



EM210 Burn Linux Image Manual

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1. Make the SD Card used to burn image

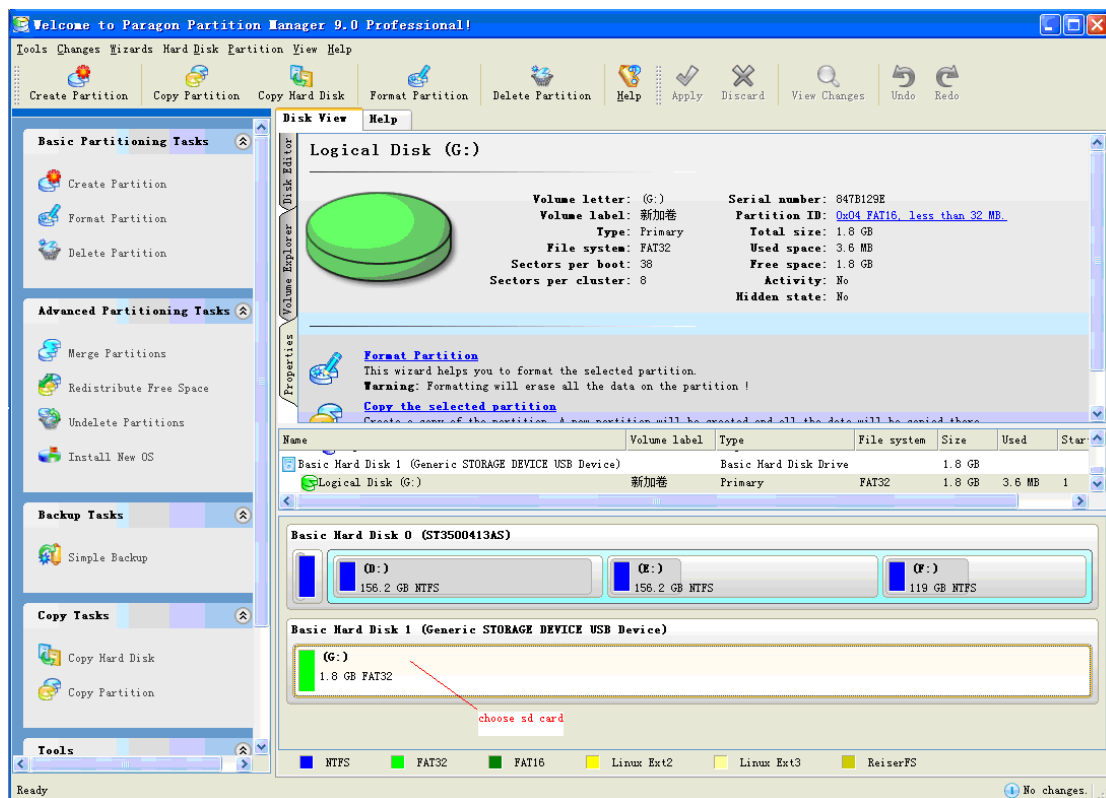
Partition the SD card before make the bootable SD card in the windows OS. Set aside front 10M space to uboot.

Open “**pmsrv_demo.exe**” in the CD: /Linux/Tools/windows to install Paragon Partition Manager.

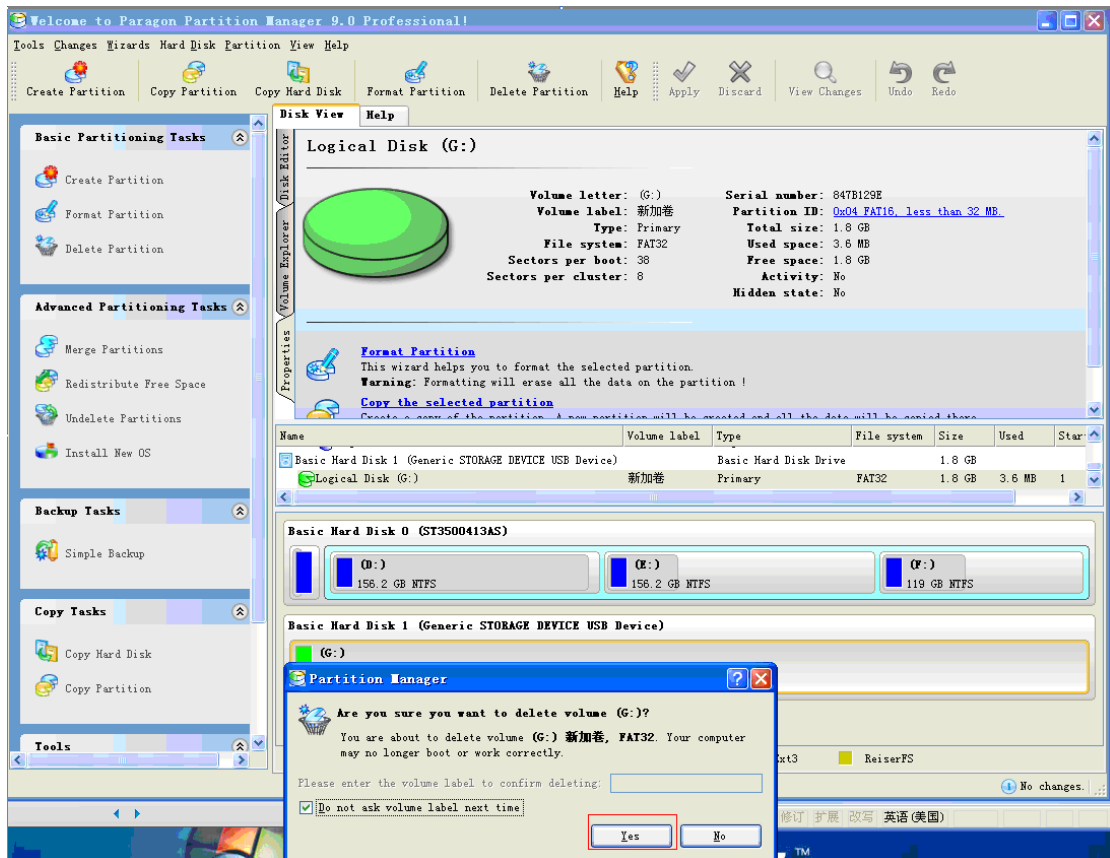
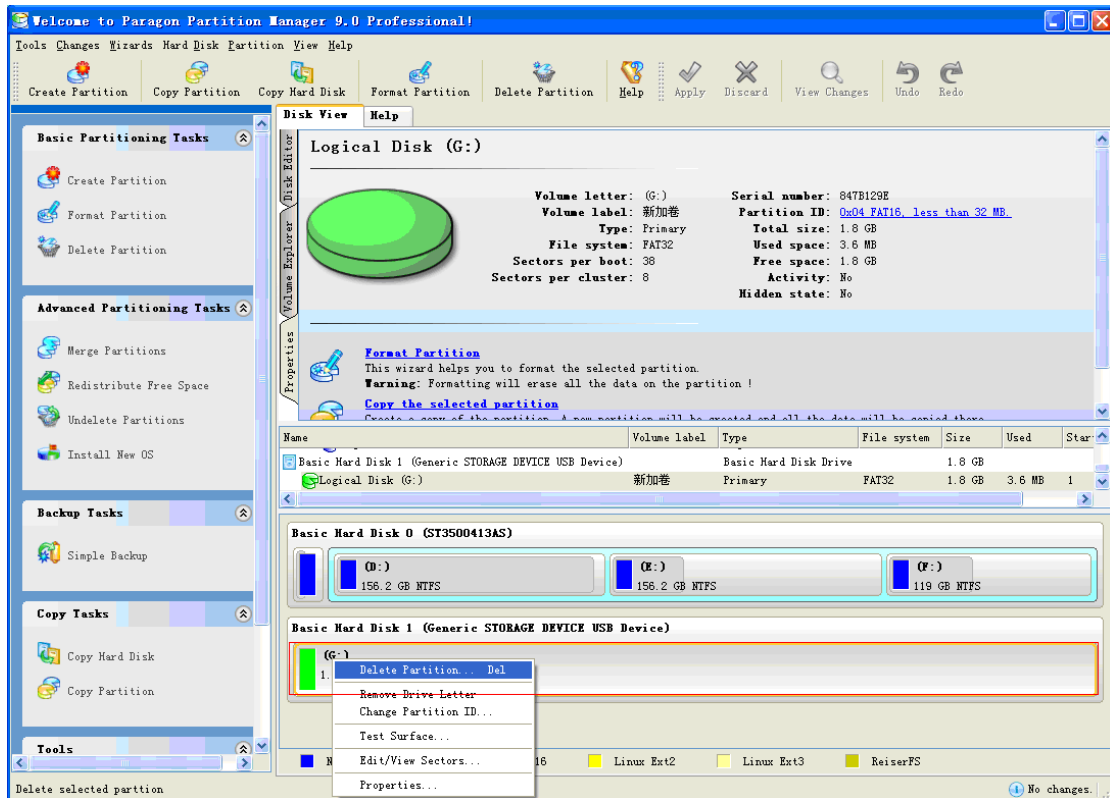
(1) Open “Paragon Partition Manager”

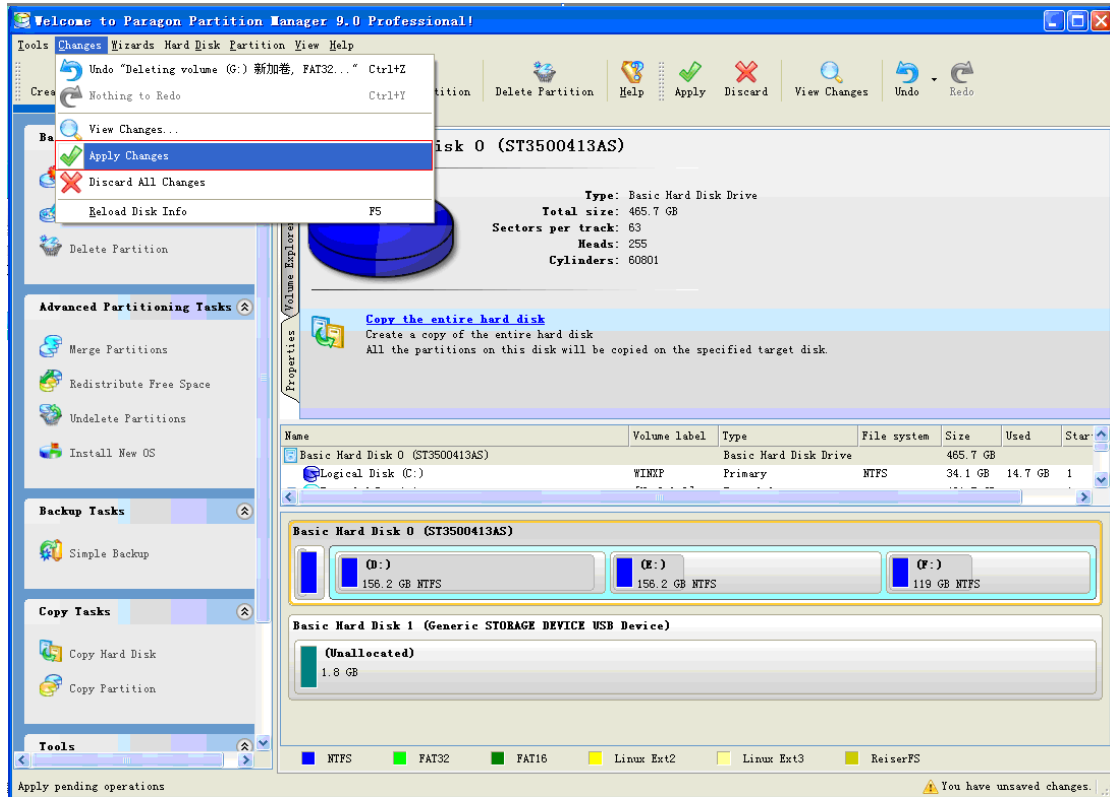


(2) Select the SD card

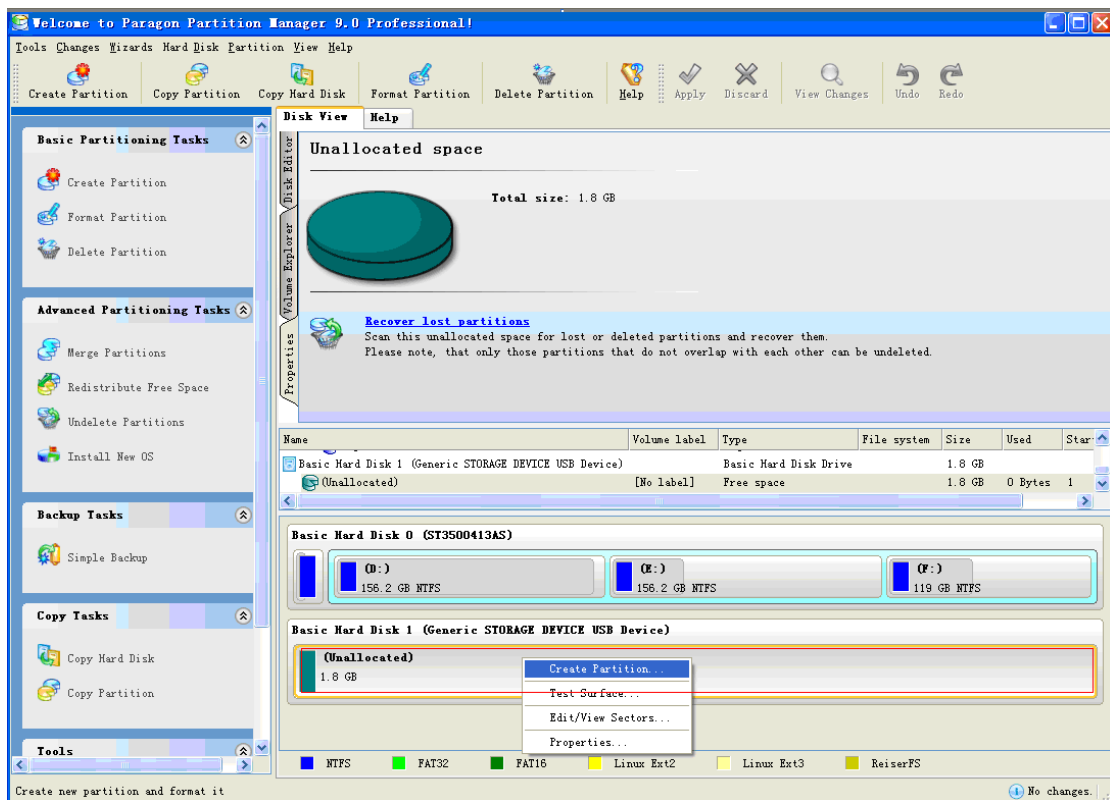


(3) Right click the mouse and select “Delete Partition...”





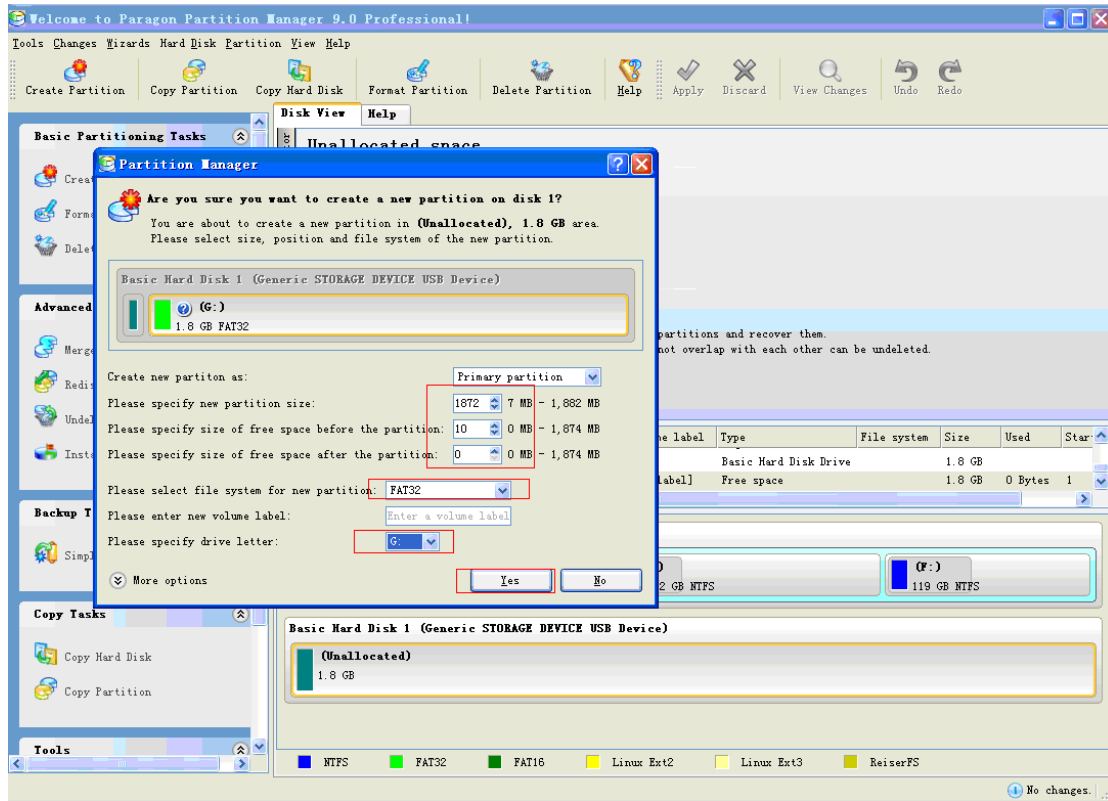
(4) Right click the mouse and select "Create Partition..."



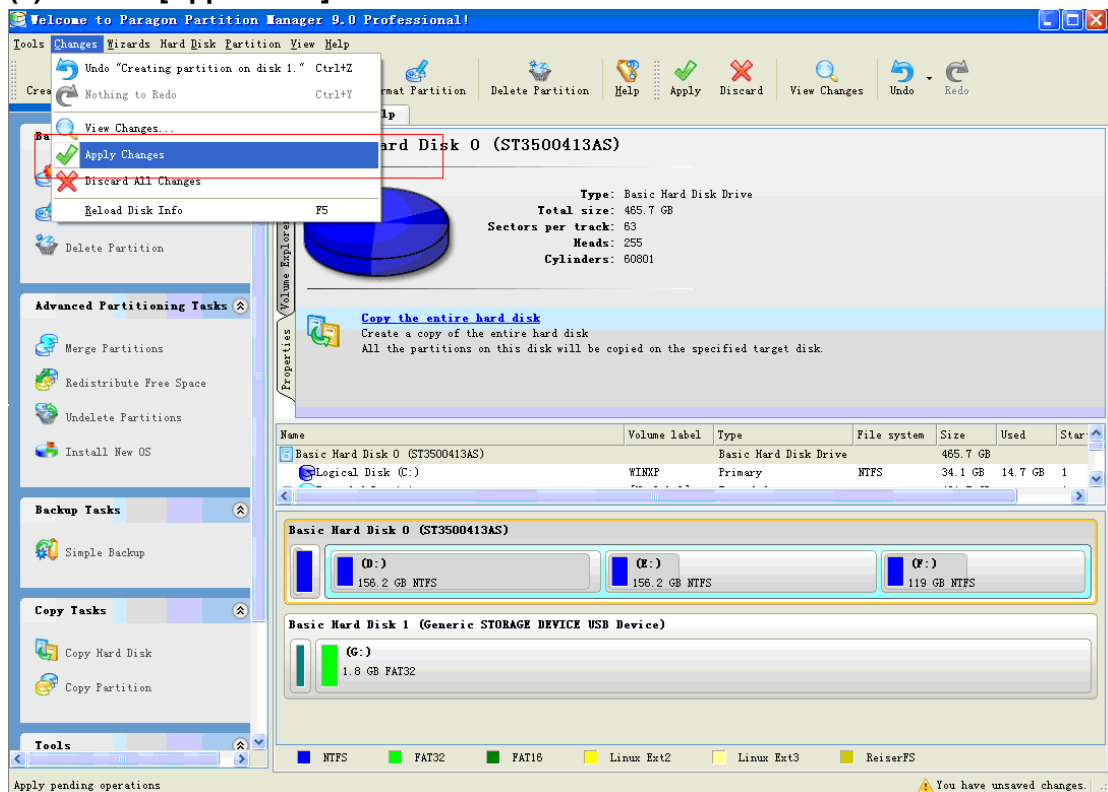
(5) Set aside front 10M space

Select [FAT32]

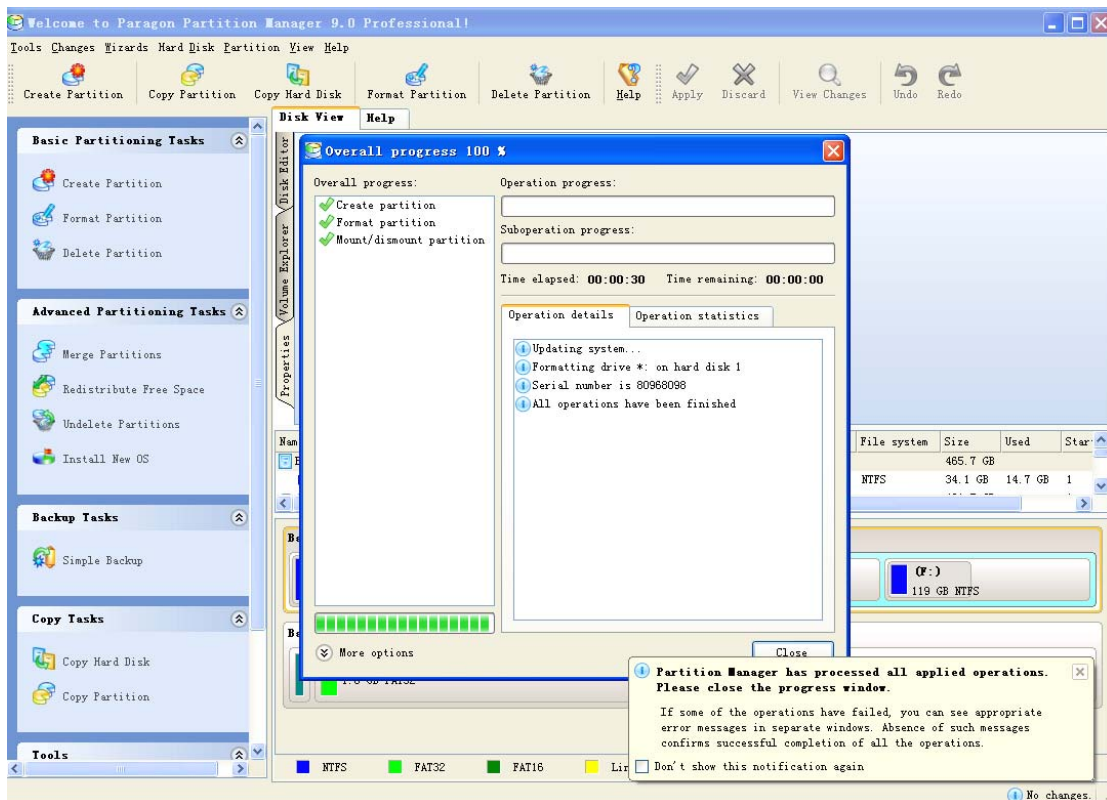
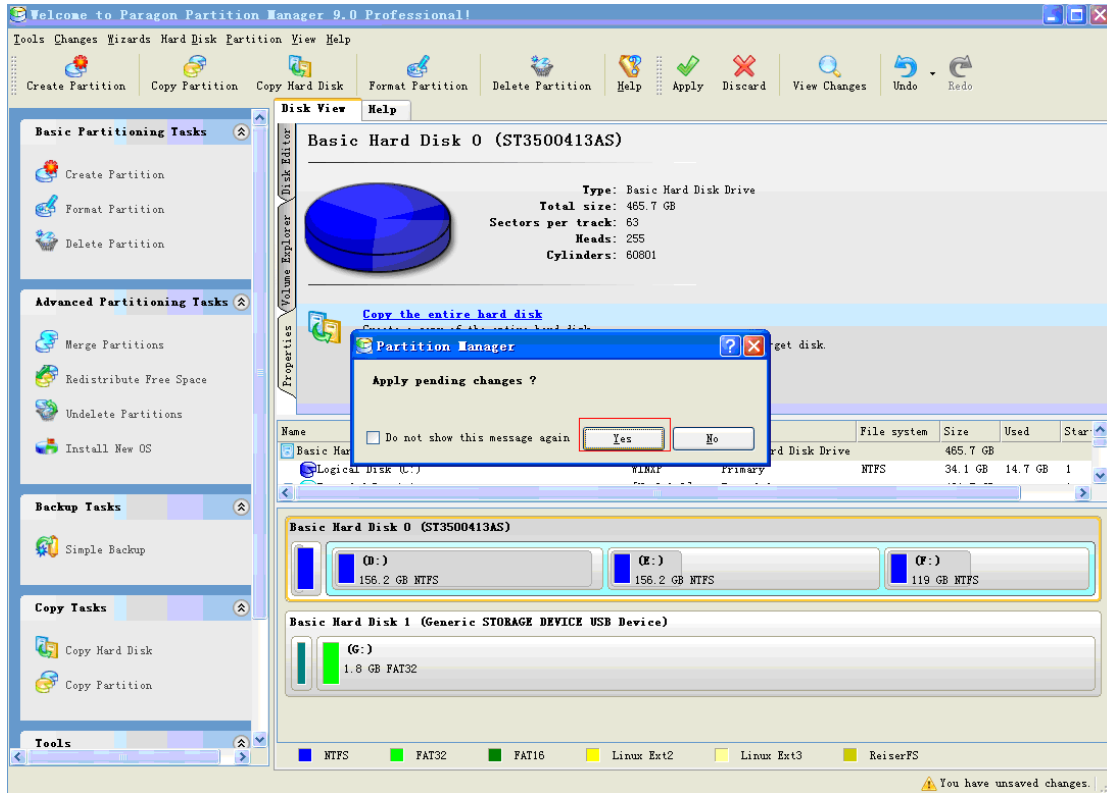
Select [Yes]



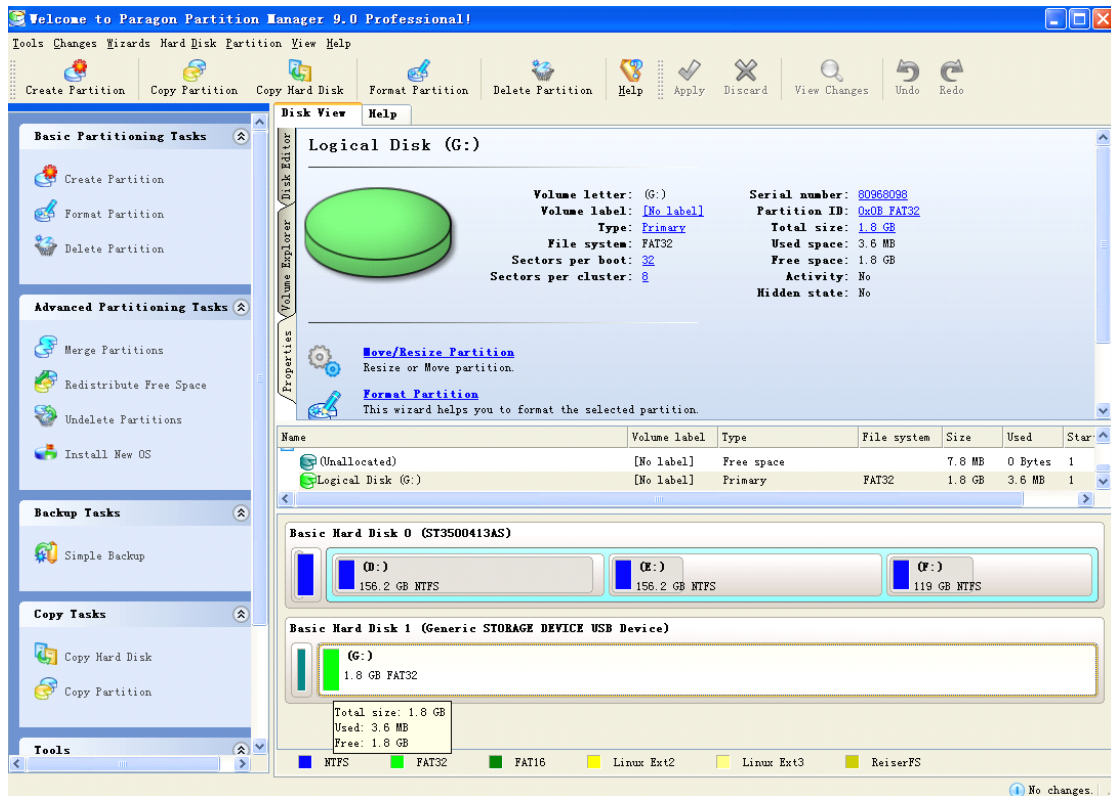
(6) Select [Application]



Select [Yes]



For the point you have reserved the space for the uboot.

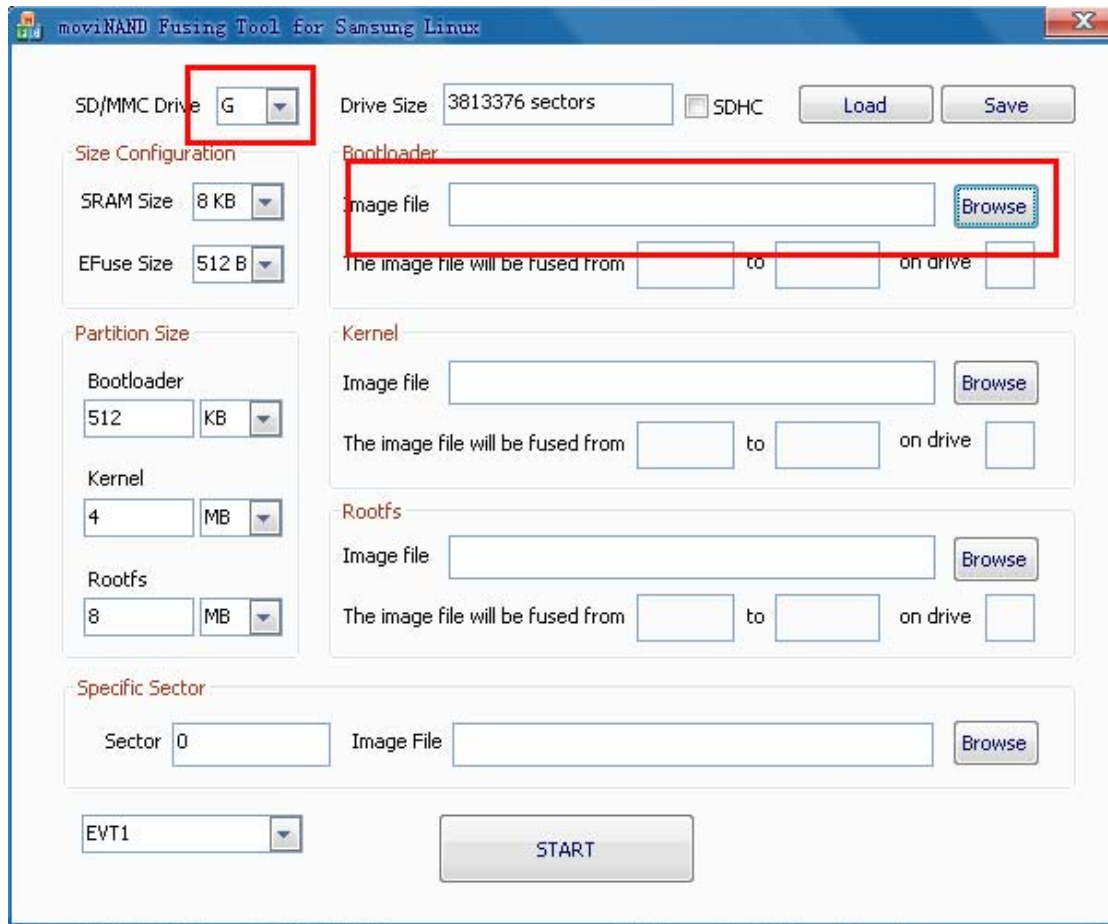


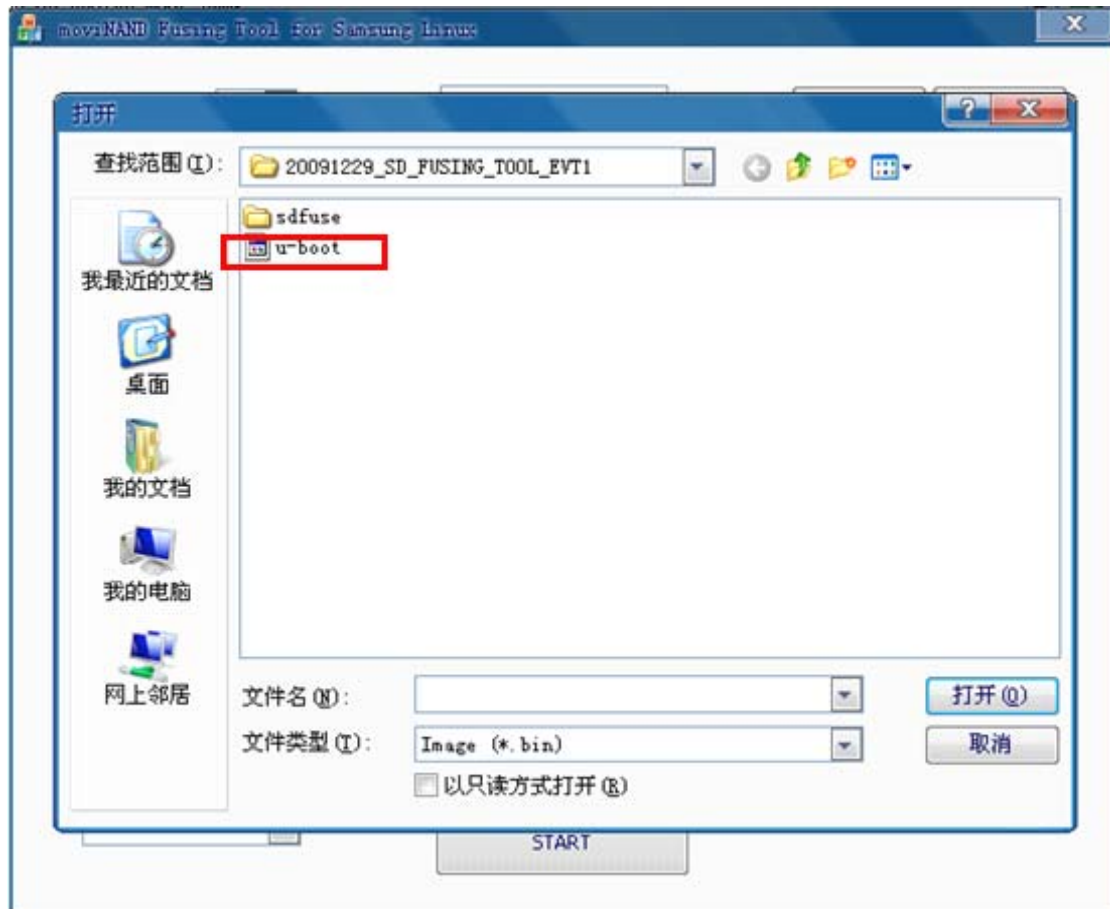
2. Burn the uboot by SD card

- (1) Before you use the SD card, you had better format the SD card to FAT32 format.
- (2) Open “moviNAND_Fusing_Tool_v2.0”.

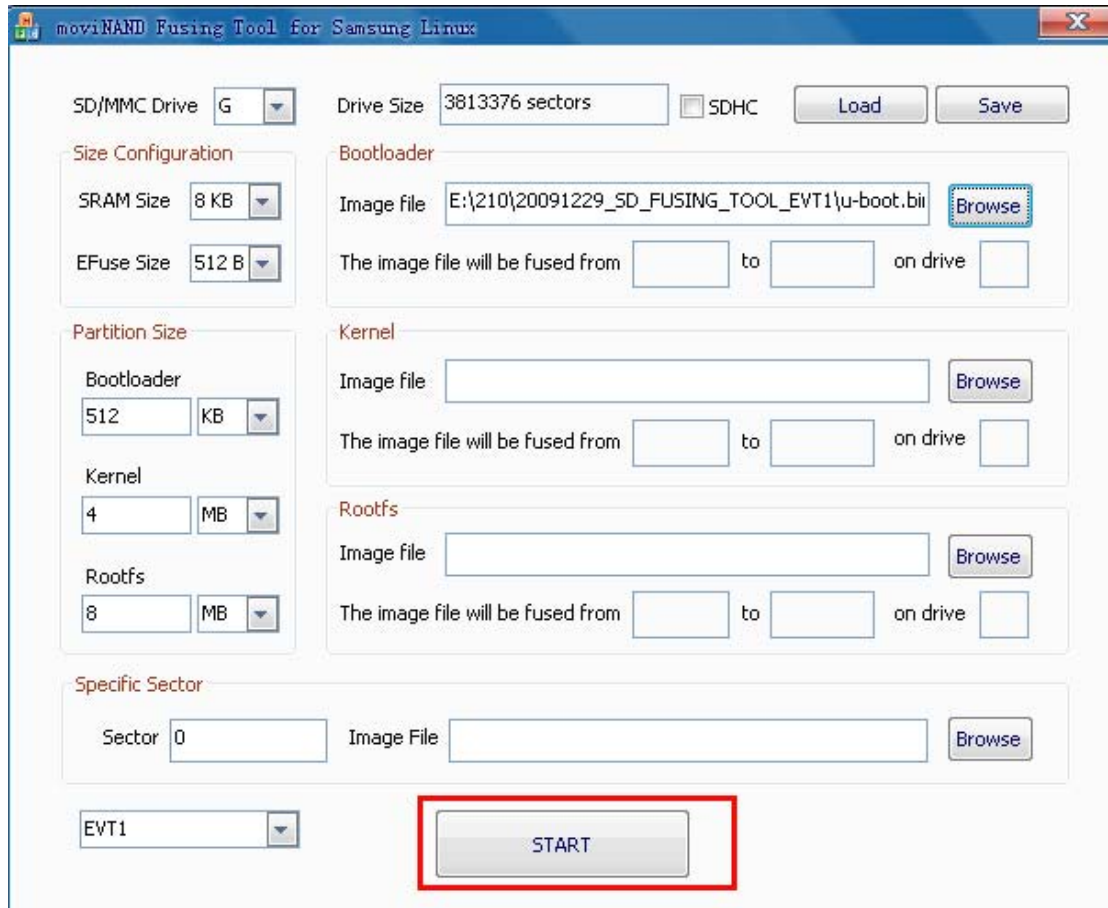


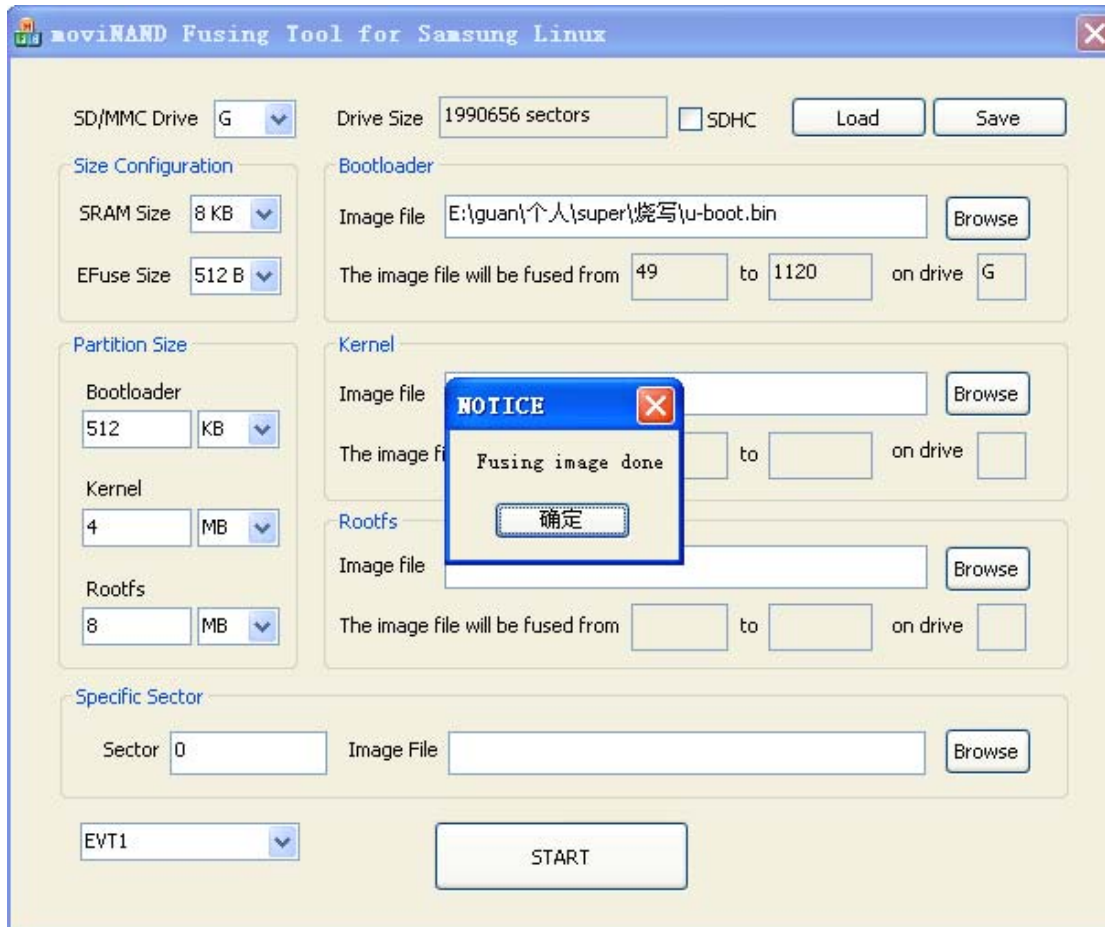
- (3) Open the disk corresponds to the SD card in moviNAND_Fusing_Tool_v2.0
(Please use the SD card provided by Boardcon) and select the file you want to burn.





(4)Click “START”. The pop-up “NOTICE” window shows writing is successful.





3. Set SD booting mode

EM210 provide a variety of boot modes via setting DIP switch. Currently we only use Nandflash boot mode and SD card boot mode. Set as follows:

Boot Mode	J1	J2	J3	J4	J5	J6
256M NAND	ON	ON	ON	ON	OFF	ON
2G NAND	ON	ON	ON	OFF	ON	ON
SD	ON	ON	OFF	OFF	ON	ON

Creating a new folder named sdfuse in the SD card and put the u-boot.bin into the folder. Set the board boot from SD card booting mode. Insert the SD card made in 2 and turn on the board, and press the space key in 3 seconds. Then the serial port will print the following information:

U-Boot 1.3.4 (Mar 29 2012 - 10:44:12) for SMDKV210

```
CPU: S5PV210@1000MHZ(OK)
      APLL = 1000MHZ, Hclkmsys = 200MHZ, Pclkmsys = 100MHZ
      MPLL = 667MHZ, EPLL = 80MHZ
           Hclkdsys = 166MHZ, Pclkdsys = 83MHZ
           Hclkpsys = 133MHZ, Pclkpsys = 66MHZ
           SCLKA2M = 200MHZ

Serial = CLKUART
Board: SMDKV210
DRAM: 512 MB
Flash: 0 kB
SD/MMC: 1909MB
NAND: *maf_id = 236,dev_id = 218
256 MB
The input address don't need a virtual-to-physical translation : 23e9d2a0
*** warning - using default environment
```

```
In: serial
Out: serial
Err: serial
checking mode for fastboot ...
Hit any key to stop autoboot: 0
```

```
##### realARM user menu for realv210 #####
##### For Android #####
[f] Format the nand flash
[s] Burn image from SD card
[u] Use fastboot
[c] Configure the radio device
[b] Boot the system
[r] Reboot the u boot
[e] Exit to command line
-----select-----
Enter your selection:█
```

Now you can burn the images by SD card or USB cable.

Burn bootloader into the nand flash by sdfuse command:

Enter "f" and enter "y" to format the nand flash.

Then enter "s" and "2" to burn u-boot.bin in SD card

4. Use sdfuse to burn system by SD card

You can do the following operations in SD card mode or Nand flash mode. But you must burn the bootloader by SD card boot mode referencing 3 if there is no uboot in nand flash. Creating a new folder named sdfuse in the SD card and put the images you want to burn into the folder.

You had better erase the nandflash if it is your first time to burn system.

```

realv210_init
checking mode for fastboot ...
Hit any key to stop autoboot: 0
SMDKV210 # nand erase

NAND erase: device 0 whole chip
Skipping bad block at 0x00cc0000
Skipping bad block at 0x053e0000
Skipping bad block at 0x089a0000
Skipping bad block at 0x09b00000
Skipping bad block at 0x0a900000
Skipping bad block at 0x0f520000
Skipping bad block at 0x0fba0000
Erasing at 0xffe0000 -- 100% complete.
OK
SMDKV210 # █

```

(1) Burn all images

Sdfuse support automatically burn all files by single instruction. Enter command below in the uboot command line.

```
sdfuse flashall
```

```

checking mode for fastboot ...
Hit any key to stop autoboot: 0
SMDKV210 # sdfuse flashall
[Fusing Image from SD Card.]
Fastboot: employ default partition information
[Partition table on NAND]
ptn 0 name='bootloader' start=0x0 len=0x100000(~1024KB)
ptn 1 name='recovery' start=0x100000 len=0x500000(~5120KB)
ptn 2 name='kernel' start=0x600000 len=0x500000(~5120KB)
ptn 3 name='ramdisk' start=0xB00000 len=0x500000(~5120KB) (Yaffs)
ptn 4 name='system' start=0x1000000 len=0x5A00000(~92160KB) (Yaffs)
ptn 5 name='cache' start=0x6A00000 len=0x1400000(~20480KB) (Yaffs)
ptn 6 name='userdata' start=0x7E00000 len=N/A (Yaffs)
Partition: bootloader, File: /sdfuse/u-boot.bin
Partition1: Start Address(0x58a4), Size(0x75612c)

```

(2) Burn Single image

Sdfuse also support single burning image so that you needn't to burn all images when you update your system.

- ① Enter command below to burn the uboot into nandflash.

```
sdfuse flash bootloader u-boot.bin
```

- ② Enter command below to burn Linux kernel image.

```
sdfuse flash kernel kernel.img
```

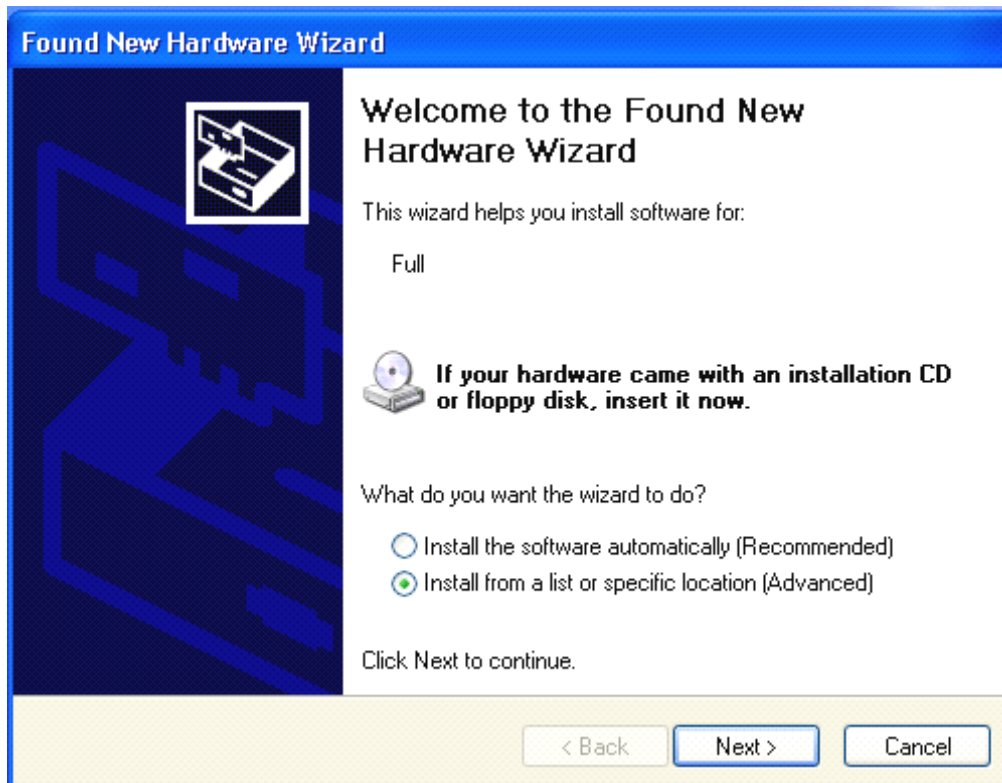
- ③ Enter command below to burn system partition. (Qtopia).

```
sdfuse flash system system.img
```

5. Use fastboot to write by USB

(1) Install USB driver

Turn on the development board and connect computer's USB port with board OTG USB port by a USB cable. Windows will immediately recognize the USB device and prompt to load the driver.

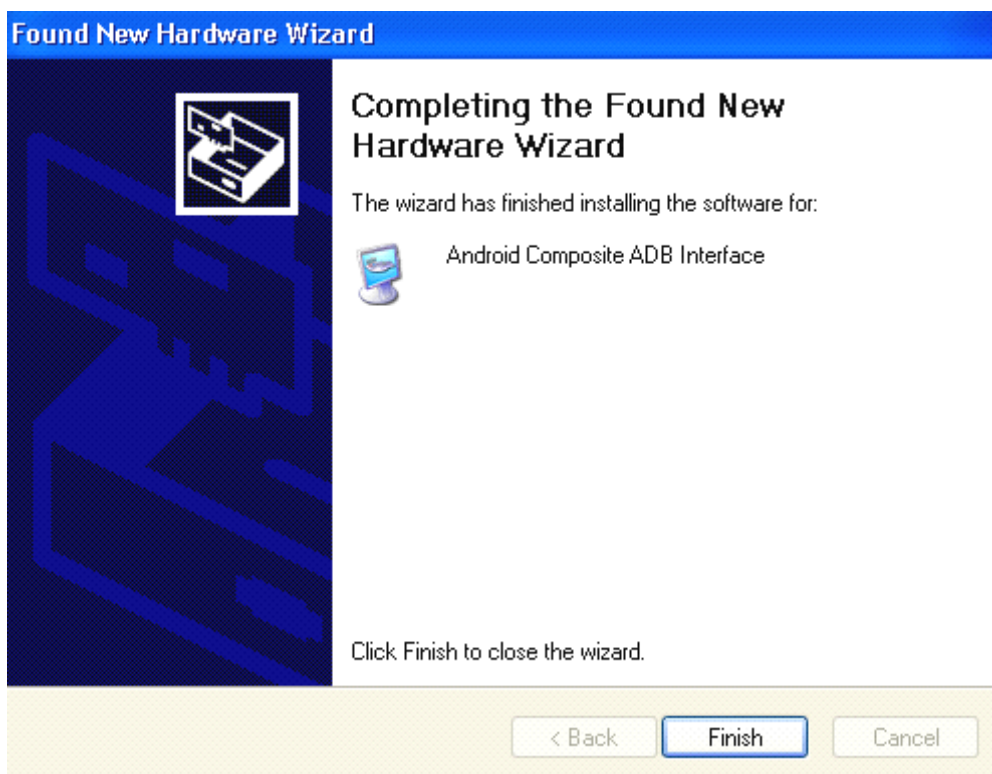
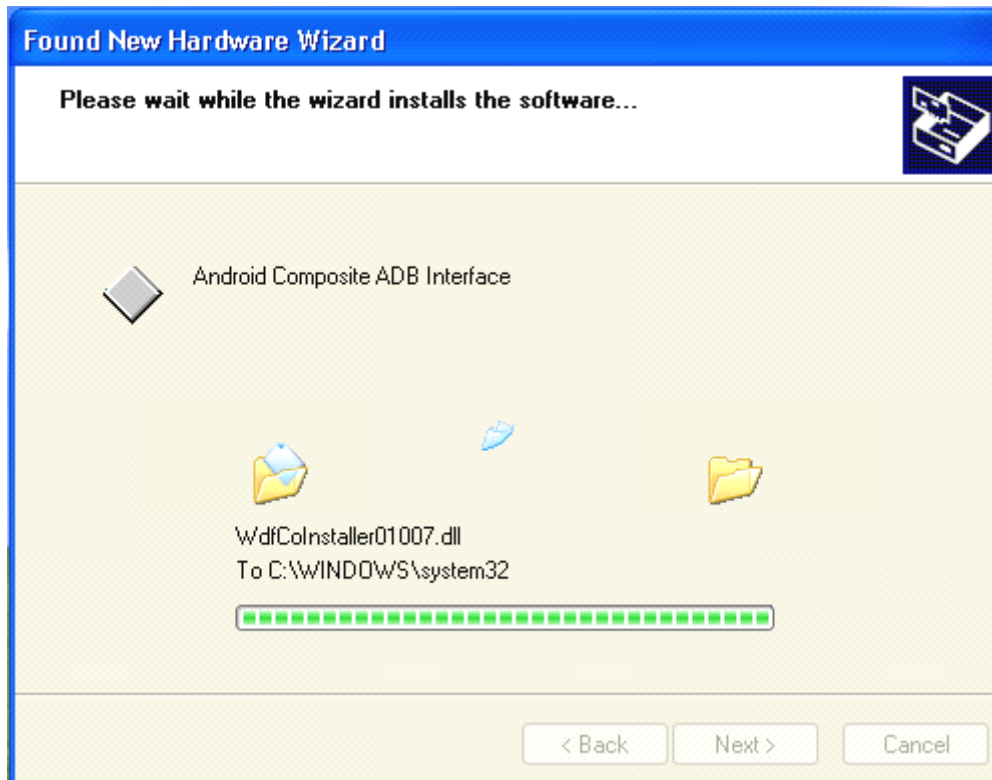


Click **“Next”** and select **Tools/usb_driver/USB_ADB_driver** directory.



Click "Next" and select **Tools/usb_driver/USB_ADB_driver** directory.





(2) Burn images by fastboot

The followings can be operated in SD card mode or Nand flash mode. But burn the uboot must be in SD card boot mode referencing 3 if there is no uboot in nandflash.

You can use "fastboot" until you copy three files as follows from

Tools/windows/fastboot directory to **C:\\WINDOWS\\system32** directory.



Boot from nand flash with space key in 3 seconds, and type following command to format the nand flash.

```
Nand scrub
```

```
*** warning - using default environment
```

```
In:      serial
Out:     serial
Err:     serial
checking mode for fastboot ...
Hit any key to stop autoboot:  0
SMDKV210 # nand scrub
```

```
NAND scrub: device 0 whole chip
warning: scrub option will erase all factory set bad blocks!
        There is no reliable way to recover them.
        Use this command only for testing purposes if you
        are sure of what you are doing!
```

```
Really scrub this NAND flash? <y/N>
```

Type following command to use fastboot burning:

```
fastboot
```

```
SMDKV210 # fastboot
Fastboot: employ default partition information
[Partition table on NAND]
ptn 0 name='bootloader' start=0x0 len=0x100000(~1024KB)
ptn 1 name='kernel' start=0x100000 len=0x500000(~5120KB)
ptn 2 name='system' start=0x600000 len=N/A (Yaffs)
Insert a OTG cable into the connector!
```

Creating a folder named **210** under the **C:\Documents and Settings\Administrator**, and open "**CDM.exe**" in windows OS. Then type following commands to burn the images.

```
fastboot flash bootloader u-boot.bin
```

```
fastboot flash kernel kernel.img
```

```
fastboot flash system system.img
```