



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1252U-A1

NFC Forum Certified Reader



Technical Specifications V1.01



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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 a SAM (Secure Access Module) which can be used for key diversification and mutual authentication providing high level security in contactless transactions. It is PC/SC-compliant allowing interoperability, and is also NFC library-compliant making it suitable for various NFC applications including Bluetooth and Wi-Fi NFC pairing/log-in. 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

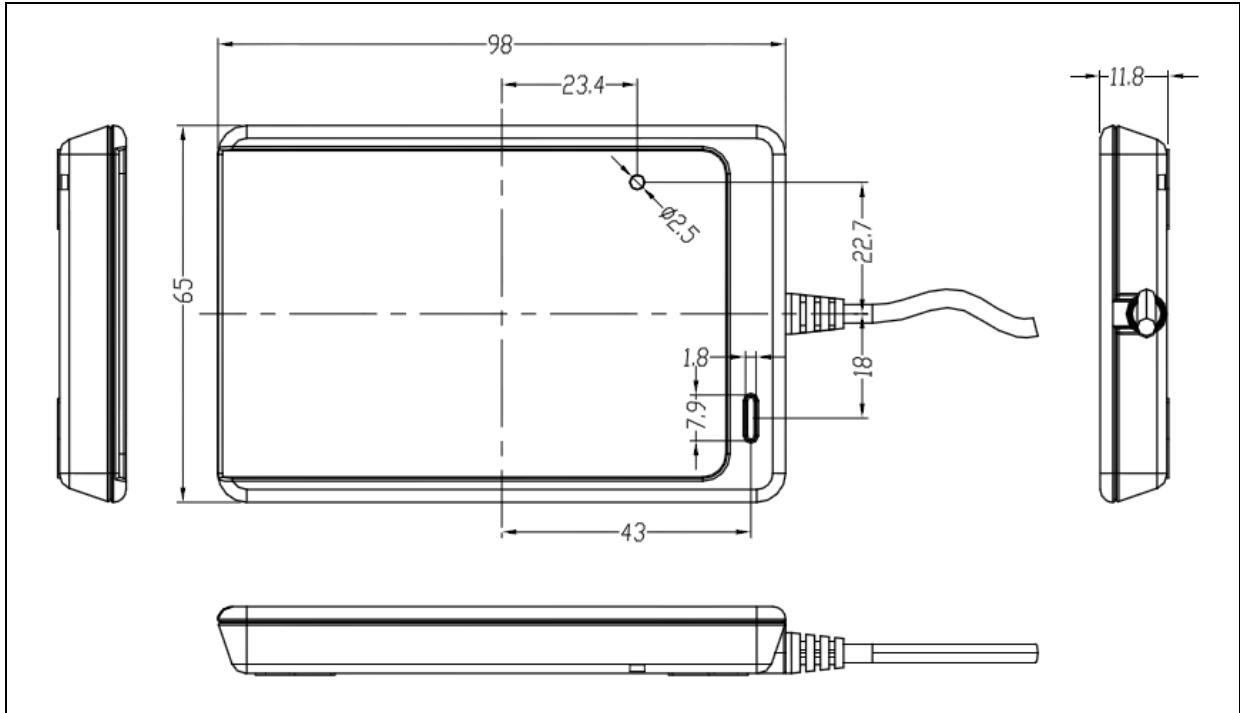
- USB 2.0 Full Speed Interface
- CCID Compliant
- Smart Card Reader:
 - Read/Write speed of up to 424 Kbps
 - Built-in antenna for contactless tag access, with card reading distance of up to 50 mm (depending on tag type)
 - Support for ISO 14443 Part 4 Type A and B cards, MIFARE, FeliCa, and all four types of NFC (ISO/IEC 18092 tags)
 - 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
 - ISO 7816-compliant SAM slot (Class A)
- 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
 - Microsoft® WHQL
 - RoHS



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 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
Protocol.....	T=0 and T=1 protocol

Physical Specifications

Dimensions	98.0 mm (L) x 65.0 mm (W) x 11.8 mm (H)
Weight.....	73 g
Material	Acrylonitrile - Butadiene – Styrene (ABS)
Color	Black
Antenna Size.....	50 mm x 40 mm
Cable Length.....	1.0 m (USB)

Built-in Peripherals

LED	Bi-color, Red and Green
Buzzer	Monotone

Operating Conditions

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

Application Programming Interface

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

Certifications/Compliance

ISO 18092, ISO 14443, ISO 7816, LASCOS, CE, FCC, VCCI, MIC, KC, PC/SC, CCID, RoHS, USB Full Speed, NFC Forum, 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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