W55FA92 SDWriter User Guide

V1.00.000

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Table of Contents

1. Introduction

1.1. SDWriter Introduction

W55FA series have two boot flows – one is Normal mode; the other is Recovery mode. For FA92, the boot flows are as below:

Normal mode boot flow is SD card 0 boot → SPI boot → NAND 0 boot → NAND 1 boot → SD card 1 boot → SD card 2 boot → USB boot

Recovery mode boot flow is USB boot.

SDWriter utilizes the character of Normal mode to load code of **SDWriter.bin** from SD card 0. When SDWriter.bin program executes, it will read the SDWriter.ini file from SD card 0 then program the target SD card according the INI file setting. The target SD card could be SD card 1 or SD card 2. This document will guide you how to prepare the SD card 0 and modify INI file.

2. Operation

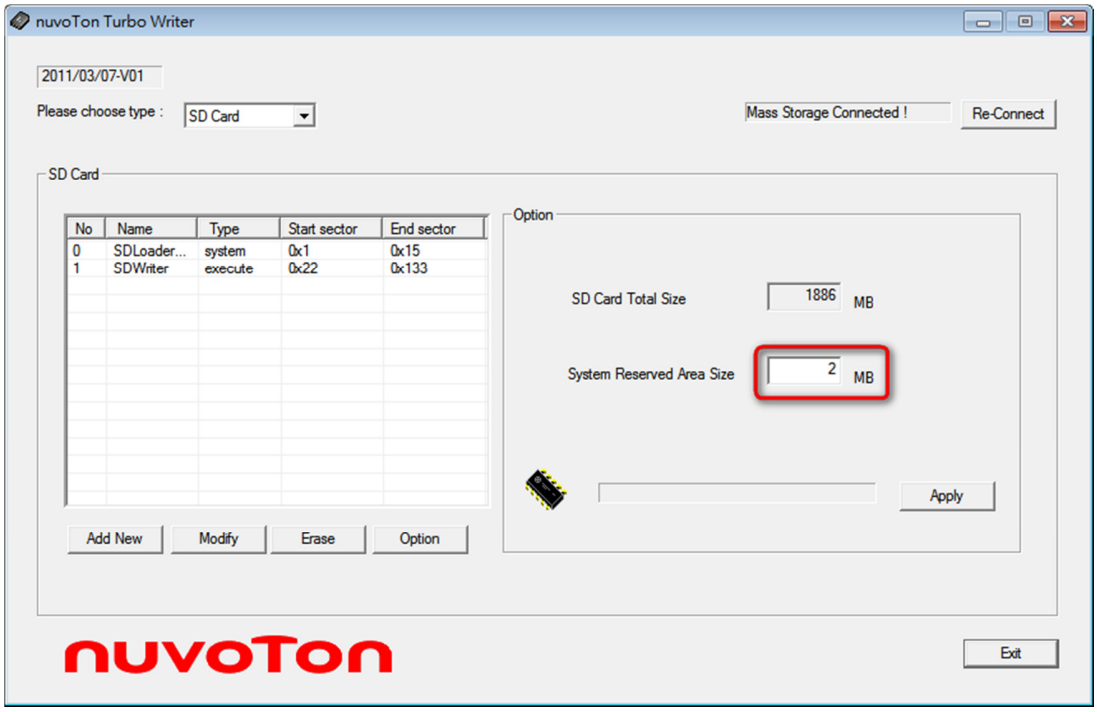
2.1. SD Card 0

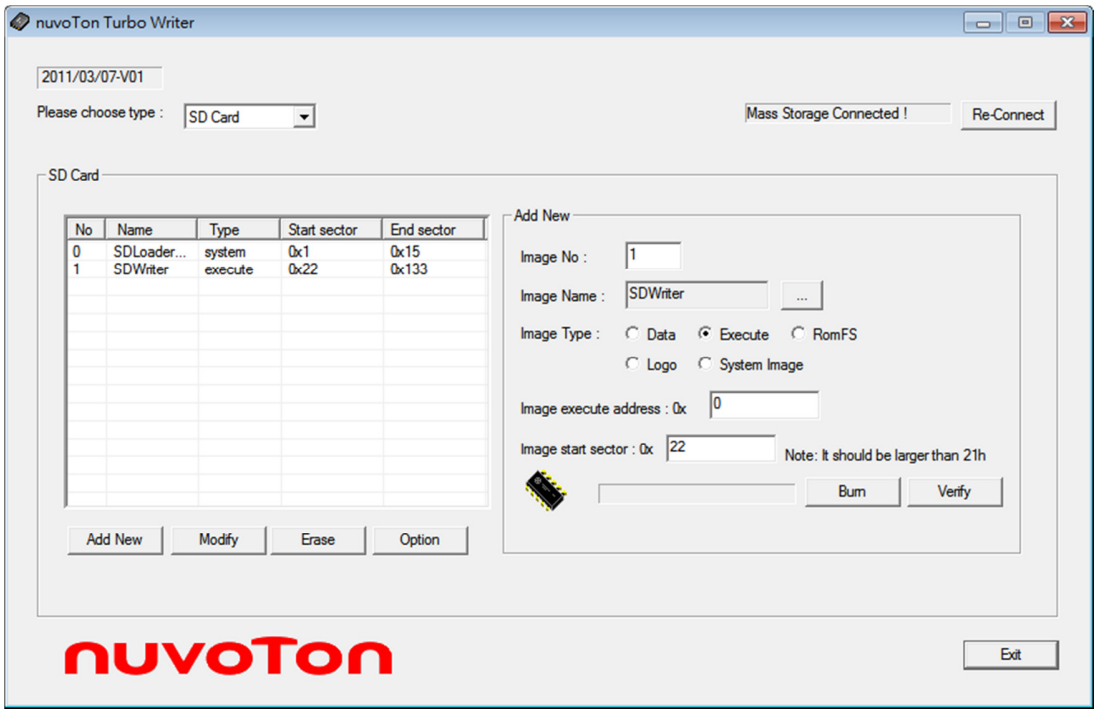
The SD card 0 must reserve some space to store the **SDLoader.bin** and **SDWriter.bin** before usage. The procedure is as below step:

- Launch TurboWriter in recovery mode and set the system Reserved Area Size if this SD card does not do it before
- Burn the SDLoader.bin as system image
- Burn the SDWriter.bin as execute image with "**Image execute address**" **0**

These two files are burned in system reserved area and unable to read from card reader.

Table 2-1 System Reserved Area Size

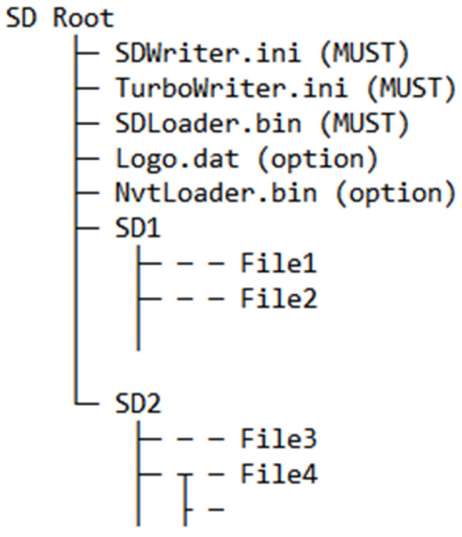




Put this SD card to another card reader and copy SDWriter.ini and related files that want to burn to target SD card to this SD card.

This SD card content structure is as below figure. The root directory contains the SDWriter.ini (must), TurboWriter.ini (must), SDLoader.bin(must), Logo.dat(option), NvtLoader.bin (option), SD1 folder and SD2 folder. The files in SD1 folder will be copied to partition SD1-1 and files in SD2 folder will be copied to partition SD1-2. It also provides some options in SDWriter.ini for user. Please check next section for detail.

Please note that the disk volume label of SD card cannot be the same as any folder name in SD card. Fox example, “SD1” or “SD2”.



2.2. INI File

2.2.1. SDWriter.ini

The INI file **SDWriter.ini** file that provides the user a flexible way to do a restricted modification without modifying the source code of SDWriter.bin.

The SDWriter.ini file provides some sections as below:

```
[SDLoader File Name]
SDLoader.bin

[Logo File Name]
Logo.dat

[NVTLoader File Name]
NvtLoader.bin

[System Reserved MegaB]
//Unit : Mega Byte
4

[SD1-1 DISK SIZE]
//Unit : Mega Byte (default : 16MB)
//This specify SD1-1 partition size, total capacity - Reserved - SD1-1 = SD1-2
//partition size
16

[SD1-1 FAT FILE]
// 1 to Use FAT file , 0 to use DiskImage, -1 to skip SD1-1 copy
1

[SD1-2 FAT FILE]
// 1 to Use FAT file , 0 to use DiskImage, -1 to skip SD1-2 copy
1

[Target SD Port]
```

```
// 1 to write files to SD port 1, 2 to write files to SD port 2
2
```

Due to its limited parsing ability of SDWriter.bin, there are some constraints in SDWriter.ini as below:

- No space is allowed to precede the option for each line.
- Only "//" comment is allowed at the beginning of each line
- String in "[ ]" is not allowed to changed.
- Only "[Logo File Name]", "[NVTLoader File Name] and "[System Reserved MegaB]" section are option for its setting. The others are must.

If the "[System Reserved MegaB]" section is not provided, the default reserved size is 4 Mega Bytes for it.

If the logo file is not necessary for the SDWriter, below two methods are all to skip burning Logo.dat into the target SD card.

```
[Logo File Name]
//Logo.dat
```

or

```
[Logo File Name]
```

It also allows changing the file name for burning. Below sample changes the file name from SDLoader.bin to Nuvoton.bin for "[SDLoader File Name]" section.

```
[SDLoader File Name]
Nuvoton.bin
```

Regarding the copy for SD1-1 and SD1-2, it provides 3 options for it.

- Option "1": SDWriter copy those files in SD1 or SD2 folder in SD card 0 through FAT to SD1-1 or SD1-2 partition.
- Option "0": SDWriter copies file **content.bin** in SD1 or SD2 folder in SD card 0 to SD1-1 or SD1-2 partition in target SD card sector by sector. It gets the best performance but it need to prepare the disk image without MBR (Master Boot Record) by **NRomMaker** tool or Linux.
- Option "-1": Skip to check the SD1 or SD2 folder.

It also allows choosing SD port 1 or SD port 2 as target SD card.

```
[Target SD Port]
// 1 to write files to SD port 1, 2 to write files to SD port 2
2
```

2.2.2. TurboWriter.ini

SDWriter v1.1 support new INI file **TurboWriter.ini** file that provides the user a flexible way to do system tuning before SDLoader running.

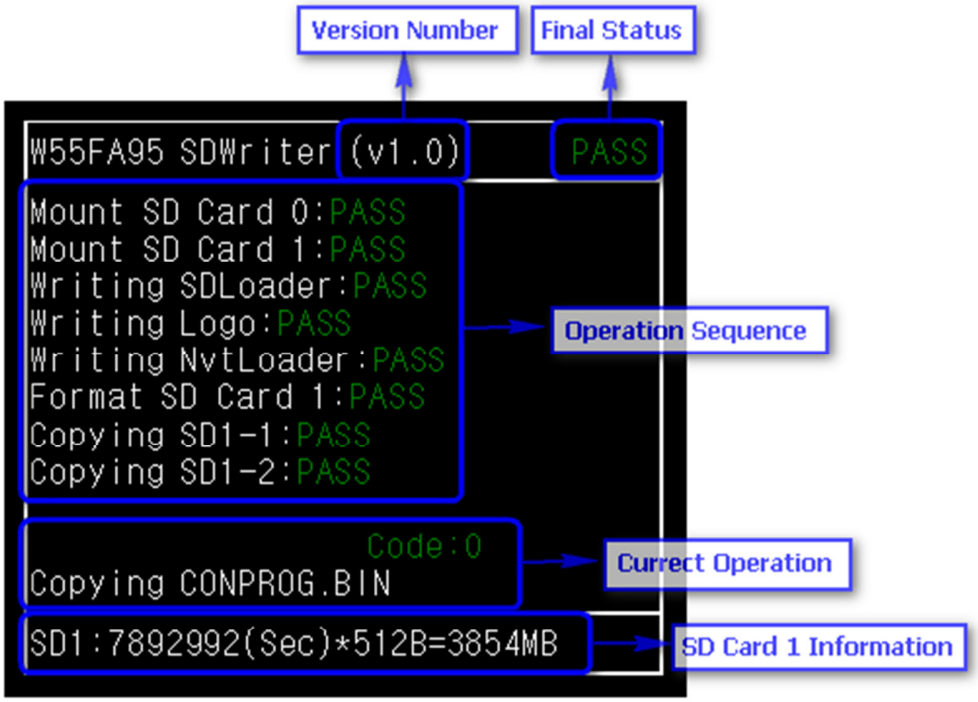
The TurboWriter.ini file provides some sections as below:

```
[ADDRESS]
  ADDRESS = 00900000
[CLOCK_SKEW]
  DQSODS = 00001010
  CKDQSDS = 00888800
[USER_DEFINE]
  B0000004 = 00032FFF
  B0000208 = 00008310
  5A5A5A5A = 00000000
  5A5A5A5A = 00000001
```

Please DO NOT modifies the TurboWriter.ini if you do not understand what it is.

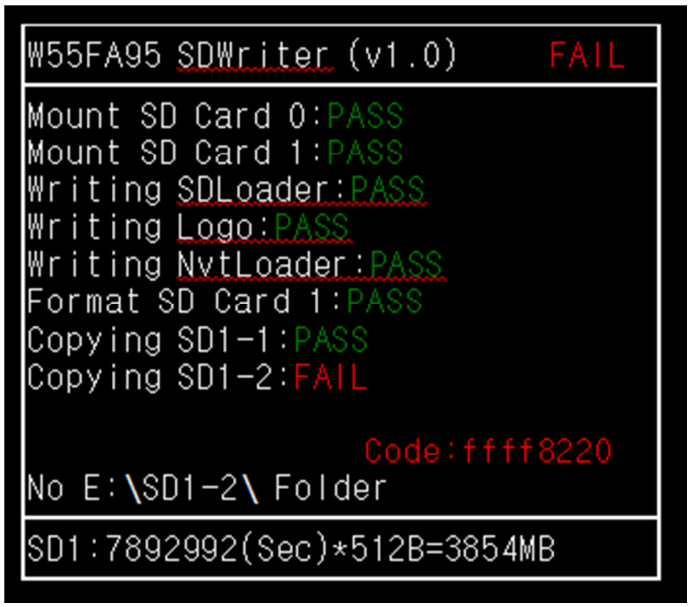
2.3. Operation

When the SD card 0 is prepared successfully and booting from Normal mode, it will show the target SD card burning status on the panel as below:



It can divide into several parts:

- Version Number: show this version number.
- Final Status: show the final operation status. If there is any fail items in the operation sequence, the final Status will be “FAIL”.
- Operation Sequence: show the current operation progress.
- Current Operation: show more detail information for current operation. For example, if fails for some function, the code will show the return code for this.
- The SD Card 1 Information: shows information of current target SD card in the format “SD1:Total_Sector_Number(Sec)*Sector_Size B=Total_Size MB “.

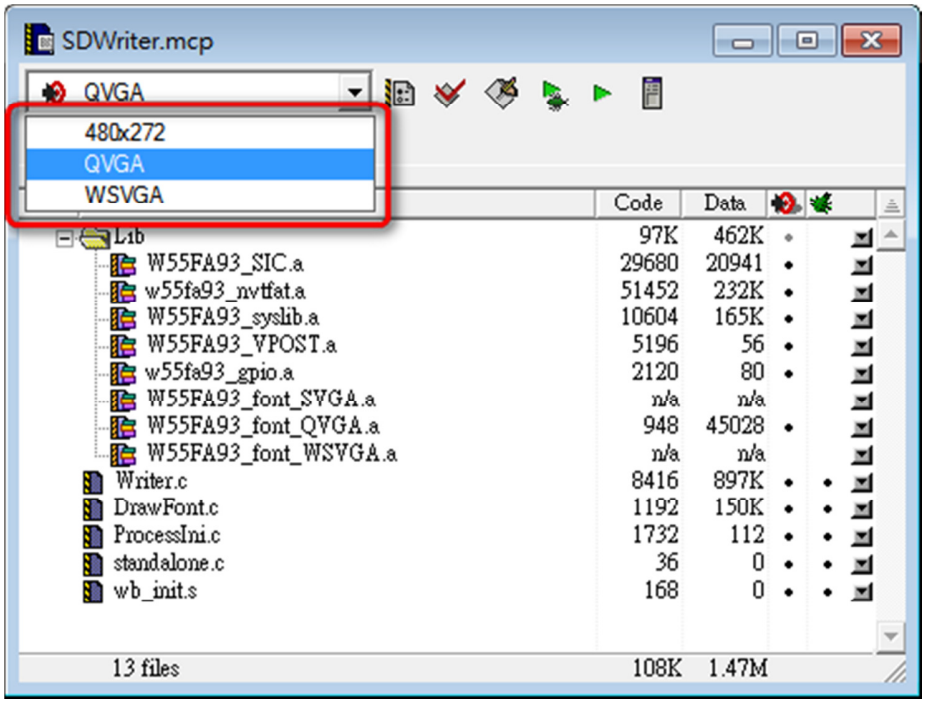

W55FA95 SDWriter (v1.0) FAIL
Mount SD Card 0:PASS
Mount SD Card 1:PASS
Writing SDLoader:PASS
Writing Logo:PASS
Writing NvtLoader:PASS
Format SD Card 1:PASS
Copying SD1-1:PASS
Copying SD1-2:FAIL
Code:ffff8220
No E:\SD1-2\ Folder
SD1:7892992(Sec)*512B=3854MB

2.4. Modification

If the modification of SDWriter.ini cannot meet customer's request, it will need to open SDWriter project to modify the source code. This project file bases on ARM Developer Suite V1.2. If user does not have such environment, it will need user to do necessary modification for the new environment.

Besides the environment issue, modification is necessary for below condition:

- Panel: If the panel is changed, linked VPOST library need to change.
- Resolution: If the resolution is changed, Select related target for it as below picture.



3. Revision History

Version	Date	Description
V1.00	Oct., 2013	● Created

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