Advanced Card Systems Ltd.

acs

ACR38DT DualKey

TECHNICAL SPECIFICATIONS

Version 2.1 **11-2006**

ACR38DT DualKey

1.0 Introduction

Due to the rising demand of e-working methods (remote office, home office...) and snowballing hacking likeliness, it is the time to properly secure access to PCs, desktops, Intranet & Extranet networks and physical access control. ACR38DT offers both solutions based on SIM-sized **combi smart card** (contactless and contact card) for logical and physical access control.

The ACR38DT Contactless/Contact DualKey is an extension of ACR38T SIMTracker II. It has full ACR38T functionalities with contactless value-added feature.

Combi card

i) Serves as a plug-in (SIM-sized) card reader:
It is an extremely compact USB full speed device completely compatible with the ACR38 smart card reader and is designed to access SIM-sized smart cards (Plug-in card). With a size of only 78.73 mm x 21.50 mm x 11.00 mm, the ACR38DT is highly suitable for portable applications, as it plugs into the USB port and requires no additional cable or wiring. It also fulfils the GSM 11.11 specification. It is designed for PC environment, ultimate smart card peripheral for a PC.

ii) Serves as a contactless card:
While the ACR38DT serves as a contactless card, the embedded antenna coil enables the contactless part of the SIM-sized combi card to work as a contactless card to communicate with contactless readers.

ACR38DT DualKey is a good quality, reliable and effective reader with designs focusing on convenient use and harmony with other PC peripherals in terms of shapes and colors. It is ideal for electronic commerce, physical access control, home banking or e-purse facilities, secure computer access, transportation and GSM application tool

1.2   About RoHS Compliance

The RoHS (**R**estriction **o**f **H**azardous **S**ubstance) Directive restricts the use of six hazardous materials in the manufacturing of various types of EEE (Electrical and Electronic Equipment), including:
- Lead,
- Mercury,
- Cadmium,
- Hexavalent chromium,
- Polybrominated biphenyl (PBB) and
- Polybrominated diphenyl ether (PBDE).

RoHS Compliant

So RoHS compliance means the protection to the environment and your future generations from these restricted irritants, carcinogens and toxins.

2.0 Features

- **USB full speed** interface to PC with simple command structure
- Support Plug-in SIM-sized card
- Read and write all microprocessor cards with T=0 or T=1 protocol
- Read and write popular memory card types
- Support GSM 11.11 specification
- Require no additional cable
- Short Circuit Protection
- RoHS Compliant
- Conform with: EN 60950/IEC 60950, ISO-7816, PC/SC, CE, FCC, Microsoft WHQL, EMV 2000 Level 1
- Support ISO-7816 Class A, B and C (**5V, 3V, 1.8V**) cards
- Embedded antenna coil
- Full functionality with SIM-sized Combi card in contact and contactless interface
- Support PPS (Protocol and Parameters Selection) with 1,743 – 250,000 bps in reading and writing smart cards
- A patented technology combines physical and logical access control capabilities

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3.0 Supported Card Types

3.1 MCU Cards

The ACR38DT 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:
  SLE4406, SLE4436, SLE5536

4.0 Typical Applications

- Home Banking
- E-commerce
- Network access control
- Digital signature
- Identification
- Ticketing
- Parking and toll collection
- Online gaming
- Transportation
- Physical access control

Serves as a contactless card - Physical access control

5.0 OEM possibility

The ACR38DT DualKey is available for custom branding for promotion purposes. OEM enquiry is welcome. Casing color can be easily defined, and your own logo or design can be printed. We can also make other adaptations according to your requirements.
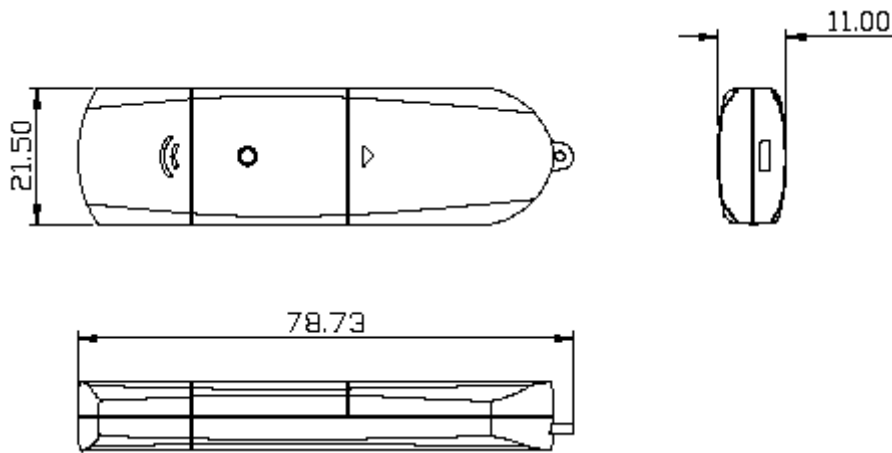
6.0 Technical Specification

Universal Serial Bus Interface

Type .... USB full speed, four lines: +5V, GND, D+ and D-
Power source.. From USB

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.. 78.73mm (L) x 21.50mm (W) x 11.00mm (H)
Standard color .... Silver/golden
Weight .... 0.16 kg

Operating Conditions

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

Standard/Certifications

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

OS

Windows 98, ME, NT, 2K, XP, NT 4.0, 2K3 Server, Linux, Mac OS X

OEM

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