



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1255U-J1 ACS Secure Bluetooth[®] NFC Reader



Technical Specifications V1.12



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1.0. Introduction

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

1.1. Smart Card Reader

The 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. The 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 speeds 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, the 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 the ACR1255U-J1 could conveniently be upgraded in-field to let users cope with the fast-changing technology for their applications to suit different scenarios.

1.4. Secure Bluetooth® Connectivity

With Bluetooth technology and AES-128 encryption (CBC ciphering mode), the ACR1255U-J1 can connect securely and wirelessly with ease to any device running on Android™ version 4.3 and later, iOS 5.0 and later, Windows® 7 and later, and Mac OS® 10.7 and later.

1.5. Ease of Integration

The ACR1255U-J1 can 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 Full Speed Interface
- Bluetooth Interface
- Plug and Play – CCID support brings utmost mobility
- Smart Card Reader:
 - Contactless Interface:
 - Read/Write speed of up to 424 Kbps
 - Built-in antenna for contactless tag access, with 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 4 types of NFC (ISO/IEC 18092) tags
 - Built-in anti-collision feature (only one tag is accessed at any time)
 - Supports AES-128 encryption algorithm (CBC ciphering mode)
 - NFC Mode Supported:
 - Card reader/writer mode
- Application Programming Interface:
 - Supports PC/SC
 - Supports CT-API (through wrapper on top of PC/SC)
- Built-in Peripherals:
 - Two user-controllable bi-color LEDs
 - User-controllable buzzer
- USB Firmware Upgradeability¹
- Supports Android™ 4.3 and later²
- Supports iOS 8.0 and later³
- Compliant with the following standards:
 - EN 60950/IEC 60950
 - ISO 14443
 - ISO 18092
 - Bluetooth
 - PC/SC
 - CCID
 - CE
 - FCC
 - RoHS
 - REACH
 - VCCI (Japan)
 - TELEC (Japan)
 - BIS (India)
 - Microsoft® WHQL

¹ Applicable under PC-linked mode

² Uses an ACS-defined Android Library

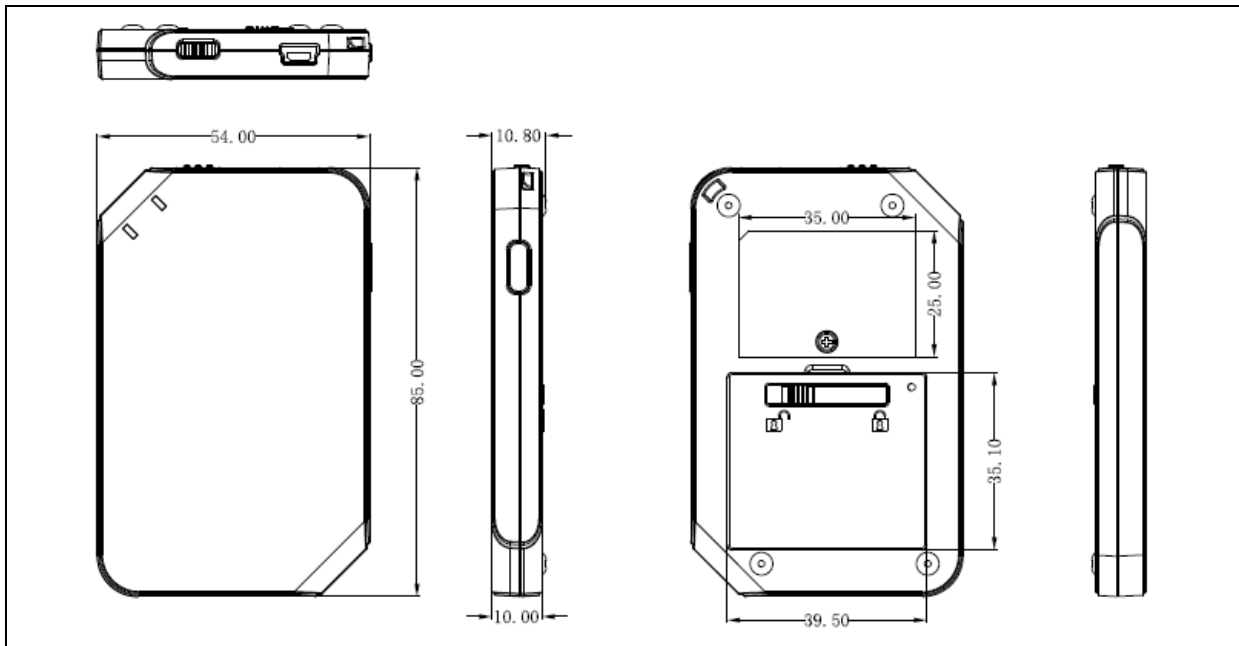
³ Uses an ACS-defined iOS Library



3.0. Typical Applications

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

4.0. Technical Specifications



Physical Characteristics

Dimensions 85 mm (L) × 54 mm (W) × 10 mm (H)
Weight 37.5 g (74.1 g with cable ± 5 g tolerance)
Color White

Bluetooth Interface

Protocol Bluetooth (Bluetooth Low Energy/Bluetooth 4.0)
Power Source Rechargeable Lithium-ion Battery (charging through USB)
Speed 1 Mbps

USB Host Interface

Protocol USB CCID
Connector Type USB Mini-B
Power Source From USB port
Speed USB Full Speed (12 Mbps)
Supply Voltage 5 V
Supply Current Max. 500 mA
Cable Length 1 m, Detachable

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 45.60 mm × 42.00 mm

Built-in Peripherals

LED 2 bi-color: Red and Blue, Red and Green
Buzzer Monotone

Other Features

Encryption In-device AES-128 Encryption Algorithm (CBC Ciphering Mode)
Firmware Upgrade Supported (upgradeable through USB Interface)

Application Programming Interface

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

Operating Conditions

Temperature 0 °C – 60 °C⁴
Humidity Max. 85% (non-condensing)
MTBF 400,000 hrs

⁴Recommended Charging Temperature: 0 °C – 45 °C



Certifications/Compliance

EN 60950/IEC 60950, ISO 14443, ISO 18092, USB Full Speed, Bluetooth, PC/SC, CCID, CE, FCC
RoHS, REACH, VCCI (Japan), TELEC (Japan), BIS (India), Microsoft® WHQL

Device Driver Operating System Support

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, Windows® Server 2016
Linux®, Mac OS®, Android™⁵, iOS⁶



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⁵ 4.3 or later Android version is required for Bluetooth 4.0
⁶ 8.0 and later iOS version is required