



Introduction

The Simple Broadcaster Application continuously broadcasts the advertisement data over the air.

The application supports ten advertisement data types. They are listed as follows:

- Incomplete List of 16-bit Service Class UUID
- Complete List of 16-bit Service Class UUIDs
- Incomplete List of 32-bit Service Class UUIDs
- Complete List of 32-bit Service Class UUIDs
- Incomplete List of 128-bit Service Class UUIDs
- Complete List of 128-bit Service Class UUIDs
- Shortened Local Name
- Complete Local Name
- Appearance
- Manufacturer Specific Data

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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 Simple Broadcaster application is an example application that is embedded as part of the software release package.

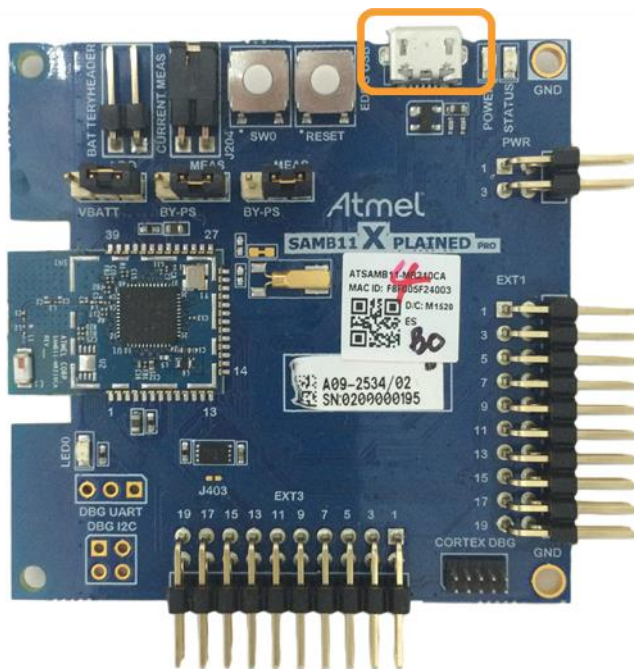
2 Demo Setup



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.

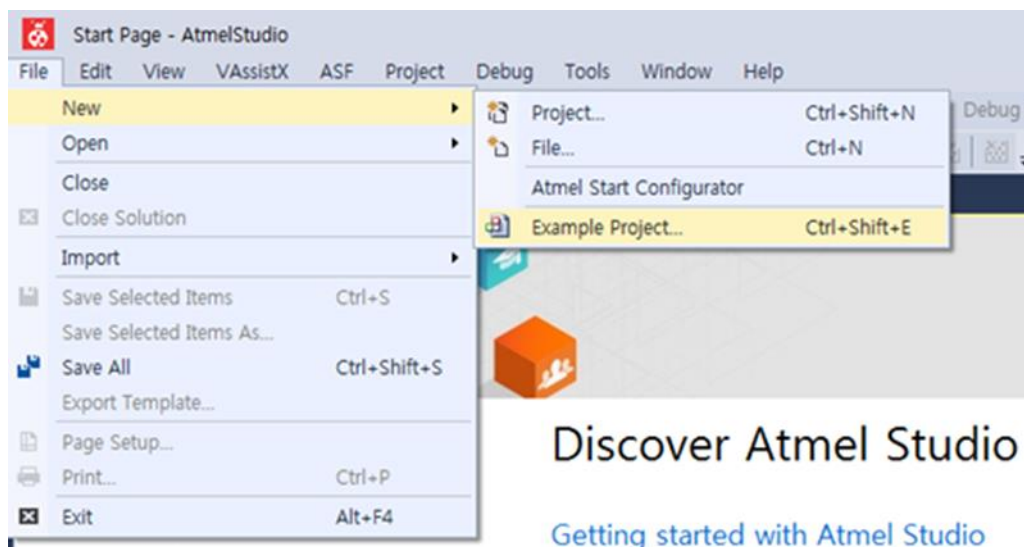
- Simple Broadcaster Application for ATSAMB11

4.2 Build Procedure

The following procedure is explained for ATSAMB11 application example.

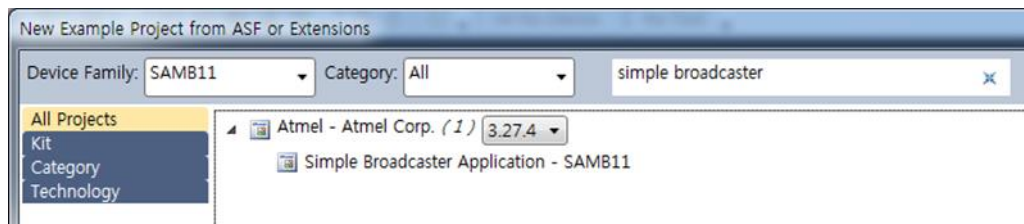
1. Select New Example Project.

Figure 4-1. Creating a New Example Project



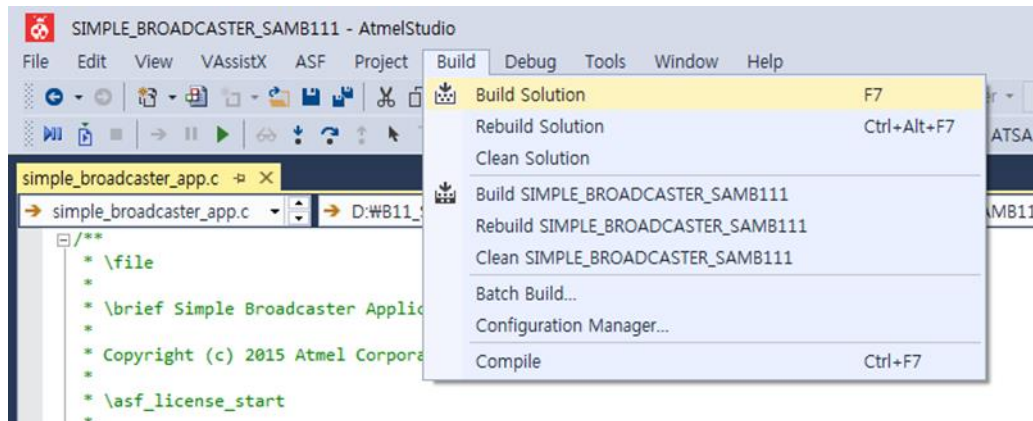
2. Select "SAMB11" in device family, enter "Simple Broadcaster" in search window, and expand Atmel Corp Projects. The location and the name of the project can be selected in the respective fields. Click OK.

Figure 4-2. Selecting Simple Broadcaster Application from Example Projects



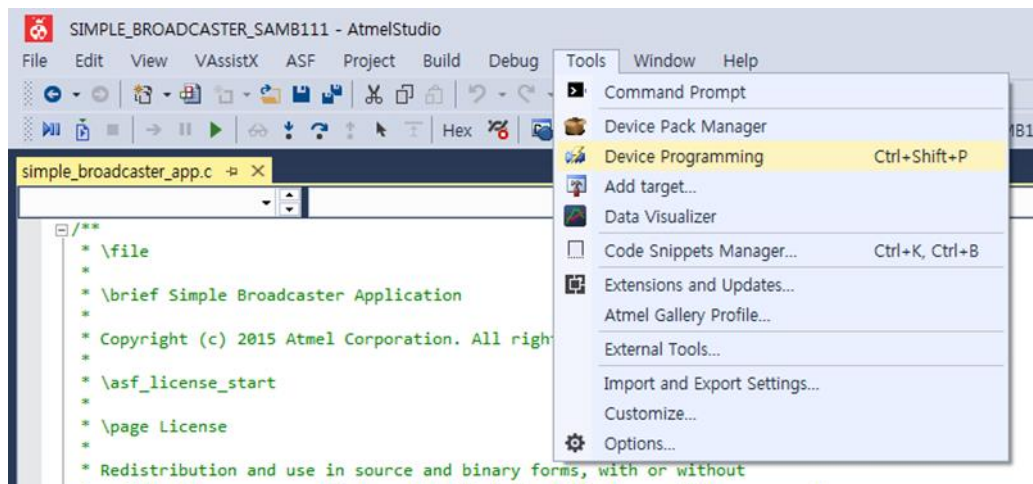
3. Accept the license Agreement. The studio will generate the Simple Broadcaster project for ATSAMB11.
4. Build the solution.

Figure 4-3. Building the Broadcaster Application



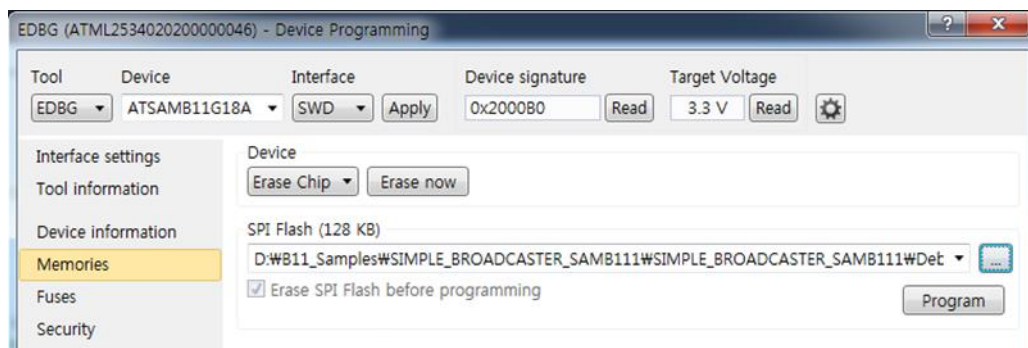
5. Download the application via the USB to the ATSAMB11 board by using the Device Programming option available in Tools as shown below.

Figure 4-4. Selecting Device Programming Option



6. Program the device to download the Simple Broadcaster application as shown below.

Figure 4-5. Flashing the Application to ATSAMB11 Memory



5 Console Display

For the purpose of debugging, a logging interface has been implemented in the Simple Broadcaster 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.

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.

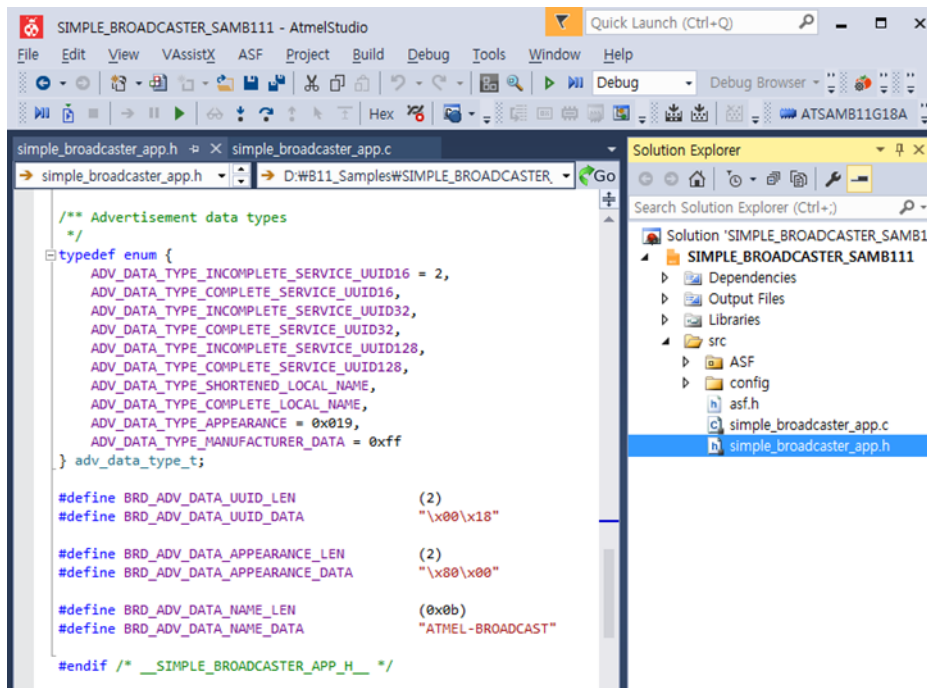
Figure 6-1. Simple Broadcaster Console Display

```
Initializing Broadcaster Application
Initializing SAMB11
BD Address:0xF8F005F23FFF, Address Type:0
Advertisement type set to nonconnectable undirected
Complete name set
Appearance set
Complete list of service uuid16 set
BLE Broadcast data set success
Started Broadcasting
```


7 Configuration Options

- Simple Broadcaster application will advertise with the default configuration provided below
- Non-connectable undirected advertisement event
- Broadcasts data in advertisement data packets only
- Broadcasts the below advertisement data types
 - Complete List of 16-bit Service Class UUIDs
 - Complete Local Name
 - Appearance
- The configuration and advertisement data types listed above can be changed by using the Macros provided in the ***simple_broadcaster_app.h*** file as shown below.

Figure 7-1. Simple_broadcaster_app.h Header File for Configurations



```
/* Advertisement data types */
typedef enum {
    ADV_DATA_TYPE_INCOMPLETE_SERVICE_UUID16 = 2,
    ADV_DATA_TYPE_COMPLETE_SERVICE_UUID16,
    ADV_DATA_TYPE_INCOMPLETE_SERVICE_UUID32,
    ADV_DATA_TYPE_COMPLETE_SERVICE_UUID32,
    ADV_DATA_TYPE_INCOMPLETE_SERVICE_UUID128,
    ADV_DATA_TYPE_COMPLETE_SERVICE_UUID128,
    ADV_DATA_TYPE_SHORTENED_LOCAL_NAME,
    ADV_DATA_TYPE_COMPLETE_LOCAL_NAME,
    ADV_DATA_TYPE_APPEARANCE = 0x019,
    ADV_DATA_TYPE_MANUFACTURER_DATA = 0xff
} adv_data_type_t;

#define BRD_ADV_DATA_UUID_LEN (2)
#define BRD_ADV_DATA_UUID_DATA "\x00\x18"

#define BRD_ADV_DATA_APPEARANCE_LEN (2)
#define BRD_ADV_DATA_APPEARANCE_DATA "\x80\x00"

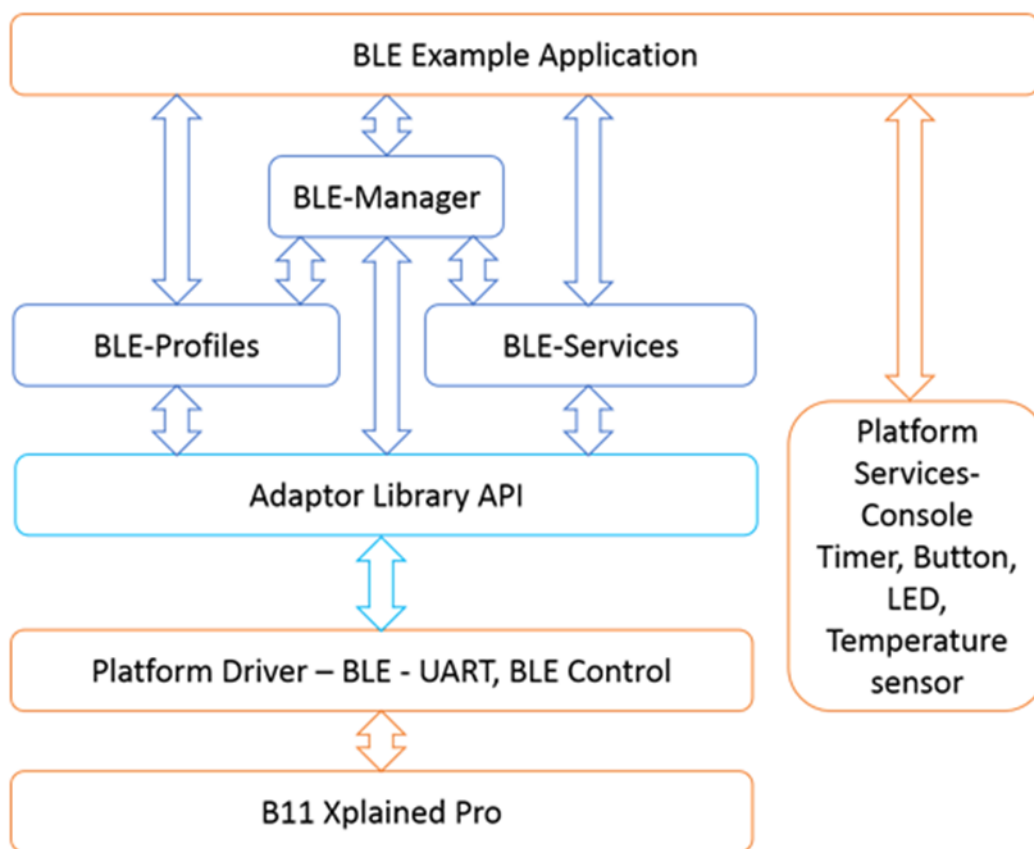
#define BRD_ADV_DATA_NAME_LEN (0x0b)
#define BRD_ADV_DATA_NAME_DATA "ATMEL-BROADCAST"

#endif /* __SIMPLE_BROADCASTER_APP_H__ */
```

8 BluSDK SMART Software Architecture

Figure 8-1 illustrates the top level diagram for the ATSAMB11 configuration.

Figure 8-1. ATSAMB11 Software Architecture



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10 Revision History

Doc Rev.	Date	Comments
42598A	11/2015	Initial document release.



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