Advanced Card Systems Ltd.
Card & Reader Technologies

ACR38ET DualKey2
Smart Card Reader

Technical Specifications

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1.0. Introduction

The threat of hacking and/or unauthorized access to company assets triggers the need for effective security devices that will safeguard both physical and logical access. With ACR38ET DualKey2, this can be done with only so much as a plug-in SIM-sized Card Reader having both the functionalities for both contactless and SIM-sized contact cards. With its simple design and powerful features, one can safeguard the access to PCs, Intranet & Extranet networks, physical doors, databanks and the like, with supreme confidence.

ACR38ET DualKey2 is an extension of the ACR38T SIMTracker II, and is a fully functional version of the ACR38T, with contactless functionalities as its value-added feature.

1.1. Plug-in (SIM-sized) Card Reader

Compliant with the GSM 11.11 specifications, the ACR38ET DualKey2 is an extremely compact USB Full Speed device compatible with the ACR38 smart card reader, and is designed to access SIM-sized smart cards (Plug-in cards).

With a size of only 78.73mm x 21.50mm x 11.00mm, it is highly suitable for portable applications. Simply plug it into the PC's USB port, as it requires no additional cable or wiring, for easy installation.

1.2. Contactless Feature

While its SIM-sized card feature enables contact card security benefits, the ACR38ET DualKey2 also functions as a Mifare card token.

The ACR38ET DualKey2 allows one to have a highly secure system as the data is segregated from the reader itself. Contactless card information is stored in the SIM card alongside the contact card data. Utilizing this feature, one can benefit from the speed and convenience that the contactless technology brings.

Further, the ACR38ET DualKey2 is a reliable and effective high quality reader, designed for convenient use and harmony with other PC peripherals. It is ideal for electronic commerce, physical access control, home banking or e-purse facilities, secure computer access, transportation and GSM applications.

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
  - Read and write support to all microprocessor cards with T=0 or T=1 protocols
  - Supports memory cards:
    - I2C bus Protocol Cards (1K bits to 1024K bits)
    - Secure Memory cards (Atmel AT88SC153 and AT88SC1608)
    - Memory Card with Secure Logic (AT88SC101/102/1003)
  - Supports SLE 4404/06/18/28/32/36/42, SLE 5518/28/32/36/42, SLE 6636
  - Supports PPS (Protocol and Parameters Selection)
  - Short Circuit Protection
- Contactless Feature
  - Features embedded Mifare 1K Chip
- Compliant with the following standards:
  - EN60950/IEC60950
  - PC/SC
  - CCID
  - RoHS
  - CE
  - FCC
  - Microsoft WHQL

3.0. Supported Card Types

3.1. MCU Cards

The ACR38ET DualKey2 operates with any MCU card following either the T=0 or T=1 protocol.

3.2. Memory-Based Smart Cards

The ACR38ET DualKey2 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

  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
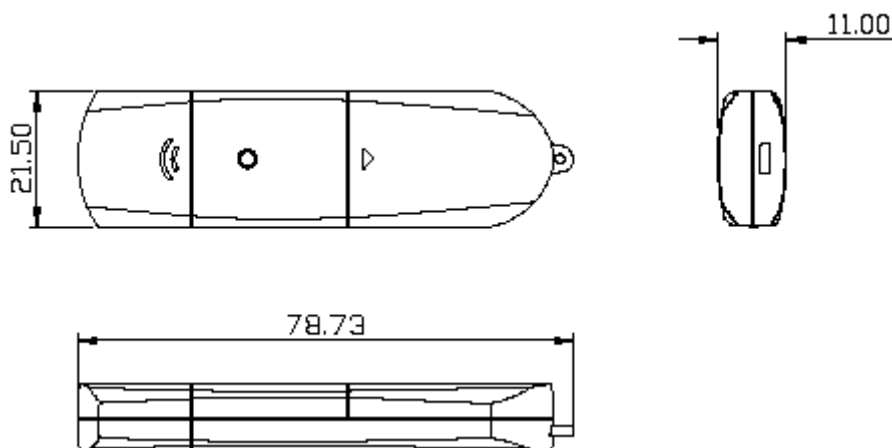
Universal Serial Bus Interface	
Type	USB full speed, four lines: +5 V, GND, D+ and D-
Power source	From USB

Smart Card Interface (Contact)	
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	+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
Card insertion cycles	min. 10,000

Smart Card Interface (Contactless)	
Standard	ISO 14443 - Mifare

The ACR38ET acts as a Mifare contactless smart card.

Physical Specifications	
Dimensions	78.73 mm (L) x 21.50 mm (W) x 11.00 mm (H)
Standard color	Transparent Blue
Weight	16 g

Operating Conditions	
Temperature	0 – 50 °C
Humidity	10% - 90%
MTBF	500,000 hrs

Certifications/Compliance

EN 60950/IEC 60950, PC/SC, CE, FCC, CCID, RoHS, USB Full Speed
Microsoft ® WHQL 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7

Device Driver Operating System Support

Windows ® 98, ME, 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2,7
Linux, Mac