SAM-M10 **GPS Module**

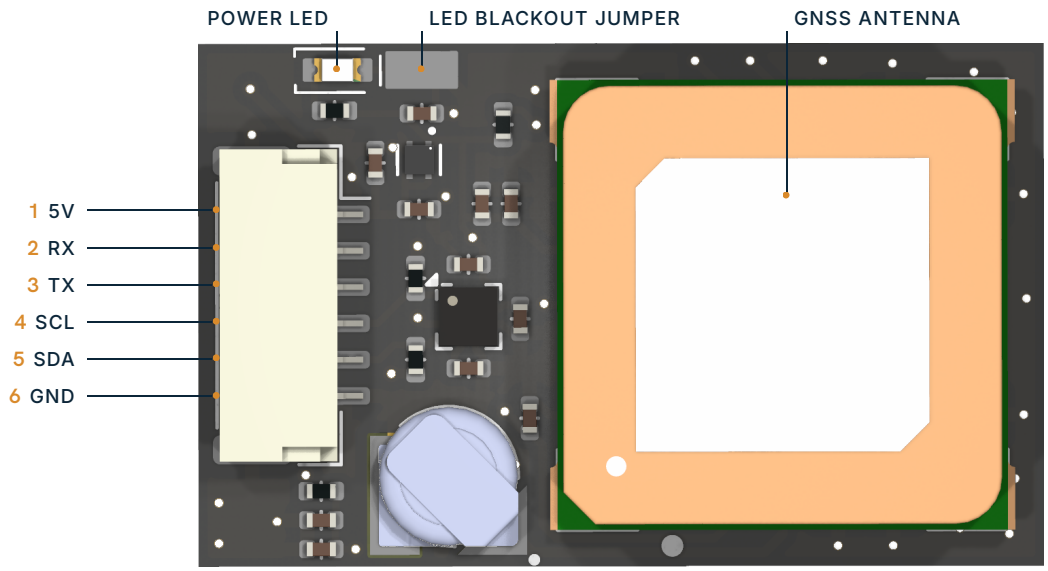
Multi-constellation GNSS receiver with an integrated magnetometer and ceramic patch antenna on the Pixhawk standard 6-pin pinout. This manual covers wiring, Betaflight configuration, and mounting.

SPECIFICATIONS

GNSS RECEIVER	u-blox M10Q, multi-constellation
MAGNETOMETER	ST LIS2MDL
ANTENNA	Integrated ceramic patch
DATA INTERFACES	UART (GNSS) · I²C (magnetometer)
UART BAUD	115200

INPUT VOLTAGE	3.3 – 6 V
CONNECTOR	6-pin, Pixhawk standard pinout
ALTERNATE WIRING	6 solder pads, rear face
SIZE	18 × 29.1 mm
WEIGHT	8 g

CONNECTIONS — FRONT FACE



FRONT FACE — ANTENNA SIDE. CONNECTOR PIN 1 IS AT THE TOP.

6-PIN CONNECTOR — PIXHAWK STANDARD

#	SIGNAL	FUNCTION
1	**5V**	Supply input, 3.3–6 V
2	**RX**	u-blox UART receive
3	**TX**	u-blox UART transmit
4	**SCL**	LIS2MDL I²C clock
5	**SDA**	LIS2MDL I²C data
6	**GND**	Ground

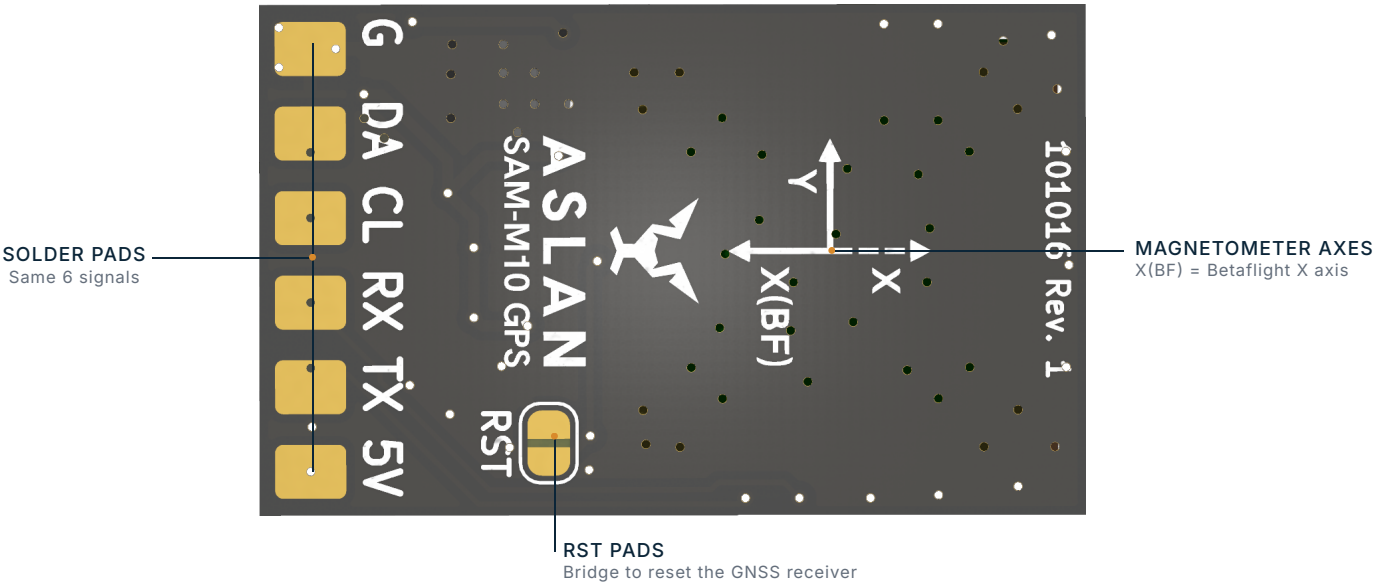
WIRING NOTES

- Pin 1 is silkscreened **5V** but accepts anything in the **3.3–6 V** range.
- Six **solder pads** on the rear face carry the same six signals — use them for direct wiring, repairs, or harnesses that aren't Pixhawk standard.
- The GNSS receiver runs on **UART**; the magnetometer is a separate device on the **I²C** bus. Both need to be wired for full functionality.

BETAFLIGHT SETUP

1. Wire the module to a free UART on the flight controller, and the I²C signals to the flight controller's I²C bus.
2. In Betaflight Configurator, **enable GPS**.
3. **Ports** tab — select **GPS** on the UART the module is connected to and set the baud rate to **115200**. Save and reboot.
4. **GPS** tab — set Protocol to **U-blox** and Ground Assist to **Auto**.
5. **Sensors** tab — confirm the **magnetometer is enabled**. Betaflight detects the LIS2MDL on the I²C bus automatically.
6. Set the magnetometer alignment to match the **X(BF)** marking on the rear face (see Mounting).
7. Verify both sensors with the **status** command in the CLI. GPS and magnetometer should both be listed.

BOARD FEATURES — REAR FACE



REAR FACE — FLIPPED ABOUT THE LONG EDGE, SO CONNECTOR PIN 1 SITS AT THE BOTTOM HERE.

RESET & STATUS LED

- **GNSS reset** — short the two **RST** pads on the rear face together.
- **Power status LED** — un-bridge the solder pads next to the LED on the front face to black it out for low-visibility operation.

MOUNTING

- Mount with the supplied **VHB tape**.
- The **antenna face must point at the sky**, with no obstructions above it.
- Magnetometer orientation follows the axis markings on the rear face. **X(BF)** is the axis Betaflight treats as X — set the alignment to match.
- STEP files for 3D-printed mounts, and a STEP file of the module for designing your own, are available on the Aslan website.
- **TPU** is the recommended print material.

Support support@aslanmotion.com
Aslan Motion Technologies LLC · Radford, Virginia

ASLANMOTION.COM
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