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SmartBond™ DA14585 IoT Multi-Sensor Development Kit

Control your cloud-based systems with Alexa and the world's lowest power 15-DOF wireless sensor module

The world's lowest power wireless sensor kit, is a complete solution for a multi-sensor node letting you develop multiple applications on the same hardware and it supports different use cases through firmware. Offering fifteen degrees of freedom it manages more sensors than any other kit. Data can be processed locally, transmitted via Bluetooth® low energy 5 and reported using Amazon's Alexa voice command technology.

Developed by Dialog Semiconductor on the basis of TDK Invensense motion and Bosch Sensortec environmental sensors, the [DA14585 IoT Multi Sensor Development Kit](#) combines Bluetooth wireless communications and an ARM Cortex-M0 processor with an accelerometer, gyroscope, magnetometer and environmental sensors. Altogether that helps reduce development time, enables rapid proof of concept and accelerates time to market for long-lifetime, fully featured IoT applications.



Applications

- Smart tags / beacons
- Cloud connected wireless sensors
- Asset tracking
- Voice controlled sensor reading
- Voice controlled actuator settings
- Wearables
- Immersive gaming
- Augmented reality
- 3D indoor mapping / navigation
- Weather stations

Benefits

- Faster time-to-market
- Reduced development effort and resources for cloud-based applications
- Flexible and modular system setup
- Ideal for resource-constrained applications
- Longest battery lifetime sensor-based applications
- Small form factor end-product

Accelerating your IoT Development

Development Kit hardware features

- Board size: round shape +/- 70 x 20 mm
- Integrated front-end module supports ranges up to 300 meters
- 15-DOF wireless sensor module
- DA14585 low-power Bluetooth low energy (5.0) SoC
- ICM42605 6-axis motion tracking sensor
- AK09915 3-axis geomagnetic field sensor
- BME680 Low power environmental unit (gas, pressure, temperature and humidity)
- Proximity and ambient light sensor with IR LED
- Digital Microphone
- Buzzer



SensorFusion software features

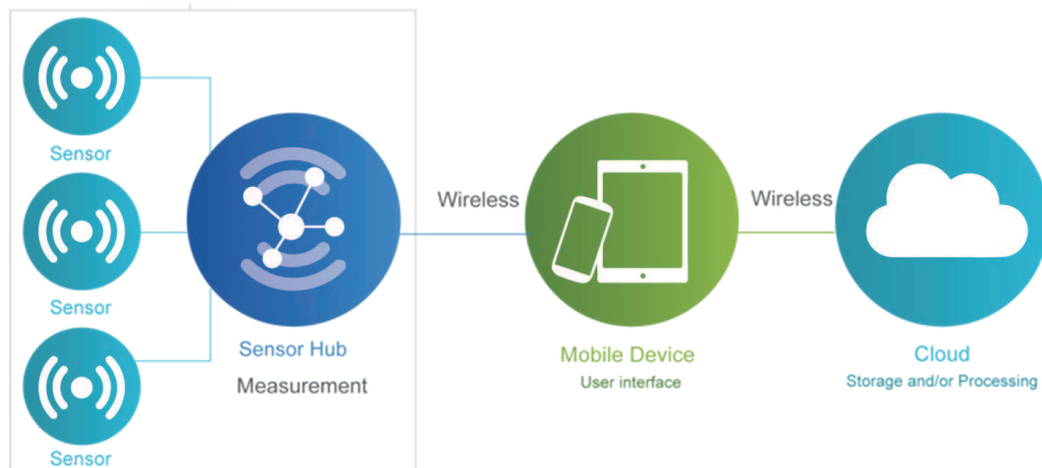
- Complete library for data acquisition, sensor calibration and fusion.
- Guarantees high performance sensor data processing using decimation for most accurate and real time sensor data
- Sensor fusion guarantees reduced airtime and longest battery life
- Sensor fusion and streaming support
- Default settings:
 - 100 Hz Accelerometer
 - 100 Hz Gyroscope
 - 0.5 Hz Environmental
 - 10 Hz Magnetometer
- Magnetometer is synchronized to motion sensor in sensor fusion mode
- Ideal for resource-constrained systems - minimizes memory, processing requirements and power consumption.
 - 0.5 MIPS on Cortex M0
 - < 5 kB RAM

Application firmware and development data

Software defined functionality by software loaded into memory using Software Update Over The Air

- Smart beacon outputting sensor data
- Smart tag
- Smart wireless Sensor Fusion Node

DA14585 IoT Multi Sensor



Cloud support via Raspberry Pi and mobile gateways

The kit offers extensive cloud support ranging from IFTTT for the creation of simple applets to advanced workflows for data analytics and is hosted on Amazon Web Services (AWS) and allows for integration of other cloud agents like Microsoft Azure.

- Cloud access via mobile gateway
- Cloud connectivity hosted on Amazon's AWS
- iOS and Android support for APPs
- Support to the DIY and maker community with IFTTT
- Asset tracking support using Alexa voice command
- Sensor reading from an APP or using Alexa voice command
- Actuator control from an APP or using Alexa voice command
- Historic data availability for data analytics and dashboard support
- Event driven alert notifications from sensors, e.g. if temperature is under 15 °C, send alert
- Joystick based motion control

The kit's cloud connectivity opens up new possibilities such as visualization of historic data with data analytics, remote sensor management, Alexa voice command support, alert notifications and cloud-based actuator control.

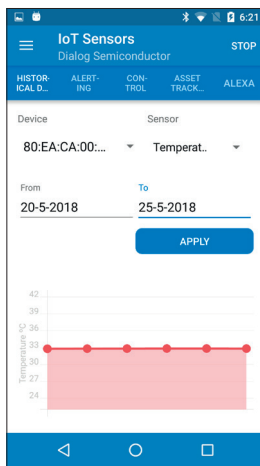


Figure 1: Showing the historical data

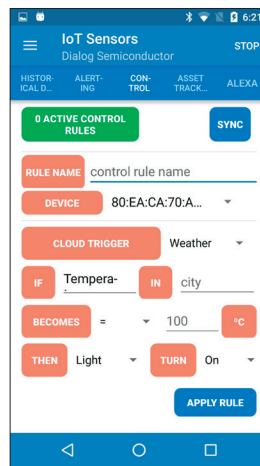


Figure 2: Showing the conditional control in the cloud



Figure 3: Asset tracking with Alexa



Please scan the QR code to download Dialog IoT Sensors iOS and Android Mobile Applications



For more information and purchasing please visit <https://www.dialog-semiconductor.com/bluetooth-low-energy>

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