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 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
  - KC
  - VCCI
  - RoHS 2
3.0. Typical Applications

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Transportation
- Network Security
- Access Control
- Loyalty Program
### 4.0. Technical Specifications

#### Serial Interface
- **Power Source**: From USB
- **Speed**: 9.6 Kbps, 115.2 Kbps
- **Supply Voltage**: Regulated 5 V DC
- **Supply Current**: 200 mA (max.); 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
- **Operating Distance**: Up to 50 mm (depending on tag type)
- **Smart Card Read/Write Speed**: 106 Kbps, 212 Kbps, 424 Kbps

#### SAM Card Interface
- **Standard**: ISO 7816, Class A (5V)
- **Protocol**: T=0 protocol

#### Physical Specifications
- **Dimensions**: 120.5 mm (L) x 72.0 mm (W) x 20.4 mm (H)
- **Weight**: 148.0 g
- **Color**: Metallic blue
- **Cable Length**: 1.5 m (DB9 + USB)

#### Built-in Peripherals
- **LEDs**: 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, KC, VCCI, RoHS 2

#### Supported Operating Systems
- Linux®

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