



Operating Instruction Manual
cifX TCP/IP Server
Remote Connection via Ethernet

Windows 2000, Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10
V2.3

**(Windows CE V1.1.2.0, Linux V1.1.0.0, QNX V1.0.2.0,
VxWorks V2.0.0.0, IntervalZero RTX™ V1.2.0.0)**

Hilscher Gesellschaft für Systemautomation mbH

www.hilscher.com

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1 Introduction

1.1 About this Manual

This guide describes the requirements, the basics and the handling of the program **cifX TCP/IP Server for SYCON.net** and for its user interface TCP/IP Server for cifX for the TCP/IP communication.

The description is exemplified for the cifX TCP/IP server for Windows® 32 systems 2000, XP or Vista and is valid as well for the cifX TCP/IP Server for Windows® CE, Linux, QNX, VxWorks and IntervalZero RTX™. The section *Remote Download via cifX TCP/IP Server* on page 15 refers only to those Windows® systems.

1.1.1 List of Revisions

Index	Date	Chapter	Revision
6	2017-04-20	All, 1.4.3 2.1, 2.2, 2.5	Windows 10 added. cifX TCP/IP-Server: Windows 2000, Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10 V2.3 (Windows CE V1.1.2.0 , Linux V1.1.0.0 , QNX V1.0.2.0 , VxWorks V2.0.0.0 , IntervalZero RTX™ V1.2.0.0) Sections <i>Documentation cifX</i> , <i>Requirements Remote Connection via Ethernet</i> , <i>System Overview for Remote Connection via Ethernet</i> , <i>Communication via cifX TCP/IP Server</i> revised.

1.1.2 Conventions in this Manual

Notes, operation instructions and results of operation steps are marked as follows:

Notes



Important: <important note you must follow to avoid malfunction>



Note: <general note>



<note, where to find further information>

Operation Instructions

1. <instruction>
2. <instruction>

or

➤ <instruction>

Results

↻ <result>

1.1.3 Used Terminology

cifX TCP/IP Server *cifX TCP Server.exe*

Program for the remote diagnostics via Ethernet.

Name: **cifX TCP/IP Server for SYCON.net**

User Interface: **TCP/IP Server for cifX**

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1.4 About cifX TCP/IP Server

1.4.1 cifXTCP/IP Server for different Operating Systems

The cifX TCP/IP Server is available for the following operating systems:

Operating System	Software Version cifX TCP/IP Server
Windows® CE	V1.1.2.0
Windows® 2000, Windows® XP, Windows® Vista, Windows® 7, Windows® 8, Windows® 10	V2.3.0.0
Linux	V1.1.0.0
QNX	V1.0.2.0
VxWorks	V2.0.0.0
IntervalZero RTX™	V1.2.0.0

Table 1: cifX TCP/IP Server for different Operating Systems

1.4.2 Where to find the cifXTCPServer.exe?

The program **cifX TCP/IP Server for SYCON.net** can be opened via the *cifXTCPServer.exe* file. This one can be found on the cifX DVD in the directory *tools\cifXTCPServer* or on the corresponding driver CD in the directory *Sources\cifXTCPServer* as given in the subsequent table:

Operating System	Product DVD	Driver CD	Revision DVD / CD	Directory
Windows® CE	-	NXDRV-CE	2015-08-1	Driver\CE6\Application\cifXTCP PServer
Windows® 2000, Windows® XP, Windows® Vista, Windows® 7, Windows® 8, Windows® 10	CIFX, Communi- cation Solutions DVD	-	2017-03-1	Driver and Toolkit\netX Diagnostics and Remote Access (NXDIAG)\Windows Executable\TCPServer\x86
Linux	-	NXDRV-Linux	2014-11-1	Examples\cifXTCPServer
QNX	-	NXDRV-QNX	2015-01-1	Sources\cifXTCPServer\
VxWorks	-	NXDRV-VXWorks	2015-07-1	VxWorks_7\Examples\cifXTC PServer
IntervalZero RTX™	-	NXDRV-RTX	2015-08-1	Examples\cifXTCPServer

Table 2: cifX TCP/IP Server for different Operating Systems

For the operating systems Linux, Windows® CE, VxWorks, QNX and IntervalZero RTX™ you can buy Device Driver at the company Hilscher Gesellschaft für Systemautomation mbH www.hilscher.com.

1.4.3 Reference on Driver and Software Versions for cifX TCP/IP Server V2.3



Note: The versions for the cifX TCP/IP Server V2.3, the driver or the configuration software listed in this section, functionally belong together.

Driver and Software		Version
cifX TCP/IP Server	cifX TCP Server.exe	2.3
cifX Device Driver	cifX Device Driver Setup.exe	1.3
SYCON.net	SYCONnet netX setup.exe	1.0400
netX Configuration Tool-Setup	netX Configuration Tool.exe	1.0900

Table 3: Reference on Driver and Software for cifX TCP/IP Server V2.3

1.4.4 Documentation cifX

The following documentation overview gives information, for which items you can find further information in which manual.



All these documents are available on the Communication Solutions DVD underneath the directory **Documentation**, in Adobe Acrobat® Reader format (PDF). You can download the Communication Solutions DVD as a ZIP file from the website <http://www.hilscher.com> (under Products, directly with the information about your product).

You can also use the latest edition of a manual, which is available on the website www.hilscher.com under **Support > Downloads > Manuals** or under **Products** directly with the information about your product.

For the PC Cards cifX on the Communication Solutions DVD the following manuals are available for you in the Adobe-Acrobat® Reader format (PDF):


Autostart Menu	Path on the DVD Documentation\..	Required	Document Type	Title	Document ID	File Name
Documentation > PC Cards - cifX	1. cifX Manuals\EN\	yes	User Manual	PC Cards cifX PCI (CIFX 50), PCI Express (CIFX 50E), Low Profile PCI Express (CIFX 70E, CIFX 100EH)	DOC120204UMXXEN	PC Cards CIFX 50 CIFX50E CIFX70E UM XX EN.pdf
		yes	User Manual	PC Cards cifX Compact PCI (CIFX80), Mini PCI (CIFX90), Mini PCI Express (CIFX 90E), PCI-104 (CIFX 104C)	DOC120205UMXXEN	PC Cards CIFX 80 90 90E 104C UM XX EN.pdf
		yes	User Manual	PC Cards cifX PC/104 (CIFX 104)	DOC120206UMXXEN	PC Cards CIFX 104 UM XX EN.pdf
		yes	User Manual	Software Installation for the PC Cards cifX, Installing Drivers and Configuration Software	DOC120207UMXXEN	PC Cards cifX Software Installation UM XX EN.pdf
Documentation > Configuration Manuals	5. Configuration Manuals\EN\					
	1. SYCON.net Configuration Software, Fundamentals	yes	Operating Instruction Manual	SYCON.net, Frame Application	DOC040402OIXXEN	SYCONnet netFrame OI XX EN.pdf
		yes	Operating Instruction Manual	FDT ,Container	DOC040401OIXXEN	SYCONnet netDevice OI XX EN.pdf
	2. SYCON.net Protocol Specific Configuration Dialogs	 Detailed overviews on the operating instruction manuals for DTMs for Master and Slave devices as well as for generic DTMs required for a PC card cifX, are listed in installation guide 'Software Installation and Documentation Overview' on the Communication Solutions DVD. The installation instructions can be found in the directory <i>Documentation\0. Installation and Overview</i> .				
	5. cifX TCP Server	optional	Operating Instruction Manual	cifX TCP/IP-Server, Remote Connection via Ethernet	DOC100610OIXXEN	cifX TCP IP Server OI XX EN.pdf
Documentation > Driver Manuals	6. Device Driver Manuals\EN\Installation	yes	Operating Instruction Manual	cifX Device Driver, Installation and Operation for Windows XP/Vista/7/8/10, V 1.3	DOC060601OIXXEN	cifX Device Driver Installation for Windows OI XX EN.pdf

Table 4: Documentations for PC Cards cifX

2 cifX TCP/IP Server Program

The program **cifX TCP/IP Server for SYCON.net** allows remote diagnostics via Ethernet. Therefore a PC card cifX installed in PC 2 (local PC) is accessed with use of the configuration software **SYCON.net** from PC 1 (remote computer) via a TCP/IP network (Ethernet).

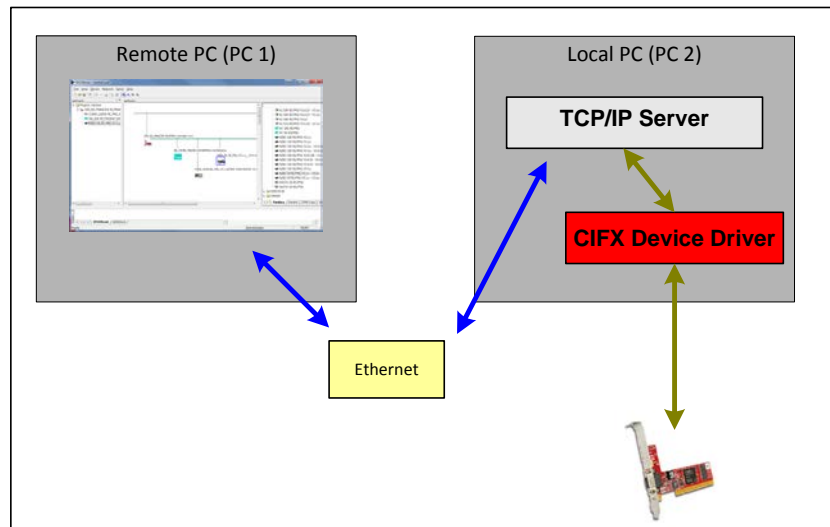


Figure 1: Remote diagnostics with cifX TCP/IP Server for SYCON.net via Ethernet

Depending on the operating system of the remote PC (PC 1), from the remote PC, the firmware file or configuration file are automatically stored via the cifX TCP/IP Server on the file system of the local PC (PC 2). The possibility of remote downloads is currently only available for the systems Windows® 2000 / Windows® XP / Windows® Vista / Windows® 7/ Windows® 8/ Windows® 10. For Linux, QNX, VxWorks and IntervalZero RTX™, please refer to the appropriate driver-guides for how to handle the firmware download and configuration download.

2.1 Requirements Remote Connection via Ethernet

The following requirements must be valid to allow to access from PC 1 (remote PC) via TCP/IP to the PC card cifX in PC 2:


No	PC 1 (Remote PC)	PC 2 (local PC)
Hardware Installation		
1	PC 1 (remote PC) and PC 2 (local PC) must be connected via TCP/IP, i. e. via an Ethernet network cable.	
2		The PC card cifX must be installed in the PC 2.
Software Installation		
3		The cifX Device Driver (from V1.0.x.x) must be installed on the PC 2.
4	The configuration software SYCON.net must be installed on the PC 1 (Remote PC).	<u>Only for cifX TCP/IP Server before version 2.3.0.0:</u> For versions of the cifX TCP/IP Server before version 2.3.0.0 on PC 2, the configuration software SYCON.net must be installed or another application program, to allow a firmware download or a configuration download to the PC card cifX (Master). For a PC card cifX (Slave) alternatively the program netX Configuration Tool can be installed on PC 2 to allow the download.
Operation		
5		The PC card cifX must be ready in PC 2, i. e., the firmware and the configuration must be loaded already to the PC card cifX.
6		The program cifX TCP/IP Server for SYCON.net must be executed on the PC 2. Under Windows, administrative rights may be required.
7	The configuration software SYCON.net must be started on the PC 1 (Remote PC).	
8	<p>From the application program (DTM) in PC 1 (Remote PC) an online connection to the corresponding device in PC 2 must be established via the cifX TCP/IP server.</p> <p>Via the cifX TCP / IP server the devices are offered in SYCON.net for selection.</p> <div>  <p>For detailed information on the connection options refer to the online help of the configuration software SYCON.net or of the DTM.</p> </div>	

Table 5: Requirements Remote Connection via Ethernet

2.2 System Overview for Remote Connection via Ethernet

Via Ethernet the program **SYCON.net** can establish for *diagnosis purposes* a connection to another PC (in the example PC 2), in which the PC card cifX is installed. Beginning with version 2.3.0.0 of the cifX TCP/IP Server for Windows® systems, the Ethernet connection from the remote PC (PC 1) can be used for *remote configuration* to the PC card cifX on PC 2. With **SYCON.net** from PC 1 to PC 2 a firmware download and configuration download can be executed as a *remote-download* of the firmware file or configuration file to the cifX communication interface. The system overview in *Figure 2* shows which components must be installed on the remote PC (PC 1) or the local PC (PC 2) and how they communicate together, so that the diagnosis functions and respectively the remote configuration and the remote download can be used. The following software components are required for **PC 1** (remote PC):

- Program **SYCON.net** (contains the installed component Online Data Manager ODMV3, marked blue,

The following software components are required for **PC 2** (local PC):

- Server program (cifX TCP/IP server, marked blue)
- Device Driver (cifX Device Driver)

Furthermore between PC 1 and PC 2

- Ethernet PC network (marked blue)

Example: IP Address PC 1: 192.168.6068

IP Address PC 2: 192.168.60.52

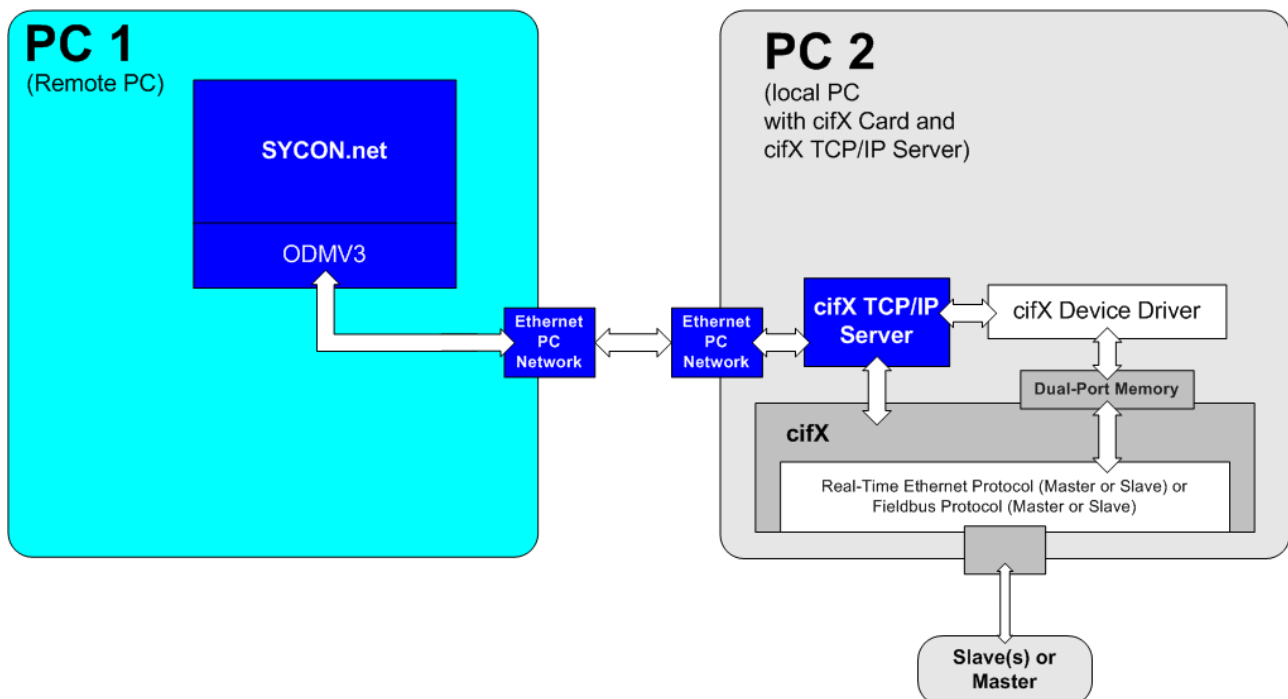


Figure 2: System Overview cifX (Master or Slave) with Remote Connection via Ethernet

Figure 2 shows the case that the PC card cifXworks as a Master in PC 1 with several connected Slave devices or as a Slave.

2.3 Remote Download via cifX TCP/IP Server

PC cards cifX are not using any flash memory to store a firmware or configuration on the PC card. Every time the PC card is powered-up the firmware and configuration must be downloaded to the PC card cifX hardware. For this reason a firmware file or a configuration file need to be stored from the remote PC (PC 1) via the cifX TCP/IP Server on the local PC (PC 2).



Note: The storage of the firmware file or the configuration file is done automatically by the cifX TCP/IP Server depending on the operating system the remote machine is running with. Currently, the automatic download is only supported by the Windows® CE, Windows® 2000, Windows® XP, Windows® Vista und Windows® 7, Windows® 8, Windows® 10 versions of the cifX TCP/IP server.



For detailed information about the firmware and configuration file storage for Windows® CE, Windows® 2000, Windows® XP, Windows® Vista und Windows® 7, Windows® 8, Windows® 10 please consult the operating instruction manual **cifX Device Driver** on the product DVD of your PC card cifX. Therefore refer to section *Documentation cifX* on page 10.

For Linux, QNX, VxWorks and IntervalZero RTX™ please refer to the corresponding driver manual how to proceed the firmware and configuration download.



Note: After a firmware download the PC card cifX needs to be restarted so the firmware update can take effect. This restart cannot be processed via the remote machine and thus must be performed manually on the local machine.

2.4 Starting cifX TCP/IP Server for SYCON.net

The program **cifX TCP/IP Server for SYCON.net** must not be installed, but need only be executed.

- Therefore start the *cifXTCPServer.exe* file.

2.5 Communication via cifX TCP/IP Server

To connect the PC 1 (remote PC) to the PC card cifX in PC 2 via an Ethernet connection, the requirements of section *Requirements* on page 13 must be fulfilled.

How to proceed:

1. Start the configuration software **SYCON.net** on PC 1 (remote PC).
2. Start the *cifXTCPServer.exe* file on PC 2.
- On PC 2 the window **TCP/IP Server for cifX** is displayed:

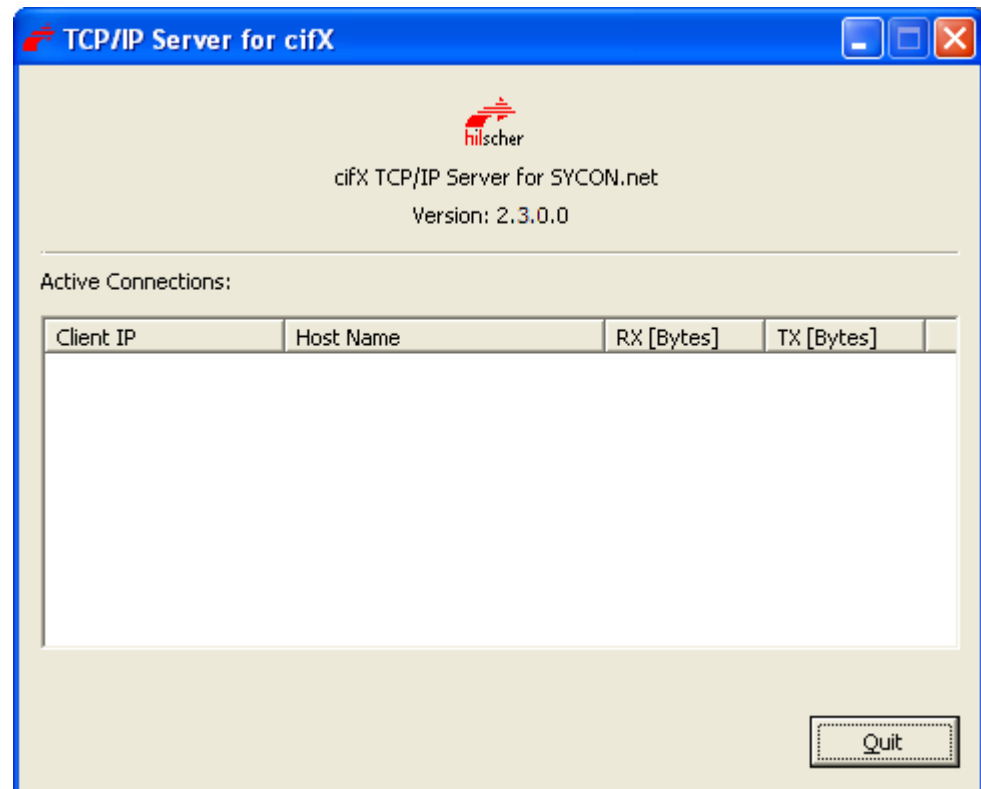


Figure 3: Window „TCP/IP Server for cifX“ (on PC 2), no TCP/IP Connection

3. In the configuration software **SYCON.net** on PC 1 (remote PC) establish an online connection from the DTM in PC 1 (remote PC) to the PC card cifX in PC 2.



For detailed information on the connectin options refer to the online help of the configuration software SYCON.net or of the DTM.

- The Ethernet connection from the DTM in PC 1 (remote PC) to the PC card cifX in PC 2 is displayed in the **TCP/IP Server for cifX** window:

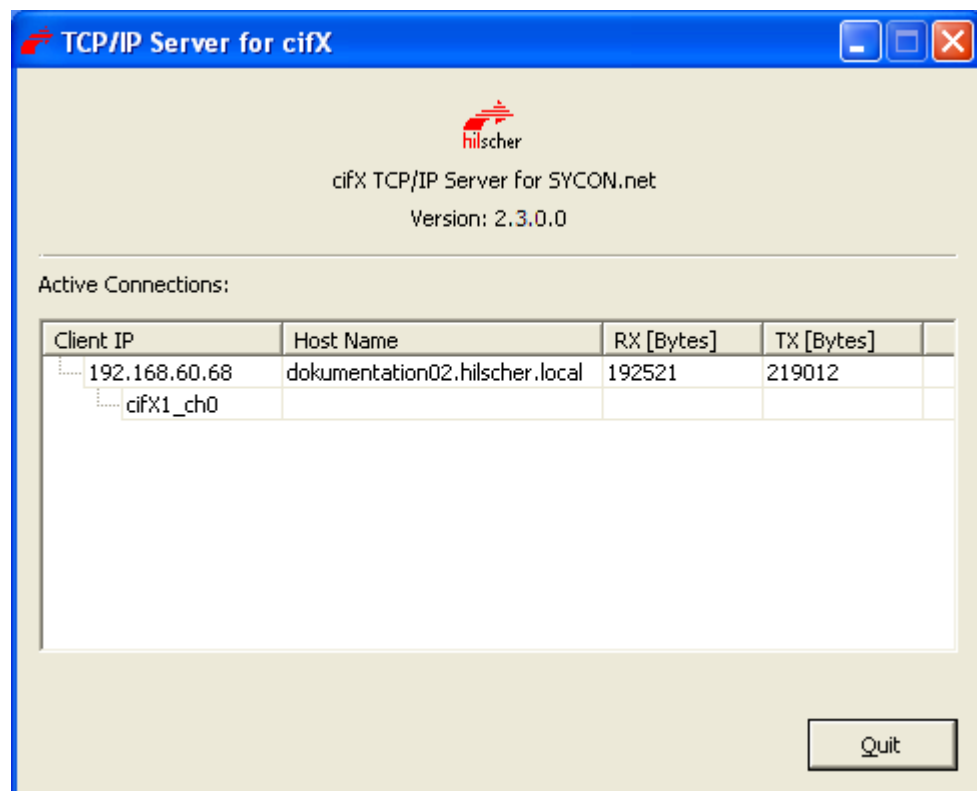


Figure 4: Window „TCP/IP Server for cifX“ (on PC 2), TCP/IP Connection to the PC card cifX 1/ Channel°0

Item	Description
Active Connections	All active Ethernet connections from a remote computer (in the example PC 1) via the cifX TCP/IP server to a PC card cifX in another PC (PC 2 in the example) are displayed.
Client IP	The IP address of the remote PC is displayed (in the example, PC 1: 192.168.6068). In addition, the card identification cifX[card ID 0 ... N] and the occupied channel _ch[channel-number 0 ... 5] (in the example cifX1_ch0) are displayed. Without firmware and configuration download to the card, only the system channel "_SYS" is displayed (for example cifX0_SYS).
Host Name	Name of the remote PC in the network
RX [Bytes]	Receive data in [Bytes]
TX [Bytes]	Transfer data in [Bytes]

Table 6: Description Window „TCP/IP Server for cifX“

2.6 Show Host Information

- In the user interface **TCP/IP Server for cifX** select **Show Host Information** ①:

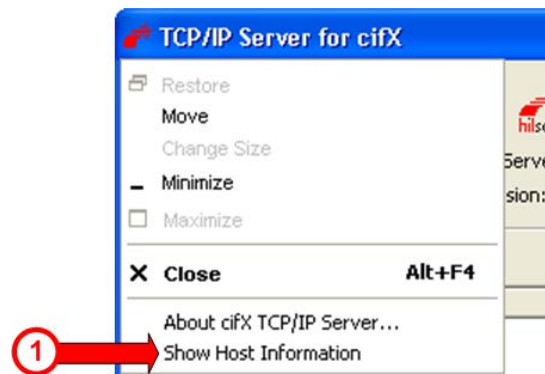


Figure 5: Show Host Information

- The window **Host Information** displays the host information for the PC cards cifX that are installed in the system to which the particular TCP/IP server accesses. For each device, the host information **Alias**, **Device Number**, **Serial Number**, **Channels** and **DPM Size** are displayed.

For more see next page

The figure below shows the data for the two sample devices **cifX0** ② and **cifX1** ③.

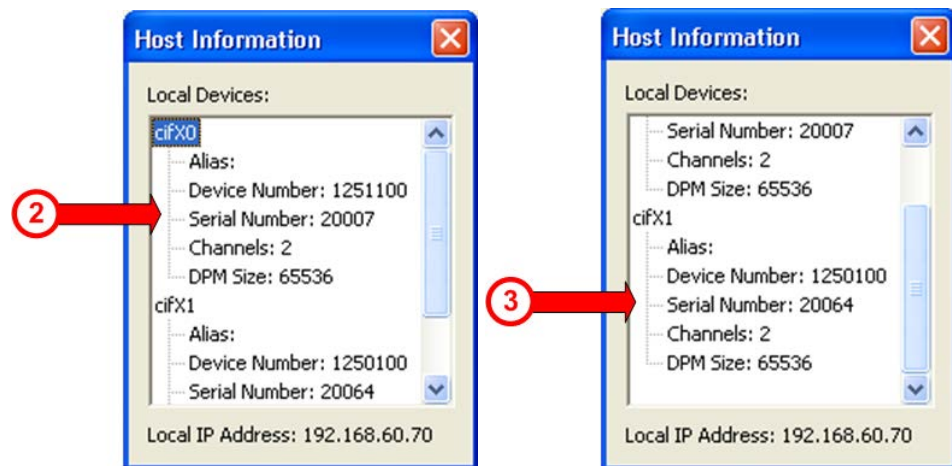


Figure 6: Host Information of Example Devices

Item	Description
Local Devices	Devices installed in the local computer
cifX0, cifX1 ...	Device name in the cifX Driver Setup Utility of the currently by the driver identified device.
Alias	As Alias you can enter in the cifX Driver Setup Utility a separate name for the device.
Device-Number	Number of the device
Serial Number	Serial number of the device
Channels	Number of the Communication channels used
DPM Size	Size of the Dual-Port Memory
Local IP Address	IP address of the local PC in the network.

Table 7: Description Window „Host Information“

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3.3 References

- [1] Dual-Port Memory Interface Manual, Revision 12, Hilscher GmbH 2012
- [2] cifX Device Driver, Windows 2000/XP/Vista/7/8, V1.2.x.x, Revision 22, Hilscher GmbH 2013

3.4 Glossary

cifX

Communication InterFace based on netX

cifX TCP/IP Server

The program **cifX TCP/IP Server for SYCON.net** (*cifX TCP Server.exe*) allows remote diagnostics via Ethernet.

netX

networX on chip, Hilscher network communication controllers

TCP/IP

Transport Control Protocol/Internet Protocol connection-orientated, secure transfer protocol as basis for the Internet-protocols

TCP/IP Server for cifX

User Interface for the program cifX TCP/IP Server for SYCON.net.

3.5 Contacts

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