



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR39U-U1 Smart Card Reader



Technical Specifications V1.00



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1.0. Introduction

ACR39U-U1 hails the new and modern technology in the world of smart card readers. It is a compact and stylish smart card reader that brings together sophisticated technology with modern design to meet rigorous requirements in various smart card based applications.

1.1. Smart Card Reader



ACR39U-U1 supports ISO 7816 Class A, B, and C smart cards (5 V, 3 V, and 1.8 V) and microprocessor cards with the T=0, T=1 protocol, and most memory cards in the market, .

It also features a USB Full Speed interface and a smart card read/write speed of up to 600 Kbps. Highly durable, ACR39U-U1 can last for 100,000 card insertion cycles. ACR39U-U1 also has various certifications, such as EMV 2000 Level 1 and PBOC, making it the ideal smart card reader for your e-Banking and e-Payment application needs.

1.2. Compact Design

The modern design of ACR39U-U1 makes it stand out from ordinary smart card readers as it houses a powerful core that can support demanding applications which can be used anytime, anywhere.

1.3. Ease of Integration

ACR39U-U1 is PC/SC and CCID compliant making it easy to install and use as it is specifically designed to be integrated into any computer-based environment. Its drivers are compatible with Windows® operating system, as well as Linux® and Mac OS®. In addition, ACR39U-U1 may now be used on mobile devices running the Android™ platform with versions 3.1 and above.

With its numerous features, the ACR39U-U1 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
- Smart Card Reader:
 - Supports ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V) 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 above¹
- Compliant with the following standards:
 - EN60950/IEC 60950
 - ISO 7816
 - CE
 - FCC
 - VCCI
 - PC/SC
 - CCID
 - EMV 2000 Level 1
 - PBOC
 - Microsoft® WHQL
 - RoHS 2
 - REACH

¹ PC/SC and CCID support are not applicable



3.0. Supported Card Types

3.1. MCU Cards

ACR39U-U1 operates with MCU cards following either the T=0 or T=1 protocol.

3.2. Memory-based Smart Cards

ACR39U-U1 works with several memory-based smart cards such as:

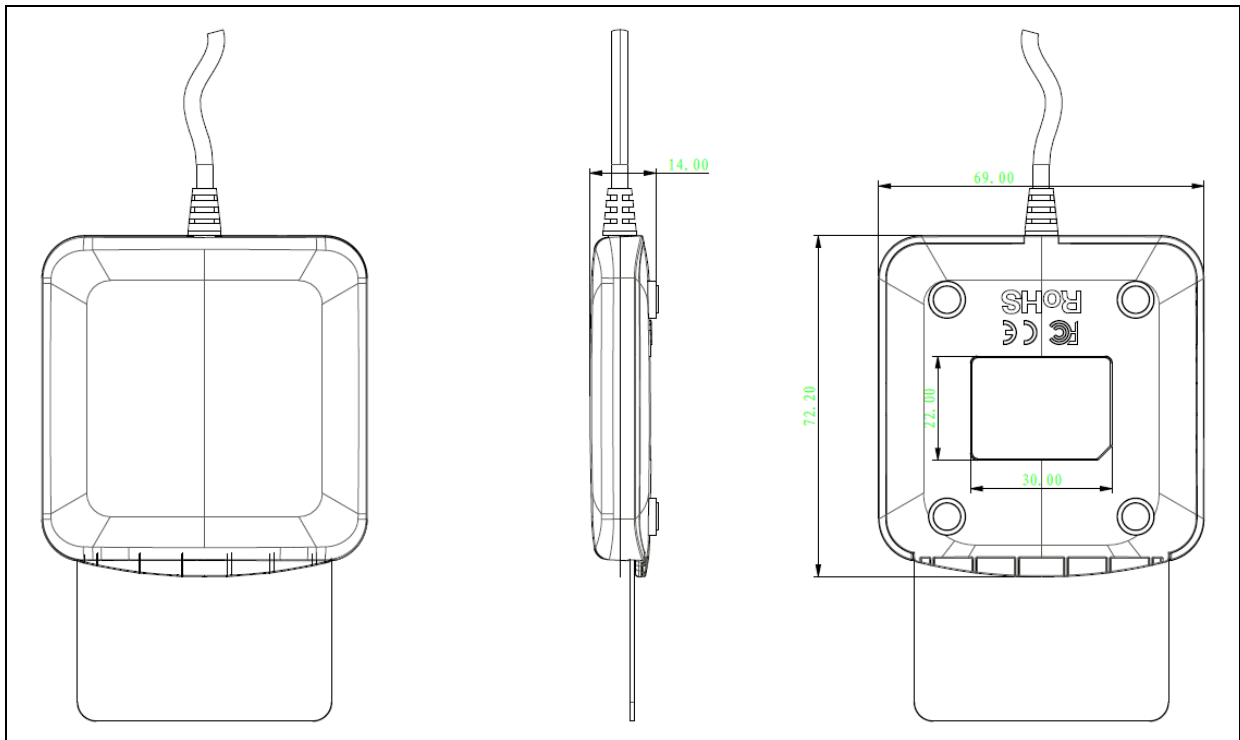
- Cards following the I2C bus protocol (free memory cards) with maximum 128 bytes page with capability, including:
 - Atmel®: AT24C01/02/04/08/16/32/64/128/256/512/1024
 - SGS-Thomson: ST14C02C, ST14C04C
 - Gemplus: GFM1K, GFM2K, GFM4K, GFM8K
- Cards with intelligent 1 KB EEPROM with write-protect function, 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-Banking and e-Payment
- e-Healthcare
- Public Key Infrastructure
- Network Security
- Access Control
- Loyalty Program

5.0. Technical Specifications



Universal Serial Bus Interface

Type USB Full Speed, four lines: +5 V, GND, D+ and D-
Power Source..... From 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. 100,000

Physical Specifications

Dimensions 72.2 mm (L) × 69.0 mm (W) × 14.0 mm (H)
Color Black
Weight..... 65 g (± 5 g allowance for cable)
Cable length, cord, connector 1.5 m, Fixed (non-detachable), USB A

Built-in Peripheral

LED 1 LED, Green

Operating Conditions

Temperature..... 0 °C – 50 °C
Humidity Max. 90% (non-condensing)
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, EMV 2000 Level 1, PBOC, USB Full Speed, RoHS 2, REACH
Microsoft® WHQL 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® 98, Windows® ME, 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
Linux®, Mac OS®, Android™ 3.1 and above



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