Linx TECHNOLOGIES

R4 Series
Master Development System
Evaluation Module
User´s Guide

Wireless made simple®

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.

The customers and users of devices and machinery controlled with RF products must understand and must use all appropriate safety procedures in connection with the devices, including without limitation, using appropriate safety procedures to prevent inadvertent triggering by the user of the device and using appropriate security codes to prevent triggering of the remote controlled machine or device by users of other remote controllers.

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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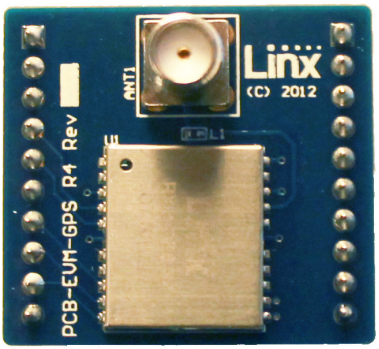

Figure 1: R4 Series Master Development System Evaluation Module

Introduction

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 Master Development System 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 Master Development System 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	µA	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	°C	
Storage Temperature Range		–40		+85	°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

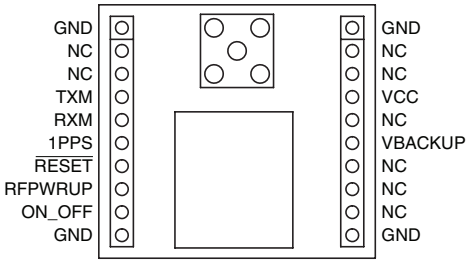

Figure 4: EVM-GPS-R4 Pin Assignments

PCB Layout

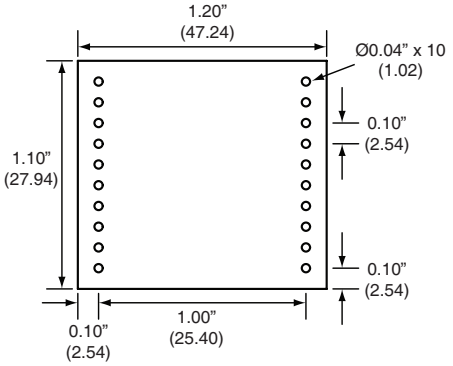

Figure 5: EVM-GPS-R4 PCB Layout Dimensions

Schematic

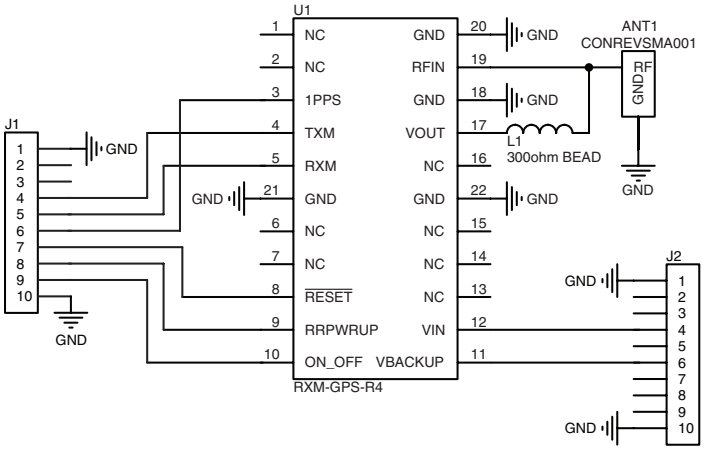

Figure 6: EVM-GPS-R4 Schematic

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