Linx
TECHNOLOGIES

**TM Series
Evaluation Module
User´s Guide**

Wireless made simple®

⚠ 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").

NO OEM LINX REMOTE CONTROL OR FUNCTION MODULE SHOULD EVER BE USED IN LIFE AND PROPERTY SAFETY SITUATIONS. No OEM Linx Remote Control or Function Module should be modified for Life and Property Safety Situations. Such modification cannot provide sufficient safety and will void the product's regulatory certification and warranty.

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.
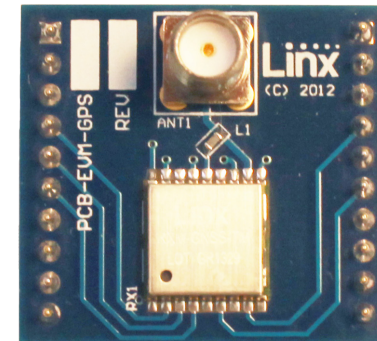
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Figure 1: TM Series Evaluation Module

Description

The TM 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. It's 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 TM 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 TM Series module very easy.

Ordering Information

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

Figure 2: Ordering Information

Electrical Specifications

TM 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				156	mA	1
Acquisition			28		mA	1
Tracking			20		mA	1
Standby			0.365		mA	1
Backup Battery Voltage	V_{BAT}	2.0		4.3	VDC	
Backup Battery Current	I_{BAT}		7		µA	2
Antenna Port						
RF Impedance	R_{IN}		50		Ω	
Environmental						
Operating Temperature Range		−40		+85	°C	
Storage Temperature Range		−40		+85	°C	

1. V_{CC} = 3.3V, without active antenna, ephemeris prediction is off
2. V_{CC} = 0V

Figure 3: Electrical Specifications

⚠ **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.
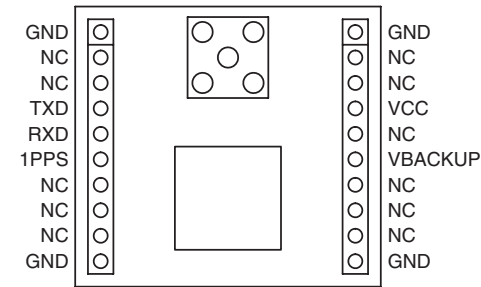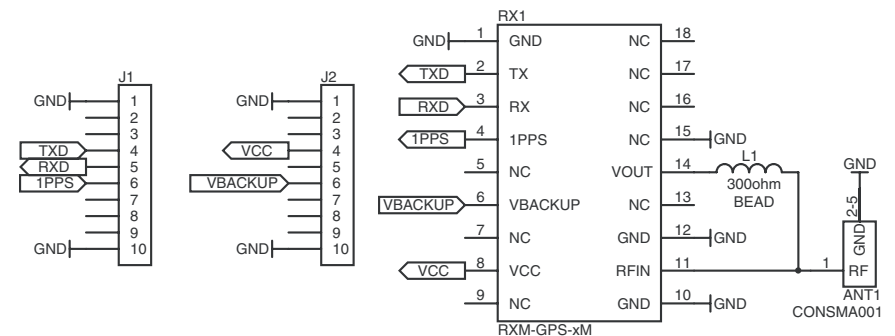
Pin Assignments

Figure 4: EVM-GNSS-TM Pin Assignments

PCB Layout
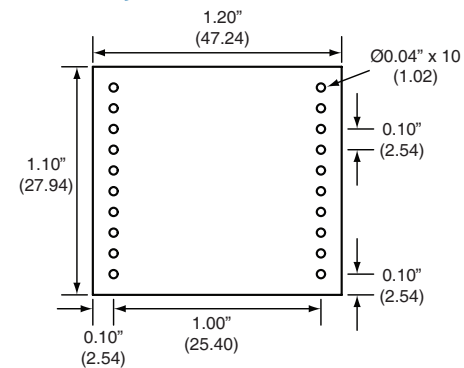
Figure 5: EVM-GNSS-TM PCB Layout Dimensions

Schematic

Figure 6: EVM-GNSS-TM Schematic

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