NAND Version 8 Booting Guide

NAND_Version_8_Boot_GUIDE_V1.0B

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Telechips

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Revision History

Date	Version	Description
2012.06.25	1.0	Support NAND Version 8 Driver for Android system

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1 Introduction

This document describes how to configure for NAND Version 8 booting in Telechips Android Platform

1.1 Remarks

1. Must have to use FWDN V2.22 or higher version

2 NAND Version 8 Booting

2.1 Introduction

Now we Support NAND version 8 driver for pure NAND. And we use EXT4 File system on Android NAND version 8 driver is included FTL driver for using pure NAND.

This document describe how to build bootloader and android system using NAND version 8 driver. And it explain example using tcc892x platform

2.2 Make Bootloader for NAND version 8 driver

```
1) Change Directory to lk bootloader
$ cd bootable/bootloader/lk

2) Make bootloader for NAND Version 8 Driver
$ make tcc8920_evm_nand_v8

* You can see the type of platform currenly support
  bootable/bootloader/lk/project
```

2.3 Android system build for NAND Version 8 Driver

1). Execute lunch command in android root
2). Select tcc8920v8-eng

```
     24. full_tcc8920v8-eng
```

When Android system is compiled, the all images are located in ***out/target/tcc8920*** directory.

3 The Partition Layout.

3.1 The Partition Layout of eMMC for Android system

You should have to understand how to configure NAND FTL partition layout for Android System, before you download Android system images. See the following table of default NAND FTL partition layout.

Area	Name	Purpose	FileSystem	Required
Boot	Boot Area	Kernel / Ram Disk	RAW	Mandatory
System	Android System	Android System Area	EXT4	Mandatory
UserData	Android UserData	Android User Data Application / Database	EXT4	Mandatory
Cache	Android Cache	Android Cache Area	EXT4	Mandatory
Recovery	Android Recovery	Recovery Mode Boot Area Recovery Mode Kernel / Ram Disk	RAW	Mandatory
Kpanic	Kpanic	Kernel Panic Log	RAW	Mandatory
Splash	Splash	Boot Screen Image	RAW	Mandatory
Misc	Miscellaneous	Firmware Update Bootloader Flag	RAW	Mandatory
TCC	Telechips Only	Set-top Flash write	RAW	Mandatory
DATA	Data	Mass Storage	VFAT / NTFS	Mandatory

3.2 The Partition Size Definition

This layout is only included Mandatory Partition size. The optional partitions are not need for Android system and it used only special purpose.

Area	Size	Partition	FileSystem
Boot	10MB	mmcblk0p1	RAW
System	300MB	mmcblk0p2	EXT4
UserData	1024MB (1GB)	mmcblk0p3	EXT4
Extended	Extended	mmcblk0p4	Extended
Cache	150MB	mmcblk0p5	EXT4
Recovery	10MB	mmcblk0p6	RAW
Kpanic	5MB	mmcblk0p7	RAW
Splash	4MB	mmcblk0p8	RAW
Misc	1MB	mmcblk0p9	RAW
TCC	1MB	mmcblk0p10	RAW
DATA	Available Space	mmcblk0p11	VFAT / NTFS

Linux support only 4 primary partition, but we need more than 4 partition. So we set the extended partition. the last 4th partition are extended and remaining 5 partitions are logical partition included in extended.

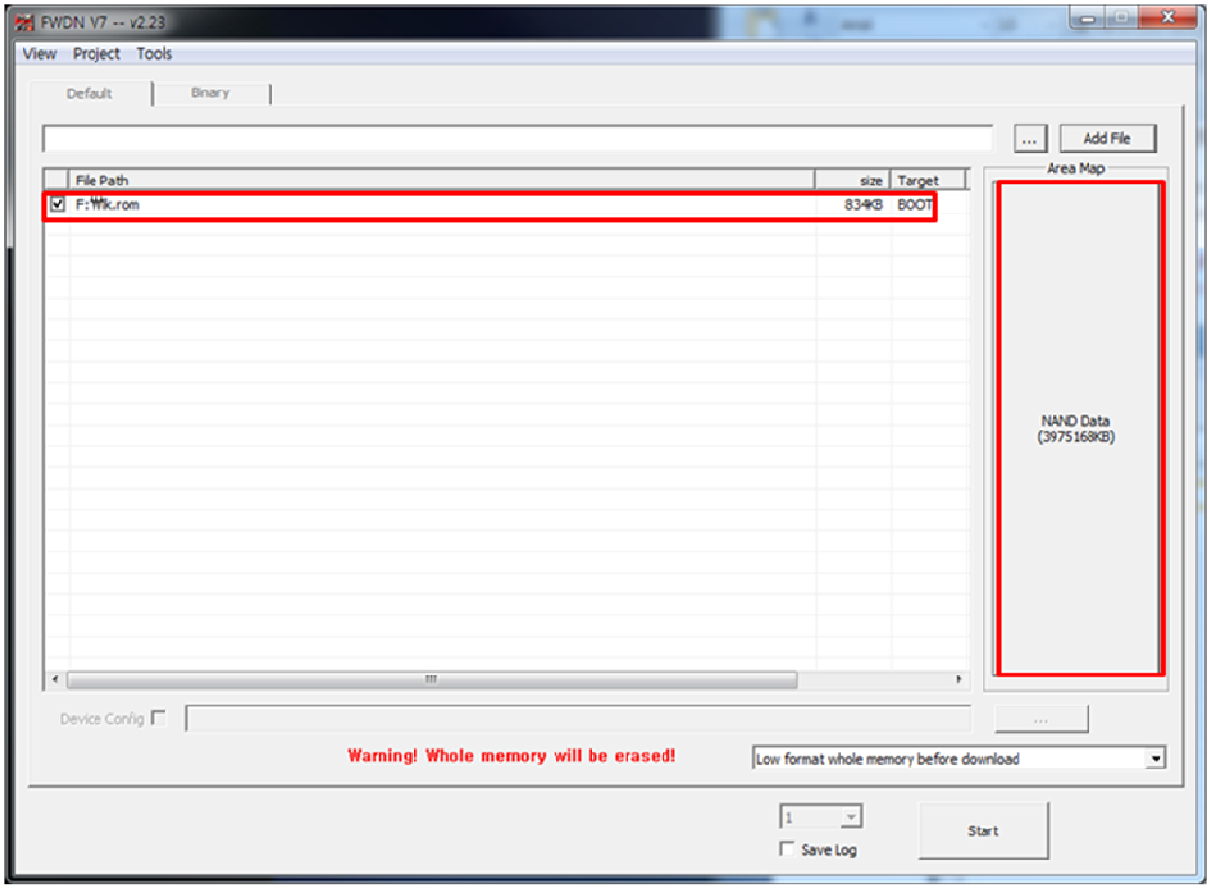
4 How to select Boot Mode.

Boot mode is as same as previous nand version 8 driver(MTD + FTL). It is NAND Boot Mode

5 Prepare to Download With FWDN

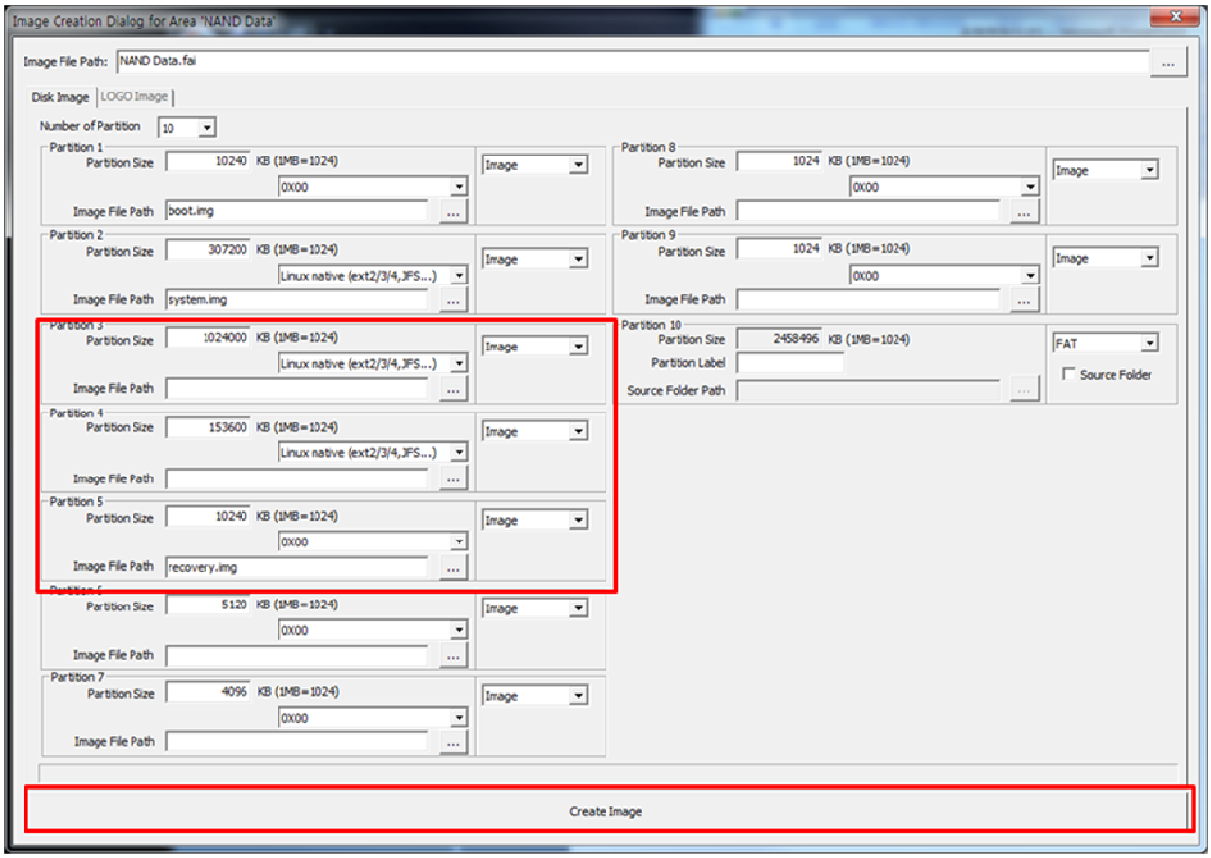
To Download TCC892x Boot Loader And Android system images, you must have to use FWDN V2.22 or Higher Version. This section describes that how to prepare and download images.

Step 1. Load bootloader to FWDN and then attach target devices on FWDN using usb boot mode. if completely attach tcc892x to FWDN, click ***NAND Data Button***



If you want to low format download select format oprtions

Step 2. Prepare download as following images. The partition order is same as partition layout previously describe in section 3. And then click ***Create Image Button***



Notice : you can see partition 3 and partition 4 in the red box . those partition image path are empty. Those are userdata partition and cache partition. From Android 4.0(Ice Cream Sandwich) if user data and cache partitions are not formatted ext4 file system, format those partition to ext4 file system.

At boot time, if those partitions are not formatted, system will format those partitions. And then reboot system for initializing Android systems. So FWDN does not write any data to that partition if image file path is empty.

Step 3. If create image success press start button. And then start download to target board