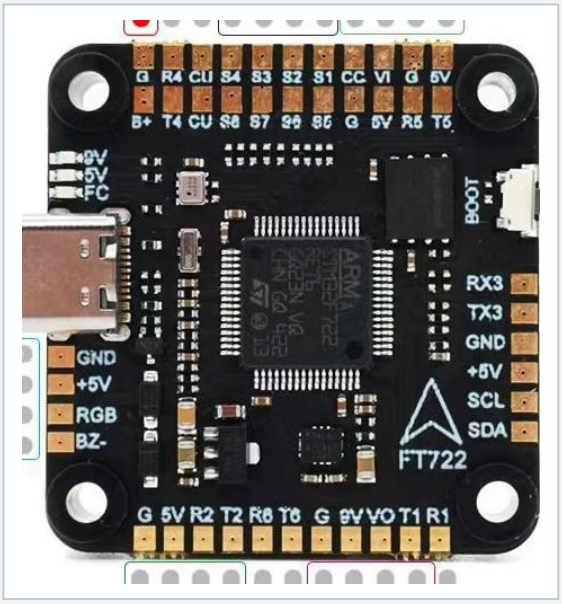
PRODUCT MANUAL

XTRAFLY XF-F722 V2 Flight Controller

STM32F722RET6 · ICM-42688 Gyro · AT7456E OSD · SPL06 Barometer · 16 MB Blackbox · 3-8S

The XF-F722 V2 is a full-featured 30.5 x 30.5 mm flight controller for 5-inch and larger multirotor builds. The STM32F722RET6 processor pairs with a high-performance ICM-42688 gyroscope for precise, low-noise flight, while the AT7456E OSD chip, SPL06 barometer and 16 MB blackbox flash cover tuning, logging and telemetry. Dual BECs and four UART groups drive every peripheral from a single board.



Key Features

- **STM32F722RET6 MCU** with **ICM-42688** high-performance gyroscope.
- **8 motor outputs** - two harness connectors drive 4-in-1 or 8-motor 4-in-1 ESCs (M1-M8).
- **Dual BEC power** - 5 V / 2.5 A for peripherals plus a configurable 10 V / 2 A rail (User 1) and IO2 pad (User 2).
- **AT7456E OSD** and **SPL06-001 barometer** with 16 MB onboard blackbox flash.
- **Four UART groups** (UART1 / 2 / 3 / 4 / 6) for receivers, GPS, analog VTX and digital HD systems.
- **Every receiver protocol** - ELRS (CRSF), TBS (CRSF), SBUS, F.Port and DSM2 / DSMX.

XF-F722 V2	ICM-42688	3-8 S	16 MB
FLIGHT CONTROLLER	HIGH-PERF GYRO	LIPO · 11.4-36 V	ONBOARD BLACKBOX

Technical Specifications

CONTROLLER	
Model	XF-F722 V2
MCU	STM32F722RET6
IMU (Gyroscope)	ICM-42688
OSD Chip	AT7456E
Barometer	SPL06-001
Blackbox	16 MB onboard flash
USB Interface	USB-C
Boot Button	Dedicated BOOT button
POWER	
Input Voltage	3-8S LiPo (11.4-36 V)
BEC 5 V	5 V / 2.5 A ± 0.1 V
BEC 10 V	10 V / 2 A (User 1)
IO2 Pad	User 2 (configurable)
RECEIVERS & MOUNTING	
Receiver Protocols	ELRS (CRSF) · TBS (CRSF) · SBUS · F.Port · DSM2 / DSMX
Receiver Port	UART2 (dedicated connector)
Mounting Pattern	30.5 x 30.5 mm

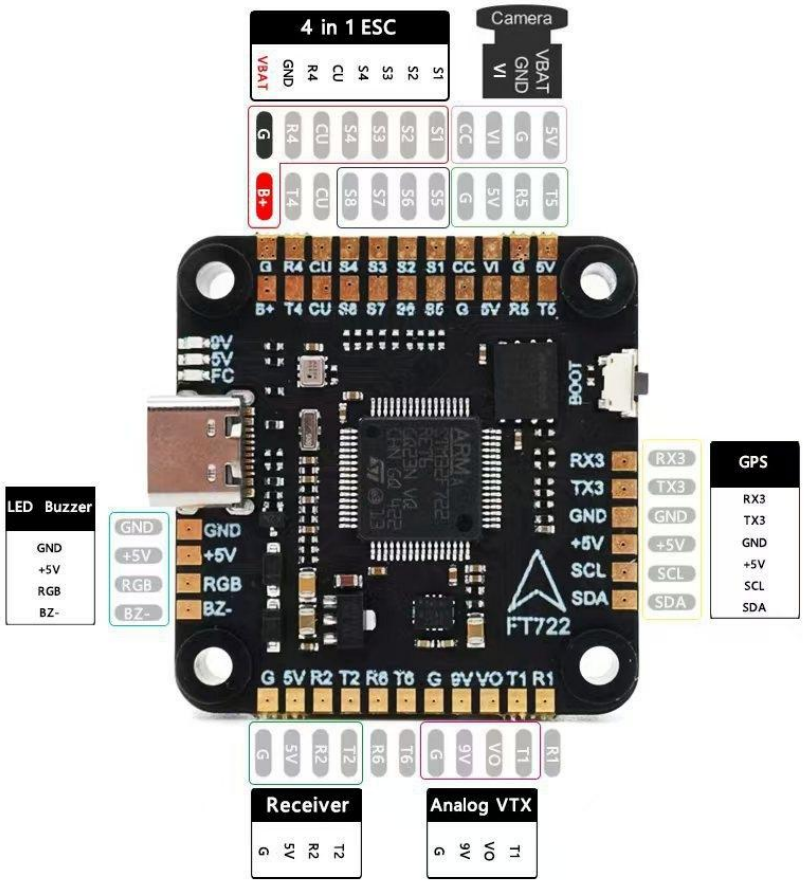
Connector Overview

Connector	Pins (left to right)	Function
4-in-1 ESC Port 1 (top)	VBAT · GND · M1 (S1) · M2 (S2) · M3 (S3) · M4 (S4) · CU · R4	Motors 1-4, current sense
4-in-1 ESC Port 2 (top)	B+ · T4 · M5 (S5) · M6 (S6) · M7 (S7) · M8 (S8)	Motors 5-8
Camera (top)	5V · G · VI · CC	Analog camera + control
GPS / Compass (top)	+5V · GND · TX3 · RX3 · SCL · SDA	UART3 + I2C compass
LED & Buzzer (top)	+5V · GND · RGB · BZ-	Programmable LED, buzzer
Receiver (top)	5V · G · R2 · T2	UART2 receiver connector
Analog VTX (top)	9V · G · VO · T1	Analog video, UART1
DJI HD (bottom)	9V · GND · T1 · R1 · GND · R2	Digital HD VTX
LED Strip pads x 3 (bottom)	+5V · GND · RGB	External LED strips
UART6 pads (bottom)	R6 · T6	Spare serial port

Pin order as printed on the wiring harnesses - always confirm against the wiring diagrams on pages 3 and 4 before connecting power.

Wiring - Top Side

The top side carries the ESC harness connectors, USB-C port (left edge) and BOOT button (right edge). Connect each harness exactly as shown; the color of each callout matches its cable group.



Top-side wiring reference - ESC harnesses, camera, GPS, LED/buzzer, receiver and analog VTX.

Top-side notes

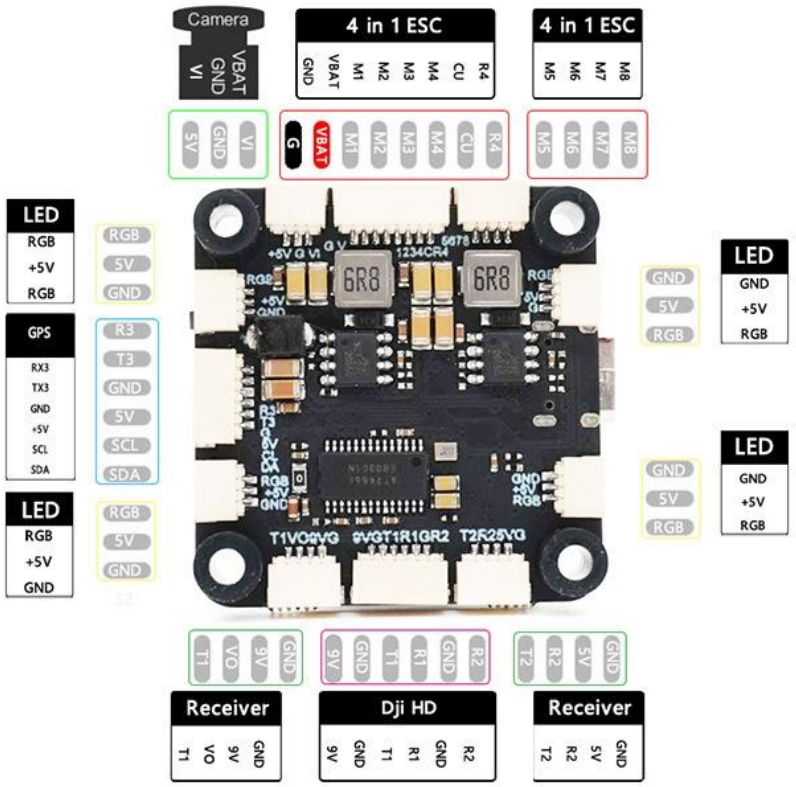
• Both 4-in-1 ESC connectors include power (VBAT / B+) and current-sense (CU) lines - a single battery input powers the whole harness.

• The GPS connector also exposes SCL / SDA for the compass on the GPS module.

• The analog VTX connector supplies 9 V for the video transmitter and routes video out (VO) plus UART1 (T1).

Wiring - Bottom Side

The bottom side carries the 8 motor outputs for direct ESC wiring, the DJI HD digital video port, receiver pads, three LED strip pads and the spare UART6 pads.



Bottom-side wiring reference - motor outputs M1-M8, DJI HD port, receiver, LED strips and GPS.

Bottom-side notes

• Motor outputs M1-M8 solder directly to the ESC pads; verify motor order and rotation direction before flight.

• The DJI HD port supplies 9 V and UART1 (T1 / R1) for digital video systems - when it is in use, the analog VTX connector on the top side shares the same UART1.

• Three identical LED strip pads (+5V · GND · RGB) allow LEDs at multiple arms without a splitter.

Getting Started

1. Mount the controller on 30.5 x 30.5 mm standoffs and keep all solder pads and wiring insulated from the frame.
2. Connect the 4-in-1 ESC harnesses (or solder M1-M8 pads) and verify motor numbering against the diagrams on pages 3-4.
3. Wire the receiver to the UART2 connector, GPS to the UART3 connector, and the camera / VTX or DJI HD system per the diagrams.
4. Power the board from a 3-8S LiPo battery. The 5 V / 2.5 A BEC feeds the peripherals; the 10 V / 2 A rail (User 1) powers analog video equipment.
5. Connect USB-C, flash and configure the firmware, set the receiver protocol (ELRS / TBS CRSF, SBUS, F.Port, DSM2 / DSMX), bind the receiver and configure failsafe.
6. Bench-test with propellers removed: verify motor order, OSD readout and blackbox logging before the first flight.

Safety Information

- **Input limit 3-8S (36 V max.)** - a higher battery voltage will destroy the board.
- **Check polarity** of VBAT / B+ wiring before connecting a battery; reverse polarity is not protected.
- **Respect BEC budgets** - the 5 V rail supplies 2.5 A total for receiver, GPS, LEDs and other peripherals.
- **Remove all propellers** whenever motors are commanded during setup or testing.
- **Update firmware over USB-C only** with battery power disconnected unless the procedure requires otherwise.

Contact

WEBSITE	**www.xtraflysystems.com**
E-MAIL	**sales@xtraflysystems.com**
DOCUMENT	XTRAFLY XF-F722 V2 Flight Controller - User Manual Rev 1.0