



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1281S-C1

Serial Dual Interface Reader



Technical Specifications V1.06



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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 RS-232 protocol to communicate with the host computer. 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

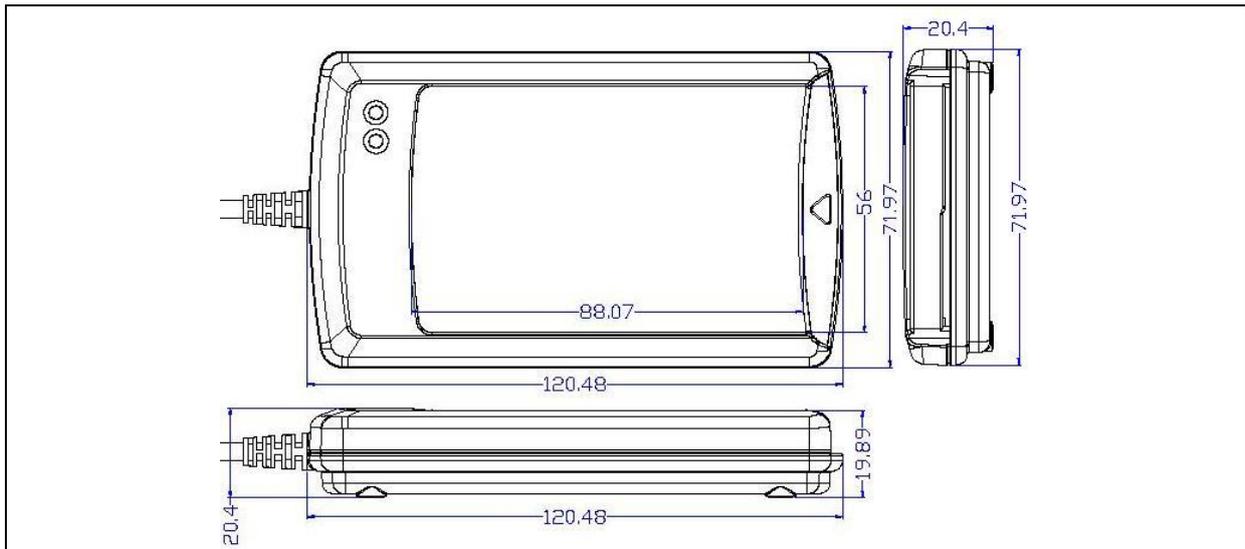
- Serial RS-232 Interface: Baud Rate = 9.6 Kbps (default), 19.2 Kbps, 38.4 Kbps, 57.6 Kbps, 115.2 Kbps, 230.4 Kbps
- USB interface for power supply
- CCID-like frame format (binary format)
- Smart Card Reader:
 - Contactless Interface:
 - Read/Write speed of up to 848 Kbps
 - Built-in antenna for contactless 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:
 - Supports ISO 7816 Class A, B and C (5 V, 3 V and 1.8 V) cards
 - 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



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	120.5 mm (L) × 72.0 mm (W) × 20.4 mm (H)
Weight	150 g
Color	Black

Serial Host Interface

Protocol	Serial RS-232
Connector Type	DB9 Connector
Power Source	From USB port
Speed	9.6 Kbps (default), 19.2 Kbps, 38.4 Kbps, 57.6 Kbps, 115.2 Kbps, 230.4 Kbps
Supply Voltage	5 V
Supply Current	Max. 200 mA
Cable Length	1.5 m, Fixed (DB9 + USB)

Contactless Smart Card Interface

Standard	ISO 14443 A and B Parts 1-4
Protocol	ISO 14443 T=CL for ISO 14443-4-compliant cards
.....	T=CL Emulation for MIFARE Classic
Operating Frequency	13.56 MHz
Operating Distance	Up to 50 mm (depends on tag type)
Smart Card Read/Write Speed	106 Kbps, 212 Kbps, 424 Kbps, 848 Kbps
Antenna Size	65 mm × 60 mm

Contact Smart Card Interface

Number of Slots	1 Full-sized Card Slot
Standard	ISO 7816, Class A, B, C (5 V, 3 V, 1.8 V)
Protocol	T=0; 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
Clock Frequency	4.80 MHz
Card Connector	ICC Slot: Landing
Card Insertion Cycles	Min. 200,000

SAM Card Interface

Number of Slots	1 Standard SIM-sized Card Slot
Standard	ISO 7816 Class A (5 V)
Protocol	T=0; T=1
Smart Card Read/Write Speed	9.6 Kbps – 420 Kbps
Card Connector Type	SAM Slot 0: Contact

Built-in Peripherals

LED	2 single-color: Red and Green
Buzzer	Monotone

Other Feature

Firmware Upgrade	Supported
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Operating Conditions

Temperature 0 °C - 60 °C
 Humidity Max. 90% (non-condensing)
 MTBF 500,000 hrs

Certifications/Compliance

ISO 14443, ISO 7816, CE, FCC, RoHS

Device Driver Operating System Support

Windows® XP, Windows® Vista™, Windows® 7, Windows® 8, Windows® 8.1, Windows® 10,
 Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012,
 Windows® Server 2012 R2, Windows® Server 2016
 Linux®



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