



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1552U-M

USB NFC Reader IV



User Manual V1.01



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1.0. Introduction

Continuing the success of the ACR1252U-M, the ACR1552U USB NFC Reader IV is the fourth generation of ACS's USB NFC Reader. It is an NFC reader that can access various contactless smart cards following the ISO 14443 Type A & B, ISO 15693, and ISO 18092 NFC standards. It has a built-in SAM (Secure Access Module) slot which can be used together with a SAM card for key diversification and mutual authentication, providing high-level security in contactless applications.

1.1. USB NFC Reader

ACR1552U-M supports a wide range of types of contactless cards and tags, including ISO 14443 Type A & B, ISO 15693, ISO18092 NFC, MIFARE®, FeliCa, SRI/SRIX, CTS, Innovatron, Picopass, Topaz card and NFC tags. This makes it the ideal device for a broad range of solutions, such as hands-free verification for physical and logical access control, and inventory tracking. ACR1552U-M has USB 2.0 full speed for PC-linked operation. Additionally, it can read/write card at speed of up to 848 kbps for contactless smart card and NFC device access.



1.2. Compact Design

With a compact design and powered by USB port, ACR1552U-M is extremely portable and convenient for use anytime, anywhere.

1.3. Firmware Upgradeable Feature

To save valuable cost and time, the firmware of ACR1552U-M could conveniently be upgraded in-field to allow users to cope with the fast-changing technology for their applications in order to suit different scenarios.

1.4. Multi-Platform Support

ACR1552U-M is a PC/SC and CCID-compliant reader. With driver support on different platforms, ACR1552U-M can operate in Windows®, Linux®, macOS and Android™ operating systems.



2.0. Features

- USB NFC Smart Card Reader (Contactless)
- USB 2.0 Full Speed Interface
- Plug and Play – CCID support brings utmost mobility¹
- USB Firmware Upgradeability²
- Contactless Smart Card Reader:
 - Supports ISO 14443 Type A and B cards
 - Supports ISO 15693 cards
 - Supports ISO 18092 NFC
 - Supports MIFARE® (T=CL), FeliCa, NFC Tags
 - Supports SRI/SRIX, CTS, Innovatron, Picopass, Topaz Card
 - Built-in antenna for contactless tag access, with a reading distance of up to 70 mm (depending on tag type)
 - Built-in anti-collision feature (only one tag is accessed at any time)
 - NFC Support:
 - Card reader/writer mode
 - Card emulation mode
 - Keyboard emulation mode
- Application Programming Interface:
 - Supports PC/SC³
 - Supports CT-API (through wrapper on top of PC/SC)
- Supports Windows®, Linux®, macOS, and Android™ operating systems.
- Built-in Peripherals:
 - One user-controllable bi-color LED
 - One user-controllable buzzer
- Compliant with the following certifications and standards:
 - CE
 - UKCA
 - FCC
 - RoHS
 - REACH
 - WEEE
 - J-LIS
 - VCCI
 - KC

¹ Applicable under PC-linked mode

² Same as above

³ Same as above



- Microsoft® WHQL
- ISO 14443
- ISO 15693
- ISO 18092
- PC/SC
- CCID

3.0. Typical Applications

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Transportation
- Network Security
- Access Control
- Loyalty Program
- Smart Poster/URL Marketing

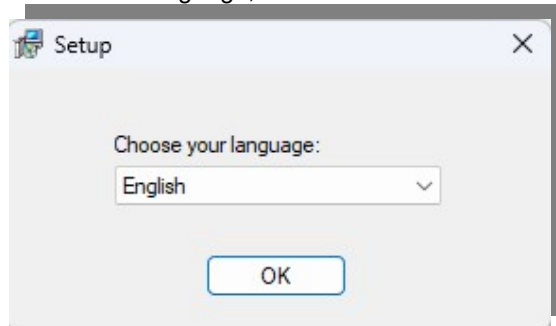
4.0. Driver installation Procedure

The installation procedure is the same for ACS PC/SC Driver version 1.0.4.0 and above. The latest device drivers of the ACS Smart Card Readers may be downloaded from the ACS Driver Download Webpage:

<http://acs.com.hk/en/drivers/>

To install the ACS Driver:

1. In the **ACS PC/SC Driver** folder, run the file **Setup.exe**.
2. Choose the language, and then click **OK**.

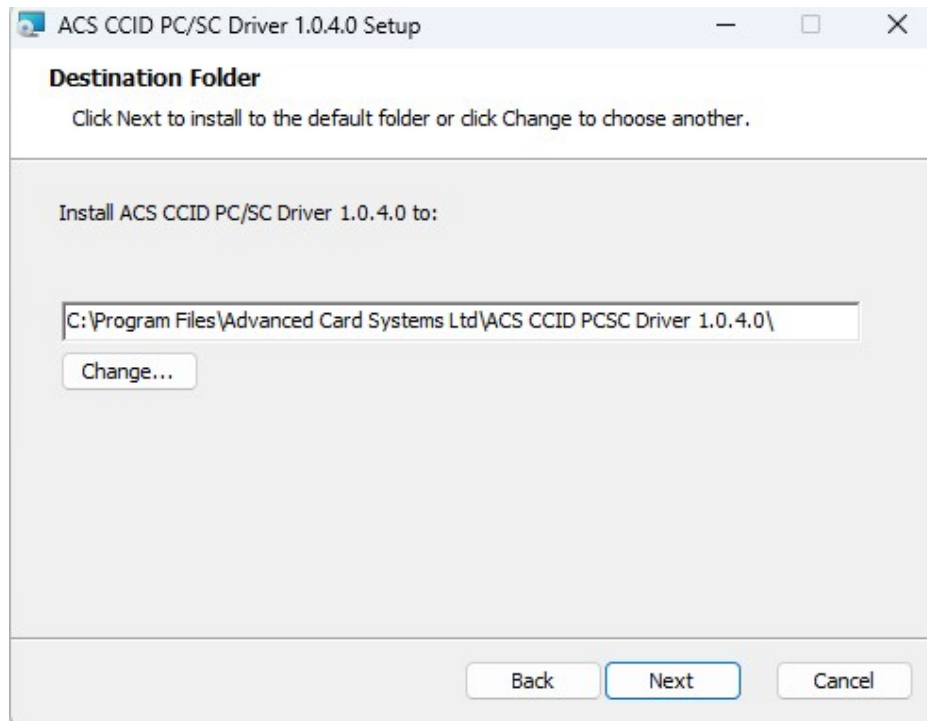


3. The Setup Wizard will be displayed. Click **Next** to proceed with the installation.

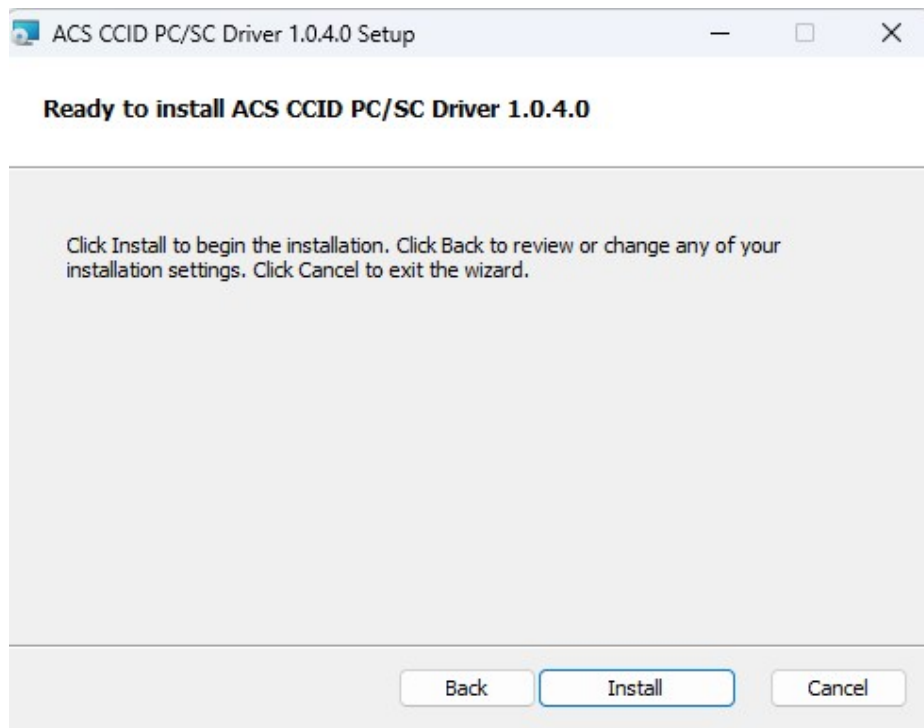




- Click **Next** to install the driver to the default folder located at **C:\Program Files\Advanced Card Systems Ltd\ACS PCSC Driver 1.0.4.0**, with **C** as the drive letter of your local drive. Otherwise, click **Change** to choose another destination folder.

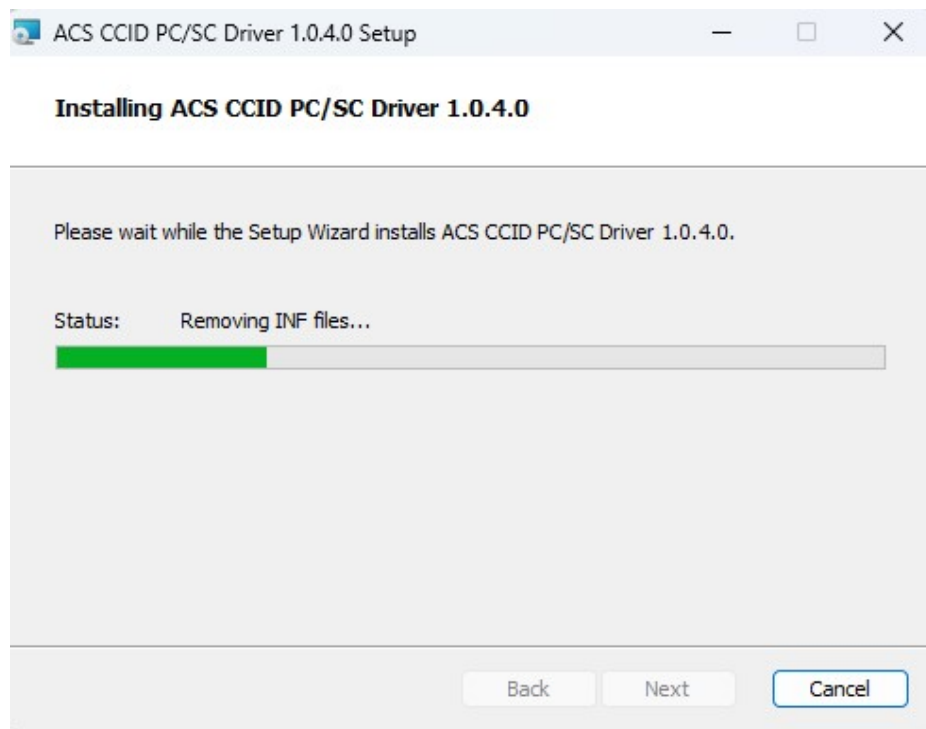


- Click **Install** to begin the installation.

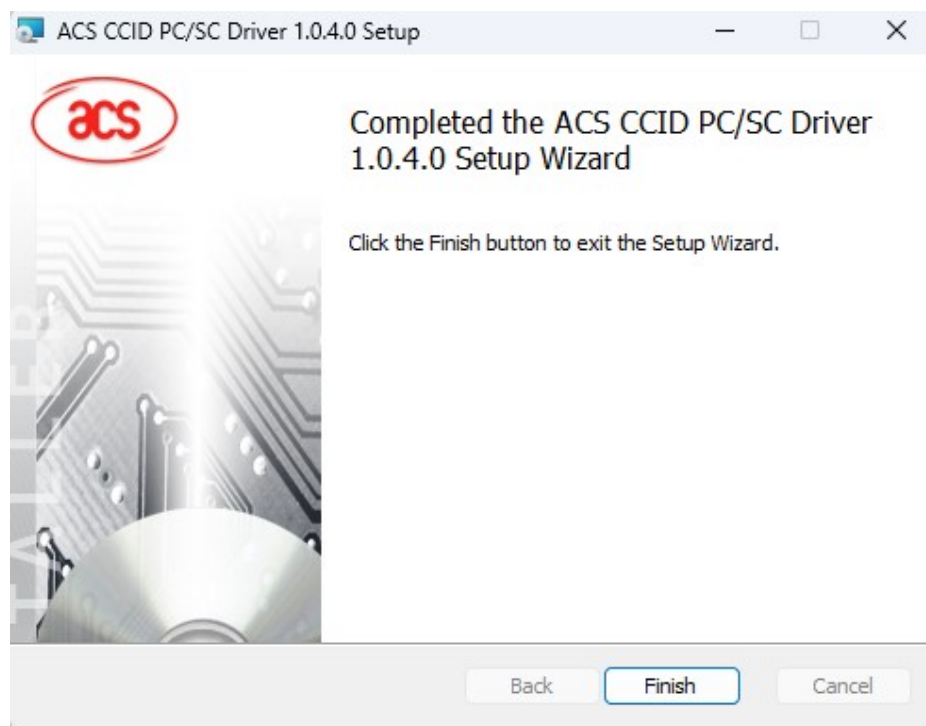




- Wait for the installation process to finish.



- Once the driver installation is finished, click **Finish** to exit the setup wizard.

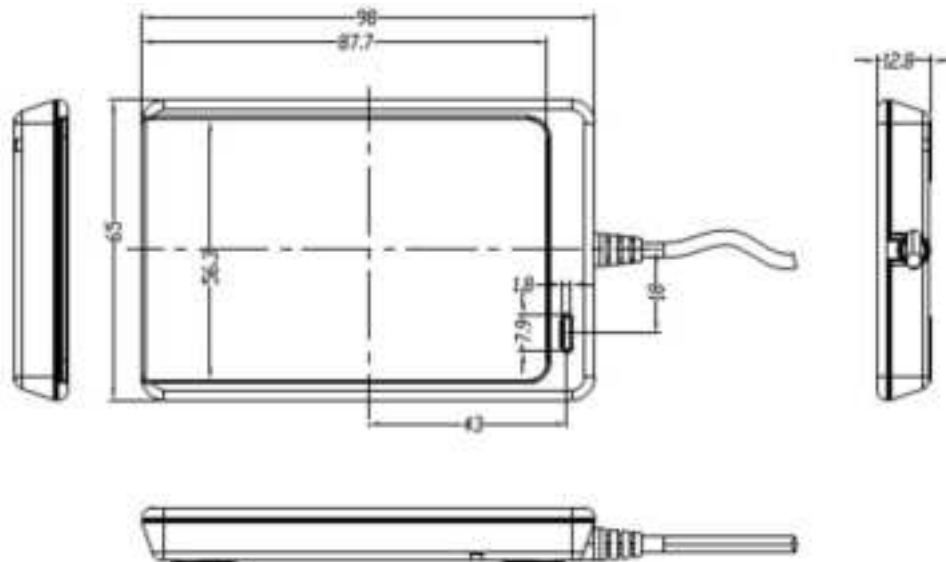




5.0. Technical Specifications

Contactless Smart Card Interface		Physical Characteristics	
Supported Card Types	ISO 14443 Type A & B Parts 1-4, ISO 15693, ISO 18092 NFC, MIFARE®, FeliCa, SRI/SRIX, CT3, Innovatron, Picopass, Topaz Card	Dimension (L x W x H)	Main Body: 98.0 x 65.0 x 12.8 mm Antenna size: 50.0 x 40.0 mm
Operating Frequency	13.56 MHz	Weight (±5 g)	79 g (USB Type-A)
Reading Distance	Up to 70 mm (Depending on tag type)	Available Colour	White
Read/Write Speed	106/212/424/848 kbps (ISO14443) 26/53kbps (ISO15693)	USB Cable Length	1 m (Non-detachable)
Supported NFC Mode	Card Reader/Writer, Keyboard Emulation, Card Emulation	Peripherals	
SAM Card Interface		Buzzer	1 x Programmable Buzzer (Mono-tone)
Standard	1 x ISO 7816 Class A (5V) Standard SIM size slot	LED	1 x Programmable LED (Blue & Green)
Read/Write Speed	13.4 kbps ~ 1,250 kbps	Operating Condition	
Clock Frequency	5 MHz, up to 10MHz (Upon request)	Temperature	0 - 60°C
Protocol	T=0, T=1	Humidity	90% (Non-condensing)
Host Interface		MTBF	500,000 Hours
Protocol	USB CCID	Certifications & Compliances	
Connector Type	USB Type-A	Certifications	CE, FCC, UKCA, VCCI, KC, RoHS, REACH, WEEE, I-LIS Microsoft® WHQL
Speed	USB 2.0 Full Speed (12 Mbps) compatible with USB 3.0	Compliances	USB CCID, PC/SC
Supply Voltage	5VDC	Libraries & Tools	
Current Consumption	Max. 300mA	Libraries	CT-API
USB Firmware Upgrade	Supported	Tools	Software Development Kit
		Drivers & Support	
		Driver Supported OS	Windows®, Linux®, macOS, Android™
		Warranty	1 Year
		Model/Part Number	
		USB Type-A	ACR1552U-M1
		USB Type-C	ACR1552U-MF

Unit: mm



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Windows® is a trademark of Microsoft Corporation in the United States and/or other countries.
Android™ is trademarks of Google LLC.
Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

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.

IMPORTANT NOTE:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.