

# Installation Instructions

**ADDI-DATA Multiarchitecture Device Drivers  
32-/64-Bit for x86/AMD64**



### Product information

This manual contains the technical installation and important instructions for correct commissioning and usage, as well as production information according to the current state before printing.

The content of this manual and the technical product data may be changed without prior notice.

ADDI-DATA GmbH reserves the right to make changes to the technical data and the materials included herein.

### Warranty and liability

The user is not authorised to make changes to the product beyond the intended use, or to interfere with the product in any other way.

ADDI-DATA shall not be liable for obvious printing and phrasing errors.

In addition, ADDI DATA, if legally permissible, shall not be liable for personal injury or damage to materials caused by improper installation and/or commissioning of the product by the user or improper use; for example, if the product is operated despite faulty safety and protection devices, or if notes in the operating instructions regarding transport, storage, installation, commissioning, operation, limit values, etc. are not taken into consideration.

Liability is further excluded if the operator changes the product or the source code files without authorisation and/or if the operator is guilty of not monitoring the permanent operational capability of working parts and this has led to damage.

### Copyright

This manual, which is intended for the operator and its staff only, is protected by copyright.

Duplication of the information contained in the operating instructions and of any other product information, or disclosure of this information for use by third parties, is not permitted, unless this right has been granted by the product licence issued. Non-compliance with this could lead to civil and criminal proceedings.

### ADDI-DATA software product licence

Please read this licence carefully before using the standard software! The customer is only granted the right to use this software if he/she agrees with the conditions of this licence.

The software may only be used to set up the ADDI-DATA products.

Reproduction of the software is forbidden (except for back-up and for exchange of faulty data carriers). Disassembly, decompilation, decryption and reverse engineering of the software are forbidden. This licence and the software may be transferred to a third party if this party has acquired a product by purchase, has agreed to all the conditions in this licence contract and the original owner does not keep any copies of the software.

### Trademarks

- ADDI-DATA, APCI-1500, MSX-Box and MSX-E are registered trademarks of ADDI-DATA GmbH.
- Turbo Pascal, Delphi, Borland C, Borland C++ are registered trademarks of Borland Software Corporation.
- Microsoft .NET, Microsoft C, Visual C++, MS-DOS, Windows XP, Windows 7, Windows 10, Windows Server 2000, Windows Server 2003, Windows Embedded and Internet Explorer are registered trademarks of Microsoft Corporation.
- Linux is a registered trademark of Linus Torvalds.
- LabVIEW, LabWindows/CVI, DASYLab, DIAdem are registered trademarks of National Instruments Corporation.
- CompactPCI is a registered trademark of PCI Industrial Computer Manufacturers Group.
- VxWorks is a registered trademark of Wind River Systems, Inc.
- RTX is a registered trademark of IntervalZero.



## Warning!

**The following risks result from the improper implementation of the board and from use contrary to the regulations:**



**Personal injury**



**Damage to the board, the PC and peripherals**



**Pollution of the environment.**

- Protect yourself, others and the environment!
- Read the safety precautions (yellow leaflet) carefully!

If this leaflet is not enclosed with the documentation, please contact us and ask for it.

- Observe the instructions of this manual!

Make sure that you do not forget or skip any step!

We are not liable for damages resulting from the wrong use of the board.

- Pay attention to the following symbols:



### NOTICE!

Designates hints and other useful information.



### NOTICE!

Designates a possibly dangerous situation.

If the instructions are ignored, the board, the PC and/or peripherals may be **destroyed**.



### WARNING!

Designates a possibly dangerous situation.

If the instructions are ignored, the board, the PC and/or peripherals may be **destroyed** and persons may be **endangered**.

## Contents

<b>Warning!</b> .....	<b>3</b>
<b>1 Installation of 64-bit drivers</b> .....	<b>5</b>
1.1 Driver signature.....	5
1.2 Installation under Windows 7 (64-bit) .....	6
1.2.1 First driver installation .....	6
1.2.2 Installation of another driver .....	12
1.3 Installation under Windows 10 (64-bit) .....	15
1.3.1 First driver installation .....	15
1.3.2 Installation of another driver .....	20
<b>2 Installation of 64-bit drivers (serial interfaces)</b> .....	<b>23</b>
2.1 Board list.....	23
2.2 Installation under Windows 7 (64-bit) .....	23
2.2.1 First driver installation .....	23
2.2.2 Installation of another driver .....	31
2.3 Installation under Windows 10 (64-bit) .....	31
2.3.1 First driver installation .....	31
2.3.2 Installation of another driver .....	38
2.4 Replacement of serial interfaces .....	39
2.5 "MTTY" test program .....	41
<b>3 Installation of programming samples</b> .....	<b>42</b>
<b>4 Uninstallation of 64-bit drivers</b> .....	<b>43</b>
<b>5 Contact and support</b> .....	<b>45</b>

## Tables

Table 1-1: Driver signature: Overview .....	5
Table 2-1: Serial interfaces .....	23

## 1 Installation of 64-bit drivers

In this document, the installation of 64-bit drivers, i.e. drivers of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64" is described.



### NOTICE!

It is possible to install the 64-bit drivers for Windows 7 (64-bit) under Windows 7 (32-bit) as well.

The installation of 64-bit drivers for serial interfaces can be found in Chapter 2. The drivers for other PC boards from ADDI-DATA are installed under Windows 7 or 10 as described on the following pages.

### 1.1 Driver signature

**Table 1-1: Driver signature: Overview**

Operating system	Windows 7	Windows 10
<b>32-bit</b>	32-bit and 64-bit drivers (no signature required)	-
<b>64-bit</b>	64-bit drivers (signed by ADDI-DATA)	64-bit drivers (signed by Microsoft)



### WARNING!

Extension signature error under Windows 7

Since 23.09.2021, our Windows drivers are signed using SHA256 instead of SHA1 algorithm.

This was imposed by Microsoft since SHA1 has been considered as unsafe.

In some circumstances, drivers signed after 23.09.2021 cannot be installed anymore under Windows 7.

This error occurs only on systems which were not updated with the following Windows updates/fixes.

- KB4490628 (update from 12 March 2019).
- KB4474419 (update from 23 September 2019).

Once those patches installed, drivers from third-party company signed using SHA256 hashing algorithm (including ADDI-DATA) could be installed again.

**Patches to install:**

To install KB4490628 manually:

1. Go to <https://www.catalog.update.microsoft.com/Search.aspx?q=kb4490628>
2. Select your computer's OS version and click Download button.
3. Download the update to your computer by clicking the link in the opened window.
4. Install the update.

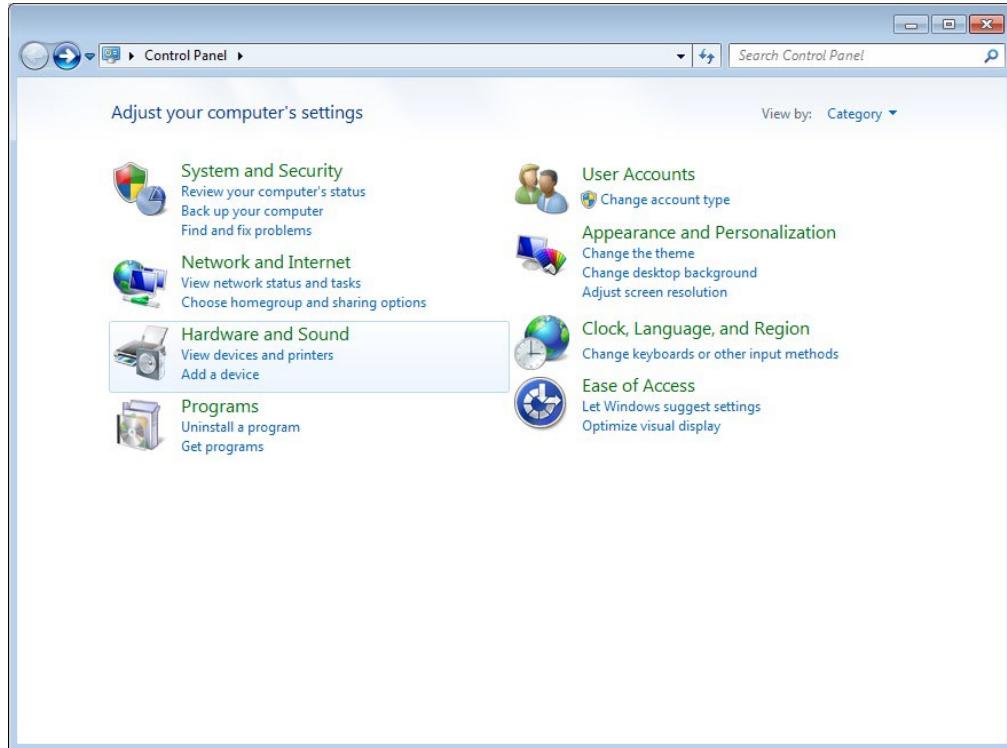
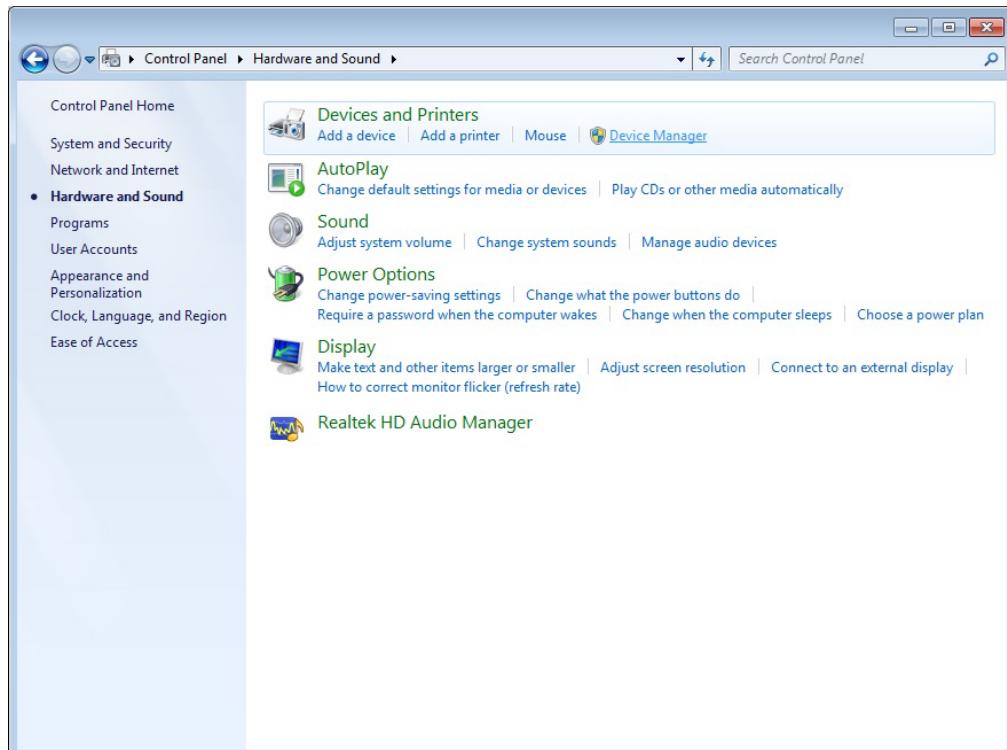
To install KB4474419 manually:

1. Go to <https://www.catalog.update.microsoft.com/search.aspx?q=kb4474419>
2. Select your computer's OS version and click Download button.
3. Download the update to your computer by clicking the link in the opened window.
4. Install the update.

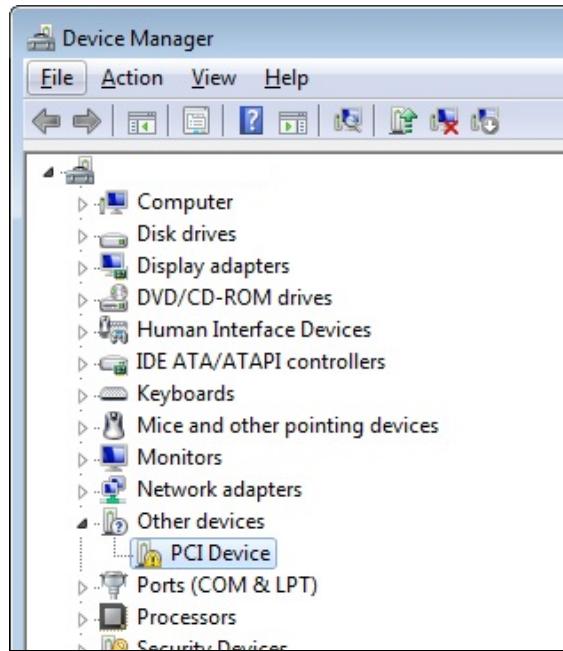
## 1.2 Installation under Windows 7 (64-bit)

### 1.2.1 First driver installation

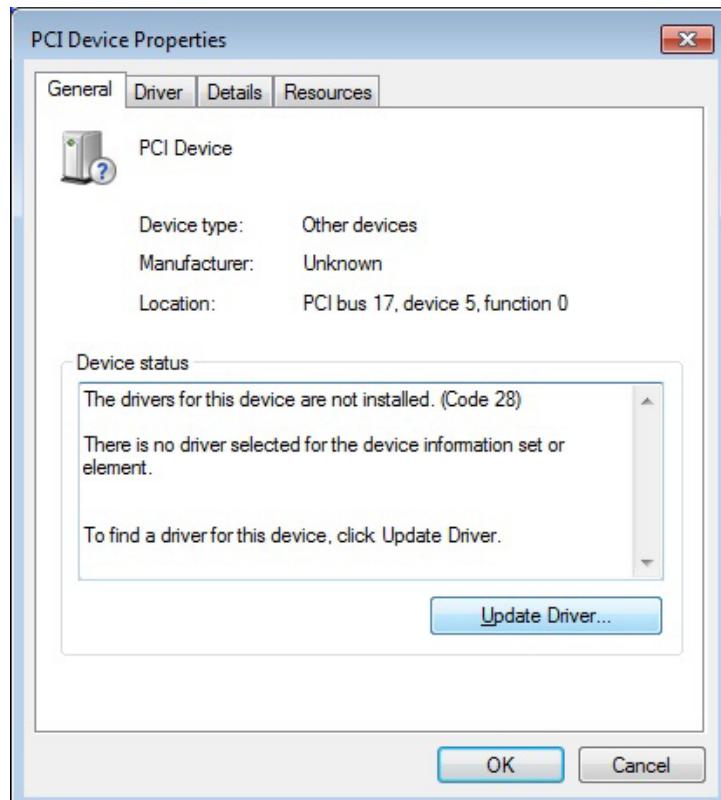
- 1.** Switch off the PC.
- 2.** Insert the board and fit the accessories.
- 3.** Start up the PC and log in with administrator rights.

**4. Click on "Start/Control Panel/Hardware and Sound".****5. In the "Devices and Printers" section, click on "Device Manager".**

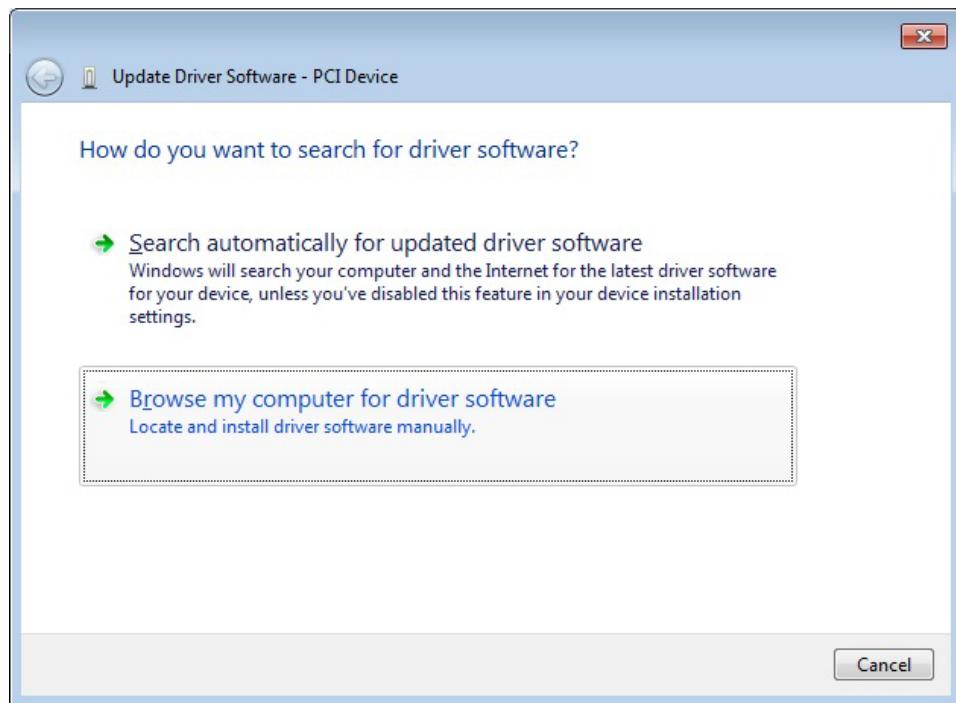
6. In the "Device Manager", double-click on the entry under "Other devices" (e.g. "PCI Device").



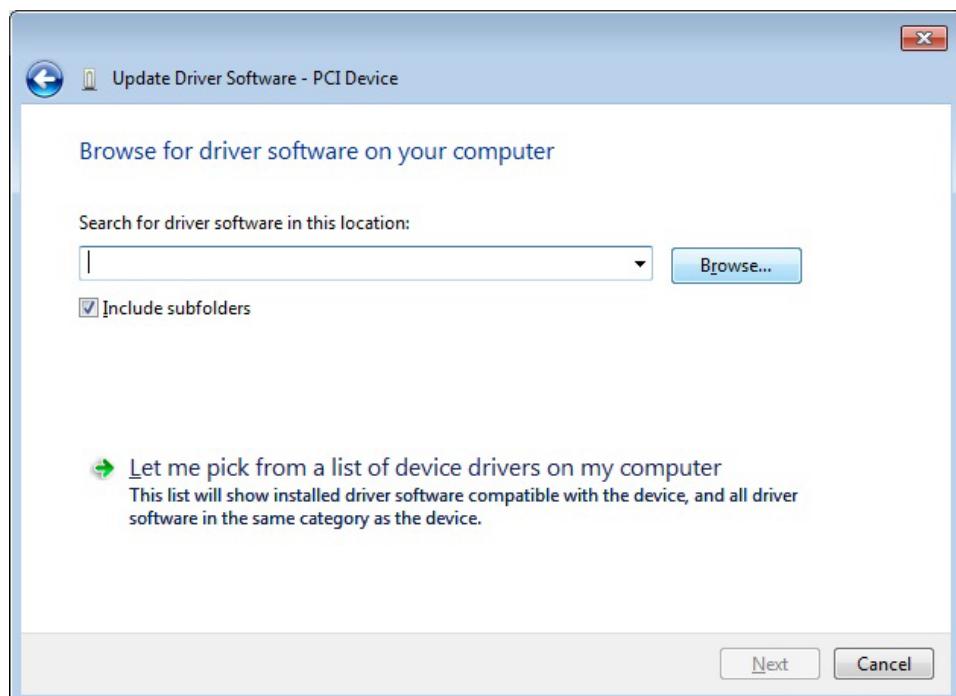
7. Click on the "Update Driver..." button.



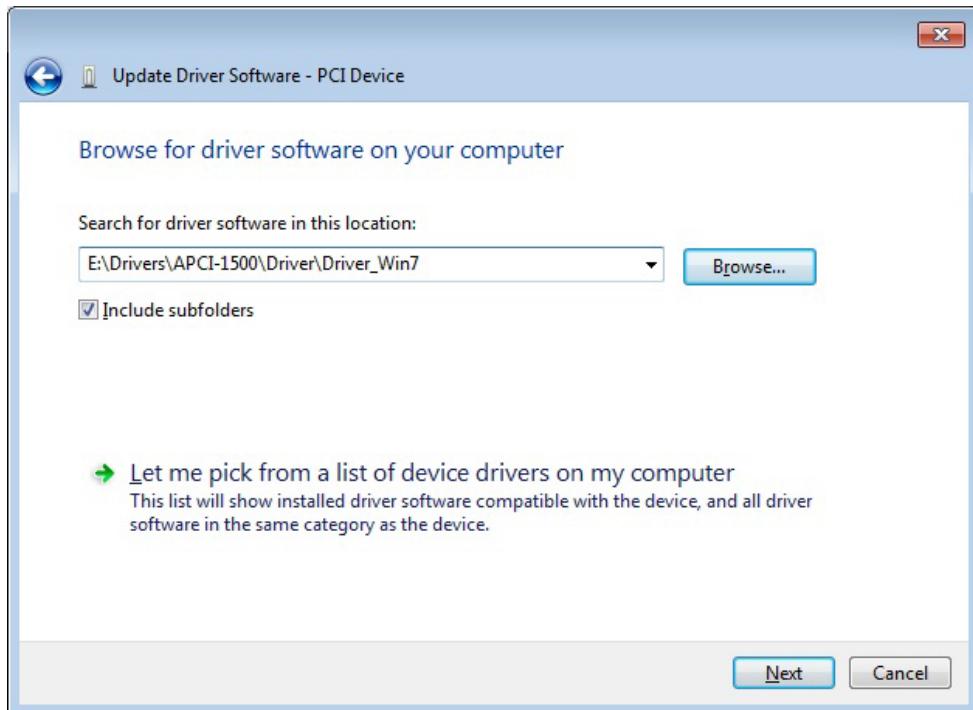
**8.** Click on the button “Browse my computer for driver software”.



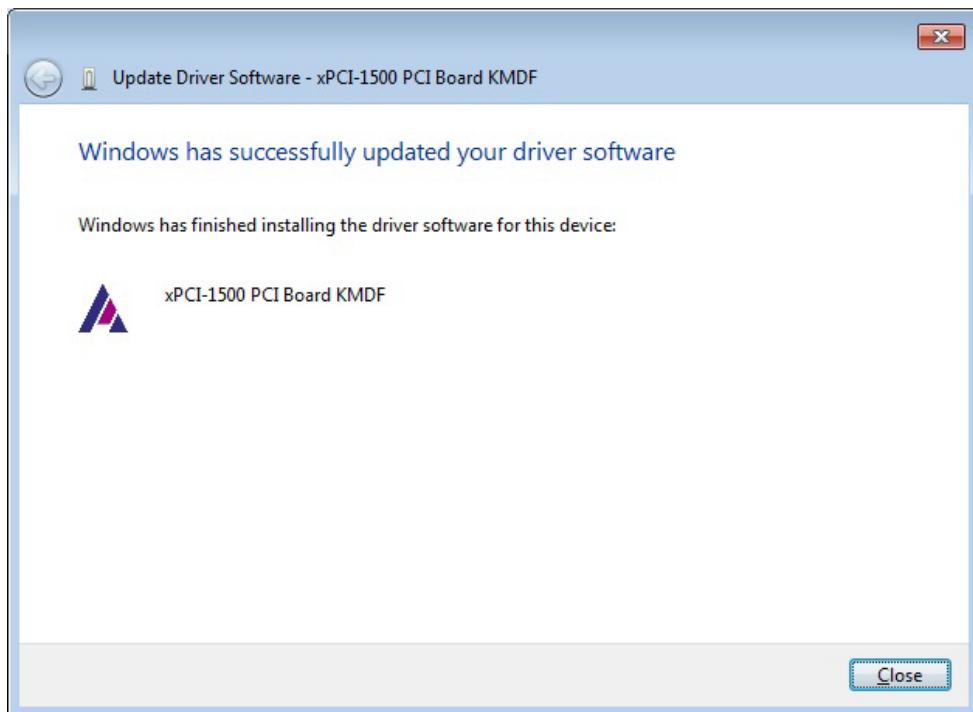
**9.** Click on “Browse”.



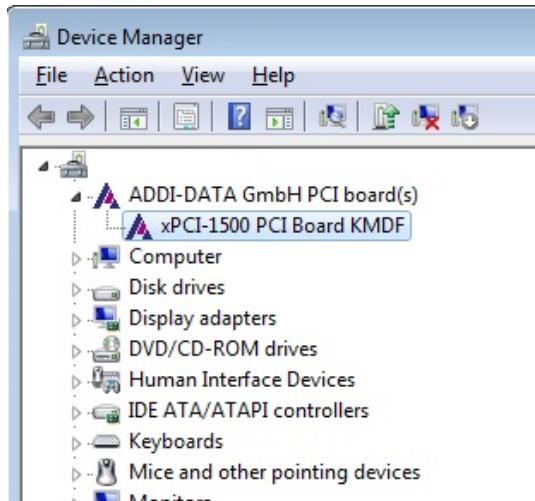
- 10.** Select the directory "Driver\Driver\_Win7" (see document "Quick installation PC boards", Chapter "Driver download").
- 11.** Click on "Next".



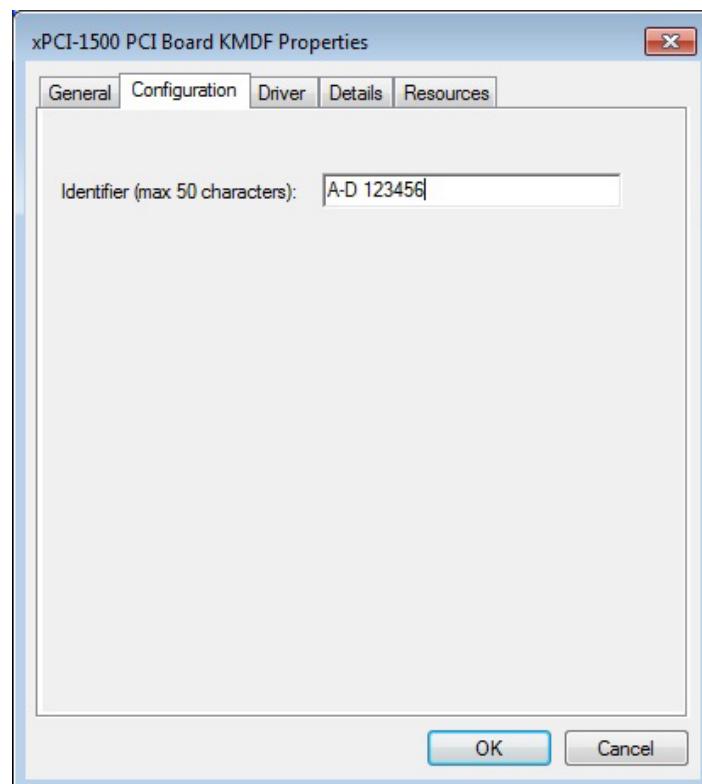
The installation of the driver software is finished.



- 12.** Click on "Close" in all open windows.
- 13.** In the "Device Manager", double-click on the name of the newly inserted board.



- 14.** On the "Configuration" tab, enter, for example, the serial number of the board (see label at the slot bracket of the board) as the identifier, and click on "OK".



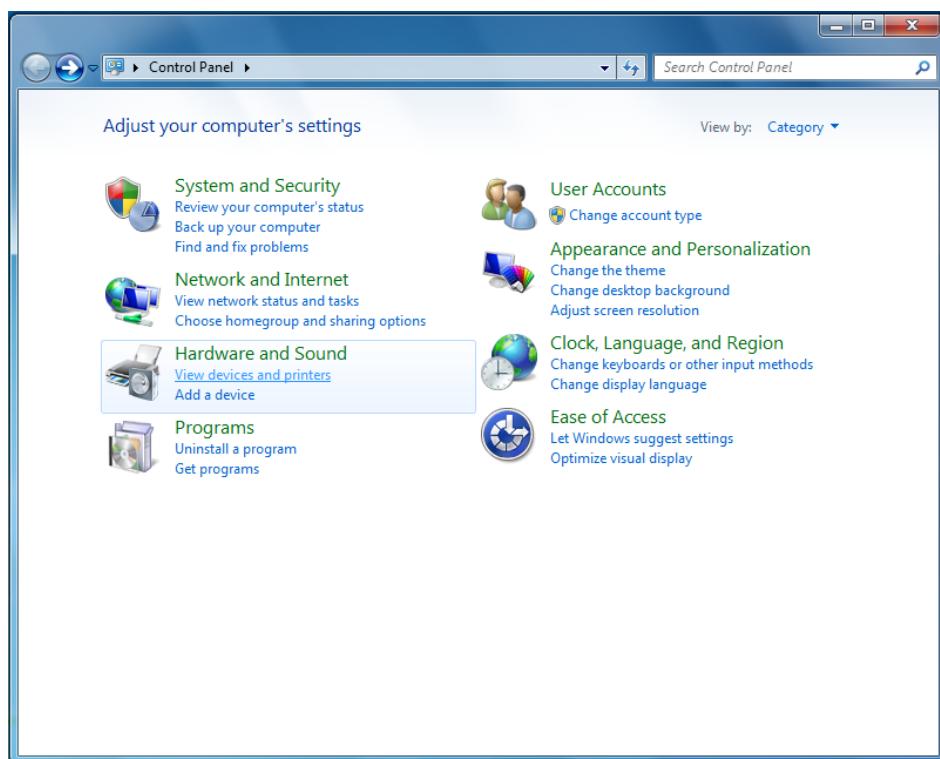
- 15.** Close all open windows of the "Device Manager".  
The installation is finished. The board is ready for operation.

### 1.2.2 Installation of another driver

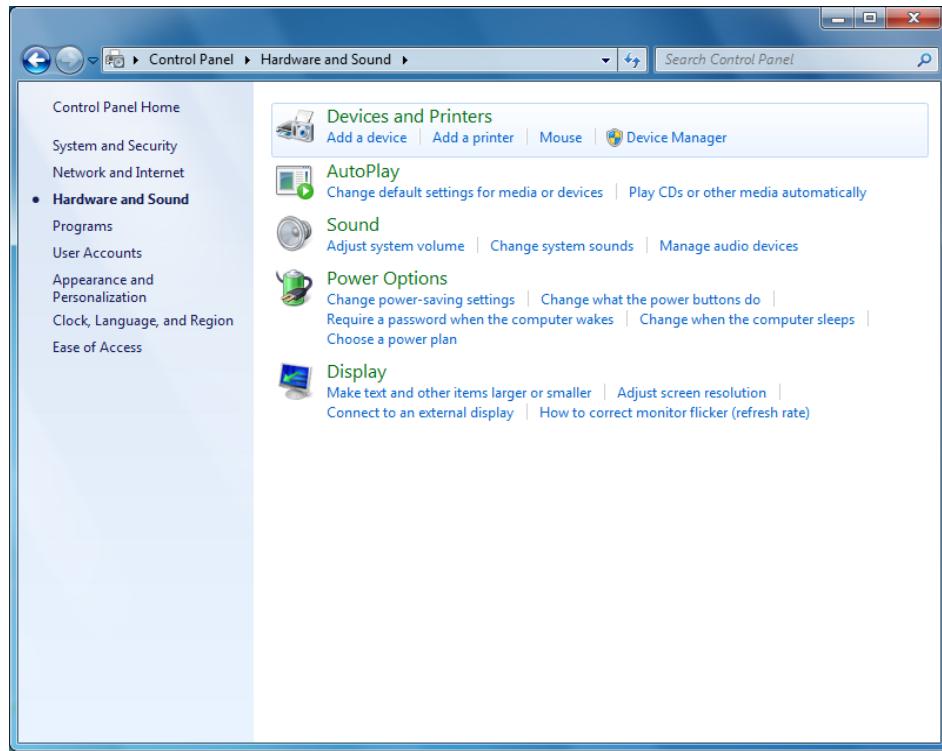
- 1.** Switch off the PC.
- 2.** Insert the board and fit the accessories.
- 3.** Start up the PC and log in with administrator rights.

Depending on the board type, you have to proceed in different ways:

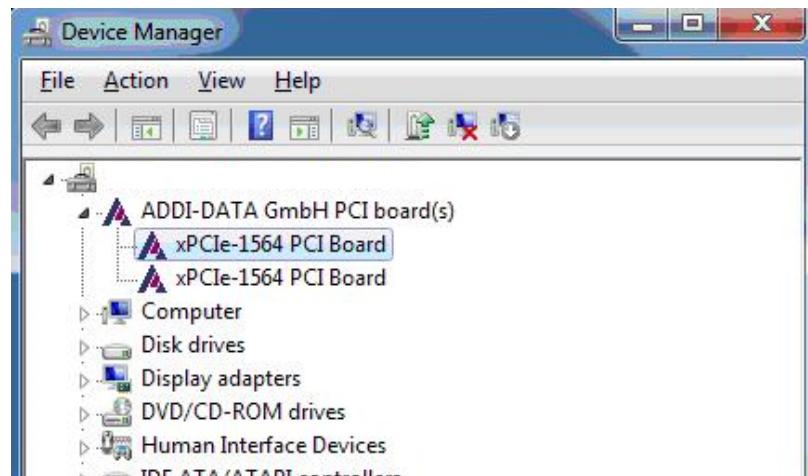
- a) If a board of the same type has been inserted before and its driver has been installed, the new board is detected by the computer and the installation of the driver software runs automatically. Afterwards, continue with step 4 of this chapter.
  - b) If the board type is a different one, the driver needs to be installed as described in Chapter 1.2.1 (from step 4).
- 4.** Click on "Start/Control Panel/Hardware and Sound".



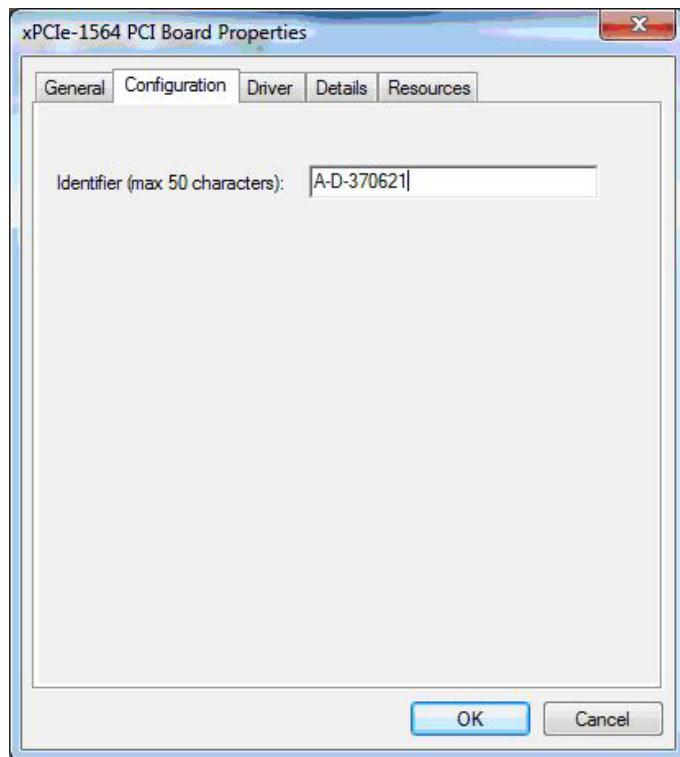
5. In the “Devices and Printers” section, click on “Device Manager”.



6. In the “Device Manager”, double-click on the name of the newly inserted board.



- 7.** On the “Configuration” tab, enter, for example, the serial number of the board (see label at the slot bracket of the board) as the identifier and click on “OK”.



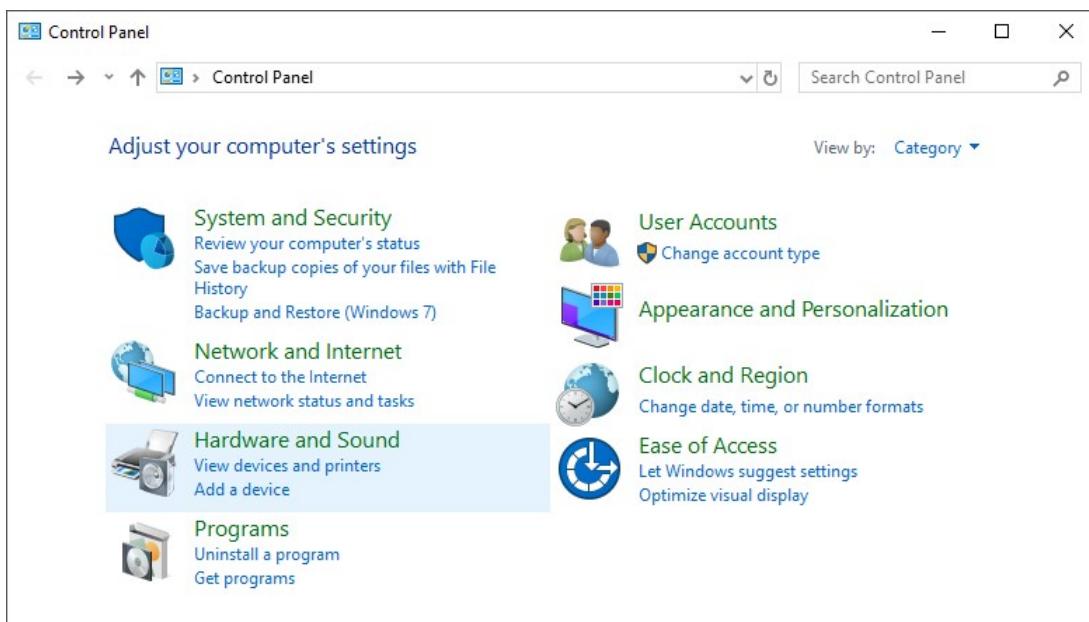
- 8.** Close all open windows of the “Device Manager”.

The installation is finished. The board is ready for operation.

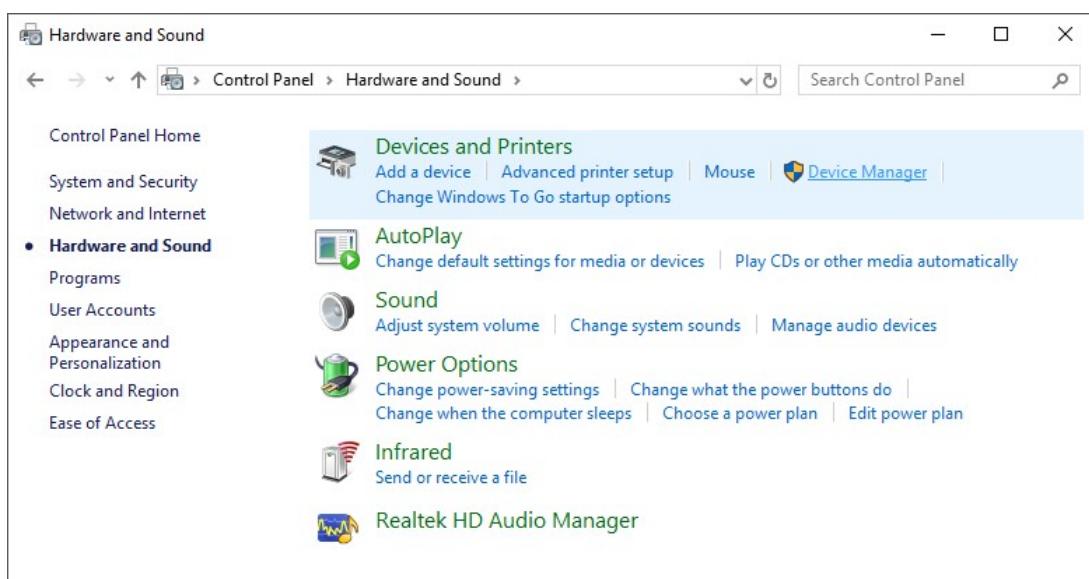
## 1.3 Installation under Windows 10 (64-bit)

### 1.3.1 First driver installation

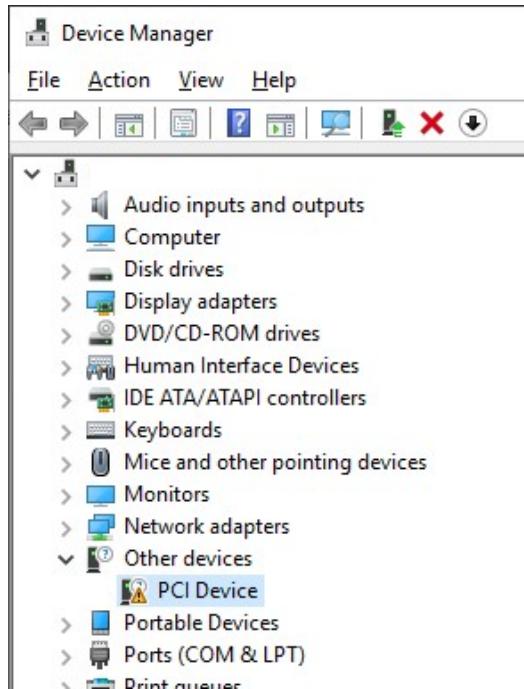
- 1.** Switch off the PC.
- 2.** Insert the board and fit the accessories.
- 3.** Start up the PC and log in with administrator rights.
- 4.** Click on "Start/Windows System/Control Panel/Hardware and Sound".



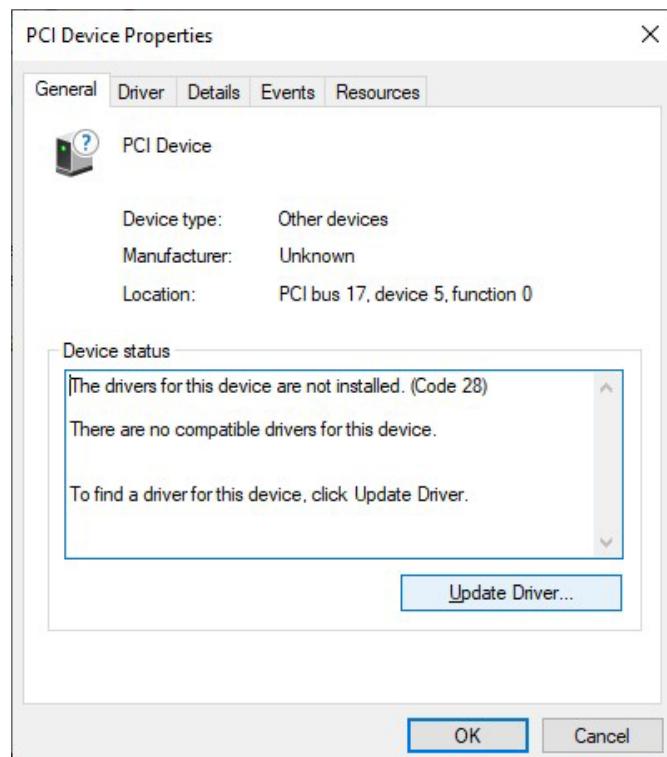
- 5.** In the "Devices and Printers" section, click on "Device Manager".



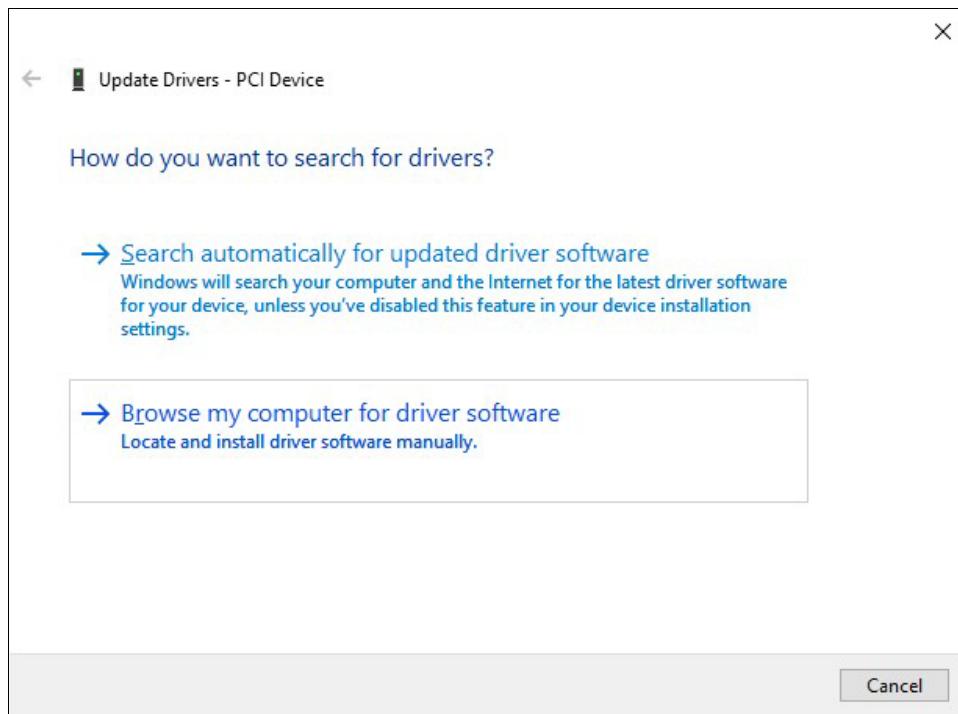
6. In the "Device Manager", double-click on the entry under "Other devices" (e.g. "PCI Device").



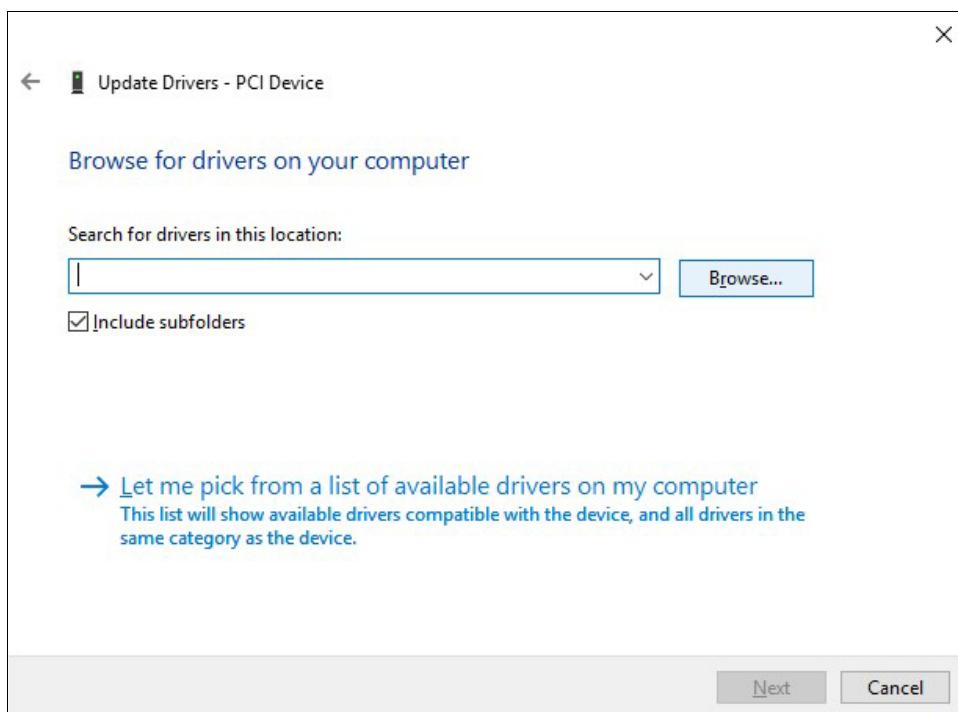
7. Click on the "Update Driver..." button.



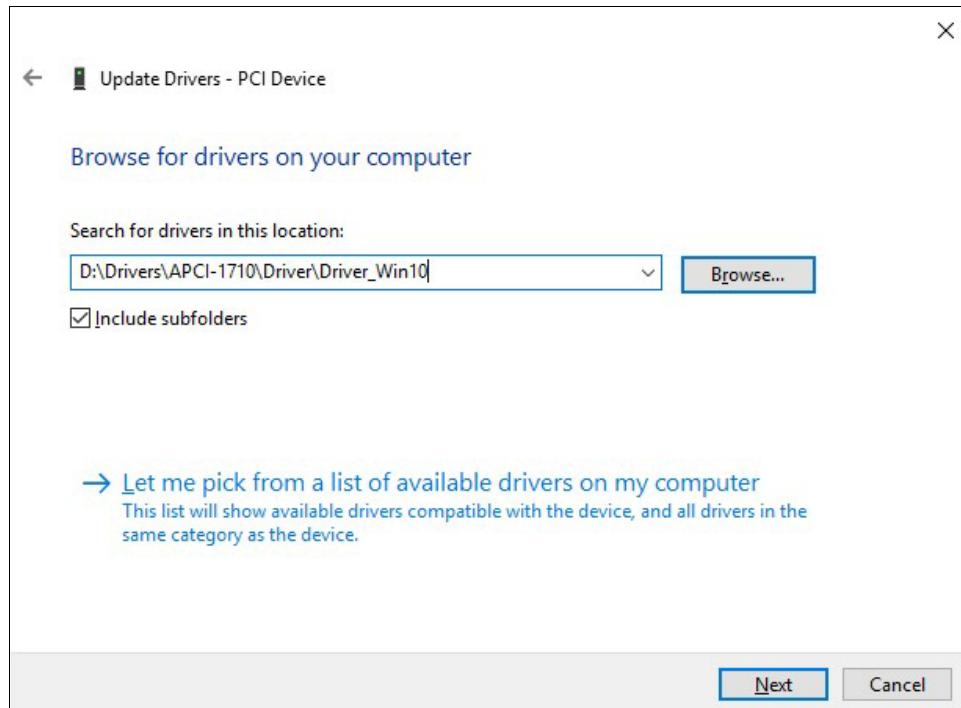
**8.** Click on the button “Browse my computer for driver software”.



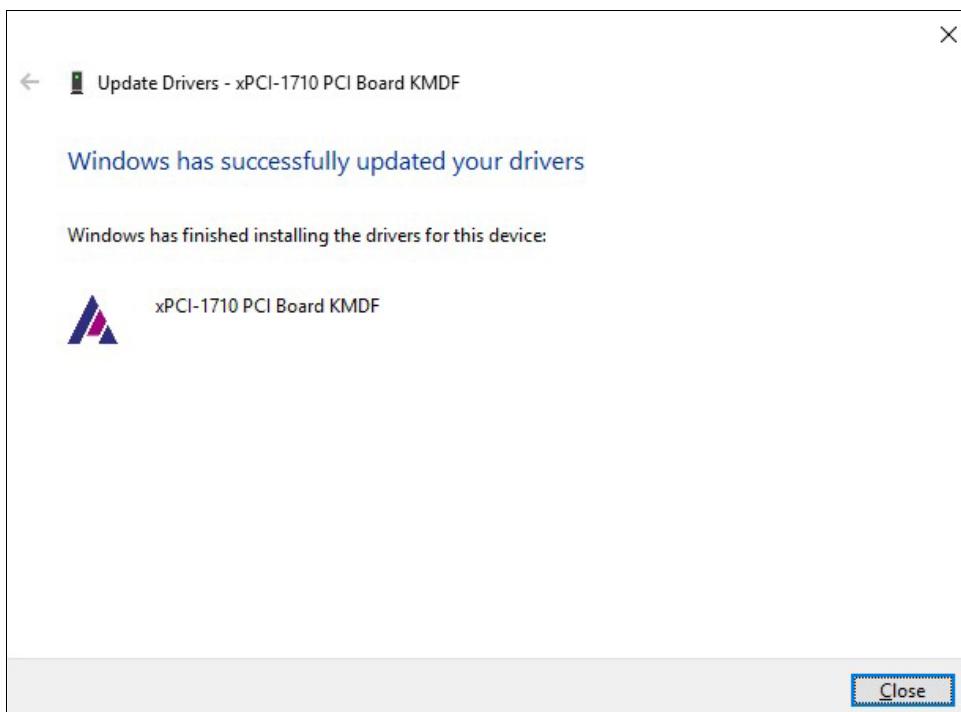
**9.** Click on “Browse”.



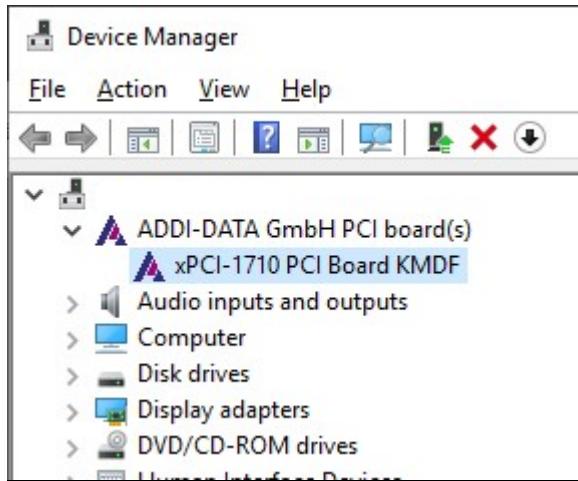
- 10.** Select the directory "Driver\Driver\_Win10" (see document "Quick installation PC boards", Chapter "Driver download").
- 11.** Click on "Next".



The installation of the driver software is finished.



- 12.** Click on "Close" in all open windows.
- 13.** In the "Device Manager", double-click on the name of the newly inserted board.



- 14.** On the "Configuration" tab, enter, for example, the serial number of the board (see label at the slot bracket of the board) as the identifier and click on "OK".



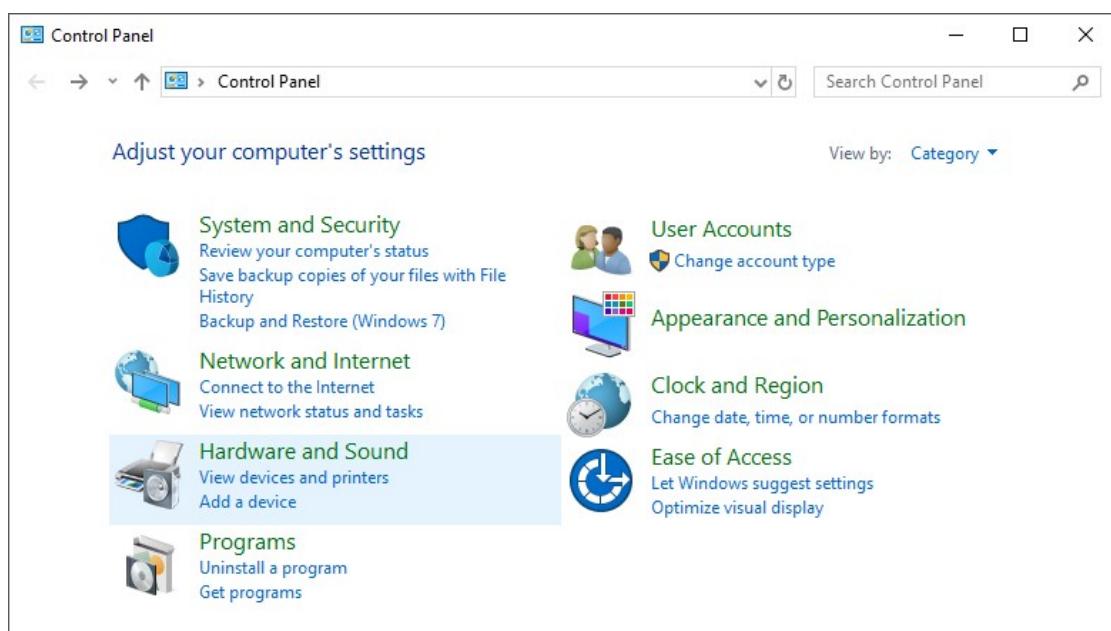
- 15.** Close all open windows of the "Device Manager".  
The installation is finished. The board is ready for operation.

### 1.3.2 Installation of another driver

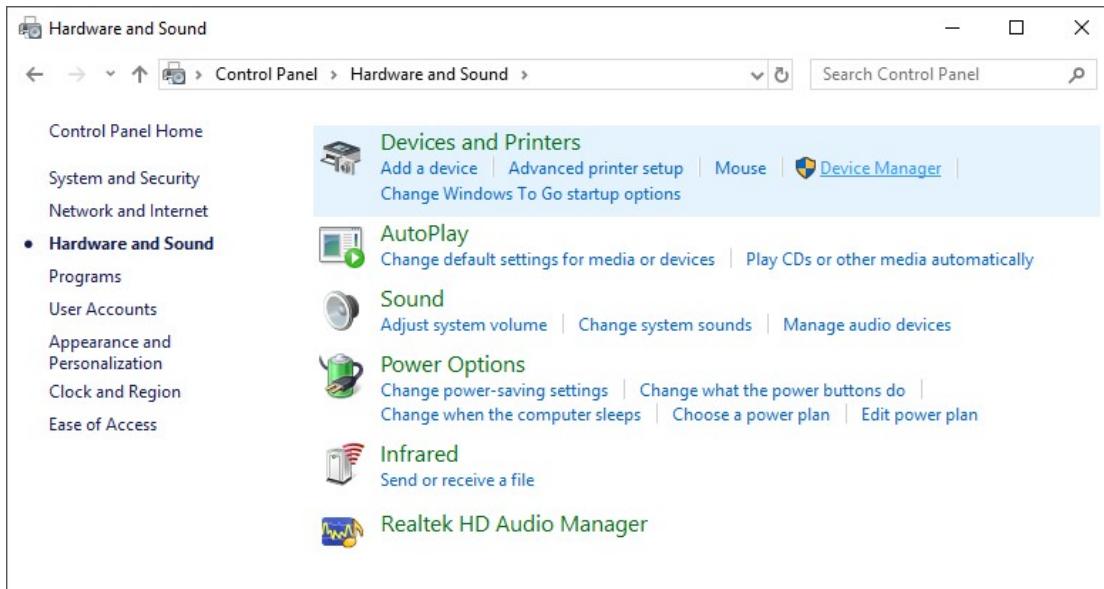
- 1.** Switch off the PC.
- 2.** Insert the board and fit the accessories.
- 3.** Start up the PC and log in with administrator rights.

Depending on the board type, you have to proceed in different ways:

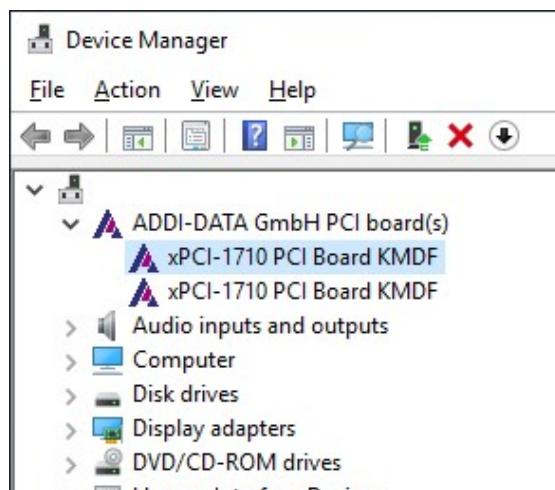
- a) If a board of the same type has been inserted before and its driver has been installed, the new board is detected by the computer and the installation of the driver software runs automatically. Afterwards, continue with step 4 of this chapter.
  - b) If the board type is a different one, the driver needs to be installed as described in Chapter 1.3.1 (from step 4).
- 4.** Click on "Start/Windows System/Control Panel/Hardware and Sound".



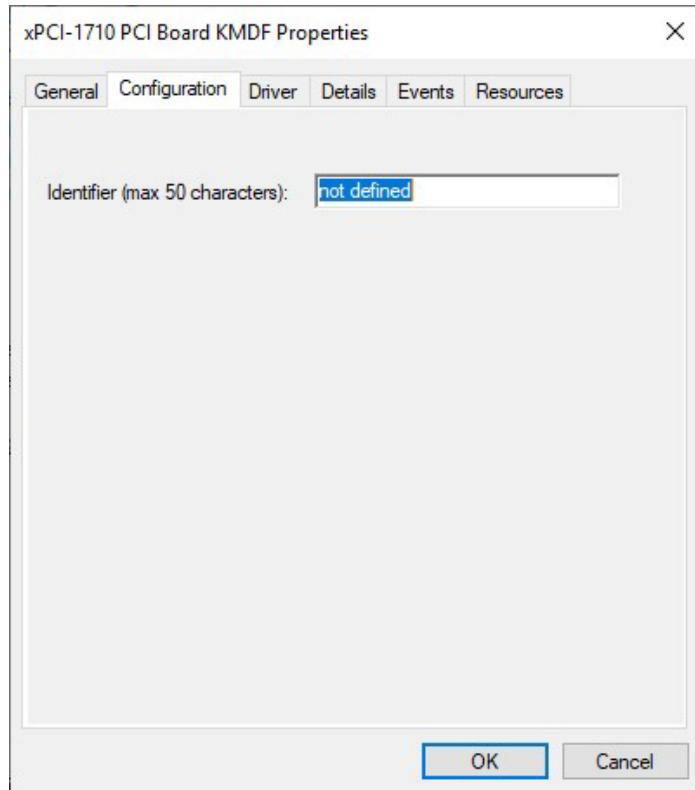
5. In the “Devices and Printers” section, click on “Device Manager”.



6. In the “Device Manager”, double-click on the name of the newly inserted board.



- 7.** On the “Configuration” tab, enter, for example, the serial number of the board (see label at the slot bracket of the board) as the identifier and click on “OK”.



- 8.** Close all open windows of the “Device Manager”.  
The installation is finished. The board is ready for operation.

## 2 Installation of 64-bit drivers (serial interfaces)

### 2.1 Board list

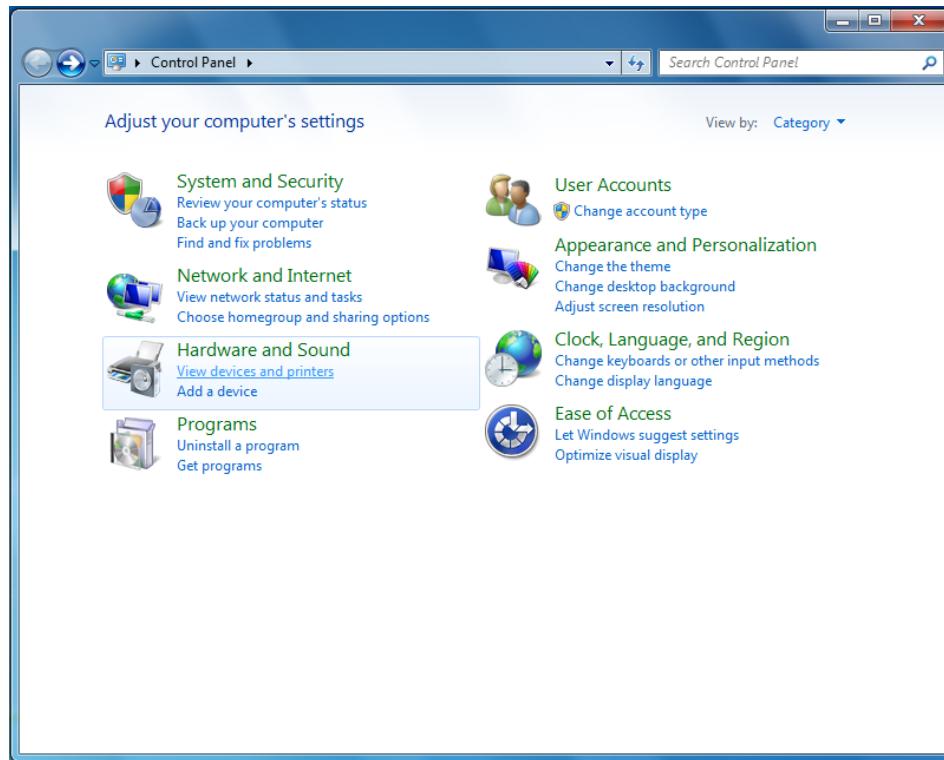
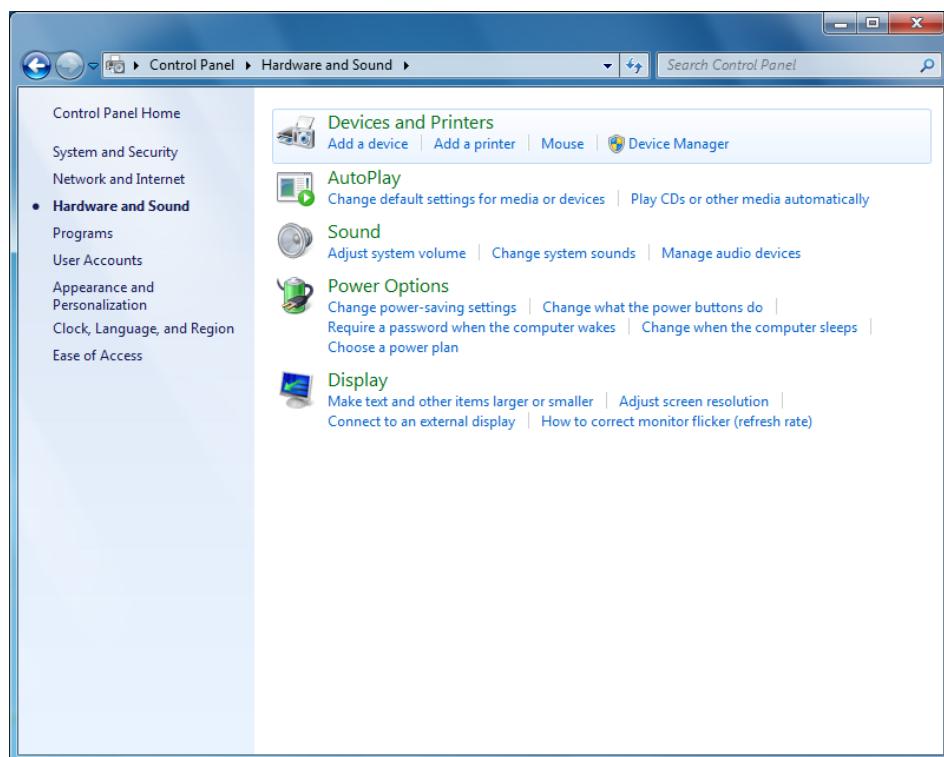
**Table 2-1: Serial interfaces**

Board	Description
<b>APCle-7300</b>	1-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting through modules, PCI Express bus
<b>APCle-7420</b>	2-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting through modules, PCI Express bus
<b>APCle-7500</b>	4-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting through modules, PCI Express bus
<b>APCle-7800</b>	8-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting through modules, PCI Express bus
<b>APCI-7300-3</b>	1-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting through modules, PCI bus
<b>APCI-7420-3</b>	2-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting through modules, PCI bus
<b>APCI-7500-3</b>	4-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting through modules, PCI bus
<b>CPCI-7500</b>	4-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting through modules, CompactPCI bus

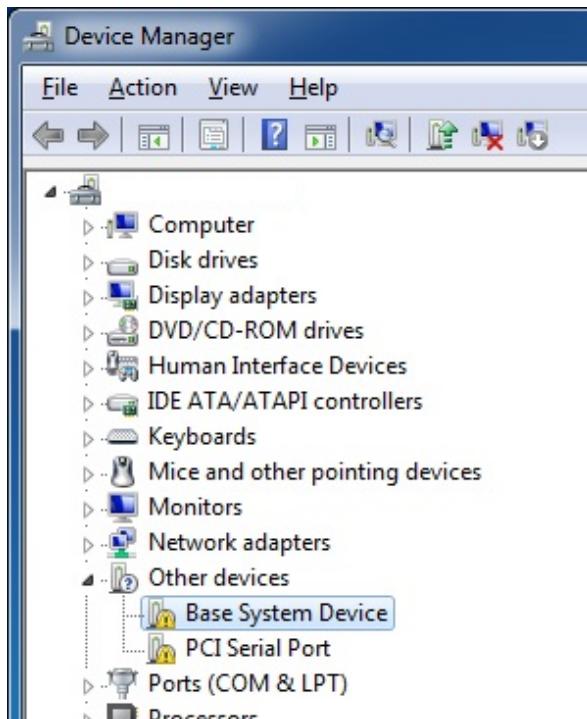
### 2.2 Installation under Windows 7 (64-bit)

#### 2.2.1 First driver installation

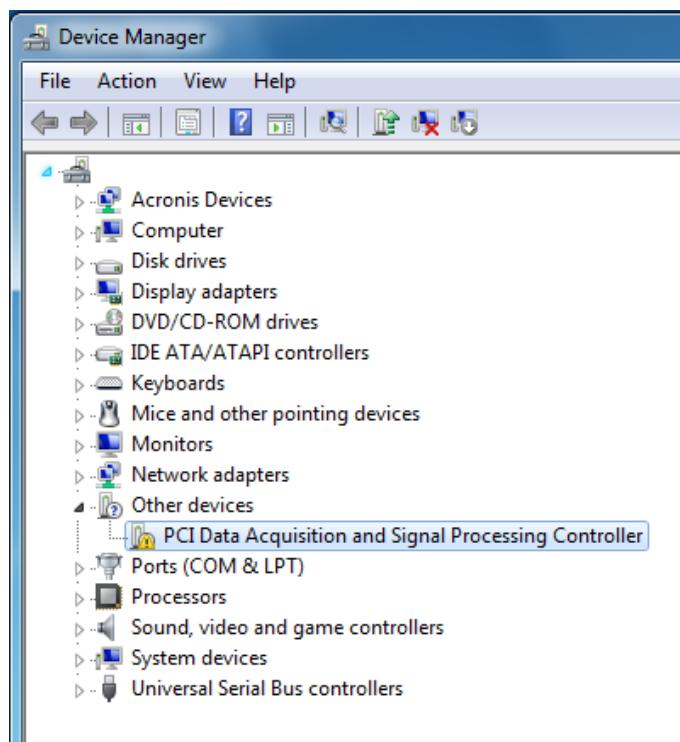
1. Switch off the PC.
2. Insert the board and fit the accessories.
3. Start up the PC and log in with administrator rights.

**4.** Click on "Start/Control Panel/Hardware and Sound".**5.** In the "Devices and Printers" section, click on "Device Manager".

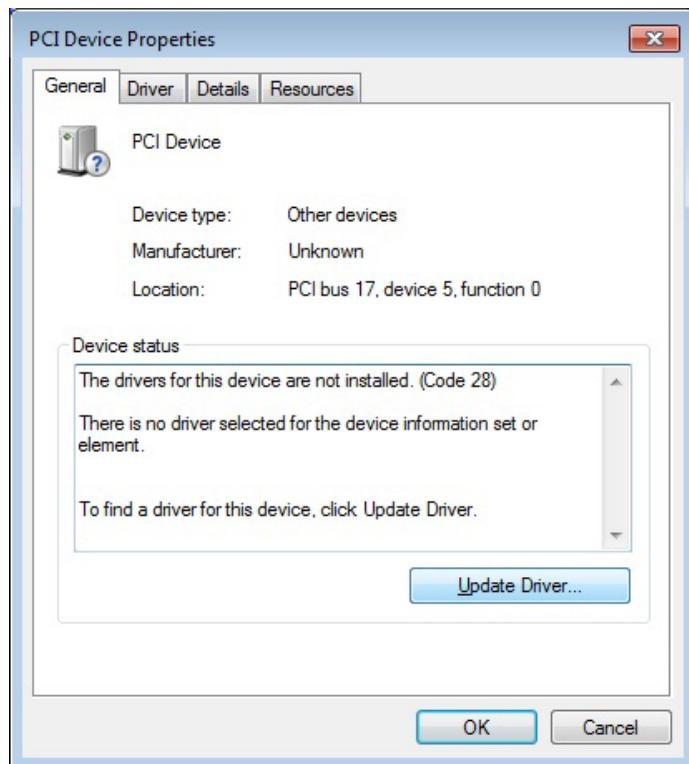
6. **APCle-xxxx:** In the “Device Manager”, under “Other devices”, double-click on the entry “Base System Device”.



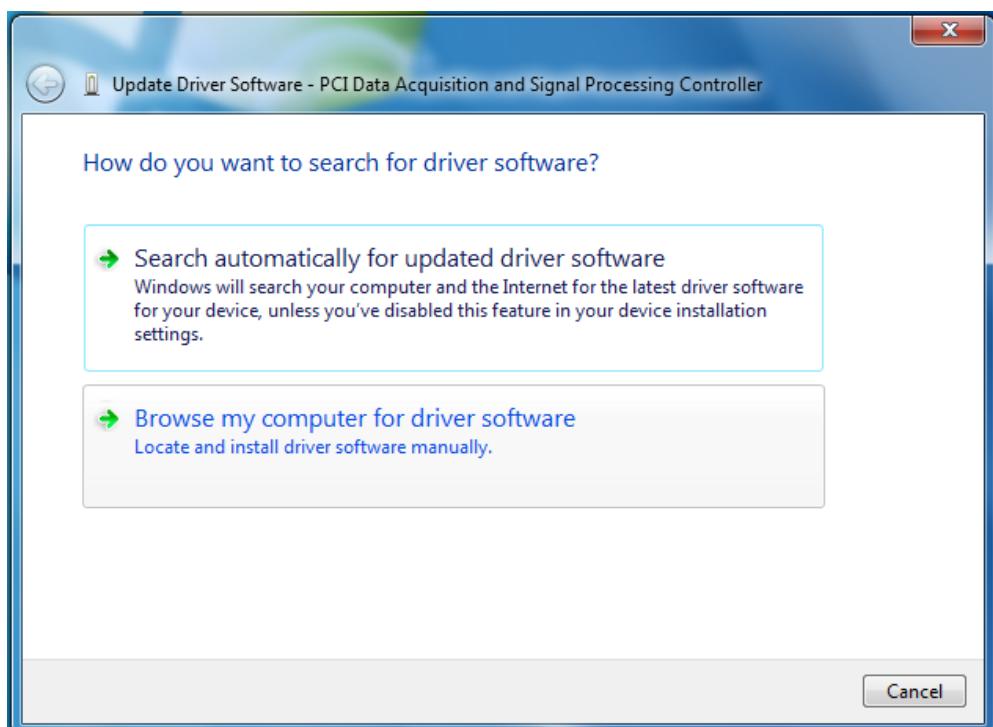
**APCI-/CPCI-xxxx:** In the “Device Manager”, double-click on the entry under “Other devices” (e.g. “PCI Data Acquisition and Signal Processing Controller”).

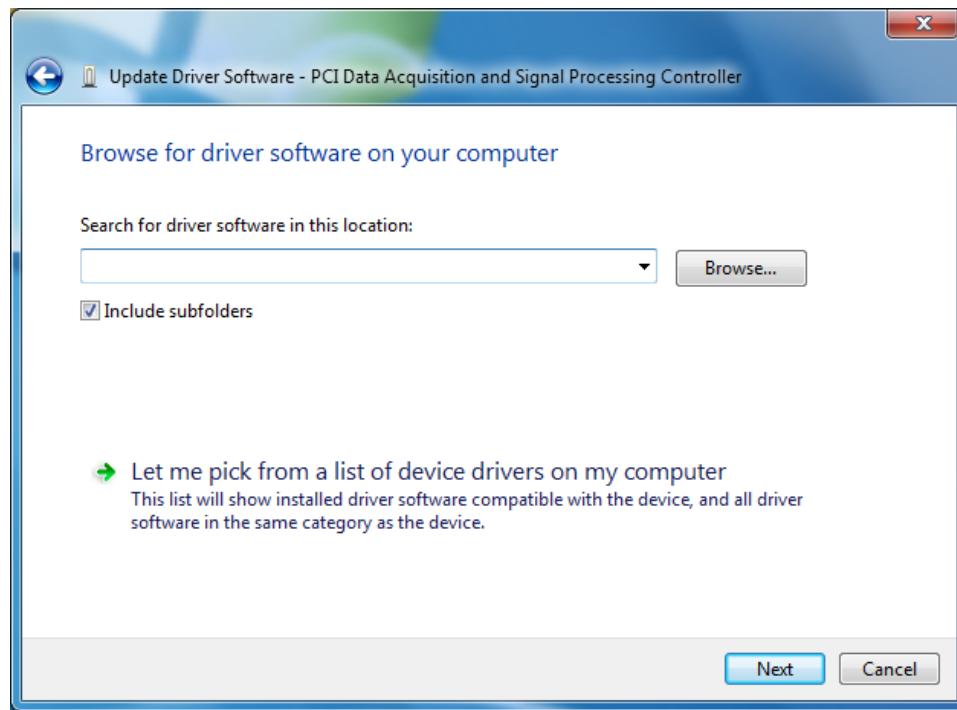


**7.** Click on the “Update Driver...” button.



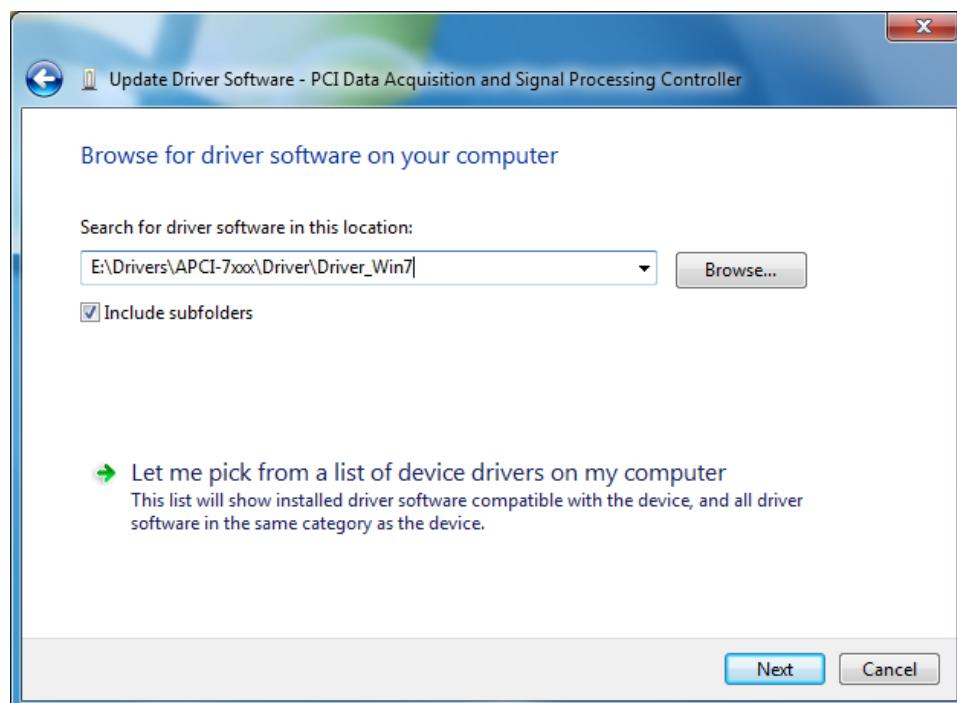
**8.** Click on the button “Browse my computer for driver software”.



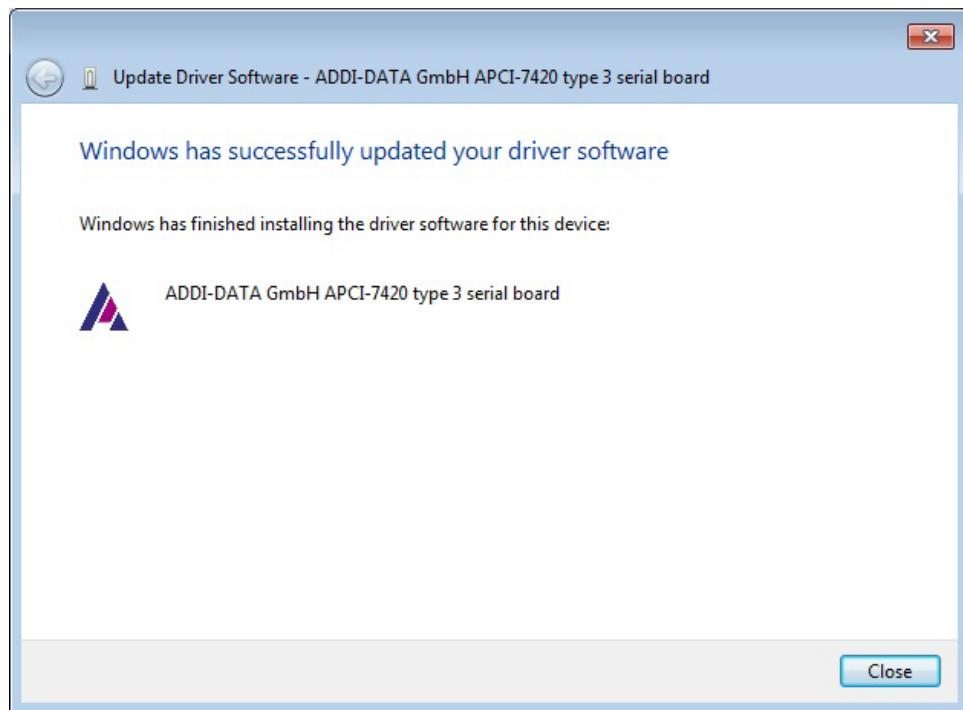
**9.** Click on "Browse".

**10.** Select the directory "Driver\Driver\_Win7" (see document "Quick installation PC boards", Chapter "Driver download").

**11.** Click on "Next".

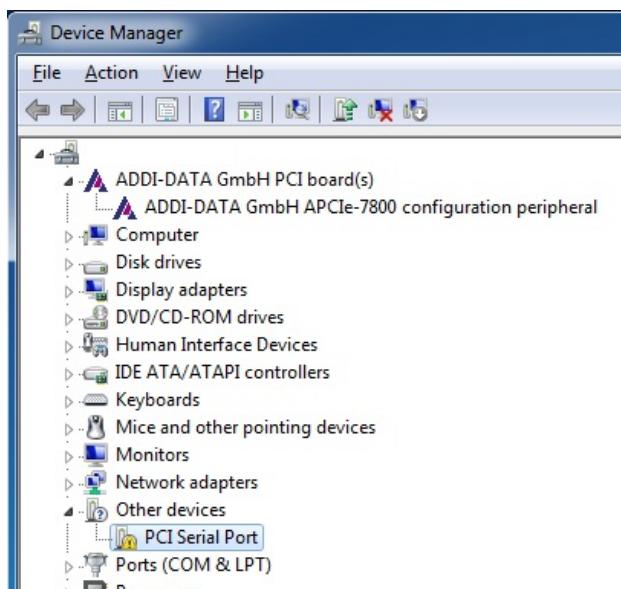


The installation of the driver software is finished.



**12.** Click on "Close" in all open windows.

**13. APCle-xxxx:** In the "Device Manager", under "Other devices", double-click on the entry "PCI Serial Port".



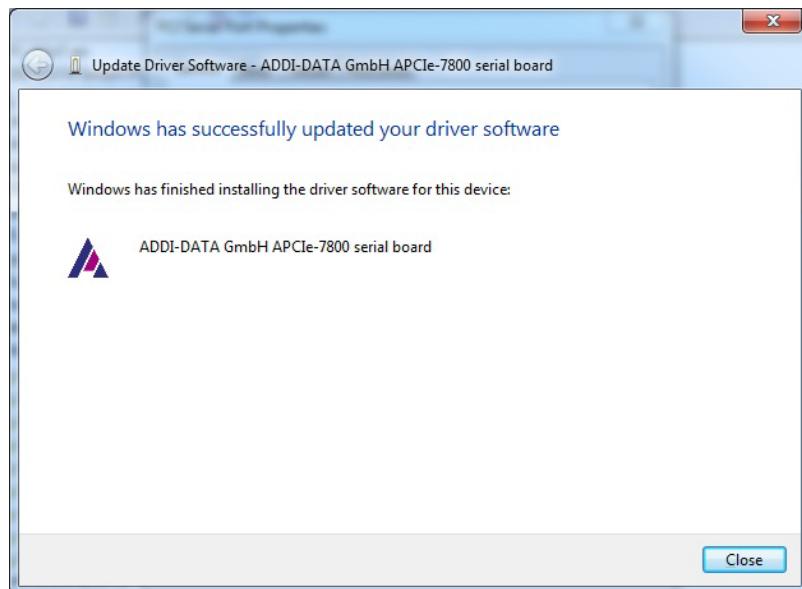
**APCI-/CPCI-xxxx:** Continue with step 18 of this chapter.

**14.** Select the “Driver” tab and click on the “Update Driver...” button.

**15.** Click on the button “Browse my computer for driver software”.

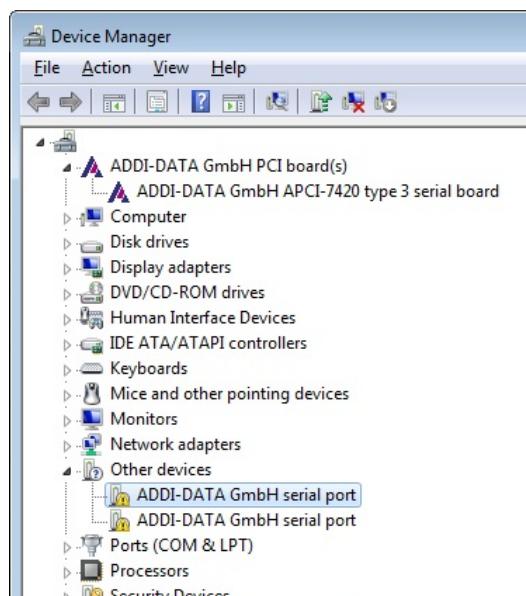
**16.** Click on “Next”.

The installation of the driver software is finished.



**17.** Click on “Close” in all open windows.

**18.** In the “Device Manager”, under “Other devices”, double-click on “ADDI-DATA GmbH serial port” (first entry).

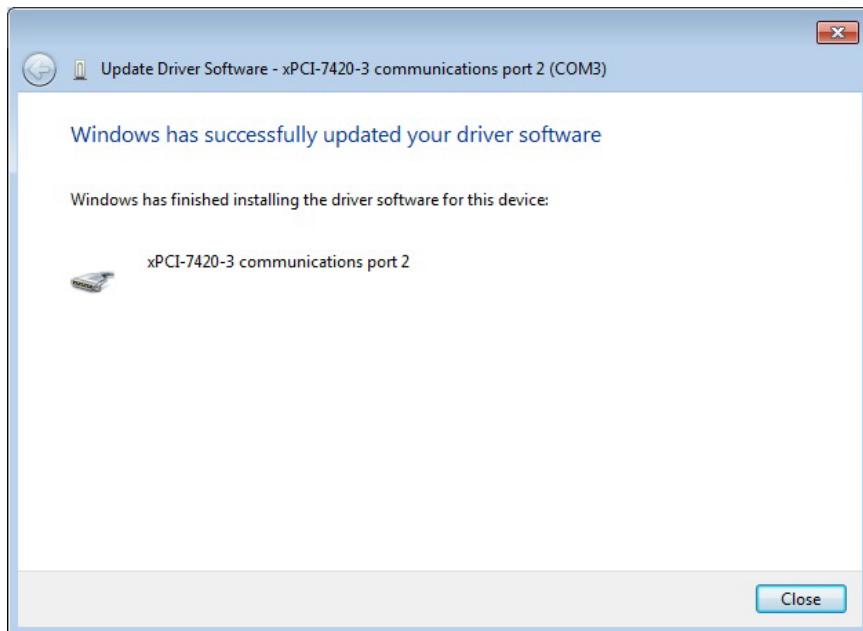


**19.** Select the “Driver” tab and click on the “Update Driver...” button.

**20.** Click on the button “Browse my computer for driver software”.

**21.** Click on “Next”.

The installation of the driver software is finished.



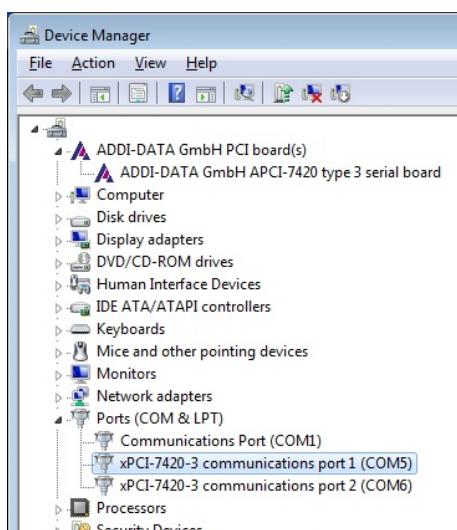
**22.** Click on “Close” in all open windows.

**23.** In the “Device Manager”, under “Other devices”, double-click on “ADDI-DATA GmbH serial port” (first entry) and repeat steps 19 to 22.

**24.** Repeat step 23 until all of the board interfaces are updated.

Afterwards, the board will be ready for operation.

In the “Device Manager”, you can configure each interface according to your requirements (see Technical Description of your board).



## 2.2.2 Installation of another driver

- Repeat steps 1 to 3 in Chapter 2.2.1.

As the PC recognises the newly inserted board, the installation runs automatically.

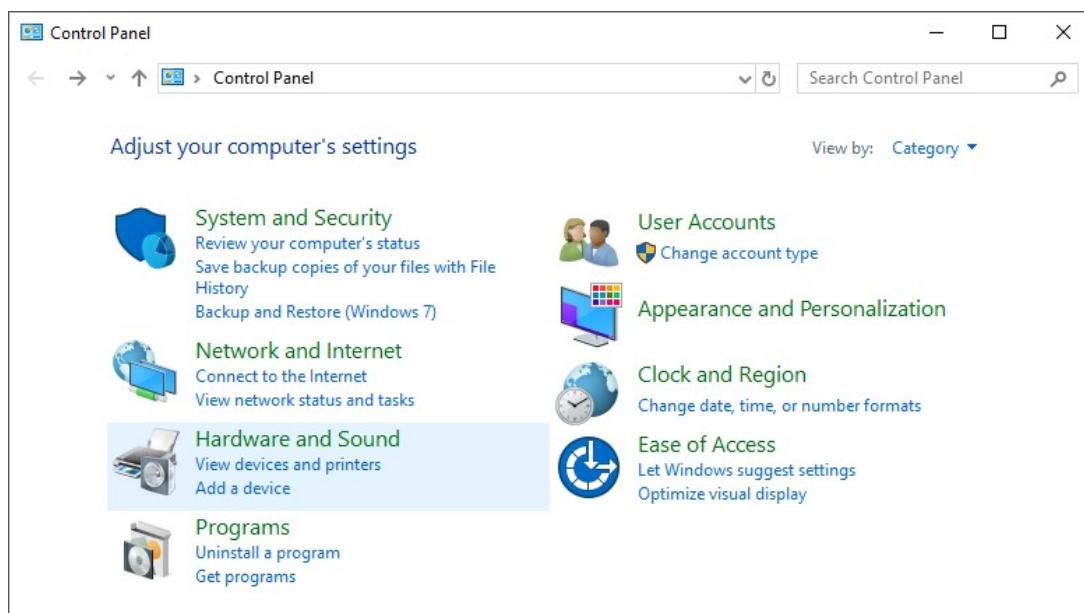
- Reboot the PC.

The installation is finished. The board is ready for operation.

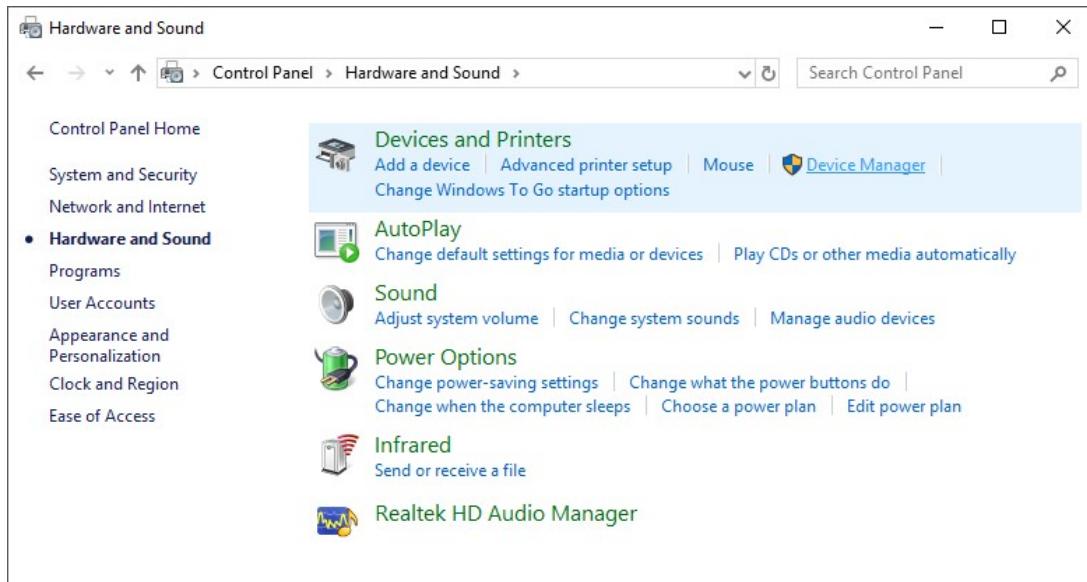
## 2.3 Installation under Windows 10 (64-bit)

### 2.3.1 First driver installation

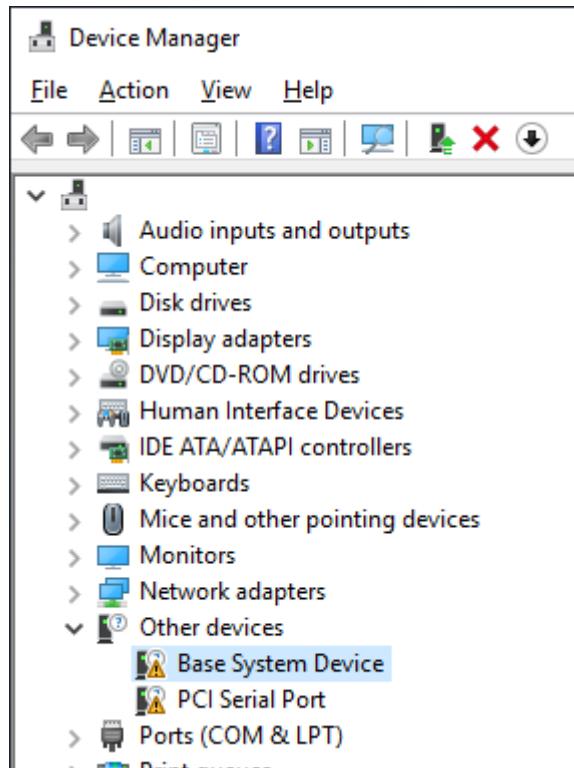
1. Switch off the PC.
2. Insert the board and fit the accessories.
3. Start up the PC and log in with administrator rights.
4. Click on "Start/Windows System/Control Panel/Hardware and Sound".



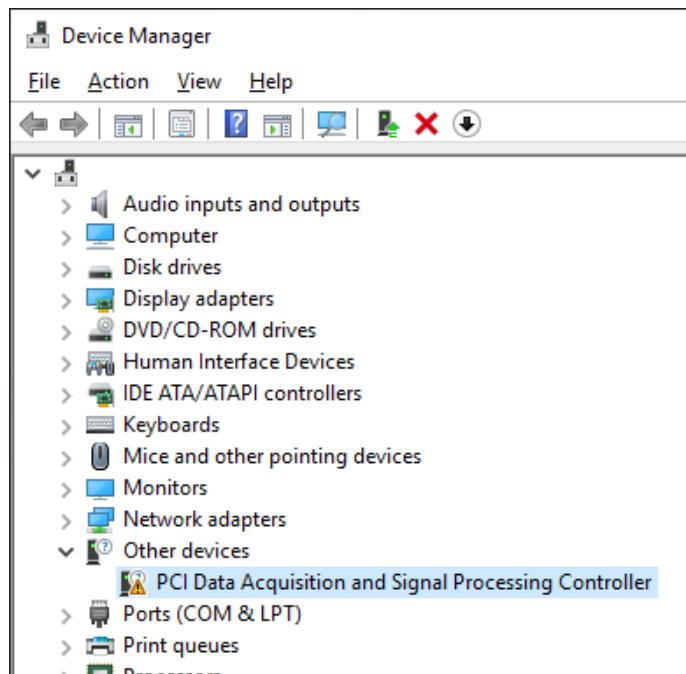
5. In the “Devices and Printers” section, click on “Device Manager”.



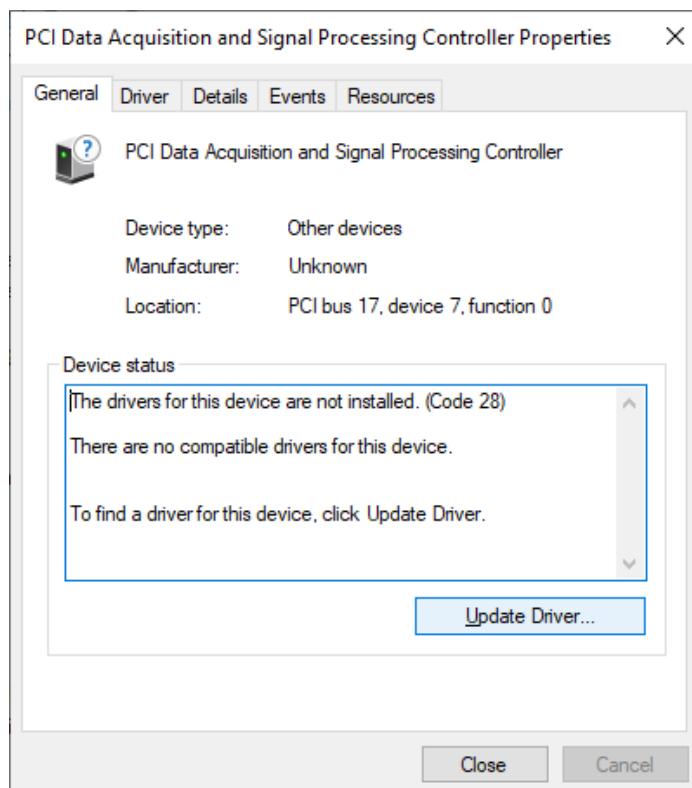
6. **APCle-xxxx:** In the “Device Manager”, under “Other devices”, double-click on the entry “Base System Device”.



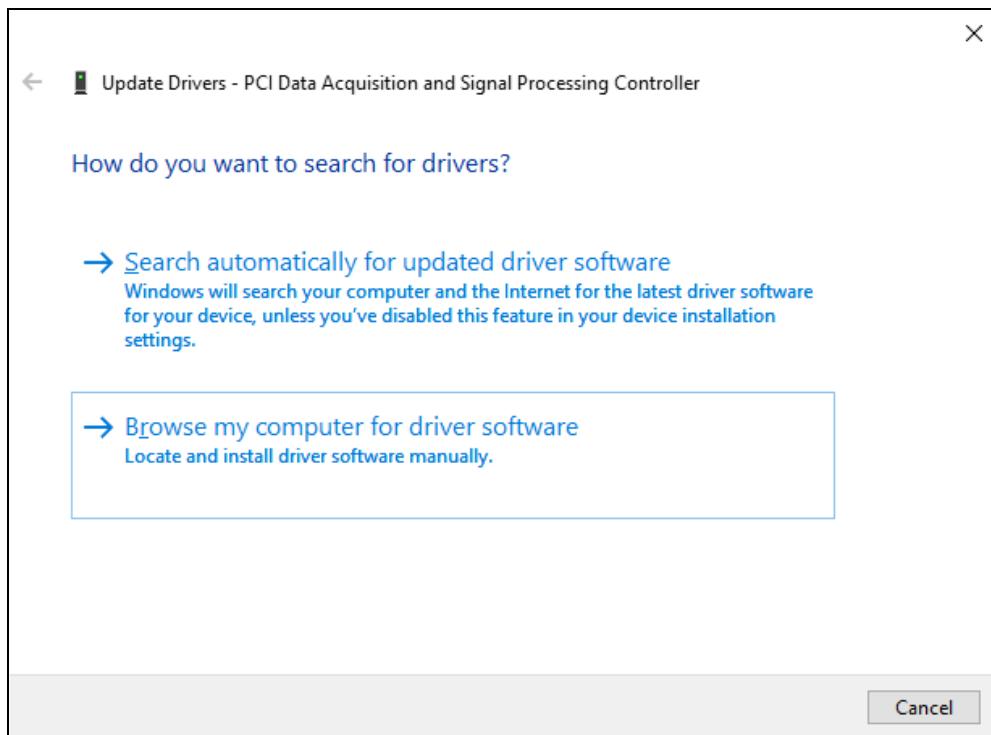
**APCI-/CPCI-xxxx:** In the “Device Manager”, double-click on the entry under “Other devices” (e.g. “PCI Data Acquisition and Signal Processing Controller”).



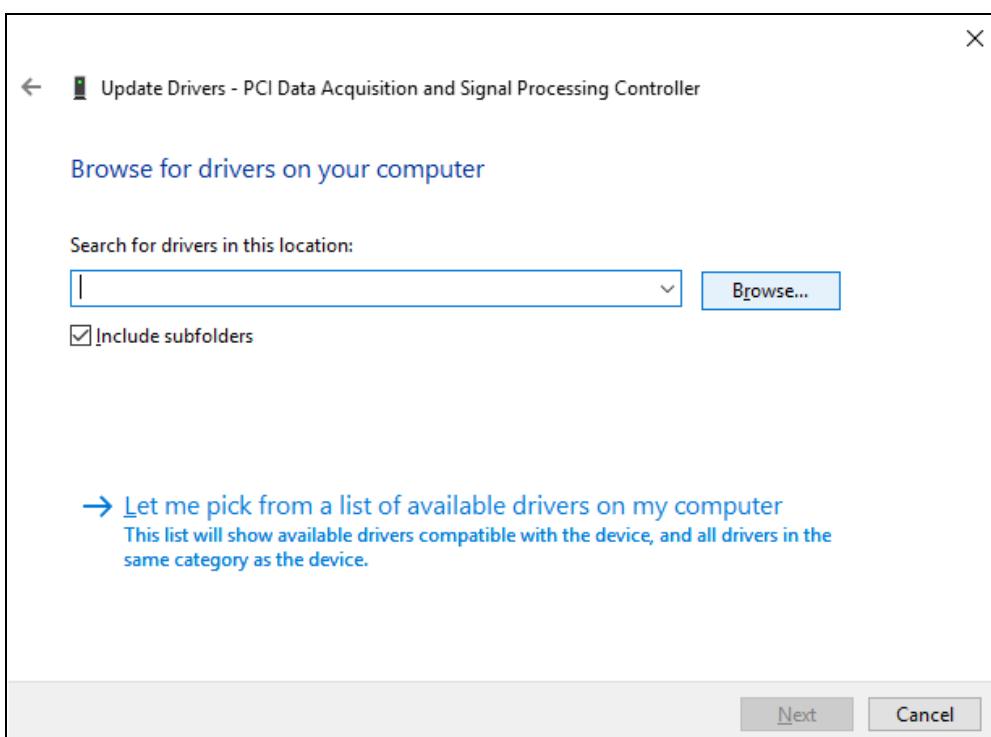
**7.** Click on the “Update Driver...” button.



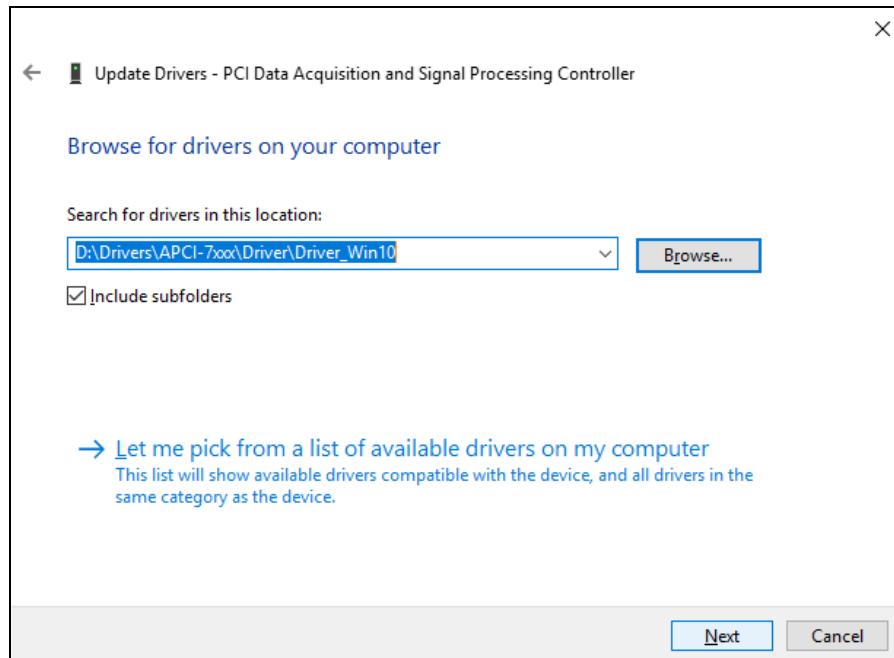
**8.** Click on the button “Browse my computer for driver software”.



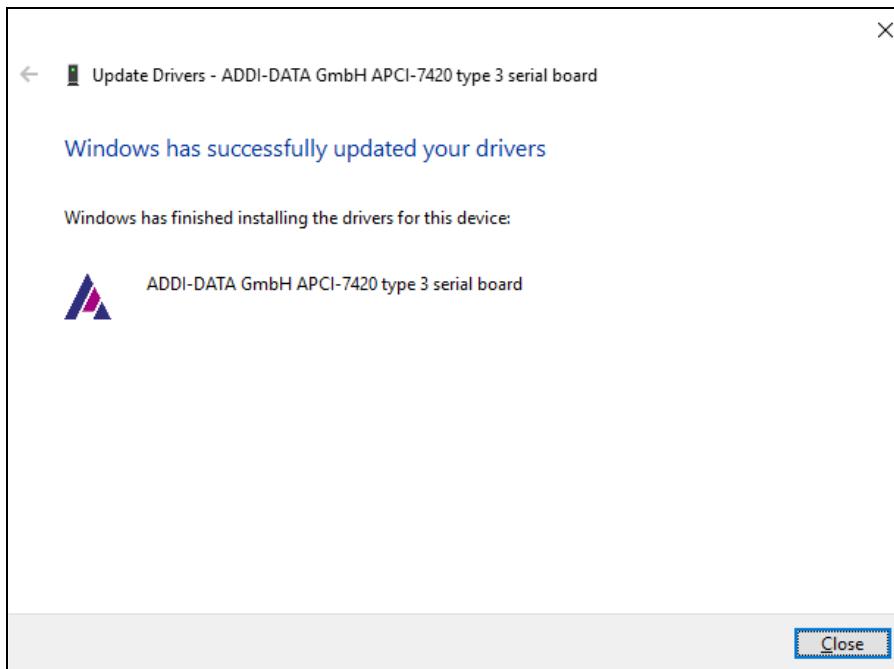
**9.** Click on “Browse”.



- 10.** Select the directory "Driver\Driver\_Win10" (see document "Quick installation PC boards", Chapter "Driver download").
- 11.** Click on "Next".

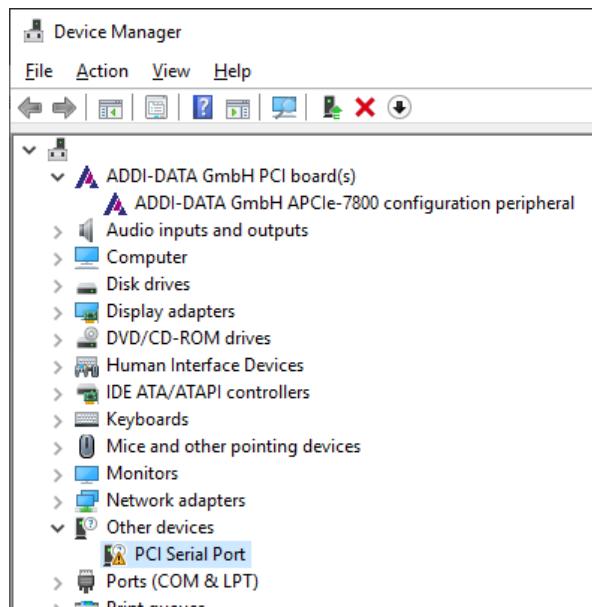


The installation of the driver software is finished.



- 12.** Click on "Close" in all open windows.

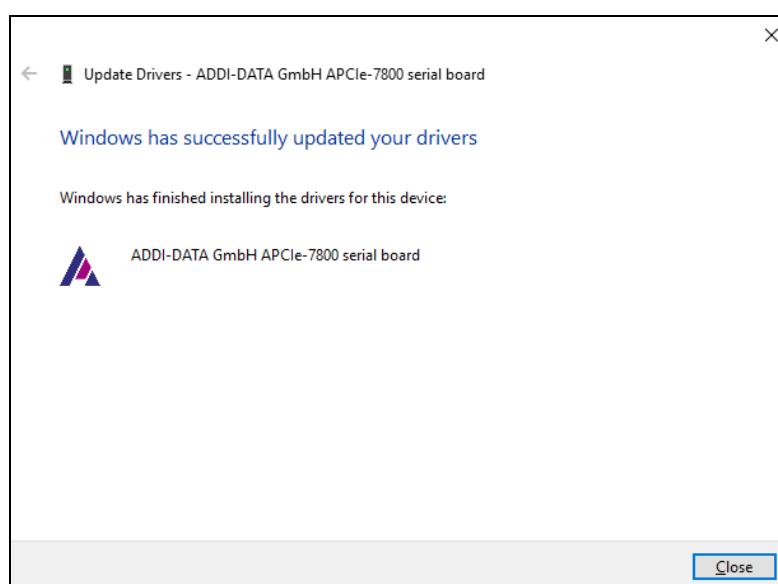
- 13. APCle-xxxx:** In the “Device Manager”, under “Other devices”, double-click on the entry “PCI Serial Port”.



**APCI-/CPCI-xxxx:** Continue with step 18 of this chapter.

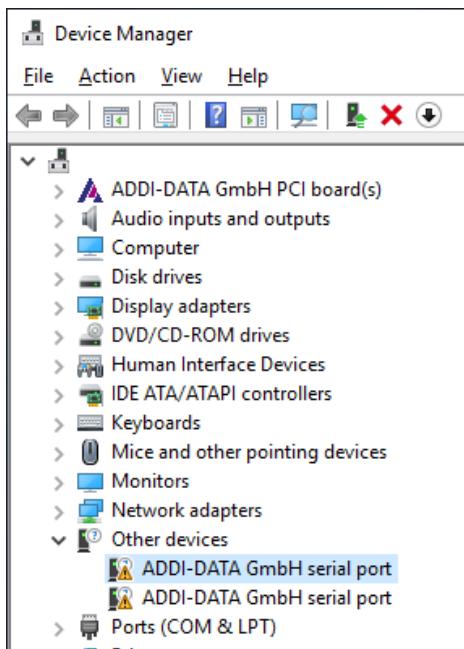
- 14.** Select the “Driver” tab and click on the “Update Driver...” button.  
**15.** Click on the button “Browse my computer for driver software”.  
**16.** Click on “Next”.

The installation of the driver software is finished.



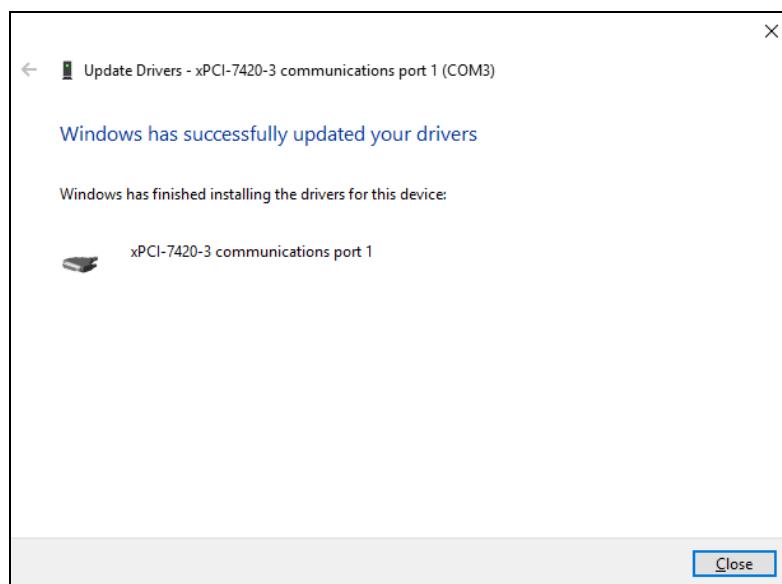
- 17.** Click on “Close” in all open windows.

- 18.** In the “Device Manager”, under “Other devices”, double-click on “ADDI-DATA GmbH serial port” (first entry).



- 19.** Click on the “Update Driver...” button.  
**20.** Click on the button “Browse my computer for driver software”.  
**21.** Click on “Next”.

The installation of the driver software is finished.



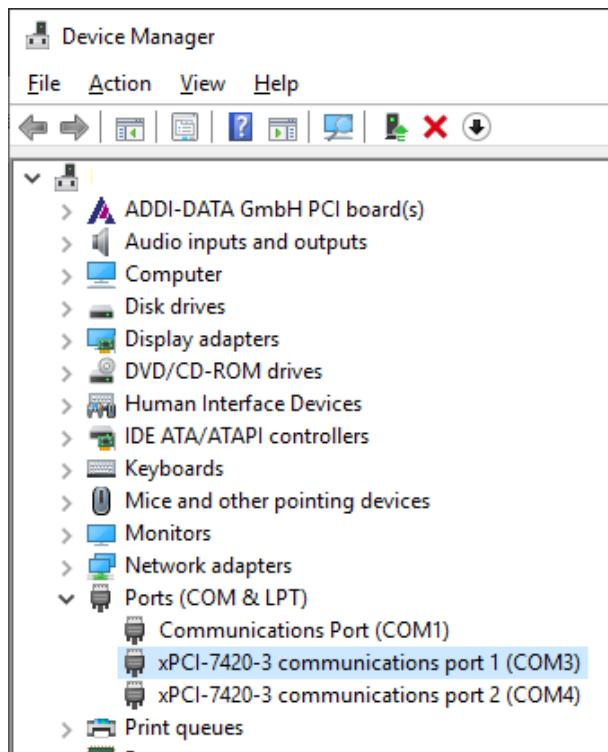
- 22.** Click on “Close” in all open windows.

**23.** In the "Device Manager", under "Other devices", double-click on "ADDI-DATA GmbH serial port" (first entry) and repeat steps 19 to 22.

**24.** Repeat step 23 until all of the board interfaces are updated.

Afterwards, the board will be ready for operation.

In the "Device Manager", you can configure each interface according to your requirements (see Technical Description of your board).



### 2.3.2 Installation of another driver

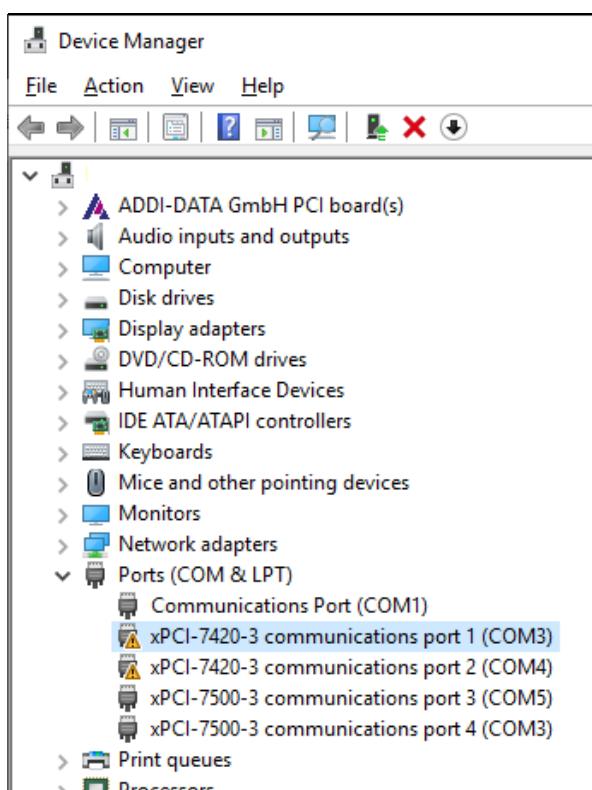
■ Repeat steps 1 to 3 in Chapter 2.2.1.

As the PC recognises the newly inserted board, the installation runs automatically. The installation is finished. The board is ready for operation.

## 2.4 Replacement of serial interfaces

- 1.** Switch off the PC.
- 2.** Remove a board from its slot and insert the desired board into the same slot.
- 3.** Fit the accessories.
- 4.** Start up the PC and log in with administrator rights.
- 5.** Windows 7: Click on "Start/Control Panel/Hardware and Sound".  
Windows 10: Click on "Start/Windows System/Control Panel/Hardware and Sound".
- 6.** In the "Devices and Printers" section, click on "Device Manager".

Under "Ports (COM & LPT)", the interface entries of the removed board are still displayed and marked by a yellow warning symbol with an exclamation mark.



- 7.** Double-click on the first interface entry of the removed board.
- 8.** Select the "Driver" tab and click on the "Update Driver..." button.
- 9.** Click on the button "Browse my computer for driver software".
- 10.** Click on "Browse". Select the directory "Driver\Driver\_[operating system]" of the newly inserted board (see document "Quick installation PC boards", Chapter "Driver download") and click on "Next".

An installation message is displayed.

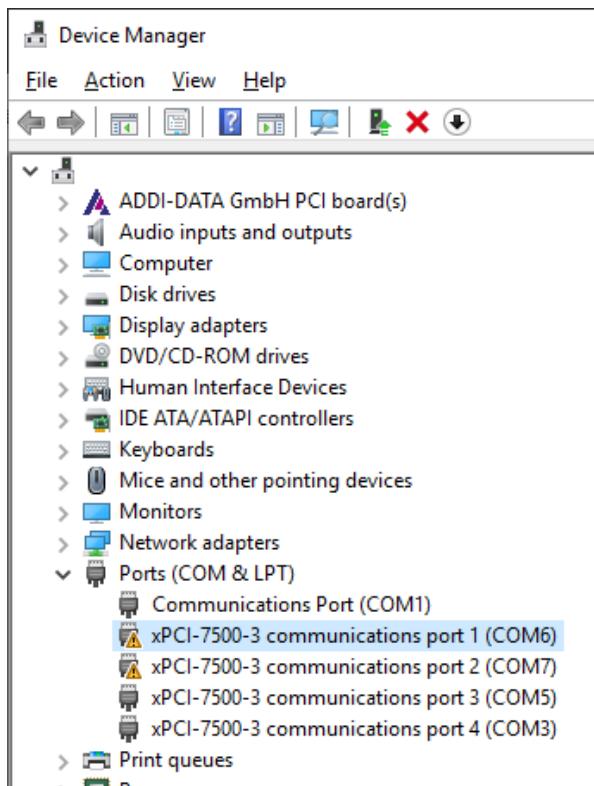
**11. Windows 7:** Click on "Install this driver software anyway", and then on "Close" in all open windows.

**Windows 10:** Click on "Close" in all open windows.

**12.** If there are further interface entries of the removed board under "Ports (COM & LPT)", repeat steps 7-11 until all entries are updated.

Afterwards, the newly inserted board is registered under "Ports (COM & LPT)".

In front of the interface entries that have been updated manually, there is still a yellow warning symbol with an exclamation mark.



**13.** Reboot the PC.

The installation is finished. The board is ready for operation.



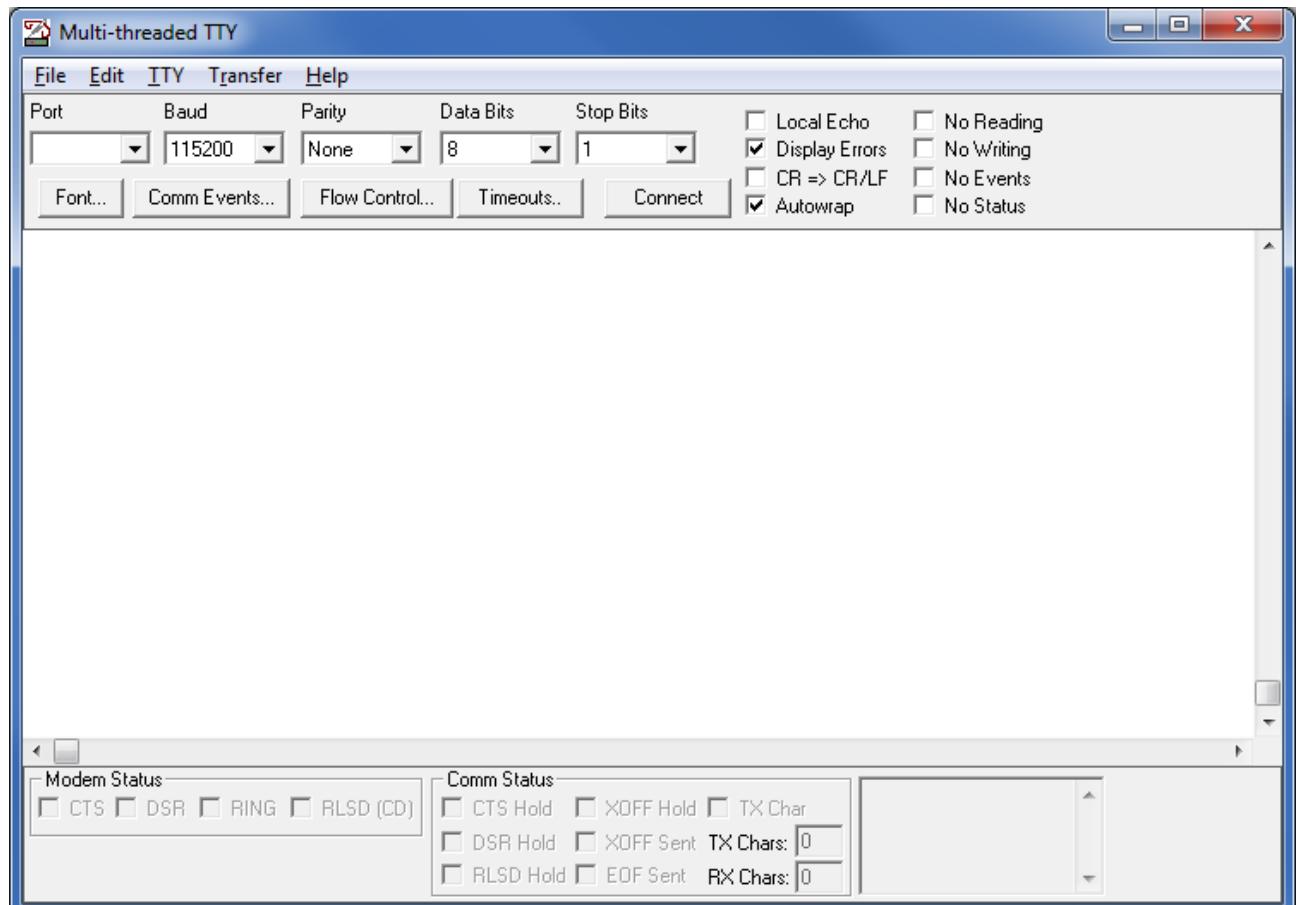
#### NOTICE!

If the interface entries of the removed board are still displayed under "Ports (COM & LPT)", uninstall the driver of this board (see Chapter 4) and then install the driver of the newly inserted board (see Chapter 2.2.1 or 2.3.1).

## 2.5 “MTTY” test program

To test if the PC board is correctly installed, a self-test of the board can be run using a short-circuit plug and the **MTTY** test program.

For more information, see the Technical Description of your board.



### 3 Installation of programming samples

The programming samples for the respective ADDI-DATA PC board can be downloaded, together with the driver for the board, from the website <https://drivers.addi-data.com>.

- Save the downloaded .zip file in a directory of your choice and unpack it afterwards.
- In the "Samples" folder, select the desired programming environment and the board function.
- Double-click on the corresponding .exe file and follow the instructions of the installation program.



#### NOTICE!

The board numbering in the samples (Board 0, Board 1 etc.) varies with every driver installation.

The identifier may therefore be, for example, the serial number of the respective boards (see screenshot and previous chapters).

A screenshot of a terminal window titled "Set 4 digital outputs sample". The window displays the output of a command that lists two boards. The output is as follows:

```
Set 4 digital outputs sample

DLL version : 1.1
i_PCIE1564_GetNumberOfBoards OK
Nbr of board found : 2

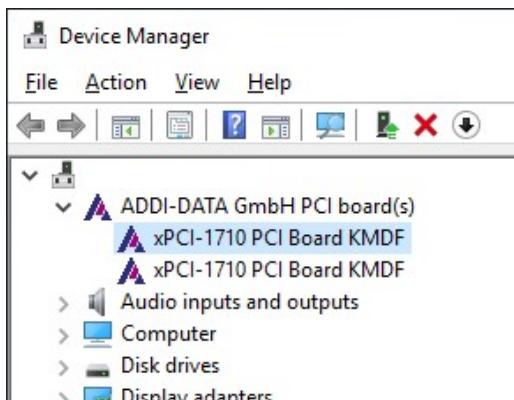
Board 0 information :
Identifier : A-D 448617
UI number : 0xffffffff
Device number : 0x4
Bus number : 0x6
Base address 0 : 0xfd6ff000
Base address 1 : 0xbc00
Interrupt : 19

Board 1 information :
Identifier : A-D 448613
UI number : 0xffffffff
Device number : 0x4
Bus number : 0x4
Base address 0 : 0xfd9ff000
Base address 1 : 0xcc00
Interrupt : 18
Do you want to open the driver via index (0) or via identifier (1):_
```

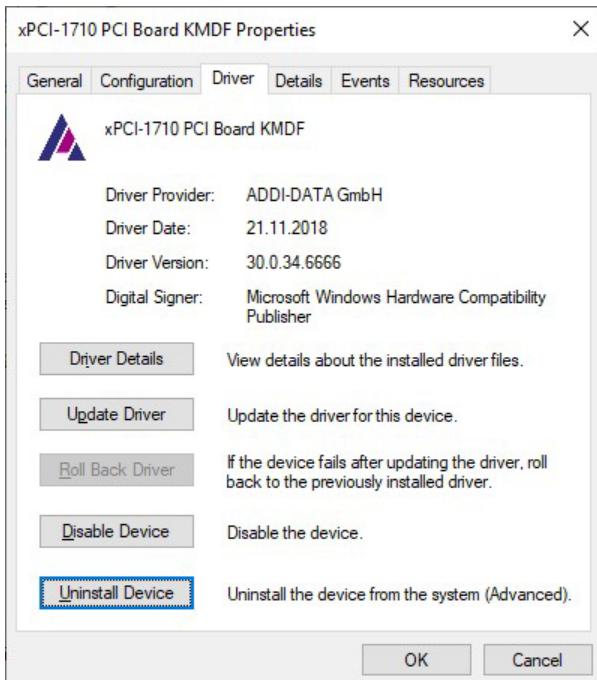
The identifiers for both boards, "A-D 448617" and "A-D 448613", are highlighted with yellow boxes.

## 4 Uninstallation of 64-bit drivers

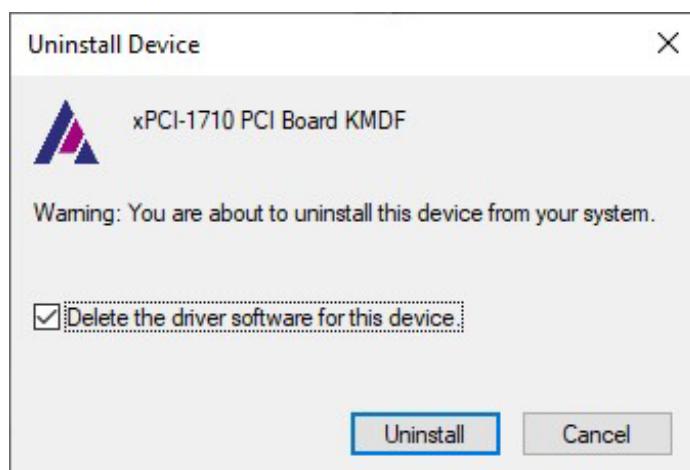
1. Start up the PC and log in with administrator rights.
2. Windows 7: Click on "Start/Control Panel/Hardware and Sound".  
Windows 10: Click on "Start/Windows System/Control Panel/Hardware and Sound".
3. In the "Devices and Printers" section, click on "Device Manager".
4. In the "Device Manager", double-click on the name of the board whose driver you want to uninstall.



5. Select the "Driver" tab.
6. Windows 7: Click on the "Uninstall" button.  
Windows 10: Click on the "Uninstall Device" button.



7. In the following window, activate the check box (if available).



8. Windows 7: Click on "OK".  
Windows 10: Click on "Uninstall".

9. Restart the PC.

The uninstallation of the driver is finished.

## 5 Contact and support

**Do you have any questions? Write or call us:**

Address: ADDI-DATA GmbH  
Airpark Business Center  
Airport Boulevard B210  
77836 Rheinmünster  
Germany

Phone: +49 7229 1847-0

Fax: +49 7229 1847-222

E-mail: [info@addi-data.com](mailto:info@addi-data.com)

**Manual and software download from the Internet:**

<https://drivers.addi-data.com>