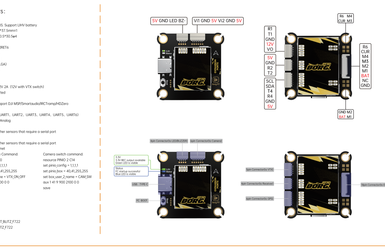
iFlight Borg F7 FC Wiring diagram

Parameters:

FC Specifications:
Flash memory: 8G, Support UPR battery
Gyroscope: ICM42688-P
Mount pattern: 30.5*30.5mm
Weight: 14g±1
MCU: STM32F722RETx
Baro: BMP280
Barometer: BMP280
OSD: AT7456E, 5.5A5
BlackBox: 128dB
Motor outputs: 4
Servo outputs: 2
BEC: 5V 2.5A , 12V 2A (12V with VTX switch)
LED Strip: Supported
Beeper: Yes
VTX protocol: Support DJI MSP/Smartaudio/IRC Tramp/HDZero
UART1: Receiver
UART2: GPS or other sensors that require a serial port
UART3: Receiver
UART4: GPS or other sensors that require a serial port
UART6: ESC Telemet
VTX_ON_OFF Mode Command:
resource PINID 1 C0
set pinio_config = 1,1,1
set pinio_box = 40,41,255,255
set box_user_1 name = VTX_ON_OFF
aux 0 40 8 900 2100 0 0
save

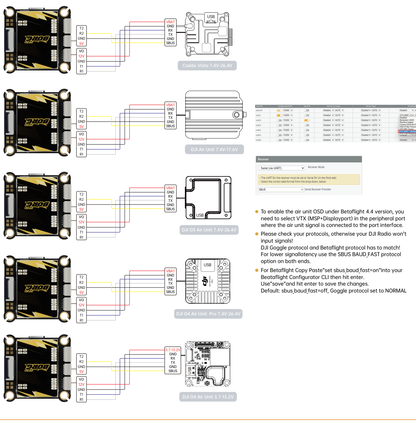
Camera switch command:
resource PINID 2 C4
set pinio_config = 1,1,1
set pinio_box = 40,41,255,255
set box_user_2 name = CAM_SW
aux 1 41 9 900 2100 0 0
save

Firmware:
Betaflight: IFLIGHT_BLITZ_F722
INAV : IFLIGHT_BLITZ_F722



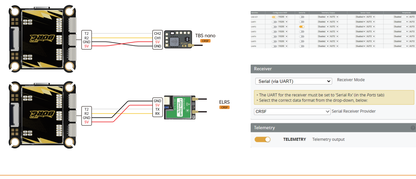
DJI Digital Transmiters: SUBS Protocol

Firmware Target : IFLIGHT_BLITZ_F722

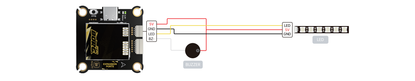


- To enable the oir unit OSD under Betaflight 4.4 version, you need to select VTX (MSP+Displayport) in the peripheral port where the air unit signal is connected to the port interface.
- Please check your protocols, otherwise your DJI Radio won't input signals!
  DJI Goggle protocol and Betaflight protocol has to match!
  For lower signallatency 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

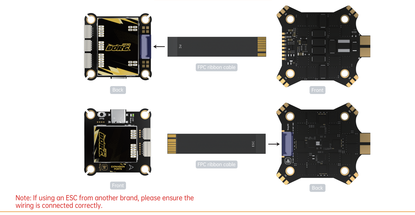
Others Receivers(TBS/ELRS): CRSF Protocol



LED/BUZZER

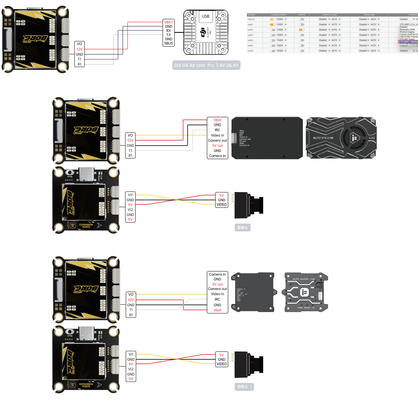


ESC

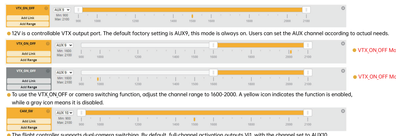


Note: If using on ESC from another brand, please ensure the wiring is connected correctly.

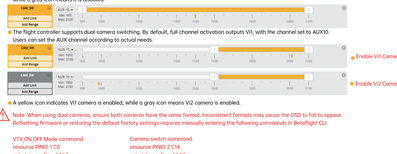
VTX/CAM



Identifier	Configuration/MSP	Serial To	Telemetry Output	Sensor Input	Peripherals
USB VCP	115200		Disabled / AUTO	Disabled / AUTO	Disabled / AUTO
UART1	115200		Disabled / AUTO	Disabled / AUTO	VTX (IRC Tramp / AUTO
UART2	115200		Disabled / AUTO	Disabled / AUTO	Disabled Rangevideo LiDAR Serial Rangefinder Camera Shut(Cam Protocol) OSD (Frsky Protocol)
UART3	115200		Disabled / AUTO	Disabled / AUTO	VTX (IRC Tramp)
UART4	115200		Disabled / AUTO	Disabled / AUTO	VTX (MSP, Tramp, Smartaudio)
UART5	115200		Disabled / AUTO	Disabled / AUTO	VTX (TBS Smartaudio)
UART6	115200		Disabled / AUTO	Disabled / AUTO	Disabled / AUTO



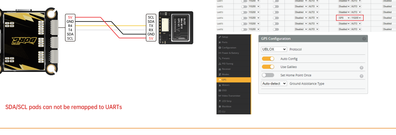
- 12V is a controllable VTX output port. The default factory setting is AUX9, this mode is always on. Users can set the AUX channel according to actual needs.



- VTX_ON_OFF Mode On
- VTX_ON_OFF Mode Off

- To use the VTX_ON_OFF or camera switching function, adjust the channel range to 1600-2000. A yellow icon indicates the function is enabled, while a gray icon means it is disabled.

- The flight controller supports dual-camera switching. By default, full-channel activation outputs V1, with the channel set to AUX10. Users can set the AUX channel according to actual needs.



- Enable V1 Camera
- Enable V2 Camera

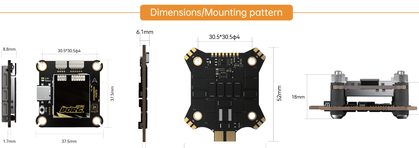
- A yellow icon indicates V1 camera is enabled, while a gray icon means V2 camera is enabled.

⚠ Note: When using dual cameras, ensure both cameras have the same format. Inconsistent formats may cause the OSD to fail to appear. Reflashing firmware or restoring the default factory settings requires manually entering the following commands in Betaflight CLI:

VTX_ON_OFF Mode command:
resource PINID 1 C0
set pinio_config = 1,1,1
set pinio_box = 40,41,255,255
set box_user_1 name = VTX_ON_OFF
aux 0 40 8 900 2100 0 0
save

Camera switch command:
resource PINID 2 C4
set pinio_config = 1,1,1
set pinio_box = 40,41,255,255
set box_user_2 name = CAM_SW
aux 1 41 9 900 2100 0 0
save

GPS



SDA/SCL pads can not be remapped to UARTs

Dimensions/Mounting pattern