



## DEDOWNLOADER

### User Manual

#### **DUALi Inc.**

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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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## Introduction

### *A. Intended readership*

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This manual has been written keeping in mind to the DUALi reader User.

### *B. Purpose*

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This manual is explained DeDownloader's use method for Firmware downloading of Readers/Modules or who need to change the configuration.

### *C. Scope*

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DeDownloader can applicable for all DUALI readers supports USB or RS232 which can connected to Windows PC

- Please use DeDownloader HID program and manual for those who uses DUALi product as HID mode(Keyboard emulation mode)

Supportive O/S

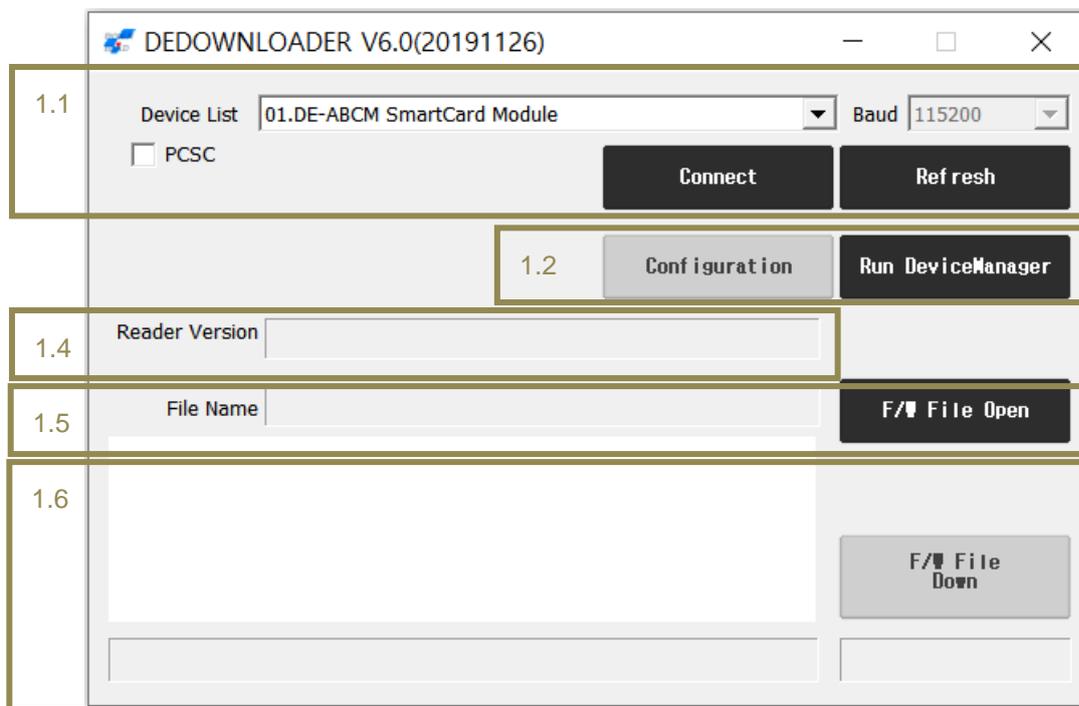
Windows 2000, Windows XP, Windows Visata, Windows7, Windows 8/ 8.1, Windows 10

## 1. Introduction

DeDownloader.exe program is for downloading new application binary file to DUALi readers and modules. Most of DUALi reader/module is a USB/RS232 as vendor (Proprietary & PCSC mode) as factory default.

Communication protocols between reader/module and host computer are designed by DUALi in proprietary mode and it is possible to control low-level behaviors for card and reader/module. In PC/SC or CCID mode, the reader/module is operated in standard smart card reader. All communication frames are in APDU format.

**Please disconnect all other DUALi's reader and connect just one reader which you want to download firmware**



< Figure 1-1 >DeDownloader Main Layout

### 1.1 Connect

Once Duali reader connected on PC, its device name automatically displayed here. In case the reader connected after this program run, please click [Refresh] then see the name shows up.

### 1.2 Configuration

Use this function to just change reader from Proprietary (vendor) to PC/SC or vice versa.

### 1.3 Reader version

When Duali reader is connected on this program, the current firmware version is displayed on this area.

#### **1.4 Firmware update**

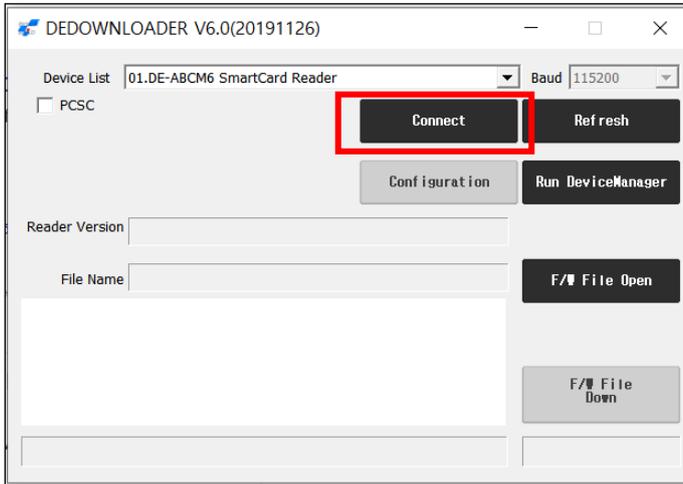
Select the firmware file and check selected version.

#### **1.5 Status**

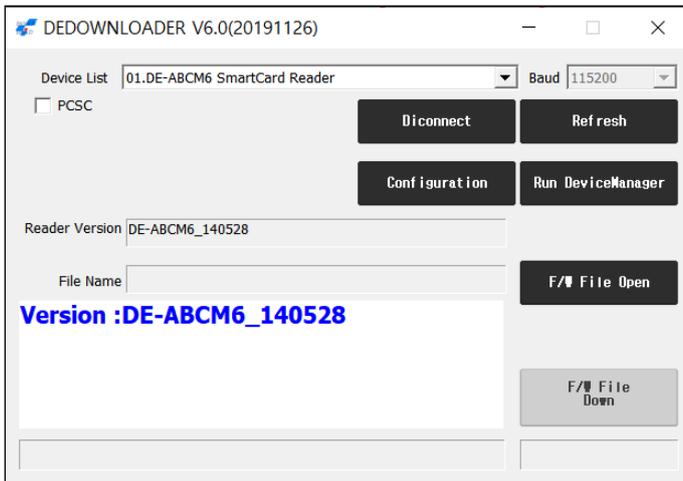
After you click F/W file down, the downloading status will be shown here.

## 2. Vendor Firmware Download

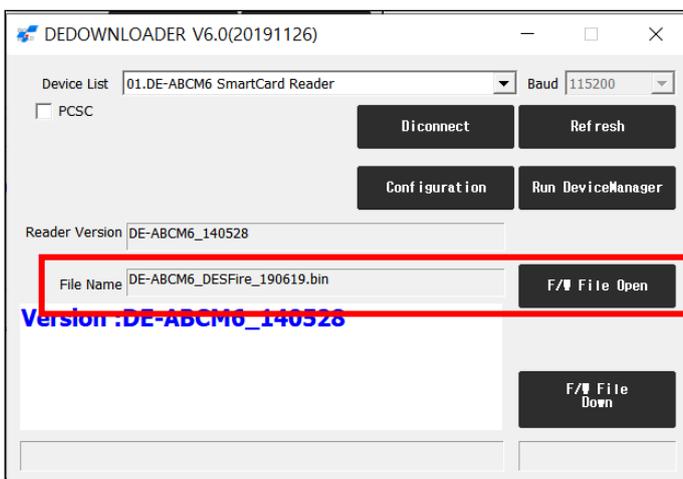
### 2.1 Vendor -> Vender



Connect the reader and click [Connect] button.

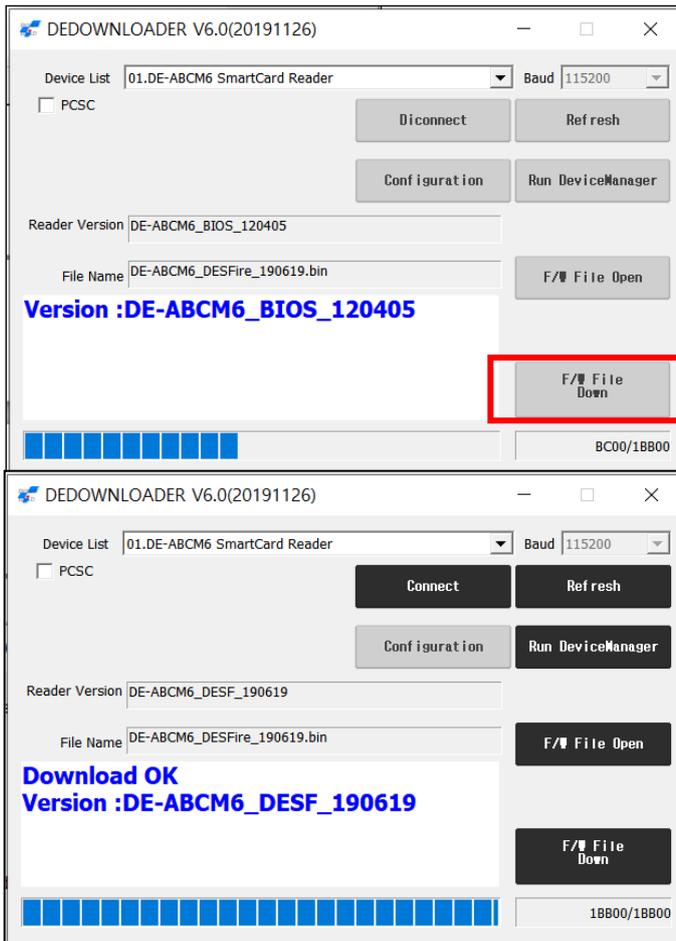


Current firmware version will be displayed



Click [F/W File Open] and select the binary file

Confirm the firmware version to update is correct

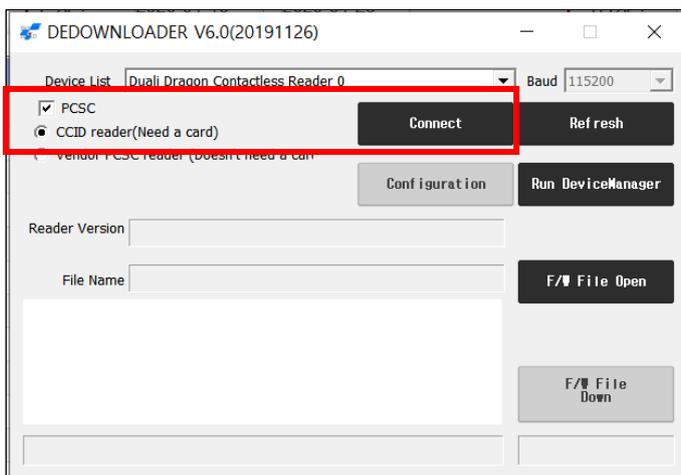


Click [FW File Down] to start updating firmware. The status bar begins to fill to the right

Once the firmware download finished, you'll see this message "Download OK" from message box.

## 2.2 CCID-> VENDOR

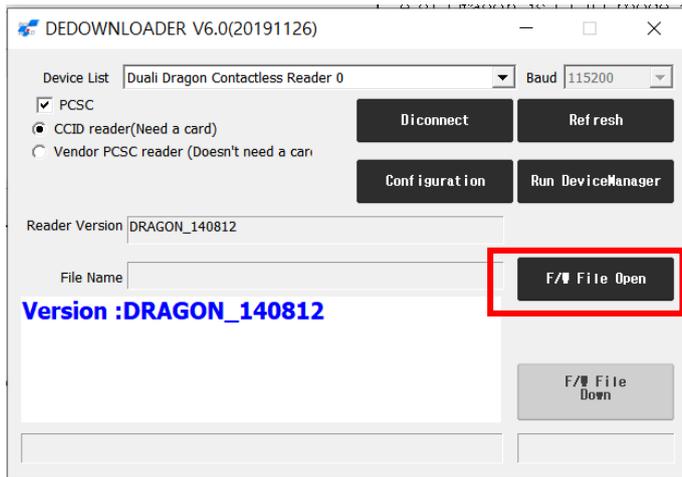
- [Please install DUALi driver before you use the reader as vendor mode before you start firmware update.](#)



Select the [ ]PCSC checkbox and choose current reader mode.

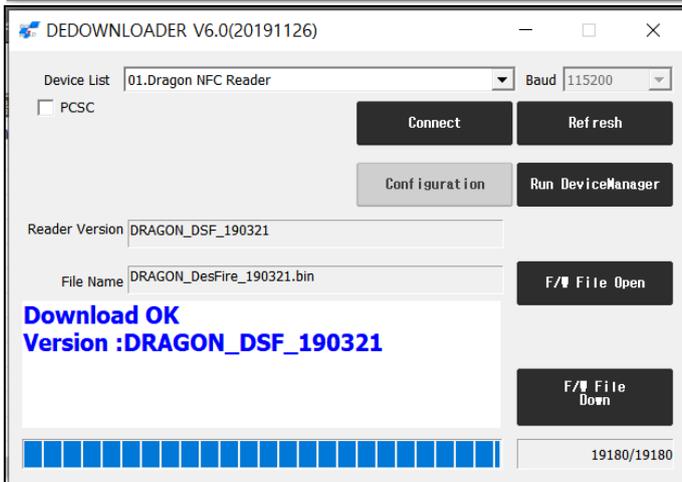
e.g) Dragon is CCID mode as default.

Please any RF card on the reader



It shows current reader firmware version.

Click [F/W File Open] and select the bin file to download.



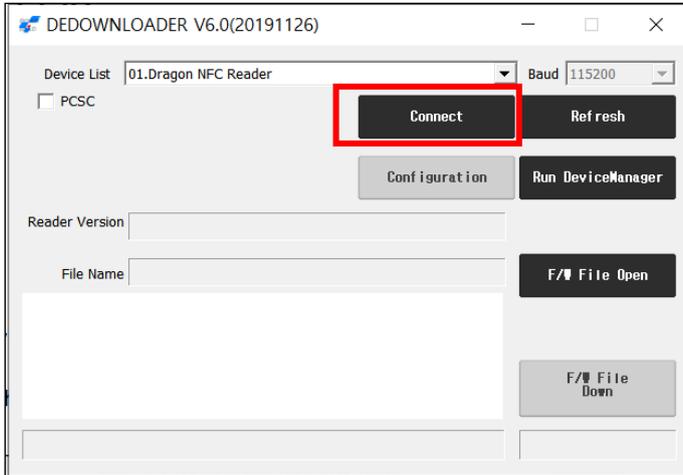
Once the firmware download finished, you'll see this message "Download OK" from message box.

Now the reader is in DUALi vendor mode

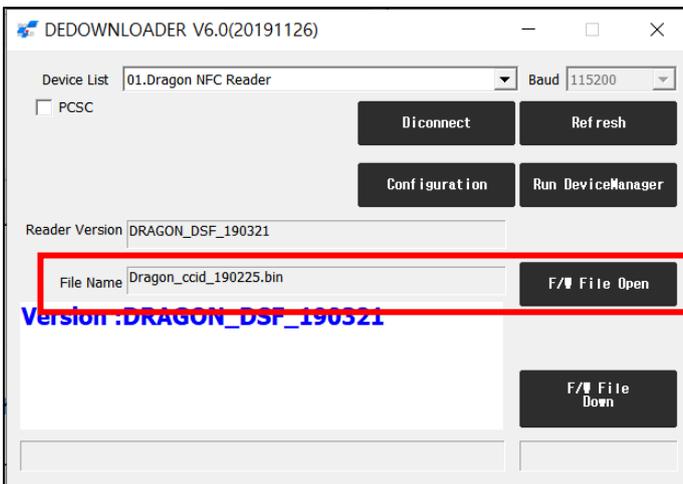
\* For application programming, please refer to Duali RW protocol specification.

### 3. CCID Firmware Download

#### 3.1 Vendor -> CCID



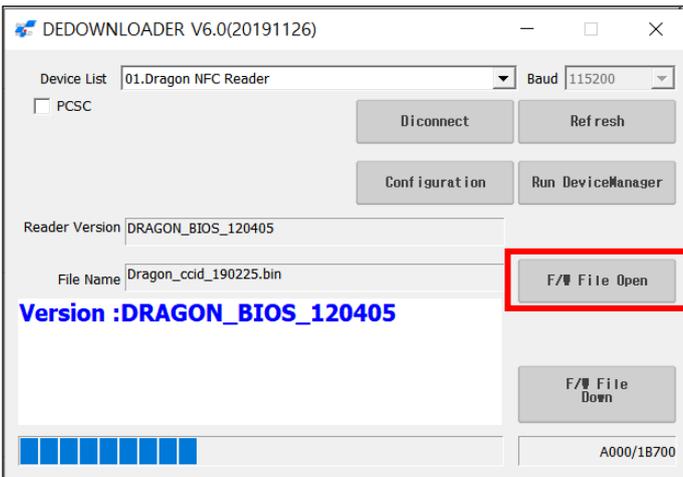
Connect the reader and click [Connect] button.



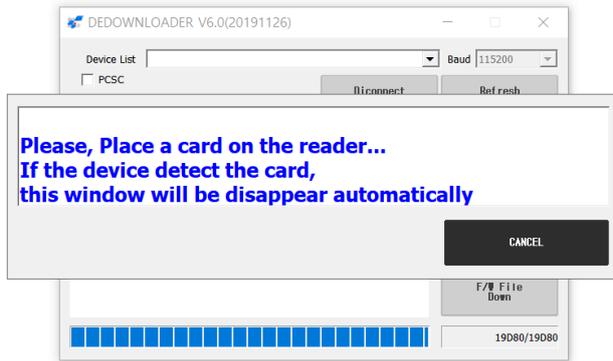
Current firmware version will be displayed

Click [F/W File Open] and select the binary file

Confirm the firmware version to update is correct



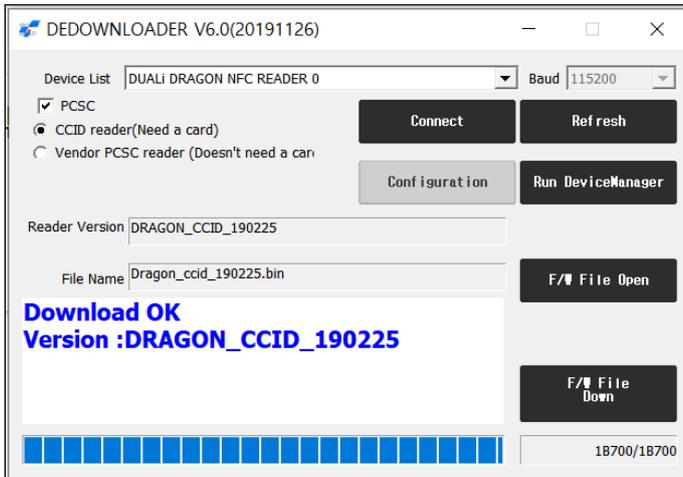
Click [F/W File Down] to start updating firmware. The status bar begins to fill to the right



Once this message pops-up, place any RF card on the reader and wait.

This takes while till it is searching for the ccid driver.

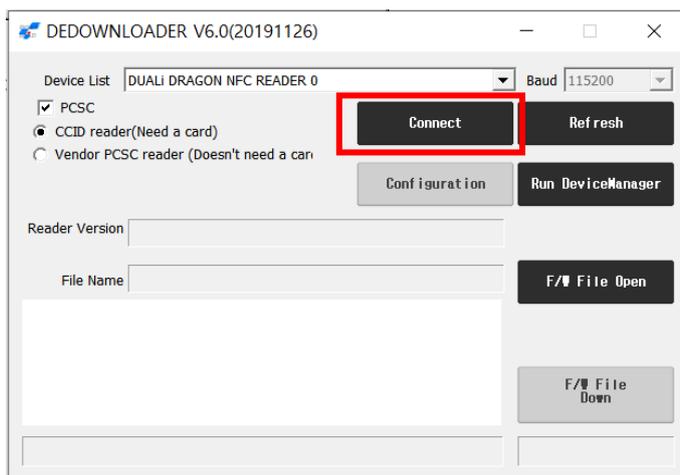
*\*Refer to trouble shooting page, when you face error during this process and lost device.*



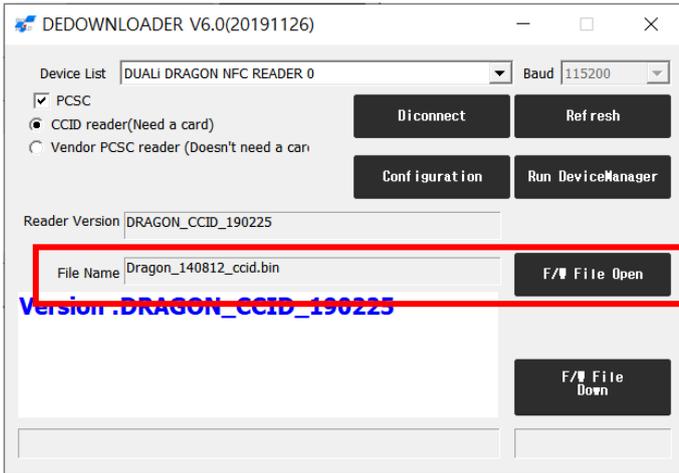
You will see this message "Download OK" from message box

Now the reader is in DUALI CCID mode

### 3.2 CCID -> CCID



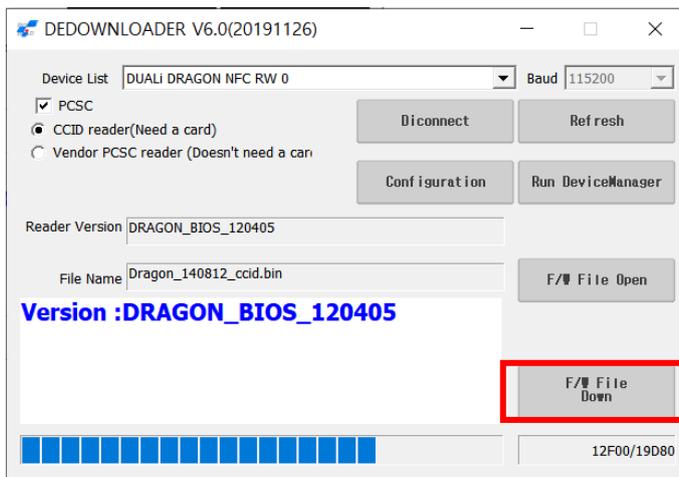
Connect the reader and click [Connect] button.



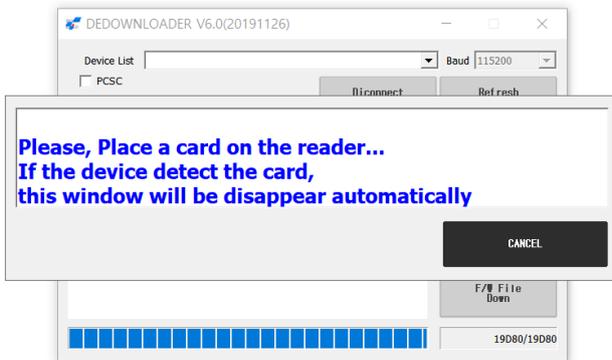
Current firmware version will be displayed

Click [F/W File Open] and select the binary file

Confirm the firmware version to update is correct



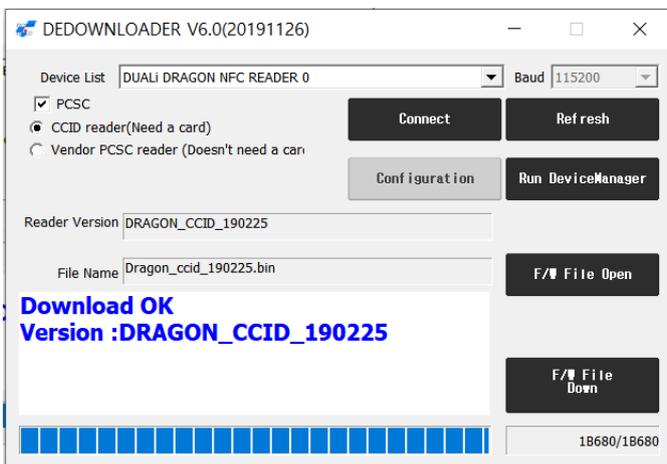
Click [F/W File Down] to start updating firmware. The status bar begins to fill to the right



Once this message pops-up, place any RF card on the reader and wait.

This takes while till it is searching for the ccid driver.

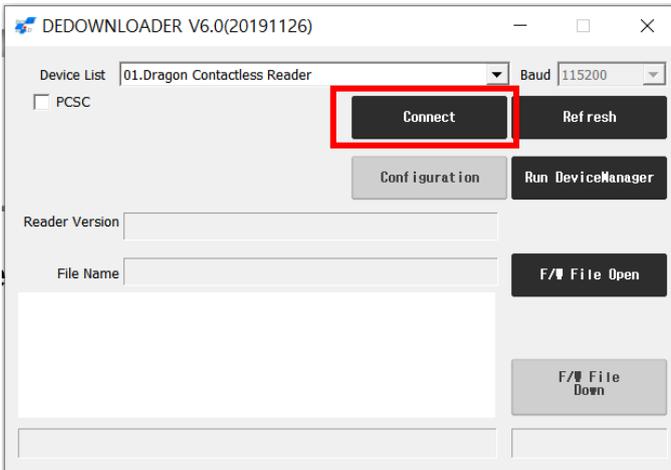
*\*Refer to trouble shooting page, when you face error during this process and lost device.*



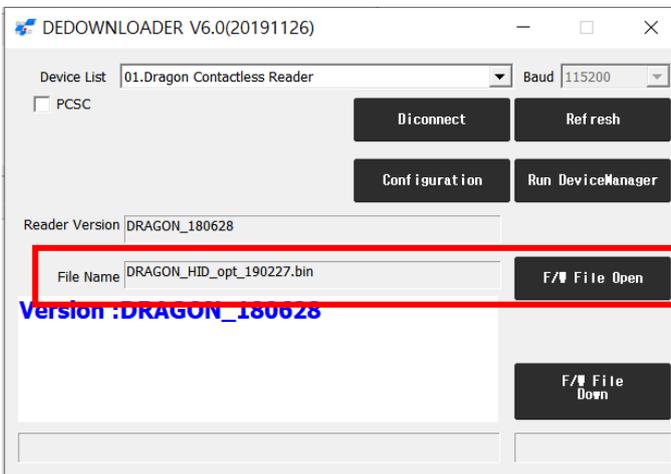
You will see this message "Download OK" from message box

## 4. HID firmware download (Keyboard emulation mode)

### 4.1 Vender -> HID



Connect the reader and click [Connect] button.



Current firmware version will be displayed

Click [F/W File Open] and select the binary file

Confirm the firmware version to update is correct

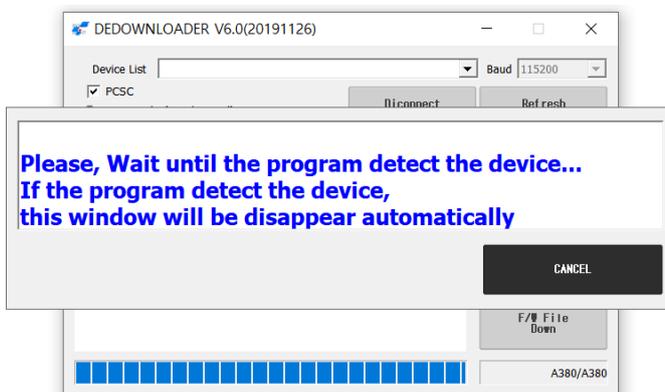
\*Please check with sales representative whether your device support HID mode, and ask for right firmware version.

Click [F/W File Down] to start updating firmware. The status bar begins to fill to the right

Once firmware download completed, the reader buzz twice

In HID (Keyboard emulation mode), PC recognize the reader as keyboard so it's not able to detect on Dedownloader

You will this following message will be displayed in this reason.



```

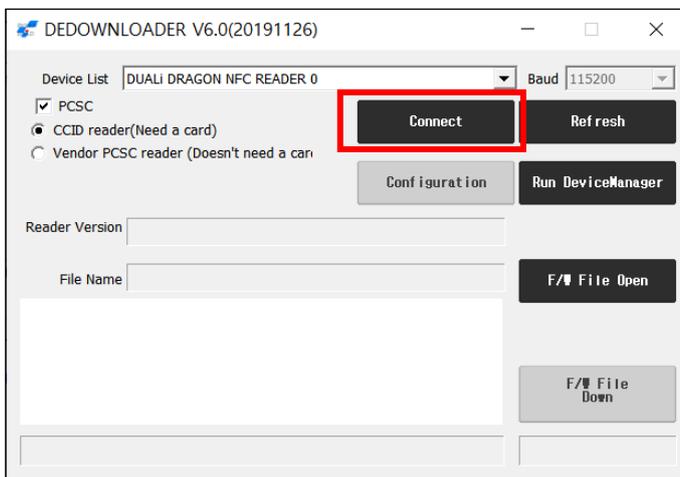
197EEAB1
197EEAB1
197EEAB1
04AC790A
04AC790A
04AC790A
    
```

To check the reader is working correctly,

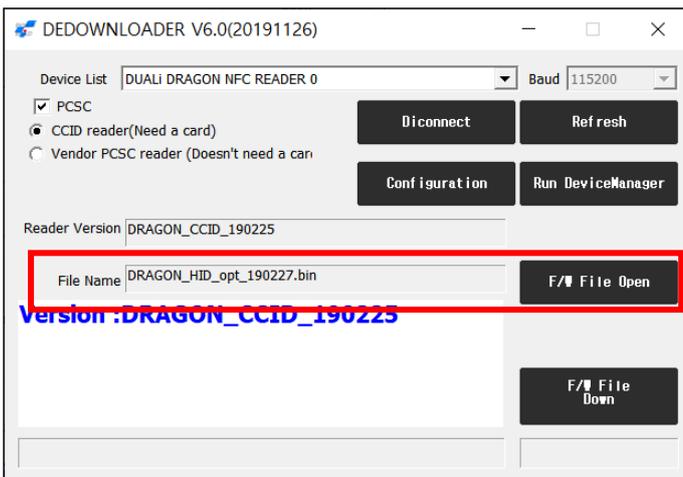
Please open any Notepad/word file, and place Mifare card on the reader. UID of Mifare (or ISO14443 Type A) will be automatically input.

It means the firmware updated successfully and you can use this reader as HID mode.

## 4.2 CCID -> HID



Connect the reader and click [Connect] button.



Current firmware version will be displayed

Click [F/W File Open] and select the binary file

Confirm the firmware version to update is correct

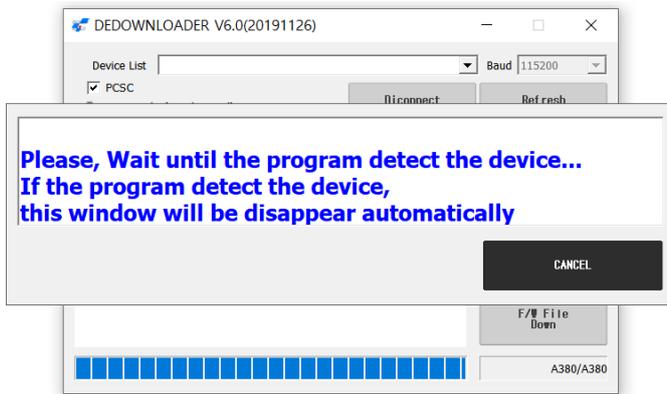
\*Please check with sales representative whether your device support HID mode, and ask for right firmware version.

Click [F/W File Down] to start updating firmware. The status bar begins to fill to the right

Once firmware download completed, the reader buzz twice

In HID (Keyboard emulation mode), PC recognizes the reader as keyboard so it's not able to detect on Dedownloader

You will this following message will be displayed in this reason.



```
197EEAB1
197EEAB1
197EEAB1
04AC790A
04AC790A
04AC790A
```

To check the reader is working correctly,

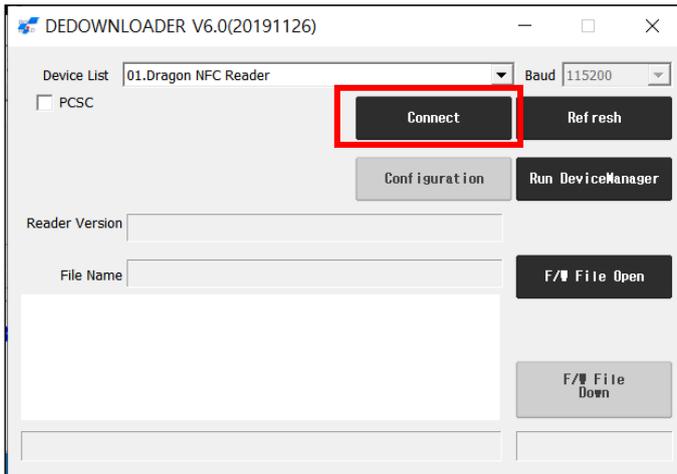
Please open any Notepad/word file, and place Mifare card on the reader. UID of Mifare (or ISO14443 Type A) will be automatically input.

It means the firmware updated successfully and you can use this reader as HID mode.

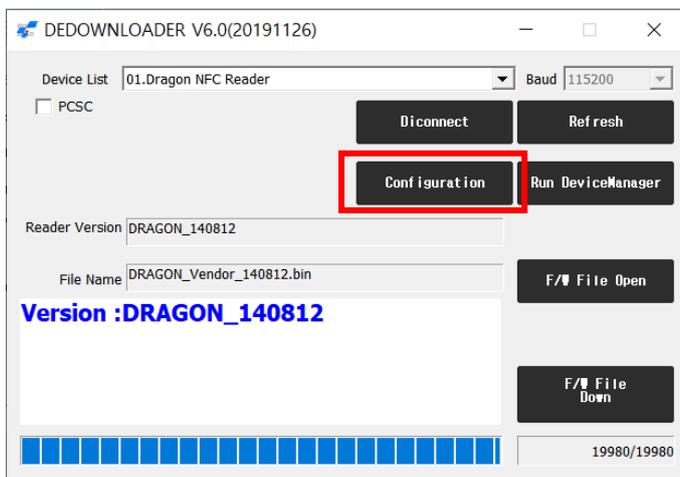
- When DUALi reader is in HID mode, it can not be controlled from DeDownloader or Dualcard program.

Please use DeDownloader\_HID.exe program for configuration setting or to downloader back to Vendor / CCID firmware.

## 5. Configuration



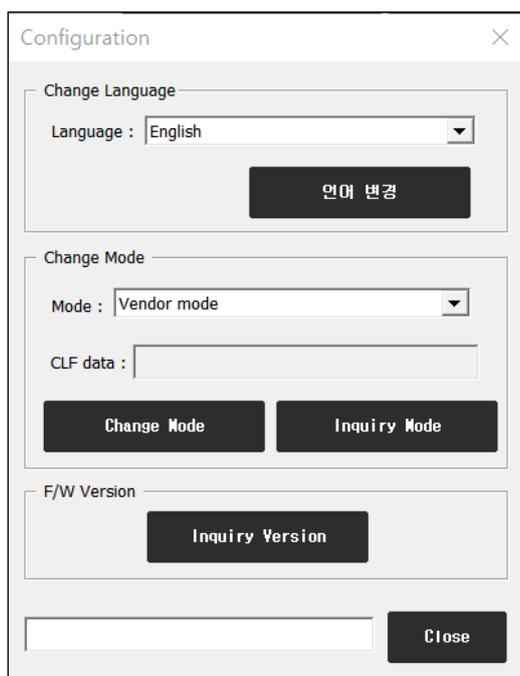
Connect the reader and click [Connect] button.



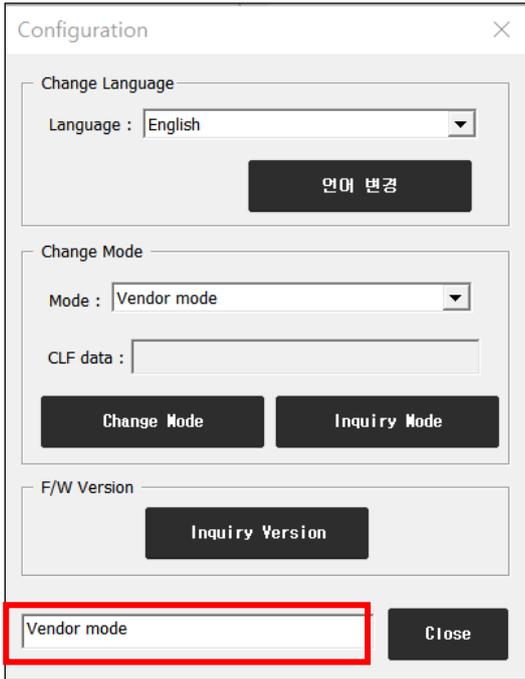
DUALi reader vendor firmware support both vendor (Proprietary) and PC/SC protocol.

You can simply change mode without firmware update.

Click [Configuration]



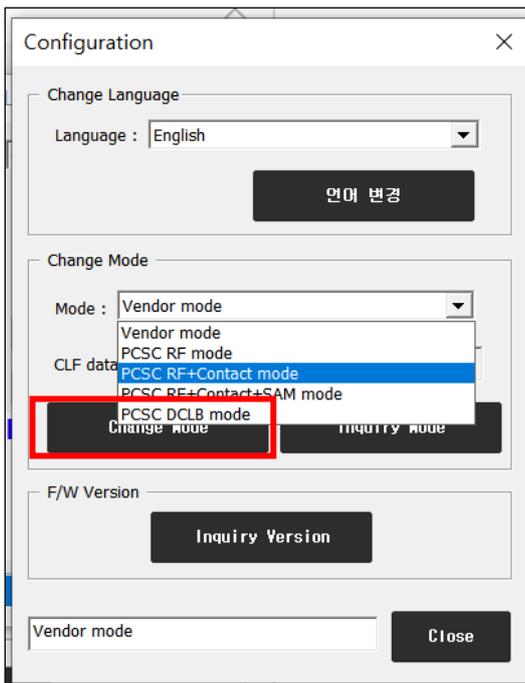
Click [Inquiry Version] to check current mode of connected reader



Connected reader's mode is displayed here.

DUALI vendor mode

\* For application programming, please refer to Duali RW protocol specification.



To use PC/SC protocol, please select from the list and click [Change Mode]

e.g) Dragon : select PCSC RF mode

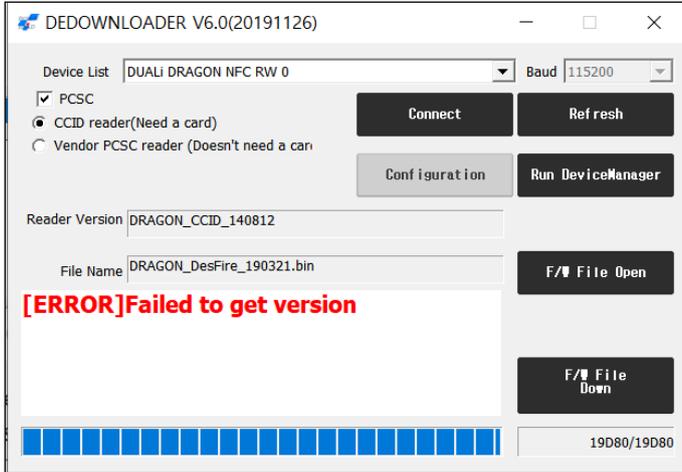
DE-620 : select PSCS RF +Contact mode

In case to use SAM for secure communication , select PCSC RF + Contact + SAM mode

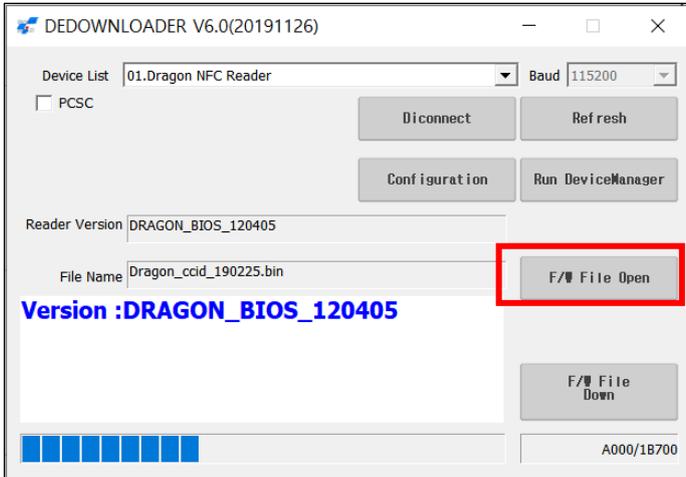
Wait until PC/SC driver is installing in the PC. (Driver installation needs only one time for each PC)

## 6. Trouble Shooting

While you're lost the reader during firmware update process, the reader can be on bios mode. Please follow the step to complete firmware update.



- 1) Disconnect the reader from PC and connect again
- 2) Execute DeDownloader and click [Refresh] button to find device name.
- 3) If device name showing, please [Connect]



Click [F/W File Down] to start updating firmware. The status bar begins to fill to the right

Refer to the above guide, complete the process.