

Quectel L76

Compact GNSS Module



L76, the extremely compact GNSS module, is a concurrent GNSS receiver with multiple GNSS systems. It provides simultaneous GPS, GLONASS, BeiDou, Galileo and QZSS open service L1 reception capability. With 33 tracking channels, 99 acquisition channels, and 210 PRN channels, L76 can acquire and track any mix of multiple satellite signals.

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 achieves the highest performance and fully meets the industrial standard. Additional feature of embedded logger function called LOCUS allows L76 to log position information to internal flash memory at default intervals of 15 seconds and provide typically more than 16 hours log capacity without adding cost.

Its super performance makes L76 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, BeiDou, Galileo and QZSS
- ✓ EASY™, an advanced AGPS technology without external memory
- ✓ Ultra low tracking power consumption, 18mA
- ✓ AlwaysLocate™, an intelligent algorithm for power saving
- ✓ LOCUS, an embedded logger solution with no need for host and external flash
- ✓ High sensitivity, -165dBm @Tracking, -148dBm @Acquisition
- ✓ 99 acquisition/ 33 tracking channels and 210 PRN channels
- ✓ Support DGPS, SBAS (WAAS/ EGNOS/ MSAS/ GAGAN)
- ✓ Anti-Jamming, Multi-tone Active Interference Canceller
- ✓ Balloon mode, for high altitude up to 80km
- ✓ PPS VS. NMEA can be used for time service



EASY™ Technology



Ultra Low Power Consumption



Extremely Compact Size



Super Tracking Sensitivity: -165dBm



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



Anti-jamming



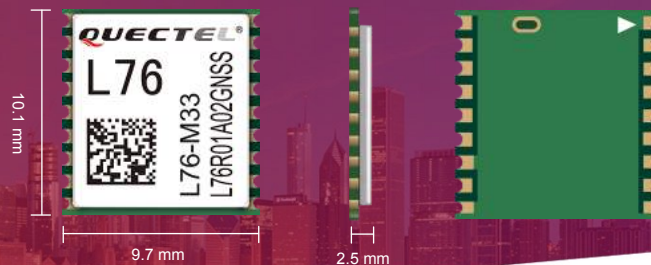
RoHS Compliant



Multi-GNSS Systems

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GNSS Features

L1 Band Receiver (1575.42MHz):

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 Out: 10ns

Reacquisition Time: <1s

TTFB @-130dBm with EASY™:

Cold Start: <15s

Warm Start: <5s

Hot Start: <1s

TTFB @-130dBm without EASY™:

Cold Start: <35s

Warm Start: <30s

Hot Start: <1s

Sensitivity:

Acquisition: -148dBm

Tracking: -165dBm

Reacquisition: -160dBm

Dynamic Performance:

Maximum Altitude: Max. 18000m

Maximum Velocity: Max. 515m/s

Maximum Acceleration: 4G

Interfaces

Serial Interface:

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:

21mA (GPS)

25mA (GPS+GLONASS)

23mA (GPS+BeiDou)

Power Tracking:

15mA (GPS)

18mA (GPS+GLONASS)

18mA (GPS+BeiDou)

Power Saving:

Typ. 2.6mA @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.