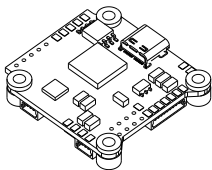


X-TOWER 2

F7 Flight Control



*图片仅供参考，产品以实物为准



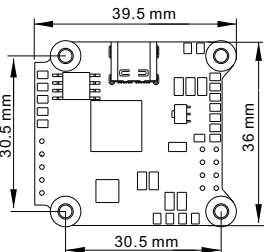
感谢您使用本产品！本产品功率强大，错误的使用可能导致人身伤害和设备损坏，强烈建议您在投入使用前仔细阅读本说明书并保存，严格遵守规定的操作程序。我们不承担因使用本产品或擅自对产品进行改造所引起的任何责任，包括但不限于对附带损失或间接损失的赔偿责任。我们有权在不经通知的情况下变更产品的设计、外观、性能及使用要求。

01 参数及特点

- 工作电压：3-6S锂电池；
- 重量：9.5g (不含配件)；
- 尺寸：39.5x36x7.8mm；
- 安装孔：30.5x30.5mm,M3；
- BF飞控固件：STM32F7X2 (配置文件：FLYCOLORF7)；
- BF飞控型号：FLYCOLORF7；
- MCU：STM32F722；
- 陀螺仪：MPU-6000 SPI；
- 蓝牙名称：FC_Bluetooth；
- USB：Type C；
- 支持 SBUS,SPEKTRUM1024/2048等类型接收机；
- 飞控集成3.3V、5V、10V，方便给接收机、图传、摄像头、蜂鸣器、LED灯等外设供电；
- 4路LED端口，独立5V BEC供电，使得供电更安全可靠；
- 可支持BetaFlight 调参软件调整LED灯带颜色。

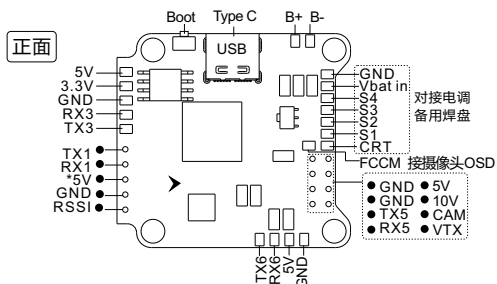
02 零件清单/尺寸

- F7飞控 1x
- 硅胶减震垫 4x
- O型橡胶圈 4x
- ESC/飞控连接线 1x
- LED连接线 4x



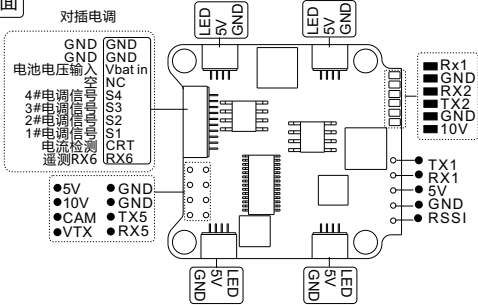
- 对于快速安装线束，连接前务必确认您设备接口的线序与飞控接口的线序是对应关系。如果不适用，请改装连接线以适用于您的设备。
- 请保持产品器件与机架或者其他产品器件之间有足够的的安全距离，避免短路造成产品损坏；

03 端口示意图



*5V：插入USB此处有5V输出(方便在不通电的情况下调试接收机)；
其余5V/10V端口均需电池上电才有电压输出

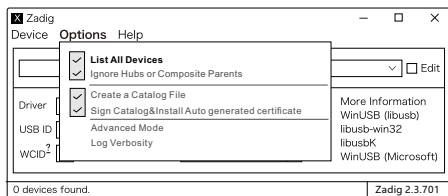
反面



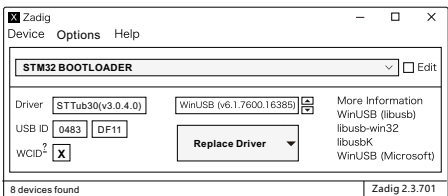
04 飞控固件升级

飞控需使用DFU模式升级固件。首次使用需按照以下步骤使用Zadig工具替换驱动，方能使用DFU模式。

- 1.运行Zadig 工具;
- 2.按住飞控上的BOOT键不放，使用TypeC USB线将飞控与电脑连接;
- 3.点击Options,选择List All Devices;

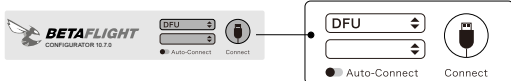


- 4.在下拉选项中选择“STM32 BOOTLOADER”，再点击Replace Driver;
- 5.直到提示成功，关闭Zadig，断开飞控USB连接;



(注意：如果您之前运行过以上步骤，之后将不再需要重复，直接从第六步开始)

- 6.打开Betaflight; 按住飞控上的Boot键，将飞控USB与电脑连接，看到Betaflight 更改为DFU模式连接，此时可进行固件刷写;



- 7.可以通过两种方式刷固件:

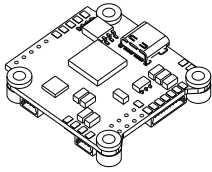
- 1)加载本地固件：(推荐，需提前下载或询问Flycolor) 先加载STM32F7X2.hex, 再连接后在CLI窗口输入FLYCOLORF7.config文件中内容，并输入save保存;
- 2)在线加载固件：飞控型号选择FLYCOLORF7，再选择对应的固件版本，从网络加载固件。

05 注意事项

- 请勿刷写其它的固件和配置，以免损坏飞控；
- 蓝牙端口固定为UART4的MSP；
- SBUS 和 SPEKTRUM 接收机适用于所有UART口 (UART4除外,UART4固定为蓝牙)，需手动将需要的UART口内容，并输入save保存； SBUS推荐使用UART1; SPEKTRUM推荐使用UART3;
- 遥测端口推荐使用UART6, 使用电调/飞控连接线直接对接即可；
- 飞控要远离一切磁性材料；
- 当检测到的电压和电流与实际有偏差时，可以调节Betaflight-Power&Battery 中电压计和电流计的Scale值；
- 飞控上5V 10V均为输出，只能用于低功耗设备 (5V最大3A,10V最大1.5A)；
- 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Flycolor售后或技术支持。

X-TOWER 2

F7
Flight Control



*All pictures are for reference only



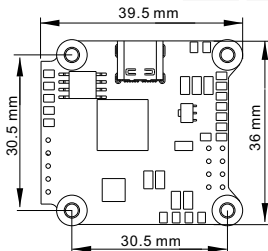
Thank you for using our product. Any improper operation may cause personal injury damage to the product and related equipments. This high power system for RC model can be dangerous, we strongly recommend reading the user manual carefully and completely. We will not assume any responsibility for any losses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

- LiPo cells: 3-6S.
- Weight: 9.5g (Without accessories).
- Dimension: 39.5x36x7.8mm.
- Install holes: 30.5x30.5mm, M3.
- Betaflight FC firmware: STM32F7X2; (Config.: FLYCOLORF7).
- Betaflight FC board: FLYCOLORF7.
- MCU: STM32F722.
- Gyro : MPU-6000 SPI.
- Bluetooth : FC_Bluetooth.
- USB: Type C.
- Supports SBUS, SPEKTRUM1024/2048 etc. remote control / receiving mode.
- FC integrated 3.3V, 5V, 12V for receiver, VTX, camera, buzzer, LED and other peripheral devices.
- 4-way led port, independent 5V BEC power supply, making the power supply more safe and reliable.
- Supports Betaflight Configurator to adjust the LED color.

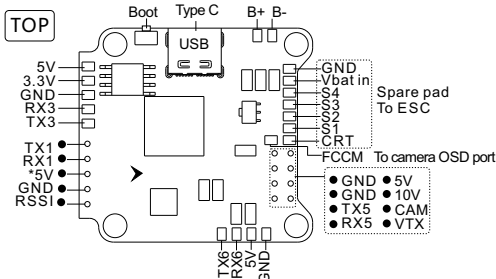
02 Part list / Install Dimensions

- F7 Flight Control 1x
- Silicone vibration absorber 4x
- O-Ring 4x
- ESC /FC connecting wire 1x
- LED wire 4x



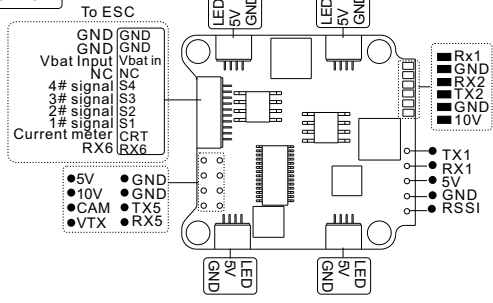
- For these quick plug cables, please confirm the wire sequences on your devices' connector are corresponding with the Flight control's before connecting. If the terminals are not fit your devices, please make a modified connection to fit.
- Please ensure enough safety space between the FC& ESC or other devices, as short circuit will damage the product.

03 Ports diagram



*5V: 5V output here after inserting USB, (it is convenient to debug the receiver without power on); the other 5V / 10V ports need battery power before voltage output.

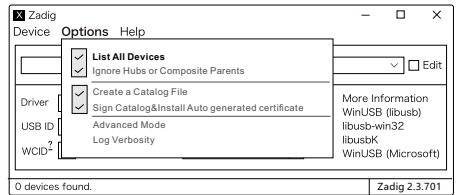
BOTTOM



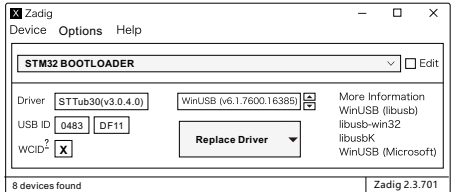
04 Load firmware for FC

You need to use DFU mode to recover firmware for Flight control, and need a software tool called Zadig to replace the driver for you FC when you load firmware at the first time.

1. Start the Zadig software tool;
2. Press and hold the "BOOT" on the FC, connect the FC to the PC.
3. Click "Options", and select "List All Devices".

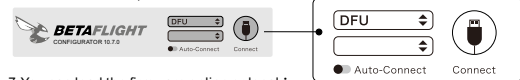


4. Then select "STM32 BOOTLOADER", Then click "Replace Driver"
5. Close the Zadig software tool when replace successfully, Then disconnect the FC from the PC.



(Notice: If you've run the above steps before, then you don't need to repeat, starting directly from the 6th step)

6. Start the Betaflight on the PC; Press and hold the "BOOT" on the FC, connect the FC to the PC, then the FC is connected in the "DFU" mode, then you can load the firmware;



7. You can load the firmware online or local :

- 1) Local (recommended, it needs to download in advance or ask for Flycolor): First load the STM32f7x2.hex file, then connect and input the contents of FLYCOLORF7.config file in the CLI, and enter "save".
- 2) Online: Select FC board FLYCOLORF7, and select the correct firmware version for the board, then load the firmware online.

05 Attentions

- Please don't load any other firmware or config. for Flight Control .
- The Bluetooth port is fixed as MSP of UART4.
- SBUS and Spektrum receivers are applicable to all UART ports (except UART4, which is fixed to Bluetooth). It is required to manually turn on the "Serial RX" of the required UART port.
- UART6 is recommended for telemetry port, which can be directly connected with ESC / Flight Control connecting wire.
- Flight Control should be far away from all magnetic materials.
- If there is any deviation between the detected voltage/current with actual situation, you can adjust the scale value in the Betaflight-Power&Battery
- 5V ,10V supply is for low-current use only(5V 3A MAX, 10V 1.5mA MAX).
- 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.