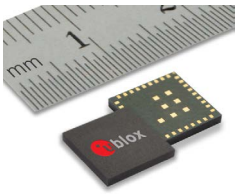
EVA-7M

u-blox 7 GNSS module

Highlights

- **Industry's smallest standalone GNSS module**
- Lowest system cost in the industry
- Minimal power consumption
- Simple integration with u-blox wireless modules
- Eases design and manufacturing
- No host integration or external components needed



EVA-7M:
7.0 x 7.0 x 1.1 mm

Product description

The EVA-7M standalone GNSS module features the reliable performance of the u-blox 7 positioning engine (receiving GPS, GLONASS, QZSS and SBAS signals). The EVA-7M delivers high sensitivity and minimal acquisition times in the ultra compact EVA form factor.

The EVA-7M is an ideal solution for cost and space-sensitive applications. It is easy to design-in, only requiring an external GNSS antenna in most applications. The layout of the EVA-7M is especially designed to ease the customer's design and limit near field interferences since RF and digital domains are kept separated.

EVA-7M uses a crystal oscillator for lower system costs. Like other u-blox GNSS modules, the EVA-7M uses components selected for functioning reliably in the field over the full operating temperature range.

The EVA-7M is easily integrated in manufacturing, thanks to its QFN-like package and low moisture sensitivity level. The modules are available in 500 pcs/reel, ideal for small production batches. The EVA-7M module combines a high level of integration capability with flexible connectivity options in a miniature package. This makes it perfectly suited for industrial and mass-market end products with strict size and cost requirements. The DDC (I^2C compliant) interface provides connectivity and enables synergies with u-blox SARA, LEON and LISA wireless modules.

The EVA-7M module is manufactured in ISO/TS 16949 certified sites and qualified as stipulated in the JESD47 standard.

Product selector

Model	Type							Supply		Interfaces				Features										
	GPS / QZSS	GLONASS	Galileo	BeiDou	Timing	Dead Reckoning	Precise Point Positioning	1.65 V – 3.6 V	Lowest power (DC/DC)	UART	USB	SPI	DDC (I^2C compliant)	Programmable (Flash)	Data logger	Extra front-end LNA	Front-end SAW filter	RTC crystal	Internal oscillator	Antenna supply	Antenna short circuit detection / protection	Antenna open circuit detection pin	Timepulse	External interrupt /Wakeup
EVA-7M	•	•						•	•	•	•	Sel	•					o	C	o	o	o	•	•

Sel = Select for either SPI or UART/DDC by HW configuration pin (D_SEL)
o = Optional, not activated per default or requires external components

C = Crystal

Features

Receiver type	56-channel u-blox 7 GNSS engine GPS/QZSS L1 C/A, GLONASS L1 FDMA, SBAS: WAAS, EGNOS, MSAS		
Max nav. update rate	10 Hz		
		GPS	GLONASS
Accuracy	Position	2.5 m CEP	4.0 m CEP
	SBAS	2.0 m CEP	n.a.
Acquisition	Cold starts:	30 s	32 s
	Aided starts:	5 s	n.a.
	Reacquisition:	1 s	3 s
Sensitivity	Tracking:	–160 dBm	–158 dBm
	Cold starts:	–147 dBm	–139 dBm
	Warm starts:	–148 dBm	–145 dBm
Assistance GPS	AssistNow Online AssistNow Offline AssistNow Autonomous OMA SUPL & 3GPP compliant		
Oscillator	Crystal		
Real time clock (RTC)	Can be derived either from onboard GNSS crystal (for lowest system costs and smallest size) or from external RTC Clock (Default mode, for lower battery current)		
Anti jamming	Active CW detection and removal		
Memory	Onboard ROM		
Supported antennas	Active and passive		
Antenna supervision	Short and open circuit detection supported with external circuit		

Electrical data

Supply voltage	1.65 V to 3.6 V
Digital I/O voltage level	1.65 V to 3.6 V
Power Consumption	16.5 mA @ 3 V (Continuous) 4 mA @ 3 V Power Save mode (1 Hz)
Backup Supply	1.4 to 3.6 V

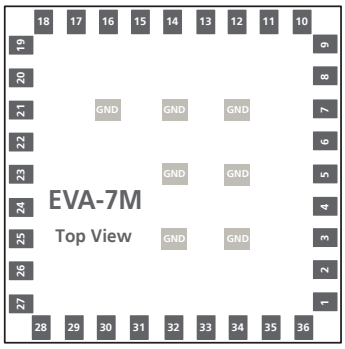
Interfaces

Serial interfaces	1 UART 1 USB 1 SPI (Optional) 1 DDC (I^2C compliant)
Digital I/O	Configurable timepulse 1 EXTINT input for Wakeup
Timepulse	Configurable 0.25 Hz to 1 kHz
Protocols	NMEA, UBX binary, RTCM

Package

43 pin LGA (Land Grid Array): 7.0 x 7.0 x 1.1 mm

Pinout



Environmental data, quality & reliability

Operating temp.	–30° C to 85° C
Storage temp.	–40° C to 105° C

RoHS compliant (lead-free) and green (no halogens)

Qualification according to standard JESD47

Manufactured in ISO/TS 16949 certified production sites

Moisture sensitivity level 3

Support products

Evaluation kit to get familiar with u-blox 7 positioning technology, evaluate functionality, and visualize GPS performance.

EVK-7C:	u-blox 7 Evaluation Kit for crystal based receivers For ordering information contact u-blox.
C88-7M:	NEO adaptor board using EVA-7M for easier evaluation for existing NEO designs.

Ordering information

EVA-7M-0	u-blox 7 GNSS LGA Module, Crystal, ROM, 7.0 x 7.0 mm, 500 pcs/reel

Available as samples and tape on reel

Contact us

For contact information, see www.u-blox.com/contact-us.