GPS MODULE · FD-GPS-M10

Fiodel M10 GPS + Compass

u-blox SAM-M10Q GNSS with a QMC5883P compass and supercapacitor backup, 20 × 23 mm.



Fiodel Technologies Private Limited
Ground Floor, 543n, Pace City II, Sector 37, Gurugram, Haryana 122004
contact@fiodel.com · +91-9891446688 · fiodel.com

Before you start

> On the Fiodel F405 Flight Controller the Y-cable goes to J10 (GPS serial, UART4) and J9 (I2C).

> Never connect the module with a straight 6-pin to 6-pin cable: on many flight controllers the 6-pin socket is a digital-VTX port carrying battery-level voltage on pin 1.

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

> Keep at least 5 mm clear above the patch antenna, and do not wash the module or apply conformal coating.

In the box

- M10 GPS + Compass module
- 150 mm Y-cable: 6-pin JST-SH to 4-pin + 2-pin JST-SH (for the Fiodel F405 Flight Controller)
- 150 mm 6-pin JST-SH to tinned-lead cable (for other flight controllers)

Overview

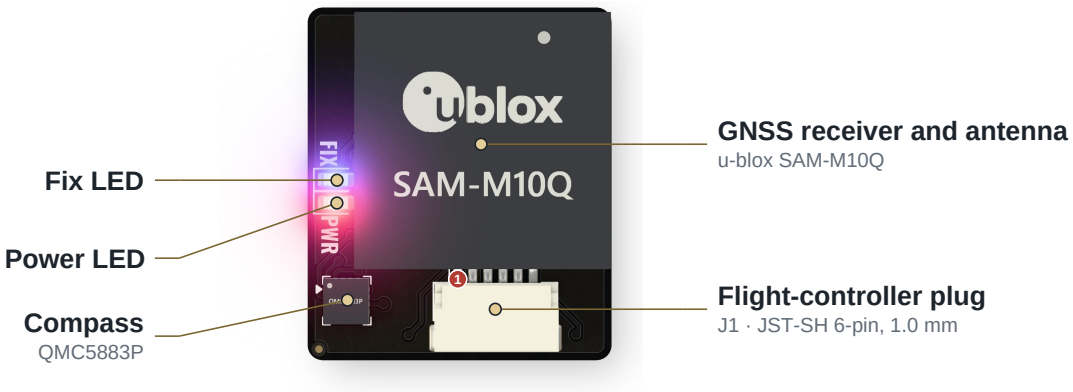
The Fiodel M10 GPS + Compass puts a u-blox SAM-M10Q GNSS receiver and a QST QMC5883P 3-axis magnetometer on one 20 × 23 mm board. The SAM-M10Q carries its own 15 × 15 mm patch antenna, SAW filter and low-noise amplifier, so there is no antenna to fit.

The receiver tracks GPS, Galileo, BeiDou and GLONASS together out of the box. A Seiko supercapacitor keeps its backup memory powered after the battery is unplugged, which is what turns a 23-second cold start into a 1-second hot start when you plug back in soon after.

GNSS data leaves on a UART and the compass on I2C, through a 6-pin JST-SH socket or six solder pads. A red LED shows power; a blue LED blinks once the receiver has a fix.

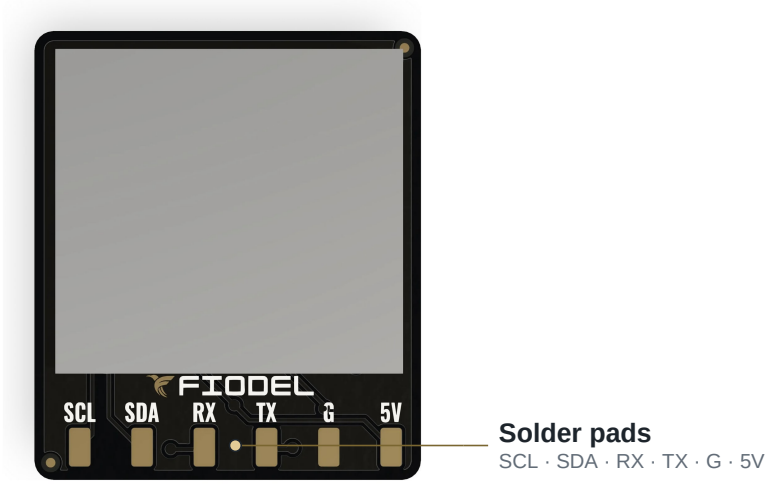
Layout

TOP SIDE



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

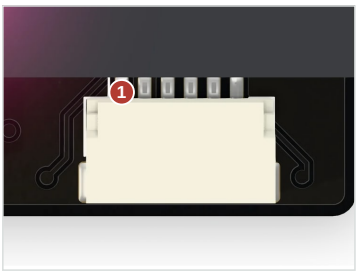
BOTTOM SIDE



Connections

J1 — Flight-controller plug JST-SH 6-pin, 1.0 mm

PIN	SIGNAL	DETAIL
1	5 V in	
2	GND	
3	TX	GPS -> flight controller RX
4	RX	GPS <- flight controller TX
5	SDA	Compass I2C data



Top side · red 1 = pin 1

6	SCL	Compass I2C clock

Pads — Solder pads (back) 6 pads

Same signals as the plug, for direct wiring.

PIN	SIGNAL	DETAIL
5V	5 V in	
G	GND	
TX	GPS TX	
RX	GPS RX	
SDA	Compass I2C data	
SCL	Compass I2C clock	

Specifications

GNSS

Receiver	u-blox SAM-M10Q, integrated 15 × 15 mm patch antenna, SAW filter and LNA
Constellations	GPS, Galileo, BeiDou B1C and GLONASS (default configuration)
Update rate	4 Hz default; 10 Hz with GPS + Galileo; up to 25 Hz single-constellation
Start time	1 s hot start, 23 s cold start (module figures)
Interface	UART, 9600 baud 8N1 default (4800–921600 supported)
Protocols	NMEA 4.11 and UBX
Backup	Seiko CPH3225A supercapacitor

COMPASS

Sensor	QST QMC5883P 3-axis magnetometer
Interface	I2C, address 0x2C, 100 kHz and 400 kHz
Pull-ups	4.7 kohm to 3.3 V on the board
Flight firmware	Betaflight 2026.6.0 or newer (QMC5883P driver)

POWER

Input	5 V (runs from a 4.5 V flight-controller rail)
Current	About 20 mA
Regulator	TI TLV75733 3.3 V LDO

INDICATORS

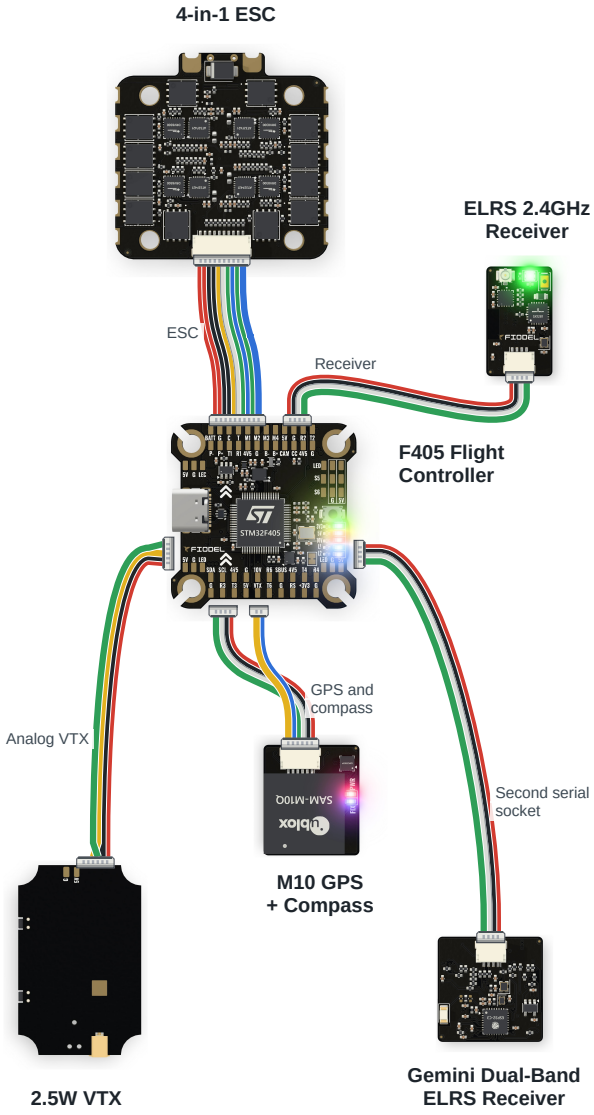
Red LED	Power
Blue LED	Blinks with the GNSS time pulse once a fix is acquired

BOARD

Size	20.2 × 23.4 mm
Construction	4-layer, 1.0 mm, ENIG finish, black solder mask
Shielding	Soldered shield can over the back of the board
Mounting	No mounting holes

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:

Setting Up the M10 GPS + Compass
fiodel.com/guides/setting-up-the-m10-gps-and-compass

Questions

Will the compass work with my firmware?
The QMC5883P is supported from Betaflight 2026.6.0. Older releases only know the earlier QMC5883L and will not detect it.

Do I need a separate antenna?
No. The patch antenna is part of the u-blox module on the board.

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/m10-gps-compass always has the latest.