ACR1255U-J1
Secure Bluetooth®
NFC Reader
Technical Specifications V1.08
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1.0. Introduction
ACR1255U-J1 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
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 the 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 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), 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
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 Upgradeability\(^1\)
  - Supports Android™ 4.3 and later\(^2\)
  - Supports iOS 5.0 and later\(^3\)
  - Compliant with the following standards:
    - EN 60950/IEC 60950
    - ISO 14443
    - ISO 18092
    - Bluetooth
    - PC/SC
    - CCID
    - CE
    - FCC
    - RoHS 2
    - REACH
    - VCCI (Japan)
    - TELEC (Japan)
    - 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. 200 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 60 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 (upgradable 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 – 50 °C
Humidity ....................................... Max. 90% (non-condensing)
MTBF ............................................. 500,000 hrs

* 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 2, REACH
VCCI (Japan), TELEC (Japan), Microsoft® WHQL

Device Driver Operating System Support
Linux®, Mac OS®, Android™, iOS®

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MIFARE and MIFARE Classic are registered trademarks of NXP B.V. and are used under license.

5 4.3 or later Android version is required for Bluetooth 4.0
6 5.0 and later iOS version is required