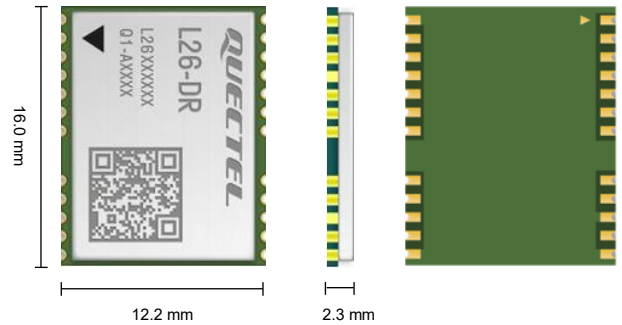


Quectel L26-DR Series

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



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

The L26-DR series supports GPS, GLONASS, Galileo, BDS 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.

The superior performance of the L26-DR series 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: 12.2 mm × 16.0 mm × 2.3 mm
- ✓ Multi-GNSS engine for GPS, GLONASS, Galileo, BDS and QZSS
- ✓ Built-in LNA for better sensitivity
- ✓ Embedded 6-axis IMU (3-axis accelerometer + 3-axis gyroscope)
- ✓ SBAS (WAAS/EGNOS/MSAS/GAGAN)
- ✓ UART and Wheel Tick interfaces to get car speed info
- ✓ AGNSS support
- ✓ Integrated dead-reckoning algorithm
- ✓ Free mounting function support in ADR
- ✓ Built-in active antenna detection function
- ✓ Manufactured in strict compliance with the IATF 16949:2016 automotive quality management system standard



Multi-GNSS System



Ultra Low Power
Consumption



Extremely
Compact Size



Tracking Sensitivity:
-160 dBm



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



RoHS Compliant

Quectel L26-DR Series

GNSS Module	L26-DR (AA)	L26-DR (ADR)	L26-DR (UDR)	L26-DR (ADRC)
Region	Global	Global	Global	Global
Dimensions (mm)	12.2 × 16.0 × 2.3	12.2 × 16.0 × 2.3	12.2 × 16.0 × 2.3	12.2 × 16.0 × 2.3
Weight (g)	Approx. 0.9	Approx. 0.9	Approx. 0.9	Approx. 0.9
Grade	Automotive AEC-Q104 qualified	Automotive AEC-Q104 qualified	Industrial	Automotive
Temperature Range				
Operating Temperature	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
Storage Temperature	-40 °C to +95 °C	-40 °C to +95 °C	-40 °C to +95 °C	-40 °C to +95 °C
GNSS Features				
Supported Bands	GPS L1 C/A: 1575.42 MHz GLONASS L1: 1602.5625 MHz Galileo E1: 1575.42 MHz BDS B1I: 1561.098 MHz QZSS L1 C/A: 1575.42 MHz	GPS L1 C/A: 1575.42 MHz GLONASS L1: 1602.5625 MHz Galileo E1: 1575.42 MHz BDS B1I: 1561.098 MHz QZSS L1 C/A: 1575.42 MHz	GPS L1 C/A: 1575.42 MHz GLONASS L1: 1602.5625 MHz Galileo E1: 1575.42 MHz BDS B1I: 1561.098 MHz QZSS L1 C/A: 1575.42 MHz	GPS L1 C/A: 1575.42 MHz GLONASS L1: 1602.5625 MHz Galileo E1: 1575.42 MHz BDS B1I: 1561.098 MHz QZSS L1 C/A: 1575.42 MHz
Default GNSS Constellations	GPS + GLONASS + Galileo + QZSS	GPS + GLONASS + Galileo	GPS + GLONASS + Galileo	GPS + GLONASS + Galileo + QZSS
Number of Concurrent GNSS	3 + QZSS	3 + QZSS	3 + QZSS	3 + QZSS
Channels	Tracking: 48 Fast Acquisition: 2	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	WAAS, EGNOS, MSAS, GAGAN
Function	PVT	4-wheel ADR	4-wheel UDR	2-wheel ADR
Horizontal Position Accuracy ^①	Autonomous: 1.5 m	Autonomous: 1.5 m	Autonomous: 1.5 m	Autonomous: 1.5 m
Velocity Accuracy ^②	Without Aid: 0.1 m/s	Without Aid: 0.1 m/s	Without Aid: 0.1 m/s	Without Aid: 0.1 m/s
Acceleration Accuracy ^②	Without Aid: 0.1 m/s ²	Without Aid: 0.1 m/s ²	Without Aid: 0.1 m/s ²	Without Aid: 0.1 m/s ²
DR Position Error (ADR)	-	< 2 % of distance traveled without GNSS	-	< 2 % of distance traveled without GNSS
Accuracy of 1PPS Signal (RMS) ^②	50 ns	32 ns	44 ns	45 ns
TTFF (with AGNSS) ^③	Cold Start: 13 s	Cold Start: 13 s	Cold Start: 13 s	Cold Start: 13 s
TTFF (without AGNSS) ^②	Cold Start: 32 s Warm Start: 27 s Hot Start: 2 s	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 Warm Start: 25 s Hot Start: 2 s
Sensitivity (@ GPS + GLONASS)	Acquisition: -144 dBm Tracking: -160 dBm Reacquisition: -152 dBm	Acquisition: -144 dBm Tracking: -160 dBm Reacquisition: -152 dBm	Acquisition: -144 dBm Tracking: -160 dBm Reacquisition: -152 dBm	Acquisition: -144 dBm Tracking: -160 dBm Reacquisition: -152 dBm
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 Maximum Velocity: 515 m/s Maximum Acceleration: 4g	Maximum Altitude: 18000 m Maximum Velocity: 515 m/s Maximum Acceleration: 4g
Update Rate	1 Hz (Default); Max. 10 Hz	1 Hz (Default); Max. 10 Hz	1 Hz (Default); Max. 10 Hz	1 Hz (Default); Max. 10 Hz
Interface				
UART Interface	Adjustable: 115200–921600 bps Default: 115200 bps	Adjustable: 115200–921600 bps Default: 115200 bps	Adjustable: 115200–921600 bps Default: 115200 bps	Adjustable: 115200–921600 bps Default: 115200 bps
Protocol				
Protocol	NMEA 0183	NMEA 0183	NMEA 0183	NMEA 0183
External Antenna Interface				
Antenna Type	Passive or Active ^④	Passive or Active ^④	Passive or Active ^④	Passive or Active ^④
Antenna Power Supply	External or Internal (through module VDD_RF)	External or Internal (through module VDD_RF)	External or Internal (through module VDD_RF)	External or Internal (through module VDD_RF)
Electrical Characteristics				
Supply Voltage Range (VCC)	3.0–3.6 V, typ. 3.3 V	3.0–3.6 V, typ. 3.3 V	3.0–3.6 V, typ. 3.3 V	3.0–3.6 V, typ. 3.3 V
I/O Voltage	Following VCC	Following VCC	Following VCC	Following VCC
Power Consumption ^② (@ 3.3 V, Default Constellations)	Normal Operation: 81 mA (267.3 mW) @ Acquisition 81 mA (267.3 mW) @ Tracking Power Saving Mode: 1.7 mA (5.61 mW) @ Standby Mode 8 μA (26.4 μW) @ Backup Mode	Normal Operation: 81 mA (267.3 mW) @ Acquisition 80 mA (264 mW) @ Tracking Power Saving Mode: 1.7 mA (5.61 mW) @ Standby Mode 8 μA (26.4 μW) @ Backup Mode	Normal Operation: 84 mA (277.2 mW) @ Acquisition 81 mA (267.3 mW) @ Tracking Power Saving Mode: 1.7 mA (5.61 mW) @ Standby Mode 8 μA (26.4 μW) @ Backup Mode	Normal Operation: 81 mA (267.3 mW) @ Acquisition 80 mA (264 mW) @ Tracking Power Saving Mode: 1.7 mA (5.61 mW) @ Standby Mode 8 μA (26.4 μW) @ Backup Mode
Certifications				
Regulatory	Europe: CE	Europe: CE	Europe: CE	Europe: CE
Others	RoHS	RoHS	RoHS	RoHS
Quality & Reliability				
Quality & Reliability	Manufactured according to IATF 16949:2016 standard	Manufactured according to IATF 16949:2016 standard	Manufactured according to IATF 16949:2016 standard	Manufactured according to IATF 16949:2016 standard

NOTE:
1. ①: CEP 50 %, 24 hours static, -130 dBm, more than 6 SVs.
2. ②: Tested at room temperature, with typical operating voltage, and satellite signal of -130 dBm configured by the instrument.
3. ③: Open-sky, active high-precision GNSS antenna.
4. ④: To further mitigate the impact of out-of-band signals on GNSS module performance, you must choose the active antenna whose SAW filter is placed in front of the LNA in the internal framework. DO NOT place the LNA in the front.