

# User Manual

## MagniLink WifiCam

**LVI America Inc.**

302 Saunders Road, Suite 200    Phone: (888) 781-7811  
Riverwoods, IL 60015, USA

[info@lviamerica.com](mailto:info@lviamerica.com)  
[www.lviamerica.com](http://www.lviamerica.com)

**LVI Low Vision International**

Verkstadsgatan 5    Tel: +46 470-727700  
SE-352 46 Växjö    Faks: +46 470-727725

[info@lvi.se](mailto:info@lvi.se)  
[www.lvi.se](http://www.lvi.se)



## Table of Contents

1	About LVI.....	5
2	Introduction to MagniLink WifiCam .....	6
3	Information.....	7
3.1	Reuse, installation and maintenance.....	7
3.2	Cleaning .....	7
3.3	Safety information.....	7
4	Unpacking .....	9
4.1	Packaging.....	9
5	Hardware.....	10
6	MagniLink Viewer .....	11
6.1	Minimum system requirements .....	11
6.2	Recommended system requirements .....	11
6.3	Installation of software .....	12
6.4	Connect to WiFi .....	13
6.5	Using the software .....	13
7	Ergonomics .....	37
8	Technical information.....	38
9	Declaration of Conformity .....	40



## 1 About LVI

LVI Low Vision International AB was founded in 1978 and is one of the world's leading manufacturers of equipment for persons with visual impairments. Development of new products takes place in close cooperation with users and professional staff within the low vision rehabilitation industry. LVI is quality-certified in accordance with ISO 9001 and environmentally-certified in accordance with ISO 14001.


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 Introduction to MagniLink WifiCam

Thank you for choosing this system. Our aim is for you to be satisfied with your choice of supplier and vision aid.

MagniLink WifiCam is a camera system where you can stream video wirelessly. To do so, you must install the MagniLink Viewer software on an iPad. The software can control camera properties such as artificial colours and magnification level.



	<p>The systems complies with all CE certification requirements for medical devices in accordance with EU regulation 2017/745.</p>
---	---

## 3 Information

### 3.1 Reuse, installation and maintenance

The device may only be technically overhauled and prepared by an authorized company. Re-use may only be carried out after appropriate inspection and cleaning / disinfection.

### 3.2 Cleaning

Before equipment cleaning and maintenance note:

- Disconnect the device from the power supply before cleaning.
- Use a slightly damp (not wet) cloth and a cleaning / disinfectant agent intended for monitors and computers.
- Do not allow any liquids to enter the device.

### 3.3 Safety information

- Only use the power adaptor supplied with the product. Using an incorrect type of power adapter may cause damage to the system.
- Never operate the product if it has been exposed to water or other liquids. Damaged or wet product can cause electric shocks or fire.
- Place the power cord in such a way that you can neither trip over it or that crush damages can occur.
- The product contains a neodymium magnet. This is a potential risk for a user with a pacemaker. If the magnet gets too close, its magnetic field can interfere with the operation of the pacemaker.
- If the product is moved from the cold into a warm room, condensation (moisture) can form inside the unit or on the camera lens. To prevent problems with condensation, the apparatus should be installed in the room at least 30 minutes prior to usage.
- If the system requires cleaning, pull out all cables and use a slightly damp (not wet) cloth. Use only water or a cleaning agent that is intended for monitors and computers.

- If the product is to be moved, make sure to remove the camera and iPad from the mount, and that all cables are disconnected and that you have a good grip on the product.
- Make sure that the camera, power adapter and WiFi adapter are disconnected when you pack the product into the bag.
- Do not rely 100 per cent on the results of an OCR conversion; the OCR engine can misinterpret the text. This is particularly important to bear in mind when processing sensitive information such as a medical prescription.

If in doubt, contact your supplier.

#### Warning



The product is supplied packed in a plastic bag. To avoid risk of suffocation, keep the bag out of the reach of children and infants.



## 4 Unpacking

The system is supplied in a cardboard box with the following contents:

- MagniLink WifiCam
- Case
- WiFi adapter (USB)
- Power adapter
- User Guide

Make sure there is no external damage before opening the box. In the event of damage, contact the transport company to report the damage.

Open the box, take out the MagniLink WifiCam and remove the packaging parts.

### 4.1 Packaging

The packaging consists of the following packaging material (LVI recommends that the packaging be kept in case you have to return the system or you need to move it):

- Packing material (XPE)
- Box (corrugated cardboard)
- Polyethylene (LDPE4)

For sorting and collection of packaging material, please call the packaging collection customer service department for information on the rules that apply in your municipality.

Note that the product and its accessories must be recycled as electronic waste. A worn-out battery is recycled as electronic waste.

## 5 Hardware



1. **On/Off button**  
Used to turn the device on and off.
2. **Battery indicator**  
Displays the battery charge level.
3. **Power supply**  
The power adapter is plugged in here.
4. **USB port**  
Connect the LVI camera here. You can also plug in the WiFi adapter to access the Internet.

### NOTE



Make sure the camera and WiFi adapter are plugged in before starting and avoid pulling them in and out while the system is running.

## 6 MagniLink Viewer

MagniLink Viewer is a software developed for iPad. The software can display images from a MagniLink camera system and the built-in cameras. The software can control camera properties such as magnification level, artificial colours and brightness.

### 6.1 Minimum system requirements

- iPad 9 generation. or newer.
- iPadOS 15.0 or later.

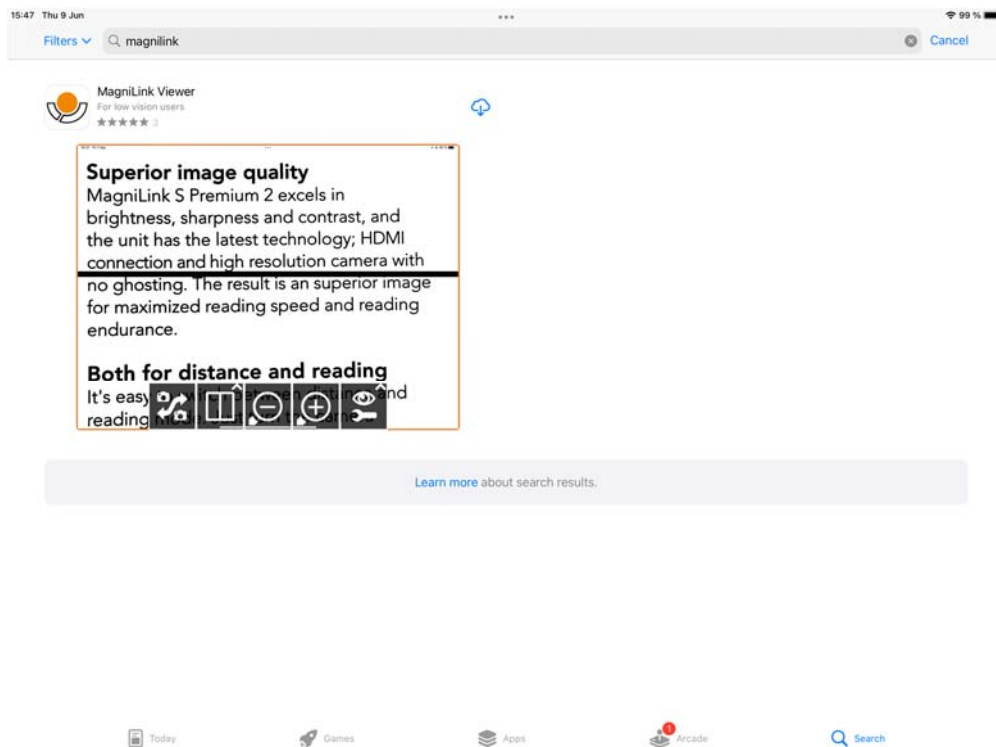
### 6.2 Recommended system requirements

- iPad Pro 12,9" with M1 chipset or newer.
- iPadOS 16.0 or newer.

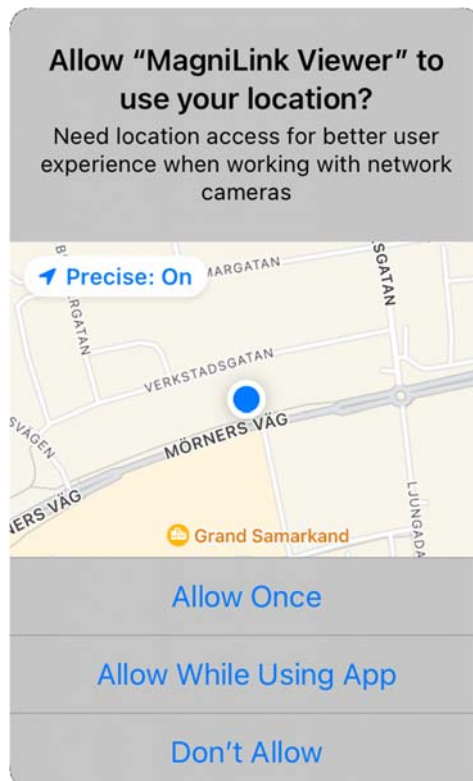
LVI has tested the software on several iPads with above specification without any problems, but there is no guarantee that the system will function on all iPads that comply with the specifications. LVI recommends testing the software on the iPad where the system is to be used, in order to ensure compatibility. Please look up the feature to reduce framerate and picture quality under camera settings, this to reduce any delay.

### 6.3 Installation of software

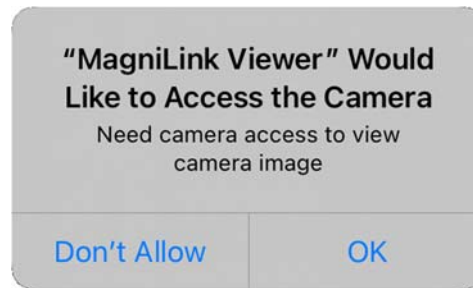
Enter **App Store** and click **Search** in the lower right-hand corner.



Click the download icon to install the software.



Click Allow while using the app.



Click OK.

## 6.4 Connect to WiFi

To be able to stream video from the system, you must connect to its network. It takes about 25 seconds from startup until the network is active. Open the iPad's WiFi settings and connect to the **MagniWiFi** network. Enter the password provided.

## 6.5 Using the software

### 6.5.1 Functions via menus

#### 6.5.1.1 Camera view

The following menu is displayed when the application is started.



#### Switch views

Switches to the OCR view. Press and hold to switch to the Notepad view.



#### Change camera

Switch between the LVI camera and the front and rear cameras.



### Split Mode

Opens a submenu where you can set the split mode.



### Lamp

Change lamp brightness. There are five modes: Off, 25, 50, 75 and 100 percent.



### Switch between rear and front camera

This feature is available on iPhone and older iPads where you cannot view the two built-in cameras at the same time.



### Change Image Source

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



### Change split mode

Change between vertical and horizontal split mode.



### Move split left

Moves the split mode to the left.



### Move split right

Moves the split mode to the right.



### Pan

Open a submenu with the following options.



### Pan left



Pan right



Tilt up



Tilt down



Decrease magnification



Increase magnification



**OCR**

Start OCR. When the OCR process is complete, the application switches to the OCR view and reading begins. You cannot switch using press and hold.



**Take picture and record video**

Open a submenu with the following buttons.



**Take picture**

There is an audible click, and the image is saved. The image can then be opened in the "Images" app. The file name will be today's date and the current time.



**Record video**

Start recording. The application will display an icon indicating that recording is in progress. Stop recording by pressing the button again. The clip can then be opened in the "Images" app. The file name will be today's date and the current time.

**Notepad**

Open image in the notes tool.

**Video Settings**

Open a submenu with the following buttons.

**Full screen**

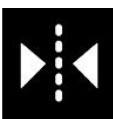
Switch between full screen and cropped image.

**Switch natural colours**

Switch between natural colours and grey scale.

**Switch artificial colours**

Switch between artificial colours. Press and hold to switch back.

**Reduce brightness/contrast****Increase brightness/contrast****Mirror the camera image**

Press again to reverse the mirror image.

**Rotate the camera image**

Rotates the camera image clockwise. Press and hold to rotate anti-clockwise.





### Reference line/vertical bar left/up

Adjusts 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.



### Settings

Open the settings dialog boxes.

## 6.5.1.2 OCR view



The OCR view consists of three components.

- At the bottom is a menu bar with buttons.
- To the left is a list of pages that have been OCR processed previously. By clicking on a page, you can navigate to it.

- An area showing the OCR processed page. The current page number is displayed top right.



**Switch views**

Switches to the camera view. Press and hold to switch to the Notepad view.



**Document management**

Open a submenu with the following three options.



**Hide sidebar**



**Open document**

From the dialog box, select the file you wish to open.



**Save document**

A dialog box where you can choose the file format (PDF, Zip and RTF) appears. You can then choose where you want to save the file.



**Remove**

Remove the current page.



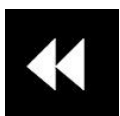
**Notepad**

Opens OCR processed pages in the notes tool.



**Start reading**

Start reading. Press again to stop reading.



**Previous**

Skip backwards in the text. Depending on which reading mode is selected, you will skip back to the previous character, word, sentence or block. Press and hold to switch to the previous page.

**Next**

Skip forwards in the text. Depending on which reading mode is selected, you will skip forwards to the next character, word, sentence or block. Press and hold to switch to the next page.

**Text settings**

Open a submenu with the following settings.

**Switch reading mode**

Switch to next reading mode. The modes available are: character, row, sentence and block.

**Switch display mode**

Switch display mode. The display modes available are "page view", "row view", "word view", "image view", "image and word" and "image and row".

**Increase font size****Reduce font size.****Image settings**

Open a submenu with the following buttons.

**Switch natural colours**

Switch between natural colours and grey scale.

**Switch artificial colours**

Switch between artificial colours. Press and hold to switch back.



Increase brightness/contrast



Reduce brightness/contrast



**Settings**

Open the settings dialog boxes.

### 6.5.1.3 Notepad view



The notes tool consists of three components.

- To the left is a list of images that have been opened previously. By clicking on an image, you can navigate to it.
- An area where you can draw, enlarge and pan through the image.
- At the bottom is a menu bar with buttons.



### Switch views

Switches to the camera view. Press and hold to switch to the OCR view.



### Document management

Open a submenu with the following three options.



### Hide sidebar



### New image

Opens a new blank image that you can draw in.



### Save document

A dialog box where you can choose the file format (PDF and JPEG) appears. You can then choose where you want to save the file.



### Open document

From the dialog box, select the file you wish to open.



### Remove

Remove the current page.



### Pen

Draw with a pen. Press and hold to open a dialog box where you can choose the colour and size.



### Highlight

Highlight with a highlighter. Press and hold to open a dialog box where you can choose the colour and size.

**Text tool**

Insert text. Press and hold to open a dialog box where you can choose the colour, size and font. You can move text around after inserting. Double-click the text to change it.

**Delete**

Enlarge and pan in the image.

**Undo****Restore**

Restore after pressing undo.

**Rotate**

Any changes you made to the image will be removed if you rotate.

**Settings**

Open the settings dialog boxes.

## 6.5.2 Functions via gestures

Some functions can be controlled via gestures on the tablet. Pressing and holding means keeping the fingers in place for more than half a second. It is possible to choose which gestures you want to switch off in the settings.

### 6.5.2.1 Camera view

Pinch	Change magnification
Rotate two fingers	Rotate the image
Press with two fingers on the top of the screen	Natural colours
Swipe with two fingers vertically over the top of the screen	Artificial colours
Swipe with two fingers vertically over the top of the screen	Contrast
Press and hold with one finger on the top of the screen	Start OCR
Press and hold with two fingers on the top of the screen	Start OCR (without switching views)
Press and hold with three fingers on the top of the screen	Take picture for notes tool
Press and hold with one finger on the bottom of the screen	Switch full screen

Double-click with two fingers on the bottom of the screen

Switch views

Double-click with one finger on the bottom of the screen

Hide menus

Double-click with one finger on the top of the screen

Switch camera

Press with three fingers on the top of the screen

Change split mode

Press with three fingers on the bottom of the screen

Open settings

### **6.5.2.2 OCR view**

Pinch

Change magnification

Swipe with one finger

Pan through the image

Press with two fingers on the top of the screen

Natural colours

Swipe with two fingers vertically over the top of the screen

Artificial colours

Swipe with two fingers vertically over the top of the screen

Contrast

Double-click with one finger on the bottom of the screen

Hide menus



Double-click with one finger on the top of the screen

Hide sidebar

Double-click with two fingers on the bottom of the screen

Switch views

Swipe with two fingers vertically over the bottom of the screen

Switch reading mode

Press with three fingers on the bottom of the screen

Open settings

Press and hold with two fingers on the bottom of the screen

Change display mode

## 6.5.3 Functions via the keyboard

You can connect to a USB or Bluetooth keyboard and control some of the application's functions via the keyboard.

The shortcut commands can be changed in Settings. Below are the standard settings for shortcut commands.

### 6.5.3.1 General

fn + F1	<b>Natural colours</b>
fn + F2	<b>Positive picture with increased contrast</b> Artificial colours; White/Black, Yellow/Black, Green/Black, Red/Black, Yellow/Blue, White/Blue Press F2 to toggle through the different colours. (Shift + fn + F2 toggles backwards.)
fn + F3	<b>Negative picture with increased contrast</b> Artificial colours; Black/White, Black/Yellow, Black/Green, Black/Red, Blue/Yellow, Blue/White Press F3 to toggle through the different colours. (Shift + fn + F3 toggles backwards.)
Arrow up	<b>Zoom in</b>
Arrow down	<b>Zoom out</b>
Arrow left	<b>Decrease brightness</b>
Arrow right	<b>Increase brightness</b>
Cmd + ,	<b>Open the preferences dialog</b> This key combination is the standard way to open the preferences dialog in a Mac application.
Option + H	<b>Hide menus</b>
V	<b>Switch between camera view and text view</b> If a text has been OCR-processed, this command switches between camera view and text view.

### 6.5.3.2 Camera view

Option + Arrow left	Guiding line left/up
Option + Arrow right	Guiding line right/down
Option + R	<b>Rotates the camera picture clockwise</b> Each time you press this key combination the picture rotates 90° (90°, 180°, 270°, 0°).
Shift + Option + R	<b>Rotates the camera picture counter clockwise</b> Each time you press this key combination the picture rotates 90° counter clockwise (270°, 180°, 90°, 0°).
R	<b>Rotate image clockwise steplessly</b>
Shift + R	<b>Rotate image anticlockwise steplessly</b>
Option + I	<b>Mirror camera image</b> By pressing Option + I, you can mirror the camera image. This is a useful feature if you for example would like to use the camera as a magnifying makeup mirror.
fn + F5	<b>Take a snapshot</b> There is an audible click, and the image is saved. The file name will be today's date and the current time.
fn + Alt + F5	<b>Start/stop video recording</b> Start recording. The application will display an icon indicating that recording is in progress. Stop recording by pressing the button again. The file name will be today's date and the current time.
C	<b>Switch camera</b>
Z	<b>Change image source</b>
X	<b>Change split mode</b>
Shift + left arrow	<b>Move split left/up</b>
Shift + right arrow	<b>Move split right/down</b>
A	<b>Pan left</b>
D	<b>Pan right</b>
W	<b>Tilt up</b>
S	<b>Tilt down</b>

### 6.5.3.3 OCR view

fn + F4

#### OCR process

This command takes a picture for OCR processing. The program then switches to text view and the OCR processed text is read aloud.

Minus

#### Decrease font size

Plus

#### Increase font size

1

#### Start/Pause reading

If no reading is currently in progress, reading starts, otherwise reading is paused.

2

#### Stop reading

This command stops the reading. The next reading will begin from the start of the text.

3

#### Read previous

With this command, the user can go backwards through the text. If the reading mode is sentence, you move backwards through the text one sentence at a time. If the reading mode is word, you move backwards through the text word by word. If the reading mode is set to character, one character is read for each keystroke.

4

#### Read next

With this command, the user can move forward in the text. If the reading mode is sentence, you move forward through the text one sentence at a time. If the reading mode is word, you move forward through the text word by word. If the reading mode is set as character, one character is read for each keystroke.

5

#### Switch reading mode

This command selects the reading mode that is to be employed when the "Read previous" or "Read next" command is entered. The modes are, character, word, sentence, view and block. Which modes can be selected depends on the display mode.

B

#### Display mode

Switches to display mode for OCR-processed text. The available display modes are: "page view", "row view", "word view", "image view", "image and word" and "image and row".

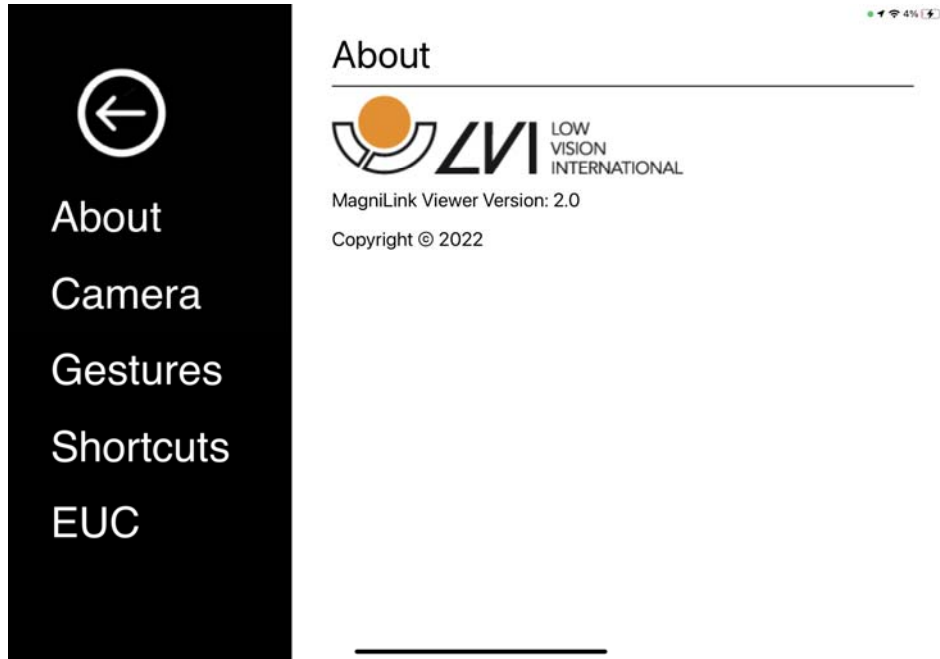
### 6.5.3.4 Notepad view

fn + F7	Take a picture and open in Notepad
Option + N	New Page
Option + O	Open image
Option + S	Save image
Cmd + Z	Undo
Shift + Cmd + Z	Redo
Option + R	Rotate clockwise
Shift + Option + R	Rotate anti-clockwise
Option + P	Select pen tool
Option + L	Select the highlighter tool
Option + T	Select text tool
Option + E	Select the eraser tool
Option + F	Select the pan tool

## 6.5.4 Information and settings window

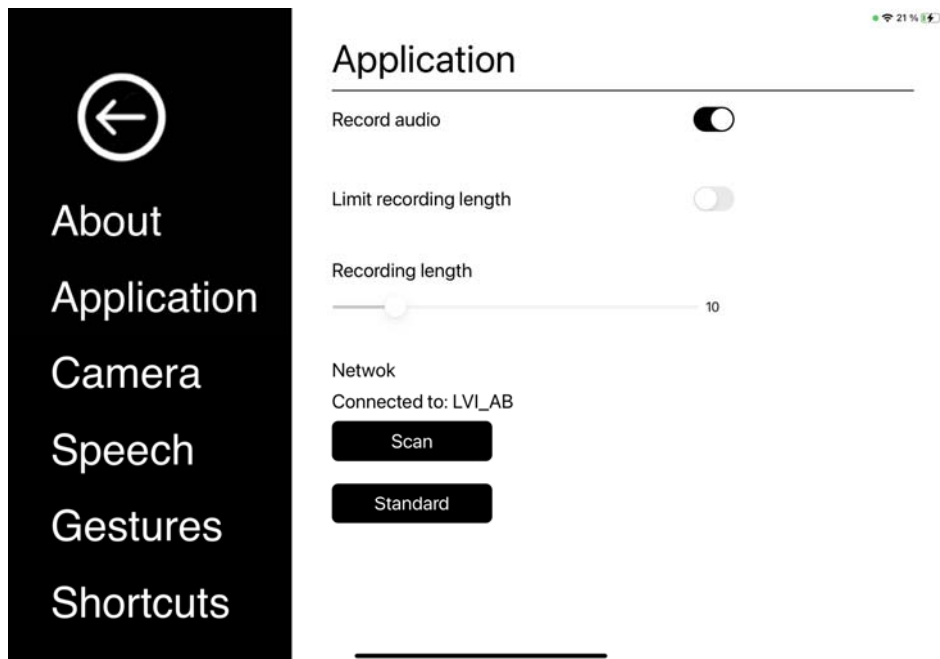
The Information and settings window consists of a number of different tabs that contain application information and alternative settings.

### 6.5.4.1 About the application



Under this tab you will find information about the camera and the software version.

## 6.5.4.2 Application Settings



### Record audio

Choose whether to record video with audio

### Limit recording length

Activate this function to limit the recording length.

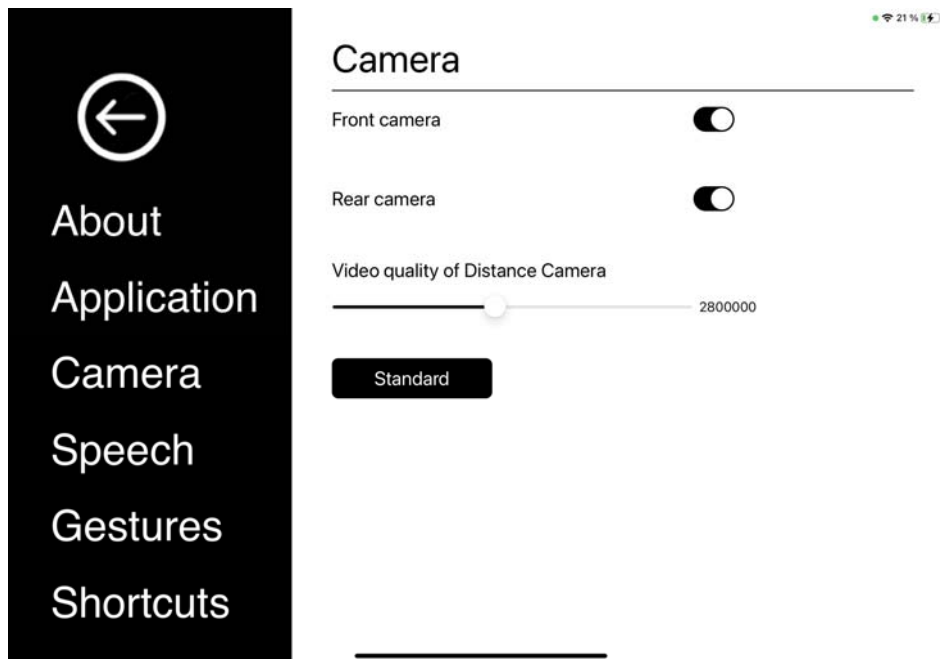
### Length in minutes

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

### Scan for WiFi networks

A dialog box with available networks will appear.

### 6.5.4.3 Camera settings



#### Front camera

When this is deselected, it is not possible to switch to the front camera. It is not possible to deselect this if the rear camera is deselected.

#### Rear camera

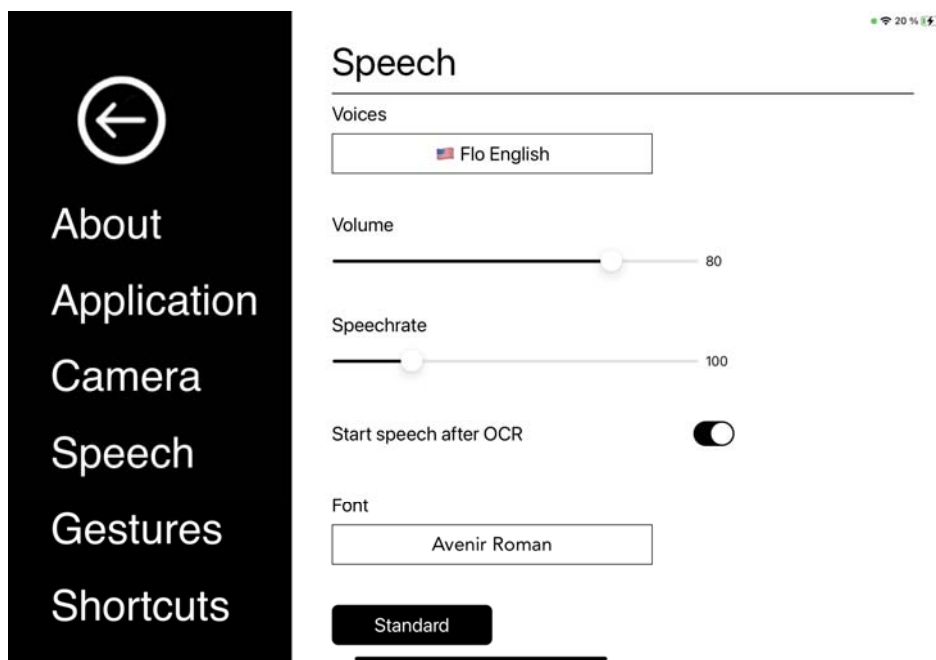
When this is deselected, it is not possible to switch to the rear camera. It is not possible to deselect this if the front camera is deselected.

#### Distance camera video quality

Here you can set the video quality.



## 6.5.4.4 Speech Settings



### Voices

If several voices are available, the user can choose between them. You can get other voices by downloading languages in the iPad's settings. The OCR engine only supports languages that use the Latin alphabet.

### Volume

Setting for the sound level of the voice.

### Speaking speed

Setting for the speaking speed.

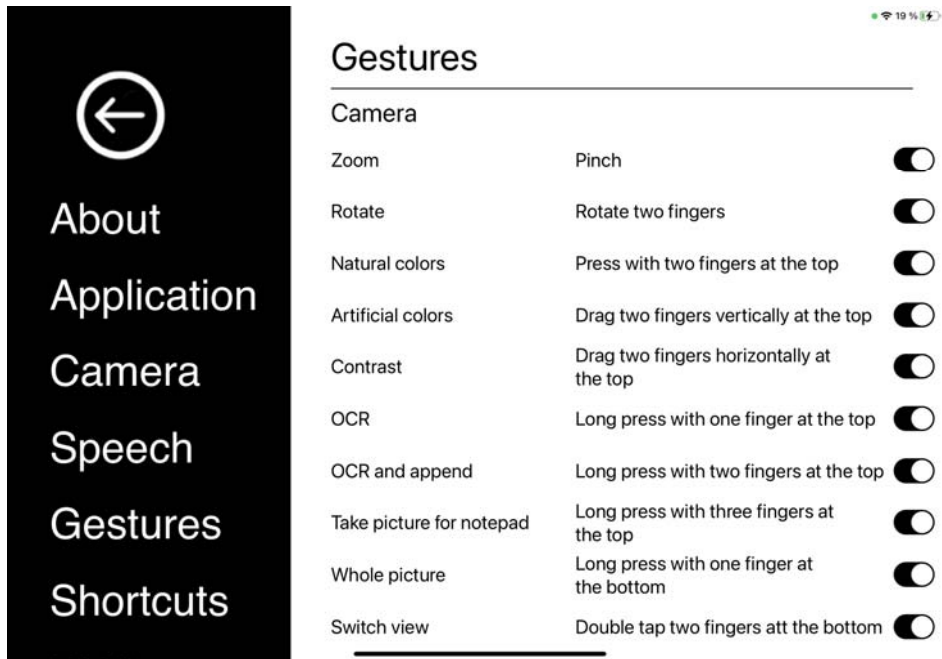
### Start speech after OCR

If this box is checked, text will automatically be read aloud after an image has been OCR processed.

### Font

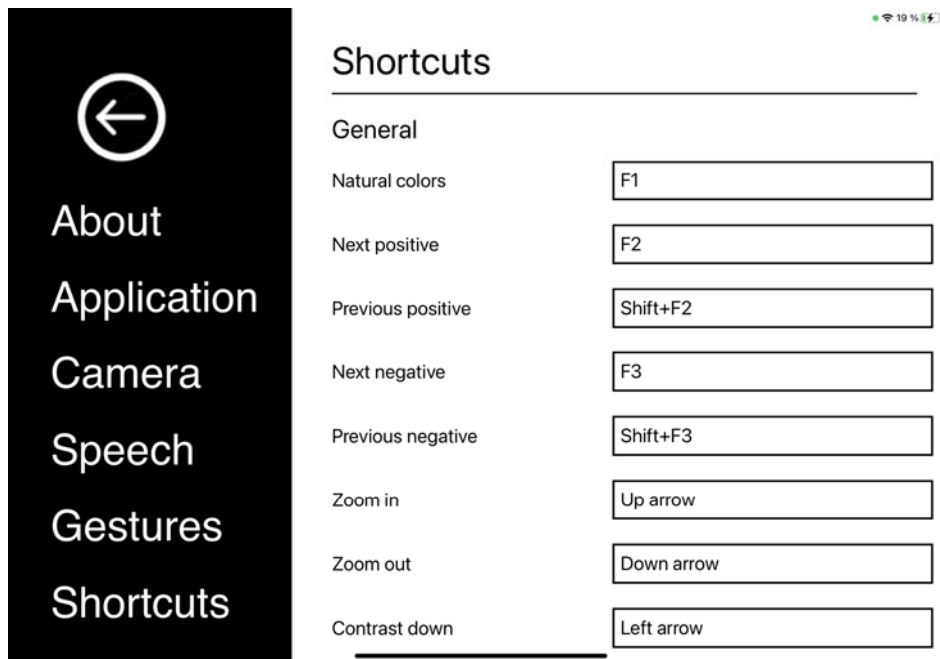
Here the user can set the font for displaying the OCR processed text. The choice of font has no bearing on the OCR result.

### 6.5.4.5 Gestures



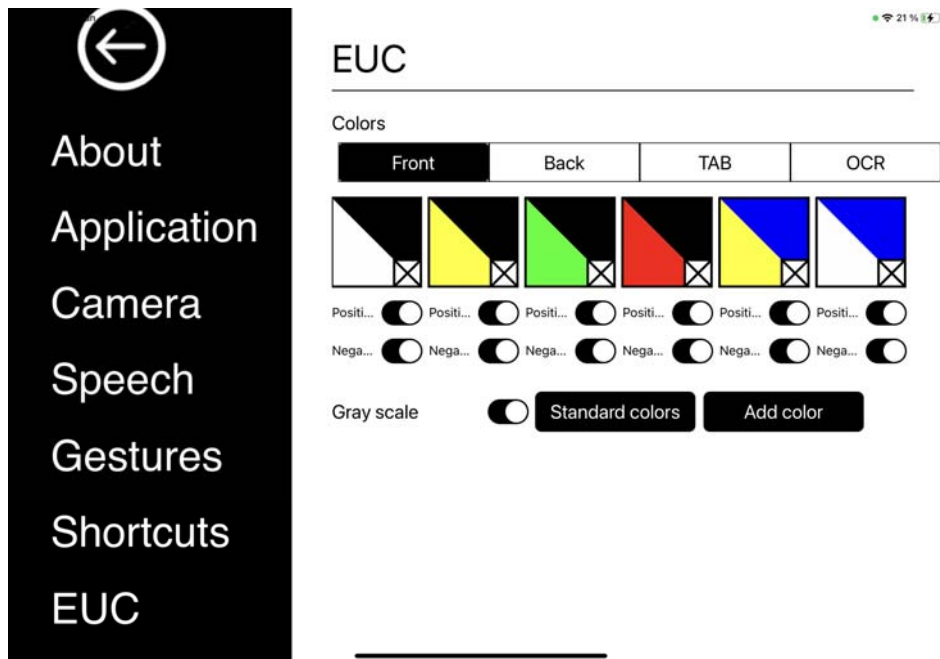
Here you can choose which gestures will be used. To turn off a gesture, you can untick the relevant box.

## 6.5.4.6 Short cut commands



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 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 for the other command.

## 6.5.4.7 EUC



The camera can be configured under this tab.

### Colours

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

- To remove a colour combination, press X.
- To add a colour combination, press Add.
- To change a colour combination, press one of the triangular fields and a colour dialog box will appear. Select colours and press OK.
- To remove either the positive or the negative component. Uncheck the "Positive" or "Negative" checkboxes.
- To restore the colours, press "Default colours".

### Grey scale

Choose if you wish to have grey scale or not.

## 7 Ergonomics

It is important that the workplace around your system is comfortable, and that you sit correctly. This is so that you can use it for as long as possible without putting undue strain and stress on your neck and back.

You should bear the following in mind.

- Your chair should be positioned close to the table on which the equipment is located, and you should not sit in the chair for too long. We recommend a good office chair with adjustable height.
- The seat of the chair should be at a height that does not cause your legs to become numb; legs should be at an angle of 90 degrees and you should rest your feet on the floor.
- The table should be at a height at which you can rest your lower arm horizontally on it. It is important that the table is neither too high nor too low for you. The ideal solution is if the screen is slightly below eye level and in as straight a line in front of you as possible.
- Shield out daylight. Lights in the ceiling, table lamps and light from windows can cause reflections on the monitor. For this reason, avoid placing lights where they shine directly at the screen or at yourself.
- If you use the device for long periods of time, there is a risk of repeated movements causing you pain in your neck, shoulders and back. Your eyes can also get tired from looking at a screen for too long.

## 8 Technical information

### MagniLink WifiCam

Dimensions (W x D x H) (without camera)	220 x 300 x 65 mm
Weight (without camera)	2.1 kg
Resolution	1280 x 720
Frame rate	30 Hz
Power consumption, operation	13 W
Power consumption, standby	6 W
Battery time	Use: about 5.5 hours
Operating temperature	0 to 35°C
Storage and transport temperature	-20 to 60°C

### Distance camera

Magnifying area	0.8 – 40x (Height 33 cm)
Weight	700 g
Length of camera and arm	620 mm



**Disposal of old electrical and electronic equipment (applies for EU countries and all other European countries that have specific collection systems)**

If the product or its packaging has this symbol on it, it is not to be handled as regular domestic waste. It should instead be deposited at a suitable collection centre for the recycling of electrical and electronic equipment. By ensuring that this product is properly taken care of, you are helping to prevent the negative impact on health and the environment that might otherwise result from inappropriate disposal of this product. Recycling helps in the management of our natural resources. For more detailed information regarding the recycling of this product, you can contact your municipality, your waste management company or the store where you purchased the product.

## 9 Declaration of Conformity

### DECLARATION OF CONFORMITY

Manufacturer's name: *LVI Low Vision International AB*  
 Manufacturer's Address: *Verkstadsgratan 5  
S-352 46 Växjö  
Sweden*  
 Web: *http://www.lviglobal.se*  
 SRN (Single Registration Number): *SE-MF-000004178*  
 Basic UDI-DI (GMN): *7330724 ML-WIFI-CAMZV*  
 Brand name or trademark: *MagniLink*  
 Product code: ***ML-WIFI-CAM***  
 Classification: *Class 1*  
 Type of equipment: *Reading Aid*  
 Conformity assessment route: *LVI Low Vision International AB uses the following  
procedures for the CE-labeling of their products  
according to the Regulation MDR 2017/745:  
  
Class [1]: EC conformity declaration according to  
Annex I + Annex II +Annex VII*

This declaration of conformity is issued under the sole responsibility of LVI Low Vision International AB. We hereby declare that the medical device(s) specified above meet the provision of the Regulation (EU) MDR 2017/745 for medical devices. This declaration is supported by the Quality System approval to ISO 9001 issued by Intertek. All supporting documentation is retained at the premises of the manufacturer.

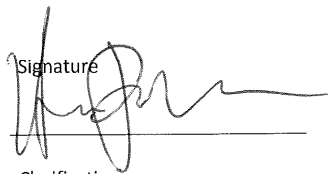
Manufacturer

Manufacturer's authorized representative

Date

12-07-2023

Signature



Clarification

HENRIK Blomdahl

Position

Managing Director



## Alphabetical index

About LVI .....	5
About the application .....	30
Application Settings.....	31
Camera settings.....	32
Camera view .....	13, 23, 27
Cleaning .....	7
Connect to WiFi.....	13
Declaration of Conformity .....	40
Ergonomics .....	37
EUC.....	36
Functions via gestures.....	23
Functions via menus.....	13
Functions via the keyboard.....	26
General.....	26
Gestures .....	34
Hardware.....	10
Information.....	7
Information and settings window.....	30
Installation of software .....	12
Introduction to MagniLink WifiCam.....	6
MagniLink Viewer .....	11
Minimum system requirements.....	11
Notepad view .....	20, 29
OCR view .....	17, 24, 28
Packaging.....	9
Recommended system requirements.....	11
Reuse, installation and maintenance .....	7
Safety information .....	7
Short cut commands .....	35
Speech Settings.....	33
Technical information.....	38
Unpacking .....	9
Using the software.....	13