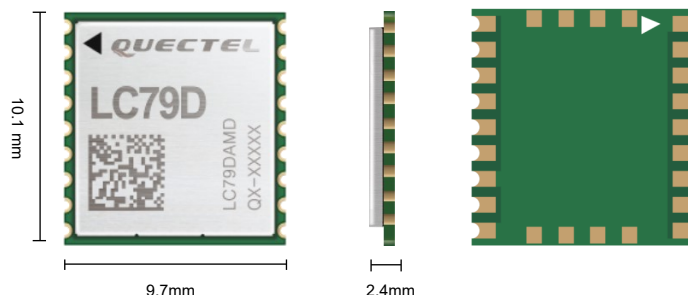


# Quectel LC79D

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



Featuring a concurrent multi-constellation GNSS receiver on dual GNSS bands, LC79D can work on 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.

Compared with the GNSS modules working on L1 band only, LC79D greatly increases the number of satellites involved in tracking and positioning, thereby significantly reducing the multipath effect caused by tall buildings in urban environments, reducing signal acquisition time and improving positioning accuracy.

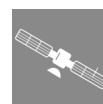
LC79D is AIS-140 compliant, and its on-board LNAs and SAW filters serve to ensure better positioning in weak signal areas and other harsh environments. The GNSS chipset using 28nm process technology, coupled with the advanced low-power management solution, enables low-power GNSS sensing and positioning determination and makes the module an ideal solution for power-sensitive and battery-powered systems.

Due to its excellent performance in improving position drift and enhancing positioning accuracy in rough urban canyons, LC79D has become a popular selection for real-time tracking systems, sharing economy applications and so on.



### Key Benefits

- ✓ Ultra-compact size: 10.1mm × 9.7mm × 2.4mm
- ✓ Multi-GNSS engine for GPS, GLONASS, IRNSS, BeiDou, Galileo and QZSS
- ✓ Support dual GNSS bands (L1, L5)
- ✓ Support AGNSS
- ✓ Built-in LNA for better sensitivity
- ✓ Support SPI, UART and I2C interfaces
- ✓ Support SDK command developed by Quectel
- ✓ Support UDR (Untethered Dead Reckoning) in host mode



L1+L5  
Dual Bands



Multi-constellation  
System



Ultra-compact  
Size



RoHS Compliant



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



Low Power  
Consumption

# Quectel LC79D

| Dual-Band GNSS Module        | LC79D (A)                                                                                                                                                             | LC79D (B)                                                                                                                                                                |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Region                       | Global                                                                                                                                                                | Global                                                                                                                                                                   |
| Dimensions (mm)              | 10.1mm × 9.7mm × 2.4mm                                                                                                                                                | 10.1mm × 9.7mm × 2.4mm                                                                                                                                                   |
| Weight                       | Approx. 0.42g                                                                                                                                                         | Approx. 0.42g                                                                                                                                                            |
| Working Mode                 | Standalone Mode                                                                                                                                                       | Host                                                                                                                                                                     |
| Embedded Flash               | ●                                                                                                                                                                     | /                                                                                                                                                                        |
| Temperature Range            |                                                                                                                                                                       |                                                                                                                                                                          |
| Operation Temperature        | -40°C ~ +85°C                                                                                                                                                         | -40°C ~ +85°C                                                                                                                                                            |
| Storage Temperature          | -40°C ~ +90°C                                                                                                                                                         | -40°C ~ +90°C                                                                                                                                                            |
| GNSS Features                |                                                                                                                                                                       |                                                                                                                                                                          |
| Supported Bands              | GPS L1 C/A, Galileo E1, QZSS L1: 1575.42MHz<br>GPS L5, Galileo E5a, QZSS L5: 1176.45MHz<br>IRNSS L5: 1176.45MHz<br>GLONASS L1: 1602.5625MHz<br>BeiDou B1: 1561.098MHz | GPS L1 C/A, Galileo E1, QZSS L1: 1575.42MHz<br>GPS L5, Galileo E5a, QZSS L5: 1176.45MHz<br>IRNSS L5: 1176.45MHz<br>GLONASS L1: 1602.5625MHz<br>BeiDou B1: 1561.098MHz    |
| Default GNSS Constellation   | GPS+BeiDou+GLONASS+Galileo+QZSS+IRNSS                                                                                                                                 | GPS+BeiDou+GLONASS+Galileo+QZSS+IRNSS                                                                                                                                    |
| Channels                     | 32 Channels                                                                                                                                                           | 32 Channels                                                                                                                                                              |
| Horizontal Position Accuracy | Autonomous: <1.2m CEP                                                                                                                                                 | Autonomous: <1.2m CEP <sup>①</sup>                                                                                                                                       |
| Velocity Accuracy            | Without Aid: <0.1m/s                                                                                                                                                  | Without Aid: <0.1m/s <sup>①</sup>                                                                                                                                        |
| Acceleration Accuracy        | Without Aid: <0.1m/s <sup>2</sup>                                                                                                                                     | Without Aid: <0.1m/s <sup>2</sup> <sup>①</sup>                                                                                                                           |
| TTFF (with AGNSS)            | Cold Start: <5s                                                                                                                                                       | Cold Start: <5s <sup>①</sup>                                                                                                                                             |
| TTFF (without AGNSS)         | Cold Start: <34s<br>Warm Start: <30s<br>Hot Start: <2s                                                                                                                | Cold Start: <34s <sup>①</sup><br>Warm Start: <30s <sup>①</sup><br>Hot Start: <2s*                                                                                        |
| Sensitivity                  | Acquisition: -147dBm<br>Tracking: -163dBm<br>Reacquisition: -158dBm                                                                                                   | Acquisition: -147dBm <sup>①</sup><br>Tracking: -163dBm <sup>①</sup><br>Reacquisition: -158dBm <sup>①</sup>                                                               |
| Dynamic Performance          | Maximum Altitude: Max 18000m<br>Maximum Velocity: Max 515m/s<br>Maximum Acceleration: 4g                                                                              | Maximum Altitude: Max 18000m <sup>①</sup><br>Maximum Velocity: Max 515m/s <sup>①</sup><br>Maximum Acceleration: 4g <sup>①</sup>                                          |
| Certifications               |                                                                                                                                                                       |                                                                                                                                                                          |
| Regulatory                   | CE                                                                                                                                                                    | CE                                                                                                                                                                       |
| Others                       | RoHS                                                                                                                                                                  | RoHS                                                                                                                                                                     |
| Interfaces                   |                                                                                                                                                                       |                                                                                                                                                                          |
| SPI Interface                | Multiplexed from UART <sup>②</sup>                                                                                                                                    | Up to 50MHz                                                                                                                                                              |
| I2C Interface*               | ●                                                                                                                                                                     | ●                                                                                                                                                                        |
| UART Interface               | Adjustable: 115200bps~921600bps<br>Default: 115200bps<br>Update Rate: 1Hz                                                                                             | Multiplexed from SPI <sup>②</sup>                                                                                                                                        |
| I/O Voltage                  | Typical 1.8V                                                                                                                                                          | Typical 1.8V                                                                                                                                                             |
| Protocols                    | NMEA 0183                                                                                                                                                             | NMEA 0183                                                                                                                                                                |
| External Antenna Interface   |                                                                                                                                                                       |                                                                                                                                                                          |
| Antenna Type                 | Passive or Active                                                                                                                                                     | Passive or Active                                                                                                                                                        |
| Antenna Power Supply         | External or<br>Internal (through VCC_RF)                                                                                                                              | External or<br>Internal (through VCC_RF)                                                                                                                                 |
| Electrical Features          |                                                                                                                                                                       |                                                                                                                                                                          |
| Supply Voltage Range         | 1.7V~1.9V, Typical 1.8V                                                                                                                                               | 1.7V~1.9V, Typical 1.8V                                                                                                                                                  |
| Current Consumption (@1.8V)  | Normal Operation: 47mA @Acquisition<br>43mA @Tracking<br>Power Saving Modes: 200µA @Sleep Mode<br>17µA @Standby Mode                                                  | Normal Operation: 47mA @Acquisition <sup>①</sup><br>43mA @Tracking <sup>①</sup><br>Power Saving Modes: 200µA @Sleep Mode <sup>①</sup><br>17µA @Standby Mode <sup>①</sup> |

## Notes:

- <sup>①</sup> Preliminary data
- <sup>②</sup> Under planning
- \* Under development
- means supported