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](http://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 is placed 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

<table>
<thead>
<tr>
<th>Communication protocol</th>
<th>Atmel AT88CK101BK8 (K1 switch setting)</th>
<th>Atmel AT88Microbase (K1 switch setting)</th>
<th>Comments</th>
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<tbody>
<tr>
<td>I²C</td>
<td>uBase</td>
<td>TWI (I²C)</td>
<td>Kit shipped with this setup</td>
</tr>
<tr>
<td>SWI</td>
<td>uBase</td>
<td>SPI</td>
<td></td>
</tr>
</tbody>
</table>

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 ExecuteNonce 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

<table>
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<td>Atmel kits</td>
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<tr>
<td>AT88CK101STK3</td>
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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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