

GNSS Module with Barometric Pressure, IMU, Magnetometer Sensors (NEO-M9N, BMP280, BMI270, BMM150)

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Description

GNSS Module is a global positioning wireless communication module featuring the **NEO-M9N-00B** GPS module. Compatible with multiple satellite positioning systems, it offers an impressive accuracy of approximately 1.5 meters. This module can simultaneously receive signals from four GNSS sources, ensuring high precision and fast lock times. Equipped with an external MCX antenna interface, it also includes a button battery and an EEPROM chip to securely store data in case of power loss.

In addition to its exceptional positioning capabilities, the module integrates multiple sensors for comprehensive geographic information measuring. It incorporates a BMI270 six-axis attitude sensor, a BMM150 three-axis magnetometer, and a barometric pressure sensor. This combination enables precise measurement of position, orientation, altitude, and other essential parameters. Furthermore, the module offers flexibility through its provision of DIP switches and toggle switches. These allow easy adjustment of serial port pins, PPS pins, and communication addresses for the attitude sensor.

Designed for seamless communication with M5Stack controllers, the GNSS Module utilizes M5BUS for data exchange and supports adding M5 Stamp wireless communication modules, which empowers remote IoT communication, making it a versatile solution for applications such as positioning and navigation, agriculture, logistics, geospatial surveying, environmental monitoring, and safety and emergency response.

Features

- **Multi-Constellation Positioning:** Supports various satellite systems for accurate positioning.
- **High Precision:** Approximately 1.5-meter positioning accuracy.
- **Multi-Signal Reception:** Simultaneously receives signals from four GNSS sources for enhanced accuracy.
- **External Antenna:** Optional configurations to suit different needs.
- **Data Protection:** Backup battery and EEPROM chip ensure data security during power loss.
- **Multiple Sensors:** Integrates six-axis attitude sensor, magnetometer, and barometric sensor.
- **Flexible Configuration:** Customizable settings like serial port pins, PPS sync signal pin.
- **Versatile Application:** Suitable for positioning, agriculture, logistics, environmental monitoring, etc.
- **IoT Support:** Can integrate M5 Stamp wireless communication module for remote communication.

Includes

- 1x GNSS Module
- 1x external GPS/BD antenna (Length: 1 m)
- 1x antenna feeder
- 2x M2*4 screws
- 1x hex key 1.5mm
- 1x HY2.0-4P Cable (20cm)

Applications

- Positioning and Navigation
- agriculture
- logistics
- Geographic surveying and mapping

Specification

Resources	Parameters
GNSS chip	NEO-M9N-00B Accuracy:1.5Meter Operational limits: Max Altitude: 80,000m,Max G: ≤4,Max Velocity:500m/s Number of supported channels: 92 Dynamic course accuracy : 0.3deg Maximum navigation update rate: 25Hz
Six-axis attitude sensor	BMI270 Accelerometer range: ±2g/±4g/±8g/±16g Gyroscope process range: ±125dps/±250dps/±500dps/±1000dps/±2000dps
Three axis magnetometer	BMM150(Magnetic field resolution :0.3uT)
Barometric pressure sensor	BMP280(Measuring range: 300 ~ 1100 hPa)
Supports navigation satellite types	GPS / QZSS 、 GLONASS、 Galileo、 BeiDou
Product Size	54*54*13.1mm
Package Size	126*66*23mm
Product Weight	14.4g
Package Weight	60.4g