

# Quectel L80

## Compact GPS Module Integrated with Patch Antenna



Embedded Patch Antenna



EASY™ Technology



Low Power Consumption



Super Tracking Sensitivity -165dBm



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



High Accuracy



Anti-Jamming



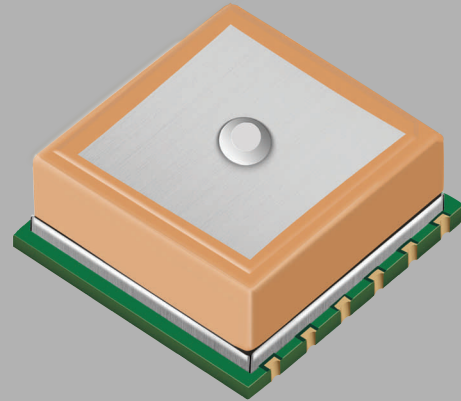
GPS+QZSS



RoHS Compliant

### Key benefits

- Embedded patch antenna: 15.0 x 15.0 x 4.0mm
- Extremely compact size: 16.0 x 16.0 x 6.45mm
- Automatic antenna switching function
- Support short circuit protection and antenna detection
- Built-in LNA for better sensitivity
- EASY™, advanced AGPS technology without external memory
- Ultra low power consumption in tracking mode, 20mA
- 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 DGPS, SBAS(WAAS/EGNOS/MSAS/GAGAN)
- Anti-Jamming, Multi-tone Active Interference Canceller



L80 is an ultra compact GPS POT (Patch on Top) module with an embedded 15.0 × 15.0 × 4.0mm patch antenna. This space-saving design makes L80 the perfect module for the miniature devices. Adopted by LCC package and integrated with patch antenna, L80 has exceptional performance both in acquisition and tracking.

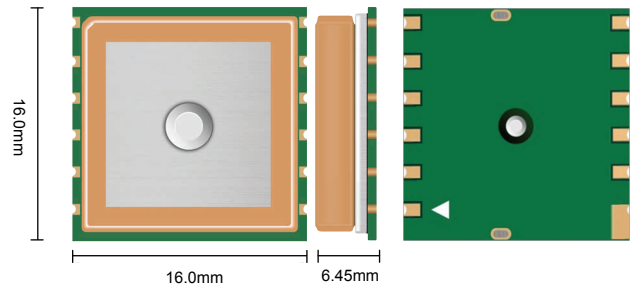
Combining advanced AGPS called EASY™ (Embedded Assist System) and proven AlwaysLocate™ technology, L80 achieves the highest performance and fully meets the industrial standard. EASY™ technology ensures L80 can calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal flash memory, so L80 can fix position quickly even at indoor signal levels with low power consumption. With AlwaysLocate™ technology, L80 can adaptively adjust the on/off time to achieve balance between positioning accuracy and power consumption according to the environmental and motion conditions.

L80 supports automatic antenna switching function. It can achieve the switching between internal patch antenna and external active antenna. Moreover, it keeps positioning during the switching process.

With its tiny design, high precision and sensitivity, L80 is perfectly suitable for a broad range of M2M applications such as portable device, automotive, personal tracking, security and industrial PDA, especially suitable for special applications, like GPS mouse and OBD.

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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	0.1m/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>	16.0 x 16.0 x 6.45mm	
<b>Weight</b>	6.0g	

### Power Management

<b>Power supply</b>	3.0V ~ 4.3V
<b>Power Acquisition</b>	25mA
<b>Power Tracking</b>	20mA
<b>Power Saving</b>	3mA@AlwaysLocate™(Note1) 7uA @Backup Mode 1mA@Standby Mode Periodic Mode

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