Quick Installation

Boards for PCI Express, PCI, CompactPCI and CompactPCI Serial bus

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.
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1 Driver selection

> **NOTICE!**
> Please make sure to select the appropriate driver for your application to allow for smooth operation!

1.1 Installation under Windows

1.1.1 Application-based driver selection

For new applications, drivers of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64" must be installed.

Table 1-1: Windows driver selection

Application	Target application	Target operating system	Driver type	Recommen- dation
1) New 32-bit application under Windows 32-bit or 64-bit	32-bit	Windows 32-bit/64-bit	ADDI-DATA Multi- architecture Device Drivers 32-/64-Bit for x86/AMD64	x
2) New 64-bit- application under Windows 64-bit	64-bit	Windows 64-bit	ADDI-DATA Multi- architecture Device Drivers 32-/64-Bit for x86/AMD64	x
3) Continued use of an existing 32-bit application without any changes	32-bit	Windows 32-bit	ADDI-DATA W32-Bit Driver for x86	
4) Existing 32-bit application under Windows 64-bit without a new compilation	32-bit	Windows 64-bit	Compatible DLL with ADDI-DATA Multi- architecture Device Drivers 32-/64-Bit for x86/AMD64	
5) Existing 32-bit application under Windows 64-bit, compilation necessary	32-bit	Windows 64-bit	ADDI-DATA Multi- architecture Device Drivers 32-/64-Bit for x86/AMD64	

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Application 1

An existing 32-bit application is to be upgraded for subsequent use under a Windows 64-bit operating system but should continue to run under a Windows 32-bit operating system for the time being.

- In your application, replace the API software functions of the driver of the type "ADDI-DATA W32-Bit Driver for x86" by the API software functions of the driver of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64".

Application 2

You develop a new 64-bit application for a Windows 64-bit operating system.

- Use the API software functions of the driver of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64".

Application 3

You use an existing 32-bit application, which is not to be changed, with a driver of the type "ADDI-DATA W32-Bit Driver for x86".

In this case, there is no need for any changes.

If an existing 32-bit application is to be used under a Windows 64-bit operating system, there are two possibilities:

Application 4

You want to execute your existing 32-bit application under Windows 64-bit without any changes and thus without a compilation.

- On the Windows 64-bit computer, uninstall all ADDI-DATA drivers (see Chapter 1.1.2).

NOTICE!
The directories "C:\Windows" and "C:\Windows\ System32" may no longer contain any ADDI-DATA files.

The further procedure depends on the fact if the board used supports ADDIPACK 64-Bit or not. An overview of the ADDIPACK boards and functions can be found in the manual for ADDIPACK 64-Bit, which is included in the "Manuals" folder after downloading ADDIPACK 64-Bit from our FTP server (see option b).

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> **NOTICE!**
> Please note that with the compatible DLL, the synchronous interrupt mode is not available!

a) Boards without ADDIPACK 64-Bit
(APCIe-1500*, APCIe-/CPCIs-1711, APCI-/CPCI-1500*, APCI-/CPCI-1710, APCI-/CPCI-3001, APCI-/CPCI-3120)

- Install the corresponding driver of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64".

The compatible DLL ("APCIxxxx.dll") is automatically copied into the directory "C:\Windows\SysWOW64". Instead, it is also possible to copy the DLL into the directory of the application.

> **NOTICE!**
> With the **APCI-3001**, the compatible DLL ("APCI3001.dll") must be copied from the driver directory "Driver_[operating system]\x86" (see Chapter 2) into the directory of the application and be renamed ("PCI3001.dll").

b) Boards with ADDIPACK 64-Bit
(Digital boards with ADDIPACK 64-Bit functions)

- Install the corresponding driver of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64".

- To download ADDIPACK 64-Bit, on our FTP server (ftp://Drivers:addidrivers@addi-data.com), in the folder "ADDIPACK64_BIT/", click on the .zip file. Save this file in a directory of your choice and unpack it afterwards.

- To install ADDIPACK 64-Bit, in the "Program" folder, double-click on the "setup.exe" file.

ADDIPACK 64-Bit contains the compatible DLL ("ADDIDATA.dll"). In order to use this, you have to start the tool "Virtual Board Manager" (see manual for ADDIPACK 64-Bit in the "Manuals" folder).

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* With this board, option b) or c) may be executed as well.

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c) Boards with the compatible DLL "ADDIDATA.dll"
(Digital boards without ADDIPACK 64-Bit functions, analog boards, combination of analog and digital boards)

- Install the corresponding driver of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64".

- To download the compatible DLL, on our FTP server (ftp://Drivers:addidrivers@addi-data.com), in the directory "ADDI-DATA_DLL_Customer/[board name]", click on the .zip file. Save this file in a directory of your choice and unpack it afterwards.

- Copy the compatible DLL ("ADDIDATA.dll") into the directory "C:\Windows\SysWOW64" or in the directory of the application.

Application 5

You want to execute your existing 32-bit application under Windows 64-bit with changes.

- In your application, replace the API software functions of the driver of the type "ADDI-DATA W32-Bit Driver for x86" by the API software functions of the driver of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64".

1.1.2 Installation of drivers and samples

The installation and uninstallation of drivers of the type "ADDI-DATA Multi-architecture Device Drivers 32-/64-Bit for x86/AMD64" as well as the installation of the corresponding programming samples is described in the installation instructions on CD Boards ("Manuals") or the ADDI-DATA website (see Chapter 3.1).

1.1.3 Windows real-time drivers (synchronous interrupt mode)

Under Windows 32-/64-bit, the ADDI-DATA PC boards can be operated in real-time mode. For this, ADDI-DATA provides a special SDK (Software Development Kit) for a fee.
In addition, a key for the generation of a digital signature is needed. This can be acquired for a fee from a certified Microsoft partner.

NOTICE!
The real-time driver is only supplied with the board
on request.

For more information, please call our sales department at: +49 7229 1847-0.

1.2 Installation under Linux

NOTICE!
For information on Linux driver types from ADDI-DATA,
please refer to the document "Introduction to Linux
drivers" (see Chapter 3.1).

The driver model is based on two levels: the user level and the kernel level.
The source code of all drivers is included in delivery so that you can adapt the drivers
to your personal needs.

1.2.1 Standard drivers

Installation instructions for the standard drivers are to be found in a .txt file
contained in the driver package.

1.2.2 Comedi

Comedi drivers are available on request.
For more information, please call our sales department at: +49 7229 1847-0.

1.2.3 RTAI

RTAI drivers are available on request.
For more information, please call our sales department at: +49 7229 1847-0.

1.3 Installation under RTX

RTX drivers are available on request.
For more information, please call our sales department at: +49 7229 1847-0.

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2 Driver download

ADDI-DATA drivers of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64" for ADDI-DATA PC boards can be found both on the supplied CD Boards ("Drivers") and the ADDI-DATA website.

Drivers of the type "ADDI-DATA W32-Bit Driver for x86" are available on the ADDI-DATA website under "Downloads/Drivers".

> **NOTICE!**
> Before using the board and in case of malfunction during operation, check if there is an update (driver, etc.) available. Current data can be found on our website or contact us directly.

2.1 CD Boards ("Drivers")

A driver CD ("CD Boards – Standard Drivers") is supplied with each board.
The CD contains, for example:

- Standard drivers of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64" for ADDI-DATA PC boards (contained in the directory **"Driver\Driver_[operating system]"** of the respective board folder)
- Software tool "ConfigTools" for configuring certain boards
- Programming samples
- API software functions (see also Chapter 3.2).

2.2 Internet

1. On the ADDI-DATA website (www.addi-data.com), in the menu bar above, click on "Downloads/Drivers", and then on the link "ADDI-DATA Multiarchitecture Device Drivers".
2. With "Product", select the desired board; with "Drivers/Samples", select the option "Driver", and with "Operating System", select the desired operating system (64-bit). After that, click on the "Search" button.
3. With the displayed search results, click on the link under the heading "[operating system] – Driver" and save the .zip file in a directory of your choice. Unpack the .zip file afterwards.

The driver of the board is contained in the folder **"Driver_[operating system]"**.

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3 Documentation

3.1 Manuals

The manuals for ADDI-DATA PC boards are available for free on the supplied CD Boards ("Manuals") as well as on the ADDI-DATA website.

NOTICE!
Before using the board and in case of malfunction during operation, check if there is an update (manual, etc.) available. Current data can be found on our website or contact us directly.

3.1.1 CD Boards ("Manuals")

A manual CD ("CD Boards – Technical Manuals") is supplied with each board. The CD contains documents such as:

- Technical descriptions of ADDI-DATA PC boards
- Function descriptions of ADDI-DATA counter boards
- Technical descriptions of accessories (screw terminal panels, etc.)
- Installation instructions for drivers of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64"
- Introduction to Linux drivers
- Safety precautions.

Fig. 3-1: CD Boards ("Manuals"): Menu bar above

In the menu bar above, the different product categories are given. From here, you can access the technical manuals and installation instructions.

■ Select the requested product category and then your product.

3.1.2 Internet

To download manuals or similar documents from the ADDI-DATA website, proceed as follows:

- On the website (www.addi-data.com), in the menu bar above, click on "Downloads/Manuals".

- With "Product", select the desired board or document, and with "Language", select the desired language. After that, click on the "Search" button.

3.2 Standard software

For boards with drivers of the type "ADDI-DATA Multiarchitecture Device Drivers 32-/64-Bit for x86/AMD64", the supported API software functions are available in an HTML document on the supplied CD Boards (see Chapter 2.1) or the ADDI-DATA website.

To download the file from the website (www.addi-data.com), proceed as follows:

1. In the menu bar above, click on "Downloads/Drivers", and then on the link "ADDI-DATA Multiarchitecture Device Drivers".

2. With "Product", select the desired board; with "Drivers/Samples", select the option "Driver", and with "Operating System", select the desired operating system (64-bit). After that, click on the "Search" button.

3. With the displayed search results, click on the link under the heading "[operating system] – API" and save the .zip file in a directory of your choice. Unpack the .zip file afterwards.

4. In the directory "Documentation\html", double-click on the file "index.html", which contains the API software functions.

3.3 Tutorials

Instruction manuals for software such as MATLAB, DASYLab and LabVIEW are available on request.
For more information, please call our sales department at: +49 7229 1847-0.

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4 Contact and support

Do you have any questions? Write or call us:

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E-mail:	info@addi-data.com

Manual and software download from the Internet:

www.addi-data.com

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