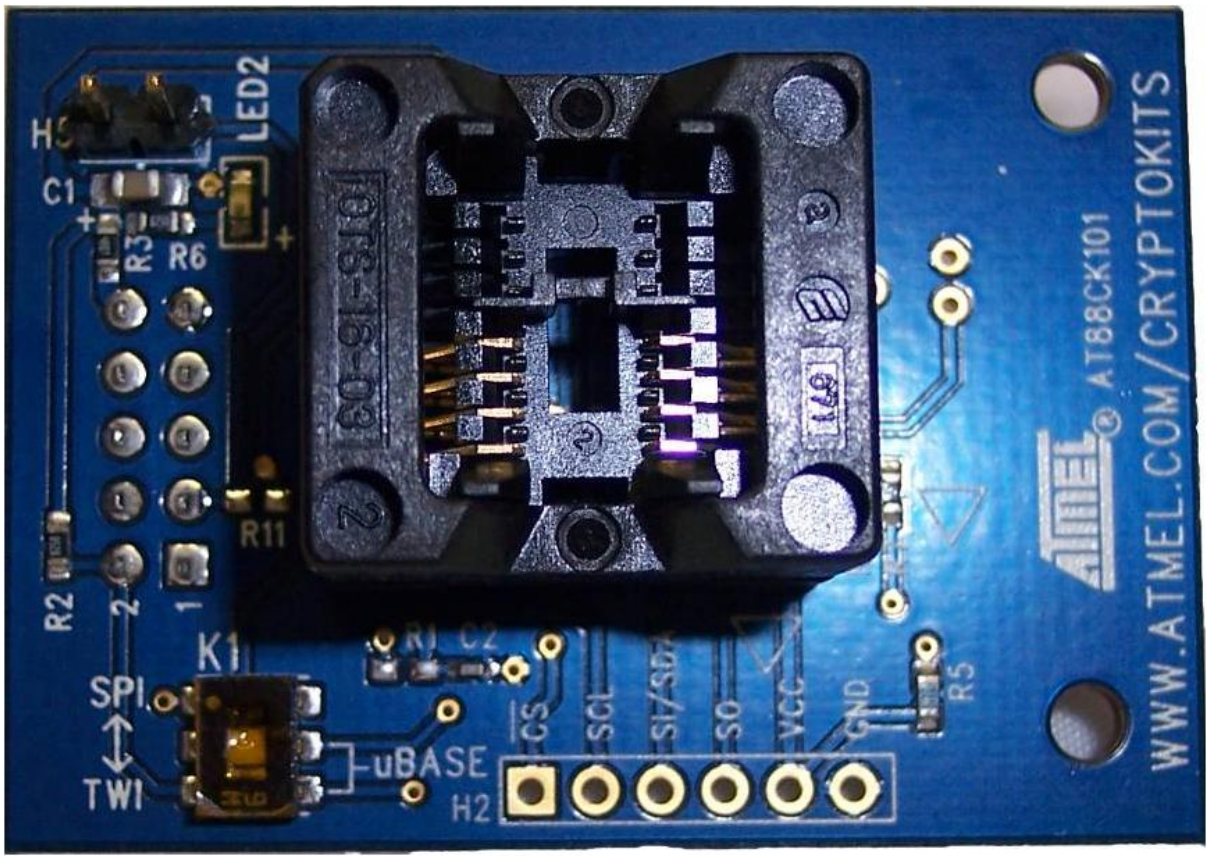
AT88CK101

Atmel CryptoAuthentication Development Kit

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^2C, 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.

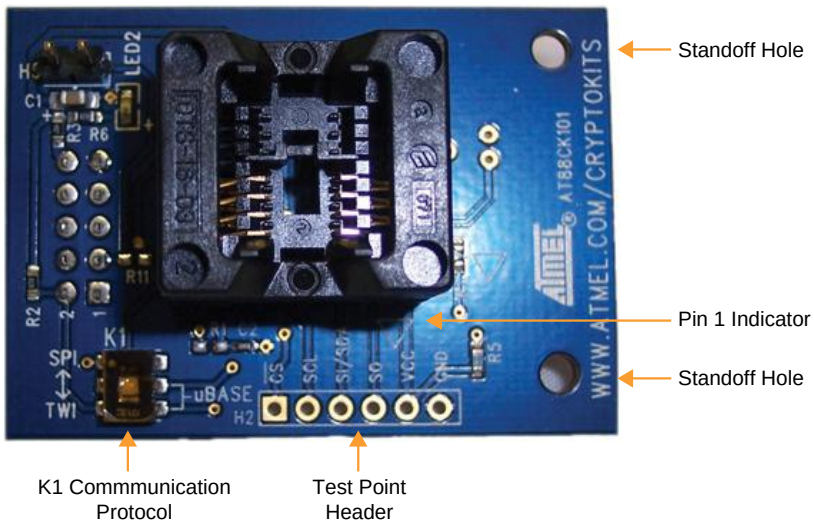
Contents

- Atmel AT88CK101 Daughterboard

Features

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

Figure 1. AT88CK101 Daughterboard



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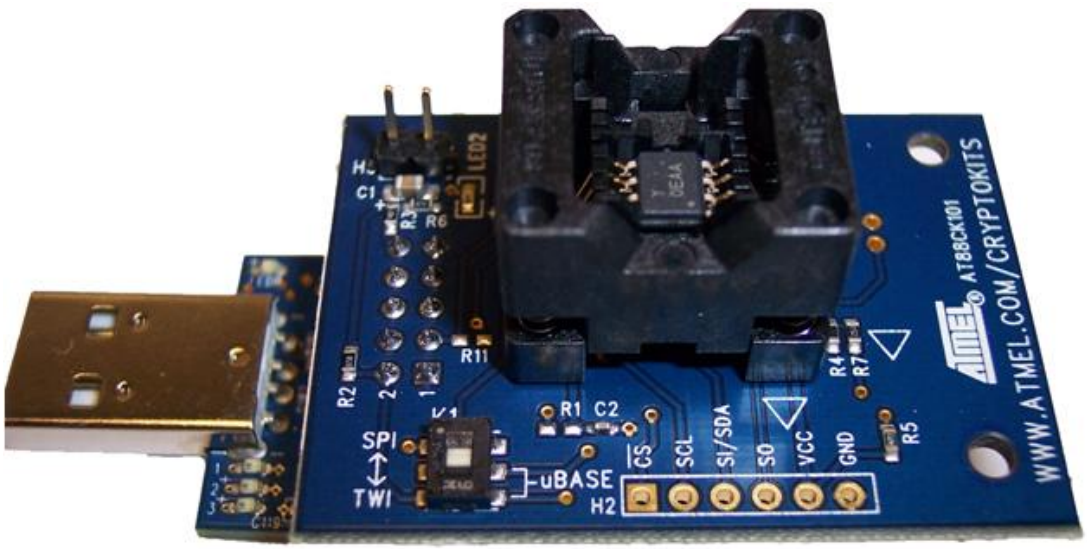
AT88CK101 Starter Kit

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[1][2]

P10	P9	P8	P7	P6	P5	P4	P3	P2	P1
V_{CC}	GND	NC	NC	NC	NC	MISO	MOSI	SDA/SCLK	SCL /CS

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

6-pin Test Header

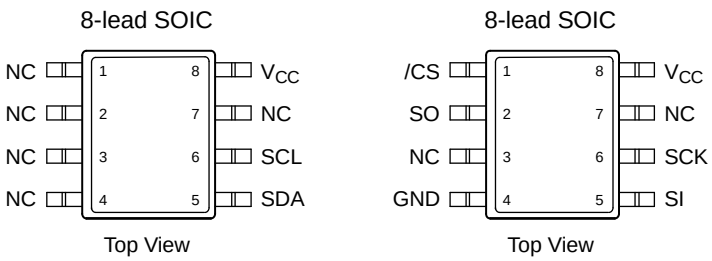
Table 1-2. 6-pin Test Header

/CS	SCL	SI/SDA	S0	V_{CC}	GND
SPI Chip Select	SPI-CLK	MOSI/SDA	MISO	V_{CC}	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

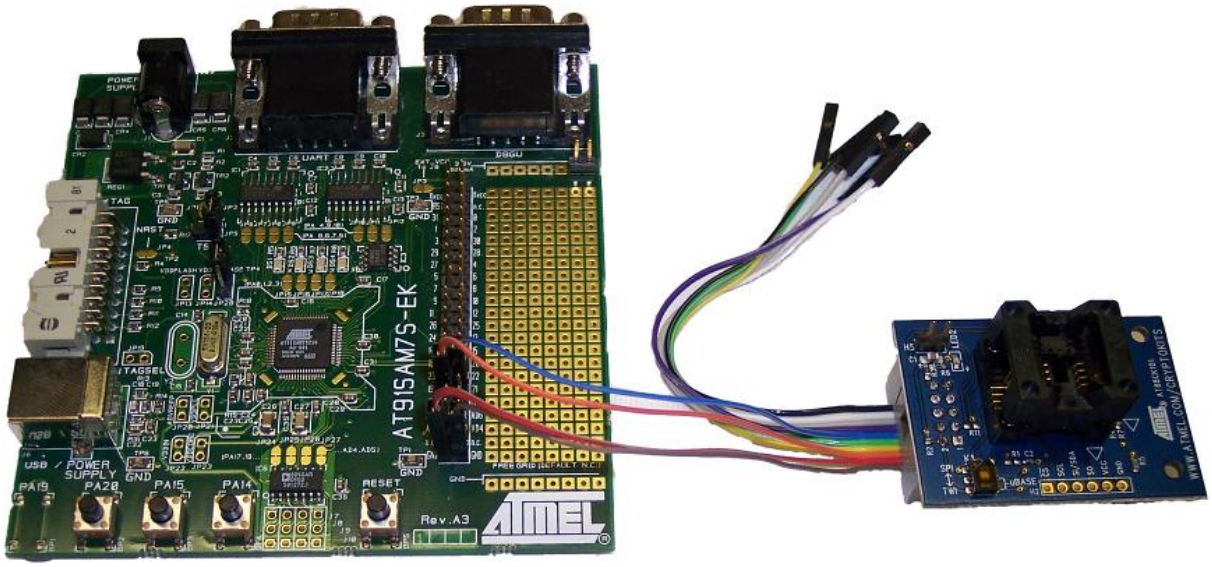


Table 2. 10-pin Squid Cable

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/cryptokits.

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Revision History

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

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