

ViewPAC (CE7 Based) Series

User Manual

Version 1.0.0, March 2015

Service and usage information for

VP-2201-CE7



VP-4201-CE7



Written by Sean
Edited by Anna Huang

Warranty

All products manufactured by ICP DAS are under warranty regarding defective materials for a period of one year, beginning from the date of delivery to the original purchaser.

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1. Introduction

This chapter provides an overview of the ViewPAC CE7 series PACs (ViewPAC) and its components, and introduces the fundamental concepts for user familiar with the ViewPAC.



The ViewPAC are CE7 based ViewPAC that combine computing, I/O, and operator interface into a single unit, and provides the perfect solution for integrating HMI, data acquisition and control in an individual PAC. It is equipped with an ARM AM3352/AM3354 CPU, three I/O expansion slots (for ViewPAC with I/O slots series PACs only), TFT LCD and a variety of connectives including a Gigabit Ethernet, USB port, RS-232 and RS-485 interface. I/O expansion is available to use our Ethernet I/O modules and RS-485 I/O modules. Designed for panel mount installation, the front panel is NEMA 4/IP65 rated and can withstand sprayed water, humidity and extreme dust. Designed to operate over a wide -10°C ~ 60°C ambient temperature range, the fanless design offers the ultimate in reliability with no moving parts.

Windows Embedded Compact 7 is a componentized, hard real-time, high performance, and highly reliable operating system. CE7 delivers rich user experiences and a unique connection to Windows PCs, servers, services, and devices.

1.1. Features

The ViewPAC offers the most comprehensive configuration and remote system upgrade solutions to meet specific application requirements. The following list shows the hardware and software features designed to simplify installation, configuration and application.

- 5.7", 7", 10.4", 15" TFT LCD
- AM3352/AM3354, 720 MHz/1 GHz CPU
- CE7 (Windows Embedded Compact 7)
- Hard Real-Time Capability
- Support eLogger HMI (free)
- Power Over Ethernet
- NEMA 4/IP65 Compliant Front Panel
- Ultra-Rugged Construction and Reliable Design
- Operating Temperature: -10 °C ~ +60 °C

1.2. Specifications

The table below summarizes the specifications of the ViewPAC.

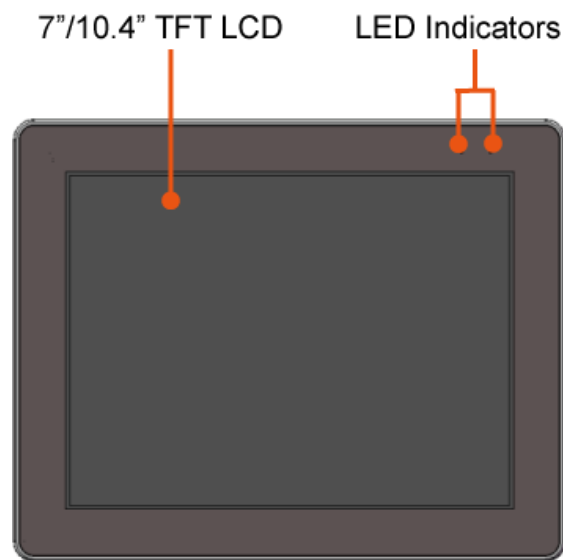
Models	VP-2201-CE7	VP-4201-CE7
LCD		
Size	7" (16:9)	10.4" (4:3)
Resolution	800 x 480	800 x 600
Brightness (cd/m ²)	400	
Contrast Ratio	500:1	
LED Backlight Life (hrs)	20,000	50,000
Touch Panel	4-wire, resistive type; light transmission: 80%	5-wire, resistive type; light transmission: 80%
LED Indicators	2 (PWR, Run)	
System Software		
OS	Microsoft Windows Embedded Compact 7	
Framework Support	.Net Compact Framework 3.5	
Embedded Service	FTP Server, Web Server (supports VB script, JAVA script), SQL compact Edition 3.5	
SDK Provided	DII for Visual Studio.Net 2008	
Multilanguage Support	English, German, French, Spanish, Russian, Italian, Korean, Simplified Chinese, Traditional Chinese	
CPU Module		
CPU	AM3352, 720 MHz	AM3354, 1GHz
DRAM	512 MB	
MRAM	128 KB	
Flash (SSD)	256 MB	
EEPROM	16 KB	
Memory Expansion	microSD socket with 4 GB micro SDHC card (support up to 32 GB)	SD socket with 4 GB SDHC card (support up to 32 GB)
RTC (Real Time Clock)	Yes, provide second, minute, hour, date, day of week, month, year	

64-bit Hardware Serial Number	Yes, for software copy protection	
Dual Watchdog Timers	0.8 second	
Rotary Switch	Yes (0 ~ 9)	
Communication Ports		
Ethernet	RJ-45 x 1, 10/100/1000 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)	
USB 2.0 (host)	2	
COM 1	RS-232/RS-485 (DB9 connector); 2500 V _{DC} isolated	
COM 2	RS-232/RS-485 (DB9 connector); 2500 V _{DC} isolated	
COM 3	-	RS-485 (Data+, Data-, GND); 2500 VDC isolated
Audio	Earphone-out	
Mechanical		
Dimensions (W x H x D), unit: mm	213 x 148 x 44	291 x 229 x 54
Panel Cut-Out (W x H), unit: mm	200 x 133, ± 1	276 x 214, ± 1
Installation	Panel Mounting	
Ingress Protection	Front Panel: NEMA 4/IP65	
Weight	0.7 kg estimate	1.8 kg estimate
Environmental		
Operating Temperature	-10 °C ~ +60 °C	
Storage Temperature	-20 °C ~ + 70 °C	
Ambient Relative Humidity	10 % ~ 90 % RH (non-condensing)	
Power		
Input Range	+12 V _{DC} ~ +48 V _{DC}	
Power from PoE	Yes, IEEE 802.3af	
Isolation	-	1 kV
Consumption	6 W	13 W

1.3. Overview

The ViewPAC are equipped with several interfaces and peripherals that can be integrated with external systems. Here is an overview of the components and its descriptions.

Front View



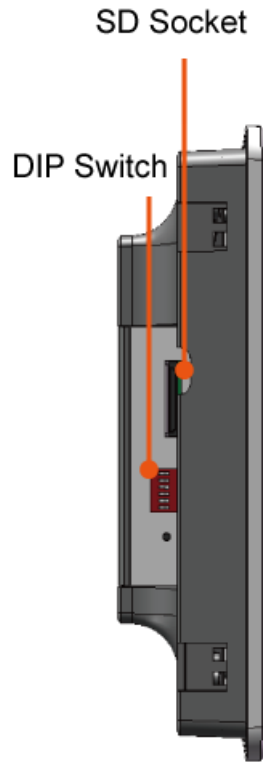
Item	Description																
LED Indicators	There are two system LED indicators that display the system status. The details are shown as below.																
	<table border="1"> <thead> <tr> <th>LED Indicator</th> <th>Color</th> <th>State</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td rowspan="2">RWR</td> <td rowspan="2">Red</td> <td>On</td> <td>System has power applied to it.</td> </tr> <tr> <td>Off</td> <td>System is not powered on.</td> </tr> <tr> <td rowspan="2">RUN</td> <td rowspan="2">Green</td> <td>Flash than off</td> <td>Booting.</td> </tr> <tr> <td>On</td> <td>System booted and OS ready.</td> </tr> </tbody> </table>	LED Indicator	Color	State	Meaning	RWR	Red	On	System has power applied to it.	Off	System is not powered on.	RUN	Green	Flash than off	Booting.	On	System booted and OS ready.
	LED Indicator	Color	State	Meaning													
	RWR	Red	On	System has power applied to it.													
			Off	System is not powered on.													
RUN	Green	Flash than off	Booting.														
		On	System booted and OS ready.														


Side View

VP-2201-CE7



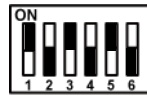
VP-4201-CE7



Item	Description
microSD Socket	The microSD socket can be used to restore the ViewPAC system and expand the memory up to 32 GB.
Rotary Switch	Rotary Switch is an operating mode selector switch which provides seven functions related to the selection of the operating mode for ViewPAC. 
SD Socket	The SD socket can be used to restore the ViewPAC system and expand the memory up to 32 GB.

DIP Switch

The DIP Switch is a binary switch. Each individual DIP switch is used to change the RS-232/RS-485 mode and set the slave terminal resistance for COM1, COM2 and COM3.

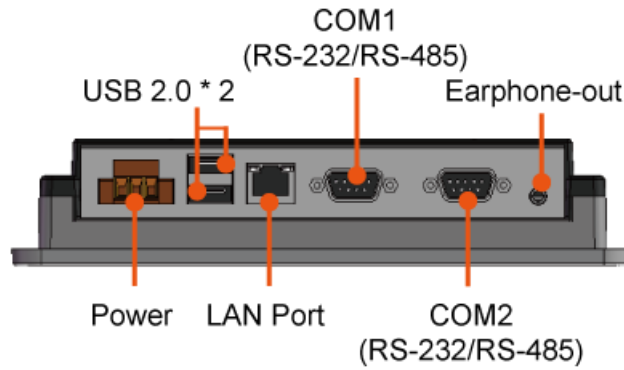


The factory default settings

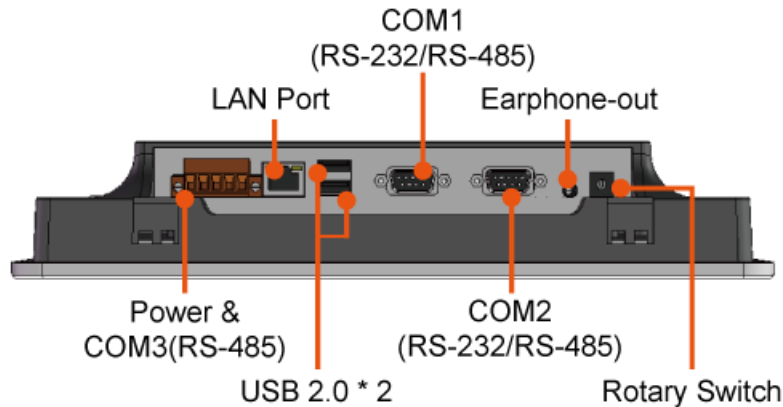
The details are shown as below.

Position	Description
	COM1 RS-232 Mode: On COM1 RS-485 Pull Mode: On (Master, default)
	COM1 RS-232 Mode: Off COM1 RS-485 Pull Mode: On (Slave)
	COM1 RS-485 Slave Terminal Resistance 120 Ohm: On
	COM1 RS-485 Slave Terminal Resistance 120 Ohm: Off (default)
	COM2 RS-232 Mode: On COM2 RS-485 Pull Mode: On (Master, default)
	COM2 RS-232 Mode: Off COM2 RS-485 Pull Mode: On (Slave)
	COM2 RS-485 Slave Terminal Resistance 120 Ohm: On
	COM2 RS-485 Slave Terminal Resistance 120 Ohm: Off (default)
	COM3 RS-232 Mode: On COM3 RS-485 Pull Mode: On (Master, default)
	COM3 RS-232 Mode: Off COM3 RS-485 Pull Mode: On (Slave)
	COM3 RS-485 Slave Terminal Resistance 120 Ohm: On
	COM3 RS-485 Slave Terminal Resistance 120 Ohm: Off (default)

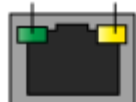
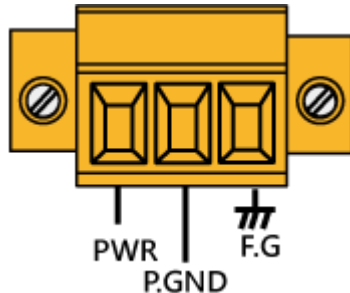
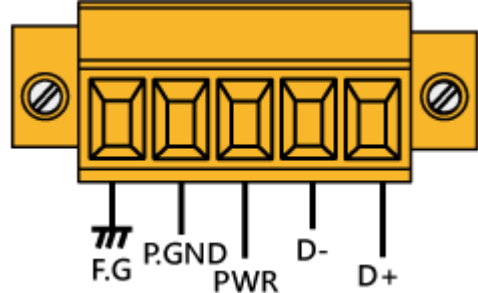
VP-2201-CE7



VP-4201-CE7

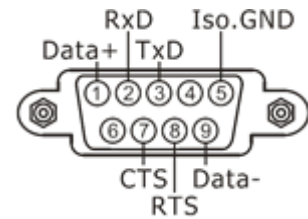


Item	Description
Earphone-out	The ViewPAC has an earphone-out that can be used to process the output of sound.
Rotary Switch	Rotary Switch is an operating mode selector switch which provides seven functions related to the selection of the operating mode for ViewPAC.

<p>LAN Port</p>	<p>The ViewPAC has an Ethernet port that can be connected to a computer or device via an Ethernet cable.</p>	<p>Link/Act 100M/1G</p> 															
<table border="1"> <thead> <tr> <th>LED Indicator</th> <th>State (Color)</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td rowspan="2">100M/1G</td> <td>ON (Orange)</td> <td>Network Speed: 1 G</td> </tr> <tr> <td>OFF</td> <td>Network Speed: 10/100 M</td> </tr> <tr> <td rowspan="3">Link/Act</td> <td>ON (Green)</td> <td>The Link is active</td> </tr> <tr> <td>OFF</td> <td>The Link is inactive</td> </tr> <tr> <td>Blinking(Green)</td> <td>Network activity</td> </tr> </tbody> </table>			LED Indicator	State (Color)	Meaning	100M/1G	ON (Orange)	Network Speed: 1 G	OFF	Network Speed: 10/100 M	Link/Act	ON (Green)	The Link is active	OFF	The Link is inactive	Blinking(Green)	Network activity
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100M/1G	ON (Orange)	Network Speed: 1 G															
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Link/Act	ON (Green)	The Link is active															
	OFF	The Link is inactive															
	Blinking(Green)	Network activity															
<p>USB 2.0 Port</p>	<p>The ViewPAC has an USB ports that allow support for the USB devices such as mouse, keyboard or an external USB hard drive.</p>																
<p>Power</p>	<p>The ViewPAC has a terminal with 3/5 pins; there are 2 pins for power input and 1/3 pin for frame ground/COM3, the details are shown as below.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p><u>VP-2201-CE7</u></p>  </div> <div style="text-align: center;"> <p><u>VP-4201-CE7</u></p>  </div> </div>																

COM1 (RS-232/RS-485)

The COM1 port is a 9-pins RS-232/RS-485 connector. The details of the COM1 port specifications are shown to the side.



Port Type: Male

Baud Rate: 115200, 57600, 38400, 19200, 9600, 4800, 2400, 1200 bps

Data Bits: 5, 6, 7, 8

Parity: None, Even, Odd, Mark (Always 1), Space (Always 0)

COM1 can be configured as either RS-232 or RS-485, that only can select one at a time and its configuration depends on the pin connections as follows:

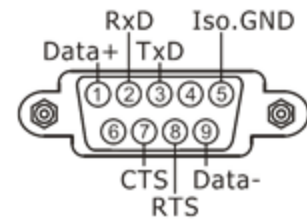
RS-232 (RXD, TXD, CTS, RTS and GND)

RS-485 (Data+ and Data-)

No software configuration or hardware jumper needed

COM2 (RS-232/RS-485)

The COM2 port is a 9-pins RS-232/RS-485 connector. The details of the COM2 port specifications are shown to the side.



Port Type: Male

Baud Rate: 115200, 57600, 38400, 19200, 9600, 4800, 2400, 1200 bps

Data Bits: 5, 6, 7, 8

Parity: None, Even, Odd, Mark (Always 1), Space (Always 0)

COM2 can be configured as either RS-232 or RS-485, that only can select one at a time and its configuration depends on the pin connections as follows:

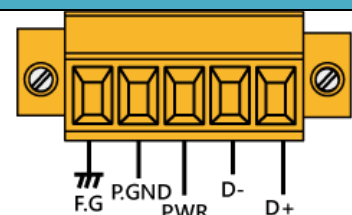
RS-232 (RXD, TXD, CTS, RTS and GND)

RS-485 (Data+ and Data-)

No software configuration or hardware jumper needed

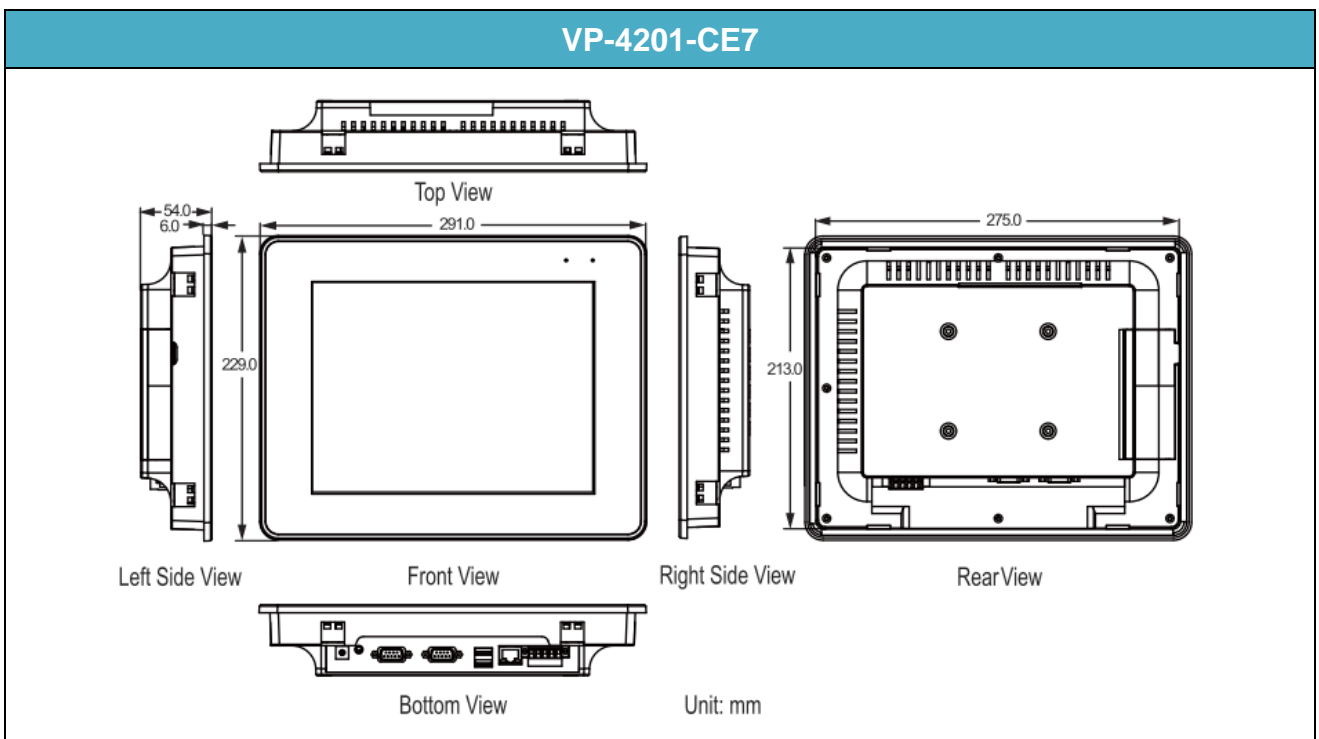
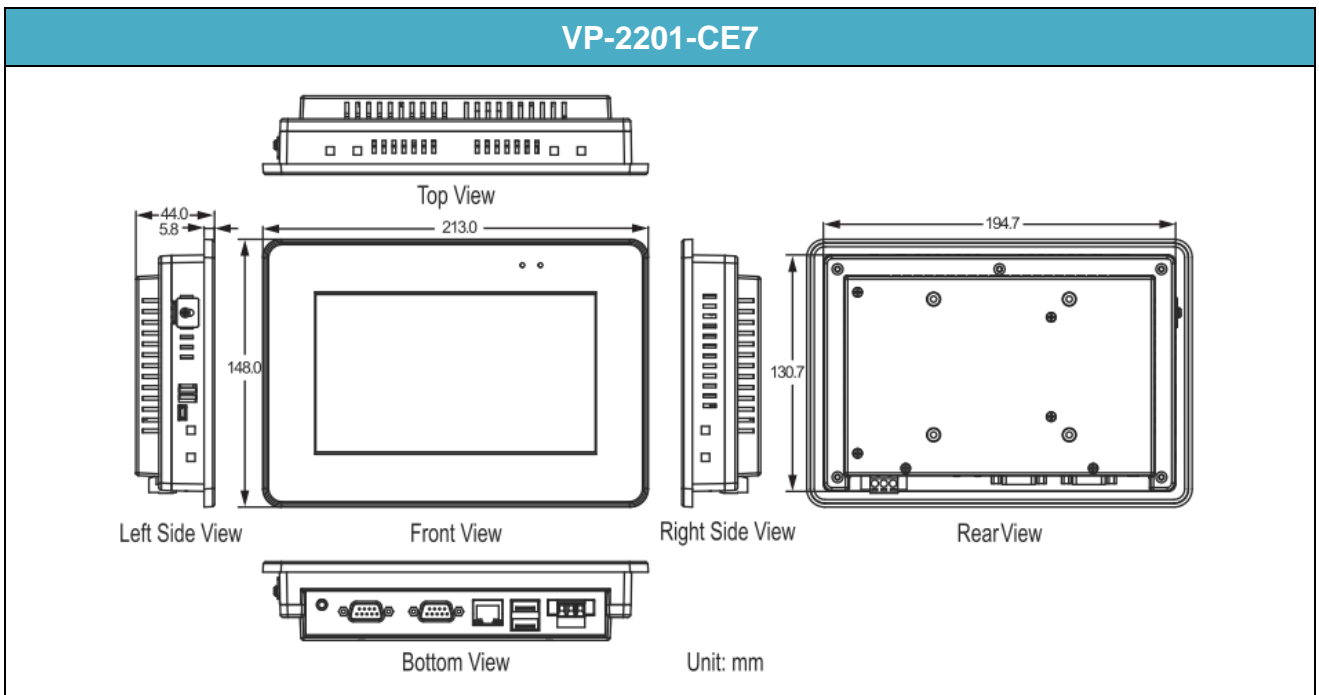
COM3 (2-wire RS-485) for VP-4201-CE7

The COM3 port is a 2-wire RS-485 connector. The details of the COM3 specifications are shown to the side.



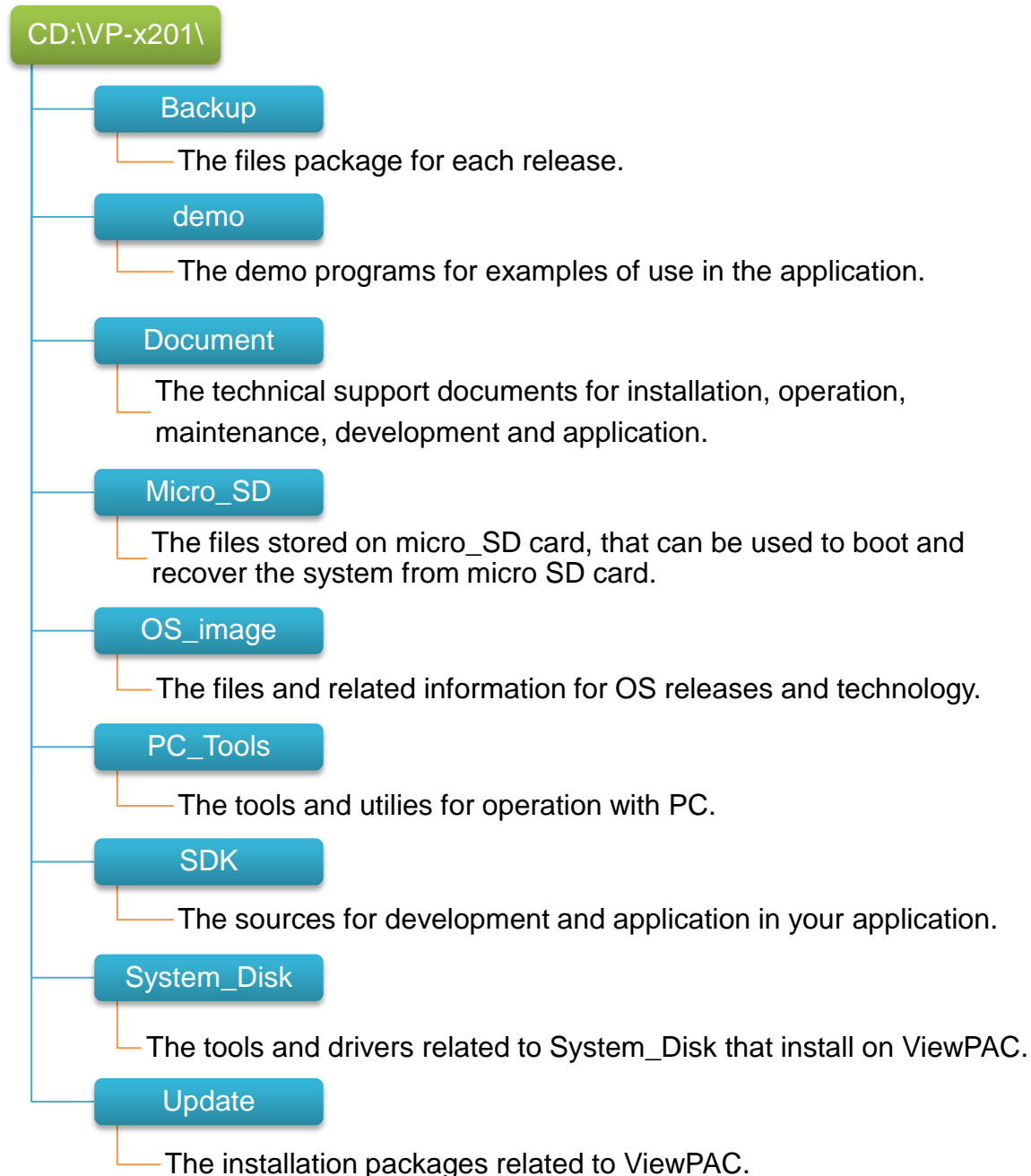
1.4. Dimensions

The diagrams below provide the dimensions and the panel cut-out to use in defining your enclosure specifications. Remember to leave room for potential expansion if you are using other components in your system. All dimensions are in millimeters.



1.5. Companion CD

This package comes with a CD that provides a collection of the software utility, documentation, drivers, demo program and application. All of them are listed below.



2. Getting Started

This chapter provides a guided tour of the ViewPAC installation and configuration that describes the steps needed to download, install, configure, and run the basic procedures for user working with the ViewPAC for the first time.

Before starting any task, please check the package contents. If any of the following package contents are missing or damaged, contact your dealer, distributor.



ViewPAC



A micro SD card & a micro SD/SD adapter



Software Utility CD



Screw Driver



Panel Clip * 4



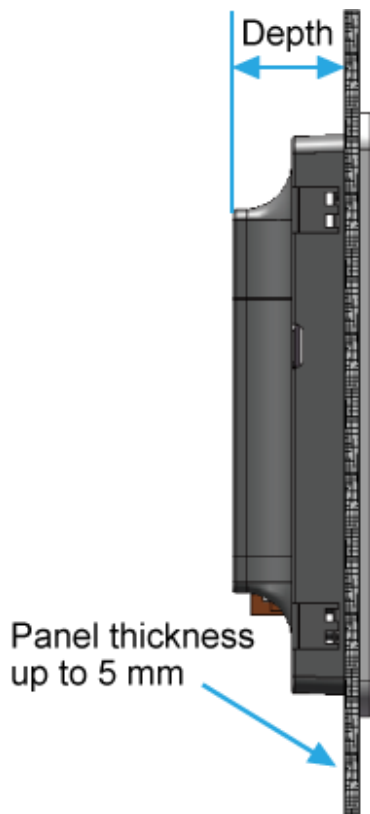
M4x30 L Screw *4

2.1. Mounting the Hardware

2.1.1. Mounting the ViewPAC

The ViewPAC can be mounted on a panel of maximum thickness 5 mm. Adequate access space can be available at the rear of the instrument panel for wiring and servicing purposes.

Spacing



Models	Depth
VP-2201-CE7	38.2 mm
VP-4201-CE7	44 mm

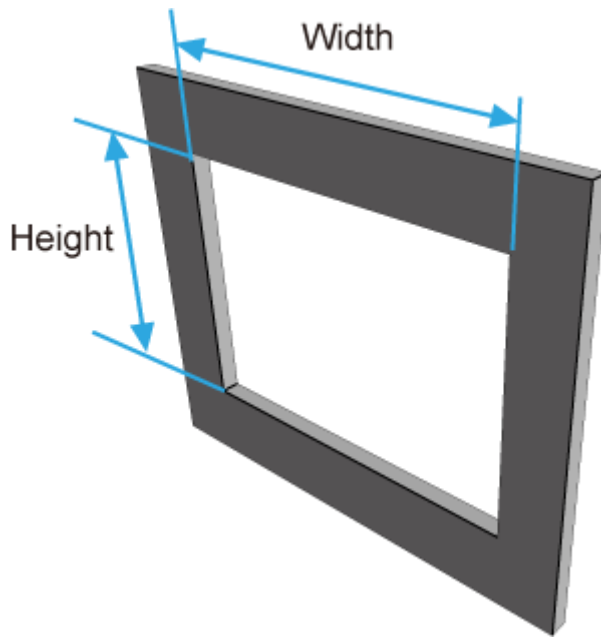
Tips & Warnings



To ensure proper ventilation for the ViewPAC, leave a minimum of 50 mm space between the top and bottom edges of the ViewPAC and the enclosure panels.

Step 1: Prepare the panel and cut the hole to the specified size

The table below shows the dimension of the panel cut-out of ViewPAC.

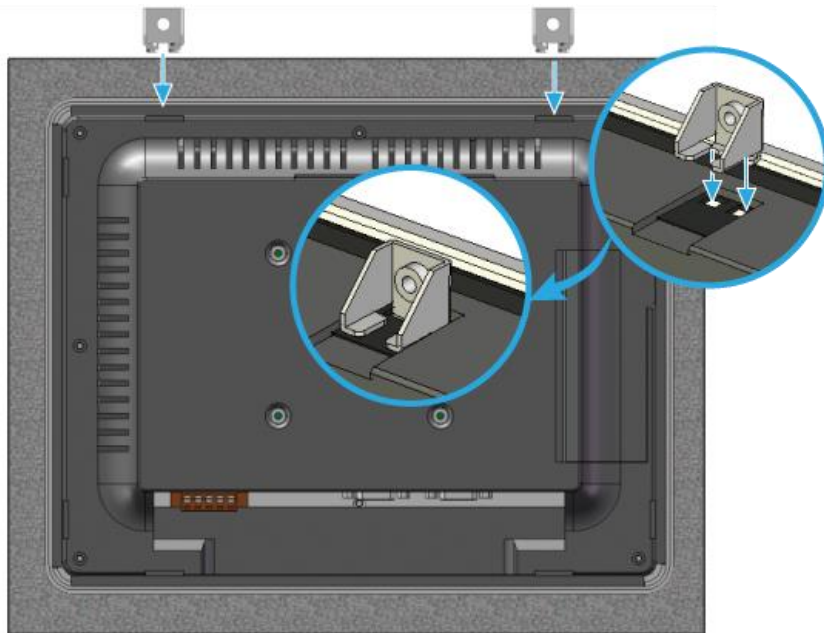


Models	Width x Height (unit: mm)
VP-2201-CE7	200 x 133, ± 1
VP-4201-CE7	276 x 214, ± 1

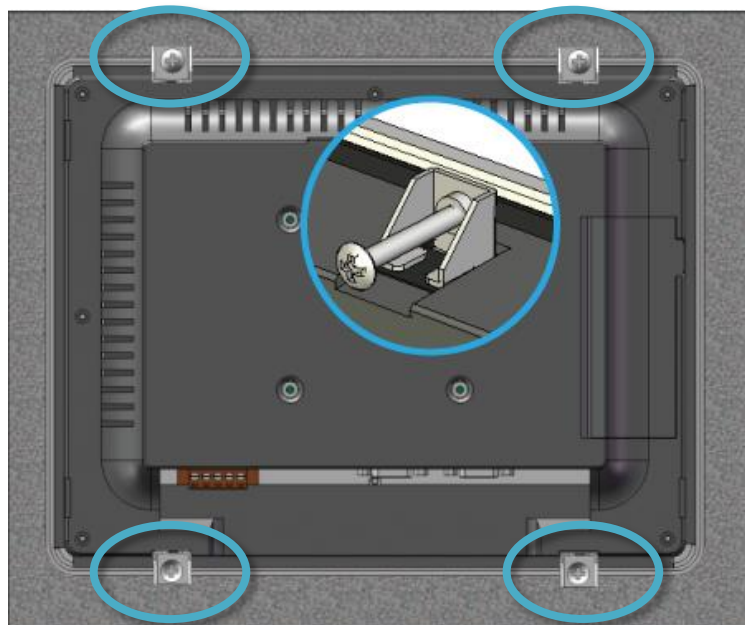
Step 2: Attach the ViewPAC to the cut-out hole



Step 3: Insert the panel mounting clips into the upper and lower ventilation holes



Step 4: Screw the panel mounting clips to the panel



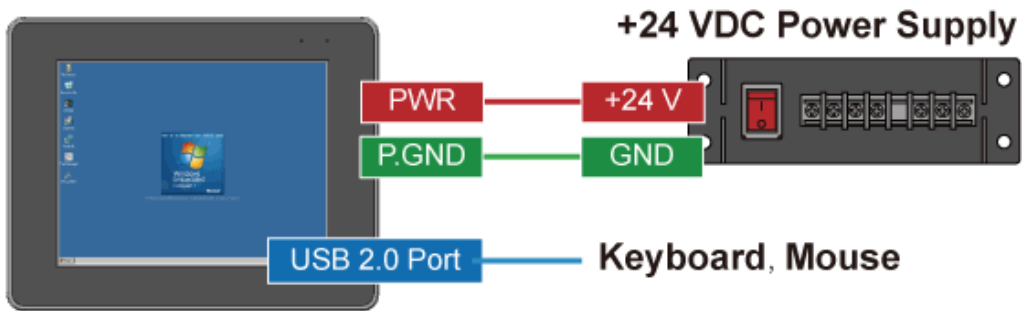
Tips & Warnings



Recommended Screw Torque: 3.4 ~ 4.5 kgf-cm.

2.1.2. Connecting Power and USB Device to ViewPAC

The ViewPAC provides a variety of interfaces to suit a range of applications. The following illustration shows a simple application.



Tips & Warnings



The input range of power supply is +12 ~ +48 V_{DC}.

2.2. Configuring the Boot Mode

The ViewPAC has several operating modes, which can be selected by a rotary switch.



The table below lists the operation modes available with the ViewPAC.

Position	Operating Mode
0	Normal mode (Default)
1	Safe mode
2	Debug mode
3	OS update mode by Ethernet
4	Reserve
5	OS update mode by Micro_SD
6	Reserve
7 ~ 9	Normal mode (For user)

The following is a brief introduction of these modes.

Normal Mode (Default mode)

Normal mode is the default mode of operation and the one you will use most of the time. Use this mode for more tasks and configurations. Programs also are executed in this mode.

Safe Mode

Safe mode is a trouble shooting. The mode loads the minimum required device drivers and system services to boot the ViewPAC.

If you have malicious software or a program caused the ViewPAC cannot be boot or run the normal mode, you can boot in safe mode to solve the problem.

Debug Mode

Debug mode is a special environment in which program debug functions can be used in addition to normal system functions.

Debug mode is unsupported.

OS Update Mode

OS update mode is a way used to update OS. For more information on updating the ViewPAC OS image, please refer to section 6.1. OS updates

Reserve->OS Development Mode

The positions 4, 6, of rotary switch are reserved for OS development.

User Mode

The positions 7, 8, 9 of rotary switch are reserved for user's applications.

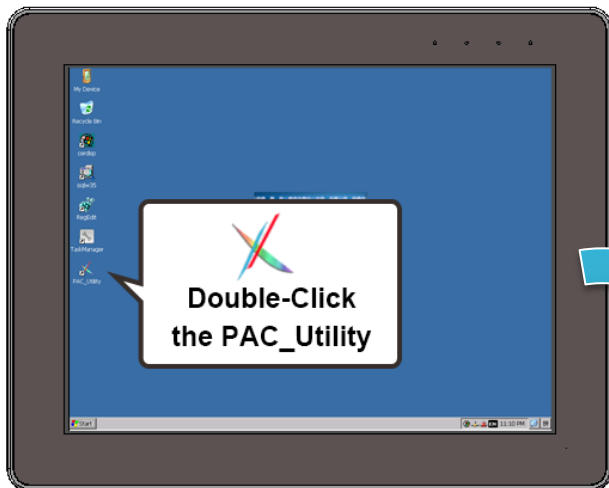
When ViewPAC is boot with one of these positions, it is boot at normal mode. User's application can check the position of the rotary switch position to run at different mode.

2.3. Using PAC Utility to Manage ViewPAC

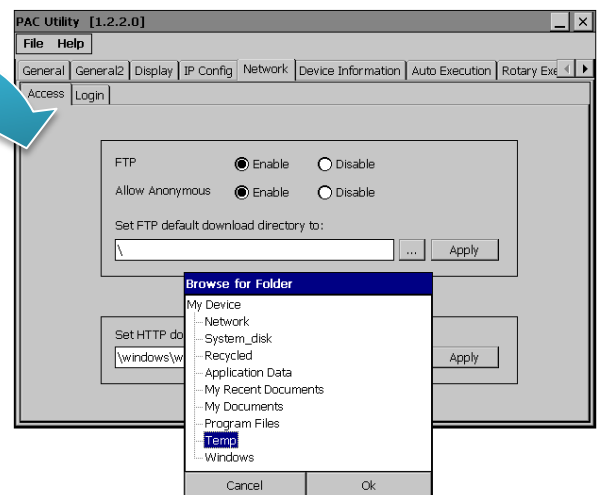
The PAC Utility is a collection of the ViewPAC system tool that allows user quickly and easily configure and manage ViewPAC.

For more detailed information on PAC Utility applications, please refer to “3.1. PAC Utility”

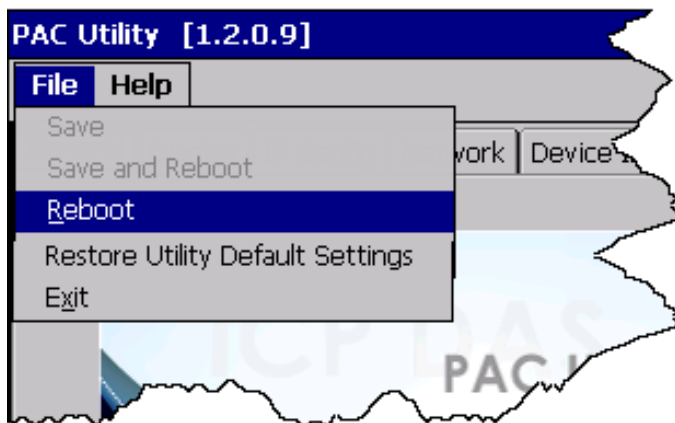
Step 1: Double-click the PAC Utility on the desktop



Step 2: Configure IP address (DHCP), FTP Server, Auto Execution files..., etc



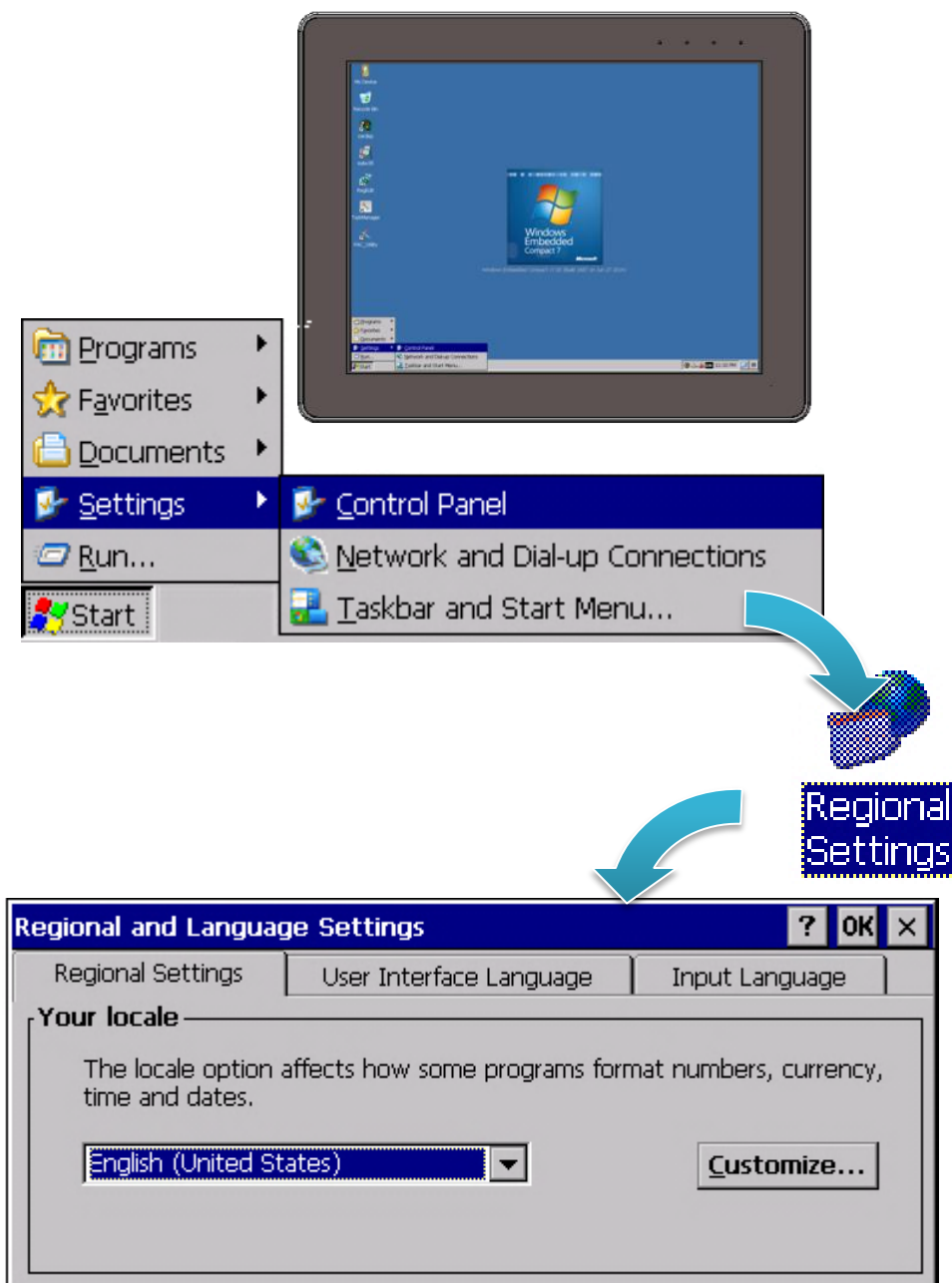
Step 3: Reboot the ViewPAC



2.4. Changing the User Interface Language

The Windows CE operating system on the ViewPAC comes with several built-in functions.

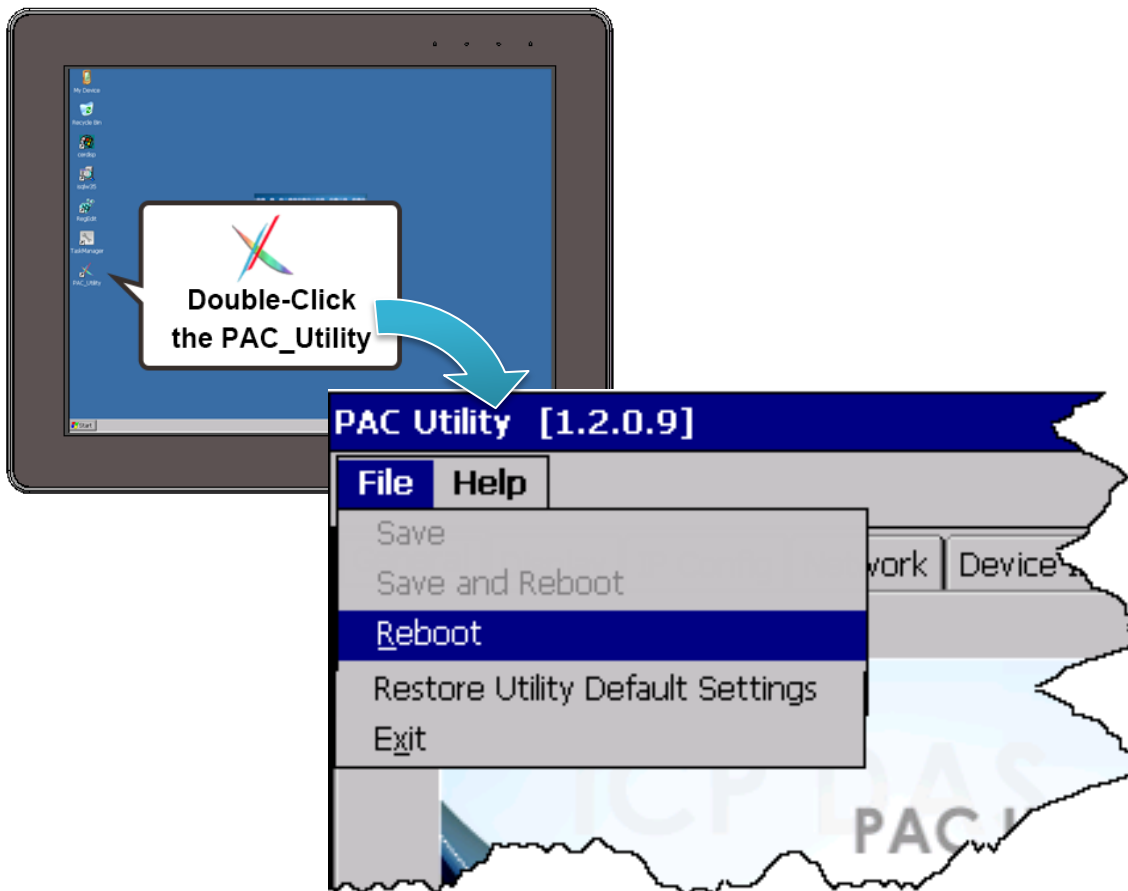
Step 1: Click Start menu, point to Settings, click Control Panel, and then click Regional Settings Options



Step 2: Click User Interface Language tab, choose to your local language, and then click OK



Step 3: Run the PAC Utility, and then reboot the ViewPAC for changes to take effect

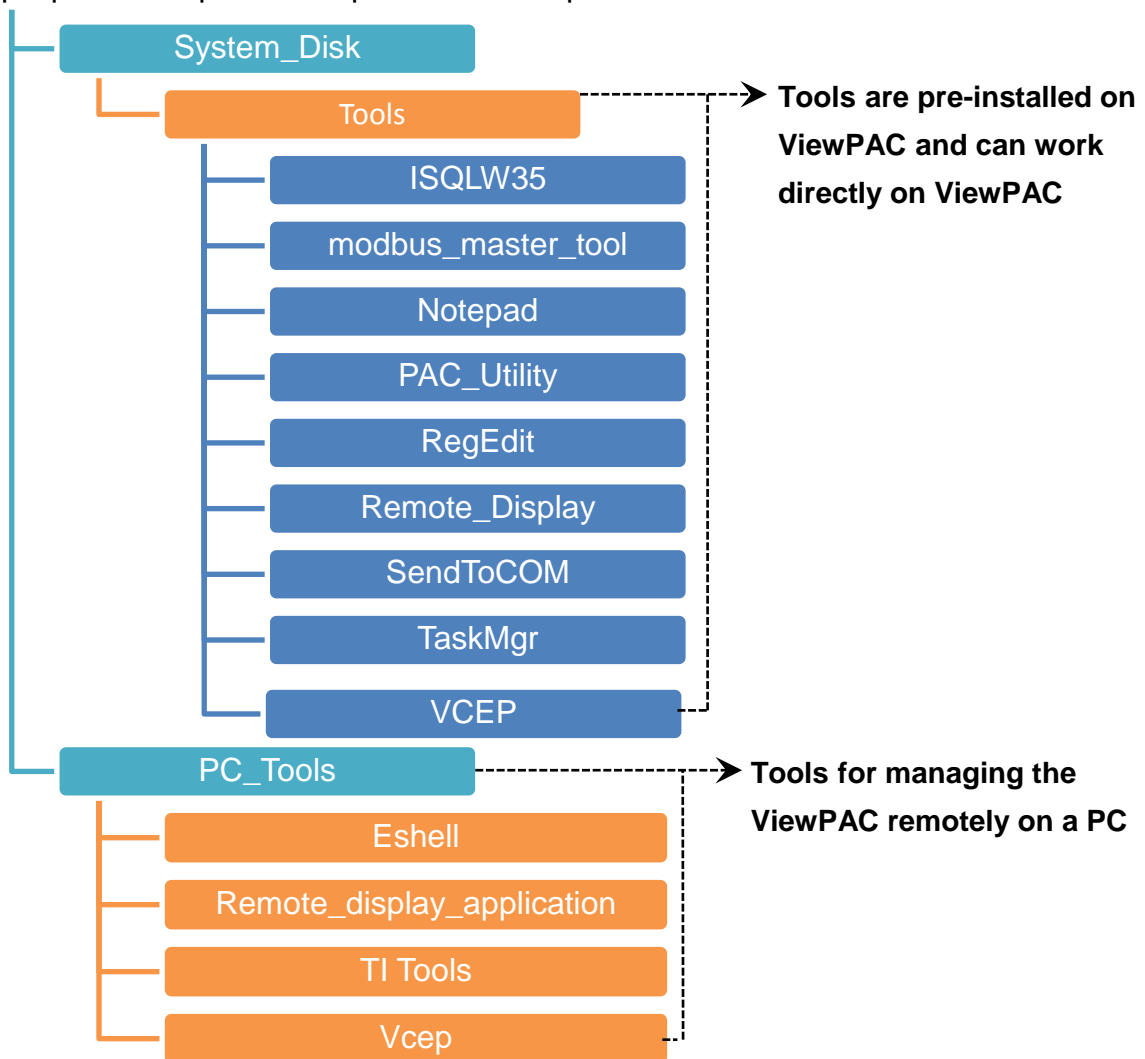


3. Tools and Tasks

This chapter provides a brief introduction of the ViewPAC service tools and its benefits.

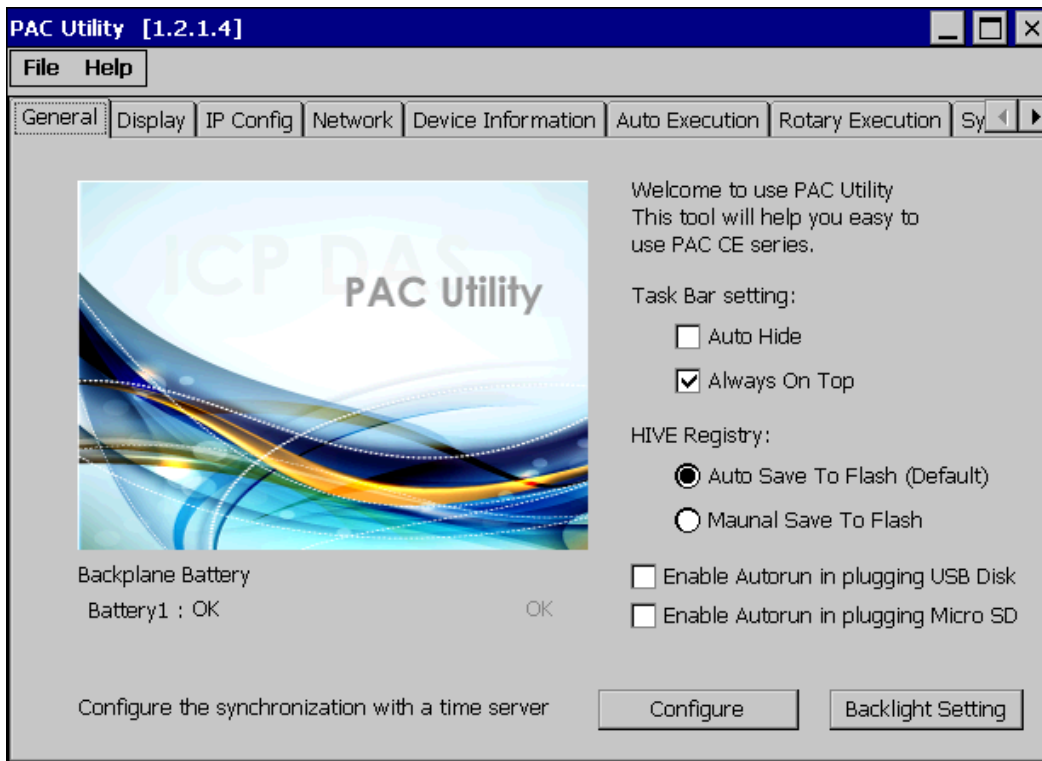
There are several tools and utilities built-in and designed for use with ViewPAC. Some of these are pre-installed on ViewPAC and can work directly on ViewPAC, and some of these tools are supporting tools and can help you to manage the ViewPAC remotely on a PC. All of them can be found on the CD that was provided with the package or by downloading the latest version from ICP DAS web site.

CD:\Wp-5231\
http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/



3.1. PAC Utility

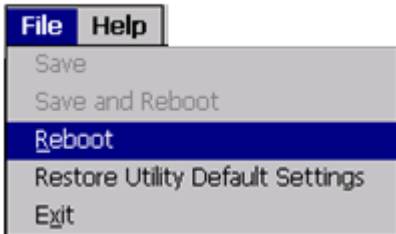
PAC Utility is a collection of software applications that enable management and configuration of ViewPAC system and features.



The PAC Utility includes the following menu bars and property tabs. All of these functions will be explained later.

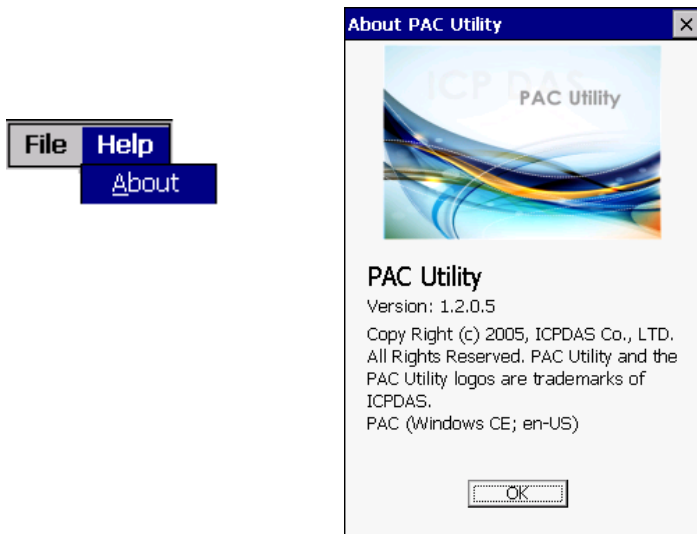
Menu bar	Property Tab
<ul style="list-style-type: none"> ➤ File ➤ Help 	<ul style="list-style-type: none"> ➤ General ➤ Display ➤ IP Config ➤ Network ➤ Device Information ➤ Auto Execution ➤ Rotary Execution

3.1.1. Menu Bar – File



The menu is used to	How to use
Reboot	Restarts the ViewPAC
Restore Default Settings	Restore the settings of ViewPAC to its default.
Exit	Exits the PAC Utility.

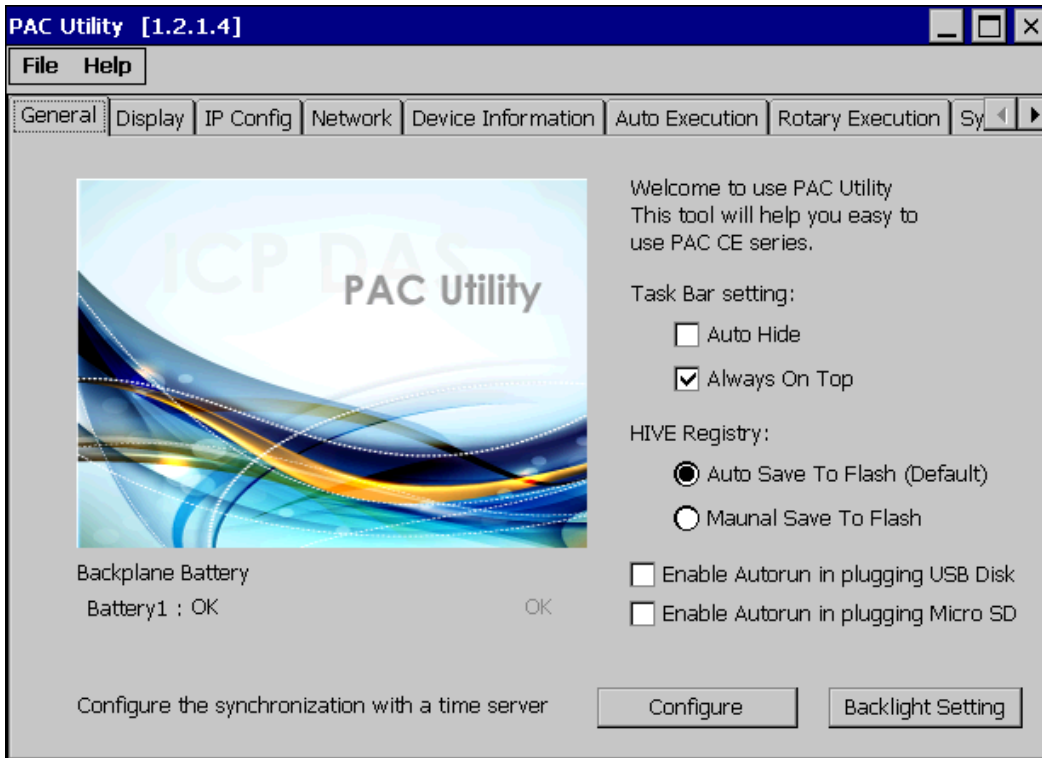
3.1.2. Menu Bar – Help



The menus is used to	How to use
About	Displays a dialog box with information about PAC Utility, including the current version and copyright information.

3.1.3. Property Tab - General

The General tab provides functions to configure the task bar, check the status of the battery, set the brightness of the LCD backlight..., etc.

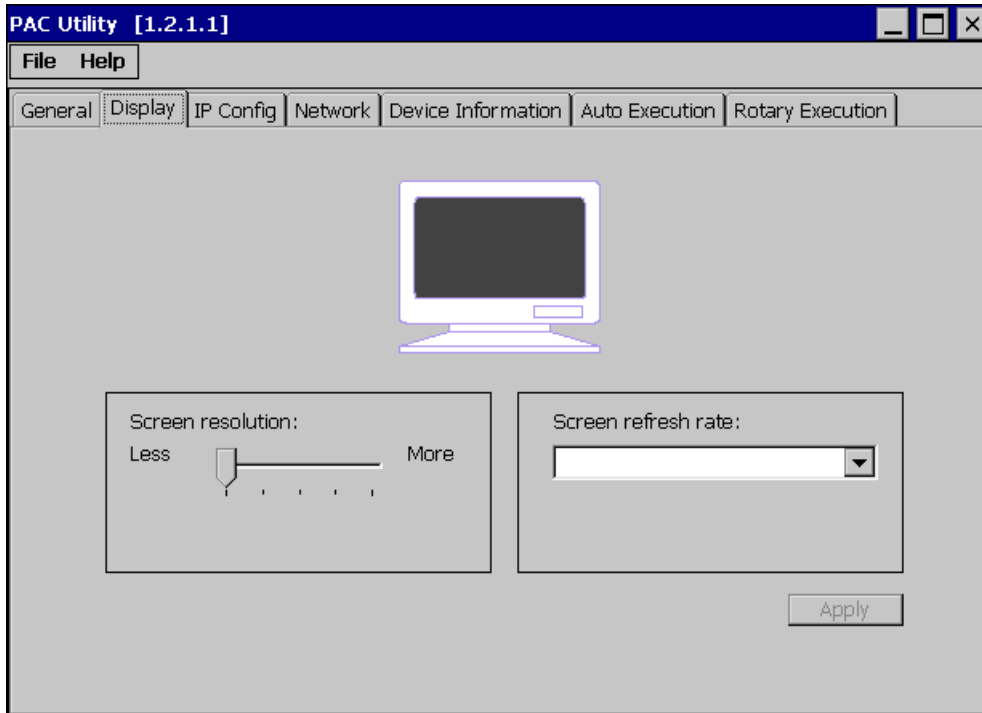


The tab is used to	How to use
Lock or Auto-Hide the taskbar	<p>Auto-Hide: Select the Auto Hide check box.</p> <p>Lock: Select the Always On Top check box.</p>
Auto save or manual save to flash	<p>By default, these options are unavailable.</p> <p>Auto save to flash: This option is checked by default. Any changes made to the ViewPAC will be saved and only take effect after the ViewPAC reboots.</p> <p>Manual save to flash: This option is useless.</p>

The tab use to	How to use
Check the status of the battery	See the Battery1 field that displays the display resolution.
Automatic synchronization of system time	Refer to the Appendix A.2. How to configure the service for automatically synchronizing with the internet time server.
Set the brightness of the LCD backlight	Click the Backlight button to set the brightness of the LCD backlight.

3.1.4. Property Tab – Display

The Display tab provides functions to configure the monitor settings.

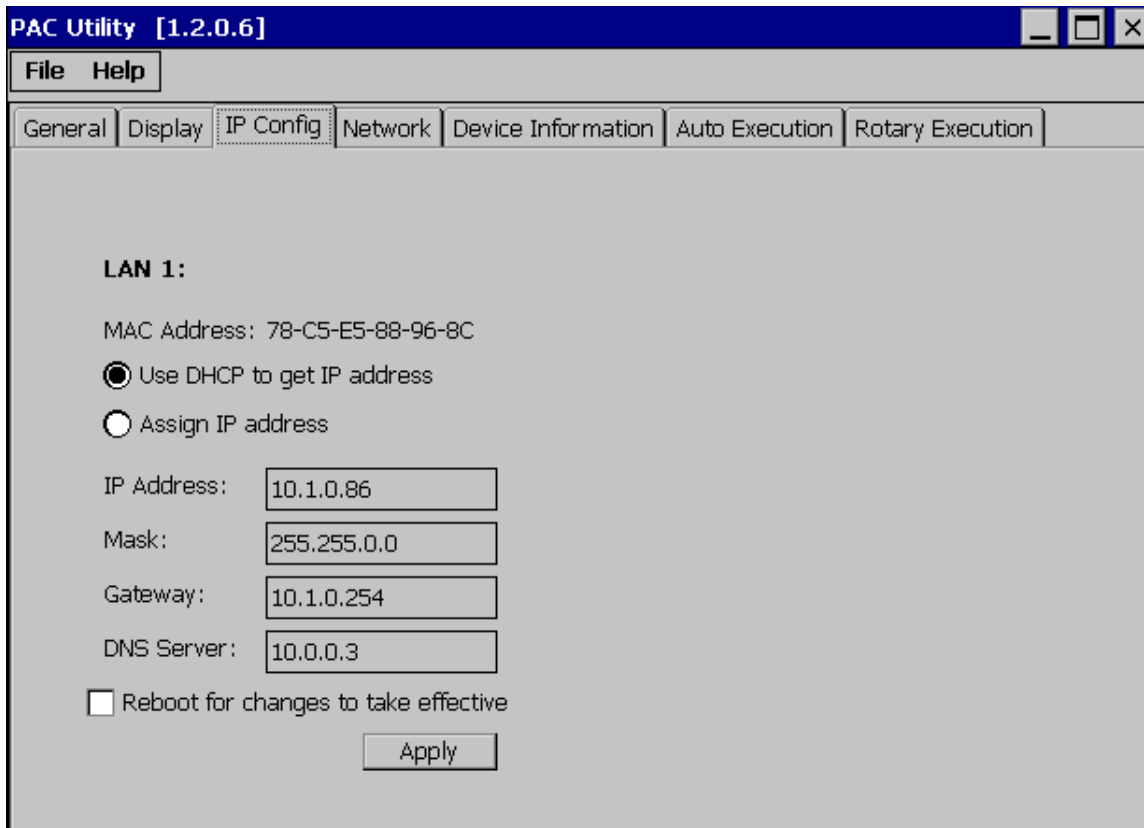


The tab is used to

The functions of this tab are fixed by default.

3.1.5. Property Tab – IP Config

The IP Config tab provides functions to configure either DHCP (Roaming) or manually configured (Static) network settings and to monitor the MAC address. Generally, DHCP is the default settings, but if you don't have a DHCP server, you must configure the network settings by using manual configuration.



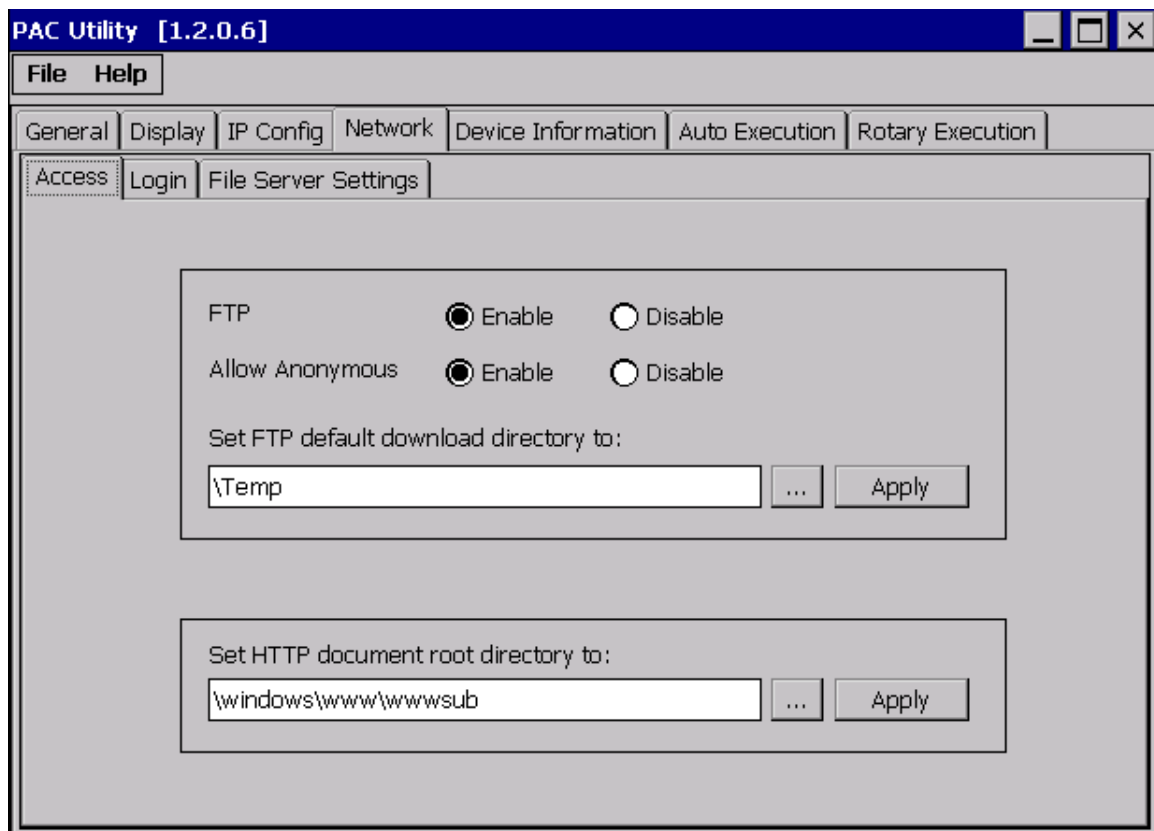
The tab is used to	How to use
Set the network settings	<p>Use DHCP to get IP address: Select the Use DHCP to get IP address option, and then click the Apply button.</p> <p>Assign an IP address: Select the Assign IP address option, and then click the Apply button.</p>

3.1.6. Property Tab – Network

The Network tab comprises three tabs – Access, Login and File Serve Settings.

Access

The Access tab provides functions to enable/disable the FTP access, enable/disable anonymous FTP access, and configure the FTP and HTTP directory path.

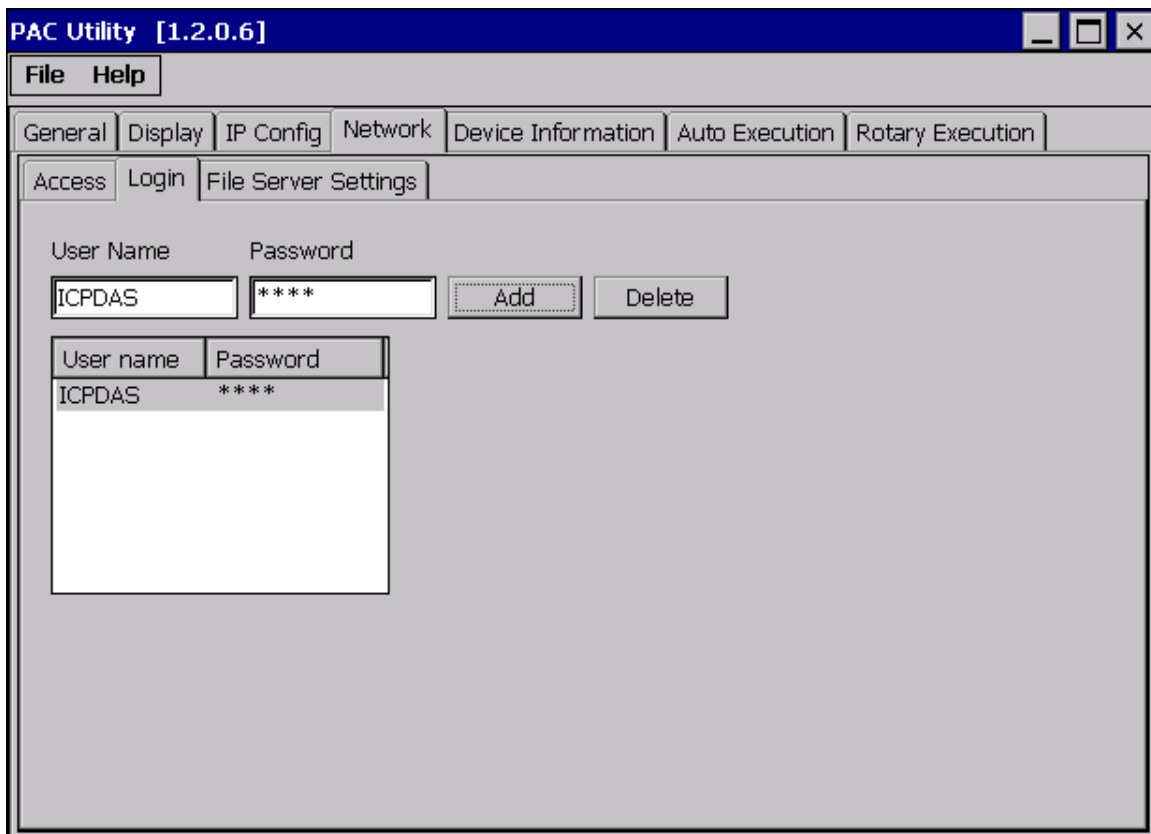


The tab is used to	How to use
Enable or disable the FTP access	<p>Enable: Select the Enable check box in the FTP field, and then click the Apply button.</p> <p>Disable: Select the Disable check box in the FTP field, and then click the Apply button.</p>

The tab use to	How to use
Enable or disable anonymous FTP access	<p>Enable:</p> <p>Select the Enable check box in the Allow Anonymous field, and then click the Apply button.</p> <p>Disable:</p> <p>Select the Disable check box in the Allow Anonymous field, and then click the Apply button.</p>
Set the FTP directory path	Enter a new path in the Set FTP default download directory to: field, and then click the Apply button.
Set the HTTP directory path	Enter a new path in the Set HTTP document root directory to: field, and then click the Apply button.

Login

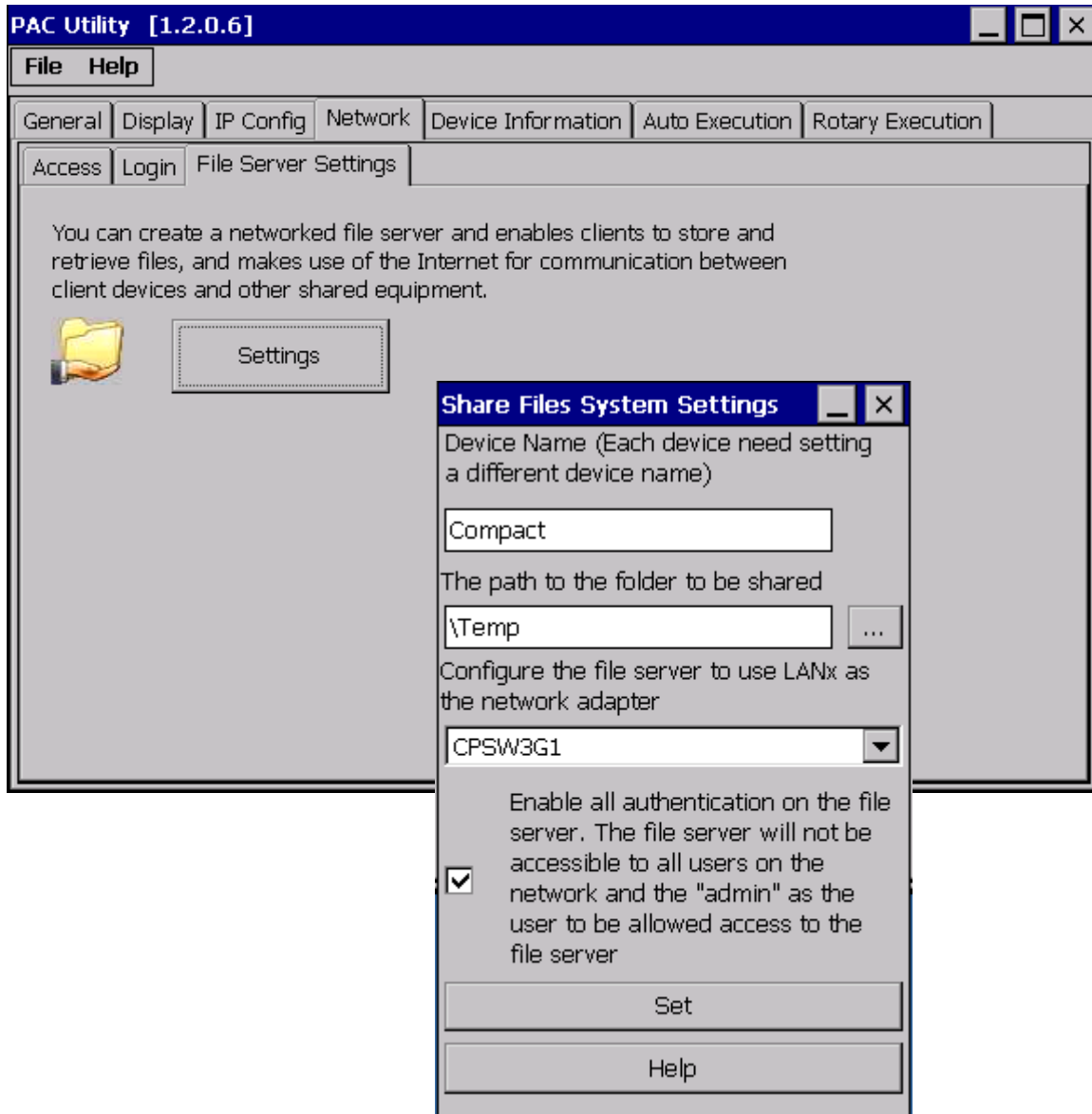
The Login tab provides functions to maintain the FTP accounts.



The tab use to	How to use
Maintain the FTP accounts	Refer to the Appendix C.1 How to add a user account to remote login the ViewPAC from PC.

File Server Settings

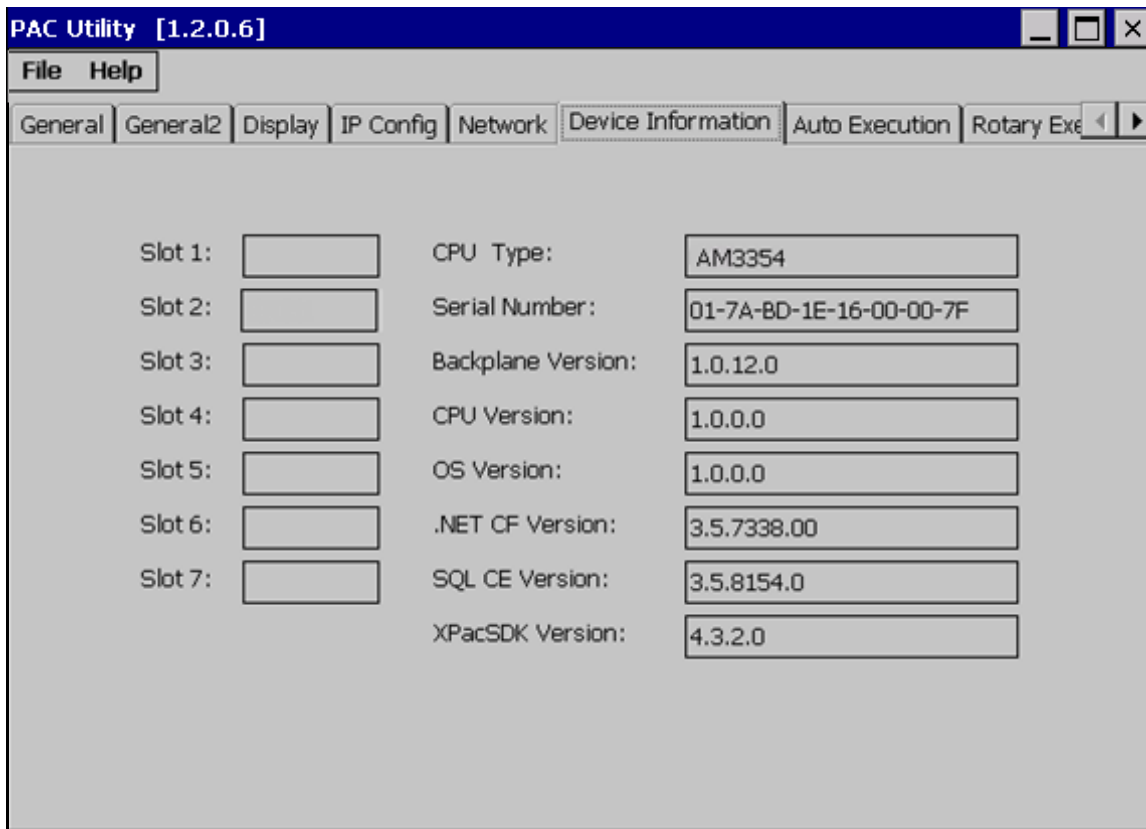
The File Server Settings tab provides functions to set the SMB server.



The tab use to	How to use
Set the SMB server	Click the Settings button to set the SMB server path.

3.1.7. Property Tab – Device Information

The Device Information tab provides functions to monitor necessary system information of the ViewPAC. The information is the most important note of version control for upgrading system.



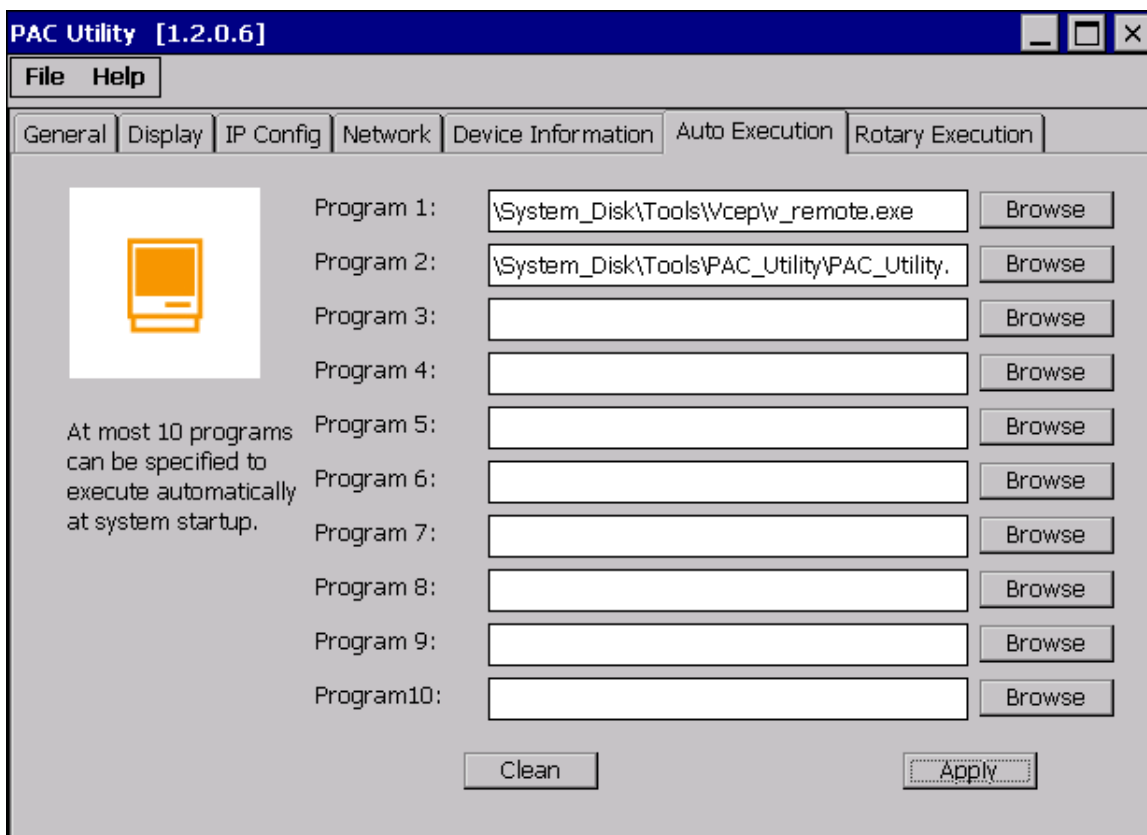
3.1.8. Property Tab – Auto Execution

The Auto Execution tab provides functions to configure programs running at ViewPAC startup, it allows users to configure ten execute files at most.

Tips & Warnings



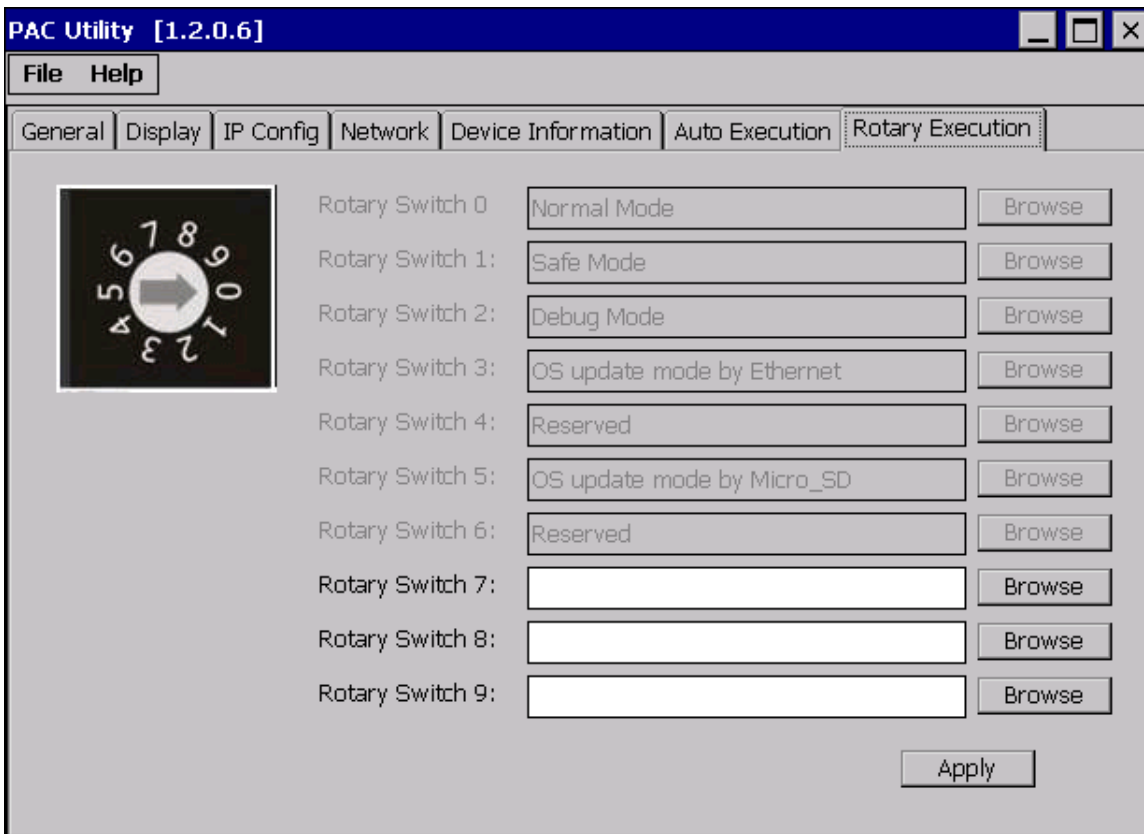
The specific extensions are .exe and .bat, and they are executed in order of program 1, program 2, etc.



The tab is used to	How to use
Configure programs running at startup	Click the Browse button to select the execute file which you want, and then click the Apply button.

3.1.9. Property Tab – Rotary Execution

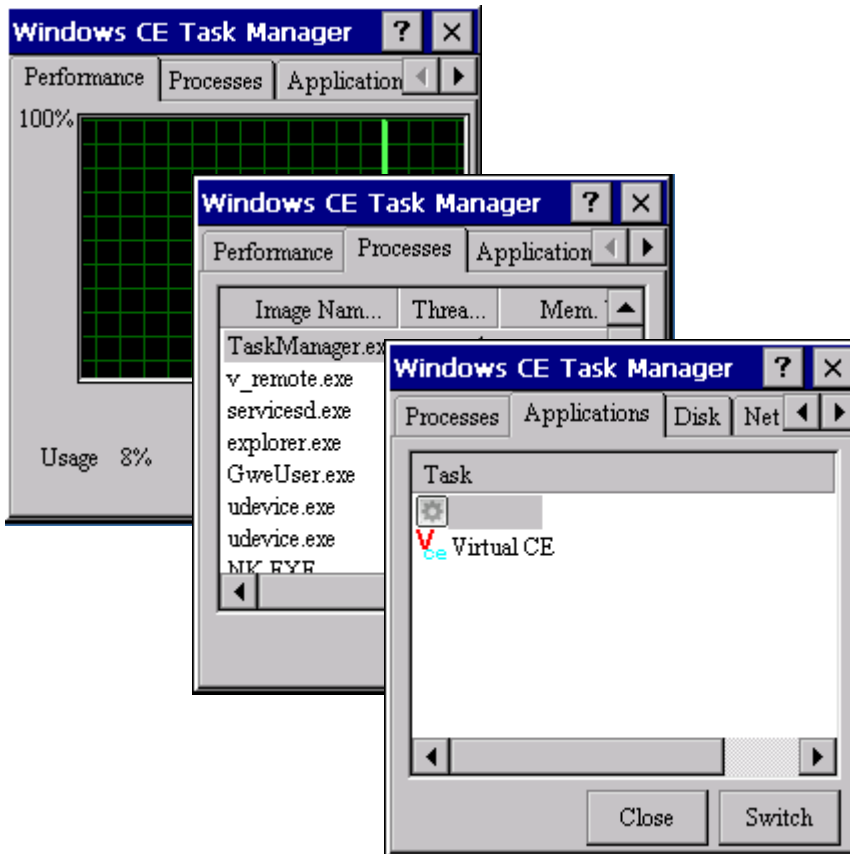
The Rotary Execution tab provides functions to configure programs running at ViewPAC startup in one of the user defined mode, it allows users to configure ten execute files at most.



The tab is used to	How to use
Configure programs running at startup in one of the user defined mode	Click the Browse button to select the execute file which you want, and then click the Apply button.

3.2. TaskMgr

The TaskMgr is a Windows CE application, which provides real time info on all processes and threads including System threads, similar in appearance to the Windows Task Manager.



3.3. VCEP

ICPDAS VCEP is designed for managing your ViewPAC anywhere. No matter where you are, ICPDAS VCEP provides a convenient environment on the Desktop PC and lets you control your ViewPAC remotely.



ICPDAS VCEP is composed of two main components: The “Server” which runs on ViewPAC and the ‘Client’ which runs on a Desktop PC.

Once a connection is established between the client and server (initiated by the client), the client will periodically send requests for screen updates and send mouse/key click information to the server to simulate.

Each video frame is inter-compressed against the previous frame and then intra-compressed with a modified LZW scheme to minimize the amount of data transmitted from server to client.

For more detailed information on VCEP application, please refer to

http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/pc_tools/vcep_4.2.0.9/

3.4. Remote_Display

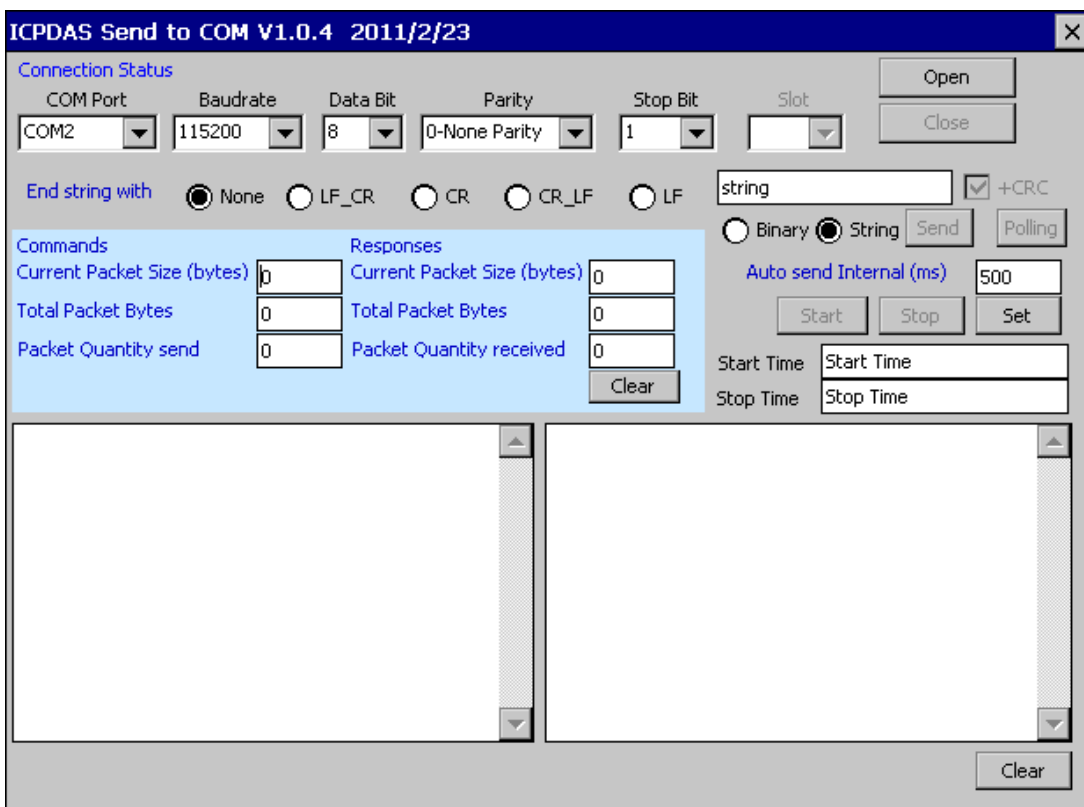
The "Remote Display" allows ViewPAC to be controlled and monitored from a remote location. This tool is composed of two parts, a client and a server. The server is a program named cerdisp.exe running on ViewPAC. The client is a PC-based program named cerhost.exe running on the PC.

3.5. SendToCOM

The SendToCOM uses the serial port to communicate with expansion module. To use the SendToCOM, you can send data to expansion module through the serial port, and receive data from other device through the serial port.

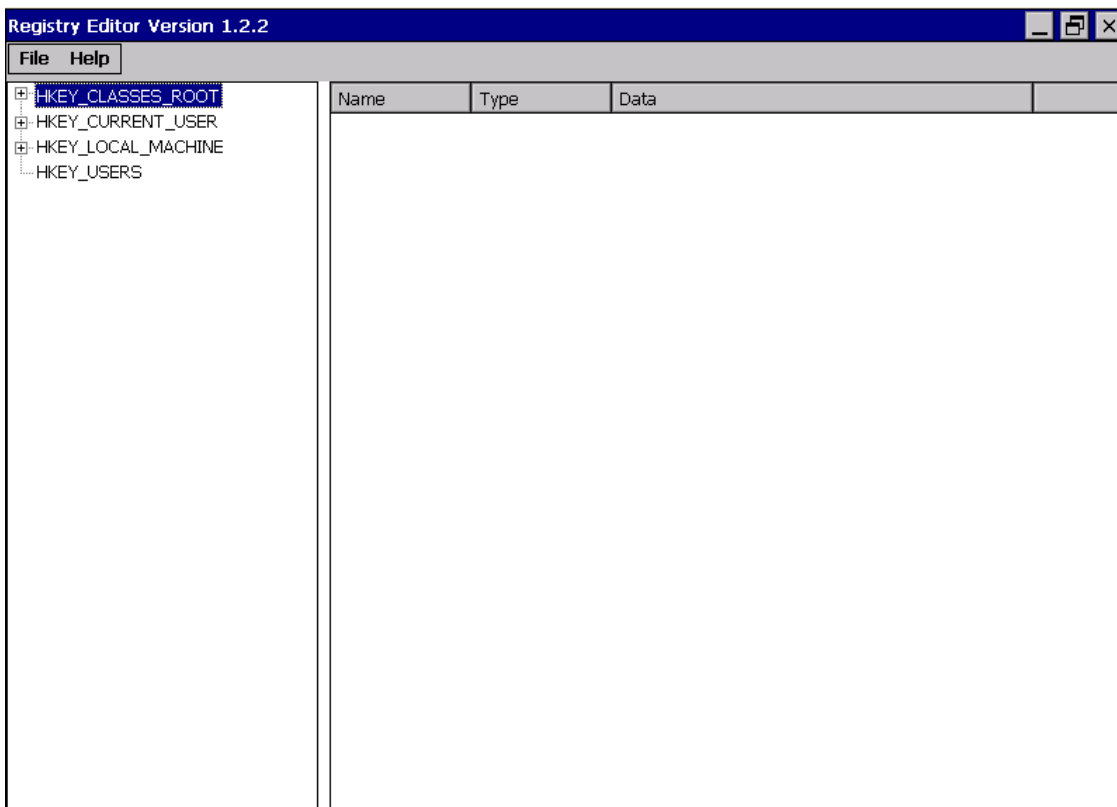
For more information about these commands for communicating with expansion module, please refer to:

http://ftp.icpdas.com.tw/pub/cd/8000cd/napdos/dcon/io_module/87k_high_profile_modules.htm



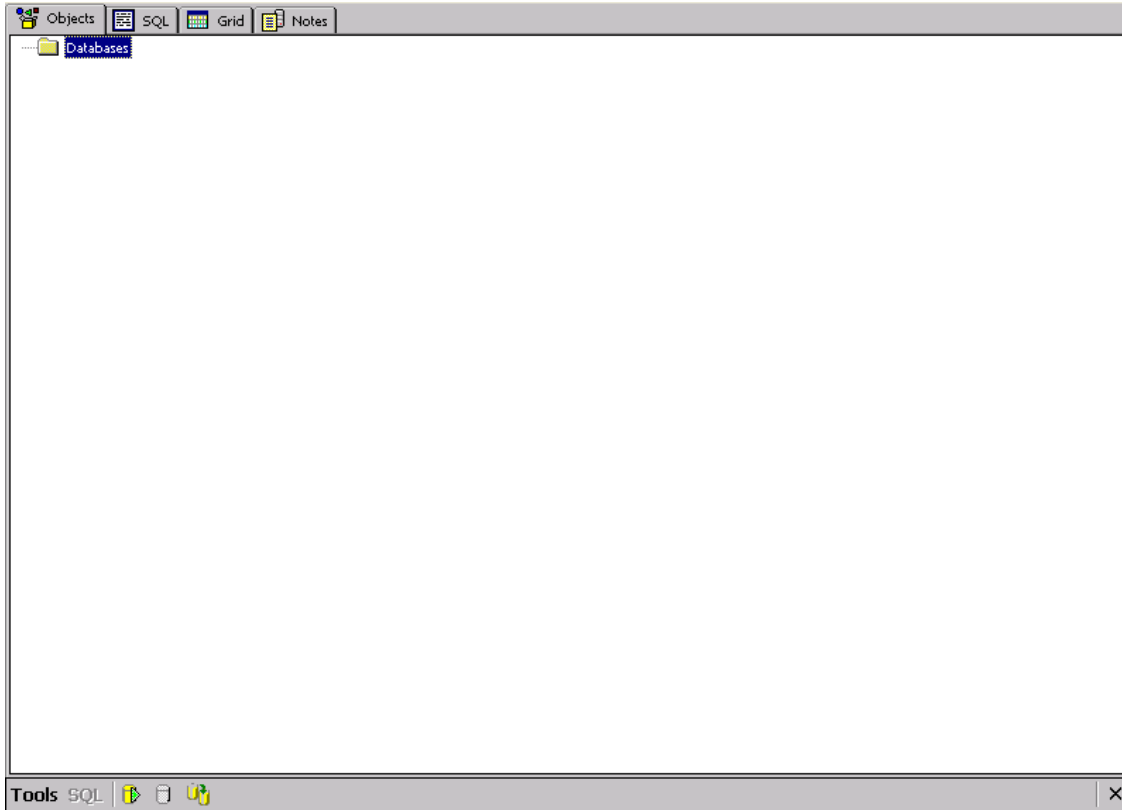
3.6. RegEdit

The RegEdit provides a hierarchical representation of the registry on a target computer, similar in appearance to the Windows Registry Editor. The standard registry roots are represented; you can add keys beneath a root to point to existing registry keys, or you can add your own keys. Values can be changed for existing keys, or added for new keys, and default keys can be specified. For more information, see Registry Settings Management in Deployment.



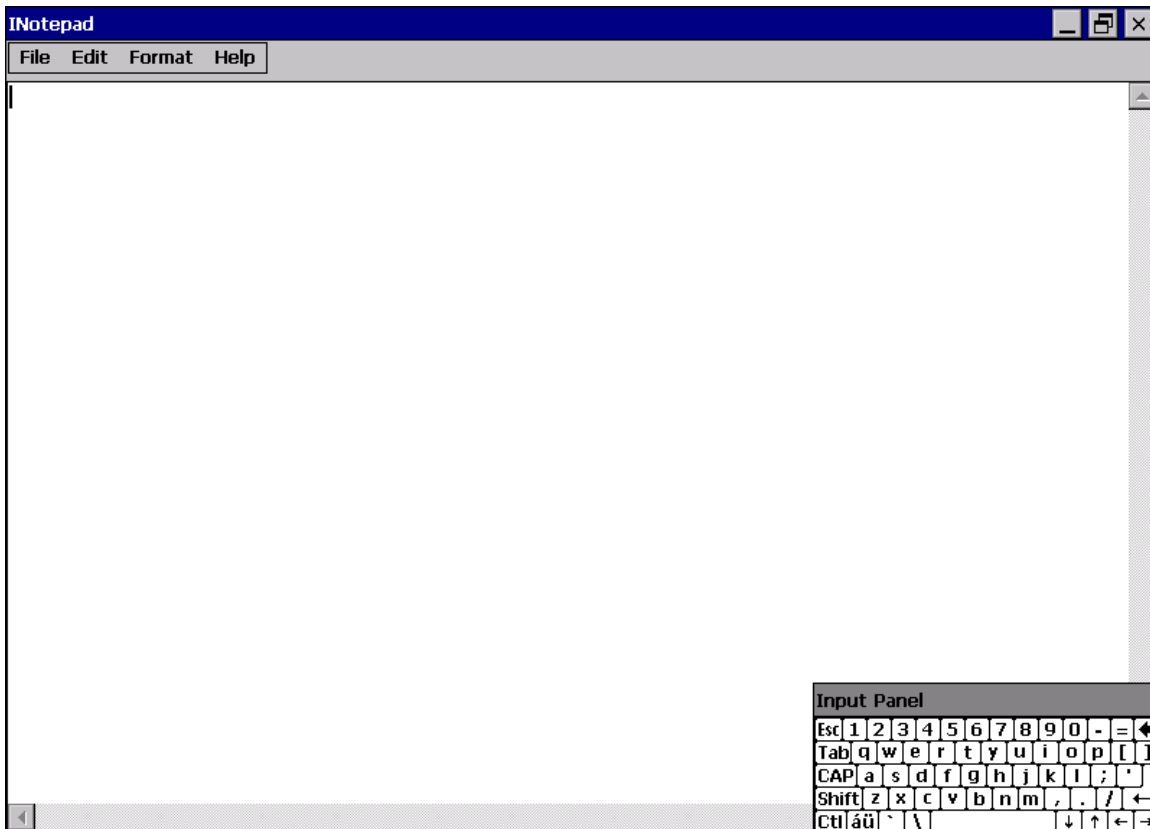
3.7. ISQLW35

The "ISQLW35" is a Windows Embedded Compact 7 functionality that implements SQL Server Compact 3.5 Query.



3.8. INotepad

The INotepad is a common text-only editor. The resulting files have no format tags or styles, making the program suitable for editing system files that are to be used in a DOS environment.



4. Your First ViewPAC Program

This chapter provides a guided tour that describes the steps needed to set-up a development environment, download, install, configure for user programming with the ViewPAC.

Before writing your first program, ensure that you have the necessary development tool and the corresponding ViewPAC SDKs are installed on your system.

4.1. Choosing a Development Tool

ViewPAC are Windows CE-based units. Windows CE is a mature embedded operating system which supports rapid development.



Visual Studio takes full advantage of the .NET Compact Framework, which uses public Internet standards to enable integration with new and existing applications running on any platform. Supported languages include Visual C#, Visual C++ and Visual Basic .NET.

Development Tool Requirements

The table below lists the supported development tools and development languages to develop ViewPAC applications.

Development Tools		Languages	Visual Basic.Net	Visual C#	Visual C++
Visual Studio 2005 or earlier	Any versions except Professional		-	-	-
	Professional		-	-	-
Visual Studio 2008	Any versions except Professional		-	-	-
	Professional		√	√	√
Visual Studio 2012 or later	Any versions except Professional		-	-	-
	Professional		-	-	-

4.2. Installing the Development Kits

If you have visual studio professional 2008 or other development tools installed, you must need to install the following kits for ViewPAC development:

- **Visual Studio 2008 Service Pack 1**
<http://www.microsoft.com/en-us/download/details.aspx?id=10986>
- **Visual Studio 2008 update for Windows Embedded Compact 7**
<http://www.microsoft.com/en-us/download/confirmation.aspx?id=11935>
- **Windows Embedded Compact 7 ATL Update for Visual Studio 2008 SP1**
<http://support.microsoft.com/kb/2468183/en-us>

4.3. Installing the ViewPAC SDK

The ViewPAC SDK contains several APIs for customizing the standard features and integrating with other applications, devices and services.

Before creating the application, ensure them that you have installed.

Step 1: Get the ViewPAC SDK installation package file, AM335x_WINCE7_SDK_YYYYMMDD.msi

The ViewPAC SDK installation file, AM335x_WINCE7_SDK_YYYYMMDD.msi, can be found on the CD that was provided with the package or by downloading the latest version from ViewPAC Download Center.

CD:\Wp-5231\SDK\PlatformSDK\

http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/sdk/platformsdk/

File name: AM335x_WINCE7_SDK_YYYYMMDD.msi

YYYYMMDD: Release date

Step 2: Execute the ViewPAC SDK installation package file

Step 3: Follow the prompts until the installation is complete

4.4. First ViewPAC Program in VB.NET

The best way to learn programming with ViewPAC is to actually create a ViewPAC program.

The example below demonstrates how to create a demo program running on ViewPAC with VB.NET.

To create a demo program with VB.NET that includes the following main steps:

1. Create a new project
2. Specify the path of the PAC reference
3. Add the control to the form
4. Add the event handling for the control
5. Upload the application to ViewPAC
6. Execute the application on ViewPAC

All main steps will be described in the following subsection.

In this tutorial, we will assume that you have installed ViewPAC SDK on PC and used the Visual Studio 2008 for application development.

4.4.1. Create a New Project

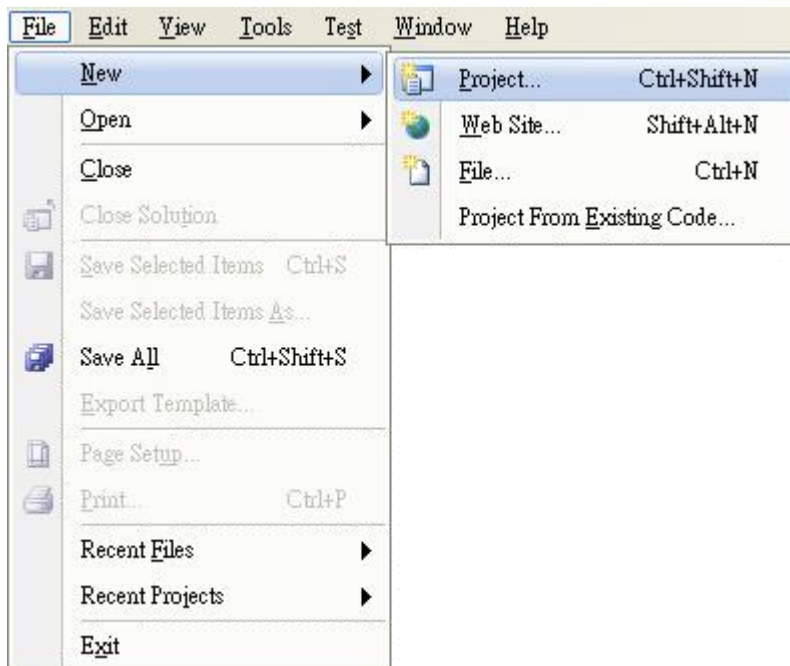
The Visual VB.net project template is a composite control that you use in this example creates a new project with this user control.

Step 1: Run the Visual Studio 2008

Visual Studio 2008



Step 2: On the File menu, point to New, and then click Project

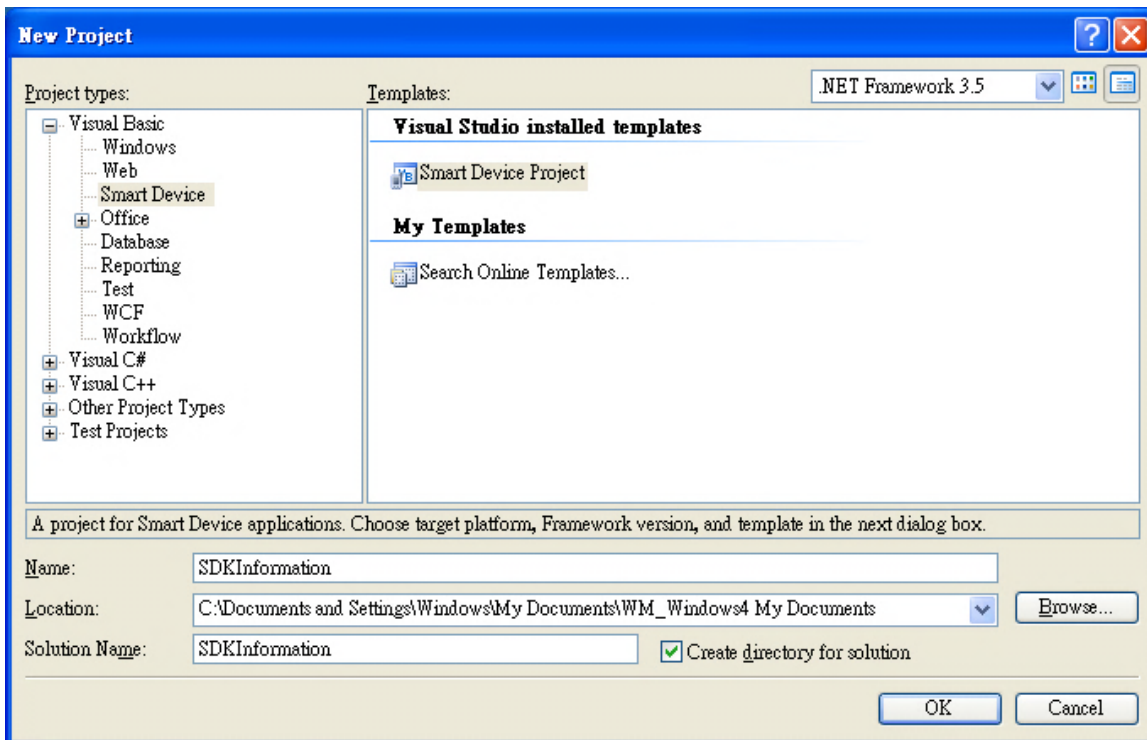


Step 3: In the Project types pane, expand Visual Basic, and then click Smart Device

Step 4: In the Templates pane, click Smart Device

Step 5: Type a name in the Name field, and then click OK

Here we will enter the name “SDKInformation” and a different location for the project if you wish



Tips & Warnings

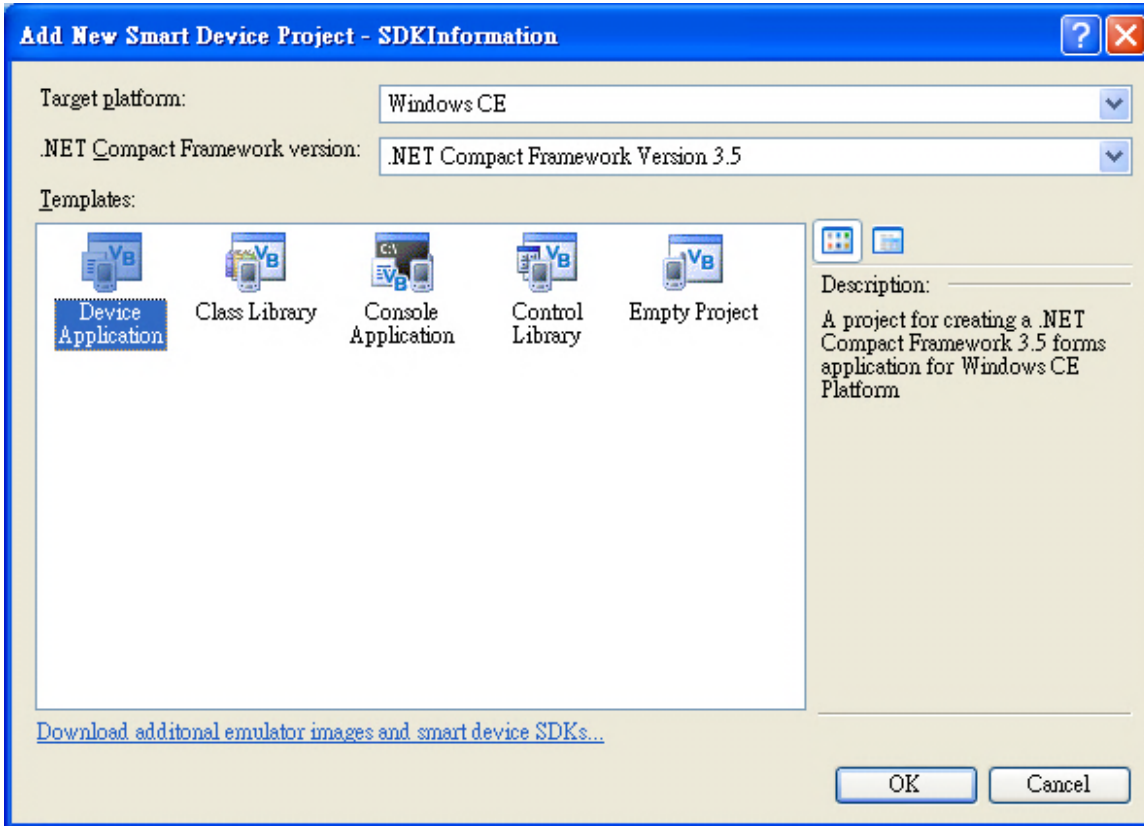


The WCE7 only support .NET Compact Framework Version 3.5, if your application uses .NET Compact Framework Version 2.0 there is no guarantee that the program will function correctly.

Step 6: In the Target platform item, choose Windows CE

Step 7: in the .NET Compact Formwork version item, choose .NET Compact Framework Version 3.5

Step 8: in the Templates pane, choose Device Application, and then click Next



4.4.2. Specify the Path of PAC Reference

The PAC SDK provides a complete solution to integrate with ViewPAC and it's compatible with Visual C#, Visual Basic .net and C++. In order to use a component in your application, you must first add a reference to it.

Step1: Get the PACNET.dll and copy it to the project folder

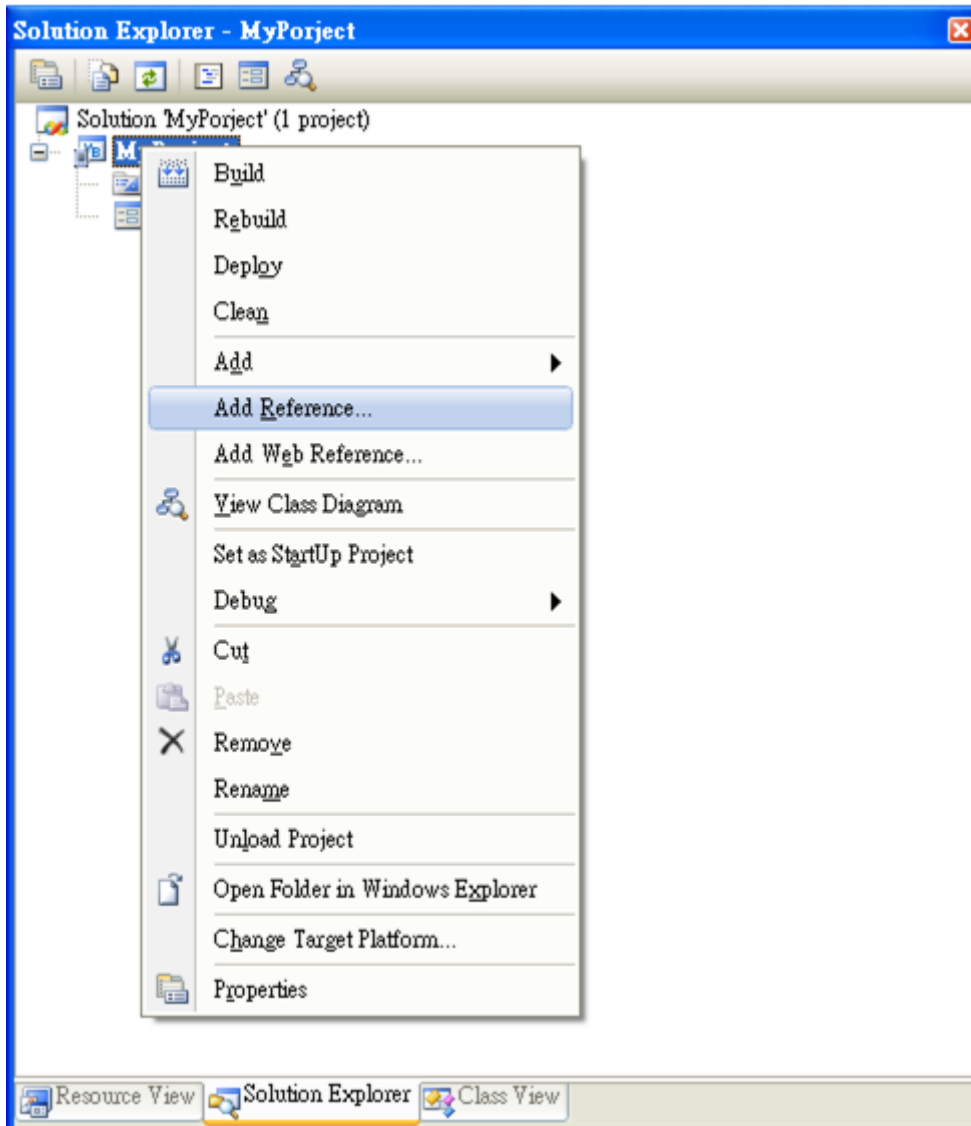
The PACNET.dll can be obtained from the link below that has been provided on the CD or by downloading the latest version from ICP DAS web site.

CD:\Wp-5231\SDK\PACNET\

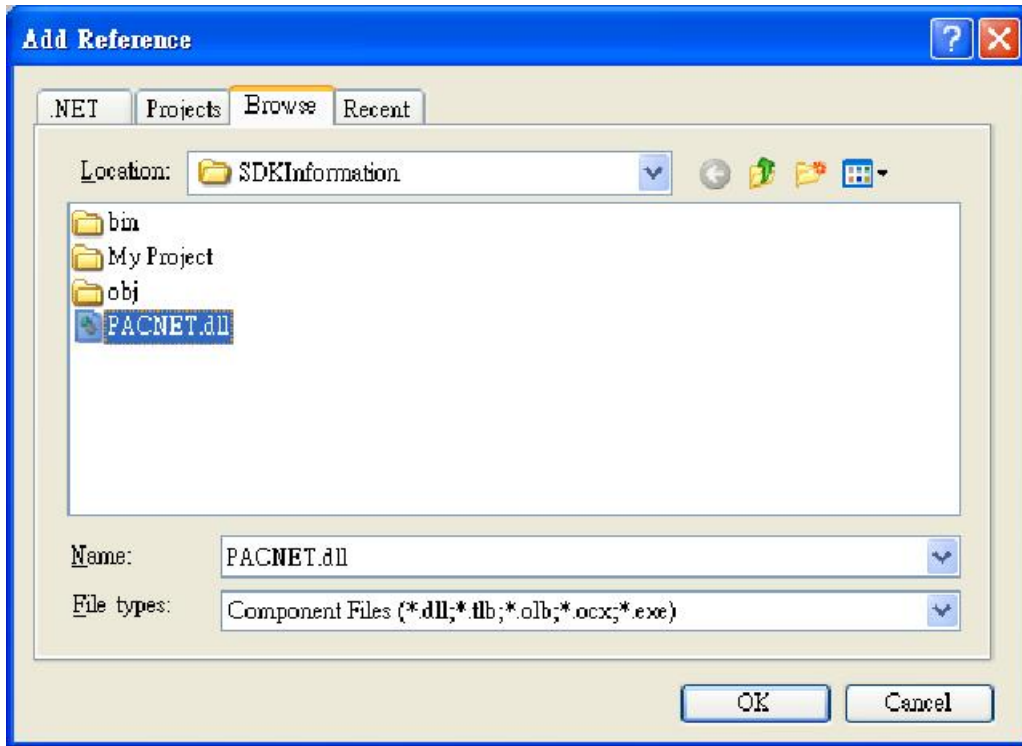
http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/sdk/pacnet/



Step 2: In Solution Explorer, right-click the References node, and then click Add Reference...



Step 3: Select Browse tab and add the PACNET.dll

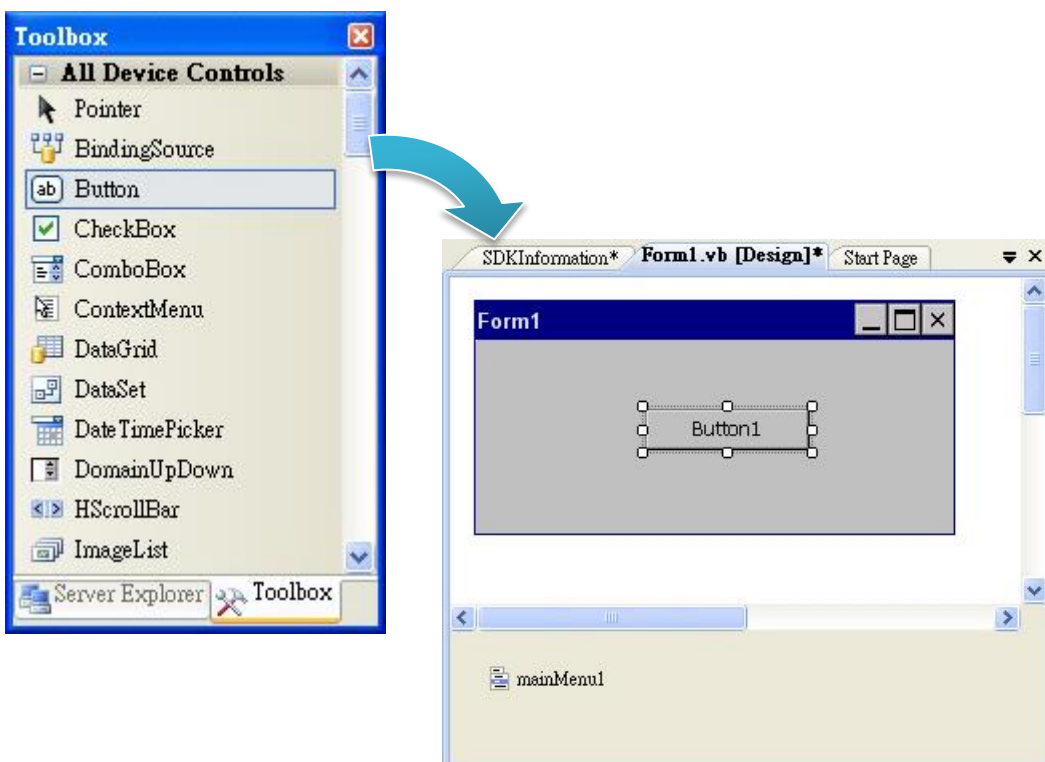


4.4.3. Add the Control to the Form

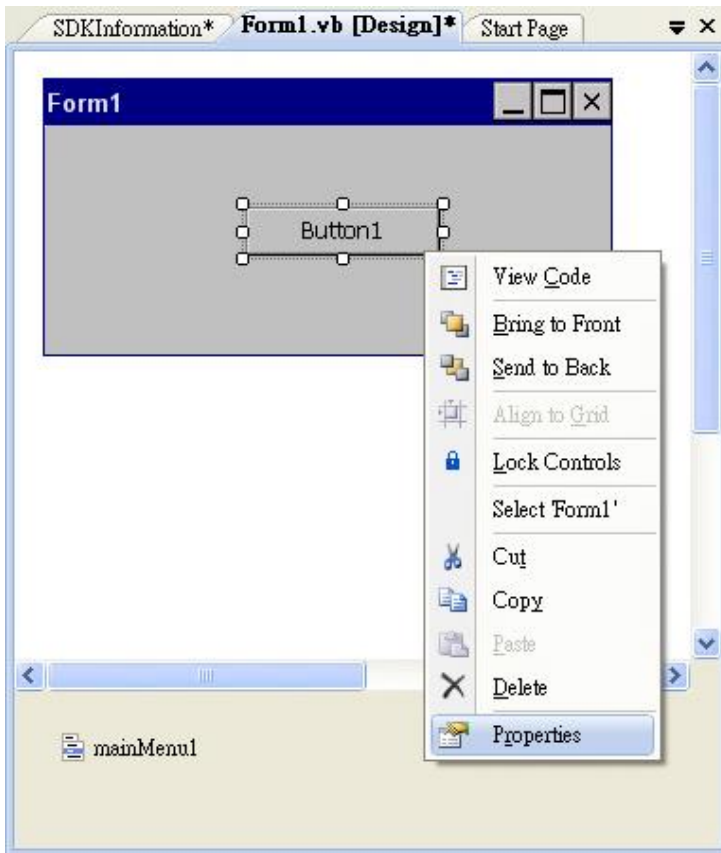
You can drag various controls from the Toolbox onto the form. These controls are not really "live"; they are just images that are convenient to move around on the form into a precise location.

After you add a control to your form, you can use the Properties window to set its properties, such as background color and default text. The values that you specify in the Properties window are the initial values that will be assigned to that property when the control is created at run time.

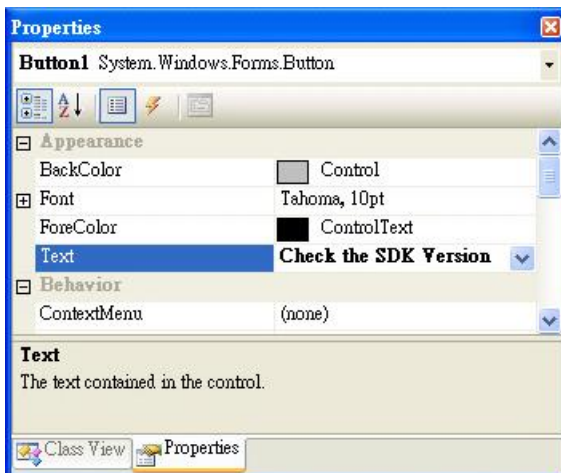
Step 1: From the Toolbox, drag a Button control onto the form



Step 2: Right-click the Button control, and then click Properties



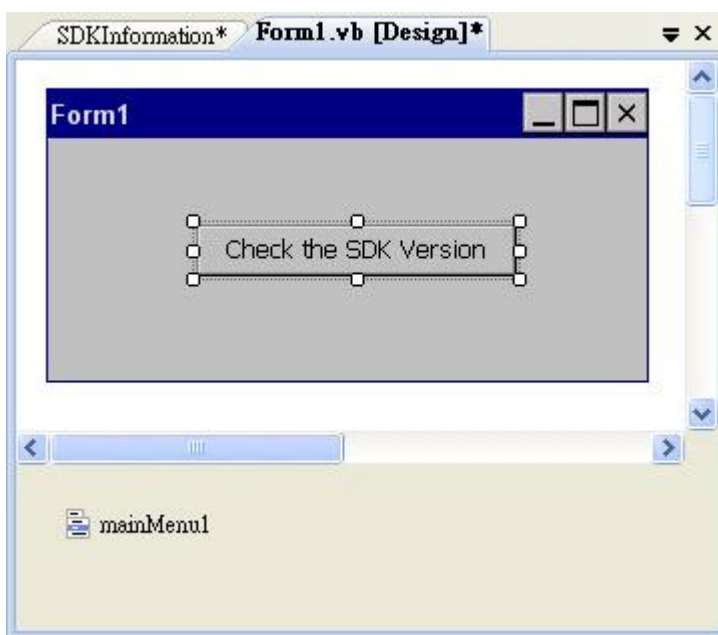
Step 3: In the Properties window, type Check the SDK version, and press ENTER to set the Text property



4.4.4. Add the Event Handling for the Control

You have finished the design stage of your application and are at the point when you can start adding some code to provide the program's functionality.

Step 1: Double-click the button on the form



Step 2: Inserting the following code

```
Dim data(30) As Byte
PACNET.Sys.GetSDKVersion(data)
MessageBox.Show(PACNET.MISC.WideString(data))
```

```
Public Class Form1
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
        Dim data(30) As Byte
        PACNET.System.GetSDKVersion(data)
        MessageBox.Show(PACNET.MISC.WideString(data))
    End Sub
End Class
```

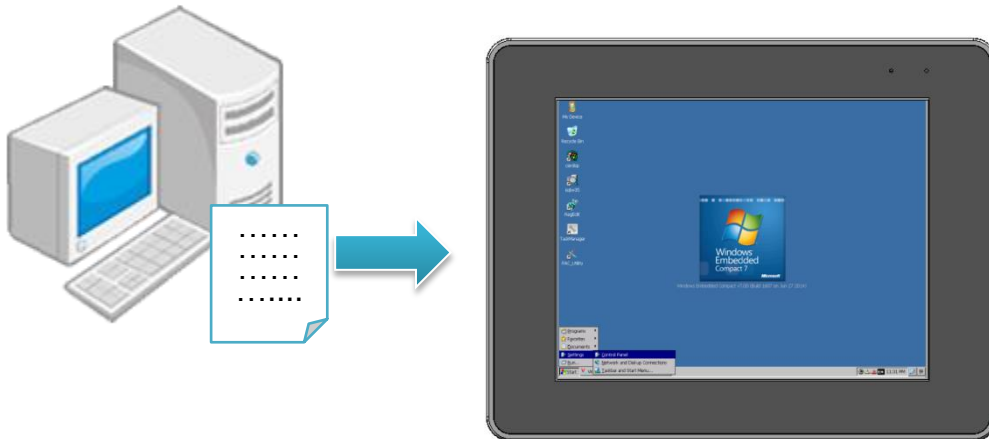
Tips & Warnings



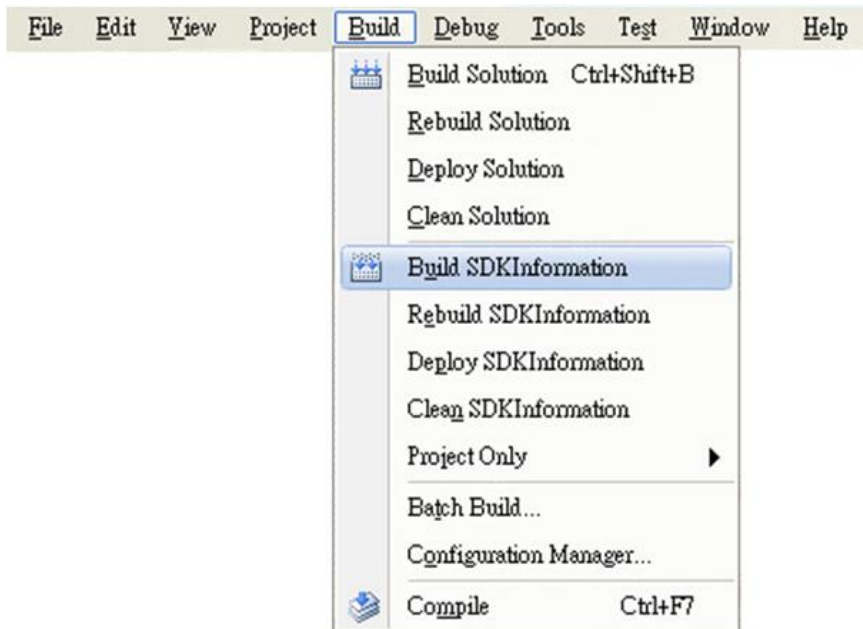
The “PACNET” of “using PACNET” is case- sensitive.

4.4.5. Upload the Application to ViewPAC

ViewPAC supports FTP server service. You can upload files to ViewPAC or download files from a public FTP server.



Step 1: On the Build menu, click Build SDKInformation



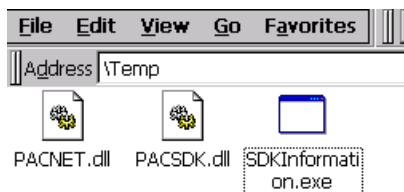
Step 2: Open the browser and type the IP address of ViewPAC

Step 3: Upload the SDKInformation.exe application and the corresponding PACSDK.dll and PACNET.dll files to ViewPAC

Tips & Warnings



For applications programming in C# and VB.net with .net compact framework, when executing these application on ViewPAC, the corresponding PACSDK.dll and PACNET.dll must be in the same directory as the .exe file.



4.4.6. Execute the Application on ViewPAC

After uploading the application to ViewPAC, you can just double-click it on ViewPAC to execute it.



4.5. First ViewPAC Program in Visual C#

The best way to learn programming with ViewPAC is to actually create a ViewPAC program.

The example below demonstrates how to create a demo program running on ViewPAC with C#.

To create a demo program with C# that includes the following main steps:

1. Create a new project
2. Specify the path of the PAC reference
3. Add the control to the form
4. Add the event handling for the control
5. Upload the application to ViewPAC
6. Execute the application on ViewPAC

All main steps will be described in the following subsection.

4.5.1. Create a New Project

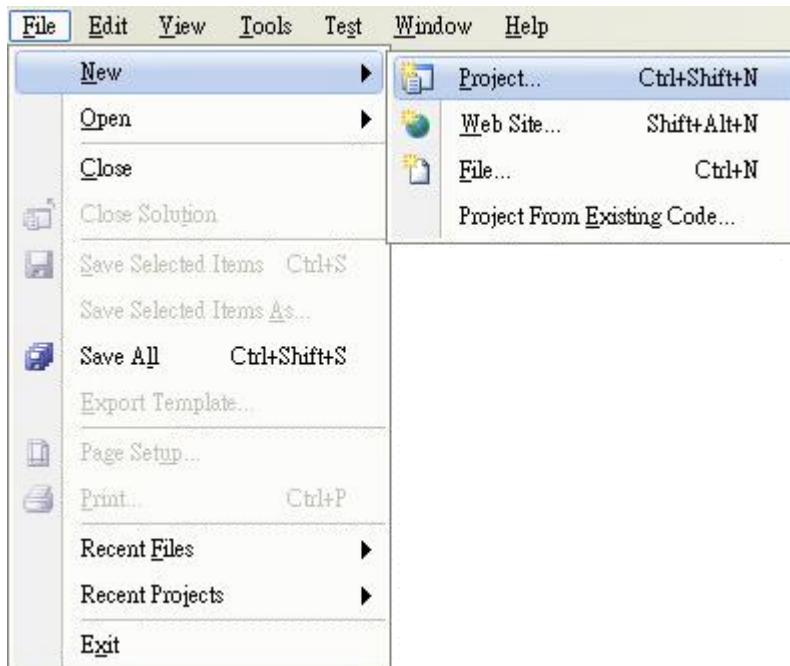
The C# project template is a composite control that you use in this example creates a new project with this user control.

Step 1: Run the Visual Studio 2008

Visual Studio 2008



Step 2: On the File menu, point to New, and then click Project

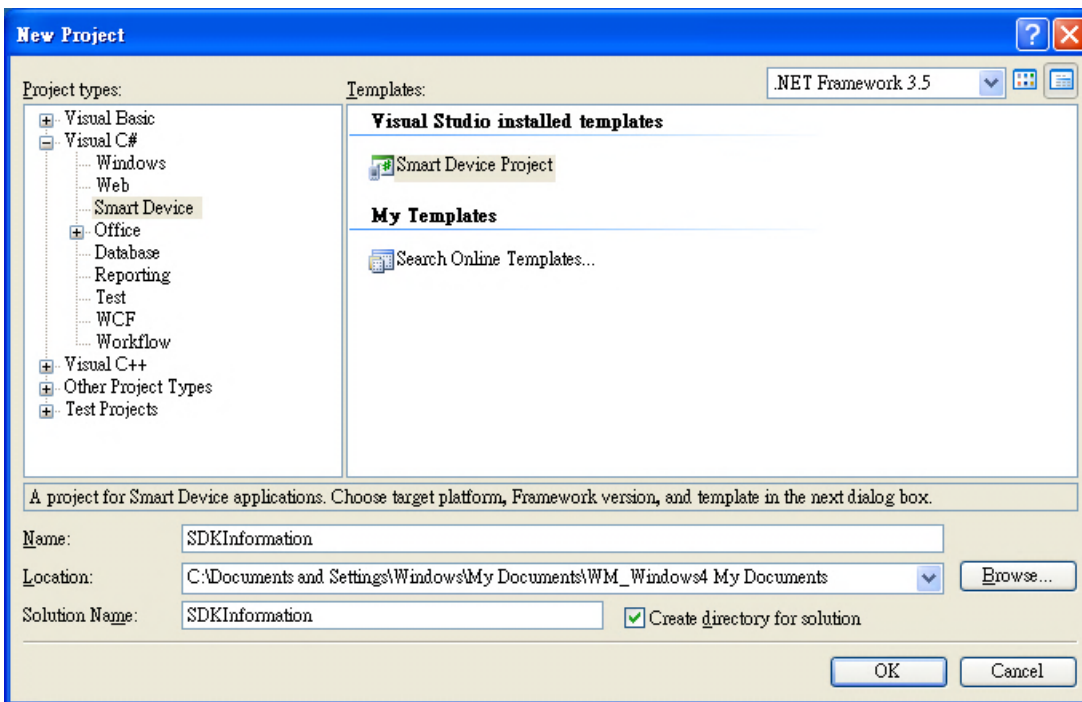


Step 3: In the Project types pane, expand Visual C#, and then click Smart Device

Step 4: In the Templates pane, click Smart Device

Step 5: Type a name in the Name field, and then click OK

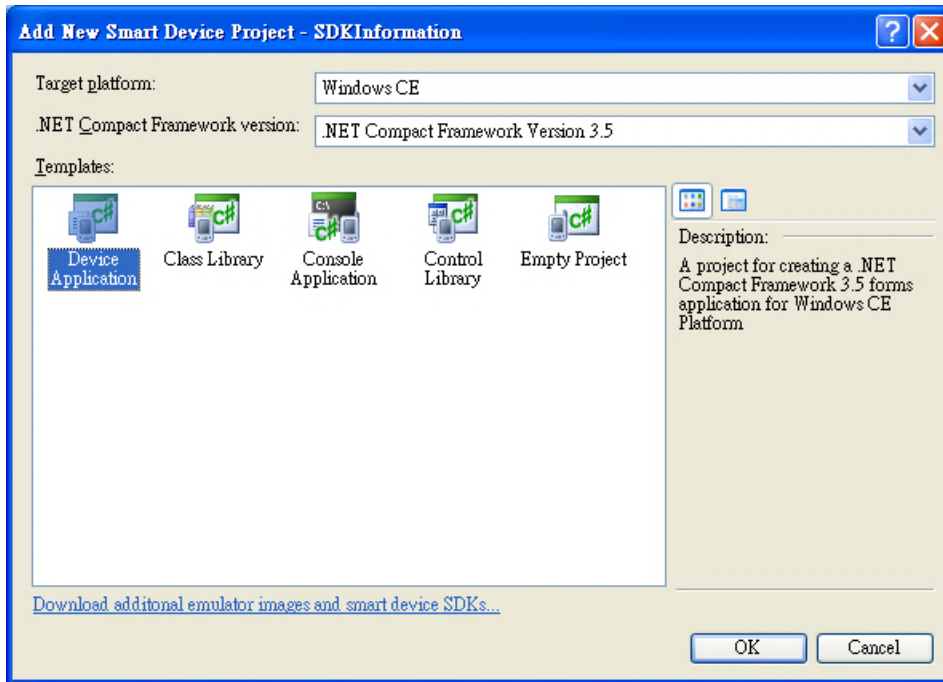
Here we will enter the name “SDKInformation” and a different location for the project if you wish.



Step 6: In the Target platform item, choose Windows CE

Step 7: in the .NET Compact Formwork version item, choose .NET Compact Framework Version 3.5

Step 8: in the Templates pane, choose Device Application, and then click Next



Tips & Warnings



The WCE7 only support .NET Compact Framework Version 3.5, if your application uses .NET Compact Framework Version 2.0 there is no guarantee that the program will function correctly.

4.5.2. Specify the Path of PAC Reference

The PAC SDK provides a complete solution to integrate with ViewPAC and it's compatible with Visual C#, Visual Basic .net and C++. In order to use a component in your application, you must first add a reference to it.

Step1: Get the PACNET.dll and copy it to the project folder

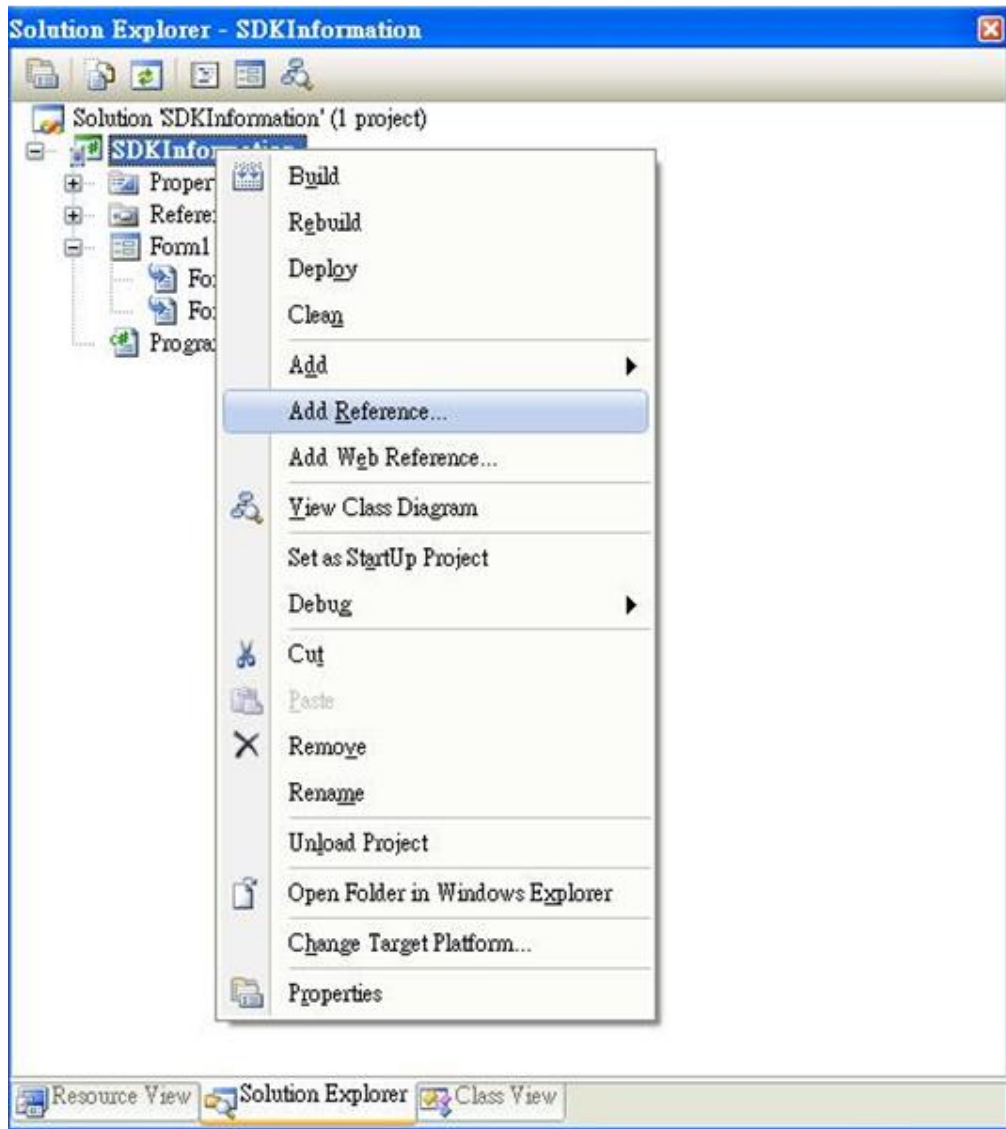
The PACNET.dll can be obtained from the link below that has been provided on the CD or by downloading the latest version from ICP DAS web site.

CD:\Wp-5231\SDK\PACNET\

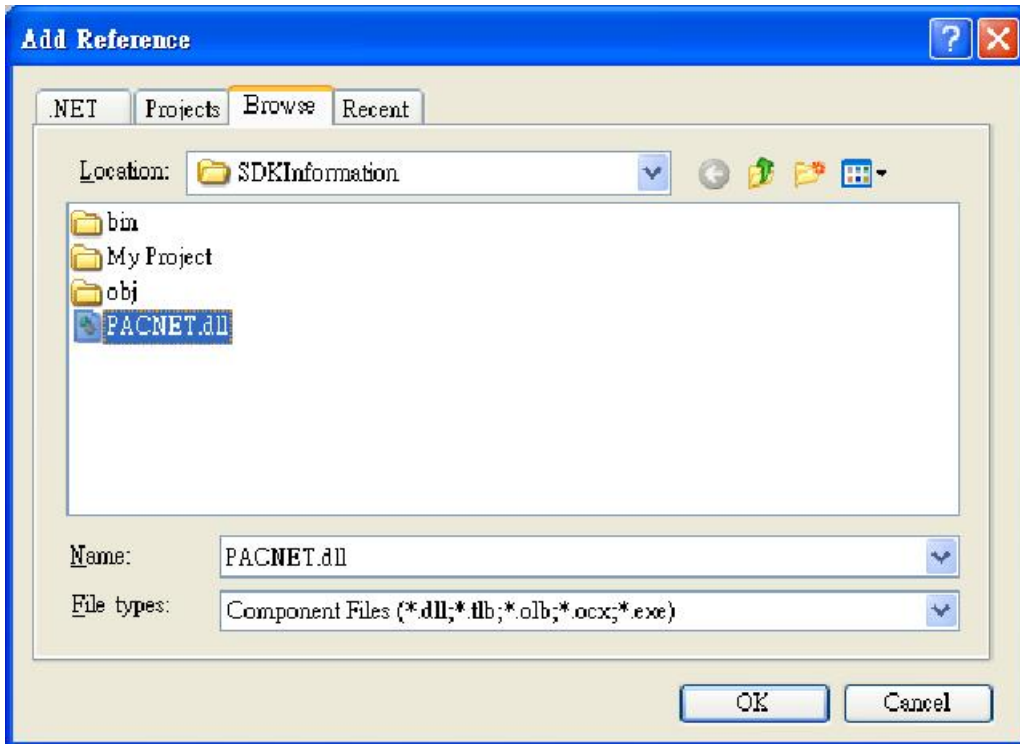
http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/sdk/pacnet/



Step 2: In Solution Explorer, right-click the References node, and then click Add Reference...



Step 3: Select Browse tab and add the PACNET.dll

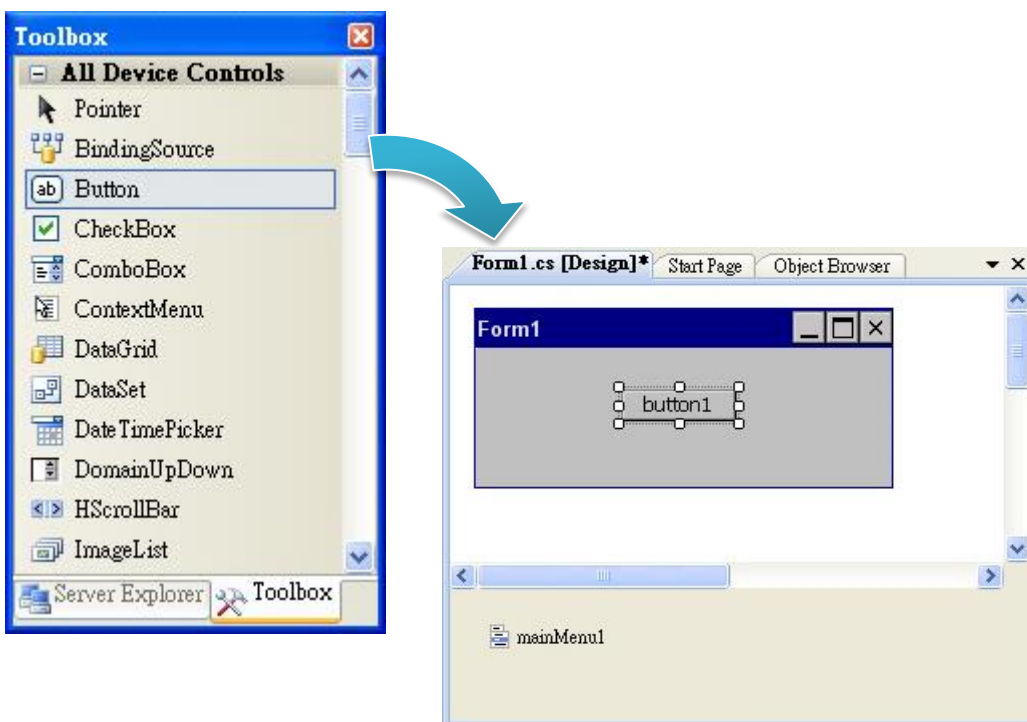


4.5.3. Add the Control to the Form

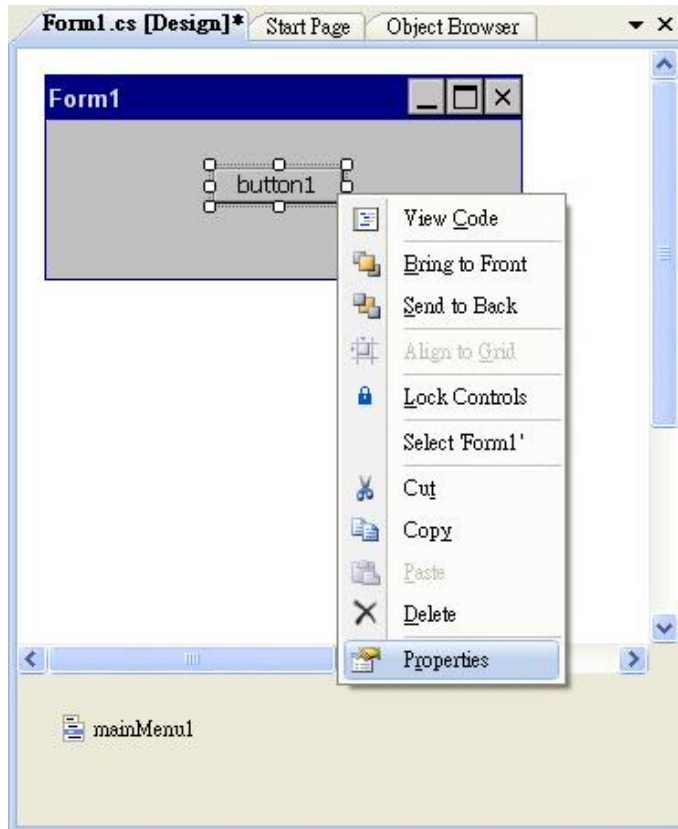
You can drag various controls from the Toolbox onto the form. These controls are not really "live"; they are just images that are convenient to move around on the form into a precise location.

After you add a control to your form, you can use the Properties window to set its properties, such as background color and default text. The values that you specify in the Properties window are the initial values that will be assigned to that property when the control is created at run time.

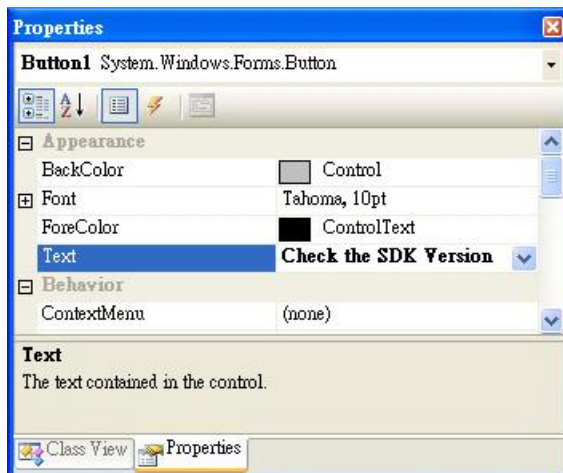
Step 1: From the Toolbox, drag a Button control onto the form



Step 2: Right-click the Button control, and then click Properties



Step 3: In the Properties window, type Check the SDK version, and press ENTER to set the Text property



4.5.4. Add the Event Handling for the Control

You have finished the design stage of your application and are at the point when you can start adding some code to provide the program's functionality.

Step 1: Double-click the button on the form



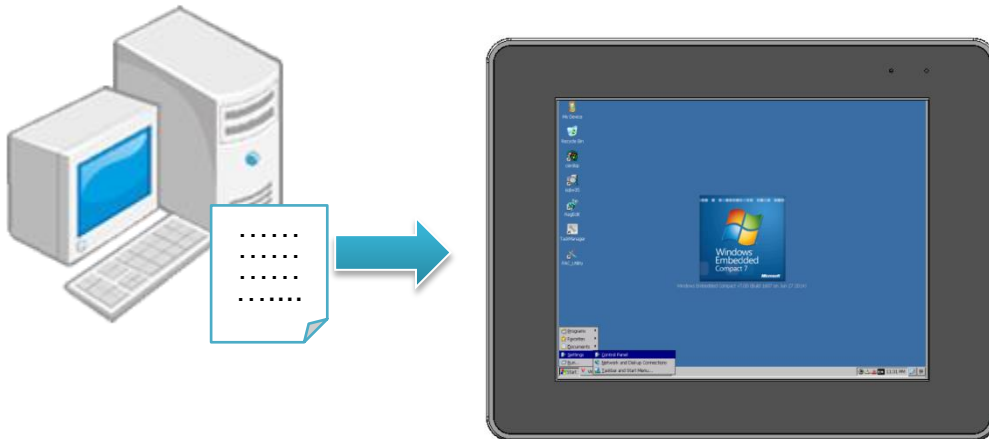
Step 2: Inserting the following code

```
byte []data = new byte[30];  
PACNET.Sys.GetSDKVersion(data);  
MessageBox.Show(PACNET.MISC.WideString(data));
```

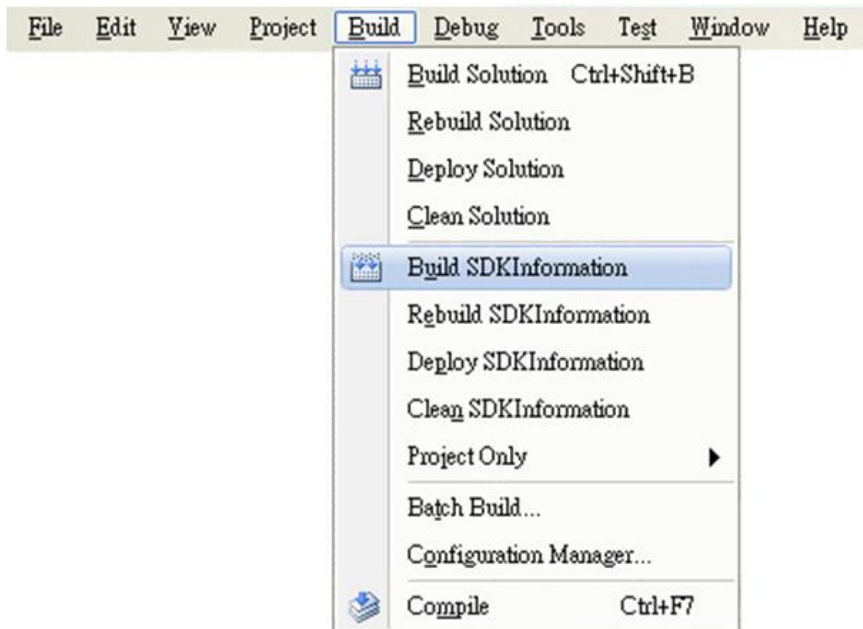
```
namespace SDKInformation  
{  
    public partial class Form1 : Form  
    {  
        public Form1()  
        {  
            InitializeComponent();  
        }  
  
        private void button1_Click(object sender, EventArgs e)  
        {  
            byte []data = new byte[30];  
            PACNET.Sys.GetSDKVersion(data);  
            MessageBox.Show(PACNET.MISC.WideString(data));  
        }  
    }  
}
```

4.5.5. Upload the Application to ViewPAC

ViewPAC supports FTP server service. You can upload files to ViewPAC or download files from a public FTP server.



Step 1: On the Build menu, click Build SDKInformation



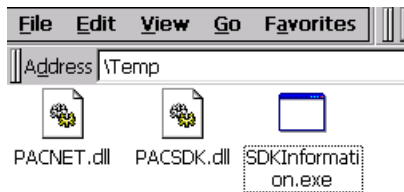
Step 2: Open the browser and type the IP address of ViewPAC

Step 3: Upload the SDKInformation.exe application and the corresponding PACSDK.dll and PACNET.dll files to ViewPAC

Tips & Warnings



For applications programming in C# and VB.net with .net compact framework, when executing these application on ViewPAC, the corresponding PACSDK.dll and PACNET.dll must be in the same directory as the .exe file.



4.5.6. Execute the Application on ViewPAC

After uploading the application to ViewPAC, you can just double-click it on ViewPAC to execute it.



4.6. First ViewPAC Program in Visual C++

The best way to learn programming with ViewPAC is to actually create a ViewPAC program.

The example below demonstrates how to create a demo program running on ViewPAC with Visual C++

To create a demo program with Visual C++ that includes the following main steps:

1. Create a new project
2. Configure the platform
3. Specify the path of the PAC reference
4. Add the control to the form
5. Add the event handling for the control
6. Upload the application to ViewPAC
7. Execute the application on ViewPAC

All main steps will be described in the following subsection.

Tips & Warnings



Before beginning a new project, the “Embedded Compact 7 ATL Update” must be installed. If this update is not installed, the error message “atlconv.h error C2039: lstrlenW” will be displayed after the program is compiled.

The update can be found on the CD that was provided with the package or by downloading the latest version from Microsoft.

CD:\Wp-5231\SDK\VisualStudioDeviceWindowsEmbeddedCompact7.msi

<http://download.microsoft.com/download/9/D/D/9DDBD3EC-A43C-4BCE-A7A9-AEE9B1007BCE/VisualStudioDeviceWindowsEmbeddedCompact7.msi>

4.6.1. Create a New Project

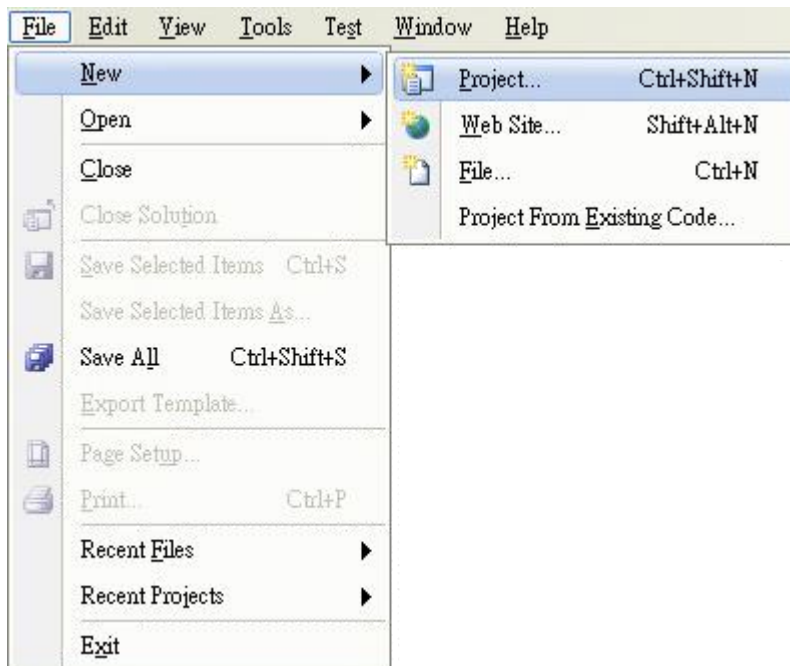
The Visual C++ project template is a composite control that you use in this example creates a new project with this user control.

Step 1: Run the Visual Studio 2008

Visual Studio 2008



Step 2: On the File menu, point to New, and then click Project

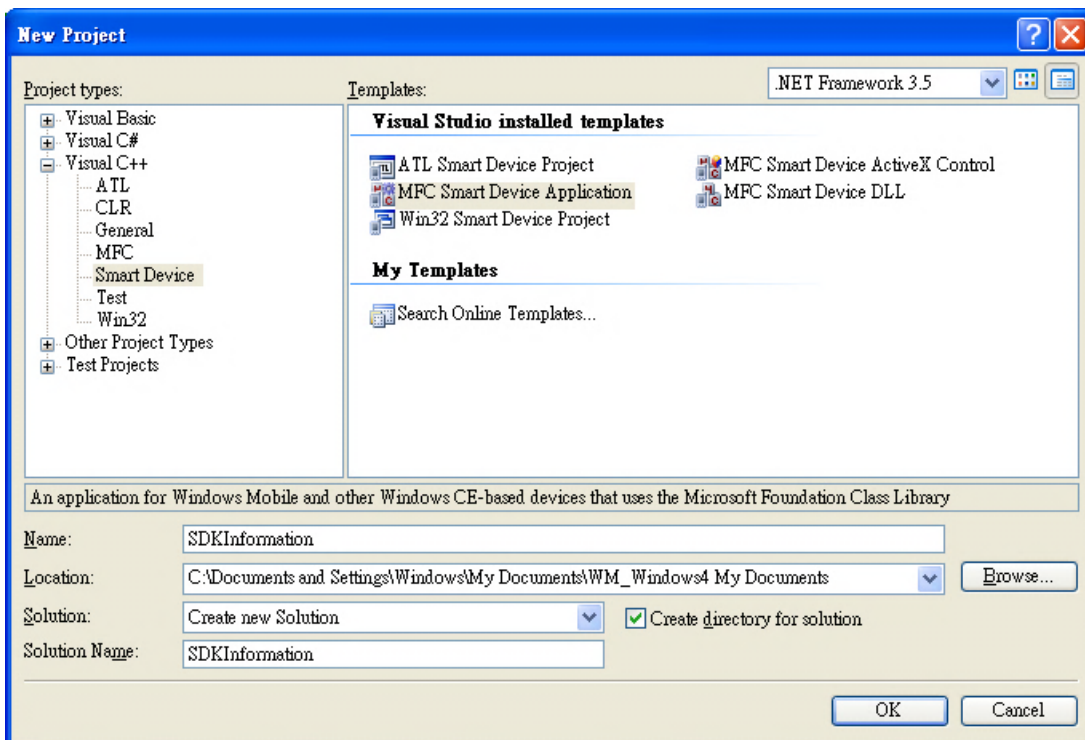


Step 3: In the Project types pane, expand Visual C++, and then click Smart Device

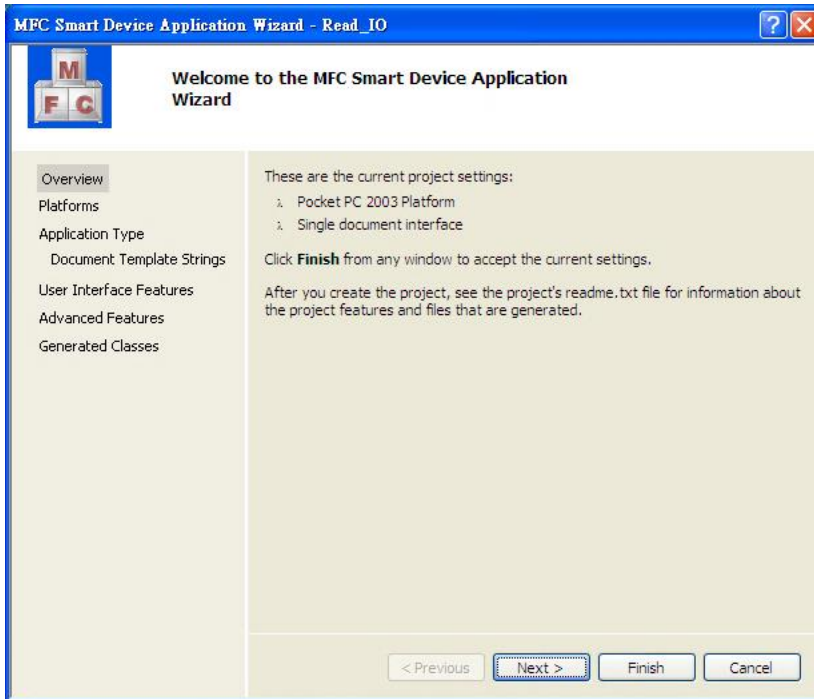
Step 4: In the Templates pane, click MFC Smart Device Application

Step 5: Type a name in the Name field, and then click OK

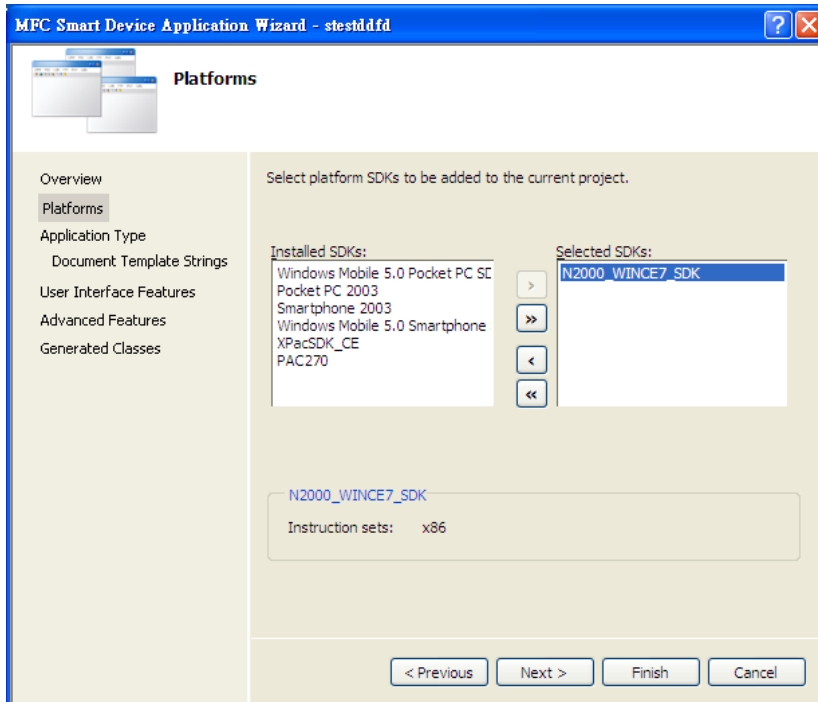
Here we will enter the name “SDKInformation” and a different location for the project if you wish



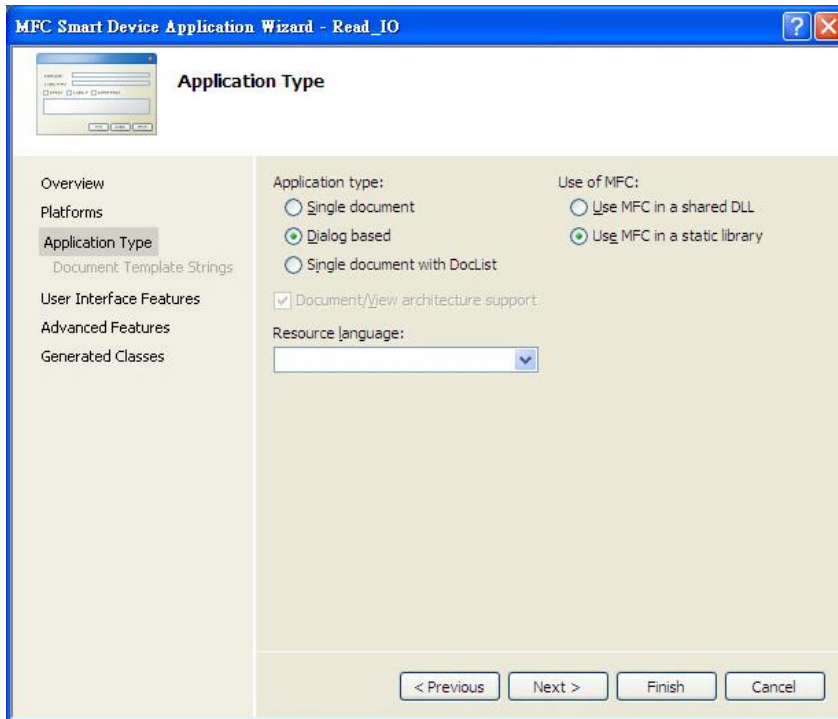
Step 6: On the first page of the wizard, click Next



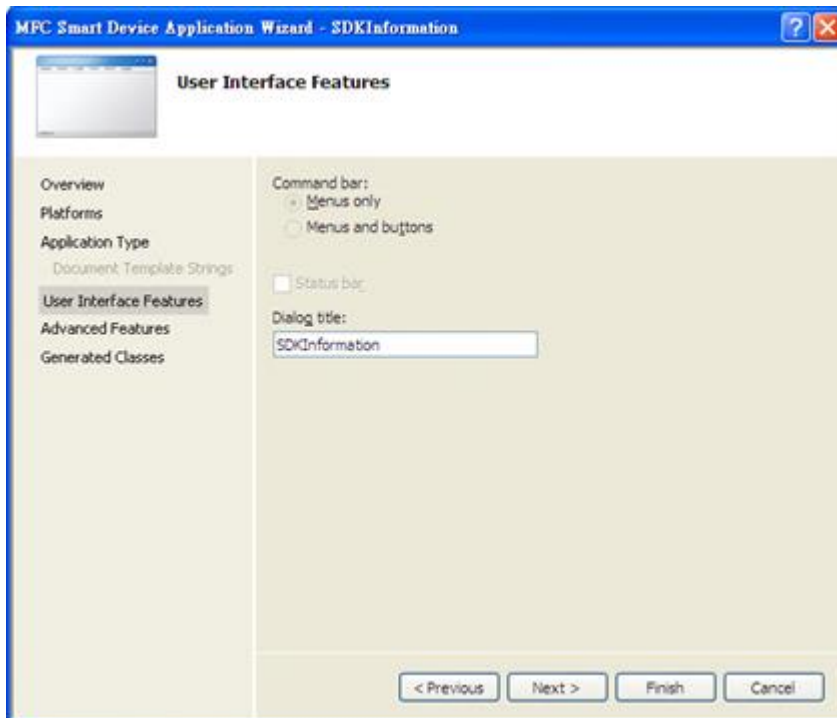
Step 7: On the next page of the wizard, select N2000_WINCE7_SDK to be added to the project, and then click Next



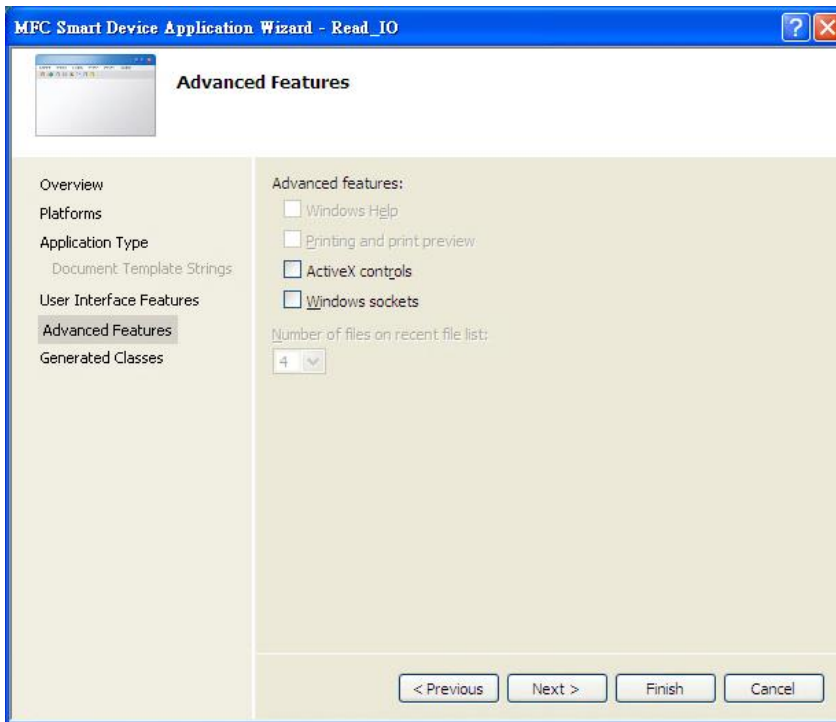
Step 8: On the next page of the wizard, select Dialog based, and then click next



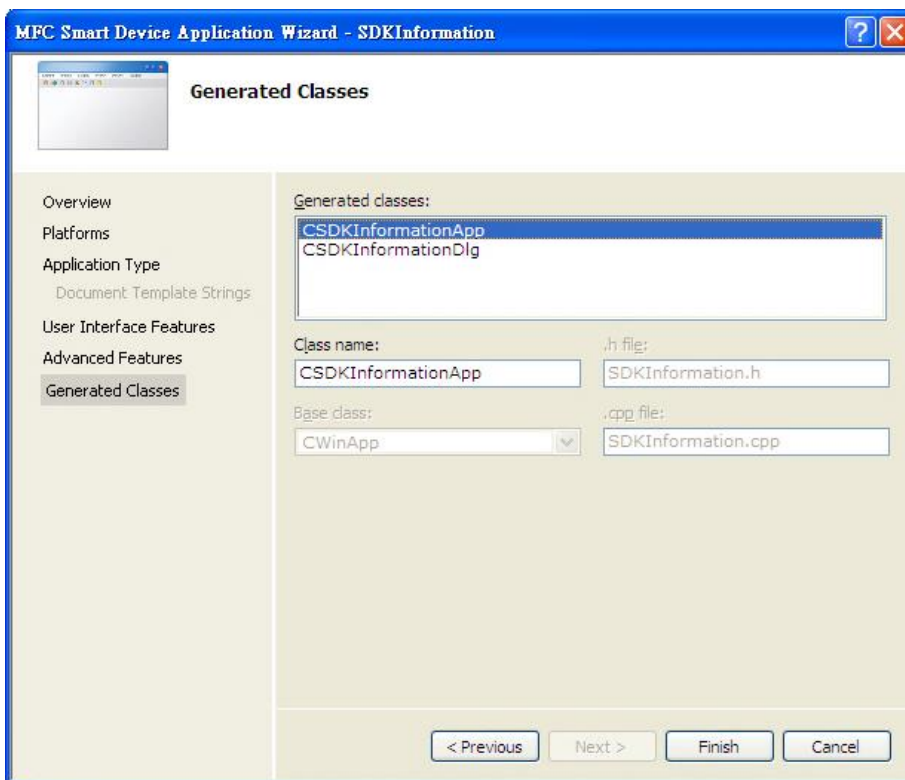
Step 9: On the next page of the wizard, click next



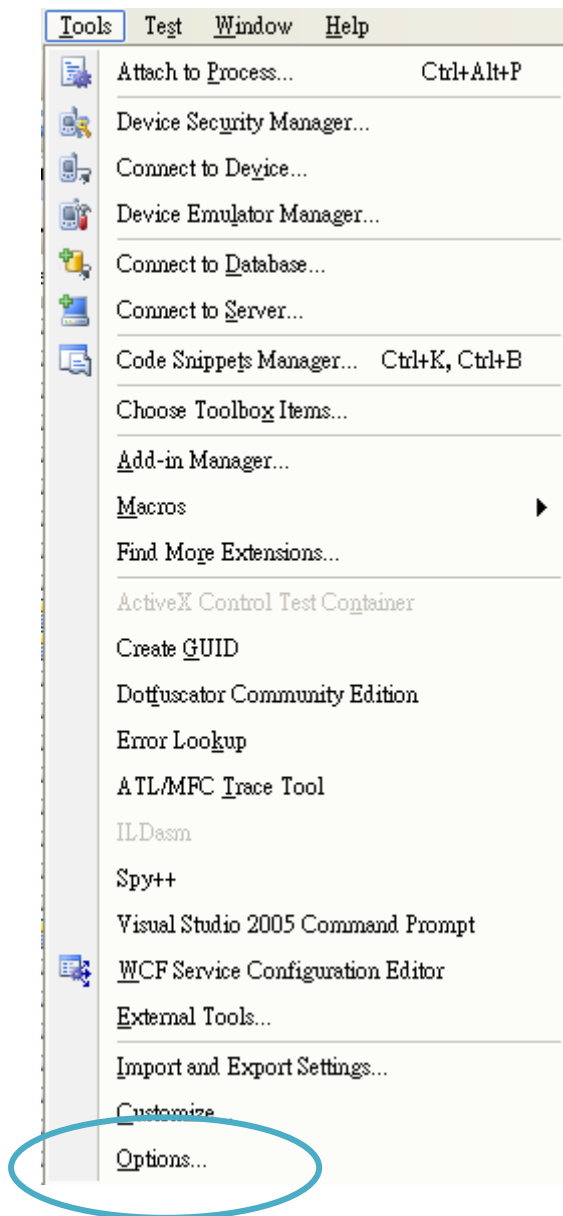
Step 10: On the next page of the wizard, click next



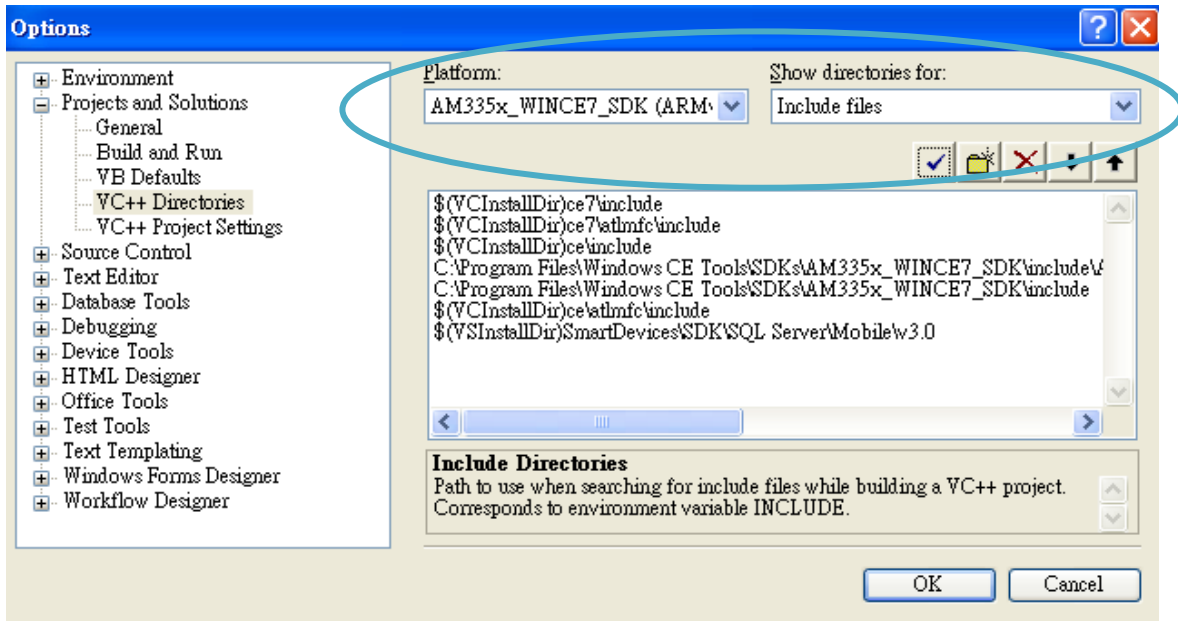
Step 11: On the next page of the wizard, click Finish



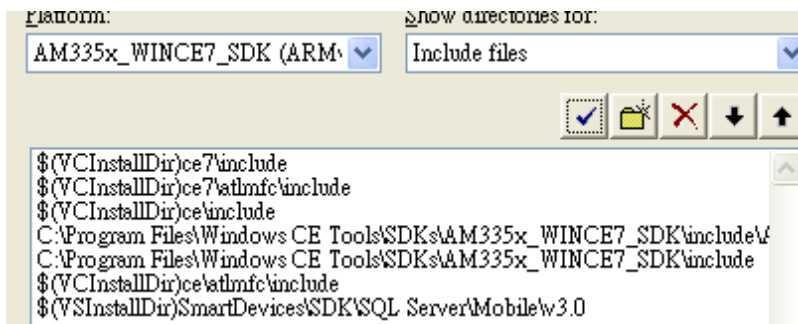
Step 4: On the new project, point to Tools, and then click Options...



Step 3: Click the “Projects and Solutions”->”VC++ Directories” and then select the “AM335x_WINCE7_SDK (ARMv4I)” 、 “Include files” at “Platform:” and “Show directories for:” item



Step 4: Add the path “\$(VCInstallDir)ce7\include” and “\$(VCInstallDir)ce7\atlmfc\include” and then click the OK button.



Tips & Warnings

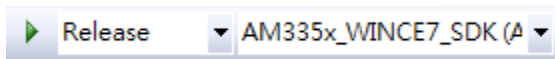


The path “\$(VCInstallDir)ce7\include” and “\$(VCInstallDir)ce7\atlmfc\include” must be on the top of box.

4.6.2. Configure the Platform

When developing applications by using Visual C++, you must configure the Platform to indicate what platform and device you intend to download the application to. Before you deploy your project, check the platform.

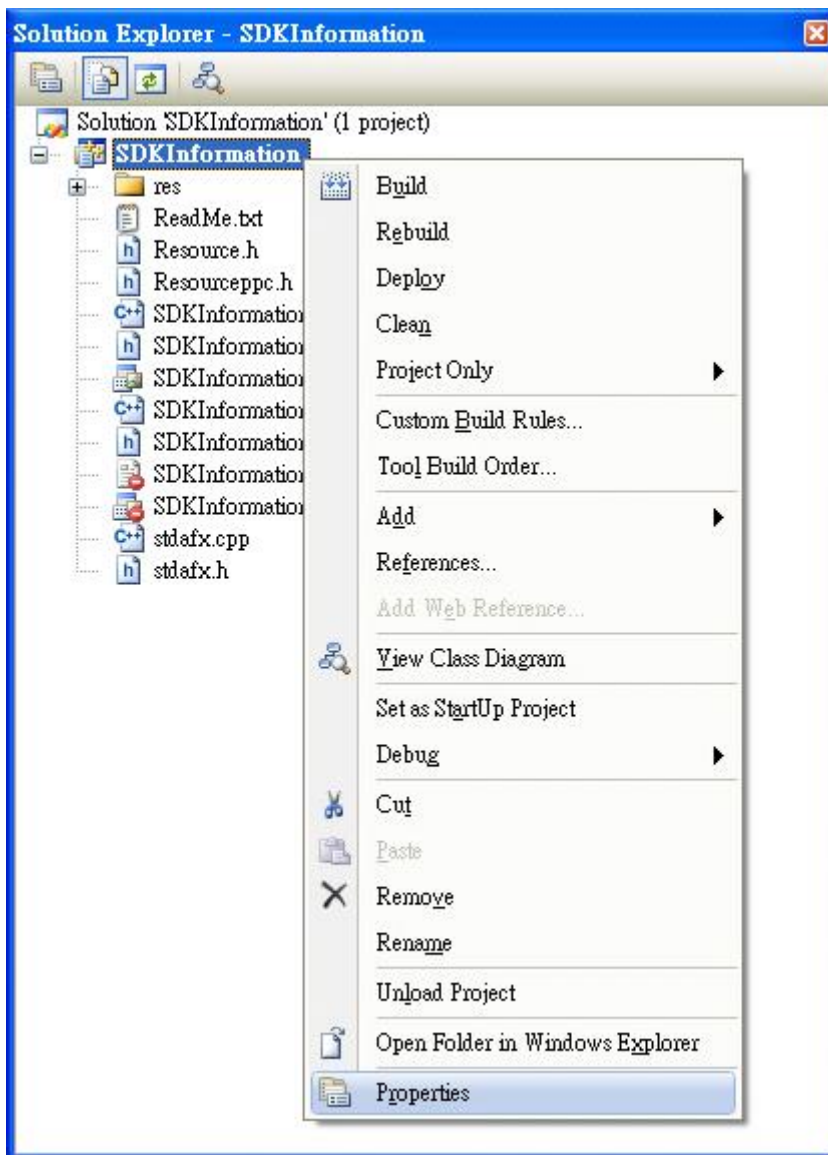
On the Debug configuration toolbar, select Release, and then on the Pocket PC 2003 (ARMV4) configuration toolbar, select N2000_WINCE7(x86), as shown in the following illustration.



4.6.3. Specify the Path of the PAC Reference

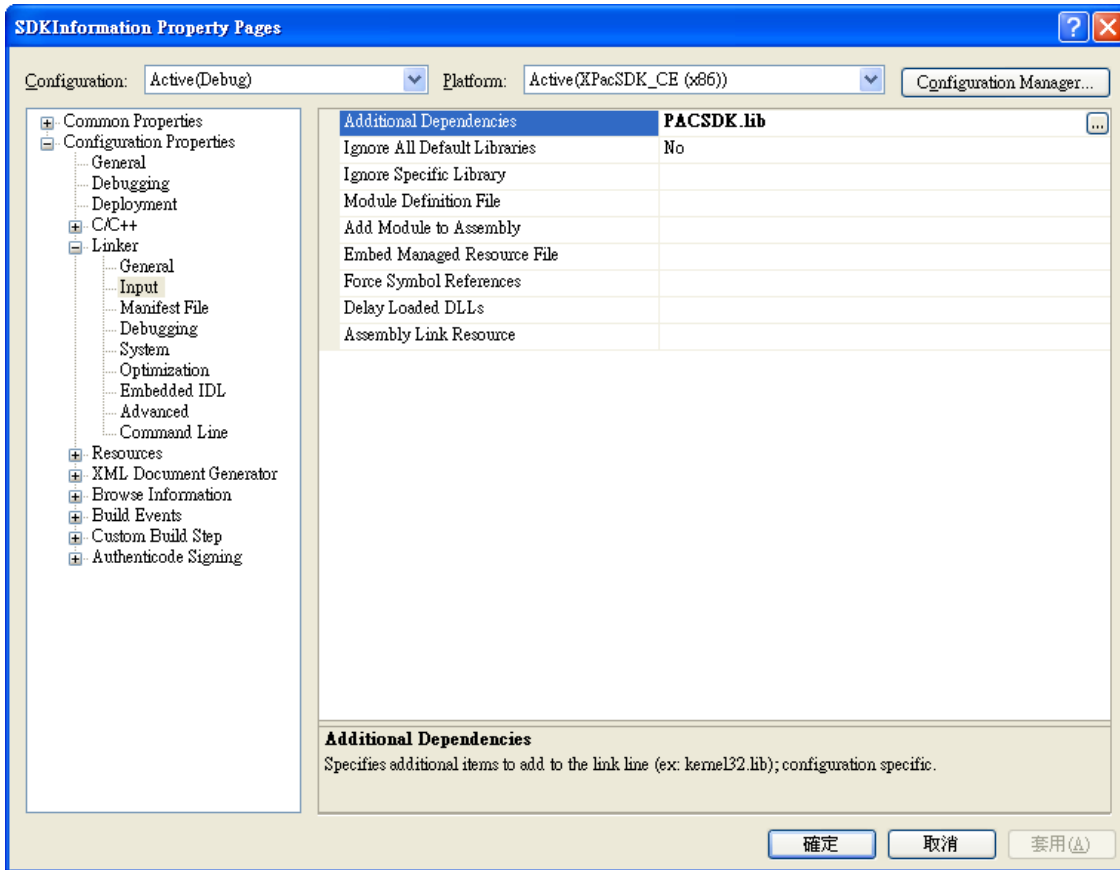
The PAC SDK provides a complete solution to integrate with ViewPAC and it's compatible with Visual C#, Visual Basic .net and C++. In order to use a component in your application, you must first add a reference to it.

Step 1: Right-click the project name, and then click Properties



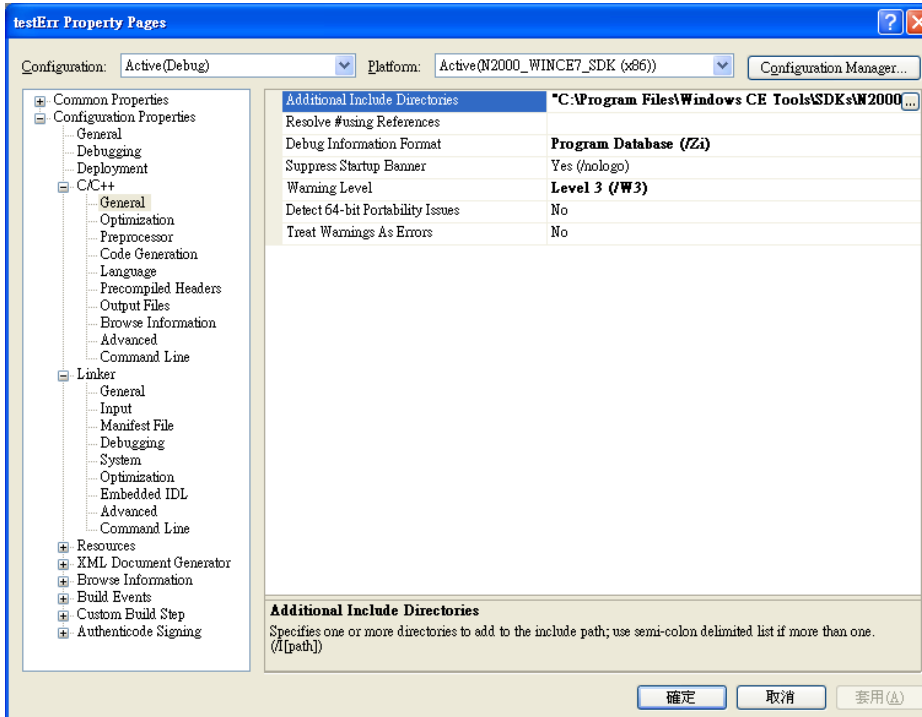
Step 2: In left pane, expand Configuration Properties, and then click Link

Step 3: In the right pane, choose the PACSDK_CE.lib in the Additional Dependencies item



Step 4: In the right pane, choose the following path in the “Additional Include Directories” item

C:\Program Files\Windows CE Tools\SDKs\N2000_WINCE7_SDK\Include\X86
C:\Program Files\Microsoft Visual Studio 9.0\VC\ce7\atlmfc\include



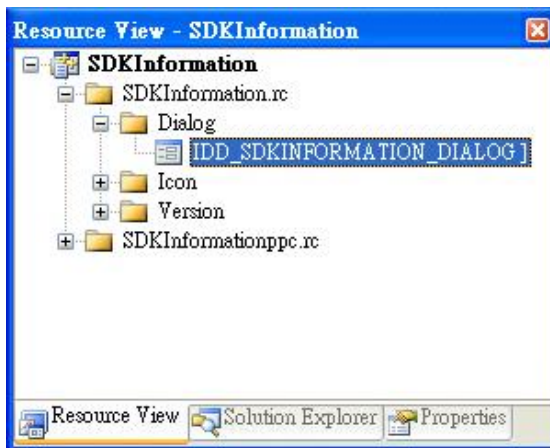
4.6.4. Add the Control to the Form

You can drag various controls from the Toolbox onto the form. These controls are not really "live"; they are just images that are convenient to move around on the form into a precise location.

After you add a control to your form, you can use the Properties window to set its properties, such as background color and default text. The values that you specify in the Properties window are the initial values that will be assigned to that property when the control is created at run time.

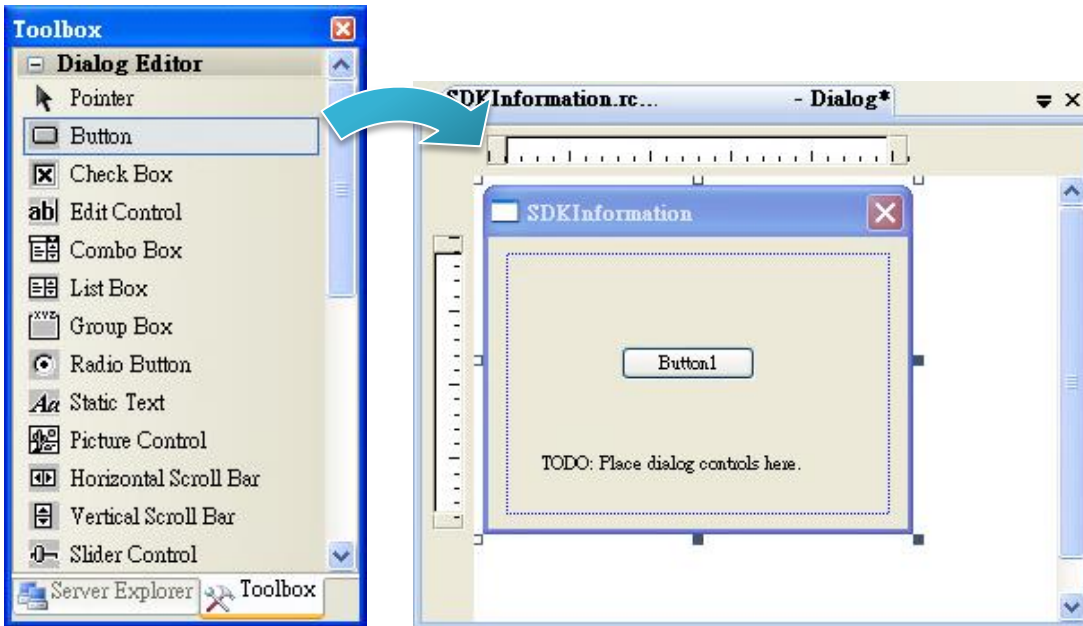
Step 1: In Resource View, expand the resources tree by opening the top level folder

**Step 2: Open the Dialog folder and then double-click the dialog resource name
IDD_SDKINFORMATION_DIALOG**

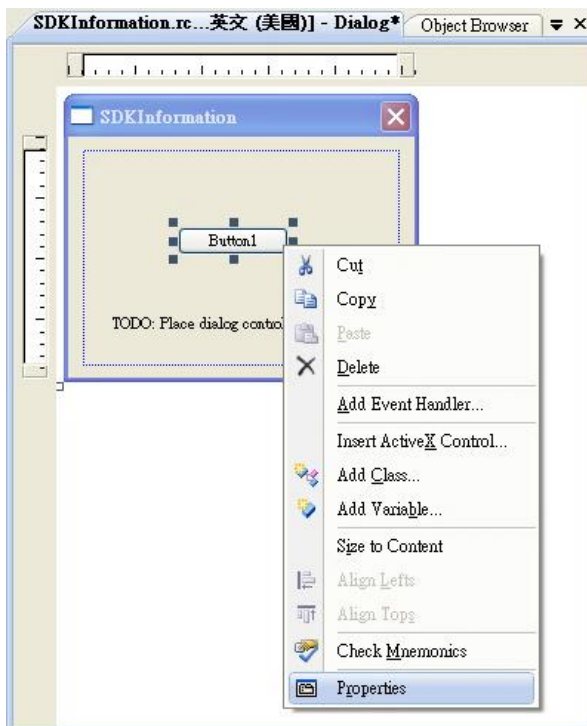


The resource editor appears in the right pane.

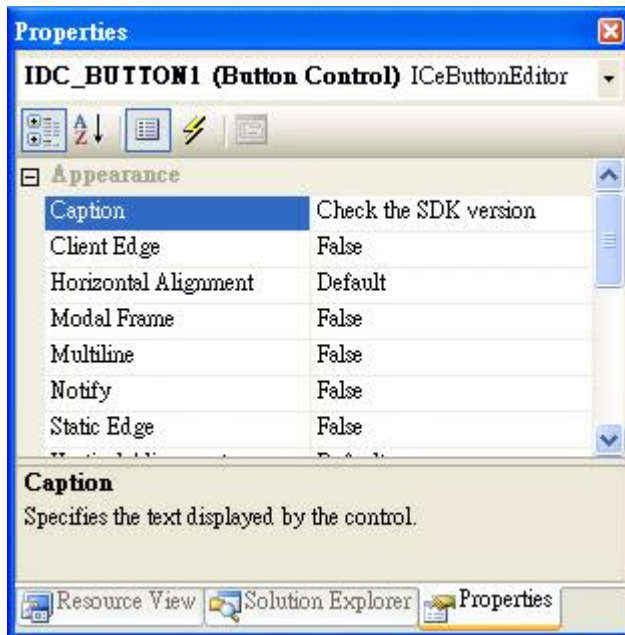
Step 3: From the Toolbox, drag a Button control onto the form



Step 4: Right-click the Button control, and then click Properties



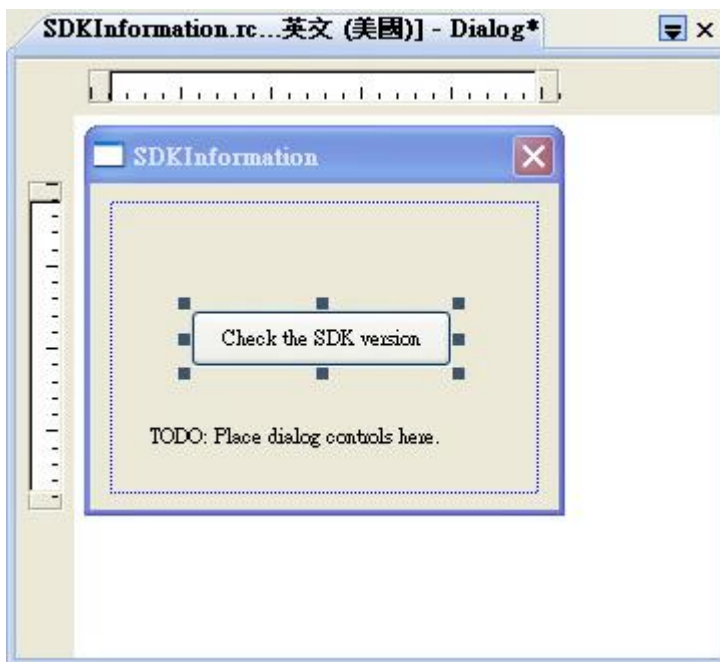
Step 5: In the Properties window, type Check the SDK version, and press ENTER to set the Text property



4.6.5. Add the Event Handling for the Control

You have finished the design stage of your application and are at the point when you can start adding some code to provide the program's functionality.

Step 1: Double-click the button on the form



Step 2: Inserting the following code

```
char sdk_version[32];
TCHAR buf[32];
pac_GetSDKVersion(sdk_version);
pac_AnsiToWideString(sdk_version, buf);
MessageBox(buf,0,MB_OK);
```

```
void CSDKInformationDlg::OnBnClickedButton1()
{
    // TODO: Add your control notification handler code here
    char sdk_version[32];
    TCHAR buf[32];
    pac_GetSDKVersion(sdk_version);
    pac_AnsiToWideString(sdk_version, buf);
    MessageBox(buf,0,MB_OK);
}
```

Step 3: Inserting the following code into the header area

```
#include "PACSDK.h"
```

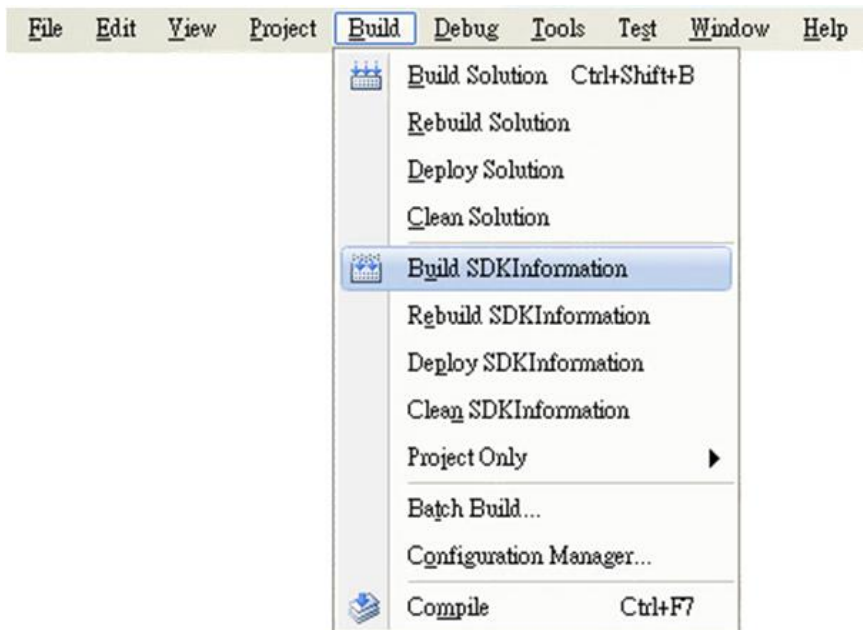
```
#include "stdafx.h"
#include "SDKInformation.h"
#include "SDKInformationDlg.h"
#include "PACSDK.H"
```

4.6.6. Upload the Application to ViewPAC

ViewPAC supports FTP server service. You can upload files to ViewPAC or download files from a public FTP server.



Step 1: On the Build menu, click Build SDKInformation



Step 2: Open the browser and type the IP address of ViewPAC

Step 3: Upload the SDKInformation.exe application to ViewPAC



4.6.7. Execute the Application on ViewPAC

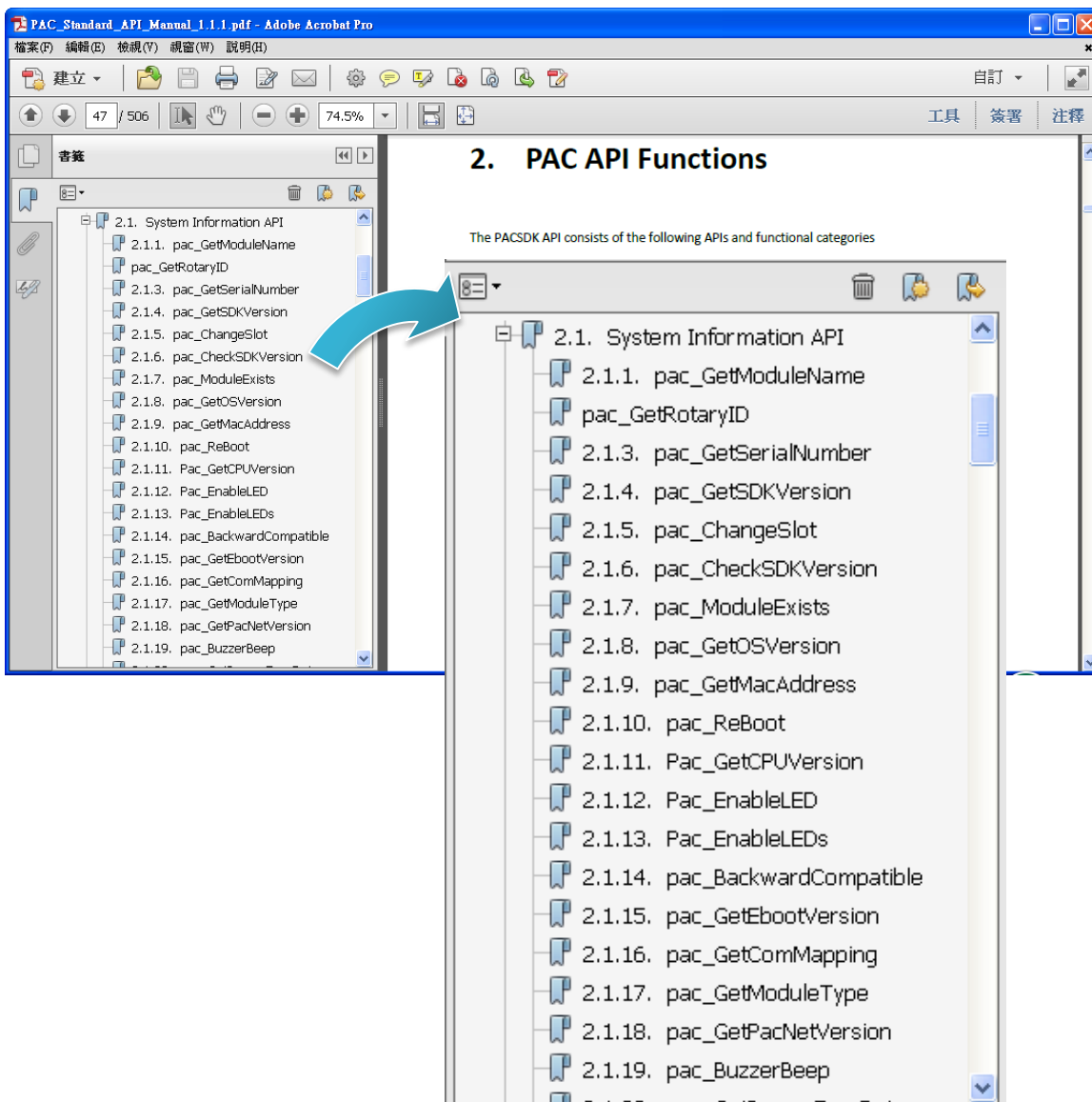
After uploading the application to ViewPAC, you can just double-click it on ViewPAC to execute it.



5. APIs and Demo Reference

This chapter provides a brief overview of PAC APIs and demos that have been designed for ViewPAC.

There are several APIs and demo programs that have been designed for ViewPAC. You can examine the APIs and demo source code, which includes numerous functions and comments, to familiarize yourself with these APIs and quickly develop your own applications quickly by modifying these demo programs.



The diagram below shows the set of each system operation API provided in the PACSDK.



5.1. VB.NET Demos for PAC Standard APIs

The PAC SDK includes the following demos that demonstrate the use of the PAC Standard APIs in a VB.net language environment. The following samples can be found on the CD that was provided with the package or by downloading the latest version from ICP DAS web site.

For VB.NET applications, these demo programs can be obtained from:

CD:\Wp-5231\demo\PAC\Vb.net\Standard\

http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/demo/pac/vb.net/standard/

Folder	Demo	Explanation
buzzer	buzzer	Shows how to make a simple buzzer beep.
DeviceInformation	DeviceInformation	Retrieves information about the OS version, CPU version, SDK version, etc.
GetRotaryID	GetRotaryID	Retrieves information about the status of the rotary switch
Memory	Memory	Shows how to read/write data values from/to the EEPROM or the backplane of the SRAM
MicroSD	MicroSD_Management	Shows how to manage the microSD
RealTimeTest	VB_UI_Call_VC_Realtime	Writes the managed code for the rich graphical user interface that does not require true real-time performance
	VBOnly	Shows how to use the function of JIT compiler and garbage collector
Registry	Registry	Shows how to read/write data values from/to the registry
UART	UART	Shows how to read the name of a local I/O modules via a UART
WatchDog	WatchDog	Displays information about how to operate the watchdog

5.2. C# Samples for PAC Standard APIs

The PAC SDK includes the following samples that demonstrate the use of the PAC Standard APIs in a C# language environment. The following samples can be found on the CD that was provided with the package or by downloading the latest version from ICP DAS web site.

For C# applications, these demo programs can be obtained from:

CD:\Wp-5231\demo\PAC\C#\Standard\

http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/demo/pac/c%23/standard/

Folder	Demo	Explanation
buzzer	buzzer	Shows how to make a simple buzzer beep.
DeviceInformation	DeviceInformation	Retrieves information about the OS version, CPU version, SDK version, etc.
GetRotaryID	GetRotaryID	Retrieves information about the status of the rotary switch
Memory	Memory	Shows how to read/write data values from/to the EEPROM or the backplane of the SRAM
MicroSD	MicroSD_Management	Shows how to manage the microSD
RealTimeTest	CSharp_UI_call_VC_Realtime	Writes the managed code for the rich graphical user interface that does not require true real-time performance
	CSharpOnly	Shows how to use the function of JIT compiler and garbage collector
Registry	Registry	Shows how to read/write data values from/to the registry
UART	UART	Shows how to read the name of a local I/O modules via a UART
WatchDog	WatchDog	Displays information about how to operate the watchdog

5.3. Visual C++ Samples for PAC Standard APIs

The PAC SDK includes the following samples that demonstrate the use of the PAC Standard APIs in a Visual C++ language environment. The following samples can be found on the CD that was provided with the package or by downloading the latest version from ICP DAS web site.

For Visual C++ applications, these demo programs can be obtained from:

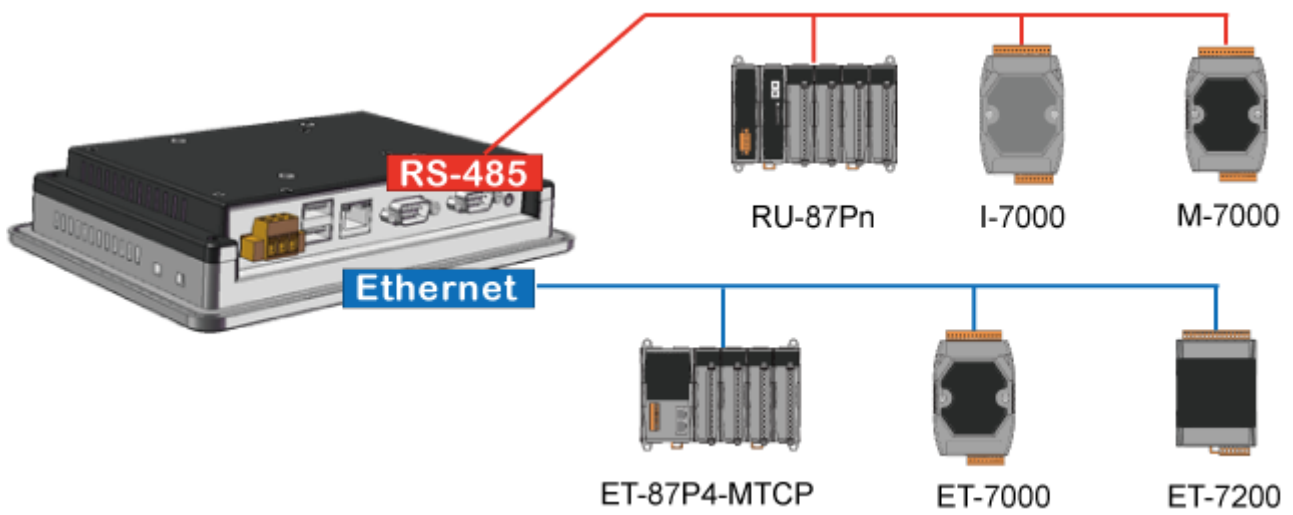
CD:\Wp-5231\demo\PAC\Vc2008\Standard\

http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/demo/pac/vc2008/standard/

Folder	Demo	Explanation
buzzer	buzzer	Shows how to make a simple buzzer beep.
DeviceInformation	DeviceInformation	Retrieves information about the OS version, CPU version, SDK version, etc.
GetRotaryID	GetRotaryID	Retrieves information about the status of the rotary switch
Memory	Memory	Shows how to read/write data values from/to the EEPROM or the backplane of the SRAM
MultiRT	MultiRT	Shows how to manage the microSD
RealTimeTest	RealTimeTest	Writes the managed cod for the rich graphical user interface that does not require true real-time performance
Registry	Registry	Shows how to read/write data values from/to the registry
UART	UART	Shows how to read the name of a local I/O modules via a UART
WatchDog	WatchDog	Displays information about how to operate the watchdog

6. I/O Modules and SDK Selection

This chapter provides information on how to choose a suitable I/O expansion module and the corresponding SDK library to be used for developing programs on ViewPAC CE7 series PACs.



➤ **RS-485 (I-7000 series and M-7000 series)**

I-7000, M-7000, RU-87Pn and high profile I-87000 series modules connect to ViewPAC devices via a twisted-pair, multi-drop, 2-wire RS-485 network.

➤ **I-7000 series I/O modules**

Module	Native SDK	.NET CF SDK
I-7000 series	PACSDK.dll	PACNET.dll
I-7000 series with I-7088(D)	PACSDK_PWM.dll	PACNET.dll

For full details regarding I-7000 series I/O modules and its demos, please refer to:
 CD:\Wp-5231\demo\PAC\IO\

➤ **M-7000 series I/O modules**

Module	Native SDK	.NET CF SDK
M-7000 series	Modbus Demo	Modbus Demo

For more detailed information about M-7000 series modules using Modbus protocol and its demos, please refer to:

CD:\Wp-5231\demo\nModbus\

➤ **RU-87Pn + I-87000 series I/O modules**

Module	Native SDK	.NET CF SDK
RU-87Pn + I-87000	PACSDK.dll	PACNET.dll

➤ **Other specified I/O**

Module	Native SDK	.NET CF SDK
Others	PACSDK.dll	PACNET.dll

➤ **Ethernet (ET-7000 series and I-8KE4/8-MTCP)**

The Ethernet I/O devices available include ET-7000 and I-8KE4/8-MTCP, and support either the DCON or the Modbus/TCP communication protocol.

Module	Native SDK	.NET CF SDK
ET-7000	Modbus Demo	Modbus Demo

For more detailed information about ET-7000 and I-8KE4/8-MTCP series modules using Modbus protocol and its demos, please refer to:

CD:\Wp-5231\demo\nModbus\

7. ViewPAC Updates

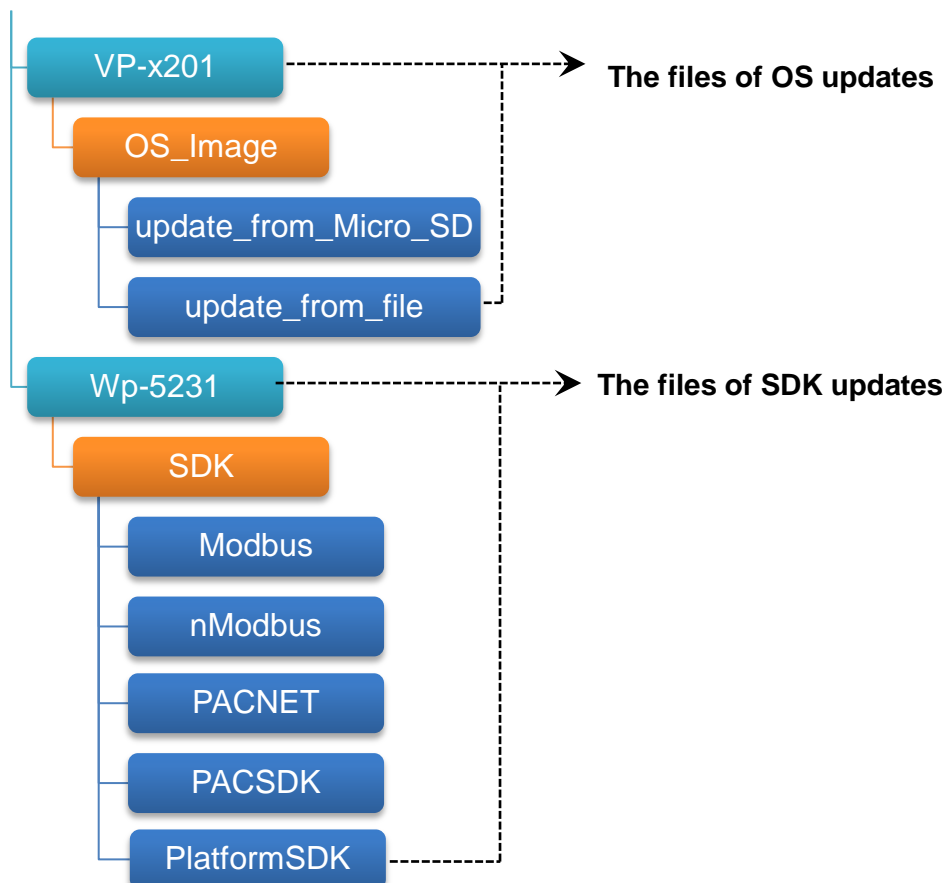
This chapter provides information of the ViewPAC OS and SDKs, and a guided tour that demonstrates the steps needed to update the ViewPAC OS and SDKs.

ICP DAS will continue to add additional features to ViewPAC SDKs and OS in the future, so we advise you to periodically check the ViewPAC Download center for the latest updates.

Both the files of OS updates and SDK updates can be found on the CD that was provided with the package or by downloading the latest version from ICP DAS web site.

CD:\

http://ftp.icpdas.com/pub/cd/winpac_am335x/

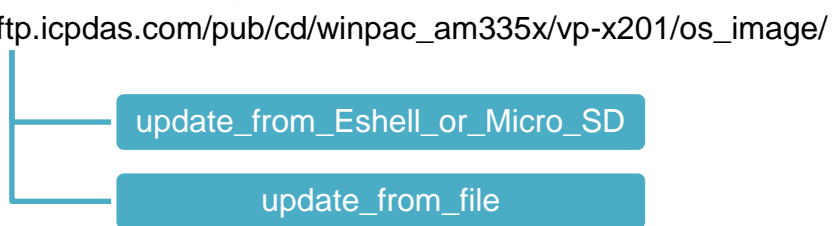


7.1. OS Updates

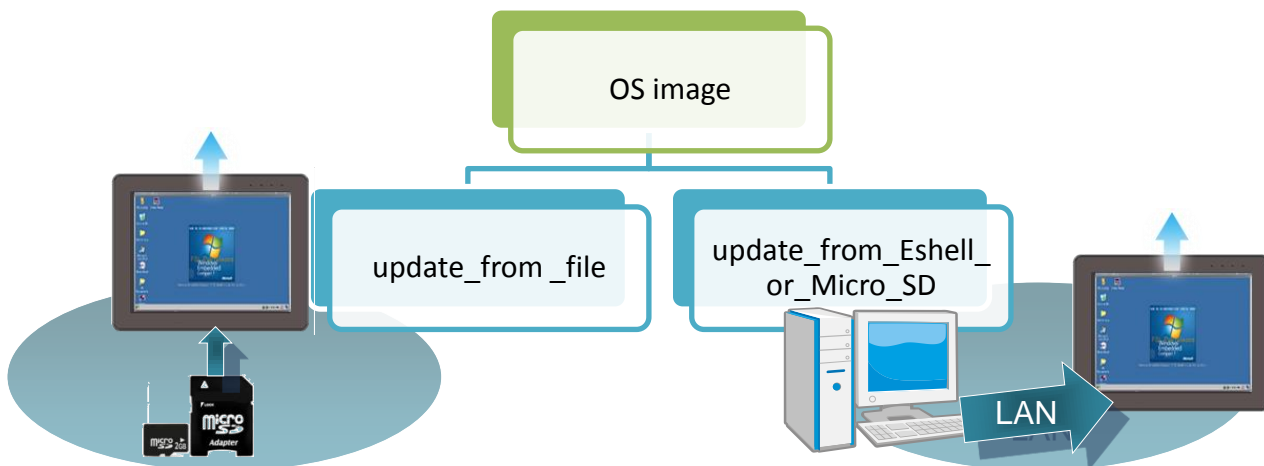
OS updates are part of the ViewPAC updates services to provide additional and more efficient features and functionality for ViewPAC operating system.

The updates files of the ViewPAC OS image can be found separately on the CD that was provided with the package or by downloading the latest version from ICP DAS web site.

CD:\VP-x201\OS_Image\
http://ftp.icpdas.com/pub/cd/winpac_am335x/vp-x201/os_image/



There are two ways to update the OS:



1. Update from eshell (Please refer to section 7.1.1)
(We recommend that you use this one for more quicker and easier to update)
2. Update from micro_SD (Please refer to section 7.1.2)

7.1.1. OS Updates using Eshell

By default, the OS updates via LAN. Therefore, to update the OS image, make sure LAN is connected to the PC.



Step 1: Get the latest version of the installation package file and then unzip it

The latest version of the installation package file can be found from ICP DAS web site.

➤ **VP-2201-CE7:**

CD:\VP-x201\OS_Image\VP-2201_IWS-2201\#update_from_Eshell_or_Micro_SD\
http://ftp.icpdas.com/pub/cd/winpac_am335x/vp-x201/os_image/vp-2201_iws-2201/update_from_eshell_or_micro_sd/

➤ **VP-4201-CE7:**

CD:\VP-x201\OS_Image\VP4201_IWS-4201\update_from_Eshell_or_Micro_SD\
http://ftp.icpdas.com/pub/cd/winpac_am335x/vp-x201/os_image/vp-4201_iws-4201/update_from_eshell_or_micro_sd/

Step 2: Run the registry clear.exe

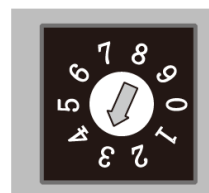
The registry.exe can be found on the CD that was provided with the package or by downloading the latest version from ICP DAS web site.

CD:\Wp-5231\PC_Tools\Eshell\

http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/pc_tools/eshell/



Step 3: Place the rotary switch in position 3, OS update mode



Step 4: Run the ESHELL.exe, and then restart the ViewPAC

The ESHELL.exe can be found on the CD that was provided with the package or by downloading the latest version from ICP DAS web site.

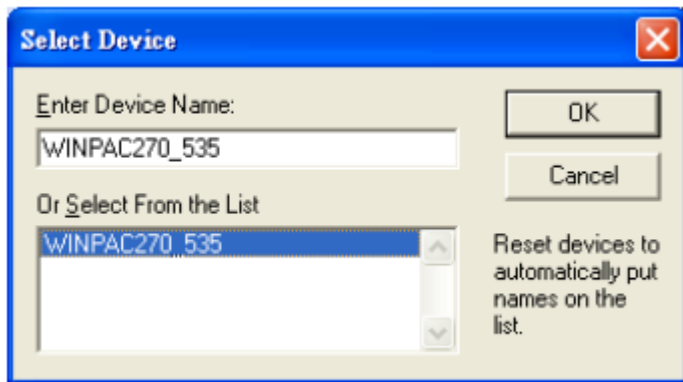


CD:\Wp-5231\PC_Tools\Eshell\

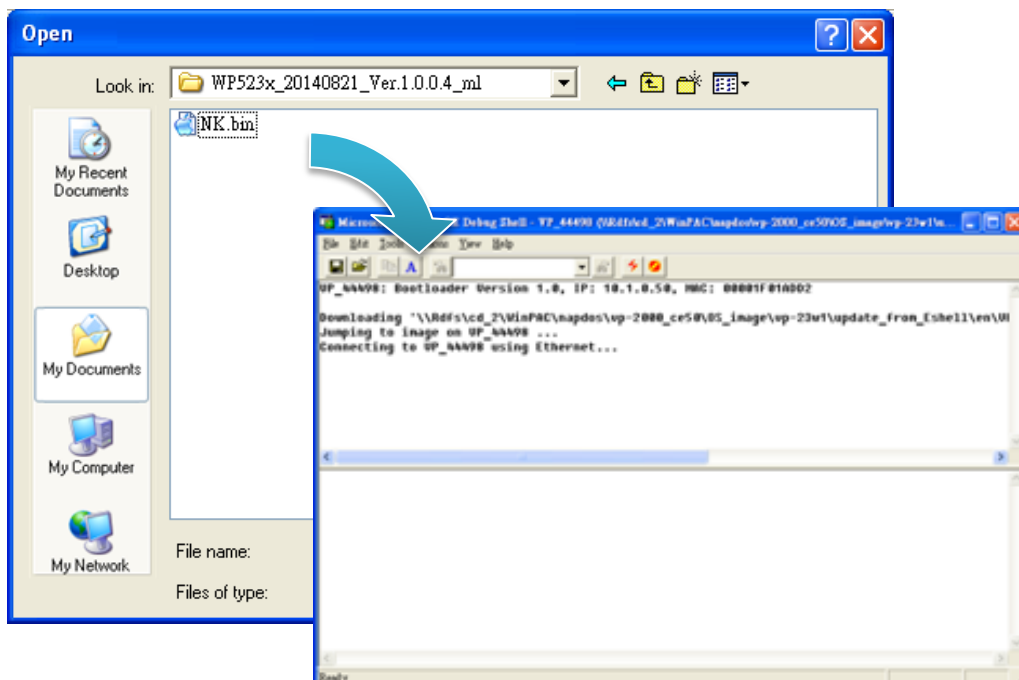
http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/pc_tools/eshell/

Step 5: Select the device which you want to update the OS image, and then click OK

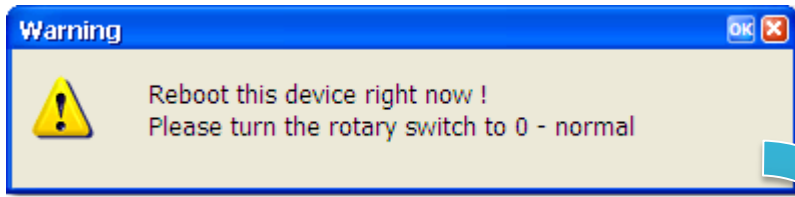
Select the device name which you want to update the OS image from the list.



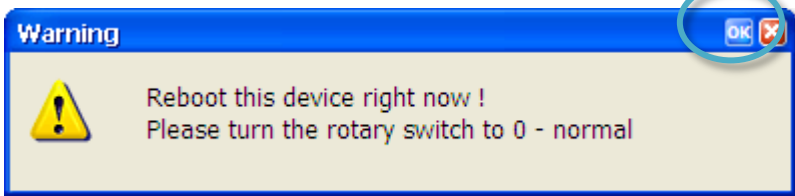
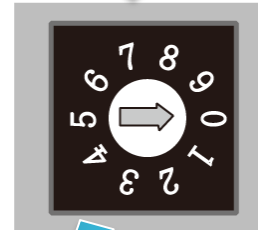
Step 6: Select the latest version of the OS image file



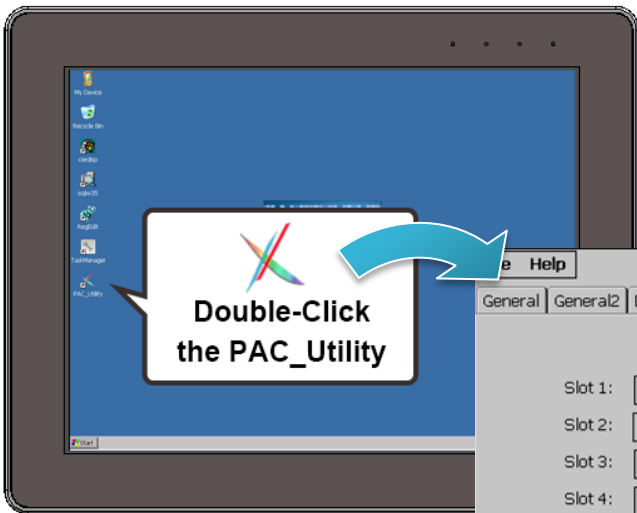
Step 7: Once the procedure is completed, the “Warning !” dialog box will appear as below shown, then turn the rotary switch in position 0, normal mode



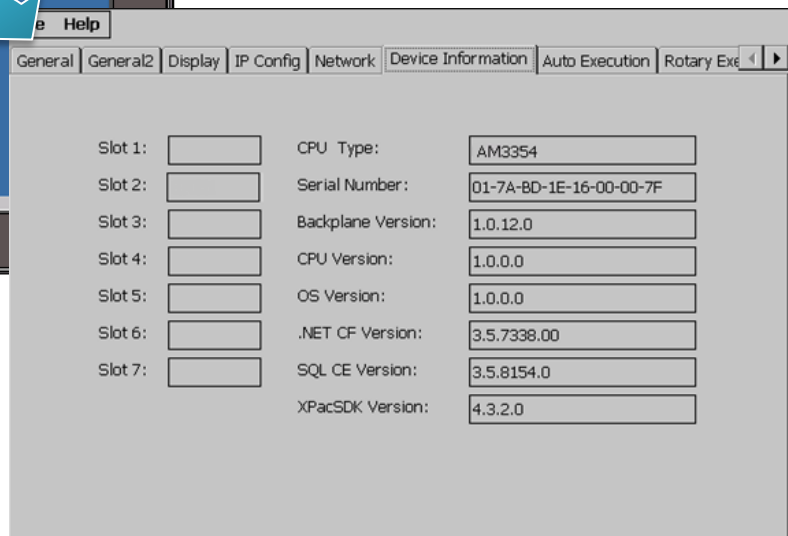
Step 8: Click the OK button and wait a few minutes for system startup



Step 9: Run the PAC Utility to check the OS version



Start the PAC Utility, and then select the “Device Information” tab to check the current OS version.



7.1.2. OS Updates using micro_SD

The SD/microSD card can be used to reinstall the ViewPAC OS image to factory default settings in the event of the ViewPAC failure.

Step 1: Get the latest version of the installation package file, then unzip the file, and then copy them to SD/microSD card

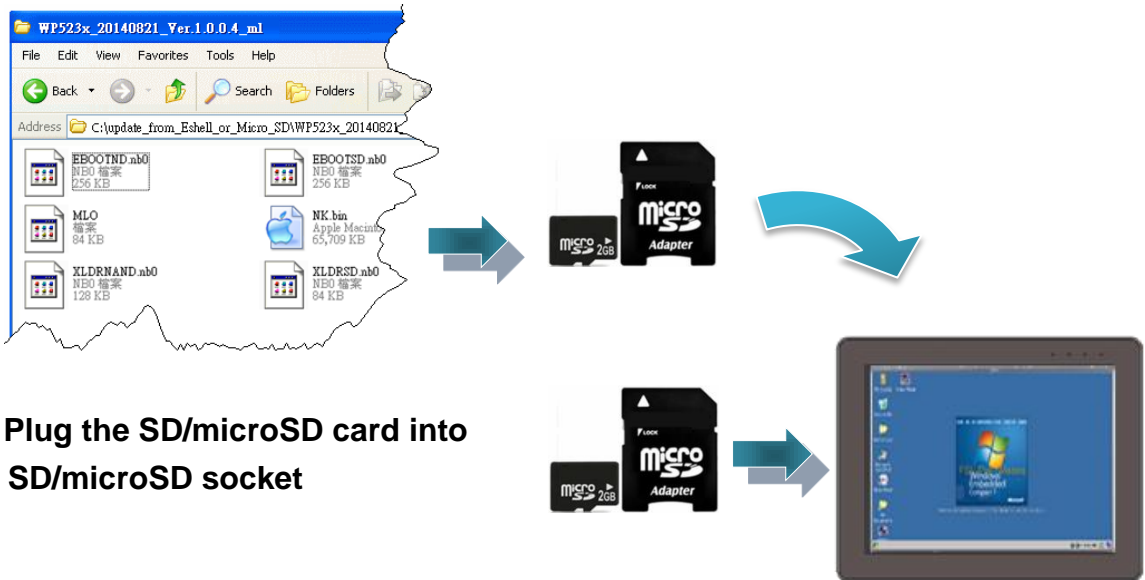
The latest version of the installation package file can be found from ICP DAS web site.

➤ **VP-2201-CE7:**

CD:\VP-x201\OS_Image\VP-2201_IWS-2201\#update_from_Eshell_or_Micro_SD\
http://ftp.icpdas.com/pub/cd/winpac_am335x/vp-x201/os_image/vp-2201_iws-2201/23update_from_eshell_or_micro_sd/

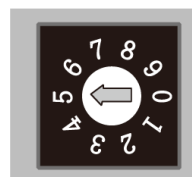
➤ **VP-4201-CE7:**

CD:\VP-x201\OS_Image\VP4201_IWS-4201\update_from_Eshell_or_Micro_SD\
http://ftp.icpdas.com/pub/cd/winpac_am335x/vp-x201/os_image/vp-4201_iws-4201/1/update_from_eshell_or_micro_sd/



Step 2: Plug the SD/microSD card into SD/microSD socket

Step 3: Turn the rotary switch in position 5, OS update mode



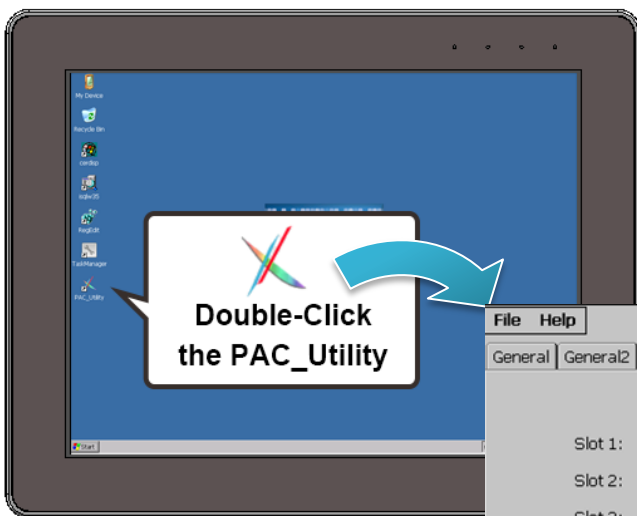
Step 4: Reboot the ViewPAC

Step 5: Wait a few minutes for the following desktop to be displayed

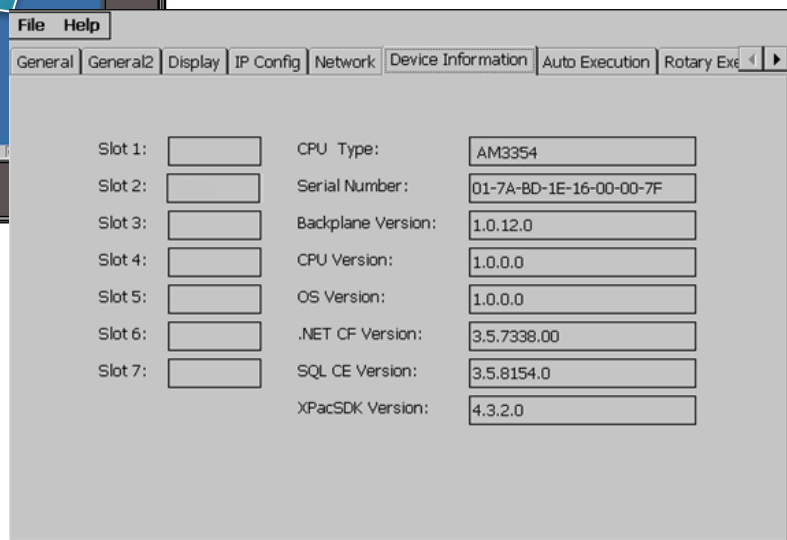


Step 6: Turn the rotary switch in position 0, normal mode

Step 7: Reboot the ViewPAC, and then run the PAC utility to check the OS version



Start the PAC Utility, and then select the “Device Information” tab to check the current OS version.



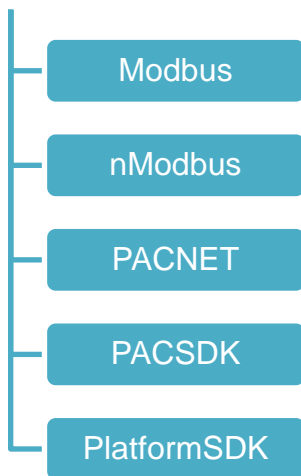
7.2. SDK Updates

SDK updates are part of the ViewPAC updates services to provide additional and more efficient features and functionality for ViewPAC operating system.

The updates files of ViewPAC SDKs can be found separately on the CD that was provided with the package or by downloading the latest version from ICP DAS web site.

CD:\Wp-5231\SDK\

http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/sdk/



7.2.1. SDK Updates for VB.NET or C#

You can just change the old one with a new one.

Step 1: Get the latest version of the ViewPAC SDK components

The latest version of the ViewPAC SDK can be obtained from ICP DAS web site.

http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/sdk/pacnet/

Step 2: Copy the latest version of DLL to PC and ViewPAC

The DLL files on PC are located at anywhere only the solution can reference it.

The DLL files on ViewPAC are located at the same directory as the .exe file.

7.2.2. SDK Updates for Visual C++

You can just change the old one with a new one.

Step 1: Get the latest version of the VC++ components

The latest version of the VC++ components can be obtained from:
http://ftp.icpdas.com/pub/cd/winpac_am335x/wp-5231/sdk/pacsdk/

Step 2: Copy the latest version of header files and libraries to Host PC

The header files are located at:

C:\Program Files\Windows CE

Tools\SDKs\AM335x_WINCE7_SDK\Include\Armv4i

The libraries are located at:

C:\Program Files\Windows CE Tools\SDKs\AM335x_WINCE7_SDK\Lib\ARMv4I

Step 3: Copy the latest version of DLL files to ViewPAC

The DLL files are located at:

\System_Disk\ICPDAS\System

8. ViewPAC Download Center

This chapter provides a brief introduction of the ViewPAC download center.

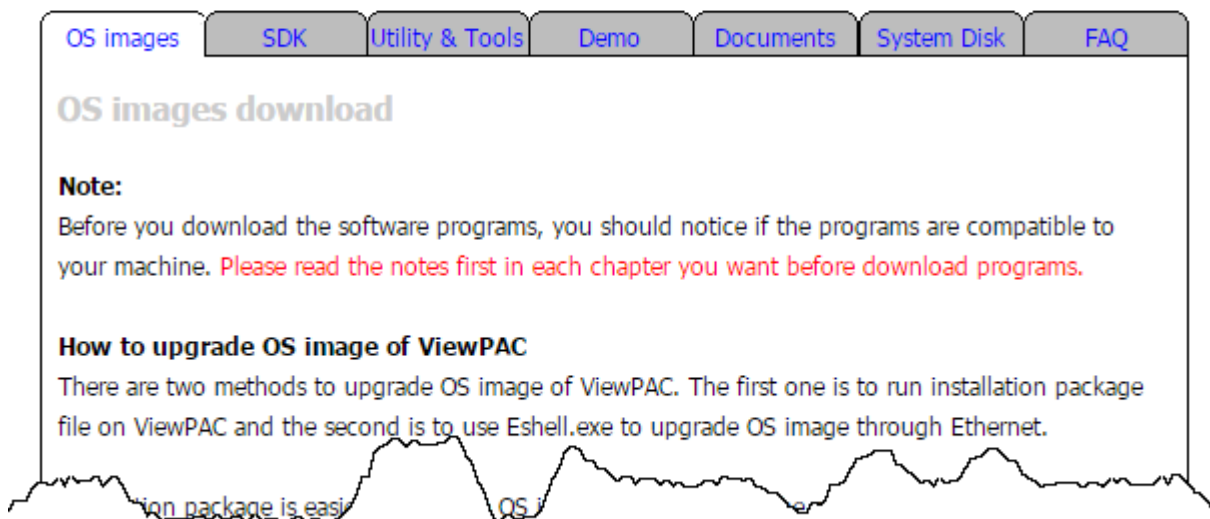
ViewPAC has a download center where you can access the latest version of the software, tools, demo programs, and related information.

http://www.icpdas.com/root/support/download/pac/vp-x201/vp-x201_download_os_images.html

ViewPAC (CE7-Based) Download Center

Note:

When you download the software programs, you should notice if the programs conform to your machine. Before you download any program, please read the notes of each online program first to avoid the confused situation.



Tips – How to

This chapter provides tips and a guided tour on using and maintaining the ViewPAC.

How to use the Printer

ViewPAC have ability to access the printer, you can connect to the printer via Ethernet network or USB.

Tips & Warnings



ViewPAC only supports HP Laser Jet Printers which support PCL6 driver. The following printer support is released by HP

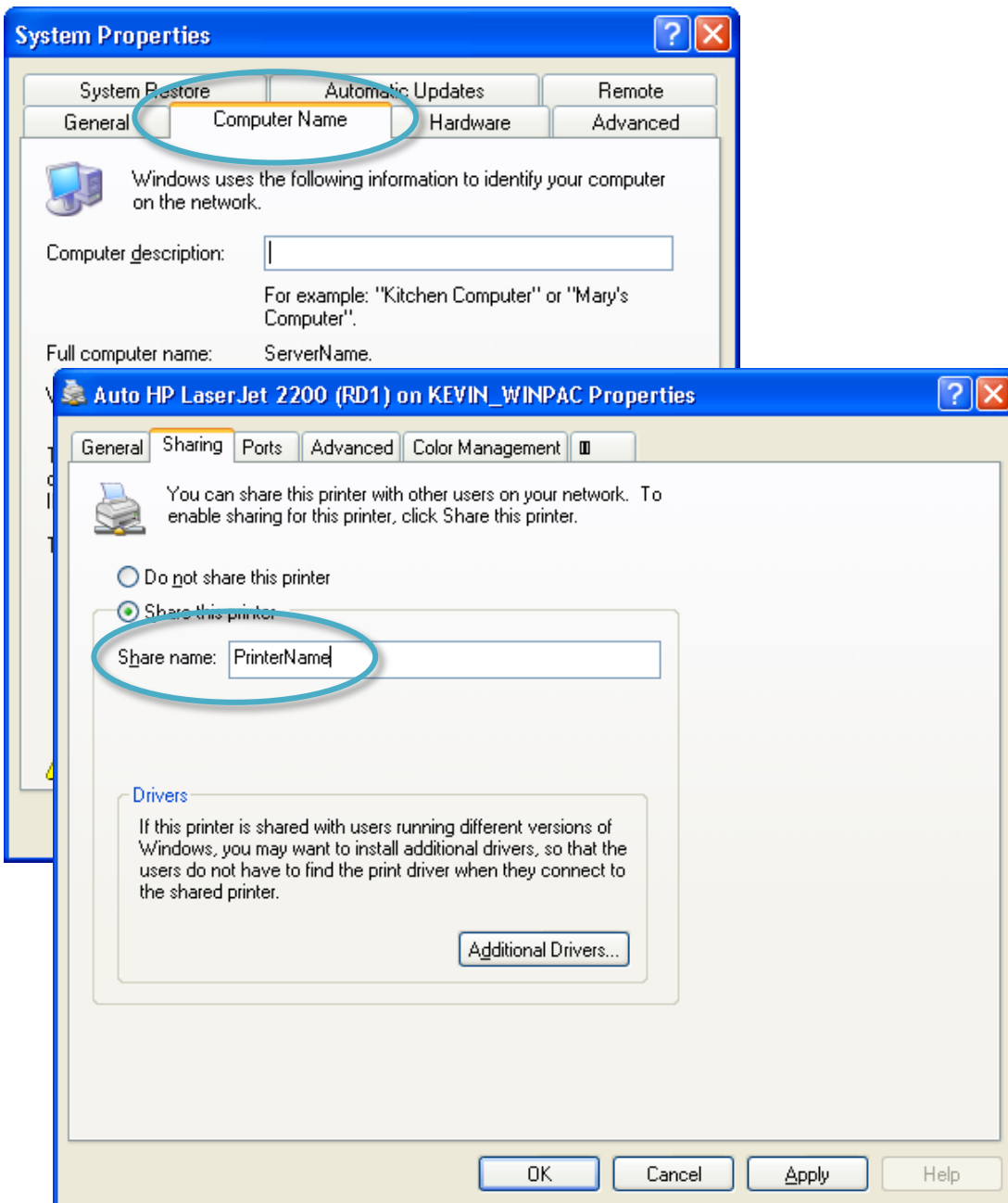
- HP LaserJet 4000 series/HP LaserJet 4100 series
- HP LaserJet 2100 series/HP LaserJet 2200 series
- HP LaserJet 1200
- HP LaserJet 3200/HP LaserJet 3300
- HP LaserJet 4200 series/HP LaserJet 4300 series
- HP LaserJet 5000 series/HP LaserJet 5100 series
- HP LaserJet 8000 series
- HP LaserJet 9000 series printers

If you need the latest support of HP PCL6 printer, you can refer to following link <http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=bpl04568>

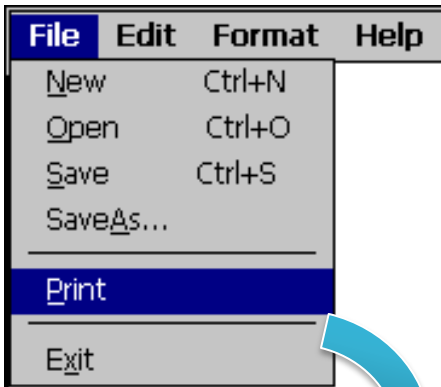
How to use the network printer

Here are step by step instructions on how to use a shared printer.

Step 1: On PC side, check the name of the PC and the shared printer

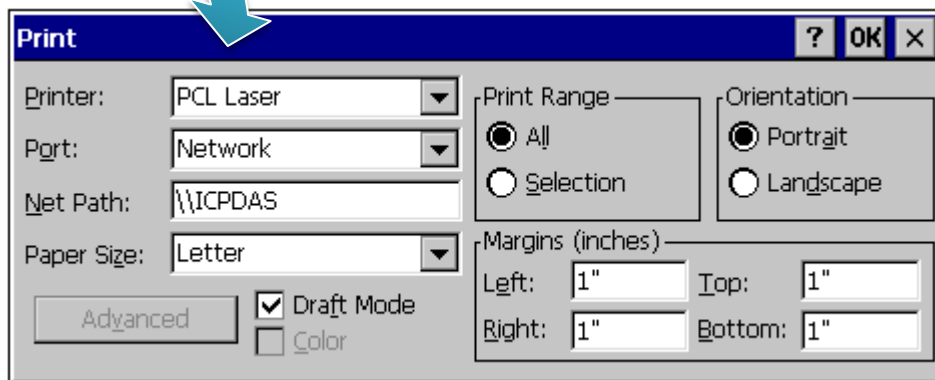


Step 2: On ViewPAC – Run the INotepad, and then open a WordPad format file



Step 3: Set up the printer

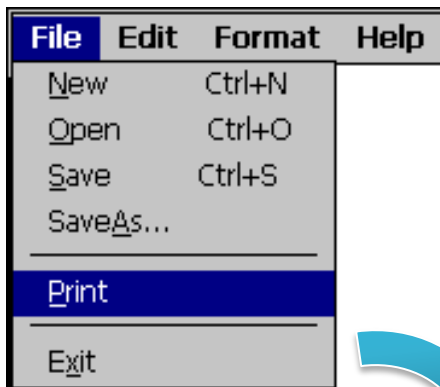
1. Printer: PCL Laser
2. Port: Network
3. Net Path: \\ServerName\PrinterName
The "ServerName" is the name or IP of the PC.
The "PrinterName" is the name of share printer of the PC.
4. Paper Size: Select the paper size



How to use the USB printer

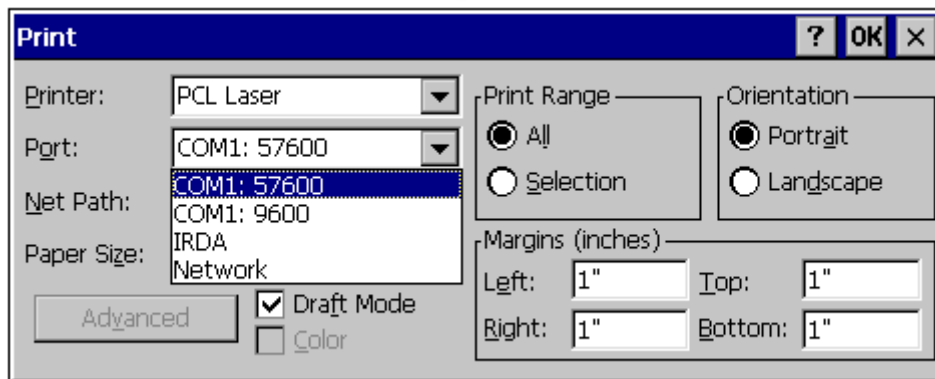
Here are step by step instructions on how to use a shared printer.

Step 1: Run the INotepad, and then open a WordPad format file



Step 2: Set up the printer

1. Printer: PCL LaserJet
2. Port: COM1: 57600
3. Paper Size: Select the paper size



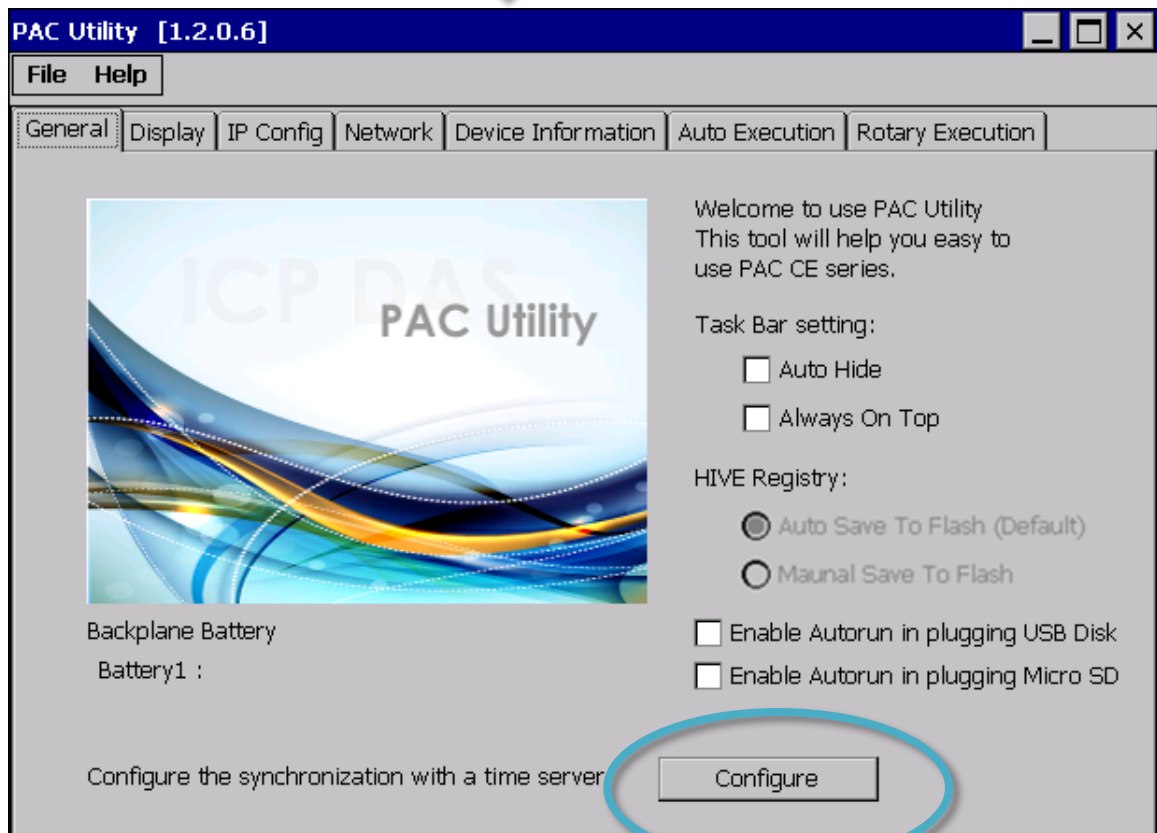
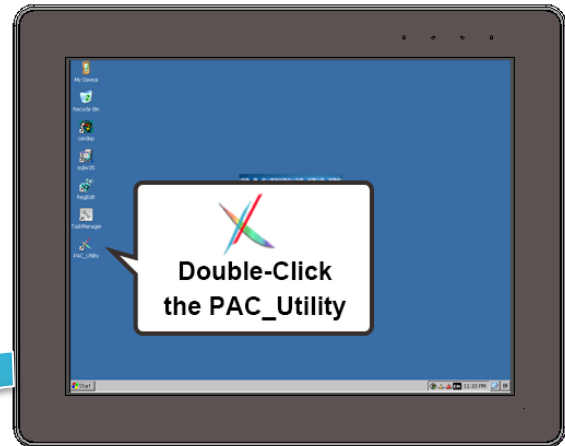
How to Automatically Synchronize ViewPAC Clock with an Internet Time Server

You can synchronize your ViewPAC clock with an Internet time server.

If synchronization is enabled, the ViewPAC clock is synchronized with an Internet time server.

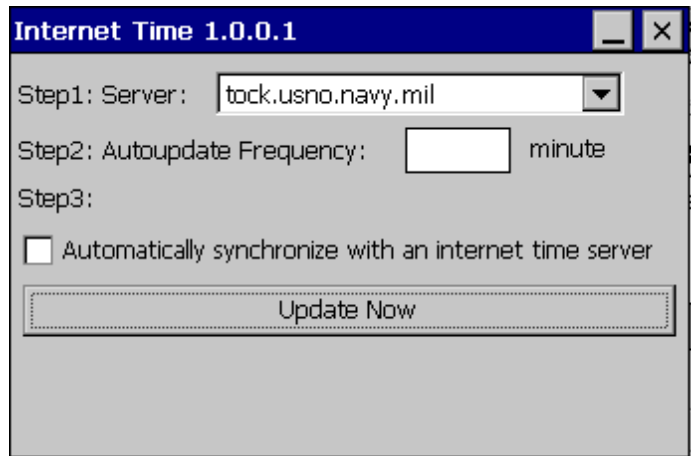
Step 1: Double-click the PAC Utility on the desktop

Step 2: On the General tab, press Configure button

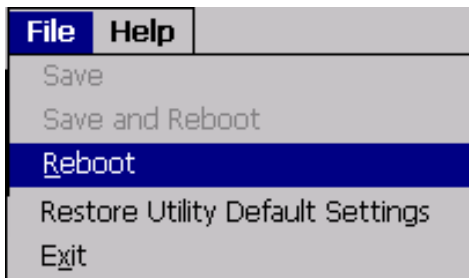


Step 3: Select the domain name from the Server drop-down list, and then enter a value in the Autoupdate Frequency field

Step 4: Check the Automatically synchronize with an internet time server check box

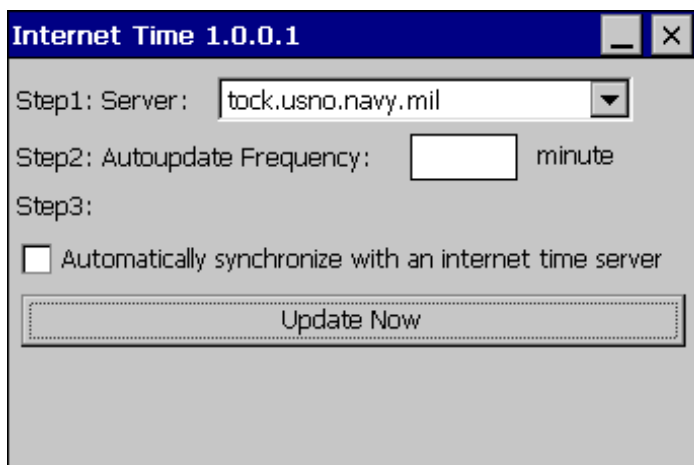


Step 5: On the File menu, click Reboot



Step 6: The ViewPAC will automatically synchronize with an internet time server regularly

Step 7: Click the Update Now button to synchronize ViewPAC clock immediately



How to use User Account Control in ViewPAC

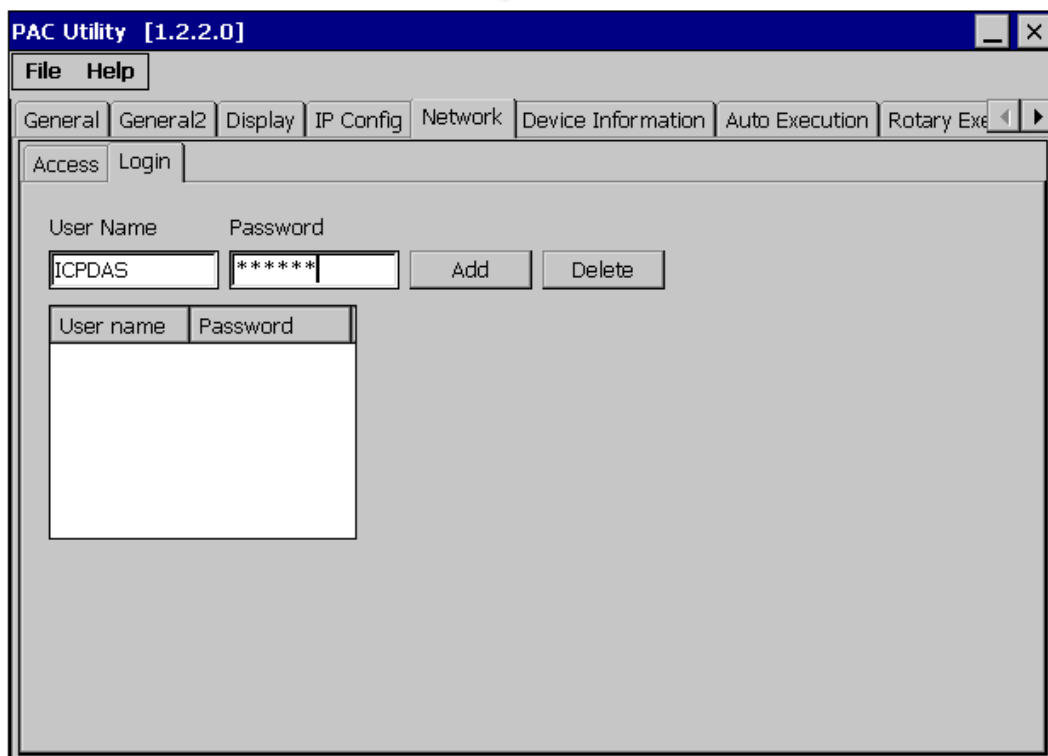
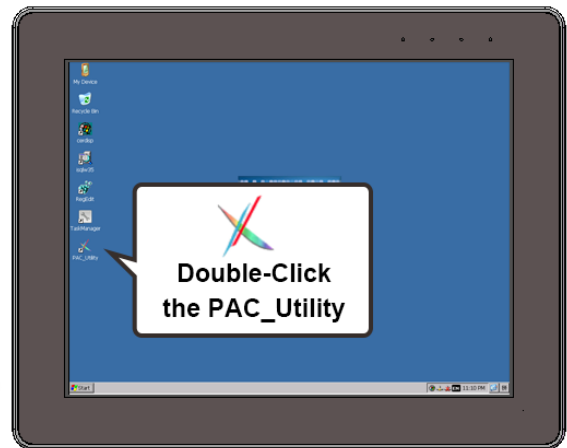
User Account Control (UAC) is a feature in ViewPAC that allows you to create, delete and manage the remote user accounts.

How to Create an User Account

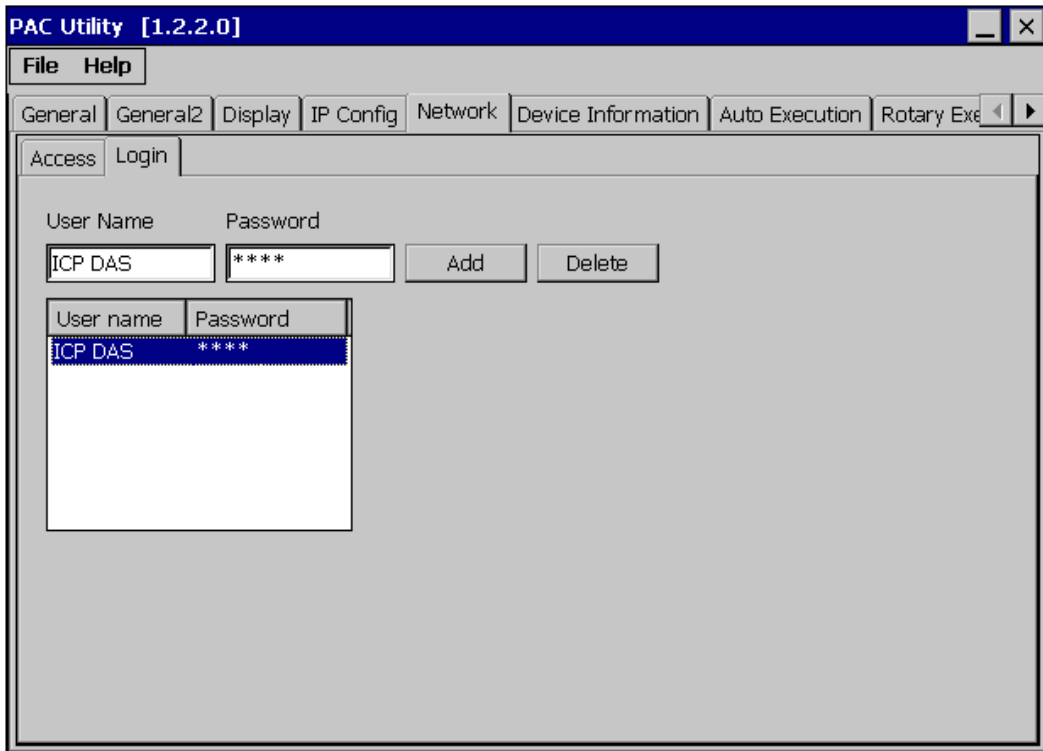
Here are step by step instructions on how to add a user account.

Step 1: Double-click the PAC Utility on the desktop

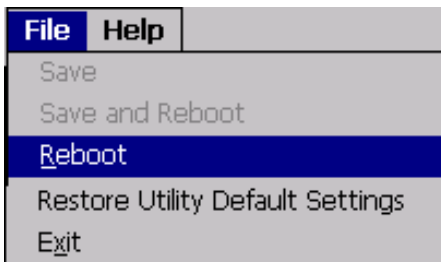
Step 2: On the Login tab of the Network tab, click Login tab, type the User Name and Password, and then click Add button



Step 3: The user has been added to the allowed under the remote login and included in the following list

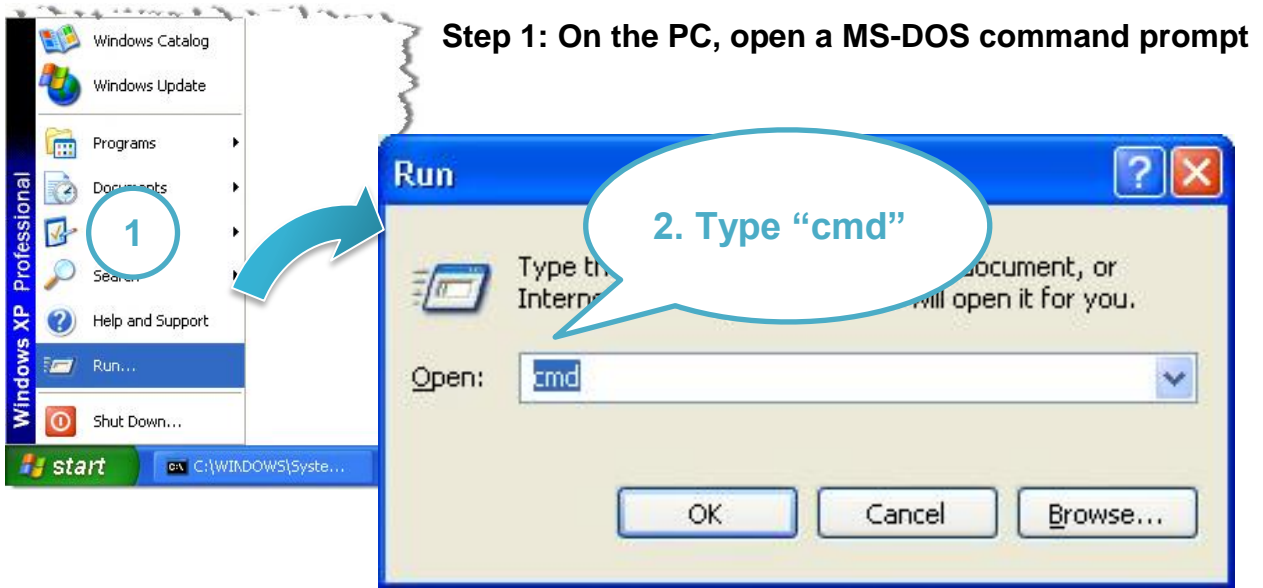


Step 4: On the File menu, click Reboot for changes to take effect

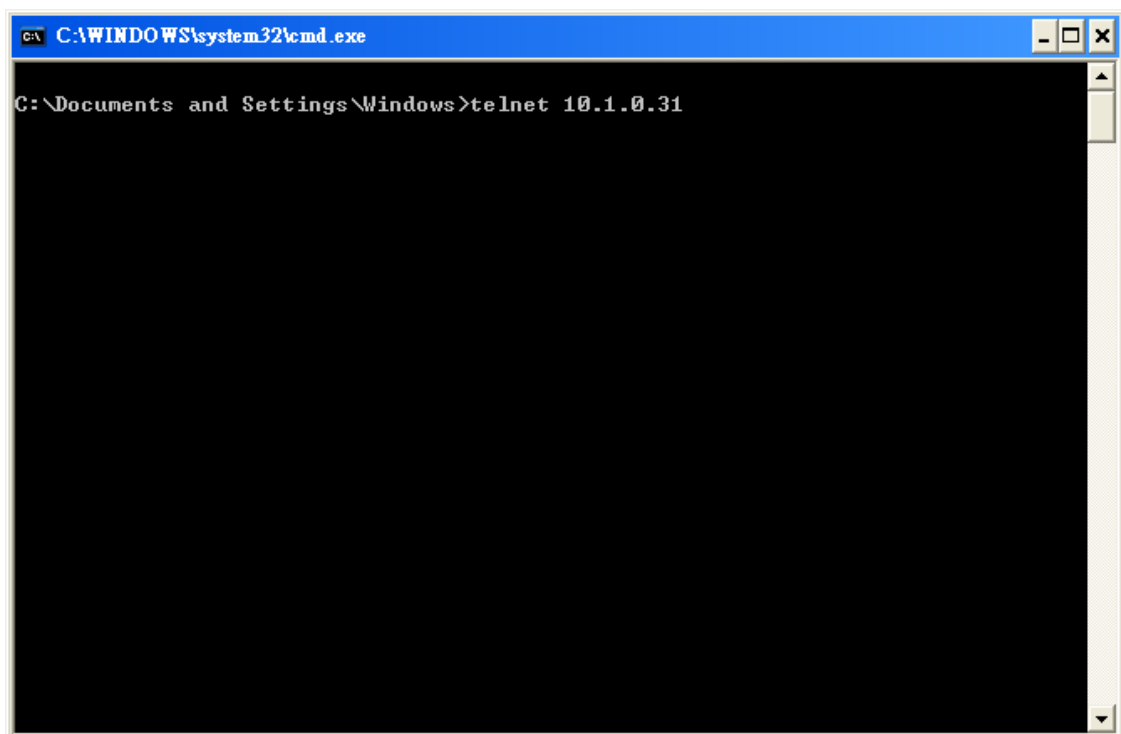


How to Use Telnet to remote login the ViewPAC from PC

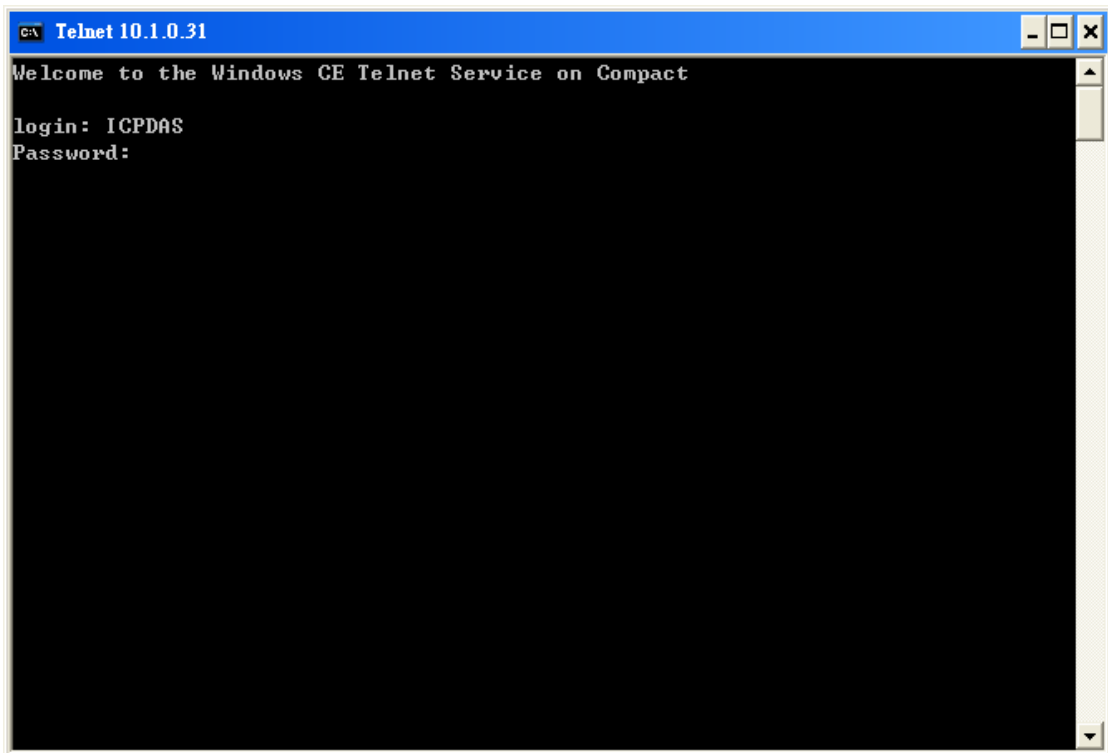
Here are step by step instructions on how to use telnet to remote login the ViewPAC from remote PC.



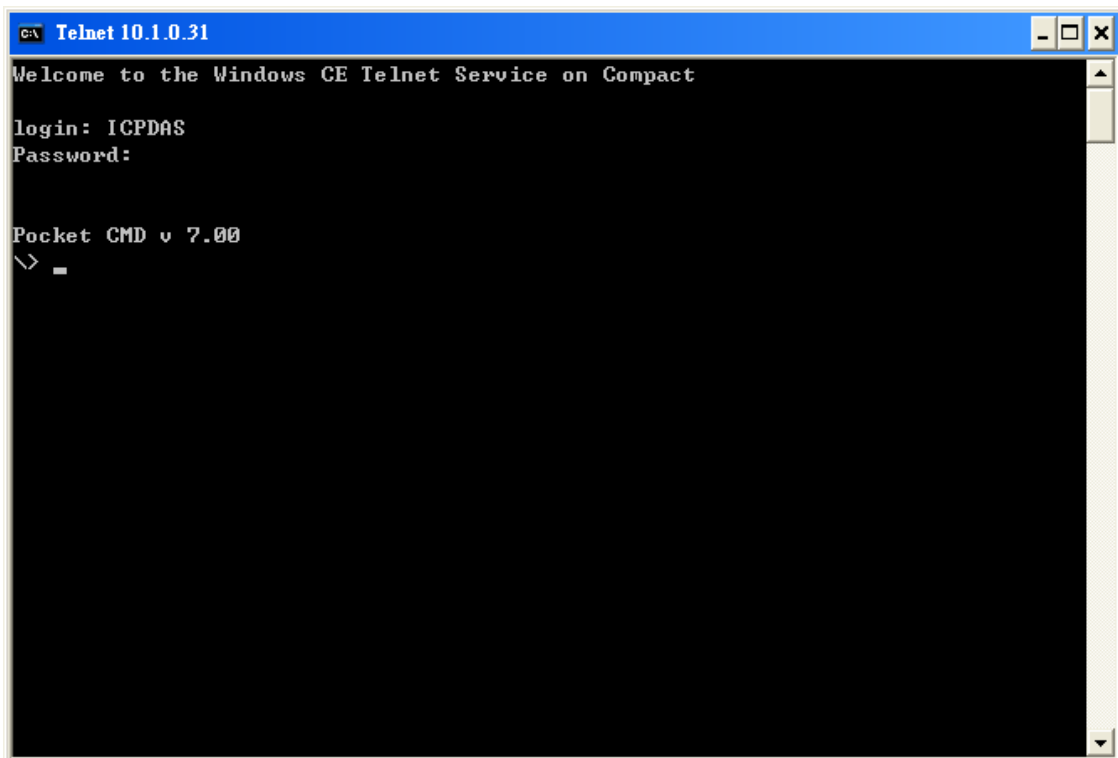
Step 2: At the command prompt, type "telnet (IP address)"



Step 3: The connection has been set up, and then type the name and password



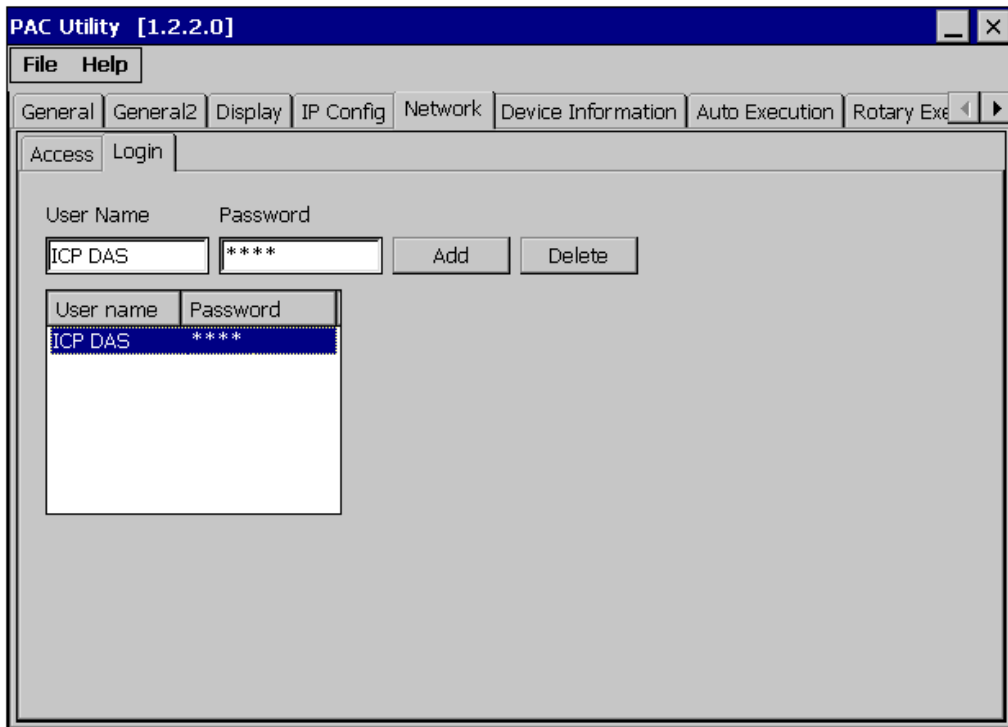
Step 4: The remote login has been completed



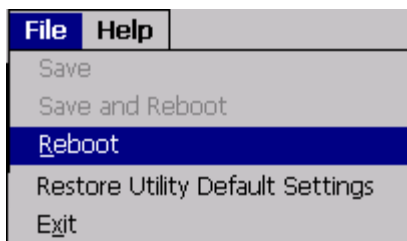
How to Remove a User Account from the Login List

Here are step by step instructions on how to remote the user from the login list.

Step 1: Click a user from the list which you want to remove, and the user will display in the field, and then press Delete to delete the user from the login list



Step 2: On the File menu, click Reboot for changes to take effect



Revision History

This chapter provides revision history information to this document.

The table below shows the revision history.

Revision	Date	Description
1.0.0	March 2015	Initial issue