Features

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

Contents

- Atmel AT88CK101BK8 daughter board
- Atmel AT88Microbase – AVR base module
- 6” USB cable
- Atmel ATSHA204 samples

Introduction

Atmel® AT88CK101STK8 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 AT88CK101STK8 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 AT88CK101BK8 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 AT88CK101BK8 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 AT88CK101BK8 CryptoAuthentication daughter board

   ![Pin 1 indicator](image1)

   - The K1 switch on the Atmel AT88CK101BK8 board should always be in the “uBase” position when mounted to the Atmel AT88Microbase

   Figure 2-2. Atmel AT88Microbase with an Atmel AT90USB1287 AVR

   ![K1 switch](image2)
Table 2-1. 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>
</tr>
</thead>
<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 AT88CK101STK8 is a USB powered device.
- Simply insert the board into an open USB port

Table 3-1. Atmel AT88CK101STK8 USB powered
4. **Reading the device configuration zone**
   - Insert the Atmel AT88CK101STK8 into a USB port
   - Launch **ACES CE** for the desktop shortcut icon or from Start / All Programs / Atmel Crypto Solutions / ACES / ACES CE

![ACES CE](image)

Figure 4-1. ACES

- Figure 4-2 will appear indicating the board (CK101), device (SHA204), firmware version (0.0.6), and the communication interface (TWI)

![Kit Detection](image)

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 – 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 0.0.6 TWI
- 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 AT88CK101STK8 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 6-1. Atmel CryptoAuthentication kits

<table>
<thead>
<tr>
<th>Atmel CryptoAuthentication kits</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Atmel kits</td>
<td>Device supported</td>
<td>Device footprint</td>
<td>Communication protocol</td>
<td>Socket(s)</td>
</tr>
<tr>
<td>AT88CK454BLACK</td>
<td>ATSHA204</td>
<td>SOT23-3</td>
<td>SWI</td>
<td>None/USB Dongle</td>
</tr>
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<td>ATSHA204</td>
<td>SOT23-3</td>
<td>SWI</td>
<td>1</td>
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<tr>
<td>AT88CK101STK8</td>
<td>ATSHA204</td>
<td>8LD SOIC</td>
<td>SWI/I²C</td>
<td>1</td>
</tr>
<tr>
<td>AT88CK109STK3</td>
<td>ATSHA204</td>
<td>SOT23-3</td>
<td>SWI</td>
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<tr>
<td>AT88CK109STK8</td>
<td>ATSHA204</td>
<td>8LD SOIC</td>
<td>SWI/I²C</td>
<td>2</td>
</tr>
</tbody>
</table>

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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