Service & Installation Manual

Helion

Video Management System



ENGLISH
en-US

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This document applies to the following sales units:

Product designation	**REF**
Helion Main Unit R	VR401111-1
Helion Main Unit	VR401111-1ND
Helion Main Unit RD	VR401111-1D
Helion Main Unit RSD	VR401111-1DT
Helion Main Unit RS	VR401111-1T
Helion Main Unit S	VR401111-1TND
Helion Main Unit AR	VR401111-2
Helion Main Unit ARD	VR401111-2D
Helion Main Unit ARSD	VR401111-2DT
Helion Main Unit ARS	VR401111-2T
Helion Main Unit SSD R	VR401111-3
Helion 4K	VR401112
Helion 4K Plus	VR401113
Helion Conference	CM401326

Optional sales items for the Helion video management system. Not all products are available in all countries.

Product designation	**REF**
Helion Rack (115V)	AC500920K
Helion Rack (230V)	AC500920K-2
Helion Rack (115V) - Permanent Install.	AC500920K-3
Auxiliary Rack (115V) - Plug&Play Install.	AC500920KB
Auxiliary Rack (230V) - Permanent Install.	AC500920KB-2
Auxiliary Rack (115V) - Permanent Install.	AC500920KB-3
Delrin Rack Spacer Kit	AC500919
On Air Lamp	AC300601
Back cover for monitor 24IN /31IN	AC500634
STD Single Plate 2xDVI 2xNEUTRIK	CS201580
STD Double Plate 4xNeutrik	CS201582
Transmission Set Single Display	CS201584
DVI Line Transmission	CS201585
STD Double Plate 4xDVI 2xNeutrik	CS201586
STD Single Plate 4xNEUTRIK	CS201592
STD Single Plate 2x NEUTRIK	CS201593
STD Single Plate 2xDVI	CS201594
Helion HR Surgical Lights Control SW	DC500103
Helion Recording Endotrigger Interface	AC500716

The manual is provided by Videomed S.r.l. as a digital PDF document on digital media.

Videomed S.r.l. declines any liability for improper use of the system and/or for damage caused as a result of operations not covered by the technical documentation.

PREFACE

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PUBLISHER'S NOTE

This documentation is expressly intended for installation technicians.

The Publisher is in no way responsible for the information and data contained in this manual: all information contained herein has been provided, checked and approved by the manufacturer for verification.

The Publisher is in no way responsible for any consequences of any incorrect operations carried out by the user.

Product and label images are for illustrative purposes only. Actual product and label may vary.

GENERAL CONSIDERATIONS

All operating instructions and recommendations described in this manual must be complied with.

It is of particular importance to train the personnel in charge of the machine, in regards to its use and for checking compliance with the operating procedures and all the safety standards indicated in this manual.

SIGNAL WORDS

Residual dangers that may occur while using the product are identified in the document with a signal word. The safety measures required and potential consequences of failing to take these are listed. A corresponding signal word provides information about the severity of the danger:

Signal word	**Meaning**
DANGER	The signal word indicates a dangerous situation that will immediately lead to death or serious injury if no precautionary measures are taken.
WARNING	The signal word indicates a dangerous situation that may lead to death or serious injury if no precautionary measures are taken.
CAUTION	The signal word indicates a dangerous situation that may lead to moderate to slight injury if no precautionary measures are taken.
NOTICE	The signal word indicates a dangerous situation that may lead to material damage or damage to the environment if no precautionary measures are taken.

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1 General preliminary information

1.1 Purpose of the document

This document must be used to safely install the Helion Video Management System. Follow this service manual when performing installation or maintenance.

1.2 Recipients of the service manual

The installation manual of the Helion Video Management System is intended for trained technicians who are authorized to install it. The technicians must have documented training.

The service manual provides instructions on the correct installation of the system, which will help maintain its functional and qualitative characteristics over time. All information and warnings for correct installation in full safety are provided.

1.3 Updates

Videomed S.r.l. reserves the right to update the service manual at any time with modifications and/or translations without prior notice.

Contact the Customer Service office of Videomed S.r.l. for updates on the latest version of the manual and to receive the current copy.

1.4 Language

The original manual has been written in American English.

Any translations into additional languages must be made starting from the original instructions.

The manufacturer is responsible for the information contained in the original instructions; translations in different languages cannot be completely verified, and therefore if an inconsistency is detected it is required to follow the text in the original language or to contact the Videomed S.r.l. Customer Service office.

1.5 Personnel qualifications

Consult the following table in order to establish the personnel skills and qualifications:

Qualification	Description
Installation Technician	Natural person authorized to install the Helion Video Management System.

1.6 Symbols

Symbol	Description
	Symbol used to indicate the need to consult the instructions for use before using the equipment.
	Conformity marking: symbol of compliance with Regulation (EU) 2017/745 on Medical Devices.
	Equipotential: symbol for “potential equalization”.
	Protective earth (ground)
	Connection point for the neutral conductor on PERMANENTLY INSTALLED equipment
	Consult instructions for use (IFU). A copy of the IFU is available on the website indicated on the symbol. A printed copy of the IFU can be ordered from Hillrom for delivery within 7 calendar days.
	Symbol used to indicate the date of manufacture.
	Symbol used to identify the manufacturer’s name.
	Barred bin: this product must not be disposed of as municipal mixed waste, collect separately.
	Symbol used to indicate the Videomed S.r.l. material number.
	Symbol used to indicate the serial number.
	Symbol used to indicate a medical device.
 (01)00615521031626 (21)123456789012 (11)210212	Indicates the Unique Device Identification (UDI) code; it is composed of: – a device identifier (UDI-DI) (01) – a production identifier (UDI-PI) (serial number (21), date of production (11))

Symbol	Description
	Medical - General Medical Equipment Defined in relation to electrical shock, fire and mechanical hazards only in accordance with AAMI ES60601-1:2005,ES60601-1:2005/AMD1 1:2012, ES60601-1:2005/AMD2:2021, CAN/CSA-C22.2 No. 60601-1:08, CAN/CSA-C22.2 No. 60601-1:14 (including Amendment 1) and Amendment 2:2022 (MOD) to CAN/CSA-C22.2 No. 60601-1:14
	Valid only for US. Caution: Federal law (United States of America) restricts this device to sale by or on the order of a licensed healthcare practitioner.
	Symbol used to indicate the model number.
	The content of the package is fragile and is therefore to be treated with care.
	Indicates the right way up to hold the product.
	Keep the package away from rain.
	Maximum number of identical packages that can be stacked on top of each other, here “N” is the limit number corresponding to 4.
	Indicates the temperature limits within which the transport package must be stored and handled.
	Universal recycling symbol.
	China RoHS symbol

1.7 Terminology used in the manual

Term	Description
GUI	Graphical User Interface
Icon	Image symbol
OP	Operating Room
Booting	Operating module start
CVBS	Color video signal in basic band (or color TV signal)
HD video	High Definition Video (1920x1080 pixels)

Term	Description
SD video	Standard Definition Video (720x576 pixels)
Live preview	Real-time video preview of a signal source on the operating monitor
OSD	View on monitor
DVI	Digital graphic interface (an interface for the transmission of video data)
DICOM	Digital Imaging and Communications in Medicine
HIS	Hospital Information System
PACS	Image archiving and communication system
RIS	Radiology Information System
Rack	Support used to accommodate the individual operating modules of the system
Video clip	Video sequence
WAN	Wide Area Network
LAN	Local Area Network
TLC	Trumpf Light Control
Video-over-IP	Video transmitted using the IP protocol
LC Fiber	Fiber Optic cable terminated with double LC connector
MNA/Encoder	Device that converts video signal into IP protocol
MNA/Decoder	Devide that converts Video-over-IP signals into video
NMS	Nexxis Management Suite, Video-over-IP control PC
NIK	Nexxis Interface Kit
SFP	Small Form-Factor Pluggable, converters from SFP switch ports into LC or RJ45 standard
Switch	Network device that deals with switching at the datalink layer of the ISO/OSI model
Multiview Encoder	MNA dedicated for creation and sharing PIP/PAP signals

1.8 Warranty

The complete warranty clauses are provided in the sales contract.

Videomed S.r.l. assures the safety and functional reliability of the system provided that:

- The system is used, managed, and repaired exclusively as described in this service manual.
- Installations, modifications, and repairs are carried out exclusively by the Videomed S.r.l. assistance services.
- Only spare parts and accessories authorized by the manufacturer are used.
- No structural changes to the devices are carried out.

The system status after system testing must be recorded in an installation protocol. Commissioning is used as proof of the start of the warranty period.

Further details may be present in the commercial contract.

The conditions required by the commercial contract (if different) have priority over what is provided in this section.

2 Safety information

2.1 General safety warnings

The Helion Video Management System must be installed by Installer Technicians adequately trained and authorized by Videomed S.r.l.

⚠ DANGER

ELECTRIC SHOCK FROM DAMAGED MAINS POWER CABLE!

Check the mains power cable before connecting it and do not use it if it has been crushed or if the insulation is damaged.

⚠ DANGER

ELECTRIC SHOCK FROM EXPOSED LIVE PARTS!

It is also recommended to periodically check the integrity of the parts of the device, to detect the presence of exposed parts following an impact or fall and not to use the device in the presence of damage to its structure or components.

⚠ DANGER

ELECTRIC SHOCK FROM INCORRECT POWER CONNECTION PROCEDURE!

The Helion system must be powered and earthed from the same electrical panel that powers the operating room. All equipment connected to the Helion system must also be powered and earthed from the same electrical panel that powers the operating room.

⚠ WARNING

This product can expose you to chemicals including Lead and Di(2-ethylhexyl) phthalate (DEHP), which are known to the State of California to cause cancer, and Lead and Di(2-ethylhexyl) phthalate (DEHP), which are known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

⚠ CAUTION

All safety information must be complied with to ensure the safe installation of the Helion Video Management System.

⚠ CAUTION

To avoid the risk of an electric shock, this appliance must only be connected to mains with a protective earthing.

⚠ CAUTION

POTENTIAL EQUALIZATION CONDUCTOR!

All Helion units are provided with a PROTECTIVE EARTH CONDUCTOR, which provides a direct connection between electrical equipment and the potential equalization busbar of the electrical installation.

⚠ CAUTION

MEASUREMENT OF DISPERSAL CURRENTS!

It is necessary to measure the leakage current with the circuits downstream of the Helion system open. Otherwise, the leakage currents of these circuits will be added to those of the Helion system.

2.2 Combination with other devices

The Helion Video Management System can be combined with devices from other manufacturers.

In the patient environment, only install devices approved in accordance with standard IEC 60601-1.

Outside patient environment, devices approved in accordance with standards IEC 62368-1 are also allowed.

If a device is installed at a later stage, the installation must be performed as specified in standard IEC 60601-1 and in keeping with the specifications provided by the manufacturer.

2.3 Security considerations

The product is intended for use on a private network with restricted access. External access must be restricted through suitable physical and electronic access restrictions.

Below are the security best practices that should be followed during the installation and when updating the product:

- Verify the checksum before installing and updating any program on the system.
- Use segregated and secure areas with appropriate access controls as per the healthcare provider policy.
- Product interface or API should be accessible internally only to the healthcare provider network.
- Install & configure only those software programs that are necessary for the intended use of the operating environment.
- Ports that are required by the product to operate should be open only.
- Any connectivity with the product should have a secure connection. Implement network and physical access controls. This reduces the likelihood of compromise.
- Utilize a firewall or equivalent technologies to protect the network.
- Change all Helion default user accounts & credentials during the initial installation, if applicable, and do not use shared user accounts.

- Utilizing a VPN or equivalent technologies with multi-factor authentication for remote connection via a public network is advisable.
- It is recommended to use the latest supported browser with up-to-date security patches as per the healthcare provider's security policy.

  The browser should be used in private mode to protect against data leaks. If not, then it is recommended to clear data such as cookies, cache, history, etc. when closing the browser.

If the product is integrated into a medical network, the healthcare provider must ensure the security of the network. The product should be secured against:

- Unauthorized access to system files
- Unauthorized software program installation
- Unauthorized physical access

Where Helion is connected to an IT network:

- Connection of the electronic interface to an IT network that includes other equipment could result in previously unidentified risks to patients, users, or third parties.
- The HCO or the organization appointed by the HCO should identify, analyze, evaluate, and control these risks.
- Subsequent changes to the IT network could introduce new risks and require additional analysis.

  Changes to the IT network include:
  - Changes in the IT network configuration
  - Connection of additional items to the IT network
  - Disconnection of items from the IT network
  - Update of equipment connected to the IT network
  - Upgrade of equipment connected to the IT network

2.4 Privacy considerations

The product is designed with privacy and data protection in mind. To ensure compliance with privacy and data protection laws and safeguard the privacy of patient and user information, follow these best practices during installation and updates:

- Ensure that all data processed by the product is done in accordance with the appropriate legal basis, as outlined by applicable privacy and data protection laws and regulations. Where applicable, utilize the consent management process established by the customer for the collection, processing, and sharing of patient data in accordance with privacy and data protection regulations.
- Configure user authentication and access controls in accordance with your organization's privacy policies and applicable regulations. Provide access to sensitive data only to authorized personnel.
- Where applicable, utilize the consent management process established by the customer for the collection, processing, and sharing of patient data in accordance with privacy and data protection regulations.

Responsible Disclosure / Report a Security or a Privacy Issue:

In case a security or privacy issue about the product is observed, the healthcare provider should report the issue to Baxter as soon as possible. Go to Product Security | Baxter (https://www.baxter.com/product-security) for information on how to report a potential issue.

2.5 Electromagnetic compatibility

The Helion Video Management System supplied contains electronic components subject to Electromagnetic Compatibility regulations, affected by conducted and radiated emissions.

The emission values comply with regulatory requirements thanks to the use of components compliant with the Electromagnetic Compatibility Directive and suitable connection, and installation of filters where required.

The Helion Video Management System is therefore compliant with Electromagnetic Compatibility (EMC) directive IEC 60601-1-2.

NOTICE

Any maintenance activities on the electrical equipment carried out in a non-compliant manner or incorrect replacement of components may compromise the efficiency of the solutions adopted.

Guidance and manufacturer's declaration
Range and frequency level: RF wireless communication equipment

Test frequency (MHz)	Modulation	Minimum IMMUNITY level (V/m)	Applied IMMUNITY level (V/m)
385	** Pulse modulation: 18 Hz	27	27
450	☐ * FM + 5 Hz deviation: 1 kHz sine ☒ ** Pulse modulation: 18 Hz	28	28
710 745 780	** Pulse modulation: 217 Hz	9	9
810 870 930	** Pulse modulation: 18 Hz	28	28
1720 1845 1970	** Pulse modulation: 217 Hz	28	28
2450	** Pulse modulation: 217 Hz	28	28
5240 5500 5785	** Pulse modulation: 217 Hz	9	9

Test frequency (KHz)	Modulation	Minimum IMMUNITY level (A/m)	Applied IMMUNITY level (A/m)
134.2	Pulse modulation: 2.1 kHz	65	65
13560	Pulse modulation: 50 kHz	7.5	7.5

2.6 Cleaning

NOTICE

Risk of material damage

Excess liquid may cause damage to internal electronics.

- Do not apply or spray liquid directly onto the housing.
- Apply liquid to the cleaning cloth.

NOTICE

Risk of material damage

Do not clean the Helion unit's rear connector panel, or any of its connectors or buttons. This may cause damage to the connectors, buttons, and internal electronics.

- Call Baxter service.

NOTICE

Risk of material damage

Abrasive materials may cause damage to the devices.

- Use a soft cloth.

2.6.1 Cleaning agents

When selecting the cleaning agents, ensure that they do not contain the following components:

- Organic, mineral, and oxidizing acids
- Bases
- Organic solvents (e.g., ether, ketones, benzines)
- Halogens (chlorine, iodine, bromine)
- Aromatic/halogenated hydrocarbons
- Any other substance that is chemically aggressive to plastics

The housings and plates have been tested for resistance to the following product: General purpose glass cleaner.

2.6.2 Preparing the devices

Before cleaning the devices, proceed as follows:

- Power off the devices.
- Pull the power plugs out of the sockets.
- For permanent installations turn off the main switch located on the front panel of the rack.

2.6.3 Cleaning the devices

To clean the front of the devices, proceed as follows:

1. Moisten a soft cloth lightly with a recognized cleaning product.
2. Clean the front of the housing.
3. Wipe dry with a dry soft cloth.
4. Inspect if the surface is visually clean. Repeat if necessary.

2.7 Useful life of the system

Provided that all applicable safety and maintenance regulations are strictly observed, the video integration system has been designed to guarantee a duration of 8 years.

The life cycle includes a guarantee of the functionality of the product in compliance with the specific instructions for use, the provision of the customer assistance service, and the availability of spare parts;

Videomed S.r.l. applies a certified quality management system according to EN ISO 13485 to all its business processes, which is a guarantee of:

- highest quality
- product and accessory reliability
- ease of use
- functional design
- optimization for the intended purpose

2.8 Preventive maintenance and unscheduled cleaning

⚠ CAUTION

Disconnect the mains plug from electrical outlet for the purposes of maintenance.

This paragraph indicates how to perform maintenance on the Helion system and clean it.

Maintenance and cleaning must be carried out annually to ensure the components remain in good working order and intact. Use personal protective equipment for any maintenance and cleaning activities. List of protective devices: closed shoes, sturdy long trousers in fabric, tunic, gloves. Check personal protective equipment to make sure they are in proper condition. Inform the operator of any defects.

To perform maintenance on the Helion system and clean it, refer to the checklists (see Annex I of this manual).

2.9 Use associated with other devices

2.9.1 Combination with other Baxter products

Product designation	REF
FCS Plate S 1xDVI	CS201560
FCS Plate S 4xNEUTRIK	CS201561
FCS Plate 2xDVI	CS201562
FCS Plate 4xNEUTRIK	CS201563
FCS Plate 1xDVI 4xNEUTRIK	CS201564
FCS Plate 8xNEUTRIK	CS201565
FCS Plate 2xDVI 4xNEUTRIK	CS201568
iLED7 Ceiling Single	4068110
iLED7 Mobile	4068120
iLED7 Pendant	4068140
iLED7 Ceiling Duo	4068210
iLED7 Ceiling Trio	4068310
iLED7 Ceiling Quad	4068410
TV HD Wireless Camera (in combination with iLED 7)	1940442
TV HD Wireless Receiver (in combination with iLED 7)	1940747
TruLight 5000 / 3000 Ceiling Single	4038110
TruLight 5000 / 3000 Mobile	4038120
TruLight 5000 / 3000 Wall	4038130
TruLight 5000 / 3000 Pendant	4038140
TruLight 5000 / 3000 Ceiling Duo	4038210
TruLight 5000 / 3000 Ceiling Trio	4038310
TruLight 5000 / 3000 Ceiling Quad	4038410
TV HD 2000 (in combination with Trulight)	2072249

2.9.2 Combination with products of other manufacturers

The Helion Video Management System can be combined with devices from other manufacturers.

In the patient environment, only install devices approved in accordance with standard IEC 60601-1.

Outside the patient environment, devices approved in accordance with standards IEC 62368-1 are also allowed.

If a device is installed at a later stage, the installation must be performed as specified in standard IEC 60601-1 and in keeping with the specifications provided by the manufacturer.

Videomed S.r.l. does not take any responsibility for the combination of the video management system with third-party products.

Pay attention to Operating temperature of individual third-party devices.

3 General installation information

3.1 Documents required for installation

The Helion Video Management System components to be installed are indicated in the order, the order confirmation, and the list of material accompanying the shipment.

Below is a specific list of documents that must be available at the beginning of the installation to make work easier:

- List of material for Helion
- Cabling plan
- Helion installation report, see annex I of this manual
- IEC 60364-7-710 or relevant national regulations

The cabling is positioned by the Installation Technician authorized by Videomed S.r.l.

Videomed S.r.l. provides a cabling plan to place the cables according to the solution purchased.

The Installation Technician is required to request a copy from Videomed S.r.l. and position the cables accordingly.

3.2 Allowed environmental conditions

The Helion Video Management System has been designed and built to safely operate in the following environmental conditions:

ENVIRONMENTAL CONDITIONS FOR OPERATION WITHOUT THE RACK	
Room temperature	from +10 °C to +40 °C
Relative humidity	from 30% to 75%
Atmospheric pressure	540 hPa to 1060 hPa

ENVIRONMENTAL CONDITIONS FOR OPERATION WITH THE RACK	
Room temperature	from +10 °C to +40 °C
Relative humidity	from 30% to 75%
Atmospheric pressure	700 hPa to 1060 hPa

ENVIRONMENTAL CONDITIONS FOR STORAGE	
Room temperature	from -40 °C to +70 °C
Relative humidity	from 10% to 100% including condensation
Atmospheric pressure	500 hPa to 1060 hPa

Video-over-IP configuration

The Helion Video-over-IP configuration has been designed and built to safely operate in the following environmental conditions:

ENVIRONMENTAL CONDITIONS FOR OPERATION WITH THE RACK	
Room temperature	from +10 °C to +30 °C (1000 m) / to +26.6 °C (2000 m) / to +18.6 °C (3000 m)
Relative humidity	from 30% to 75%
Atmospheric pressure	700 hPa to 1060 hPa

ENVIRONMENTAL CONDITIONS FOR STORAGE	
Room temperature	from -20 °C to +50 °C
Relative humidity	from 15% to 93% non-condensing
Atmospheric pressure	600 hPa to 1060 hPa

The environmental conditions relating to the storage of components must be observed during installation.

3.3 Technical requirements

The system time must be synchronized with an NTP server.

Suggested minimum network	
Bandwidth	100 Mbit/s Note: The speed of the network is not critical for the system's performance.

3.4 Installation report

All the important test and assembly stages for the purposes of installation must be documented in the installation report, see annex I of this manual, together with the serial numbers of the products installed indicating the installation site.

A copy of the installation report must be sent to Videomed S.r.l. hrc_surgical_techsupport@baxter.com.

4 Cabling

The cables to be used for connecting the components of the Helion Video Management System are provided by Videomed S.r.l.

NOTICE

Only use cables and connectors supplied by Videomed S.r.l.

4.1 Standard cabling

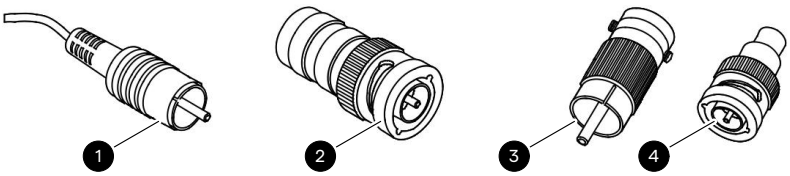
The standard cabling is provided with:

Image	Type of cabling
	**RG-6** CPR-certified LSZH shielded coaxial cable Cca-s1a,d1,a1.
	**Cat 7** Cat 7 twisted pair cable with S/FTP shielding, CPR-certified Cca-s1a,d0,a1 and RJ45 shielded connector.
	Audio CPR-certified LiHH 300/500V cable Cca-s1,d1,a1.
	Low noise Analog cable with aluminum shielding and CPR Cca-s1a,d0,a1.

4.1.1 Types of analog signal

4.1.1.1 CVBS - Composite Video

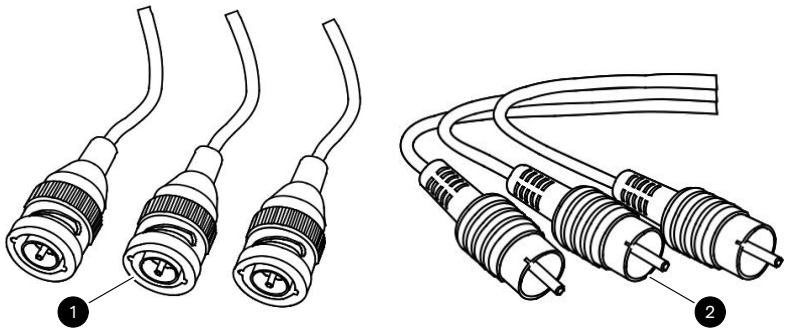
Name	Composite Video / CVBS (including PAL, NTSC, SECAM)
Resolution / Image rate	PAL / SECAM: – 720 × 576 @ 25 Hz = 576i NTSC: – 720 × 480 @ 29.97Hz = 480i
Signal type	Analog
Helion cable	1 × RG-6 / Coaxial
Conversion Helion	None
Use with Helion	– Best type of signal input for SD signal input



[1] RCA connector (Cinch)
[2] BNC connector
[3] BNC adapter
[4] RCA adapter

4.1.1.2 YPrPb - Component Video

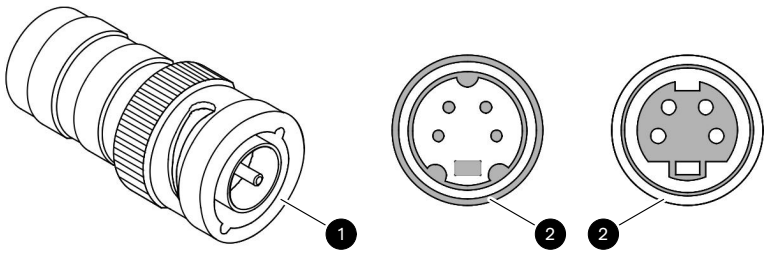
Name	Component Video / YPrPb / YCbCr
Resolution / Image rate	1920 × 1080 @ 60 Hz
Signal type	Analog
Helion cable	3 × RG-6 / Coaxial
Conversion Helion	Conversion on DVI (via the converter in the rack)
Use with Helion	– If available, use DVI (or SDI) port – No support for RGBHV (= 5× RG-6). The hospital can use a Scaler/Converter to convert into a signal supported by the system as a DVI.



[1] 3 x BNC connector
[2] 3 x RCA connector

4.1.1.3 S-Video - Separate Video

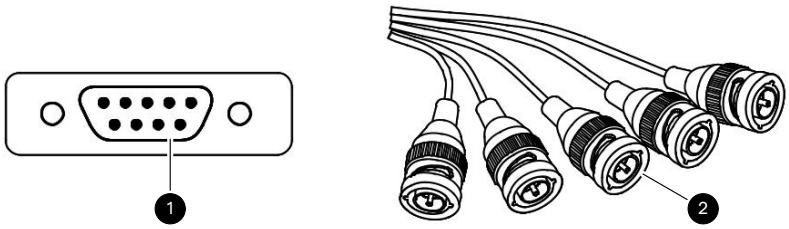
Name	S-Video (separate video, Y/C , S-VHS)
Resolution / Image rate	PAL / SECAM: – 720 × 576 @ 25 Hz = 576i NTSC: – 720 × 480 @ 29.97 Hz = 480i
Signal type	Analog
Helion cable	1 × RG-6 / Coaxial (after conversion)
Conversion Helion	From S-video to CVBS by using an adapter
Use with Helion	– Adapter available – It can be used as a standard CVBS signal



[1] 2 x BNC connector
[2] 1 x DIN / S-Video connector + female connector

4.1.1.4 VGA and RGB - Video Graphics Array

Name	VGA (Video Graphics Array)
Resolution / Image rate	– Max.: 1920 x 1080 @ 60 Hz – Standard resolution for old computers, for example 1280 × 1024
Signal type	Analog (RGB)
Helion cable	1 × Cat 7 (with extensions)
Conversion Helion	Conversion on DVI (via the converter in the rack)
Use with Helion	– If available, use DVI (or SDI) port – Maximum resolution supported: 1920 × 1080

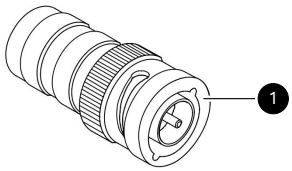


[1] 1 x VGA connector
[2] 5 x BNC connector for VGA

4.1.2 Types of digital signal

4.1.2.1 SDI / HD-SDI / 3G-SDI - Serial Digital Interface

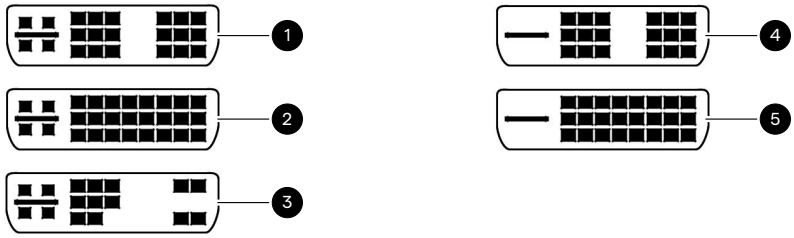
Name	Serial digital interface SD-SDI, HD-SDI, 3G-SDI
Resolution / Image rate	PAL/SECAM: – 720 × 576 @ 25 Hz = 576i NTSC: – 720 × 480 @ 29.97 Hz = 480i HD-SDI: – 1920 × 1080i, 1280 × 720p 3G-SDI: – 1920 × 1080p
Signal type	Digital
Helion cable	1 × RG-6 / Coaxial
Conversion Helion	– SD-SDI (PAL/SECAM/NTSC) is not natively supported by Helion. In this case, conversion to a supported format via a converter is required. – No conversion required for high-definition formats HD-SDI and 3G-SDI
Use with Helion	– Connect HD-SDI and 3G-SDI directly to Helion – Maximum resolution supported: 1920x1080



[1] Serial Digital Interface

4.1.2.2 DVI - Digital Visual Interface

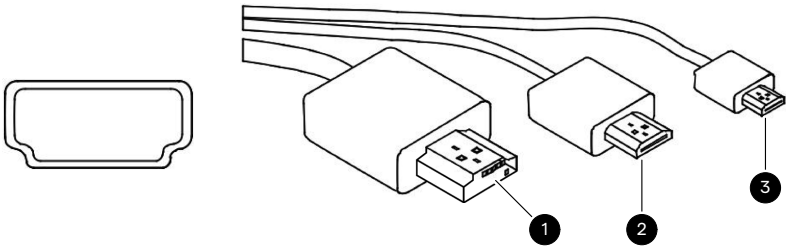
Name	DVI (Digital Video Interface)
Resolution / Image rate	– Supports up to: 2k – Helion supports: 1920 × 1080 – 16:9 and 4:3 for Routing – 16:9 only for Recording
Signal type	Digital
Helion cable	1 × Cat 7 (with extensions) - HDMI requires a DVI adapter
Conversion Helion	Not present
Use with Helion	– Best choice of use for Helion – Maximum resolution supported: 1920 × 1080 – All Helion DVI connectors are DVI-I (Dual Link) connectors to maximize compatibility. However, only digital data is used to transfer and display video signals.



[1] DVI-I (Single Link)
[2] DVI-I (Dual Link)
[3] DVI-A
[4] DVI-D (Single Link)
[5] DVI-D (Dual Link)

4.1.2.3 HDMI - High Definition Multimedia Interface

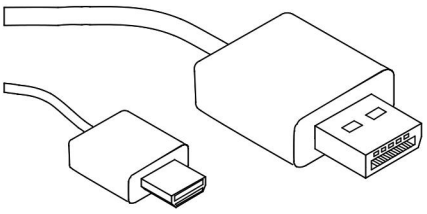
Name	HDMI (High Definition Multimedia Interface)
Resolution / Image rate	– Up to 4096 × 2160
Signal type	Digital
Helion cable	1 × Cat 7 (with extensions) - HDMI requires a DVI adapter
Conversion Helion	Not present
Use with Helion	– Maximum resolution supported: 1920 × 1080



[1] Type A - Full Size
[2] Type C - Mini
[3] Type D - Micro

4.1.2.4 DP - Display Port

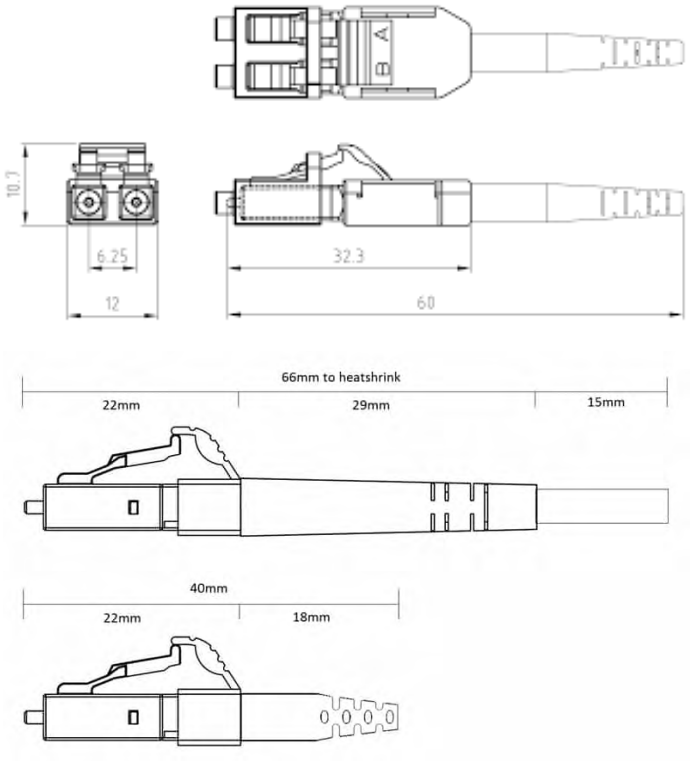
Name	Display port
Resolution / Image rate	– Up to 4096 × 2160 - Depending on version
Signal type	Digital
Helion cable	1 × Cat 7 (with extensions)
Conversion Helion	DVI / HDMI converter required
Use with Helion	– Maximum resolution supported: 1920 × 1080



4.1.2.5 LC Optic Fiber

Fiber Connector	LC UPC to LC UPC
Fiber Mode	OM4 50/125
Fiber Type	Duplex
Fiber Jacket	2.0 mm, PVC
Insertion Loss	≤ 0.15 dB
Return Loss	≥ 30 dB
Wavelength	850/1300 nm
Durability	500 Cycles
Min. Bend Radius (Fiber Core)	7.5 mm

Min. Bend Radius (Fiber Cable)	20/10D (Dynamic/Static)
Operating Temperature	-20 to 70 °C
Storage Temperature	-40 to 80 °C



4.2 Preparing the cabling

The cabling for the Helion Video Management System is carried out by using the following cables:

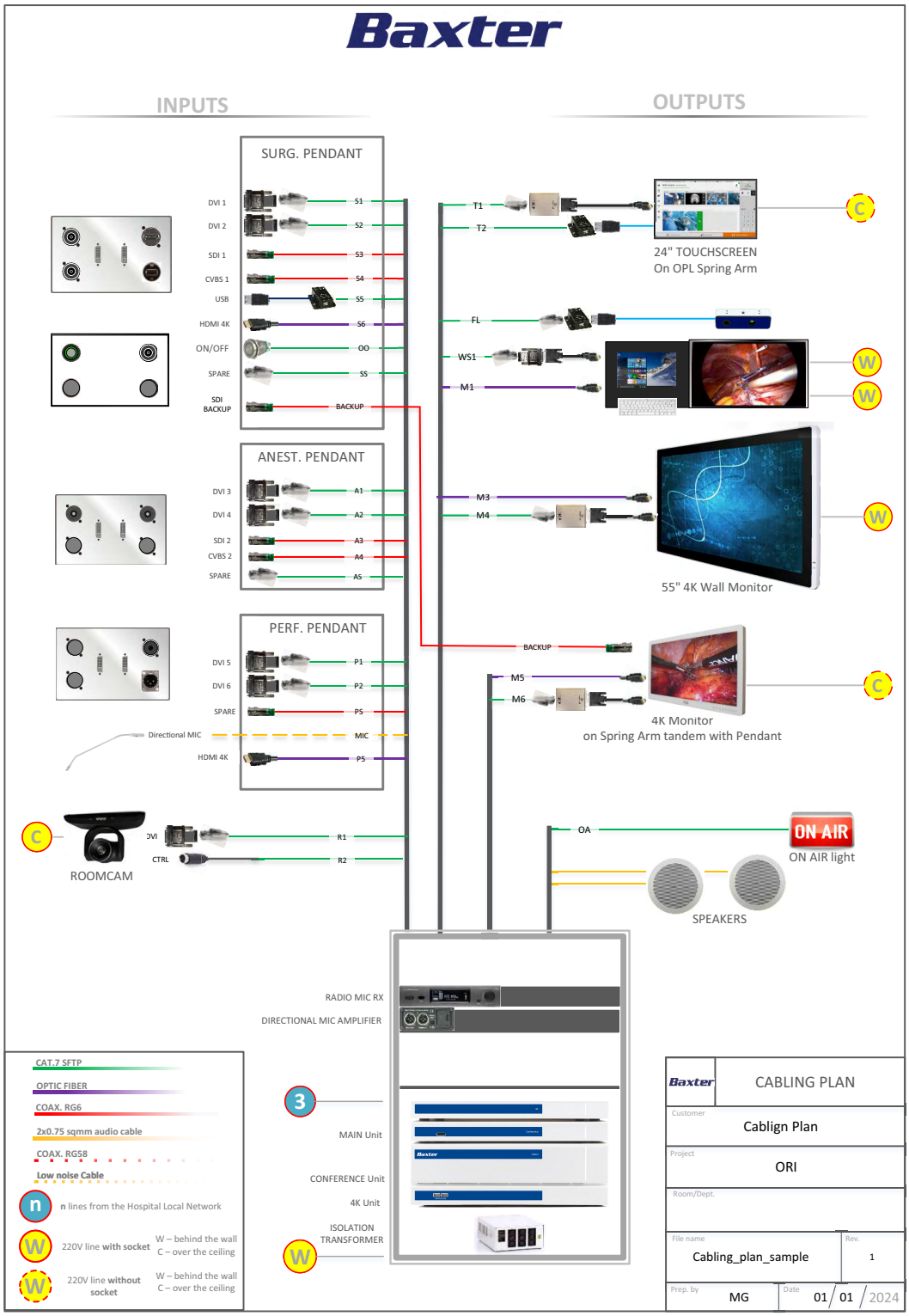
- Cat 7 cable S/FTP 23 AWGX4, with RJ45 connector
- RG6 75 Ω coaxial cable with BNC connectors
- RG58 50 Ω coaxial cable with BNC connectors to extend cables for radio microphones
- low-noise shielded audio cables

Given the high bandwidth required for communications and the quality of the signals involved, the use of high-quality cables and connectors is a mandatory requirement. The quality of the cables used and attention to detail during the actual cabling are essential for optimal performance. Only use cables supplied or approved by Videomed S.r.l.

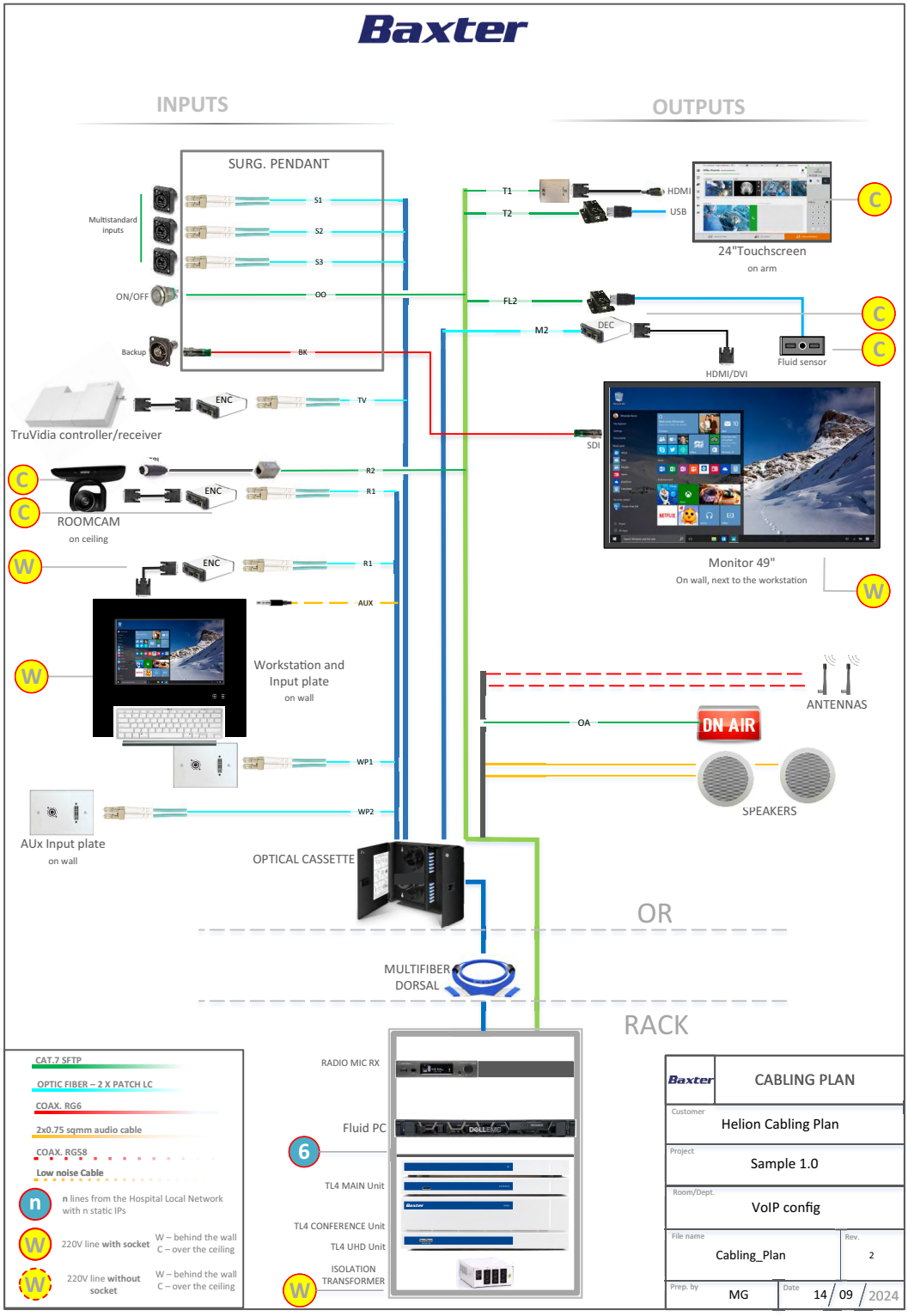
4.2.1 Cabling plan - order specifications

The “cabling plan - order specifications” is an overview of the installation diagram.

The diagram shows the connections between the Helion system, its sources and destinations, specifying their location and type. The related cable connection plan describes, once again, all the conductors and their destinations.



4.2.1.1 Cabling Plan - with Video-over-IP configuration



4.2.2 Installing empty ducts

Specifications to be agreed with the person running the site involved in the installation.

Recommended diameters for empty ducts: at least PG 21.

Observe the laws of the country where the equipment is installed.

4.2.3 Installing the cables

Proceed as described below:

1. Disconnect the mains in the room where the installation will be performed using the main switch, and lock it to prevent it from being turned on.
2. Cut the cables (leave some margin).
3. Label both ends of the cable (at about 150-200 mm from the cable end) with a felt-tip pen or an adhesive strip depending on the cable definition.

MAXIMUM LENGTH OF TWISTED PAIR CABLE

The Installer Technician must ensure that the actual length of each cable does not exceed 40 m (the calculation must include vertical, ceiling, beam and cantilever cables). The cable length has a significant impact on the quality and performance of the entire system.

Contact Hillrom to find a suitable technical solution.

INSTALLING THE CABLES

Make sure there is enough clearance when installing the cable. Avoid excessively acute angles, narrowing and bending the cable, as this could cause cable failure and system malfunction.

Overhangs, reinforced walls or intermediate ceilings must be removed when replacing cables previously installed.

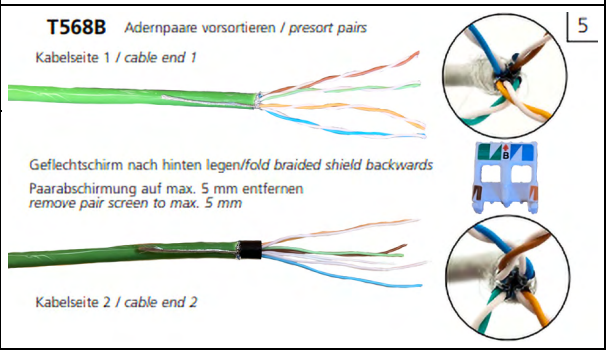
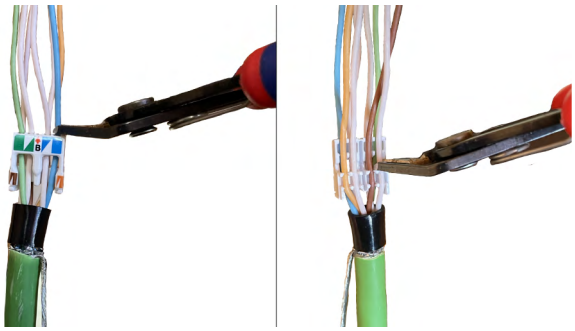
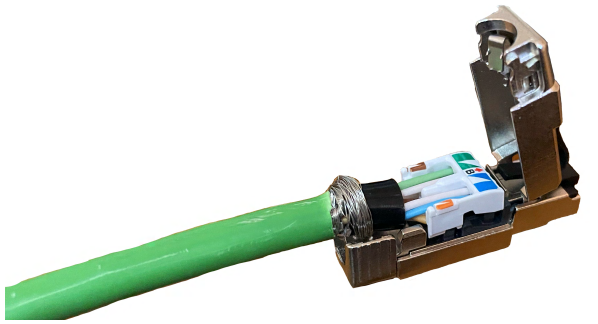
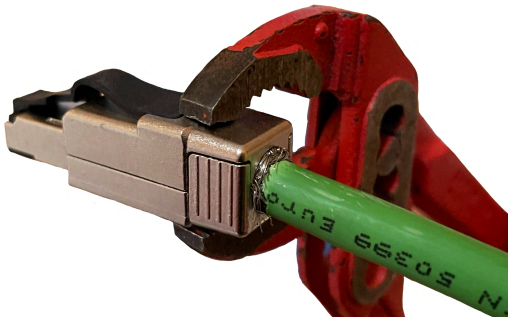
4.2.4 Crimping RJ45 connectors to CAT 7 cables

Before crimping the RJ45 connectors to the CAT 7 cables, make sure:

- You are using the right cable.
- You have a crimping clamp.

Proceed as described below:

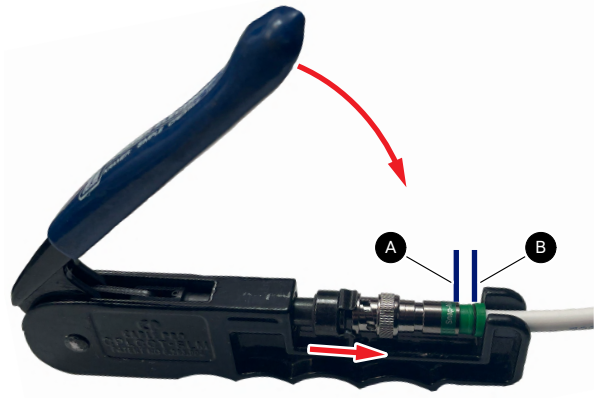
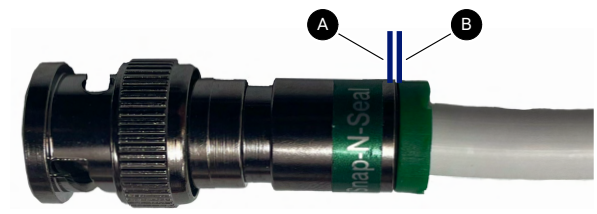
Step	Image
1. Strip the end of the cable, removing the outer sheath protecting the wires inside. When removing the sheath, don't cut too deeply, to prevent damage to the internal wires.	

Step	Image
2. Remove the additional aluminum wire protecting the internal wires up to the point where the outer sheath has been removed. 3. Remove the aluminum shield to protect each pair of wires, up to the point where the outer protective sheath has been removed and insert the black rubber ring at the bottom.	
4. Loosen the individual pairs of wires up to the point where the outer sheath has been removed.	
5. Then insert the wires into the connector, making sure that, as they enter the guides in the plug, they retain the right color order as per the chosen cabling standard.	
6. Cut the excess wire from the plug.	
7. Position the end of the connector in such a way that the plugs can fit inside.	
8. Use a clamp to crimp the CAT 6 AWG 26 cables. 9. Verify the correct order of crimping using a network cable tester.	

4.2.5 Crimping coaxial cables RG-6

Before crimping coaxial cables RG-6, make sure:
- You are using the right cable.
- You have a crimping clamp.

Proceed as follows:

Step	Image
1. Strip the end of the cable, removing the outer sheath protecting the wires inside. When removing the sheath, don't cut too deeply, to prevent damage to the internal wires.	
2. Insert the cable into the plug. Make sure that the cable inside the plug is positioned correctly.	
3. Push the cable up to the end of the plug.	
4. Place the plug, with its cable, inside the crimping clamp. The distance to be crimped is marked by points [A] and [B].	
5. Compress the plug until the distance between points [A] and [B] is closed.	

OPERATING TEST

The Installer Technician must carefully check the crimped cables with a tester to detect their conductivity.

VISUAL INSPECTION

The Installer Technician must carry out a visual check on the crimped cables, remove any incorrect torsions and twists, and remove any crushed sections or damage that has occurred during the crimping stage.

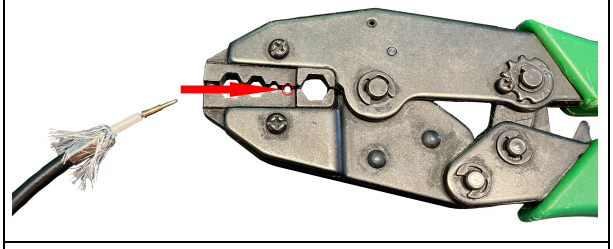
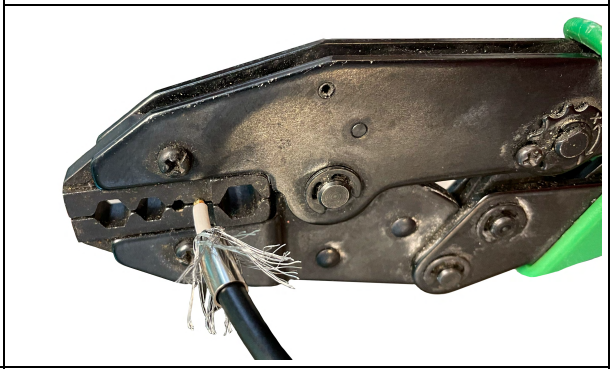
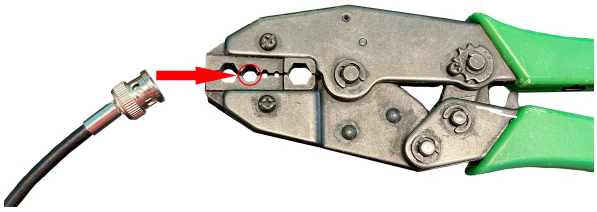
4.2.6 Crimping coaxial cables RG-58

Before crimping coaxial cables RG-58, make sure:

- You are using the right cable.
- You have a crimping clamp.

Proceed as follows:

Step	Image
1. Insert the metal ring onto the cable.	
2. Strip the end of the cable, removing the outer sheath protecting the wires inside. When removing the sheath, don't cut too deeply, to prevent damage to the internal wires.	 
3. Cut the end of the white protection covering the cable.	

Step	Image
4. Place the metal point on the cable, and plug it using the clamp.	  
5. Insert the BNC connector and slide the metal ring over it.	 
6. Use the clamp to crimp the ring.	  

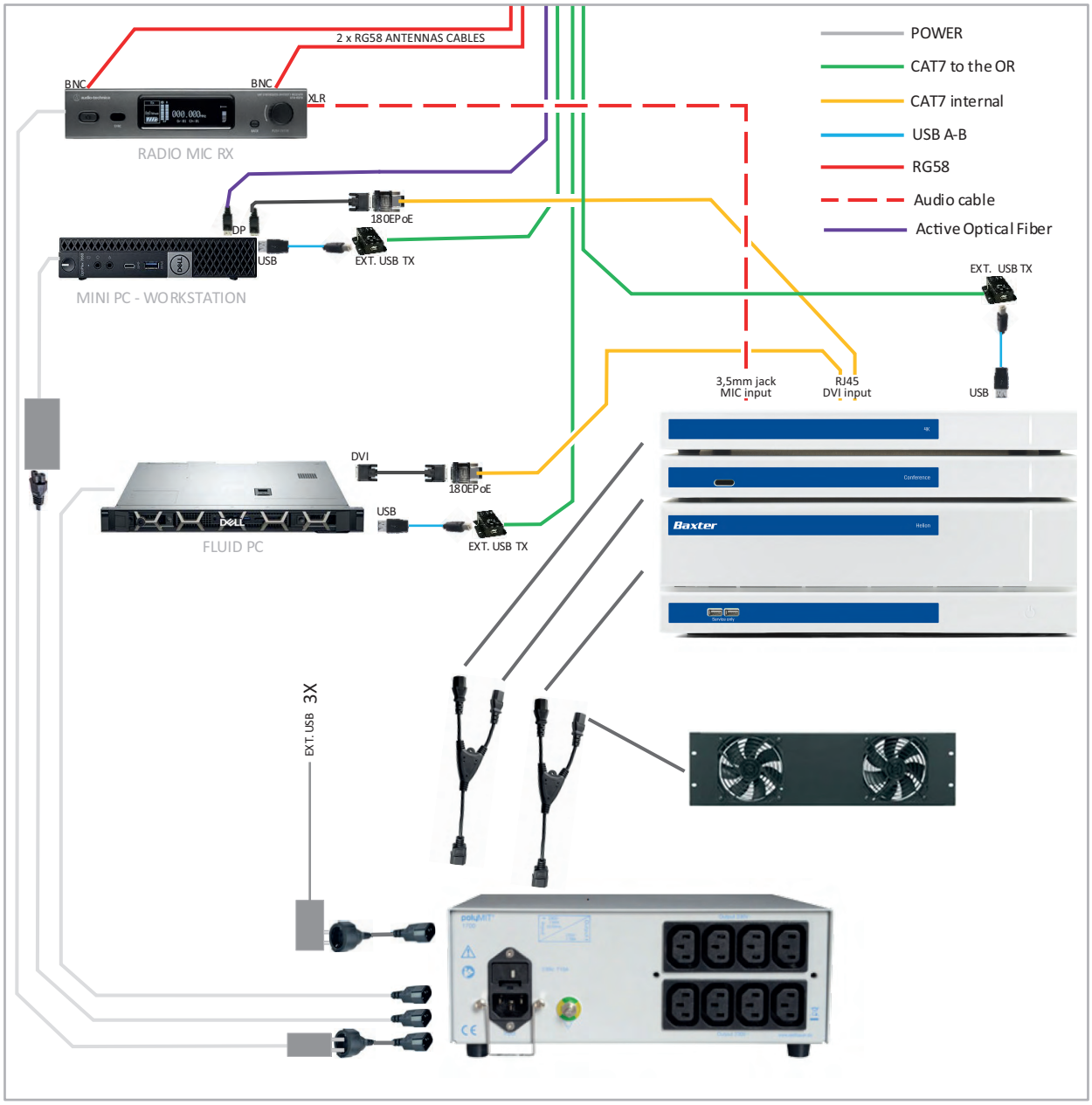
OPERATING TEST

The Installer Technician must carefully check the crimped cables with a tester to detect their conductivity.

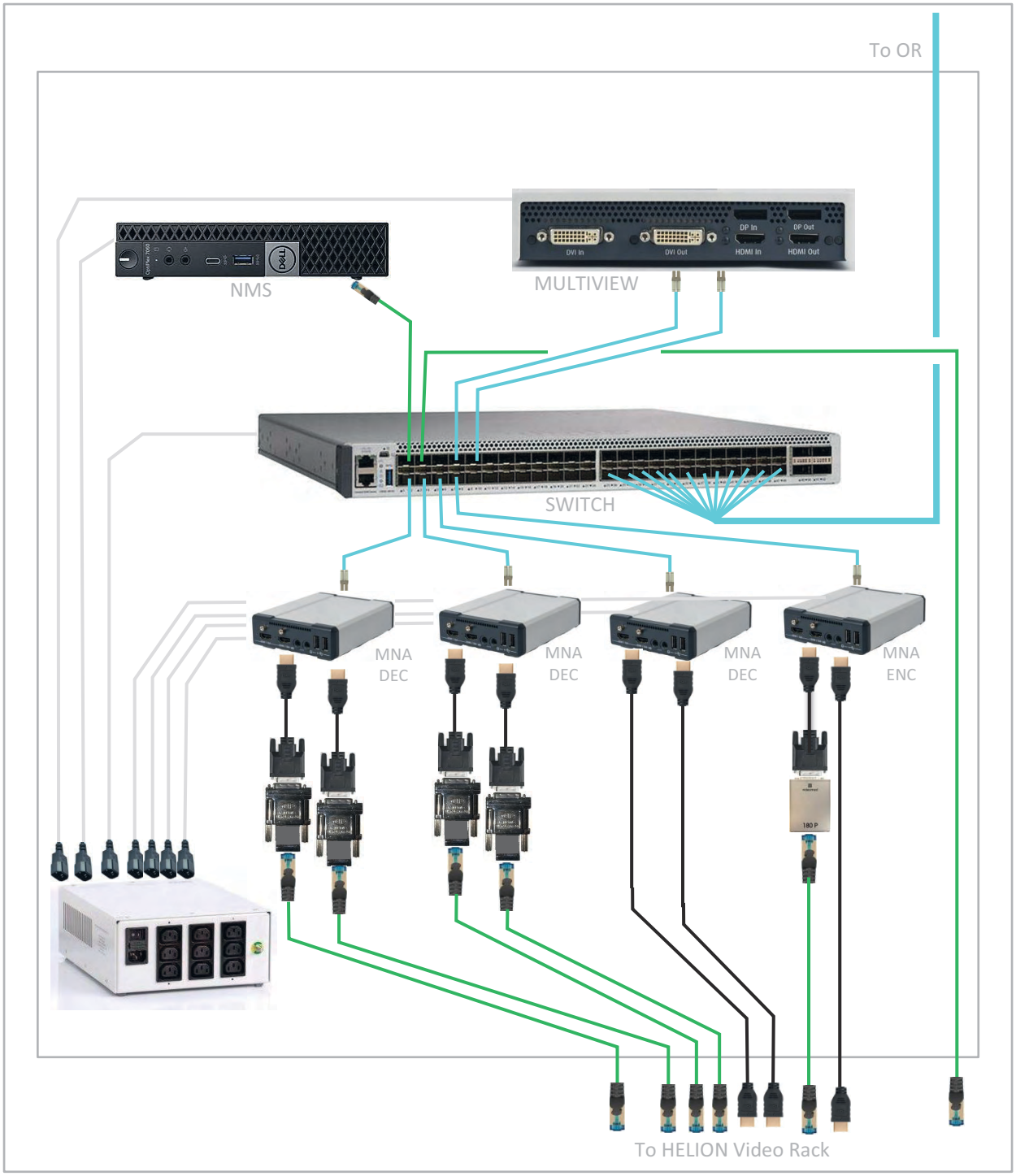
VISUAL INSPECTION

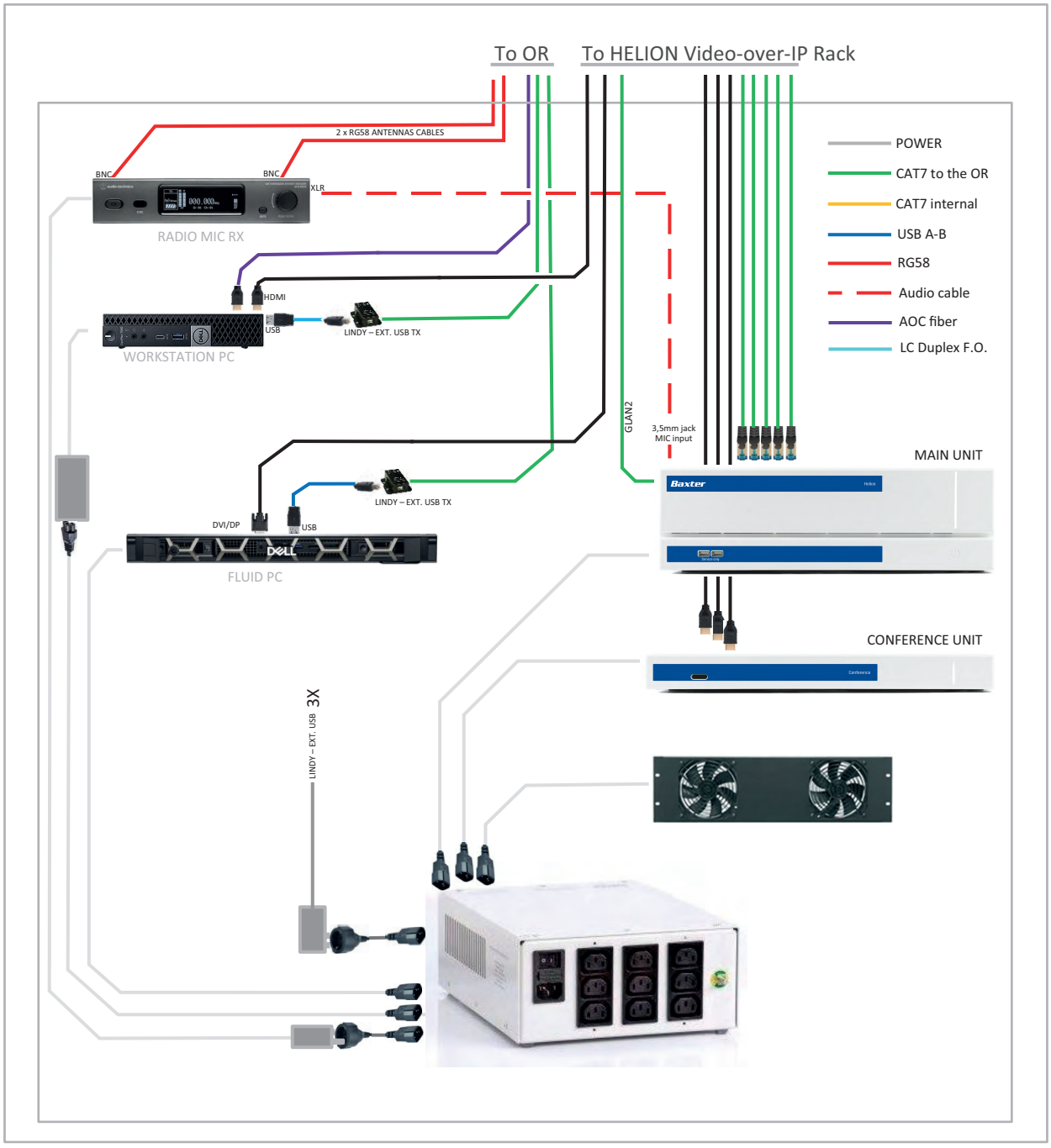
The Installer Technician must carry out a visual check on the crimped cables, remove any incorrect torsions and twists, and remove any crushed sections or damage that has occurred during the crimping stage.

4.3 Components connection diagram



4.3.1 Components connection diagram - with Video-over-IP configuration




To OR
To HELION Video-over-IP Rack
2 x RG58 ANTENNAS CABLES
BNC
BNC
XLR
RADIO MIC RX
HDMI
USB
LINDY – EXT. USB TX
WORKSTATION PC
LINDY – EXT. USB TX
DVI/DP
USB
FLUID PC
GLAN2
3,5mm jack
MIC input
MAIN UNIT
CONFERENCE UNIT
3X
LINDY – EXT. USB
POWER
CAT7 to the OR
CAT7 internal
USB A-B
RG58
Audio cable
AOC fiber
LC Duplex F.O.

4.4 Helion unit connection diagram

The Main Unit is the basis of the Helion Video Management System.

This unit can be used in combination with the 4K or 4K Plus Unit and the Conference Unit.

All units installed inside the Helion RACK must be connected to each other to make the most of all the benefits of Helion Video Management System.

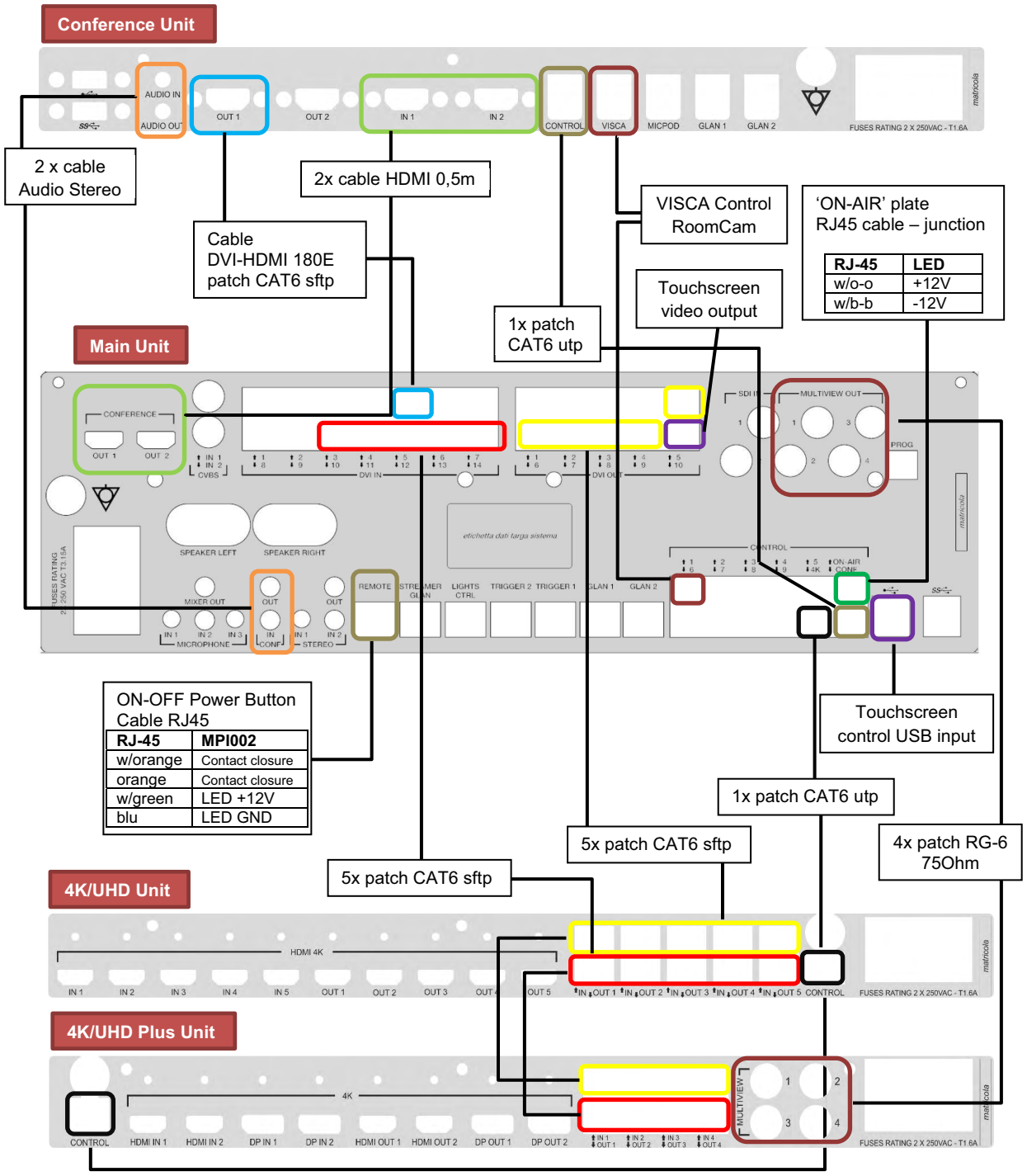
Below is a table explaining the module cabling:

Cable type	**Cable length (m)**	**Connection Description**
Stereo Audio Cable, Jack 3.5 mm M/M	0.6	Videoconference 'Audio IN' ⇨ Main 'Conf OUT'
Stereo Audio Cable, Jack 3.5 mm M/M	0.6	Videoconference 'Audio OUT' ⇨ Main 'Conf IN'
HDMI cable 2.0 M/M	0.5	Videoconference HDMI 'IN 1' ⇨ Main HDMI 'Conference OUT 1'
HDMI cable 2.0 M/M	0.5	Videoconference HDMI 'IN 2' ⇨ Main HDMI 'Conference OUT 2'
HDMI-DVI cable M/F	0.2	Videoconference HDMI 'OUT 1' ⇨ 180P
Patch network cable Cat. 6 Black SFTP LSZH	0.5	180P ⇨ Main RJ45 'DVI IN 7'
Patch network cable Cat.6 Gray U/UTP LSZH	0.5	Videoconference RJ45 'Control' ⇨ Main RJ45 'REMOTE'
Patch network cable Cat.6 Gray U/UTP LSZH	0.5	Main RJ45 'Control 4K' ⇨ 4K/4K Plus RJ45 'Control'
5x Patch network cable Cat. 6 Black SFTP LSZH	0.5	Main RJ45 'DVI IN' 10-14 ⇨ 4K/4K Plus RJ45 'DVI OUT'
5x Patch network cable Cat. 6 Black SFTP LSZH	0.5	Main RJ45 'DVI OUT' 5-9 ⇨ 4K/4K Plus RJ45 'DVI IN'
4x patch RG-6 75Ohm	0.5	Main BNC 'Multiview OUT' 1-4 ⇨ 4K Plus 'Multiview' 1-4

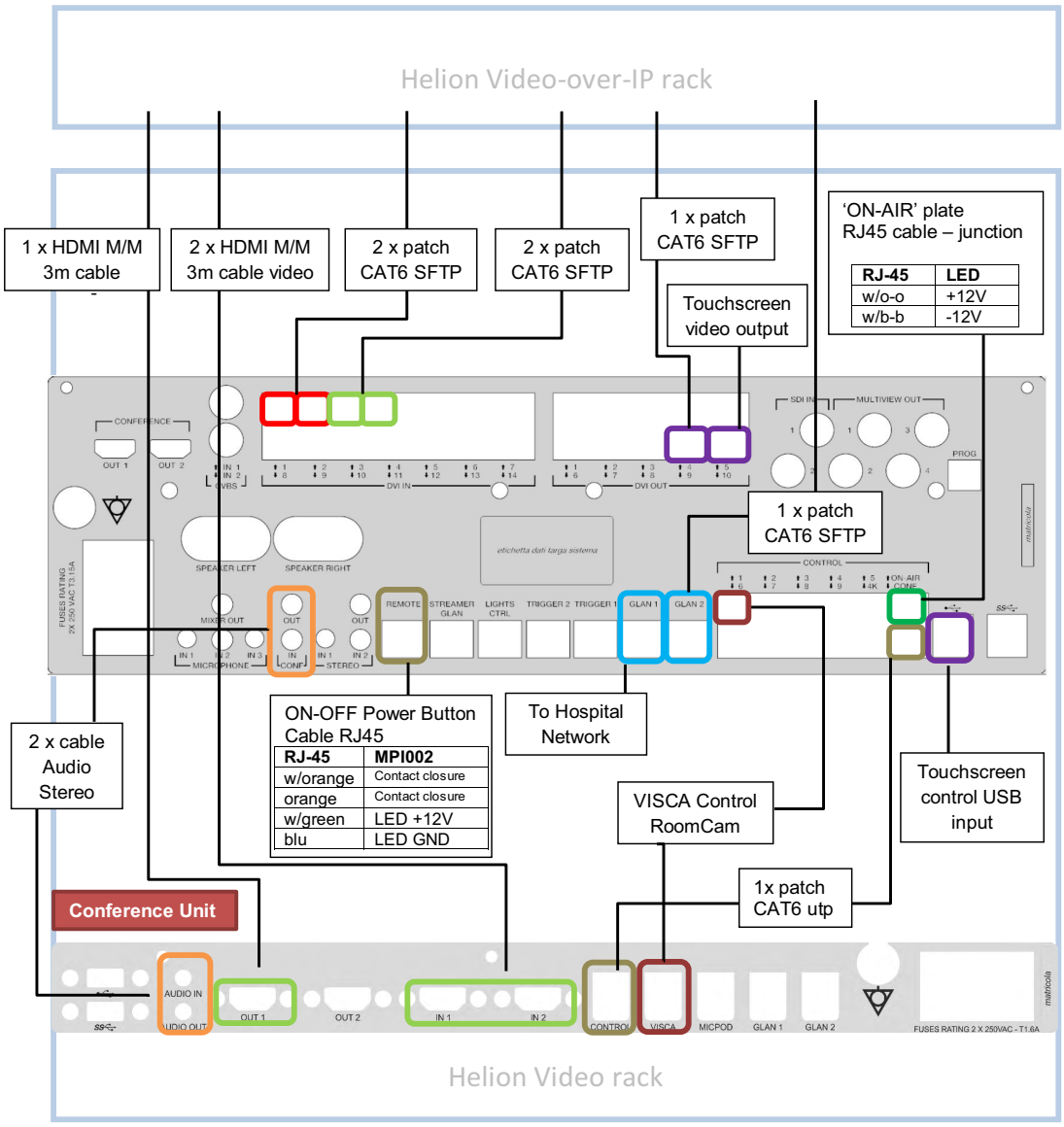
NOTICE

The cabling inside the modules is performed by Videomed S.r.l. Do not modify or tamper with the original cabling.

Helion units connection diagram:



4.5 Helion unit connection diagram - with Video-over-IP configuration



Cable type	Cable length (m)	Connection Description
Cable Audio Stereo Jack 3.5 mm M/M	0.6	Videoconference 'Audio IN' ⇨ Main 'Conf OUT'
Cable Audio Stereo Jack 3.5 mm M/M	0.6	Videoconference 'Audio OUT' ⇨ Main 'Conf IN'
3 × Cable HDMI 2.0 M/M	3	1 x Conference Unit HDMI OUT 1 ⇨ MNA on Helion VoIP Rack 2 x MNA on VoIP Rack ⇨ Videoconference HDMI IN 1 and IN 2
2 × patch CAT6 SFTP	3	MNA on Helion VoIP Rack ⇨ Main Unit DVI input 1 and 2 (recording channels)
1 × patch CAT6 SFTP	3	MNA on Helion VoIP Rack ⇨ Main Unit DVI input 2 and 3 (preview)
1 × patch CAT6 SFTP	3	MNA on Helion VoIP Rack ⇨ Main Unit DVI output 9 (GUI)
1 × patch CAT6 SFTP	3	Main-NMS Network connection

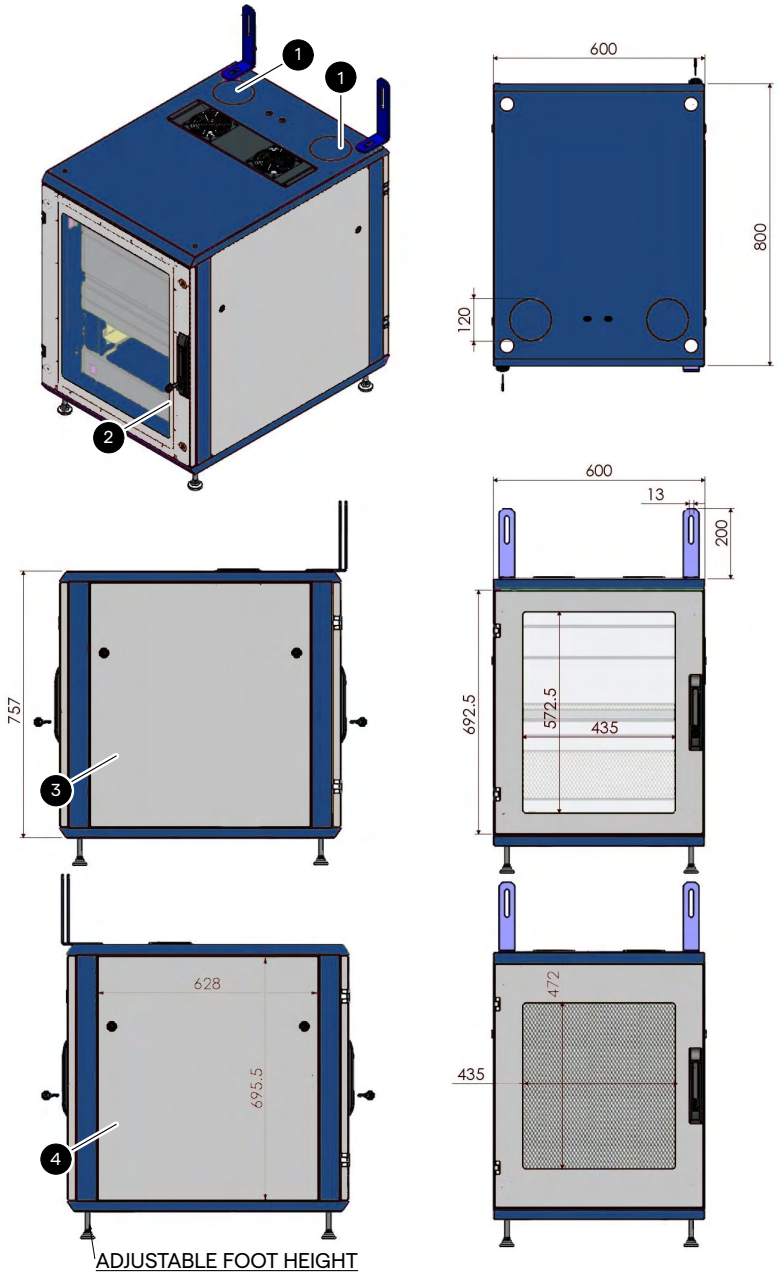
5 Components installation

Follow the indications in chapter 4 “Cabling” to connect the modules.

5.1 Hardware installation

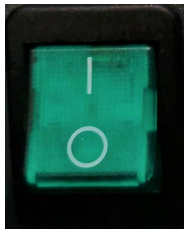
5.1.1 Rack Unit

The rack provided by the manufacturer has been designed to be installed outside of the OR only. The dimensions of the rack are length 800 mm, width 600 mm and height 757 mm with a weight of 64 kg.



[1] Holes for cable routing, see chapter 4 “Cabling”
[2] Handle door
[3] Removable left side panel
[4] Removable right side panel

In case of Helion with Video-over-IP configuration, the racks will be installed on top of each other using the Delrin Rack Spacer Kit (AC500919), leaving extra space at the top for air to flow.

Rack elements	**Image**
Junction box, with three terminal blocks inside (L,N,PE)	
Principal switch, when the switch is on “I” (green light on) operating voltage is turned on.	
Medical transformer isolator	
Metal panel with two fans	

Technical Specs

External dimensions	800 x 600 x 757 mm
Environmental conditions	Operating temperature: +10 °C/+40 °C Operating relative humidity range: 30% to 75% Operating atmospheric pressure range: 70.0 kPa to 106.0 kPa Storage temperature: -40 °C/+70 °C Storage relative humidity range: 10% to 100%, including condensation Storage atmospheric pressure range: 50.0 kPa to 106.0 kPa

Max. operation altitude	Max. 3000 m according to the single components.
Enclosure	IP20
Unit weight	64 kg
Ventilation	Module with 2 fans already installed in the Rack.

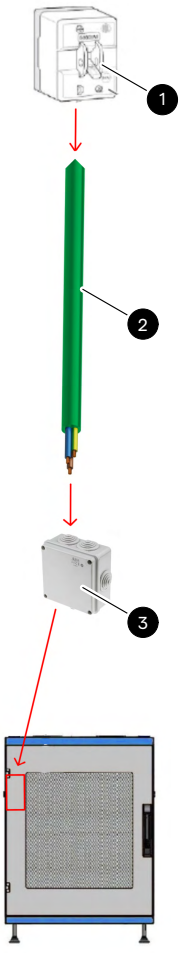
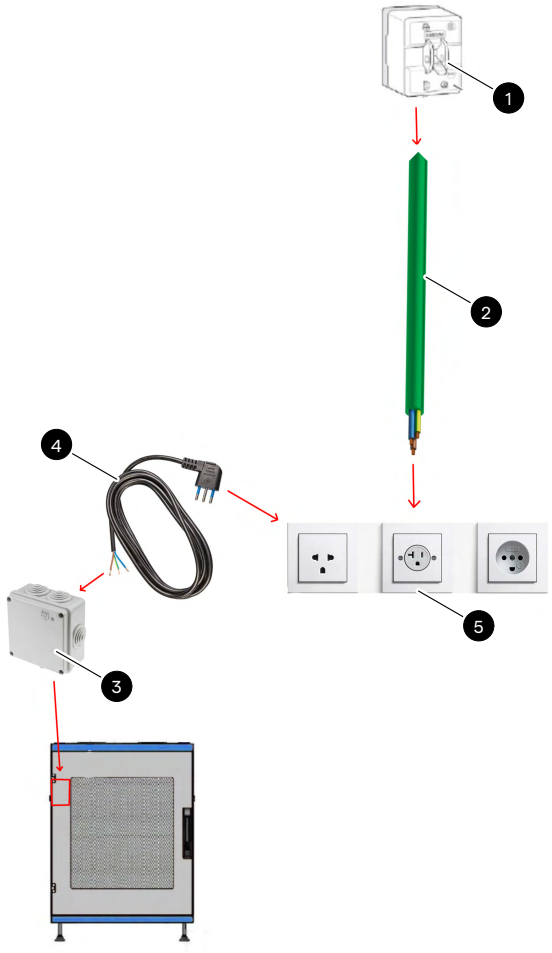
5.1.2 System power supply

The image below provides information to the final customer on how to prepare the connection between the customer's power grid and the Helion.

NOTICE

DEDICATED MAIN SAFETY SWITCH!

It must be placed close to the rack.

Case 1: direct cable connection	Case 2: external cable connection
	

[1] Main safety switch (not part of Helion system)
[2] Electrical cable (not part of Helion system)
[3] Helion Junction box
[4] Power cord
[5] Wall sockets (not part of Helion system)

To identify the correct power cord, refer to the product specifications in the instructions for use and to relevant national regulations. For US only: If the installation follows Case 1, component [2] must be a flexible cord, minimum type SJ, 3G minimum AWG 16, 1000 V.

Technical Specs

Rack electrical components	Medical grade Isolation Transformer - Nominal power output: 1000 VA Maximum power consumption at fully operational mode: 800 VA 8 x available VDE outputs: – 1 reserved for fans module – 7 available for System's units and accessories, expandable to maximum 14 with the specific adapters provided together with the Rack. Two fans: 2.4 m^3 per minute (m^3/min) each

5.1.3 Third Party Rack Unit

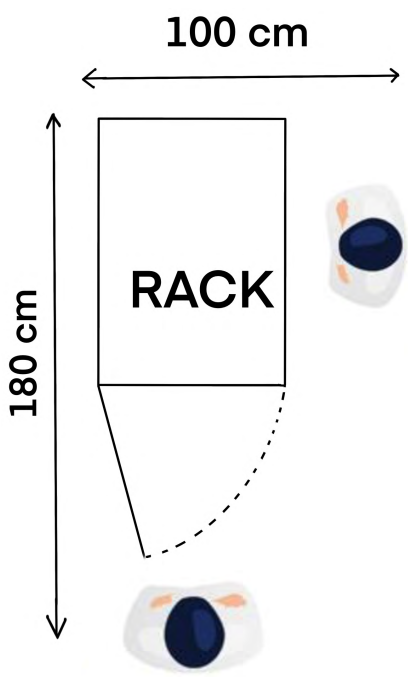
Helion medical device(s) and accessory(ies) can be installed into a rack purchased by a third party under the condition that solely the hospital/distributor is responsible for installation and that the technical specifications for the rack are at least as following and indicated in the official User Manual.

Tech. Requirements

Dimensions	Minimum space required for a full setup is 800 x 600 x 750 mm, ensuring a free space in front of the fans for proper ventilation.
Power supply	Medical grade isolation transformer, nominal power ≥ 1000 VA. System's power consumption on full operational mode must not exceed the 80% of the nominal power of the isolation transformer. Dedicated line from the OR electrical switchboard. Maximum configuration of Helion System occupies 14 connections to the isolation transformer.
Number of Helion Systems per Rack	Just 1 Only devices referring to a single operating theatre can be installed in the same rack, to guarantee electrical isolation between different ORs.
Ground connection	All the conductive parts must be connected to a PE voltage.
Power connection	All the electrical power used by internal components must be provided by the isolation transformer. All internal components that require power must be connected directly to the isolation transformer.
Ventilation	Ensure an air exchange of at least 4.8 m^3/min.
Environmental conditions	Ensure the environmental conditions required by the individual devices installed inside the rack are met. For Helion components, refer to IFU.

For other installation scenarios, such as the installation of Helion in a Rack provided by a third party (customer or distributor), Videomed S.r.l. bears no responsibility for the installation, and consequently, the certification produced will cover only the Helion modules, but not the entire system.

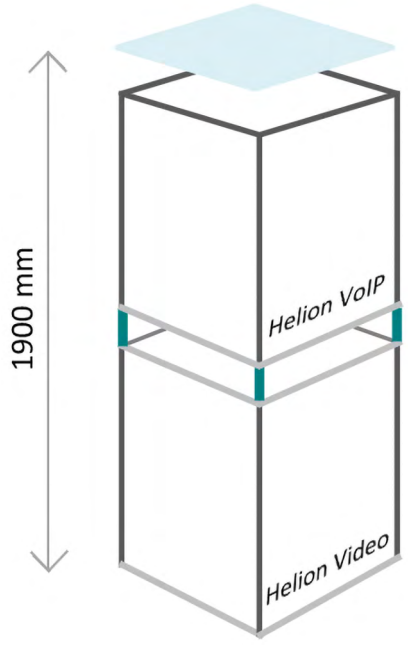
5.1.4 Rack position



The rack must be installed on a flat surface with enough room to open the door. Access to the back of the rack must be guaranteed during installation. If this cannot be ensured, provide for an area that is large enough to allow for lateral access.

Unsuitable installation:

The rack must not be installed in a niche.



Minimum height required:

900 mm and 1900 mm for Video-over-IP configuration

5.1.5 Air conditioning

The rack must be installed in a well-ventilated room.

5.1.6 Aligning and leveling the rack

The adjustable feet can be used to compensate for an uneven floor in order to stabilize the rack in a correct and level position. Use a spirit level to check whether the leveling is correct.

5.2 Installing additional rack modules

Proceed as follows to install additional modules in the rack:

1. Determine the fixing positions based on the front opening of the module.
2. Insert 4 nuts in the assembly positions in the rack guide.
3. Slide the module from the front into the rack and keep it pressed down.
4. Fix the module to the rack guides by screwing 4 screws at the front.

5.3 Installing Helion modules without any containment system (standard configuration only)

Here are some examples including, but not limited to:

- pendant/boom shelf installation inside the OR (It must be ensured that Helion units can be placed at a distance of 1.5 m or more from the surgical area during surgery.)
- cabinet inside or outside the OR
- technical shelf inside the OR or in the technical room
- desk installation inside the OR

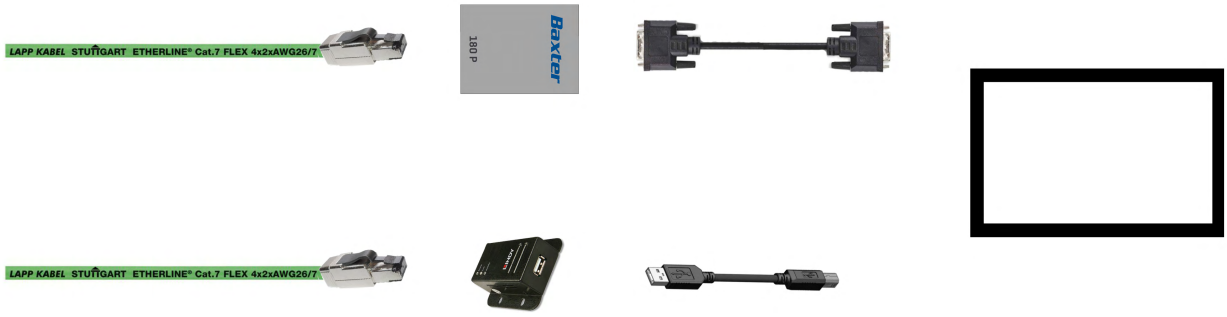
Regardless of the type of installation selected, the Environmental conditions defined by IEC 60601 and reported in the official User Manual, and listed above, must always be guaranteed (the verification of these conditions is not the responsibility of Videomed S.r.l. but of the personnel responsible for the installation).

For other installation scenarios, Videomed S.r.l. bears no responsibility for the installation, and consequently, the certification produced will cover only the Helion modules, but not the entire system.

5.4 Assembling the VESA support system

5.4.1 Connecting the Control touchscreen

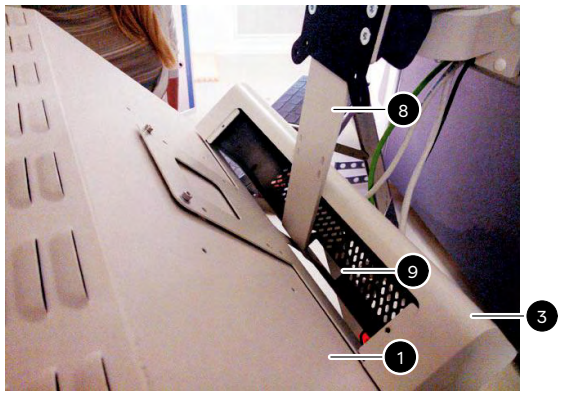
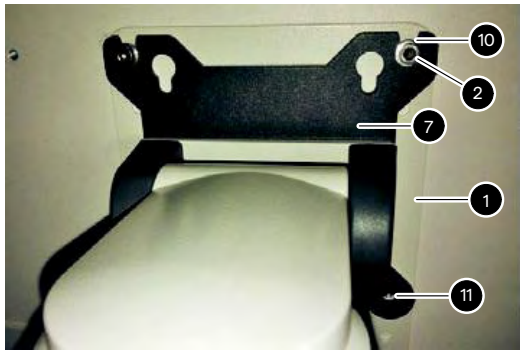
Follow the diagram to connect the Control touchscreen:

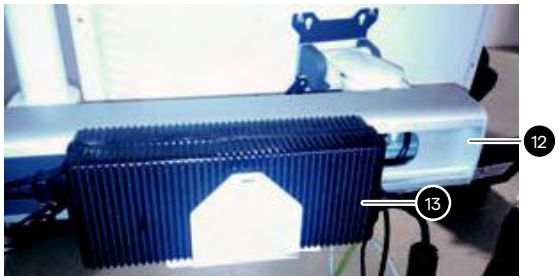
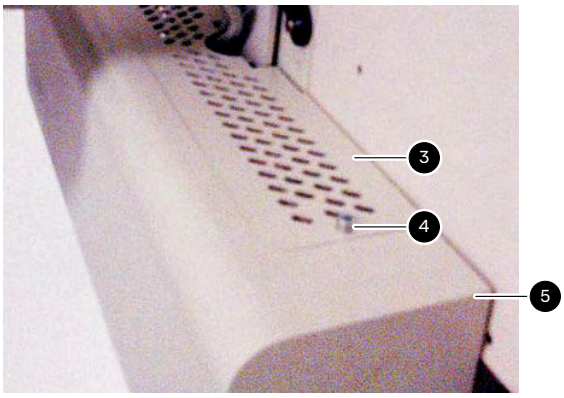


1. Connect the T1 cable to the 180P adapter.
2. Connect the DVI cable to the 180P and to the DVI input on the touchscreen monitor.
3. Connect the T2 cable to the USB adapter.
4. Connect the USB cable to the adapter and to the USB port on the monitor.

5.4.2 Mounting the touchscreen

Proceed as follows to assemble the touchscreen:

Step	Image
1. Slide touchscreen [1] by keeping opening [9] in the lower part of cover [3] on handle [8] and push upwards.	
2. Place 2 fixing screws [2] in projecting parts [10] and [11] of VESA adapter plate [7] and tighten them.	
3. Turn the remaining 2 screws through the two lower 4 openings in VESA adapter plate [7] and touchscreen [1] and tighten them.	

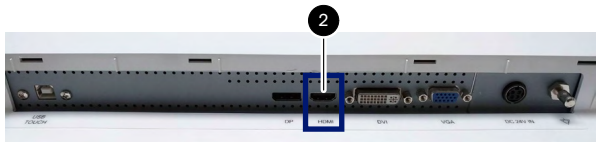
Step	Image
4. Insert touchscreen monitor power supply unit [13] into optional cover [12].	
5. Put the lid of cover [5] into position, pass the cables through the relevant section provided and fix cover [3] with 2 screws [4].	

or:

Step	Image
6. Place the power supply unit in the mounting equipment on the monitor support and fix it with cable ties.	
7. Cut a section for the cables in the monitor arm cover and replace the cover.	
8. Pass the cables through the section that has just been cut.	

in both cases:

Step	Image
9. Insert the plug of the power supply unit into special connection [1] on the touchscreen.	

Step	Image
10. Connect HDMI input [2] on the 24" touchscreen monitor (or DVI on the 27" touchscreen monitor) to the relevant DVI connection of the receiver (180 P), which receives the signal from the Helion through the CAT 7 cable. The transmission set consists of the following elements: – 180 P receiver – DVI/HDMI or DVI/DVI cable – pair of USB extenders or active USB extension cable **NOTICE** **The DVI cable to the receiver and the Helion cable to the touchscreen cable must be bent in the same way (TIA-568B).**	
11. Using the pair of USB extenders or the active USB extension cable, connect the USB control cable to the relevant connection on touchscreen [3].	
12. Position the lid in the cover, pass the cables through the relevant section provided and fix the cover with 2 screws.	
13. Turn on the touchscreen and perform an operating test.	

5.4.2.1 Desk Installation

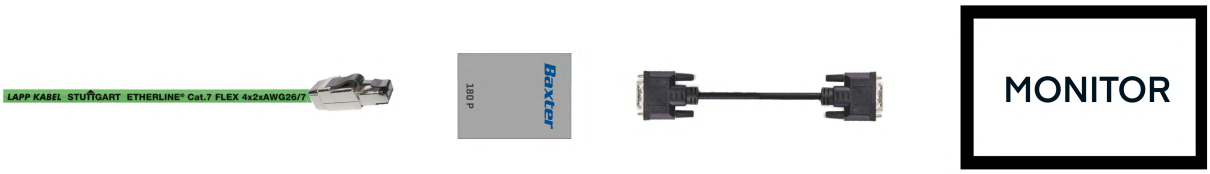
In case of desk installation, follow the mounting instructions provided with the stand.

5.5 Connecting the monitors

Refer to the installation manual of the support arms for instructions on how to connect the cables.

5.5.1 Connecting the FHD monitor

Follow the diagram to connect the FHD monitor:



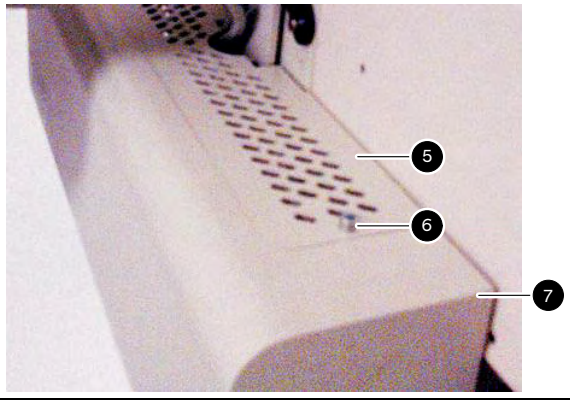
1. Connect the CAT 7 cable to the 180P adapter.
2. Connect the DVI cable to the 180P and to the DVI input on the monitor.

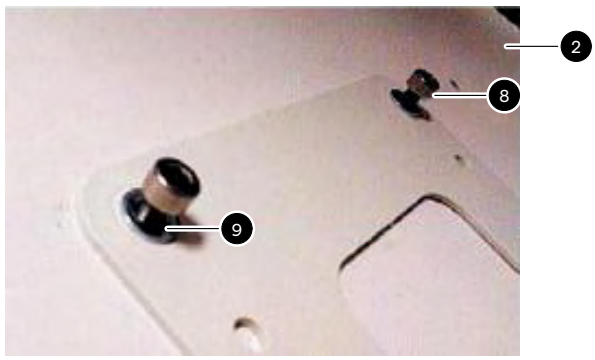
5.5.2 Preliminary steps to assemble the monitor

Remove the monitor cover before installing the monitor itself.
Proceed as follows to assemble the monitor:

Step	Image
1. Position monitor [2] face-down on a soft surface.	
2. Undo the 2 screws [3] from the cover of monitor [4] and remove the cover itself.	

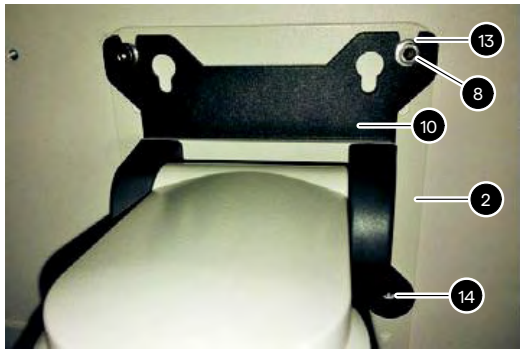
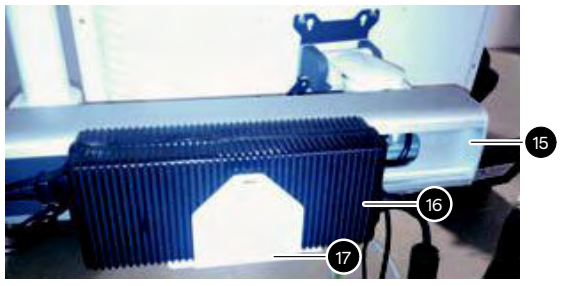
Proceed as follows if using an optional cover:

Step	Image
1. Unscrew the 2 fixing screws [6] from the cover [5] of the support of optional cover [7] and remove cover [5].	
2. Position optional cover [4] on monitor [2].	
3. Identify 2 screws [8] of an adequate length among the monitor screws. The length is either determined beforehand or must be identified at the time of installation.	

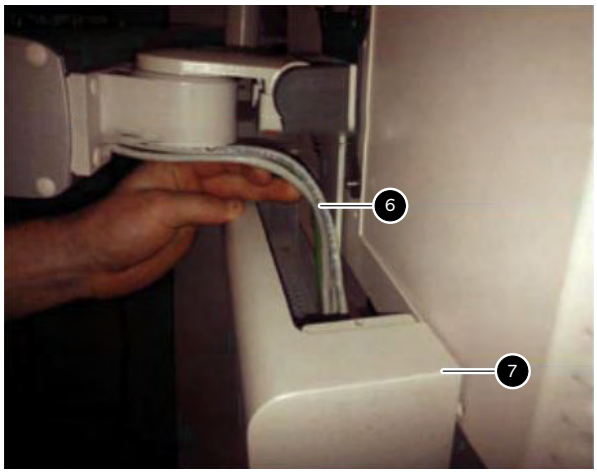
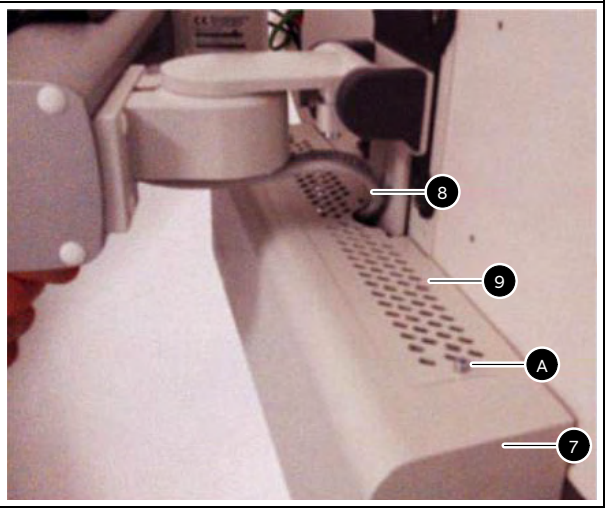
Step	Image
4. Fix the 2 screws of monitor [8] through the two openings [9] on the back of monitor [2], in the upper part. Insert the screws of monitor [8] only partially, so that they can still slide on the plate of the VESA adapter.	

5.5.3 Connecting the monitors

Proceed as follows to assemble the monitor:

Step	Image
1. Slide monitor [2] so that opening [12] is at the base of cover [7] and push the monitor upwards.	
2. Position and then fix the 2 fixing screws [8] in the relevant housings [13] on the plate of VESA adapter [10]. 3. Insert and then tighten 2 more fixing screws [8] in the relevant lower openings [14] of VESA adapter [10] on monitor [2].	
4. Insert power supply unit [16] in the relevant housing and install device [17] on monitor support [15] and fix it with cable ties.	

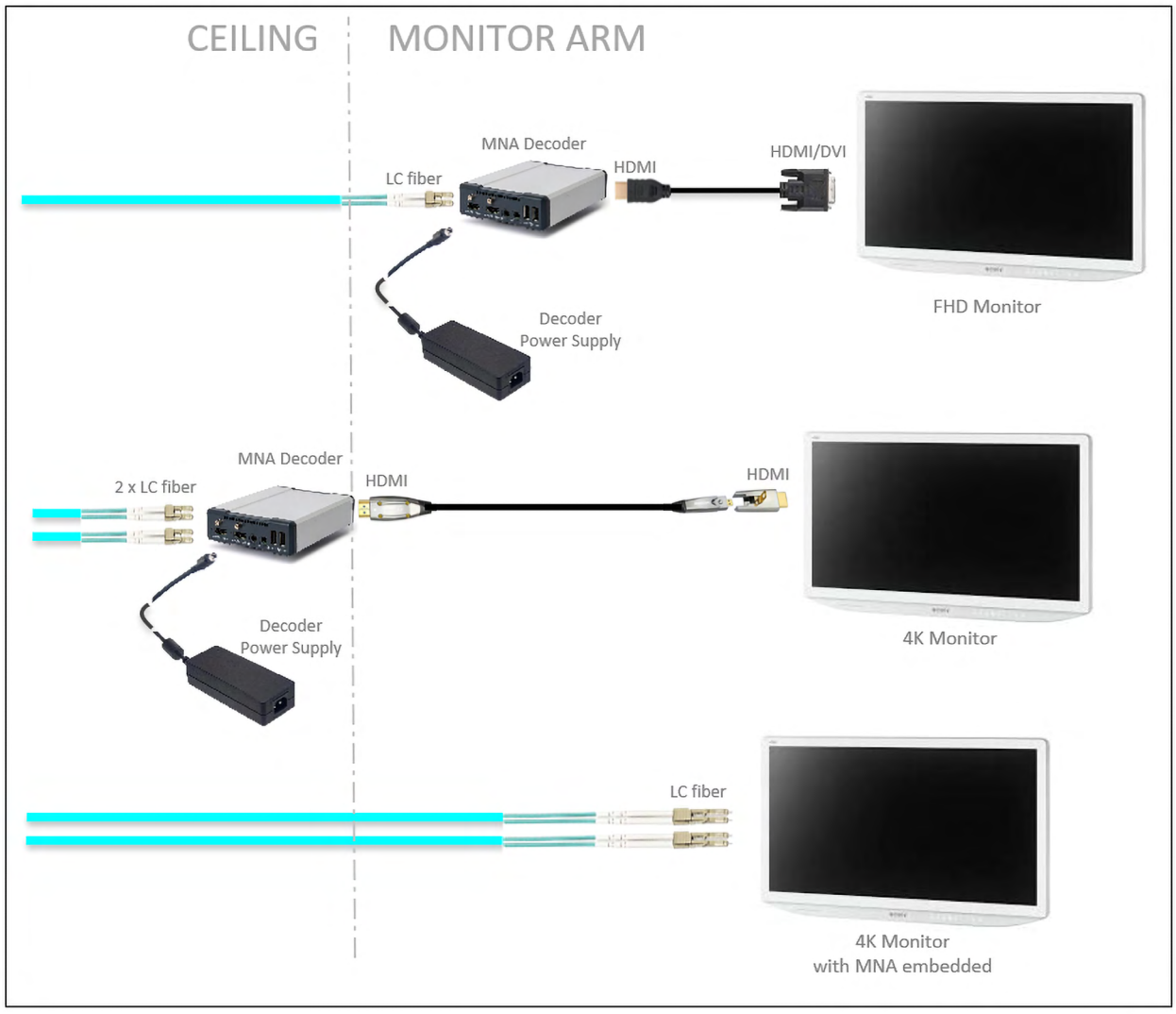
or:

Step		Image
1.	Install the power supply unit in the false ceiling.	
2.	Move up the power cables by using the monitor support arm and connect the device's plug.	
3.	Create a cable passage in the monitor arm cover.	
4.	Connect the DVI output of 180 P device [1] to the DVI input of the touchscreen inside cover [7].	
5.	Insert connection cables [6] from the 180 P device to the respective connections on the monitor.	
6.	Insert the 180 P device into cover [7] by tilting the monitor forward. Roll up the cable at the access.	
7.	Connect the DVI cable and power cable to the monitor. Arrange the connection cables in parallel so that they protrude from cover [7], forming an arc [8]. Fix the connection cables with cable ties.	
8.	Fix cover [9] to cover [7] with 2 screws [A].	

Note: It is also possible to use a medical FHD Touchscreen Monitor that is not included in the catalogue. Please contact technical support for compatibility information.

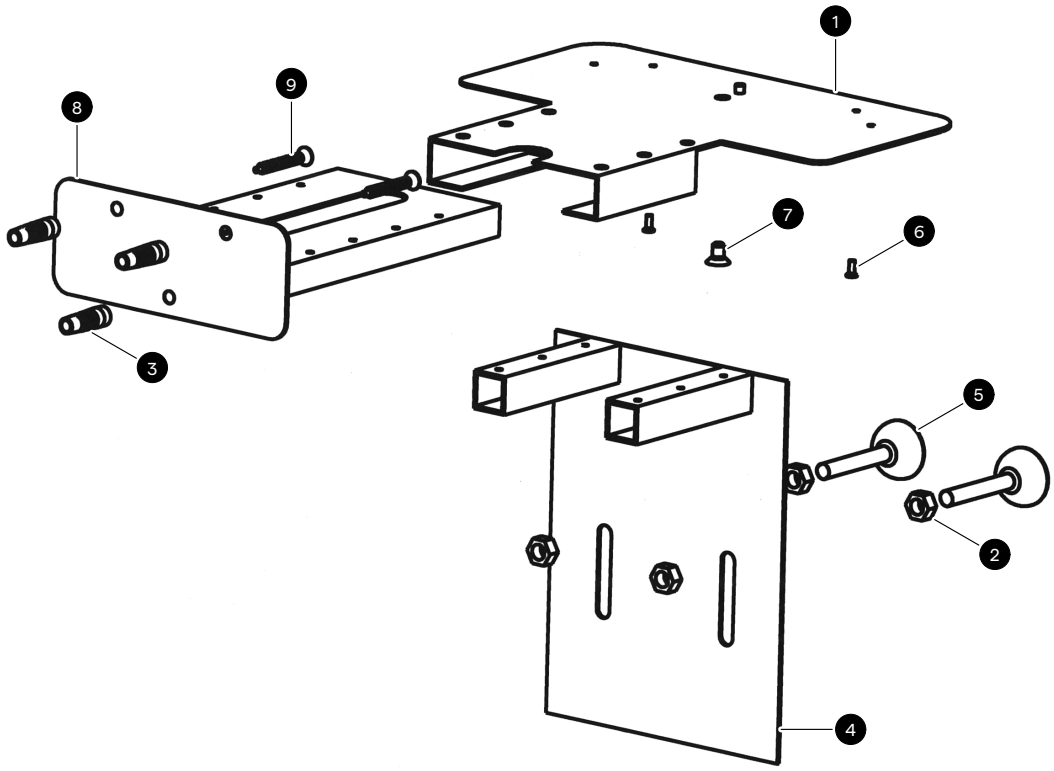
5.5.3.1 Connecting the monitors with Video-over-IP configuration

Follow the diagram to connect the monitors with Video-over-IP configuration:

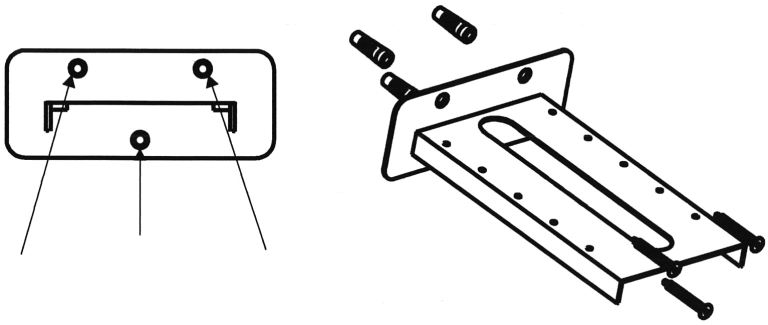
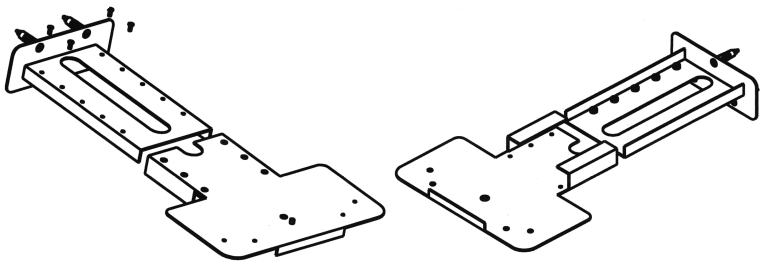
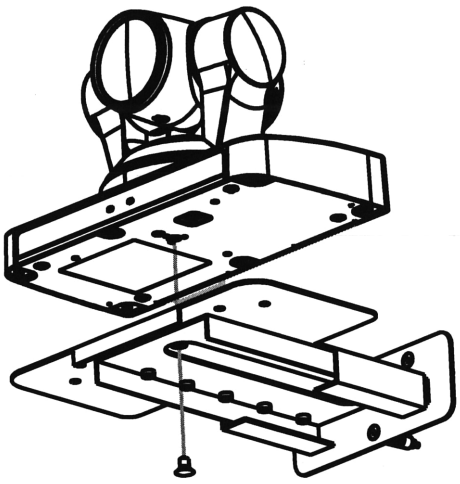
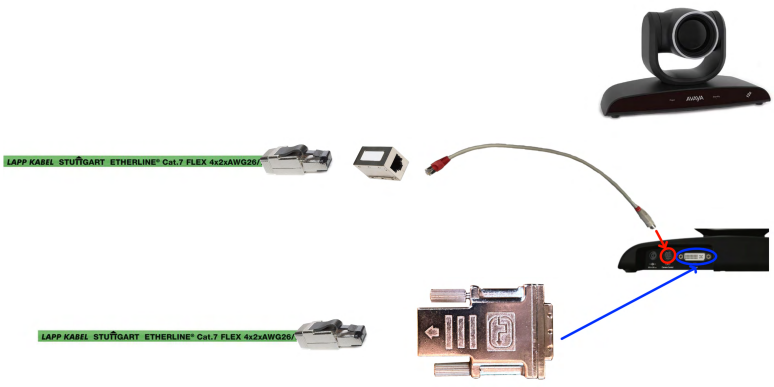


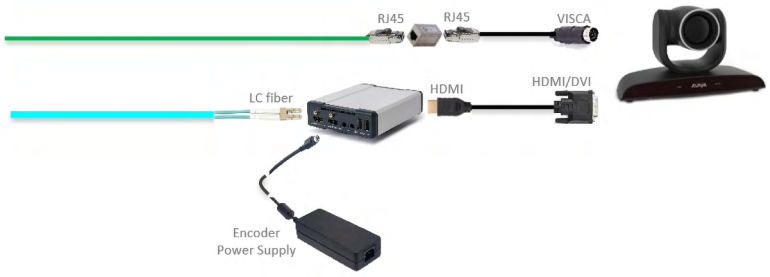
5.6 Assembling the Room Cam

Proceed as follows to assemble the Avaya Room Cam:



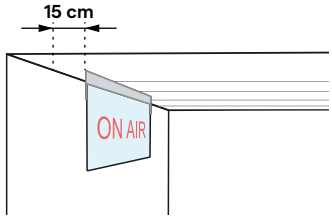
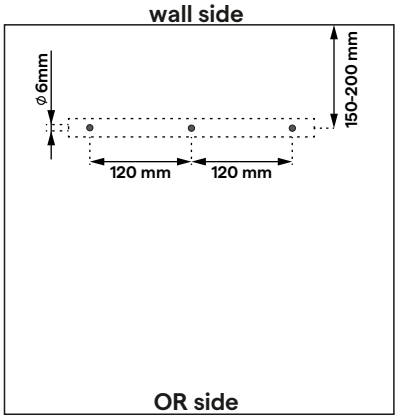
Item	Model name	Quantity	Description	Material
[1]	BRACKET_EVIH7	1	XT EVI HD Camera bracket	STEEL
[2]	DADO_M8	4	nut m8	STEEL
[3]	DOWEL_6X30	3	tassello nylon 6x30	
[4]	MON ITO R_B RACKET	1	XT Camera Monitor bracket	STEEL
[5]	SCREW_BUMPER	2	Screw MB custom with bumper	
[6]	VITE_M3X8_ TSP TC_NERA	6	screw M 3x8 Fiat Head Black	STEEL
[7]	VITE_UNC_ 1_ 4X10	1	SCREW UNC 1/4” -20 UNC - 2A x 10	BRASS
[8]	WALL_BRACKET	1	XT Camera Wall bracket	STEEL
[9]	WN1413_K50_40	3	cross rec. flat head tapping screw	STEEL

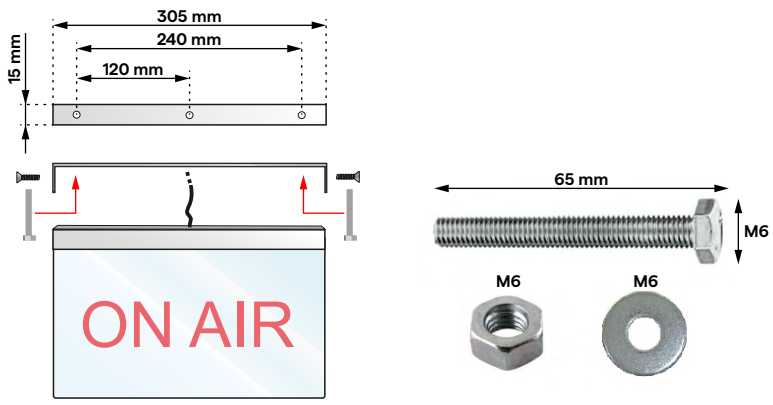
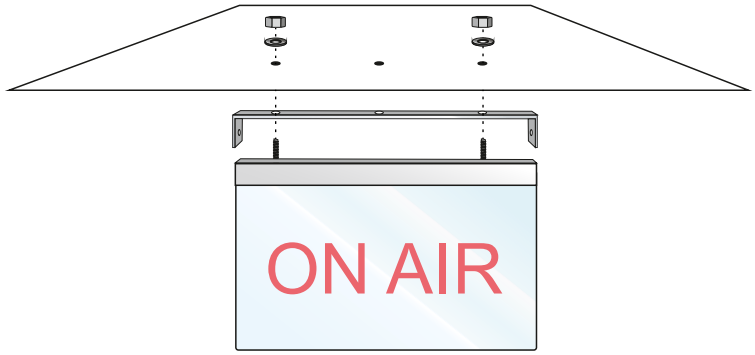
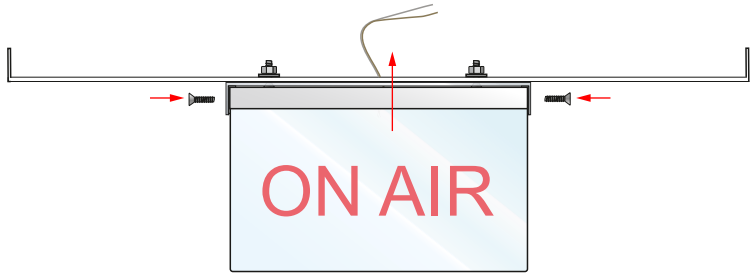
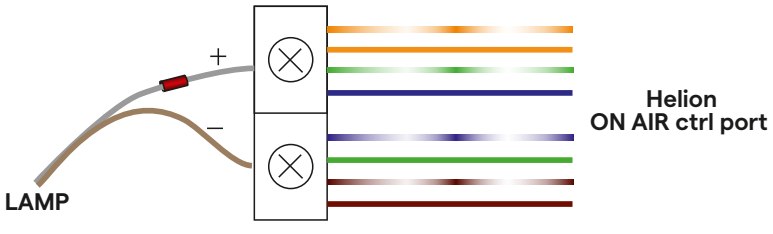
Step	Image
1. Lean the wall bracket [8] on the wall in the preferred position, and make 3 marks with a pencil inside the indicated holes. 2. Remove the wall bracket, and using the marks drawn earlier, make 3 holes with a diameter of 6 mm and a minimum depth of 40 mm, and insert dowels [3]. 3. Place the bracket on the wall and screw in all three 3x40 screws [9]. Tighten until the bracket is tightly fixed on the wall.	
4. Insert T plate [1] in the bracket fixed on the wall, then slide it into the desired position and fix the two brackets with 4 M3x8 screws [6]. The distance from the wall to the front part of the T plate varies from 223 mm to 363 mm.	
5. Place the camera on the T plate, centering it with the pivot, then fix with 1/4”x10 screw [7].	
6. Final video connection chain is:	

Step	Image
7. Room camera connection with Video-over-IP configuration:	

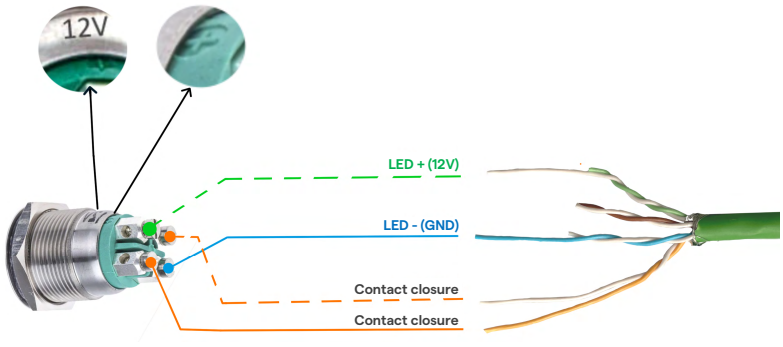
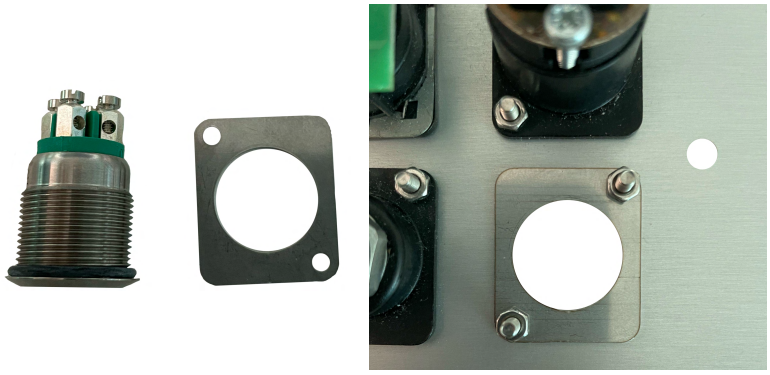
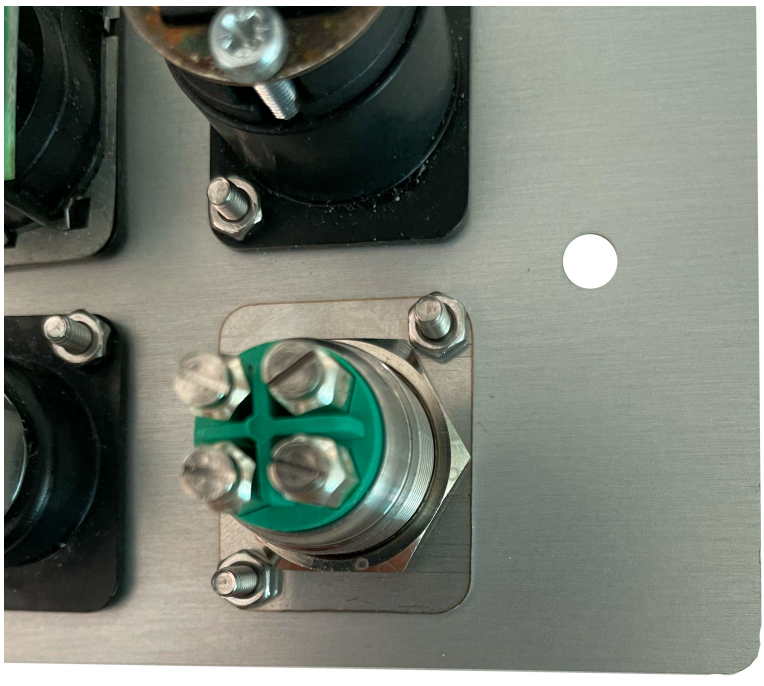
5.7 Assembling the “ON AIR” lamp

Proceed as follows to assemble the lamp:

Step	Image
1. Remove the ceiling panel where the ON AIR lamp will be installed.	
2. Make 3 holes in a straight line approx 15 cm from the wall edge.	

Step	Image
3. Remove the upper interface plate by unscrewing the 2 side screws and slide in the hexagonal screws provided on the ON AIR lamp installation kit.	
	
4. Re-mount the plastic lighted panel by passing the cable through the hole and fixing the screws over the ceiling with washers and nuts.	
5. Connect power to the cable connected to the Helion Main Unit on the ON AIR port following the diagram on the side.	

5.8 On / Off button wiring

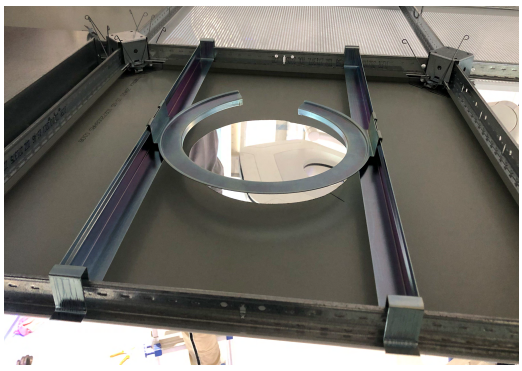
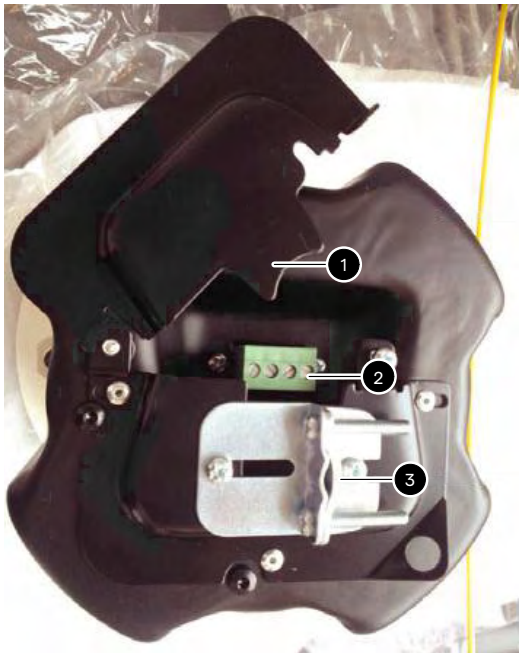
Step	Image
1. Use the CAT 7 cable to wire the on/off button. This button is needed to turn the system on and off from the operating room.	
2. Fix the Neutrik adapter to the plate.	
3. Fix the button to the adapter from the rear.	

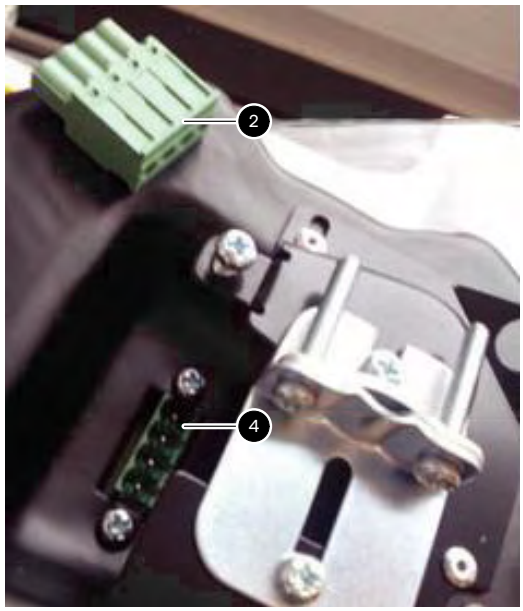
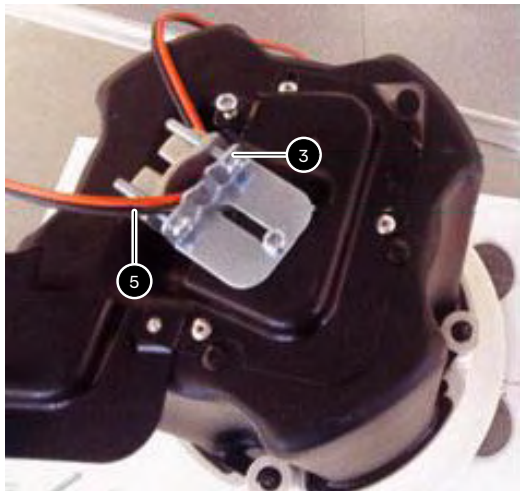
5.9 Installing the ceiling speakers

Due to the weight of the speakers, the false ceiling may need to be reinforced with the supplied frame in the area where the speaker will be installed.

5.9.1 Installing the speakers

Proceed as follows to assemble the speaker:

Step	Image
1. Use the drilling template supplied to mark the size of the speaker hole on the ceiling. The hole in the false ceiling must comply with the dimensions of sealing ring of reinforcement frame.	
2. Cut the ceiling tile based on the dimensions of the speaker and clean the edges.	
3. Ensure the cables come out from the false ceiling tile and place back the previously removed tile.	
4. Bend cover [1] of the device to the left, fixing the speaker cable to the ceiling.	
5. Pull the plug of connection cable [2] upwards.	

Step	Image
6. Slightly loosen cable clamp [3] of the ceiling speakers, push audio cable [5] through the cable clamp and ensure it comes out.	
7. Use the screws to connect audio cable [5] to connector [2] and reinsert the connector on counter-support [4].	
8. Turn cover [1] of the fastening device on the right side again and close it.	
9. Screw cable gland [3] and cover audio cable [5] with adhesive tape, so that the cable is fixed by the cable clamp. Audio cable [5] must have some clearance in relation to the cable clamp of cable [3] and may not be stretched.	
10. Insert speaker into the hole in the false ceiling or in the sealing ring. Do not damage audio cables [5] during this process.	
11. Slightly turn the 2 fixing screws from the ceiling speakers and push upwards, so that the tilted elements bend.	

Step	Image
12. Tighten the 2 fixing screws until the speakers press against the ceiling or against the reinforcement frame.	
13. Make sure the selector is positioned on 8 Ω.	
14. Put the cover into position.	

5.10 Installing the microphone receiver

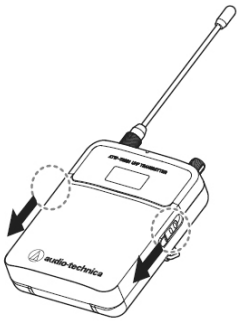
Receiver [2] is installed in the rack with an optional installation set.
Proceed as follows to install the receiver:

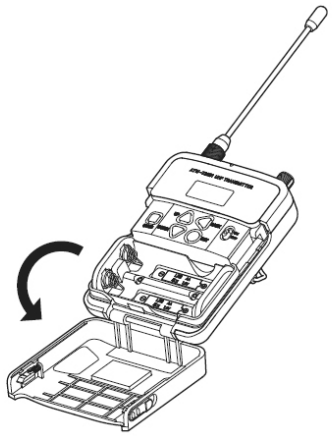
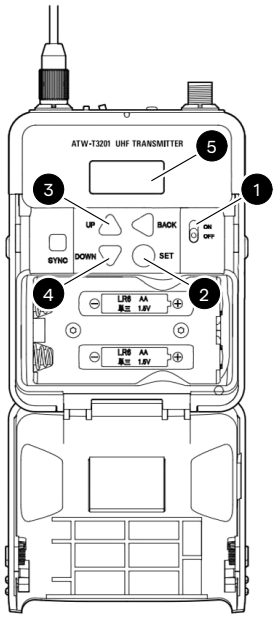
Step	Image
1. Screw short bracket [1] on the left side and long bracket [3] on the right side of the receiver [2] with 3 self-threading screws. The holes in the receiver are already pre-drilled.	
2. Fix the receiver with brackets [1], with the display facing outwards, on front uprights of the rack with 4 M6 screws [4].	

5.10.1 Adjusting the transmission frequency

When different Helion systems are used in a hospital, the set frequencies must be standardized in each operating room. However, the operating rooms have different frequencies to prevent interference and faulty transmissions.

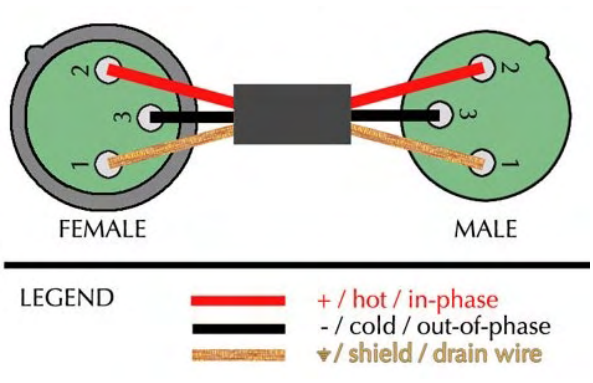
Proceed as follows to adjust the frequencies:

Step	Image
1. Slide down the door locking flaps.	

Step	Image
2. With the flaps lowered, open the battery compartment door.	
3. Move the Power switch to ON [1]. 4. Press the Set key [2] and then: – select the first frequency by using the UP [3] and DOWN [4] buttons – select the second frequency with the UP [3] and DOWN [4] buttons 5. Press and hold down the Set key [2]: Display [5] will say “stored”; the frequencies have been set. 6. The same adjustments must also be made on the receiver inside the rack	

5.10.2 Connecting the directional microphone



Step	Image
1. Follow the diagram to install the directional microphone. 2. The cable which connects the female connector on the plate to the male connector inside the rack, must be welded following the pinout instructions:	

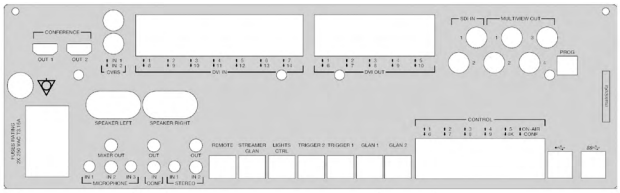
5.11 Installing the Trumpf Light Control (TLC)

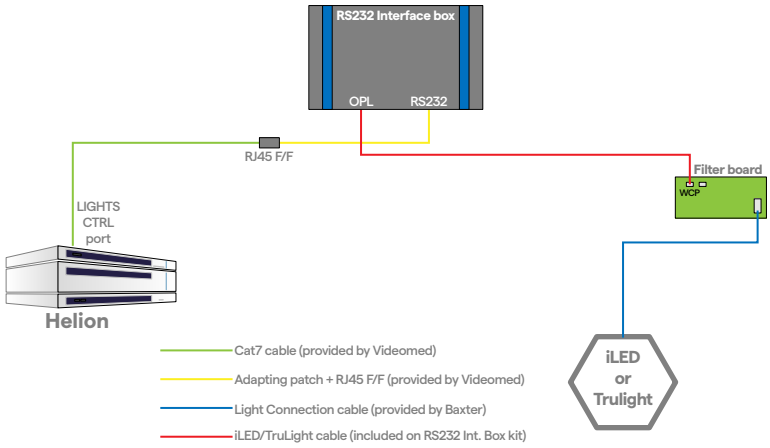
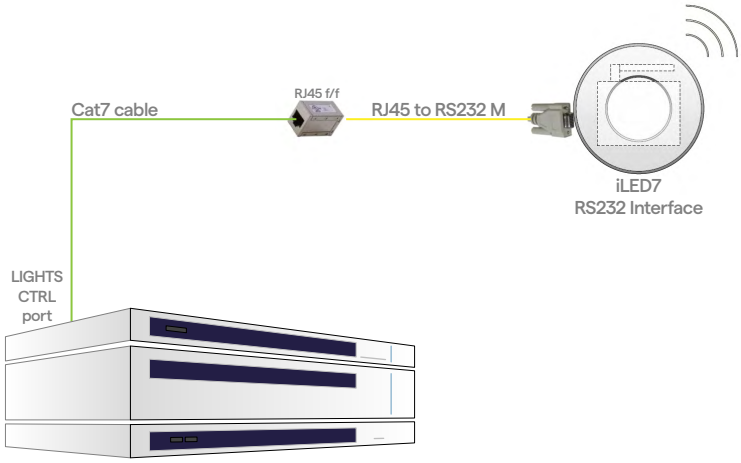
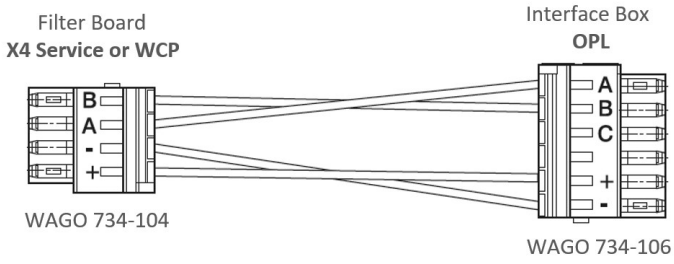
The Trumpf Light Control (TLC) is a special feature of the Helion Main Unit that allows for control over the Baxter iLED™ 3, iLED 5, iLED 7 and TruLight™ surgical lights.

The Trumpf Light Control (TLC) can only be activated with a license on the Helion Main Unit and can only work with Baxter's OPL interface converter (for iLED 3 and iLED 5) or iLED 7 RS232 interface.

5.11.1 Installing the Trumpf Light Control (TLC)

Proceed as follows to install the TLC:

Step	Image
1. Check that the OPL interface converter is connected to the Helion Main Unit through the dedicated "Lights CTRL" port.	
2. Connect the OPL interface converter to the RS232 port using the RJ45 F / F adapter and the supplied patch adapter.	

Step	Image
With iLED 3, iLED 5, Trulight	
With iLED 7	
iLED / TruLight cable diagram The WAGO connectors are included in the OPL interface converter cabling kit.	

5.12 Connections

The video sources that can be used are specified in the system's technical data sheets.

This description refers to the following connection: DVI port for 180 E PoE.

5.12.1 Analog source

Proceed as follows to perform an analog connection:

1. Connect composite video / BAS / FBAS / CVBS directly 1: 1 with a RG-59 coaxial cable to the front CVBS IN connector of the Main Unit.

5.12.2 Digital source

5.12.2.1 DVI (Digital Video Interface)

Proceed as follows to perform a digital connection:

1. Connect a 180 E PoE adapter to the “DVI OUT” output.
2. Insert a twisted pair cable (standard Helion) into the 180 E PoE adapter and connect it to the “DVI IN” connector on the Main Unit.
3. Connect another twisted pair cable from the “DVI OUT 3” connector located on the back of interface module “1” to the “DVI DV 4” connector of the routing.

5.12.2.2 HDMI (High Definition Multimedia Interface)

Proceed as follows to connect via HDMI:

1. Connect a DVI adapter to the HDMI output of the source.
2. Connect a 180 E PoE adapter to the DVI adapter.
3. Insert a twisted pair cable (standard Helion) into the 180 E PoE adapter and connect it to the “DVI” connector of the Main Unit.

5.12.2.3 SDI (Serial Digital Interface)

Proceed as follows to connect via SDI:

1. Connect the “SDI / HD-SDI / 3G-SDI” adapter to the “SDI IN” connector located on the Main Unit using an “RG-6” coaxial cable.

5.12.3 Connect the monitors to Helion

Proceed as follows to connect the monitors (DVI):

1. Connect the monitors with 1 twisted pair cable (standard Helion) and a 180 P adapter.
2. Connect the cable from the “DVI-OUT” connector of the Main Unit to the respective “DVI-IN 180P” connector.

5.13 EndoTrigger

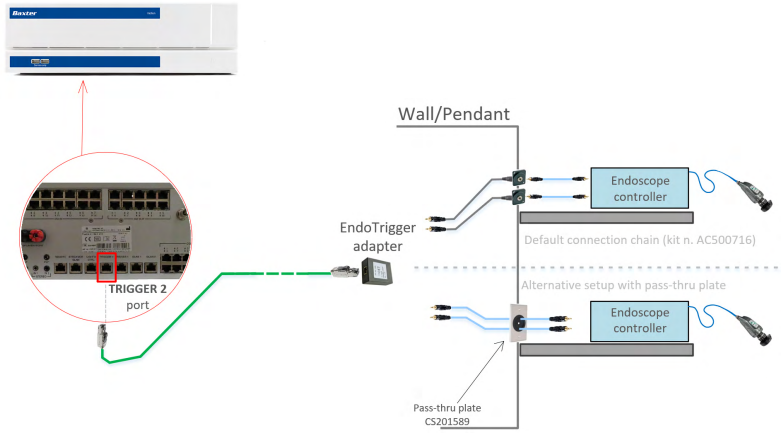
5.13.1 EndoTrigger adapter (accessory)

⚠ WARNING

This device can only be installed and used outside the Patient area.

The endotrigger adapter allows recording functionalities (snap and start/stop video recording) to be triggered using the multifunctional buttons usually positioned on the camera head.

For the correct connection to the Helion system, please refer to the following diagram:



Note: To connect the Endotrigger device to the Main Unit (green line in the above drawing) either the supplied cable or a UL 758 compliant CAT 7 cable can be used.

The commands received through the Endotrigger are equivalent to the commands given using the touchscreen, and this means that a snapshot will be taken or recording will start only if a patient has been selected/manually entered and a signal has been dropped on Recording Channel number 1.

No extra steps are required to activate it this function is always active.

It is possible to configure Helion's response to commands received from Endotrigger using config.xml file in the C:\TL4\helpers\trigger folder (open with Notepad++):

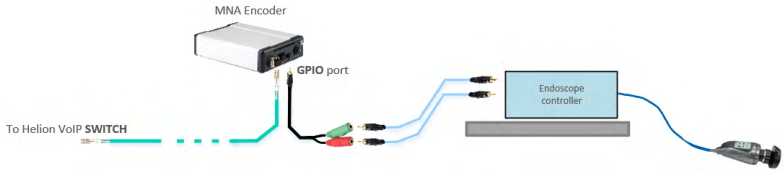
```
<?xml version='1.0' encoding='UTF-8'?>
<triggers>
  <trigger>
    <name>endotrigger</name>
    <com-port>
      <name>COM3</name>
    </com-port>
    <actions>
      <action>
        <mode>PIN</mode>
        <pin>CTS</pin>
        <id>TOGGLE_REC1</id>
        <timeout>1000</timeout>
      </action>
      <action>
        <mode>PIN</mode>
        <pin>CD</pin>
        <id>SNAPSHOT_REC1</id>
        <timeout>1000</timeout>
      </action>
    </actions>
  </trigger>
</triggers>
```

Default configuration is:

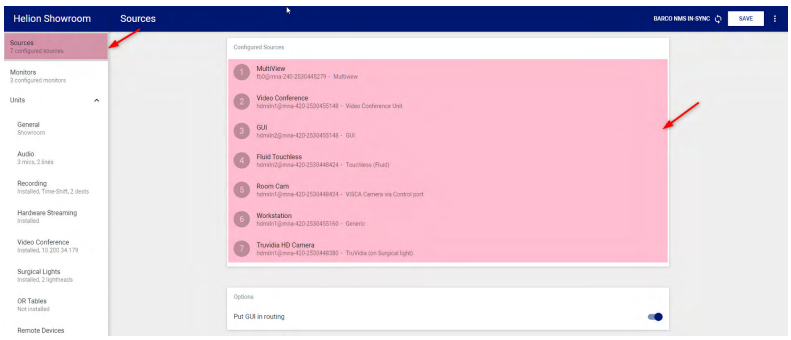
- Green jack: Start/Stop Recording
- Red jack: Snapshot

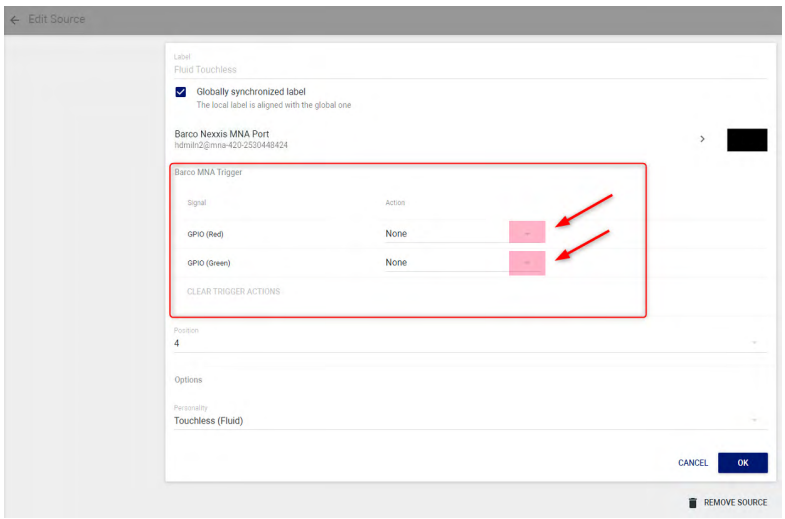
5.13.2 EndoTrigger Function (VoIP configuration only)

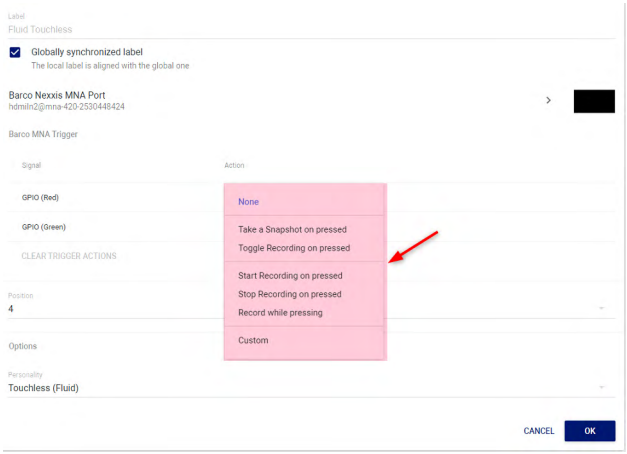
This feature allows recording functionalities (snap and start/stop video recording) to be triggered using the multifunctional buttons usually positioned on the endoscope camera controller and connecting them to the GPIO port of the MNA Encoder via a cable adapter.



MNA Encoder Triggering functions can be configured on Helion Configurator, selecting the specific MNA on the Sources List:






Label
Fluid Touchless
Globally synchronized label
The local label is aligned with the global one
Barco Nexxis MNA Port
hdmiln2@mna-420-2530448424
Barco MNA Trigger
Signal
Action
GPIO (Red)
GPIO (Green)
CLEAR TRIGGER ACTIONS
None
Take a Snapshot on pressed
Toggle Recording on pressed
Start Recording on pressed
Stop Recording on pressed
Record while pressing
Custom
Position
4
Options
Personality
Touchless (Fluid)
CANCEL
OK

6 Internal / external cabling

6.1 Connecting the speakers

The speakers can be either active or passive: the active ones are already connected, while the passive ones must be connected to the power supply.

6.1.1 Connecting the active speakers

Proceed as follows to connect the speakers:

1. Connect the speakers with a stereo cable with a 3.5 mm jack to the output of the stereo section on the audio unit.

6.1.2 Connecting the passive speakers

Proceed as follows to connect the speakers:

1. Connect the speakers to the Main module by using the dedicated ports called “speaker left” and “speaker right” via the “AUDIO OUT 9” connector; the pins are:
   - first box to pin 1/2
   - second box to pin 5/6

6.1.3 Connecting the microphone

You can connect up to three microphones. To do this:

1. Connect the microphone to one of the three ports in the microphone section of the Main module’s audio port unit.

NOTICE

Only use the XLR-jack audio cable supplied by Videomed S.r.l. to perform the connection.

6.2 Positioning the “Main” unit

The “Main” unit of the Helion Video Management System is positioned inside the Rack with, upon request, the two optional units called “Conference” and “4K” or “4K Plus”.

Refer to the image below to position them.

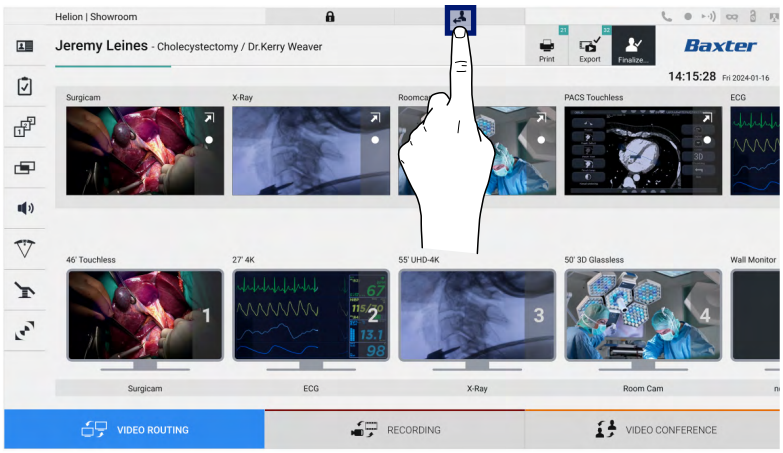
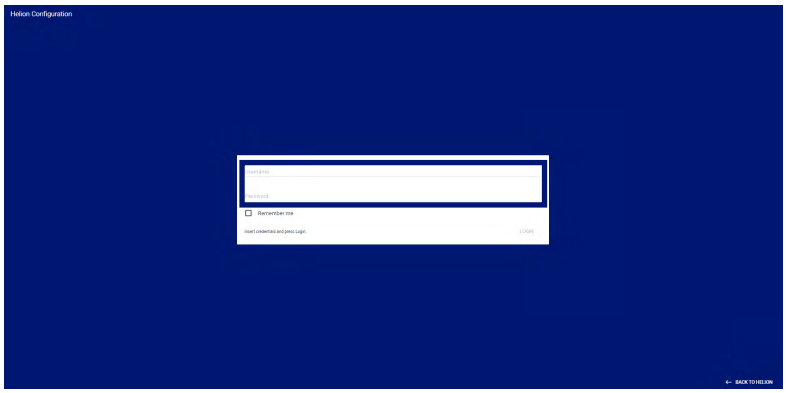
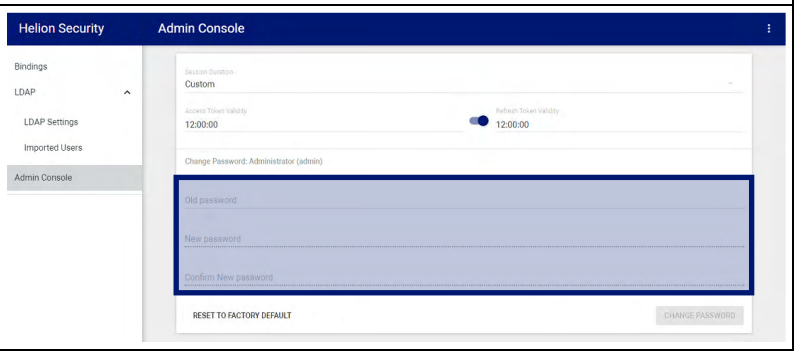


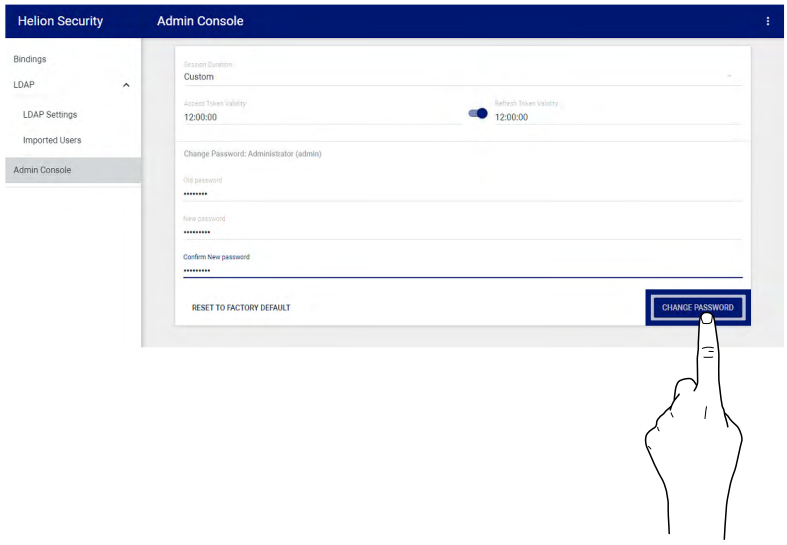
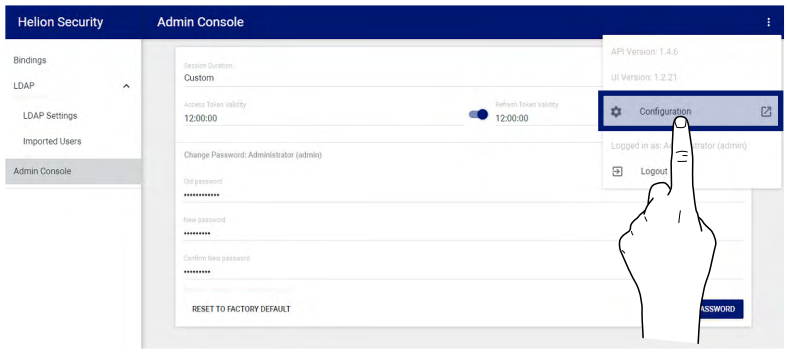
[1] 4K or 4K Plus Unit
[2] Conference Unit
[3] Main Unit

7 Configuring Helion

Access the configuration system directly from the GUI.
The Helion system will prompt you to enter a username and password. Contact Videomed S.r.l. to request your login details.

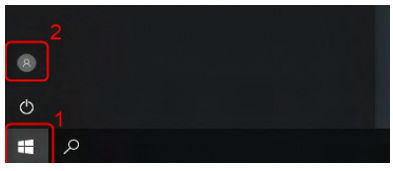
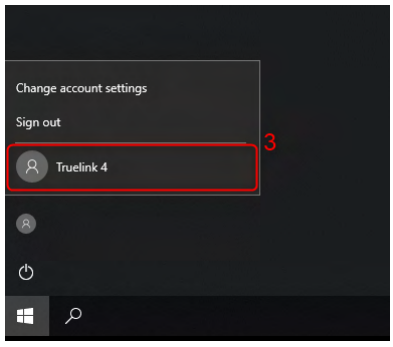
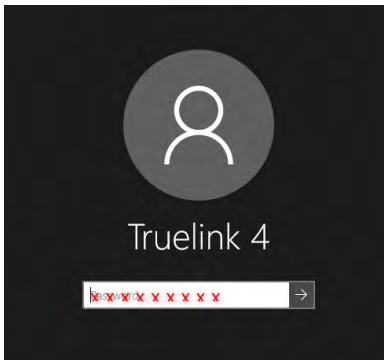
Proceed as follows to access the configuration system directly from the GUI:

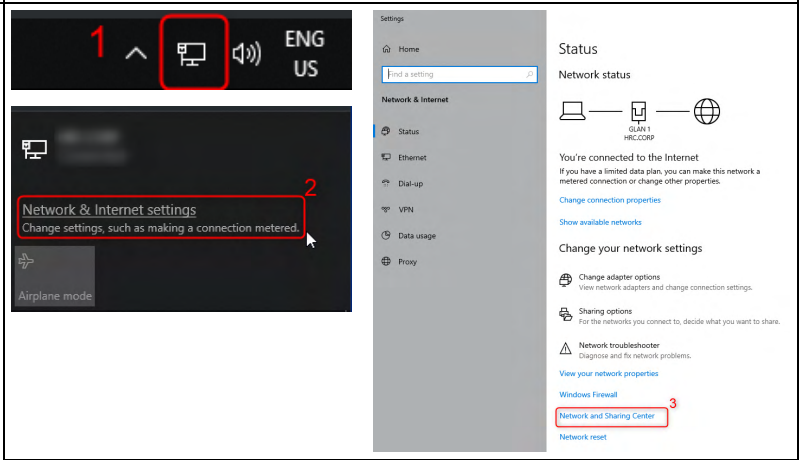
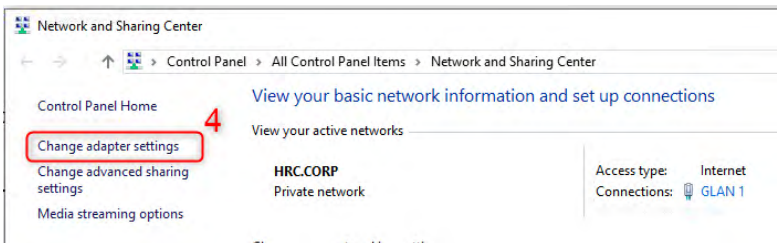
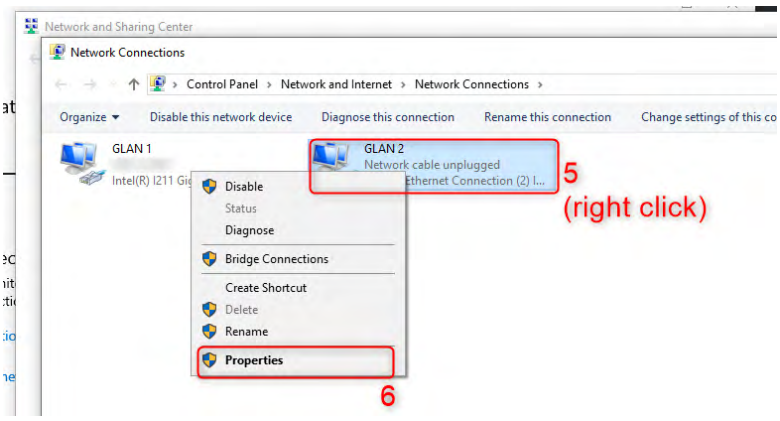
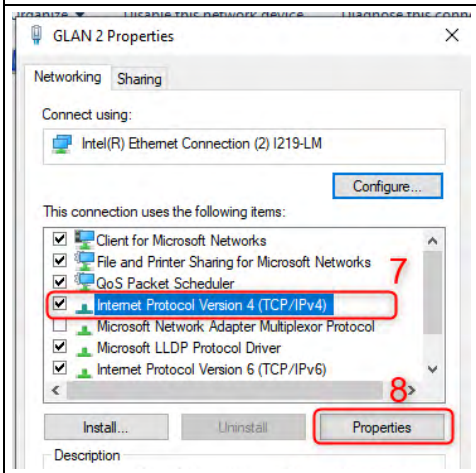
Step	Image
1. Press  (at the top of the menu bar) to go to the login screen.	
2. Press  to go to the Login screen.	
3. Enter the Username and Password to access the configurator.	
4. When accessing the configurator for the first time, you will be asked to change the password and will then be redirected to the Admin Console section where all fields must be filled in before proceeding.	

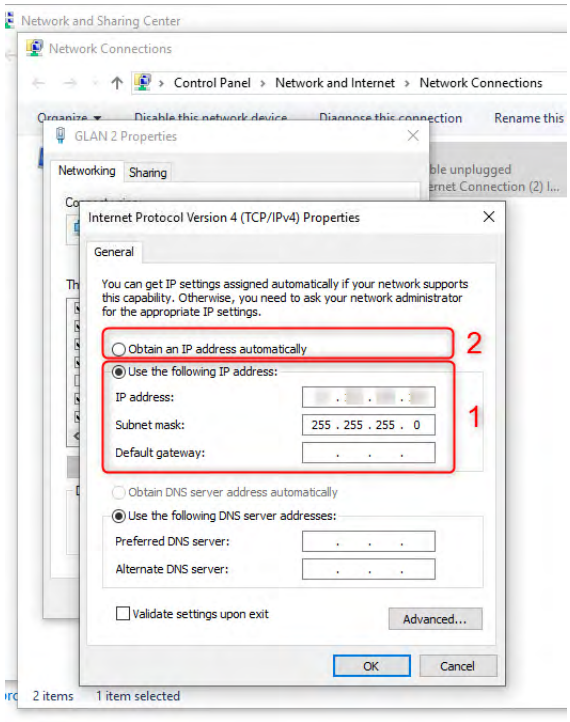
Step	Image
5. Once the fields have been filled in, confirm the password change with the CHANGE PASSWORD button.	
6. To return to the Configurator, press the 3-dot button in the top-right corner to open the menu and press Configuration.	

7.1 Helion network configuration

7.1.1 Setting the IP address on Helion Main Unit

Step	Image
1. Connect an external keyboard and close the Helion application with “Alt”+”F4”.	
2. Log in to the Truelink 4 Windows user (Windows Administrator password).	  

Step	Image
3. Open the Network & Internet settings page.	   

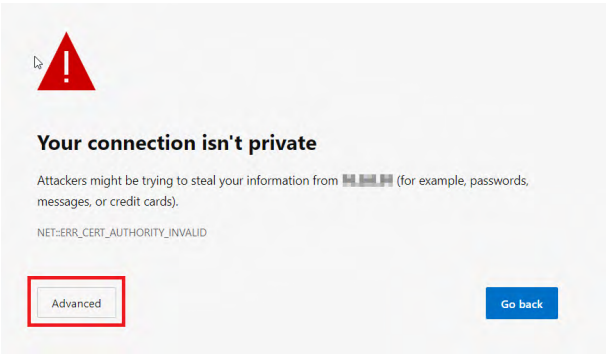
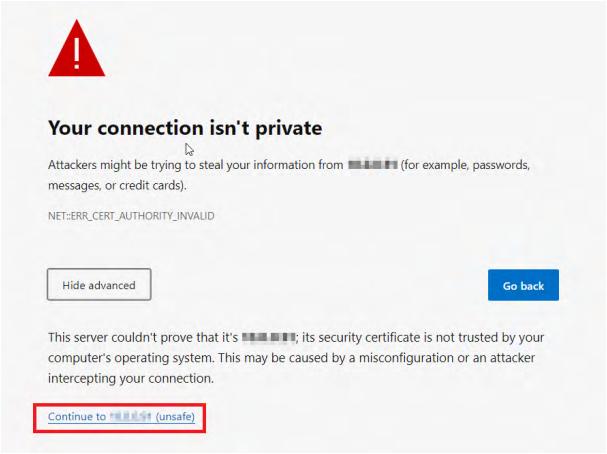
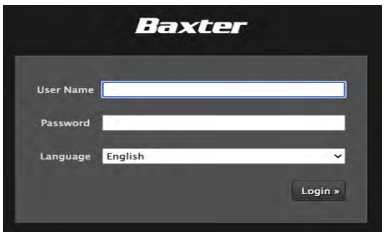
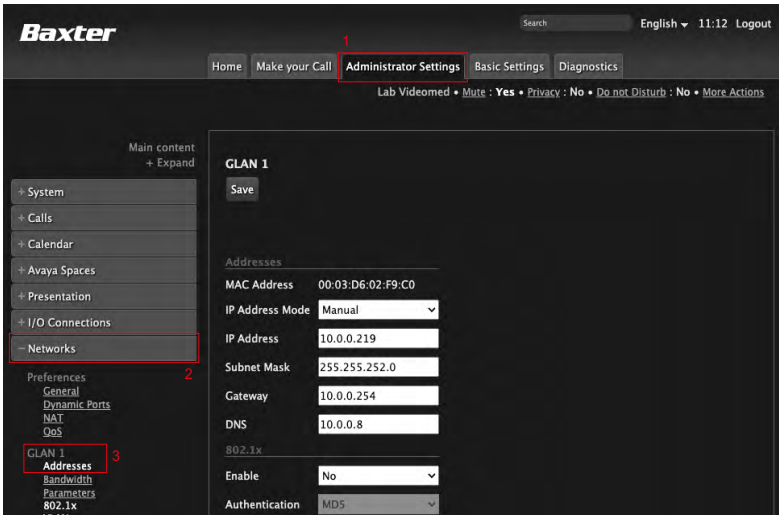
Step	Image
4. Set the parameters provided by the local IT manager (1) or select “Obtain an IP address automatically” (2) if static IPs are not provided but Helion is instead required to be connected via MAC address reservation.	
5. Press “OK”, close all the open windows and log out from Truelink 4 user before logging in back to TL4-App.	

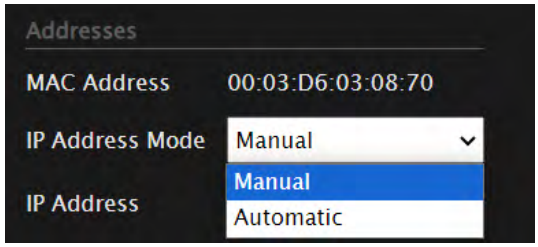
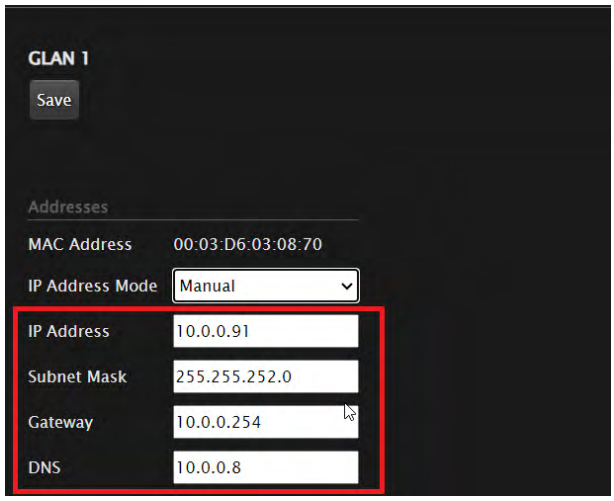
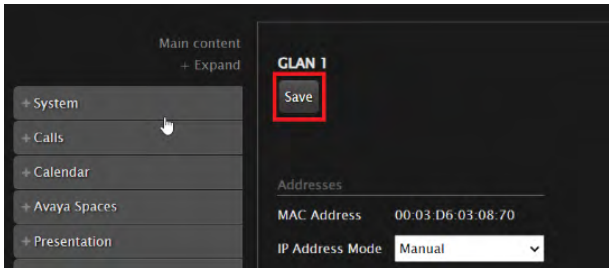
7.1.2 Setting the IP address on Helion Conference Unit

Perform the following activities from a PC connected on the same network of the Conference Unit and properly configured or from Helion Main Unit itself.

This guide has been developed on a test machine, so IP addresses and other specific settings are not to be considered reliable.

Step	Image
1. Connect a LAN cable between the laptop ethernet port and the Conference Unit GLAN1 port.	
2. Open a Google Chrome webpage and go to the default IP page of the Conference Unit 192.168.1.1.	

Step	Image
3. Click on “Advanced”.	
4. Continue to 192.168.1.1	
5. Insert the credentials provided in the training and select the preferred language.	
6. Go to “Administrator Settings” (1), “Networks” (2), “GLAN 1, Addresses” (3)	

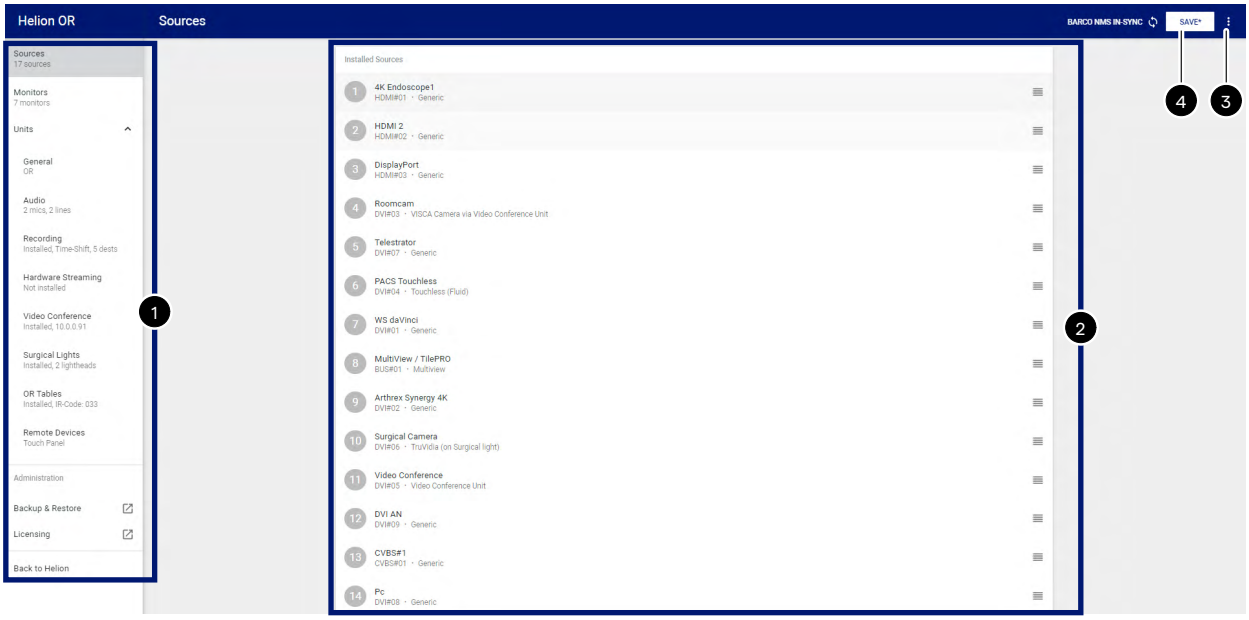
Step	Image
7. The Codec will be pre-configured in production with a static IP of 192.168.1.1. Here you can change the address according to the parameters provided by the local IT Manager or switch to Automatic if the Helion System will be connected with MAC Address reservation. In this case, MAC Address is also available on the same page.	
8. Insert all network data required.	
9. Click on “Save”. After saving , you will be automatically logged out of the page because the new parameters will be applied.	
10. Connect the network cable from hospital line to the GLAN1 port on Conference Unit.	

Note: In case you have selected “Automatic”, go back to Helion GUI to check which IP has been assigned to the Conference Unit: It will be displayed on the Conference graphics on inputs list.

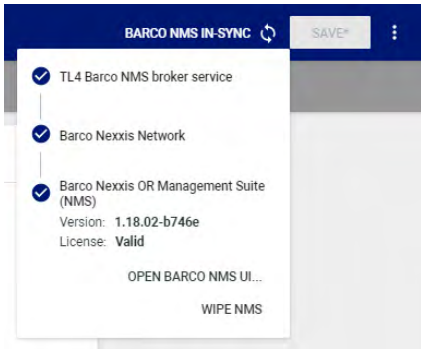
Note: The static IP or the assigned IP of the Conference Unit must be then also copied on Helion Conference Configuration section (see chapter 7.2.3.5).

7.2 General description of the configuration interface

The configuration interface is structured as follows:



Pos.	Element	Description
[1]	MAIN MENU	List of configurable sections.
[2]	SECONDARY MENU	Configuration area of the selected item on the main menu.
[3]	ADVANCED MENU	Area with advanced features.
[4]	BUTTON TO SAVE CONFIGURATION	Touch button to save the configured settings.

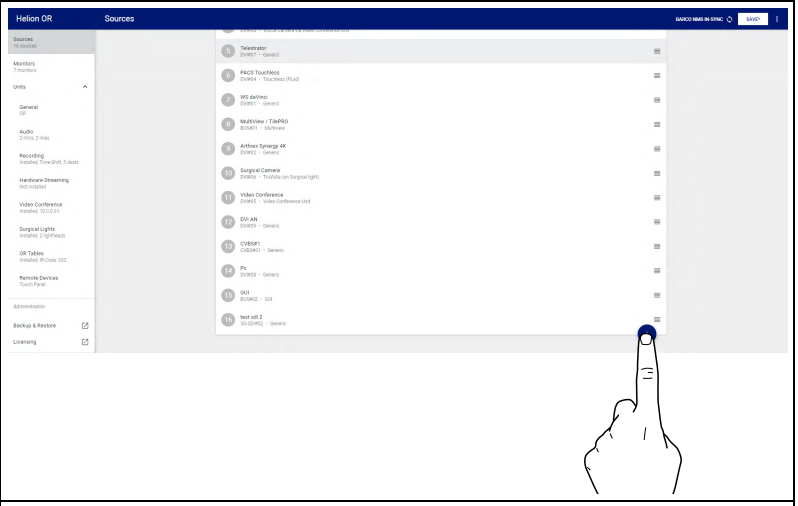
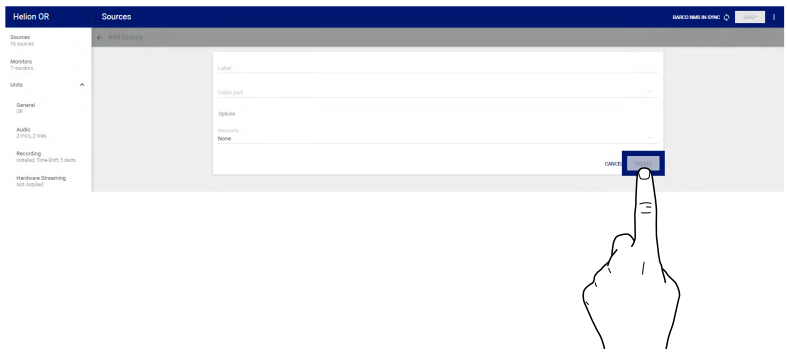


Clicking on the BARCO NMS in-SYNC button the version of the Barco System, the license info and connection status will be displayed.

7.2.1 “SOURCES” section

The SOURCES section is used to add, modify, or remove the video source signals that were previously installed and cabled by the Technician.

Proceed as follows to configure the SOURCES section:

Step	Image
1. Press + to add a new SOURCE. This opens the configuration window.	
2. Enter: – name of the new dedicated source (e.g., DVI 1, SDI 1, etc) – type of input – special “Personality” source (optional)	
3. Press CREATE to confirm or CANCEL to cancel the changes.	
4. Press SAVE to go to the Login screen.	

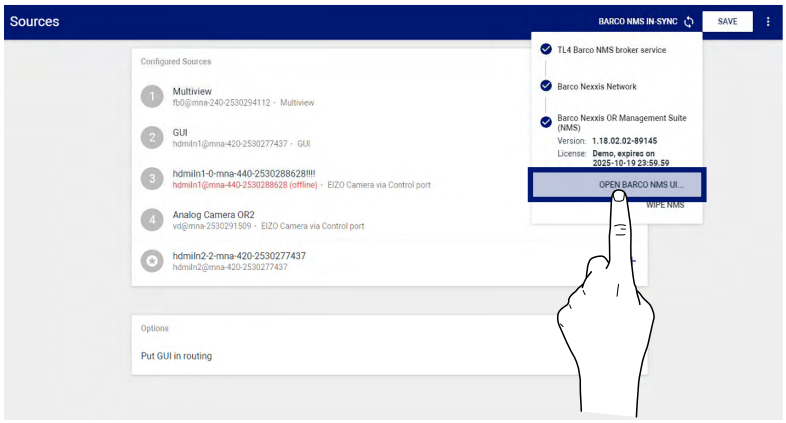
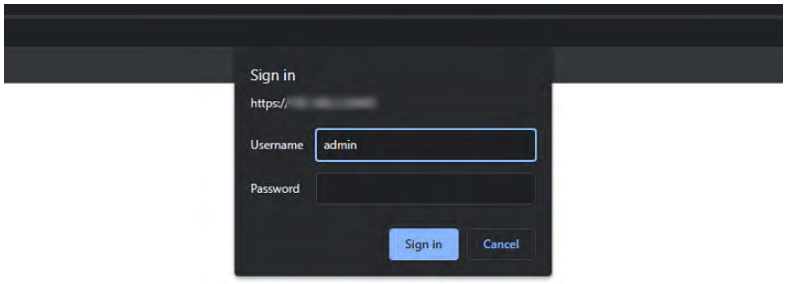
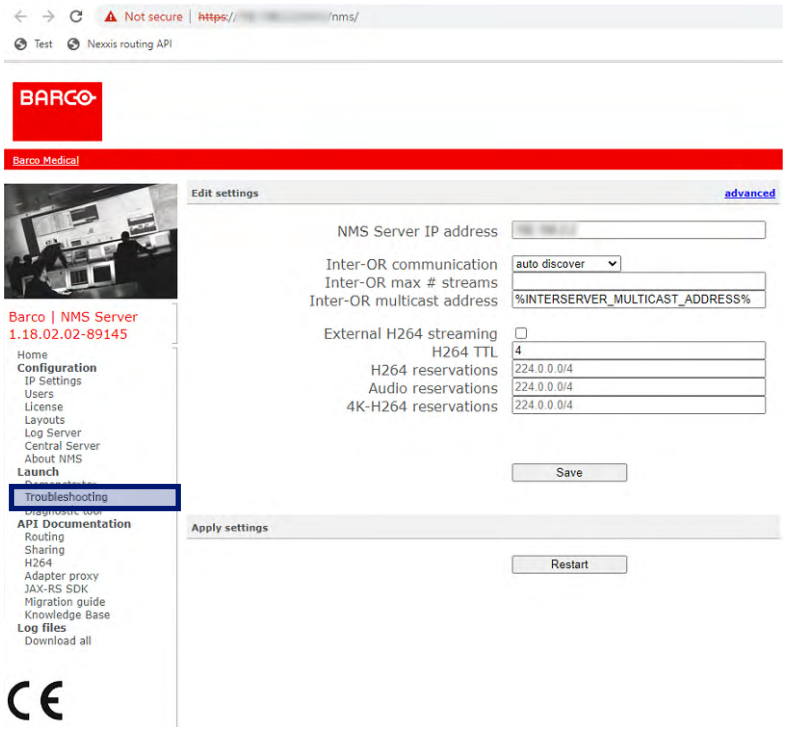
If it is a special source (Room Cam, Conference Unit, MultiView, Fluid), press the “PERSONALITY” field and select the reference source.

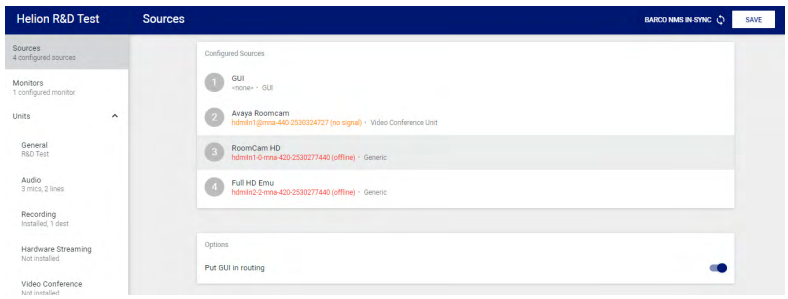
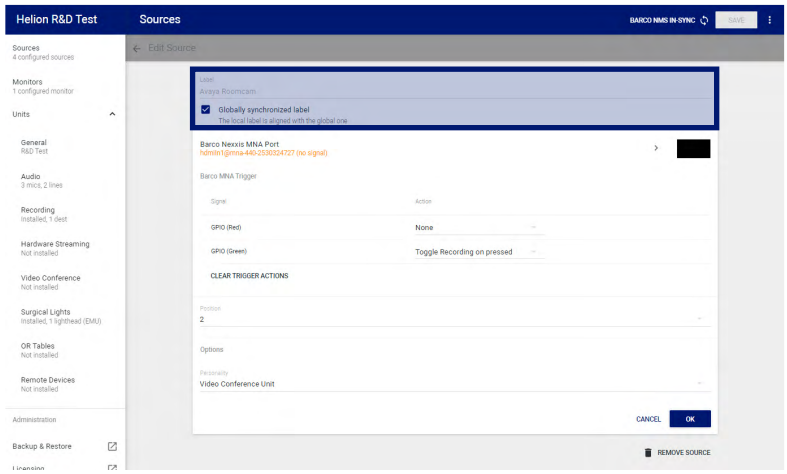
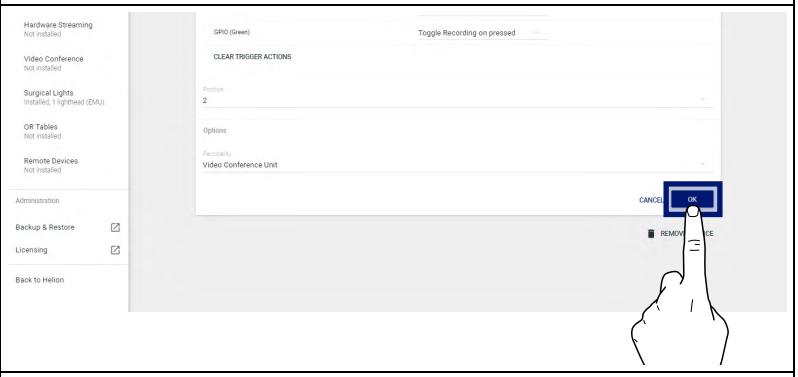
Each source created within the list will be numbered and visible in the last position. To sort the list, open the details of the source to be moved and assign the desired position by modifying the “Position” field value.

NOTICE

It is not possible to connect several sources to the same port. Each source must be connected to its own port that was previously installed and cabled by the technician.

7.2.1.1 Video-over-IP sources configuration

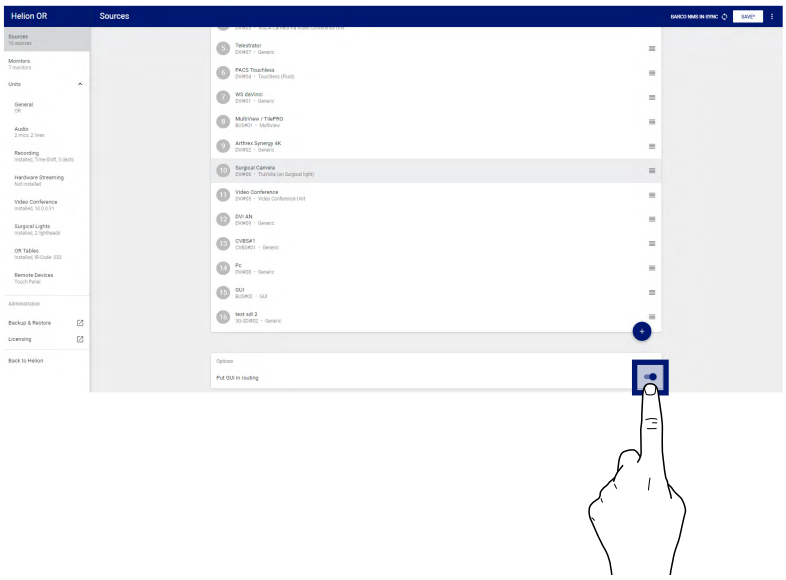
Step	Image
1. Every time a new MNA is connected to a Helion system, it is necessary to check that the firmware is aligned with that of the NMS, and if it is not, perform the alignment procedure by accessing the NMS web interface via Helion Configurator, launched on a local browser (https://tl4-local/admin).	
The Login page will open. 2. Please use the Administrator credentials provided to get to the Barco NMS UI page.	
3. Enter the Troubleshooting section and follow the instructions provided by the Barco Nexxis OR System Installation Guide.	

Step	Image
1. The Sources list shows the recognized sources already connected to the Helion system. Click on one of the sources to open the following window and complete the configuration.	
2. Enter the name of the source. 3. Check “Globally synchronized label” to give the source the same name on each NMS it will be connected to. 4. On the same page is also possible to check the status of the source (at the bottom) and to have a small preview of the video signal received (at the upper right). Set the specific personality of the source if needed.	
5. Click OK to confirm.	
6. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.1.2 Graphical User Interface (GUI)

This subsection is used to activate the Graphical User Interface (GUI) option, which allows you to enter the user interface in the list of sources.

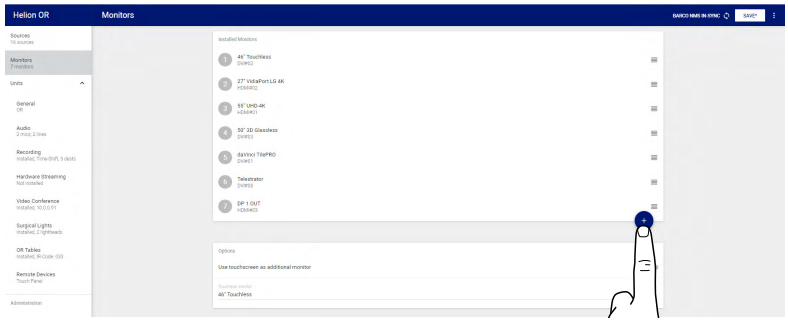
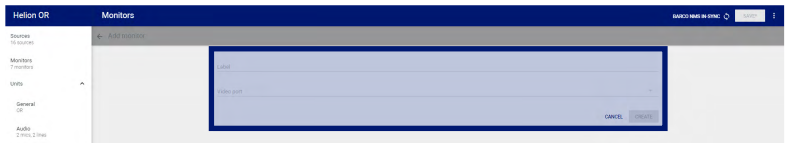
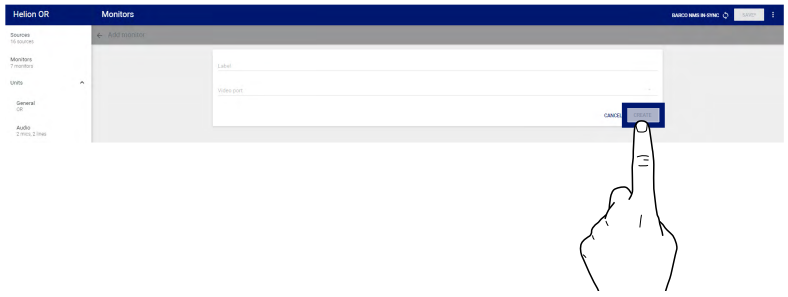
Proceed as follows to activate the option:

Step	Image
1. Press to enable or disable the option. It is now possible to send the Graphical User Interface (GUI) on a second monitor (or multiple).	
2. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.2 “Monitors” section

The MONITORS section is used to add, modify, or remove monitor signals previously installed and cabled by the technician.

Proceed as follows to configure the MONITORS section:

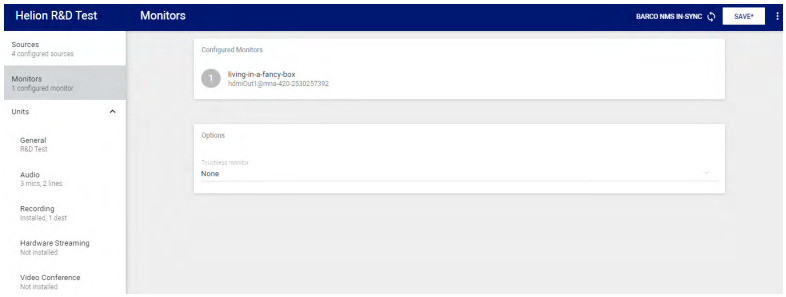
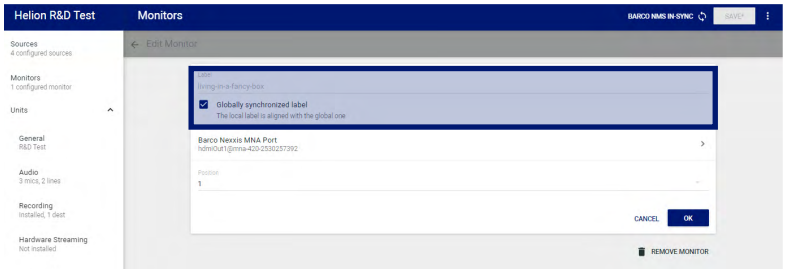
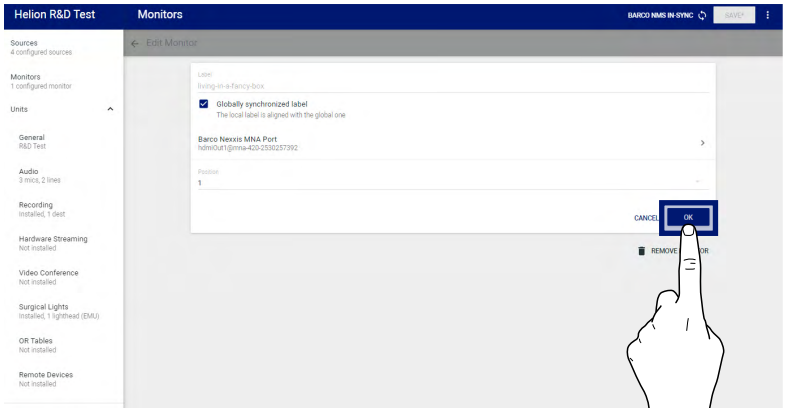
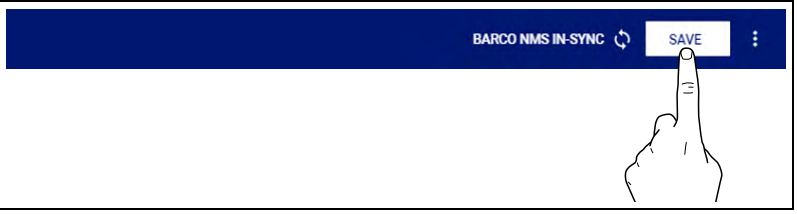
Step	Image
1. Press + to add a new MONITOR. This opens the configuration window.	
2. Enter: – the name of the new monitor (e.g., MONITOR 1, 2, 3) – the type of connection (e.g., DVI 1, 2, 3)	
3. Press CREATE to confirm or CANCEL to cancel the changes.	
4. Press the SAVE key (at the top of the menu bar) to save the changes made.	

Each monitor created within the list will be numbered and visible in the last position. To sort the list, open the details of the monitor to be moved and assign the desired position by modifying the “Position” field value.

NOTICE

It is not possible to connect several monitors to the same port. Each monitor must be connected to its own port previously installed and cabled by the technician.

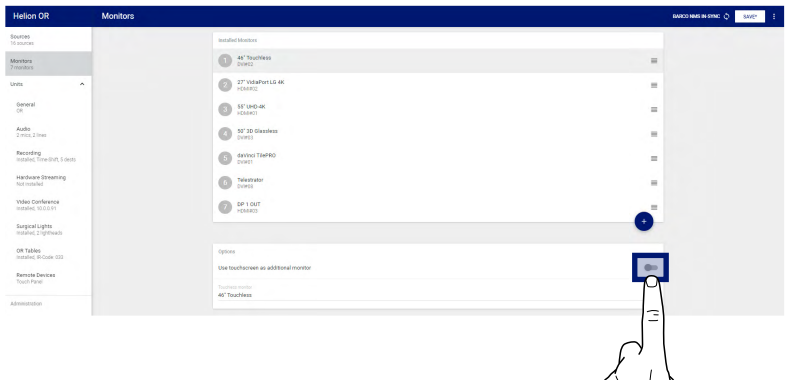
7.2.2.1 Video-over-IP outputs configuration

Step	Image
1. The list shows the recognized Monitors already connected to Helion system. Click on one of the monitors to open the configuration page.	
2. Enter the name of the monitor. 3. Check the “Globally synchronized label” to give the monitor the same name on each NMS it will be connected to.	
4. Click OK to confirm.	
5. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.2.2 Options

This subsection is used to activate the “Use touchscreen as additional monitor” option, which allows you to use the touchscreen as an additional output, displaying it in the list of monitors.

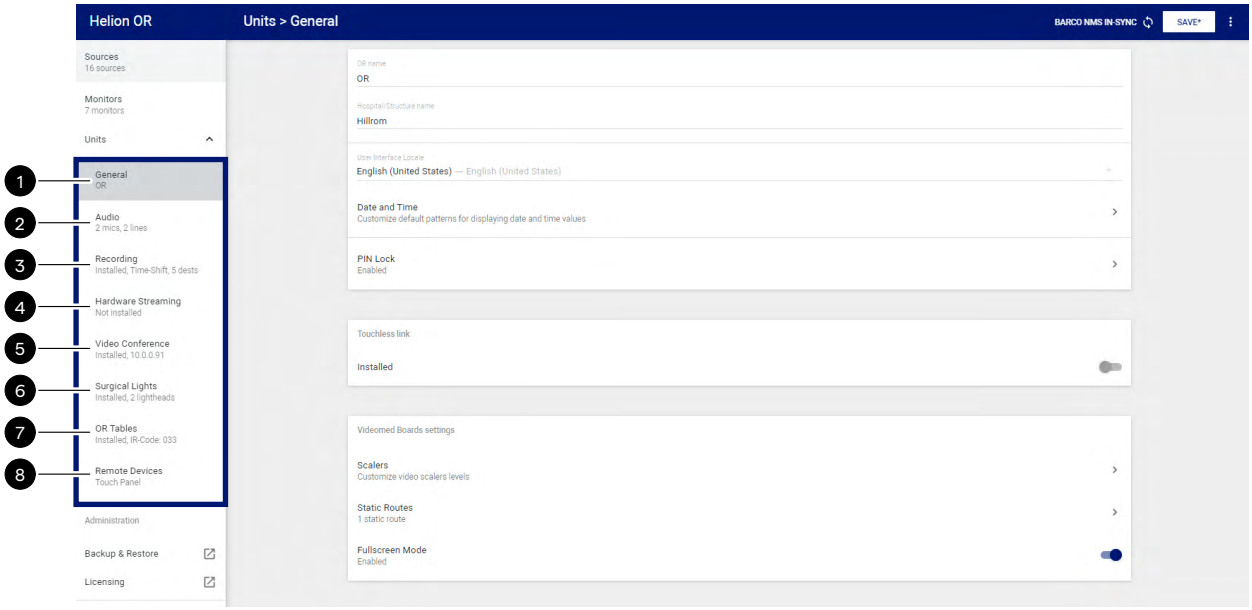
Proceed as follows to activate the option:

Step	Image
1. Press to enable or disable the “Use touchscreen as additional monitor” option.	
2. Press the SAVE key (at the top of the menu bar) to save the changes made.	

The “Use touchscreen as additional monitor” features are described in the user manual.

7.2.3 “Units” section

The UNITS section is divided as follows:

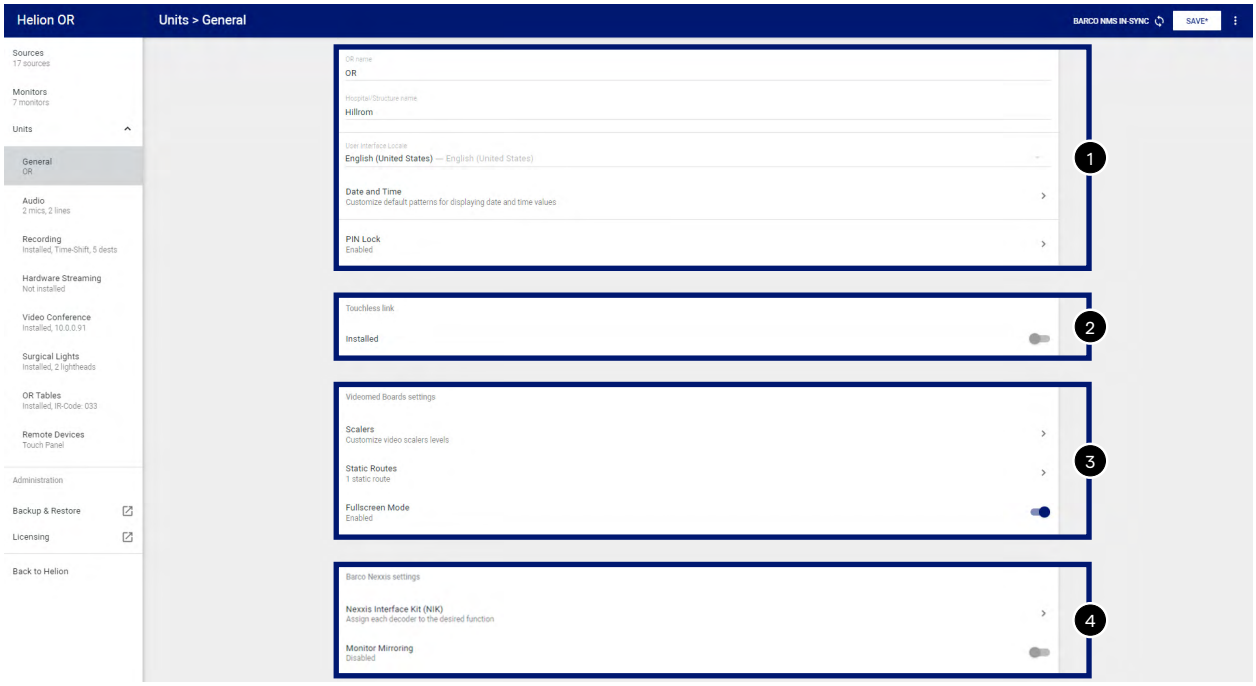


Pos.	Element	Description
[1]	GENERAL	Section where you can customize the configuration of the general information for the Helion system.
[2]	AUDIO	Section where you can customize the configuration of the audio ports for the Helion system.
[3]	RECORDING	Section where you can customize the configuration of the video registration for the Helion system.
[4]	HARDWARE STREAMING	Section where you can customize the streaming configuration of the Helion system.
[5]	VIDEOCONFERENCE	Section where you can customize the configuration of the video conference system built into Helion.
[6]	SURGICAL LIGHTS	Section where you can customize the configuration of the surgical lights control.
[7]	OR TABLES	Section where you can customize the configuration of the operating room tables control.
[8]	REMOTE DEVICES	Section where you can customize the configuration of the remote-controlled devices connected to the Helion system.

The details of each section are reported in the following pages.

7.2.3.1 General

The GENERAL section consists of three macro areas, listed below:



Pos.	Element
[1]	GENERAL
[2]	GENERAL - Touchless link (connection to the Therapixel Fluid system)
[3]	GENERAL - Videomed Boards settings (advanced settings of the digital video matrix built into Helion)
[4]	GENERAL - Barco Nexxis settings (only for the Video-over-IP configuration)

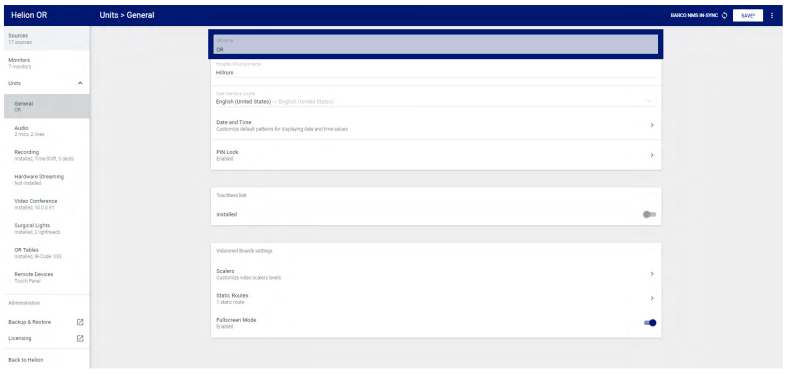
The details of each section are reported in the following pages.

GENERAL section

This subsection contains the general information about Helion Video Management System.

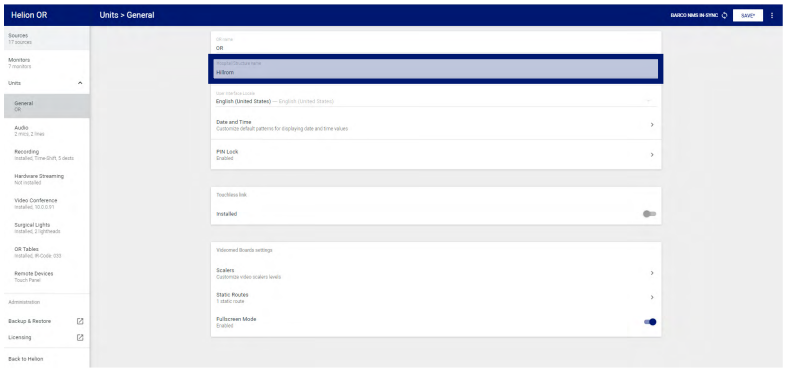
The OR name field is used to customize the name of the operating room where the Helion Video Management System is installed.

Proceed as follows to edit the field:

Step	Image
1. Enter the name of the new operating room.	
2. Press the SAVE key (at the top of the menu bar) to save the changes made.	

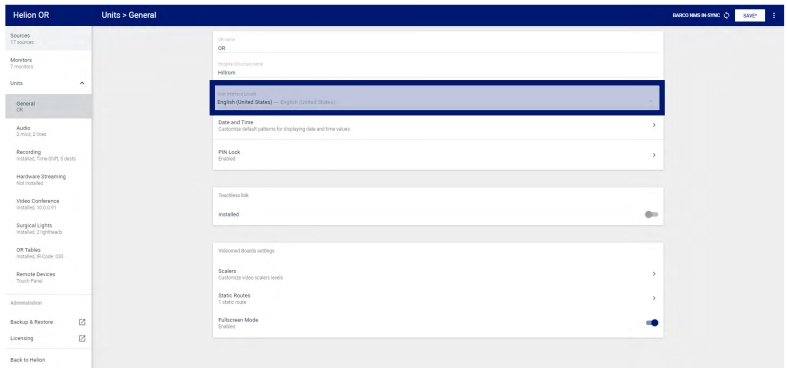
The Hospital/Structure name field is used to customize the name of the hospital where the Helion Video Management System is installed.

Proceed as follows to edit the field:

Step	Image
1. Enter the name of the hospital.	
2. Press the SAVE key (at the top of the menu bar) to save the changes made.	

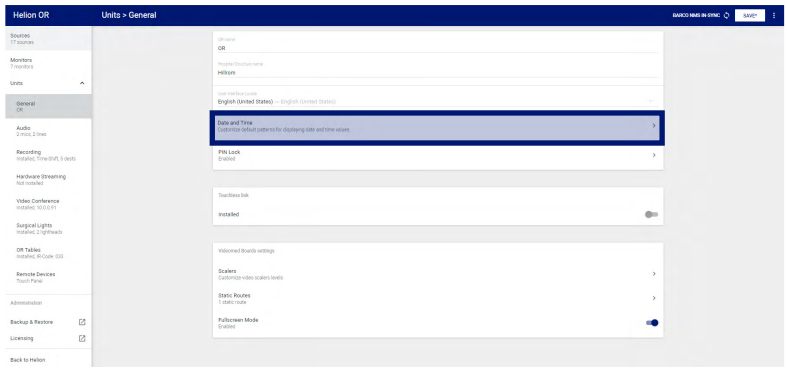
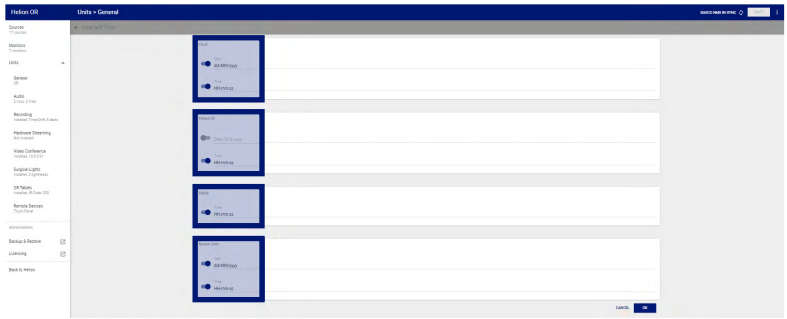
The User Interface Locale field is used to set the language employed to view the graphic interface of the Helion Video Management System.

Proceed as follows to edit the field:

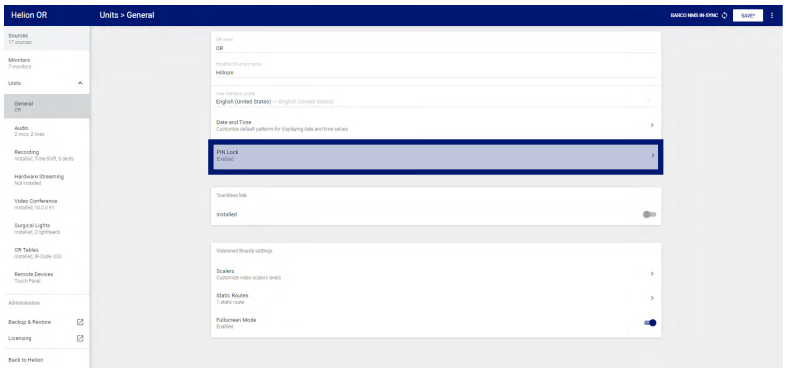
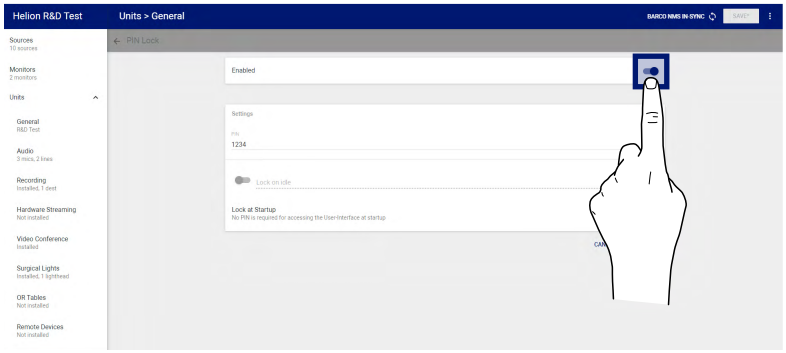
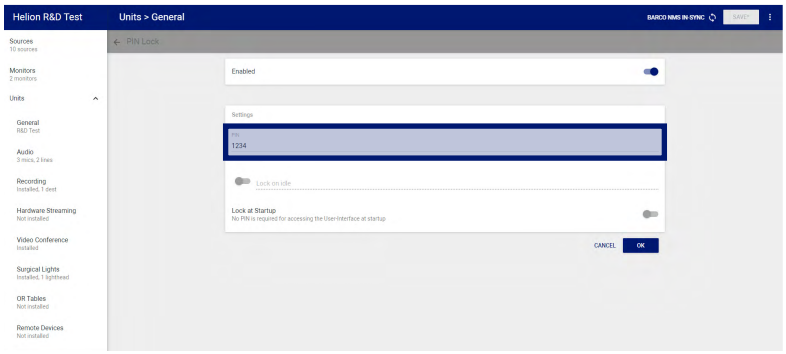
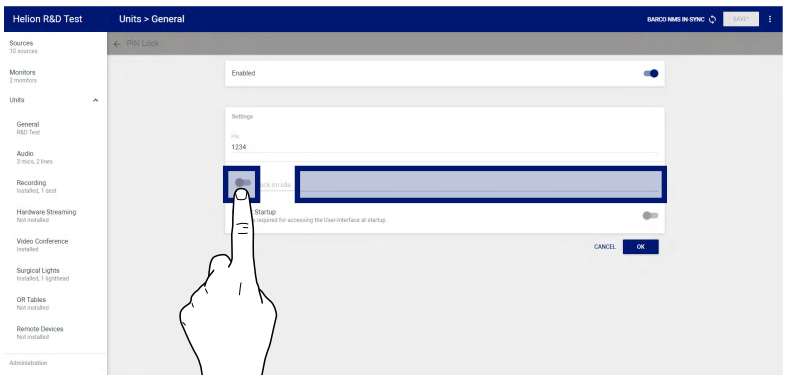
Step	Image
1. Select the desired language to view the system.	
2. Press the SAVE key (at the top of the menu bar) to save the changes made.	

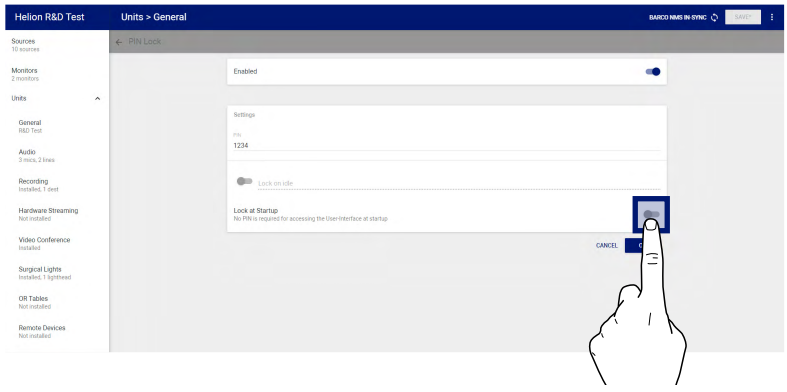
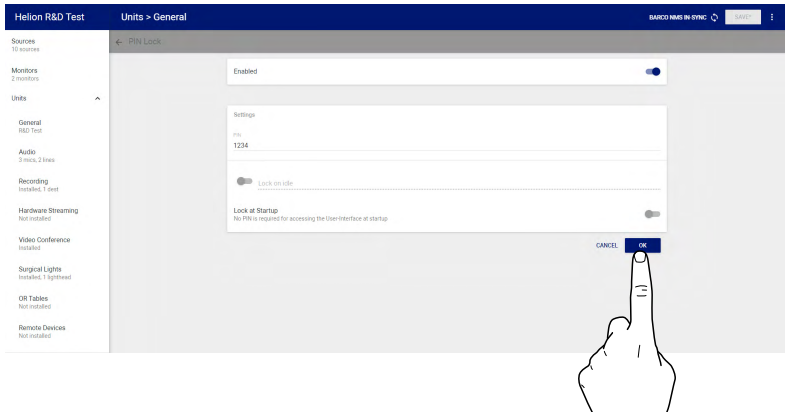
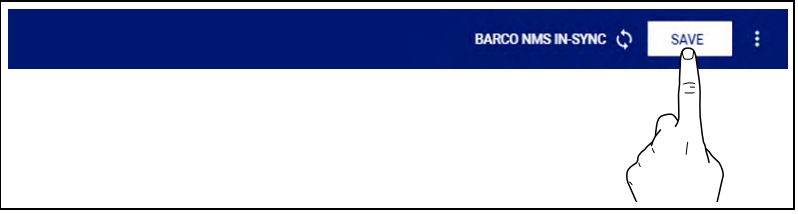
The Date and Time field is used to customize the date and time formats used in the different sections of the Helion Video Management System.

Proceed as follows to edit the field:

Step	Image
1. Select to change the date and time. This opens the configuration window.	
2. Activate the change and customize the date and time format for the different sections, according to the suggested format. If a parameter change is not activated, the default format will be used.	
3. Press the SAVE key (at the top of the menu bar) to save the changes made.	

The PIN Lock field is used to set/change the pin to access the features of the Helion Video Management System.
Proceed as follows to edit the field:

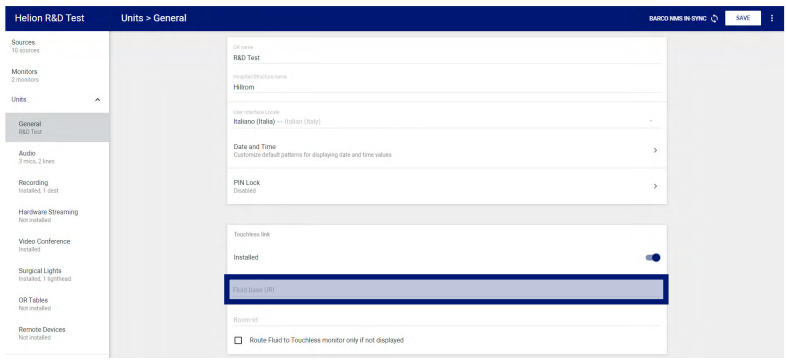
Step	Image
1. Press the Pin Lock editable field. This opens the configuration window.	
2. Press  to enable / disable the Pin Lock feature.	
3. With the Pin Lock feature enabled, press the Pin editable field to change the pin to access the touchscreen features.	
4. With the Pin Lock feature enabled, press  to enable the monitor lock feature after a preset time. It is possible to set a preset time to start the monitor lock feature; press the sensitive field to set the desired time. The feature is activated when the touchscreen is not touched.	

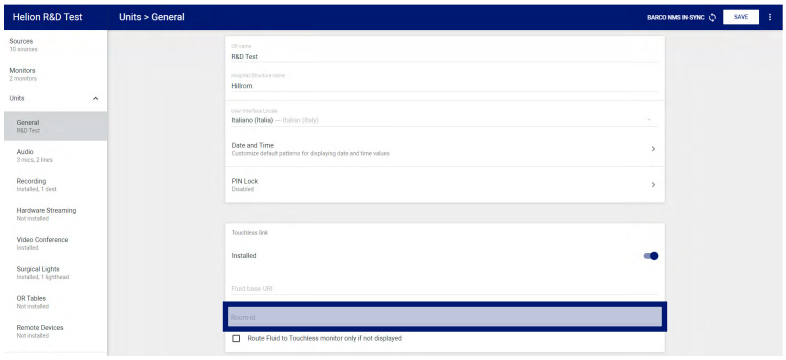
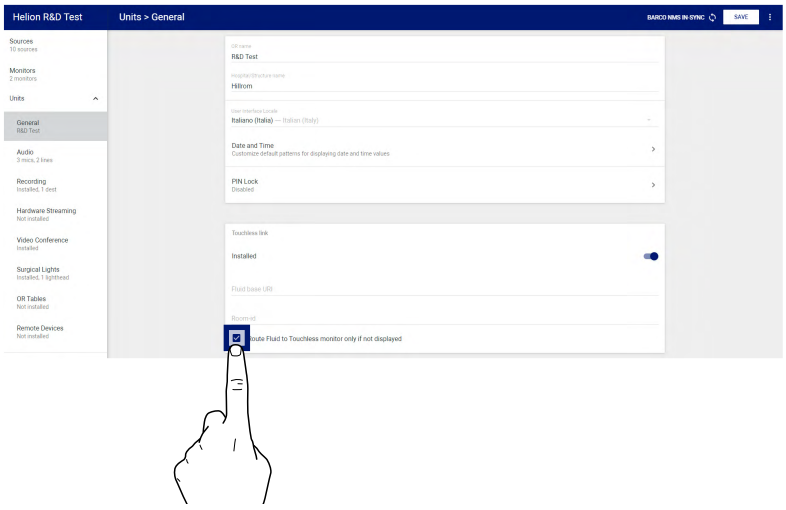
Step	Image
5. With the Pin Lock feature enabled, press to enable the monitor lock feature upon system startup.	
6. After editing the Pin Lock settings, press OK to confirm the changes.	
7. Press the SAVE key (at the top of the menu bar) to save the changes made.	

GENERAL section - Touchless link

In this subsection, it is possible to configure the parameters to synchronize Helion with Therapixel Fluid.

Proceed as follows to edit the field:

Step	Image
1. Select to edit the IP address the touchless system is associated with.	

Step	Image
2. Select to edit the Room ID of the specific touchless system.	
3. Uncheck the “Route to touchless monitor only if not displayed” box to prevent the automatic routing of the Fluid image on a dedicated monitor, even if the correct signal is already displayed.	
4. Press the SAVE key (at the top of the menu bar) to save the changes made.	

GENERAL section - Videomed Boards settings

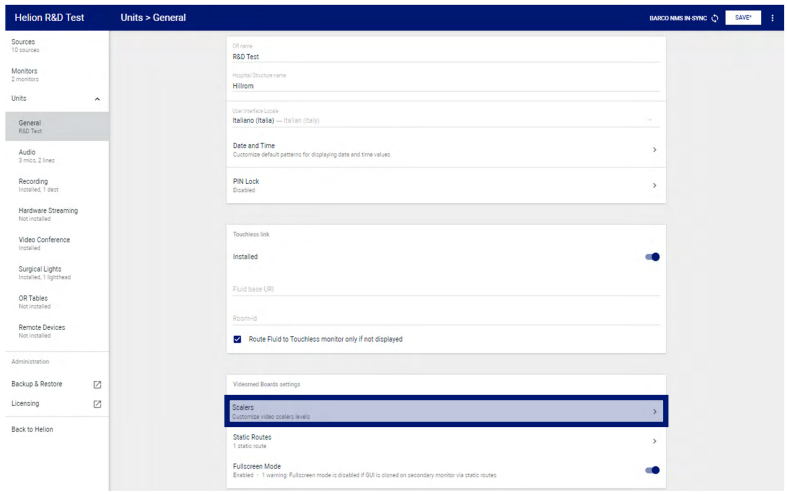
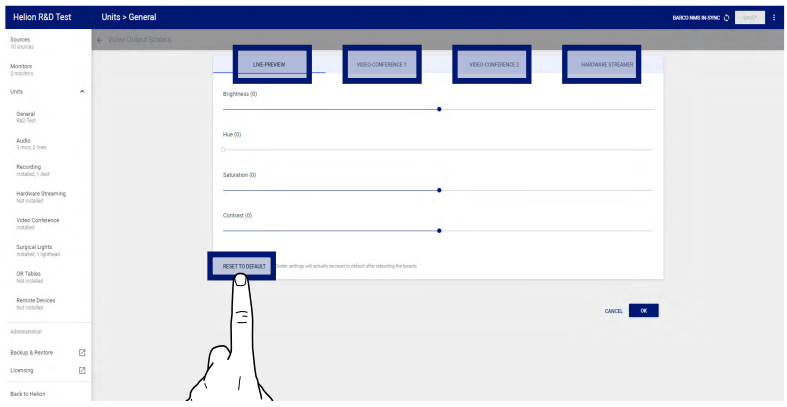
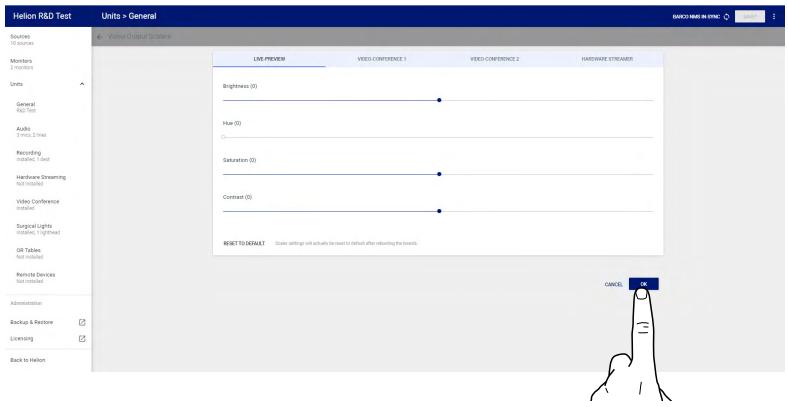
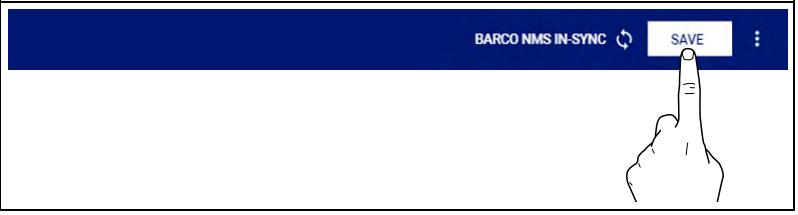
This sub-section provides access to the advanced customization of parameters of the digital matrix built into Helion.

The “Scalers” option is used to customize the conversion parameters for the video channels processed by the system.

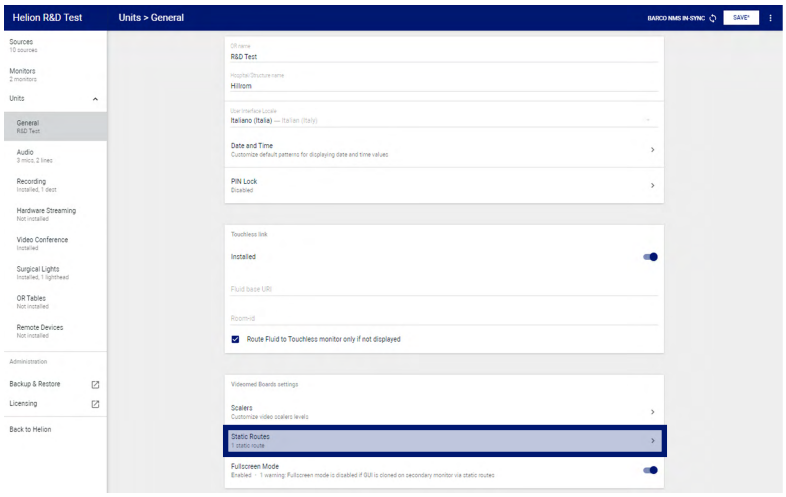
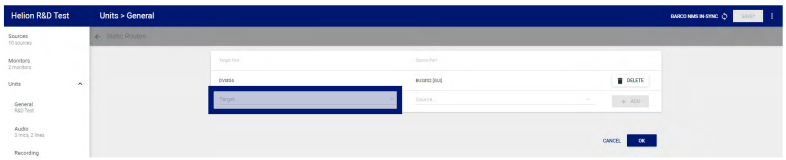
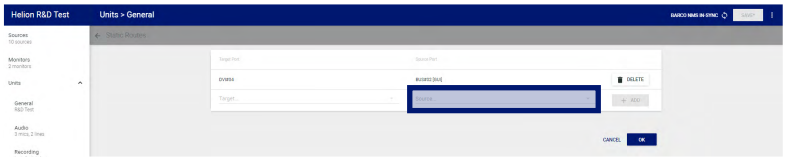
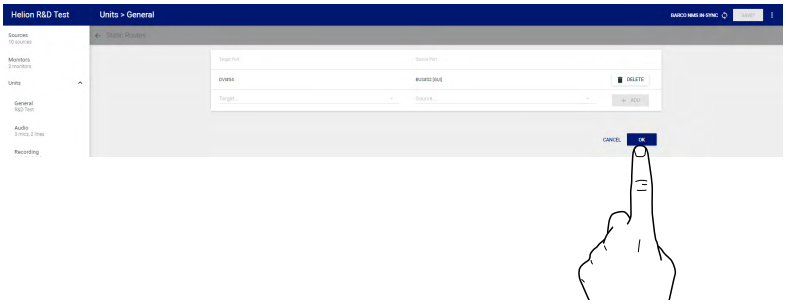
NOTICE

The parameters for the live video transmitted from the sources to the monitors are not modified in any way!

Proceed as follows to edit the field:

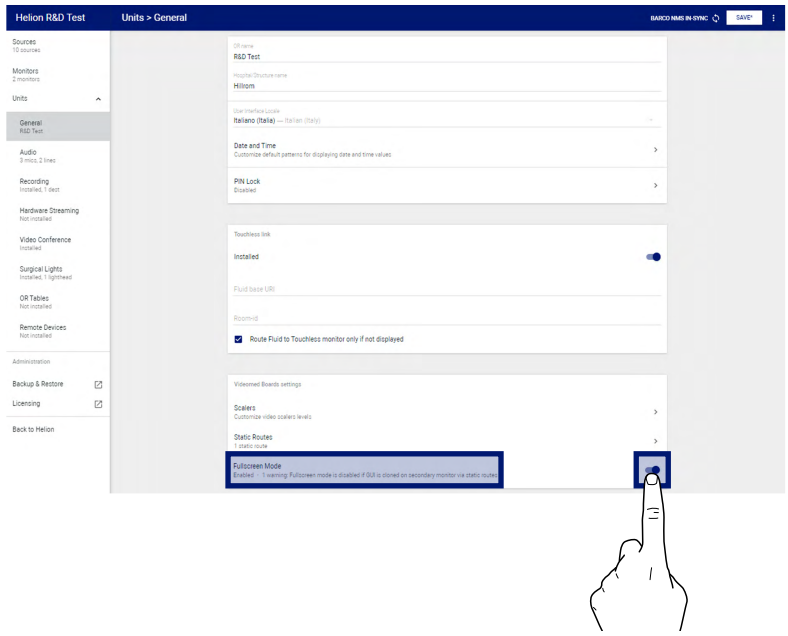
Step	Image
1. Press the editable Scalers field. This opens the configuration window.	
2. Select to edit the image display parameters. The parameters can be edited for the livepreview, video conference 1, video conference 2, and hardware streamer sections. The settings can be reset by pressing “RESET TO DEFAULT”.	
3. After editing the settings, press **OK** to confirm the changes.	
4. Press the SAVE key (at the top of the menu bar) to save the changes made.	

The Static Routes is used to set a static connection between a specific input and a specific output of the digital matrix.
Proceed as follows to edit the field:

Step	Image
1. Press the Static Routes editable field. This opens the configuration window.	
2. Select Target to indicate the desired transmission output. This opens the window to choose the configuration.	
3. Select Source to indicate which input signal must be transmitted. This opens the window to choose the configuration.	
4. After editing the settings, press **OK** to confirm the changes.	
5. Press the SAVE key (at the top of the menu bar) to save the changes made.	

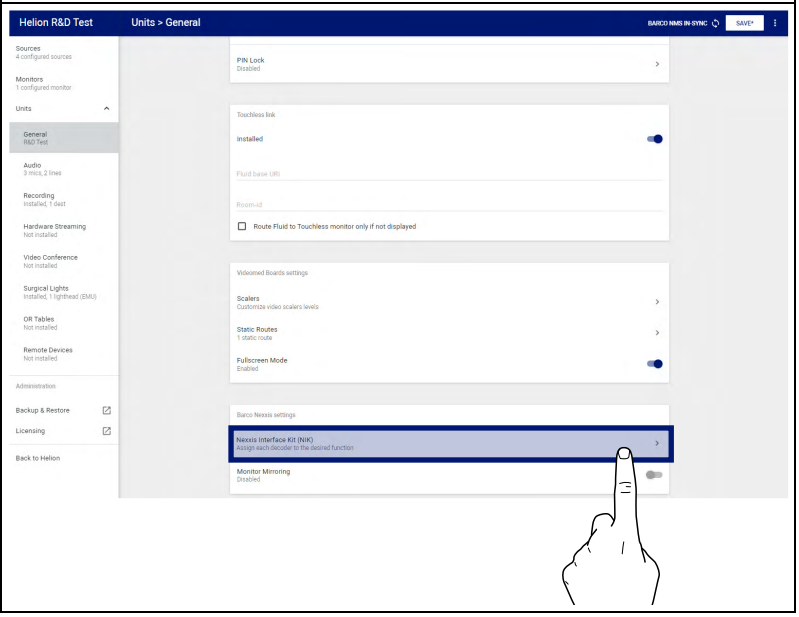
The Fullscreen Mode field is used to enable/disable the fullscreen feature of the input signals on the control touchscreen.

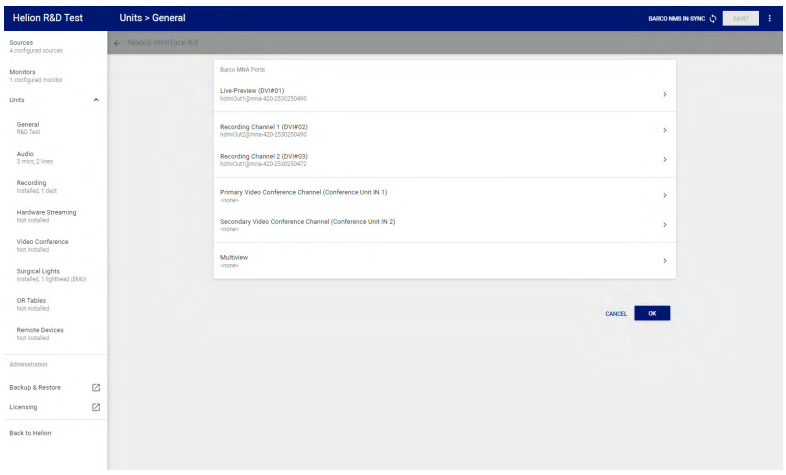
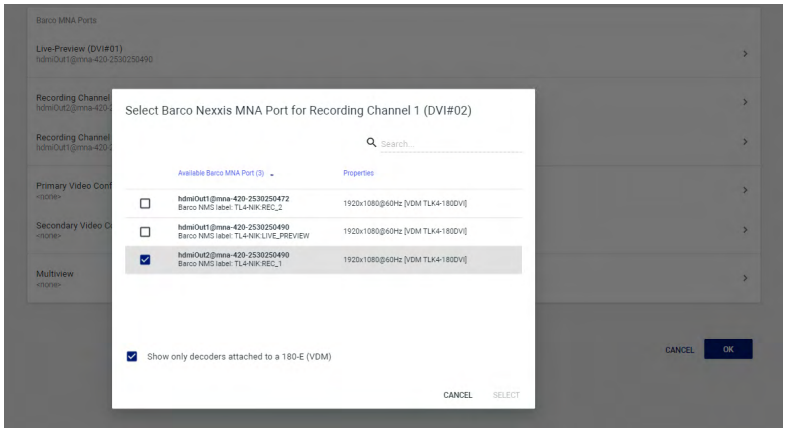
Proceed as follows to edit the field:

Step	Image
1. Press to enable/disable the fullscreen feature.	
2. Press the SAVE key (at the top of the menu bar) to save the changes made.	

GENERAL section - Barco Nexxis settings

In this section, it is possible to associate, by s/n, the MNAs connected to the basic internal functions of the system.

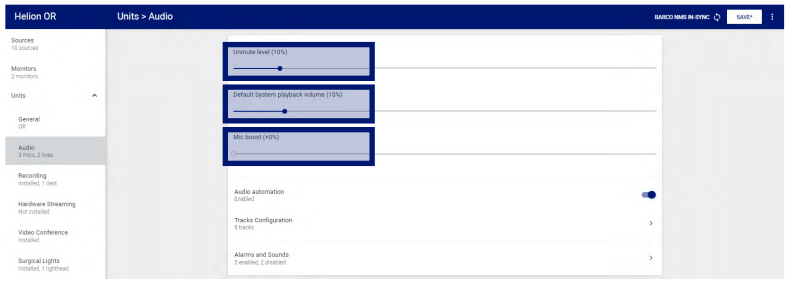
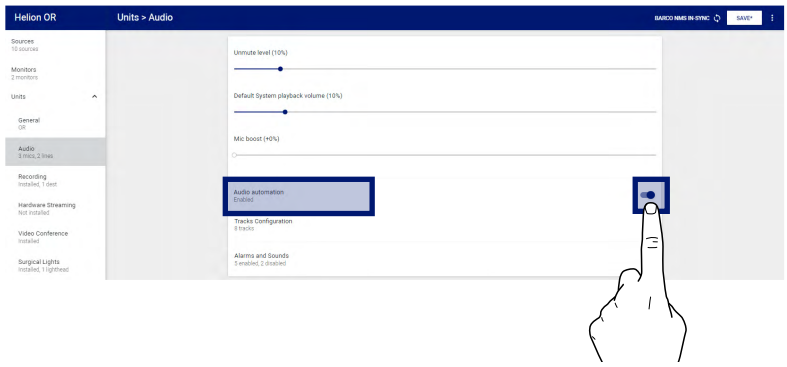
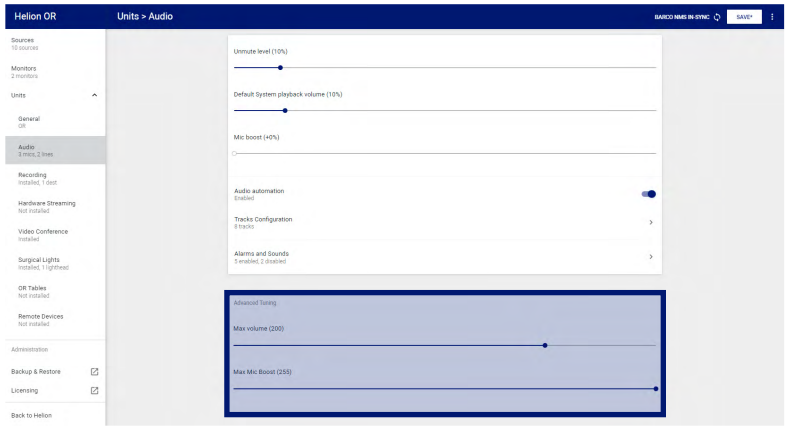
Step	**Image**
1. Click on Nexxis interface Kit (NIK).	

Step	Image
2. In this info section, it is possible to have an overview of the internal signals allocation, describing which MNA is managing each signal.	
3. By clicking on each signal, it is possible to re-assign it to a different MNA by selecting it from the list of available ones.	

7.2.3.2 Audio

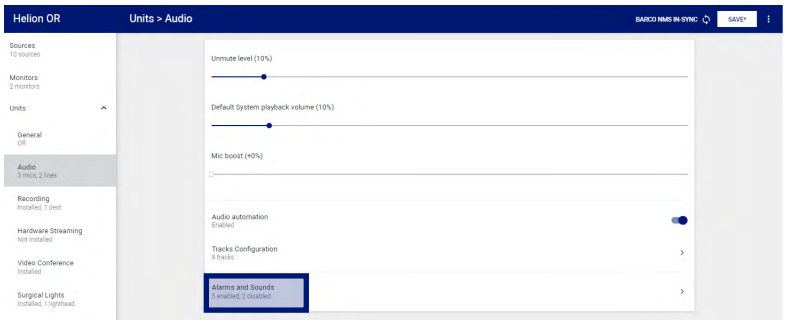
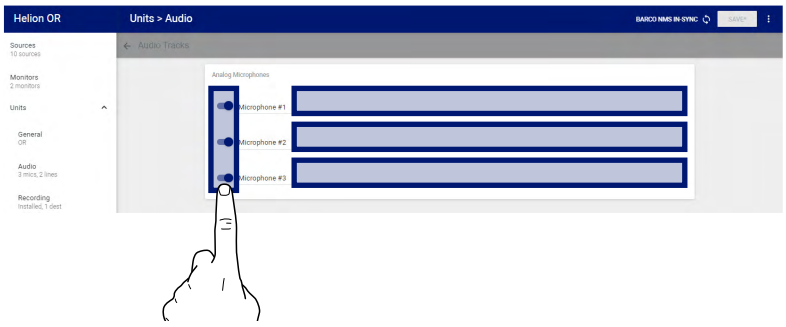
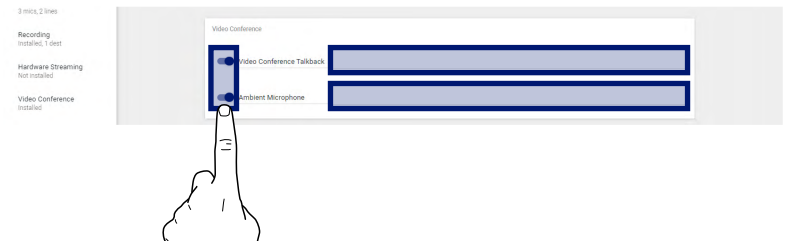
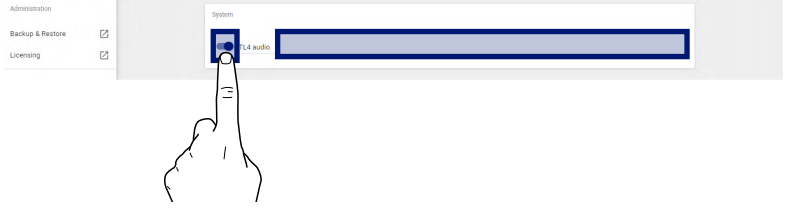
The Audio subsection is used to change the configuration settings of the audio ports of the Helion Video Management System.

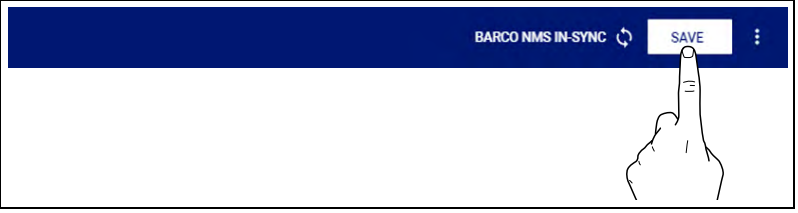
Proceed as follows to edit the field:

Step	Image
1. Change the volume level after exiting the “mute” mode. 2. Change the Default volume level of the audio channels. 3. Change the Boost volume level of the microphone ports.	
4. Press to enable the changes to the Audio automation section. The Audio automation system is used to employ audio speakers and microphones during an internal call, disabling the music for the duration of the call.	
5. Change the maximum output volume and microphone gain levels.	
6. Press the SAVE key (at the top of the menu bar) to save the changes made.	

The Tracks Configurator field is used to change the audio inputs of the Helion Video Management System.

Proceed as follows to edit the field:

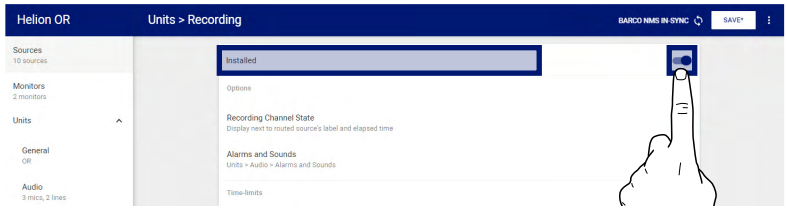
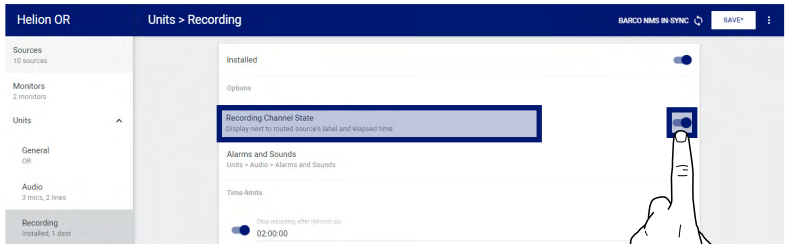
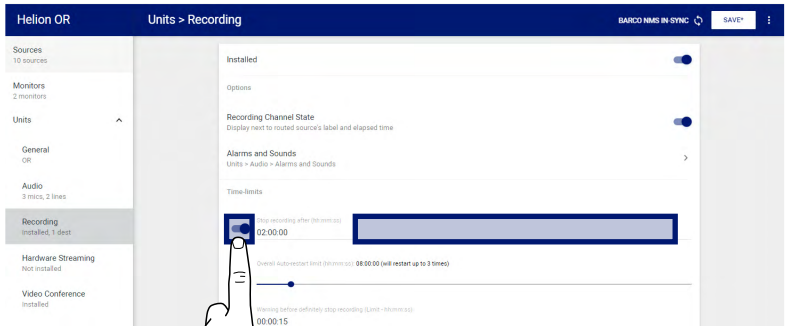
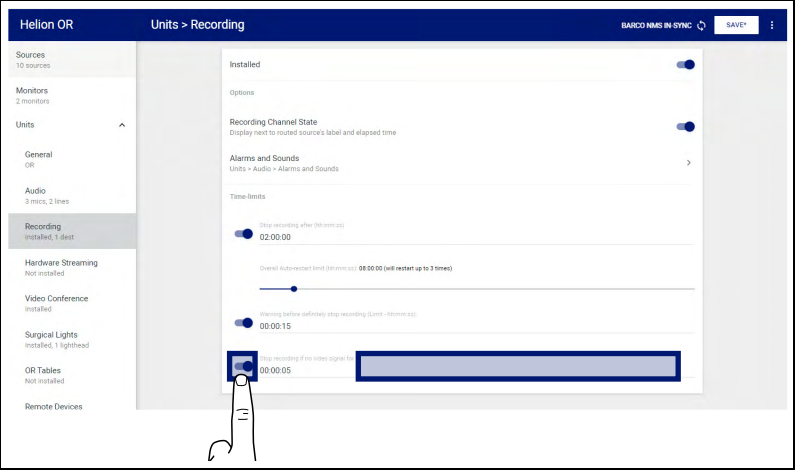
Step	Image
1. The Tracks Configurator editable field. This opens the configuration window.	
2. Press to enable or disable the available microphones. Select the label next to the activation/deactivation symbol to change it.	
3. Press to enable or disable the type of audio inputs. Select the label next to the activation/deactivation symbol to change it.	
4. Press to enable or disable the Talkback feature during a video conference. Select the label next to the activation/deactivation symbol to change it.	
5. Press to enable or disable the Talkback feature during streaming. Select the label next to the activation/deactivation symbol to change it.	
6. Press to enable or disable the audio of the Helion system (e.g., warning sounds, Voice-Over playback recorded in videos). Select the label next to the activation/deactivation symbol to change it.	

Step	Image
7. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.3.3 Recording

The Recording subsection is used to configure the recording features of the Helion Video Management System.

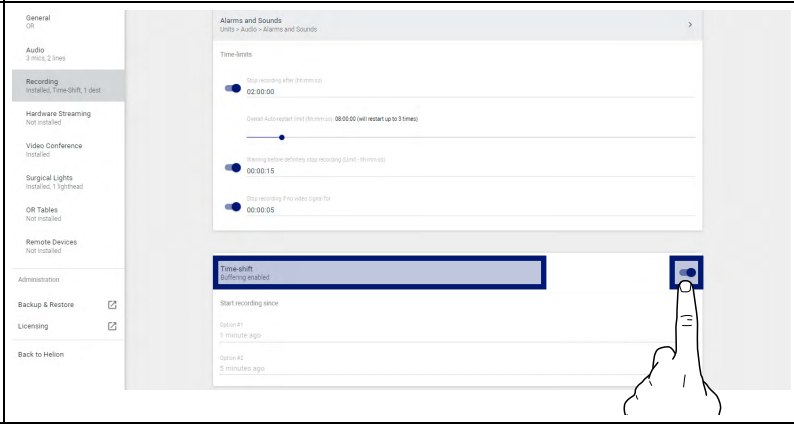
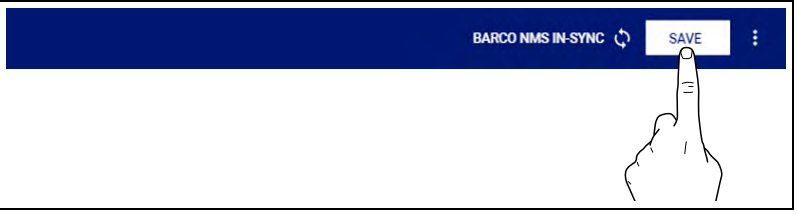
Proceed as follows to edit the field:

Step	Image
1. Press to enable or disable the Recording feature. “Recording” is an optional feature that can be activated with a license.	
2. Press to enable or disable the view of the recording status. By enabling the feature, the system uses dynamic indicators to show the operator the registration status.	
3. Press to enable or disable the stop recording automatically feature after the set time limit. Follow the required formatting rules to edit the time limit. Regardless of the setting of this parameter, the recording will be automatically interrupted when the recorded media file reaches the maximum size.	
4. Press to enable or disable the stop recording automatically in the event of a signal failure (e.g., source off), after a preset amount of time. Follow the required formatting rules to edit the time limit.	

Step	Image
5. Press the SAVE key (at the top of the menu bar) to save the changes made.	

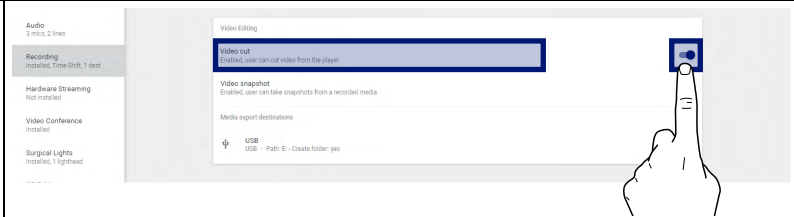
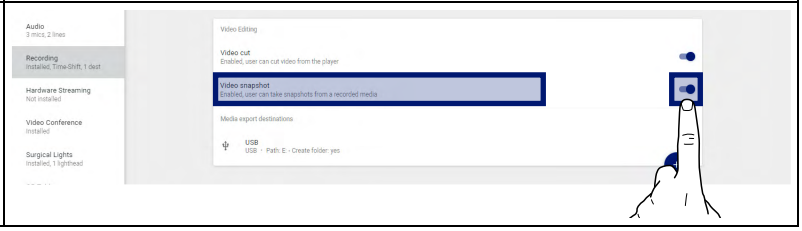
The Time-shift field is used to enable/disable the automatic buffering feature of the recording channels.

Proceed as follows to edit the field:

Step	Image
1. Press to enable or disable the Time-shift feature.	
2. Press the SAVE key (at the top of the menu bar) to save the changes made.	

The Video Editing field is used to enable/disable the editing of videos already saved and to take snapshots of them.

Proceed as follows to edit the field:

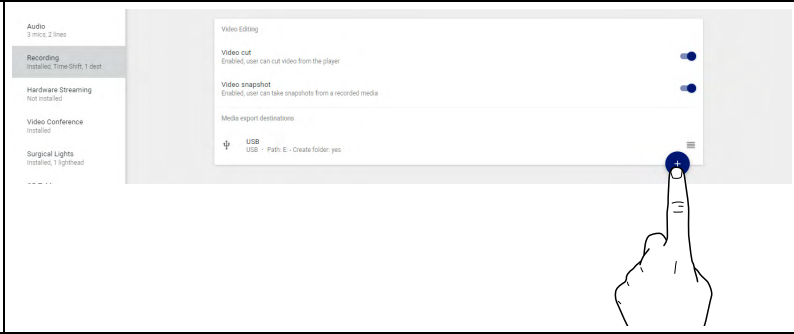
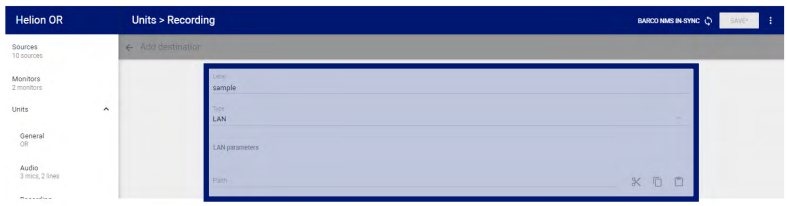
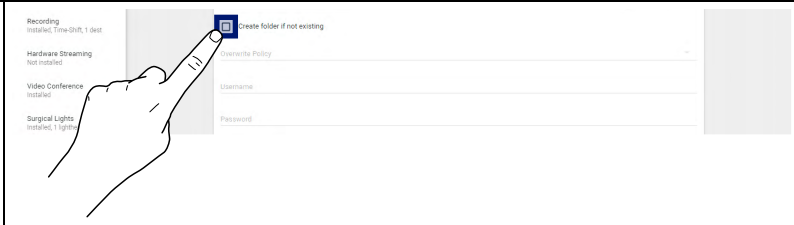
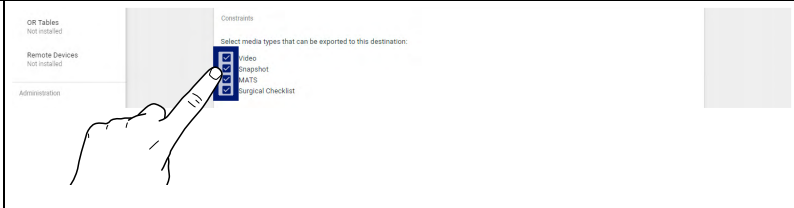
Step	Image
1. Press to enable or disable the Video cut feature.	
2. Press to enable or disable Video snapshot feature.	

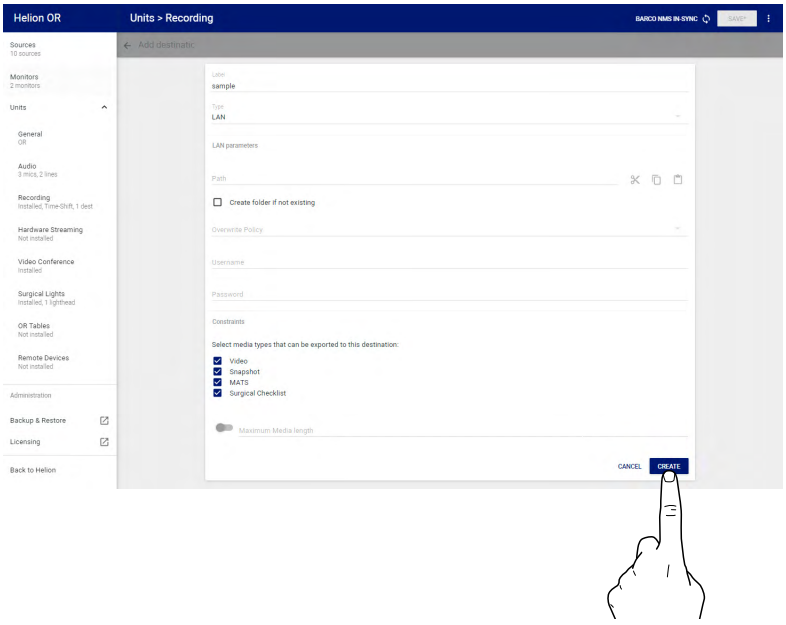
Step	Image
3. Press the SAVE key (at the top of the menu bar) to save the changes made.	

RECORDING section - Add destination

In this Add destination subsection, you can access the settings to create a new export destination.

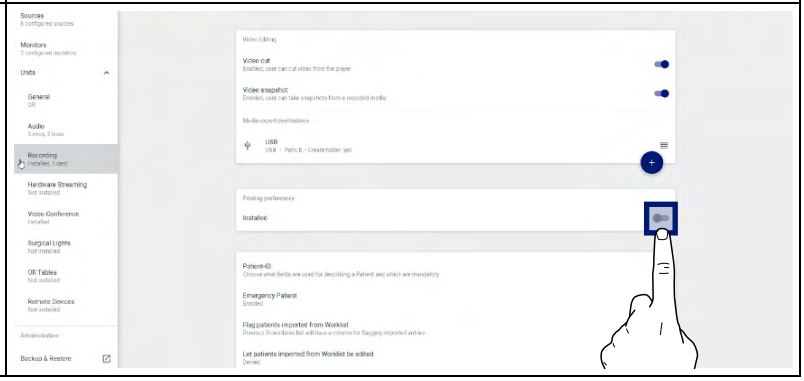
Proceed as follows to edit the section:

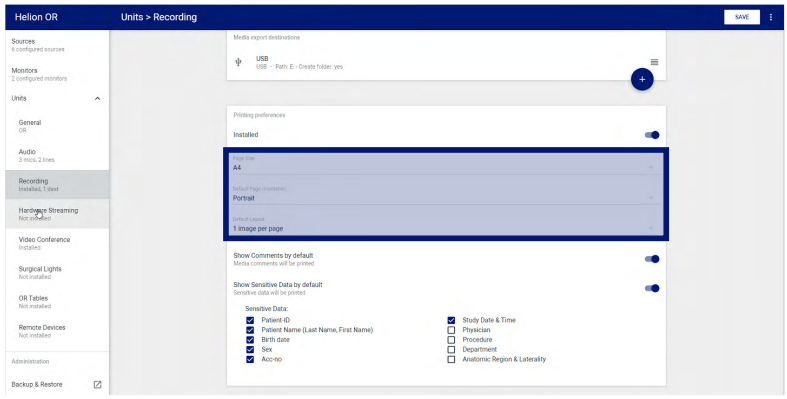
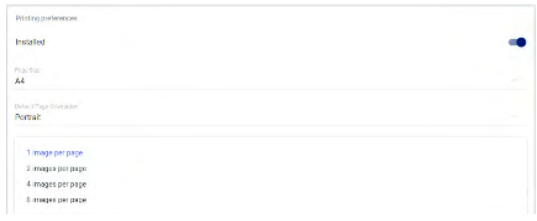
Step	Image
1. Press + to add a new export destination. This opens the configuration window.	
2. Enter: – the name of the new destination – the type (PACS, USB, LAN, PRINTER) – the server address (ONLY if LAN or PRINTER have been selected)	
3. Uncheck the “Create folder if not existing” box, and enter your username and password to access it. The folder is created on the server address entered in step 2, which is where the exported file will be saved.	
4. Uncheck the boxes according to the type of media you want to export to the configured destination. For the PRINTER destination, only SNAPSHOTS will be available.	
5. Press to enable or disable the file dimension limitation feature to export.	

Step	Image
6. Press CREATE to confirm or CANCEL to cancel the changes.	
7. Press the SAVE key (at the top of the menu bar) to save the changes made.	

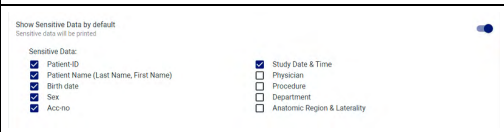
Printing Preferences

In this section, you can set the page size, orientation and layout. These parameters cannot be changed by the user from the UI.

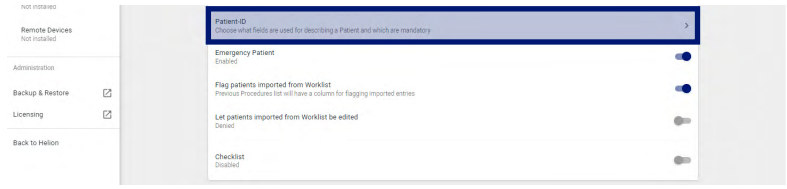
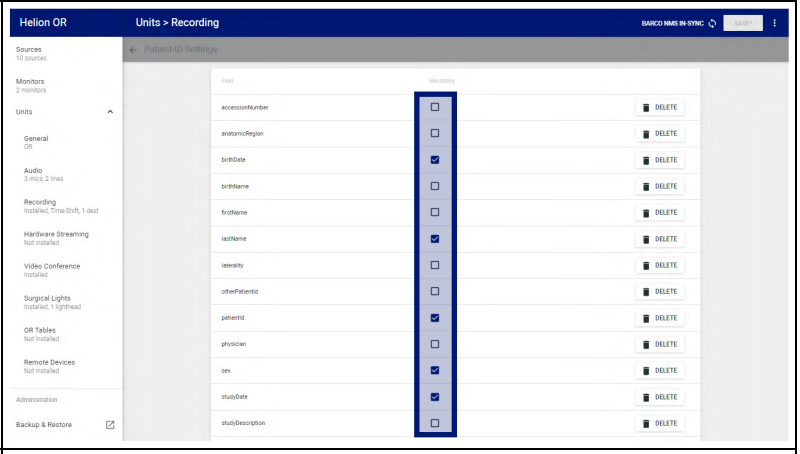
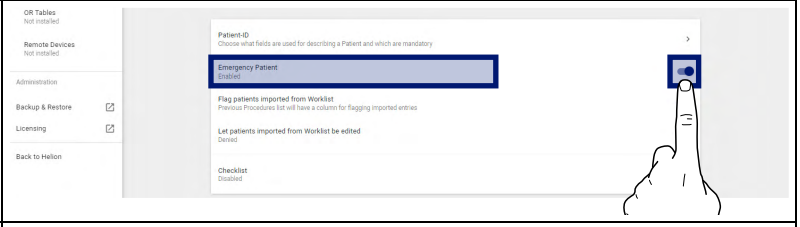
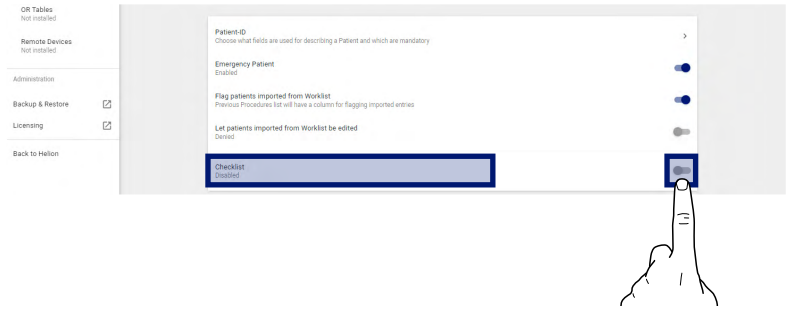
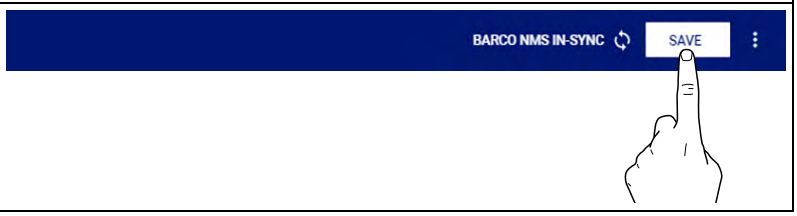
Step	Image
1. Press to enable or disable the section for Printing preferences.	

Step	Image
2. Click on one of the highlighted fields. A new box will pop up, listing all the available options:	
A4 or US Letter for Page Size	
Portrait or Landscape for the Orientation	
1, 2, 4, or 8 images per page as possible layouts	

The following section is for defining the default settings regarding the Printing contents. In any case, the user can change these settings before sending the media to the printer.

Step	Image
If this option is enabled, any comments manually added to the snaps will be printed by default. The user is also able to hide them from UI.	
If this option is enabled, all Patient Data will be printed by default. The user is also able to hide any Sensitive Data from UI. In the second part of this section, you can select which kinds of Patient Data must be considered sensitive, and therefore, which may possibly be hidden by the user.	

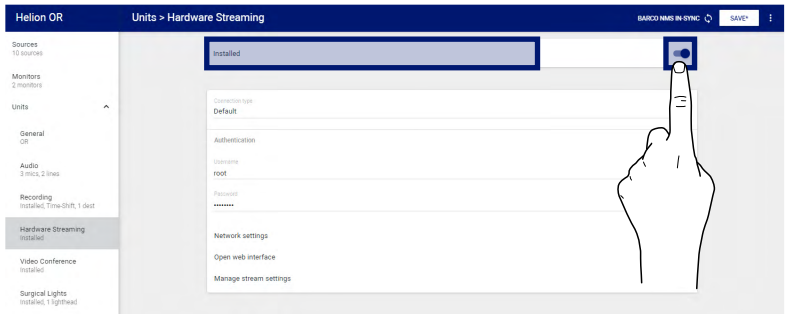
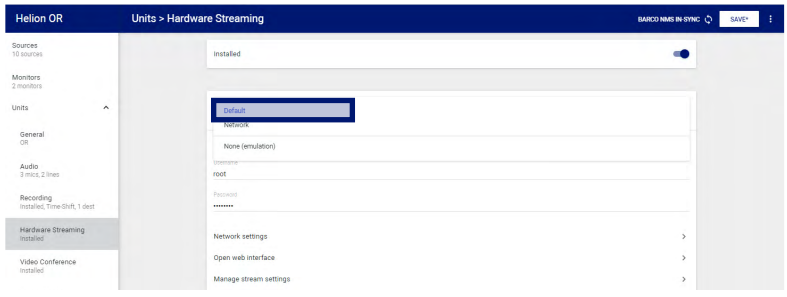
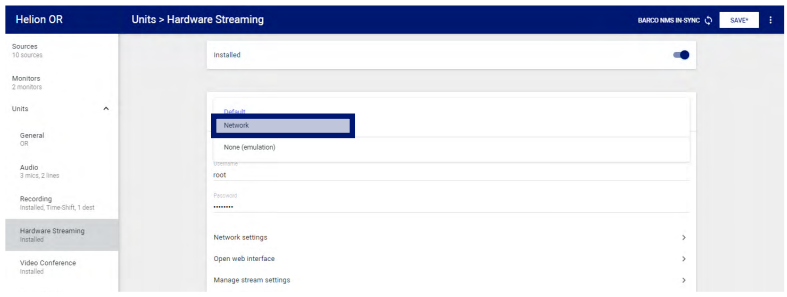
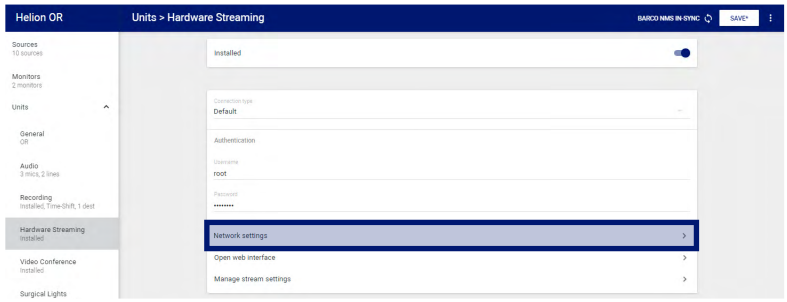
The Patient ID Settings section is used to customize the management of patients in the Helion Video Management System.
Proceed as follows to edit the section:

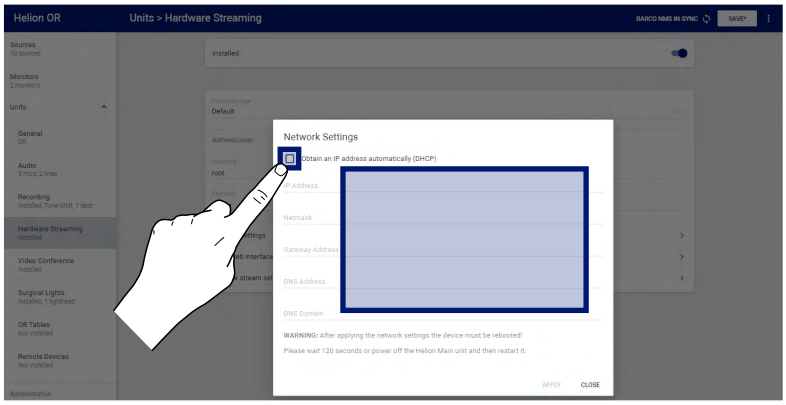
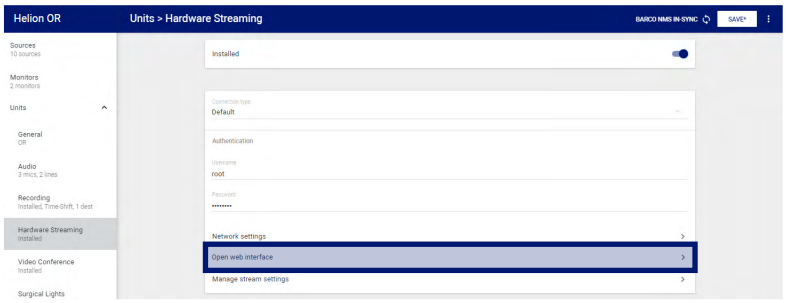
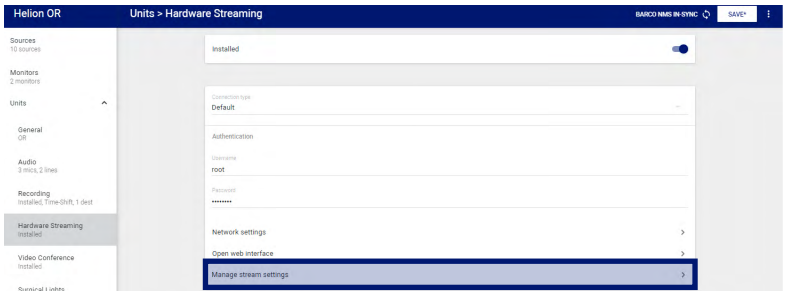
Step	Image
1. Press the Patient ID editable field. This opens the configuration window.	
2. Select the patient fields that must be filled out.	
3. Press  to enable or disable the Emergency Patient feature (creation of a patient in emergency circumstances, when a correct identification cannot be entered).	
4. Press  to enable or disable the Checklist feature.	
5. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.3.4 Hardware Streaming

The Hardware Streaming subsection is used to enable/disable the Streaming features of the Helion Video Management System.

Proceed as follows to edit the field:

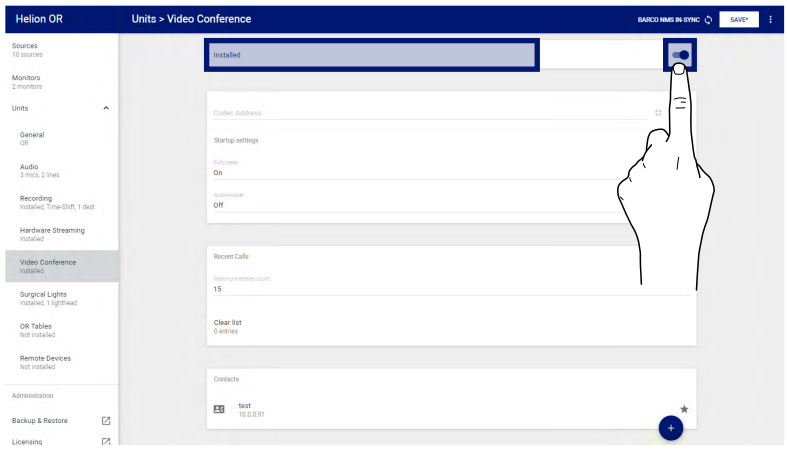
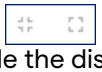
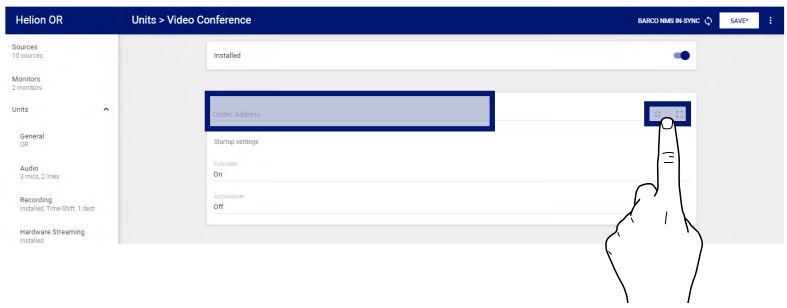
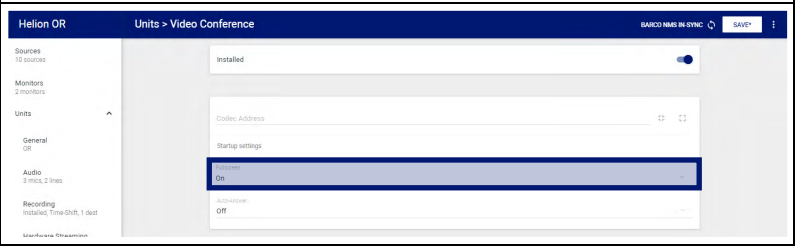
Step	Image
1. Press to enable or disable the Hardware Streaming feature. “Hardware Streaming” is an optional feature that can be activated with a license.	
2. a) Select the Default (internal) path. Do not change the login details unless they have been previously changed.	
b) Select the network path. Enter the IP to authenticate the login. An IP configuration window will be opened automatically for the network streaming feature. This mode is an alternative to the Default mode, which is always the preferable choice as it is more optimized.	
3. Press the editable Configure network setting field. This opens the configuration window.	

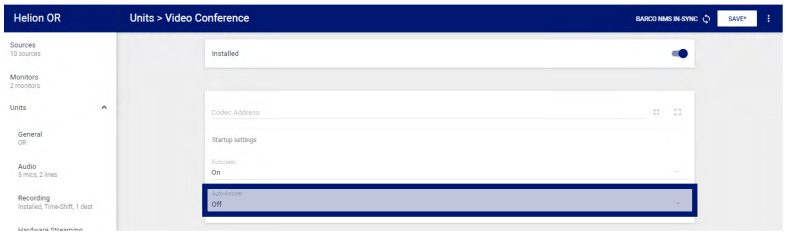
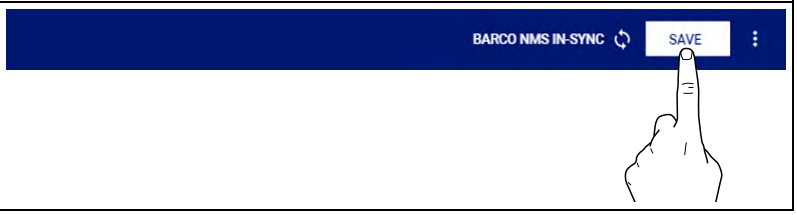
Step	Image
4. Uncheck the box to configure the streamer with the automatic network settings obtained via the DHCP. Alternatively, fill in all the fields to configure the streaming network parameters.	
5. Press the Open web interface editable field. The streaming link window opens automatically in the browser.	
6. Press the Manage stream settings editable field. This opens the configuration window.	
7. Select Streamer settings to save and archive the streaming configurations.	
8. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.3.5 Videoconference

The Video Conference subsection is used to enable/disable the video conference features of the Helion Video Management System.

Proceed as follows to edit the field:

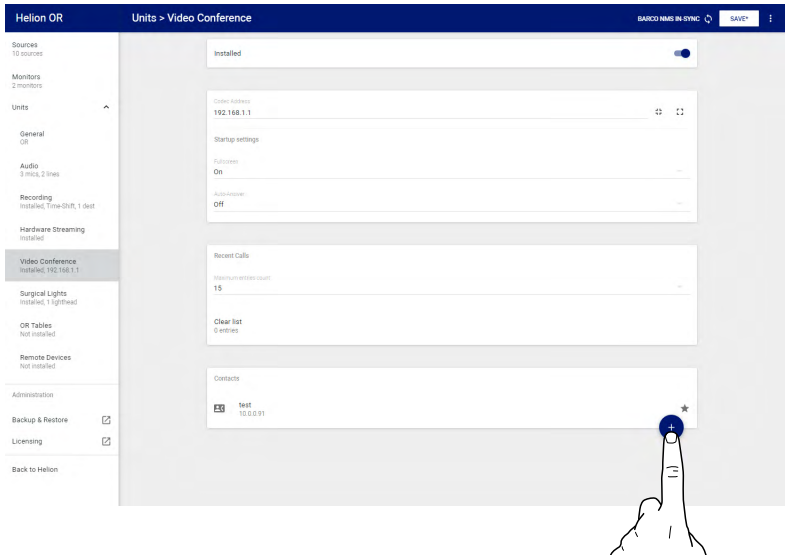
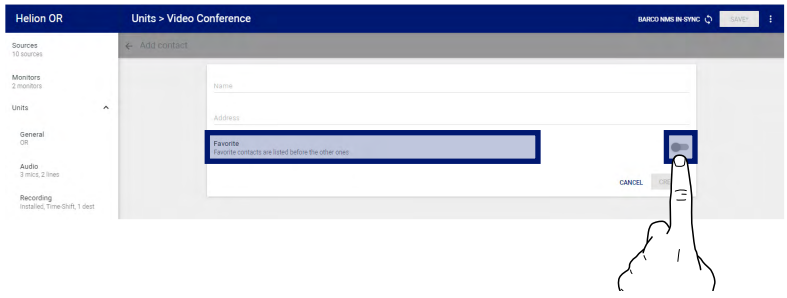
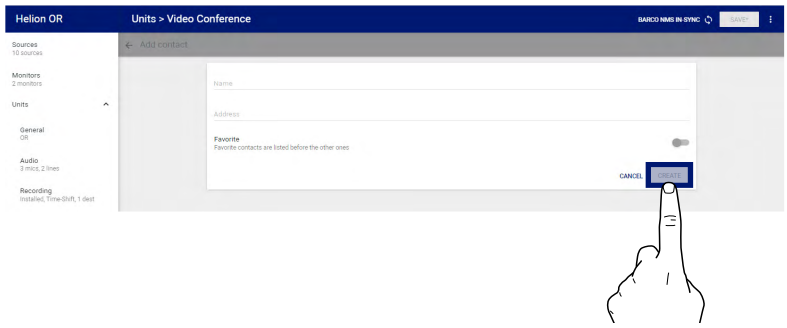
Step	Image
1. Press  to enable/disable the Video Conference feature. The “Video Conference” feature only applies to the Conference Unit.	
2. Enter the IP of the Helion Conference Unit to enable its control. Press  to enable or disable the display of the proprietary UI of the Video Conference module. This setting is for maintenance only. By default, the UI is hidden.	
3. Press the Fullscreen editable field to enable or disable the fullscreen feature.	

Step	Image
4. Press Auto-Answer to enable or disable the automatic answering of calls. You can also define this setting based on the number of times the phone rings. Here are the options for this mode: – On - auto-answer calls. – On after 1-2 rings - auto-answer calls after the phone rings once or twice. – Ignore - block incoming calls. If you choose to disable Auto-Answer (Off or On after), a warning popup window will appear on the User Interface.	
5. Press the editable field to select the maximum number of recent calls to be displayed.	
6. Press the Clear list field to delete the list of calls.	
7. Press the SAVE key (at the top of the menu bar) to save the changes made.	

VIDEO CONFERENCE section - Add contact

In the Add contact subsection, you can access the settings to create a new contact to add to your contacts.

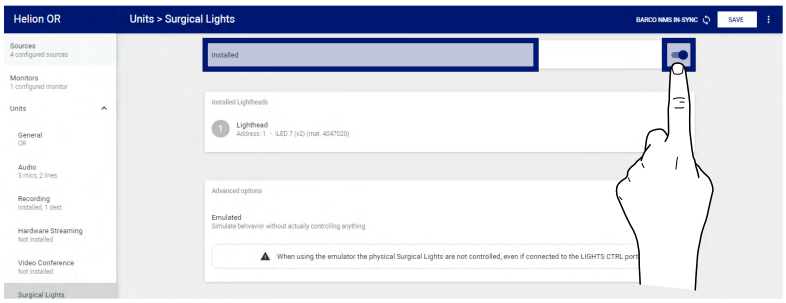
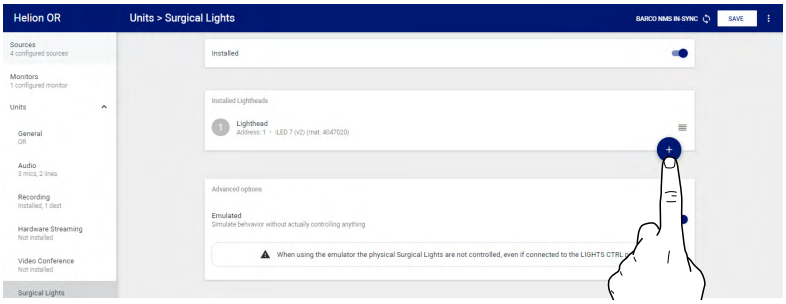
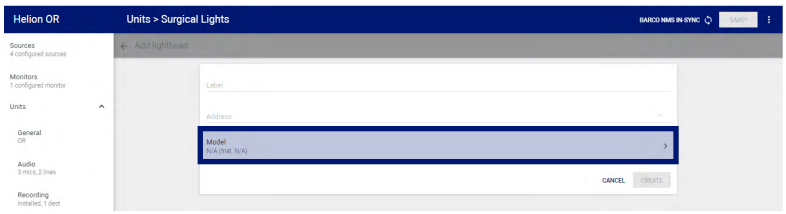
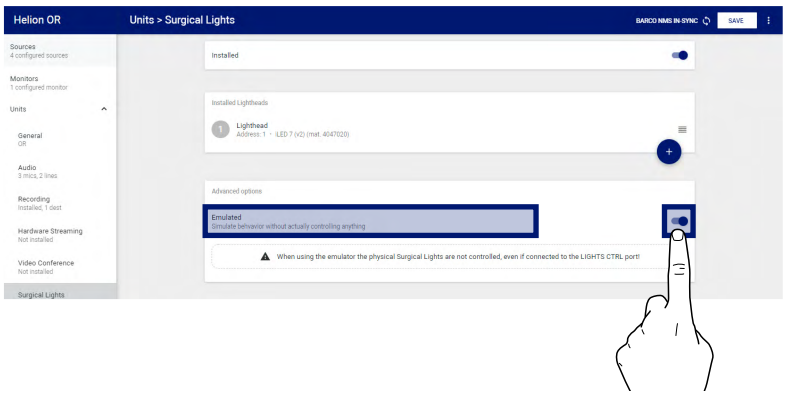
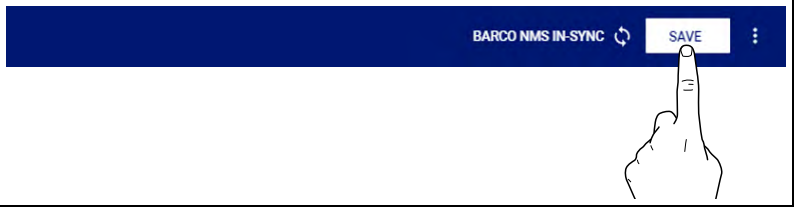
Proceed as follows to edit the section:

Step	Image
1. Press + to add a new contact. This opens the configuration window.	
2. Enter: – the name of the new contact – the IP address of the new contact	
3. Press to determine whether to add the new contact to your favorites.	
4. Press CREATE to confirm or CANCEL to cancel the changes.	
5. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.3.6 Surgical Lights

The Surgical Lights subsection is used to enable/disable the configuration options of the lamps placed in the operating room controlled by the Helion Video Management System.

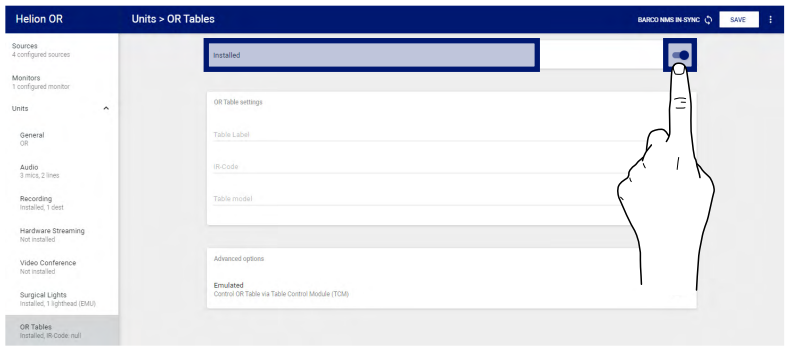
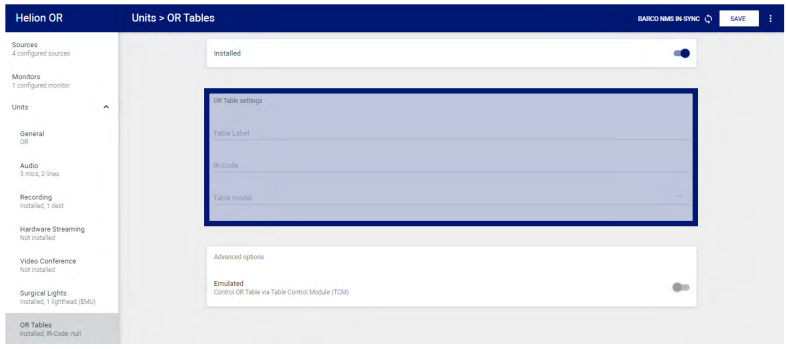
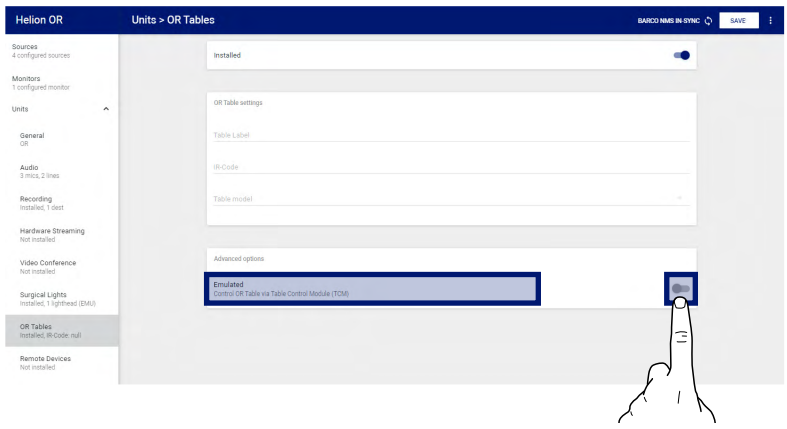
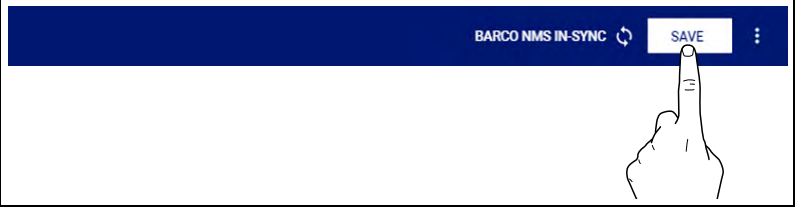
Proceed as follows to edit the field:

Step	Image
1. Press to enable or disable the Surgical Lights feature. “Surgical Lights” is an optional feature that can be activated with a license.	
2. Press + to add a new lamp model. This opens the configuration window.	
3. Select the lamp type and its address, also indicating a specific name for the lamp according to your needs (e.g., Main).	
4. Press to enable or disable the Emulated feature if lamp emulation is needed, if the lamps have not been installed. **NOTICE** **When the “Emulated” function is activated, the lamp’s settings cannot be changed, even if the lamps are installed correctly and connected.**	
5. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.3.7 OR Tables

The OR Tables subsection is used to enable/disable the configuration options of the settings for the control of the operating table built into in the Helion Video Management System.

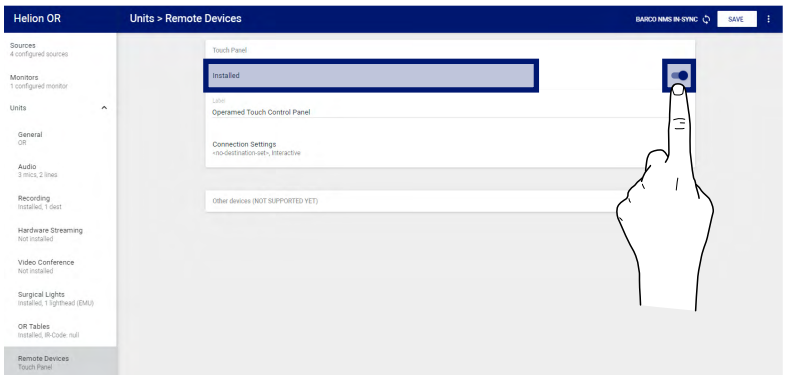
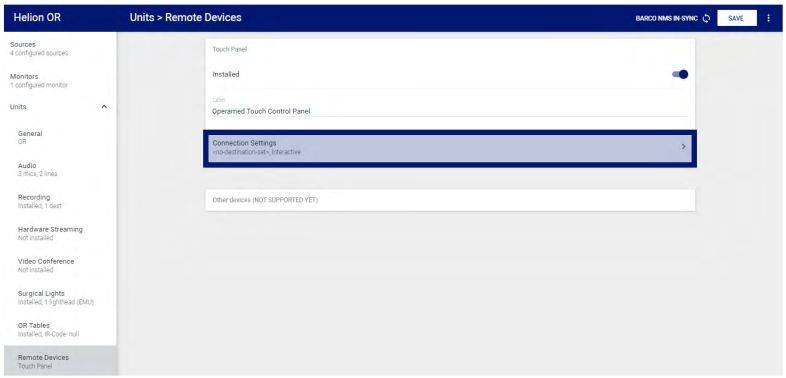
Proceed as follows to edit the field:

Step	Image
1. Press to enable or disable the OR Tables feature. “OR Tables” is an optional feature that can be activated with a license.	
2. Enter: – the operating table name – the infrared code of the operating table – the operating table model	
3. Press to enable or disable the Emulated feature if operating table emulation is needed, if the table has not been installed. **NOTICE** **When the “Emulated” function is activated, the settings of the operating tables cannot be changed, even if the tables are installed correctly and connected.**	
4. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.3.8 Remote Devices

The Remote Device subsection is used to enable/disable the configuration options of the settings of the remotecontrolled devices connected to the Helion Video Management System.

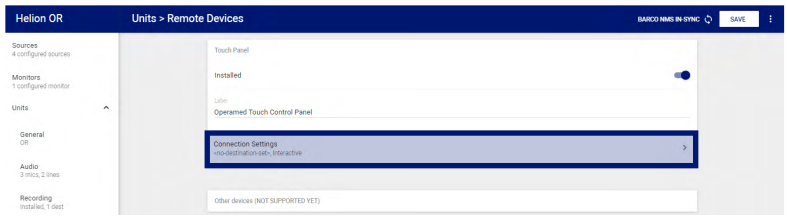
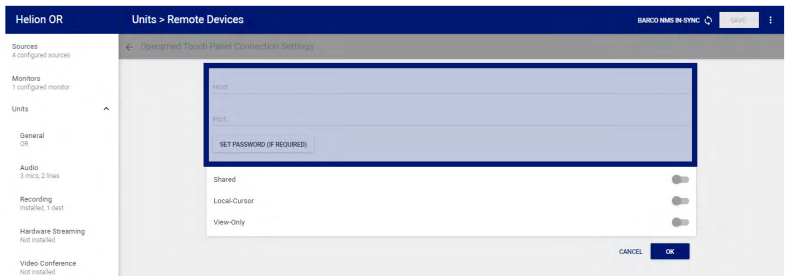
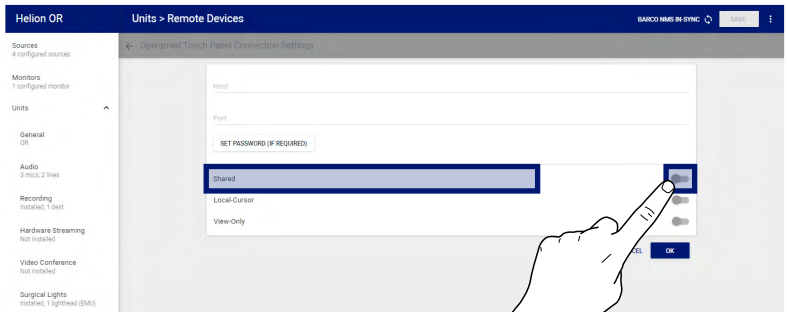
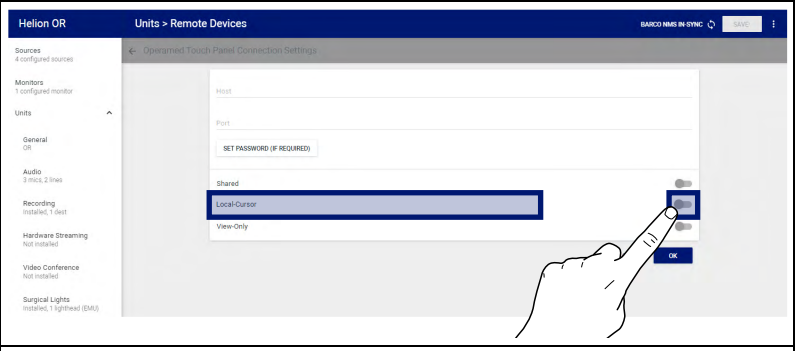
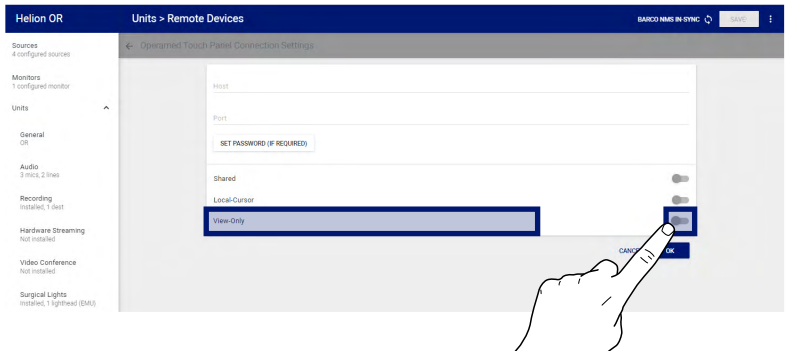
Proceed as follows to edit the field:

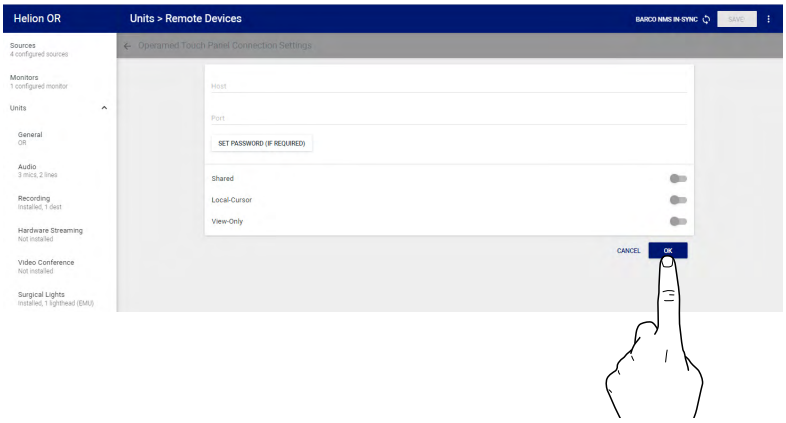
Step	Image
1. Press to enable or disable the Remote Devices feature. “Remote Devices” is an optional feature that can be activated with a license.	
2. Press the Connection Settings editable field to set the options to control the devices remotely. This opens the configuration window.	
3. Press the SAVE key (at the top of the menu bar) to save the changes made.	

REMOTE DEVICES section - Operamed Touch Panel Connection Settings

In the Operamed Touch Panel Connection Settings subsection, you can access the connection settings for the remote control of the Operamed TCP (only if present).

Proceed as follows to edit the section:

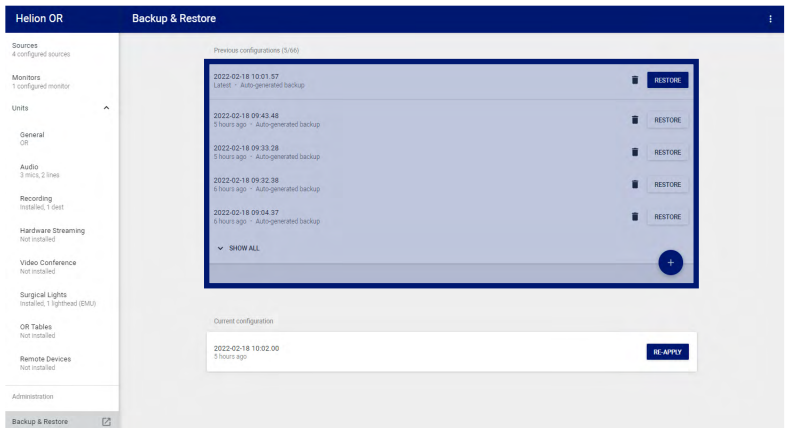
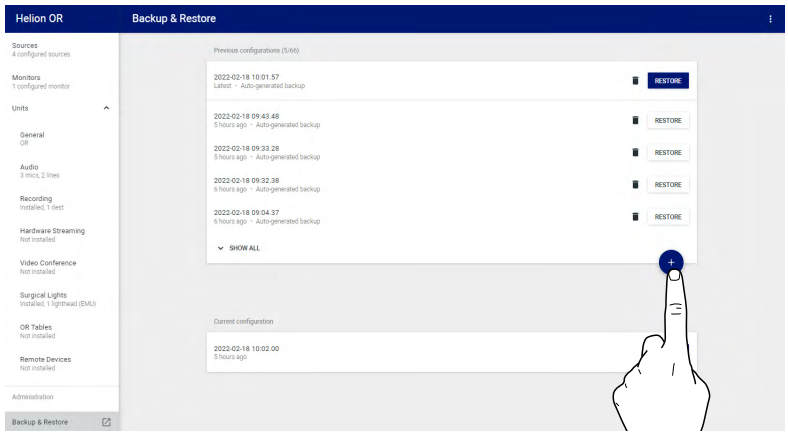
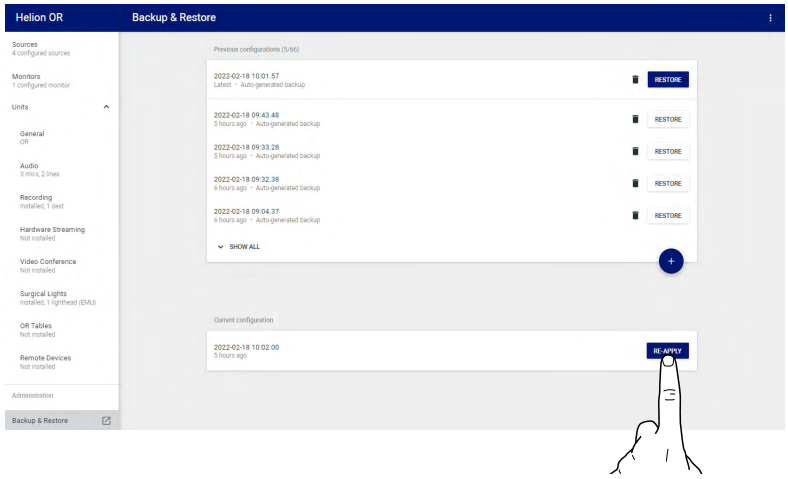
Step	Image
1. Press the editable Configure Connection setting field. This opens the configuration window.	
2. Enter: – the TCP IP – the TCP/IP port – the system password	
3. Press to enable or disable Shared mode.	
4. Press to enable or disable the option to view the remote Local-Cursor.	
5. Press to enable or disable the option to enter View-Only mode.	

Step	Image
6. Press **OK** to confirm or CANCEL to cancel the changes.	
7. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.4 “BACKUP & RESTORE” section

The Backup & Restore section is used to save the settings in a single package and create backups after completing the setup of the Helion Video Management System.

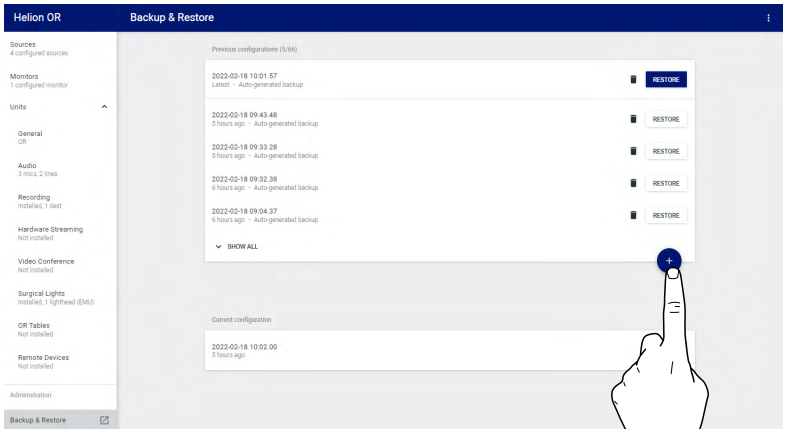
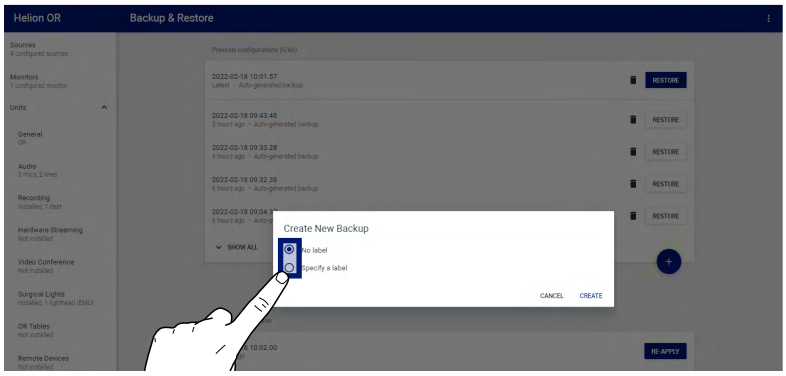
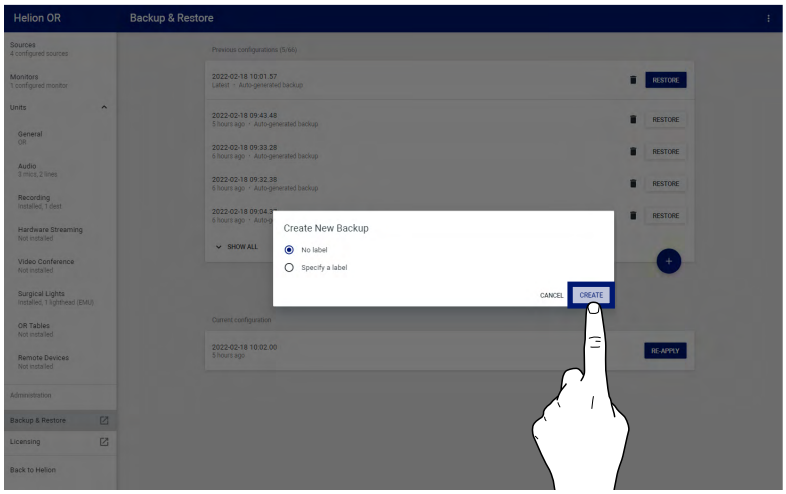
Proceed as follows to edit the section:

Step	Image
1. Select a previously saved configuration and apply it to the Helion Video Management System. Every time you save a setting in the “Sources”, “Monitors” or “Units” sections, the system creates an updated file.	
2. Press + to add a new Backup file. This opens the configuration window.	
3. Press RE-APPLY to re-apply the current settings if any system errors occur.	
4. Press the SAVE key (at the top of the menu bar) to save the changes made.	

BACKUP & RESTORE section - Create New Backup

In this Create New Backup subsection you can access the settings to create a new backup file for the settings of the Helion Video Management System.

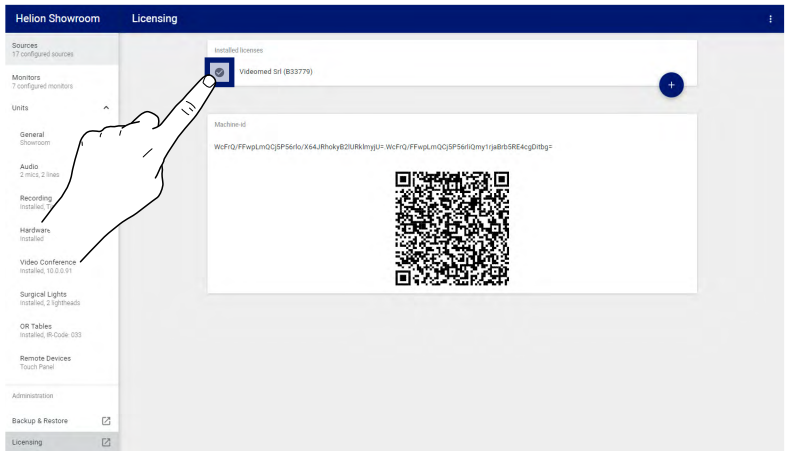
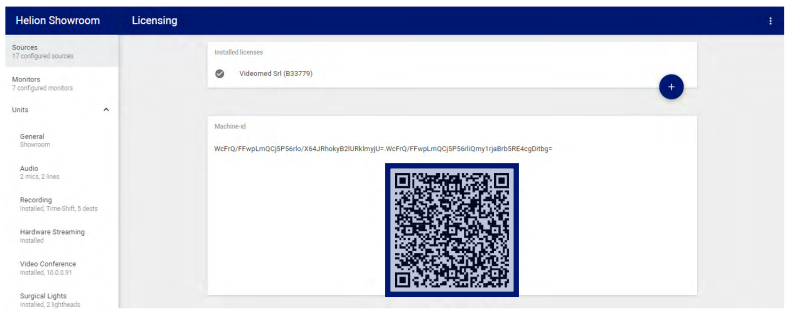
Proceed as follows to edit the section:

Step	Image
1. Press + to add a new Backup file. This opens the configuration window.	
2. Select whether to specify the name of the new backup (Specify a label) or simply name the backups according to the date and time by default (No label). If you select Specify a label, you will be prompted to enter a name to identify the backup you intend to save.	
3. Press CREATE to confirm or CANCEL to cancel the changes.	
4. Press the SAVE key (at the top of the menu bar) to save the changes made.	

7.2.5 “LICENSING” section

The Licensing section is used to check the details of the installed license or add and enable a new license issued by Videomed S.r.l.

Proceed as follows to edit the section:

Step	Image
1. Click the installed license name to view the details of the installed components. This opens the window with the list of enabled features.	
2. Use the QR codes to display the Machine ID of the Helion Video Management System. This can be sent to Videomed S.r.l. to generate a valid license if needed.	
3. Press the SAVE key (at the top of the menu bar) to save the changes made.	

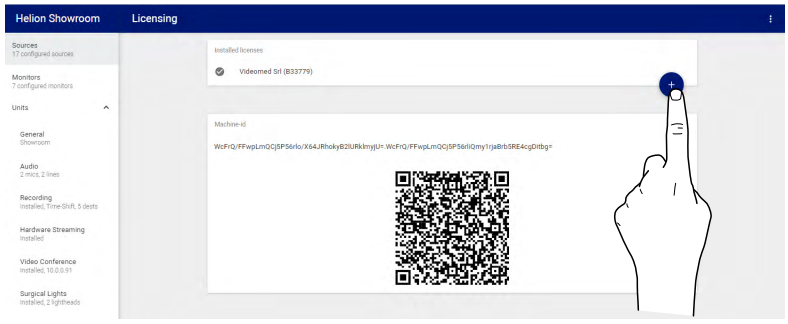
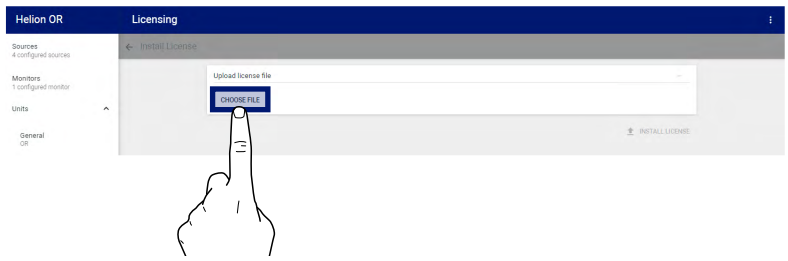
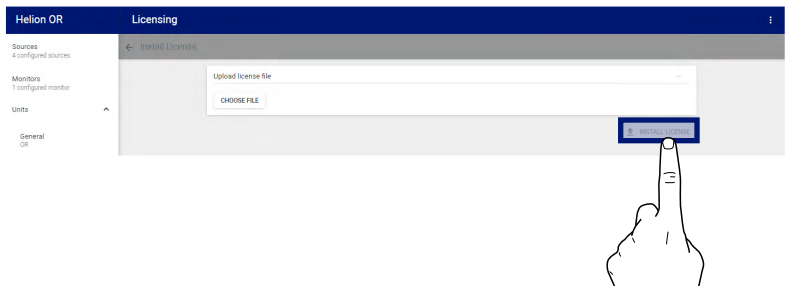
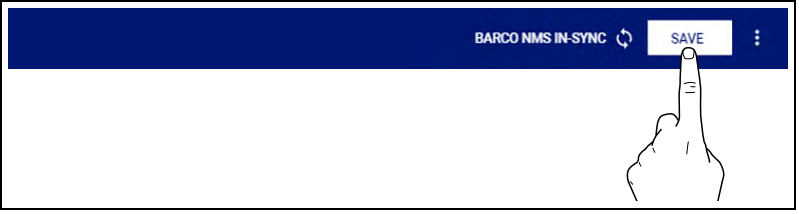
NOTICE

Each license is unique and associated with a specific system. You cannot use a license already associated with a system on a different system.

LICENSING section - Install license

In this Install license subsection. you can access the settings for installation a new license inside the Helion Video Management System.

Proceed as follows to edit the section:

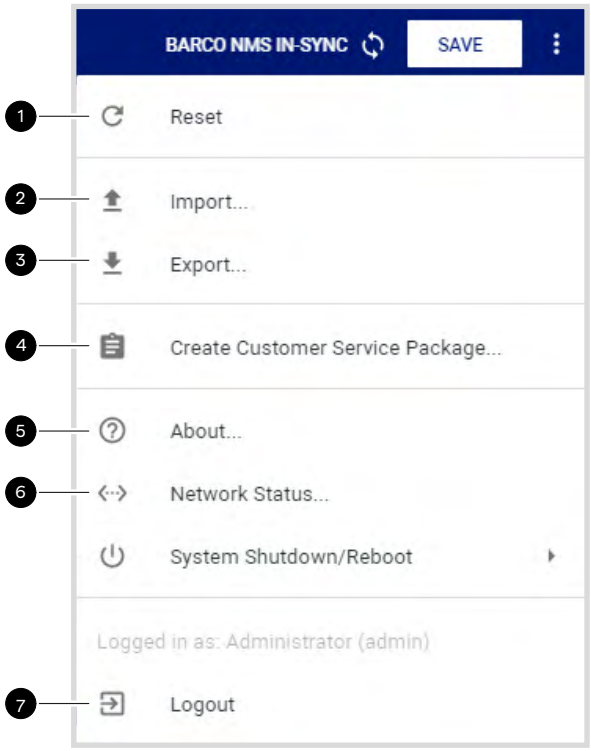
Step	Image
1. Insert a USB pen drive containing the new license to be installed.	
2. Press + to install a new license. This opens the configuration window. You can install a new license by sending the Machine ID to Videomed S.r.l.	
3. Press Choose file to open the resource management window and upload the file to be installed.	
4. Press Install license to install the new license purchased from Videomed S.r.l.	
5. Press the SAVE key (at the top of the menu bar) to save the changes made.	

NOTICE

Each license is unique and associated with a specific system. You cannot use a license already associated with a system on a different system.

7.2.6 Advanced menu

The advanced menu is divided as follows:



[1] Reset
[2] Import
[3] Export*
[4] Create Customer Service Package
[5] About
[6] Network Status
[7] Logout

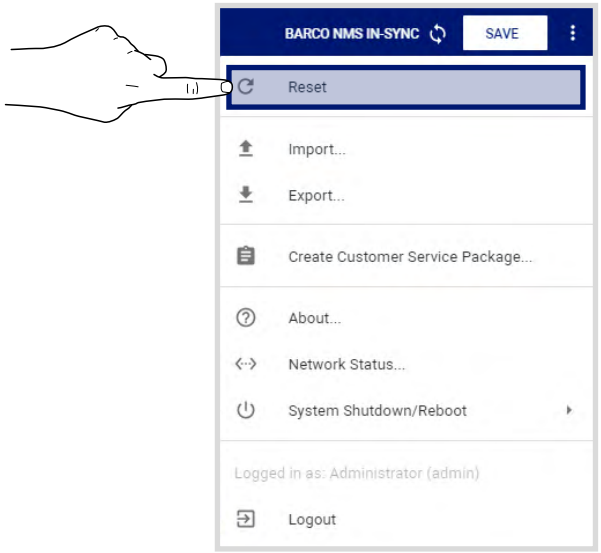
* The export function is only available via browser.

The details of each section are reported in the following pages.

7.2.6.1 Reset

The Reset feature is used to reupload the last settings saved in the configuration system.

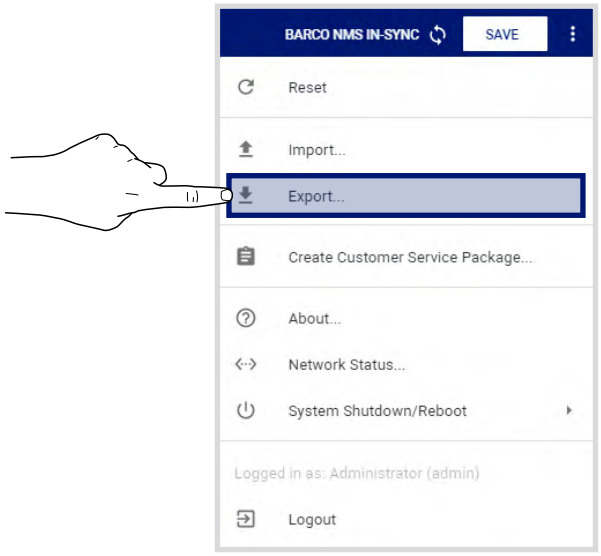
Proceed as follows to Reset:

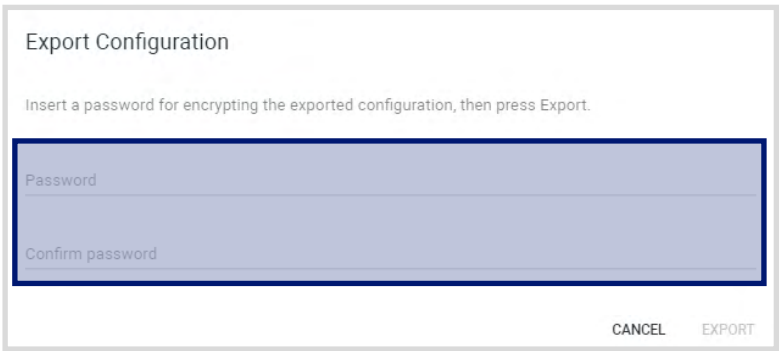
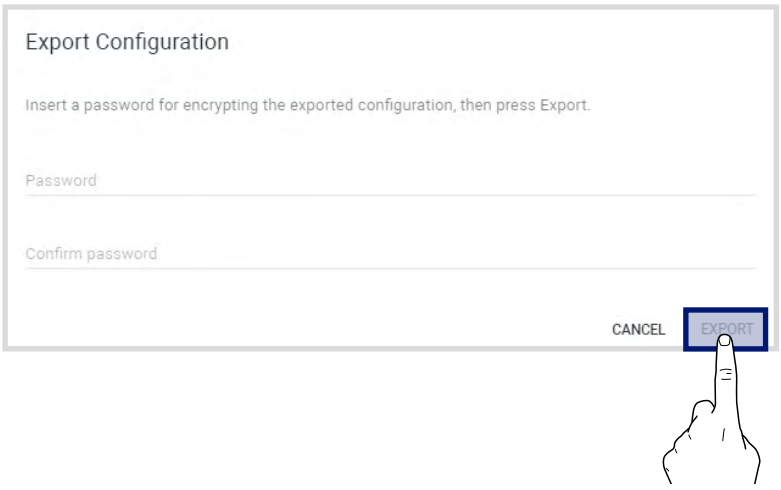
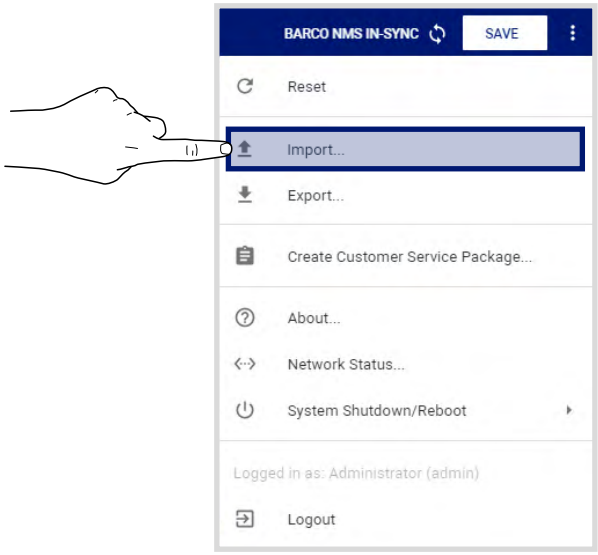
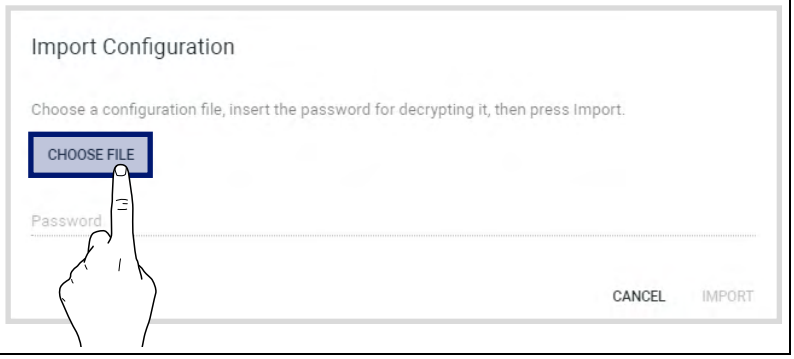
Step	Image
1. Press Reset to reupload the latest settings saved.	

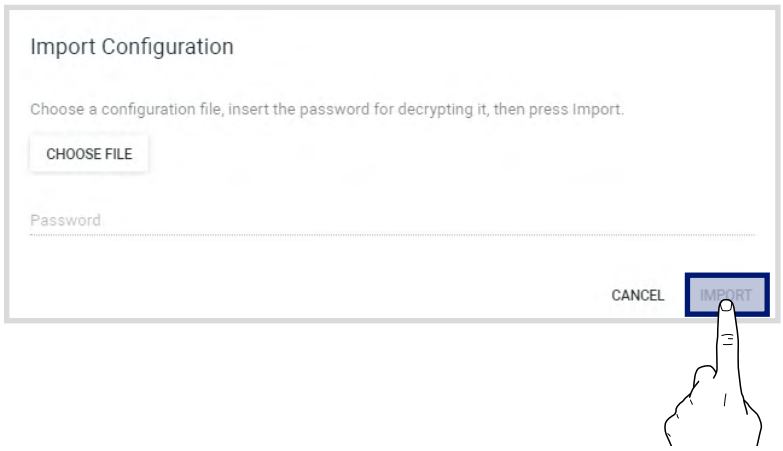
7.2.6.2 Import / Export

The Import / Export feature is used to import or export the configuration currently in use in the Helion Video Management System.

Proceed as follows to import / export the configuration:

Step	Image
1. Press Export... to go to the export feature. This opens the configuration window.	

Step	Image
2. Insert the password for encrypting the file, only if necessary.	
3. Press EXPORT to export the settings created. The settings are exported to the system "Downloads" folder. Use a USB pen drive to export them.	
4. Press Import... to go to the import feature. Connect a USB pen drive to the system to import the settings.	
5. Press CHOOSE FILE to choose the file to import. This opens the resource management window.	

Step	Image
6. Press IMPORT to import the settings.	

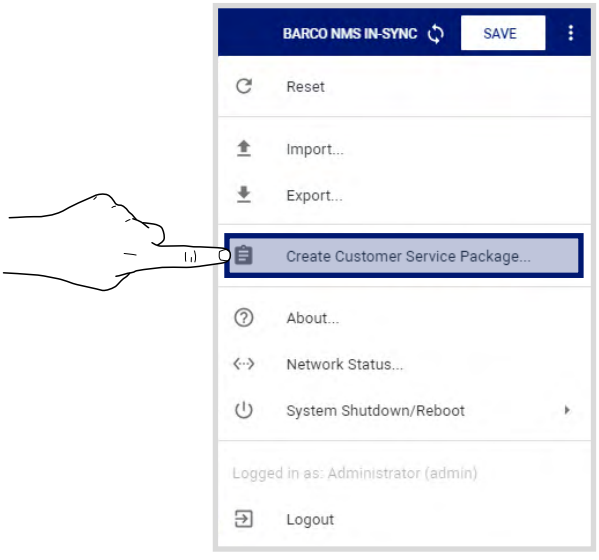
NOTICE

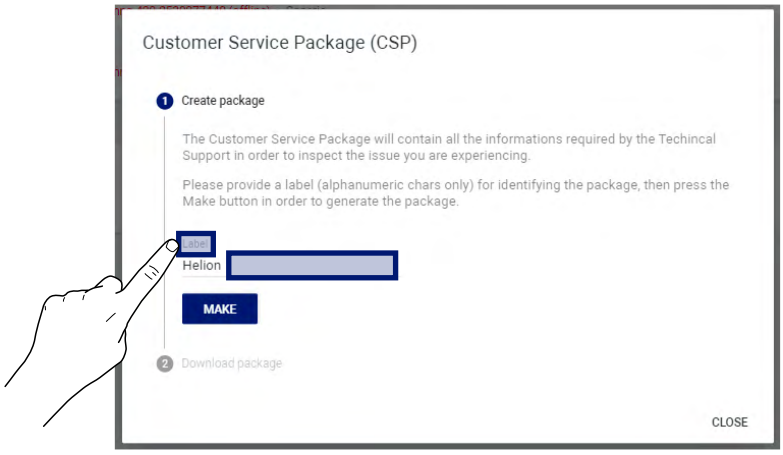
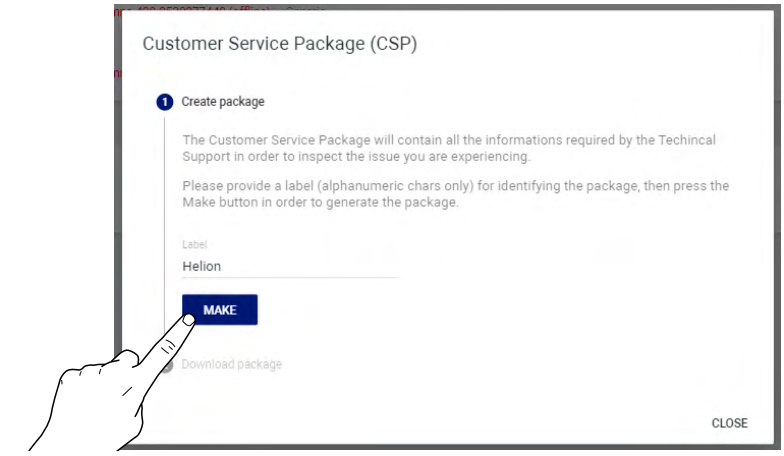
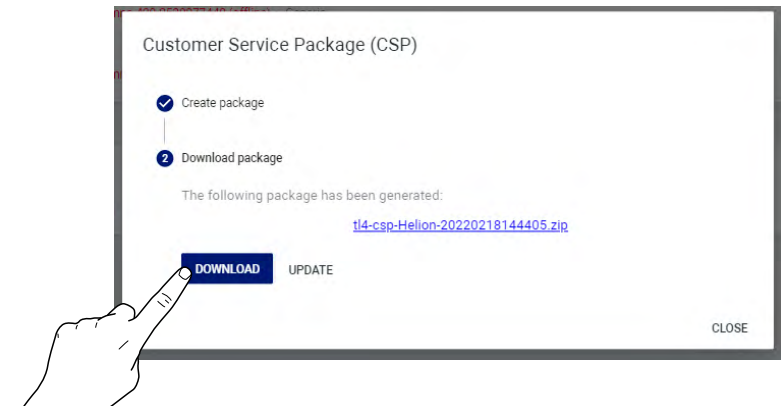
Change the IP addresses and unique data entered in the imported settings, if you import settings in a different operating room.

7.2.6.3 Customer Service Package

The Customer Service Package (CSP) is used by the Technician to create a data package regarding the status of the Video System and send it to the service authorized by Videomed S.r.l. to conduct a complete diagnostic analysis of the settings in the event that malfunctions or bugs are discovered.

Proceed as follows to create and send a Customer Service Package (CSP):

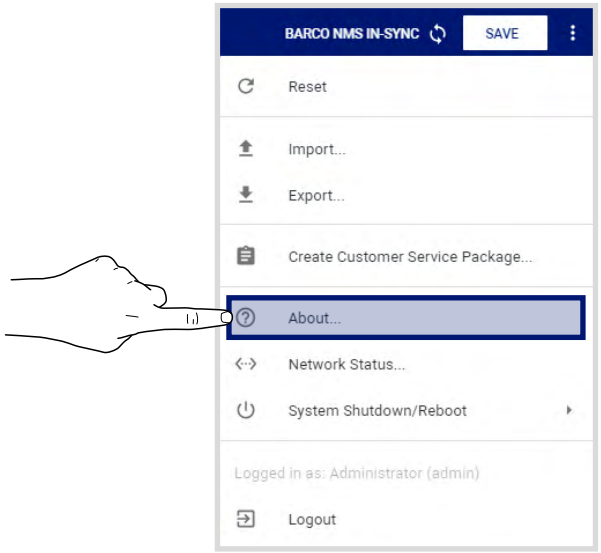
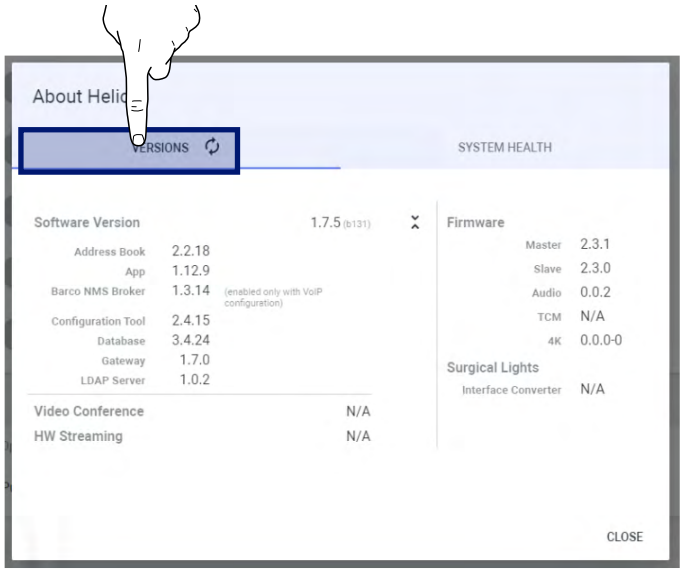
Step	Image
1. Press Create Customer Service Package... to go to the data package creation feature. This opens the configuration window.	

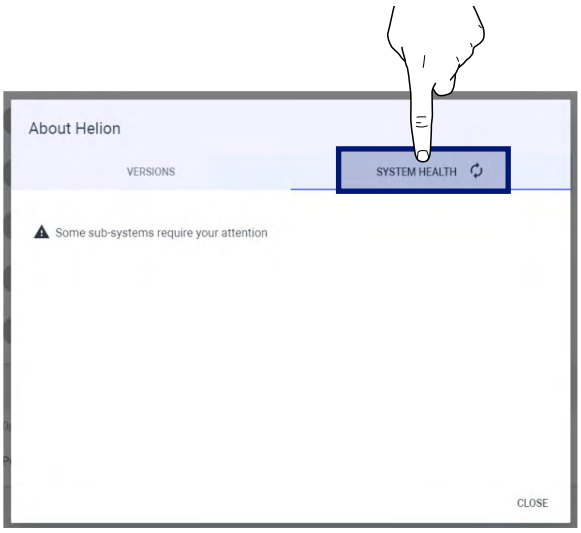
Step	Image
2. Press Label and enter the name identifying the CSP.	
3. Press MAKE and wait for the CSP to be created	
4. Press DOWNLOAD to download the package and send it to the Videomed S.r.l. service center.	

7.2.6.4 About

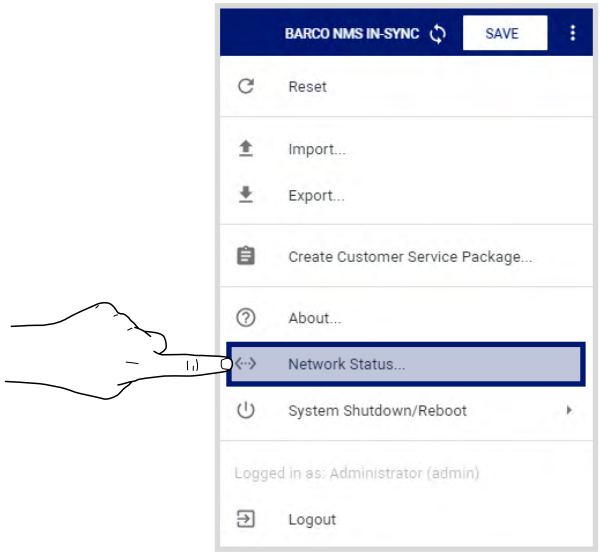
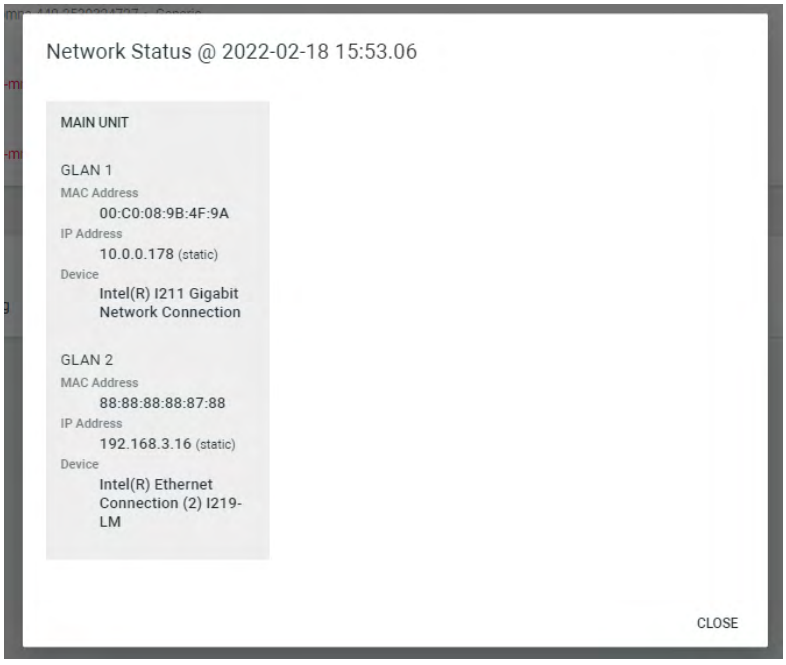
The About feature is used to access the general information menus of the Helion Video Management System.

Proceed as follows to go to the About feature:

Step	Image
1. Press About... to go to the system information menu.	
2. Press VERSIONS to view the relevant information. VERSIONS: displays the versions of the components installed in the Helion Video Management System.	

Step	Image
3. Press SYSTEM HEALTH to view the relevant information. SYSTEM HEALTH: displays the operating status of the Helion Video Management System. Press each section to view the various operating temperatures of the boards and processors.	

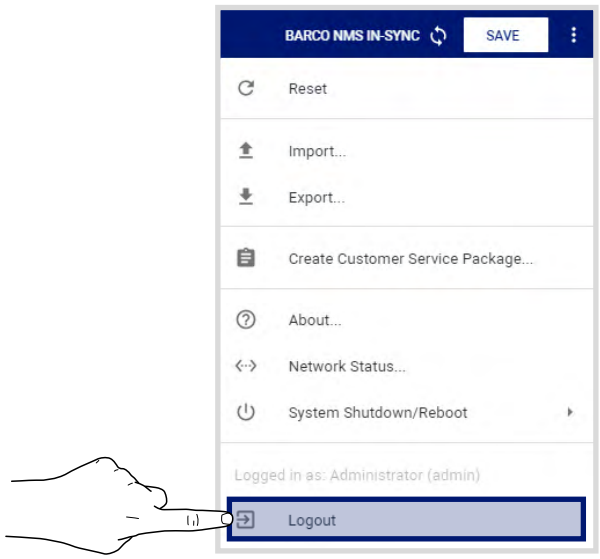
7.2.6.5 Network Status

Step	Image
1. Press Network Status... to see the network parameters of the units.	
2. Here you can see the network information for the system units.	

7.2.6.6 Logout

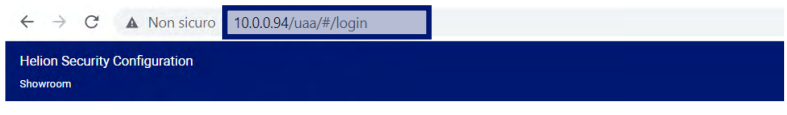
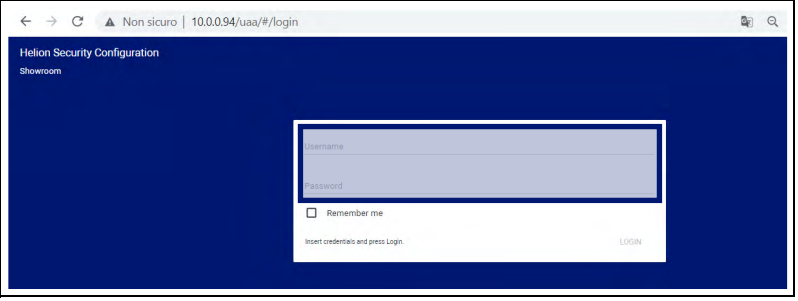
The Logout feature lets the user disconnect from the Helion configuration system.

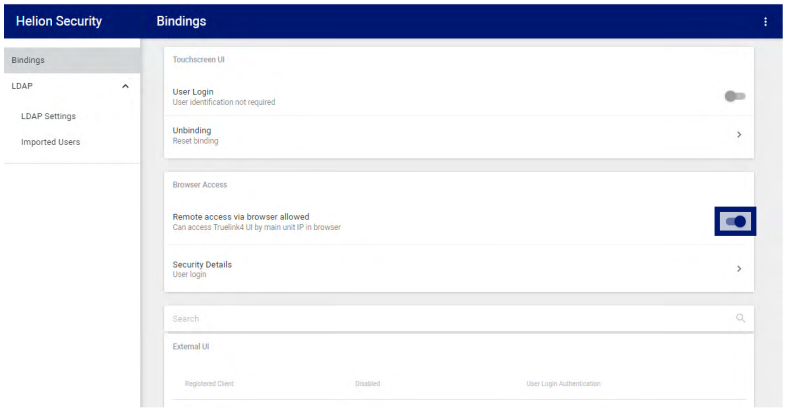
Proceed as follows to log out:

Step	Image
1. Press Logout to log out from the system.	

7.2.7 Enabling remote access via web

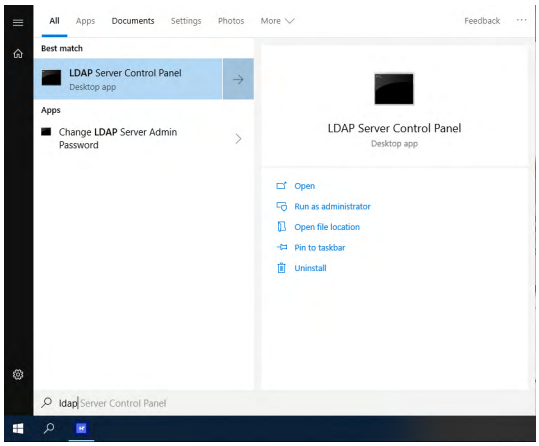
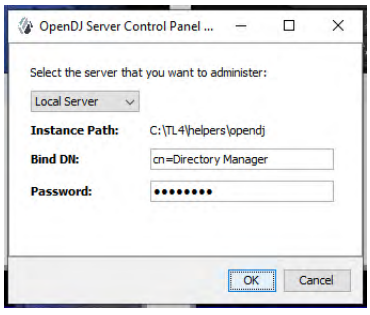
Make sure the appropriate changes have been made to the tl4-uaa folder before following the instructions.

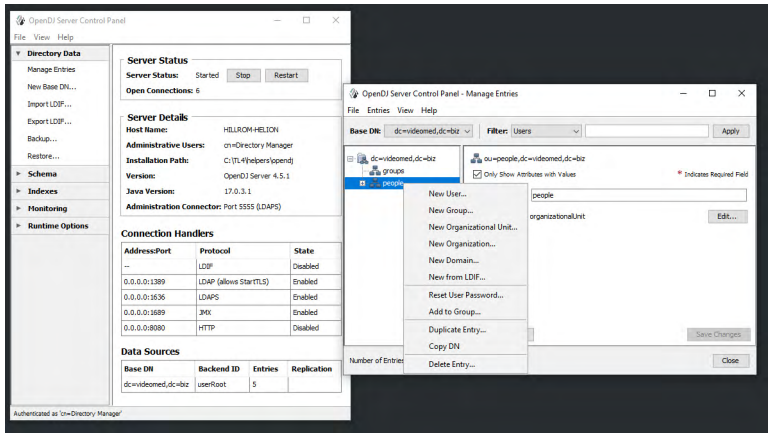
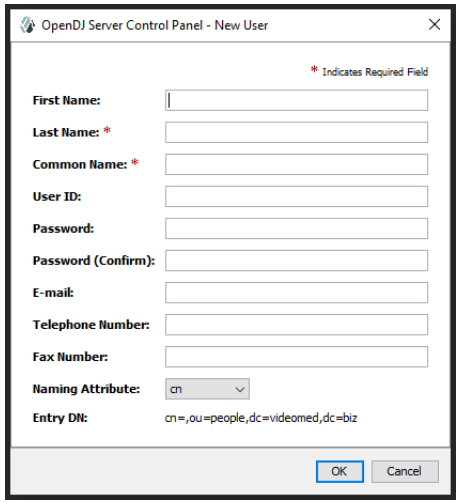
Step	Image
1. Open Google Chrome section and type: “IpAddress/uaa” to access the uaa management system.	
2. Insert the username and password to access.	

Step	Image
3. Click on the next to “Remote access via web browser allowed”.	

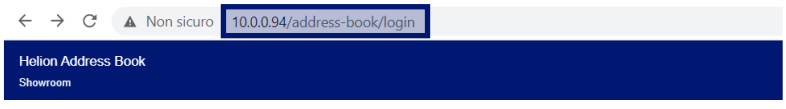
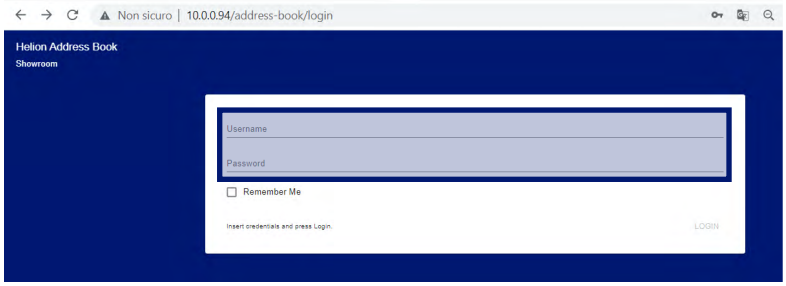
7.2.7.1 Activating new users

The following instructions are used to enable credentials for a new user who will be able to access all User environments, including UI access via WEB and the address-book portal.

Step	Image
1. Close Helion Application.	
2. Type “LDAP Server Control Panel” in the Windows Start Menu search bar and launch the application.	
3. Enter the password provided during the Service Training.	

Step	Image
4. Select Manage Entries, scroll down the dc=videomed,dc=biz menu, right-click on people and select “new user”.	
5. Fill in the form: user ID and Password are mandatory fields even though they are not marked as such. These will be the Username and Password that the new user enters to log in. Then press OK.	
6. Open the Helion App via web and log in with the new user.	

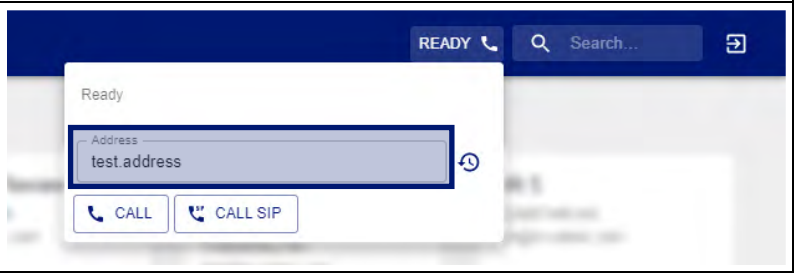
7.2.8 Address Book

Step	Image
1. Open Google Chrome and type: “IpAddress/address-book” to access address book management.	
2. Insert the username and password to access.	

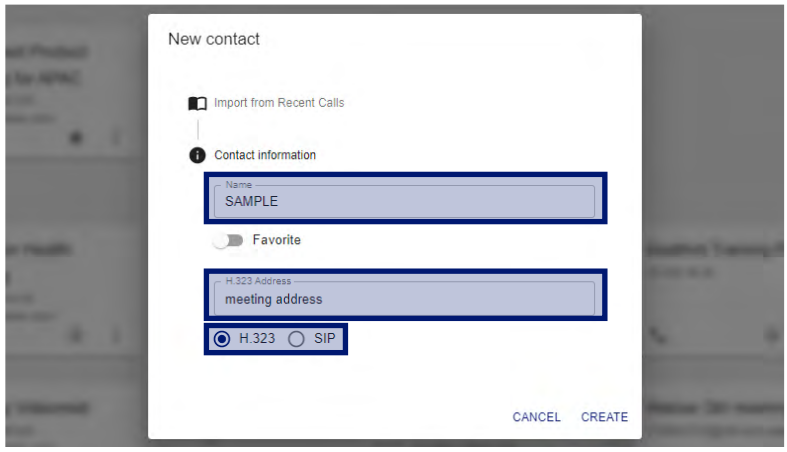


[1] Rapid call button
[2] Search through contacts
[3] Log Out button
[4] Add new contact

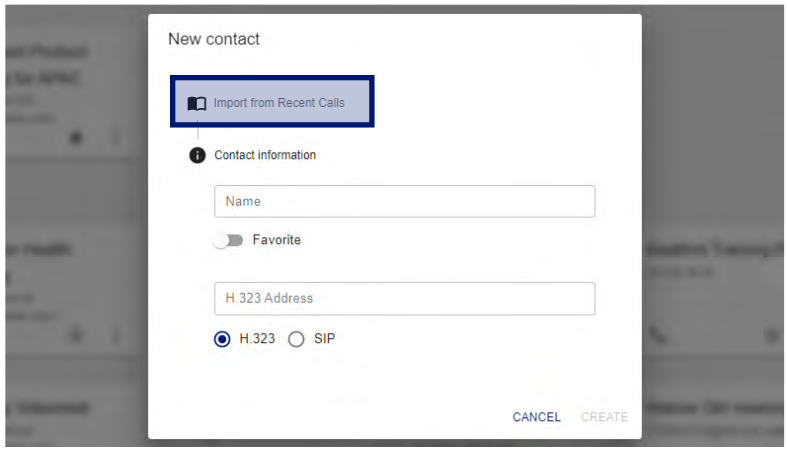
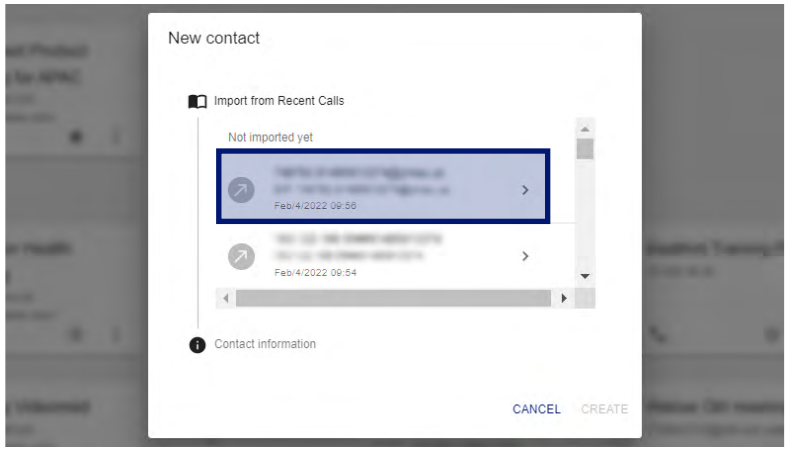
Rapid call

Step	Image
1. Insert the IP address you want to contact or the meeting link. 2. a) Click CALL if it is a H.323 call/meeting. b) Click CALL SIP if it is a SIP call/meeting.	

New contact

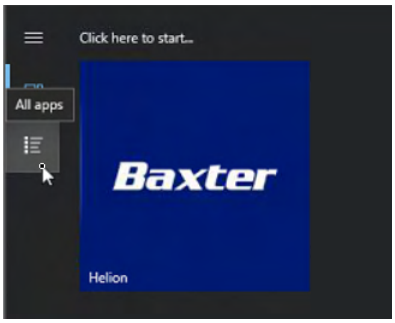
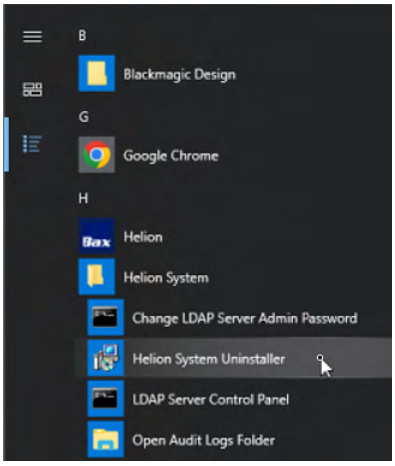
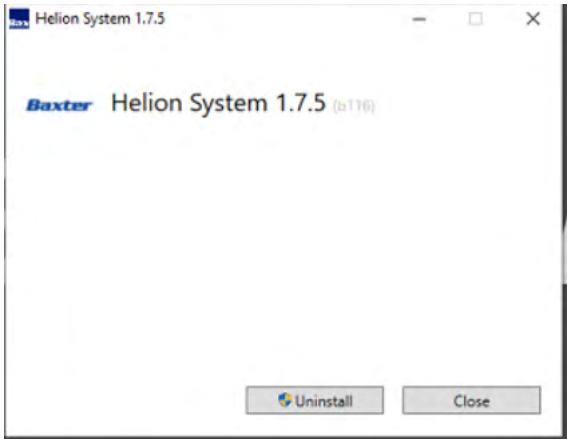
Step	Image
1. Insert the name for the contact. 2. Insert the destination address or link. 3. Select which protocol is used with that contact (SIP / H.323). 4. Click on CREATE.	

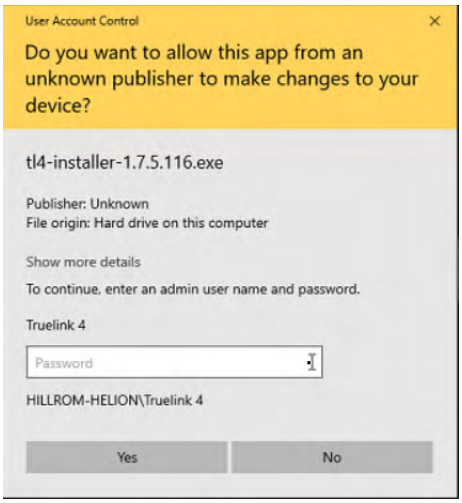
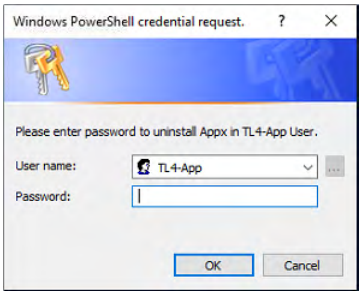
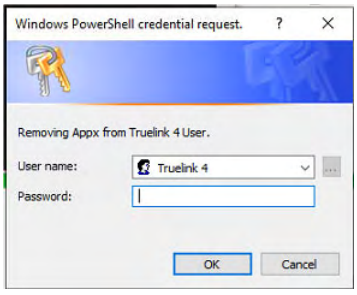
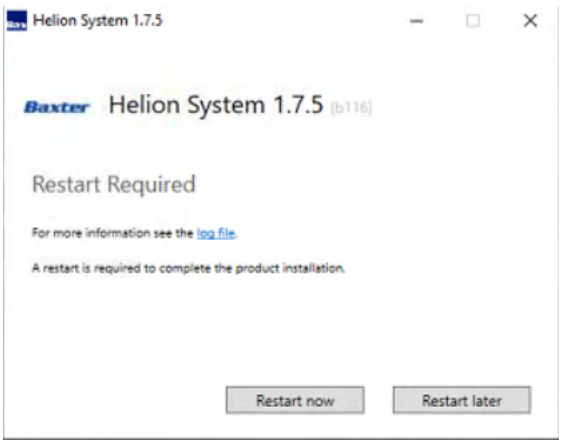
New contact from recent call

Step	Image
1. Press Import from Recent Calls. This will open the list of recent calls.	
2. Select the contact to import 3. Click on CREATE.	

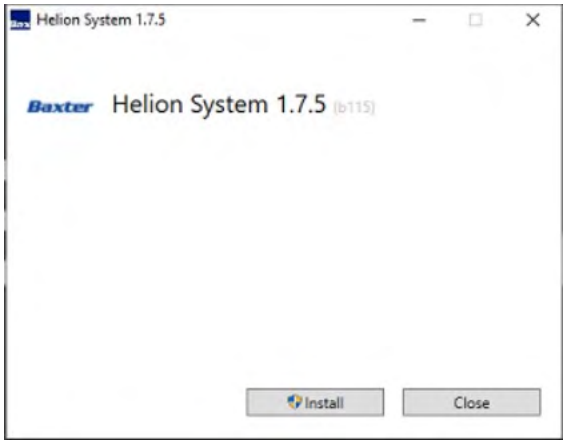
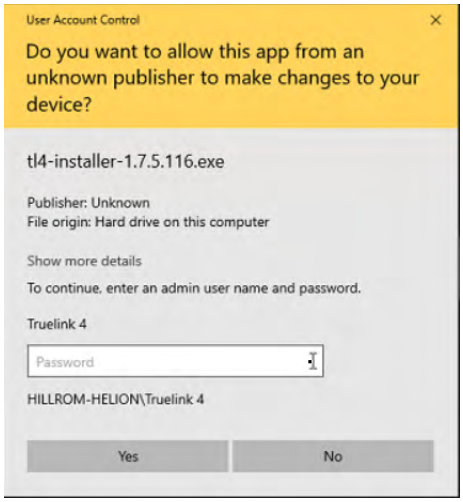
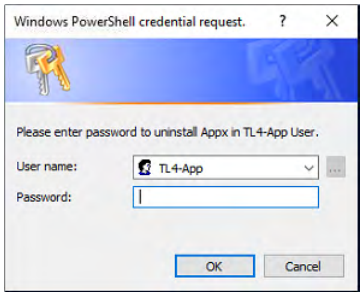
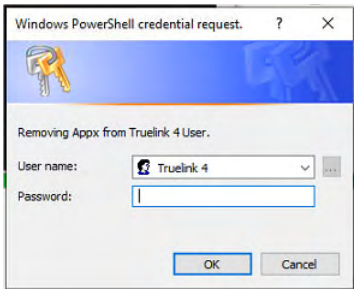
7.3 Installing and uninstalling software

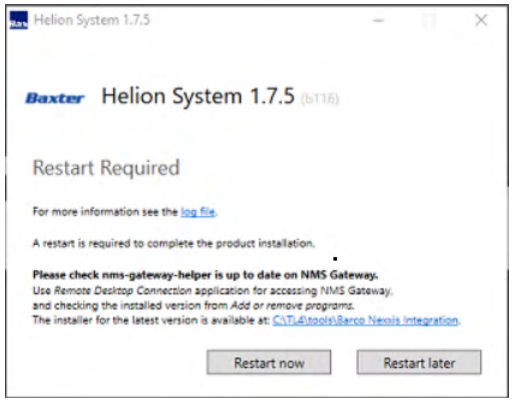
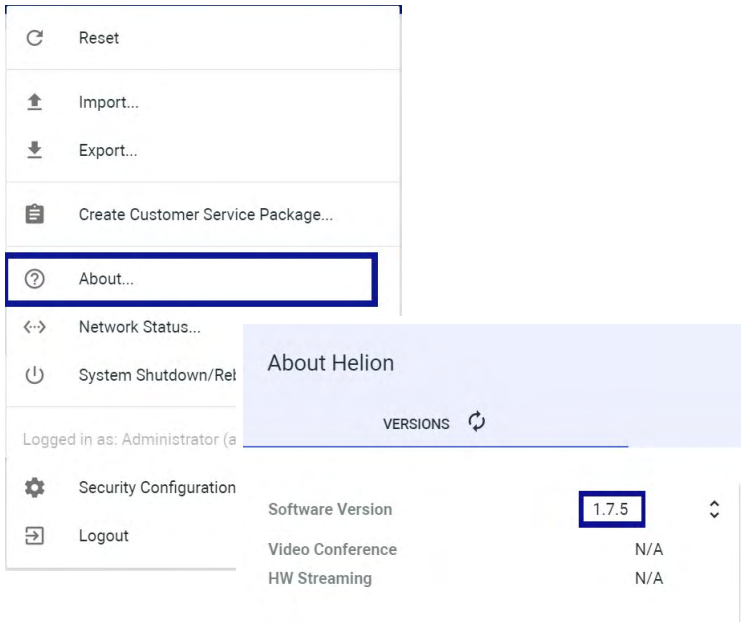
To uninstall the Helion app, proceed as follows:

Step	Image
1. Close the Helion app (ALT+f4). 2. Go to the Windows search box. 3. Click on the “All apps” icon	
4. Click to expand the Helion System folder and launch the “Helion System Uninstaller”.	
5. Click on Uninstall.	

Step	Image
6. Enter the administrator password.	
7. Enter the Truelink 4 password and TL4-App password when requested. (This password will be shared separately.)	 
8. Once the process is finished, click on “Restart now” and wait for the machine to restart.	

To install the Helion app, proceed as follows:

Step	Image
1. Click on tl4-installer-1.x.x.exe.	
2. Click Install and follow the procedure.	
3. Enter the administrator password.	
4. Enter the Truelink 4 password and TL4-App password when requested. (This password will be shared separately.)	 

Step	Image
5. Once the Installation is completed, click on “Restart now” and wait for the machine to restart.	
6. Check that installation has been successful in Helion/ Truelink 4 About section.	

Note: See Helion Troubleshooting document on Wallpaper setting section.

7.4 Installing, managing, and uninstalling printers

7.4.1 Installing a printer

Note: For security reasons, administrator rights are mandatory when installing printers. Everything in this chapter must be done inside the Truelink 4 user, the administrator of the Helion System.

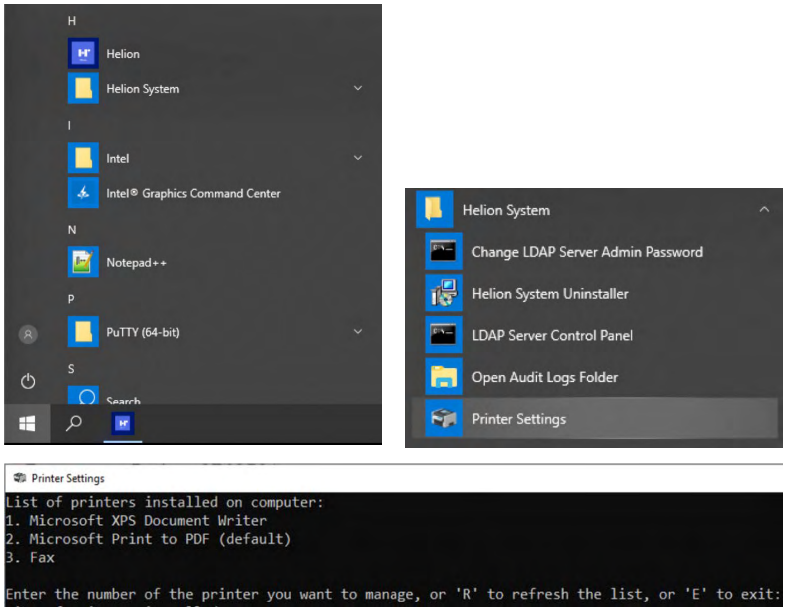
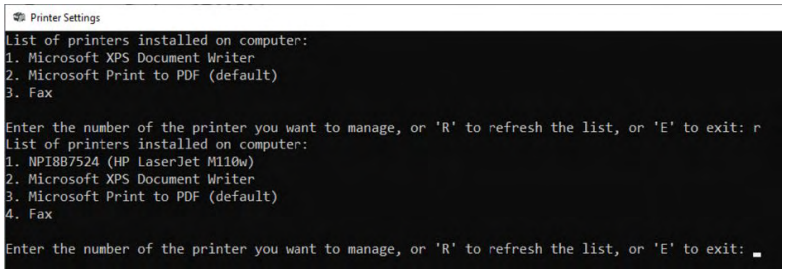
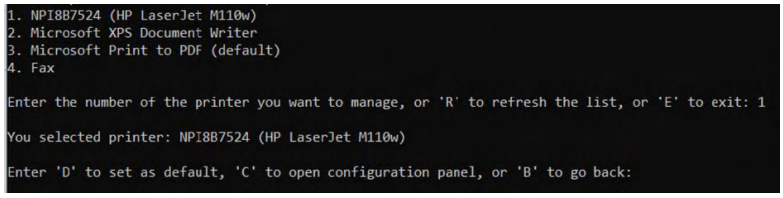
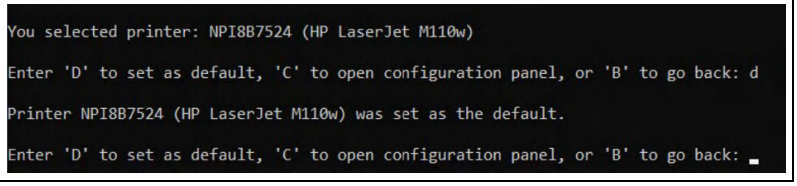
7.4.1.1 Using the manufacturer installation tool

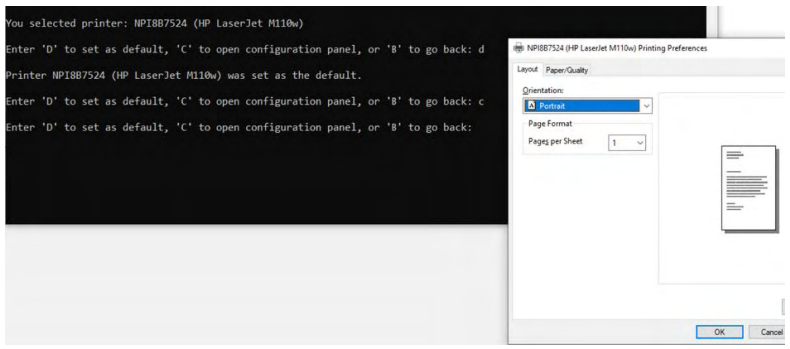
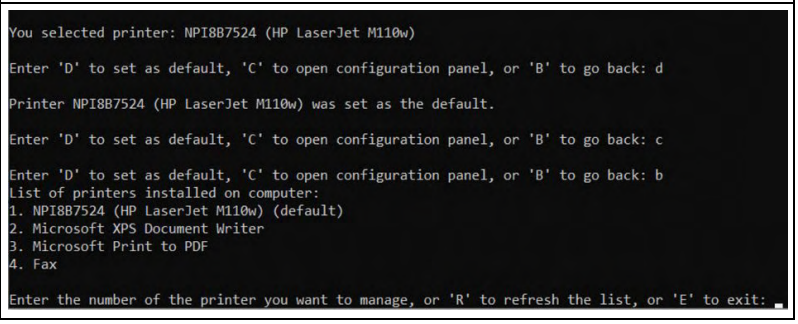
In case the printer you want to install comes with an installation tool made by the manufacturer, you can simply launch it and follow the steps.

In this case, administrator rights are still mandatory. So the tool is launched either from the Truelink 4 user space, or by right click > “Run as administrator”.

7.4.2 Managing installed printers

Managing printers, such as setting one as default or opening the specific settings panel, must be done inside the non-admin space TL4-App user.

Step	Image
1. Starting from Helion System 1.7.5, there is a new shortcut in the Start menu, in the Helion folder, called Printer Settings, which is used to manage the printers installed in the system. Clicking the shortcut will open a new window like this, showing the list of installed printers and stating which one is the default printer.	
The commands (case-insensitive) are: – **E** to exit – **R** to refresh the list, if an administrator has just installed or removed a printer	
Enter the number of the printer you want to manage, for example, 1	
Once you have selected the printer you want to manage: – Enter **D** to set it as the default printer	

Step	Image
– Enter **C** to open the configuration panel	
– Enter **B** to go back to the printers list	

7.4.3 Uninstalling a printer

Note: For security reasons, administrator rights are mandatory to uninstall printers. Everything in this chapter must be done inside the Truelink 4 user, the administrator of the Helion System.

7.4.3.1 Using the Windows printer settings page

In the Printers & scanners settings section, to remove a printer, just select the printer you want to remove and click Remove device. Windows will uninstall the printer and remove it from the list of the available printers.



7.4.3.2 Using the manufacturer installation tool

Depending on the manufacturer and the printer, the tool (and the printer) can be uninstalled from Control Panel > Programs > Programs and Features.

Note: In this case, administrator rights are still mandatory. If present, the uninstaller tool can then be launched from the Truelink 4 user space, or by right click > “Run as administrator”. To open the Control Panel instead, it is mandatory to be inside the administrator user space.

7.5 Installing and updating firmware

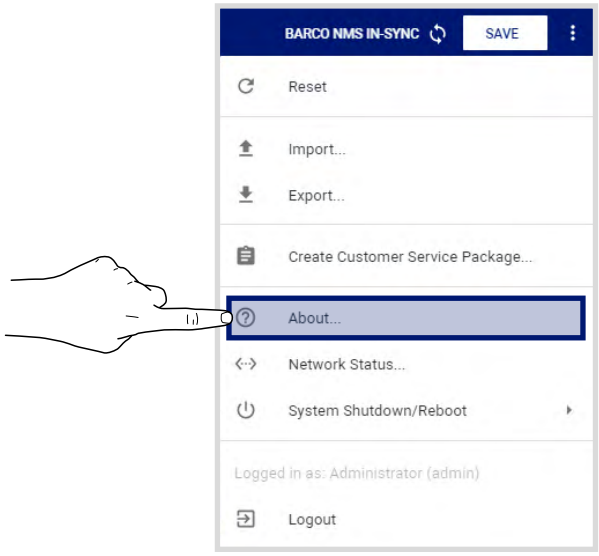
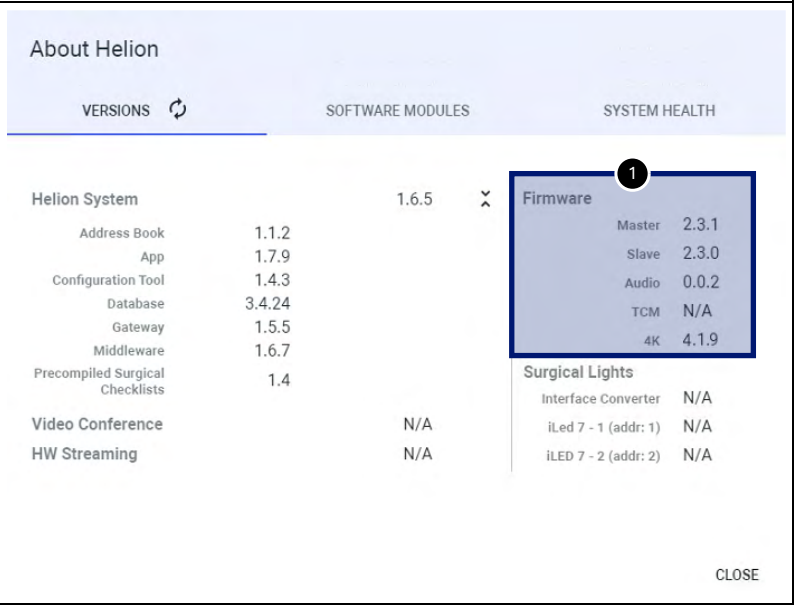
7.5.1 Purpose and Scope

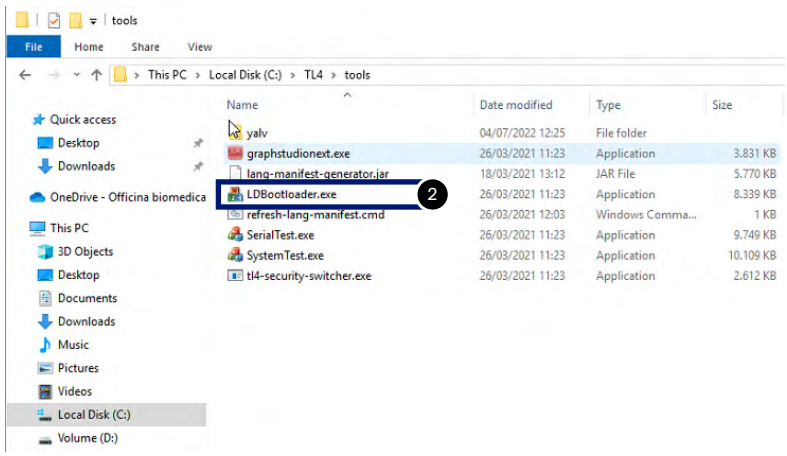
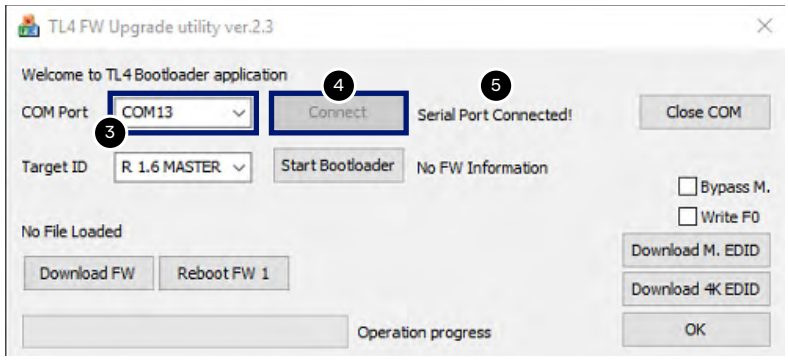
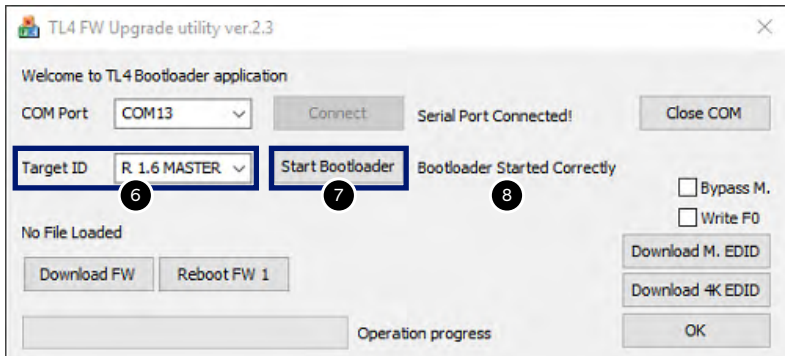
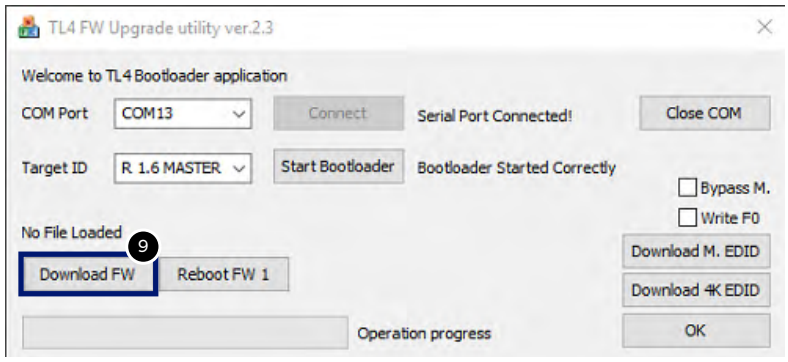
The purpose of this section is to describe how to update the Firmware (FW) for Main Unit / 4K modules and the 4K EDID module.

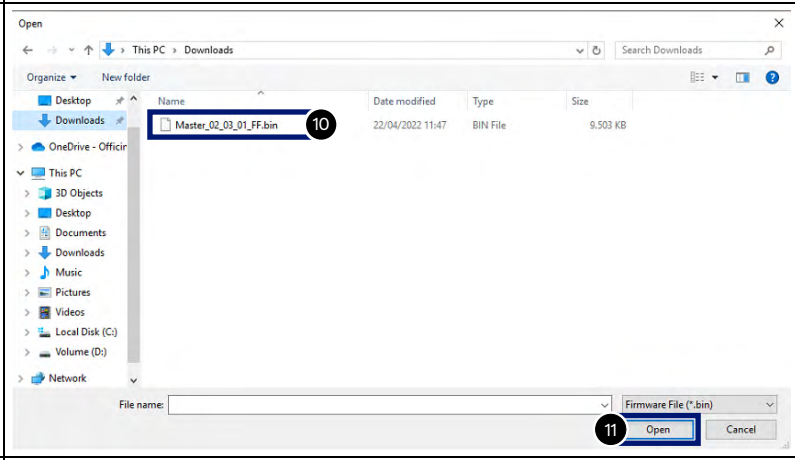
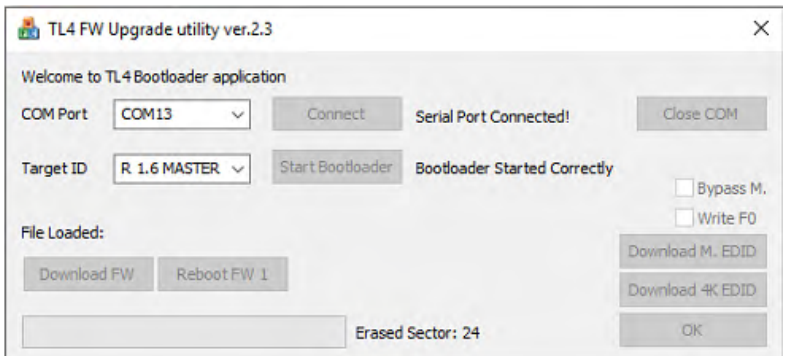
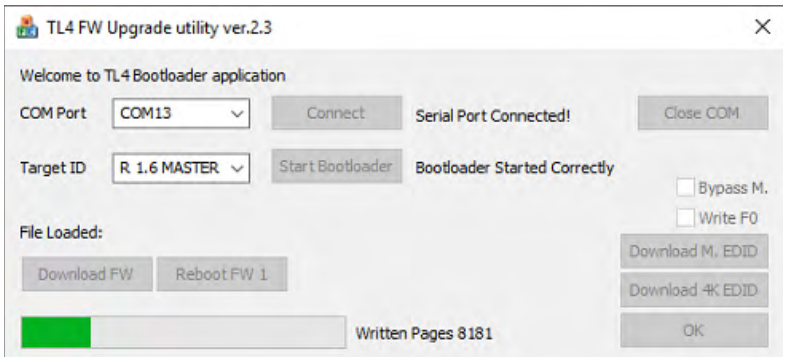
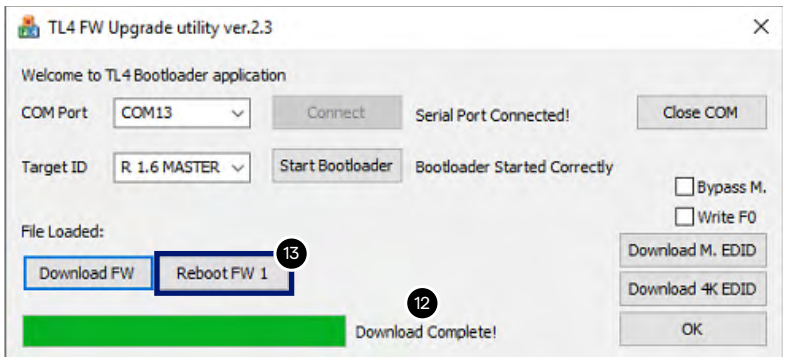
Check that the LDBootloader.exe update tool is present in the Main Unit (C:\TL4\tools) and that you have the .bin files required for the update.

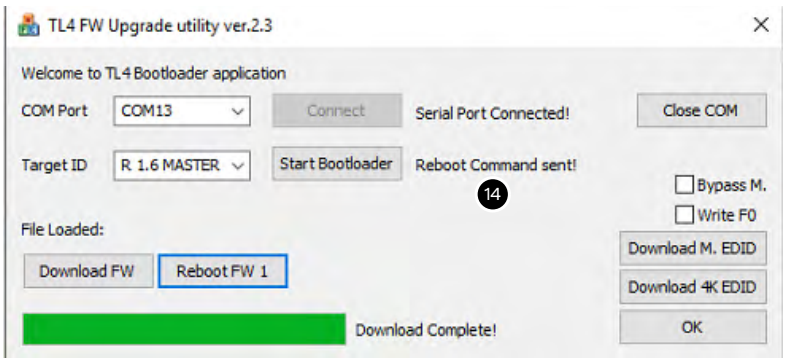
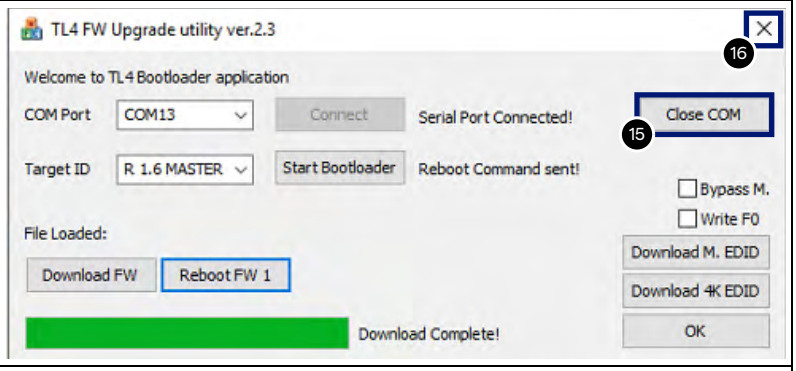
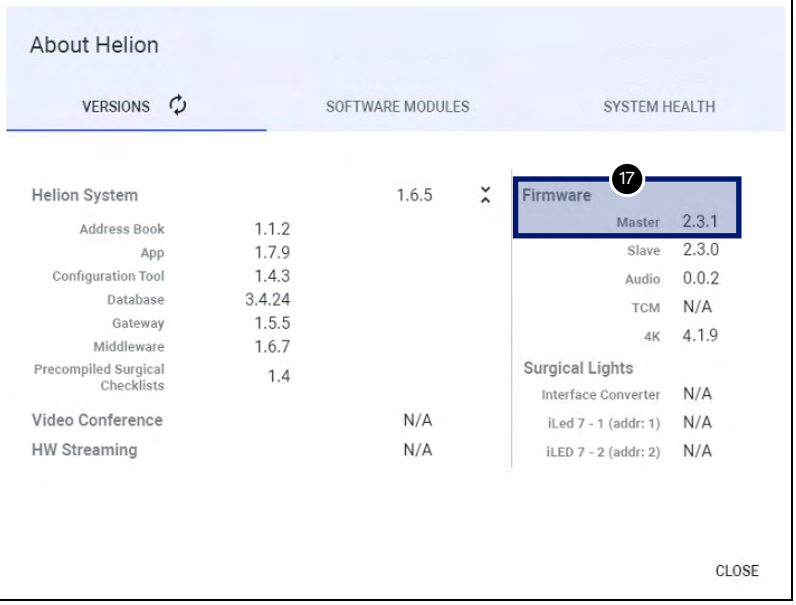
If not, please contact the service team.

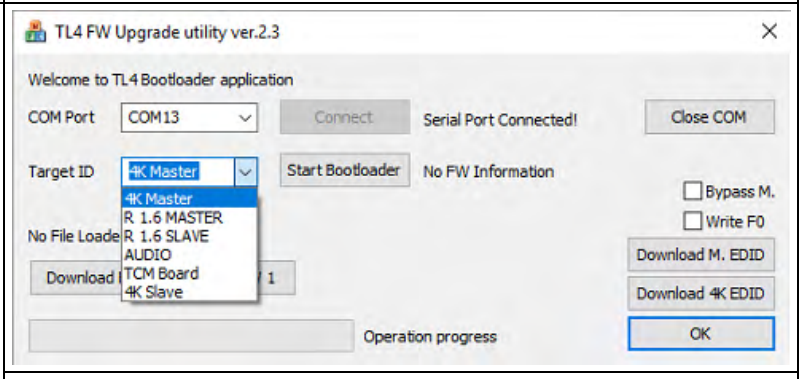
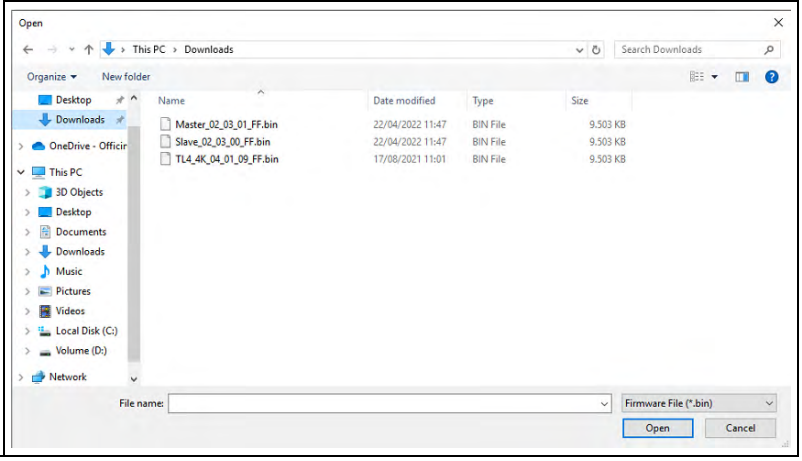
7.5.2 Updating Firmware

Step	Image
1. Check the versions currently in use by going to the About... section.	
2. After verifying the firmware versions [1], proceed with the following steps.	

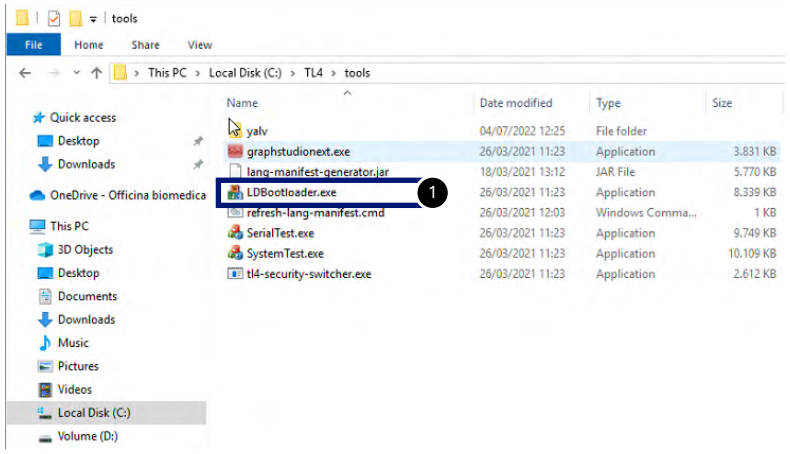
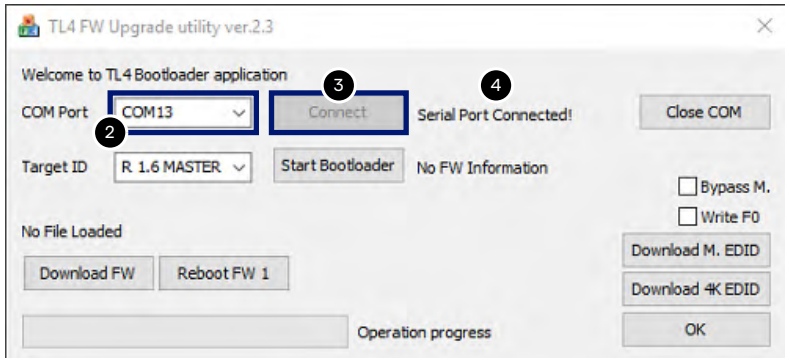
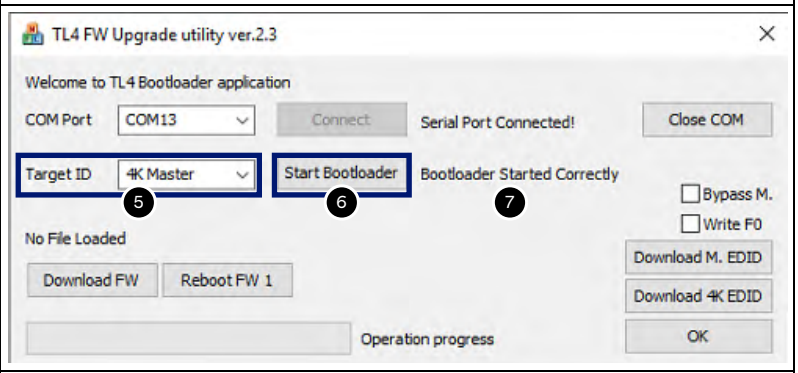
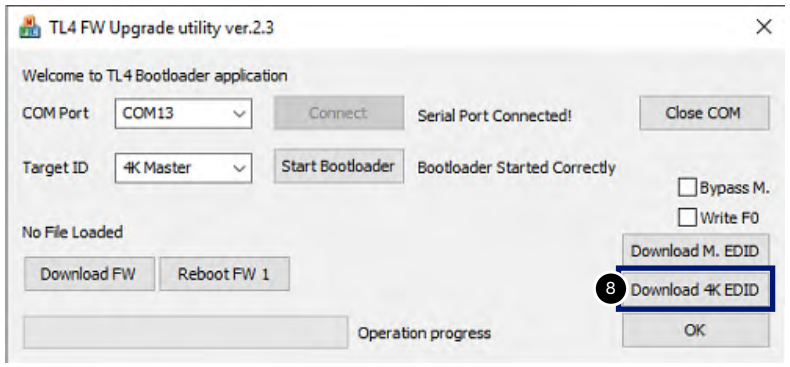
Step	Image
3. Close the Helion app (Alt+F4). 4. Go to C:\TL4\tools. 5. Run LDBootloader.exe [2].	
6. Once the utility automatically identifies the COM port [3] (COM Port: COM x) press on Connect [4]. If the connection is successful, the message “Serial Port Connected!” [5] appears.	
7. Select the Target ID [6] according to the chip to be programmed (in our case R 1.6 MASTER). 8. Press “Start Bootloader” [7]. If the operation is successful, the message “Bootloader Started Correctly” [8] will appear.	
9. Press the “Download FW” button [9].	

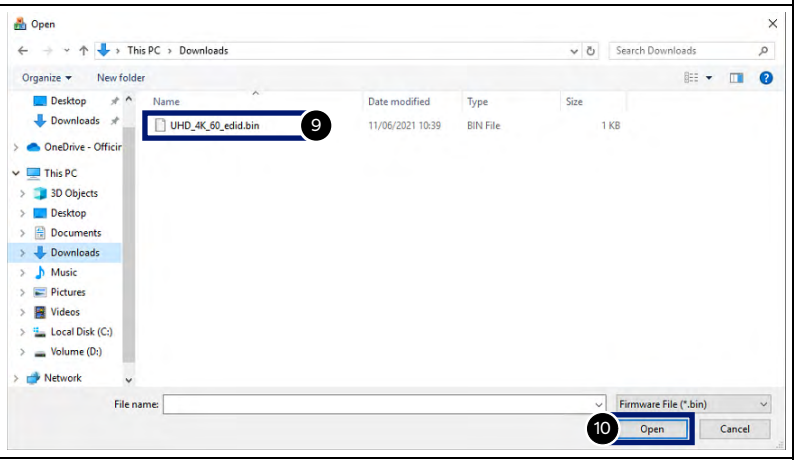
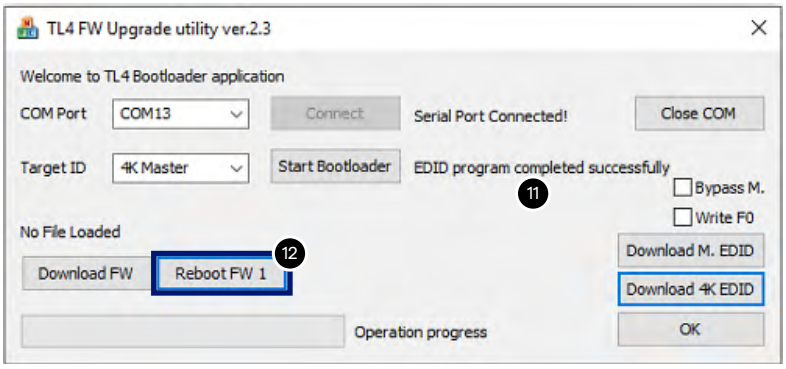
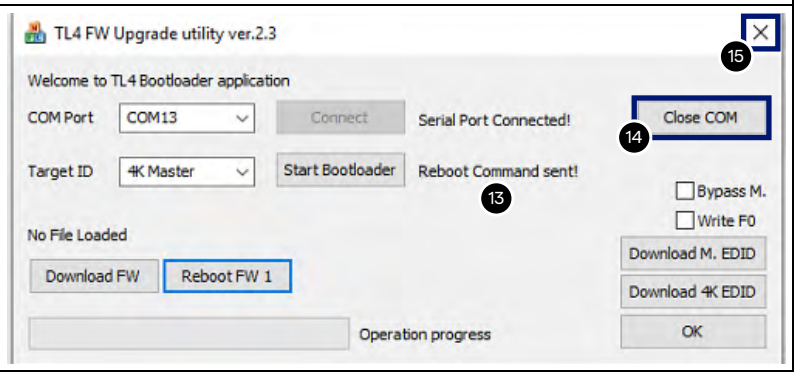
Step	Image
10. Select the FW (file.bin) [10] previously downloaded in the download directory corresponding to the Target ID you have decided to update (in our case Master_02_03_01_FF.bin). 11. Press “Open” [11] and the upgrade procedure will start.	
12. Wait for the firmware download to end. First erase the old one and then write the new one.	 
13. Once the procedure has been completed, if successful, “Download Complete!” [12] will appear. 14. Press “Reboot FW1” [13] to restart the board.	

Step	Image
15. After pressing the reboot button, the screen will go black for a few seconds, then the “Reboot Command sent!” [14] screen will reappear.	
16. The procedure is finished, press the “Close COM” button [15]. 17. Close the utility with the “X” [16] in the upper-right corner.	
18. Run the Helion app back into the configurator and check the correct firmware version [17] just loaded.	

Step	Image
The procedure explained how to load the Master firmware onto the HELION Main Unit by selecting the Target ID: R 1.6 MASTER. It may also be necessary to upgrade the Slave firmware of the same card or to upgrade the 4K Unit firmware if present. The steps to follow are the same as described above. The only difference is that you must select R 1.6 SLAVE or 4K Master as the Target ID and select the file.bin corresponding to the Target ID you decided to program. e.g., Slave_xx_x_xx_FF.bin TL4_4K_xx_xx_xx_FF.bin	 

7.5.3 Upgrading EDID 4K module

Step	Image
1. Close the Helion app (Alt+F4). 2. Go to C:\TL4\tools. 3. Run LDBootloader.exe [1].	
4. Once the utility automatically identifies the COM port [2] (COM Port: COM x) press Connect [3]. If the connection is successful, the message “Serial Port Connected!” [4] appears.	
5. Select the Target ID 4K Master [5]. 6. Press “Start Bootloader” [6]. If the operation is successful, the message “Bootloader Started Correctly” [7] will appear.	
7. Press “4K EDID” button [8].	

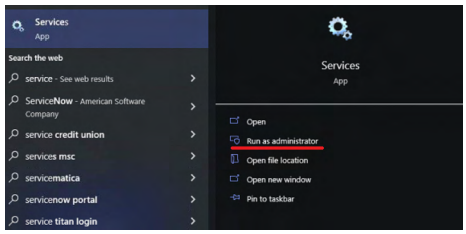
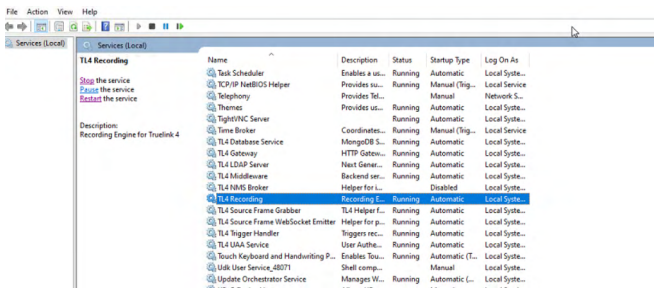
Step	Image
8. Select the EDID file.bin [9], in the example UHD_4K_60_edid.bin. 9. Press “Open” [10] and the upgrade will start.	
10. Wait for the upgrade to end. 11. Once the upgrade has completed, if successful, “EDID program completed successfully” [11] will appear. 12. Press “Reboot FW1” [12] to restart the board.	
13. After pressing the reboot button, the screen will go black for a few seconds, then the “Reboot Command sent!” [13] screen will reappear. 14. The procedure is finished, press the “Close COM” button [14]. 15. Close the utility with the “X” [15] in the upper-right corner.	

7.6 DICOM Configuration

7.6.1 Importing a worklist

Date needed from the IT department:

1. IP address for Helion Main Unit: Could be static or reserved with MAC Address
2. IP address of the DICOM Worklist server
3. Communication Port used by DICOM Worklist server
4. AeTitle to assign to Main Unit
5. AeTitle of the DICOM Worklist server

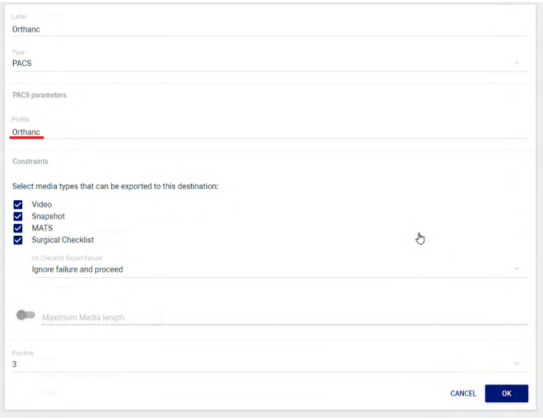
Step	Image
1. Close the Helion application with Alt+F4 and enter the following path on the Windows File Explorer: C:\TL4\tl4-rec.	
2. Open the settings.xml file with notepad++.	
3. Enter the data provided by the customer in the corresponding fields. – Set the enabled tag to True. – Insert the provided WL server IP between the WorklistServerIP tags. – Insert the provided port number between the WorklistServerPort tags. – Insert the provided WL server AeTitle between the WorklistAETitle tags. – Insert the provided Main Unit AeTitle between the MyAETitle tags.	
4. Save and exit.	
5. Restart the system or proceed as follows to restart the TL4-recording service: run the Windows Services app as administrator, select the TL4 Recording service from the available services and restart it to apply changes.	 

Note: You need to do this operation every time the settings.xml file is modified.

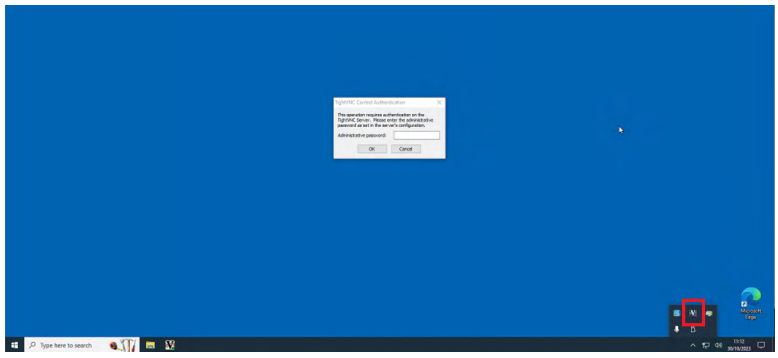
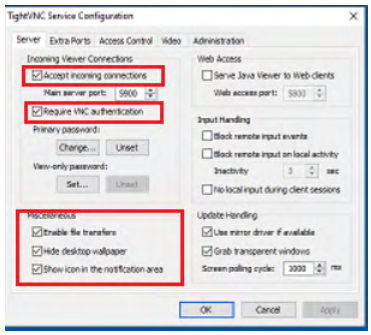
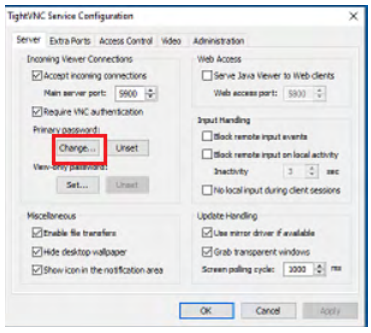
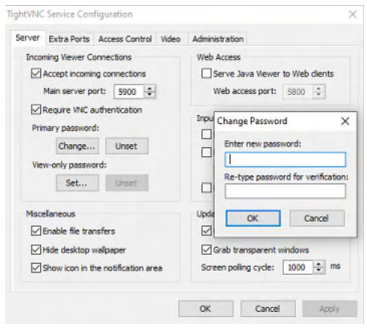
7.6.2 PACS Export Configuration

Date needed from the IT department:

1. IP address of the PACS server
2. Communication Port used to communicate with PACS
3. IP address for Main Unit
   Could be static or reserved with MAC Address
4. AeTitle to assign to Main Unit
5. AeTitle of the PACS

Step	Image
1. Close the Helion application with Alt+F4 and enter the following path on the Windows File Explorer: C:\TL4\tl4-rec.	
2. Open the settings.xml file with notepad++.	
3. Enter the data provided by the customer in the corresponding fields: – In the ProfileName tag, enter the profile name as provided on the configurator. – Insert the provided PACS server IP between the IP tags. – Insert the provided port number between the Port tags. – Insert the Main Unit AETitle between the CallingAETitle tags. – Insert the provided PACS AETitle between the CalledAETitle tags.	
4. Save and exit.	
5. **Note:** Restart the recording service.	
6. Open the Helion Configurator page, add a new Export destination, select the Type “PACS” and set the same Profile Name as previously set on the settings.xml file. 7. Select which type of media can be exported to PACS according to PACS Manager’s instructions.	

7.7 Active Tight VNC

Step	Image
1. Close the Helion Application.	
2. In the Windows taskbar, click the Show hidden icons button, then double click on the TightVNC icon.	
3. Insert the password for the Helion Administrator user.	
4. Check the boxes per the screenshot on the right.	
5. Click on “Change...” and choose the remote connection access password.	
6. Insert the password and press “OK”.	
7. Press “OK” and Close.	

8 Annex I - Installation report

INSTALLATION AND MAINTENANCE REPORT

Helion

PROJECT*	NO.
LOCATION	
HOSPITAL	
DEPARTMENT	
ROOM NO.	

ITEM	Model								Serial Number
Rack Unit*									
Main Unit*									
Conference Unit*									
UHD Unit*									
UHD Plus Unit*									
Radio Microphone*	headset		directional		handheld				
Radio Microphone*	headset		directional		handheld				
Radio Microphone*	headset		directional		handheld				
Directional Microphone									
Workstation*	all-in-one		PC on rack		PROKEYS				
Workstation*	all-in-one		PC on rack		PROKEYS				
Touchscreen 1	FSN 21/27″		REIN 24″		DISTEC 24″		Other		
Touchscreen 2	FSN 21/27″		REIN 24″		DISTEC 24″		Other		
RoomCam	Avaya		Sony HD		Sony SD		Other		
Monitor on arm/pendant	FSN		LG		SONY		customer		
Monitor on arm/pendant	FSN		LG		SONY		customer		
Monitor on arm/pendant	FSN		LG		SONY		customer		
Monitor on wall	NEC		SONY		Other		customer		
Monitor on wall	NEC		SONY		Other		customer		
Monitor on wall	NEC		SONY		Other		customer		
Fluid Solo	IP				SW				*
Fluid Sensor	Model								*
Anywhere	IP								

* If applicable, it is the responsibility of the Videomed operator to fill these fields in.

POWER SUPPLY (min 3x1.5 sqmm)	present		size						
NETWORK line presence	active			IP:		GW:		SM:	
VPN	enabled		pending		contact:				

DRAWINGS AND PLANS	received		provided		pending		N/A		
RACK POSITION	single		overlaid		wall fixation				

Helion Video-over-IP Rack

ITEM	Model	Serial Number
Rack Unit*		
Switch*		
NMS*		
MNA DECODER 1*		
MNA DECODER 2*		
MNA DECODER 3*		
MNA ENCODER 1*		
MNA ENCODER 2*		
MNA ENCODER 3*		
MNAENCODER 4*		
MNA ENCODER 5*		

* If applicable, it is the responsibility of the Videomed operator to fill these fields in.

CHECK-LIST
Main Unit

		Pass	Fail	Notes
MECHANICAL STATUS AND INTERNAL COMPONENTS				
1.	Verify parts integrity, cleaning status and closure systems.			
2.	Verify presence of labels for rear connections, S/N and identification.			
POWER				
1.	Connect the power cord, switch ON the unit and press the frontal touch button for 2 sec. Verify the automatic startup of the motherboard and software.			
2.	Check the power connection of all devices linked to the system (monitors, roomcam, touchscreen, etc.).			
3.	Make sure that each cable has been named.			
4.	Check the switch OFF procedure by pressing the touch button at the front of the device until the flashing frequency increases.			
INTERNAL AND EXTERNAL CONNECTIONS				
1.	Check the cabling between Main and the other units, if installed.			
2.	Check the connections of the signals coming from the OR by referring to the Cabling Plan provided by Videomed.			
3.	Make sure that each cable has been named.			
4.	Check that the microphone, speakers, and other audio sources are connected and functioning correctly.			
5.	Check that ON AIR lights up whenever on conferencing calls.			
TOUCHSCREEN				
Switch ON the Touchscreen and check the calibration using the appropriate driver.				
MONITORS				
1.	Check that the Power and DVI lines are connected properly.			
2.	Check the input and standby settings on OSD menu of the monitor.			
3.	Check the proper and fast response of the monitor when a new signal is selected.			
ROUTING IMAGES				
1.	Connect a digital signal source, with 1920x1080 p50/60 resolution, to each one of the inputs prepared into the room. Check if the preview and live preview are properly displayed on touchscreen. Send the signal to each one of the monitors installed and check if a stable image is displayed for at least 1 minute. Repeat the same procedure with a 1920x1200 p60 source.			
2.	Repeat the same procedure with 3G-SDI and CVBS signals on the relative input ports.			

CHECK-LIST
Main Unit

		Pass	Fail	Notes
RECORDING				
1.	Check if the license installed includes the Recording functions.			
2.	Create a new patient in the Patient Management section, then open the Recording section and select one of the available sources on the first recording channel. Make a short video with a length of 1 minute, and take 5 pictures. Stop recording and check on the items bar that all files have been saved.			
3.	Export the files you just saved (the export path is defined on Configuration page). Then replay them on a different machine.			
4.	Check the quality of the saved images and video.			
NETWORK CONNECTIONS				
If provided, set the static IP on network settings and check the connections with the local network and the other units of the system.				
RACK				
1.	Verify parts integrity, cleaning status, and closure systems.			
2.	Check that video and power supply cables are fully and correctly connected.			
3.	Check the thermostat setpoint and test the correct start/ stop of the fans.			
4.	Check that the cables are not damaged or stressed at rack input.			
ELECTRICAL TEST				
Perform the electrical safety test (all units must be connected and running).				

CHECK-LIST
Conference Unit

		Pass	Fail	Notes
MECHANICAL STATUS AND INTERNAL COMPONENTS				
1.	Verify parts integrity, cleaning status, and closure systems.			
2.	Verify the presence of labels for rear connections, S/N, and identification.			
POWER				
1.	Connect the power cord, verify the automatic switching ON and OFF of the unit following Main Unit status.			
2.	Execute a forced shut switching off the main power button, and switch it on again after few seconds to simulate a power black out. Check the regular re-start of all the components and functions.			
INTERNAL AND EXTERNAL CONNECTIONS				
1.	Check the cabling between Conference and Main Units.			
2.	Check the connections of the signals coming from the OR by referring to the Cabling Plan provided by Videomed.			
3.	Check that ON AIR lights up whenever System recording starts and switches off when stopped.			
ROUTING IMAGES				
Switch on the system and send the Videoconference signal to a monitor via the Routing function. Open the Conference section and select an image on the first channel. Verify that the right signal is displayed on monitor. Verify that channel 1 and 2 are properly connected and identified.				
ROOMCAM				
1.	Verify that the roomcam has been properly configured (ceiling or std mounting).			
2.	Move the camera in all directions as far as possible.			
3.	Save 3 preset positions and recall them.			
NETWORK CONNECTIONS				
1.	If provided, set the static IP on network settings and check the connections with the local network and the other system units.			
2.	In the Configurator, set the IP and check the communication between the Main and Conference Units.			

CHECK-LIST
UHD Unit

	Pass	Fail	Notes
MECHANICAL STATUS AND INTERNAL COMPONENTS			
1. Verify parts integrity, cleaning status, and closure systems.			
2. Verify presence of labels for rear connections, S/N, and identification.			
POWER			
Connect the power supply and switch ON the unit. Turn on Truelink 4 and verify the automatic start.			
INTERNAL AND EXTERNAL CONNECTIONS			
Check the cabling between Main and UHD unit, following the “internal cabling plan”.			
ROUTING AND DOWNSCALE			
Connect an UHD source, with 4096x2160 p50/60 resolution, to each one of the configured inputs. Check if the preview and live preview are properly displayed on the touchscreen. Send the signal to each one of the monitors (4K and FHD) installed and check if a stable image is displayed for at least 2 minutes. Try to intersperse FHD and 4K images on 4K monitors and check if the monitors can properly handle the switch.			

CABLING PLAN

ATTACH ON THIS PAGE

THE CABLING PLAN

OF THE PROJECT

ELECTRICAL SAFETY CHECK

Note: Further information on this protocol is provided in the Installation Manual (IM) or Service Manual (SM). Electrical safety measurements are carried out according to EN 62353. The corresponding protocol for the electrical safety test/repeat test available in the Online Info System (OIS) is the basis for this protocol. The above-mentioned serialnumber structure must be observe during the installation and strictly reported to Hillrom in this protocol.

		Pass	Fail	Notes
Electrical safety test - Rack & Touchscreen Monitor				
1.	Visual inspection			
2.	Integrity and continuity check of the protective conductor			
3.	All externally accessible fuses comply with the data indicated by the manufacturer (rated current, characteristics)			
4.	The labels relating to the plate data are legible and complete			
5.	Integrity check of mechanical parts and connectors			
6.	Absence of defects, damage, and contamination			
7.	Evaluation of the main accessories external to the device or system (e.g., removable or fixed power cables, network cables, claddings, connection leads, etc.)			
Resistance of protective conductor RSL ≤ 0,3 Ω				
Measurement taken between the earth pole of the power cable plug and the equipotential node on the device.				
Resistance of protective conductor - Touchscreen Monitor RSL < 500 µA AC				
Measurement taken between the earth pole of the power cable plug and the equipotential node on the device.				
Device Leakage current - Rack IGA < 500 µA AC				
The measuring point on the device is a grounding point (worst condition).				
Device Leakage current - Touchscreen Monitor IGA < 500 µA AC				
The measuring point on the device is a grounding point (worst condition).				
Insulating resistance - Rack RISPE > 2 MΩ				
1.	Measurement of the insulation resistance between L/N and the protective conductor.			
2.	Measurement of the insulation resistance between L/N and an accessible conductive part.			
Insulating resistance -Touchscreen Monitor RISPE > 2 MΩ				
1.	Measurement of the insulation resistance between L/N and the protective conductor.			
2.	Measurement of the insulation resistance between L/N and an accessible conductive part.			

Remarks/defects:

Overall evaluation	
☐	Safety and functional deficiencies could not be detected
☐	No direct risk; detected defects can be resolved in the short term
☐	Device has to be withdrawn from service until the defect is resolved
☐	Device does not correspond to the requirements – it is recommended to modify/exchange components or decommission the device

Test performed on		Next test date:	
Service technician			

Remarks/Open topics

INPUTS			
PORT	SIGNAL	CABLE	☑
DVI 1			
DVI 2			
DVI 3			
DVI 4			
DVI 5			
DVI 6			
DVI 7			
DVI 8			
DVI 9			
DVI 10			
DVI 11			
DVI 12			
DVI 13			
DVI 14			
SDI 1			
SDI 2			
CVBS 1			
CVBS 2			
HDMI 1			
HDMI 2			
HDMI 3			
HDMI 4			
GLAN 1			
GLAN 2			
TRIGGER 1			
TRIGGER 2			

OUTPUTS			
☑	PORT	SIGNAL	CABLE
	DVI 1		
	DVI 2		
	DVI 3		
	DVI 4		
	DVI 5		
	DVI 6		
	DVI 7		
	DVI 8		
	DVI 9		
	DVI 10		
	HDMI 1		
	HDMI 2		
	HDMI 3		
	HDMI 4		
	HDMI 5		
	CTRL 1		
	CTRL 2		
	CTRL 3		
	CTRL 4		
	CTRL 5		
	CTRL 6		
	CTRL 7		
	CTRL 8		
	CTRL 9		
	CTRL 10		
	LIGHTS CTRL		

FINAL APPROVAL

ORIGINATED BY:		/	/	
	Signature			
APPROVED BY:		/	/	
	Signature			
CUSTOMER:		/	/	
DEPARTMENT:				
	Signature			

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Baxter

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