Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1222L
USB NFC Reader
with LCD

Technical Specifications V1.02

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1.0. Introduction

The ACR1222L is a PC-linked NFC contactless reader with LCD screen and USB host interface. Developed based on the 13.56 MHz RFID technology and the ISO/IEC 18092 NFC standard, it supports ISO 14443 Type A and B cards, Mifare, FeliCa and all four types of NFC tags.

ACR1222L is equipped with four LEDs, a buzzer and an LCD, providing users with a clear indication of the reader's status. The two-line graphic LCD has multiple language support, including Chinese, English, Japanese and several European languages. It allows interactive operation, such as scrolling up and down, left and right, etc. ACR1222L also comes with three built-in SAM slots for enhanced security in contactless operations.

Moreover, ACR1222L has a built-in anti-collision feature and direct card type polling commands that enable smooth operation in cases where multiple cards are present. ACR1222L has firmware upgradability and PC/SC compliance, which allows its interoperability across different applications and platforms. With the convenience it enabled in contactless transactions, ACR1222L is suitable for applications such as payment, access control and time and attendance checking.

2.0. Features

- USB 2.0 Full Speed Interface
- CCID Compliance
- 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)
    - Three ISO 7816 compliant SAM slots
- Application Programming Interface:
    - Supports PC/SC
    - Supports CT-API (through wrapper on top of PC/SC)
- Built-in Peripherals:
    - Two-line graphic LCD with interactive operability (i.e. scroll up and down, left and right, etc.) and multi-language support (i.e. Chinese, English, Japanese and several European languages)
    - Four user-controllable LEDs
    - User-controllable buzzer
- USB Firmware Upgradability
- Supports Android^{TM} OS 3.1 and above
- Compliant with the following standards:
    - ISO 14443
    - CE
    - FCC
    - KC
    - VCCI
    - 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

4.0. Technical Specifications
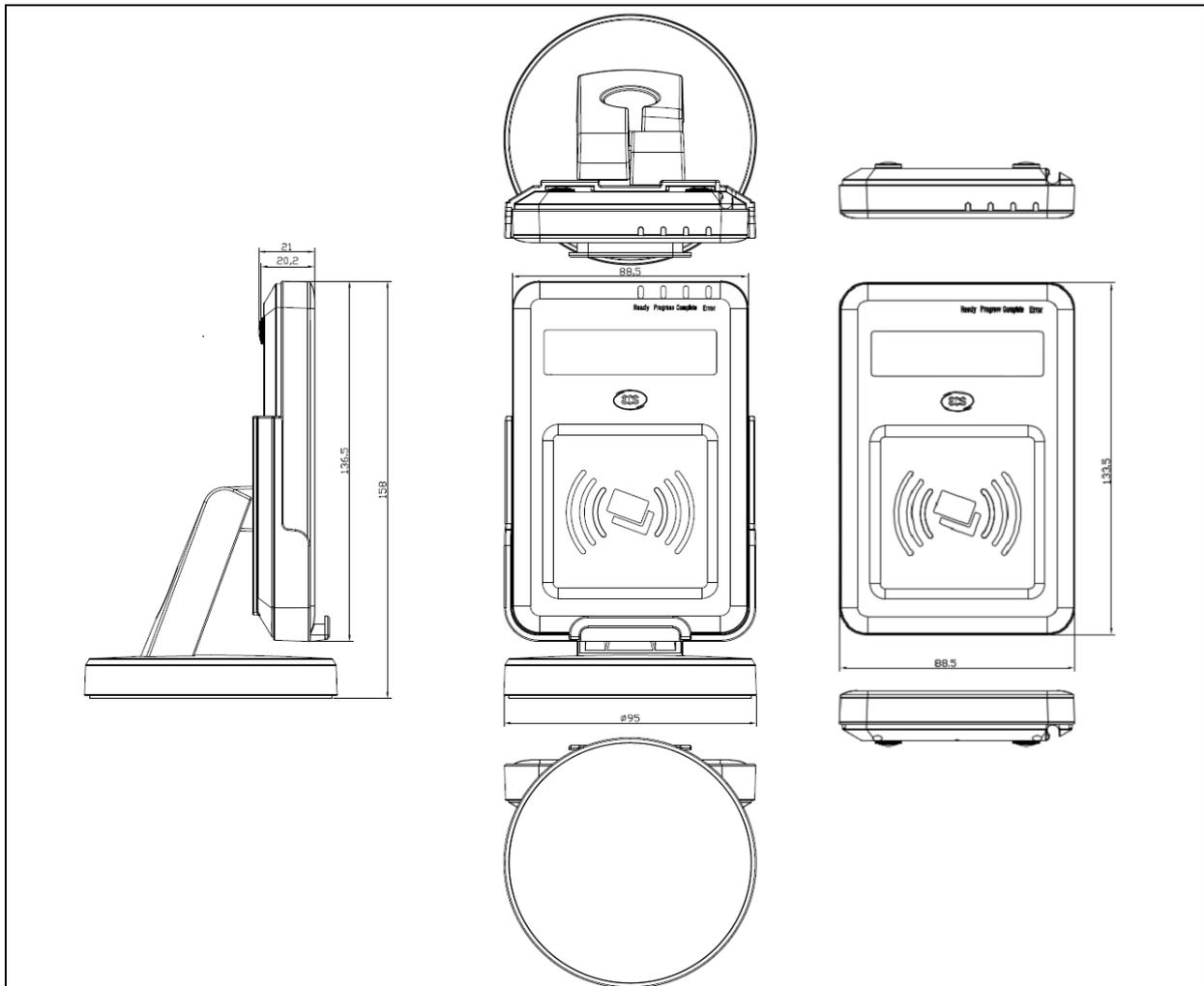
Universal Serial Bus Interface
Power Source ....From USB
Speed..12 Mbps (Full speed)
Supply Voltage......................................Regulated 5 V DC
Supply Current ....300 mA (maximum)

Contactless Smart Card Interface
Standard ....Mifare, ISO 14443-4 Type A & B, FeliCa, ISO/IEC 18092 NFC
Protocol...ISO 14443 T=CL for ISO 14443-4 compliant cards and T=CL Emulation for Mifare 1K/4K, FeliCa, ISO 18092
Operating Frequency ....13.56 MHz
Operating Distance ....Up to 50 mm (depending on tag type)
Smart Card Read/Write Speed.... ....106, 212, 424 kbps

SAM Card Interface
Standard ....ISO 7816
Protocol...T=0 and T=1 protocol

Built-in Peripherals
LCD Display ....128 x 32 pixel graphic LCD with yellow-green backlight
....Number of characters: 2 line x 16 characters
LED Status Indicators ....4 LEDs: Green, Blue, Orange and Red
Buzzer...Monotone

Physical Specifications
Dimensions ....Main Body: 133.5 mm (L) x 88.5 mm (W) x 21.0 mm (H);
                                                              With Stand: 158.0 mm (L) x 95.00 mm (W) x 95.00 mm (H)
Weight……………………………… Main Body: 173 g
                                                              With Stand: 415 g
Color ....Black
Cable Length……………………….....1.5 m (USB)

Operating Conditions
Temperature ....0 – 50 °C
Humidity .... 10% - 90%

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

Certifications/Compliance
ISO 14443, CE, FCC, KC, VCCI, PC/SC, CCID, RoHS, USB Full Speed
Microsoft® WHQL Windows® 2000, XP, Vista, 7

Device Driver Operating System Support
Windows® 2000, XP, Vista, 7, Server 2003, Server 2008, Server 2008 R2
Linux, Mac, Android^TM 3.1 and above