

# VCI - Virtual CAN Interface

VCI-V3 Installation Manual

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Software Version 3.1

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# 1 Overview

The VCI is a universal CAN driver for all CAN interfaces from IXXAT and already included in the scope of supply of the CAN interface. As a DLL for Windows 2000/XP/Vista, it forms the interface between the user application and the various IXXAT CAN interfaces. A special feature is its uniform programming interface, which allows a change between various interface types without adapting the user software.

The version 3.1 of the VCI supports the following hardware:

- PC-I 04/PCI, PC-I 04/104
- iPC-I 320/PCI, iPC-I 320/104
- iPC-I 165/PCI
- iPC-I XC16/PCI, iPC-I XC16/PMC, iPC-I XC16/PCIe
- tinCANv4, tinCAN161
- USB-to-CAN compact
- USB-to-CAN II

## Installation of the VCI consists of two steps:

### (1) Installation of the software

Uninstallation of VCI\_V2 is described in detail in the installation manual of VCI\_V2 section 7. However, the VCI\_V3 can be used parallel to a VCI\_V2 installation without any problems.

### (2) Installation of the hardware

This manual provides instructions on carrying out these two steps under **Windows 2000, Windows XP** and **Windows Vista**.

# 2 Support

For more information on our products, FAQ lists and installation tips, please refer to the support section of our website (<http://www.ixxat.de>), which also contains information on current product versions and available updates.

If you have any further questions after studying the information on our website and the manuals, please contact our support department. The support section on our website contains the relevant forms for your support request. In order to facilitate our support work and enable a fast response, please provide precise information on the individual points and describe your question or problem in detail.

If you would prefer to contact our support department by phone, please also send a support request via our website first, so that our support department has the relevant information available.

## 3 Installation of the driver software VCI V3

### Installation from CD-ROM


Insert the IXXAT driver and demo CD-ROM into the CD drive.


Windows automatically starts a menu in which you first select the language. In the following dialogue, click on "Driver" and start the installation of the VCI driver software.

If the CD menu is not automatically displayed, start the installation manually by running the file VCI\_3\_1\_1\_XXXX.exe in the "Drivers" directory on the CD-ROM. The version of the installation is shown in the properties of the installation.

Follow the instructions in the installation program.

# 4 Windows 2000

 **Attention:** With Windows 2000, the user must be logged in with administrator rights in order to carry out the hardware installation!

 **Tip:** Install the VCI software before you install the IXXAT CAN interface, this facilitates configuration of the new IXXAT hardware under Windows. The driver is thus automatically found and does not have to be copied from an external data carrier.


## 4.1 Installation of PCI, USB or PCMCIA interfaces

Installation is carried out via the automatically started hardware assistant, which detects the newly installed interface.

- (1) Install your CAN interface in the computer, or insert the tinCAN161 in the PCMCIA slot, or connect the USB-to-CAN adapter to your USB port. Also observe any instructions in the hardware manuals.
- (2) The first time Windows 2000 is booted after installing the CAN-Interface the hardware assistant is automatically started. The Hardware Wizard dialogue appears, which you acknowledge with "Next".
- (3) Windows finds a driver for the new CAN interface and displays it in a corresponding dialogue. Acknowledge the dialogue with "Next".
- (4) Windows copies the driver thus found and indicates success with a last dialogue. Finish the installation by clicking on the "Finish" button.  
After the successful installation the interface is visible in the Windows Device Manager and ready for use.

## 4.2 Installation of PC/104 (ISA) boards

Before installing an ISA-card, it is absolutely essential to first find a free address space in the working memory and a free IRQ. For this, open the "System Informations" (Accessories|System Tools) and search for a free address space and a free IRQ under "Hardware Resources".

 **The address settings on the card are made by means of 16-bit DOS segment addresses (e.g. D200) which are also described in the hardware manual. 32-bit Windows operating systems don't work with DOS segment/offset addressing; instead they address the memory in a linear way.**

Therefore the board's segment address (e.g. D200...D3FF) is declared as a linear address under Windows (e.g. D2000...D3FFF).

The free address and the IRQ found are then set on the card by means of jumpers and dipswitches (see hardware manual). The IRQ is to be reserved in the Bios for ISA-cards.

### 4.2.1 Installation

- (1) Start the Hardware Wizard.

This is found in the Start menu under "Control Panel"

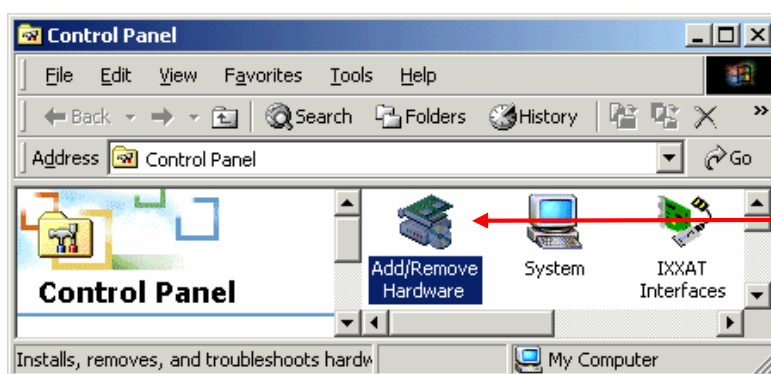


Figure 4.2-1: Starting the hardware wizard

- (2) The welcome dialog of the Hardware Wizard appears. Acknowledge this with the "Next"-button.
- (3) Mark the button for installing new hardware and acknowledge the dialog with the "Next"-button.

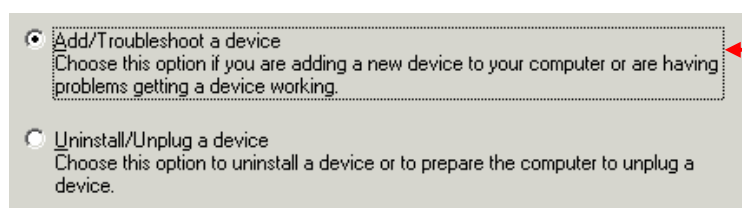
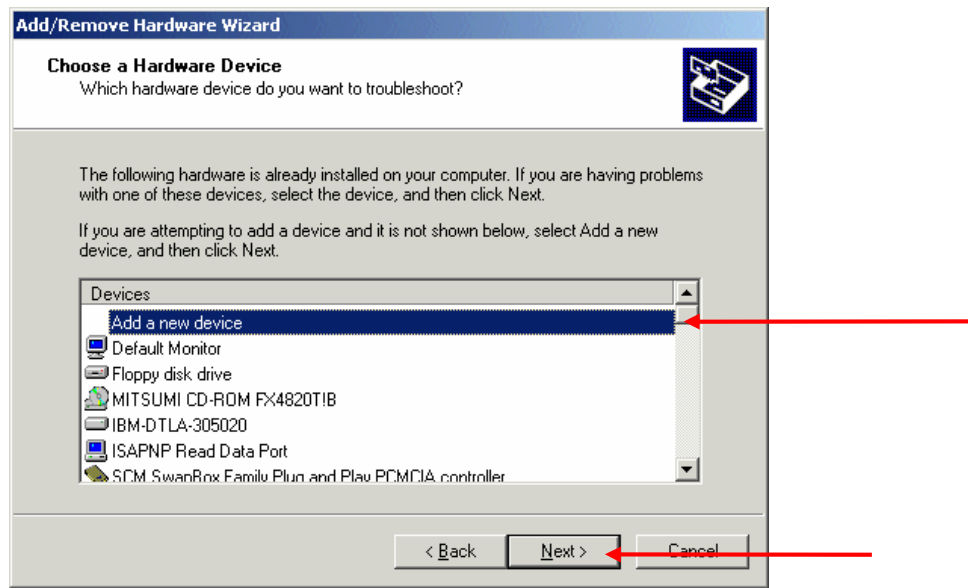


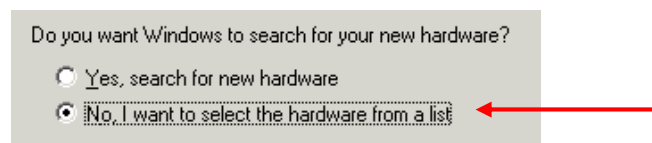
Figure 4.2-2: Selection of the Wizard task

- (4) The Hardware Wizard lists all hardware previously installed. Select the entry to add a new device and continue with the "Next" button.



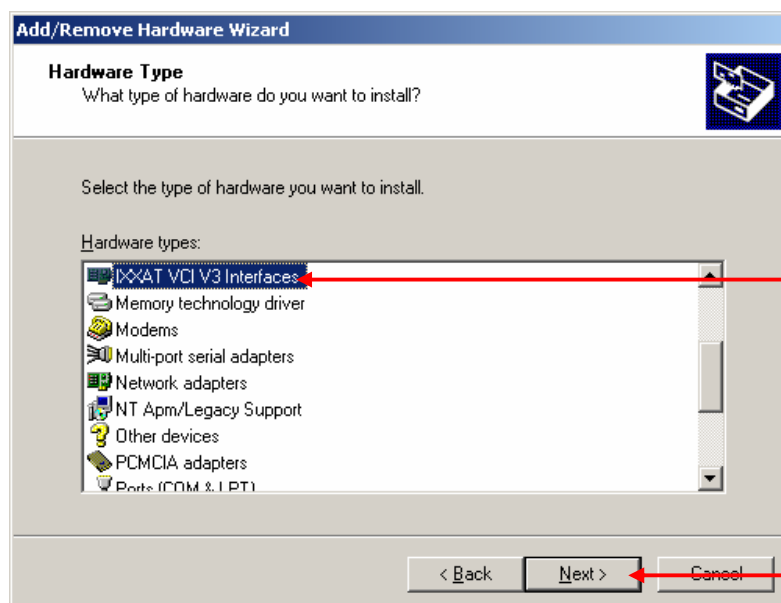
**Figure 4.2-3: Selection for installing new hardware**

- (5) The Hardware Wizard asks whether further hardware should be searched for. This is not the case. Continue with the "Next"-button.



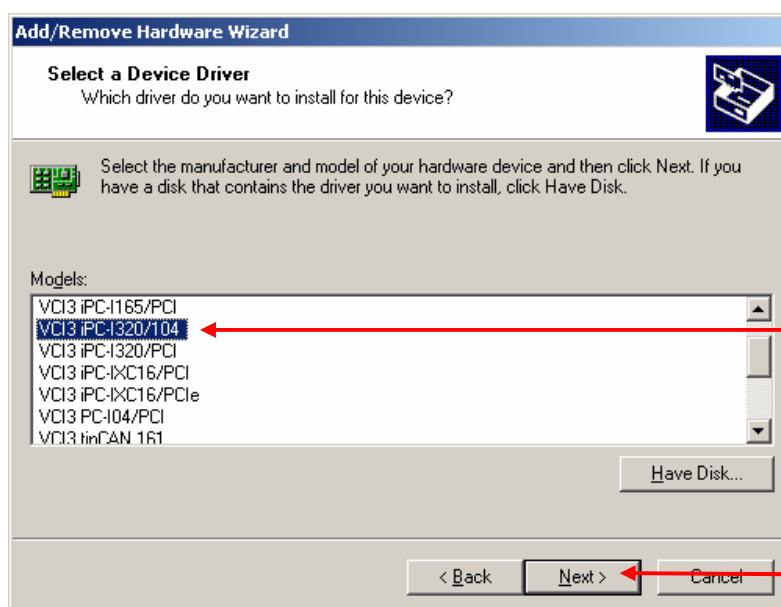
**Figure 4.2-4: Do not search for hardware**

- (6) If the VCI-software was installed before the hardware installation, you can select "IXXAT VCI V3 Interfaces" in the list of the known hardware types and continue with pressing via the "Next" button.



**Figure 4.2-5: Selection of the hardware type**

- (7) The hardware wizard now provides a selection of drivers. Select your CAN-interface and continue the installation with "Next".



**Figure 4.2-6: Selection of the driver to be installed**

- (8) Windows has now installed the CAN-interface with default settings. If this do not match the Address and IRQ set by you on the hardware, you can alter them later in the hardware settings (see Section 4.2.2). However, you must first accept the recommended settings and go on with "Next".
- (9) Installation of the new component is now complete and can be ended with "Finish". Windows now asks you to restart the computer.

! If the recommended settings do not match the values set on the card (check in the Device Manager if necessary), you should adjust these before restarting. Please read Section 4.2.2 for this.

### 4.2.2 Changing the Default settings

An ISA-card is always installed by the hardware wizard with the default settings (address and IRQ). If it not correspond to the values set on the card via jumpers and dipswitches, they must be altered as described in this section.

(1) Start the "System"-Applet in the Control Panel.

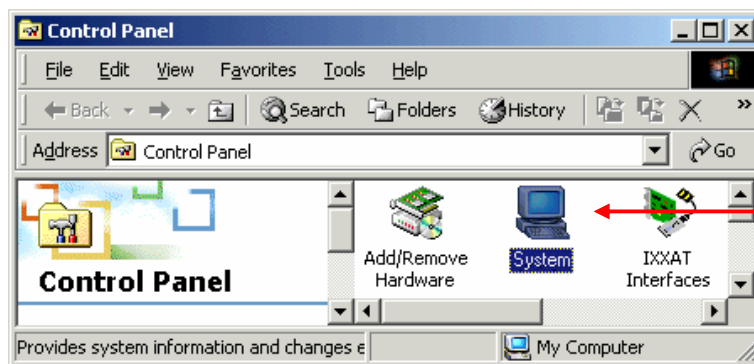


Figure 4.2-7: Starting the System Applet

(2) Start the Device Manager via the "Device Manager" button.



Figure 4.2-8: Starting the Device Manager

(3) Select the installed CAN-Interface in the Device Manager.  
Open the properties of the CAN-Interface whose settings you will change.

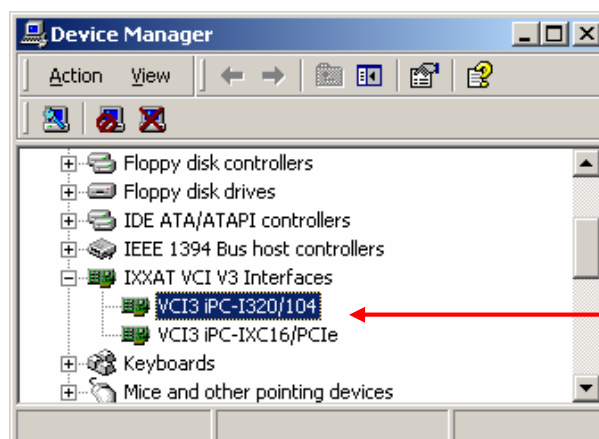


Figure 4.2-9: The Device Manager

(4) Changing the settings:

If you now switch to the "Resources" tab in the hardware properties dialog, you will see the settings entered by Windows during the installation.

According to the settings made by you on the CAN-Interface for Address and Interrupt, you must adjust the Resource settings here.

Your alterations are adopted with "OK".

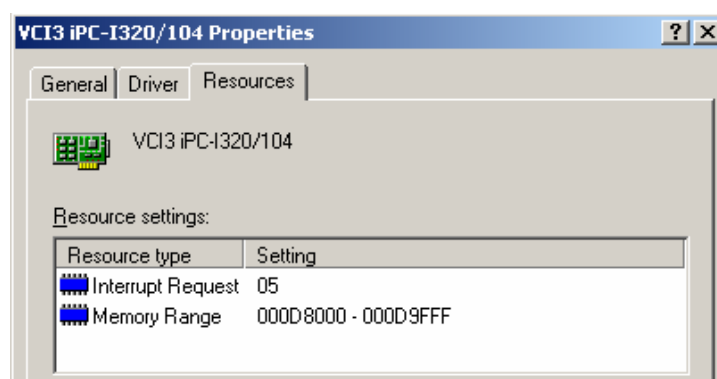


Figure 4.2-10: Changing the CAN-interface settings

## 4.3 Changing between VCI\_V2 and VCI\_V3 driver

The VCI\_V3 can be used parallel to a VCI\_V2 installation without any problems.

VCI\_V2 or VCI\_V3 is selected by selecting the corresponding driver.

The driver can be changed in the device manager via "Update driver...". In order to change the driver, the hardware must be installed in the system.

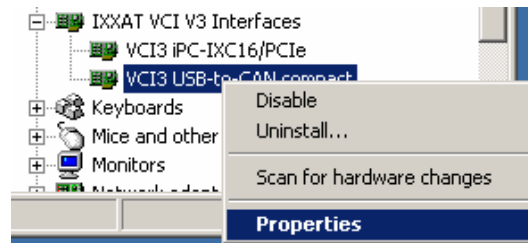


Fig. 4.3-1

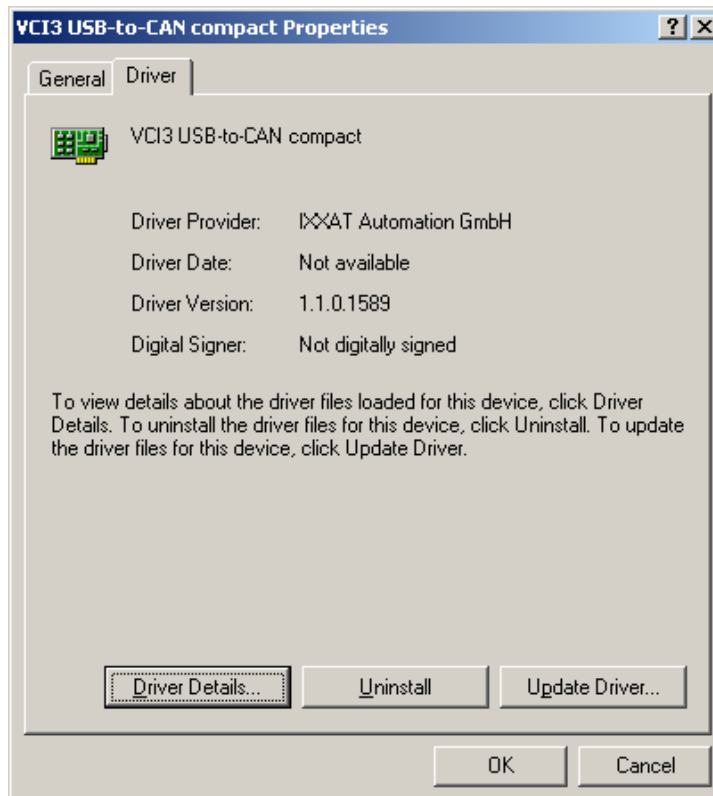


Fig. 4.3-2



Fig. 4.3-3



Fig. 4.3-4

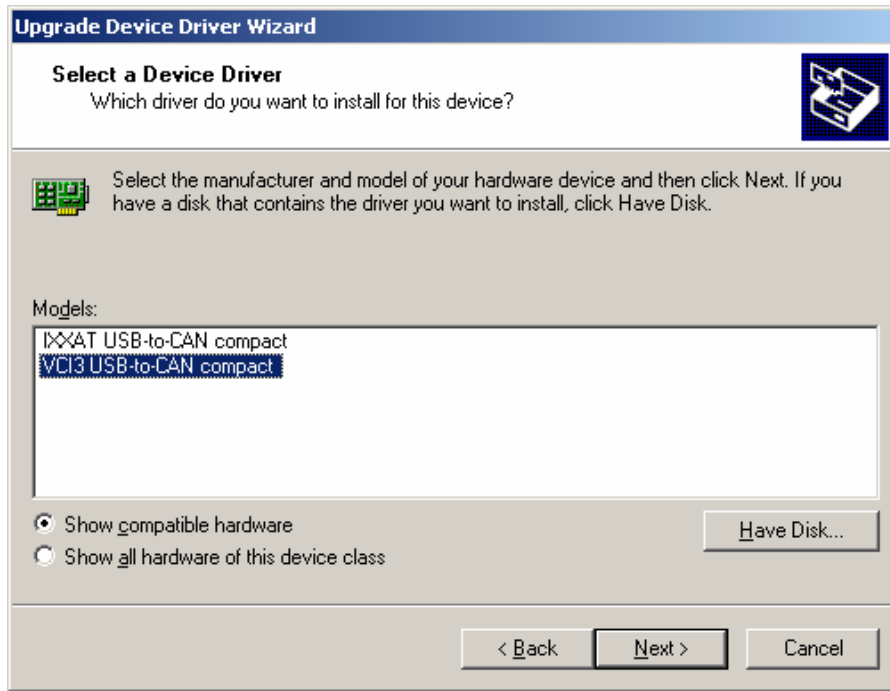


Fig. 4.3-5

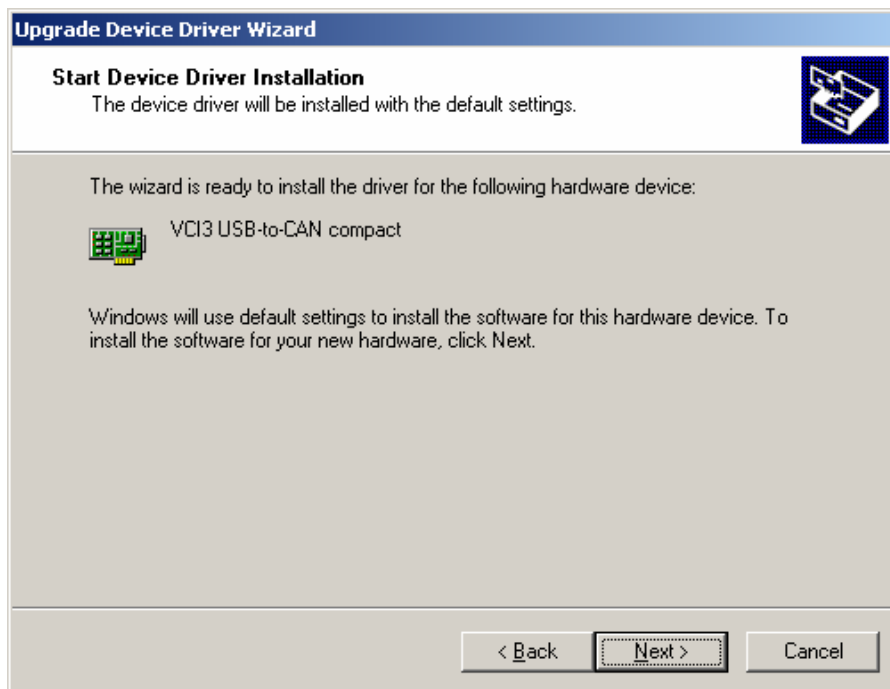


Fig. 4.3-6



Fig. 4.3-7

# 5 Windows XP

**!** **Attention:** With Windows XP, the user must be logged in with administrator rights in order to carry out the hardware installation!

**💡** **Tip:** Install the VCI software before you install the IXXAT CAN interface, this facilitates configuration of the new IXXAT hardware under Windows. The driver will be found automatically and must not be copied from an external data carrier.

## 5.1 Installation of PCI, USB or PCMCIA interfaces

Installation is carried out via the automatically started hardware assistant, which detects the newly installed interface.

- (1) Install your CAN interface board in the computer, or insert the tinCAN161 in the PCMCIA slot, or connect the USB-to-CAN adapter to your USB interface. Also observe any instructions in the hardware manuals.
- (2) The first time Windows XP is booted after installing the CAN interface the hardware assistant is started automatically. The following dialogue appears, which you acknowledge with "Next".



**Fig. 5.1-1: New USB-to-CAN compact found**

- (3) Windows finds a driver for the new CAN interface and the following dialogue appears (here for a USB-to-CAN compact):



Fig. 5.1-2: Driver found

Finish the installation by clicking on the "Finish" button.

After successful installation, the CAN interface (here USB-to-CAN compact) is now visible in the Windows Device Manager and ready for use.

## 5.2 Installation of PC/104 (ISA) boards

Before installing an ISA-card, it is absolutely essential to first find a free address space in the working memory and a free IRQ. For this, open the "System Informations" (Accessories|System Tools) and search for a free memory address space and a free IRQ under "Hardware Resources".

★ **The address settings on the card are made by means of 16-bit DOS segment addresses (e.g. D200) which are also described in the hardware manual. 32-bit Windows operating systems don't work with DOS segment/offset addressing; instead they address the memory in a linear way. Therefore the board's segment address (e.g. D200...D3FF) is declared as a linear address under Windows (e.g. D2000...D3FFF).**

The free address and the IRQ found are then set on the card by means of jumpers and dipswitches (see hardware manual). Afterwards install the CAN card into your PC.

The IRQ is to be reserved in the Bios for ISA-cards.

## 5.2.1 Installation

- (1) Open the category "Printers and Other Hardware" in the Control Panel.

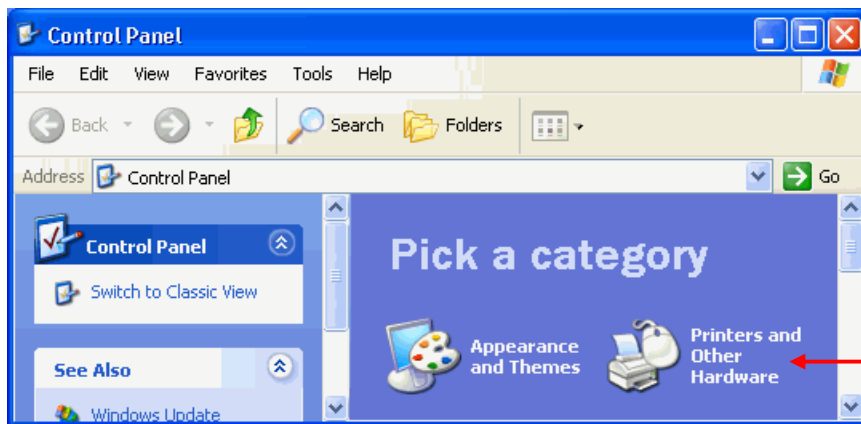


Figure 5.2-1: Opening Control Panel category

- (2) Start the Hardware Wizard via the icon "Add Hardware".

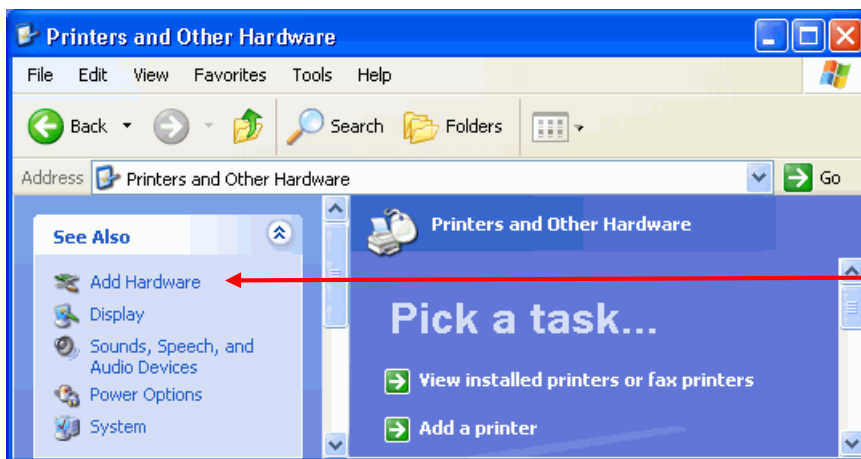


Figure 5.2-2: Starting the hardware wizard

- (3) The welcome dialog of the Hardware Wizard appears. Acknowledge this with the "Next"-button.



Figure 5.2-3: The started Hardware Wizard

- (4) Because the new hardware is already connected you may acknowledge the following dialog with the "Next"-button.

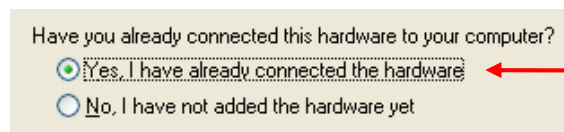
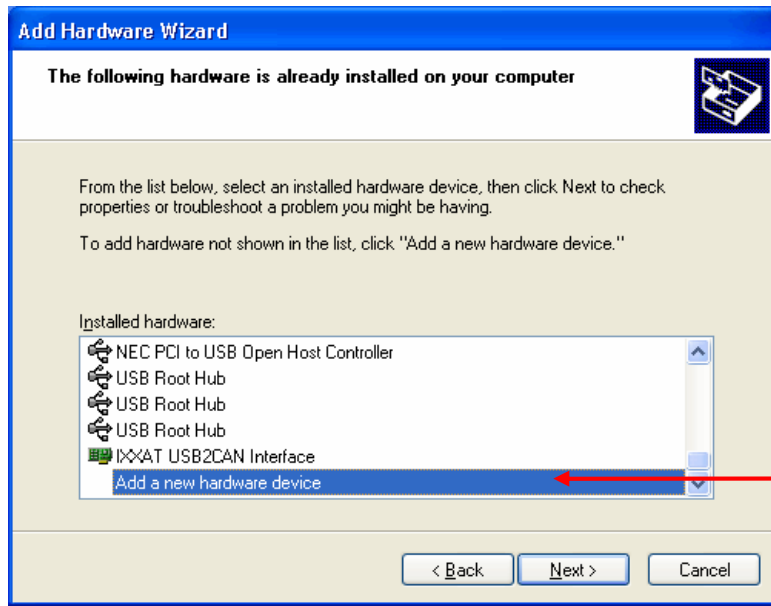


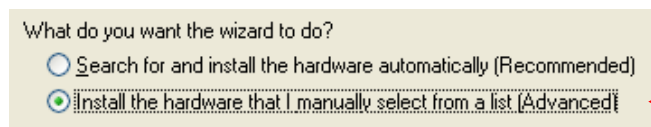
Figure 5.2-4: Selection of the Wizard task

- (5) The Hardware Wizard lists all previously installed hardware. Select the entry to add a new device and continue with the "Next" button.



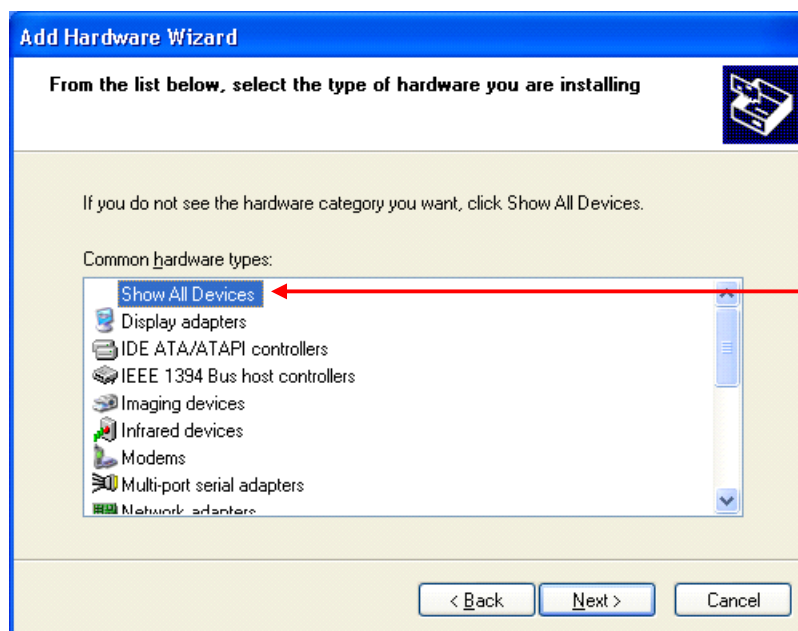
**Figure 5.2-5: Selection for installing new hardware**

- (6) The Hardware Wizard asks whether hardware should be searched for. This is not the case. Continue with the "Next"-button.



**Figure 5.2-6: Manually select hardware from a list**

- (7) The Hardware Wizard lists the common hardware types. Select the entry to show all devices and continue with the "Next" button.



**Figure 5.2-7: Show all devices**

- (8) If the VCI-software was installed before the hardware, you can select “IXXAT Automation GmbH” in the list. Then select the CAN interface board and continue via the “Next” button.

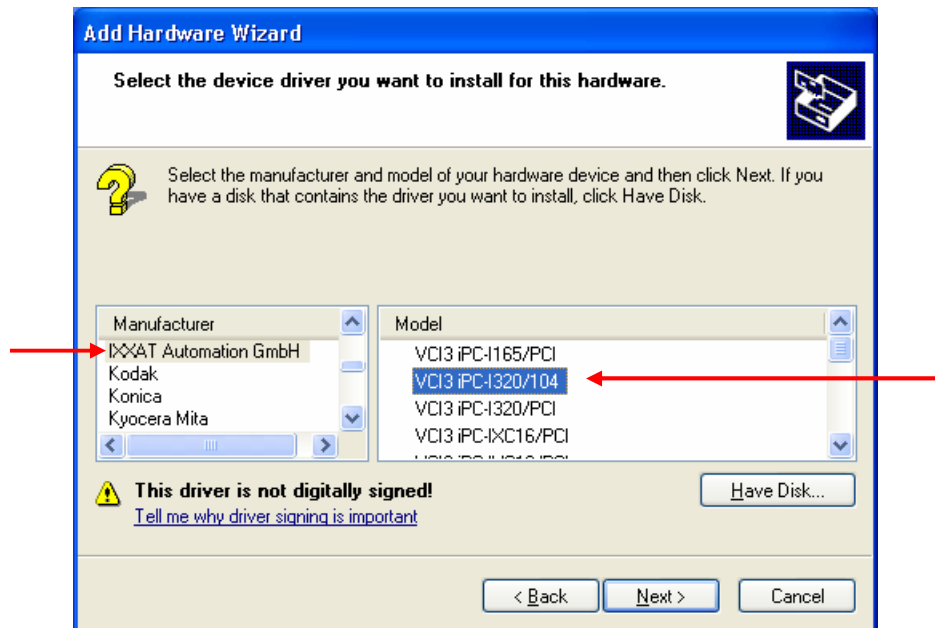


Figure 5.2-8: Selection of the driver to be installed

- (9) Windows now confirms your selection, which you acknowledge with the “Next” button.



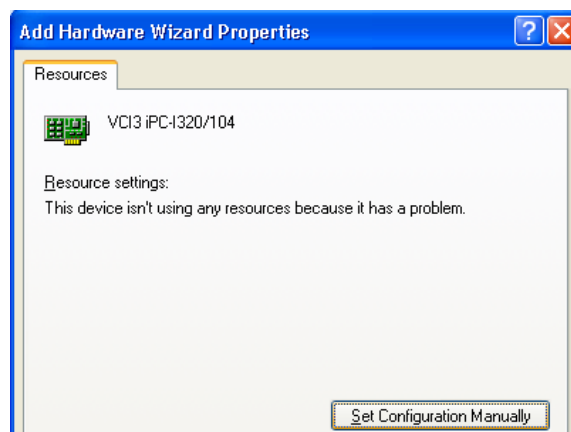
**The selected driver will be installed. This may take some time!**

- (10) Windows has now installed the CAN-interface with default settings. Click on “View or change resources for this hardware” to adapt the default settings to the settings on the board.



**Figure 5.2-9: Hardware driver installed**

- (11) If the default settings conflict with existing resource configuration Windows will show the following error message. Use the button "Set Configuration Manually" to adapt the settings.



**Figure 5.2-10: Notification about resource conflicts**

- (12) Changing the settings:

According to the settings made by you on the CAN-interface for address and interrupt, you must adjust the Resource settings here. Your alterations are adopted with "OK".

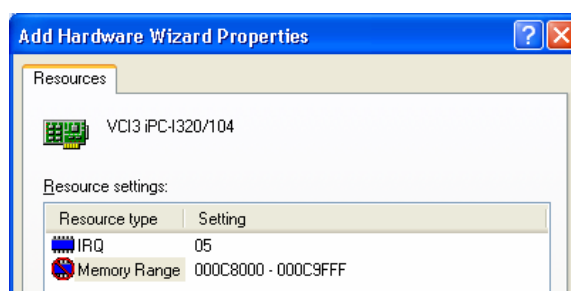


Figure 5.2-11: Adaptation of settings

(13) Conclude the installation with the "Finish" button.

### 5.2.2 Changing the settings

In case of resource conflicts with other hardware components you must modify the settings for address and/or IRQ as described in this chapter. Of course the new settings must first be set on the CAN-Interface itself and in the bios.

(1) Start the applet "System" within the Control Panel category "Printers and Other Hardware".

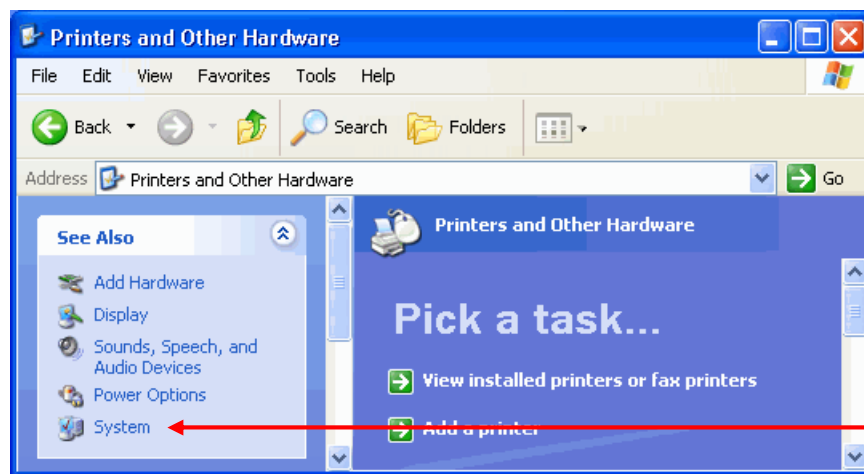


Figure 5.2-12: Starting the System Applet

(2) Start the Device Manager via the "Device Manager" button.

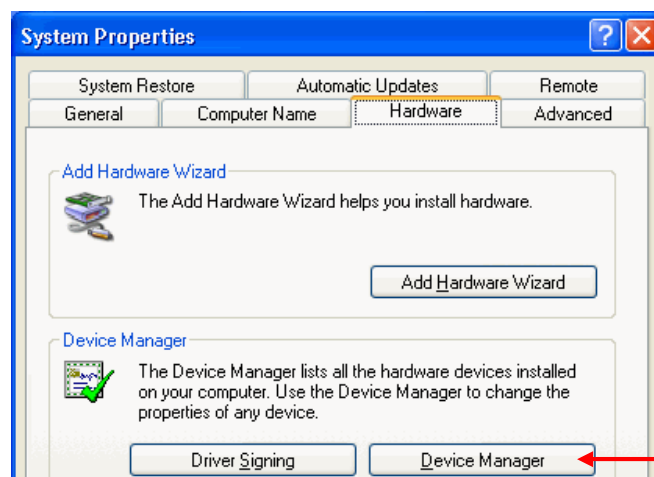
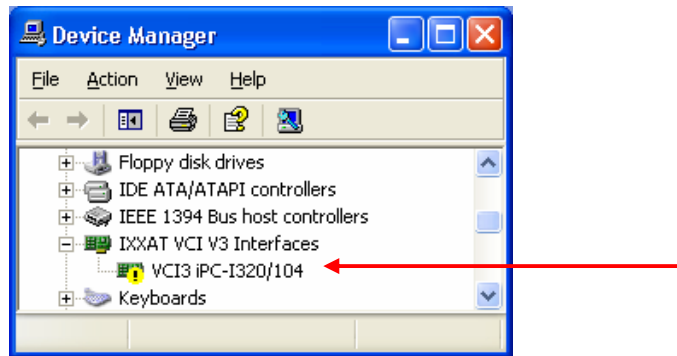


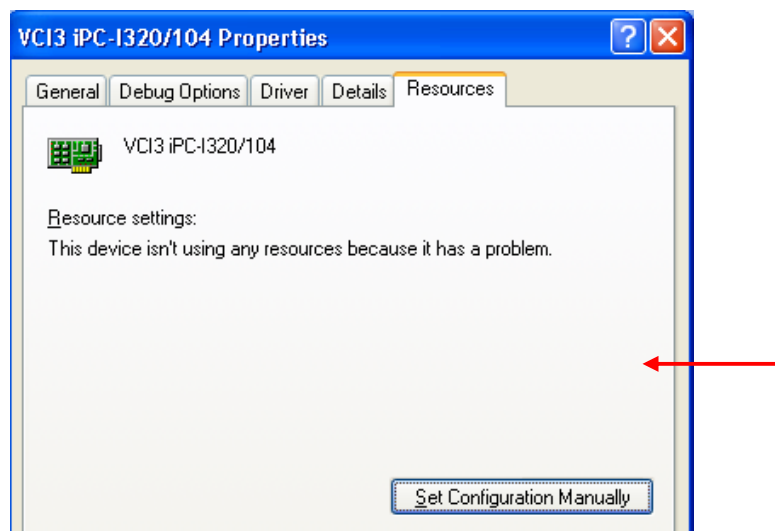
Figure 5.2-13: Starting the Device Manager

(3) Select the installed CAN-interface in the Device Manager. Open the properties of the CAN-interface whose settings you wish to change.



**Figure 5.2-14: The Device Manager**

- (4) If the settings conflict with existing resource configuration Windows will show the following error message. Use the button "Set Configuration Manually" to adapt the settings.



**Figure 5.2-15: Notification about resource conflicts**

- (5) Changing the settings:  
Now you see the settings entered during the installation.  
Set the resources according to the settings made by you on the CAN-interface for address and interrupt.  
Your alterations are adopted with "OK".

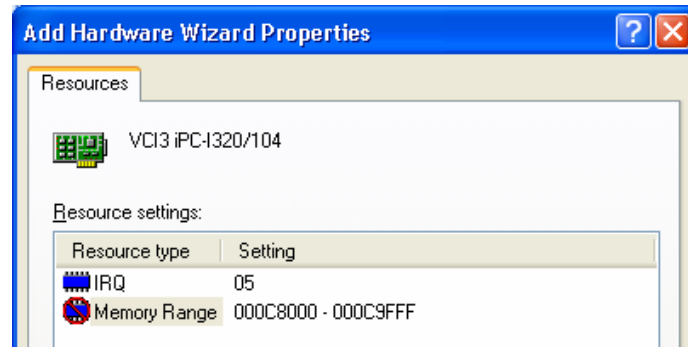


Figure 5.2-16: Adaptation of settings

### 5.3 Changing between VCI\_V2 and VCI\_V3 driver

The VCI\_V3 can be used parallel to a VCI\_V2 installation without any problems.

VCI\_V2 or VCI\_V3 is selected by selecting the corresponding driver.

The driver can be changed in the device manager via "Update driver...". In order to change the driver, the hardware must be installed in the system.

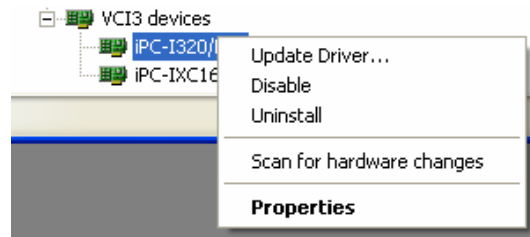


Fig. 5.3-1

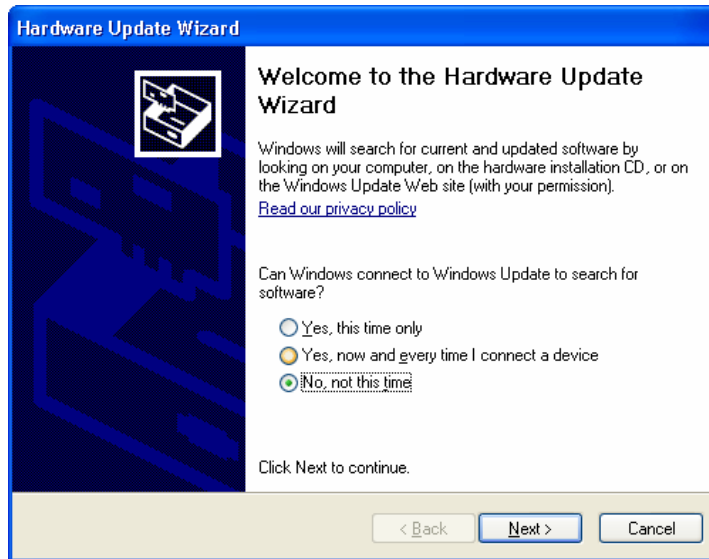


Fig. 5.3-2

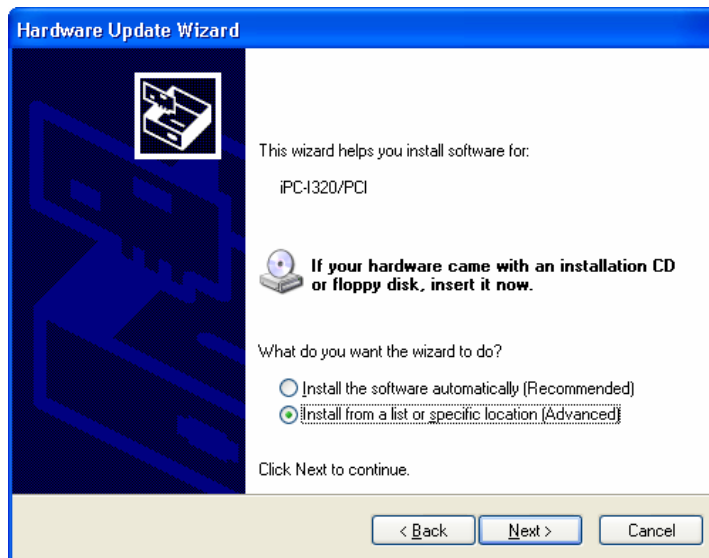


Fig. 5.3-3

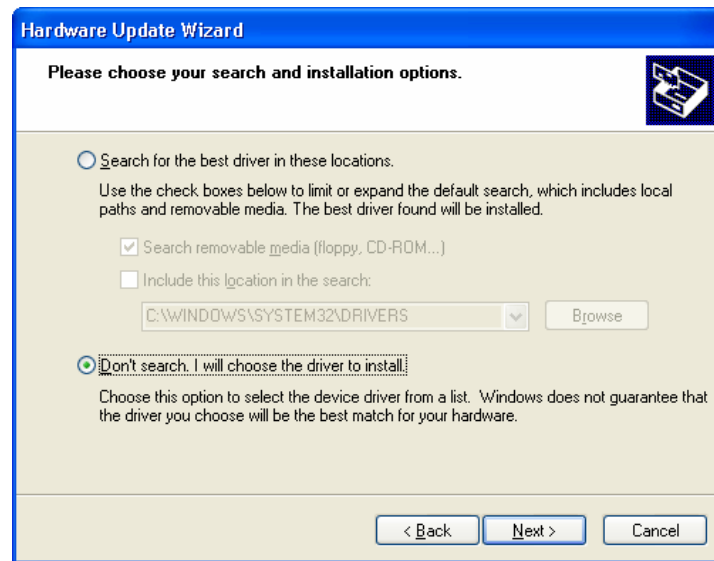


Fig. 5.3-4

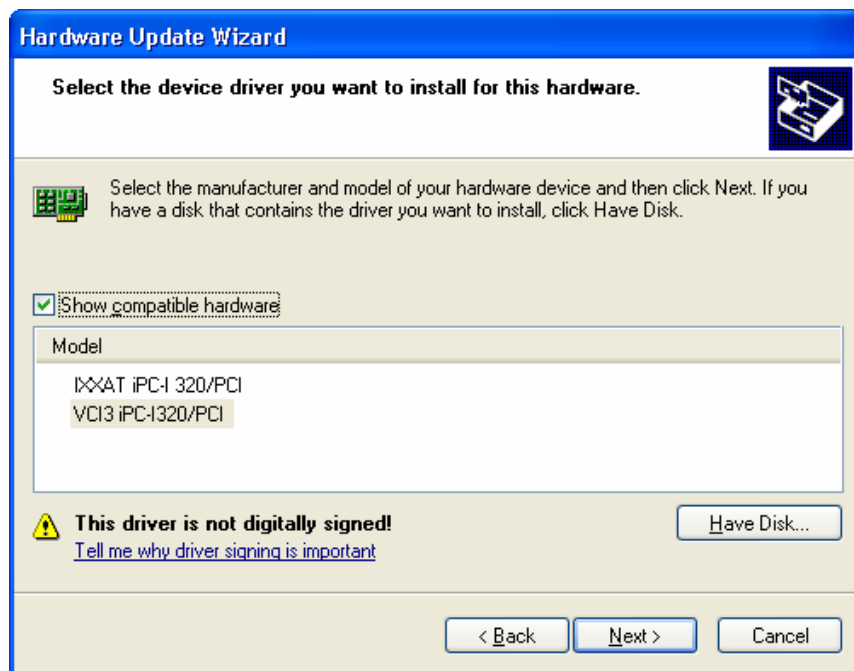


Fig. 5.3-5

# 6 Windows Vista

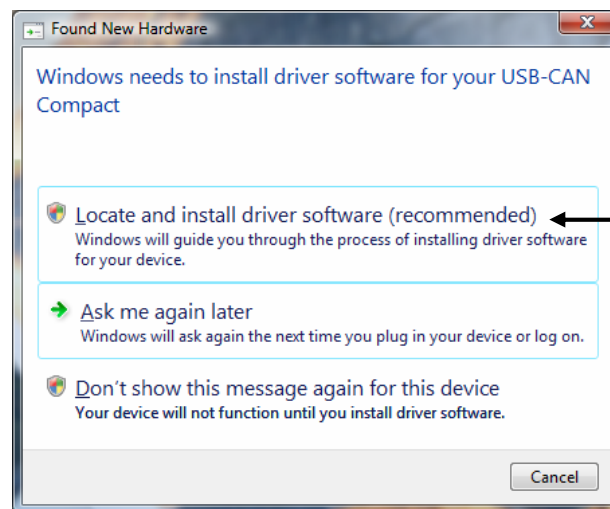
**!** **Attention:** With Windows Vista, the user must be logged in with administrator rights in order to carry out the hardware installation!

**💡** **Tip:** Install the VCI software before you install the IXXAT CAN interface. This facilitates configuration of the new IXXAT hardware under Windows. The driver will be found automatically and must not be copied from an external data carrier.

## 6.1 Installation of PCI, USB or PCMCIA interfaces

Installation is carried out via the automatically started hardware assistant, which detects the newly installed CAN-Interface.

- (1) Install your CAN interface board in the computer, or insert the tinCAN161 in the PCMCIA slot, or connect the USB-to-CAN adapter to your USB interface. Also observe any instructions in the hardware manuals.
- (2) The first time Windows Vista is booted after installing the CAN-Interface the hardware assistant is started automatically. The following dialogue appears, which you acknowledge with the selection of "Locate and install driver".



**Fig. 6.1-1: New USB-to-CAN compact found**

- (3) Windows finds a driver for the new CAN interface and the following dialogue appears (here for a USB-to-CAN compact):

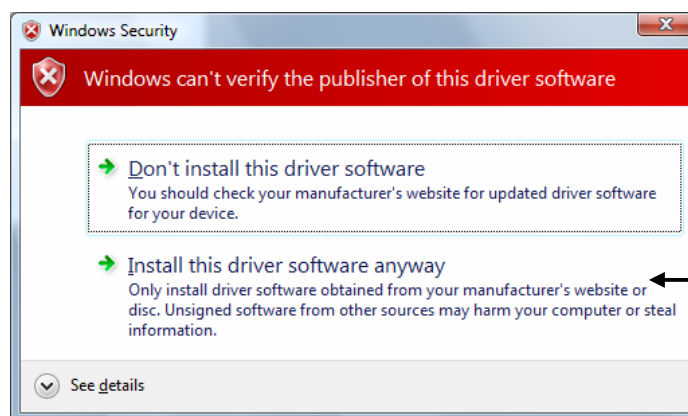


Fig. 6.1-2: Driver found

This dialog appears only on the installation of drivers which are not signed by the publisher.

After selecting 'Install this software anyway' the installation of the driver starts.

After successful installation, the CAN interface (here USB-to-CAN compact) is visible in the Windows Device Manager and ready for use.

## 6.2 Installation of PC/104 (ISA) boards

Before installing an ISA-card, it is absolutely essential to first find a free address space in the working memory and a free IRQ. For this, open the "System Informations" (Accessories|System Tools) and search for a free memory address space and a free IRQ under "Hardware Resources".

★ **The address settings on the card are made by means of 16-bit DOS segment addresses (e.g. D200) which are also described in the hardware manual. 32-bit Windows operating systems don't work with DOS segment/offset addressing; instead they address the memory in a linear way. Therefore the board's segment address (e.g. D200...D3FF) is declared as a linear address under Windows (e.g. D2000...D3FFF).**

The free address and the IRQ found are then set on the card by means of jumpers and dipswitches (see hardware manual). Afterwards install the CAN card into your PC.

The IRQ is to be reserved in the Bios for ISA-cards.

## 6.2.1 Installation

- (1) Start the Device Manager via the icon "Hardware and Sound/Device Manager".

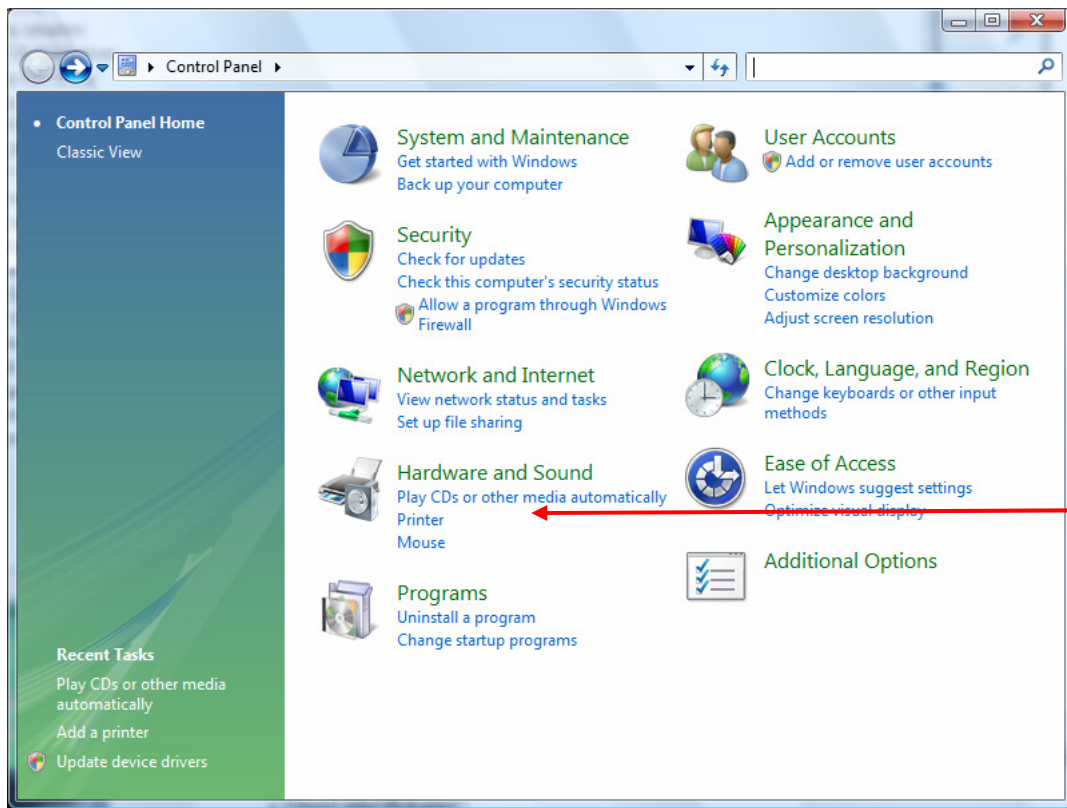


Figure 6.2-1: Starting the hardware wizard

- (2) Start the hardware assistant by selecting "Add legacy hardware"

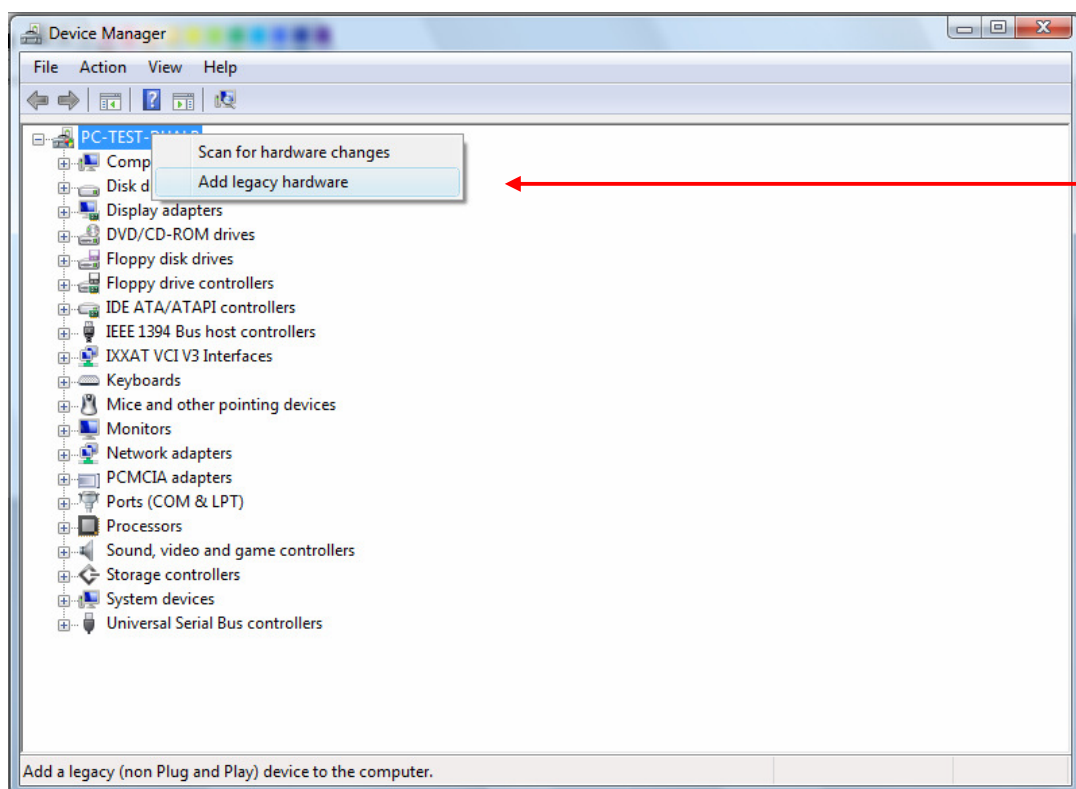


Figure 6.2-2: Start the Hardware Wizard

- (3) The welcome dialog of the Hardware Wizard appears. Acknowledge this with the "Next"-button.
- (4) Now the Hardware Wizard asks whether he should search for a new hardware. Please select "Install the hardware that I manually select from a list (Advanced)" and continue the installation with pressing the "Next" button.

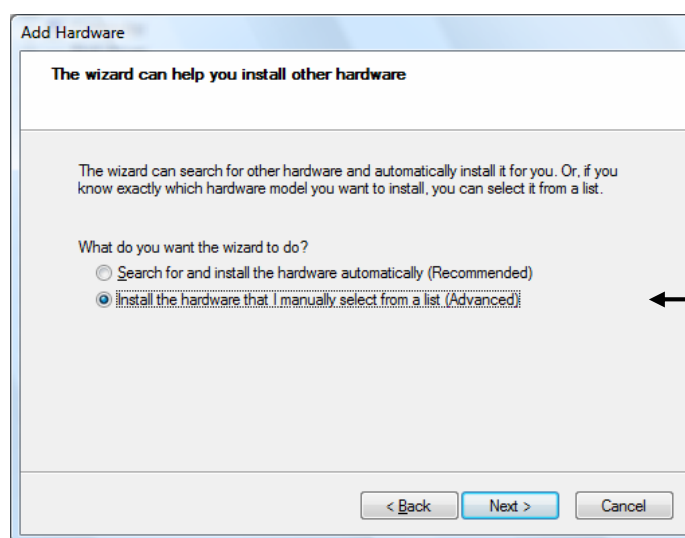


Bild 6.2-3: Hardware manuell aus einer Liste wählen

- (5) Because the VCI-software was installed before the hardware, you can select “IX-XAT VCI V3 Interfaces” in the list of the known hardware types and continue via the “Next” button.

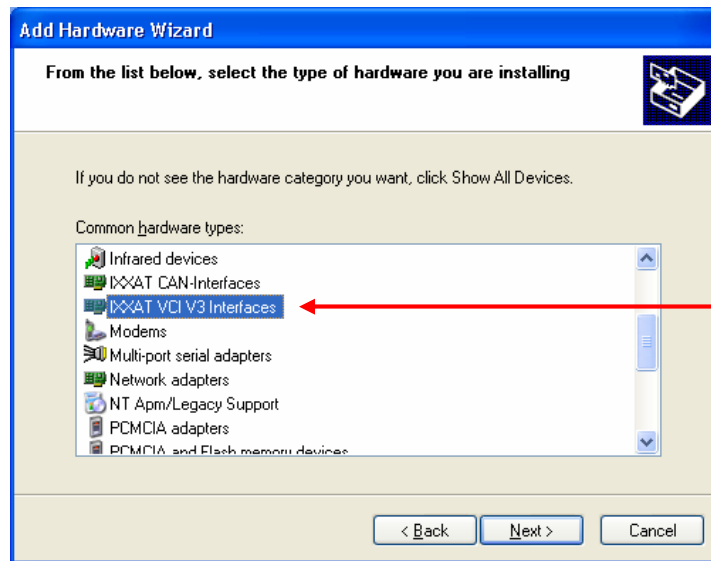


Figure 6.2-4: Selection of the hardware type

- (6) The hardware wizard now provides a selection of drivers. Select your CAN-interface and continue the installation with "Next".

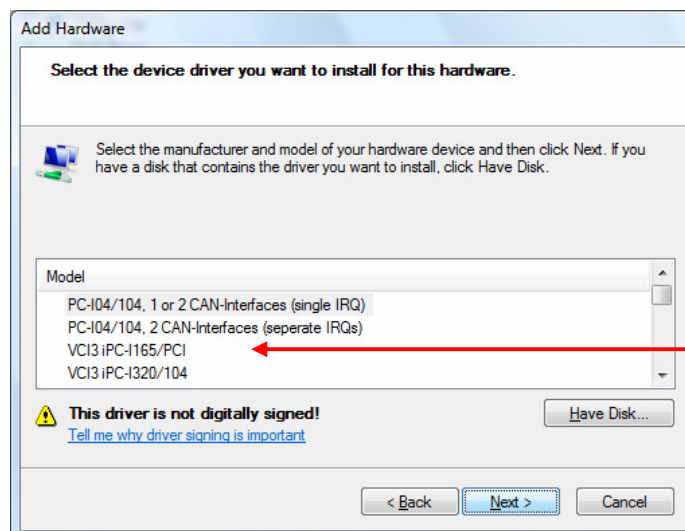


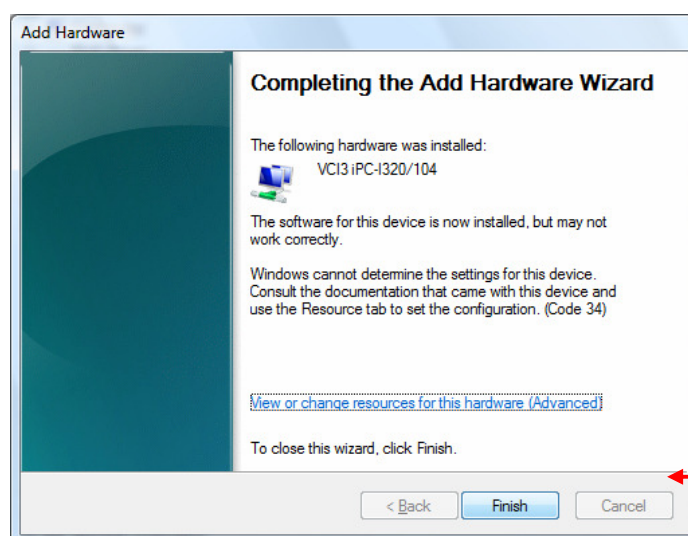
Figure 6.2-5: Selection of the driver to be installed

- (7) Windows now confirms your selection, which you acknowledge with the “Next” button.



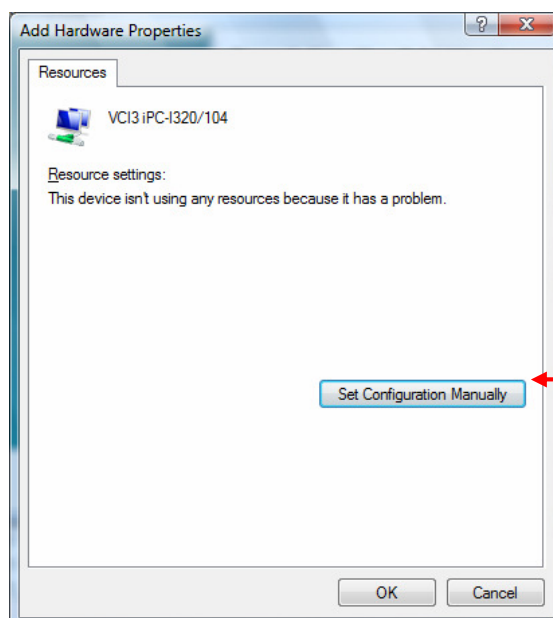
**The selected driver will be installed. This may take some time!**

- (8) Windows has now installed the CAN-interface with default settings. Click on *"View or change resources for this hardware"* to adapt this settings to the settings on the board.



**Figure 6.2-6: Hardware driver installed**

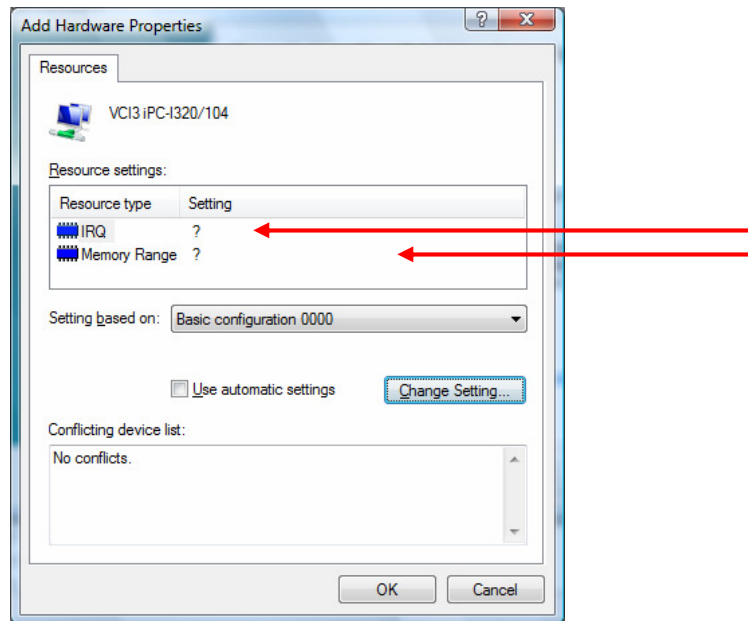
- (9) If the default settings are in conflict with existing resource configuration, Windows will show the following error message. Use the button *"Set Configuration Manually"* to adapt the settings.



**Figure 6.2-7: Notification about resource conflicts**

- (10) Changing the settings:

According to the settings made by you on the CAN-interface for address and interrupt, you must adjust the Resource settings here. Your alterations are adopted with "OK".



**Figure 6.2-8: Adaptation of settings**

(11) Conclude the installation with the "Finish" button.

## 6.2.2 Changing the settings

In case of resource conflicts with other hardware components you must modify the settings for address and/or IRQ as described in this chapter. Of course the new settings must first be set on the CAN-Interface itself and in the bios.

(1) Start the applet "System" within the Control Panel category "Hardware and Sound".

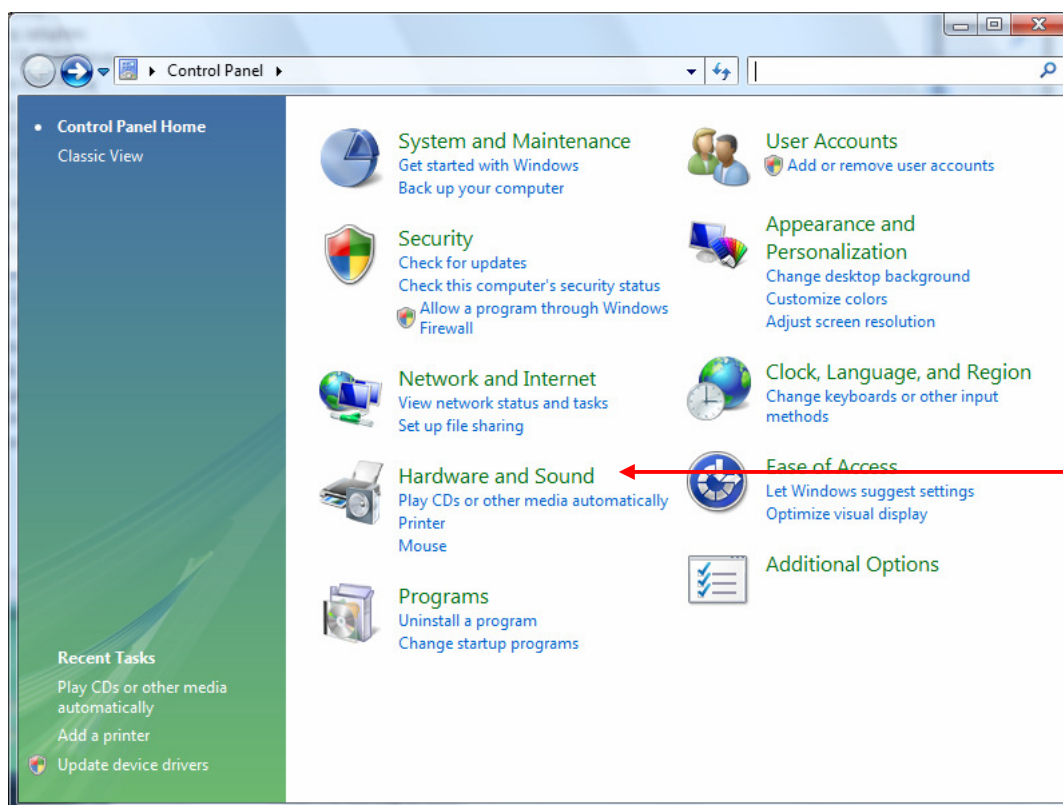


Figure 6.2-9: Starting the System Applet

- (2) Select the installed CAN-interface in the Device Manager.  
Open the properties of the CAN-interface whose settings you want to change.

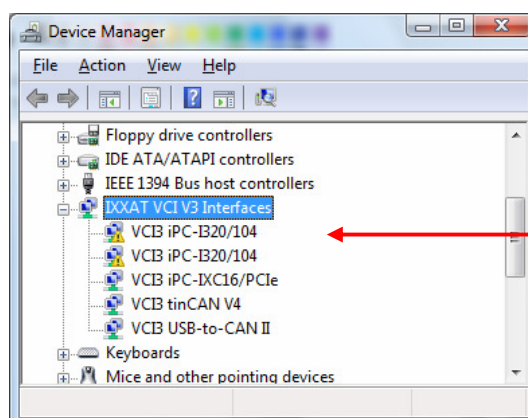
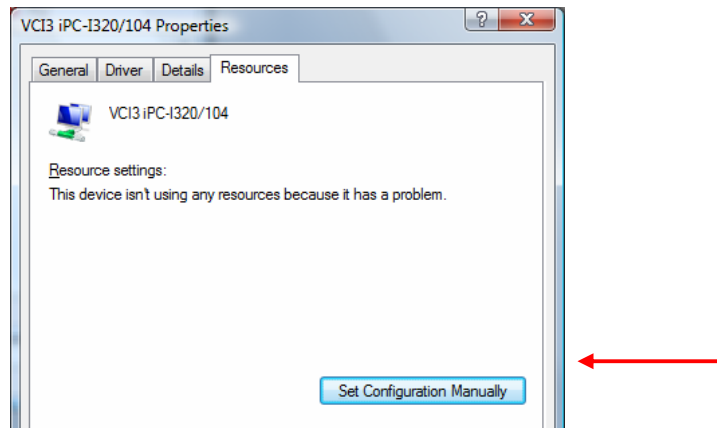


Figure 6.2-10: The Device Manager

- (3) If the settings conflict with existing resource configuration Windows will show the following error message. Use the button "Set Configuration Manually" to adapt the settings.



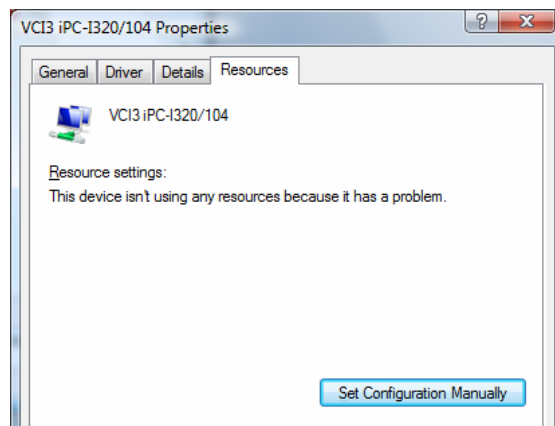
**Figure 6.2-11: Notification about resource conflicts**

(4) Changing the settings:

Now you see the settings entered during the installation.

Set the resources according to the settings you have made on the CAN-interface for address and interrupt.

Your alterations are adopted with "OK".



**Figure 6.2-12: Adaptation of settings**

### 6.3 Changing between VCI\_V2 and VCI\_V3 driver

The VCI\_V3 can be used parallel to a VCI\_V2 installation without any problems.

VCI\_V2 or VCI\_V3 is selected by selecting the corresponding driver.

The driver can be changed in the device manager via "Update driver...". In order to change the driver, the hardware must be installed in the system.

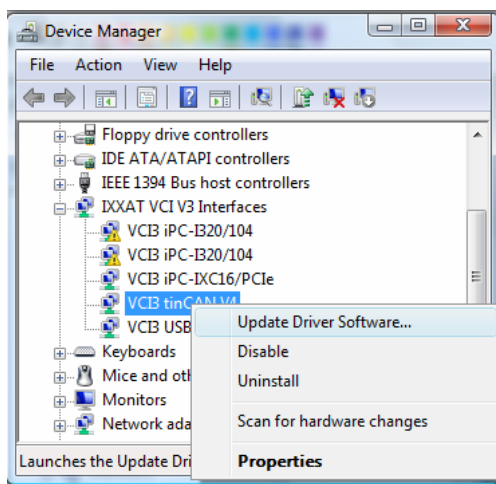


Fig. 6.3-1

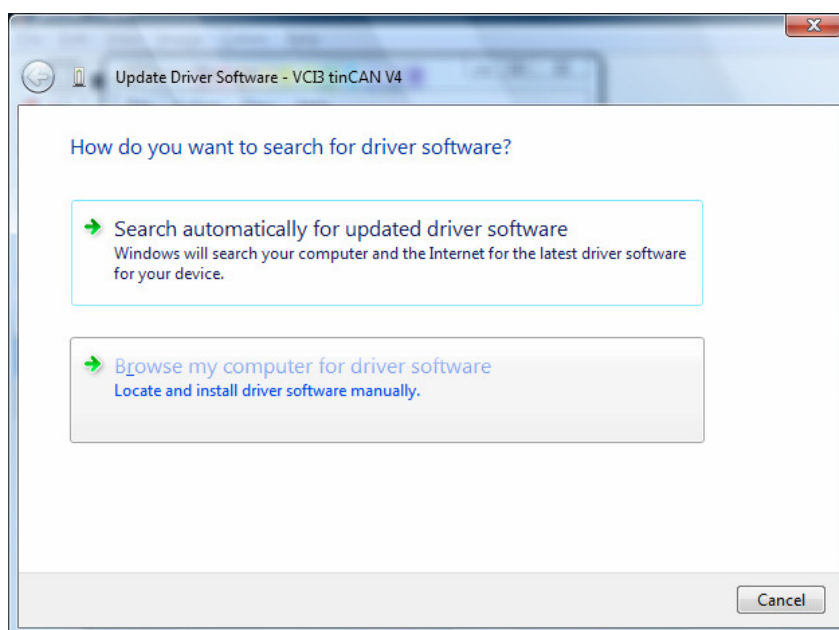


Fig. . 6.3-2

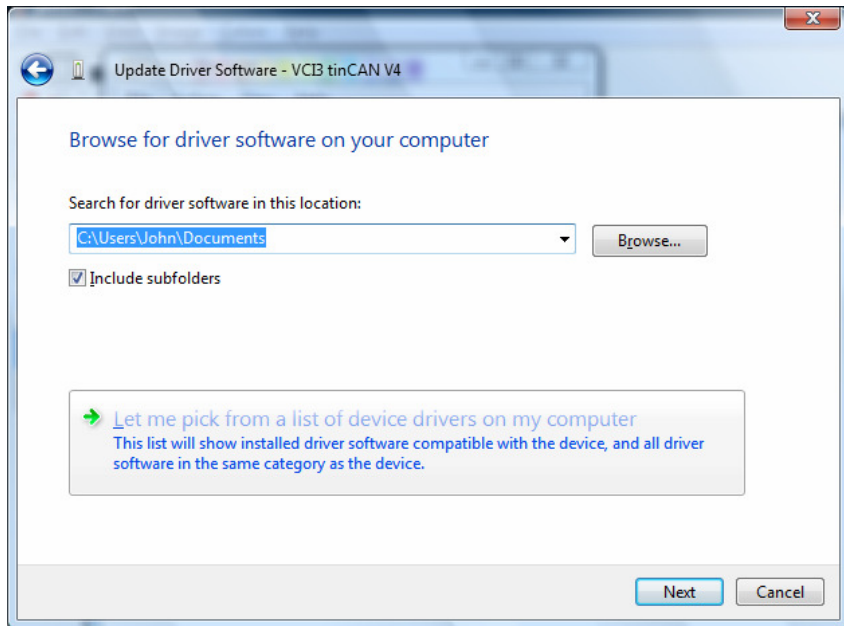


Fig. . 6.3-3

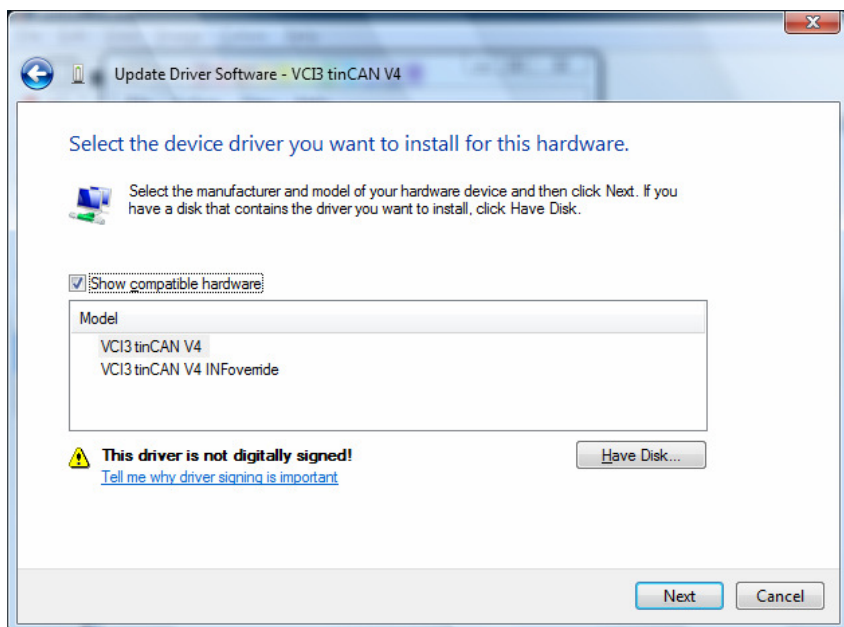


Fig. 6.3-4

## **7 Important information**

### **7.1 Updating to a new VCI version**

To update to a newer version of VCI V3, please first uninstall the old version with the aid of the control panel / software, then carry out the new VCI installation.

### **7.2 Plug&Play hardware installed before VCI installation**

If you already have installed your IXXAT PCI board under Windows 2000/XP, or have already inserted your PCMCIA board or your USB-to-CAN interface board before the VCI was installed, Windows will start the automatic hardware assistant after booting. This requires the location of the relevant INF file, as described in this installation manual.

These INF files are not available in unpacked form. Therefore, abort the automatically started hardware installation and proceed as follows:

- (1) Install the VCI. The necessary INF files are installed with the VCI.
- (2) Restart Windows. Your Plug&Play hardware is now automatically detected and configured.

### **7.3 Installation of INF file via the right-hand mouse button**

The INF files of the driver CD should not be directly installed via the right-hand mouse button in the Explorer. Correct installation can only be carried out via the hardware assistant.