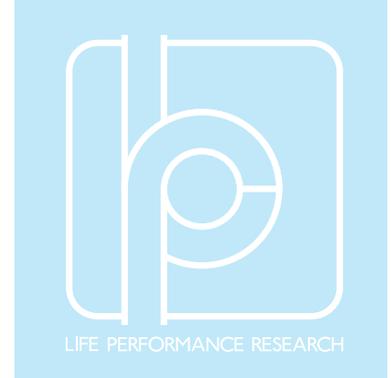


# LPMS-URS2



## 9-Axis Inertial Measurement Unit (IMU) / AHRS with USB and RS232 Connectivity

The LP-Research Motion Sensor with USB and RS232 connectivity version 2 (LPMS-URS2) is a miniature inertial measurement unit (IMU) / attitude and heading reference system (AHRS). The unit is very versatile, performing accurate, high speed orientation measurements. By the use of three different MEMS sensors (3-axis gyroscope, 3-axis accelerometer and 3-axis magnetometer) low-drift, real-time 3D orientation data is achieved.

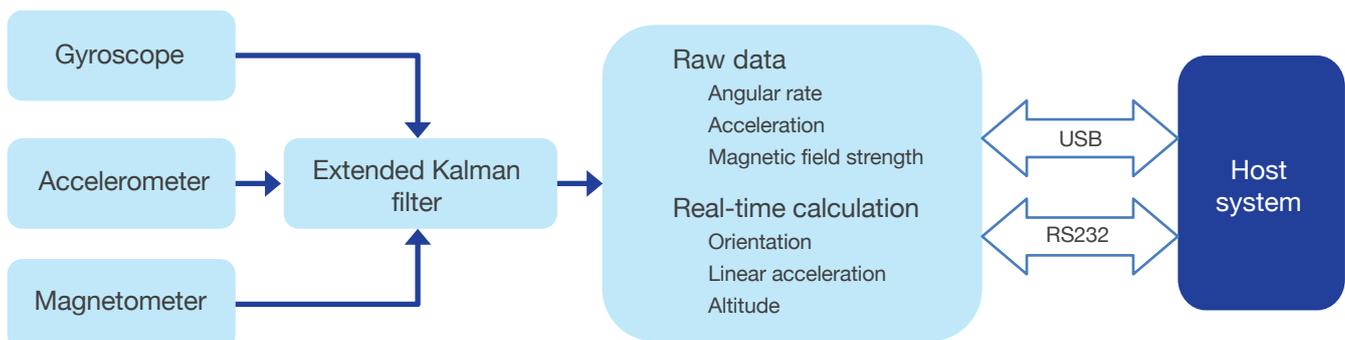


### Key Features

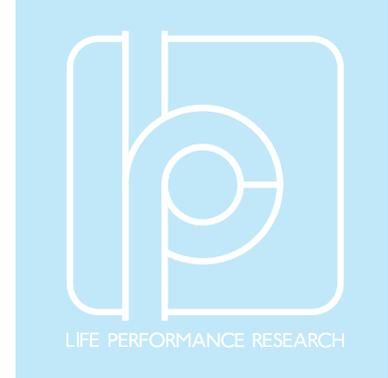
- MEMS-based miniature inertial measurement unit (IMU)
- Integration of 3-axis gyroscope, accelerometer, magnetometer, temperature and barometric pressure sensor in one unit
- Robust and light plastic enclosure
- Real-time, on-device calculation of sensor orientation, linear acceleration and altitude
- Data output rates of up to 400Hz
- USB interface and RS232 serial communication
- Selectable binary and plain ASCII format output
- Control application and SDK for Windows, Linux

### Applications

- Human motion capture
- Internet of Things (IoT) devices
- Sports performance evaluation
- Drone flight control



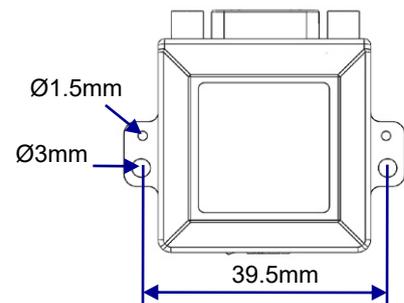
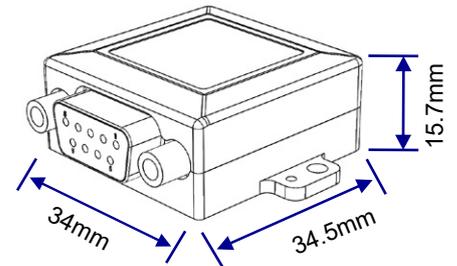
NOTE: Diagram is simplified. Please ask us, if you need more detailed information.



## Sensor Specifications

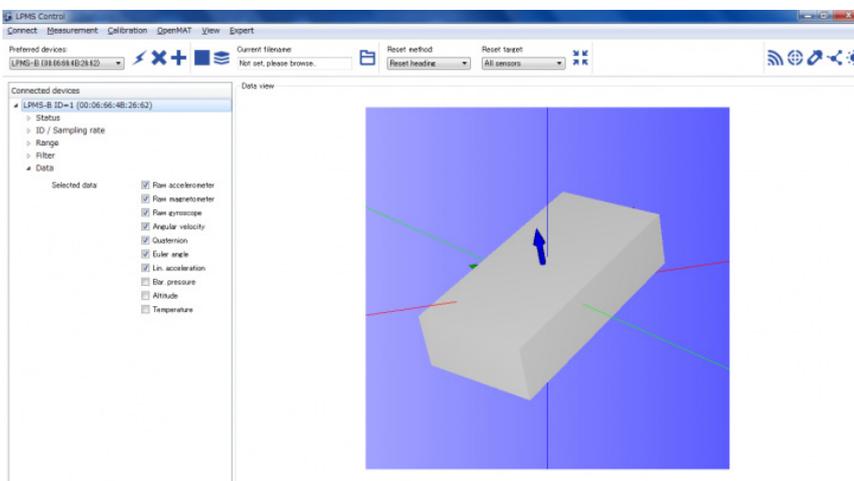
Wired interface	RS232	USB
Max. baudrate	921.6Kbit/s	921.6Kbit/s
Communication protocol	LP-BUS	LP-BUS
Size	34 x 34.5 x 15.7 mm	
Weight	17.6 g	
Orientation range	Roll: $\pm 180^\circ$ ; Pitch: $\pm 90^\circ$ ; Yaw: $\pm 180^\circ$	
Resolution	$< 0.01^\circ$	
Accuracy	$< 0.5^\circ$ (static), $< 2^\circ$ RMS	
Accelerometer	3-axis, $\pm 2 / \pm 4 / \pm 8 / \pm 16$ g, 16 bits	
Gyroscope	3-axis, $\pm 125 / \pm 245 / \pm 500 / \pm 1000 / \pm 2000$ dps, 16 bits	
Static orientation stability	9 $^\circ$ /hour	
Gyroscope noise density	0.007 dps/ $\sqrt{\text{Hz}}$	
Magnetometer	3-axis, $\pm 4 / \pm 8 / \pm 12 / \pm 16$ gauss, 16 bits	
Pressure sensor	300-1100 hPa	
Data output format	Raw data / Euler angle / Quaternion	
Data output rate	up to 400Hz	
Power consumption	$< 145$ mW@3.3V	
Power supply	5 V ~18 V DC	5 V DC
Connector	DB9 female	Micro USB-B
Case material	ABS Plastic shell	
Temperature range	$- 40 \sim +80^\circ\text{C}$	
Software	C++ library for Windows, LpmsControl software and Open Motion Analysis Toolkit (OpenMAT) for Windows.	

## Mechanical drawing



NOTE: For detailed specifications, please refer to our product manuals.

## LpmsControl Utility Software



## Package

- LPMS-URS2 sensor x 1
- User guide card x 1
- Cable x 1
- Box x 1
- Warranty (1 year)