

1. Product Information:

The AX88178 Controller is a single chip USB 2.0 to Gigabit Ethernet Controller. This is an AX88178 NDIS driver for WinCE 6.0 embedded system. It has been qualified under WinCE 6.0 CETK on an Intel Pentium II 300MHz system with a NEC D720100AGM USB 2.0 PCI Host adapter running WinCE 6.0 CEPC X86 Platform Image.

2. Files Descriptions:

The AX88178 WinCE driver package includes the files as described below,

RELEASE.PDF	This file
AX88178.DLL	Driver file
PROJECT.REG	Sample REG file
PROJECT.BIB	Sample BIB file
CETK_LOG\1C_TEST.LOG	CETK One Card Test log file
CETK_LOG\2C_TEST.LOG	CETK Two Card Test log file
CETK_LOG\1C_TEST.TXT	CETK One Card Test readme file
CETK_LOG\2C_TEST.TXT	CETK Two Card Test readme file

3. Revision History:

Revision	Author	Date	Description

v1.2.0.1	Francis	2008/03/27	1. New release for WinCE 6.0. Build from WinCE 5.0 source v1.0.0.1.
v1.2.0.2	Francis	2008/08/13	1. Fix structure alignment problem for ARM platform.

4. Driver Installation:

1. Add below AX88178 registry values into the \$(_WINCEROOT)\PUBLIC\CEBASE\OAK\FILES\PROJECT.REG file.

```
; @CESYSGEN IF BSP_NIC_AX88178
;IF BSP_NIC_AX88178
[HKEY_LOCAL_MACHINE\Drivers\USB\LoadClients\2965_6016\Default\Default\AX88178]
    "DLL"="AX88178.DLL"
    "Prefix"="NDS"

[HKEY_LOCAL_MACHINE\Drivers\USB\ClientDrivers\AX88178]
    "DLL"="AX88178.DLL"
    "Prefix"="NDS"

[HKEY_LOCAL_MACHINE\Comm\AX88178]
    "DisplayName"="ASIX AX88178 USB 2.0 Gigabit Ethernet Driver"
    "Group"="NDIS"
    "ImagePath"="AX88178.dll"

[HKEY_LOCAL_MACHINE\Comm\AX88178\Linkage]
    "Route"=multi_sz:"AX881781"

[HKEY_LOCAL_MACHINE\Comm\AX881781]
    "DisplayName"="ASIX AX88178 USB 2.0 Gigabit Ethernet Driver"
    "Group"="NDIS"
    "ImagePath"="AX88178.dll"

[HKEY_LOCAL_MACHINE\Comm\AX881781\Parms]
    "BusNumber"=dword:0
    "BusType"=dword:1
;    "NetworkAddress"="02-12-34-56-78-9a"    ;Define an override MAC address 02-12-34-56-78-9a

;=====
; AX88178 Driver Parameters:
;"ConnectionType" ==> 0 = "AutoSense"; 2 = "10BaseT Half_Duplex"; 3 = "10BaseT Full_Duplex"
;                      8 = "100BaseTx Half_Duplex"; 9 = "100BaseTx Full_Duplex"
;                      17 = "1000BaseT Full_Duplex"
; "FlowControl" ==> 0 = "Disable"; 1 = "TX PAUSE"; 2 = "RX PAUSE"; 3 = "Enable"
;=====
    "ConnectionType"=dword:0
    "FlowControl"=dword:3

[HKEY_LOCAL_MACHINE\Comm\AX881781\Parms\TcpIp]
;    "EnableDHCP"=dword:0                ;Disable DHCP function
;    "IpAddress"="xxx.xxx.xxx.aaa"        ;Define your IP address (xxx.xxx.xxx.aaa)
;    "Subnetmask"="255.255.255.0"        ;Define Submask IP address
;    "DefaultGateway"="xxx.xxx.xxx.bbb"  ;Define Gateway IP address
;    "DNS"="xxx.xxx.xxx.ccc"             ;Define DNS server IP address

    "AutoCfg"=dword:1
    "EnableDHCP"=dword:1                ;Enable DHCP function
    "UseZeroBroadcast"=dword:0          ;Use zero for broadcast address?

;ENDIF BSP_NIC_AX88178
; @CESYSGEN ENDIF BSP_NIC_AX88178
```

2. Add below AX88178 driver file path and attributes into the \$(_WINCEROOT)\PUBLIC\CEBASE\OAK\FILES\PROJECT.BIB file.

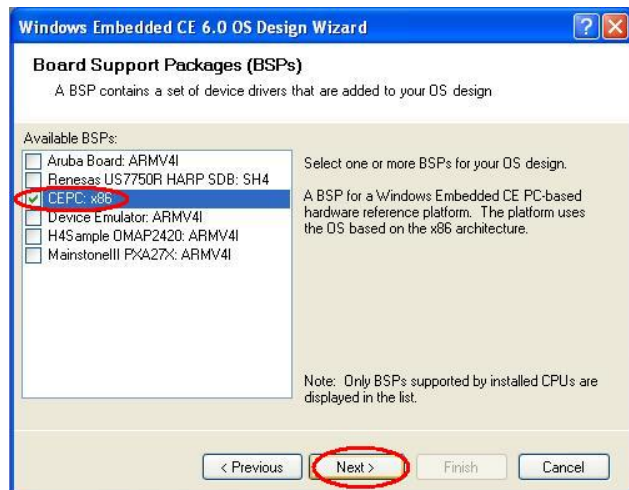
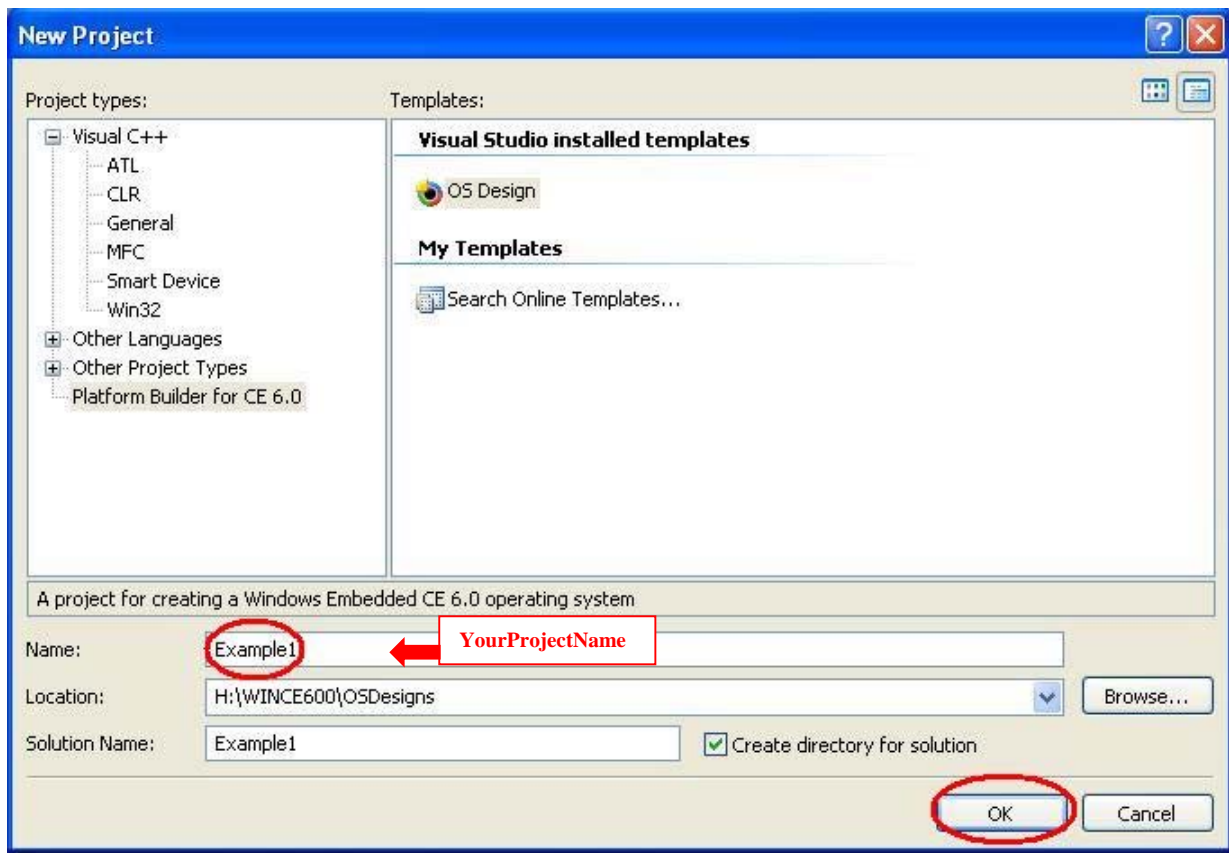
MODULES

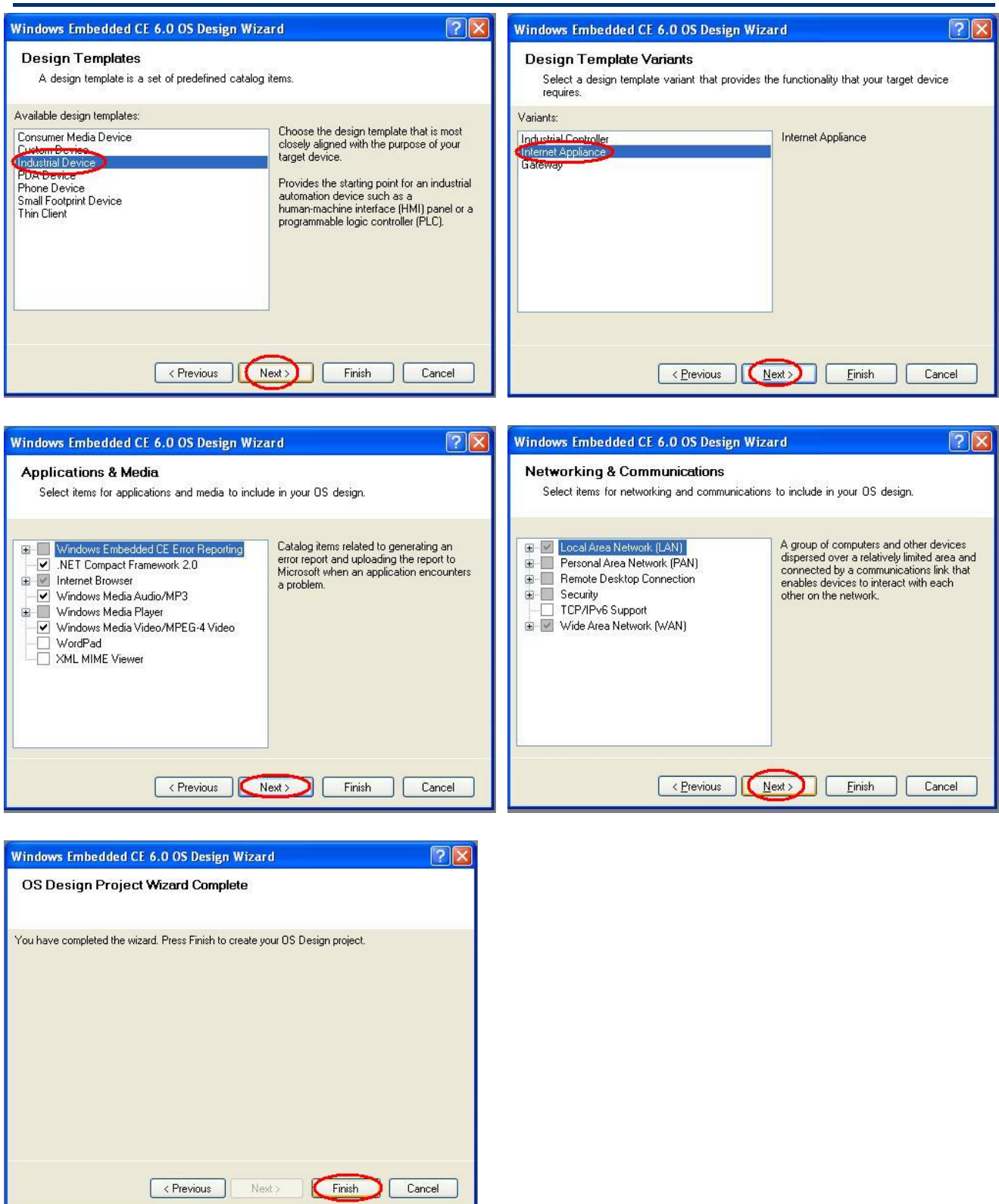
; Name	Path	Memory Type
; -----	-----	-----
ax88178.dll	\$(_FLATRELEASEDIR)\ax88178.dll	NK SHK

FILES

; Name	Path	Memory Type
; -----	-----	-----

3. Install new platform for your project





Windows Embedded CE 6.0 OS Design Wizard

Design Templates
A design template is a set of predefined catalog items.

Available design templates:

- Consumer Media Device
- Custom Device
- Industrial Device**
- PDA Device
- Phone Device
- Small Footprint Device
- Thin Client

Choose the design template that is most closely aligned with the purpose of your target device.

Provides the starting point for an industrial automation device such as a human-machine interface (HMI) panel or a programmable logic controller (PLC).

< Previous **Next >** Finish Cancel

Windows Embedded CE 6.0 OS Design Wizard

Design Template Variants
Select a design template variant that provides the functionality that your target device requires.

Variants:

- Industrial Controller
- Internet Appliance Gateway**

Internet Appliance

< Previous **Next >** Finish Cancel

Windows Embedded CE 6.0 OS Design Wizard

Applications & Media
Select items for applications and media to include in your OS design.

☐ Windows Embedded CE Error Reporting
☒ .NET Compact Framework 2.0
☒ Internet Browser
☒ Windows Media Audio/MP3
☐ Windows Media Player
☒ Windows Media Video/MPEG-4 Video
☐ WordPad
☐ XML MIME Viewer

Catalog items related to generating an error report and uploading the report to Microsoft when an application encounters a problem.

< Previous **Next >** Finish Cancel

Windows Embedded CE 6.0 OS Design Wizard

Networking & Communications
Select items for networking and communications to include in your OS design.

☒ Local Area Network (LAN)
☐ Personal Area Network (PAN)
☐ Remote Desktop Connection
☐ Security
☐ TCP/IP v6 Support
☒ Wide Area Network (WAN)

A group of computers and other devices dispersed over a relatively limited area and connected by a communications link that enables devices to interact with each other on the network.

< Previous **Next >** Finish Cancel

Windows Embedded CE 6.0 OS Design Wizard

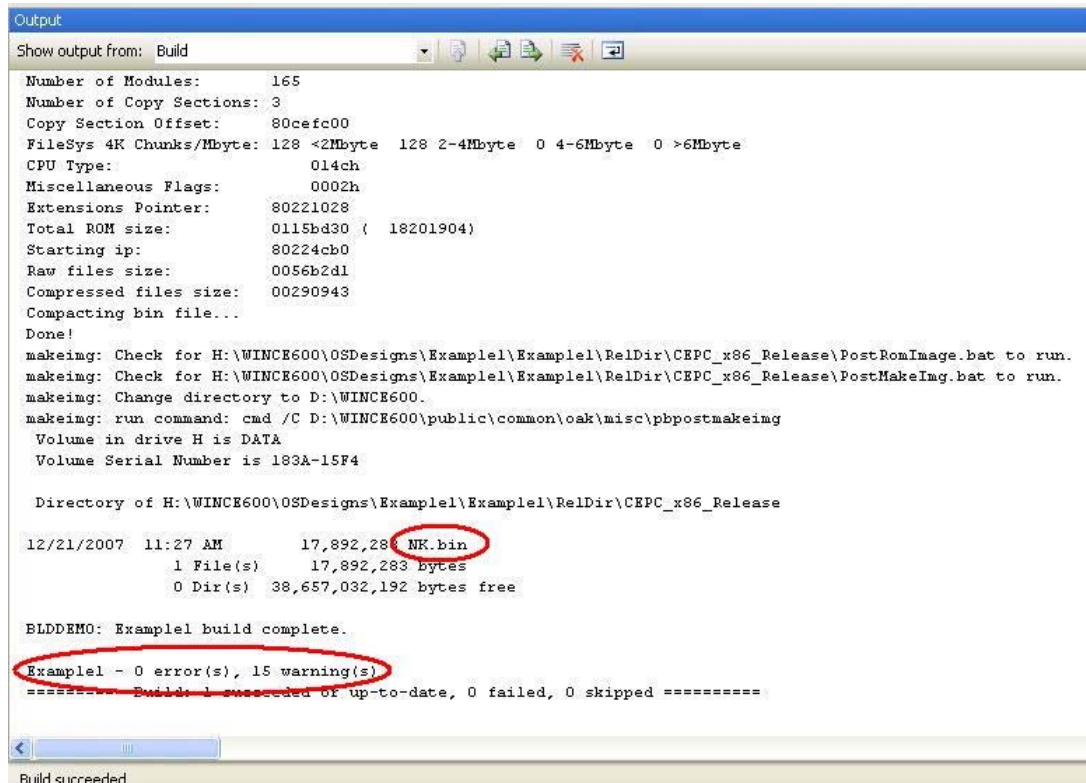
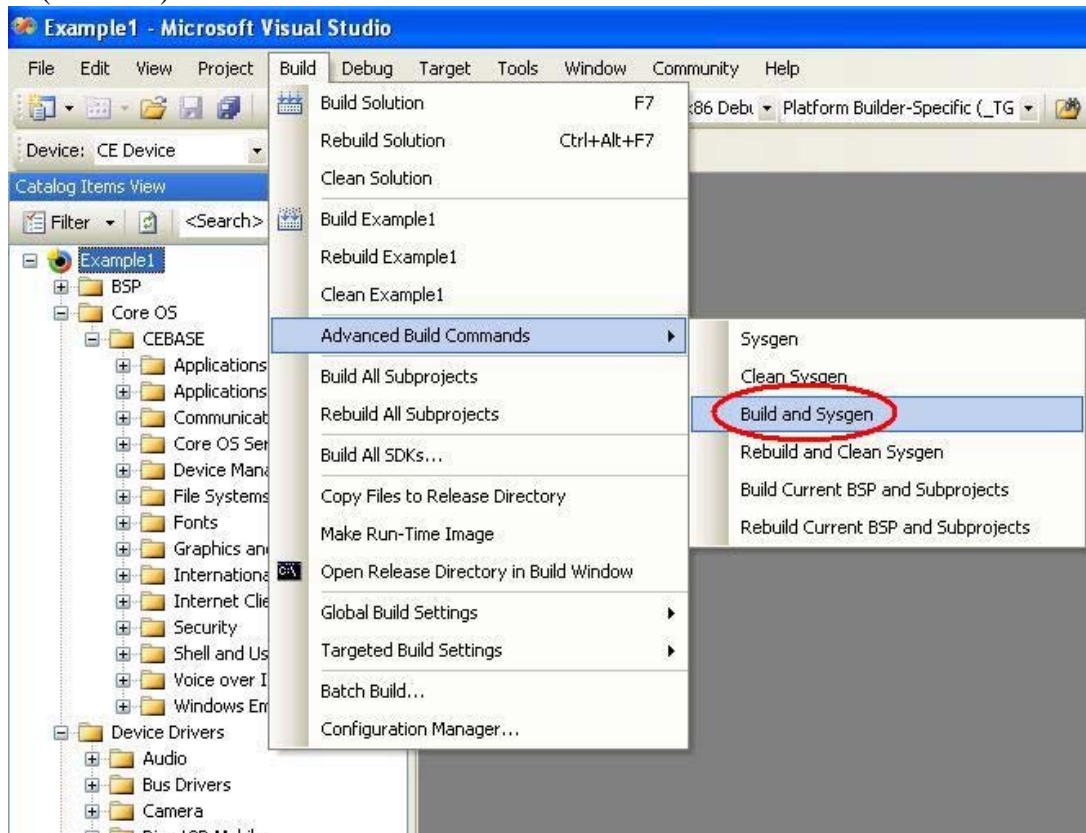
OS Design Project Wizard Complete

You have completed the wizard. Press Finish to create your OS Design project.

< Previous Next > **Finish** Cancel

Note: Please check if the PROJECT.REG file in \$(_WINCEROOT)\OSDesigns\<YourProjectName>\<YourProjectName>\WINCE600\CEPC_x86\OAK\files subdirectory is included all contents modified in Step 1.

4. Choose “Build and Sysgen” from the Build OS menu to build the platform image file (NK.BIN).



5. Startup your CE/PC to get the connection.

- 5-1. Install a supported Ethernet adapter (like NE2000 ISA card or RTL8139 PCI card) for Ethernet Boot Loader (eboot.bin) and an ASIX AX88178 USB to Gigabit Ethernet adapter for tested WinCE driver.

Note 1: Please set a proper IRQ, IOBASE and IP address in the AUTOEXEC.BAT file of the CE/PC Boot Disk for the Ethernet Boot Loader adapter.
(For PCI card: set to IRQ=0, IOBASE =0 for auto-detection.
For ISA card: set to the same IRQ, IOBASE as the H/W setting.)

- 5-2. Insert the CE/PC Boot Disk into your CE/PC.

- 5-3. Power ON the CE/PC.

- 5-4. Select “Boot CE/PC (ether via eboot.bin with /L:800x600x16)” from the boot menu.

6. Choose “Connectivity Options” from the Target menu to configure an Ethernet connection for downloading and debugging the image file.

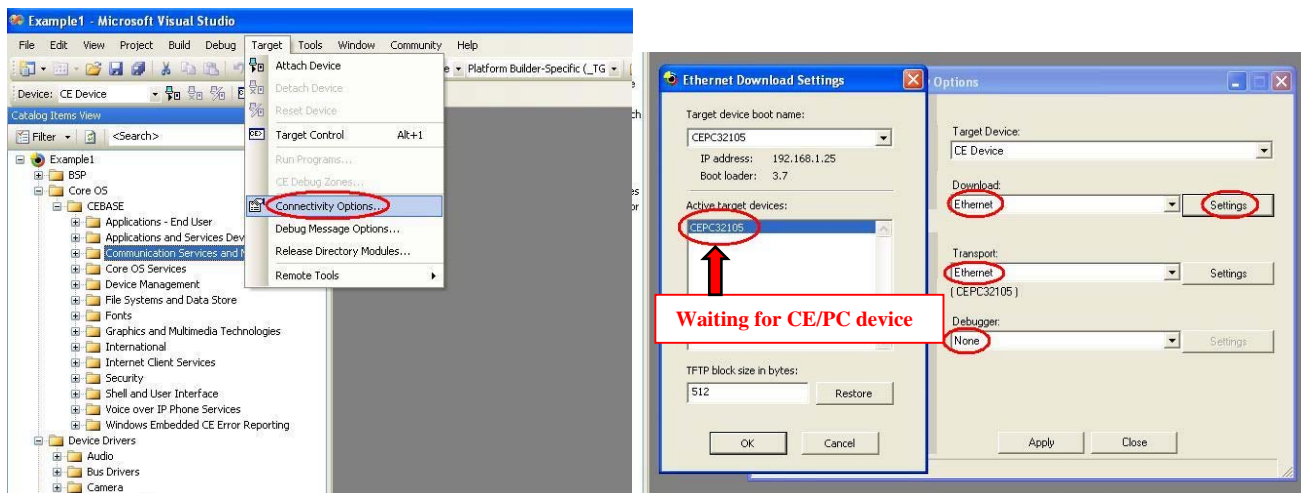
- 6-1. Select “Ethernet” in the drop-down menu titled “Download”.

- 6-2. Select “Ethernet” in the drop-down menu titled “Transport”.

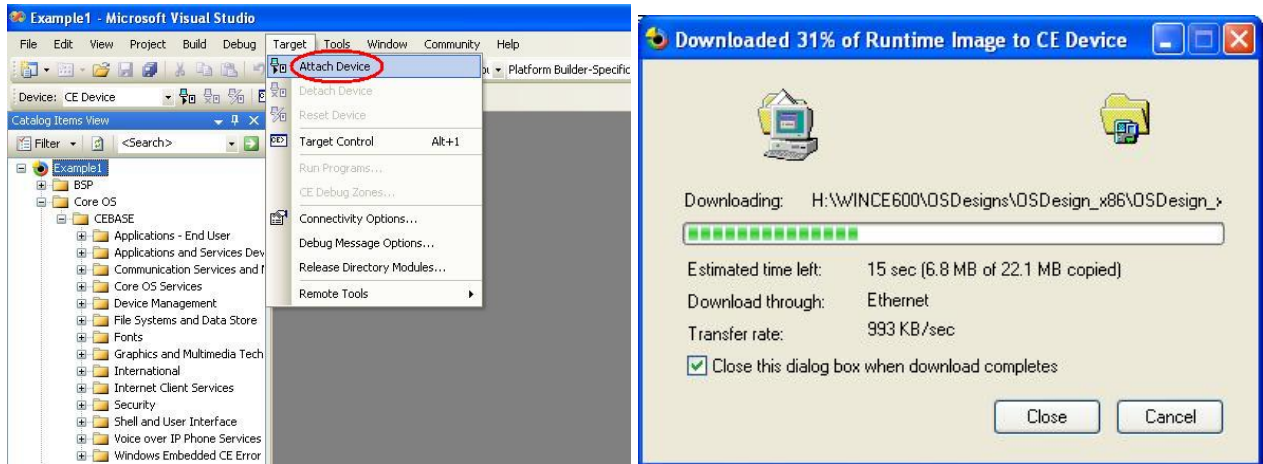
- 6-3. Click “Settings” button associated with the “Download” option.

This will open a new dialog to wait for the available CEPC devices.

- 6-4. Select “None” in the drop-down menu titled “Debugger”.



7. Choose “Attach Device” from the Target menu to start downloading the Platform Image file onto the CE/PC.



8. After the image file is downloaded successfully, the CE/PC will be booted up to WinCE operation system by running the Platform Image file.
9. Run Ping command to verify the network connection function.

5. Modify Driver Parameters:

1. Modify the AX88178 registry values from the \$(_WINCEROOT)\OSDesigns
\

```
; @CESYSGEN IF BSP_NIC_AX88178
;IF BSP_NIC_AX88178
[HKEY_LOCAL_MACHINE\Drivers\USB\LoadClients\2965_6016\Default\Default\AX88178]
    "DLL"="AX88178.DLL"
    "Prefix"="NDS"

[HKEY_LOCAL_MACHINE\Drivers\USB\ClientDrivers\AX88178]
    "DLL"="AX88178.DLL"
    "Prefix"="NDS"

[HKEY_LOCAL_MACHINE\Comm\AX88178]
    "DisplayName"="ASIX AX88178 USB 2.0 Gigabit Ethernet Driver"
    "Group"="NDIS"
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[HKEY_LOCAL_MACHINE\Comm\AX88178\Linkage]
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;                8 = "100BaseTx Half_Duplex"; 9 = "100BaseTx Full_Duplex"
;                17 = "1000BaseT Full_Duplex"
; "FlowControl"   ==> 0 = "Disable"; 1 = "TX PAUSE"; 2 = "RX PAUSE"; 3 = "Enable"
;=====
    "ConnectionType"=dword:0
    "FlowControl"=dword:3

[HKEY_LOCAL_MACHINE\Comm\AX881781\Parms\TcpIp]
;    "EnableDHCP"=dword:0                ;Disable DHCP function
;    "IpAddress"="xxx.xxx.xxx.aaa"        ;Define your IP address (xxx.xxx.xxx.aaa)
;    "Subnetmask"="255.255.255.0"         ;Define Submask IP address
;    "DefaultGateway"="xxx.xxx.xxx.bbb"   ;Define Gateway IP address
;    "DNS"="xxx.xxx.xxx.ccc"              ;Define DNS server IP address

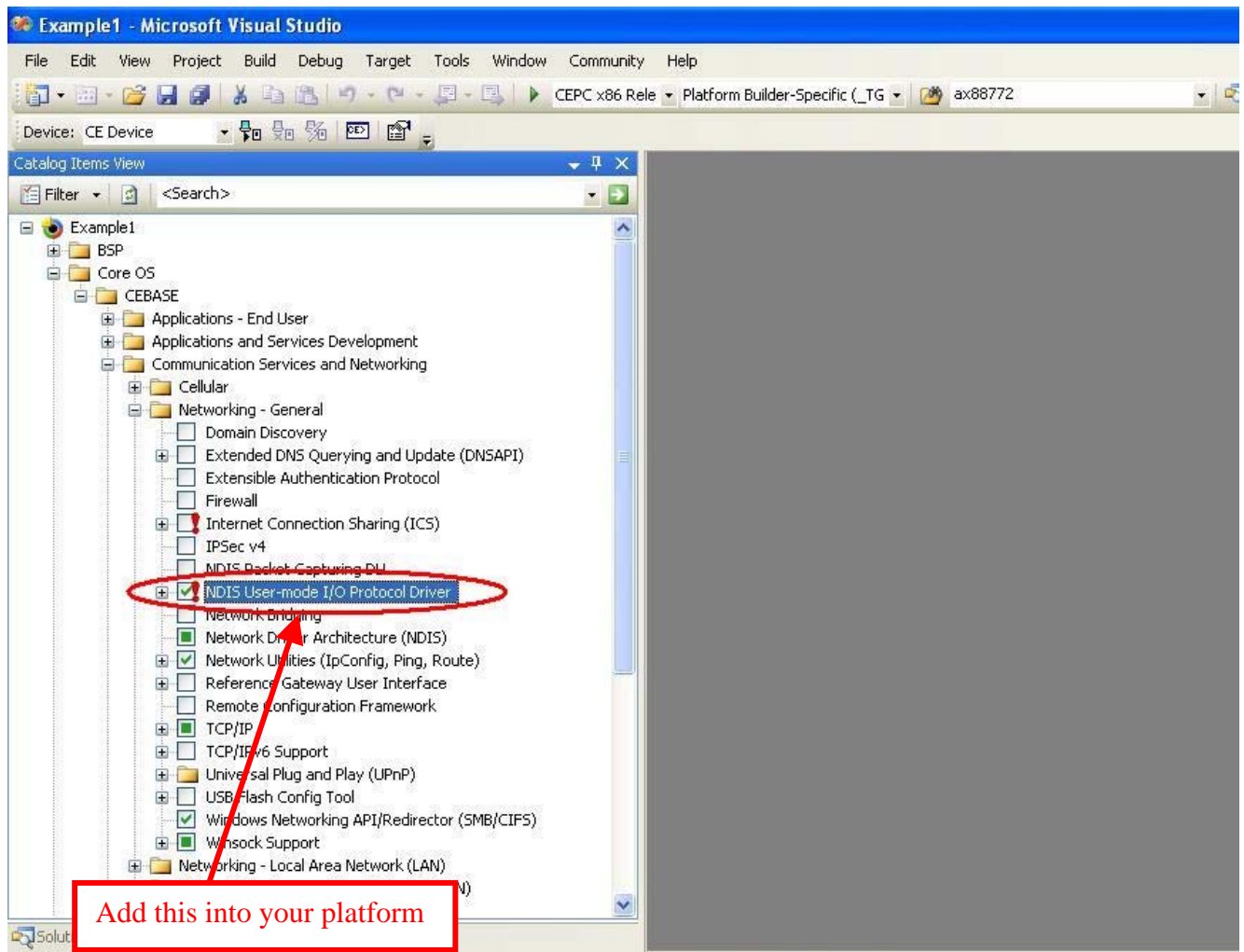
    "AutoCfg"=dword:1
    "EnableDHCP"=dword:1                ;Enable DHCP function
    "UseZeroBroadcast"=dword:0           ;Use zero for broadcast address?

;ENDIF BSP_NIC_AX88178
; @CESYSGEN ENDIF BSP_NIC_AX88178
```

2. Choose “Make Run-Time Image” from the Build menu to build a new platform image (NK.BIN) to take effect the new settings.

6. How to configure WinCE 6.0 to run the SROM Programming Tool?

Before running AX88178 SROM Programming Tool (eeprom.exe), users need to add the “NDIS user mode I/O driver” in the WinCE 6.0 platform and then select “Build and Sysgen” from “Build OS” menu to rebuild the boot image file.



7. Known Errata:

None.