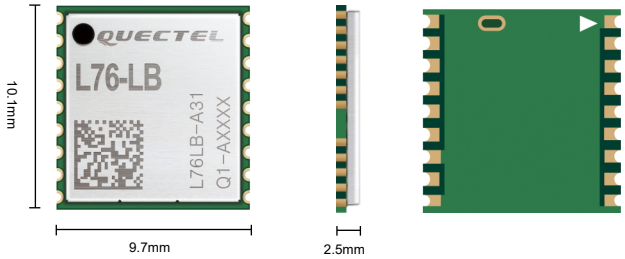
Quectel L76-LB

Compact GNSS Module



Quectel L76-LB GNSS module supports concurrent reception of GPS, GLONASS, BeiDou and QZSS. With 33 tracking channels, 99 acquisition channels and 210 PRN channels, it can acquire and track any mix of GPS, GLONASS (or BeiDou) and SBAS signals. L76-LB is designed to be compatible with Quectel L76 and L76-L modules, allowing convenient migration between them. The integrated LNA provides better performance in challenging environments.

Compared with single GPS system, 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 technologies such as EASY™ (Embedded Assist System) and low-power modes such as GLP (GNSS Low Power), L76-LB achieves high performance, low power consumption and fully meets the industrial standards. EASY™ technology allows the module to calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal RAM. With GLP technology, L76-LB can adaptively adjust the on/off time to achieve a balance between positioning accuracy and power consumption according to the environmental and motional conditions.

Its super performance makes L76-LB ideal for industrial PDA, consumer and industry applications. Extremely low power consumption makes it a great solution for power-sensitive applications, especially portable devices.

Key Benefits

- Multi-GNSS engine for GPS, GLONASS, BeiDou and QZSS, ensuring fast and accurate fixes in any environment
- Industrial leading sensitivity of -165dBm during tracking and -148dBm during acquisition
- Integrated LNA improves sensitivity
- Support anti-jamming and multi-tone active interference canceller
- Multiple low-power modes ensure ultra-low power consumption
- Support UART and I2C Interfaces
- Backward compatible with L76 and L76-L modules

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 System

Rev.: V1.0 | Status: Released

Quectel L76-LB

Compact GNSS Module

GNSS Features

Receiving Bands①:

GPS L1/Galileo E1 C/A: 1575.42MHz

GLONASS L1 C/A: 1602.5625MHz

BeiDou B1 C/A: 1561.098MHz

Channel:

33 Tracking Channels

99 Acquisition Channels

210 PRN Channels

SBAS:

WAAS, EGNOS, MSAS, GAGAN

Horizontal Position Accuracy:

Autonomous: <2.5m CEP

Velocity Accuracy②:

Without Aid: <0.1m/s

Acceleration Accuracy:

Without Aid: <0.1m/s²

Timing Accuracy:

1PPS <100ns

Reacquisition Time:

<1s

TTFF @-130dBm with EASY™②:

Cold Start: <15s

Warm Start: <5s

Hot Start: <1s

TTFF @-130dBm without EASY™②:

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

I2C Interface:

Up to 400kbps

UART Interface:

Adjustable: 4800bps~921600bps

Default: 9600bps

Update Rate:

1Hz (Default), up to 10Hz

I/O Port Voltage:

2.7V~2.9V

Electrical Characteristics

Power Supply:

2.8V~4.3V, Typ. 3.3V

Power Consumption:

Acquisition: 31.6mA @3.3V (GPS+GLONASS)

Tracking: 30.3mA @3.3V (GPS+GLONASS)

Power Saving:

7μA @Backup Mode

0.6mA @Standby Mode

Antenna Type:

Active or Passive

Antenna Power Supply:

External or Internal VCC_RF

General Features

Temperature Range:

-40°C ~ +85°C

Dimensions:

10.1mm × 9.7mm × 2.5mm

Weight:

Approx. 0.5g

Protocols:

NMEA 0183

PMTK

① Default GNSS Configuration: GPS+GLONASS

② Measured in GPS+GLONASS Systems under Outdoor Static Mode.

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