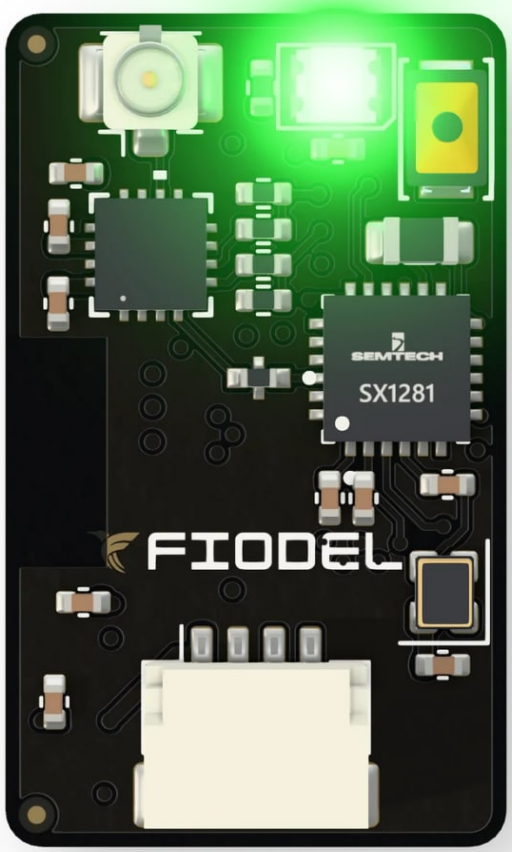
RC RECEIVER · FD-RX-2400

Fiodel ELRS 2.4GHz Receiver

ExpressLRS 2.4 GHz receiver with a TCXO, a 100 mW telemetry front end and Wi-Fi updates.



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Before you start

> Plugs straight into the receiver sockets (J8 or J5) of the Fiodel F405 Flight Controller with the supplied cable — TX and RX are already crossed.

> On other flight controllers use the tinned-lead cable: white to a UART RX pad, green to the matching TX pad, red to 5 V, black to ground.

> Wi-Fi setup: power the receiver with the transmitter off; after 30 seconds it opens the hotspot "ExpressLRS RX". Open 10.0.0.1 to update firmware or set a binding phrase.

> Wire colours on every Fiodel cable: red = power, black = ground, white = data into the flight controller, green = data out of the flight controller.

In the box

- ELRS 2.4GHz receiver
- 2.4 GHz T antenna with U.FL plug
- 100 mm 4-pin JST-SH to JST-SH cable (for the Fiodel F405 Flight Controller)
- 100 mm 4-pin JST-SH to tinned-lead cable (for other flight controllers)

Overview

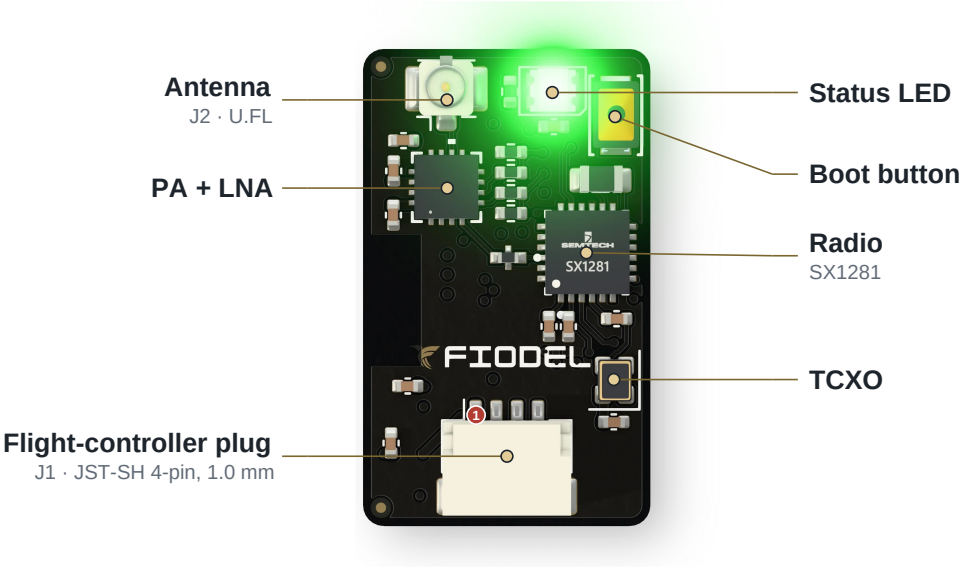
The Fiodel ELRS 2.4GHz Receiver is a single-radio ExpressLRS receiver for FPV and long-range builds. It pairs a Semtech SX1281 transceiver with a Skyworks RFX2401C power amplifier and low-noise amplifier, a Johanson band-pass filter between the two, and a 52 MHz temperature-compensated oscillator as the radio reference.

An ESP32-C3 runs ExpressLRS and brings Wi-Fi with it: power the receiver without a transmitter and it opens its own hotspot for firmware updates and for setting your binding phrase. The link antenna connects by U.FL; a separate chip antenna on the board handles Wi-Fi.

It connects to the flight controller through a 4-pin JST-SH socket in the Betaflight connector-standard pinout, or through four solder pads on the back carrying the same signals. With the Fiodel F405 Flight Controller the supplied cable plugs straight in.

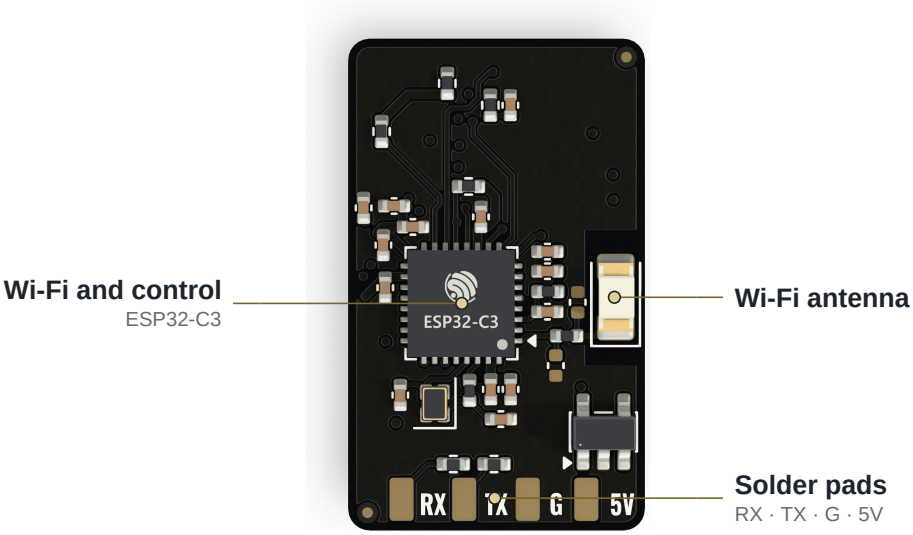
Layout

TOP SIDE



❶ Pin 1 of the socket: the pin tables count from here.

BOTTOM SIDE

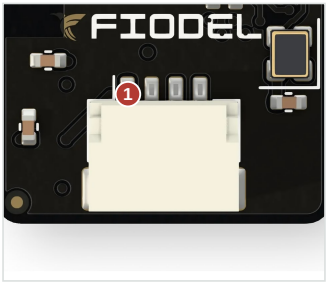


Connections

J1 — Flight-controller plug JST-SH 4-pin, 1.0 mm

Betaflight connector-standard serial pinout, peripheral side.

PIN	SIGNAL	DETAIL
1	5 V in	
2	GND	
3	TX	Receiver -> flight controller RX
4	RX	Receiver <- flight controller TX



Top side · red 1 = pin 1

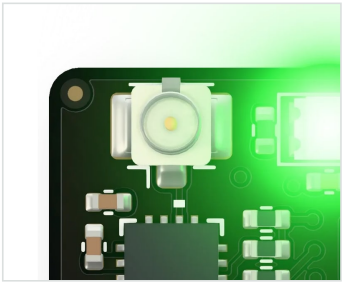
Pads — Solder pads (back) 4 pads

Same signals as the plug, for direct wiring.

PIN	SIGNAL	DETAIL
5V	5 V in	
G	GND	
TX	TX	Receiver -> flight controller RX
RX	RX	Receiver <- flight controller TX

J2 — Antenna U.FL

PIN	SIGNAL	DETAIL
RF	2.4 GHz link antenna	



Top side

Specifications

RADIO	
Protocol	ExpressLRS, 2.4 GHz ISM band
Transceiver	Semtech SX1281
Front end	Skyworks RFX2401C PA + LNA (12 dB receive gain)
Filter	Johanson 2450FM07D0034 band-pass, 2400–2500 MHz
Radio reference	52 MHz TCXO, ±0.5 ppm

Telemetry power	10 / 25 / 50 / 100 mW (nominal)
Link antenna	U.FL connector

CONTROLLER

MCU	Espressif ESP32-C3FH4, 4 MB flash, Wi-Fi
Wi-Fi antenna	On-board chip antenna (configuration range)
Output	CRSF serial, 3.3 V logic
Status LED	WS2812 RGB
Button	Boot (hold while powering up for UART flashing)

FIRMWARE

Ships with	ExpressLRS 3.6
Update methods	Wi-Fi, UART, Betaflight passthrough
Binding	Binding phrase over Wi-Fi, or three power cycles

POWER

Input	5 V (runs from a 4.5 V flight-controller rail)
Regulator	TI TLV75733 3.3 V LDO, 1 A

BOARD

Size	13.8 × 23.0 mm
Construction	6-layer, 1.0 mm, ENIG finish, black solder mask
Mounting	No mounting holes (tape or heat-shrink)

Firmware

Runs	ExpressLRS 3.6
Updating	It is updated over Wi-Fi from the receiver's own page (10.0.0.1), over UART, or through Betaflight passthrough.

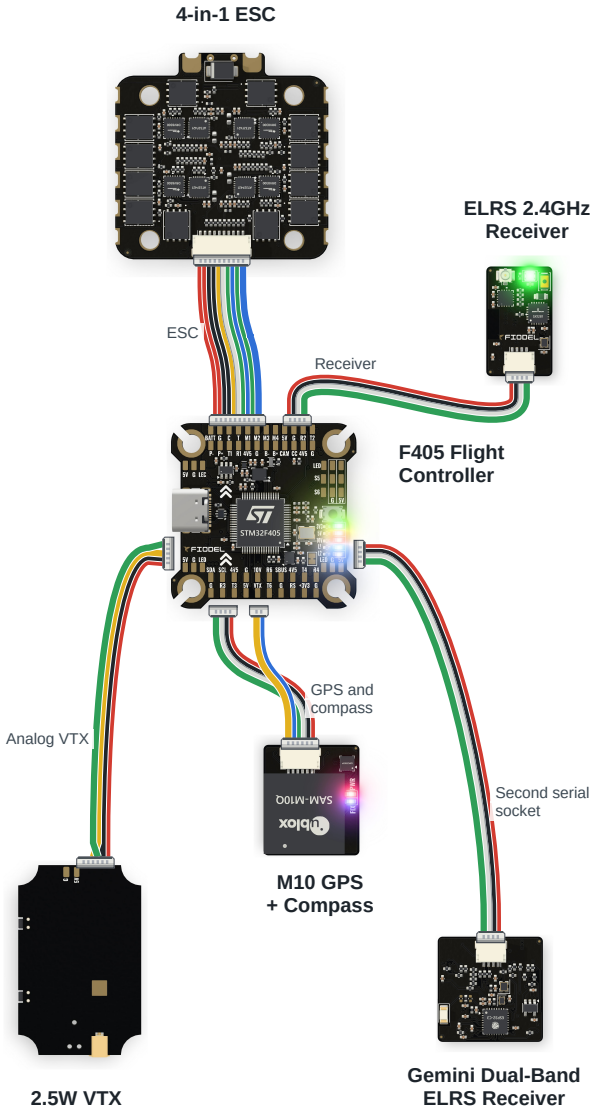
ExpressLRS hardware layout

fiodel.com/downloads/elrs-2-4ghz-receiver/fiodel-2400-rx-layout.json

What ExpressLRS needs to know about this board. Upload it on the receiver's Wi-Fi page if a flash has left the receiver asking for a layout.

How the range connects

Every Fiodel board plugs into the flight controller with its own cable, every wire on the pin it really joins. The flight controller is drawn from above, its sockets underneath along the edges its cables leave by; every board is at its true size.



ESC	10-pin cable, in the ESC's box
Receiver	4-pin cable, in the receiver's box
Second serial socket	Same plug as the receiver socket
GPS and compass	Y-cable, in the GPS's box: its 4-pin end to GPS, its 2-pin end to Compass
Analog VTX	10 V, ground, video and SmartAudio

Wire colours: red is power, black is ground, white is data into the flight controller, green is data out of it. Yellow and blue are a cable's other lines.

Setup guides

Step by step, on our site:

Binding a Fiodel ELRS Receiver
fiodel.com/guides/binding-a-fiodel-elrs-receiver

Questions

How do I bind it to my transmitter?
Set the same binding phrase on the receiver's Wi-Fi page as on your transmitter, or power-cycle the receiver three times to put it in bind mode and start binding from the ExpressLRS Lua script.

Does it work with flight controllers from other brands?
Yes. It needs 5 V, ground and one free UART. A tinned-lead cable is included for flight controllers without a matching socket.

Warranty and support

- 6-month warranty against manufacturing defects, serviced at our workshop in Gurugram. Terms: fiodel.com/warranty
- Returns within 7 days for wrong, damaged or dead-on-arrival items: fiodel.com/returns
- Questions: WhatsApp or call +91-9891446688, or write to contact@fiodel.com. 9am–6pm, Monday to Saturday.

This manual is made from the product's page: fiodel.com/products/elrs-2-4ghz-receiver always has the latest.