



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR122S

Serial NFC Reader



Technical Specifications V2.05



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1.0. Introduction



The ACR122S is the serial interface (RS-232) extension of the ACR122 Series, which is a family of NFC contactless smart card readers/writers. Developed based on the 13.56 MHz RFID technology and the ISO/IEC 18092 NFC standard, it also supports FeliCa and NFC tags, aside from MIFARE® and ISO 14443 Type A and B cards.

ACR122S is equipped with a buzzer and two LEDs for richer user interaction. It also supports anti-collision and selective card polling, allowing smooth operation even when multiple cards are presented. Moreover, it is equipped with a built-in ISO 7816-compliant Class A SAM (Secure Access Module) slot which can be used together with a SAM card to secure the overall contactless operation.



2.0. Features

- Serial RS-232 Interface: Baud Rate = 115200 bps, 8-N-1
- USB Interface for power supply
- CCID-like frame format (Binary format)
- Smart Card Reader:
 - Contactless Interface:
 - Read/Write speed of up to 424 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, MIFARE Classic®, FeliCa, and all four types of NFC (ISO/IEC 18092 tags)
 - Built-in anti-collision feature (only one tag is accessed at any time)
 - SAM Interface:
 - One SAM Slot
 - Supports ISO 7816 Class A SAM card
- Built-in Peripherals:
 - Two user-controllable LEDs
 - User-controllable buzzer
- Compliant with the following standards:
 - ISO 7816 (SAM Slot)
 - ISO 14443
 - ISO 18092
 - CE
 - FCC
 - RoHS 2
 - VCCI (Japan)
 - KC (Korea)

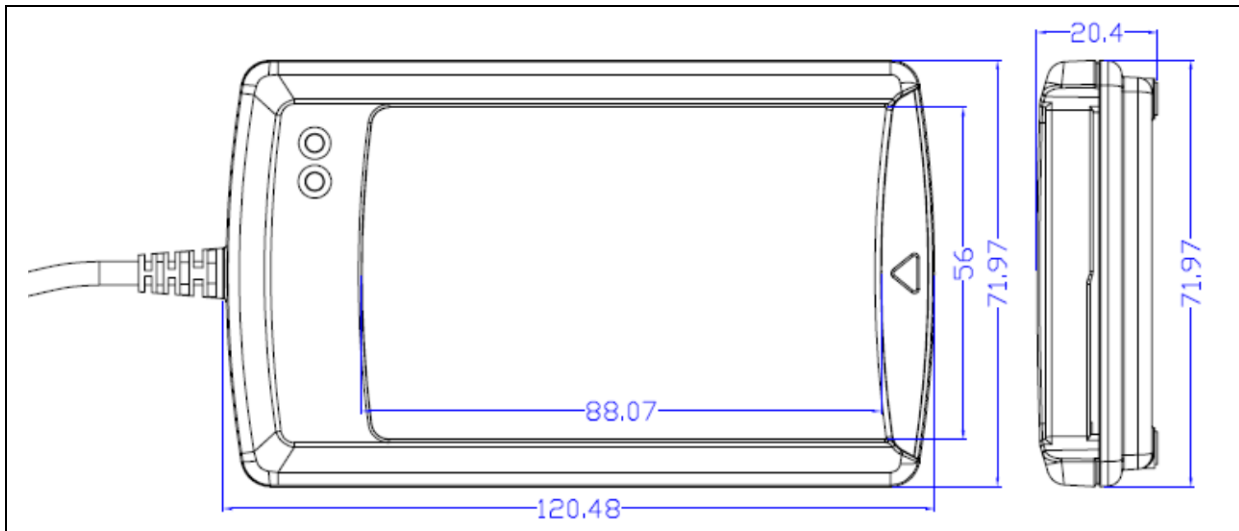


3.0. Typical Applications

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



4.0. Technical Specifications



Physical Characteristics

Dimensions 120.5 mm (L) × 72.0 mm (W) × 20.4 mm (H)
 Weight 148 g
 Color Metallic Blue

Serial Host Interface

Protocol RS-232
 Connector Type DB-9 Connector
 Power Source From USB port
 Speed 9.6 Kbps (default), 115.2 Kbps
 Supply Voltage 5 V
 Supply Current Max. 200 mA
 Cable Length 1.5 m, Fixed (DB9 + USB)

Contactless Smart Card Interface

Standard ISO/IEC 18092 NFC, ISO 14443 Type A and B, MIFARE, FeliCa
 Protocol ISO 14443 T=CL for ISO 14443-4-compliant cards
 T=CL Emulation for MIFARE Classic, ISO 18092, FeliCa and NFC Tags
 Operating Frequency 13.56 MHz
 Operating Distance Up to 50 mm (depending on tag type)
 Smart Card Read/Write Speed 106 Kbps, 212 Kbps, 424 Kbps
 Antenna Size 55 mm × 67 mm

SAM Card Interface

Number of Slot 1 Standard SIM-sized Card Slot
 Standard ISO 7816, Class A (5 V)
 Protocol T=0
 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

Operating Conditions

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

Certifications/Compliance

ISO 7816 (SAM Slot), ISO 14443, ISO 18092, CE, FCC, RoHS 2
 VCCI (Japan), KC (Korea)



Device Driver Operating System Support

Windows® 2000, Windows® XP, Windows Vista®, Windows® 7
Windows® Server 2003, Windows® Server 2003 R2, Windows® Server 2008, Windows® Server 2008 R2
Linux®



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