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# ACR122U NFC MIFARE RFID SMART READER



#### **Introduction**

The ACR122U NFC Reader is a PC-linked contactless smart card reader/writer developed based on 13.56 MHz Contactless (RFID) Technology. Compliant with the ISO/IEC18092 standard for Near Field Communication (NFC), it supports not only MIFARE<sup>®</sup> and ISO 14443 A and B cards, but also all four types of NFC tags.

ACR122U is compliant with both CCID and PC/SC. Thus, it is a plug-and-play USB device allowing interoperability with different devices and applications. With an access speed of up to 424 kbps and a full USB speed of up to 12 Mbps, ACR122U can also read and write more quickly and efficiently. The proximity operating distance of ACR122U is up to 5 cm, depending on the type of contactless tag in use.

#### **Objective**

Writing, reading and format NFC Tag data using ACR122U on Windows PC.

#### **Requirement**

ACR122U Reader, a PC (Windows 10 tested) & NFC Tools for Desktop program



## **Technical Specification**

Physical Characteristics					
Dimensions (mm)	98.0 mm (L) x 65.0 mm (W) x 12.8 mm (H)				
Weight (g)	70 g				
USB Interface					
Protocol	USB CCID				
Power Source	From USB port				
Speed	USB Full Speed (12 Mbps)				
Cable Length	1.0 m, Fixed				
Con	tactless Smart Card Interface				
Standard	ISO/IEC 18092 NFC, ISO 14443 Type A & B, MIFARE <sup>®</sup> , FeliCa				
	ISO 14443-4 Compliant Card, T=CL				
Protocol	MIFARE <sup>®</sup> Classic Card, T=CL				
11010101	ISO18092, NFC Tags				
	FeliCa				
	Built-in Peripherals				
LED	1 bi-color: Red and Green				
Buzzer	Monotone				
	Certifications/Compliance				
EN 60950/IEC 60950					
ISO 18092					
ISO 14443					
	USB Full Speed				
	PC/SC				
	CCID				
	VCCI (Japan)				
KC (Korea)					
	Microsoft <sup>®</sup> WHQL				
CE					
	FCC				
	RoHS 2				
REACH					
Device Driver Operating System Support					
Windows® CE					
Windows <sup>®</sup>					
MAC US®					
Android™					



### A). Installing Driver and Program Setup.

1. Download both driver and program from link below

USB Driver: <u>https://www.acs.com.hk/download-driver-unified/9840/ACS-Unified-MSI-4280.rar</u> NFC Tools for Desktop: <u>https://www.wakdev.com/en/apps/nfc-tools-pc-mac.html</u>

2. Install the driver and connect the device after the installation completed.

3. Unzip / unpack / decompress the '.zip' file downloaded from site above.

#### **B). Reading NFC Tag Information**

- Locate the unpacked folder and run the *nfctoolsgui.exe* to launch the program.
- Place the NFC tag on the ACR122U; LED will change from RED to YELLOW and buzzer will beep once. This indicate that the device already detected the Tag.
- NFC Model, UID, Memory, Password Protection & Tag Content will displayed.





### D-2). Programming Link / URL using PC

- Switch to **'Write'** tab and click on **'Add a record'** button. Select **'URL / URI'** from the list down menu.
- Input your Link / URL inside the new pop-up menu, and click on 'OK'.



- Once data confirmed, click on **'Write'** button to encode the link to NFC tag.
- The new pop-up window will appear to shows the result whether it successful or not

NFC Tools For Desktop					_		×
Information Memory	Write	Other	Option	About			≓⁄
Add a record	Write		More				
VRL / URI http://www.syncorp.my					▼	×	:
	Successful		×				
	Write complet	e!	$\checkmark$				
	Your record(s) ha	is been written o	on your NFC chip.				



#### D-3). Programming Business Card or Digital Contact using PC

- Switch to **'Write'** tab and click on **'Add a record'** button. Select **'Contact'** from the list down menu.
- Input all contact info details on the pop-up window and click on **'OK'** button.

Information Memory	Write	Add a record	×
Add a record	W	Contact Recor	rd 🚨
Ø Custom URL, Mail	/ URI	Contact name:	
SMS		Address:	25, Lorong 1/Ss3, Bandar Tasek Mutiara, 14120 Simpar
Location     Address     Android App		Phone: Mail:	+601120759670 sales@synacorp.com.my
BlueTooth		Website:	synacorp.my OK Cancel

- Once data confirmed, click on 'Write' button to encode the link to NFC tag.
- The new pop-up window will appear to shows the result whether it successful or not

NFC Tools For De	esktop					_		×
Information	Memory	Write	Other	Option	Abou	ıt		≓
Add a r	ecord	Write		More				
SYNACOL SYNACOL 25, Loron +601120 sales@sy synacorp	t RP RP TECHNOLOGIE Ig 1/Ss3, Bandar T 759670 nacorp.com.my .my	S SDN BHD asek Mutiara, 1412	0 Simpang Ar	npat, Pulau Pinang				<
Success	ful	>	< 🖸 Error	r			×	
Write con	nplete!	~	: Oops!	An error has occur	red		×	
Your record	d(s) has been writt	en on your NFC chip OK	). The mes	sage / record exceed	ls the chip ma	ximum ca	apacity. )K	

Note that the more data / text will increase storage use. Choose NFC Tag Size properly



### D-4). Formatting / Erase NFC Tag using PC.

- Switch to 'Other' tab and click on 'Format (write 0x00)' button.
- The new pop-up window will appear to shows the result whether it successful or not

NFC Tools For Desktop					_	$\times$
Information Memory	Write	Other	Option	About		≓
Erase (empty	record)					
Format (writ	e 0x00)					
Set passv	vord					
Remove pa	ssword					
L						

Successful X
Format complete!
Your NFC chip has been formatted.

• Once format complete user can re-scan the NFC tag to confirm whether the data already deleted or not.