Quectel L50

Slim GPS Module
Integrated Patch Antenna

GNSS

Embedded Patch Antenna

Self-Assisted CGEE

Low Power Consumption

Super Tracking Sensitivity -163dBm

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

High Accuracy

Anti-Jamming

LCC Type

RoHS Compliant

L50 is an ultra slim module with embedded 15.0 × 15.0 × 2.0mm patch antenna. It is built upon the lastest SIRFstarIV ROM version 2.2 which offers high performance GPS engine. Alongside highest reliability and quality of patch antenna, L50 also offers 48 PRN channels, which allows the module to acquire and track satellites in the shortest time, even at a very low signal level. Its highly compact design with minimal patch antenna is ideal for portable devices, asset tracking, connected PND, security devices, vehicle management and other industry applications.

L50 supports aided-GPS function without the necessity of downloading data from server since it automatically captures ephemeris data from satellites locally and predicts ephemeris over 3 days without server assistance.

With embedded active jammer remover, L50 can track and remove up to 8 CW (Carrier Wave) type signals up to 80dB-HZ signal level. This feature ensures fast and accurate navigation in hostile signal or high noise environment.

Key benefits

- Embedded patch antenna
  Default size: 15.0 ×15.0 × 2.0mm
- Self-Assisted CGEE: Up to 3-days ahead prediction
- Extremely low power mode: Hibernate mode, 26uW@1.8V
- Low power consumption in tracking mode: 31mA@-130dBm
- Super sensitivity
  -148dBm acquisition; -163dBm tracking
- Hardware Baud Rate Configuration
- 5Hz Navigation Update Rate
- Ultra slim form factor: 28.0 × 16.0 × 3.0mm
  (With patch antenna)
- SBAS (WAAS, EGNOS and QZSS)

QUECTEL
Wireless Module Expert

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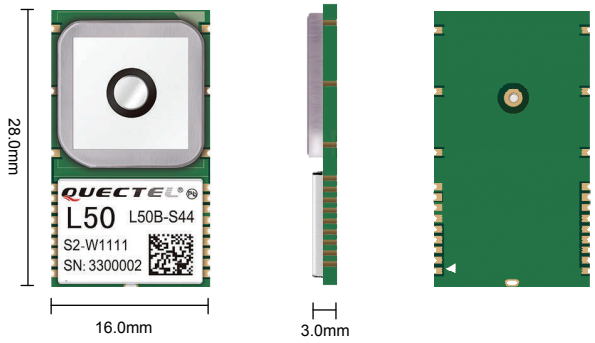

General Specifications

L1 Band Receiver (1575.42MHz)	Channel	48 Channels
	C/A Code	
	SBAS	WAAS, EGNOS, QZSS
Horizontal Position Accuracy	Autonomous	<2.5m CEP
	SBAS	<2.0m CEP
Velocity Accuracy	Without Aid	<0.01m/s
Acceleration Accuracy	Without Aid	0.1m/s²
Timing Accuracy		<500ns
Reacquisition Time		<1s
TTFF (Time to First Fix)	Cold Start	<33s
	Warm Start	<33s
	Warm Start with CGEE	10s
	Hot Start	<1s
Sensitivity *	Autonomous Acquisition	-148dBm
	Tracking	-163dBm
	Reacquisition	-160dBm
Patch Antenna Performance	Range of Receiving Frequency	1575.42MHz ±1.023MH
	Band Width	10MHz min
	Gain at Zenith	1.0dBic typ.
	VSWR	1.5max
	Axial Ratio	-3dB max
	Polarization	RHCP
	Impendence	50Ohm
	Frequency Temperature Coefficient	0±20ppm/°C
Environmental	Operating Temperature	-40℃ to 85℃
	Storage Temperature	-45℃ to 125℃
Dynamic Performance	Maximum Altitude	Max.18288m
	Maximum Velocity	Max.514m/s
	Maximum Acceleration	4G
Dimensions	28.0 x 16.0 x 3.0mm	
Weight	Approx. 4.0g	
Active Jammer Remover	Removes in-band jammers up to 80 dB-Hz	
	Tracks up to 8 CW jammers	

** Measured in conducted method by 8-star GPS simulator*

Serial Interfaces

One Multiplexed Interface	UART	Adjustable: Baud rate configured by Hardware
		Default: 4800 bps
	IIC	(Master/Slave): Up to 400 Kbps
Update rate	1Hz (Default), up to 5Hz	
I/O Voltage	1.71V ~ 1.89V	
Protocols	NMEA OSP	

Power Management

Power Supply	1.71V ~ 1.89V
Power Acquisition	33mA@-130dBm
Power Tracking	31mA@-130dBm
Power Saving	ATP, PTF, Hibernate

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