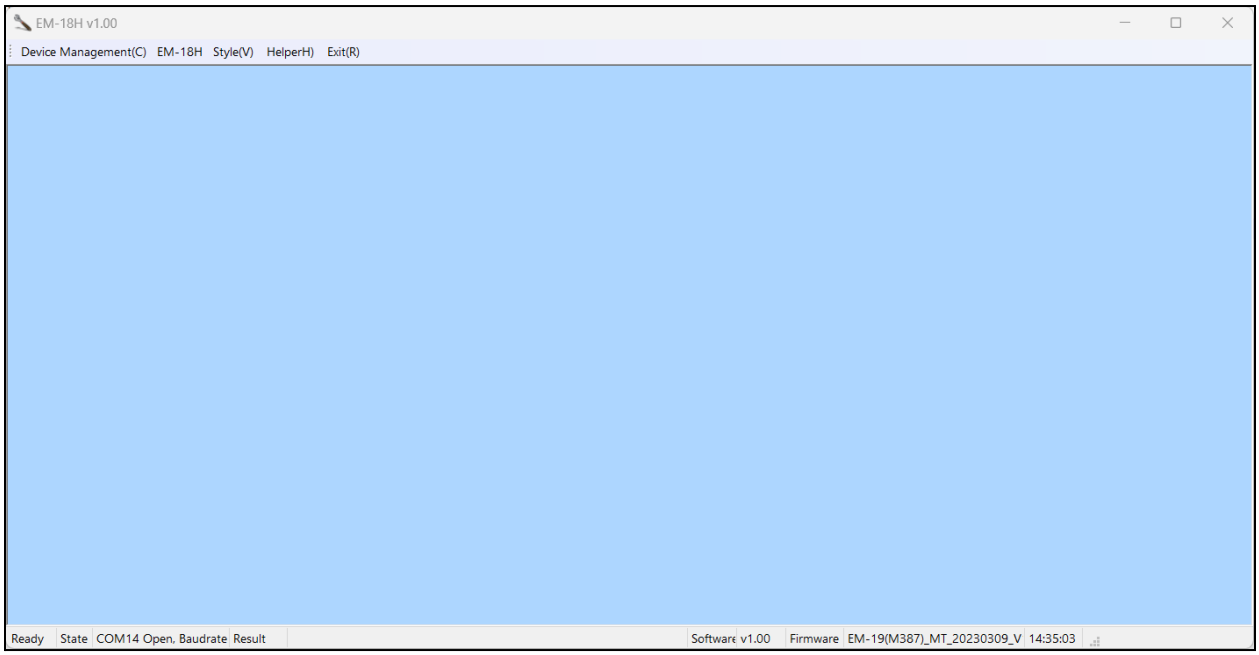
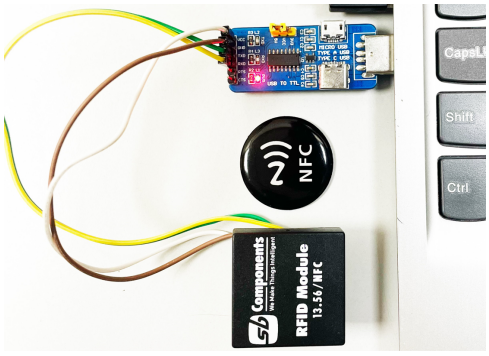
NFC Module operations using Software application

Download software folder and run .exe file provided on github:
https://github.com/sbcshop/NFC_Module/tree/main/softwares

Below is the interface of software



Here you will need an NFC module with any USB to TTL converter, connect NFC module to usb port of computer using USB to TTL converter

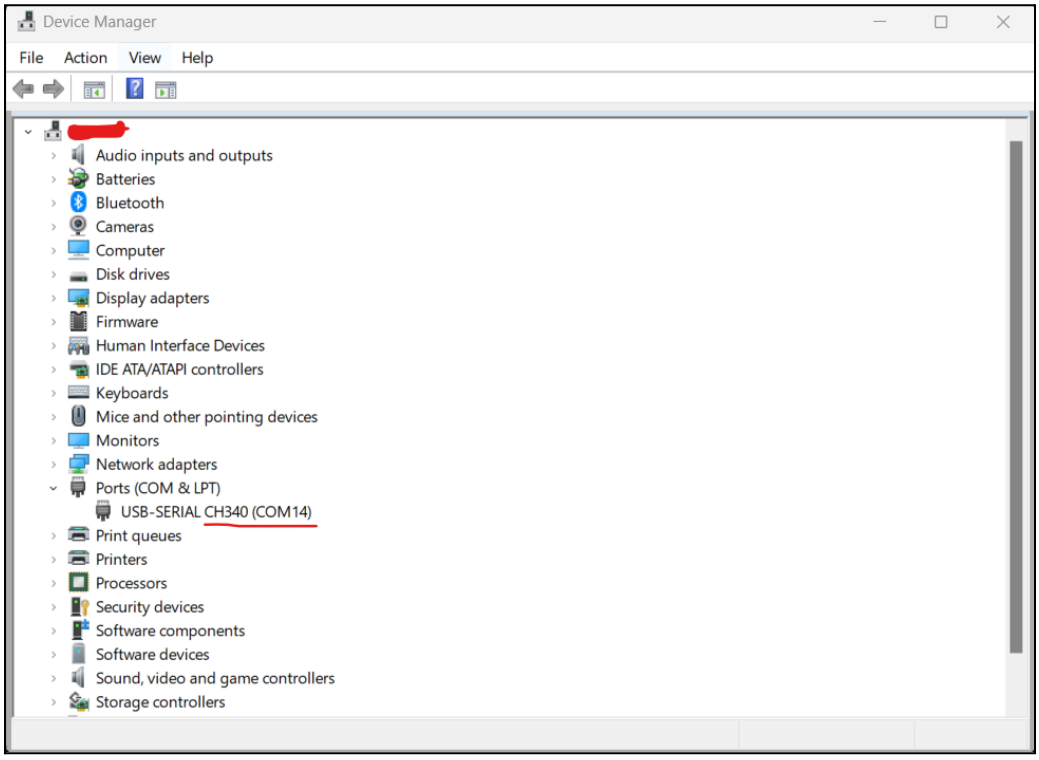


USB to TTL (CP2102 Variants)	NFC Module	Function
VCC	5V	Positive Supply
GND	GND	Ground
TXD	TXD	UART Connection
RXD	RXD	UART Connection

USB to TTL (CH340 Variants)	NFC Module	Function
VCC	5V	Positive Supply
GND	GND	Ground
TXD	RXD	UART Connection
RXD	TXD	UART Connection

Note: Do cross connection of UART pins if module won't respond or showing connection failed in software application

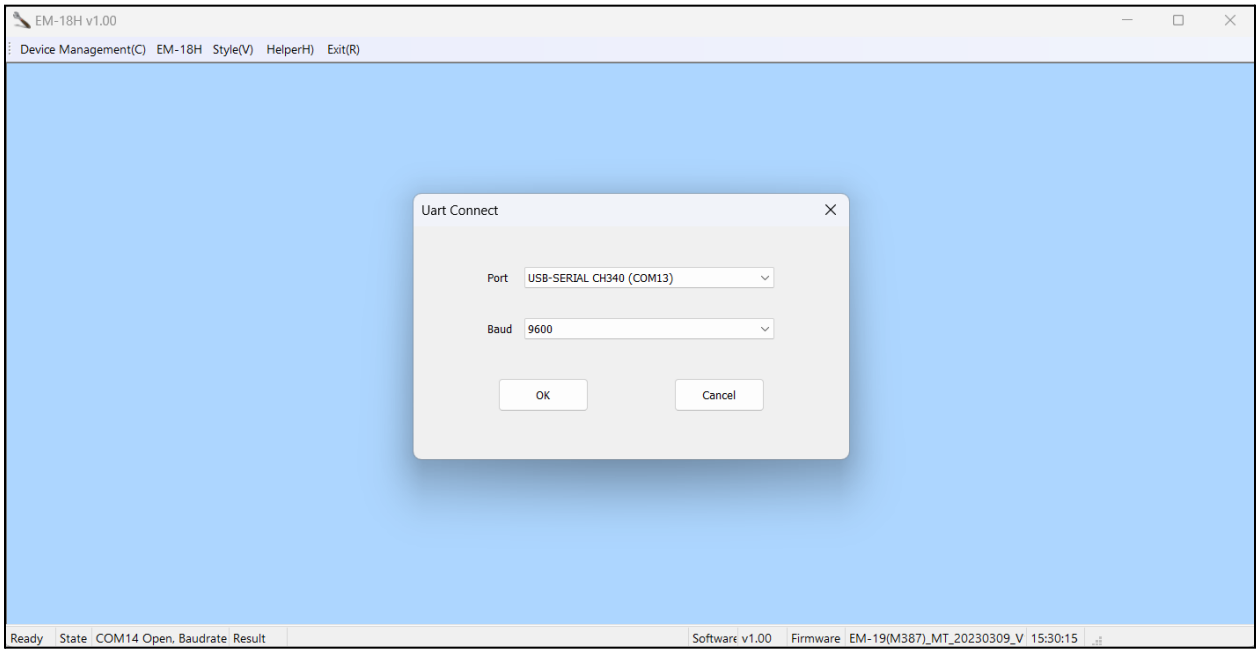
Once the NFC Module and USB-TTL converter are connected, attach the converter to the USB port of the computer or laptop and check your COM Port in device manager.



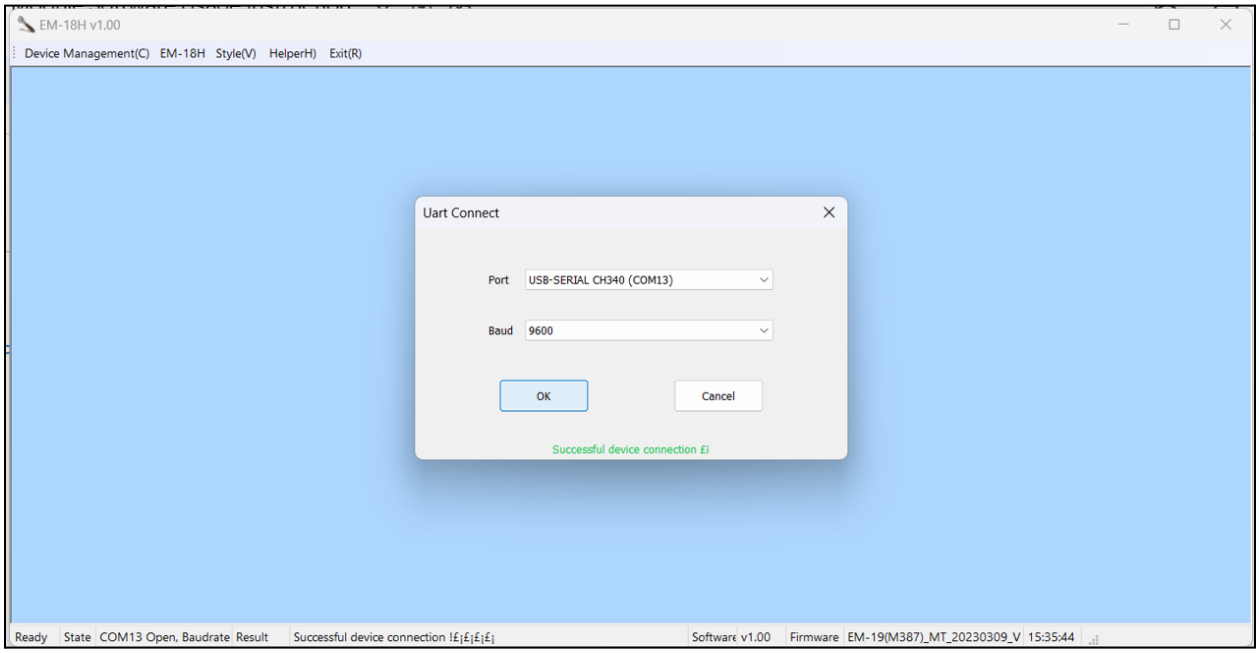
Login Operation:

- With software interface open, Select Device Management > Serialport Connect(F),

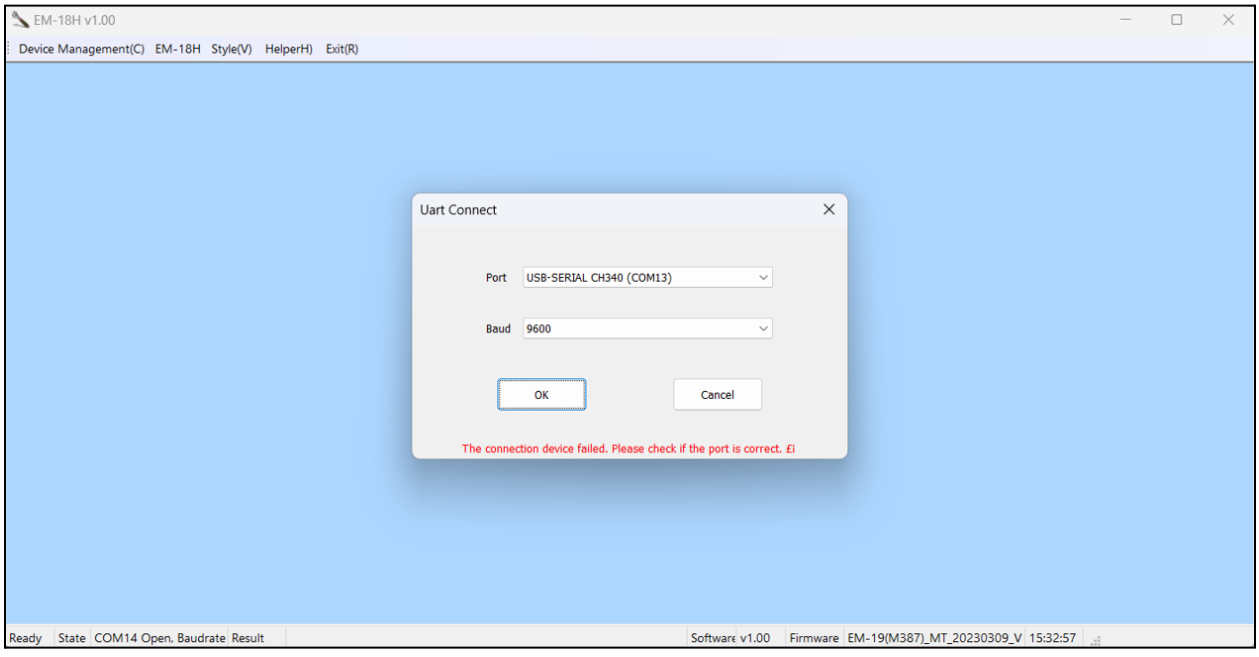
- Select the device with the correct COM port, and then select the baud rate of the device. Default provided with 9600. After this click OK.



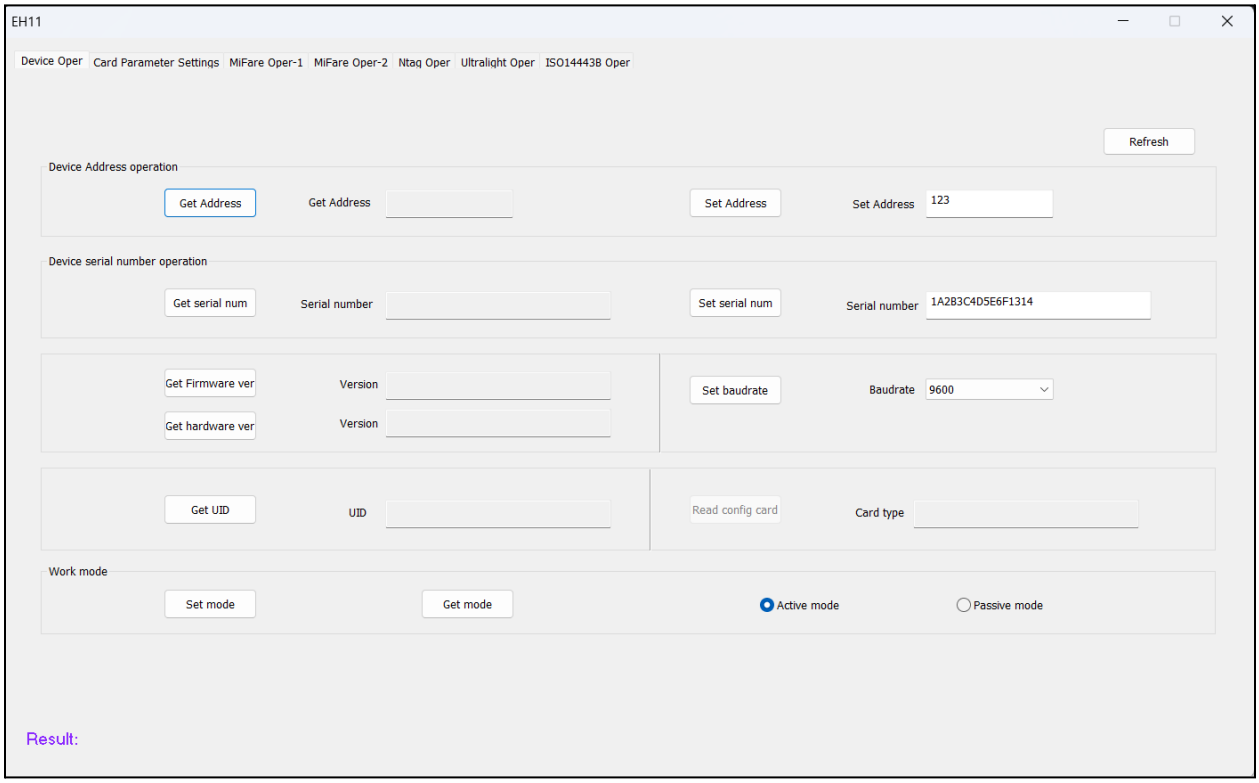
- If everything is fine you will get a success message as shown below, and the Uart connect window will disappear.



Note: Possible issue when connecting device, make sure serial connection is ok between NFC and TTL converter. Try reconnecting the TTL device by removing it from the USB port. This should resolve your issue.



After successfully login, click on the EM-18H option menu and so you will get the window below shown.

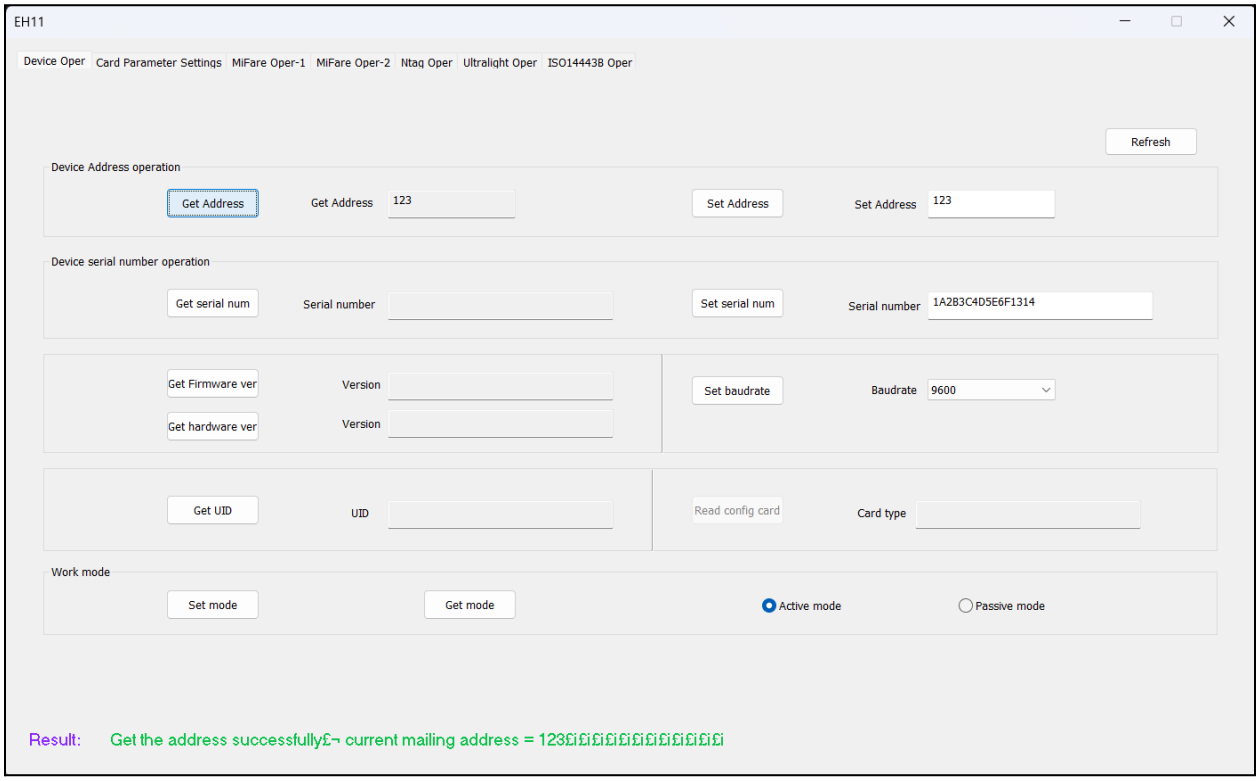


Device Oper:

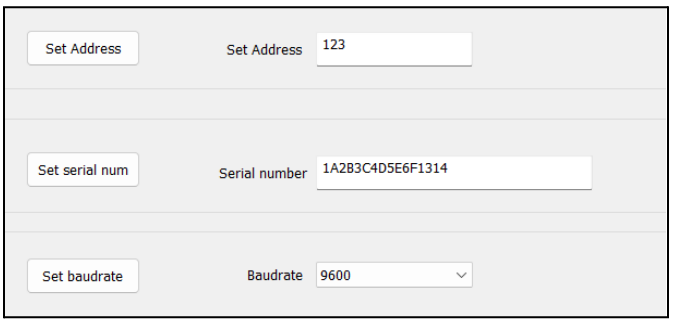
This operation is about getting information about NFC module devices and you can modify information as per your requirement.

Operation Steps:

1. With interface open Select Device Oper, Click "Get Address" to view the device address information, "Get Serial Num" to view the serial number information, "Get Firmware Ver" to view the device firmware version number, and "Get Hardware Ver" to view the device hardware version number, respectively. "Get hardware ver" to view the device hardware version number.



2. If need to modify the address information and device serial number, click "Set Address" and "Set Serial Number".

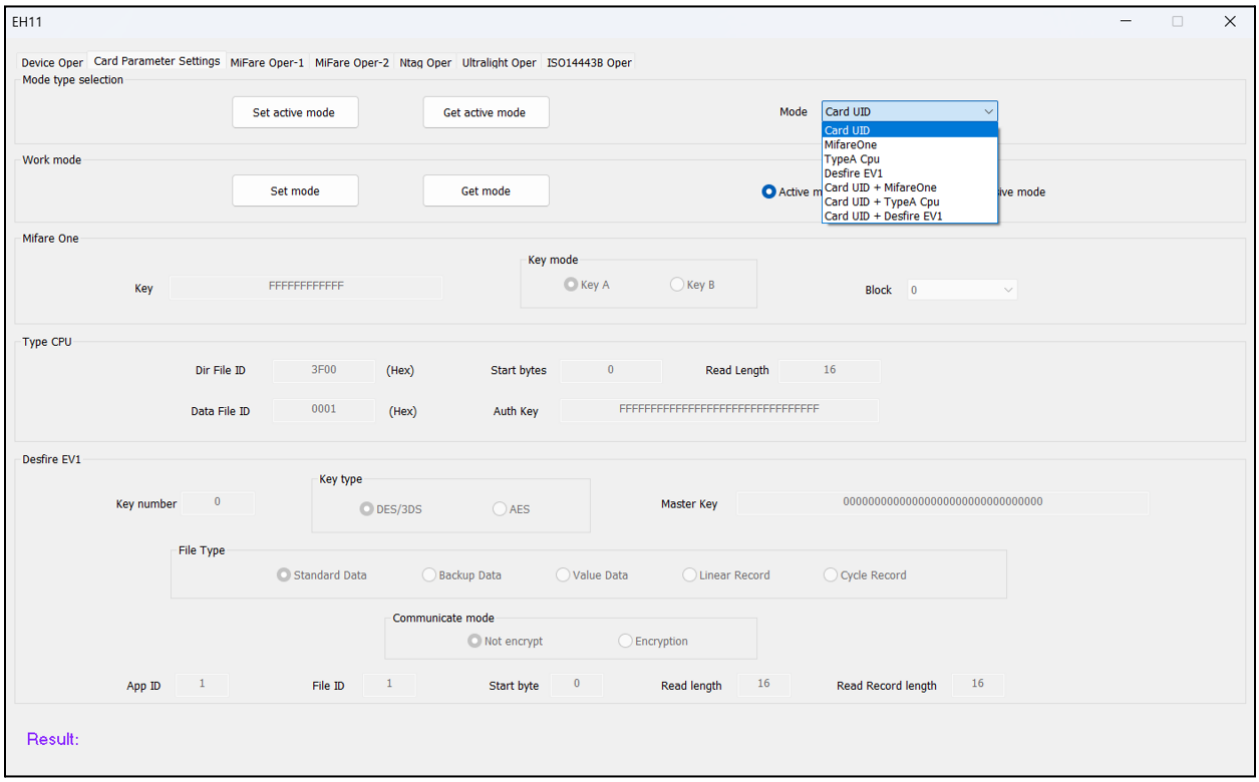


Card parameter settings

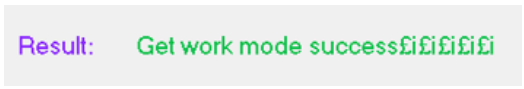
Set the working mode of the user card. Two modes are supported: active working mode and passive working mode.

Operation Steps: In the opened software interface, click "Card Parameters Settings".
1. Click "Get mode" to get the current working mode, check the passive working mode, click "Set mode" to set the working mode.

2. In the mode type select: Card UID, Mifare one, TypeA CPU, Desfire EV1, etc.

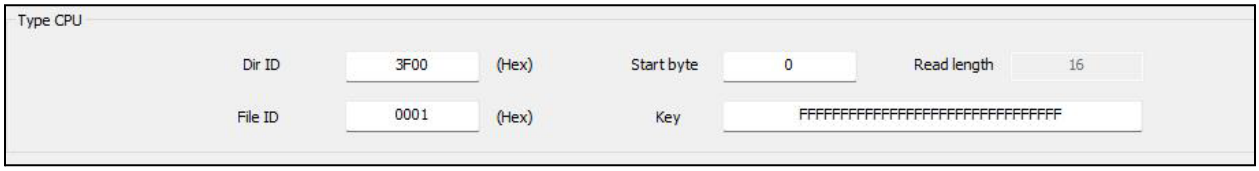


For example, after selecting Mifare one as the mode type, click "Set active mode" to set the corresponding parameter information. The bottom of the interface shows that the setting of active mode parameters is successful.

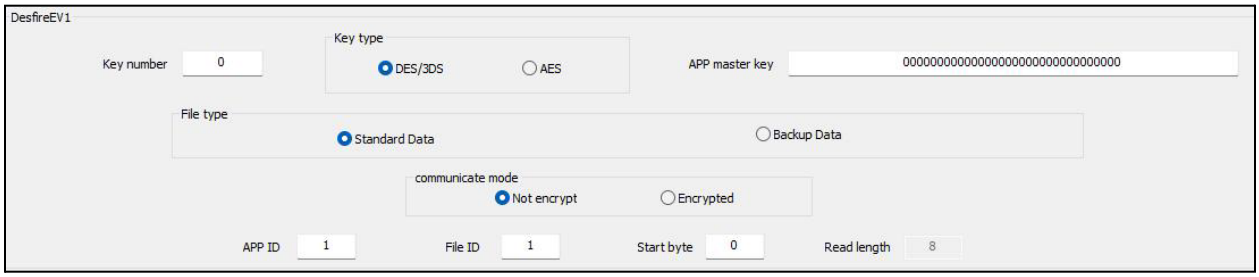


3. Set the key and key type of Mifare card under the Mifare one card.

4. For example, after selecting TypeA CPU as the mode type, click "Set active mode" to set the corresponding parameter information.



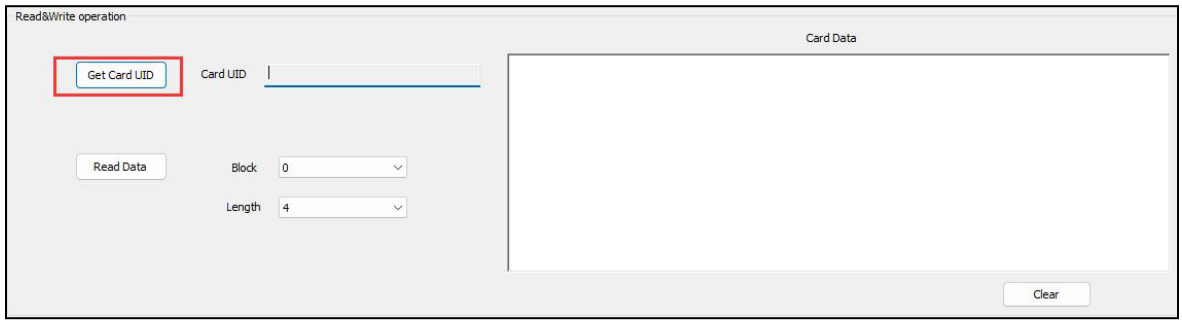
5. For example, after selecting Desfire EV1 as the mode type, click "Set Active Mode" to set the corresponding parameter information.



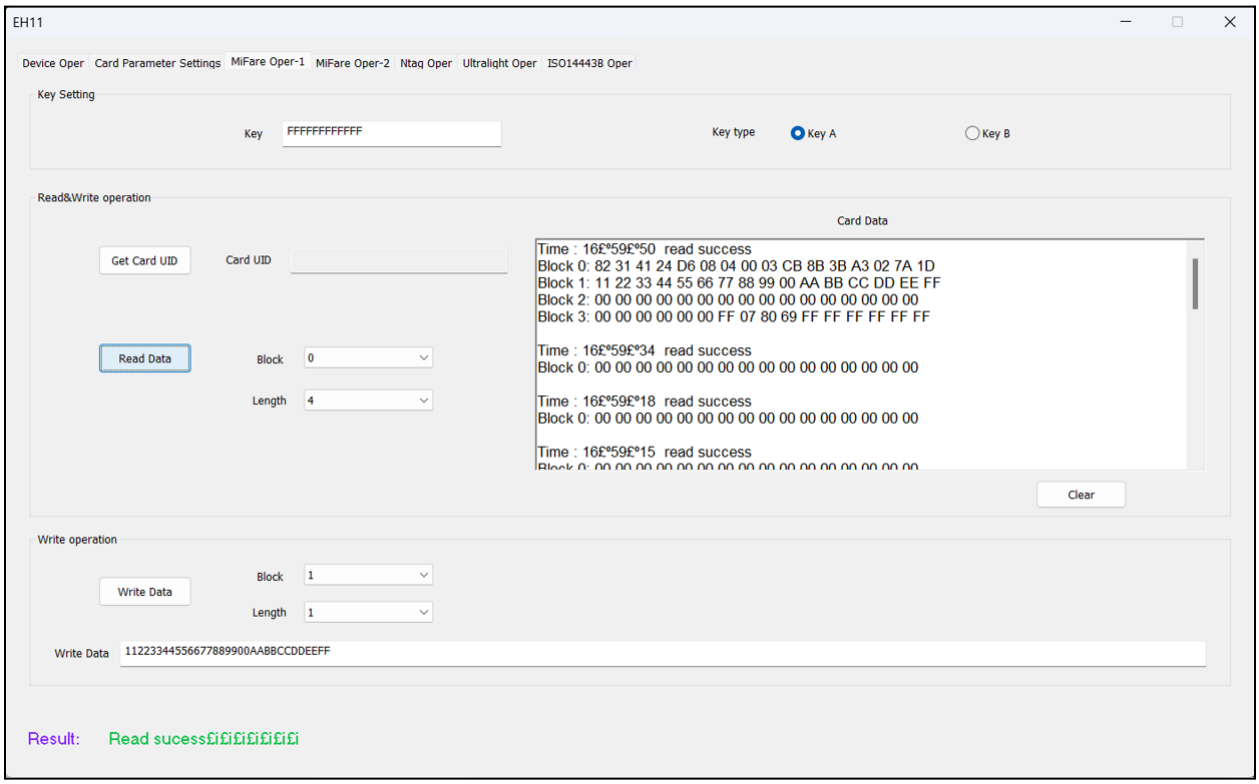
Mifare Oper

Support Mifare card reading & writing

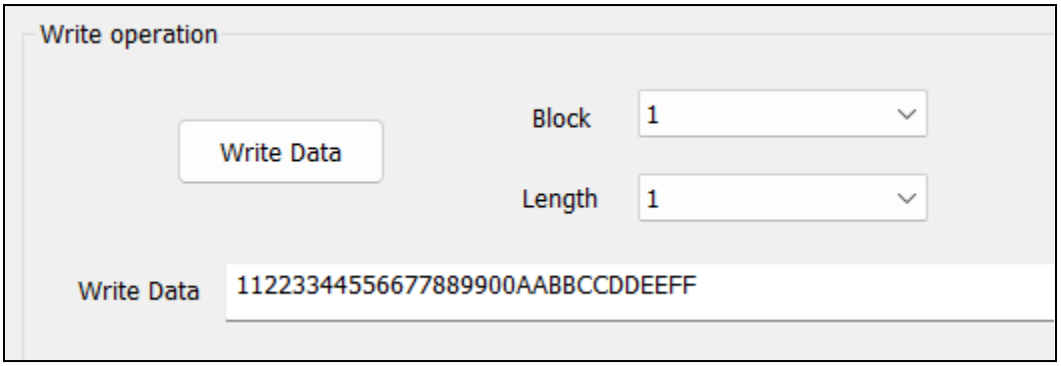
Operation steps:
1. Select "Mifare oper-1".
(1) Place the Mifare card in the reading area of the antenna, click "Get card UID", the right side of the interface shows that the card is read successfully.



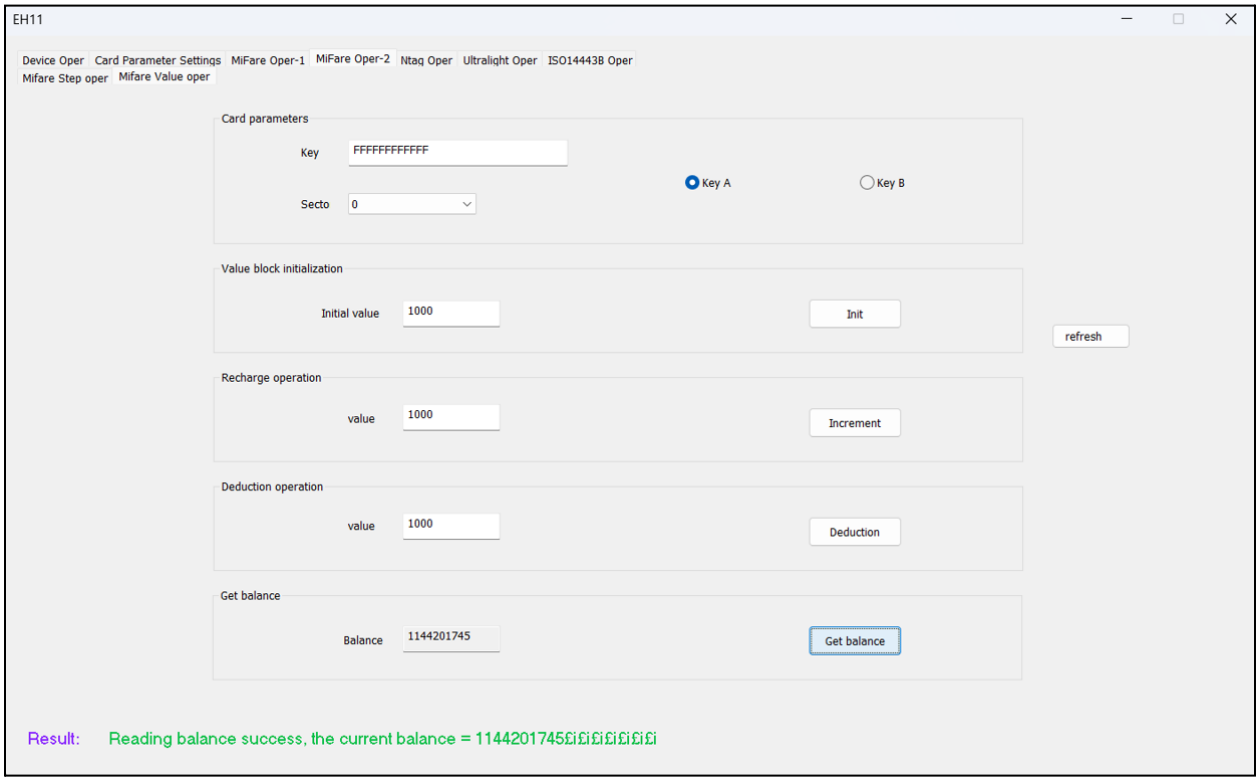
(2) Select the block number and length that need to read and write, click "Read Data", the right side of the interface displays the card data information.



(3) Select the block number and length of the data to be written, enter the written data, click "Write Card", and the interface shows that the card is written successfully.



2. Select "Mifare oper-2".



Ntag oper

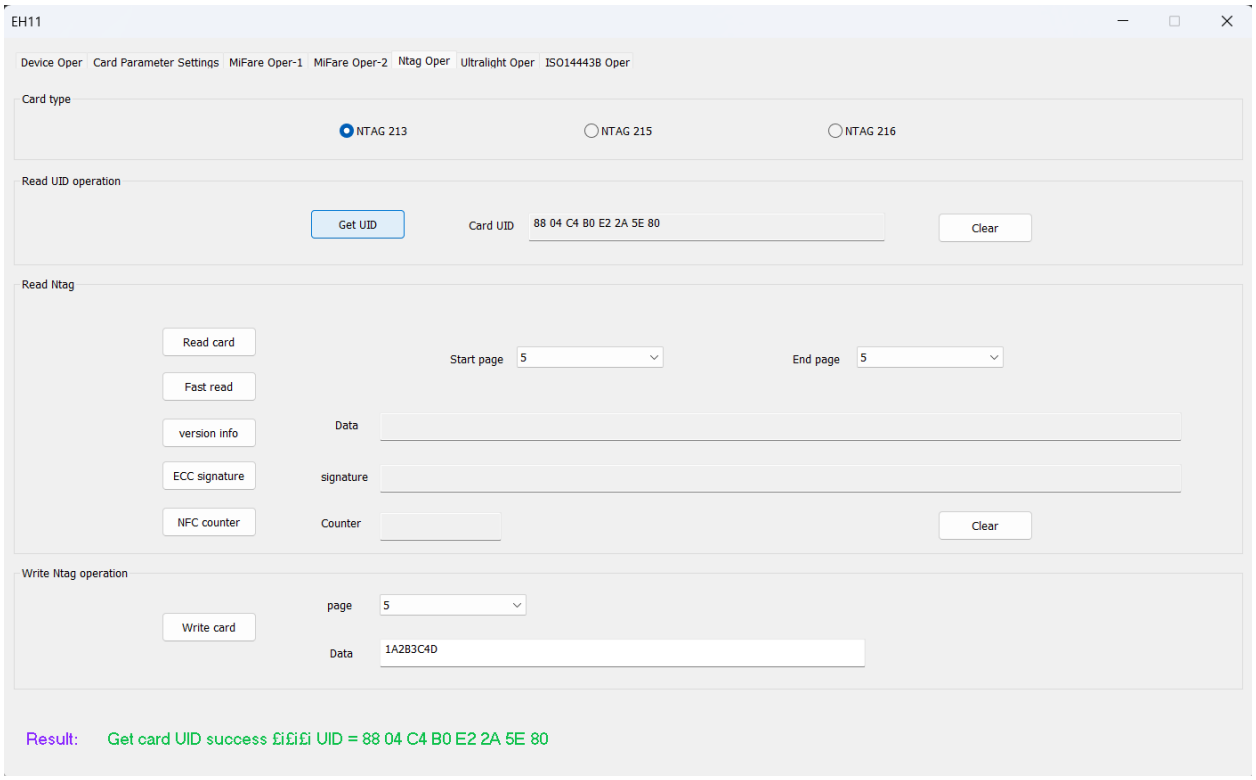
Supports NTAG 213, NTAG 215, and NTAG 216 card types for read and write operations.

Operation steps:

1. Select "Ntag oper".

2. Select the type of NTAG card, NTAG 213, NTAG 215, NTAG 216 are supported.

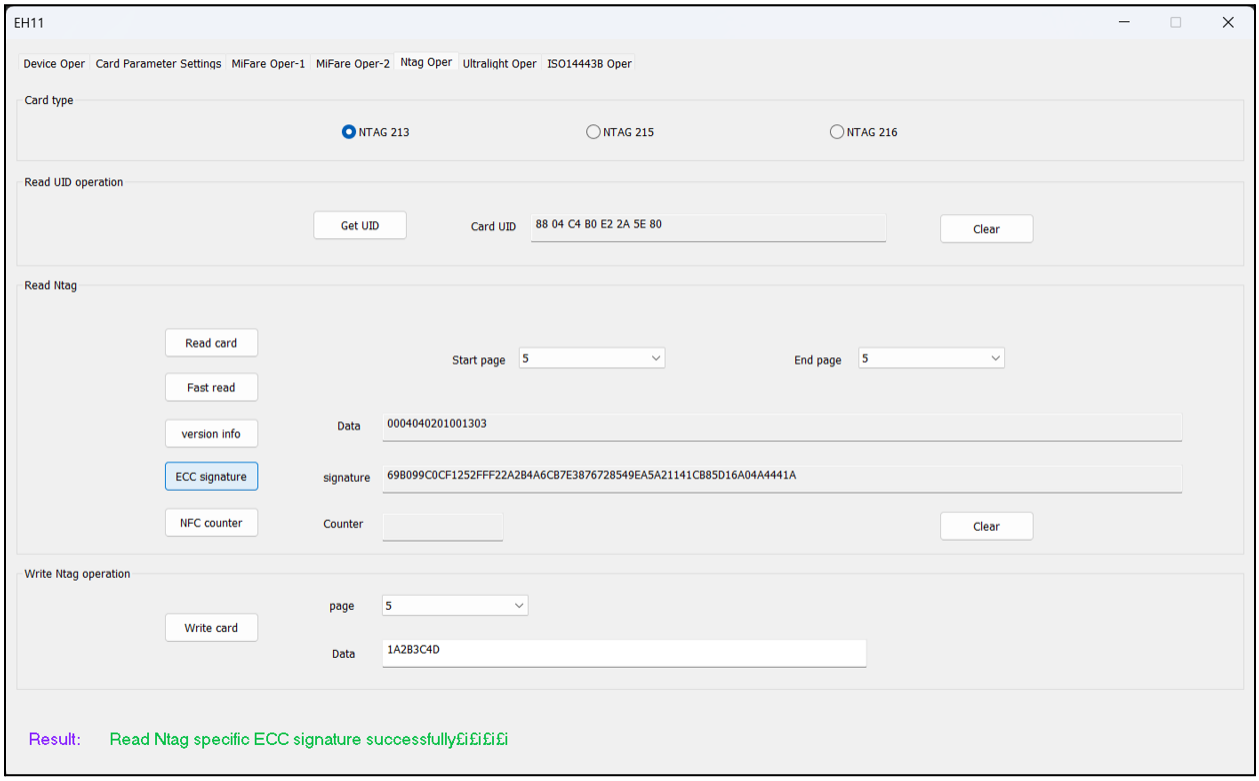
3. Click "Get UID" to view the physical card number of the card.



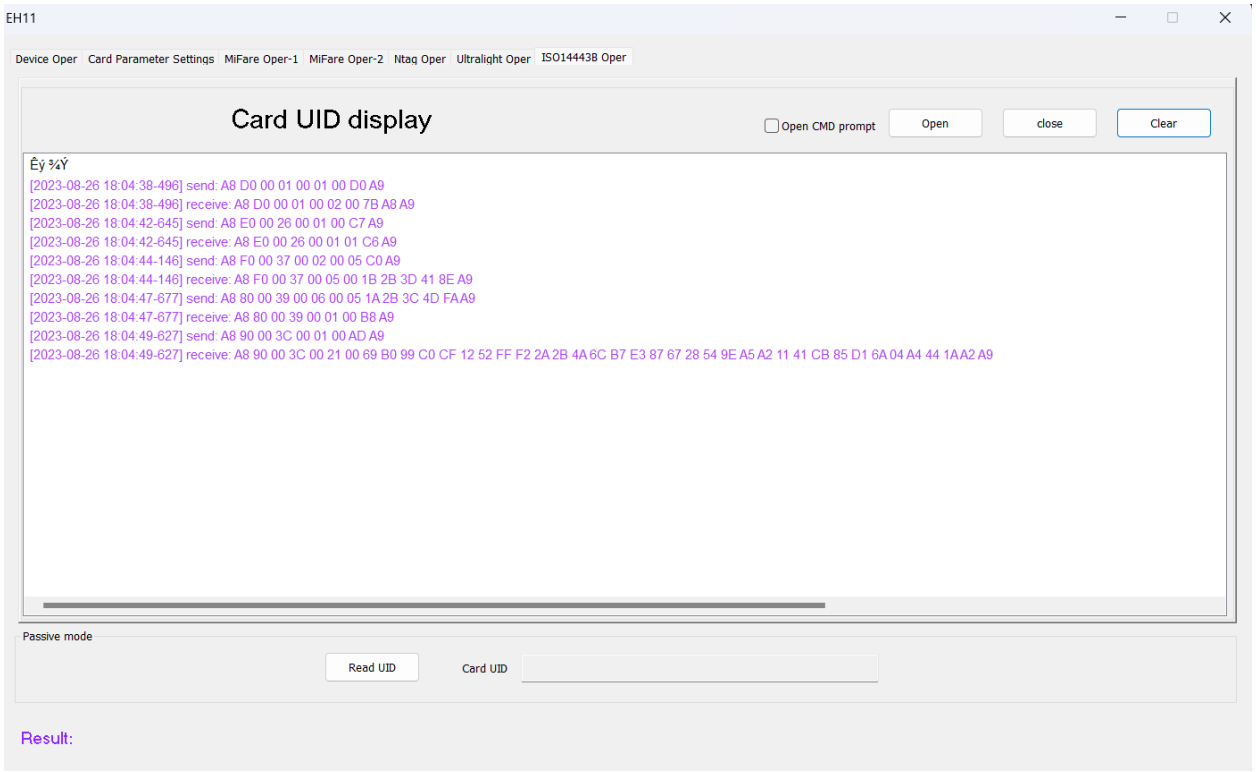
Note：The first click reads the UID error to prevent repeated uploads of the same card number and the need to switch to a different card.

4. At the bottom of the "Read Ntag" area, select the start page and end page, and click the read card, version info, and other operations.

5. At the bottom of the "Write Ntag operation" area, select the page, enter the card number data, and click Write Card to write the card number data.


EH11
Device Oper
Card Parameter Settings
MiFare Oper-1
MiFare Oper-2
Ntag Oper
Ultralight Oper
ISO14443B Oper
Card type
NTAG 213
NTAG 215
NTAG 216
Read UID operation
Get UID
Card UID
88 04 C4 B0 E2 2A 5E 80
Clear
Read Ntag
Read card
Fast read
version info
ECC signature
NFC counter
Start page
5
End page
5
Data
0004040201001303
signature
69B099C0CF1252FFF22A2B4A6CB7E3876728549EA5A21141CB85D16A04A4441A
Counter
Clear
Write Ntag operation
Write card
page
5
Data
1A2B3C4D
Result:
Read Ntag specific ECC signature successfully£i£i£i£i

Data logs:


EH11
Device Oper
Card Parameter Settings
MiFare Oper-1
MiFare Oper-2
Ntag Oper
Ultralight Oper
ISO14443B Oper
Card UID display
Open CMD prompt
Open
close
Clear
Êý ¾Ý
[2023-08-26 18:04:38-496] send: A8 D0 00 01 00 01 00 D0 A9
[2023-08-26 18:04:38-496] receive: A8 D0 00 01 00 02 00 7B A8 A9
[2023-08-26 18:04:42-645] send: A8 E0 00 26 00 01 00 C7 A9
[2023-08-26 18:04:42-645] receive: A8 E0 00 26 00 01 01 C6 A9
[2023-08-26 18:04:44-146] send: A8 F0 00 37 00 02 00 05 C0 A9
[2023-08-26 18:04:44-146] receive: A8 F0 00 37 00 05 00 1B 2B 3D 41 8E A9
[2023-08-26 18:04:47-677] send: A8 80 00 39 00 06 00 05 1A 2B 3C 4D FA A9
[2023-08-26 18:04:47-677] receive: A8 80 00 39 00 01 00 B8 A9
[2023-08-26 18:04:49-627] send: A8 90 00 3C 00 01 00 AD A9
[2023-08-26 18:04:49-627] receive: A8 90 00 3C 00 21 00 69 B0 99 C0 CF 12 52 FF F2 2A 2B 4A 6C B7 E3 87 67 28 54 9E A5 A2 11 41 CB 85 D1 6A 04 A4 44 1A A2 A9
Passive mode
Read UID
Card UID
Result: