How to Burn Newton Demo

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北京君正集成电路有限公司
Ingenic Semiconductor Co. Ltd

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Release history

Date	Revision	Change
Apr. 26, 2014	1.0	First release

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Beijing Ingenic
Addr: Ingenic Headquarters, East Bldg. 14, Courtyard #10, Xibeiwang East Road, Haidian Dist., Beijing 100193, China
Tel: (86-10)56345000
Fax: (86-10)56345001
Marketing: (86-10)56345028
Zip: 100193
E-Mail:marketing@ingenic.cn

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1 Newton Hardware Introduction

1.1 Front Side of Newton Board

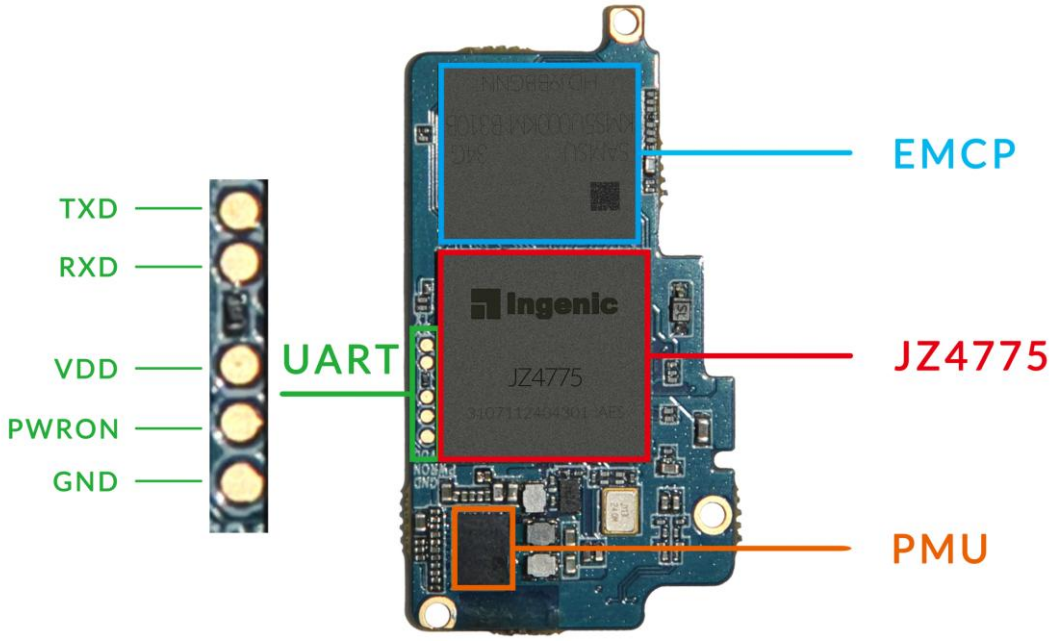

Figure 1- 1 Front Side of Newton Board

1.2 Back Side of Newton Board

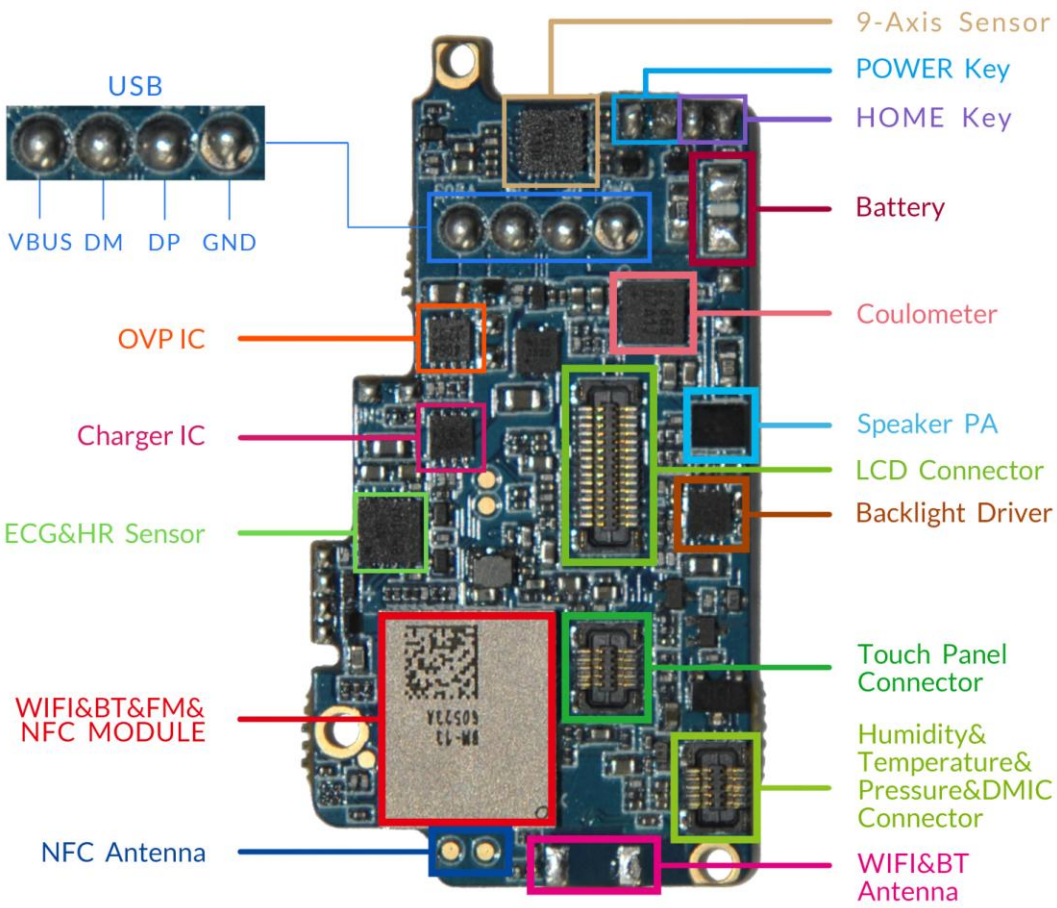

Figure 1- 2 Back Side of Newton Board

1.3 Newton Demo Machine

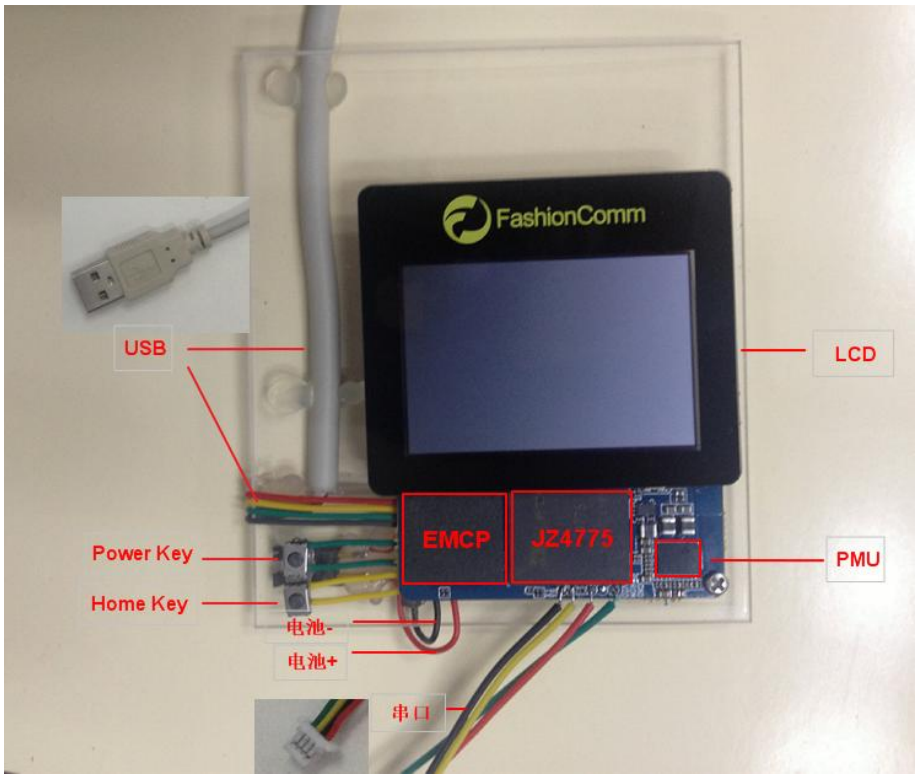

Figure 1- 3 Newton Demo Machine

2 Preparation

2.1 Prepare Newton Platform Hardware

Check the Newton platform hardware, it should contain:

1. One Newton board
2. One LCD panel
3. One Li-battery
4. POWER and HOME keys
5. One serial cable and one UART debug board
6. One USB cable

2.2 Prepare a PC with Windows

The demo will be burned to Newton board through a Windows PC. It's suggested to use Windows XP or 7. Here we will use Windows 7 as an example.

2.3 Download Demo File

Download the proper demo file according to your board type (Newton or Newton Lite).

Newton demo:
ftp://ftp.ingenic.cn/newton/android/android4.3/demo/newton-android-demo.tar.bz2

Newton Lite demo:
ftp://ftp.ingenic.cn/newton/android/android4.3/demo/newton-lite-android-demo.tar.bz2

Download the demo file and save to the PC, and extract it. The demo file contains the demo binaries and a burning tool. The directory tree is showed as following after extraction:

```
- newton-android-demo/newton-lite-demo
├─── images
│    ├─── mbr-xboot-gpt.bin        /* Bootloader image */
│    ├─── boot.img                 /* Kernel image */
│    └─── system.img               /* Android system image */
└─── USBBurnTool-V1.4.2            /* Burning tool */
```

3 Install the Burning Tool Driver

If you are the first time to burn the demo images, you will be asked to install the burning tool driver first. If you have installed the driver, you can skip this chapter.

You need to connect the USB cable of the Newton board to your PC, and then power and boot the Newton board into burning mode. Then you will be asked to install the driver.

Follow following steps to install the driver.

3.1 Boot the Newton board into burning mode

The steps to boot Newton board into burning mode are:

a) Connect the battery.
b) Use USB cable to connect Newton board with the PC.
c) Press down HOME key and POWER key at the same time about 10 seconds.
d) Then release POWER key first, 2 seconds later release HOME key, then Newton will boot up and enter USB burning mode.

If the Newton board boots into burning mode successfully, the PC Windows will detect a new USB device, and try to install the driver for the new device automatically. If it fails to install the driver, you should install it manually.

3.2 Install the Driver Manually

a) First open the Windows Device Manager, find the “JZ4775 USB Boot Device”:

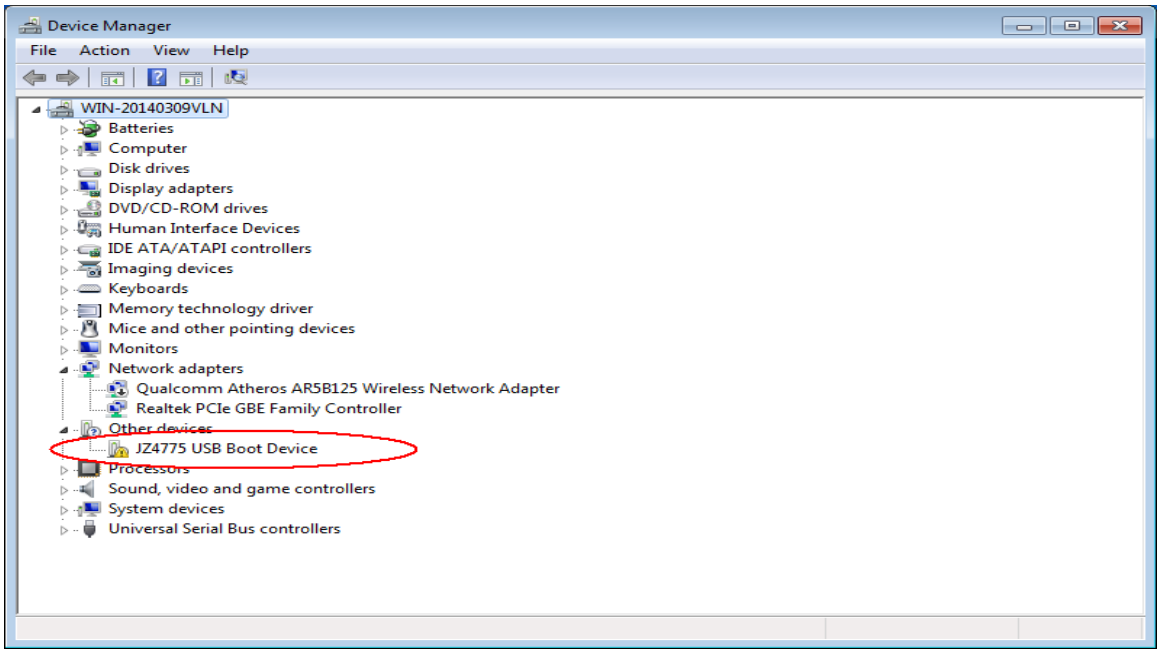

Figure 3- 1 Find the "JZ4775 USB Boot Device"

b) Right click this device, select “Update Driver Software…” :

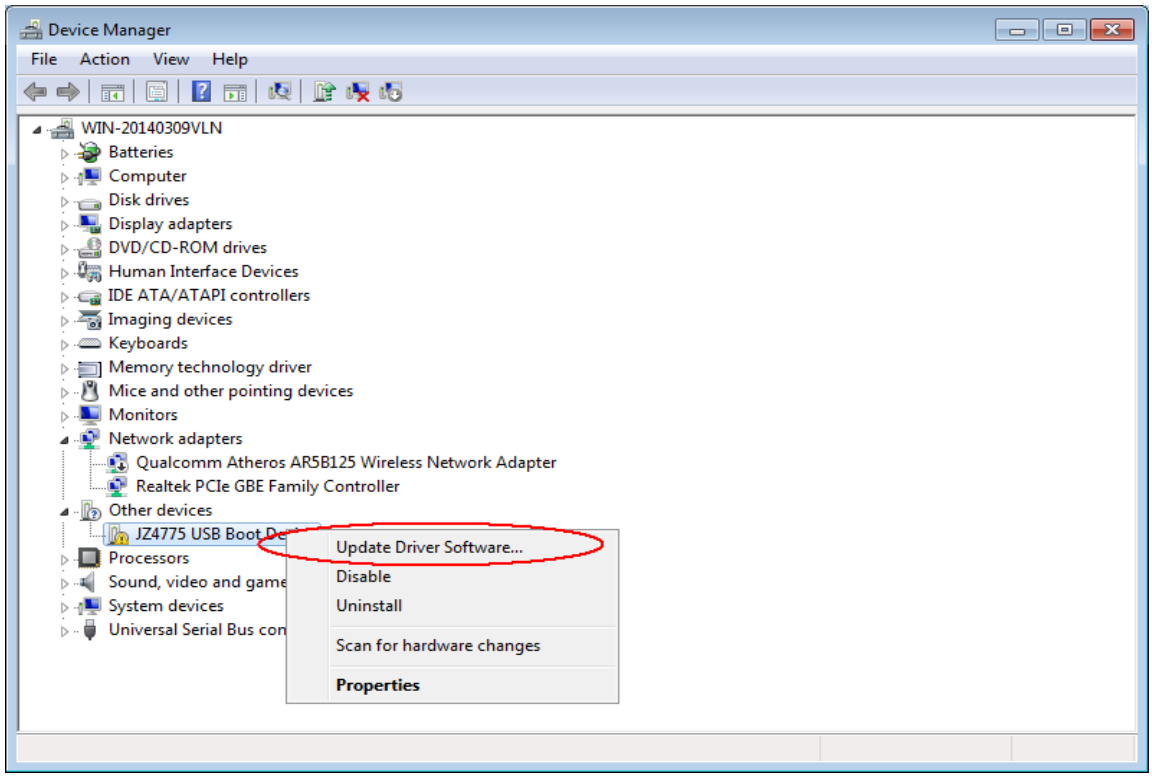

Figure 3- 2 Select the “Update Driver Software…”

c) Select “Browse my computer for driver software”:

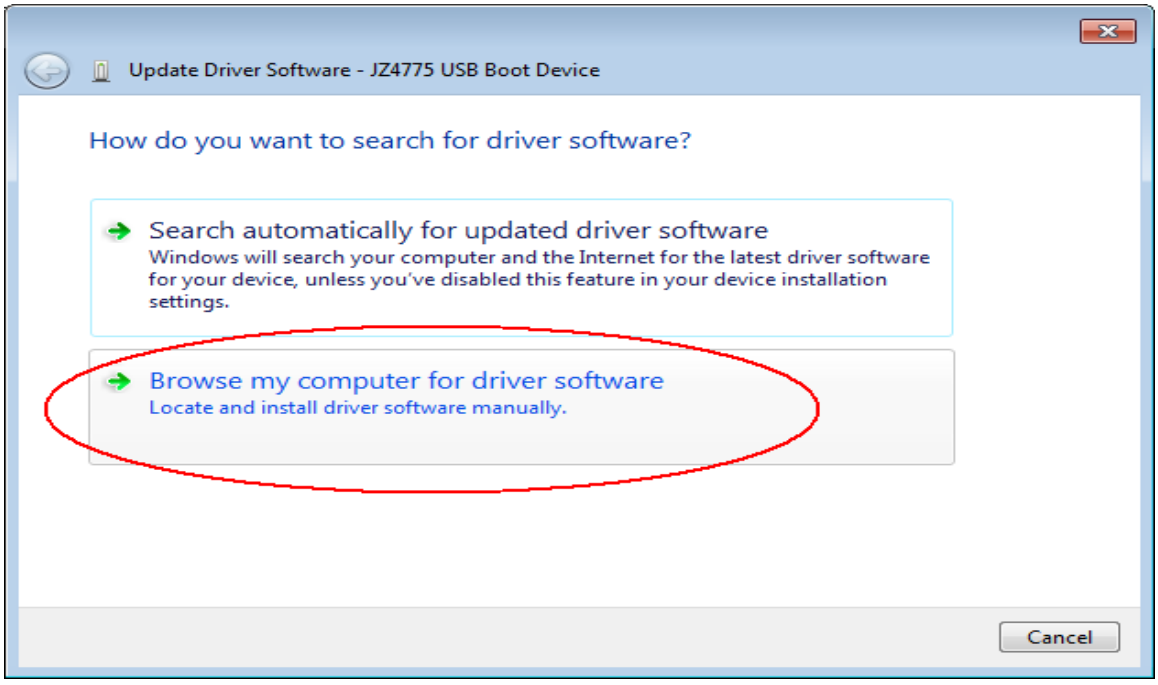

Figure 3- 3 Select “Browse my computer for driver software”

d) Click “Browse” to select the folder of the driver:

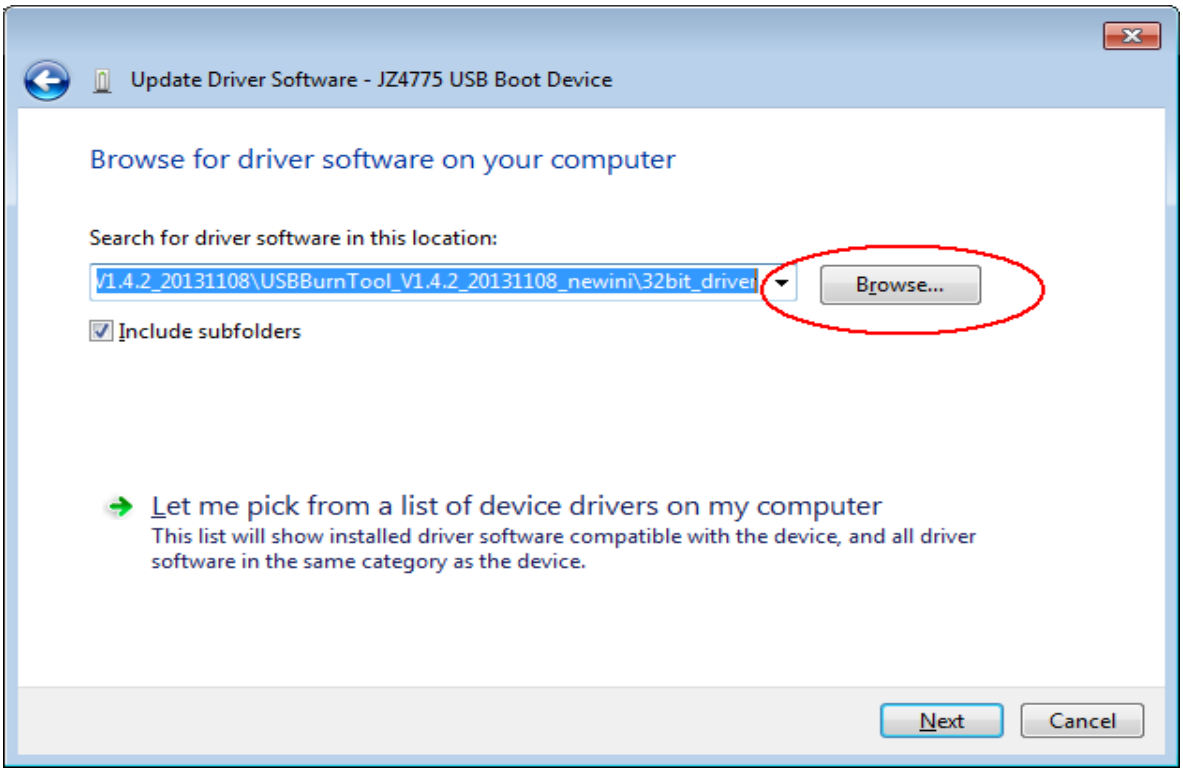

Figure 3- 4 Browse the location of driver

e) Choose 32bit or 64bit according to your OS:

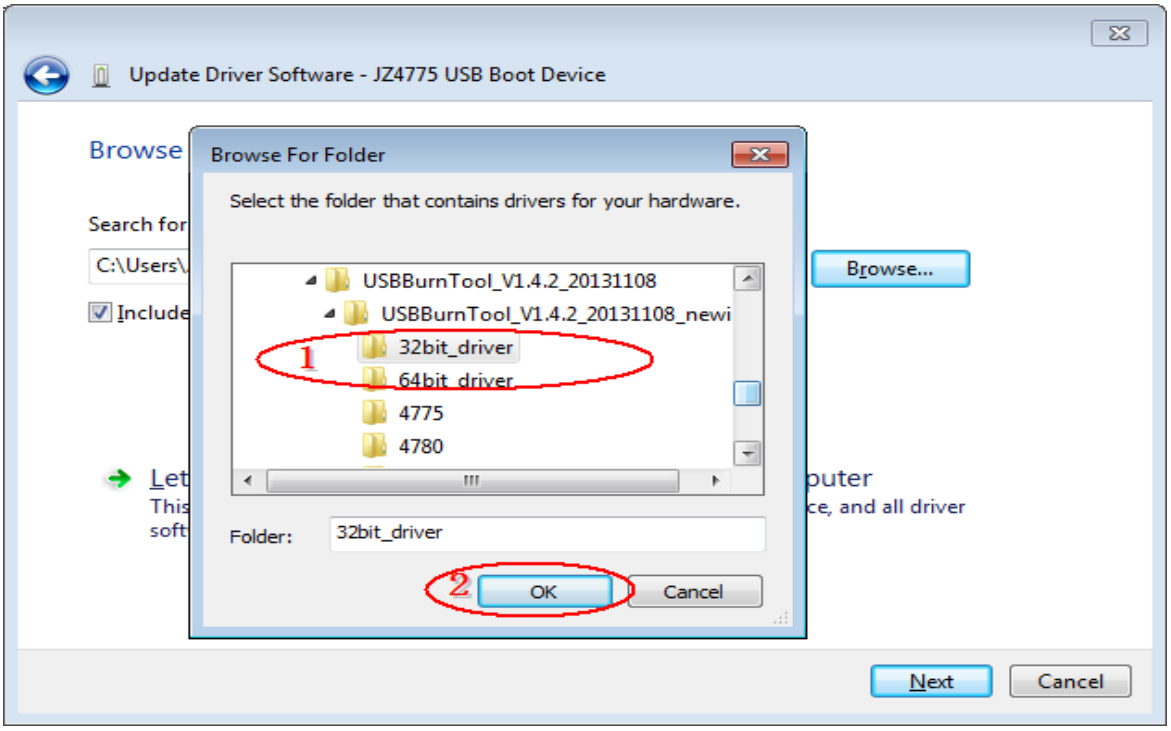

Figure 3- 5 Choose 32bit or 64bit driver

f) Then click “Next” to start “Installing driver software”, select “Install this driver software anyway” to continue:

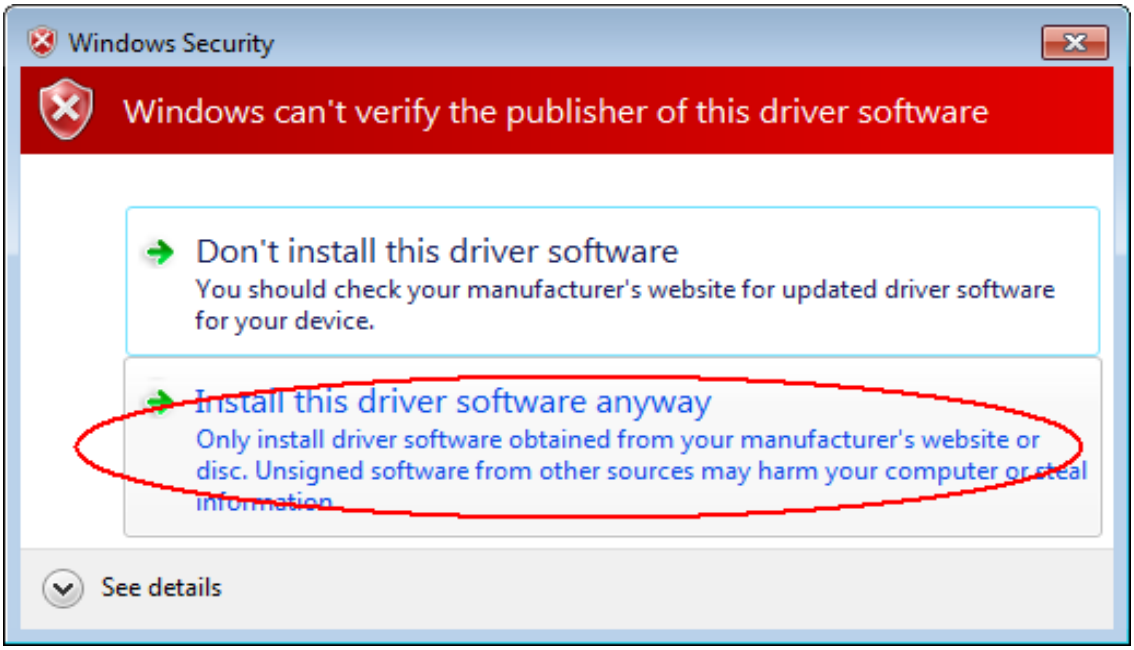

Figure 3- 6 install this driver software anyway

g) Then you will see following windows showing that Windows has successfully updated your driver, and click “Close” to finish the driver installation.

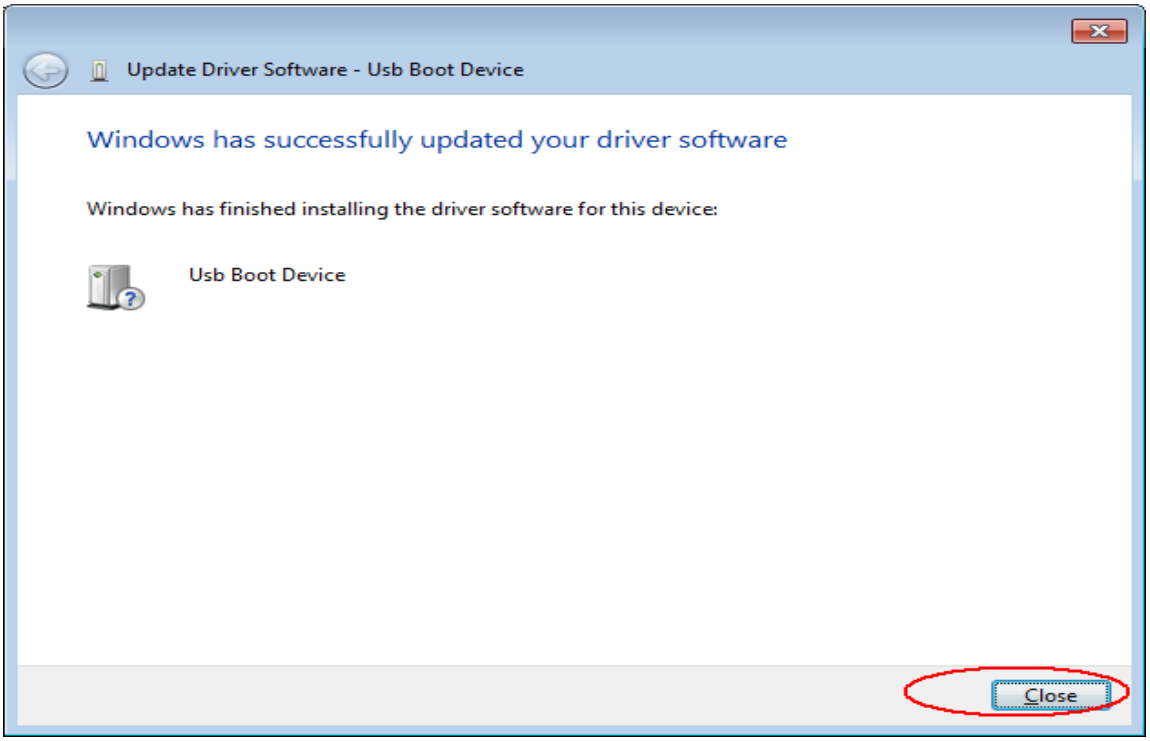

Figure 3- 7 Install the driver successfully

4 Start Burning

4.1 Steps of Burning

Follow next steps to start the burning:

1. Enter the burning tool directory and run the burning tool.
2. Connect the USB cable of Newton board to PC.
3. Power up and boot the Newton board into the USB burning mode.
4. Then the burning tool will start burning automatically, wait until finishing.
5. Reboot Newton board to start the demo.

4.2 Start the USBBurnTool.exe

In the demo images directory, enter USBBurnTool-V1.4.2, double click “USBBurnTool.exe” to start the burning tool:

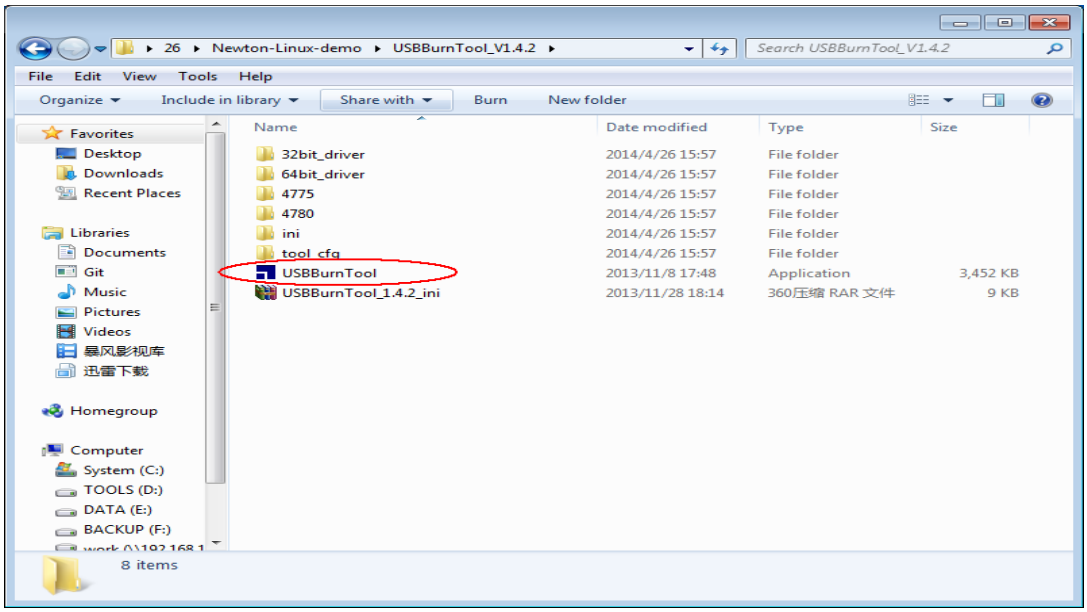

Figure 4- 1 burn tools folder

Then you will see the burning tool window as following:

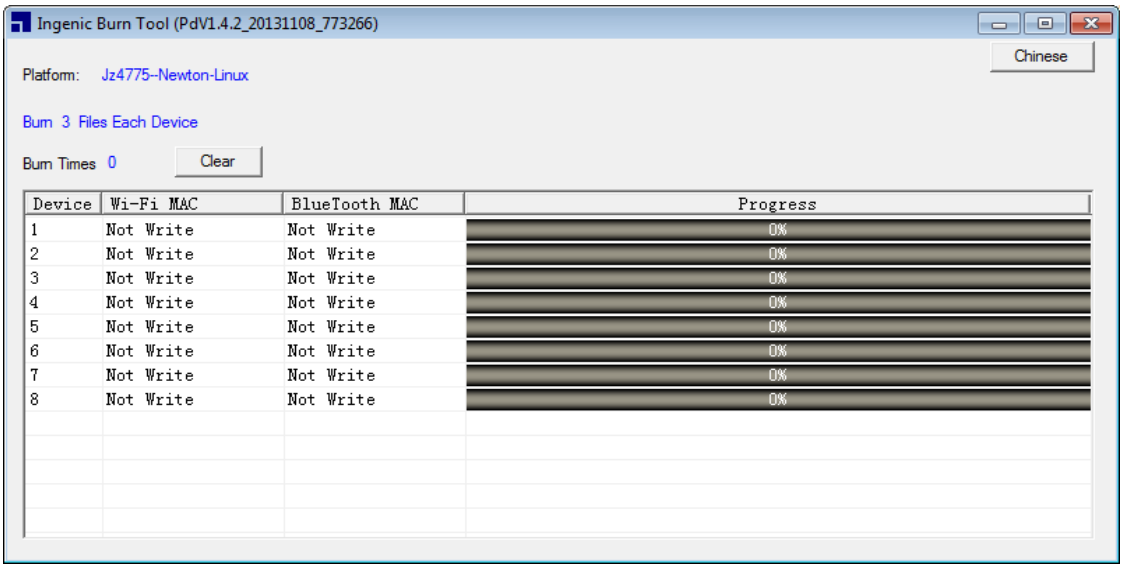

Figure 4- 2 burn tools main windows

4.3 Boot Newton board into burning mode

Follow next steps to boot the Newton board into burning mode:

a) Connect the battery.
b) Use USB cable to connect Newton board with the PC.
c) Press down HOME key and POWER key at the same time about 10 seconds.
d) Then release POWER key first, 2 seconds later release HOME key, then Newton will boot up and enter USB burning mode.

Normally Newton board will boot into burning mode successfully, and the PC Windows will detect a new USB device called “JZ4775 USB Boot Device”.

If you are the first time to boot Newton board into burning mode and haven’t installed the burning tool driver before, you will be asked to install the driver first. Go to chapter 3 to get instructions of how to install the driver.

4.4 Start Burning

If you have installed the driver before, you will see that the burning tool starts the burning progress. The burning window is as following:

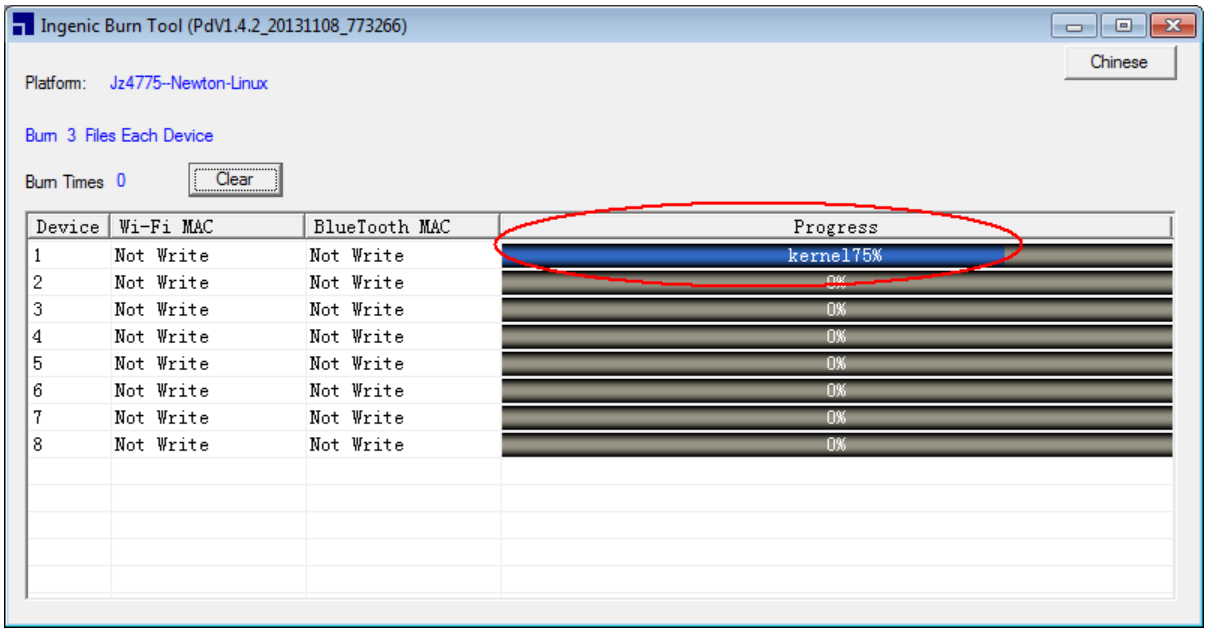

Figure 4- 3 Start Burning

4.5 Finish Burning

Wait for several minitues until the status bar shows the successful message.

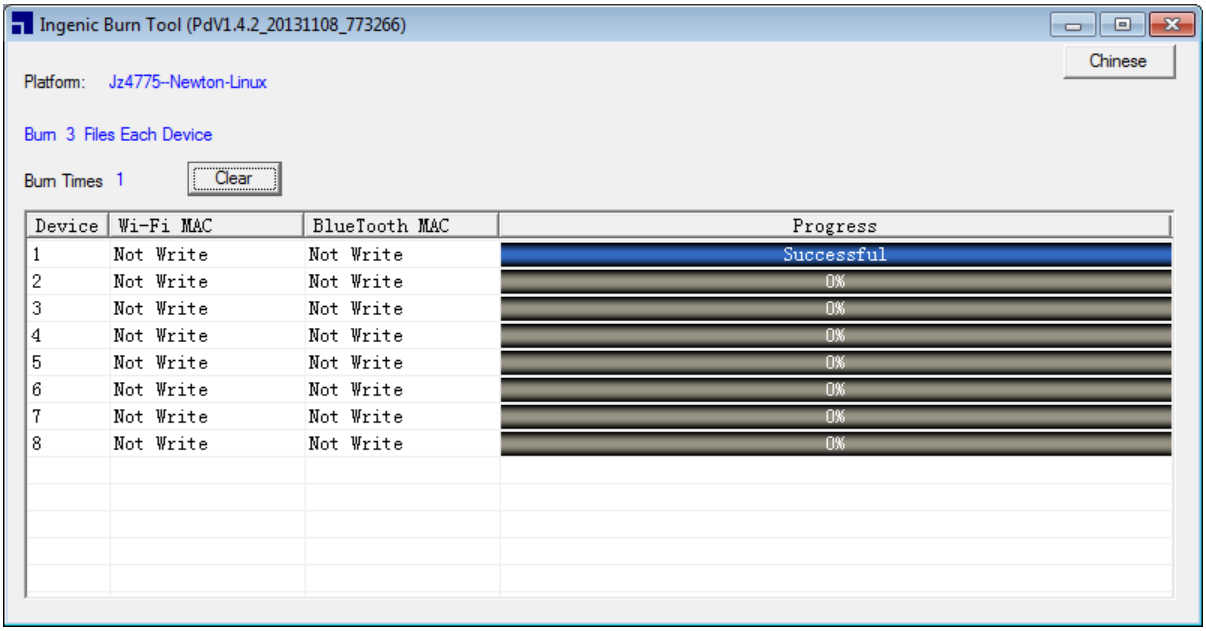

Figure 4- 4 Finish Burning

4.6 Auto-restart the Newton board

After finishing burning, the burning tool will aoto-restart the Newton board.

5 Boot and Reset

5.1 Normal boot

When you want to boot the Newton board normally, follow next instructions:

a) Connect the battery
b) Press down POWER key for 3 seconds
c) Newton boots up normally

5.2 Hardware Reset

Press down POWER key for about 10 seconds while connecting the battery, Newton board will be hardware reset and restarting.

6 FAQ

Q1: Why should POWER and HOME keys be pressed down 10 seconds at the same time before starting the burning?

Answer: because the hardware design has no reset circuit, Newton will generate reset signal through the on-board PMU. When you press the POWER key for about 10 seconds, the PMU will dectect this action and send a reset signal to the CPU. CPU will then detect the HOME key to decide to enter the burning mode after reset.

Q2: Why Newton board must connect the battery to boot or burn?

Answer：There is an OVP (Over Voltage Protection) IC on the board, and this chip can work normally only when it detects the battery.

Q3: I can't burn or failed to burn, what reasons may be?

Answer: The possible reasons are a) the battery is in low power, b) the burning tool driver was not installed correctly, c) the burning tool was not closed and restart after installing the driver, d) other hardware reasons.

Q4: Why Newton board can not boot after pressing down the POWER key for 3 seconds?

Answer: The possible reasons are a）battery was not connected correctly, b) battery is in low power, c) burning failure or the burning binaries are wrong, d) other hardware reasons.

Q5: Can I use the burning tool on other OS like Linux or MAC OS except Windows?

Answer: No. The burning can only be run on Windows, Windows XP or 7 are suggested.

A6: Can I check the UART port for debugging messages after finishing burning and booting up the Newton board? What are the UART port settings?

Answer: Yes you can. If the burning finished successfully and the Newton board boots up normally, the system logging messages will be checked through the UART port. The UART port settings are: 57600 baud rate, 8 data bits, 1 stop bit, no parity, and no flow control.