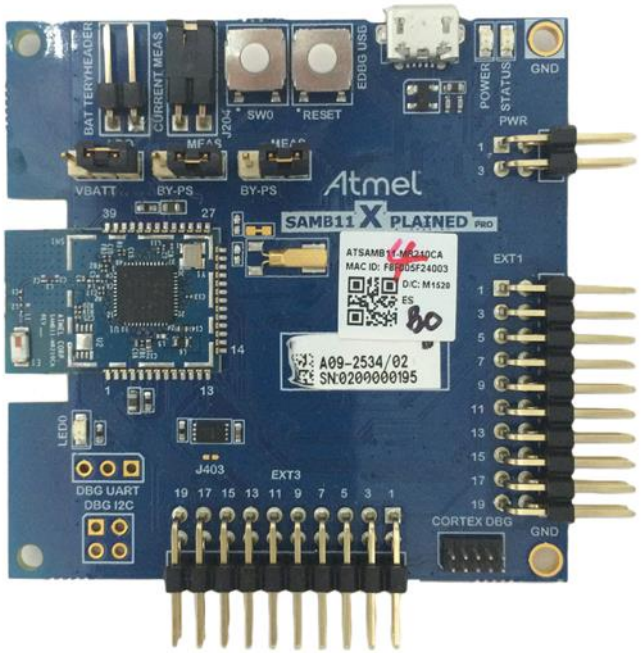
ATSAMB11 BluSDK SMART

Battery Service Application - Getting Started Guide

USER GUIDE



Introduction

The Battery Service Application provides the capability to report battery level of the device by using the battery characteristics. Any application discovering the database can access the Battery Service instance during discovery services.

For the purpose of demonstration, the example simulates battery level of the device. The battery level is changed by 1% every second. The range of battery level is from 0% to 99%. At the start of the demo, the battery level is 0%.

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1 Purpose

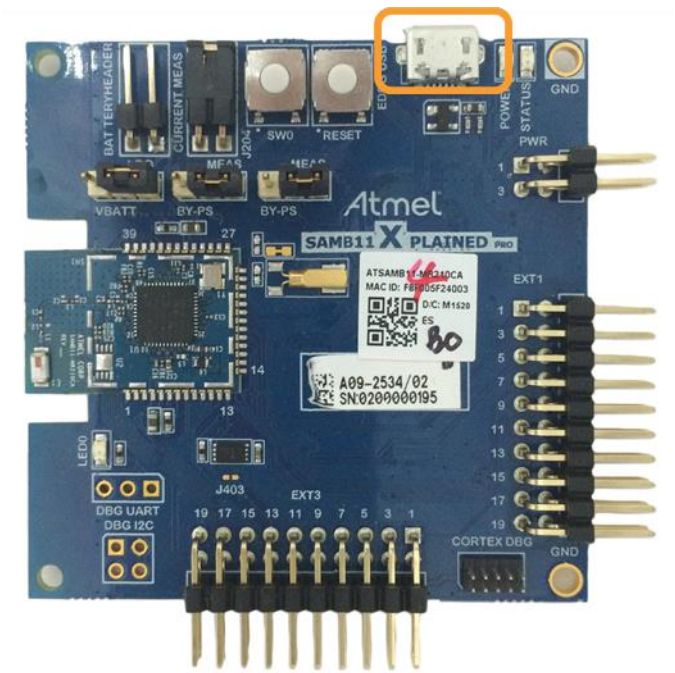
This guide describes the setup of an Atmel® ATSAMB11 Xplained board. The Battery Service Application is an example application that is embedded as part of the software release package. This documents explains the bring-up of the Battery Service example application.

2 Demo Setup

3 Hardware Setup

Connect the ATSAMB11 board to the host PC using a Micro-USB cable.

Figure 3-1. EDBG USB Port



4 Software Setup

4.1 Installation Steps

1. Install the latest Atmel Studio **[Atmel Studio 7.0 (build 629 or later) web installer (recommended)]**
   http://www.atmel.com/tools/ATMELSTUDIO.aspx.
2. Install the latest Atmel Software Framework.

This package will install the following examples within the Atmel Studio environment.

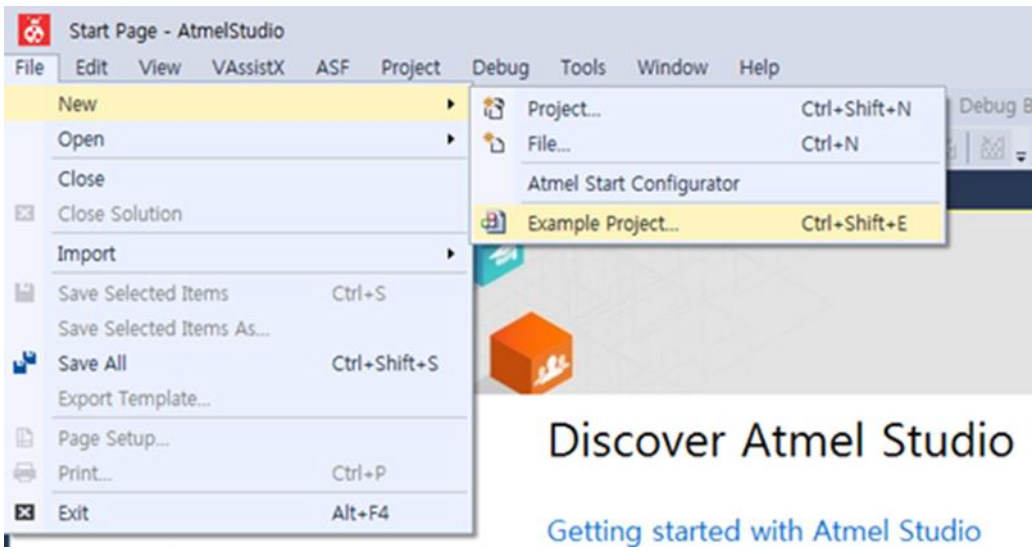
- Battery Service Application for ATSAMB11

4.2 Build Procedure

The following procedure is explained for ATSAMB11 application example.

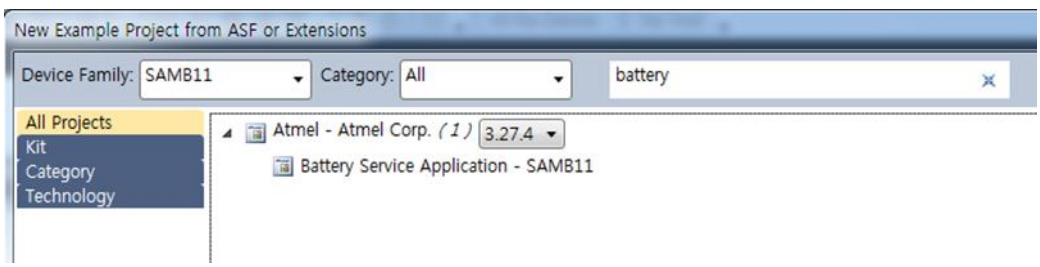
1. Select New Example Project.

Figure 4-1. Creating a New Example Project



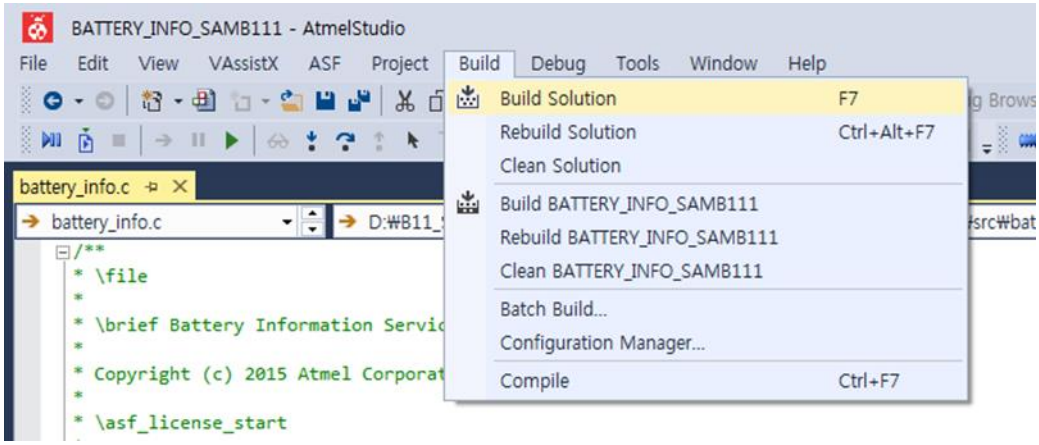
2. In search box enter “battery” in search window and expand Atmel Corp Projects. The location and the name of the project can be selected in the respective fields. Click OK

Figure 4-2. Searching for Battery Service Application Example



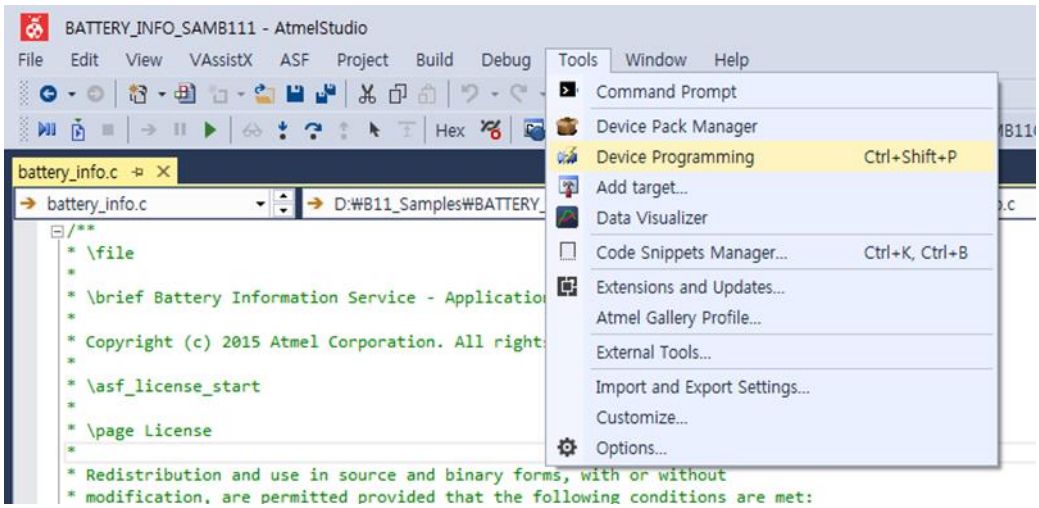
3. Accept the license Agreement. The Atmel studio will generate the Battery Service Example project for ATSAMB11.
4. Build the solution.

Figure 4-3. Building Battery Service Application



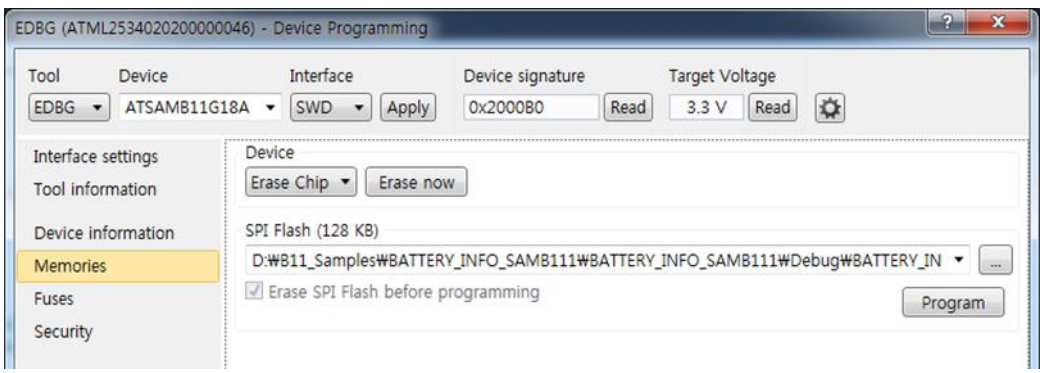
5. Download the application via the DEBUG-USB to the ATSAMB11 board by using the Device Programming option available in Tools as mentioned below.

Figure 4-4. Selecting Device Programming



6. Inside device programming the user has to select the correct configuration for device and finally program the device by clicking on the ‘Program button.

Figure 4-5. Flash Programming



7. Once the application is flashed, it is ready to be used as a BLE device supporting Battery Service.

5 Console Logging

For the purpose of debugging, a logging interface has been implemented in the Battery Service Application.

The logging interface utilizes the same EDBG port that connects to ATSAMB11. A serial port monitor application (for example TeraTerm) shall be opened and attached to the EDBG COM port.

6 Running the Demo

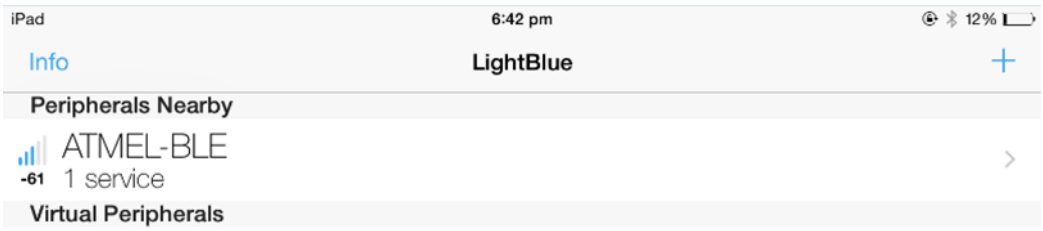
1. Power on the ATSAMB11 by connecting the USB Cable.
2. Open any Terminal Application (e.g. TeraTerm) Select the COM Port and Baudrate 115200, None Parity, one Stop bit, one Start bit, no Hardware Handshake
3. Press the Reset button on the ATSAMB11 board.
4. The device is now in advertising mode.

Figure 6-1. Console Display for Device in Advertising Mode

```
Initializing Battery Service Application
Initializing SAMB11
BD Address:0xF8F005F23FFF, Address Type:0
Device is in Advertising Mode
```

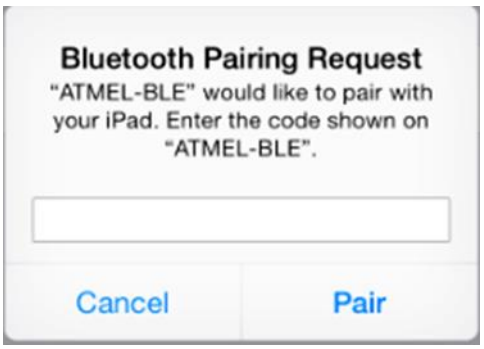
5. Enable Bluetooth from Settings page on iPhone®. Use the LightBlue application to scan for peripheral devices. A device with name ‘Atmel-BLE’ will appear amongst the list of scanned devices.

Figure 6-2. Atmel-BLE Device Discovered by LightBlue Application



6. Click on ATMEL-BLE device. A pop-up will appear requesting pass-key. Enter “123456” and click on ‘Pair’.

Figure 6-3. Pairing Pop-up Screen

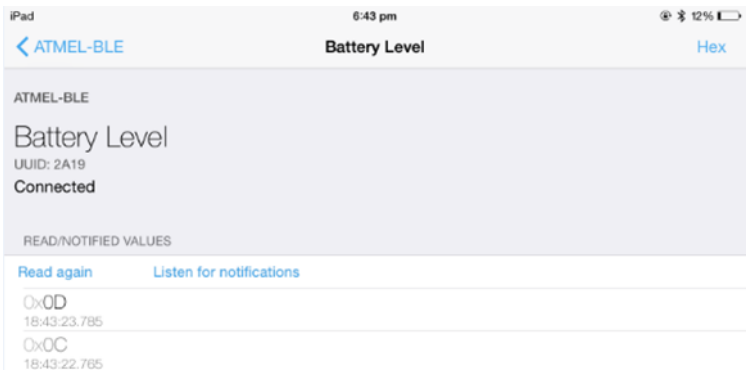


7. Once paired, the application displays the battery level characteristic as shown below.

Figure 6-4. Display of Battery Service

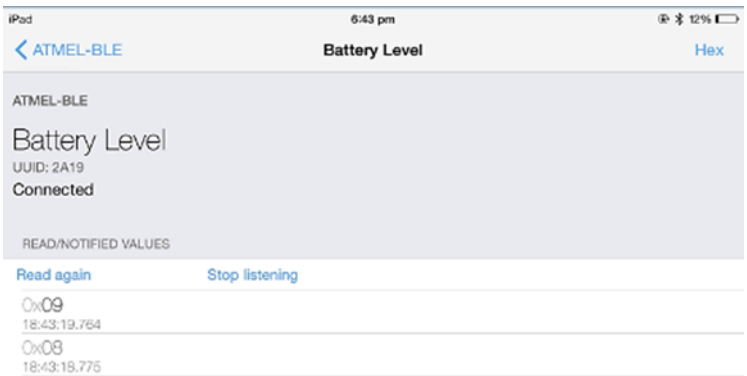
8. Once the “battery level” characteristic is clicked the user can listen for the notification by clicking “listen for notification” as shown below. Optionally the user can also read the battery level by “Read again” options as shown below.

Figure 6-5. Battery Level Characteristic Notification Options



9. Once the “listen for notification” is clicked the device will keep getting the notification. To stop listening for the notification the user has to click on “stop listening” as shown below.

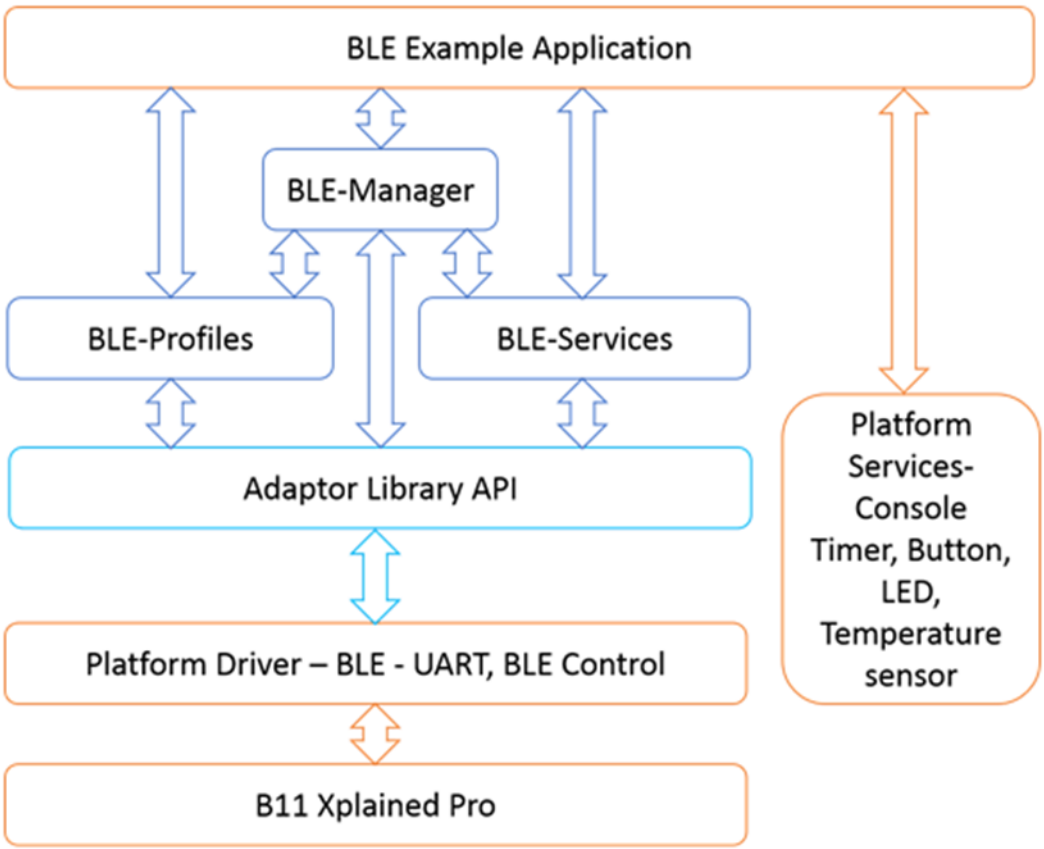
Figure 6-6. Battery Level Characteristic Notification



7 BluSDK SMART Software Architecture

Figure 7-1 illustrates the top level diagram for the ATSAMB11 configuration.

Figure 7-1. ATSAMB11 Software Architecture



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9 Revision History

Doc Rev.	Date	Comments
42596A	11/2015	Initial document release.

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