



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR39T-A3 Smart Card Reader



Technical Specifications V1.02



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1.0. Introduction

ACR39T-A3 hails the new and modern technology in the world of smart card readers and mobile devices. It is a SIM-sized smart card reader that is small in size but packs a lot of features. With its MicroUSB OTG (On-The-Go) interface, the ACR39T-A3 is capable of supporting most of the smartphones and tablets available in the market that runs applications using SIM-sized contact smart cards.



1.1. Smart Card Reader

ACR39T-A3 supports ISO 7816 Class A, B, and C smart cards (5 V, 3 V, and 1.8 V) and works well with most memory cards and microprocessor cards with the T=0 and T=1 protocol. It connects with mobile devices through its MicroUSB full-speed interface and has a smart card read/write speed of up to 600 Kbps. This makes it ideal for a broad range of solutions, such as e-Government, Network Security and Access Control.

1.2. Ease of Integration

ACR39T-A3 can be easily integrated with any mobile device running the Android™ platform with versions 3.1 and later. Additionally, it may be used in operating systems such as Windows®, Linux®, or Mac OS® with its PC/SC and CCID compliance.

With its numerous features, the ACR39T-A3 is clearly the perfect smart card reader for your smart card solution.



2.0. Features

- USB Full Speed Interface
- Plug and Play—CCID support brings utmost mobility
- Includes protective USB cap
- Smart Card Reader:
 - Supports ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V) SIM-sized cards
 - Supports microprocessor cards with T=0 and T=1 protocol
 - Supports memory cards
 - Supports PPS (Protocol and Parameters Selection)
 - Features Short Circuit Protection
- Application Programming Interface:
 - Supports PC/SC
 - Supports CT-API (through wrapper on top of PC/SC)
- Supports Android™ 3.1 and later¹
- Compliant with the following standards:
 - EN60950/IEC 60950
 - ISO 7816
 - USB Full Speed
 - PC/SC
 - CCID
 - CE
 - FCC
 - WEEE
 - RoHS 2
 - REACH
 - VCCI (Japan)
 - Microsoft® WHQL

¹ Uses an ACS-defined Android Library



3.0. Supported Card Types

3.1. MCU Cards

ACR39T-A3 operates with MCU cards following either the T=0 or T=1 protocol.

3.2. Memory-based Smart Cards

ACR39T-A3 works with several memory-based smart cards such as:

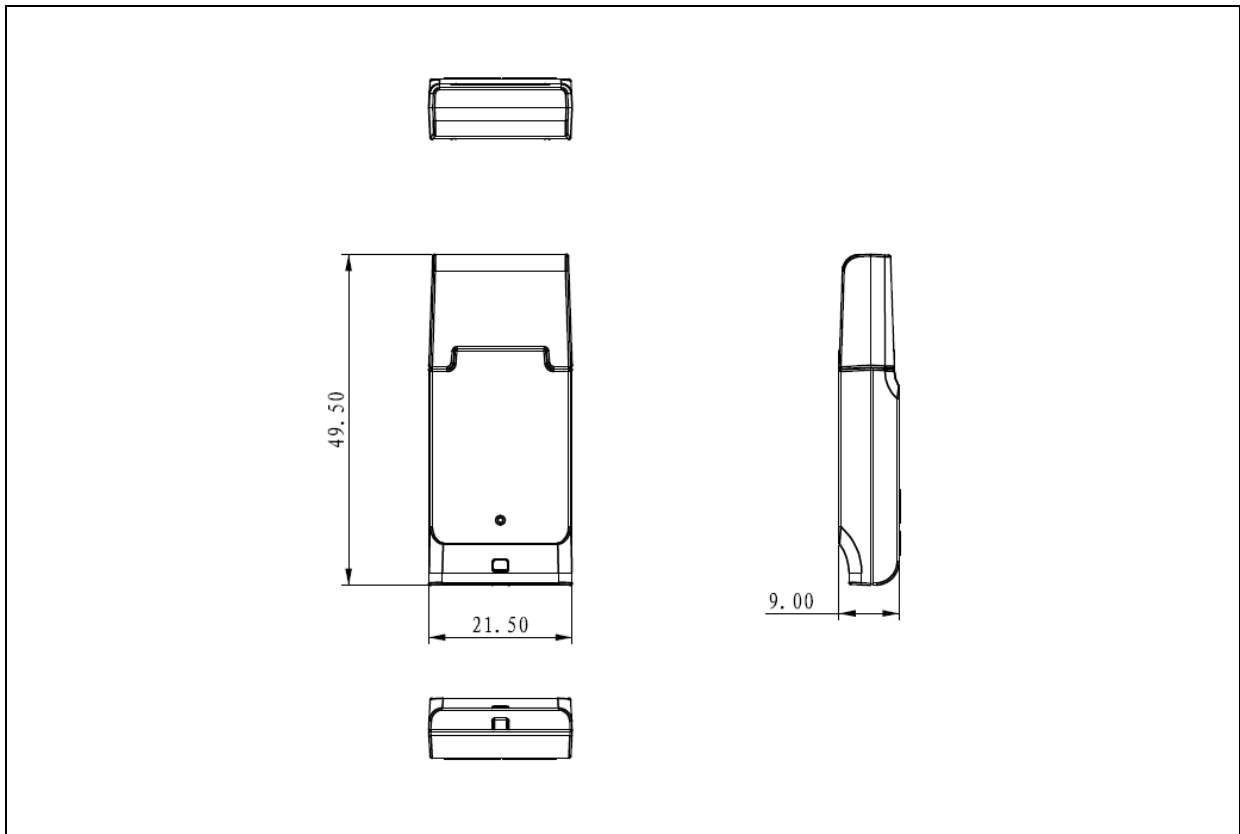
- Cards following the I2C bus protocol (free memory cards) with maximum 128 bytes page with capability, including:
 - Atmel®: AT24C01/02/04/08/16/32/64/128/256/512/1024
 - SGS-Thomson: ST14C02C, ST14C04C
 - Gemplus: GFM1K, GFM2K, GFM4K, GFM8K
- Cards with intelligent 1 KB EEPROM with write-protect function, including:
 - Infineon®: SLE4418, SLE4428, SLE5518 and SLE5528
- Cards with intelligent 256-byte EEPROM with write-protect function, including:
 - Infineon®: SLE4432, SLE4442, SLE5532 and SLE5542



4.0. Typical Applications

- e-Government
- e-Healthcare
- e-Purse and Loyalty
- Mobile Banking and Payment
- Network Security
- Access Control
- Public Key Infrastructure

5.0. Technical Specifications



Physical Characteristics

Dimensions 49.5 mm (L) × 21.5 mm (W) × 9.0 mm (H)
 Weight 7.9 g
 Color Black

USB Host Interface

Protocol USB CCID
 Connector Type Micro Type B
 Power Source From Micro USB port
 Speed USB Full Speed (12 Mbps)
 Supply Voltage 5 V

Contact Smart Card Interface

Number of Slot 1 SIM-sized Card Slot (optional with MicroSIM-sized)
 Standard ISO 7816 Parts 1-3, Class A, B, C (5 V, 3 V, 1.8 V)
 Protocol T=0; T=1; Memory Card Support
 Supply Current Max. 50 mA
 Smart Card Read/Write Speed 9.6 Kbps – 600 Kbps
 Short Circuit Protection (+5) V/GND on all pins
 Clock Frequency 4.80 MHz
 Card Connector Contact
 Card Insertion Cycles Min. 10,000

Built-in Peripheral

LED Green

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

EN60950/IEC 60950, ISO 7816, USB Full Speed, PC/SC, CCID, CE, FCC, WEEE, 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
Linux®, Mac OS®, Android™ 3.1 and later



6.0. Opening the SIM card cover

1. Open the SIM card cover from the back part of the reader.

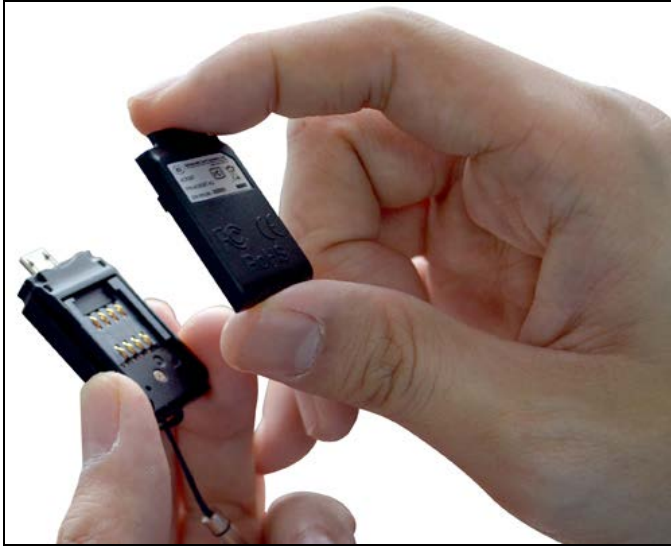


2. Pull out the back cover from the top end.





3. Remove the cover completely to insert/remove the SIM card to/from the reader.



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