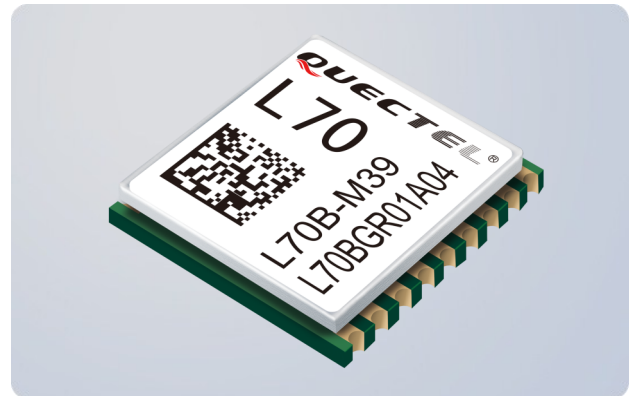


# Quectel L70

Compact GPS Module  
Ultra Low Consumption  
Fast Positioning



L70, an SMD type module, brings the high performance of MTK positioning engine to the industrial applications with compact profile, ultra low power consumption and fast positioning capability.

Combining advanced AGPS called EASY™ (Embedded Assist System) and proven AlwaysLocate™ technology, L70 achieves the highest performance and fully meets the industrial standard. EASY™ technology ensures L70 can calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal RAM memory, so L70 can fix position quickly even at indoor signal levels with low power consumption. With AlwaysLocate™ technology, L70 can adaptively adjust the on/off time to achieve balance between positioning accuracy and power consumption according to the environmental and motion conditions.

Additional feature of embedded logger function called LOCUS allows L70 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.

The Fitness Low Power (FLP) feature provides low power GPS solution for fitness application. It is an optimized solution for wearable, fitness and tracking device and only costs 5mA current consumption in static receiving.

With its tiny design, high precision and sensitivity, L70 is perfectly suitable 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
- ✓ EASY™, an advanced AGPS technology without external memory
- ✓ Ultra low power consumption in tracking mode, 12mA
- ✓ 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, only 5mA in static receiving
- ✓ Balloon mode, for high altitude up to 80km
- ✓ Support QZSS
- ✓ 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



EASY™ Technology



Ultra Low Power Consumption



Compact Size



Super Tracking Sensitivity:  
-165dBm



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



Anti-jamming



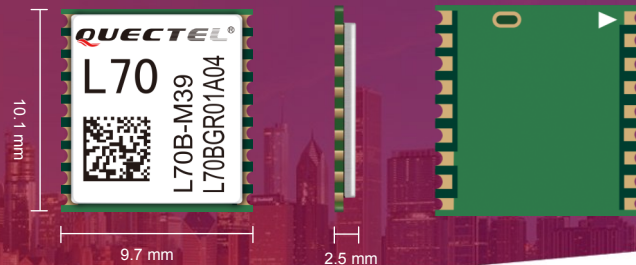
RoHS Compliant



GPS+QZSS

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## GPS Features

### L1 Band Receiver (1575.42MHz):

Channel: 22 (Tracking)/ 66 (Acquisition)

C/A Code

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<sup>2</sup>

### 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:

10.1mm × 9.7mm × 2.5mm

### Weight:

Approx. 0.6g

## Power Management

### Power Supply:

2.8V~4.3V

### Power Acquisition:

18mA

### Power Tracking:

12mA

## Power Saving:

Typ. 1.4mA @AlwaysLocate™ (Note1)

7uA @Backup Mode

200uA @Standby Mode

5mA @FLP Mode

Periodic Mode

### Antenna Type:

Active or Passive

### Antenna Power:

External or Internal VCC\_RF

Note1: Measured in GPS System under Outdoor Static Mode.

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