

# 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 u-blox UC530M multi-GNSS antenna module adds GLONASS reception to Fastrax' industry proven UC530 form factor. By utilizing GPS and GLONASS satellites in parallel, the 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 autonomous 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	3.0 m CEP
	SBAS	3.0 m CEP
Acquisition	Cold starts:	23 s
	Aided starts:	3 s
	Hot starts:	1 s
Sensitivity	Tracking:	-165 dBm
	Cold starts:	-148 dBm
Assistance	Autonomous	
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 <sup>1</sup> V
Power Consumption	66 mW @ 3.3 V (Continuous)
Backup Supply	2.0 V to 4.3 <sup>1</sup> V

<sup>1</sup> 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

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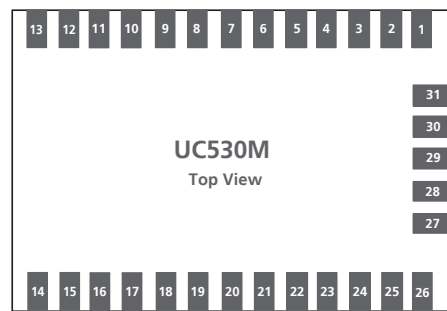
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Objective Specification

## 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)

## Support product

EVK-UC530M UC530M GPS/GNSS evaluation kit with TCXO

Easy-to-use kit to get familiar with Fastrax UC530M multi-GNSS receiver modules, evaluate functionality and visualize GPS/GNSS performance.

## 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

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