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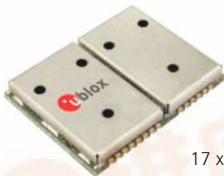
LEA-5H

u-blox 5 Programmable GPS & Galileo Module Automotive and Mobile Terminal Applications

Preliminary Data – Scheduled for Q2 2007

Overview

With the integrated u-blox 5 positioning engine containing 50 channels, the LEA-5H module provides unparalleled acquisition and navigation performance. A dedicated acquisition engine with over 1 million correlators is capable of doing simultaneous searches across the entire time/frequency space to find satellites instantly, even under difficult signal conditions, providing Time To First Fix (TTFF) of under 1 second and -160 dBm acquisition sensitivity. Once the signals are acquired, they are passed to the tracking engine. With innovative solutions to suppress jamming sources and mitigate multipath effects, it provides excellent navigation performance with low power consumption in most challenging indoor and outdoor locations.

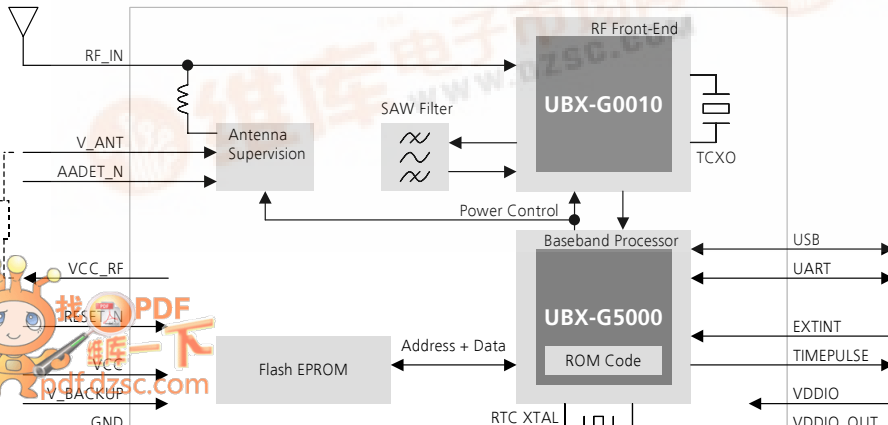


17 x 22.4 x 3 mm

The built-in Flash EPROM provides space to store user-specific configuration settings and enables future firmware updates, e.g. to process Galileo signals when Galileo is put in operation.

The combination of these features makes this module suitable for a broad spectrum of GPS products whose key requirements include high sensitivity, low power consumption and small size.

Block Diagram



Highlights

- Unparalleled acquisition performance with 50 channel engine and > 1 million correlators
- SuperSense® Indoor GPS: -160 dBm acquisition and tracking sensitivity
- Ultra low power consumption
- High jamming immunity
- Galileo ready
- Upgrade path from LEA-4H and LEA-4P

Features

- 32 channel acquisition engine
- 18 channel tracking engine for GPS + Galileo
- Supports A-GPS solutions including
 - AssistNow® Online and Offline
 - SUPL, RRC, RRLP
- Supports WAAS, EGNOS and MSAS
- Flash EPROM: programmable and configurable
- 1 USB and 1 UART port
- 4 Hz position update rate
- Power saving modes
- Supports passive and active antennas
- Antenna short and open circuit detection and protection
- Operating temperature range: -40 to 85°C
- RoHS compliant (lead-free)

*your position
is our focus*



u-blox AG
 Zürcherstrasse 68
 8800 Thalwil
 Switzerland
www.u-blox.com

Phone: +41 44 722 7444
 Fax: +41 44 722 7447
info@u-blox.com

Receiver Performance Data

Receiver Type	L1 frequency GPS C/A code Galileo Open Service (with upgrade) Supports SBAS: WAAS, EGNOS, MSAS	
Max. Update Rate	4 Hz	
Accuracy	Position	2.5 m CEP
	SBAS	2.0 m CEP ¹
Acquisition	Open sky ²	Indoor ³
	Cold starts	29 s
	Aided starts:	<1 s 10 s
	Hot starts:	<1 s 10 s
	Reacquisition:	<1 s 10 s
Sensitivity	Acquisition and Reacquisition:	-160 dBm
	Tracking:	-160 dBm
	Cold starts:	-145 dBm
Multipath Suppression	Intelligent multipath detection and suppression	
GPS Protocols	NMEA, UBX Binary	
	Supports protocol mixing over same serial port	

A-GPS Assistance Data Standards	UMTS / GSM:	3GPP TS 25.331 RRC 3GPP TS 44.031 RRLP
	CDMA:	3GPP2 C.S0022-0-1
	OMA SUPL	
	AssistNow:	UBX protocol

A-GPS Performance Standards	USA (FCC)	E-911 Phase II
	UMTS / GSM:	3GPP TS 25.171
	CDMA:	TIA.916

Operational Limits	Velocity	515 m/s (1000 knots)
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¹ Depends on accuracy of correction data provided by the SBAS service

² Open sky: All SV -144 dBm or higher

³ Indoor: SV signal strength: -155 dBm

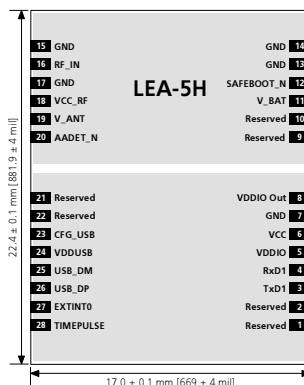
Electrical Data

Power Supply	2.7 to 3.6 V
Power Consumption	TBD
Backup Power	1.3 V to 4.8 V, typ. 25 µA
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

Mechanical Data



Support Products

An evaluation kit will be available soon.

Ordering Information

LEA-5H	LEA-5H – u-blox 5 Programmable GPS Module with SuperSense®
	Available as samples and taped on reel (250 pieces)

Interfaces

USB	V2.0 Full Speed 12 Mbit/s
Serial Ports	1 UART
Digital I/O	Configurable time pulse 1 EXTINT input
Serial and I/O Voltages	3 V levels, 5 V tolerant inputs
Protocols	NMEA, UBX binary
	Supports protocol mixing over same serial and USB ports