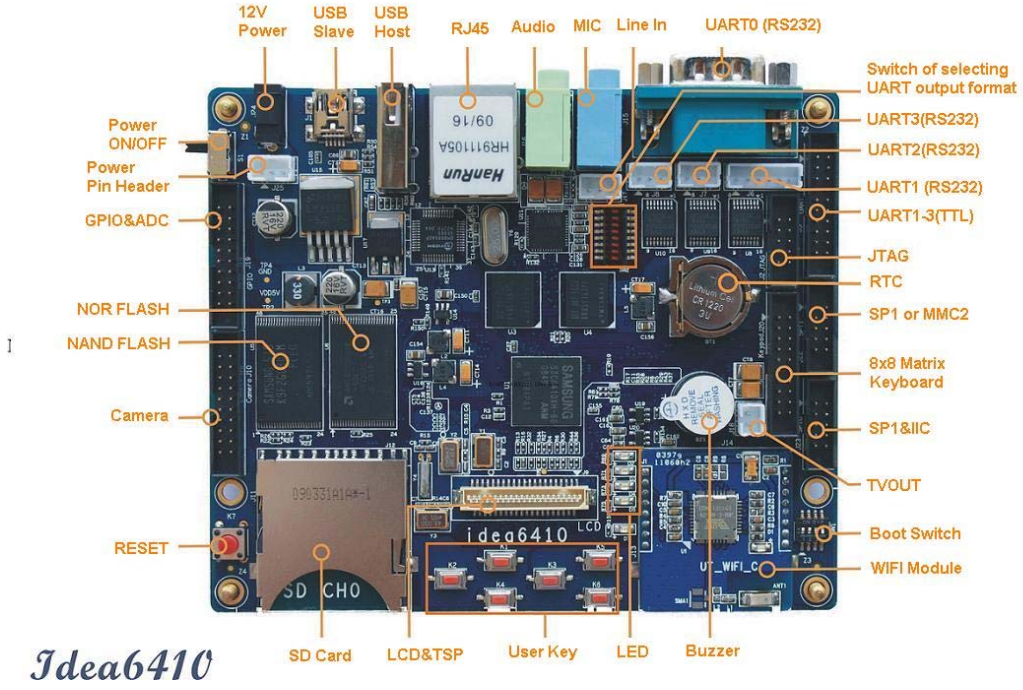
Idea6410

Single Board Computer

WinCE User Manual

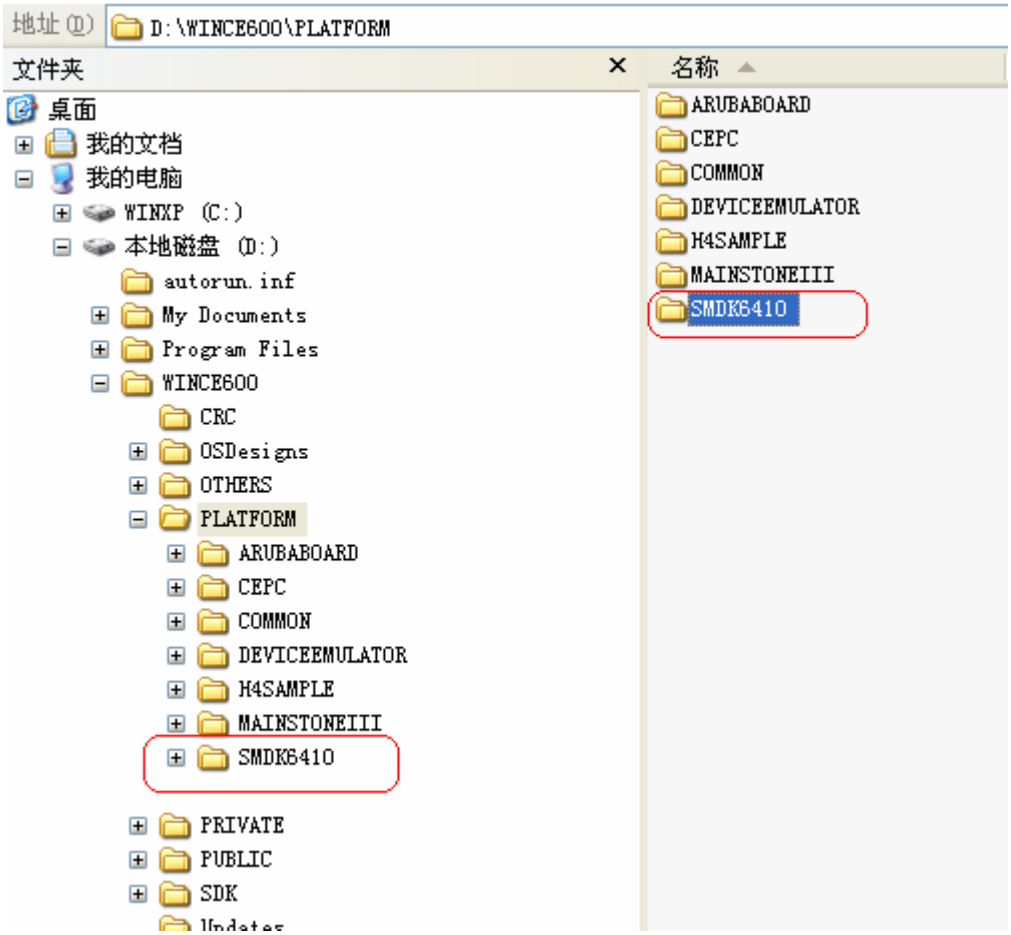


1. Install the development environment

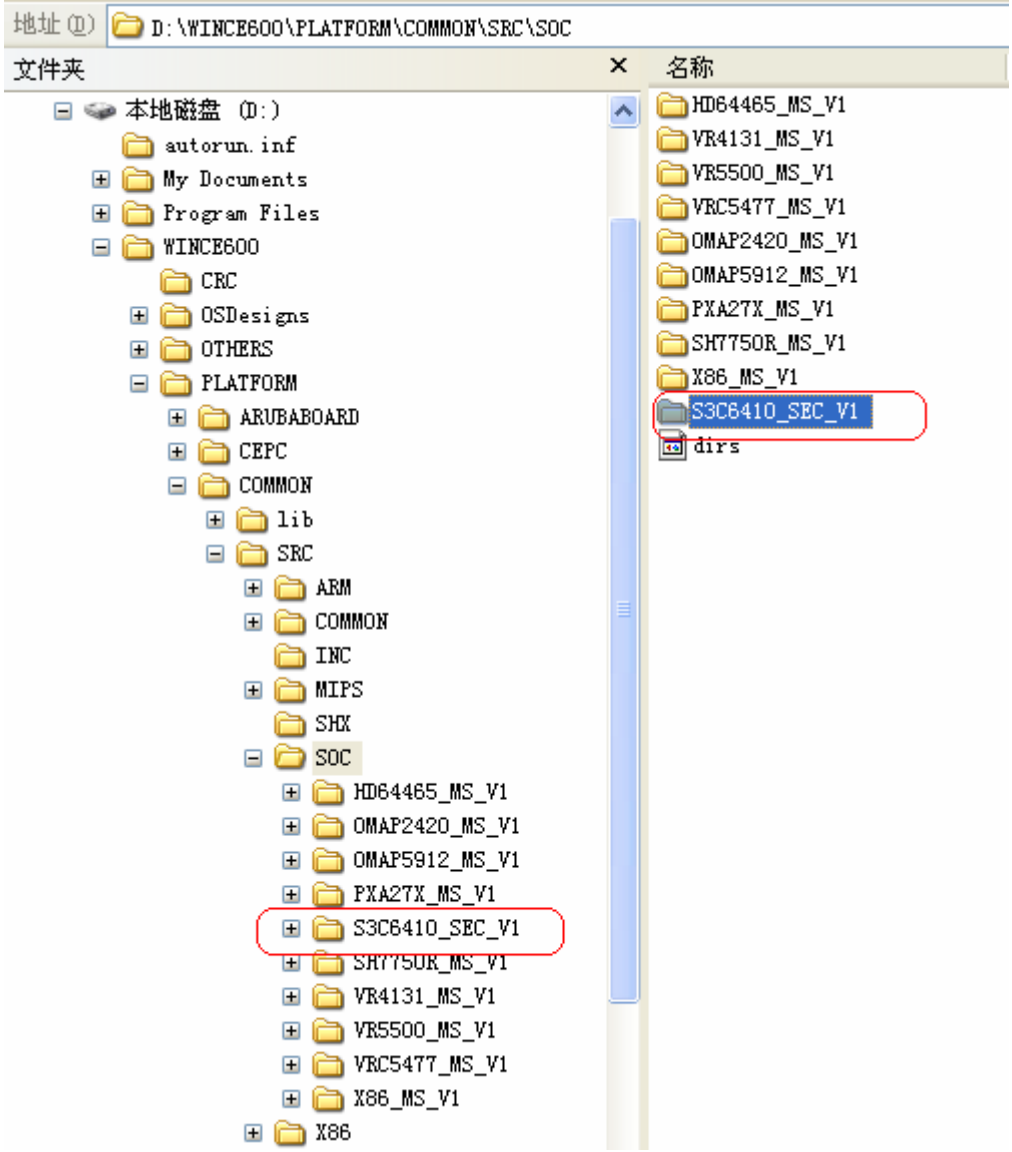
Before customize the system, please install V2005 and WinCE6.0 development environment. The installation procedure please refer to the 《VS2005_WINCE6.0 installation guidance .pdf》.

2. Install BSP

2.1. Copy the SMDK6410 from the CD\WinCE 6.0 software package\Idea6410_WincCE6.0_BSP\SMDK6410 to D:\WINCE600\PLATFORM\, do not choose ready-only file properties.



2.2. Copy the S3C6410_SEC_V1 from the CD \WINCE software package\Idea6410_WinCE6.0_BSP\S3C6410_SEC_V1 to D:\WINCE600\PLATFORM\COMMON\SRC\SOC and do not select read only file properties.



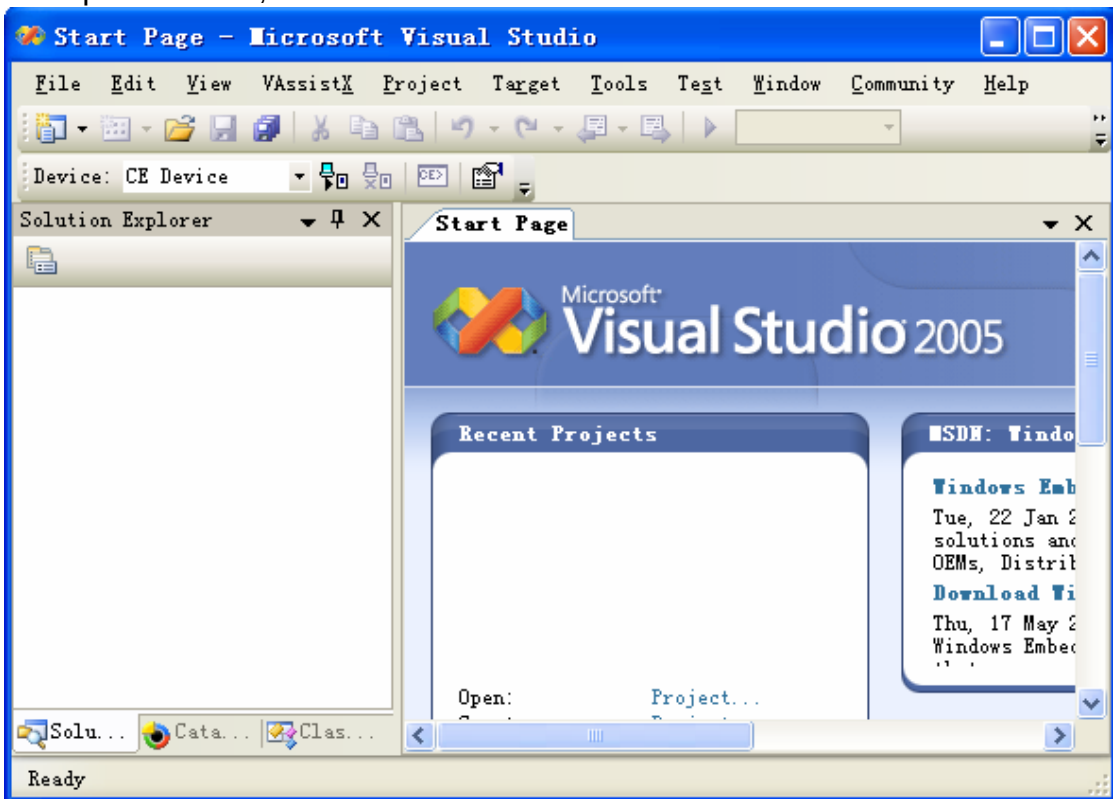
2.3. Modify the file dirs which under the directory D:\ WINCE600\PlATFORM\COMMON\SRC\SOC to
DIRS=\
S3C6410_SEC_V1

```
11 THE SAMPLE SOURCE CODE IS PROVIDED "AS IS", WITH NO WARRANTIES.
12 !endif
13
14 DIRS=\
15 S3C6410_SEC_V1
16
```

2.4 Please confirm the SMDK6410; S3C6410_SEC_V1 folder has copy to the correct directory:
SMDK6410：D:\WINCE600\PLATFORM\ SMDK6410
S3C6410_SEC_V1 ： D:\ WINCE600\PLATFORM\COMMON\SRC\SOC\ S3C6410_SEC_V1

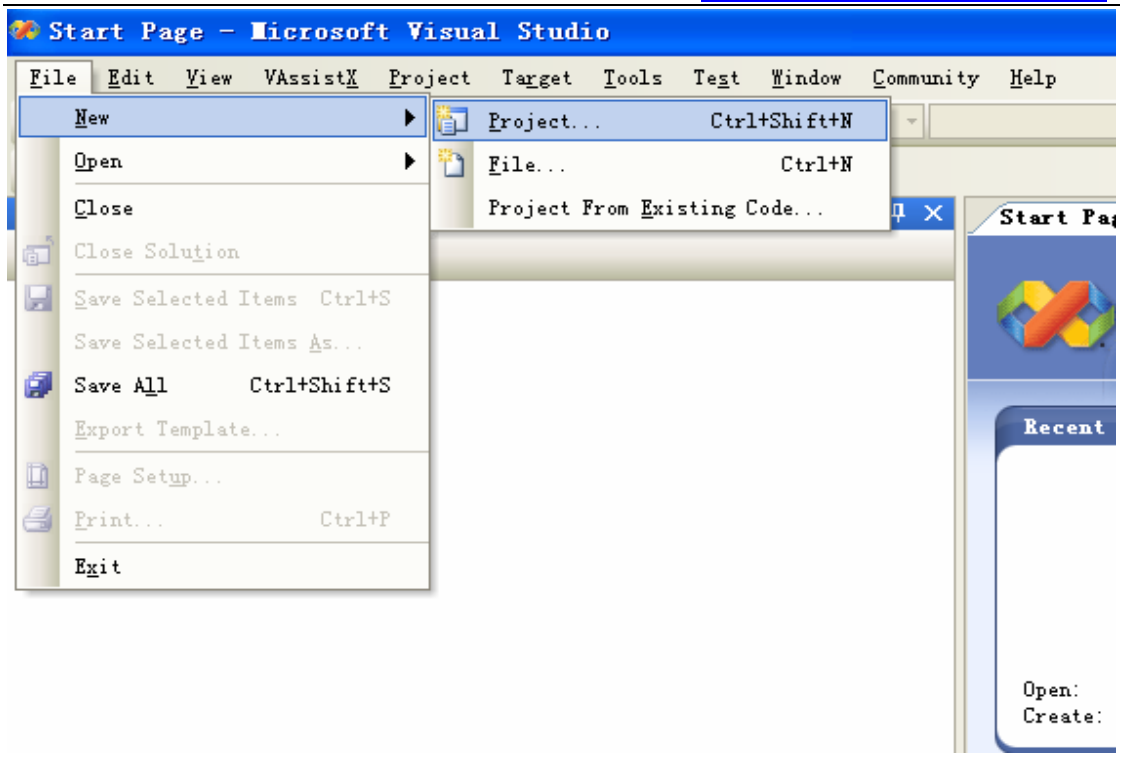
3. Build WinCE6.0 project

3.1 Open VS2005, VS2005 software interface like below:

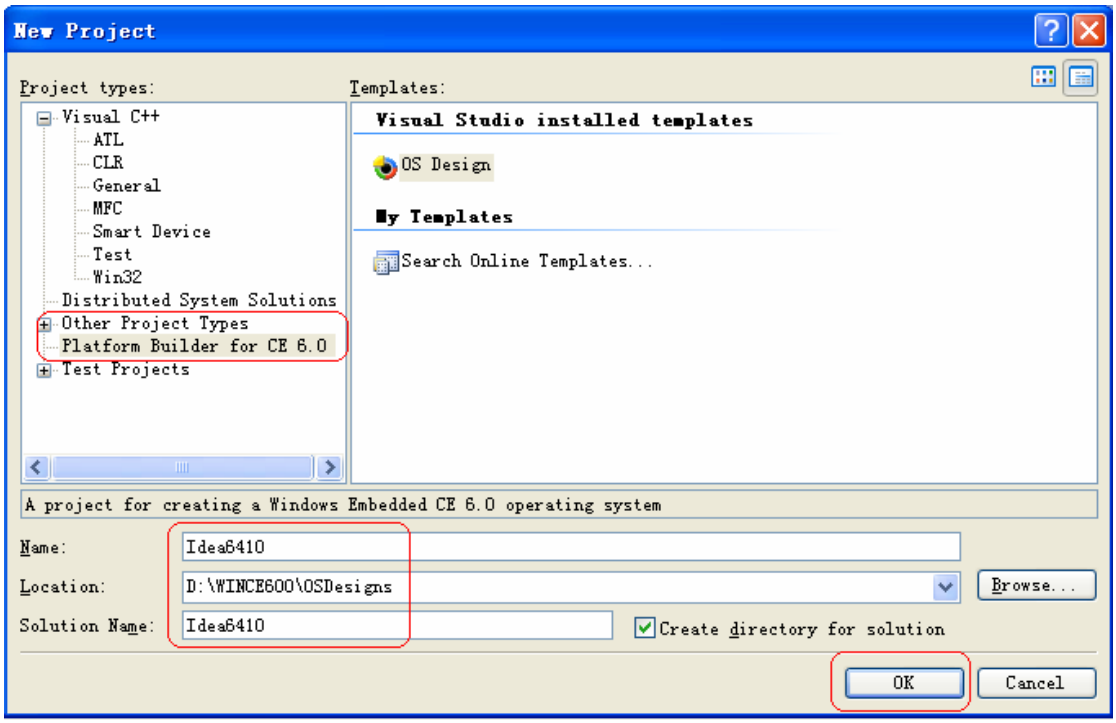


3.2. Create new project

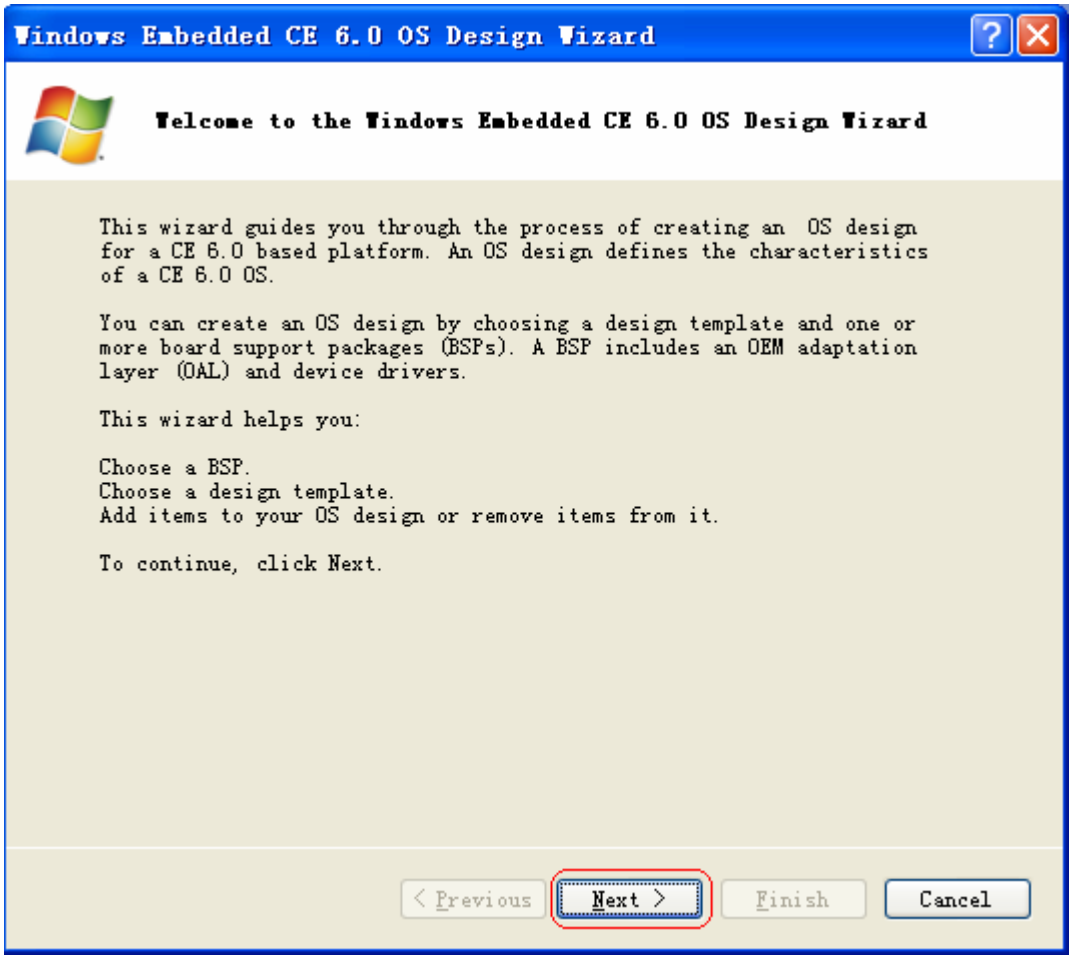
Select “File” menu, “New” → “Project”



3.3. Set the project name and location.
3.3.1. “Other Project Types” Select “Platform Builder for CE 6.0”
3.3.2. “Name:” input Project name “Idea6410”
3.3.3. “Location:” set default location “D:\WiNCE600\OSDesigns”
3.3.4. “Solution Name:” input Solution name “Idea6410”
3.3.5. Click “OK”



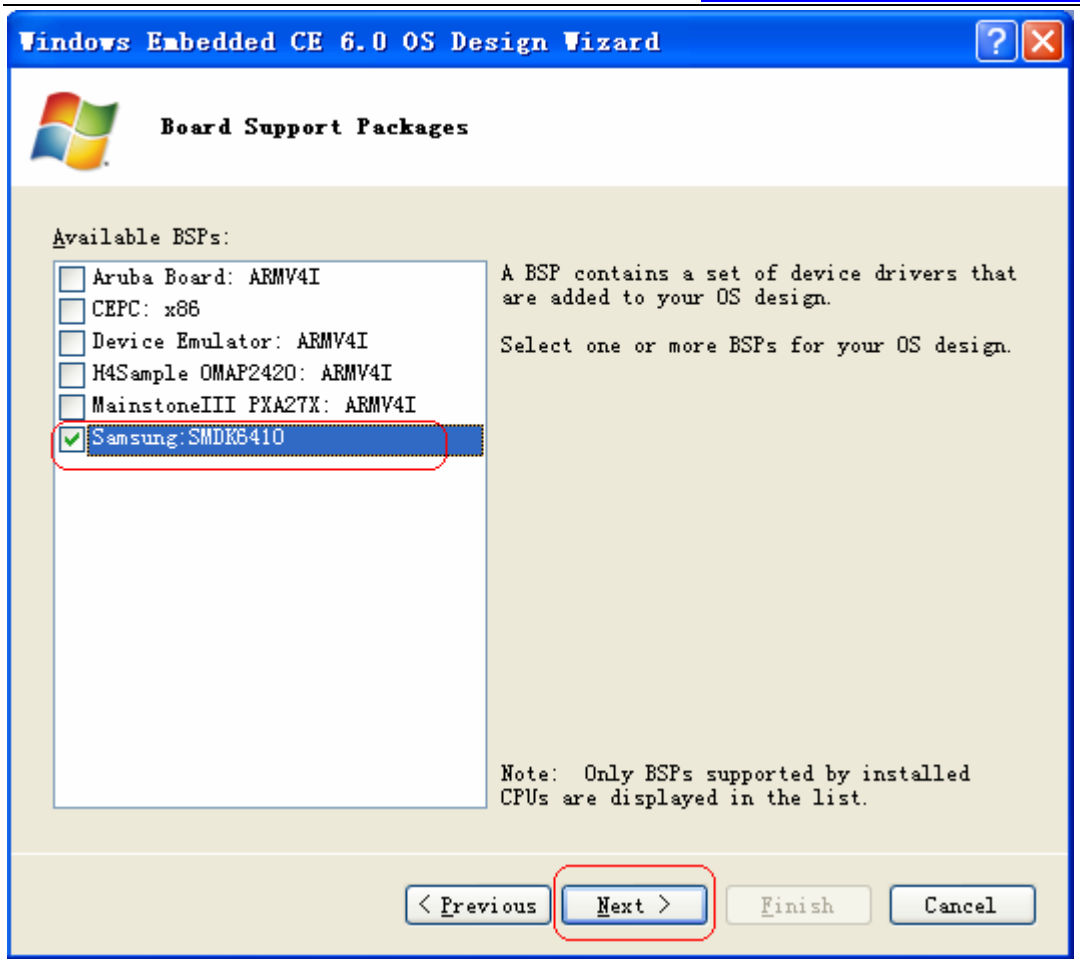
3.4. Click “Next”



3.5 Select project BSP

3.5.1 “Available BSPs:” select “Samsung: SMDK6410”

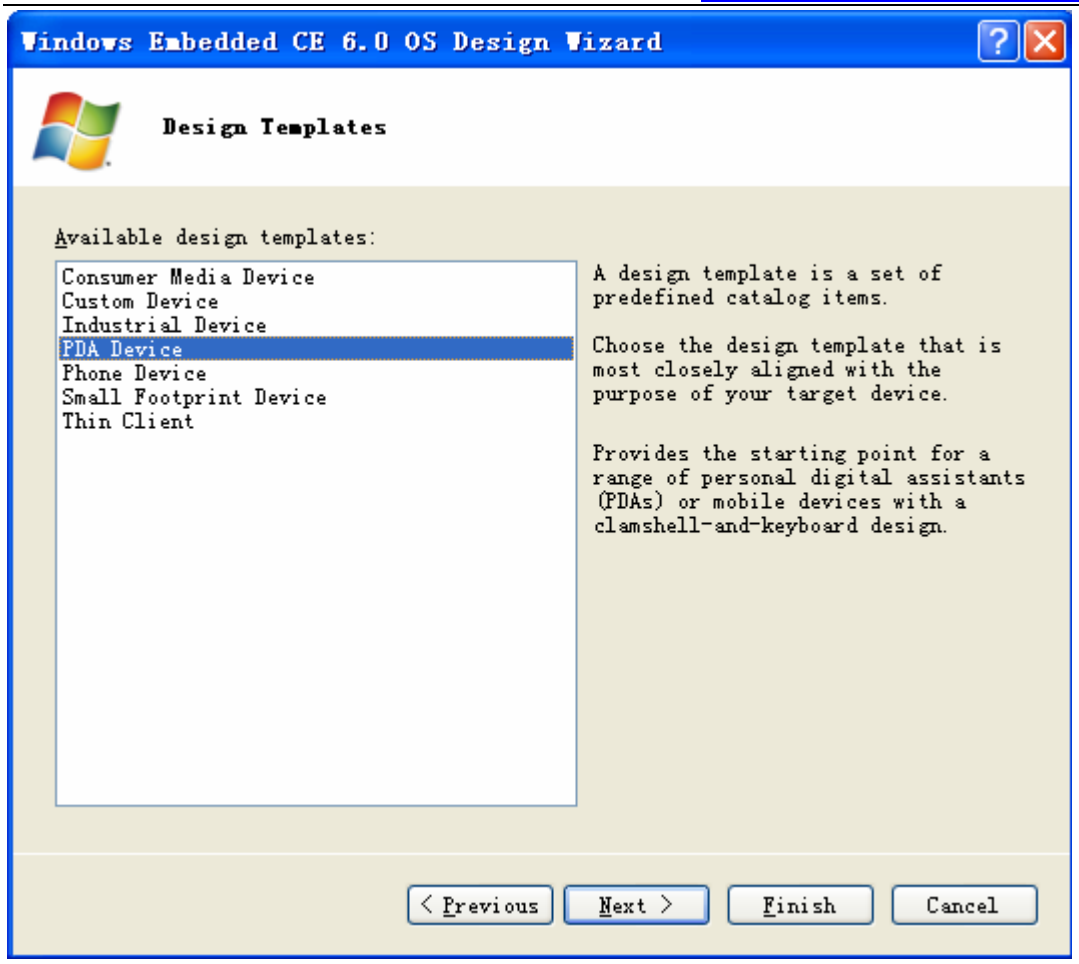
3.5.2 Click “Next”



3.6. Select project template

3.6.1 “Available design templates:” Select “PDA Device”

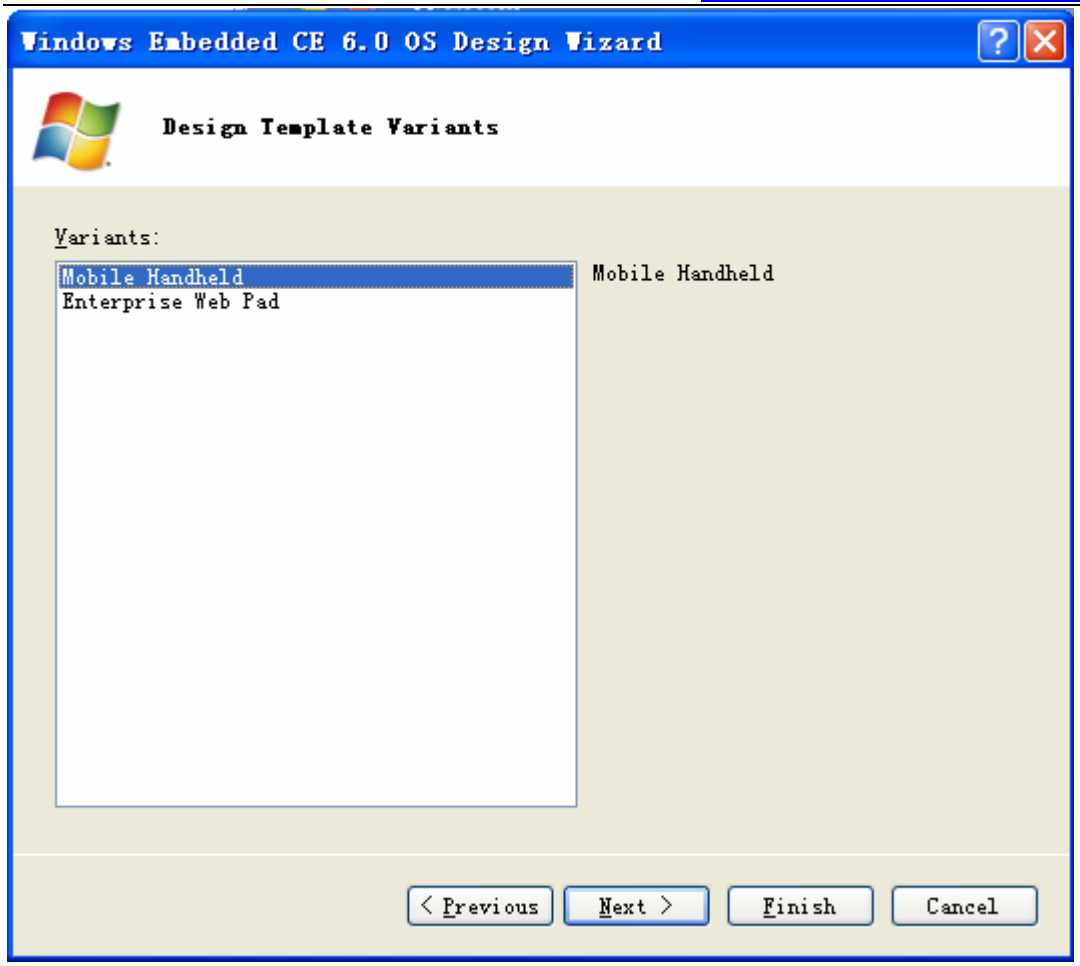
3.6.2 Click “Next”



3.7. Select template type

3.7.1 “Variants:” Select “Mobile Handheld”

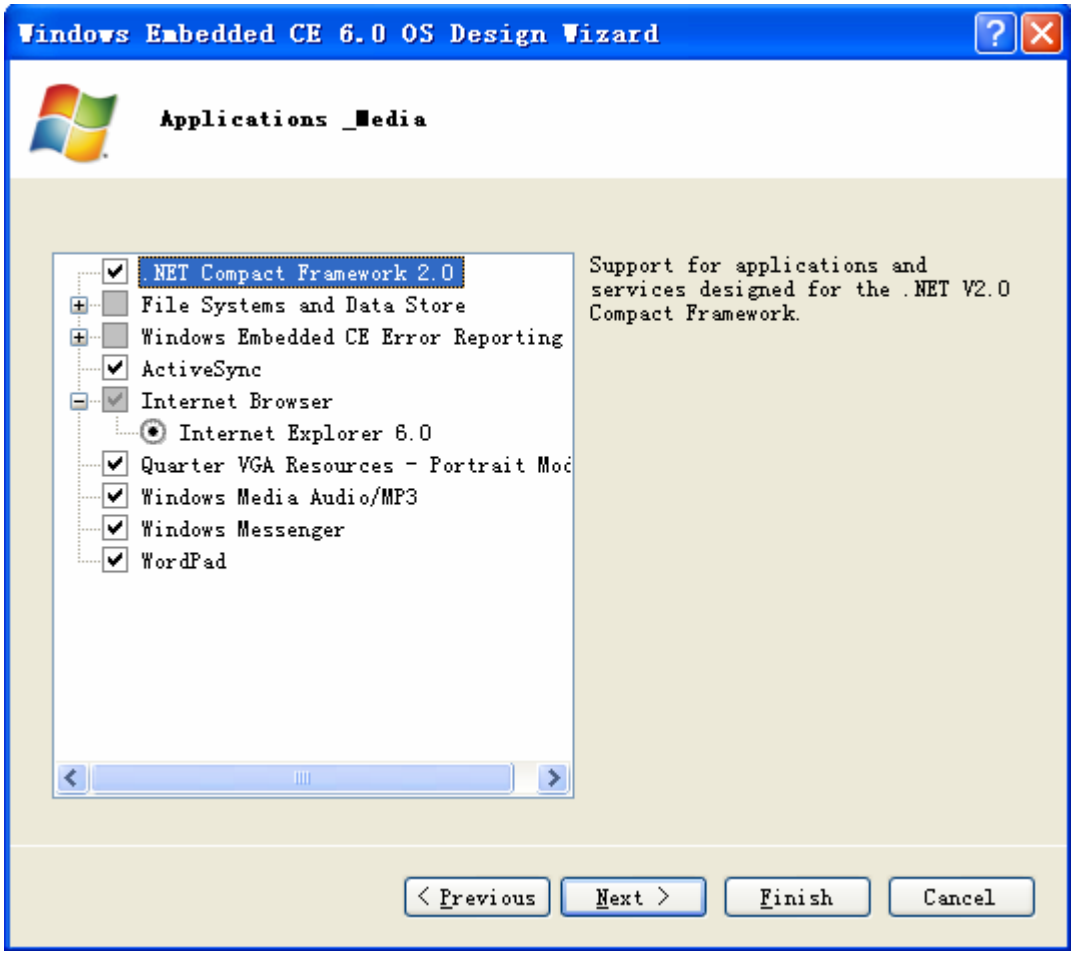
3.7.2 Click “Next”



3.8. Select the required applications, add the additional applications based on default setting.

- “Internet Explorer 6.0”
- “Windows Media Audio/MP3”
- “Windows Messenger”
- “WordPad”

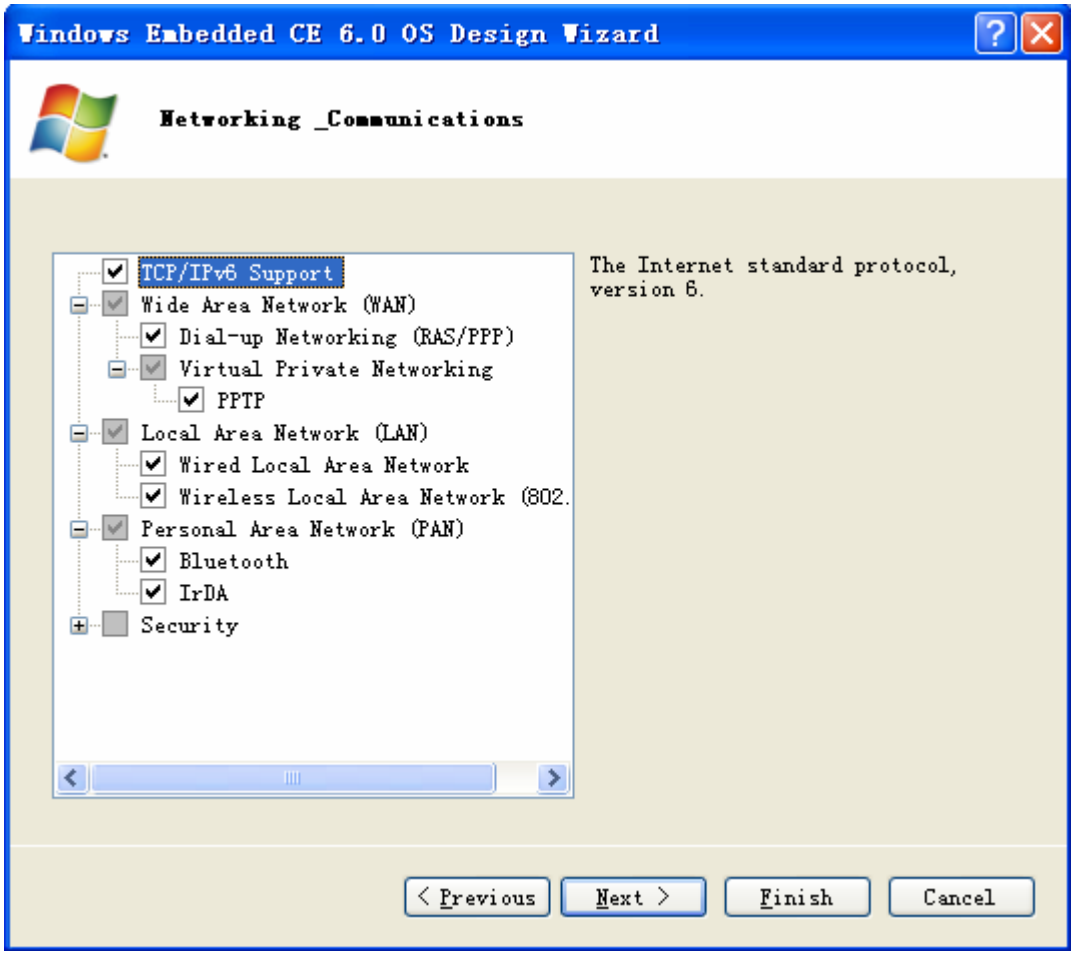
Click “Next”



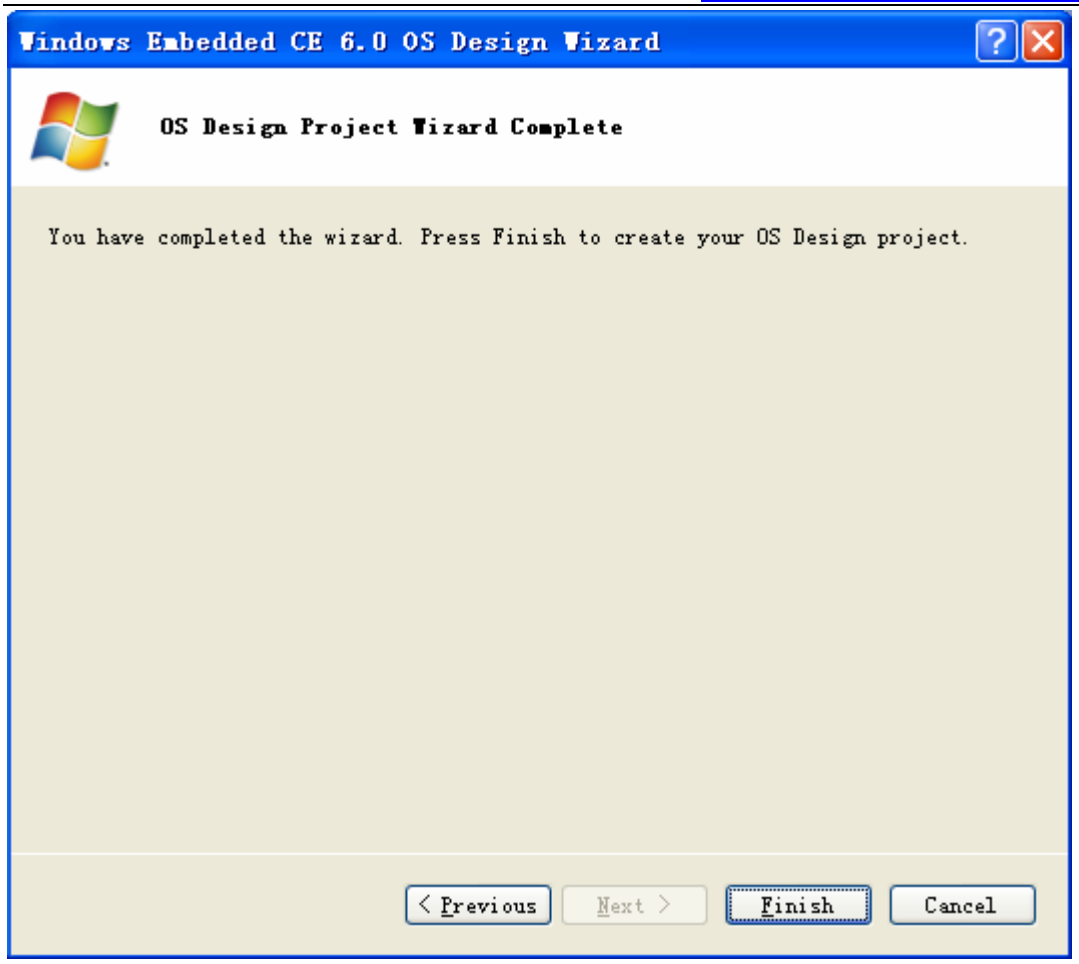
3.9 Add network application

3.9.1 User selects the application according to below picture.

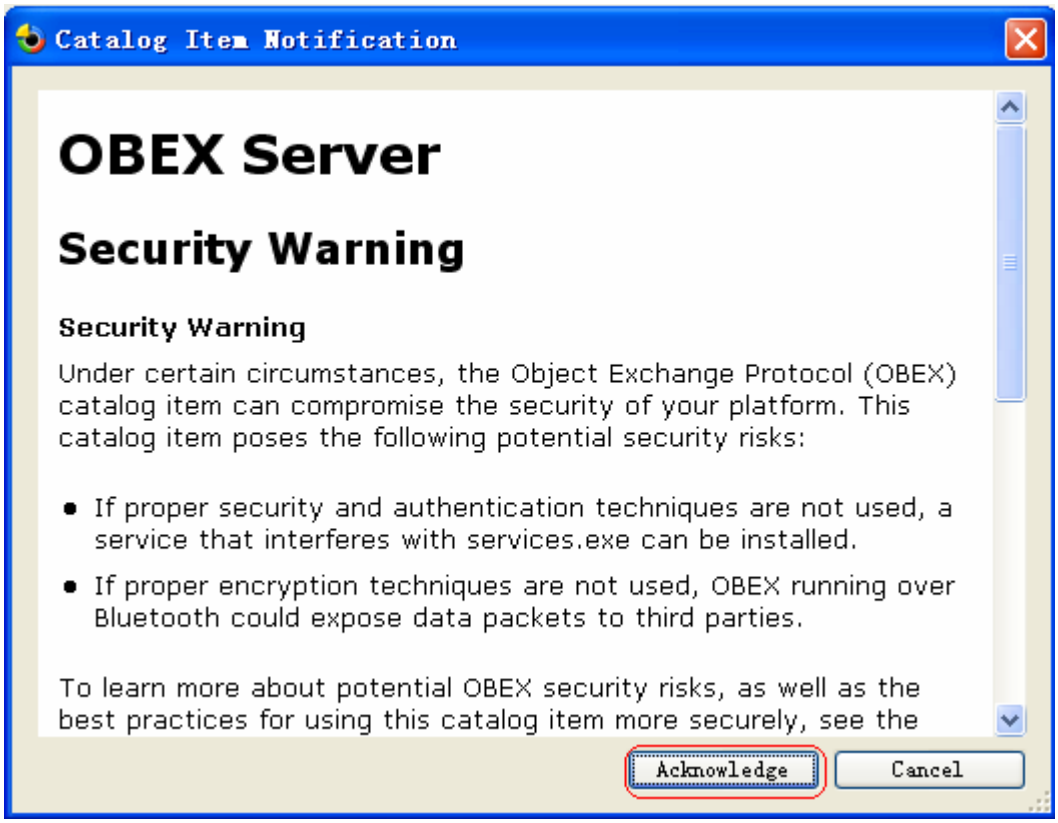
3.9.2 Click “Next”



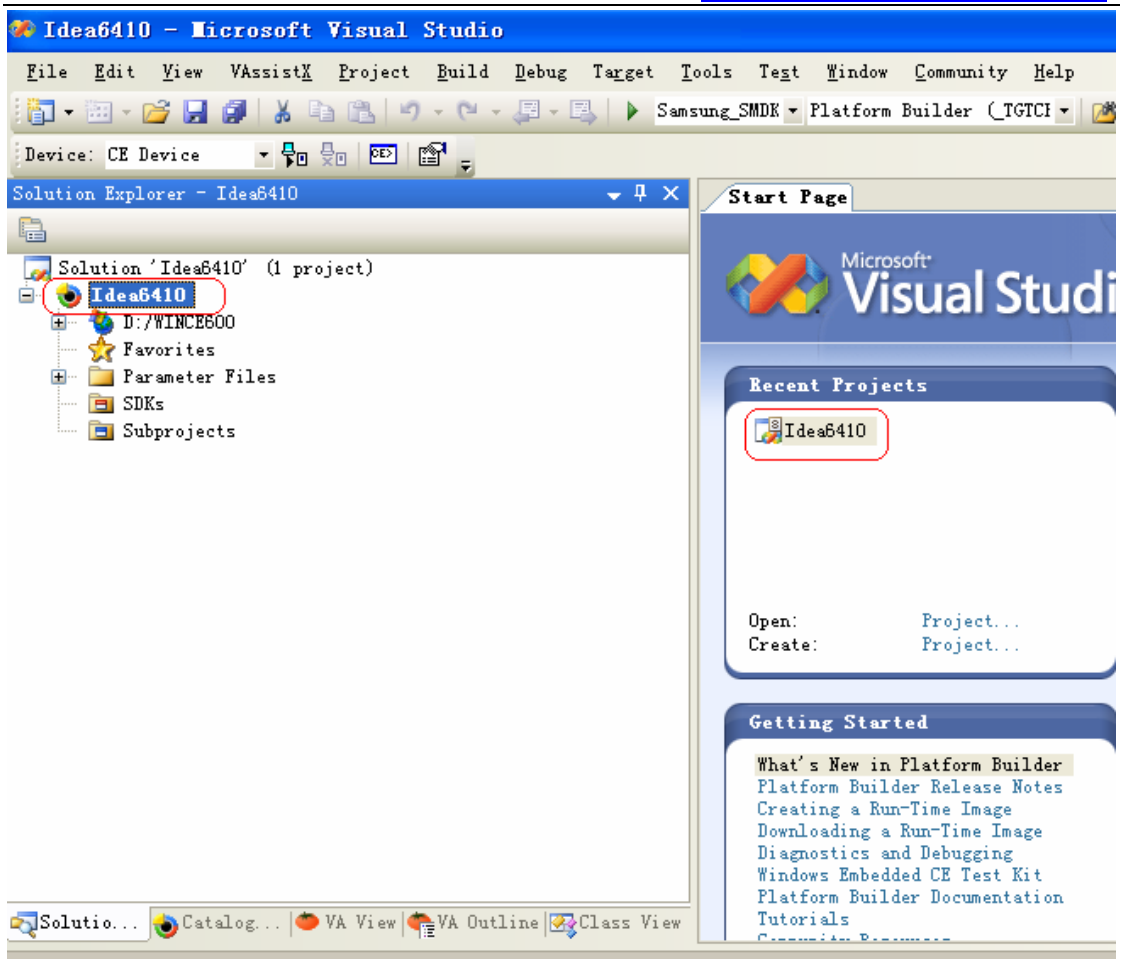
3.10, Click “Finish”



3.11. Click “Acknowledge”

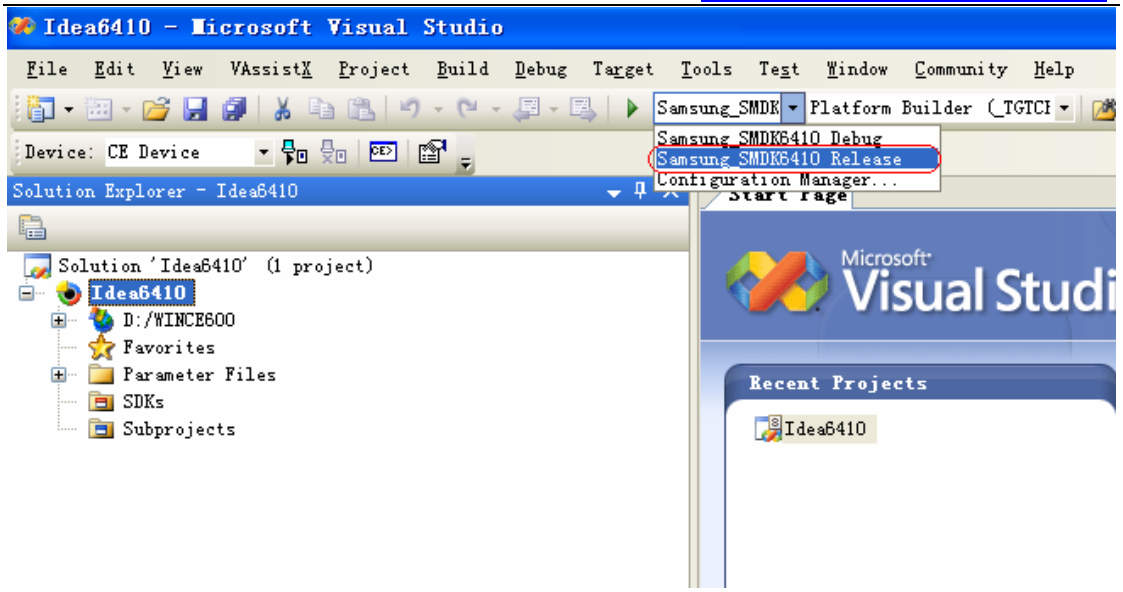


The Project has been successfully created until now.
Under VS2005, we can find the new created project " Idea6410"



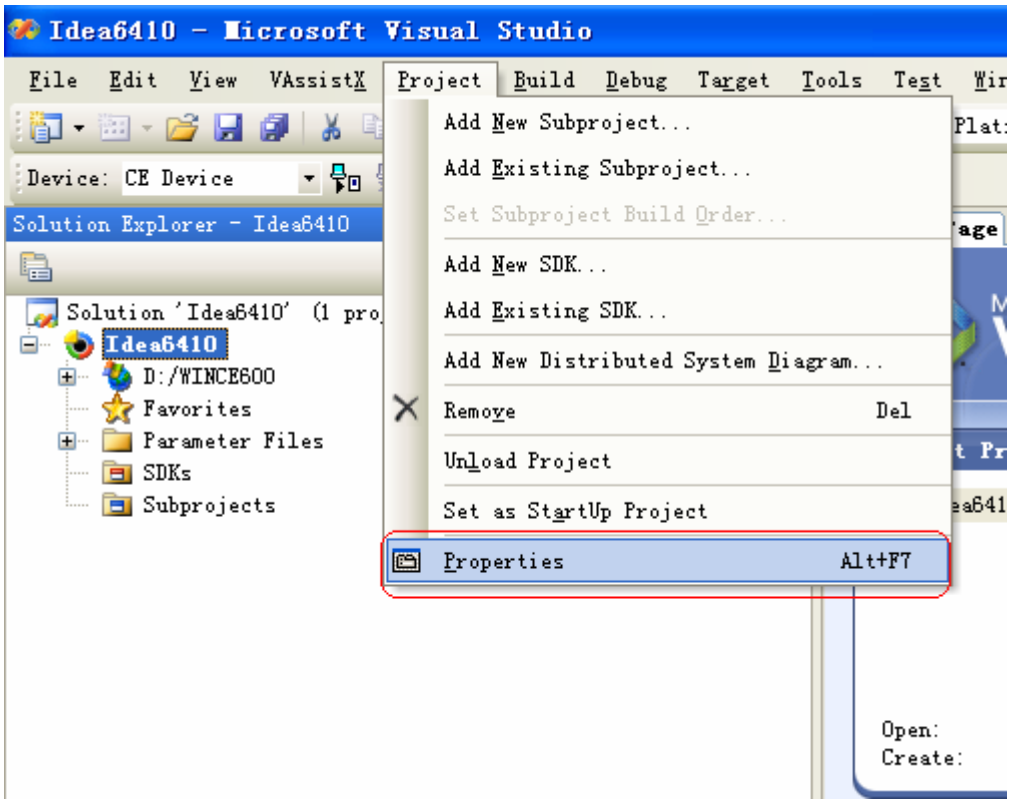
4. Customize the Kernel

4.1 Set the target Kernel type
Select “Samsung SMD6410 Release”

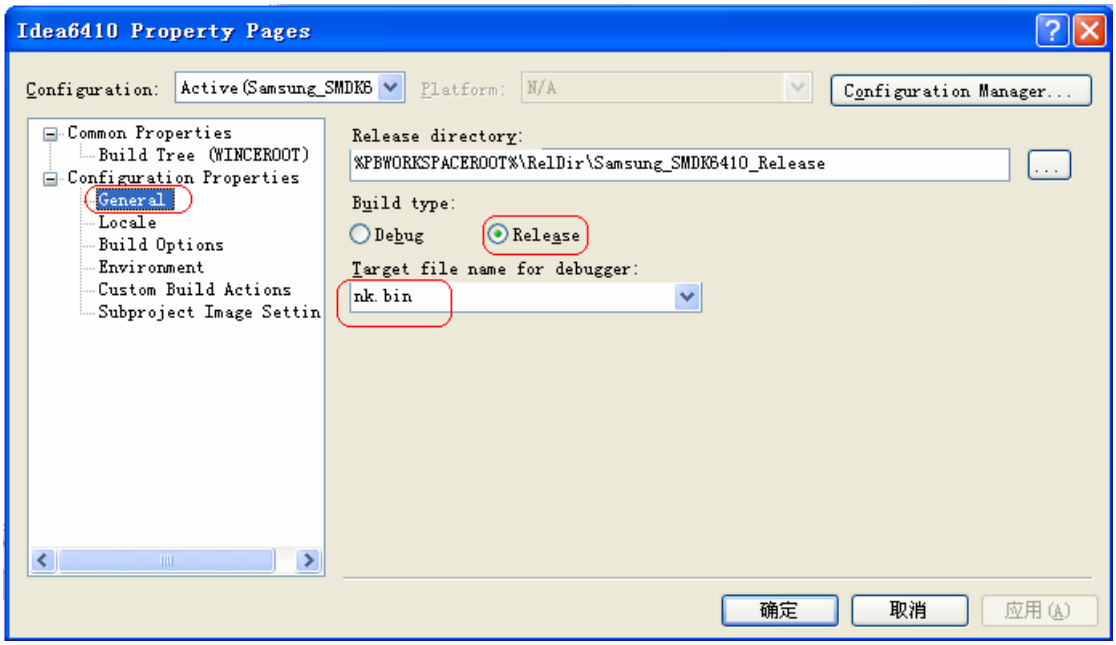


4.2 Set the project properties.

4.2.1 Select menu “Project” → “Properties”



4.2.2 “General” Setting

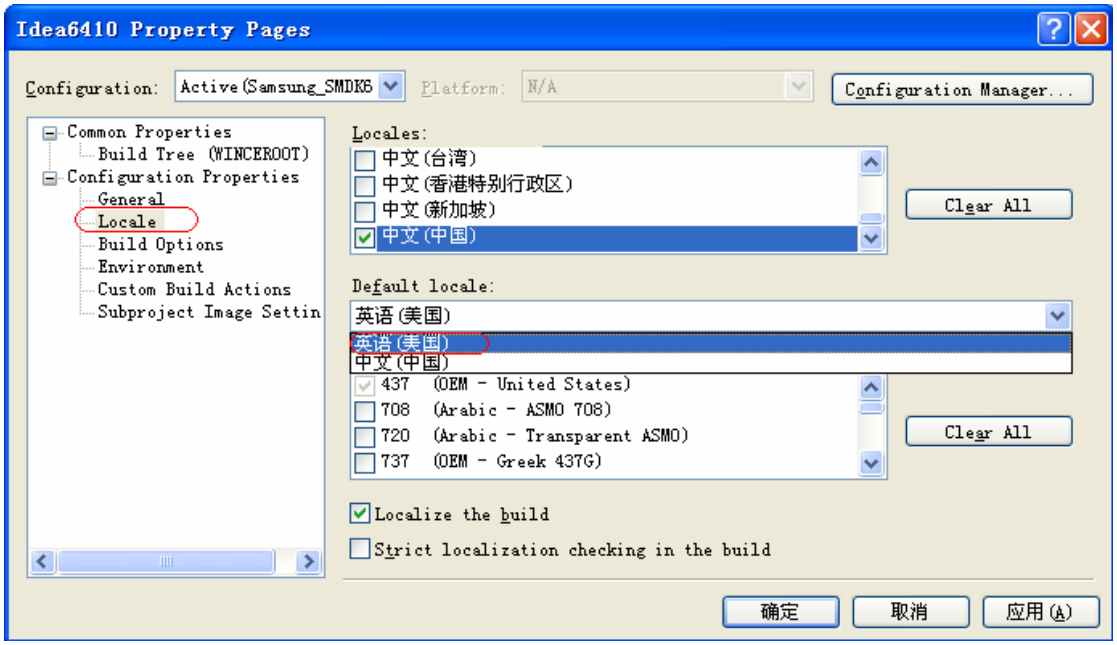


4.2.3 “Locale” setting set the system language here.

First “Clear All’, and select the system language based on the requirement

- Select “ English (American)”
- Select “ Chinese (China)”

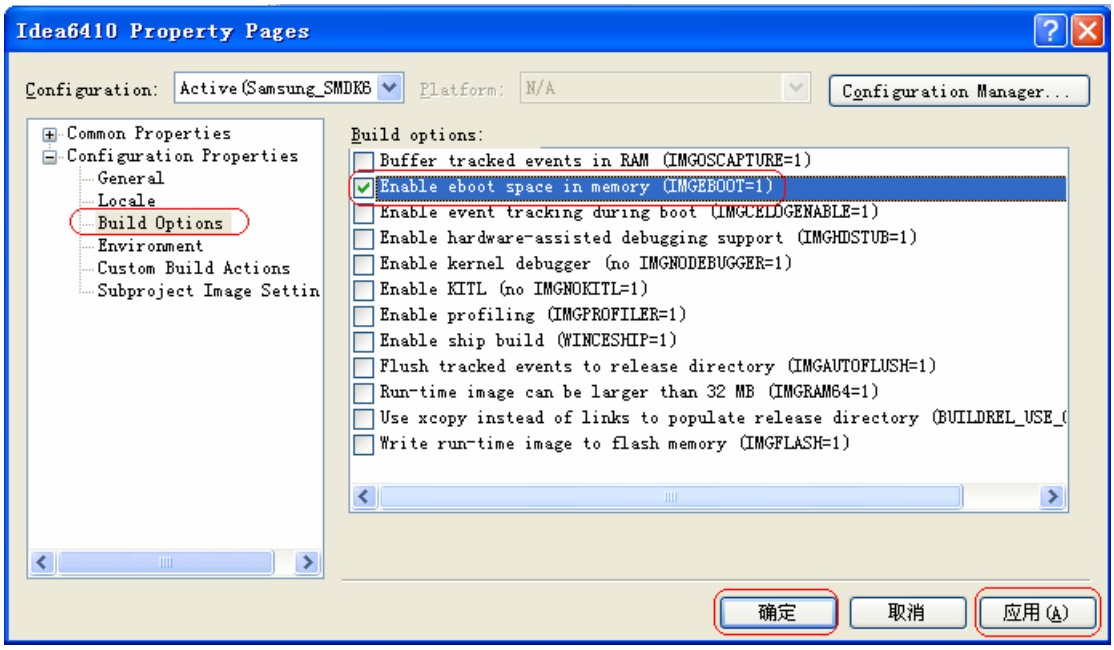
Default locale: Select “English (American)”.



4.2.4 “Build Options” setting

Only select “Enable eboot space in memory (IMAGBOOT=1)”

Select “ Apply” → “OK”

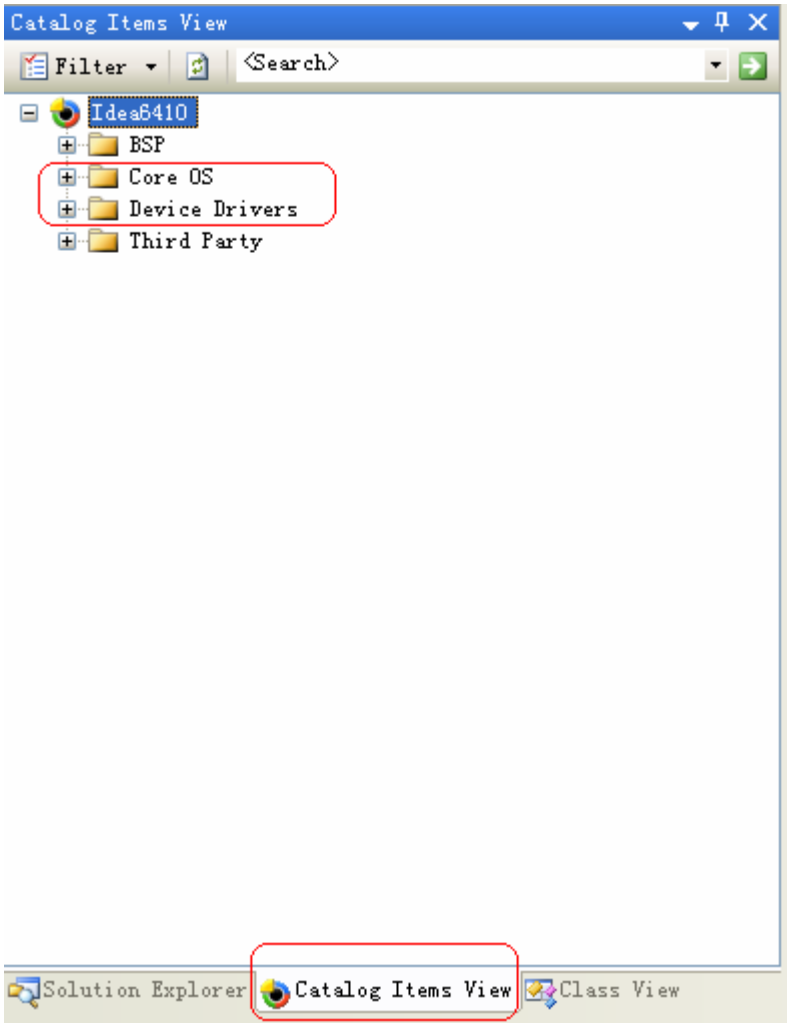


4.2.5 The other items choose the default.

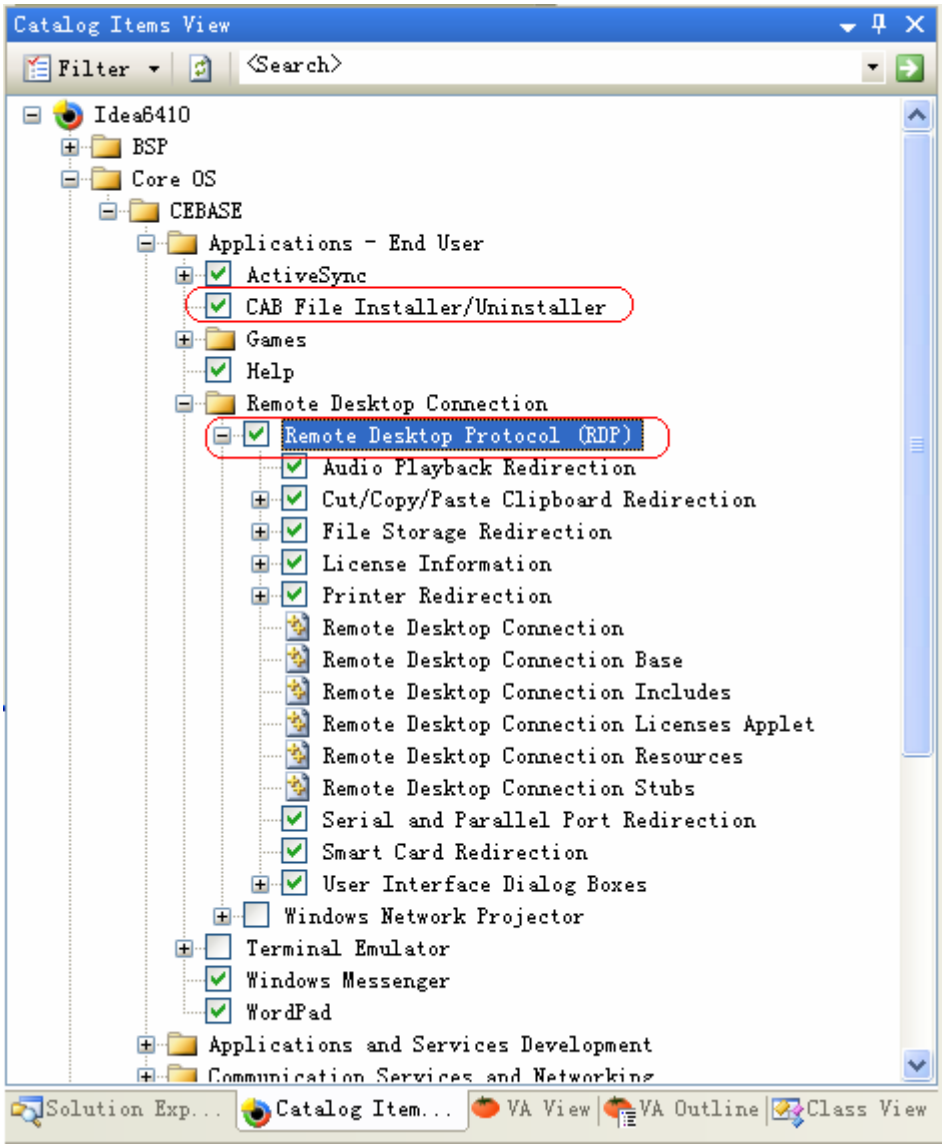
4.3 Add system items

4.3.1 Open “Catalog Items View window”

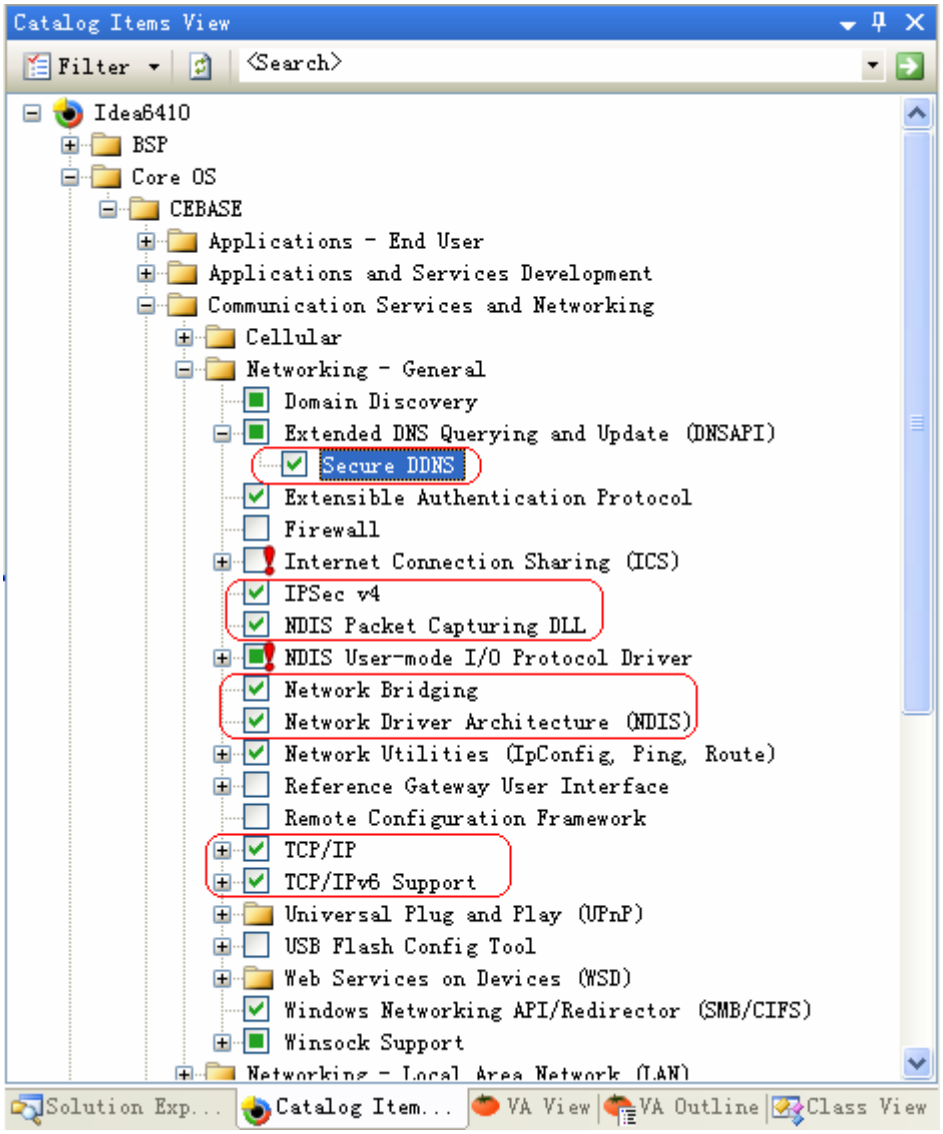
This project adds the items to Core OS and Device Drivers only.



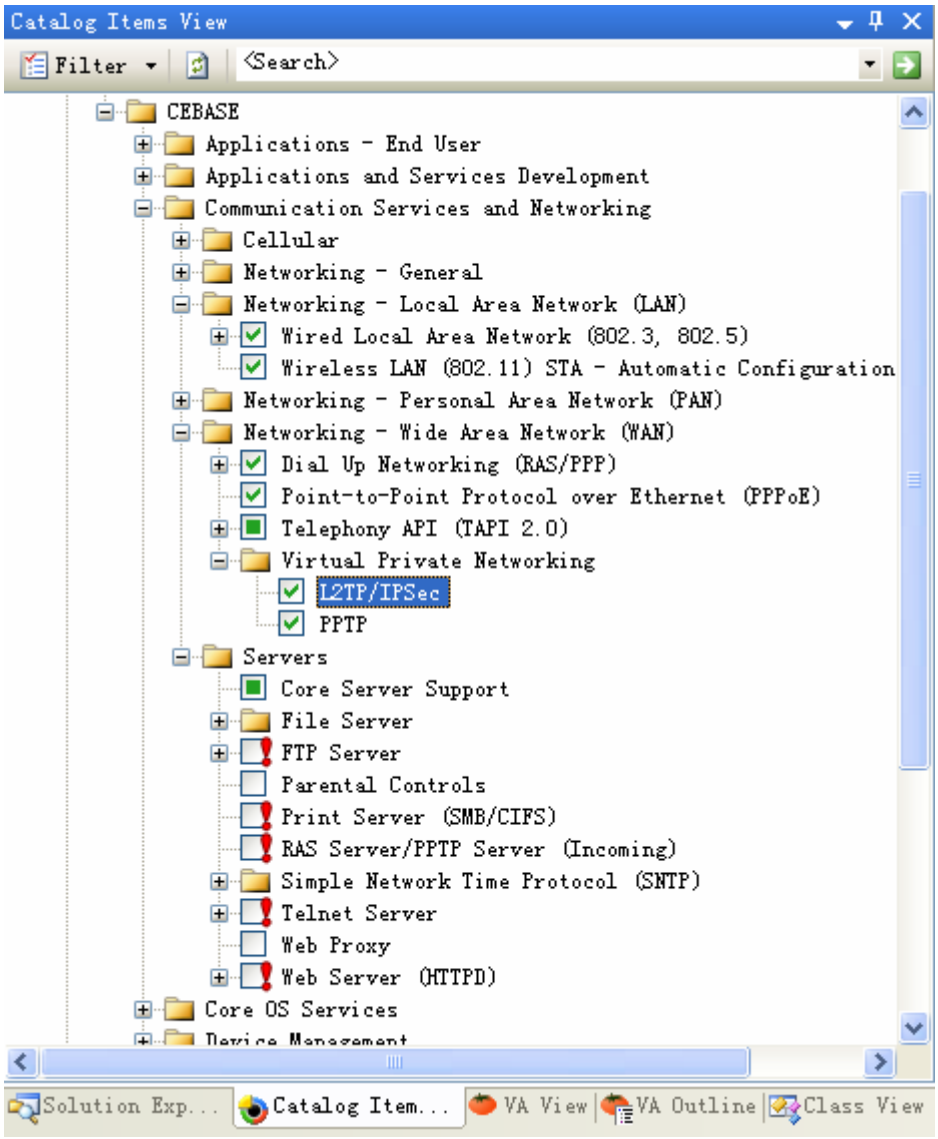
Add the items based on the system requirement
4.3.2 Core OS→ CEBASE → Applications→ End User



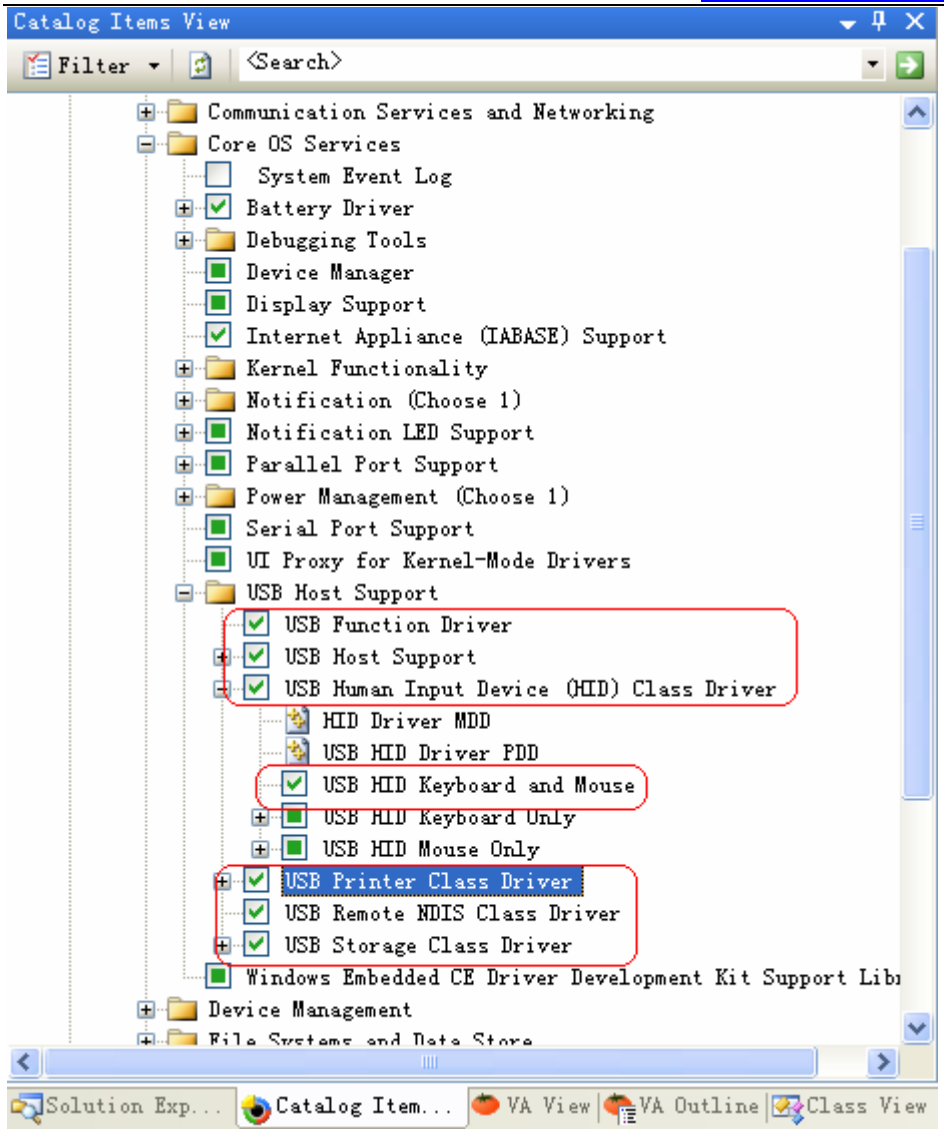
4.3.3 Core OS→ CEBASE → Communication Services and Networking →Networking --- General



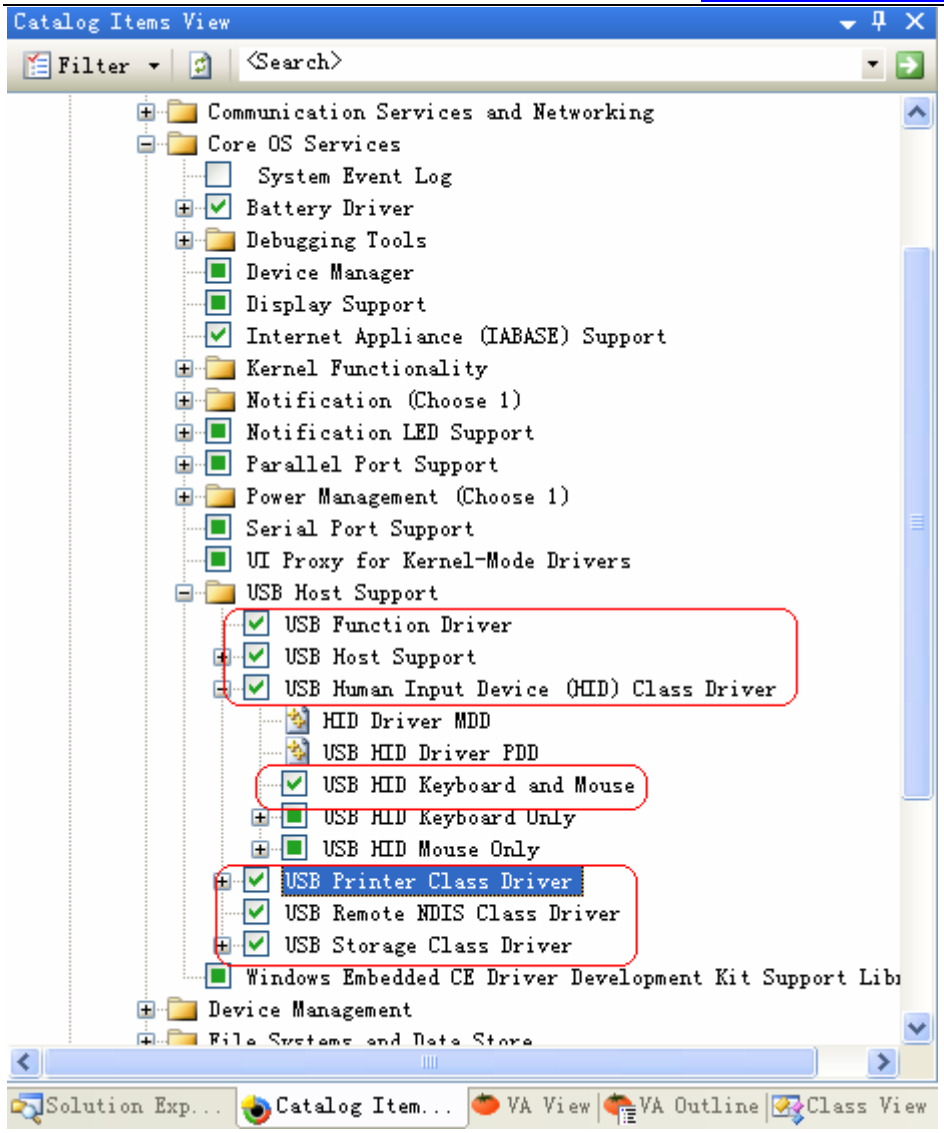
4.3.4 Core OS → CEBASE → Communication Services and Networking
→Networking--- Local Area Network (LAN)
→Networking--- Wide Area Network (WAN)



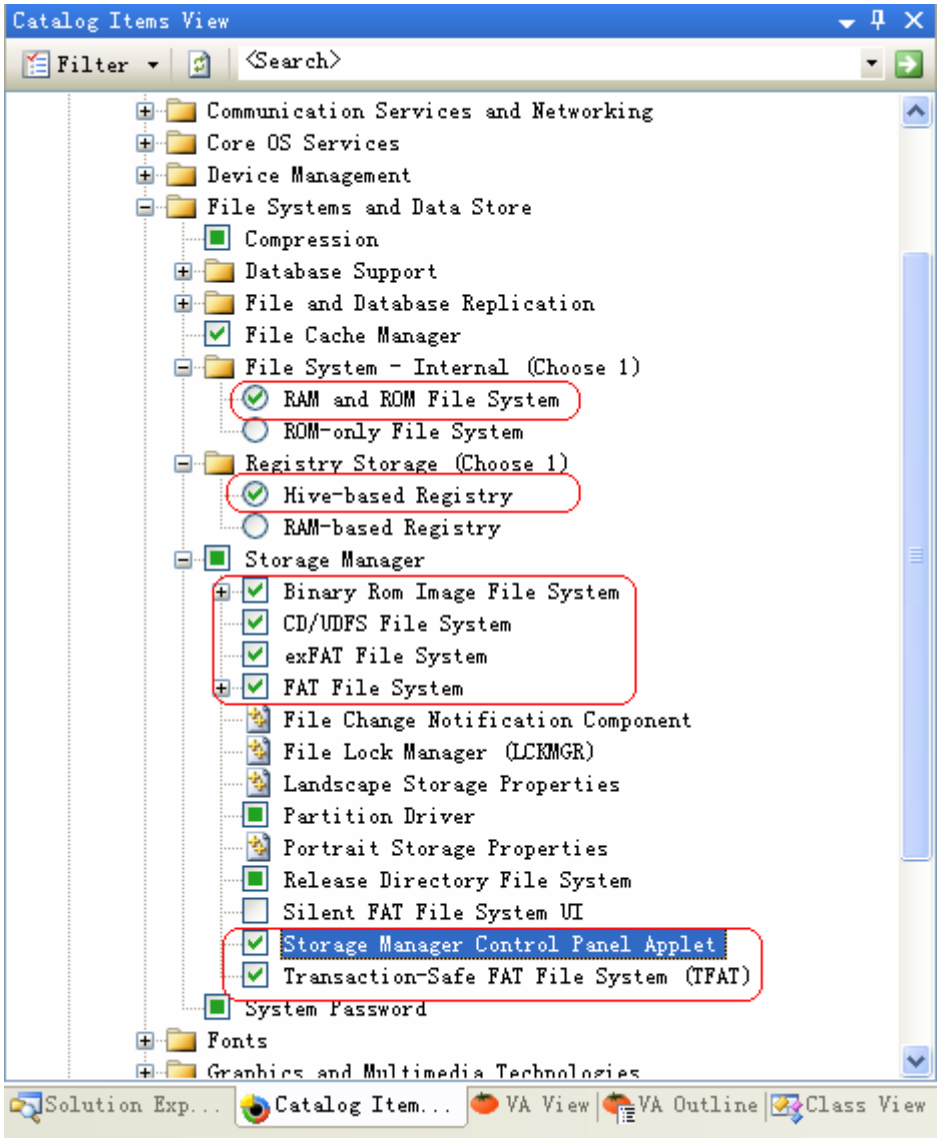
4.3.5 Core→ CEBASE → Core OS Services
→ USB Host Support



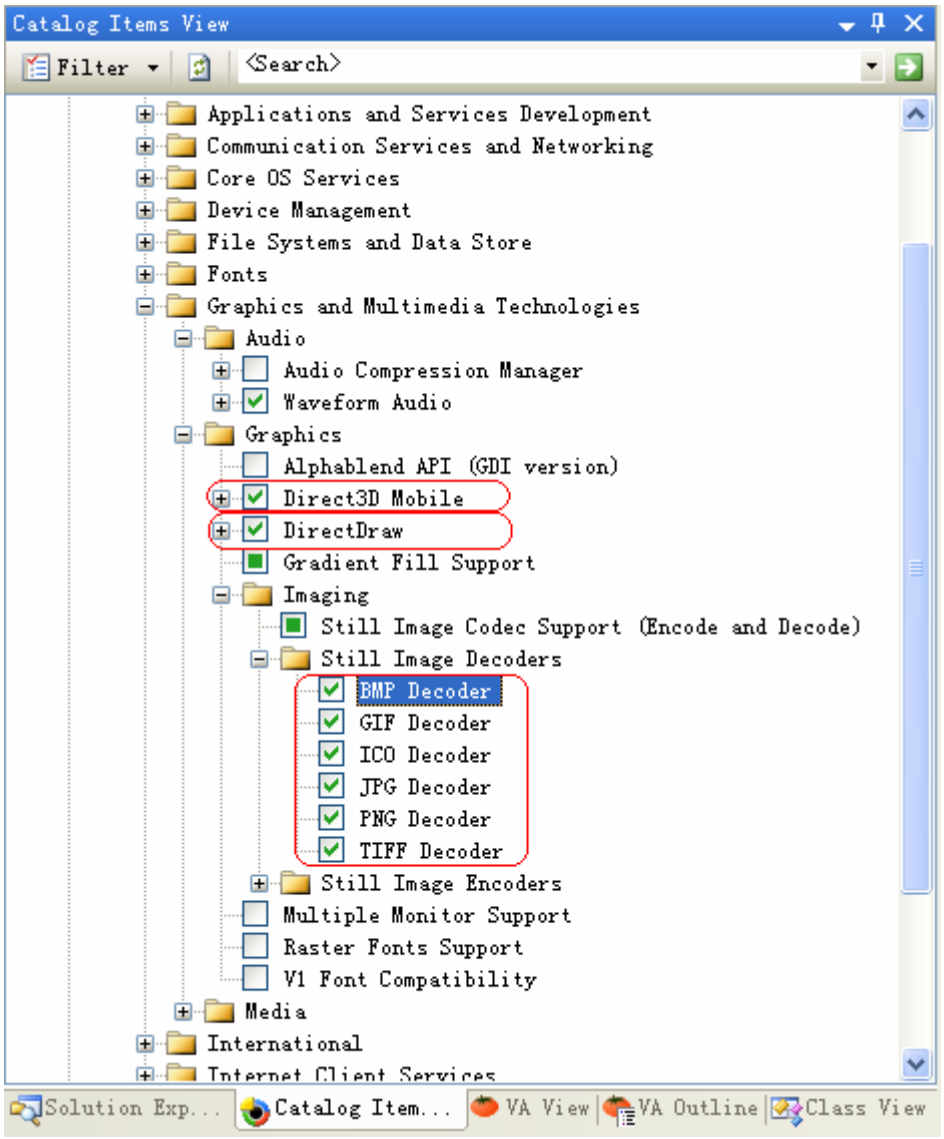
4.3.6 Core →CEBASE → Core OS Services
→ USB Host Support

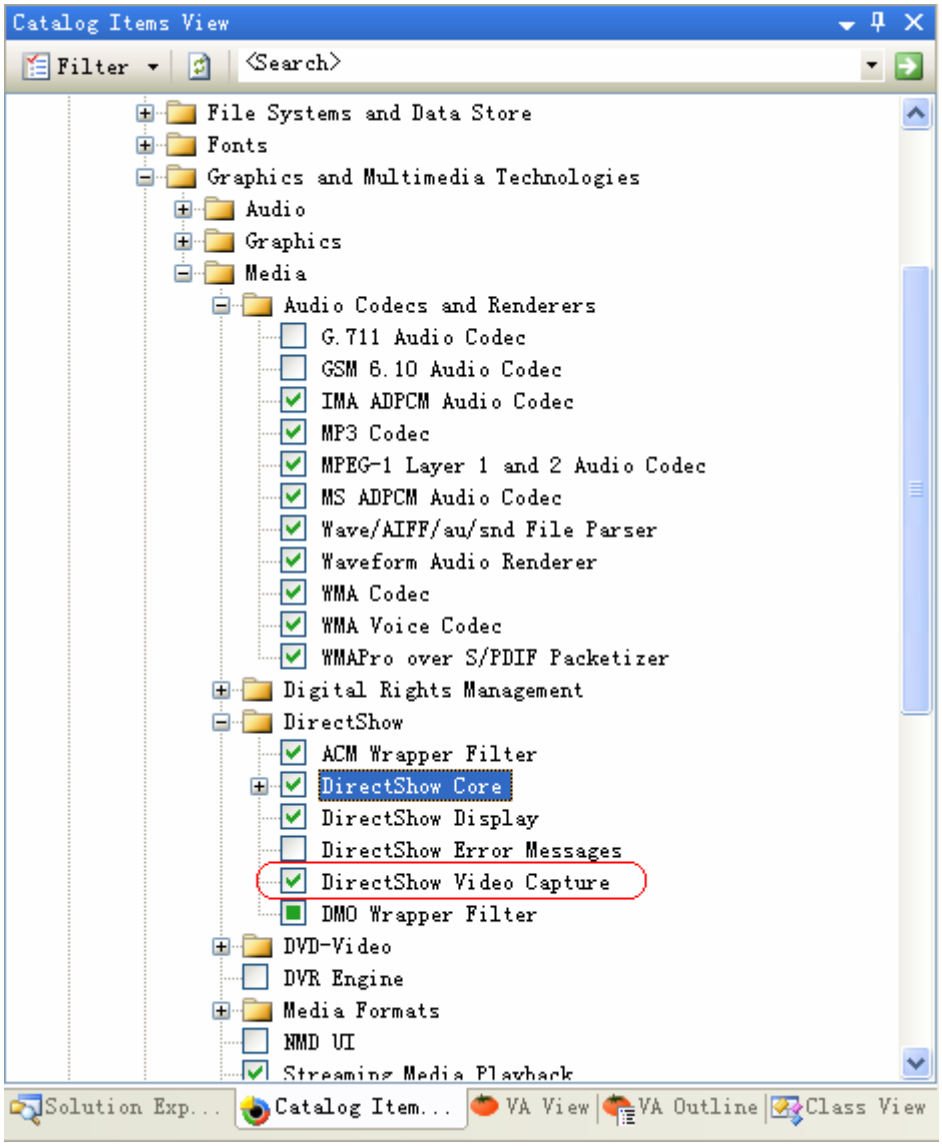


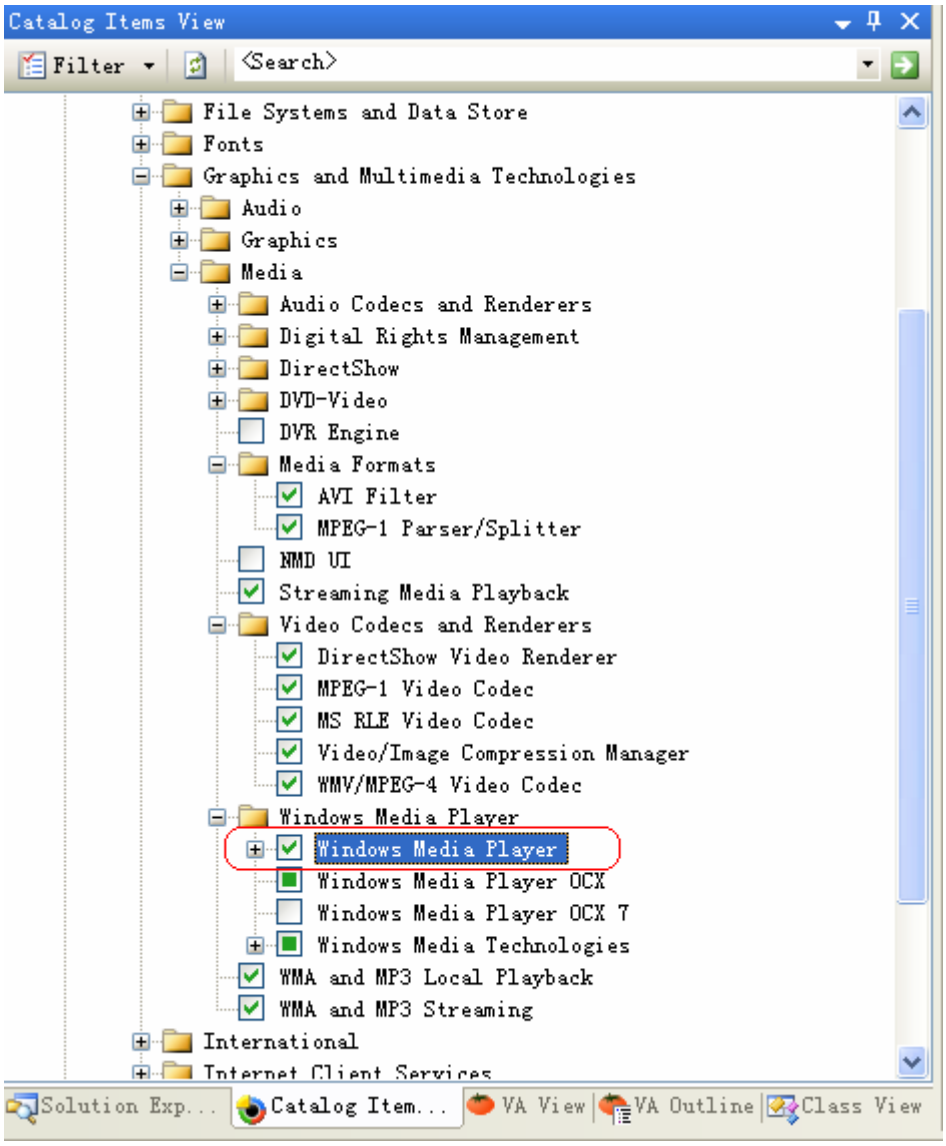
4.3.7 Core OS → CEBASE→ File Systems and Data Store



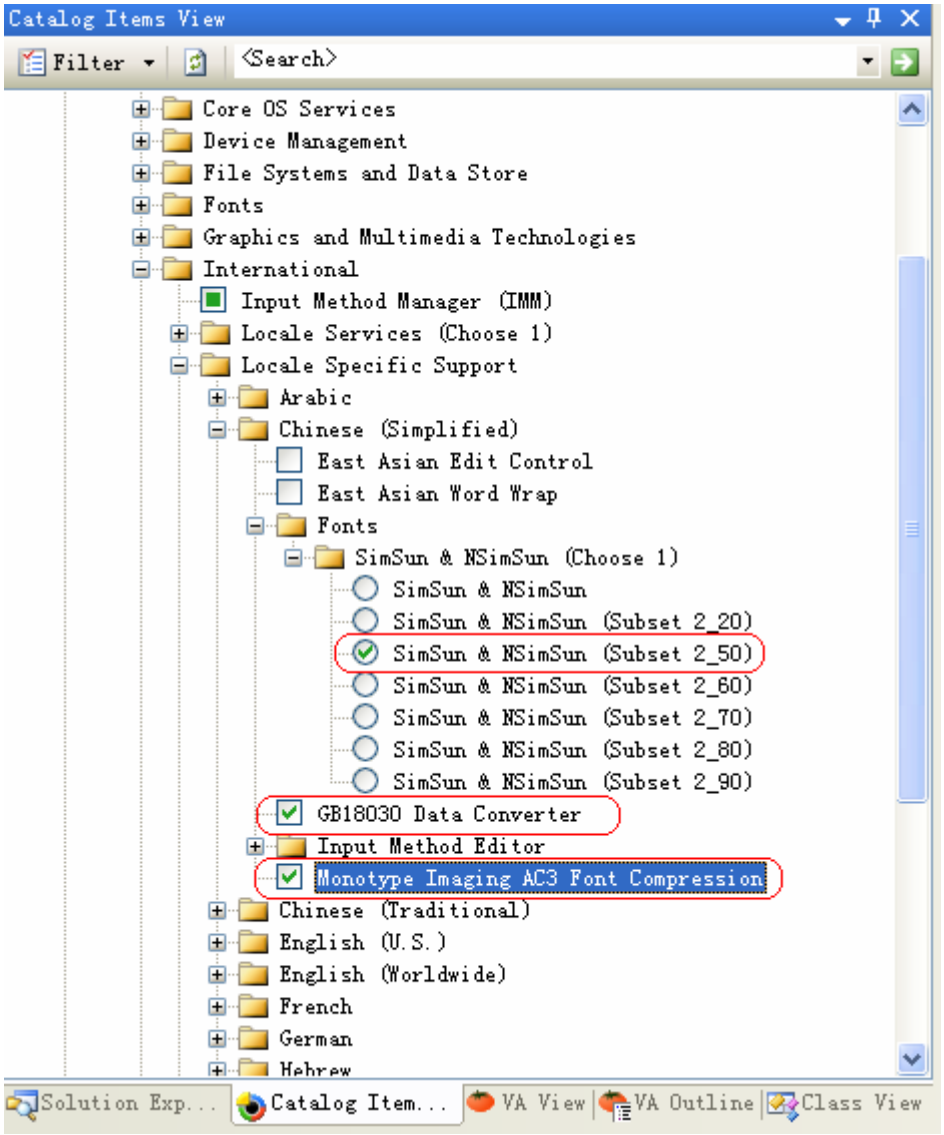
4.3.8 Core OS → CEBASE→ Graphics and Multimedia Technologies


Catalog Items View
Filter
<Search>
Applications and Services Development
Communication Services and Networking
Core OS Services
Device Management
File Systems and Data Store
Fonts
Graphics and Multimedia Technologies
Audio
Audio Compression Manager
Waveform Audio
Graphics
Alphablend API (GDI version)
Direct3D Mobile
DirectDraw
Gradient Fill Support
Imaging
Still Image Codec Support (Encode and Decode)
Still Image Decoders
BMP Decoder
GIF Decoder
ICO Decoder
JPG Decoder
PNG Decoder
TIFF Decoder
Still Image Encoders
Multiple Monitor Support
Raster Fonts Support
V1 Font Compatibility
Media
International
Internet Client Services
Solution Exp...
Catalog Item...
VA View
VA Outline
Class View

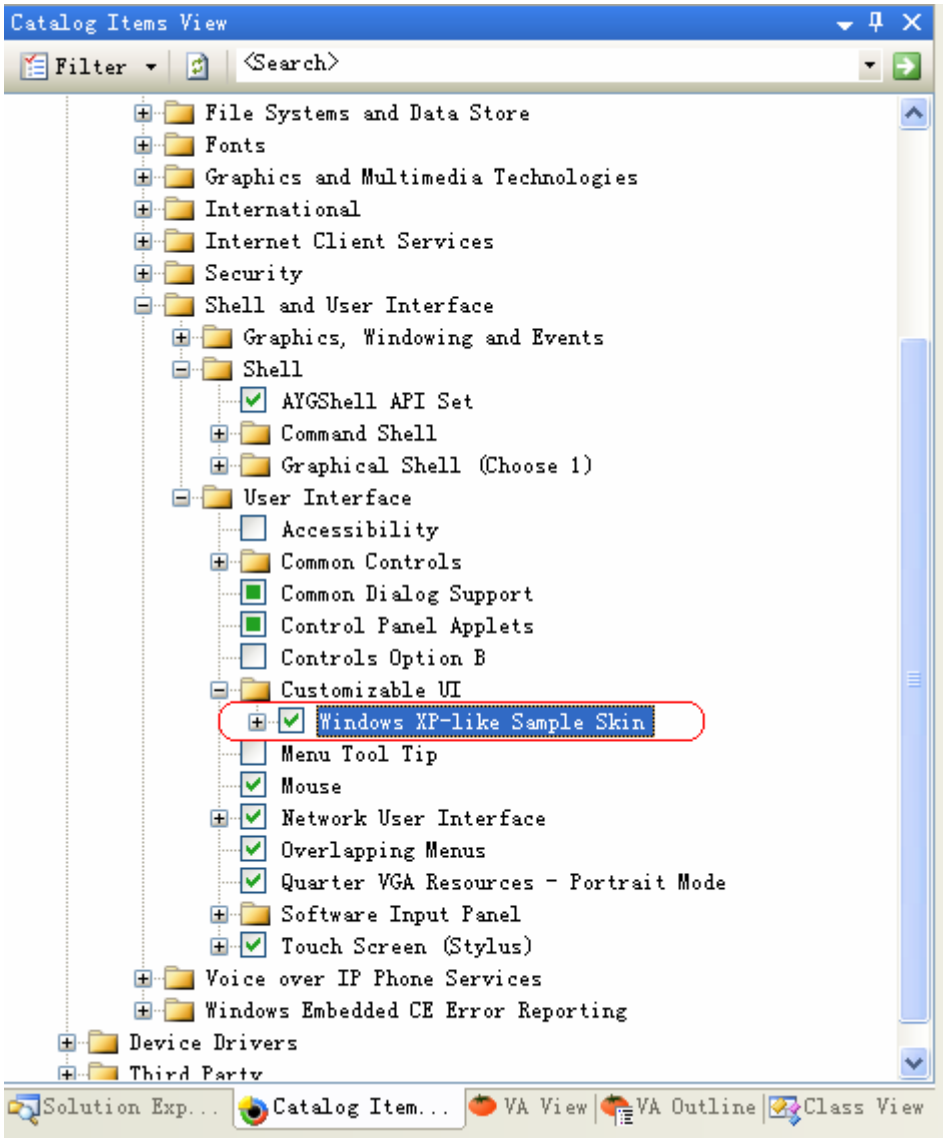

Catalog Items View
Filter
<Search>
File Systems and Data Store
Fonts
Graphics and Multimedia Technologies
Audio
Graphics
Media
Audio Codecs and Renderers
G.711 Audio Codec
GSM 6.10 Audio Codec
IMA ADPCM Audio Codec
MP3 Codec
MPEG-1 Layer 1 and 2 Audio Codec
MS ADPCM Audio Codec
Wave/AIFF/au/snd File Parser
Waveform Audio Renderer
WMA Codec
WMA Voice Codec
WMAPro over S/PDIF Packetizer
Digital Rights Management
DirectShow
ACM Wrapper Filter
DirectShow Core
DirectShow Display
DirectShow Error Messages
DirectShow Video Capture
DMO Wrapper Filter
DVD-Video
DVR Engine
Media Formats
NMD UI
Streaming Media Playback
Solution Exp...
Catalog Item...
VA View
VA Outline
Class View



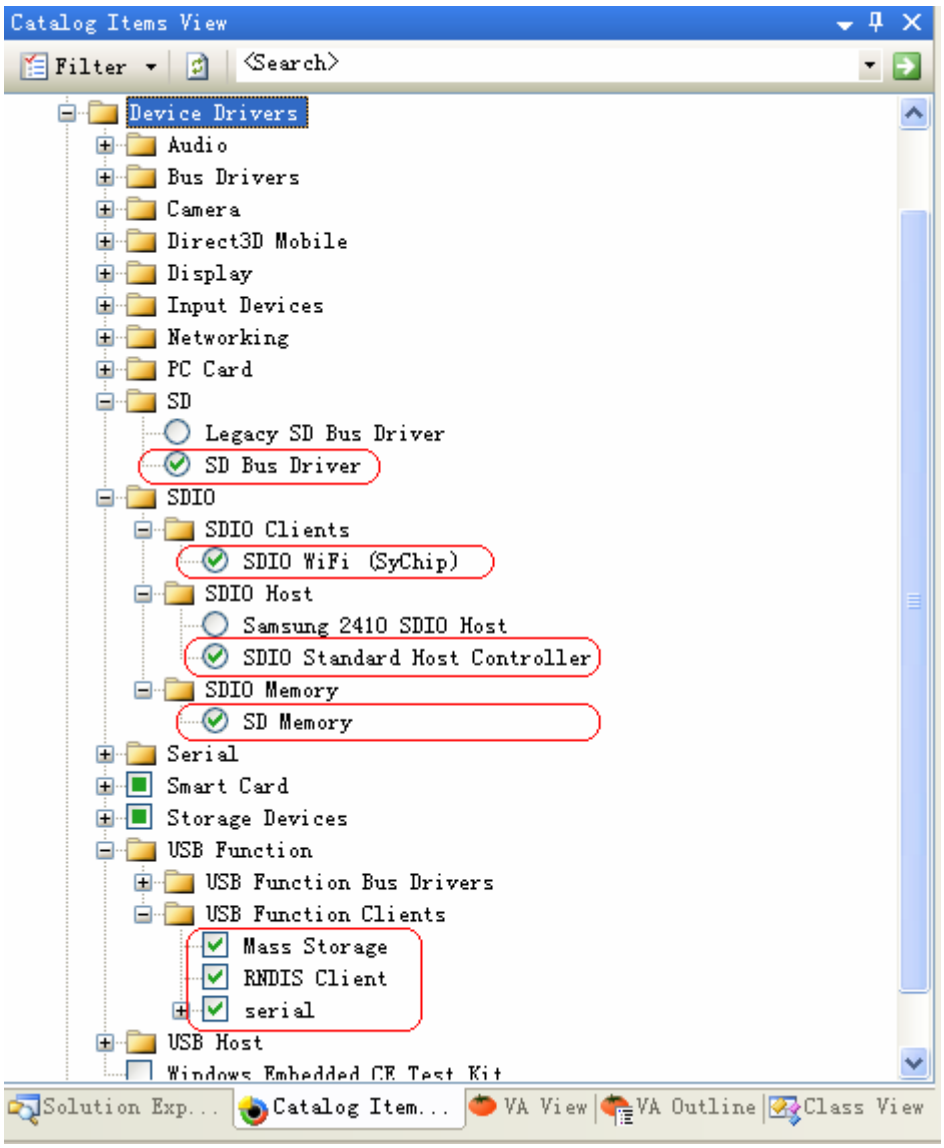
4.3.9 Core OS → CEBASE → International



4.3.10 Core OS→ CEBASE→ Shell and User Interface

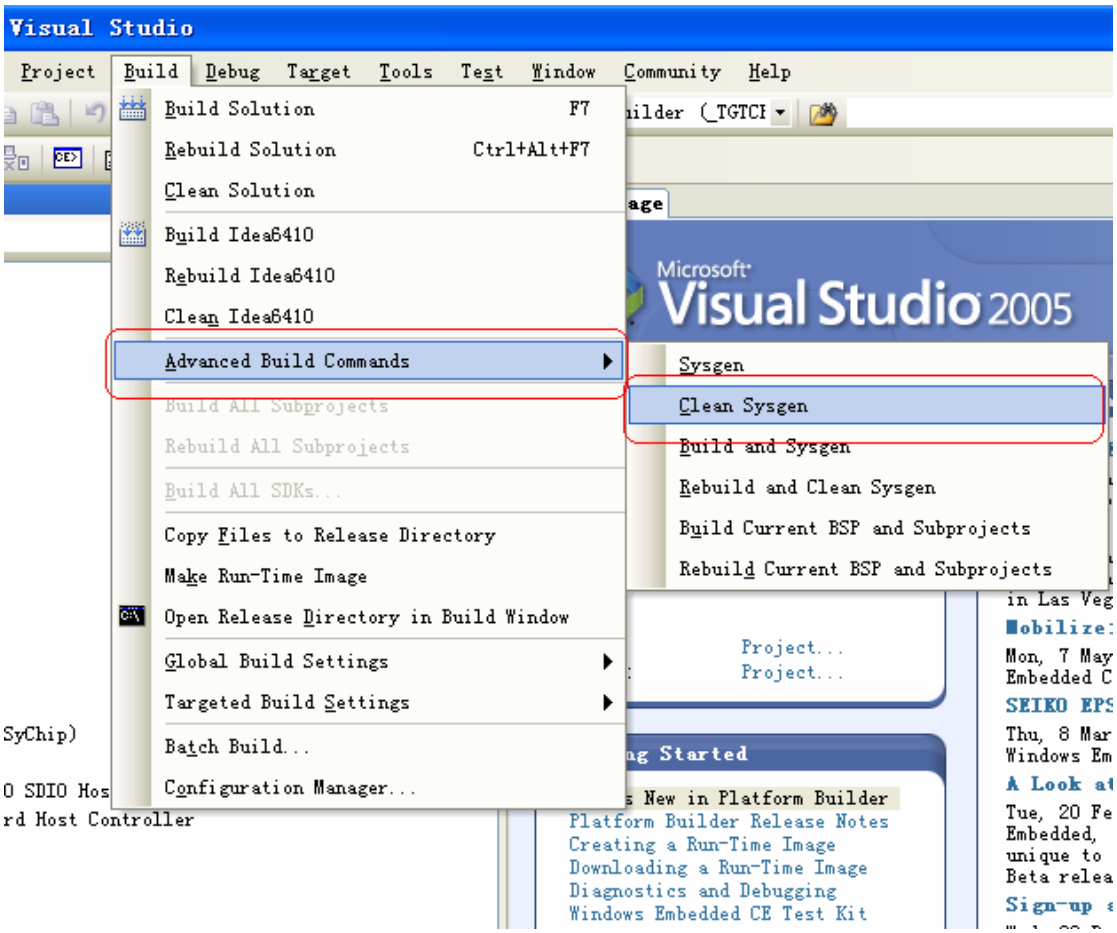


4.3.11 Device Drivers

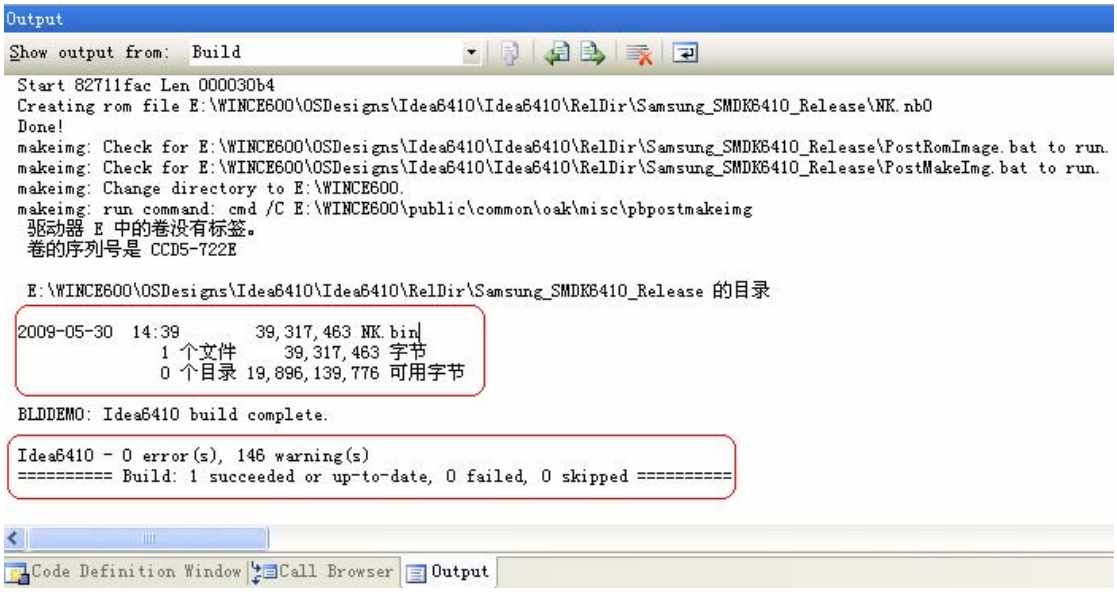


5. Compiling Kernel

5.1 Select “Build” → “Build Idea6410”
5.2 If this is the first time to create project, we suggest you to select “Build” → “Advanced Build Commands” → “Clean Sysgen”



When the compiling finished, we can see follow message from “Output” Window.



6. Burn the Kernel

The Idea6410 support 2 types of booting system startup: Boot from SD card and boot from the Nand Flash.
Set the switch SW1 (located on the right bottom corner) to realize the 2 types of booting system. SD boot used to replace the SJF+JTAG burning method; it is used for the first time of burning the Nand Flash.

Digital Switch SW1 pin	Pin 1	Pin 2	Pin 3	Pin 4
Boot From SD card	1	1	1	1
Boot from Nand Flash	1	1	0	0

Notice: Move the digital switch to **"On"** status it represent "**1**", Move the digital switch to "**OFF**" status, it represent "**0**".

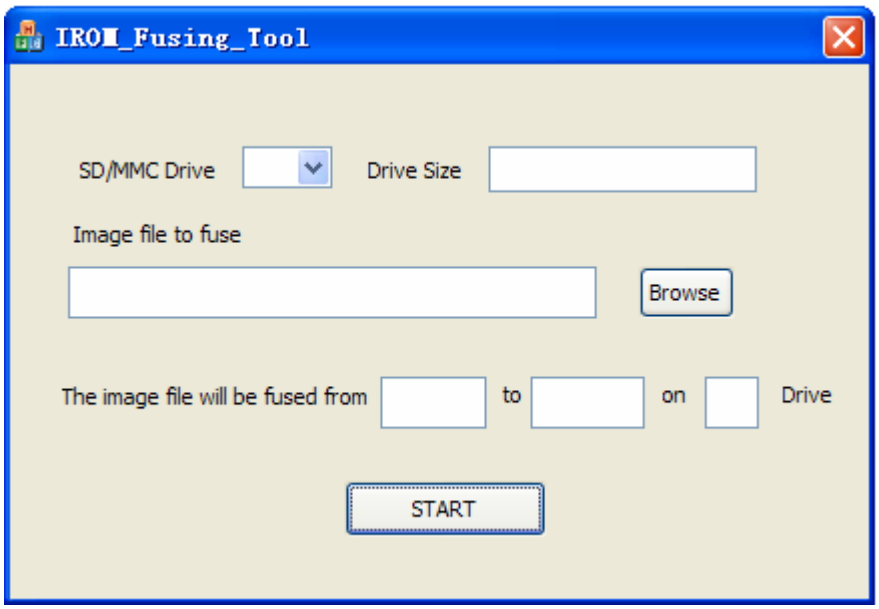
Burning the kernel include below steps:

(1) Set the hardware switch SW1 boot from SD.
(2) Burn the boot code to the SD card
(3) Power on the board, and Start EBOOT from the SD card.
(4) Install USB download driver
(5) Burn the STEPLDR.bin to Nand Flash.
(6) Restart the system (Startup from SD), and press "Blank" key within 3 second to enter the EBOOT interface.
(7) Burn the EBOOT.bin into Nand Flash
(8) Set hardware digital switch SW1 to Nand flash startup mode.
(9) Restart the system (this time startup from the Nand Flash), and press "Blank" key within 3 second to enter the EBOOT interface.
(10) Burn the Nk.bin into Nand Flash.

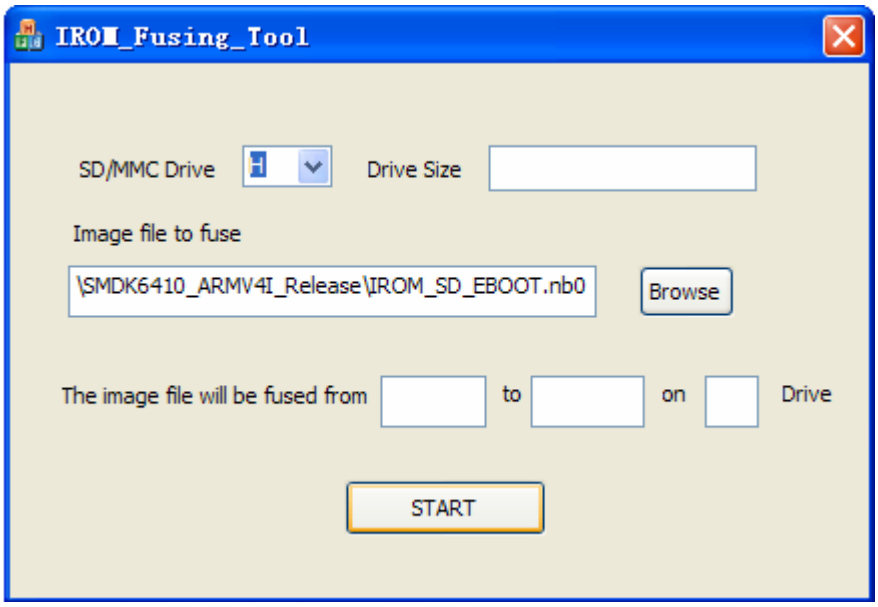
Notice: When the first burn the boot code or the boot code has been erased from the Nand Flash, it must be startup from the SD card, after the boot code has burned to the Nand flash, the SD card will no longer needed.

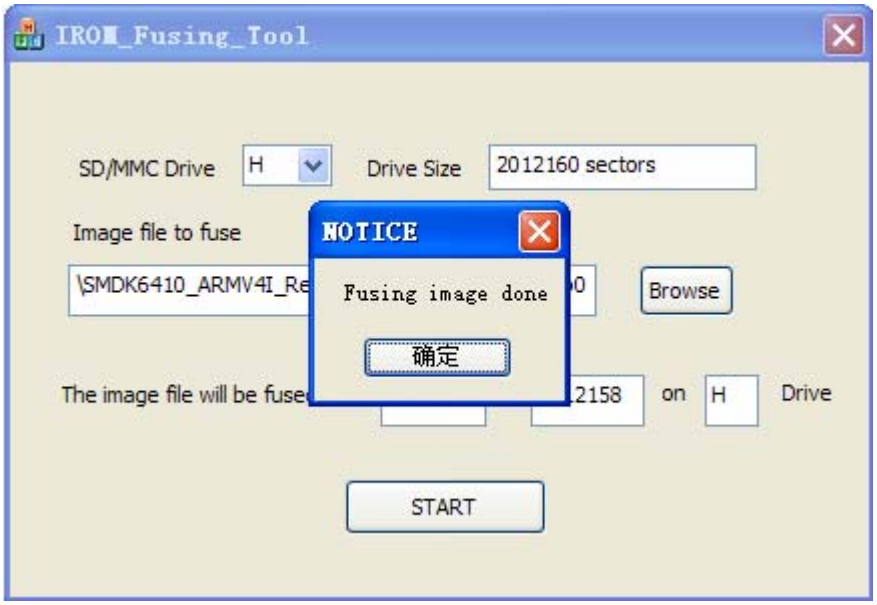
Below are the detail steps of burning program:
(1) Set the hardware digital switch SW1 boot from SD card.
Set the SW1 bit from 1-4 as "**1111**" (set the low bit first)
(2) Burn the **boot code** to SD card
Burn the boot code from the PC to the SD card by the PC software IROM_Fusing_Tool.exe, burn IROM_SD_EBOOT.nb0 into SD card.

- Insert the SD card to the SD reader on the PC. Open the file from CDROM "**Tools \ SDboot \ IROM_Fusing_Tool.exe**"



- Click " **Browse**", Select the file **IROM_SD_EBOOT.nb0** from " **Tools\ SDboot**".
- Select the **SD** card from **SD/MMC** Drive
- Click " **START**"

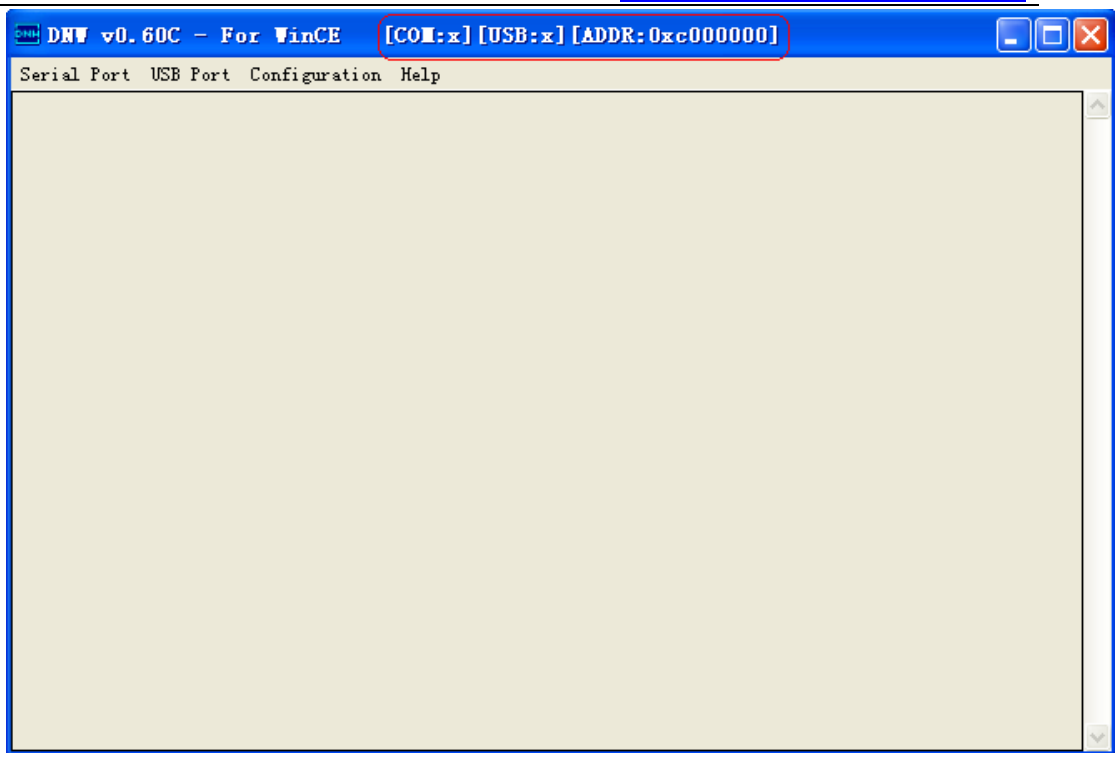




- If burning the program to the **SD** card successfully, there will be a pop-up Notice " Fusing image done", click "OK"

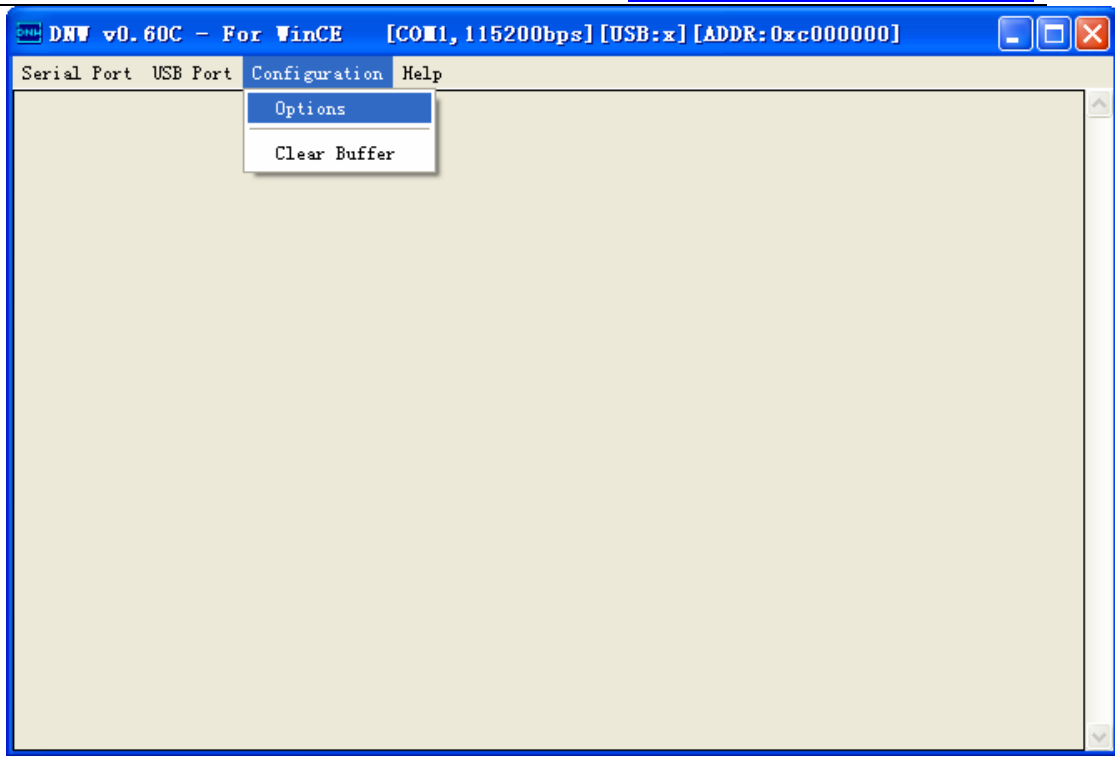
Notice: Please select the standard SD card as boot card, we suggest to use Kingston, SanDisk, 1G/2G card as our boot card.

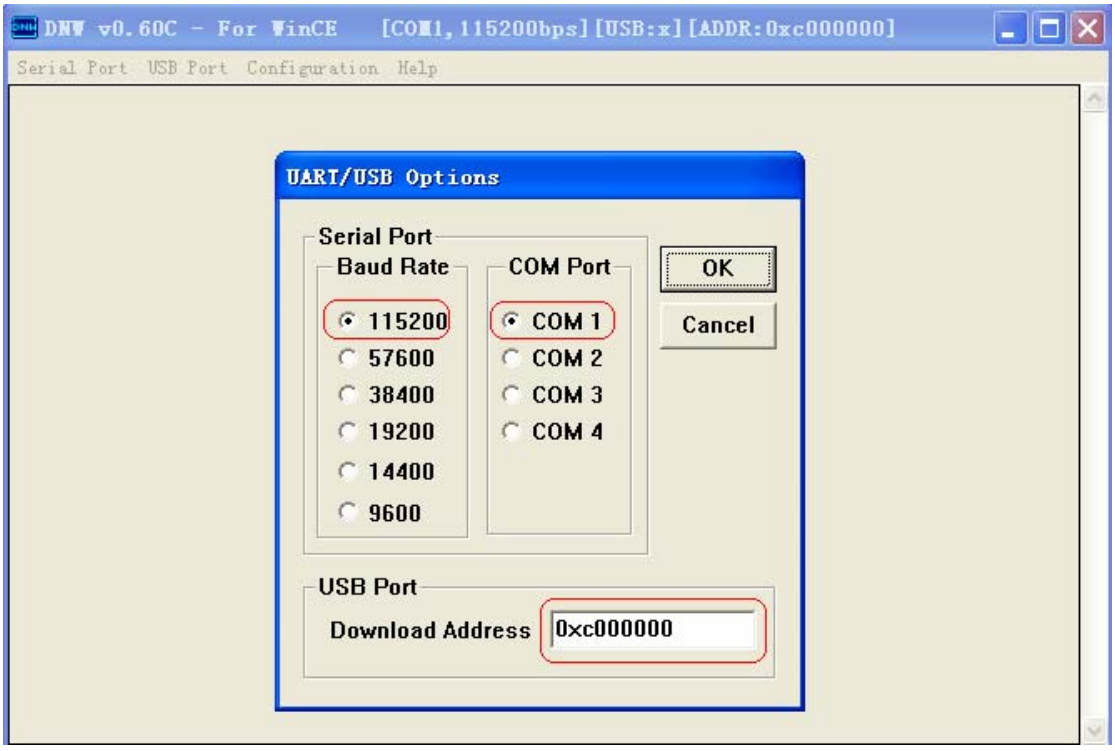
- Insert the SD card which has been burned the boot code to the SD card socket (SD CH0)
- Connect the power, USD device, serial port of the Idea6410
- Open "\tools\dnw.exe



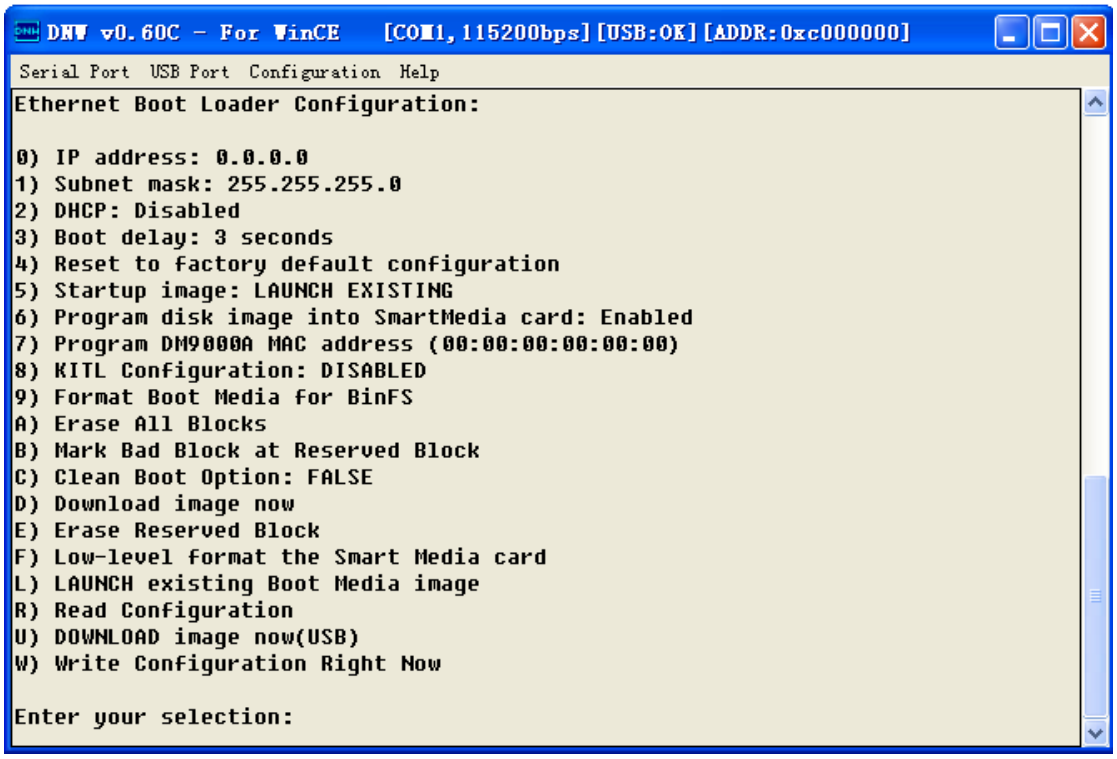
- Click “ Serial port”→ “ Connect”

- Click “Configuration” → “Options”
- Click “Configuration” → “ Options”, Baud Rate: 115200, COM Port: CoM1
- Download Address: 0xc000000





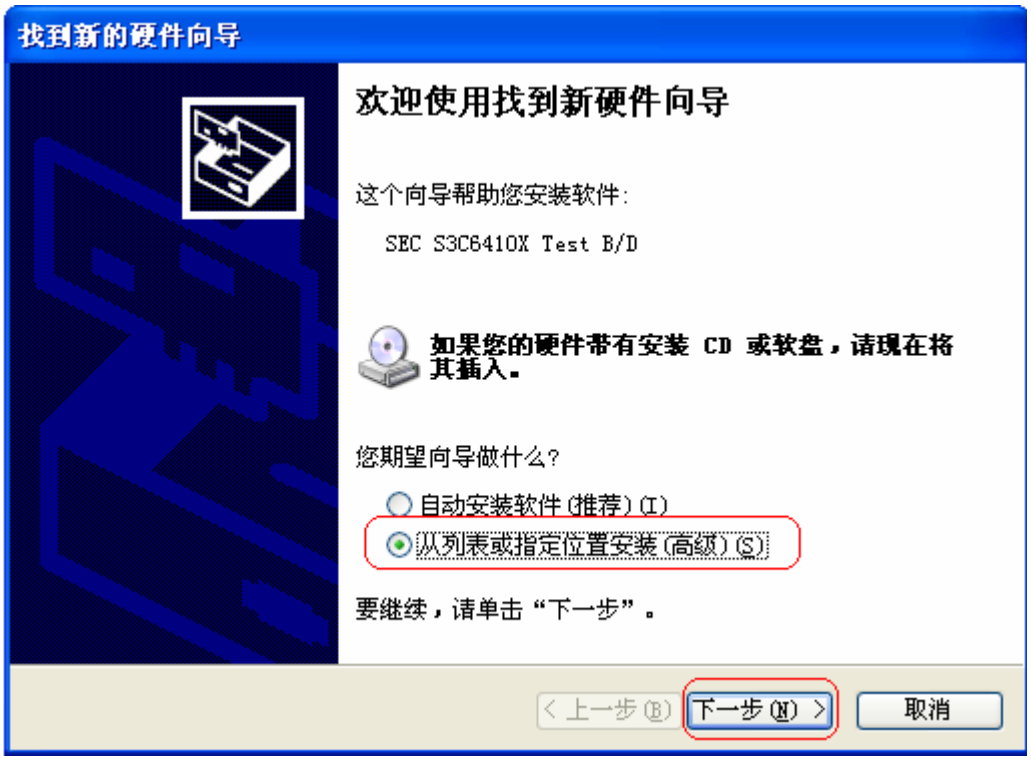
(3) Power on, start the system (startup from the SD card), and press “Blank” key within 3 second to enter the EBOOK interface.



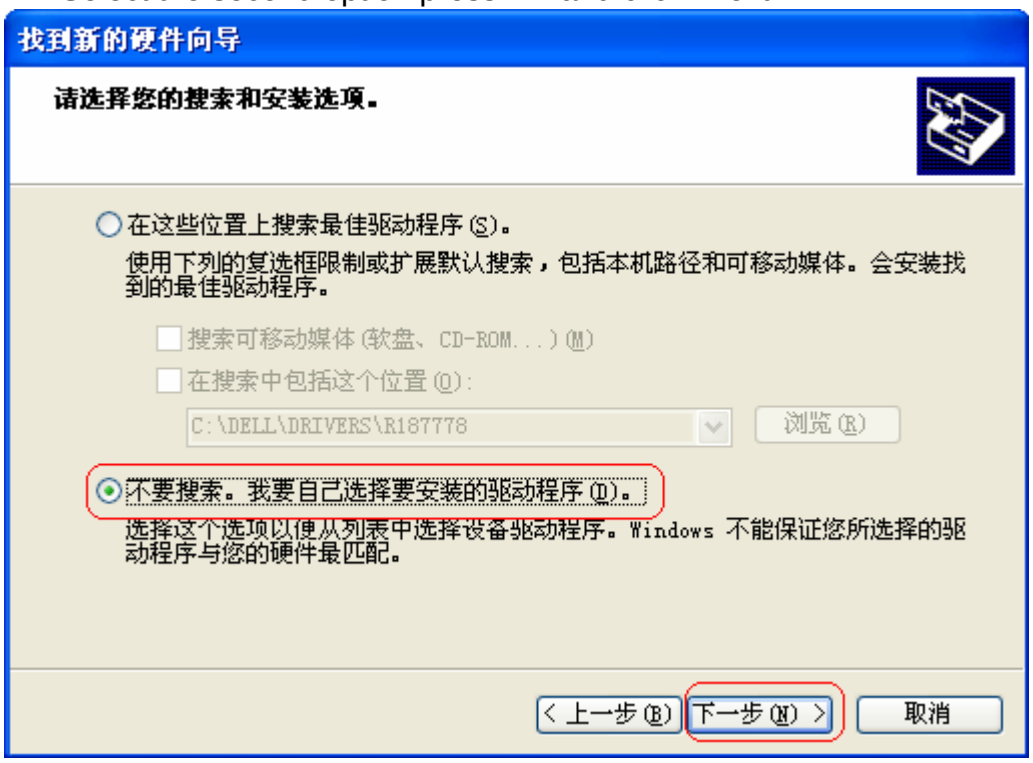
If the PC has not installed the USB download driver the PC will find new hardware.

(4) Install USB download driver.

- Select “install from the specified location” (S) and click “Next”

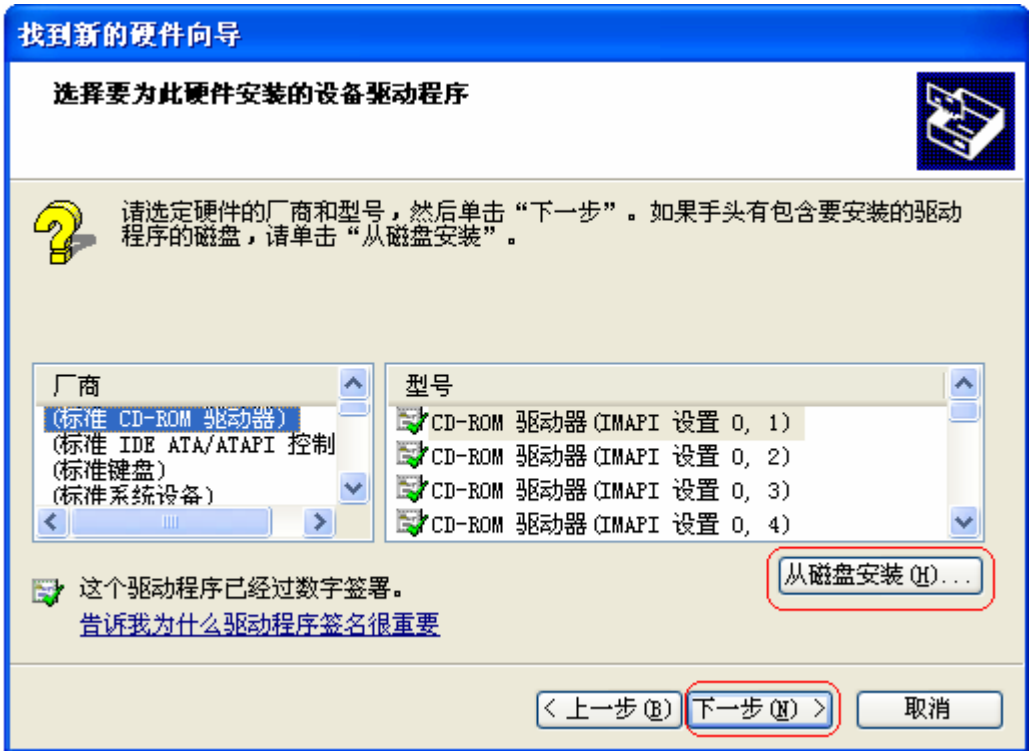


- Select the second option press “D” and click “Next”

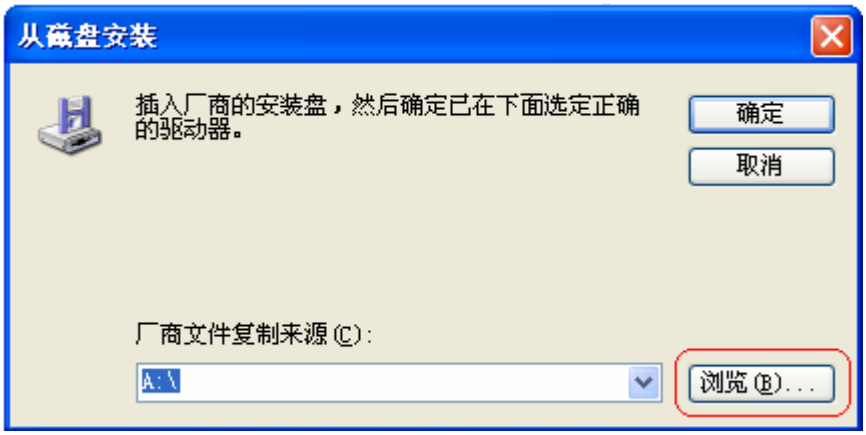


- “Next”

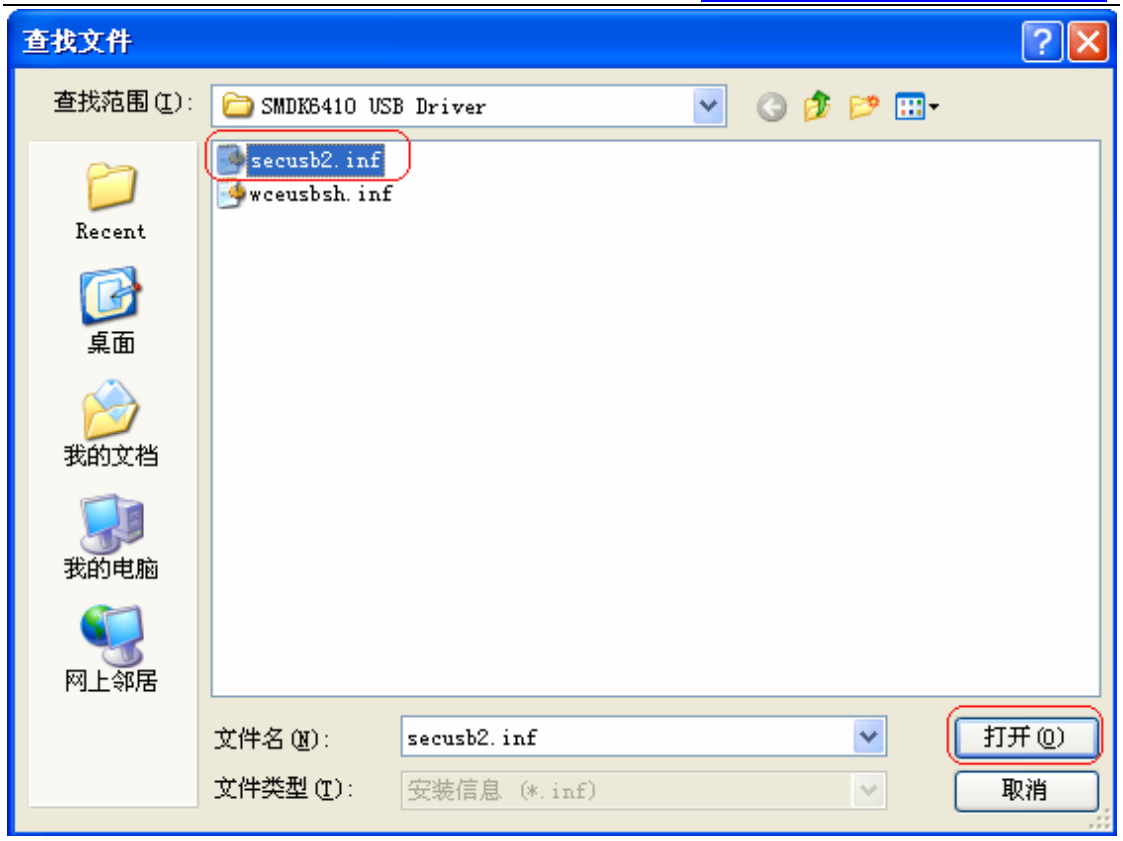
- Select install from the “Hard disk”, and click “Next”



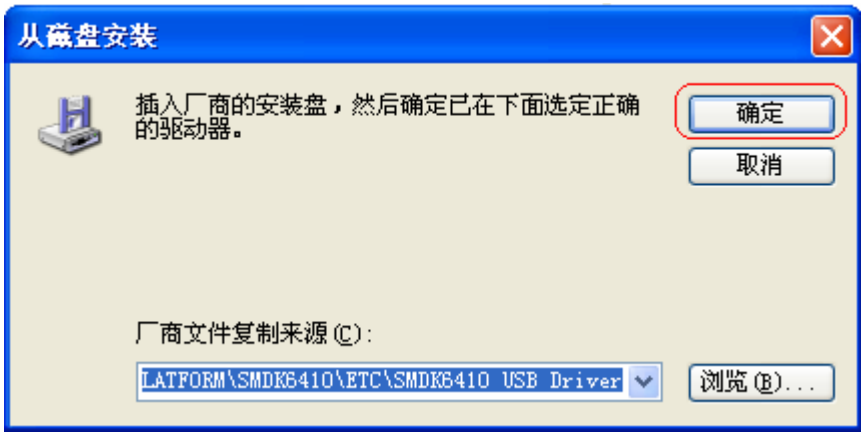
- Select “ Browse”



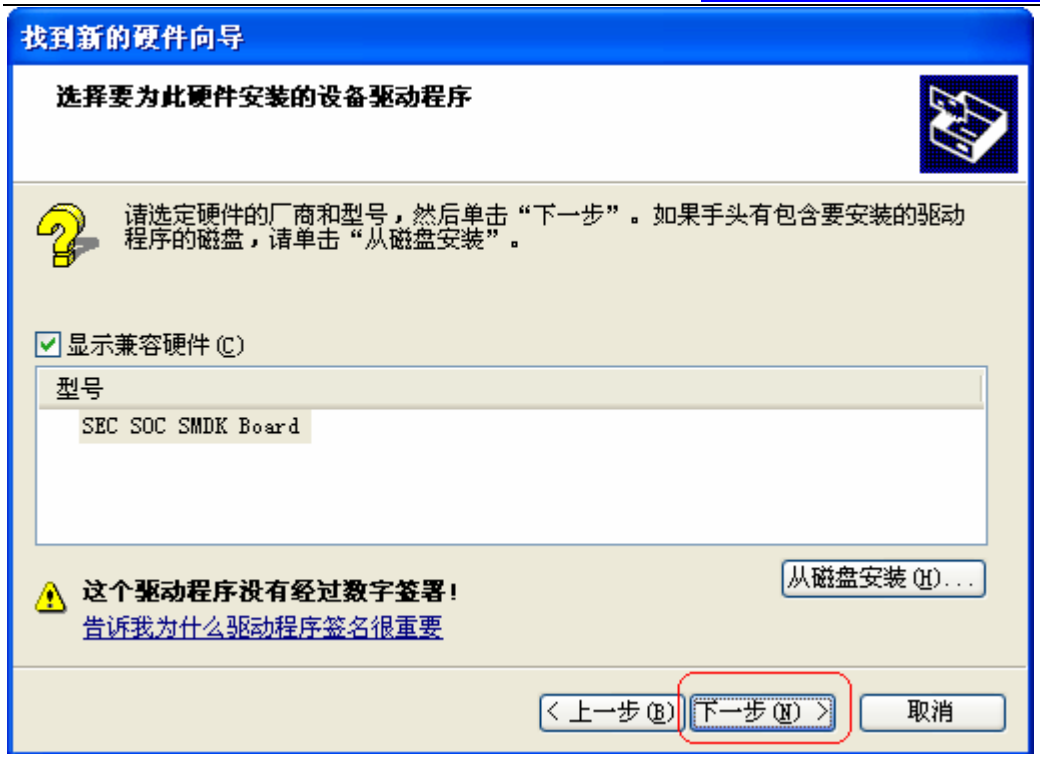
- Select “ \Tools\UBB driver\ USB download driver\secusb2.inf,
- Click “ Open”



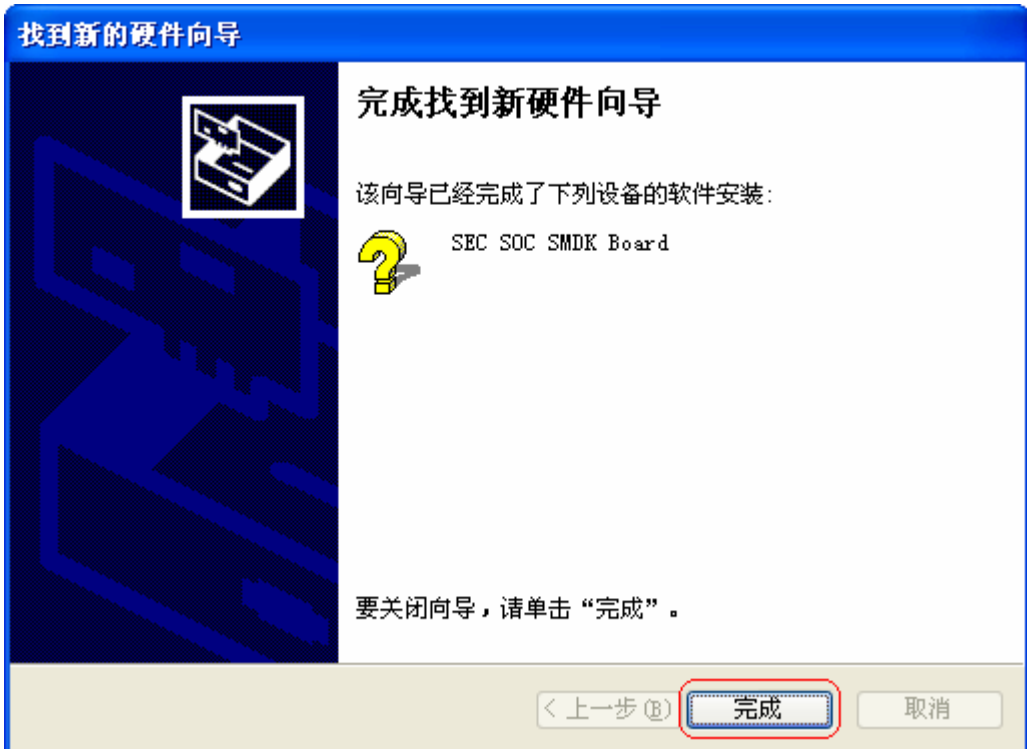
- Click “ Ok”



- Click “Next”



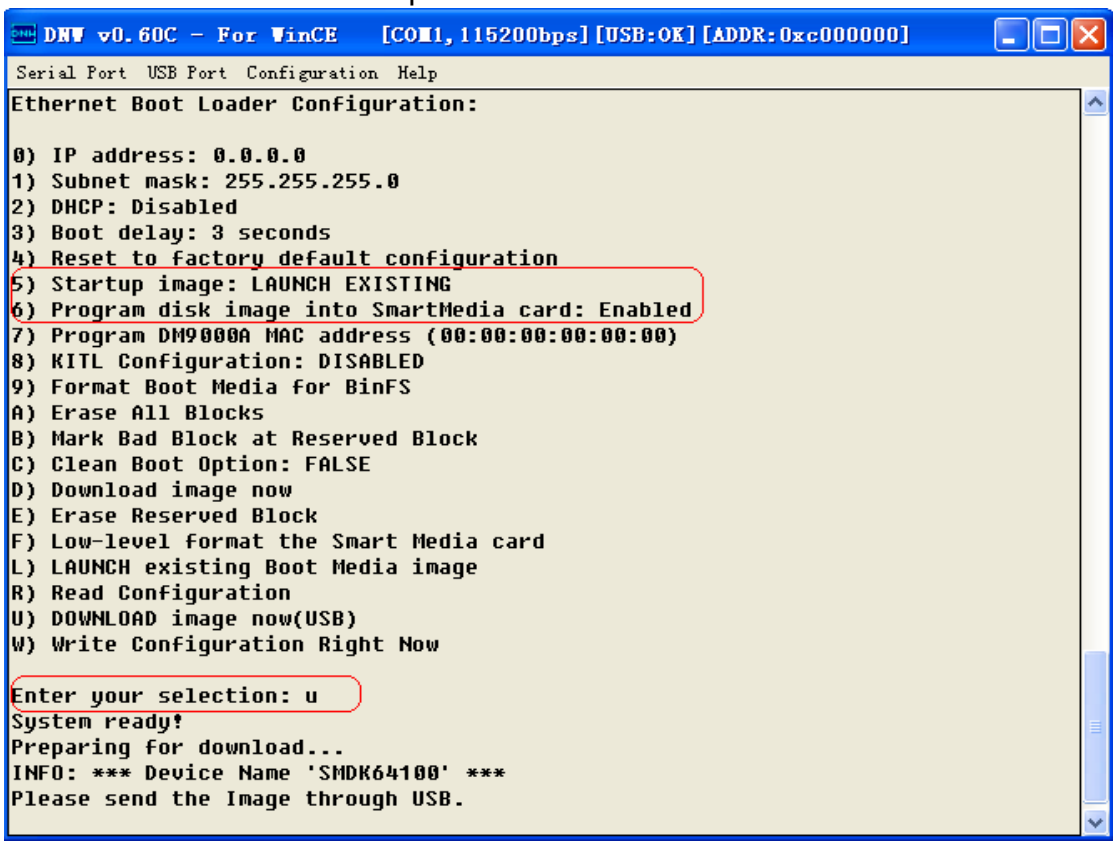
- Click “OK”



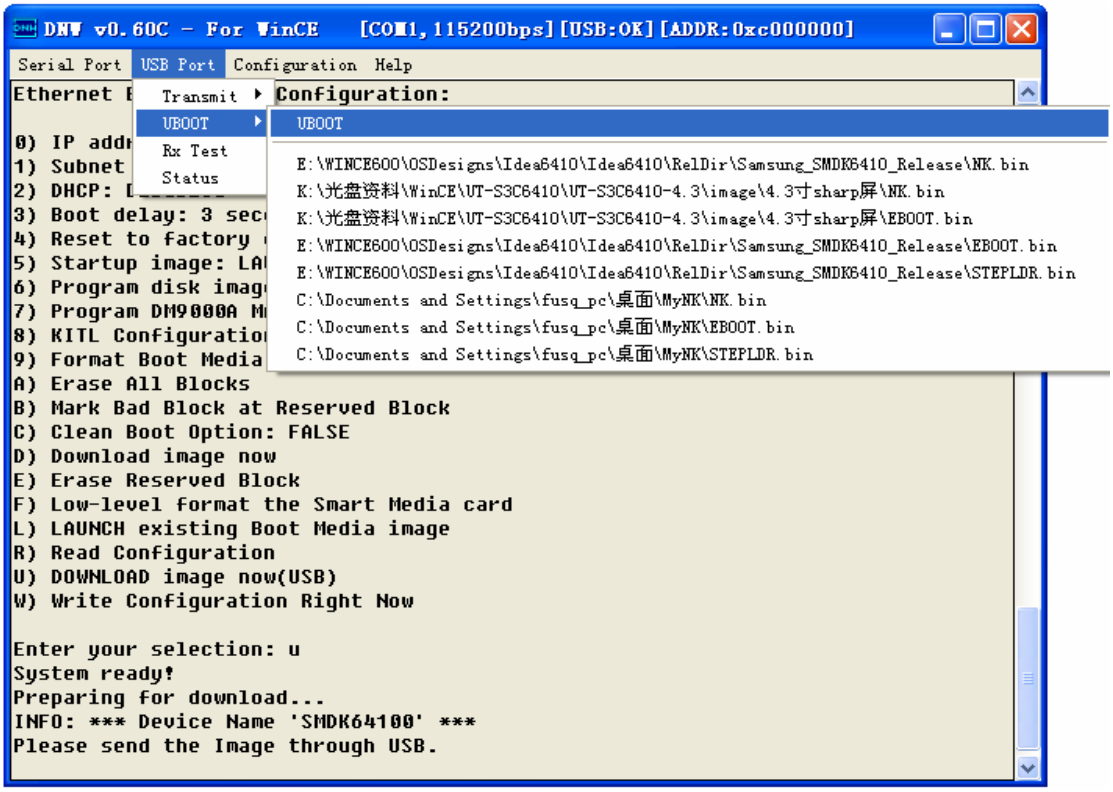
When finished install the USB download driver, user can download and burning image to Nand flash by USB device interface.

(5) Burn the STEPLDR.bin into Nand Flash

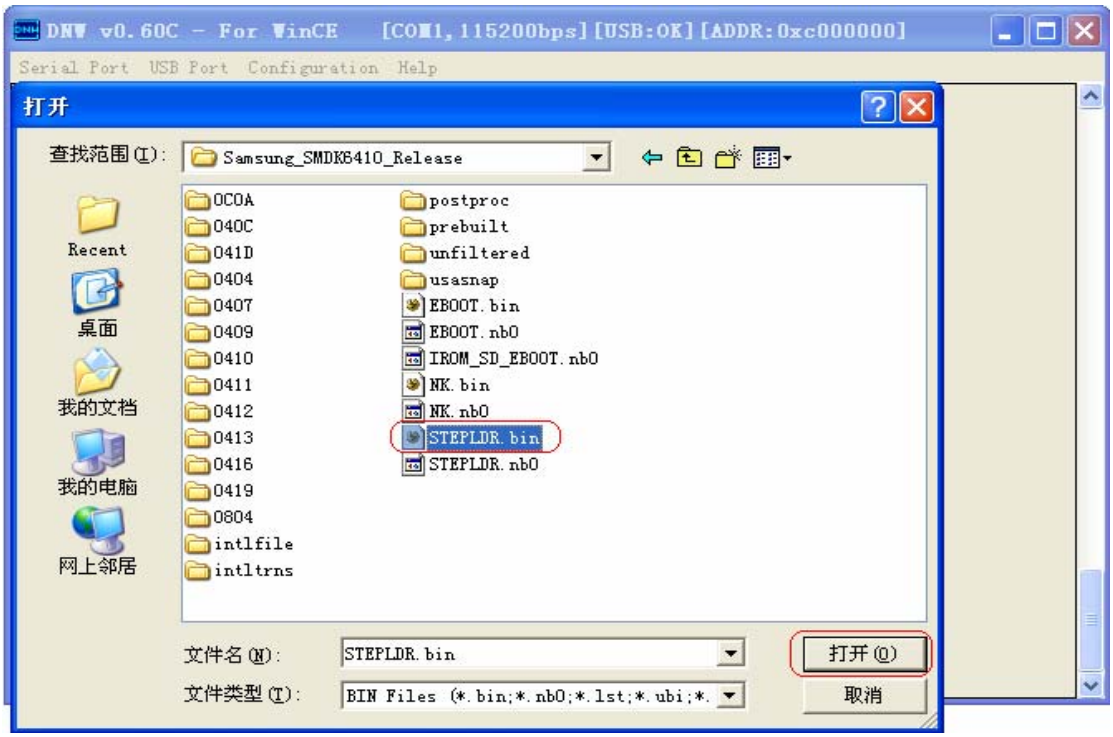
- Under EBOOT interface press “U” .

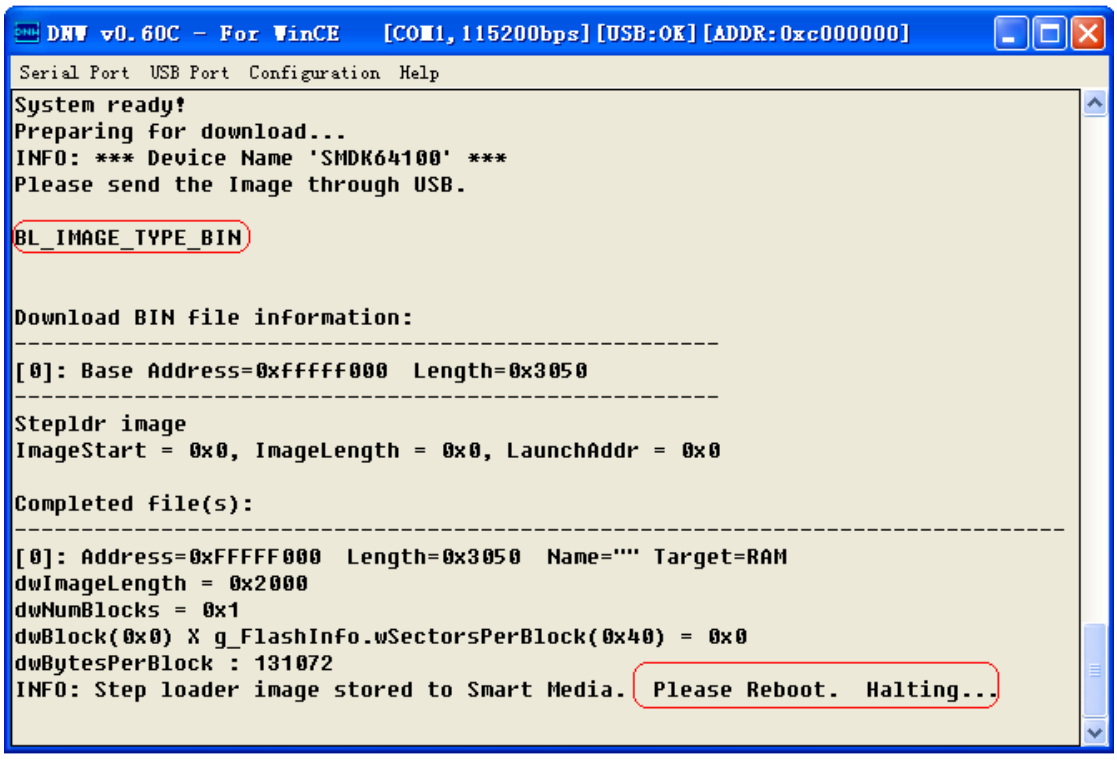


- Click “USB Port” → “UBOOT” → “UBOOT”



- Add the STEPLDR.bin file which is generated after the compiling, the locations is "E:\WinCE600\OSDesigns\Idea6410\Idea6410\DelDir\Samsung_SMDK6410_Release\STEPLDR.bin"
- Click "Open"



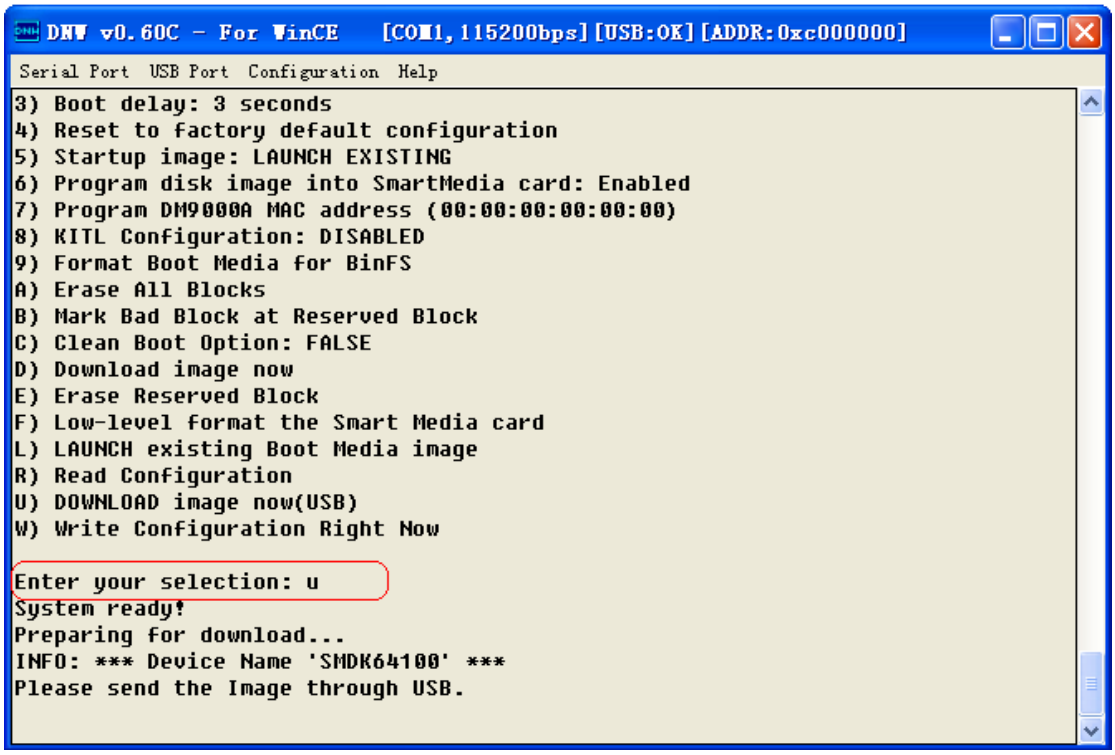


STEPLDR.bin has been burned into Nand flash.

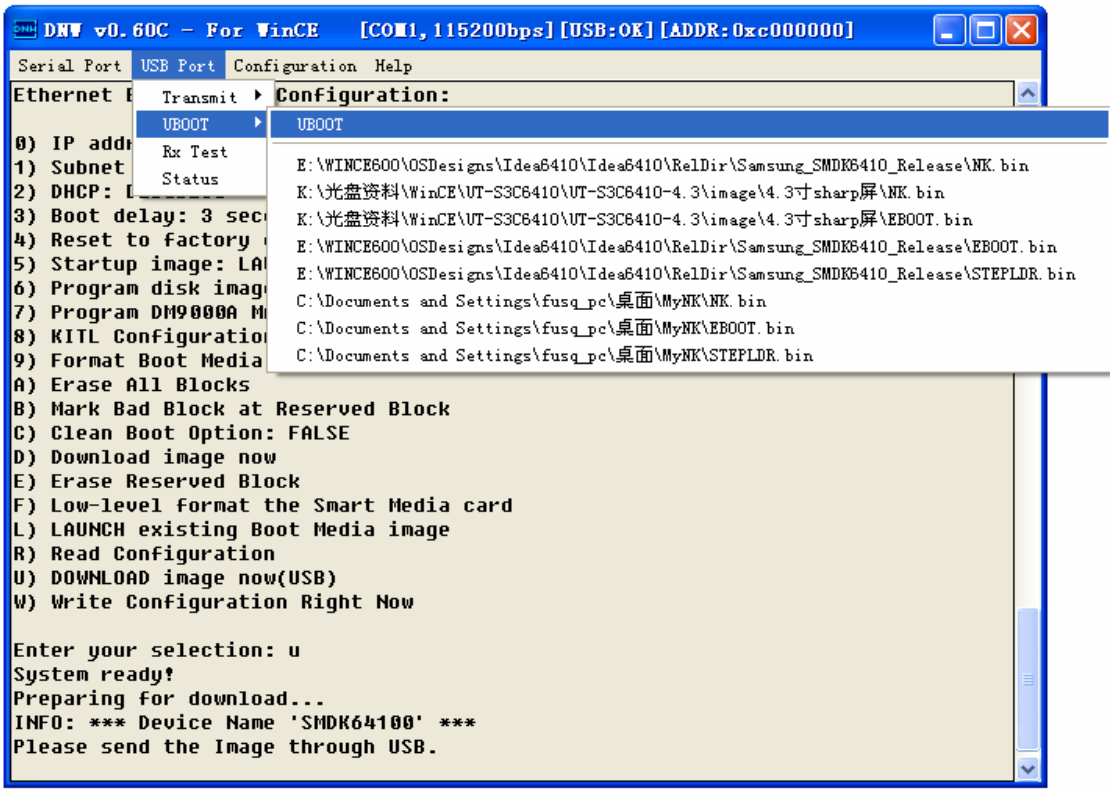
(6) After the system restart, press “Blank” key within 3 second to enter the EBOOK interface.

(7). Burn EBOOT.bin into Nand Flash

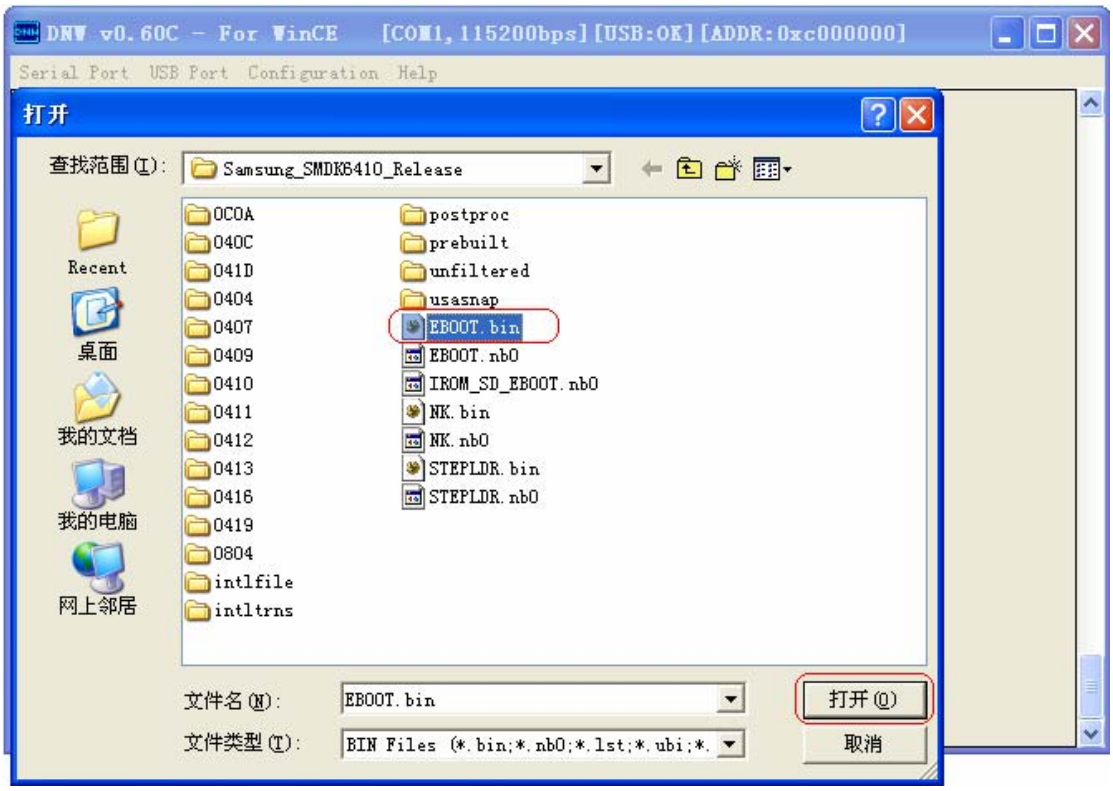
- Under EBOOT interface, press “U”

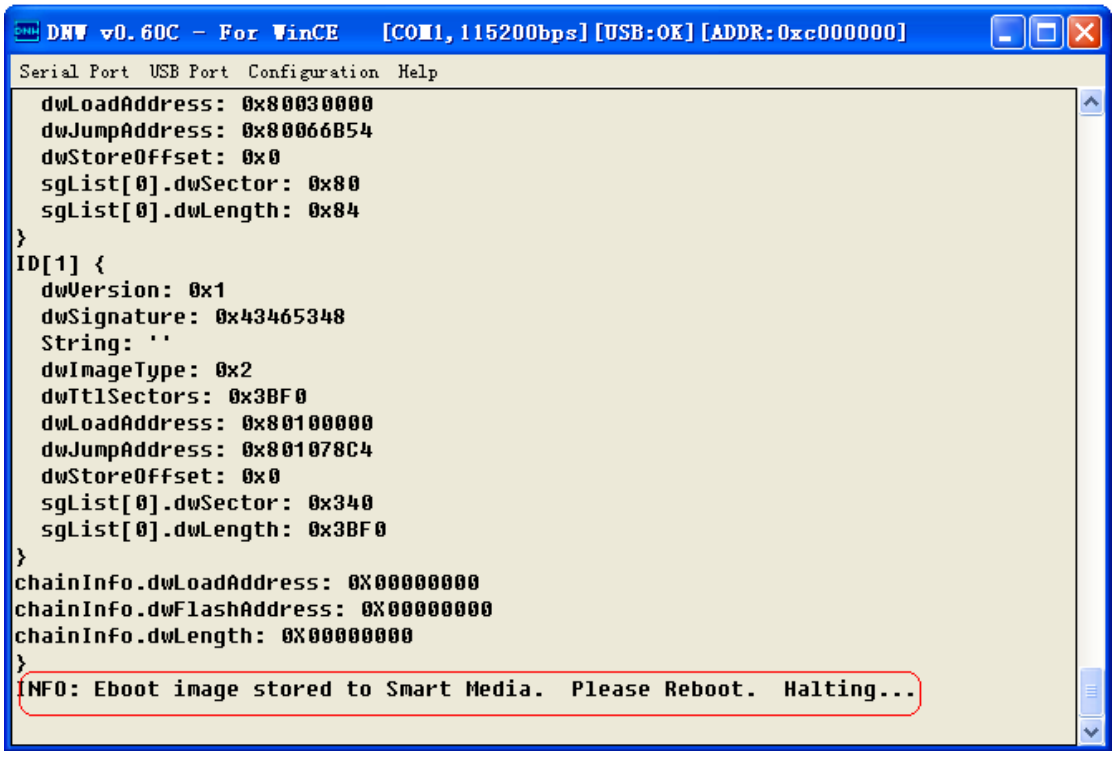


- Click “USB Port” → “UBOOT”→ “UBOOT”



- Add the EBOOT.bin file which is generated after the compiling, the locations is "E:\WINCE600\OSDesigns\Idea6410\Idea6410\RelDir\Samsung_SMDK6410_Release\ EBOOT.bin"
- Click "Open"





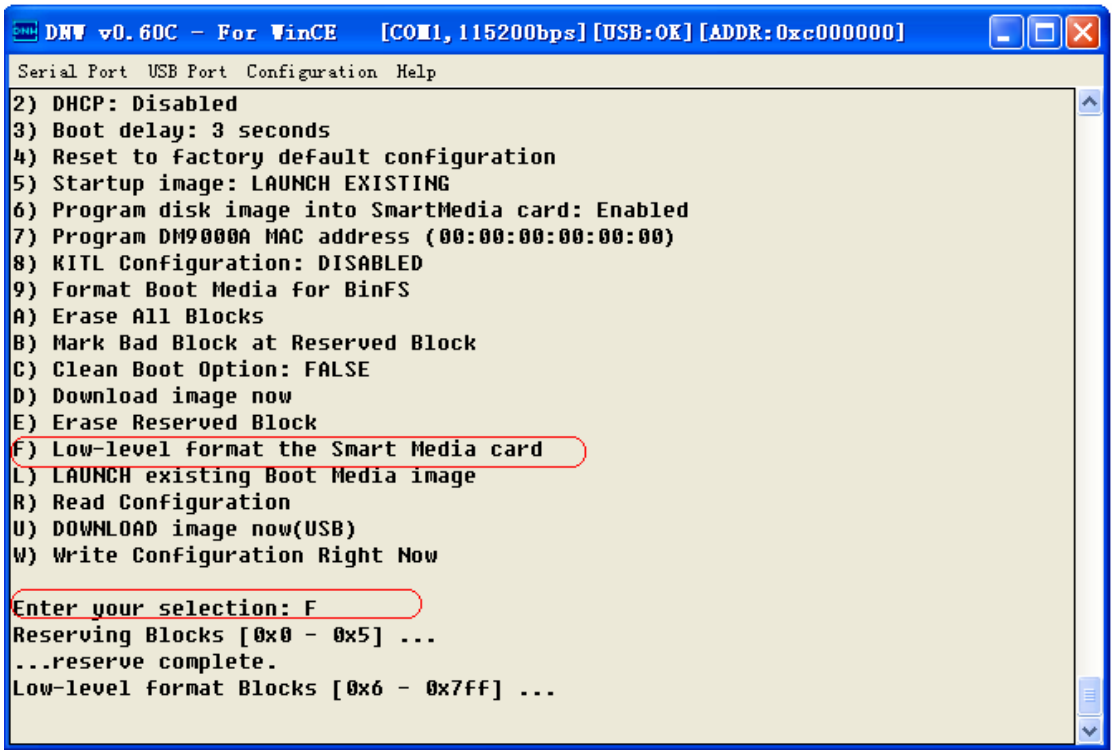
EBOOT.bin has already write into Nand Flash

(8). Set the hardware digital switch SW1 startup from the Nand Flash.
Set the 1-4bit of SW1 to “1100”

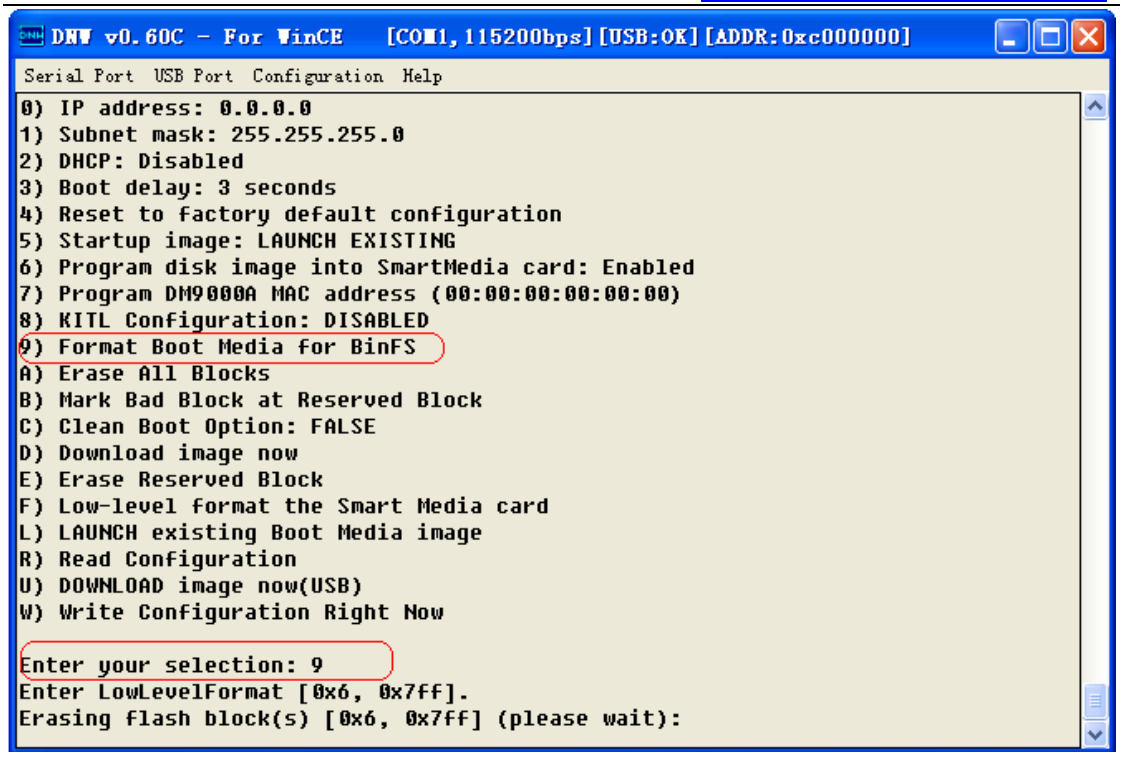
(9) Restart the system (Now start from the Nand Flash), press “Blank” key within 3 second, and enter the EBOOT interface.

(10) Burn the NK.bin into Nand Flash

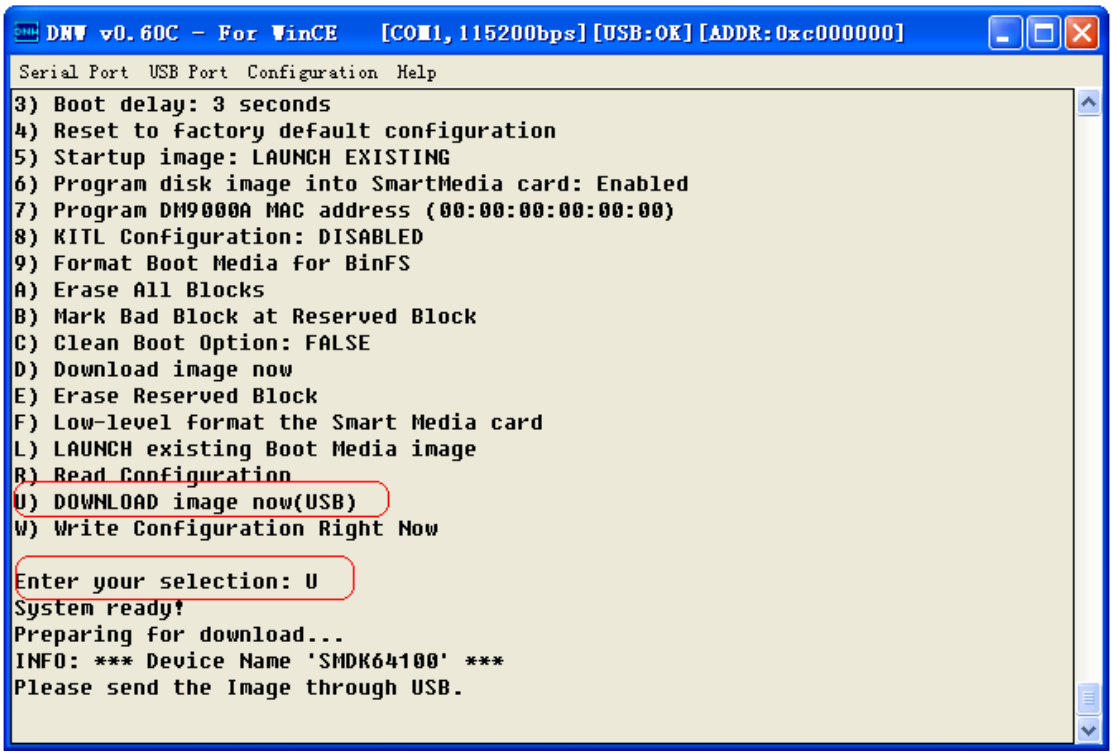
- Under EBOOT interface, press “F”



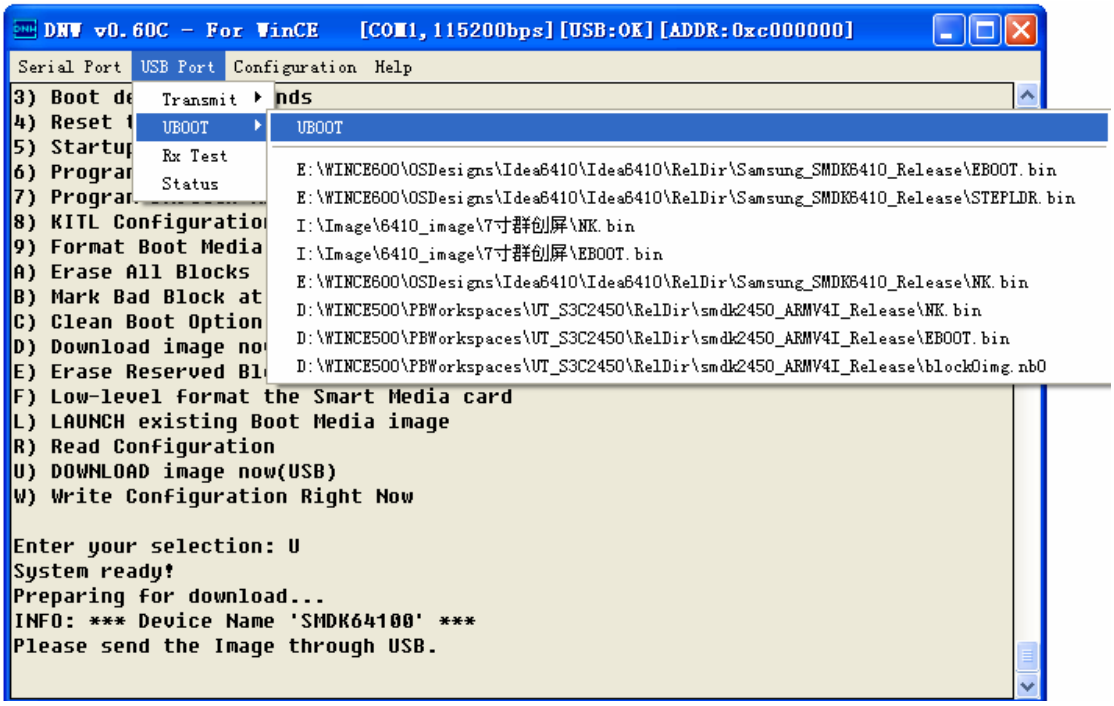
- Press “9”



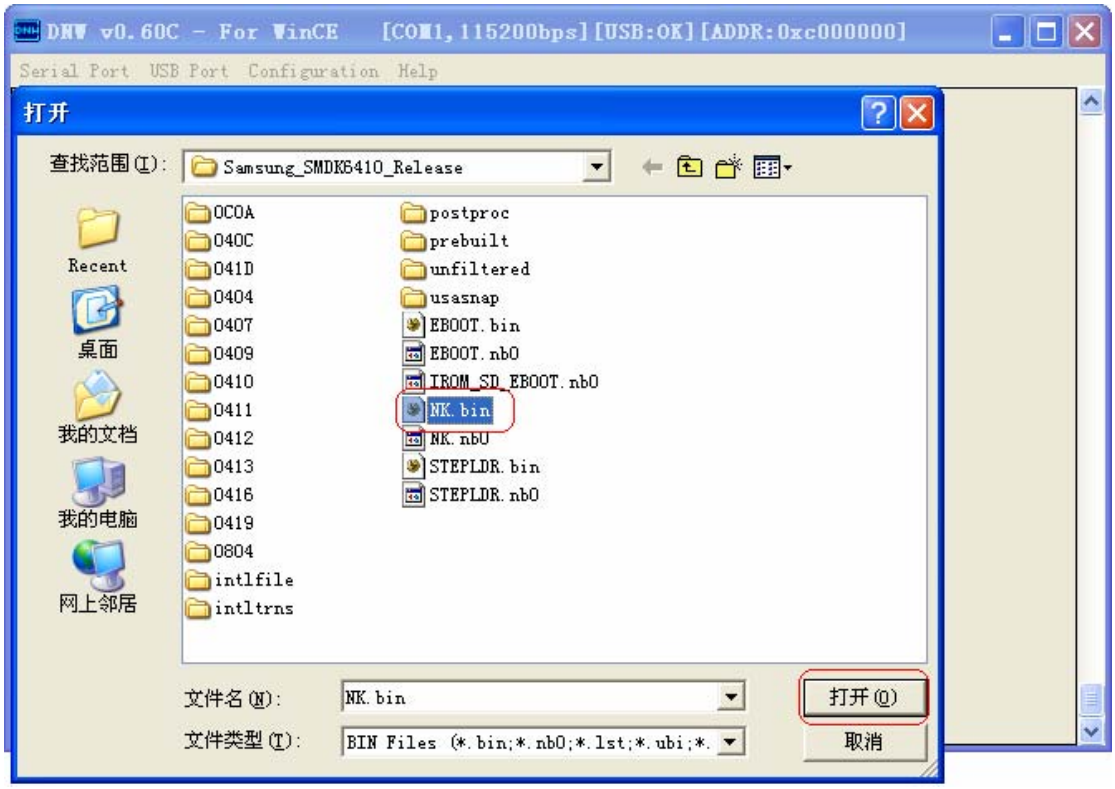
- Press “U”

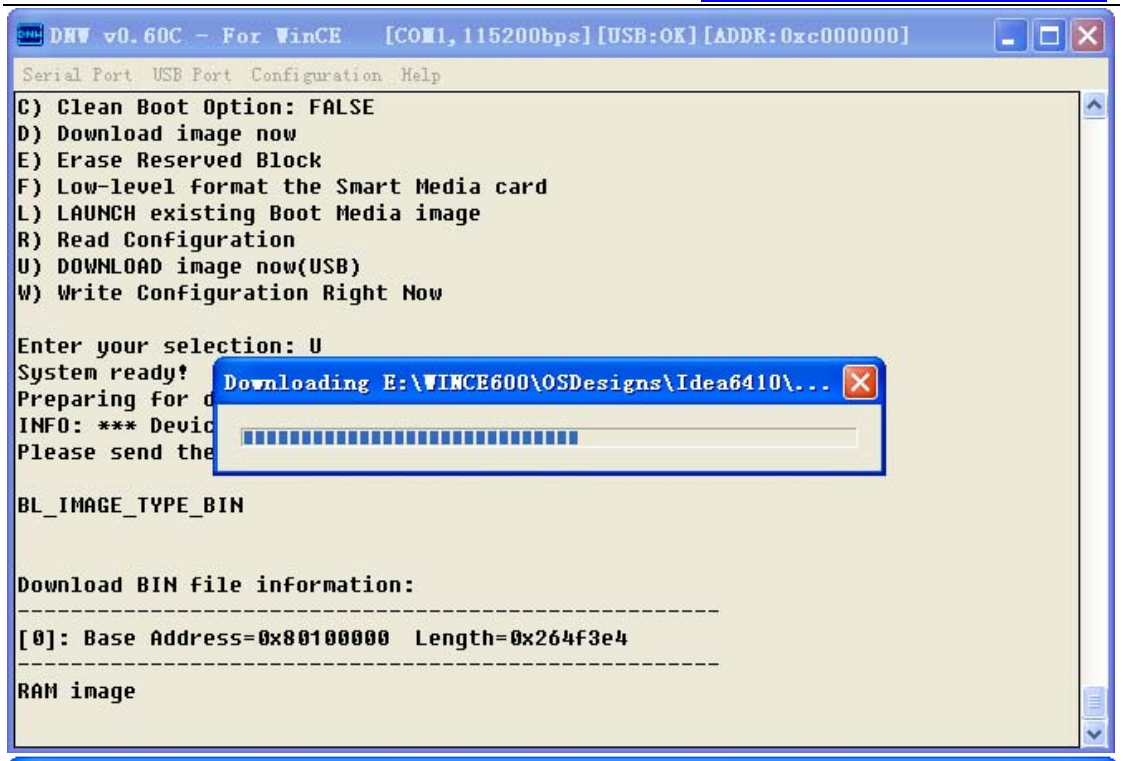


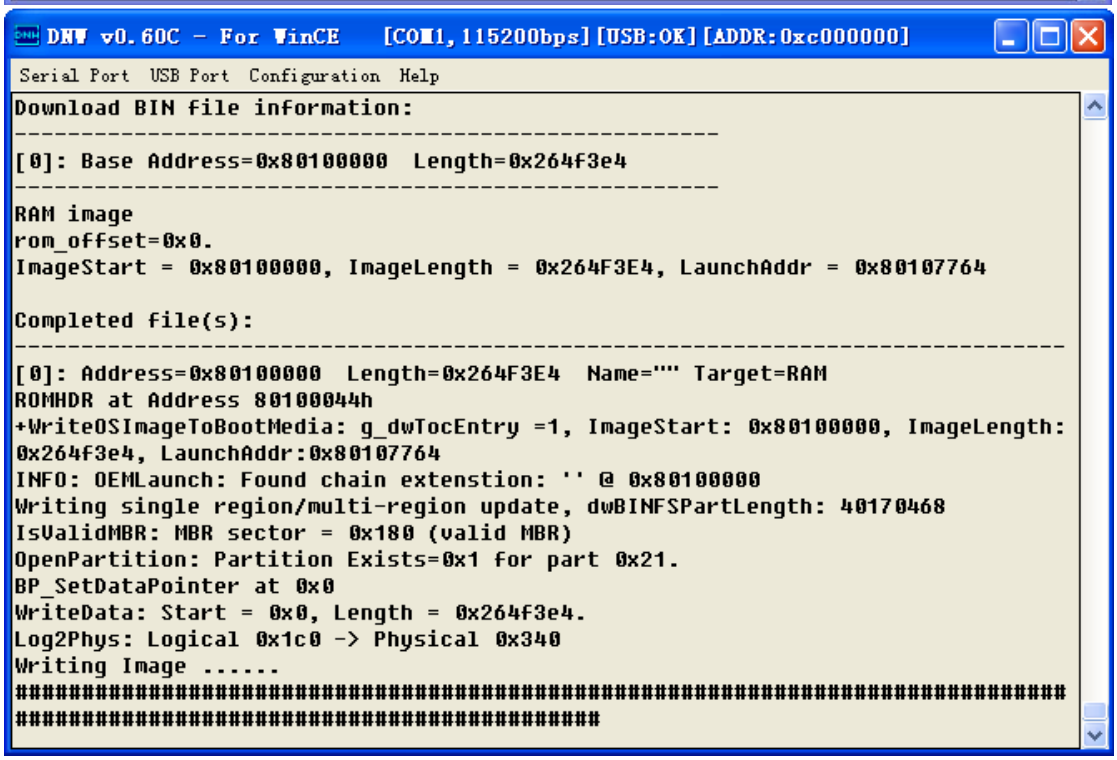
- Click “USB Port” → “ UBOOT”→ “UBOOT”



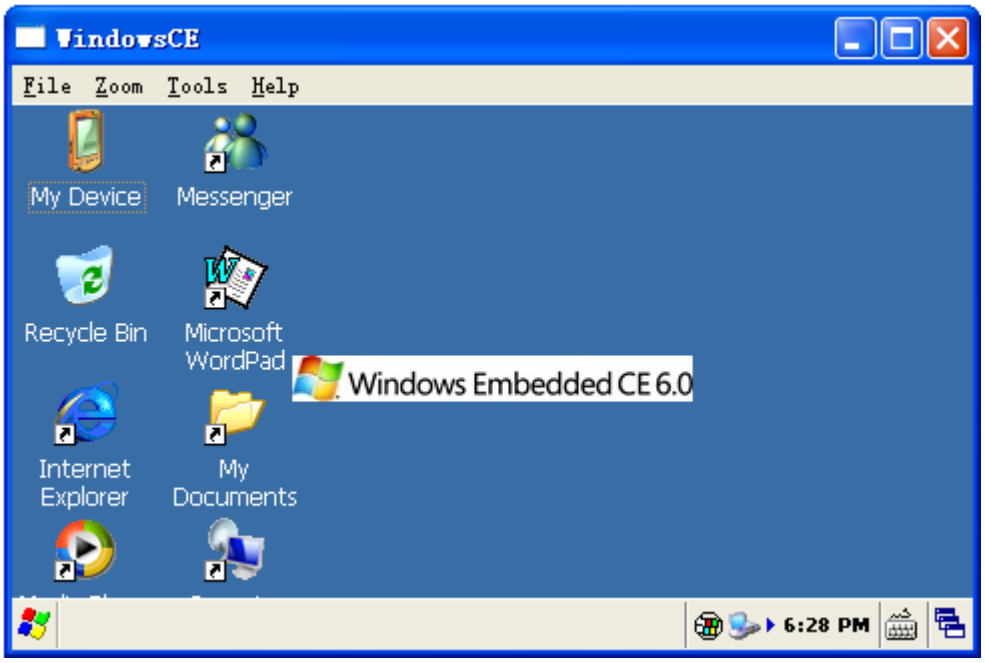
- Add the NK.bin file which is generated after the compiling, the locations is "E:\WINCE600\OSDesigns\Idea6410\Idea6410\RelDir\Samsung_SMDK6410_Release\ NK.bin"
- Click "Open"







After downloading and burning the system will start WinCE automatically.



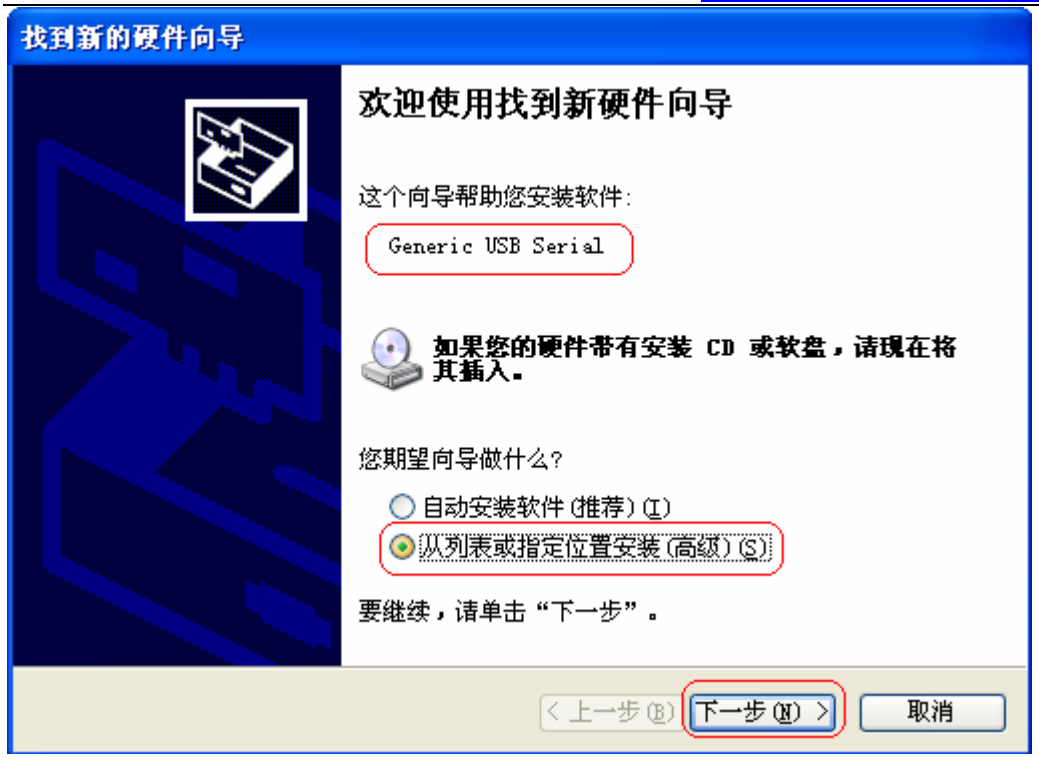
After the system start, when the USB cable connect to the PC only, the Idea 6410 board will be detected by the PC as a slave design. If the driver for the USB not installed yet, the PC will find the new hardware, and request to install the USB synchronous driver. To make the Idea6410 and the PC synchronization, user need to install:

a. USB synchronous driver
b. ActiveSync4.5 synchronous driver

Below are the detail steps of the installation:

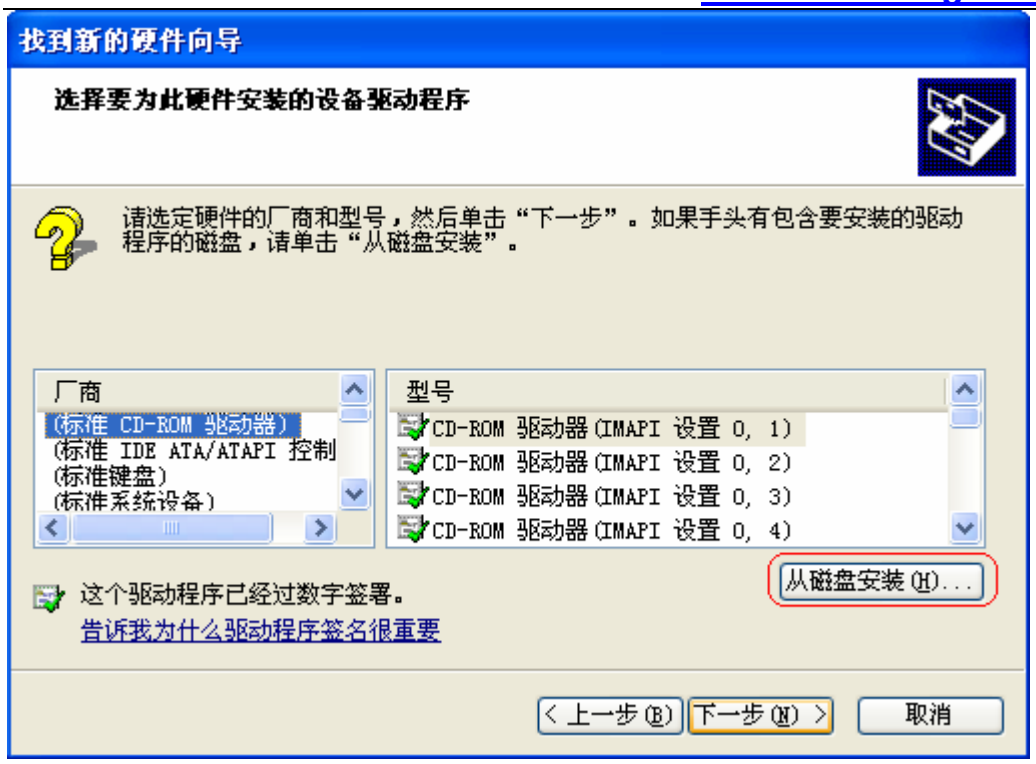
a. Install USB synchronous driver

- Select “Install from the specified location”
- Click “Next”

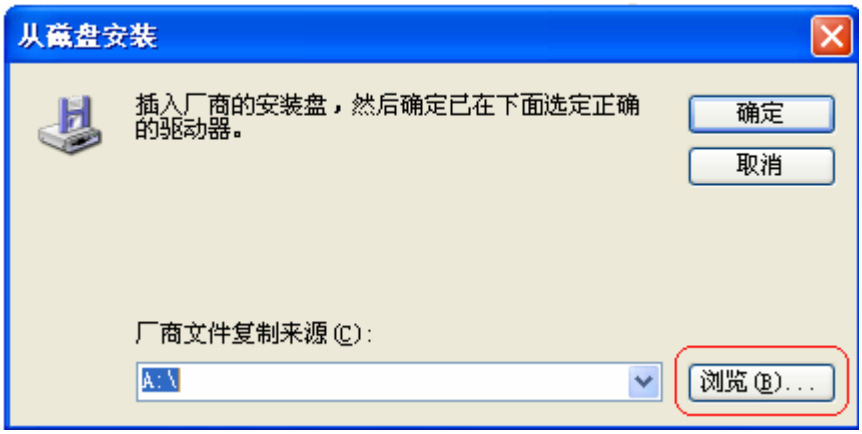


- Click “Next”

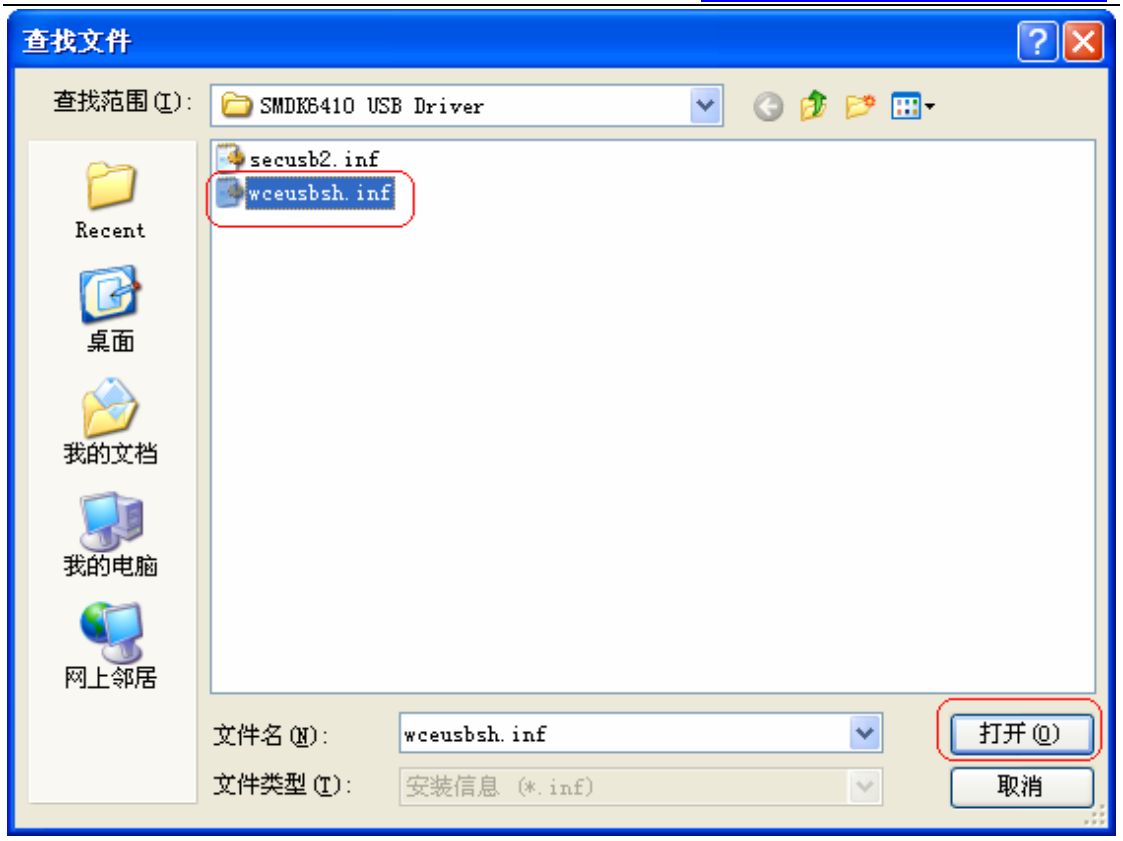
- Select “Install from the disk”
- Click “Next”



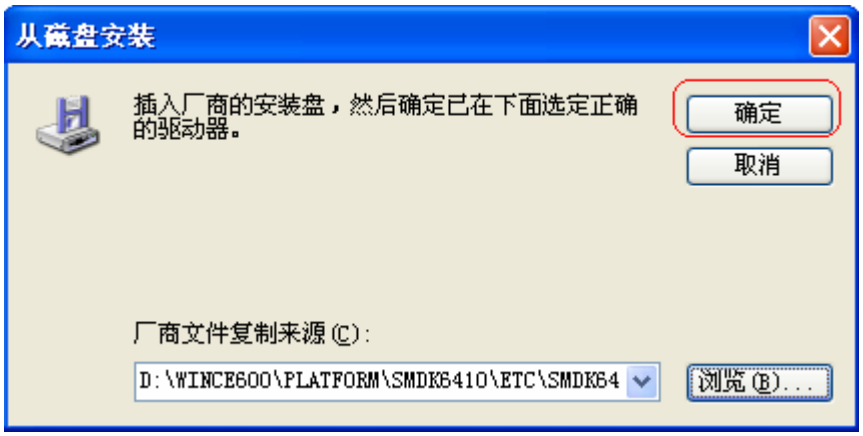
- Clcik “Browse”



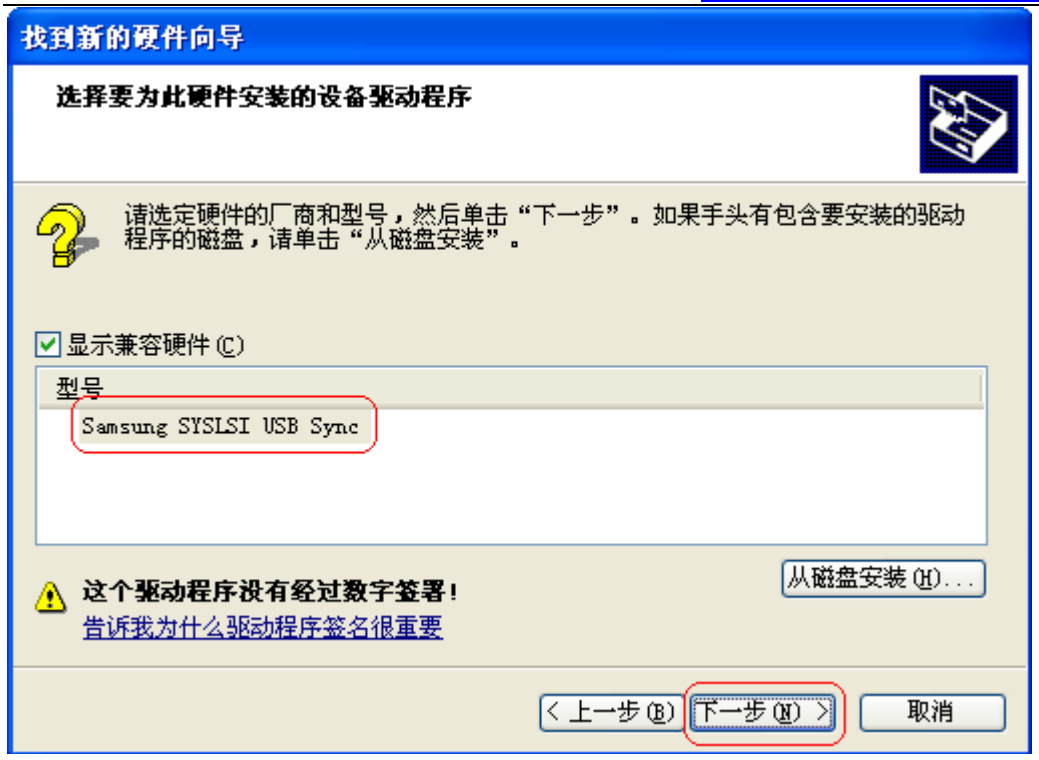
- Add “ Tools\USB driver\USB synchronous driver\USB synchronous driver\ wceubsh.inf
- Click “Open”

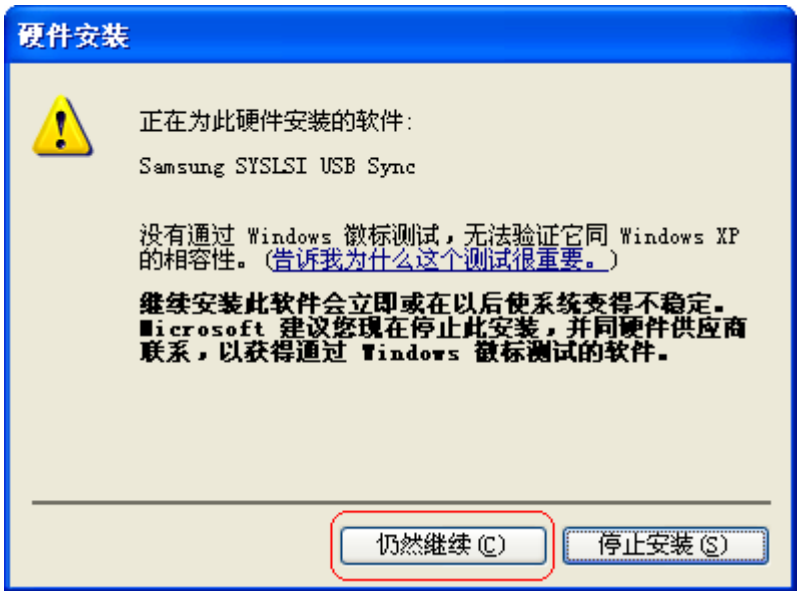


Click “Ok”



- Click “Next”

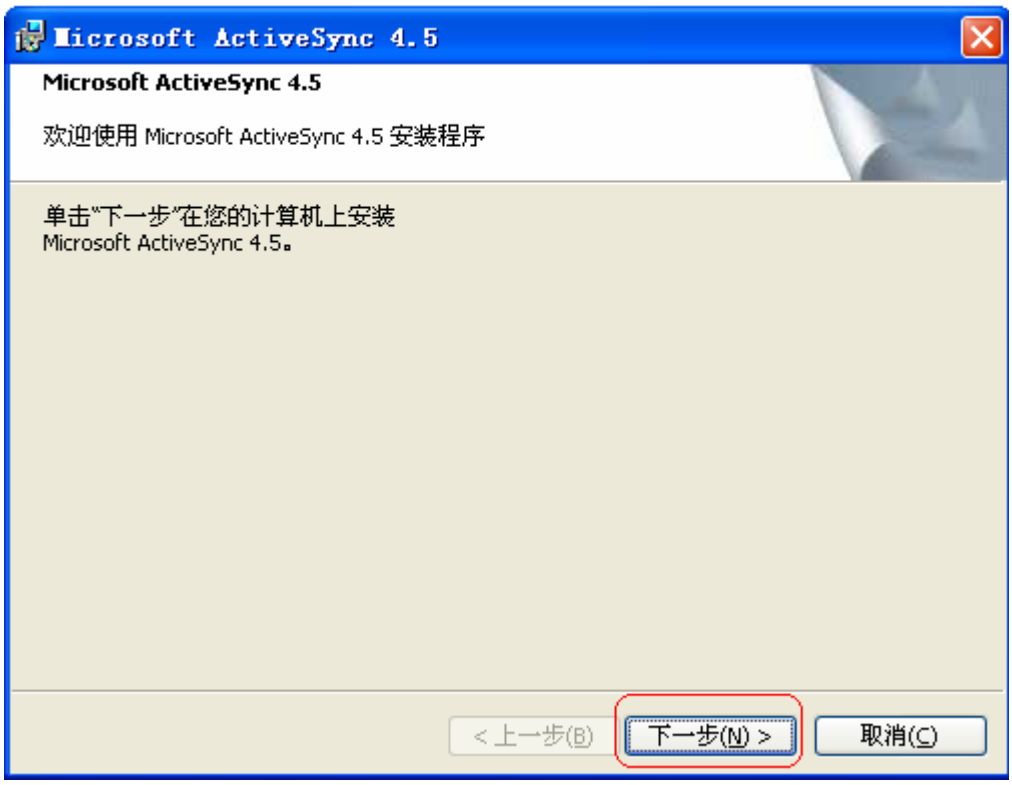




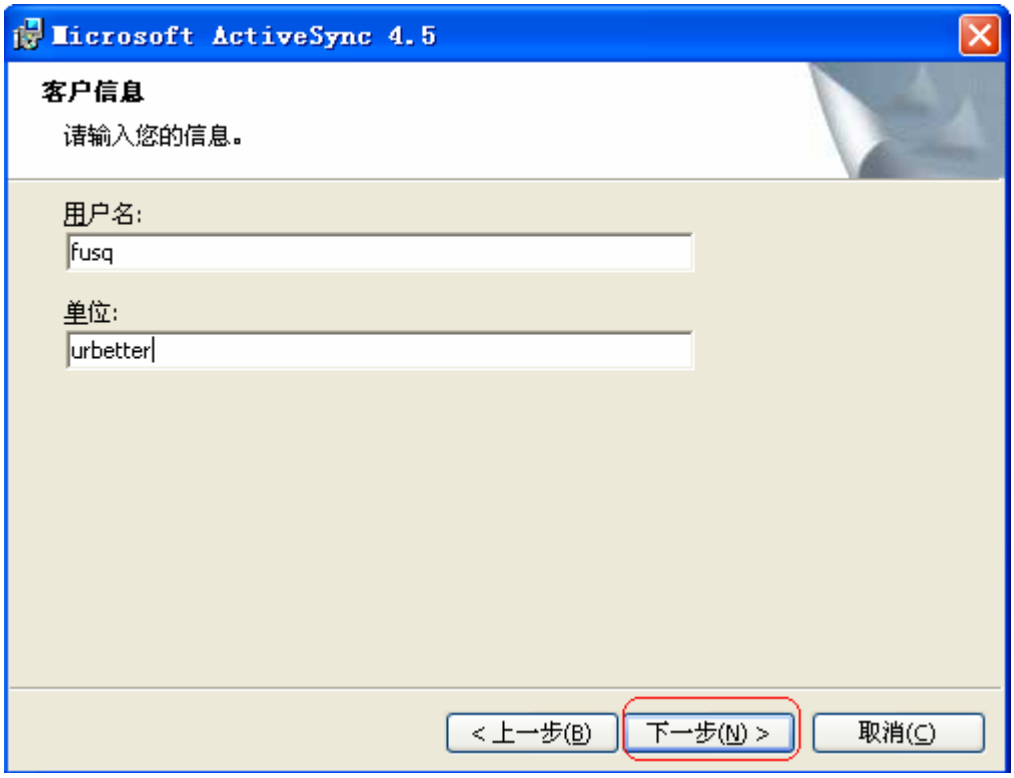
- Click “finish”

b. ActiveSync 4.5 synchronous software

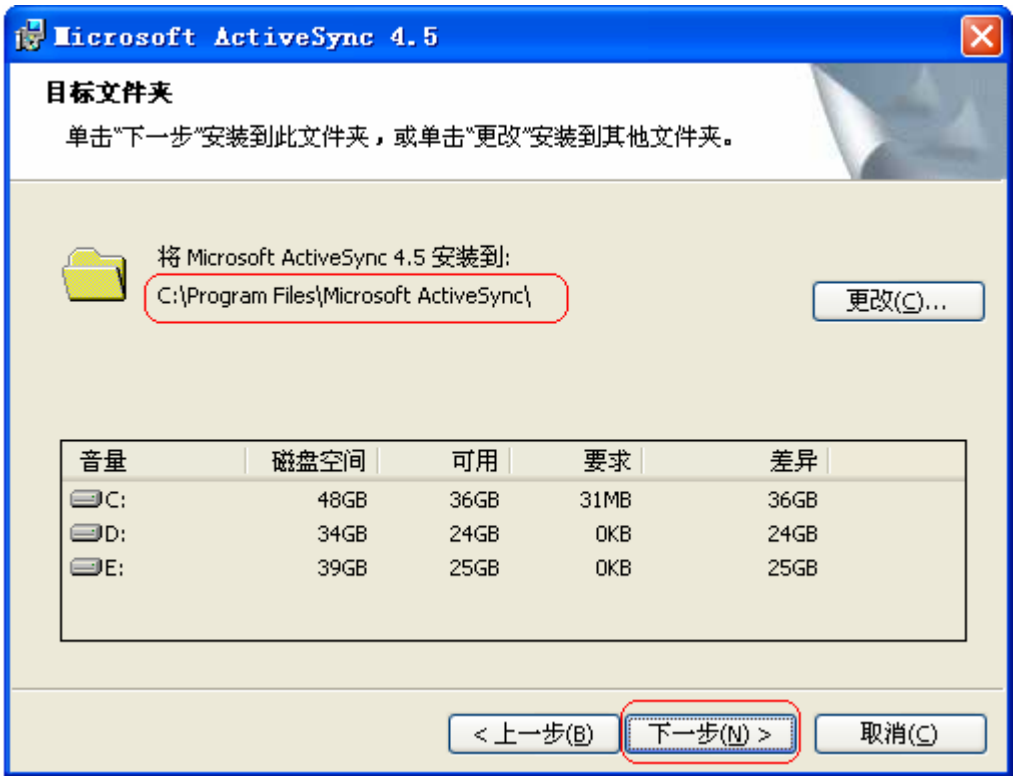
- Double Click “ Tools\Activesync\Microsoft ActiveSync 4.5.msi”
- Click “Next”



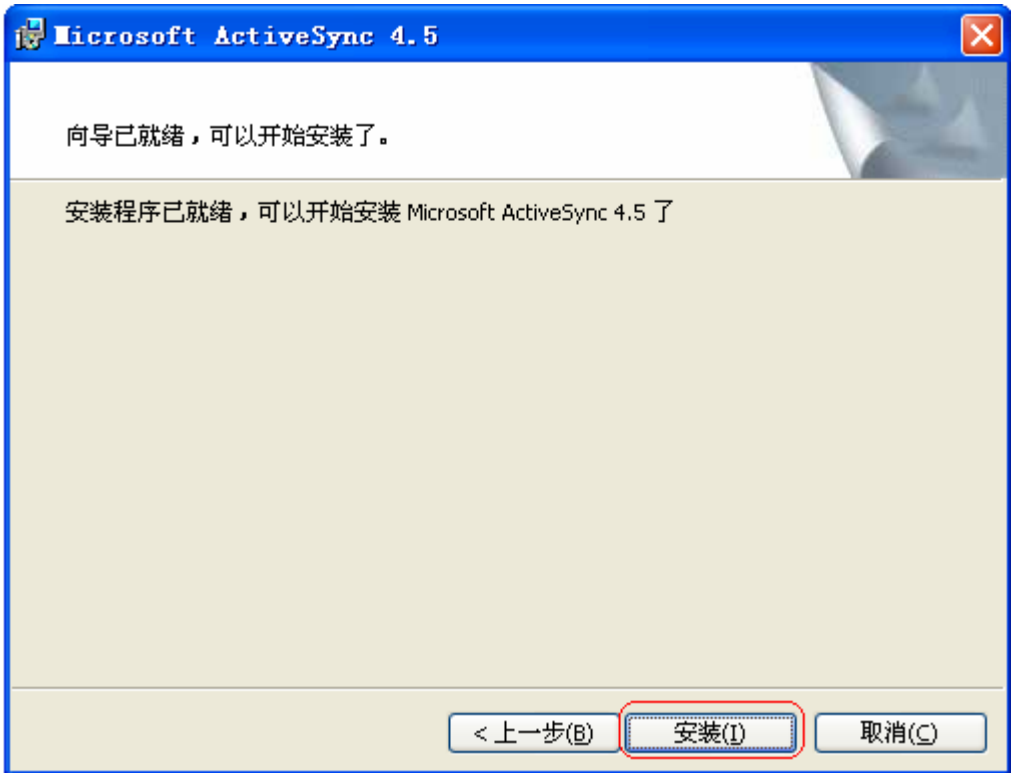
- Select “ I agree with the terms”
- Click “Next”



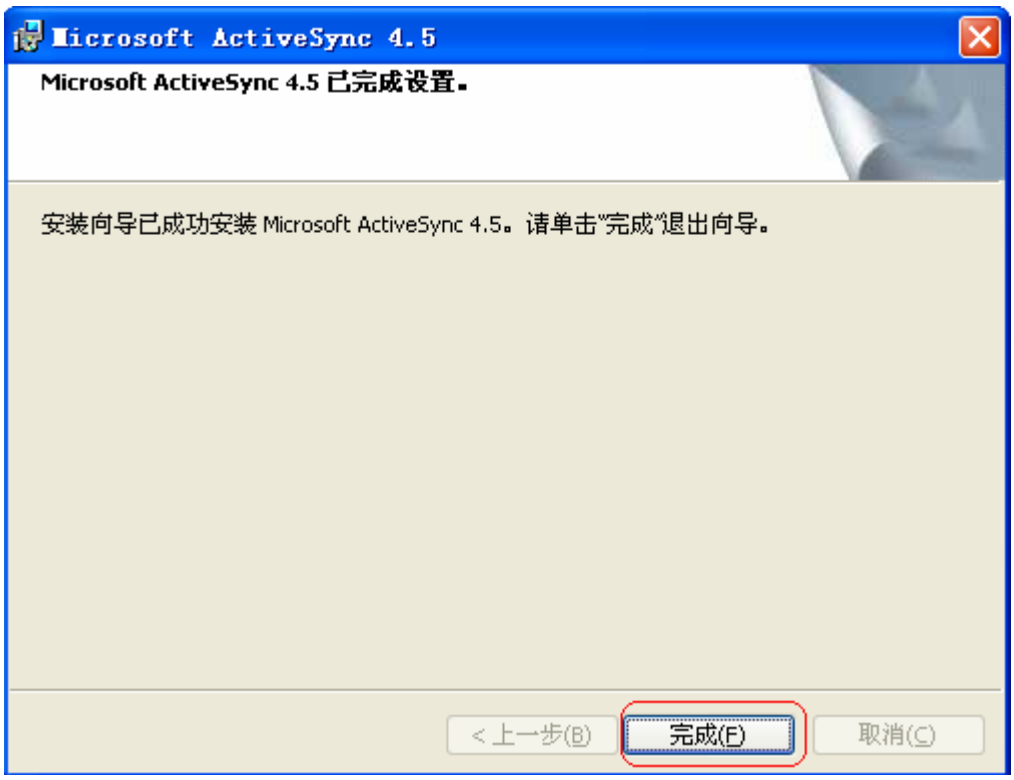
- Click “ change” and select the install location
- Click “Next”



- Click “Install”



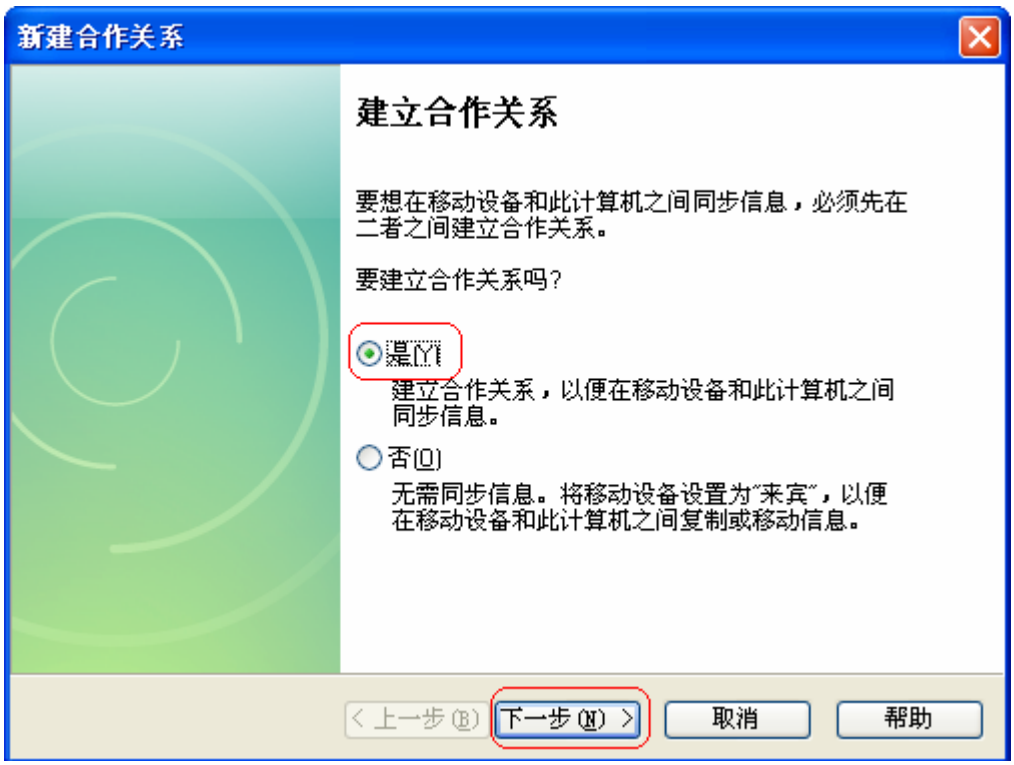
- Click “finish”



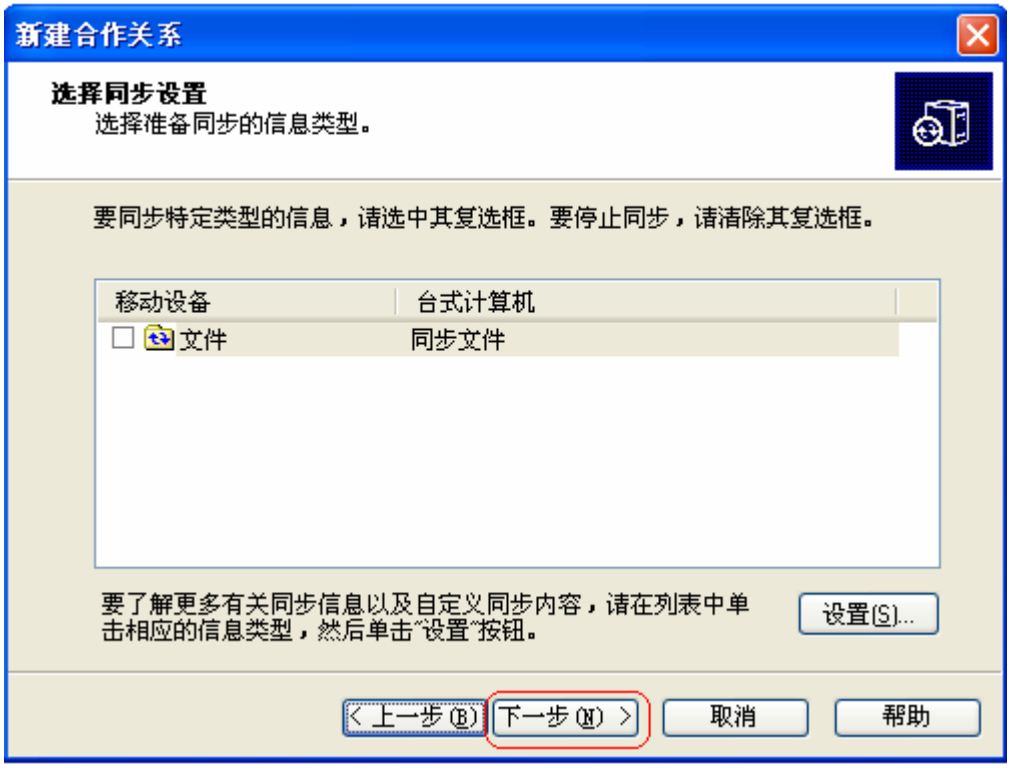
When the installation finished, on the right bottom corner of the PC monitor there is a small icon of synchronous software.

After the ActiveSync synchronous software installed to the PC, restart the Idea6410 development board.
Every time restart the system, PC will find new hardware automatically and there will be a pop-up windows.

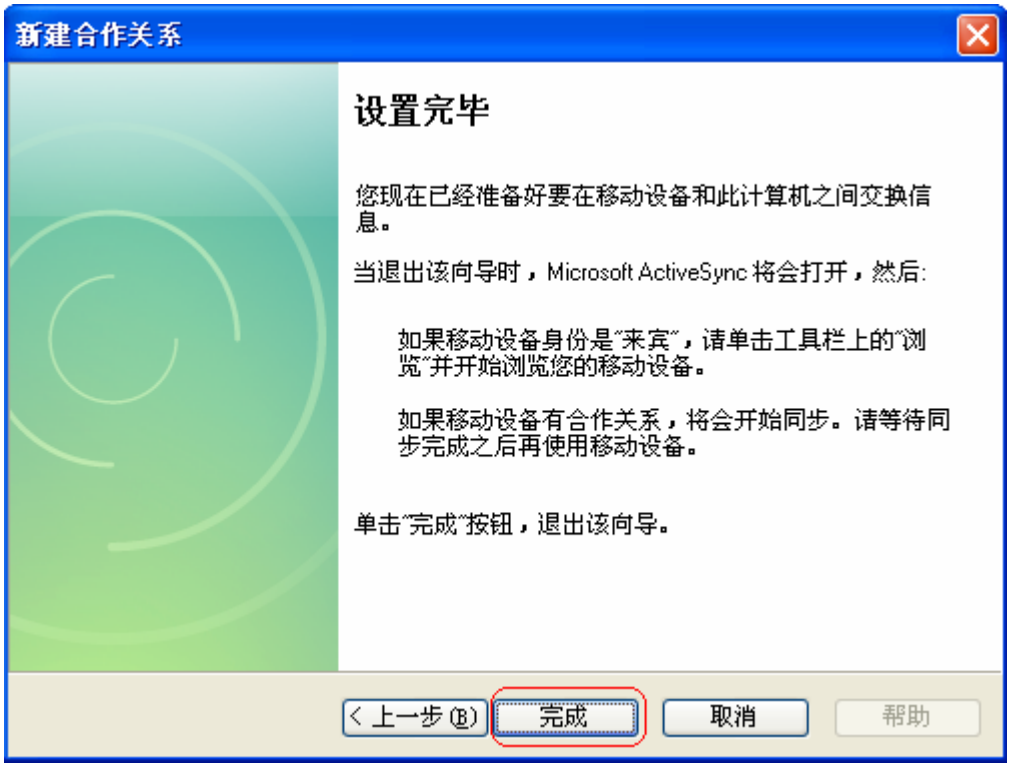
- Select “Yes”
- Click “Next”



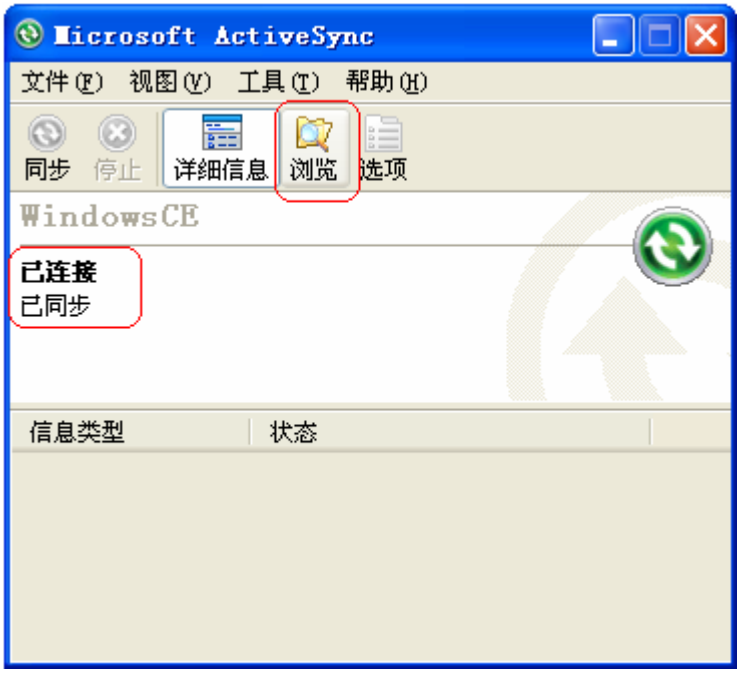
- Click “Next”



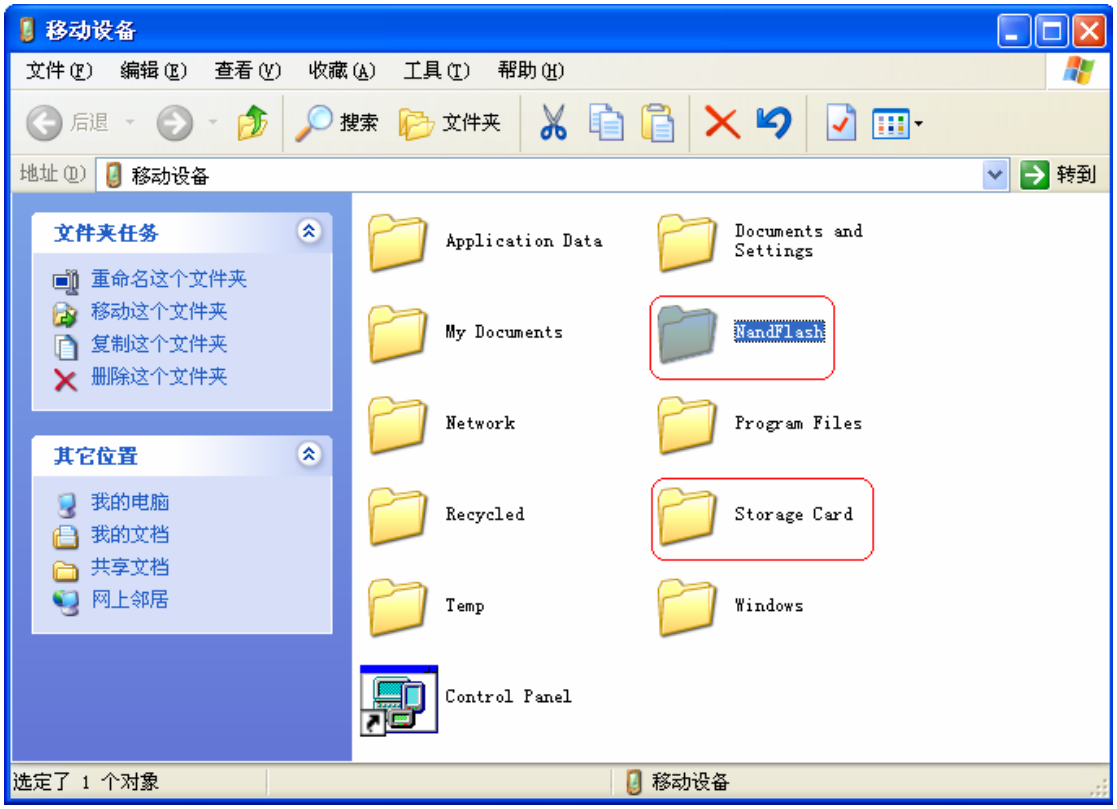
Click “Finish”



- The “Connect” show PC already connects with the device.
- Click “Browse” to get the detail information of the device.



We can see “NandFlash”, “Storage Card” etc, then we can Read/Write that device by PC.


移动设备
文件(F) 编辑(E) 查看(V) 收藏(A) 工具(T) 帮助(H)
后退 搜索 文件夹
地址(D) 移动设备
转到
文件夹任务
重命名这个文件夹
移动这个文件夹
复制这个文件夹
删除这个文件夹
其它位置
我的电脑
我的文档
共享文档
网上邻居
Application Data
Documents and Settings
My Documents
Network
Program Files
Recycled
Storage Card
Temp
Windows
Control Panel
选定了 1 个对象
移动设备

Thank You.