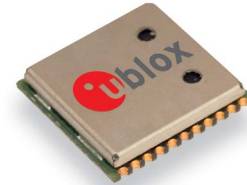


MAX-M5Q

Concurrent GNSS module

Highlights

- Multi-GNSS engine for concurrent GPS, GLONASS and QZSS reception
- Extremely small form factor
- Low power consumption
- Form-factor compatible with MAX-7 series



MAX-M5Q:
9.7 x 10.1 x 2.5 mm

Product description

The MAX-M5Q is a standalone, multi-GNSS module. With the exceptional utilization of concurrent GPS and GLONASS, MAX-M5Q can enhance the position availability in harsh GNSS satellite visibility conditions or at high latitudes, e.g. in the polar regions of Russia. It is characterized by a small footprint, low power consumption, and sophisticated interference suppression, ensuring maximum performance even in GPS-hostile environments. This makes incorporating MAX-M5Q into customer designs simple and straightforward.

MAX-M5Q supports autonomous A-GPS, allowing a very short warm start TTFF. It features an embedded data logger, which can store location information to internal Flash memory for up to 16 hours at the predetermined interval of 15 seconds.

MAX-M5Q targets industrial and consumer applications that require concurrent GPS/GLONASS reception. MAX-M5Q is form factor compatible with other MAX modules, allowing the upgrade of existing designs with minimal effort.

Product selector

The table below shows the MAX-M5Q feature set compared to the MAX-7 based receivers.

Model	Type	Supply	Interfaces	Features
	GPS / QZSS GLONASS Galileo BeiDou Timing Dead Reckoning Precise Point Positioning	1.65 V – 3.6 V 2.7 V – 3.6 V 3.0 V – 3.6 V	UART USB SPI DDC (I ² C compliant)	Programmable (Flash) Data logging 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 output External interrupt / Wakeup
MAX-7C	• •	•	• •	■ C ○ ○ ○ ○ • •
MAX-7Q	• •	•	• •	• T ○ ○ ○ ○ • •
MAX-7W	• •	•	• •	• T • • ○ ○ • •
MAX-M5Q	• •	•	• •	• • • • T ○ ○ ○ • •

○ = Optional, not activated per default or requires external components

C = Crystal / T = TCXO

■ = Derived from single crystal feature

Features

Receiver type	MT3333 engine 99/33-channel (search/track) GPS/QZSS L1 C/A, GLONASS L1 FDMA, SBAS: WAAS, EGNOS, MSAS	
Navigation update rate	up to 10 Hz	
Accuracy	Position	3.0 m CEP
	SBAS	3.0 m CEP
Acquisition	Cold starts:	23 s
	Aided starts:	3 s
	Reacquisition:	1 s
Sensitivity	Tracking:	-165 dBm
	Cold starts:	-148 dBm
	Warm starts:	-148 dBm
Assistance	Autonomous	
Oscillator	TCXO	
RTC crystal	Built-In	
Anti jamming	Active CW detection and removal	
Memory	Flash	
Supported antennas	Active antenna suggested	

Electrical data

Supply voltage	3.0 V to 3.6 V
Power Consumption	57 mW @ 3.3 V (continuous)
Backup Supply	2.0 to 3.6 V

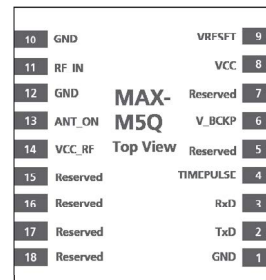
Interfaces

Serial interfaces	1 UART
Digital I/O	Timepulse
Timepulse	1 Hz
Protocols	NMEA

Package

18 pin LCC (Leadless Chip Carrier): 9.7 x 10.1 x 2.5 mm, 0.4 g

Pinout



Environmental data, quality & reliability

Operating temp. -40° C to +85° C

Storage temp. -40° C to +85° C

RoHS compliant (lead-free)

Manufactured in ISO/TS 16949 certified production sites

Support products

u-blox MAX-M5Q Evaluation Kit:

Easy-to-use kit to get familiar with the u-blox MAX-M5Q concurrent GNSS module, evaluate its functionality, and visualize GNSS performance.

EVK-M5Q: u-blox MAX-M5Q GNSS Evaluation Kit, with TCXO, supports MAX-M5Q

Ordering information

MAX-M5Q-0 Concurrent GNSS LCC Module, TCXO
9.7 x 10.1 mm, 500 pcs/reel

Available as samples and tape on reel

Contact us

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

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