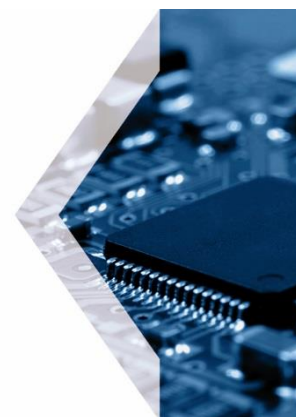BOSCH

XDK
The Sensor X-perience

Cross-Domain Development Kit XDK110

Platform for Application Development

General Description

The XDK110 is a wireless sensor device that enables rapid prototyping of sensor based products and applications for the Internet of Things (IoT). Inclusive of multiple Micro‑Electromechanical Systems (MEMS) sensors, the XDK110 enables time and cost effective realization of IoT applications while offering users the freedom of programming from a basic to an advanced level. The XDK110 is an integrated product that offers access to the XDK developer community for active information exchange, knowledge sharing, technical support and more. The device was designed to allow users an easy transition from prototype to mass production by providing a clear road to product development.

Application Advantages

- ▶ All-in-one sensor development kit:
  No need for component selection, hardware assembly, or deployment of a real-time operating system
- ▶ Algorithm library and sample applications convenient for first-time programming
- ▶ Drivers for all system components included
- ▶ Secure data protocol
- ▶ Small form factor
- ▶ Built-in lithium ion rechargeable battery
- ▶ Functional extendibility via the included extension board
- ▶ High-level API for the standard user and low-level API for the power user
- ▶ PC-based development tools make it an easy to work with tool for any developer
- ▶ CE, FCC and IC certified

Built-in Sensors

- ▶ Accelerometer (BMA280)
- ▶ Gyroscope (BMG160)
- ▶ Magnetometer (BMM150)
- ▶ Inertial measurement unit (BMI160)

- ▶ Humidity/ Pressure/ Temperature/ sensor (BME280)
- ▶ Acoustic noise sensor (AKU340)
- ▶ Digital light sensor (MAX44009)

Other Main Components

- ▶ Bluetooth 4.0 low energy IEEE 802.15.1
- ▶ Wireless LAN IEEE 802.11b/g/n
- ▶ 32‑Bit microcontroller (ARM Cortex M3), 1MB Flash, 128 kB RAM
- ▶ Internal Li‑Ion rechargeable battery 560 mAh
- ▶ Integrated antennas

Included in delivery

- ▶ XDK110 Development Kit with "XDK Gateway" extension board for easy access to additional MCU functionality, incl. 10 cm connector cable
- ▶ Micro USB 2.0 connector cable
- ▶ Mounting plate and screws

Operating Conditions

- Indoor use
- Operating temperature range: -20 ºC ... 60 °C, (0 °C ... 45 °C for battery charging)
- Storage temperature range: -20 ºC ... 60 °C
- Humidity range: 10...90 %rH (non-condensing)
- IP Rating: IP 30 (IEC 60529)
- Supply Voltage: 5 V DC
- Charging Current: 500 mA Maximum

Measurement Ranges

- Accelerometer ± 2 ... ± 16 g (programmable)
- Gyroscope ± 125 º/s ... ± 2000 º/s (programmable)
- Magnetic field strength ± 1300 µT (X,Y-Axis); ± 2500µT (Z-Axis)
- Light sensor   0.045 lux ... 188,000 lux ; 22-bit
- Temperature   -20 ºC ... 60 °C [limited by XDK operating conditions]
- Pressure   300...1100 hPa
- Humidity   10...90 %rH (non-condensing) [limited by XDK operating conditions]

Sampling Rate

- Accelerometer BMA280   2000 Hz
- Gyroscope BMG160   2000 Hz
- Magnetometer BMM150   300 Hz
- Hum./Press./Temp. BME280   182 Hz
- Inertial Measurement Unit   1600 Hz (Accelerometer);
  BMI160   3200 Hz (Gyroscope)

Software

- Integrated development environment supplied with XDK Workbench (Eclipse)
- LWM2M communication protocol
- Extensive libraries and modular source code enable the developer to fully understand the system

User Interface

- Power switch
- Green system LED to display the state of charging
- 3 programmable status LEDs (red, orange, yellow)
- 2 programmable push-buttons
- Micro SD card slot
- Interface for J-Link Debug-probe
- Interface for extension board

Contact us

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