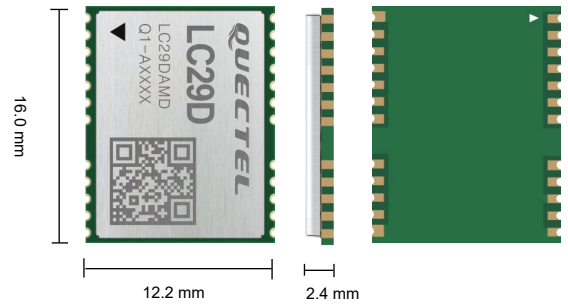




# Quectel LC29D

## Ultra-Small Dual-Band Multi-Constellation GNSS Module



Featuring concurrent multi-constellation GNSS receiver for dual GNSS bands, an integrated 6-axis MEMS sensor, as well as the sophisticated RTK and dead-reckoning algorithms that fuse the sensor data, GNSS measurement, and wheel ticks, the LC29D module can provide sub-meter level positioning accuracy under open-sky environment.

Compared with GNSS modules working on the L1 band only, the LC29D module can track both L1 and L5 bands for GPS, Galileo and QZSS satellites, L1 band for GLONASS and BeiDou satellites, as well as L5 band for IRNSS satellite. This greatly increases the number of satellites involved in tracking and positioning, thereby improving positioning accuracy and significantly reducing the multipath effect caused by tall buildings in urban environments.

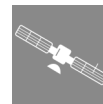
Its built-in LNAs and SAW filters ensure better positioning in weak signal areas and other challenging environments.

Due to its high precision, the LC29D module is an excellent choice for real-time tracking systems, such as vehicle, personnel and asset tracking, or sharing economy applications.



### Key Features

- ✓ Ultra-compact size : 16.0 mm × 12.2 mm × 2.4 mm
- ✓ Multi-GNSS engine for GPS/ BeiDou/ GLONASS/ Galileo/ IRNSS/ QZSS
- ✓ Built-in LNAs and SAW filters for better sensitivity
- ✓ Supports dual GNSS bands (L1 and L5)
- ✓ Supports UART, SPI\* and I2C\* interfaces
- ✓ Supports AGNSS
- ✓ Supports RTK and DR functions



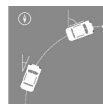
L1 + L5  
Dual Bands



Multi-Constellation  
System



RoHS Compliant



DR



RTK



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

Version: 1.1 | Status: Released

# Quectel LC29D

GNSS Module	LC29D (A)	LC29D (B)	LC29D (C)
<b>Chipset</b>	BCM47758	BCM47765	BCM47755
<b>Region</b>	Global	Global	Global
<b>Dimensions</b>	16.0 mm × 12.2 mm × 2.4 mm	16.0 mm × 12.2 mm × 2.4 mm	16.0 mm × 12.2 mm × 2.4 mm
<b>Weight</b>	0.9 g	0.9 g	0.9 g
<b>Temperature Range</b>			
<b>Operating Temperature</b>	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
<b>GNSS Features</b>			
<b>Receiving Band</b> <sup>①</sup>	GPS/QZSS L1, Galileo E1: 1575.42 MHz GPS/QZSS L5, Galileo E5a: 1176.45 MHz IRNSS L5: 1176.45 MHz GLONASS L1: 1602.5625 MHz BeiDou B1: 1561.098 MHz	GPS/QZSS L1, Galileo E1: 1575.42 MHz GPS/QZSS L5, Galileo E5a: 1176.45 MHz IRNSS L5: 1176.45 MHz GLONASS L1: 1602.5625 MHz BeiDou B1: 1561.098 MHz BeiDou B2a: 1176.45 MHz	GPS/QZSS L1, Galileo E1: 1575.42 MHz GPS/QZSS L5, Galileo E5a: 1176.45 MHz IRNSS L5: 1176.45 MHz GLONASS L1: 1602.5625 MHz BeiDou B1: 1561.098 MHz
<b>Horizontal Position Accuracy</b>	Autonomous: < 1.0 m CEP <sup>②</sup>	Autonomous: < 1.0 m CEP <sup>②</sup>	Autonomous: < 1.2 CEP
<b>Velocity Accuracy</b>	Without Aid: < 0.1 m/s	Without Aid: < 0.1 m/s	Without Aid: < 0.1 m/s
<b>Acceleration Accuracy</b>	Without Aid: < 0.1 m/s <sup>2</sup>	Without Aid: < 0.1 m/s <sup>2</sup>	Without Aid: < 0.1 m/s <sup>2</sup>
<b>TTFF (With AGNSS)*</b>	Cold Start: < 5 s	Cold Start: < 5 s	Cold Start: < 5 s
<b>TTFF (Without AGNSS)</b>	Cold Start: < 34 s <sup>③</sup> Warm Start: < 30 s <sup>③</sup> Hot Start: < 2 s <sup>③</sup>	Cold Start: < 34 s <sup>③</sup> Warm Start: < 30 s <sup>③</sup> Hot Start: < 2 s <sup>③</sup>	Cold Start: < 34 s Warm Start: < 30 s Hot Start: < 2 s
<b>Sensitivity</b>	Acquisition: -147 dBm <sup>④</sup> Tracking: -163 dBm <sup>④</sup> Reacquisition: -157 dBm <sup>④</sup>	Acquisition: -147 dBm <sup>④</sup> Tracking: -163 dBm <sup>④</sup> Reacquisition: -157 dBm <sup>④</sup>	Acquisition: -147 dBm Tracking: -163 dBm Reacquisition: -157 dBm
<b>Dynamic Performance</b>	Maximum Altitude: 18000 m Maximum Velocity: 515 m/s Maximum Acceleration: 4g	Maximum Altitude: 18000 m Maximum Velocity: 515 m/s Maximum Acceleration: 4g	Maximum Altitude: 18000 m Maximum Velocity: 515 m/s Maximum Acceleration: 4g
<b>Supported Mode</b>	RTK + DR	RTK + DR	DR
<b>Interfaces</b>			
<b>UART</b>	Baud Rate Range: 115200–921600 bps Default: 115200 bps Update Rate: 1 Hz (max. 10 Hz)	Baud Rate Range: 115200–921600 bps Default: 115200 bps Update Rate: 1 Hz (max. 10 Hz)	Baud Rate Range: 115200–921600 bps Default: 115200 bps Update Rate: 1 Hz (max. 10 Hz)
<b>SPI</b>	•	*	-
<b>I2C*</b>	•	•	•
<b>Protocol</b>			
<b>Protocol</b>	NMEA 0183	NMEA 0183	NMEA 0183
<b>Antenna Interface</b>			
<b>Antenna Type</b>	Passive or Active	Passive or Active	Passive or Active
<b>Antenna Power Supply</b>	Module VCC_RF or External	Module VCC_RF or External	Module VCC_RF or External
<b>Power Management</b>			
<b>Power Supply</b>	Voltage Range: 2.7–3.6 V Typical: 3.3 V	Voltage Range: 2.7–3.6 V Typical: 3.3 V	Voltage Range: 2.7–3.6 V Typical: 3.3 V
<b>Power Consumption</b>	Acquisition Mode: 50 mA <sup>④</sup> Tracking Mode: 40 mA <sup>④</sup> Sleep Mode: 4 mA <sup>④</sup>	Acquisition Mode: TBD Tracking Mode: TBD Sleep Mode: TBD	Acquisition Mode: 53 mA Tracking Mode: 49 mA Sleep Mode: 1.2 mA

#### Notes:

- \* Under development/planning
- <sup>①</sup> Default GNSS constellation: GPS + BeiDou + GLONASS + Galileo + QZSS
- <sup>②</sup> Preliminary data
- Supported