Quectel L26-DR

Compact Multi-Constellation IATF 16949 Compliant GNSS Module with DR Function

16.0 mm

12.3 mm

2.3 mm
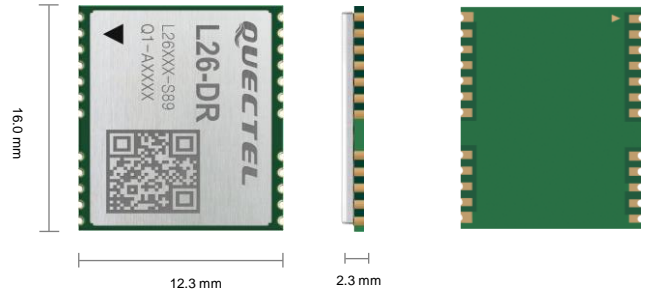
The L26-DR is a concurrent multi-GNSS receiver supporting dead reckoning function. It is equipped with a powerful GNSS core and a 6-axis IMU composed of a 3-axis accelerometer and a 3-axis gyroscope. L26-DR provides an outstanding performance and is easy to integrate. The module is designed and manufactured according to IATF 16949: 2016 standard.

The L26-DR module supports GPS, GLONASS, BeiDou, Galileo and QZSS constellations. This multi-constellation feature guarantees accurate navigation in harsh environments such as dense urban canyons. The dead-reckoning feature enables reliable positioning performance, even when GNSS signals are absent or compromised. The integrated LNA improves the module's performance under signal-challenging conditions.
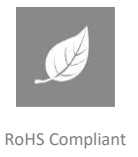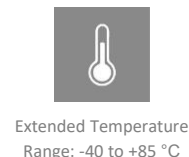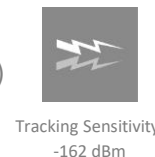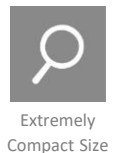
Compared with single GPS system, the enabling of multiple GNSS systems generally increases the number of visible satellites, reduces the time to first fix and improves positioning accuracy while driving through dense urban canyon environment.

Quectel L26-DR's superior performance makes it ideal for automotive and industrial applications, such as vehicle tracker, T-Box and vehicle navigation system. Besides, its ultra low power consumption makes it suitable for power-sensitive devices.

Key Features

- ✓ Ultra-compact size: 16.0 mm × 12.2 mm × 2.3 mm
- ✓ Multi-GNSS engine for GPS, GLONASS, BeiDou, Galileo and QZSS
- ✓ Built-in LNA for better sensitivity
- ✓ Embedded 6-axis IMU (3-axis accelerometer + 3-axis gyroscope)
- ✓ DGPS and SBAS (WAAS/EGNOS/MSAS/GAGAN)
- ✓ Wheel Tick/UART/CAN interfaces to get car speed info
- ✓ Integrated dead-reckoning algorithm
- ✓ Free mounting function support in ADR
- ✓ Built-in active antenna detection function

Multi-GNSS System

Ultra Low Power Consumption

Extremely Compact Size

Tracking Sensitivity: -162 dBm

Extended Temperature Range: -40 to +85 °C

RoHS Compliant

Version: 1.3 | Status: Released

GNSS Module	L26-DR(ADR)	L26-DR (UDR)	L26-DR (ADRC)
Region	Global	Global	Global
Dimensions (mm)	16.0 mm × 12.2 mm × 2.3 mm	16.0 mm × 12.2 mm × 2.3 mm	16.0 mm × 12.2 mm × 2.3 mm
Weight (g)	Approx. 0.9 g	Approx. 0.9 g	Approx. 0.9 g
Grade	Automotive AEC-Q104 qualified	Industrial	Automotive (chipsets compliant with AEC-Q100)
Temperature Range			
Operating Temperature	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
Storage Temperature	-40 °C to +90 °C	-40 °C to +90 °C	-40 °C to +90 °C
GNSS Features			
Supported Bands	GPS L1 C/A: 1575.42 MHz Galileo E1: 1575.42 MHz QZSS L1: 1575.42 MHz GLONASS L1: 1602.5625 MHz BeiDou B1: 1561.098 MHz	GPS L1 C/A: 1575.42 MHz Galileo E1: 1575.42 MHz QZSS L1: 1575.42 MHz GLONASS L1: 1602.5625 MHz BeiDou B1: 1561.098 MHz	GPS L1 C/A: 1575.42 MHz Galileo E1: 1575.42 MHz QZSS L1: 1575.42 MHz GLONASS L1: 1602.5625 MHz BeiDou B1: 1561.098 MHz
Default GNSS Constellation	GPS/GLONASS/Galileo/QZSS	GPS/GLONASS/Galileo/QZSS	GPS/GLONASS/Galileo/QZSS
Channel	Tracking: 48 Fast Acquisition: 2	Tracking: 48 Fast Acquisition: 2	Tracking: 48 Fast Acquisition: 2
SBAS	WAAS, EGNOS, MSAS, GAGAN	WAAS, EGNOS, MSAS, GAGAN	WAAS, EGNOS, MSAS, GAGAN
Horizontal Position Accuracy [2]	Autonomous: < 1.5 m CEP	Autonomous: < 1.5 m CEP	Autonomous: < 1.5 m CEP [1]
Velocity Accuracy [2]	Without Aid: < 0.1 m/s	Without Aid: < 0.1 m/s	Without Aid: < 0.1 m/s [1]
Acceleration Accuracy [2]	Without Aid: < 0.1 m/s²	Without Aid: < 0.1 m/s²	Without Aid: < 0.1 m/s² [1]
Timing Accuracy [2]	1PPS: < 100 ns @ 1σ	1PPS: < 100 ns @ 1σ	1PPS: < 100 ns @ 1σ [1]
TTFF (with AGNSS) [2]	Cold Start: < 13 s	Cold Start: < 13 s	Cold Start: < 13 s [1]
TTFF (without AGNSS) [2]	Cold Start: < 32 s Warm Start: < 25 s Hot Start: < 2 s	Cold Start: < 32 s Warm Start: < 25 s Hot Start: < 2 s	Cold Start: < 32 s [1] Warm Start: < 25 s [1] Hot Start: < 2 s [1]
Sensitivity [2]	Acquisition: -145 dBm Tracking: -162 dBm Reacquisition: -152 dBm	Acquisition: -145 dBm Tracking: -162 dBm Reacquisition: -152 dBm	Acquisition: -145 dBm [1] Tracking: -162 dBm [1] Reacquisition: -152 dBm [1]
Dynamic Performance [2]	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 [1] Maximum Velocity: 515 m/s [1] Maximum Acceleration: 4g [1]
Certifications			
Regulatory	**Europe:** CE	**Europe:** CE	**Europe:** CE
Others	RoHS	RoHS	RoHS
Interfaces			
UART Interface	Adjustable: 115200–921600 bps Default: 115200 bps Update Rate: 1 Hz (Default)	Adjustable: 115200–921600 bps Default: 115200 bps Update Rate: 1 Hz (Default); Max. 10 Hz	Adjustable: 115200–921600 bps Default: 115200 bps Update Rate: 1 Hz (Default); Max. 10 Hz
I/O Voltage	Typical 3.3 V	Typical 3.3 V	Typical 3.3 V
Protocols	NMEA 0183	NMEA 0183	NMEA 0183
External Antenna Interface			
Antenna Type	Passive or Active	Passive or Active	Passive or Active
Antenna Power Supply	External or Internal	External or Internal	External or Internal
Electrical Characteristics			
Supply Voltage Range	3.0–3.6 V, typical 3.3 V	3.0–3.6 V, typical 3.3 V	3.0–3.6 V, typical 3.3 V
Current Consumption [2]	**Normal Operation:** 79 mA @ 3.3 V Acquisition Mode 74 mA @ 3.3 V Tracking Mode **Power Saving Mode:** 17 µA @ Standby Mode	**Normal Operation:** 84 mA @ 3.3 V Acquisition Mode 81 mA @ 3.3 V Tracking Mode **Power Saving Mode:** 13 µA @ Standby Mode	**Normal Operation:** [1] 79 mA @ 3.3 V Acquisition Mode 74 mA @ 3.3 V Tracking Mode **Power Saving Mode:** [1] 13 µA @ Standby Mode

Notes:
1. [1] Preliminary data
2. [2] Room temperature, all satellites at -130 dBm
3. * Under development/planning

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