Q: How to Burn the Image(EM2440_WinCE)
A:

Note:
EM2440-III not only supports start from Nor Flash but also supporting start from Nand Flash. When the user erased u-boot in the Nor Flash and Nand Flash, that leading the board can not start from neither Nor Flash nor Nand Flash. In this case the user must use JTAG to burn u-boot to the board.

How to judge there isn’t u-boot on the Nor Flash and Nand Flash:
First, after the board powered on, if four green Led’s don’t light on at the same time, means that there are no u-boot on the Nor Flash or Nand Flash.
Second, connect with serial cable, and power on the board, and check that are there any following message printed, if no uboot message that means there are nothing in the Nor Flash or nand flash.

1. Burn uboot.bin when there isn’t uboot.bin in the nor flash and nand flash.

(1) install GIVEIO driver

Step 1, find giveio driver in the CD under the directory “Windows software package\GIVEIO”. Copy the file “Giveio.sys” to your system disk, under the directory “C:\Windows\System32\drivers\”

Step 2, open “Control panel” on PC, and double-click the icon “Add hardware” and click “Next” to continue:
Welcome to the Add Hardware Wizard

This wizard helps you:
- Install software to support the hardware you add to your computer.
- Troubleshoot problems you may be having with your hardware.

If your hardware came with an installation CD, it is recommended that you click Cancel to close this wizard and use the manufacturer's CD to install this hardware.

To continue, click Next.

Add Hardware Wizard

Is the hardware connected?

Have you already connected this hardware to your computer?
- Yes, I have already connected the hardware
- No, I have not added the hardware yet

To continue, click Next.
Completing the Add Hardware Wizard

The following hardware was installed:

- gpio

Windows has finished installing the software for this device.

To close this wizard, click Finish.
Now, the newly installed device could be found in “Device Manager”.

(2) Burning U-boot by SJF2440

Notice: Unless you destroy the u-boot in the nor flash and nand flash, you don’t have to burn the u-boot by SJF2440.

The SJF2440 software is at the place of: EM2440-III_CD\Windows software package\SJF2440.

Step 1: Before use SJF2440, below items must be required.

a. Make sure PC has parallel interface, and set the mode of BIOS of PC as “EPP”.
b. The PC has been installed driver of GIVEIO parallel interface.
c. Via JTAG’s 25-pin port Connecting PC’s parallel interface with the 10-pin JTAG interface on the board.
d. Power on the board

e. Copy the u-boot image into the directory \Windows software package\SJF2440, and make sure the u-boot image is u-boot.bin.

In this case we take 3.5inch TFT LCD as an example; we copy the u-boot image for 3.5 inch into the \Windows software package\SJF2440 directory.

Double click “SJF2440_uboot.bat” to run the software
Step2: Burn Image to Nand Flash, continuously select “0”, “0”, “0”, and wait for several minutes, the Image will be burned successfully into Nand Flash, as follow:
Step3: Burning image to Nor Flash, continuously select “2”, “0”, the following diagram shows the steps.

Waiting for several minutes, the Image will be burned successfully into Nor Flash:
2. Burn image when there is uboot.bin in the nor flash and nand flash.

**Step1: Install USB driver**

The driver is located under the directory “Windows software package\USB driver”: (1) Configure DNW. Open DNW, click “Configuration -> Options”, the configuration table “UART/USB Options” appears.

Choose “115200” of “Baud Rate”, choose “COM1” of “COM Port” (choose the right one according to actual situation), fill in “0x32000000” of “USB Port”, click “OK” to finish the DNW configuration:
Link the serial port line and power line; press the space-key of PC and hold, and Switch on the power. The DNW will display the u-boot console (instruction: USB download-driver needs to be installed in u-boot console. If your board has no u-boot, please burn the u-boot by Jtag firstly).

(2) Install usb driver
linking the USB wire, PC can recognize the new device automatically as follow:
Welcome to the Found New Hardware Wizard

Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission). Read our privacy policy.

Can Windows connect to Windows Update to search for software?
- Yes, this time only
- Yes, now and every time I connect a device
- No, not this time

Click Next to continue.

This wizard helps you install software for:
- Generic USB Serial

If your hardware came with an installation CD or floppy disk, insert it now.

What do you want the wizard to do?
- Install the software automatically (Recommended)
- Install from a list or specific location (Advanced)

Click Next to continue.
Found New Hardware Wizard

Please choose your search and installation options.

- Search for the best driver in these locations:
  Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
  - Search removable media (floppy, CD-ROM...)
  - Include the location in the search

- Don't search. I will choose the driver to install.

Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best search for your hardware.

Browse For Folder

Select the folder that contains drivers for your hardware.

- USB drive
- Shared Pictures
- Shared Videos
-テンプレ
- Windows software package
- Driver
- Shared Documents
- Administrator's Documents

To view any subfolders, click a plus sign above.

[OK] [Cancel]
Found New Hardware Wizard

Please select the best match for your hardware from the list below.

- TQ2440 Board

<table>
<thead>
<tr>
<th>Description</th>
<th>Version</th>
<th>Manufacturer</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>TQ2440 Board</td>
<td>Unknown</td>
<td></td>
<td>c:\windows\inf\secbulk.inf</td>
</tr>
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<td></td>
<td>c:\windows\inf\secbulk.inf</td>
</tr>
</tbody>
</table>

⚠️ This driver is not digitally signed!
Tell me why driver signing is important.

Insert Disk

Please insert the Compact Disc labeled 'USB Downloader Installation Disk for TQ2440' into your CD-ROM drive (D:) and then click OK.

- You can also click OK if you want files to be copied from an alternate location, such as a floppy disk or a network server.

Files Needed

The file 'SECBULK.sys' on USB Downloader Installation Disk for TQ2440 is needed.

Type the path where the file is located, and then click OK.

- Copy files from:
  - D:

[OK] [Cancel]
After the USB download-driver has been installed, open DNW software. The mark 
“[COM:x][USB:OK]” could be found on top of the window:
The USB driver installed previously could be found in “Device Manager”:

![Device Manager](image)

Now the user can use USB to download u-boot, operating system and file system.

**Step2: burn image**

**(1) Using the U-boot to update u-boot**

If you erased the u-boot on nand flash, you can burn the u-boot to the nand flash by the u-boot on nor flash. Of course, you have to burn the u-boot by JTAG if you eased the Nor flash and Nand flash at all.

Suppose the u-boot on Nor flash was not erased, we introduce the process of burning the u-boot to nand flash by the u-boot on Nor flash.
Step 1: Push the button to the Nor flash side, select booting from the Nor flash.

Step 2: Power up the board, you can enter into the u-boot menu.
Step 3: Input “1” and press enter key:
Step 4: Choose the “USB port->transmit”:

![USB port transmit interface]

[1] Download u-boot or STEPLDR.nbd to Hand Flash
[2] Download Eboot to Hand Flash
[3] Download Linux Kernel to Hand Flash
[4] Download CRAMFS image to Hand Flash
[5] Download YAFFS image to Hand Flash
[6] Download Program (uCOS-II or TQ2440_Test) to SDRAM and Run it
[7] Boot the system
[8] Format the Hand Flash
[9] Set the boot parameters
[10] Download User Program (e.g. uCOS-II or TQ2440_Test)

Step 5: Select the u-boot.bin image you want to burn.

![Select u-boot.bin image]

Select the u-boot.bin image you want to burn.
Step 6: You can see the follow message after above steps, and then you have burnt the u-boot to the nand flash.

![Screenshot of serial port with u-boot writing data]

(2) Burn the STEPLDR.nb1 and Eboot.nb0 image.

If you want to run Wince system, you have to boot from nand flash. Wince system includes three parts: STEPLDR.nb1, EBOOT.nb0 and NK.bin. We suppose the u-boot has existed on nand flash.

Step 1: Push the button to the nand flash side, select booting from nand flash:
Step 2: Power up the board, and press the space key to enter into the u-boot menu.
Step 3: Choose “1” to burn the STEPLDR.nb1 image, and select the “USB port->transmit”.

Press Space key to Download Mode!

Boot For Handy Flash Main Menu

[1] Download u-boot or STEPLDR.nb1 or other bootloader to Handy Flash
[2] Download Eboot to Handy Flash
[3] Download Linux Kernel to Handy Flash
[4] Download CRAMFS image to Handy Flash
[5] Download YAFFS image to Handy Flash
[6] Download Program (uCOS-II or TQ2440 Test) to SDRAM and Run it
[7] Boot the system
[8] Format the Handy Flash
[9] Set the boot parameters
[a] Download User Program (eg: uCOS-II or TQ2440 Test)
h] Download LOGO Picture (.bin) to Handy Flash
[1] Set LCD Parameters
[r] Reboot u-boot
[q] quit from menu

Enter your selection:
Step 4: select the kernel image “STEPLDR.nb1”image under the /image/wince/directory, and begin to burn.
Step 5: After above steps, you should see the following message, and then, you have burnt the STEPLDR.nb1 image into the nand flash.

Step 6: Choose “2” to burn the Eboot.nb0 image, and select the “USB port->transmit”. 
Step 7: select the “Eboot.nb0” image under the /image/wince/ directory, and begin to burn.

Step 8: After above steps, you should see the following message, and then, you have burnt the EBOOT.nb0 image into the nand flash.
(3) Burn the NK.bin image

Step 1: Push the button to the nand flash side, select booting from nand flash:
Step 2: Reset the board, and press the space key to enter into the eboot menu.

Step 3: Choose the “9” to format the Boot Media for BinFS.

Step 4: Choose the “F” to low-level format the Smart Media card.
Step 5: Choose the “U” to download the NK.bin image, and select the “USB port->transmit”.

Step 6: select the kernel image “NK.bin”image under the /image/wince/ directory, and begin to burn.
Step 7: After several minutes, the Wince system boots automatically, and you have to reset your board at the first time.