



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR38-SAM



Technical Specifications



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1.0. Introduction



Smart Card Reader Technology offers to address the rising demand of e-working methods (remote office, home office, etc) and the increasing risk of unauthorized access to private networks. With Smart Card Based Solutions you can now properly secure access to PCs, desktops, and the Intranet and Extranet networks.

The ACR38-SAM is the ideal solution for your application using Smart Card Contact Technology. As smart cards become an essential component in network security and electronic payment system, the ACR38-SAM provides secured network computing environment with its data encryption function. Furthermore, with its built-in SAM slot, the ACR38-SAM provides an enhanced security environment since the card authentication will be done inside the ACR38-SAM making your applications more secure. The added Secure Access Module limits the exposure of keys

thus limiting the possibility of stealing these keys to access the applications.

The ACR38-SAM is a smart card reader/writer which offers for you have the option to improve the security of your system with its SAM support. It 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 your application!



2.0. Features

- SAM Slot is provided to for highly secured applications
- Conforms to: EN 60950/IEC 60950, ISO-7816, PC/SC, CE, FCC, Microsoft WHQL, 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 memory-based smart cards, including I2C bus protocol cards (from 1k bits up to 1024k bits) and Secure memory cards (Atmel AT88SC153 and AT88SC1608) and Memory Card with Security Logic (AT88SC101/102/1003)
- Supports SLE 4418/28/32/36/42, SLE 5518/28/32/36/42, SLE6636 memory cards
- Support PPS (Protocol and Parameters Selection) with 1,743 – 250,000 bps in reading and writing smart cards
- USB full speed interface to PC
- Short Circuit Protection
- RoHS Compliant



3.0. Supported Card Types

3.1. MCU Cards

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

3.2. Memory-based Smart Cards (Synchronous Interface)

The ACR38-SAM 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



4.0. Working Principle of SAM

The SAM or Secure Access Module is an additional feature in a Smart Card Reader that can enhance the level of security in your Smart Card based application. Normally card authentication is implemented in PC or application level. However with the presence of a SAM, mutual authentication can be implemented between card and reader which means that the PC will not perform the authentication but it will be done via card to reader and reader to card authentication making your system more secure and less prone to hacking. Advanced Card Systems Limited also provides powerful and efficient MCU cards like the ACOS3 and ACOS6-SAM Cards that you can use to develop your applications.

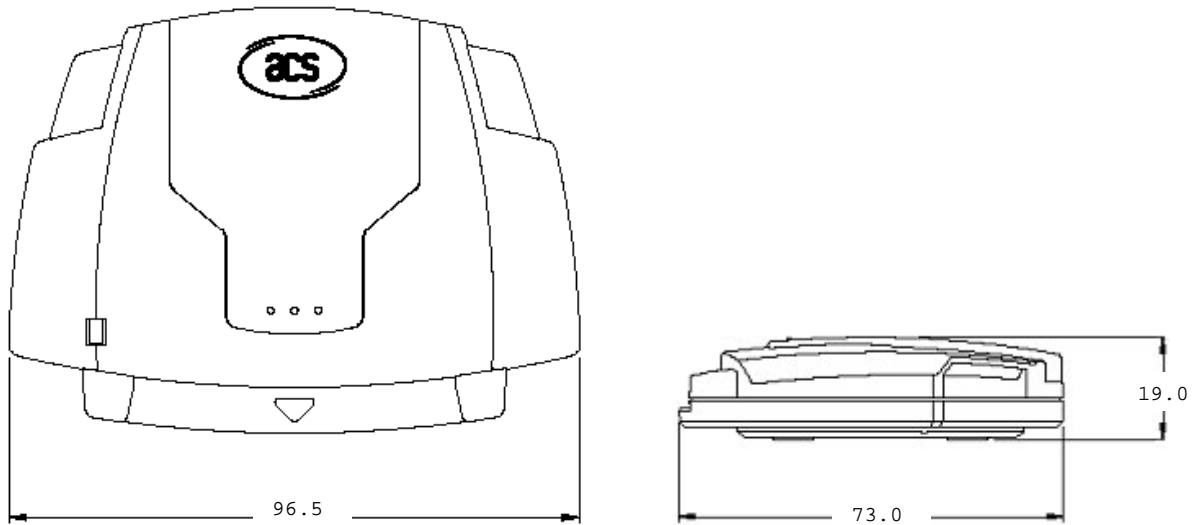


5.0. Typical Applications

- 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



6.0. Technical Specification



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

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%

Compliance/Certifications

EN 60950/IEC 60950, RoHS Compliant, EMV 2000 Level 1, ISO-7816, PC/SC, CE, FCC, USB Full Speed
Microsoft WHQL 2K, XP, Vista

Device Driver Operating System Support

Windows 98, ME, 2000, XP, Server 2003, Vista

