

MU Firmware Upgrading Instructions

Morpx.Inc

V1.0

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Dfu-util

Dfu-util Device Firmware Upgrade Utilities is an open-source software which support multi-platforms. It is easy to upgrade your micro controller unit's firmware via dfu-util on different OS. Visit dfu-util's official website for more details:

<http://dfu-util.sourceforge.net>

Windows

1.1 Download "Firmware" which you would like to install from Morpx.com:

<http://store.morpx.com/article.php?id=72>

1.2 Download "dfu-util" from Morpx.com or dfu-util's official website:

<http://www.morpx.com/.....>

Release the ZIP file to your folder, ect. "desktop>dfu-util-0.9-win64".

1.3 Download Zadig software. Zadig is a Windows open-source application that installs generic USB drivers which help MU to access computers. Zadig can be download from Morpx.com or Zadig official website:

地址 <http://www.morpx.com/.....>。

地址: <http://zadig.akeo.ie>

1.4 Connect your MU to computer via an USB cable. Hold on the Mode button (1) (Do Not release) and then press the Power button (2), the MU's eyes are blinking green lights, which means it is in the DFU mode. Release the Mode button.

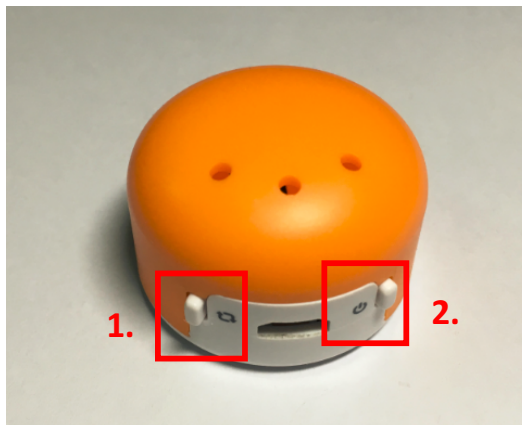


fig1. Power and Mode Buttons of Mu

1.5 Run Zadig.exe

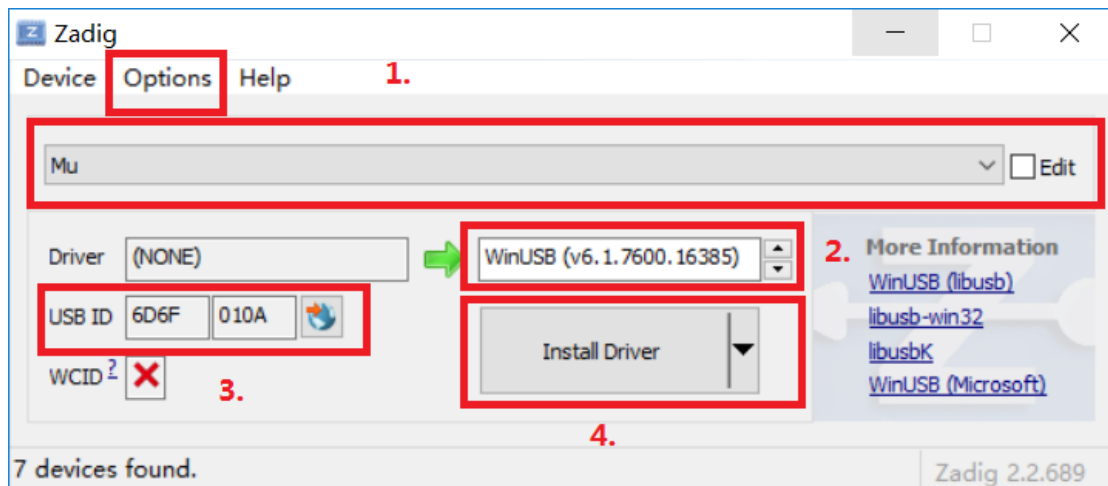


Fig2.Zadig interface

- 1.6 (1) Click “Options>List all devices” on the top of the menu bar and select “MU” in the drop-down menu;
- (2) Select “WinUSB” for the Driver;
- (3) Check the USB ID, should be “6D6F 010A”;
- (4) Click “Install Driver” button. It will show “Driver installed successfully” if it is successful.

1.7 Launch the Windows terminal tool “cmd.exe”

Method 1: Press “Windows + R” combination on the keyboard to open the “Run.exe”. Input “cmd” and click “OK”.

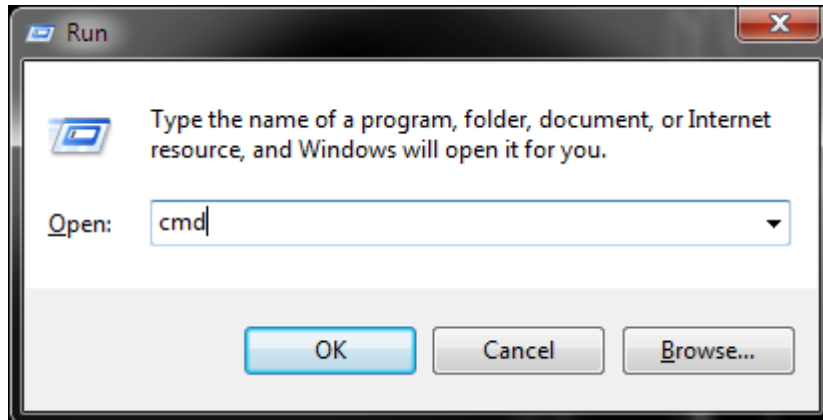


Fig3. Method 1

Method 2: Open the “Windows Start Menu”. Input “cmd” in the search box and strike the “Return” key.

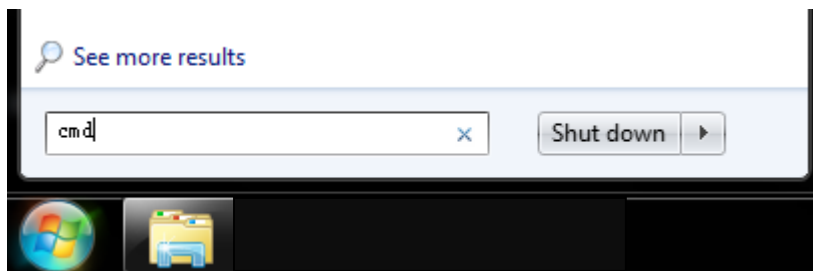
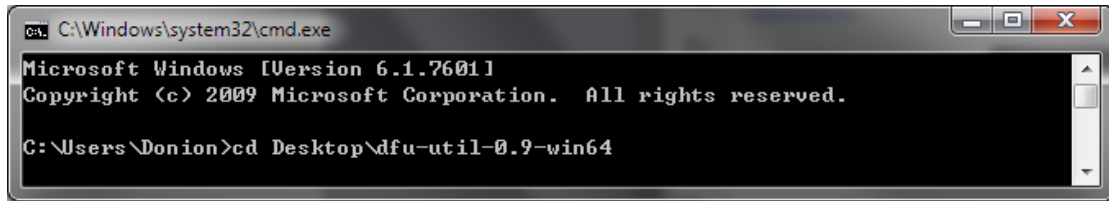


Fig4. Method 2

1.8 Input "cd xxx\dfu-util-0.9-win64" command in the terminal, xxx is the path of dfu-util folder.

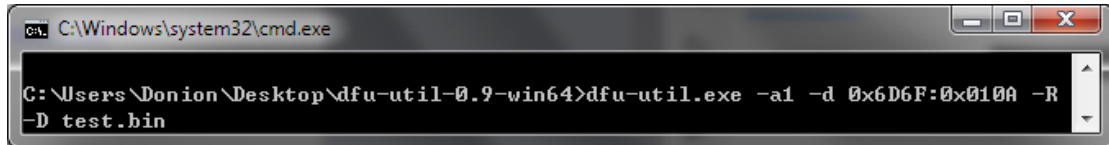


```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Donion>cd Desktop\dfu-util-0.9-win64
```

Fig5. Input the folder path

1.9 Follow step 1.4 to set MU to the dfu mode. Enter the following command in the terminal:
dfu-util.exe -a1 -d 0x6D6F:0x010A -R -D xxx\xxx\yyyy.bin



```
C:\Windows\system32\cmd.exe

C:\Users\Donion\Desktop\dfu-util-0.9-win64>dfu-util.exe -a1 -d 0x6D6F:0x010A -R
-D test.bin
```

Fig 6: Input the command

dfu-util.exe is the application name.

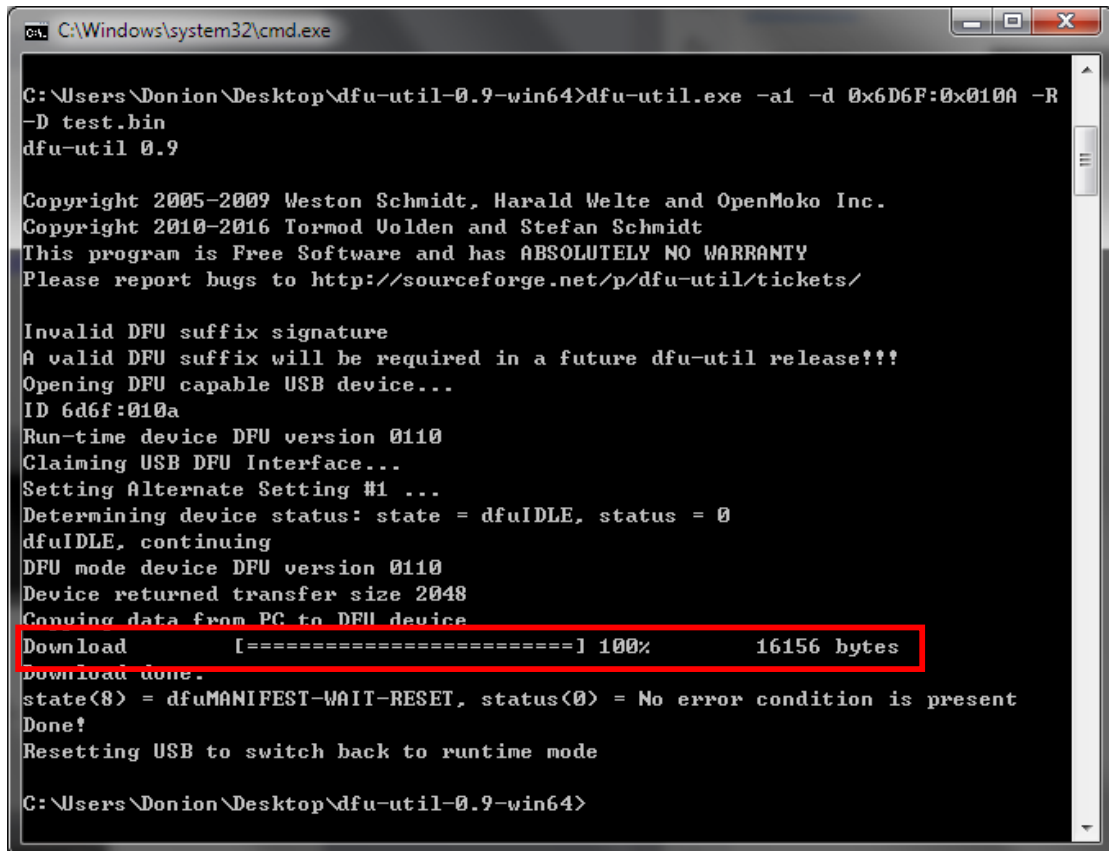
0x6D6F:0x010A is the MU's USB ID.

-D is Download command, download data from PC to Mu.

xxxx\xxxx the path of the firmware folder. It is unnecessary if the firmware is in the same folder with dfu-util.

yyyy.bin is the name of firmware.

1.10 As is shown in the Fig7, the firmware is being downloaded to the MU and is completed when the progress bar is up to 100%.



```
C:\Windows\system32\cmd.exe

C:\Users\Donion\Desktop\dfu-util-0.9-win64>dfu-util.exe -a1 -d 0x6D6F:0x010A -R
-D test.bin
dfu-util 0.9

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Please report bugs to http://sourceforge.net/p/dfu-util/tickets/

Invalid DFU suffix signature
A valid DFU suffix will be required in a future dfu-util release!!!
Opening DFU capable USB device...
ID 6d6f:010a
Run-time device DFU version 0110
Claiming USB DFU Interface...
Setting Alternate Setting #1 ...
Determining device status: state = dfuIDLE, status = 0
dfuIDLE, continuing
DFU mode device DFU version 0110
Device returned transfer size 2048
Copying data from PC to DFU device
Download [=====] 100% 16156 bytes
download done.
state(8) = dfuMANIFEST-WAIT-RESET, status(0) = No error condition is present
Done!
Resetting USB to switch back to runtime mode

C:\Users\Donion\Desktop\dfu-util-0.9-win64>
```

Fig7. Upgrading

1.11 MU will be shut down automatically when the upgrade is completed. Otherwise, you can insert something slender like wire or paper clip to the reset hole at the bottom of the Mu to reset it manually.

1.12 When the firmware upgrade is finished, turn on the MU and enjoy it!

Mac OS

2.1 Open “Launchpad > other > Terminal”

2.2 It is easy to install dfu-util by the “brew” tool in the Mac OS. Enter the command “sudo brew install dfu-util” and user password in the terminal. The software will be downloaded automatically.

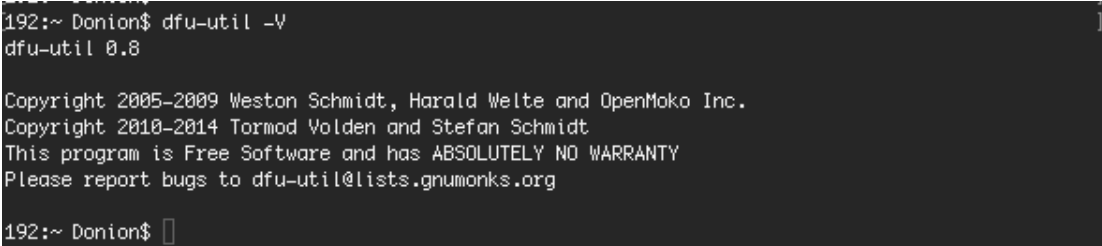
A terminal window titled "Donion" with a window size of "97x23". The terminal shows the command "brew install dfu-util" and its output. The output includes: "Installing dependencies for dfu-util: pkg-config, libusb", "Installing dfu-util dependency: pkg-config", "Downloading http://pkgconfig.freedesktop.org/releases/pkg-config-0.28.tar.gz", "make", "make check", "make install", "Installing dfu-util dependency: libusb", "Downloading https://downloads.sourceforge.net/project/libusb/libusb-1.0/libu", "make install", "Installing dfu-util", "Downloading http://ftp.de.debian.org/debian/pool/main/d/dfu-util/dfu-util_0.", "make install". The terminal ends with the prompt "192:~ Donion\$".

```
192:~ Donion$ brew install dfu-util
[=> Installing dependencies for dfu-util: pkg-config, libusb
[=> Installing dfu-util dependency: pkg-config
[=> Downloading http://pkgconfig.freedesktop.org/releases/pkg-config-0.28.tar.gz
##### 100.0%
[=> ./configure --prefix=/usr/local/Cellar/pkg-config/0.28 --disable-host-tool -
[=> make
[=> make check
[=> make install
[+] /usr/local/Cellar/pkg-config/0.28: 10 files, 600K, built in 2.5 minutes
[=> Installing dfu-util dependency: libusb
[=> Downloading https://downloads.sourceforge.net/project/libusb/libusb-1.0/libu
##### 100.0%
[=> ./configure --prefix=/usr/local/Cellar/libusb/1.0.19
[=> make install
[+] /usr/local/Cellar/libusb/1.0.19: 11 files, 324K, built in 23 seconds
[=> Installing dfu-util
[=> Downloading http://ftp.de.debian.org/debian/pool/main/d/dfu-util/dfu-util_0.
##### 100.0%
[=> ./configure --prefix=/usr/local/Cellar/dfu-util/0.8
[=> make install
[+] /usr/local/Cellar/dfu-util/0.8: 10 files, 136K, built in 7.1 minutes
192:~ Donion$
```

Fig8. Install dfu-util via brew tool

2.3 Input the following command to check the version of dfu-util. Dfu-util is installed successfully if the terminal returns the version message.

dfu-util -V

A terminal window showing the command "dfu-util -V" and its output. The output is "dfu-util 0.8" followed by a copyright notice: "Copyright 2005-2009 Weston Schmidt, Harald Welte and OpenMoko Inc. Copyright 2010-2014 Tormod Volden and Stefan Schmidt. This program is Free Software and has ABSOLUTELY NO WARRANTY. Please report bugs to dfu-util@lists.gnumonks.org". The terminal ends with the prompt "192:~ Donion\$".

```
192:~ Donion$ dfu-util -V
dfu-util 0.8

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192:~ Donion$
```

Fig9. Check the dfu-util version

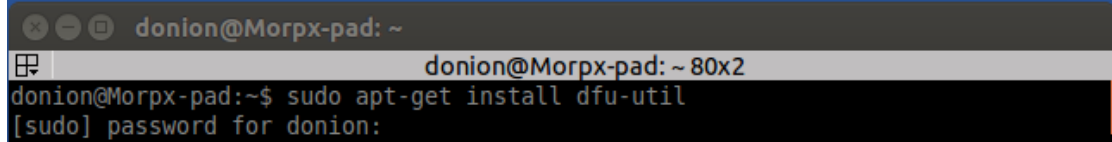
2.4 Connect your MU to the computer and set it to the Dfu mode as shown in the step 1.4. Input the following command to upgrade your Mu:

dfu-util -a1 -d 0x6D6F:0x010A -R -D xxx\xxx\yyyy.bin

Linux Ubuntu

3.1 Open the terminal.

3.2 Enter the command “sudo apt-get install dfu-util” and user password to download the software automatically which is the same as Mac OS.



```
donion@Morpx-pad: ~  
donion@Morpx-pad:~$ sudo apt-get install dfu-util  
[sudo] password for donion:
```

Fig10. Install dfu-util

3.3 check the version by the command “dfu-util -V”.

3.4 Connect your MU to the computer and set it to the Dfu mode as shown in the step 1.4. Input the following command to upgrade your Mu:

```
dfu-util -a1 -d 0x6D6F:0x010A -R -D xxx\xxx\yyyy.bin
```

You can add “sudo” in front of the command if it doesn’t work:

```
sudo dfu-util -a1 -d 0x6D6F:0x010A -R -D xxx\xxx\yyyy.bin
```

SN Retrieve

Each MU has an unique SN(Serial Number) on the bottom of the package. SN is the certificate to upgrade firmware and to get the technical support from Morpx. The dfu-util software can help you to find the SN back if you lost your shipping box.

4.1 Connect your MU to the computer and set it to the Dfu mode as shown in the step 1.4.

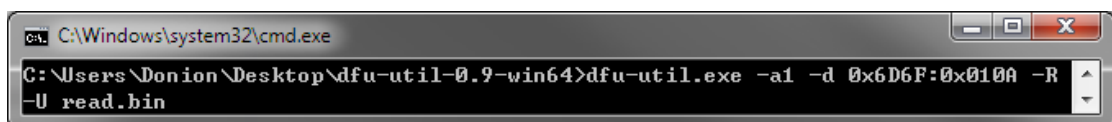
4.2 Open the terminal and enter the following command to read the information of your Mu:

Windows:

```
dfu-util.exe -a1 -d 0x6D6F:0x010A -R -U xxx/xxx/yyyy.bin
```

Mac OS & Linux Ubuntu

```
dfu-util -a1 -d 0x6D6F:0x010A -R -U xxx\xxx\yyyy.bin
```



```
C:\Windows\system32\cmd.exe  
C:\Users\Donion\Desktop>dfu-util-0.9-win64>dfu-util.exe -a1 -d 0x6D6F:0x010A -R  
-U read.bin
```

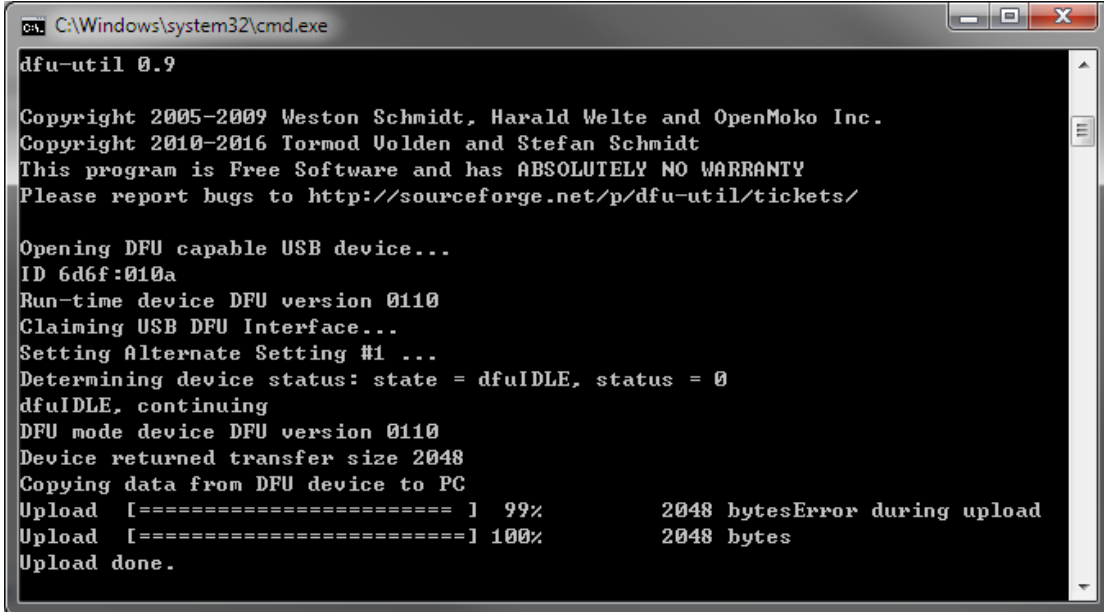
Fig11. Input command

-U is Upload data from MU to computer and save the information to “xxx\xxx\yyyy.bin” file.

xxx\xxx\ is the location of the yyyy.bin. You can choose it wherever you like.

yyyy.bin is the upload file name, you can rename the file, but the file suffix must be “.bin”

4.4 Press "Return" key to upload the information to PC and save it to yyyy.bin.



```
C:\Windows\system32\cmd.exe
dfu-util 0.9

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Opening DFU capable USB device...
ID 6d6f:010a
Run-time device DFU version 0110
Claiming USB DFU Interface...
Setting Alternate Setting #1 ...
Determining device status: state = dfuIDLE, status = 0
dfuIDLE, continuing
DFU mode device DFU version 0110
Device returned transfer size 2048
Copying data from DFU device to PC
Upload [===== ] 99%          2048 bytesError during upload
Upload [=====] 100%         2048 bytes
Upload done.
```

Fig12. Read the MU's information

4.5 You need to reset your MU manually if it is not shut down automatically. Use the same step as step 1.11.

4.6 Upload the "yyyy.bin" file to Morpx.com to activate your MU and get better support.

<http://www.morpx.com/....>

DECLARATION: Dfu-util and Zadig which are mentioned in the doc are third party free open-source software. Morpx uses the software only for the firmware upgrading. Please use Morpx.com supported firmwares to upgrade your MU. It may be NOT working or damage your MU if you download other third party firmware into it.