

LEA-6N

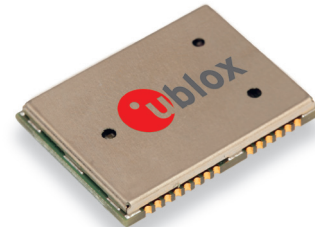
u-blox 6 GPS, QZSS, GLONASS and Galileo module

Highlights

- GLONASS, GPS and QZSS
- Optimized mode for low power and maximum sensitivity
- UART, USB and DDC (I²C compliant) interfaces
- Onboard RTC Crystal for faster warm and hot starts
- Integrated antenna supervisor

Features

- u-blox 6 position engine:
 - Navigate down to -162 dBm and -148 dBm coldstart
 - Configurable power management
 - Hybrid GPS/SBAS engine (WAAS, EGNOS, MSAS)
 - Anti-jamming technology
- Simple integration with u-blox wireless modules
- A-GPS: AssistNow Online and AssistNow Offline services, OMA SUPL compliant
- Easy migration from LEA-6, LEA-5 or LEA-4 GPS modules
- LCC package for reliable and cost effective manufacturing
- Compatible with u-blox GNSS Solution for Android
- Based on GNSS chips qualified according to AEC-Q100
- Manufactured in ISO/TS 16949 certified production sites
- Qualified according to ISO 16750



LEA-6N:
17.0 x 22.4 x 2.4 mm

Product description

The LEA-6N module brings GLONASS functionality to the high performance u-blox 6 position engine in the industry standard LEA form factor. The Russian GLONASS satellite system is an alternative to the US-based Global Positioning System (GPS). GLONASS-based navigation systems are becoming a de-facto standard in Russia and beyond. The LEA-6N also provides the GPS features and performance of u-blox 6 technology and adds enhanced coverage and performance by also supporting the QZSS regional satellite system.

The LEA-6N features the lowest power GLONASS functionality in the industry at low cost, and is designed for ERA-GLONASS. This versatile, standalone receiver combines an extensive array of features with flexible connectivity options. The ease of integration results in fast time-to-market for a wide range of automotive and industrial applications targeting the Russian market.

All LEA-6 modules are manufactured in ISO/TS 16949 certified sites. Each module is tested and inspected during production. The modules are qualified according to ISO 16750 - Environmental conditions and electrical testing for electrical and electronic equipment for road vehicles.

Product selector

Model	Type						Supply	Interfaces				Features							
	Standalone GPS	Standalone GLONASS	Standalone Galileo	QZSS	Timing & Raw Data	Dead Reckoning	1.75 V - 2.0 V	2.7 V - 3.6 V	UART	USB	SPI	DDC (I ² C compliant)	Programmable (Flash) FW update	Oscillator	RTC crystal	Antenna supply and supervisor	Configuration pins	Timepulse	External interrupt / Wakeup
LEA-6N	•	•	R	•			•		•	•		•	T	O	•		1	•	

R = HW Galileo ready, firmware upgrade required.

O = Onboard RTC crystal for faster warm and hot starts.

T = TCXO

Receiver performance data

Receiver type	50-channel u-blox 6 engine GPS/QZSS L1 C/A code GLONASS L1 FDMA Galileo L1 open service (with upgrade) SBAS: WAAS, EGNOS, MSAS		
Navigation update rate	2 Hz		
Accuracy ¹	Position	GPS 2.5 m CEP	GLONASS 4 m CEP
	SBAS	2.0 m CEP	n.a.
Acquisition ¹	Cold starts:	26 s	38 s
	Aided starts ² :	1 s	n.a.
	Hot starts:	1 s	3 s
Sensitivity ³	Tracking:	-162 dBm	-158 dBm
	Cold starts:	-148 dBm	-138 dBm
	Hot starts:	-157 dBm	-153 dBm

¹ All SV @ -130 dBm

² Dependent on aiding data connection speed and latency

³ Demonstrated with a good active antenna

Electrical data

Power supply	2.7 V – 3.6 V
Power consumption	121 mW @ 3.0 V (continuous) 33 mW @ 3.0 V Power Save Mode (1 Hz) ⁴
Backup power	1.4 V – 3.6 V, 22 µA
Antenna power	External or internal VCC_RF
Supported antennas	Active and passive
Antenna supervision	Integrated short-circuit detection and antenna shutdown, open circuit detection with minimal external circuitry

⁴ GPS only.

Interfaces

Serial interfaces	1 UART 1 USB V2.0 full speed 12 Mbit/s 1 DDC (I ² C compliant)
Digital I/O	Configurable timepulse 1 EXTINT input for Wakeup 1 reset
Serial and I/O	Voltages 2.7 V – 3.6 V
Timepulse	Configurable 0.25 Hz to 1 kHz
Protocols	NMEA, UBX binary, RTCM

Legal Notice

u-blox reserves all rights to this document and the information contained herein. Products, names, logos and designs described herein may in whole or in part be subject to intellectual property rights. Reproduction, use, modification or disclosure to third parties of this document or any part thereof without the express permission of u-blox is strictly prohibited.

The information contained herein is provided "as is". No warranty of any kind, either express or implied, is made in relation to the accuracy, reliability, fitness for a particular purpose or content of this document. This document may be revised by u-blox at any time. For most recent documents, please visit www.u-blox.com.

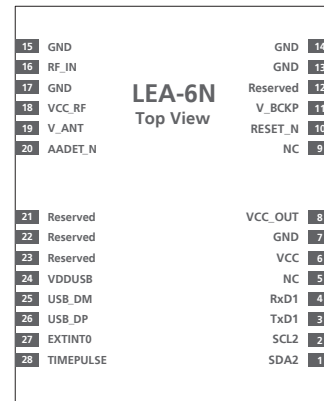
Copyright © 2012, u-blox AG

Objective Specification

Package

28 pin LCC (Leadless Chip Carrier): 17.0 x 22.4 x 2.4 mm, 2.1 g

Pinout



Environmental data, quality & reliability

Operating temp. -40° C to 85° C

Storage temp. -40° C to 85° C

RoHS compliant (lead-free)

Qualification according to ISO 16750

Manufactured in ISO/TS 16949 certified production sites

Support products

u-blox 6 Evaluation Kits:

Easy-to-use kits to get familiar with u-blox 6 positioning technology, evaluate functionality, and visualize GNSS performance.

EVK-6N: u-blox 6 Evaluation Kit
GPS/GLONASS/QZSS with TCXO

Ordering information

LEA-6N-0 u-blox 6 GPS/GLONASS/QZSS Module, TCXO, Flash, 17 x 22mm, 250 pcs/reel

Available as samples and tape on reel

Contact us

HQ Switzerland
+41 44 722 7444
info@u-blox.com

China
+86 10 68 133 545
info_cn@u-blox.com

EMEA
+41 44 722 7444
info@u-blox.com

Japan
+81 3 5775 3850
info_jp@u-blox.com

Americas
+1 703 483 3180
info_us@u-blox.com

Korea
+82 2 542 0861
info_kr@u-blox.com

APAC – Singapore
+65 6734 3811
info_ap@u-blox.com

Taiwan
+886 2 2657 1090
info_tw@u-blox.com