Advanced Card Systems Ltd.
Card & Reader Technologies

ACR39U-ND PocketMate II (Micro-USB)

Smart Card Reader

Technical Specifications V1.00

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1.0. Introduction

ACR39U-ND PocketMate II (Micro-USB) 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

ACR39U-NDPocketMate II (Micro-USB) 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 for Mobile Use

The highly compact ACR39U-ND PocketMate II (Micro-USB) 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. With the Micro-USB Interface, it is also suited for use with most mobile devices with OTG support. Furthermore, being a PC/SC and CCID-compliant device, it can easily be integrated in a computer-based environment by using a Micro-USB to USB Type A converter. Its drivers are compatible with operating systems such as Windows®, Linux®, Mac OS®, and Solaris. In addition, ACR39U-ND PocketMate II (Micro-USB) can also be used on mobile devices running the Android™ platform with versions 3.1 and later.

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

2.0. Features

- USB Full Speed Interface
- Micro USB Connector
- Plug and Play – CCID support brings utmost mobility
- Swivel Motion Design
- Smart Card Reader:
  - 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[1]
- Compliant with the following standards:
  - EN 60950/IEC 60950
  - ISO 7816
  - USB Full Speed
  - EMV™ Level 1 (Contact)
  - PC/SC
  - CCID
  - CE
  - FCC
  - WEEE
  - RoHS 2
  - REACH
  - TAA (USA)
  - J-LIS (Japan)
  - VCCI (Japan)
  - PBOC (China)
  - 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 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:
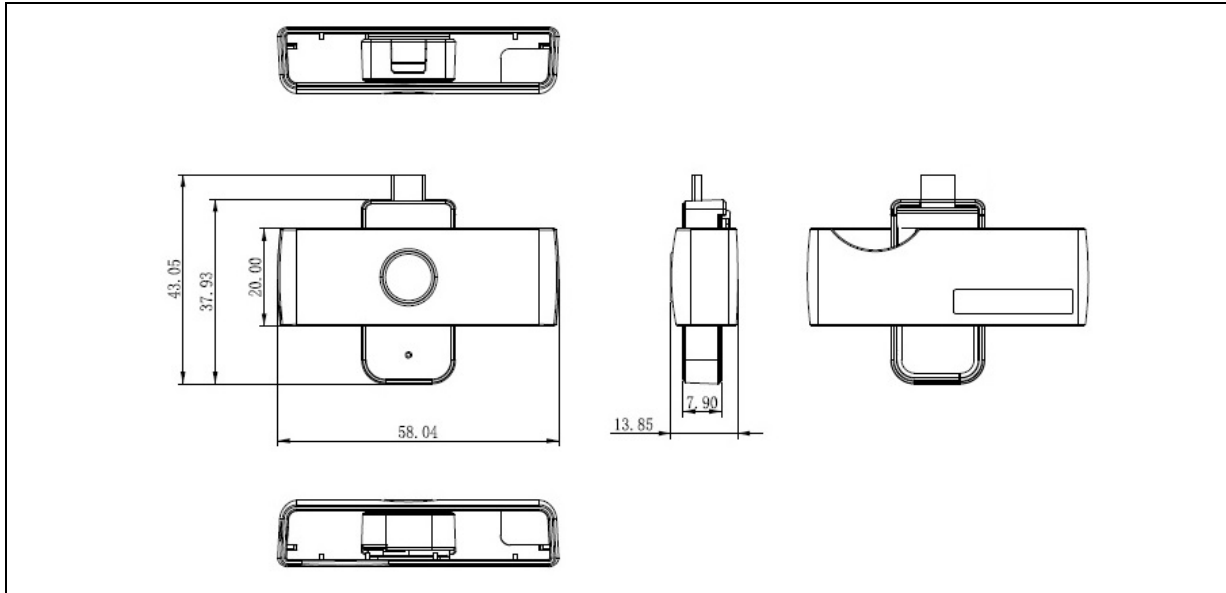 - Infineon®: SLE4432, SLE4442, SLE5532 and SLE5542

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

Physical Characteristics

Dimensions .... 58.0 mm (L) × 20.0 mm (W) × 13.9 mm (H)
Weight... 9.7g
Color .... White

USB Host Interface

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

Contact Smart Card Interface

Number of Slot .... 1 Full-sized Card Slot
Standard .... ISO 7816 Parts 1-3, 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 .... 4.8 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 60950/IEC 60950, ISO 7816, USB Full Speed, EMV™ Level 1 (Contact), PC/SC, CCID, CE, FCC, WEEE, RoHS 2, REACH,TAA (USA), J-LIS (Japan), VCCI (Japan), PBOC (China), 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, Windows® Server 2016
Linux®, Mac OS®, Solaris, Android™ 3.1 and later

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