



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

# ACR122U USB NFC Reader



Technical Specifications V3.05



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## 1.0. Introduction



The ACR122U is a PC-linked contactless smart card reader/writer developed 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.

By making use of up to 424 Kbps read/write speed for NFC tag access and up to 12 Mbps for USB full speed, ACR122U can efficiently read from and write to various contactless cards/tags. It is also PC/SC-compliant which allows interoperability across different applications and platforms.

You can experience the convenience in using ACR122U, 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 Full Speed Interface
- CCID-compliant
- 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)
  - Supports ISO 14443 Part 4 Type A and B cards, MIFARE Classic®, FeliCa, and all four types of NFC (ISO/IEC 18092 tags)
  - Built-in anti-collision feature (only one tag is accessed at any time)
- Built-in Peripherals:
  - User-controllable bi-color LED
  - User-controllable buzzer
- Application Programming Interface:
  - Supports PC/SC
  - Supports CT-API (through wrapper on top of PC/SC)
- Supports Android™ 3.1 and later<sup>1</sup>
- Compliant with the following standards:
  - EN 60950/IEC 60950
  - ISO 14443
  - ISO 18092
  - USB Full Speed
  - PC/SC
  - CCID
  - CE
  - FCC
  - RoHS 2
  - REACH
  - VCCI (Japan)
  - KC (Korea)
  - Microsoft® WHQL

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<sup>1</sup> Uses an ACS-defined Android Library



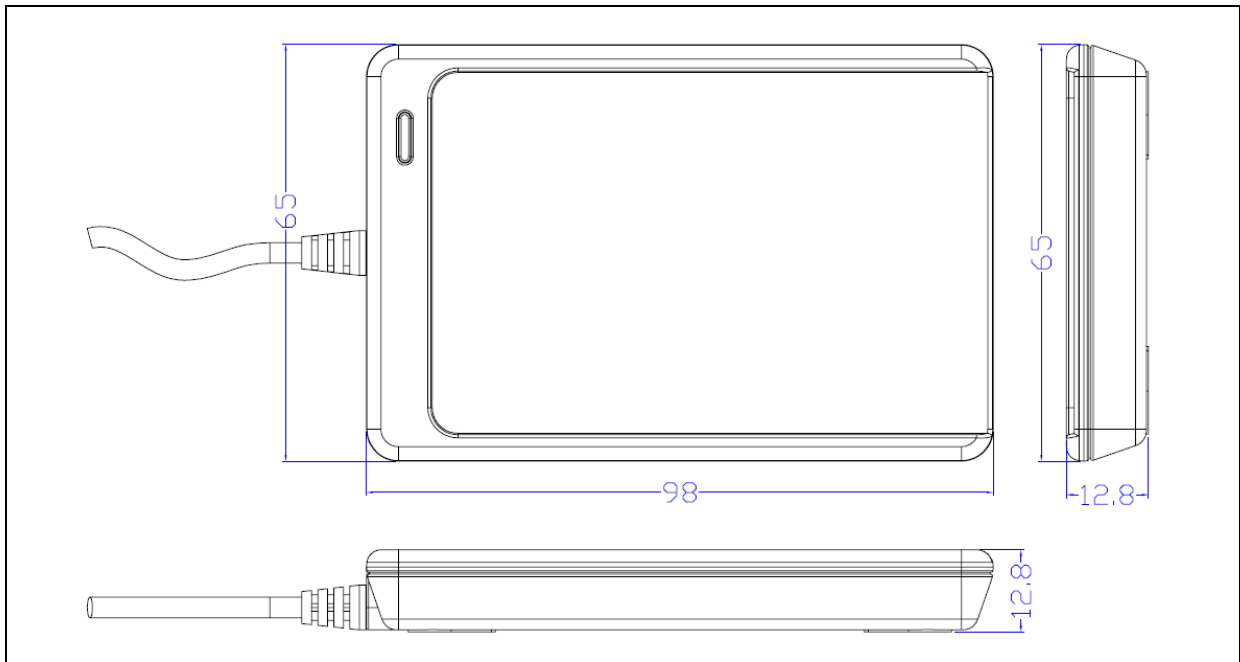
### 3.0. Typical Applications

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





## 4.0. Technical Specifications



### Physical Characteristics

Dimensions ..... 98.0 mm (L) × 65.0 mm (W) × 12.8 mm (H)  
Weight ..... 70 g  
Color ..... Pearl White

### USB Host Interface

Protocol ..... USB CCID  
Connector Type ..... Standard Type A  
Power Source ..... From USB port  
Speed ..... USB Full Speed (12 Mbps)  
Supply Voltage ..... 5 V  
Supply Current ..... Max. 200 mA  
Cable Length ..... 1.0 m, Fixed

### Contactless Smart Card Interface

Standard ..... ISO/IEC 18092 NFC, ISO 14443 Type A & B, MIFARE, FeliCa  
Protocol ..... ISO 14443 T=CL for ISO 14443-4 compliant cards  
..... T=CL Emulation for MIFARE Classic, ISO 18092, FeliCa and NFC Tags  
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  
Antenna Size ..... 50 mm × 40 mm

### Built-in Peripherals

LED ..... 1 bi-color: Red and Green  
Buzzer ..... Monotone

### Application Programming Interface

PC-linked Mode ..... PC/SC  
..... CT-API (through wrapper on top of PC/SC)

### Operating Conditions

Temperature ..... 0 °C – 50 °C  
Humidity ..... Max. 90% (non-condensing)  
MTBF ..... 408,500 hrs

### Certifications/Compliance

EN 60950/IEC 60950, ISO 14443, ISO 18092, USB Full Speed, PC/SC, CCID, CE, FCC, RoHS 2, REACH VCCI (Japan), KC (Korea), Microsoft® WHQL



**Device Driver Operating System Support**

Windows® CE 5.0, Windows® 6.0, Windows® Embedded Compact 7, Windows® 2000, Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, Windows® 10, Windows® Server 2003, Windows® Server 2003 R2, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2, Linux®, Mac OS®, Android™ 3.1 and later



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