Quectel L70-R
Compact GPS Module
Ultra Low Consumption

EASY™ Technology

Ultra Low Power Consumption

Tiny Size

Super Tracking Sensitivity –165dBm

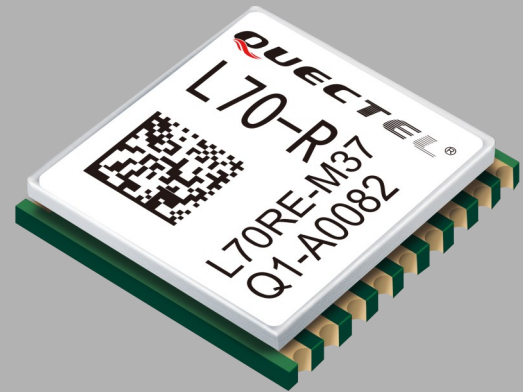**Extended Temperature Range -40°C to +85°C**

Anti-Jamming

RoHS Compliant

GPS+QZSS

L70-R, a low cost ROM-based GPS 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) technology, L70-R achieves the highest performance and fully meets the industrial standard. EASY™ technology ensures L70-R can calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal memory, so L70-R can fix position quickly even at indoor signal levels with low power consumption.

With its tiny design, high precision and sensitivity, L70-R is perfectly suitable for a broad range of M2M applications such as portable device, automotive, personal tracking, security and industrial PDA.
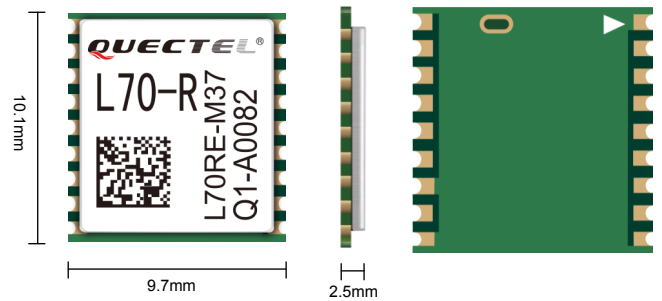
Key Benefits

- Extremely compact size: 10.1 × 9.7 × 2.5mm
- Cost efficient for ROM-based version
- Ultra low power consumption in tracking mode, 13mA
- EASY™, advanced AGPS technology without external memory
- High sensitivity:
  -165dBm@Tracking, -148dBm@Acquisition
- 66 acquisition channels, 22 tracking channels
- Support QZSS
- Balloon mode, for high altitude up to 80km
- PPS VS. NMEA can be used in time service
- Anti-Jamming, Multi-tone Active Interference Canceller

QUECTEL®
Build a Smarter World

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10.1mm

9.7mm

2.5mm

L70-R
L70RE-M37
Q1-A0082

General Specifications

L1 Band Receiver (1575.42MHz)	Channel	22 (Tracking) / 66 (Acquisition)
	C/A code	
Horizontal Position Accuracy	Autonomous	<2.5 m CEP
Velocity Accuracy	Without aid	<0.1m/s
Acceleration Accuracy	Without aid	0.1 m/s²
Timing Accuracy	1PPS out	10ns
Reacquisition Time		<1s
TTFF@-130dBm without EASY™	Cold Start	<35s
	Warm Start	<30s
	Hot Start	<1s
TTFF@-130dBm with EASY™	Cold Start	<15s
	Warm Start	<5s
	Hot Start	<1s
Sensitivity	Acquisition	-148dBm
	Tracking	-165dBm
	Reacquisition	-160dBm
Environmental	Operation Temperature	-40 °C to 85 °C
	Storage Temperature	-45 °C to 125 °C
Dynamic Performance	Maximum Altitude	Max.18000m
	Maximum Velocity	Max.515m/s
	Maximum Acceleration	4G
Dimensions	10.1× 9.7 × 2.5mm	
Weight	Approx. 0.6g	

Power Management

Power supply	2.8V ~ 4.3V
Power Acquisition	16mA
Power Tracking	13mA
Power Saving	500uA@Standby Mode
	8uA@Backup Mode
Antenna Type	Active or Passive
Antenna Power	External or Internal VCC_RF

Serial Interfaces

Serial Interfaces	UART: Adjustable 4800~115200 bps Default: 9600bps
Update rate	1Hz (Default), up to 5Hz
I/O Voltage	2.7V ~ 2.9V
Protocols	NMEA 0183 PMTK

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