UC530M

Fastrax GPS/GNSS antenna module

Highlights

• Multi-GNSS engine for combined GPS, GLONASS and QZSS

• Embedded GPS/GNSS Antenna

• Extremely small form factor and low power consumption

• Easy migration from UC530

• LCC package for reliable and cost effective manufacturing

UC530M:
9.6 x 14.0 x 1.95 mm

Product description

The UC530M is u-blox' newest multi-GNSS antenna module, adding GLONASS reception to Fastrax' industry proven UC530 form factor. By utilizing GPS and GLONASS satellites in parallel, UC530M can enhance the position availability in harsh GNSS satellite visibility conditions and in the polar regions.

Incorporating UC530M into customer designs is simple and straightforward thanks to the embedded antenna, low power consumption, a small footprint of only 9.6x14.0x1.95 mm and sophisticated interference suppression that ensures maximum performance even in GPS-hostile environments. The SMD design keeps manufacturing costs to a minimum.

The chip antenna of UC530M performs well against larger patch antennas. The omnidirectional radiation pattern increases flexibility for device installation. Additionally, UC530M can optionally be connected to an external GNSS antenna.

UC530M supports online and offline A-GPS, allowing a reduction of the warm start TTFF by as much as 90%. 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.

UC530M targets industrial and consumer applications that require parallel GPS/GLONASS reception. UC530M is pin and software compatible to Fastrax' UC530 antenna module, allowing the upgrade of existing designs with minimal effort.

Product selector

Model	Type						Supply			Interfaces				Features											
	GPS	QZSS	GLONASS	Timing	Dead Reckoning	Precise Point Positioning	3.0 V – 4.3 V	1.65 V – 3.6 V	Lowest power (DC/DC)	UART	USB	SPI	DDC (I2C compliant)	Programmable (Flash)	Data logger	Extra front-end LNA	Front-end SAW filter	Oscillator	RTC crystal	Antenna supply	Antenna short circuit detection / protection	Antenna open circuit detection pin	Timepulse	External interrupt / Wakeup
UC530M	•	•	•				•			•				•	•	•	•	T	•				•	•

C = Crystal / T = TCXO

Features
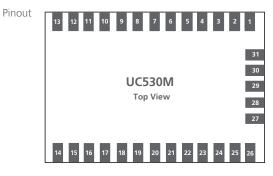
Receiver type	MT3333 engine GPS L1 C/A, GLONASS L1 FDMA , QZSS L1 C/A SBAS: WAAS, EGNOS, MSAS
Navigation update rate	up to 10 Hz

Accuracy	Position	2.5 m CEP
	SBAS	2.0 m CEP

Acquisition	Cold starts:	29 s
	Warm starts:	23 s
	Hot starts:	1 s

Sensitivity	Tracking:	−165 dBm
	Cold starts:	−148 dBm

Assistance	Online and offline
Data logging	Up to 16 hours at 15 s intervals
Oscillator	TCXO
RTC crystal	Built-In
Anti jamming	Active CW detection and removal
Memory	Flash
Supported antennas	Embedded chip antenna Optional external antenna

Electrical data

Supply voltage	3.0 V to 4.3[1] V
Power Consumption	66 mW @ 3.3 V (Continuous)
Backup Supply	2.0 V to 4.3[1] V

[1] For future-proof designs, u-blox recommends a 3.6 V maximum.

Interfaces

Serial interfaces	2 UART
Digital I/O	FORCE_ON WAKEUP output (ANT_ON)
Timepulse	1 Hz
Protocols	NMEA, RTCM

Package

28 pin LCC (Leadless Chip Carrier): 9.6 x 14.0 x 1.95 mm, 0.5 g

Pinout

Environmental data, quality & reliability

Operating temp.	−40° C to 85° C
Storage temp.	−40° C to 85° C

RoHS compliant (lead-free)

Ordering information

UC530M-0	Fastrax GPS/GNSS Antenna Module, Flash, TCXO, SAW, 9.6 x 14.0mm, 500 pcs/reel

Available as samples and tape on reel

Contact us

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