Installation Manual for SMDK6410 (Windows Embedded CE 6.0) PocketMory(MLC)

S3C6410

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REV 0.4

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S3C6410 RISC Microprocessor
Installation Manual

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0.1	Preliminary draft	-	Hyuk Lee	2008-09-16
0.2	An explanation for Multipl-XIP image download was added	-	Jungchul Park	2009-04-07
0.3	An explanation for iROM booting DIP switch setting wa added	-	D/D Team	2009-06-07
0.4	Revised for new downloader, and KITL connection		WM Team	2009-09-24

Contents

Figures

1 Overview

This Installation Manual guides you to install the Samsung SMDK6410 Windows Embedded CE 6.0 BSP.

The manual explains the following topics:

- Copying BSP and Setting up Platform Builder
- Creating a New OSDesign
- Building OS Image – Without KITL
- Running NK.nb0 Image
- Fusing WinCE Image on NAND Flash via USB
- Building and Running OS Image – With KITL
    - USB Serial KITL
    - Ethernet KITL

The detail information of each topic is explained in the following chapters. About connectivity to platform builder, please read "SMDK6410_Platform_builder_Connectivity.doc" document. This help you how to download and connect your device with OS image to platform builder.

2 Copying BSP and Setting up Visual Studio 2005

In this chapter, you can understand how to copy the Samsung SMDK6410 Windows Embedded CE 6.0 BSP and setup the Platform Builder.

1. To start the BSP installation, Extract zip-archived file into $(WINCEROOT)\PLATFORM. See the picture describes folder structure. In archives, PLATFORM folder has two sub folders. One is SMDK6410, and another one is COMMON/SRC/SOC/S3C6410_SEC_V1.
   For example, copy extracted **SMDK6410_WinCE60_XX_XX\PLATFORM** BSP folder to **X:\WINCE600\PLATFORM** directory on your host PC. Make sure that catalog file and batch file in **X:\WINCE600\PLATFORM\SMDK6410** directory has the same name as that of the BSP, i.e. **SMDK6410.pbcxml** and **SMDK6410.bat**.

Note: About PQOAL & SOC Folder Structure, Please refer to porting guide, If you don't know the difference between PQOAL and non-PQOAL structure, read first porting guide.

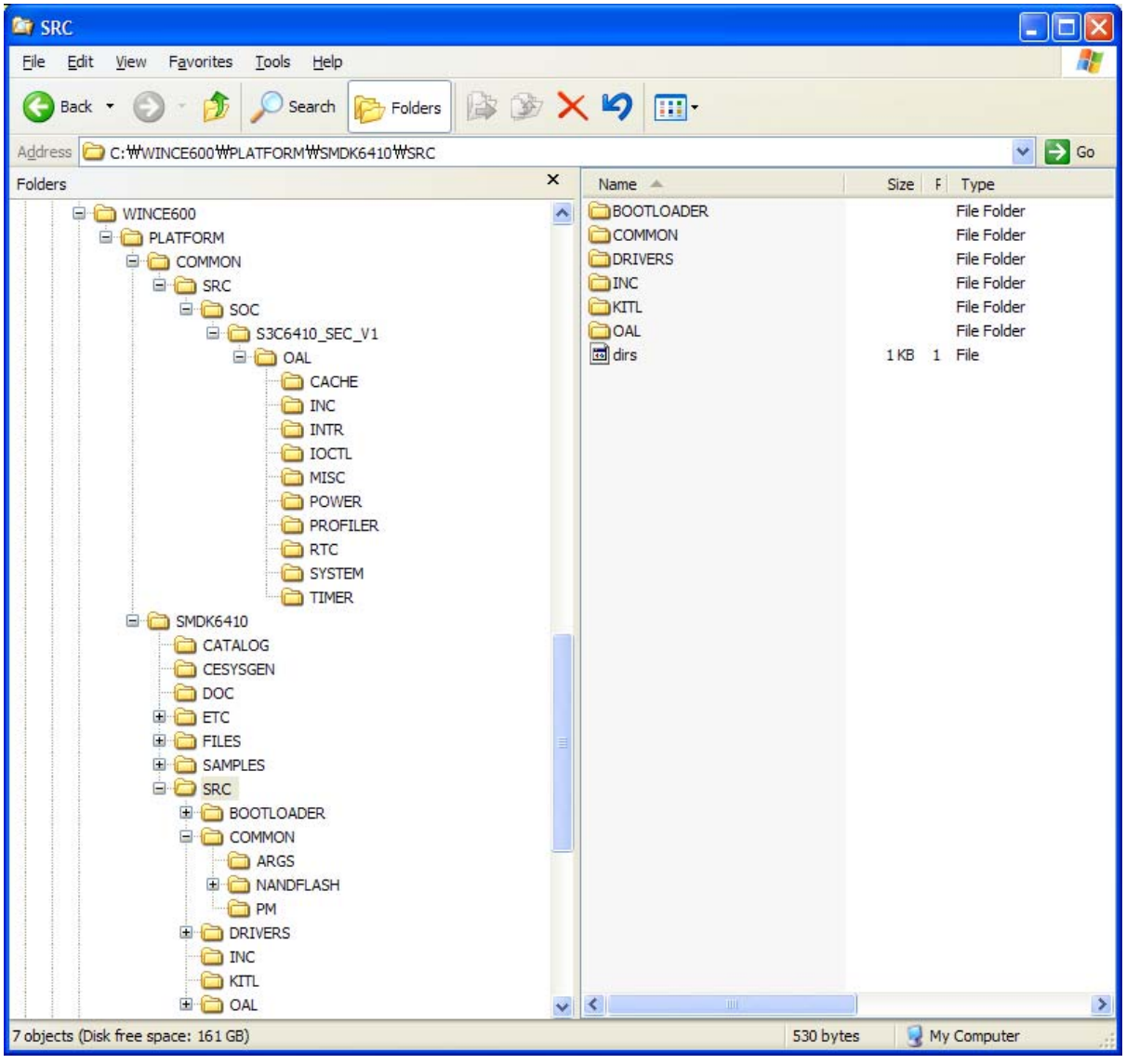

Figure 2-1 SMDK6410 BSP Files

2. To start SMDK6410 Windows Embedded CE 6.0 BSP Porting, on your host PC click **Start**, point to **All Programs**, point to **Microsoft Visual Studio 2005** and then click on **Microsoft Visual Studio 2005.** The following window appears on your screen.

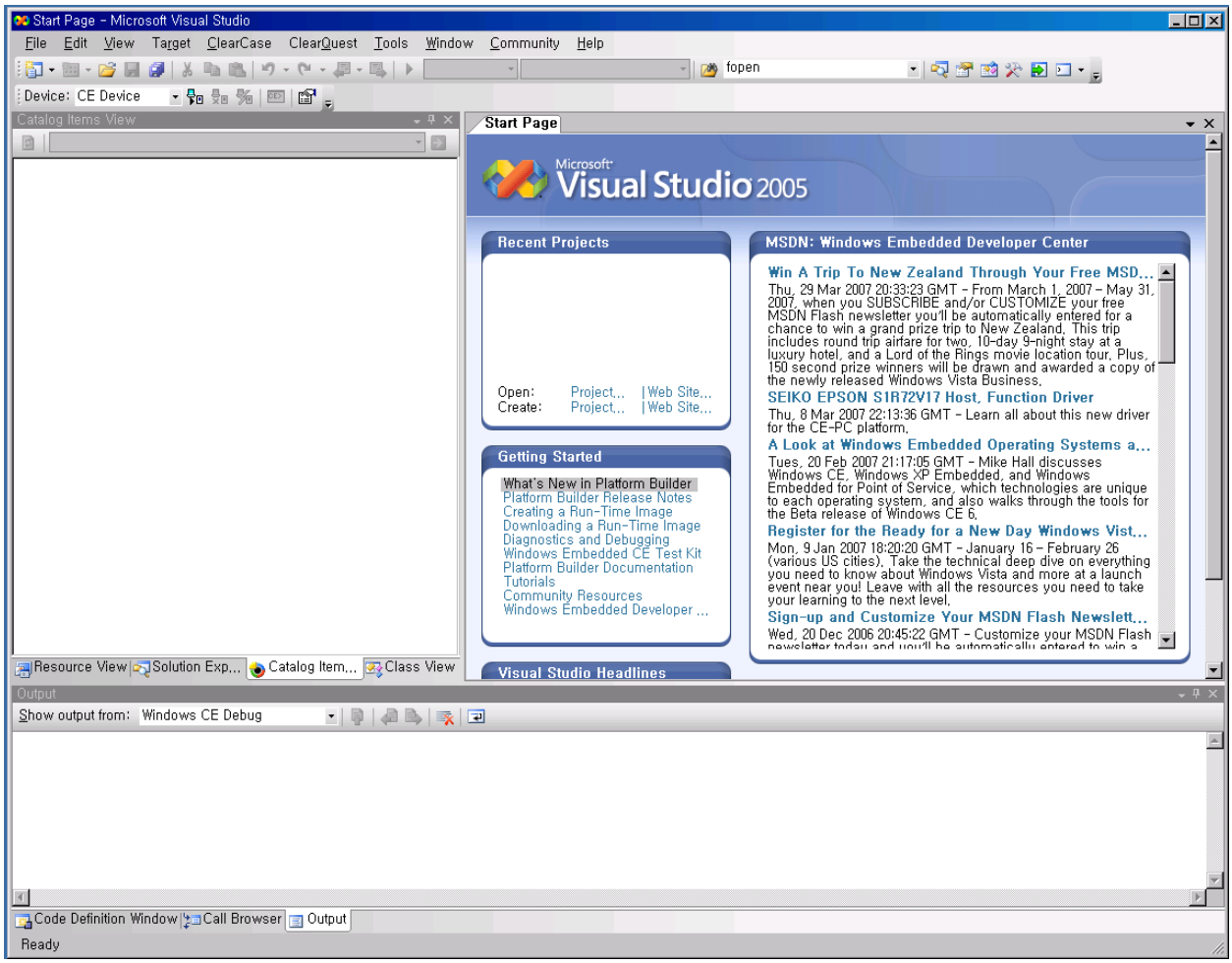

Figure 2-2 Visual Studio 2005 Window

3 Creating a New OS Design

In this chapter, you can understand how to create a new OS Design using the Visual Studio 2005.

1. On the **File** menu in the **Visual Studio 2005** window, click **New /Project** as shown in figure 3-1.

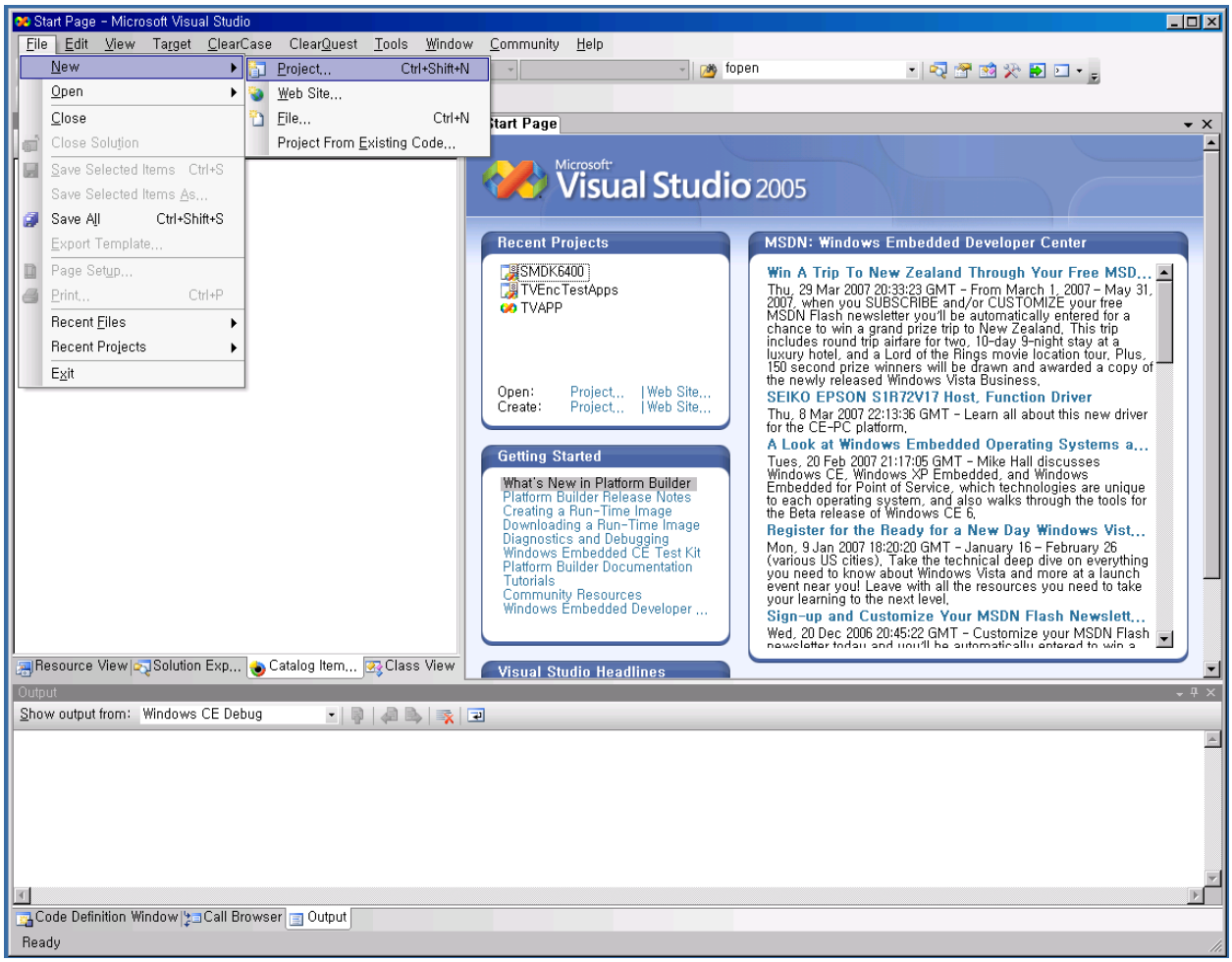

Figure 3-1 Creating New Project

2. The following window appears on your screen. Click **OK** button to continue.

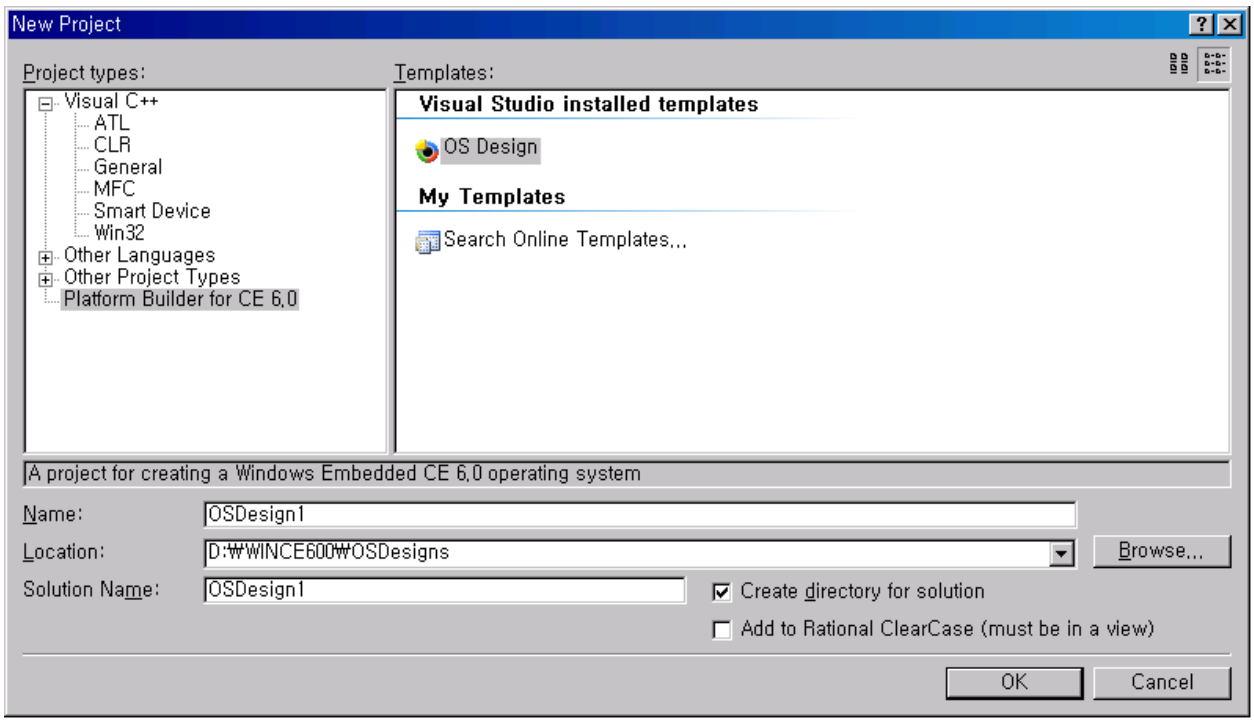

Figure 3-2 New Project for WinCE6.0

3. The **Windows Embedded CE 6.0 OS Design Wizard** appears on your screen as below figure. Click **NEXT** button to continue .

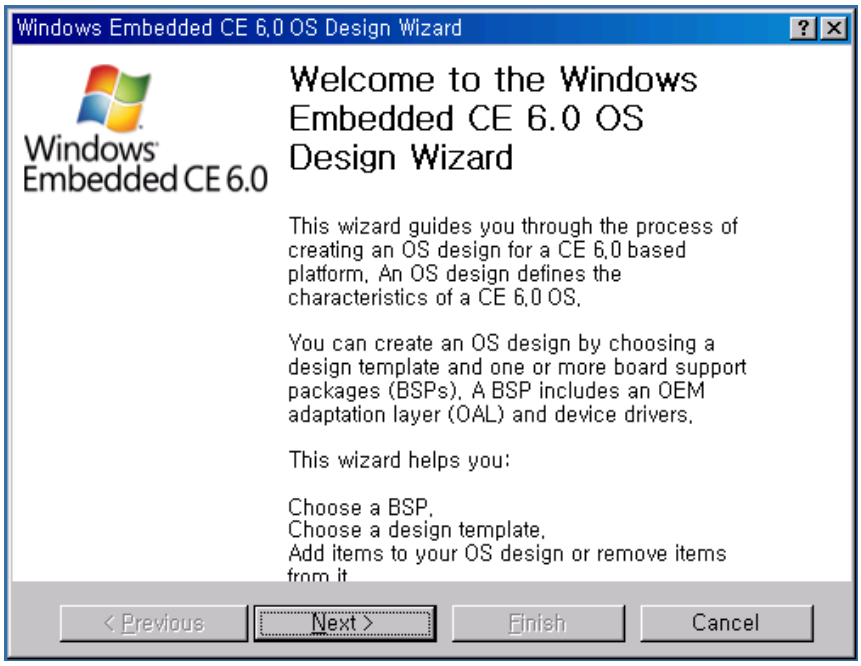

Figure 3-3 Windows Embedded CE 6.0 OS Design Wizard

4. The **Board Support Packages (BSPs)** window appears on your screen. Select **SMDK6410: ARMV4I** and then click **Next** button.

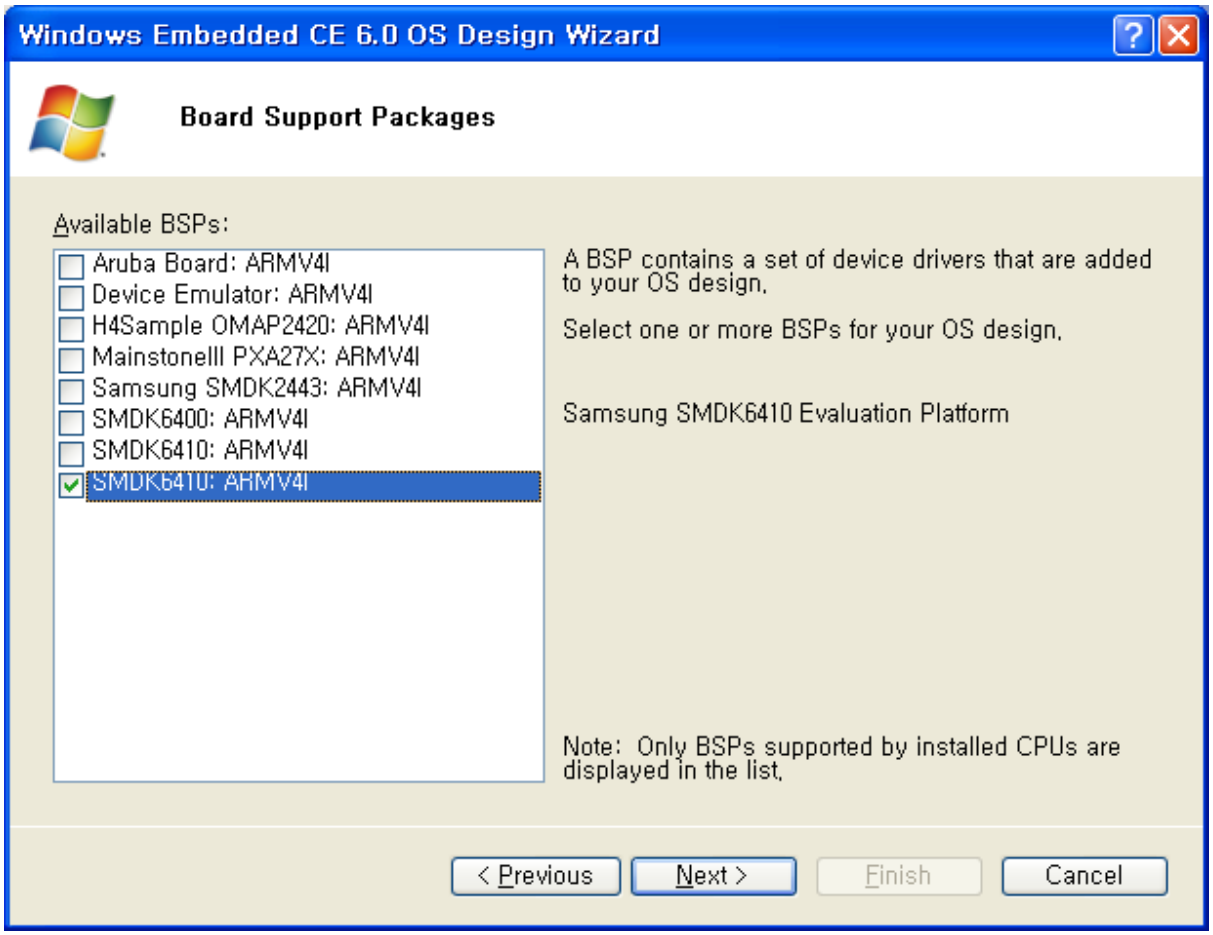

Figure 3-4 Windows Embedded CE 6.0 OS Design Wizard - Step 1

5. The **Design Template Wizard** window appears on your screen. Please select **PDA Device** from **Available design templates** list and then click **Next** button.

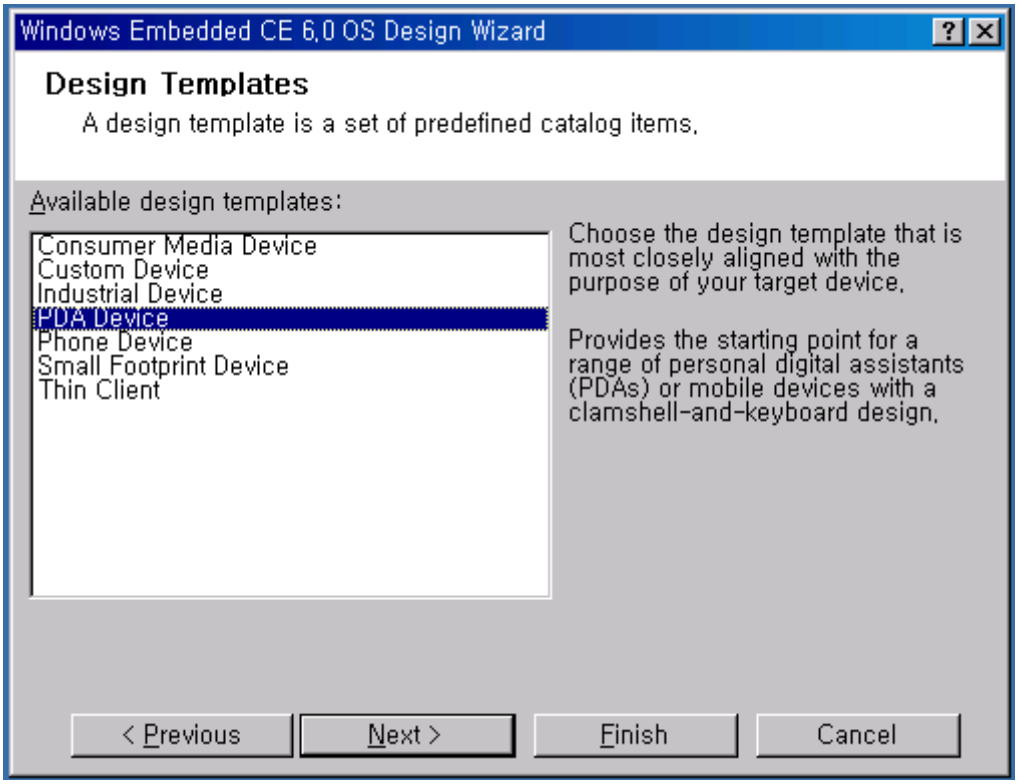

Figure 3-5 Windows Embedded CE 6.0 OS Design Wizard – Step 2

6. The **Design Template Variants** window appears on your screen. Please select **Mobile Handheld** from **Available design Variants** list and then click **Next** button.

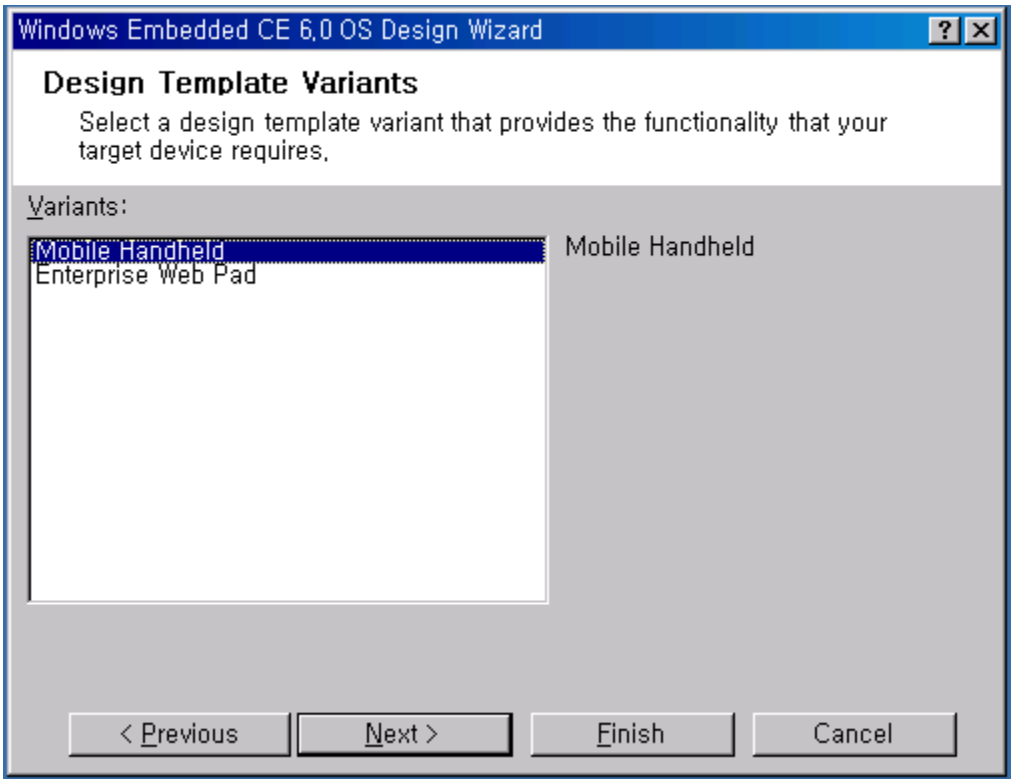

Figure 3-6 Windows Embedded CE 6.0 OS Design Wizard – Step 3

7. The following window appears on your screen. Here you select the **Application & Media** you want to include in your platform and then click **Next** button.

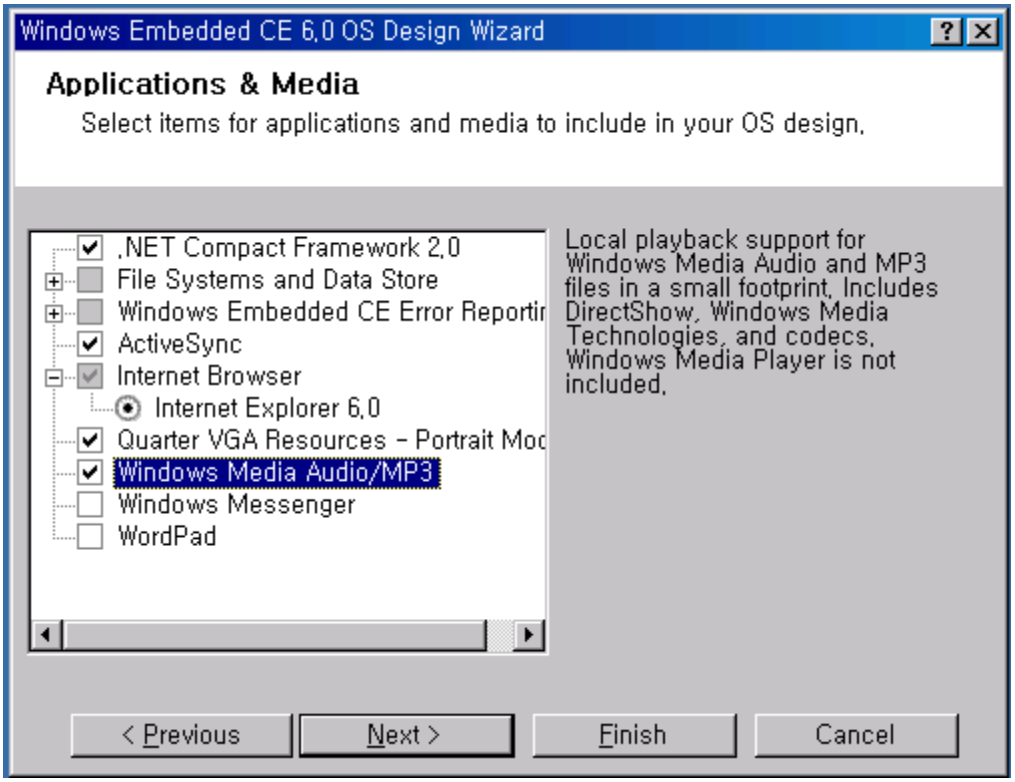

Figure 3-7 Windows Embedded CE 6.0 OS Design Wizard - Step 4

8. The **Networking & Communications** wizard window appears on your screen. Click **Finish** button.

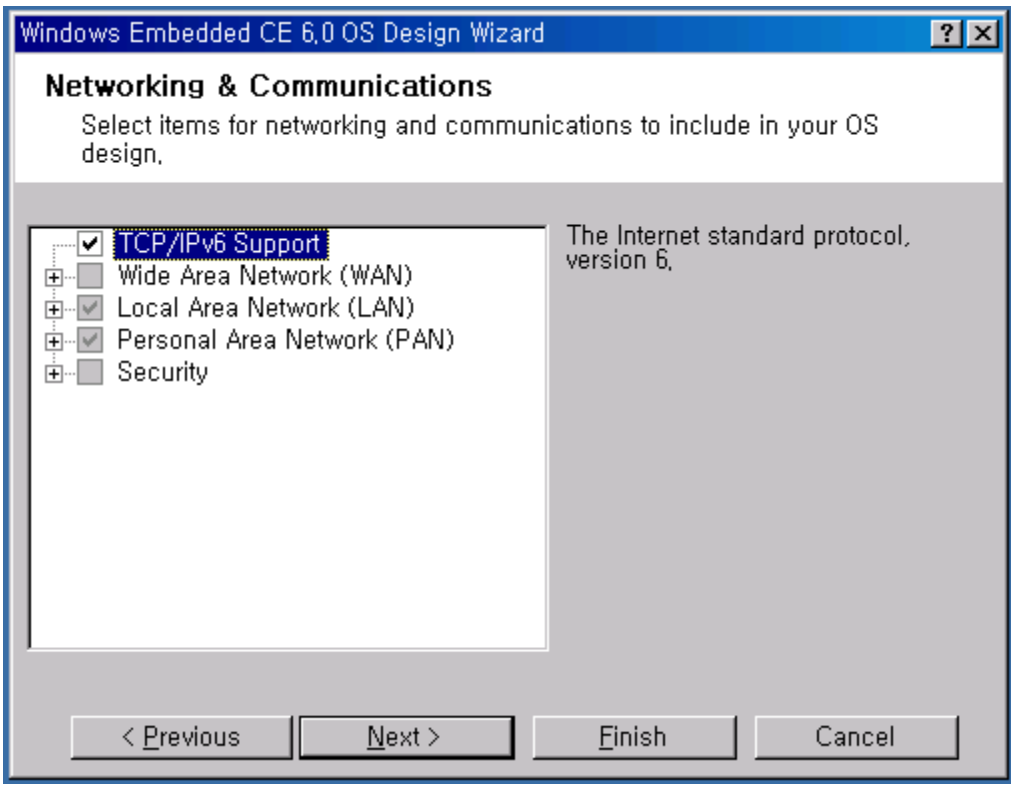

Figure 3-8 Windows Embedded CE 6.0 OS Design Wizard – Step 5

9. The following window appears on your screen. Please read all the security warnings and then click **Acknowledge** button.

Figure 3-9 Windows Embedded CE 6.0 OS Design Wizard - Step 6

4 Building OS Image – Without KITL

1. In the **Visual Studio 2005** window on your host PC, you can see the new OS Design along with its various sub-directories on the left hand side **Catalog Items View** as shown in figure 4-1. Here, you can choose items what you want to include in your OS design. The chosen items in this instruction are only for sample purpose.

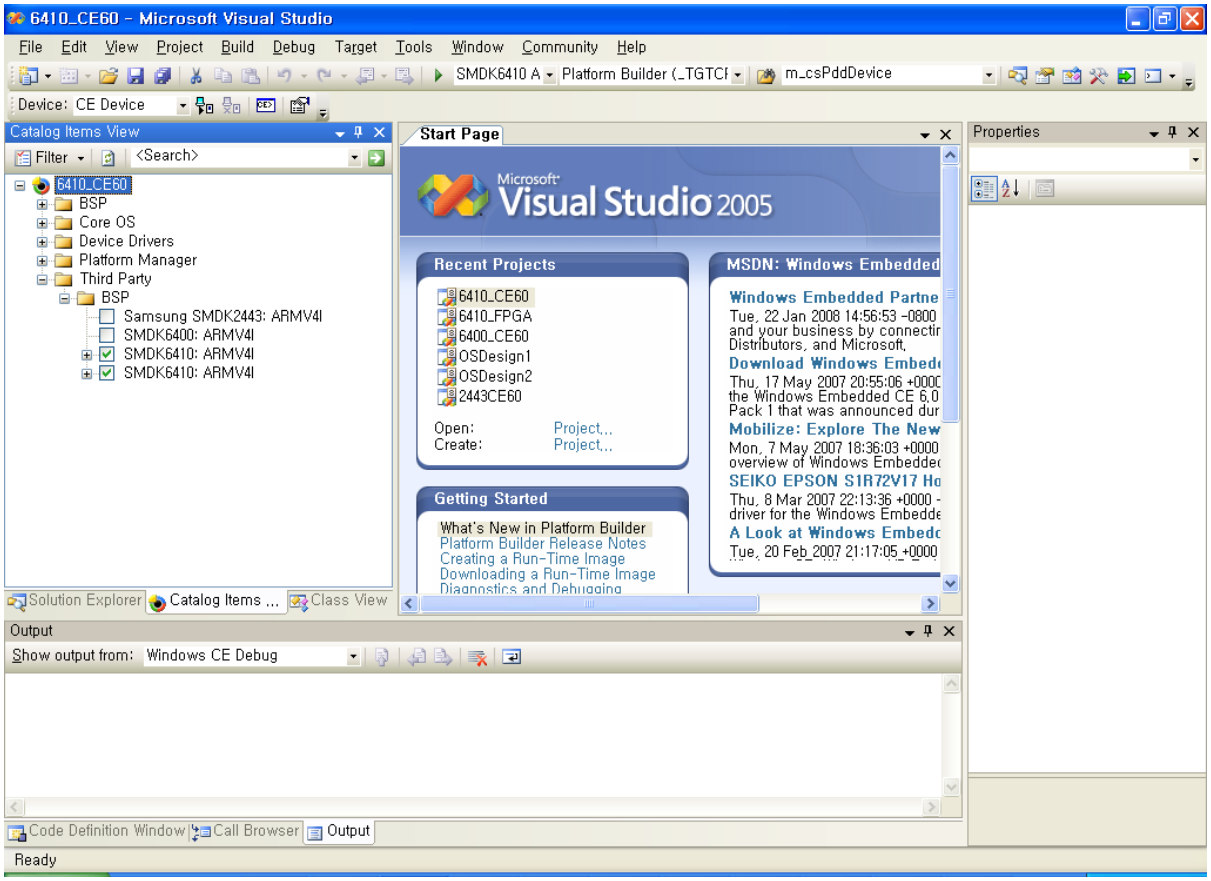

Figure 4-1 Catalog Items View

2. You can change build mode (release or debug mode) as below figures. Select **SMDK6410_ARMV4I Release**.

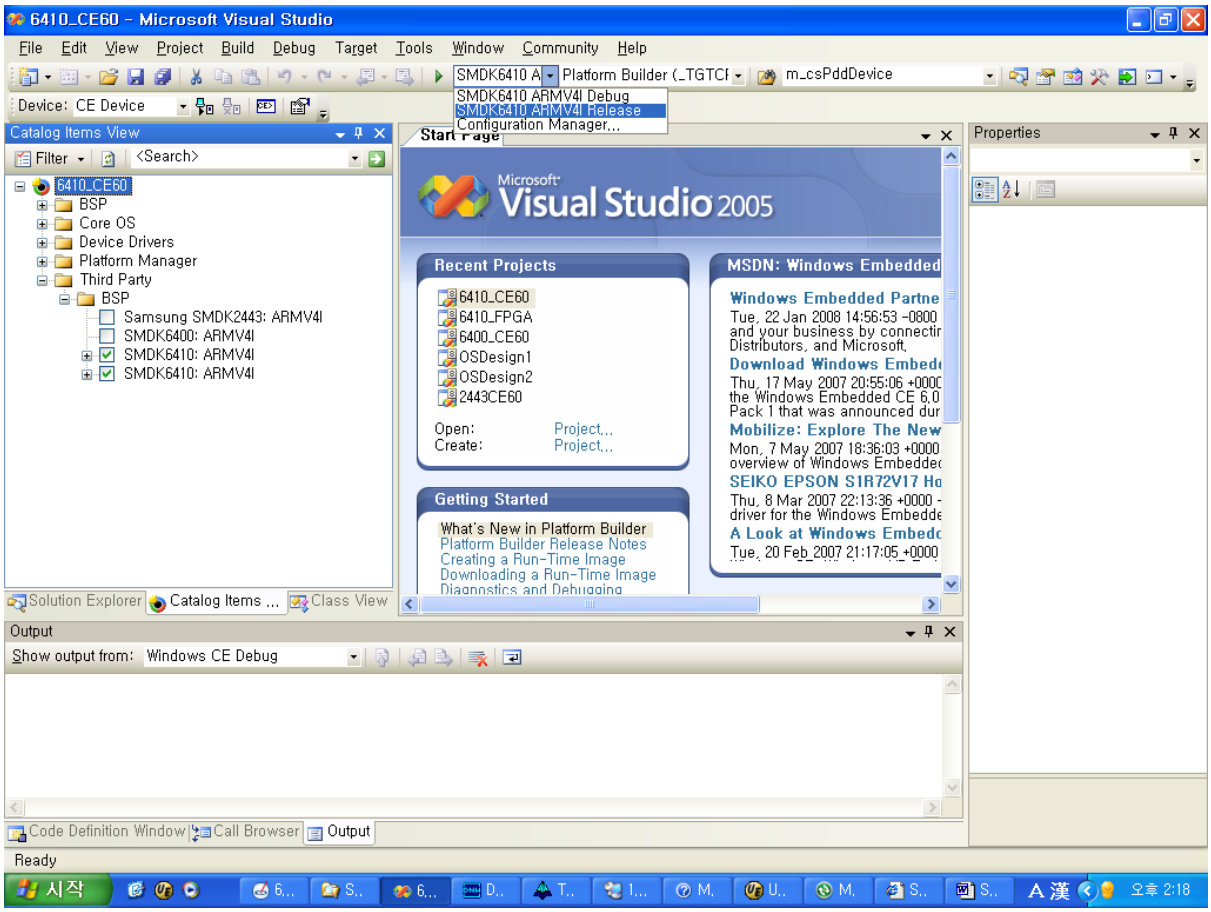

Figure 4-2 Build Mode in Visual Studio 2005

3. Expand **File Systems and Data Store** node in the Core OS node in **Catalog Items View**, then select some items as shown in the figure below.

File System-RAM and ROM File System

Registry Storage-Hive-based Registry(recommended) **or RAM-based Registry**

Storage Manager-Binary Rom Image file System

Storage Manager-exFAT File System

Storage Manager-Storage Manager Control Panel Applet

Storage Manager-TFAT File System

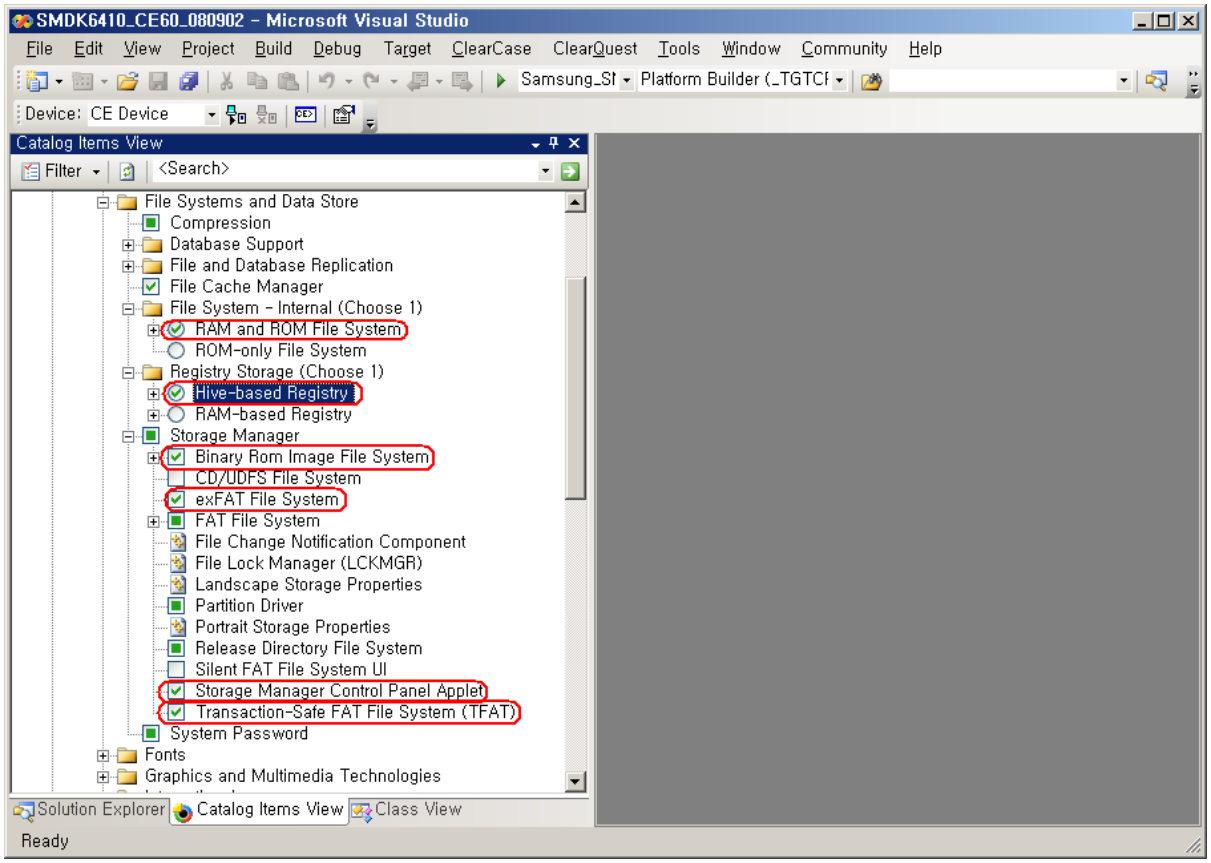

Figure 4-3 Adding File System and Data store Item to OS Design

4. Expand **Core OS** node in **Catalog Items View window,** then expand **Graphics and Multimedia Technologies.** Select some items as shown in the figure below.

Graphics-Direct3D Mobile

Graphics → DirectDraw (Required for Display Driver)

Media → Video Codecs and Renderers → WMV/MPEG-4 Video Codec (Required for MFC)

Media → Windows Media Player → Windows Media Player (Recommended for MFC)

Media → DirectShow → DirectShow Video Capture (Required for Camera)

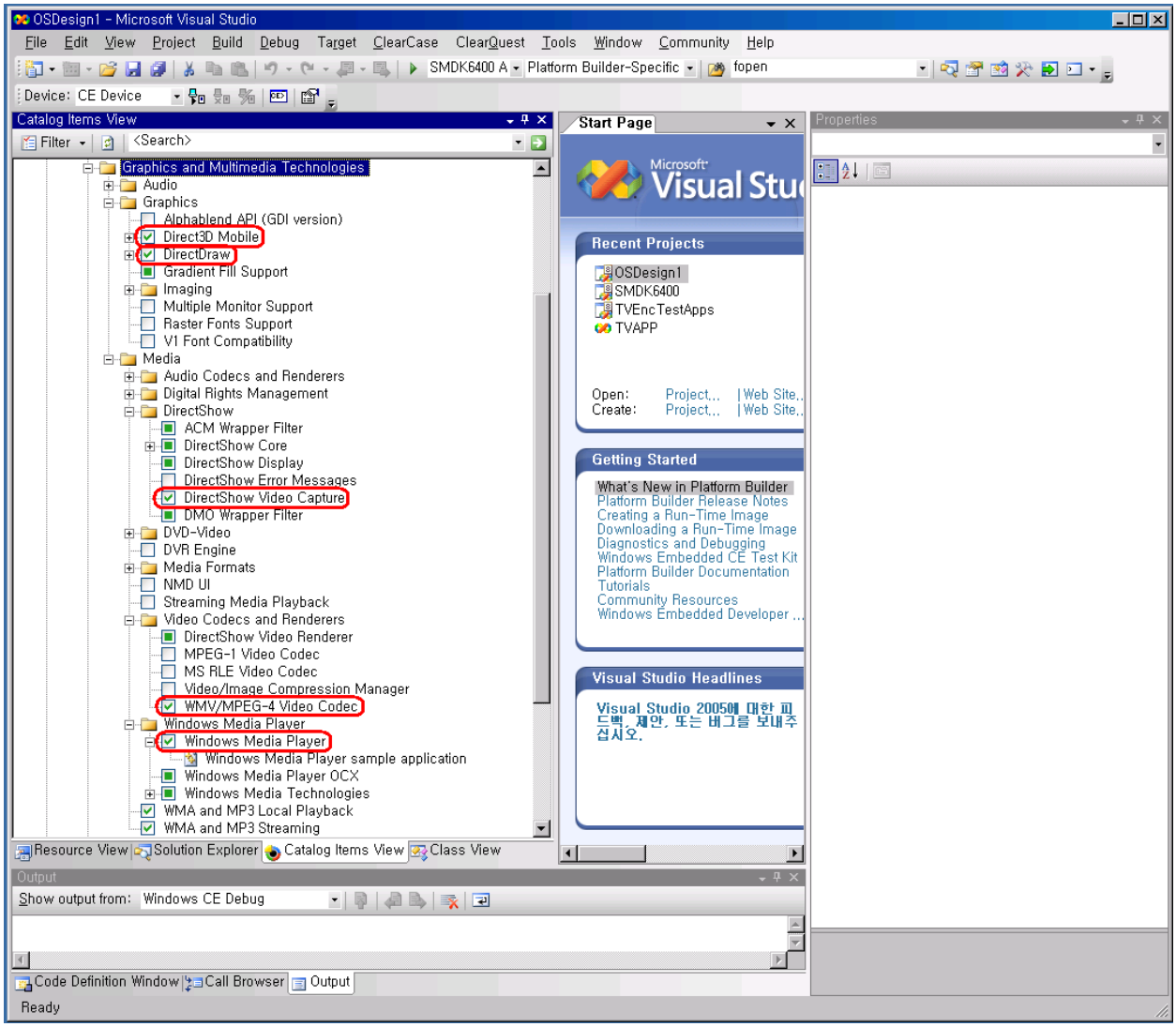

Figure 4-4 Adding Graphics and Multimedia Technologies Item to OS Design

5. Expand **Core OS Services** node in the Core OS node in **Catalog Items View**, then expand **USB Host Support**. Select some items as shown in the figure below.

USB Function Driver

USB Host Support

USB Human Input Device(HID) Class Driver (recommended)

USB Human Input Device(HID) Class Driver → USB HID Keyboard and Mouse

USB Storage Class Driver

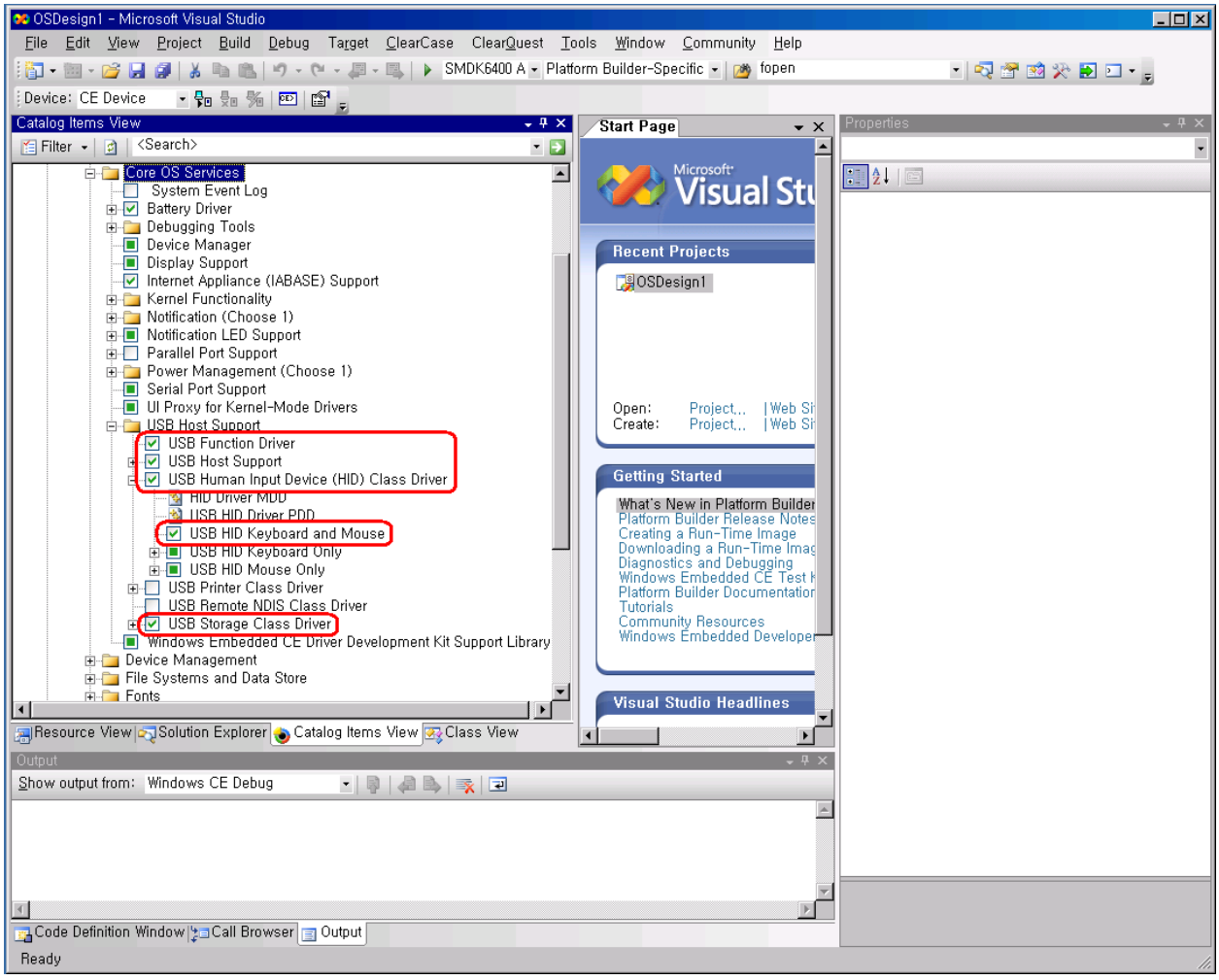

Figure 4-5 Adding Core OS Services Item to OS Design

6. Expand **Application – End User** node in **Catalog Items View window.** Select **CAB File Installer/Uninstaller** as shown in the figure below.

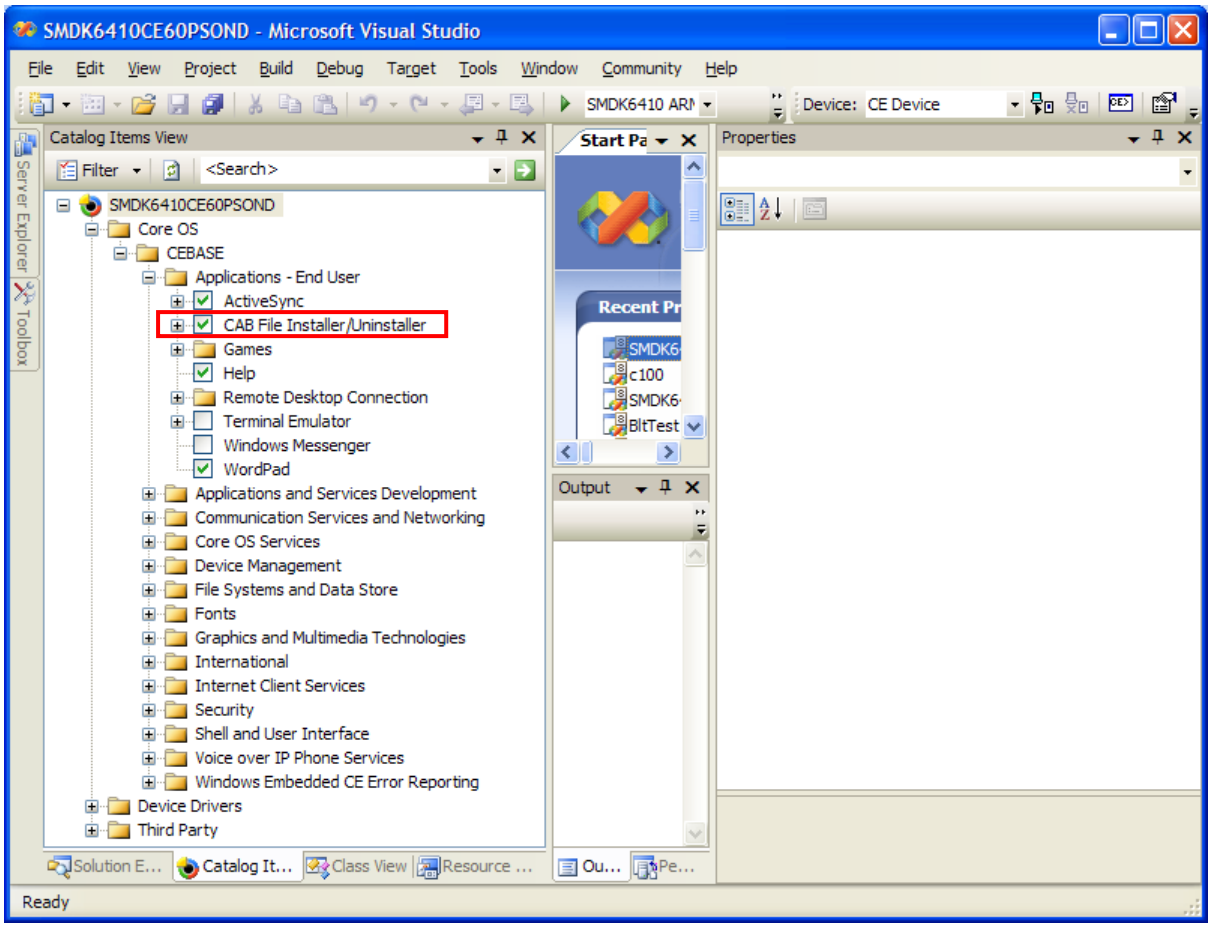

Figure 4-6 Adding CAB File Installer to OS Design

7. Expand **Applications and Services Development** node in **Catalog Items View window,** then expand **OBEX Server.**

Select **OBEX File Brower** and **OBEX Inbox**.

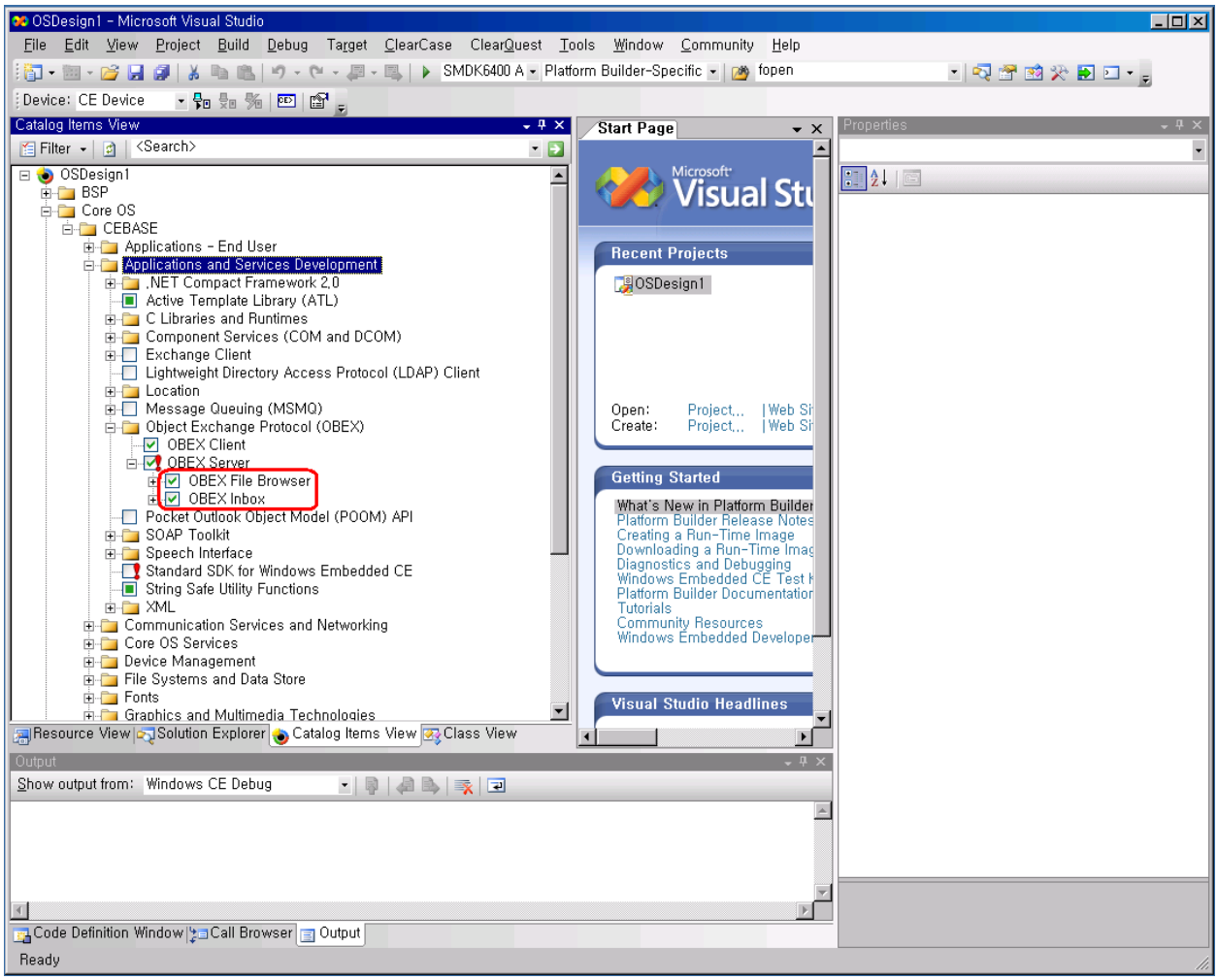

Figure 4-7 Adding Core OS Services Item to OS Design

8. Expand **Device Drivers** node in **Catalog Items View window,** then expand **USB Function.** Select Some Items as shown in the figure below.

USB Function Clients-Mass Storage

USB Function Clients-serial

Select **SD Bus Driver in SD**, **SD Memory in SDIO and Windows Embedded CE Test Kit**.

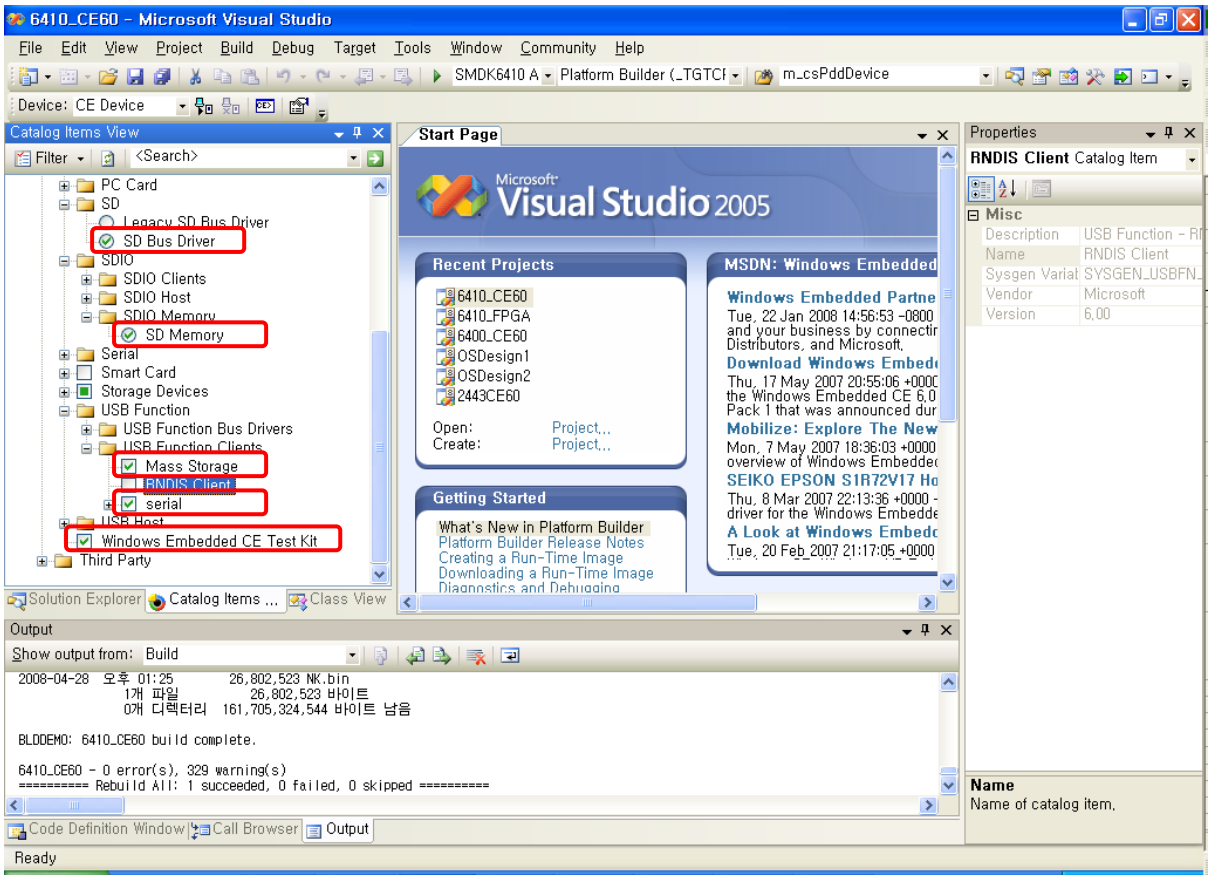

Figure 4-8 Adding Device Drivers Item to OS Design

9. Expand **Device Drivers** node in **Catalog Items View window,** then expand **Networking.** Select **Serial Infrared (SIR)** as shown in the figure below.

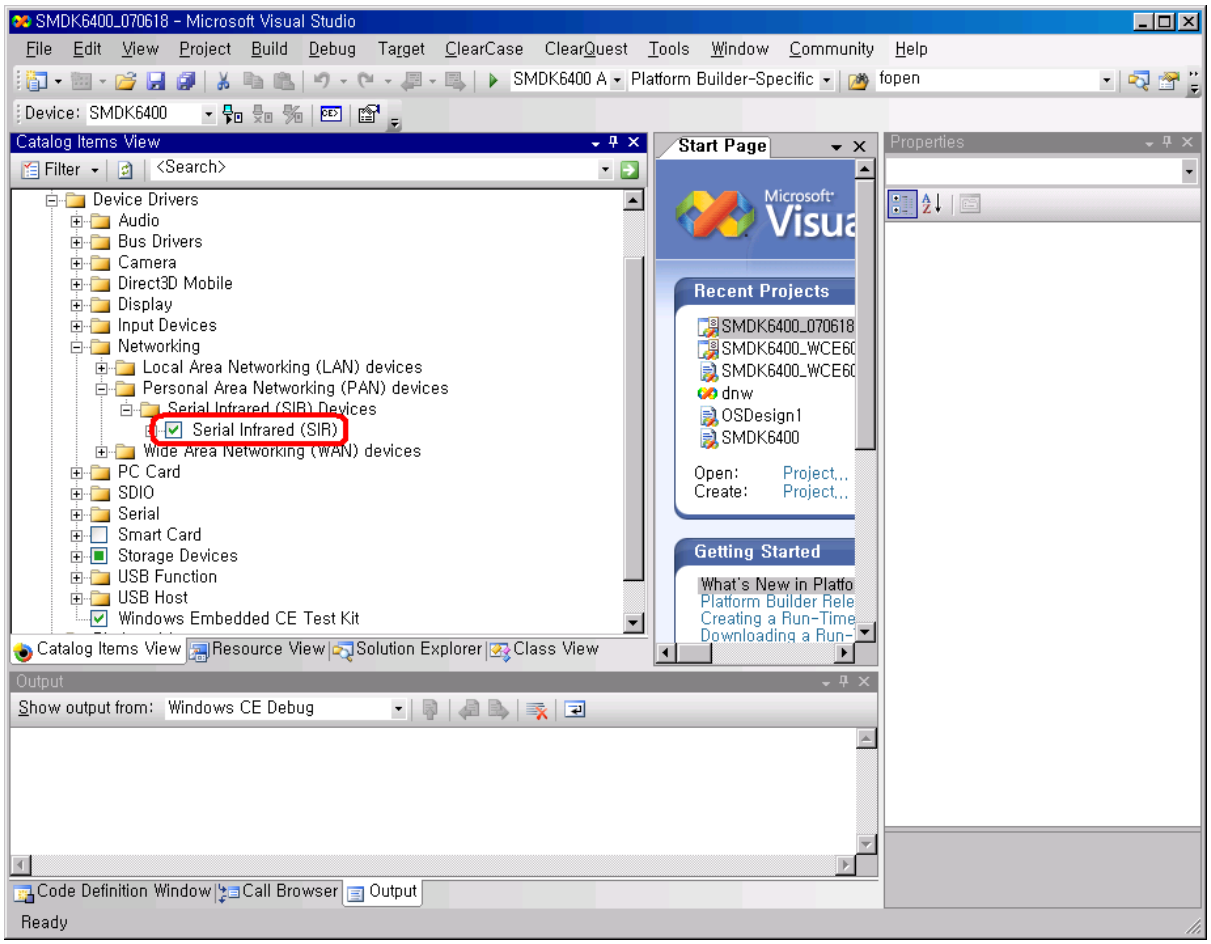

Figure 4-9 Adding Networking Item to OS Design

10. On the top of **Visual Studio 2005,** You can see the Project menu as below figure.

And then select **Properties...**

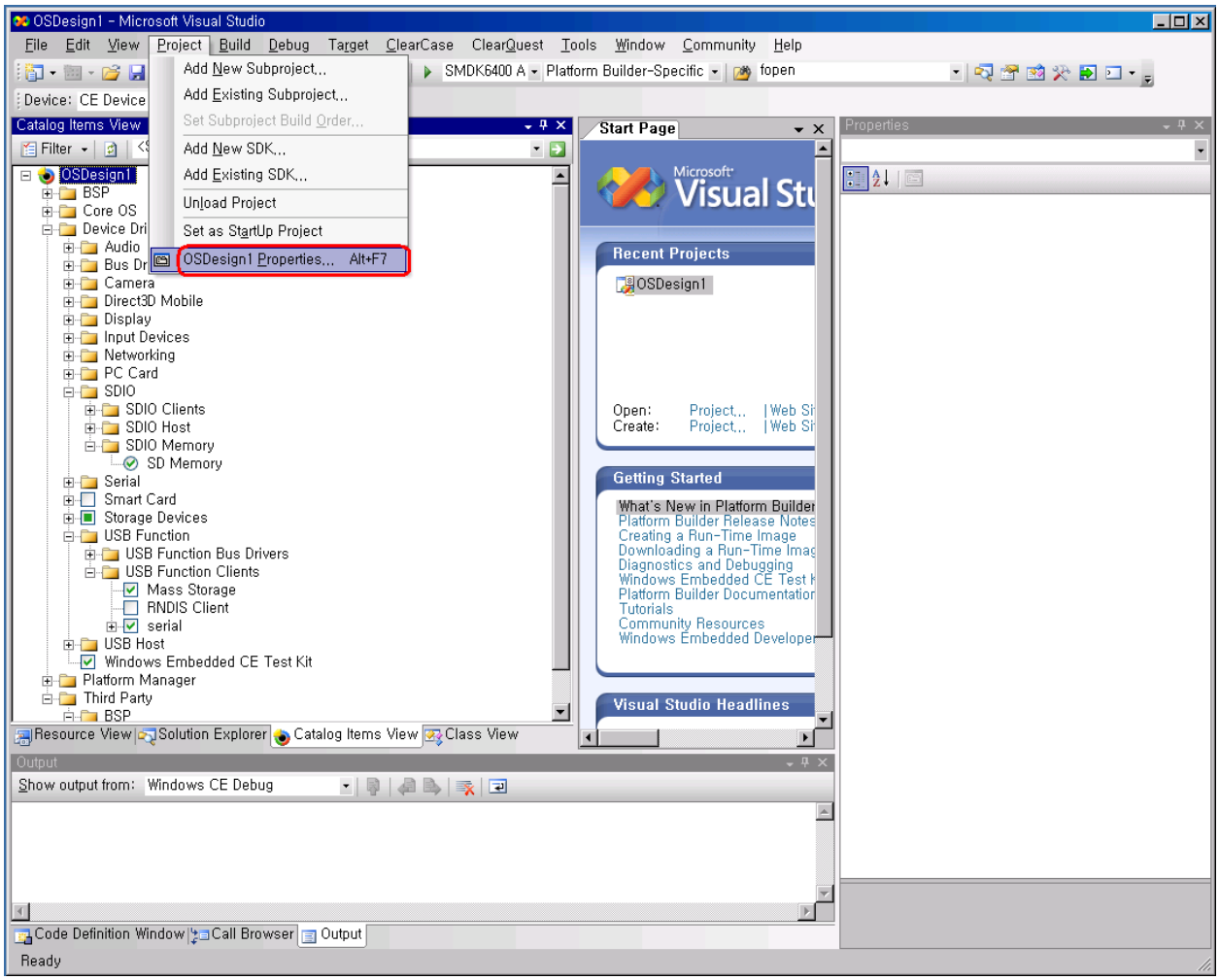

Figure 4-10 Properties of OS Design

11. The **OS Design Properties Pages** window appears on your screen. Select **Locale** tab and click **Clear All** button. It clears all the language settings in your platform. Now select **English (United States)** as shown in figure below.

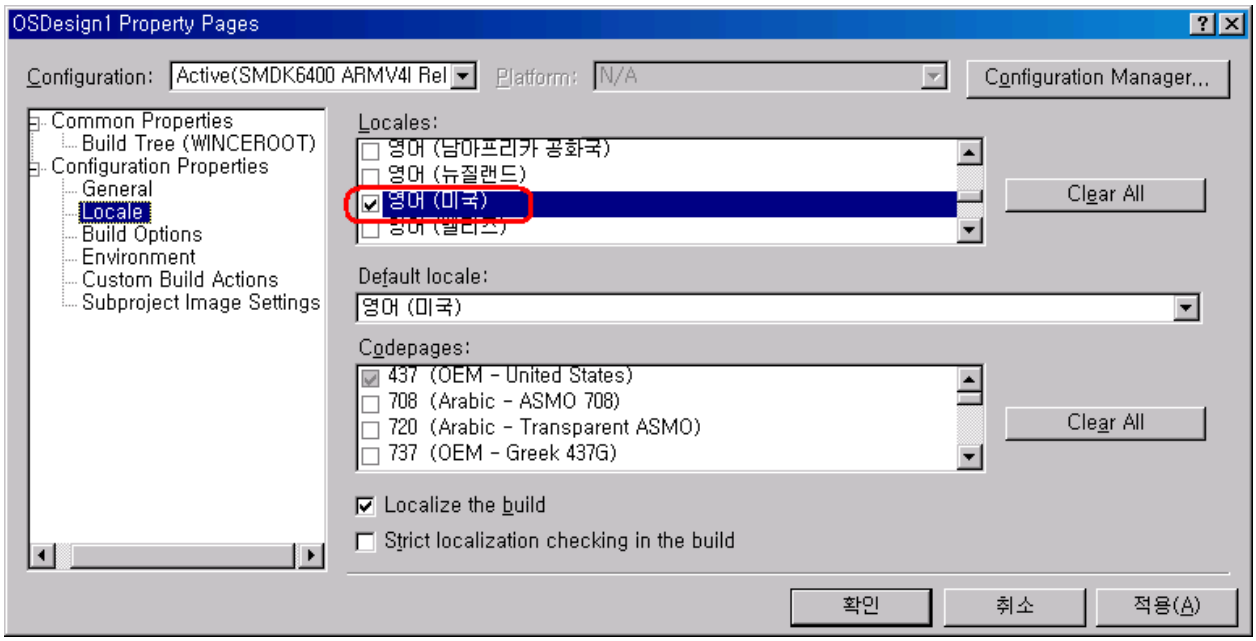

Figure 4-11 Selecting Language in the Property Pages Window

12. Now please uncheck the square boxes **Enable KITL (no IMGNOKITL=1)** in the **Build Options Properties** in **OS Design Properties Pages** window and then click **OK** button.

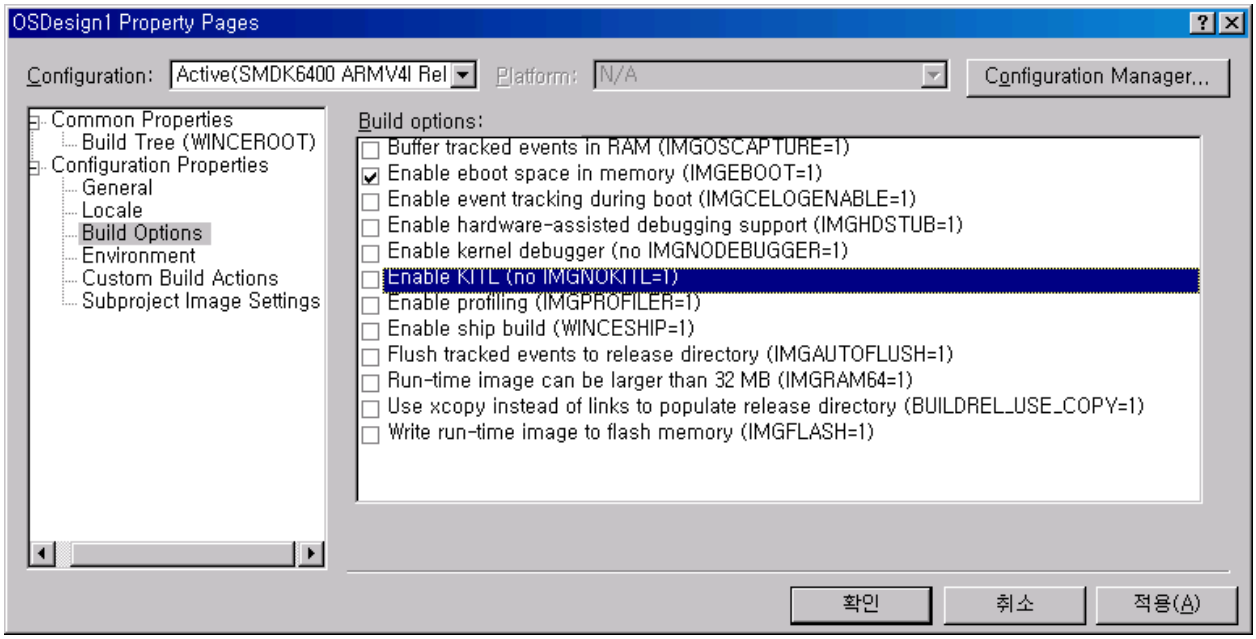

Figure 4-12 Removing KITL Setting in OS Design Properties Window

13. On the **Build** menu, click **Build OSDesign1** as shown in figure below to build the **Eboot** and **OS image**.

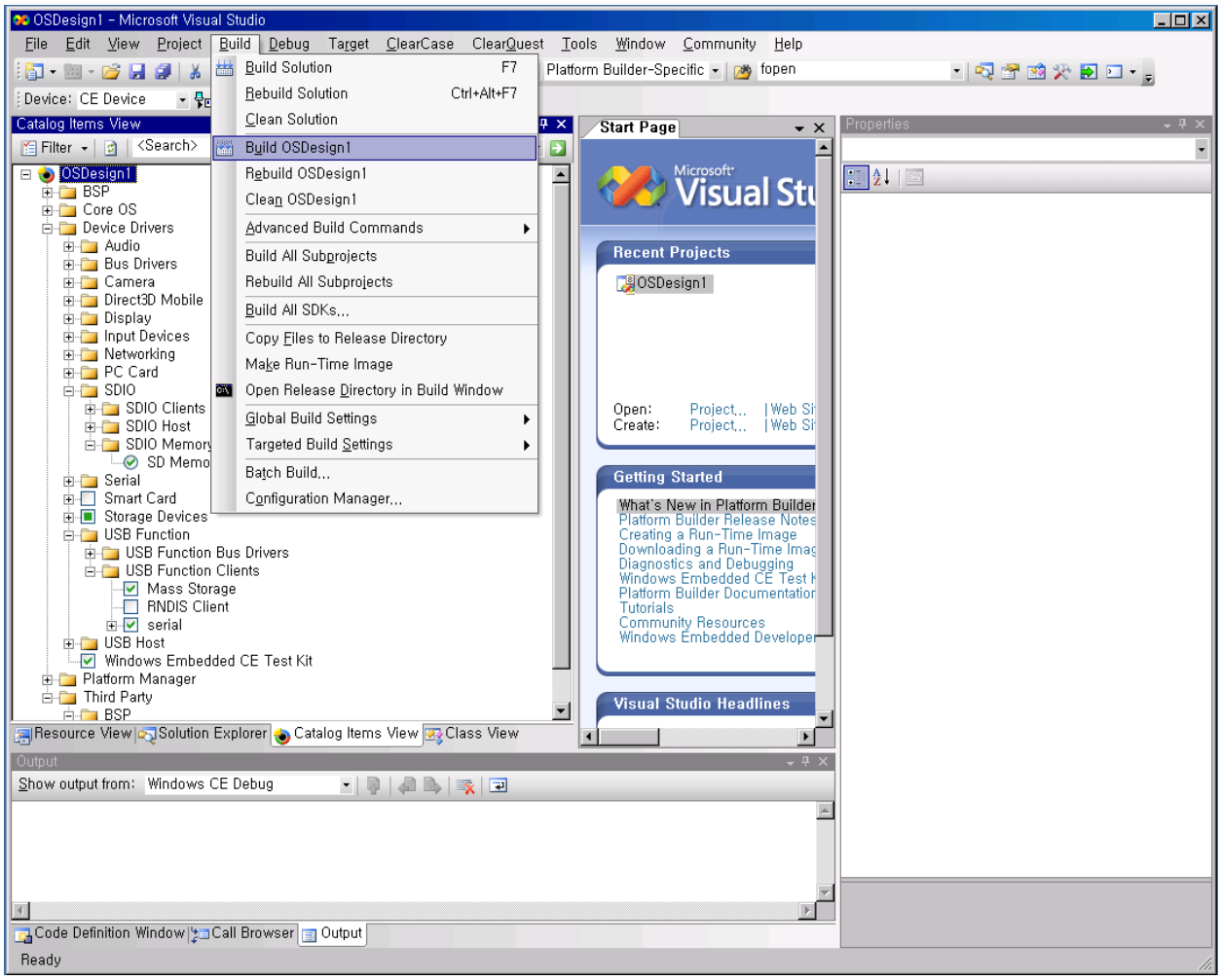

Figure 4-13 Build OS Design

14. The arrow pointing to the icon in the following figure indicates the **Building process**.

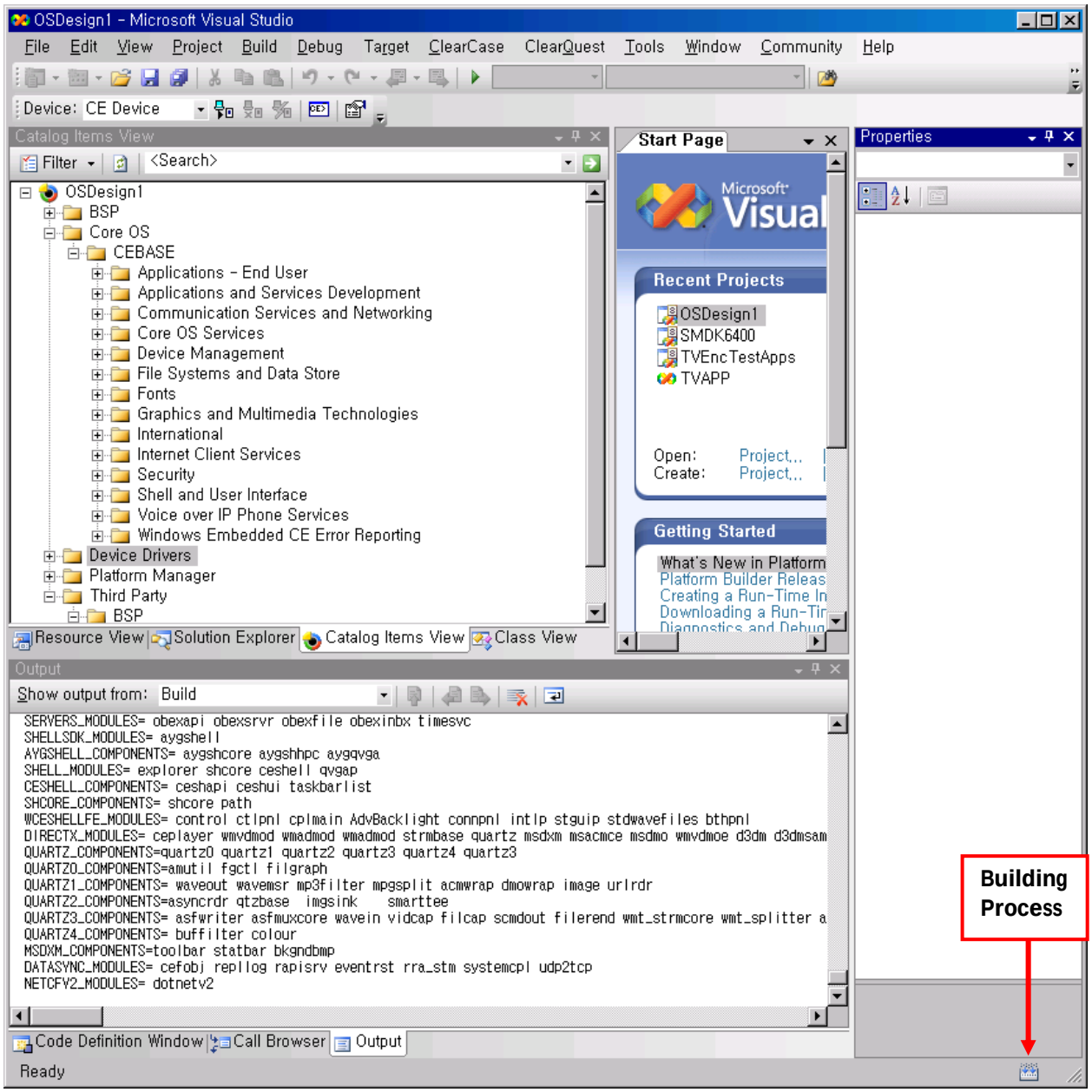

Figure 4-14 Building Process

Note: Building process may take some time depending on your system capability. So, please wait for the build process to be completed. It might take around 1 hour.

15. After completion of build process, following messages appear as shown in figure 4-15. **EBOOT.nb0, EBOOT.bin, block0imag.nb0, NK.bin** and **NK.nb0** are now available in **X:\WINCE600\OSDesigns \[OS Design Name]\ [OS Design Name]\RelDir\SMDK6410_ARMV4I_Release** directory.

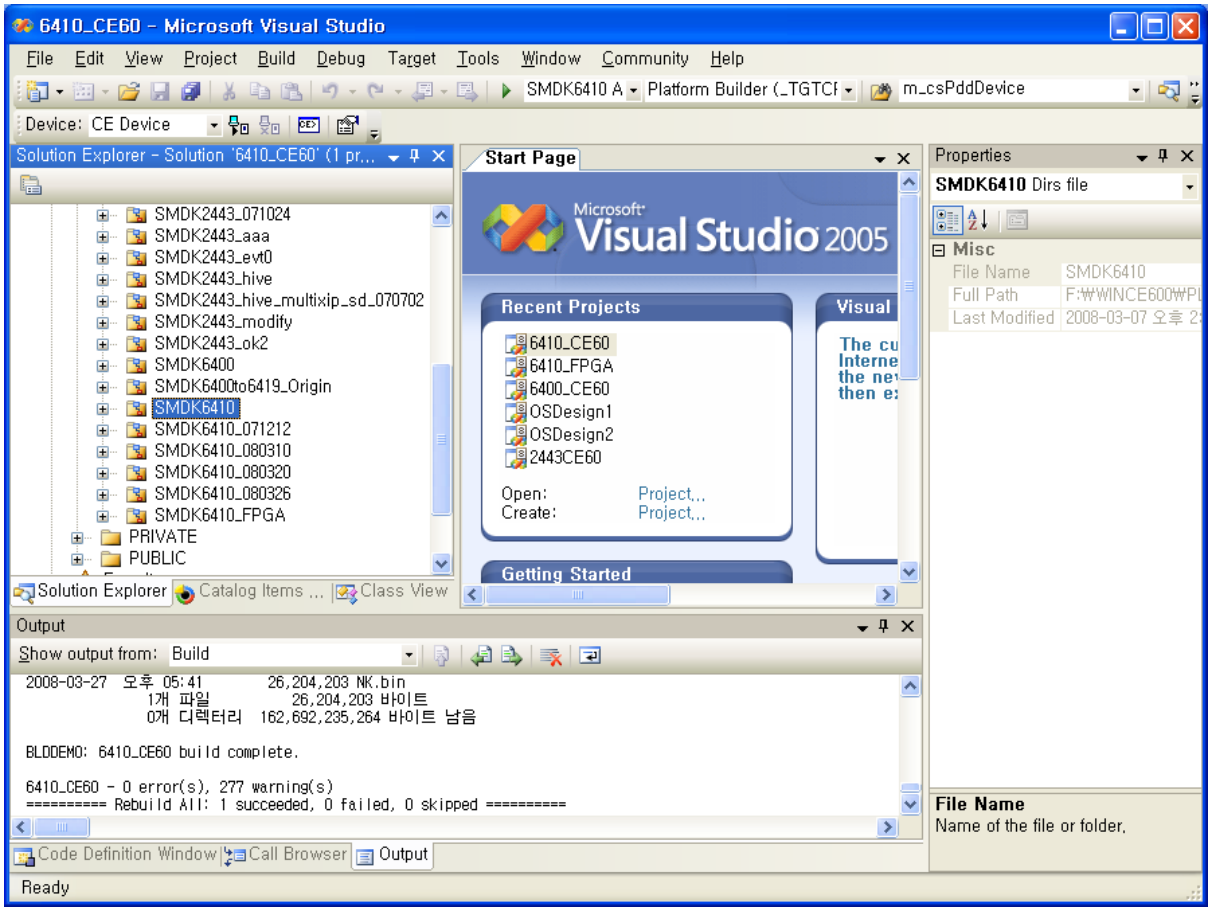

Figure 4-15 After Building the OS Image

5 Running NK.nb0 Image (available on the single-XIP only)

In this chapter, you can understand how to download and run the NK.nb0 image.

1. Before you download the WinCE Image through the USB, you must have **6410_OtgMon.bin** image on your AMD Flash. (The image was already fused on your AMD Flash in the board before release)

2. Configure DIP switch CFG0 on the CPU Board and CFGB1 on the CPU board properly for booting from AMD Flash. (For more information, Read SMDK6410 Board User's Manual)

a. Set the CFG3 Jumpers on CPU Board for NAND boot.

CFG3		1	2	3	4	5	6
Boot Mode	**Umon boot**	**OFF**	**ON**	**OFF**	**ON**	**OFF**	**X**
	NAND iROM boot	OFF	ON	ON	ON	ON	X

Note) X : X means Don't Care

CFG4		1	2	3	4
CS2	NAND	ON	ON	OFF	OFF
	OneNAND	**OFF**	**OFF**	**ON**	**ON**

b. Set the Jumpers on Base Board. (CFGB1, CFGB2, CFGB3, CFGB4)

CFGB1	1	2	3	4
nCS0 SEL	ON	OFF	OFF	OFF

CFGB2	1	2	3	4
nCS1 SEL	OFF	OFF	ON	OFF

CFGB3	1	2	3	4
SLC SOP NAND	ON	OFF	OFF	OFF
XD Card NAND	OFF	ON	OFF	OFF

CFGB4	1	2	3	4
nCS4 SEL	OFF	OFF	OFF	OFF

3. Please install the USB Driver and DNW application on your host PC.

4. After installing the USB driver, run **dnw.exe** on the host PC. The following window appears on your screen.

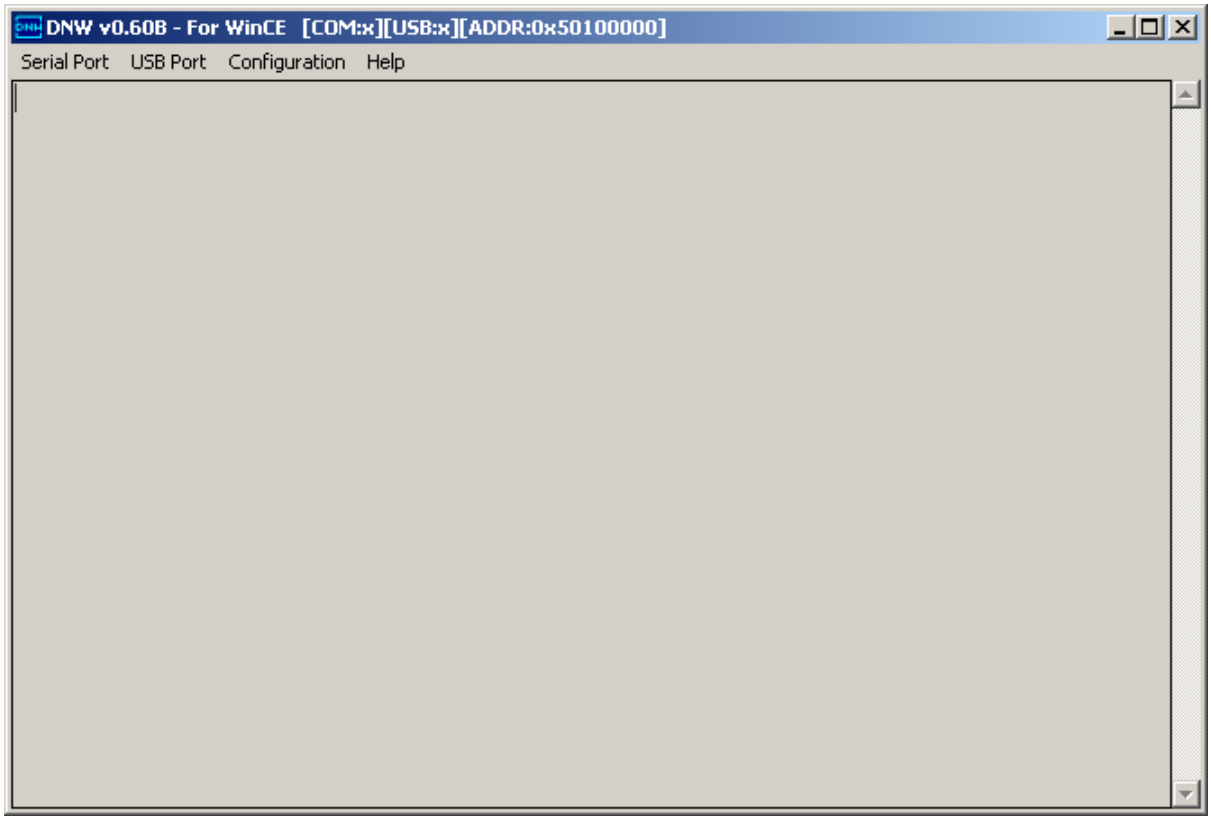

Figure 5-1 DNW Window

5. On the **Configuration** menu, click **Options** to set the UART/USB options. The following window appears on your screen. Select Baud Rate and COM Port as shown in figure 5-2, enter the download address as **0x50100000** and then click **OK** button.

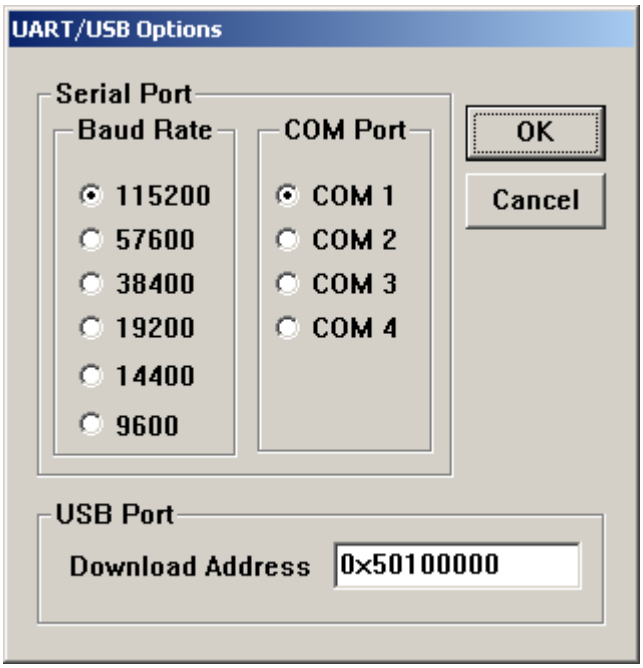

Figure 5-2 UART/USB Options

6. On the **Serial Port** menu, click **Connect**. Switch **ON** the board and then press any key. The DNW window appears as shown in figure 5-3.

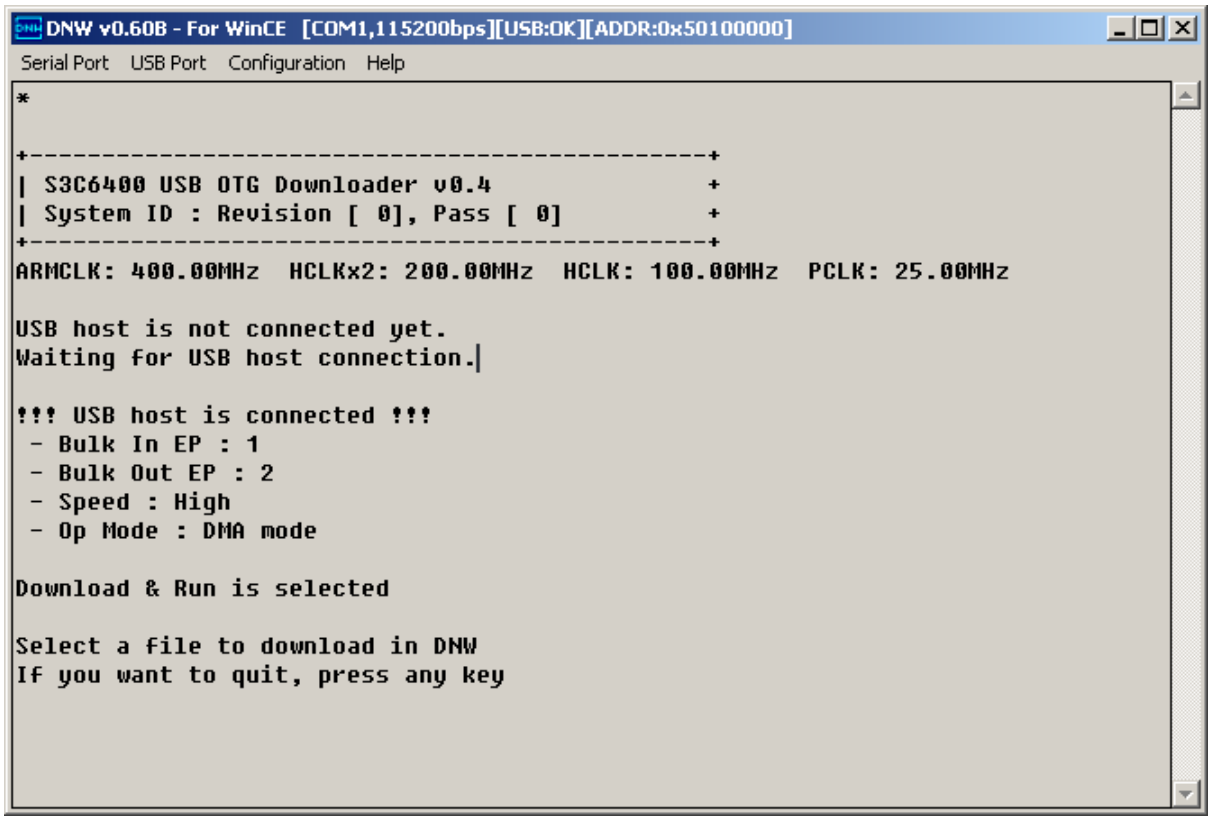

Figure 5-3 DNW Window after Board Power ON

7. Press any key to see USB OTG Mon menu. Now DNW window appears as shown below.

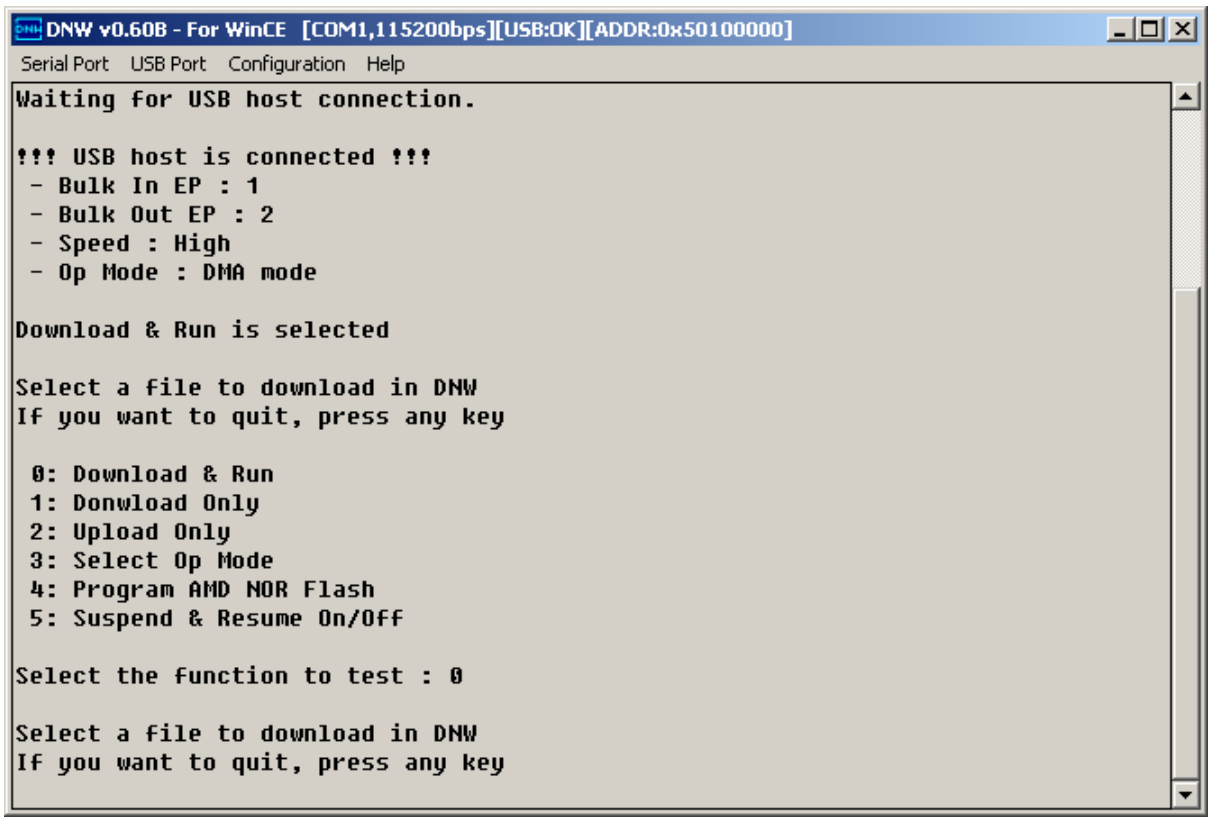

Figure 5-4 USB OTG Mon Menu

8. Enter **0** to download and run the Image on the board. DNW window appears as shown in figure 5-5.

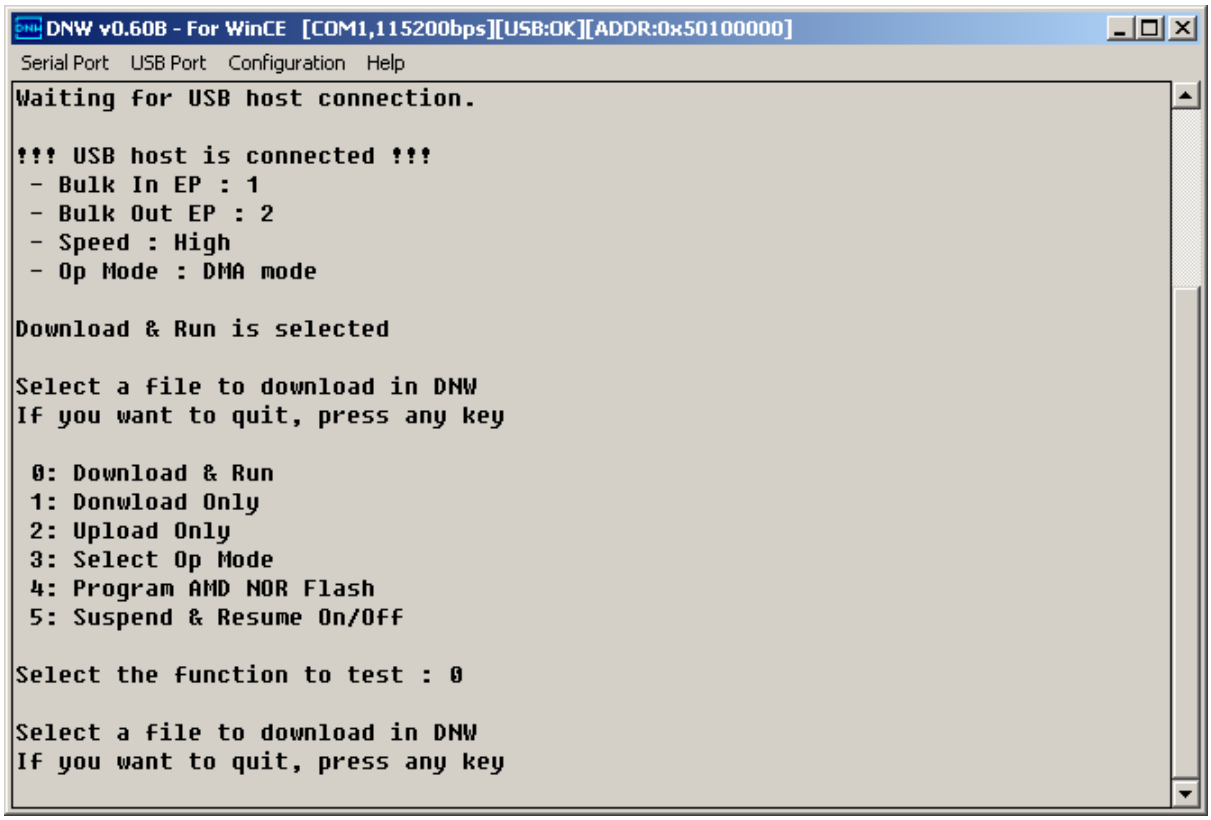

Figure 5-5 Download & Run

9. On the **USB Port** menu, click **Transmit** and the following window appears on your screen. Select **NK.nb0** from **X:\WINCE600\OSDesins\[OS Design name]\[OS Design name]\RelDir\SMDK6410_ARMV4I_Release** directory and then click **Open** button.

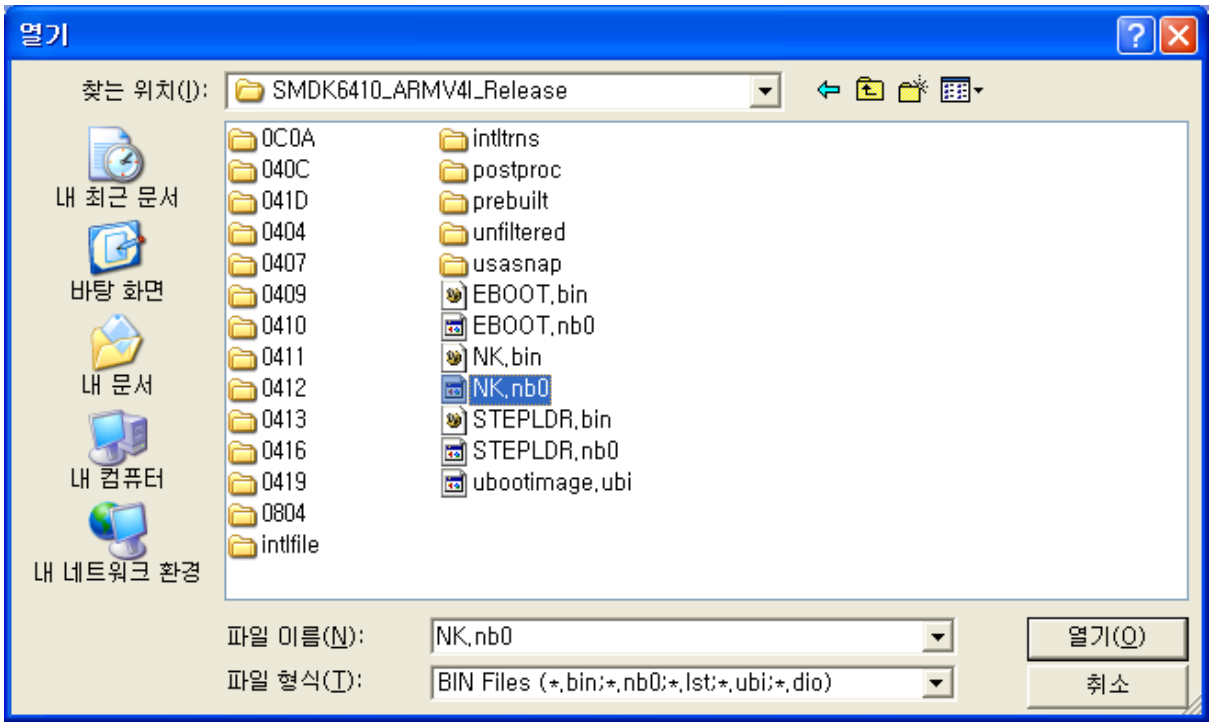

Figure 5-6 Selecting NK.nb0 for Download

10. Once download begins, a download status bar appears on your screen as shown in figure 5-7. After **NK.nb0** download is over, **Windows Embedded CE 6.0** boots on the target Board

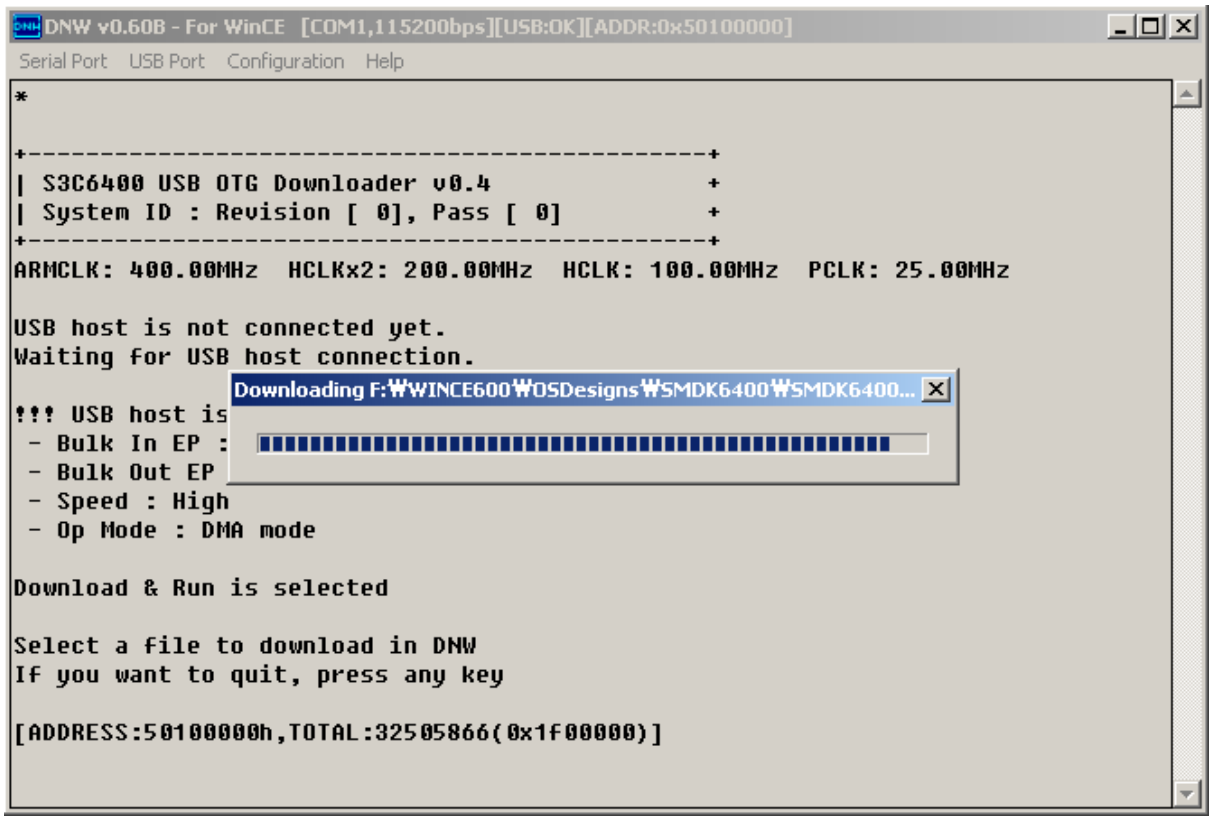

Figure 5-7 Downloading Status of NK.nb0

6 Fusing WinCE OS Image(single.bin or multiple.bin) to NAND Flash via USB

In this chapter, you can understand how to fuse WinCE image to NAND Flash via USB.

1. Before you download the WinCE Image through the USB, you must have **6410_OtgMon.bin** image on your AMD Flash. (The image was already fused on your AMD Flash in the board before release)

2. Configure CFG0 DIP switch on the CPU Board and CFGB1 on the CPU board properly for booting from AMD Flash. (For more information, Read SMDK6410 Board User's Manual)

a. Set the CFG3 Jumpers on CPU Board for NAND boot.

CFG3		1	2	3	4	5	6
Boot Mode	**Umon boot**	**OFF**	**ON**	**OFF**	**ON**	**OFF**	**X**
	NAND iROM boot	OFF	ON	ON	ON	ON	X

Note) X : X means Don't Care

CFG4		1	2	3	4
CS2	NAND	ON	ON	OFF	OFF
	OneNAND	**OFF**	**OFF**	**ON**	**ON**

b. Set the Jumpers on Base Board. (CFGB1, CFGB2, CFGB3, CFGB4)

CFGB1	1	2	3	4
nCS0 SEL	ON	OFF	OFF	OFF

CFGB2	1	2	3	4
nCS1 SEL	OFF	OFF	ON	OFF

CFGB3	1	2	3	4
SLC SOP NAND	ON	OFF	OFF	OFF
XD Card NAND	OFF	ON	OFF	OFF

CFGB4	1	2	3	4
nCS4 SEL	OFF	OFF	OFF	OFF

3. Please install the USB Driver and DNW application on your host PC.

4. Run **dnw.exe** on the host PC. The following window appears on your screen.

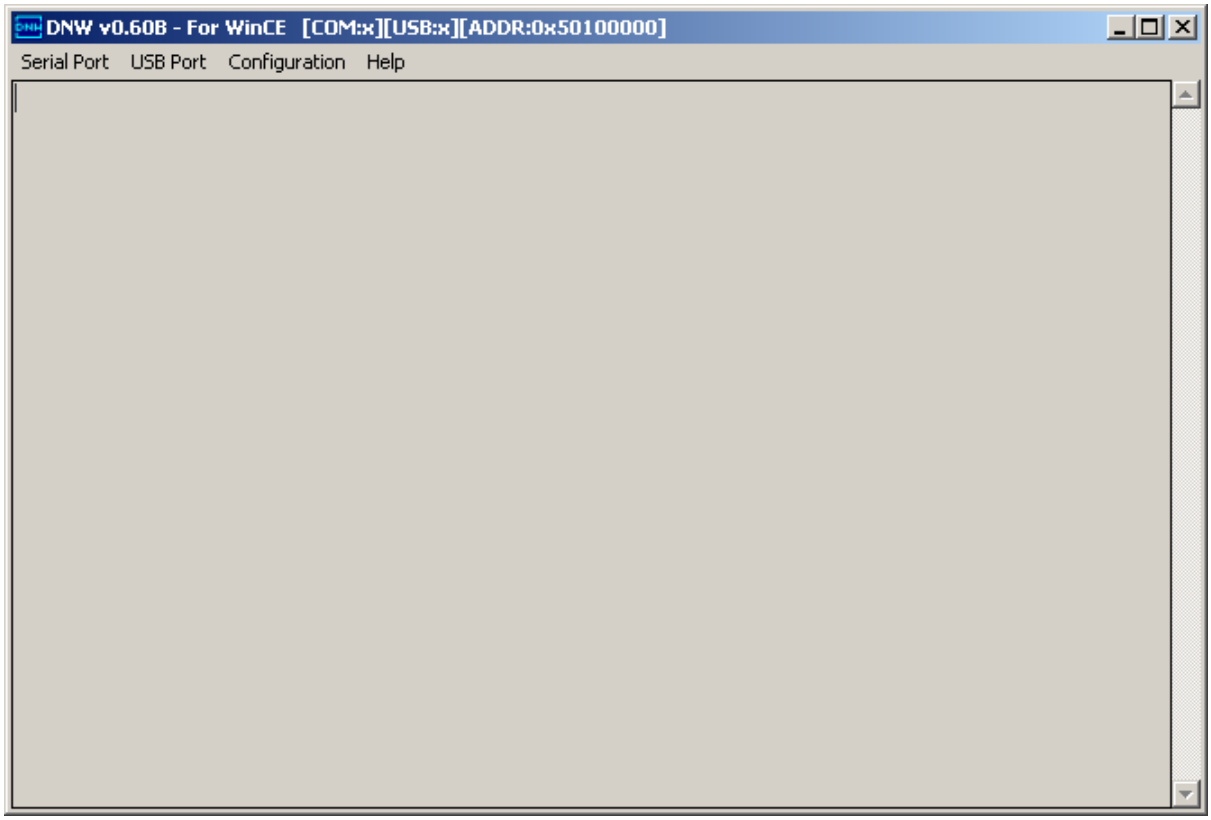

Figure 6-1 DNW Window

5. On the **Configuration** menu in the DNW window, click **Options** to set the UART/USB options. The following window appears on your screen. Select Baud Rate and COM Port as shown in figure 6-2, enter the download address as **0x50030000** and then click **OK** button.

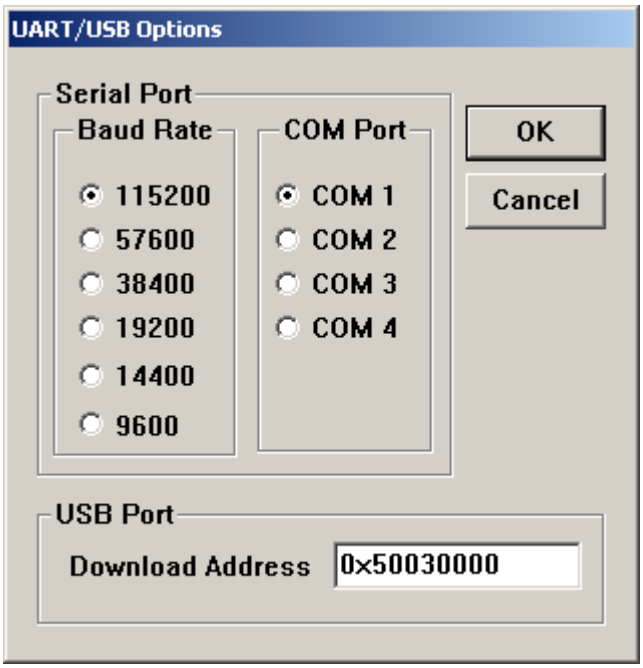

Figure 6-2 UART/USB Options

6. On the **Serial Port** menu, click **Connect**. Switch **ON** the board and then press any key. The DNW window appears as shown in figure 6-3.

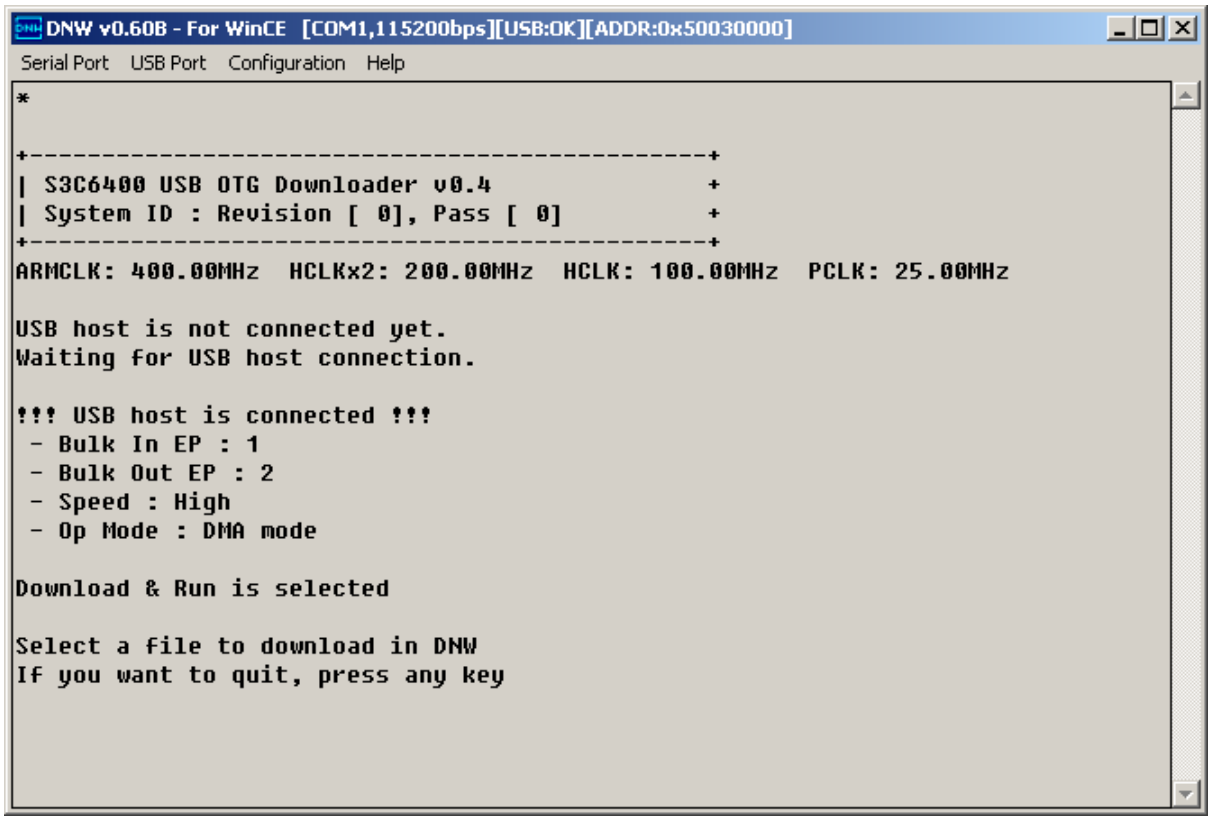

Figure 6-3 DNW Window after Board Power ON

7. Press any key to see USB OTG Mon menu. Now DNW window appears as shown below.

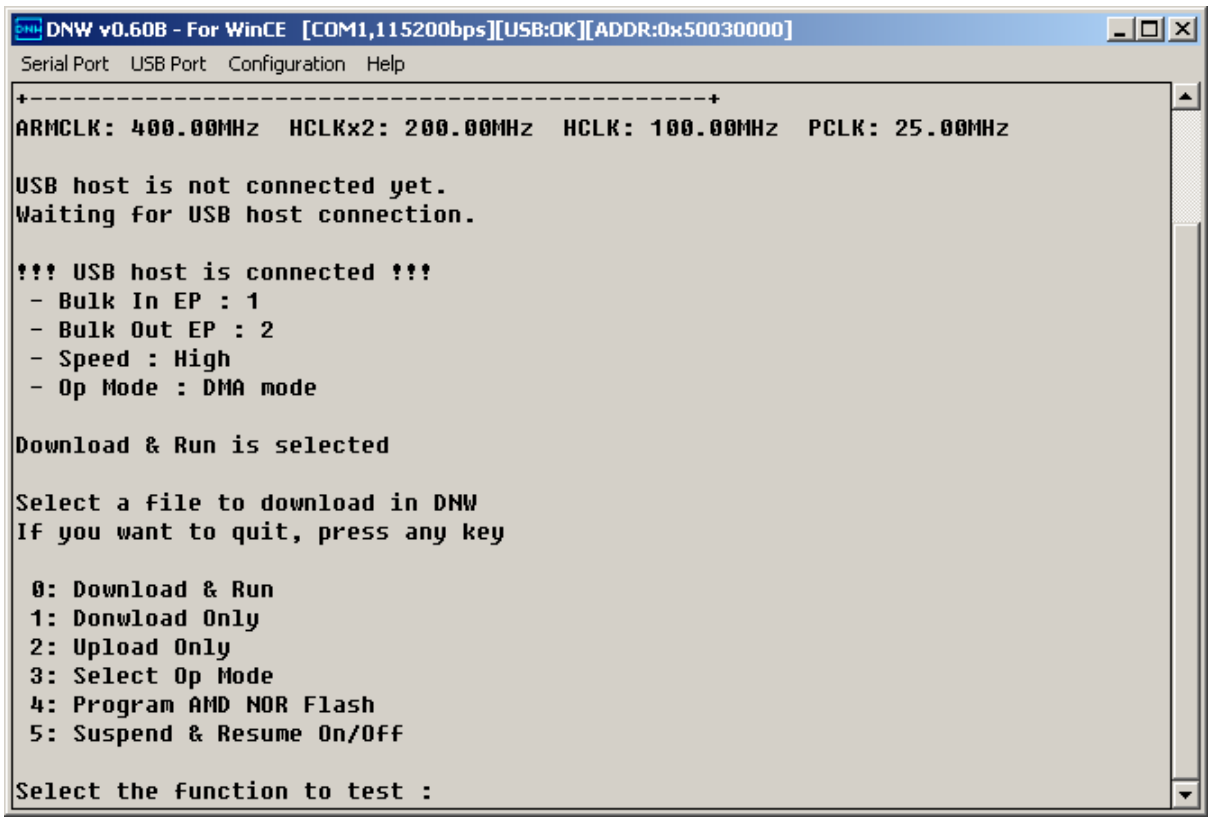

Figure 6-4 usb OTG Mon menu

8. Enter **0** to download and run the Image on the board. DNW window appears as shown in figure 6-5.

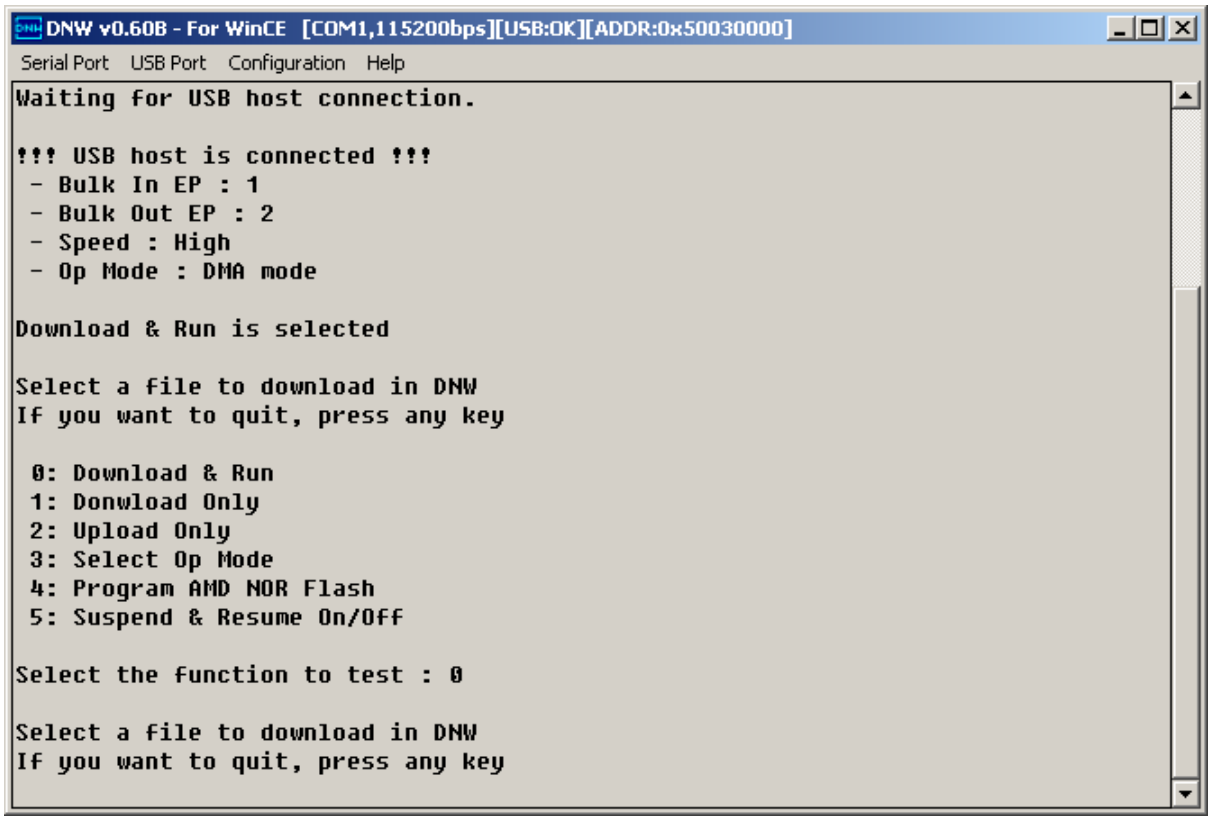

Figure 6-5 Download & Run

9. On the **USB Port** menu, click **Transmit** and the following window appears on your screen. Select **EBOOT.nb0** file from **X:\WINCE600\OSDesigns\[OSDesign name] \[OSDesign name]\RelDir\SMDK6410_ARMV4I _Release** directory and then click **Open** button.

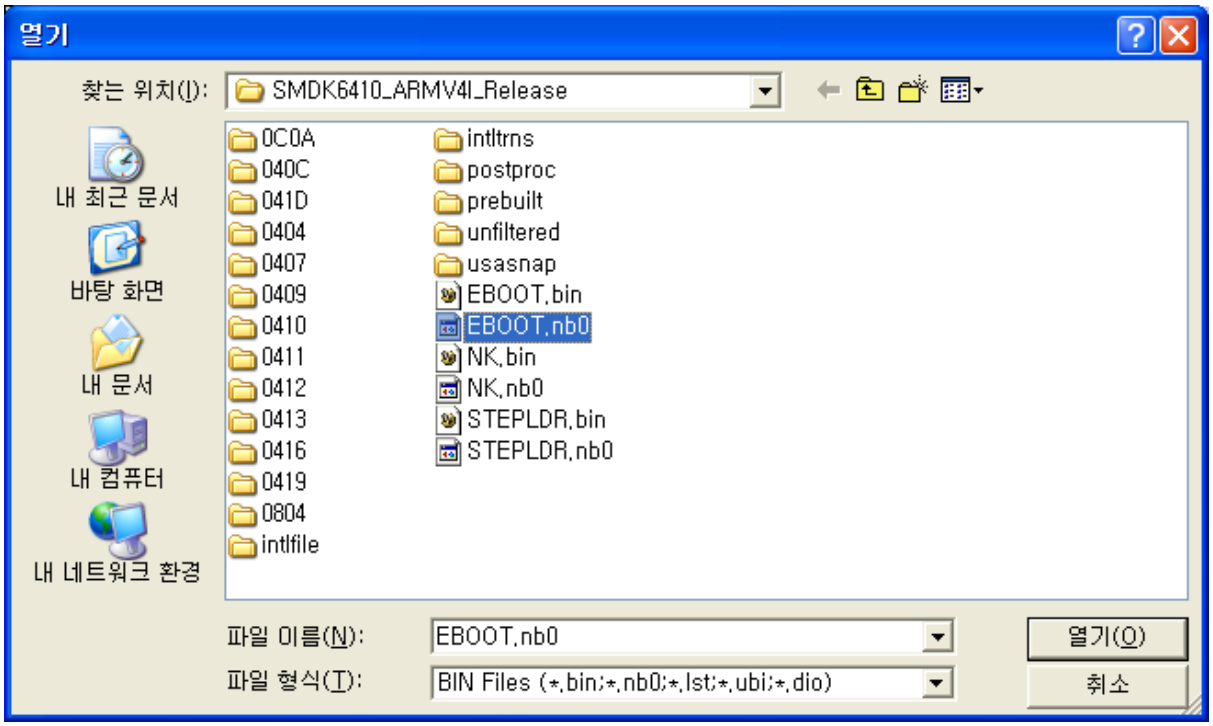

Figure 6-6 Selecting EBOOT.nb0 for Download

10. As soon as **EBOOT.nb0** download is over, the following messages appear in the DNW window**.**

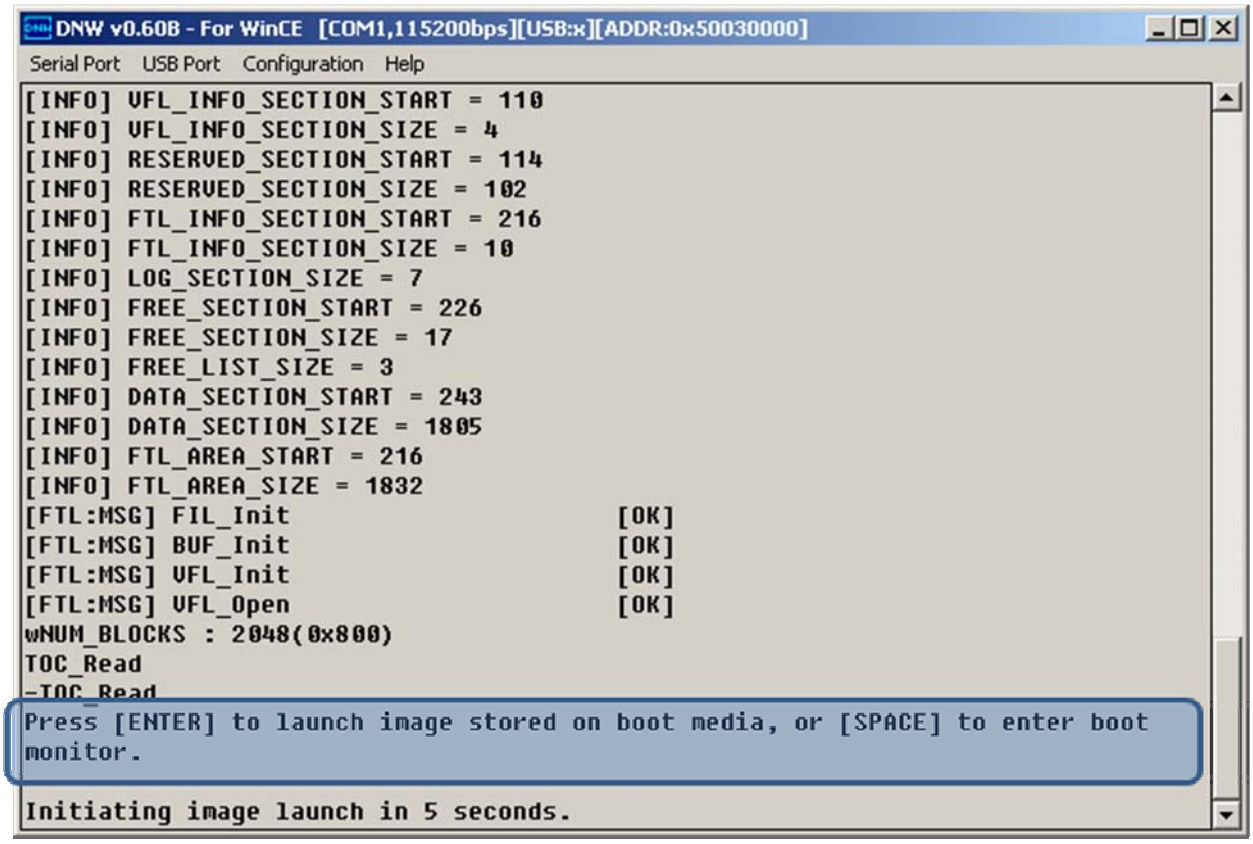

Figure 6-7 After EBOOT.nb0 Download

11. Please hit the **SPACE BAR** key to view the current Ethernet Boot Loader Configuration.

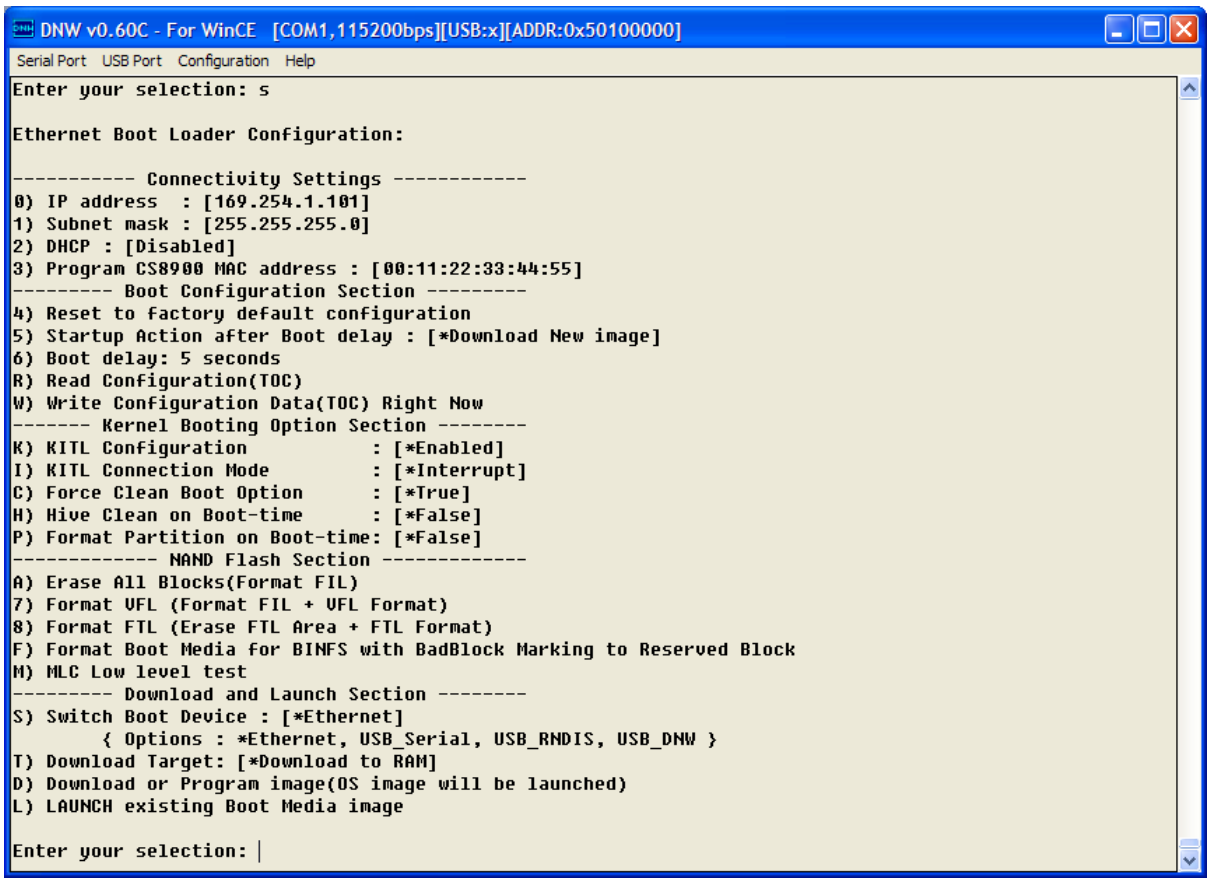

Figure 6-8 Ethernet Boot Loader Configuration - Before

12. And **then Enter [A]** for Erase All Blocks. If so, You can see the below window.

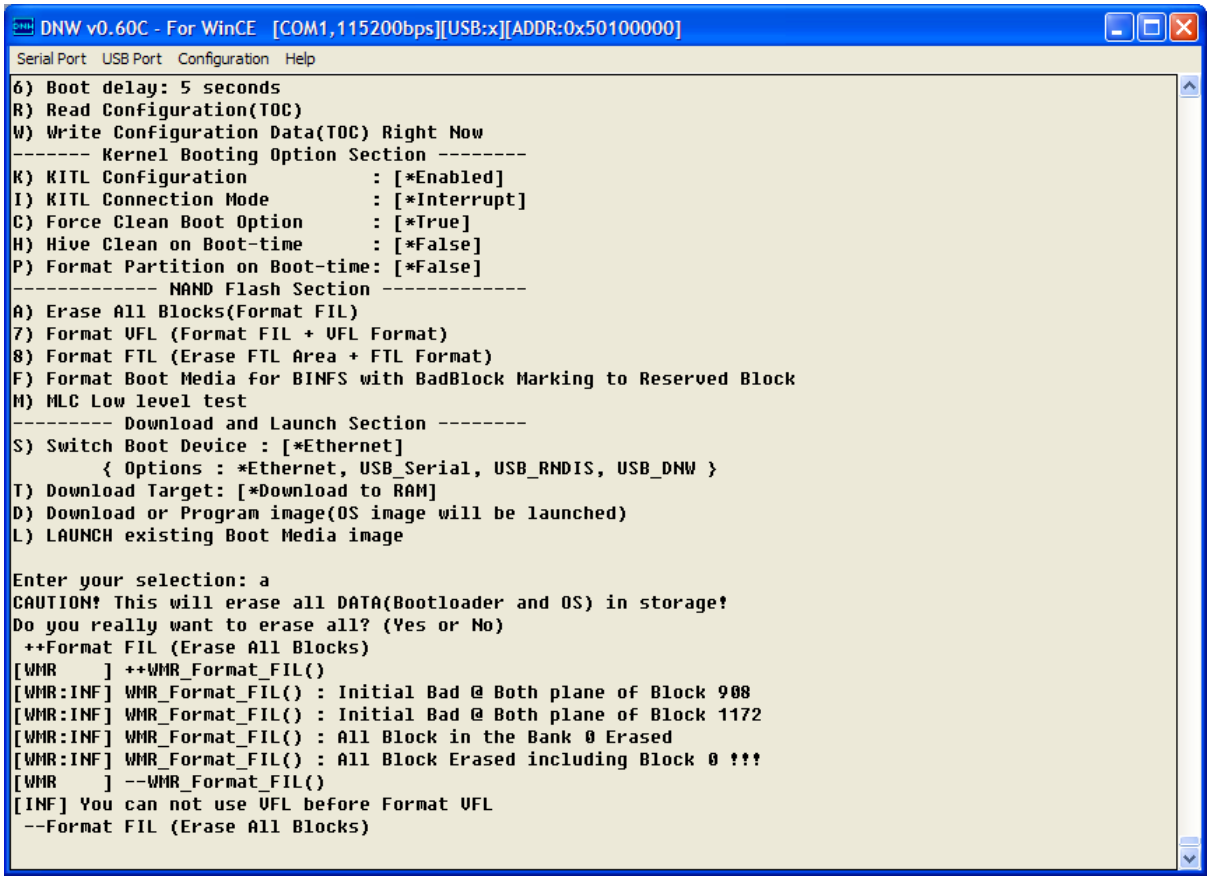

Figure 6-9 Format FIL (Erase All Blocks)

13. Reset the board. DNW window appears as shown in figure 6-10.

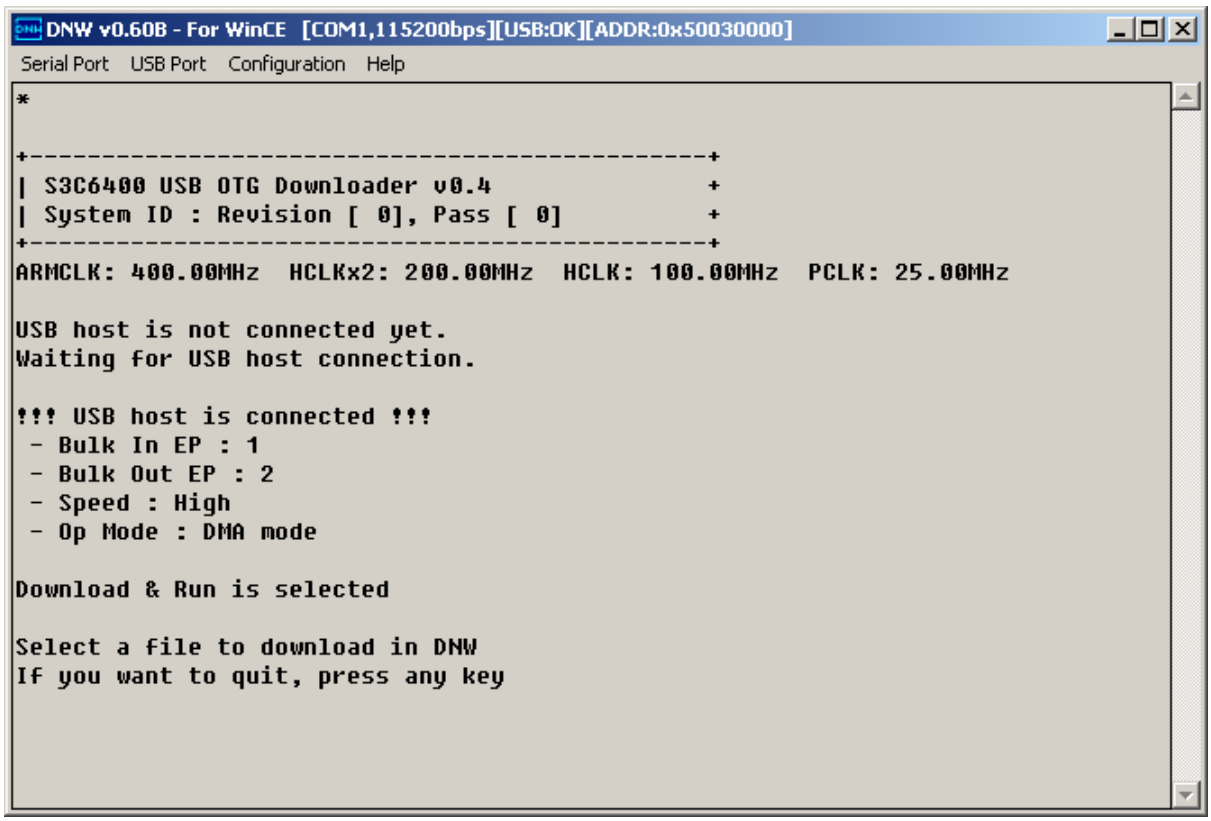

Figure 6-10 DNW Window after reset

14. On the **USB Port** menu, click **Transmit** and the following window appears on your screen. Select **EBOOT.nb0** file from **X:\WINCE600\OSDesigns\[OSDesign name] \[OSDesign name]\RelDir\SMDK6410_ARMV4I _Release** directory and then click **Open** button.

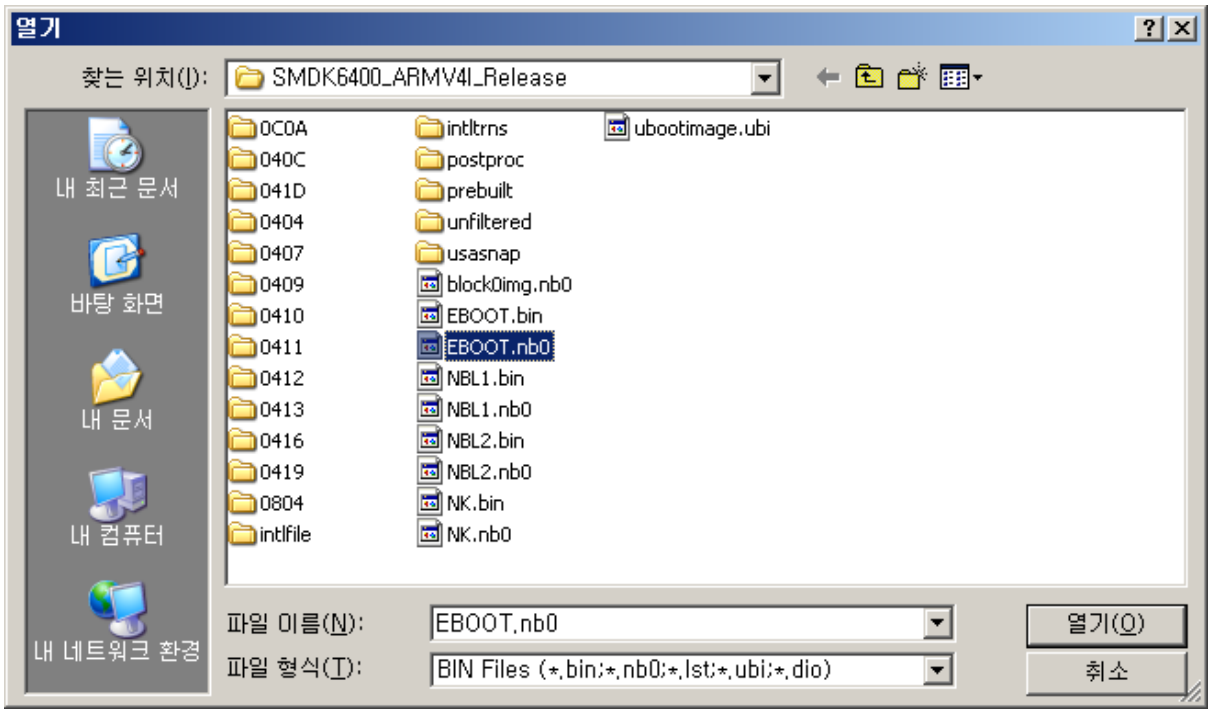

Figure 6-11 Selecting EBOOT.nb0 for Download

15. As soon as **EBOOT.nb0** download is over, the following messages appear in the DNW window**.**

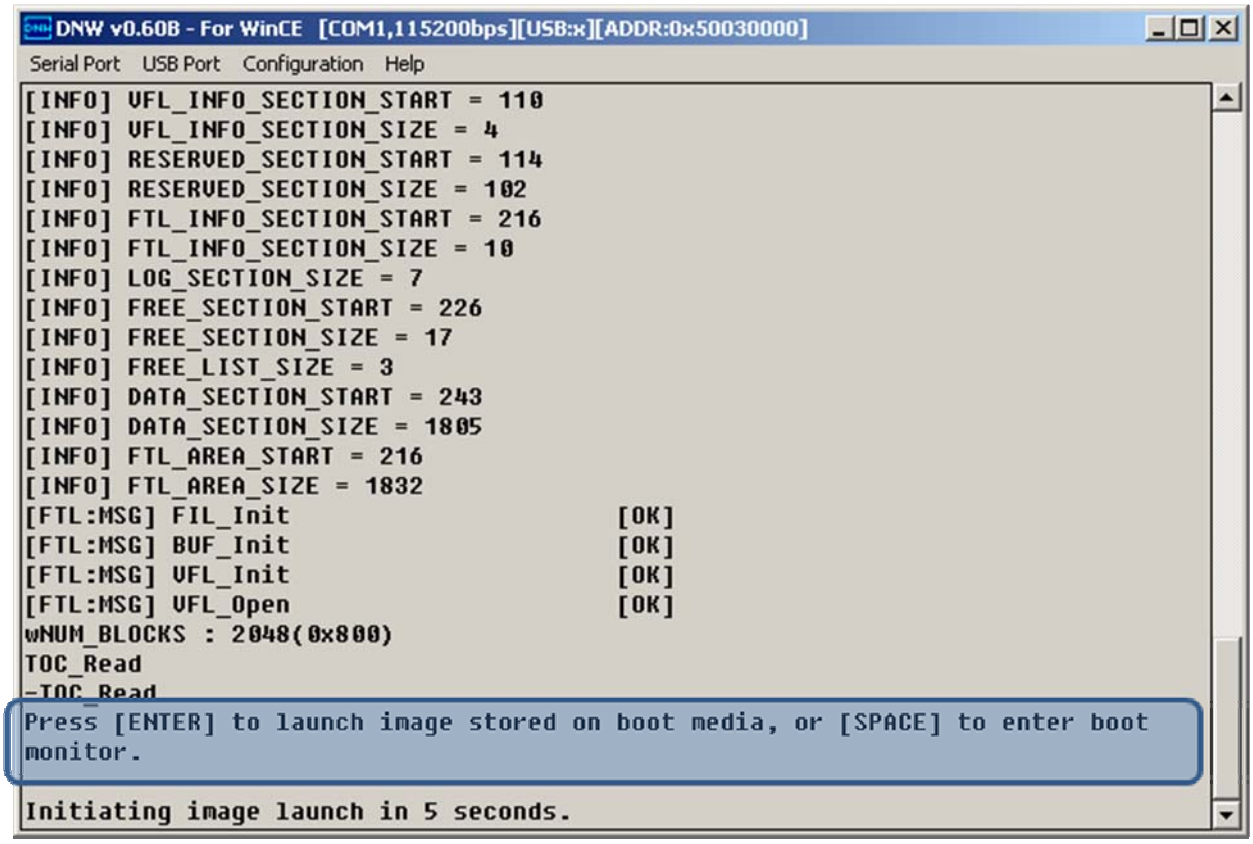

Figure 6-12 After EBOOT.nb0 Download

16. Please hit the **SPACE BAR** key to view the current Ethernet Boot Loader Configuration.

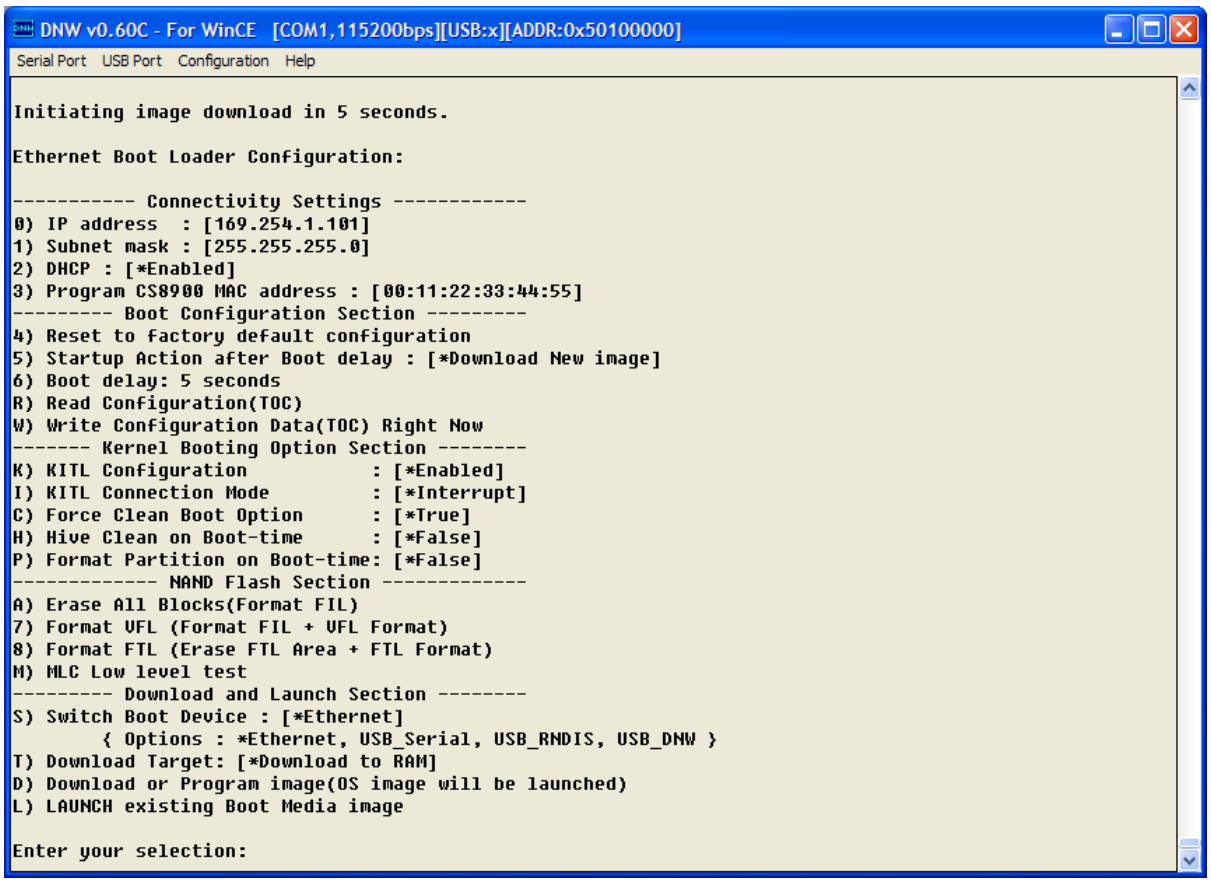

Figure 6-13 Ethernet Boot Loader Configuration - Before

17. Configure the Ethernet Boot loader as follows by entering the respective options:

- Enter **[5]** to change **Startup action after Boot Delay** to Launch Existing OS image from Storage. Default values is Download New Image
- Enter **[T]** to change **Download Target** to Write to NAND Storage. Default value is Download to RAM
- Enter **[K]** to change **KITL Configuration** to DISABLE. Default value is Enabled
- Enter **[S]** twice to change **Boot Device** to USB_DNW. Default value is Ethernet.
- Enter **[W]** to **Write Configuration Right Now**

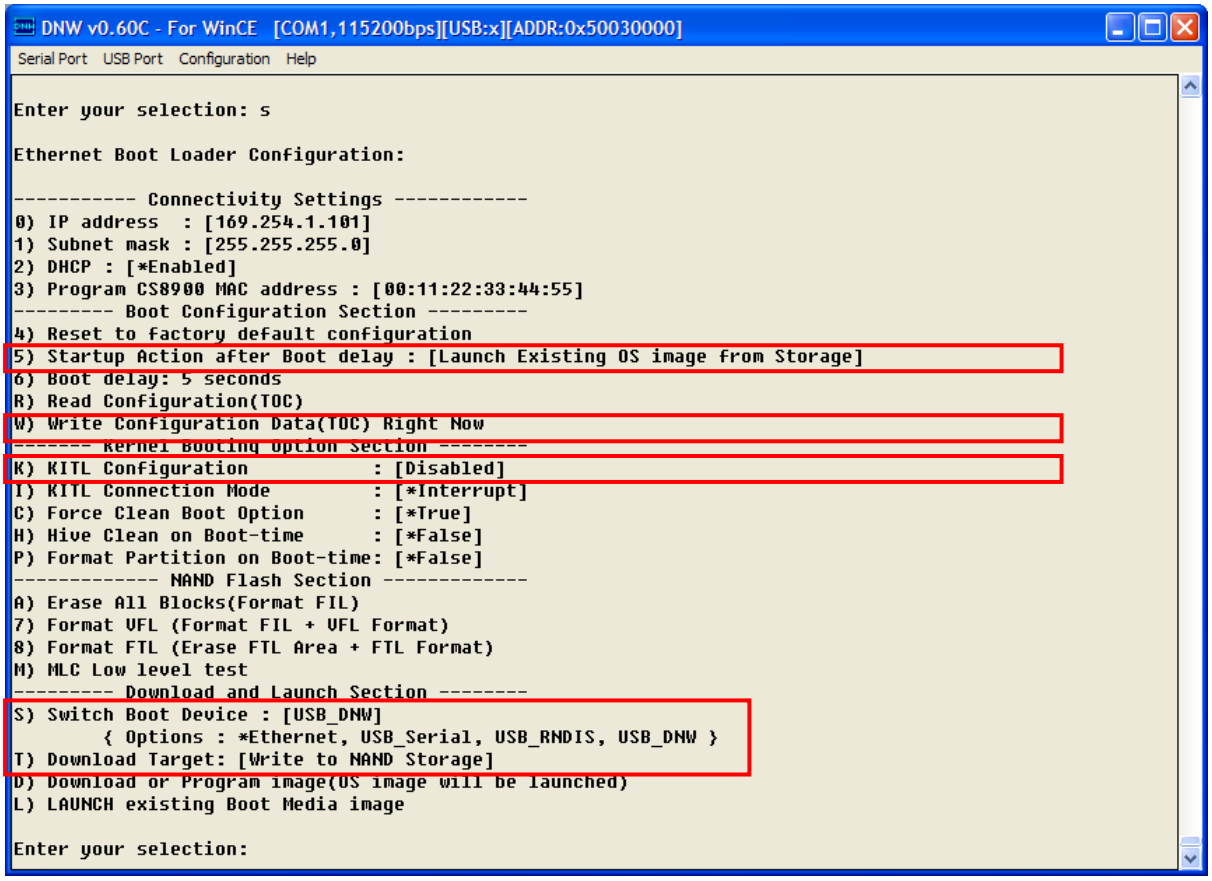

Figure 6-14 Ethernet Boot Loader Configuration - After

18. Change the **[0] IP address** and **[1] Subnet Mask** manually on your **Host PC** in **TCP/IP properties** before you start to download the OS image to the target board via Ethernet or USB_RNDIS. For example, if the Target Board IP Address is 192.168.1.200, then set Host PC IP address as 192.168.1.100. Set the subnet mask as 255.255.255.0. If you has some collision. Try to change the **[3] MAC Address** like 33:44:55:66:77:88. **You can skip this step for downloading via USB_DNW or USB_Serial.**

    And E**nter [D]** to **Download image with selected Boot device**. Then you can see the below messages.

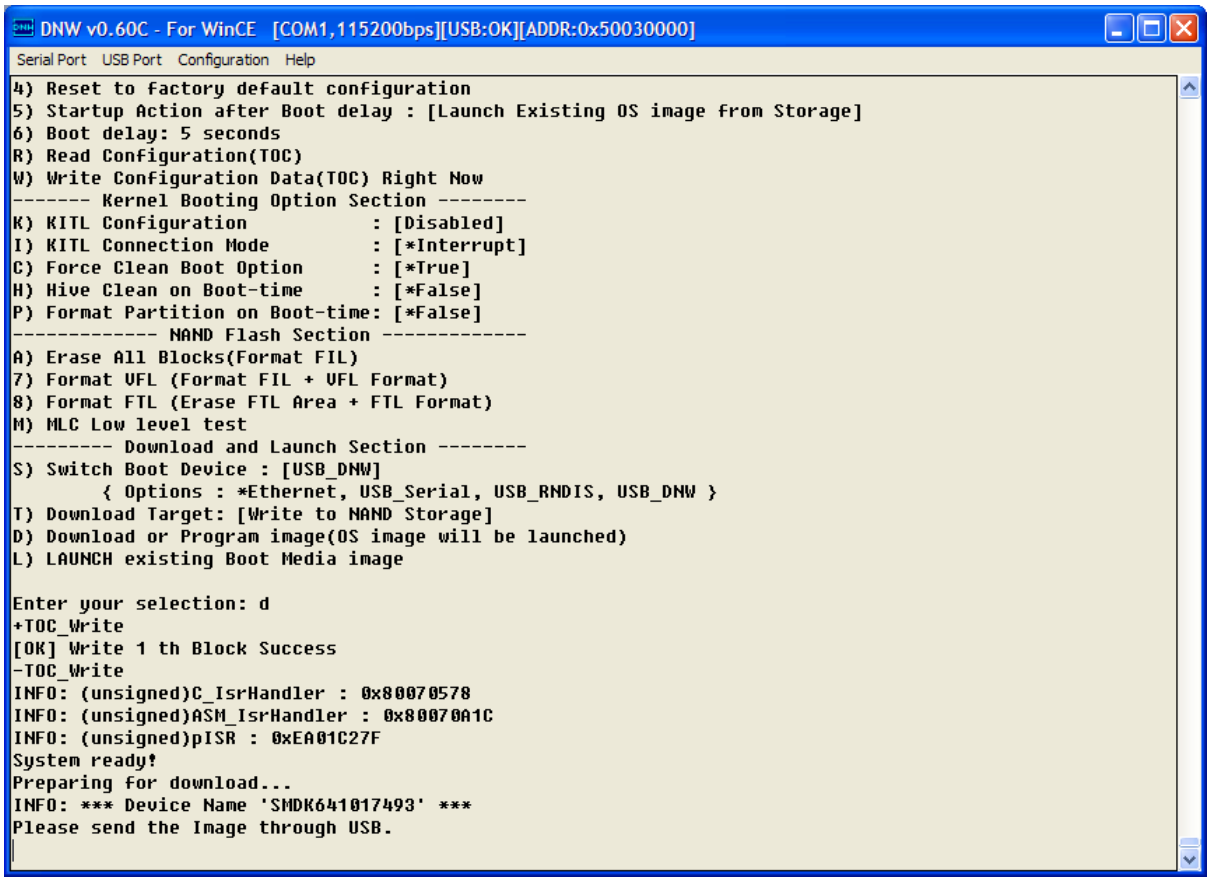

Figure 6-15 Preparing to download image through USB

19. On the **USB Port** menu click **UBOOT** and the following window appears on your screen. Select **block0img.nb0** from **X:\WINCE600\OSDesigns\[OSDesign name]\[OSDesign name]\ RelDir\SMDK6410_ARMV4I _Release** directory and then click **Open** button.

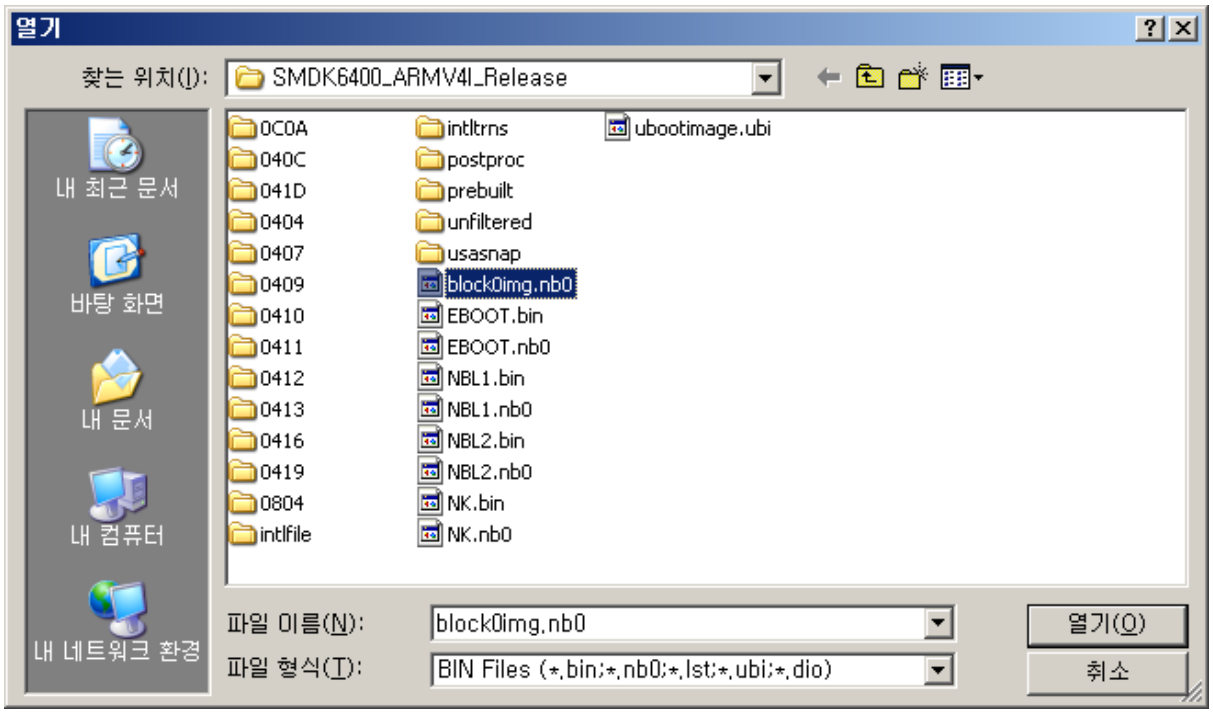

Figure 6-16 Selecting block0img.nb0 for Download

20. You can see the following messages on the DNW window after **block0img.nb0** download is over.

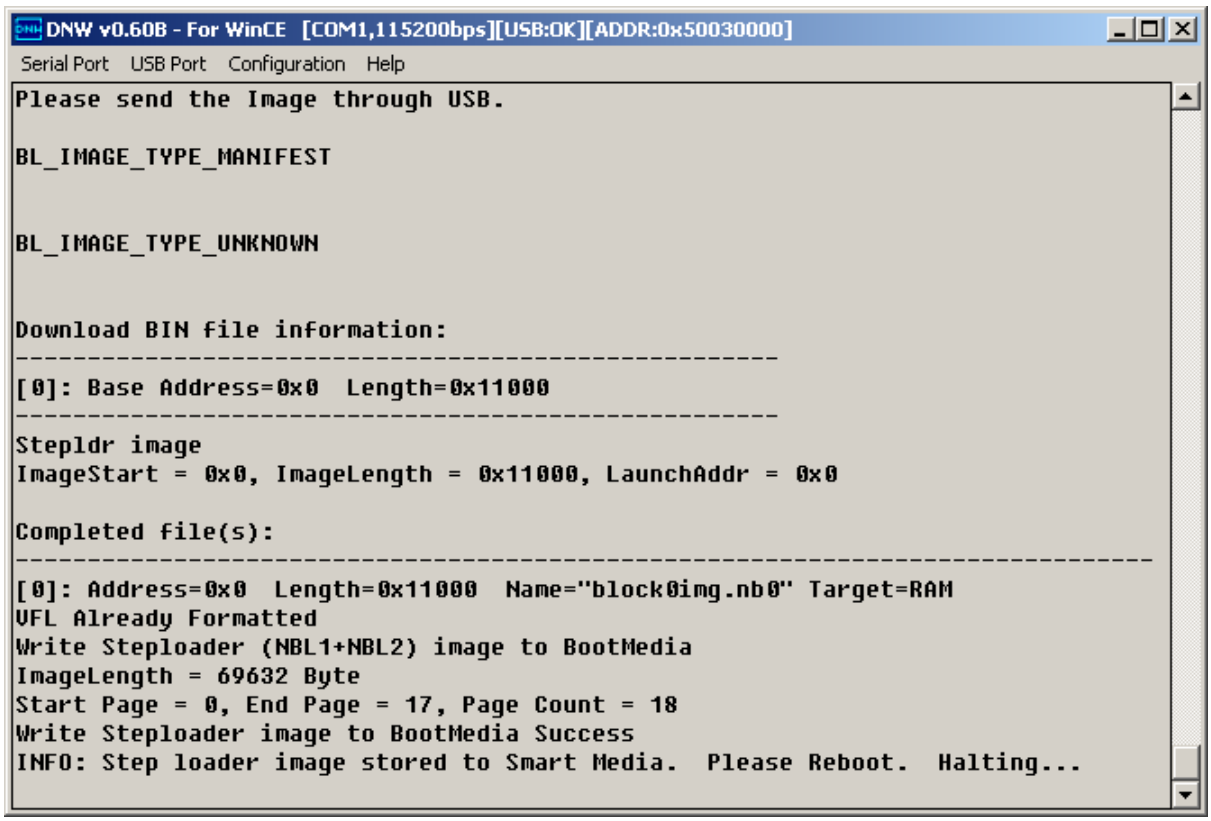

Figure 6-17 Messages via UART Port after block0img.nb0 Download

21. Reset the board. DNW window appears as shown in figure 6-18.

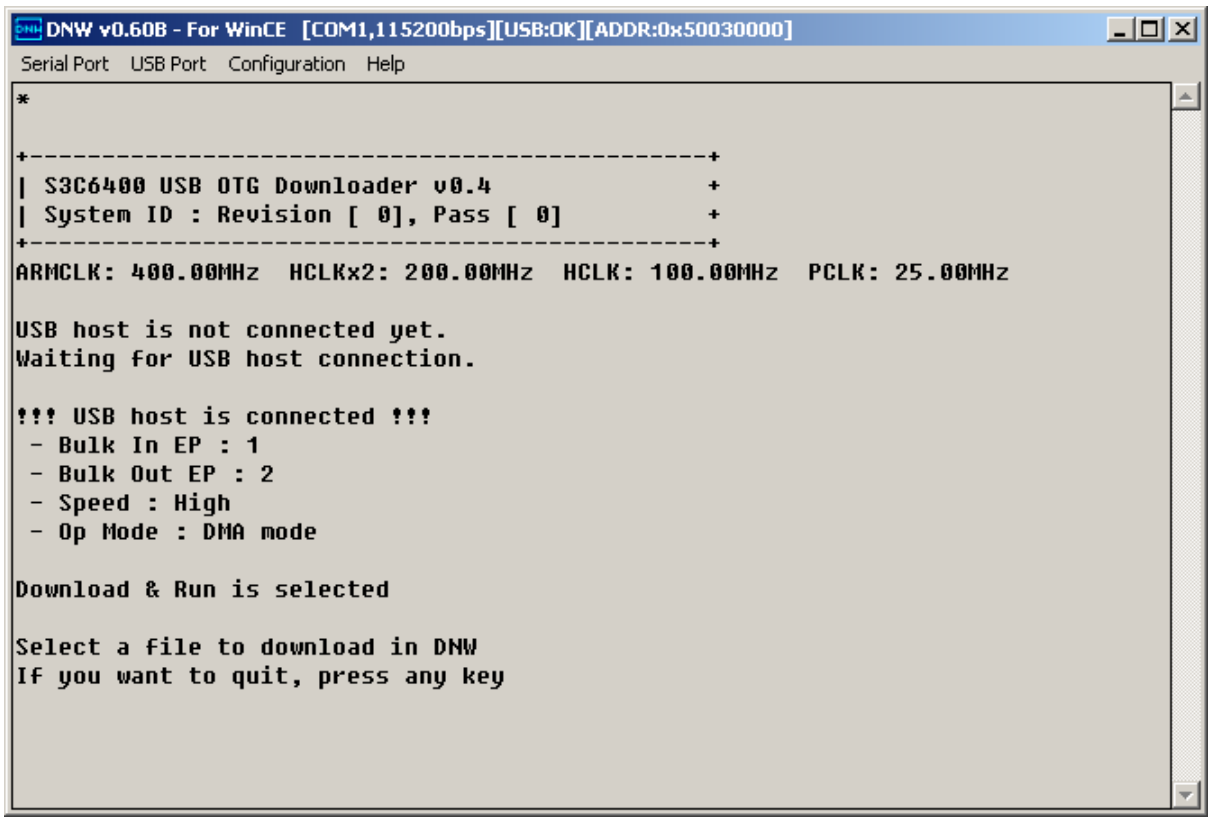

Figure 6-18 DNW Window after reset

22. On the **USB Port** menu, click **Transmit** and the following window appears on your screen. Select **EBOOT.nb0** file from **X:\WINCE600\OSDesigns\[OSDesign name] \[OSDesign name]\RelDir\SMDK6410_ARMV4I _Release** directory and then click **Open** button.

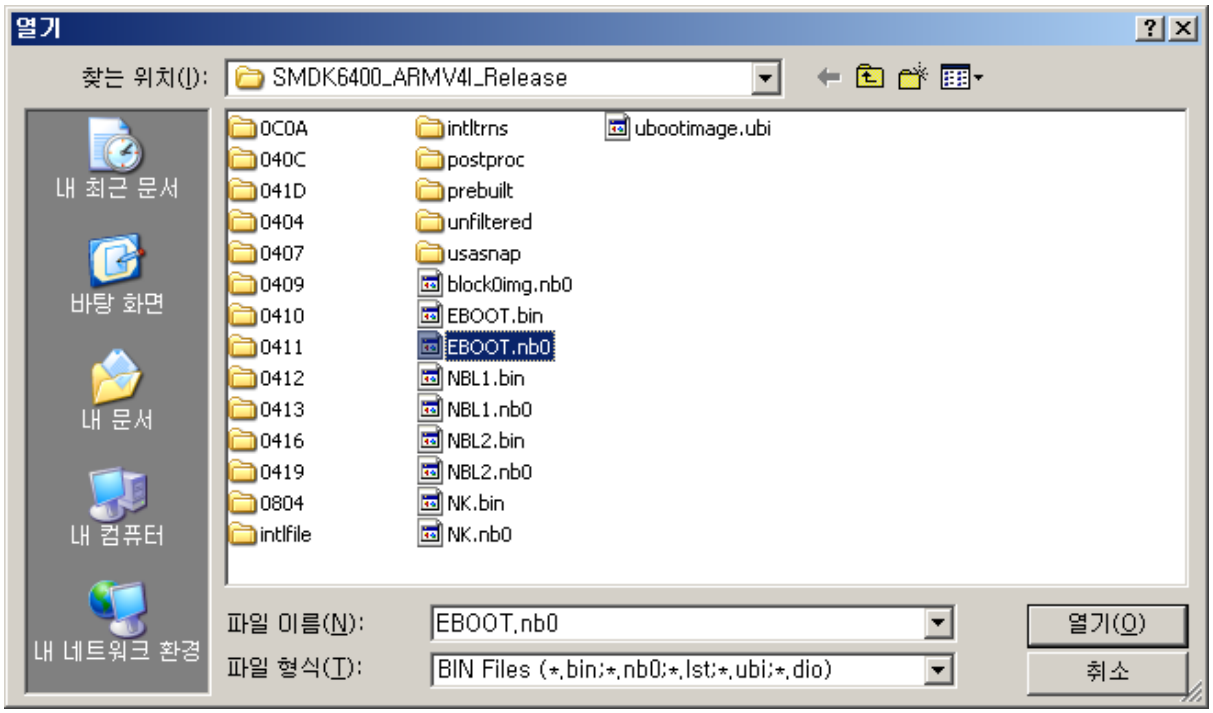

Figure 6-19 Selecting EBOOT.nb0 for Download

23. As soon as **EBOOT.nb0** download is over, the following messages appear in the DNW window.

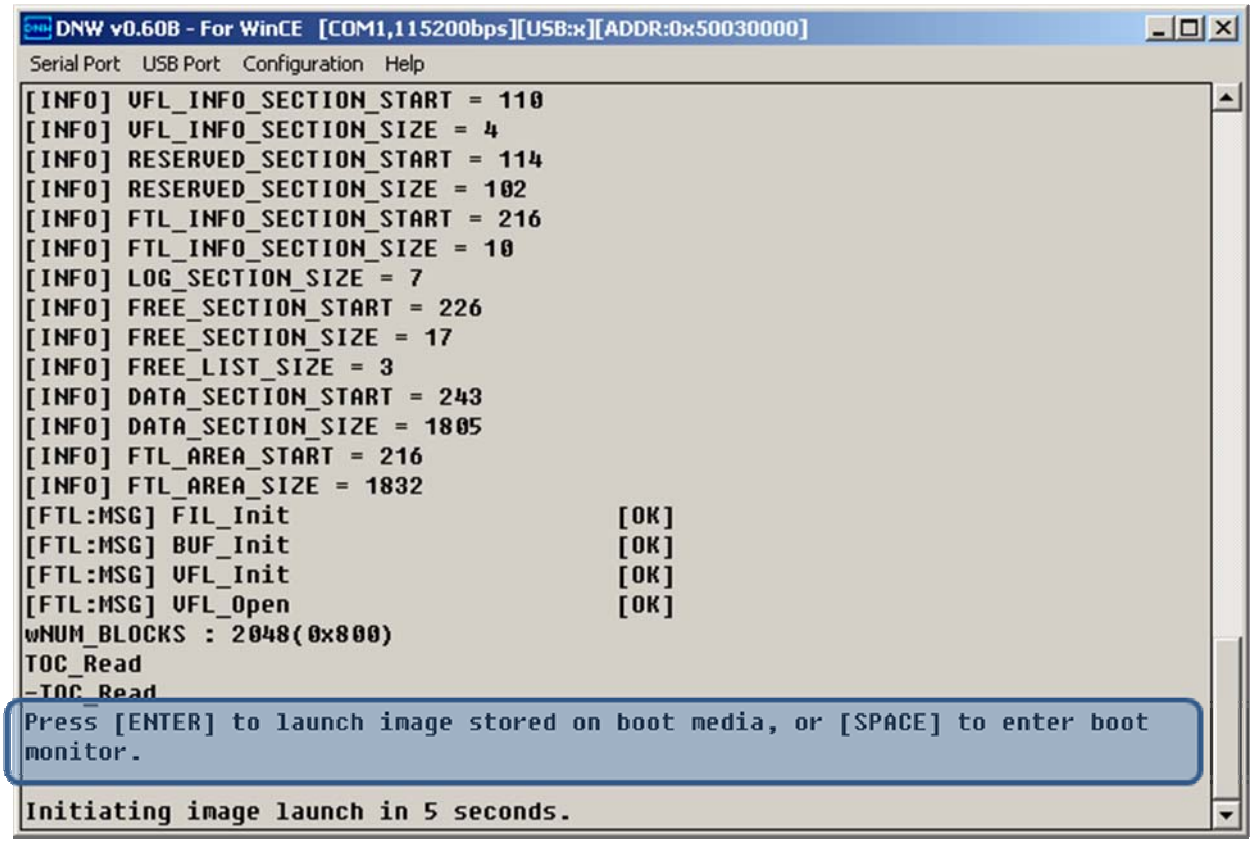

Figure 6-20 After EBOOT.nb0 Download

24. Please hit the **SPACE BAR** key to view the current Ethernet Boot Loader Configuration.

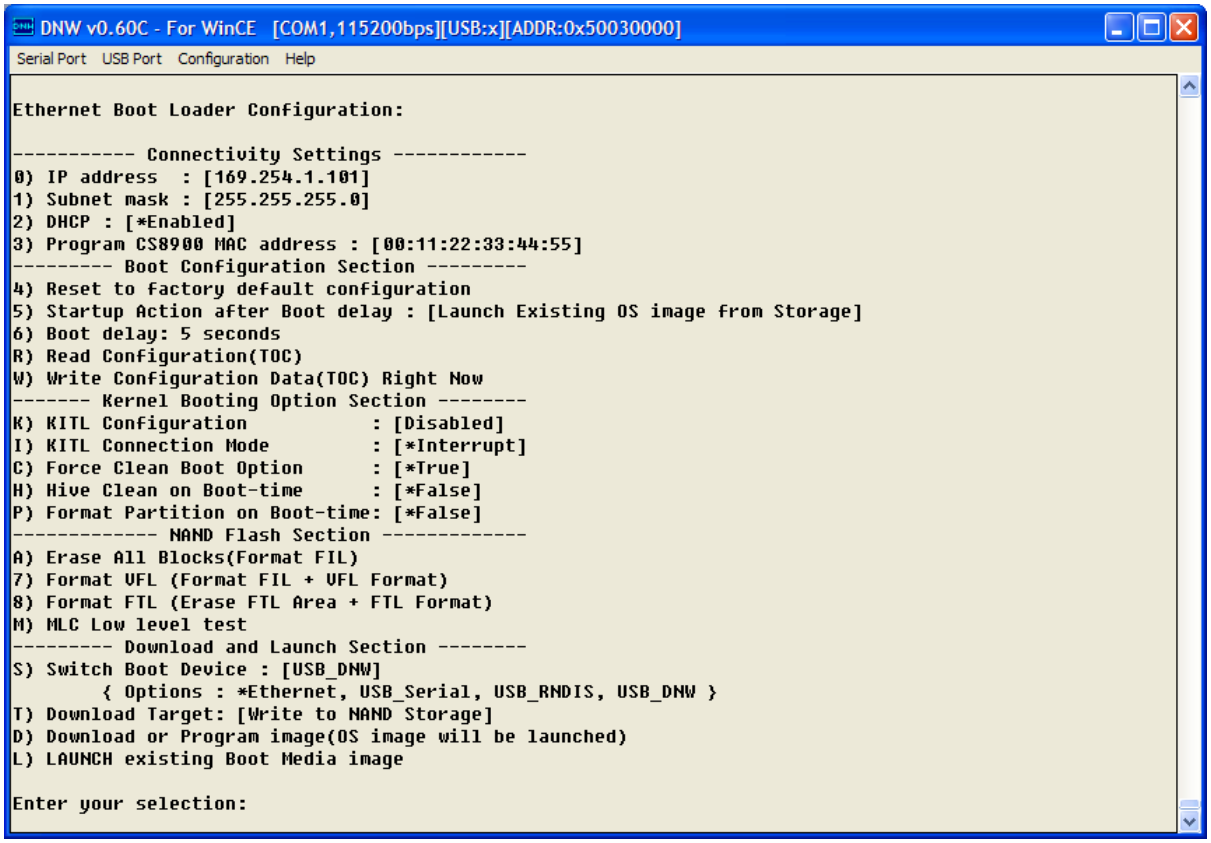

Figure 6-21 Ethernet Boot Loader Configuration

25. Enter **[D]** to **Download image,** the following messages appear in the DNW window.

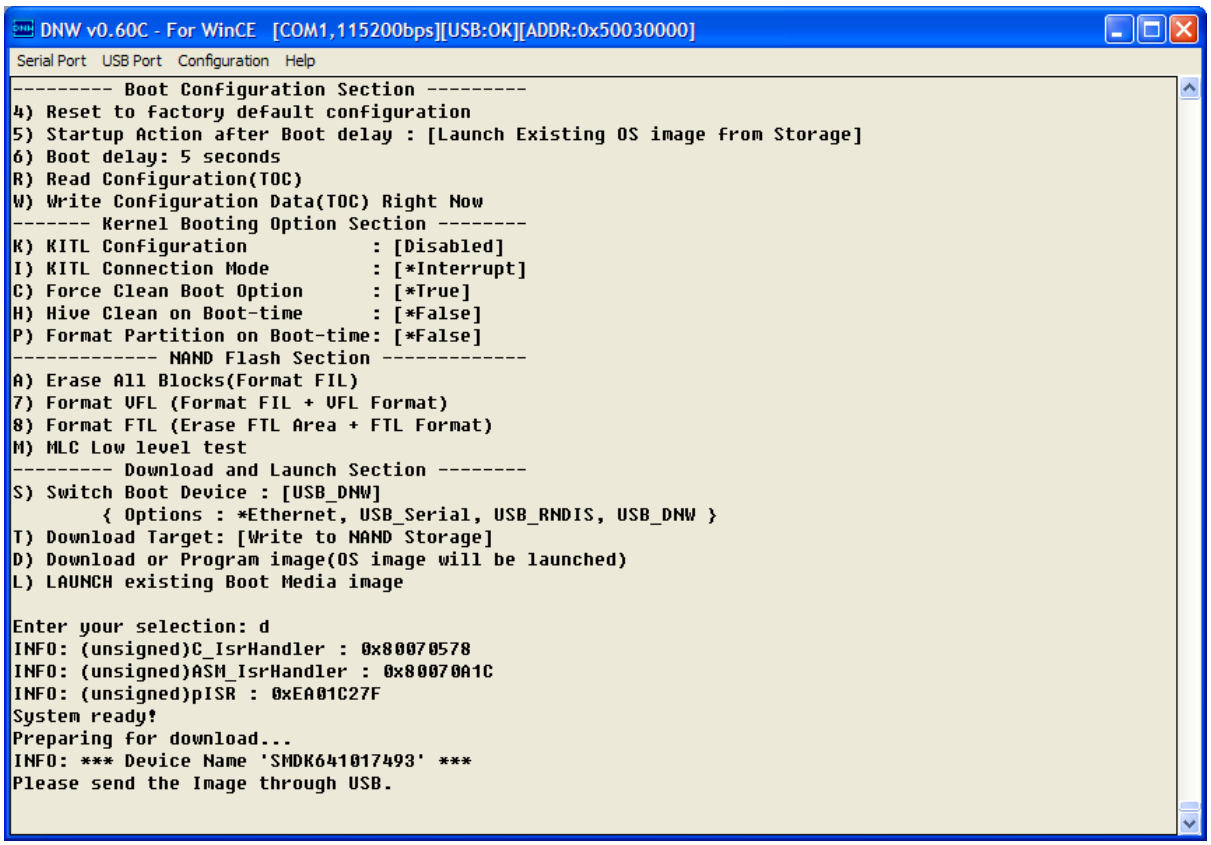

Figure 6-22 Preparing to download image through USB

26. On the **USB Port** menu click **UBOOT** and the following window appears on your screen. Select **Eboot.bin** from **X:\WINCE600\OSDesigns\[OSDesign name]\[OSDesign name]\ RelDir\SMDK6410_ARMV4I _Release** directory and then click **Open** button.

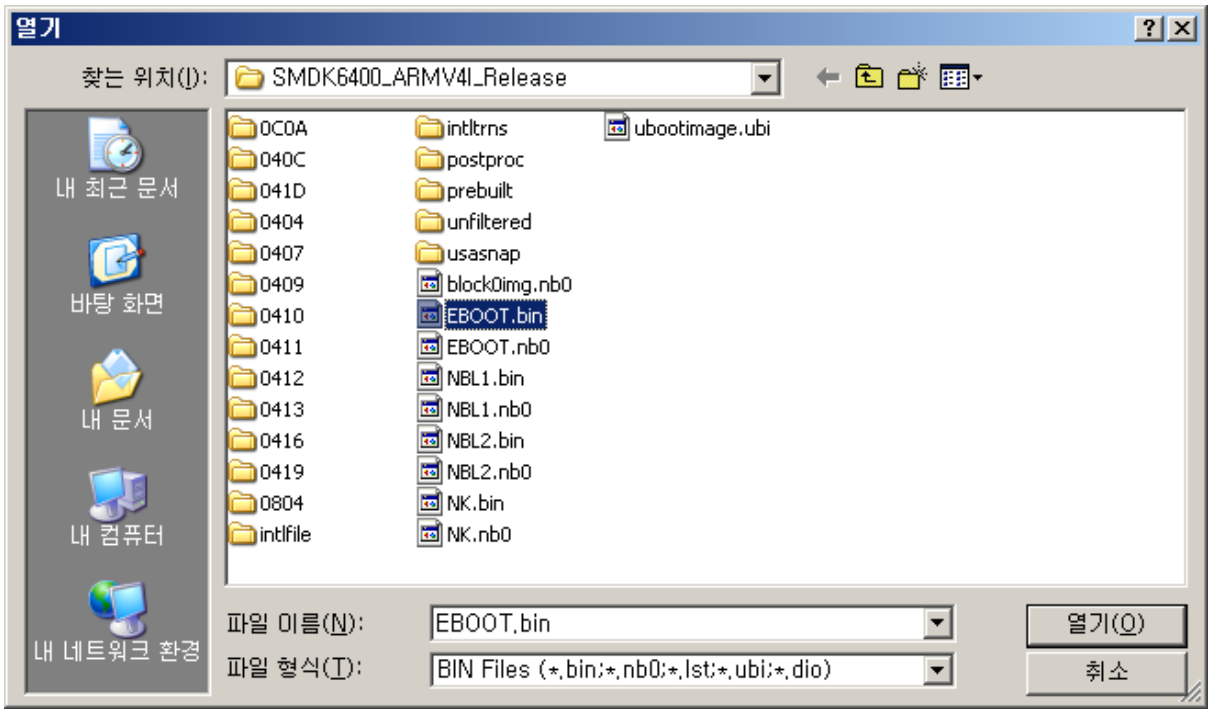

Figure 6-23 Selecting EBOOT.bin for Download

27. You can see the following messages on the DNW window after **EBOOT.bin** download.

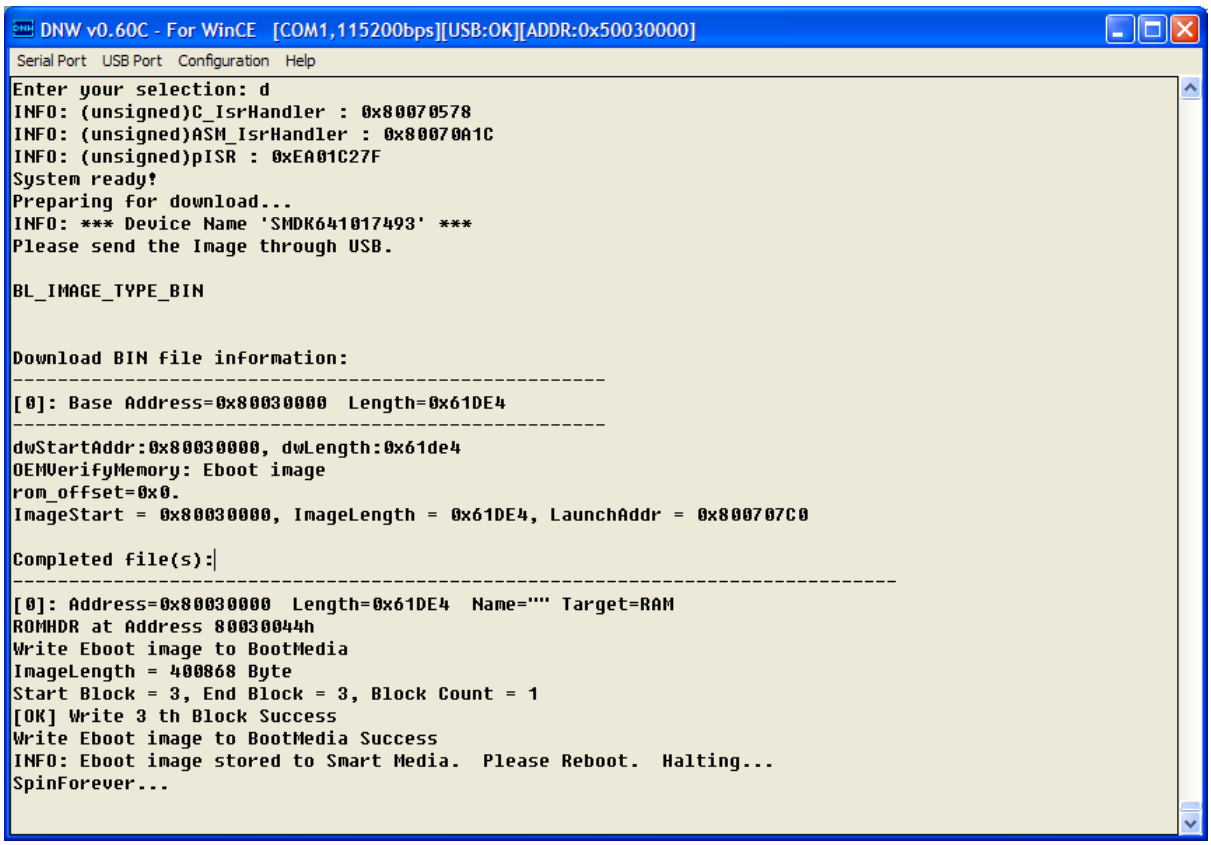

Figure 6-24 Messages via UART Port after EBOOT.bin Download

28. Reset the board. DNW window appears as shown in figure 6-25.

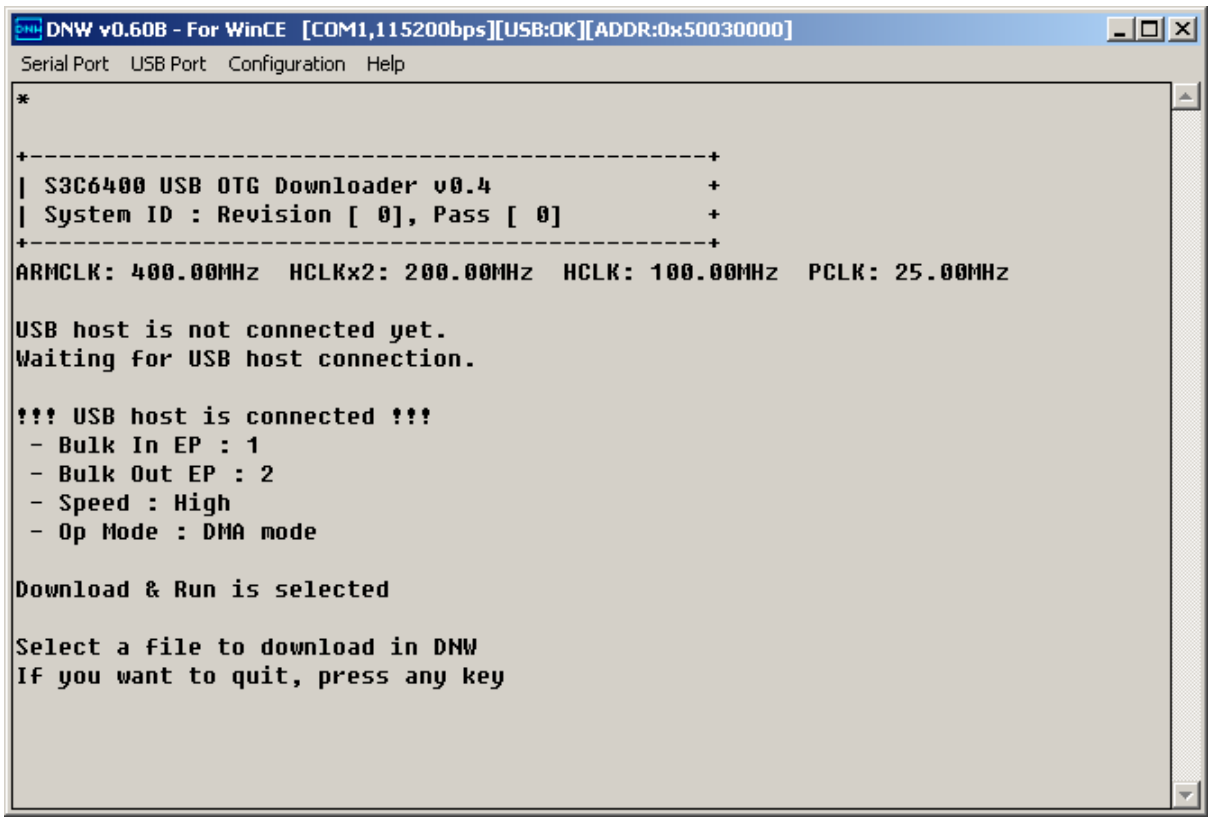

Figure 6-25 DNW Window after reset

29. On the **USB Port** menu, click **Transmit** and the following window appears on your screen. Select **EBOOT.nb0** file from **X:\WINCE600\OSDesigns\[OSDesign name] \[OSDesign name]\RelDir\SMDK6410_ARMV4I _Release** directory and then click **Open** button.

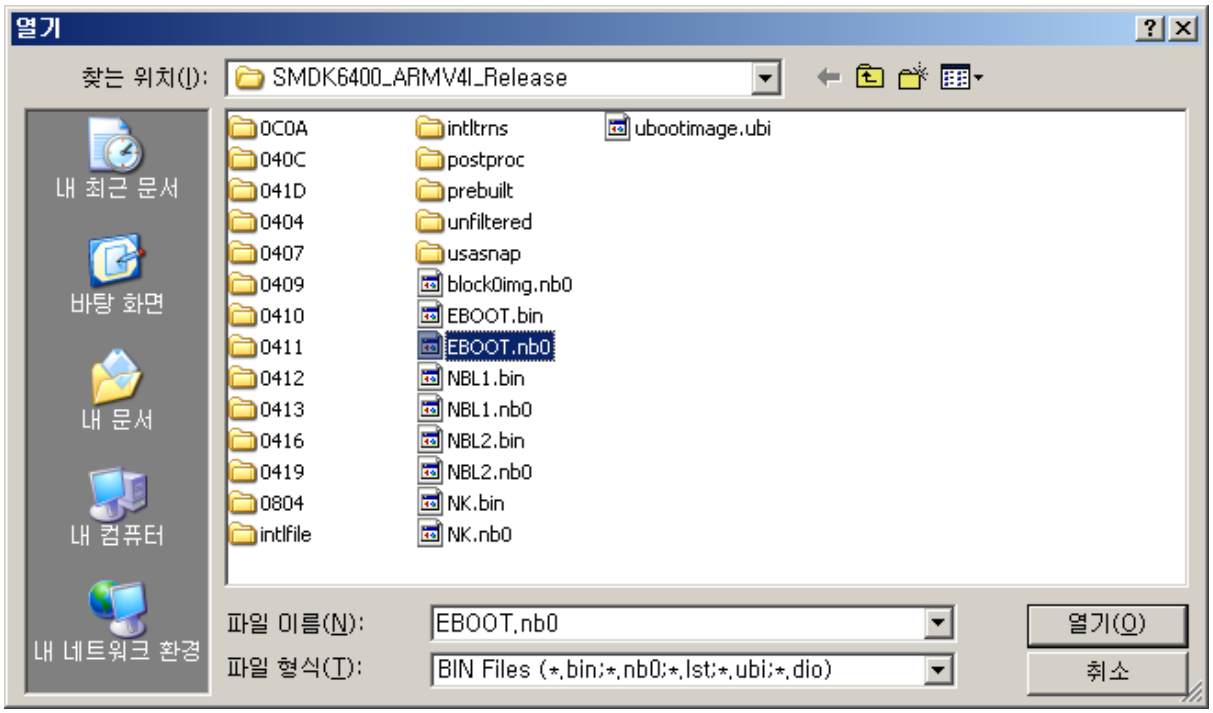

Figure 6-26 Selecting EBOOT.nb0 for Download

30. As soon as **EBOOT.nb0** download is over, the following messages appear in the DNW window.

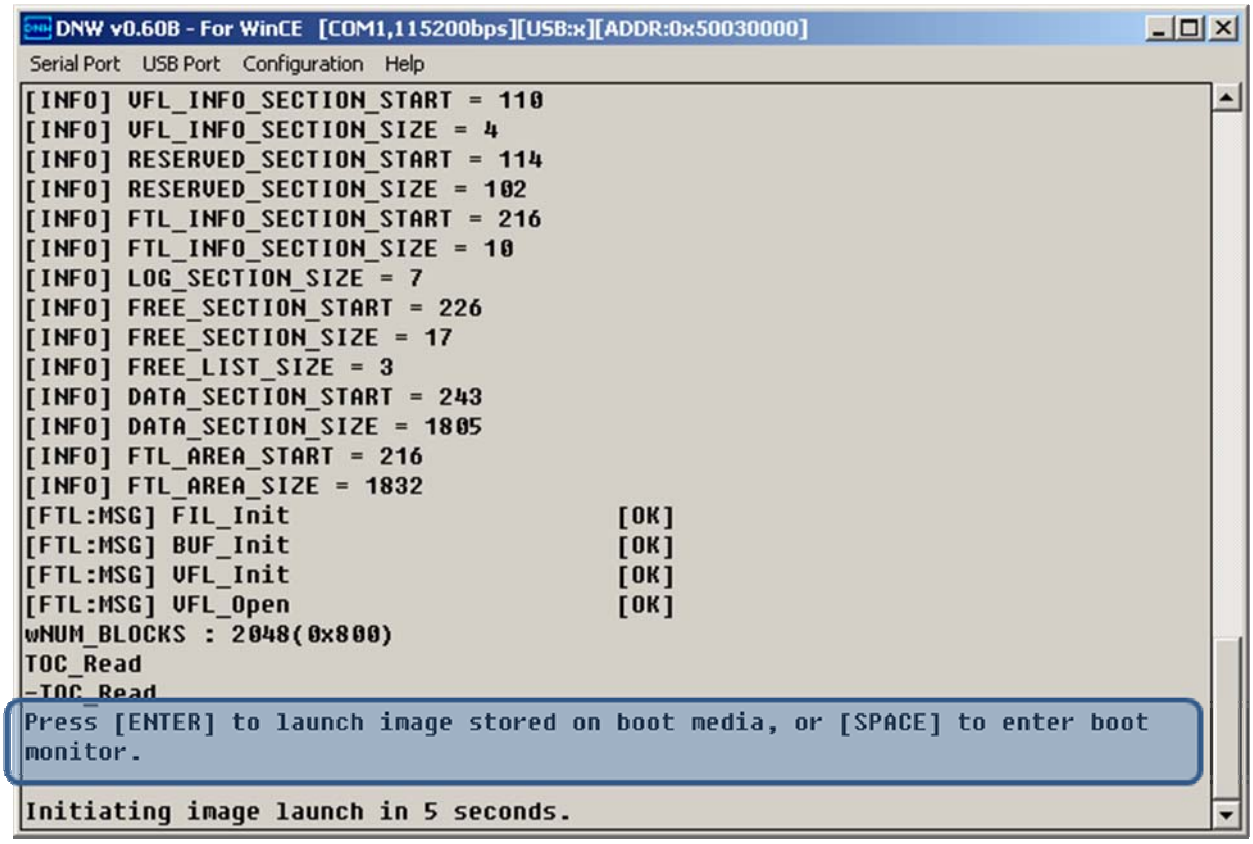

Figure 6-27 After EBOOT.nb0 Download

31. Please hit the **SPACE BAR** key to view the current Ethernet Boot Loader Configuration.

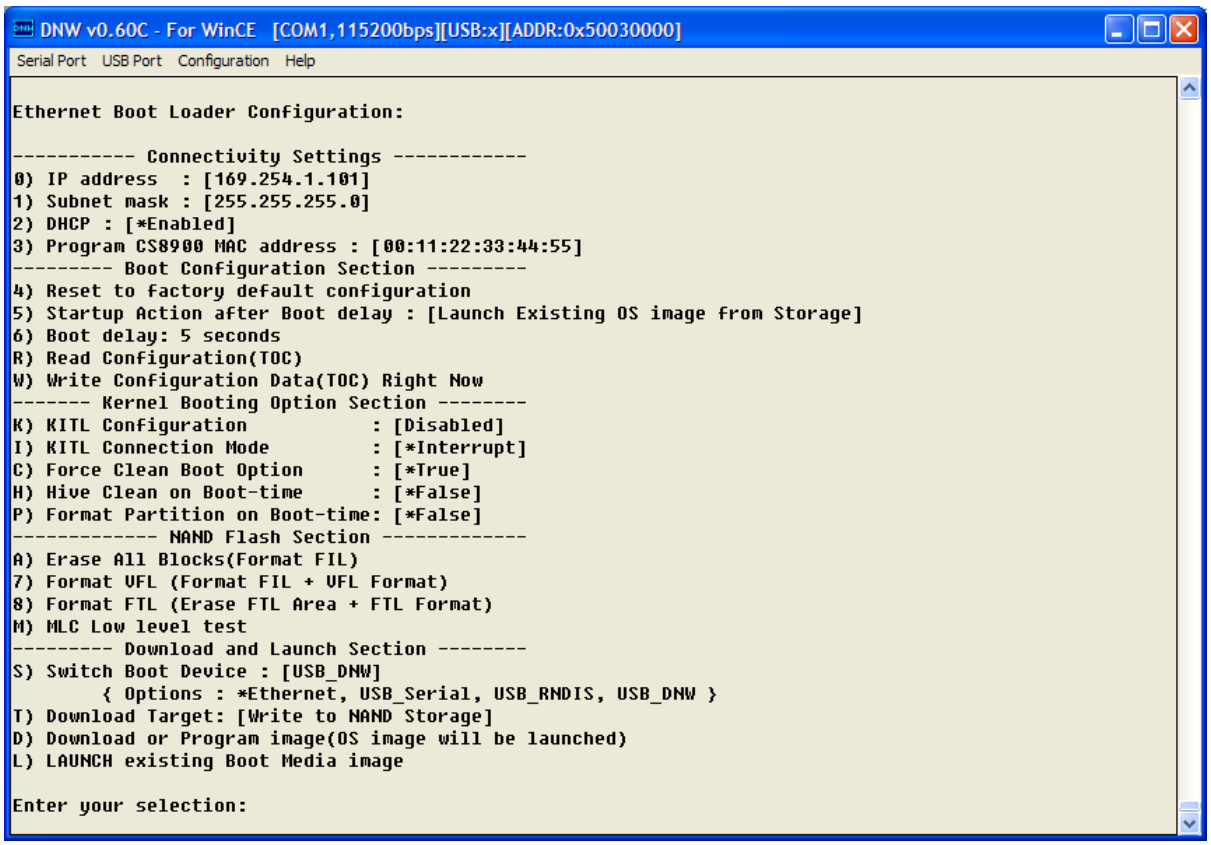

Figure 6-28 Ethernet Boot Loader Configuration

32. Enter **[D]** to **Download image,** the following messages appear in the DNW window.

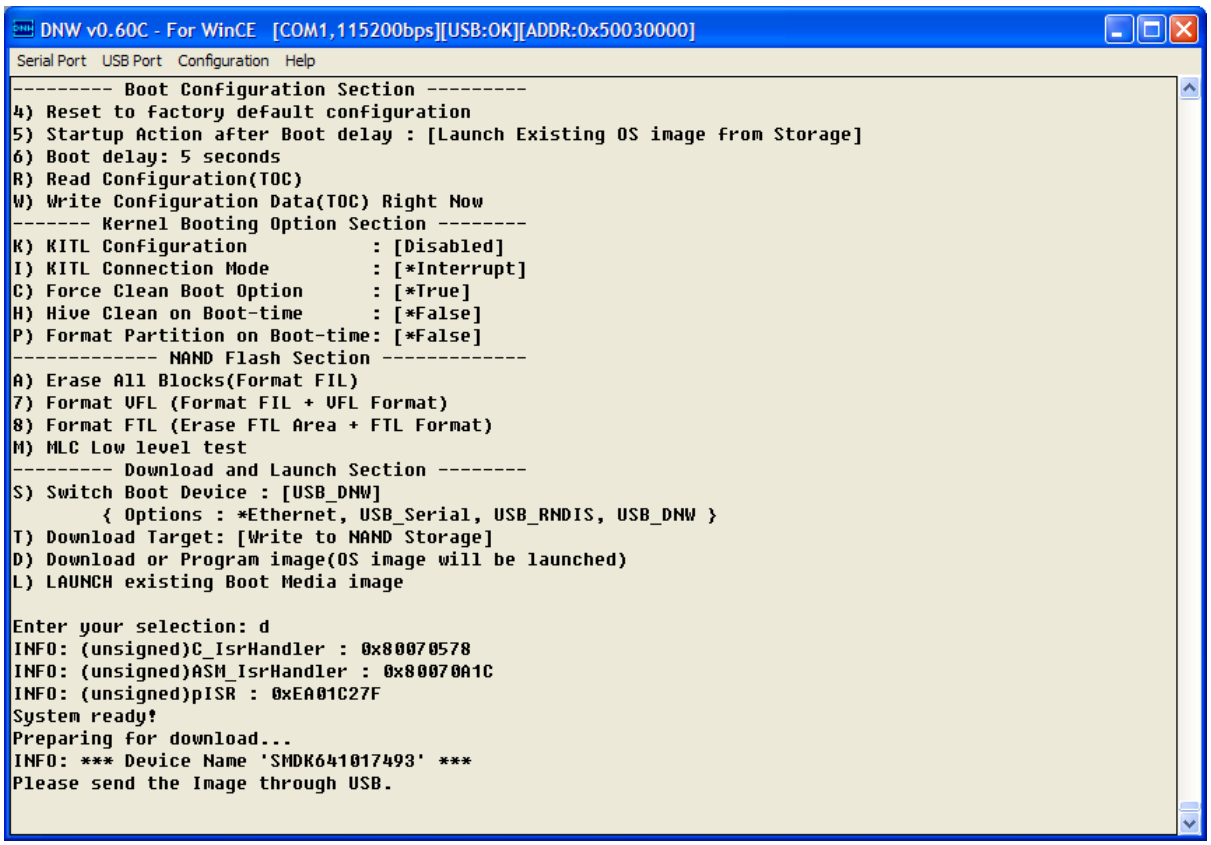

Figure 6-29 Preparing to download image through USB

33. On the **USB Port** menu click **UBOOT** and the following window appears on your screen. Select **NK.bin** from **X:\WINCE600\OSDesigns\[OSDesign name]\[OSDesign name]\ RelDir\SMDK6410_ARMV4I _Release** directory and then click **Open** button.

- Single-XIP (no IMGMULTIXIP) : Select NK.bin
- Multiple-XIP (IMGMULTIXIP=1) : Select chain.lst

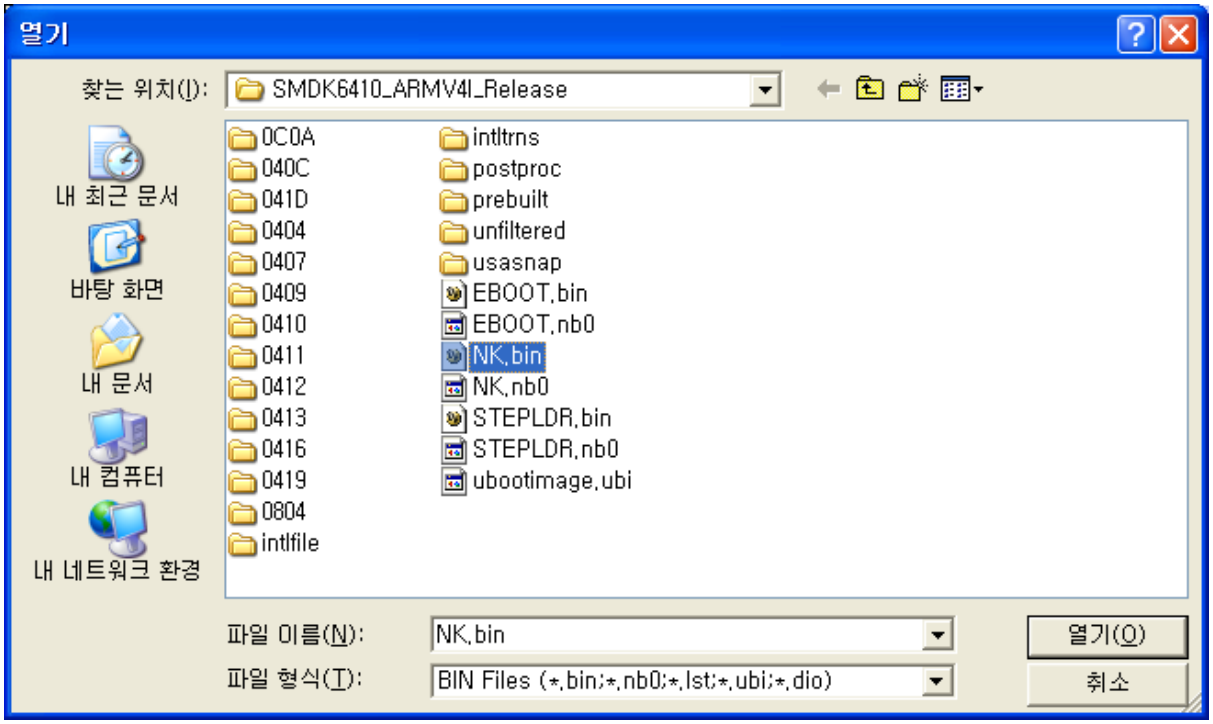

Figure 6-30 Selecting NK.bin for Download (no IMGMULTIXIP)

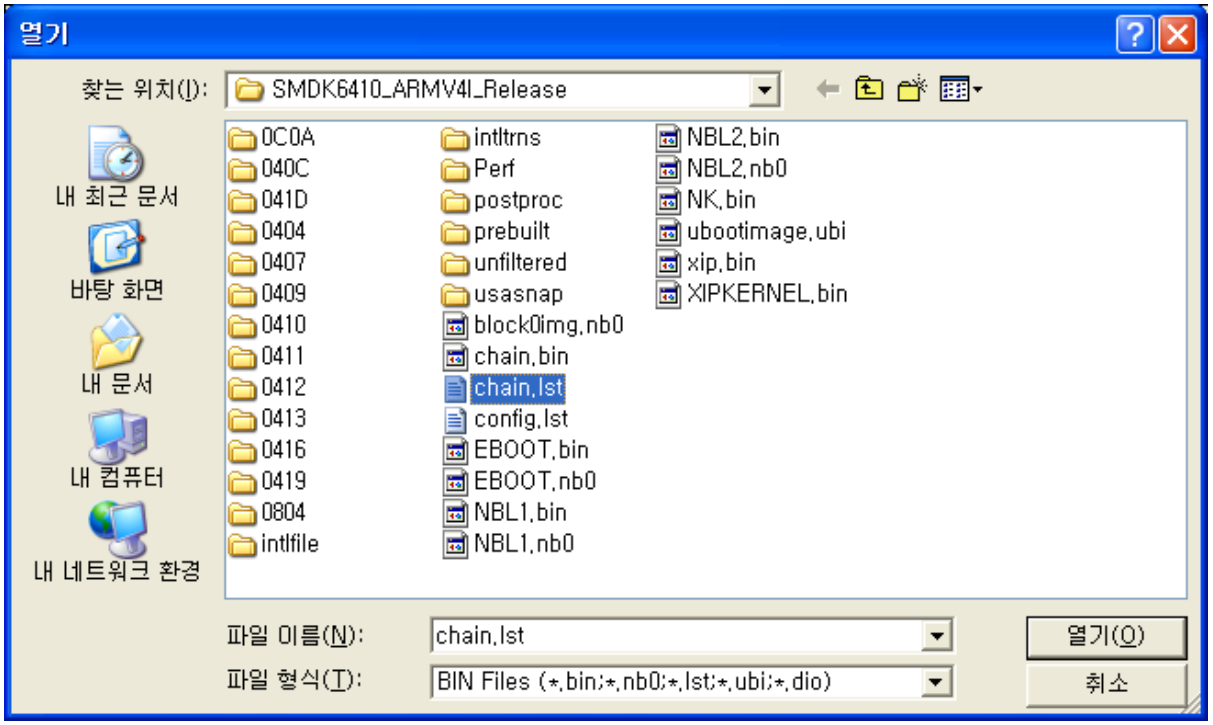

Figure 6-31 Selecting chain.lst for Download (IMGMULTIXIP=1)

34. You can see the following messages on the DNW window after OS image download.

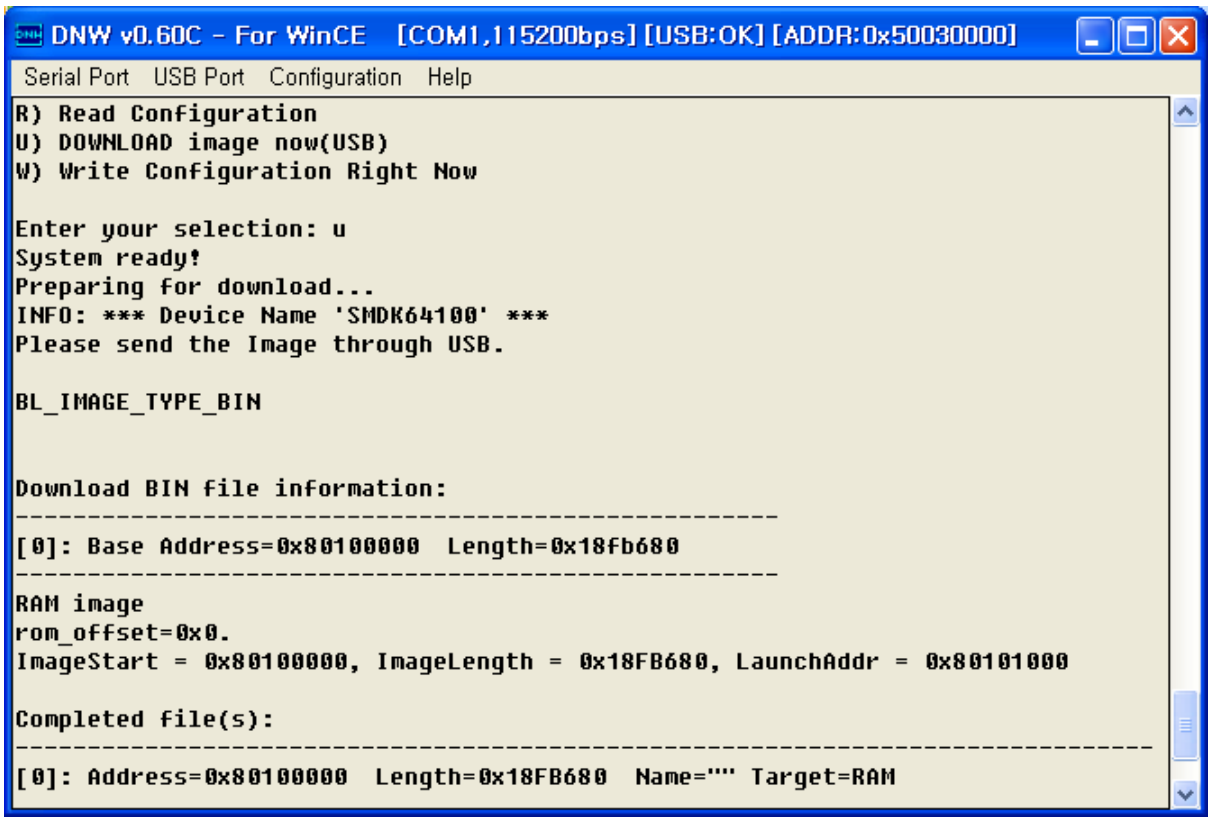

Figure 6-32 Messages via UART Port during NK.bin Download (no IMGMULTIXIP)

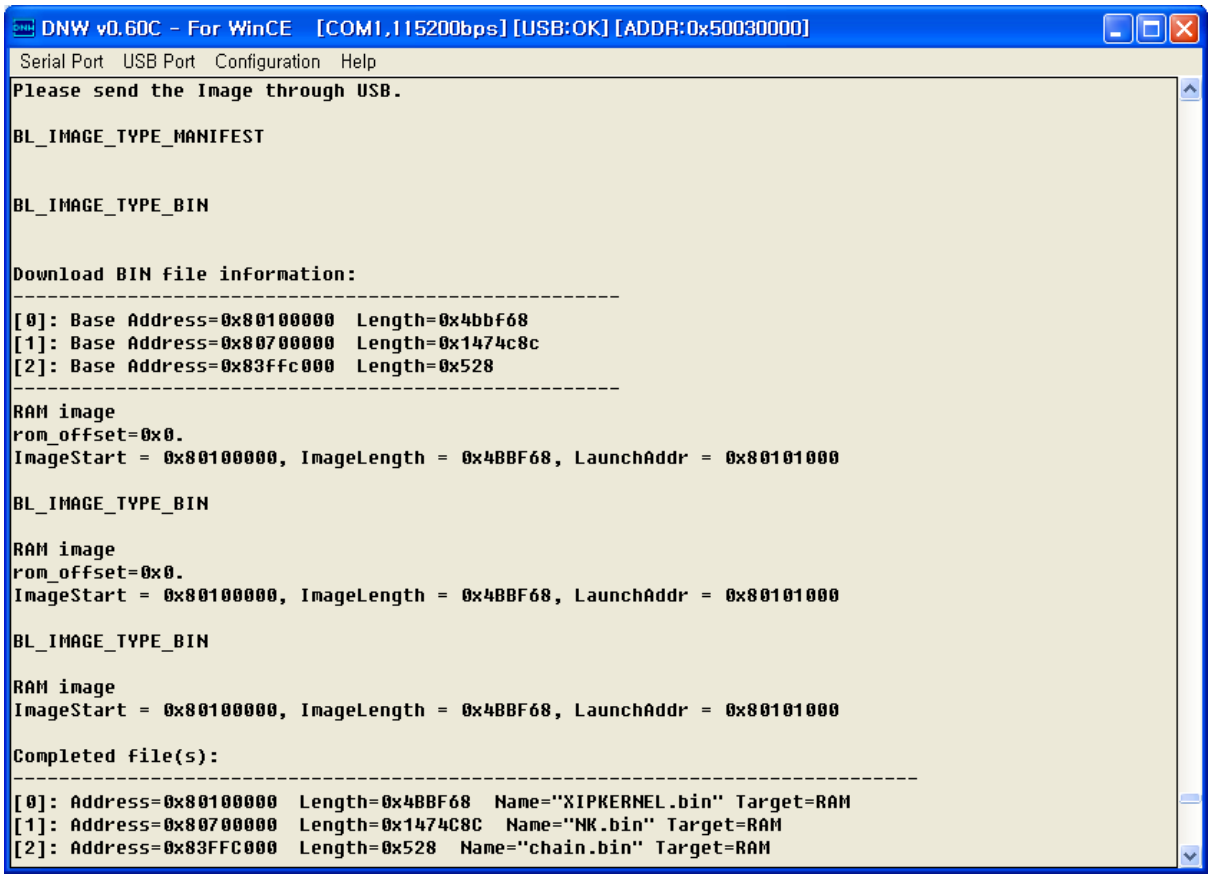

Figure 6-33 Messages via UART Port during chain.lst Download (IMGMULTIXIP=1)

35. After OS image download is over, **Windows Embedded CE 6.0** boots on the target Board.

36. Power **OFF** the board and Configure DIP switch CFG0 on the CPU Board and CFGB3 on the base board properly for booting from NAND Flash. (For more information about board configuration, Refer to the SMDK6410 Board User's Manual)

A. Set the CFG3 Jumpers on CPU Board for NAND boot.

CFG3		1	2	3	4	5	6
Boot Mode	**Umon boot**	**OFF**	**ON**	**OFF**	**ON**	**OFF**	**X**
	NAND iROM boot	OFF	ON	ON	ON	ON	X

Note) X : X means Don't Care

CFG4		1	2	3	4
CS2	NAND	ON	ON	OFF	OFF
	OneNAND	**OFF**	**OFF**	**ON**	**ON**

IROM Booting	Page	Address	J8	J7	J6
SD/MMC CH0			1-2	1-2	1-2
OneNAND			1-2	1-2	2-3
Nand	512	3	1-2	2-3	1-2
		4	1-2	2-3	2-3
	2048	4	2-3	1-2	1-2
		5	2-3	1-2	2-3
	4096	5	2-3	2-3	1-2
SD/MMC CH1			2-3	2-3	2-3

B. Set the Jumpers on Base Board. (CFGB1, CFGB2, CFGB3, CFGB4)

CFGB1	1	2	3	4
nCS0 SEL	ON	OFF	OFF	OFF

CFGB2	1	2	3	4
nCS1 SEL	OFF	OFF	ON	OFF

CFGB3	1	2	3	4
SLC SOP NAND	ON	OFF	OFF	OFF
XD Card NAND	OFF	ON	OFF	OFF

CFGB4	1	2	3	4
nCS4 SEL	OFF	OFF	OFF	OFF

37. Power **ON** the board. You can see **Windows Embedded CE 6.0** boots on the target board.

7 Building and Running OS Image – With KITL

In this chapter, you can understand how to build, download and run the OS image with KITL.

USB Serial and Ethernet(USB_RNDIS) KITL connection can be made.

1. To enable KITL, on the top of Visual Studio 2005, you can see the Project menu as below figure. And then select **Properties...**

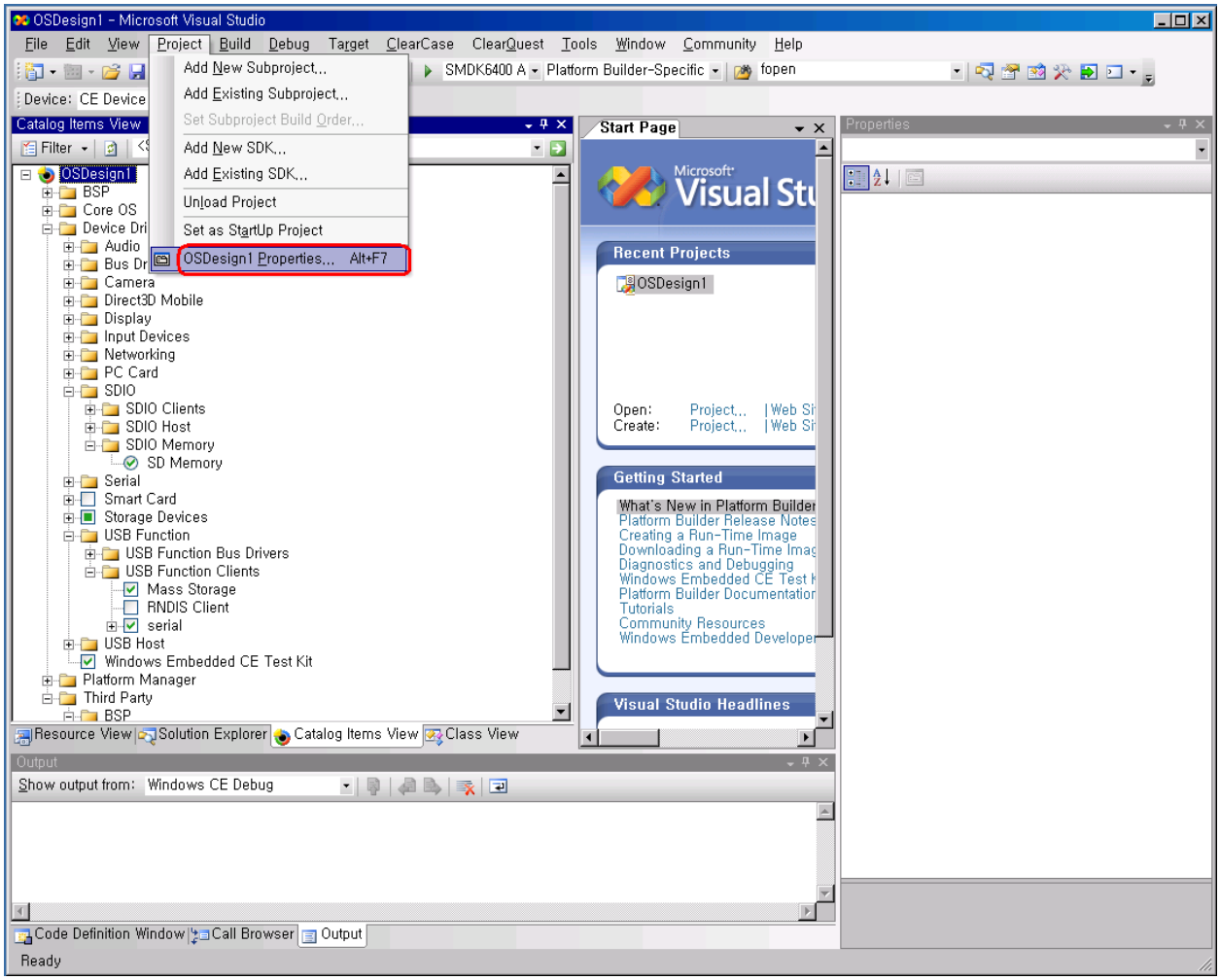

Figure 7-1 OSDesign Properties

2. OSDesign1 Property Pages window appears on your screen. Check square **boxes Enable kernel debugger(no IMGNODEBUGGER=1)** and **Enable KITL (no IMGNOKITL=1)** in the **Build Options** and then click **OK** button.

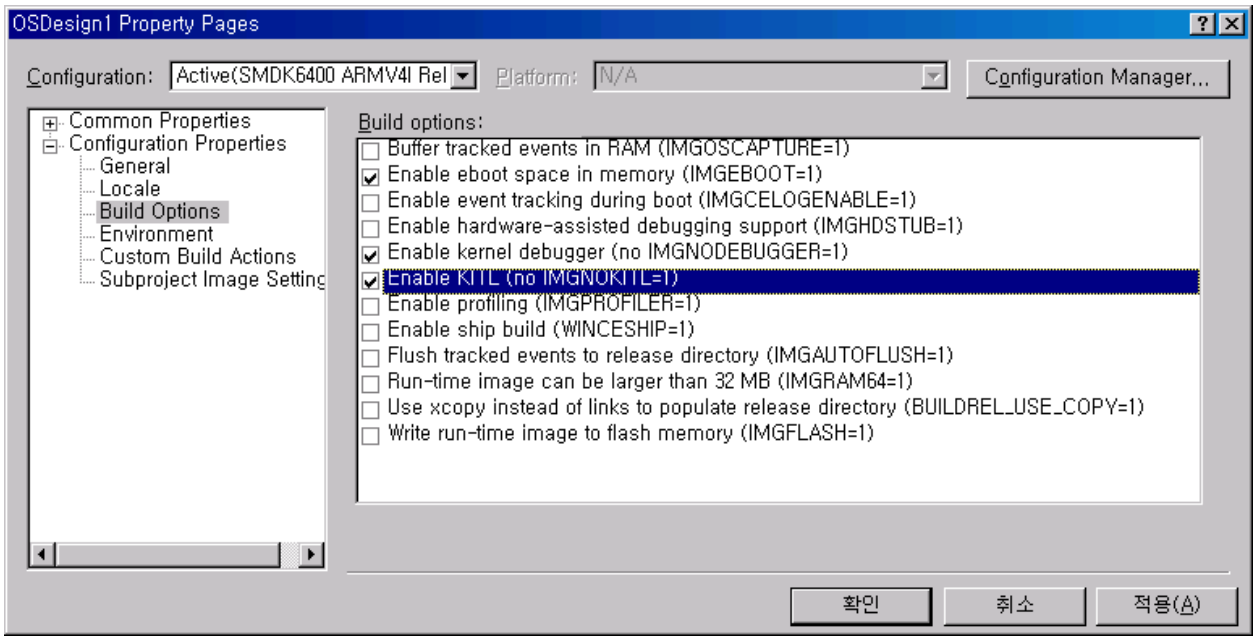

Figure 7-2 Property Pages for KITL

3. On the **Build** menu, click **Build OSDesign1** as shown in figure 7-3 to build the **Eboot** and **OS image.**

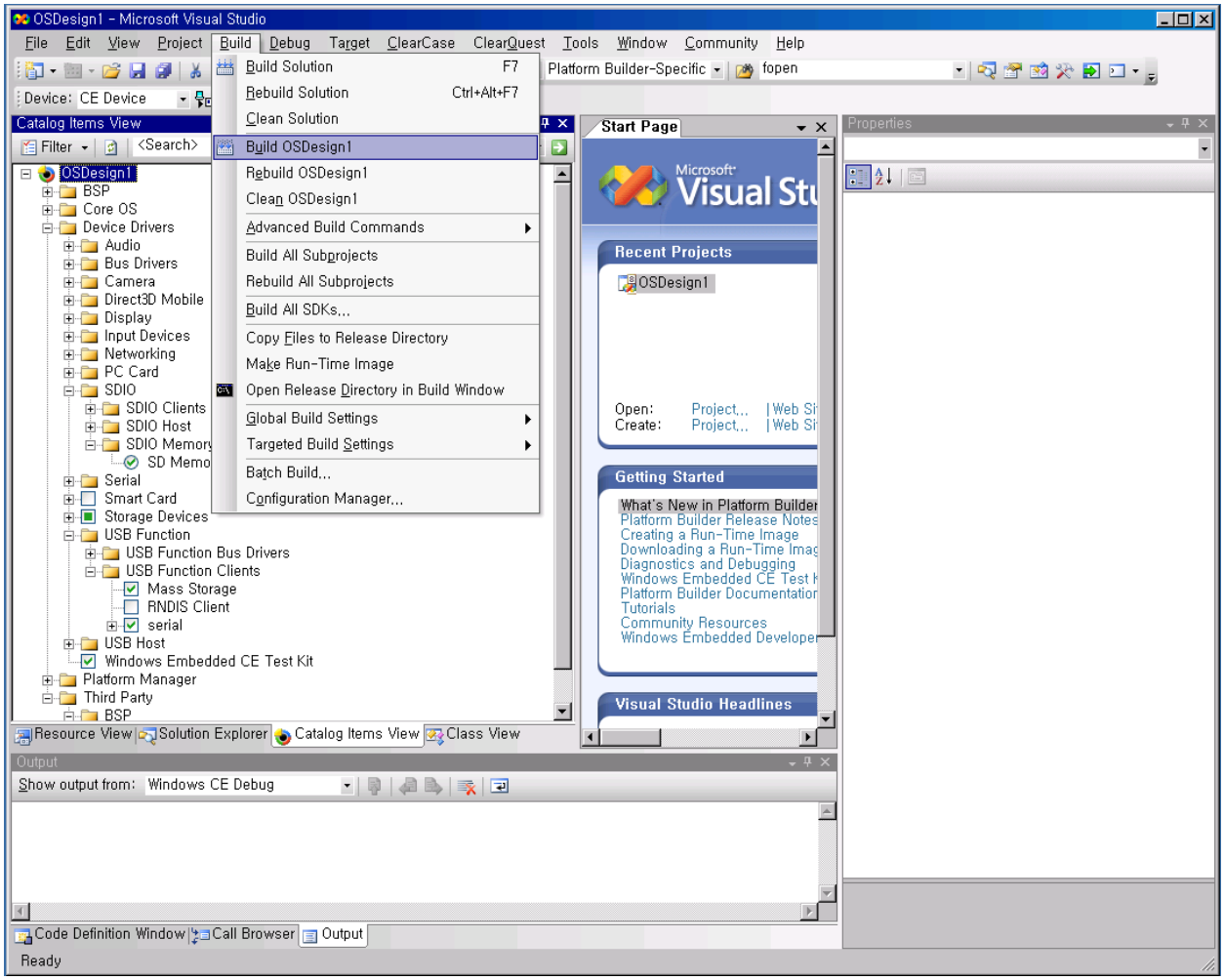

Figure 7-3 Build OSDesign

Note: Building process may take some time depending on your system capability. So, please wait for the build process to be completed. It might take around 1 hour.

4. After completion of build process, . **EBOOT.nb0, EBOOT.bin, block0img.nb0, NK.bin** and **NK.nb0** are now available in **X:\WINCE600\OSDesigns \[OS Design Name]\ [OS Design Name]\RelDir\SMDK6410_ARMV4I_Release** directory.

5. Configure DIP switch CFG0 on the CPU Board and CFGB1 on the CPU board properly for booting from AMD Flash. (For more information about board configuration, Read SMDK6410 Board User's Manual)

A. Set the CFG3 Jumpers on CPU Board for NAND boot.

CFG3		1	2	3	4	5	6
Boot Mode	**Umon boot**	**OFF**	**ON**	**OFF**	**ON**	**OFF**	**X**
	NAND iROM boot	OFF	ON	ON	ON	ON	X

Note) X : X means Don't Care

CFG4		1	2	3	4
CS2	NAND	ON	ON	OFF	OFF
	OneNAND	**OFF**	**OFF**	**ON**	**ON**

B. Set the Jumpers on Base Board. (CFGB1, CFGB2, CFGB3, CFGB4)

CFGB1	1	2	3	4
nCS0 SEL	ON	OFF	OFF	OFF

CFGB2	1	2	3	4
nCS1 SEL	OFF	OFF	ON	OFF

CFGB3	1	2	3	4
SLC SOP NAND	ON	OFF	OFF	OFF
XD Card NAND	OFF	ON	OFF	OFF

CFGB4	1	2	3	4
nCS4 SEL	OFF	OFF	OFF	OFF

6. Please install the USB Driver and DNW application on your host PC if it is not installed before.

7. Please refer to chapter 6 Fusing WinCE image to NAND Flash via USB in this documentation. And fuse to NAND Flash along to Step 29 from Step 1 in Chapter 6.

8. Reset the board. DNW window appears as shown in figure 7-4.

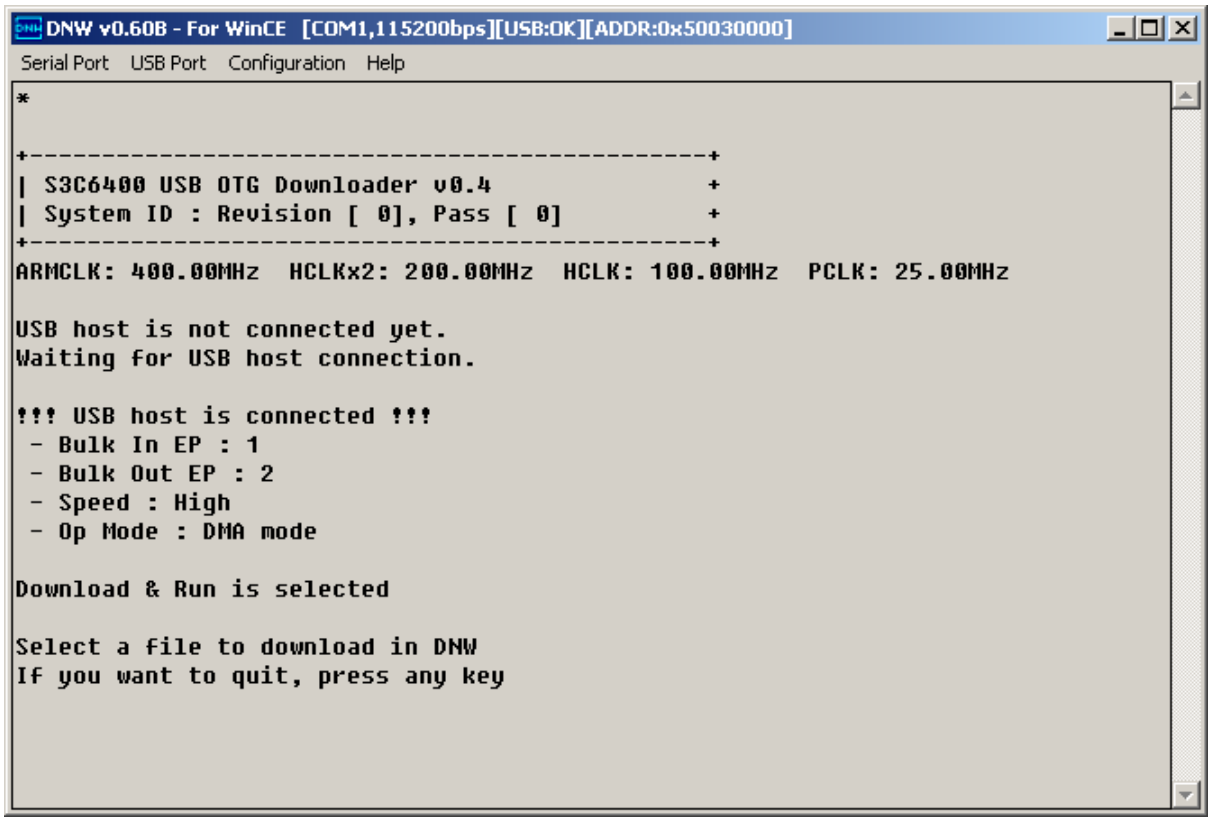

Figure 7-4 DNW Window after reset

9. On the **USB Port** menu, click **Transmit** and the following window appears on your screen. Select **EBOOT.nb0** file from **X:\WINCE600\OSDesigns\[OSDesign name] \[OSDesign name]\RelDir\SMDK6410_ARMV4I _Release** directory and then click **Open** button.

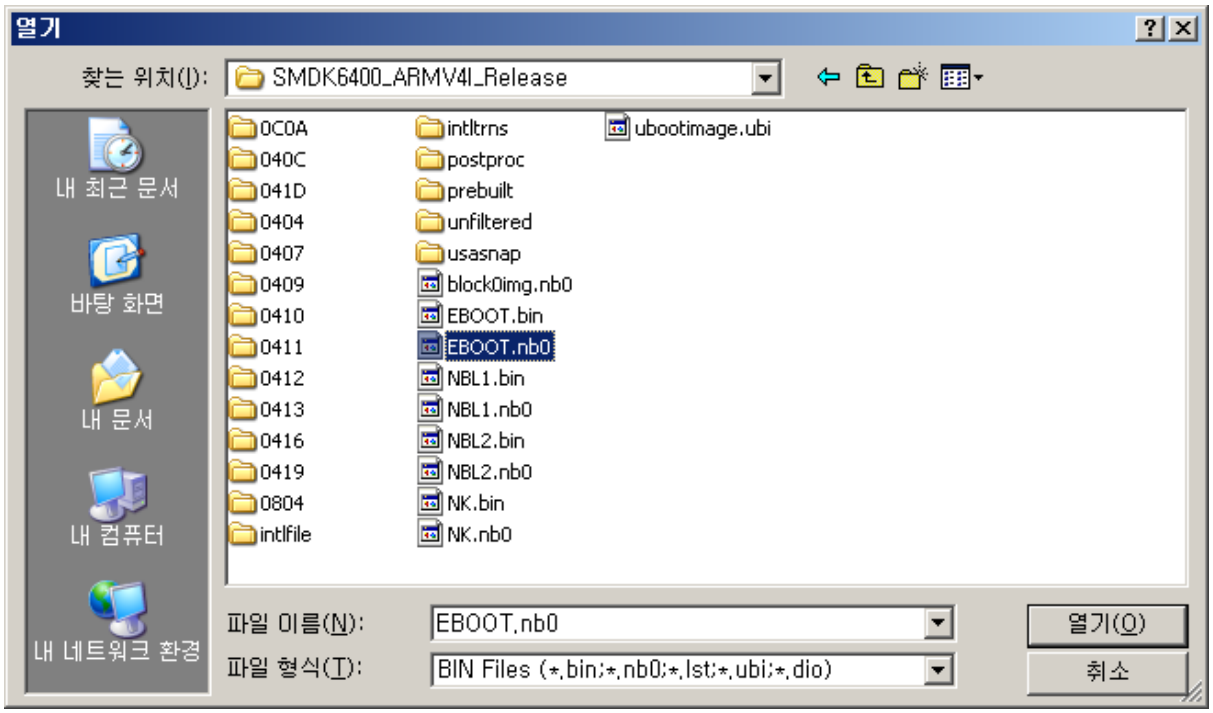

Figure 7-5 Selecting EBOOT.nb0 for Download

10. As soon as **EBOOT.nb0** download is over, the following messages appear in the DNW window**.**

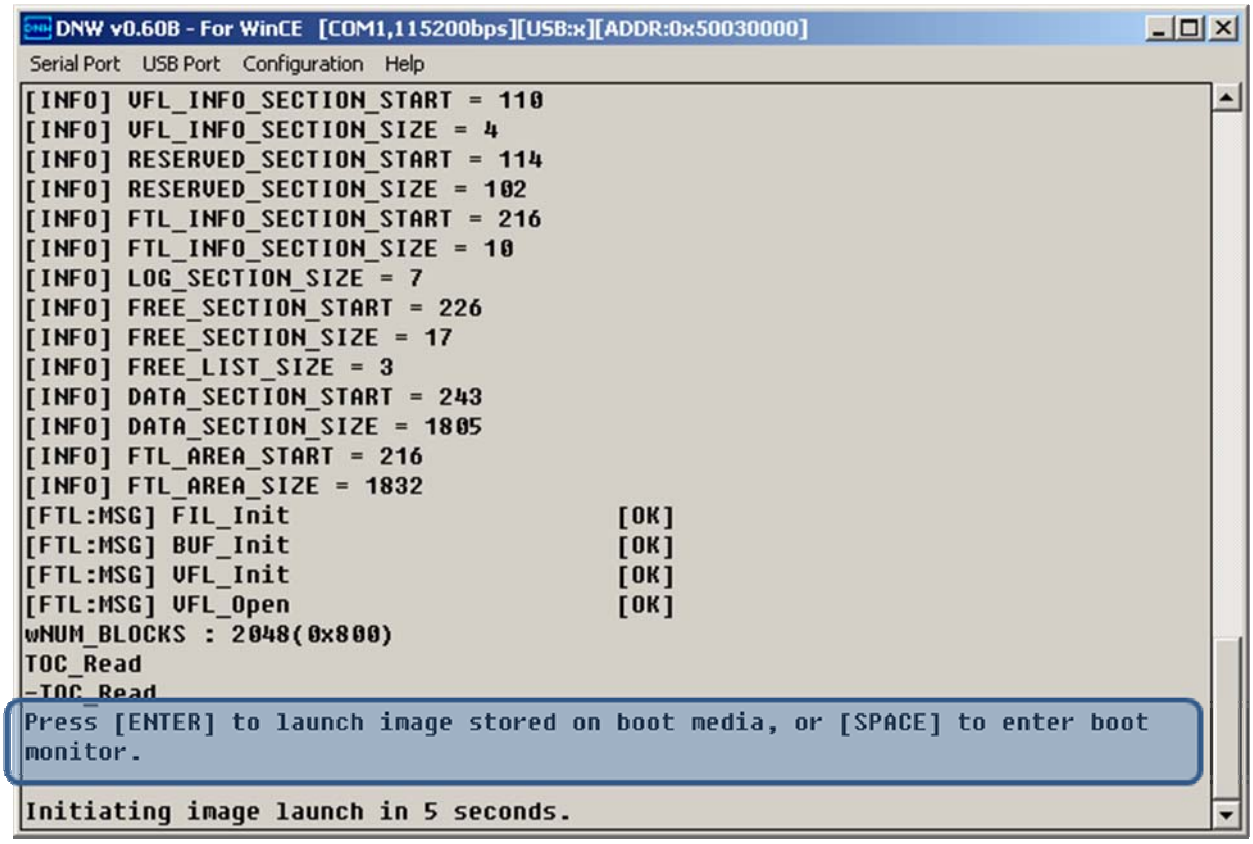

Figure 7-6 After EBOOT.nb0 Download

11. Please hit the **SPACE BAR** key to view the current Ethernet Boot Loader Configuration. Configure the Ethernet Boot Loader as follows by entering the respective options:

- Enter **[K]** to change **KITL Configuration** to ENABLE. Default value is Enabled
- Enter **[S]** to select proper KITL connection media. Ethernet and USB_RNDIS will use ETHERNET transfer protocol, USB_Serial and USB_DNW will use USB transfer.
- If you use Ethernet transfer protocol, Configure IP Address and Network Properties as your network environment properly
    - Using 0) IP Address, 1) Subnet Mask, 2) DHCP, 3) Device MAC Address
- Enter **[L]** to **LAUNCH existing Boot Media image**

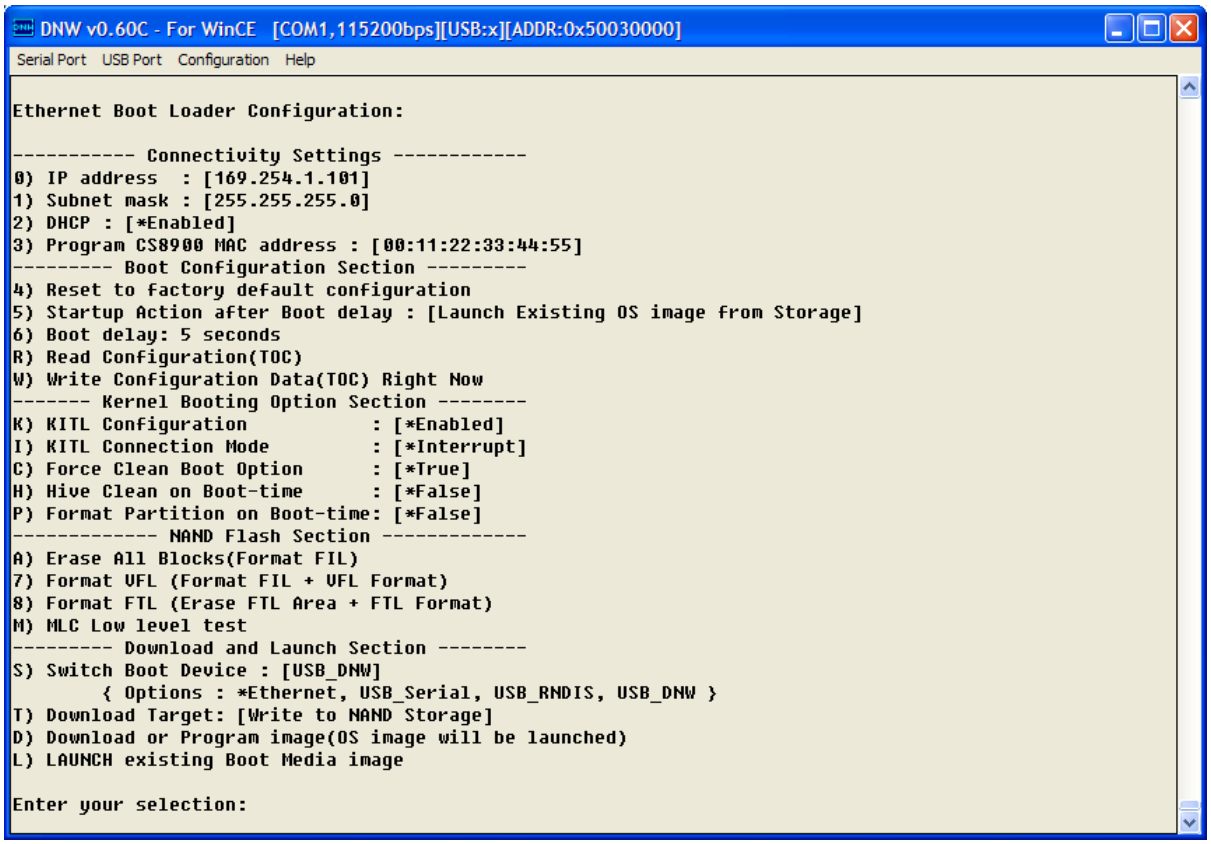

Figure 7-7 Ethernet Boot Loader Configuration

12. On the **Target** menu in the **Visual Studio 2005** window, click **Connectivity Options...** as shown below. **Target Device Connectivity Options** window appears on your screen as shown in figure 7-8.

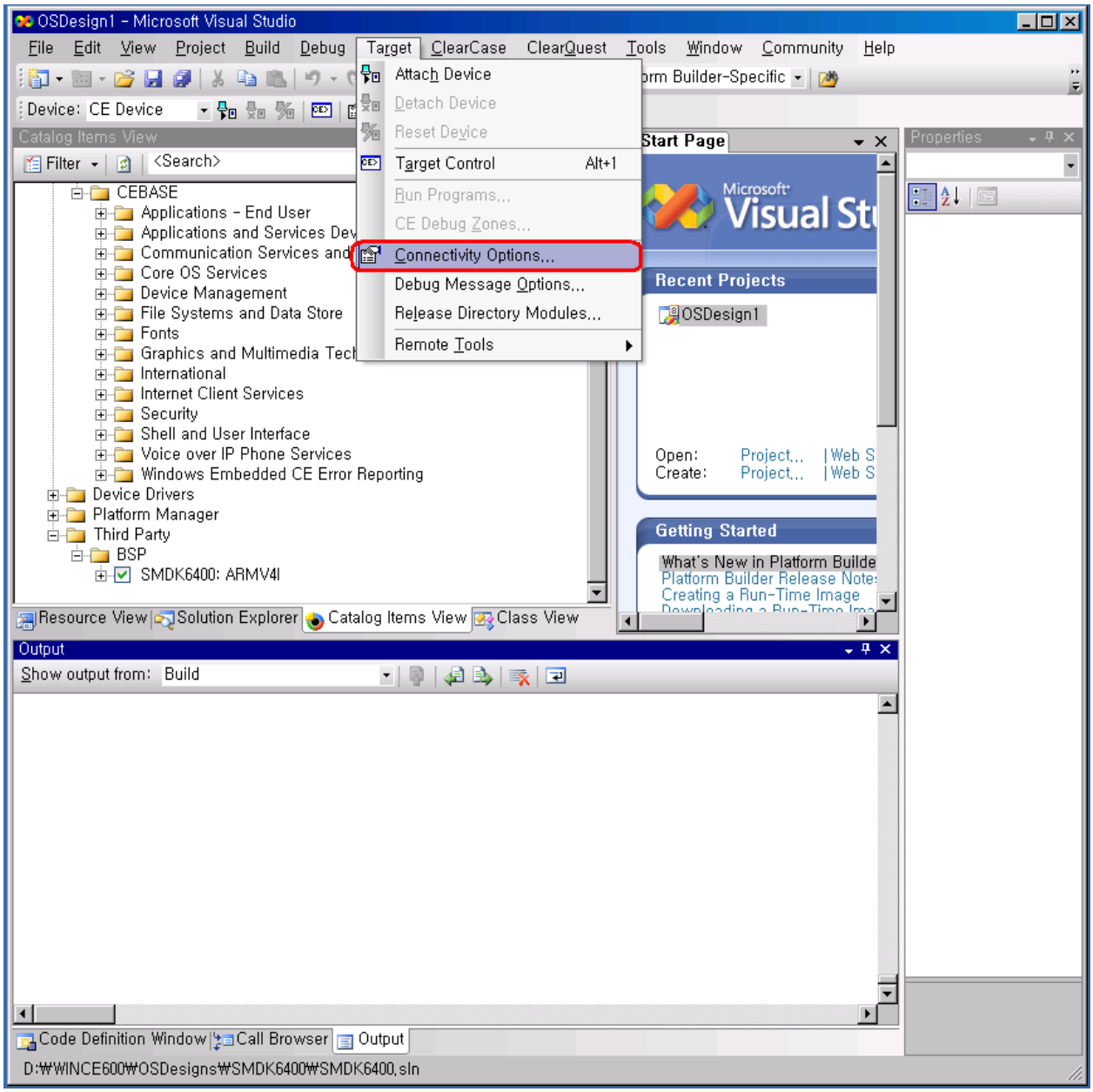

Figure 7-8 Target Connectivity Option

13. On the **Target Device Connectivity Options** window, select **USB** option from **Transport** drop down menu box.

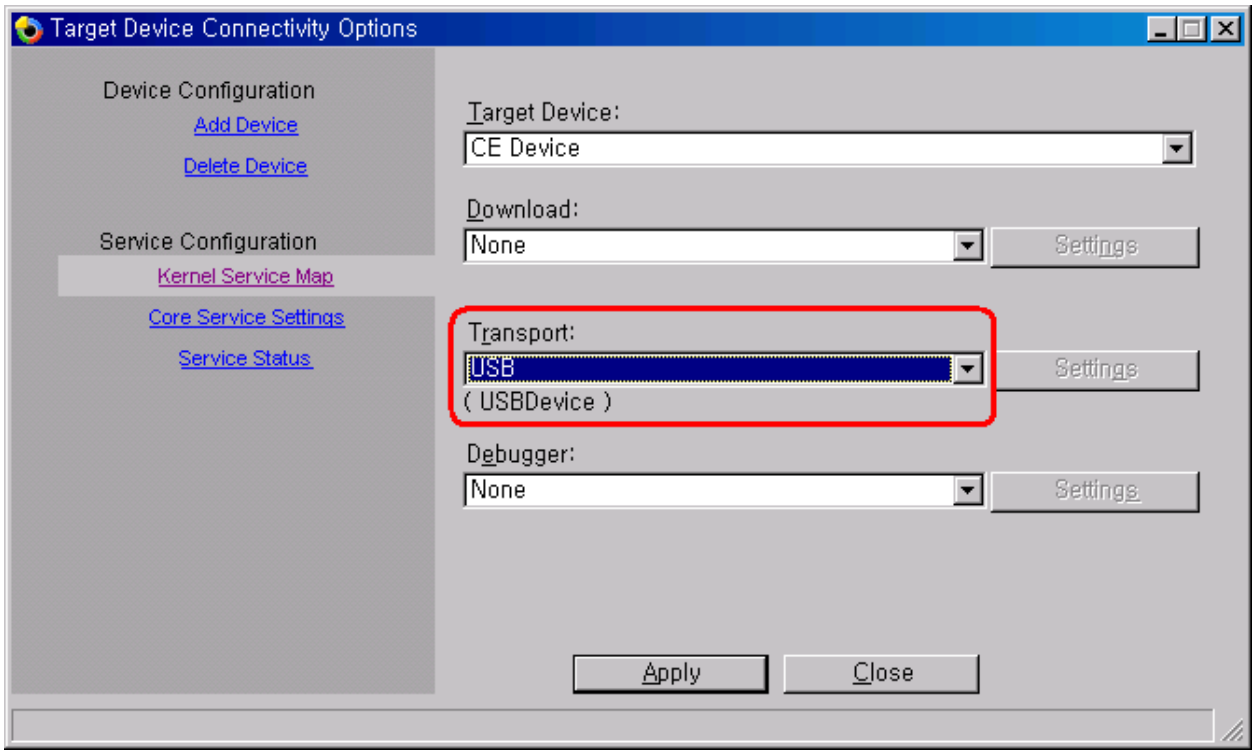

Figure 7-9 Target Device Connectivity Options Window after Transport Select

14. Configure the **KdStub** option in **Debugger** drop down menu box. And click **Apply** button

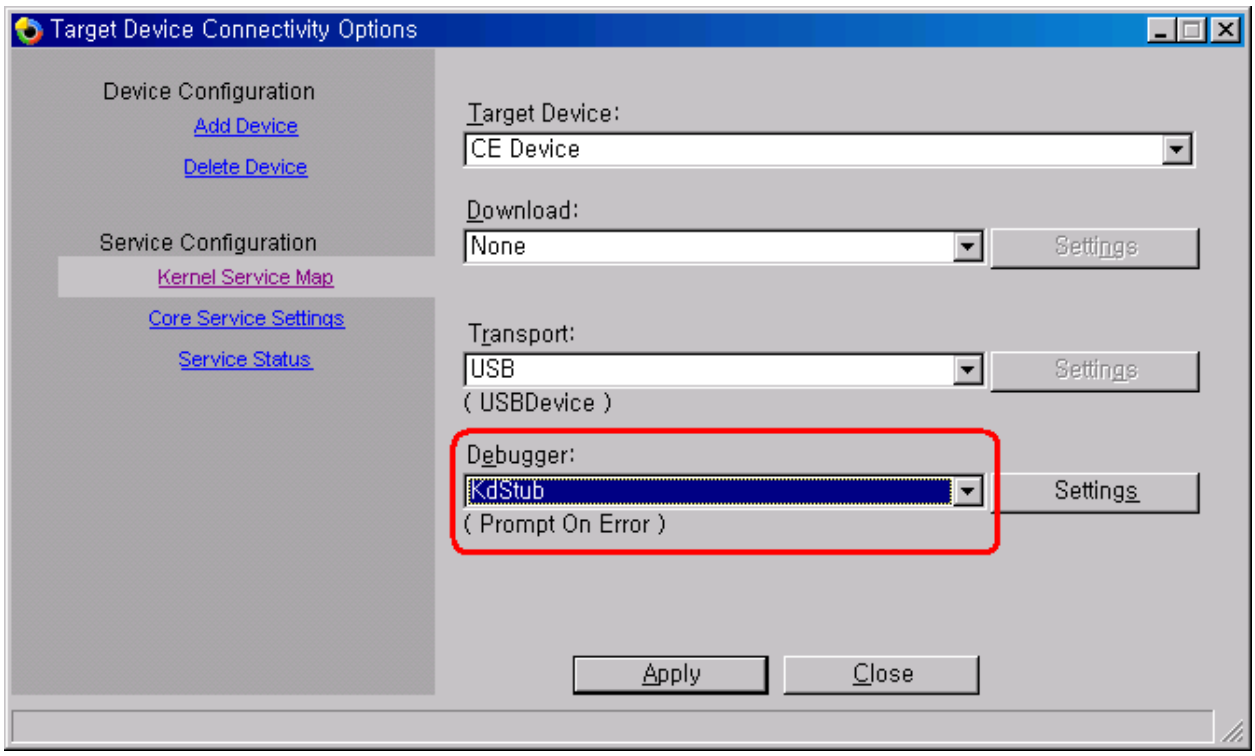

Figure 7-10 Target Device Connectivity Options Window After Debugger Select(USB)

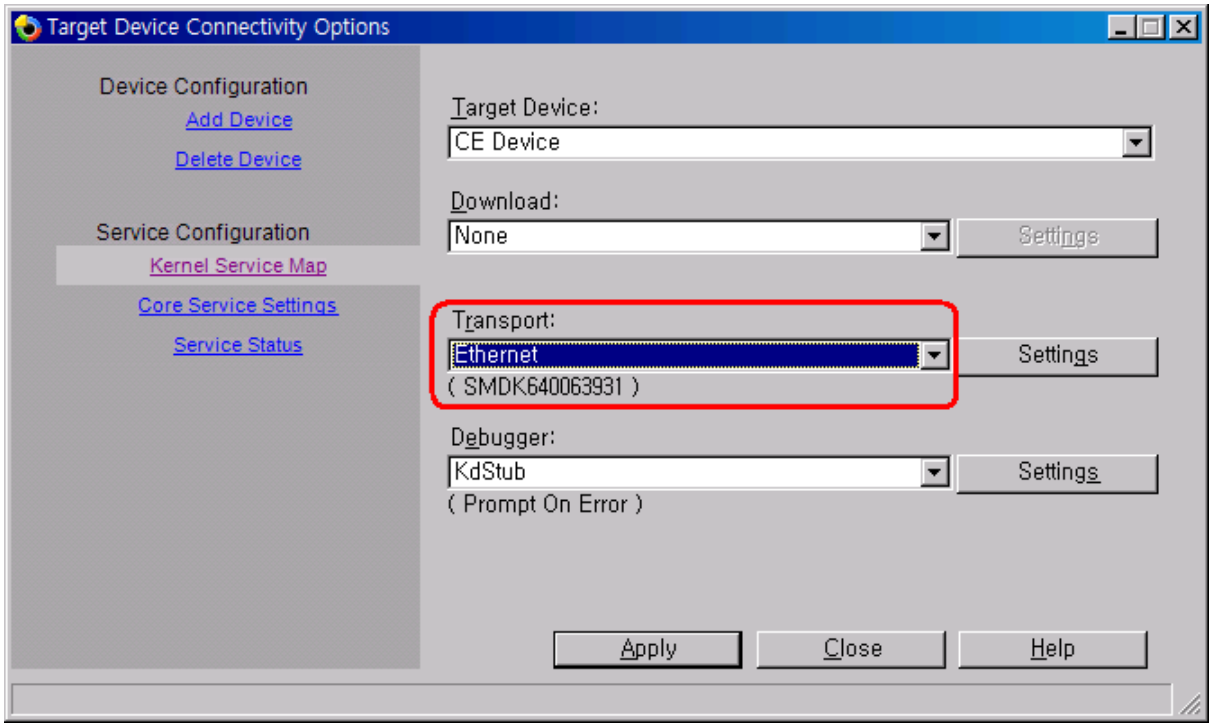

Figure 7-11 Target Device Connectivity Options Window After Debugger Select(Ethernet)

15. On the **Target** menu in **Visual Studio 2005** window, click **Attach Device** as shown below.

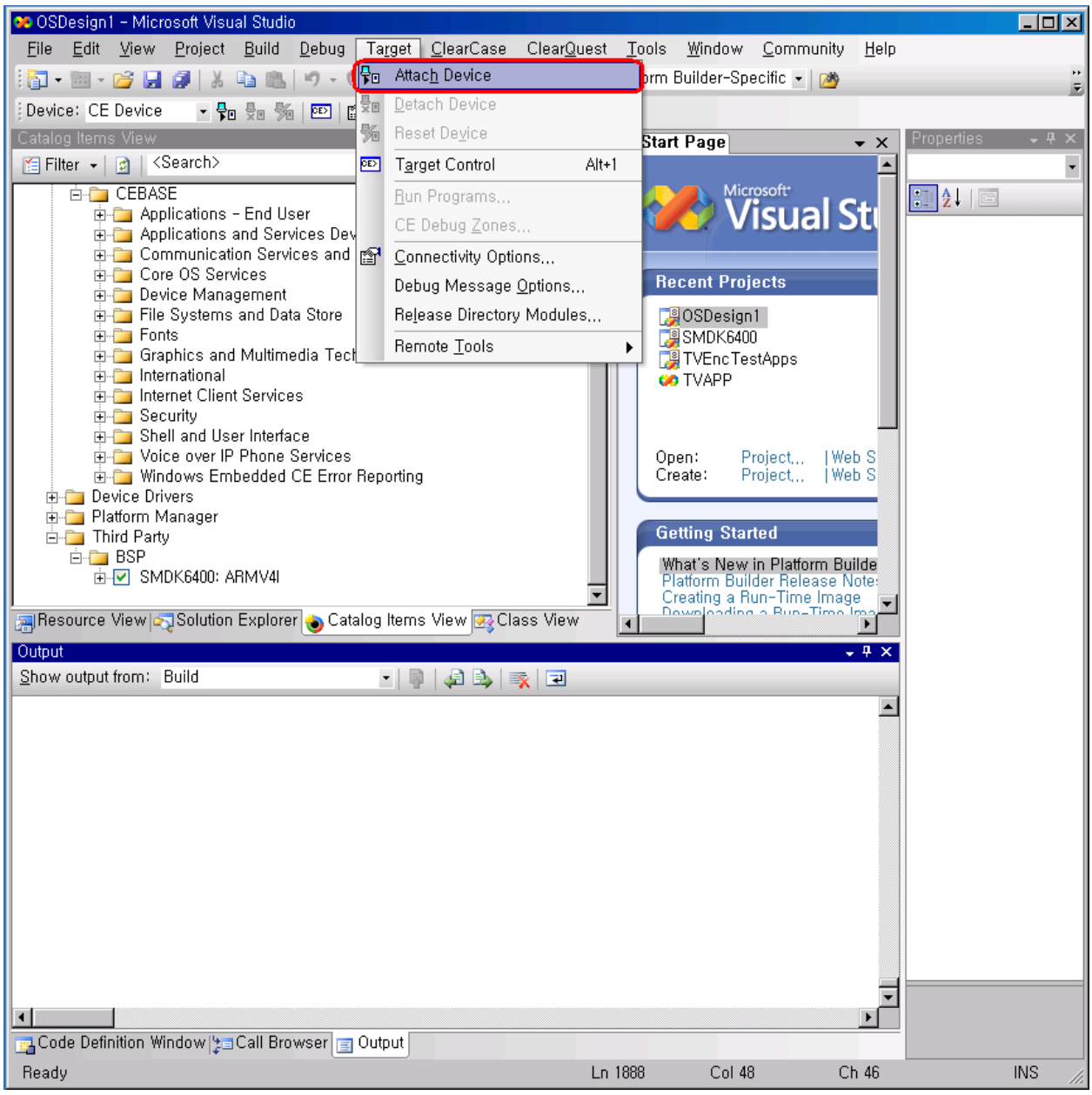

Figure 7-12 Attach Device

16. You can see the following messages on the DNW window.

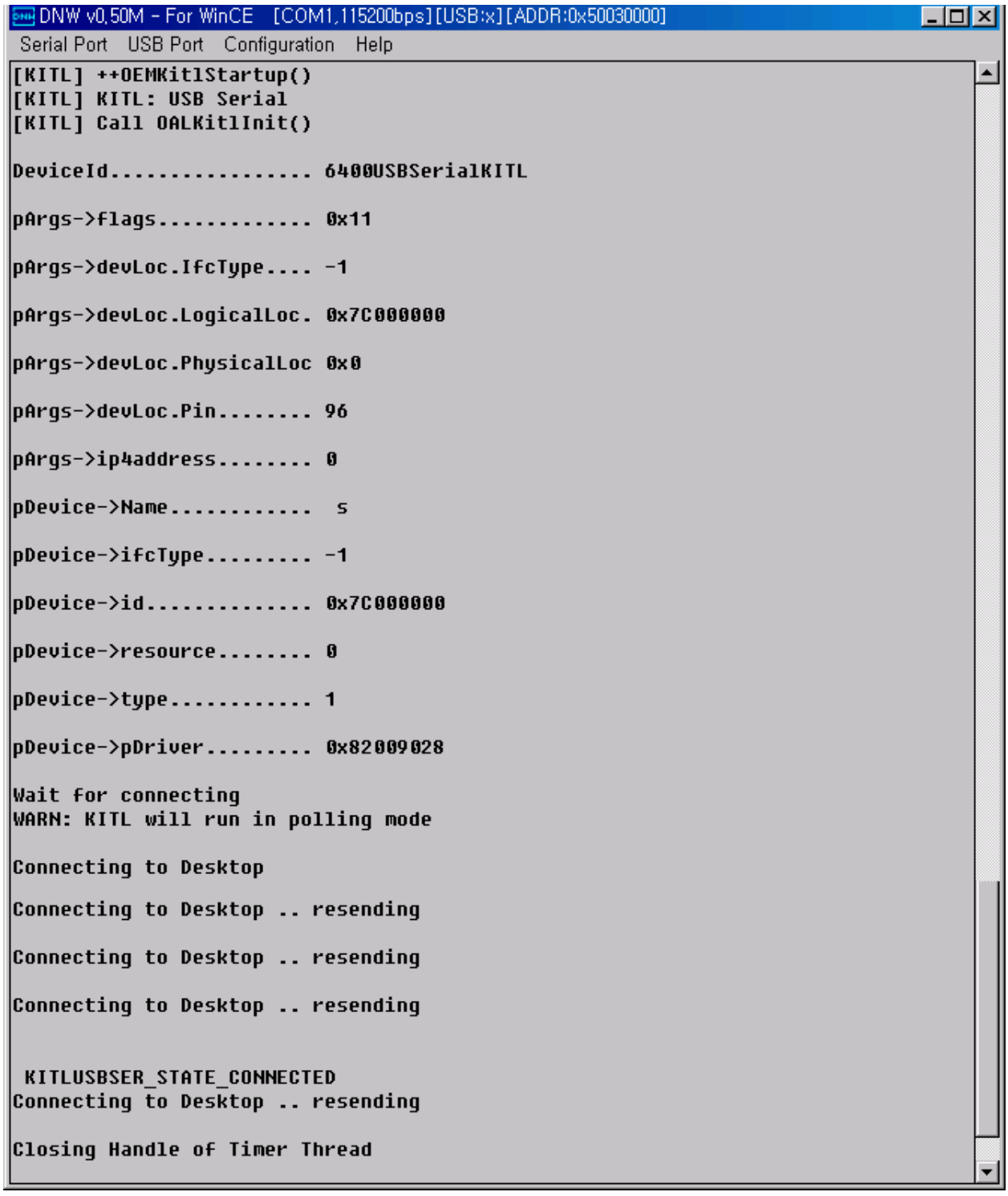

Figure 7-13 Messages via UART Port

17. **Windows Embedded CE 6.0** boots on the target board and platform builder window appears as shown below.

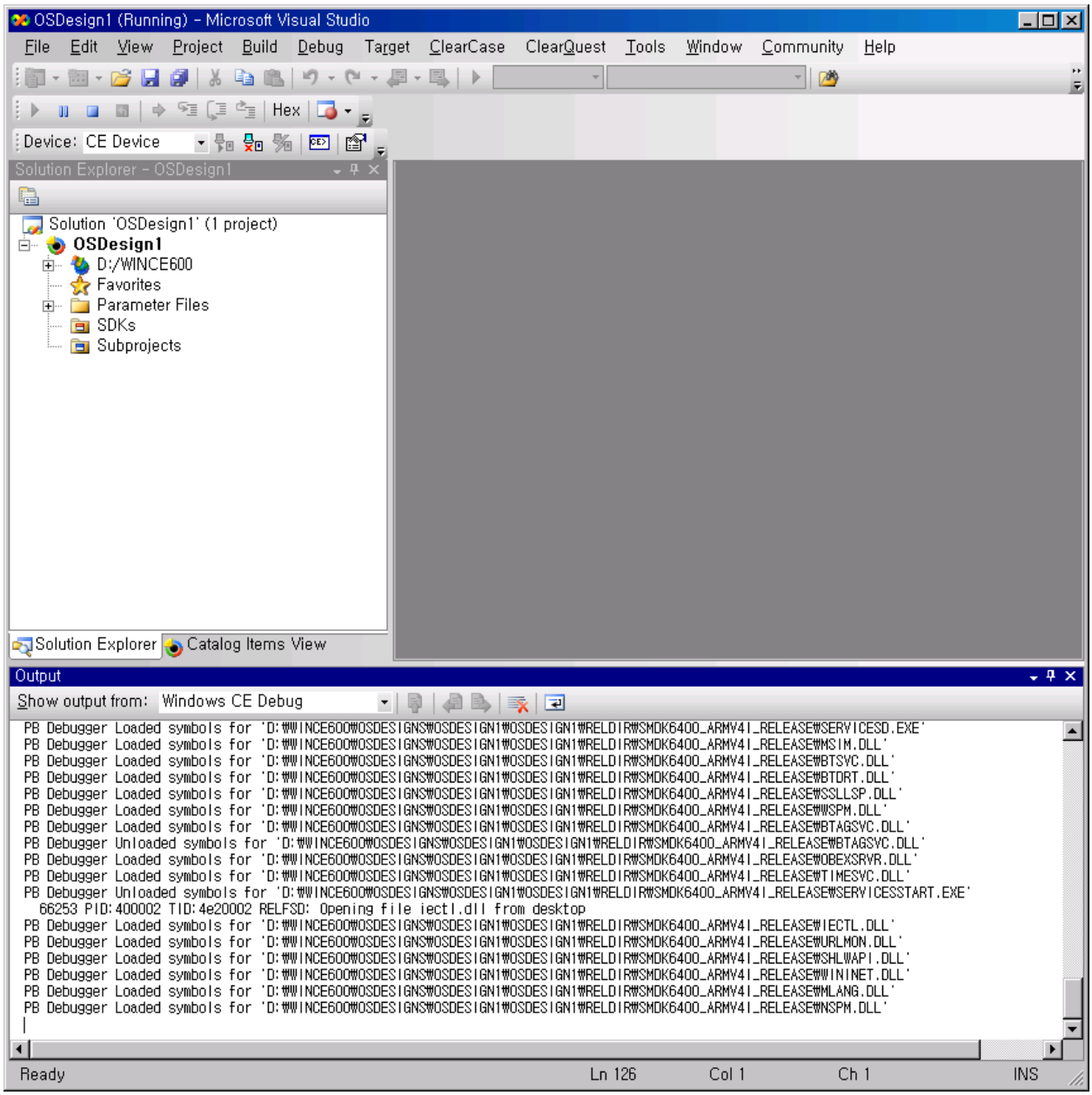

Figure 7-14 Visual Studio 2005 Window after KITL connected

Appendix I – DIP Switch Settings for Booting Mode

Table 9-1 and 9-2 explains the DIP Switch configuration on the SMDK6410 board for Booting mode.

AMD NOR/SROM Boot

Description	CFG0[6:1]				
	[6]	[5]	[4]	[3]	[2]
NOR Boot (8bit Data Width)	Don't Care	OFF	**ON**	OFF	OFF
NOR Boot (16bit Data Width)	Don't Care	OFF	**ON**	OFF	**ON**

Description	CFGB1[4:1]		
	[3]	[2]	[1]
Connected NorFlash to Xm0CSn0	OFF	OFF	**ON**
Connected SRAM to Xm0CSn0	OFF	**ON**	OFF

Table 0-1 DIP Switch setting for AMD Flash Boot (NOR Flash)

NAND Boot

Description	CFG0[6:1]				
	[6]	[5]	[4]	[3]	[2]
Normal NAND, 512-byte page, 3 addr. Cycle	**ON**	OFF	OFF	OFF	OFF
Normal NAND, 512-byte page, 4 addr. Cycle	**ON**	OFF	OFF	OFF	**ON**
Advanced NAND, 2K-byte page, 4 addr. Cycle	**ON**	OFF	OFF	**ON**	OFF
Advanced NAND, 2K-byte page, 5 addr. Cycle	**ON**	OFF	OFF	**ON**	**ON**

Description	CFGB3[4:1]			
	[4]	[3]	[2]	[1]
Connected NandFlash to Xm0CSn2	OFF	OFF	OFF	**ON**
Connected XD Picture Card to Xm0CSn2	OFF	OFF	**ON**	OFF

Table 0-2 DIP Switch setting for NAND Flash Boot

IROM Booting	Page	Address	J8	J7	J6
SD/MMC CH0			1-2	1-2	1-2
OneNAND			1-2	1-2	2-3
Nand	512	3	1-2	2-3	1-2
		4	1-2	2-3	2-3
	2048	4	2-3	1-2	1-2
		5	2-3	1-2	2-3
	4096	5	2-3	2-3	1-2
SD/MMC CH1			2-3	2-3	2-3

Table 0-3 DIP Switch setting for iROM Boot

Note: For more information about board configuration, Check SMDK6410 Board Manual