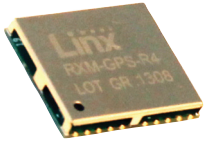




GPS & GNSS Module Overview Guide

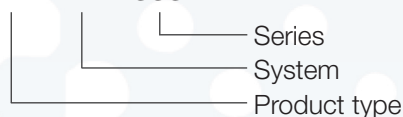
Linx strives to *make every engineer a hero in record time™* by minimizing the risk, delays and technical challenges for design engineers to implement wireless functionality and connectivity to the Internet. Unlike other module producers, every aspect of our product and design experience is specifically crafted to achieve Wireless Made Simple®.

Linx GPS and GNSS Module Parameters						
						
		NEW!	NEW!	NEW!	NEW!	NEW!
Series		R4	RM	F4	FM	GM
Product Positioning		Low-cost ROM GPS receiver		Full featured GPS receiver		Full featured GNSS receiver
Features		SiRFStarIV	MediaTek Low power	SiRFStarIV 5 user definable GPIOs 3 day ephemeris prediction	MediaTek 3 day ephemeris prediction Low power	MediaTek 3 day ephemeris prediction Uses all current global navigation satellite systems
Size	Inches	0.51 x 0.59	0.51 x 0.59	0.51 x 0.59	0.51 x 0.59	0.51 x 0.59
	mm	15.0 x 13.0	15.0 x 13.0	15.0 x 13.0	15.0 x 13.0	15.0 x 13.0
Frequency		1575.42MHz	1575.42MHz	1575.42MHz	1575.42MHz	1575.42MHz, 1598.0625-1605.375MHz
Chipset		SiRF Star IV, GSD4e ROM	MediaTek MT3337	SiRF Star IV, GSD4e-9411	MediaTek MT3339	MediaTek MT3333
Current Consumption	Peak (mA)	122	44	130	66	150
	Acquisition (mA)	56	14	46	14	24
	Tracking (mA)	33	12	27.5	12	16
	Sleep (µA)	430	135	20	150	365
Supply Voltage (VDC)	Min	3	3	1.71	3	3
	Max	3.6	4.3	1.89	4.3	4.3
RX Sensitivity (dBm)	Cold Start	-145	-143	-145	-143	-143
	Tracking	-160	-161	-160	-161	-161
Channels		48	66	48	66	99
Update Rate (Hz)		1	1 default, up to 10	1 default, up to 5	1 default, up to 10	1 default, up to 10
Operating Temp Range		-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C
Acquisition Time (Seconds)	Hot Start Open Sky	<1	<1	<1	<1	<1
	Hot Start Indoors	<15	<30	<15	<30	<30
	Cold Start	<32	<32	<32	<32 (<15 wthi AGPS)	<32 (<15 wthi AGPS)
Altitude (m)		18,000	50,000	18,000	50,000	18,000
Velocity (m/s)		<515	<515	<515	<515	<515
Position Accuracy (m)		2.5	2.5	2.5	2.5	2.5
1PPS Accuracy		N/A	±11ns	N/A	±11ns	±11ns
Systems		GPS, QZSS	GPS, QZSS	GPS, QZSS	GPS, QZSS	GPS, GALILEO, QZSS, GLONASS
Interface		UART	UART	UART	UART	UART
Protocol Support		NMEA 0183 ver 3.0, SiRF Binary	NMEA 0183 ver 3.01	NMEA 0183 ver 3.0, SiRF Binary	NMEA 0183 ver 3.01	NMEA 0183 ver 4.10

GPS and GNSS Module Part Numbering System

Our part numbers are structured as follows: product type, system and series.

TTT - FFF - SSS



EVM (Module on carrier board.)

RF Module Part Numbering System Descriptions

Product Type Options	System	Series
RXM (Receiver module)	GPS	R4, RM, F4, FM, GM, TM
EVM (Module on carrier board)	GNSS	

Master Development System

The development systems are not an afterthought to us at Linx. They are key to how we make Wireless Made Simple®. We do not consider a designer who purchases our kit to be a customer yet; they are potential customers who must be won over by our development experience and the support we provide. Linx kits are different in that they are:

- 1. Intuitive** – We took inspiration from modern consumer products and usability best practices to design our kits to be extremely intuitive. Open the box and begin preliminary testing without reading the manual.
- 2. Everything you need** – Contains everything a designer needs to make their product wireless including printed documentation, Antenna Factor™ antennas, spare modules and PC software to customize the module and troubleshoot the development.
- 3. Ergonomic to develop** – Linx is unique in providing a hardware development area with easy to access lines and clips tied directly to the module's output. An integrated OLED display shows the module's output making it suitable for stand-alone testing.
- 4. Affordable** – The goal of Linx is to make it as easy as possible to try out our products, not to make a profit on the kit. We price our master development systems at \$149 to \$199.



Linx Technologies is continually striving to improve the quality and function of its products. For this reason, we reserve the right to make changes to our products without notice. The information contained in this Data Guide is believed to be accurate as of the time of publication. Specifications are based on representative lot samples. Values may vary from lot-to-lot and are not guaranteed. "Typical" parameters can and do vary over lots and application. Linx Technologies makes no guarantee, warranty, or representation regarding the suitability of any product for use in any specific application. It is Customer's responsibility to verify the suitability of the part for the intended application. At Customer's request, Linx Technologies may provide advice and assistance in designing systems and remote control devices that employ Linx Technologies RF products, but responsibility for the ultimate design and use of any such systems and devices remains entirely with Customer and/or user of the RF products.

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.

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