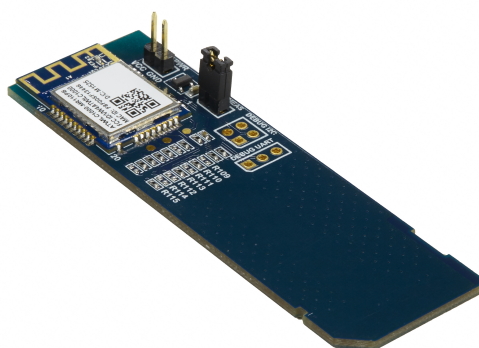


## Preface

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Atmel® ATWILC1000-SD is a SD card interface board designed to demonstrate ATWILC1000-MR110PB, a low-power consumption 802.11 b/g/n IoT (Internet of Things) module, which is specifically optimized for low-power IoT applications.



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# 1. Introduction

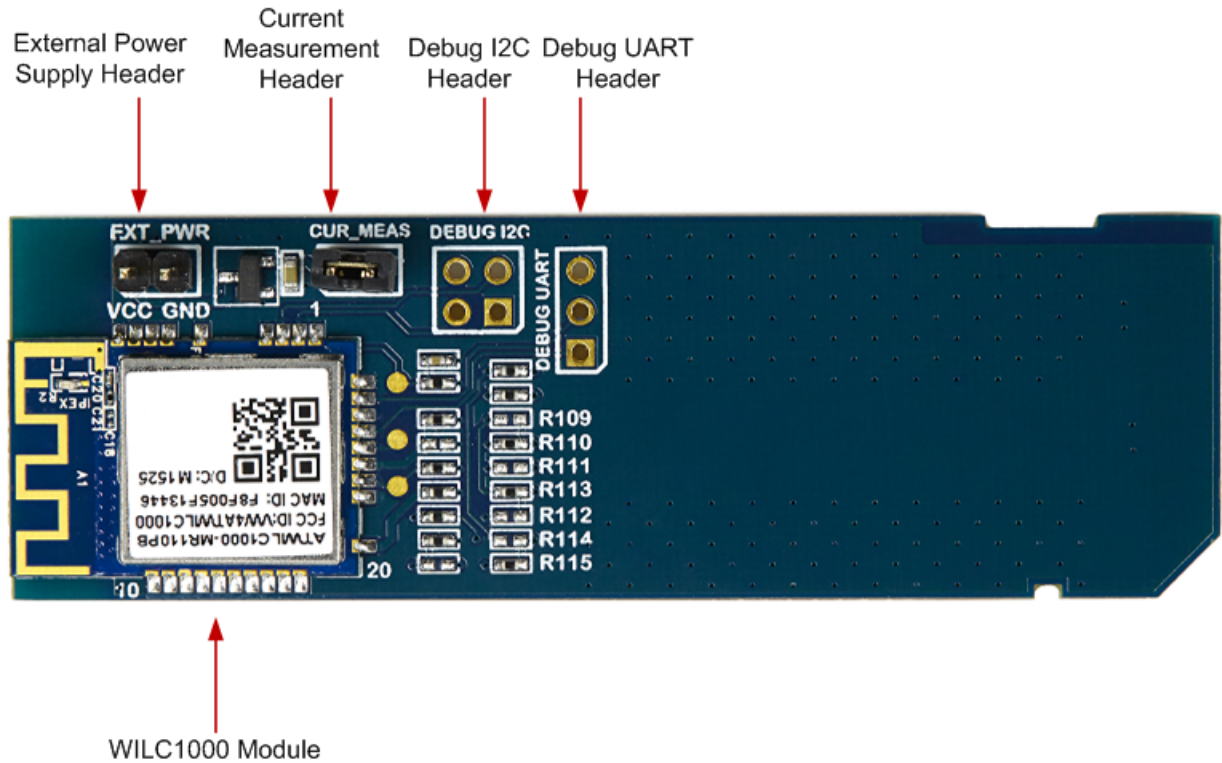
## 1.1. Features

- ATWILC1000-MR110PB low-power consumption 802.11 b/g/n IoT module
  - IEEE® 802.11 b/g/n 20MHz (1x1) solution
  - Cortus APS3 32-bit processor
  - PCB Antenna
- Debug I<sup>2</sup>C header
- Debug UART header
- External Power Supply header
- Current Measurement header

## 1.2. Kit Overview

The Atmel ATWILC1000-SD is an extension board containing the Atmel ultra-low power IoT module "ATWILC1000-MR110PB". The kit can be connected to any MCU with SDIO via SD card connector.

Figure 1-1 ATWILC1000-SD



## 2. Getting Started

ATWILC1000-SD can be used with any MCU board with SD connector. Refer to [ATWILC1000 Wiki](#) for the list of supported boards and getting started user guide.

### 3. Design Documentation and Relevant Links

The following list contains links to the most relevant documents and software for ATWILC1000-SD:

- [Xplained Pro products](#) - Atmel Xplained Pro is a series of small-sized and easy-to-use evaluation kits for Atmel microcontrollers and other Atmel products. It consists of a series of low-cost MCU boards for evaluation and demonstration of features and capabilities of different MCU families.
- [Atmel Studio](#) - Free Atmel IDE for development of C/C++ and assembler code for Atmel microcontrollers.
- [EDBG User Guide](#) - User guide containing more information about the on-board Embedded Debugger.
- [Atmel Data Visualizer](#) - Atmel Data Visualizer is a program used for processing and visualizing data. Data Visualizer can receive data from various sources such as the Embedded Debugger Data Gateway Interface found on Xplained Pro boards and COM ports.
- [ATWILC1000-MR110PB Complete](#)
- [ATWILC1000B Complete](#)
- [ATWILC1000 Getting Started with SAMA5D3 Xplained Board](#)
- [ATWILC1000 Hardware Design Guidelines](#)
- [ATWILC1000 Wireless Wiki](#)
- [Atmel | SMART SAMA5 ARM® Cortex® Based MPUs](#)

## 4. Hardware Users Guide

### 4.1. Headers and Connectors

#### 4.1.1. ATWILC1000-SD SD Connector

ATWILC1000-SD has a PCB implemented SD card interface making it possible to connect the board to an MCU board with SD connector. The pin-out definition for the SD connector is given in [ATWILC1000-SD Card Connector](#).

**Table 4-1 ATWILC1000-SD Card Connector**

Pin on EXT1	Function	Description
1	SD DATA 3	SDIO Data 3
2	SD CMD	SDIO Command
3	GND	Ground
4	VDD	3.3V Power Supply
5	SD CLK	SDIO Clock
6	GND	Ground
7	SD DATA 0	SDIO Data 0
8	SD DATA 1	SDIO Data 1
9	SD DATA 2	SDIO Data 2

#### 4.1.2. Power Measurement Header

Current measurement header "J102" can be used to measure the current consumed by the ATWILC1000 module using an ammeter. There are two 0Ω resistors, "R104" and "R105", that can be used to measure the current consumed by individual power rails, "VBAT" and "VDDIO" respectively.

#### 4.1.3. Debug Connectors

"Debug I<sup>2</sup>C" (J105) and Debug UART (J104) are not mounted on the board.

**Table 4-2 Debug I<sup>2</sup>C Connector**

Pin on I <sup>2</sup> C connector	Pin on ATWILC1000 module	Function
1	2	I <sup>2</sup> C SCL
2	1	Ground
3	3	I <sup>2</sup> C SDA
4	-	Not Connected

**Table 4-3 Debug UART Connector**

Pin on Extension Port	Pin on ATWILC1000 module	Function
1	25	UART RX
2	27	UART TX
3	1	Ground

## **5. Hardware Revision History and Known Issues**

### **5.1. Identifying Product ID and Revision**

The revision and product identifier of ATWILC1000-SD can be found by looking at the sticker on the bottom side of the PCB. The identifier and revision are printed in plain text as A09-nnnn\rr, where nnnn is the identifier and rr is the revision. Also the label contains a 10 digit serial number unique to each board.

The product identifier for ATWILC1000-SD is A09-2610.

### **5.2. Revision**

Revision 4 is the initially released revision, there are no known issues.



## 6. Evaluation Board/kit Important Notice

This evaluation board/kit is intended for use for **FURTHER ENGINEERING, DEVELOPMENT, DEMONSTRATION, OR EVALUATION PURPOSES ONLY**. It is not a finished product and may not (yet) comply with some or any technical or legal requirements that are applicable to finished products, including, without limitation, directives regarding electromagnetic compatibility, recycling (WEEE), FCC, CE or UL (except as may be otherwise noted on the board/kit). Atmel supplied this board/kit "AS IS," without any warranties, with all faults, at the buyer's and further users' sole risk. The user assumes all responsibility and liability for proper and safe handling of the goods. Further, the user indemnifies Atmel from all claims arising from the handling or use of the goods. Due to the open construction of the product, it is the user's responsibility to take any and all appropriate precautions with regard to electrostatic discharge and any other technical or legal concerns.

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## 7. Document Revision History

Doc. rev.	Date	Comment
42620A	11/2015	Initial document release.



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