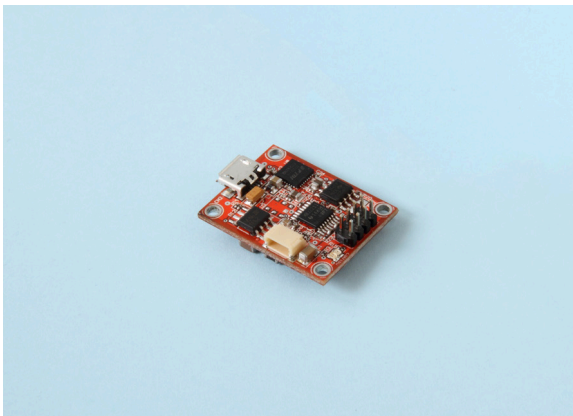# LPMS-CURS

LPMS Wired Miniature Motion Sensor / IMU / AHRS with CAN Bus, USB and UART Connectivity

The LPMS-CURS is an innovative and high performance miniature motion sensor with multiple communication interface. Integrating CAN Bus, USB and UART, the LPMS-CURS perfectly fits both machine and human motion measurements for size and cost sensitive applications.
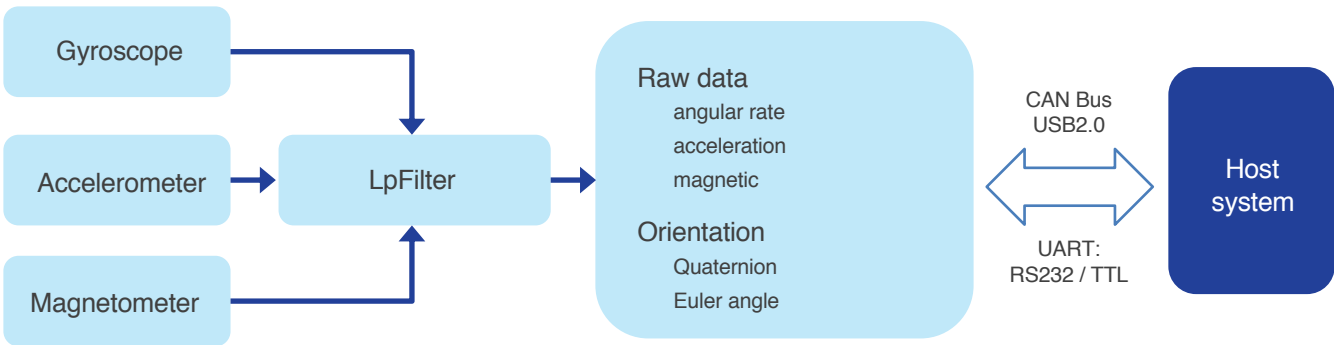
Key Features

- MEMS miniature inertial measurement unit (IMU)

- Integration of 3-axis gyroscope, accelerometer and magnetometer

- Accurate on-device orientation calculation using the LpFilter
  (based on an extended Kalman filter).

- High sampling rates of up to 300 Hz.

- IVariety of wired interfaces: CAN Bus, USB, UART:RS232 and TTL

- SDK and programming libraries for Windows, Linux, Android, etc.
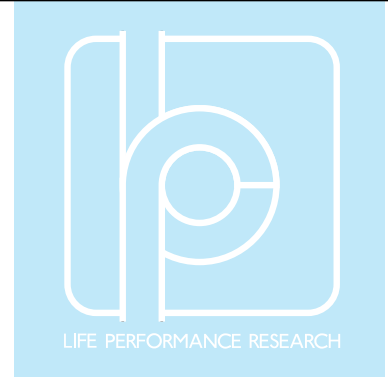
- Affordable price

Applications

- Human motion capture

- Health care: health monitoring equipment, fitness devices, etc.

- Medical and sport skill training

- Vehicle monitoring
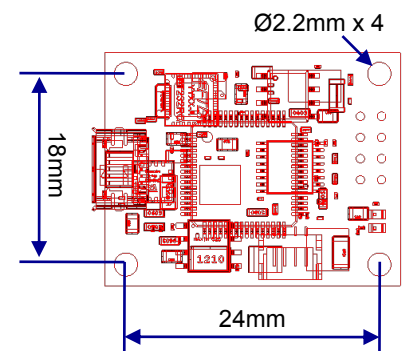
- Aerospace navigation
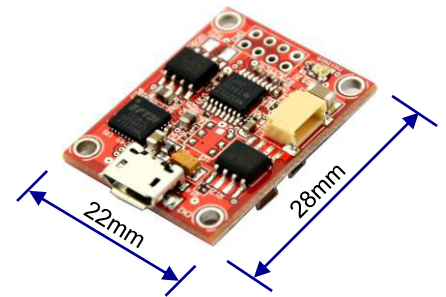
- Virtual reality

Gyroscope → LpFilter

Accelerometer → LpFilter

Magnetometer → LpFilter

LpFilter →

Raw data
  angular rate
  acceleration
  magnetic

Orientation
  Quaternion
  Euler angle

CAN Bus
USB2.0

UART:
RS232 / TTL

Host system

Sensor Specifications

Wired interface	CAN Bus	UART: RS232/TTL	USB
Max. baudrate	1Mbit/s	921.6Kbit/s	921.6Kbit/s
Communication protocol	LpCAN/ CANOpen	LpBus	LpBus
Size	48 x 40 x 25 mm		
Weight	4.1g		
Orientation range	360° about all axes		
Resolution	< 0.05°		
Accuracy	< 0. 5°(static), < 2°RMS (dynamic)		
Accelerometer	3-axis,± 20 / ± 40 / ± 80 / ± 160 m/s², 16 bits		
Gyroscope	3-axis,± 250 / ± 500 / ± 2000°/s, 16 bits		
Magnetometer	3-axis,± 130～ ± 810uT, 16 bits		
Pressure sensor	300～ 1100hPa*		
Data output format	Raw data / Euler angle / Quaternion		
Sampling rate	0 ～ 300 Hz		
Power consumption	165 mW @ 5 V		
Power supply	4 ～ 18 V DC	5 V DC	
Connector	Header pitch 2mm	Micro Usb-B	
Case material	Null		
Temperature range	- 40 ～+80°C		
Software	C++ library for Windows, Java library for Android, LpmsControl software and Open Motion Analysis Toolkit (OpenMAT) for Windows.		

＊An optional pressure sensor is available for altitude measurement.

Mechanical drawing

22mm
28mm

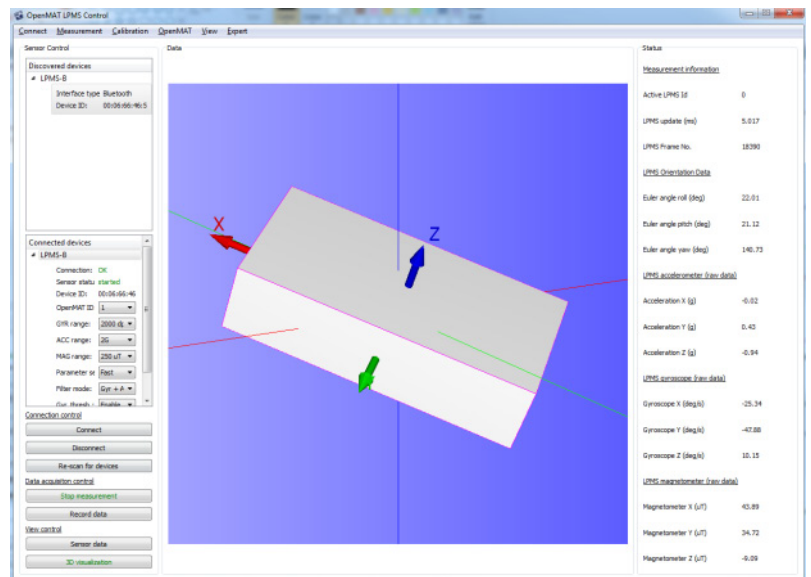Ø2.2mm x 4
18mm
24mm

Package

- LPS-CU sensor x 1

- User guide card

- Warranty (1 year)

Multiple LPMS-CUs can be connected together while using CAN Bus interface.

LpmsControl Utility Software