

# Communication Drivers Installation Manual

(Original Document)

12/2018

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The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

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# Safety Information

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## Important Information

### NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

## **DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

## **WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

## **CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

## **NOTICE**

**NOTICE** is used to address practices not related to physical injury.

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## PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

## BEFORE YOU BEGIN

Do not use this product on machinery lacking effective point-of-operation guarding. Lack of effective point-of-operation guarding on a machine can result in serious injury to the operator of that machine.

 <b>WARNING</b>
<b>UNGUARDED EQUIPMENT</b>
<ul style="list-style-type: none"><li>• Do not use this software and related automation equipment on equipment which does not have point-of-operation protection.</li><li>• Do not reach into machinery during operation.</li></ul>
<b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b>



This automation equipment and related software is used to control a variety of industrial processes. The type or model of automation equipment suitable for each application will vary depending on factors such as the control function required, degree of protection required, production methods, unusual conditions, government regulations, etc. In some applications, more than one processor may be required, as when backup redundancy is needed.

Only you, the user, machine builder or system integrator can be aware of all the conditions and factors present during setup, operation, and maintenance of the machine and, therefore, can determine the automation equipment and the related safeties and interlocks which can be properly used. When selecting automation and control equipment and related software for a particular application, you should refer to the applicable local and national standards and regulations. The National Safety Council's Accident Prevention Manual (nationally recognized in the United States of America) also provides much useful information.

In some applications, such as packaging machinery, additional operator protection such as point-of-operation guarding must be provided. This is necessary if the operator's hands and other parts of the body are free to enter the pinch points or other hazardous areas and serious injury can occur. Software products alone cannot protect an operator from injury. For this reason the software cannot be substituted for or take the place of point-of-operation protection.

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Ensure that appropriate safeties and mechanical/electrical interlocks related to point-of-operation protection have been installed and are operational before placing the equipment into service. All interlocks and safeties related to point-of-operation protection must be coordinated with the related automation equipment and software programming.

**NOTE:** Coordination of safeties and mechanical/electrical interlocks for point-of-operation protection is outside the scope of the Function Block Library, System User Guide, or other implementation referenced in this documentation.

## START-UP AND TEST

Before using electrical control and automation equipment for regular operation after installation, the system should be given a start-up test by qualified personnel to verify correct operation of the equipment. It is important that arrangements for such a check be made and that enough time is allowed to perform complete and satisfactory testing.

### **WARNING**

#### **EQUIPMENT OPERATION HAZARD**

- Verify that all installation and set up procedures have been completed.
- Before operational tests are performed, remove all blocks or other temporary holding means used for shipment from all component devices.
- Remove tools, meters, and debris from equipment.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

Follow all start-up tests recommended in the equipment documentation. Store all equipment documentation for future references.

#### **Software testing must be done in both simulated and real environments.**

Verify that the completed system is free from all short circuits and temporary grounds that are not installed according to local regulations (according to the National Electrical Code in the U.S.A, for instance). If high-potential voltage testing is necessary, follow recommendations in equipment documentation to prevent accidental equipment damage.

Before energizing equipment:

- Remove tools, meters, and debris from equipment.
- Close the equipment enclosure door.
- Remove all temporary grounds from incoming power lines.
- Perform all start-up tests recommended by the manufacturer.

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## OPERATION AND ADJUSTMENTS

The following precautions are from the NEMA Standards Publication ICS 7.1-1995 (English version prevails):

- Regardless of the care exercised in the design and manufacture of equipment or in the selection and ratings of components, there are hazards that can be encountered if such equipment is improperly operated.
- It is sometimes possible to misadjust the equipment and thus produce unsatisfactory or unsafe operation. Always use the manufacturer's instructions as a guide for functional adjustments. Personnel who have access to these adjustments should be familiar with the equipment manufacturer's instructions and the machinery used with the electrical equipment.
- Only those operational adjustments actually required by the operator should be accessible to the operator. Access to other controls should be restricted to prevent unauthorized changes in operating characteristics.

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# About the Book

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## At a Glance

### Document Scope

This manual provides information on the installation and configuration of communication drivers.

### Validity Note

This documentation is valid for EcoStruxure™ Control Expert 14.0 or later.

The technical characteristics of the devices described in the present document also appear online. To access the information online:

Step	Action
1	Go to the Schneider Electric home page <a href="http://www.schneider-electric.com">www.schneider-electric.com</a> .
2	In the <b>Search</b> box type the reference of a product or the name of a product range. <ul style="list-style-type: none"><li>• Do not include blank spaces in the reference or product range.</li><li>• To get information on grouping similar modules, use asterisks ( * ).</li></ul>
3	If you entered a reference, go to the <b>Product Datasheets</b> search results and click on the reference that interests you. If you entered the name of a product range, go to the <b>Product Ranges</b> search results and click on the product range that interests you.
4	If more than one reference appears in the <b>Products</b> search results, click on the reference that interests you.
5	Depending on the size of your screen, you may need to scroll down to see the data sheet.
6	To save or print a data sheet as a .pdf file, click <b>Download XXX product datasheet</b> .

The characteristics that are presented in the present document should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the document and online information, use the online information as your reference.



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# Chapter 1

## Driver Installation

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### Driver Installation

#### At a Glance

When installing Control Expert software from the DVD, the installation of the following drivers is proposed (depending on the operating system):

- Modbus serial
- USB
- Uni-Telway

Other available drivers are installed from the Control Expert software DVD, and the TSX C USB 485 / TSX C USB 232 cable driver require specific installation procedures. Refer to corresponding driver chapters for installation instructions.

**NOTE:** Read the release notes carefully to follow specific installation instructions.

**NOTE:** With hardware that is no longer manufactured by Schneider Electric, drivers availability and installation procedures are described in the appendices (*see page 81*).

#### Drivers Compatibility

Windows operating system compatibility table:

Driver	Win 7 (32/64 bits)	Win 8.1 (32/64 bits)	Win 10 (32/64 bits)	Win Server 2012 R2
Modbus serial	+	+	+	+
USB	+	+	+	+
Uni-Telway	+	+	+	+
XIP (XWAY on TCP/IP)	+	+	+	+
PCIway	+	-	-	-
USB-FIP	+	-	-	-
+ Yes - No				

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## Procedure

The following procedure describes how to install drivers after Control Expert software installation, using the Control Expert DVD:

Step	Description
1	Insert Control Expert installation DVD in the drive. <b>Result:</b> The Control Expert software installation prompt launches automatically.
2	Cancel Control Expert software installation (the program should already be installed).
3	Explore the DVD folder: <b>Communication Drivers</b> To install all drivers, double-click <b>InstallAllDrivers.exe</b> . To install a specific driver, double-click the driver installation program: <b>Modbus serial: SchneiderModbusDriverSuite.exe</b> <b>USB: SchneiderPLCUSBDriverSuite.exe</b> <b>Uni-Telway: SchneiderUnitelwayDriverSuite.exe</b> <b>XIP: SchneiderXipDriverSuite.exe</b> <b>PCIway: SchneiderTPCI57DriverSuite.exe</b> <b>USB-FIP: SchneiderUsbFipDriverSuite.exe</b> <b>NOTE:</b> The program extension (.exe) may not appear depending on your display options.
4	An InstallShield Wizard displays during installation. Follow displayed instructions (Win XP).
5	Once installation is completed (no specific message), you can launch Control Expert software.

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# Chapter 2

## Modbus Driver

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### Subject of This Chapter

This chapter describes Modbus driver configuration.

For installation information, refer to the Driver Installation chapter (*see page 11*).

### What Is in This Chapter?

This chapter contains the following topics:

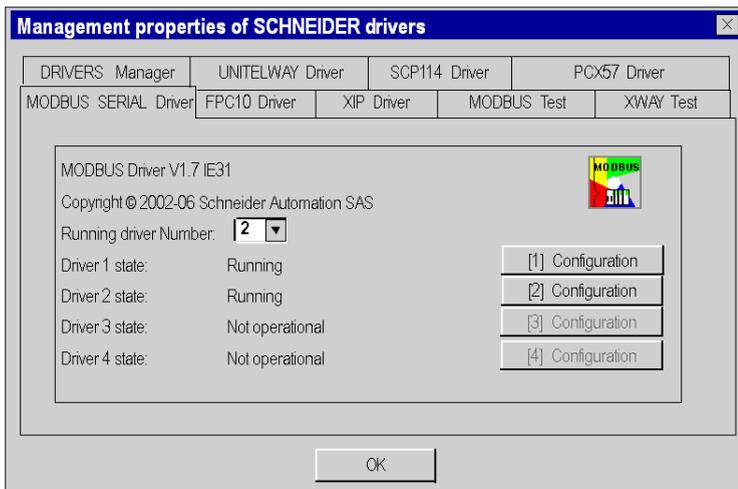
Topic	Page
Configuration of the Modbus Driver	14
Driver Configuration Screen	15
Driver Control Screen	17
Driver Debug Screen	19
Information Screen	21
How to configure the Modbus modem with Windows	23

## Configuration of the Modbus Driver

### Access to the Configuration Tool

The configuration tool can be accessed from the taskbar **Start** → **Control Panel** → **Drivers Manager**. Refer to Drivers Manager chapter (*see page 67*).

Select the **MODBUS SERIAL Driver** tab to display the following window:



This window enables you to:

- Display the driver version installed.
- Select the number of drivers to activate.
- Display the status of each driver.
- Access the configuration (*see page 15*) of each driver.

## Driver Configuration Screen

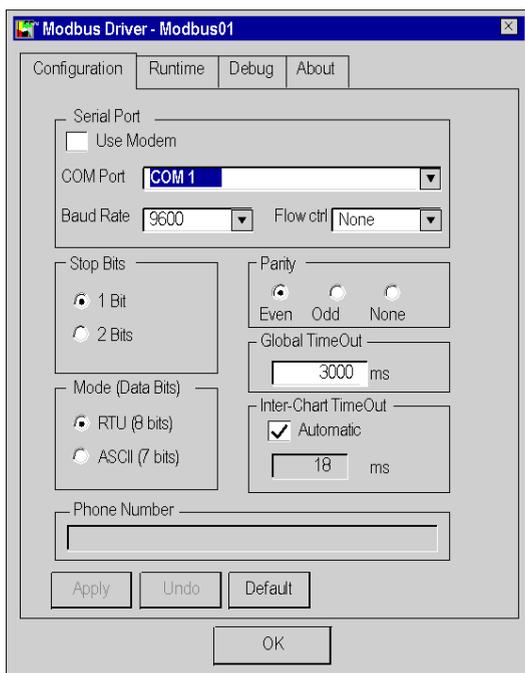
### At a Glance

This chapter describes Modbus driver for serial port configuration.

The configuration tool is accessible from the Windows taskbar: **Start** → **Control Panel** → **Drivers Manager**. Choose the **MODBUS SERIAL DRIVER** tab and select one of the **Configuration** buttons corresponding to the four drivers.

### Illustration

The configuration screen dedicated to the Modbus driver looks like this:



Configuration screen description:

Area	Element
<b>Serial Port/Modem</b>	<p>If the <b>Use Modem</b> box is checked the list of all the modems configured on the PC is displayed in the <b>Modem</b> area (instead of <b>COM Port</b>). To configure the modem in Windows operating system refer to the page of configuration of the modem with Windows (<i>see page 23</i>).</p> <p><b>COM Port or Modem:</b> Provides a choice for the communication port to be used, by default COM1 or the modem to be used.</p> <p><b>Baud Rate:</b> Provides a choice for transmission speed between 300 and 19200bits/second, by default 9600b/s.</p> <p><b>Flow ctrl:</b> Selects the flow control of the serial port (except for modem communication).</p>
<b>Stop Bits</b>	Allows entry of the number of stop bits used for communication, by default 1 stop bit.
<b>Parity</b>	<p>Is used to set whether a parity bit is added or not, as well as its type, such as:</p> <ul style="list-style-type: none"> <li>● <b>Even</b>, for even parity (default selection).</li> <li>● <b>Odd</b>, for odd parity.</li> <li>● <b>None</b>, for no parity bit.</li> </ul>
<b>Global TimeOut</b>	Allows reception time-out to be defined (in milliseconds) while the driver is waiting for the response from the polled Modbus slave.
<b>Inter-Char TimeOut</b>	<p>Allows quiet time to be defined (in milliseconds), permitting detection of a Modbus end delimiter.</p> <p>If the <b>Automatic</b> box is checked, the value is automatically calculated according to speed (baud rate).</p>
<b>Mode (Data Bits)</b>	<p><b>RTU:</b> The characters are coded on 8 bits in binary. This mode is the default mode.</p> <p><b>ASCII:</b> The characters are coded on 7 bits in ASCII.</p>
<b>Phone number</b>	Number to dial when the communication port is connected to a modem.
<b>Apply</b>	Saves the configuration.
<b>Undo</b>	Cancels the latest modifications.
<b>Default</b>	Sets parameters for the different fields with default values.
<b>OK</b>	Allows configuration parameters to be acknowledged, and represents the window by an icon.

### Modbus Instances

Once installed, configure the Modbus driver and reboot the computer. All Modbus instances that are activated in the driver manager are initialized.

For each Modbus instance configured a corresponding icon appears in the task bar.

## Driver Control Screen

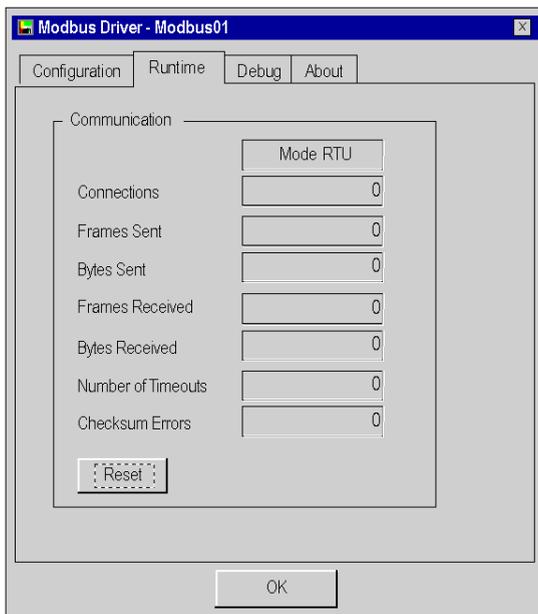
### At a Glance

This screen is used to view information concerning driver operation.

The refreshment period for this information is defined in a driver screen. See *Driver Debug Screen*, page 19.

### Illustration

You can access the control screen dedicated to the Modbus driver by selecting the **Runtime** tab in the **Driver Configuration** screen:



**Description**

This table describes the different information concerning driver operation:

<b>Element</b>	<b>Description</b>
Mode	Displays the driver operating mode: <ul style="list-style-type: none"><li>● RTU Mode,</li><li>● ASCII Mode.</li></ul>
Connections	Contains the number of clients using the driver
Frames Sent	Contains the number of frames sent since the last Reset.
Bytes Sent	Contains the number of bytes sent since the last Reset.
Frames Received	Contains the number of frames received since the last Reset.
Bytes Received	Contains the number of bytes received since the last Reset.
Number of TimeOut	Contains the number of Time-Outs reached; the value is defined in the "Global Delay" configuration screen.
Checksum Errors	Contains the number of checksum errors detected.
Reset	This button is used to reset the different counters in the control screen to 0.
OK	This button allows the window to be represented as an icon.

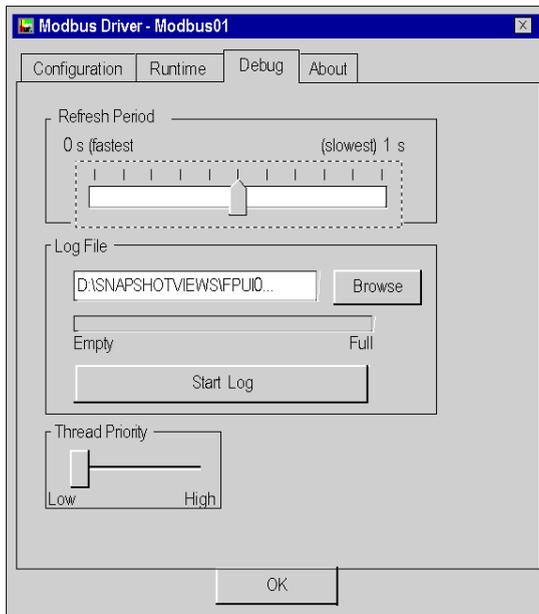
## Driver Debug Screen

### At a Glance

This screen is used to deactivate the saving of certain operations carried out by the communication driver in a trace file.

### Illustration

You can access the debug screen dedicated to the Modbus driver by selecting the **Debug** tab in the **Driver Configuration** screen:



**Description**

This table describes the different areas which make up the debug screen:

Area	Description
Refresh Period	Allows the screen refreshing period for the driver control screen to be defined within a range of 0s to 1s.
Log File	This area contains: <ul style="list-style-type: none"><li>● the description of the path where the trace file has been saved,</li><li>● a bar graph showing the fill level of the trace file.</li><li>● a button to start or stop saving in the trace file.</li></ul>
Thread Priority	Adjusts the priority of the driver with regard to other tasks executed in Windows. The default setting is "Low" .
OK	This button allows the window to be represented as an icon.

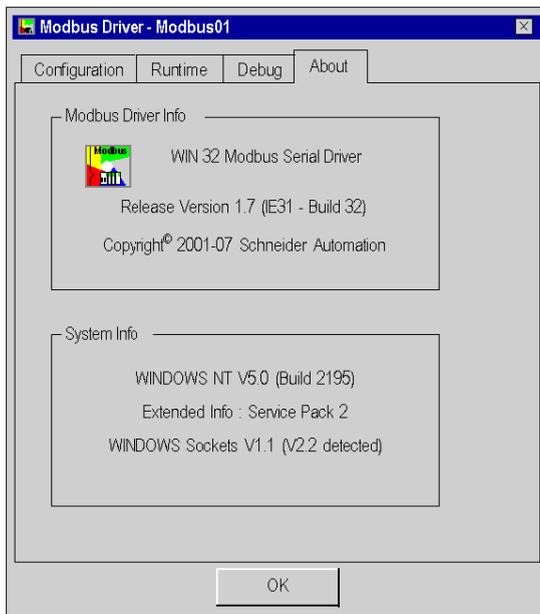
## Information Screen

### At a Glance

This screen provides general information on the communication driver and on the operating system installed.

### Illustration

You can access the information screen dedicated to the Modbus driver by selecting the **About** tab in the **Driver Configuration** screen:



**Description**

This table describes the different areas which make up the information screen:

Area	Element
Modbus Driver Info	This area contains: <ul style="list-style-type: none"><li>● the driver version,</li><li>● the Schneider Electric Copyright.</li></ul>
System Info	This area contains: <ul style="list-style-type: none"><li>● the Windows operating system version,</li><li>● additional information,</li><li>● the Winsock interface version.</li></ul>
OK	This button allows the window to be represented as an icon.

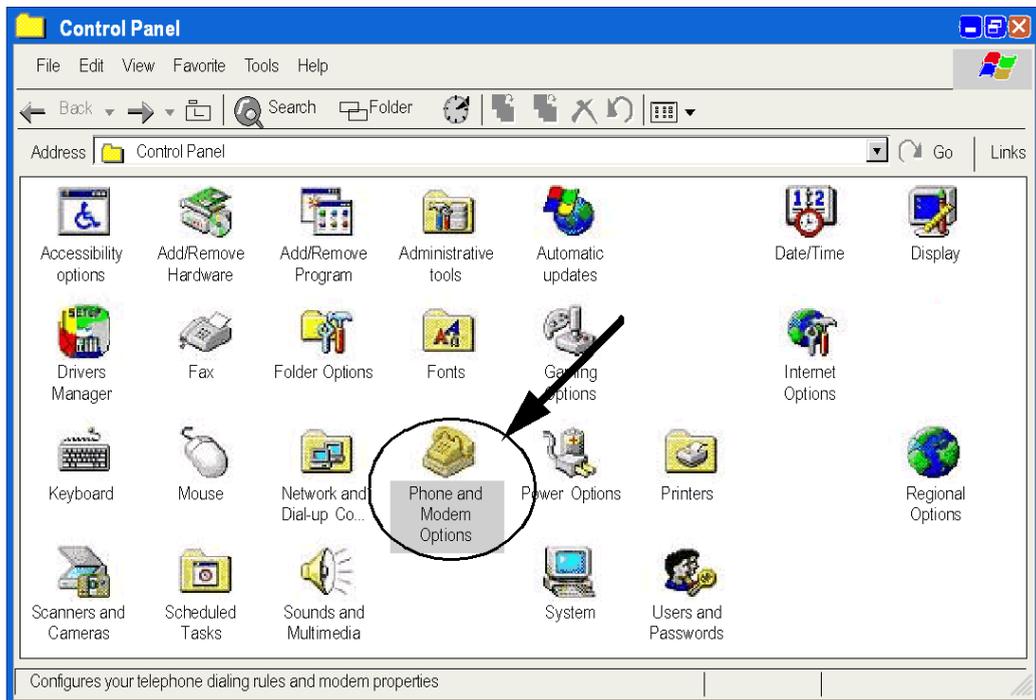
## How to configure the Modbus modem with Windows

### At a glance

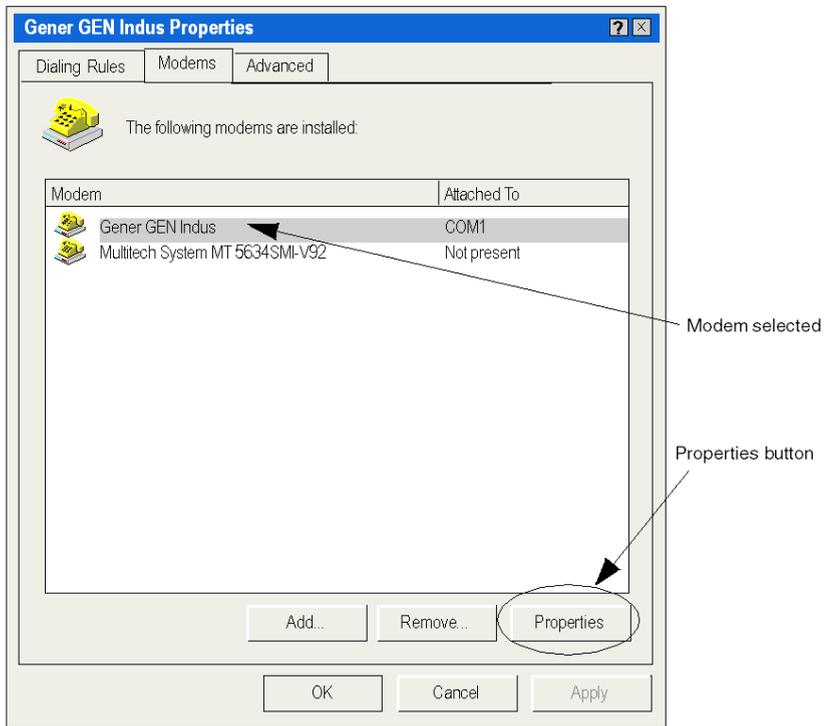
This section explains how to configure the Modbus modem with Windows Operating System when the check button **Use Modem** is selected in the driver configuration screen (*see page 15*).

### Procedure

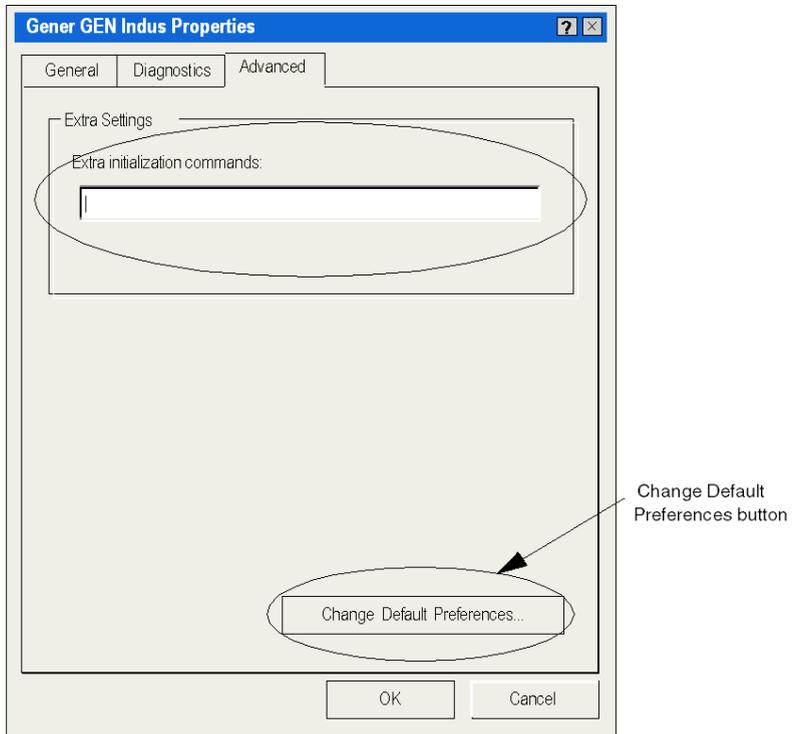
In the Windows control panel, select the icon **Phone and Modem options**.



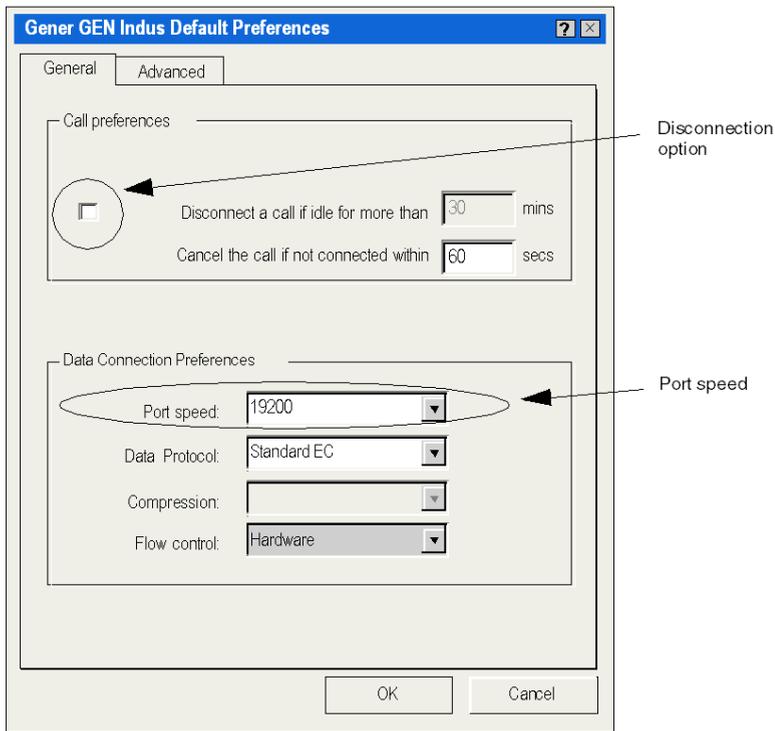
Open the tab **Modems**, then select the modem to configure from the list, and click on the **Properties** button.



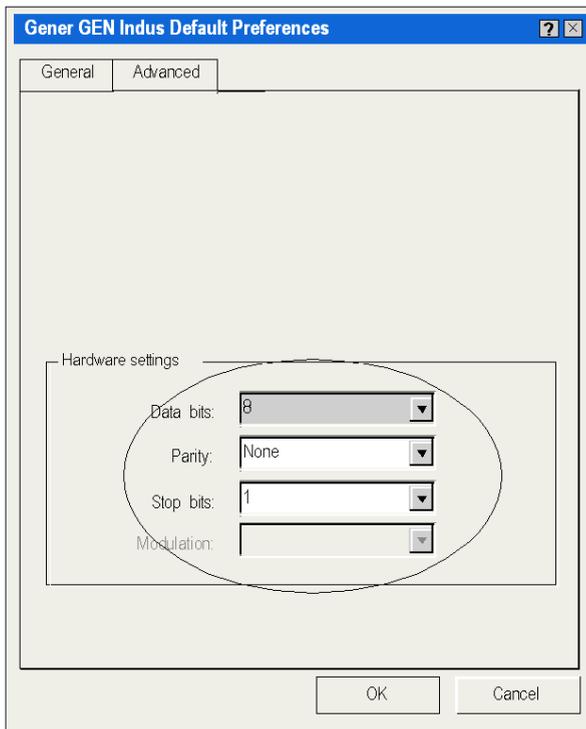
In the properties screen, enter (if needed) the Hayes initialization string of the modem, then click on **Change Default Preferences** button.



In the **Default preferences** screen, enter the same speed as the modbus driver, uncheck the disconnection option, then click on the **Advanced** tab.



Enter the same parameters as those entered in the driver Modbus configuration screen. Then click on **OK** button to validate the modifications.



The modem is now configured to use with Modbus driver.



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# Chapter 3

## PLC USB Driver

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### State of the USB Link

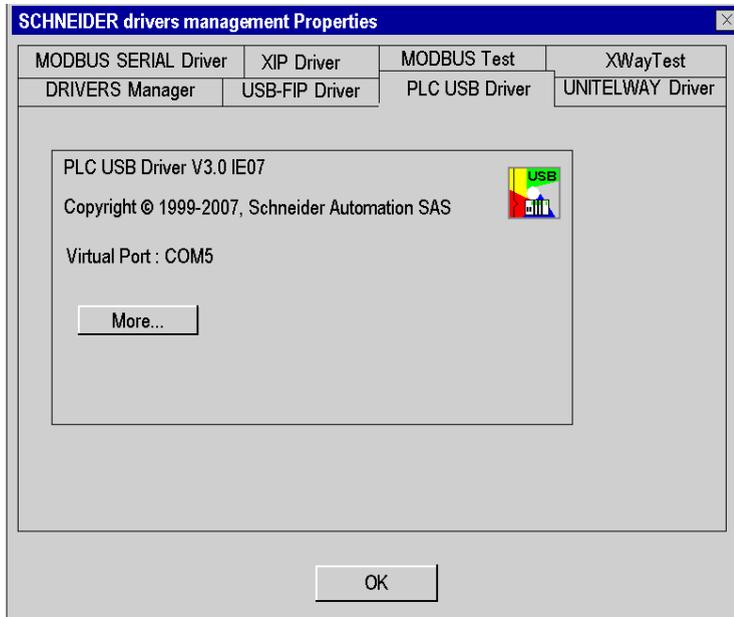
#### At a Glance

To display the state of the USB link click:

**Start → Control Panel → Drivers Manager**

#### Driver Properties With Win 7, Win 8.1, and Win 10

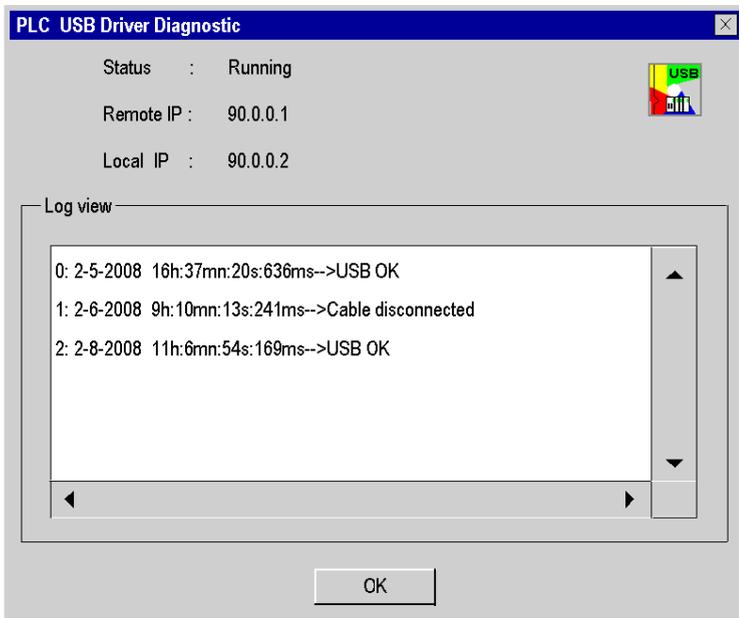
Select the **PLC USB Driver** tab to display the driver information:



USB management window description:

Field	Description
Virtual Port	Name of the COM port used by the driver.

To diagnose the USB connection, click **More....**

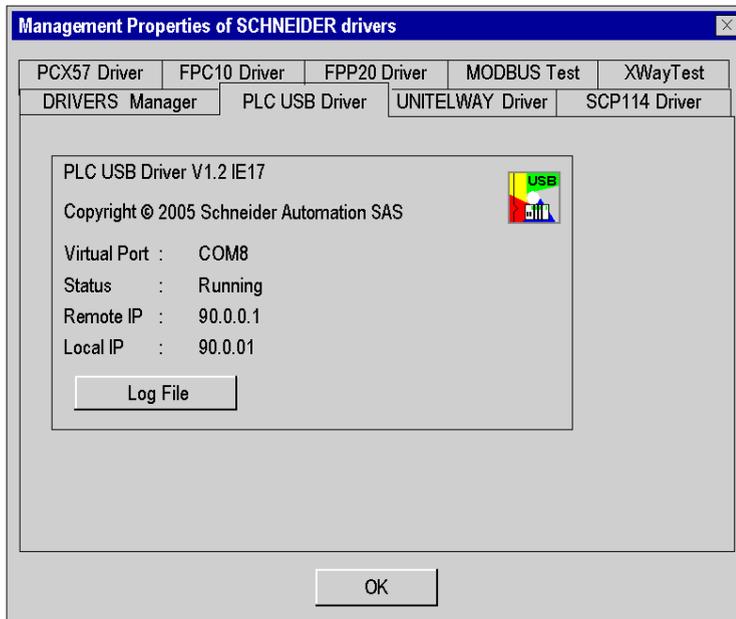


USB diagnostic window description:

Field	Description
Status	<ul style="list-style-type: none"> <li>● <b>"Running"</b> if the driver is operating.</li> <li>● <b>"Not operational"</b> if the driver is not operating.</li> <li>● <b>"Disconnected"</b> if the USB cable is not connected.</li> </ul>
Remote IP \ Local IP	IP addresses used by the PC and PLC to communicate.

## Driver Properties With Win XP

Select the **PLC USB Driver** tab to display the driver information and USB connection diagnostic:



USB management window description:

Field	Description
<b>Virtual Port</b>	Name of the COM port used by the driver.
<b>Status</b>	<ul style="list-style-type: none"> <li>● <b>"Running"</b> if the driver is operating.</li> <li>● <b>"Not operational"</b> if the driver is not operating.</li> <li>● <b>"Disconnected"</b> if the USB cable is not connected.</li> </ul>
<b>Remote IP \ Local IP</b>	IP addresses used by the PC and PLC to communicate.
<b>Log File</b>	Button to access a *.log file containing connection/disconnection events on the USB line.



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# Chapter 4

## Uni-Telway Driver for Serial Port

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### Subject of This Chapter

This chapter describes the configuration of the Uni-Telway driver communicating in slave mode on the serial port with a remote device.

For installation information, refer to the Driver Installation chapter (*see page 11*).

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Driver Configuration Screens	34
How to Configure the Driver	38

## Driver Configuration Screens

### At a Glance

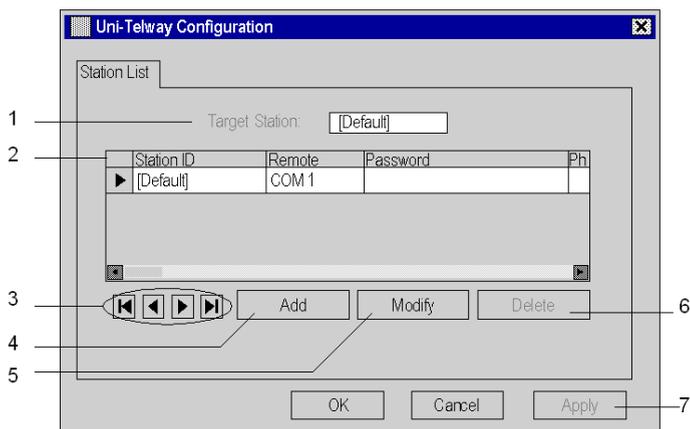
The configuration tool is used to link a driver configuration profile to a remote device that communicates with the station.

The configuration tool can be accessed from the taskbar **Start** → **Control panel** → **Drivers Manager**. Refer to Drivers Manager chapter (*see page 67*).

Select the tab corresponding to the driver to be configured in the **Drivers Manager** window.

### Illustration

Screen dedicated to the Uni-Telway driver:



Configuration screen areas:

Number	Element
1	This field is used to display the active profile.
2	This list is used to display the driver profile associated with each remote device.
3	These buttons are used to select the driver profile.
4	This button is used to add new profiles to the list.
5	This button is used to modify the profile of the driver selected from the list.
6	This button is used to remove a profile from the list.
7	This button is used to make the profile selected with the cursor active.

## Uni-Telway Parameters

The parameters are accessed in the **Parameters of the Station** window.

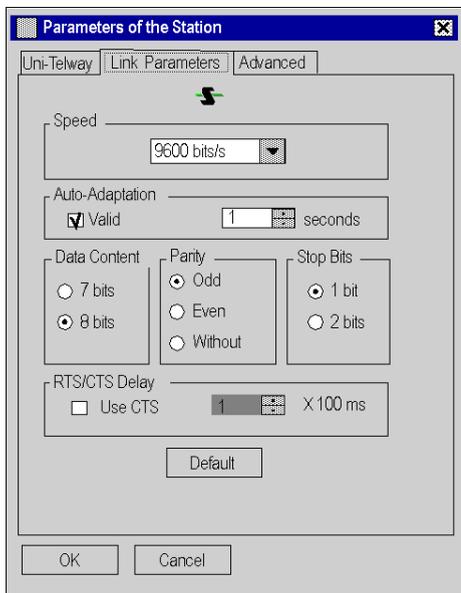
Click **Add** on the Uni-Telway configuration screen (*see page 34*) to reach the **Parameters of the Station** window. **Uni-Telway** tab appears as follows:

Uni-Telway tab parameters:

Element	Description
<b>Station ID</b>	The <b>Station ID</b> is used to name the remote device associated with the driver configuration.
<b>COM Port</b>	The <b>COM Port</b> is used to select the communication port used.
<b>Uni-Telway Slave address</b>	The <b>Uni-Telway Slave address</b> window is used to enter: <ul style="list-style-type: none"> <li>• The standard slave address of the driver.</li> <li>• The number of slave addresses used by the driver.</li> </ul>
<b>Communication Modem</b>	The <b>Communication Modem</b> window is useful when the local station is communicating via a modem. In this case, this window is used to enter: <ul style="list-style-type: none"> <li>• The <b>HAYES</b> string to be sent to the modem in order to initialize it.</li> <li>• The call number of the remote device.</li> <li>• The password to be sent to the remote device. If it has been configured with a list of callers with passwords (for example, TSX MDM 10 card configured with passwords).</li> </ul>

## Link Parameters

Link Parameters tab:

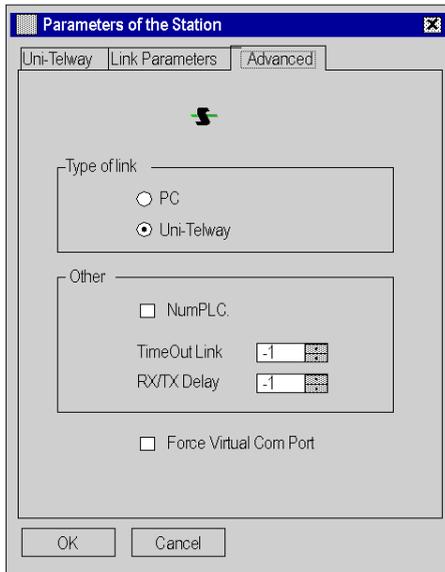


Link Parameters tab parameters:

Element	Description
<b>Speed</b>	This area enables to set transmission speed of from 300 to 115,200 bits/s.
<b>Auto-Adaptation</b>	Self-adaptation of speed (time during which the driver tries to connect at a given speed).
<b>Data Content</b>	The <b>Data Content</b> specifies the size of the data exchanged over the line.
<b>Parity</b>	This area is used to set whether a parity bit is added or not, as well as its type.
<b>Stop Bits</b>	This area is used to enter the number of stop bits used for communication.
<b>RTS/CTS Delay</b>	This area enables the CTS signal to be used in the event of multidrop communication.
<b>Default</b>	The <b>Default</b> button is used to reset all these parameters to their default value.

## Advanced Parameters

Advanced tab:



Advanced tab parameters:

Element	Description
<b>PC</b>	Uses the driver to connect to a series 7 PLC terminal port.
<b>Uni-Telway</b>	Default value, uses the driver to communicate in Uni-Telway.
<b>NumPLC</b>	Uses the driver to connect to Num PLCs <ul style="list-style-type: none"> <li>● <b>TimeOut Link:</b> By default set to -1; is used to set the maximum time for detecting the right transmission speed.</li> <li>● <b>RX/TX Delay:</b> By default set to -1; is used to extend the return time (if the station is too fast).</li> </ul>
<b>Force Virtual Com Port</b>	Must be checked if the Uni-Telway driver uses a virtual communication port except for use with the TSX PCX 0303 / TSXCUSB485 / TSXCUSB232 cables.

## How to Configure the Driver

### At a Glance

During driver installation, a default profile is proposed. This profile can be modified or a new one created.

### How to Create a New Profile

From the driver Uni-telway configuration screen (*see page 34*):

Step	Action
1	Click on the <b>Add...</b> button. <i>see Uni-Telway Parameters, page 35.</i>
2	Enter station name.
3	Select <b>COM port</b> .
4	Define the driver slave address.
5	If the driver uses a modem to communicate, select the <b>Use modem</b> box and enter the different fields associated with it.
6	Select the <b>Link parameters</b> ( <i>see page 36</i> ) tab.
7	Configure the transmission parameters according to the remote device (baud rate, parity, data bits, etc.).
8	If the driver requires specific configuration, click on the <b>Advanced</b> ( <i>see page 37</i> ) tab and configure the parameters according to the remote device.
9	Accept the configuration by clicking on <b>Ok</b> . <b>Result:</b> the new configuration appears in the list.

### How to Modify a Profile

From the Uni-telway configuration screen (*see page 34*):

Step	Action
1	Select a configuration profile from the list. <b>Result:</b> the cursor moves to the selected line.
2	Click on the <b>Modify</b> button; <i>see Uni-Telway Parameters, page 35.</i>
3	Modify the parameters according to the remote device.
4	Select the <b>Link parameters</b> ( <i>see page 36</i> ) tab and modify the transmission parameters according to the remote device (speed, parity, data, etc.).
5	If the driver requires specific configuration, click on the <b>Advanced</b> ( <i>see page 37</i> ) tab and modify the parameters according to the remote device.
6	Accept the configuration by clicking on <b>Ok</b> . <b>Result:</b> the new configuration appears in the list.

### How to Remove a Profile

From the Uni-telway configuration screen (*see page 34*):

Step	Action
1	Select a configuration profile from the list. <b>Result:</b> the cursor moves to the selected line.
2	Click on <b>Delete</b> .
3	Press the <b>Yes</b> button to confirm your choice. <b>Result:</b> the configuration is removed from the list.

### How to Activate a Profile

From the Uni-telway configuration screen (*see page 34*):

Step	Action
1	Select a profile from the list. <b>Result:</b> the cursor moves to the selected line.
2	Click on the <b>Apply</b> button.



---

# Chapter 5

## XIP Driver on TCP/IP

---

### Subject of This Chapter

This chapter describes the XIP driver configuration.

This driver is used to communicate via an Ethernet card using the X-Way protocol on TCP/IP.

For installation information, refer to the Driver Installation chapter (*see page 11*).

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Driver Configuration Screen	42
How to Configure the Driver	44

## Driver Configuration Screen

### At a Glance

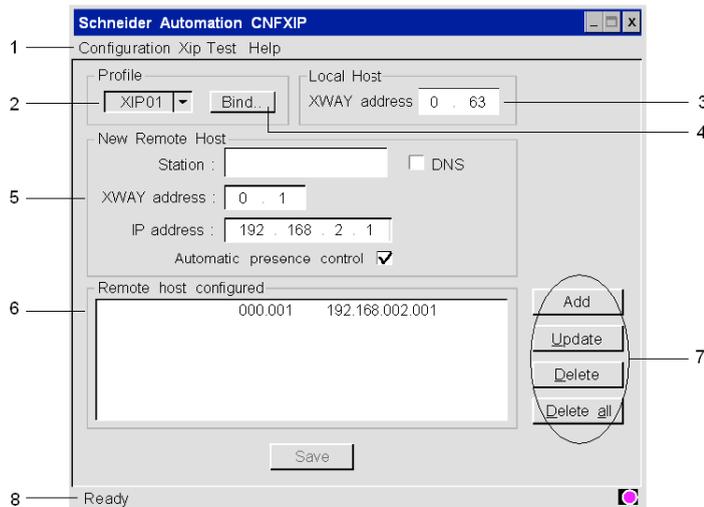
The configuration tool is used to link a driver configuration profile to a remote device that communicates with the station.

Access the **Drivers Manager** from the taskbar: **Start** → **Control Panel** → **Drivers Manager**. Refer to Drivers Manager Chapter (see page 67).

Choose the tab corresponding to the driver to be configured and click **Configure**.

### Illustration

The screen dedicated to the XIP driver looks like this:

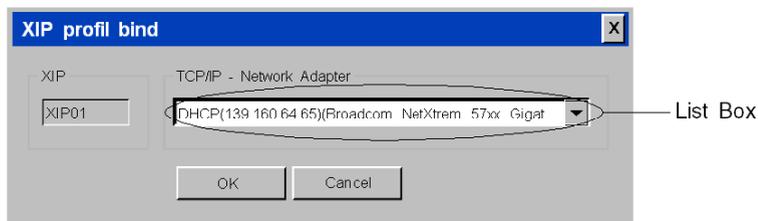


**Legend:**

Number	Element
1	All software functions can be accessed using this menu bar: <ul style="list-style-type: none"> <li>● <b>Configuration:</b> Creation or deletion of a profile.</li> <li>● <b>Xip:</b> Start, stop or reinitialize the driver.</li> <li>● <b>Test:</b> Test request transmissions with options: <ul style="list-style-type: none"> <li>○ <b>UNI-TE Mirror:</b> Request to send and receive a series of characters to/from a device supporting the UNI-TE protocol.</li> <li>○ <b>Ping:</b> Standard ping to test for the presence of the station on the network.</li> </ul> </li> <li>● <b>Help:</b> Information on the software.</li> </ul>
2	The profile used by the driver is selected from this list.
3	The X-Way address of the station is configured from this window.
4	Opens a dialog box to choose a network interface (IP address / network adapter) on which the profile is linked. This interface is used to communicate with the PLC.
5	The new remote host, with remote devices associated to the driver is set from this window. By checking the <b>Automatic presence control</b> option, you confirm a control of the workstation on the network.
6	Remote host configured with remote devices can be viewed via this list. Using the character "***" allows you to make a multiple selection in the next screen 002. * stands for all stations on network 2. <b>Note:</b> If you wish to communicate with a station across one or more bridges, you must not only indicate the address of the station but also that of the first bridge crossed.
7	Connections can be added, removed, or redefined with these buttons.
8	This status bar contains an operating indicator (driver stopped or started) with a comment zone.

**Binding**

When clicking **Bind...**, the following window appears:



**List Box:** Menu containing IP addresses associated to the different network adapter installed on the computer.

Menu description:

- DHCP: The IP address is associated to a DHCP server.
- (xxx.xxx.xxx.xxx): IP address.
- (xxxxxxxx xxxxxxxx xxxx xxxxx): Adapter name.

## How to Configure the Driver

### At a Glance

During driver installation, a default configuration profile is proposed. You are able to modify this profile or create a new one.

**NOTE:** If all the network connections are in use or if there are none on the station, a profile cannot be created.

### How to Create a New Profile

From the driver configuration screen: (*see page 42*)

Step	Action
1	Select the menu <b>Configuration</b> → <b>Create a profile</b> . <b>Result:</b> This type of window appears: <div style="text-align: center;">  </div>
2	From the <b>TCP/IP - Network Adapter</b> menu, select the TCP/IP connection to the network.
3	Click <b>Ok</b> .

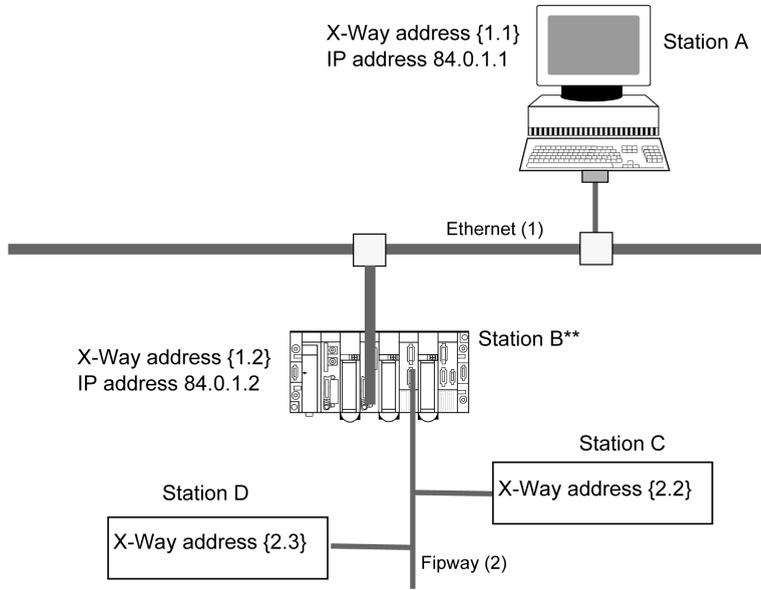
### How to Remove a Profile

From the driver configuration screen (*see page 42*):

Step	Action
1	Select the menu <b>Configuration</b> → <b>Remove a profile</b> .
2	From the menu, select the profile to be removed.
3	Confirm deletion with <b>Ok</b> .

## Example

The architecture below describes the addressing of stations on Ethernet and Fipway networks:



\*\* : Station B is configured as a Router (Bridge) between the Ethernet (1) network and the Fipway (2) network. This configuration is set up using Control Expert.

## Access to Stations

To access directly all the stations on the Ethernet 1 network from station **A**, enter the X-Way address {1.\*} and the IP address: 84.0.1.1.

In order for station **A** to be able to access station **B**, enter for connection the X-Way address {1.2} and the IP address: 84.0.1.2.

In order for station **A** to be able to access station **B**, enter the X-Way address {2.3} and the IP address of the bridge: 84.0.1.2.

To access directly all the station Fipway (2) network from station **A**, enter the X-Way address {2.\*} and the IP address of the first you cross.

**NOTE:** When creating a bridge connection, you must configure the X-Way address of the recipient PLC by assigning it the IP address of the bridge you cross.

### How to Add a Connection

From the configuration screen (*see page 42*):

Step	Action
1	In the <b>New Remote Host</b> window, enter: <ul style="list-style-type: none"><li>● The name of the remote station or bridge.</li><li>● The address of the remote station or bridge.</li><li>● The IP address of the remote station or bridge.</li></ul>
2	Click <b>Add</b> .
3	Click <b>Save</b> . <b>Note:</b> The configuration is saved for the current profile.

### How to Remove a Connection

From the configuration screen (*see page 42*):

Step	Action
1	In the <b>Remote Host Configured</b> window, select the name of the remote station to be removed.
2	Click <b>Delete</b> .
3	Click <b>Save</b> . <b>Note:</b> The configuration is saved for the current profile.

### How to Modify a Connection

From the configuration screen (*see page 42*):

Step	Action
1	In the <b>Remote Host Configured</b> window, select the name of the remote station to be modified.
2	In the <b>New Remote Host</b> window, modify: <ul style="list-style-type: none"><li>● The name of the remote station or bridge.</li><li>● The address of the remote station or bridge.</li><li>● The IP address of the remote station or bridge.</li></ul>
3	Click <b>Update</b> .
4	Click <b>Save</b> . <b>Note:</b> The configuration is saved for the current profile.

## How to Change a Network Interface

From the configuration screen (*see page 42*):

Step	Action
1	Select the profile to be modified in the <b>Remote Host Configured</b> window.
2	Click <b>Bind...</b> to make the XIP profile bind window appear.
3	Select the IP/Network address to be associated with the profile.
4	Click <b>Ok</b> .
5	Restart driver in the <b>XIP</b> menu to apply the modifications.

## XIP Instances

Once installed, configure the XIP driver and restart the computer. All XIP profile instances are initialized.

For each XIP profile configured, a corresponding icon appears in the task bar.



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# Chapter 6

## PCIWAY Driver for Atrium TSX PCI 57 xxx Processors

---

### Subject of This Chapter

This chapter describes how to configure the driver for TSX PCI 57 ••• processors on the PCI bus. For installation information, refer to the Driver Installation chapter (*see page 11*).

### What Is in This Chapter?

This chapter contains the following topics:

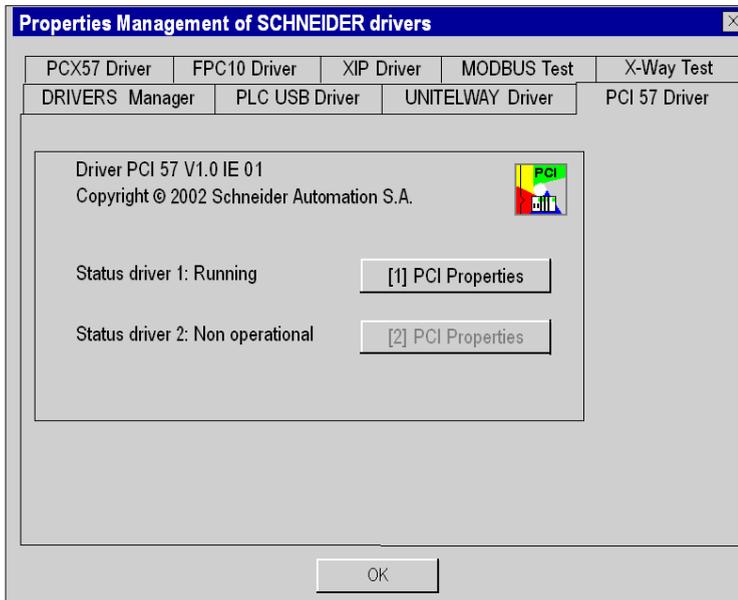
Topic	Page
Driver Configuration Screen	50
How to Adjust the Parameters of the TSX PCI 57 xxx Card	52

## Driver Configuration Screen

### Access to the Configuration Tool

The configuration tool can be accessed from the taskbar **Start → Control Panel → Drivers Manager**. Refer to Drivers Manager chapter (*see page 67*).

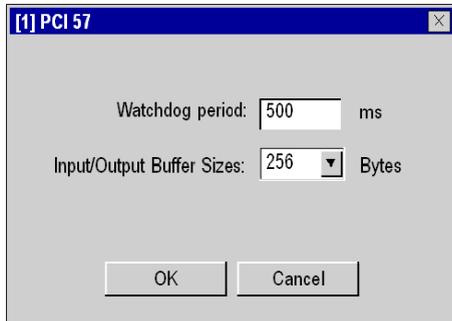
Select **PCI 57 Driver** tab to display the following window:



This window shows information on the version and status of the driver installed.

## Properties

Click the relevant **PCI properties** button to display the following window:



The table below describes the properties window:

Area	Description
<b>Watchdog period</b>	Represents the refresh period of the watchdog. The watchdog is a function enabling a non-card activity alert to be displayed in the software.
<b>Input/Output Buffer Sizes</b>	Allows the size of the buffers for the interface between the TSX PCI 57 card and the driver to be configured. The size may be set between 160...256 bytes.
<b>OK</b>	Validates the configuration; the parameters displayed are stored and the previous screen is displayed.
<b>Cancel</b>	Cancels a modification and returns to the previous screen.

## How to Adjust the Parameters of the TSX PCI 57 xxx Card

### At a Glance

Before installing the TSX PCI 57 ... card, you must:

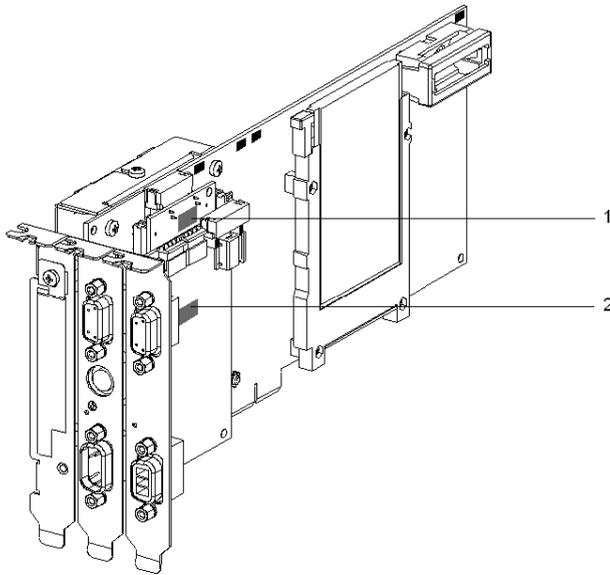
- install the PCI 57 driver,
- code the rack number on the X Bus,
- code the position of the processor in the rack.

**NOTE:** TSX PCI 57 ... cards are all "plug and play" meaning that once you have installed the driver you can simply insert the card in its slot and it will be automatically detected when the computer is next powered up.

**NOTE:** A maximum of two TSX PCI 57 ... cards can be connected.

### Illustration

This card comprises the following elements:



## Numbers and Elements

The following table describes the different parameters to be adjusted:

Number	Element
1	The address of the rack on the X Bus can be coded with the micro-switches.
2	The processor's rack position can be coded with the micro-switches.

## Procedure

To adjust the parameters, proceed in the following manner:

Step	Action
1	Code the number of the rack on the X-Bus.
2	Code the position of the processor in the rack.



---

# Chapter 7

## FIP Driver for TSX C USB FIP Card

---

### Subject of This Chapter

This chapter describes how to finish the driver installation and to configure the driver used to communicate with the TSX C USB FIP on Fipway/Fipio network.

For installation information, refer to the Driver Installation chapter (*see page 11*).

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Finishing Installation	56
Driver Configuration Screen	57

## Finishing Installation

### At a Glance

After the driver installation (*see page 11*) phase, the operating system automatically detects the TSX C USB FIP communication adapter and its driver.

### Procedure

To complete the installation:

Step	Action
1	Connect the TSX C USB FIP communication adapter to the USB port of the PC. <b>Result:</b> The system automatically detects the USB device.
2	Depending on the operating system, dialog boxes may appear: <ul style="list-style-type: none"> <li>● If no dialog box appears, the installation is carried on automatically. Go to step 4.</li> <li>● If a dialog box appears, go to step 3.</li> </ul>
3	If the operating system asks to connect to Windows update to search for the driver software, choose <b>No</b> . The next dialog should ask if it should install the software automatically or from a specific location, choose <b>Install the software automatically (Recommended)</b> and reply is prompted to continue the installation.
4	Installation is completed

## Driver Configuration Screen

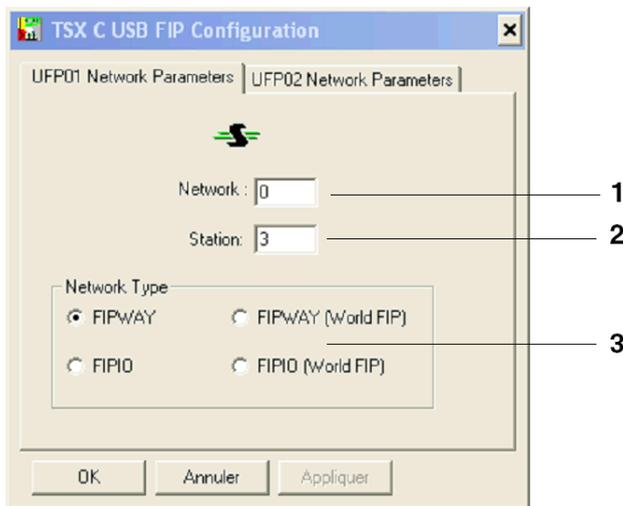
### At a Glance

With the driver configuration tool, you can configure the driver in Fipway network or Fipio network to use the TSX C USB FIP communication adapter.

The configuration tool can be accessed from the taskbar **Start** → **Control Panel** → **Drivers Manager**. Select the driver to be configured.

### Illustration

Card configuration screen:



Configuration screen description:

Number	Element
1	This field is used to set the network address (from 0 to 127).
2	This field is used to set the station address (from 0 to 63).
3	This window is used to select the connexion type.



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# Chapter 8

## TSX C USB 485 / TSX C USB 232 Cable Drivers

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### Subject of This Chapter

This chapter describes the installation and configuration of drivers for the TSX C USB 485 and TSX C USB 232 cables. These cables are USB/RS-485 or USB/RS232 serial link converters.

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
How to Install The Drivers for TSX C USB 485 / TSX C USB 232 Cables	60
Configuration Screens for TSX C USB 485 / TSX C USB 232 Cable Drivers	64

## How to Install The Drivers for TSX C USB 485 / TSX C USB 232 Cables

### At a Glance

The TSX C USB 485 / TSX C USB 232 cables are USB/RS-485 or USB/RS232 serial link converters. They are used to connect a device with a USB port to a PLC.

The cables are "plug 'n' play". When you connect the cable via the USB port to the PC, the operating system (Win 7 or Win 8.1) finds a new device and installs the corresponding driver.

Two drivers are installed:

- The USB bus driver
- The virtual serial port driver

**Installation**

**Important:** Before connecting the cables to the USB port on the PC, you must install the Uni-Telway driver, or the Modbus serial line driver. The cable drivers are pre-installed when installing the Uni-Telway or Modbus driver.

Procedure to install both drivers required to use the TSX C USB 232 or TSX C USB 485 cable:

Step	Action
1	<p>Connect the cable to the USB port of your device.</p> <p><b>Result:</b> Windows detects the new hardware and installs the drivers.</p> <p><b>NOTE:</b> Win XP displays an assistant for installing the device drivers. Select the automatic installation and follow the instructions displayed until the installation is finished.</p>
2	<p>To determine the COM port that the cable was mapped to, open the <b>Device Manager</b> property sheet (<b>Start → Control Panel → System and Security → Device Manager</b>).</p> <p>A window is displayed with the reference of the cable and the number of the COM port as in the following example:</p> <div data-bbox="271 634 1153 1268" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>The screenshot shows the Windows Device Manager window for a computer named 'SO-ROBIN'. The 'Ports (COM &amp; LPT)' category is expanded, showing three devices: 'Communications Port (COM1)', 'ECP Printer Port (LPT1)', and 'TSX C USB 232 (COM8)'. The 'TSX C USB 232 (COM8)' device is circled in black, and an arrow points from the text 'Cable reference and com port' located below the screenshot to this device.</p> </div>

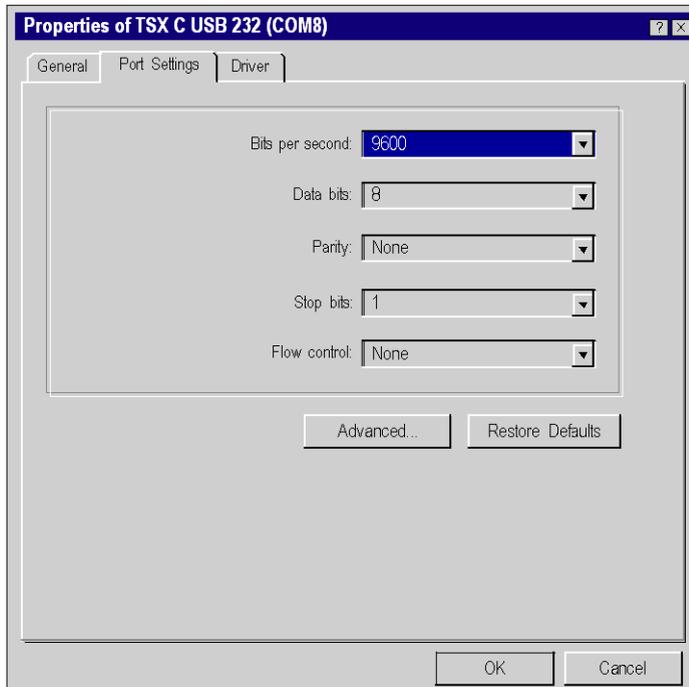
## COM Port Number

When the driver is installed, you can assign it to another communication port number.

## Changing the COM Port Number

The following example describes how to change the COM port of a TSX C USB 232 cable configured on COM8. The COM port will be reconfigured to COM13.

From the **Device Manager**, select the COM8 port and open **Properties** to access the port settings:



Select **Port Settings** tab of the COM8 properties, click **Advanced....** The following window displays:

**Advanced Settings for COM8**

COM Port Number: **COM13**

USB Transfer Sizes

Select lower settings to correct performance problems at low baud rates:  
Select higher settings for faster performance.

Receive (Bytes): **4096**

Transmit (Bytes): **4096**

BIM Options

Select lower settings to correct response problems:

Latency Timer (msec): **16**

Timeouts

Minimum Read Timeout (msec): **0**

Minimum Write Timeout (msec): **0**

Miscellaneous Options

Serial Enumerator

Serial Printer

Cancel If Power Off

Event On Surprise Removal

Set RST On Close

Disable Modem Ctrl At Startup

OK  
Cancel  
Defaults

Select port **COM13**, and confirm with **OK**.

Disconnect and reconnect the **TSX C USB 232** cable in order to take the new settings into account.

## Configuration Screens for TSX C USB 485 / TSX C USB 232 Cable Drivers

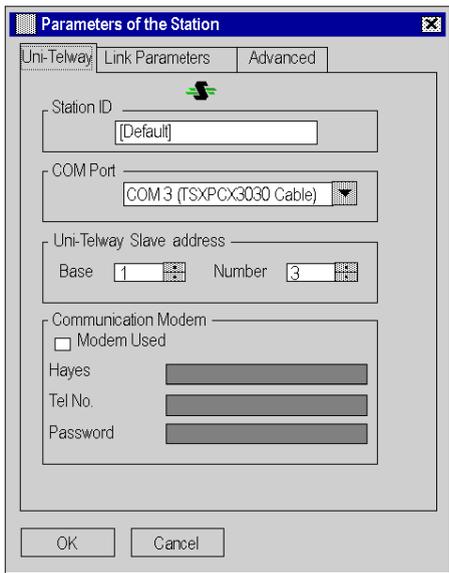
### At a Glance

When the drivers of the TSX C USB 485 and TSX C USB 232 cables are installed, select the cables with the drivers that can use them. The compatible drivers are:

- Uni-Telway driver, version ≥ V1.8,
- Modbus driver, version ≥ V1.5.

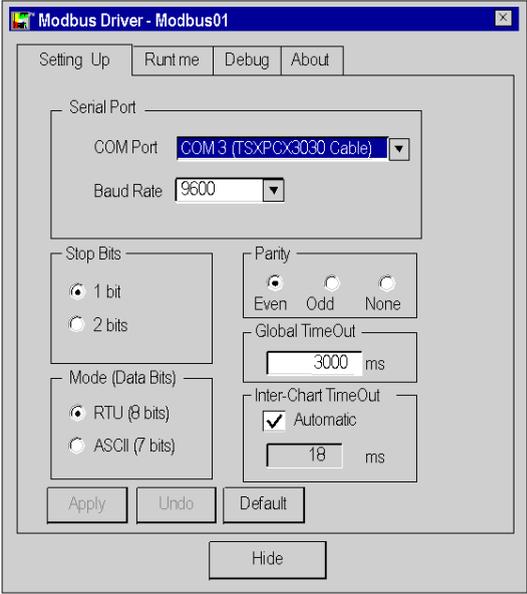
### Uni-Telway Driver

Procedure to declare the cable with the Uni-Telway driver:

Step	Action
1	Access the <b>Drivers Manager</b> from the taskbar: <b>Start</b> → <b>Control Panel</b> → <b>Drivers Manager</b> . Refer to Drivers Manager chapter ( <i>see page 67</i> ).
2	In the <b>Drivers Manager</b> , select <b>UNITELWAY Driver</b> tab.
3	Click <b>Configuration</b> .
4	Click <b>Edit</b> . <b>Result:</b> The station parameters window appears.
	
5	In <b>COM Port</b> field, select the communication port associated with the cable ( <i>see page 62</i> ).

## Modbus Driver

Procedure to declare the cable with the Modbus driver:

Step	Action
1	Access the <b>Drivers Manager</b> from the taskbar: <b>Start → Control Panel → Drivers Manager</b> . Refer to Drivers Manager chapter ( <i>see page 67</i> ).
2	In the <b>Drivers Manager</b> , select <b>MODBUS SERIAL Driver</b> tab.
3	<p>Click <b>Configuration</b>.  <b>Result:</b> The <b>MODBUS driver</b> window appears.</p> 
4	In <b>Serial Port/Modem</b> field, select the communication port associated with the cable ( <i>see page 62</i> ).



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# Chapter 9

## Drivers Manager

---

### Subject of This Chapter

This chapter describes the **Drivers Manager** management software and its functions.

Specific information on the configuration screens for individual drivers can be found in the chapters on those drivers. The remaining tabs in the **Drivers Manager** are described here.

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Management of Drivers	68
X-Way addressing modes	73

## Management of Drivers

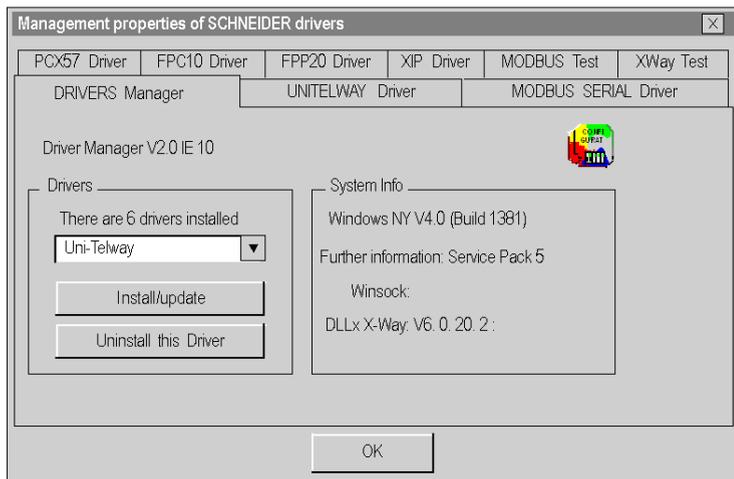
### At a Glance

This **Drivers Manager** is used to install, update, configure, and test the different drivers in a centralized manner.

### Accessing the Drivers Management Tool

Access the **Drivers Manager** from the task bar: **Start** → **Control Panel** → **Drivers Manager**.

Select the **Drivers Manager** tab, and the following window is displayed:



### Drivers Manager Tab

This tab is used to:

- View the list of installed drivers.
- Install or update a driver.
- Delete a driver.

## Drivers Tabs

Each driver tab is described in the following chapters:

**Modbus serial driver:** Refer to Configuration of the Modbus Driver (*see page 14*).

**Uni-Telway driver:**

- If using a serial port refer to Uni-Telway Driver for Serial Port (*see page 33*).
- If using a TSX SCP 114 card refer to Uni-Telway driver for TSX SCP 114 Card (*see page 121*).

**USB driver:** Refer to PLC USB Driver (*see page 29*).

**XIP driver:** Refer to XIP Driver on TCP/IP (*see page 41*).

**TSX C USB FIP driver:** Refer to FIP Driver for TSX C USB FIP Card (*see page 55*).

**FPP20 driver:** Refer to FIP Driver for TSX FPP 20 Card (*see page 89*).

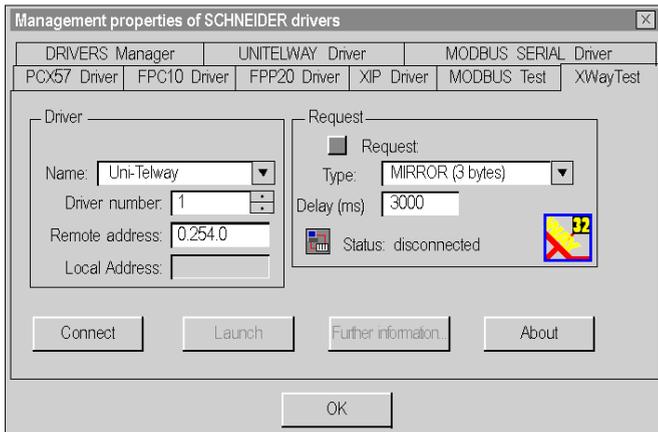
**FPC10 driver:** Refer to FIP Driver for TSX FPC 10 ISA Card (*see page 93*).

**PCI 57 driver:** Refer to PCIWAY Driver for Atrium TSX PCI 57 xxx Processors (*see page 49*).

**PCX 57 driver:** Refer to ISAWAY driver for Atrium TPCX 57 processors (*see page 105*).

## XWAY Test Tab

The **XWAY Test** tab is used to test the basic operation of an X-Way driver:



The table below describes the **XWAY Test** window:

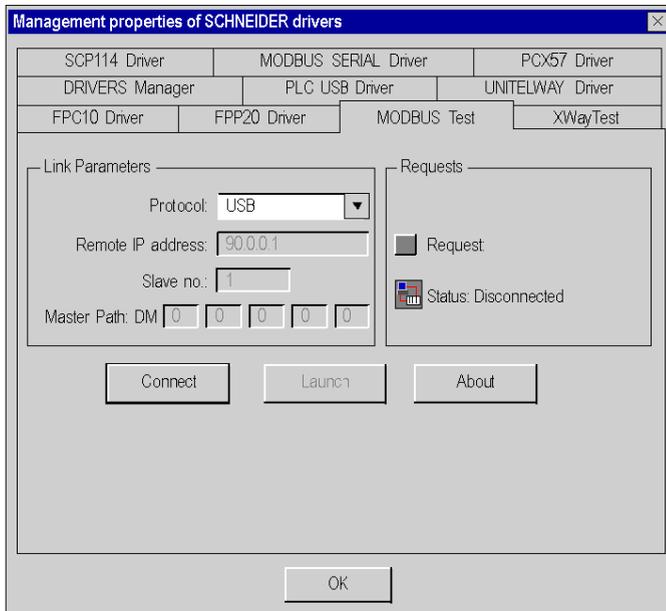
Driver Group	
Field	Description
<b>Name</b>	Name of driver to be used for the test (Uni-Telway, FPC10).
<b>Driver number</b>	Instance number of driver to be used for the test (usually 1).
<b>Remote Address</b>	X-Way remote station address in the format "network.station.gate". The address <b>0.254.0</b> is the default address (terminal port for example). For a network connection (such as Fipway), the user must complete this field. For example: <b>3.5.0</b> to address station 5 of network 3. Gate 0 corresponds to the system server gate of the station. Refer to X-Way addressing modes ( <i>see page 73</i> ) page for more information.
<b>Local Address</b>	Internal address used locally by the driver. The driver completes this field automatically for information purposes when the connection becomes effective.

Request Group	
Field	Description
<b>Request</b>	Name of driver to be used for the test (Uni-Telway, FPC10).
<b>Type</b>	Type of request. Different sizes of mirror requests are suggested, as well as reading the PLC system bit %S6.
<b>Delay</b>	Wait timeout in ms for the response to the transmitted request (time out).
<b>Status</b>	Status of the connection: <b>disconnected</b> , <b>connecting...</b> or <b>connected</b> .

Buttons	
Object	Description
<b>Connect</b>	Opens an internal communication channel on the selected driver.
<b>Launch</b>	Launch request transmission to the station defined in the <b>Remote address</b> field of the <b>Driver</b> group.
<b>Further information...</b>	Displays system information about the driver. This button is active in online mode only.
<b>About</b>	Displays X-Way manager version and copyright details.

## MODBUS Test Tab

This tab is used to test the basic operation of a Modbus driver:



The table below describes the **MODBUS Test** window:

Link Parameters Group	
Field	Description
<b>Protocol</b>	Name of protocol used (USB, TCP, Serial Modbus, Modbus Plus).
<b>Remote IP address</b>	If TCP is being used, then the IP address or machine name is shown here.
<b>Slave No.</b>	If Serial Modbus protocol is being used, then the slave number is shown here.
<b>Master Path: DM</b>	If Modbus Plus protocol is being used, then the station address is shown here.

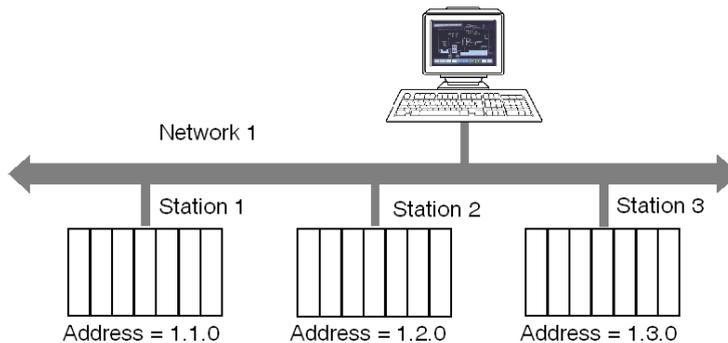
Request Group	
Field	Description
<b>Request</b>	Request.
<b>Status</b>	Status of the connection: <b>disconnected</b> , <b>connecting...</b> or <b>connected</b> .

Buttons	
Object	Description
<b>Connect</b>	Opens an internal communication channel on the selected driver.
<b>Launch</b>	Launch request transmission to the station defined in the <b>Remote IP address</b> field of the <b>Link Parameters</b> group.
<b>About</b>	Displays X-Way Manager version and copyright details.

## X-Way addressing modes

### Description

Example of access through a network:



### Addressing to 3 levels:

Allows a station connected to the network at any point of the X-Way communication architecture to be reached.

Illustration:



The Network and Station values make up the station address.

- Network: value between [1.127] or 0 = my network.
- Station: value between [1.63] or 254 = my station or 255 = diffusion.

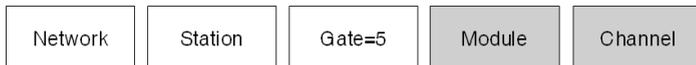
The value "Gate" refers to the communication entity within the station: system server (Gate 0, the most common), the terminal port (Gates 1,2,3), 1K asynchronous server (Gate 7), etc.

In the case of multiprocessor stations such as PLCs, each processor module built into the system can support communication entities, frame routing requiring supplementary addressing levels (inter-station routing capabilities). PLC "processor modules" are situated in the PLC's racks or offset on field buses.

**Addressing to 5 levels:**

It is generally used for devices connected on a Uni-Telway bus.

Illustration:

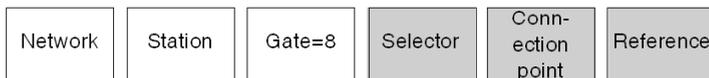


- **Module:** physical location of the communication module in the rack. Its value must be defined as follows:  $(\text{Master rack number} * 16) + \text{Number of master module}$ .
- **Channel:** address of the device connected to the communication module. Its value must be defined as follows:  $(\text{Master channel number} * 100) + \text{slave Ad0 number}$ .

**Addressing to 6 levels:**

This is similar to addressing to 5 levels. It was created for extended services (FIPIO, communication module integrated in rack).

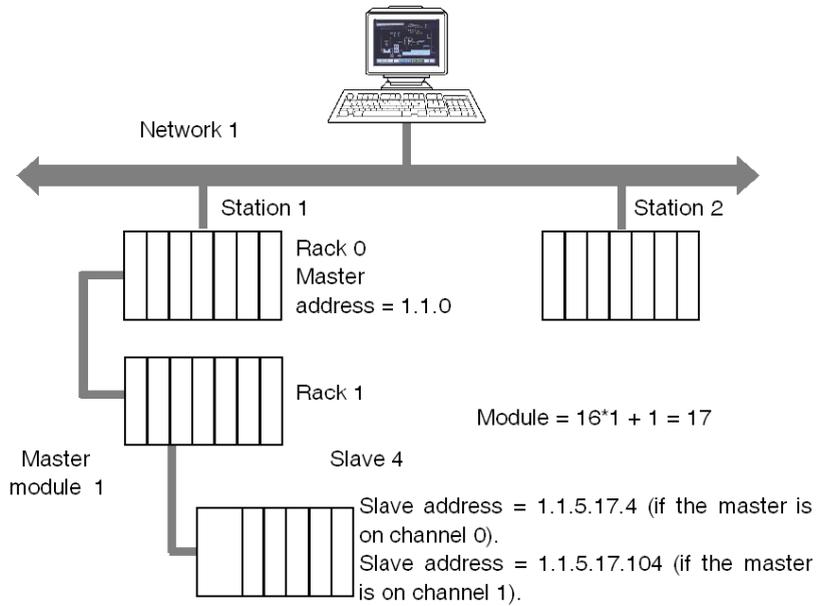
Illustration:



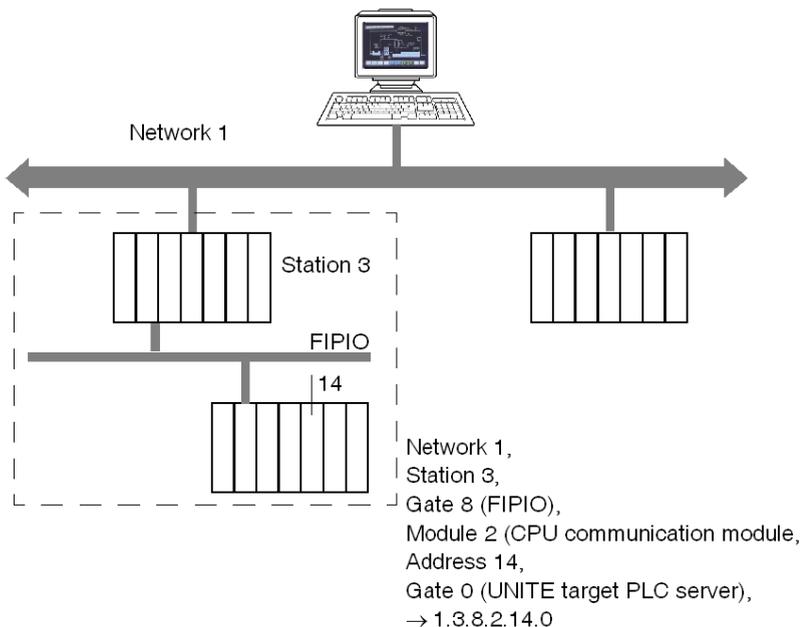
- **Selector:** designates a communication module on the CPU (2) or in a separate module (1).
- **Connection point:** device address, if the destination module is FIPIO. Physical positioning in the PLC rack, if the destination module is a PLC card.
- **Reference:** communication entity in the device (similar to the Gate number).

**Examples:**

5 level addressing:



6 level addressing:



For more information on the X-Way address, see "X-Way Communication" documentation, ref. TSX DR NET.

**NOTE:** In point to point connections (Uni-Telway, ISAway, PCIway), the default address 0.254.0 can be used to reference the PLC.

0.254.0 can be used to access to the Fipio Master when we are connected through the privileged terminal @63

0.254.5.17.104 can be used to access to the Uni-Telway slave @4 which is connected on the rack 1 module 1 channel 1 when we are connected on the local PLC.

0.254.8.2.14.0 can be used to access to the Fipio connection point 14 when we are connected through the privileged terminal @63.

With Ethway and XIP, it is possible to use gate 7, which accepts large frames (up to 1024 bytes). In order to do this, the PL7 application must be configured in periodic mode (MAST task). The "1K service" option must be checked in the alias definition page.

**Example:** normal address: XIP01:1.2, to use gate 7: XIP01:1.2.7

---

# Chapter 10

## Troubleshooting

---

### Subject of This Chapter

This chapter presents the installation and configuration troubleshooting.

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Installation Troubleshooting	78
Configuration Troubleshooting	80

## Installation Troubleshooting

### Introduction

This troubleshooting table helps you find solutions to difficulties you may encounter during the installation of your device driver.

### Difficulties and Solutions

Identify your difficulty in the left column, and follow the corresponding solution instructions on the right:

Difficulty	Solution
The drivers have not been installed during Control Expert installation.	Contact your administrator to install the drivers.
During the installation, a driver setup dialog box appears "You are not administrator, you cannot install drivers".	You must be administrator in order to install drivers. Make sure that you have administrator rights.
The driver cannot be installed.	<ul style="list-style-type: none"> <li>● The drivers are not compatible with your operating system. Make sure that your computer is currently running one of the operating systems mentioned in the operating system compatibility table (<a href="#">see page 9</a>).</li> </ul> <p>If this solution does not work, then:</p> <ul style="list-style-type: none"> <li>● Check / change driver signing options in system.               <ol style="list-style-type: none"> <li>1.From the start menu go to <b>Start → Control panel</b>.</li> <li>2.Double-click <b>System</b>.</li> <li>3.Choose the <b>Hardware</b> tab.</li> <li>4.Click <b>Driver Signing</b> button.</li> <li>5.Choose <b>Warn - display</b>.</li> <li>6.Click <b>OK</b>.</li> <li>7.Click <b>OK</b> to close the <b>System</b> window.</li> </ol> </li> </ul> <p><b>NOTE:</b> Validation above does not work with Windows Vista Business Edition 32 (all drivers are already signed).</p>

Difficulty	Solution
<p>When the USB device is connected, the <b>Found New Hardware Wizard</b> appears.</p>	<p>The driver may not be installed or not updated:</p> <ol style="list-style-type: none"> <li>1. Click <b>Cancel</b> from the <b>Found New Hardware Wizard</b></li> <li>2. Remove the device as follows:               <ol style="list-style-type: none"> <li>a. From the start menu, go to <b>Start → Control Panel</b></li> <li>b. Double-click <b>System</b></li> <li>c. Choose the <b>Hardware</b> tab</li> <li>d. Click the <b>Device Manager</b> button.</li> <li>e. Find the device with the yellow question mark.</li> <li>f. Right-click on that device and choose <b>Uninstall</b>.</li> <li>g. Click OK in the <b>Confirm Device Removal</b> dialog box.</li> <li>h. Disconnect the device.</li> </ol> </li> <li>3. Now install the requested driver with the supplied DVD, following the driver installation procedure (<i>see page 11</i>).</li> <li>4. Reconnect the device.</li> </ol>
<p>While installing a driver, a dialog box appears indicating to Repair/Update or Remove the driver.</p>	<p>Choose <b>Repair/Update</b> and go to step 4 of the "Installation Procedure" in the Driver Installation (<i>see page 11</i>) chapter.</p>

## Configuration Troubleshooting

### Introduction

This troubleshooting table helps you find solutions to difficulties you might encounter during the configuration of your device driver.

### Difficulties and Solution

Identify your difficulty in the left column then follow the corresponding solution instructions on the right.

Difficulty	Solution
The driver tab cannot be seen in the driver manager.	The driver tabs correspond to the drivers currently installed on your computer. Install the required driver by following the driver installation procedure ( <i>see page 11</i> ).
The drivers manager remains on the computer after uninstalling all the drivers.	<ol style="list-style-type: none"> <li>1. From the start menu, go to <b>Start → Control Panel → Programs and Features</b>.</li> <li>2. Right-click the <b>Drivers Manager</b> line, and select <b>Remove</b>.</li> </ol>
The configuration window does not appear at the end of a driver installation.	Double-click the drivers manager shortcut on your desktop. If you have no shortcut, then: <ol style="list-style-type: none"> <li>1. From the start menu, go to: <b>Start → Control Panel</b>.</li> <li>2. Double-click <b>Drivers Manager</b>.</li> <li>3. Select the tab corresponding to the driver to be configured.</li> </ol>

---

# Appendices

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## Overview

This section describes how to finish the installation and configure drivers for hardware that is no longer manufactured by Schneider Electric.

**NOTE:** The drivers described in this section are only compatible with Win XP 32. They are not delivered on Control Expert installation DVD but they are available for download on [www.schneider-electric.com](http://www.schneider-electric.com) (search for **Driver Pack V2.6**, or **Driver for TSXCUSB485 USB to RS485 converter**).

**NOTE:** The driver CD-ROM mentioned in this section refers to the CD-ROM created from the downloaded .iso file (once the drivers file is downloaded from [www.schneider-electric.com](http://www.schneider-electric.com), the file is extracted as an .iso file).

## What Is in This Appendix?

The appendix contains the following chapters:

Chapter	Chapter Name	Page
A	Ethway Driver	83
B	FIP Driver for TSX FPP 20 Card	89
C	FIP Driver for TSX FPC 10 ISA Card	93
D	ISAWAY Driver for Atrium TPCX 57 Processors	105
E	Uni-Telway Driver for TSX SCP 114 Card	121



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# Appendix A

## Ethway Driver

---

### Subject of This Chapter

This chapter describes how install and configure the Ethway driver.

This driver is used to communicate via an Ethernet card using the Ethway protocol.

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
How to Install the Driver	84
Driver Configuration Tool	86

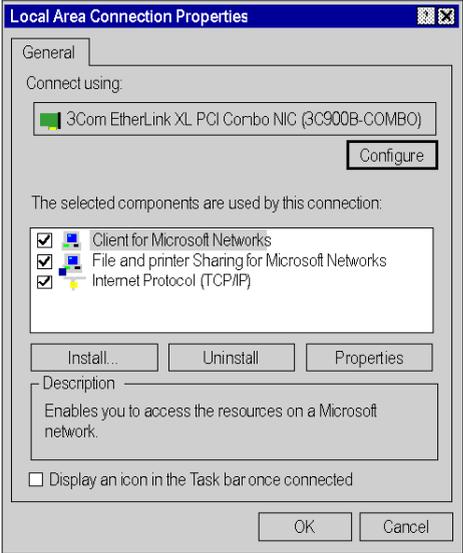
## How to Install the Driver

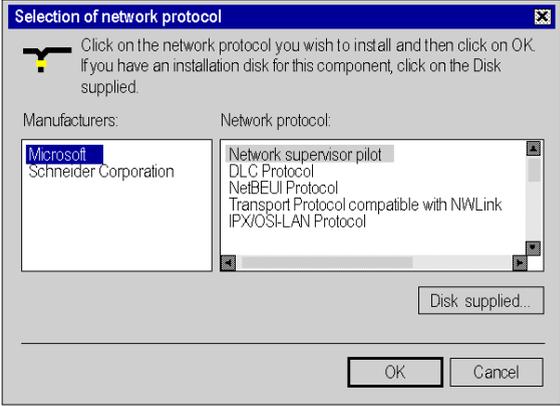
### At a Glance

The ETHWAY protocol is installed from the driver CD-ROM, but does not follow the standard driver installation procedure.

### How to Install the Driver

The ETHWAY driver is installed in accordance with the following procedure:

Step	Action
1	Insert the CD-ROM.
2	Access the <b>Control Panel</b> in Windows.
3	Double-click on the <b>Network connections and Remote access</b> icon.
4	<p>Select the icon <b>Local connection</b> then by right-clicking select the command <b>Properties</b>.</p> <p><b>Result</b> The following window appears:</p> 
5	Click on the <b>Install</b> button.

Step	Action
6	<p>In the <b>Select Network Component Type</b> window, select the type <b>Protocol</b> then click on <b>Add</b>.</p> <p><b>Result</b> The following window appears:</p> 
7	Click on <b>Have Disk</b> .
8	Select the access path of the files to be installed from the CD-ROM using the <b>Browse</b> button.
9	Click on <b>Ok</b> .
10	In this window select the <b>ETHWAY Protocol</b> then click on <b>OK</b> .
11	Select the <b>ETHWAY protocol</b> then click on <b>Properties</b> .
12	In the configuration screen ( <i>see page 86</i> ), configure the protocol then click on <b>OK</b> .
13	Complete the installation by clicking on <b>OK</b> .

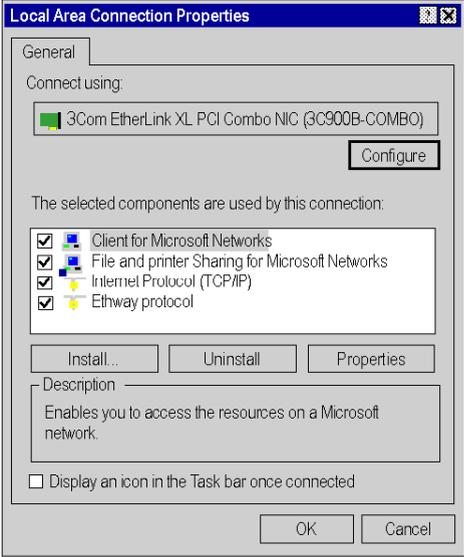
## Driver Configuration Tool

### At a Glance

The configuration tool is used to configure the Ethernet card to communicate according to the ETHWAY protocol.

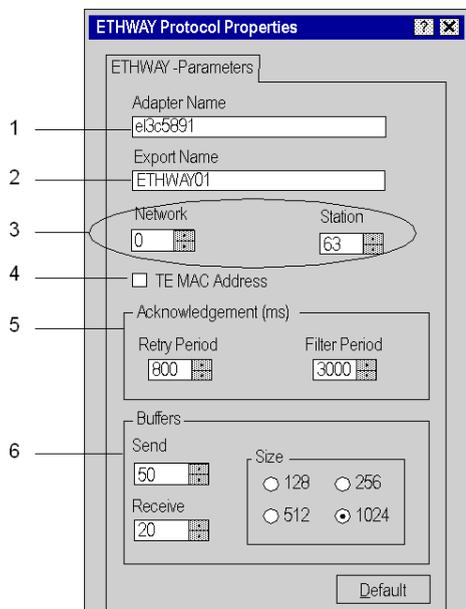
### How to Access the Configuration Tool

The ETHWAY driver configuration tool is accessed as follows:

Step	Action
1	Access the <b>Control Panel</b> in Windows.
2	Double-click on the <b>Network connections and Remote access</b> icon.
3	<p>Select the icon <b>Local connection</b> then by right-clicking select the command <b>Properties</b>.</p> <p><b>Result</b> The following window appears:</p> 
4	<p>Select the <b>ETHWAY protocol</b> then click on <b>Properties</b>.</p> <p><b>Result</b> The Ethway Configuration Screen appears.</p>

## Illustration

The card configuration screen looks like this:



## Description

This table describes the different areas which make up the configuration screen:

Number	Element
1	This field is used to select the Ethernet card (useful if there are several Ethernet cards). This field cannot be modified under Windows XP Professional Edition or Windows Vista Business Edition 32.
2	This field is used to select the ETHWAY driver instance. This field cannot be modified under Windows XP Professional Edition or Windows Vista Business Edition 32.
3	These windows are used to define the address {Network.Station} of the Ethernet card used.
4	This box is used to replace the Ethernet card's MAC address with the SCHNEIDER MAC address (00 80 F4 Network Station).
5	This window is used to configure the reception acknowledgment by defining: <ul style="list-style-type: none"> <li>the retransmission period between two frames if the remote device is not responding,</li> <li>the storage time of a frame originating from the remote device (useful for loaded networks).</li> </ul> <b>Note:</b> in general, storage time is three times the retransmission period.
6	This window is used to configure the transmission and reception buffer size in bytes.



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# Appendix B

## FIP Driver for TSX FPP 20 Card

---

### Subject of This Chapter

This chapter describes configuration of the driver used to communicate with the TSX FPP 20 card on Fipway\Fipio network.

For installation information, refer to the Driver Installation chapter (*see page 11*).

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Driver configuration screen	90
Finalizing installation	91

## Driver configuration screen

### At a Glance

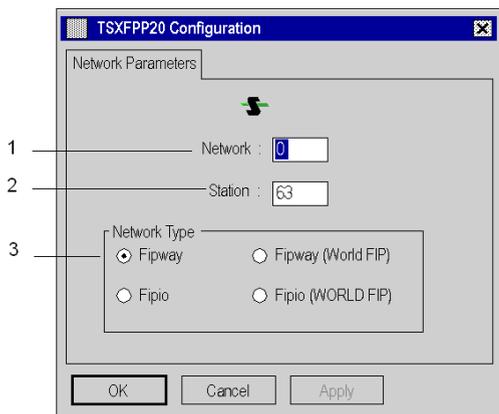
The configuration tool is used to configure the driver to use the TSX FPP 20 card on Fipway or Fipio network.

The configuration tool can be accessed from the taskbar **Start → Settings → Control Panel → Driver Manager**.

Select the tab corresponding to the driver to be configured, then click the **Configuration** button.

### Illustration

The screen dedicated to the card driver looks like this:



### Description

This table describes the different areas which make up the configuration screen:

Number	Element
1	This field is used to set the network address (between 0 and 127).
2	This field is used to set the station address. (between 0 and 63)
3	This window is used to select the type of Fipway or Fipio connection.

This table describes the configuration tool is used to configure the driver to use the TSX FPP OZD 200

Number	Element
1	This field is used to set the network address between 0 to 127
2	This field is used to set the station address between 0 to 32

## Finalizing installation

### At a Glance

After the driver installation and configuration phase, the operating system shall recognize the TSX FPP 20 card and its driver.

**NOTE:** When configuring the system, it is not necessary to restart the station.

### How to Configure the Operating System

The following procedure describes how to configure the operating system:

Step	Action
1	Install and configure the driver.
2	Insert the PCMCIA card into its slot. <b>Result:</b> The system automatically detects the card and loads the card driver.



---

# Appendix C

## FIP Driver for TSX FPC 10 ISA Card

---

### Subject of This Chapter

This chapter describes how to finish the installation and to configure the driver used to communicate with the TSX FPC 10 ISA card on Fipway\Fipio network.

This chapter contains the following information:

- Finishing the installation.
- Configuration of the driver.

For more information, refer to the Driver Installation chapter (*see page 11*).

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Finalizing the installation of the TSX FPC 10 Card	94
How to Select the Hardware Type	95
How to Configure Hardware Parameters	98
How to Adjust the TSX FPC 10 ISA Card Parameters	101
Driver configuration screen	103

## Finalizing the installation of the TSX FPC 10 Card

### At a Glance

After the driver installation and configuration phase, the operating system does not automatically recognize the ISA TSX FPC 10 card and its driver.

### Installation Principles

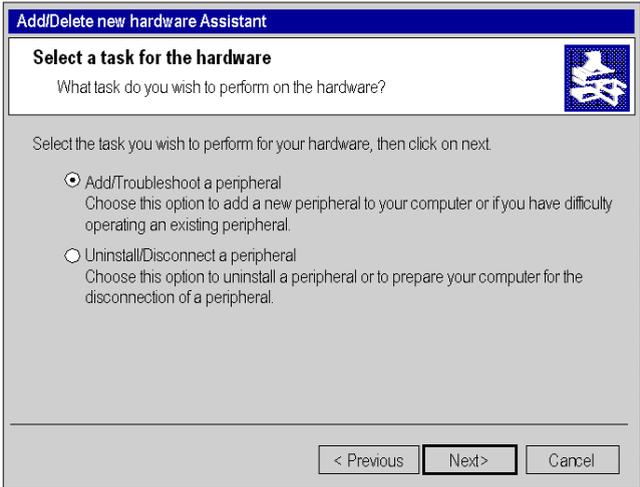
As this card is not automatically recognized by the operating system, the following phases must be carried out:

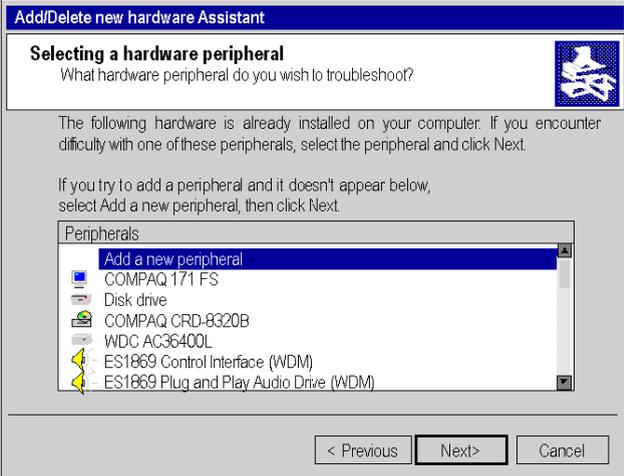
Step	Action
1	Select the hardware type: See <i>How to Select the Hardware Type, page 95</i> .
2	Configure the parameters of the operating system to recognize the card: See <i>How to Configure Hardware Parameters, page 98</i> .
3	Switch off the PC.
4	Adjust the card parameters (See <i>How to Adjust the TSX FPC 10 ISA Card Parameters, page 101</i> ): <ul style="list-style-type: none"> <li>● the standard I/O address,</li> <li>● the IRQ interrupt address.</li> </ul>
5	Connect the card to the ISA bus.
6	Turn the PC back on. <b>Result:</b> the driver is operational.

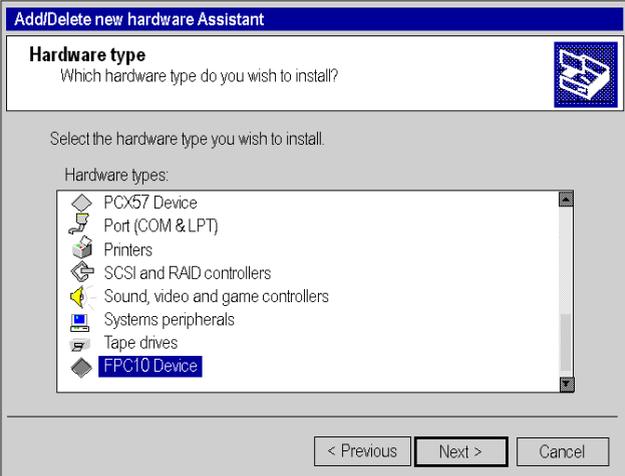
## How to Select the Hardware Type

### Procedure

After having installed and configured the driver, carry out the following procedure to select the hardware type.

Step	Action
1	<p>From the Driver Manager window, choose the FPC 10 Driver tab, then click <b>Hardware Wizard</b>, click on <b>Next</b>.</p> <p><b>Result</b> The following window appears:</p> 

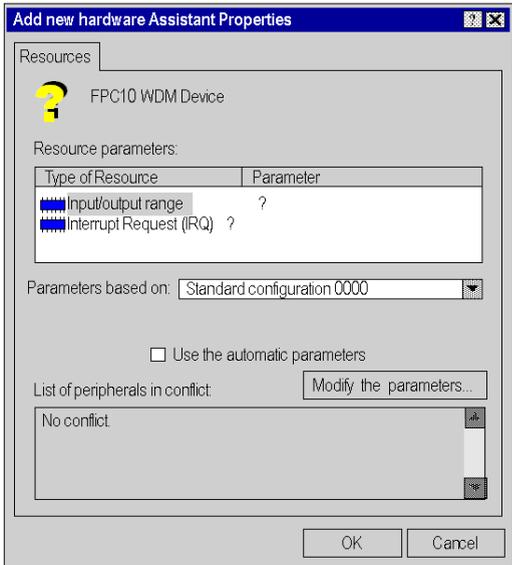
Step	Action
2	<p>Select the option <b>Add/Troubleshoot a peripheral</b> then click <b>Next</b>.</p> <p><b>Result</b> The following window appears:</p> 
3	<p>Select the option <b>Add a new peripheral</b> then click <b>Next</b>.</p>
4	<p>Answer <b>No</b> to the question <b>Do you want Windows to search for your new hardware?</b></p>

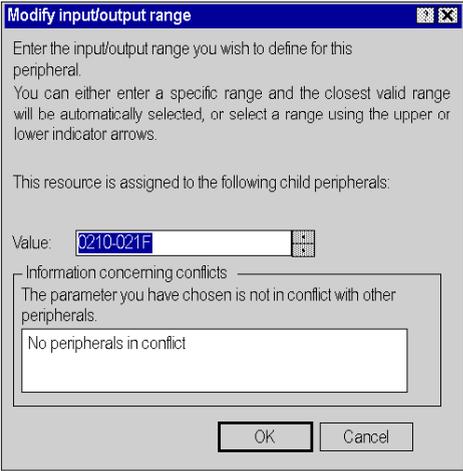
Step	Action
5	<p>Click on <b>Next</b>.</p> <p><b>Result</b> The following window appears:</p> 
6	Select <b>FPC10 Device</b> from the list then click on <b>Next</b> .
7	Select <b>FPC10 WDM Device</b> from the list then click on <b>Next</b> . <b>Result:</b> an information window appears.
8	A window informs the user that the hardware parameters of the card must be entered by the user. Click on <b>OK</b> and go to the next procedure: how to configure hardware parameters ( <a href="#">see page 98</a> ).

## How to Configure Hardware Parameters

### Procedure

After having selected the hardware type, carry out the following procedure to configure the parameters.

Step	Action
1	Click on the <b>Resources</b> button.
2	<p>Click on <b>Manual Configuration</b>.</p> <p><b>Result</b> The following window appears:</p> 
3	Select <b>Input/Output Range</b> from the list.
4	Verify the box <b>Use automatic settings</b> is not checked.

Step	Action
5	<p>Click on <b>Change settings</b>.</p> <p><b>Result</b> The following window appears:</p> 
6	<p>From the <b>Value</b> list, select the non-conflicting address range. <b>Note:</b> note the values because they must be coded onto the ISA card.</p>
7	<p>Confirm with <b>OK</b>. <b>Result:</b> a confirmation window appears.</p>
8	<p>Confirm with <b>Yes</b>.</p>
9	<p>Carry out steps 3 to 8 selecting <b>Interrupt Request</b> from the list.</p>

Step	Action
<p>10</p>	<p>Accept the configuration with <b>OK</b>.</p> <p><b>Result</b> The following window appears:</p> 
<p>11</p>	<p>Click on <b>Finish</b> to confirm hardware configuration.</p>

## How to Adjust the TSX FPC 10 ISA Card Parameters

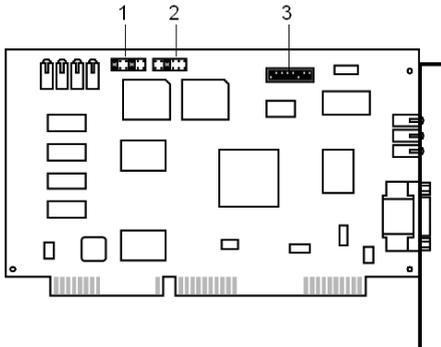
### At a Glance

Before installing the TSX FPC 10 card, you must adjust the following parameters:

- the standard I/O address,
- the IRQ interrupt address.

### Illustration

This card comprises the following elements:



### Numbers and Elements

The following table describes the different parameters to be adjusted:

Number	Element
1	Jumpers (SW1) are used to select the DMA channel (Direct Memory Access) (no object).
2	A jumper (SW2) is used to select the IRQ (Interrupt Request) level.
3	The micro-switches (SW3) are used to select the standard address of the card in the I/O space.

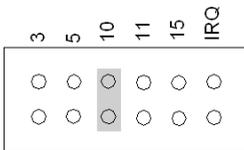
### Procedure

To adjust the parameters, proceed in the following manner:

Step	Action
1	Set the IRQ interrupt jumper to comply with the address provided by the or Vista/XP ( <i>see page 98</i> ) operating systems.
2	Code the standard I/O address provided by the operating system or Vista/XP ( <i>see page 98</i> ) with the micro-switches.

### Example of IRQ Selection

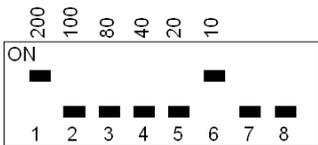
The interrupt address provided by the system is 10:



**NOTE:** The jumper must not be set in the IRQ position.

### Example of Standard Address Selection

The standard address provided by the system is equal to 210 in hexadecimal:



## Driver configuration screen

### At a Glance

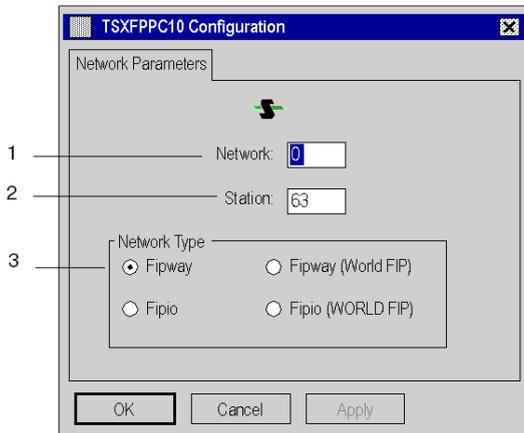
The configuration tool is used to configure the driver in Fipway or Fipio mode to use a ISA TSX FPC 10 card on Fipway/Fipio network.

The configuration tool can be accessed from the taskbar **Start → Settings → Control Panel → Driver Manager**.

Select the tab corresponding to the driver to be configured, then click **[FIP01]/[FIP02] Properties**.

### Illustration

The screen dedicated to the card driver looks like this:



### Description

This table describes the different areas which make up the configuration screen:

Number	Element
1	This field is used to set the network address.
2	This field is used to set the station address.
3	This window is used to select the type of Fipway or Fipio connection.



---

# Appendix D

## ISAWAY Driver for Atrium TPCX 57 Processors

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### Subject of This Chapter

This chapter describes how to finish the installation and to configure the driver for the TPCX 57 processor.

This chapter contains the following information:

- Finalizing the installation.
- Configuration of the driver.

For more information, refer to the Driver Installation chapter (*see page 11*).

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Finalizing the installation	106
How to select the hardware type	107
How to configure hardware parameters	110
How to adjust the ISA TPCX 57 card parameters	113
Configuration of ISAWAY driver	115

## Finalizing the installation

### At a Glance

After following the Driver Installation (*see page 11*) and configuration phase, the operating system does not automatically recognize the TPCX 57 card and its driver.

### Installation principles

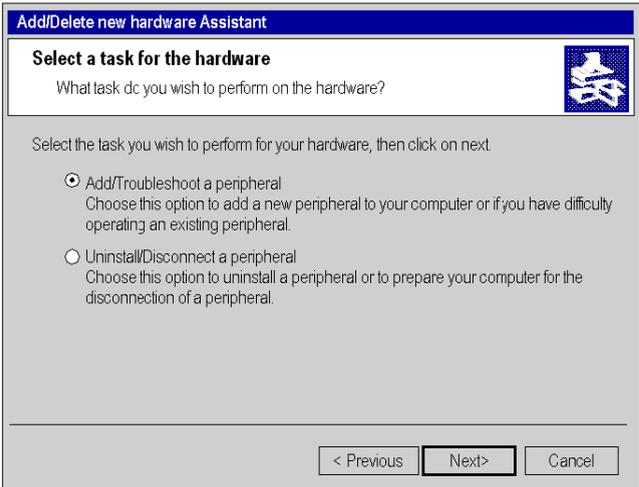
As this card is not automatically recognized by the operating system, the following phases must be carried out:

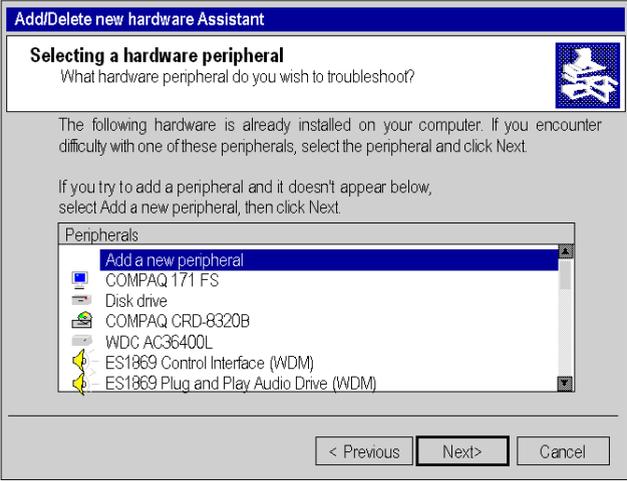
Step	Action
1	Select the hardware type: See <i>How to select the hardware type, page 107</i> .
2	Configure the parameters of the operating system to recognize the card: See <i>How to configure hardware parameters, page 110</i> .
3	Switch off the PC.
4	Adjust the card parameters: See <i>How to adjust the ISA TPCX 57 card parameters, page 113</i> . <ul style="list-style-type: none"><li>● the standard I/O address,</li><li>● the IRQ interrupt address.</li></ul>
5	Connect the card to the ISA bus.
6	Turn the PC back on. <b>Result:</b> the driver and the TPCX 57 card are operational.

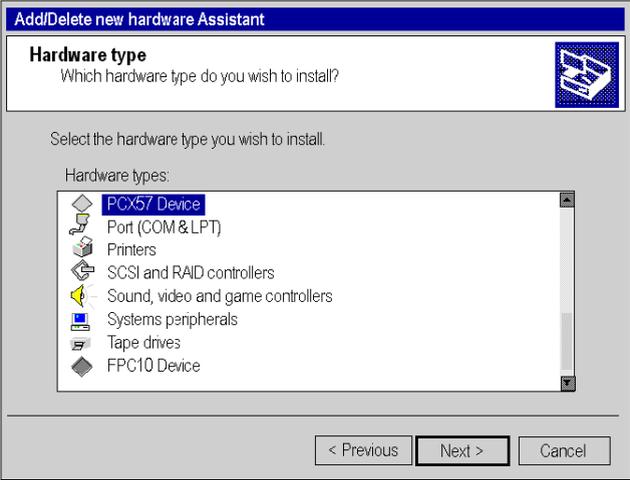
## How to select the hardware type

### Procedure

After having installed and configured the driver, carry out the following procedure to select the hardware type.

Step	Action
1	<p>From the <b>Driver Manager</b> window, choose the <b>PCX57</b> tab, then click <b>Hardware Wizard</b> followed by <b>Next</b>.</p> <p><b>Result</b> The following window appears:</p> 

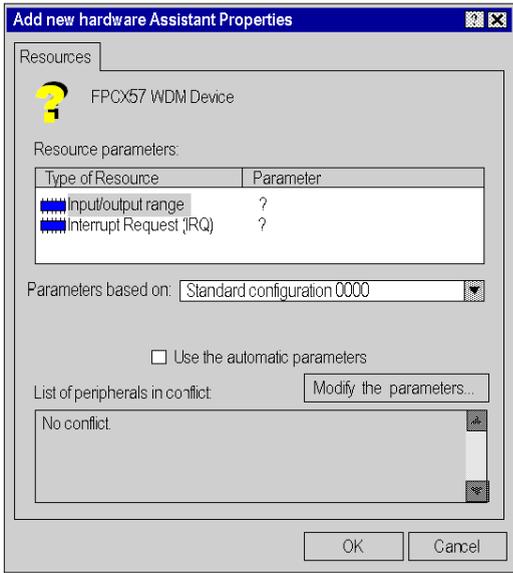
Step	Action
2	<p>Select the option <b>Add/Troubleshoot a peripheral</b> then click <b>Next</b>.</p> <p><b>Result</b> The following window appears:</p> 
3	Select the option <b>Add a new peripheral</b> . Then click on <b>Next</b> .
4	Answer <b>No</b> to the question <b>Do you want Windows to search for your new hardware?</b>

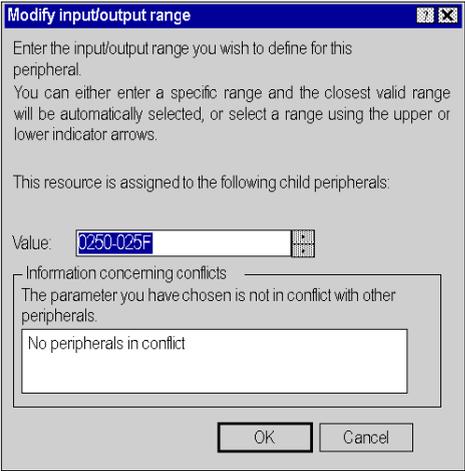
Step	Action
5	<p>Click on <b>Next</b>.</p> <p><b>Result</b> The following window appears:</p> 
6	Select <b>PCX57 Device</b> from the list then click on <b>Next</b> .
7	Select <b>PCX57 WDM Device</b> from the list then click on <b>Next</b> .
8	Go to the next procedure: how to configure hardware parameters ( <i>see page 110</i> ).

## How to configure hardware parameters

### Procedure

After having selected the hardware type, carry out the following procedure to configure the parameters.

Step	Action
1	Click on the <b>Resources</b> button.
2	<p>Click on <b>Manual Configuration</b>.</p> <p><b>Result</b> The following window appears:</p> 
3	Select <b>Input/Output Range</b> from the list.
4	Verify that the box <b>Use automatic settings</b> is not checked.

Step	Action
5	<p>Click on <b>Modify the parameters....</b></p> <p><b>Result</b> The following window appears:</p> 
6	<p>From the <b>Value</b> list, select the non-conflicting address range. <b>Note:</b> note the values because they must be coded onto the ISA card.</p>
7	<p>Confirm with <b>OK</b>. <b>Result:</b> a confirmation window appears.</p>
8	<p>Confirm with <b>Yes</b>.</p>
9	<p>Carry out steps 3 to 8 selecting <b>Interrupt Request</b> from the list.</p>

Step	Action
10	<p>Accept the configuration with <b>OK</b>.</p> <p><b>Result</b> The following window appears:</p> 
11	Click on <b>Finish</b> to confirm hardware configuration.

## How to adjust the ISA TPCX 57 card parameters

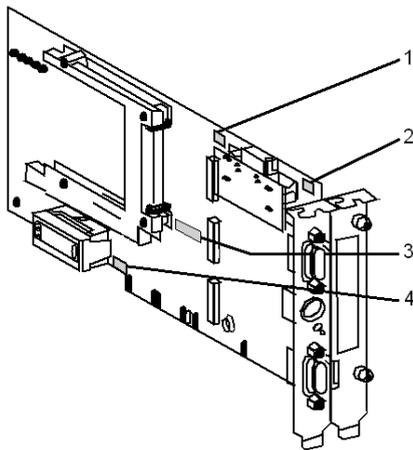
### At a Glance

Before installing the TPCX 57 card, you must adjust the following parameters:

- the rack number and the processor position,
- the standard I/O address,
- the IRQ interrupt address.

### Illustration

This card comprises the following elements:



### Numbers and elements

The following table describes the different parameters to be adjusted:

Number	Element
1	The processor's rack position can be coded with the micro-switches.
2	The address of the rack which contains the processor can be coded with the micro-switches.
3	The standard address of the processor can be coded on the ISA bus with the micro-switches.
4	The IRQ (Interrupt Request) level can be coded with the micro-switches.

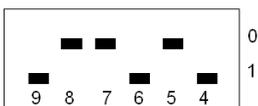
## Procedure

To adjust the parameters, proceed in the following manner:

Step	Action
1	Code the number of the rack which contains the processor.
2	Code the processor position.
3	Code the standard I/O address provided by the operating system with the micro-switches.
4	Code the interrupt level provided by the operating system with the micro-switches.

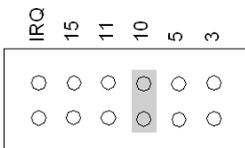
### Example of standard address selection

The standard address provided by the system is equal to 250 in hexadecimal:



### Example of IRQ selection

The interrupt address provided by the system is 10:



**NOTE:** The jumper must not be set in the IRQ position.

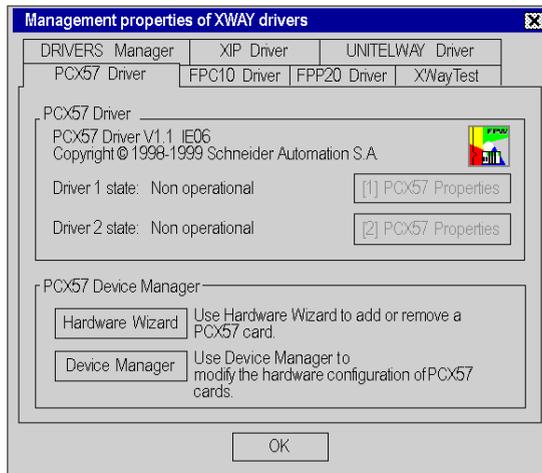
## Configuration of ISAWAY driver

### At a Glance

The configuration tool is used to configure the ISAWAY driver for the TPCX 57 card.

The configuration tool can be accessed from the taskbar **Start** → **Settings** → **Control Panel** → **Driver Manager**. See Driver Manager Chapter (*see page 67*)

Select the **PCX57 Driver** tab to display the following window:



### Elements

The **Properties** button is used to access the driver configuration screen for card 1 and card 2 respectively.

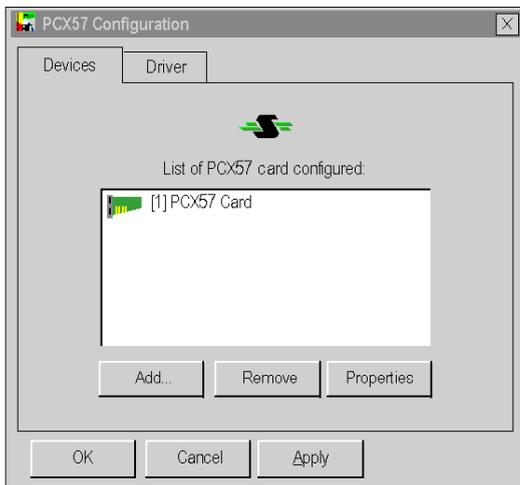
The **Hardware Wizard** button is used to add or remove an ISA TPCX 57 card using the Add/Remove Hardware Wizard.

**NOTE:** a maximum of two cards can be connected.

The **Device Manager** button activates the **System Properties** window and is used to view or modify the card hardware parameters.

## Properties configuration

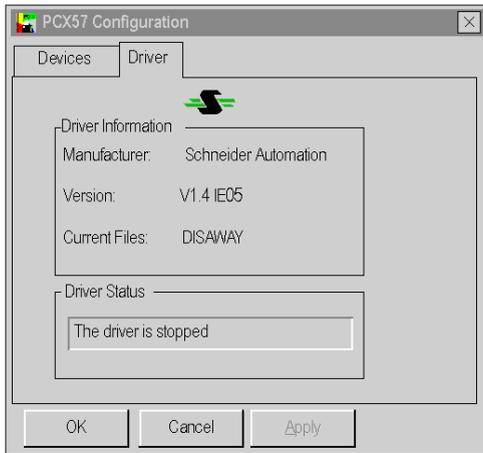
From the **PCX57** tab in the **Driver Manager**, press the **PCX57 Properties** button corresponding to your card in order to display the following window:



The table below describes the different commands in the tab "**Devices**":

Button	Action
<b>Add...</b>	Allows a T PCX 57 processor card with default parameters (IRQ =10, base address I/O='H'220', timer=500ms, buffer size=256 bytes) to be added to the PC. The maximum number of cards is 2.
<b>Remove</b>	Deletes the selected T PCX 57 processor card.
<b>Properties</b>	Allows the properties of a processor card to be defined, see: <i>Properties, page 118</i> .
<b>Apply</b>	Allows configuration parameters to be applied; the tool saves the parameters, then reinitializes the driver.
<b>Cancel</b>	Allows the user to exit without acknowledging the modified parameters.
<b>OK</b>	Allows the user to exit while acknowledging the modified parameters.

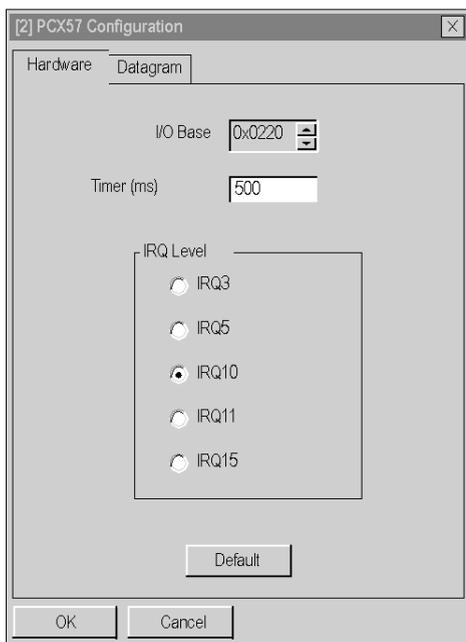
Click the **"Driver"** tab in the **Properties Configuration** window to display the following window:



This window displays general information on the driver

## Properties

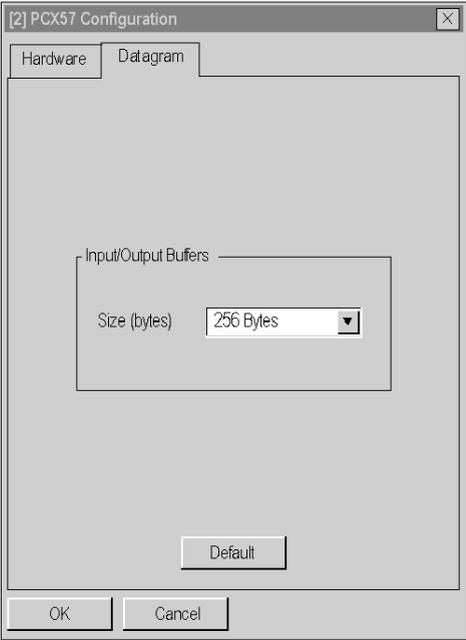
Press the **Properties** button in the *Properties configuration*, [page 116](#) to display the following window:



The table below describes the different areas:

Area	Description
<b>I/O Base</b>	This is the address of the PCX57 card in hexadecimal, which should correspond to the address configured on the processor card.
<b>Timer(ms)</b>	Represents the watchdog refreshment period, which is updated by the driver.
<b>IRQ Level</b>	Use to set the IRQ level
<b>Default</b>	Displays the default configuration of the card (IRQ=10, I/O Base='H'220', Timer=500ms).
<b>Cancel</b>	Cancels a modification, and returns to the previous screen.
<b>OK</b>	Validates the configuration; the parameters displayed are stored and the previous screen is displayed.

Click the **Datagram** tab to display the following window:



The table below describes the different areas:

Area	Description
<b>Input/Output buffer</b>	Allows the size of the buffers for the interface between the PCX57 card and the driver to be configured. The size may be set at between 160 and 256 bytes.
<b>Default</b>	Allows default selection of the card (256 bytes)
<b>Cancel</b>	Cancels a modification, and returns to the previous screen.
<b>OK</b>	Validates the configuration; the parameters displayed are stored and the previous screen is displayed.



---

# Appendix E

## Uni-Telway Driver for TSX SCP 114 Card

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### Subject of This Chapter

This chapter describes configuration of the Uni-Telway driver communicating in slave mode via the TSX SCP 114 PCMCIA card with a remote device.

For installation information, refer to the Driver Installation chapter (*see page 11*).

### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Driver Configuration Screens	122
Finalizing installation	124

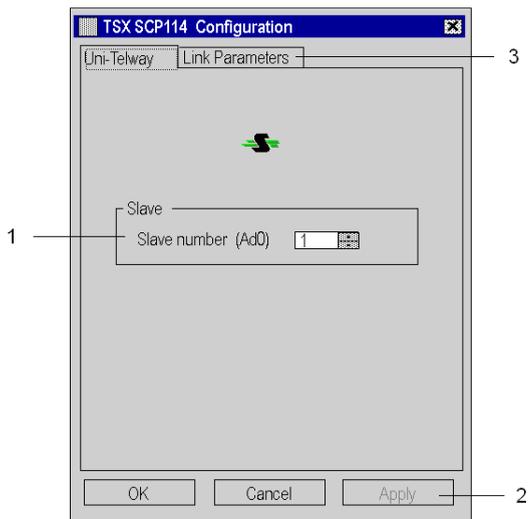
## Driver Configuration Screens

### At a Glance

The configuration tool is used to configure the TSX SCP 114 card Uni-Telway driver.  
 The configuration tool can be accessed from the taskbar **Start → Settings → Control Panel → Driver Manager**.  
 Select the tab corresponding to the driver to be configured in the Driver Manager window.

### Illustration

The screen dedicated to the Uni-Telway driver looks like this:



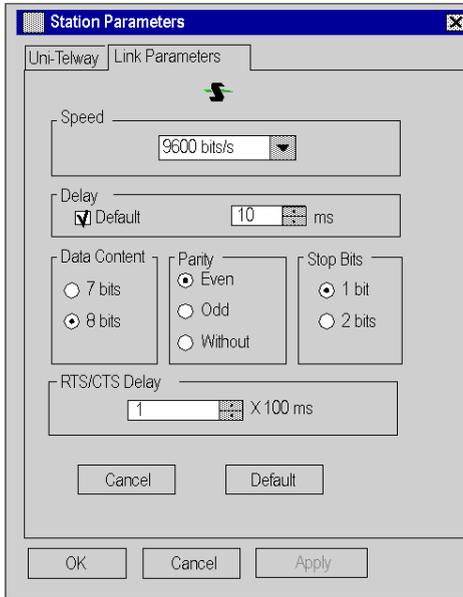
### Description

This table describes the different areas which make up the configuration screen:

Number	Element
1	This window is used to set the standard slave address (Ad0) used by the card.
2	This button is used to recognize the address.
3	This tab is used to access the configuration of transmission parameters.

## Link Parameters

To access the Link Parameters, select the **Link Parameters** tab:



## Description

This tab is used to configure the parameters linked to transmission

Element	Description
Speed	transmission speed of between 300 and 19,200 bits/s
Delay	sets the delay.
Data Content	specifies the size of the data exchanged over the line.
Parity	is used to set whether a parity bit is added or not, as well as its type.
Stop Bits	is used to enter the number of stop bits used for communication.
RTS/CTS Delay	enables the CTS signal to be used in the event of multidrop communication.
Default Button	button is used to reset all these parameters to their default value.

## Finalizing installation

### At a Glance

After the driver installation and configuration phase, the operating system shall recognize the TSX SCP 114 card and its driver.

**NOTE:** When configuring the system, it is not necessary to restart the PC.

### How to Configure the Operating System

The following procedure describes how to configure the operating system:

Step	Action
1	Install and configure the driver.
2	Insert the PCMCIA card into its slot. <b>Result:</b> The system automatically detects the card and loads the card driver.



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