



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR38



Technical Specifications



Table of Contents

1.0.	Introduction	3
2.0.	Features	4
3.0.	Supported Card Types.....	5
3.1.	MCU Cards	5
3.2.	Memory-based Smart Cards (Synchronous Interface)	5
4.0.	Typical Applications	6
5.0.	Technical Specifications	7



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 the Intranet and Extranet networks. The ACR38 Series offers solutions based on smart card technology for secured access control.

The ACR38 smart card reader/writer is a USB full speed device which is the interface for the communication between a computer and a smart card.

With smart cards becoming an essential component in network security and electronic payment systems, the ACR38 Smart Card Reader emerges as an ideal partner for smart card-based applications in the PC environment. Providing secured network computing environment with its data encryption function, the device also comes with an SDK package that allows users to easily develop their own applications to best meet their system's security needs.

Moreover, the ACR38 is a cost-effective, reliable and efficient smart card reader/writer, with a card-to-PC interface that is designed for convenient and complementary use with other PC peripherals. With its provision for smart card authenticity verification, it can be used for several applications such as access control to a computer or network (intranet, extranet, etc) and authentication for e-commerce (B to B, B to C). The ACR38 Series is ideal for applications such as electronic commerce, home banking, e-purse facilities, secure computer access, and other smart card solutions.





2.0. Features

- PC/SC Compliant
- Microsoft WHQL Certified Drivers
- CE and FCC Certified
- EMV 2000 Level 1 Certified
- Conforms to EN 60950/IEC 60950
- 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 protocol
- Supports a wide range of memory-based smart cards
- USB full speed interface to PC
- Short Circuit Protection
- RoHS Compliant
- Support PPS (Protocol and Parameters Selection) with 1,743 – 250,000 bps in reading and writing smart cards



3.0. Supported Card Types

3.1. MCU Cards

The ACR38 operates with an MCU card following either the T=0 and T=1 protocol.

3.2. Memory-based Smart Cards (Synchronous Interface)

The ACR38 supports the following memory cards:

- Cards following the I2C bus protocol (free memory cards) such as:
 - Atmel: AT24C01 / 02 / 04 / 08 / 16 / 32 / 64 / 128 / 256 / 512 / 1024
 - SGS-Thomson: ST14C02C, ST14C04C
 - Gemplus: GFM1K, GFM2K, GFM4K, GFM8K
- SLE4432/4442/5542 intelligent 256 bytes EEPROM with write protect function:
 - SLE4432, SLE4442, SLE5542
- SLE4418/4428/5528 intelligent 1K bytes EEPROM with write-protect function:
 - SLE4418, SLE 4428, SLE5528
- Secure memory cards such as:
 - AT88SC153, AT88SC1608
- SLE4406/4436/5536 '104' type EEPROM non-reloadable token counter cards
 - SLE4406, SLE4436, SLE5536

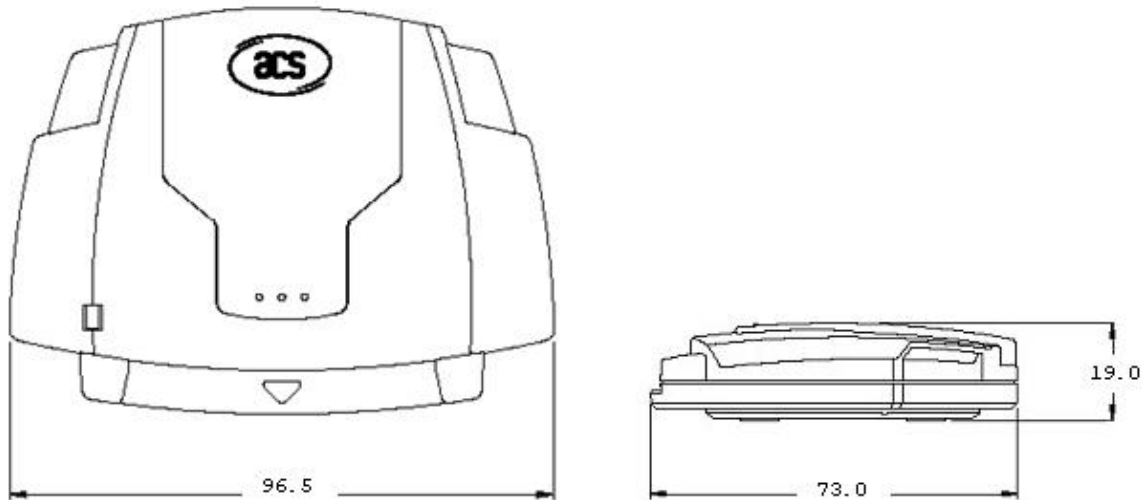


4.0. Typical Applications

- 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 – 250,000 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

(Optional) SAM Card Interface

Card connector Sliding
Location Under the removable dark lid

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

EN 60950/IEC 60950, EMV 2000 Level 1, PC/SC, CE, FCC, VCCI, RoHS Compliant, USB Full Speed, Microsoft © WHQL 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7

Device Driver Operating System Support

Windows © NT, 98, ME, 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7
Linux, MAC

