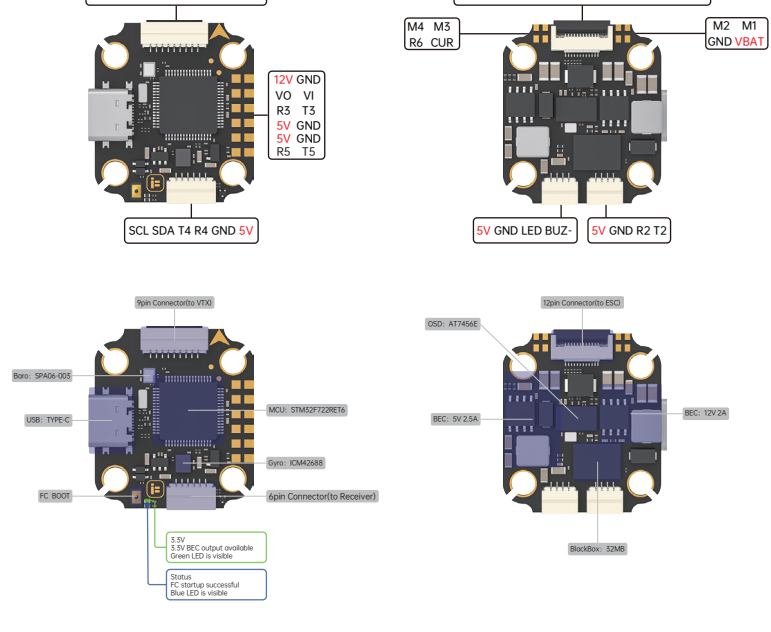


# iFlight Borg F7 Mini FC Wiring diagram

## Parameters:

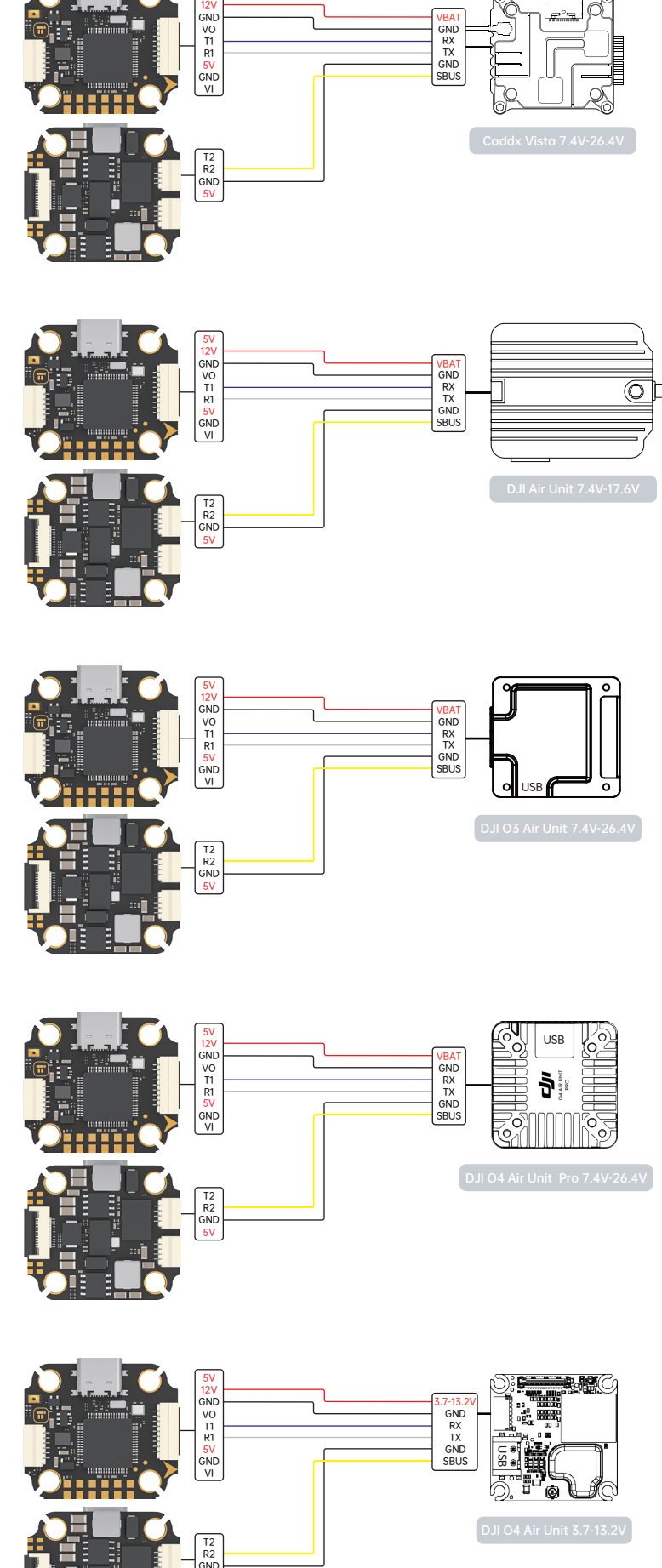
FC Specifications  
Input voltage: 4-8S, Support LiHV battery  
Dimensions: 27\*50.6mm  
Mount pattern: 20\*20mm  
Weight: 6.8g  
MCU: AT32F722ET6  
Gyro: ICM42688  
Baro: SPA06-003  
OSD: AT7456E (LGA)  
Blackbox: 52MB  
Motor outputs: 4  
IOC: Yes  
BEC: 5V 2.5A, 12V 2A (12V with VTX switch)  
LED Strip: Supported  
Sleep: Yes  
VTX protocol: Support DJI MSP/SmartAudio/RCRampHDZero  
UARTs: 6  
Uart: 6\*UART (UART1, UART2, UART3, UART4, UART5, UART6)  
UART1: VTX HD / Analog  
UART2: Receiver  
UART3: GPS or other sensors that require a serial port  
UART4: GPS  
UART5: GPS or other sensors that require a serial port  
UART6: ESC Telemetry  
VTX ON/OFF Mode Command:  
resource PINIO 1 C0  
set pinio\_config = 1,1,1,1  
set pinio\_box = 40,41,255,255  
set box\_user\_name = VTX\_ON/OFF  
aux 0 40 8 900 2100 0 0  
save

Firmware:  
Betaflight: iFLIGHT\_BUTZ.F722  
NAV: iFLIGHT\_BUTZ.F722



## DJI Digital Transmitters: SUBS Protocol

Firmware Target: iFLIGHT\_BUTZ.F722



| Channel | Frequency | Power | Mode     | Protocol | Receiver | Receiver Mode |
|---------|-----------|-------|----------|----------|----------|---------------|
| CH1     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH2     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH3     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH4     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH5     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH6     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH7     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH8     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH9     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH10    | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |

Receiver

Serial (via UART) Receiver Mode

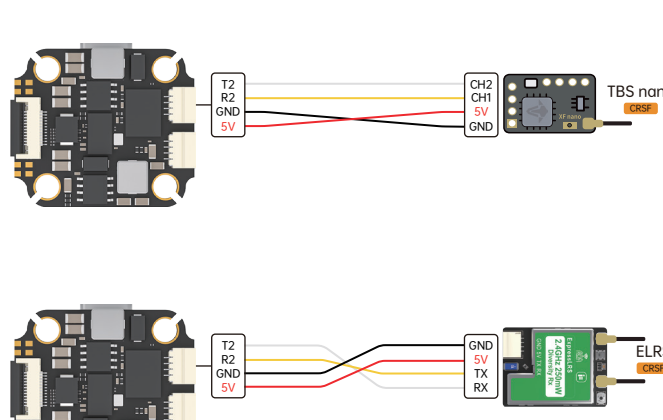
The UART for the receiver must be set to Serial Rx (in the Ports tab)

Select the correct data format from the drop-down below:

CRSF Serial Receiver Provider

- To enable the air unit OSD under Betaflight 4.4 version, you need to select VTX (MSP+Displayport) in the peripheral port where the air unit signal is connected to the port interface.
- note: DJI FPV Remote Controller2 is for DJI O3 Air Unit  
DJI FPV Remote Controller is for DJI Air Unit and Vista
- Please check your protocols, otherwise your DJI Radio won't input signals!  
DJI Goggle protocol and Betaflight protocol has to match!  
For lower signal latency use the SBus BAUD\_FAST protocol option on both ends.
- For Betaflight Copy Paste "set sbus baud fast=on" into your Betaflight Configurator CLI then hit enter.  
Use "save" and hit enter to save the changes.  
Default: sbus baud fast=off, Goggle protocol set to NORMAL

## Others Receivers(TBS/ELRS): CRSF Protocol



| Channel | Frequency | Power | Mode     | Protocol | Receiver | Receiver Mode |
|---------|-----------|-------|----------|----------|----------|---------------|
| CH1     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH2     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH3     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH4     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH5     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH6     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH7     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH8     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH9     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH10    | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |

Receiver

Serial (via UART) Receiver Mode

The UART for the receiver must be set to Serial Rx (in the Ports tab)

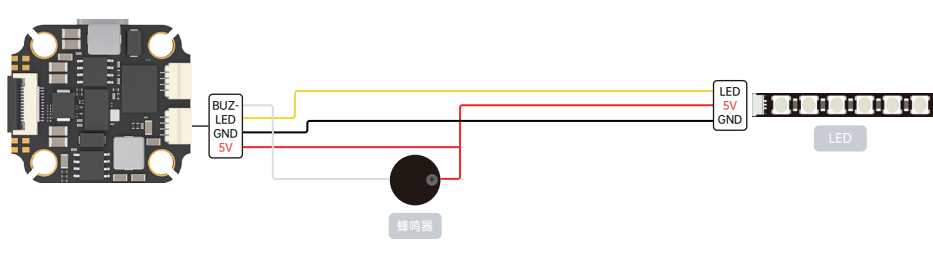
Select the correct data format from the drop-down below:

CRSF Serial Receiver Provider

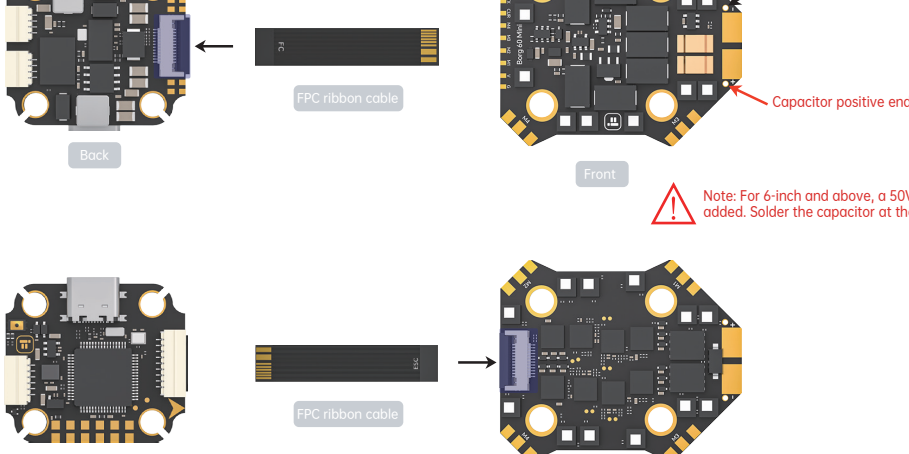
Telemetry

TELEMETRY Telemetry output

## LED/BUZZER

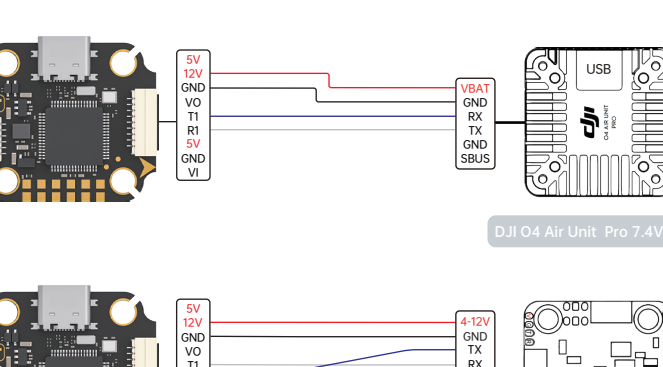


## ESC



Note: If using ESCs from other brands, please ensure the wiring is connected correctly.  
5-inch models do not require an external capacitor to fly, while 6-inch or larger models need to add a 50V 470uF capacitor.

## VTX/CAM



| Channel | Frequency | Power | Mode     | Protocol | Receiver | Receiver Mode |
|---------|-----------|-------|----------|----------|----------|---------------|
| CH1     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH2     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH3     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH4     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH5     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH6     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH7     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH8     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH9     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH10    | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |

VTX ON/OFF Mode On

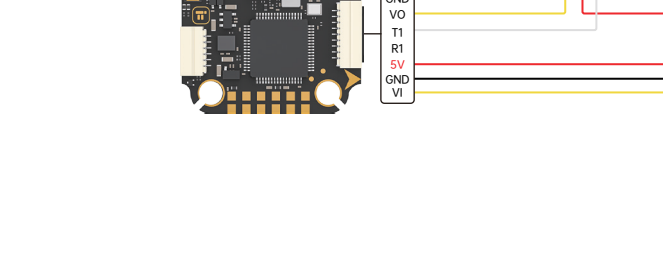
VTX ON/OFF Mode Off

To control VTX on/off, please drag the range to 1600-2000. If the icon is yellow, it is on, and if it is gray, it is off.

Ref flashing firmware or restoring the default factory settings requires manually entering the following commands in Betaflight CLI to re-enable VTX switch control:

```
resource PINIO 1 C0
set pinio_config = 1,1,1,1
set pinio_box = 40,41,255,255
set box_user_name = VTX_ON/OFF
aux 0 40 8 900 2100 0 0
save
```

## GPS



| Channel | Frequency | Power | Mode     | Protocol | Receiver | Receiver Mode |
|---------|-----------|-------|----------|----------|----------|---------------|
| CH1     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH2     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH3     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH4     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH5     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH6     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH7     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH8     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH9     | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |
| CH10    | 115200    | 1000  | Disabled | AUTO     | Disabled | AUTO          |

GPS Configuration

UBLOX Protocol

Auto Config

Use Galileo

Set Home Point Once

Auto-detect Ground Assistance Type

SDA/SCL pads can not be remapped to UARTs

## Dimensions/Mounting pattern

