

Inspector Viewer

Test and monitoring tools

SICK
Sensor Intelligence.



Described product

Inspector Viewer

Manufacturer

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Original document

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1 About this document

1.1 Information on the operating instructions

These operating instructions provide important information on how to use a product from SICK AG.

Prerequisites for safe work are:

- Compliance with all safety notes and handling instructions supplied.
- Compliance with local work safety regulations and general safety regulations for sensor applications.

The operating instructions are intended to be used by qualified personnel.



NOTE

Read these operating instructions carefully before starting any work on the device, in order to familiarize yourself with the device and its functions.

The instructions constitute an integral part of the product and are to be stored in the immediate vicinity of the device so they remain accessible to staff at all times. Should the device be passed on to a third party, these operating instructions should be handed over with it.

1.2 Scope and target group

This document describes the Inspector Viewer, which is used together with sensors from the Inspector family. This document does not cover all the information that is needed to set up and use the Inspector Viewer. You must also read the Quickstart document, which is printed and delivered together with the Inspector Viewer.

A prerequisite for using the Inspector Viewer and this document, is that you are familiar with the Inspector sensor and the terms and concepts that are used in its documentation.

These operating instructions are intended for technical personnel who are working with the Inspector Viewer in industrial environments. Before starting to work with the Inspector Viewer, read both this document and the Quickstart carefully and make sure that you are familiar with the product.

1.3 Explanation of symbols

Warnings and important information in this document are labeled with symbols. The warnings are introduced by signal words that indicate the extent of the danger. These warnings must be observed at all times and care must be taken to avoid accidents, personal injury, and material damage.



DANGER

... indicates a situation of imminent danger, which will lead to a fatality or serious injuries if not prevented.



WARNING

... indicates a potentially dangerous situation, which may lead to a fatality or serious injuries if not prevented.

**CAUTION**

... indicates a potentially dangerous situation, which may lead to minor/slight injuries if not prevented.

**NOTICE**

... indicates a potentially harmful situation, which may lead to material damage if not prevented.

**NOTE**

... highlights useful tips and recommendations as well as information for efficient and trouble-free operation.

1.4 Further information

You find further information about installation, maintenance, interfaces, and technical data in the Quickstart document, which is printed and included in the delivery. Read the Quickstart carefully before you start to use the Inspector Viewer.

All the documentation available for this product can be found on the online product page at: www.sick.com.

2 Safety information

2.1 Intended use

The Inspector Viewer is used as an operator panel for the following SICK products:

- Inspector I10, I20, I40
- Inspector P30
- Inspector PI50
- Inspector PIM60
- Inspector PIM60 Bead.

The Inspector Viewer is used in industrial environments and complies to IP 65.

The Inspector Viewer must be used as described in this manual and the accompanying Quickstart document. If any modifications are done to the device or to the SICK software, any warranty claims against SICK AG shall be null and void. The user is not allowed to open the housing in any other way than removing the cover for the USB port and SD card slot.

2.2 Operational safety and particular hazards

It is essential that the Inspector Viewer is transported, stored, installed, and used correctly in accordance with its intended use in order to ensure error-free, safe operation.

The Inspector Viewer may only be installed, operated, used, and maintained by appropriately trained, authorized specialist personnel. Specialist personnel are individuals who possess the technical training, knowledge, and experience necessary in order to understand the tasks entrusted to them, evaluate these and identify possible hazards.



CAUTION

To prevent the risk of electric shock, do not open the housing of the Inspector Viewer. The housing does not contain any user-serviceable parts.

3 Product description

3.1 Product characteristics

The Inspector Viewer is an accessory that provides instant monitoring capabilities for the Inspector product family. The Inspector Viewer has a resistive touch screen display and complies to IP 65. This makes it suitable for industrial environments.

The main tasks of the Inspector Viewer are described below.

- **Monitor images:** Verify your application and setup by monitoring live or logged images. The result of your inspection is displayed live on the Inspector Viewer's screen.
- **View results:** Using the Inspector Viewer, you can monitor overall results and statistics information for part presence, detailed fail and pass. This information enables you to adjust production parameters in order to increase throughput and reduce costs.
- **Simplify product changeover:** Easily change reference objects to make line changes faster and more efficient, such as in packaging applications. The Inspector Viewer provides the ability to save and export configurations, allowing virtually an infinite number of reference objects.
- **Manage Inspectors:** Multiple Inspectors can be managed from one Viewer. The Viewer also enables users to easily duplicate the parameters of one Inspector to multiple Inspectors.

3.2 Main functions

These are the main functions of the Inspector Viewer:

- View live images and result
- View log images and result
- View statistics
- Change batch by changing reference object
- Change batch by re-teaching the reference image
- Change batch by exchanging the whole configuration.

4 Mounting

4.1 Overview of the mounting procedure

Mount the Inspector Viewer and connect the sensors as described in the Quickstart document.

4.2 Scope of delivery

The delivery includes:

- Inspector Viewer
- SD card with installation software
- Printed Quickstart document.

Note that power cables are not included.

5 Electrical installation

5.1 Installing the power supply

Install the power supply as described in the Quickstart document.



CAUTION

Before connecting the power supply unit to the Inspector Viewer, make sure that the unit is unplugged from the mains supply.

6 Operation

6.1 Getting started

6.1.1 Using the touch screen

The Inspector Viewer has a resistive touch screen display. This means that you do not have to use your finger to tap the screen. You can also use the back end of a pen, or any object that does not scratch the screen.

6.1.2 Description of the user interface

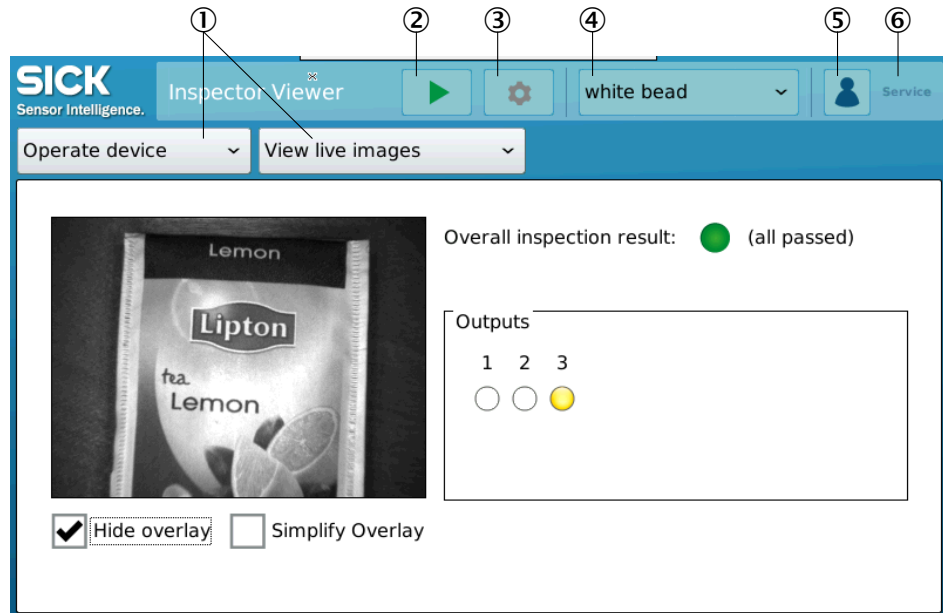


Figure 1: Example of user interface

- ① Drop-down menus (main menu to the left)
- ② Run mode button
- ③ Edit mode button
- ④ List of devices
- ⑤ Login button
- ⑥ Logged in user

6.1.2.1 Modes

The Inspector Viewer has two different modes: Run mode and Edit mode. The mode is indicated by the mode buttons in the toolbar, see ["Description of the user interface", page 10](#). When the device is in Run mode, the Run mode button is clearly visible and the Edit mode button appears dimmed. To switch from Run mode to Edit mode, tap the dimmed Edit mode button.

6.1.3 Menus

You use drop-down menus to navigate in the Inspector Viewer. The main menu has the following alternatives:

- **Viewer setup**
- **Sensor setup**
- **Operate device**

For each alternative, there is a submenu that is placed to the right of the main menu. There are up to three levels of menus, placed next to each other. The figure below shows the main menu **Operate device**, and two levels of submenus.

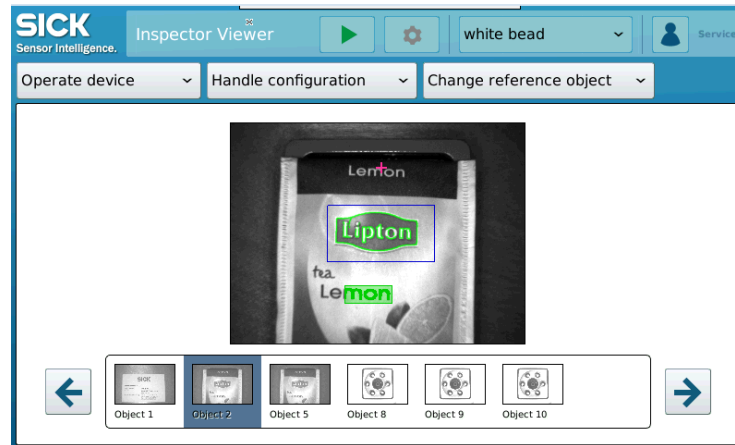


Figure 2: Example of three menu levels

The **Viewer setup** submenu includes the following alternatives:

- **Communication**
- **Time & Language**
- **Data handling & Storage**
- **User profiles**

The **Sensor setup** submenu includes the following alternatives:

- **Scan & communication**
- **Log settings**
- **Delete Devices**

The **Operate device** submenu includes the following alternatives, where one of them has a third menu level:

- **View live images**
- **View log images**
- **View results**
- **Handle configuration**
 - **Change reference object**
 - **Re-teach reference object**
 - **Regions**
- **Manage configurations**

6.1.3.1 Selecting menu

In the instructions in this manual, the following notation is used: Select **Operate device > Handle configuration > Re-teach reference object**. This has the following meaning:

1. In the main menu, select **Operate device**.
2. In the second menu, to the right of the main menu, select **Handle configuration**.
3. In the third menu, select **Re-teach reference object**.

6.1.4 User categories

There are three different user authority levels: **Standard Operator**, **Advanced Operator**, and **Service**. The table below shows which tasks each user is allowed to perform.

	Standard Operator	Advanced Operator	Service
Change language	X	X	X
Switch graphical overlay	X	X	X
Clear, update, and save log	X	X	X
Switch device in the device list	X	X	X
Fetch statistics	X	X	X
Change mode	-	X	X
Change reference object	-	X	X
Save and restore backup	-	X	X
Handle data and storage on the SD card	-	-	X
Change log settings	-	-	X
Re-teach reference image	-	-	X
Move regions	-	-	X
Reset statistics	-	-	X
Set IP address of Inspector Viewer and Inspector devices	-	-	X
Scan network	-	-	X
Change date and time	-	-	X

6.1.5 Logging in

When you start the Inspector Viewer, you are automatically logged in as a **Standard Operator**. To log in as another user, do as follows:

1. Tap the Login button, see ["Description of the user interface"](#), page 10. The **Login** dialog box appears.

Figure 3: Login dialog box

2. Select user authority level in the **User** drop-down menu.
3. Type the password in the **Password** box. The default password for all users is to leave the box empty.
4. Tap **OK**.

6.1.6 Setting up the Inspector Viewer

Only **Service** users are allowed to do this procedure. Other users can only change the language.

1. Select **Viewer setup > Communication** and specify the IP settings. Tap the text box to display a keypad.

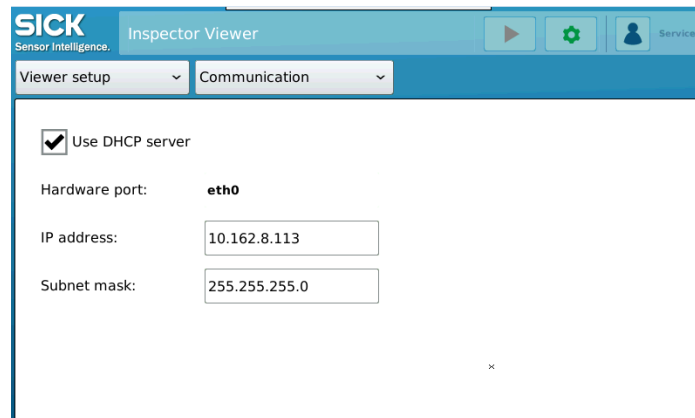


Figure 4: *Communication* window

2. Select **Viewer setup > Time & Language** and set the date and time and select the language.

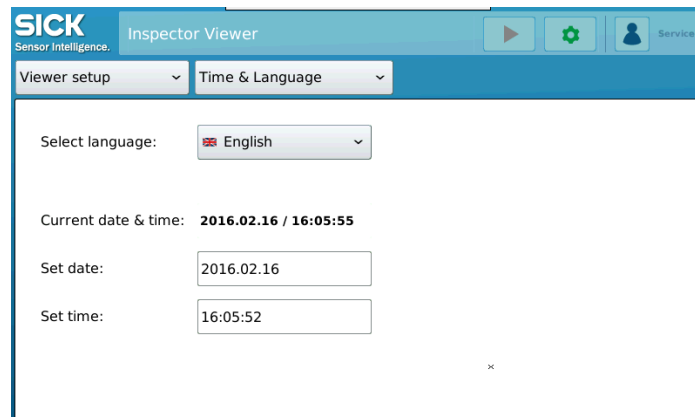


Figure 5: *Time & Language* window

3. Select **Viewer setup > User profiles** and set the passwords for the different user categories.
As default, no password is required.

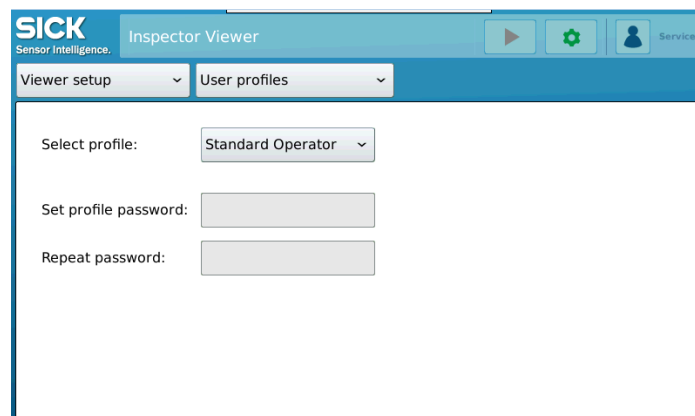


Figure 6: *User profiles* window

6.1.7 Connecting the Inspector device to the Inspector Viewer

Only **Service** users are allowed to do this procedure.

1. Select **Sensor setup > Scan & communication**.
2. To get a list of available devices, tap **Scan network**.

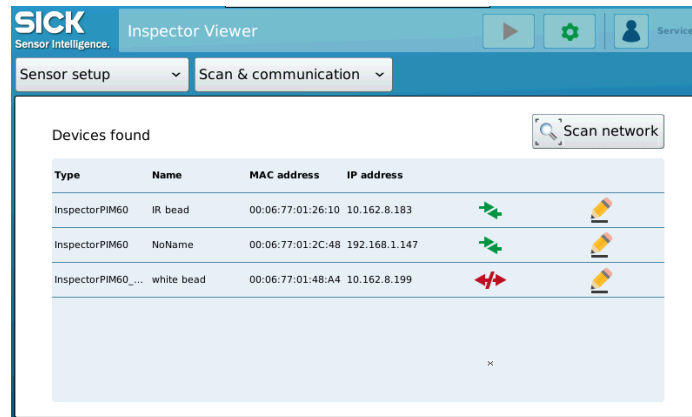


Figure 7: *Devices found list*

A connected device has a red arrow icon in the list, and a device that is not connected has a green arrow icon. Only one Inspector can be connected at a time. The first time you connect the Inspector Viewer to the network, none of the devices in the list is connected. If the Inspector Viewer has been connected to an Inspector device before, it tries to reconnect to it.

3. If needed, tap the Edit icon to open the **Manual setup** window and edit the IP settings.
4. To connect a device, tap the green arrow icon.
If another device was already connected, it will be automatically disconnected.

6.1.7.1 Deleting a device

During operation, all devices that have been connected to the Inspector Viewer at least once, are shown in a drop-down list in the Inspector Viewer toolbar, see "[Description of the user interface](#)", page 10. A device remains in the list also when it is not available on the network.

1. To delete a device from the drop-down list, select **Sensor setup > Delete Devices** and tap the Delete icon.

6.2 Using the Inspector Viewer

This section describes how to use the main functions of the Inspector Viewer.

6.2.1 Standard Operator functions

The functions described in this section are available to all users.

6.2.1.1 Viewing live images

1. To view the live images, select **Operate device > View live images**.

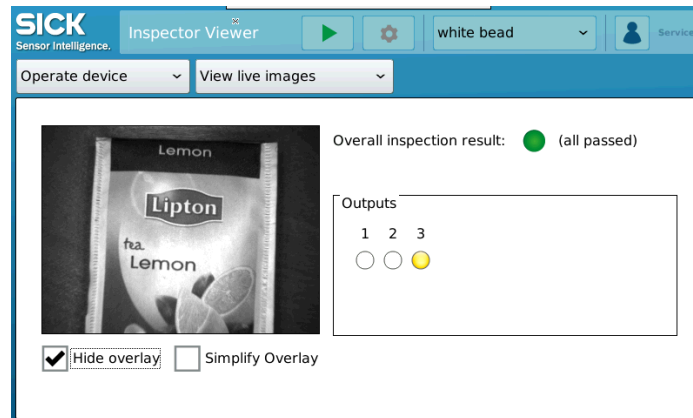


Figure 8: View live images window

2. If applicable, select one of the check boxes **Hide overlay** or **Simplify overlay**.

The images are shown using a best effort strategy. This means that, depending on scan rate, not every image is shown.

The following information is also shown in the window:

- The **Overall inspection result** is indicated both by color and text.
- The **Outputs** section shows the three digital outputs of the Inspector Viewer. Yellow color indicates that the output is active. Which outputs that are active for a specific image depends on the inspection result and is configured in SOPAS.

6.2.1.2 Viewing and saving log images

The device log is a circular image buffer in the Inspector. The size of the buffer is 20-30 images, depending on Inspector type.

1. To view the log images, select **Operate device > View log images**.

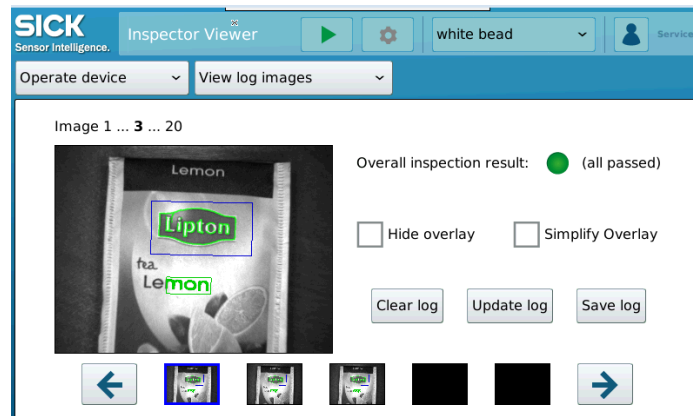


Figure 9: View log images window

2. Tap **Update log** to upload the most recent log images from the Inspector to the Inspector Viewer.
3. If applicable, select one of the check boxes **Hide overlay** or **Simplify overlay**.
4. To view one image at a time, step the thumbnail list.
5. To save the set of images on the SD card, tap **Save log**.

6.2.1.3 Viewing statistics

1. To view the statistics, select **Operate device > View results**.

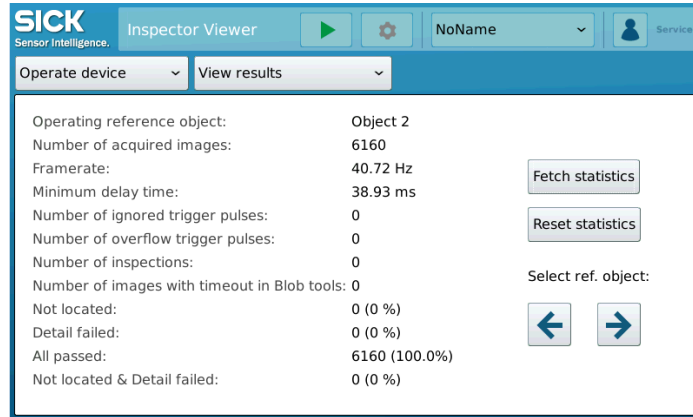


Figure 10: View results window

2. Tap **Fetch statistics** to upload the most recent statistical data from the Inspector.
3. To view statistics for another Inspector device, use the **Select ref. object** arrows. Note that you cannot fetch statistics for an Inspector that is not connected. Therefore, what you see are the statistics that were uploaded the last time that Inspector was connected to the Inspector Viewer.

6.2.2 Advanced Operator functions

The functions described in this section are available to users with authority level **Advanced Operator** or **Service**.

6.2.2.1 Batch change by changing reference object

This procedure is applicable when you want to change between reference objects that are already stored in the Inspector.

1. To change reference object, select **Operate device** > **Handle configuration** > **Change reference object**. The reference object that is currently in use is shown. All reference objects that are stored in the Inspector are shown in a thumbnail list.

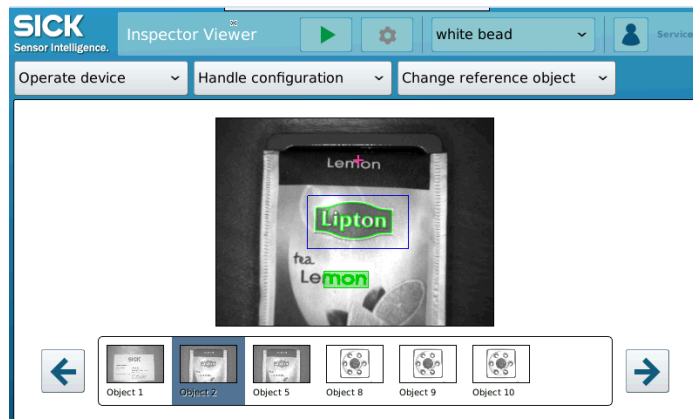


Figure 11: Change reference object window

2. To select the new reference object, step the thumbnail list.

6.2.3 Service user functions

The functions described in this section are only available to users with authority level **Service**.

6.2.3.1 Setting up which images that are logged

This setting does not affect the recording of live images. For some Inspector types, not all of the alternatives listed below are available.

1. Select **Sensor setup > Log settings**.
2. Select which type of images you want to log:
 - All images
 - Images with result **Passed**
 - Images with result **Located**
 - Images with result **Detail failed**
 - Images with result **Failed (Not located or detail failed)**.

6.2.3.2 Saving live images on the SD card

1. Select **Viewer setup > Data handling & Storage**.
2. To activate the function that saves the live images on the SD card, select **Record Live Images**.

The images are recorded using a best effort strategy. This means that, depending on scan rate, not every image is saved.

6.2.3.3 Managing images on the SD card

1. Select **Viewer setup > Data handling & Storage**.
2. Tap **Manage recorded/logged images**.
The file system on the SD card is shown.
3. Navigate the file system on the SD card in the following way:
 - To open a folder, tap and hold.
 - To view an image, tap and hold.
 - To select an image or a folder, without opening it, just tap.
4. To remove an image from the SD card, select it and tap **Delete**.
5. To copy an image or a complete subdirectory to a USB storage device, select it and tap **Copy**.

6.2.3.3.1 Name and format of the saved images

The naming structure for images saved on the SD card is: **DeviceType_ Device Number_Date&Time**, where **Time** is written as **hour-minute-second-ms**. Example: **Inspector40_2_2016-03-15-10-27-47-635.jpg**. The file format of the saved images is raw bitmap without graphical overlay.

6.2.3.4 Batch change by re-teaching reference image

This procedure is applicable when you want to create a new reference object.

1. Select **Operate device > Handle configuration > Re-teach reference objects**.

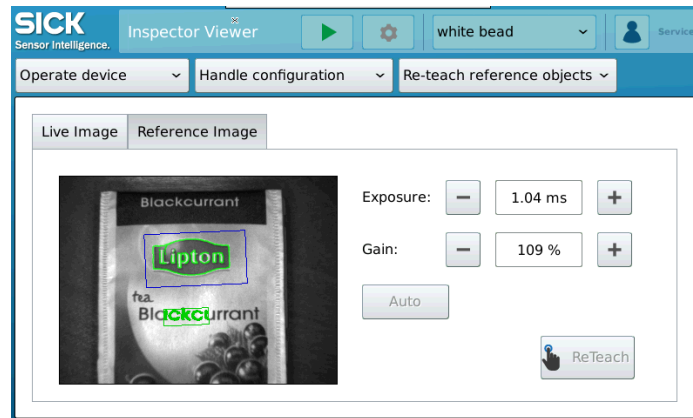


Figure 12: Re-teach reference objects window

2. Select Edit mode.
3. If needed, select **Reference image** to see the old image.
4. Select **Live image**.
5. Place the new object under the camera.
6. If necessary, adjust exposure and gain.
Note that this can affect the minimum delay time.
7. Tap **ReTeach**.
8. If the regions are not in the correct place, do as follows:
 - a) Select **Operate device > Handle configuration > Regions**.
 - b) Select the region to move in the **Tool list**.
 - c) Use the arrow keys to move the region to the correct place.
 - d) Tap the Save icon.
9. To save the new configuration permanently in the device, switch to Run mode.

6.2.3.5 Batch change by exchanging configuration

When you configure a device in SOPAS, you can save the configuration as a SOPAS Parameter Backup (SPB) file, and then import the SPB file to the Inspector Viewer. You can save a number of SPB files, each with up to 32 reference objects, on the SD card. This is useful if 32 references objects are not enough to cover the type variation in the production line, or if special grouping makes it easier for the operator.

Preparation: Creating and importing the SPB files

1. Create the SPB files in SOPAS and export them to a USB storage device.
2. Connect the USB device to the Inspector Viewer, [see "Connecting a USB device to the Inspector Viewer", page 20](#).
3. Select **Viewer setup > Data handling & Storage**.

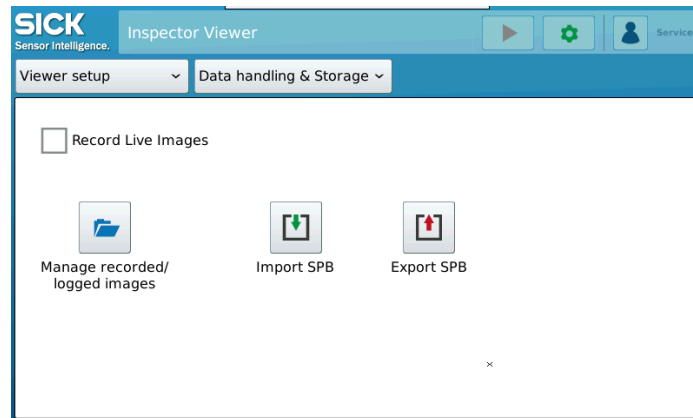


Figure 13: Data handling & Storage window

4. Tap **Import SPB**.
The **Select File for Import** window opens.

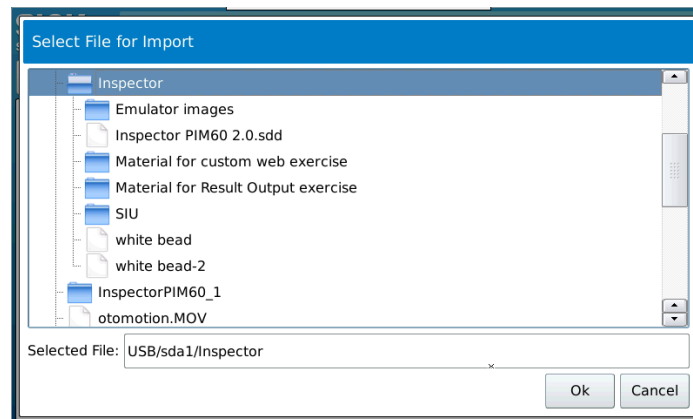


Figure 14: Select File for Import window

5. To open the file system on the USB device, tap and hold the **USB** folder.
6. To save a SPB file on the SD card, tap to select it in the file system, and then tap **OK**.
7. Repeat the previous step until all applicable SPB files are saved on the SD card.
8. Disconnect the USB device and mount the cover.

Changing batch

1. Select **Operate device > Manage configurations**.

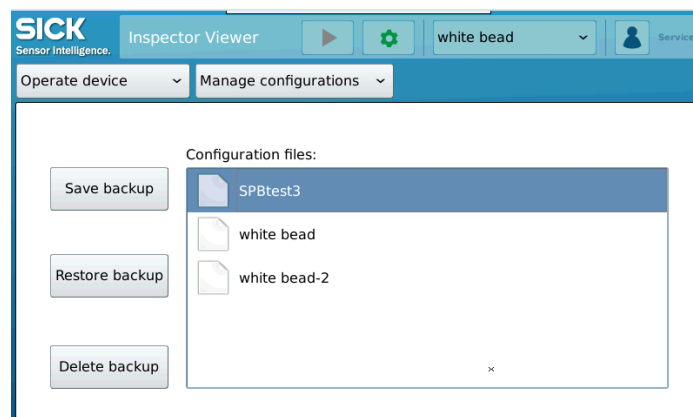


Figure 15: Manage configurations window

2. Switch to Edit mode.
3. In the **Configuration files** list, select the SPB.
4. Tap **Restore backup**.
The new configuration is uploaded.
5. Select **Operate device > Handle configuration > Change reference object**.
6. Select the reference object in the thumbnails list.
7. Switch to Run mode.

6.2.3.5.1 Connecting a USB device to the Inspector Viewer



CAUTION

When the cover is removed, the circuit board is unprotected. Make sure that you do not touch any part of the circuit board!



CAUTION

When the cover is removed, the Inspector Viewer does not fulfill the requirements for IP 65. Keep the environment as dry and clean as possible until the cover is mounted again.

1. Unscrew the cover on the right-hand side of the device.
2. Insert the USB device into the USB port.

6.2.3.6 Exchanging Inspector device

The Inspector Viewer can be used for backup storage when the Inspector device is changed.

Preparation: Save a backup on the SD card

1. Select **Operate device > Manage configurations**.
2. Switch to Edit mode.
3. Tap **Save backup**.
4. In the **Configuration download** dialog box, specify the name of the backup file.
5. tap **OK**.

The configuration from the Inspector is now saved as a backup on the SD card and shown in the **Configuration files** list.

Exchanging the device

1. Exchange the HW setup and the electrical connection.
2. Select **Sensor setup > Scan & communication**.
3. Tap **Scan network**.
4. If the device needs a new IP address, tap the Edit icon. Change the IP settings and tap **OK**.
5. Select **Operate device > Manage configurations**.
6. Select the applicable configuration file in the **Configuration files** list.
7. Tap **Restore backup**.
The new configuration is uploaded.

The device is now ready to use. Note that this procedure does not support a calibrated setup.

7 Maintenance

7.1 Overview of the maintenance procedure

Maintenance and cleaning of the product is described in the Quickstart document.

7.2 Replacing the SD card

Because the installation software is stored on the SD card, you need to replace the SD card if the software is updated. This must only be done by qualified personnel. Replace the SD card as described in the Quickstart document.



CAUTION

- Always disconnect the device from the power supply before removing or re-inserting the SD card.
 - In all cases, take measures to protect against electrostatic discharge.
-



CAUTION

When the cover is removed, the circuit board is unprotected. Make sure that you do not touch any part of the circuit board!



CAUTION

When the cover is removed, the Inspector Viewer does not fulfill the requirements for IP 65. Keep the environment as dry and clean as possible until the cover is mounted again.

8 Technical data

8.1 Description of the device

Refer to the Quickstart document for a description of the device, including interfaces and technical data.

9 Appendix

9.1 Licenses

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