



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

# ACR122S Serial NFC Reader



Technical Specifications



## 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 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 supports not only Mifare® and ISO 14443 Type A and B cards but also FeliCa and NFC tags.

ACR122S is equipped with a buzzer and two LEDs as well for rich 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 SAM slot to secure the overall contactless operation.



## 2.0. Features

- Serial Interface. Baud Rate = 9600 bps (default) or 115200 bps, 8-N-1. Initial Baud Rate is determined by the existence of R12. A command is also provided for changing the baud rate while the reader is running.
- USB interface for power supply
- CCID-like frame format (Binary format)
- 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, Mifare, FeliCa and all 4 types of NFC (ISO/IEC 18092) tags
- Supports all 3 modes of NFC: reader, card emulation and peer-to-peer modes
- Built-in anti-collision feature (at least 1 card is detected when multiple cards are presented)
- Selective card polling capability (especially useful when multiple cards are presented)
- SAM socket supports ISO 7816 T=0 cards
- User-controllable bi-color LED
- User-controllable buzzer
- OEM PCBA module version (*Upon request*)
- RS485 interface for data transmission (*Upon request*)
- PS/2 or DC power adaptor for power supply (*Upon request*)
- Relay (*Upon request*)
- Additional 2 SAM slots (*Upon request*)

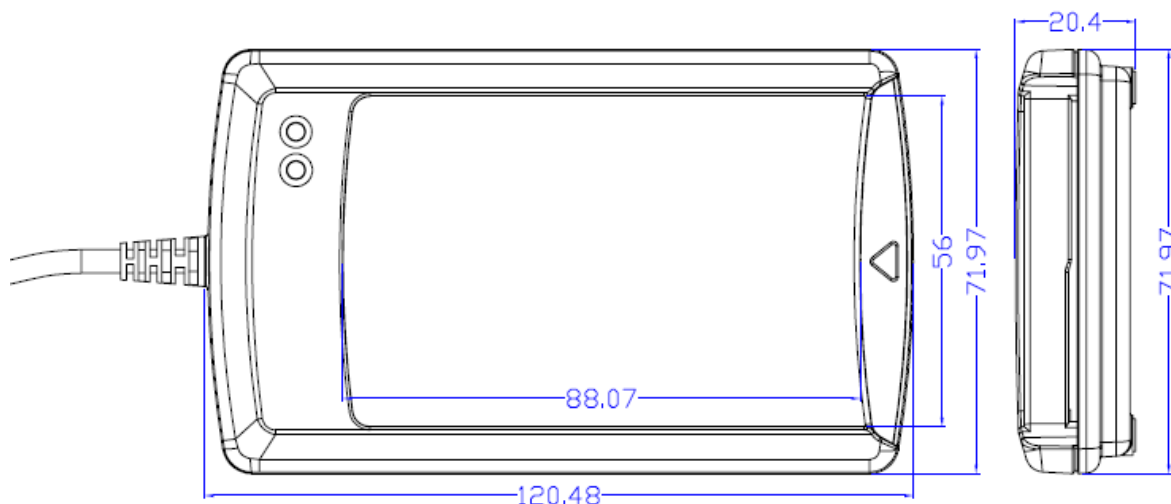


### **3.0. Typical Applications**

- Automatic Fare Collection
- Vending Machines
- Public Transportation Terminals
- Customer Loyalty
- Time and Attendance
- Contactless Public Phones
- Network Access Control
- Physical Access Control



## 4.0. Technical Specifications



### Serial Interface

|                      |  |
|----------------------|--|
| Power source .....   | From USB interface                                 |
| Speed .....          | 9.6 kbps, 115.2 kbps                               |
| Supply Voltage ..... | Regulated 5 V DC                                   |
| Supply Current ..... | 200 mA (maximum); 50 mA (standby); 100 mA (normal) |

### Contactless Smart Card Interface

|                                     |   |
|-------------------------------------|---|
| Standard .....                      | Mifare, ISO 14443-4 Type A & B, FeliCa, ISO/IEC 18092 NFC |
| Operating Frequency .....           | 13.56 MHz   |
| Smart Card Read / Write Speed ..... | 106, 212, 424 kbps  |

### SAM Card Interface

|                                     |                   |
|-------------------------------------|-------------------|
| Standard .....                      | ISO 7816          |
| Protocol .....                      | T=0 protocol      |
| Operating Frequency .....           | 4 MHz             |
| Smart Card Read / Write Speed ..... | 9600 – 115200 bps |

### Physical Specifications

|                          |  |
|--------------------------|--|
| Dimensions .....         | 120.5 mm (L) x 72.0 mm (W) x 20.4 mm (H) |
| Color .....              | Metallic Blue                            |
| Operating Distance ..... | Up to 50 mm (depending on tag type)      |

### Built-In Peripherals

|                                      |                             |
|--------------------------------------|-----------------------------|
| User controllable bi-color LED ..... | Bi-color LED, Red and Green |
| Buzzer .....                         | Monotone                    |

### Operating Conditions

|                   |           |
|-------------------|-----------|
| Temperature ..... | 0 - 50° C |
| Humidity .....    | 10% - 80% |

### Cable Connector

|              |                   |
|--------------|-------------------|
| Length ..... | 1.5 m (DB9 + USB) |
|--------------|-------------------|

### Certifications/Compliance

CE, FCC, RoHS Compliant, VCCI

### Operating System Support

Windows ® 98, ME, 2000, Server 2003, XP, Vista, Server 2008, 7, CE, Mobile  
Linux, Mac OS X

