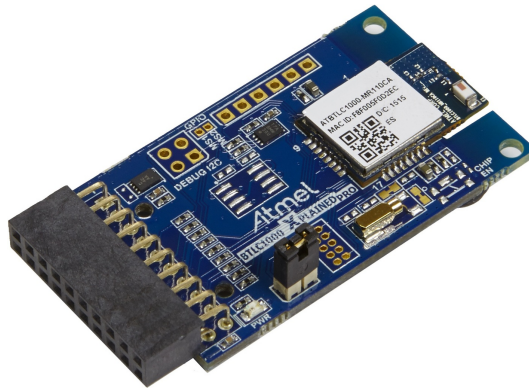# ATBTLC1000-XPRO

ATBTLC1000 Xplained Pro User Guide

Introduction

The ATBTLC1000 Xplained Pro is an extension board to evaluate the performance of the ultra-low power Bluetooth® Low Energy 5.0 ATBTLC1000-MR110CA module. The ATBTLC1000 Xplained Pro board is designed to provide BLE functionality to the Xplained Pro evaluation platform. This kit provides access to the features of the ATBTLC1000-MR110CA module and explains how to integrate the module in a custom design.

Features

- ATBTLC1000-MR110CA Bluetooth Module
    - Compliant with Bluetooth V5.0 Core Specification, ETSI EN 300 328 and EN 300 440 Class 2, FCC CFR47 Part 15, and ARIB STD-T66
    - ARM® Cortex®-M0 32-bit processor
- AT30TSE758A Digital Temperature Sensor
    - Integrated temperature sensor, non-volatile registers, and serial EEPROM
    - Two wire I^{2}C and SMBus compatible serial interface
- Xplained Pro Hardware Identification System using ATSHA204A
- Power LED
- Power Debugger Support using Current Measurement Header
- Provision for External Flash (Footprint Only). Recommended MPN: IS25LD020-JNLE.
- Debug I^{2}C Header
- Debug UART/SPI Extension Port
- CHIP EN Switch for ATBTLC1000 Module (Footprint Only)
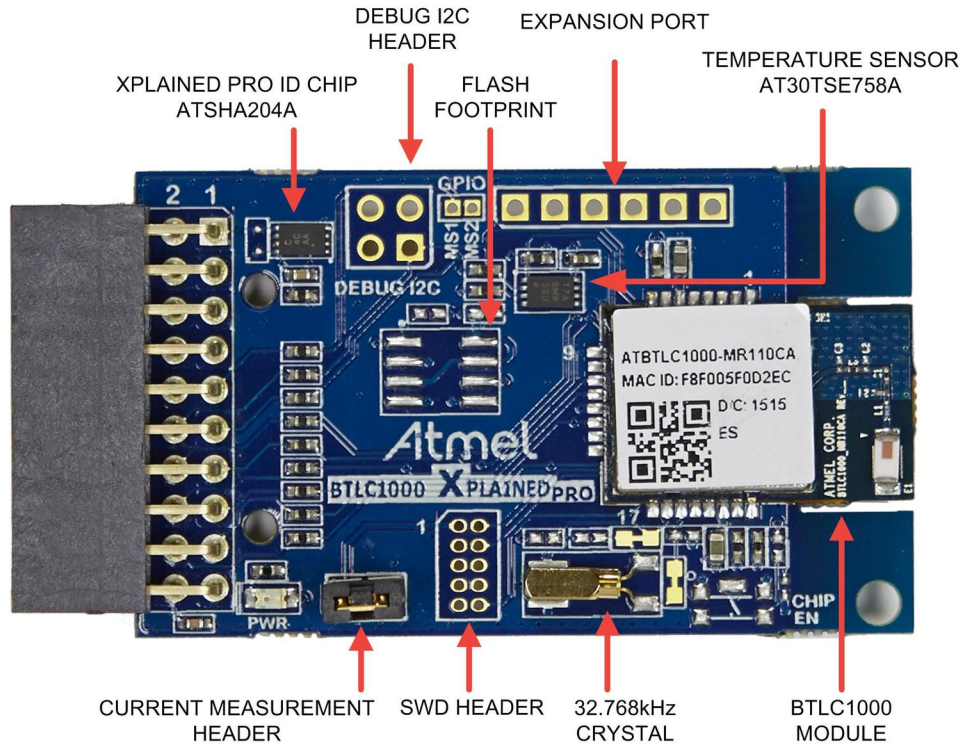- SWD Header
- 32 kHz Crystal

Table of Contents

1.   Kit Overview

The ATBTLC1000 Xplained Pro is an extension board containing the ultra-low power Bluetooth module ATBTLC1000-MR110CA for the Xplained Pro platform. The kit can be connected to any extension header on an Xplained Pro MCU board.

Figure 1-1. ATBTLC1000 Xplained Pro Extension Board

2. Getting Started

2.1 Xplained Pro Quick Start

Steps to start exploring the Xplained Pro platform:

1. Download and install Atmel Studio.
2. Launch Atmel Studio.
3. Connect the ATBTLC1000 Xplained Pro extension board with an Xplained Pro MCU board and connect a USB cable to the DEBUG USB port on the Xplained Pro MCU board.

When the Xplained Pro MCU kit is connected to the computer for the first time, the operating system installs the driver software automatically. This driver supports 32-bit and 64-bit versions of Microsoft® Windows® XP, Windows Vista®, Windows 7, Windows 8, Windows 10, and Windows Server 2012.

When the Xplained Pro MCU board is powered, the power LED (green) glows, and Atmel Studio automatically detects the specific Xplained Pro MCU and extension board(s) that are connected. The landing page of the kit in the Atmel Studio has an option to launch the Atmel Software Framework (ASF) and the Atmel START example application codes for the kit. The target device is programmed and debugged by the on-board embedded debugger and therefore no external programmer or debugger tool is required.

2.2 Design Documentation and Relevant Links

The following list contains links to the most relevant documents and software for the ATBTLC1000 Xplained Pro.

- Xplained Products - Xplained evaluation kits are a series of easy-to-use evaluation kits for Microchip microcontrollers and other Microchip products.
  - Xplained Nano - used for low pin count devices and provides a minimalistic solution with access to all I/O pins of the target microcontroller.
  - Xplained Mini - used for medium pin count devices and adds Arduino Uno compatible header footprint and a prototyping area.
  - Xplained Pro - used for medium-to-high pin count devices that features advanced debugging and standardized extensions for peripheral functions.

  Note: All the above kits have on-board programmers/debuggers, which creates a set of low-cost boards for evaluation and demonstration of features and capabilities of different Microchip products.
- Atmel Studio - Free IDE for the development of C/C++ and assembler code for microcontrollers.
- EDBG User Guide - User guide containing more information about the on-board Embedded Debugger.
- Data Visualizer - Data Visualizer is a program used for processing and visualizing data. The Data Visualizer can receive data from various sources such as the EDBG Data Gateway Interface found on Curiosity Nano and Xplained Pro boards and COM Ports.
- Advanced Software Framework - MCU software library providing a large collection of embedded software for MCUs.
- Design Documentation - Package containing CAD source, schematics, BOM, assembly drawings, 3D plots, layer plots, and so on.
- ATBTLC1000 Xplained Pro on Microchip website - Microchip website link.

- **ATBTLC1000 BluSDK** - Software, firmware, applications, and tools packages. Located in the software section of the page.

3.   Xplained Pro

Xplained Pro is an evaluation platform which contains a series of microcontroller boards (evaluation kits) and extension boards. Atmel Studio is used to program and debug the microcontrollers on these boards. Atmel Studio includes Advanced Software Framework (ASF) and Atmel START, which has drivers and demo code, and Data Visualizer, which supports data streaming and advanced debugging. Xplained Pro evaluation kits can be connected to a wide range of Xplained Pro extension boards through standardized headers and connectors. Xplained Pro extension boards have identification (ID) chips to uniquely identify which boards are connected to the Xplained Pro evaluation kits.

3.1   Hardware Identification System

All Xplained Pro extension boards come with an identification chip (ATSHA204A CryptoAuthentication™ chip) to uniquely identify the boards that are connected to the Xplained Pro Evaluation Kit. This chip contains information that identifies the extension with its name and some extra data. When an Xplained Pro extension is connected to an Xplained Pro Evaluation Kit, the information is read and sent to the Atmel Studio. The following table shows the data fields stored in the ID chip with example content.

Table 3-1. Xplained Pro ID Chip Content

Data Field	Data Type	Example Content
Manufacturer	ASCII string	Microchip'\0'
Product name	ASCII string	Segment LCD1 Xplained Pro'\0'
Product revision	ASCII string	02'\0'
Product serial number	ASCII string	1774020200000010'\0'
Minimum voltage [mV]	uint16_t	3000
Maximum voltage [mV]	uint16_t	3600
Maximum current [mA]	uint16_t	30

3.2   Xplained Pro Standard Extension Header

All Xplained Pro kits have many dual-row, 20-pin, 100 mil extension headers. The Xplained Pro MCU boards have male headers, while the Xplained Pro extensions have their female counterparts. The following table provides the pin description of all the connected pins.

> **Info:** Not all pins are always connected on all extension headers.

The extension headers can be used to connect a variety of Xplained Pro extensions to Xplained Pro MCU boards or to access the pins of the target microcontroller on the Xplained Pro boards.

Table 3-2. Xplained Pro Standard Extension Header

Pin Number	Pin Name	Description
1	ID	Pin to communicate with the ID chip on an extension board.
2	GND	Ground
3	ADC(+)	Analog-to-Digital Converter; alternatively, a pin for the positive terminal of a differential ADC.
4	ADC(-)	Analog-to-Digital Converter; alternatively, a pin for the negative terminal of a differential ADC.
5	GPIO1	General purpose I/O pin.
6	GPIO2	General purpose I/O pin.
7	PWM(+)	Pulse-Width Modulation; alternatively, a pin for the positive part of a differential PWM.
8	PWM(-)	Pulse-Width Modulation; alternatively, a pin for the negative part of a differential PWM.
9	IRQ/GPIO	Interrupt request pin and/or general purpose I/O pin.
10	SPI_SS_B/ GPIO	Slave select pin for Serial Peripheral Interface (SPI) and/or general purpose I/O pin.
11	I^{2}C_SDA	Data pin for I^{2}C interface. Always connected, bus type.
12	I^{2}C_SCL	Clock pin for I^{2}C interface. Always connected, bus type.
13	UART_RX	Receiver pin of target device UART.
14	UART_TX	Transmitter pin of target device UART.
15	SPI_SS_A	Slave select for SPI. This pin should preferably not be connected to anything else.
16	SPI_MOSI	SPI master out slave in pin. Always connected, bus type.
17	SPI_MISO	SPI master in slave out pin. Always connected, bus type.
18	SPI_SCK	SPI clock pin. Always connected, bus type.
19	GND	Ground pin for extension boards.
20	VCC	Power pin for extension boards.

4. Hardware Specifications

4.1 Electrical Characteristics

ATBTLC1000 Xplained Pro can be connected to several Xplained Pro MCU boards and manually connected to other hardware. Xplained Pro MCU board(s) that does not have 3.3V as its primary target voltage will read all ID devices on connected extensions to check if they support the target voltage before enabling it to the extension headers. The table below shows the static content written in the ID chip.

Table 4-1. ATBTLC1000 Xplained Pro ID Chip Content

Data field	Content
Product name	ATBTLC1000-XPRO
Minimum operation voltage	1.8V
Maximum operation voltage	3.6V
Maximum current	10mA

See also Hardware Identification System.

4.2 Headers and Connectors

4.2.1 ATBTLC1000 Xplained Pro Extension Header

The ATBTLC1000 Xplained Pro implements one Xplained Pro standard extension header marked with EXT1 in silkscreen. This header helps to connect the board to an Xplained Pro MCU board. The pinout definition for the extension header is shown in the following table.

Table 4-2. ATBTLC1000 Xplained Pro Extension Header EXT1

Pin on EXT1	Function	Description
1	ID	Communication line to the ID chip
2	GND	Ground
3	NC	Not connected
4	NC	Not connected
5	NC	Not connected
6	GPIO/WAKE	Always-on external wake up
7	NC	Not connected
8	PWM-/RTC_CLKP	32.768 kHz RTC clock (optional feature)
9	GPIO_MS1	Mixed signal/Analog interface pin
10	GPIO/CHIP_EN	Master enable for chip
11	TWI_SDA	I^{2}C SDA

Pin on EXT1	Function	Description
..........continued		
12	TWI_SCL	I^{2}C SCL
13	UART_TX	UART TX
14	UART_RX	UART RX
15	SPI_SS_A	SPI SS
16	SPI_MOSI	SPI MOSI
17	SPI_MISO	SPI MISO
18	SPI_SCK	SPI Clock
19	GND	Ground
20	VCC	Target supply voltage

Related Links

4.2.2   Current Measurement Header

The current measurement header (J101) can be used to measure the current consumed by the ATBTLC1000 module using an ammeter. The two 0Ω resistors R112 and R113 can be removed to measure the current consumed by individual power rails, VDDIO and VBAT respectively, by soldering in wires for an ammeter.

4.2.3   Debug Connectors

The Debug I^{2}C (J104) and Extension port (J105) are not mounted on the board.

Table 4-3. Debug I^{2}C Connector

Pin on I^{2}C connector	Pin on ATBTLC1000 Module	Function
1	8	I^{2}C SCL
2	1	Ground
3	7	I^{2}C SDA
4	-	Not connected

Table 4-4. Extension Port

Pin on Extension Port	Pin on ATBTLC1000 Module	Function
1	4	UART RX/ SPI SCK
2	5	UART TX/SPI MOSI
3	21	DBG_UART_RX/SPI SSN
4	23	DBG_UART_TX/SPI MISO
5	1	Ground
6	1	Ground

Note: BluSDK does not support debug information through the debug I^{2}C and debug UART. The debug I^{2}C and the debug UART headers are placeholders for future use.

4.3 Peripherals

4.3.1 External Flash

The ATBTLC1000 Xplained Pro provides a footprint for an external Flash (U103). The design is tested with an ISSI *IS25LD020-JNLE* 2 Mb Flash. By default, the Flash is connected to the SPI master/slave interface of the ATBTLC1000 module, which is also connected to the Xplained Pro extension header.

The SPI Flash master interface of the ATBTLC1000 can also be used to control the external Flash by reconfiguring the jumper straps (J109-J112) as following.

External Flash Configuration 1:	ATBTLC1000 SPI0 peripheral connected (default)
	Short straps J109, J110, J111, and J112
	Open straps J113, J114, J115, and J116
External Flash Configuration 2:	ATBTLC1000 SPI Flash peripheral connected
	Short straps J113, J114, J115, and J116
	Open straps J109, J110, J111, and J112

Refer to Design Documentation and the ATBTLC1000-MR110CA datasheet for further reference.

Table 4-5. External Flash Pin Configuration

External Flash		Configuration 1, ATBTLC1000 Signals			Configuration 2, ATBTLC1000 Signals		
Pin	**Name**	**Pin**	**Name**	**Function**	**Pin**	**Name**	**Function**
1	CE#	12	LP_GPIO_12	SPI0_SSN	21	LP_GPIO_16	SPI Flash SSN
2	SO	14	LP_GPIO_13	SPI0_MISO	23	LP_GPIO_18	SPI Flash RxD
5	SIO	11	LP_GPIO_11	SPI0_MOSI	5	LP_GPIO_3	SPI Flash TxD
6	SCK	10	LP_GPIO_10	SPI0_SCK	4	LP_GPIO_2	SPI Flash SCK

Note: Connecting the ATBTLC1000-ZR module to the external Flash is not supported.

4.3.2 Temperature Sensor

The ATBTLC1000 Xplained Pro extension board features an AT30TSE758 temperature sensor with an 8 kb serial EEPROM inside. The sensor includes programmable high and low temperature alarms, user-selectable temperature resolution up to 12 bits, and an I^{2}C/SMBus compatible serial interface.

Table 4-6. Temperature Sensor Connections

Pin on EXT Connector	Pin Name	AT30TSE758 Temperature Sensor Pin	Comment
11	SDA	1	Data line of serial interface
12	SCL	2	Clock line of serial interface

..........continued

Pin on EXT Connector	Pin Name	AT30TSE758 Temperature Sensor Pin	Comment
-	ALERT	3	Temperature alarm signaling pin
2, 19	GND	4	
-	A2	5	Address line for serial interface, shorted to GND
-	A1	6	Address line for serial interface, shorted to GND
-	A0	7	Address line for serial interface, shorted to GND
20	VCC	8	

The temperature sensor has two I^2C addresses, one for the temperature sensor and one for the EEPROM. The addresses are "0b1001 A2 A1 A0" for the temperature sensor and "0b1010 A2 A1 A0" for the EEPROM. The address selection lines (A2, A1, and A0) of the temperature sensor are shorted to GND, which makes the default addresses 0b1001000 and 0b1010000. When communicating with the EEPROM, parts of the TWI address are used as a page address. For more details, see the device (AT30TSE752A/754A/758A) datasheet.

4.3.3   Power LED

The power LED (D101) is connected to the power rail from the extension header. The current measurement jumper must be closed to enable power to the ATBTLC1000 module.

4.3.4   Reset Switch

The ATBTLC1000 Xplained Pro contains footprint of switch (SW100) along with resistor R111 and capacitor C107 that can be mounted to reset the ATBTLC1000. The switch is connected to the CHIP_EN pin of the ATBTLC1000, which is pulled up by default.

> **Attention:** When this switch is used to reset the device, the host MCU loses the status of the ATBTLC1000 device. It is recommended not to reset the device using this switch when it is controlled by the host MCU.

4.3.5   32kHz RTC Oscillator

The ATBTLC1000 has a 32.768kHz RTC oscillator that is used for BLE activities involving connection events. There is also a provision to reconfigure the ATBTLC1000 Xplained Pro board to bypass the external crystal oscillator with an external signal capable of driving 2pF on the RTC_CLK_P pin of the ATBTLC1000-MR110CA.

Table 4-7. Configuring the RTC Oscillator

Configuration option	Board configuration
32.768kHz RTC oscillator	Open R105, Close J107
External signal on RTC_CLK_P	Close R105, Open J107, J106

5.   Hardware Revision History and Known Issues

5.1   Identifying Product ID and Revision

There are two ways to find the revision and product identifier of the Xplained Pro boards: either through Atmel Studio or by looking at the sticker on the bottom side of the PCB.

When an Xplained Pro MCU board is connected to a computer with Atmel Studio running, an information window with the serial number is shown. The first six digits of the serial number contain the product identifier and revision. Information about connected Xplained Pro extension boards is also shown in the window.

The same information can be found on the sticker on the bottom side of the PCB. Most kits have stickers that have the identifier and revision printed in plain text as A09-nnnn/rr, where nnnn is the identifier and rr is the revision. Boards with limited space have a sticker with only a data matrix code, which contains a serial number string.

The serial number string has the following format:

"nnnnrrssssssssss" n = product identifier r = revision s = serial number

The product identifier for the ATBTLC1000 Xplained Pro is A09-2528.

5.2   Revision 2

Revision 2 is the initially released revision.

The ATBTLC1000 Xplained Pro revision 2 is partially incompatible with SAM L21 Xplained Pro extension header EXT1; pin 10 (Chip Enable) is shared with the user button SW0 on the SAM L21 Xplained Pro. A workaround for the incompatibility is to modify the kit by cutting a track in the PCB from pin 10, and soldering a wire from a test point to pin 4 of the Xplained Pro extension header as shown in the following image.

Figure 5-1. Chip Enable Workaround
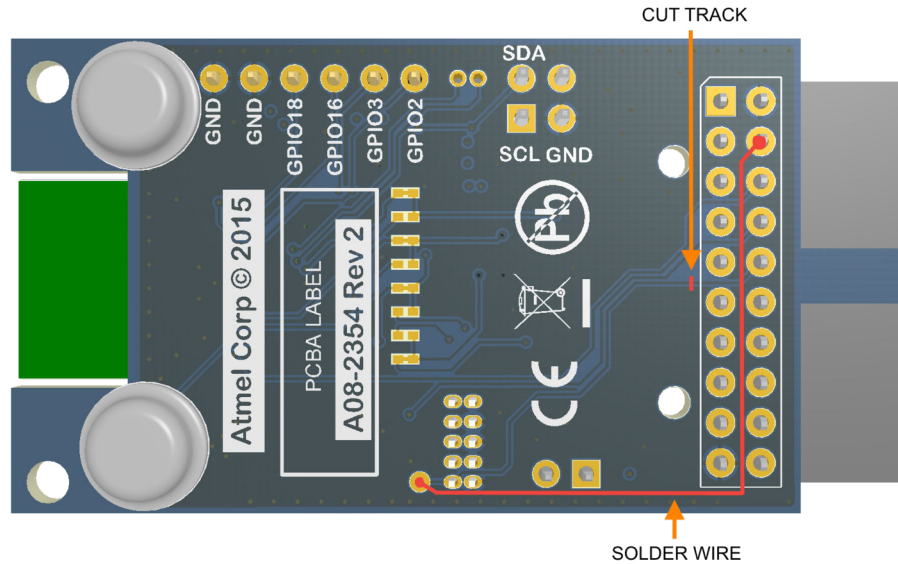
When the modification is done, the pinout table in Table 4-2 is changed according to the following table.

Table 5-1. ATBTLC1000 Xplained Pro Extension Header EXT1 Modification

Pin on EXT1	Function	Description
4	GPIO/CHIP_EN	Master Enable for chip
10	NC	Not Connected

Some ATBTLC1000 Xplained Pro kits are already modified according to the instructions above. These kits are marked with a round, green sticker in the upper right corner as shown in the following image.

Figure 5-2. Modified ATBTLC1000 Xplained Pro Kits
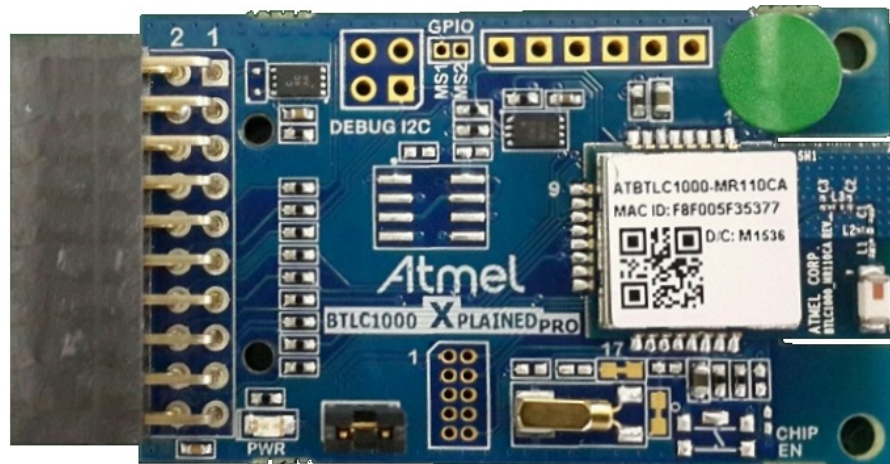
6. ATBTLC1000XPRO-ADP Adapter Board

6.1 Kit Overview

The ATBTLC1000XPRO-ADP is an adapter board designed for the ATBTLC1000 Xplained Pro with the ATBTLC1000-MR110CA Bluetooth module. It is designed to allow direct connection of the ATBTLC1000 Xplained Pro with different Xplained Pro MCU boards for providing UART hardware flow control functionality.
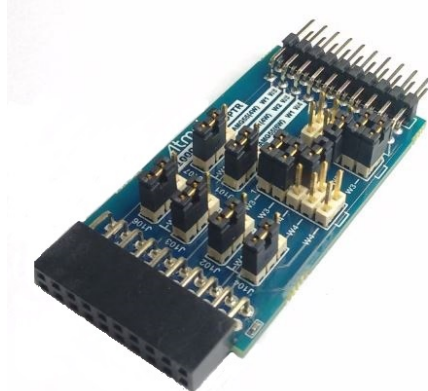
6.2 Need for the Kit

Due to the non-standard mapping of the UART flow control lines on the extension headers, the ATBTLC1000 Xplained Pro is incompatible for direct connection with some Xplained Pro platforms. Loose wire connections are required between the Xplained Pro boards and the ATBTLC1000 Xplained Pro extension board to support the UART flow control functionality.

The adapter board has been designed to avoid these loose wire connections. It has jumper configurations to support this functionality across different Xplained Pro MCU boards. The Xplained Pro boards and the corresponding UART flow control mode supported by the adapter board is shown in the table below.

Table 6-1. Xplained Pro Boards Support

XPLAINED PRO BOARD	UART FLOW CONTROL MODE
SAM L21 Xplained Pro	4-Wire Mode
SAM D21 Xplained Pro	4-Wire Mode
SAM 4S Xplained Pro	4-Wire Mode
SAM G55 Xplained Pro	4-Wire and 6-Wire Mode

6.3 Hardware

The ATBTLC1000XPRO-ADP adapter board has the following headers:

- Female extension header (J100) - 1
- Male extension header (J105) - 1
- 1x3 pin headers (J101, J102, J103, J104, J106, J107) - 6

- 2x5 pin headers (J108, J109) - 2

The adapter board can be connected to several Xplained Pro MCU boards using a female extension header. The male extension header is used to connect it to the ATBTLC1000 Xplained Pro.

The jumpers on the pin headers have to be placed based on the Xplained Pro board used and the UART Flow Control mode of the ATBTLC1000 Xplained Pro (6-Wire mode or 4-Wire mode), as shown in the following table.

Table 6-2. Jumper Placement on Headers

JUMPERS	SAML21:4-Wire	SAMD21:4-Wire	SAM4S:4-Wire	SAMG55:4-Wire	SAMG55:6-Wire
J101	J2-3	J2-3	J1-2	J1-2	J1-2
J102	J2-3	J2-3	J1-2	J1-2	J1-2
J103	J2-3	J2-3	J1-2	J1-2	J1-2
J104	J2-3	J2-3	J1-2	J1-2	J1-2
J106	J2-3	J2-3	J1-2	J1-2	J1-2
J107	J2-3	J2-3	J1-2	J1-2	J1-2
J108	J1-2,J3-4	J1-2,J3-4	J1-2,J3-4	J1-2,J3-4	J5-6,J7-8,J9-10
J109	J1-2,J3-4	J1-2,J3-4	J1-2,J3-4	J1-2,J3-4	J5-6,J7-8,J9-10

Note: Ensure that jumpers are not placed in adapter board locations other than those specified in the table above.

7.   Evaluation Kit Interface Details (Without Adapter Board)

This section describes the hardware interface details required between the SAMG55/D21/L21/L22 Xplained Pro boards and the ATBTLC1000 Xplained Pro board for both the UART 4-wire and 6-wire configurations. The required connections can be made with loose wires as shown in the following figure.

Figure 7-1. Hardware Interface Details (without Adapter Board)
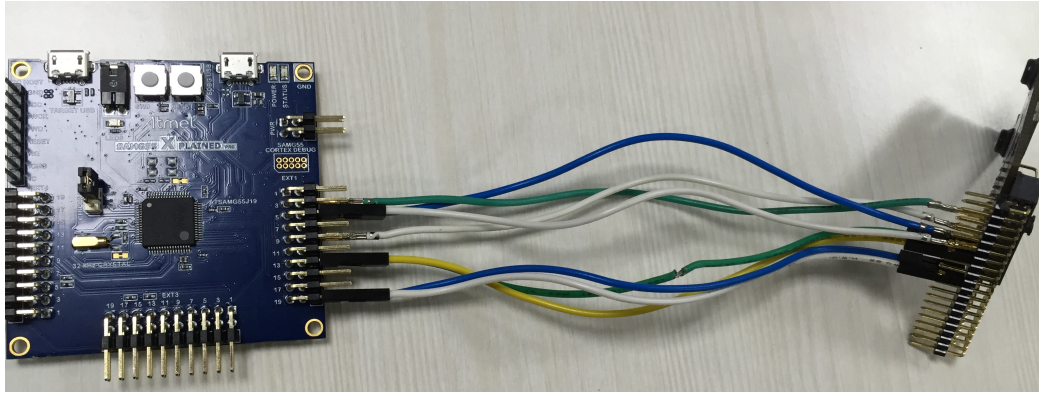
The following table specifies the hardware interface detail between the SAMG55/D21/L21/L22 Xplained Pro board with the ATBTLC1000 Xplained Pro board for UART 4-wire configuration. These connections must be made with loose wires, if ATBTLC1000XPRO-ADP board is not available.

Table 7-1. Hardware Flow Control 4-Wire Mode Interface Details – ATBTLC1000-MR110CA Module

Pin Description	SAM G55/SAM 4S XPro (EXT1)	SAM D21/L21/L22 XPro (EXT1)	ATBTLC1000 XPro
ATBTLC1000 Wake up	(EXT1-PIN4)	(EXT1-PIN6)	PIN6 – ATBTLC1000 Wake up
ATBTLC1000 Chip Enable	(EXT1-PIN10)	(EXT1-PIN4)	PIN4 – ATBTLC1000 Chip Enable[1]
MCU UART Rx	(EXT1-PIN13)	(EXT1-PIN15)	PIN13 – ATBTLC1000 Tx
MCU UART Tx	(EXT1-PIN14)	(EXT1-PIN17)	PIN14 – ATBTLC1000 Rx
MCU UART RTS	(EXT1-PIN5)	(EXT1-PIN16)	PIN11 – ATBTLC1000 CTS
MCU UART CTS	(EXT1-PIN6)	(EXT1-PIN18)	PIN12 – ATBTLC1000 RTS
Host Wake up	(EXT1-PIN9)	(EXT1-PIN9)	PIN9 – GPIO_MS1
GND	(EXT1-PIN19)	(EXT1-PIN19)	PIN19 – GND
VCC	(EXT1-PIN20)	(EXT1-PIN20)	PIN20 – VCC

The following table specifies the hardware interface detail between the SAMG55/D21/L21/L22 Xplained Pro board with the ATBTLC1000 Xplained Pro board for the UART 6-wire configuration. For the SAMD21/L21/L22 Xplained Pro boards, the BTLC1000 Xplained Pro board can be directly plugged into the EXT header. For the SAMG55 Xplained Pro board, the connections must be made as follows with loose wires, if the ATBTLC1000XPRO-ADP board is not available.

Table 7-2. Hardware Flow Control 6-Wire Mode Interface Details – ATBTLC1000-MR110CA Module

Pin Description	SAM G55 XPro (EXT1)	SAM D21/L21/L22 XPro (EXT1)	ATBTLC1000 XPro
ATBTLC1000 Wake up	(EXT1-PIN4)	(EXT1-PIN6)	PIN6 – ATBTLC1000 Wake up
ATBTLC1000 Chip Enable	(EXT1-PIN10)	(EXT1-PIN4)	PIN4 – ATBTLC1000 Chip Enable[1]
MCU Primary UART Rx	(EXT1-PIN17)	(EXT1-PIN13)	PIN13 – ATBTLC1000 Tx
MCU Primary UART Tx	(EXT1-PIN16)	(EXT1-PIN14)	PIN14 – ATBTLC1000 Rx
MCU Secondary UART Rx	(EXT1-PIN13)	(EXT1-PIN15)	PIN15 – ATBTLC1000 Tx
MCU Secondary UART Tx	(EXT1-PIN14)	(EXT1-PIN17)	PIN17 – ATBTLC1000 Rx
MCU Secondary UART RTS	(EXT1-PIN5)	(EXT1-PIN16)	PIN16 – ATBTLC1000 CTS
MCU Secondary UART CTS	(EXT1-PIN6)	(EXT1-PIN18)	PIN18 – ATBTLC1000 RTS
Host Wake up	(EXT1-PIN9)	(EXT1-PIN9)	PIN9 – GPIO_MS1
GND	(EXT1-PIN19)	(EXT1-PIN19)	PIN19 – GND
VCC	(EXT1-PIN20)	(EXT1-PIN20)	PIN20 – VCC

Note:

1. Chip Enable is available on Pin 4 of revised ATBTLC1000 XPRO boards (see 5.2 Revision 2).
2. Primary UART is used only for enabling the hardware flow control on the secondary UART. After enabling the hardware flow control on the secondary UART, all the communications between the host MCU and the ATBTLC1000 happen through the secondary UART.

Refer to the following documents for equivalent pin names of the respective platforms:

- SAM L22 Xplained Pro User Guide
- SAM L21 Xplained Pro User Guide
- SAM D21 Xplained Pro User Guide
- SAM G55 Xplained Pro User Guide
- SAM 4S Xplained Pro User Guide

8.   Document Revision History

Revision	Date	Section	Description
A	02/2019	Document	• Change of document style. • New Microchip document number.
		Evaluation Kit Interface Details (Without Adapter Board)	Added new section

Doc. rev.	Date	Comment
42538C	05/2016	Added ATBTLC1000XPRO-ADP Adapter Board chapter.
42538B	11/2015	Added revision 2 ERRATA. Added temperature sensor, and electrical characteristics chapter. Updated the external flash chapter.
42538A	09/2015	Initial document release.

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