



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1281S-C1 Serial Dual Interface Reader



Technical Specifications V1.02



Table of Contents

1.0.	Introduction	3
2.0.	Features	4
3.0.	Typical Applications.....	5
4.0.	Technical Specifications.....	6



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 RS-232 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 ISO 7816 Compliant Class A SAM (Secure Access Module) slot which can be used together with a SAM card for added security in both contact and contactless applications.



2.0. Features

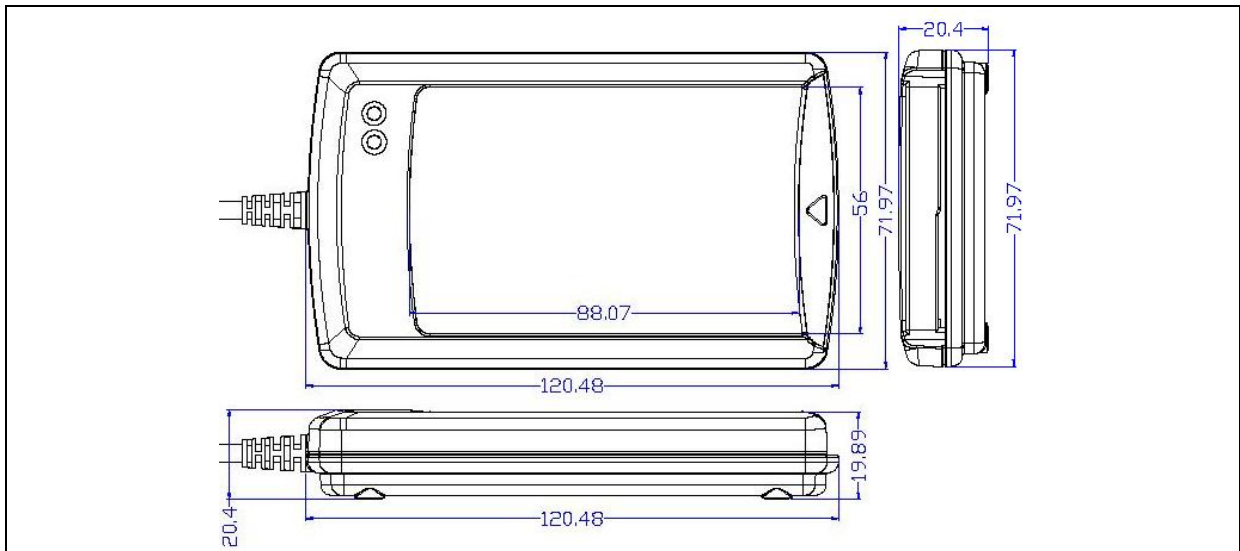
- Serial RS-232 Interface: Baud Rate = 9.6 Kbps (default), 19.2 Kbps, 38.4 Kbps, 57.6 Kbps, 115.2 Kbps, 230.4 Kbps
- USB interface for power supply
- CCID-like frame format (binary format)
- Smart Card Reader:
 - Contactless Interface:
 - Read/Write speed of up to 848 Kbps
 - Built-in antenna for contactless 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 KB)
 - Contact Card Interface:
 - One full sized contact card slot
 - Supports ISO 7816 Class A, B and C (5 V, 3 V and 1.8 V)
 - Supports microprocessor cards with T=0 or T=1 protocol
 - Supports memory cards
 - SAM Interface
 - One SAM slot
 - Supports ISO 7816 Class A SAM cards
- 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 2



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.....	ISO 14443 T=CL for ISO 14443-4 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.....	65 mm x 60 mm

Contact Smart Card Interface

Standard	ISO 7816 Parts 1-3, 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 Kbps – 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 °C - 50 °C
Humidity	Max. 90% (non-condensing)
MTBF	500,000 hrs

Certifications/Compliance

ISO 14443, ISO 7816, CE, FCC, RoHS 2



Device Driver Operating System Support

Windows® 2000, Windows® XP, Windows Vista®, Windows® 7, Windows® Server 2003,
Windows® Server 2008, Windows® Server 2008 R2
Linux®



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