Atmel CryptoAuthentication Starter Kit

Atmel AT88CK109STK8
Getting Started Guide

Features

- Installing Atmel CryptoAuthentication Evaluation Studio (ACES)
- Powering the board
- Reading the device configuration information Atmel ATSHA204 device

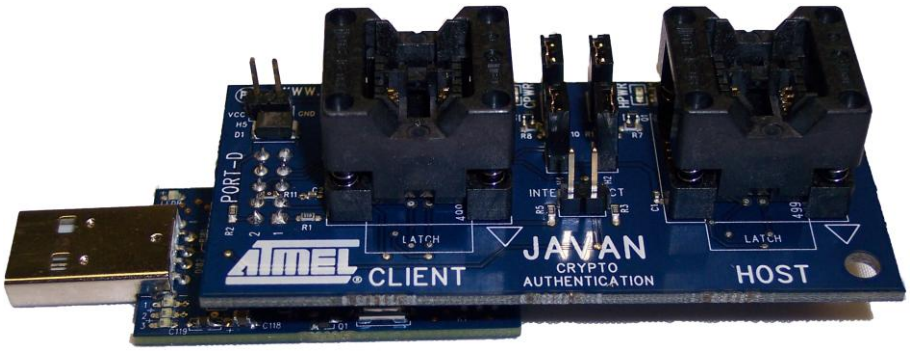
Contents

- Atmel AT88CK109BK8 daughter board
- Atmel AT88Microbase – AVR base module
- 6” USB cable
- Atmel ATSHA204 samples

Introduction

Atmel® AT88CK109STK8 is an Atmel CryptoAuthentication™ starter kit, which can be used as a reference design for an USB application requiring the Atmel CryptoAuthentication product family.

Figure 1. Atmel AT88CK109STK8 starter kit



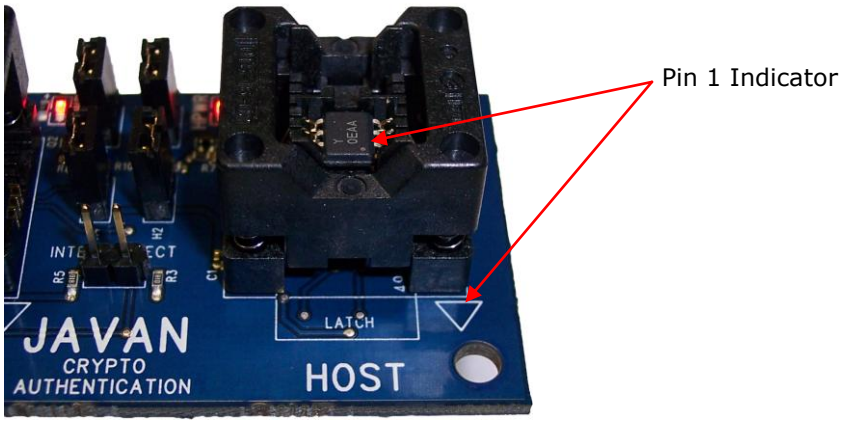
1. Install ACES (Atmel CryptoAuthentication Evaluation Studio)

Visit www.atmel.com/cryptokits to download and install the latest ACES

2. Configuring the Atmel AT88CK109BK8 and Atmel AT88Microbase boards

- Ensure the Atmel ATSHA204 device in place in the socket with the correct Pin1 orientation
- The K1 switch on the Atmel AT88CK109BK8 board should always be in the "uBase" position when mounted to the Atmel AT88Microbase
- The 8ld SOIC package supports both SWI (Single Wire Interface) and I^2C communication protocol. The following steps configure the kit for I^2C communication, since the samples in this kit are shipped with I^2C enabled.

Figure 2-1. Atmel AT88CK109BK8 CryptoAuthentication daughter board



- The K1 switch on the Atmel AT88CK109BK8 board should always be in the "uBase" position when mounted to the Atmel AT88Microbase

Table 2-1. Atmel AT88Microbase with an Atmel AT90USB1287 AVR

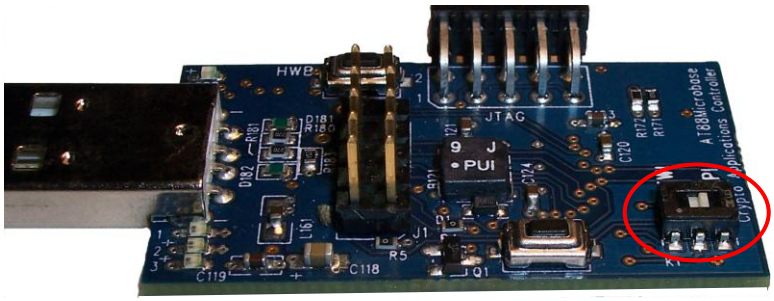


Table 2-2. Configuration table

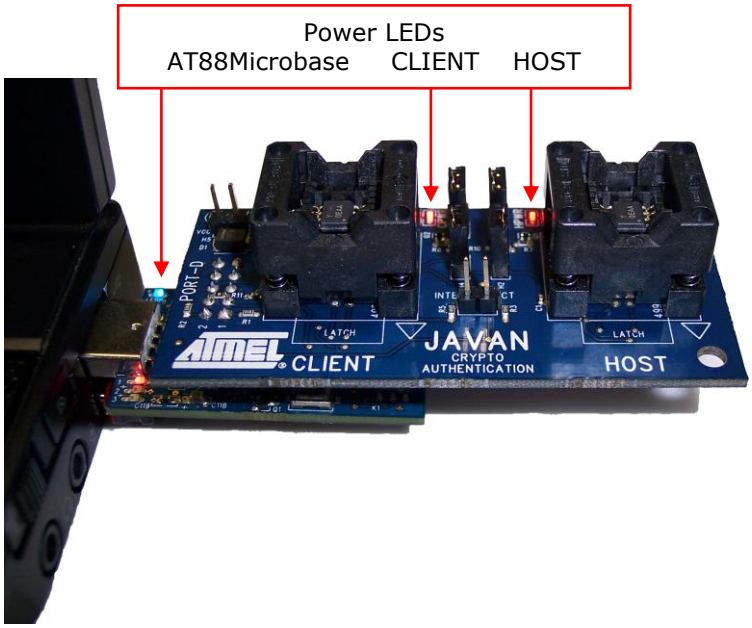
Configuration table			
Communication protocol	Atmel AT88CK101BK8 (K1 switch setting)	Atmel AT88Microbase (K1 switch setting)	Comments
I^2C	uBase	TWI (I^2C)	Kit shipped with this setup
SWI	uBase	SPI	

3. Powering up the board

The Atmel AT88CK109STK8 is a USB powered device.

- Simply insert the board into an open USB port

Figure 3-1. Atmel AT88CK109STK8 USB powered



4. Reading the device configuration zone

- Insert the Atmel AT88CK109STK8 into a USB port
- Launch **ACES CE** for the desktop shortcut icon or from Start / All Programs / Atmel Crypto Solutions / ACES / ACES CE

Figure 4-1. ACES



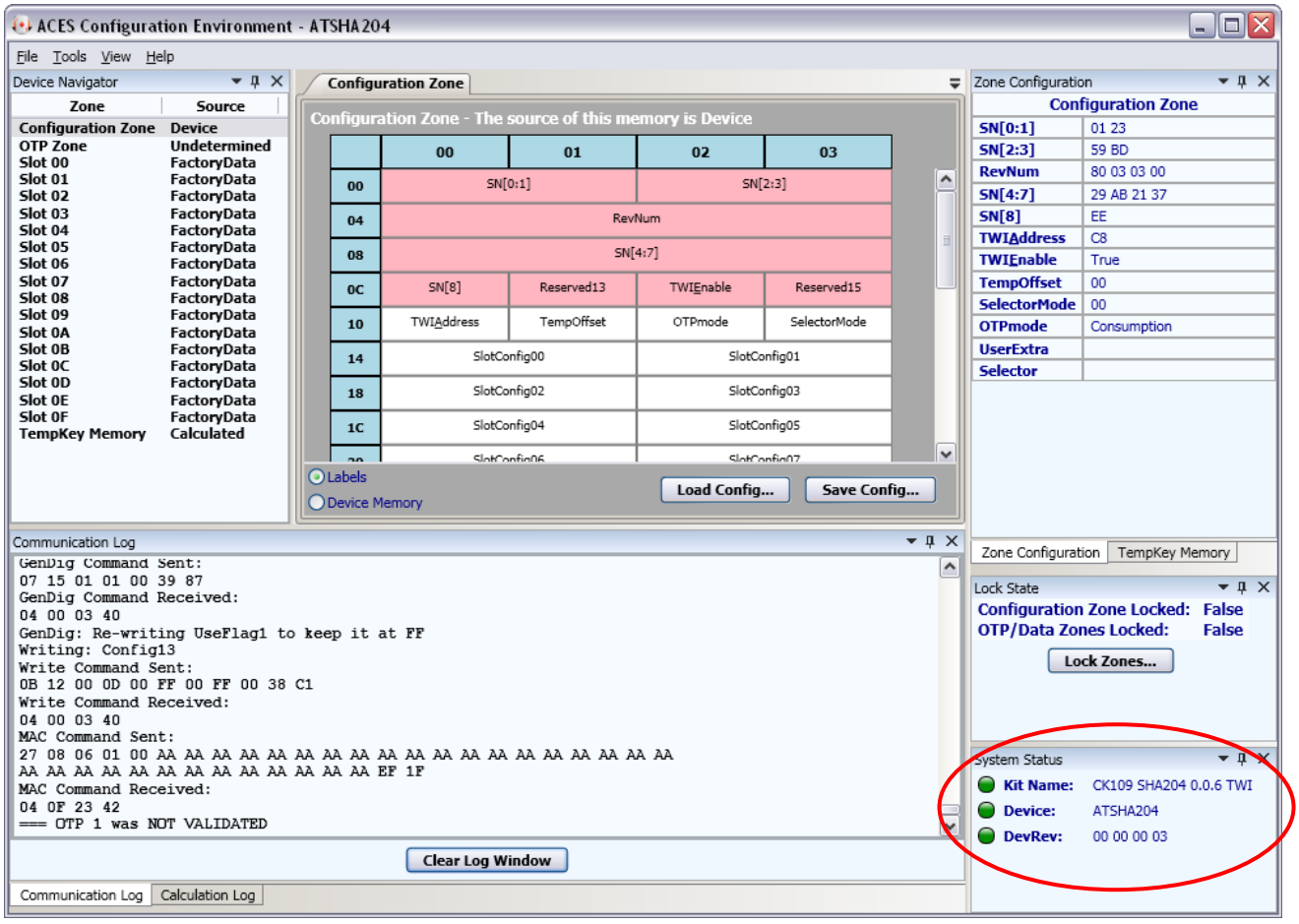
- Figure 4-2 will appear indicating the board (CK109), device (SHA204), firmware version (0.0.6), and the communication interface (TWI)

Figure 4-2. Kit detection screen



- Selecting the **Show Quick Start Guide** check box will launch the QSG alongside the configuration environment.
- Click the "Select Kit" button to launch **ACES Configuration Environment – ATSHA204** pane

Figure 4-3. ACES configuration environment – Atmel ATSHA204



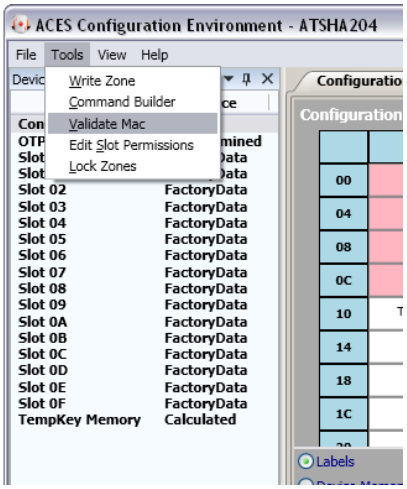
- All three **System Status** fields should be green and populated, which indicates the proper communication with the development kit and the Atmel ATSHA204 device

  Kit Name: CK101 0.0.5 SWI8
  Device: ATSHA204
  DevRev: 00 00 00 03

5. Executing the **Validate MAC** command

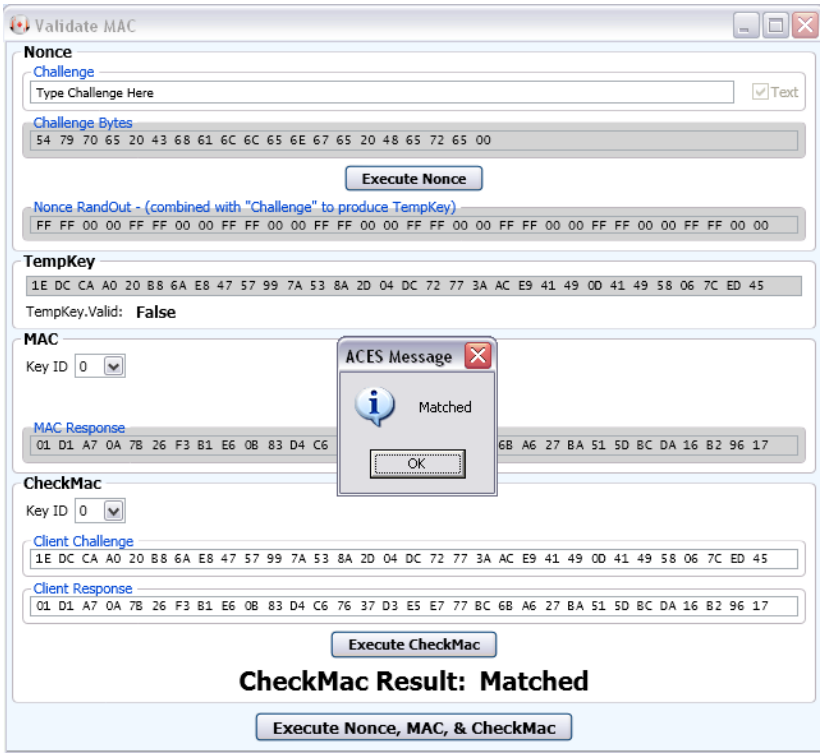
- Go to Tools \ Validate MAC to launch the Validate MAC window, see Figure 5-1

Figure 5-1. Validate MAC tools menu



- Figure 5-2 will appear
- Click the Execute Nonce button
- Click the MAC button
- Click the CheckMac button
- The CheckMac Result: should indicate Matched

Figure 5-2. Validate MAC pane



Congratulations, your Atmel AT88CK109STK8 is up and running.

See ACES online Help additional information.

For additional samples, go to: http://www.atmel.com/forms/Samples.asp?family_id=699

6. Additional kits information

Atmel CryptoAuthentication kits				
Atmel kits	Atmel device supported	Device footprint	Communication protocol	Socket(s)
AT88CK454BLACK	ATSHA204	SOT23-3	SWI	None/USB Dongle
AT88CK101STK3	ATSHA204	SOT23-3	SWI	1
AT88CK101STK8	ATSHA204	8LD SOIC	SWI/I^2C	1
AT88CK109STK3	ATSHA204	SOT23-3	SWI	2
AT88CK109STK8	ATSHA204	8LD SOIC	SWI/I^2C	2

7. Firmware Upgrade

See application note, doc8746, “Upgrading Crypto Kits Firmware.”

8. References and further information

A complete reference design including schematics, Gerber files, bill of materials (BOM), hardware user guide and development and demonstration software is conveniently downloadable from the Atmel website at www.atmel.com/cryptokits.

9. EVALUATION BOARD/KIT IMPORTANT NOTICE

This evaluation board/kit is intended for **ENGINEERING, DEVELOPMENT, DEMONSTRATION** or **EVALUATION PURPOSE 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 limitations, 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 responsibly and liability for proper and safe handling of goods. Further, the user indemnifies Atmel from claims arising from the handling or use of goods. Due to 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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