

Embedded based teaching pendant optimized for industrial robots.

DTP7H-W

Windows CE7

Development Environment Installation Guide

(R1) Version

DAINCUBE Corp.

ARM Cortex-A9 Windows CE7 system

FORM 170703F – 2019.04.03



DTP7H-W Windows CE7 Development Environment Installation Guide

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Preface

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Important information

This documentation is intended for qualified audience only.

The product described herein is not an end user product.

It was developed and manufactured for further processing by trained personnel.

This product is protected by the "End-User License Agreement" (EULA).

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Product support

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Safety precautions

Be sure to observe all of the following safety precautions.

Strict observance of these warning and caution indications are a **MUST** for preventing accidents, which could result in bodily injury and substantial property damage. Make sure you fully understand all definitions of these terms and related symbols given below, before you proceed to the manual.

Symbols

The following symbols may be used in this specification:



Warning

Warnings indicate conditions that, if not observed, can cause personal injury.



Caution

Cautions warn the user about how to prevent damage to hardware or loss of data.



Note

Notes call attention to important information that should be observed.

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User Guide

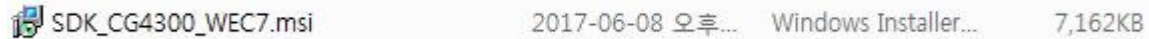
1. Windows Development Environment

1.1. SDK Install

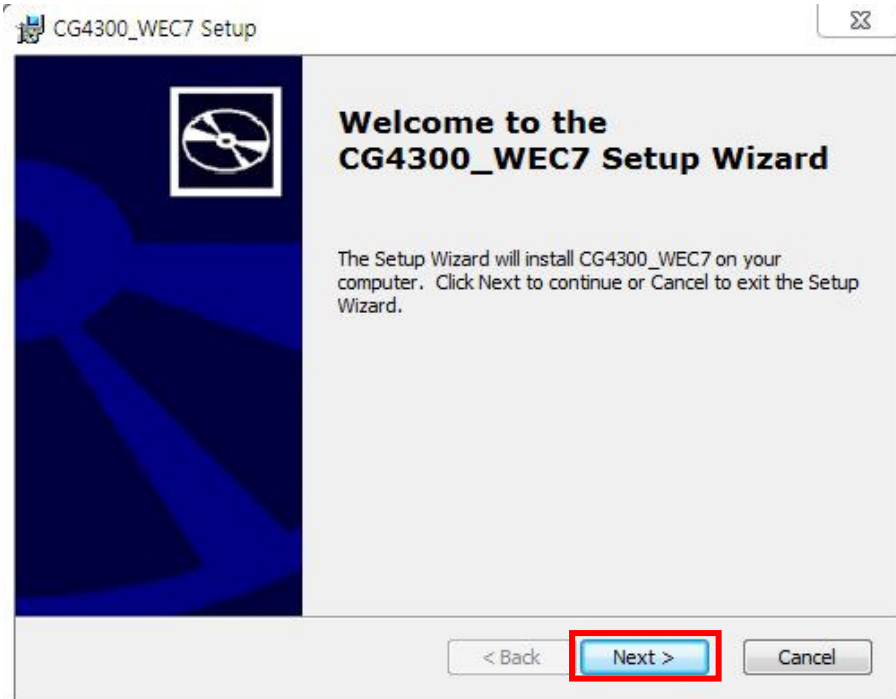
If Visual Studio 2008 is open before installation, be sure to close all of them.

In order to develop DTP7H-W in Visual Studio, you need to install additional SDK provided by DAINCUBE.

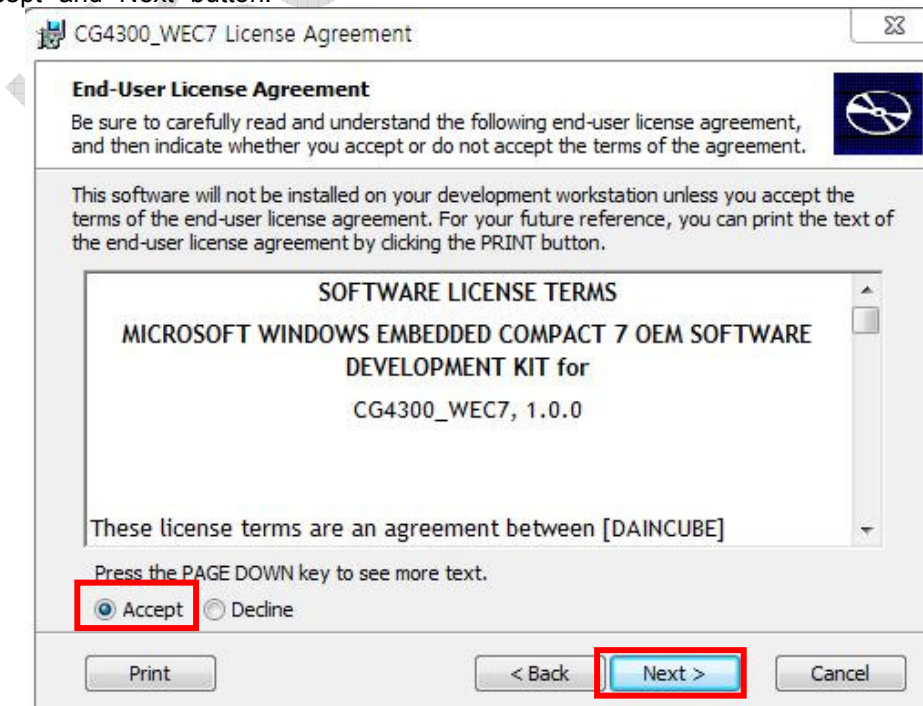
Run the provided "SDK_CG4300_WEC7.msi".

 SDK_CG4300_WEC7.msi 2017-06-08 오후... Windows Installer... 7,162KB

"Next" Button Click



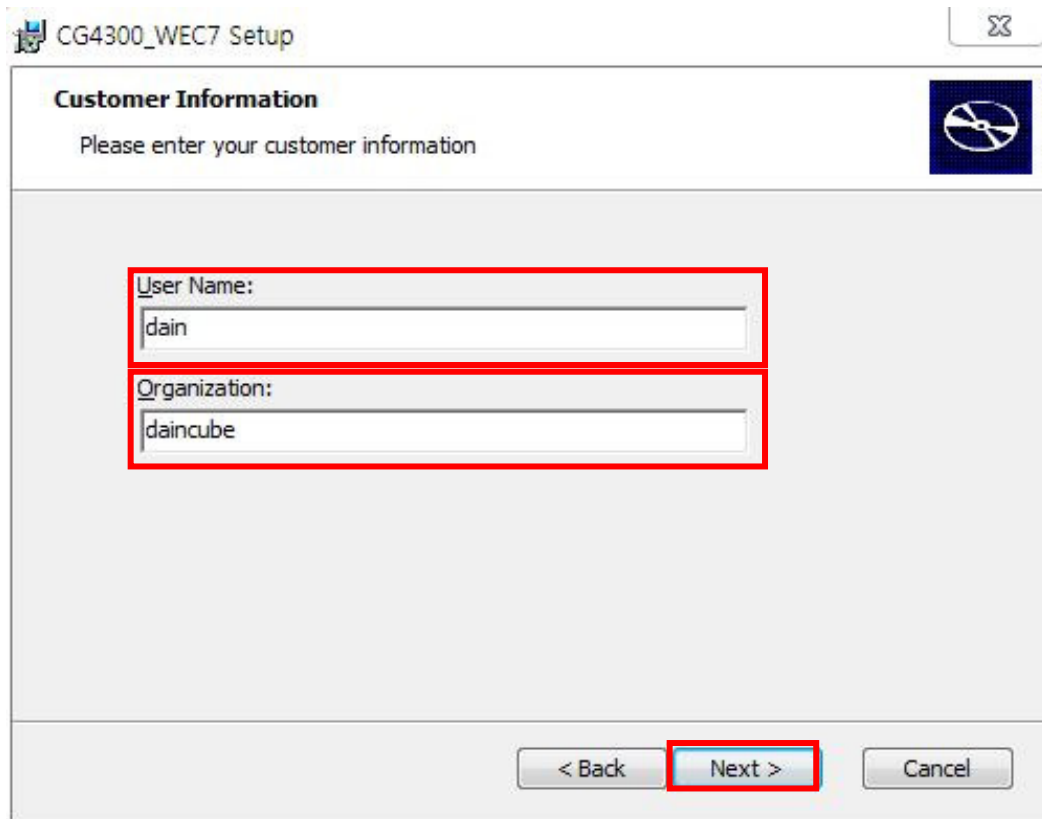
Click the "Accept" and "Next" button.



Enter "User Name" and "Organization" and click "Next" button.

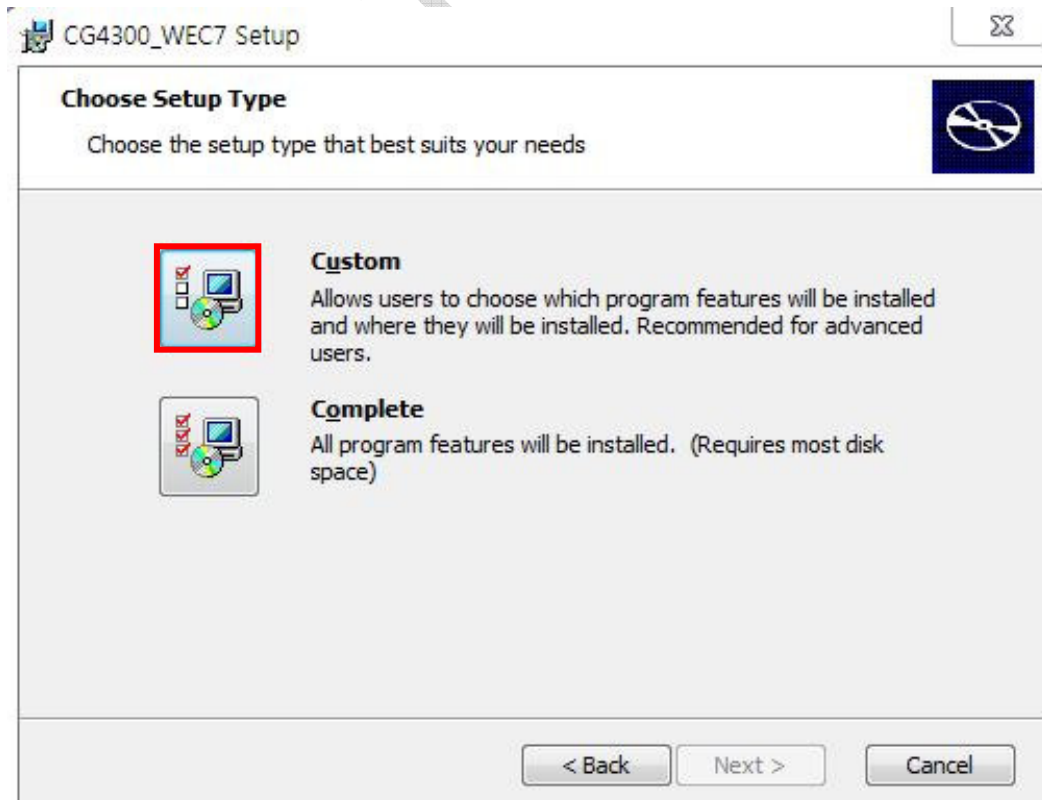
User Name : dain

Organization : daincube



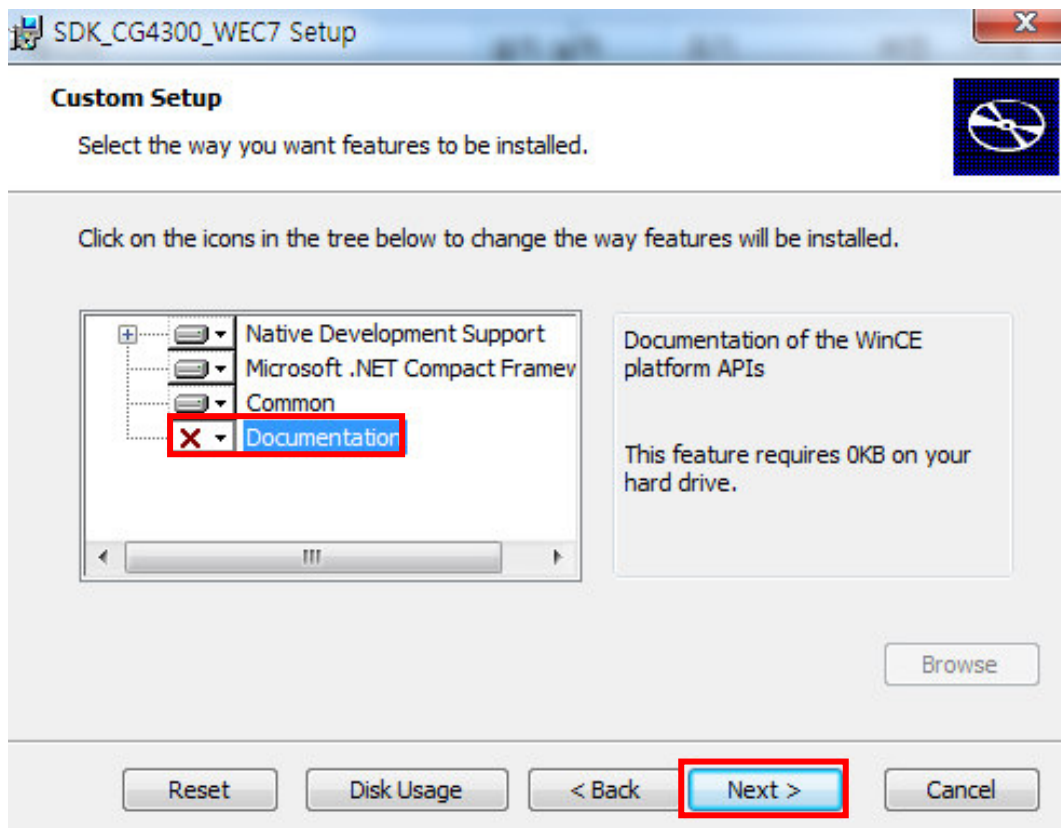
The screenshot shows the "Customer Information" screen of the CG4300_WEC7 Setup dialog box. The title bar reads "CG4300_WEC7 Setup". The main heading is "Customer Information" with a sub-heading "Please enter your customer information". There are two text input fields: "User Name:" containing "dain" and "Organization:" containing "daincube". Both input fields are highlighted with a red rectangular border. At the bottom of the dialog, there are three buttons: "< Back", "Next >" (highlighted with a red rectangular border), and "Cancel".

Click the "Custom" button.

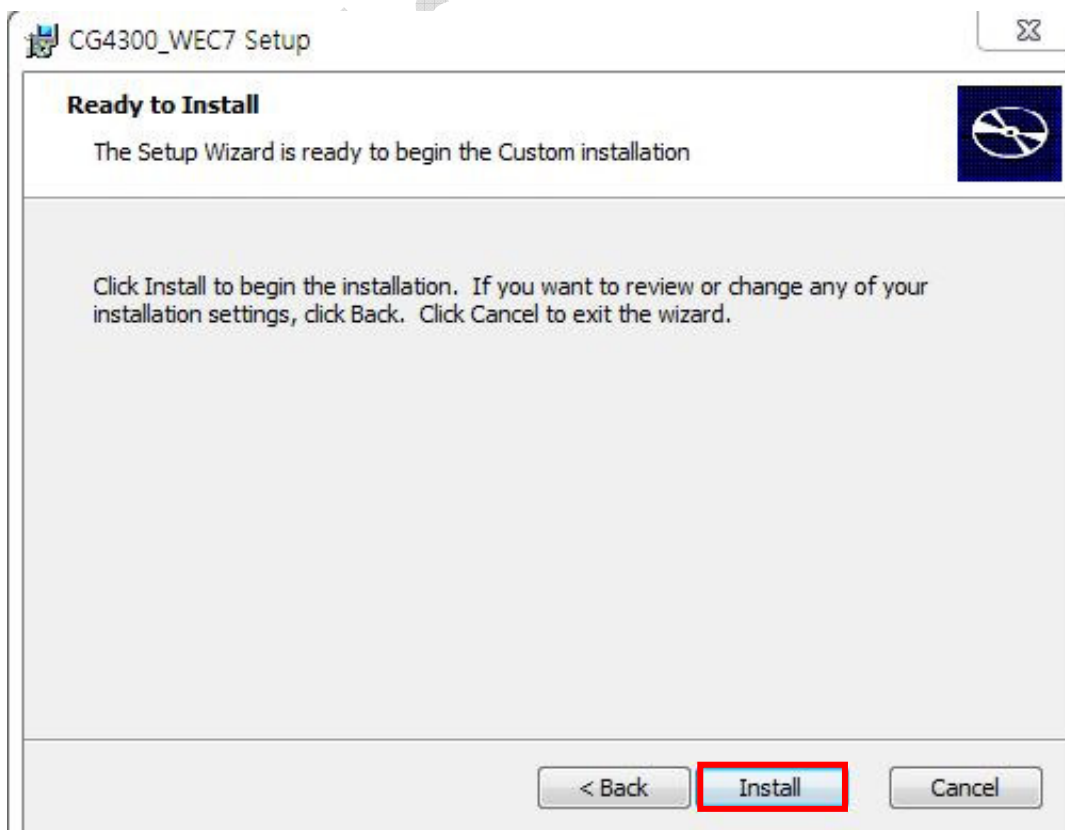


The screenshot shows the "Choose Setup Type" screen of the CG4300_WEC7 Setup dialog box. The title bar reads "CG4300_WEC7 Setup". The main heading is "Choose Setup Type" with a sub-heading "Choose the setup type that best suits your needs". There are two radio button options: "Custom" and "Complete". The "Custom" option is selected, indicated by a red square around its icon. The "Custom" option description is: "Allows users to choose which program features will be installed and where they will be installed. Recommended for advanced users." The "Complete" option description is: "All program features will be installed. (Requires most disk space)". At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel".

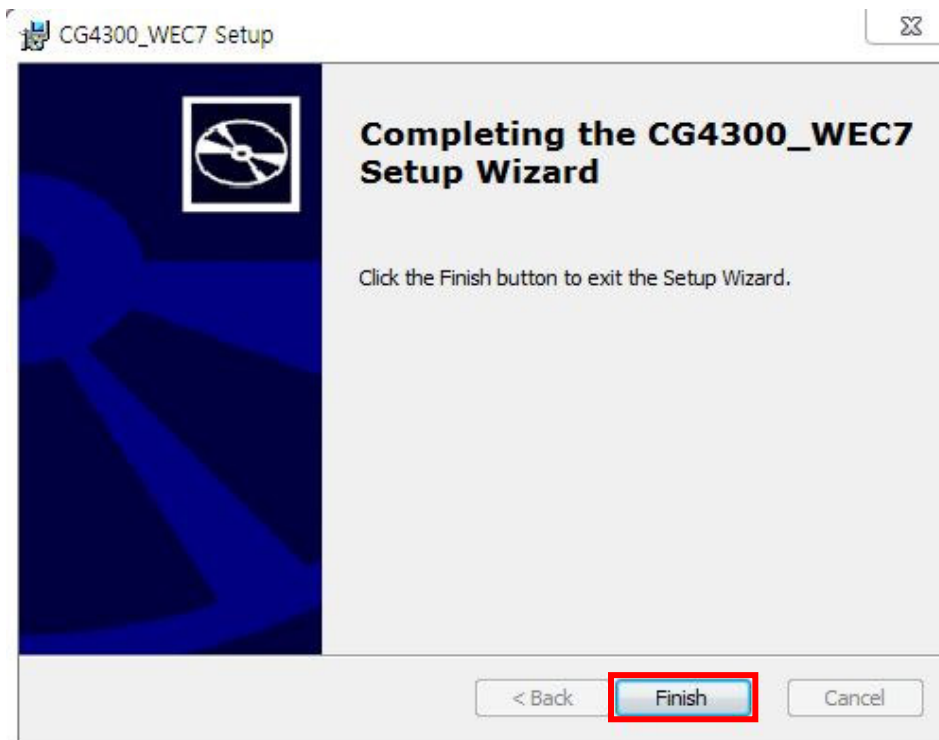
In Windows7 environment, click "Next" button except "Documentation".



Click the "Install" button.



Click the "Finish" button.



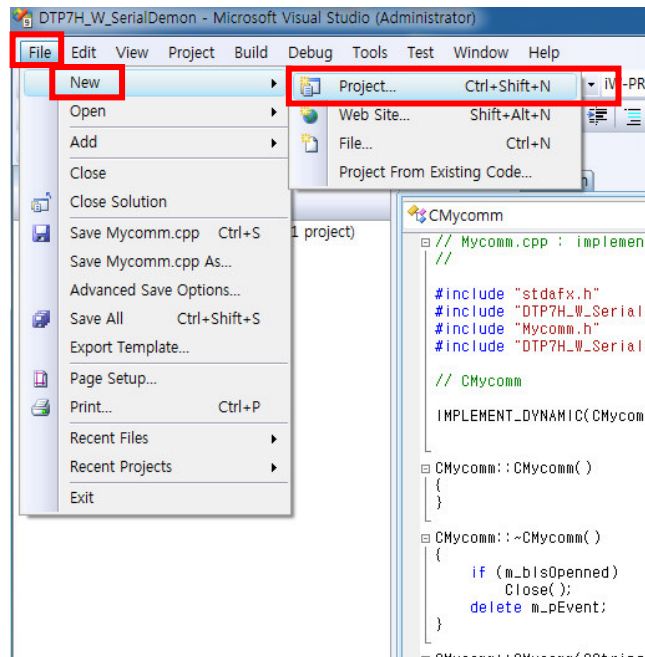
1.2. Power Supply

Once the installation is completed on the HOST PC, turn on the power. If the wallpaper is displayed, boot normally It is finished.

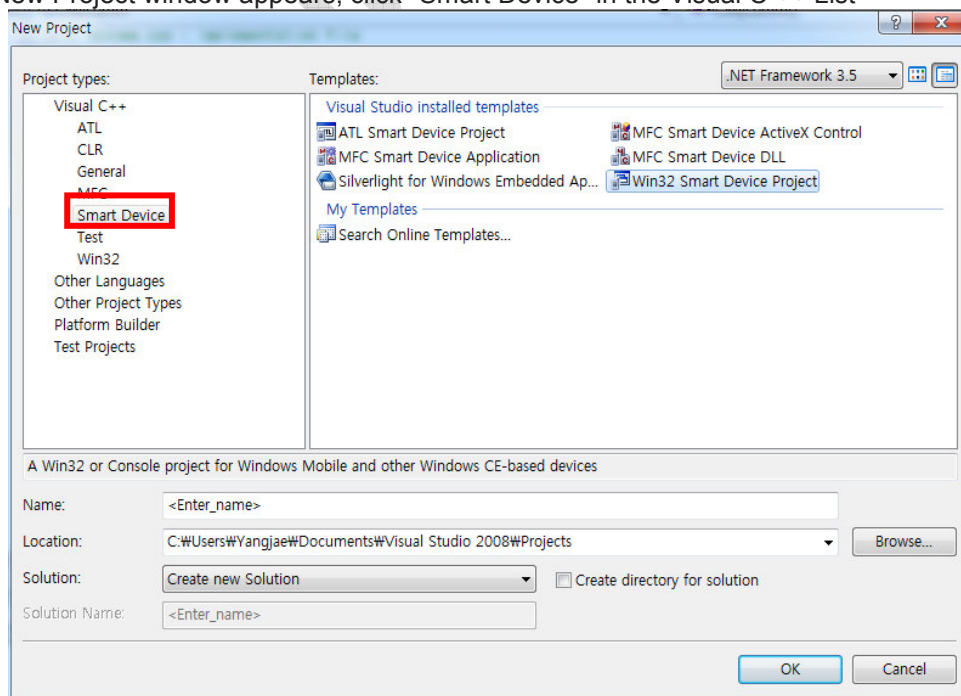
2. . Windows Application Project Example (MFC)

2.1. Test Application

Once the connection with DTP7H-W is completed, the cross-compile development environment for application development has been completed. Create a Project on your PC and explain how to debug with DTP7H-W. Open Visual Studio and click "File -> New -> Project".



When the New Project window appears, click "Smart Device" in the Visual C ++ List



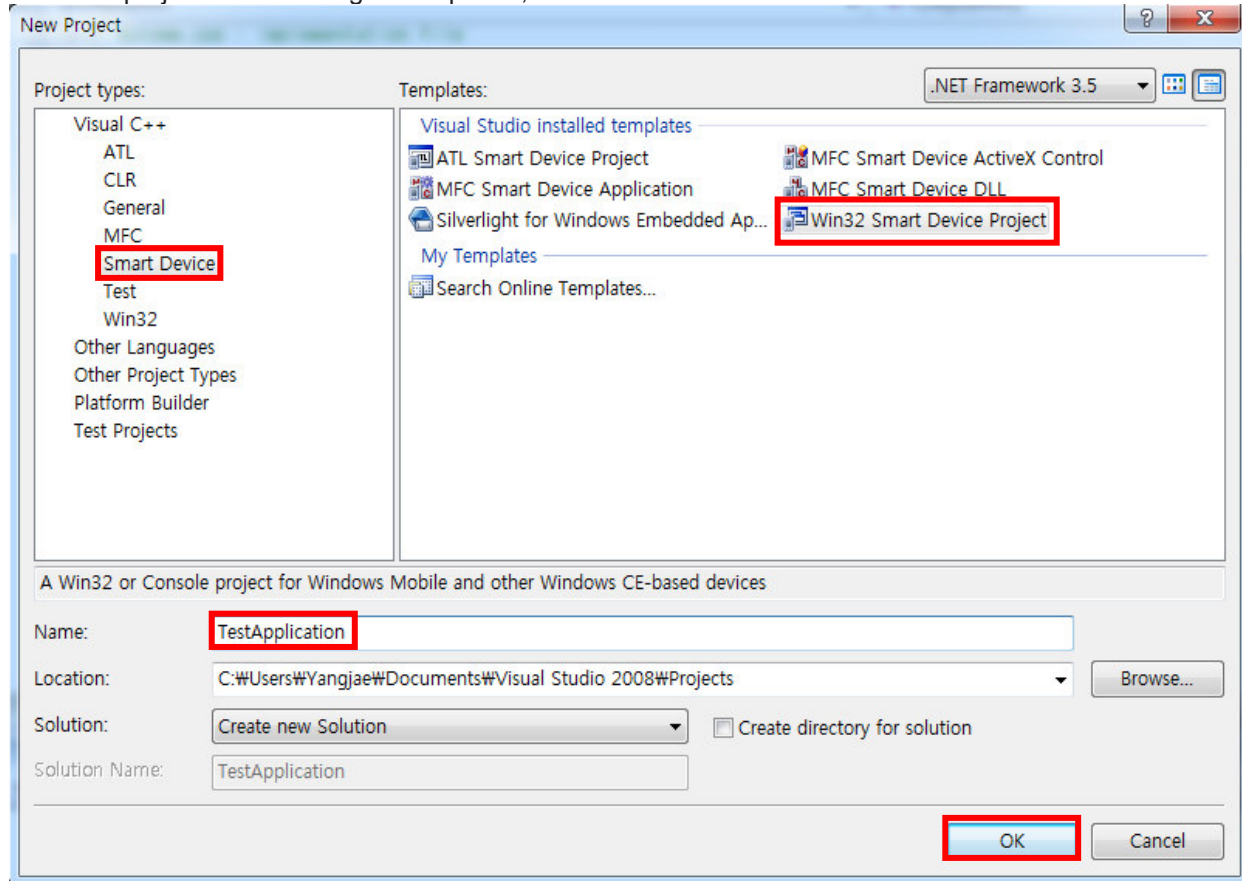
※ Embedded Visual C ++ and Embedded Visual Basic are included in VS2005, and Smart Device is created. This Smart Device is an Embedded Application.

In the Visual Studio installed templates on the right, under "Win32 Smart Device Project" or Select "MFC Smart Device Application".

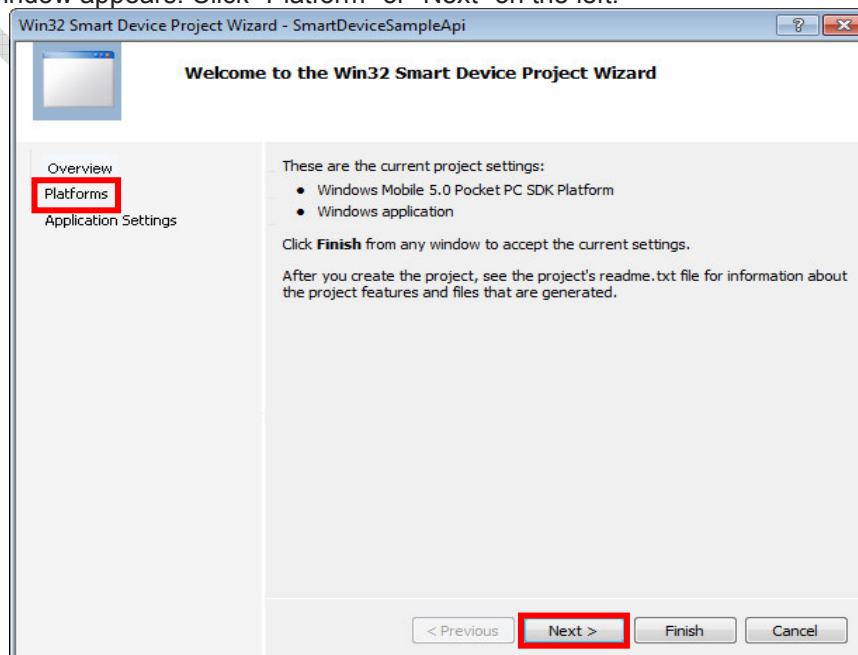
In this manual "Win32 Smart Device Project" to test.
Enter the desired Name and Location in the Project Name at the bottom.

Project Name : TestApplication
Project Location: Host PC work path

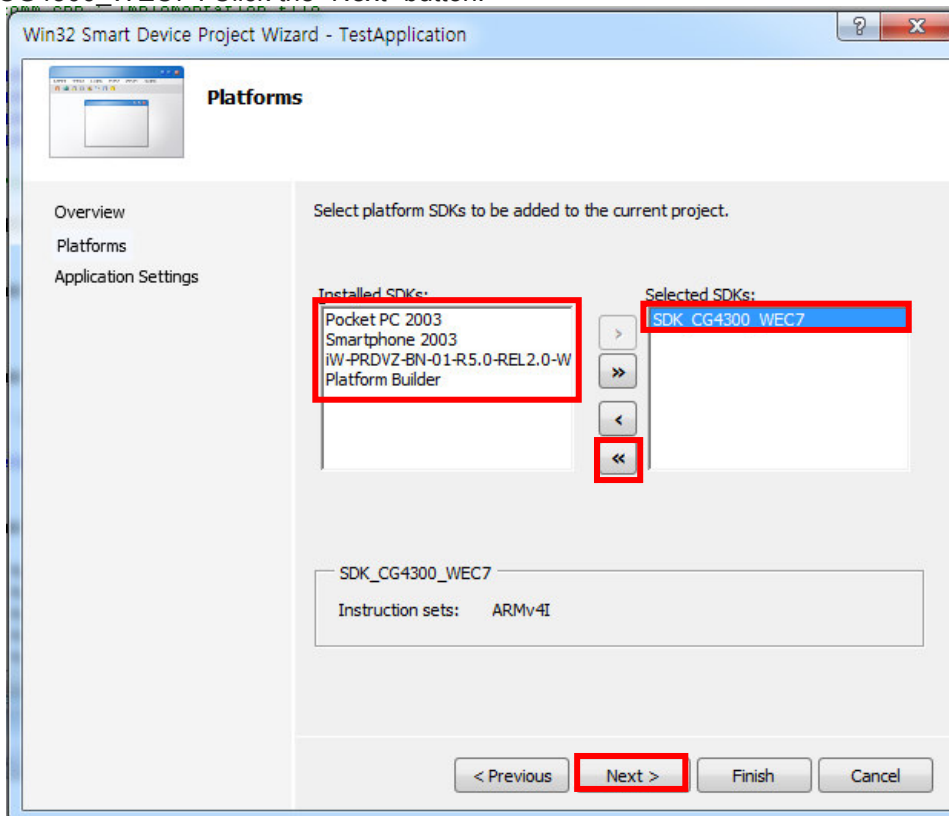
Project Name will be "TestApplication".
When the project name setting is completed, click "OK" button



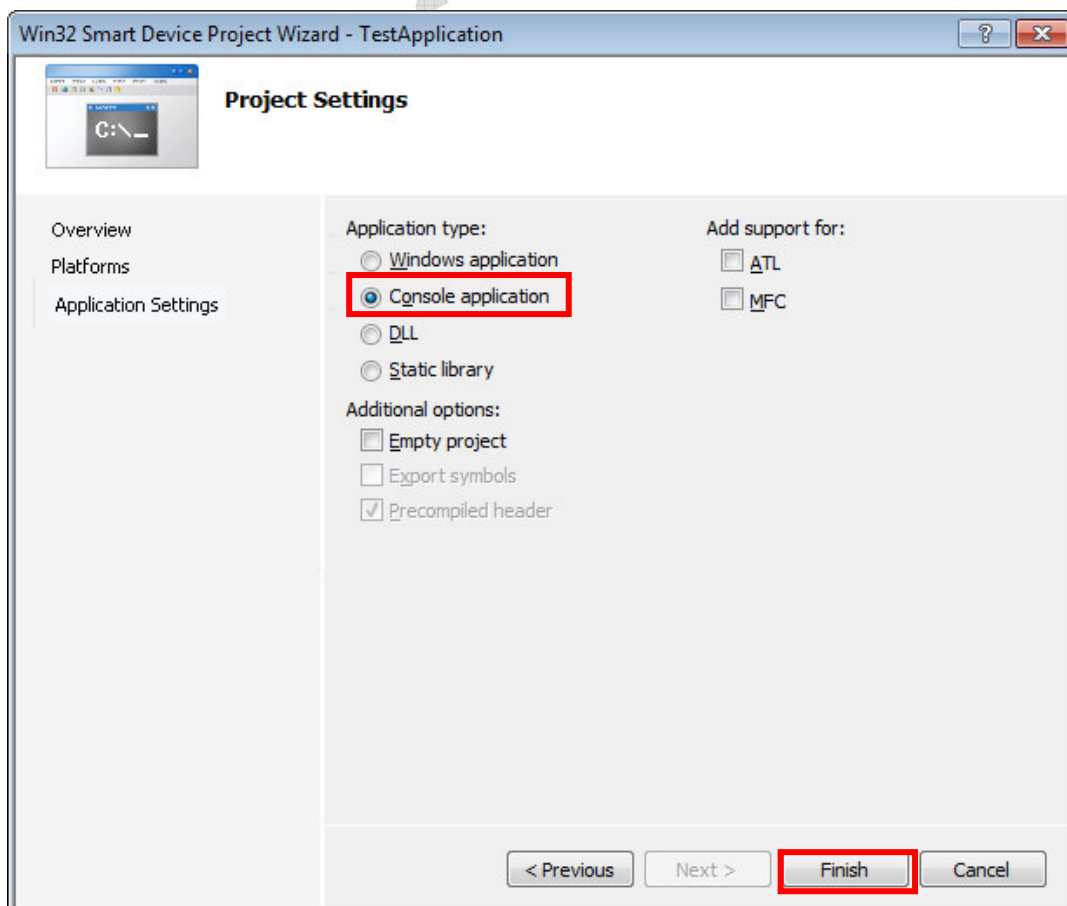
The following window appears. Click "Platform" or "Next" on the left.



By default, Pocket PC 2003 is selected. Click the << button to remove it. Add "SDK_CG4300_WEC7". Click the "Next" button.



I will make test application as console application and proceed with test. Select Console Application and click the "Finish" button.

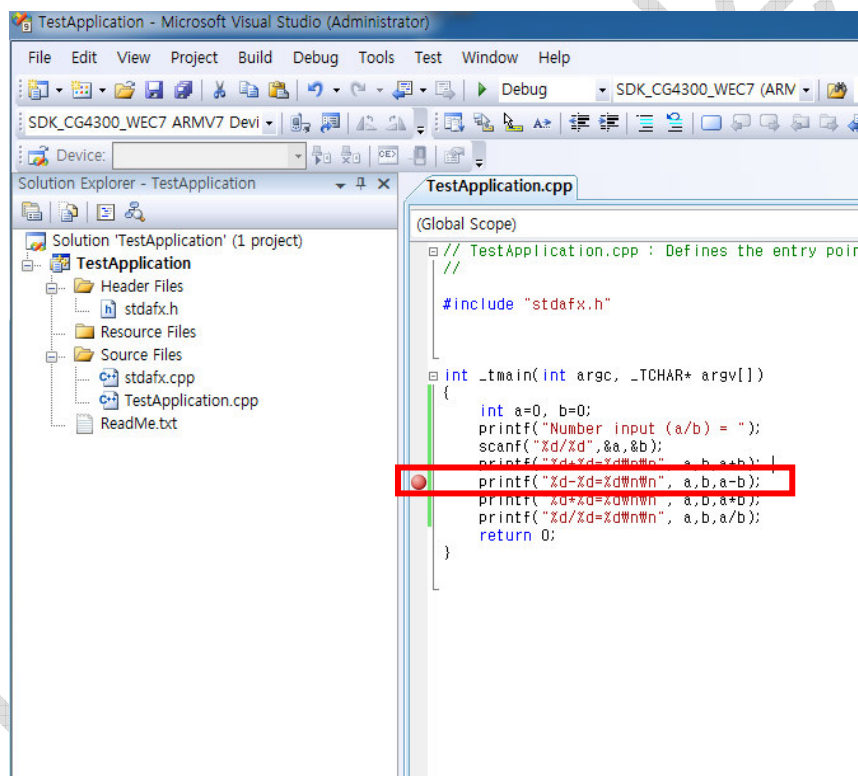


In the TestApplication.cpp file, create the following simple arithmetic example Source:

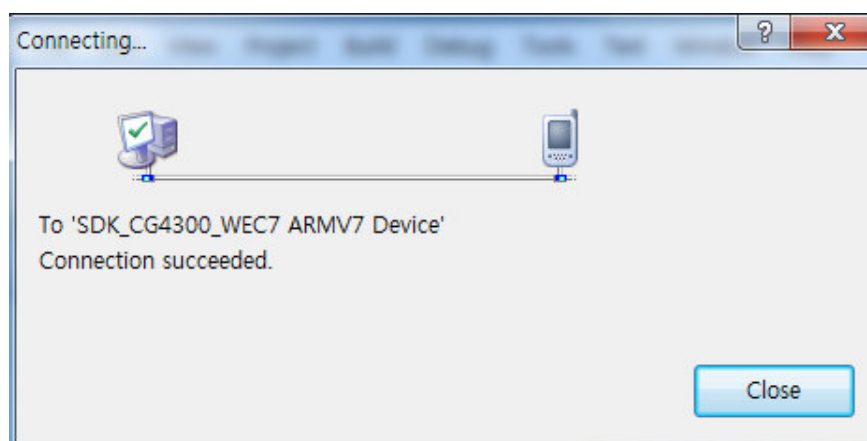
```
#include "stdafx.h"

int _tmain(int argc, _TCHAR* argv[])
{
    int a=0, b=0;
    printf("Number input (a/b) = ");
    scanf("%d/%d",&a,&b);
    printf("%d+%d=%d\n\n", a,b,a+b);
    printf("%d-%d=%d\n\n", a,b,a-b);
    printf("%d*%d=%d\n\n", a,b,a*b);
    printf("%d/%d=%d\n\n", a,b,a/b);
    return 0;
}
```

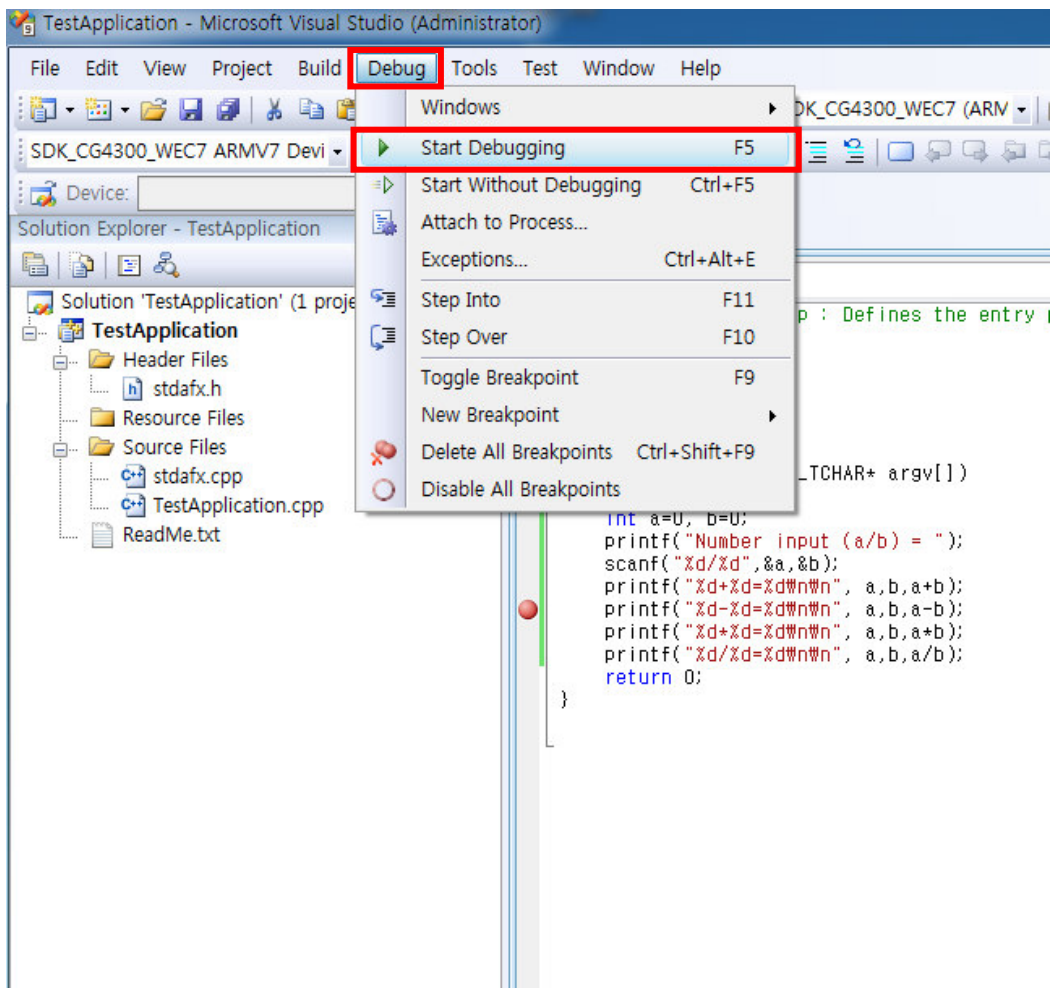
When the sample source creation is completed, click the breakpoint point in the "-" part of the arithmetic operation.



Connect to DTP7H-W. If it is already connected, proceed to the next step.



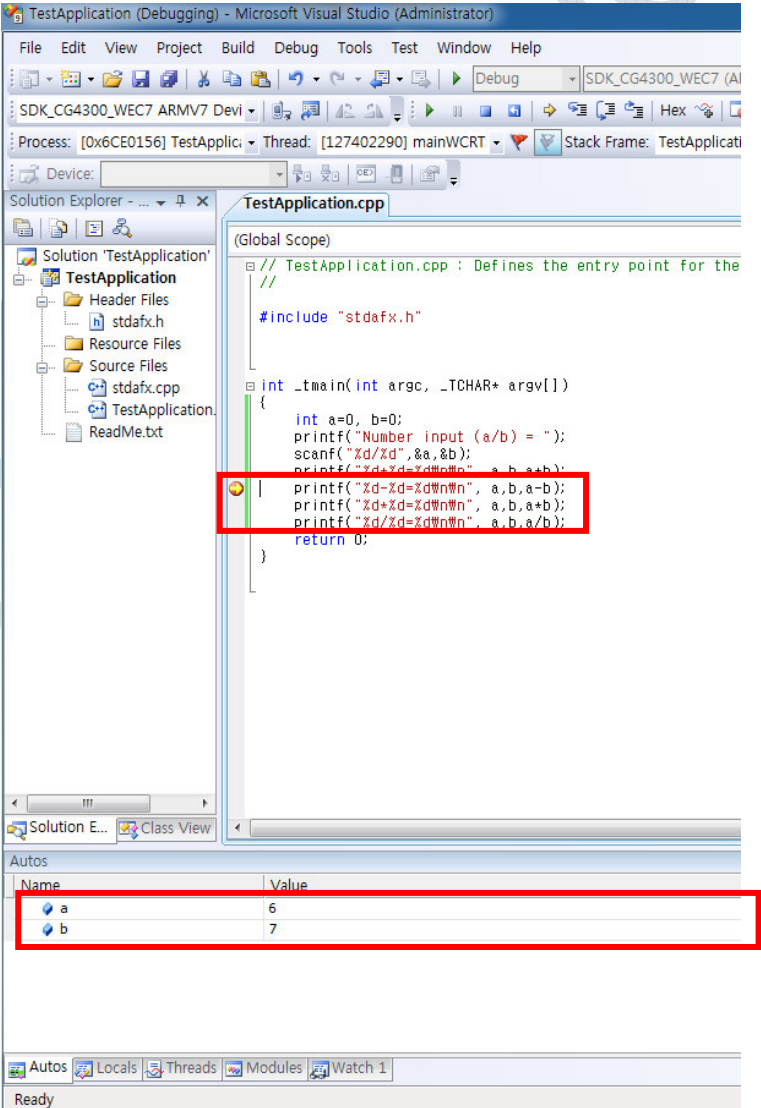
If the HOST PC and DTP7H-W are connected, click "Debug -> Start Debugging".



When Debugging is completed, it will be executed automatically as shown below on the DTP7H-W screen.

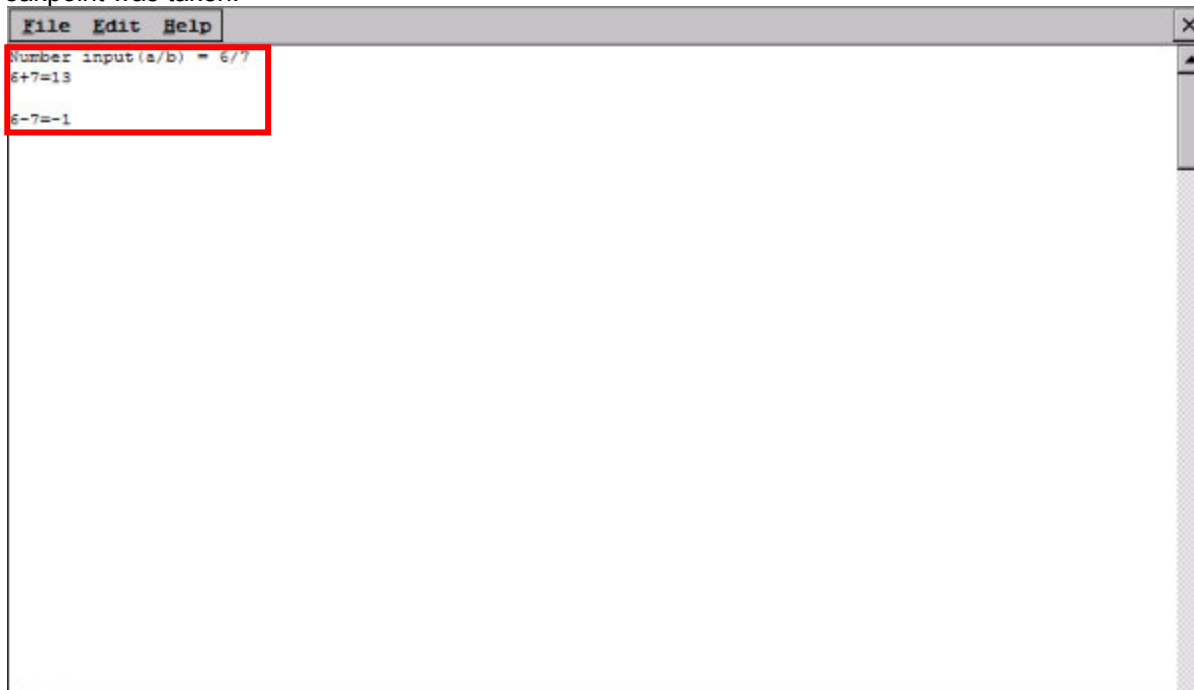


If you enter a random number and press Enter, execution is confirmed until the breakpoint is taken.



[Debugging with Visual Studio and DTP7H-W in real time]

When Step Into is executed, you can confirm that the "-" operation has started after the point where the breakpoint was taken.



```
File Edit Help
Number input(a,b) = 6/7
6+7=13
6-7=-1
```

The subsequent tasks are the same as the application development process on the PC.

2.2. How to Auto Execute

When the DTP7H-W finishes booting and you want to run the application automatically, You can edit and set it to run automatically.

- 1) Power on DTP7H-W to boot and move to FlashDisk folder.
- 2) HOST PC It creates the default 'Notepad' under 'Config' in Windows.

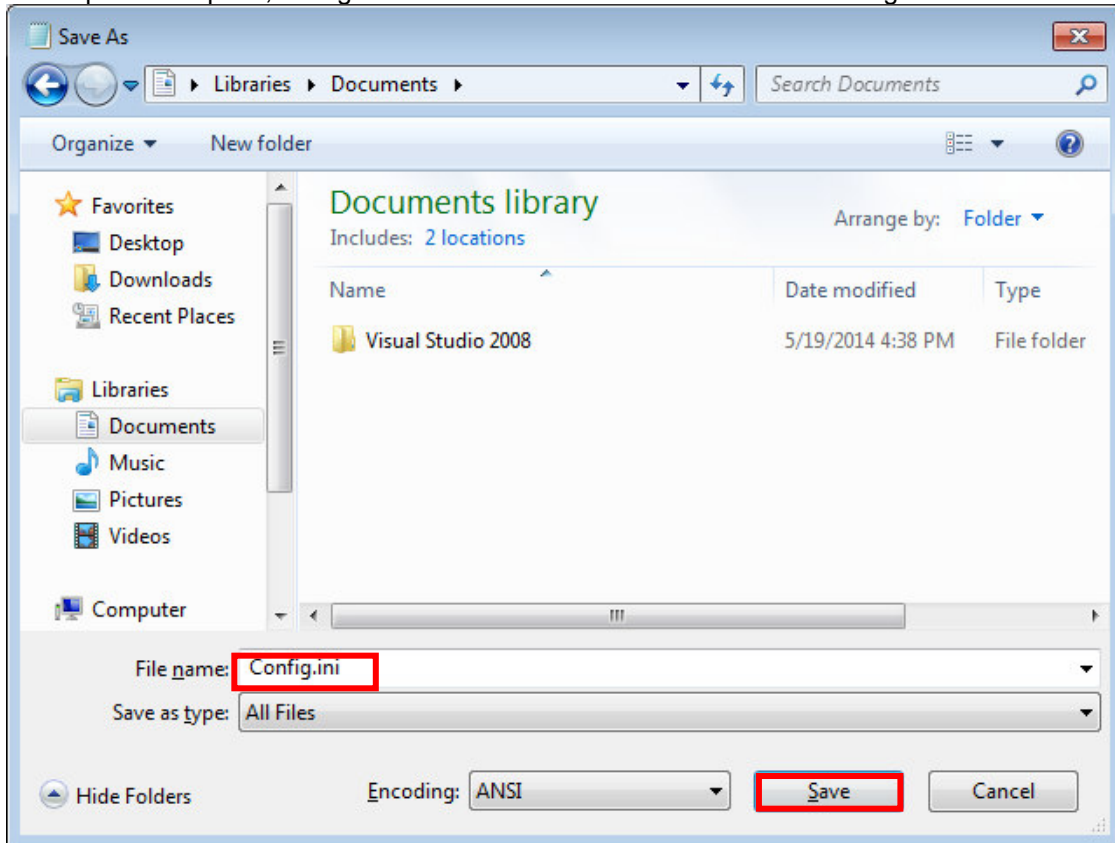


Config.txt

- 3) When the "Config.txt" file is created, enter the contents of Notepad as below.

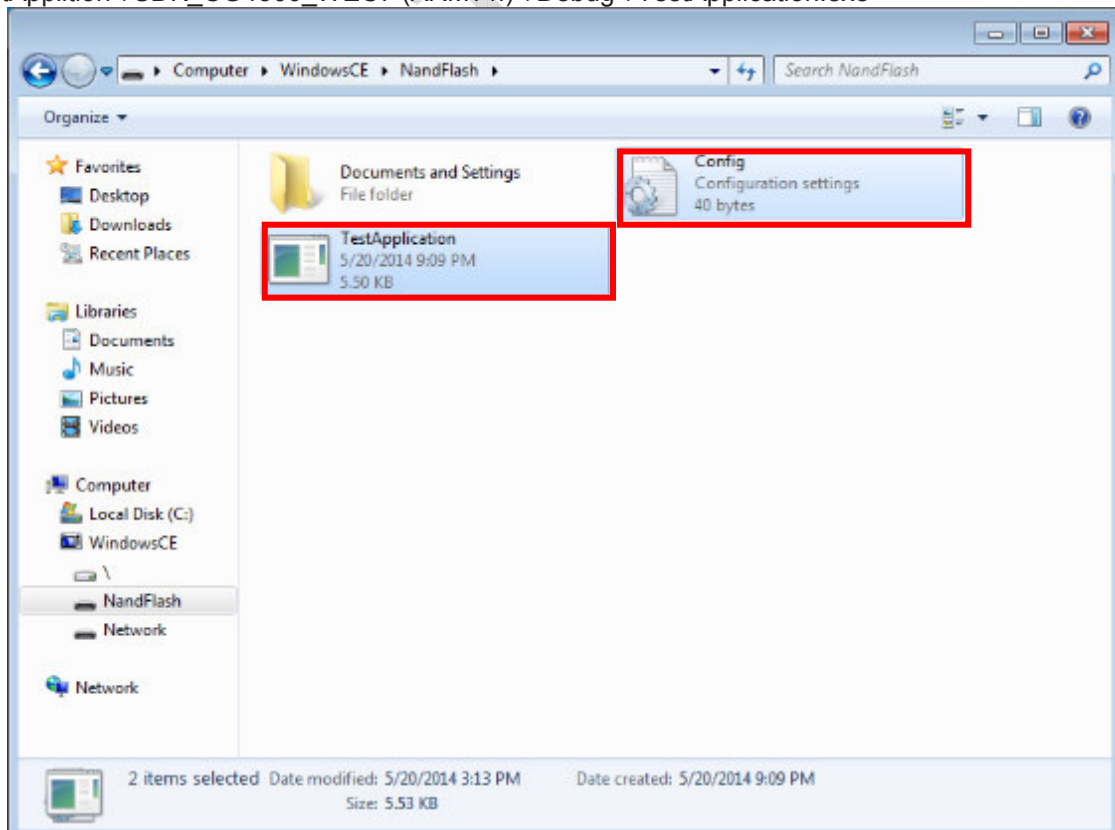
```
Launch1=\FlashDisk\TestApplication.exe
```

When the input is complete, change the file name and extension name to "Config.ini" and save.

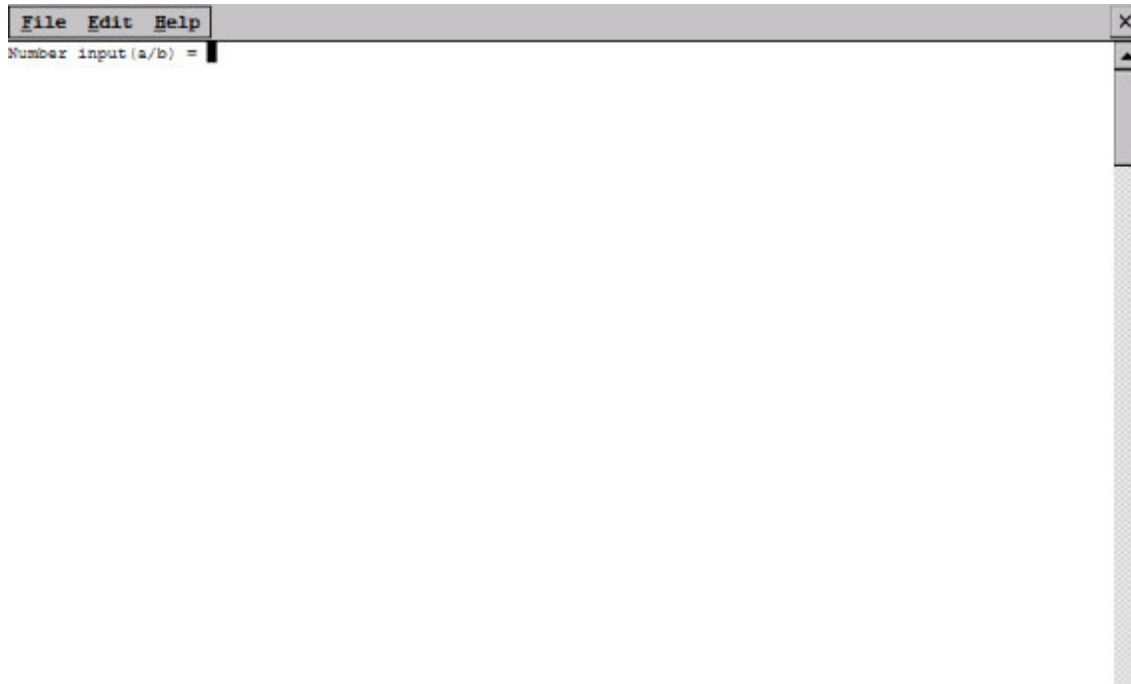


The "Config.ini" file and the TestApplication.exe file that was created in '4.1 Test Application' DTP7H-W Copy to the FlashDisk folder.

* Note: Check the path of the TestApplication.exe file in the folder where it is saved as below.
TestApplication \ SDK_CG4300_WEC7 (ARMv4I) \ Debug \ TestApplication.exe



If copying to the FlashDisk folder is completed, the program will be executed automatically when DTP7H-W is rebooted.



User Guide

3. Connect to DTP7H-W

To develop Visual Studio DTP7H-W Application, you need to connect Visual Studio with DTP7H-W. DTP7H-W can be used for development environment using Ethernet.

Development is possible after connection is completed by the method shown below.

How to connect HOST PC with DTP7H-W
(HOST PC and DTP7H-W Connection Ethernet)

3.1. HOST PC and DTP7H-W Connection (Ethernet)

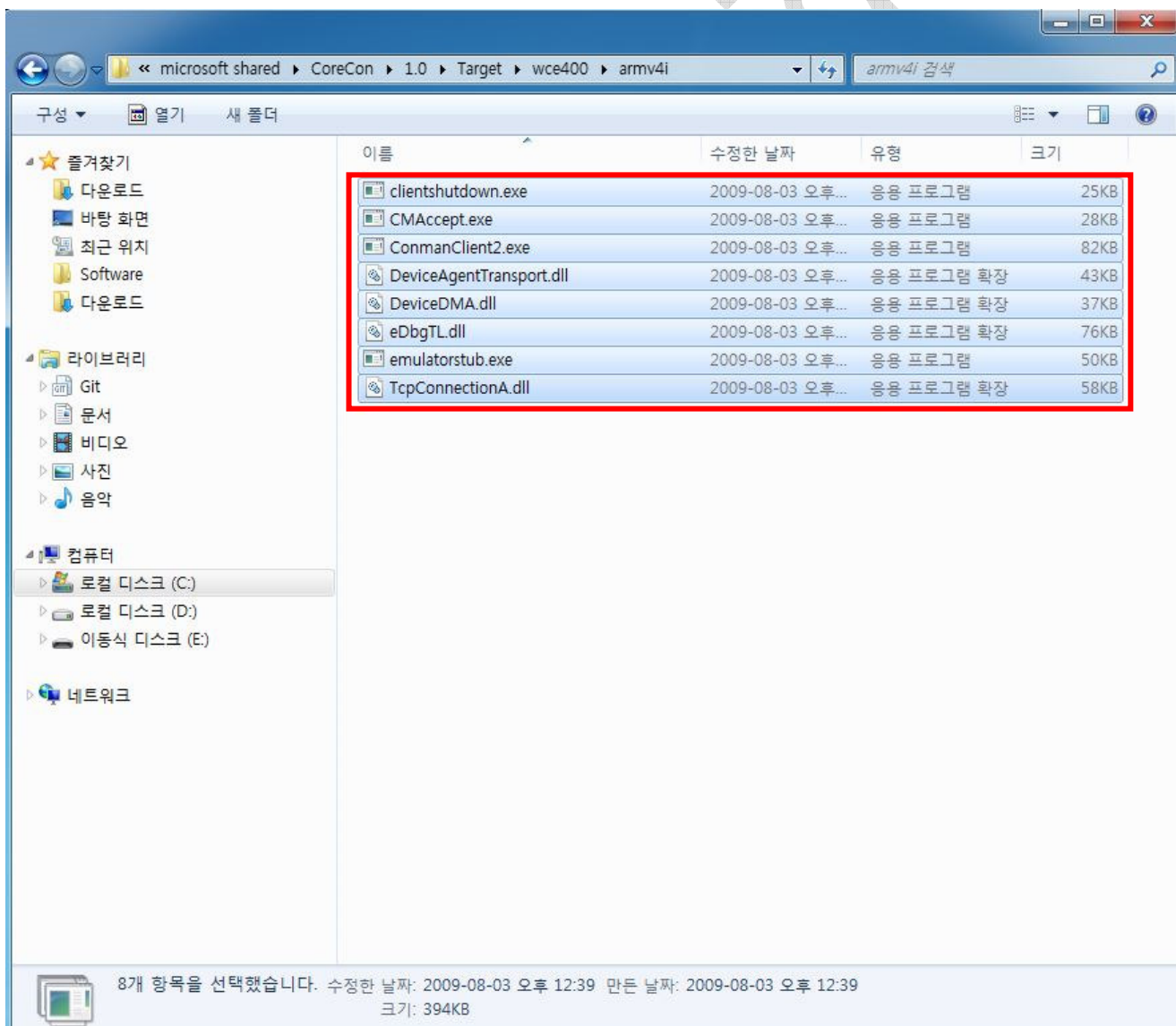
This manual explains how to build a cross-compile environment using Ethernet.

This is how to build a development environment using only DTP7H-W Ethernet.

In this case, you have to set up the connection with Visual Studio manually on the DTP7H-W side using a separate program.

If you installed Visual Studio 2008 in a folder other than the default installation folder, change the path below to match your PC. If you installed it as the default folder

There are 8 files in the path of " C: \ Program Files (x86) \ Common Files \ Common Files \ microsoft shared \ CoreCon \ 1.0 \ Target \ wce400 \ armv4i " .

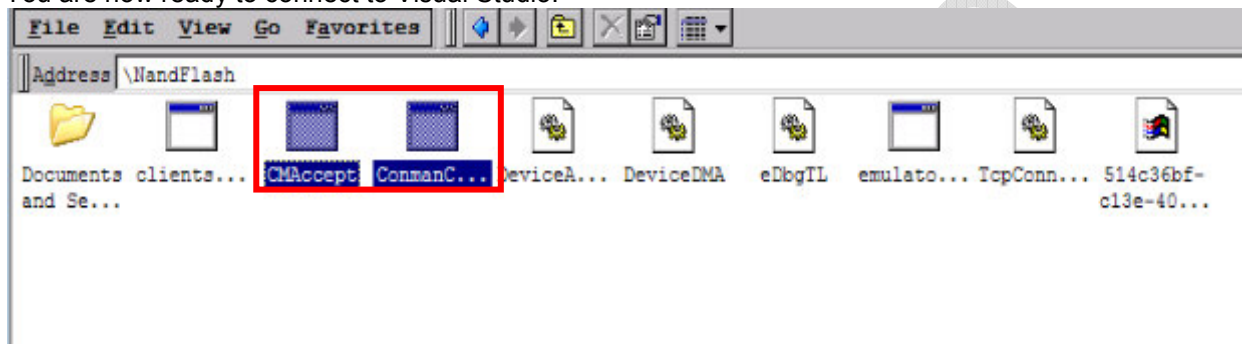


Copy these files to a specific folder on DTP7H-W. The location of the file copy can be anywhere, FlashDisk folder, DTP7H-W can keep the file even when it reboots.

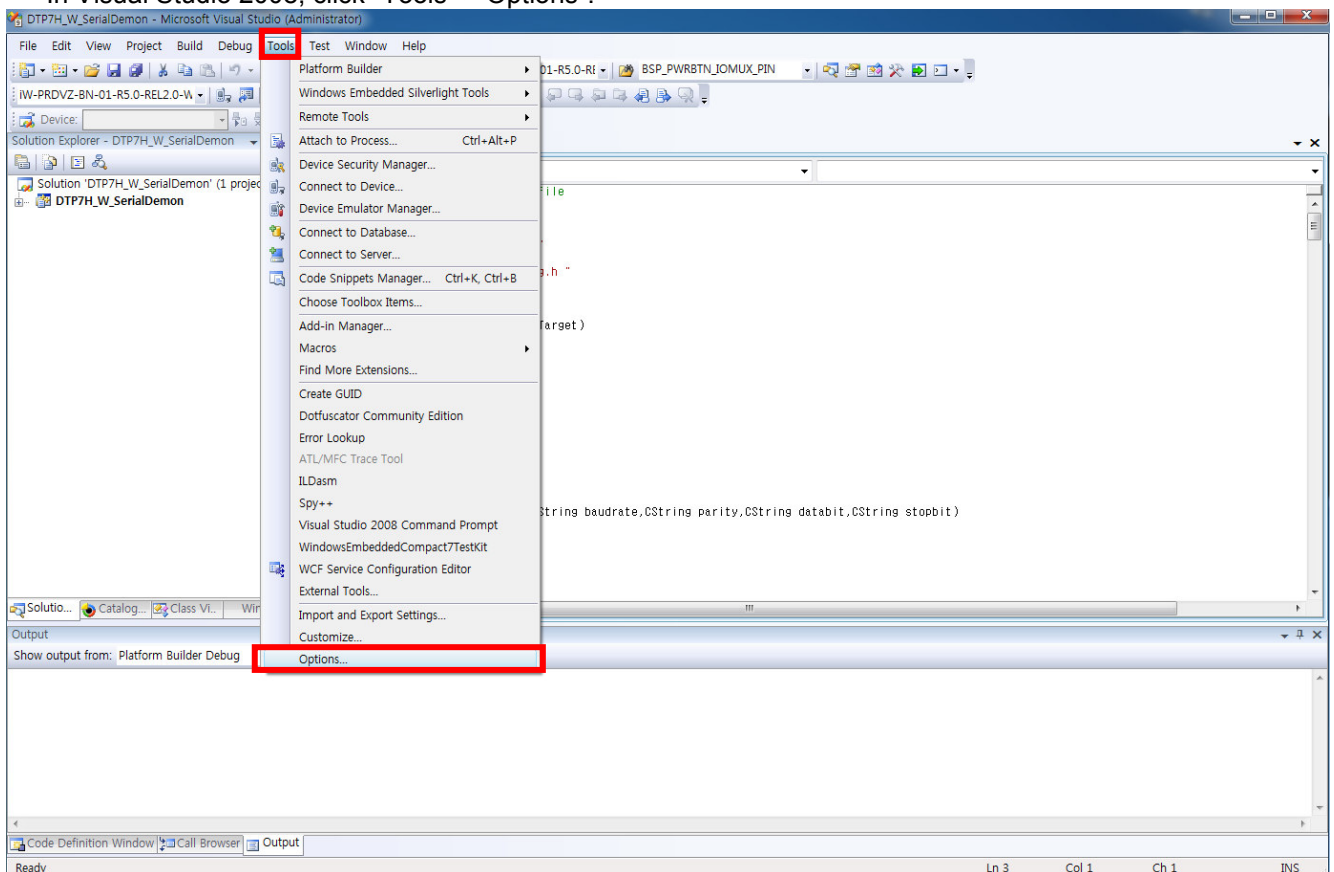
clientshutdown.exe	2009-08-03 오후...	응용 프로그램	25KB
CMAccept.exe	2009-08-03 오후...	응용 프로그램	28KB
ConmanClient2.exe	2009-08-03 오후...	응용 프로그램	82KB
DeviceAgentTransport.dll	2009-08-03 오후...	응용 프로그램 확장	43KB
DeviceDMA.dll	2009-08-03 오후...	응용 프로그램 확장	37KB
eDbgTL.dll	2009-08-03 오후...	응용 프로그램 확장	76KB
emulatorstub.exe	2009-08-03 오후...	응용 프로그램	50KB
TcpConnectionA.dll	2009-08-03 오후...	응용 프로그램 확장	58KB

Execute "ConManClient2" and "CMAccept" on DTP7H-W. There is no special change in the screen Process is running normally.

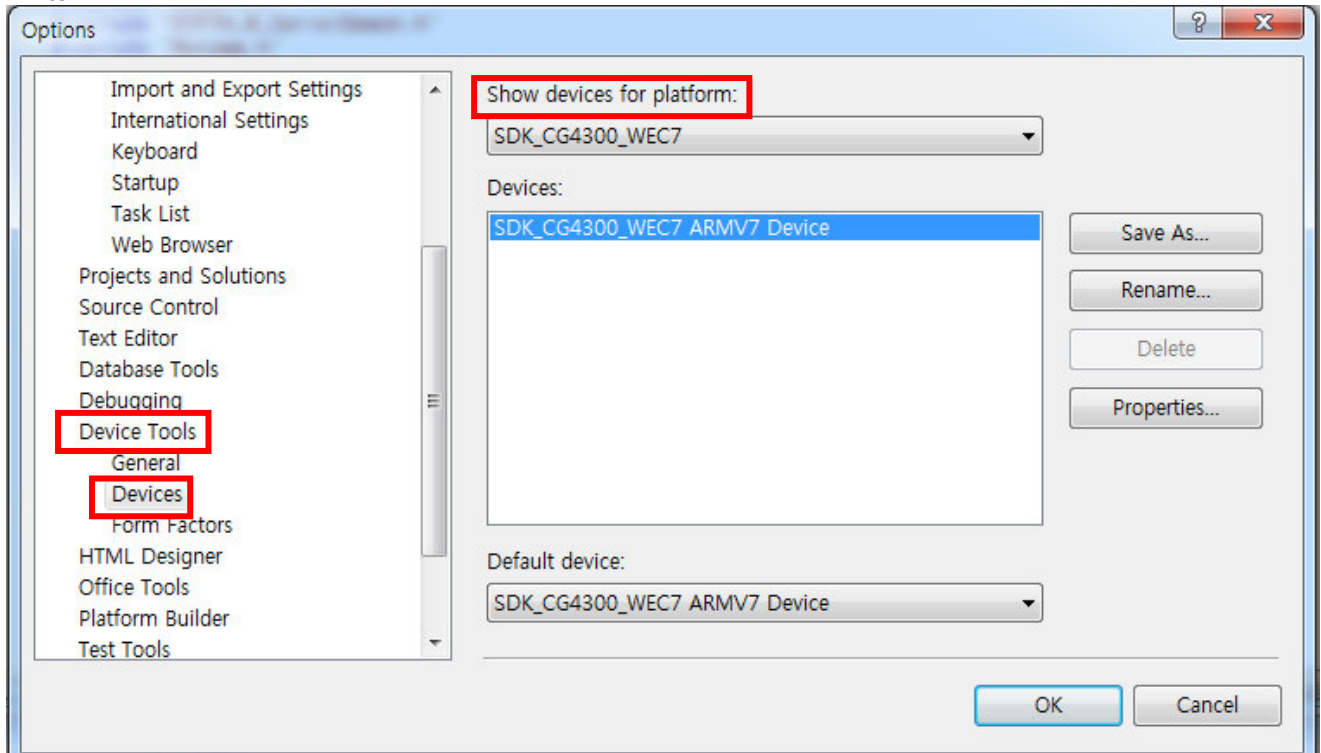
You are now ready to connect to Visual Studio.



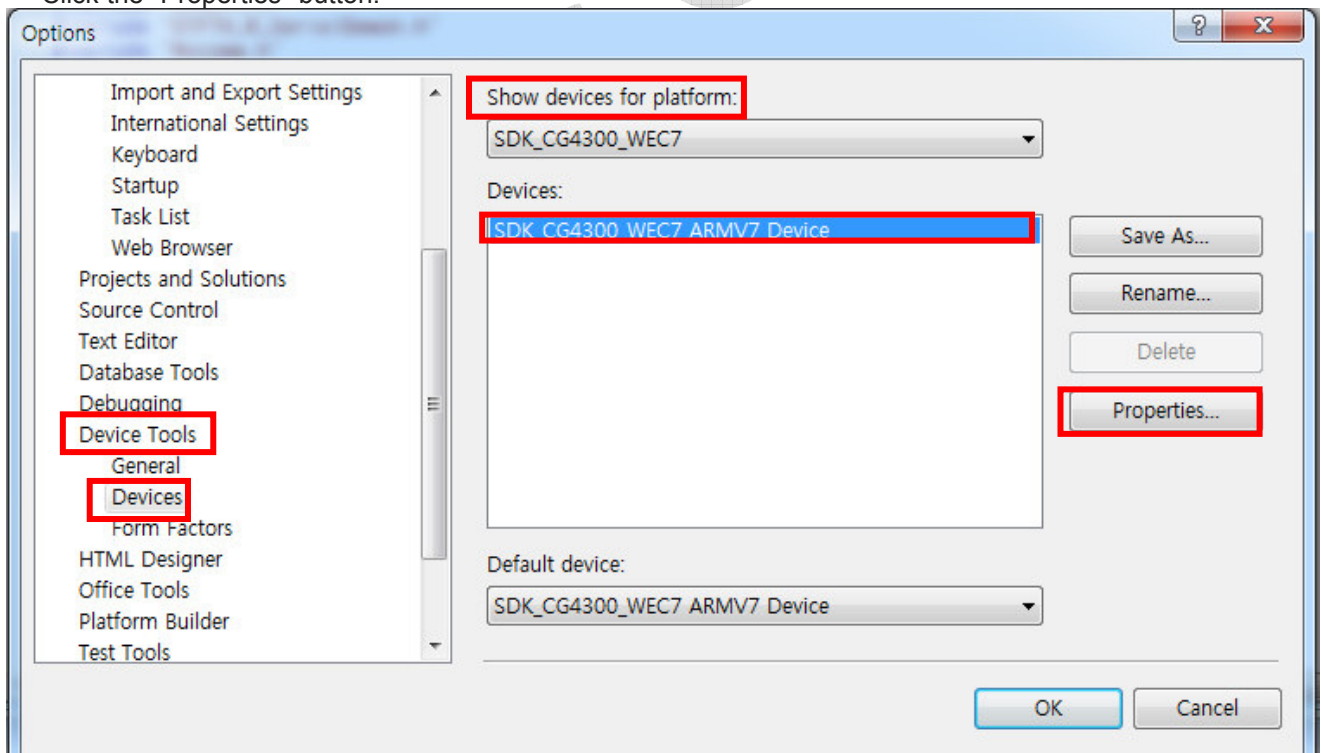
In Visual Studio 2008, click "Tools -> Options".



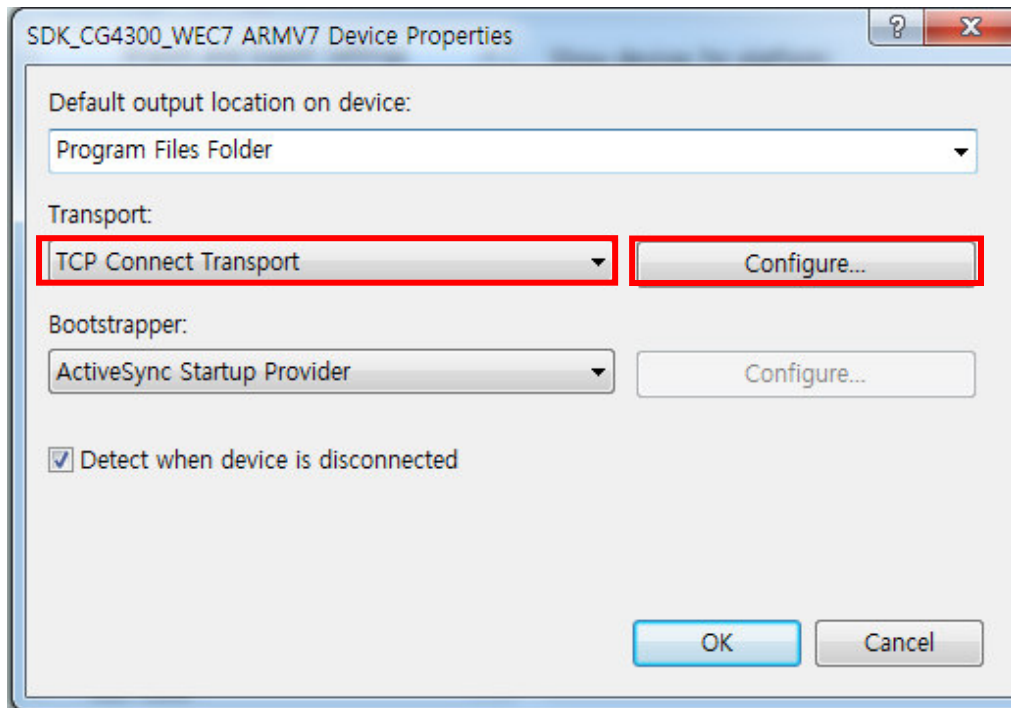
When the following window appears, select "Device Tools -> Devices" item in the left list. If the SDK item is not displayed in the box of "Show devices for platform:" on this screen, install the SDK from the **SDK Install** item.



Click the "Properties" button.

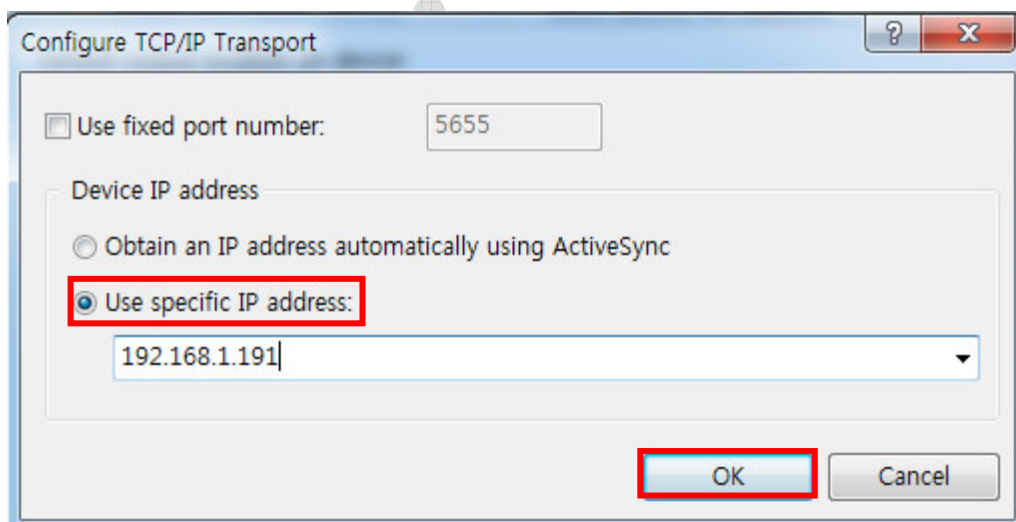


Both "USB Connect and Ethernet Connect" use "TCP Connect Transport". After setting as above, click the "Configure" button in the "TCP Connect Transport" item.

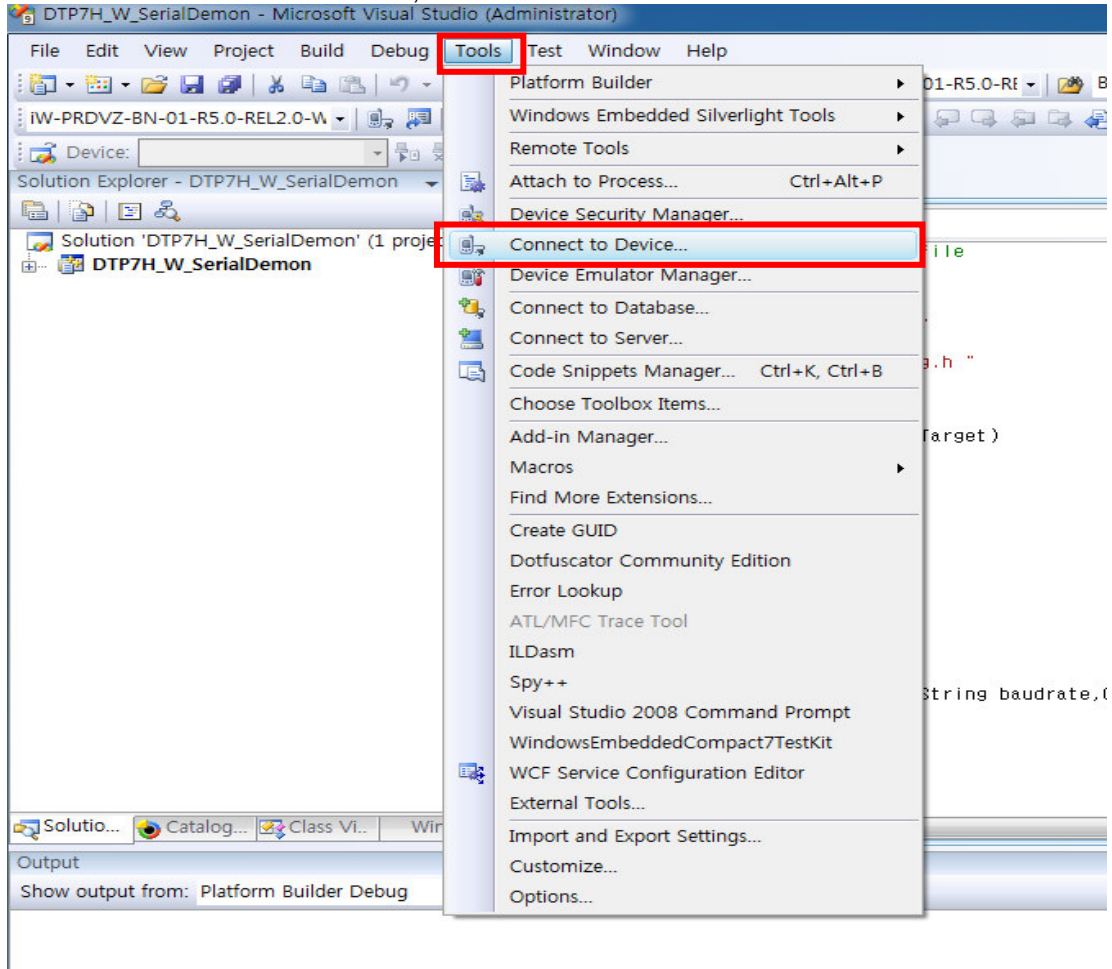


Select "Use specific IP address" and enter the IP of DTP7H-W. Do not select "Use fixed port number".

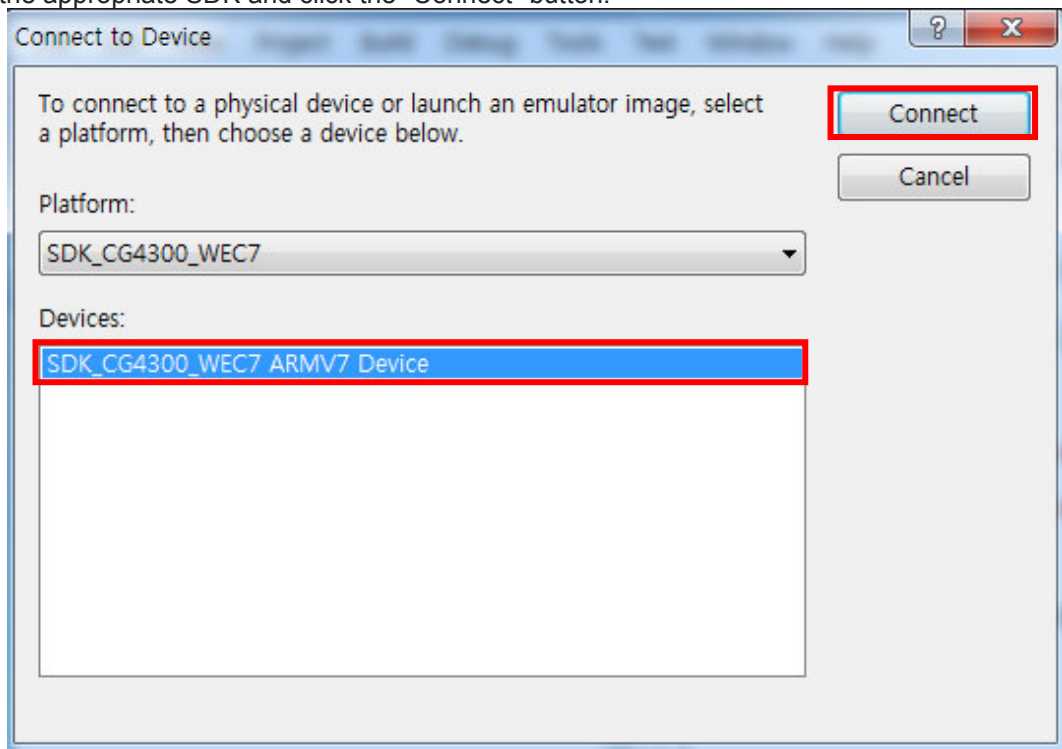
When the setting is completed, click the "OK" button.



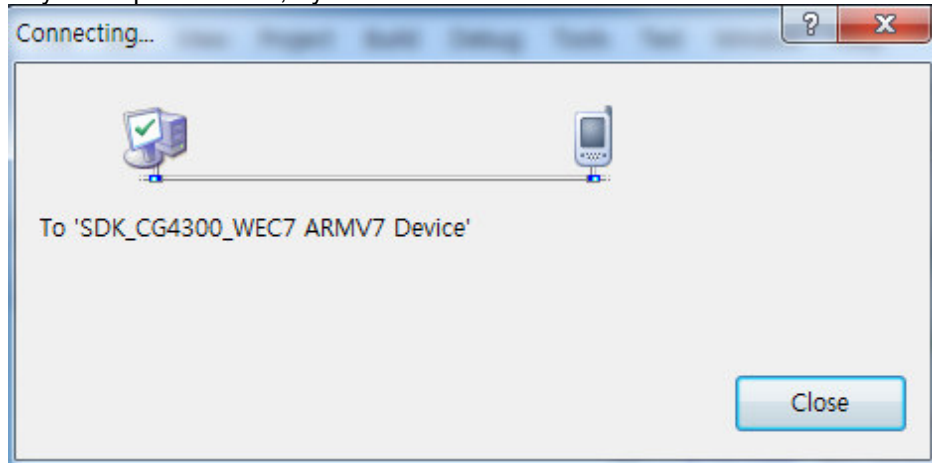
On the first screen of Visual Studio 2008, click "Tools >> Connect to Device".



Select the appropriate SDK and click the "Connect" button.



Depending on system specifications, try about 10 to 20 seconds.



<p>If the connection succeeds, the following screen appears</p>	<p>If the connection fails, the following screen appears. Confirm that all the copied files are copied in the DTP7H-W, and then try to connect again.</p>

※ **If you can not check all status**

If Windows Firewall is enabled, please disable it.

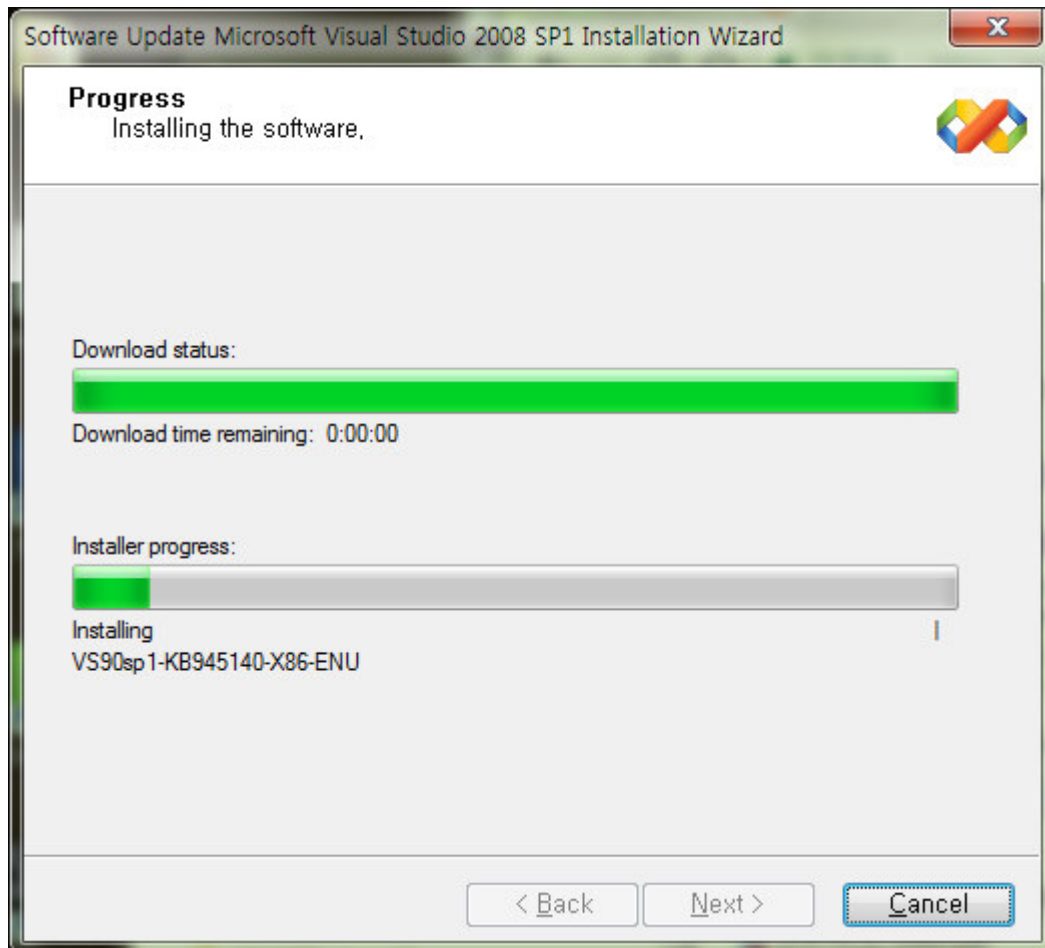
Check the network cable and IP address.

4. Troubleshooting when setting up development environment

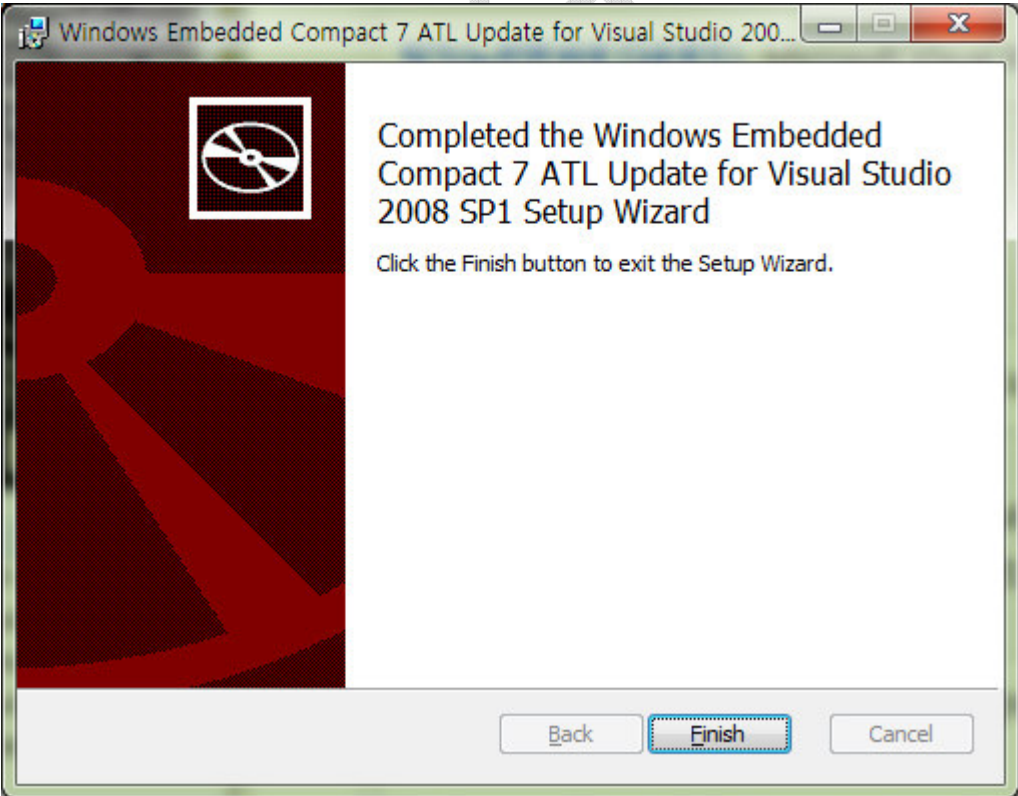
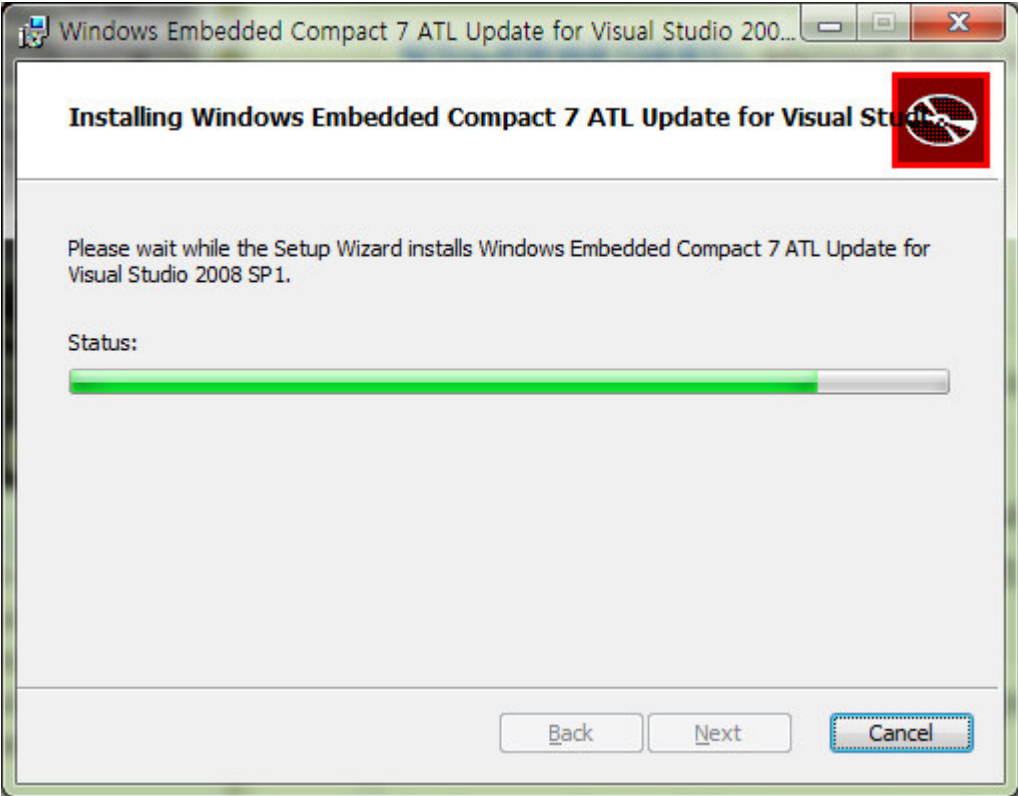
4.1.ERROR C2039

error C2039: 'IstrlenW' : is not a member of 'ATL'

1. Install VS90sp1-KB945140.exe.



2. Install VisualStudioDeviceWindowsEmbeddedCompact7.msi.



Configuration Properties - C/C++ - General – Additional Include Directories.

C:\Program Files (x86)\Microsoft Visual Studio 9.0\VC\ce7\atlmfc\include

C:\Program Files (x86)\Microsoft Visual Studio 9.0\VC\ce7\include

