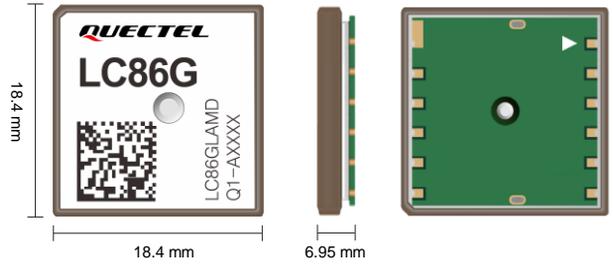


Quectel LC86G

Compact GNSS Module



Based on the latest enhanced chipset, the new Quectel LC86G GNSS module supports concurrent reception of GPS, GLONASS, BDS, Galileo and QZSS. The LC86G is designed to be compatible with Quectel L86 module, allowing for smooth migration between them.

Compared with single constellation receivers, by enabling multiple GNSS constellations, the LC86G module increases the number of visible satellites, reduces the time to first fix and improves positioning accuracy, especially when driving through dense urban canyons.

The integrated LNA that delivers high sensitivity effectuates high accuracy positioning, fast signal tracking and acquisition and better module performance even in challenging environments.

Based on its enhanced performance and low power consumption, LC86G is perfectly suited for applications such as real-time tracking systems and sharing economy services.



Key Features

- ✓ Multi-GNSS engine for GPS, GLONASS, BDS, Galileo and QZSS, ensuring fast and accurate fix in any environment
- ✓ Footprint compatible with L86 modules
- ✓ Industry-leading sensitivity: -166 dBm during tracking and -147 dBm during acquisition
- ✓ Integrated LNA improves sensitivity
- ✓ Embedded multi-tone active interference canceller for anti-jamming
- ✓ Supported interface: UART



EASY™ Technology



Ultra Low Power Consumption



Ultracompact Size



Tracking Sensitivity: -166 dBm



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



Anti-jamming



RoHS Compliant



Multi-constellation System

GNSS Module	LC86G (LA)
Region	Global
Dimensions	18.4 mm × 18.4 mm × 6.95 mm
Weight	Approx. 0.8 g
Temperature Range	
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +90 °C
GNSS Features	
Supported Bands	GPS L1 C/A, QZSS L1 C/A: 1575.42 MHz GLONASS L1: 1598.0625–1605.375 MHz BDS B1I: 1561.098 MHz B1C*: 1575.42 MHz Galileo E1: 1575.42 MHz
Default Constellations	GPS + GLONASS + BDS + Galileo + QZSS
Number of Tracking Channels	47
Number of Concurrent GNSS	5
SBAS	WAAS, EGNOS, MSAS and GAGAN
Horizontal Position Accuracy ^①	Autonomous: 2.0 m
Velocity Accuracy ^②	Without Aid: 0.1 m/s
Acceleration Accuracy ^②	Without Aid: 0.1 m/s ²
1PPS Signal Accuracy ^②	100 ns
TTF (with EASY™) ^③	Cold Start: 12 s Warm Start: 2 s Hot Start: 1 s
TTF (without EASY™) ^②	Cold Start: 25 s Warm Start: 22 s Hot Start: 1s
Sensitivity (@ Default Constellations)	Acquisition: -147 dBm Tracking: -166 dBm Reacquisition: -160 dBm Maximum Altitude: 10000 m Maximum Velocity: TBD m/s Maximum Acceleration: 4g
Dynamic Performance ^②	
Certifications	
Regulatory	Europe: CE*
Others	RoHS
Interfaces	
UART	Adjustable: 9600–921600 bps Default: 115200 bps Update Rate: 1 Hz (Default), up to 10 Hz
Protocol	NMEA 0183 V4.10
External Antenna Interface	
Antenna Type	Active or Passive
Antenna Power Supply	External or Internal (through VDD_RF)
Electrical Characteristics	
Supply Voltage Range	2.55–3.6 V, Typ. 3.3 V
I/O Voltage	Typ. 3.3 V
Current Consumption (@ 3.3 V, Default Constellations) ^②	Normal Operation: TDB mA @ Acquisition TBD mA @ Tracking Power Saving Modes: TBD mA @ Standby Mode TBD μA @ Backup Mode

NOTE:

- ①: CEP, 50%, 24 hours static, -130 dBm, more than 6 SVs.
- ②: Room temperature, all satellites at -130 dBm.
- ③: Open-sky, active high-precision GNSS antenna.
- *: Under development/Ongoing.

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