



LSM1x0A

F/W Download Guide

Rev 1.1

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History

Date	Contents	Version	
2022-04-18	Create	V1.0	
2022-06-03	Add F/W merge (IAP + F/W)	V1.1	

1. F/W merge

The firmware version below must be merged

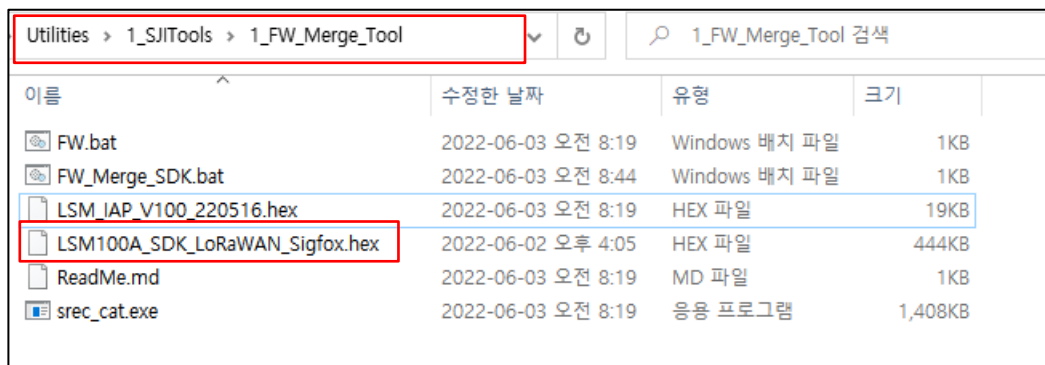
- LSM100A: 1.0.1 or later
- LSM110A: 1.0.0 or later

F/W merge is the operation of merging IAP and LSM application F/W

1.1 Move FW

After building the SDK, move the built hex file to the path below the SDK

SDK Top-Level Folder\Utilities\1_SJITools\1_FW_Merge_Tool

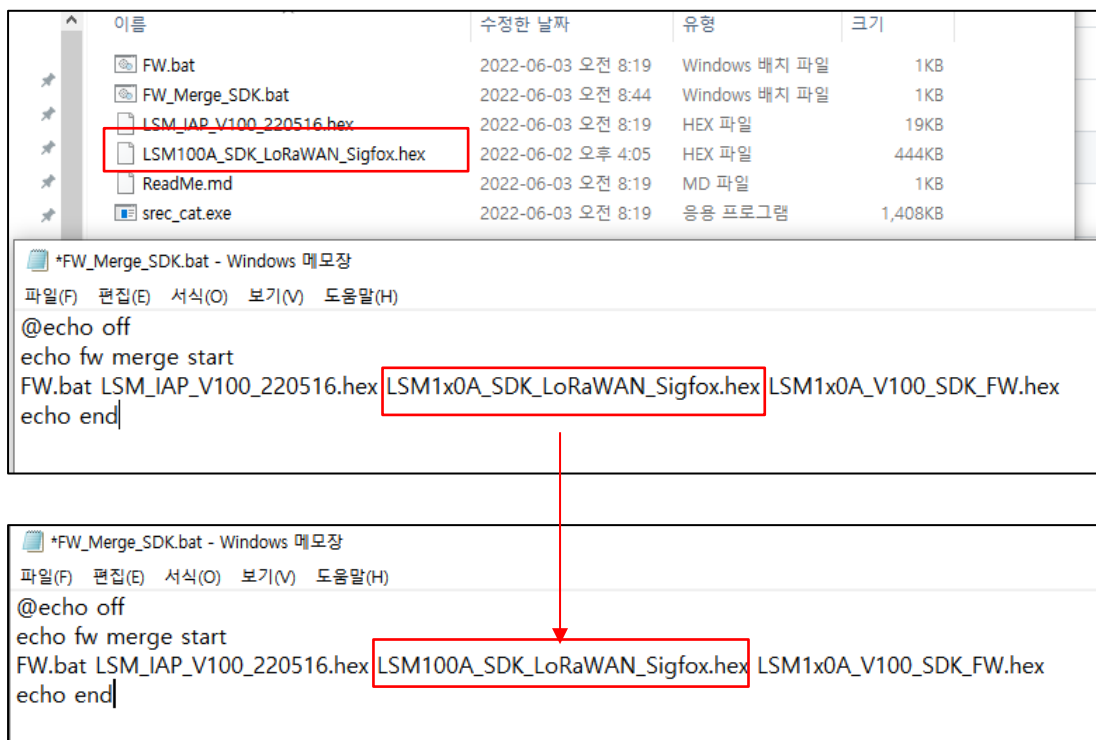


이름	수정된 날짜	유형	크기
FW.bat	2022-06-03 오전 8:19	Windows 배치 파일	1KB
FW_Merge_SDK.bat	2022-06-03 오전 8:44	Windows 배치 파일	1KB
LSM_IAP_V100_220516.hex	2022-06-03 오전 8:19	HEX 파일	19KB
LSM100A_SDK_LoRaWAN_Sigfox.hex	2022-06-02 오후 4:05	HEX 파일	444KB
ReadMe.md	2022-06-03 오전 8:19	MD 파일	1KB
srec_cat.exe	2022-06-03 오전 8:19	응용 프로그램	1,408KB

1.2 Edit batch file

1) Open the bat file by editing and modify it in the same way as the hex file

Change it to the same hex file name as the arrow in the image below and save it

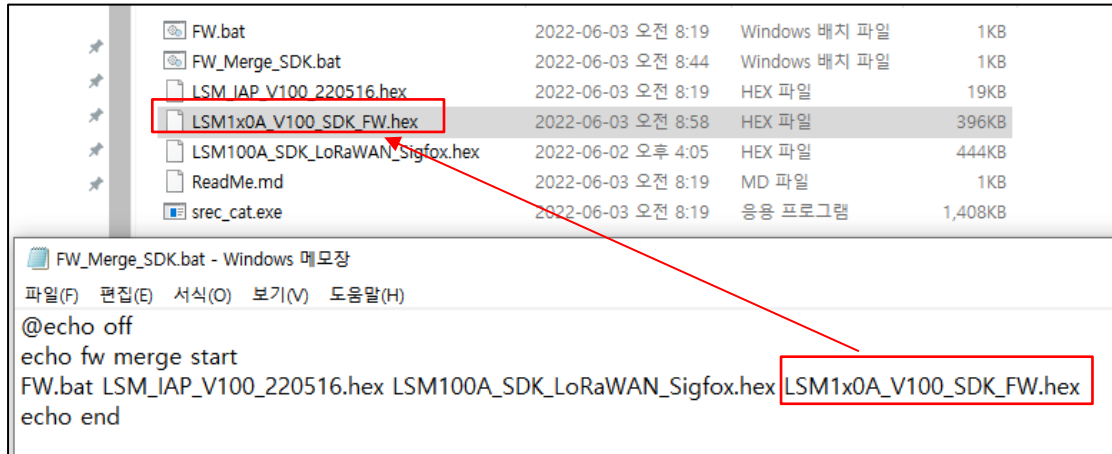


```
*FW_Merge_SDK.bat - Windows 메모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)
@echo off
echo fw merge start
FW.bat LSM_IAP_V100_220516.hex LSM1x0A_SDK_LoRaWAN_Sigfox.hex LSM1x0A_V100_SDK_FW.hex
echo end|
```



```
*FW_Merge_SDK.bat - Windows 메모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)
@echo off
echo fw merge start
FW.bat LSM_IAP_V100_220516.hex LSM100A_SDK_LoRaWAN_Sigfox.hex LSM1x0A_V100_SDK_FW.hex
echo end|
```

2) Run the FW_Merge_SDK.bat file to verify that the file is created such as the hex file name specified in the bat file as shown in the image below



1.3 Confirm merged file

If you have confirmed the creation of the merged file, you can proceed with the 2. F/W Download-STlink

2. F/W Download - STlink

2.1 Connect

1) Connect STlink and module

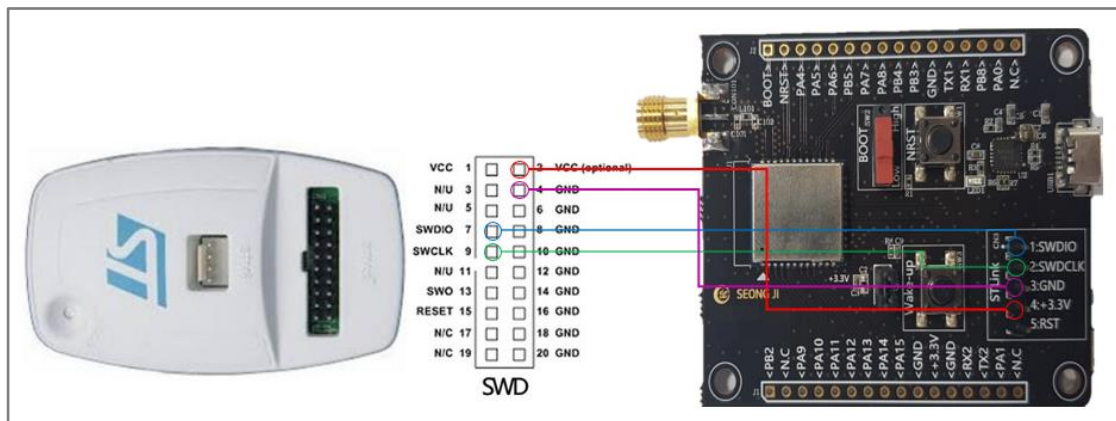
- Connect the circuit as shown in the image below
- PC and STlink connection

Red: VCC

Blue: SWDIO

Green: SWCLK

Purple: GND



2) Connect PC and module

- PC and module connection using micro 5pin cable

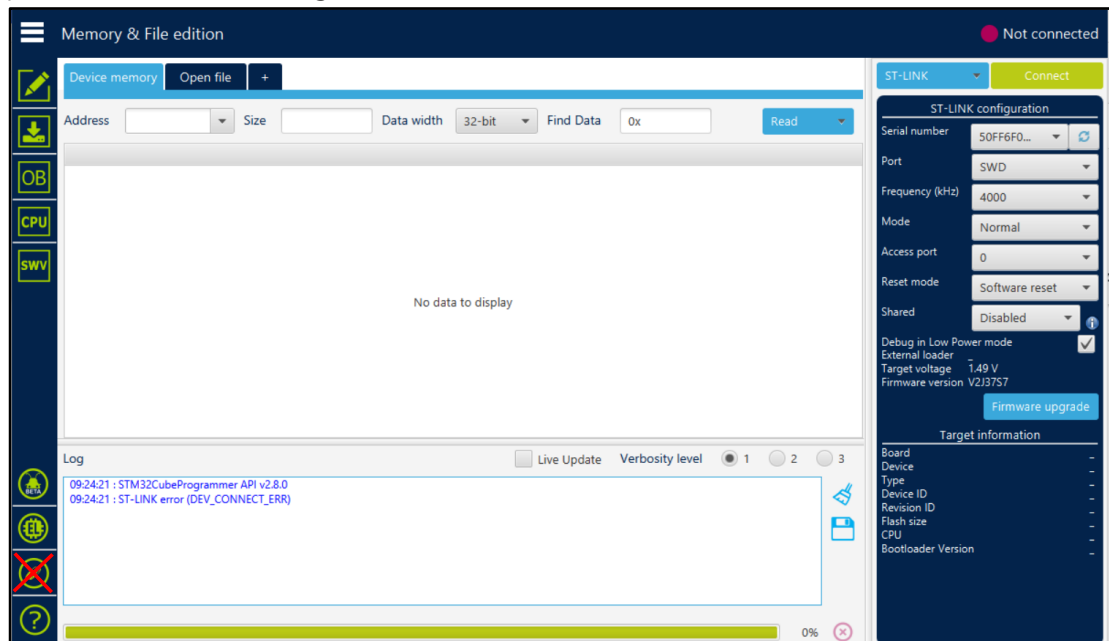


2.2 F/W download using STM32 Cube Programmer

✘ Warning: Never use the full chip erase of the STM32 tube programmer

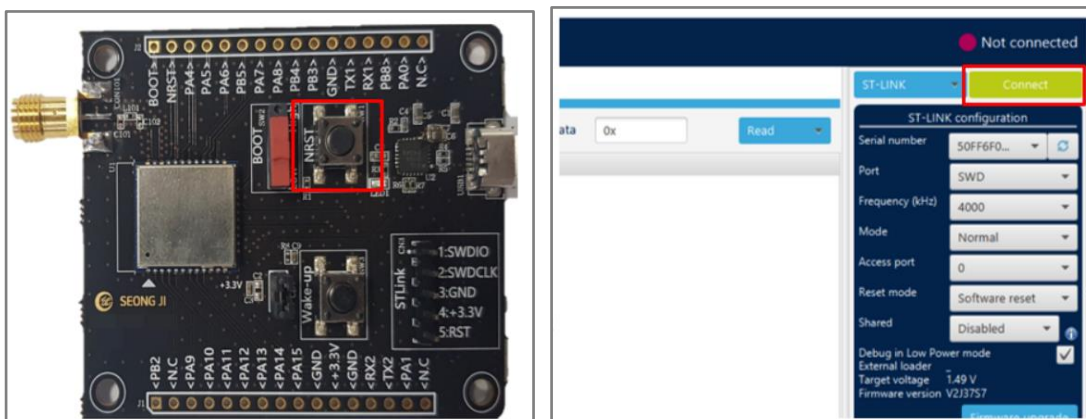
Note: STM32 Cube Programmer can be downloaded from the STMicroelectronics website below
<https://www.st.com/en/development-tools/stm32cubeprog.html>

1) Open the STM32 Cube Programmer



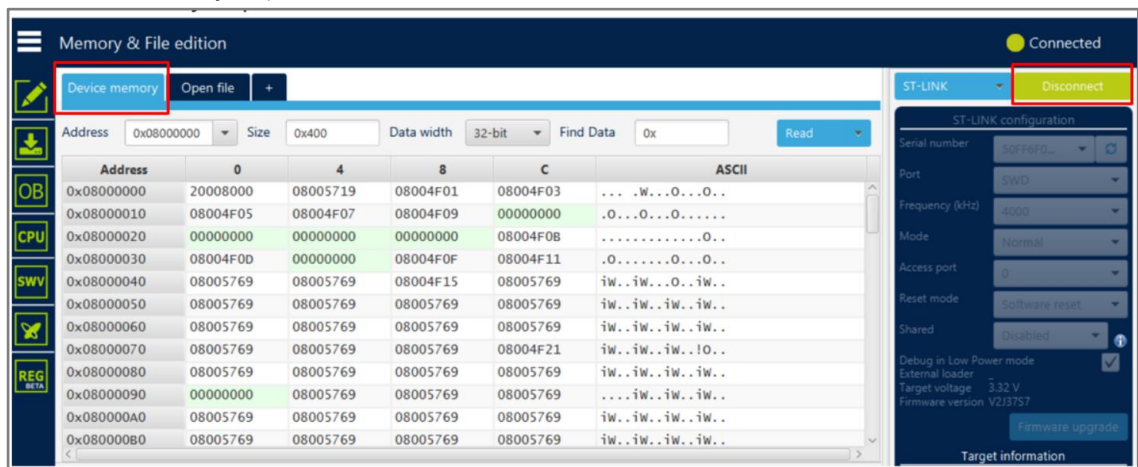
2) Connect the programmer and module

- While holding push the reset button, click connect of programmer and release the reset button



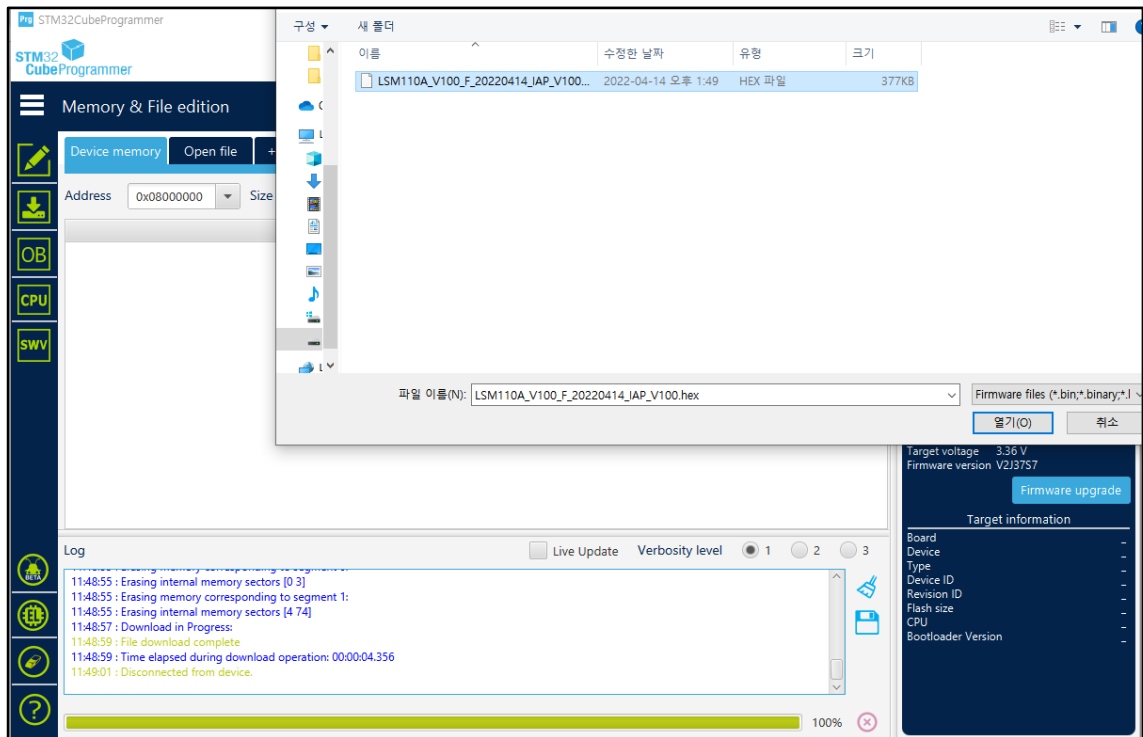
3) Check the connection

- The connect button changes to disconnect
- Device memory is print



4) Hexfile import

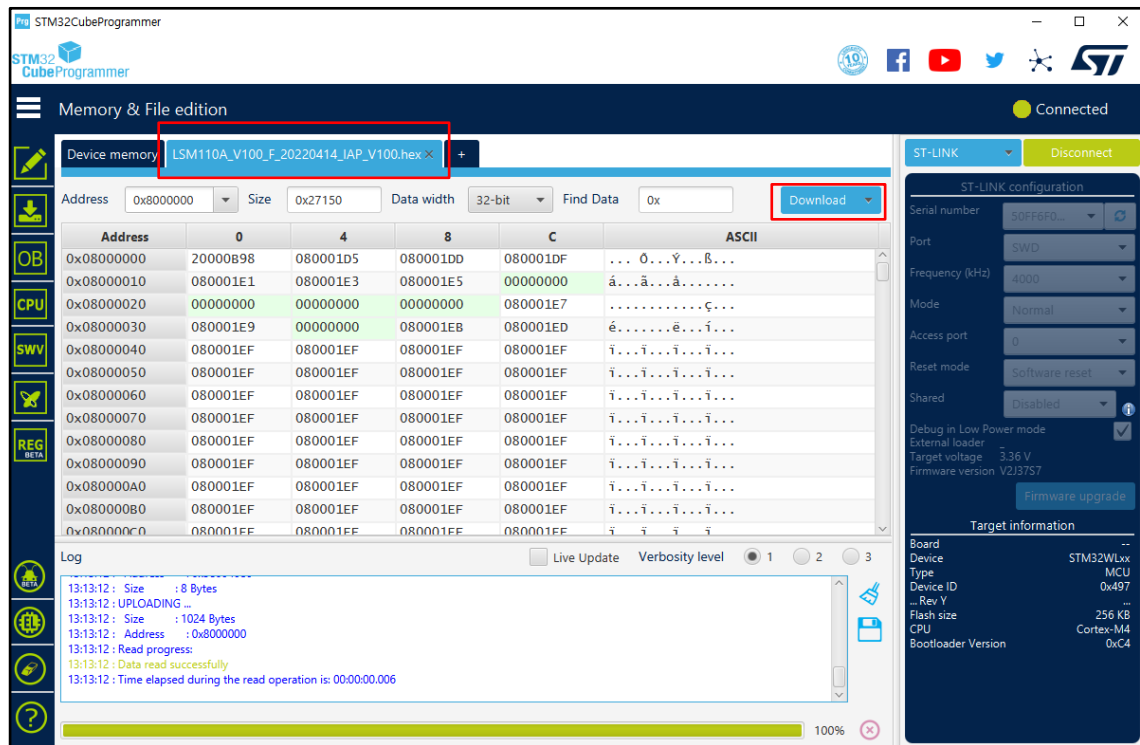
- open file click
- Load the hex file you want to download



※ Warning: Users are responsible for any problems resulting from the use of any hexfile other than the provided hexfile

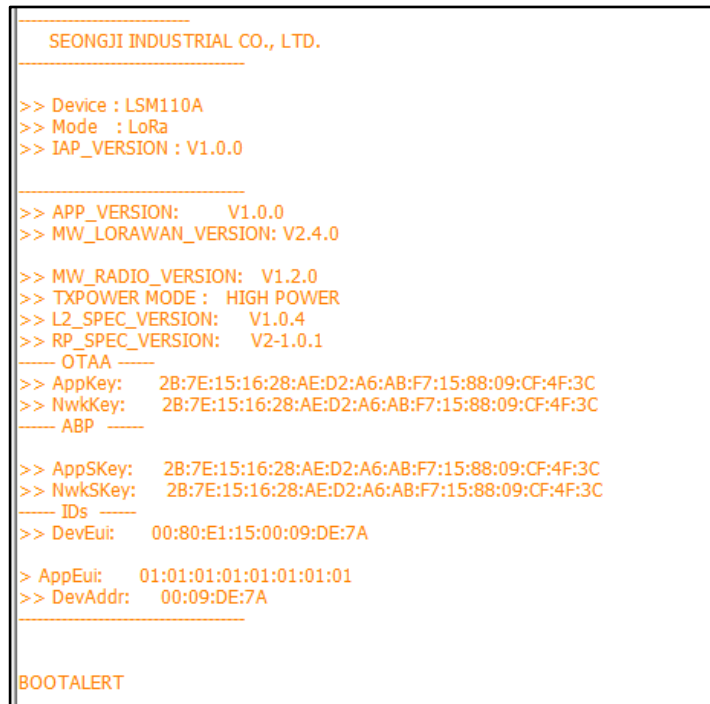
5) Download

- Click Download in the loaded hex file tab
- After that, check the "File download complete" message



6) Check the booting log

- Check the booting log using serial monitoring program



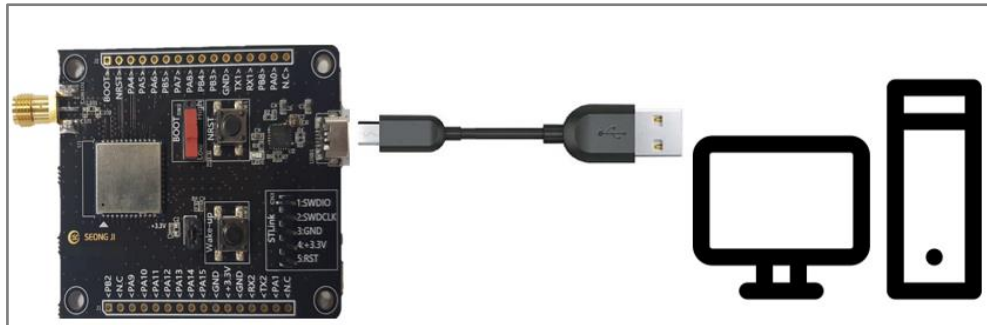
3. F/W Download - IAP

note: F/W downloader using IAP

Run as a Ymodem-enabled program (Extra putty, tera term, etc.)

Connect PC and module

- PC and module connection using micro 5pin cable

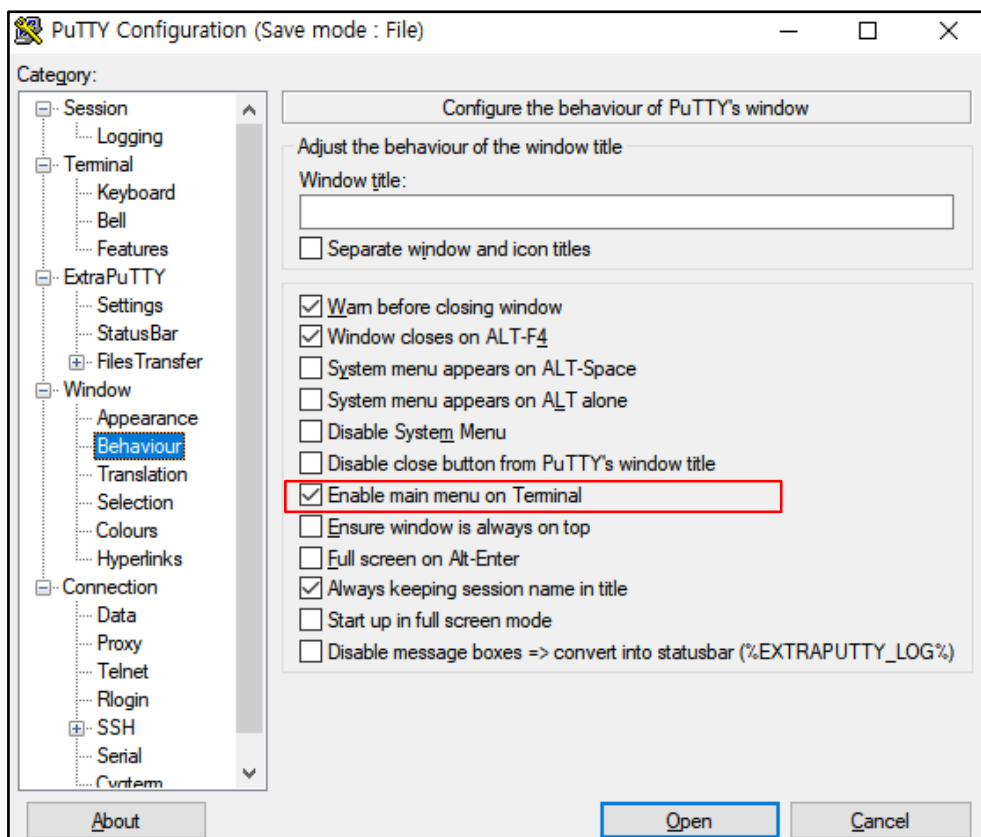


3.1 F/W download using Extra putty

Putty version: Extra putty 0.30

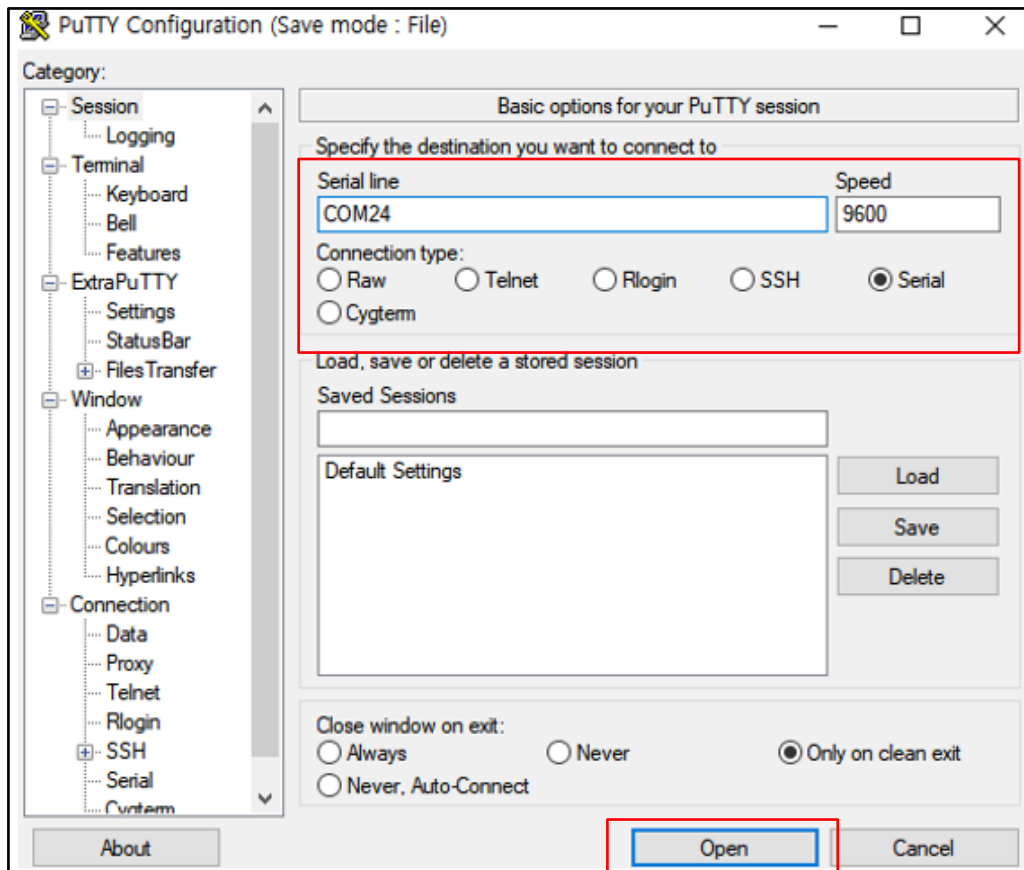
1)Putty standard setting

- Window -> Behaviour -> "Enable menu on Terminal" check



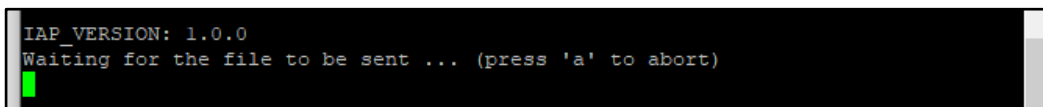
2) Serial connection

- Connection type: Serial
- Serial line: module port number Ex) COM24
- Speed: 9600
- After setting as above, "Open" button click



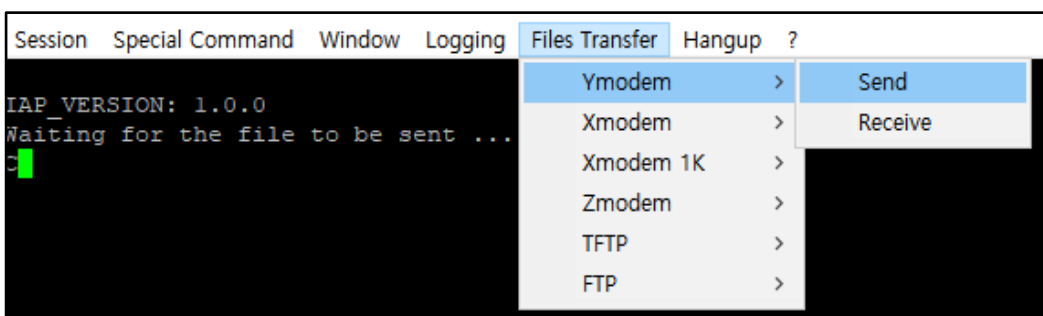
3) Start download mode

- Press reset and enter '1' within 0.5 seconds

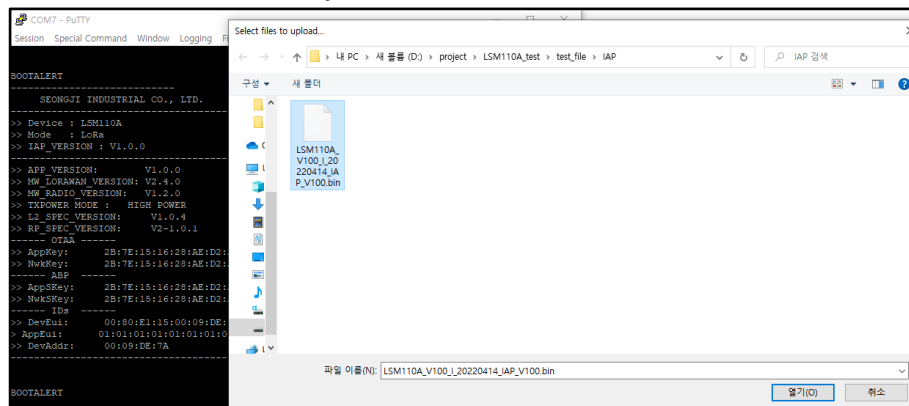


4) In download mode

- Files Transfer -> Ymodem -> Send click

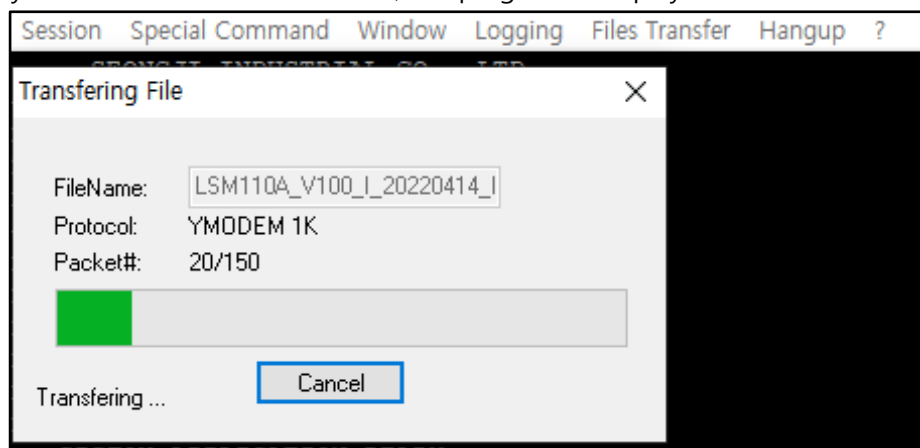


5) Find and select the .bin file you want to install

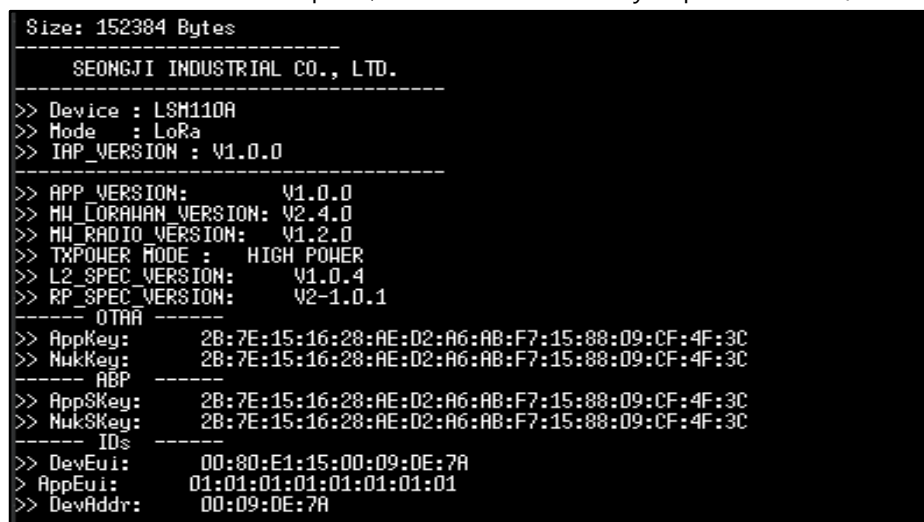


※ Warning: In addition to binary (.bin) files created by building SDKs, you are responsible for any problems that occur when using other binary (.bin) files.

6) If you select a bin file and send it, the progress is displayed as shown in the figure below



7) After the download is complete, the size of the binary is printed and F/W is booted

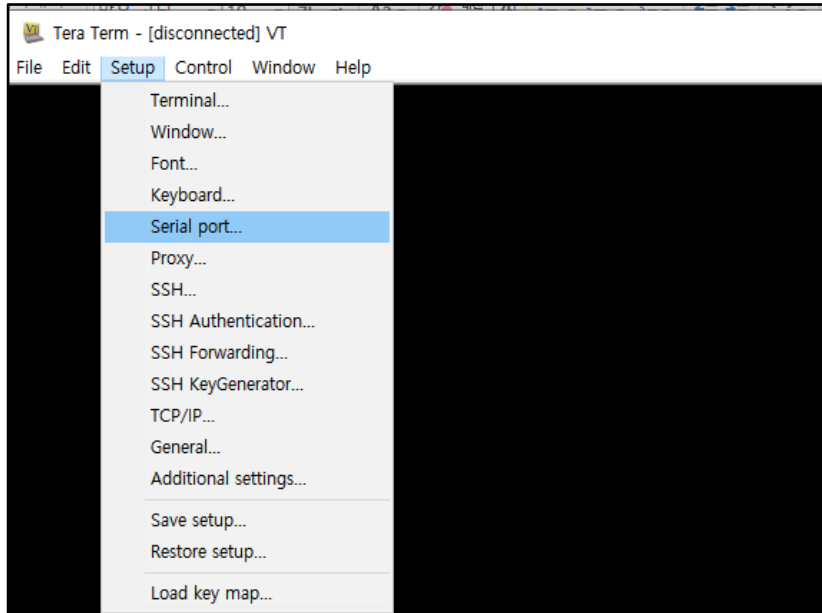


3.2 F/W download using Tera term

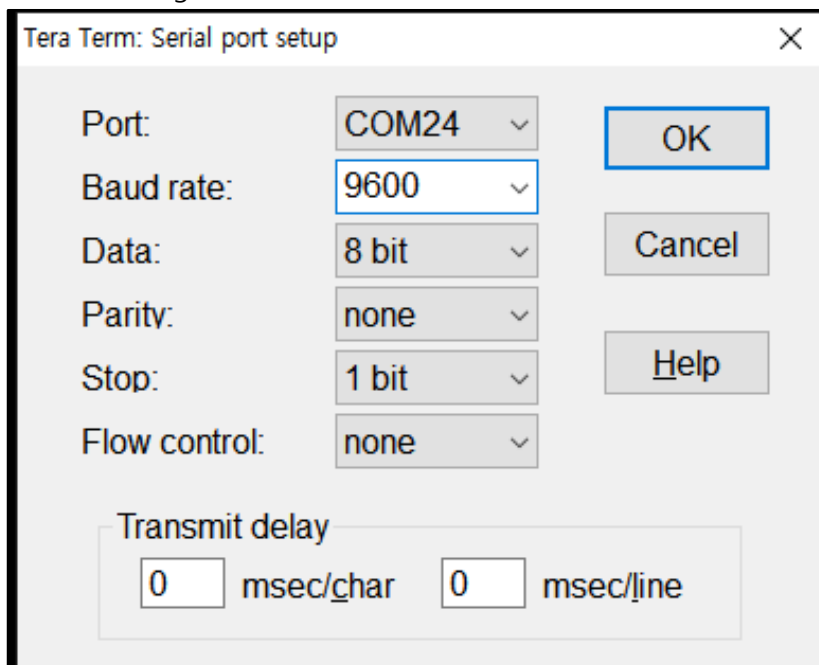
Note: tera term does not work in the latest version(4.106), use version 4.72

1) Serial connection

- Setup -> "Serial port..." click



- Port: module port number Ex) COM24
- Baud rate: 9600
- After setting as above, "OK" button click

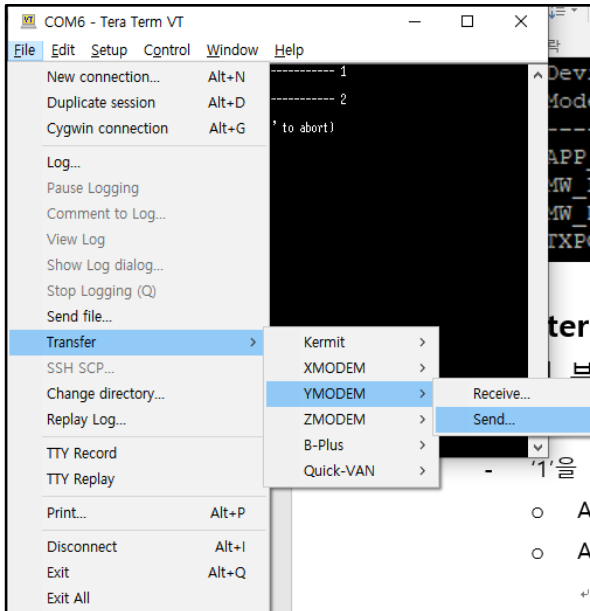


2) Start download mode

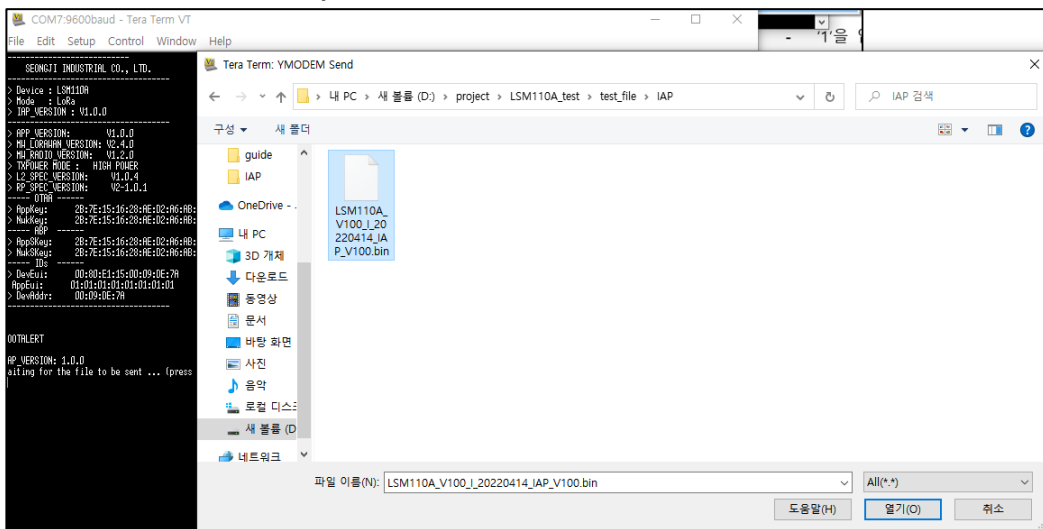
- Press reset and enter '1' within 0.5 seconds

```
IAP VERSION: 1.0.0
Waiting for the file to be sent ... (press 'a' to abort)
```

3) In download mode

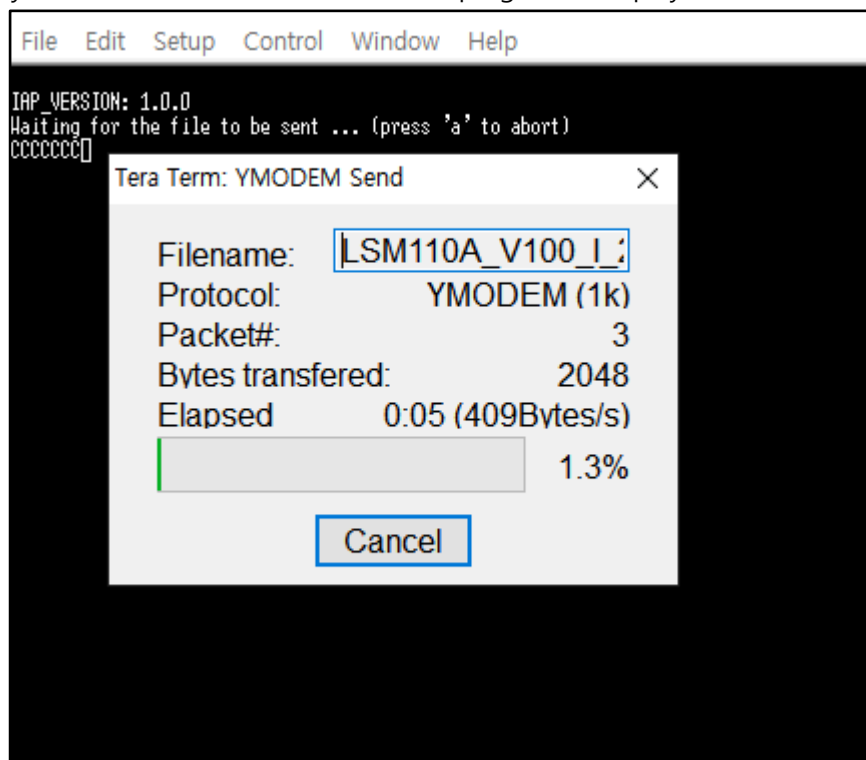


4) Find and select the .bin file you want to install



※ Warning: In addition to binary (.bin) files created by building SDKs, you are responsible for any problems that occur when using other binary (.bin) files.

- 5) If you select a bin file and send it, the progress is displayed as shown in the figure below



- 6) After the download is complete, the size of the binary is printed and F/W is booted

```
Size: 152384 Bytes
-----
      SEONGJI INDUSTRIAL CO., LTD.
-----
>> Device : LSM110A
>> Mode   : LoRa
>> IAP_VERSION : V1.0.0
-----
>> APP_VERSION:      V1.0.0
>> MH_LORAWAN_VERSION: V2.4.0
>> MH_RADIO_VERSION:  V1.2.0
>> TXPOWER MODE :   HIGH POWER
>> L2_SPEC_VERSION:   V1.0.4
>> RP_SPEC_VERSION:   V2-1.0.1
----- OTAA -----
>> AppKey:  2B:7E:15:16:28:AE:D2:A6:AB:F7:15:88:09:CF:4F:3C
>> NwkKey:  2B:7E:15:16:28:AE:D2:A6:AB:F7:15:88:09:CF:4F:3C
----- ABP -----
>> AppSKey:  2B:7E:15:16:28:AE:D2:A6:AB:F7:15:88:09:CF:4F:3C
>> NwkSKey:  2B:7E:15:16:28:AE:D2:A6:AB:F7:15:88:09:CF:4F:3C
----- IDs -----
>> DevEui:  00:80:E1:15:00:09:0E:7A
> AppEui:  01:01:01:01:01:01:01:01
>> DevAddr: 00:09:0E:7A
-----
```