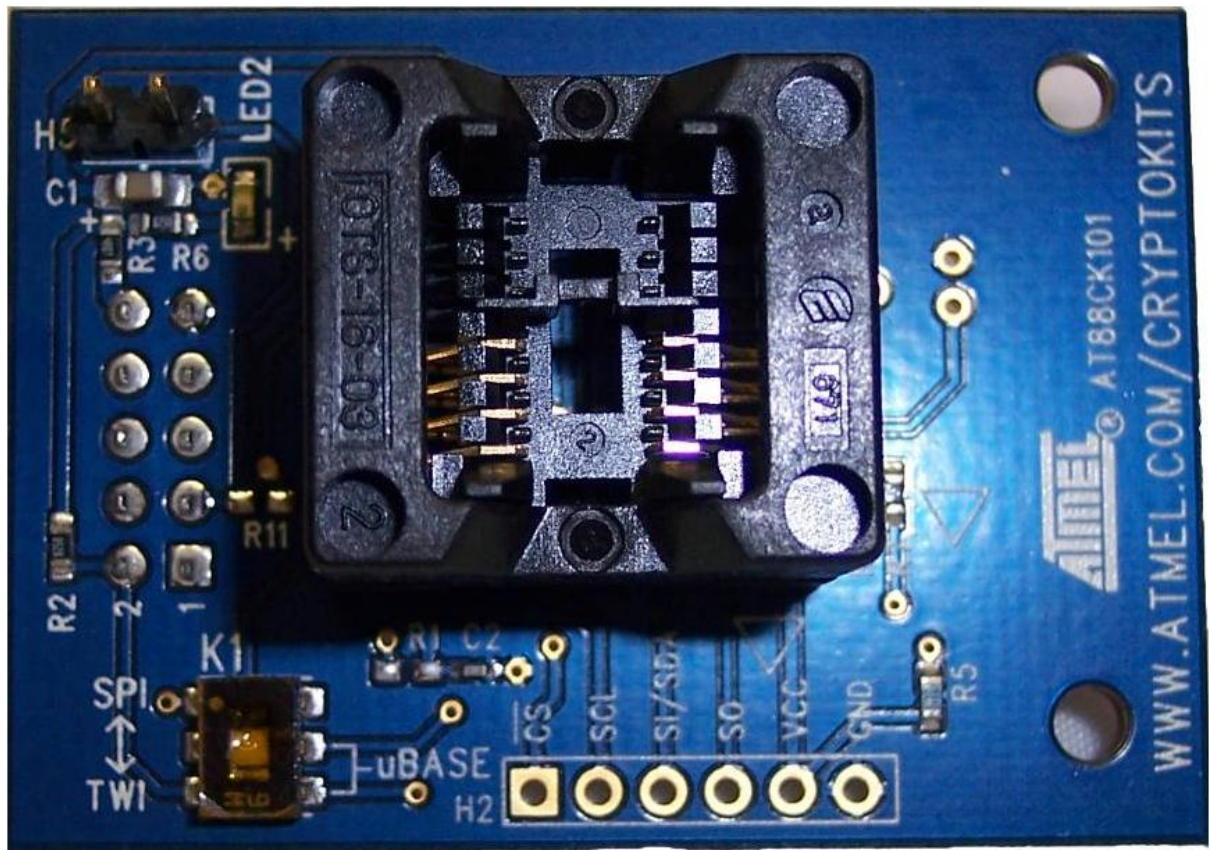


## HARDWARE USER GUIDE



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.

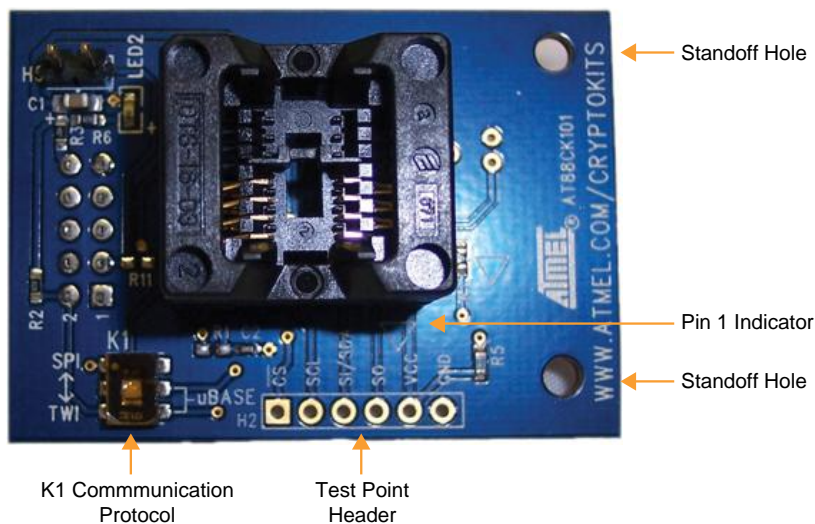
## Contents

- 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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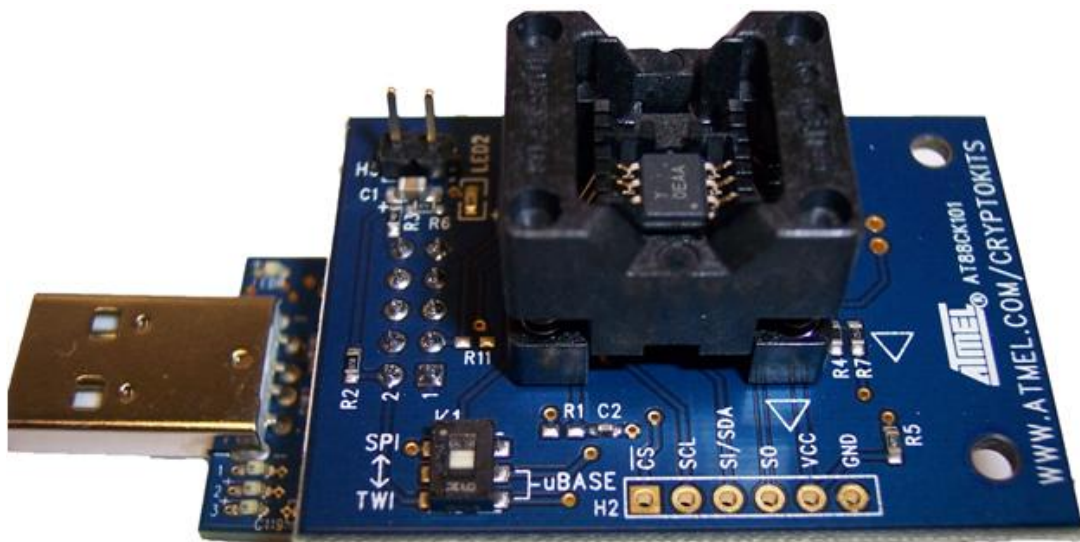
## AT88CK101 Starter Kit

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

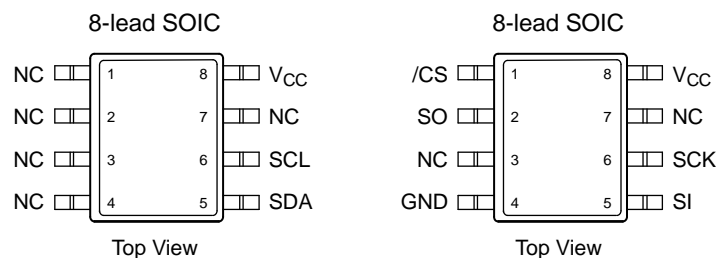
Table 1-2. 6-pin Test Header

/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 Signal on Px1 (X denotes the port)	Open

Note: X = Don't Care

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



Figure 6. Atmel AT88CK301ADP Adapter Kit

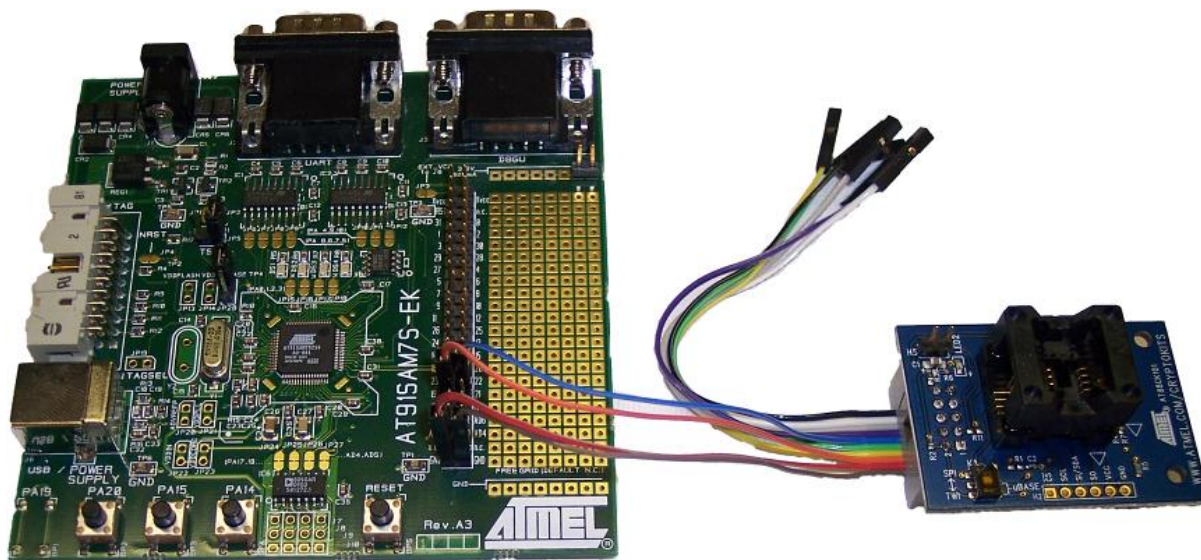


Table 2. 10-pin Squid Cable

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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