MAX-6 series

Compact u-blox 6 GPS modules

Highlights

- Ultra miniature package
- UART and DDC (I²C compliant) interfaces
- RTC crystal for faster warm and hot starts
- 1.8 V and 3.0 V variants



MAX-6: 9.7 x 10.1 x 2.5 mm

Features

- u-blox 6 position engine:
 - o Navigate down to -161 dBm and -148 dBm coldstart
 - o Faster acquisition with AssistNow Autonomous
 - o Configurable power management
 - o Hybrid GPS/SBAS engine (WAAS, EGNOS, MSAS)
 - o Anti-jamming technology
- Simple integration with u-blox wireless modules
- A-GPS: AssistNow Online and AssistNow Offline services, OMA SUPL compliant
- LCC package for reliable and cost effective manufacturing
- Compatible with u-blox GPS Solution for Android
- Manufactured in ISO/TS 16949 certified production sites
- Qualified according to ISO 16750

Product description

The MAX-6 module series brings the high performance of the u-blox 6 position engine to the ultra miniature MAX form factor. u-blox 6 has been designed with low power consumption and low costs in mind. Intelligent power management is a breakthrough for low-power applications. These receivers provide high performance and a high level of integration capability in a tiny package. This makes them perfectly suited for end products with strict size and cost requirements. The DDC interface provides connectivity and enables synergies with u-blox wireless modules.

All MAX-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	Туре				Supply		Interfaces				Features						
	Standalone GPS	Standalone GLONASS	Timing & Raw Data	Dead Reckoning	1.75 V – 2.0 V	2.7 V – 3.6 V	UART	USB	SPI	DDC (I²C compliant)	Programmable (Flash) FW update	Oscillator	RTC crystal	Antenna supply and supervisor	Configuration pins	Timepulse	External interrupt / Wakeup
MAX-6G	•				•		•			•		Т	•	0		1	•
MAX-6Q	•					•	•			•		Т	•	0		1	•

• = requires external components

T = TCXO



Receiver performance data

Receiver type 50-channel u-blox 6 engine

GPS L1 C/A code

SBAS: WAAS, EGNOS, MSAS

Navigation update rate up to 5 Hz

Accuracy¹ Position 2.5 m CEP

SBAS 2.0 m CEP

Acquisition¹ Cold starts: 26 s Aided starts²: 1 s

Hot starts: 1 s

Sensitivity³ Tracking & navigation: -161 dBm

Cold starts: -148 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 (MAX-6Q)

1.75 V – 2.0 V (MAX-6G)

Power consumption 41 mA (continuous)

12 mA Power Save Mode (1 Hz)

Backup power 1.4 V – 3.6 V, 22 μA

Supported antennas Active and passive

<u>Interfaces</u>

Serial interfaces 1 UART

1 DDC (I²C compliant)

Digital I/O Configurable timepulse

1 EXTINT input for Wakeup

Serial and I/O Voltages 2.7 – 3.6 V (MAX-6Q)

1.75 - 2.0 V (MAX-6G)

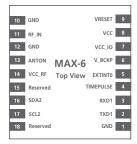
Timepulse Configurable 0.25 Hz to 1 kHz

Protocols NMEA, UBX binary, RTCM

Package

18 pin LCC (Leadless Chip Carrier): 9.7 x 10.1 x 2.5 mm

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 GPS performance.

EVK-6H: u-blox 6 Evaluation Kit with TCXO

Ordering information

MAX-6G-0 u-blox 6 GPS Module, 1.8V, TCXO,

9.7x10.1 mm, 500 pcs/reel

MAX-6Q-0 u-blox 6 GPS Module, TCXO,

9.7x10.1 mm, 500 pcs/reel

Available as samples and tape on reel

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