

Quectel L70

Compact GPS Module

Ultra Low Consumption

Fast Positioning



EASY™ Technology



Ultra Low Power Consumption



Tiny Size



Super Tracking Sensitivity -165dBm



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



Anti-Jamming



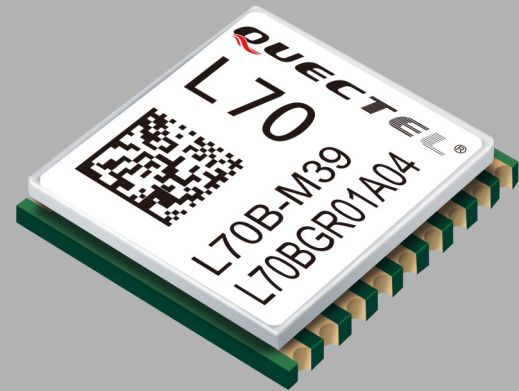
RoHS Compliant



GPS+QZSS

Key benefits

- ☞ Extremely compact size: 10.1 × 9.7 × 2.5mm
- ☞ EASY™, advanced AGPS technology without external memory
- ☞ Ultra low power consumption in tracking mode, 12mA
- ☞ AlwaysLocate™, an intelligent controller of periodic mode
- ☞ LOCUS, innate 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 in time service
- ☞ Support SDK command developed by Quectel



L70, a 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 flash 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.

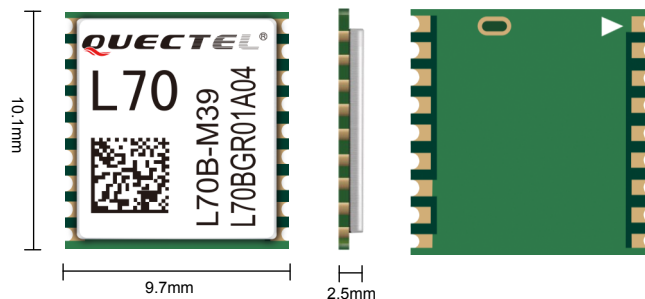
With its tiny design, high precision and sensitivity, L70 is perfectly suitable for a broad range of M2M applications such as portable device, automotive, personal tracking, security and industrial PDA.

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General Specifications

L1 Band Receiver (1575.42MHz)	Channel	22 (Tracking) / 66 (Acquisition)
	C/A code	
	SBAS	WAAS, EGNOS MSAS, GAGAN
Horizontal Position Accuracy	Autonomous	<2.5 m CEP
Velocity Accuracy	Without aid	<0.1m/s
Acceleration Accuracy	Without aid	0.1 m/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
Environmental	Operating 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	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.

Serial Interfaces

Serial Interfaces	UART: Adjustable 4800~115200 bps Default: 9600bps
Update rate	1Hz (Default), up to10Hz
I/O Voltage	2.7V ~ 2.9V
Protocols	NMEA 0183 PMTK