CHAPTER 16

COMPILING/SIMULATING/DOWNLOADING A PANEL APPLICATION

16.1. Compiling an Application

Using the compiler offered by the software, you can verify the correctness of all the settings and designs, optimize the communications 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 PanelMaster Runtime.

The Panel Runtime Data is the data of the current panel application that is executed by the HMI engine at runtime. The panel runtime data will be generated and saved into a PL2 file after the user compiles an application.

16.1.1. Compiling an Application

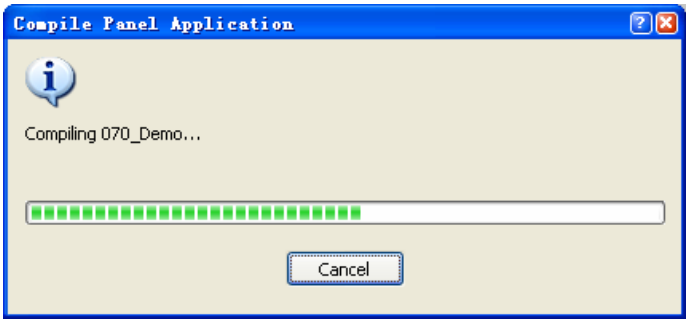
To compile an application, you can do the followings:

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

   Or in the main toolbar, click  Compile icon.

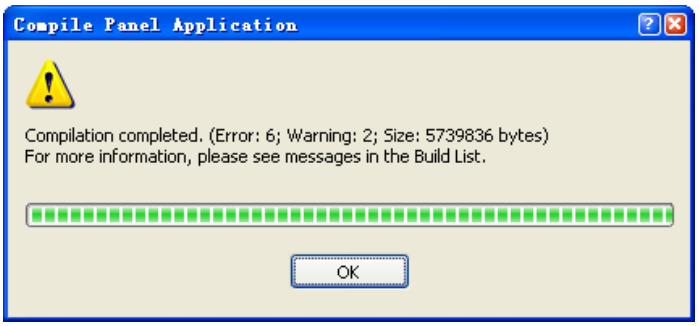
2) The Compile Panel Application dialog will popup and show the progress of the compiling process. If you want to cancel the compiling operation, click Cancel button.

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



3) After the compilation is completed, the Compile Panel Application dialog will display the error count, warning count and total file size of panel runtime data. All the details will be listed in Build List Window. To know about Built List Window, please see Section 16.1.3 Built List Window.

   On the right, there is an example of the Compile Panel Application dialog when the compilation is completed.



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.

16.1.2. Building Panel Runtime Package

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

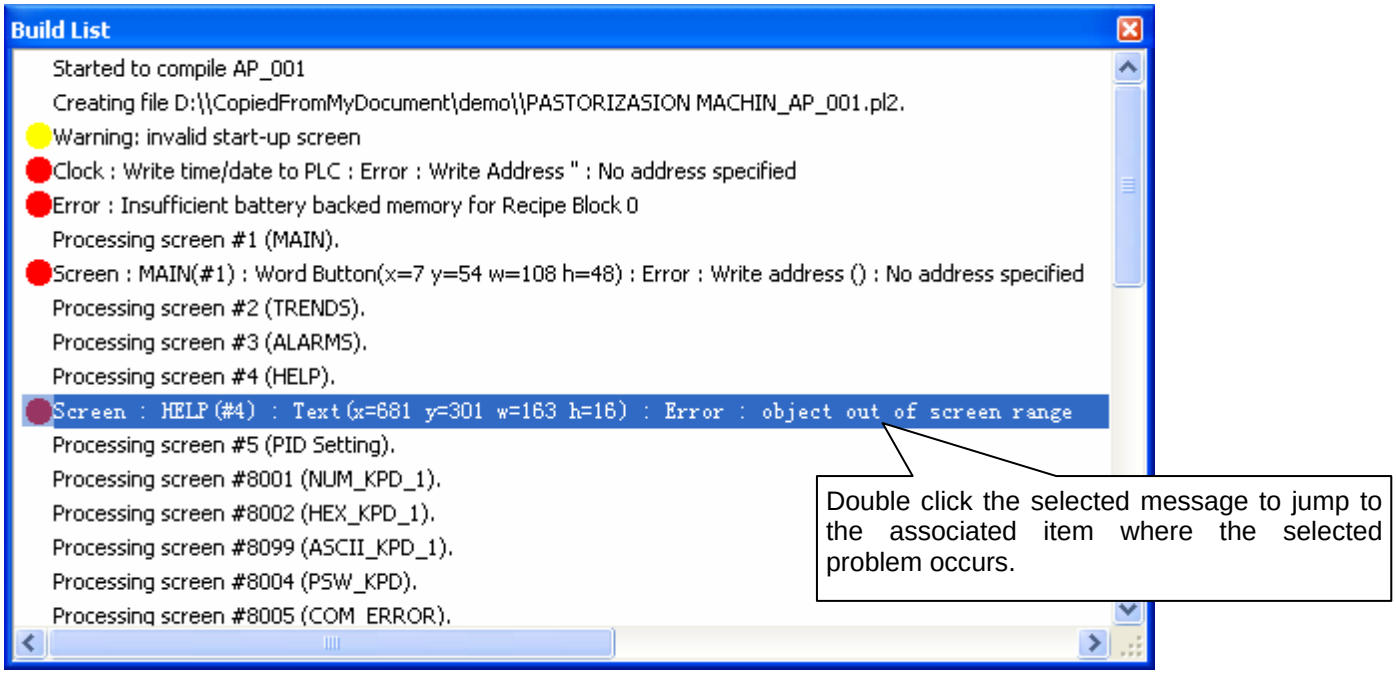
1) In the menu bar, click Panel to bring up the Panel sub-menu. Click Build Panel Runtime Package(PRP)…in the Panel sub-menu.
2) If the compilation is completed successfully, you will be asked to specify the file name in the Save As… dialog to save the package into a PRP file.

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

16.1.3. Build List Window

All the detail information about compiling process, error messages, warning messages are listed in the Build List window. The Build List Window is a dockable window. In the window, the error message will have a red circle in the front of the entry, and the warning message will have a yellow circle in the 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 popup menu with the following menu items:

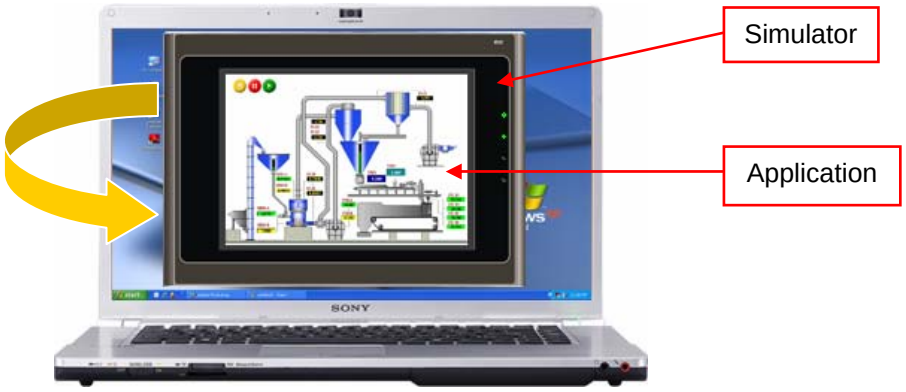
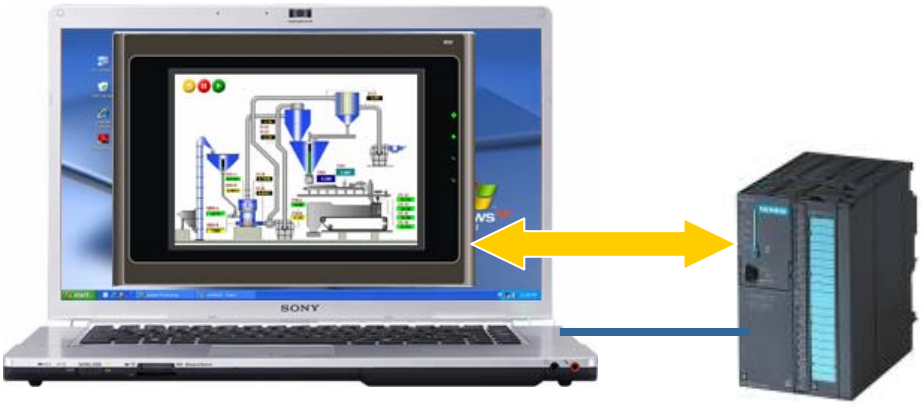
Menu Item	Description
Clear	Clears all the entries in the window.

16.2. 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 PC, you can simulate how the application runs on the target panel.

There are two types of simulation offered by the software: Online Simulation and Offline Simulation.

16.2.1. Online/Offline Simulation

Type	Description
Offline simulation	 In the offline 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 PC, so there will never be communication error generated with the off-line simulator. Offline simulator is good for screen visual effects, object operation logic verification.
Online simulation	 Online simulator is similar to the offline simulator except that the PC tries to communicate with the device/server instead of created virtual registers in memory. Online simulator is used to troubleshoot the communication problem.

16.2.2. Simulating an Application

To simulate an application, you can do the followings:

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

2) **Using the software:**

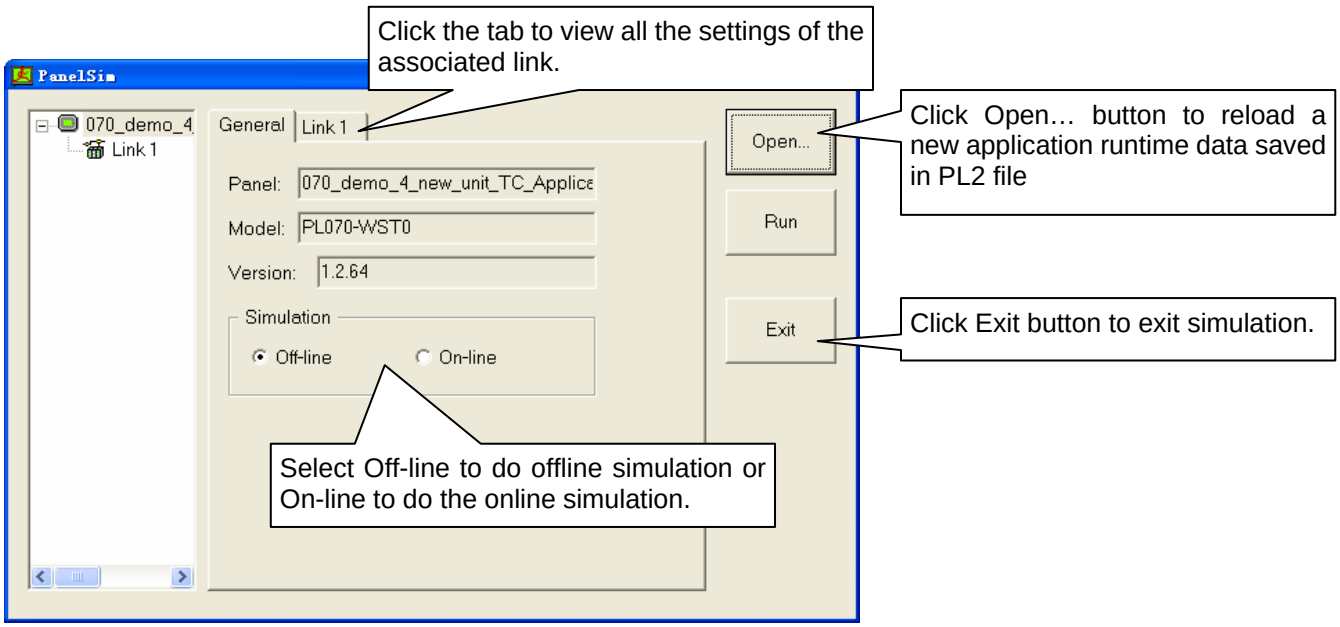
In the menu bar, click Tools to bring up the Tools sub-menu. Click Run Offline Simulation…in the Panel sub-menu.

Or in the main toolbar, click  Run Offline Simulation icon.

By PanelSim.exe, an independent executable program:

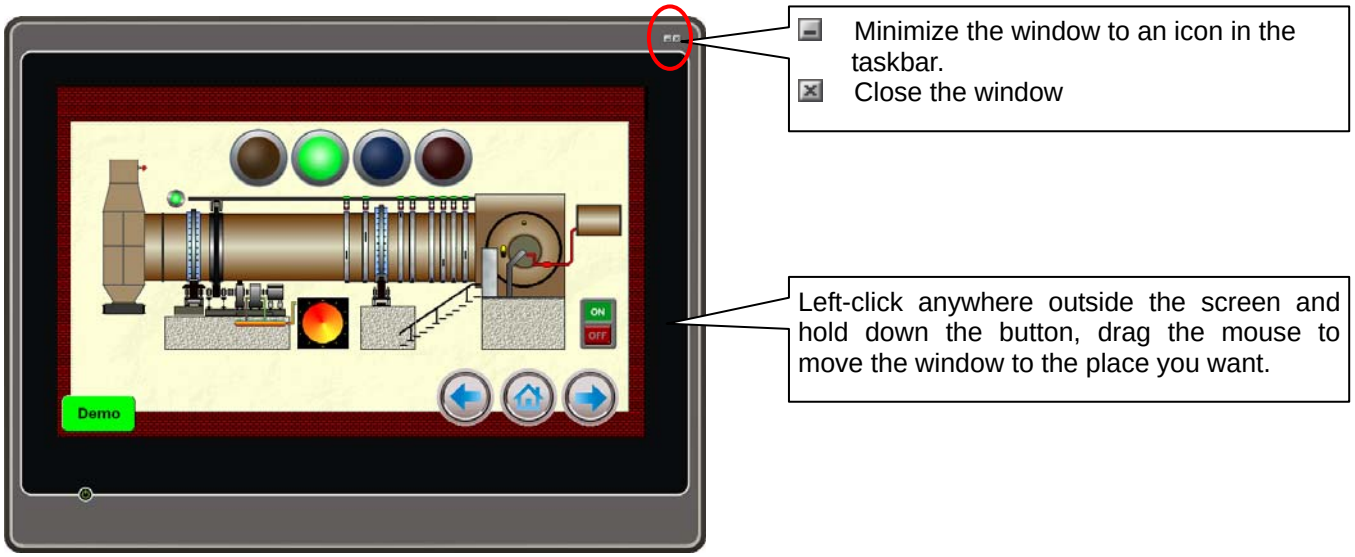
Click Start->All Programs->"The software" ->PanelSim

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



Note: If simulating an application in the software, the above dialog will show up and then close automatically before the simulation starts. In this case, you don't need to do anything with the dialog.

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



16.3. Transferring Data Between PC and Panel

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

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

16.3.1. Downloading Data to Panel

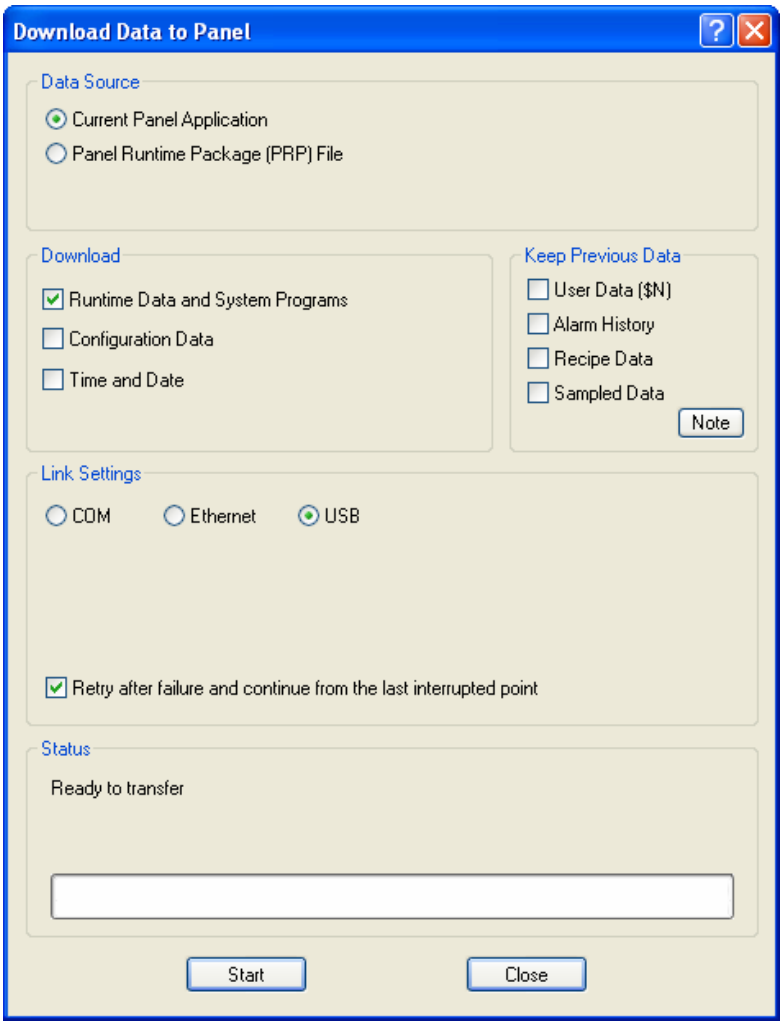
To download data by using the software, you may do the followings:

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

   Or on the standard toolbar, click 

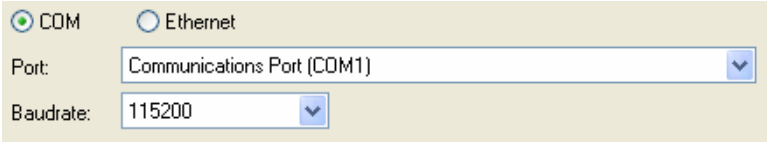
2) In the Download Data to Panel dialog, select the options and make settings before downloading

   The following is an example of Download Data to 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 Download Data to Panel Dialog.

<table>
<tr><th>Property</th><th>Description</th></tr>
<tr><td>Data Source</td><td>Select the data you want to download. The current panel application is the data generated by the compiler. The panel runtime data package includes current panel application data and system programs saved in a PRP file. You need to select a PRP file to download if Panel Runtime Data Package(PRP) File option is selected.</td></tr>
<tr><td>Download</td><td>Check Runtime Data and System Programs, Configuration Data, Time and Date if you want to download. Available only when the data source is current panel application.
You can select the configuration data to backup the panel application into the target panel. The data format is the same as the Panel Application Files(PLF)</td></tr>
<tr><td>Keep Previous Data</td><td>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 the 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 alarm logging buffer for both the old and new applications are exactly the same.</td></tr>
<tr><td>Link Settings</td><td>Select the communication port that is used to download the data.
<table>
<tr><th>Communication Port</th><th>Description</th></tr>
<tr><td>COM</td><td>Use serial port to do the download and select communication port and the used baud rate.
 
</td></tr>
<tr><td>Ethernet</td><td>Use the Ethernet to do the download. Type the IP Address where the target panel locates, or click a recent connected entry from the list.
 
</td></tr>
<tr><td>USB</td><td>Use the USB to do the download. You need to install USB driver before transferring data by USB cable. To know how to install USB driver, please see Section 16.3.3</td></tr>
</table>
If the target panel has sufficient memory, you can do the data transmission in safe mode.
<table>
<tr><th>Mode</th><th>Description</th></tr>
<tr><td>Direct Mode</td><td>Download data to flash memory directly.</td></tr>
<tr><td>Safe Mode</td><td>Buffer the data in the RAM of the target panel to prevent download problems on large files. Only if the transmission is done successfully, the data in the SDRAM will be saved to flash memory.</td></tr>
</table></td></tr>
<tr><td>Status</td><td>Display the transmission status and progress.</td></tr>
<tr><td>Start</td><td>Click the button to start download the data.</td></tr>
<tr><td>Cancel</td><td>Cancel the download operation.</td></tr>
<tr><td>Close</td><td>Exit the dialog.</td></tr>
</table>

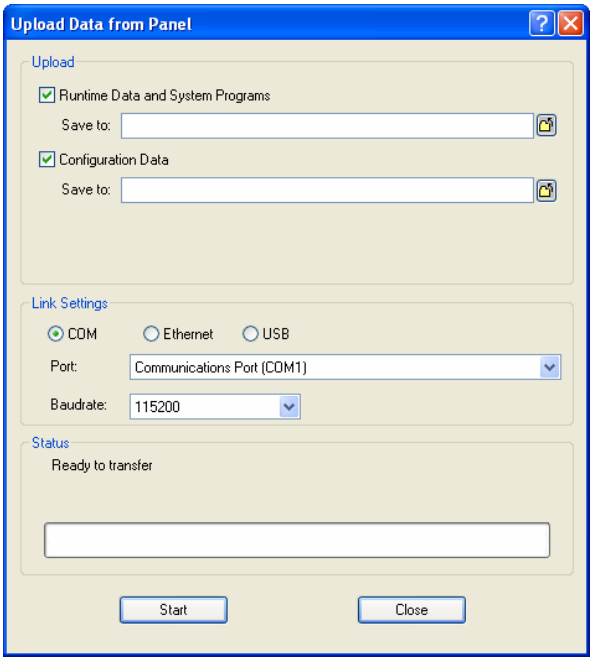
Note: On the standard toolbar, you can click  to download data using the existing settings in the Download Data to Panel Dialog to the target panel immediately

16.3.2. Uploading Data from Panel

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

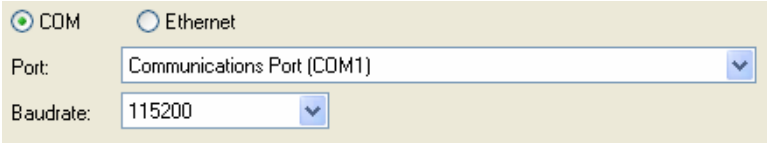
1) In the menu bar, click Panel to bring up the Panel sub-menu. Click Upload…in the Panel sub-menu.
2) In the Upload Data from Panel dialog, select the options and make settings before uploading

The following is an example of Download Data to 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.

<table>
<tr><th>Property</th><th>Description</th></tr>
<tr><td>Upload</td><td>Select the data you want to upload and save the uploaded data into the specified file. You can import existing panel application from the configuration data file (PLF file).</td></tr>
<tr><td>Link Settings</td><td>Select the communication port that is used to upload the data.
<table>
<tr><th>Communication Port</th><th>Description</th></tr>
<tr><td>COM</td><td>Use serial port to do the upload and select communication port and the used baud rate.
  </td></tr>
<tr><td>Ethernet</td><td>Use the Ethernet to do the upload. Type the IP Address where the target panel locates, or click a recent connected entry from the list.
  </td></tr>
<tr><td>USB</td><td>Use the USB to do the upload. You need to install USB driver before transferring data by USB cable. To know how to install USB driver, please see Section 16.3.3</td></tr>
</table></td></tr>
<tr><td>Status</td><td>Display the transmission status and progress.</td></tr>
<tr><td>Start</td><td>Click the button to start upload the data.</td></tr>
<tr><td>Cancel</td><td>Cancel the upload operation.</td></tr>
<tr><td>Close</td><td>Exit the dialog.</td></tr>
</table>

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

This section describes how to install 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 USB cable

Step 3: Start installing the driver

You can use one of the following methods as appropriate to your situation to start installing the driver:

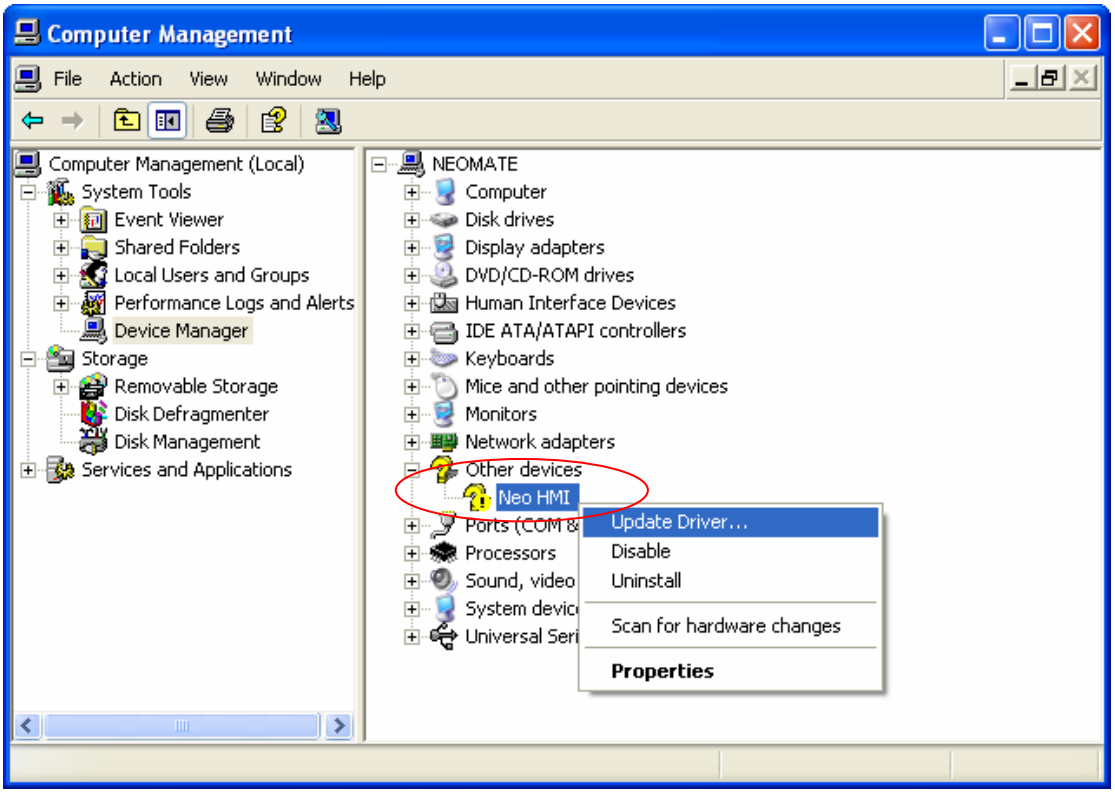
■ **With Found New Hardware Wizard**

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

■ **With Upgrade Device Driver Wizard**

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

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

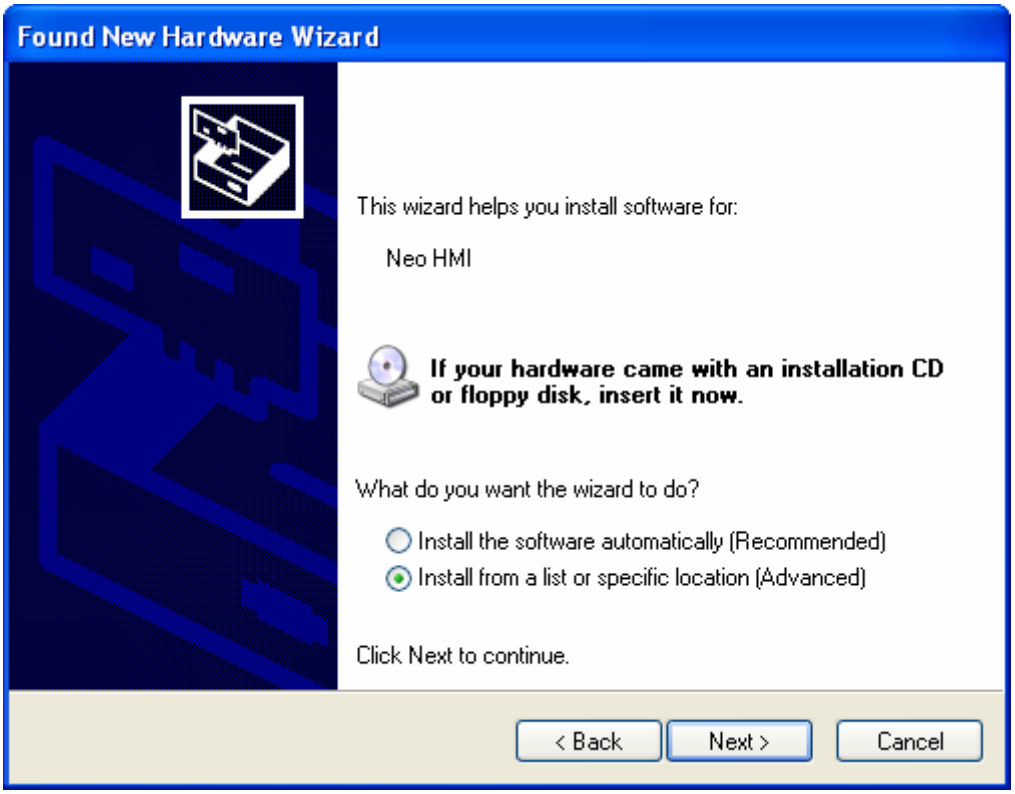


6. Click the **Driver** tab, and then click **Update Driver**. The Upgrade Device Driver wizard starts.

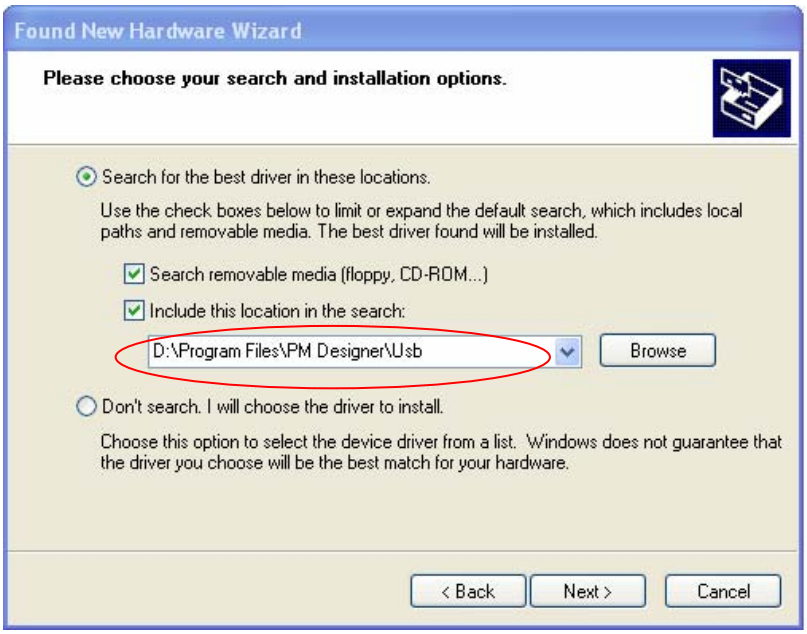
Step 4: Install the driver by following the wizard instructions

1. Click **Next**.

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

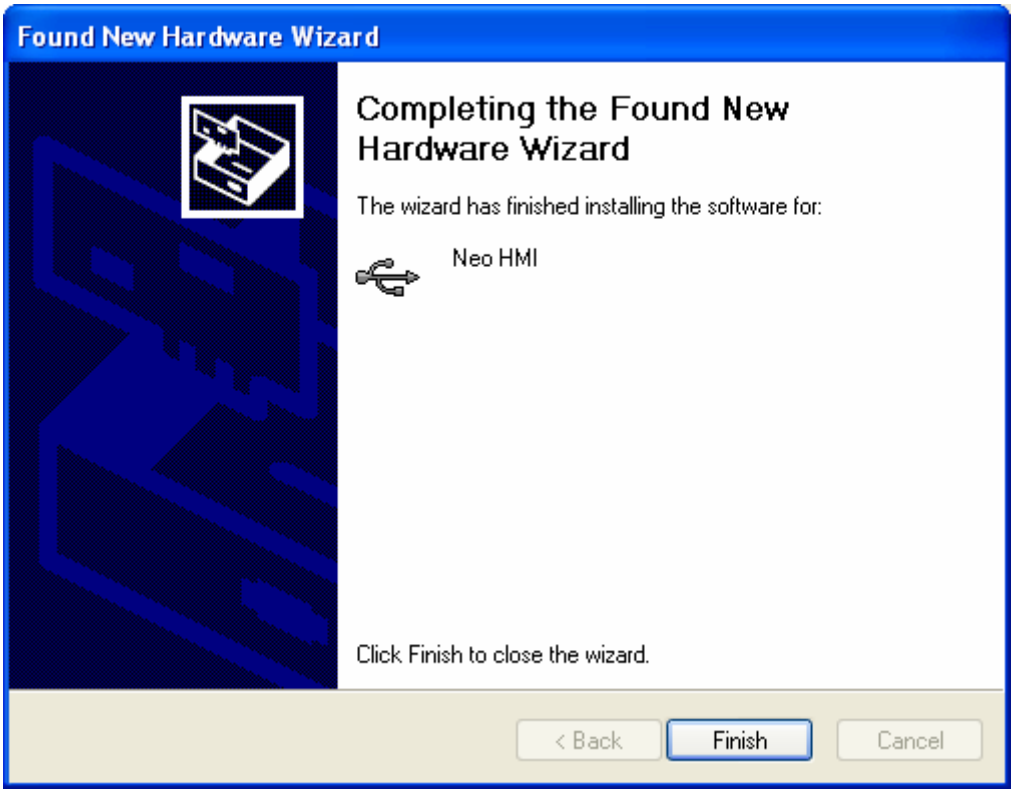


3. Click **Search for the best driver in these locations**, and then select **Include this location in the search**, click Browse, select \PM Designer\Usb as the folder that contains drivers, and then click **Next**.



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 USB to transfer data between 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.