ACR38U-I1
Smart Card Reader
FIPS 201 Certified

Technical Specifications V1.06
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1.0. Introduction

ACR38U-I1 is the latest addition to the ACR38 PC-linked Smart Card Reader Series. Combining secure smart card reader technology functionalities with a sleek and modern design, ACR38U-I1 is the perfect peripheral for your smart card applications.

1.1. Smart Card Reader

ACR38U-I1 supports ISO 7816 Class A, B and C smart cards and microprocessor cards with the T=0 and T=1 protocol. Also, it supports a wide variety of memory cards in the market, including the Department of Defense Common Access Card (CAC). This makes it perfect for a broad range of solutions, such as PIV Application, Physical and Logical Access Control, Digital Signature, and Online Banking.

1.2. Modern Design

The new sleek and stylish design of ACR38U-I1 makes it stand out from ordinary smart card readers. This trendy device houses the powerful ACR38 core, which has been proven to support highly demanding smart card applications. It also features a USB Full Speed interface and a smart card R/W speed of 344 Kbps. Highly durable, ACR38U-I1 can last for at least 100,000 card insertion cycles.

1.3. Ease of Integration

ACR38U-I1 is easy to install, use and integrate into a PC environment. It is PC/SC and CCID compliant, and its drivers are compatible with Windows, Linux and Mac operating systems. In addition, ACR38U-I1 may now be used on mobile devices running the Android™ platform with versions 3.1 and above.

With its various features, the FIPS 201 certified ACR38U-I1 is the perfect smart card reader for your smart card solution.
2.0. Features

- USB 2.0 Full Speed Interface
- Plug and Play – CCID support brings utmost mobility
- Smart Card Reader:
  - Supports ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V) cards
  - Supports CAC (Common Access Card)
  - Supports microprocessor cards with T=0 or T=1 protocol
  - Supports memory cards
  - Supports PPS (Protocol and Parameters Selection)
  - Features Short Circuit Protection
- Application Programming Interface:
  - Supports PC/SC
  - Supports CT-API (through wrapper on top of PC/SC)
- Supports Android™ OS 3.1 and above
- Compliant with the following standards:
  - FIPS 201
  - TAA
  - EN60950/IEC 60950
  - ISO 7816
  - CE
  - FCC
  - UL
  - KC
  - VCCI
  - PC/SC
  - CCID
  - EMV 2000 Level 1
  - Microsoft WHQL
  - RoHS
  - REACH
3.0. Supported Card Types

3.1. MCU Cards
ACR38U-I1 operates with ISO 7816 MCU card following either the T=0 or T=1 protocol. It also works with CAC cards, ideal for US PIV and PKI applications.

3.2. Memory-based Smart Cards
ACR38U-I1 works with several memory-based smart cards such as:

- Cards following the I2C bus 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

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Public Key Infrastructure
- Network Security
- Access Control
- Loyalty Program
5.0. Technical Specifications

**Universal Serial Bus Interface**
- **Type**: USB Full Speed, four lines: +5 V, GND, D+ and D-
- **Power Source**: From USB
- **Speed**: 12 Mbps

**Smart Card Interface**
- **Standard**: ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V), T=0 and T=1
- **Supply Current**: max. 50 mA
- **Smart Card Read/Write Speed**: max. 344,086 bps
- **Short Circuit Protection**: +5 V/GND on all pins
- **CLK Frequency**: 4 MHz
- **Card Connector**: Contact
- **Card Insertion Cycles**: min. 100,000

**Physical Specifications**
- **Dimensions**: 72.2 mm (L) x 69.0 mm (W) x 14.5 mm (H)
- **Color**: White
- **Weight**: 65 g (± 5 g allowance for cable)
- **Cable length, cord, connector**: 1.5 meters, Fixed (non-detachable), USB A

**Operating Conditions**
- **Temperature**: 0 – 50 °C
- **Humidity**: 10% - 90%
- **MTBF**: 500,000 hrs.

**Application Programming Interface**
- **PC/SC**: CT-API (through wrapper on top of PC/SC)

**Certifications/Compliance**

**Device Driver Operating System Support**
- **Linux**, **Mac**, **Android™ 3.1 and above**