

LESSON 0

COMPILING/SIMULATING/DOWNLOADING A PANEL APPLICATION

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17.1. Compiling an Application

Using the compiler offered by the software, you can verify the correctness of all the settings and designs, optimize the communication with the connected controllers, interpret macros into compact and ready-to-execute codes, and build the panel runtime data to be executed by the HMI engine of the target panel. The panel runtime data will be generated and saved into a PL2 file after the user compiles an application.

17.1.1. Compiling an Application

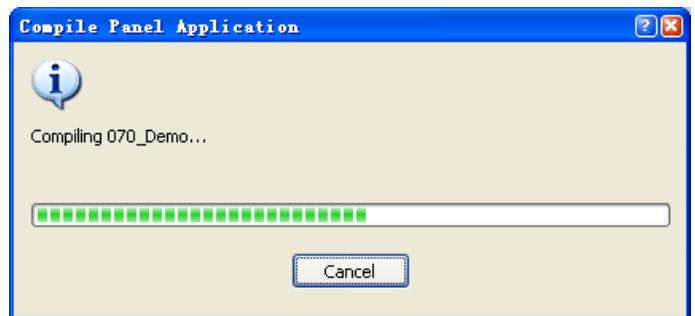
To compile an application, you can do the following:

- 1) In the menu bar, click Panel to bring up the Panel sub-menu. Click Compile... in the Panel sub-menu.

Alternatively, click the  Compile icon in the main toolbar.

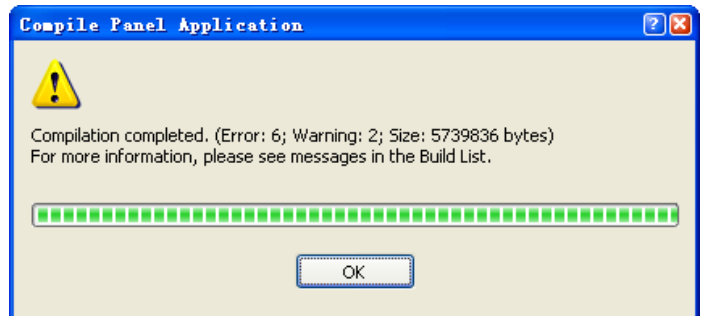
- 2) The Compile Panel Application dialog will pop-up and show the progress of the compiling process. If you want to cancel the compiling operation, click the Cancel button.

On the right is an example of the Compile Panel Application dialog in the process of compiling.



- 3) After the compilation is complete, the Compile Panel Application dialog will display the error count, warning count, and total file size of the panel runtime data. All the details will be listed in the Build List Window. To know about the Built List Window, please see [Section 17.1.3 Built List Window](#).

On the right is an example of the Compile Panel Application dialog when the compilation is complete.



If the compilation is completed successfully, the runtime data of the current panel application will be saved into a file named Project Name_Application Name.pl2.

17.1.2. Building a Panel Runtime Package

A Panel Runtime Package includes the panel runtime data and system programs. To build a panel runtime package, you can do the following:

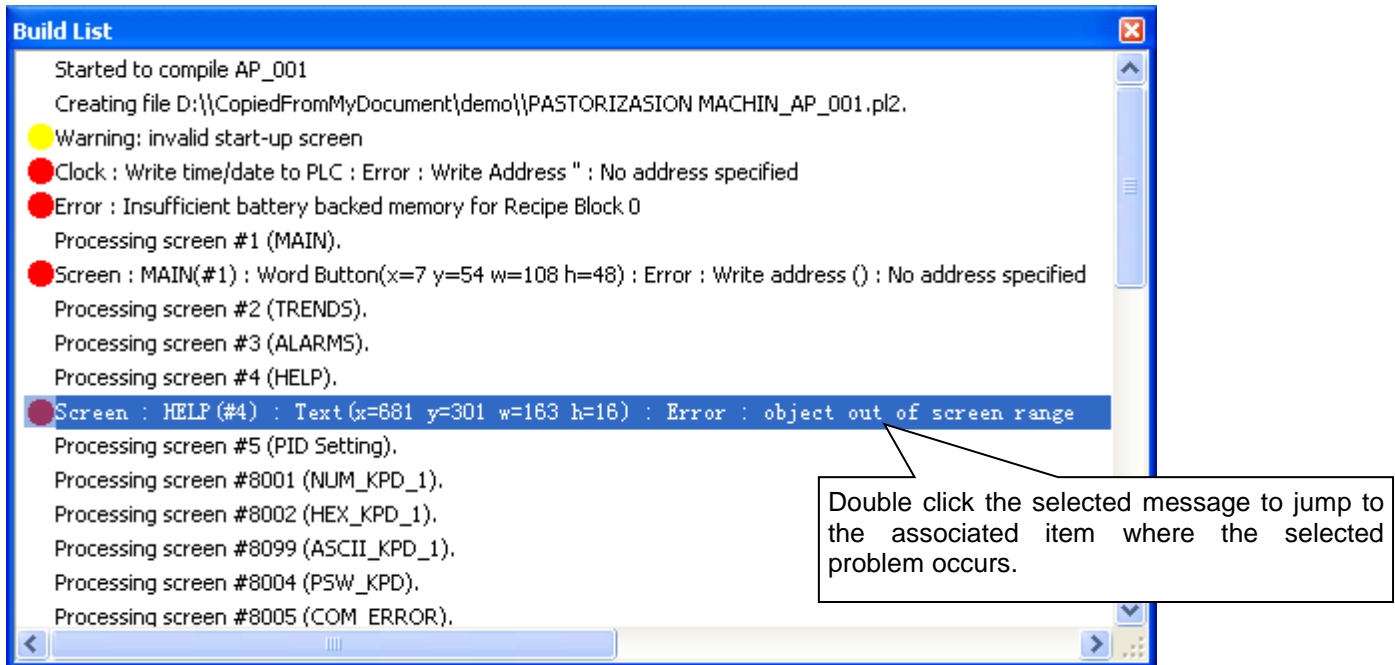
- 1) In the menu bar, click Panel to bring up the Panel sub-menu. Click Build Panel Runtime Package (PRP)...in the Panel sub-menu.
- 2) If the compilation is completed successfully, you will be asked to specify the file name in the Save As... dialog to save the package into a PRP file.

Note: The PRP file that includes the application and the system programs is portable. You can save the PRP file anywhere on the PC or a USB disk and download it to the target panel with the software or Data Transfer Helper (DTH).

17.1.3. Build a List Window

All the detailed information about the compiling process, error messages, and warning messages are listed in the Build List window. The Build List Window is a dockable window. In the window, error messages will have a red circle in front of the entry, and warning messages will have a yellow circle in front of the entry.

The following is an example of the Build List window:



You can right-click the Build List window to get the pop-up menu with the following menu items:

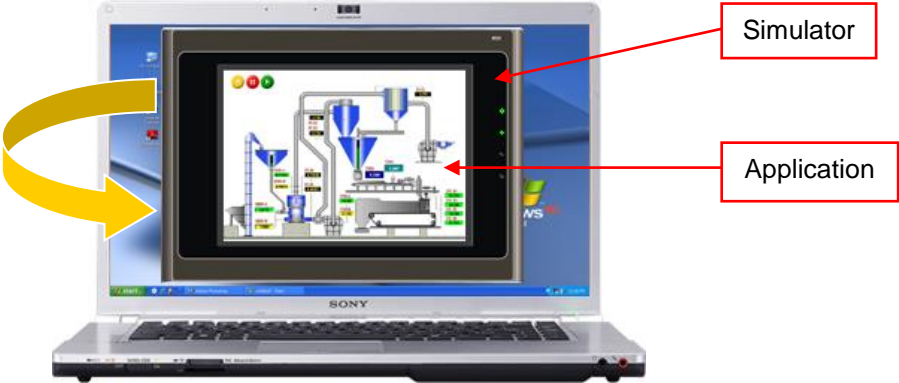
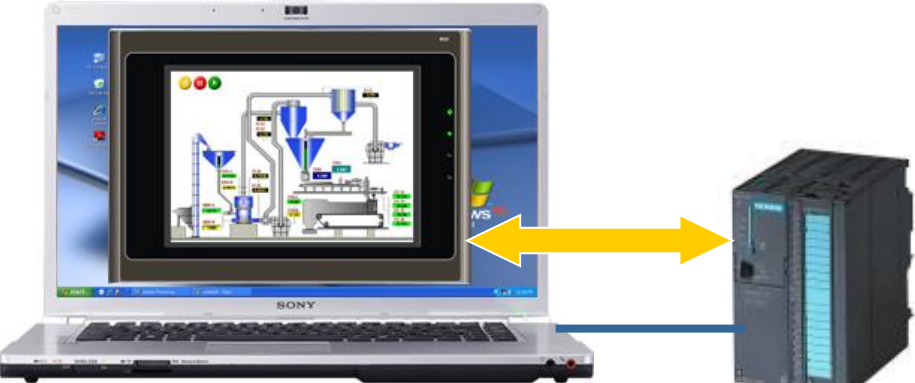
Menu Item	Description
Clear	Clears all the entries in the window.

17.2. Simulating an Application

Simulator is a convenient tool for design verification. With the simulator, you don't need to download the application to the target panel. On a PC, you can simulate how the application runs on the target panel.

There are two types of simulation offered by the software: On-line Simulation and Off-line Simulation.

17.2.1. On-line/Off-line Simulation

Type	Description
Off-line simulation	 <p>In the off-line simulation mode, the PC will create a memory block for all registers of the device/server used in the application. The simulator will communicate with the memory on the PC, so there will never be a communication error generated with the off-line simulator.</p> <p>Off-line simulation is good for screen visual effects, object operation, and logic verification.</p>
On-line simulation	 <p>The on-line simulator is similar to the off-line simulator except that the PC tries to communicate with the device/server instead of the created virtual registers in its memory.</p> <p>On-line simulator is used to troubleshoot communication problems.</p>


17.2.2. Simulating an Application

To simulate an application, you can do the following:

1) The application must be saved and compiled before the simulator can start.

2) **Using the software:**

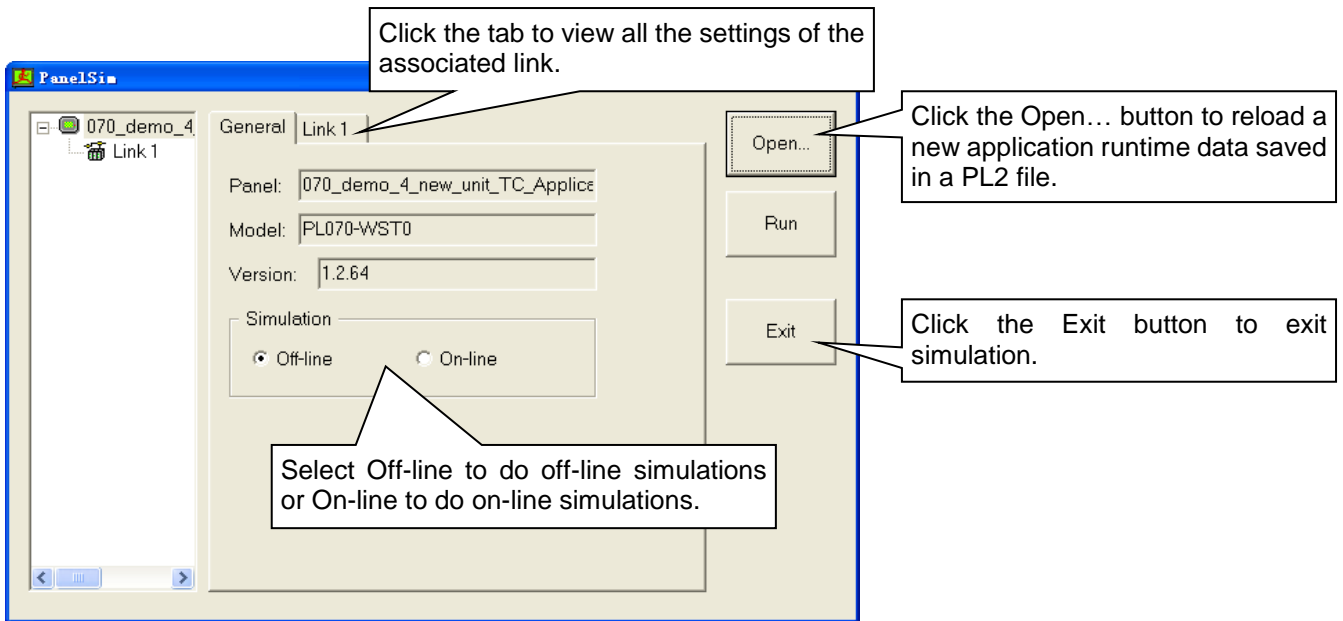
In the menu bar, click Tools to bring up the Tools sub-menu. Click Run Off-line Simulation...in the Panel sub-menu.

Alternatively, click the  Run Off-line Simulation icon in the main toolbar.

Using PanelSim.exe, an independent executable program:

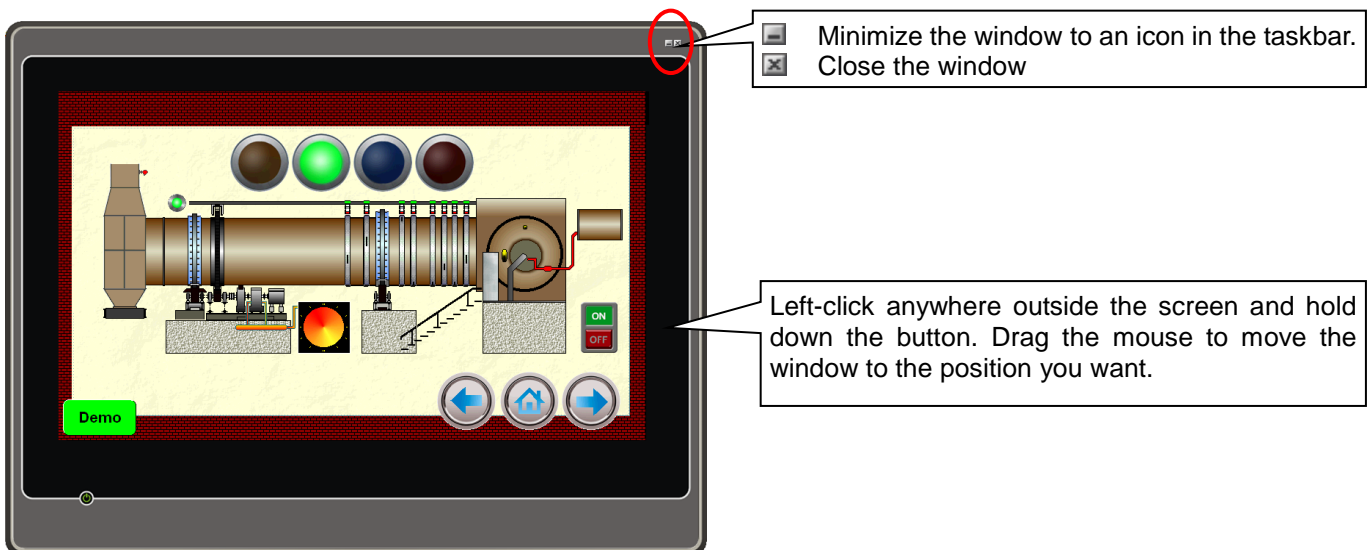
Click Start->All Programs->"The software" ->PanelSim

3) In the PanelSim startup dialog, click Run button to start simulation



Note: When simulating an application in the software, the above dialog will show up and then close automatically before the simulation starts. In this case, ignore the dialog.

4) Simulate the application in the simulator window. The simulator window is similar in appearance to the target panel. The following is an example of the simulator window while running the application.



17.3. Transferring Data Between PC and Panel

In the software, you can transfer the panel runtime data using any of the Serial port, Ethernet port or USB client port whenever the target panel is running.

You can also use a Micro SD card or USB memory stick for the trouble-free update of the application.

17.3.1. Downloading Data to Panel

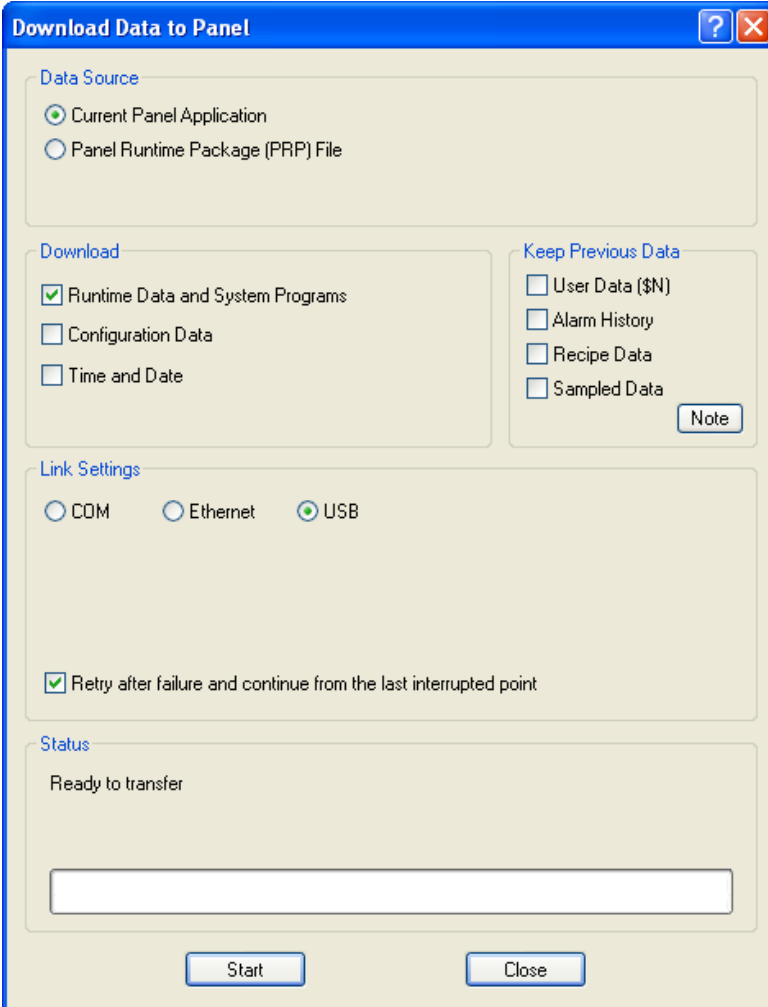
To download data by using the software, you may do the followings:

- 1) In the menu bar, click Panel to bring up the Panel sub-menu. Click Download...in the Panel sub-menu.

Alternatively, click the  Download icon on the standard toolbar.

- 2) In the Download Data to Panel dialog, select the options and settings before downloading.

The following is an example of the Download Data to Panel dialog.



Download Data to Panel

Data Source

Current Panel Application

Panel Runtime Package (PRP) File

Download

Runtime Data and System Programs

Configuration Data

Time and Date

Keep Previous Data

User Data (\$N)

Alarm History

Recipe Data

Sampled Data

Note

Link Settings

COM Ethernet USB

Retry after failure and continue from the last interrupted point

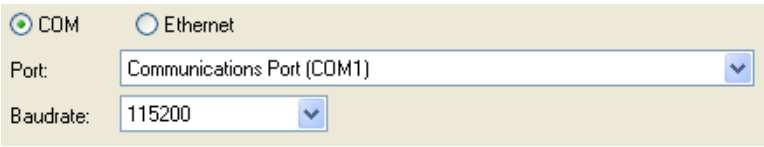

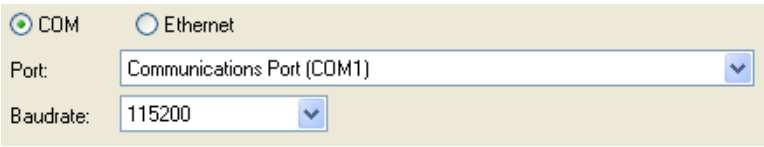

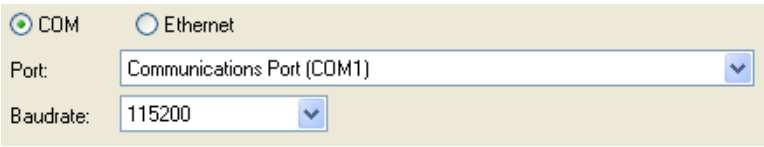

Status


Ready to transfer

Start Close

Note: If the application is modified, the software will automatically compile the application before downloading.

The following table describes each property in the Download Data to Panel dialog.

Property	Description														
Data Source	Select the data you want to download. The current panel application is the data generated by the compiler. The panel runtime data package includes the current panel application data and system programs saved in a PRP file. You need to select a PRP file to download if the Panel Runtime Data Package (PRP) File option is selected.														
Download	Check Runtime Data and System Programs, Configuration Data, Time and Date if you want to download them. Available only when the data source is the current panel application. You can select the configuration data to backup the panel application to the target panel. The data format is the same as the Panel Application Files(PLF)														
Keep Previous Data	Check the previous data of User Data (\$N), Alarm History, Recipe Data or Sampled Data if you want the selected data to be kept instead of being cleared after downloading. The selected data will be kept only if: 1) The previous application was compiled and downloaded by the software V1.2.26 or later. 2) The configurations of battery backed user memory, recipe blocks, data loggers, alarm blocks, and the alarm logging buffer for both the old and new applications are exactly the same.														
Link Settings	Select the communication port that is used to download the data. <table border="1" data-bbox="300 772 1497 1579"> <thead> <tr> <th>Communication Port</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>COM</td> <td>Use the serial port to perform the download and select the communication port and the baud rate used.  </td> </tr> <tr> <td>Ethernet</td> <td>Use the Ethernet to perform the download. Type the IP Address where the target panel is located, or choose a recently connected entry from the list.  </td> </tr> <tr> <td>USB</td> <td>Use the USB to perform the download. You need to install the USB driver before transferring data with the USB cable. To know how to install a USB driver, please see Section 17.3.3</td> </tr> </tbody> </table> <p>If the target panel has sufficient memory, you can perform data transmission in safe mode.</p> <table border="1" data-bbox="300 1388 1497 1579"> <thead> <tr> <th>Mode</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Direct Mode</td> <td>Download data directly to flash memory.</td> </tr> <tr> <td>Safe Mode</td> <td>Buffer the data in the RAM of the target panel to prevent download problems in large files. The transmission has to be done successfully before the data in the SDRAM will be saved to the flash memory.</td> </tr> </tbody> </table>	Communication Port	Description	COM	Use the serial port to perform the download and select the communication port and the baud rate used. 	Ethernet	Use the Ethernet to perform the download. Type the IP Address where the target panel is located, or choose a recently connected entry from the list. 	USB	Use the USB to perform the download. You need to install the USB driver before transferring data with the USB cable. To know how to install a USB driver, please see Section 17.3.3	Mode	Description	Direct Mode	Download data directly to flash memory.	Safe Mode	Buffer the data in the RAM of the target panel to prevent download problems in large files. The transmission has to be done successfully before the data in the SDRAM will be saved to the flash memory.
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COM	Use the serial port to perform the download and select the communication port and the baud rate used. 														
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Mode	Description														
Direct Mode	Download data directly to flash memory.														
Safe Mode	Buffer the data in the RAM of the target panel to prevent download problems in large files. The transmission has to be done successfully before the data in the SDRAM will be saved to the flash memory.														
Status	Display the transmission status and progress.														
Start	Click the button to start download the data.														
Cancel	Cancel the download operation.														
Close	Exit the dialog.														

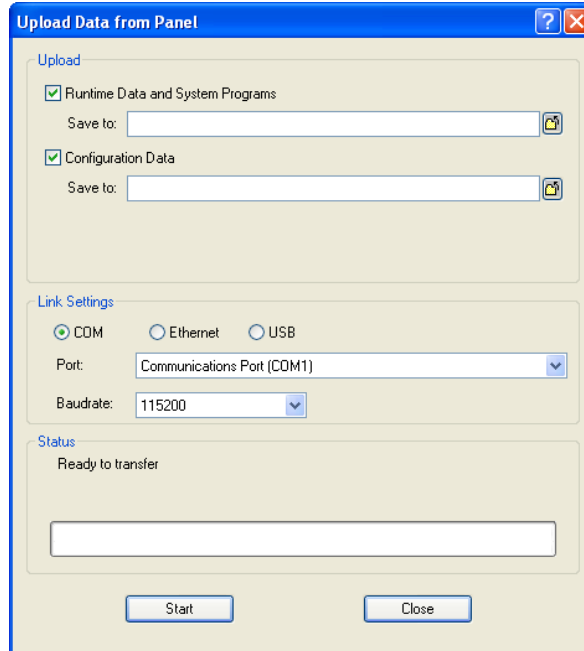
Note: On the standard toolbar, you can click the  Download Immediately icon to immediately download data using the existing settings of the Download Data to Panel dialog to the target panel.

17.3.2. Uploading Data from Panel

To upload data using the software, you may do the following:

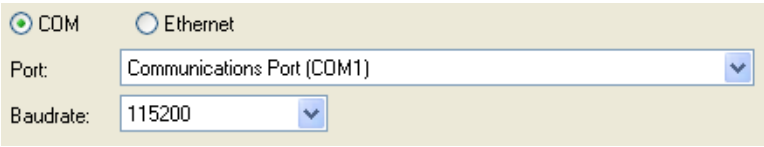

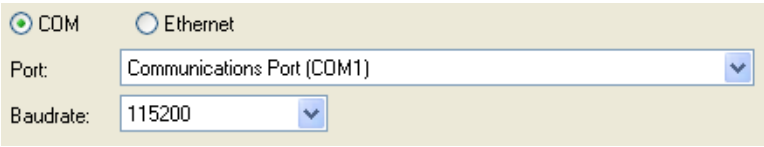

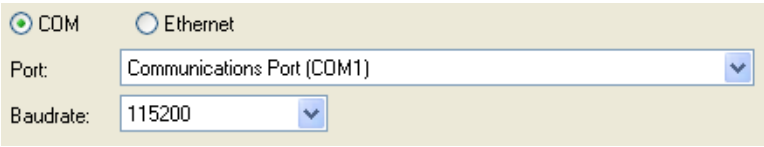

- 1) In the menu bar, click Panel to bring up the Panel sub-menu, then click Upload... in the Panel sub-menu.
- 2) In the Upload Data from Panel dialog, select the options and settings before uploading

The following is an example of the Upload Data from Panel dialog.



Note: If the application is modified, the software will automatically compile the application before downloading.

The following table describes each property in the Upload Data from Panel dialog.

Property	Description								
Upload	Select the data you want to upload and save the uploaded data to the specified file. You can import existing panel applications from the configuration data file (PLF file).								
Link Settings	Select the communication port that is used to upload the data.								
	<table border="1"> <thead> <tr> <th>Communication Port</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>COM</td> <td>Use the serial port to perform the upload and select the communication port and the baud rate used.  </td> </tr> <tr> <td>Ethernet</td> <td>Use the Ethernet to perform the upload. Type the IP Address where the target panel is located, or choose a recently connected entry from the list.  </td> </tr> <tr> <td>USB</td> <td>Use the USB to perform the upload. You need to install the USB driver before transferring data with the USB cable. To know how to install a USB driver, please see Section 17.3.3</td> </tr> </tbody> </table>	Communication Port	Description	COM	Use the serial port to perform the upload and select the communication port and the baud rate used. 	Ethernet	Use the Ethernet to perform the upload. Type the IP Address where the target panel is located, or choose a recently connected entry from the list. 	USB	Use the USB to perform the upload. You need to install the USB driver before transferring data with the USB cable. To know how to install a USB driver, please see Section 17.3.3
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USB	Use the USB to perform the upload. You need to install the USB driver before transferring data with the USB cable. To know how to install a USB driver, please see Section 17.3.3								
Status	Display the transmission status and progress.								
Start	Click the button to start uploading the data.								
Cancel	Cancel the upload operation.								
Close	Exit the dialog.								

17.3.3. Installing a USB Driver to Transfer Data Using a USB Cable

This section describes how to install a USB driver for downloading an application to the target panel on a Microsoft Windows based computer.

Step 1: Log on to your computer as an administrator.

Step 2: Connect the computer and the target panel through a USB cable

Step 3: Start installing the driver

You can use one of the following methods as appropriate to begin installing the driver:

■ **With the Found New Hardware Wizard**

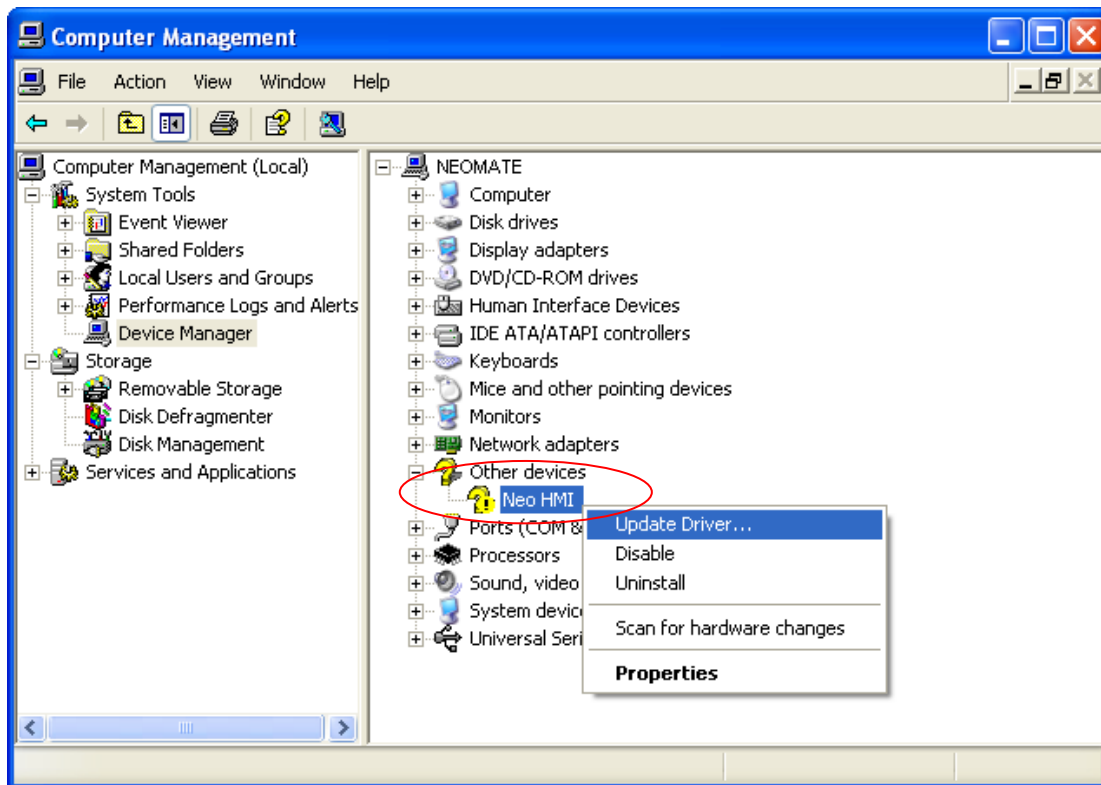
Power on the target panel, “Found New Hardware Wizard” will automatically pop-up in Windows to guide you to install the driver.



■ **With the Upgrade Device Driver Wizard**

If the “Found New Hardware Wizard” does not appear or if it is turned off, you can do the following to bring out the Upgrade Device Driver wizard:

1. On the desktop, right-click **My Computer**, and then click **Manage**.
2. Under **System Tools**, click **Device Manager**.
The devices that are installed on the computer are listed in the right pane.
3. Expand the **Other devices** category
4. Right-click the device named **Neo HMI** for which you want to install the driver, and then click **Properties**.



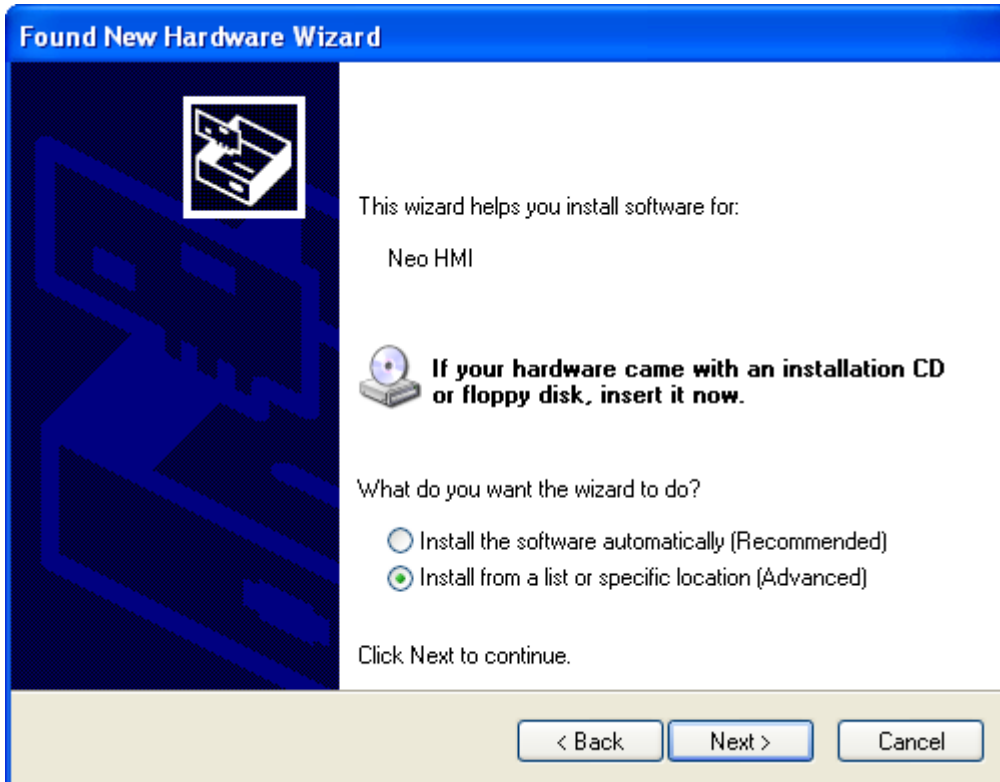
5. Click the **Driver** tab, and then click **Update Driver**. The Upgrade Device Driver wizard starts.

Step 4: Install the driver by following the wizard instructions

1. Click **Next**.



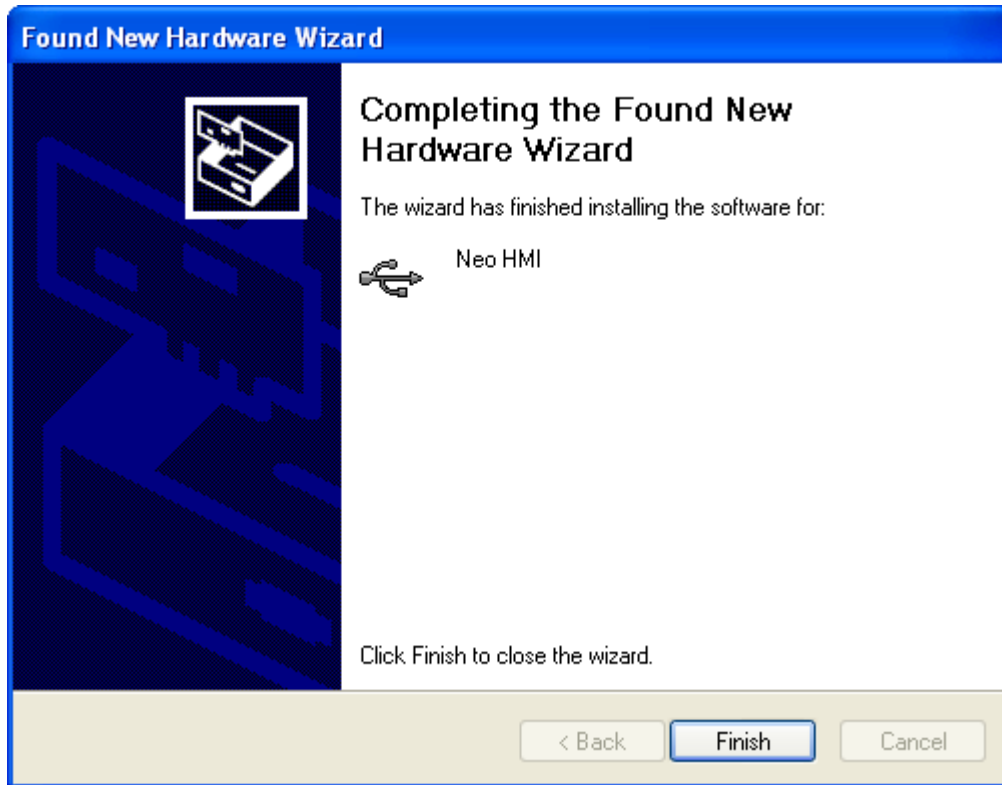
2. Click **Install from a list or specific location (Advanced)**, and then click **Next**.



3. Click **Search for the best driver in these locations**, and then select **Include this location in the search**, click **Browse**, select **\Usb** in the software's installation folder as the folder that contains drivers, and then click **Next**.
4. Click **Continue Anyway** if the Hardware Installation dialog box shown as below appears.



Step 5: Click Finish to complete installing the driver for Neo HMI



Note: The first time you connect a target panel that plugs into any of the USB ports on the computer, you need to install a driver for that device.

After installing the driver, you can use the USB to transfer data between the PC and the target panel which supports USB transferring. In the software, you need to select USB as the link settings in the Download Data to Panel/Upload Data from Panel dialog box before transferring.