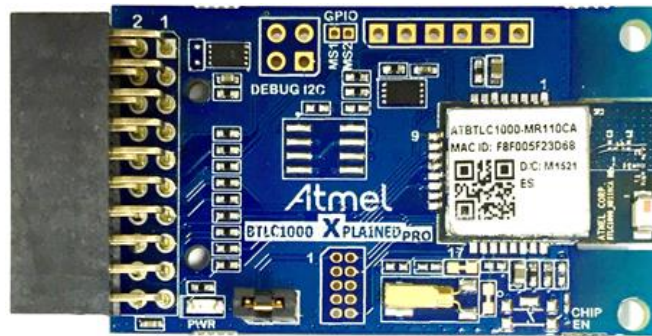


USER GUIDE



Introduction

This getting started guide describes the setup of the Atmel® ATBTLC1000 with a supported platform bringing-up an example profile supplied as part of BluSDK release. The Bluetooth® Find Me Profile is an example application that is embedded as part of the software release package.

The Find Me Profile (FMP) defines the behavior when a button is pressed on one device to cause an alerting signal on a peer device.

This document explains the details about:

1. Getting started with the setup of supported platform to be used as a Find Me Target.
2. Getting the Find Me Application working on the above mentioned setup.

Features

- Device Discovery and Disconnection
- Pairing / Bonding
- Find Me Alerts
- Console Display

Table of Contents

1	Demo Setup.....	3
2	Supported Hardware Platforms and IDEs	3
3	Hardware Setup	4
3.1	SAM L21 Xplained Pro Find Me Target Setup.....	4
3.2	SAM D21 Xplained Pro Find Me Target Setup.....	4
3.3	SAM G55 Xplained Pro Find Me Target Setup.....	5
4	Find Me Target	5
5	Software Setup.....	5
5.1	Installation Steps	5
5.2	Build Procedure.....	6
6	Console Logging	9
7	Running the Demo	9
8	BluSDK Software Architecture.....	12
9	ATMEL EVALUATION BOARD/KIT IMPORTANT NOTICE AND DISCLAIMER	13
10	Revision History	14

1 Demo Setup

Figure 1-1. Demo Setup for Find Me Profile



2 Supported Hardware Platforms and IDEs

Table 2-1. BluSDK – Supported Hardware and IDEs

Platform	MCU	Supported BLE Module	Supported evaluation kits	Supported IDEs
SAM L21 (MCU)	ATSAML21J18B	ATBTLC1000	ATBTLC1000-XSTK (ATSAML21-XPRO-B + ATBTLC1000 XPRO)	Atmel Studio v7.0
SAM L21 (MCU)	ATSAML21J18A	ATBTLC1000	ATBTLC1000-XSTK	Atmel Studio v7.0
SAM D21 (MCU)	ATSAMD21J18A	ATBTLC1000	SAMD21-XPRO + ATBTLC1000	Atmel Studio v7.0
SAM G55 (MCU)	ATSAMG55J19	ATBTLC1000	SAMG55-XPRO + ATBTLC1000	Atmel Studio v7.0

3 Hardware Setup

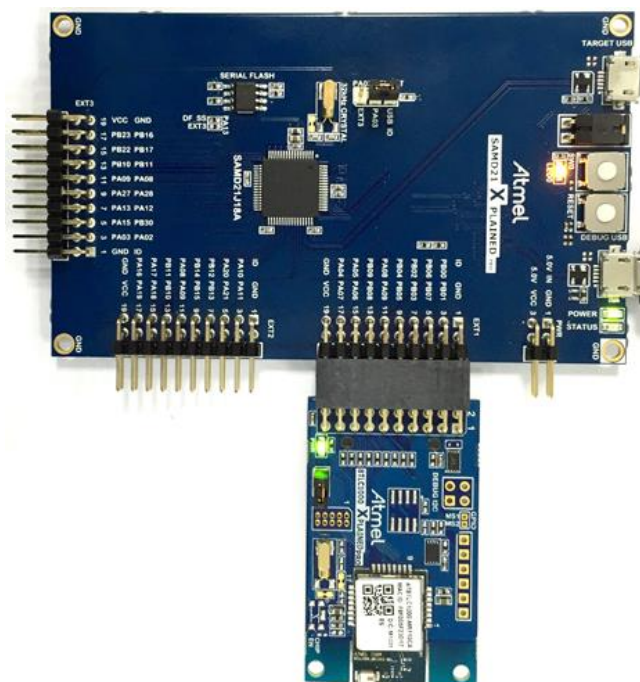
3.1 SAM L21 Xplained Pro Find Me Target Setup

Figure 3-1. ATBTLC1000 Xplained Pro Extension Connected to a SAM L21 Xplained Pro



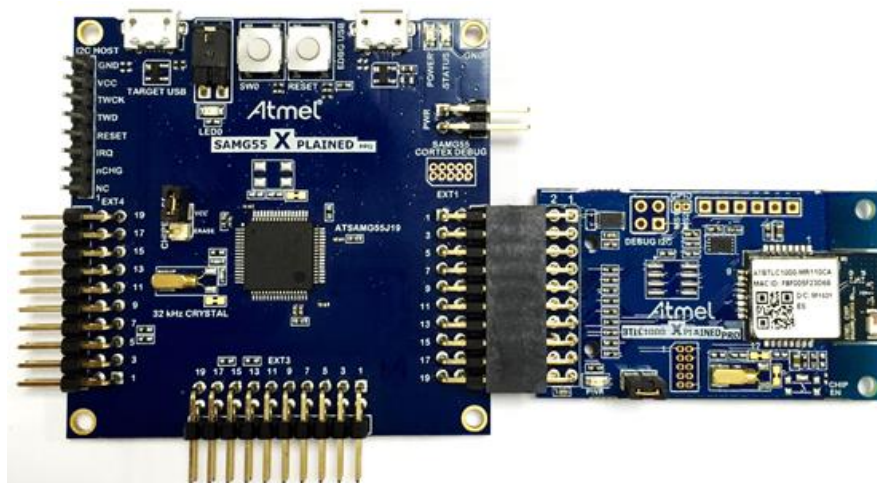
3.2 SAM D21 Xplained Pro Find Me Target Setup

Figure 3-2. ATBTLC1000 Xplained Pro Extension Connected to a SAM D21 Xplained Pro



3.3 SAM G55 Xplained Pro Find Me Target Setup

Figure 3-3. ATBTLC1000 Xplained Pro Extension Connected to a SAM G55 Xplained Pro



4 Find Me Target

The Find Me profile defines the behavior when a button is pressed on a device to cause an immediate alert on a peer device. This can be used to allow users to find devices that have been misplaced.

Find Me Target Application which is the GATT server will hold the characteristics and wait for the Find Me locaters alerts and based on the alerts level it will do the appropriate task.

- Alert Level Characteristic

When the Find Me Locator device wishes to cause an alert on the Find Me Target device, it shall write the specific Alert Level in the Alert Level characteristic.

5 Software Setup

5.1 Installation Steps

1. Atmel Studio installation [**Atmel Studio 7.0 (build 594) Installer – with .NET**]
<http://www.atmel.com/tools/atmelstudio.aspx>.

(Note: SAM L21 Rev B/SAM D21/SAM G55 part pack is built-in as part of Atmel Studio 7.0)

2. Atmel USB Driver Installer from <http://www.atmel.com/tools/atmelstudio.aspx>.
3. Install the standalone ASF package from
<http://www.atmel.com/tools/AVRSOFTWAREFRAMEWORK.aspx>.

Note: Refer to the BluSDK release notes for updates to version numbers of the components mentioned above.

This package will install the following examples within the Atmel Studio environment.

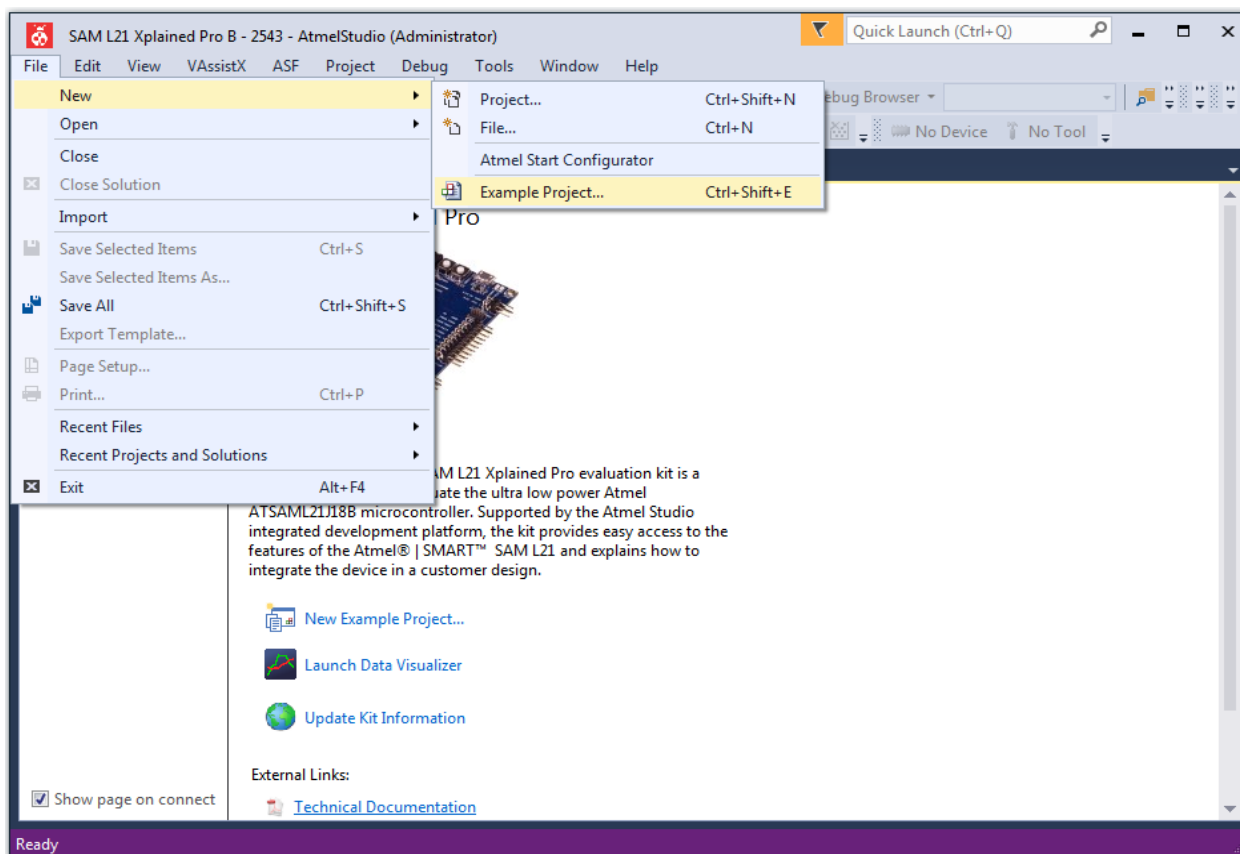
1. Find Me Application for SAM L21.
2. Find Me Application for SAM D21.
3. Find Me Application for SAM G55.

5.2 Build Procedure

The following procedure is explained for SAM L21 application example. The same procedure is valid for the case of all the other supported platform as well.

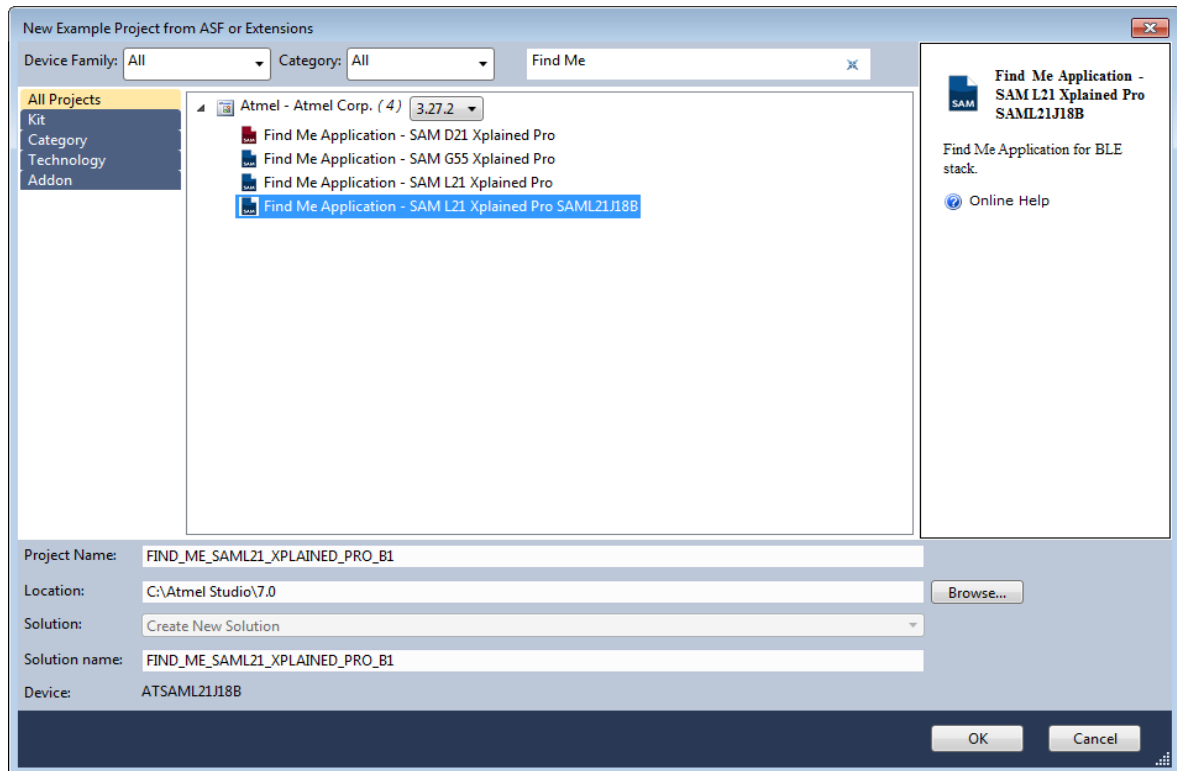
Select New Example Project.

Figure 5-1. Creating a New Project



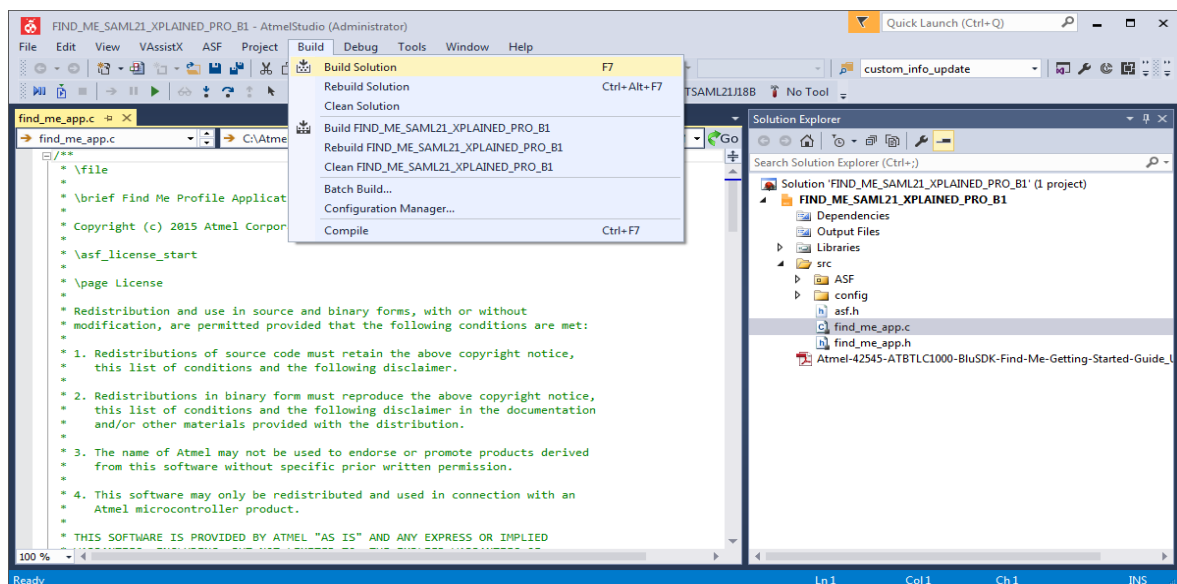
1. Select "SAML,32-bit" in device family, enter "Find Me" in search window and expand Atmel Corp. Projects. The location and the name of the project can be selected in the respective fields. Click OK.

Figure 5-2. Selecting Find Me Application from Example Projects



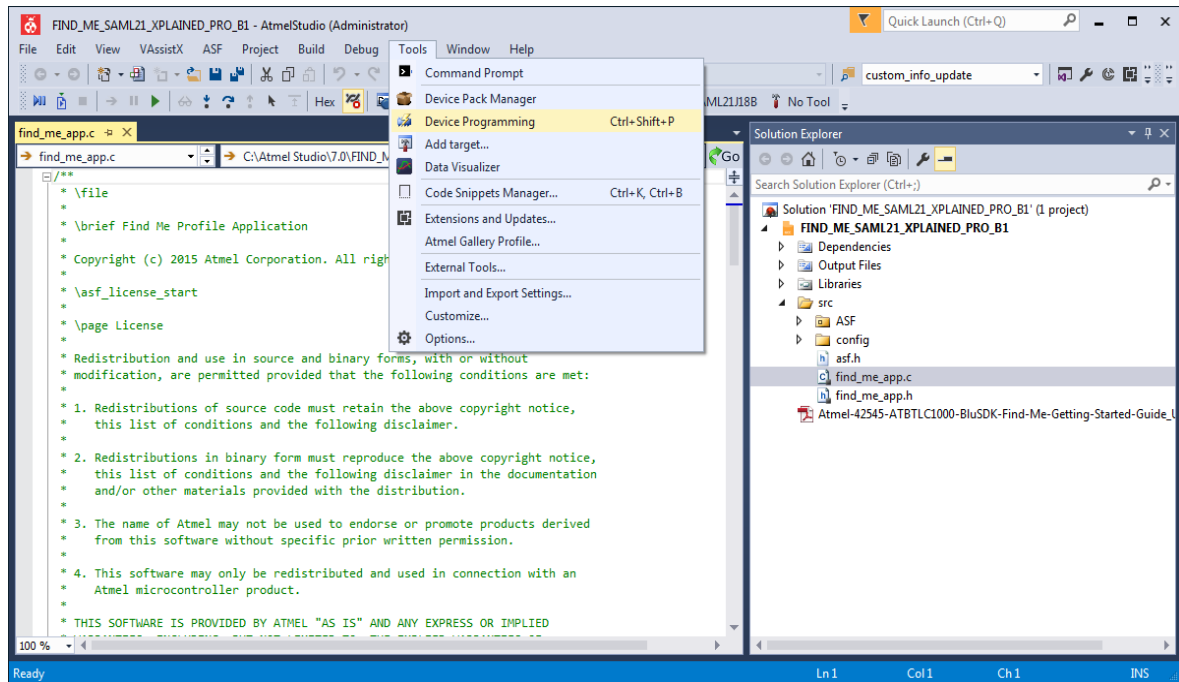
2. Accept the license Agreement. The studio will generate the Find Me Target project for SAM L21.
3. Build the solution.

Figure 5-3. Building the Find Me Application



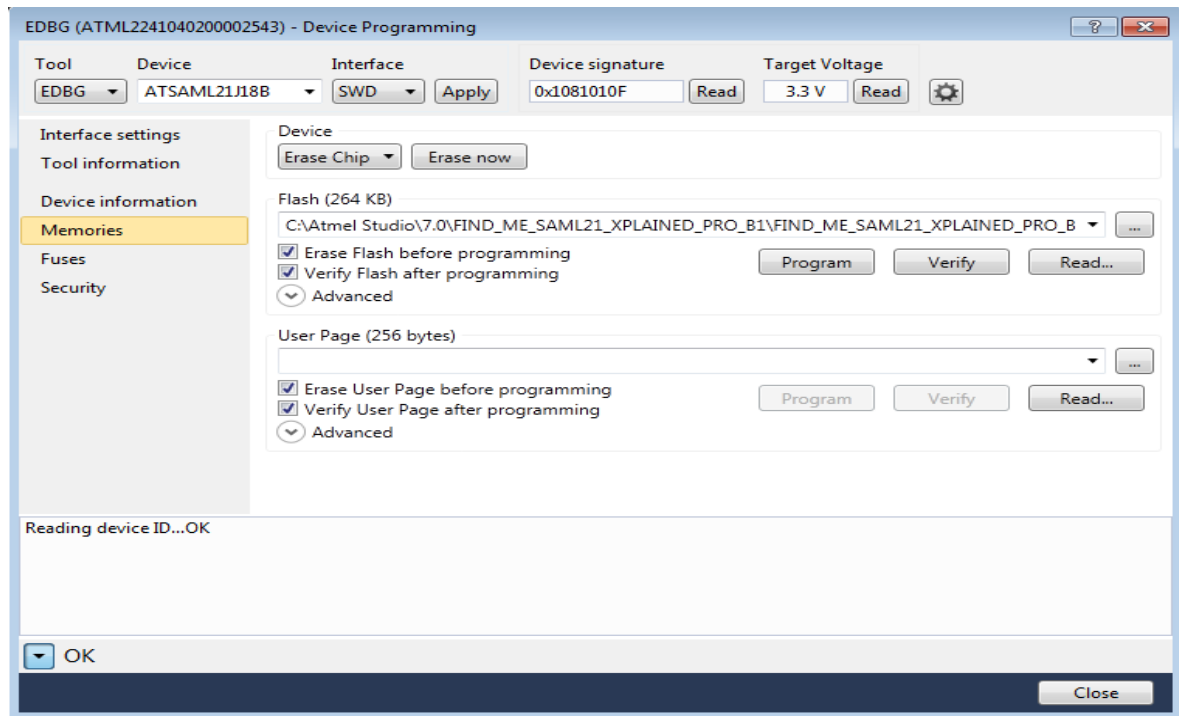
4. Download the application via the USB to the SAM L21 board by using the Device Programming option available in Tools as mentioned below.

Figure 5-4. Programming the Find Me Application



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

Figure 5-5. Flashing the Find Me Application



6. Once the application is flashed the Find Me Target Application is ready for usage.

6 Console Logging

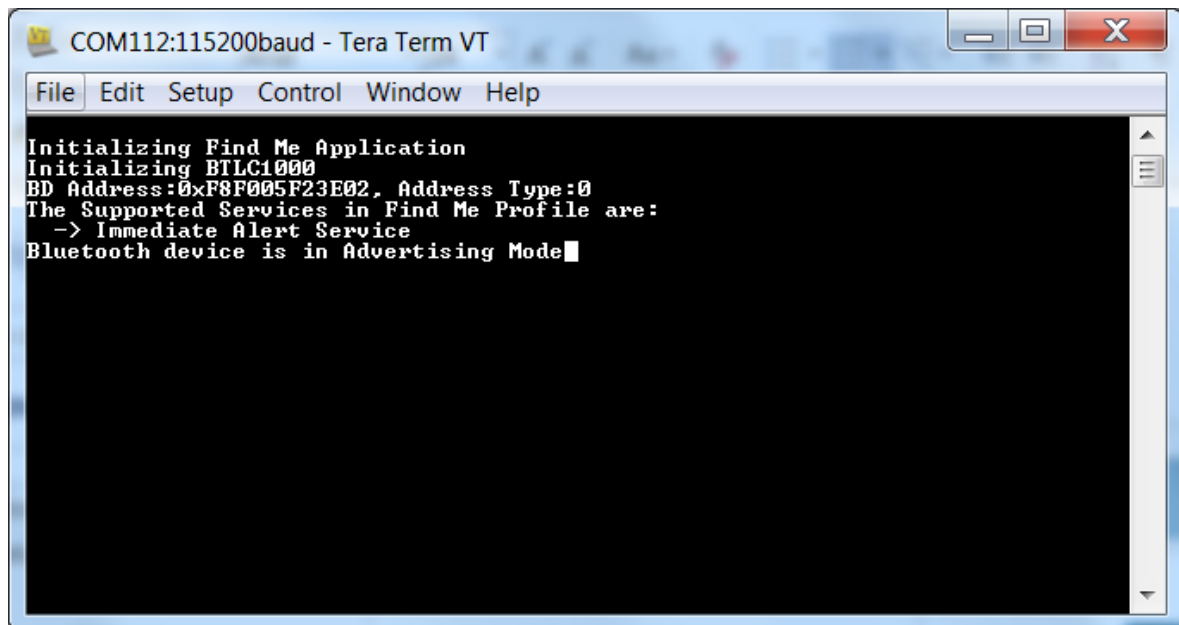
For the purpose of debugging, a logging interface has been implemented in the Find Me Application.

The logging interface utilizes the same EDBG port that connects to the supported platform. 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. The baud rate should be set to 115200.

7 Running the Demo

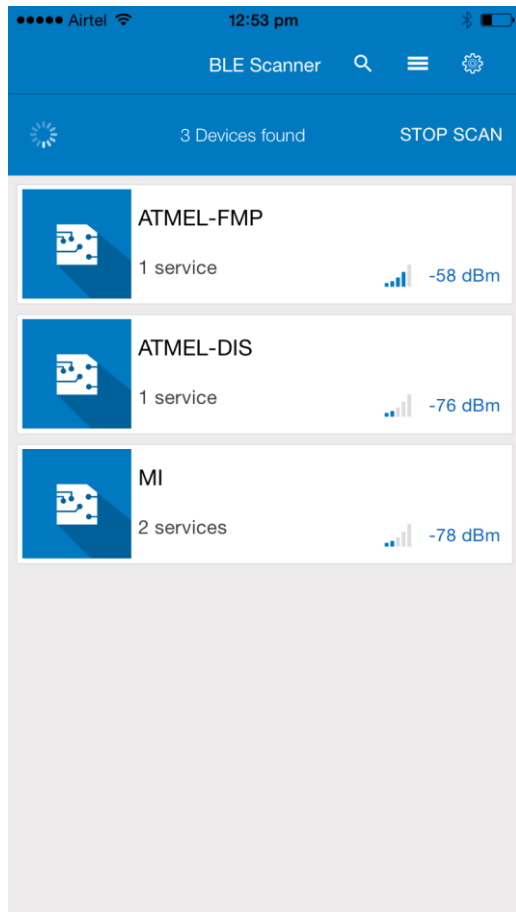
1. Power on the SAM L21 + ATBTLC1000 setup by connecting the USB cable as indicated in [Figure 3-1](#).
2. Open a console window using TeraTerm or any equivalent serial port monitor application and connect to the corresponding COM port enumerated on the PC. (Settings: Baud rate 115200, None Parity, one Stop bit, one Start bit, no Hardware Handshake.)
3. Press the Reset button on the SAM L21 or supported platform board.
4. The device is now in advertising mode.

Figure 7-1. Console Display for Device in Advertisement Mode



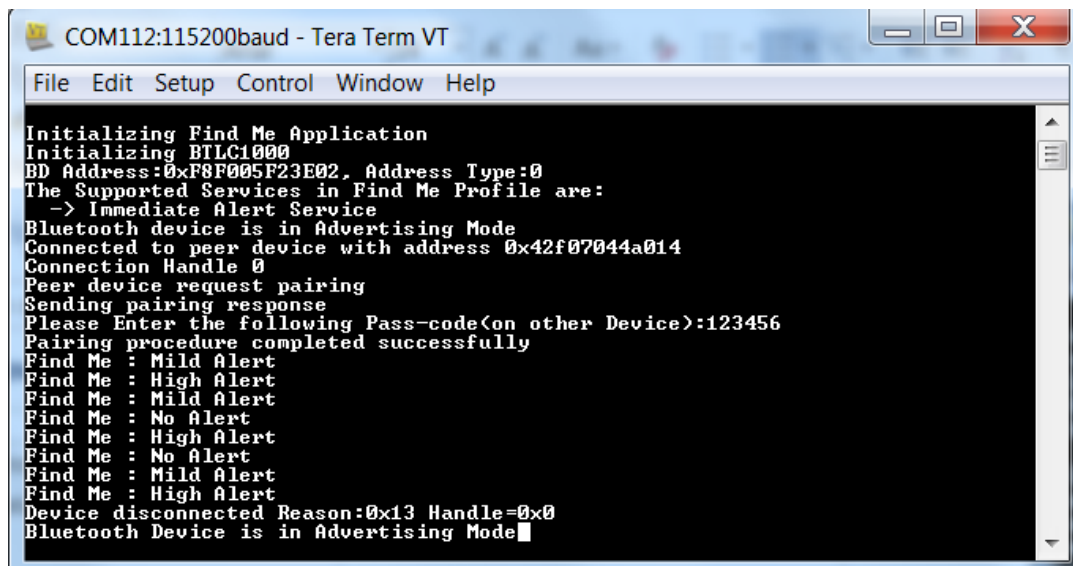
5. On a BLE compatible Android phone or an iPhone®, enable Bluetooth in the Settings page. Start the Atmel Smart Connect App and scan for devices. ATMEL-FMP will be appear amongst the devices scanned. Click on ATMEL-FMP to connect to the SAM L21 or supported platform + ATBTLC1000 device.

Figure 7-2. ATMEL-FMP in Device Discovery Atmel Smart Connect App



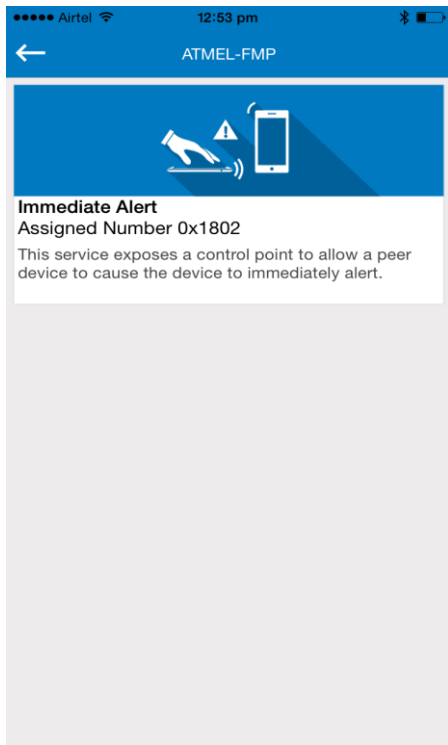
6. Once connected, the client side will request for the pairing procedure with iPhone. The console log provides a guidance for the user to enter the pass-key on iPhone.

Figure 7-3. Console Display for Find Me Application Pairing



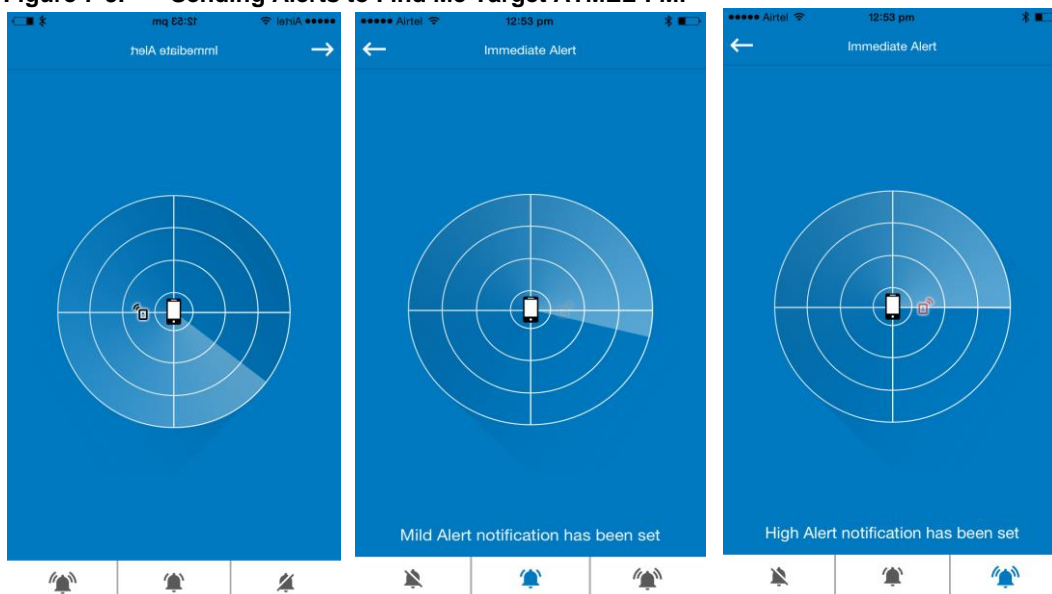
- Once the device is connected, the following services shall be displayed on the App.

Figure 7-4. Services Discovered in ATMEL-FMP Device



- Since the service level connection is now established, the user will see the notifications based on the alert level settings as depicted in the following diagrams.

Figure 7-5. Sending Alerts to Find Me Target ATMEL-FMP

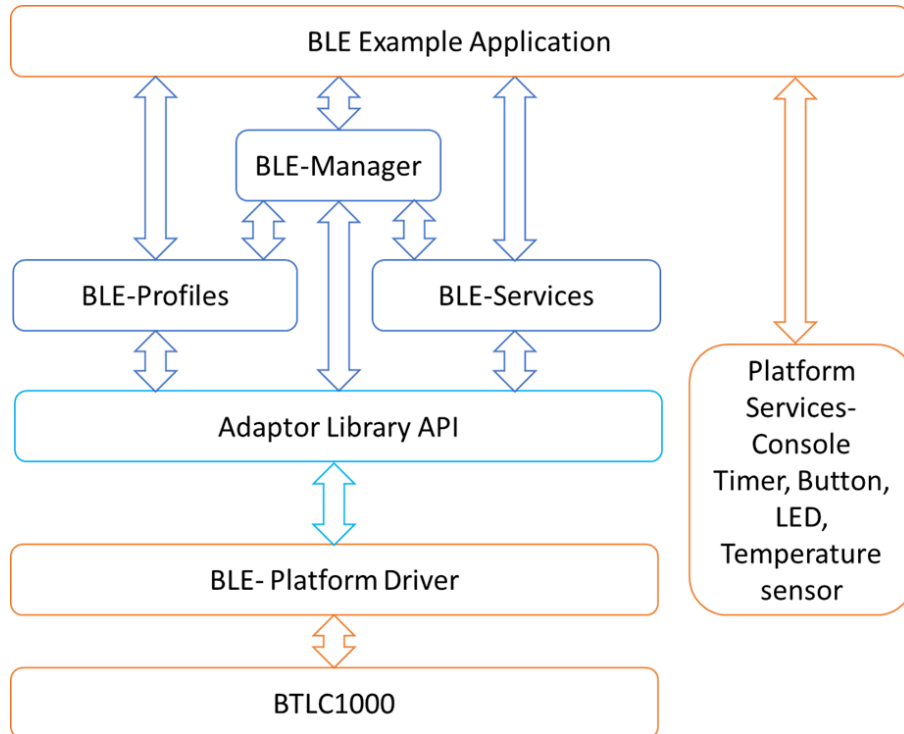


Note: A BLE compatible Android phone with the Atmel Smart Connect App can also be used to run the demo as described above. The Android version of the Smart Connect app provides the same look and feel as the iOS mobile app described above. Hence the same steps shall be used to run the demo on a BLE compatible Android phone.

8 BluSDK Software Architecture

Figure 8-1 illustrates the various layers in the BLE subsystem for the ATBTLC1000 configuration. The External host can be supported platform. The application in this example is ANCS Profile.

Figure 8-1. BluSDK Software Architecture



9 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

10 Revision History

Doc Rev.	Date	Comments
42545B	11/2015	Figure 3-1 is updated. The screenshots in Chapter 5 are updated.
42545A	09/2015	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

© 2015 Atmel Corporation. / Rev.: Atmel-42545B-ATBTLC1000-BluSDK-Find-Me-Profile-Getting-Started-Guide_UserGuide_112015.

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. 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.