LEADTEK BLUETOOTH GPS RECEIVER

LR9559X
SPECIFICATIONS SHEET

Introduction

The Leadtek LR9559X (LR9559X) Bluetooth GPS receiver is a high performance, low power, 20-channel GPS receiver, enabled with wireless capability with Bluetooth technology. It is based on the SiRFStarIII latest technology which provides a fast time to the first fix. Its far reaching capability meets the sensitivity requirements of car navigation as well as other location-based applications.

This LR9559X GPS receiver allows you to receive GPS data with Bluetooth-enabled portable devices, such as laptop, pocket PC, and smart phone. By sending GPS position data over Bluetooth you can position the receiver for the best possible reception - and all without wires!

Features

Hardware and Software

• Based on the high performance features of the SiRFStar III chipset
• Compact module size for easy integration 2.68”x1.73”x1.04”.
• Compliant with Bluetooth v1.2, class 2
• Series Port Profile (SPP) supported
• Built-in Ceramic Patch Antenna
• Removable Li-ion battery (Same as Nokia 3650 battery pack)
• Operation time: 10 hours, in continuous mode

Performance

• Cold/Warm/Hot Start Time: 42/38/8 sec.
• Reacquisition Time: 0.1 second.
• RF Metal Shield for best performance in noisy environments.
• Multi-path Mitigation Hardware.

Interface

• TTL level serial port for GPS communications interface
• Protocol: NMEA-0183/SiRF Binary (Default NMEA).
• Baud Rate: Default 19200 bps.

Specifications

Technical Performance

Feature	Item	Description
Chipset	GSW3	SiRFStarIII technology
General	Frequency	L1, 1575.42 MHz
	C/A code	1.023 MHz chip rate
	Channels	20
Accuracy	Position	10 meters, 2D RMS 5 meters 2D RMS, WAAS corrected <5meters(50%), DGPS corrected
	Velocity	0.1 meters/second
	Time	1 microsecond synchronized to GPS time
Datum	Default	WGS-84
Time to First Fix (TTFF)	Reacquisition	0.1 sec., average
(Open Sky & Stationary Requirements)	Hot start	8 sec., average typical TTFF
	Warm start	38 sec., average typical TTFF
	Cold start	42 sec., average typical TTFF
Dynamic Conditions	Altitude	18,000 meters (60,000 feet) max.
	Velocity	515 meters/second (1000 knots) max.
	Acceleration	4g, max.
Power	Main power input	5±5%(10%)V DC input
	Power consumption	≈390 mW (continuous mode)
	Backup Power	1.5±10%V DC input
Time-1PPS Pulse	Level	3.3V TTL
	Pulse duration	1 μs
	Time reference	At the pulse positive edge.
	Measurement	Aligned to GPS second, ±1 microsecond

Interface Specifications

Items	Description
Power Recharge	Mini-USB connector
Connector for External Antenna	MMCX

LED

LED 1			
Color	Blue	Flashing Blue	Red
BT Active	Yes	No	-
Low Power	-	-	Yes
LED 2			
Color	Green	Flashing Green	Orange
GPS Fix Status	No	Yes	-
Battery Charging	-	-	Yes

Bluetooth

Frequency	2400MHz to 2483.5MHz
Modulation Method	GFSK, 1Mbps, 0.5BT Gaussian
Maximum Data Rate	Asynchronous: 723.2kbps/57.6kbps Synchronous: 433.9kbps/433.9kbps
Transmission Power (Maximum)	4dBm(Class 2)
Hoping	1600hops/sec, 1MHz channel space
Receiving Signal Range	-84 to -15dBm
Receiver IF Frequency	1.5MHz center frequency
Baseband Crystal OSC	16MHz
Compliant	Bluetooth Specification v 1.2
Profile	Series Port Profile (SPP)
Bluetooth Operation Range	10 M

Electrical

Main power input	5±5%(10%)V DC input
Power consumption	≈390 mW (continuous mode)
Backup Power	1.5±10%V DC input
Operation Time	11 hours (1000mAh Li-Ion battery)

Battery Electrical

(Same as Nokia 3650 battery pack)

Battery Cell	Li-ion (1000mA)
Output Voltage	2.3V~4.2V ±0.025V
Dimension (LxWxH)	2.09"x1.34"x0.25"

*** Battery Pack for NOKIA 3650**

Environmental Characteristics

Items	Description
Operating temperature range	-10 deg. C to +50deg. C
Storage temperature range	-20 deg. C to +65 deg. C

Physical Characteristics

Items	Description
Length	68.1mm (2.68 in)
Width	44 mm (1.73 in)
Height	26.5 mm (1.04 in)
Weight	70 g (including rechargeable battery)

Software

SiRF GSW3

The LR9559X includes GSW3, the SiRF standard GPS software for SiRFStarIII receivers.

Features include:
• Excellent sensitivity
• High configurability
• 1-second position update rate
• Supports use of satellite-based augmentation systems like the US WAAS or European EGNOS system
• API compatible with GSW3 and SiRFLoc™ Client AGPS support
• Real-time Operating System (RTOS) friendly
• Capable of outputting both NMEA and SiRF-proprietary binary protocols
• Designed to accept custom user tasks executed on the integrated ARM7TDM1 processor
• Runs in full power operation or optional power saving modes

GSW3 default configuration is as follows:

Item	Description
Core of firmware	SiRF GSW3
Baud rate	4800 bps
Code type	NMEA-0183 ASCII
Datum	WGS 84 default (User configurable)
Protocol message	GGA(1sec), GSA(5sec), GSV(5sec), RMC(1sec),VTG(1sec)
Output frequency	1 Hz

Photo Image

Outline Dimension