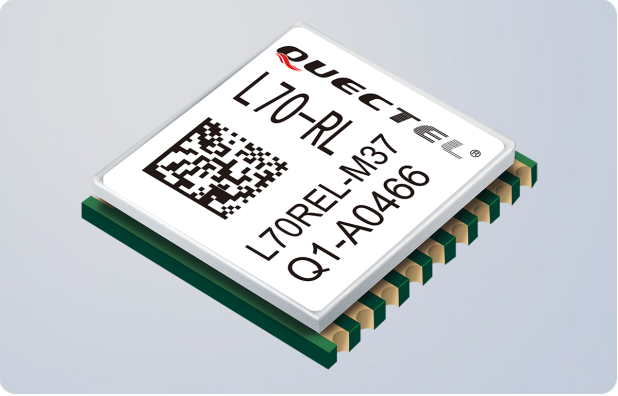
Quectel L70-RL

Compact GPS Module with Built-in LNA and Ultra Low Power Consumption



L70-RL, a low cost ROM-based GPS module, brings the high performance of MTK positioning engine to industrial applications with its compact profile, ultra low power consumption and fast positioning capability. Designed to be compatible with Quectel L70-R module in the compact and unified form factor, L70-RL additionally provides a built-in LNA for better sensitivity in weak signal areas.

Combining advanced AGPS called EASY™ (Embedded Assist System) technology, L70-RL achieves the highest performance and fully meets the industrial standard. EASY™ technology ensures L70-RL can calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal RAM memory, so L70-RL can fix position quickly even at indoor signal levels with low power consumption.

With its extremely compact design, high precision and improved sensitivity, L70-RL is a perfect solution for a broad range of M2M applications such as portable device, automotive, personal tracking, security and industrial PDA.

Key Benefits

- Extremely compact size: 10.1mm × 9.7mm × 2.5mm
- Cost-efficient ROM-based version
- Ultra low power consumption in tracking mode: 18mA
- Support EASY™, an advanced AGPS technology without the demand of external memory
- Built-in LNA for better sensitivity
- High sensitivity: -167dBm @Tracking, -149dBm @Acquisition
- 66 acquisition channels, 22 tracking channels
- Support QZSS
- Balloon mode, for high altitude up to 80km
- PPS VS. NMEA can be used for time service
- Great anti-jamming performance due to multi-tone active interference canceller

EASY™ Technology

Ultra Low Power Consumption

Extremely Compact Size

Super Tracking Sensitivity: -167dBm

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

Anti-jamming

RoHS Compliant

GPS+QZSS

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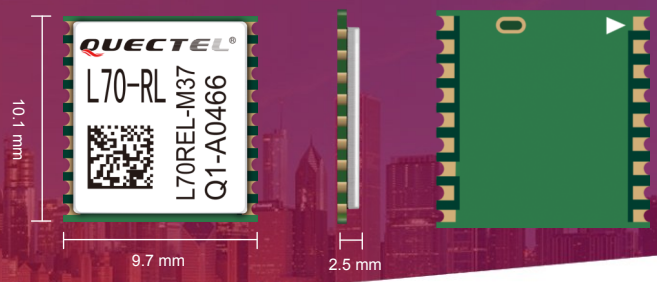

GPS Features

L1 Band Receiver (1575.42MHz):

Channel: 22 (Tracking)/ 66 (Acquisition)

C/A Code

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:

UART: Adjustable 4800bps~115200bps

Default: 9600bps

Update Rate:

1Hz (Default), up to 5Hz

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 @3.3V

Power Tracking:

18mA @3.3V

Power Saving:

500uA @Standby Mode

8uA @Backup Mode

Antenna Type:

Active or Passive

Antenna Power:

External or Internal VCC_RF

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