Quectel L80-R
Compact GPS Module Integrated with Patch Antenna

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

Combining advanced AGPS called EASY™ (Embedded Assist System) technology, L80-R achieves the highest performance and fully meets the industrial standard. EASY™ technology ensures L80-R can calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal RAM memory, so L80-R can fix position quickly even at indoor signal levels with low power consumption.

With its compact design, high precision and sensitivity, L80-R 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.

**Key Benefits**

- Embedded patch antenna: 15.0mm × 15.0mm × 4.0mm
- Extremely compact size: 16.0mm × 16.0mm × 6.45mm
- Cost efficient for ROM-based version
- Built-in LNA for better sensitivity
- EASY™, an advanced AGPS technology without external memory
- Ultra low power consumption in tracking mode, 20mA
- 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 for time service
- Anti-Jamming, Multi-tone Active Interference Canceller

Embedded Patch Antenna
EASY™ Technology
Low Power Consumption
Super Tracking Sensitivity: -165dBm
Extended Temperature Range: -40°C ~ +85°C
Anti-jamming
GPS+QZSS
RoHS Compliant
Compact GPS Module
Integrated with Patch Antenna

Quectel L80-R

GPS Features
L1 Band Receiver (1575.42MHz):
Channel: 22 (Tracking)/ 66 (Acquisition)
C/A Code
Horizontal Position Accuracy:
Autonomous: <2.5m CEP
Velocity Accuracy:
Without Aid: <0.1m/s
Acceleration Accuracy:
Without Aid: <0.1m/s²
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 5Hz
I/O Voltage:
2.7V~2.9V
Protocols:
NMEA 0183
PMTK

General Features
Temperature Range:
-40°C ~ +85°C
Dimensions:
16.0mm × 16.0mm × 6.45mm
Weight:
Approx. 6.0g

Power Saving:
7uA @Backup Mode
1mA @Standby Mode

Power Management
Power Supply:
3.0V~4.3V
Power Acquisition:
25mA
Power Tracking:
20mA