LPMS-NAV3

LPMS-NAV3 LPMS Waterproof 6-axis Motion Sensor / IMU with High-precision Heading Measurement

LPMS-NAV3 is a high-performance miniature inertial measurement unit (IMU) with multiple communication interfaces. The sensor uses a combination of 3-axis accelerometer/ gyroscope and a high-accuracy single axis gyroscope to calculate accurate relative heading information. Also, LPMS-NAV3 sensor is contained in a rugged, IP67-rated aluminum enclosure. We created this unit especially with automotive, mobile robotics and automatic guided vehicle (AGV) application cases in mind.

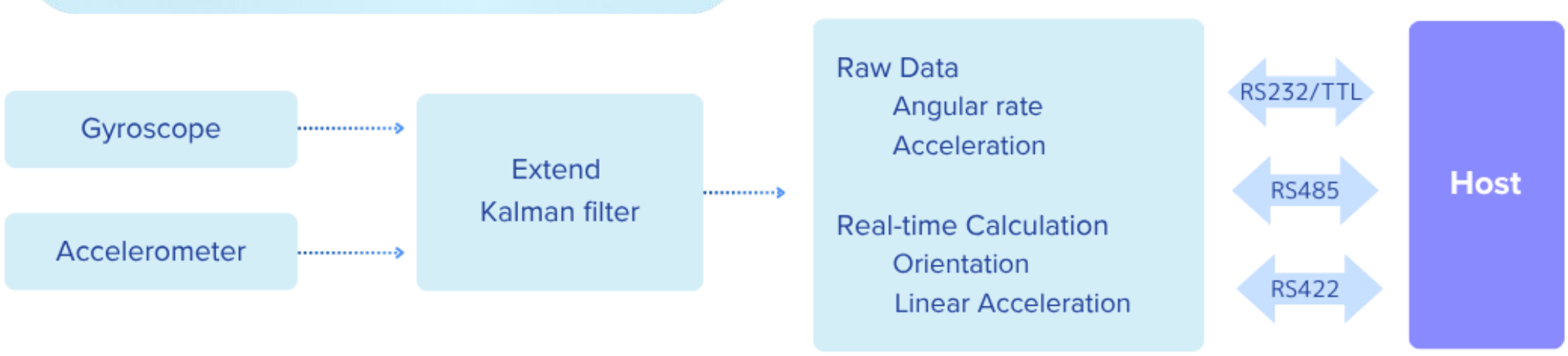


Key Features

- MEMS miniature inertial measurement unit (IMU)
- Integration of 3-axis gyroscope, accelerometer and an additional single axis ultra-low-noise gyroscope for yaw angle calculation
- Precise heading data output
- Data output rates of up to 500Hz
- IP67-rated waterproof enclosure
- Available interface: TTL, RS232, RS422, RS485, CAN
- Ideal for autonomous navigation applications

Applications

- AGV/AMR navigation
- Automatic dead reckoning
- SLAM applications



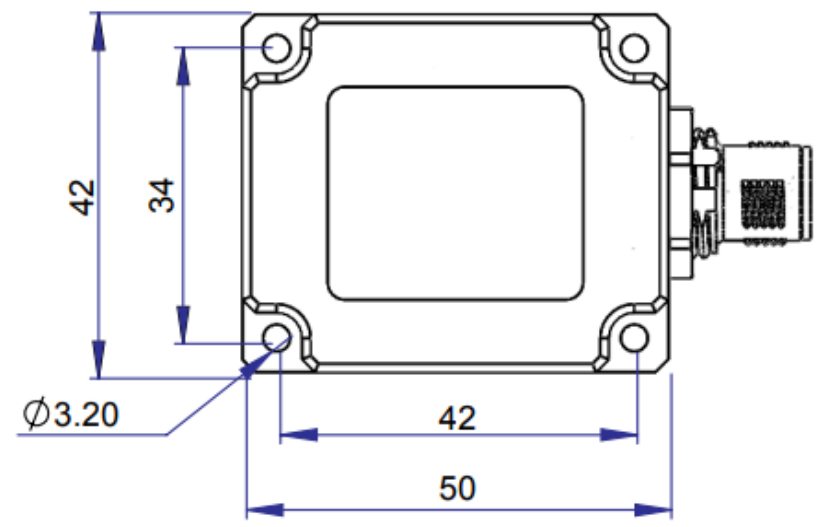
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Sensor Specification

Part number	LPMS-NAV3 -TTL	LPMS-NAV3 -RS232	LPMS-NAV3 -RS485	LPMS-NAV3 -CAN	LPMS-NAV3 -RS422
Size	50 × 42 × 25 mm				
Weight	106.8 (±4) g				
Communication Protocol	LP-BUS	LP-BUS	LP-BUS	LP-BUS	LP-BUS
Interface	TTL	RS232	RS485 /MODBUS	CAN+TTL	RS422
Max. Baudrate	921.6 Kbps	921.6 Kbps	256 Kbps	1M Kbps	921.6 Kbps
Orientation Range	Roll: ±180°; Pitch: ±90°; Yaw: ±180°				
Resolution	0.01°				
Accuracy	< 0. 5° (static), < 2° RMS (Dynamic)				
Gyroscope	XY-axis, ± 125 / ± 250 / ± 500 / ± 1000 / ± 2000 dps / ± 4000 dps, 16 bits Z-axis, ±400 dps, 24 bits				
Accelerometer	3-axis, ±2 / ±4 / ±8 / ±16 g, 16 bits				
Data Output Format	Raw & Calibrated data, Euler Angle, Quaternion, Linear Acceleration				
Data Output Rate	500 Hz.				
Power Consumption	0.072 (0.006A@12V)	0.084 (0.007A@12V)	0.072 (0.006A@12V)	0.096 (0.008A@12V)	0.072 (0.006A@12V)
Power Supply	5V ~ 36V DC				
Connector	SACC-DSI-MS-5CON-PG 9/0, 5 SCO, M12				
Case material	IP67 rated aluminum alloy				
Temperature Range*	-20 to +80 °C (upon request -40 to +80 °C)				
Software Information	LpmsControl2 interface software (Windows), Open source sensor driver for Windows and Linux (OpenZen, supports C, C++, Python, C#, Unity, ROS)				

※ Performance parameters are measured at room temperature +25°C. Reference values will change at other temperatures.
※ Please refer to the product manual for more detailed specifications.

External Dimensions

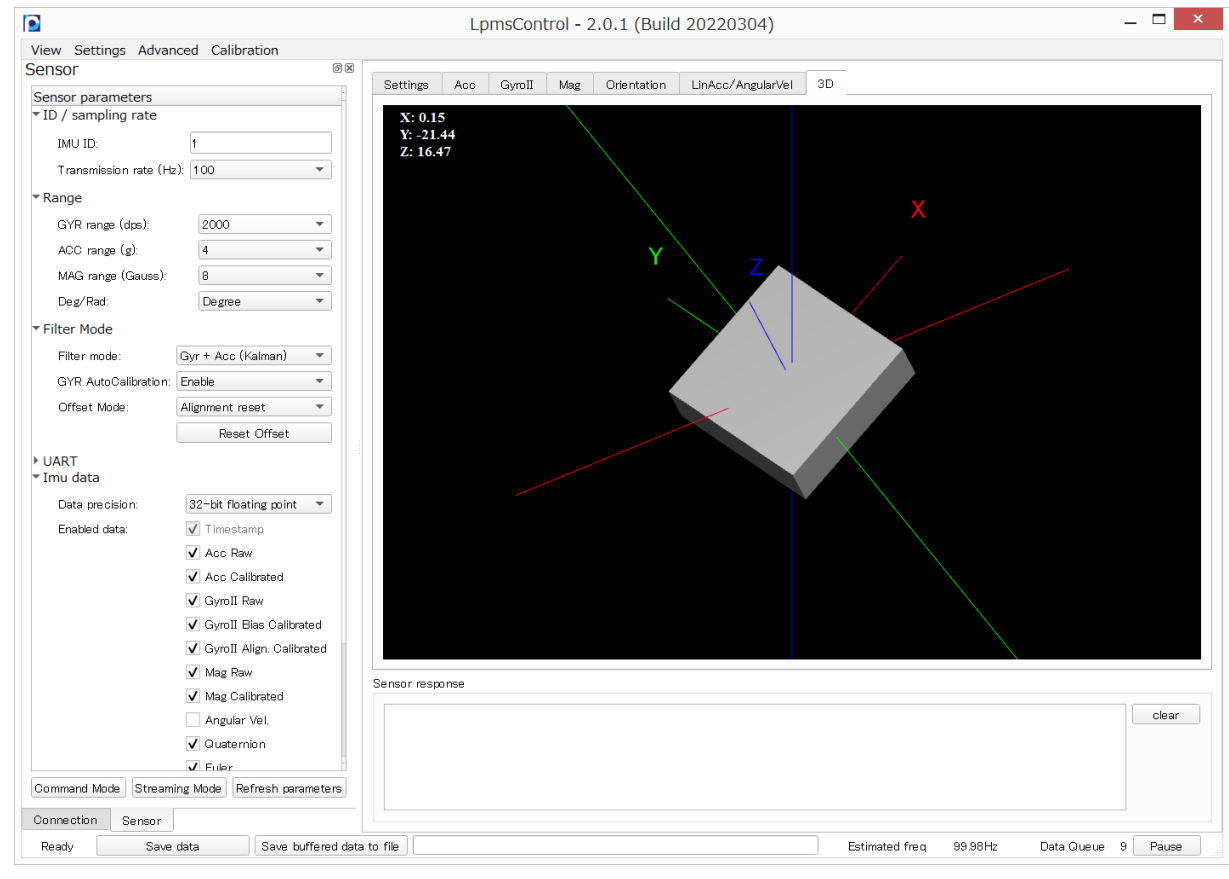


Package

- LPMS-NAV3 sensor× 1
- Cable× 1
- Box x 1
- Instruction manual× 1
- Warranty (1Year)



Interface Software



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