



**R4 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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R4 Series GPS Receiver Evaluation Module User's Guide

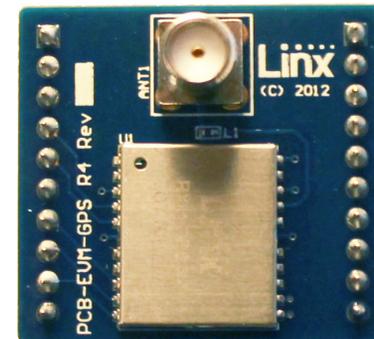


Figure 1: R4 Series Evaluation Module

Description

The R4 Series GPS receiver module is a self-contained high-performance GPS receiver with an on-board LNA and SAW filter. Based on the SiRFstar IV chipset, it provides exceptional sensitivity, even in dense foliage and urban canyons. The module's very low power consumption helps maximize runtimes in battery powered applications. With over 200,000 effective correlators, the R4 Series receiver can acquire and track up to 48 satellites simultaneously in just seconds, even at the lowest signal levels. These features, along with the module's standard NMEA data output, make it easy to integrate, even by engineers without previous RF or GPS experience. The Linx R4 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 R4 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 R4 Series module very easy.

Ordering Information

Ordering Information	
Part Number	Description
EVM-GPS-R4	R4 Series Evaluation Module
RXM-GPS-R4	R4 Series GPS Receiver Module

Figure 2: Ordering Information

Electrical Specifications

Ordering Information						
Parameter	Designation	Min.	Typ.	Max.	Units	Notes
POWER SUPPLY						
Supply Voltage	V_{CC}	3.0	3.3	3.6	VDC	
Supply Current	I_{CC}					
Peak				122	mA	1
Acquisition			56		mA	1
Tracking			33		mA	1
Hibernate			0.43		mA	1
Backup Battery Voltage	V_{BAT}	2.0			VDC	
Backup Battery Current	I_{BAT}		660	830	μ A	2
2.85V Output Voltage	V_{OUT}		V_{CC}		VDC	
2.85V Output Current	I_{OUT}		2		mA	
ANTENNA PORT						
RF Input Impedance	R_{IN}		50		Ω	
ENVIRONMENTAL						
Operating Temperature Range		-40		+85	$^{\circ}$ C	
Storage Temperature Range		-40		+85	$^{\circ}$ C	

Notes:
 1. V_{CC} = 3.3V, without active antenna
 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

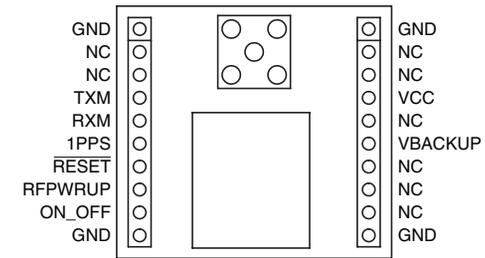


Figure 4: EVM-GPS-R4 Pin Assignments

PCB Layout

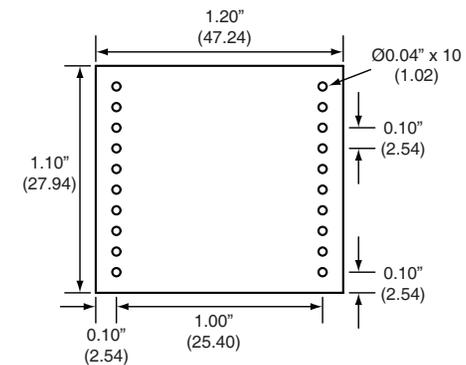


Figure 5: EVM-GPS-R4 PCB Layout Dimensions

Schematic

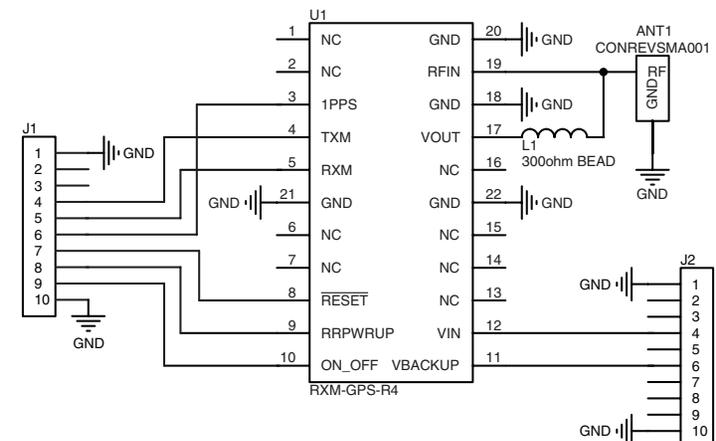


Figure 6: EVM-GPS-R4 Schematic



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