

Atmel AT88CK101BK8 Hardware User Guide

# Features

- 8-lead SOIC socket
- Supports the Atmel ATSHA204 CryptoAuthentication IC
- · Supports communication protocols
  - I<sup>2</sup>C
  - SWI (Single wire interface)
- Power LED.
- Test points header

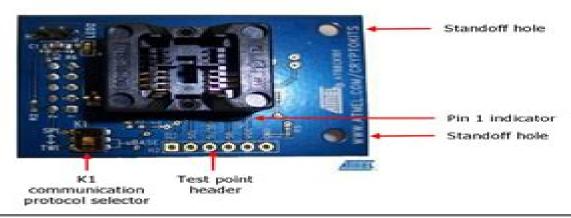
## Contents

Atmel AT88CK101BK8 daughterboard

#### Introduction

Atmel<sup>®</sup> 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 I<sup>2</sup>C, 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 AT88CK1018K8 Crypto daughterboard



# **Atmel User Manual**

**Julia Schneider** 

#### **Atmel User Manual:**

Making Embedded Systems Elecia White, 2011-11 Eager to develop embedded systems These systems don't tolerate inefficiency so you may need a more disciplined approach to programming This easy to read book helps you cultivate a host of good development practices based on classic software design patterns as well as new patterns unique to embedded programming You not only learn system architecture but also specific techniques for dealing with system constraints and manufacturing requirements Written by an expert who s created embedded systems ranging from urban surveillance and DNA scanners to children's toys Making Embedded Systems is ideal for intermediate and experienced programmers no matter what platform you use Develop an architecture that makes your software robust and maintainable Understand how to make your code smaller your processor seem faster and your system use less power Learn how to explore sensors motors communications and other I O devices Explore tasks that are complicated on embedded systems such as updating the software and using fixed point math to implement complex algorithms **8051 Microcontrollers** Salvador Pinillos Gimenez, 2018-05-22 This textbook describes in detail the fundamental information about the 8051 microcontroller and it carefully teaches readers how to use the microcontroller to make both electronics hardware and software In addition to discussion of the 8051 internals this text includes numerous solved examples end of chapter exercises laboratory and Microcontroller Education Dimosthenis E. Bolanakis, 2022-05-31 Microcontroller education has practical projects experienced tremendous change in recent years This book attempts to keep pace with the most recent technology while holding an opposing attitude to the No Need to Reinvent the Wheel philosophy The choice strategies are in agreement with the employment of today's flexible and low cost Do It Yourself DYI microcontroller hardware along with an embedded C programming approach able to be adapted by different hardware and software development platforms Modern embedded C compilers employ built in features for keeping programs short and manageable and hence speeding up the development process However those features eliminate the reusability of the source code among diverse systems The recommended programming approach relies on the motto Code More to Learn Even More and directs the reader toward a low level accessibility of the microcontroller device The examples addressed herein are designed to meet the demands of Electrical Electronic Engineering discipline where the microcontroller learning processes definitely bear the major responsibility The programming strategies are in line with the two virtues of C programming language that is the adaptability of the source code and the low level accessibility of the hardware system Some accompanying material of the book can be found at http bit ly mcu files **AVR Programming** Elliot Williams, 2014-01-27 Atmel s AVR microcontrollers are the chips that power Arduino and are the go to chip for many hobbyist and hardware hacking projects In this book you ll set aside the layers of abstraction provided by the Arduino environment and learn how to program AVR microcontrollers directly In doing so you ll get closer to the chip and you ll be able to squeeze more power and features out of it Each chapter of this book is centered

around projects that incorporate that particular microcontroller topic Each project includes schematics code and illustrations of a working project Program a range of AVR chips Extend and re use other people's code and circuits Interface with USB I2C and SPI peripheral devices Learn to access the full range of power and speed of the microcontroller Build projects including Cylon Eyes a Square Wave Organ an AM Radio a Passive Light Sensor Alarm Temperature Logger and more Implementation of a CAN Bus based Understand what's happening behind the scenes even when using the Arduino IDE Measurement System on an FPGA Development Kit Yu Zhu, 2010-07-05 Inhaltsangabe Abstract The Controller Area Network CAN is a serial field bus protocol which was originally used in road vehicles Most people still use Microcontrollers MCU to control the CAN bus The development of Field programmable Gate Array FPGA is very advanced and compared to the MCU the FPGA has many advantages For this reason this thesis uses an Altera FPGA development kit to design a CAN bus based measurement system During the work four Direct Digital Synthesizers DDS were simulated for four wave channels in the FPGA All signals of the channels were transmitted from the FPGA to a CAN bus Between the CAN bus and FPGA an Atmel CAN MCU which contains both serial and CAN ports was used as the third party Whereby the data output from the FPGA were first transmitted to the serial port of the CAN MCU and then shifted to the CAN port of the CAN MCU The CAN bus device NI CAN USB 8473 which was used in this thesis has a CAN port to connect to the CAN port of the CAN MCU and a USB 2 0 port to connect to a PC Finally the data of the CAN bus was monitored on the PC with the LabVIEW platform With this platform the data could also be transmitted to the CAN bus and then to the FPGA to change the tuning word of DDS In order to achieve the speed limit of the complete measurement system the communication rates of FPGA CAN bus and CAN MCU were programmed to be the maximum Inhaltsverzeichnis Table of Contents 1Introduction4 1 1Background4 1 20bjective4 1 3Outline6 2CAN Introduction7 2 1Background7 2 2Architecture Layers8 2 2 1Physical Layer8 2 2 2Data Link Layer10 2 2 3Higher Layer10 2 3Frame Structure11 2 3 1Data Frame11 2 3 2Remote Frame14 2 3 3Error Frame15 2 3 40verload Frame16 2 3 5Interframe Space16 2 4Frame Coding17 2 5Error Detecting and Handling18 2 6Fault Confinement19 3CAN and MCU Serial Port Effective Data Study22 3 1CAN Effective Data Study22 3 2MCU Serial Port Study25 3 2 1General 8051 MCU25 3 2 2Using Timer 227 3 2 3X2 Mode28 3 3CAN vs MCU Serial Port29 4Experiment Components and Setup32 4 1Stratix III FPGA Development Kit32 4 2CAN MCU AT89C51CC0335 4 35 3 3 V Voltage Level Transistor38 4 4NI CAN USB 847340 4 5PC with NI CAN Driver42 4 6Setup42 5Software Development43 5 1FPGA with Quartus II43 5 1 1DDS Design43 5 1 2PLL Application45 5 1 3UART Reception49 5 1 4UART Transmission51 5 2MCU with Keil C5153 5 2 1Serial Port Programming53 5 2 2CAN Automated Methods in Cryptographic Fault Analysis Jakub Breier, Xiaolu Hou, Shivam Bhasin, 2019-03-19 This book presents a collection of automated methods that are useful for different aspects of fault analysis in cryptography The first part focuses on automated analysis of symmetric cipher design specifications software implementations and hardware circuits The second part provides automated deployment of

countermeasures The third part provides automated evaluation of countermeasures against fault attacks Finally the fourth part focuses on automating fault attack experiments The presented methods enable software developers circuit designers and cryptographers to test and harden their products Raspberry Pi User Guide Gareth Halfacree, Eben Upton, 2012-08-30 Make the most out of the world's first truly compact computer It's the size of a credit card it can be charged like a smartphone it runs on open source Linux and it holds the promise of bringing programming and playing to millions at low cost And now you can learn how to use this amazing computer from its co creator Eben Upton in Raspberry Pi User Guide Cowritten with Gareth Halfacree this guide gets you up and running on Raspberry Pi whether you re an educator hacker hobbyist or kid Learn how to connect your Pi to other hardware install software write basic programs and set it up to run robots multimedia centers and more Gets you up and running on Raspberry Pi a high tech computer the size of a credit card Helps educators teach students how to program Covers connecting Raspberry Pi to other hardware such as monitors and keyboards how to install software and how to configure Raspberry Pi Shows you how to set up Raspberry Pi as a simple productivity computer write basic programs in Python connect to servos and sensors and drive a robot or multimedia center Adults kids and devoted hardware hackers now that you ve got a Raspberry Pi get the very most out of it with Raspberry Pi NASA Formal Methods Aaron Dutle, Mariano M. Moscato, Laura Titolo, César A. Muñoz, Ivan Perez, 2021-05-19 User Guide This book constitutes the proceedings of the 13th International Symposium on NASA Formal Methods NFM 2021 held virtually in May 2021 The 21 full and 3 short papers presented in this volume were carefully reviewed and selected from 66 submissions The papers aim to identify challenges and provide solutions to achieve assurance in mission critical and safety critical systems Examples of such systems include advanced separation assurance algorithms for aircraft next generation air transportation autonomous rendezvous and docking of spacecraft on board software for unmanned aerial systems UAS UAS traffic management autonomous robots and systems for fault detection diagnosis and prognostics Arduino Programming in 24 Hours, Sams Teach Yourself Richard Blum, 2014-08-08 In just 24 sessions of one hour or less Sams Teach Yourself Arduino Programming in 24 Hours teaches you C programmingon Arduino so you can start creating inspired DIY hardwareprojects of your own Using this book s straightforward step by stepapproach you ll walk through everything from setting up yourprogramming environment to mastering C syntax and features interfacing your Arduino to performing full fledged prototyping Every hands on lesson and example builds on what you ve alreadylearned giving you a rock solid foundation for real world success Step by step instructions carefully walk you through the most common Arduino programming tasks Quizzes at the end of each chapter help you test your knowledge By the Way notes present interesting information related to the discussion Did You Know tips offer advice or show you easier ways to perform tasks Watch Out cautions alert you to possible problems and give you advice on how to avoid them Learn how to Get the right Arduino hardware and accessories for your needs Download the Arduino IDE install it and link it to your Arduino Quickly create

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