

LEA-5 Module Series

u-blox 5 GPS and GALILEO Receivers

Preliminary Data

Overview

The LEA-5 module series brings the high performance of the u-blox 5 positioning engine to the industry standard LEA form factor. These versatile, stand-alone receivers combine an extensive array of features with flexible connectivity options. Their ease of integration results in fast times-to-market for a wide range of automotive, consumer and industrial applications with strict size and cost requirements.



Highlights

- 50-channel u-blox 5 engine with over 1 million effective correlators
- <1 second Time To First Fix for Hot and Aided Starts
- -160dBm SuperSense® acquisition and tracking sensitivity
- Accelerated startup at weak signals with KickStart feature
- Supports AssistNow® Online and AssistNow® Offline A-GPS services; OMA SUPL compliant
- High immunity to jamming
- Hybrid GPS, GALILEO and SBAS (WAAS, EGNOS, MSAS, GAGAN) engine
- 4 Hz position update rate
- Easy migration from LEA-4 modules

Features

	Power	Size	Memory	Function			Antenna		Input / Output						
	Voltage Range (V)		Programmable (Flash) FW Update	KickStart	Dead Reckoning	Raw Data	Precision Timing	Antenna Supply	Antenna Supervisor		USB	SPI	DDC (I²C compliant)	Reset Input	Configuration Pin
LEA-5H			•	•				•	•	1	1		1	•	
LEA-5S	2.7-3.6	3.0		•				•	•	1	1		1	•	1
LEA-5A								•	•	1	1		1	•	1

your position is our focus





Mechanical Data

15 GND		GND 14
16 RF_IN		GND 13
17 GND	LEA-5	Reserved 12
18 VCC_RF	Top View	V_BCKP 11
19 V_ANT	•	RESET_N 10
20 AADETO_N		CFG_COM1 /Reserved
		/Reserved
21 NC		VCC_OUT 8
22 NC		GND 7
23 NC		VCC 6
24 VDDUSB		NC 5
25 USB DM		RxD1 4
26 USB DP		TxD1 3
27 EXTINTO		SCL2 2
28 TIMEPULSE		SDA2 1
THREFULSE		3DAZ

Dimensions 22.4mm x 17.0mm

Weight 2.1 g

Receiver Performance Data

Receiver Type 50-channel u-blox 5 engine

GPS L1 C/A code

GALILEO L1 Open Service (with upgrade) SBAS: WAAS, EGNOS, MSAS, GAGAN

Max. Update

Rate

4 Hz

Accuracy¹ Position

SBAS

2.0 m CFF

2.5 m CEP

Acquisition¹

Cold starts: 29 s Warm starts: 29 s Aided starts²: <1 s

Hot starts:

<1s

Sensitivity

Acquisition: -160 dBm -160 dBm Tracking: Cold starts: -145 dBm

Multipath Suppression Intelligent multipath detection and

suppression

A-GPS

Supports AssistNow® Online and AssistNow® Offline,

OMA SUPL compliant

Operational Limits

Velocity:

515 m/s (1000 knots)

Interfaces

Serial 1 UART

Interfaces 1 USB V2.0 Full Speed 12 Mbit/s

1 DDC (I²C compliant)

Digital I/O Configurable time pulse

1 EXTINT input

1 Reset

1 Configuration Pin (LEA-5A, LEA-5S)

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Serial and I/O **Voltages**

3 V levels

Protocols NMEA, UBX binary

Electrical Data

Power Supply 2.7 to 3.6 V

Power

120 mW @ 3.0V

Consumption **Backup Power**

1.3 V to 4.8 V, 30µA

Antenna Type

Active and Passive

Antenna Power

External or Internal VCC_RF

Antenna Supervision Integrated short-circuit detection and antenna shutdown, open circuit detection is supported with AADET N

input and little external circuitry

Environmental Data

Operating Temp.

-40°C to 85°C

Storage Temp.

-40°C to 85°C

Support Products

EVK-5H u-blox 5 Evaluation Kit

An easy-to-use kit to get familiar with u-blox 5 positioning technology, and to evaluate functionality and visualize

GPS performance.

Ordering Information

LEA-5H-0 LEA-5H - u-blox 5 GPS/GALILEO Module

LEA-5S-0 LEA-5S - u-blox 5 GPS Module

LEA-5A-0

LEA-5A - u-blox 5 GPS Module

Available as samples and tape on reel

(250 pieces)

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All SV @ -130 dBm

Dependent on aiding data connection speed and latency