Advanced Card Systems Ltd.
Card & Reader Technologies

ACR122S Serial NFC Reader

Technical Specifications

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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 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.

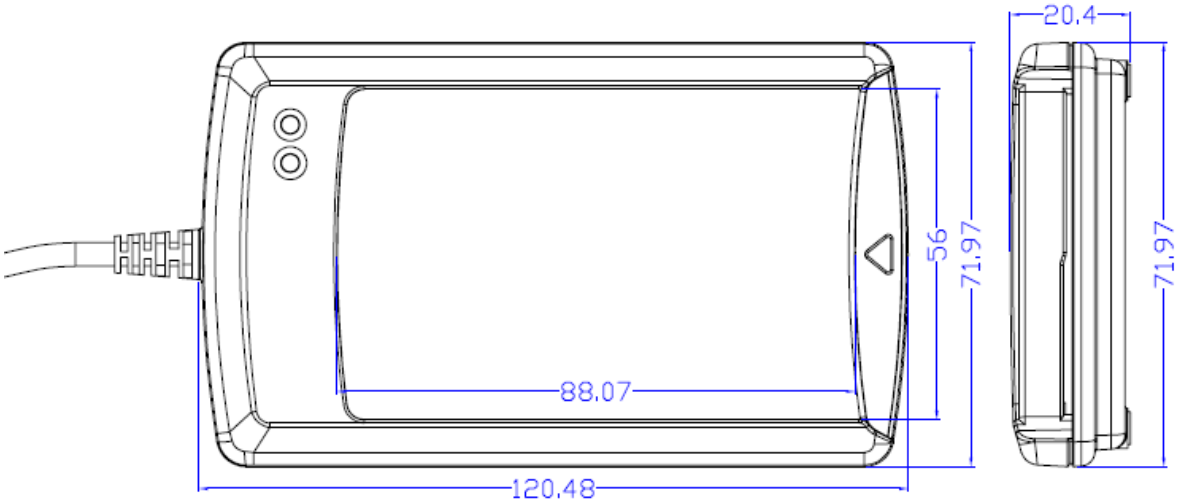
2.0. Features

- 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)
- Read/write speed 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, Mifare, FeliCa and all 4 types of NFC (ISO/IEC 18092) tags
- Supports new Mifare Ultralight C and Mifare Plus SL1 (4 Byte UID) and SL3
- 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, VCCI, RoHS Compliant

Device Driver Operating System Support

Windows ® 98, ME, 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7
Windows CE ® 5.0
Linux, Mac