



Introduction

This document explains the details about:

- Getting started with the setup of ATSAMB11 Xplained board
- How to use AT Command on ATSAMB11 Xplained board

Features

- Reset the link layer
- Set device configuration
- Start scan
- Stop scan

Table of Contents

Introduction	1
Features	1
Table of Contents	2
1 Purpose	3
2 Demo Setup	4
3 Hardware Setup	5
4 Software Setup	6
4.1 Installation Steps	6
4.2 Build Procedure	6
5 Running the Demo	8
6 BluSDK SMART Software Architecture	10
7 ATMEL EVALUATION BOARD/KIT IMPORTANT NOTICE AND DISCLAIMER	11
8 Revision History	12

1 Purpose

This getting started guide describes the setup of ATSAMB11 Xplained board and bringing up an AT CMD example supplied as part of BluSDK Smart release.

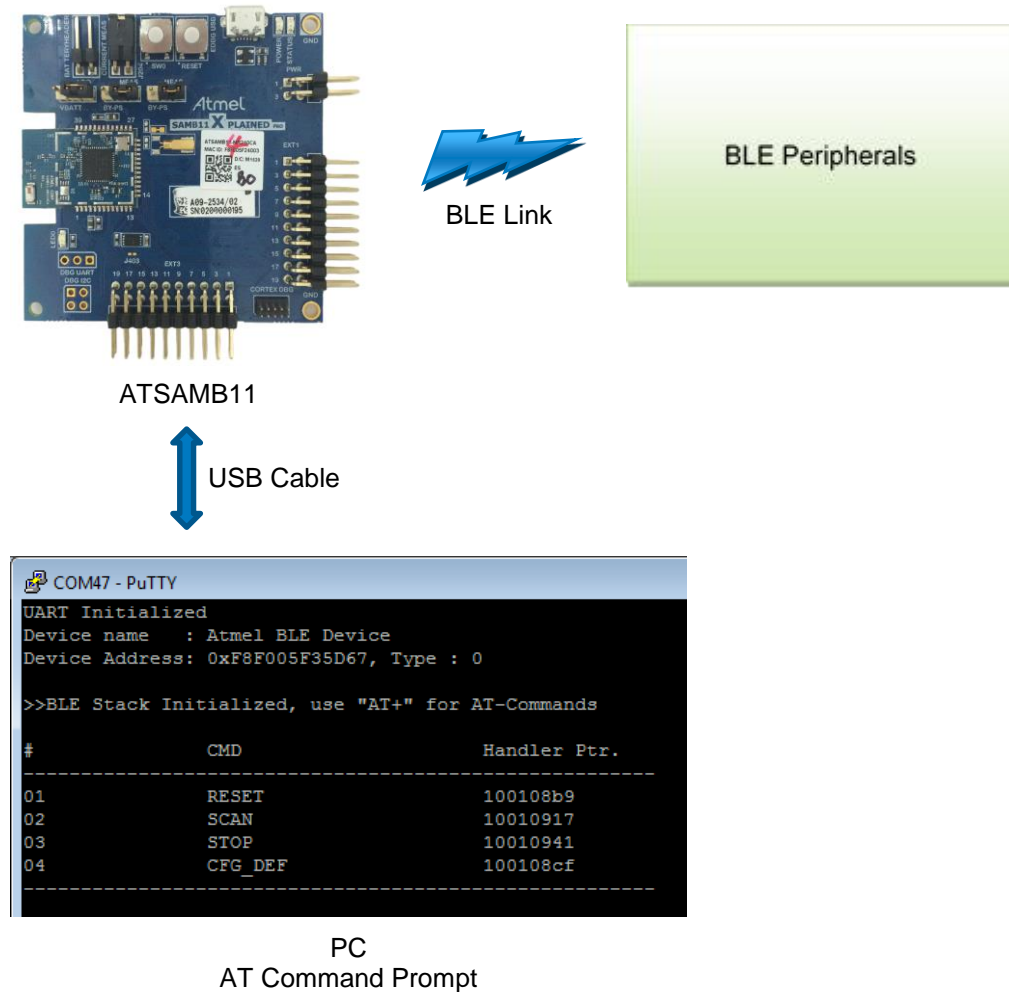
The AT command set is listed in the following table.

Table 1-1. AT Command Set

Command	Command Description	Command Syntax
Reset	Reset the link layer	AT+RESET
Configuration	Set device configuration	AT+CFG_DEF
Start Scan	Start scan operation	AT+SCAN
Stop Scan	Stop an ongoing scan operation	AT+STOP

2 Demo Setup

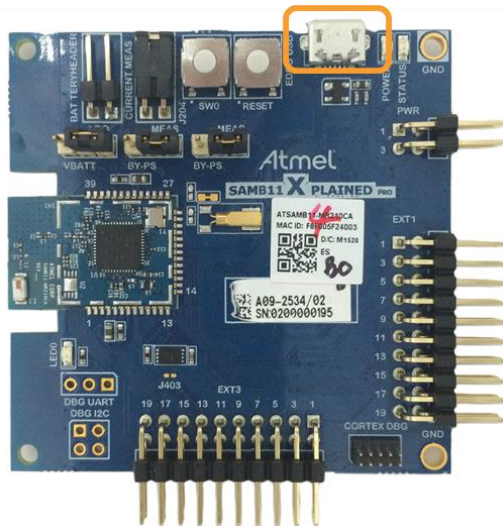
Figure 2-1. Demo Setup of the AT CMD Application on ATSAMB11



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:

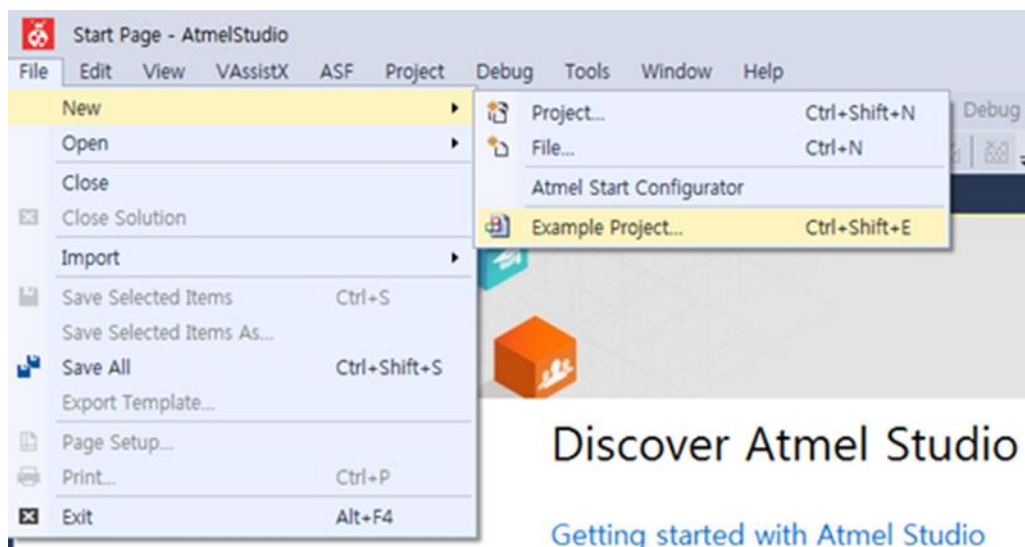
- AT CMD application for ATSAMB11

4.2 Build Procedure

The following procedure is explained for ATSAMB11 application example.

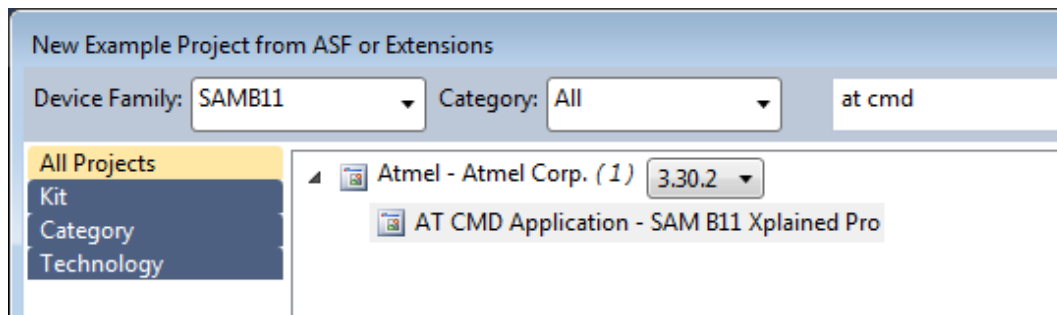
1. Select New Example Project.

Figure 4-1. Creating a New Example Project



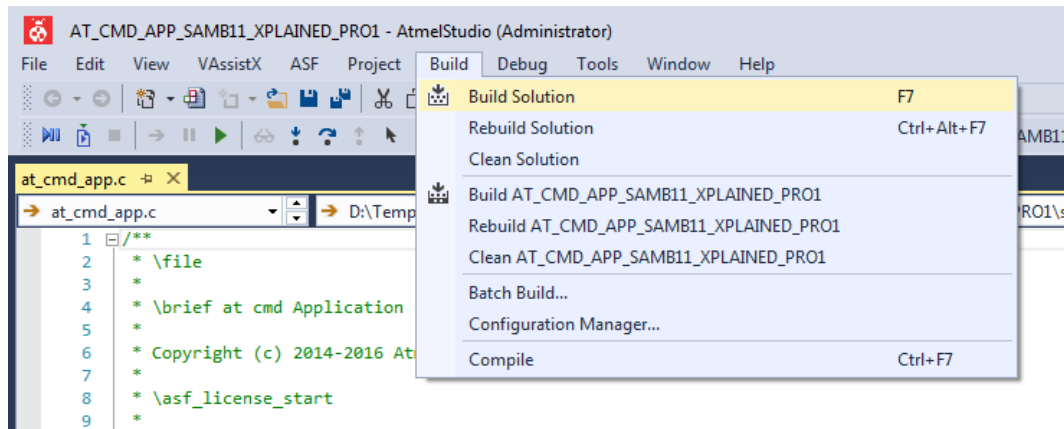
2. Select "SAMB11" in device family, enter "at cmd" in search window, and expand Atmel Corp Projects. The location and the name of the project can be selected in the respective fields. Click OK.

Figure 4-2. Selecting AT CMD Application from Example Projects



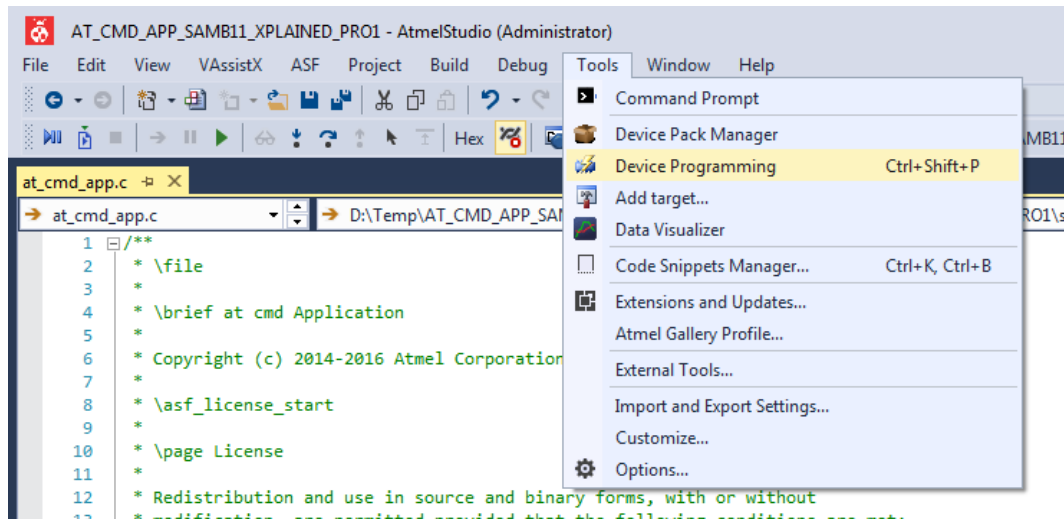
3. Accept the license Agreement. The Atmel studio will generate the AT CMD project for ATSAMB11.
4. Build the solution.

Figure 4-3. Building the AT CMD Application



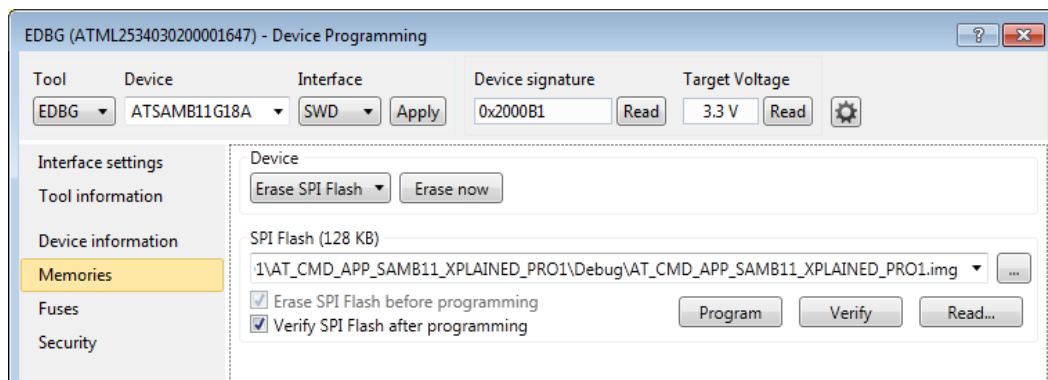
5. Download the application via the USB to the ATSAMB11 board by using the Device Programming option available in Tools as shown below.

Figure 4-4. 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 AT CMD Application is ready for usage.

5 Running the Demo

Type one of four commands you want on the console.

1. Reset command
Type “AT+RESET” and then press ‘Enter’ key.

Figure 5-1. RESET command

```
UART Initialized
Device name   : Atmel BLE Device
Device Address : 0xF8F005F35D67, Type : 0

>>BLE Stack Initialized, use “AT+” for AT-Commands

#           CMD           Handler Ptr.
-----
01          RESET         100108b9
02          SCAN          10010917
03          STOP          10010941
04          CFG_DEF        100108cf
-----

AT+RESET
Searching for CMD handler...
Processing...Reset Handler
DONE
```

2. CFG_DEF command
Type “AT+CFG_DEF” and then press ‘Enter’ key.

Figure 5-2. CFG_DEF command

```
AT+CFG_DEF
Searching for CMD handler...
Processing... Config Handler
DONE
```


3. SCAN command

Type “AT+SCAN” and then press ‘Enter’ key. After a while, scan results should be shown as below.

Figure 5-3. SCAN command

```
AT+SCAN
Searching for CMD handler...
Processing... Scan Handler
DONE
AT_BLE_SCAN_INFO:
    Device Addr.: 0xF8F005F35BE4
    AddrType    : 0x00
    RSSI        : -68
AT_BLE_SCAN_INFO:
    Device Addr.: 0xF8F005F35BE4
    AddrType    : 0x00
    RSSI        : -66
AT_BLE_SCAN_INFO:
    Device Addr.: 0xACEE9E19AE82
    AddrType    : 0x00
    RSSI        : -78
AT_BLE_SCAN_INFO:
    Device Addr.: 0xF8F005F35978
    AddrType    : 0x00
    RSSI        : -77
AT_BLE_SCAN_INFO:
    Device Addr.: 0xF8F005F35978
    AddrType    : 0x00
    RSSI        : -76
```

4. STOP command

Type “AT+STOP” and then press ‘Enter’ key.

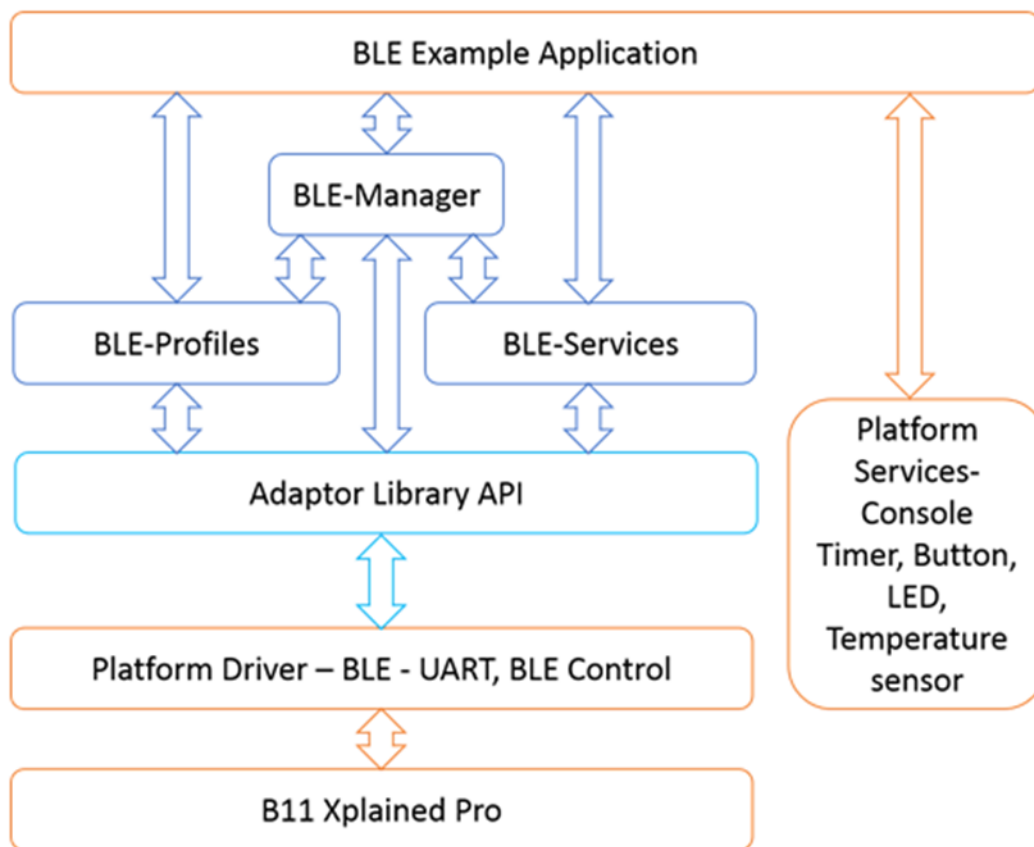
Figure 5-4. STOP command

```
AT+STOP
Searching for CMD handler...
Processing... Stop Handler
DONE
```

6 BluSDK SMART Software Architecture

Figure 6-1 illustrates the top level diagram for the BLU-SDK SMART configuration.

Figure 6-1. ATSAMB11 Software Architecture



7 ATMEL EVALUATION BOARD/KIT IMPORTANT NOTICE AND DISCLAIMER

This evaluation board/kit is intended for user's internal development and evaluation purposes only. It is not a finished product and may not comply with technical or legal requirements that are applicable to finished products, including, without limitation, directives or regulations relating to electromagnetic compatibility, recycling (WEEE), FCC, CE or UL. Atmel is providing this evaluation board/kit "AS IS" without any warranties or indemnities. The user assumes all responsibility and liability for handling and use of the evaluation board/kit including, without limitation, the responsibility to take any and all appropriate precautions with regard to electrostatic discharge and other technical issues. User indemnifies Atmel from any claim arising from user's handling or use of this evaluation board/kit. Except for the limited purpose of internal development and evaluation as specified above, no license, express or implied, by estoppel or otherwise, to any Atmel intellectual property right is granted hereunder. ATMEL SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RELATING TO USE OF THIS EVALUATION BOARD/KIT.

ATMEL CORPORATION
1600 Technology Drive
San Jose, CA 95110
USA

8 Revision History

Doc Rev.	Date	Comments
42693A	03/2016	Initial document release.



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

© 2016 Atmel Corporation. / Rev.: Atmel-42693A-ATSAMB11-BluSDK-SMART-AT-CMD-Getting-Started-Guide_UserGuide_032016

Atmel®, Atmel logo and combinations thereof, Enabling Unlimited Possibilities®, and others are registered trademarks or trademarks of Atmel Corporation in U.S. and other countries. ARM®, ARM Connected® logo, and others are the registered trademarks or trademarks of ARM Ltd. Windows® is a registered trademark of Microsoft Corporation in U.S. and or other countries. Other terms and product names may be trademarks of others.

DISCLAIMER: The information in this document is provided in connection with Atmel products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Atmel products. EXCEPT AS SET FORTH IN THE ATMEL TERMS AND CONDITIONS OF SALES LOCATED ON THE ATMEL WEBSITE, ATMEL ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL ATMEL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS AND PROFITS, BUSINESS INTERRUPTION, OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF ATMEL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Atmel makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and products descriptions at any time without notice. Atmel does not make any commitment to update the information contained herein. Unless specifically provided otherwise, Atmel products are not suitable for, and shall not be used in, automotive applications. Atmel products are not intended, authorized, or warranted for use as components in applications intended to support or sustain life.

SAFETY-CRITICAL, MILITARY, AND AUTOMOTIVE APPLICATIONS DISCLAIMER: Atmel products are not designed for and will not be used in connection with any applications where the failure of such products would reasonably be expected to result in significant personal injury or death ("Safety-Critical Applications") without an Atmel officer's specific written consent. Safety-Critical Applications include, without limitation, life support devices and systems, equipment or systems for the operation of nuclear facilities and weapons systems. Atmel products are not designed nor intended for use in military or aerospace applications or environments unless specifically designated by Atmel as military-grade. Atmel products are not designed nor intended for use in automotive applications unless specifically designated by Atmel as automotive-grade.