

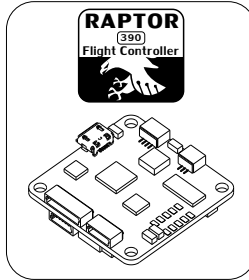
Raptor390 Tower F3 FC



感谢您购买本产品！本产品功率强大，错误的使用可能导致人身伤害和设备损坏，强烈建议您在设备前仔细阅读本说明书并保存，严格遵守规定的操作程序。我们不承担因使用本产品或擅自对产品进行改造所引起的一切责任，包括但不限于对附带损失或间接损失的赔偿责任。我们有权在不通知的情况下变更产品的设计、外观、性能及使用要求。

01 主要特性

- 外形尺寸36x36mm，安装尺寸30.5x30.5mm，Φ3mm；
- 重量：9.5g；
- 工作电压：7-16V(或2-4S锂电池电压)；
- 使用ARM Cortex M4内核的STM32F303的处理器，工作频率高达72MHz；内置浮点运算单元，飞行控制运算能力强大；
- 支持PPM、PWM、SBUS等最主流遥控/接收模式；
- 飞控集成OSD；集成5V、12V 以及电池电压(VBAT)输出，方便给图传、摄像头、蜂鸣器、LED灯等外设供电；
- 只保留飞行所需的极为简单的接口，所有插接头均配有连接线，给您前所未有的安装体验；
- 飞控通过USB连接电脑，可升级固件，操作简洁；完全支持OneShot 电调，为PID参数调节提供充分支持；
- 只需连接ESC的单根白色信号线到飞控对应的信号焊盘，焊接简单快捷。



02 产品规格

型号	工作电压	重量(供参考)	尺寸(供参考)
FK-D1D1	7-16V或2-4S锂电池电压	9.5g	36x36x7.5mm

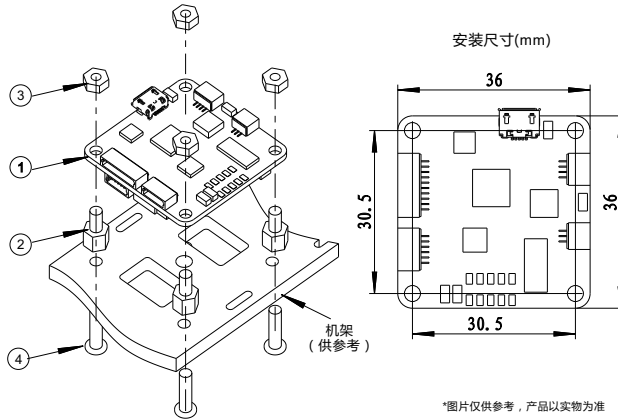
03 元件清单/安装尺寸

序号	描述	数量
1	猛禽390 Tower F3飞控	1
2	尼龙支撑柱 M3*5+6	4
3	尼龙螺母 M3	4
4	尼龙螺钉 M3*12	4

推荐使用飞盈佳乐猛禽390 四合一电调，安装更方便，匹配更完美；

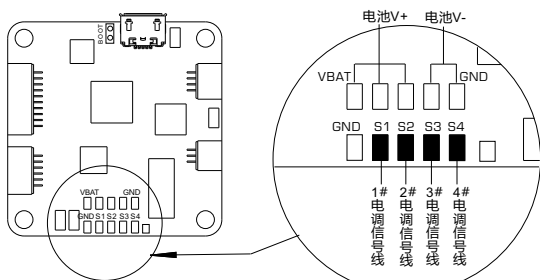
为实现快速安装，额外提供了：
 一根10Pin线束（10p SH1.0端子），用于PWM/PPM接口；
 一根3Pin线束（4p SH1.0端子），用于SBUS接口；
 一根6Pin线束（6p SH1.0端子），用于LED及蜂鸣器；
 三根4Pin线束（4p SH1.0端子），用于不同的图传；
 两根3Pin线束（3p SH1.0端子），用于不同的摄像头；

注意：对于快速安装线束，连接前务必确认您设备接口的线序与飞控接口的线序是对应的关系。如果您的图传或摄像头不适用配件连接线的端子，请改装连接线以适用于您的设备。



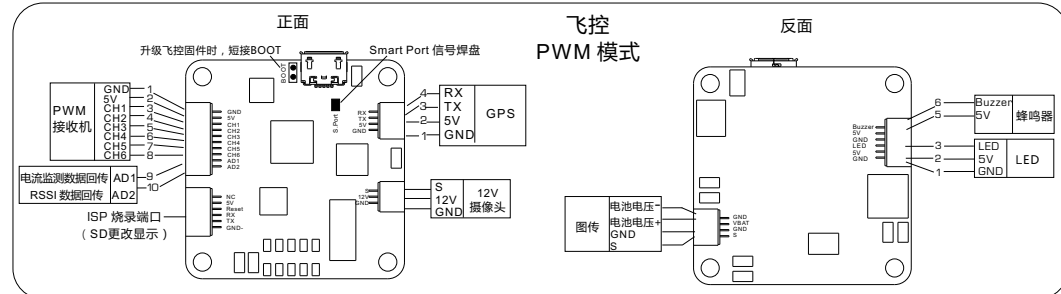
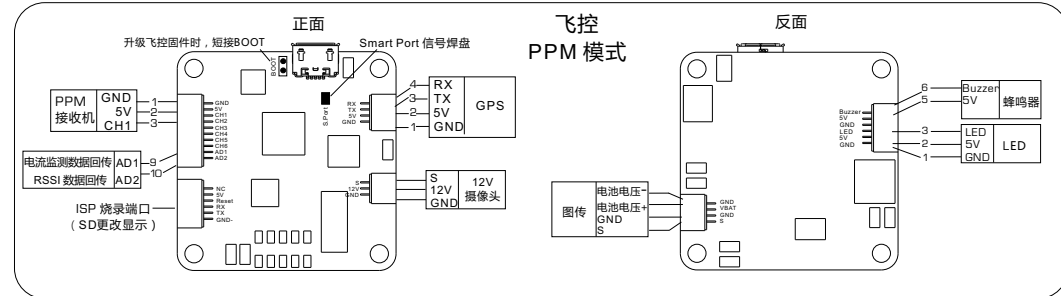
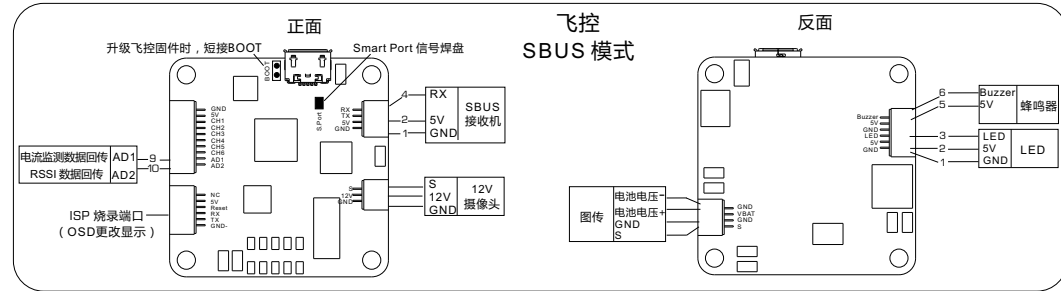
*图片仅供参考，产品以实物为准

04 连线示意图



- VBAT, GND焊盘只需要连接任意一组，给飞控供电；
- S1-S4焊盘，只需要焊接电调的白色信号线；
- 所有焊接要求良好的焊接技术，任何时候都需要避免因焊接而造成元件或线材之间短路；
- 为避免短路和漏电，请确保连接处绝缘良好；
- 接电之前务必再次检查极性是否正确；

05 飞控模式及连线示意图



06 注意事项

- 无论任何时候都要注意极性，供电之前一定要反复检查。
- 在插拔或者做任何连接时，请关闭电源。
- 电源供电只能有一个VCC，千万不要连接两个以上的电源。
- 飞控电源供电可以由电池或者额外的分电板供电。
- 不要把GND、VCC之间互相短接，这样会损坏飞控（短路）。
- 不要把GND、VCC接入到输入或者输出信号。
- 不要把输入或者输出接口接入到其它的输入或者输出接口，除非特殊情况。
- 5V 12V只能用于低功率设备（5V最大1A,12V最大500mA，12V只建议用于摄像头）。
- 飞控要远离一切磁性材料。
- 可以做一些减震措施尽量避免震动，因加速度计/陀螺仪对震动很敏感。

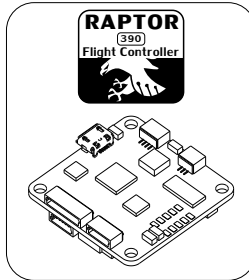
Raptor390 Tower F3 FC



Thank you for purchasing our product. Any Improper operation may cause personal injury damage to the product and related equipments. This high power system for RC model can be dangerous, we strongly recommend reading the user manual carefully and completely. We will not assume any responsibility for any losses caused by unauthorized modifications to our product. We have the right to change the design, appearance, performance and usage requirements of the product without notice.

01 Main features

- Size: 36x36x7.5mm; install dimension: 30.5x30.5mm, Φ3mm
- Weight : 9.5g;
- Operating Voltage: 7-16V (or 2-4S LiPoVBAT) ;
- STM32F3 Processor with hardware floating point unit for efficient flight calculations and faster ARM-Cortex M4 core. Operation frequency up to 72MHz.
- Supports SBUS, PPM, PWM etc. receivers.
- FC integrated OSD, also integrated 5V, 12V, and battery voltage (VBAT) output, Easy power supply to Image transmitter, camera, buzzer, LED and other peripheral ;
- Only keep very simple connectors for flight, provides all kind of cables for connectors on FC , to give you an unprecedented experience of installation;
- Update the FC firmware by connect computer via USB. Full support for OneShot ESCs for easy PID tuning and a sharper response.
- Only need to connect the single signal wires to the pads on the flight controller PCB, easy to connect .



02 Specification

Model	Operating Voltage	Weight (For reference)	Size (For reference)
FK-D1D1	7-16V Or 2-4S LiPo VBAT	9.5g	36x36x7.5mm

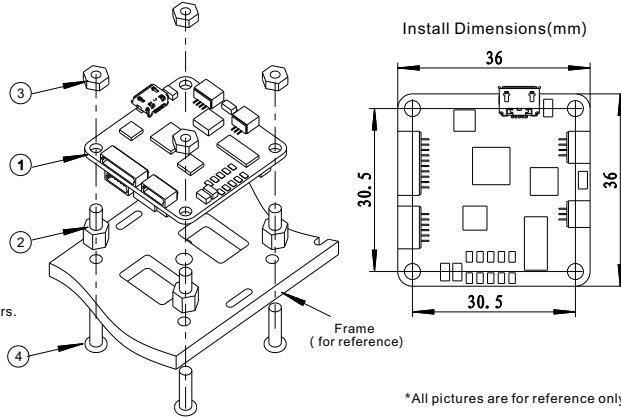
03 Part list / Install Dimensions

Item	Description	Qty.
1	Raptor390 Tower F3 Flight Controller	1
2	Nylon spacer M3*5+6	4
3	Nylon Nut M3	4
4	Nylon screw M3*12	4

Recommend Flycolor Raptor390 4in1 ESC. Assembly will be more simple.

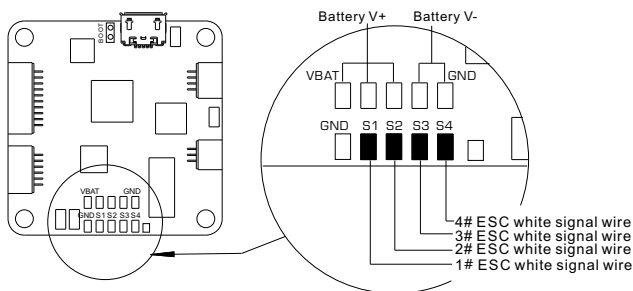
For quick plug, Flight Controller additionally provide: :
 one 10p cable (10-pin SH1.0 terminal) for PWM/PPM connectors;
 one 3p cable (4-pin SH1.0 terminal) for SBUS connector;
 one 6p cable (6-pin SH1.0 terminal) for LED and Buzzer;
 three 4p cables (4-pin SH1.0) for different brand Image Transmitters.
 two 3p cables (3-pin SH1.0) for different brand Cameras;

Attention: For these quick plug cables, please confirm the wire sequences on your devices' connector are corresponding with the Flight controller before connecting. If the terminals are not fit your devices, please make a modified connection to fit.



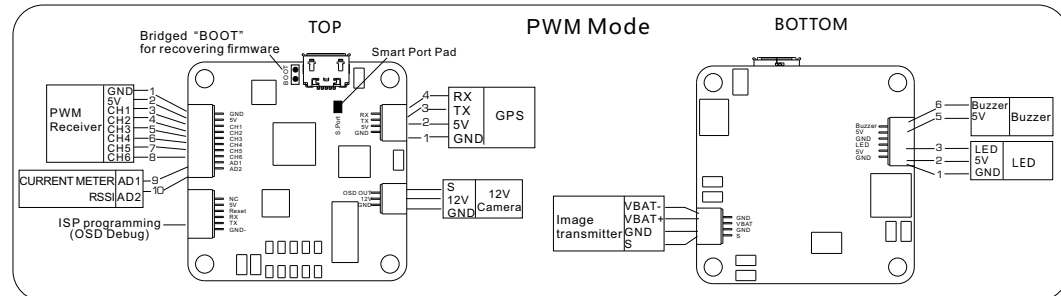
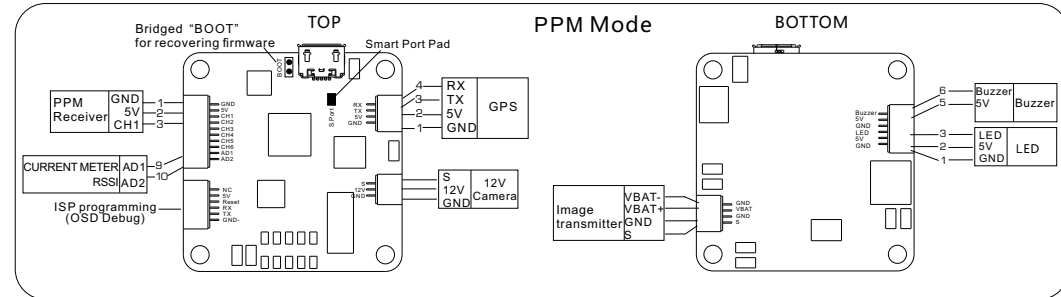
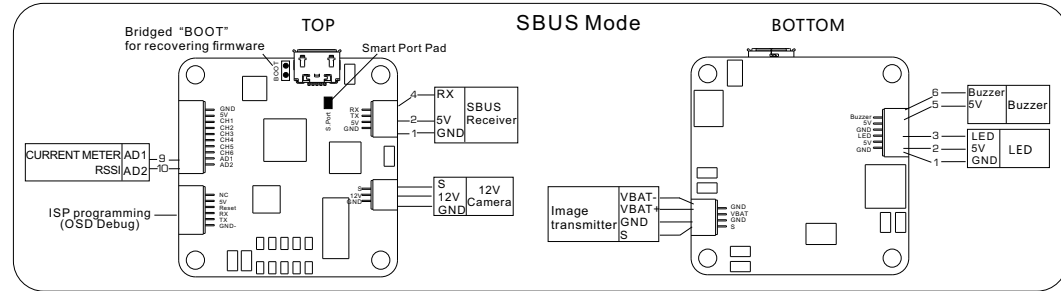
*All pictures are for reference only

04 Wiring Diagram



- Only need to connect any one group of VBAT, GND pads to battery, power supply the FC.
- Only need to connect the white signal wires on ESC to S1-S4 pads.
- All welding requires good welding technology, short circuit between the element or the wire should be avoided at any time.
- Please ensure all solder joints are insulated with heat shrink where necessary.
- Please double-check the polarity is correct before power up.

05 Receiver modes & Connect method



06 Attention

- Observe polarity at all times. Check and double check before applying power.
- Power off before unplugging, plugging in or making any connections.
- Connect only one source of power to the VCC pins. Do not connect more than one source of power to two or more of the VCC pins.
- The flight controller can be powered by battery or additional PDB.
- Do not connected GND, VCC to each other (short circuit).
- Do not connect GND, VCC to any inputs or outputs unless specifically stated.
- Do not connect any input or output to any other input or output unless specifically stated.
- 5V, 12V supply is for low-current use only (5V 1A MAX, 12V 500mA MAX, 12V is suggested for camera only).
- Keep magnets away from the Flight Controller.
- Do everything you can to prevent vibrations.