



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

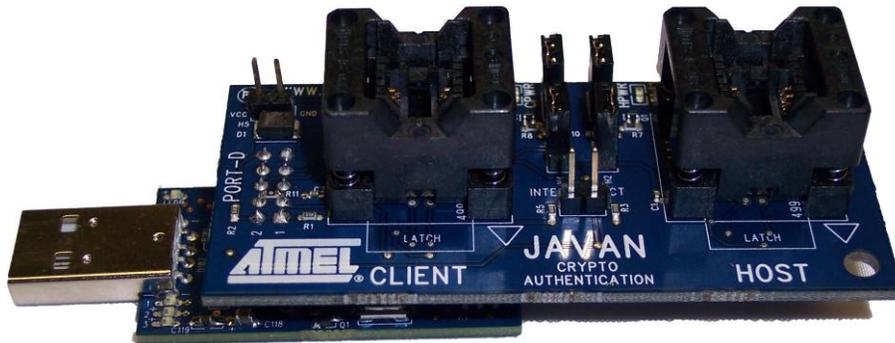
Contents

- 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





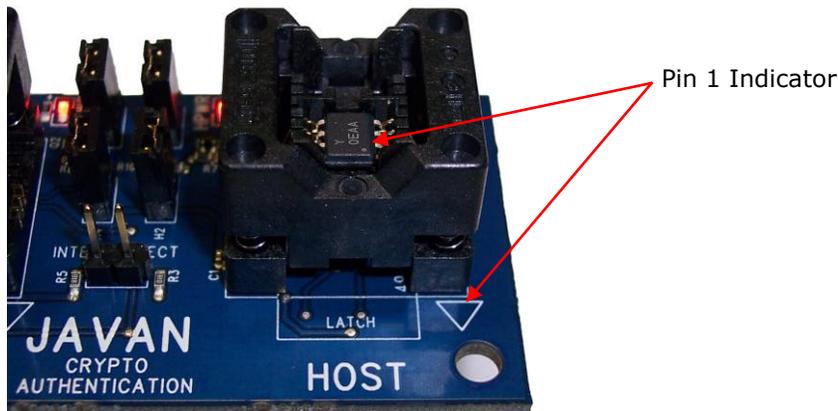
1. Install ACES (Atmel CryptoAuthentication Evaluation Studio)

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 I²C communication protocol. The following steps configure the kit for I²C communication, since the samples in this kit are shipped with I²C 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

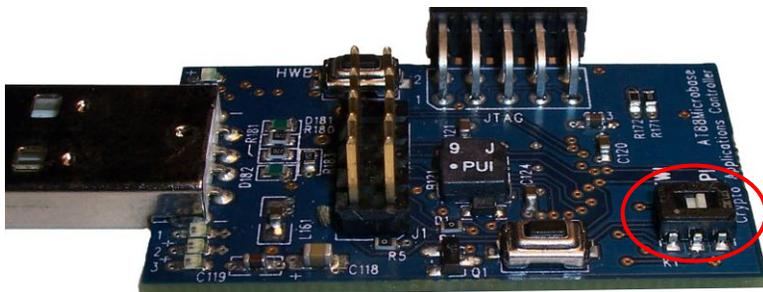


Table 2-2. Configuration table

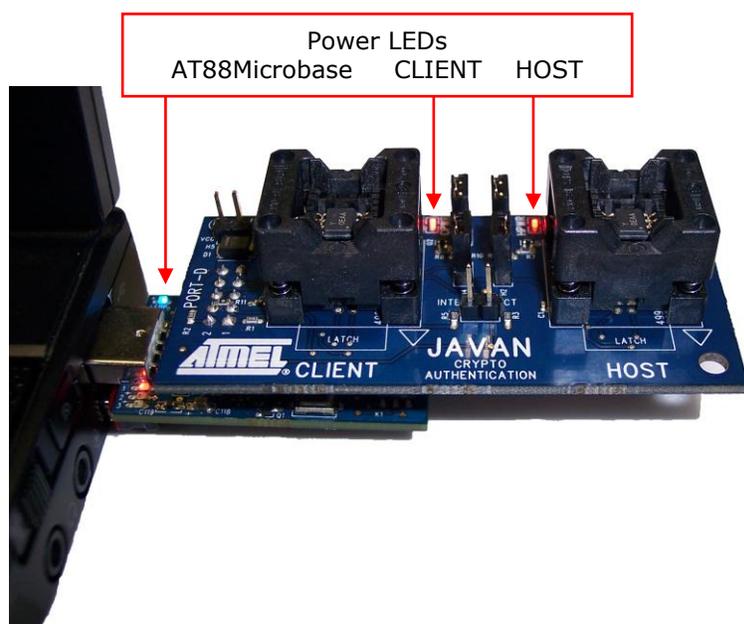
Configuration table			
Communication protocol	Atmel AT88CK101BK8 (K1 switch setting)	Atmel AT88Microbase (K1 switch setting)	Comments
I ² C	uBase	TWI (I ² C)	Kit shipped with this setup
SWI	uBase	SPI	

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

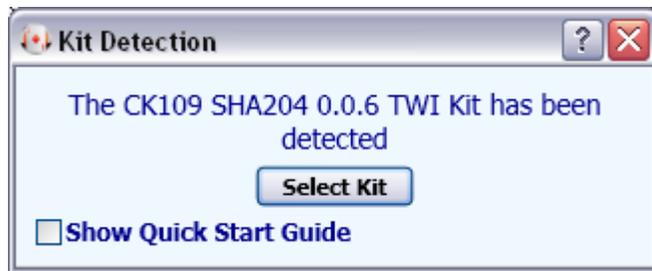
- Insert the Atmel AT88CK109STK8 into a USB port
- Launch **ACES CE** for the desktop shortcut icon or from Start / All Programs / Atmel Crypto Solutions / ACES / ACES CE

Figure 4-1. ACES



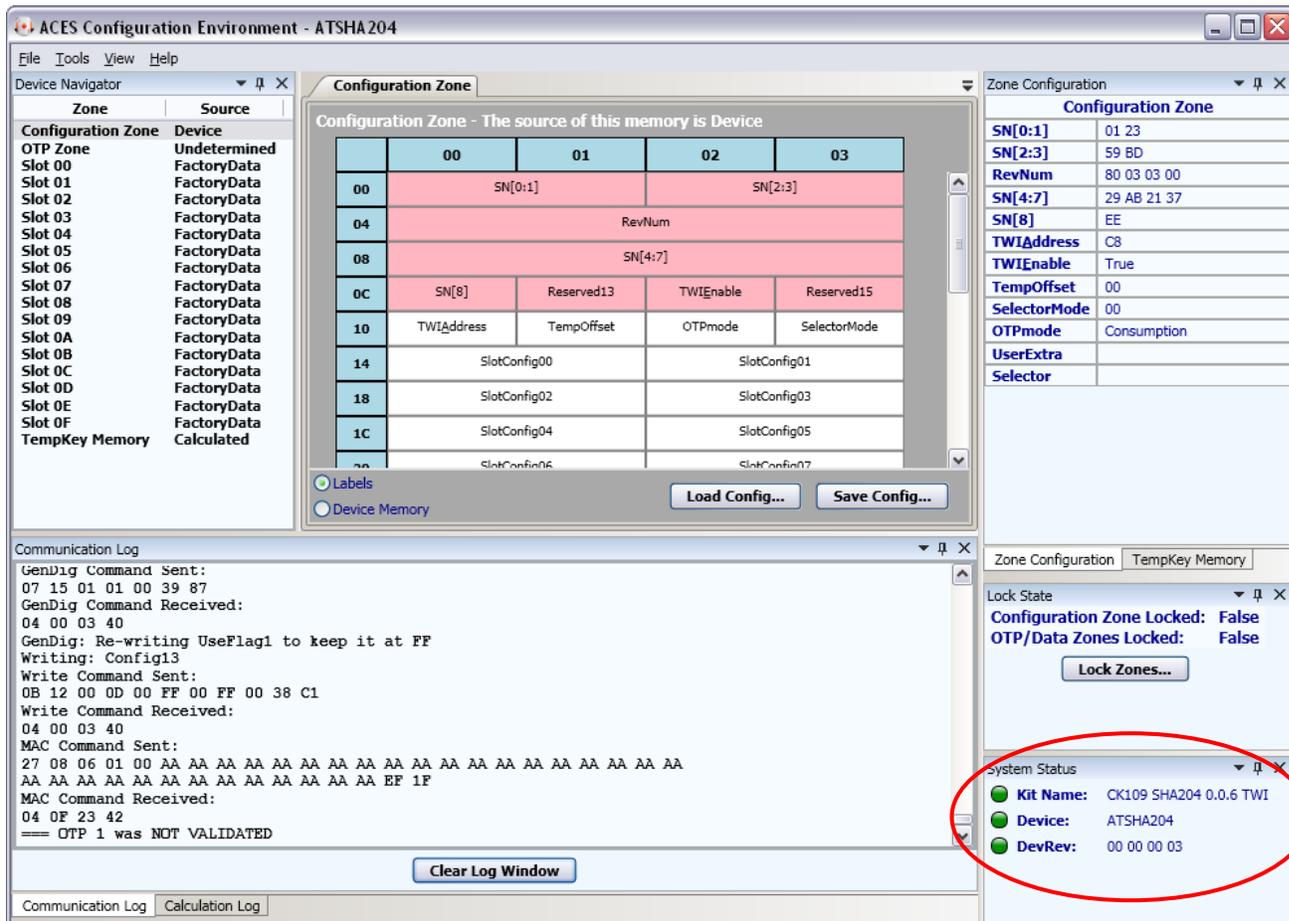
- Figure 4-2 will appear indicating the board (CK109), device (SHA204), firmware version (0.0.6), and the communication interface (TWI)

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

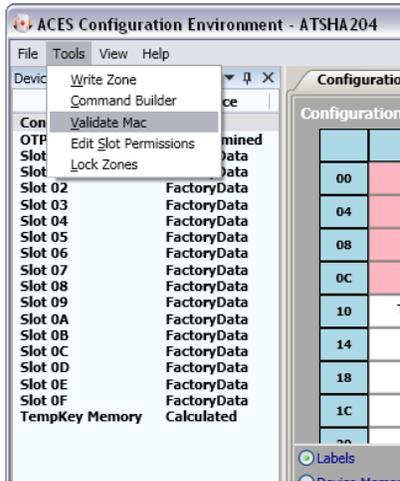
```
Kit Name:    CK101 0.0.5 SWI8
Device:     ATSHA204
DevRev:    00 00 00 03
```

5. Executing the **Validate MAC** command

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

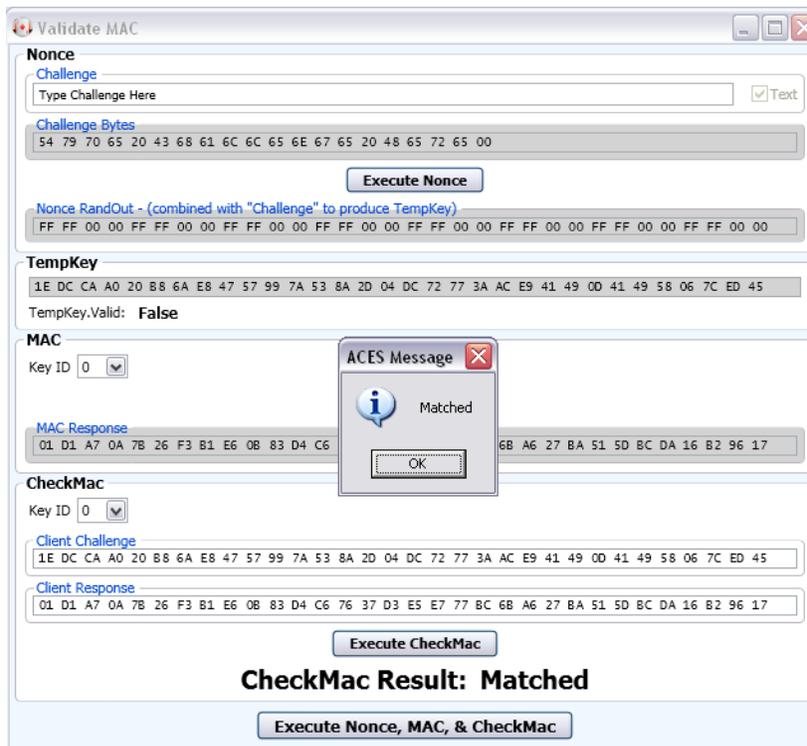


Figure 5-1. Validate MAC tools menu



- 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 ² C	1
AT88CK109STK3	ATSHA204	SOT23-3	SWI	2
AT88CK109STK8	ATSHA204	8LD SOIC	SWI/I ² C	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

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