

6.9 Troubleshooting Check List

This section can serve as a check list for troubleshooting. It summarizes chapter „Process Optimization and Troubleshooting“ on page 41 in a shorthand fashion and is intended as an on-site memory aid for setup personnel after studying this entire manual. It is also available electronically as a PDF file on the NeuroCheck installation CD-ROM and can be downloaded from our web site. We recommend having a hardcopy of this check list ready to hand at the visual inspection system.

Hardware Inspection

Visual inspection of cameras, lenses and lighting

Check

- **Lighting** for function and brightness.
- **Connectors** on the back panels of the cameras.
- **Cameras and lenses** for
 - damages,
 - dirt,
 - blocking objects.

Status Bar



Check the status bar. You'll find it on the bottom of the NeuroCheck window. It tells you whether the necessary hardware components are available in the system and have been recognized.

The icons indicate:



- Dongle



- Image processing board (frame grabber)



- Digital I/O board



- Serial interface



- Field bus board

Security key and frame grabber (camera icon) are always required. I/O board, serial interface and field bus may be required, depending on the configuration of your inspection system.



Live Image

Check whether there is a suitable live image available.



Adjust Cameras

- Adjust camera position using the marks in the reference image.
- Adjust brightness by changing the f-stop setting on the camera lens.
- Set the focus using the focus ring on the lens.
- After adjustment, re-lock f-stop and focus.

Check signal connections

Please take care that:

- Production equipment is at stand-still during testing,
- Control system is in manual operating mode.

Check inputs and outputs of **digital I/O** and/or **field bus board** by choosing **Test** from the **System** menu and selecting the appropriate board.

- **Set outputs:** click the check boxes in the dialog to set outputs. Check transmission of the signals on the control system.
- **Check inputs:** set inputs from the control system. Check in the dialog box whether they are recognized.

You can check the **serial interface** by choosing **Test > Serial Communication** from the **System** menu.

- In the **Output data** field you can enter characters to be sent by NeuroCheck as decimal ASCII values.
- The **Input data** field displays the ASCII character codes most recently received by NeuroCheck from the serial interface.

Signal Source

Check whether the signal source for the start signal has been set to the correct communication interface.

Choose **Remote Control** from the **System** menu.

- Select **Start check** on the **Input Signals** page in the **Remote Control** dialog box.

- Click *Change* and check whether the correct signal source is selected.

Troubleshooting Tools

System Log Window

In automatic mode, this window displays the following information:



- Green check mark: individual check successful.
- Red circle with yellow cross: individual check failed.

Error Statistics

The result output window can display the failure share of the various individual checks.



Change into *Configure Automatic Screen* mode.

- Right-click the result output window.
- Choose *Parameters*.
- Select *Error Shares of Individual Checks* from the list.
- Confirm with OK.



Switch back to automatic mode by clicking the depicted icon.

Debugging Screen

The Diagnostics/maintenance window lists every single check function executed during a check routine.



- Change into *Configure Automatic Screen* mode.
- Select the debugging screen from the list box.

Check Routine Overview



The check routine overview window can be inserted into the bottom left window area in manual mode.

- Right-click the empty edit area on the left.
- Select **Show Overview** from the context menu (the overview window can be removed with the **Hide Overview** command.).

Protocol File

The **protocol file** is a very useful tool for solving problems with NeuroCheck start-up or automatic operation.

- Choose **Options** from the **System** menu.
- Switch to the *Debug* page of the dialog box.

- The **View** button opens WordPad with the current log file (see „Protocol File“ on page 57 of the Operator Manual for information about configuring NeuroCheck to create a log file).

Software-Optimization



Changing Target Values

To optimize inspection system performance, you can change target values directly in automatic mode. Such changes should only be made by trained personnel.



- Configure NeuroCheck to ignore all functions expecting digital I/O signals.



- Switch to manual mode and display the structure of the individual check in question by clicking the “+” icon.



- Select check function **Transfer Image** by a single left mouse-click and open the corresponding parameter dialog.

- Select **Bitmap file**, then click **Browse**. Select the corresponding bitmap files from the error images folder. Leave the dialog box with OK.



- Select the first check function and execute it using the depicted icon.



- Single-step through the check functions using the icon depicted here.



Important:

Before switching back to automatic mode:

- change the image data source back from **Bitmap file** to **Camera** and
- switch off the **Ignore Digital I/O** functionality.



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Maintenance Instructions

Every other week

Check for pollution:

- Lens
- Lighting

If required, clean with oil-free pressurized air or special lens cleaning cloth.

Every four weeks

Check for good fixation (handle carefully, especially with coarse tools!):

- Camera
- Lighting

Check correct position using the Adjust Cameras function (see “Adjust Cameras” on page 48).

Every other month

Check for pollution:

- Dust filter of PC fan