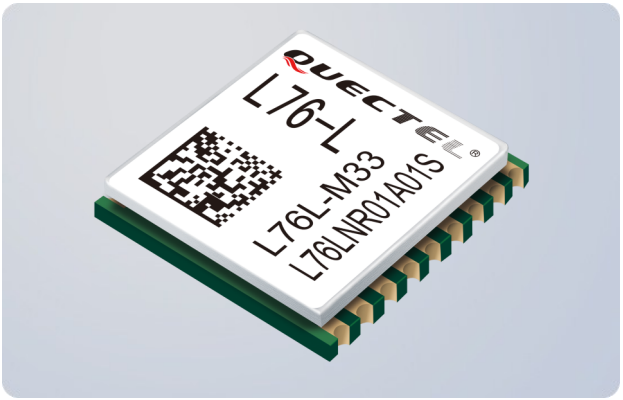
Quectel L76-L

Extremely Compact GNSS Module with Ultra Low Power Consumption



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.

Key Benefits

- Extremely compact size, 10.1mm × 9.7mm ×2.5mm
- Multi-GNSS engine for GPS, GLONASS, Galileo and QZSS
- Support EASY™, an 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, an embedded logger function with no need for host and external flash
- Offer 99 acquisition/33 tracking channels and 210 PRN channels
- Support DGPS, SBAS (WAAS/EGNOS/MSAS/GAGAN)
- Support UART and I2C Interfaces
- 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 for time service
- Support SDK command developed by Quectel

EASY™ Technology

Ultra Low Power Consumption

Extremely Compact Size

Super Tracking Sensitivity: -167dBm

Extended Temperature Range: -40°C ~ +85°C

Anti-jamming

RoHS Compliant

Multi-GNSS Systems

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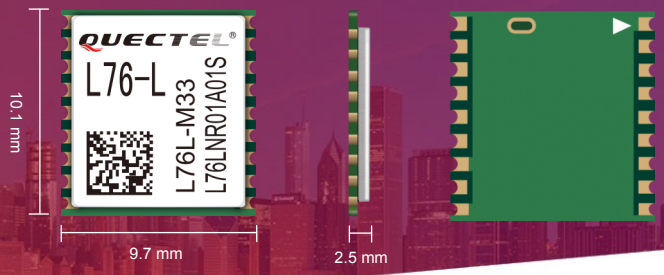

GNSS Features

GPS L1 Band Receiver (1575.42MHz)/

GLONASS L1 Band Receiver (1601.71MHz):

Channel: 33 (Tracking)/ 99 (Acquisition)/

210 (PRN)

C/A Code

SBAS: WAAS, EGNOS, MSAS, GAGAN

Horizontal Position Accuracy:

Autonomous: <2.5m 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

Dynamic Performance:

Maximum Altitude: Max. 18000m

Maximum Velocity: Max. 515m/s

Maximum Acceleration: 4G

Interfaces

Serial Interface:

I2C: Up to 400kbps

UART: Adjustable 4800bps~115200bps

Default: 9600bps

Update Rate:

1Hz (Default), up to 10Hz

I/O Voltage:

2.7V~2.9V

Protocols:

NMEA 0183

PMTK

General Features

Extended Temperature:

-40°C ~ +85°C

Dimensions:

10.1mm × 9.7mm × 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™ (Note1)

7uA @Backup Mode

500uA @Standby Mode

Periodic Mode

Antenna Type:

Active or Passive

Antenna Power:

External or Internal VCC_RF

Note1: Measured in GPS+GLONASS System under Outdoor Static Mode.

HQ address: Office 501, Building 13, No.99, Tianzhou Road, Shanghai, China 200233
Tel: +86 21 51086236 Fax: +86 21 54453668 Email: info@quectel.com