

A background image showing a person's hands interacting with a card reader device. The person is wearing a plaid shirt and a watch. The card reader is a white, rectangular device with a slot for a card. The image is slightly blurred and has a semi-transparent white box overlaid on it containing the text 'TECHNICAL SPECIFICATIONS'.

## TECHNICAL SPECIFICATIONS

### ACR38ET Dual Key 2





### ACR38ET DualKey2

#### 1.0 Introduction



To effectively deter hacking or unauthorized access to company assets, a need for an effective device to guard the physical and logical access is imminent. With ACR38ET, you can safeguard the access to PCs, desktops, Intranet & Extranet networks, physical doors, safes, databanks... etc, with supreme confidence. With that power, ACR38ET is astonishingly simple – having innate contactless card functionalities and requiring simply a SIM-sized **smart card** for contact card functionalities.

The ACR38ET DualKey2 is an extension of ACR38T SIMTracker II. It has full ACR38T functionalities with contactless value-added feature.

##### 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 ACR38ET 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 the PC environment, and is an ultimate smart card peripheral for a PC.

##### ii) Serves as a contactless card:

While the SIM-sized card enables the contact card security benefits, the ACR38ET is virtually a Mifare® card token. Make use of this feature, and you may benefit from the speed and convenience contactless technologies can bring.

Since the contact card information is stored in the SIM card, while the contactless card information is stored in the ACR38ET itself, you can have a highly secure system based on data storage segregation.

ACR38ET DualKey2 is a good quality, reliable and effective reader with designs focused 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.

#### 1.1 About RoHS Compliance

The RoHS (**R**estriction of **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).



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
- Support SLE 4418/28/32/42 memory cards
- Support the most common memory-based smart cards, including **I2C bus protocol cards** (from 1k bits up to 1024k bits) and secure memory cards (**Atmel AT88SC153** and **AT88SC1608**)
- Support ISO-7816 Class A, B and C (**5V, 3V, 1.8V**) cards
- 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 PPS (Protocol and Parameters Selection) with 1,743 – 250,000 bps in reading and writing smart cards

### 3.0 Typical Applications

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



Serves as a contactless card - Physical access control



### 4.0 Supported Card Types

#### 4.1 MCU Cards

The ACR38ET 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.

#### 4.2 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
- SLE4432/5542 intelligent 256 bytes EEPROM with write protect function:  
SLE4432, SLE5542
- SLE4418/5528 intelligent 1K bytes EEPROM with write-protect function:  
SLE4418, SLE5528
- Secure memory cards such as:  
AT88SC153, AT88SC1608
- SLE4406/4436/5536 '104' type EEPROM non-reloadable token counter cards:  
SLE4406, SLE4436, SLE5536

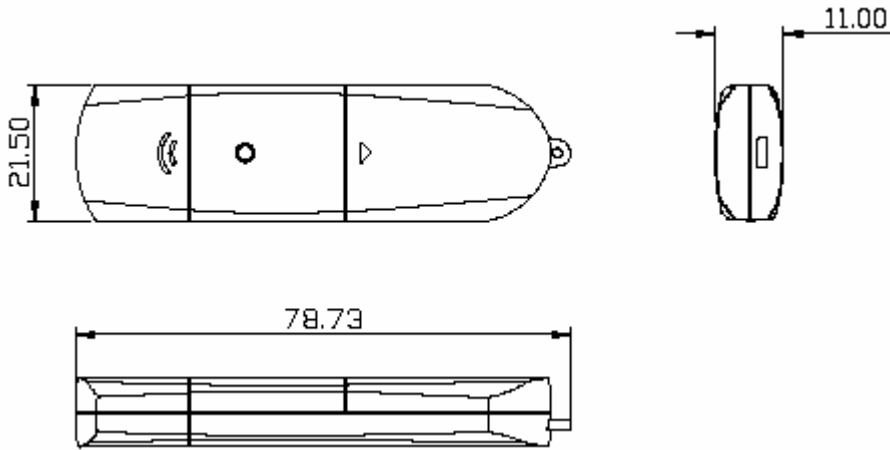
### 5.0 OEM possibility

The ACR38ET DualKey2 is available for custom branding for promotional 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 (8 contacts)  
Card insertion cycles ..... min. 100,000

#### Case

Dimensions..... 78.73mm (L) x 21.50mm (W) x 11.00mm (H)  
Standard color ..... Transparent blue  
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, Vista

#### OS

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

#### OEM

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

