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Card & Reader Technologies

ACR38F

Technical Specifications

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1.0. Introduction

The ACR38F is the ideal solution for easy integration of a smart card reader into the desktop environment. It uses the same electronic circuit as the ACR38, and has the same versatility and cost-effectiveness that have always been associated with ACS smart card readers. Using the USB interface, it uses the PC's internal power supply, and can be configured in several ways to suit the customer's preference.

Similar to ACR38, ACR38F Floppy Bay Smart Card Reader is also very simple to use and to install. It is ideal for electronic commerce, home banking or e-purse facilities, secure computer access or any other smart card application.

2.0. Features

- PC/SC Compliant
- Microsoft WHQL Certified Drivers
- CE and FCC Certified
- EMV 2000 Level 1 Certified
- Conforms to EN 60950/IEC 60950
- 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 protocol
- Supports a wide range of memory-based smart cards
- USB full speed interface to PC
- Short Circuit Protection
- RoHS Compliant
- 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 ACR38F operates with an MCU card following either the T=0 and T=1 protocol.

3.2. Memory-based Smart Cards (Synchronous Interface)

The ACR38F supports the following memory cards:

- 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
- SLE4432/4442/5542 intelligent 256 bytes EEPROM with write protect function:

  SLE4432, SLE4442, SLE5542
- SLE4418/4428/5528 intelligent 1K bytes EEPROM with write-protect function:

  SLE4418, SLE 4428, SLE5528
- Secure memory cards such as:

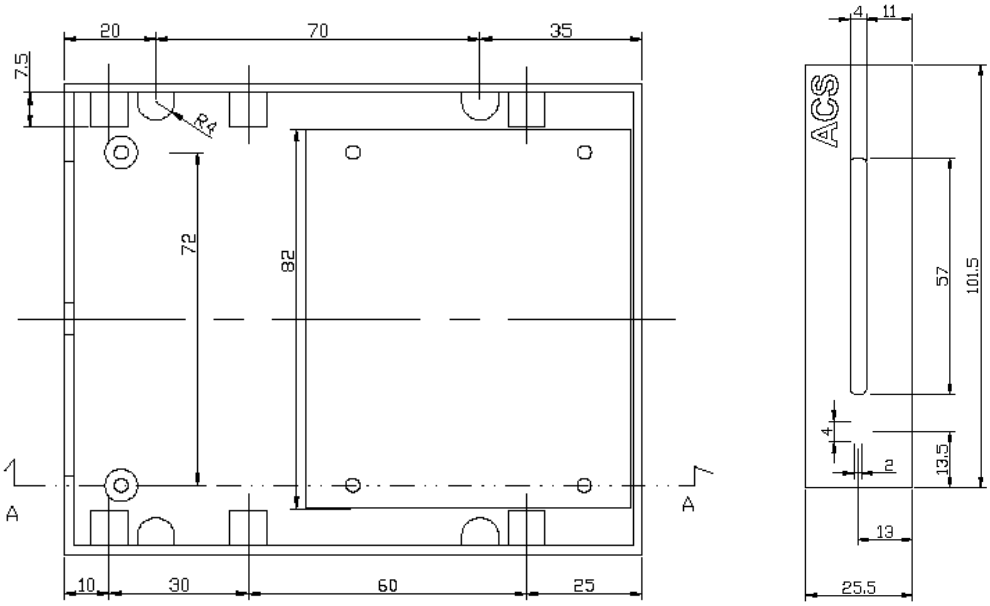
  AT88SC153, AT88SC1608
- SLE4406/4436/5536 ‘104’ type EEPROM non-reloadable token counter cards

  SLE4406, SLE4436, SLE5536

4.0. Typical Applications

- Home Banking 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 Specifications



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

Operating Conditions

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

Certifications/Compliance

EN 60950/IEC 60950, EMV 2000 Level 1, PC/SC, CE, FCC, RoHS Compliant, USB Full Speed,
Microsoft ® WHQL 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7

Device Driver Operating System Support

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

6.0. Interface Scheme

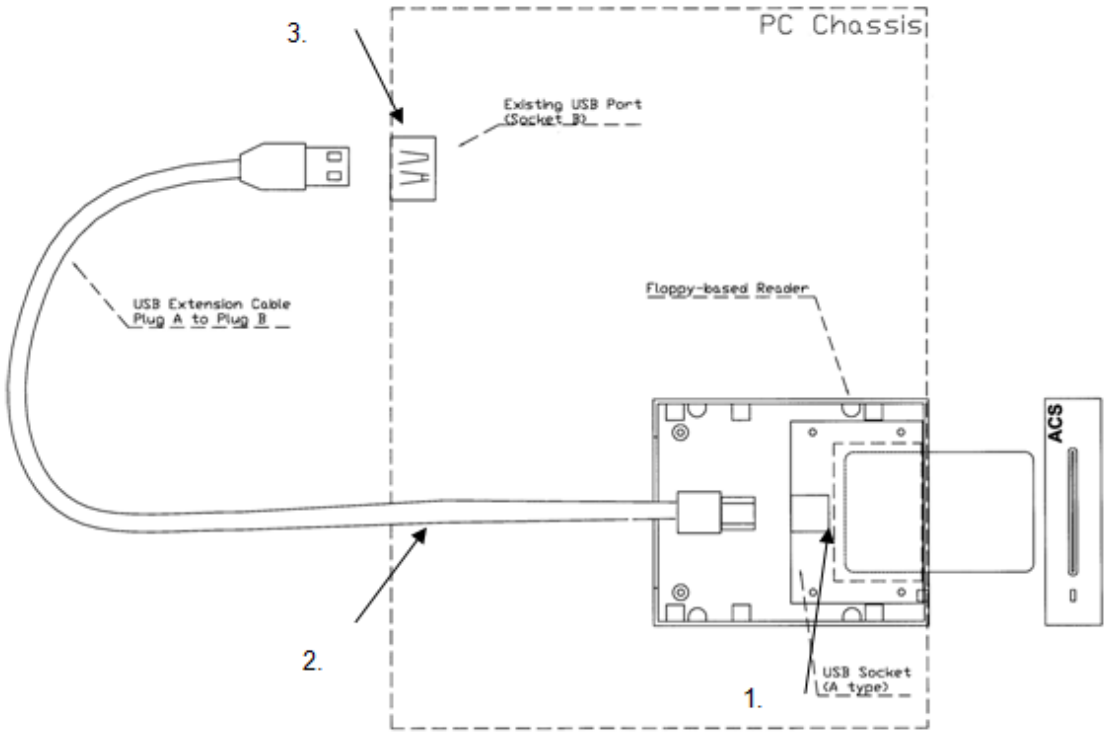
Since the floppy bay reader is designed to be mounted or integrated into a standard PC Chassis, the top plastic cover is no longer required. The power of the reader is obtained through the internal switching power supply of the PC. Basically, the functionality of the ACR38F floppy bay reader is the same as an ACR38 reader.

The size is the same as a standard 3.5" floppy disk drive. No top plastic cover. There are also screw holes on the reader for the user to mount the device to the PC chassis. For convenience, (4) pieces of PA 2.6 x 8 mm screws are included. A "4 pins mini power socket (M)" is provided on the PCB reader for the power interface. (The socket is the same as the one used in a 3.5" floppy disk drive). A 2x5 pins header socket is provided on the PCB of the reader for connecting to the communication port through the use of an appropriate extension cable.

6.1. Connection Scheme

Using an extension cable coming out from the back of the PC

One extension cable is required. A cable with an **"USB Plug A"** on the one side while the other side is connected to an **"USB Plug B"** as shown below:.



6.2. Wiring Procedures

1. Connect the **USB Plug A** of the flat cable into the **USB Socket A** on the PCB of the reader.
2. Let the **USB Plug B** go through the slot hole of the PC Chassis.
3. Connect the **USB Plug B** of the extension cable to any unused USB Port externally.