Advanced Card Systems Ltd.
Card & Reader Technologies

ACR101I
SIMicro (CCID)
Smart Card and Micro SD Reader

Technical Specifications V1.07

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1.0. Introduction

The ACR101I SIMicro (CCID) is more than just your ordinary SIM-sized smart card reader. With the combination of a smart card reader and a Micro SD card slot in a compact USB token, the ACR101I SIMicro (CCID) provides you with complete support for highly secured mobile applications. Furthermore, it has an embedded MIFARE® Classic (1K) chip that allows the device to be used for contactless applications. The ACR101I SIMicro (CCID) is also available in HID, bringing you the same plug-and-play convenience, which does not require any special driver installation.

1.1. SIM-sized Smart Card Reader

The ACR101I SIMicro (CCID) is a compact and powerful reader with its reliable support for ISO 7816 microprocessor smart cards. It works with most memory cards and microprocessor cards with the T=0 and T=1 protocol.

With security as its top priority, the ACR101I SIMicro (CCID) gives you the option to integrate highly secured technologies, such as Public Key Infrastructure (PKI), into your applications for maximum protection of sensitive data.

1.2. Memory Storage Device

Aside from being a SIM-sized smart card reader, the ACR101I SIMicro (CCID) is also a storage device. With a dimension of 72.0 mm × 26.0 mm × 11.7 mm, this USB-powered device can be brought anywhere and be used without any cable. The ACR101I SIMicro (CCID) is also capable of supporting up to 8 GB expandable Micro SD memory.

1.3. Contactless Feature

The ACR101I SIMicro (CCID) has an embedded MIFARE Classic 1K chip which enables it to act as a contactless card. Its contactless attribute allows flexibility in using this powerful device in a wide array of applications, such as physical and logical access control.

1.4. Ease of Integration

With the ACR101I SIMicro (CCID) being compliant with the Chip/Smart Card Interface Devices (CCID) and Personal Computer/Smart Card (PC/SC) standards, it is easier to integrate in a computer-based environment by eliminating driver installation prior to use. In addition, the ACR101I SIMicro (CCID) may now be used on mobile devices running the Android™ platform with versions 3.1 and later.

With its wide array of features, the ACR101I SIMicro (CCID) can be used in various application areas, such as Public Key Infrastructure, network security and GSM management.

2.0. Features

- USB Combo Device - Works as a smart card reader and mass storage

- USB Full Speed Interface

- Plug and Play - CCID support brings utmost mobility

- Extractable USB Connector

- Smart Card Reader:
  - Contact Interface:
    - Supports ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V) SIM-sized cards
    - Supports microprocessor cards with T=0 or T=1 protocol
    - Supports memory cards
    - Supports PPS (Protocol and Parameters Selection)
    - Features Short Circuit Protection

- Built-in Peripherals:
  - Bi-color LED
  - Contactless Feature:
    - Embedded MIFARE Classic 1K chip

- Application Programming Interface:
  - Supports PC/SC
  - Supports CT-API (through wrapper on top of PC/SC)

- Flash Drive:
  - Supports Micro SD cards
  - Maximum of 8 GB memory

- Supports Android™ 3.1 and later[1]

- Compliant with the following standards:
  - EN 60950/IEC 60950
  - ISO 7816
  - PC/SC
  - CCID
  - CE
  - FCC
  - RoHS 2
  - REACH
  - VCCI (Japan)
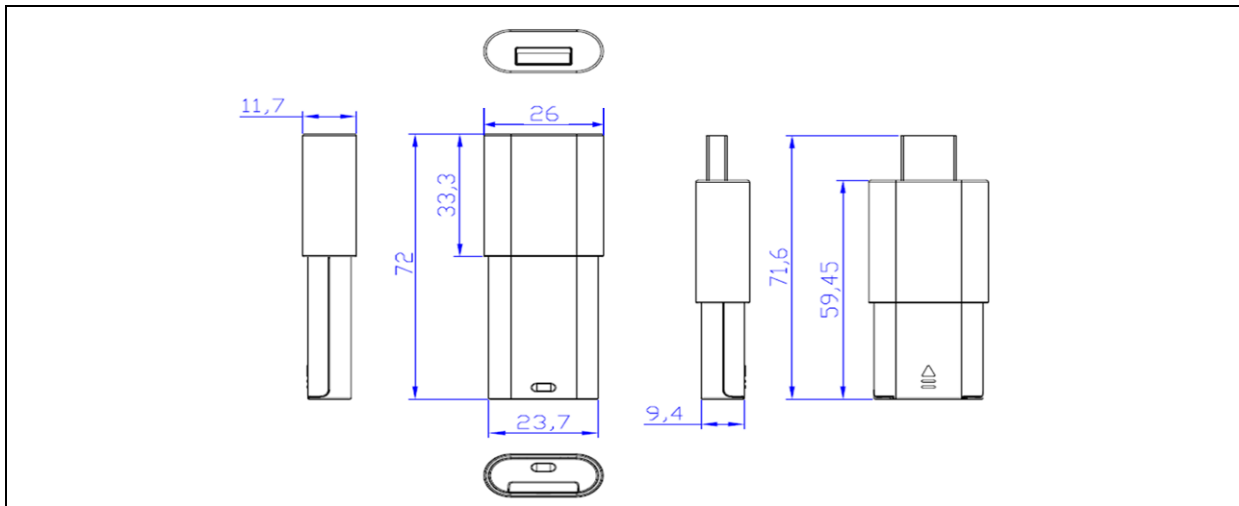 - Microsoft® WHQL

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[1] Uses an ACS Defined Android Library

3.0. Typical Applications

- e-Government
- Banking and Payment
- Network Security
- Public Key Infrastructure
- Telecommunications
- VoIP (Voice over IP)
- Data Storage

4.0. Technical Specifications

Physical Characteristics

Dimensions .... 72.0 mm (L) × 26.0 mm (W) × 11.7 mm (H)
Weight... 15 g
Color .... Green and White

USB Host Interface

Protocol.. USB CCID
Connector Type.............................. Standard Type A
Power Source................................. From USB port
Speed .... USB Full Speed (12 Mbps)
Supply Voltage.............................. 2.7 V - 3.6 V

Contact Smart Card Interface

Number of Slots .... 1 SIM-sized Card Slot
Standard .... ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V)
Protocol.. T=0 and T=1; Memory Card Support
Supply Current .... Max. 50 mA
Smart Card Read/Write Speed....... 9.6 Kbps - 344 Kbps
Short Circuit Protection .... (+5) V/GND on all pins
Clock Frequency .... 4 MHz
Card Connector Type..................... Contact
Card Insertion Cycles.................... Min. 2,000

Memory Expansion

Micro-SD Card Slot…..................... Supports up to 8 GB (the device comes with a min. 2GB Micro SD card)
Data Writing Speed .... Up to 3 Mbps
Data Reading Speed .... Up to 14 Mbps

Built-in Peripheral

LED... 1 bi-color: Green and Red
Contactless Feature...................... Embedded MIFARE 1K Chip

Application Programming Interface

PC-linked Mode............................. PC/SC
.... CT-API (through wrapper on top of PC/SC)

Operating Conditions

Temperature.................................. 0 °C - 50 °C
Humidity….... .... Max. 90% (non-condensing)
MTBF .... 500,000 hrs

Certifications/Compliance

EN 60950/IEC 60950, ISO 7816, USB Full Speed, PC/SC, CCID, CE, FCC, RoHS 2, REACH,
VCCI (Japan), Microsoft® WHQL

Device Driver Operating System Support

Windows® XP, Windows® Vista™, Windows® 7, Windows® 8, Windows® 8.1, Windows® 10, Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2, Windows® Server 2016
Linux®, Mac OS®, Android™ 3.1 and later

5.0. Opening the card cover

1. Before opening the cover of the SIM-sized smart card and Micro SD slot, make sure that the USB connector cover is closed.

2. To close the cover of the USB connector, pull up the green cap.

3. Place your thumb on the cover of the SIM-sized smart card slot and push up.

4. Slightly pull up the bottom end of the cover to open the smart card slot.

5. Remove the cover to reveal the SIM-sized card slot and Micro SD slot.