



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

# ACR122U-SAM USB NFC Reader



Technical Specifications V2.01



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## 1.0. Introduction



The ACR122U-SAM is a PC-linked contactless smart card reader/writer developed based on the 13.56 MHz contactless technology. It is the world's first CCID-compliant contactless card reader/writer that follows both ISO 14443 and ISO 18092. This device is designed to support not only Mifare and ISO 14443 Type A and B cards, but also FeliCa and NFC tags.

The ACR122U-SAM is ideal for implementing contactless technology with added security functions in the system. By making use of a SAM (Secure Access Module), key diversification and mutual authentication between the card and the reader is made possible, restricting the exposure of keys and, thus, limiting the possibility of the keys being stolen to access the application illegally.

With high-speed card access and full USB speed of 12 Mbps, read and write operations are faster and more efficient. You can experience the convenience in using the ACR122U-SAM, with its compact size and the various features it offers, for applications such as payment, access control, time and attendance, and mass transit.



## 2.0. Features

- USB 2.0 Full Speed Interface
- CCID Compliance
- Smart Card Reader:
  - 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)
  - Support for ISO 14443 Part 4 Type A and B cards, Mifare, FeliCa, and all four types of NFC (ISO/IEC 18092 tags)
  - ISO 7816 compliant SAM slot
- Application Programming Interface:
  - Supports PC/SC for SAM interface only
  - Supports CT-API (through wrapper on top of PC/SC) for SAM interface only
- Built-in Peripheral:
  - User-controllable bi-color LED
- Supports Android™ OS 3.1 and above
- Compliant with the following standards:
  - ISO 14443
  - CE
  - FCC
  - VCCI
  - CCID
  - Microsoft WHQL
  - RoHS



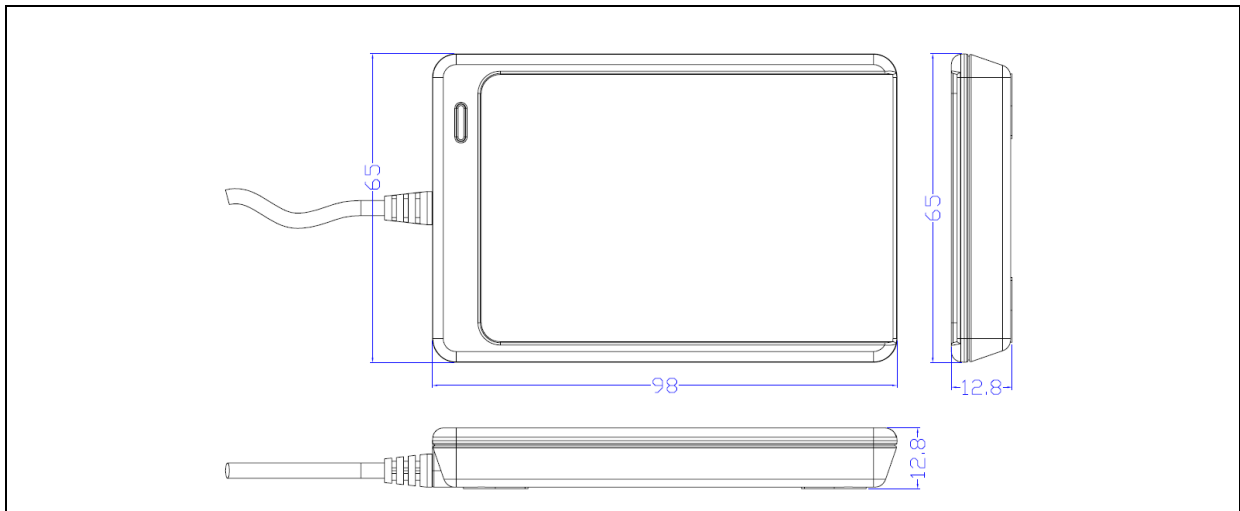
### 3.0. Typical Applications

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





## 4.0. Technical Specifications



### Universal Serial Bus Interface

Power Source..... From USB  
 Speed..... 12 Mbps (Full Speed)  
 Supply Voltage ..... Regulated 5 V DC  
 Supply Current ..... 200 mA (maximum); 50 mA (standby); 100 mA (normal)

### Contactless Smart Card Interface

Standard ..... ISO/IEC 18092 NFC, ISO 14443 A and B, Mifare, FeliCa  
 Protocol..... FeliCa protocol, T=CL protocol  
 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

### Physical Specifications

Dimensions ..... 98.0 mm (L) x 65.0 mm (W) x 12.8 mm (H)  
 Weight..... 70 g  
 Material ..... Polycarbonate (PC)  
 Color ..... Pearl White  
 Antenna Size..... 50 mm x 40 mm  
 Cable Length..... 1.0 m (USB)

### Built-in Peripheral

Bi-color LED ..... Bi-color LED, red and green

### Operating Conditions

Temperature ..... 0 – 50 °C  
 Humidity ..... 10% - 90%

### Application Programming Interface

PC/SC for SAM interface only  
 CT-API (through wrapper on top of PC/SC) for SAM interface only

### Certifications/Compliance

CCID, CE, FCC, VCCI, RoHS Compliant, USB Full Speed  
 Microsoft® WHQL 2000, XP, Vista, 7, 8, Server 2003, Server 2008, Server 2008 R2, Server 2012

### Device Driver Operating System Support

Windows® 98, ME, 2000, XP, Vista, 7, 8, Server 2003, Server 2008, Server 2008 R2, Server 2012, Windows® CE 5.0 and 6.0, Linux, Mac, Android™ 3.1 and above

