

FM 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”).

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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FM Series GPS Receiver Evaluation Module

User's Guide

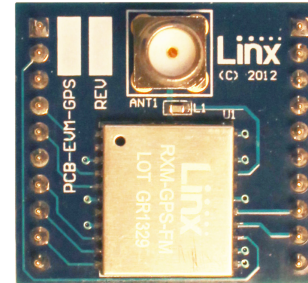


Figure 1: FM Series Evaluation Module

Description

The FM Series GPS receiver module is a self-contained high-performance Global Positioning System receiver. Based on the MediaTek MT3339 chipset, it can simultaneously acquire on 66 channels and track on up to 22 channels. This gives the module fast lock times and high position accuracy even at low signal levels.

The module's exceptional sensitivity gives it superior performance, even in dense foliage and urban canyons. Its very low power consumption helps maximize runtimes in battery powered applications. The module outputs standard NMEA data messages through a UART interface. These features make it easy to integrate, even by engineers without previous RF or GPS experience. The Linx FM Series GPS modules offer a simple, efficient and cost-effective method of adding GPS capabilities to any product.

The evaluation module contains the surface mount FM Series GPS 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 FM Series module very easy.

Ordering Information

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

Figure 2: Ordering Information

Electrical Specifications

FM Series GPS 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				66	mA	1
Acquisition			14		mA	1
Tracking			12		mA	1
Standby			0.150		mA	1
Backup Battery Voltage	V_{BAT}	2.0		4.3	VDC	
Backup Battery Current	I_{BAT}		6		μ A	2
VOUT Output Voltage	V_{OUT}	2.7	2.8	2.9	VDC	
VOUT Output Current	I_{OUT}			30	mA	1
Antenna Port						
RF Impedance	R_{IN}		50		Ω	
ENVIRONMENTAL						
Operating Temperature Range		-40		+85	$^{\circ}$ C	
Storage Temperature Range		-40		+85	$^{\circ}$ C	

- $V_{CC} = 3.3V$, without active antenna, position fix is available
- $V_{CC} = 0V$

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

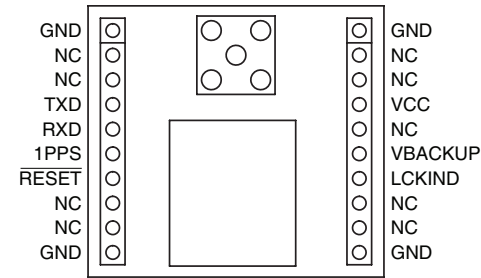


Figure 4: EVM-GPS-FM Pin Assignments

PCB Layout

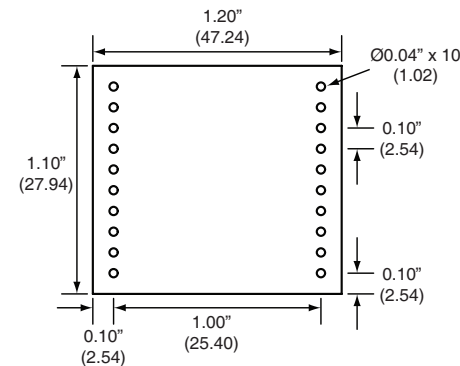


Figure 5: EVM-GPS-FM PCB Layout Dimensions

Schematic

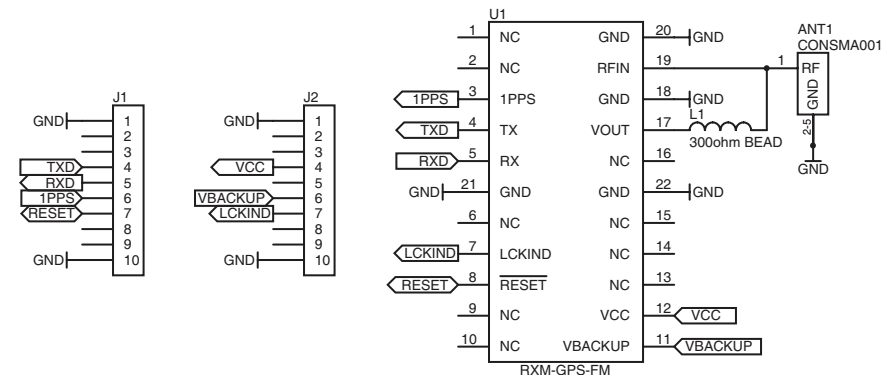


Figure 6: EVM-GPS-FM Schematic

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