



Advanced Card Systems Ltd.
Card & Reader Technologies



ACR1252U-A1

NFC Forum Certified Reader

Technical Specifications V1.05



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1.0. Introduction



The ACR1252U-A1 is a PC-linked NFC Reader that is NFC Forum certified.

The ACR1252U-A1 runs on the 13.56 MHz contactless technology and supports ISO 14443 Type A and B cards, MIFARE®, FeliCa and ISO 18092 compliant NFC tags and other NFC devices. It has an ISO 7816 Compliant Class A SAM (Secure Access Module) slot which can be used together with a SAM card for key diversification and mutual authentication, providing high level security in contactless transactions. Post-deployment firmware upgrade is also supported, eliminating the need for additional hardware modification.

ACR1252U-A1 is capable of the three modes of NFC, namely, Card Reader/Writer, Card Emulation and Peer-to-Peer Communication. These NFC features make the ACR1252U-A1 ideal for NFC applications like Smart Posters

for advertising and marketing purposes with most NFC-enabled mobile phones and SIM cards in the market.



2.0. Features

- USB 2.0 Full Speed Interface
- CCID Compliant
- 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)
 - NFC Support:
 - Card reader/writer mode
 - Peer-to-Peer mode
 - Card Emulation mode
 - SAM Interface
 - One SAM slot
 - Supports ISO 7816-compliant Class A SAM cards
- Application Programming Interface:
 - Supports PC/SC
 - Supports CT-API (through wrapper on top of PC/SC)
- Built-in Peripherals:
 - User-controllable bi-color LED
 - User-controllable buzzer
- USB Firmware Upgradeability
- Supports Android™ 3.1 and above
- Compliant with the following standards:
 - ISO 18092
 - ISO 14443
 - ISO 7816 Class A (for SAM slot)
 - NFC Forum
 - LASCOM
 - CE
 - FCC
 - VCCI
 - MIC
 - KC
 - PC/SC
 - CCID
 - RoHS 2
 - Felica Performance Certification
 - Microsoft® WHQL

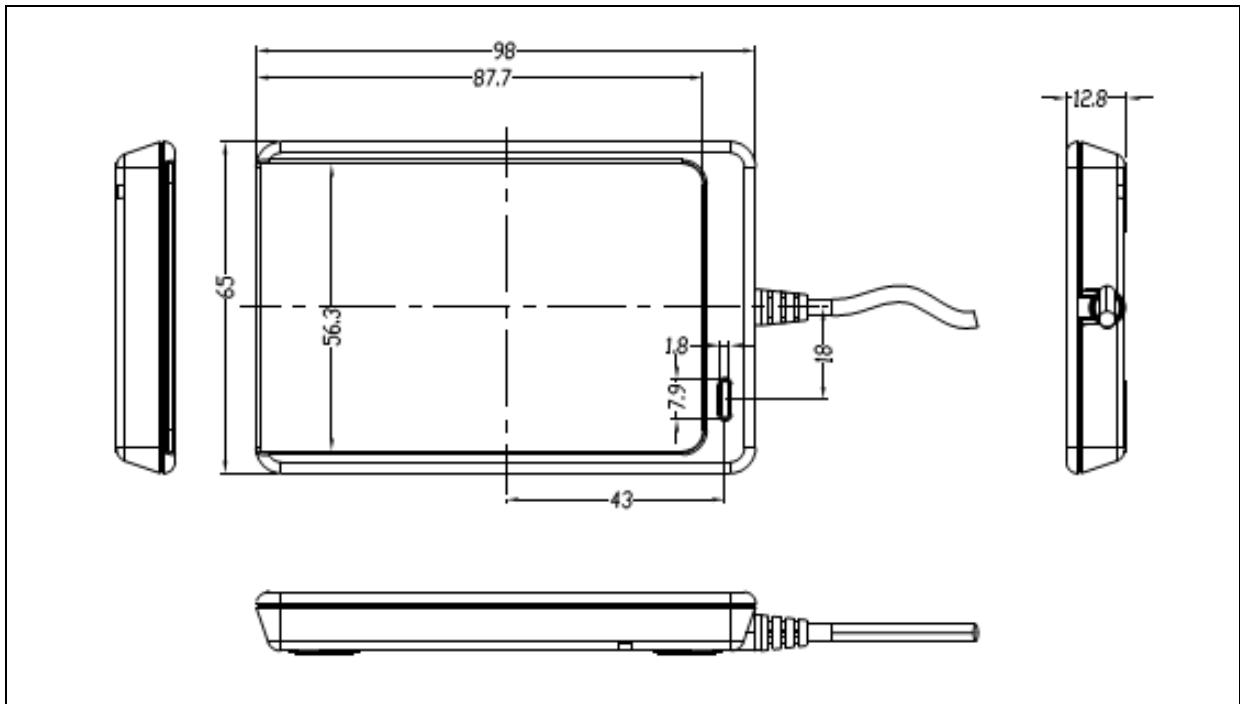


3.0. Typical Applications

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Transportation
- Network Security
- Access Control
- Loyalty Program
- Smart Poster/URL Marketing
- P2P Communication



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 Max. 200 mA

Contactless Smart Card Interface

Standard ISO/IEC 18092 NFC, ISO 14443 Type A & B, MIFARE, FeliCa
 Protocol..... ISO 14443 T=CL for ISO14443-4 compliant cards and T=CL Emulation for MIFARE Classic 1K/4K, 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

SAM Card Interface

Standard ISO 7816 Class A
 Protocol..... T=0 and T=1 protocol

Physical Specifications

Dimensions 98.0 mm (L) x 65.0 mm (W) x 12.8 mm (H)
 Weight..... 81 g
 Material Acrylonitrile - Butadiene – Styrene (ABS)
 Color Black
 Antenna Size..... 50 mm x 40 mm
 Cable Length..... 1 m (USB)

Built-in Peripherals

LED Bi-color, Red and Green
 Buzzer..... Monotone

Operating Conditions

Temperature..... 0 °C – 50 °C
 Humidity Max. 90% (non-condensing)
 MTBF 500,000 hrs

Application Programming Interface

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



Certifications/Compliance

ISO 18092, ISO 14443, ISO 7816 Class A (SAM slot), NFC Forum, LASCOM, CE, FCC, VCCI, MIC, KC, PC/SC, CCID, RoHS 2, Felica Performance Certification, USB Full Speed, Microsoft® WHQL for Windows® 2000, Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2

Device Driver Operating System Support

Windows® 2000, Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, 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 above



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