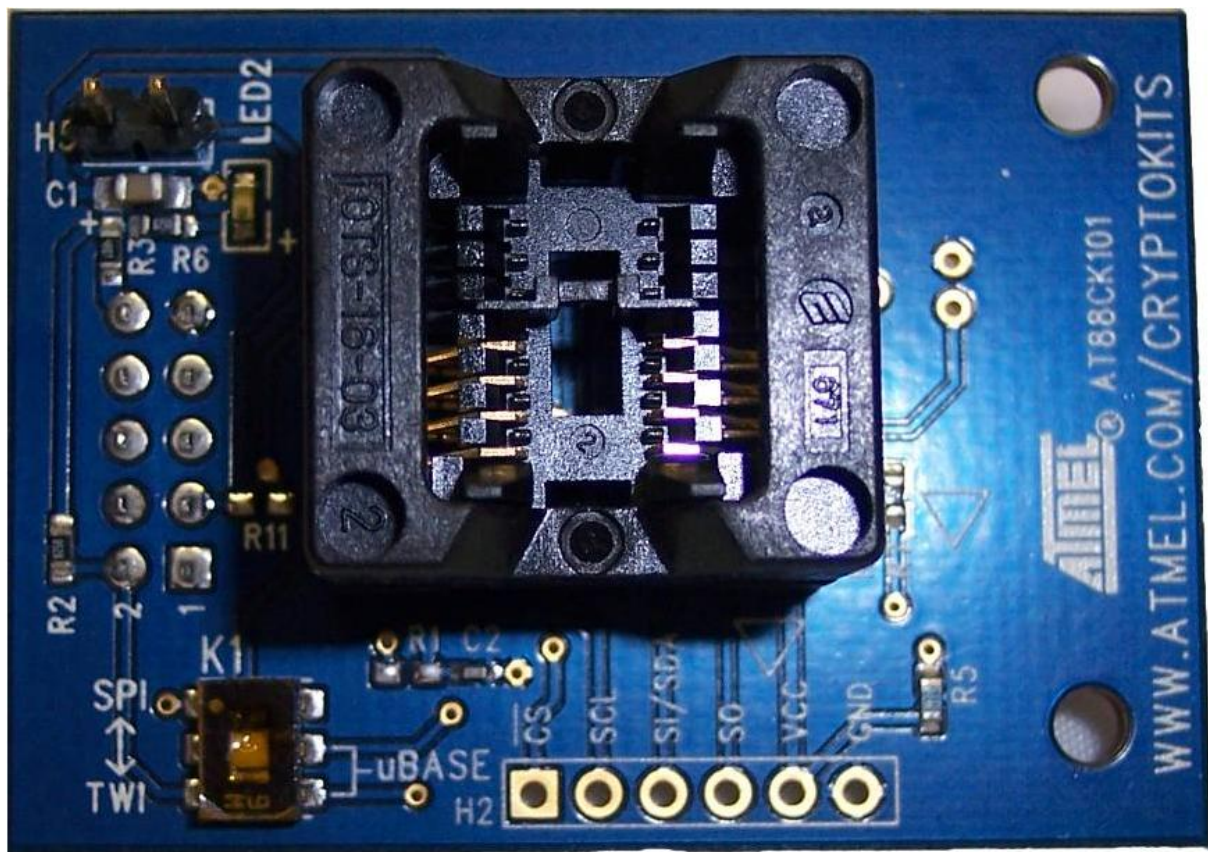


## HARDWARE USER GUIDE



Atmel CryptoAuthentication AT88CK101 Daughterboard

## Introduction

The Atmel® CryptoAuthentication™ AT88CK101 is a daughterboard that interfaces with a MCU board via a 10-pin header. The daughterboard has a single 8-pin SOIC socket which can support the Atmel ATSHA204A, ATAES132A, ATECC108A, and ATECC508A crypto element devices. The daughter board comes in two different variations with a socket that supports either an 8-lead SOIC or an 8-lead UDFN/XDFN. This kit uses a modular approach, enabling the daughterboard to connect directly to an STK series Atmel AVR® or Atmel ARM® development platform to easily add security to applications. An optional adapter kit is also available when the 10-pin header on the daughterboard is incompatible. The AT88CK101 provides a test point header for the I<sup>2</sup>C, SWI, and SPI signals. The AT88CK101 is sold with the Atmel AT88Microbase module to form the Atmel AT88CK101-XXX Starter Kit. The AT88Microbase AVR-based base board comes with a USB interface that lets designers learn and experiment on their PCs.

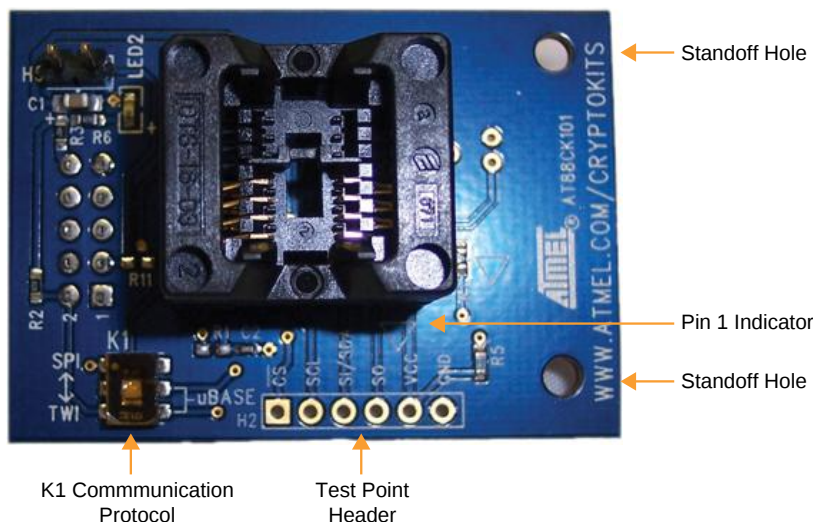
## Contents

- Atmel AT88CK101 Daughterboard

## Features

- 8-lead SOIC and UDFN/XDFN Socket
- Supports the ATSHA204A, ATAES132A, ATECC108A, and ATECC508A Devices
- Supports Communication Protocols:
  - I<sup>2</sup>C
  - SWI (Single-Wire Interface)
  - SPI
- Power LED
- Test Points Header

**Figure 1. AT88CK101 Daughterboard**



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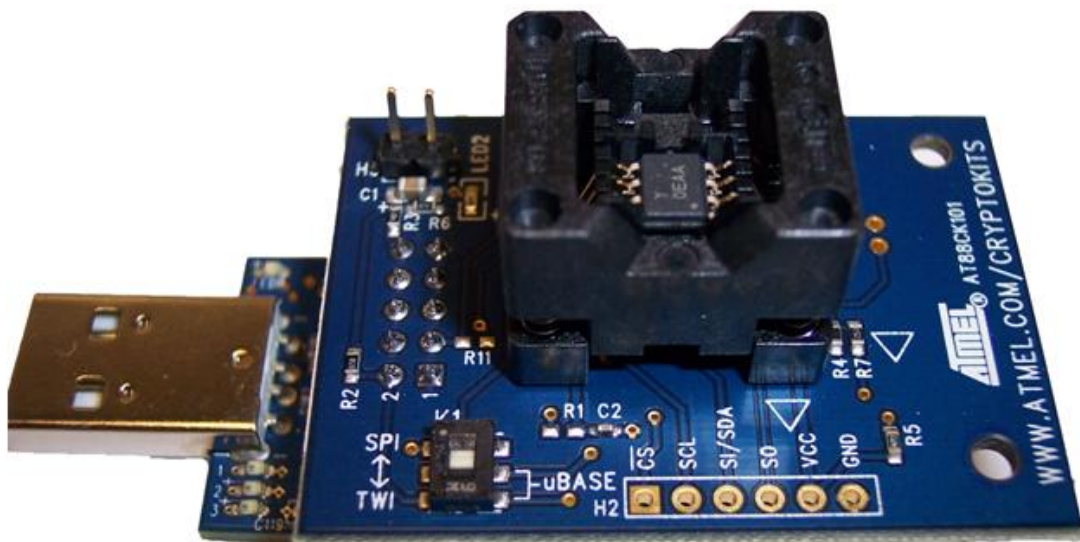
## AT88CK101 Starter Kit

The AT88CK101 is sold with the Atmel AT88Microbase module to form the AT88CK101-XXX Starter Kit. For additional information on the AT88Microbase, refer to the [Atmel AT88Microbase Hardware User Guide](#).

Figure 2. AT88CK101STK8 Starter Kit



Figure 3. AT88CK101 Daughterboard with AT88Microbase



## Development Kit Configuration

### 10-pin Interface Header

Table 1-1. 10-pin Interface Header<sup>(1)(2)</sup>

| P10             | P9  | P8 | P7 | P6 | P5 | P4   | P3   | P2       | P1      |
|-----------------|-----|----|----|----|----|------|------|----------|---------|
| V <sub>CC</sub> | GND | NC | NC | NC | NC | MISO | MOSI | SDA/SCLK | SCL /CS |

Notes: 1. I<sup>2</sup>C Pins: SCL, SDA  
2. SPI Pins: /CS, SCLK, MOSI, MISO

### 6-pin Test Header

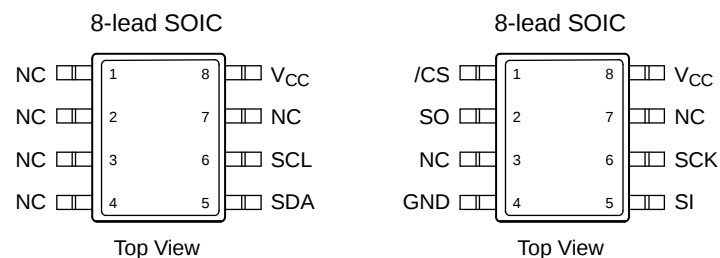
Table 1-2. 6-pin Test Header

| /CS             | SCL     | SI/SDA   | SO   | V <sub>CC</sub> | GND |
|-----------------|---------|----------|------|-----------------|-----|
| SPI Chip Select | SPI-CLK | MOSI/SDA | MISO | V <sub>CC</sub> | GND |

### Supports 8-lead SOIC and SPI Interfaces

The AT88CK101 supports 8-lead SOIC and SPI Interfaces with the following pinout configuration.

Figure 4. Pinout Configurations



Note: Drawings are not to scale.

## Configurations

The below table describes the how to configure the AT88CK101 with respect to the AT88Microbase and the STK/EVK development platforms.

**Table 1. AT88CK101STK8 Starter Kit Configuration Guide**

| AT88CK101STK8 Starter Kit Configuration Guide    |                           |                                              |                       |
|--------------------------------------------------|---------------------------|----------------------------------------------|-----------------------|
| Communication Interface                          | AT88Microbase (K1 Switch) | AT88CK101 (K1 Switch)                        | AT88CK101 Jumper (H5) |
| TWI                                              | TWI                       | uBase                                        | Open                  |
| SPI                                              | SPI                       | uBase                                        | Mounted               |
| SWI (UART)                                       | —                         | SPI                                          | Mounted               |
| SWI (GPIO)                                       | SPI                       | uBase                                        | Open                  |
| AT88CK101+ STK/EVK Platforms Configuration Guide |                           |                                              |                       |
| TWI                                              | —                         | TWI                                          | Open                  |
| SPI                                              | —                         | SPI                                          | Open                  |
| SWI (UART)                                       | —                         | SPI                                          | Mounted               |
| SWI (GPIO)                                       | —                         | TWI<br>Signal on Px1<br>(X denotes the port) | Open                  |

Note: X = Don't Care

**Figure 5. AT88CK101 Adapter Board Mounted to STK600**



Figure 6. Atmel AT88CK301ADP Adapter Kit

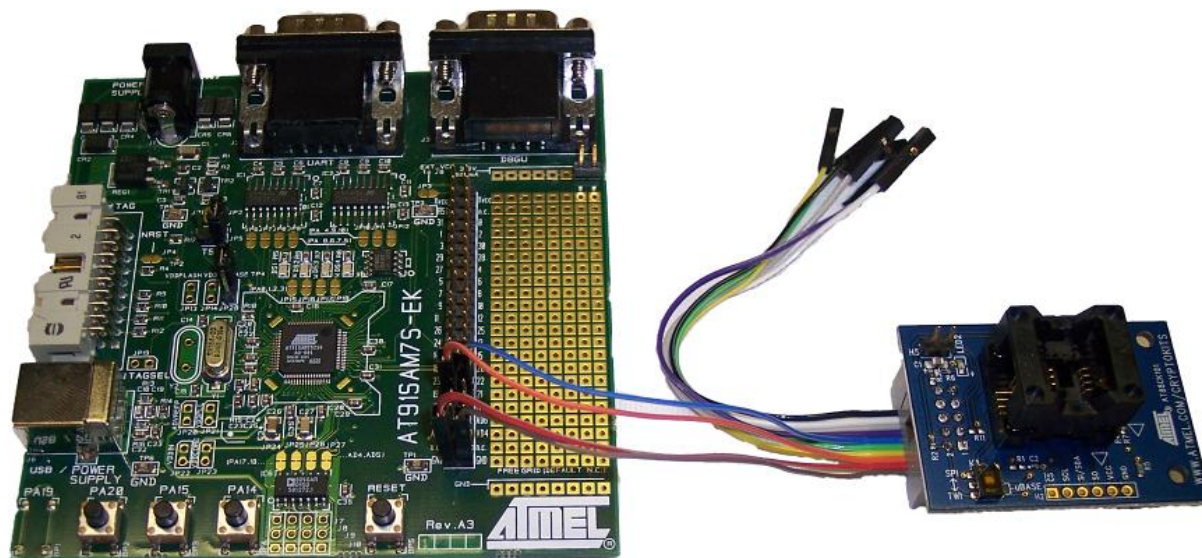


Table 2. 10-pin Squid Cable

| P10   | P9    | P8   | P7     | P6   | P5    | P4     | P3     | P2  | P1    |
|-------|-------|------|--------|------|-------|--------|--------|-----|-------|
| Black | White | Gray | Purple | Blue | Green | Yellow | Orange | Red | Brown |

## References and Further Information

Schematics, Gerber files, Bill Of Materials (BOM), development and demonstration software is conveniently downloadable from the Atmel website at [www.atmel.com/cryptokit](http://www.atmel.com/cryptokit).

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## Revision History

| Doc Rev. | Date    | Comments                  |
|----------|---------|---------------------------|
| 8726A    | 11/2015 | Initial document release. |



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