Manual
Software SPECTRO3-COMFORT-Scope V1.0

(PC Software for Microsoft® Windows® XP, VISTA, 7)

for color sensors of **SPECTRO-3, SPECTRO-3-SL and SPECTRO-3-SLE Series**
with internal temperature compensation and white light balancing

Color sensors of the following types can be quickly parameterised with the SPECTRO3-COMFORT-SCOPE software:

SPECTRO-3 in M34 housing
SPECTRO-3-CL
SPECTRO-3-JR
SPECTRO-3-SL
SPECTRO-3-SLE

The software features menu guidance that prompts the user to enter all the relevant parameters.

0. Contents

Shortcuts:

SEND	F9
GET	F10
GO	F11
STOP	F12

1.   Installation of the SPECTRO3-COMFORT-Scope software

Hardware requirements for successful installation of the SPECTRO3-COMFORT-Scope software:

- Microsoft® Windows® XP, VISTA, 7
- IBM PC AT or compatible
- VGA graphics
- Microsoft-compatible mouse
- CD-ROM drive
- Serial RS232 interface at the PC or USB slot
- Cable **cab-las4/PC** for the RS232 interface or **cab-las4/USB** for USB slot

The SPECTRO3-COMFORT-Scope software can only be installed under Windows. Windows must therefore be started first, if it is not yet running.

Please install the software as described below:

1.	The software can be installed directly from the installation CD-ROM. The CD-ROM under SUPPORT contains a folder with the SPECTRO3-COMFORT-Scope software. This folder contains a SETUP program that must be started to install the software.
2.	The installation program displays a dialog and suggests to install the software in the C:\"FILENAME" directory on the hard disk. You may accept this suggestion with **OK** or [**ENTER**], or you may change the path as desired. Installation is then performed automatically.
3.	During the installation process a new program group for the software is created in the Windows Program Manager. In the program group an icon for starting the software is created automatically. When installation is successfully completed the installation program displays "Setup OK".
4.	After successful installation the software can be started with a left mouse button double-click on the icon.

Windows® is a trademark of the Microsoft Corp.
VGA™ is a trademark of the International Business Machines Corp.

2. Operation of the SPECTRO3-COMFORT-Scope Software

Please read this chapter first before you start to adjust and parameterise the SPECTRO-3 color sensor.

When the SPECTRO3-COMFORT-Scope software is started, the following window appears on the Windows interface:
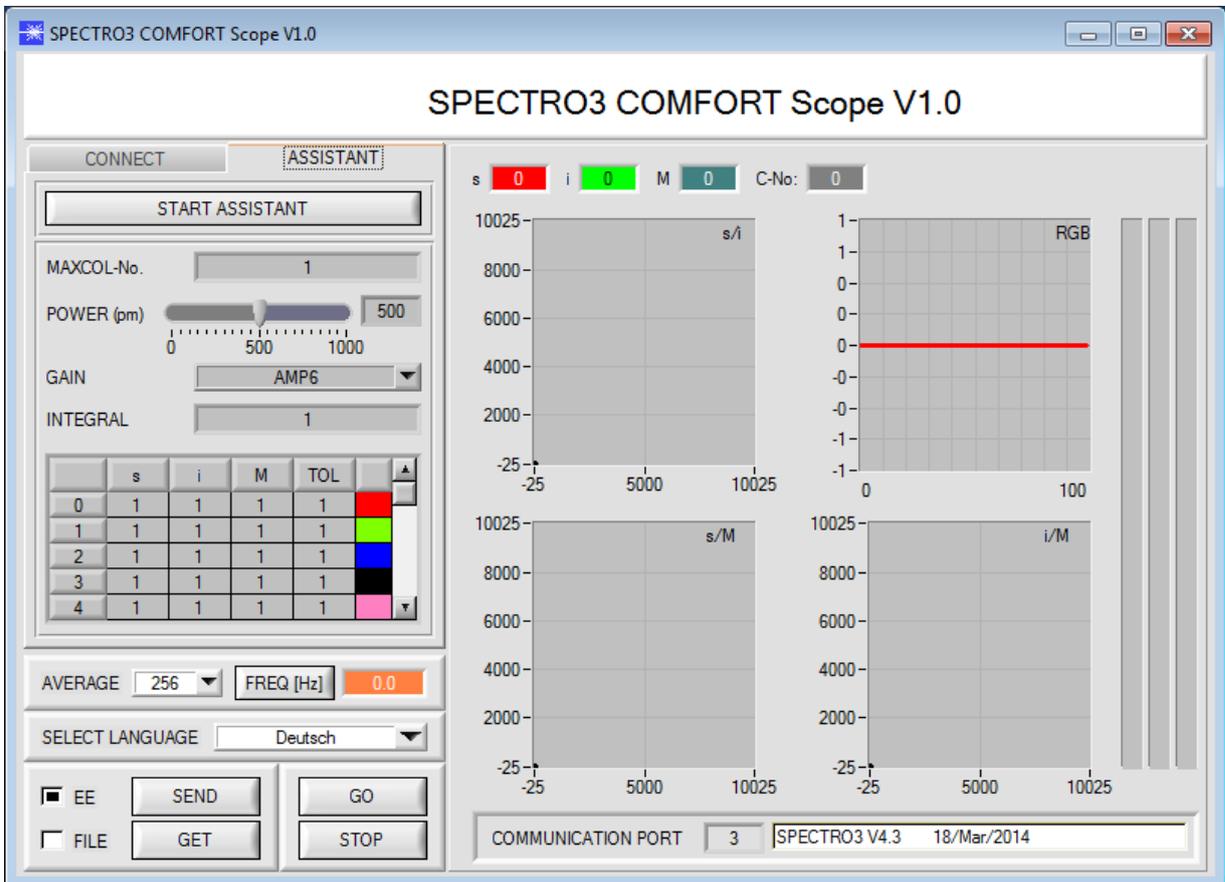
The window size and position will be the same as when the software was last closed. A double-click with the right mouse button e.g. under the minimise symbol places the window centrally in its original size.

If a connection is not established automatically, e.g. if no sensor is connected, the software can be run in OFFLINE mode. In offline mode it only is possible to exchange parameters with a file on a storage medium, which often is helpful for the purpose of analysing parameter files.

If a sensor is connected and a connection still cannot be established, either the SCOPE version (program at the PC) and the firmware version (program in the sensor) do not match, or the interface to the sensor must be correctly configured.

The interface configuration is described in the CONNECT tab chapter.

Pressing the right mouse button on an individual element will call up a short help text.

2.1 Tab CONNECT
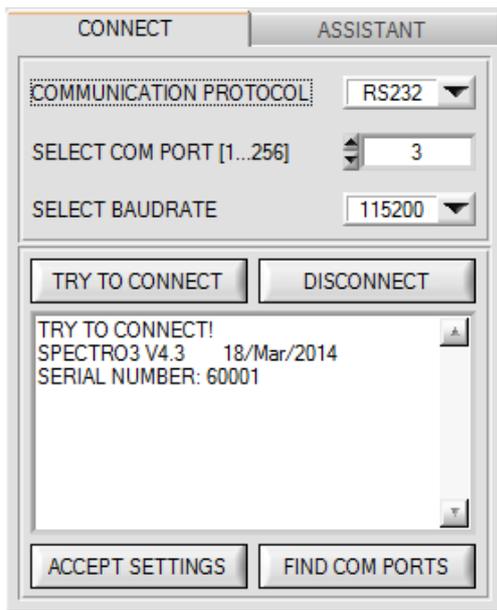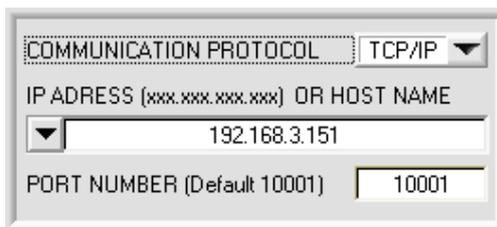
CONNECT:
Pressing the **CONNECT** tab opens a window for selecting and configuring the interface.

The **COMMUNICATION PROTOCOL** function field is used for selecting either an **RS232** or a **TCP/IP** protocol.
If RS232 is selected, a port from 1 to 256 can be selected with SELECT COM PORT, depending on which port the sensor is connected to.
The sensor operates with a set baudrate. Sensor and user interface both must operate with the same baudrate.
At the user interface the baudrate is set with **SELECT BAUDRATE**. If after starting the software should not automatically establish a connection, the correct baudrate can be found with **SELECT BAUDRATE**.
If an adaptor is used, the **COM PORT** number can be determined by way of the hardware manager in the system control panel.
A click on **FIND COM PORTS** lists all the possible COM ports in the display.
If the sensor should communicate through a local area network, an RS232 to Ethernet adaptor will be needed. This adapter makes it possible to establish a connection to the sensor with the **TCP/IP** protocol.
The network adaptors that are available from us are based on the Lantronix XPort module. For parameterising these adapters (assigning of an IP address, setting of the Baud rate of 19200) please download the "DeviceInstaller" software that is provided free of charge by Lantronix at http://www.lantronix.com/. DeviceInstaller is based on Microsoft's ".NET" framework. Detailed operating instructions for the "DeviceInstaller" software also are available from Lantronix.

In order to establish a connection to the adaptor, its IP address or HOST name must be entered in the field **IP ADDRESS (xxx.xxx.xxx.xxx) OR HOST NAME**. The DROP DOWN menu (down arrow) shows the last 10 IP addresses that were used. An address from this list can be directly selected by clicking on the respective item. The DROP DOWN list is saved and is thus always available when the software is closed.
The **PORT NUMBER** for the XPort-based network adaptors is 10001. This port number must not be changed.
When you press the **TRY TO CONNECT** button, the software tries to establish a connection with the set parameters. The communication status is shown in the display field. If the sensor answers with its FIRMWARE ID, the set connection type can be accepted by pressing **ACCEPT SETTINGS**. You will then automatically be returned to the **ASSISTANT** tab. If you get a **TIMEOUT** message, the software could not establish a connection to the sensor. In this case please check if the interface cable is correctly connected, if the sensor is supplied with power, and if the set parameters are correct.
If a connection has been accepted by pressing **ACCEPT SETTINGS**, the software starts automatically with these settings when called the next time.

DISCONNECT disconnects the connection between sensor and PC. The software then switches to OFFLINE mode, where it is only possible to exchange parameters with a file on a storage medium.

Please note:	The stable function of the interface is a basic prerequisite for measured value transfer from the PC to the sensor.
⚠️ ATTENTION !	Due to the limited data transfer rate through the serial RS232 interface only slow changes of the raw signals at the sensor front end can be observed in the graphic output window of the PC. For maintaining maximum switching frequency at the sensor data communication with the PC must be stopped (press the STOP button).

2.2 Tab ASSISTANT, button SEND, GET, GO, STOP
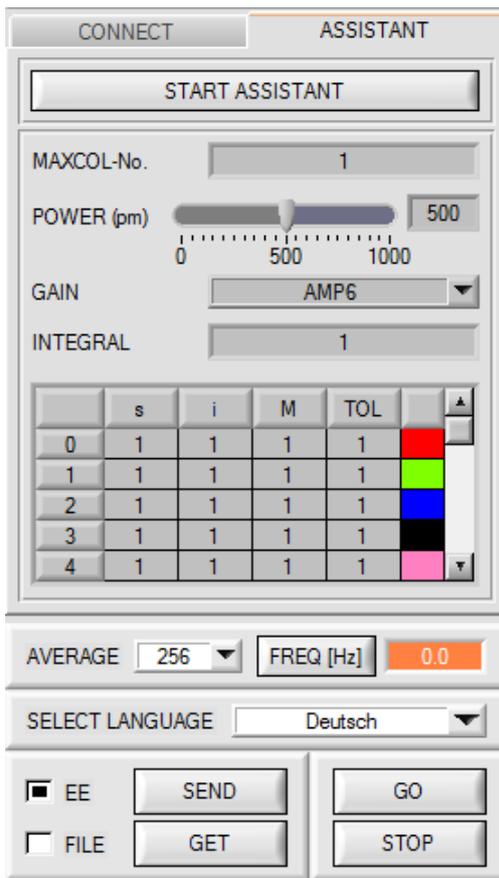
ASSISTANT:
Click on the **ASSISTANT** tab to open a window where the sensor parameters can be set.

Please note: Any changes in the parameter function groups only become effective at the sensor when the SEND button in the MEM function field is pressed!

SEND [F9]:
When the **SEND** button (or shortcut key F9) is pressed all the currently set parameters are transferred between PC and sensor. The target of the respective parameter transfer is determined by the selected button (**EEPROM** or **FILE**).

GET [F10]:
The sensor's current setting values can be called up by clicking on the **GET** button (or with shortcut key F10). The source of data exchange is determined by the selected button (**EEPROM** or **FILE)**.

EEPROM:
When the **SEND** button is pressed the current parameters are written to the non-volatile EEPROM memory of the sensor, or they are read from the **EEPROM** when the **GET** button is pressed, i.e. the parameters in the internal **EEPROM** will remain stored when the voltage at the sensor is switched off.

FILE:
When the **SEND** button is pressed the current parameters can be written to a selectable file on the hard disk, or they can be read from such a file when the **GET** button is pressed. When the **SEND** or **GET** button is pressed a dialog box opens where the desired file can be selected.

GO [F11]:
A click on this button starts data transfer from the sensor to the PC through the serial RS232 interface. **SOURCE** can be used to select which signals should be shown in the displays and graphs.

STOP [F12]:
A click on this button stops data transfer from the sensor to the PC through the serial RS232 interface.

| START ASSISTANT | **START ASSISTANT**:
Click on **START ASSISTANT** to start menu guidance. |

Please follow the instructions in the popup windows.

Instructions will be displayed in the language that is set under **SELECT LANGUAGE**.

Entered data only are displayed in the **ASSISTANT** tab, i.e. they cannot be changed there.

When menu guidance is successfully completed the set data are automatically written to the sensor's EEPROM.

A click on **FREQ** displays the sensor's current scan frequency.
If the frequency should be too low it can be directly influenced with the **AVERAGE** parameter. Change this AVERAGE value and press the **SEND** button.

Meaning of AVERAGE:
This function field is used to set the number of scanning values (measurement values) over which the raw signal measured at the receiver is averaged. A higher **AVERAGE** default value reduces the noise of the raw signals at the receiver unit and at the same time means a decrease of the maximally available scan frequency of the sensor.