#### 아래 프로그램을 설치 합니다.

#### STM 사이트에 가셔서 검색 하시면 됩니다.

#### http://www.st.com/

#### STSW-STM32080 으로 검색

http://www.st.com/web/catalog/tools/FM147/CL1794/SC961/SS1533/PF257916?s\_searchtype=partnumber

STSW-STM32063	STM32F2xx in-application programming using the USART (AN3374)
STSW-STM32080	DfuSe USB device firmware upgrade STMicroelectronics extension: contains the demo GUI, debugging GUI, all sources files and the protocol layer (UMD412)
STSW-STM32090	Clock configuration tool for STM32F2xx microcontrollers (AN3362)

Тор

#### Get Software

Part Number	Version	Marketing Status	Order From ST
ST SW-STM32080	3.0.3	Active	Download

#### 버전이 3.0.3 이네요.

#### 설치하면 시작에 아래와 같이 설치 되어 있습니다. (버전마다 틀릴 수 있습니다.)

이듬	수성한 날싸	<sup>H</sup> 영	크기
DfuSe_Demo_V3.0.3_Setup	2011-12-25 오후	응용 프로그램	9,575KB
DfuSe_Demo_V3.0.3_Setup_amd64	2011-12-25 오후	응용 프로그램	9,575KB
🔁 MCD-ST Liberty SW License Agreement	2011-11-16 오후	Adobe Acrobat D	18KB
📄 readme	2011-11-20 오후	Text Document	4KB
version	2011-11-20 오후	Text Document	5KB

#### 64bit 운영체제는 Dfusexx\_amd64.exe를 설치하면 됩니다.



DFU File Manager -> 우리가 writing 하는 hex 파일을 dfu 파일로 변환하는 툴 DfuSe Demonstration -> USB 로 라이팅 하게 해주는 툴 STDFU Tester -> DFU Test 프로그램



#### MangoF2 아래 사진의 빨간색 박스를 아래로 합니다.



### 전원을 넣고 USB mini 케이블을 연결 합니다. 장치 관리자에서 범용 직렬 버스 콘트롤러에서 아래와 같이 STM Device in DFU Mode 를 확인합니다.



#### DFU File Manager를 실행 합니다.



#### OK를 누릅니다.

😭 DFU File Manager (v	3.0.2) - Generation
Vendor ID 0x 0495 Product ID 0x 0000 Version 0x 0000	Images       Injection       Target ID:       0 <u>S</u> 19 or Hex       Multi BIN       Target Name:       ST
	Deletion     Delete selected Image       Generate     Cancel

빨간 박스를 눌러서 변환하려는 파일을 선택 합니다.(변환하려는 파일이 bin 이면 bin을 눌러야 합니다.)

😭 DFU File Manager (v	v3.0.2) - Generation
Vendor ID 0x Product ID 0x 0000 Version 0x 0000	Images         Injection         Target ID:       0         S19 or Hex       Multi BIN         Target Name:       ST         Deletion       Delete selected Image         Generate       Cancel

# 파일 형식을 hex 로 변경합니다.

i 😭 I	DFU File Manage		
월기	Vendor ID 0x 0483 Product ID 0x 0000 Version 0x 0000	Images Injection Target ID: 0 <u>S</u> 19 or Hex	Multi BIN
찾는 위치(!): 내 최근 문서 나당 화면 나당 화면 내 문서 내 컴퓨터	i MangoF2 imango-m32f2_12 imap	▼ 🖻 🕂 🛿	
내 네트워크 환경	파일 이름( <u>N</u> ): 파일 형식( <u>T</u> ):	*,s19 s19 Files (*,s19) s19 Files (*,s19) hex Files (*,hex)	열기( <u>0</u> ) 취소

## 파일 선택 후 빨간 박스 Generate 를 누릅니다.

😭 DFU File Manager (vi	3.0.2) - Generation
Vendor ID 0x 0483 Product ID 0x 0000 Version 0x 0000	Images         Image for Alternate Setting 00 (ST)         Injection         Target ID:       0         S19 or Hex       Multi BIN         Target Name:       ST
	Deletion       Delete selected Image       Generate

## 성공하면 아래와 같이 팝업창이 뜹니다.

😭 DFU File	Manager (v3.0.3)	- Generation	Terms at loss	L	
Device—		⊢lmages			
	DfuFileMgr			×	
Vendor I					
Product I	🔔 Succ	cess for 'Image fo	or Alternate Setting	00 (ST)' !	BIN
Versio					
				확인	
	L,				mage
				Generate	Cancel
			-		

DfuSe Demonstration 을 실행 합니다.(각 설명은 UM0412.pdf 파일을 참조 합니다.)

DfuSe Demo     Available DFU and c     STM Device in DFU     Supports Upload     Supports Downl     Can Detach     Enter <u>D</u> FU mode/H	(V3. D. 2) compatible HID Devices J Mode d Manifesta oad Acceleral IID detach Leave	ation tolerant ted Upload (ST)	Application Mode: Vendor ID: Procuct ID: Version:	DFU Mode: Vendor ID: 0483 Procuct ID: DF11 Version: 2200
Actions Select <u>T</u> arget(s):	Target IdName00Internal FI01Option By02OTP Merr03Device Fe	ash tes iory sature	Available Sectors (D 12 sectors 1 sectors 2 sectors 1 sectors	ouble Click for more)
Upload Action File: <u>C</u> hoose Transferred data si	<u>U</u> pload	Upgrade or Va File: Vendor ID: Procuct ID: Version:	Targets in file:	
0 KB(0 Bytes) of 0 Operation duration 00	KB(0 Bytes) :00:00	Verify afte	er download Upgrade duration (Remove	some FFs) 
Abort				Quit

빨간 박스 위 Choose를 누릅니다.

🧼 DíuSe Demo (v3.0.2)	
Available DFU and compatible HID Devices STM Device in DFU Mode Supports Upload Manifesta Supports Download Accelerate Can Detach Enter DFU mode/HID detach Leave	Application Mode: Vendor ID: DFU Mode: Vendor ID: Vendor ID: 0483 Procuct ID: Procuct ID: DF11 Version: Version: 2200
Actions Select Iarget(s): Target Id Name 00 Internal Fla 01 Option Byt 02 OTP Mem 03 Device Fe	Available Sectors (Double Click for more)           Flash         12 sectors           ytes         1 sectors           mory         2 sectors           Feature         1 sectors
Upload Action File: <u>Choose</u> <u>Upload</u> Transferred data size	Upgrade or Verify Action       File:       Vendor ID:       Targets in file:       Procuct ID:       Version:
0 KB(0 Bytes) of 0 KB(0 Bytes) Operation duration 00:00:00	□ Verify after download         □ Optimize Upgrade duration (Remove some FFs)         Choose       Upgrade
Abort	Quit

변환 했던 파일을 선택 후 열기를 합니다.

🧼 DfuSe Demo (	(v3.0.2)					3
Available DFU and c	ompatible HID Devices					
STM Device in DFU	Mode	•	Application Mode:		ode:	
Supports Upload	l 🔲 Manifesta pad 🔲 Accelerati	tion tolerant ed Upload (ST)	Vendor ID:	Procuct	ID: 0483	
Enter <u>D</u> FU mode/H	ID detach Leave	DFU mode			1. 2200	
월기						? 🗙
찾는 위치([):	🗀 MangoF2			• • •	- 🖬 🏪	
내 최근 문서	i mango-m32f2_` i Map i 1, dfu i 2, dfu	120612_1731_u	sbdev-vcp			
내 문서 🧊 내 컴퓨터						
내 네트워크 환경	파일 이름( <u>N</u> ): 파일 형식( <u>T</u> ):	2,dfu Dfu Files (*, 읽기 전용	dfu) 으로 열기( <u>B</u> )		•	열기( <u>0</u> ) 취소

아래와 같은 화면을 볼 수 있습니다.

🧼 DfuSe Demo (v3.0.2)
Available DFU and compatible HID Devices          STM Device in DFU Mode <ul> <li>Manifestation tolerant</li> <li>Supports Download</li> <li>Accelerated Upload (ST)</li> <li>Can Detach</li> <li>Enter DFU mode/HID detach</li> <li>Leave DFU mode</li> </ul> Application Mode:     Vendor ID:     Vendor ID:     Vendor ID:     Vendor ID:     0483     Procuct ID:     DFU Mode:     Vendor ID:     0483     Procuct ID:     DF11     Version:     2200     Version:     2200     Version:     2200     Version:     2200     Version:     2200     Version:     2200     Version:     200     Version:     Version:     200     Version:     200     Version:     200     Version:     200     Version:     Version:
Actions       Select Iarget(s):       Target Id       Name       Available Sectors (Double Click for more)         00       Internal Flash       12 sectors         01       Option Bytes       1 sectors         02       OTP Memory       2 sectors         03       Device Feature       1 sectors
Upload Action       Upgrade or Verify Action         File:       2.dfu         Choose       Upload         Transferred data size       Version:         O000         Version:       0000
0 KB(0 Bytes) of 0 KB(0 Bytes)       Verify after download         Operation duration       Optimize Upgrade duration (Remove some FFs)         00:00:00       Choose
File correctly loaded.       Abort     Quit

Upgrade 를 누릅니다.

🧼 DiuSe Demo (v3.0.2)
Available DFU and compatible HID Devices         STM Device in DFU Mode         Supports Upload         Manifestation tolerant         Supports Download         Accelerated Upload (ST)         Can Detach         Enter DFU mode/HID detach
Actions       Select Iarget(s):       Target Id       Name       Available Sectors (Double Click for more)         00       Internal Flash       12 sectors         01       Option Bytes       1 sectors         02       OTP Memory       2 sectors         03       Device Feature       1 sectors
Upload Action       Upgrade or Verify Action         File:       2.dfu         Choose       Upload         Transferred data size       Version:         0000         ST
0 KB(0 Bytes) of 0 KB(0 Bytes)       Image: Verify after download         Operation duration       Image: Optimize Upgrade duration (Remove some FFs)         00:00:00       Image: Choose         Upgrade       Verify
File correctly loaded.       Abort     Quit

아래 화면을 볼 수 있습니다.

Available DFU and compatible HID Devices         Supports Upload       Manifestation tolerant         Supports Download       Accelerated Upload (ST)         Can Detach       Leave DFU mode         Procuct ID:       Version:         Version:       2200    Actions Select [arget(s):          Target Id       Name         Otions       0         Internal Flash       12 sectors         01       Option Bytes       1 sectors         02       OTP Memory       2 sectors         03       Device Feature       1 sectors         15 KB(15988 Bytes) of 15 KB(15988       Version:       00         Bytes)       0ptinze Upgrade duration       0000         Optimize Upgrade duration       0000       St         02.00102       Version:       0000	🧼 DiuSe Demo (vä.l.2)
00       Interior Hash       12 sectors         01       Option Bytes       1 sectors         02       OTP Memory       2 sectors         03       Device Feature       1 sectors         Upload Action       File:       2 du         Choose       Upgrade or Verify Action       File:         Choose       Upload       Vendor ID:       0483         Transferred data size       Procuct ID:       0000       ST         15 KB(15988 Bytes) of 15 KB(15988       Version:       0000       ST         0peration duration       00:00:02       Optimize Upgrade duration (Remove some FFs)       Chgose         Chogose       Upgrade       Verify	Available DFU and compatible HID Devices         Image: Strippide in DFU Mode         Image: Supports Upload       Manifestation tolerant         Image: Supports Download       Manifestation tolerant         Image: Supports Download       Accelerated Upload (ST)         Image: Supports Download       Accelerated Upload (ST)         Image: Supports Download       Accelerated Upload (ST)         Image: Supports Download       Leave DFU mode         Image: Support Download       Leave DFU mode
Upload Action File: <u>Choose</u> <u>Upload</u> <u>Transferred data size</u> 15 KB(15988 Bytes) of 15 KB(15988 Bytes) Operation duration 00:00:02 Upgrade or Verify Action File: 2.dfu Vendor ID: 0483 Procuct ID: 0000 Version: 0000 Version: 0000 Version: 0000 Upgrade duration (Remove some FFs) <u>Choose</u> <u>Upgrade duration (Remove some FFs)</u> <u>Choose</u> <u>Upgrade duration (Remove some FFs)</u> <u>Choose</u> <u>Upgrade duration (Remove some FFs)</u> <u>Choose</u> <u>Upgrade duration (Remove some FFs)</u> <u>Choose</u> <u>Upgrade Jupgrade J</u>	01     Option Bytes     1 sectors       02     OTP Memory     2 sectors       03     Device Feature     1 sectors
15 KB(15988 Bytes) of 15 KB(15988         Bytes)         Operation duration         00:00:02         Choose         Upgrade         Verify after download         Optimize Upgrade duration (Remove some FFs)         Choose         Upgrade         Verify	Upload Action       Upgrade or Verify Action         File:       2.dfu         Choose       Upload         Transferred data size       O0000         Version:       0000
Target 00: Upgrade successful !	15 KB(15988 Bytes) of 15 KB(15988         Bytes)         Operation duration         00:00:02         Choose         Upgrade         Verify after download         © Optimize Upgrade duration (Remove some FFs)         Choose         Upgrade
Ábort Duit	Abort

디버그 포트에 디버그 케이블 연결 후 제대로 writing 되었는지 확인 합니다.

보드에 Debug 3핀 케이블을 연결 후 적색 버튼을 위로 올리고, 전원을 인가합니다.



터미널창에서 아래와 같이 디버깅 메시지를 확인 할 수 있습니다.

🛎 COM8:115200baud - Tera Term VT 📃 🗖 🔀
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp
SART_Debug_Initialization done. Mango-M32F2 Test - Jun 12 2012, 17:25:03 SysTick_Initialization done.
Press menu key
O> System Information
1> Test LED 2> Test USB Device VCP
x> quit