

User Manual

MagniLink ChromeViewer

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1 About LVI

LVI Low Vision International AB was founded in 1978 and is one of the world's leading manufacturers of magnifying TV- and computer systems for visually impaired. New products are developed in close cooperation with users and professional personnel of vision rehabilitation. LVI is a Quality System Certified ISO 9001 and Environmental System Certified ISO 14001 company.

The information in this manual has been carefully checked and is believed to be accurate. However, LVI assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will LVI be liable for direct, indirect, special, exemplary, incidental, or consequential damages resulting from any defect or omission in this manual. In the interest of continued product development, LVI reserves the right to make improvements in this manual and the products it describes at any time, without notice or obligation.

2 Introducing MagniLink ChromeViewer

MagniLink ChromeViewer is a software used on a Chromebook to display images from a MagniLink camera system. The software controls camera properties such as magnification level, artificial colours and brightness. When a license is obtained, it is possible to OCR process a text and have it read by a speech synthesizer.

2.1 Minimum system requirements

- Chrome OS version 98
- 1 integrated USB 3.0 port.
- Intel Celeron, 2 GB RAM

2.2 Recommended system requirements

- Chrome OS version 98
- 1 integrated USB 3.0 type A-port
- Intel i5 processor
- 4 GB RAM

LVI recommends using an Intel-based Chromebook together with a MagniLink camera, as we have experienced compatibility issues with some ARM-based Chromebooks.

A USB 3.0 Y-cable may be required in order to deliver enough power to the camera system. A USB Y-cable allows the use of two USB ports in order to run the MagniLink camera system.

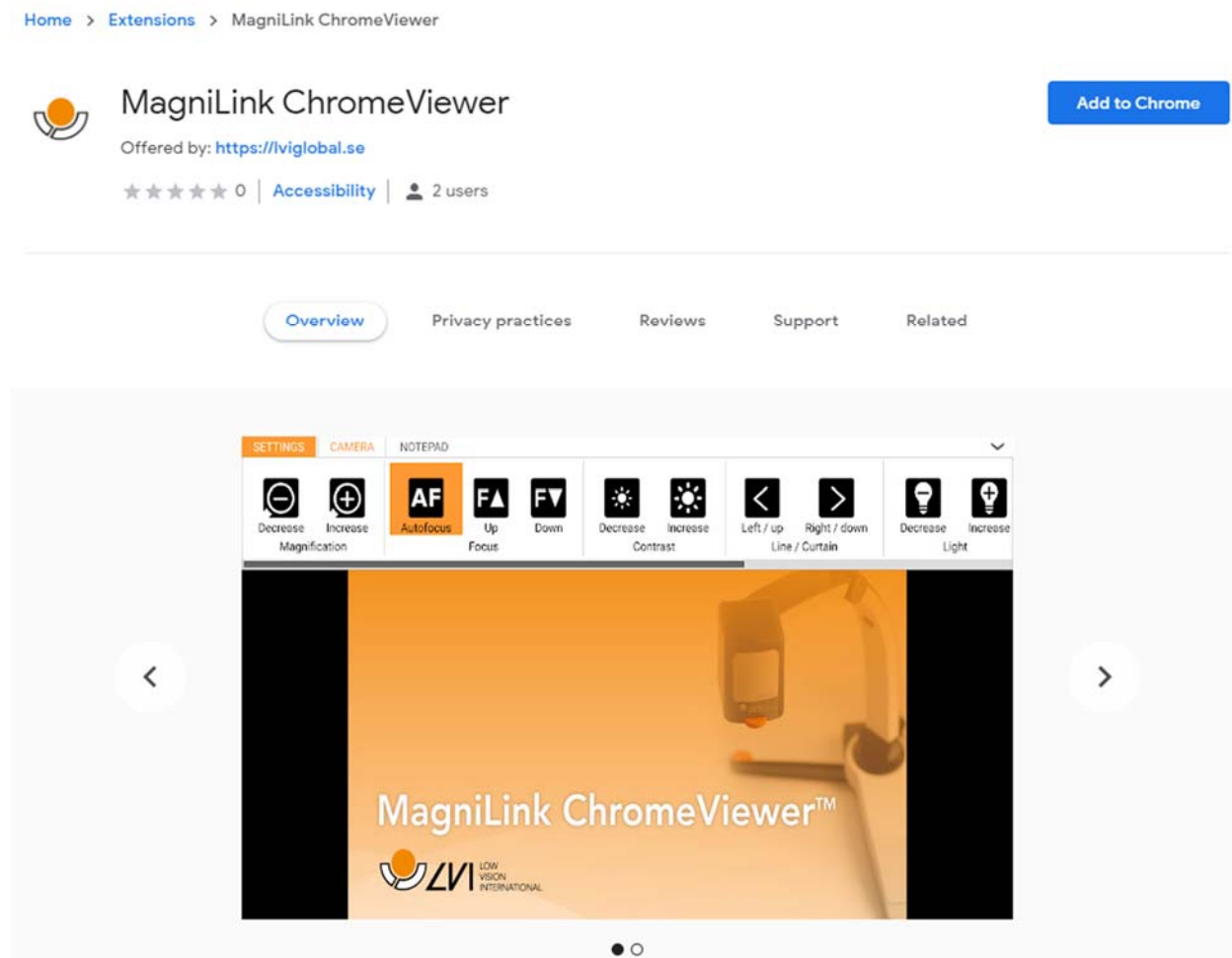
LVI has tested the software on several Intel-based Chromebooks without any issues, however there is no guarantee that the system will function on all computers that comply with the specifications. LVI recommends testing the software with the Chromebook which the system will be used with, in order to ensure compatibility. Better performing computers facilitate better camera performance.

Please note that an internet connection is required for licensing, as well as for use of OCR in ChromeViewer.

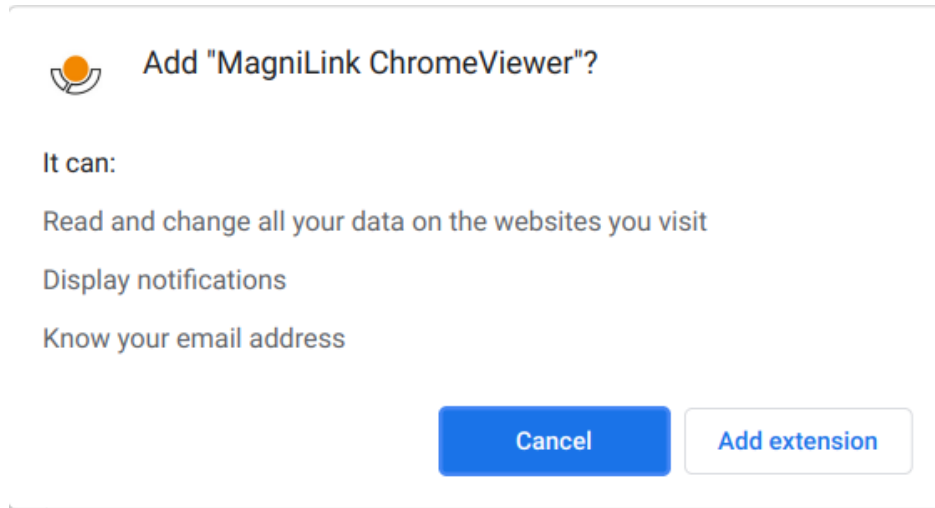
3 Installation of software

MagniLink ChromeViewer is available for download from the Chrome Web Store. In case you cannot find the application via the search function at the Chrome Web Store, there is a direct link on our website that will take you directly to the installation page.

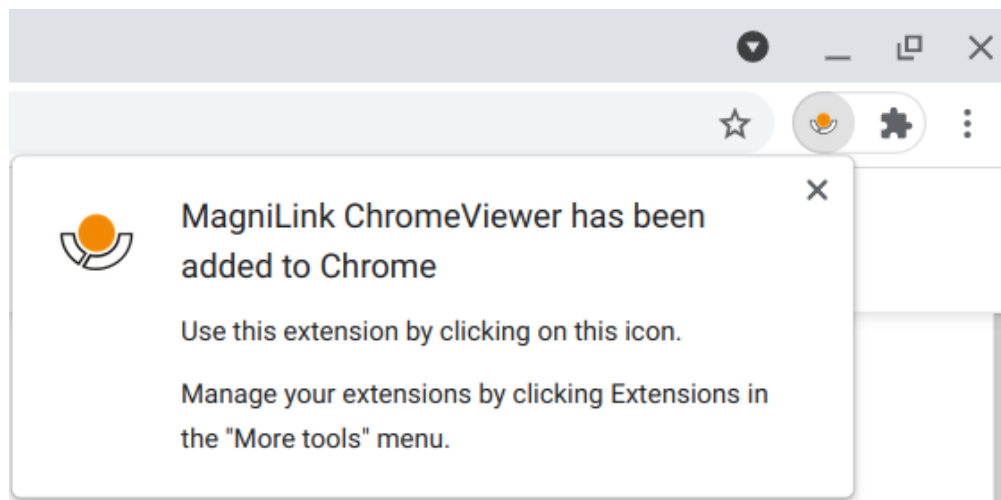
The link will open a new page with the Chrome Web Store and the MagniLink ChromeViewer will be selected automatically.



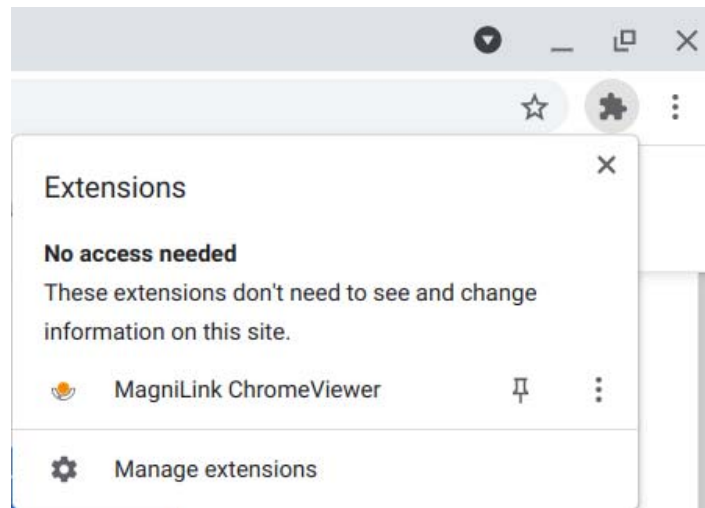
Press **Add** to start the installation.



You will then see an information box that explains what the application is able to do, click **Add app** to proceed.

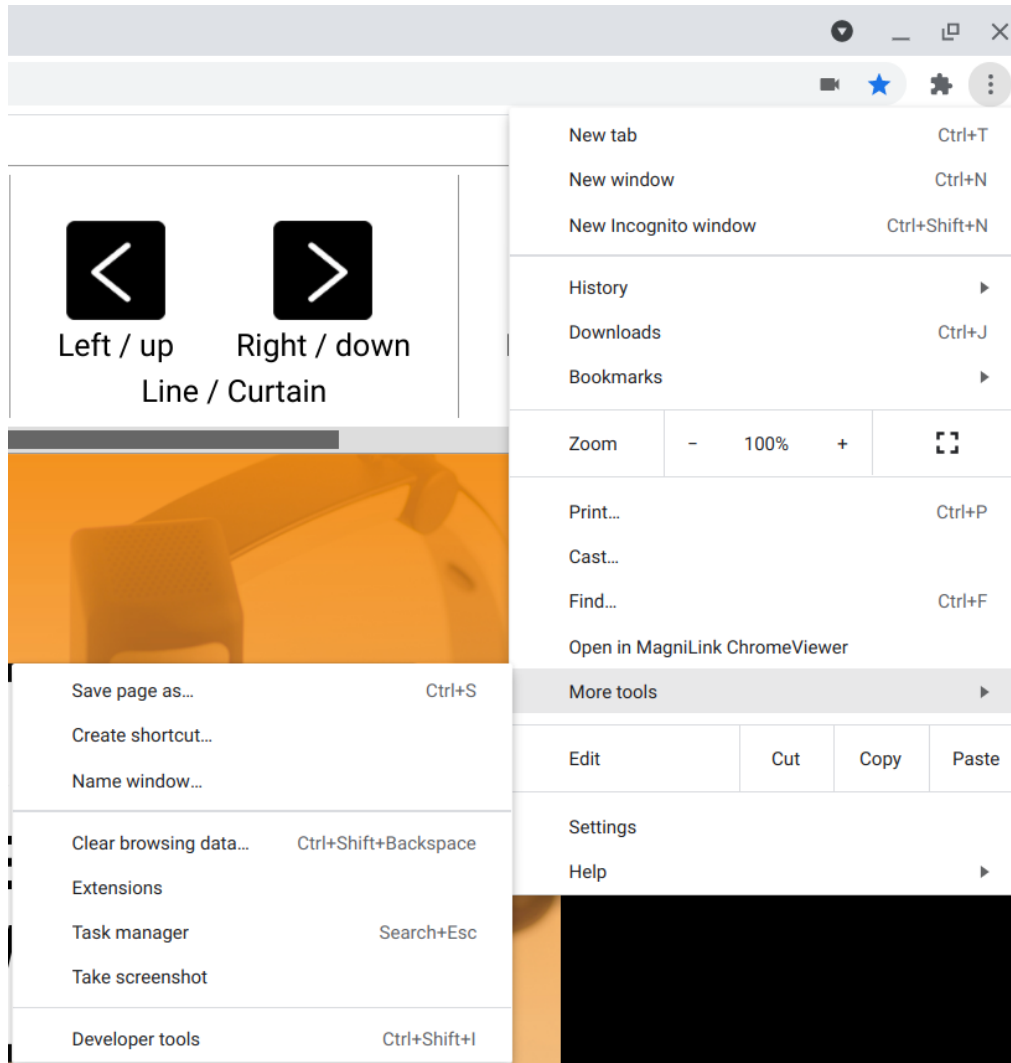


The installation is now complete and you can start the application by following the instructions and clicking the highlighted icon. It is also possible, as described in the picture above, to press the App button to start the application.

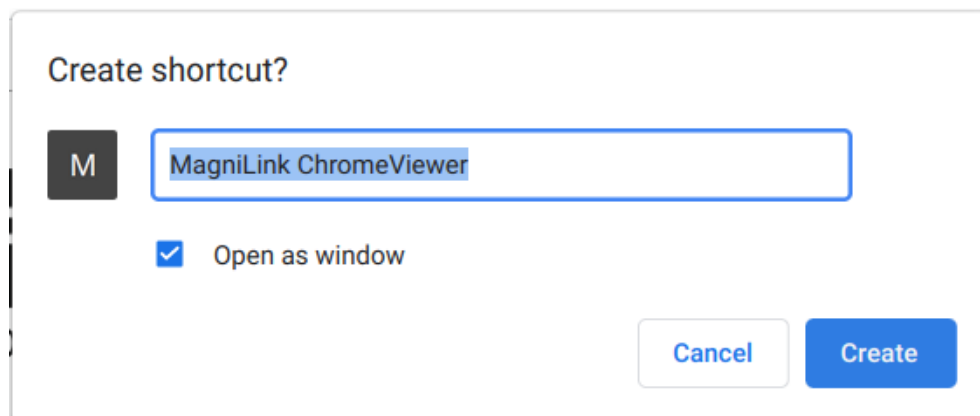


If you want access to MagniLink ChromeViewer in the App Launcher with the option to attach the application to the start area, do as follows.

1. Launch MagniLink ChromeViewer.
2. Go to Settings.
3. Press the **Copy URL** button located under the About settings page to copy the address to the app.
4. Launch the Google Chrome browser.
5. Select the address field and paste the copied address either by pressing **Ctrl + V** or by right-clicking on the address field and selecting **Paste**. Press Enter.
6. Under **More** at the top right, press **More Tools** and then **Create Shortcut**.



7. Select **Open as window**, then press **Create**.



In App Launcher you can also attach MagniLink ChromeViewer to the start area.

4 Licensing

Camera systems used with ChromeViewer can be licensed with OCR. ChromeViewer will automatically detect if your camera system is licensed for OCR.

It is also possible to activate an independent OCR license. Such activation requires you to give ChromeViewer access to certain information in your Google account, as the license key is applied to your Google account upon activation. This means that you will not be restricted to one computer but will be able to use any Chromebook with your Google account and still use OCR in ChromeViewer.

To give ChromeViewer access to your Google account, press the Sign in button under Settings and then follow the instructions. Upon successful sign-in, an input box is displayed where the license key is entered, then press OK. Upon successful activation, you will have direct access to OCR.

Note that OCR with ChromeViewer has the following limitations:

- An internet connection is required for licensing, as well as for the use of OCR in MagniLink ChromeViewer.

5 Using the software

5.1 LVI camera

To launch a USB LVI camera you must either press the Connect button, on the far left of the menu bar under the Camera tab, or the \angle shortcut. A dialog box containing a list of connected USB LVI cameras will then appear. Select the camera you want to start and then select Connect.

5.2 Functions via menus

The application consists of a window with tabs and groups of buttons. There is a tab for the application settings, a tab for handling the camera and a tab for Notepad. Depending on whether you have obtained a licence, there is also a tab for handling OCR-processed text.

5.2.1 Camera tab

The following tab varies in the range of buttons depending on the number of camera systems connected.



Connect LVI camera



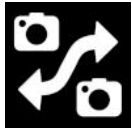
Decrease magnification



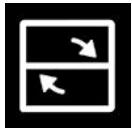
Increase magnification

**Change Image Source**

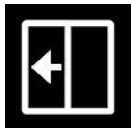
Used to swap image sources (if there are more than two sources).

**Change camera**

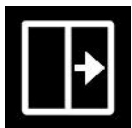
Used to swap cameras.

**Change split mode**

Change between vertical and horizontal split mode.

**Move split left**

Moves split mode to the left.

**Move split right**

Moves split mode to the right.

**Pan left****Pan right****Tilt down****Tilt up**



Position 1

To save the position, hold down "Ctrl" while pressing the button. The camera image will then move into the saved position when pressing the button.



Position 2

To save the position, hold down "Ctrl" while pressing the button. The camera image will then move into the saved position when pressing the button.



Position 3

To save the position, hold down "Ctrl" while pressing the button. The camera image will then move into the saved position when pressing the button.



Lock Autofocus

Locks the autofocus mode. This feature is useful when you prefer to write by hand. The autofocus is not affected then by the pen or your hand. Press the button again to reactivate autofocus.



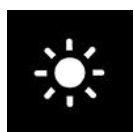
Focus up

Reduce focus distance. When this function is used, autofocus is turned off.

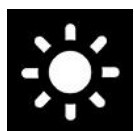


Focus down

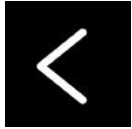
Increase focus distance. When this function is used, autofocus is turned off



Reduce brightness/contrast



Increase brightness/contrast

**Reference line/bar left/up**

Adjust the position of the reference line. Press the button to move the reference line to the left. Hold the button in to change the reference line to horizontal and move it upwards. The reference line then becomes a vertical bar which diminishes the viewing area. To make the bar horizontal, press the button again.

**Reference line/bar right/down**

Same as the previous command but in the opposite direction.

**Reduce lamp brightness****Increase lamp brightness****Take snapshot**

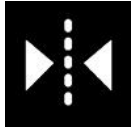
A "Save file as" dialog box opens. A file name (with the day's date and time) and a folder (Downloads) are automatically suggested. Just press "Enter" to save the picture. If you want to save the picture somewhere else, you can change this manually.

**Start/stop video recording**

Press to open the "Save file as" dialog box. A file name (with the day's date and time) and a folder (Downloads) are automatically suggested. Press Enter to save with the suggested name. If you wish to save the video in a different folder, or with another name, it is possible to change this in the dialog box. Stop recording by pressing the button again.

**Rotate the camera image**

Rotates the camera image clockwise. To rotate anti clockwise, hold down Shift when you press the button.

**Mirror the camera image**

Press again to reverse the mirror image.

**Freeze the camera image**

Press again to release the freeze.

**Whole image** (Only shown if the system has a licence for OCR)

When this is active, the whole camera image is shown. Otherwise edit in the image, depending on how large the camera window is.

**OCR processing**

Performs an OCR conversion of the camera window.

**Notepad**

Opens images from the camera in the notes tool.

**Help**

Opens the user guide in the standard application for showing PDF files.

5.2.2 OCR tab

The following tab is only shown if the system has an OCR license.



Open document (OCR conversion)

Opens a dialog box. From the dialog box, select the file you wish to open. It is possible to open image files in JPEG, PNG and PDF formats.



Import document

Import exported documents.



Export document

Export current document.



Save document

Save current document. The document will remain in the application, even on reboot, until you choose to delete the document.



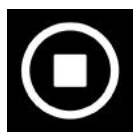
Delete document

Delete the current document.



Play/Pause

Start/pause reading



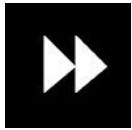
Stop

Stops reading. The next reading will be from the start of the text.



Back

Use this command to step back through the text. If the reading mode is set to word, you step back through the text word by word. If the reading mode is set to sentence, you step back one sentence at a time.



Forward

Use this command to step forward in the text. If the reading mode is set to words, you step forward in the text word by word. If the reading mode is set to sentence, you step forward one sentence at a time.



Reading mode

This command switches reading mode to be used when the "Back" and "Forward" commands are pressed. Possible modes are letter, word or sentence.



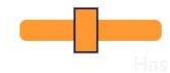
View Mode

Switches the display mode for OCR converted text. The view modes available are "page view", "row view", "word view", "image view", "image and word" and "image and row".



Font size

Used to change the size of the OCR text.



Speed

Changes the speech speed.



Help

Opens the user guide in the standard application for showing PDF files.

5.2.3 Notepad tab



The notes tool consists of three components.

- At the top is a menu bar with buttons.
- To the left is a list of pictures. By clicking on a picture, you can navigate to it. You can delete a picture by clicking in the top right corner.
- A surface where you can draw, enlarge and pan in the picture.



Open

Open image. It is possible to open images in JPEG, PNG and PDF formats.



Export

Exports note. It is possible to export the active note as an image file or all the notes as a PDF.



Save

Save current note. The note will remain in the application, even on reboot, until you choose to delete the note.



Delete

Delete the current note.



Ballpoint pen

Draw with a ballpoint pen.



Highlighter

Draw with a highlighter.

**Text**

Insert text. You can move text around after inserting. However, you must first press on the inserted text with the **Text** tool.

**Zoom & Pan**

Magnify and pan the image.

**Eraser**

Erase.

**Undo**

Undoes latest entry.

**Redo**

Recreates after pressing undo.

**Rotate**

Rotate the image. NOTE! This deletes all entries.

5.3 Functions via the keyboard

Global keyboard shortcuts The following shortcuts apply to all tabs.

9	Information and settings window Various settings for the application can be made in this window.
Alt + 1	Go to the camera tab
Alt + 2	Go to the OCR tab
Alt + 3	Go to the Notepad tab
V	Switch between tabs
Ctrl + H	Hide or show the menu
8	Next window position Press the 8 key repeatedly to switch between the preset split screen modes on the primary screen. The window can also be controlled via the mouse or Chrome OS standard commands.
Ctrl + Plus	Enlarge menu
Ctrl + Minus	Reduce menu

Camera shortcut commands The following shortcuts only apply to the Camera tab.

L	Connect LVI Camera Displays dialog to start the LVI camera connected.
1	Natural colours Switches between natural colours and greyscale.
2	Positive image with enhanced contrast Artificial colours; White/Black, Yellow/Black, Green/Black, Red/Black, Yellow/Blue, White/Blue. Press 2 repeatedly to switch between the different colours. (Shift + 2 to step backwards)
3	Negative image with enhanced contrast Artificial colours; White/Black, Black/Yellow, Black/Green, Black/Red, Blue/Yellow, Blue/White. Press 3 repeatedly to switch between the different colours. (Shift + 3 to step backwards)

4	Start OCR Start OCR with automatic reading. (Shift + 4 starts OCR without automatic reading)
5	Add note Add note and open Notepad. (Shift + 5 adds note but does not open Notepad)
Up arrow	Increase magnification
Down arrow	Decrease magnification
J	Autofocus Off/On
Shift + Up arrow	Reduce focus distance
Shift + Down arrow	Increase focus distance
Right arrow	Increase brightness/contrast
Left arrow	Reduce brightness/contrast
Ctrl + left arrow	Reference line left/up
Ctrl + right arrow	Reference line right/down
Ctrl + 7	Increase lamp brightness
Ctrl + 6	Reduce lamp brightness
Ctrl + P	Take "snapshot" Press Ctrl + P to open the "Save file" dialog box. A file name (today's date and time) and folder are automatically suggested. Just press Enter to save the picture. If you want to save the picture somewhere else, or with another name, you can change this manually.
Ctrl + M	Start/stop video recording Press Ctrl + M to start video recording. Before recording, a dialog box appears with the suggested file name (today's date and time) and folder. Just press Enter to start video recording. If you want to save the video recording somewhere else, or with a another name, you can change this manually. Stop the recording by pressing Ctrl + M.
Ctrl + R	Rotate camera image clockwise Every time this key combination is pressed, the camera image will rotate 90° clockwise (90°, 180°, 270° and 0°).
Ctrl + Shift + R	Rotate camera image anticlockwise Every time this key combination is pressed, the camera image will rotate 90° anticlockwise (270°, 180°, 90° and 0°).

Ctrl + I	Mirror camera image Mirrors the camera image. This is a handy function if, for example, you want to use the camera as a magnifying makeup mirror.
Ctrl + F	Freeze camera image By pressing this key combination, the camera image freezes. To release the frozen image, press the same key combination again.
Ctrl + L	Full screen Switches between full screen and cropped image
A	Pan left
D	Pan right
W	Pan up
S	Pan down
C	Change camera
X	Change split mode
Z	Change image source
Shift + left arrow	Move split left/up
Shift + right arrow	Move split right/down
Ctrl + Shift + 1	Save position 1
Ctrl + Shift + 2	Save position 2
Ctrl + Shift + 3	Save position 3
Ctrl + 1	Go to position 1
Ctrl + 2	Go to position 2
Ctrl + 3	Go to position 3
OCR keyboard shortcuts	The following keyboard shortcuts only apply to the OCR tab
1	Play/pause reading
2	Stop reading
3	Previous word/sentence/letter
4	Next word/sentence/letter
5	Switch between navigation by words, sentences or letters

B	Change display mode
7	Reduce speaking speed
8	Increase speaking speed

Notepad keyboard shortcuts

The following keyboard shortcuts only apply to the Notepad tab

Ctrl + Z	Undo
Ctrl + Shift + Z	Redo
Ctrl + S	Save note
Del (Delete)	Delete note
Ctrl + R	Rotate image right
Ctrl + Shift + R	Rotate image left
1	Select ballpoint pen
2	Select highlighter
3	Select the text tool
4	Select the magnification and panning tool
5	Select eraser
Ctrl + 1	Previous colour of drawing tool
Ctrl + 2	Next colour of drawing tool
Ctrl + 3	Reduce size of drawing tool
Ctrl + 4	Increase size of drawing tool

5.4 Mouse control

Certain functions can be controlled with the mouse.

In camera mode.

- If the camera supports panning, the left mouse button can be used to pan the image.
- Zoom using the right mouse button.

In OCR mode

- The left mouse button is used to start the reading. You can also select a word to continue reading from the selected word.
- The scroll wheel can be used to enlarge or shrink the image.

5.5 Information and settings window

The Information and settings window consists of a number of different tabs that contain application information and alternative settings.

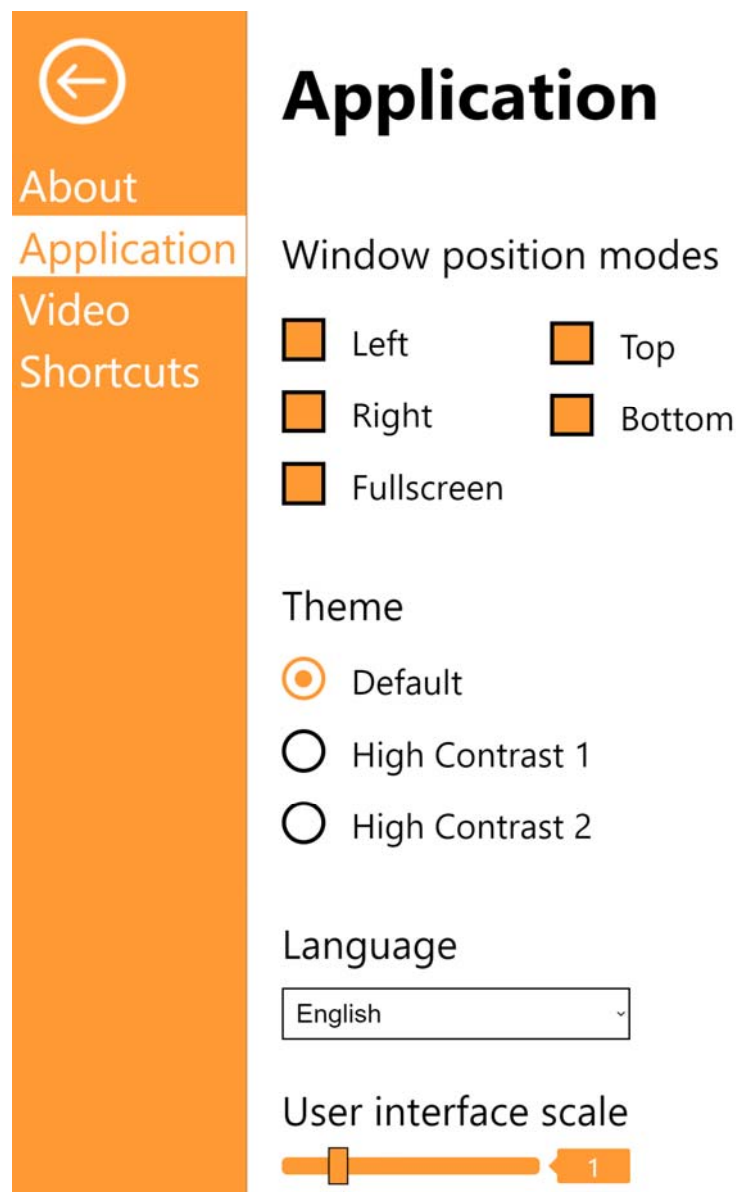
5.5.1 About the application



This tab contains information about software version, copyrights and license information.

If you want to activate an obtained OCR license to your Google account, this is where you log in and enter the license key.

5.5.2 Applications Settings



Window modes

Select which different window modes to be selected when pressing the 8 key.

Theme

Select the theme to be active. The theme controls which colour set the application should have.

Language

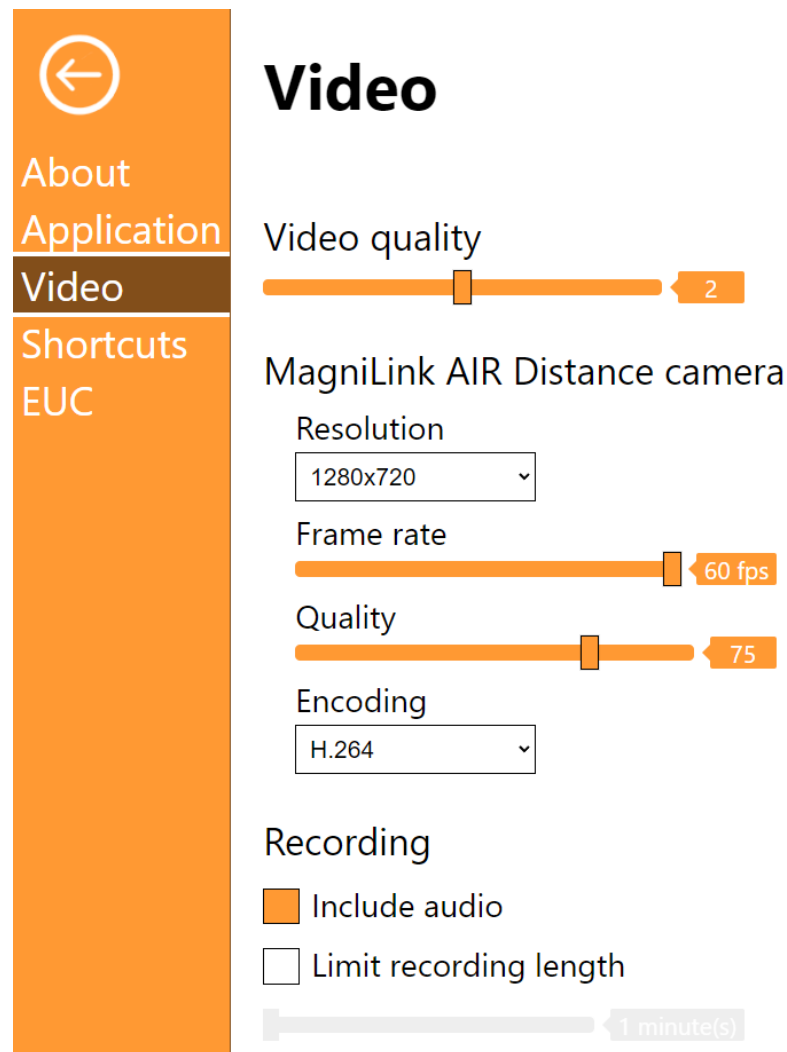
Change the language of the software. The software is set to use the same

language as the computer's default. If this language is not available, English is automatically selected as default.

Menu size

Here you can change the size of the menus and buttons.

5.5.3 Video Settings



Video Quality

This setting allows the user to increase or decrease the video quality of the application. For the best balance between performance and quality, the setting should be left untouched, but it may be advisable to decrease for low-performance computers.

Resolution

Select from the camera's various resolution options. Resolution cannot be selected for all cameras.

Image rate

This setting allows the user to limit the image rate. The image rate cannot be changed for all cameras.

Image quality

This setting allows the user to limit the camera's image quality. The image quality cannot be changed for all cameras.

Record audio

Activate this function to record audio with a connected microphone.

Limit recording length


Activate this function to limit the recording length.

Length in minutes

If you have chosen to limit the recording length you can set the limit here in minutes, from 1 to 60 minutes.

MagniLink ChromeViewer can record video clips from a MagniLink camera system to WebM (.webm) format. The video recording is started using the keyboard (Ctrl + M). A red indicator is displayed at the bottom right of the video window while video is being recorded.

5.5.4 Settings for short cut commands



About

Application

Video

Shortcuts

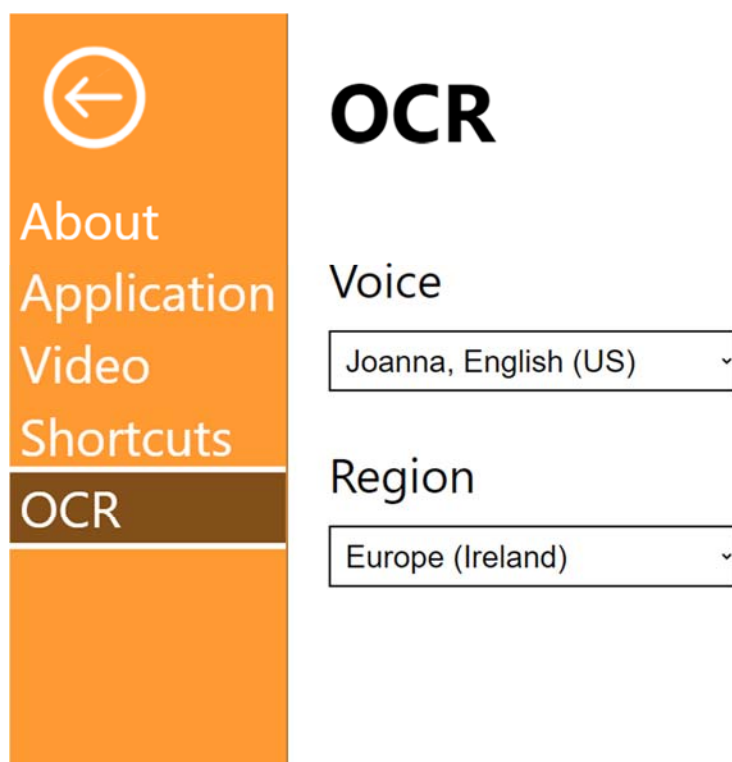
Shortcuts

Application

Open settings	9
Open the camera tab	alt+1
Open the notepad tab	alt+3
Toggle menu visibility	ctrl+h
Next window position	8
Increase menu size	ctrl+plus-sign
Decrease menu size	ctrl+minus-sign

Here the short cut commands used for the application can be changed. To change a short cut command, tab to the command that is to be changed and then press Space or Enter and then enter the new keyboard combination. If a combination already being used for another command is entered, the other command will be erased. A new keyboard combination will need to be entered in order to change the command.

5.5.5 OCR Settings



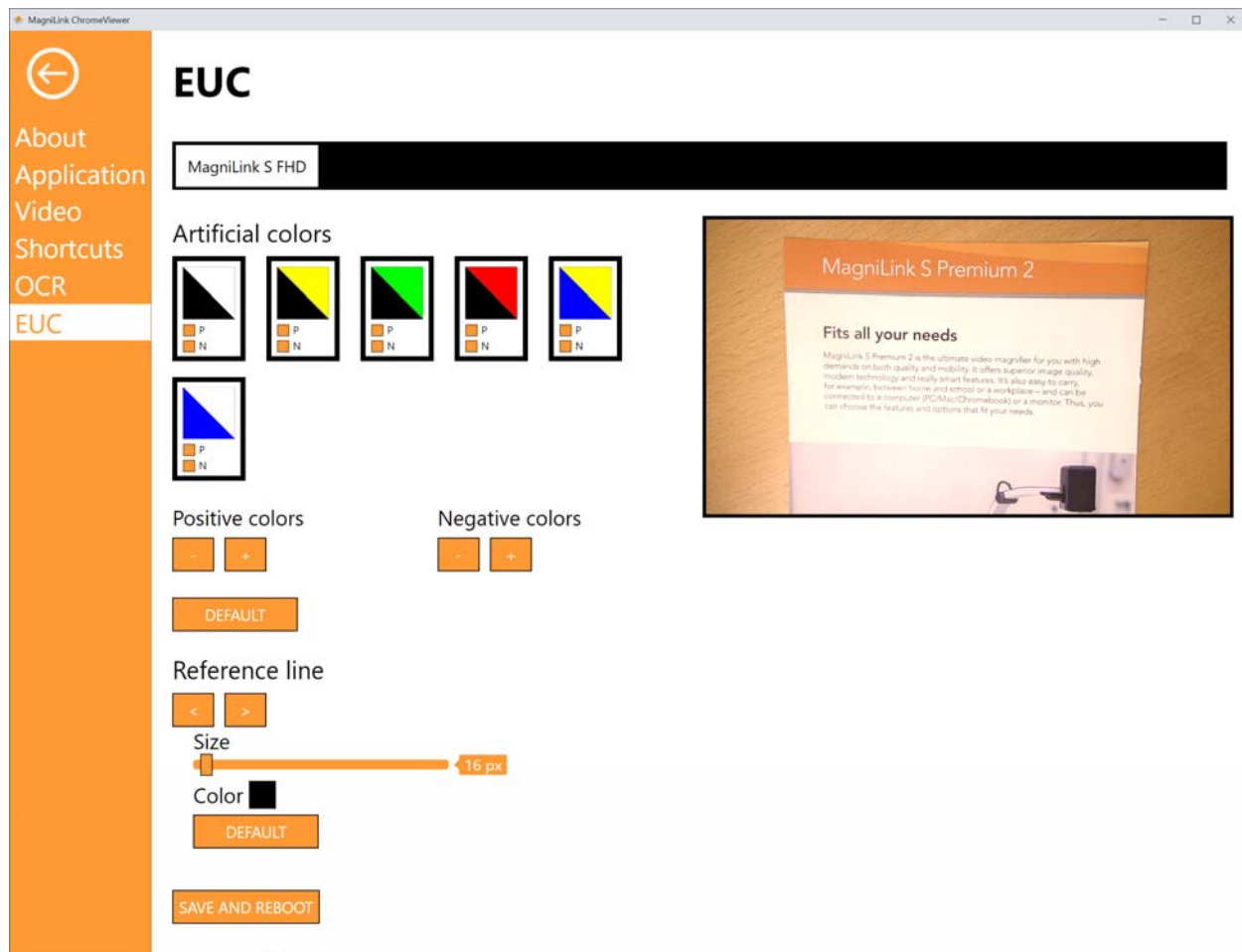
Voice

Select which voice to use for future OCR conversions.

Region

Choose which data centre should perform the OCR conversions. The closer to your current location, the faster the OCR conversions will be performed.

5.5.6 EUC



The camera can be configured under this tab. If there is a “Save” button at the bottom, it must be pressed to save the changes. When doing this, the camera restarts and the configuration has been saved.

Artificial colours

It is possible to remove and change the artificial colours of the camera.

- To remove either the positive or the negative component. Deselect box “P” or “N”.
- To remove a colour combination, deselect both “P” and “N”.
- To change a colour combination, press one of the triangular fields and a colour dialog will appear. Select colours and press OK.
- To restore the colours, press “Default”.

Reference line

Set the size and colour of the reference line. Press “Default” to reset.

5.6 Quality of OCR conversion

In order to optimize the results of the OCR conversion, bear the following in mind.

- Ensure the magnification is sufficient. Very small text produces poor results in the OCR software. A minimum of 12pt is recommended for the lowest magnification of the reading camera.
- Avoid glossy paper as this gives reflections in the image. This impairs the results of the OCR conversion. If you intend to use glossy paper, we recommend that the light on the unit is switched off.
- Certain fonts can be difficult for the OCR engine to interpret.
- It is important that the text contrast is sufficient.

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