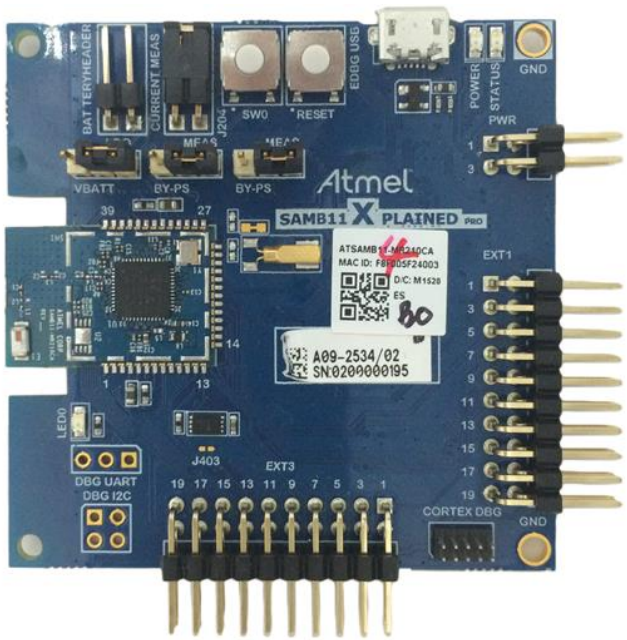
ATSAMB11 BluSDK SMART

Custom Serial Chat Profile - Getting Started Guide

USER GUIDE



Introduction

The Custom Serial Chat allows you to send and receive data between the Atmel® ATSAMB11 and the Atmel SmartConnect mobile application. This is a custom profile and application example implemented over GATT. The user can type a message on the ATSAMB11 side by using the terminal console and send it to the mobile application. Messages typed from the mobile app side are received and displayed on the console terminal at the device side.

Features

- Device Discovery and Disconnection
- Pairing/Bonding
- Send and Receive Messages
- Console Display

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 Custom Serial Chat Profile is an example application that is embedded as part of the software release package.

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:

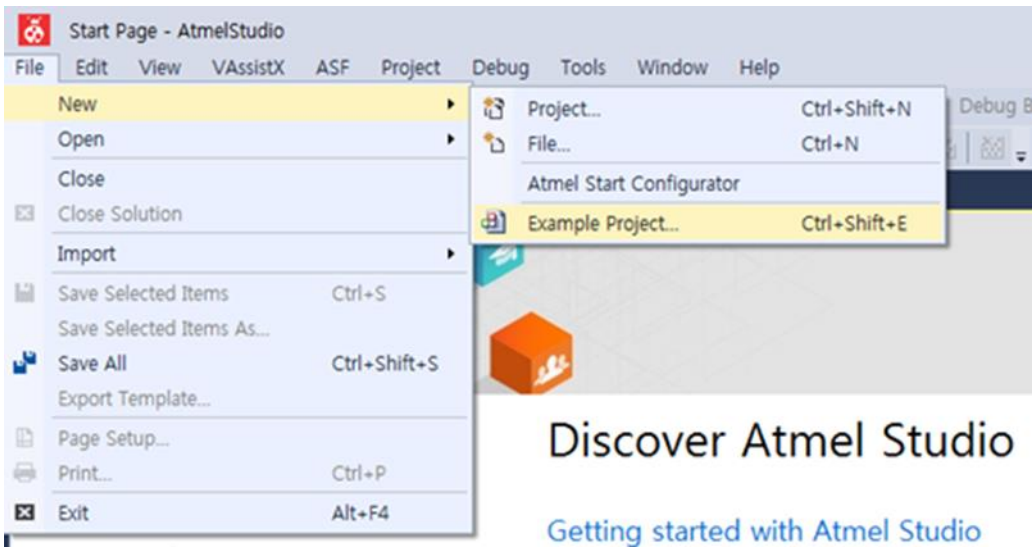
- Custom Serial Chat application for ATSAMB11

4.2 Build Procedure

The following procedure is explained for ATSAMB11 application example.

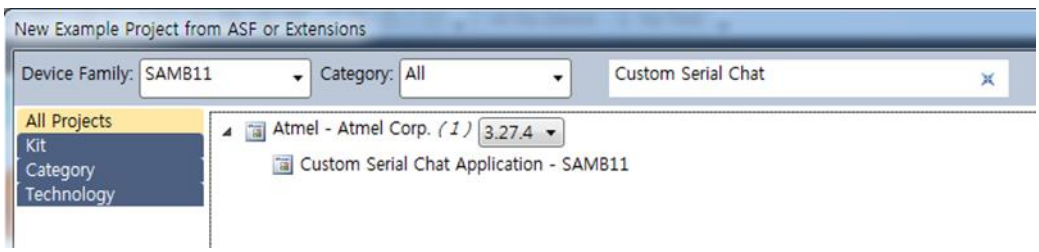
1. Select New Example Project.

Figure 4-1. Creating a New Example Project



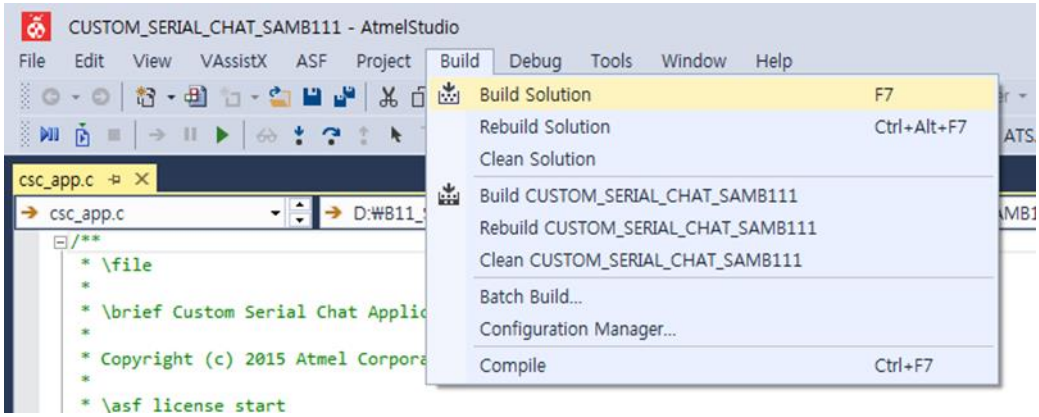
2. Select “SAMB11” in device family, enter “Custom Serial Chat” in search window, and expand Atmel Corp Projects. The location and the name of the project can be selected in the respective fields. Click OK.

Figure 4-2. Selecting Custom Serial Chat Application from Example Projects



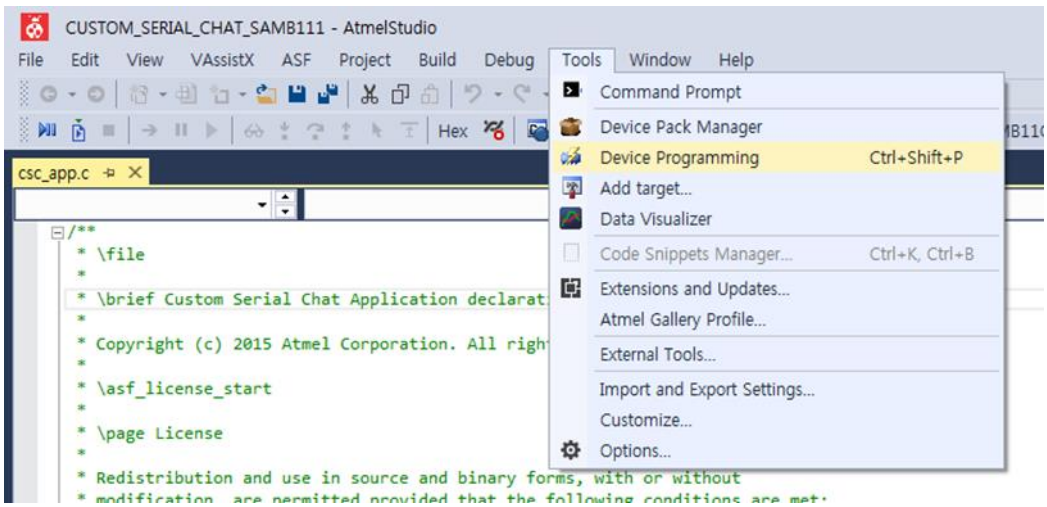
3. Accept the license Agreement. The Atmel studio will generate the Custom Serial Chat project for ATSAMB11.
4. Build the solution.

Figure 4-3. Building the Custom Serial Chat Application



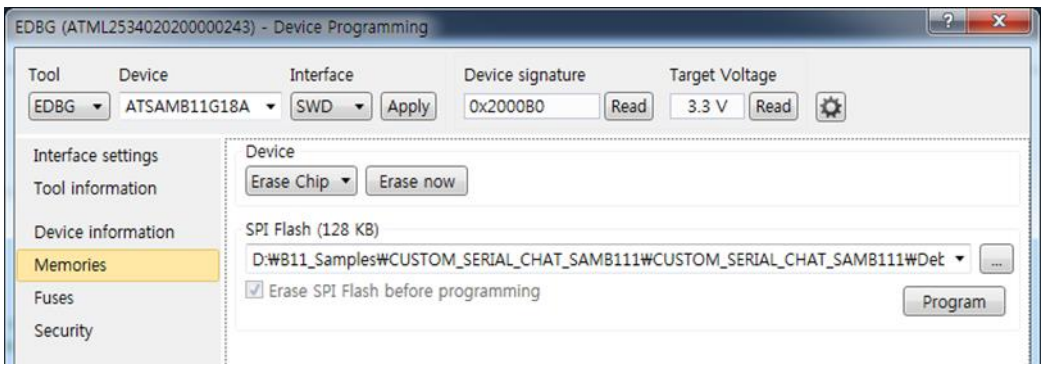
5. Download the application via the USB to the ATSAMB11 board by using the Device Programing option available in Tools as shown below.

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. Flashing the Application on Atmel MCU



5 Console Logging

For the purpose of debugging, logging is made available through a serial console. The logging interface utilizes the same COM port that connects to ATSAMB11. A serial port monitor application (for example TeraTerm) shall be opened and attached to the appropriate COM port enumerated by the device on the PC.

6 Running the Demo

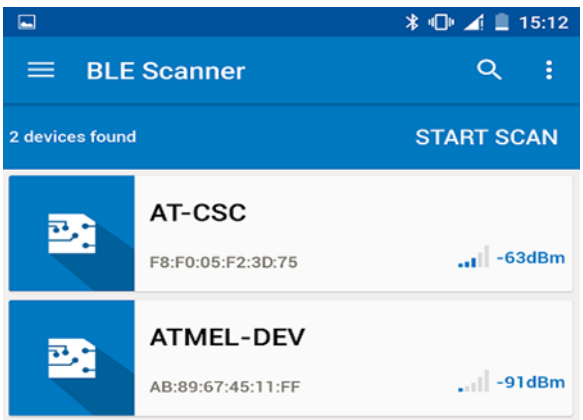
1. Power on the ATSAMB11 by connecting the USB Cable.
2. On the PC, open any Terminal Application (e.g. TeraTerm). Select the appropriate COM Port. (Settings: Baudrate 115200, None Parity, one Stop bit, one Start bit, no Hardware Handshake.)
3. Press the Reset button on the ATSAMB11 board.
4. The device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

Figure 6-1. Custom Serial Chat in Advertising Mode

```
Initializing Custom Serial Chat Application
Initializing SAMB11
BD Address:0xF8F005F23FFF, Address Type:0
Device Started Advertisement
```

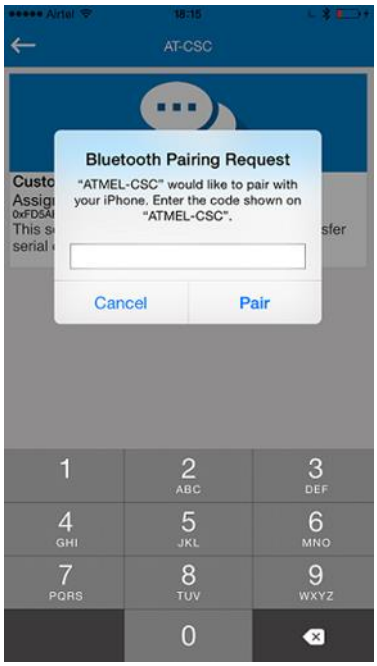
5. On the iPhone, enable Bluetooth® in the settings page. Open the Atmel SmartConnect application and click on the 'START SCAN' option for scanning the nearby BLE devices. AT-CSC will appear amongst the devices scanned. Click on AT-CSC to connect to the ATSAMB11 device.

Figure 6-2. AT-CSC Device Discover on Bluetooth Device



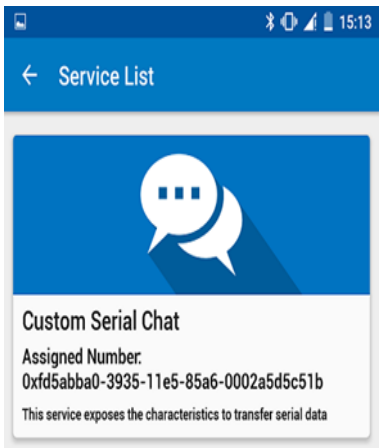
6. After connection, a pairing pop-up will occur. The user will then need to key in "123456" as instructed on the console log connected to the ATSAMB11 setup.

Figure 6-3. Pairing Page for Custom Serial Chat Application



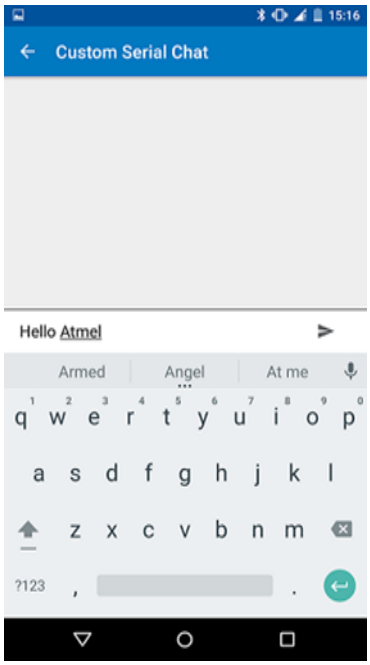
7. Once pairing complete the Custom Serial Chat icon appear on service list page.

Figure 6-4. Custom Serial Chat Service Page



8. After clicking on the Custom Serial Chat icon, the chat screen will appear where the user can type the text that needs to be sent to remote device and also see the text coming from the remote device.

Figure 6-5. Custom Serial Chat Window



9. Chat text “Hello Atmel” send to remote device.

Figure 6-6. Send Data to ATSAMB11

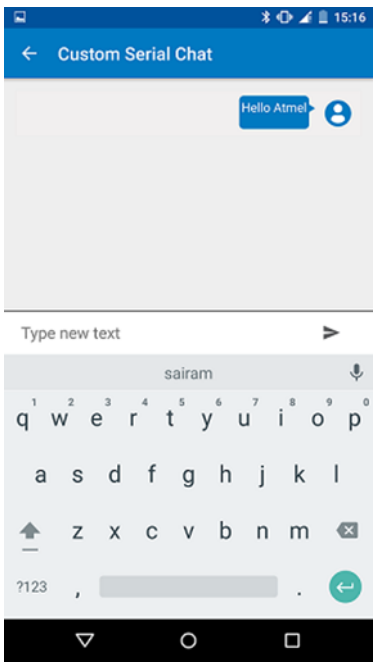


Figure 6-7. Console Log Displaying Data Received from Mobile Application

```
Initializing Custom Serial Chat Application
Initializing SAMB11
BD Address:0xF8F005F23FFF, Address Type:0
Device Started Advertisement
Connected to peer device with address 0xccfa00710852
Connection Handle 0
Peer device request pairing
Sending pairing response
Please Enter the following Pass-code(on the Device):123456
Pairing procedure completed successfully

Hello Atmel
```

10. The user can also write the text on the console for ATSAMB11 device and press the ENTER key for transmitting the chat text to the mobile application.

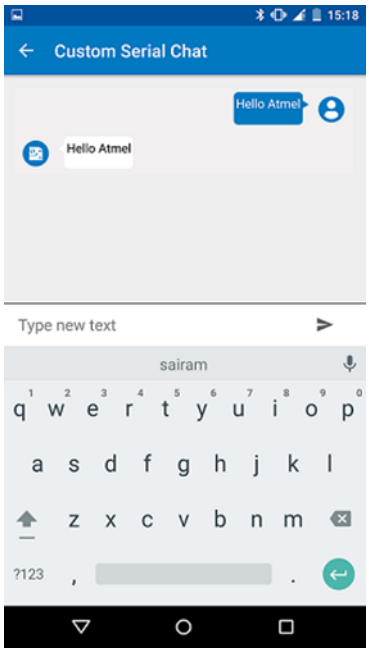
Figure 6-8. Console Log for Sending Data to Remote Device

```
Initializing Custom Serial Chat Application
Initializing SAMB11
BD Address:0xF8F005F23FFF, Address Type:0
Device Started Advertisement
Connected to peer device with address 0xccfa00710852
Connection Handle 0
Peer device request pairing
Sending pairing response
Please Enter the following Pass-code(on the Device):123456
Pairing procedure completed successfully

Hello Atmel

Hello Atmel
```

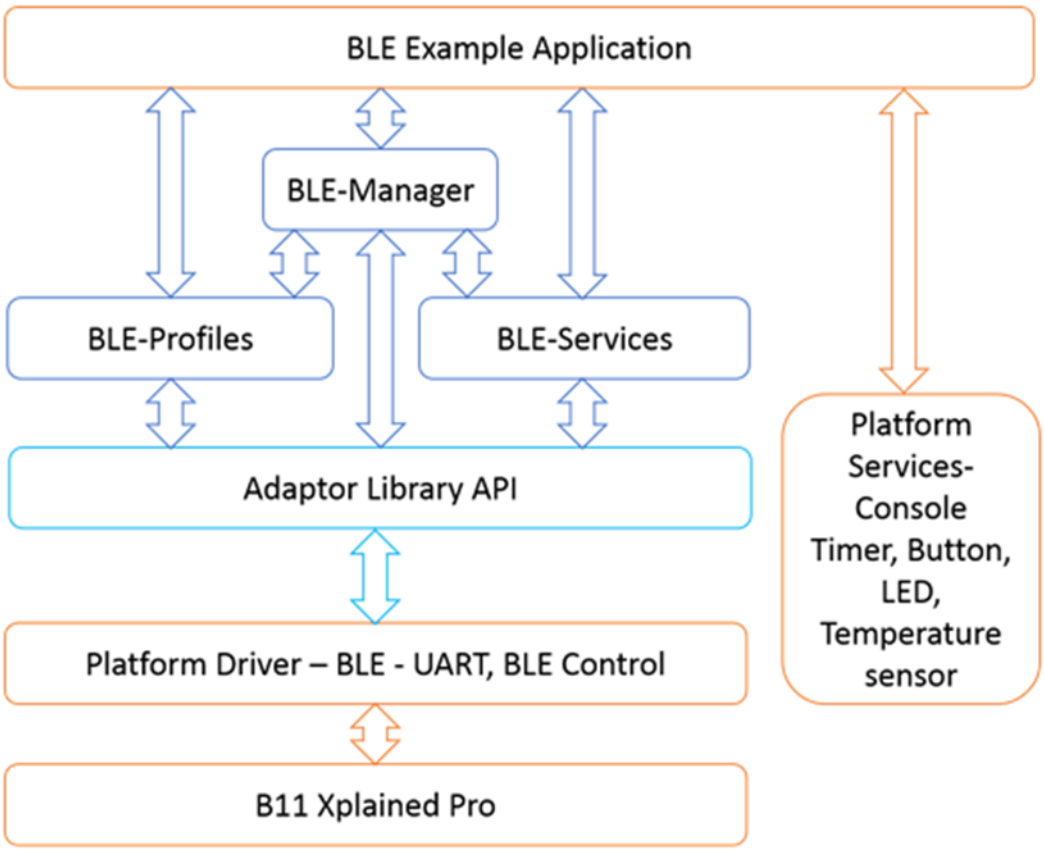
Figure 6-9. Chat Text Received from ATSAMB11



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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ATMEL CORPORATION
1600 Technology Drive
San Jose, CA 95110
USA

9 Revision History

Doc Rev.	Date	Comments
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Atmel Corporation 1600 Technology Drive, San Jose, CA 95110 USA **T:** (+1)(408) 441.0311 **F:** (+1)(408) 436.4200 | **www.atmel.com**