

Advanced Card Systems Ltd.



## **ACR38T-IBS Plug-in Card Reader**



### **TECHNICAL SPECIFICATIONS**

**Version 1.7 03-2006**

## ACR38T-IBS Plug-in Card Reader

### 1.0 Introduction



The ACR38T is a stylish plug-in (SIM-sized) smart card reader/writer. It has the full functionalities of ACR38 and supports smart cards that conform to GSM 11.11 specification.

It is an extremely light and compact USB full speed device, with a weight of only 10 grams and has a release button for plug-in smart cards. The ACR38T is a highly portable smart card PC peripheral, as it plugs into the USB port and requires no additional cable or wiring. It is ideal for Internet Banking, Payment Systems and Network Security.

### 2.0 Features

- **USB full speed** interface to PC with simple command structure
- Support Plug-in SIM-sized card
- Read and write all microprocessor SIM-sized cards with T=0 or T=1 protocols
- Read and write popular memory card types
- Support GSM 11.11 specification
- Require no additional cable
- Short Circuit Protection
- Conform with: EN 60950/IEC 60950, ISO-7816, PC/SC, Microsoft WHQL, EMV Level 1, USB Full Speed
- Support ISO-7816 Class A, B and C (**5V, 3V, 1.8V**) cards
- 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 ACR38T can operate MCU card with T=0 and T=1 protocol. The table presented in Appendix A (Reference Manual) explains which card type selection value must be specified for the various card types supported by the reader.

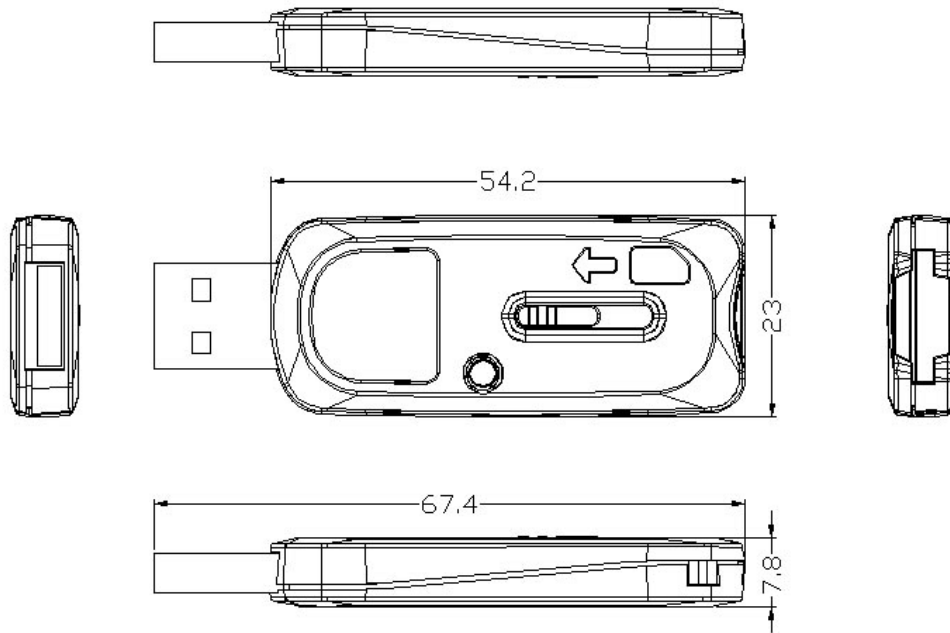
#### 3.2 Memory-based smart cards (synchronous interface)

- 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 intelligent 256 bytes EEPROM with write protect function:  
 SLE4432, SLE4442
- SLE4418/4428 intelligent 1K bytes EEPROM with write-protect function:  
 SLE4418, SLE4428
- Secure memory cards such as:  
 AT88SC153, AT88SC1608
- SLE4406/4436/5536 '104' type EEPROM non-reloadable token counter cards (for firmware version 1.10 onwards):  
 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 Specification



### Universal Serial Bus Interface

Type..... USB full speed, four lines: +5V, GND, D+ and D-  
 Power source..... From USB  
 Speed..... 12 Mbps (Full Speed)

### 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..... sliding contacts (6 contacts)  
 Card insertion cycles..... min. 100,000

### Case

Dimensions..... 67.4mm (L) x 23.0mm (W) x 7.8mm (H)  
 Color..... Red  
 Weight..... 10 g

### Operating Conditions

Temperature..... 0 - 50° C  
 Humidity..... 40% - 80%

### Standard/Certifications

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

### OS

Windows 98, ME, NT, 2K, XP, 2K3 Server, Linux, Mac OS X 10.1, 10.2, 10.3

### OEM

OEM-Logo possible, customer-specific colors, and casing



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## 6.0 Software Development Kit Specifications

ACR38 SDK is a complete package containing all the vital components required for smart card application development. It provides developers with a convenient and effective way to incorporate smart cards into their solutions.

### Package Contents

- ACR38 Smart Card Reader, ACR38T SIMTracker SIM-sized plug-in Smart Card Reader, ABR08LS Balance Reader
- 5 ACOS2 8Kbyte microprocessor-based smart cards, 5 ACOS2 SIM-size plug-in 8Kbyte microprocessor-based smart cards, 5 SLE 4428 memory-based smart cards, 5 SLE 4442 memory-based smart cards
- Installation and operation CD-ROM (including drivers, source codes, utility tools and demo software)

### The SDK CD-ROM includes:

- Sample Applications – Casino Application, School Application, and ACOS Screen Saver (For Windows 2000 and XP only). These demo programs can showcase the wide range of applications ACR38 can be employed in, e.g. e-purse, physical and logical access control, etc.
- Sample Codes – C#, Delphi, VB.NET, Visual Basic, Visual C++
- Tools & Utilities – Card Tool, PC/SC Learning Tool, Quick View and Scripting Tool
- User Manuals and Reference Materials – ACOS2 Reference Manual, ACOS3 Reference Manual, ACR38 Memory Card Access, ACR38 OCF, ACR38 Reference Manual, ACR38 Technical Specifications, ACR38T Technical Specifications, Balance Reader Technical Specifications, FAQ, PC/SC Specifications, Training Materials and Product and Service Guide
- SDK User Manual

