EXLs1

Wireless Inertial Measurement Unit (IMU)

FEATURES:

- Module Size: 45 x 32 x 5 mm.
- 32 bit Cortex M3, 72MHz
- 3 axis accelerometer: ±2 or ±6g.
  Resolution: 1mg (±2g) Freq. max: 2.5KHz
- 3 axis gyroscope:(full scale ±250/±500/±2000 dps)
  sensitivity: 8.75/17.50/70 mdps/digit
- 3 axis magnetometer: full scale ± 1000 µT,
  sensitivity 0,10µT
- Thermometer environment. Resolution: (±1°).
  Freq. max: 20Hz.
- Vibration sensor
- Bluetooth™ 2.1 class 2.
- Flash memory 1GB on board
- Power supplied from USB or with lithium battery.
  Max current consumption 60mA.
- Battery operating time 3h (using a Li-Ion
  3.7V, 160mAh, Fsamplig 10Hz)

GENERAL DESCRIPTION

- **EXLs1** is an **inertial sensor** based on MEMS technology and wireless communication
  (Bluetooth™ 2.1) made for motion measurement, acquisition and transmission.
  It features a complete IMU sensor set with full axis **gyroscope, magnetometer, accelerometer, vibration
  sensor, temperature sensor.**

- It is particularly suitable to be used in the medical field as a wearable devices for the **body movements
  analysis** (posture assessment, rehabilitation, gait monitoring, joint's biomechanics analysis,
  activity monitoring). Other areas of application include multimedia interactions and vibration analysis.

- The **Bluetooth™** radio allows standard interfacing to a wide range of devices (PC, Tablets, Smartphone)
  without the need of additional hardware so that data can be transmitted wirelessly up to 10 meters.

- The built in **Flash memory** (1 GByte) allows data logging over long period of activity. Data can then be
  retrieved by using Bluetooth ™ connection or USB interface.

- Algorithms for motion characterization, statistical analysis, collision detection, orientation estimation, can be
  implemented on the on board 32 bit CPU (Cortex M3).

- **IMU** hardware and software can be fully customized.