Advanced Card Systems Ltd.
Card & Reader Technologies

ACR39U-N1 PocketMate II
(USB Type A)
Smart Card Reader

Technical Specifications V1.03

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1.0. Introduction

The ACR39U-N1 PocketMate II (USB Type A) is a portable smart card reader that has more to it than meets the eye. As small and elegant looking as it is, this smart card reader is capable of supporting demanding smart card applications using full-sized contact smart cards. It provides the perfect balance between reliable functionality and design aesthetics to meet your security needs in many fields, including e-Banking, e-Payment, and e-Government.

1.1. Smart Card Reader

The ACR39U-N1 PocketMate II (USB Type A) 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 connects with computers through its USB Full Speed interface and has a smart card read/write speed of 600 Kbps. This small device proves to be a powerful smart card reader as it houses the ACR39 core, which has been proven to support highly demanding smart card applications.

1.2. Ingenious Design

The highly compact ACR39U-N1 PocketMate II (USB Type A) is specifically designed to be brought and used anytime, anywhere. No larger than a standard USB token, it transforms into a smart card reader for full-sized contact smart cards with just a single swivel motion.

1.3. Ease of Integration

Being a PC/SC and CCID-compliant device, ACR39U-N1 PocketMate II (USB Type A) can easily be integrated in a computer-based environment. Its drivers are compatible with operating systems such as Windows®, Linux®, Mac OS® and Solaris. In addition, ACR39U PocketMate II may now be used on mobile devices running the Android™ platform with versions 3.1 and later.

With its various features, the ACR39U PocketMate II Series is the perfect smart card reader for your smart card solution.

2.0. Features

- USB 2.0 Full Speed Interface

- USB Type A Connector

- Plug and Play – CCID support brings utmost mobility

- Swivel Motion Design

- Smart Card Reader:
  - Contact Interface:
    - Supports ISO 7816 Class A, B, and C (5 V, 3 V, 1.8 V) cards
    - Supports CAC (Common Access Card)
    - 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[1]

- Compliant with the following standards:
  - EN 62368/IEC 62368
  - CE
  - FCC
  - RoHS
  - REACH
  - EMV™ Level 1 (Contact)
  - J-LIS
  - KCC
  - PBOC
  - TAA (USA)
  - UKCA
  - UL
  - VCCI
  - WEEE
  - ISO 7816
  - PC/SC
  - CCID
  - Microsoft® WHQL

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[1] Uses an ACS-defined Android Library

3.0. Supported Card Types

3.1. MCU Cards

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

- Cards with intelligent 1 KB EEPROM with write-protect function, including:
  - o Infineon®: SLE4418, SLE4428, SLE5518 and SLE5528
- Cards with intelligent 256-byte EEPROM with write-protect function, including:
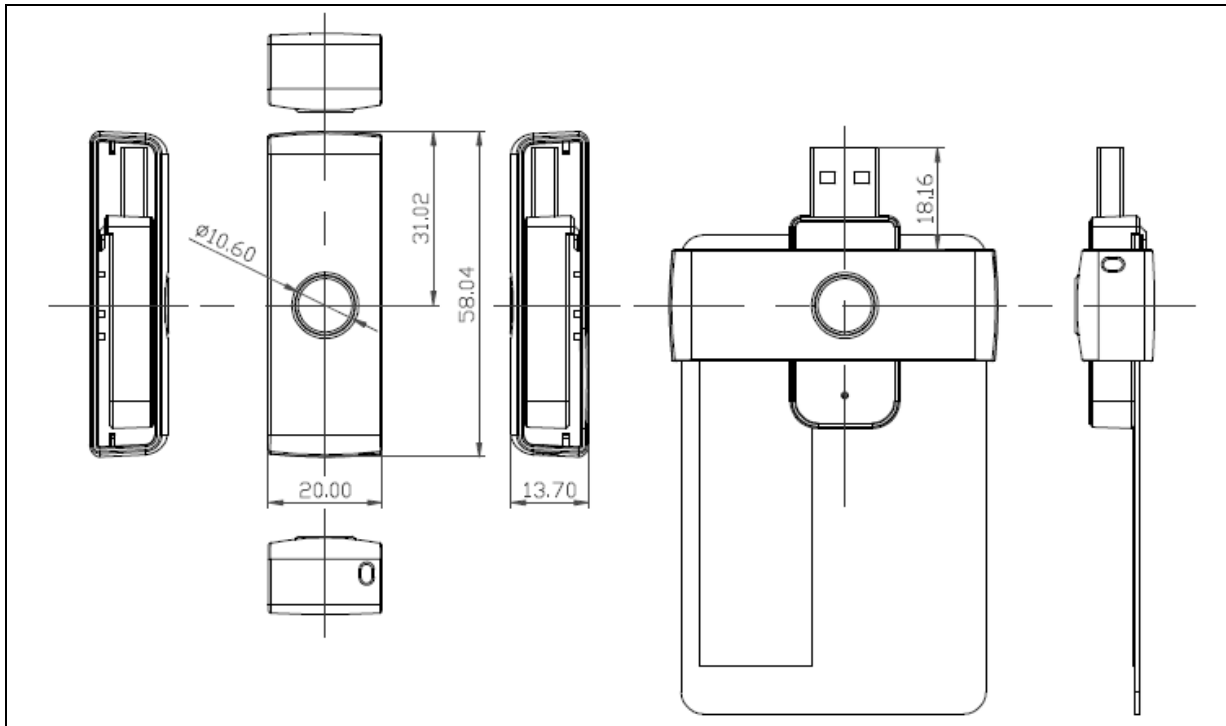 - o Infineon®: SLE4432, SLE4442, SLE5532 and SLE5542

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	58.0 mm (L) × 20.0 mm (W) × 13.7 mm (H)
Weight	12 g
Color	White

USB Host Interface	
Protocol	USB CCID
Connector Type	Standard Type A
Power Source	From USB port
Speed	USB 2.0 Full Speed (12 Mbps)
Supply Voltage	5 V

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
Card Insertion Cycles	Min. 100,000

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 – 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, UL, 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

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