

Quectel L76-L

Extremely Compact GNSS Module with Ultra Low Power Consumption



L76-L is a concurrent receiver module integrating GPS, GLONASS, Galileo and QZSS 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 RAM 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



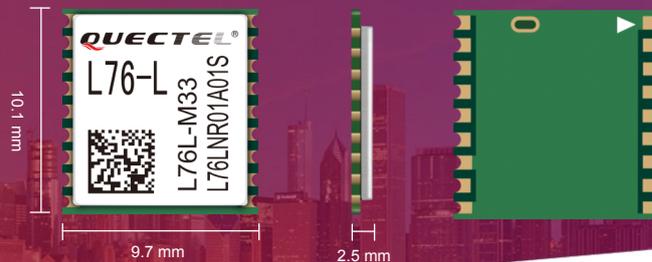
RoHS Compliant



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

Temperature Range:
-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.