USER MANUAL

LD systems


# TICA® NMP8 & NMP32

## NETWORKED MATRIX PROCESSOR

LDNMP32; LDNMP8;

en-GB

# TABLE OF CONTENTS

# 1 DOCUMENT VERSION AND REVISIONS

| Version | Date | Implemented Changes |
|---|---|---|
| 1 | 03/2026 | Original version |

# 2 INTRODUCTION

## 2.1 YOU MADE THE RIGHT CHOICE!

This product has been developed and manufactured to the highest quality standards to ensure many years of problem-free operation. Find further information about LD Systems on our website:
https://www.ld-systems.com/

## 2.2 CONTACTS

| | **Adam Hall GmbH Headquarter** | **Customer Service** |
|---|---|---|
| E-mail | info@adamhall.com | customerservice@adamhall.com |
| Phone | +49 6081 9419-0 | +49 6081 941973-0 |
| Street | Adam-Hall-Str. 1 | Adam-Hall-Str. 1 |
| Postal code / city | 61267 Neu-Anspach | 61267 Neu-Anspach |
| Website | *www.adamhall.com* | *www.adamhall.com* |

## 2.3 LINK TO THE DOWNLOAD CENTRE

You can download some information, such as CAD data or technical data, from the Download Centre. Scan the QR code or click the link to download this information:

## 2.4 VISUALISATION CONVENTIONS IN THIS USER MANUAL

In this manual we use graphical symbols and icons in certain contexts. Find below a table with explanations and use cases of the graphical symbols and icons.

| **Icon / Symbol** | **Designation** | **Context** | **Explanation / Example** |
|---|---|---|---|
| ↙ | **Prerequisite** | Tasks | Used in task topics to indicate a prerequisite that must be met before beginning the task. |
| ⇨ | **Result / Intermediate Result** | Tasks | Used in task topics to indicate a result or intermediate result of an action step. |
| **1** Step<br>**a)** Substep | **1 Action Step**<br>**a) Substep** | Tasks | Used in task topics to indicate action steps and substeps. |

| Icon / Symbol | Designation | Context | Explanation / Example |
|---|---|---|---|
| **1** | **Callout** | Graphics; tasks | Text-image reference or labeling of certain functions on the device |
| [...] | **Value range indicator** | Technical data; paragraphs; lists | Indicates the range of a value, such as "Compressor ratio: **1:1...20:1**". Mostly used in tables or callouts. |
| * | **Asterisk** | Paragraphs; tables | Indicates additional information in a footnote. |
| The **LIM** LED lights up | **General User Interface element** | Paragraphs; tasks; tables; lists | The words presented in this way represent graphic user interface elements on the device. |
| **PAGE** button | **Key / Button** | Paragraphs; tasks; tables; lists | The words presented in this way represent user interface controls on the device. |
| `<name>` | **User input** | Paragraphs; tasks; tables; lists | The words presented in this way represent required user inputs. |
| *https://adamhall.com* | **Weblink** | Paragraphs; tables; lists | External link to a website |

# 3 PRODUCT COMPLIANCE

## 3.1 MANUFACTURER'S DECLARATION

Adam Hall offers a voluntary, EU-wide manufacturer's guarantee of 5 years. The statutory warranty period is not affected by this voluntary guarantee.

Visit the Adam Hall Service Portal to access the **Download Centre**:

*https://portal.adamhall.com/*

Under the **Service & Regulations** section, you find our current detailed manufacturer's declarations, warranty conditions, and limitation of liability.

To request warranty for a product, please contact:

Adam Hall GmbH, Adam-Hall-Str. 1, 61267 Neu-Anspach

customerservice@adamhall.com

0049 (0)6081 / 9419-1000

## 3.2 DECLARATION OF CONFORMITY

UK CA

Hereby, Adam Hall Ltd. declares that this product meets the following guidelines (where applicable)

- Electrical Equipment (Safety) Regulations 2016
- Electromagnetic Compatibility Regulations 2016 (SI 2016/1091)
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulation 2012 (SI 2012/3032)
- Radio Equipment Regulations 2017 (SI 2016/2015)

Products that are subject to Electrical Equipment(Safety)Regulation 2016, EMC Regulation 2016 or RoHS Regulation can be requested at info@adamhall.com. Products that are subject to the Radio Equipments Regulations 2017 (SI2017/1206) can be downloaded at *http://www.adamhall.com/compliance*.

# 4 SAFETY INSTRUCTIONS

## 4.1 INTENDED USE

The **TICA® NMP8** and **NMP32** are intended for use in fixed professional audio installations requiring flexible routing, processing, and distribution of analog and AES67 network audio signals.

This product has been developed for the professional use in the field of event technology. Furthermore it is intended for qualified users with specialist knowledge of event technology only.

This product is intended for fixed installation and not for mobile application.

This product is intended for indoor use only.

This product is not suitable for domestic use.

Do not use the product outside the operating conditions as stated in the user manual under Technical Data. Liability for damage and third-party damage to persons and property due to inappropriate use is excluded.

This product is not suitable for children and persons with limited physical, sensory, or mental capabilities or lack of experience and knowledge.

## 4.2 EXPLANATION OF SAFETY AND WARNING SYMBOLS

Find the following safety and warning symbols on the device, the user manual, or the packaging:


This symbol indicates that you must read the complete user manual before using the product.


This symbol indicates a general hazardous situation.


This symbol indicates hazards that can cause electric shock.


This symbol indicates that the product is for indoor use only.


This symbol indicates that the product is not suitable for household use.


This symbol indicates that the product has no serviceable parts. Only authorized personnel is allowed to perform maintenance or service work.


This symbol indicates helpful hints or additional information.

## 4.3 STRUCTURE OF WARNING MESSAGES

In this user manual, warning messages are structured with a safety symbol, a signal word, a hazard description, and instructions on how to avoid injuries or death.


**DANGER**

**Indicates a hazardous situation which will result in death or serious injury.**

**WARNING**

**Indicates a hazardous situation which could result in death or serious injury**

**CAUTION**

**Indicates a hazardous situation which could result in minor or moderate injury.**

**NOTICE**

**Indicates situations or conditions that could result in damage to property and/or the environment.**

## 4.4 GENERAL SAFETY

- Read this document carefully.
- Keep this document for later reference.
- Follow closely the instructions in this document.
- This document is an integral part of the product. If you sell or pass on the product, you must include this document.
- Only use this product according to its intended use.
- Risk of choking. Keep small parts away from children and individuals with impaired physical, sensory, or mental capabilities.
- Risk of suffocation. Keep plastic bags away from children and individuals with impaired physical, sensory, or mental capabilities.
- Observe all safety instructions and warning messages in this document, on the device, and on the packaging.
- Products are subject to continuous further development. If you find discrepancies between this document and the product labeling, the information on the product always takes priority.
- Do not remove safety instructions or warning messages from the product.
- Do not modify the product.
- If the product shows any sign of damage, do not use it.
- Do not operate the product with removed or missing covers.
- Do not expose the product to direct sunlight.
- If not further specified in the user manual under Technical Data, do not use the product in ambient temperatures that exceed 40 °C / 104 °F or fall below 0 °C / 32 °F
- Do not use the product in tropical climate.
- Do not use the product above 2000 metres of altitude.
- Unless otherwise stated, do not use the product under marine conditions.
- Maintenance and repairs may only be carried out by authorized service personnel.

- Store and transport the product in a dry and safe environment.
- Clean the product on a regular basis. If applicable, see the user manual for maintenance intervals.
- If the device was exposed to strong temperature changes, such as during transport, do not switch it on immediately. Wait until the device has reached ambient temperature.

## 4.5 ELECTRICAL SAFETY

- Only operate the device with the provided power supply. If no power supply is included, the device should be powered via Power over Ethernet (PoE) using equipment compliant with the IEEE 802.3af standards (PSE output up to 15.4 W).
- If you don`t use PoE or the provided power supply, any external power supply used must meet the following specifications:
  - Comply with all applicable local safety regulations
  - Be certified for use in the country of installation
  - Meet SELV (Safety Extra Low Voltage) or PELV (Protective Extra Low Voltage) requirements
- This is an electrical device in protection class III, using safety extra-low voltage (SELV) or protective extra-low voltage (PELV).
- Do not bypass the mains fuse.
- Use only mains fuses as specified by the manufacturer.
- Do not use kinked or otherwise damaged power cables.
- Only operate the device on compliant, tested and intact mains power outlets.
- Do not use the device in the vicinity of water. Keep the device away from splashing or dripping water.
- Make sure that the voltage and frequency of the mains power match the values specified by the manufacturer.
- Take suitable measures against overvoltage, such as lightning strikes.
- For devices with a power out connector, make sure the total current consumption of all connected devices does not exceed the value specified by the manufacturer.
- This device is suitable for continuous current.
- Disconnect the device from all poles before maintenance, repair or extend periods of non-use.
- Permanently connected power cables may only be replaced by a qualified service technician.

## 4.6 THERMAL SAFETY

- Do not install the device near heat sources, such as radiators or ovens.
- Do not block any ventilation openings.
- Unless otherwise stated, keep a minimum clearance of at least 20 centimetres around the device.

- Unless otherwise stated, keep flammable materials, such as paper or wood, at least 50 centimetres away from the device

## 4.7 DEVICE SAFETY

- Do not switch the device on and off in quick succession, because this will shorten the device lifetime.

# 5 PRODUCT DESCRIPTION

## 5.1 PRODUCT OVERVIEW

The **TICA® NMP8** and **NMP32** are intended to use in audio systems that require both analog and AES67 network interfaces. Configuration is performed via software. Both models support integration into distributed audio environments and are designed for silent operation using passive convection cooling.

**SHARED TECHNICAL SPECIFICATIONS**

- 4 balanced microphone/line inputs with switchable 48V phantom power
- Hybrid DSP Architecture: Scalable with other NMP devices
- Silent Operation: Fanless convection cooling design
- Compact Form Factor: 1/3 rack unit, compatible with TICA rack tray
- Advanced DSP Modules:
  - Parametric Equaliser (up to 16-band)
  - Delay (up to 2 seconds)
  - Dynamic processing: Limiter, compressor, noise gate, ducker
  - Filters: High-pass / low-pass, FIR filters (up to 4096 taps)
  - Signal Generator
  - Feedback Suppression

**MODEL-SPECIFIC SPECIFICATIONS**

| Specification | NMP8 (8x8 Matrix) | NMP32 (32x32 Matrix) |
|---|---|---|
| DSP Matrix size | 8x8 | 32x32 |
| AES67 Network channels | 4x4 | 28x28 |
| Addisional DSP Functions | • Auto-mixing (gain sharing / threshold<br>• Feedback suppression | • Auto-mixing (gain sharing / threshold (Limited availablility depending on the DSP resources of the device) |

## 5.2 TECHNICAL DATA

| General | NMP 8 | NMP 32 |
|---|---|---|
| Material | Steel sheet | Steel sheet |
| Coating | Powder coated | Powder coated |
| Colour | Black | Black |

| Inputs | |
|---|---|
| Input signal type | Balanced, Dynamic microphone, Condenser microphone (phantom powered), Unbalanced, AES67 |
| AES67 connector type | RJ-45 socket |
| Number of mic/line inputs | 4 |
| Mic/line-in connector type | Terminal block 3-pin (Euroblock) / 3.5 mm pitch |
| Phantom power | 48 V |

| Mic/line input performance | |
|---|---|
| Nominal sensitivity (< 1 % THD, 1 kHz, maximum gain) | 43 mV |
| Gain range | 0 ... 24 dB |
| Input impedance | 6.8 kΩ |
| THD+N | ≤ 0.003 % (+4 dBu) |
| Input frequency response (±0.5 dB, relative average) | 13 ... 22000 Hz |
| Minimum SNR (< 1 % THD, 1 kHz, maximum gain, unweighted) | 110 dB |
| Minimum SNR (< 1 % THD, 1 kHz, unity, A-weighted) | 102 dB |
| Minimum CMRR | 50 dB |

| AES67 | NMP 8 | NMP 32 |
|---|---|---|
| Number of input channels | 4 | 28 |
| Number of output channels | 4 | 28 |
| Sample rate | 48 kHz | 48 kHz |
| Bit depth | 16 Bit, 24 Bit, 32 Bit | 16 Bit, 24 Bit, 32 Bit |

| Outputs | |
|---|---|
| Output signal type | Balanced, Unbalanced, AES67 |
| AES67 outputs connector type | RJ-45 socket |
| Number of line outputs | 4 |
| Line outputs connector type | Terminal block 3-pin (Euroblock) / 3.5 mm pitch |

| Line output performance | |
|---|---|
| Maximum output level (< 1 % THD, 1 kHz, maximum gain) | 13.5 dBu |
| Balanced output impedance (1 kHz) | 600 Ω |
| Intermodulation distortion (SMPTE) | 0.005 % |

| Line output performance | |
|---|---|
| THD (+4 dBu) | 0.004 % |
| Signal to noise ratio SNR (< 1 % THD, 1 kHz, unity gain, A-weighted) | > 95 dBu |
| Dynamic range (AES17) | > 110 dB |
| Crosstalk | 110 dB |

| Signal processing | |
|---|---|
| Audio processing | Delay line |
| AD/DA converter bit depth | 24 Bit |
| AD/DA converter sampling rate | 48 kHz |
| System latency | 2.6 ms |

| Mains operation | |
|---|---|
| Operation voltage | 100 V AC ... 240 V AC (±10 %) / 50 ... 60 Hz,<br>PoE+ (42.5 V DC ... 57 V DC, IEEE 802.3at, Type 2) |
| Rated power | 10 W |
| Power consumption in idle mode | 6 W |

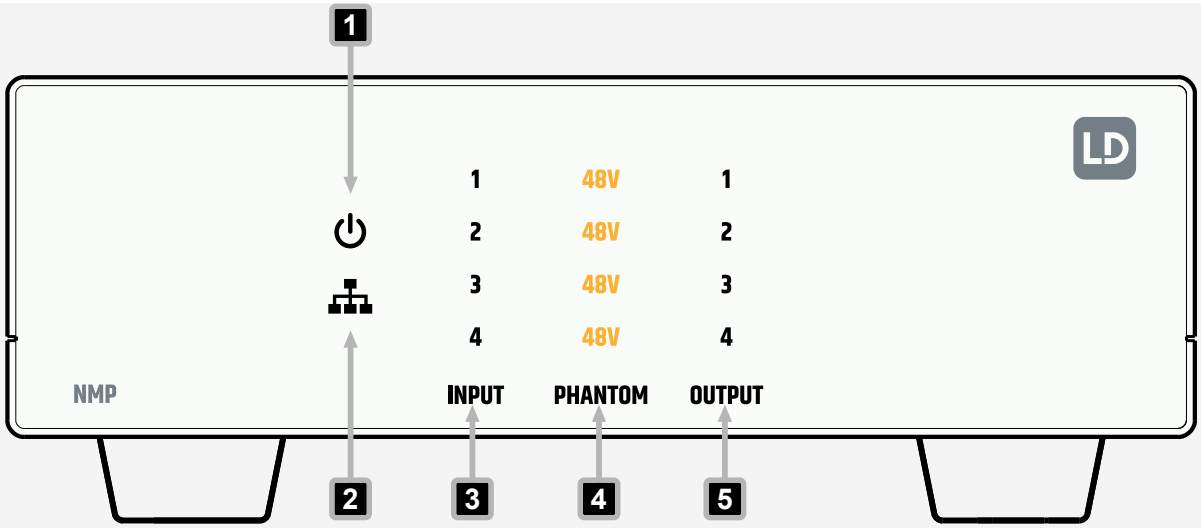
| Cooling | |
|---|---|
| Cooling system | Convection cooling |

| Environmental | |
|---|---|
| Ambient temperature | 0 ... 40 °C |
| Maximum air humidity (non-condensing) | 85 % |
| Safety class | Class 3 |

| Dimensions and weight | |
|---|---|
| Width | 142 mm |
| Height | 53 mm |
| Depth | 221 mm |
| Weight | 905 g |

## 5.3 USER INTERFACE

### 5.3.1 FRONT PANEL OVERVIEW




**1** **Indicator LED** - Lights up white when the device is powered on

**2** **Connection LED** -

**White:** Lights up to indicate normal operating mode and an active network connection

**Red:** Indicates that the device is unresponsive due to CPU failure.

**Red (flashing):** Indicates that no network connection is detected.

**3** **INPUT 1 ... 4 Audio output status LEDs** -

**White:** Indicates a nominal input signal level

**Red:** Indicates that the input signal is too high and clipping

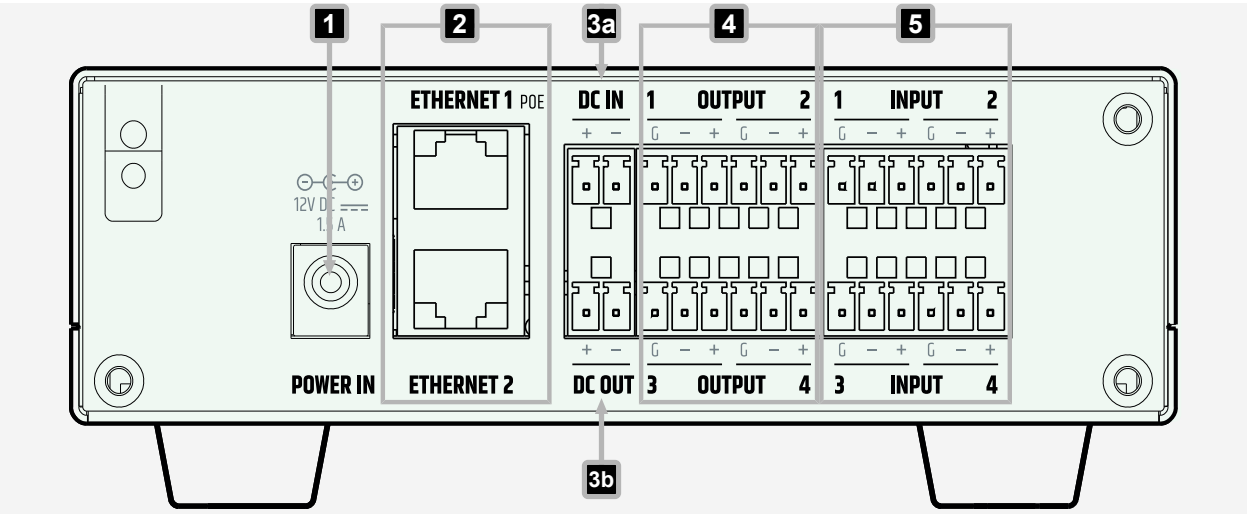
**4** **PHANTOM 48V** - Lights up yellow to indicate active 48V phantom power on the corresponding input

**5** **OUTPUT 1 ... 4** -

**White:** Indicates a nominal output signal level

**Red:** Indicates that the output signal is too high and clipping

## 5.3.2 REAR PANEL OVERVIEW




**1** **POWER IN** – Connects to an external DC power adapter (12V / 1.5A; adapter not included).
A daisy-chain setup supports a maximum of two devices (one additional unit via **DC OUT**). Ensure that the external power supply provides sufficient current for both units.

- 2 devices (2 × 10W) ⟶ approx. 3A total

**2** **ETHERNET 1 POE** - Provides remote access to QUESTRA® for configuration and monitoring and supplies power to the device via Power over Ethernet (PoE).
**ETHERNET 2** – Provides network connectivity for control and audio and allows linking additional network devices via the internal Ethernet switch.

**3a** **DC IN 2-pin terminal block connector (3.81 mm pitch)**
Connects to an external DC power source (12V / 1.5A; power source not included).
A daisy-chain setup supports a maximum of two devices (one additional unit via **DC OUT**). Ensure that the external power supply provides sufficient current for both units.

- 2 devices (2 × 10W) ⟶ approx. 3A total

**3b** **DC OUT 2-pin terminal block connector (3.81 mm pitch)**
Connects to external components to supply DC power.
This output is available only when the device is powered via the DC IN connector; DC OUT is not active when the unit is powered through PoE.

**4** **OUTPUT 1 ... 4** **3-pin terminal block connector (3.81 mm pitch** - Sends signals to external audio devices

**5** **INPUT 1 ... 4** **3-pin terminal block connector (3.81 mm pitch** - Receives signals from external audio source devices

# 6 PREPARATION

## 6.1 SCOPE OF DELIVERY

| Item Description | Quantity |
|---|---|
| Device | 1 |
| Mounting plate | 2 |
| Screw PH2 | 4 |
| Safety Compliance Information (en, de, fr, it, pl, es) | 1 |

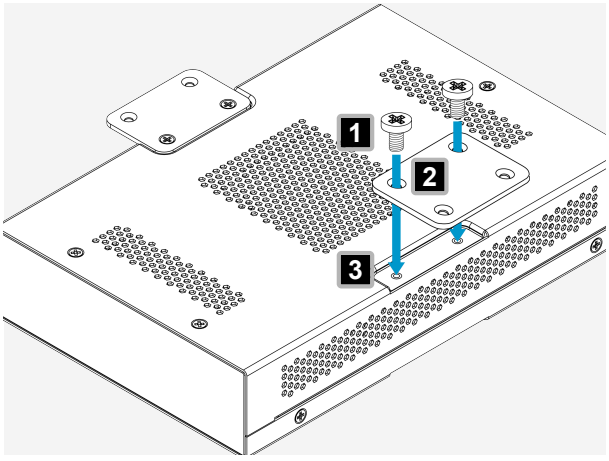
## 6.2 ABOUT RACK INTEGRATION

The device is mechanically compatible with the **TIKA RK** rack tray used for this product series. It occupies one-third of the rack width, allowing three units to be installed side by side on a single rack level. The ventilation slots are vertically aligned across adjacent units to ensure consistent airflow.

**Further information and ordering options are available here:** *19" Rack Tray for TICA® Series products*

## 6.3 MOUNTING THE DEVICE UNDER-COUNTER

- ✓ Phillips screwdriver
- ✓ 4 spacers minimum 5 mm
- ✓ 4 suitable countertop screws




**1** On the top side of the device, insert the metric screws 1 through the holes in the mounting plates 2 into the threated holes 3 on the device

**2** Tighten the metric screws.

**3** Bring the device into the mounting position.

**4** Place the spacers (minimum 5 mm) between the mounting plates and the countertop.

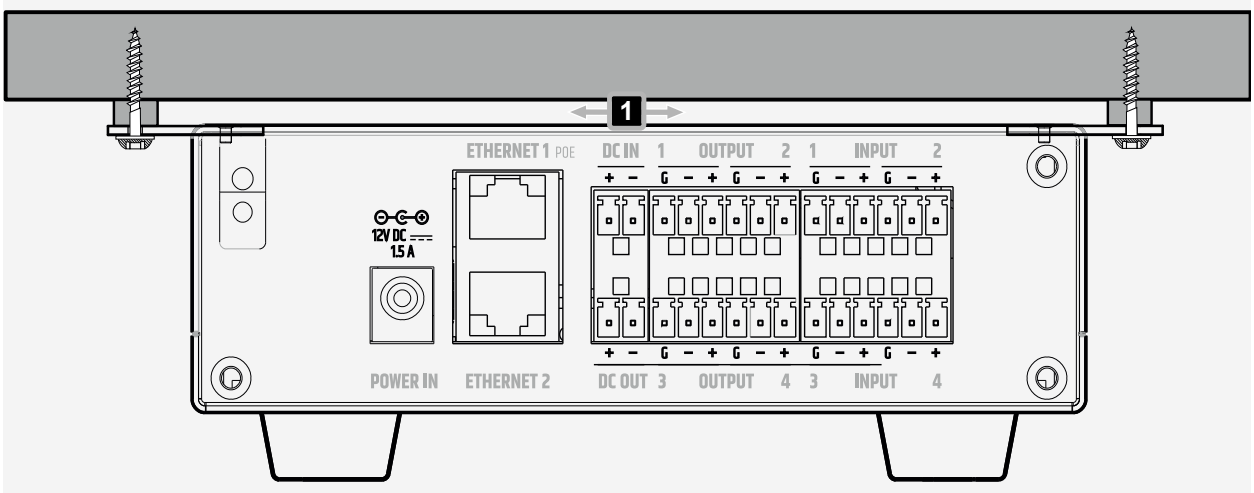
5 Use screws suitable for the countertop material to fasten the device.

NOTICE

**Minimum mounting distance of 5 mm not maintained**

Risk of overheating

a. Make sure that the required 5 mm clearance is maintained along the entire installation area for under-counter installation 1 as well as on-counter installations.



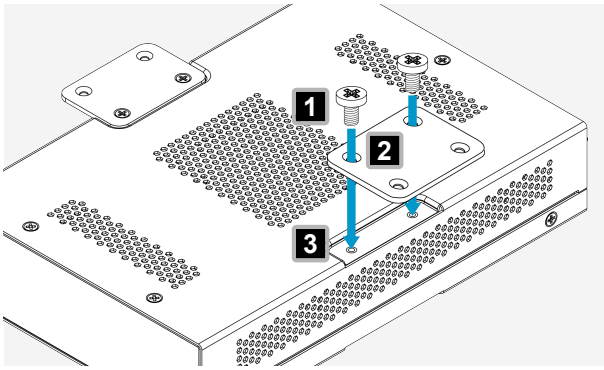

## 6.4 MOUNTING THE DEVICE ON-COUNTER

✓ Phillips screwdriver

✓ 4 spacers minimum 5 mm

✓ 4 suitable countertop screws

✓ The feet are removed




1 On the bottom side of the device, insert the metric screws 1 through the holes in the mounting plates 2 into the threated holes 3 on the device

2 Tighten the metric screws.

3 Bring the device into the mounting position.

4 Place the spacers (minimum 5 mm) between the mounting plates and the countertop.

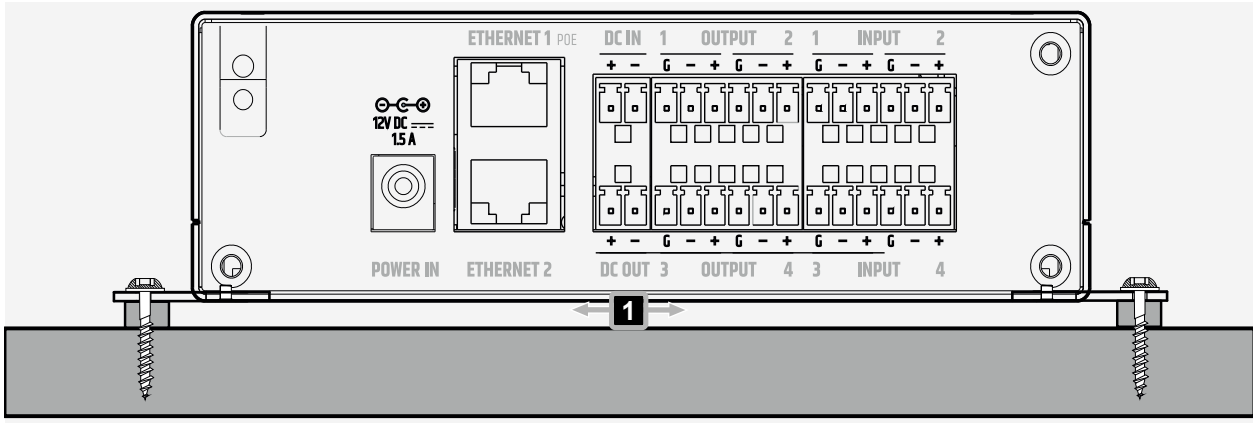
5 Use screws suitable for the countertop material to fasten the device.

NOTICE

**Minimum mounting distance of 5 mm not maintained**

Risk of overheating

a. Make sure that the required 5 mm clearance is maintained along the entire installation area for under-counter installation 1 as well as on-counter installations.


ETHERNET 1 POE
DC IN 1 OUTPUT 2 1 INPUT 2
+ − G − + G − + G − + G − +
12V DC ⎓ 1.5 A
POWER IN
ETHERNET 2
DC OUT 3 OUTPUT 4 3 INPUT 4
1

# 7 OPERATION

## 7.1 POWER SUPPLY

### 7.1.1 ABOUT POWER OVER ETHERNET (POE)

Power over Ethernet (PoE) delivers both power and data through a single Ethernet cable. The Ethernet cable, typically Cat5e or Cat6, runs from a PoE switch or injector to the PoE-enabled device.

We recommend using Power over Ethernet (PoE) as the primary power source, as it simplifies installation and reduces the need for additional power infrastructure.

### 7.1.2 TURNING THE DEVICE ON OR OFF

The device automatically turns on when connected to a power source — either via Power over Ethernet (PoE) or an external power adapter.

1 Plug in the power source to turn the device on.
2 Remove the power source to turn the device off.

### 7.1.3 CONNECTING A POWER ADAPTER

A power adapter is not included in the scope of delivery.

**WARNING**

**Mains voltage**

Risk of electric shock

a. Do not use kinked or damaged mains power cables.

**NOTICE**

**Damage to the device**

a. Make sure that the voltage of the mains power socket matches the device operating voltage.
b. Do not plug the device under load.

✓ Power adapter which meets the specifications indicated on the device label and features a 2-pin terminal block connector for device-side connection

1 Plug the terminal block connector of the power adapter into the **POWER IN** terminal on the device.
2 Plug the AC input of the power adapter into a mains power socket.

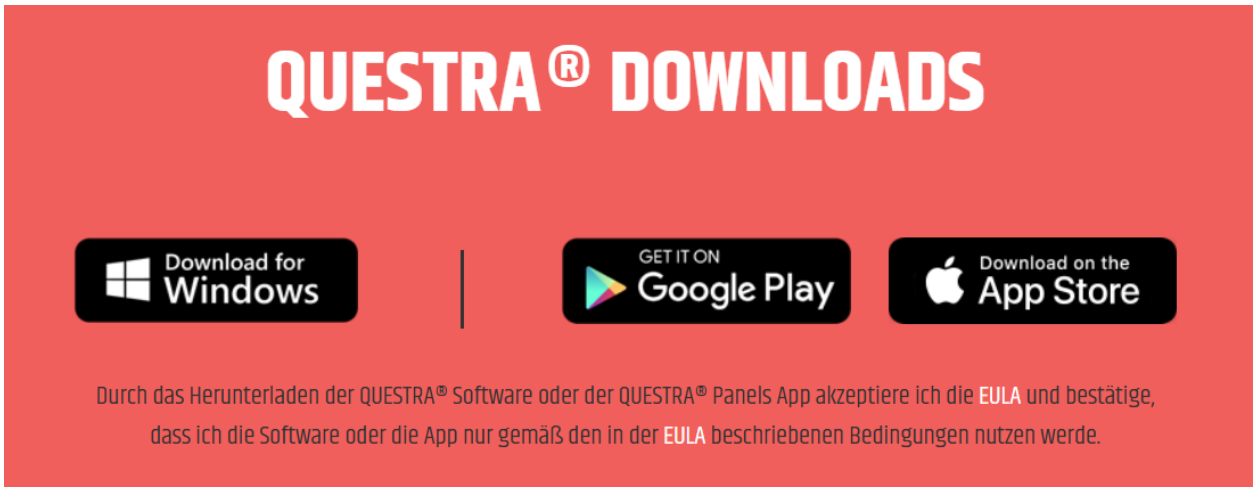
## 7.2 QUESTRA® SOFTWARE

The **TICA® NMP8** and **NMP32** are operated exclusively through the **QUESTRA®** software. The following section describes how to make the devices available within a **QUESTRA®** project environment, where devices are configured, monitored, and managed. A QR code is provided in this manual and links directly to the **QUESTRA®** User Manual, which contains additional information and detailed instructions.

### 7.2.1 DOWNLOADING QUESTRA® AND QUESTRA® PANELS APP

Visit the **LD Systems** website to download the **QUESTRA®** software. You will also find links to the Google Play Store and Apple App Store to download the **QUESTRA®** Panels app.

*www.ld-systems.com/questra*




## 7.3 SYSTEM TAB OVERVIEW


**1** **Close Button** - Closes the **ADD DEVICES** view

2 **Link Icon** - Indicates the connection status of the respective device

3 **Warning Symbol** - Indicates invalid references

4 **AVAILABLE DEVICES area** - Shows a list of devices available in the network

5 **OFFLINE DEVICES area** - Shows a list of offline devices that can be added to the project's device section during configuration.

6 **Pairing Drop Zone** - Drag a device from the **AVAILABLE DEVICES** list and drop it here to pair it

7 **New Device Drop Zone** - Drag and drop devices here to add them to the project

## 7.3.1 ADD DEVICES VIEW

### 7.3.1.1 SCANNING FOR AVAILABLE DEVICES

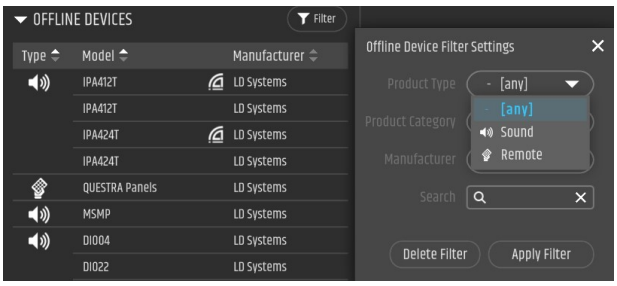

1 In the **ADD DEVICES** view, click **Refresh** 1 to refresh the **AVAILABLE DEVICES** list.

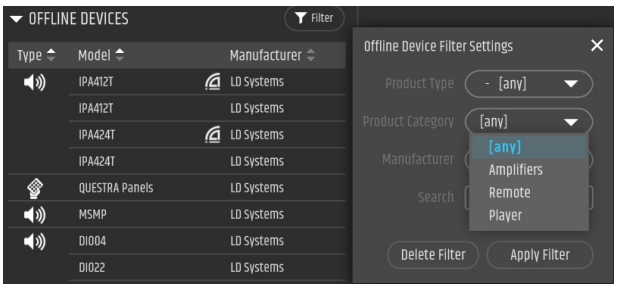
If a device does not show up immediately, please wait a few seconds before using the Refresh button again.

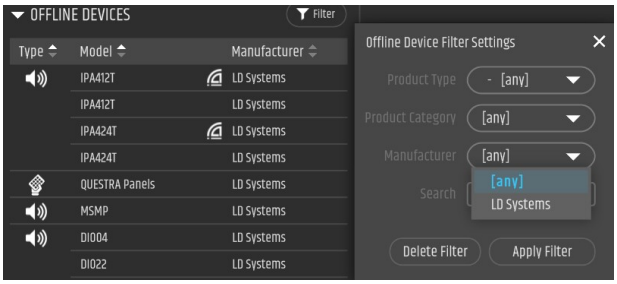
### 7.3.1.2 OFFLINE DEVICES FILTERING OPTIONS

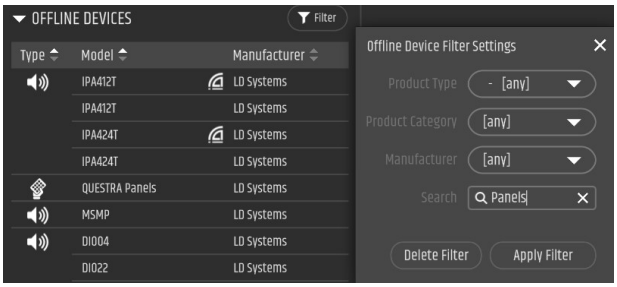
Filter the offline devices according to:

- Product Type
- Product Category
- Manufacturer
- `<Custom text>`



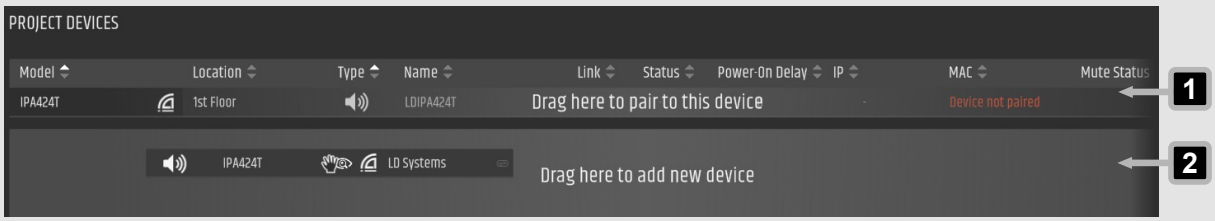






### 7.3.1.3 PAIRING DEVICES

Offline devices act as virtual placeholders that let you pre-configure the system before installation. When the actual devices appear in the **AVAILABLE DEVICES** list, you simply pair each one with its corresponding offline device.




**1** From the **ADD DEVICES** panel, drag a device to the **PROJECT DEVICES** list.

⇨ Drop zones are highlighted.

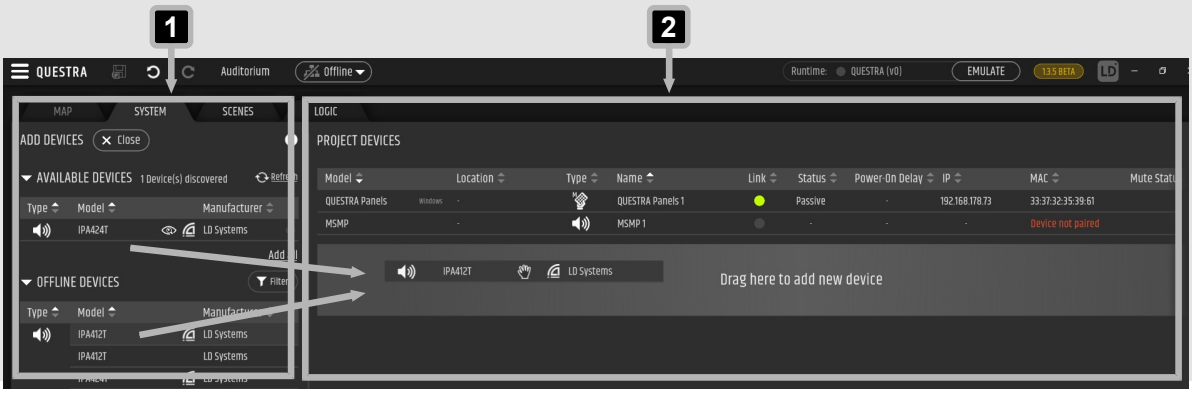
**a)** Select **Drag here to pair to this device** **1** to pair the device with a corresponding **PROJECT DEVICES** list entry.

**b)** Select **Drag here to add new device** **2** to add a new device entry to the **PROJECT DEVICES** list.

Drop zone **1** is only highlighted if there is a matching entry in the **PROJECT DEVICES** list

## 7.3.2 PROJECT DEVICES LIST

### 7.3.2.1 ADDING DEVICES TO THE PROJECT DEVICES LIST




**1** From the **ADD DEVICES** panel **1**, drag and drop the corresponding devices to the **PROJECT DEVICES** list **2**.

### 7.3.2.2 RENAMING DEVICES

1 Click on the name field to highlight it.
2 Enter a new `<device name>`

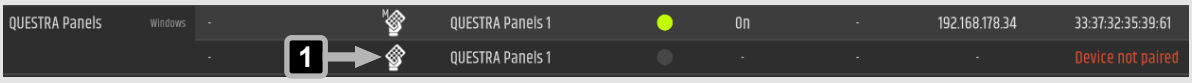
> You can also use the context menu to rename the device by right-clicking and selecting the **Rename** option.

### 7.3.2.3 CLONING DEVICES

Cloning devices creates an exact duplicate of a device, including all its settings and its name. Cloning is a quick way to create projects with several identically configured devices.

> Consider renaming the cloned device so that it is easier to identify.

1 Right-click the device to open the context menu.
2 In the context menu, choose **Clone**.




⇨ Find the cloned device in the **PROJECT DEVICES** list 1.

### 7.3.2.4 REMOVING DEVICES FROM THE PROJECT DEVICES LIST

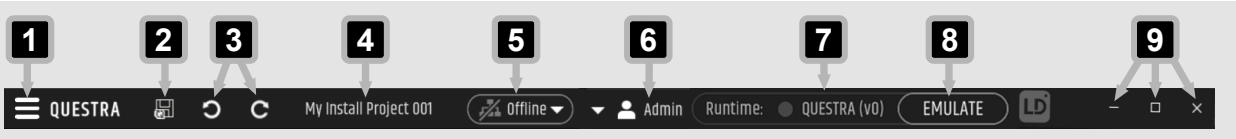
1 Right-click the device to open the context menu.
2 In the context menu, choose **Remove**.

### 7.3.2.5 UNPAIRING DEVICES

1 Right-click the device to open the context menu.
2 In the context menu, choose **Unpair**.

## 7.4 QUESTRA® TITLE BAR OVERVIEW

> The layout of the menu ribbon may look different from yours, as it will vary according to the project name and the users defined.




1 **"Hamburger" menu** - Contains some global commands, submenus and settings e.g., New Project, Export, Update, Preferences, Help, etc.

2 **Save** [CTRL+S] - Saves the project. Auto-save is enabled by default. If Auto-save is disabled, the icon is highlighted whenever there are unsaved changes. After saving, the icon turns grey to indicate that all changes are stored.

**3** **Undo** [CTRL+Z] / **Redo** [CTRL+Y]

**4** **Project Name** - Indicates the currently active project

**5** **Offline / Online Button** - Displays the online and offline status. You can use the drop-down menu to connect and deploy or to connect and download.

**6** **User Rights** - Displays the user role

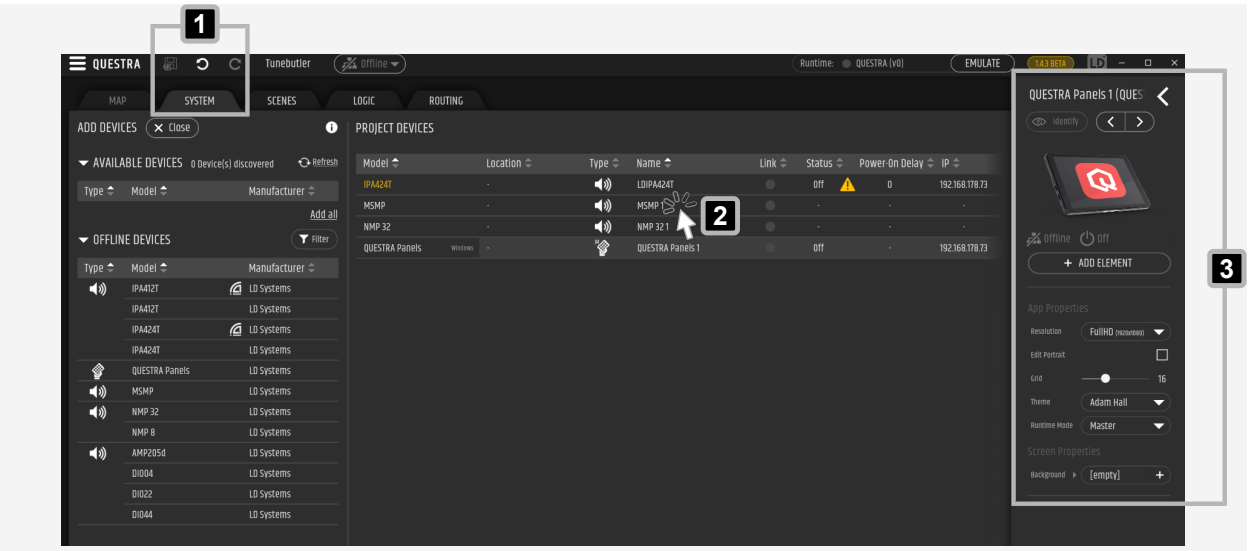
**7** **Runtime** - Indicates the device currently operating as the active runtime for the system. During emulation, the **QUESTRA®** PC application serves as the runtime. After deployment, the associated QTP panel is shown here as the active runtime device.

**8** **EMULATE** - Provides a preview of the preconfigured system without using real hardware. Emulation allows you to test control scenes, presets, and QTP panel designs, but it does not emulate audio processing or signal flow. Audio behavior can only be verified after deploying the project to actual devices.

**9** **Window Management Buttons** - Minimises, maximises and closes QUESTRA® Software

## 7.5 OPENING THE EXPANDED VIEW

✓ You have selected the **SYSTEM** tab **1**.




**1** In the **PROJECT DEVICES** area, choose the device for which you want to open the corresponding compact view **2**.

⇨ The compact view opens **3**

**2** On the top right in the compact view, choose ❮ to open the expanded view.

⇨ You have access to the configuration options of all submenus.

## 7.6 ROUTING

The **ROUTING** tab displays all AES67 transmit and receive channels from devices detected on the same network as the QUESTRA software. All compatible devices are discovered automatically, and this tab allows you to create, view, and manage audio routes between their channels.

### 7.6.1 ROUTING TAB OVERVIEW


1. **Multicast Stream** – Displays the AES67 streams that were created under the **MULTICAST STREAMS** submenu.
2. **Transmitter** – Displays the AES67 transmitters connected to the matrix.
3. **Routing Area** – Assigns AES67 transmitter signals to receivers by clicking the corresponding cross-points.
4. **Receiver** - Displays the AES67 receivers connected to the matrix.


A crosshair appears when you hover over the routing area, making it easier to select the desired crosspoints.

## 7.7 GENERAL INFORMATION

### 7.7.1 ABOUT AES67

AES67 is an interoperability standard for high-performance audio-over-IP networks. It enables seamless streaming between devices from different manufacturers using common protocols.

### 7.7.2 ABOUT DIGITAL SIGNAL PROCESSOR (DSP)

Each input and output channel of the device includes a predefined set of DSP elements to enable essential signal processing. These elements may vary depending on the device. On **TICA® NMP8** and **TICA® NMP32** models, additional DSP elements can be added to customise the signal processing chain according to your requirements.

### 7.7.3 ABOUT OFFLINE-ONLY MODIFICATIONS

**AUTOMIXERS**, **MULTICAST STREAMS**, and DSP blocks of the **INPUTS** and **OUTPUTS** can only be modified in **Offline** mode. After completing any changes, the configuration must be redeployed to the devices.

## 7.8 NMP

### 7.8.1 ADDING A DSP ELEMENT TO THE NMP

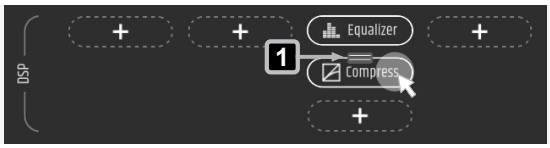
✓ You have opened the expanded view of your NMP.

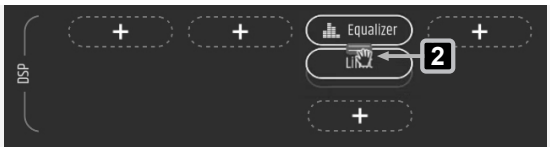

1 In the **NMP INPUTS** or **OUTPUTS** submenu 1, click + to open the DSP element context menu.

2 In the context menu, click the desired entry (DSP element) to select it 2.

⇨ The selected DSP element appears at the bottom of the list 3.

### 7.8.1.1 REARRANGING DSP ELEMENTS (SIGNAL PROCESSING ADJUSTMENT)



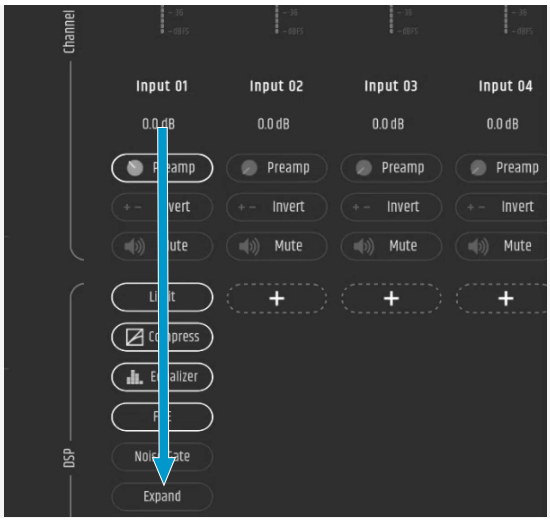

1 Hover the cursor over the DSP element you want to adjust.

⇨ An icon appears 1,

2 Click and hold the icon.

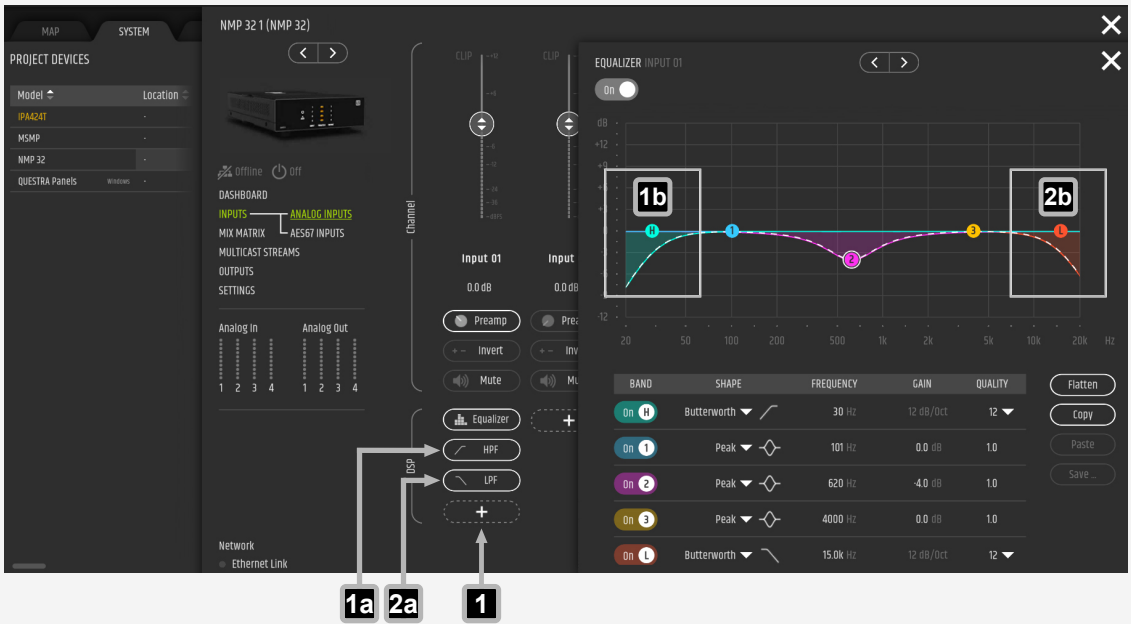
⇨ A hand cursor appears 2, indicating that you can drag the DSP element.

3 Move the DSP element up or down to change its position.




ⓘ The audio signal passes through the elements from top to bottom, so their order directly affects processing. When you change the position of DSP elements, you modify the audio signal flow—not just the visual arrangement.

## 7.8.2 EQUALIZER OVERVIEW NMP




**1a** **HPF** (**High-Pass Filter**) - Cuts low frequencies below the selected cutoff. When added, the **HPF** is displayed immediately in the Equalizer view **1b**.

**2a** **LPF** (**Low-Pass Filter**) - Cuts high frequencies above the selected cutoff. When added, the **LPF** is displayed immediately in the Equalizer view **2b**.

**3** + - Adds a new DSP Element.

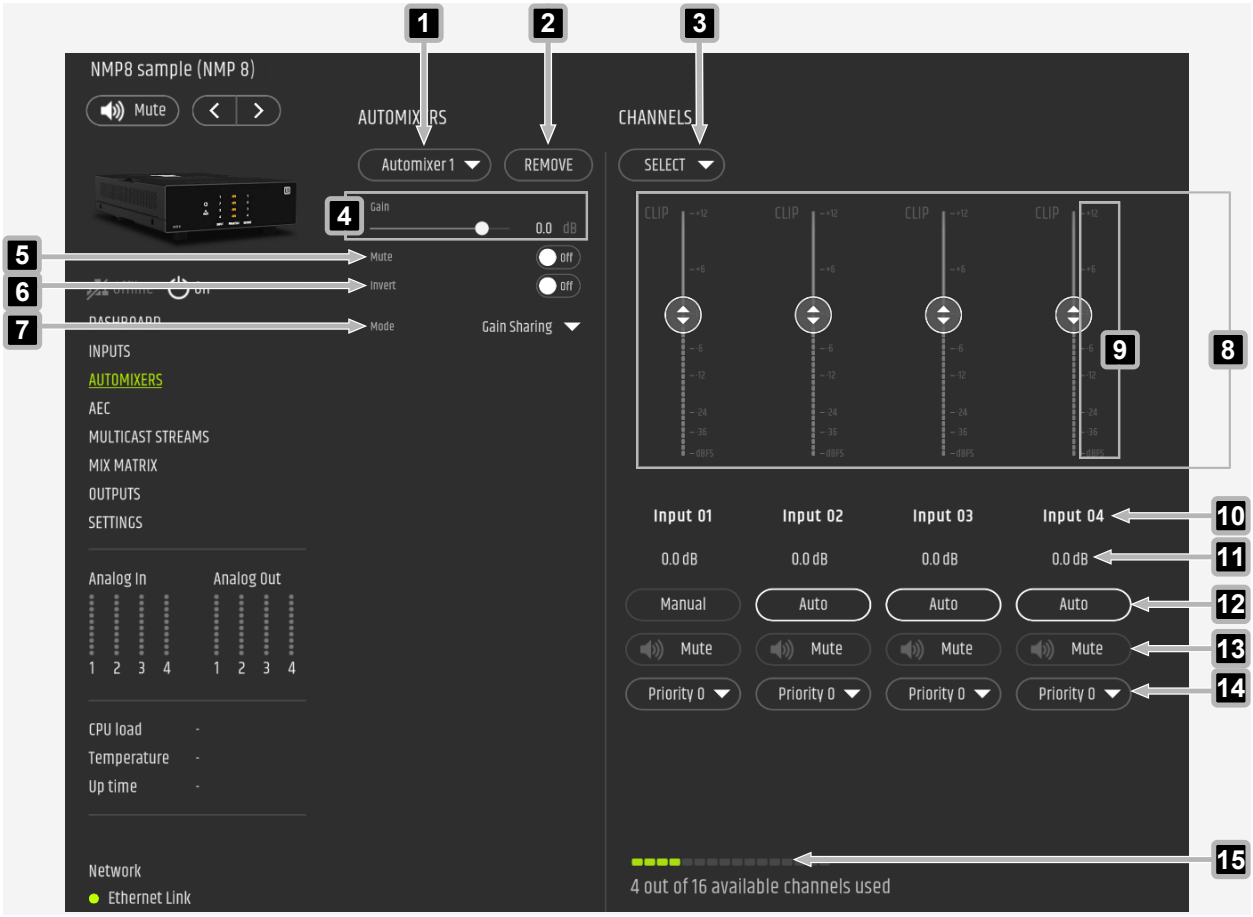
## 7.8.3 AUTOMIXERS

### 7.8.3.1 AUTOMIXERS GAIN SHARING MODE

#### 7.8.3.1.1 ABOUT GAIN SHARING MODE

Gain Sharing mode provides a continuous and adaptive method of balancing multiple microphones. It redistributes gain based on detected speech activity, improving clarity and reducing noise without the abrupt on/off behavior of gating systems.

#### 7.8.3.1.2 AUTOMIXERS OVERVIEW (GAIN SHARING MODE)




1 **Automixer Drop-down Menu** - Selects the active automixer instance

2 **REMOVE Button** – Removes the active automixer block

3 **CHANNELS SELECT Drop-down Menu** – Selects the input channels to include in the Automixer.
When adding an Automixer in **QUESTRA®**, a DSP block with capacity for 4 channels is automatically allocated. Selecting more than 4 channels automatically adds an additional 4-channel DSP block. After deployment, DSP block allocation is fixed; to change assignments, go offline, adjust selections, and redeploy.

4 **Gain Slider** - Controls the overall output gain of the automixer block

5 **Mute** (On) - Toggles the automixer on/off

6 **Invert** (On) - Toggles the polarity inversion of the automixer output

7 **Mode Drop-down Menu** - Selects the automixing mode (**Gating**, **Gain Sharing**)

8 **Input Gain Fader** - Controls the level feeding into the automixer algorithm

9 **Meter Indicator** - Displays the processed signal level in dBFS after the Gain Sharing algorithm has applied gain redistribution. This makes sure the meter reflects the channel's actual contribution to the mix without referencing any post-fade mute stage.

10 **Channel Name** - Displays the channel label

**11** **Level Readout** - Displays the fader value

**12** **Auto** / **Manual Button** - Switches the channel between automatic and manual operation.

- In **Auto** mode, the channel participates in Gain Sharing and its gain is adjusted automatically
- In **Manual** mode, the channel is excluded from the algorithm while audio passes through unchanged

**13** **Mute Button** - Mutes the channel at the input stage and excludes it from the automixer algorithm.

**14** **Priority Drop-down Menu** - Sets the relative priority for ducking behavior. Lower numbers mean higher priority.

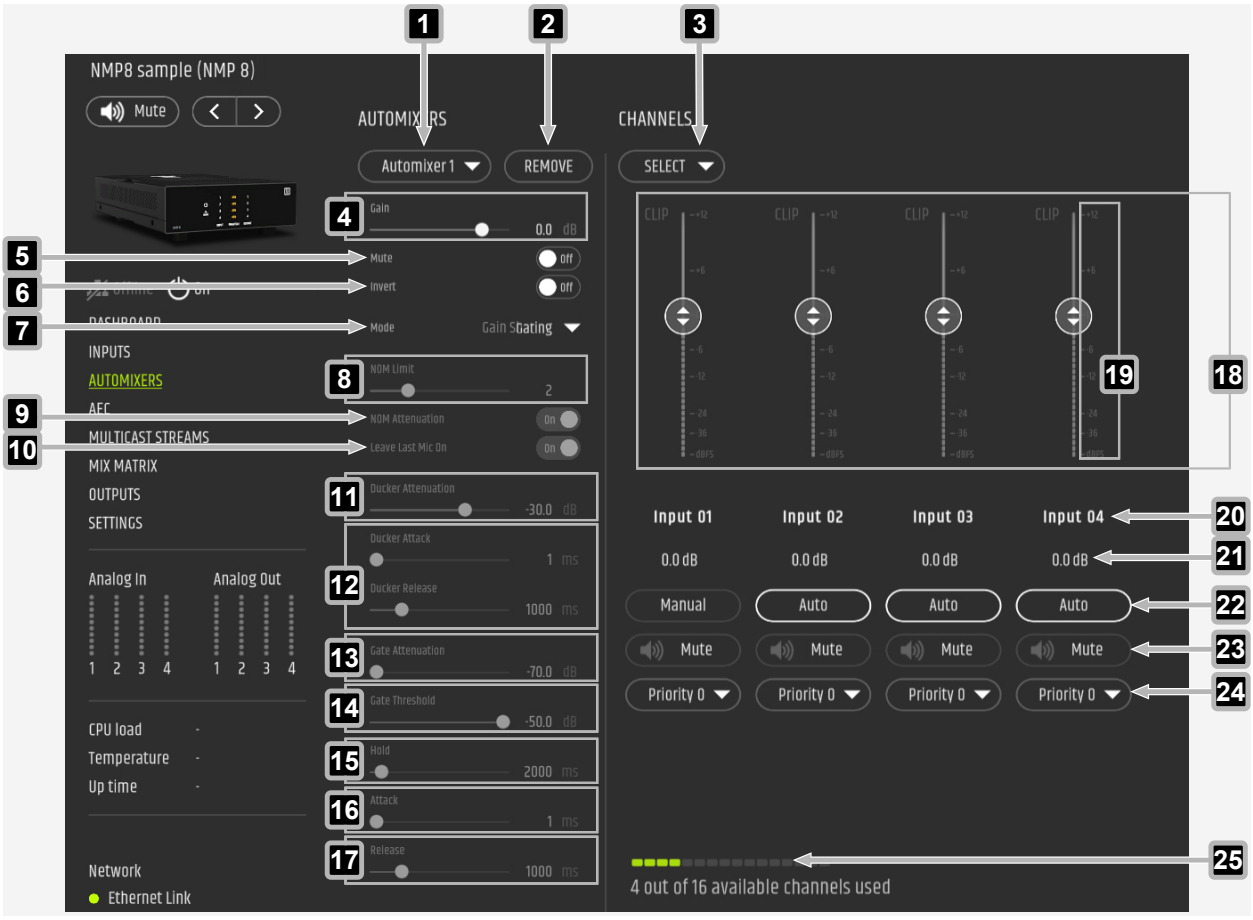
**15** **Channel Usage Indicator** – Displays how many channels are currently assigned relative to the available DSP block capacity

## 7.8.3.2 AUTOMIXERS GATING MODE

### 7.8.3.2.1 ABOUT GATING MODE

Gating mode uses thresholds and timing parameters to determine when microphones open or close. This mode is effective in environments where strict control of microphone activity is preferred.

### 7.8.3.2.2 AUTOMIXERS OVERVIEW (GATING MODE)




**1** **Automixer Drop-down Menu** - Selects the active automixer instance

2 **REMOVE Button** – Removes the active automixer block

3 **CHANNELS SELECT Drop-down Menu** – Selects the input channels to include in the Automixer.
When adding an Automixer in **QUESTRA®**, a DSP block with capacity for 4 channels is automatically allocated. Selecting more than 4 channels automatically adds an additional 4-channel DSP block. After deployment, DSP block allocation is fixed; to change assignments, go offline, adjust selections, and redeploy.

4 **Gain Slider** - Controls the overall output gain of the automixer block

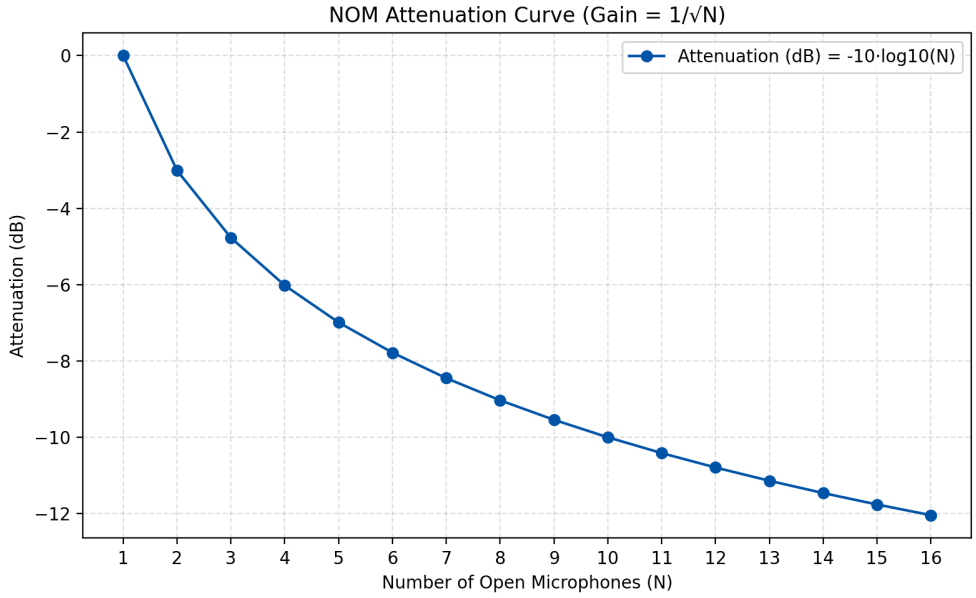
5 **Mute** On - Toggles the automixer on/off

6 **Invert** On - Toggles the polarity inversion of the automixer output

7 **Mode Drop-down Menu** - Selects the automixing mode (**Gating**, **Gain Sharing**)

8 **NOM Limit (Number of Open Microphones Limit) Slider** - Defines the maximum number of microphones that may be open simultaneously. If more microphones attempt to open than the configured **NOM Limit**, the automixer evaluates all channels every 1 ms using a real-time competition algorithm: channels with higher priority are selected first; if priorities are equal, the channel with the lower input index is chosen. Additional microphones are only admitted to the mix when one of the currently active channels becomes inactive.

9 **NOM Attenuation** On – Enables the automixer to adjust the bus gain according to the number of open microphones. The applied gain follows 1/√N (equivalently −10·log10(N) dB). This maintains a consistent perceived mix level as additional talkers become active and helps prevent overload.




10 **Leave Last Mic On** On - Keeps at least one microphone open at all times.
If all active microphones stop receiving speech, the automixer prevents full closure by keeping the most recently active channel open. This avoids complete silence in the mix, maintains consistent room ambience, and prevents abrupt noise-floor changes. It is especially useful in conferencing, broadcast, and panel setups to avoid unwanted “dead air.”

11 **Ducker Attenuation Slider** - Sets the amount of attenuation applied to non-priority channels when priority channels become active.

12 **Ducker Attack** / **Release Sliders** - Control how quickly the ducker applies and releases attenuation in response to priority-channel activity.

- **Attack** – Sets the speed at which ducking engages after a priority channel becomes active.
- **Release** – Sets the speed at which the attenuation on non-priority channels is removed after the priority channel becomes inactive.

13 **Gate Attenuation Slider** - Sets the level of attenuation applied to microphones when the gate is closed.

14 **Gate Threshold Slider** – Sets the input level required for a microphone to be considered active.

15 **Hold Slider** – Sets the minimum time a microphone remains open after its level drops below the gate threshold.

16 **Attack Slider** – Sets the time it takes for a microphone to fully open once the input exceeds the threshold.

17 **Release Slider** – Sets the time it takes for a microphone to begin closing after the **Hold** period has fully elapsed. The release phase only starts once the configured **Hold** time is complete, ensuring smooth and predictable microphone deactivation behavior.

18 **Input Gain Fader** - Controls the level feeding into the automixer algorithm

19 **Meter Indicator** - Displays the processed signal level in dBFS after the Gain Sharing algorithm has applied gain redistribution. This makes sure the meter reflects the channel's actual contribution to the mix without referencing any post-fade mute stage.

20 **Channel Name** - Displays the channel label

21 **Level Readout** - Displays the fader value

22 **Auto** / **Manual Button** - Switches the channel between automatic and manual operation.

- In **Auto** mode, the channel participates in Gain Sharing and its gain is adjusted automatically
- In **Manual** mode, the channel is excluded from the algorithm while audio passes through unchanged

23 **Mute Button** - Mutes the channel at the input stage and excludes it from the automixer algorithm.

24 **Priority Drop-down Menu** - Adjusts a channel's weighting factor within the gain-sharing automixer, determining its relative contribution to the shared gain distribution.

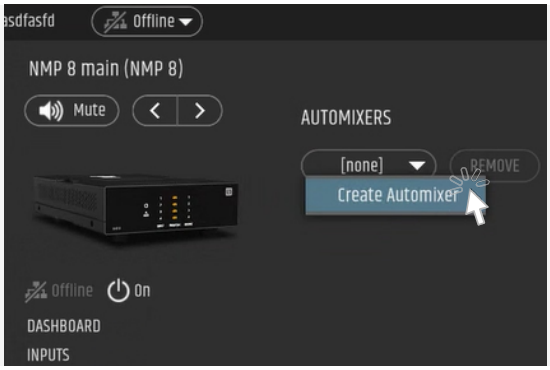
A difference of 1 priority step corresponds to a 2 dB change in weighting.

Priority 5 represents the 0 dB reference point. Higher priorities apply a positive weight, and lower priorities apply a negative weight, influencing the gain the channel receives relative to others.

The automixer combines real-time signal energy and the priority setting to calculate each channel's effective weight. Channels with higher priority receive a larger share of the available gain, allowing integrators to favor key participants, such as presenter microphone without disabling other contributors.

25 **Channel Usage Indicator** – Displays how many channels are currently assigned relative to the available DSP block capacity

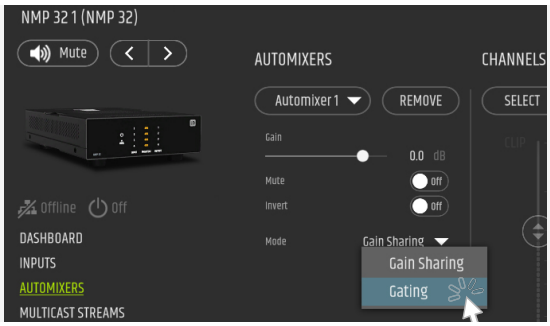
### 7.8.3.3 ADDING AN AUTOMIXER




✓ **Offline** mode is activated

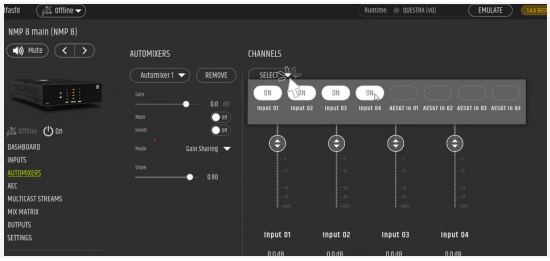
1. Click the **AUTOMIXERS** drop-down menu to open the **Create Automixer** submenu.
2. Click **Create Automixer**.
   ⇨ A new Automixer module is inserted.
   ⇨ One DSP block (4 channels) for processing capacity is reserved.

### 7.8.3.4 CONFIGURING AN AUTOMIXER

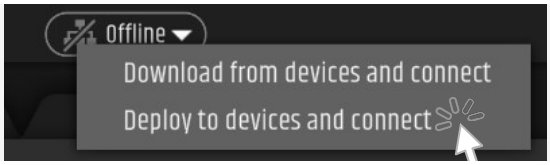



1. Click the **Mode** drop-down menu if you want to switch to gating mode.
2. Select **Gating** from the list.

> By default, the automixer runs in **Gain Sharing** mode.

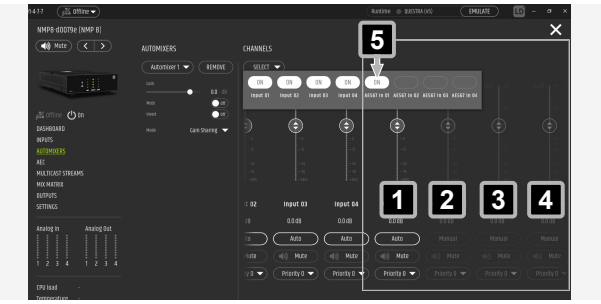


3. In the **CHANNEL SELECT** drop-down menu, select the four input channels you want to assign to this automixer block.
   ⇨ The selected channels are automatically routed into the automixer.
   ⇨ The selected channels are displayed as an active channel strip in the interface.




4. In the menu bar, click **Offline** to open the **Online** connection options.
5. From the drop-down menu, select **Deploy to devices and connect**.

> Changes such as deleting, adding, or configuring blocks can only be made in **Offline** mode. After deployment, these blocks become fixed and any modifications must be redeployed.




When you add a fifth channel **5**, a new four-channel placeholder **1** - **4** appears.

## 7.8.4 ABOUT MULTICAST

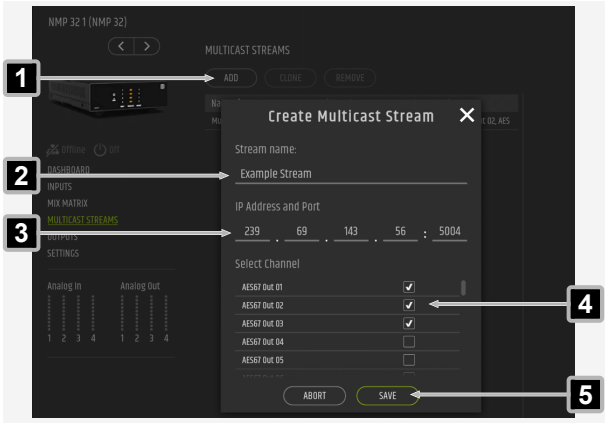
A multicast stream is a network-based transmission method in which a single data stream is delivered from one source to multiple designated receivers simultaneously. This minimises overall network traffic and provides consistent, synchronised signal distribution across all subscribed devices.

In mixed Dante and AES67 environments, interoperability depends on AES67 multicast streaming: Dante devices with AES67 support can send and receive AES67 multicast flows to and from third-party AES67 devices, whereas AES67 unicast is not supported. Therefore, AES67 streams must always be configured as multicast when bridging Dante with non-Dante AES67 equipment.

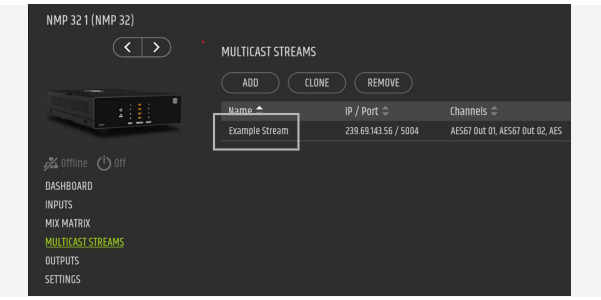
### Deployment notes

- Use Dante Controller's AES67 Config tools to create AES67 multicast flows and make sure that multicast addresses comply with the ranges supported by the receiving devices (many Dante chipsets expect addresses in the 239.x/16 range).
- Confirm that the network infrastructure properly supports multicast (IGMP snooping and a querier enabled) to prevent unwanted flooding and to maintain deterministic audio delivery.

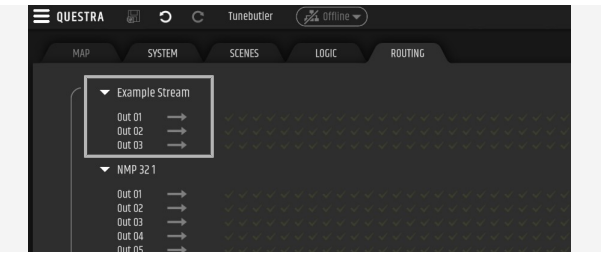
### 7.8.4.1 ADDING A MULTICAST STREAM




1. Click **ADD** **1** to open the **Create Multicast Stream** window.
2. Enter a name of your choice **2**.
3. Adjust the multicast IP address and port if necessary **3** —the system generates valid AES67-compliant defaults automatically, so these values usually don't require modification.
4. Select the desired AES67 channels by clicking the corresponding checkboxes **4**.
5. Click **SAVE** **5** to create the multicast stream



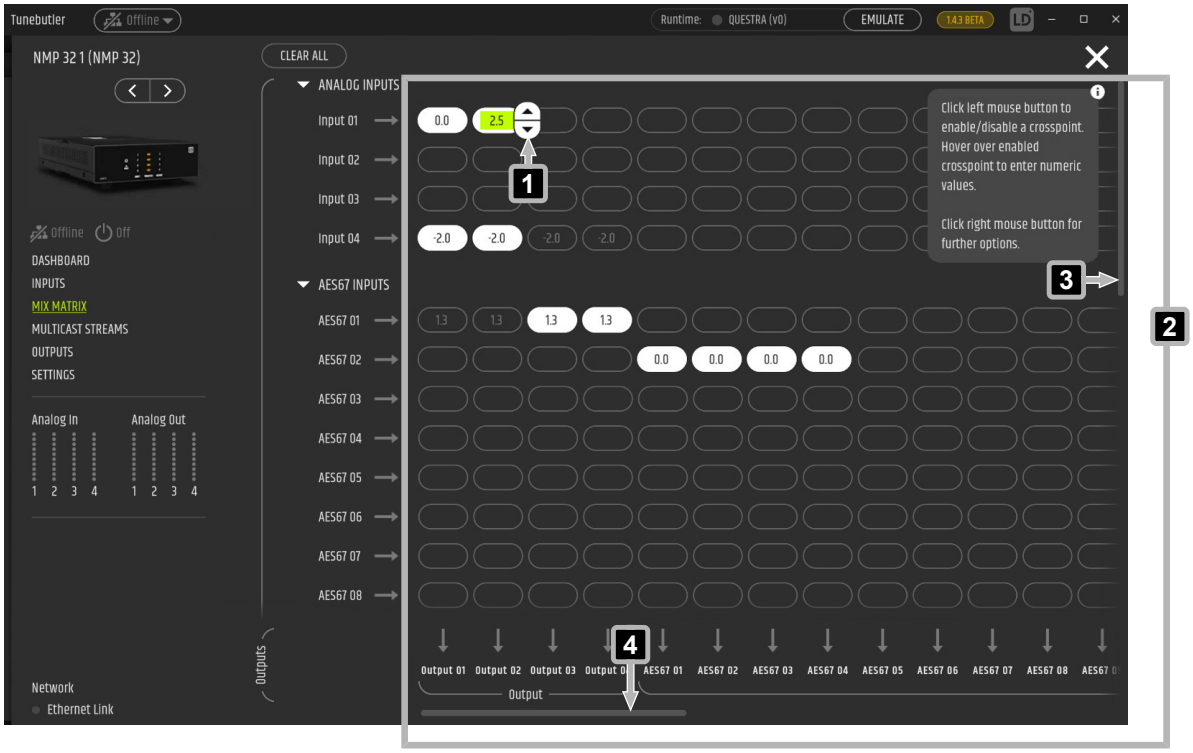

⇨ The created stream appears in the **MULTICAST STREAMS** list.




⇨ The created stream appears in the **ROUTING** tab and is available for routing to the outputs.

⇨ The multicast stream appears in the Dante Controller software, allowing it to be subscribed to by AES67-enabled Dante devices.

## 7.8.5 MIX MATRIX OVERVIEW NMP




**1** **Crosspoint ▲/▼ buttons** – Adjusts gain values by hovering over an enabled crosspoint. The ▲/▼ buttons appear for incremental gain changes, and the gain field highlights in green to allow direct numeric entry.

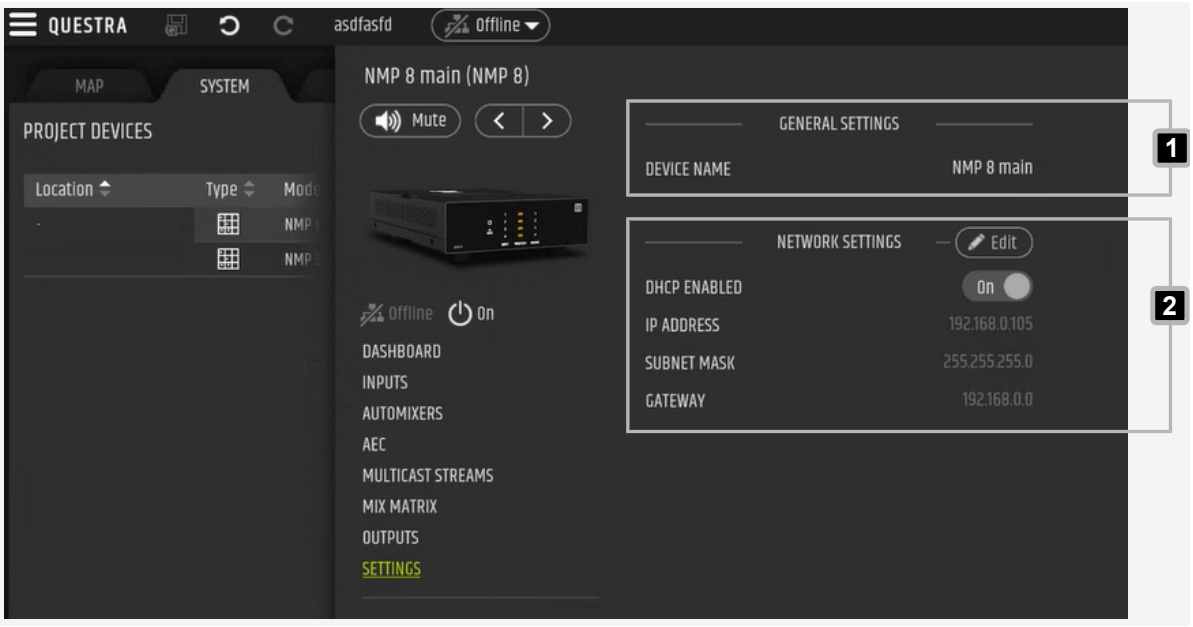
**2** **MIX MATRIX Crosspoint Area** - Establishes connections between inputs and outputs

**3** **Scroll bar** – Scrolls through Crosspoints 1 to 28 in the vertical direction.

**4** **Scroll bar** – Scrolls through Crosspoints 1 to 28 in the horizontal direction.

Refer to the **QUESTRA©** User Manual for further information on how to operate the mix matrix.

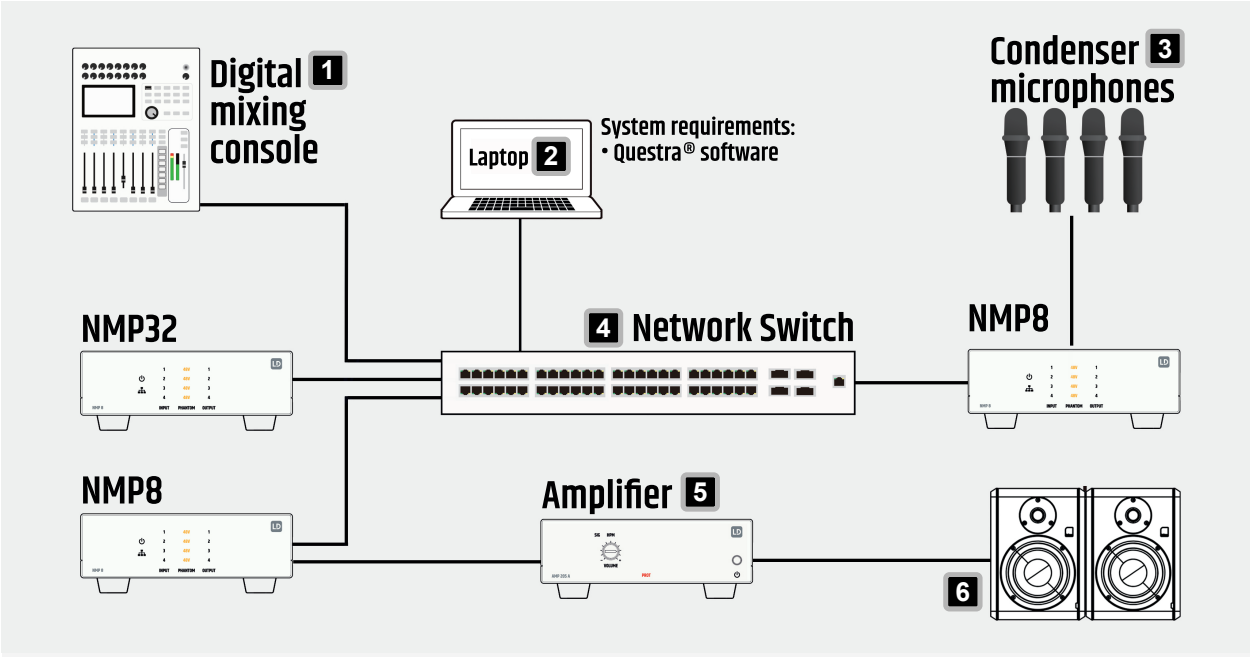
## 7.8.6 NETWORK SETTINGS OVERVIEW




**1** **GENERAL SETTINGS Section** - Displays the system settings

**2** **NETWORK SETTINGS Section** - Assigns network settings

## 7.9 USE CASE




**1** Digital mixing console

**2** Laptop

System requirements:

- QUESTRA® software

**3** Condenser microphones

**4** Network switch

**5** Amplifier

**6** 2.0 Speaker

# 8 MAINTENANCE

## 8.1 PRODUCT MAINTENANCE

CAUTION

**Mains Voltage**

Risk of electric shock

a. Before you perform maintenance work on the device, disconnect the device from all poles.

NOTICE

**Damage to the device and void of warranty**

a. Do not use cleaning agents, disinfectants, alcohol, or agents with abrasive effect for cleaning.

Carry out the maintenance measures listed below on a regular basis. The frequency of cleaning depends on the environment in which you use the product. Damp or dirty environments may cause increased soiling and wear.

### VISUAL INSPECTION

Check the following points before operating the device.

- ⚠ **WARNING! Risk of electric shock.** Check mains power cables for damage or material fatigue.
- Check all air inlets and outlets for damage, dust, or dirt deposits.
- Check all outside screws and covers for corrosion, damage or excessive wear.
- Check all connectors and rubber sealing caps for damage, dust, or dirt deposits.
- ⚠ **WARNING! Risk of falling objects.** Check that all screws, fasteners, and rigging points are securely tightened.

### CLEANING

- Clean the surface with a clean and damp lint-free cotton cloth. Wipe off all excess moisture.
- **NOTICE! Do not use compressed air.** Clean any air inlets and outlets of dust and dirt deposits with a clean and damp lint-free cotton cloth.
- Clean all plug contacts from dust and dirt with a dry lint-free cotton cloth.

# 9 DISPOSAL

## 9.1 PACKAGING DISPOSAL

1. You can feed the packaging into the reusable material cycle using the usual disposal methods.
2. Separate the packaging in accordance with the applicable disposal laws and recycling regulations in your country

LD systems