ACR38 CCID Smart Card Reader

Technical Specifications

Subject to change without prior notice

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1.0. Introduction

Due to the rising demand of e-working methods such as remote office and home banking and with the increasing risk of unauthorized access to private network, it is time to properly secure the access to PCs, desktops, and Intranet and Extranet networks. Reinforced with CCID functionality and an extensive support for memory cards, the ACR38 CCID series offers solutions based on smart card readers (connected to PCs) for access control.

The ACR38 CCID Smart Card Reader is a smart card reader/writer is a USB full speed device, which is the interface for the communication between a computer and a smart card. It is designed for the PC environment and is the ultimate smart card peripheral for a PC.

Smart cards are becoming an essential component in network security and electronic payment system and the ACR38 CCID Smart Card Reader is the ideal partner when using a PC. It provides secured network computing environment with its data encryption function. Furthermore, with the SDK package, it will allow users to easily develop their own application to best meet the specific system needs.

The ACR38 CCID is a low cost, yet reliable and effective smart card-to-PC interface with design focusing on convenient use and harmony with other PC peripherals in shape and color. It also provides the solution where the security of a smart card is required. It can be used as access control to a computer or network (intranet, extranet, etc), authentication for e-commerce (B to B, B to C), etc. It is also very simple to use and install since it is CCID compliant and it can be support a wide variety of MCU and Memory cards. It is ideal for electronic commerce, home banking or e-purse facilities, secure computer access or any of a multitude of other applications.
2.0. Features

- FIPS 201 Certified
- PC/SC Compliant
- CCID Compliant
- Microsoft WHQL Signed Drivers
- EMV 2000 Level 1
- Supports ISO-7816 Class A, B and C (5V, 3V, 1.8V) cards
- Read and write support to all microprocessor cards with T=0 or T=1 protocols
- Supports a wide range of memory-based smart cards
- Supports PPS (Protocol and Parameters Selection) with 1,743 – 344,086 bps in reading and writing smart cards
- EN 60950/IEC 60950 Compliant
- CE and FCC Certified
- RoHS Compliant
- USB full speed interface to PC
- Short Circuit Protection
3.0. Supported Card Types

3.1. MCU Cards
The ACR38 CCID operates with an MCU card following either the T=0 or T=1 protocol.

3.2. Memory-Based Smart Cards (Synchronous Interface)
The ACR38 CCID works with several memory-based smart cards such as:

- Cards following the I2Cbus protocol (free memory cards) with maximum 128 bytes page with capability, including:
  - Atmel: AT24C01/02/04/08/16/32/64/128/256/512/1024
  - SGS-Thomson: ST14C02C, ST14C04C
  - Gemplus: GFM1K, GFM2K, GFM4K, GFM8K
- Cards with secure memory IC with password and authentication, including:
  - Atmel: AT88SC153 and AT88SC1608
- Cards with intelligent 1k bytes EEPROM with write-protect function, including:
  - Infineon: SLE4418, SLE4428, SLE5518 and SLE5528
- Cards with intelligent 256 bytes EEPROM with write-protect function, including:
  - Infineon: SLE4432, SLE4442, SLE5532 and SLE5542
- Cards with ‘104’ type EEPROM non-reloadable token counter cards, including:
  - Infineon: SLE4406, SLE4436, SLE5536 and SLE6636
- Cards with Intelligent 416-Bit EEPROM with internal PIN check, including:
  - Infineon: SLE4404
- Cards with Security Logic with Application Zone(s), including:
  - Atmel: AT88SC101, AT88SC102 and AT88SC1003
4.0. Typical Applications

- Home Banking and Home Shopping
- Electronic Commerce
- Checking the balance of account of re-loading an electronic purses
- Network access control
- S/W locking
- Digital signature
- Loyalty and promotions
- Stored value
- Identification
- Ticketing
- Parking and toll collection
- Online gaming
5.0. Technical Specifications

Universal Serial Bus Interface
- Type: USB full speed, four lines: +5V, GND, D+ and D-
- Power source: From USB
- Speed: 12 Mbps

Smart Card Interface
- Standard: ISO-7816 Class A, B and C (5V, 3V, 1.8V), T=0 and T=1
- Supply current: max. 50mA
- Smart card read / write speed: 1,743 – 344,086 bps
- Short circuit protection: +5V / GND on all pins
  - The presence of the smart card power supply voltage is indicated through a green LED on the reader
- CLK frequency: 4 MHz
- Card connector: Contact
- Card insertion cycles: min. 100,000

Physical Specifications
- Dimensions: 73.0mm (L) x 96.5mm (W) x 19.0mm (H)
- Color: Silver
- Weight: 95g (± 5g allowance for cable) - Spaceship casing
- Cable length, cord, connector: 1.5 meters, Fixed (non-detachable), USB A

Operating Conditions
- Temperature: 0 - 50°C
- Humidity: 40% - 80%

Certifications/Compliance

Device Driver Operating System Support
- Windows ® CE 5.0
- Linux, MAC
6.0. Software Development Kit Specifications

The ACR38 CCID SDK is a complete package containing all the vital components required for smart card application development. The ACR38 CCID SDK provides developers with tools and utilities and sample codes making it convenient and effective to incorporate smart cards into their solutions.

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