Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1281S-C1 Serial Dual Interface Reader

Technical Specifications V1.01

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1.0. Introduction

ACR1281S-C1 DualBoost II is a dual interface reader that can access any contact and contactless smart cards following the ISO 7816 and ISO 14443 standards. ACR1281S-C1 enables one to conventionally integrate separate and independent applications for contact and contactless technologies into one device and one card.

The DualBoost II makes use of serial RS232 protocol to communicate with the PC or host. It also makes use of high-speed communication for contactless cards at a maximum of 848 kbps, which makes it suitable for highly demanding applications. It also provides intelligent support for hybrid and combi cards, such that it detects a contactless card even if it is inserted in the contact card slot. Lastly, it has a built-in SAM slot for added security in both contact and contactless applications.

2.0. Features

- Serial RS232 Interface: Baud Rate = 9.6 kbps (default), 19.2 kbps, 38.4 kbps, 57.6 kbps, 115.2 kbps, 230.4 kbps

- USB interface for power supply

- CCID-like frame format (binary format)

- Contactless Smart Card Reader:
  - Read/write speed of up to 848 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 and Mifare series
  - Built-in anti-collision feature (only one tag is accessed at any time)
  - Supports extended APDU (max. 64 kbytes)

- Contact Smart Card Reader:
  - Supports ISO 7816 Class A, B and C (5 V, 3V and 1.8 V)
  - Supports microprocessor cards with T=0 or T=1 protocol
  - Supports memory cards
  - ISO 7816 compliant SAM slot

- Built-in Peripherals:
  - Two user-controllable LEDs
  - User-controllable buzzer

- USB Firmware Upgradability

- Compliant with the following standards:
  - ISO 14443
  - ISO 7816
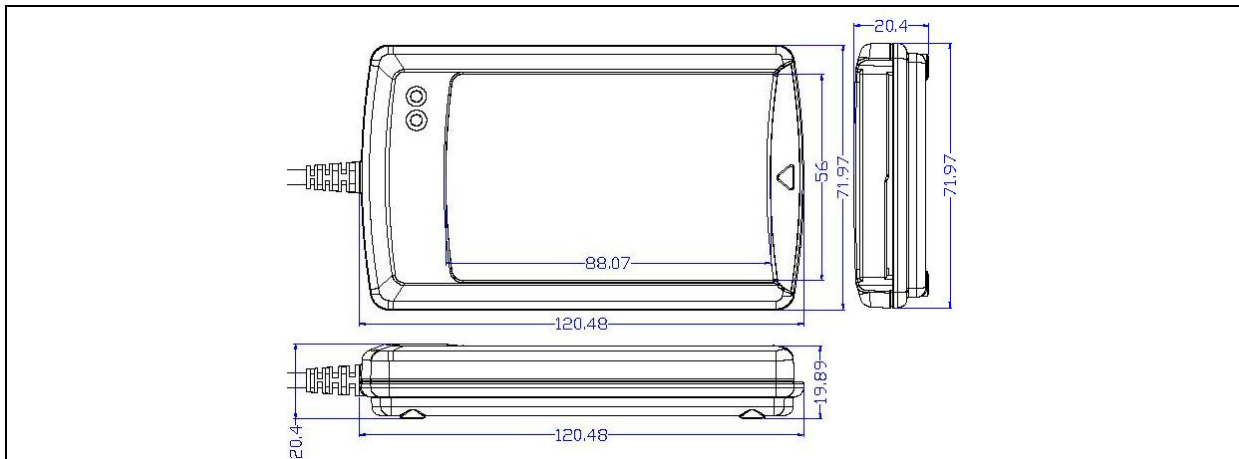 - CE
  - FCC
  - RoHS

3.0. Typical Applications

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

4.0. Technical Specifications

Serial Interface
Power Source .... From USB
Speed.. 9.6 kbps (default), 19.2 kbps, 38.4 kbps, 57.6 kbps, 115.2 kbps, 230.4 kbps
Supply Voltage..................................... Regulated 5 V DC
Supply Current .... 200 mA

Contactless Smart Card Interface
Standard .... ISO 14443 A & B Parts 1-4
Protocol .... ISO14443 T=CL for ISO14443-4 compliant cards and T=CL Emulation for Mifare series
Smart Card Read/Write Speed .... 106 kbps, 212 kbps, 424 kbps, 848 kbps
Operating Frequency .... 13.56 MHz
Operating Distance .... Up to 50 mm (depends on card type)
Antenna Size.. 65mm x 60mm

Contact Smart Card Interface
Standard .... ISO 7816 Parts1-3, Class A, B, C (5 V, 3 V, 1.8 V), T=0 and T=1
Supply Current .... Max. 60 mA
Smart Card Read/Write Speed .... 9.6 – 344 kbps
Short Circuit Protection .... +5 V/GND on all pins
CLK Frequency .... 4.80 MHz
Card Connector..................................... Landing
Card Insertion Cycles............................ Min. 200,000

SAM Card Interface
Standard .... ISO 7816, Class A (5 V)
Protocol .... T=0 and T=1 protocol

Built-in Peripherals
Buzzer.. Monotone
LEDs .... Red and Green

Physical Specifications
Dimensions .... 120.5 mm (L) x 72.0 mm (W) x 20.4 mm (H)
Weight... 150 g
Color .... Black
Cable Length... 1.5 m

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

Certifications/Compliance
ISO 14443, ISO 7816, CE, FCC, RoHS

Device Driver Operating System Support
Windows® 2000, XP, Vista, 7, Server 2003, Server 2008, Server 2008 R2
Linux