Advanced Card Systems Ltd.
Card & Reader Technologies

ACR39T-A3 Smart Card Reader

Technical Specifications V1.00

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1.0. Introduction

The 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 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, 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 Digital Signature, m-Commerce and Online Banking.

1.2. Ease of Integration

ACR39T-A3 can be easily integrated with any mobile device running the Android™ platform with versions 3.1 and above. Additionally, it may be used in 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 2.0 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 above
- Compliant with the following standards:
  - EN60950/IEC 60950
  - ISO 7816
  - CE
  - FCC
  - VCCI
  - PC/SC
  - CCID
  - Microsoft® WHQL
  - RoHS
  - REACH

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

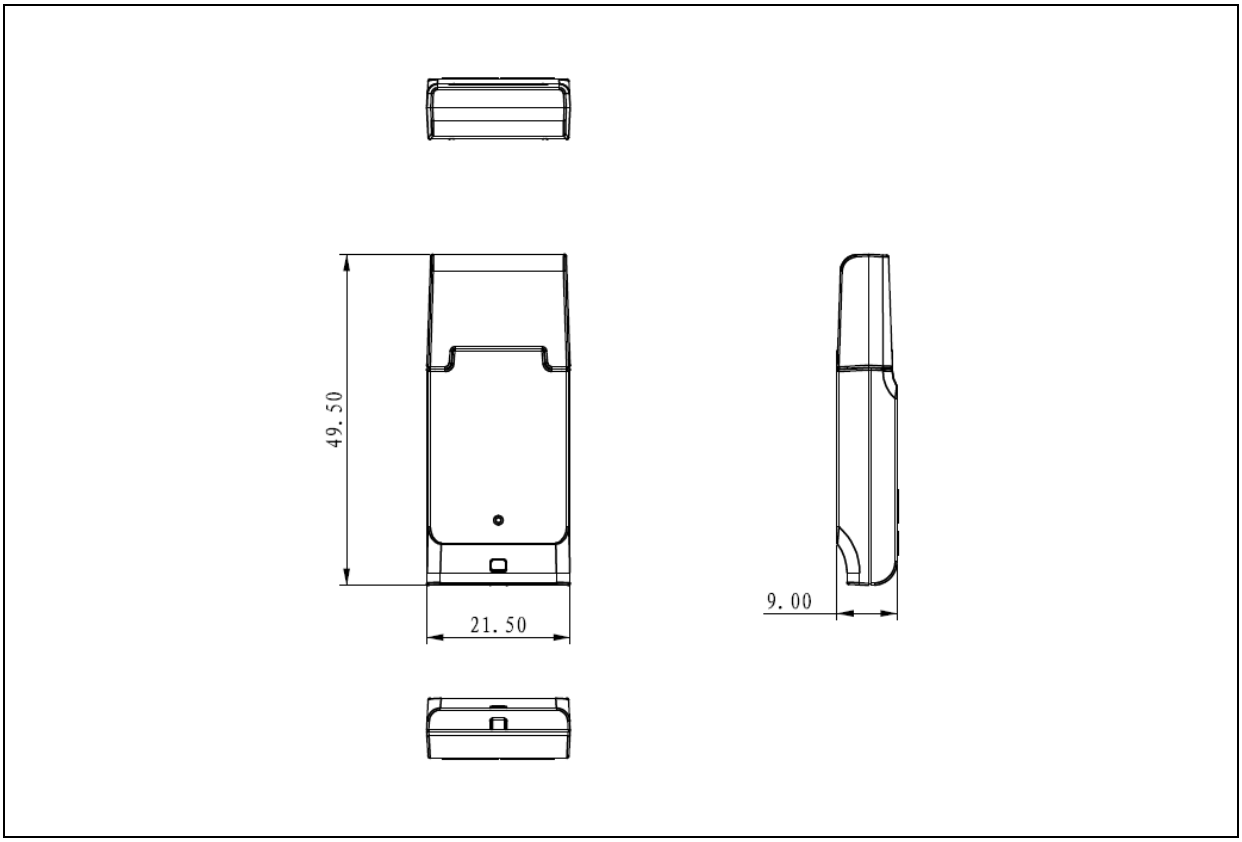
ACR39T-A3 works with several memory-based smart cards such as:

- 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-kilobyte 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

- Mobile Banking
- Mobile Payment
- e-Healthcare
- Loyalty Program

5.0. Technical Specifications



Universal Serial Bus Interface

Type ..... Micro USB (OTG) Full Speed, Five Lines: +5 V, GND, ID pin, D+ and D-
Power Source..... From Micro USB
Speed..... 12 Mbps

Smart Card Interface

Standard ..... ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V), T=0 and T=1
Supply Current ..... Max. 50 mA
Smart Card Read/Write Speed..... Max. 600,000 bps
Short Circuit Protection ..... +5 V/GND on all pins
CLK Frequency ..... 4.8 MHz
Card Connector..... Contact
Card Insertion Cycles..... Min. 10,000
Card Form Factor..... SIM-sized (optional with MicroSIM-sized)

Physical Specifications

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

Built-in Peripheral

LED..... 1 LED, Green

Operating Conditions

Temperature ..... 0 °C – 50 °C
Humidity..... 10% – 90%
MTBF ..... 500,000 hrs

Application Programming Interface

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

Certifications/Compliance

EN60950/IEC 60950, ISO 7816, CE, FCC, VCCI, PC/SC, CCID, RoHS, REACH, USB Full Speed
Microsoft® WHQL for Windows® 2000, Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2

Device Driver Operating System Support

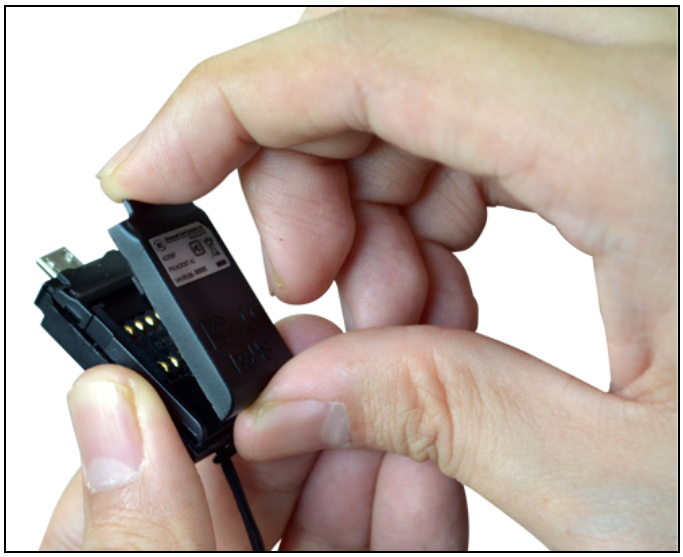
Windows® CE, Windows® 98, Windows® ME, Windows® 2000, Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, Windows® Server 2003, Windows® Server 2003 R2, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2

Linux®, Mac OS®, Android™ 3.1 and above

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.