21% U: 2% Packet error: 0 I2C error: 0 Cycle Time: 132 CPU Load: 5%

Firmware: BTFL 3.2.1 (Target: G8SD), Configurator: 10.4.0

## 7.LED设置

**LED Strip** WIKI

The flight controller can control colors and effects of individual LEDs on a strip. Configure LEDs on the grid, configure wiring order then attach LEDs on your aircraft according to grid positions. LEDs without wire ordering number will not be saved. Double-click on a color to edit the HSV values.

1)  Remaining

LED Functions:  
Function: None  
Overlay:  
 Warnings  
 Indicator (uses position on matrix)

LED Orientation (Modes & Orientation) and Color:

N	U	0	1	2
W	E	4	5	6
S	D	8	9	10
		12	13	14
		16	17	18

LED Strip Wiring

Wire Ordering Mode

LEDs without wire ordering number will not be saved.

(2) **Save**

Port utilization: 0.21% U: 1% Packet error: 0 I2C error: 0 Cycle Time: 127 CPU Load: 5%

Firmware: BTFL 3.2.1 (Target: G8SD), Configurator: 10.4.0

产品名称	工厂编码	产品名称	工厂编码
90GTI(HD) NO RX	PNP.90GTI(HD).NO RX	2035桨	PROP.2035.4.WHITE
90GTI(FPV) NO RX	PNP.90GTI(FPV).NO RX	2045桨	PROP.2045.4.WHITE
90GTI(HD) AC2000	PNP.90GTI(HD).AC2000	3050桨	PROP.3050.3.WHITE
90GTI(FPV) AC2000	PNP.90GTI(FPV).AC2000	XT1406-3600KV	MOTOR.XT1406-3600KV
130GTI(HD) NO RX	PNP.130GTI(HD).NO RX	XT1105-5000KV	MOTOR.XT1105-5000KV
130GTI(FPV) NO RX	PNP.130GTI(FPV).NO RX	4in1电调20A(KK飞塔配件)	ESC.KK TOWER 20A
130GTI(HD) AC2000	PNP.130GTI(HD).AC2000	F411+OSD飞控(V2)	FC.F411+OSD(V2)
130GTI(FPV) AC2000	PNP.130GTI(FPV).AC2000	图传(KK飞塔配件)	VTX.KK TOWER
90GTI KIT	KIT.90GTI	3层飞塔螺丝包(KK飞塔配件)	PART.KK TOWER SCREW(3 LAYER)
130GTI KIT	KIT.130GTI	连接线(KK飞塔配件)	PART.KK TOWER WIRE
电池11.4V 530mAh 80C	BAT.11.4V 530MAH 80C	90/130GTI头罩	PART.90/130GTI CANOPY
电池14.8V 650mAh 50C	BAT.14.8V 650MAH 50C	90GTI碳底板	PART.90GTI BOTTOM PLATE
C1200	CAM.C1200	130GTI碳底板	PART.130GTI BOTTOM PLATE
90GTI半包围保护架	PART.90GTI PROTECTOR BUMPER(HALF)	90GTI塑料配件	PART.90GTI PLASTIC PART
90GTI全包围保护架	PART.90GTI PROTECTOR BUMPER(ALL)	小号TPU电池保护座	PART.TPU SMALL LANDING GEAR
3.1寸半包围保护架	3.1 INCH PROTECTOR BUMPER(HALF)	天线(KK飞塔配件)	PART.KK TOWER ANTENNA

- 1.客户收到货以后，发现产品不能正常使用，返厂检验为质量问题的，无偿提供维修服务。
- 2.对不正当操作造成产品损坏的，经检验可以维修的情况下，提供有偿维修服务。
- 3.国内客户请与售后服务人员联系，海外客户请与经销商联系。

### PNP/RTF套机出厂检测报告

#### 飞行测试

- 遥控器功能正常
- 测试飞行状态良好
- 摄像头清晰度良好
- 图像传输质量良好

检测员：\_\_\_\_\_

#### 装箱报告

- PNP
- RTF
- 机体
- 遥控器
- 机体与遥控器ID相符
- 机体部件安装到位无缺失
- 热缩管封装到位
- 说明文件齐全
- 配件包齐全，共 包

装箱员：\_\_\_\_\_