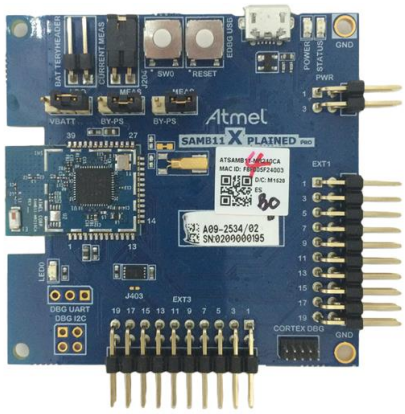
ATSAMB11 BluSDK SMART

Alert Notification Profile - Getting Started Guide

USER GUIDE



Introduction

The Alert Notification Profile allows a device like a watch to obtain information from a cellphone about incoming calls, missed calls, and SMS/MMS messages. The information may include the caller ID for an incoming call or the sender's ID for email/SMS/MMS but not the message. This profile also enables the client device to get information about the number of unread messages on the server device.

The iPhone® implements a custom variant of ANS called ANCS. A separate example application implementing this custom variant is available in the BluSDK SMART package.

The example application explained in this document will only work with BLE compatible Android phones running Atmel SmartConnect mobile application. Unlike iPhone, Android does not natively support Alert Notification Service. The Atmel SmartConnect mobile application implements this service and can be used to demonstrate this example application. The example application supports missed call alert and SMS alert notification.

The device implements the GATT Client, which reads (or gets notified) about the characteristic values from the GATT server (the mobile device). The Atmel® ATSAMB11 device must be paired with an Android phone. After connection and discovery, missed call or SMS alert notifications can be enabled/disabled. The Atmel SmartConnect application will notify missed calls or SMS alerts, which are then displayed on the terminal console on the device side. The following chapters provide a detailed description of running this demo.

The 'SW0' user button on the ATSAMB11 is programmed in such a way that each successive button press will either enable or disable the notifications.

Features

- Device Discovery and Connection
- Pairing/Bonding
- Alert Notification Service
- Alert on incoming call

Table of Contents

1 Purpose

This getting started guide describes the setup of an Atmel ATSAMB11 Xplained board and bringing up an example profile supplied as part of BluSDK SMART release. The Alert Notification Profile is an example application that is embedded as part of the software release package.

This document explains the details about:

1. Getting started with the setup of ATSAMB11 to be used as a Notification Consumer.
2. Getting the ANS Application working on the above mentioned setup.

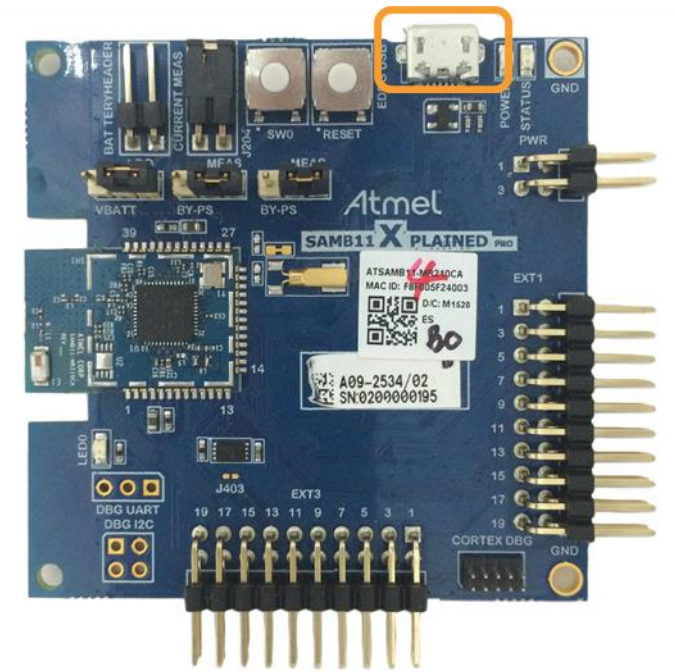
The example application provided currently supports ‘Missed Call Alert and SMS Notification’.

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:

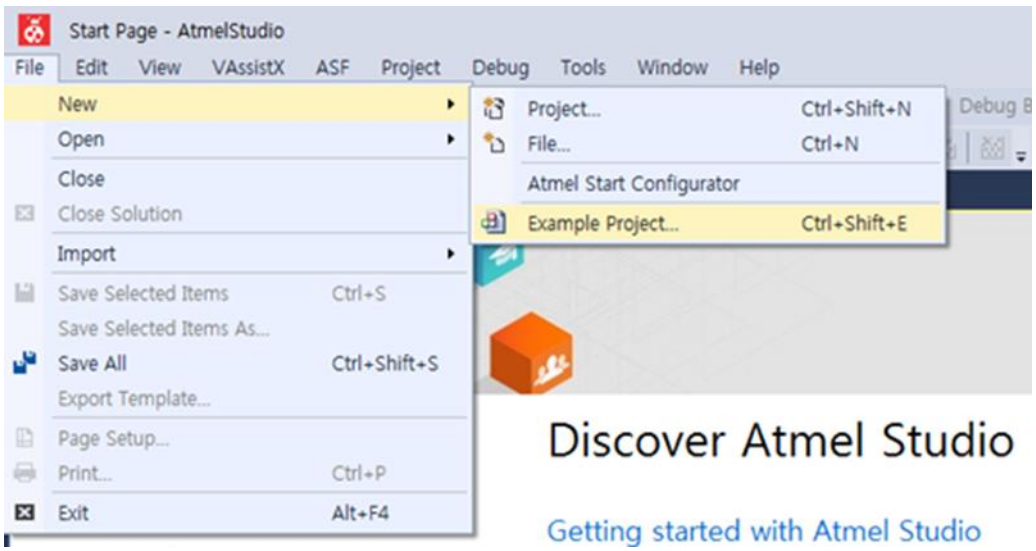
- Alert Notification application for ATSAMB11

4.2 Build Procedure

The following procedure is explained for ATSAMB11 application example.

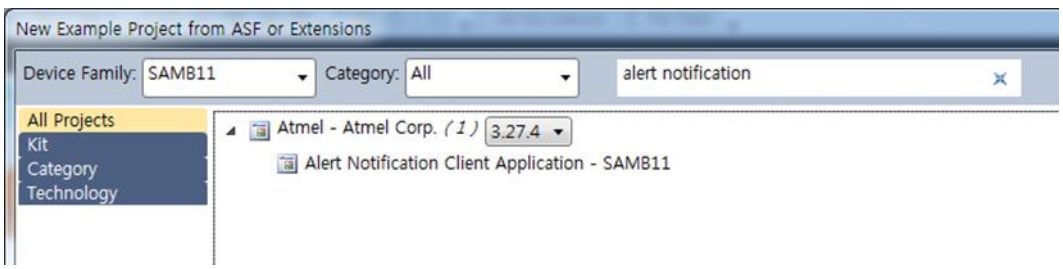
1. Select New Example Project.

Figure 4-1. Creating a New Example Project



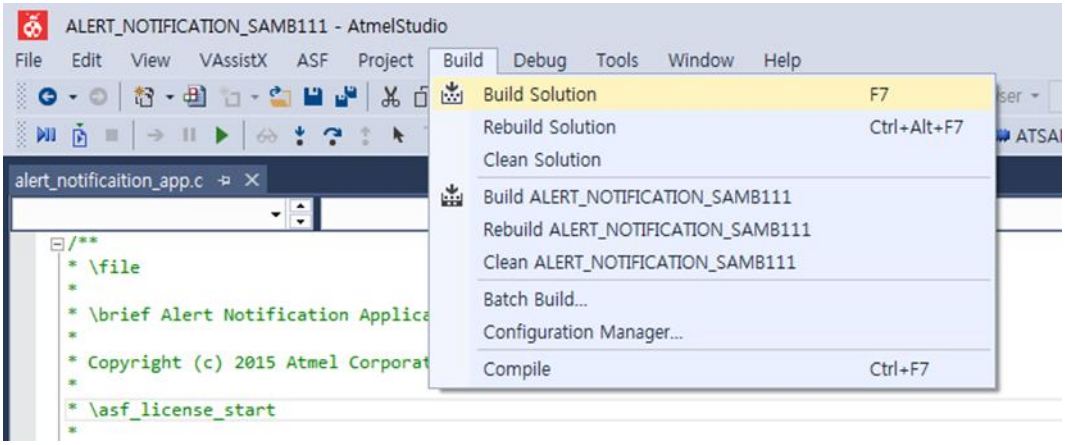
2. Select “SAMB11” in device family, enter “alert notification” in search window, and expand Atmel Corp Projects. The location and the name of the project can be selected in the respective fields. Click OK.

Figure 4-2. Selecting Alert Notification Application from Example Projects



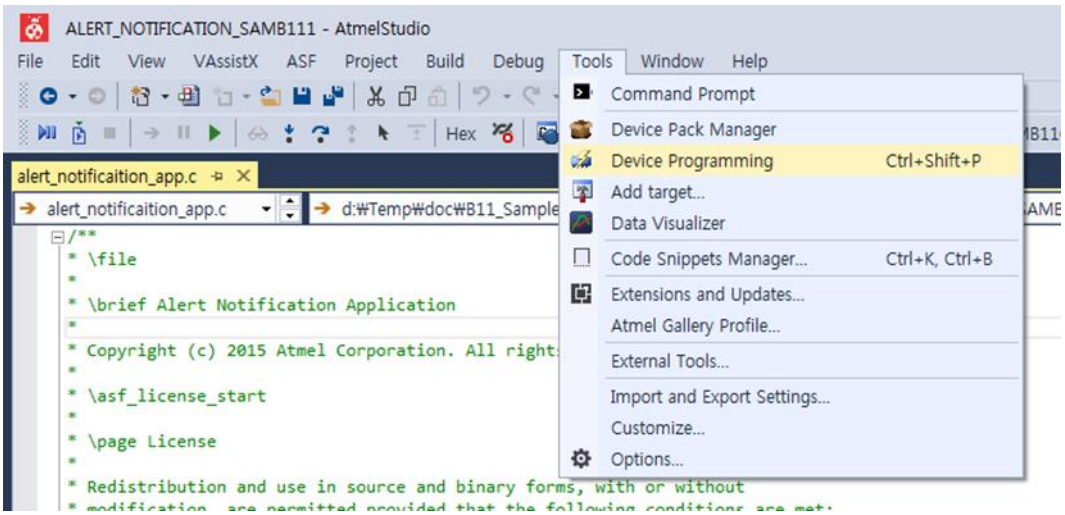
3. Accept the license Agreement. The Atmel studio will generate the Alert Notification Profile project for ATSAMB11.
4. Build the solution.

Figure 4-3. Building the ANP Application



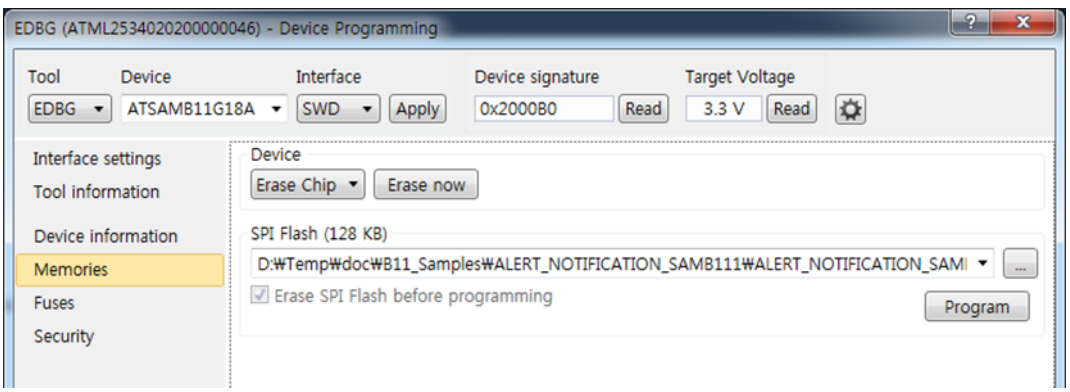
5. Download the application via the USB to the ATSAMB11 board by using the Device Programing option available in Tools as shown below.

Figure 4-4. Flashing the Application on Atmel MCU



6. Inside the device programming the user has to select the correct configuration for the device and finally program the device by using the program button.

Figure 4-5. Flash Programming



7. Once the application is flashed, now ANP Application is ready for usage.

5 Console Logging

For the purpose of debugging, a logging interface had been implemented in the ANS 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 corresponding COM port enumerated on the PC by the device. Baudrate should be set to 115200.

6 Running the Demo

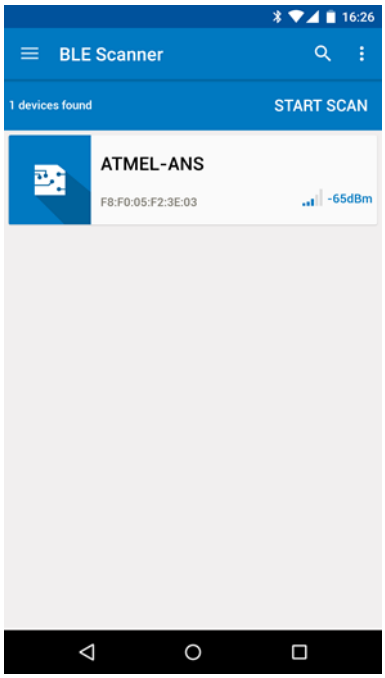
1. Open a console window using TeraTerm or any equivalent serial port monitor application and connect to the corresponding COM port enumerated on the PC. Configure the COM Port with the following settings: Baudrate 115200, Parity None, one Stop bit, one Start bit, no Hardware Handshake.
2. Press the Reset button on the ATSAMB11 board.
3. The device is now in advertising mode.

Figure 6-1. Display for Advertising Mode

```
Initializing Alert Notification Profile Application
Initializing SAMB11
BD Address:0xF8F005F23FFF, Address Type:0
Device is in Advertising Mode
```

4. On the Android phone, enable Bluetooth® in the Settings page. Start the Atmel SmartConnect mobile application and allow it to scan for devices. ATMEL-ANS will appear amongst the devices scanned. Click on ATMEL-ANS to connect to the ATSAMB11 device.

Figure 6-2. ATMEL-ANS Device Discovery on Atmel SmartConnect Application



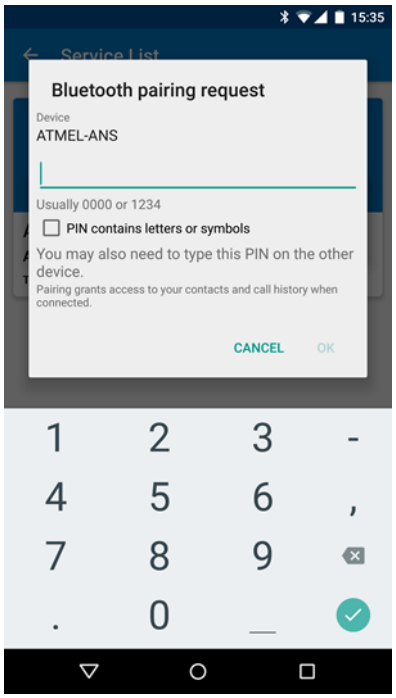
5. Once connected, the client side will request for the pairing procedure with the Android phone. The console log provides a guidance for the user to enter the pass-key on the phone.

Figure 6-3. Figure 9: Console Display for Pairing in ANP

```
Alert Notification Profile Application
Initializing SAMB11
BD Address:0xF8F005F23FFF, Address Type:0
Device is in Advertising Mode
Connected to peer device with address 0xccfa00710852
Connection Handle 0
Peer device request pairing
Sending pairing response
Please Enter the following Pass-code(on other Device):123456
Pairing procedure completed successfully
```

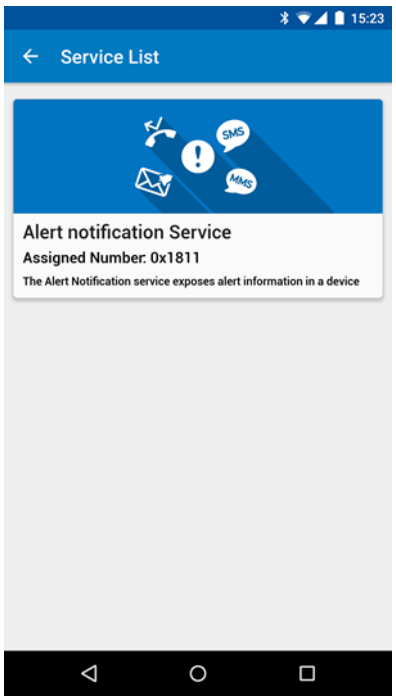
6. On Android phone side, a pop-up screen prompting the user to enter the pass-key will appear. Enter ‘123456’ in the text box and click on ‘Pair’.

Figure 6-4. Pairing Pop on Android Phone



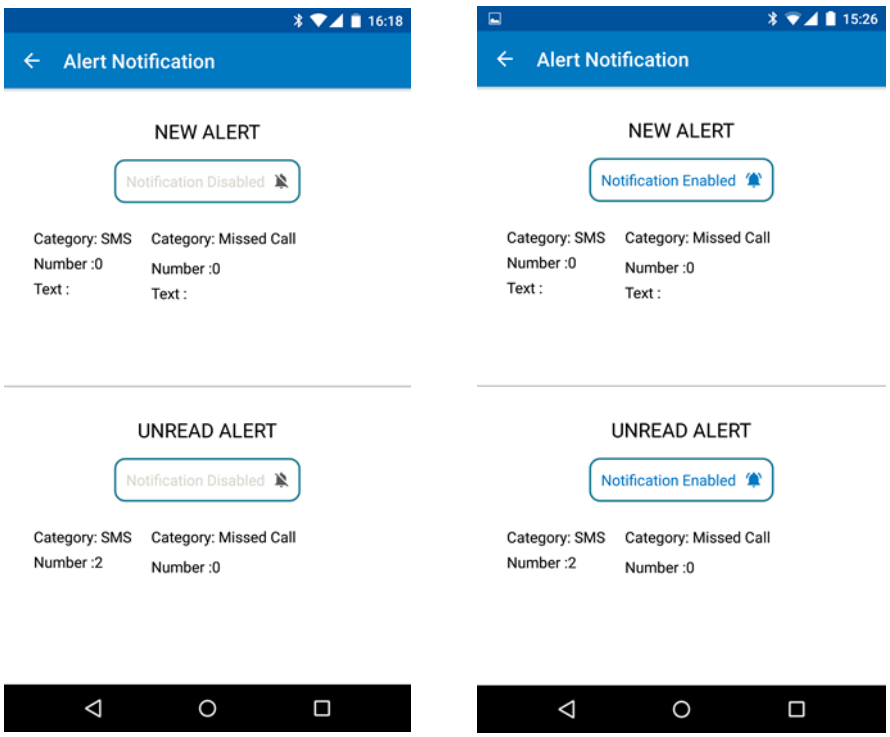
7. After pairing the Alert Notification service page is displayed as shown.

Figure 6-5. ANS Services Page



8. Enable the notifications by using the SW0 button. The mobile app should reflect the status as shown.

Figure 6-6. Alert Notification Screen on Atmel SmartConnect Application



9. The user can trigger a missed call to the Android phone or send an SMS. The corresponding notification then gets displayed on the ATSAMB11 side as shown below in the console logs.

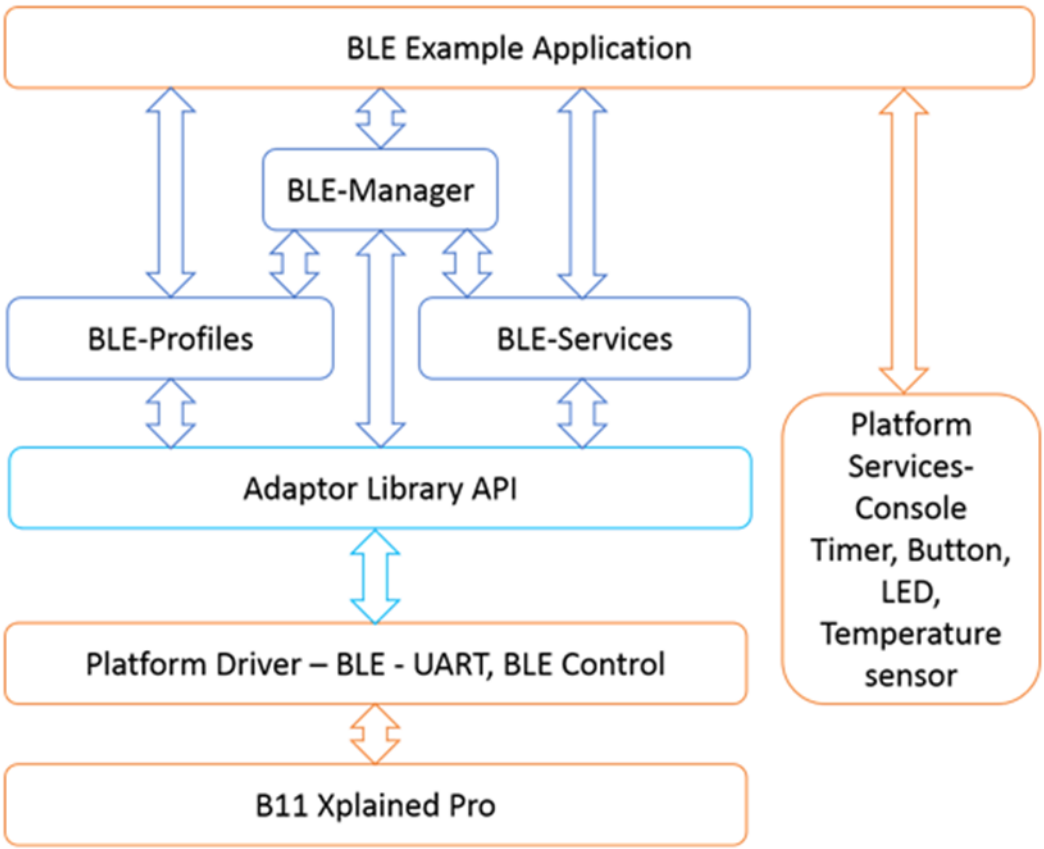
Figure 6-7. Alert Notification Screen on Atmel SmartConnect Application

```
New Alert received
The no of new alerts are 1
The alert type is :
Missed Call alert
Unread alert received
The no of unread alerts are 0
New Alert received
The no of new alerts are 2
The alert type is :
Missed Call alert
Unread alert received
The no of unread alerts are 1
The alert type is :
Missed Call alert
```

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
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