



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

# ACR122S

## Serial NFC Reader



Technical Specifications V2.04



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

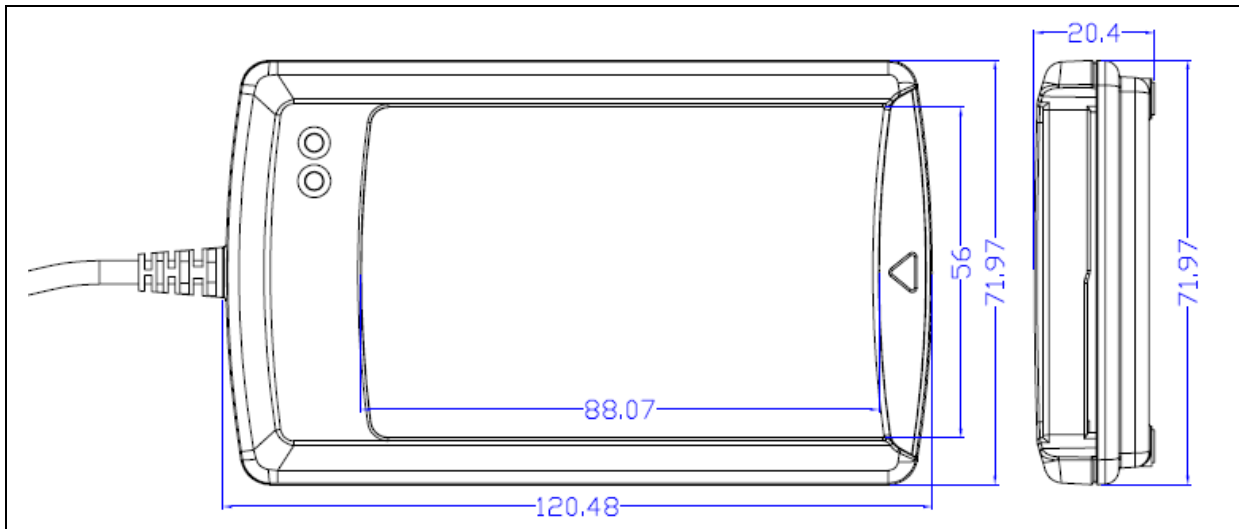


### **3.0. Typical Applications**

- 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 ..... 148.0 g  
 Color ..... Metallic blue

### Serial Host Interface

Protocol ..... RS-232  
 Connector Type ..... DB-9 Connector  
 Power Source ..... Via detachable USB cable  
 Speed ..... 9.6 Kbps, 115.2 Kbps  
 Supply Voltage ..... Regulated 5 V DC  
 Supply Current ..... Max. 200 mA  
 ..... 50 mA (standby)  
 ..... 100 mA (normal)  
 Cable Length ..... 1.5 m fixed cable (DB9 + USB)

### Contactless Smart Card Interface

Standard ..... ISO 14443-4 A and B, ISO/IEC 18092 (NFC), MIFARE, FeliCa  
 Operating Frequency ..... 13.56 MHz  
 Operating Distance ..... Up to 50 mm  
 Smart Card Read/Write Speed ..... 106 Kbps, 212 Kbps, 424 Kbps

### SAM Card Interface

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

### Built-in Peripherals

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

### Supported Operating Systems

Windows® ME, Windows® 98, Windows® 2000, Windows® XP, Windows Vista®, Windows® 7,  
 Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2  
 Linux®



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