



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1281U-C Dual-Interface Reader



User Manual



Version History

Date	By	Changes	Version
2011-05-09	Melissa Frances Balmes	<ul style="list-style-type: none">• Creation	0.00.00
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Table of Contents

1.0.	Introduction	4
2.0.	Features	5
3.0.	Typical Applications.....	6
4.0.	How to use?.....	7
5.0.	Technical Specifications.....	8



1.0. Introduction



The ACR1281U-C DualBoost II is the second generation of ACS' ACR128 DualBoost Reader. ACR1281U-C is a dual interface reader that can access any contact and contactless smart cards following the ISO 7816 and ISO 14443 standards. This reader makes it possible to integrate into one device and one card the conventional separate and independent applications for contact and contactless technologies.

Like ACR128, DualBoost II is PC/SC compliant for both contact and contactless interfaces. It makes use of high-speed communication for contactless cards that reaches up to 848 kbps, which makes it suitable for highly demanding applications. ACR1281U-C also provides intelligent support for hybrid and combi cards, such as detecting a contactless card even if it is inserted in the contact card slot. Lastly, ACR1281U-C has a built-in SAM slot for added security in both contact and contactless applications.

Being the second generation of ACR128, ACR1281U-C DualBoost II offers additional features such as USB firmware upgradability, contact memory card support and extended APDU support. ACR1281U-C is an all-in-one, cost-effective and powerful dual interface reader designed to provide you with great flexibility and convenience. It can be used for online transactions to settle payment using credit card or for topping up transport contactless cards. It can also be embedded in bigger machines for physical access systems.



2.0. Features

- PC/SC Compliant for Contact, SAM and Contactless Smart Card Interfaces
- CCID Compliant
- Read/write speed of up to 848 kbps
- Supports major contactless smart cards technologies such as ISO14443 Type A and B and Mifare series
- Supports new Mifare Plus and DESFire EV1
- Supports extended APDU
- Contactless card operating distance is up to 50 mm
- Support major contact smart cards that conform to ISO7816 Part 1 to 3, T=0 and T=1 standard
- Maximum contact smart card read/write speed is 460 kbps
- Supports memory cards such as SLE5528, SLE5542, etc.
- ISO 7816 compliant SAM slot
- Maximum SIM-sized smart card read/write speed is 115.2 kbps
- High transaction processing speed with most local transactions completed within 100 ms
- Intelligent support for hybrid and combi cards
- USB firmware upgradable
- USB Full Speed (12 Mbps)



3.0. Typical Applications

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

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

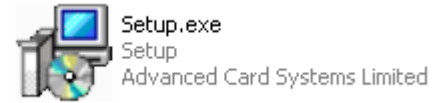
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



4.0. How to use?

4.1. Install ACS CCID Driver

Step 1: Double click the "Setup.exe" from the installer
"ACR1281_PCSC_Driver_Installer_bin-1.0.1.0-20110818_all".



Step 2: The driver will automatically install for ACR1281-C.

4.2. Read the card UID

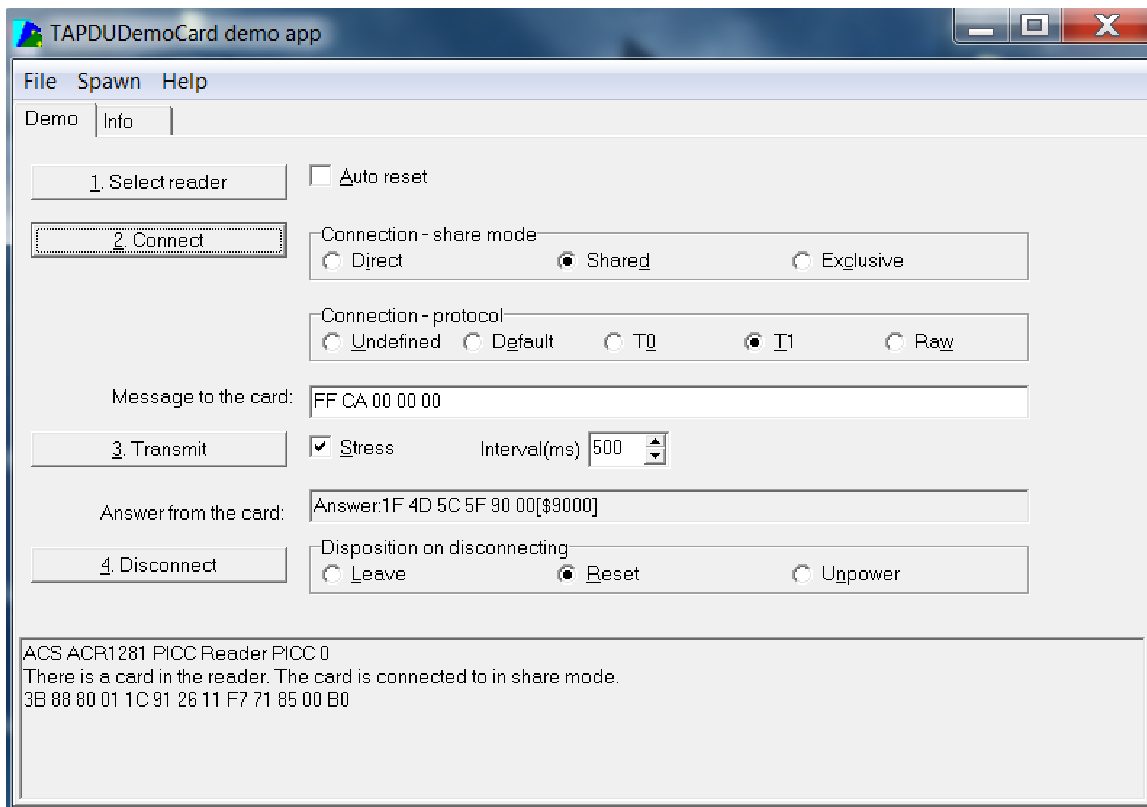
Step 1: Connect the reader to the computer

Step 2: Execute the "APDU.exe"



Step 3: Put the card onto the reader.

Step 4: Set the program according to the picture below



Step 5: Click Connect.

Step 6: Click Transmit. Then the message "FF CA 00 00 00" transmit to the smart card.

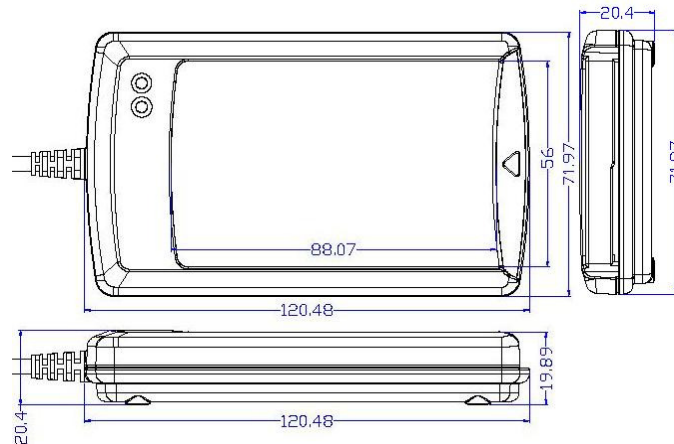
Step 7: Then get the answer response from the smart card "1F 4D 5C 5F 90 00".

The data transition was completed successfully.

Note: please close the APDU.exe before unplug the reader



5.0. Technical Specifications



Universal Serial Bus Interface

Power source From USB
 Speed 12 Mbps (Full Speed)
 Supply Voltage Regulated 5V DC
 Supply Current $\leq 200\text{ mA}$

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 1/2/3, T=0 and T=1
 Supply current max. 50mA
 Smart card read / write speed 9600-- 344kbps
 Short circuit protection +5V / GND on all pins
 CLK frequency 4.80 MHz
 Card connector Landing
 Card insertion cycles min. 200,000

SAM Card Interface

Standard ISO 7816
 Protocol T=0 and T=1 protocol

Multi-in Peripherals

Buzzer Monotone
 LEDs Red and Green

Casing

Dimensions 120.48 mm (L) x 71.97 mm (W) x 20.4 mm (H)
 Weight 150 g
 Color Black

Operating Conditions

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

Compliance/Certifications

PC/SC, CCID, CE, FCC, RoHS Compliant, USB Full Speed
 Microsoft WHQL Windows 2000, XP, Vista, 7

OS Support

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

