ROHM Sensor Platform Kit

Distributor Training
November 2014

innovations Embedded

Overview

- What is ROHM's Sensor Platform Kit?

- How does it work?

- How can you use it? (Sales Perspective)

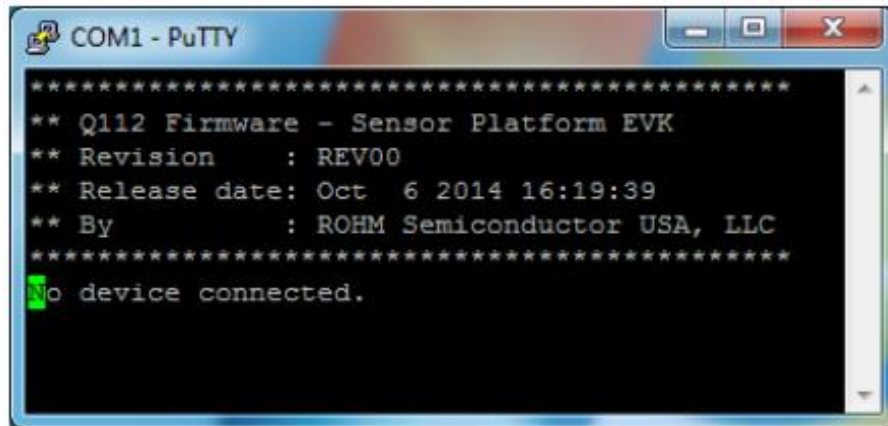- Sensor Details

- Sensor Applications

What is ROHM's Sensor Platform Kit?

- ROHM's Sensor Platform Kit is a combined evaluation/development kit that contains the following
  - 1 Base Board Platform
  - 2 Ambient Light Sensors (1 digital, 1 analog)
  - 1 Analog Temperature Sensor
  - 1 Omnipolar Hall Sensor
  - 1 UV Sensor
  - 1 MEMs Accel + Magnetometer Sensor
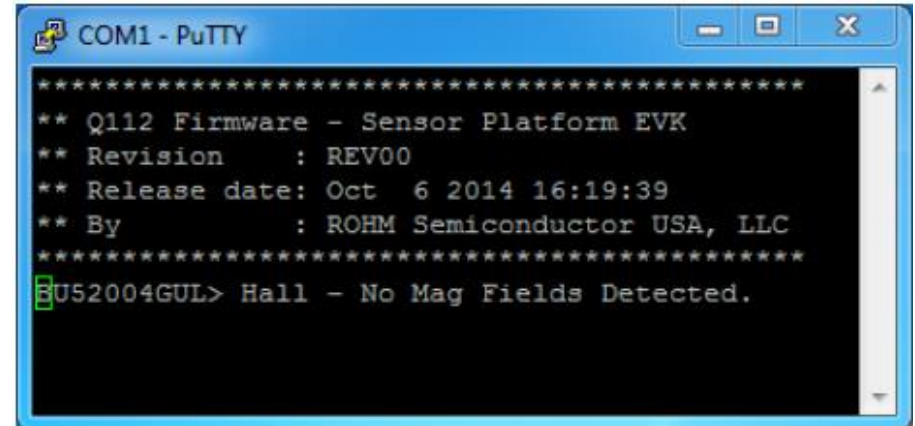 - 1 ROHM branded USB backup Battery
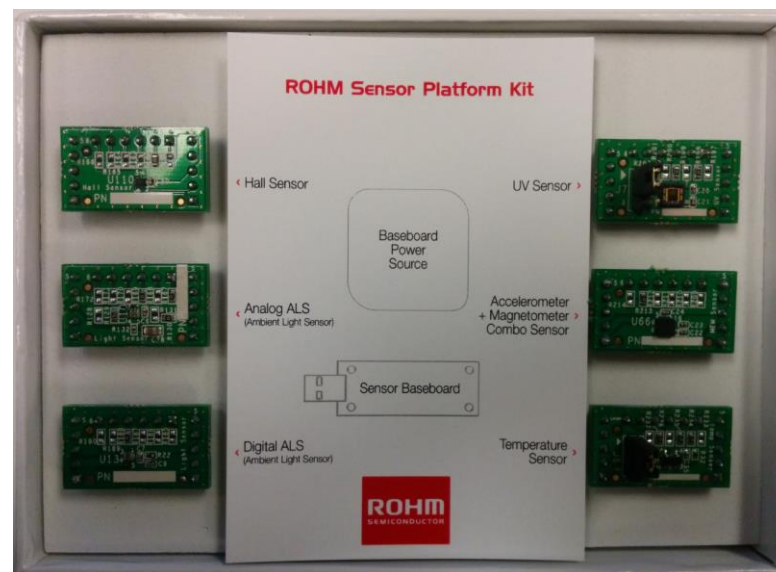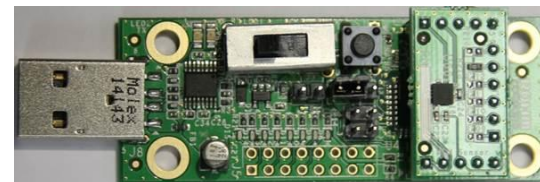
How does it work?

- Two Primary Modes of Operation
  - Standalone Mode (No PC Required)
    - "Range" based outputs (UV, Light, Temp) shown using LED output in binary format (0 to 255)
    - For any "non-ranged" outputs (Accel, Hall), different LED output schemes are used to show functionality
  - Precision Output Mode (PC Required)
    - Connect USB to PC. Simple COM port interface raw and scaled data


```
COM1 - PuTTY                                    - □ x
************************************************
** Q112 Firmware - Sensor Platform EVK
** Revision    : REV00
** Release date: Oct  6 2014 16:19:39
** By          : ROHM Semiconductor USA, LLC
************************************************
No device connected.
```

```
COM1 - PuTTY                                    - □ x
************************************************
** Q112 Firmware - Sensor Platform EVK
** Revision    : REV00
** Release date: Oct  6 2014 16:19:39
** By          : ROHM Semiconductor USA, LLC
************************************************
BU52004GUL> Hall - No Mag Fields Detected.
```

How do you REALLY use it?

- Use as a Sales Tool
  - USB backup battery is provided: Kit can operate directly out of the package
  - Useful when visiting customers to show ROHM's diverse sensor lineup
- Use as an Engineering Development Board
  - Kit allows for a quick check (either in standalone or precision output mode)
  - Modular sensor boards: can be removed and connected to the user's design
  - Open hardware and open source firmware design
    - https://github.com/ROHMUSDC/ROHMSensorPlatformEVK
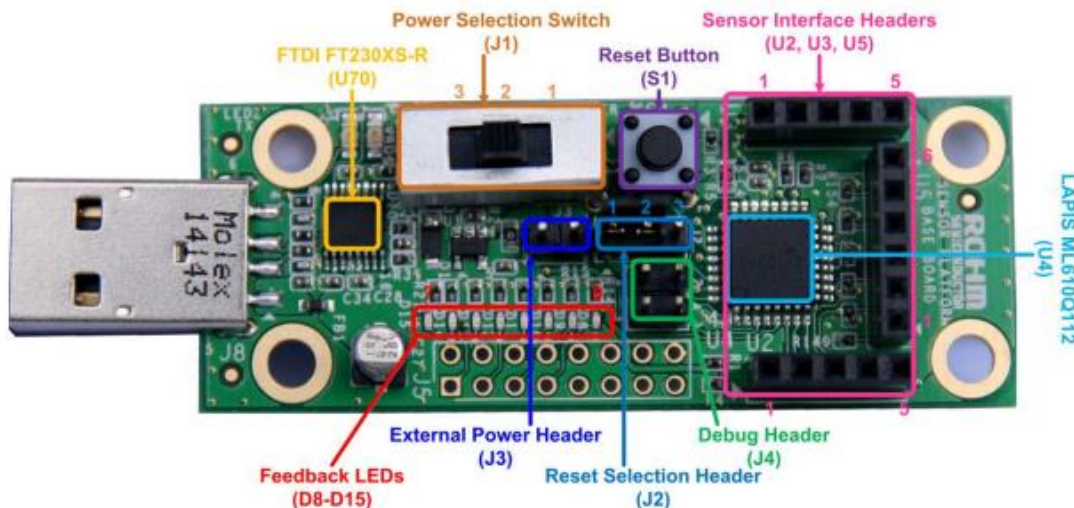
ROHM Included Sensor Details

- BH1721FVC – Digital ALS (I2C)
  - 1 to 65528 Lx Range (16bit ADC)

- BH1620FVC – Analog ALS
  - Different Gain Modes allow for 0 to 100,000Lx Range

- BU52011HFV – Omnipolar Hall Sensor
  - ±3.0mT switch operation point, dual output for N and S polarity
  - Different PNs in lineup have different mT operating points

- BDE0600G – Temperature Sensor
  - High Accuracy Output (±3.5C @ Ta = 30C)
  - Different PNs in lineup have different thermostat trigger interrupt pin function triggering from +55C to +115C @ 5C Steps

- ML8511 – Analog UV Sensor
  - Sensitive to UV-A and UV-B. Can be used to calculate UV Index. Outputs in mW/cm^2

- KMX61 – Accel and Mag Sensor
  - Accel: ±2g, ±4g, ±8g
  - Mag: ±1200µT
  - General: 14bit ADC, I2C

ROHM Sensor Applications

- **Ambient Light Sensors**
  - Phones, TV, Notebook PC, Wearables, IOT/E, Portable Gaming, Digital Camera, LCD Displays
- **Omnipolar Hall Sensor**
  - Contact-less SW, Tablet/PC/Phone Covers
- **Temperature Sensor**
  - Thermal Protection for Electrical Equipment, FAN Control for Thermal Management
- **UV Sensor**
  - Smartphone, Watches, Wearables, IOT/E, Weather Stations, Bicycle Navigation
- **Accel and Mag Sensor**
  - Phone/Tablet/PC, Wearables, Game Controllers, Vehicle Stability

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