Quectel L96

Extremely Compact GNSS Module with Chip Antenna

EASY™ Technology

Ultra Low Power Consumption

Extremely Compact Size

Super Tracking Sensitivity: -165dBm

Extended Operating Temperature: -40°C to +85°

Anti-Jamming

RoHS Compliant

Multi-GNSS Systems

Key Benefits

- Small compact size: 9.6 x 14.0 x 2.5 mm
- Multi-GNSS engine for GPS, GLONASS, GALILEO and QZSS
- Support EASY™, advanced AGPS technology without external memory
- Built-in LNA for better sensitivity
- Ultra low tracking power consumption
- AlwaysLocate™, an intelligent algorithm for power saving
- LOCUS, embedded logger function with no need for host and external flash
- Offer 99 acquisition/33 tracking channels and up to 210PRN channels
- Support DGPS, SBAS (WAAS/EGNOS/MSAS/GAGAN)
- Great anti-jamming performance due to multi-tone active interference canceller
- Balloon mode, for high altitude up to 80km
- PPS VS. NMEA can be used in time service
- Support SDK command developed by Quectel
- Support external antenna

L96 is a concurrent receiver module integrating GPS and GLONASS systems with chip antenna. With 33 tracking channels, 99 acquisition channels and 210 PRN channels, L96 can acquire and track any mix of GPS, GLONASS and SBAS signals. L96 embedded chip antenna reducing the total module volume and provides a built-in LNA for better performance . L96 aslo provides external antenna interface.

Compared with using GPS only, enabling multiple GNSS systems generally increases the number of visible satellites, reduces the time to first fix and increases positioning accuracy, especially when driving in rough urban environments.

Combining advanced AGPS called EASY™ (Embedded Assist System) and proven AlwaysLocate™ technology, L96 achieves the highest performance and fully meets the industrial standard. EASY™ technology allows L96 to calculate and predict orbits automatically using the ephemeris data (up to 3 days) stored in internal flash memory, so L96 can fix position quickly even at indoor signal levels with low power consumption. With AlwaysLocate™ technology, L96 can adaptively adjust the on/off time to achieve balance between positioning accuracy and power consumption according to the environmental and motional conditions.

Its super performance makes L96 ideal for automotive, industrial PDA, consumer and industry applications. Extremely low power consumption makes it easier to be applied to power sensitive devices, especially portable applications.

QUECTEL ®
Build a Smarter World

Quectel L96
Extremely Compact GNSS Module with Chip Antenna

14.0 mm

9.6 mm   2.5 mm

L96

L96-M33

L96R01A02GNSS
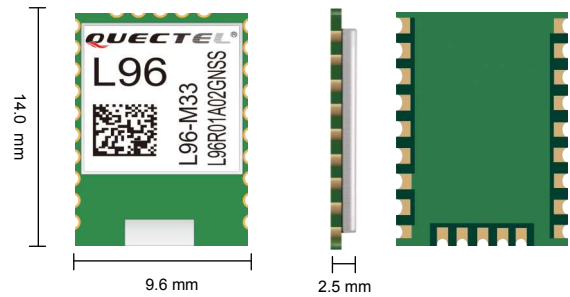
General Specifications

GPS L1 Band Receiver (1575.42MHz)	Channel	33 tracking channels 99 acquisition channels 210 PRN channels
GLONASS L1 Band Receiver (1601.71MHz)	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	0.1m/s²
Timing Accuracy	1PPS	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 Conditions	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	9.6 x 14.0 x 2.5 mm	
Weight	Approx. 0.8g	

Power Management

Power Supply	2.8V ~ 4.3V
Power Acquisition	TBD mA@3.3V(GPS) TBD mA@3.3V(GPS+GLONASS)
Power Tracking	TBD mA@3.3V(GPS) TBD mA@3.3V(GPS+GLONASS)
Power Saving	TBD mA @AlwaysLocate™ (Note 1)
	TBD @Backup Mode
	TBD uA @Standby Mode
	Periodic Mode
External Antenna Type	Active or Passive (recommend : Active)
Antenna Power	External

Note 1: Measured in GPS+GLONASS system under outdoor static mode.

Serial Interfaces

Serial Interfaces	I2C: Up to 400k bps
	UART: Adjustable 4800~115200 bps Default: 9600bps
Update Rate	1Hz (default), up to10Hz
I/O Voltage	2.7V ~ 2.9V
Protocols	NMEA 0183 PMTK

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