Quectel L76-L

Extremely Compact GNSS Module with Ultra Low Power Consumption

EASY™ Technology

Ultra Low Power Consumption

Extremely Compact Size

Super Tracking Sensitivity: -167dBm

Extended Operating Temperature: -40°C to +85°

Anti-Jamming
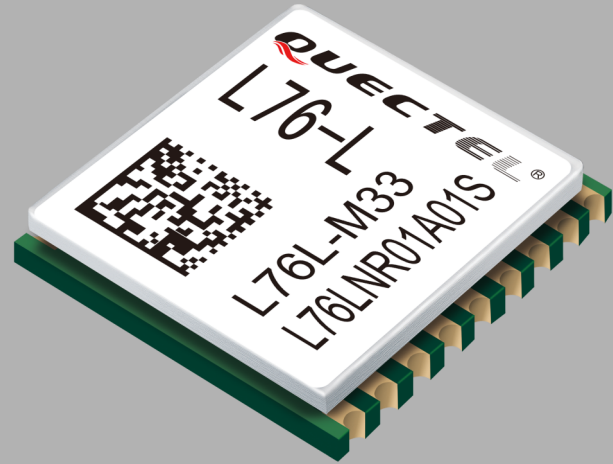
RoHS Compliant

Multi-GNSS Systems

Key Benefits

- Extremely compact size: 10.1 × 9.7 ×2.5mm
- Multi-GNSS engine for GPS, GLONASS, Galileo and QZSS
- Support EASY™, advanced AGPS technology without external memory
- Built-in LNA for better sensitivity
- Ultra low tracking power consumption
- AlwaysLocate™, an intelligent algorithm for power saving
- LOCUS, embedded logger function with no need for host and external flash
- Offer 99 acquisition/33 tracking channels and up to 210PRN channels
- Support DGPS, SBAS (WAAS/EGNOS/MSAS/GAGAN)
- Support UART and I2C Interface
- Great anti-jamming performance due to multi-tone active interference canceller
- Balloon mode, for high altitude up to 80km
- PPS VS. NMEA can be used in time service
- Support SDK command developed by Quectel

L76-L is a single receiver module integrating GLONASS and GPS systems. With 33 tracking channels, 99 acquisition channels and 210 PRN channels, L76-L can acquire and track any mix of GPS, GLONASS and SBAS signals. Designed to be compatible with Quectel L76 module in the compact and unified form factor, L76-L provides a built-in LNA for better performance in weak signal areas.
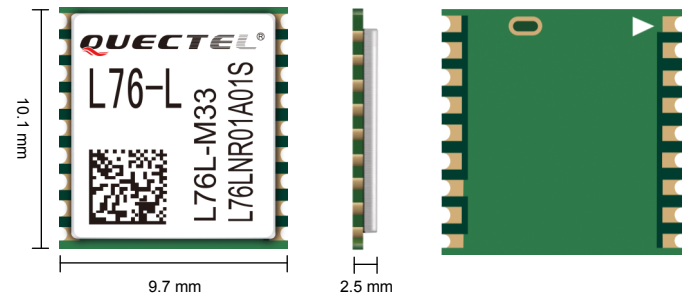
Compared with using GPS only, enabling multiple GNSS systems generally increases the number of visible satellites, reduces the time to first fix and increases positioning accuracy, especially when driving in rough urban environments.

Combining advanced AGPS called EASY™ (Embedded Assist System) and proven AlwaysLocate™ technology, L76-L achieves the highest performance and fully meets the industrial standard. EASY™ technology allows L76-L to calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal flash memory, so L76-L can fix position quickly even at indoor signal levels with low power consumption. With AlwaysLocate™ technology, L76-L can adaptively adjust the on/off time to achieve balance between positioning accuracy and power consumption according to the environmental and motional conditions.

Its super performance makes L76-L ideal for automotive, industrial PDA, consumer and industry applications. Extremely low power consumption makes it easier to be applied to power sensitive devices, especially portable applications.

QUECTEL ®
Build a Smarter World

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Extremely Compact GNSS Module with Ultra Low Power Consumption

10.1 mm
9.7 mm
2.5 mm

General Specifications

GPS L1 Band Receiver (1575.42MHz)	Channel	33 tracking channels 99 acquisition channels 210 PRN channels
GLONASS L1 Band Receiver (1601.71MHz)	C/A Code	
	SBAS	WAAS, EGNOS MSAS, GAGAN
Horizontal Position Accuracy	Autonomous	<2.5 m CEP
Velocity Accuracy	Without Aid	<0.1m/s
Acceleration Accuracy	Without Aid	0.1m/s²
Timing Accuracy	1PPS	10ns
Reacquisition Time		<1s
TTFF@-130dBm with EASY™	Cold Start	<15s
	Warm Start	<5s
	Hot Start	<1s
TTFF@-130dBm without EASY™	Cold Start	<35s
	Warm Start	<30s
	Hot Start	<1s
Sensitivity	Acquisition	-149dBm
	Tracking	-167dBm
	Reacquisition	-161dBm
Environmental Conditions	Operating Temperature	-40°C to 85°C
	Storage Temperature	-45°C to 125°C
Dynamic Performance	Maximum Altitude	Max.18000m
	Maximum Velocity	Max.515m/s
	Maximum Acceleration	4G
Dimensions	10.1 x 9.7 x 2.5mm	
Weight	Approx. 0.6g	

Power Management

Power Supply	2.8V ~ 4.3V
Power Acquisition	25mA@3.3V(GPS) 29mA@3.3V(GPS+GLONASS)
Power Tracking	19mA@3.3V(GPS) 22mA@3.3V(GPS+GLONASS)
Power Saving	2.8mA @AlwaysLocate™ (Note 1)
	7uA @Backup Mode
	500uA @Standby Mode
	Periodic Mode
Antenna Type	Active or Passive
Antenna Power	External or Internal VCC_RF

Note 1: Measured in GPS+GLONASS system under outdoor static mode.

Serial Interfaces

Serial Interfaces	I2C: Up to 400k bps
	UART: Adjustable 4800~115200 bps Default: 9600bps
Update Rate	1Hz (default), up to10Hz
I/O Voltage	2.7V ~ 2.9V
Protocols	NMEA 0183 PMTK