

# GNSS

## N-U1

The N-U1 is a compact, high-performance GPS module powered by the u-blox M9N. It delivers fast, reliable performance with a time-to-first-fix (TTFF) under 25 seconds and maintains a strong lock even in challenging environments.

The N-U1 is RTK-ready, enabling centimeter-level precision whenever required. It offers professional-grade accuracy at an accessible hobby-level price and is PX4/ArduPilot compatible via UART/I2C. Just mount, connect, and you're ready to go.



### Key Features

- Multi-GNSS: <math><0.01\sim 2.0\text{m}</math> accuracy, 4-system lock
- Integrated Sensors: Magnetometer + barometer
- Rugged Build: IP67, 4.7–5.2V, 200mA @ 5V
- Easy Integration: MAVLink-ready, anti-interference

### Use Cases

- Drones/UAVs: Surveying, agriculture, search & rescue
- Robotics: Rovers, ROVs, waypoint navigation
- FPV/Cinematography: Smooth flight, precise footage
- R&D: Prototyping autonomous systems

### Specifications

<b>GNSS Receiver</b>	<ul style="list-style-type: none"><li>• Standard Model: U-blox NEO-M9N Module (non-RTK)</li><li>• High Precision Model: U-Blox NEO-F9P RTK Module</li></ul>
<b>Number of Concurrent GNSS</b>	Up to 4 GNSS, BeiDou, Galileo, GLONASS, GPS/QZSS
<b>Frequency Band</b>	<ul style="list-style-type: none"><li>• GPS L1, Galileo E1, GLONASS L1, BeiDou B1, SBAS L1, QZSS L1 (M9N module)</li><li>• GPS L1/L5, GLONASS L1, BeiDou B1/B2, Galileo E1/E5, NavIC SPS-L5 (F9P module)</li></ul>
<b>Barometer</b>	DPS368
<b>Compass</b>	IST8310 or RM3100
<b>LEDs</b>	Safety x1, GPS Fix x1, Status x1, RTK Fix x1 (RTK Fix for F9P module only)
<b>Buzzer</b>	Built-in high-volume buzzer (optional)
<b>Safety Switch</b>	Supported
<b>Supported Protocol</b>	<ul style="list-style-type: none"><li>• UBX, NMEA 4.10, RTCM 3.3 (M9N module)</li><li>• UBX, NMEA 4.11, RTCM 3.3, SPARTN 2.0.1 (F9P module)</li></ul>
<b>Accuracy</b>	<ul style="list-style-type: none"><li>• 2.0 m CEP (M9N module)</li><li>• 0.01 m + 1 ppm CEP (F9P module)</li></ul>
<b>Nav. Update Rate</b>	Up to 25 Hz (4 concurrent GNSS)
<b>GNSS Augmentation System</b>	<ul style="list-style-type: none"><li>• SBAS: EGNOS, GAGAN, MSAS and WAAS</li><li>• QZSS: L1S</li></ul>
<b>Default Baud Rate</b>	115200
<b>Input Voltage</b>	4.7-5.2V
<b>Connector Type</b>	<ul style="list-style-type: none"><li>• JST-GH-10pin</li><li>• JST-GH-6pin (optional)</li></ul>
<b>Antenna</b>	25 x 25 x 4 mm ceramic patch antenna
<b>Antenna Gain</b>	2.8dBi
<b>Antenna LNA Gain</b>	22dB (Min.)
<b>Power Consumption</b>	Less than 200mA @ 5V
<b>Operating Temperature</b>	-20~60 °C
<b>Housing</b>	With mounting screw hole
<b>Dimension</b>	60 x 60 x 16 mm
<b>Weight</b>	45 g
<b>IP Rating</b>	IP67
<b>Cable Length</b>	26 cm