GoDroid

GoWarrior FTool

User Manual

v1.0

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Preface

Overview

This manual mainly describes how to burn a NAND Flash of the TIGER Board by using GoWarrior FTool (Hereinafter referred to as FTool) utility. This manual is organized into the following chapters:

- **Chapter 1: Environment Preparation**

This chapter provides details about the environment required by the FTool.

- **Chapter 2: Flash Burning**

This chapter gives compact description about how to burn NAND Flash by using FTool utility.

- **Chapter 3: Making a Burning File Package**

This chapter provides information about how to make a burning file package.

- **Chapter 4: Flash Dumping**

This chapter gives insight about how to dump data from NAND Flash.

- **Chapter 5: Modifying MAC Address in Platform**

This chapter summarizes how to modify the MAC address of the partition file parsed by FTool.

- **Chapter 6: Partition Burn Check**

This chapter introduces how FTool reads data back from NAND Flash and checks them against original data.

Audience

This manual is primarily written to provide complete guidance for those who wants to exploit GoWarrior TIGER Board, such as makers, tinkers, innovators, students, etc.

Applicable Products

This manual is applicable for the GoWarrior TIGER Board.

Reference Documents

N/A

Conventions

Typographical Conventions

Item	Format
codes, keyboard input commands, file names, equations, and math	`Courier New, Size 10.5`
Variables, code variables, and code comments	*`Courier New, Size, Italic`*
Menu item, buttons, tool names	**Ebrima, Size 10.5, Bold** e.g. Select **USB Debugging**
Screens, windows, dialog boxes, and tabs	**Ebrima, Size 10.5, Bold** **Enclosed in double quotation marks** e.g. Open the **"Debug Configuration"** dialog box

Table 1. Typographical Conventions

Symbol Conventions

Item	Description
Caution	Indicates a potential hazard or unsafe practice that, if not avoided, could result in data loss, device performance degradation, or other unpredictable results.
Note	Indicates additional and supplemental information for the main contents.

Item	Description
 *Tip*	Indicates a suggestion that may help you solve a problem or save your time.

Table 2. Symbol Conventions

How to Contact Us

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1 Environment Preparation

GoWarrior FTool is a software tool that runs on Windows operating system. It is use for burning the NAND Flash of the TIGER Board and it requires the following items:

- **FTool.exe:** i.e. the burning tool
- **ALI.ini:** This file is automatically generated at compile time. Description of other files required by FTool.exe can also be found in this file.

Note:

As FTool is applicable for both the Linux solution and Android solution, the location of generated ALi.ini and other files after compilation will differ according to different customized projects.

- `NandList_v2.ran`: This is a NAND Flash list file. It needs to be updated if incase a new flash is added.
- `sdram_C3921_QFP_1GB_1066Mbps.abs`: It is the SDRAM profile. Please select a correct platform SDRAM profile.
- `nand_updater_loader.axf.bin`: It is a file for implementing burning.
- `uboot_unify_1GB_training.abs`: Loader

Note:

In Android system, FTool is located in this directory: `AOSP/build/tools/burningtools/FTool/`. When executing the "build image" command to generate Android image files, the system will simultaneously and automatically copy files in FTool directory to the `AOSP/image` directory where Android image files are located.

As FTool is applied to both the Linux solution and Android solution, the location of generated burning file in each partition after compilation will differ according to different customized projects.

```
[SYSINI]
FlashTable = NandList_v2.ran
ALI_CHIP = C3921

[ALI-PRIVATE-PARTITION0]
ALI_PRIVATE_RESERVED_BLOCK = 0x02
SecondCpu =
SIZE = 0x800000

[SYSTEM-START-ADDRESS]
TDS_ADDR = 0x400
START_ADDR = 0x83C00000

[STARTUP-FILE]
DRAM = sdram_C3921_QFP_1GB_1066Mbps.abs
UPDATER = nand_updater_loader.axf.bin
LOADER = uboot_QFP_1GB_training.abs

[PARTITION1]
NAME = bootbak
SIZE = 0x800000
FILE = uboot_QFP_1GB_training.abs

[PARTITION2]
NAME = bootargs
SIZE = 0x800000
FILE = bootargs.abs

[PARTITION3]
NAME = deviceinfo
SIZE = 0x800000
FILE = deviceinfo.abs
```

Figure 1. Partition Information

2 Flash Burning

2.1 Connecting to Platform

1. Prepare a USB cable and an adapter as shown below.

Figure 2. Sample Cable and Adapter

2. Press and hold the "**Burn NAND**" button as shown in Figure 3 and connect platform to PC via USB cable as shown in Figure 4.

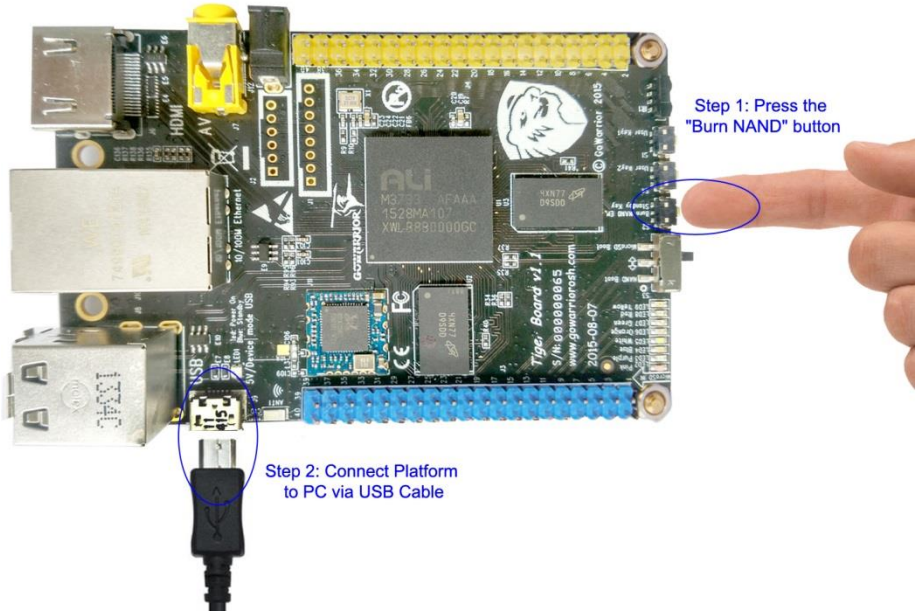

Figure 3. TIGER Board

Figure 4. Connecting Platform to PC via USB Cable

3. Run FTool.exe.

You will see the following screen if the platform is successfully connected with the PC. If the connection is unsuccessful then please try again.

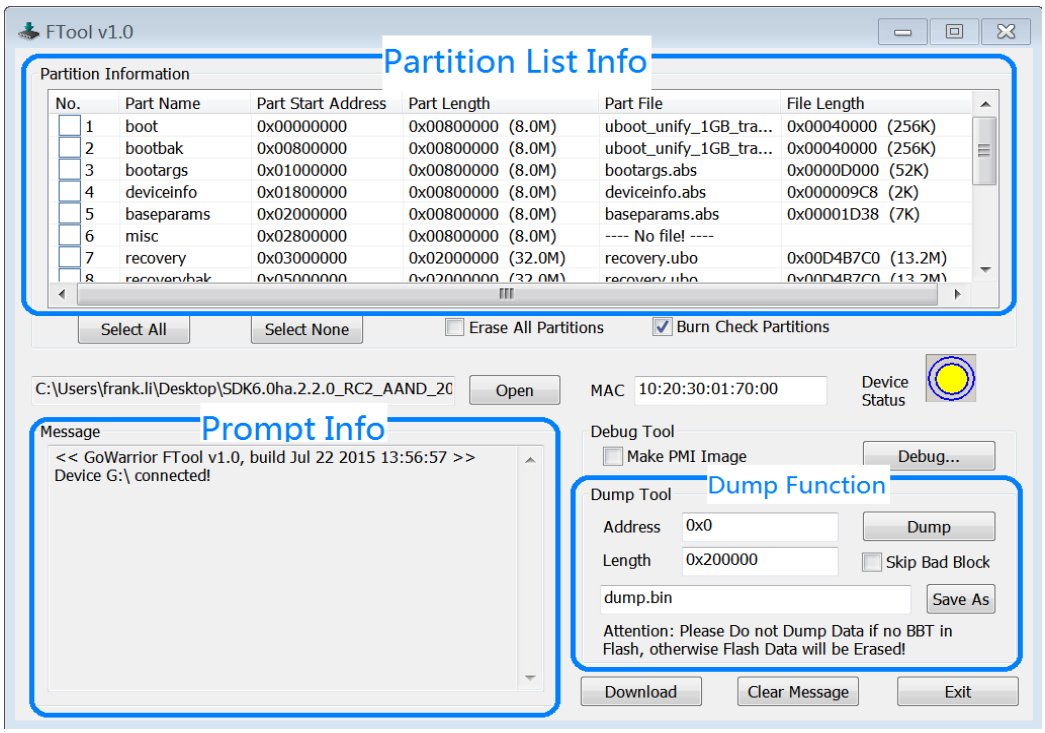

Figure 5. FTool Interface

2.2 Opening Profile

When FTool is operative, the profile ALI.ini in the current directory will be parsed automatically. Other profiles can also be accessible.

Please pay attention to the size of partition list in ALI.ini. The partition size should be larger than the size of burned file.

[PARTITION1]

NAME = bootbak

SIZE = 0x800000

FILE = uboot_unify_1GB_training.abs

The TOTAL-SIZE of partition should be smaller than the capacity of NAND Flash.

For example, the capacity of selected NAND Flash should be larger than 0x24400000 bytes, or else the partition list in ALI.ini needs to be reconfigured.

[PARTITION-COUNT]

COUNT = 9

TOTAL-SIZE = 0x24400000

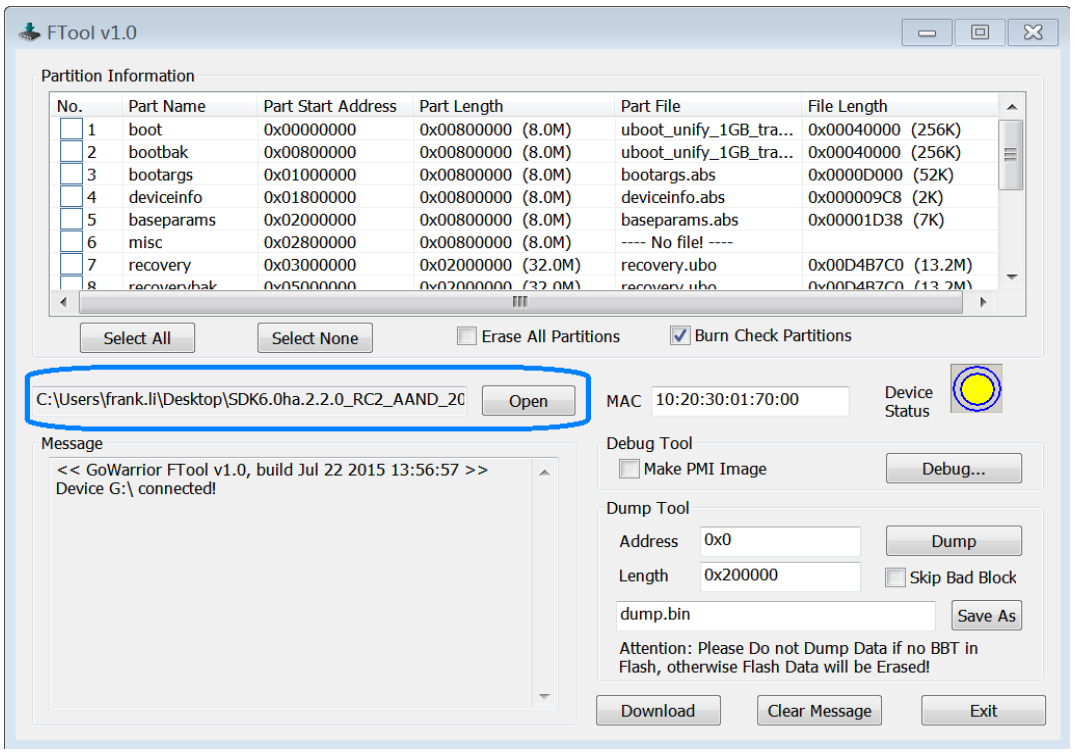

Figure 6. Opening Profile

2.3 Selecting Partitions to Burn

You can either choose "**Select All**" to burn the complete Flash or choose "**Select None**" to cancel all the selected partitions.

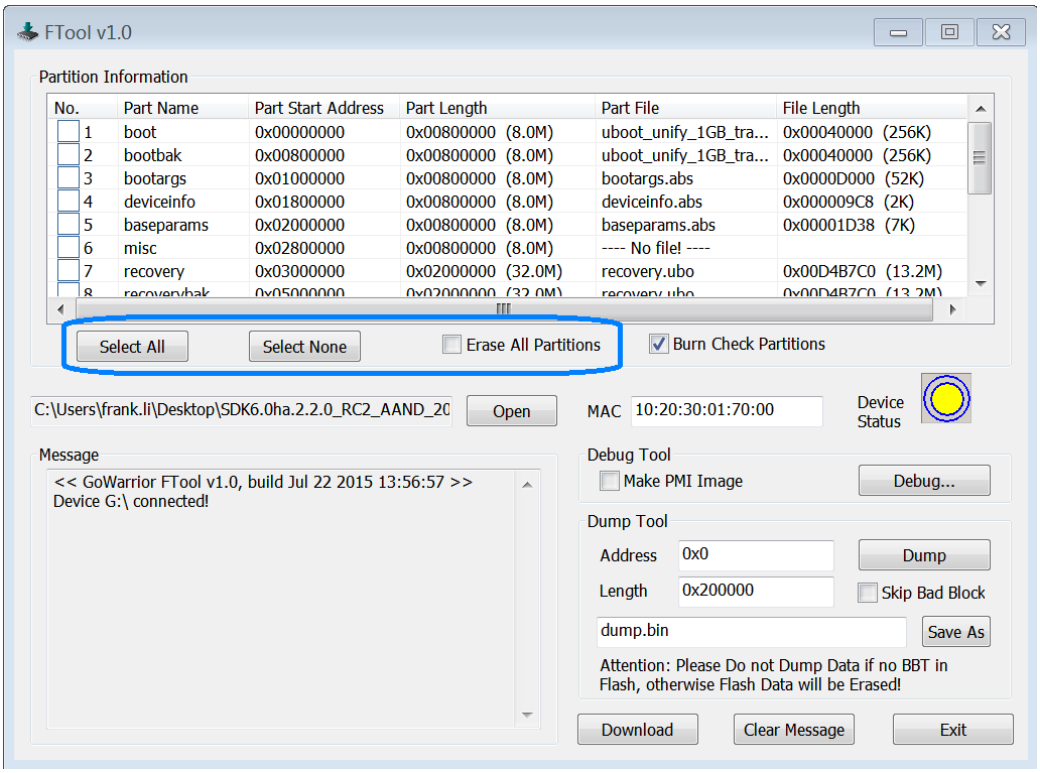

Figure 7. Partition Options

You can select one or more partitions to burn simultaneously, you can also select "**Erase All Partitions**" to erase the complete Flash.

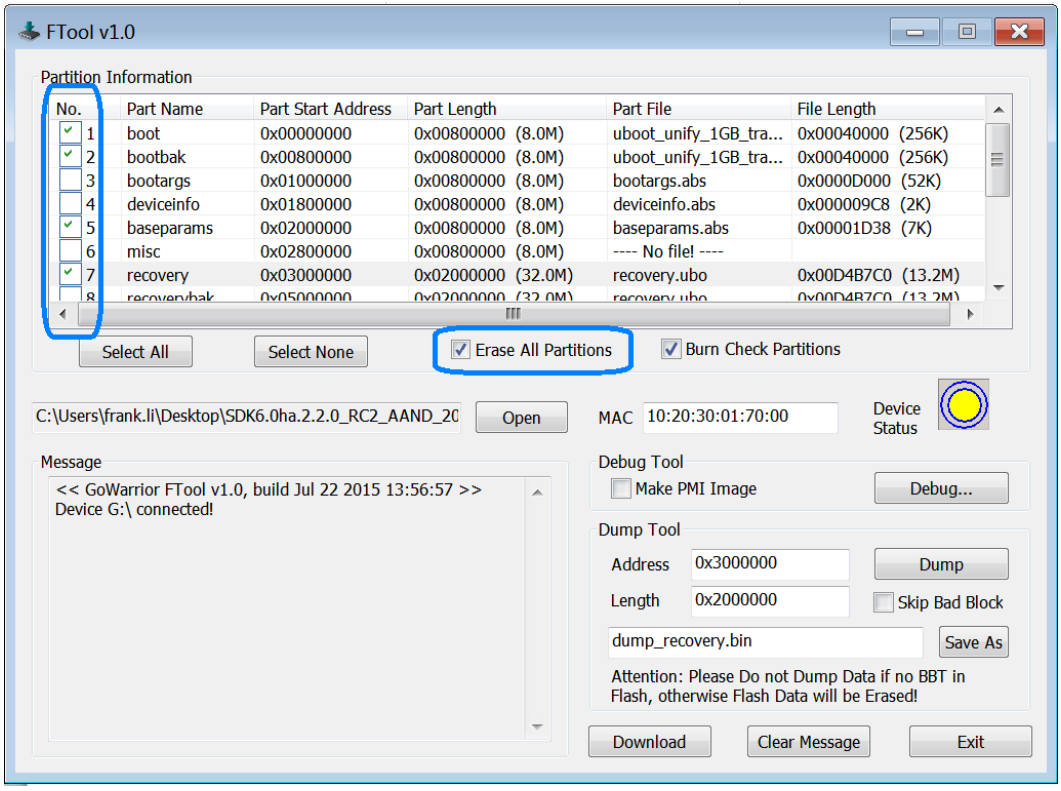

Figure 8. Selecting Partitions to Burn

2.4 Starting Burning

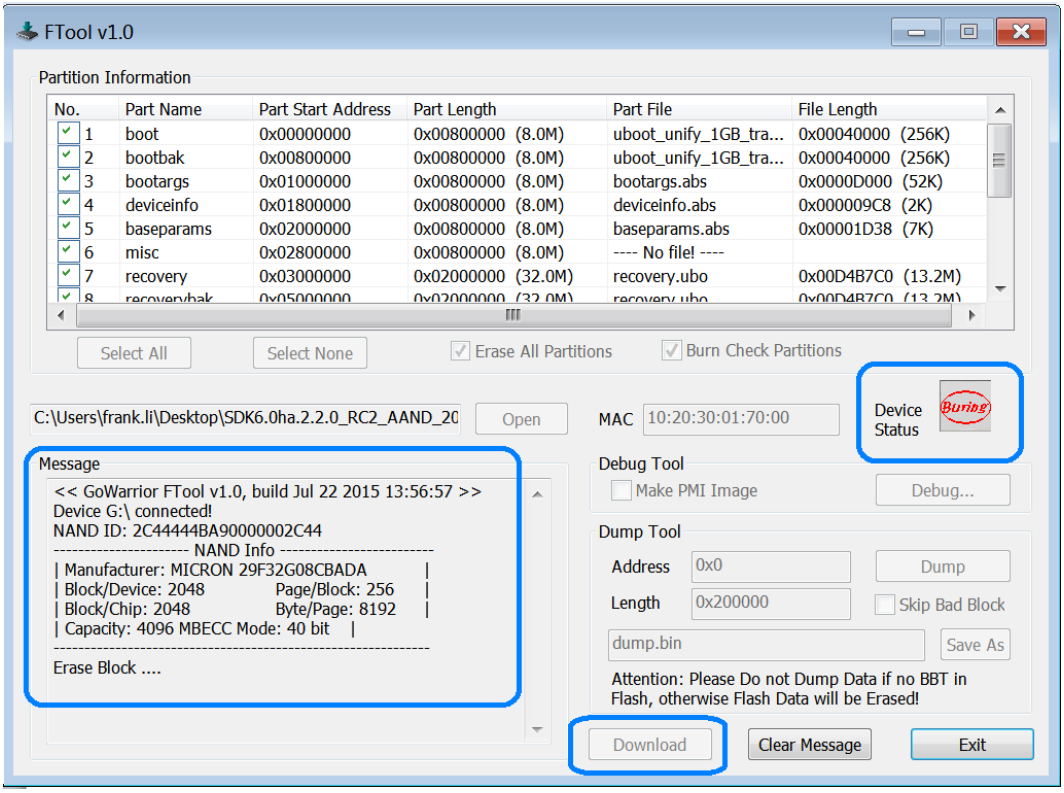

Figure 9. Starting Burning Flash

2.5 Finishing Burning

When the following screen appears, it indicates burning process is successfully completed.

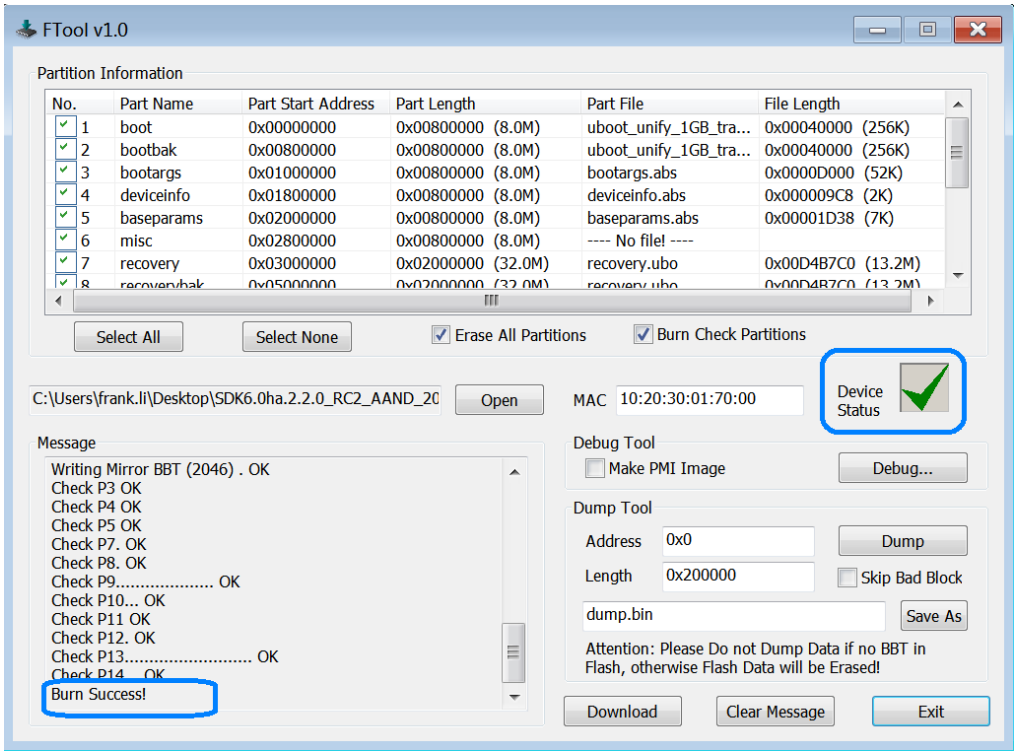

Figure 10. Burning Completed

3 Making A Burning File Package

FTool supports burning the single file in ZIP archive format.

There are two methods to create the burning file package.

1. Use Linux zip command

Put the files (exclusive of files related to FTool) to zip in the same directory, and execute the following command.

```
user@shsa02:~/work/SDK6.0ha.1.1_ACAS1.1_20140507$ zip -0 ALi.abp *
```

2. Use Windows zip utility for file compression (WinZIP/WinRAR).

Figure 11 illustrates the options that need to configure for creating a zip package. Please pay attention to the items circled in blue. The files will be compressed to produce ALi.abp file.

Note:

When the second method is adopted, if some files in the storage package need to be updated, do not drag the files to the compression tool interface directly .The proper way to do this is to unzip the storage package to some directory, use the new files to overwrite the original files, and recompress the files to generate a new storage package by making configurations indicated in Figure 11.

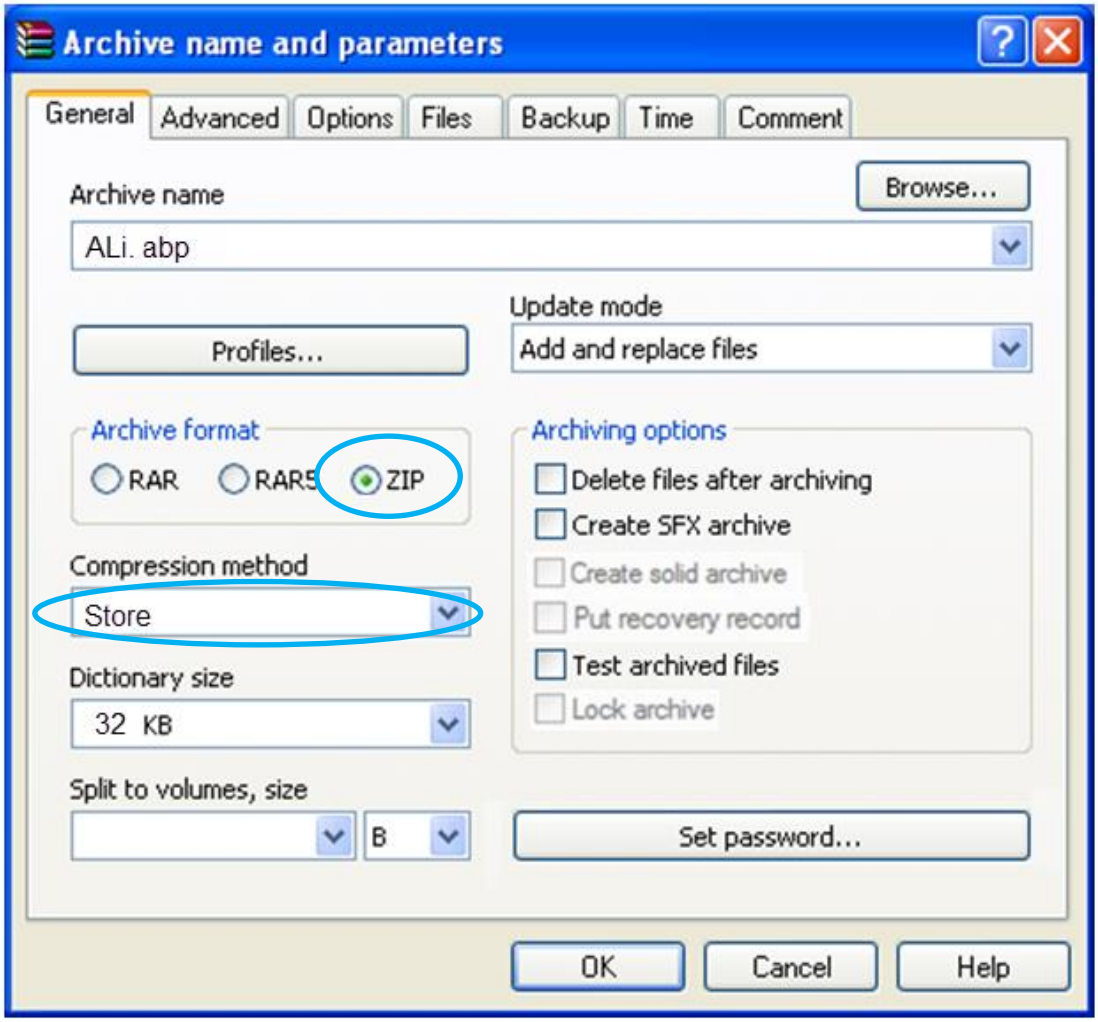

Figure 11. Archive Name and Parameters

4 Flash Dumping

4.1 Connecting to Platform

This step is corresponds to the *2.1 Connecting to Platform*.

4.2 Opening Profile

This step is corresponds to the *2.2 Opening Profile*.

Generally, the opened profile should match the partition list in the platform. Otherwise the data dumped by partition might be incorrect.

4.3 Selecting Items to Dump

- Dump a partition

Select a partition from the partition list and the address. The length of this partition will be automatically calculated in the Dump Tool Column.

- Dump a partition segment

If you need to dump the entire NAND Flash or dump the specified data address and length, then please enter the address and length in the "**Address**" and "**Length**" fields of the "**Dump Tool**" area.

Dumping does not skip the bad blocks by default. If you wish to skip the bad blocks, please select "**Skip Bad Block**".

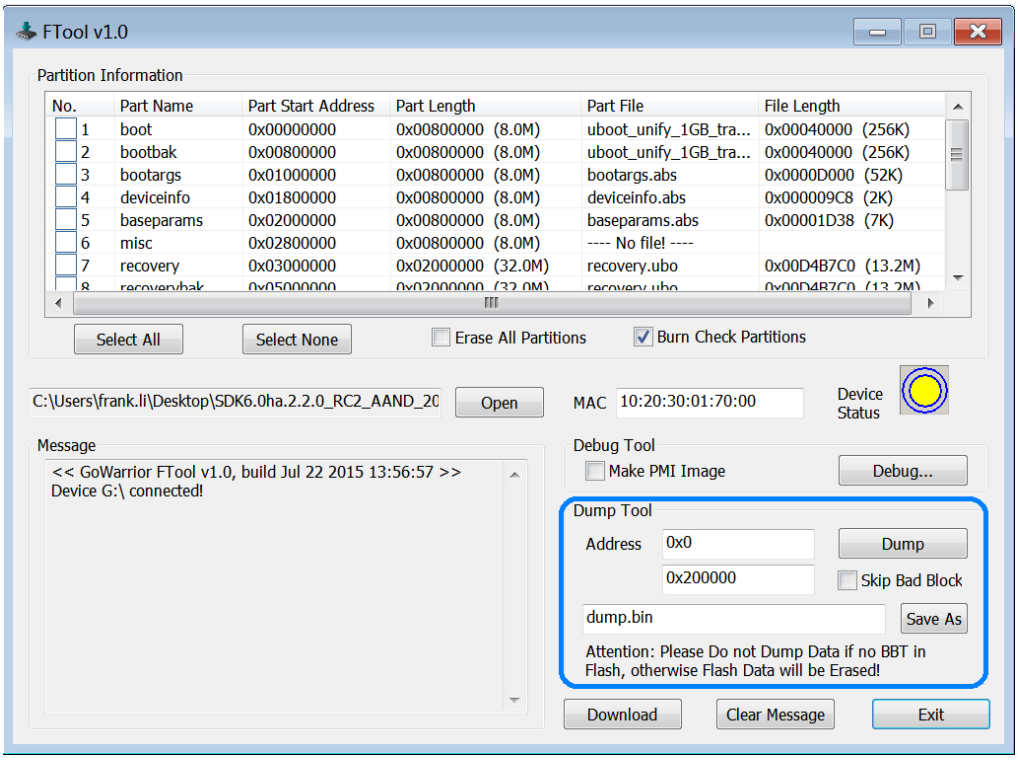

Figure 12. Selecting Items to Dump

4.4 Starting Dumping

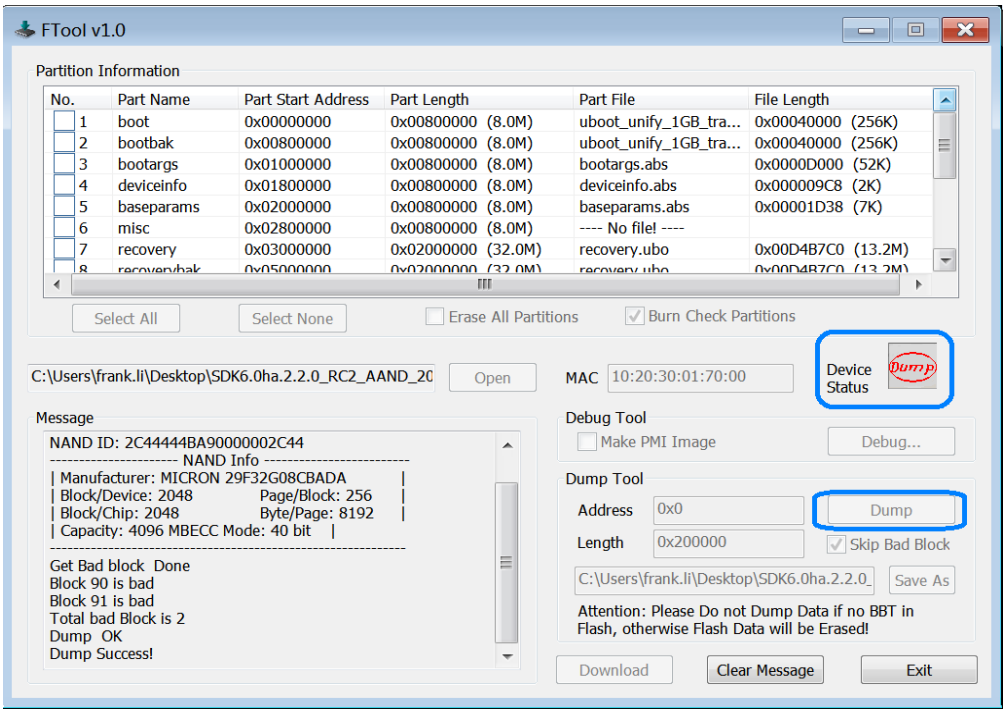

Figure 13. Starting Dumping

4.5 Finishing Dumping

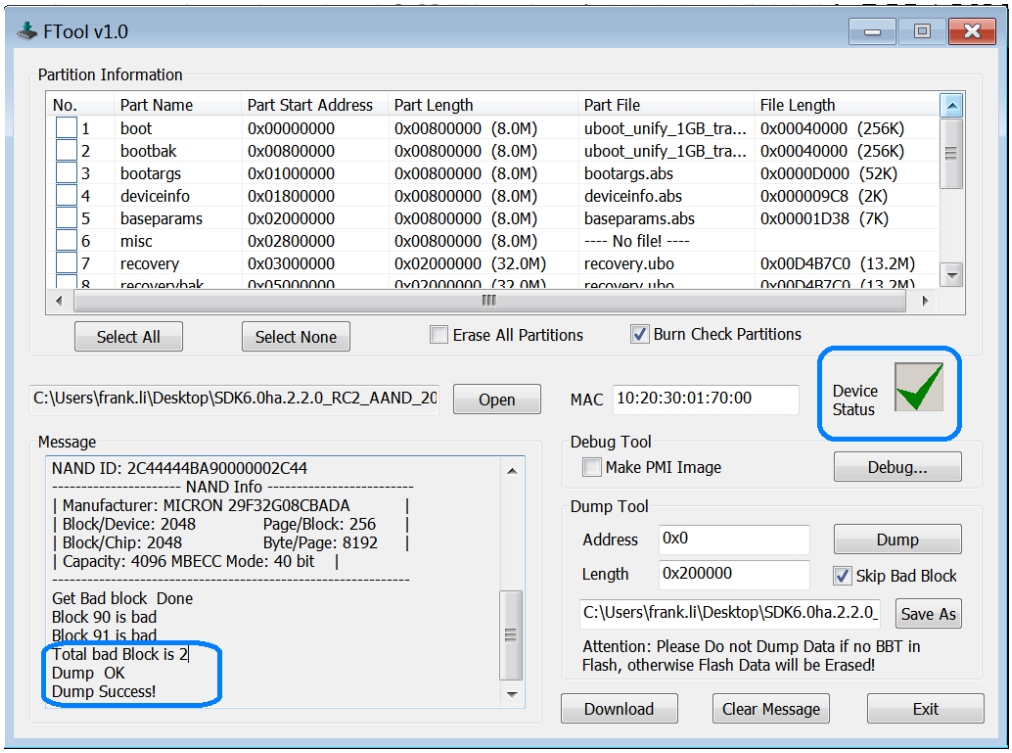

Figure 14. Dumping Completed

5 Modifying MAC Address of Platform

5.1 Connecting to Platform

This step is corresponds to the *2.1 Connecting to Platform*.

5.2 Opening Profile

This step is corresponds to the *2.2 Opening Profile*.

5.3 Modifying MAC Address

If a burn file contains the `deviceinfo` file, FTool will automatically resolve MAC address from the `deviceinfo` file and display it on the screen, as shown in Figure 15. You can edit the MAC address by clicking on MAC edit box.

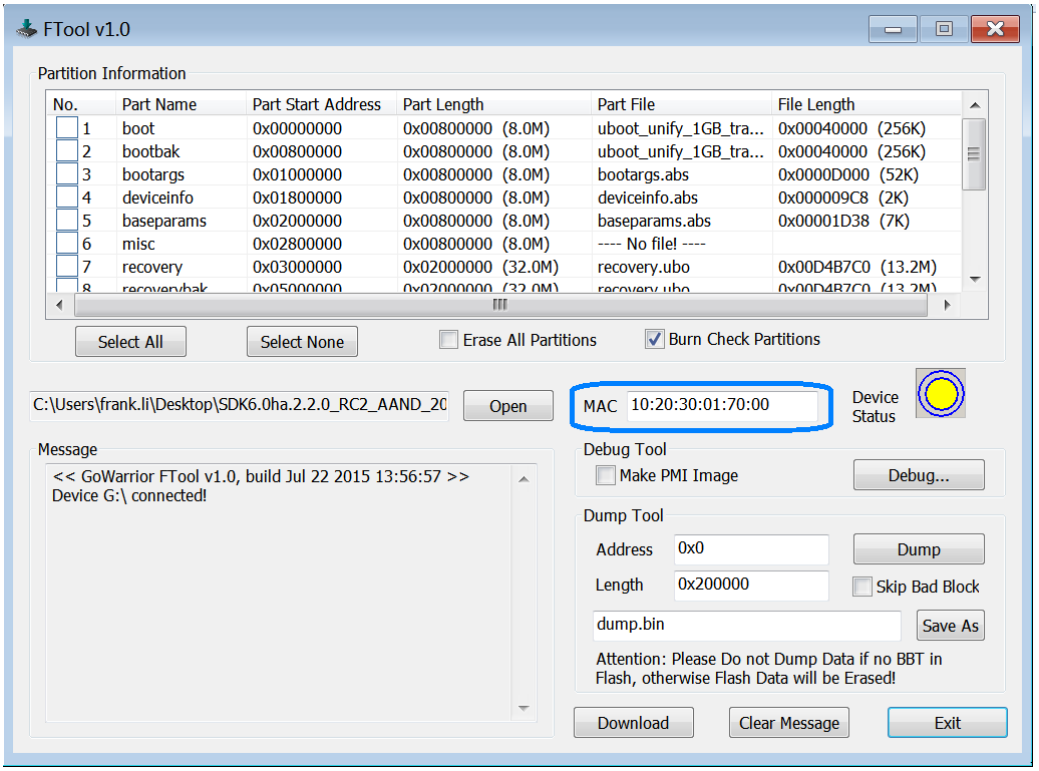

Figure 15. Editing MAC Address

Note:

FTool will automatically detect whether MAC address needs to be modified. During burning, FTool will compare the MAC address info in the edit box of the screen with that saved in the deviceinfo partition. Once the address difference is detected, it will automatically tick the deviceinfo partition and burn MAC.

6 Partition Burn Check

Once the partition burning process will complete, then the FTool will read back the partition data from NAND Flash and compare it with the original data to ensure successful burning. As this process takes a relatively long time, the "**Burn Check partitions**" option on the interface is provided to support reading back or not reading back data for confirmation.

FTool defaults to check "**Burn Check Partitions**". If you wish to cancel the data confirmation process, you only need to uncheck "**Burn Check Partitions**".

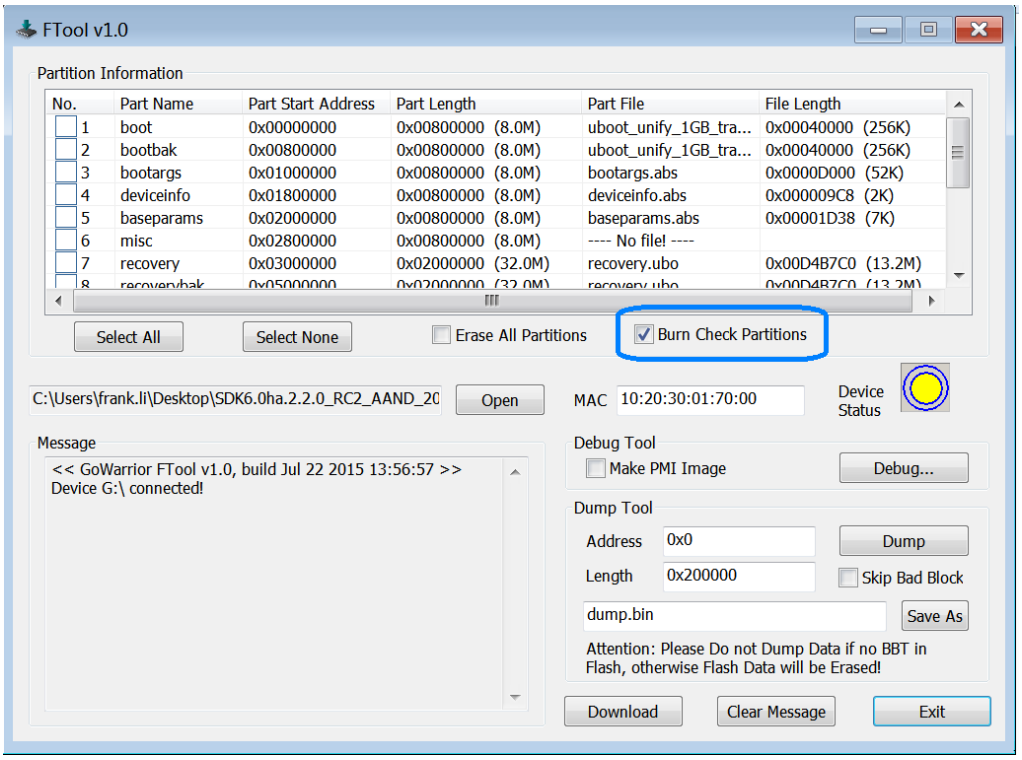

Figure 16. Partition Burn Check

Revision History

Document Change History

Revision	Changes	Date
v1.0	Initial Release	September 07, 2015

Table 3. Document Change History

Software Change History

Revision	Changes	Date
v1.0	Initial Release	September 07, 2015

Table 4. Software Change History

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