



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1255U-J1 Bluetooth[®] NFC Reader



Technical Specifications V1.01



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1.0. Introduction

ACR1255U-J1 Bluetooth® NFC Reader combines the latest 13.56 MHz contactless technology with Bluetooth® Smart connectivity for on-the-go smart card and NFC applications.

1.1. Smart Card Reader

ACR1255U-J1 supports ISO 14443 Type A and B smart cards, MIFARE®, FeliCa®, and most NFC tags and devices compliant with ISO 18092 standard. This makes it the ideal device for a broad range of solutions, such as hands-free verification for physical and logical access control, and inventory tracking. ACR1255U-J1 has both Bluetooth 4.0 interface for pairing with mobile devices and USB Full Speed for PC-linked operation. Additionally, it can read/write at speed of up to 424 Kbps for contactless smart card and NFC device access.



1.2. Compact Design

With a compact design and a rechargeable Lithium-ion battery for power, ACR1255U-J1 is extremely portable and convenient for use anytime, anywhere with most Bluetooth-enabled smartphones and tablets in the market.

1.3. Firmware Upgradeable Feature

To save valuable cost and time, the firmware of ACR1255U-J1 could conveniently be upgraded in-field to allow users to cope up with the fast-changing technology for their applications in order to suit different scenarios.

1.4. Bluetooth Connectivity

With Bluetooth Smart technology, ACR1255U-J1 can connect wirelessly with ease to any device running on Android™ 4.3 and above, iOS 5.0 and above, Windows® operating system and Mac OS®.

1.5. Ease of Integration

ACR1255U-J1 could easily be installed for use with any personal computer running on Windows® operating system because it is PC/SC and CCID compliant. Its drivers are also compatible with Linux® and Mac OS®.

With its numerous features, the ACR1255U-J1 is the perfect reader for your smart card solution.



2.0. Features

- USB 2.0 Full Speed Interface
- Bluetooth Smart Interface
- Plug and Play – CCID support brings utmost mobility
- USB Firmware Upgradeability¹
- Smart Card Reader:
 - Built-in antenna for contactless tag access, with reading distance of up to 60 mm (depending on tag type)
 - Supports ISO 14443 Part 4 Type A and B cards
 - Supports MIFARE® and MIFARE® DESFire®
 - Supports FeliCa®
 - Supports ISO 18092 Tags (NFC Tags)
 - Built-in anti-collision feature (only one tag is accessed at any time)
 - NFC Support:
 - Card reader/writer mode
 - Card emulation mode
 - Supports AES-128 encryption algorithm
- Application Programming Interface:
 - Supports PC/SC
 - Supports CT-API (through wrapper on top of PC/SC)
- Supports Android™ 4.3 and above²
- Supports iOS 5.0 and above³
- Built-in Peripherals:
 - Two user-controllable bi-color LEDs
 - User-controllable buzzer
- Compliant with the following standards:
 - EN60950/IEC 60950
 - ISO 18092
 - ISO 14443
 - CE
 - FCC
 - VCCI
 - PC/SC
 - CCID
 - Bluetooth® Smart
 - Microsoft® WHQL
 - RoHS 2
 - REACH

¹ Applicable under PC-linked mode

² PC/SC and CCID support are not applicable.

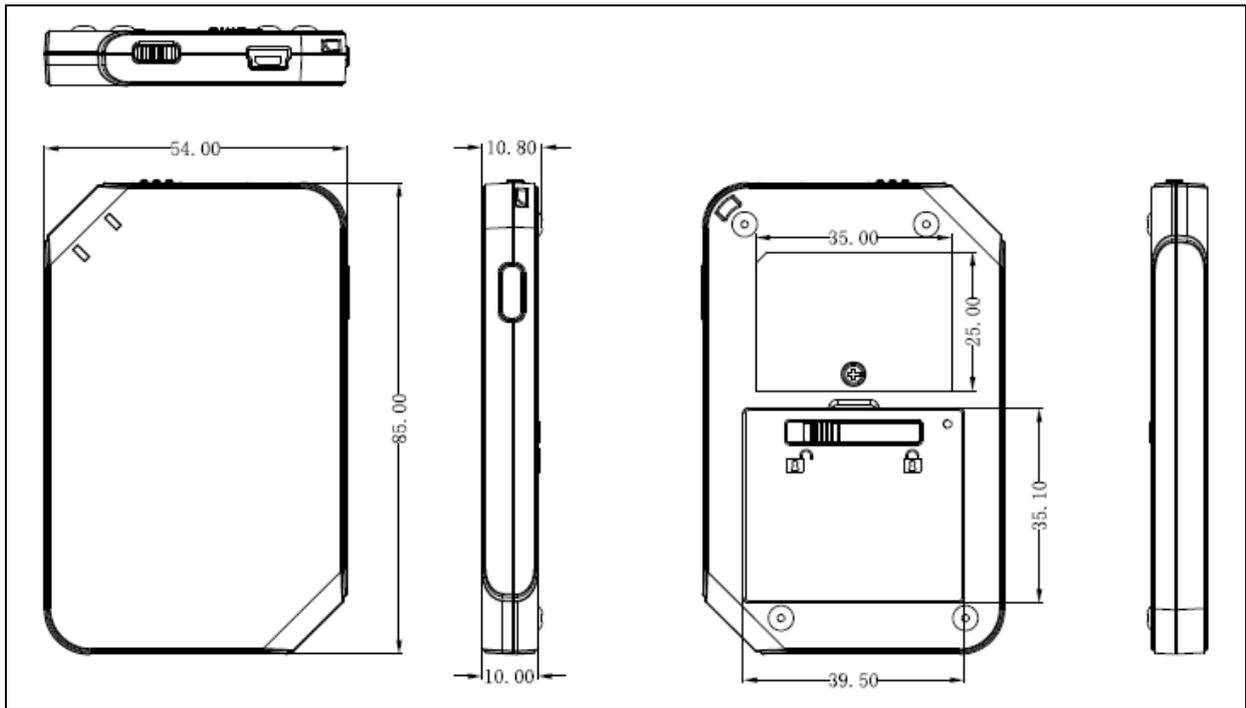
³ Same as above



3.0. Typical Applications

- Mobile Banking & Payment
- e-Government
- e-Healthcare
- Network Security
- Access Control
- e-Purse & Loyalty
- Public Key Infrastructure

4.0. Technical Specifications



Universal Serial Bus Interface

Type USB Full Speed, four lines: +5 V, GND, D+ and D-
 Power Source..... From USB
 Speed..... 12 Mbps
 Firmware Upgradeable through USB interface

Bluetooth Interface

Type Bluetooth Smart
 Power Source..... From battery or from USB
 Speed..... 1 Mbps (on-air data rate)

Contactless Smart Card Interface

Standard ISO/IEC 18092 NFC, ISO 14443 Type A & B, MIFARE, DESFire, FeliCa
 Protocol..... ISO 14443 T=CL for ISO 14443-4 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 60 mm (depending on tag type)
 Smart Card Read/Write Speed..... 106 Kbps, 212 Kbps, 424 Kbps

Physical Specifications

Dimensions 85 mm (L) × 54 mm (W) × 10 mm (H)
 Color White
 Weight..... 37.5 g (74.1 g with cable ± 5 g allowance for cable)
 Cable length, cord, connector. 1 m, Fixed (detachable), USB A
 Antenna size 45.60 mm × 42.00 mm

Built-In Peripheral

LED 2, Bi-color (Red and Blue, 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

EN60950/IEC 60950, ISO 18092, ISO 14443, NFC Forum, CE, FCC, VCCI, PC/SC, CCID, RoHS 2, REACH, USB Full Speed, Bluetooth® Smart
Microsoft® WHQL for Windows® 2000, Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, Windows® 10, Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2

Device Driver Operating System Support

Windows® ME, Windows® 98, Windows® 2000, Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, Windows® 10, Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2
Linux®, Mac OS®, Android™¹, iOS²



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¹ 4.3 or above Android version is required for Bluetooth 4.0.
² 5.0 and above iOS version is required.