Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1281U nPA Contactless Reader

Technical Specifications

info@acs.com.hk
www.acs.com.hk

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1.0. Introduction

The ACR1281U nPA contactless reader is one of the world's earliest nPA scheme-qualified readers that support the extended contactless Application Protocol Data Unit (APDU) command.

The ACR1281U nPA contactless reader can access virtually any contactless smart card following the ISO 14443 standard. With its MCU high processing speed and good antenna performance, it is ready for highly demanding applications requiring high speed (up to 847 kbps) and government qualifications such as Germany BSI certificate etc

ACR1281U's support for extended contactless APDU Commands makes the processing of highly secure Public Key Infrastructure (PKI) algorithms and reading/writing of large files in a much shorter time. Hence, ACR1281U nPA Contactless Reader is fit for PKI applications, such as digital signatures on official documents using 2048 or 4096 bits of RSA keys, as well as government applications, which involves storing large files such as ID photos and fingerprint images. At such speeds, users are able to experience the total satisfactions of utilizing contactless technology.

USB connectivity of the ACR1281U nPA contactless reader securely connects the contactless smart cards, such as the new Germany e-ID cards, to any PC running on Windows, Mac and Linux operating systems. With a secure firmware upgrade capability, the reader is forward compatible with new card requirements and new function requirements.

Following its certification, ACR1281U nPA contactless reader can now be readily deployed by government authorities, companies and other institutions for citizens to assess this nPa electronic ID card system, implemented by Germany's Federal Ministry of Interior.

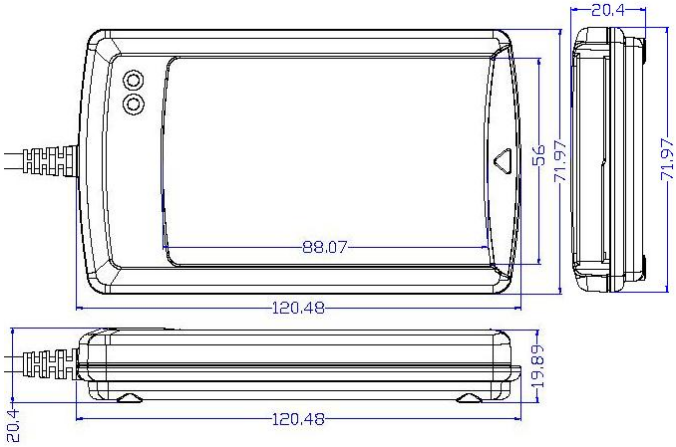
2.0. Features

- Germany BSI compliant
- MS-CCID Compliant
- PC/SC Compliant
- Read/write speed (for both Type A and B) of up to 847 kbps.
- Support major contactless smart cards technologies such as ISO 14443 Type A and B and Mifare series.
- Card operating distance is up to 50 mm
- Germany eID card operating distance is up to 40 mm (eID card requirement)
- Supports contactless extended APDU commands
- High transaction processing speed
- Secure and remote USB firmware upgrade mechanism
- USB Full Speed (12 Mbps)
- In-device AES / 3DES encryption algorithm (Upon request)
- Support contactless memory cards such as SRI(X)4k cards (Upon request)
- Possible to qualify for industry standard compliance such as China qPBOC certificates etc (Upon request)

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 VDC
Supply Current ..... 200 mA (max); 100 mA (normal)

Contactless Smart Card Interface

Standard..... ISO 14443 A & B Parts 1-4
Protocol..... ISO 14443 T=CL for ISO 14443-4 compliant cards and T=CL Emulation for Mifare series
Memory card support..... Upon request
Smart card read / write speed..... 106 kbps, 212 kbps, 424 kbps, 847 kbps
Operating frequency ..... 13.56 MHz
Operating distance ..... up to 50 mm
Antenna size..... 65 mm x 60 mm

Casing

Dimensions..... 120.48 mm (L) x 71.97 mm (W) x 20.4 mm (H)

MCU Interface

Germany BSI compliance
Support contactless extended APDU commands
Secure USB firmware upgrade mechanism
In-device 3DES / AES encryption algorithm (Upon request)

Operating Conditions

Temperature..... 0 – 50 °C
Humidity ..... 10% - 80%

Compliance/Certifications

PC/SC, CCID, CE, FCC, RoHS Compliant, USB Full Speed,
Microsoft WHQL 2000, XP, Vista, 7, Server 2003 and Server 2008

OS Support

Windows 2K, 2003, XP, Vista, 7, Server 2003, Server 2008, MacOS X and Linux for Ubuntu, OpenSuse and Debian OS