ACM1281S-C7
Serial Contactless Reader Module with SAM Slot

Technical Specifications V1.01
Table of Contents

1.0. Introduction ............................................................................................................. 3
2.0. Features ................................................................................................................... 4
3.0. Typical Applications............................................................................................... 5
4.0. Technical Specifications......................................................................................... 6
1.0. Introduction

The ACM1281S-C7 Serial Contactless Reader Module with SAM Slot was designed based on the 13.56 MHz technology. It supports ISO 14443 Parts 1-4 Type A and B cards, and MIFARE® Classic® series with a card reading distance of up to 50 mm (depending on tag type).

The ACM1281S-C7 is a Plug and Play device that does not require any driver installation and is specifically designed for fast and easy integration to embedded systems. It also has an ISO 7816–compliant built-in SAM (Secure Access Module) slot which can be used together with a SAM card for high-level security in contactless transactions.

The ACM1281S-C7 has an integrated (on-board) antenna, comes with an optional serial cable, and has additional features like USB firmware upgradability and extended APDU support. Lastly, the ACM1281S-C7 makes use of high-speed communication for contactless cards at a maximum of 848 Kbps, which makes it suitable for highly demanding applications such as vending machine payment systems, kiosks, gaming machines and other integrated systems which have different serial ports.
2.0. Features

- Serial Interface: Baud Rate = 9.6 Kbps (default), 19.2 Kbps, 38.4 Kbps, 57.6 Kbps, 115.2 Kbps, 230.4 Kbps
- USB interface for power supply
- CCID-like frame format
- 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 MCU card (Class A)
- Built-in Peripherals:
  - Two user-controllable LEDs
  - User-controllable buzzer
- USB Firmware Upgradability
- Compliant with the following standards:
  - ISO 14443
  - ISO 7816
  - PC/SC
  - CE
  - FCC
  - RoHS 2
  - REACH
  - Microsoft® WHQL
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

**Serial Host Interface**

Protocol .......................................... RS-232
Connector Type.............................. DB-9 connector
Power Source................................. From USB port
Speed ............................................. 9.6 Kbps (default), 19.2 Kbps, 38.4 Kbps, 57.6 Kbps, 115.2 Kbps, 230.4 Kbps
Supply Voltage ............................... 5 V
Supply Current  .............................. Max. 200 mA
Cable Length .................................. 1.5 m, Detachable (optional)

**Contactless Smart Card Interface**

Standard ........................................ ISO 14443 Type A & B Parts 1-4
Protocol .......................................... ISO 14443 T=CL for ISO 14443-4–compliant cards
....................................................... T=CL Emulation for MIFARE 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 Slots ............................. 1 Standard SIM-sized Card Slot
Standard ........................................ ISO 7816, Class A (5 V)
Protocol .......................................... T=0; T=1
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

**Operating Conditions**

Temperature ................................... 0 °C – 50 °C
Humidity ........................................ Max. 90% (non-condensing)
MTBF ............................................. 500,000 hrs

**Certifications/Compliance**

EN 60950/EIC 60950, ISO 14443, ISO 7816 (SAM Slot), CE, FCC, RoHS 2, REACH
Device Driver Operating System Support
Linux®

Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.
Microsoft, Windows and Windows Vista are registered trademarks of Microsoft Corporation in the United States and/or other countries.
MIFARE and MIFARE Classic is a registered trademark of NXP B.V. and are used under license.