ExNandWriter User Guide

V1.00.000

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1. Introduction

1.1. ExNandWriter Introduction

W55FA series have two boot flows – one is Normal mode; the other is Recovery mode.
For FA93, the boot flows are as below:
Normal mode boot flow is SD card 0 boot -> NAND boot -> SPI boot -> SD card 1 boot -> USB boot
Recovery mode boot flow is USB boot

ExNandWriter utilizes the character of Normal mode to load code of **ExNandWriter.bin** from SD card 0. When ExNandWriter.bin program executes, it will read the ExNandWriter.ini file from SD card 0 then program the external NAND chip that use CS1 pin (chip select 1) according the INI file setting. 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 ExNandWriter.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 ExNandWriter.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
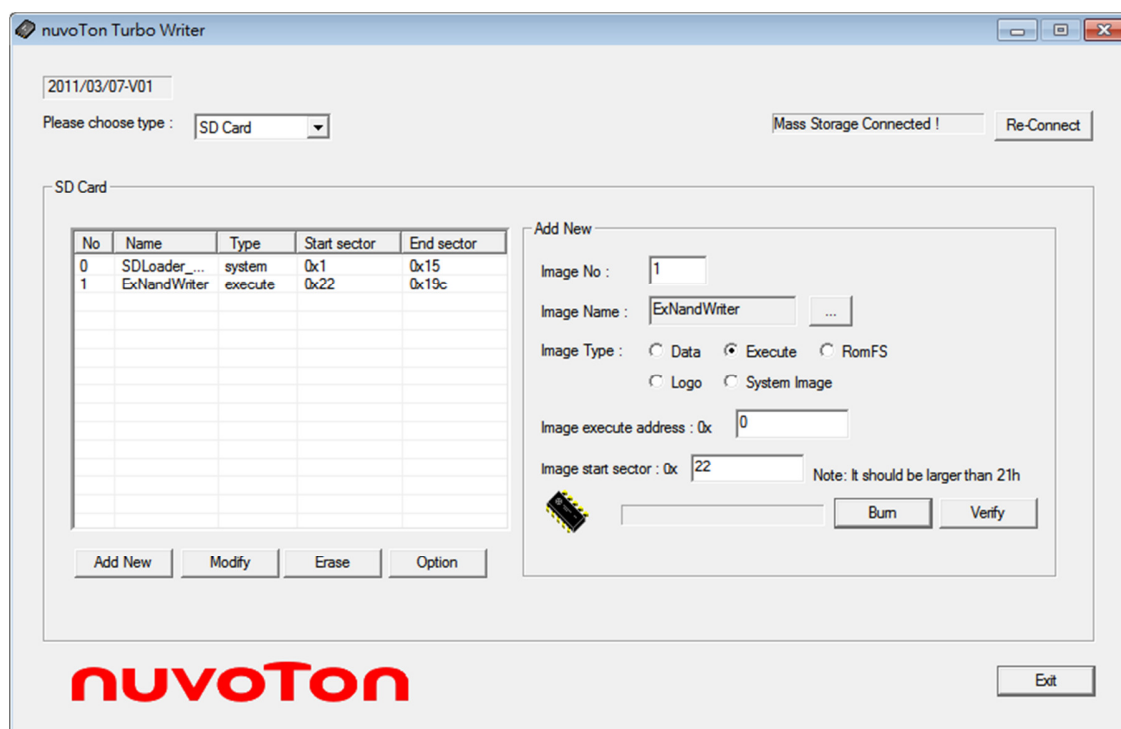
Put this SD card to another card reader and copy ExNandWriter.ini and related files that want to burn to external NAND chip to this SD card.

This SD card content structure is as below figure. The root directory contains the ExNandWriter.ini (must) and NAND1-1 folder. The files in NAND1-1 folder are copied to partition NAND1-1 in external NAND chip. It also provides some option in ExNandWriter.ini for user. Please check the INI File section.

```
SD Root
    ├── ExNandWriter.ini (MUST)
    └── NAND1-1
            ├── ── File1
            ├── ── File2
            │   ├── ─
```

2.2.   INI File

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

The ExNandWriter.ini file provides some sections as below:

```
[NAND1-1 FAT FILE]

// 1 to Use FAT file, 0 to use DiskImage, -1 to skip NAND1-1 copy

1
```

Due to its limited parsing ability of ExNandWriter.bin, there are some constraints in ExNandWriter.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.

Regarding the copy for NAND1-1, it provides 3 options for it.

- Option "1": ExNandWriter copy those files on NAND1-1 folder in SD card 0 through FAT to NAND1-1 partition.
- Option "0": ExNandWriter copy file **Content.bin** on NAND1-1 folder in SD card 0 through GNAND to NAND1-1 partition in external NAND page by page. It gets the best performance but it need to prepare the disk image by **NRomMaker** tool or Linux.
- Option "-1": Skip to check the NAND1-1 folder.

2.3.　Operation

When the SD card 0 is prepared successfully and booting from Normal mode, it will show the external NAND burning status on the panel as below:
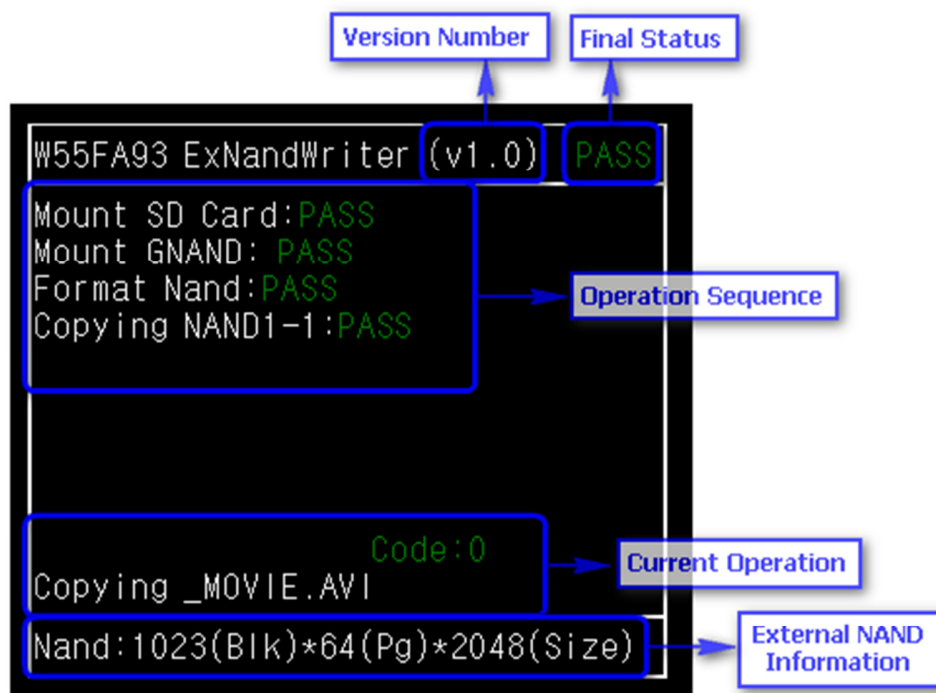
It can divide into several parts:

- 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, it fails for some function, the code will show the return code for this.
- External NAND Information: shows information of current external NAND chip in the format "Nand:Total_Block_Number(Blk) * Page_Number_Per_Block(Pg) * Page_Size (Size)"

2.4. Modification

If the modification of ExNandWriter.ini cannot meet customer's request, it will need to open ExNandWriter 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.
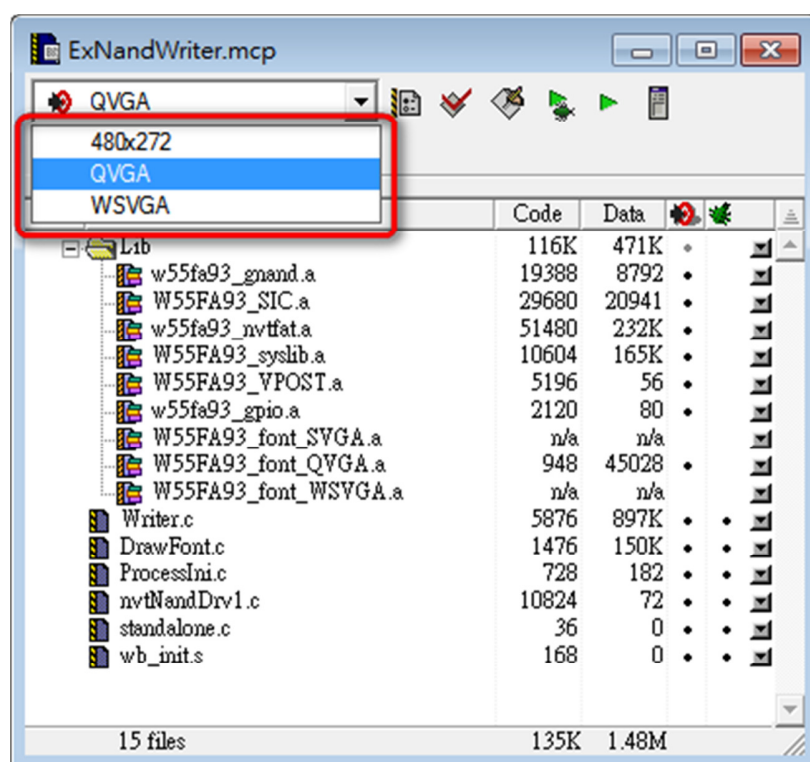
3. Revision History

Version	Date	Description
V1.0	Nov, 2011	● Created

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