

# 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



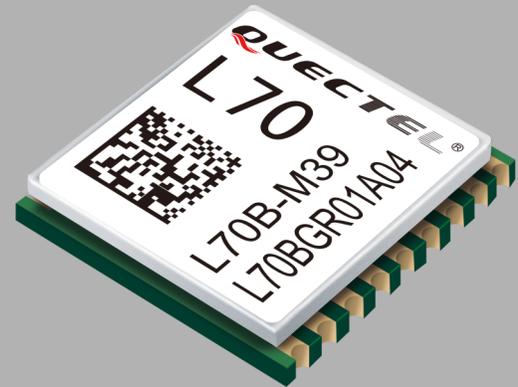
RoHS Compliant



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
- ☞ Support QZSS
- ☞ Support DGPS, SBAS(WAAS/EGNOS/MSAS/GAGAN)
- ☞ Anti-Jamming, Multi-tone Active Interference Canceller



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.

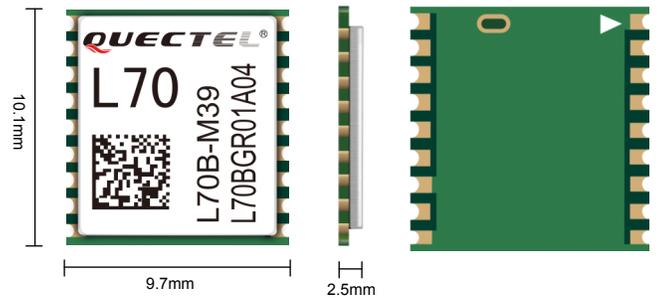
With its tiny design, high precision and sensitivity, L70 is perfectly suitable for a broad range of M2M applications such as portable device, automotive, personal tracking, security and industrial PDA.

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#### General Specifications

<b>L1 Band Receiver (1575.42MHz)</b>	Channel	22 (Tracking) / 66 (Acquisition)
	C/A code	
	SBAS	WAAS, EGNOS MSAS, GAGAN
<b>Horizontal Position Accuracy</b>	Autonomous	<2.5 m CEP
<b>Velocity Accuracy</b>	Without aid	<0.1m/s
<b>Acceleration Accuracy</b>	Without aid	0.1 m/s <sup>2</sup>
<b>Timing Accuracy</b>	1PPS out	10ns
<b>Reacquisition Time</b>		<1s
<b>TTFF@-130dBm with EASY™</b>	Cold Start	<15s
	Warm Start	<5s
	Hot start	<1s
<b>TTFF@-130dBm without EASY™</b>	Cold Start	<35s
	Warm Start	<30s
	Hot Start	<1s
<b>Sensitivity</b>	Acquisition	-148dBm
	Tracking	-165dBm
	Reacquisition	-160dBm
<b>Environmental</b>	Operating Temperature	-40°C to 85°C
	Storage Temperature	-45°C to 125°C
<b>Dynamic Performance</b>	Maximum Altitude	Max.18000m
	Maximum Velocity	Max.515m/s
	Maximum Acceleration	4G
<b>Dimensions</b>	10.1 × 9.7 × 2.5mm	
<b>Weight</b>	Approx. 0.6g	

#### Power Management

<b>Power supply</b>	2.8V ~ 4.3V
<b>Power Acquisition</b>	18mA
<b>Power Tracking</b>	12mA
<b>Power Saving</b>	Typ.1.4mA @AlwaysLocate™(Note1) 7uA @Backup Mode 200uA@Standby Mode Periodic Mode
<b>Antenna Type</b>	Active or Passive
<b>Antenna Power</b>	External or Internal VCC_RF

Note1: Measured in GPS system under outdoor static mode.

#### Serial Interfaces

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