



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

# ACM1281U-C7

## USB Contactless Reader Module with SAM Slot



Technical Specifications V1.03

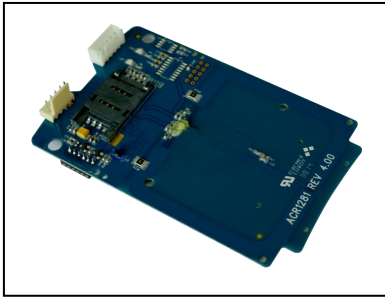


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## 1.0. Introduction



The ACM1281U-C7 USB Contactless Reader Module with SAM Slot, running on the 13.56 MHz frequency, was designed for fast and easy integration to embedded systems. It supports ISO 14443 Parts 1-4 Type A and B cards, and MIFARE Classic® series.

The ACM1281U-C7 has an integrated (on-board) antenna and comes with an optional USB cable. It has additional features like firmware upgradeability and extended APDU support. It also has an ISO 7816-compliant built-in SAM (Secure Access Module) slot, which can be used together with a SAM card for enhanced security.

With a maximum of 848 Kbps high-speed communication ability for contactless cards, the ACM1281U-C7 USB Contactless Reader Module with SAM Slot is made suitable for highly demanding smart card applications like vending machine payment systems, kiosks, gaming machines, and other integrated systems.



## 2.0. Features

- USB Full Speed Interface
- Smart Card Reader:
  - Contactless Interface:
    - Read/Write speed of up to 848 Kbps
    - Built-in antenna for contactless tag access, with card reading distance of up to 50 mm (depending on tag type)
    - Supports ISO 14443 Part 4 Type A and B cards and MIFARE Classic series
    - Built-in anti-collision feature (only one tag is accessed at any time)
    - Supports extended APDU (Max. 64 KB)
  - SAM Interface:
    - One SAM slot
    - Supports ISO 7816-compliant Class A SAM cards
- Built-in Peripherals:
  - Two user-controllable LEDs
  - User-controllable buzzer
- Application Programming Interface:
  - Supports PC/SC
  - Supports CT-API (through wrapper on top of PC/SC)
- USB Firmware Upgradeability
- Supports Android™ 3.1 and later<sup>1</sup>
- Compliant with the following standards:
  - ISO 7816 (SAM Slot)
  - ISO 14443
  - PC/SC
  - CCID
  - CE
  - FCC
  - RoHS
  - REACH
  - Microsoft® WHQL

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

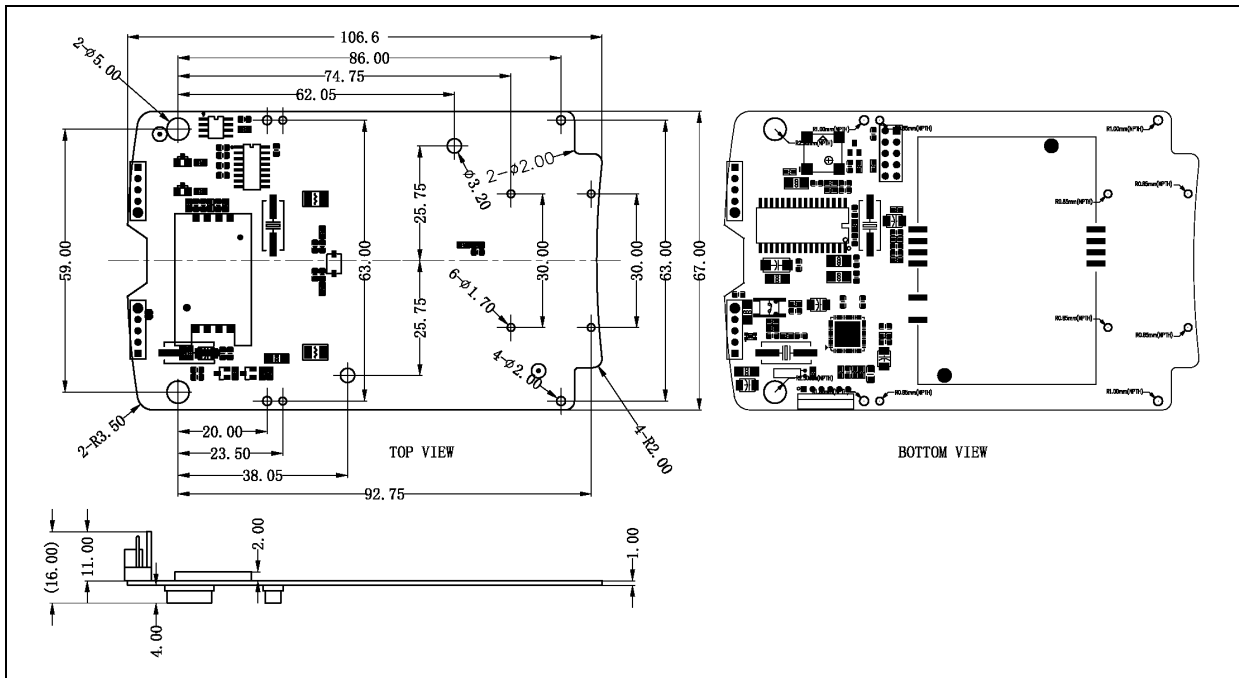


### **3.0. Typical Applications**

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Transportation
- Network Security
- Access Control
- Loyalty Program



## 4.0. Technical Specifications



### Physical Characteristics

Dimensions ..... 106.6 mm (L) × 67.0 mm (W) × 16.0 mm (H)  
Weight ..... 20.8 g

### USB Host Interface

Protocol ..... USB CCID  
Connector Type ..... Standard Type A  
Power Source ..... From USB port  
Speed ..... USB Full Speed (12 Mbps)  
Supply Voltage ..... 5 V  
Supply Current ..... Max. 200 mA  
Cable Length ..... 1.0 m, Detachable (optional)

### Contactless Smart Card Interface

Standard ..... ISO 14443 A & B Parts 1-4  
Protocol ..... ISO 14443 T=CL for ISO 14443-4-compliant cards  
..... T=CL Emulation for MIFARE Classic cards  
Operating Frequency ..... 13.56 MHz  
Operating Distance ..... Up to 50 mm (depending on card type)  
Smart Card Read/Write Speed ..... 106 Kbps, 212 Kbps, 424 Kbps, 848 Kbps  
Antenna Size ..... 65 mm × 60 mm

### SAM Card Interface

Number of Slot ..... 1 Standard SIM-sized Card Slots  
Standard ..... ISO 7816 Class A (5 V)  
Protocol ..... T=0; T=1  
Supply Current ..... Max. 50 mA  
Smart Card Read/Write Speed ..... 9.6 Kbps – 344 Kbps  
Card Connector Type ..... SAM Slot 0: Contact

### Built-in Peripherals

LED ..... 2 single-color: Red and Green  
Buzzer ..... Monotone

### Other Feature

Firmware Upgrade ..... Supported

### 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 (SAM Slot), ISO 14443, USB Full Speed, PC/SC, CCID, CE, FCC, RoHS, REACH, 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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