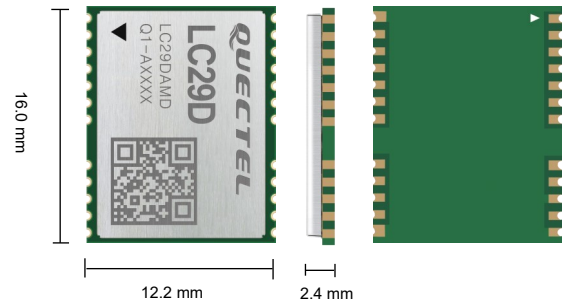




Quectel LC29D

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 satellites. 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.

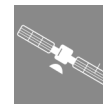
Its built-in LNAs and SAW filters ensure better positioning in weak signal areas and other challenging environments.

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



Ultra-Compact
Size



RoHS Compliant



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

Quectel LC29D

GNSS Module	LC29D (A)	LC29D (B)	LC29D (C)
Chipset	BCM47758	BCM47765	BCM47755
Region	Global	Global	Global
Dimensions (mm)	16.0 × 12.2 × 2.4	16.0 × 12.2 × 2.4	16.0 × 12.2 × 2.4
Weight (g) ^①	0.9	0.9	0.9
Temperature Range			
Operating Temperature	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
GNSS Features			
Receiving Bands ^②	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 B1I: 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 B1I: 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 B1I: 1561.098 MHz
Horizontal Position Accuracy ^③	Autonomous: < 1.0 m CEP	Autonomous: < 1.0 m CEP	Autonomous: < 2.0 m CEP
Velocity Accuracy	Without Aid: < 0.1 m/s	Without Aid: < 0.1 m/s	Without Aid: < 0.1 m/s
Acceleration Accuracy	Without Aid: < 0.1 m/s ²	Without Aid: < 0.1 m/s ²	Without Aid: < 0.1 m/s ²
TTFF ^④ (With AGNSS)	Cold Start: < 5 s	Cold Start: < 5 s	Cold Start: < 5 s
TTFF ^④ (Without AGNSS)	Cold Start: < 34 s Warm Start: < 30 s Hot Start: < 2 s	Cold Start: < 34 s Warm Start: < 30 s Hot Start: < 2 s	Cold Start: < 34 s Warm Start: < 30 s Hot Start: < 2 s
Sensitivity ^④	Acquisition: -147 dBm Tracking: -163 dBm Reacquisition: -158 dBm	Acquisition: -147 dBm Tracking: -163 dBm Reacquisition: -158 dBm	Acquisition: -147 dBm Tracking: -163 dBm Reacquisition: -158 dBm
Dynamic Performance	Maximum Altitude: 18000 m Maximum Velocity: 515 m/s Maximum Acceleration: 4 g	Maximum Altitude: 18000 m Maximum Velocity: 515 m/s Maximum Acceleration: 4 g	Maximum Altitude: 18000 m Maximum Velocity: 515 m/s Maximum Acceleration: 4 g
Supported Mode	RTK + DR	RTK* + DR	DR
Interfaces			
UART	Baud Rate Range: 115200–921600 bps Default: 115200 bps Update Rate: 1 Hz	Baud Rate Range: 115200–921600 bps Default: 115200 bps Update Rate: 1 Hz	Baud Rate Range: 115200–921600 bps Default: 115200 bps Update Rate: 1 Hz
SPI *	•	•	•
I2C *	•	•	•
Protocol			
Protocol	NMEA 0183	NMEA 0183	NMEA 0183
External Antenna Interface			
Antenna Type	Passive or Active	Passive or Active	Passive or Active
Antenna Power Supply	Module VCC_RF or External	Module VCC_RF or External	Module VCC_RF or External
Power Management			
Power Supply	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
Power Consumption ^④	Acquisition Mode: 50mA Tracking Mode: 40 mA Sleep Mode: 4 mA Standby Mode: 2 mA	Acquisition Mode: TBD Tracking Mode: TBD Sleep Mode: TBD Standby Mode: TBD	Acquisition Mode: 48mA Tracking Mode: 38 mA Sleep Mode: 4 mA Standby Mode: 2 mA

Notes:

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