

Atmel CryptoAuthentication Starter Kit

Atmel AT88CK101BK8 Hardware User Guide

Features

- 8-lead SOIC socket
- Supports the Atmel ATSHA204 CryptoAuthentication IC
- Supports communication protocols
 - I²C
 - SWI (Single wire interface)
- Power LED
- Test points header

1. Introduction

Atmel[®] AT88CK101BK8 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 ATSHA204. This kit uses a modular approach, enabling the daughterboard to connect directly to an STK series AVR development platform to easily add security to applications. An optional adapter kit is also available when the 10-pin header on the daughterboard requires a different pinout. The AT88CK101BK8 also provides a test point header for the I²C, SWI, and SPI signals. The AT88CK101BK8 is sold with the Atmel AT88Microbase module to form the Atmel AT88CK101STK8 starter kit. The AT88Microbase AVR base board comes with a USB interface that lets designers learn and experiment on their PCs.

Figure 1-1. Atmel AT88CK101BK8 Crypto daughterboard



Contents

Atmel AT88CK101BK8 daughterboard



1.1. Atmel AT88CK101STK8 starter kit

The AT88CK101BK8 is sold with the Atmel AT88Microbase module to form the Atmel **AT88CK101STK8** starter kit. For additional information on the AT88Microbase, See Atmel doc8723A, Atmel AT88Microbase Hardware User Guide.

Figure 1-2. Atmel AT88CK101STK8 starter kit



Figure 1-3. The Atmel AT88CK101BK8 daughterboard with the Atmel AT88Microbase





2. Board configuration

2.1. 10-pin interface header

Table 2-1. 10-pin interface header

| P10 | P9 | P8 | P7 | P6 | P5 | P4 | P3 | P2 | P1 |
|-----|-----|----|----|----|----|------|------|----------|---------|
| VCC | GND | NC | NC | NC | NC | MISO | MOSI | SDA/SCLK | SCL /CS |

Note: I²C Pins: SCL, SDA

SPI Pins: /CS, SCLK, MOSI, MISO

2.2. 6-pin test header

Table 2-2. 6-pin test header

| /CS | SCL | SI/SDA | S0 | VCC | GND |
|-----------------|---------|----------|-----------|-----|-----|
| SPI chip select | SPI-CLK | MOSI/SDA | MISO | VCC | GND |

Note: I²C Pins: SCL, SDA SPI Pins: /CS, SCLK, MOSI, MISO

2.3. Supports 8-lead SOIC and SPI interfaces with the following pinout

Figure 2-1. Pinout configurations





2.4. Configurations

Table 2-3 describes the how to configure the AT88CK101BK8 with respect to the AT88Microbase and the STK/EVK development platforms.

| Table 2-3. | Atmel AT88CK101STK8 | starter kit configuration guide |
|------------|---------------------|---------------------------------|
|------------|---------------------|---------------------------------|

| Atmel AT88CK101STK8 starter kit configuration guide | | | | | | | | |
|---|------------------------------------|--|-----------------------------------|--|--|--|--|--|
| Communication interface | Atmel AT88Microbase (K1 switch) | Atmel AT88CK101BK8 (K1 switch) | Atmel AT88CK101BK8 jumper (H5) | | | | | |
| TWI | TWI | uBase | Open | | | | | |
| SPI | SPI | uBase | Mounted | | | | | |
| SWI (UART) | _ | SPI | Mounted | | | | | |
| SWI (GPIO) | SPI | uBase | Open | | | | | |
| Atmel AT88CK101BK8+ STK/EVK platforms configuration guide | | | | | | | | |
| Communication interface | _ | Atmel AT88CK101BK8 (K1 switch) | Atmel AT88CK101BK8 jumper (H5) | | | | | |
| 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 2-2. Atmel AT88CK101BK8 adapter board mounted to STK600





2.5. AT88CK301ADP adapter kit

An optional adapter kit is also available when the 10-pin header on the daughterboard requires a different pinout.





Figure 2-4. Atmel AT88CK101BK8 and Atmel AT88CK301ADP with the Atmel AT91SAM7S-EK board



Table 2-4. 10 pin squid cable

| | 10 pin squid cable | | | | | | | | |
|-------|--------------------|------|--------|------|-------|--------|--------|-----|-------|
| P10 | P9 | P8 | P7 | P6 | P5 | P4 | P3 | P2 | P1 |
| black | white | gray | purple | blue | green | yellow | orange | red | brown |



3. 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.

4. EVALUATION BOARD/KIT IMPORTANT NOTICE

This evaluation board/kit is intended for **ENGINEERING**, **DEVELOPMENT**, **DEMONSTRATION** or **EVALUATION PURPOSE ONLY**. It is not a finished product and may not (yet) comply with some or any technical or legal requirements that are applicable to finished products, including, without limitations, directives regarding electromagnetic compatibility, recycling (WEEE), FCC, CE or UL (except as may be otherwise noted on the board/kit). Atmel[®] supplied this board/kit "AS IS," without any warranties, with all faults, at the buyer's and further users' sole risk. The user assumes all responsibly and liability for proper and safe handling of goods. Further, the user indemnifies Atmel from claims arising from the handling or use of goods. Due to open construction of the product, it is the user's responsibility to take any and all appropriate precautions with regard to electrostatic discharge and any other technical or legal concerns.

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