



**Advanced Card Systems Ltd.**  
Card & Reader Technologies

# ACR33U-A1 SmartDuo Smart Card Reader



## Technical Specifications



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## 1.0. Introduction

ACR33U-A1 SmartDuo is a sleek and stylish device that features an innovative dual slot design to accommodate two smart cards simultaneously. This dual slot solution enables cost-effective, time-efficient and secure implementation of smart card applications in fields such as e-Banking and e-Payment, e-Government, e-Healthcare, Physical and Logical Access Control, and Network Security.

### 1.1. Smart Card Reader



ACR33U-A1 SmartDuo supports ISO 7816 Class A smart cards, microprocessor cards with the T=0 and T=1 protocol, and most common memory cards in the market. It has USB full speed as its host interface, and a smart card R/W speed of 344 Kbps. Having dimensions of 103.5 mm x 85.0 mm x 59.9 mm and capacity for at least 200,000 card insertion cycles, ACR33U-A1 SmartDuo is clearly a portable and durable smart card reader.

### 1.2. Dual Slot Feature

The competitive advantage of ACR33U-A1 SmartDuo lies on its dual slot feature that allows users to operate two smart cards at the same time, enabling efficiency and enhanced security in smart card applications. As an example, one slot can hold the smart card of an authorized personnel managing a particular smart card-based service, while the other slot can be used by various individuals availing of such service. Through ACR33U-A1 SmartDuo's dual slot solution, the need to pull out and reinsert the personnel's card to accommodate a user's card, whenever one is presented, is eliminated, resulting to smoother and uninterrupted flow of transactions.

### 1.3. Security Feature

Aside from its dual slot feature, ACR33U-A1 SmartDuo also has 3 SAM (Secure Access Module) card slots. This feature allows one to enhance the security provided by the device for applications requiring more stringent security mechanisms.

### 1.4. Easy Installation

Being PC/SC and CCID compliant, ACR33U-A1 SmartDuo is easy to install and use. It is specially designed to be used in PC environments, and its drivers are compatible with Windows operating systems.



## 2.0. Features

- USB Full Speed Interface
- Plug-and-Play – CCID support brings utmost compatibility
- Dual Slots for Full-Sized Smart Cards
- 3 SAM (Secure Access Module) Card Slots
- Smart card reader:
  - Supports ISO 7816 Class A (5V) smart cards
  - Reads and writes onto all microprocessor cards with T=0 and T=1 protocol
  - Supports memory cards (Atmel AT88SC153 and AT88SC1608)
  - Supports SLE 4406/18/28/32/36/42, SLE 5518/28/32/36/42, SLE 6636
  - Features Short Circuit Protection
  - Supports PPS (Protocol and Parameters Selection)
- Tri-Color LED (Green, Red, Blue) and Buzzer for Status Indication
- Compliant with the following international standards:
  - PC/SC
  - CCID
  - Microsoft WHQL
  - CE
  - FCC
  - RoHS
  - VCCI



## 3.0. Supported Card Types

### 3.1. MCU Cards

ACR33U-A1 SmartDuo operates with MCU cards following either the T=0 or T=1 protocol.

### 3.2. Memory-Based Smart Cards (Synchronous Interface)

ACR33U-A1 SmartDuo 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
- 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 Security Logic with Application Zone(s), including:
  - Atmel: AT88SC101, AT88SC102 and AT88SC1003

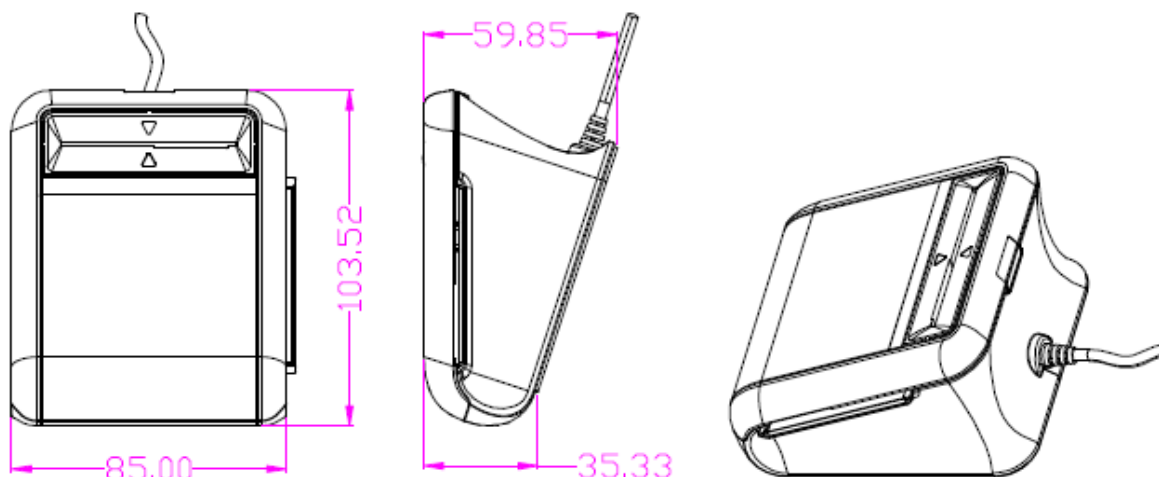


## 4.0. Typical Applications

- 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 Interfaces (Two contact card slots)

Standard ..... ISO-7816 Class A (5V), T=0 and T=1  
Supply current ..... max. 50 mA  
Smart card read / write speed ..... max. 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. 200,000

### Built-in Peripherals

LED ..... Blue, Green, and Red

### Physical Specifications

Dimensions ..... 103.5 mm (L) x 85.0 mm (W) x 59.9 mm (H)  
Color ..... Blue  
Weight ..... 310 g ( $\pm$  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%

### Certifications/Compliance

PC/SC, CCID, RoHS, CE, FCC, USB Full Speed, VCCI  
Microsoft WHQL 2000, XP, Vista, 7

### Device Driver Operating System Support

Windows © 2000, XP, Vista, 7, Server 2003, Server 2008, Server 2008 R2

