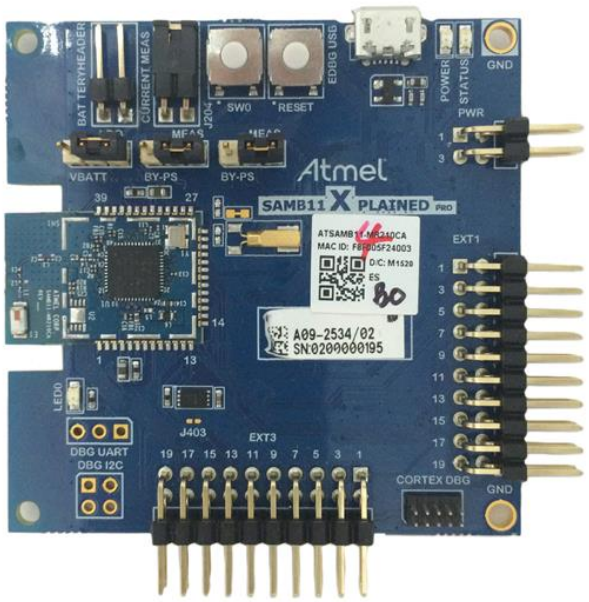
ATSAMB11 BluSDK SMART

Time Information Profile - Getting Started Guide

USER GUIDE



Introduction

The Time Information Profile implements Time Service that is used to read the current time, date, and day information from an iPhone®.

The profile defines two roles:

- Time Client:
  The Time Client is the device in peripheral role that reads the time, date, and day information. This is implemented in the Atmel® ATSAMB11 example application.
- Time Server:
  The Time Server is the device that provides the time related information. The Time Service is supported natively in iOS 7.0 and above.

To test this profile example, an iPhone supporting iOS 7.0 or above is needed.

Features

- Device Discovery and Disconnection
- Pairing/Bonding
- BLE Time Client
- Console Logging

Table of Contents

1 Purpose

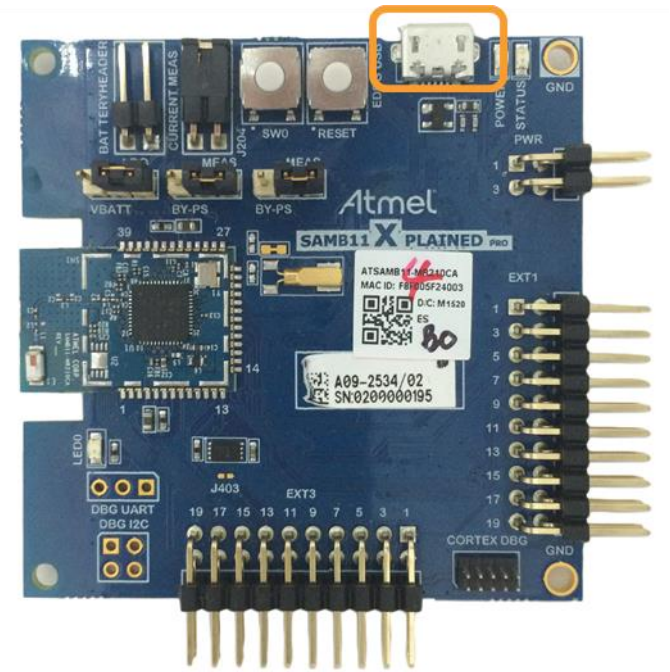
This getting started guide describes the setup of an Atmel ATSAMB11 Xplained board and bringing up an example profile supplied as part of BluSDK SMART release. The Bluetooth® Time Information Profile is an example profile application implementing BLE Time Service (supported by iOS devices like iPhone). The Bluetooth device, when connected with a compatible iPhone device supporting Time service, reads the current time, date, and day information from the iPhone and displays it on the console.

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:

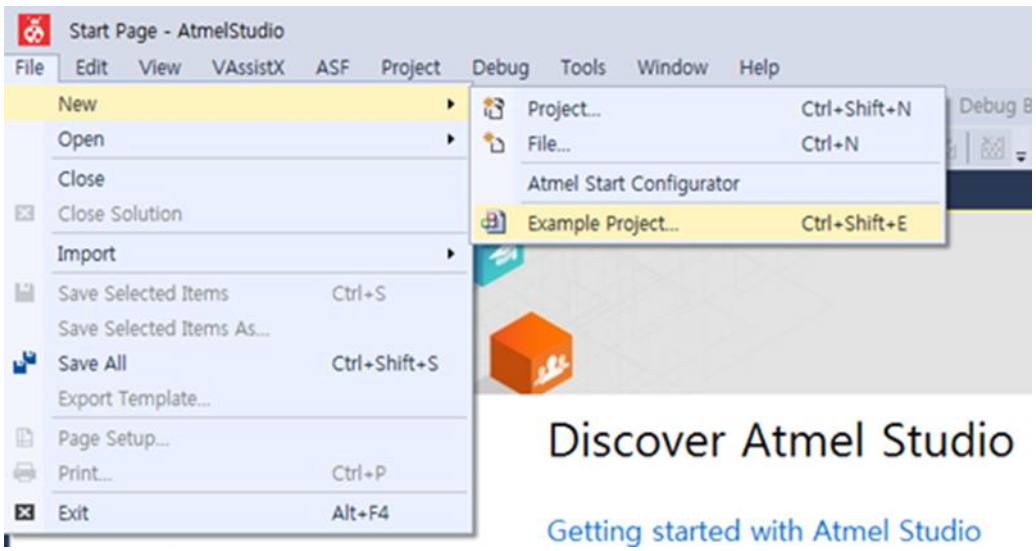
- Time Information Application for ATSAMB11

4.2 Build Procedure

The following procedure is explained for ATSAMB11 application example.

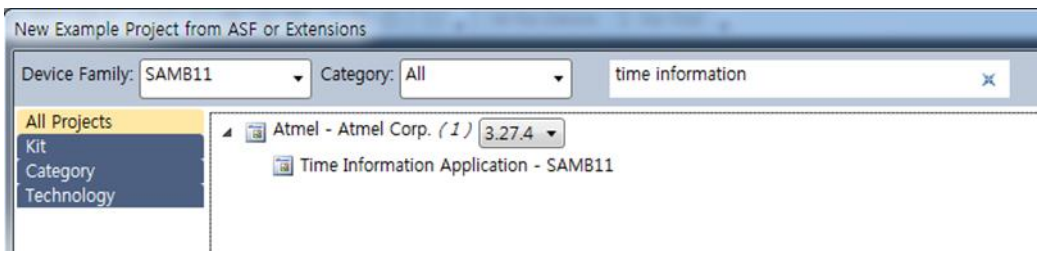
1. Select New Example Project.

Figure 4-1. Creating a New Example Project



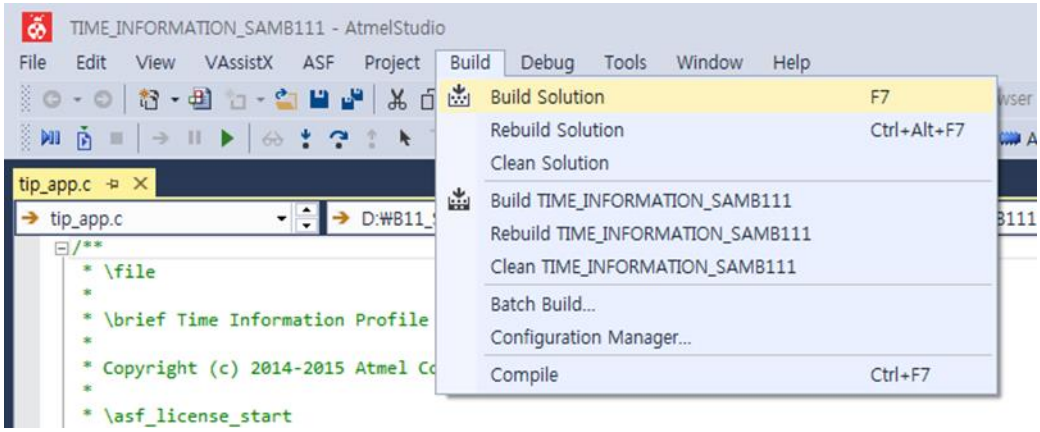
2. Select “SAMB11” in device family, enter “time information” in search window, and expand Atmel Corp Projects. The location and the name of the project can be selected in the respective fields. Click OK.

Figure 4-2. Selecting TIP Application from Example Projects



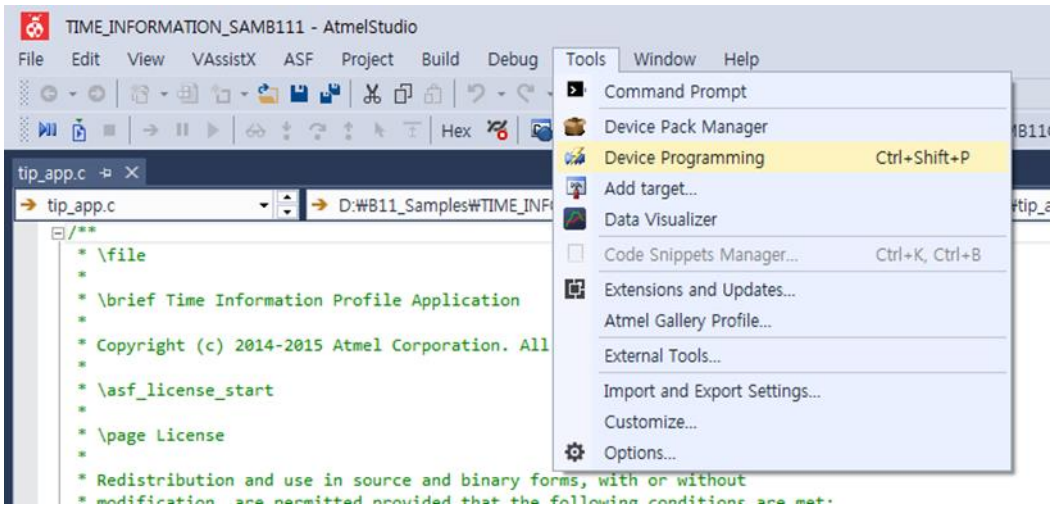
3. Accept the license Agreement. The studio will generate the Time Information Profile project for ATSAMB11.
4. Build the solution.

Figure 4-3. Building the TIP Application



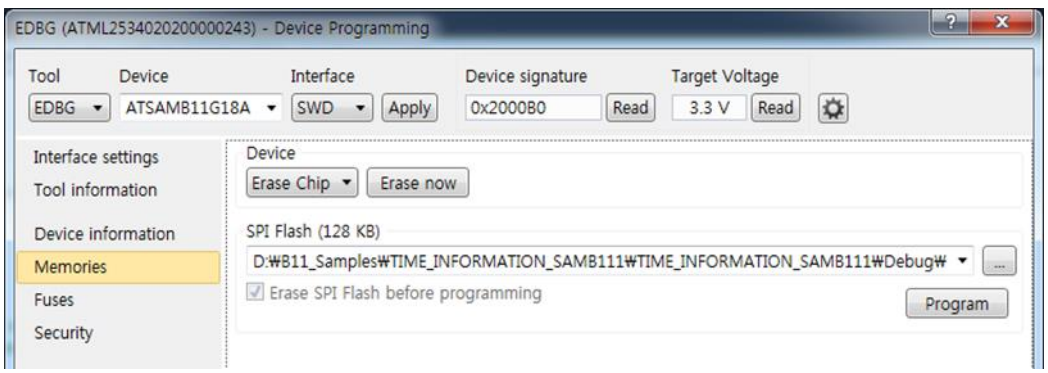
5. Download the application via the USB to the ATSAMB11 board by using the Device Programing option available in Tools as shown below.

Figure 4-4. Selecting Device Programming Option



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, the Time Information client is ready for usage.

5 Console Logging

For the purpose of debugging, a logging interface has been implemented in the Time Information 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.

6 Running the Demo

1. Power on the ATSAMB11 by connecting the USB cable.
2. Open the console using TeraTerm or any serial port monitor application and connect to the corresponding COM port enumerated by the device on the PC. (Settings: 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. Display for Advertising Mode

```
Time Profile Application
Initializing SAMB11
BD Address:0xF8F005F24004, Address Type:0
Device is in Advertising Mode
```

5. On the iPhone, enable Bluetooth in the Settings page. The phone will start to scan for devices. ATMEL-TIP will be appear amongst the devices scanned. Click on ATMEL-TIP to connect to the ATSAMB11 device.

Figure 6-2. Atmel Tip Device Discovery on iPhone

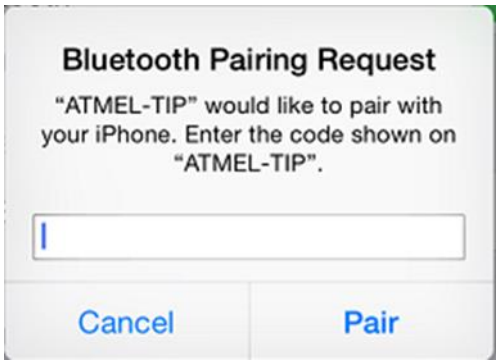
6. Once connected, the client side will request for the pairing procedure with the iPhone. The console log provides a guidance for the user to enter the pass-key on the iPhone.

Figure 6-3. Display for Connection and Pairing Info

```
Time Profile Application
Initializing SAMB11
BD Address:0xF8F005F24004, Address Type:0
Device is in Advertising Mode
Connected to peer device with address 0x52d6a9a6490a
Connection Handle 0
Peer device request pairing
Sending pairing response
Please Enter the following Pass-code(on other Device):123456
```

7. On iPhone 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 Request Pop-up on iPhone

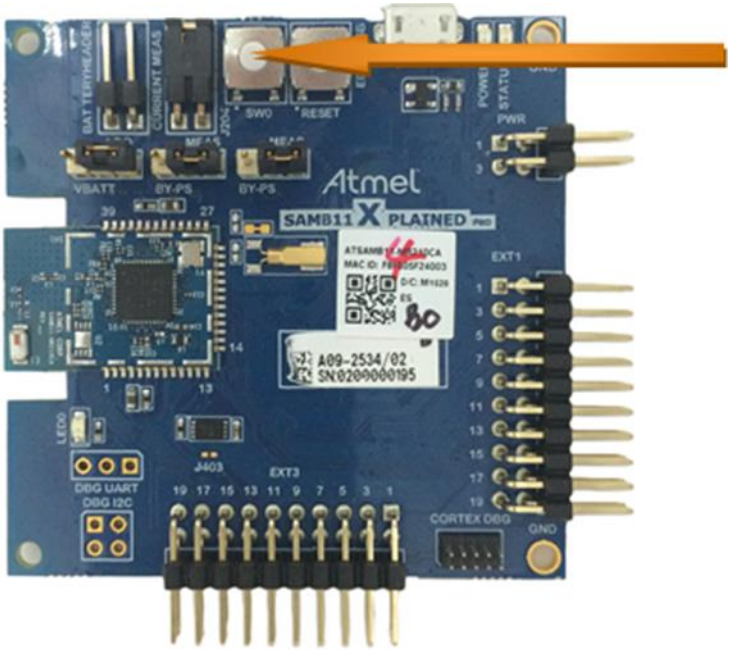


8. Once the device is connected, the ATMEL-TIP will appear in the MY DEVICES section on the iPhone.

Figure 6-5. Display of Connected Device

9. Press the SW0 button on ATSAMB11 to read the current time value from iPhone.

Figure 6-6. Button for Reading Time Information



10. The console log on ATSAMB11 will display Date, Time, and Day information as shown below.

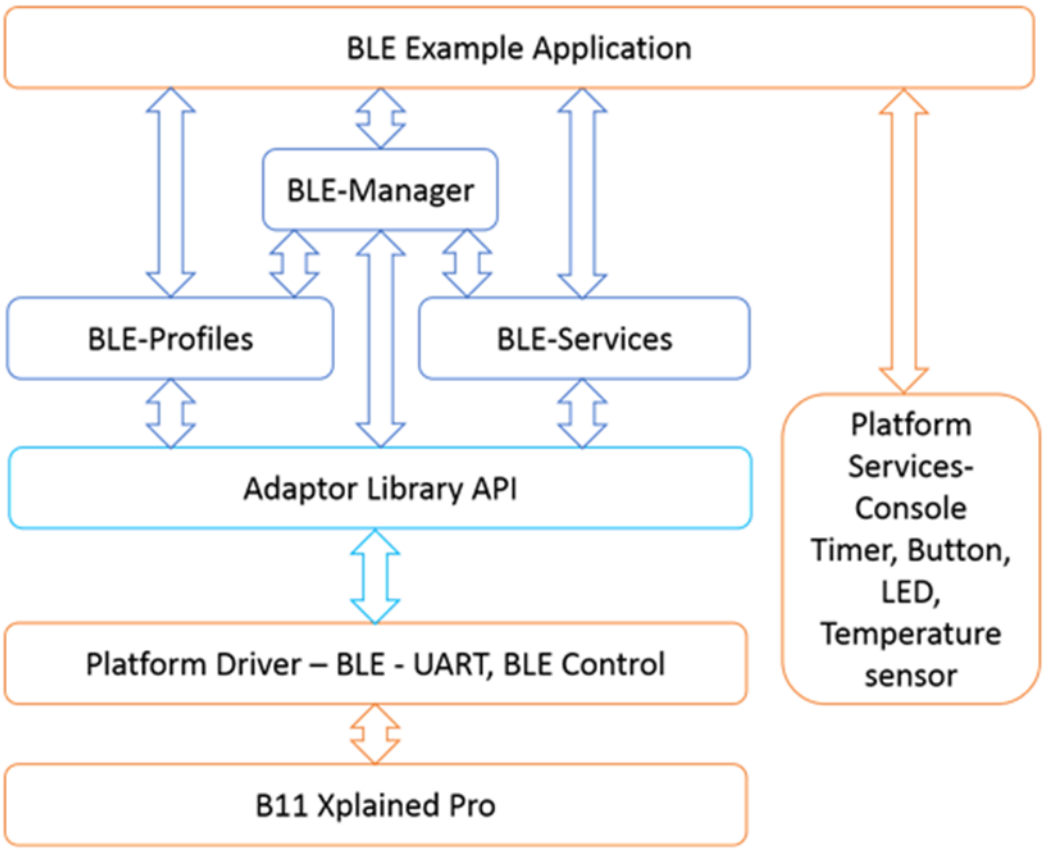
Figure 6-7. Console Display – Date, Time, and Day Information

```
Current Time:[DD:MM:YYYY]: 21-10-2015 [HH:MM:SS]: 11:05:43  Day:WED
Fraction:94
Time Zone 36
DST Offset 00  Standard Time
Current Time:[DD:MM:YYYY]: 21-10-2015 [HH:MM:SS]: 11:05:44  Day:WED
Fraction:180
Time Zone 36
DST Offset 00  Standard Time
```

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
42604A	11/2015	Initial document release.

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