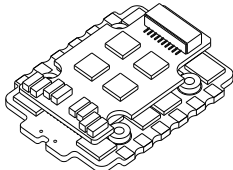


X-CROSS
Mini
4in1 ESC



*图片仅供参考，产品以实物为准



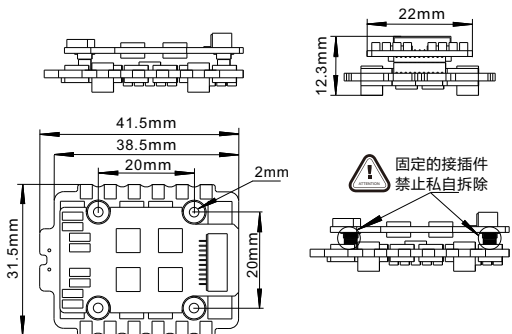
感谢您使用本产品！本产品功率强大，错误的使用可能导致人身伤害和设备损坏，强烈建议您在设备使用前仔细阅读本说明书并保存，严格遵守规定的操作程序。我们不承担因使用本产品或擅自对产品进行改造所引起的任何责任，包括但不限于对附带损失或间接损失的赔偿责任。我们有权在不经通知的情况下变更产品的设计、外观、性能及使用要求。

01 产品特点

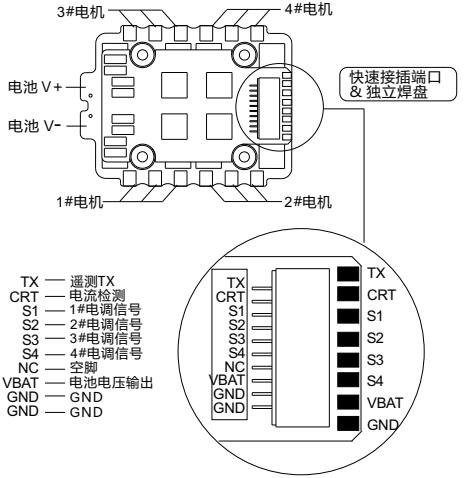
- ARM 32-bit Cortex 核心MCU，工作频率高达48MHz。
- BLHeli-32 固件，超快响应速度，卓越的性能。
- 20x20安装孔，轻巧方便，支持更大功率负载，适合多旋翼的暴力飞行。
- 更大功率的设计，颠覆性双层结构，功率和控制部分独立。在有限的体积下，突破电流限制。
- 精心优化的走线和元件布局；
- 内置电流计，Vbat电池电压输出。
- 快速插接端口与独立焊盘并存，满足不同的习惯和个性化需求。
- 电调上电自动检测油门信号，支持普通PWM油门模式（1-2ms）的脉宽输入、Oneshot125（125-250us）、Oneshot42（41.7-83.3us）和 Multishot（5-25us）。
- 支持所有Dshot和Proshot数字信号
- Damped light再生制动，使得效率更高，油门从大到小变化时电机减速响应更加迅速，稳定性和灵活性显著加强。
- 通过更换3mm安装配件，可以转换为M3的安装螺丝，适配不同机型。

02 规格参数

●型号:	X-Cross Mini 4in1		
●持续电流:	30A	45A	60A
●瞬时电流:	40A (10s)	55A (10s)	70A (10s)
●BEC:	No		
●锂电池节数:	3-6S		
●重量:	14.5g		
●尺寸(供参考):	41.5x31.5x12.3mm		
●安装孔:	20x20mm, M2		
●调参软件:	BLHeliSuite32		
●电调固件:	Flycolor_X_Cross_BL_32		
●典型应用:	170-450mm 多旋翼		

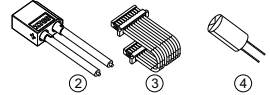
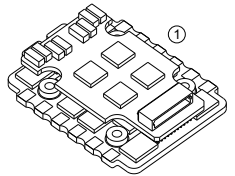


03 端口示意图



04 零件清单

序号	零件名称	数量
①	X-Cross Mini 4in1	1
②	XT60电源线	1
③	10P&10P 硅胶线束	1
④	电解电容	1
	2mm 安装配件	1套
	3mm 安装配件	1套

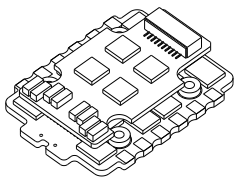


- 为加强更好滤波效果，请将配件包中的电解电容，焊接在正负极两端。
- 对于快速安装线束，连接前务必确认线序与飞控接口的线序是对应关系。如果不对应，请改装连接线以适用于您的飞控。

05 注意事项

- 每次上电会自动检测输入的油门信号,然后执行相应的油门模式；
- 首次使用无刷电调或更换遥控设备后需要进行油门行程校准；Dshot 模式时，将不再需要校准油门；
- 请勿刷写除“Flycolor_X_Cross_BL_32”以外的固件以免损坏电调；
- VBAT 为电池电压，如果连接至其它设备，务必确认工作电压是否匹配；
- CRT.(Current)为电流检测口，可连接至飞控对应电流检测口；
- 无论任何时候都要注意极性，供电之前一定要反复检查；
- 在插接或者做任何连接时，请关闭电源；
- 请不要超出ESC工作电流、电压范围使用；
- 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；
- 为避免造成产品损坏，请勿私自拆开或者分离两个PCB，私拆不保；
- 请确保所有电线和连接部件绝缘良好，避免短路造成产品损坏；
- 请避免在潮湿、高温等恶劣环境下使用产品，避免造成产品损坏；
- 如需更多信息，请联系飞盈佳乐售后或者技术支持。

X-CROSS
Mini
4in1 ESC



*All pictures are for reference only



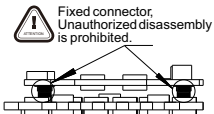
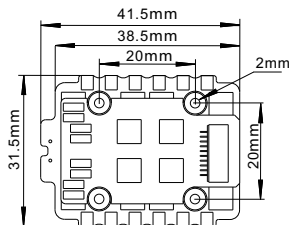
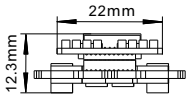
Thank you for using our product. Any improper operation may cause personal injury damage to the product and related equipments. This high power system for RC model can be dangerous, we strongly recommend reading the user manual carefully and completely. We will not assume any responsibility for any losses 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

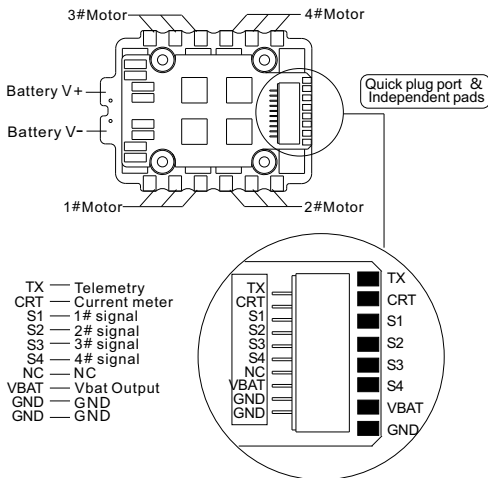
- ARM 32-bit Cortex MCU, frequency up to 48 MHZ.
- BLHeli_32 firmware, which is designed for superior functionality and performance.
- 20x20 mounting holes, light and convenient. Supports higher power load, more suitable for violent flight of drone.
- Higher power design, subsversive double-layer structure, independent power and control parts; Breaking current limit in limited volume.
- Carefully optimized routing and component layout.
- 4in1 ESC built-in current sensor, VBAT output.
- Quick plug port coexists with independent pads, meet different habits and personalized needs.
- Supports regular 1-2ms pulse width input, as well as Oneshot125 (125-250us), Oneshot42 (41.7-83.3us) and Multishot (5- 25us). The input signal is automatically detected by the ESC upon power up.
- All Dshot and Proshot signals are supported .
- Damped light does regenerative braking, causing very fast motor retardation, and inherently also does active freewheeling.
- By replacing the 3mm Mounting Accessories, it can be converted into M3 mounting screws to adapt to different frames.

02 Specification

●Model:	X-Cross Mini 4in1		
●Con. Current:	30A	45A	60A
●Burst Current:	40A (10s)	55A (10s)	70A (10s)
●BEC:	No		
●LiPo cells:	3-6S		
●Weight:	14.5g		
●Size:	41.5x31.5x12.3mm		
●Mounting holes:	20x20mm, M2		
●Configurator:	BLHeliSuite32		
●Firmware :	Flycolor_X_Cross_BL_32		
●Application:	170-450mm Multi Drone		

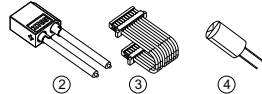
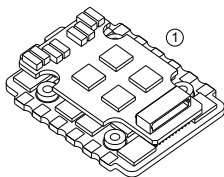


03 Ports diagram



04 Part list

Item	Parts description	Qty.
①	X-Cross Mini 4in1	1
②	Power cable+XT60	1
③	10P&10P SH1.0 cable	1
④	Low ESR Capacitor	1
	2mm Mounting Accessories	1 set
	3mm Mounting Accessories	1 set



- To enhance filter performance , please solder included capacitor to the positive and negative terminals on the ESC.
- Please confirm the pinout and sequences between flight controller and ESC before applying power. Modify as necessary.

05 Attention

- ESC will automatically detect the input throttle signals every time as soon as it powered on, and then execute the corresponding signal-receiving mode.
- User need to calibrate the throttle range when starting to use a new ESC or another transmitter. When the input signal is Dshot, throttle calibration is disabled.
- Please don't flash any other firmware except "Flycolor_X_Cross_BL_32".
- VBAT is battery output, make sure your device operating voltage is matched if you want to use VBAT.
- CRT.(Current)port can be connect to the port on F.C for current meter.
- Observe polarity at all times. Check and double check before applying power.
- Power off before unplugging, plugging in or making any connections.
- Please do not exceed the current & voltage range.
- All welding requires good welding technology, short circuit between the element or the wire should be avoided at any time.
- To avoid product damage, do not disassemble or separate two PCBs without permission. No warranty for unauthorized disassembly.
- Please ensure that all wires and connecting parts are well insulated to avoid product damage due to short circuit.
- Never use this product in harsh environments such as humidity, high temperature, and so on to avoid product damage.
- Please contact Flycolor sales or technical support for more information.