



NFC Manager

User Manual

(This document was generated by NFC Manager Ver.1.0.8.)

DUALi Inc.

Document Version: 6.0

Last Revised Date: 25 JUNE 2013

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We have our development center in South Korea to provide technical support. For any technical assistance can contact our technical support team as below;

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Revision History

- 2012.04 (Ver. 1.0) : First Distribution
- 2012.07 (Ver. 2.0) : P2P Function update
- 2012.12 (Ver. 3.0) : Added Mifare 4k Tag and P2P(NPP, SNEP) Function
- 2013.01 (Ver. 4.0) : Modified Vcard record
- 2013.05 (Ver. 5.0) : Modified Mifare Access Bits
- 2013.06 (Ver. 6.0) : Added Desfire EV1 8k Tag and Distinguish Ultralight, Ultralight C, NTAG203

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1. Introduction

A. Intended Readership

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

B. Purpose

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.

C. Scope

NFC Manager Program supports below devices produced by DUALi.

Available DUALi Devices
DE-ABCM6 Dragon

Firmware and Driver

	Firmware	Driver
Date(Version)	2013.01.30 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 NXP Mifare Classic 4k
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)).

4. NFC P2P communication Basics

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

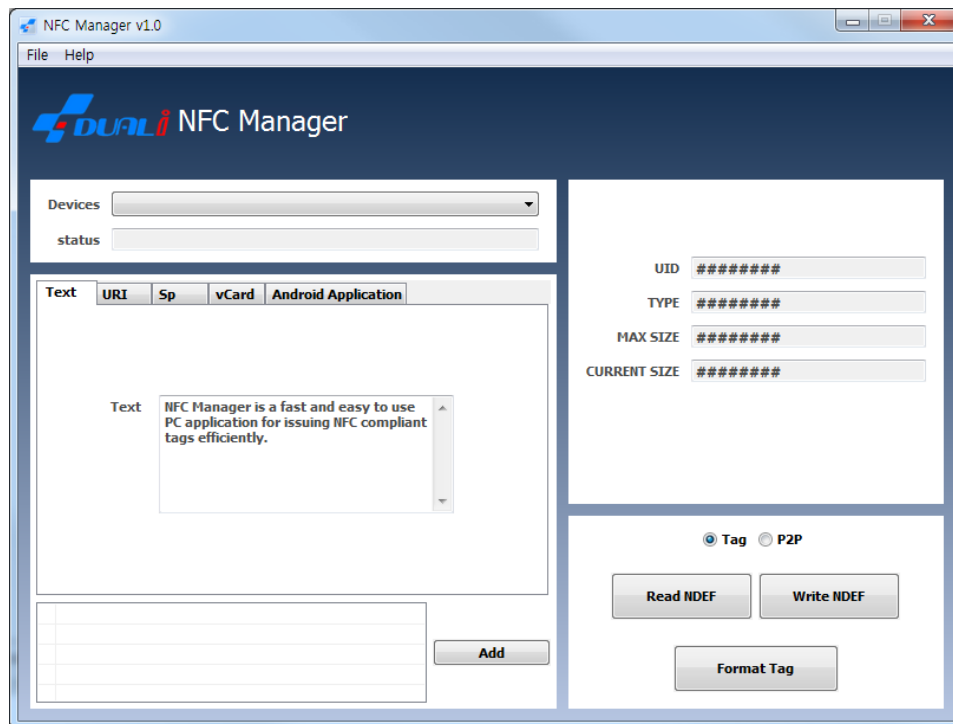
NFC Manager supports both Android NPP(NDEF Push Protocol) and SNEP(Simple NDEF Exchange Protocol).

NFC mobile's Android version for NPP & SNEP

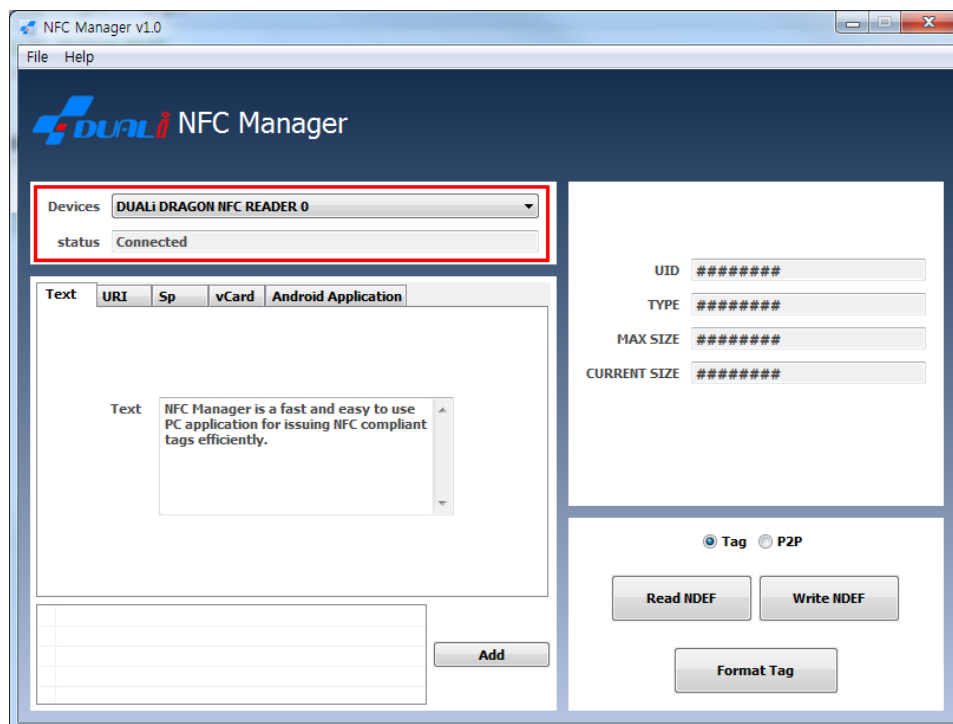
	API Level	Android version
NPP	API Level 9 to 13	Android 2.3 to 3.2
NPP & SNEP	API Level 14 or later	Android 4.0 or later

5. NFC Manager

<NFC Manager main>

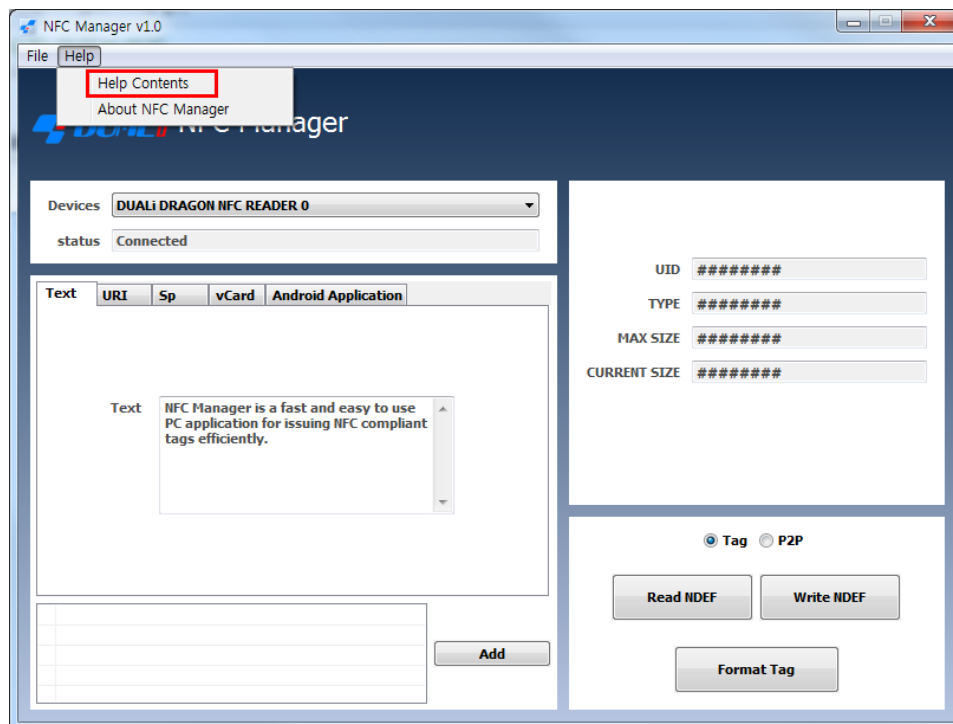


<Connect>



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

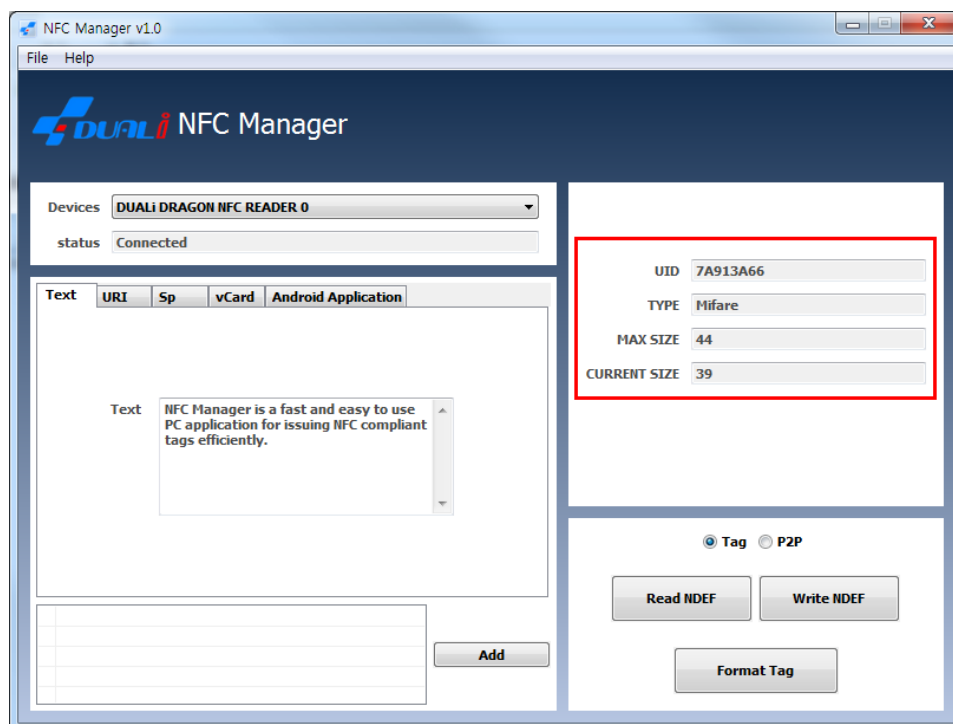
<"NFC_MANAGER_User_Manual" would be founded via Help- Help Contents>



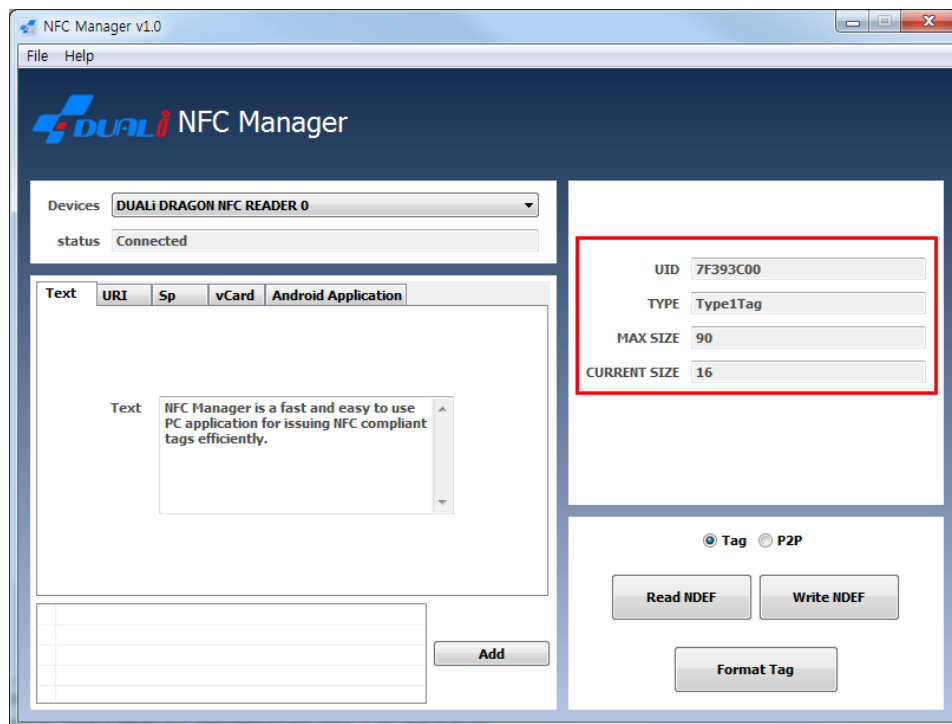
6. Tag Detect

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

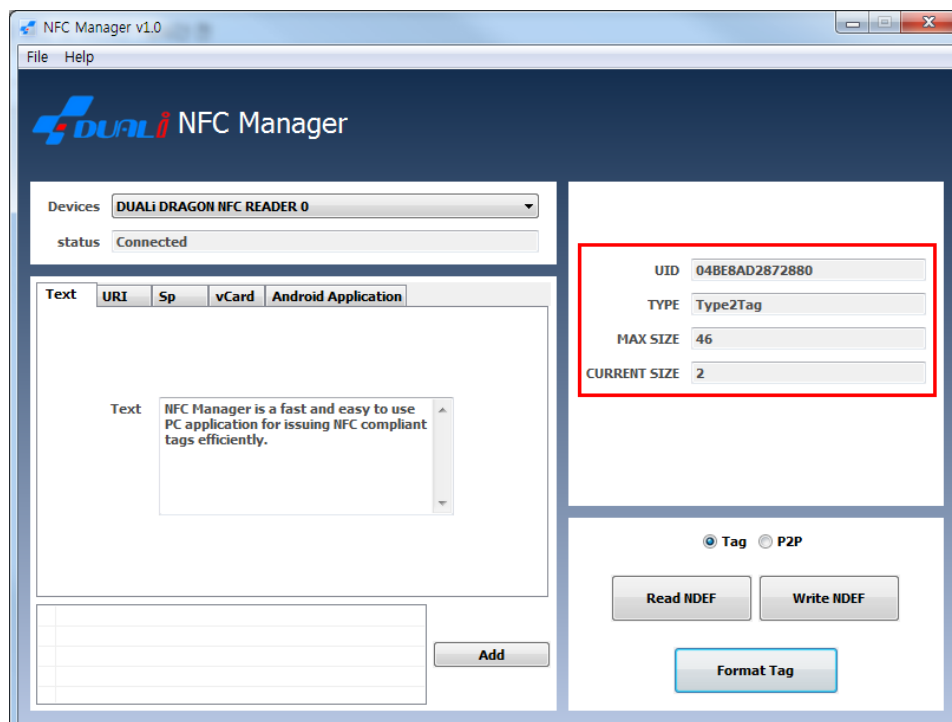
< Mifare Classic as NFC Type Tag Detect>



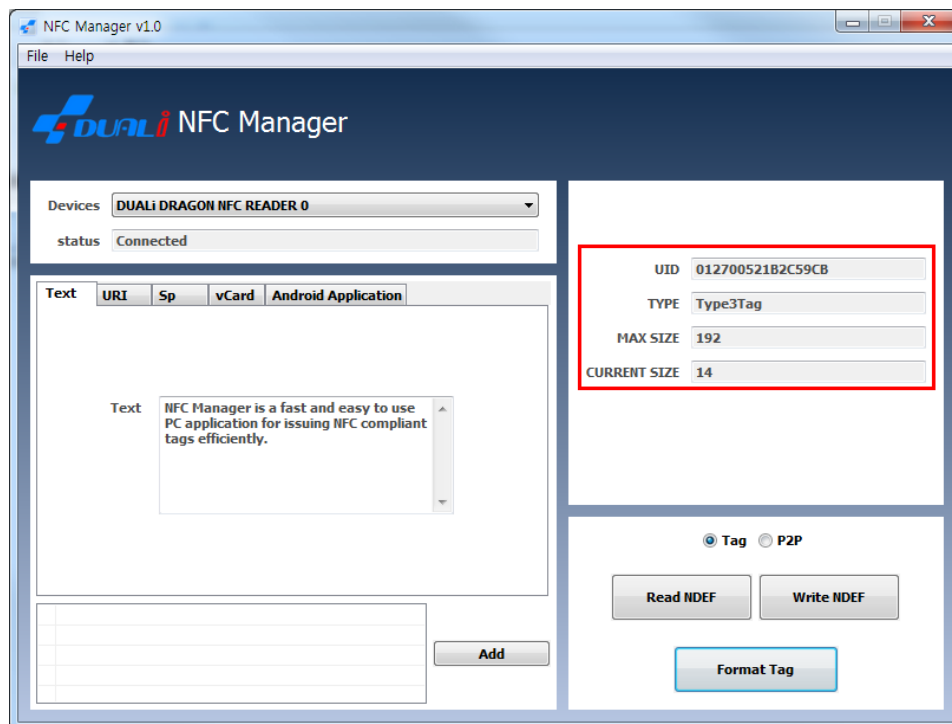
<NFC Forum Type 1 Tag Detect>



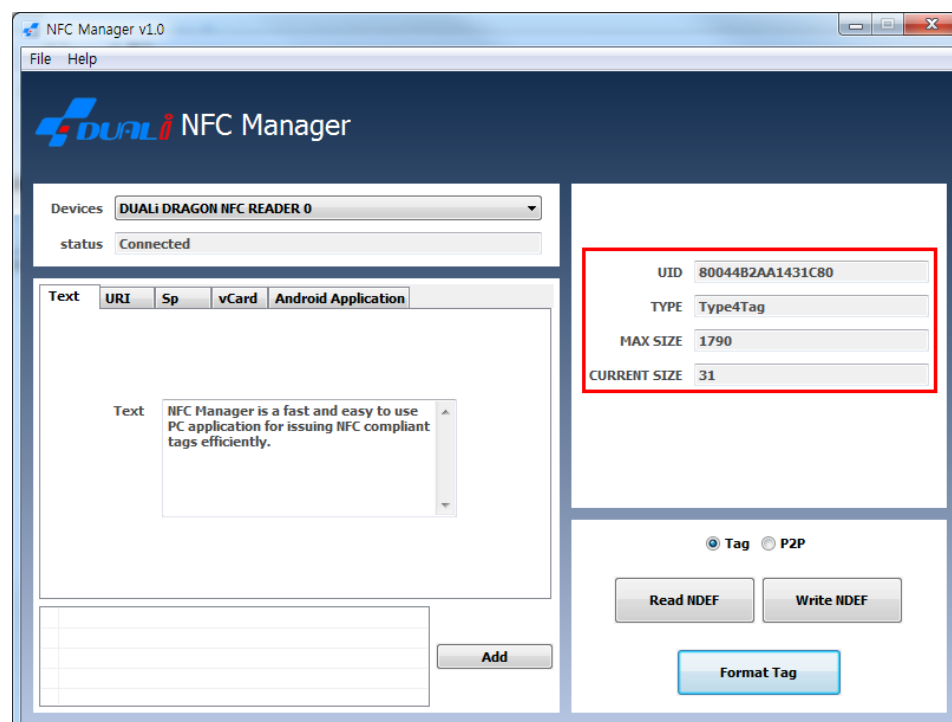
<NFC Forum Type 2 Tag Detect>



<NFC Forum Type 3 Tag Detect>



<NFC Forum Type 4 Tag Detect>



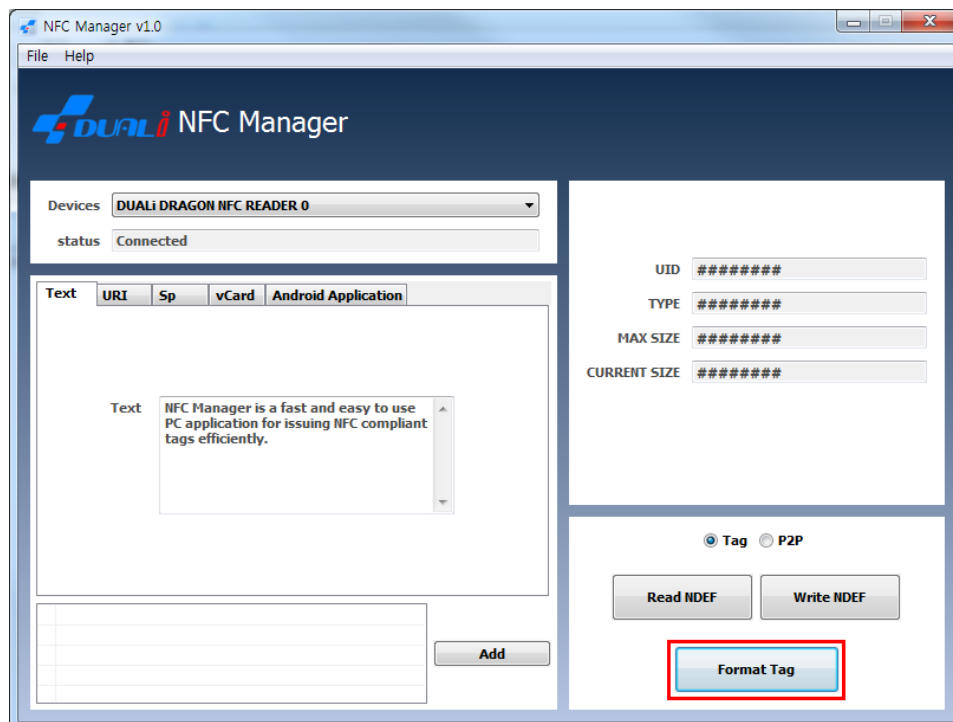
7. Tag Format

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)

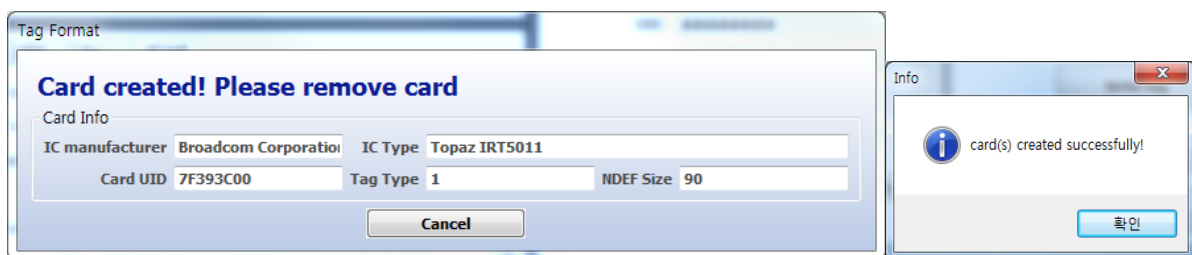
1. Click "Format Tag"



2. Place a Tag on the device



3. Following message will be shown 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.



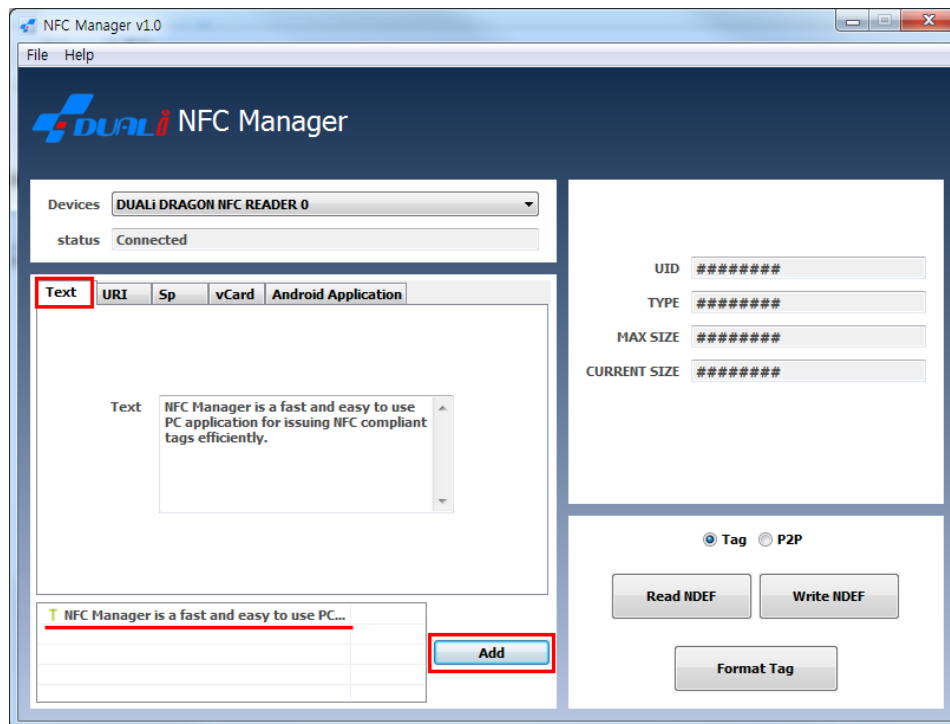
8. Tag Write

NFC Manager Program provides 5 types of below record.

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

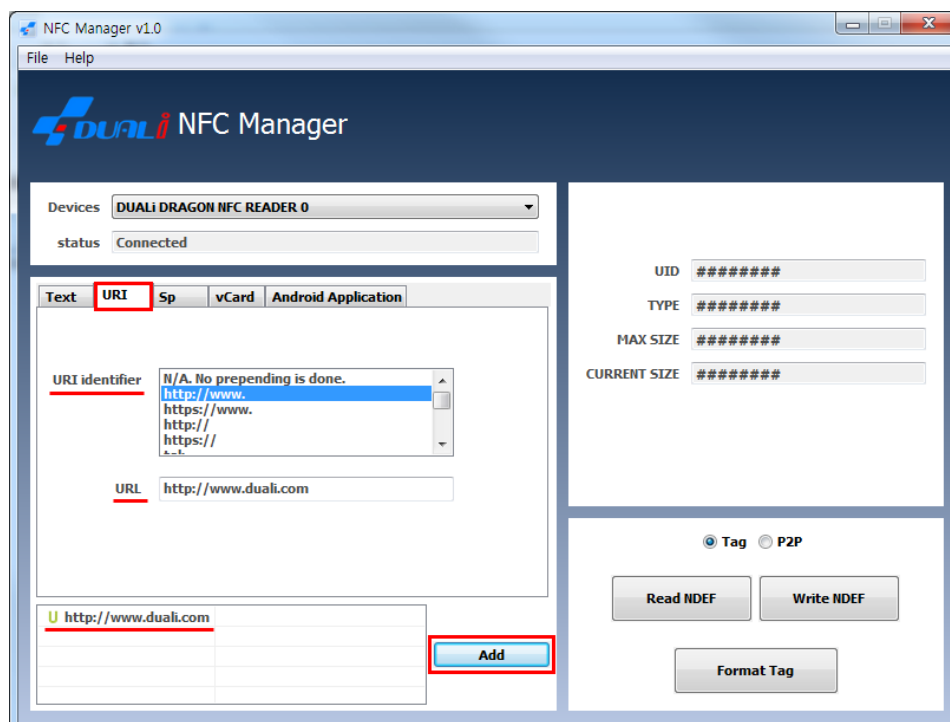
8.1 Add Record

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

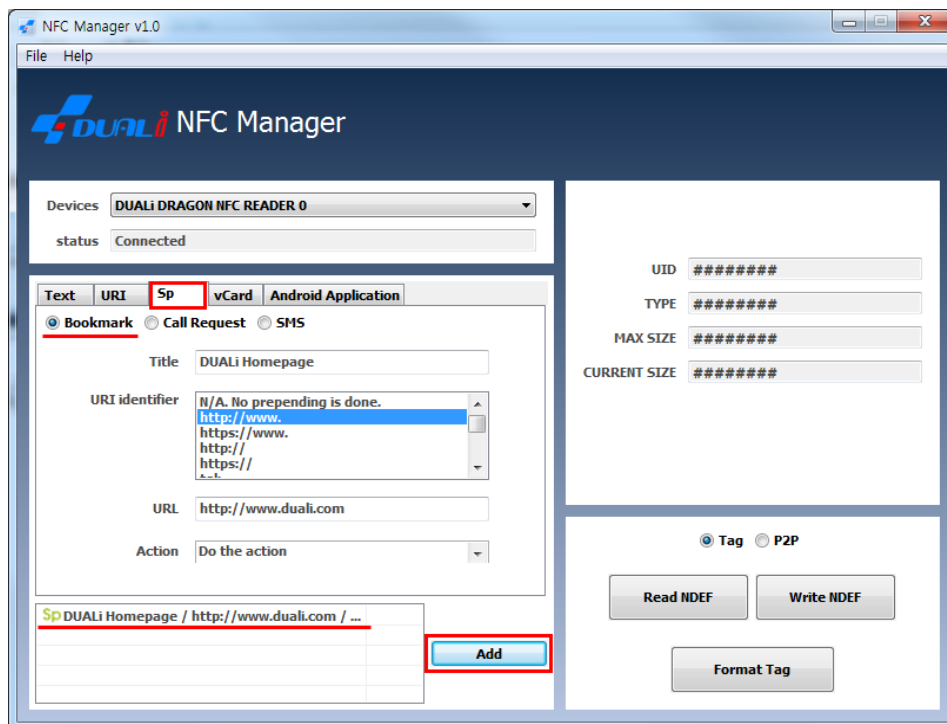


✓ To delete text/url/Sp/vCard data, double click it from the log box

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



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



NFC Manager v1.0

File Help

DUALi NFC Manager

Devices: DUALi DRAGON NFC READER 0

status: Connected

Text URI **Sp** vCard Android Application

☒ Bookmark ☐ Call Request ☐ SMS

Title: DUALi Homepage

URI identifier: II/A. No prepending is done.
http://www.
https://www.
https://
https://

URL: http://www.duali.com

Action: Do the action

Sp DUALi Homepage / http://www.duali.com / ...

Add

UID: #####

TYPE: #####

MAX SIZE: #####

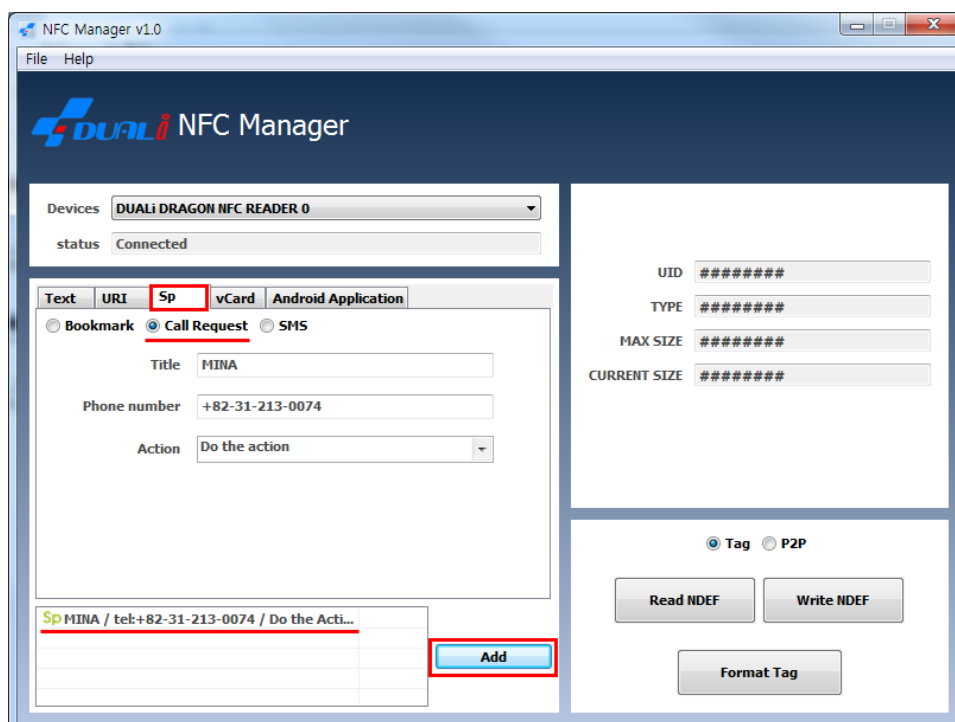
CURRENT SIZE: #####

☒ Tag ☐ P2P

Read NDEF Write NDEF

Format Tag

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



NFC Manager v1.0

File Help

DUALi NFC Manager

Devices: DUALi DRAGON NFC READER 0

status: Connected

Text URI **Sp** vCard Android Application

☐ Bookmark ☒ Call Request ☐ SMS

Title: MINA

Phone number: +82-31-213-0074

Action: Do the action

Sp MINA / tel:+82-31-213-0074 / Do the Acti...

Add

UID: #####

TYPE: #####

MAX SIZE: #####

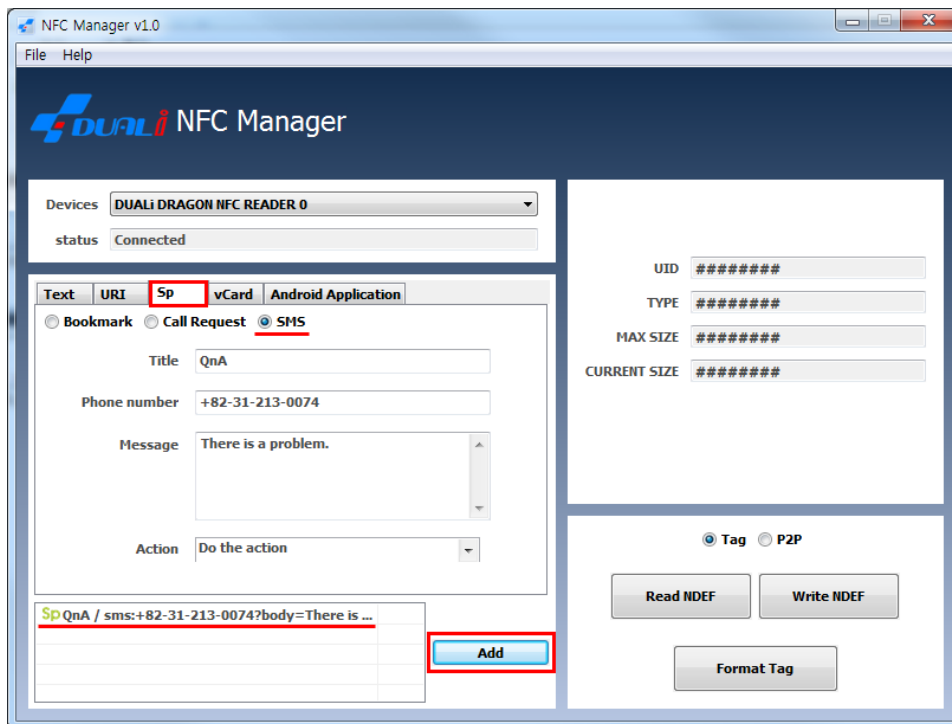
CURRENT SIZE: #####

☒ Tag ☐ P2P

Read NDEF Write NDEF

Format Tag

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



NFC Manager v1.0

File Help

DUALi NFC Manager

Devices: DUALi DRAGON NFC READER 0

status: Connected

Text URI **Sp** vCard Android Application

☐ Bookmark ☐ Call Request ☒ SMS

Title: QnA

Phone number: +82-31-213-0074

Message: There is a problem.

Action: Do the action

Sp QnA / sms:+82-31-213-0074?body=There is ...

Add

UID: #####

TYPE: #####

MAX SIZE: #####

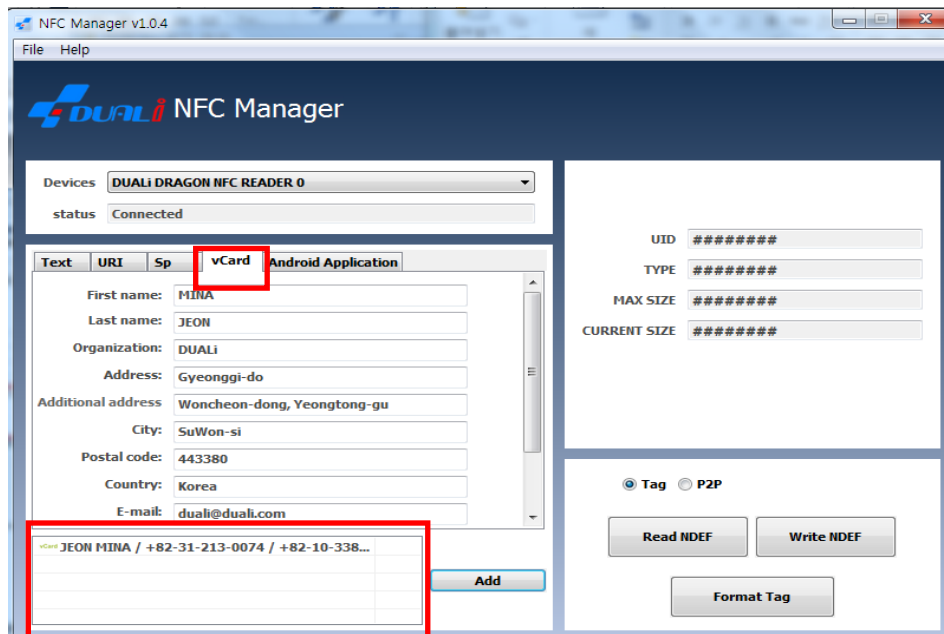
CURRENT SIZE: #####

☒ Tag ☐ P2P

Read NDEF Write NDEF

Format Tag

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



NFC Manager v1.0.4

File Help

DUALi NFC Manager

Devices: DUALi DRAGON NFC READER 0

status: Connected

Text URI Sp **vCard** Android Application

First name: MINA

Last name: JEON

Organization: DUALi

Address: Gyeonggi-do

Additional address: Woncheon-dong, Yeongtong-gu

City: SuWon-si

Postal code: 443380

Country: Korea

E-mail: duali@duali.com

vCard JEON MINA / +82-31-213-0074 / +82-10-338...

Add

UID: #####

TYPE: #####

MAX SIZE: #####

CURRENT SIZE: #####

☒ Tag ☐ P2P

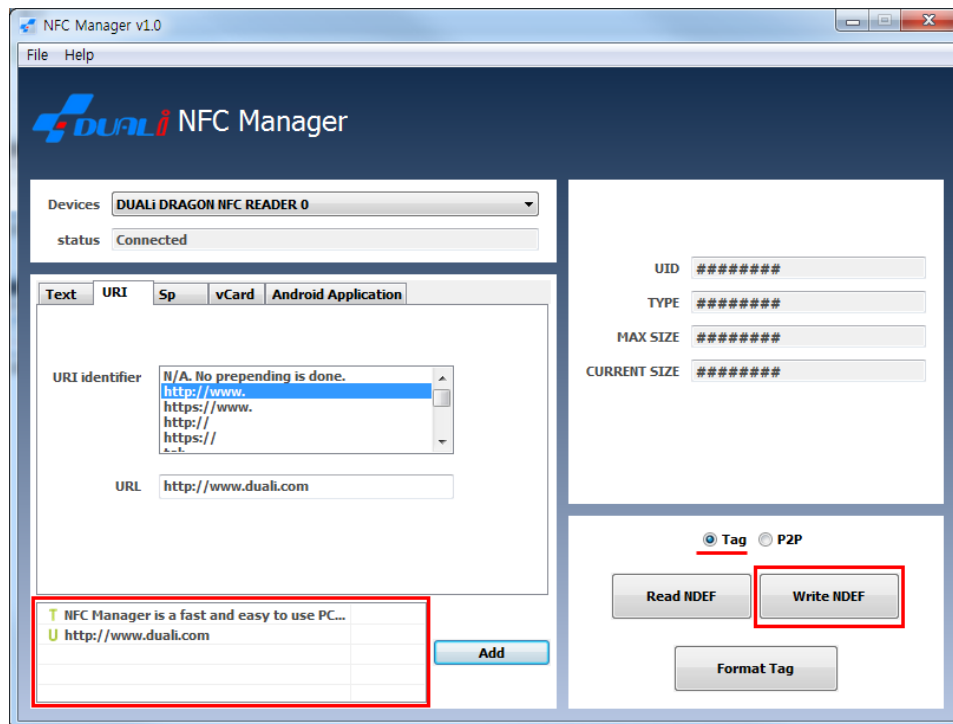
Read NDEF Write NDEF

Format Tag

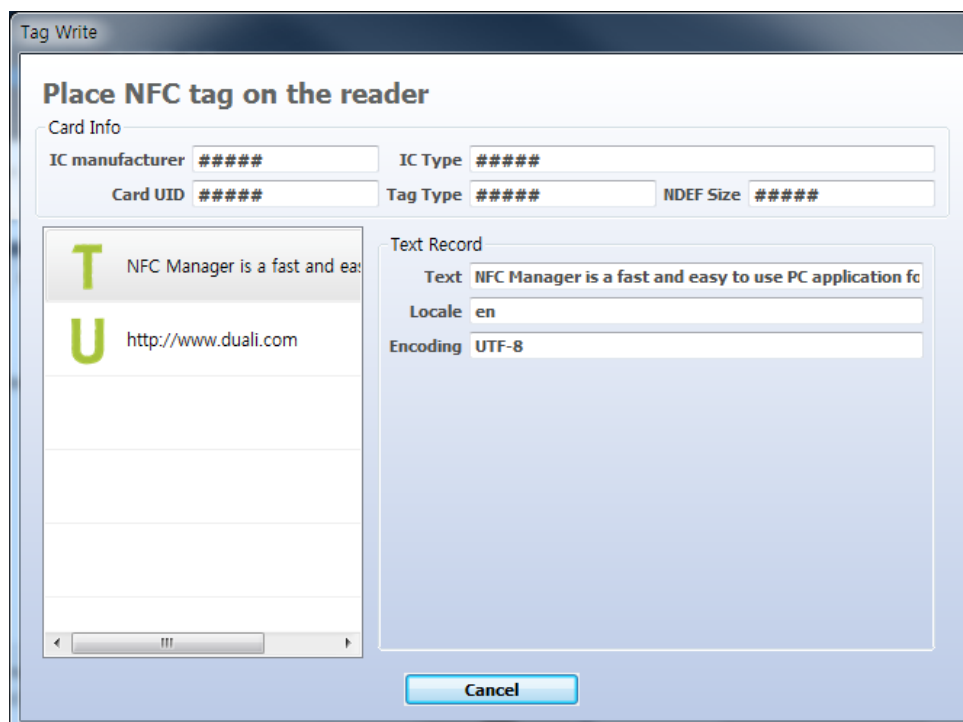
<VCard Record> Input business card information you want to add and click add button

8.2 Write A Tag

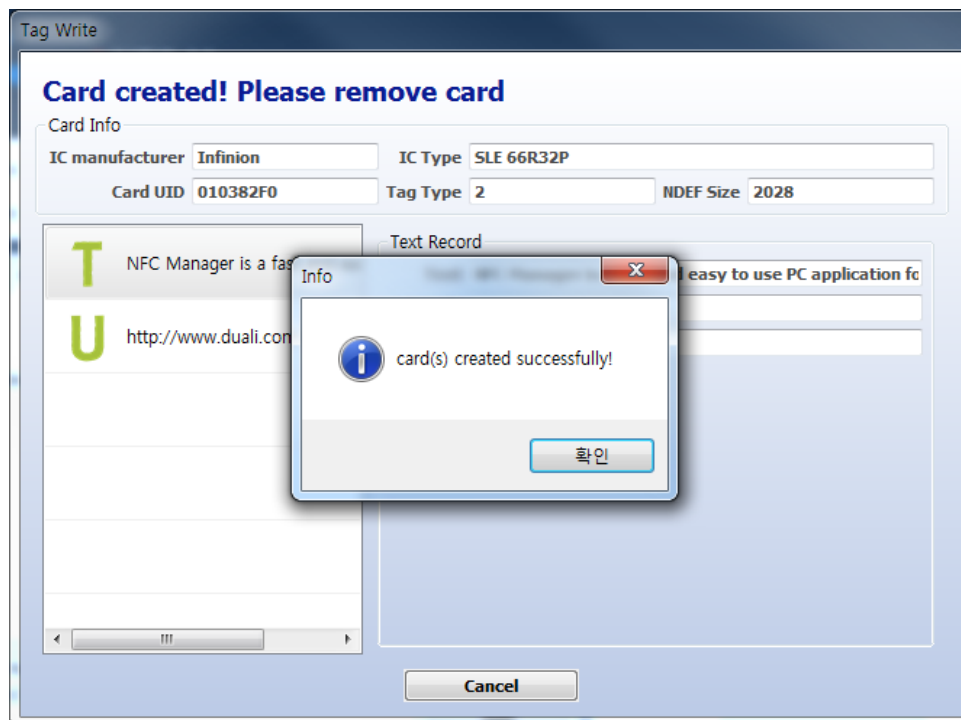
1. After adding Record, click “Tag” on the lower- right hand side and “Write NDEF”



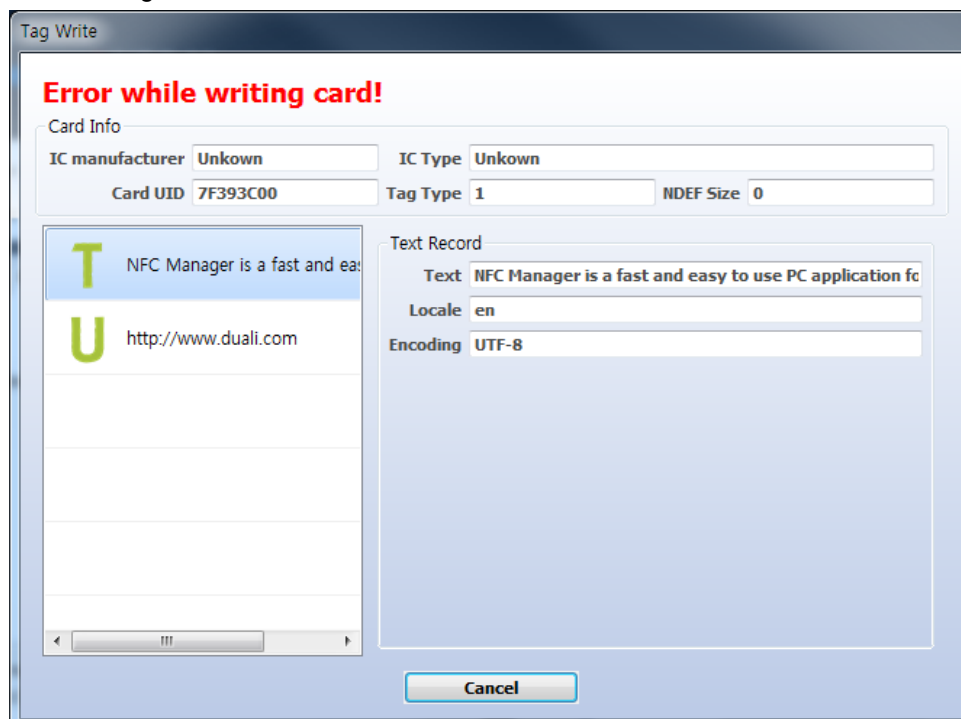
2. Place a Tag on the device.



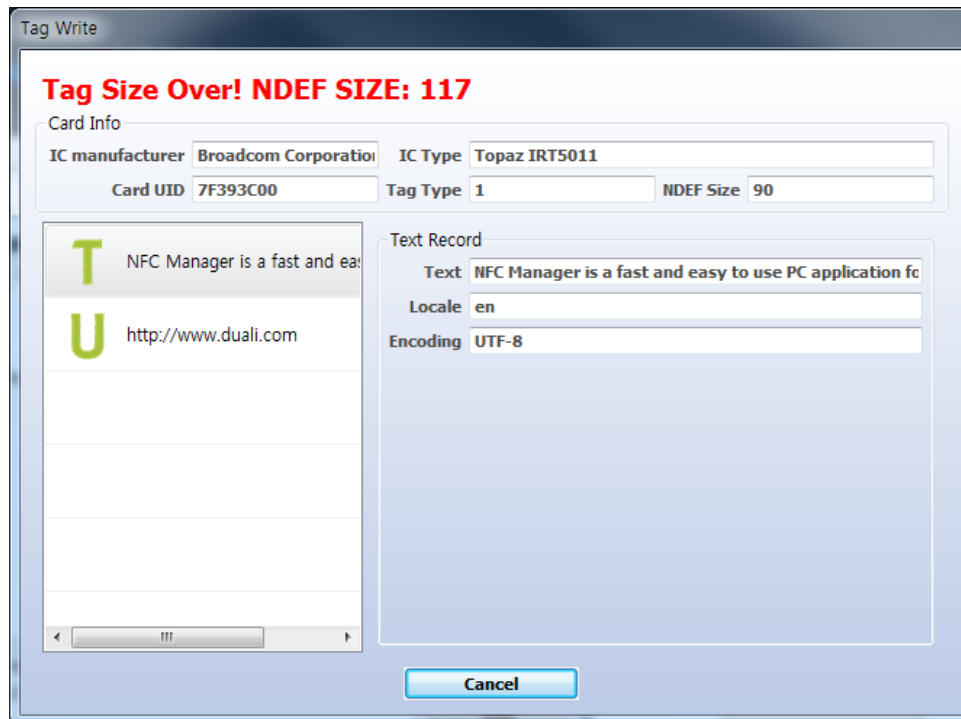
3. This message will pop up when writing a Tag is succeed.



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

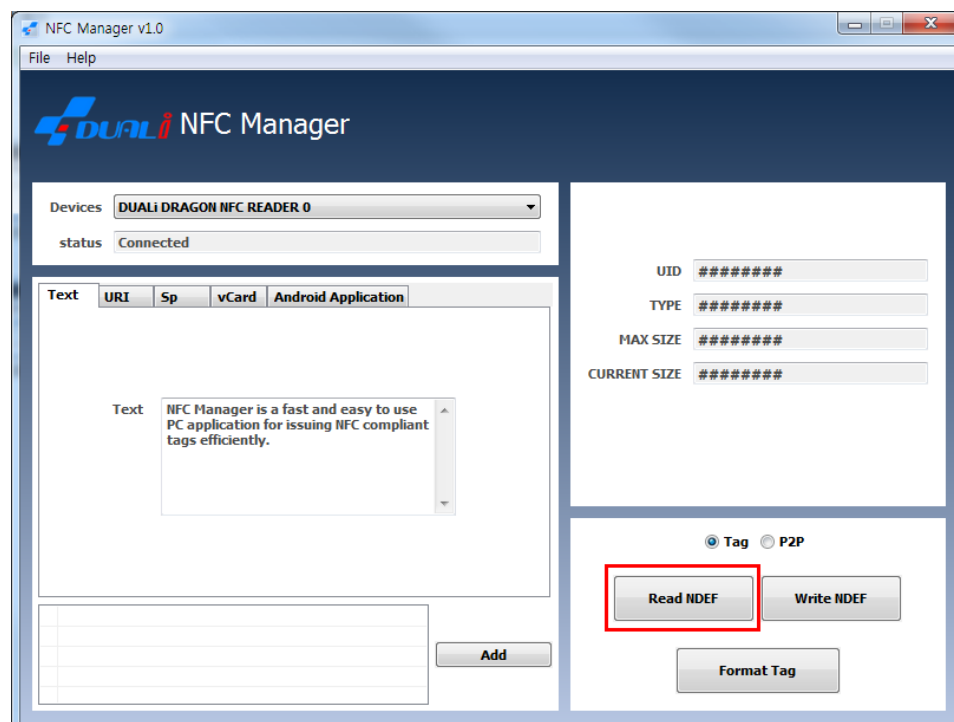


5. Following message will be shown when the size of NDEF Messages is bigger than Tag memory size.

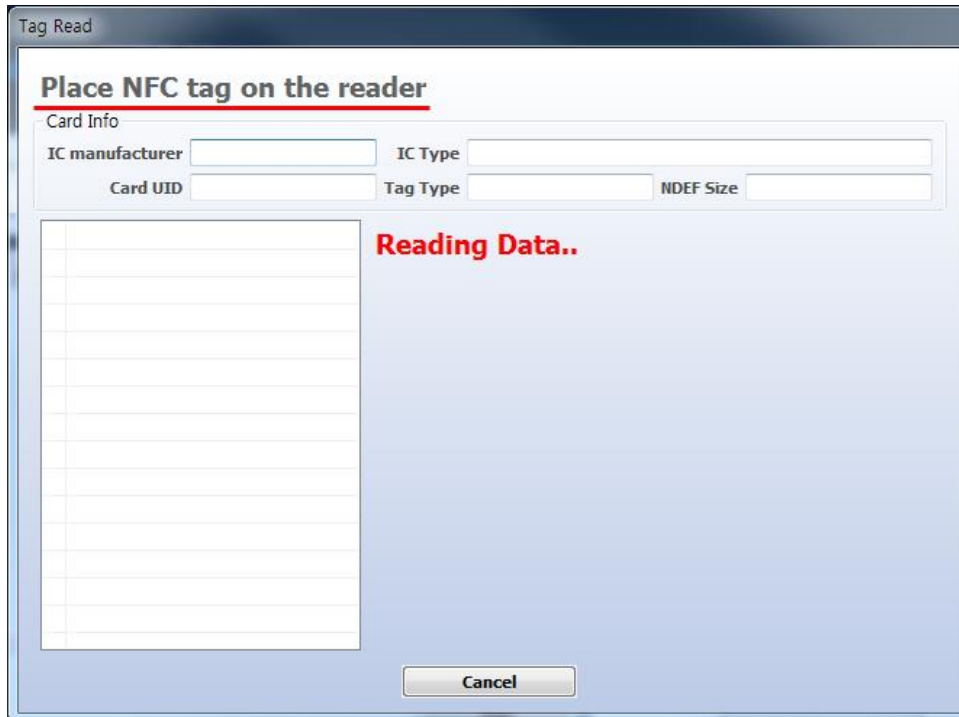


9. Tag Read

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



2. Place a Tag on the device.



Tag Read

Place NFC tag on the reader

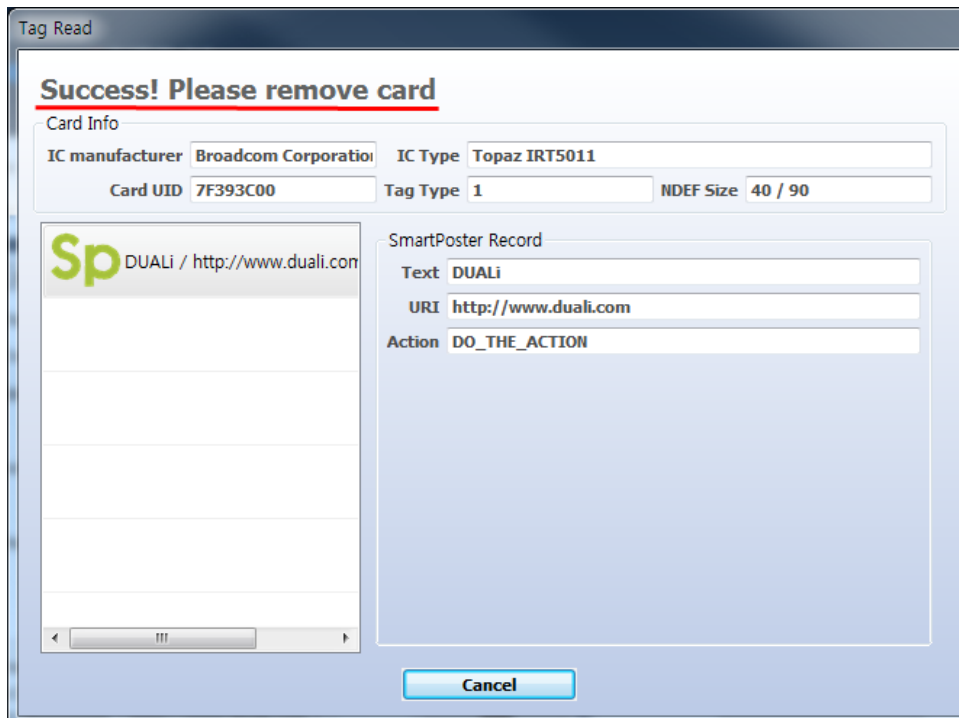
Card Info

IC manufacturer IC Type

Card UID Tag Type NDEF Size

Reading Data..

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



Tag Read

Success! Please remove card

Card Info

IC manufacturer IC Type

Card UID Tag Type NDEF Size

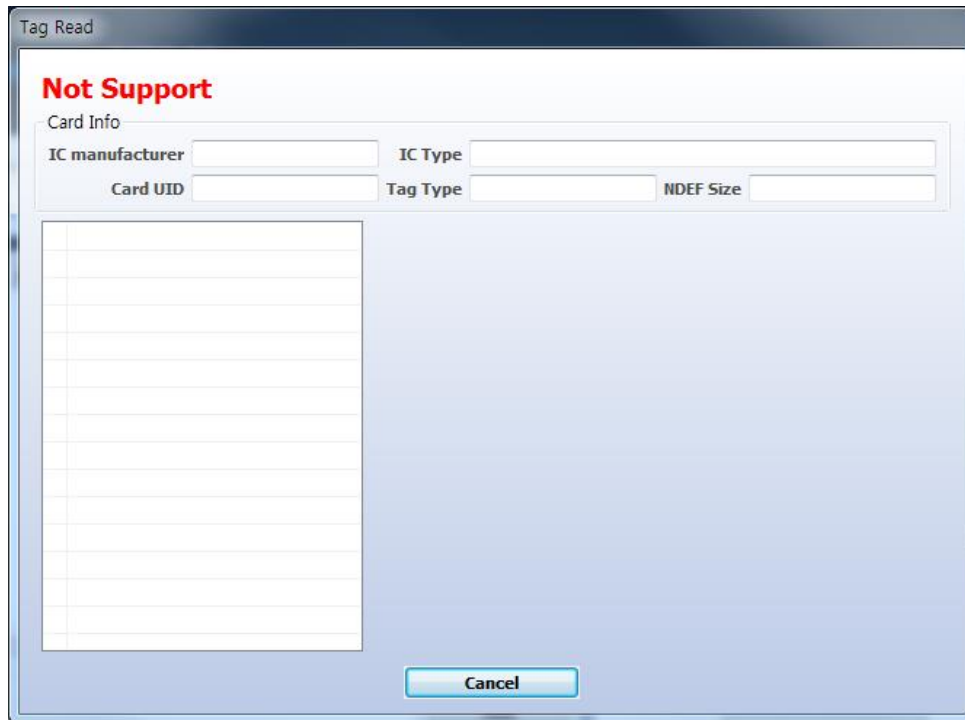
SmartPoster Record

Text

URI

Action

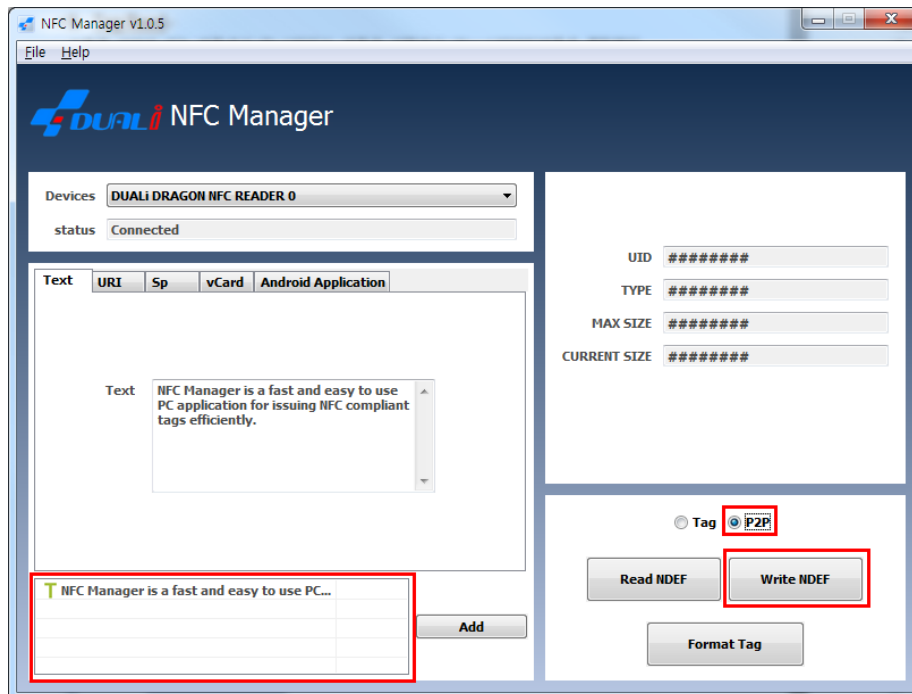
4. The below message will be shown when an unsupported tag (Refer to 2. List of NFC Tag(IC Type)) is on the device.



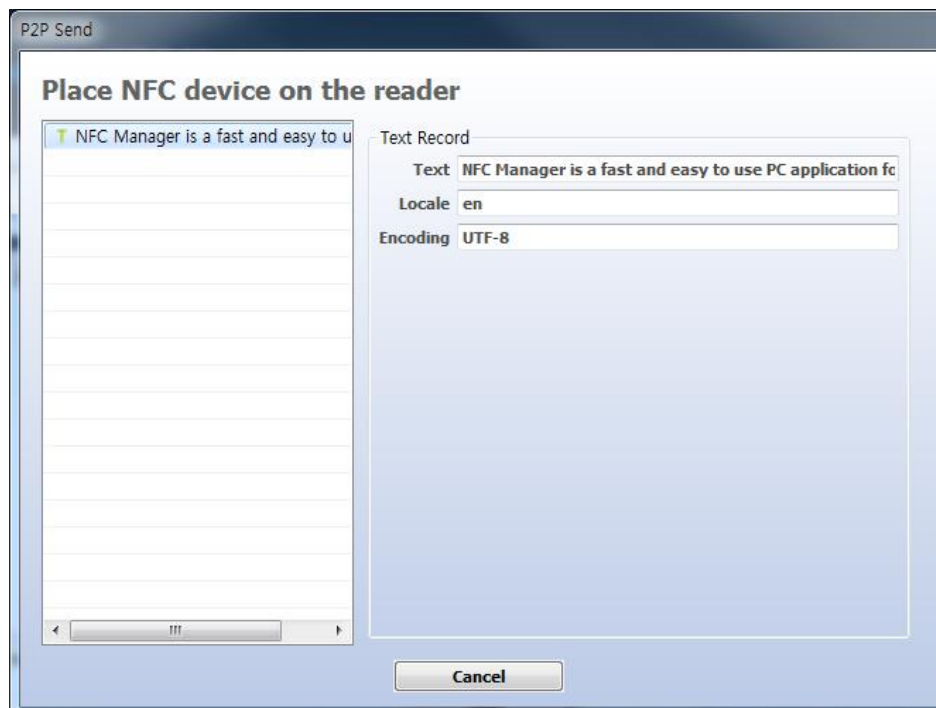
10. P2P Write

1. According to "8.1 Add Record", add Record.

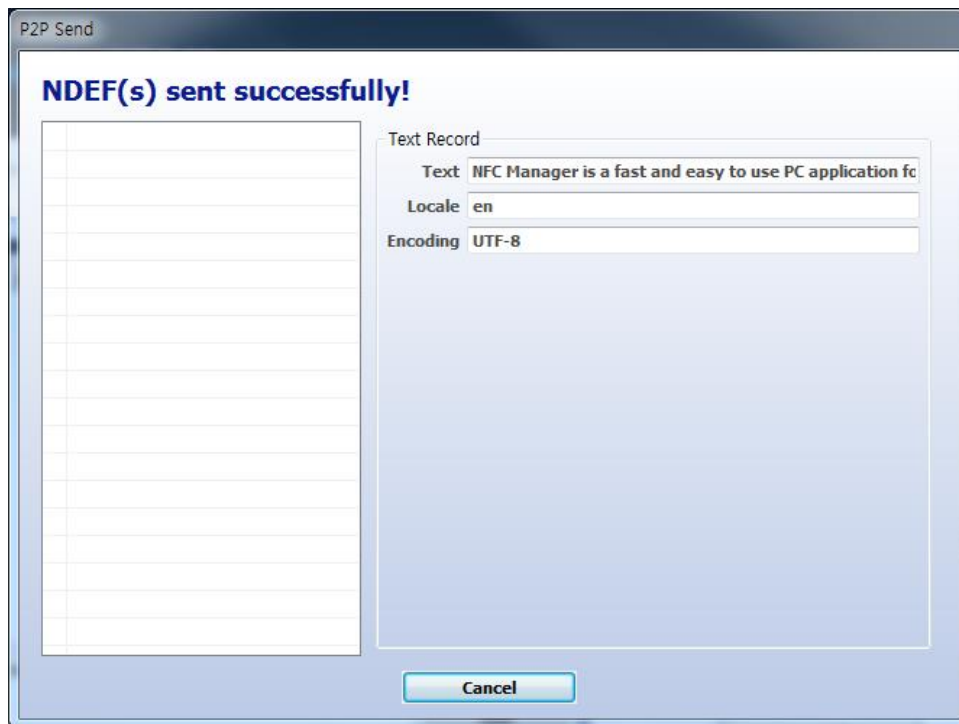
Click "P2P" on the lower- right hand side and "Write NDEF".



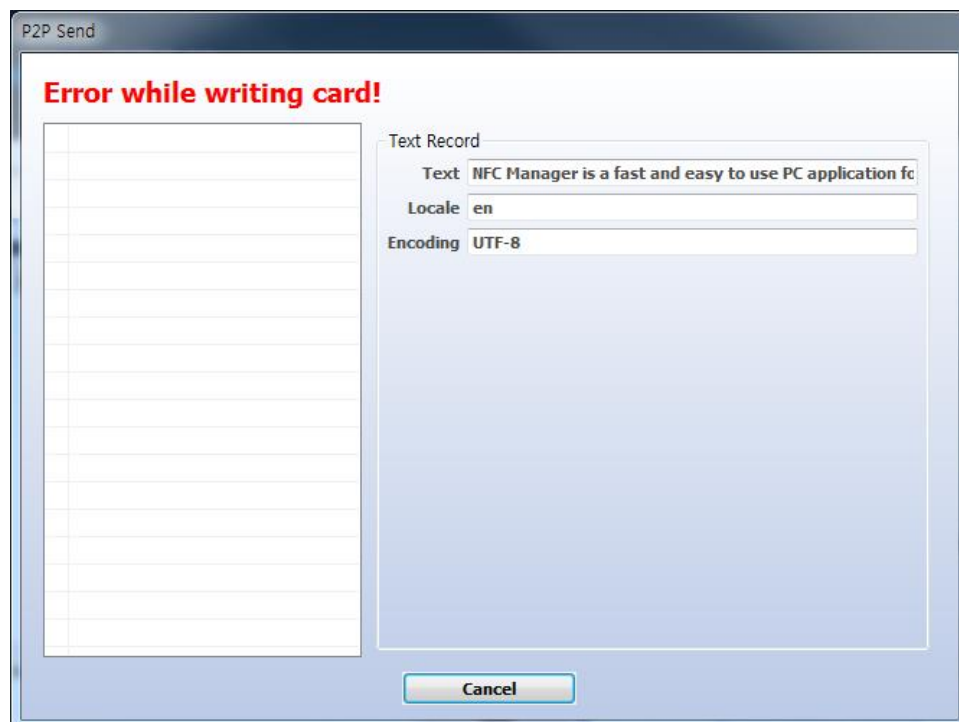
2. Place a NFC-enabled Android mobile on the device.



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

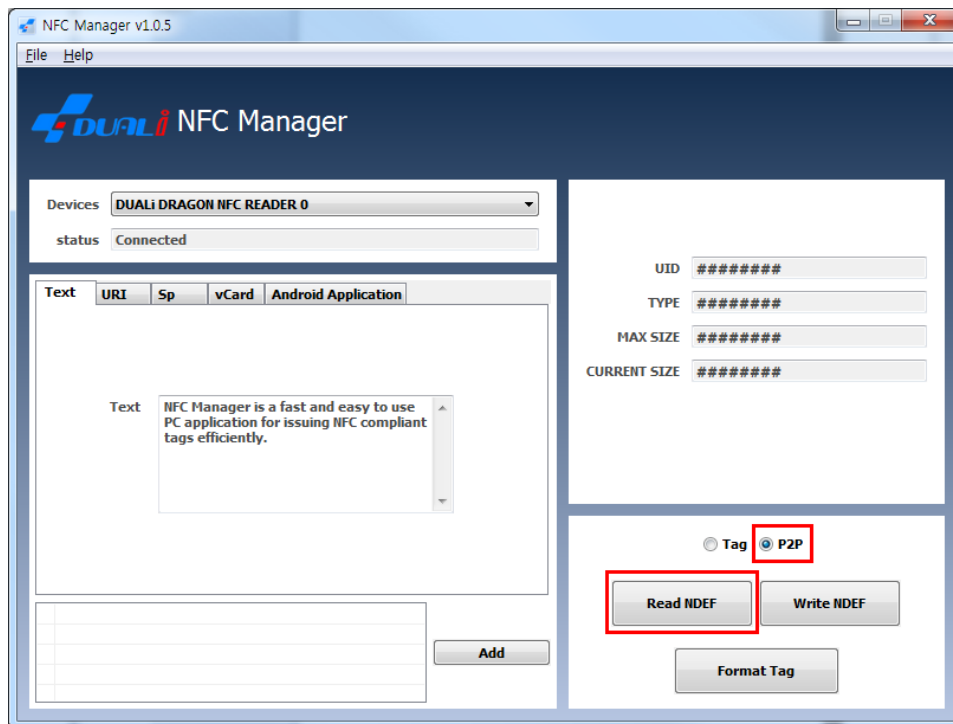


4. An error message will be shown in case of failure.

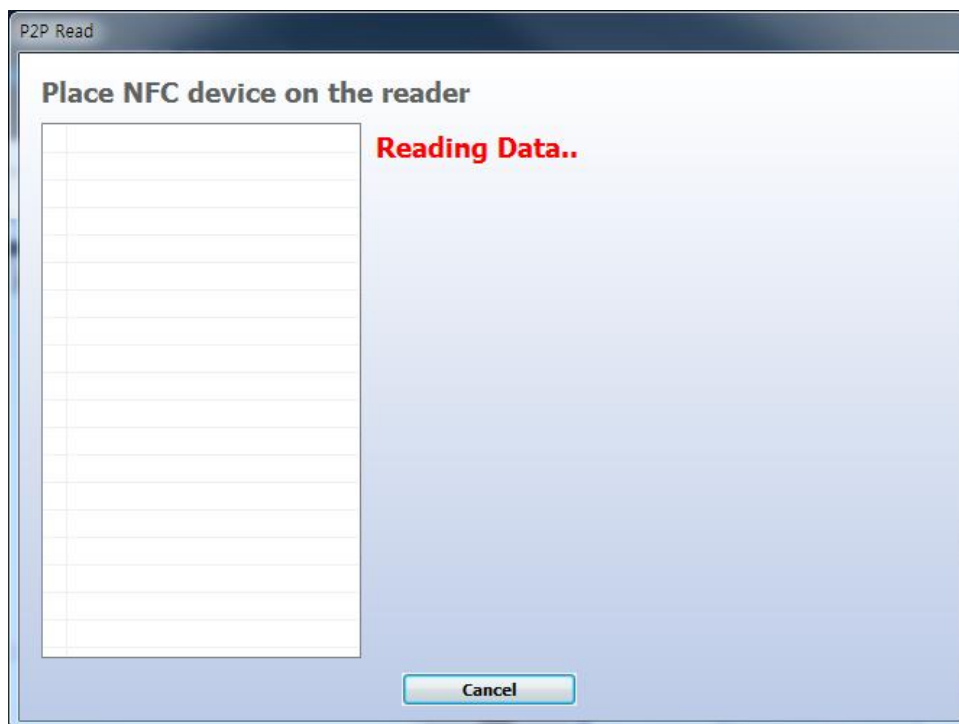


11. P2P Read

1. Click "P2P" 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.

P2P Read

Success! Please remove NFC device

vCard JEON MINA / +82312130074 / +82

vCard Record

First Name	MINA
Last Name	JEON
Organization	DUALi
Address	Gyeonggi-do Woncheon-dong, Yeongtong-gu
Additional address	
City	SuWon-si
Postal code	443380
Country	Korea
E-mail	+82-31-213-0078
Phone	+82312130074
Fax	+82312130078

Cancel

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

P2P Read

Fail!

Reading Data..

Cancel

DUALi Inc.

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