

SigmaStar USB Factory Tool User Guide

Version 0.1

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REVISION HISTORY

| Revision No. | Description | Date |
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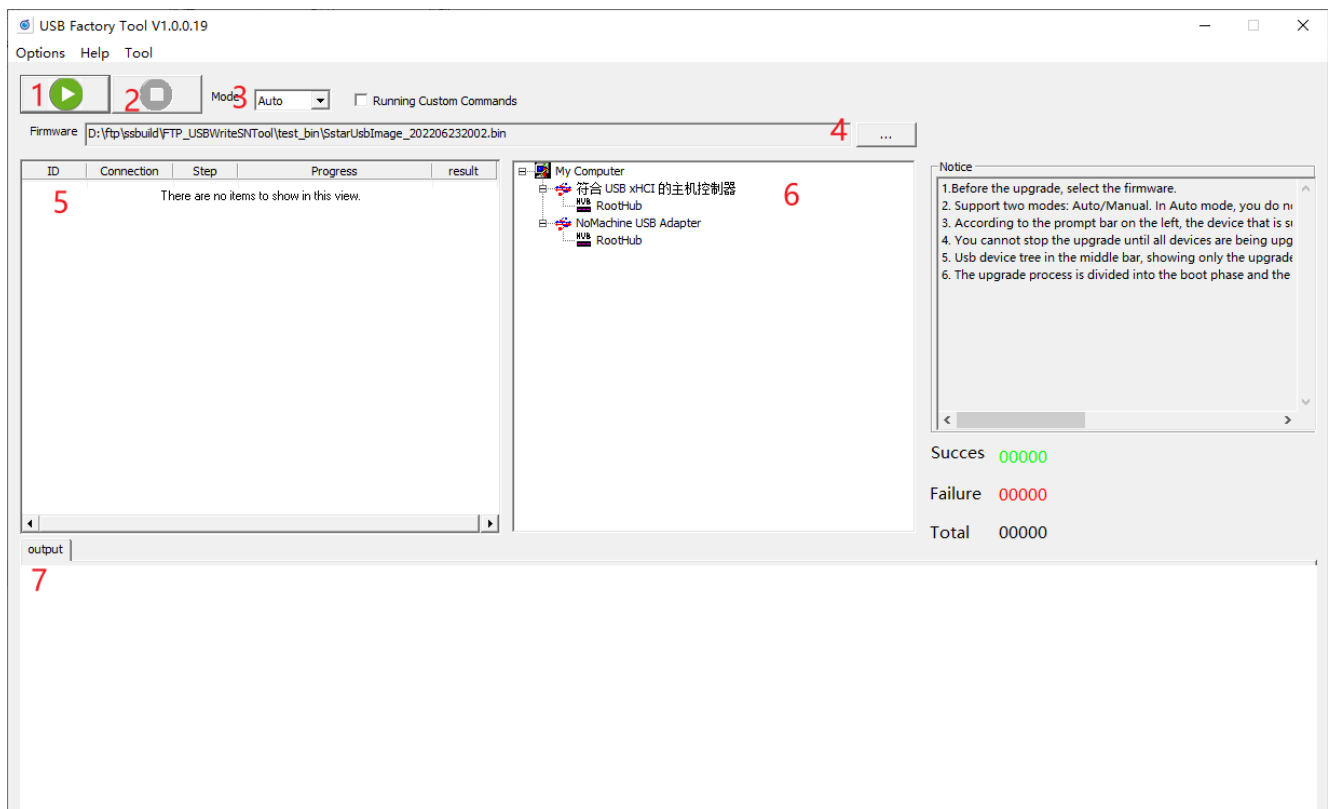
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1. USB UPGRADE

USB Factory Tool Interface



1. Start.
2. End. Click to end. It will wait for all upgrades to be completed, and those that have not yet started will not be upgraded.
3. Mode
Auto: Auto mode, device will be upgraded if there is any;
Manual: Manual upgrade. Select the device to be upgraded from Number 6, the upgrade will end automatically if successful.
4. Select bin file.
5. Shows upgrade success or failure.
6. USB Tree, only the device of SigmaStar will be shown.
7. Output log.
8. Running Custom Commands
9. Option
saveLog: Save the log in the application directory.
writes: Write SN.

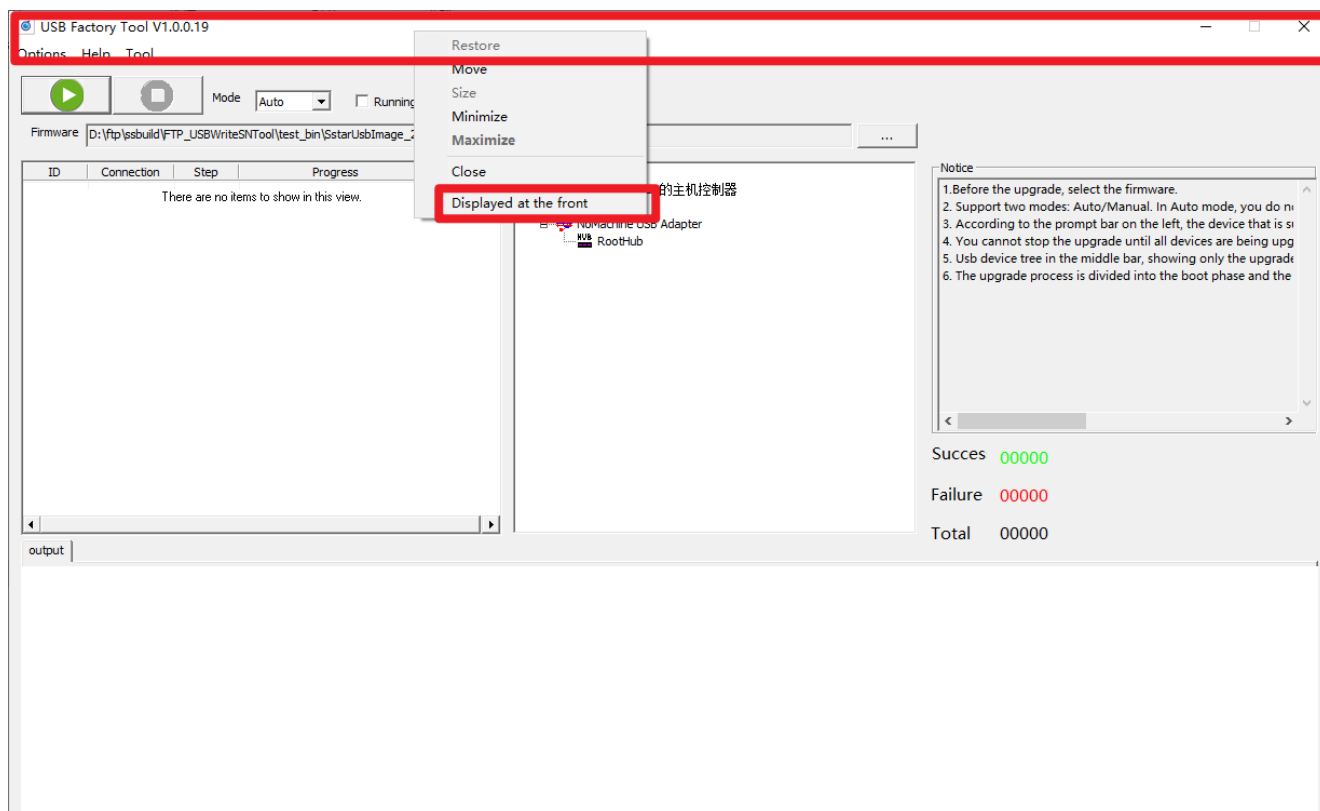
UVCMODE: Enable UVCMODE so that UVC can be identified.

10. Help

View Help: View help.

11. Update History: Update history

System Menu:



1. Right-click area to access system menu.

2. Show on top: If you want the application to always be displayed at the front, select this option.

2. UVC MODE

1. Click Options and then select UVCMode
Since ordinary USB upgrade is different from UVC USB upgrade, do not mix them together.
2. Follow the same steps as ordinary USB upgrade.

3. BIN FILE GENERATION

1. First, compile and generate the image normally, and then make image -j32 under the project directory.
2. Run `./image/makefiletools/script/make_usb_factory_sigmaster.sh -i IPL -u UBOOT` under the project directory.

This script is taken from the bin from project/board/i6f/boot/usb/upgrade, in which IPL and TF-A will be released, but uboot will not be released automatically. If there is no need to manually compile and copy to this directory, you can just run `./image/makefiletools/script/make_usb_factory_sigmaster.sh` "usage" will show the bin that already exists in the directory.

```
zhenggui.chen@xml3bc12807:~/i6f/project$ ./image/makefiletools/script/make_usb_factory_sigmaster.sh
Full or Optional Upgrade ? (Y/N)
para error: need IPL or UBOOT!

usage:
./image/makefiletools/script/make_usb_factory_sigmaster.sh -i IPL -u UBOOT

support IPL:
IPL_USB_UPD_2133_DDR3.bin    IPL_USB_UPD_2666_LPDDR4X.bin    IPL_USB_UPD_3200_DDR4.ext_SAMSUNG.bin    IPL_USB_UPD_0FN_2133_DDR3.ext_M26G.bin
IPL_USB_UPD_2666_LPDDR4X.bin    IPL_USB_UPD_3200_DDR4.bin    IPL_USB_UPD.bin    IPL_USB_UPD_TMODE_3200_DDR4.bin
support UBOOT:
u-boot-nor.bin    u-boot-spinand.bin
zhenggui.chen@xml3bc12807:~/i6f/project$ repo forall -c 'git checkout $REPO_RREV'
```

3. Based on the method set out in Step 2, start running the script. You will have to manually select "Full or Optional Upgrade?" If you enter Y or press Enter, it will mean that all es in auto_update.txt have to be upgraded. The corresponding bin generated is shown below:

```
zhenggui.chen@xml3bc12807:~/i6f/project$ ./image/makefiletools/script/make_usb_factory_sigmaster.sh -i IPL_USB_UPD_0FN_2133_DDR3.ext_M26G.bin -u u-boot-nor.bin
Full or Optional Upgrade ? (Y/N)
USB Factory Image Generating....
success, usb factory image have generated:
path: ./image/output/images/SstarUsbImage_202307211457.bin
size: 16424960 byte
md5sum: f81d51641e08eaada46d13c7b36bbe5d
zhenggui.chen@xml3bc12807:~/i6f/project$
```

If you enter N, you will need to manually enter and select the corresponding es. These es are obtained by parsing auto_update.txt. After everything is completed, the corresponding bin will be generated.

```
zhenggui.chen@xml3bc12807:~/i6f/project$ ./image/makefiletools/script/make_usb_factory_sigmaster.sh -i IPL_USB_UPD_0FN_2133_DDR3.ext_M26G.bin -u u-boot-nor.bin
Full or Optional Upgrade ? (Y/N)Y
Optional Upgrade [[set partition.es? (Y/N)Y
Optional Upgrade [[boot.es? (Y/N)Y
Optional Upgrade [[kernel.es? (Y/N)Y
Optional Upgrade [[rootfs.es? (Y/N)N
Optional Upgrade [[misc.es? (Y/N)Y
Optional Upgrade [[miservice.es? (Y/N)
Optional Upgrade [[customer.es? (Y/N)
Optional Upgrade set_config? (Y/N)
USB Factory Image Generating....
success, usb factory image have generated:
path: ./image/output/images/SstarUsbImage_202307211458.bin
size: 14278464 byte
md5sum: f1e0f203533092f7fa046a0254456bcf
zhenggui.chen@xml3bc12807:~/i6f/project$
```

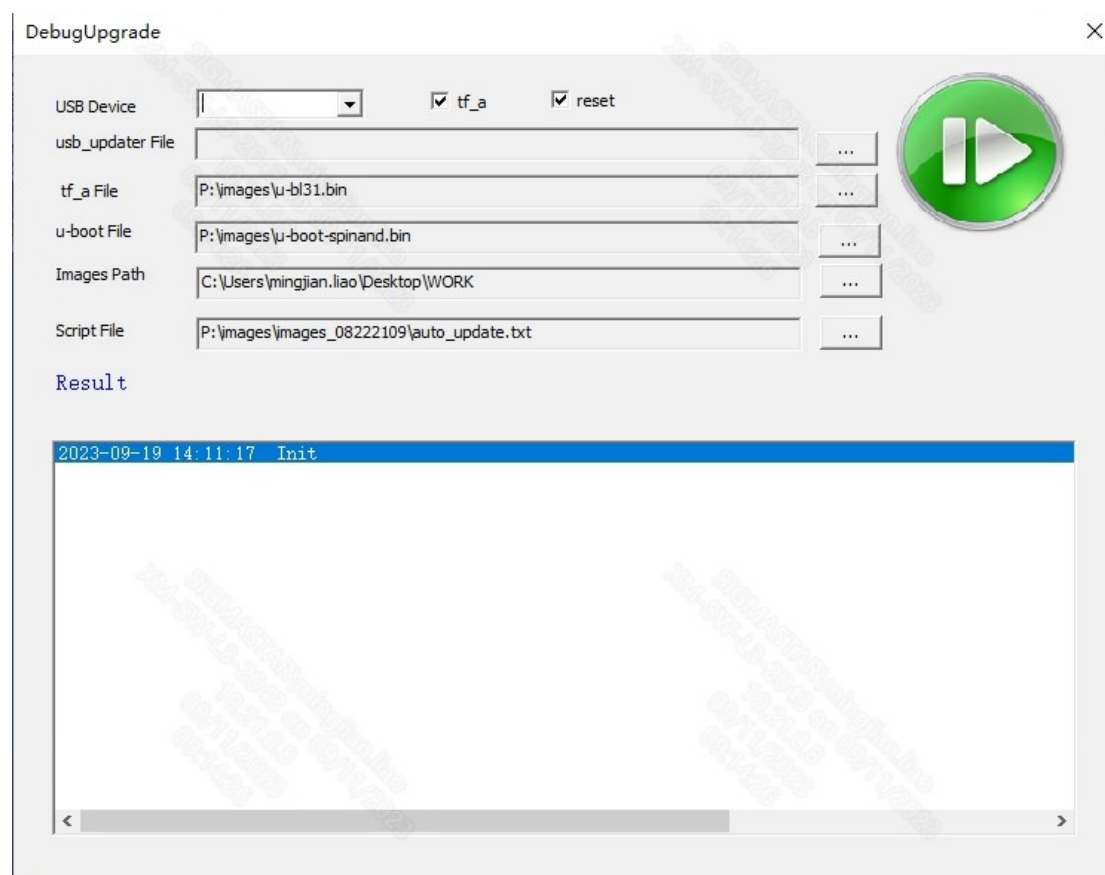
After the operation is over, there will be a corresponding log. Select SstarUsbImage_xxxx.bin which has been generated in the upgrade tool to start upgrading.


```
Full or Optional Upgrade ? (Y/N)N
Optional Upgrade [[set_partition.es? (Y/N)Y
Optional Upgrade [[boot.es? (Y/N)Y
Optional Upgrade [[kernel.es? (Y/N)Y
Optional Upgrade [[rootfs.es? (Y/N)N
Optional Upgrade [[misc.es? (Y/N)Y
Optional Upgrade [[miservice.es? (Y/N)
Optional Upgrade [[customer.es? (Y/N)
Optional Upgrade set_config? (Y/N)
USB Facotry Image Generating.....
success, usb factory image have generated:
  path: ./image/output/images/SstarUsbImage_202307211458.bin
  size:14270464 byte
  md5sum:f1e8f203533b92f7fa046a0254456bcf
zhenggui.cheng@ml3bc12007:~/16f/projects
```

4. DEBUG UPGRADE BY SCRIPT

4.1. The Main Interface of Debug Upgrade

The main function of this interface: to facilitate tuning without the need to pack images.



1. USB Device: USB port.
2. usb_updater file: The IPL files you will need when performing empty-chip upgrading.
3. u-boot file: The u-boot you will need when performing empty upgrading.
4. images path: The root directory of image package.
5. script file: The script for upgrading.
6. Result: Upgrading result.
7. Upgrading log.
8. Reset: Whether the device should be reset after upgrading succeeds.
9. tf_a: Click if necessary.
10. tf_a File: the path to the tf_a document.

4.2. Empty USB Upgrading

usb_updater file and u-boot file must be selected. They can be obtained as the following figure shows. To use the spinand of OPERA series chips, for instance, select the ipl and uboot of your board.

```

17 Aug 22 20:10 .
3 Aug 22 20:10 ..
65536 Aug 22 20:10 IPL.USB_UPD.ext_NANYA_DDR4_2666_16Gb.pkg_BGA19.bin
65536 Aug 22 20:10 IPL.USB_UPD.ext_NANYA_DDR4_2666_4Gb.bin
65536 Aug 22 20:10 IPL.USB_UPD.ext_NANYA_DDR4_2666_8Gb.bin
65536 Aug 22 20:10 IPL.USB_UPD.ext_NANYA_DDR4_2666_8Gb.pkg_BGA16_2.bin
65536 Aug 22 20:10 IPL.USB_UPD.ext_NANYA_DDR4_3200_16Gb.pkg_BGA19.bin
65536 Aug 22 20:10 IPL.USB_UPD.ext_NANYA_DDR4_3200_4Gb.pkg_BGA16_3.bin
65536 Aug 22 20:10 IPL.USB_UPD.ext_NANYA_DDR4_3200_8Gb.pkg_BGA16_2.bin
65536 Aug 22 20:10 IPL.USB_UPD.ext_NANYA_LPDDR4X_2666_16Gb_EMCP.pkg_BGA19.bin
65536 Aug 22 20:10 IPL.USB_UPD.ext_SEC_DDR4_2666_16Gb.bin
65536 Aug 22 20:10 IPL.USB_UPD.ext_SEC_DDR4_2666_16Gb.pkg_BGA16_2.bin
813140 Aug 22 20:10 u-boot_ufu_dualenv.img.bin
413944 Aug 22 20:10 u-boot_ufu_emmc.img.bin
308168 Aug 22 20:10 u-boot_ufu.img.bin
708388 Aug 22 20:10 u-boot_ufu_spinand_dualenv.img.bin
668196 Aug 22 20:10 u-boot_ufu_spinand.img.bin

```

4.3. USB Script Upgrading

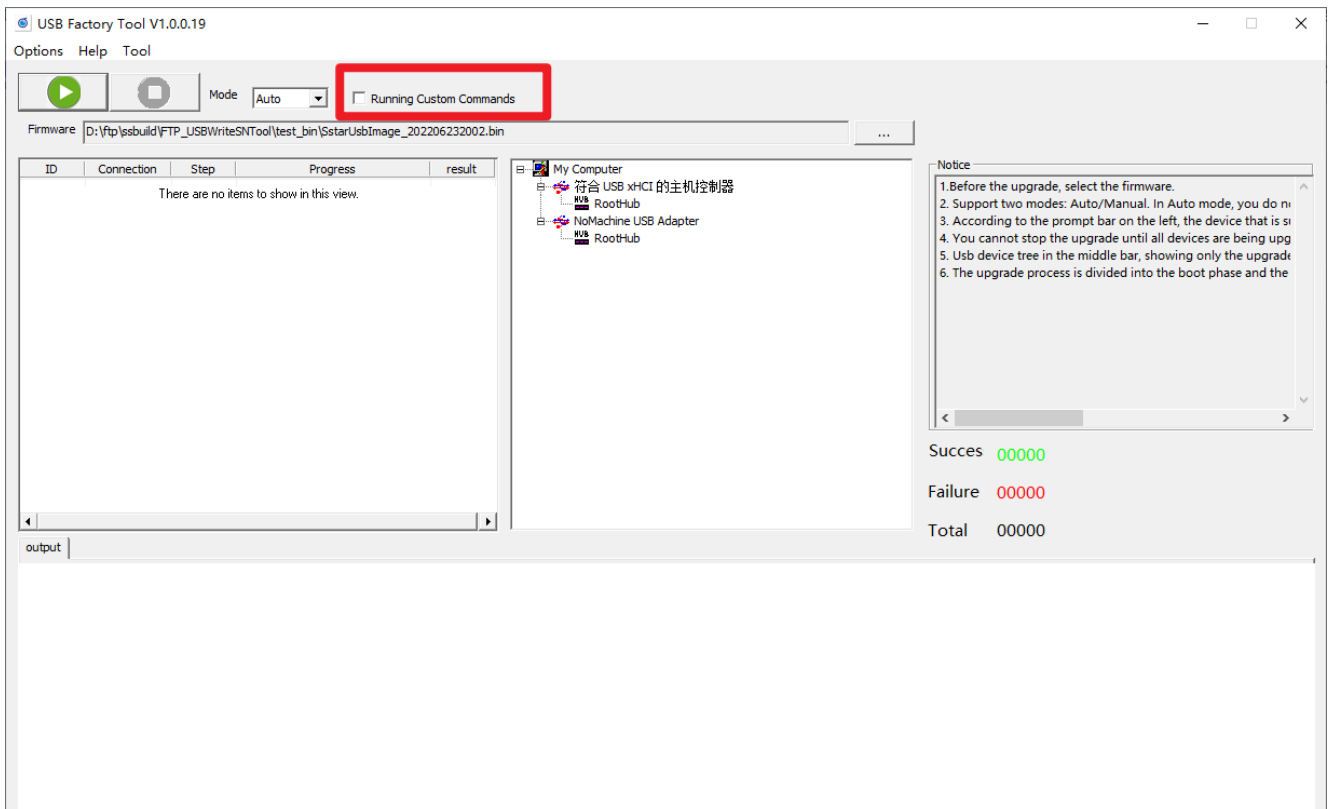
Images path and script file must be selected, as the following figure shows.

| DATA1 (D:) > ftp > ssbuild > FTP_BIN > images_08222109 > | | | | |
|--|-----------------|--------------------|-----------|--|
| 名称 | 修改日期 | 类型 | 大小 | |
| boot | 2023/8/22 21:10 | 文件夹 | | |
| scripts | 2023/8/24 20:08 | 文件夹 | | |
| auto_update.txt | 2023/8/22 13:10 | 文本文档 | 1 KB | |
| boot.bin | 2023/8/22 13:10 | BIN 文件 | 1,280 KB | |
| cis.bin | 2023/8/22 13:10 | BIN 文件 | 40 KB | |
| customer.ubifs | 2023/8/22 13:10 | UBIFS 文件 | 6,944 KB | |
| kernel | 2023/8/22 13:10 | 文件 | 3,326 KB | |
| misc.fwfs | 2023/8/22 13:10 | FWFS 文件 | 384 KB | |
| miservice.ubifs | 2023/8/22 13:10 | UBIFS 文件 | 7,440 KB | |
| nebinandBurnImgConfig.cfg | 2023/8/22 13:10 | Configuration 源... | 1 KB | |
| OnebinandBurnImgConfig.cfg | 2023/8/22 13:10 | Configuration 源... | 1 KB | |
| partition.ini | 2023/8/24 20:08 | 配置设置 | 1 KB | |
| partition_layout.txt | 2023/8/22 13:10 | 文本文档 | 2 KB | |
| riscvfw | 2023/8/22 13:10 | 文件 | 298 KB | |
| rootfs.sqfs | 2023/8/22 13:10 | SQFS 文件 | 2,540 KB | |
| SstarUsbImage_202308222108.bin | 2023/8/22 13:10 | BIN 文件 | 23,753 KB | |
| ubia.bin | 2023/8/22 13:10 | BIN 文件 | 15,104 KB | |
| ubinizea.cfg | 2023/8/22 13:10 | Configuration 源... | 1 KB | |

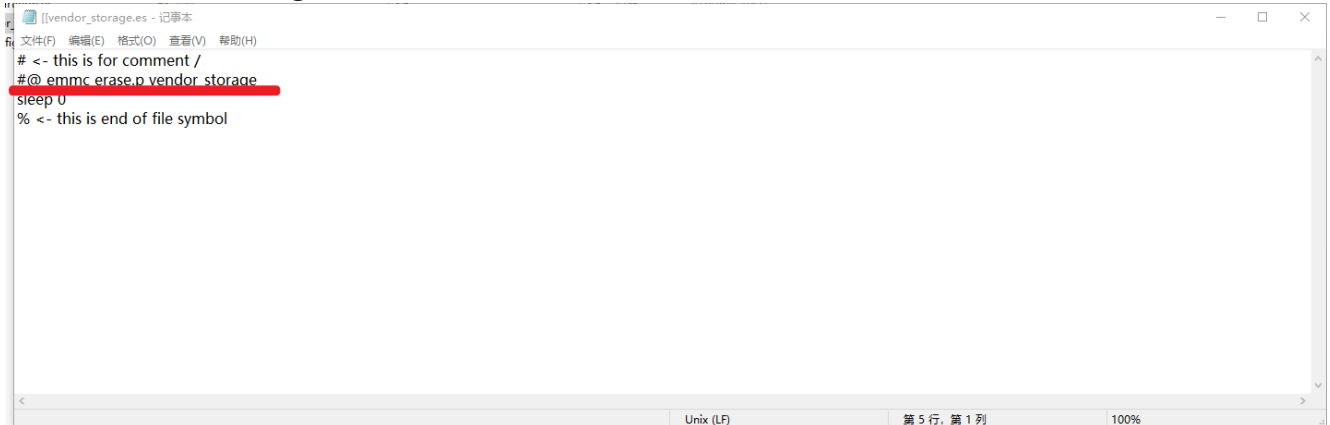
5. 5.RUNNING CUSTOM COMMANDS

During the upgrade process, you can run custom scripts to choose from

5.1. Custom Script Naming



Add before command #@



5.1.1 Display Name Customization

```
[usb]
language=2
binFileName=D:\ftp\ssbuild\FTP_USBWriteSNTTool\test_bin\SstarUsbImage_202206232002.bin
writeRetryCnt=5
[ui]
RunningCustomCommandName=
[USBDebugScript]
usb_updater=D:\ftp\ssbuild\FTP_USBFactoryTool\IPL.USB_UPD.DDRTRAIN.bin
u_boot=D:\ftp\ssbuild\FTP_USBFactoryTool\u-boot-spinand.bin
images=C:\Users\mingjian.liao\Desktop\tmp
script_file=
tfa_file=D:\ftp\ssbuild\FTP_isp_tool\dd3_0725_0940_v2.zip
tfaCheck=0
resetCheck=1
[USBDebugCustomer]
images=
```

RunningCustomCommandName: You can replace the "Running Custom Commands" name according to your own needs