



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1222L USB NFC Reader with LCD

Technical Specifications V1.05





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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 ISO 7816 Compliant Class A SAM slots which can be used together with SAM cards 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:
 - 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, FeliCa and all four types of NFC (ISO/IEC 18092) tags
 - Built-in anti-collision feature (only one tag is accessed at any time)
 - SAM Interface
 - Three SAM Slots
 - Supports ISO 7816 Class A SAM Card
- 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™ 3.1 and later¹
- Compliant with the following standards:
 - ISO 18092
 - ISO 14443
 - ISO 7816 Class A (SAM Slot)
 - CE
 - FCC
 - PC/SC
 - CCID
 - RoHS 2
 - VCCI (Japan)
 - KC (Korea)
 - Microsoft® WHQL

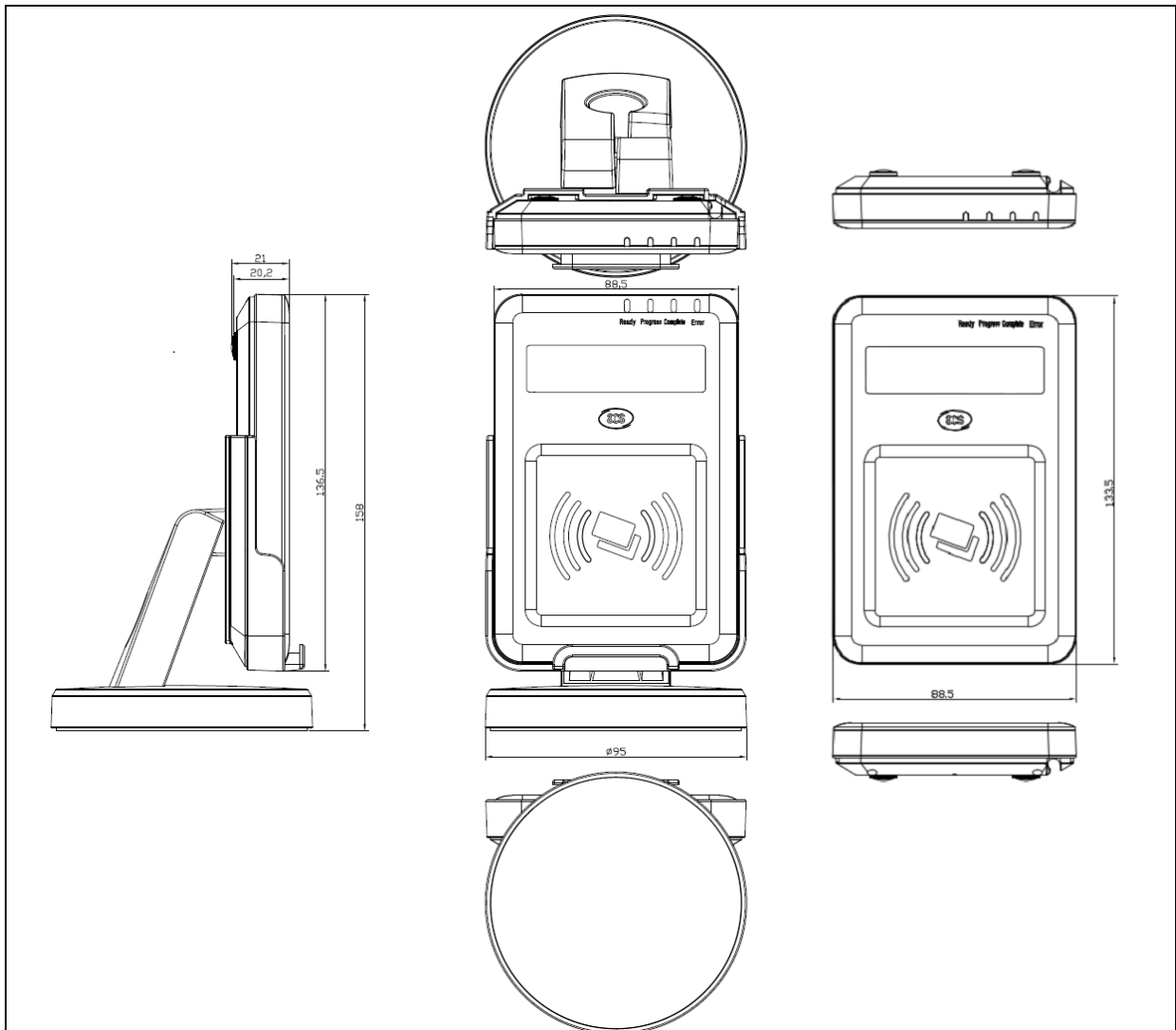
¹ Uses an ACS-defined Android Library



3.0. Typical Applications

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Transportation
- Network Security
- Access Control
- Loyalty Program

4.0. Technical Specifications



Physical Characteristics

Dimensions	Main Body: 133.5 mm (L) x 88.5 mm (W) x 21.0 mm (H)
.....	With Stand: 158.0 mm (L) x 95.0 mm (W) x 95.0 mm (H)
Weight	Main Body: 173 g
.....	With Stand: 415 g
Color	Black

USB Host Interface

Protocol.....	USB CCID
Type	Four Lines: +5 V, GND, D+ and D-
Connector Type.....	Standard Type A
Power Source.....	From USB port
Speed.....	USB Full Speed (12 Mbps)
Supply Voltage.....	5 V
Supply Current	Max. 300 mA
Cable Length.....	1.5 m fixed cable

Contactless Smart Card Interface

Standard	ISO 14443-4 A and B, ISO/IEC 18092 (NFC), MIFARE®, FeliCa
Protocol.....	MIFARE Classic Card Protocol, T=CL
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



SAM Card Interface

Number of Slots 2 Standard SIM-sized
Standard ISO 7816, Class A (5 V)
Protocol..... T=0; T=1
Card Connector Type..... Contact

Built-in Peripherals

LCD..... 128 x 32 pixel graphic LCD with yellow-green backlight
..... 16 characters x 2 lines
LED 4 single-color: Green, Blue, Orange and Red
Buzzer Monotone

Operating Conditions

Temperature..... 0 °C - 50 °C
Humidity Max. 90% (non-condensing)
MTBF 300,000 hrs

Application Programming Interface

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

Certifications/Compliance

ISO 14443, ISO 18092, ISO 7816 Class A (SAM slot), USB Full Speed, PC/SC, CCID, CE, FCC, RoHS 2
VCCI (Japan), KC (Korea), Microsoft® WHQL

Device Driver Operating System Support

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
Linux®, Mac OS®, Android™



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