

NFC Manager

User Manual

The software NFC-Manager offer the possibility to write, read and format NFC-Tags very easily. Further you can transfer data to a suitable Android mobile via a direct P2P (Peer to Peer) connection.

The NFC-Manager can write Tags in a way that the following actions are executed on your mobile phone automatically:

- Choice of a certain URL (webpage)
- Display of a v-card
- Dial a phone number
- Send a SMS (short message service)

CONTENTS

1.	Introduction.....	2
2.	List of NFC Tag(IC Type)	3
3.	NFC Tag Basics.....	3
4.	NFC Manager.....	4
5.	Tag Detect.....	5
6.	Tag Format.....	6
7.	Tag Write.....	7
8.	Tag Read	13
9.	P2P Write	15
10.	P2P Read	17

1. Introduction

This manual has been written for keeping in mind the end-user who uses NFC Manager Program.

In this manual is explained how to use NFC Manager Program without any difficulty or troublesome. It describes the various functions that will be provided in the application. The purpose of this document is to give detail description about NFC Manager Program.

Firmware and Driver

	Firmware	Driver
Date(Version)	2012.7.10 or higher	2012.4.6 (1.4.0.0) or higher

2. List of NFC Tag(IC Type)

List of NFC Tag(IC Type) supported by NFC Manager Program

	NXP Mifare Classic 1k
NFC Forum Type 1	Innovision Topaz IRT5011
NFC Forum Type 2	NXP Mifare Ultralight Mifare Ultralight C NTAG203 INFINEON my-d NFC SLE 66R01P my-d NFC SLE 66R32P Kovio 2k (K14T1)
NFC Forum Type 3	Sony FeliCa
NFC Forum Type 4	NXP Mifare DESFire EV1 ISO/IEC 14443 standard series, full compliant cards

3. NFC Tag Basics

NFC Manager Program reads and writes NDEF data onto a Tag.

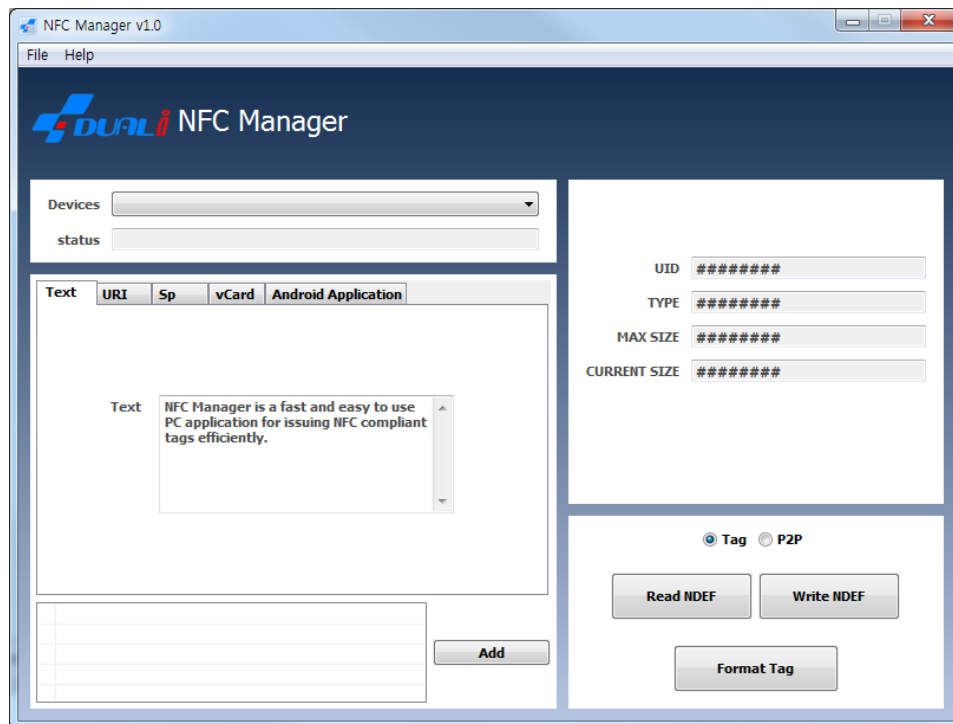
To read/write, a NFC Tag must be initialized. This program initializes NFC tag (IC Type) only on the above list (Refer to 2. List of NFC Tag(IC Type)).

NFC Manager provides P2P communication between DUALi's NFC device and Android NFC mobile.

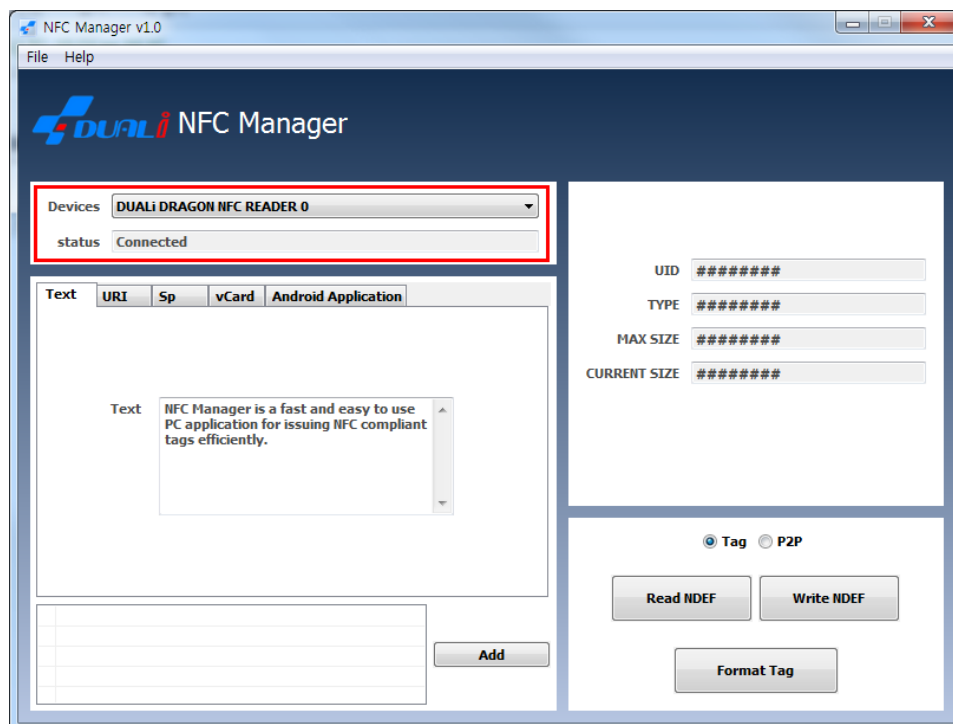
It has been providing Android NPP (NDEF Push Protocol) and SNEP (Simple NDEF Exchange Protocol) will be also possible in near future.

4. NFC Manager

<NFC Manager main>



<Connect>

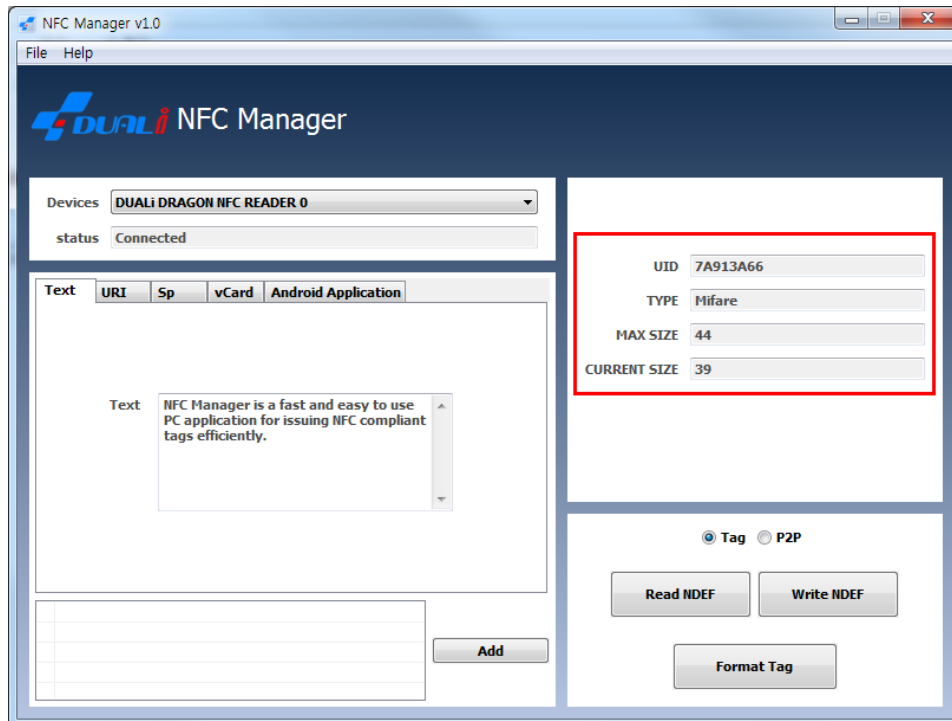


NFC Manager Program finds automatically NFC Device (produced by DUALi only), when it is connected.

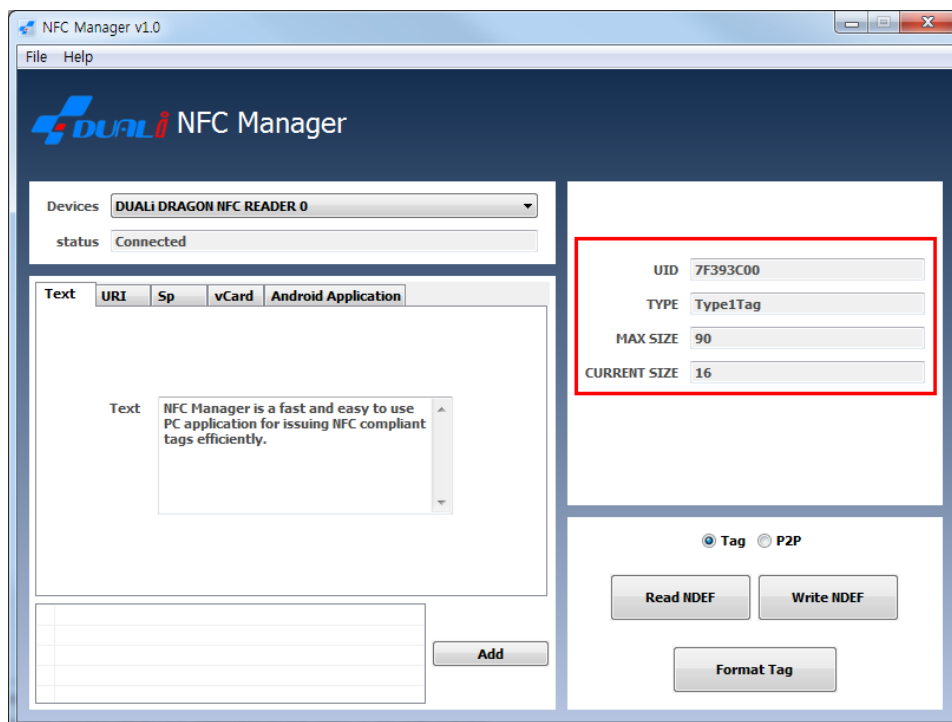
5. Tag Detect

When a Tag is placed on NFC Device, it reads the information on the Tag.

< Mifare Classic as NFC Type Tag Detect>



<NFC Forum Type 1 Tag Detect>



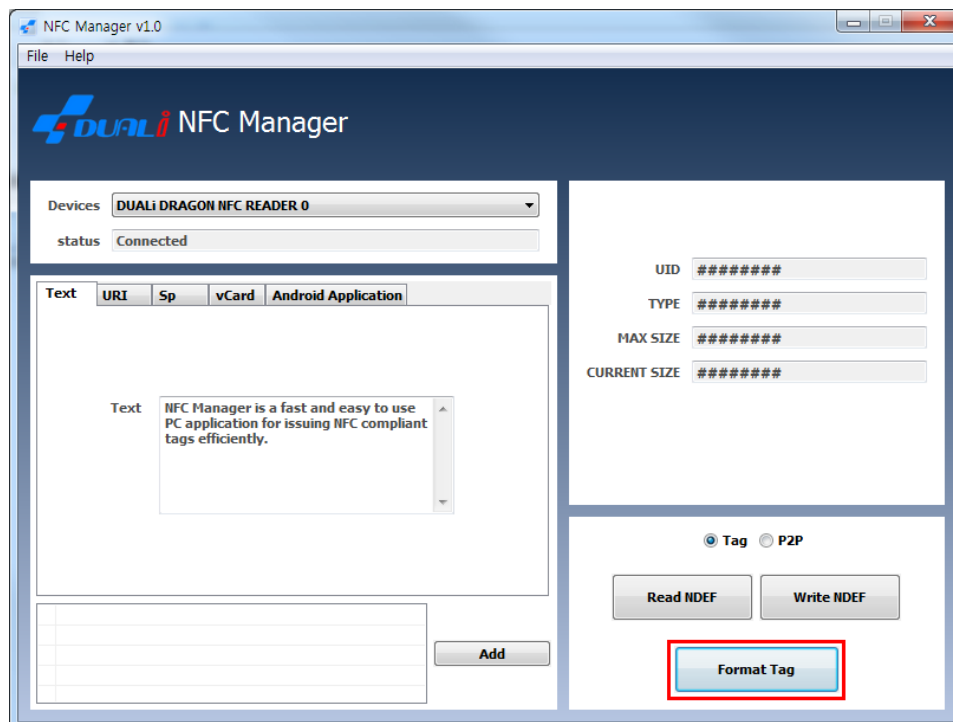
6. Tag Format

When formatting a Tag, this program writes the data listed on the below table on Capability Container (or Attribute Information), and NDEF Data.

	IC Type	Capability Container	NDEF Data
NFC Forum Type 1	Topaz IRT5011	0xE1101000	0x0300FE00 (NDEF TLV/ Terminate TLV)
NFC Forum Type 2	Mifare Ultralight	0xE1100600	
	Mifare Ultralight C NTAG203	0xE1101200	
	my-d NFC SLE 66R01P	0xE1101000	
	my-d NFC SLE 66R32P	0xE110FE00	
	Kovio 2k (K14T1)	0xE1100700	NO
NFC Forum Type 3	Sony FeliCa	Ln byte in the Attribute Information Block is 0h	NO
NFC Forum Type 4	ISO/IEC 14443-4	NO	0x0003D00000

(NO: no data)

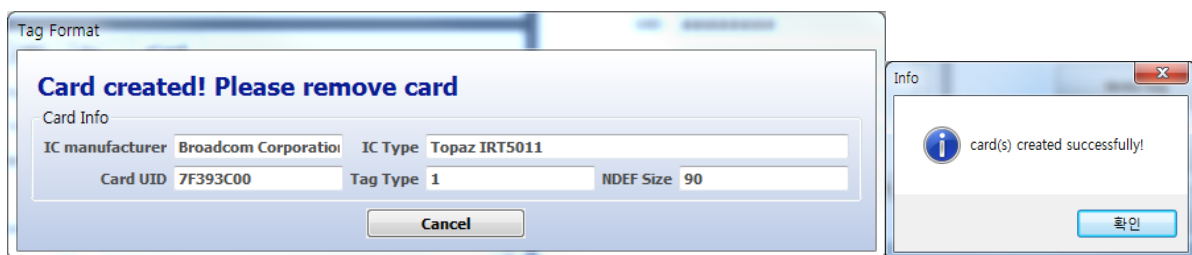
1. Click "Format Tag"



2. Place a Tag on the device



3. Following message will be show when Format is done



- ✓ The below message will be shown when unsupported tag (Refer to [2. List of NFC Tag\(IC Type\)](#)) is on the device



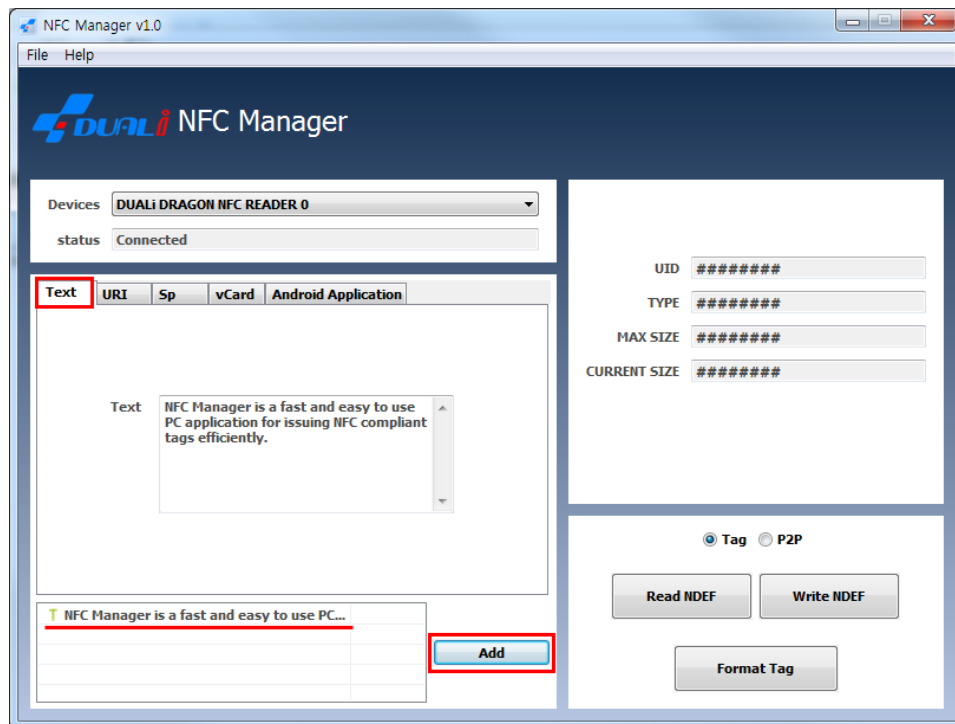
7. Tag Write

NFC Manager Program provides 5 types of below record

- TextRecord
- UriRecord
- SmartPosterRecord
- VCardRecord(vCard)
- AndroidApplicationRecord

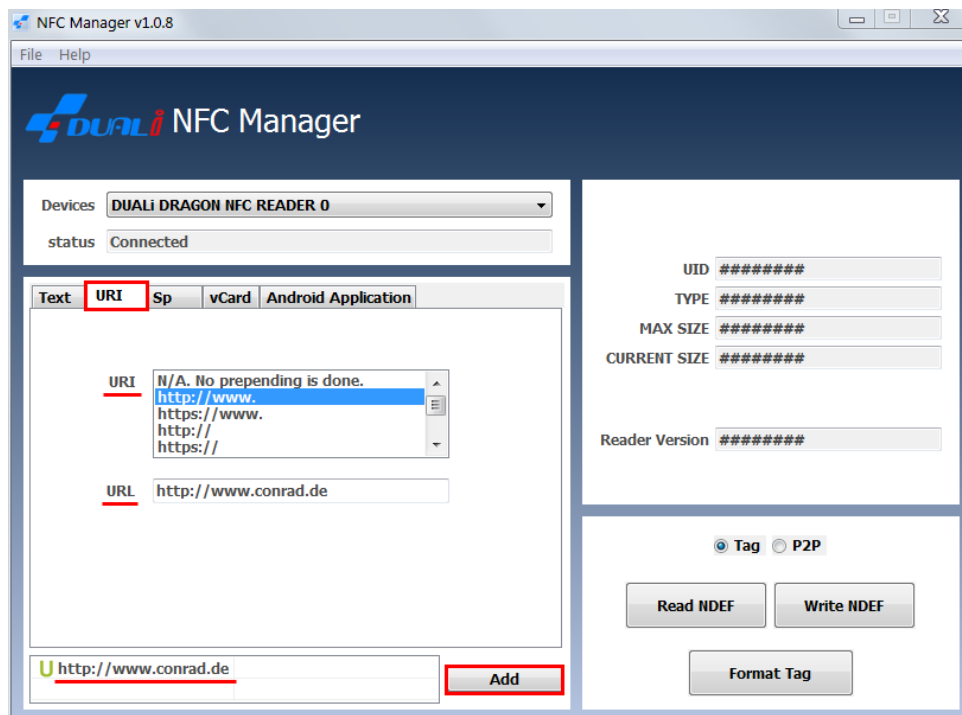
7.1 Add Record

<Text Record> Input TEXT you want to add and click add button



✓ To delete text/url/Sp/vCard data, double click it from the log box

<Uri Record> Input URI / URL you want to add and click add button



<Smart Poster Record> Input Smartposter data you want to add and click add button

The screenshot shows the NFC Manager v1.0.8 application window. The 'Devices' dropdown is set to 'DUALI DRAGON NFC READER 0' and the status is 'Connected'. The 'Text' tab is selected, and the 'SP' (Smart Poster) sub-tab is active. The 'Bookmark' radio button is selected. The 'Title' field contains 'Conrad Homepage'. The 'URI identifier' field has a dropdown menu open, showing options: 'N/A. No prepending is done.', 'http://www.', 'https://www.', 'http://', and 'https://'. The 'URL' field contains 'http://www.conrad.de'. The 'Action' dropdown is set to 'Do the action'. At the bottom, the summary bar shows 'SP Conrad Homepage / http://www.conrad.de / ...' and an 'Add' button is highlighted with a red box. On the right side, there are fields for 'UID', 'TYPE', 'MAX SIZE', 'CURRENT SIZE', and 'Reader Version', all showing '#####'. Below these are radio buttons for 'Tag' (selected) and 'P2P', and buttons for 'Read NDEF', 'Write NDEF', and 'Format Tag'.

<Bookmark> Input Bookmark you want to add and click add button

The screenshot shows the same NFC Manager v1.0.8 application window, but the 'Call Request' radio button is now selected. The 'Title' field contains 'Max'. The 'Phone number' field contains '+49-9604-408787'. The 'Action' dropdown is set to 'Do the action'. At the bottom, the summary bar shows 'SP Max / tel:+49-9604-408787 / Do the Actio...' and an 'Add' button is highlighted with a red box. The right side of the interface remains the same, with fields for 'UID', 'TYPE', 'MAX SIZE', 'CURRENT SIZE', and 'Reader Version' showing '#####', and buttons for 'Read NDEF', 'Write NDEF', and 'Format Tag'.

<Call Request> Input Phone number you want to add and click add button

The screenshot shows the NFC Manager v1.0.8 application window. The 'Devices' dropdown is set to 'DUALi DRAGON NFC READER 0' and the status is 'Connected'. The 'Text' tab is active, and the 'Sp' sub-tab is selected. The 'SMS' radio button is chosen. The form fields are: Title 'QnA', Phone number '+49-9604-408787', Message 'There is a problem.', and Action 'Do the action'. The summary bar at the bottom shows 'SP QnA / sms: +49-9604-408787?body=There is ...' and an 'Add' button. On the right, there are fields for UID, TYPE, MAX SIZE, CURRENT SIZE, and Reader Version, all showing '#####'. At the bottom right, there are buttons for 'Read NDEF', 'Write NDEF', and 'Format Tag', with 'Tag' selected over 'P2P'.

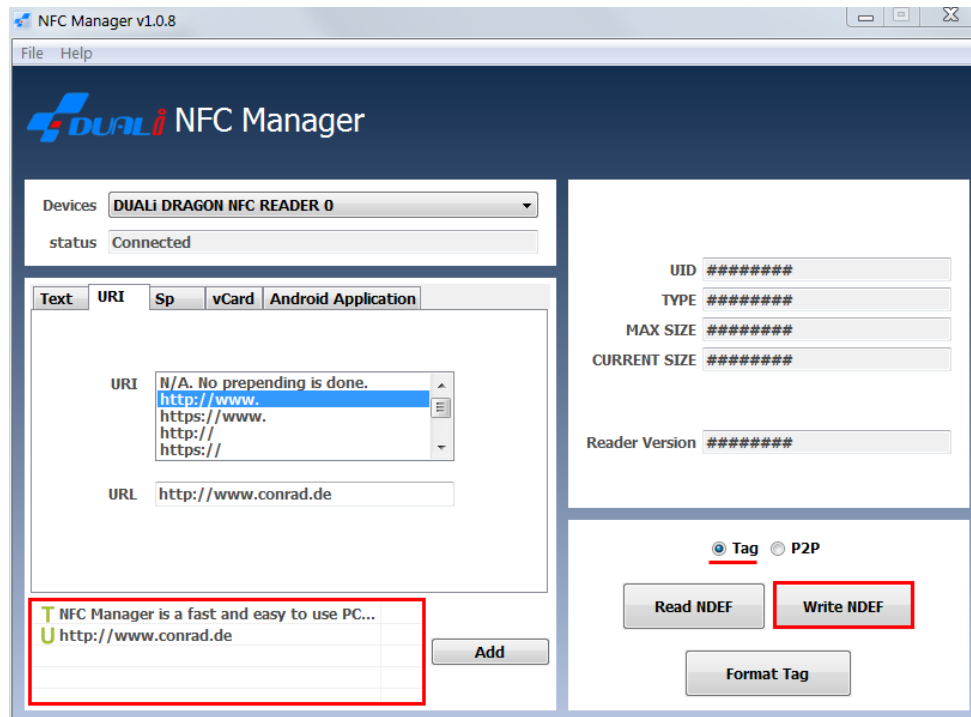
<SMS> Input message you want to add and click add button

<VCard Record> Input business card information you want to add and click add button

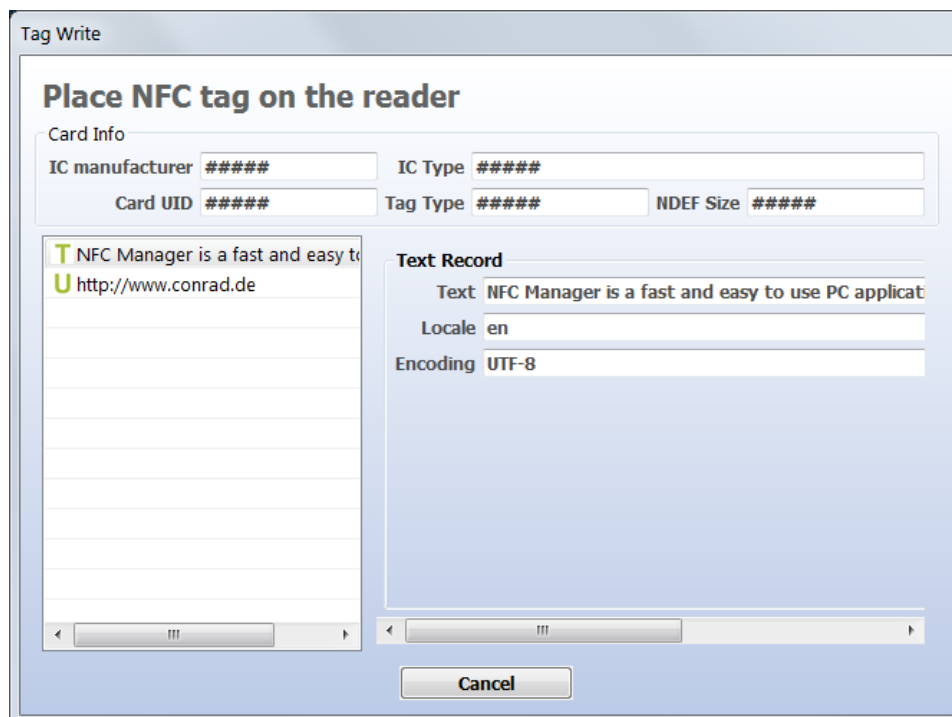
The screenshot shows the NFC Manager v1.0.8 application window with the 'vCard' sub-tab selected. The form fields are: First name 'Max', Last name 'Mustermann', Organization 'Conrad Electronic SE', Address 'Klaus-Conrad-Str.1', City 'Hirschau', Postal code '92240', Country 'Germany', E-mail 'info@conrad.de', Phone '+49-9604-408787', and Cell (empty). The summary bar at the bottom shows 'vCard Mustermann Max / +49-9604-408787 / +49-1...' and an 'Add' button. The right side of the interface is identical to the previous screenshot, showing fields for UID, TYPE, MAX SIZE, CURRENT SIZE, Reader Version, and buttons for 'Read NDEF', 'Write NDEF', and 'Format Tag'.

7.2 Write a Tag

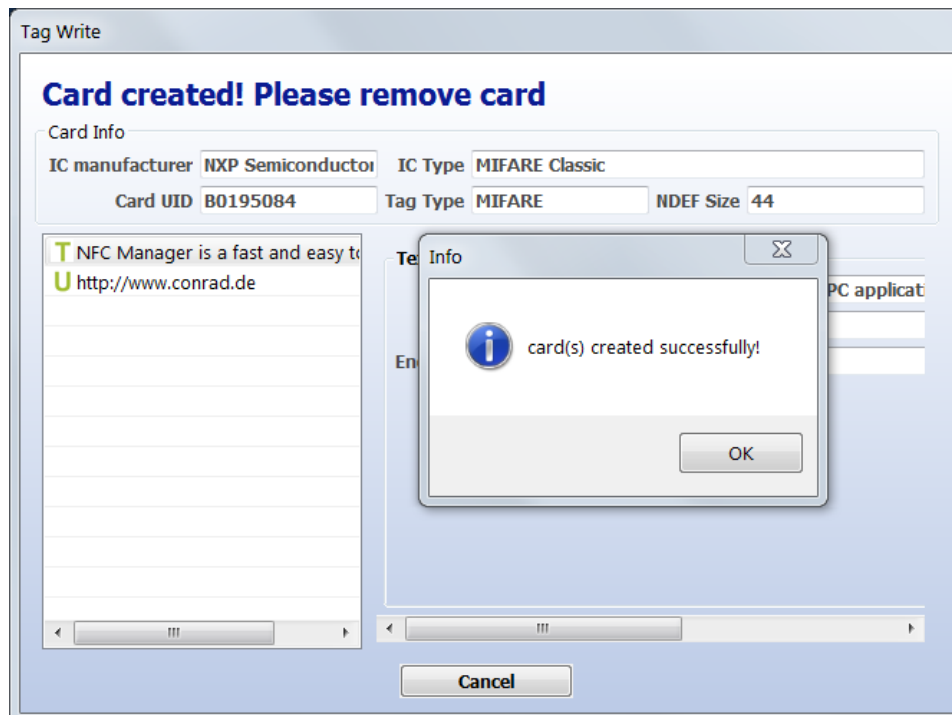
1. After adding Record, click “Tag” on the lower- right hand side and “Write NDEF”



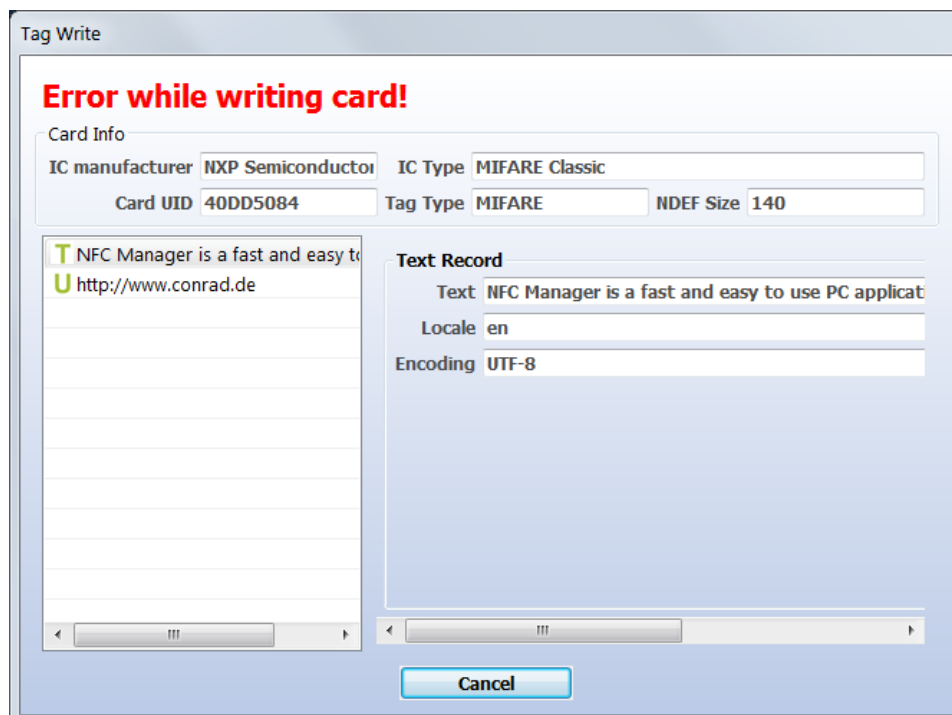
2. Place a Tag on the device.



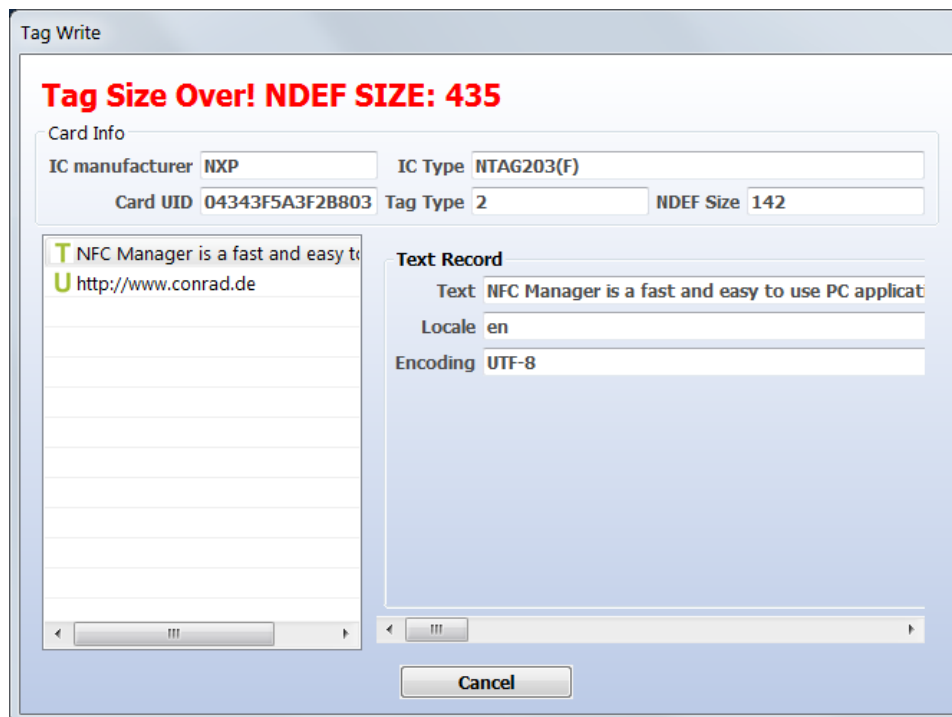
3. This message will pop up when writing a Tag is succeeded



4. An error message will be shown in case of failure.

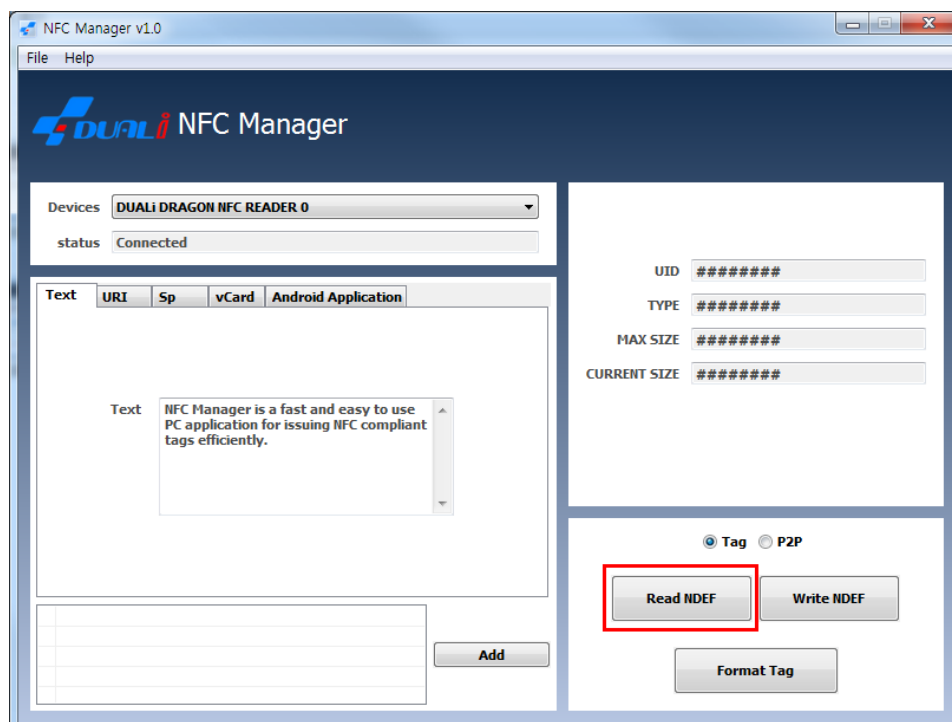


- Following message will be shown when the size of NDEF Messages is bigger than Tag memory size.

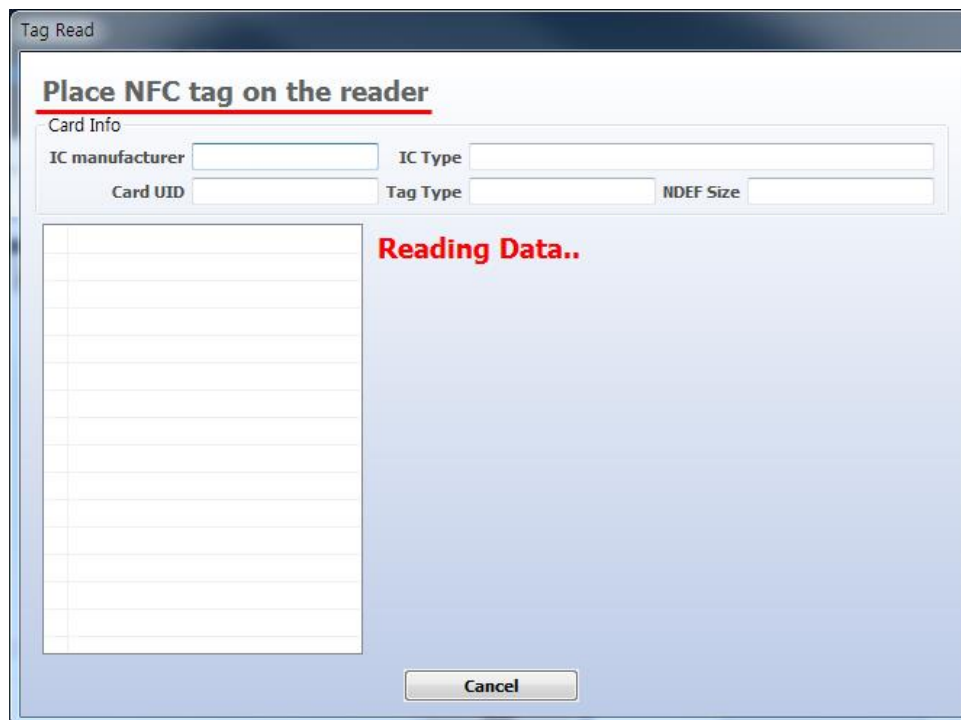


8. Tag Read

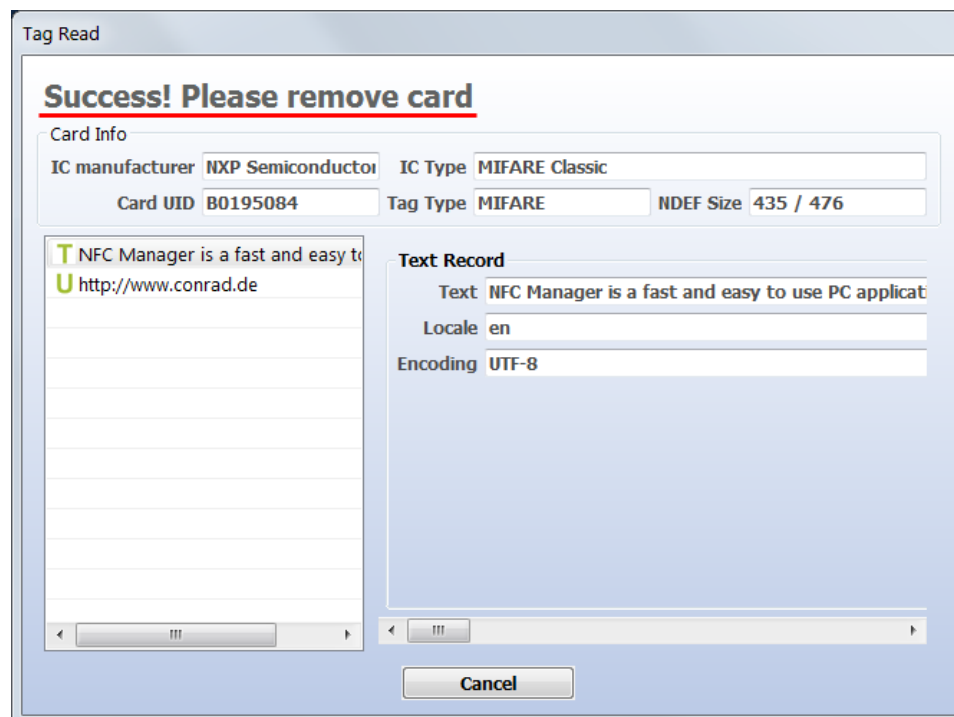
- Click "Tag" on the lower- right hand side and "Read NDEF"



2. Place a Tag on the device.



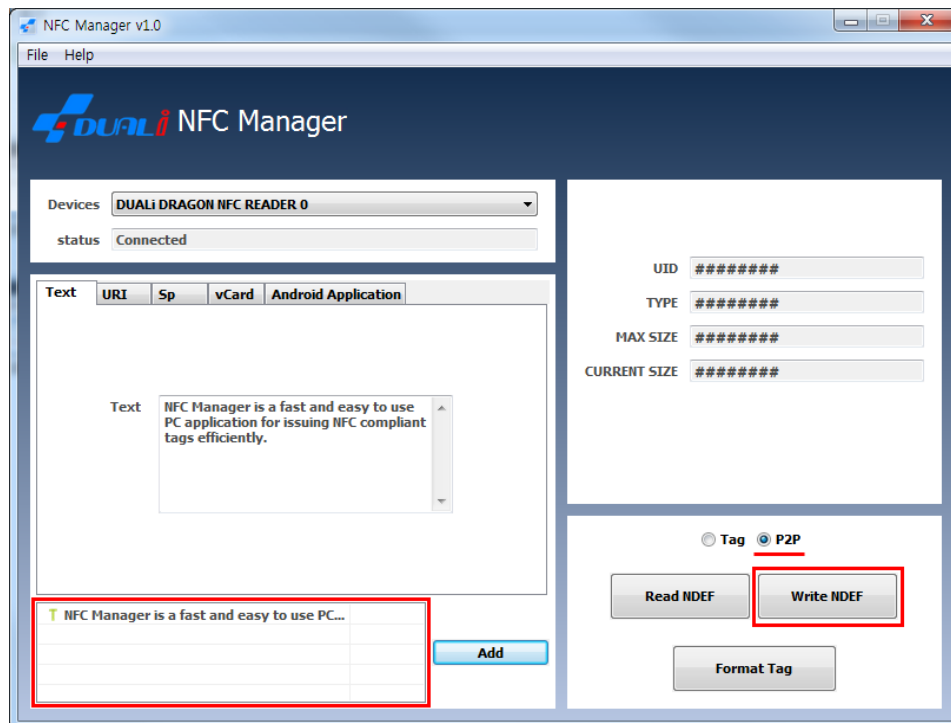
3. Following message will be show when you place a tag on [Read] windows.



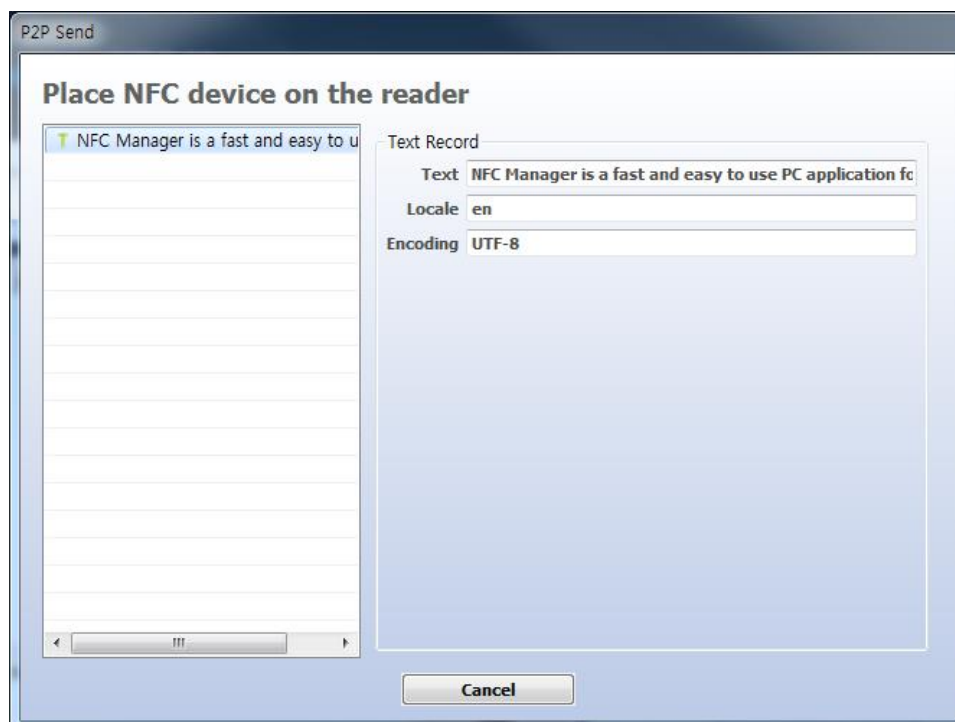
9. P2P Write

1. According to “8.1 Add Record”, add Record.

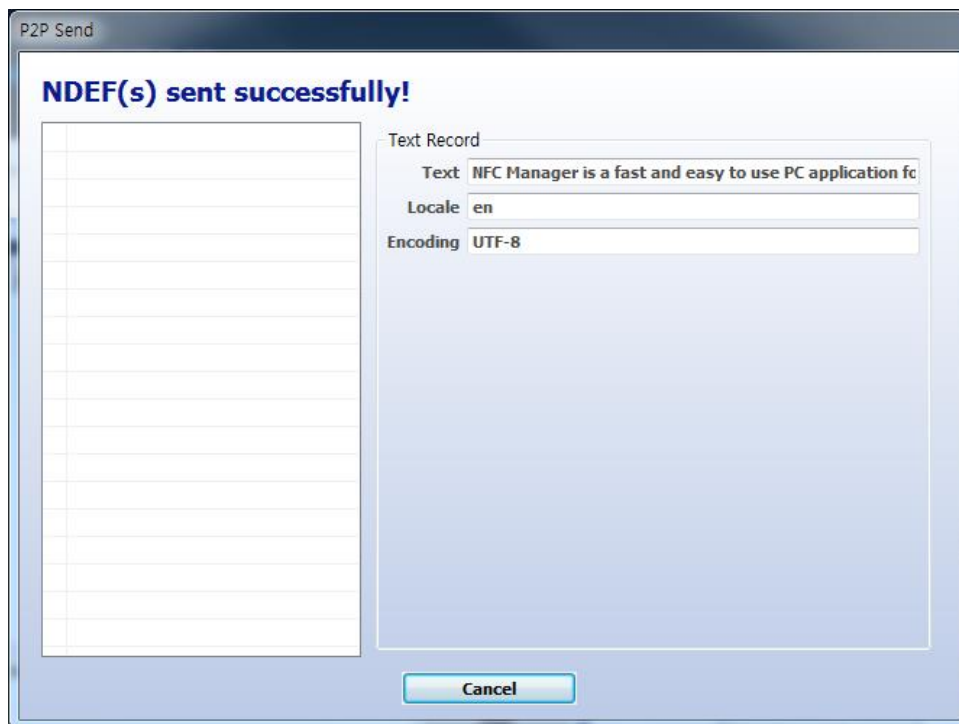
Click “P2P” on the lower- right hand side and “Write NDEF”



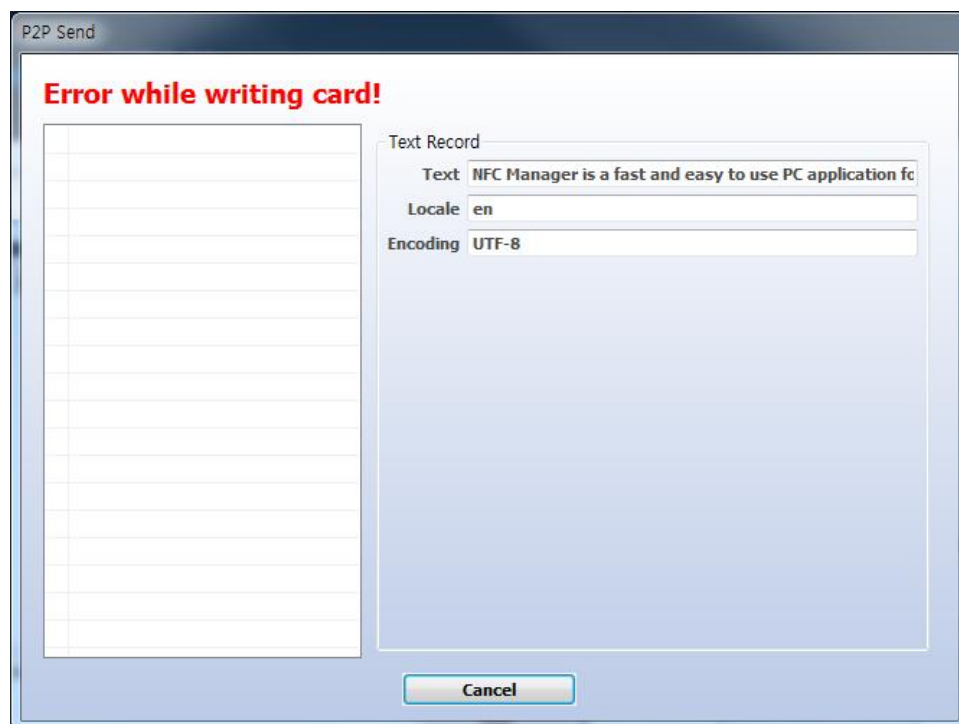
2. Place a NFC-enabled Android mobile on the device.
Perhaps you have to confirm it on your smartphone.



3. This message will pop up when writing a Tag is succeeded.

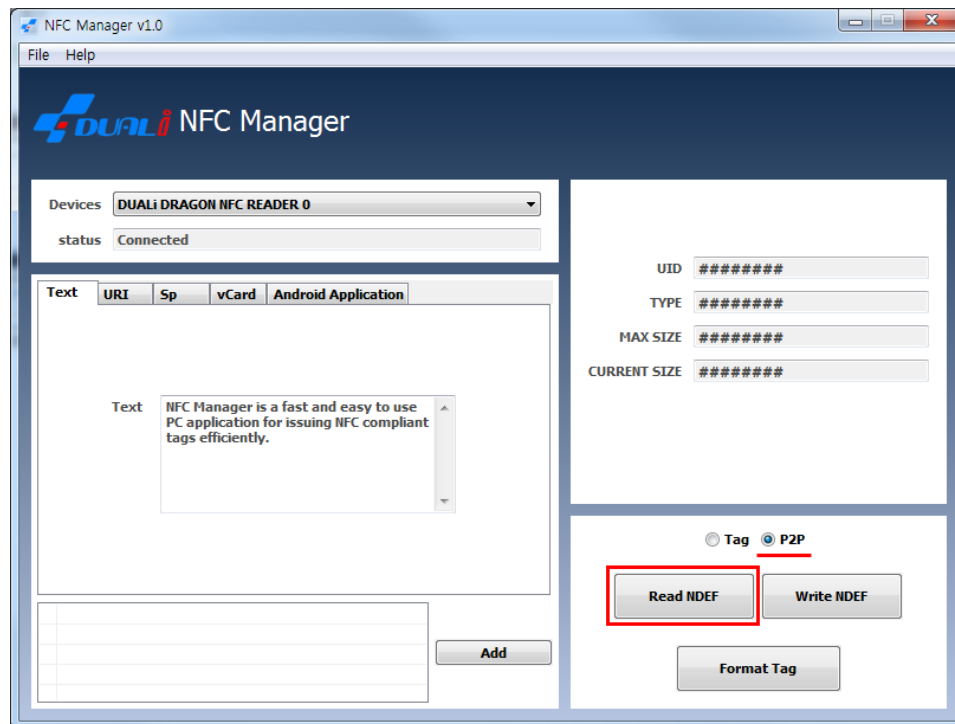


4. An error message will be shown in case of failure.

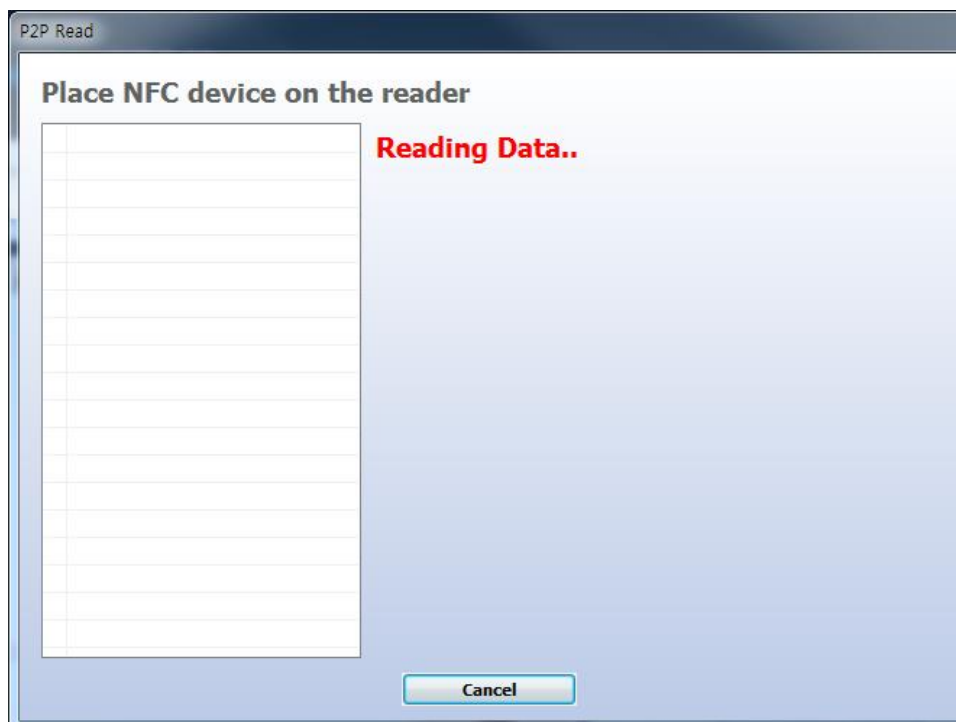


10. P2P Read

1. Click “Tag” on the lower- right hand side and “Read NDEF”



2. Place a NFC-enabled Android mobile on the device.



3. Following message will be show when you place a tag on [Read] windows.

The screenshot shows a window titled "P2P Read". Inside, there is a message "Success! Please remove NFC device". Below this message is a list of vCard records. The first record is selected and shows the following details:

vCard Record	
First Name	Max
Last Name	Mustermann
Organization	Conrad Electronic SE
Address	Klaus-Conrad-Str. 1
Additional address	
City	Hirschau
Postal code	92240
Country	Germany
E-mail	info@conrad.de
Phone	+491805312110
Cell	
Fax	

At the bottom of the window is a "Cancel" button.

4. The below message will be shown when an NFC unsupportable mobile is on the device.

The screenshot shows a window titled "P2P Read". Inside, there is a message "Fail!" in red. Below this message is a list of vCard records. The first record is selected and shows the following details:

vCard Record	
First Name	Max
Last Name	Mustermann
Organization	Conrad Electronic SE
Address	Klaus-Conrad-Str. 1
Additional address	
City	Hirschau
Postal code	92240
Country	Germany
E-mail	info@conrad.de
Phone	+491805312110
Cell	
Fax	

At the bottom of the window is a "Cancel" button.