

## L10

### Compact GPS Module with SuperSensitivity



Super Sensitivity -  
-165dBm Tracking

Low Power  
Consumption

Extended Temperature  
Range -40 °C to +85 °C

High Accuracy

RoHS Compliant

SMD Type

USB 2.0 Full Speed  
Compliant Interface

The GPS module L10 brings the high performance of the MTK positioning engine to the industrial standard. The L10 supports 210 PRN channels. With 66 search channels and 22 simultaneous tracking channels, it acquires and tracks satellites in the shortest time even at indoor signal level. This versatile, stand-alone receiver combines an extensive array of features with flexible connectivity options. Their ease of integration results in fast time-to-market in a wide range of automotive, consumer and industrial applications.

- 210 PRN channels, with 66 search channels and 22 simultaneous tracking channels
- -165dBm tracking sensitivity
- Highest autonomous mode acquisition sensitivity, -148dBm
- Low tracking power consumption, 38mA (passive antenna)
- Full ESD protection on all pins
- Embedded with one 4Mbits flash memory
- Superior anti-jamming design for best integration with other wireless application, such as WiFi, WiMax, CDMA and GSM
- Multi-path detection and correction for accurate navigation in harsh urban canyon
- Up to 5Hz update rate
- USB 2.0 full speed compliant interface

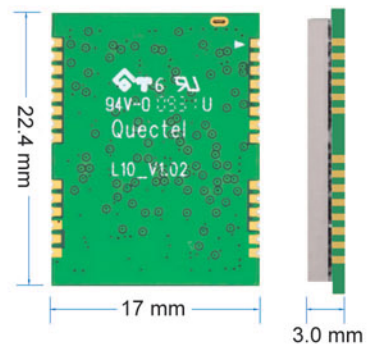


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### Compact GPS Module with Super Sensitivity

#### General Specifications

L1 Band Receiver (1575.42MHz)	Channel Number	22 TRK / 66 ACQ
	SBAS	19 C/A (WAAS, EGNOS, MSAS)
	QZSS	5 C/A, 5 SAIF
	Total	210 PRN channels
Position Accuracy	Without Aid	3.0 m 2D-RMS
	DGPS	2.5 m
Velocity Accuracy	Without Aid	0.1 m/s
	DGPS	0.05 m/s
Acceleration Accuracy	Without Aid	0.1 m/s <sup>2</sup>
	DGPS	0.05 m/s <sup>2</sup>
Timing Accuracy		< 100 ns
Reacquisition Time		< 1 s
TTFF (Time To First Fix)	Cold Start	<35s
	Warm Start	<35s
	Hot Start	<1s
	EPO, BEE * (Optional)	5-10s
	SUPL**(Optional)	5-10s
	*EPO: Extended Prediction Orbit *BEE: Broadcast Ephemeris Extension **Without counting data link time	
Sensitivity	Autonomous Acquisition	-148dBm
	Reacquisition	-160dBm
	Hot Start	-160dBm
	Tracking	-165dBm
Max Update Rate		5Hz
Environmental	Operating Temperature	-40°C to 85°C
	Storage Temperature	-45°C to 125°C
Dynamic Performance	Maximum Altitude	18,000 m
	Maximum Velocity	515m/s
	Acceleration	4 G
Dimensions		22.4mm×17.0mm×3.0mm
Weight		Approx 2.0g



#### Electrical Data

Power Supply	3.0 to 4.3V
Power Acquisition	43mA (Passive antenna)
Power Tracking	38mA (Passive antenna)
Antenna Type	Active and passive
Antenna Power	External or internal VCC_RF
Antenna Supervision	Integrated short-circuit detection and antenna shutdown , open circuit detection is supported with AADET input and little external circuitry

#### Interfaces

Serial Interfaces	1 UART with baud rate 2.4 ~ 115.2 Kbps
	1 USB V2.0 Full Speed
	1 I2C (Optional)
Digital I/O	Configurable time pulse
	1 Reset
Serial And I/O Voltage	2.7V ~ 2.9V
Protocols	NMEA PMTK

#### Approvals

• CE • FCC

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