

MultiNav Pro+



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1. Overview

The MultiNav Pro+ is a state-of-the-art GNSS module designed to provide unparalleled precision and reliability for a wide range of navigation applications. With support for GPS, Glonass, Galileo, and Beidou satellite systems, the MultiNav Pro+ offers comprehensive global coverage and advanced features to meet the demands of modern navigation solutions.

2. Key Features

- **High Precision:** 1.5-meter accuracy for precise location tracking.
- **Fast Fix Rate:** 18Hz fix rate for real-time responsiveness.
- **Global Connectivity:** Concurrent support for GPS, Glonass, Galileo, and Beidou satellite systems.
- **Advanced Filtering Technology:** Minimizes interference for clear signal reception.
- **Compact Design:** Integrated chip antenna for optimal signal reception without bulk.
- **Open Source Compatibility:** Seamless integration with open-source projects and custom developments.
- **Flexible Interface:** Supports UART and I2C connectivity options.

3. Technical Specifications

- **Dimensions:** 26mm x 22mm
- **Weight:** 5g
- **Accuracy:** 1.5 meters
- **Fix Rate:** 18Hz
- **Power Supply:** 3.3V & 1.8V
- **Operating Temperature:** -40°C to 85°C
- **Antenna Type:** Integrated chip antenna
- **Interface:** UART, I2C
- **Compatibility:** Arduino IDE, SparkFun Libraries, u-blox u-center2, ublox open source libraries

4. Use Cases

- **Vehicle Navigation:** Enhance the accuracy and reliability of in-car navigation systems.
- **Drones and UAVs:** Improve positioning accuracy for autonomous flying and mapping applications.
- **Wearable Devices:** Integrate into fitness trackers and smartwatches for precise location tracking.
- **IoT Applications:** Utilize for location-based services in smart cities and connected devices.
- **Custom Projects:** Use the open-source code from u-blox, a super-rich library, to import into your project with the desired controller system or development board, whether building a drone, robot, or tracker system.

5. Pinout



Below is the pinout for the MultiNav Pro+ GNSS Module. Each pin has a specific function, as described in the table.

Pin Number	Pin Name	Description
1	RESET	MIA-M10Q RESET pin
2	GND	Ground
3	TX	UART Transmit
4	RX	UART Receive
5	VCC	Power Supply (3.3V or 1.8V) by default 3.3V
6	SCL	I2C Clock Line
7	SDA	I2C Data Line
8	TP/SB	MIA-M10Q TIMEPULSE and SAFEBOOT pins
9	INT	MIA-M10Q interrupt pin
10	VOL_SEL	Voltage Select (Leave Open for 3.3V, connect to GND for 1.8V)

6. Setup Guide

Tools Required

- **MultiNav Pro+ GNSS Module:** [Purchase Here](#)
- **RFOXiA USB to TTL Adapter:** [Purchase Here](#)
- **USB Cable**
- **Computer with u-center2 Installed**
- **Arduino Board (e.g., Arduino Uno)**
- **Connecting Cables**

Step-by-Step Setup

Setup with u-center2



1. Connect the MultiNav Pro+ to the RFOXiA USB to TTL Adapter:

- Ensure the VCC and GND pins are connected correctly.
- All other pins will align automatically.
- Make sure the voltage select on the adapter board is set to 3.3V to be compatible with MultiNav Pro+.
- To use MultiNav Pro+ in 1.8V mode, select 1.8V on the adapter board and connect the VOL_SEL pin from MultiNav Pro+ to GND.

2. Connect the USB to TTL Adapter to Your Computer:

- Plug the USB cable into the USB to TTL Adapter and the other end into your computer.

3. Open u-center2 Software:

- Start u-center2 from u-blox on your computer.
- Configure the software to connect to the correct COM port.

4. Evaluate GNSS Performance:

- Use u-center2 to experiment with real-time performance, live maps, satellite views, and signal strengths.

Setup with Arduino

1. Prepare the Arduino and MultiNav Pro+:

- Ensure you have an Arduino board (e.g., Arduino Uno) and connecting cables. Make sure the selected Arduino board is voltage compatible with MultiNav Pro+ otherwise you will need a voltage level translator.

2. Connect Arduino to MultiNav Pro+ using I2C Interface:

- Connect the SDA pin on MultiNav Pro+ to the SDA pin on Arduino.
- Connect the SCL pin on MultiNav Pro+ to the SCL pin on Arduino.
- Connect the VCC pin on MultiNav Pro+ to the 3.3V pin on Arduino.
- Connect the GND pin on MultiNav Pro+ to the GND pin on Arduino.

3. Install Necessary Libraries:

- Open the Arduino IDE on your computer.
- Install the SparkFun GNSS library through the Library Manager.

4. Upload the Sketch to the Module:

- Select the correct COM port and board in the Arduino IDE.
- Open an example sketch from the SparkFun GNSS library.
- Upload the sketch to the MultiNav Pro+ module.

5. Monitor the Output:

- Open the Serial Monitor in the Arduino IDE to observe the GNSS data being received.

Setup with u-blox Open Source Code

1. Prepare the Development Environment:

- Ensure you have a compatible controller system or development board.
- Download the open-source code.

2. Connect the MultiNav Pro+ to Your Controller whether through I2C or UART:

- Follow the connection guidelines provided in the open-source library documentation.
- Ensure all connections are secure and the voltage levels are correctly set.

3. Import the Library:

- Import the u-blox open-source library into your development environment.

4. Configure and Program:

- Use the library functions to configure the MultiNav Pro+ for your specific use case.
- Program your controller system or development board accordingly.

5. Integrate and Test:

- Integrate the MultiNav Pro+ into your project, whether it be a drone, robot, or tracker system.
- Test the module to ensure it meets your performance and accuracy requirements.

7. Conclusion

The MultiNav Pro+ GNSS Module is designed to meet the needs of various navigation applications with its high precision, fast fix rate, and advanced filtering technology. Its compact design and open-source compatibility make it an ideal choice for developers and hobbyists alike.

For more information and to purchase the necessary tools, visit the following links:

- **MultiNav Pro+ GNSS Module:** [Purchase Here](#)
- **RFOXiA USB to TTL Adapter:** [Purchase Here](#)

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