OpenMovement

AX6 Datasheet

6-Axis logging movement sensor

Version: 1.2
Date: 04/02/2019

openmovement.dev

AX6

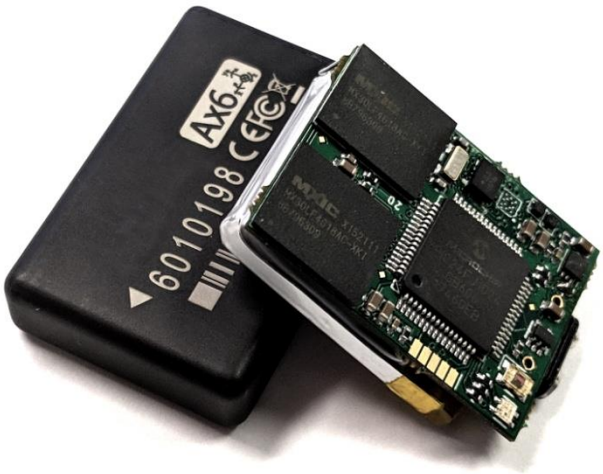
Axis logging movement sensor

Description

The AX6 is a low cost logging 6-axis inertial movement sensor (IMU). At the heart of the sensor is a 6-axis movement sensor and a non-volatile flash memory chip linked by a USB enabled microcontroller. A temperature sensor, ambient light sensor, real time clock (RTC) and lithium polymer battery are also integrated into the sealed polycarbonate puck. The charge time is approximately 120 minutes and the sensor will record for **7 days of continuous 6-axis IMU data at 100Hz**. The device is suitable for use in a variety of environments, is water resistant up to 1.5 meters and is CE safety mark approved.

Applications

- Human movement science
- Sports research
- Instrumented environments
- Digital interaction
- Activity recognition



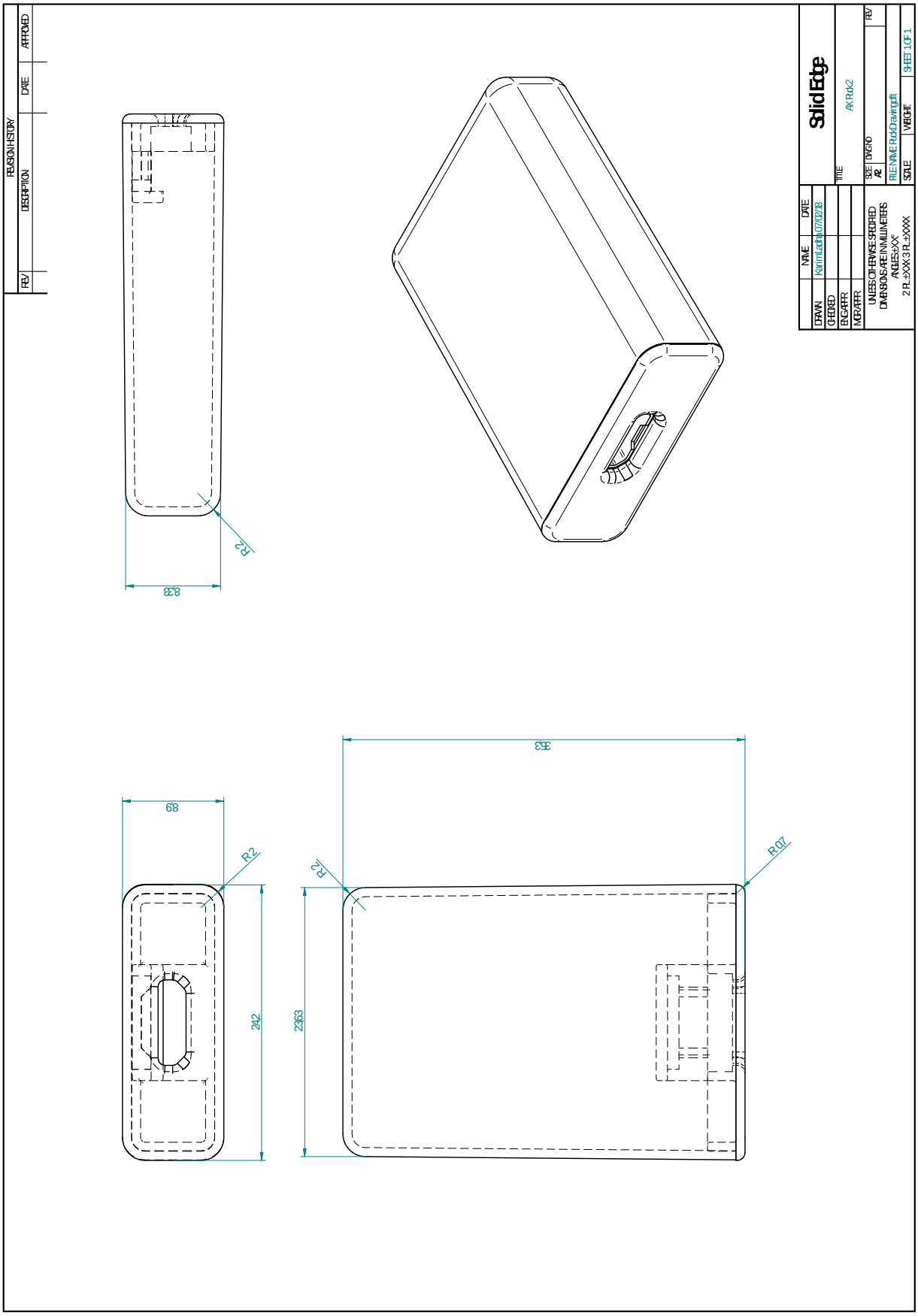
Summary

- 6-axis 16-bit synchronised accelerometer and gyroscope IMU sensor
- Ambient light sensor
- Temperature sensor
- 1024MB recording memory
- **7 days recording gyro/accel @ 100Hz**
- **34 days recording accel @ 50Hz**
- Rechargeable lithium battery
- Water resistant and CE marked
- Configurable logging options

Specification: AX6

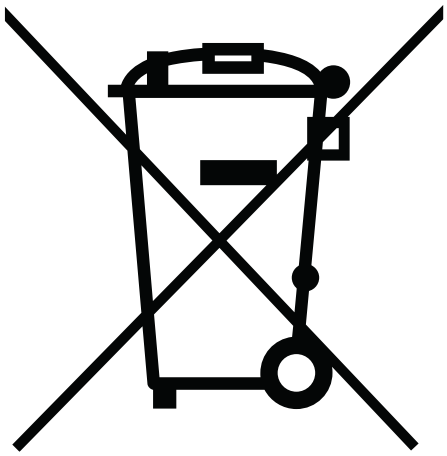
PARAMETER	VALUE	NOTES
Puck Size	23x32.5x8.9 mm	
Puck Weight	11g	
Enclosure Material	Polycarbonate	
Battery Capacity	250mAh	Rechargeable lithium polymer
Battery Charge Current	250mA	
Connectivity	Micro USB	
ENVIRONMENTAL		
Moisture Ingress	Water-resistant to 1.5m	IPx8
Dust Ingress	Dust tight	IP6x
Operating Temperature	0 - 65˚C (not charging)	40˚C if charging
TYPICAL CAPABILITIES		
Memory	1024MB flash non-volatile	
Logging Frequencies	Configurable 12.5Hz - 1600Hz	
Maximum Logging Periods	7 days	IMU mode @ 100Hz
	17 days	Accelerometer @ 100Hz
	34 days	Accelerometer @ 50Hz
	Up to 140 days	Accelerometer @ 12.5Hz
REAL TIME CLOCK		
Type	Quartz real time clock	
Frequency	32.768KHz	
Precision	± 50ppm (typical)	
ACCELEROMETER AND GYROSCOPE		
Sensor Type	MEMS	BMI160
Range	±2/4/8/16g	Configurable
Gyroscope Range	±125/250/500/1000/2000 dps	Configurable
Resolution	16 bit	Gyro and Accelerometer
LIGHT		
Sensor Type	APDS9007	Logarithmic light sensor
Wave Length	470-650 nm	Matched to human eye
Range	3-1000 LUX	At sensor
Digital format	10 bit	
TEMPERATURE		
Sensor Type	MCP9700	Linear thermistor
Range	0 - 40˚C	
Resolution	0.3˚C	
Accuracy	1˚C typical (4˚C max)	

Dimensions: AX6



Certification:

The AX6 is certified to the following:

Certification	Test
CE	The product is compliant with the Directive 2004/108/ EC; the relevant Declaration of Conformity is available from **manufacturer** The product has been tested to BS EN 61000-6-1:2007 and BS EN 61000-6-3:2007 (Electromagnetic compatibility (EMC), Generic standards, Immunity for residential, commercial and light-industrial environments).
IP68	The product has an ingress protection rating as defined in IEC 60529 to level 68. Due to the nature of the housing (potted enclosure) the device was passed on the basis that it was fully functional both before and after each testing criterion
	In accordance with the European Directive 2002/96/ EC on Waste Electrical and Electronic Equipment (WEEE), the product must not be disposed of in the normal unsorted municipal waste stream. Instead, it is the user's responsibility to dispose of this product by returning it to a collection point or directly to **manufacturer**. Separate collection of this waste helps optimize the recovery and recycling of any reclaimable materials and also reduces the impact on human health and the environment. For more information concerning the correct disposal of this product, please contact your local authority or our issuing authority The lithium polymer cell has met the acceptance criterion for the UN Recommendations on the Transport or Dangerous Goods relating to lithium batteries, reference Para 38.3 of Manual tests and Criteria document No. ST/SG/AC.10.11/Rev.4:2003

Disclaimer:

Information in this document is believed to be accurate and reliable. However, the manufacturer does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information. The manufacturer reserves the right to make changes to information published in this document, including without limitation, specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof. The manufacturer's products are not designed, authorized or warranted to be suitable for use in applications where failure or malfunction can reasonably be expected to result in personal injury, death or severe property or environmental damage. The manufacturer accepts no liability for inclusion and/or use of its products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.