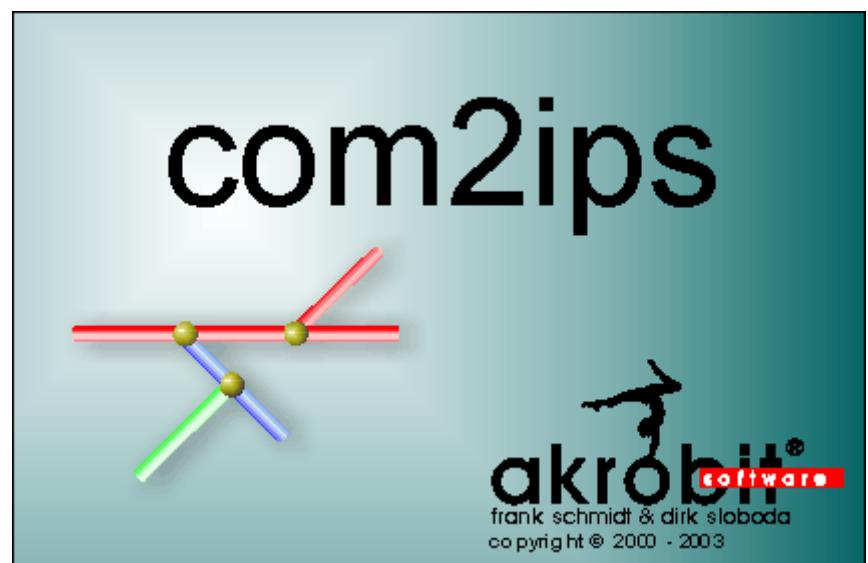

com2ips

User Manual

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1. Programme Description

1.1. General

The programme com2ips operates as an interface between a device software and (measuring) devices within a network and / or (measuring) devices connected to any number of COM ports of the PC on which com2ips is running.

1.2. com2ips Light

Use com2ips Light to address any device with a serial interface via your corporate network or via the internet. In order to do this, connect the device to a COM port of your PC. Start com2ips, set the COM port and start the data transfer. You can now access the device activated via com2ips from any computer within your corporate network. It works the same way via internet if you start com2ips on your internet server.

com2ips can be started several times on one computer, thus activating several devices with a serial interface at the same time.

1.3. com2ips Standard

If your device with a serial interface supports a bus protocol, you can use com2ips to connect several devices via your network. Instead of doing this by installing a costly new RS485 cable, you can simply use your existing network. com2ips will use the network in order to realize a “virtual” RS485 connection between your devices via the network.

2. Installation and Programme Start

2.1. Installation

Installation is perfectly simple: start the file Setup.exe and follow the instructions of the installation routine.

2.2. Programme Start

The programme group “com2ips“ will be entered into your start menu during installation. Start your programme from this group.

2.3. Test Operation

If you are working with the test version of com2ips, the dialogue “License Information” will appear after starting the programme.

In this dialogue you are informed about the remaining time during which the test version of the programme can be run and how to register the software.

Other than that, the test version of the programme is exactly the same as the full version, only that it is limited for operation on your computer.

2.3.1. The Dialogue “License Information“

The dialogue “License Information” will appear:

- when the programme is started, if you are working with a test version of com2ips;
- when clicking on the button *License* in the dialogue “Info on com2ips“ (only in the test and the Light version)

In this dialogue you are informed about the remaining time during which the test version of the programme can be run and how to register the software or how to upgrade to the standard version.

3. Operation

3.1. Brief Instruction

3.1.1. First Steps

The preparation of com2ips for the desired redirection / distribution of the data flow is carried out in the following steps:

- Programme start
- Check / change host settings
- Create new connection; check / change settings
- Start data transfer

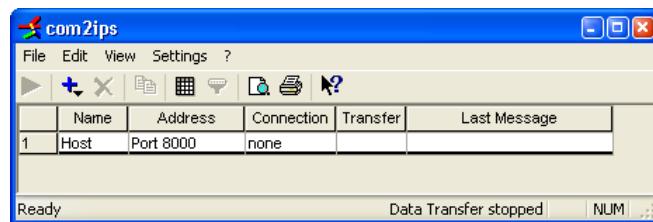
Now enter the host settings as output interface into the device software and start data transfer.

Example 1 is the redirection from a TCP connection as host to a COM port, example 2 is the redirection from a COM port as host to a TCP connection.

3.1.2. Redirection from a TCP connection to a COM port

A redirection from a TCP connection to a COM port may be required if a (measuring) device is connected to a PC in the network and is to be addressed by any other PC in the network. In this case, the software com2ips must be installed on the PC to which the (measuring) device is connected. Then carry out the following steps:

Programme Start



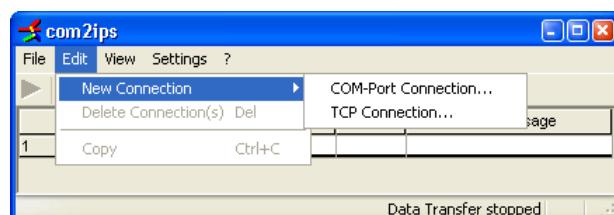
When starting the application, a connection table will appear in the main window. This table contains either the connection entries that were active when the programme was last shut down, or (when starting the programme for the first time) only the entry for the host. In this case, the programme will enter a TCP connection as host, with the default port 8000. The IP address is automatically the address of the computer from which com2ips has been started.

Check / Change Host Settings

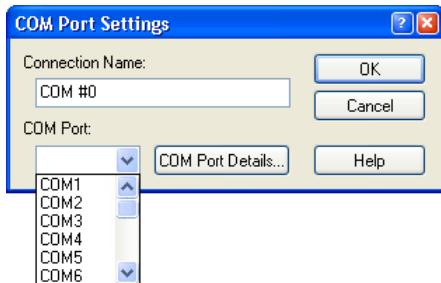


In order to change the number of the TCP port, select the menu function *Settings/ Connection Settings*. The host connection can be changed in the respective entry field in the dialogue "Host Connection".

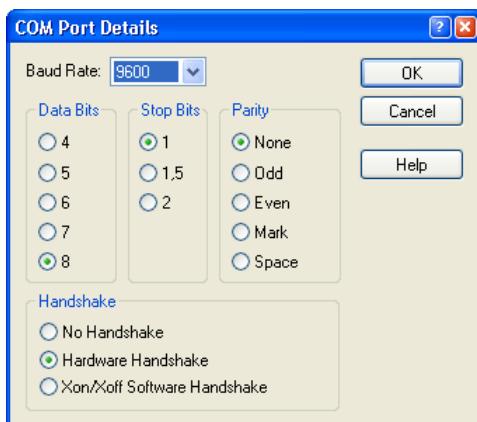
Create New Connection; Check / Change Settings



A COM port for redirection of the data flow can be determined via the menu function *Edit/New Connection/COM Port Connection*. When calling this function, the dialogue "COM Settings" will appear. A text for the description of the connection can be entered into the field "Name of Connection".



The COM port is selected from the list which opens by clicking, with the left mouse button, on the button right from the display field. The COM port settings can be changed in the dialogue “COM Port Details”. This dialogue is opened via the button *COM Port Details*.



Start of Data Transfer

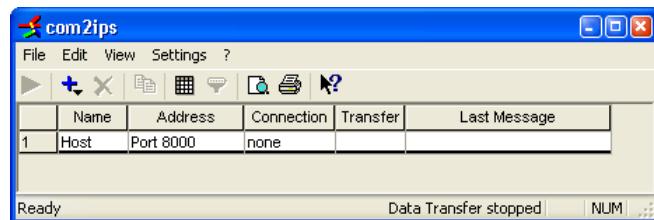
Data transfer with com2ips is started via the menu function *Settings/Data Transfer*. The software will search the chosen ports in the system and wait for the arrival of the data via the port that has been selected as host. Once the data have arrived (after starting the device software), they are forwarded to the connection port(s), and the replies are returned to the host port.

3.1.3. Redirection from a COM port to a TCP connection

A redirection from a COM port to a TCP connection may be required if a (measuring) device is connected to the network via a hardware converter and can thus be addressed via an IP address and a TCP port, but the device software does not support direct access via an Ethernet interface (indication of IP address and TCP port). In that case, the software com2ips must be installed on the PC on which the device software is running. Then carry out the following steps:

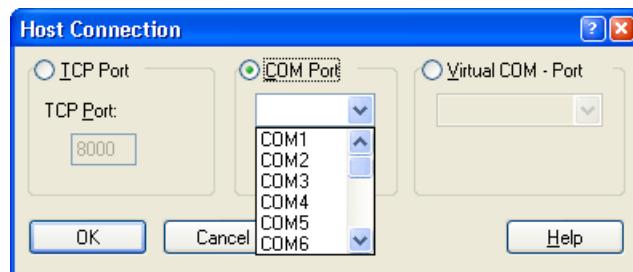
Programme Start

When starting the application, a connection table will appear in the main window. This table contains either the connection entries that were active when the programme was last shut down, or (when starting the programme for the first time) only the entry for the host.



In this case, the programme will enter a TCP connection as host, with the default port 8000. The IP address is automatically the address of the computer from which com2ips has been started.

Check / Change Host Settings



Either a TCP port (default) or a COM port can serve as host. In order to determine a COM port as host, select the menu function *Settings/Connection Settings*.

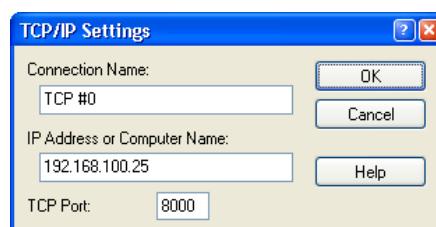
In the dialogue "Host Connection", click once, with the left mouse button, onto the option field "COM Port" in order to determine that a COM port is to serve as host.

The COM port is selected from the list which opens by clicking, with the left mouse button, on the button right from the display field. The COM port settings can be changed in the dialogue "COM Port Details". This dialogue is opened via the button *COM Port Details*.

Warning!

A "COM redirection" is required in order to be able to address the COM port selected as host from your device software. It will direct the data flow from the output port of the device software to the input port (host) of com2ips. If you are not in possession of the corresponding software, connect the output COM port of your device software to the host COM port of com2ips with a nullmodem cable.

Create New Connection; Check / Change Settings



A TCP connection for redirection of the data flow can be determined via the menu function *Edit/New Connection/TCP Connection*. When calling this function, the dialogue "TCP/IP Settings" will appear. A text for the description of the connection can be entered into the field "Name of Connection". The IP address and the TCP port are to be entered into the re-

spective entry fields. Make sure these values correspond to those of the hardware converter in use.

Start of Data Transfer

Data transfer with com2ips is started via the menu function *Settings/Data Transfer*. The software will search the selected ports in the system and wait for the arrival of the data via the port that has been selected as host. Once the data have arrived (after starting the device software), they are forwarded to the connection port(s), and the replies are returned to the host port.

3.1.4. Programme Start via Command Line

Com2ips can be started by calling a command line, too. Several parameters can be given. It is thus possible, for example, to organize an automatic programme start with direct data transfer.

The following parameters are possible:

- **connect** – for immediate commencement of data transfer after programme start
- **nosplash** – for suppressing the display of the opening picture during programme start
- **filename.ini** – for starting the programme with a special configuration (file)

If, for example, com2ips shall be started with the configuration 1 (saved in the file configuration1.ini), data transfer shall begin immediately and the opening picture shall not be displayed, the call takes the following form: “com2ips configuration1.ini – connect – nosplash”. If the name of the configuration file contains blanks, it is to be put into inverted commas.

3.2. Main Window

3.2.1. Connection Table

The main window contains the connection table, in which all connections which have been agreed are listed. Each connection contains the elements “Name”, “Address”, “Connection”, “Transfer” and “Last Message”. The port serving as host is always described in the first line.

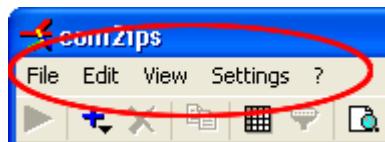
The dialogue “Table Settings” is opened via the command *View/Table* or *Properties/Table Settings*. You can determine in this dialogue which information (column) of the table is to be displayed.

Warning!

The host name cannot be changed. If a TCP connection has been determined as host, it will automatically be given the IP address of the computer on which com2ips is running. In this case only the TCP port appears as address.

3.2.2. Menu Bar

The menu bar consists of five main menus:



File

This menu contains the functions for saving and loading configuration files, for printing the connection table and for exiting the programme.

Edit

You can make new connections via this menu and delete existing connections (entries). Furthermore, table entries can be copied into temporary memory.

View

Change the appearance of the main window and the table settings in this menu.

Settings

This menu features the function Start / Stop of data transfer. Furthermore, the properties of existing connections and of the table can be changed.

Help

The menu item "Help Topics" starts the help function integrated into the programme, the menu item "Info" displays an information window with version number, operating system and copyright information.

3.2.3. Symbol Bar, Status Bar



The symbol bar contains buttons for frequently used functions and thus enables fast access to these functions. The symbol bar can be turned on or off via the command *View/Symbol Bar*.



The status bar gives brief information on the functions currently active in the menu or in the symbol bar and on the status of data transfer. The status bar can be turned on or off via the command *View/Status Bar*. The width of the status bar depends on the width of the display. If it is too narrow, not all information may be displayed.

3.3. The File Menu

3.3.1. Load Configuration

If a configuration (connections), once created, has been saved in a file via the command *File/Save Configuration*, the settings can be loaded via *File/Load Configuration*. In case of identical terminal assignment of ports, the system communication can take place at once in the desired way, without having to recover the settings manually.

The requested file is selected from the standard file dialogue according to file name, file type, drive and directory.

3.3.2. Save Configuration

Once created, any connection can be saved in a file via the command *File/Save Configuration*. On request, this configuration can be loaded via *File/Load Configuration*. In case of identical terminal assignment of ports, the system communication can take place at once in the desired way, without having to recover the settings manually.

The requested file is selected from the standard file dialogue according to file name, file type, drive and directory.

3.3.3. Print

The command *File/Print* controls the printing process for printing the connection table. Before executing this command, a Windows printer has to be installed and, unless installed as standard printer, it must be selected by the programme. Please refer to your Windows Documentation for information on printer installation. Please refer to "Printer Setup" for further information on printer selection.

3.3.4. Print Preview

The command *File/Print Preview* shows what the printout of the connection table will look like. Click on the button *Close* to return to the programme view, click on *Print* to start printing.

3.3.5. Printer Setup

This command shows you a list of all printers installed in your system. In the dialogue "Printer Setup", you can select a special printer as default printer as well as further printing options for the printer you have selected. Please refer to your Windows Documentation and your Printer Manual for further information on printer setup.

3.3.6. Previous Files

Use the numbers and names in the lower part of the file menu for speedy access to one of the files (configurations) which you have last worked with. Select the number or name of the requested file.

3.3.7. Exit

With the command *File/Exit*, you leave the application and the programme is shut down. Should data transfer be active at that time, you will be asked whether you really want to end the transfer.

3.4. The Edit Menu

3.4.1. New Connection

Use the menu function *Edit/New Connection* to either set a COM port connection or a new TCP connection for transferring the data flow.

New COM port connection

When calling the function *Edit/New Connection/COM Port Connection*, the dialogue “COM Settings” will appear. Enter a text for the description of the connection into the entry field “Name of Connection”. The COM port is selected from the list which can be opened with a click of the left mouse button onto the button right from the display field. The COM port settings can be changed in the dialogue “COM port details”. This dialogue is opened via the button *COM Port Details*.

New TCP connection

The dialogue “TCP/IP Settings” will appear when calling the function *Edit/New Connection/TCP Connection*. Enter a text for the description of the connection into the entry field “Name of Connection”. The IP address and the TCP port are to be entered into the corresponding entry fields. These values must correspond to those of the respective counterpart (hardware converter or PC with com2ips).

3.4.2. Delete Connection(s)

If an element of an entry, the entire entry or several entries have been selected in the connection table, the function *Edit/Delete Connection(s)* can be applied to these. Calling this function will e.g. delete all entries from the table.

The command *Edit/Delete Connection(s)* is not available for the host entry.

The same function can be called via the button “Delete Connection(s)” in the symbol bar.

3.4.3. Copy

The command *Edit/Copy* is used to copy the contents of the selected table elements into temporary memory. The copied contents can be copied into another programme via the command *Edit/Paste*.

The same function can be called via the button “Copy” in the symbol bar.

3.5. The View Menu

3.5.1. Symbol Bar and Status Bar

The respective element from the main window can be displayed on screen or hidden via the command *View/Symbol Bar* and *View/Status Bar*.

3.5.2. Table

The dialogue “Table Settings” is opened via the command *View/Table*. You can determine in this dialogue which information (column) is to be displayed in the table. In order to select or unselect an element, click with your left mouse button into the option field left from the corresponding text and confirm your settings with *OK*.

This dialogue can also be called via the button “Table Settings” in the symbol bar and via the command *Settings/Table Settings*.

3.6. The Settings Menu

3.6.1. Data Transfer

Data transfer of com2ips is started and stopped via the command *Settings/Data Transfer*.

The same function can be called via the button “Start/Stop Data Transfer” in the symbol bar.

3.6.2. Connection Settings

The function *Settings/Connection Settings* can only be called if an entry in the connection table has been selected.

In order to select the requested connection, move the mouse pointer into the first column of the table. The pointer symbol will change as soon as it is on the numbered elements of the entries. By a click with the left mouse button, the respective entry is selected.

Depending on the connection type for which the function is called, either the dialogue “Host Connection”, the dialogue “TCP/IP Settings” or the dialogue “COM Settings” will appear.

The corresponding dialogue can also be called via the button “Connection Settings” in the symbol bar.

Dialogue “Host Connection”

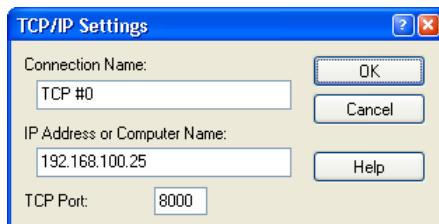


The port number for a TCP connection can be set in the dialogue "Host Connection".

By a single click into the option field "COM Port", with the left mouse button, you can determine that a COM port is to serve as host. All elements for COM port selection and fixing of details are now active.

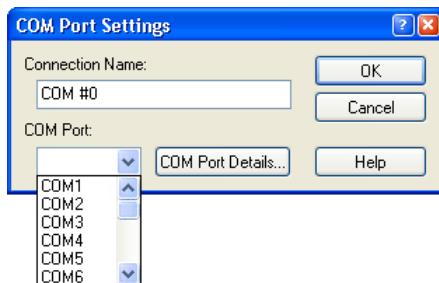
The COM port is selected from the list which will be displayed after a single mouse click (left button) onto the button right from the display field. The COM port settings can be changed in the dialogue "COM Port Details", which is opened via the button *COM-Port Details*.

Dialogue "TCP/IP Settings"



A text for the description of the connection can be entered into the entry field "Name of Connection" in the dialogue "TCP/IP Settings". The IP address and the TCP port are to be entered into the respective entry fields. Make sure these values correspond to those of the counterpart (hardware converter or PC with com2ips) in use.

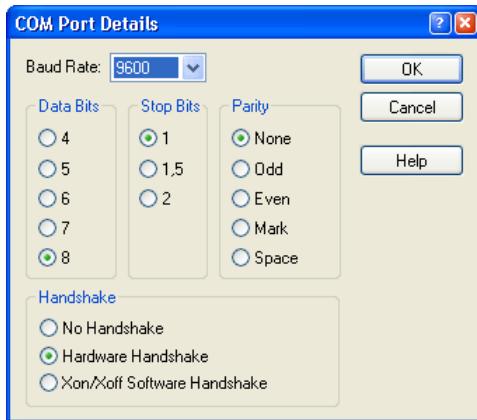
Dialogue "COM Settings"



In the dialogue "COM Settings", the COM port is selected from the list which will be displayed after a single mouse click (left button) onto the button right from the display field. The COM port settings can be changed in the dialogue "COM Port Details", which is opened via the button *COM-Port Details*.

Dialogue "COM Port Details"

The dialogue "COM-Port Details" is used to make settings for baud rate, number of data bits and stop bits, parity and handshake.



Please refer to your device documentation for information on required settings.

3.6.3. Table Settings

The dialogue “Table Settings” is opened via the command *Settings/Table Settings*.



You can determine in this dialogue which information (column) is to be displayed in the table. In order to select or unselect an element, click into the option field left from the corresponding text with the left mouse button and confirm your settings with *OK*.

This dialogue can also be called via the button “Table Settings” in the symbol bar and via the function *View/Table*.

3.7. The Help Menu

The command *Help/Help Topics* shows a dialogue with the contents of the com2ips help system. The requested description can be shown via the table of contents, an index or a browse function.

4. Appendix

4.1. Application Examples

4.1.1. com2ips Light

Access to a measuring device from several computers

You have a measuring device with a serial interface (e.g. an Ahlborn ALMEMO device) connected to one of your PCs and would like to enable several of your employees to access this device from the network. First, start com2ips on your PC. If your software supports addressing the measuring devices via a TCP/IP connection (e.g. COM WinControl with the corresponding option), your staff can, at any time, access the measuring device from the network.

Remote Diagnosis

A device with a serial interface does not operate as requested. The local staff is not able to solve the problem. Instead of making your way to the defective device, you can simply use the internet for access to the device. com2ips will assist you:

Connect the device to the serial interface of a PC with internet access. A simple dial-up connection to any internet service provider will do the job. Then start com2ips on that PC. The operator will inform you of the IP address of the PC.

Now you can access the device from your PC, via the internet, and solve the problem!

4.1.2. com2ips Standard

Access to several measuring devices in one company

You would like to monitor the temperature in three rooms. The monitoring computer is located in one of these rooms. First of all, connect an Ahlborn ALMEMO measuring device with temperature sensor to the monitoring PC. Another PC is already located in the second room that is to be monitored. Connect another ALMEMO measuring device to this PC.

Next, start com2ips on the second PC in order to enable access to this measuring device from the network. Unfortunately, the third room is not equipped with a PC. Therefore, you install a hardware converter in this room, e.g. a Wiesemann & Theis Com Server, an ACOLA CoBox or a Digi PortServer. Back at the monitoring computer, start com2ips and enter the addresses of the three ALMEMO measuring devices: the COM port for the local device, the IP address for the computer in the second room as well as the IP address of the converter in the third room. You can now start COM WinControl on the capturing computer and build up a connection to com2ips, which is running on the same computer. You are now able to operate with all three measurement devices as if they were locally connected to the capturing computer!

Time Control in Branches

You would like to implement an electronic staff time control system in your company. Besides the head office, your company has two branches connected to the main location via a permanent line. The time control is to take place at head office.

The time control system consists of a PC software solution as well as a number of access terminals. The terminals are usually connected to the PC via an RS 485 line.

Here is one solution: the access terminals are connected to the corporate network with the help of hardware converters (e.g. Wiesemann & Theis Com Server, ACOLA CoBox or Digi PortServer). Since the time control system software only supports one single terminal connection, make use of com2ips to join the respective terminals into one unit.

4.1.3. About

com2ips Version 2.1

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5. Glossary

Serial Number

In [the dialog "COM WinControl License Information"](#) in this field the serial number is shown. Please refer this number for registering software.

Max Evaluation Time

In [the dialog "COM WinControl License Information"](#) in this field the max evaluation time is shown.

Remaining Evaluation Time

In [the dialog "COM WinControl License Information"](#) in this field the remaining evaluation time is shown.

Unlock Code

Enter in [the dialog "COM WinControl License Information"](#) in this field the unlock code. Register the software, to get the unlock code.

Calculation Channels

Using the formula editor, you can define the settings for a calculation channel. The polled data can be calculated and displayed both on and offline. A calculation channel can be defined as global (that is it is available to the whole system) or as local (where it is only available in a certain diagram or table).

The “License“ Button

Click with the left mouse button on the License button in the [“Info“ dialogue](#) to open the dialogue “Com2ips License Information”. This dialogue provides you with information on your license and on registration of the software.

Baud Rate Selection

Select the baud rate for operation of the serial connection in the [dialogue “COM Port Details”](#).

Data Bits Selection

Select the number of bits for data transfer from the list in the [dialogue “COM-Port Details”](#).

Parity Selection

Select the parity for data transfer from the list in the [dialogue “COM-Port Details”](#).

Stop Bits Selection

Select the number of stop bits for data transfer from the list in the **dialogue “COM-Port Details”**.

Handshake Selection

Select the protocol for the serial connection from the list in the **dialogue “COM-Port Details”**.

Entry Field “Name of Connection”

Enter the requested name of the connection into the entry field in the **dialogue “TCP/IP Settings or the dialogue “COM Settings”**.

Entry Field IP Address

Enter the IP address for the TCP connection into the entry field in the **dialogue “TCP/IP Settings”**.

COM Port Details Button

In the dialogue „**Host Connections**“ or the dialogue **“COM Settings”**, click with the left mouse button onto the button **COM Port Details** to open the dialogue **“COM Port Details”** and to change the COM port settings.

List of COM Ports

Select COM ports from the list in the **dialogue “Host Connection” or in the dialogue “COM Settings”**. Click once, with the left mouse button, on the button right from the display field to show the list.

Option Field “COM-Port”

Click once, with the left mouse button, onto the option field **“COM Port”** within the **dialogue “Host Connection”** to determine that a COM port is to serve as host. Now the elements for selection of a COM port and fixing of details are active.

Entry Field “TCP Port Number”

Enter the port number via which com2ips is to be addressed into the entry field in the **dialogue “Host Connection”**.

Option Field “TCP-Port”

Click once, with the left mouse button, onto the option field **“TCP Port”** within the **dialogue “Host Connection”** to determine that a TCP port is to serve as host. Now the entry field for selection of a TCP port is active

Name of Connection

The **“Name”** in the connection table is the text which describes the connection in the respective properties dialogue. **Click, with the left mouse button, into the option field left from the text in order to display or hide the column in the connection table.**

Address of the Connection

In the connection table, you can see under **“Address”** the IP address and the TCP port in case of a TCP connection and the COM port and the baud rate for a COM port connection. **Click, with the left mouse button,**

into the option field left from the text in order to display or hide the column in the connection table.

State of the Connection

In the connection table, you can see under "Connection" the current state of the respective connection. The possibilities for a host are "none", "waiting" and "connected", for all other types of connection "none", "making connection" and "connected". Click, with the left mouse button, into the option field left from the text in order to display or hide the column in the connection table.

Transfer

In the connection table, you can see under "Transfer" the data transfer, displayed by two symbols. The red arrow stands for data going out from com2ips, the green arrow stands for data coming in. Click, with the left mouse button, into the option field left from the text in order to display or hide the column in the connection table.

Last Message

In the connection table, you might see under "Last Message" a text describing an error or its current status. This message will remain in the table as long as it has been replaced by a new message or deleted by stopping and restarting the data transfer. Click, with the left mouse button, into the option field left from the text in order to display or hide the column in the connection table.