



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1252U

NFC Forum Certified Reader



Technical Specifications V1.05



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

The ACR1252U runs on the 13.56 MHz contactless technology and supports ISO 14443 Type A and B cards, MIFARE®, FeliCa, 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 of security in contactless transactions. Post-deployment firmware upgrade is also supported, eliminating the need for additional hardware modification.

ACR1252U 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 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 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 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)
 - Supports extended APDU (max. 64 KB)
 - 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
- 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)
- USB Firmware Upgradeability
- Supports Android™ 3.1 and later¹
- Compliant with the following standards:
 - EN 60950/IEC 60950
 - ISO 18092
 - ISO 14443
 - ISO 7816 Class A (SAM Slot)
 - NFC Forum Certification Mark
 - Felica Performance Certification
 - PC/SC
 - CCID
 - CE
 - FCC
 - RoHS 2
 - REACH
 - J-LIS (Japan)
 - VCCI (Japan)
 - MIC (Japan)
 - KC (Korea)
 - Microsoft® WHQL

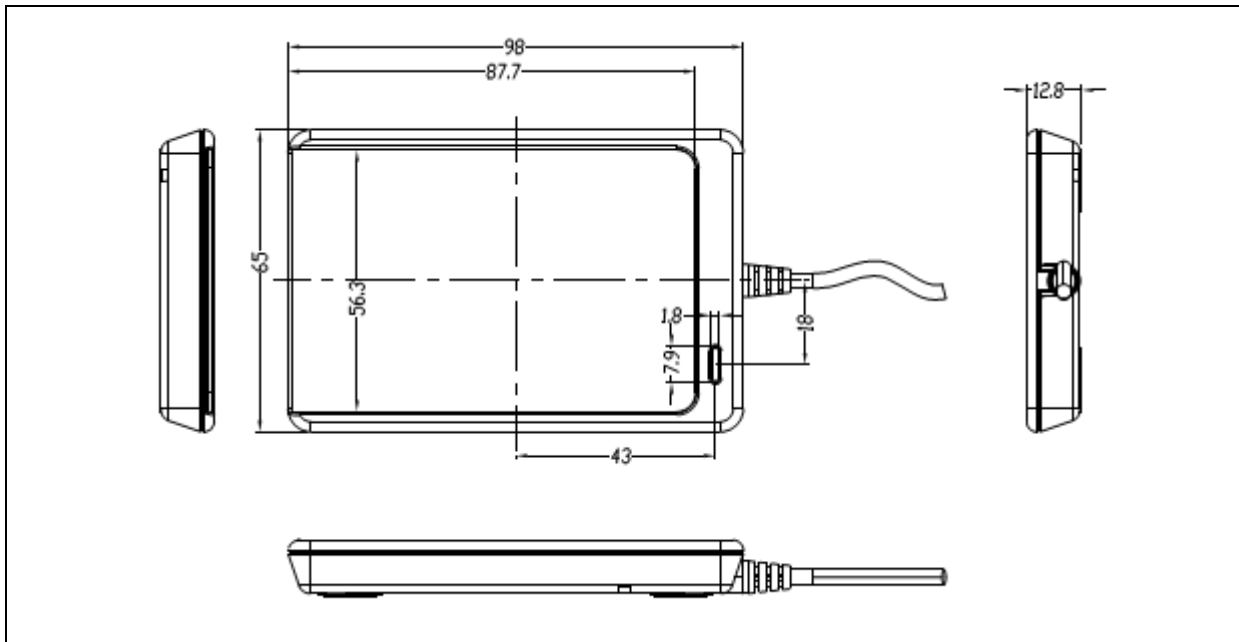
¹ Uses an ACS-defined Android Library



3.0. Typical Applications

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

4.0. Technical Specifications



Physical Characteristics

Dimensions 98.0 mm (L) × 65.0 mm (W) × 12.8 mm (H)
Weight..... 81 g
Color Matte Black

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 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

SAM Card Interface

Number of Slot 1 Standard SIM-sized Card Slot
Standard ISO 7816, Class A (5 V)
Protocol..... T=0;T=1
Smart Card Read/Write Speed..... 9.6 Kbps – 215 Kbps
Card Connector Type..... SAM Slot 0: Contact

Built-in Peripherals

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

Other Feature

Firmware Upgrade Supported

Application Programming Interface

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

Operating Conditions

Temperature..... 0 °C – 60 °C
Humidity Max. 90% (non-condensing)
MTBF 500,000 hrs



Certifications/Compliance

EN 60950/IEC 60950, ISO 18092, ISO 14443, ISO 7816 (SAM Slot), USB Full Speed, NFC Forum Certification, Felica Performance Certification, PC/SC, CCID, CE, FCC, RoHS 2, REACH J-LIS (Japan), VCCI (Japan), MIC (Japan), KC (Korea), Microsoft® WHQL

Device Driver Operating System Support

Windows® CE 5.0, Windows® CE 6.0, Windows® Embedded Compact 7, 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, Windows® 2016
Linux®, Mac OS®, Solaris, Android™ 3.1 and later



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