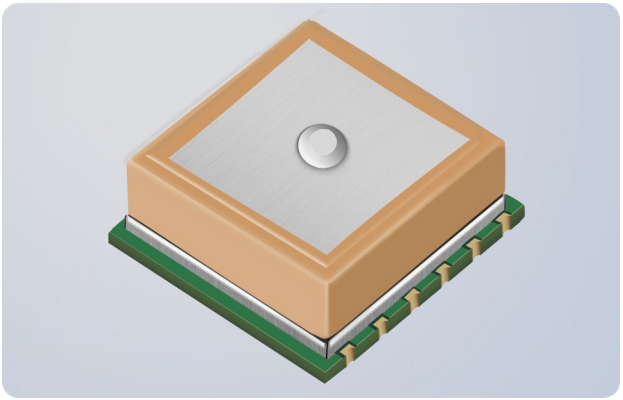
Quectel L80

Compact GPS Module Integrated with Patch Antenna



L80 is an ultra compact GPS POT (Patch on Top) module with an embedded 15.0mm × 15.0mm × 4.0mm patch antenna. This space-saving design makes L80 the perfect module for the miniature devices. Adopted by LCC package and integrated with patch antenna, L80 has exceptional performance both in acquisition and tracking.

Combining advanced AGPS called EASY™ (Embedded Assist System) and proven AlwaysLocate™ technology, L80 achieves the highest performance and fully meets the industrial standard. EASY™ technology ensures L80 can calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal RAM memory, so L80 can fix position quickly even at indoor signal levels with low power consumption. With AlwaysLocate™ technology, L80 can adaptively adjust the on/off time to achieve balance between positioning accuracy and power consumption according to the environmental and motion conditions.

L80 supports automatic antenna switching function. It can achieve the switching between internal patch antenna and external active antenna. Moreover, it keeps positioning during the switching process.

The Fitness Low Power (FLP) feature provides low power GPS solution for fitness application. It is an optimized solution for wearable, fitness and tracking devices and only costs about 50% power consumption of normal mode.

With its compact design, high precision and sensitivity, L80 is perfectly suitable for a broad range of M2M applications such as portable device, automotive, personal tracking, security and industrial PDA, especially suitable for special applications, like GPS mouse and OBD.

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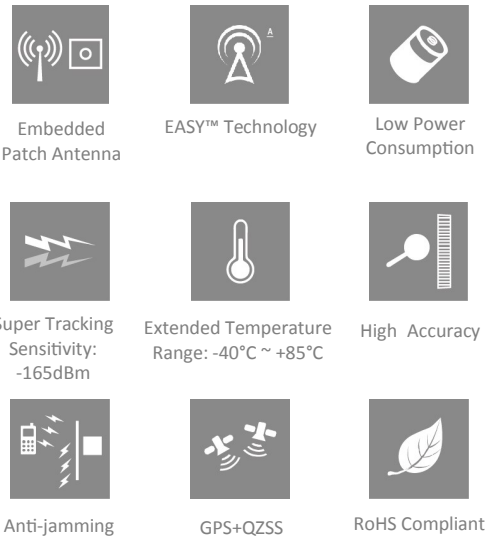
Key Benefits

- Embedded patch antenna: 15.0mm × 15.0mm × 4.0mm
- Extremely compact size: 16.0mm × 16.0mm × 6.45mm
- Automatic antenna switching function
- Support short circuit protection and antenna detection
- Built-in LNA for better sensitivity
- EASY™, an advanced AGPS technology without external memory
- Ultra low power consumption in tracking mode, 20mA
- AlwaysLocate™, an intelligent controller of periodic mode
- LOCUS, an embedded logger solution with no need of host and external flash
- High sensitivity, -165dBm @Tracking, -148dBm @Acquisition
- 66 acquisition channels, 22 tracking channels
- FLP mode, about 50% power consumption of normal mode
- Balloon mode, for high altitude up to 80km
- Support DGPS, SBAS (WAAS/EGNOS/MSAS/GAGAN)
- Anti-Jamming, Multi-tone Active Interference Canceller
- PPS VS. NMEA can be used for time service
- Support SDK command developed by Quectel



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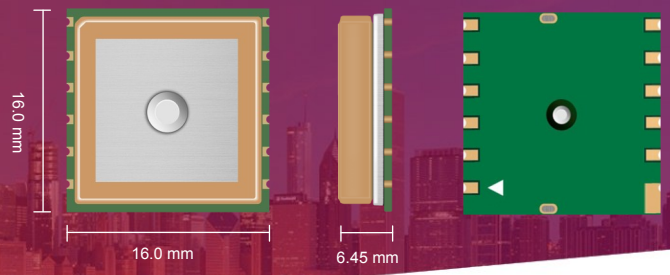

GPS Features

L1 Band Receiver (1575.42MHz):

Channel: 22 (Tracking)/ 66 (Acquisition)

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/s^2

Timing Accuracy:

1PPS Out: 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: -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:

16.0mm × 16.0mm × 6.45mm

Weight:

Approx. 6.0g

Power Management

Power Supply:

3.0V~4.3V

Power Acquisition:

25mA

Power Tracking:

20mA

Power Saving:

3mA @AlwaysLocate™ (Note1)

7uA @Backup Mode

1mA @Standby Mode

11mA @FLP Mode

Periodic Mode

Note1: Measured in GPS System under Outdoor Static Mode.

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