



**GM Series  
Evaluation Module  
User's Guide**

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**Warning:** Some customers may want Linx radio frequency (“RF”) products to control machinery or devices remotely, including machinery or devices that can cause death, bodily injuries, and/or property damage if improperly or inadvertently triggered, particularly in industrial settings or other applications implicating life-safety concerns (“Life and Property Safety Situations”).

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Customers may use our (non-Function) Modules, Antenna and Connectors as part of other systems in Life Safety Situations, but only with necessary and industry appropriate redundancies and in compliance with applicable safety standards, including without limitation, ANSI and NFPA standards. It is solely the responsibility of any Linx customer who uses one or more of these products to incorporate appropriate redundancies and safety standards for the Life and Property Safety Situation application.

**Do not use this or any Linx product to trigger an action directly from the data line or RSSI lines without a protocol or encoder/decoder to validate the data.** Without validation, any signal from another unrelated transmitter in the environment received by the module could inadvertently trigger the action.

**All RF products are susceptible to RF interference that can prevent communication.** RF products without frequency agility or hopping implemented are more subject to interference. This module does not have a frequency hopping protocol built in.

**Do not use any Linx product over the limits in this data guide.** Excessive voltage or extended operation at the maximum voltage could cause product failure. Exceeding the reflow temperature profile could cause product failure which is not immediately evident.

**Do not make any physical or electrical modifications to any Linx product.** This will void the warranty and regulatory and UL certifications and may cause product failure which is not immediately evident.

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# GM Series GNSS Receiver Evaluation Module User's Guide

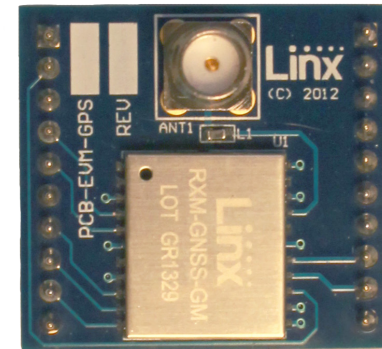


Figure 1: GM Series Evaluation Module

## Description

The GM Series GNSS receiver module is a self-contained high-performance Global Satellite Navigation System receiver. Based on the MediaTek chipset, it can simultaneously acquire and track multiple satellite constellations. These include the United States GPS system, Europe's GALILEO, Russia's GLONASS and Japan's QZSS.

The module provides exceptional sensitivity, even in dense foliage and urban canyons. Its very low power consumption helps maximize runtimes in battery powered applications. Hybrid ephemeris prediction can be used to achieve cold start times of less than 15 seconds. The module outputs standard NMEA data.

The evaluation module contains the surface mount GM Series GNSS module, SMA connector and a ferrite bead (used to supply power to an external active antenna, such as the LinX SH Series active GPS antenna) on a single board with through-hole headers. This small board makes prototyping with the GM Series module very easy.

## Ordering Information

| Ordering Information |   |
|----------------------|---|
| Part Number          | Description                                       |
| EVM-GNSS-GM          | GM Series Evaluation Module                       |
| RXM-GNSS-GM          | GM Series GNSS Receiver Module                    |
| MDEV-GNSS-GM         | GM Series GNSS Receiver Master Development System |

Figure 2: Ordering Information

## Electrical Specifications

| GM Series GNSS Receiver Specifications   |           |      |       |      |              |       |
|--|-----------|------|-------|------|--------------|-------|
| Parameter  | Symbol    | Min. | Typ.  | Max. | Units        | Notes |
| Power Supply   |           |      |       |      |              |       |
| Operating Voltage  | $V_{CC}$  | 3.0  | 3.3   | 4.3  | VDC          |       |
| Supply Current   | $I_{CC}$  |      |       |      |              |       |
| Peak   |           |      |       | 150  | mA           | 1     |
| Acquisition  |           |      | 24    |      | mA           | 1     |
| Tracking   |           |      | 16    |      | mA           | 1     |
| Standby  |           |      | 0.365 |      | mA           | 1     |
| Backup Battery Voltage   | $V_{BAT}$ | 2.0  |       | 4.3  | VDC          |       |
| Backup Battery Current   | $I_{BAT}$ |      | 7     |      | $\mu$ A      | 2     |
| Antenna Port   |           |      |       |      |              |       |
| RF Impedance   | $R_{IN}$  |      | 50    |      | $\Omega$     |       |
| Environmental  |           |      |       |      |              |       |
| Operating Temperature Range  |           | -40  |       | +85  | $^{\circ}$ C |       |
| Storage Temperature Range  |           | -40  |       | +85  | $^{\circ}$ C |       |
| 1. $V_{CC} = 3.3V$ , without active antenna, ephemeris prediction is off<br>2. $V_{CC} = 0V$ |           |      |       |      |              |       |

Figure 3: Electrical Specifications

## Pin Assignments

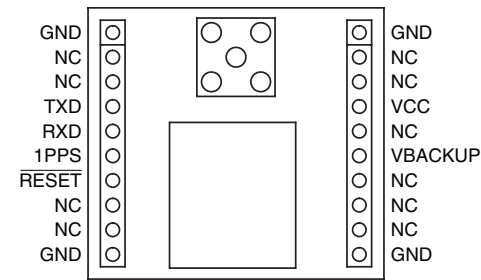


Figure 4: EVM-GNSS-GM Pin Assignments

## PCB Layout

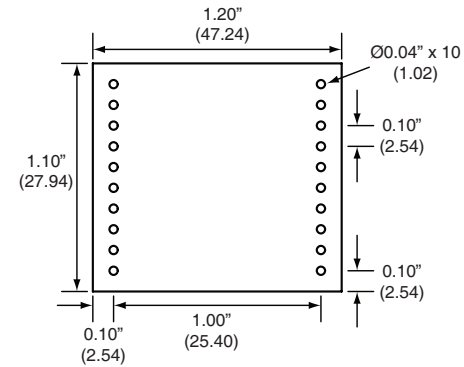


Figure 5: EVM-GNSS-GM PCB Layout Dimensions

## Schematic

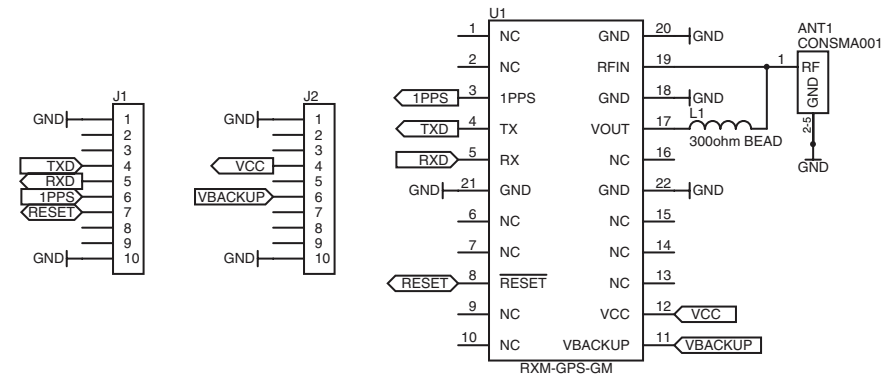


Figure 6: EVM-GNSS-GM Schematic

**Warning:** This product incorporates numerous static-sensitive components. Always wear an ESD wrist strap and observe proper ESD handling procedures when working with this device. Failure to observe this precaution may result in module damage or failure.



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