




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

**Wireless made simple<sup>®</sup>**

 **Warning:** Linx radio frequency (“RF”) products may be used 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. No Linx Technologies product is intended for use in any application without redundancies where the safety of life or property is at risk.

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**All RF products are susceptible to RF interference that can prevent communication.** Lack of good sight of the GPS satellites (open sky) can affect the accuracy of a position fix or prevent a fix entirely.

**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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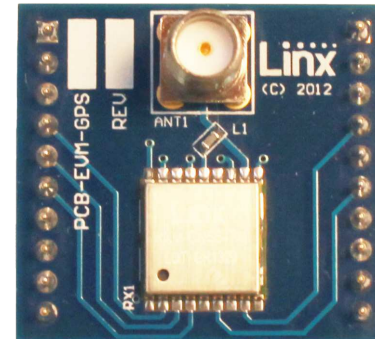


Figure 1: TM Series Evaluation Module

## Introduction

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		$\mu$ 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						
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

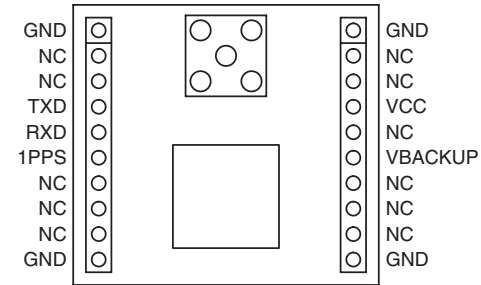


Figure 4: EVM-GNSS-TM Pin Assignments

## PCB Layout

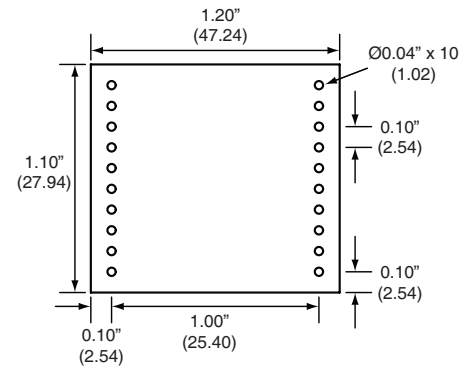


Figure 5: EVM-GNSS-TM PCB Layout Dimensions

## Schematic

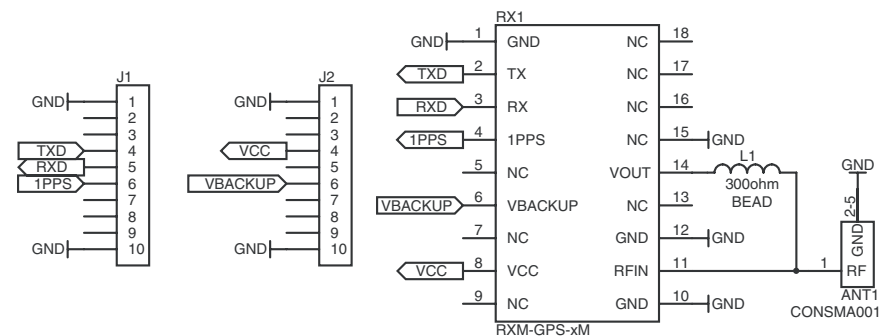


Figure 6: EVM-GNSS-TM Schematic



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#### Disclaimer

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