



**Advanced Card Systems Ltd.**  
Card & Reader Technologies

# ACR39U-UF ( USB Type C ) Smart Card Reader



Technical Specifications V1.04





## Table of Contents

<b>1.0.</b>	<b>Introduction .....</b>	<b>3</b>
1.1.	Smart Card Reader.....	3
1.2.	Compact Design .....	3
1.3.	Ease of Integration.....	3
<b>2.0.</b>	<b>Features .....</b>	<b>4</b>
<b>3.0.</b>	<b>Supported Card Types.....</b>	<b>5</b>
3.1.	MCU Cards .....	5
3.2.	Memory-based Smart Cards.....	5
<b>4.0.</b>	<b>Typical Applications .....</b>	<b>6</b>
<b>5.0.</b>	<b>Technical Specifications .....</b>	<b>7</b>



## 1.0. Introduction

The ACR39U-UF hails the coming of 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-UF supports ISO 7816 Class A, B, and C smart cards (5 V, 3 V, and 1.8 V) and microprocessor cards with T=0 and T=1 protocol. In addition, it supports a wide variety of memory cards in the market, including the Department of Defense Common Access Card (CAC), and SIPRNET Card. This makes it ideal for a broad range of solutions such as PIV Application, Physical and Logical Access Control, Digital Signature, and Online Banking.

It also features a USB Full Speed interface and a smart card read/write speed of up to 600 Kbps. Highly durable, ACR39U-UF can last for 100,000 card insertion cycles. ACR39U-UF also has various certifications such as EMV™ Level 1 (Contact) and People's Bank of China (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-UF, with its matte casing and its USB Type C connector, makes it stand out from ordinary smart card readers. It houses a powerful core that can support demanding applications and can be used anytime, anywhere.

### 1.3. Ease of Integration

The ACR39U-UF 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 operating systems such as Windows®, Linux®, Mac OS®, and Solaris. In addition, ACR39U-UF may now be used on mobile devices running the Android™ platform with versions 3.1 and later.

With its numerous features, the ACR39U-UF is clearly the perfect smart card reader for your smart card solution.



## 2.0. Features

- USB 2.0 Full Speed Interface
- USB Type C Connector
- Plug and Play – CCID support brings utmost mobility
- Smart Card Reader:
  - Contact Interface:
    - Supports ISO 7816 Class A, B, and C (5 V, 3 V, 1.8 V) cards
    - Supports CAC
    - Supports SIPRNET Card
    - Supports J-LIS Card
    - 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 later<sup>1</sup>
- Compliant with the following standards:
  - EN 62368/IEC 62368
  - CE
  - FCC
  - RoHS
  - REACH
  - EMV™ Level 1 (Contact)
  - J-LIS
  - KCC
  - PBOC
  - TAA (USA)
  - UKCA
  - VCCI
  - WEEE
  - ISO 7816
  - PC/SC
  - CCID
  - Microsoft® WHQL

---

<sup>1</sup> Uses an ACS-defined Android Library



## **3.0. Supported Card Types**

### **3.1. MCU Cards**

ACR39U-UF operates with MCU cards following either the T=0 or T=1 protocol. It also works with SIPRNET and CAC cards, ideal for US PIV and PKI applications.

### **3.2. Memory-based Smart Cards**

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

- 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

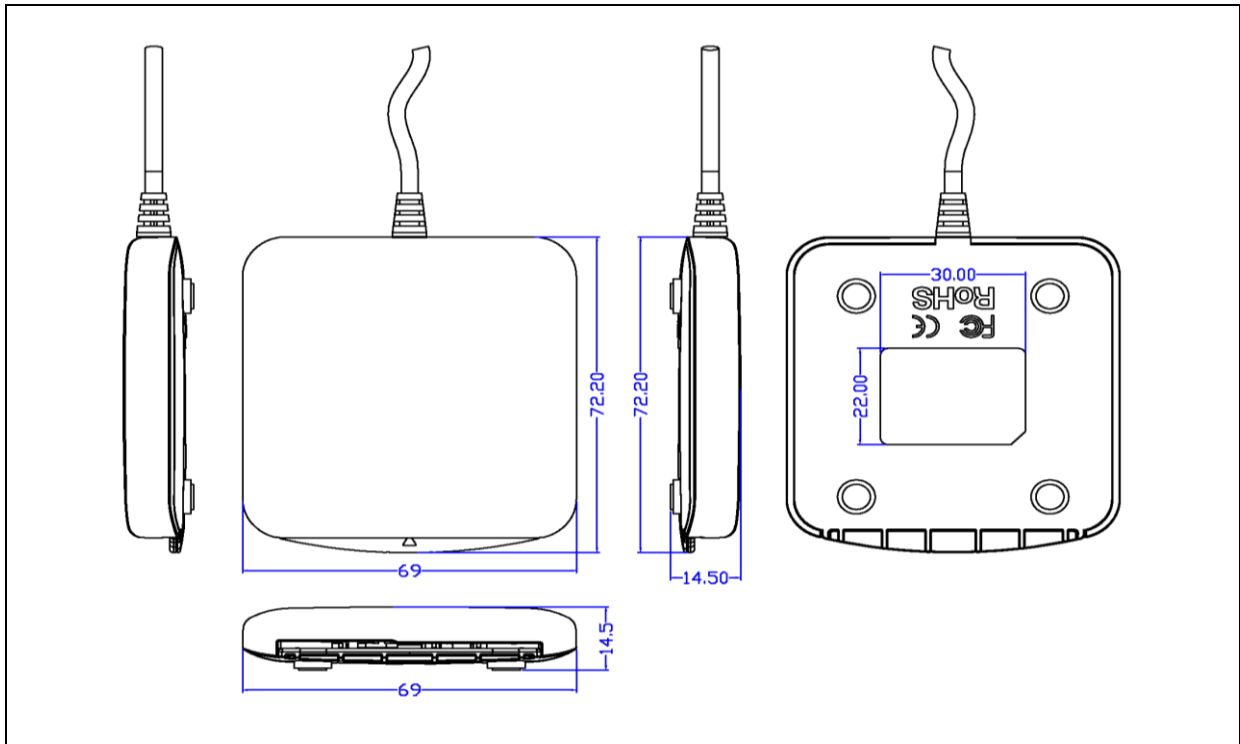


## 4.0. Typical Applications

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



## 5.0. Technical Specifications



### Physical Characteristics

Dimensions .....	72.2 mm (L) x 69.0 mm (W) x 14.5 mm (H)
Weight .....	56 g
Color .....	Black (Matte)

### USB Host Interface

Protocol .....	USB CCID
Connector Type .....	USB Type C
Power Source .....	From USB port
Speed .....	USB 2.0 Full Speed (12 Mbps)
Supply Voltage .....	5 V
Cable Length .....	1.5 m (Fixed)

### Contact Smart Card Interface

Number of Slot .....	1 Full-sized Card Slot
Standard .....	ISO 7816 Parts 1-4, 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 .....	4.8 MHz
Card Connector Type .....	Contact
.....	Landing (optional)
Card Insertion Cycles .....	Min. 100,000
.....	Min. 200,000 (for landing connector)

### 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 – 60 °C
Humidity .....	Max. 90% (non-condensing)
MTBF .....	500,000 hrs

### Certifications/Compliance

EN 62368/IEC 62368, CE, FCC, RoHS, REACH, EMV™ Level 1 (Contact), J-LIS, KCC, PBOC, TAA(USA), UKCA, VCCI, WEEE, ISO 7816, USB 2.0 Full Speed, PC/SC, CCID, Microsoft® WHQL



**Device Driver Operating System Support**

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®, Solaris, Android™ 3.1 and later



Android is a trademark of Google LLC. The Android robot is reproduced or modified from work created and shared by Google and used according to terms described in the Creative Commons 3.0 Attribution License.  
 EMV is a registered trademark or trademark of EMVCo LLC in the United States and other countries.  
 Infineon is a registered trademark of Infineon Technologies AG.  
 Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.  
 Mac OS is a trademark of Apple Inc., registered in the U.S. and other countries.  
 Microsoft, Windows, and Windows Vista are either registered trademarks or trademarks of the Microsoft Corporation in the United States and/or other countries.