



ACR38U

Smart Card Reader



Technical Specifications



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## 1.0. Introduction

ACR38U is the PC-linked Smart Card Reader. Combining secure smart card reader technology functionalities with a modern design, ACR38U is the perfect peripheral for your smart card applications.



### 1.1. Smart Card Reader

ACR38U 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 stylish design of ACR38U 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 can last for at least 100,000 card insertion cycles.

### 1.3. Ease of Integration

ACR38U 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 may now be used on mobile devices running the Android™ platform with versions 3.1 and above.



## 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:
  - TAA
  - EN60950/IEC 60950
  - ISO 7816
  - CE
  - FCC
  - UL
  - KC
  - VCCI
  - PC/SC
  - CCID
  - EMV 2000 Level 1
  - Microsoft WHQL
  - RoHS



## 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:

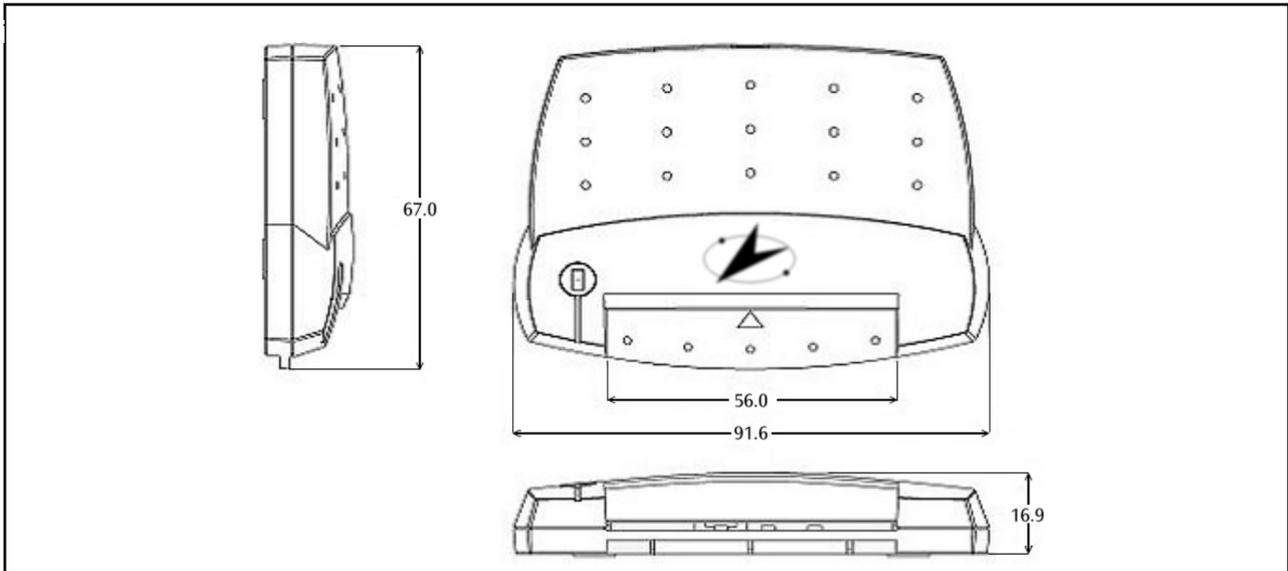
- ❑ Cards following the I2C bus protocol (free memory cards) with maximum 128 bytes page with capability, including:
  - Atmel: AT24C01/02/04/08/16/32/64/128/256/512/1024
  - SGS-Thomson: ST14C02C, ST14C04C
  - Gemplus: GFM1K, GFM2K, GFM4K, GFM8K
- ❑ Cards with secure memory IC with password and authentication, 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



### USB Interface

Type ..... USB Full Speed, four lines: +5 V, GND, D+ and DPower  
 Source ..... From USB  
 Speed ..... 12 Mbps

### SmartCard 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 ..... 67.0mm (L) x 91.6mm (W) x 16.9mm (H)  
 Color ..... Transparent Blue  
 Weight ..... 85g (± 5g 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

EN60950/IEC 60950, ISO 7816, TAA, CE, FCC, UL, KC, VCCI, PC/SC, CCID, EMV 2000 Level 1, RoHS, REACH, USB Full Speed  
 Microsoft® WHQL 2000, XP, Vista, 7, 8, Server 2003, Server 2008, Server 2008 R2, Server 2012

### Device Driver Operating System Support

Windows® CE, 98, ME, 2000, XP, Vista, 7, 8, Server 2003, Server 2003 R2, Server 2008, Server 2008 R2, Server 2012  
 Linux, Mac, Android™ 3.1 and above

