Manuals+ — User Manuals Simplified.
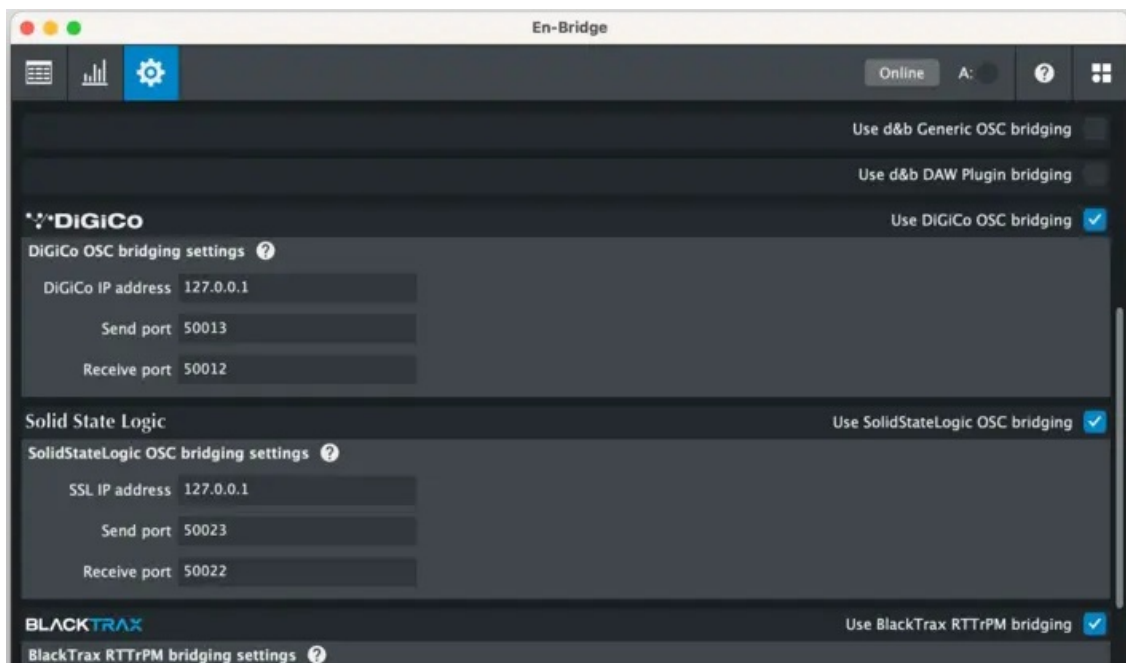

d b En-Bridge Software User Guide

Contents

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d b En-Bridge Software

Product Information

Specifications

- Software tool for D&B soundscape systems
- Interconnects d&b Signal Engines and third-party devices
- Handles sound object data including object position, En-Space gain, spread, delay mode, and mapping area
- Offers pre-configured bridging modules for commonly used devices
- Includes control and logging functions for testing and troubleshooting
- Available for Windows and macOS operating systems

System Requirements

PC:

- Intel/AMD (Intel i5/3rd generation or higher)
- Windows 10 (64 Bit) or higher
- **Ethernet Network:** 1 Gbit or faster, cable connection recommended (no WiFi)
- **RAM/Free disk space:** 8 GB / 20 MB
- **Screen resolution:** 1280 x 800 or higher

Mac (Intel):

- Intel (i5/i7 3rd generation or higher)
- macOS 10.15 or higher
- Ethernet Network: 1 Gbit or faster, cable connection recommended (no WiFi)
- RAM / Free disk space: 8 GB / 20 MB
- Screen resolution: 1280 x 800 or higher

Mac (M1/M2):

- macOS 13.0 or higher
- Ethernet Network: 1 Gbit or faster, cable connection recommended (no WiFi)
- RAM / Free disk space: 8 GB / 20 MB
- Screen resolution: 1280 x 800 or higher

Application Updates
En-Bridge features an in-app update function that checks for new versions at every application start. Make sure to have good working knowledge of d&b systems in general and Soundscape systems in particular, specifically as far as the contents of d&b TI 501, available at **www.dbaudio.com**, are concerned.

Minimum Hardware Setup Requiring En-Bridge
When using more than one OSC controller, there is a need to update one with the changes made by the other. En-Bridge fits into the data stream between OSC controllers and DS100s. If you use two DS100 Signal Engines, ensure they have the same licenses and operate on the same firmware revision. Always use the latest available firmware for your DS100 Signal Engines. All necessary configuration steps are explained in the following pages, but you can also use the context-sensitive built-in Help function of En-Bridge by clicking the question mark icon (?).

Product Usage Instructions

General Configuration of En-Bridge (with one DS100 Signal Engine)
To configure En-Bridge with one DS100 Signal Engine, follow these steps:

Step 1: Network Setup
Make sure that all devices reside within the network and have compatible IP settings.

Step 2: Interval Configuration
For most applications, an interval of 100 ms is sufficient. This ensures near-real-time updates of object parameters on all connected OSC controllers while keeping traffic within reasonable bounds. Note that this does not affect the rate at which data is forwarded from the connected OSC controllers to the DS100 Signal Engine.

Configuration of En-Bridge with two DS100 Signal Engines

To configure En-Bridge with two DS100 Signal Engines, follow these steps:
(Steps for configuration are not provided in the given text extract)

Going Online

To go online with En-Bridge, follow these steps:
(Steps for going online are not provided in the given text extract)

Sound Objects Page
The Sound Objects page in En-Bridge allows you to configure and manage sound objects. (Further details on configuring sound objects are not provided in the given text extract)

FAQ

- **Q: What is En-Bridge?**

  A: En-Bridge is a software tool for d&b Soundscape systems that interconnects d&b Signal Engines and third-party devices.

- **Q: What data does En-Bridge handle?**

A: En-Bridge handles sound object data including object position, En-Space gain, spread, delay mode, and mapping area.

- **Q: What operating systems are supported by En-Bridge?**

  A: En-Bridge is available for Windows and macOS operating systems.

- **Q: What are the system requirements for En-Bridge?**

  A: The system requirements for En-Bridge vary depending on the operating system. For PC, it requires Intel/AMD (Intel i5/3rd generation or higher) and Windows 10 (64 Bit) or higher. For Mac (Intel), it requires Intel (i5/i7 3rd generation or higher) and macOS 10.15 or higher. For Mac (M1/M2), it requires macOS 13.0 or higher. It also requires an Ethernet network connection with 1 Gbit or faster, with a cable connection recommended (no WiFi). Additionally, it requires 8 GB of RAM, 20 MB of free disk space, and a screen resolution of 1280 x 800 or higher.

- **Q: How can I update En-Bridge?**

  A: En-Bridge features an in-app update function that checks for new versions at every application start.

What is En-Bridge

En-Bridge is a software tool for d&b Soundscape systems that interconnects d&b Signal Engines and third-party devices such as control software or tracking systems that require the consolidated handling of sound object data.

Such data comprises:

- Object position,
- En-Space gain,
- Spread,
- Delay mode
- and mapping area.
- As there is normally no method to keep multiple connected OSC controllers synchronized about the sound object attributes mentioned above that some or all of them may send to the same d&b Signal Engine, En-Bridge offers a bridging matrix for up to 128 sound objects that can be flexibly assigned per object and input device.
- En-Bridge polls and distributes sound object data between one or two connected Signal Engines to enable automatic data updates, parallel processing and backup schemes.
- To more easily integrate with OSC controllers, En-Bridge offers preconfigured bridging modules for commonly used devices.
- Furthermore, En-Bridge incorporates simplified control and logging functions for testing and troubleshooting.

The software is available for Windows and macOS operating systems.

- **System requirements PC:**
  - Intel/AMD (Intel i5/3rd generation or higher).
  - Win 10 (64 Bit) or higher.
- **Mac (Intel):** Intel (i5/i7 3rd generation or higher). 10.15 or higher.
- **Mac (M1/M2):** 13.0 or higher.
- **Ethernet Network:** 1 Gbit or faster, cable connection recommended (no WiFi).

- **RAM/Free disk space:** 8 GB / 20 MB.
- **Screen resolution:** 1280 x 800 or higher.

Application updates

- En-Bridge features an in-app update function that checks for new versions at every application start.
- This manual assumes good working knowledge of d&b systems in general and Soundscape systems in particular, specifically as far as the contents of d&b TI 501, available at **www.dbaudio.com**, are concerned.

NOTICE!
Important notes when running software-based OSC controllers.

- Only one OSC controller can be run per computer machine, i.e. just En-Bridge, or just a DAW with the d&b Soundscape plug-in. The reason is that because all OSC applications have to use the same UDP port per machine, it would not be possible to differentiate which data belongs to which application.
- This in turn would lead to errors and time-outs.
- R1 (OCA) and En-Bridge (OSC) can be operated on the same machine, but for scenarios in which a large amount of OSC traffic is expected (many objects and/or multiple controllers), it is recommended to use a separate machine just for En-Bridge.

Minimum hardware setup requiring En-Bridge

- As soon as more than one OSC controller is in use, there is a need to update one with the changes made by the other.
- The following illustration shows how and where En-Bridge fits into the data stream between OSC controllers and DS100s.
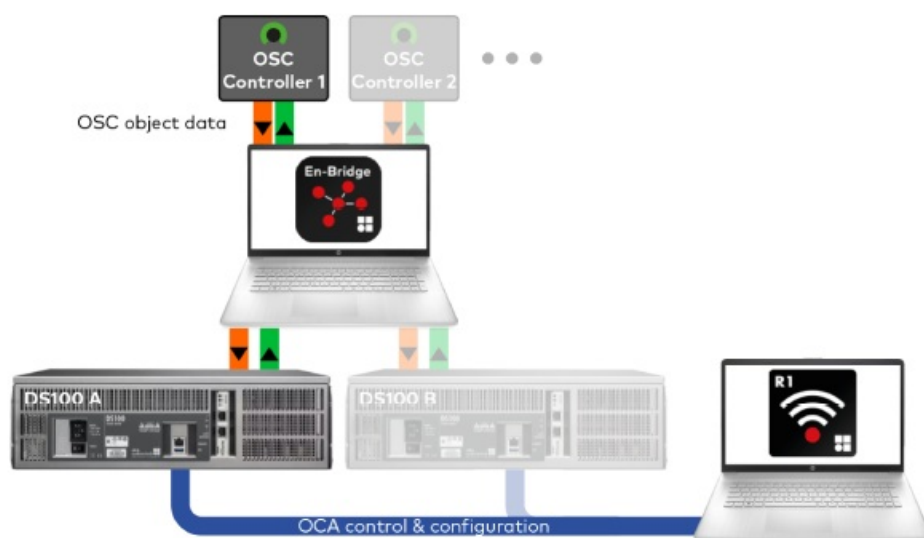

- If you use two DS100 Signal Engines, you must make sure that they are equipped with the same licenses and that they are operating on the same firmware revision.
- Always use the latest available firmware for your DS100 Signal Engines.
- All necessary configuration steps are explained on the following pages, but you can also use the context-

sensitive built-in Help function of En-Bridge by clicking the question mark icon (?).

General configuration of En-Bridge with one DS100 Signal Engine

Make sure that all devices reside within the network and have compatible IP settings.
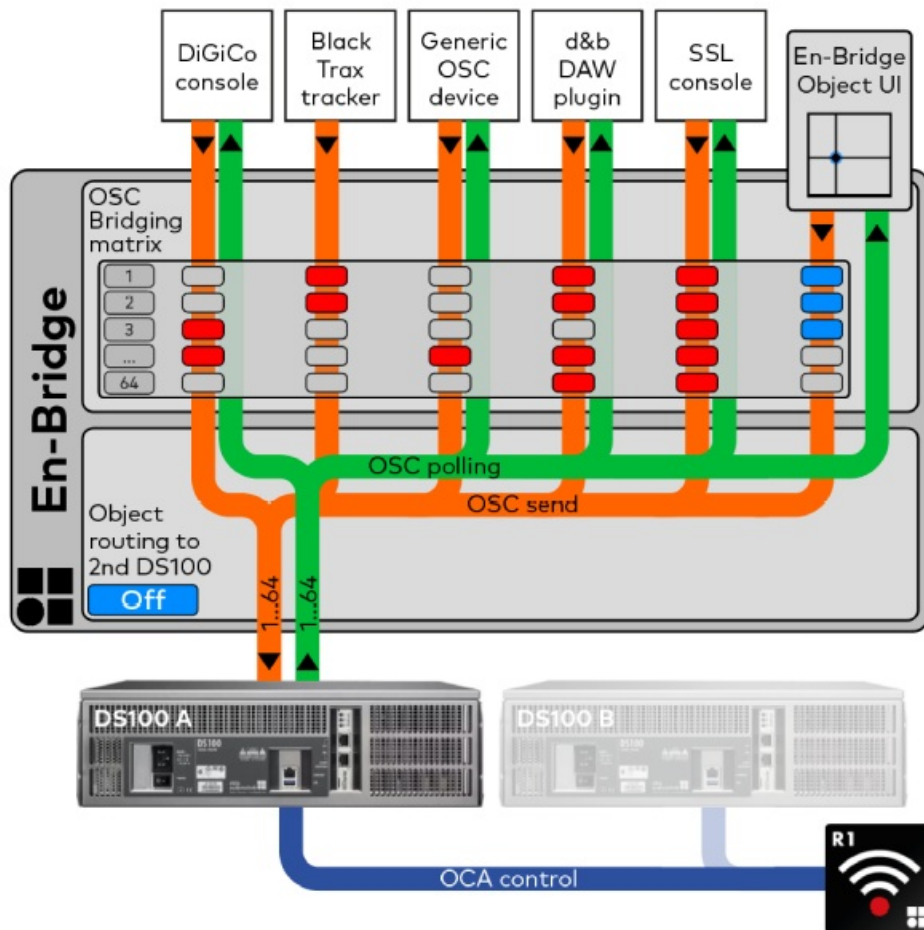
1. Under «General settings», make sure that at least the
   The «Sound objects» page is enabled as shown in the screenshot opposite.
2. Under «DS100 settings», specify the polling interval
   («Interval») En-Bridge should be used to read back object parameters from the connected DS100.
   ↳ For virtually all applications, an interval of 100 ms is more than sufficient.
   This ensures near-real-time updates of object parameters on all connected OSC controllers while keeping traffic within reasonable bounds.
   This does not affect the rate at which data is forwarded from the connected OSC controllers to the DS100 Signal Engine.
3. Specify the IP address of your DS100 Signal Engine («DS100 A IP address»).
   ↳ Use the magnifier icon ( ) to scan the network for
4. Set the «2nd DS100» to «Off».
5. Configure at least one OSC bridging module (refer TO "Bridging modules").
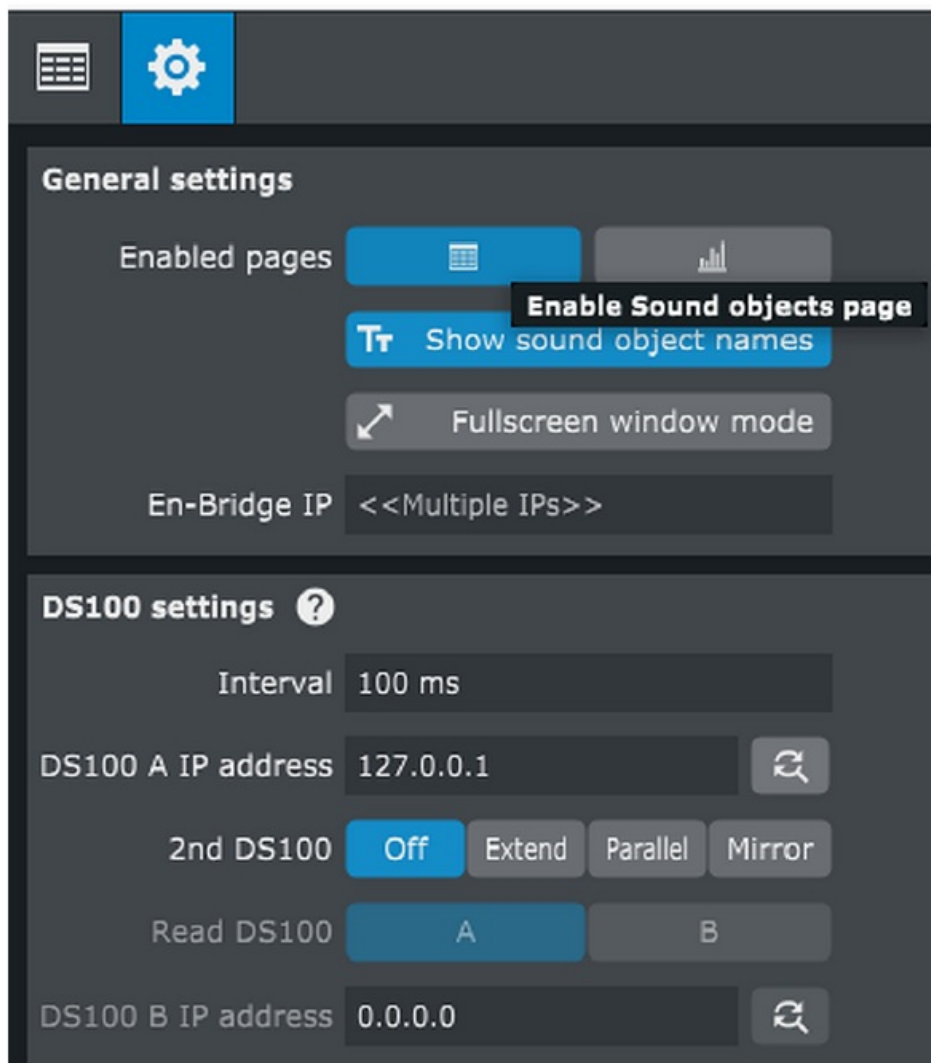
Sound objects page

1. Add one or multiple sound objects to be bridged by using the controls on the bottom left of the application window

   ( ).
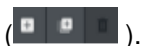
   ↳New sound objects will always be added sequentially to the end of the list. Their IDs will be incremented according to the highest existing sound object ID on the list.

2. Adjust the desired «Mapping» area for your objects.

   ↳By default, newly created objects are assigned to «Mapping» area 1 ( ).

   All activated bridging modules will appear under

   «Disable bridging».

   Per module and sound object you can select, whether its data should be forwarded ( ) to the DS100 or not

   ( ).

   «Read DS100» ( ) determines whether data for this object is polled from the DS100 and forwarded to the bridged OSC controllers.
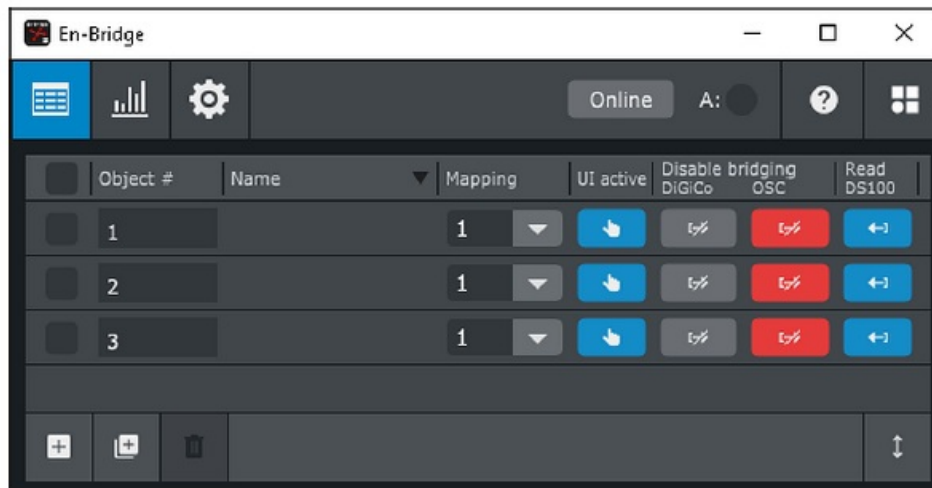
Going online

- Click the «Online» button on the top right of the application window to put En-Bridge into operation.
  ↳ Next to the button, the corresponding LEDs will indicate whether the specified DS100s are online.
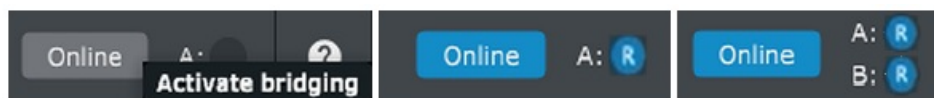

Configuration of En-Bridge with two DS100 Signal Engines

For some applications, two DS100s are required. Always make sure that both DS100s use the same firmware version and have identical licenses activated.

- On the «Settings page», enter the IP address of the second or "B" DS100 into the respective field.
- You may use the magnifier icon ( ) to scan the network for all available DS100s or enter the IP address manually.
- The following modes are available when using two DS100s.

Extend mode

- Use this mode when more than 64 sound objects are required.
- En-Bridge will forward sound object IDs 1 – 64 to DS100 A, and sound object IDs 65 – 128 to DS100 B.
- For this, incoming sound object IDs 65 – 128 will be translated into sound object IDs 1 – 64 for DS100 B.
- Both DS100s are polled.
- The data from sound object IDs 1 – 64 will be polled from DS100 A and forwarded 1:1 to all bridged devices.
- The data from sound object IDs 1 – 64 polled from DS100 B will be translated into sound object IDs 65 – 128 and then forwarded to all bridged devices as such.
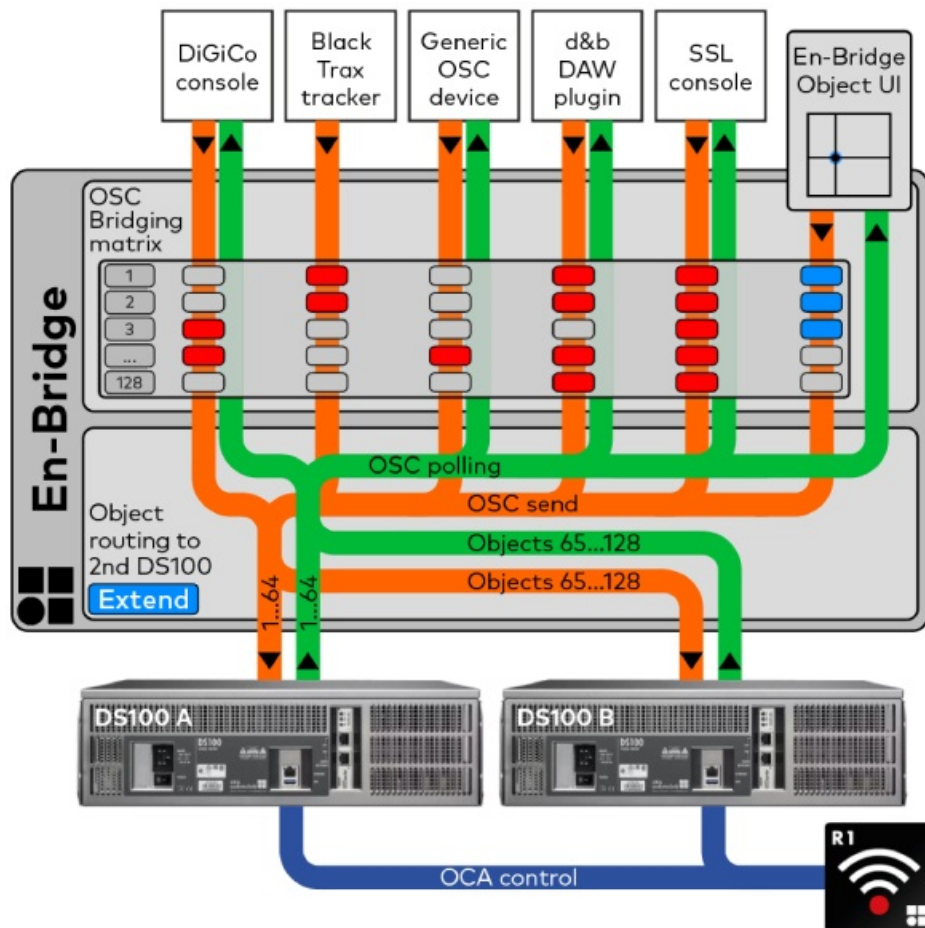
Parallel mode

- In "Parallel" mode, incoming messages are sent to both DS100s simultaneously.
- Set the «Read» status to the DS100 En-Bridge should poll for object data to return back to all bridged devices.
- One application for this mode is when one DS100 should serve as a backup for the other, and you want to manually switch the «Read» device, when required. Both DS100s have to be configured identically in R1 beforehand. They must have identical input routing and the same licenses activated.
- In case of switch over, the audio outputs of the second DS100 have to be routed to the system by means that are external to En-Bridge.
- Another possible application could be when both DS100s should process the same objects with the same relative or absolute coordinates, but are rendering their outputs on two different loudspeaker setups, e.g. for two different venues, simultaneously.
- In this case, both DS100s must be initially configured as desired in R1 and must receive the same audio input.
- Both DS100s are polled. Only data from the DS100 that has been set to «Read» on the «Settings» page in En-Bridge will be forwarded to the bridged devices. The polling of the other DS100 is only used to determine whether it is still responding and thus its online status.
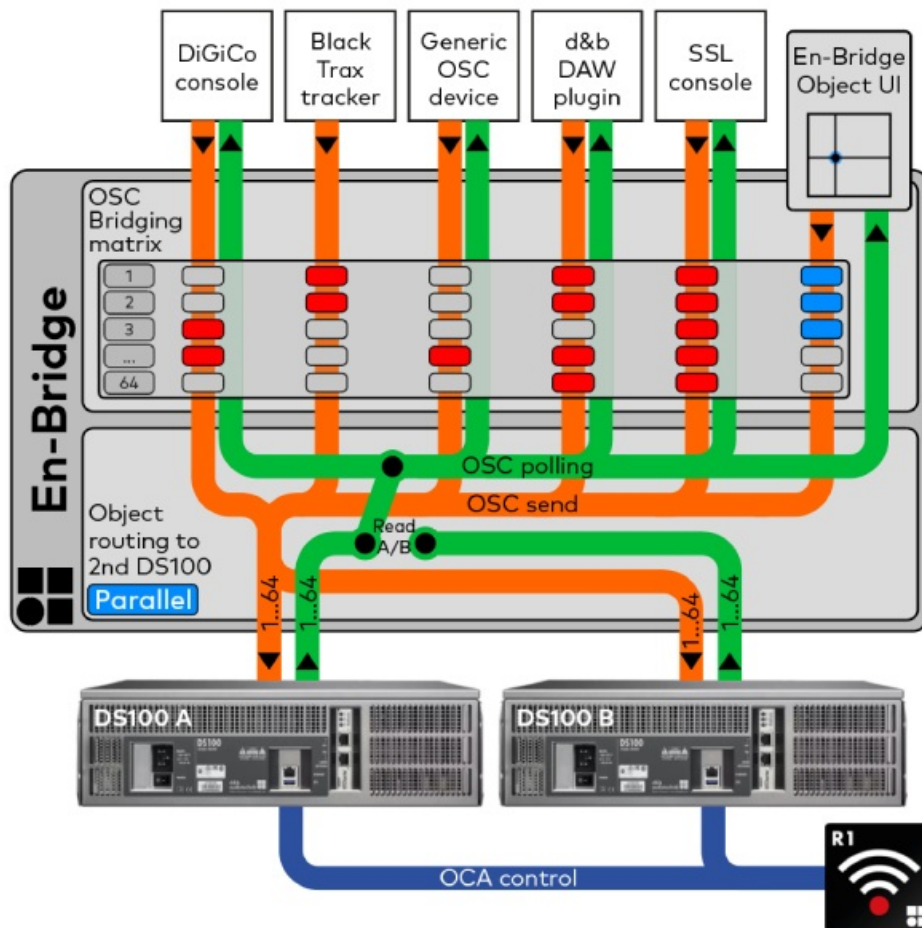
Mirror mode

- In contrast to the "Parallel" mode, the application for this mode is when the second DS100 should automatically take over from the first about the «Read» status in case the first unit becomes unresponsive.
- Both DS100s have to be configured identically in R1 beforehand and both must have identical licenses activated and the same input signals routed to them.
- In case of switchover, the audio outputs of the second DS100 have to be routed to the system by means that are external to En-Bridge.
- As long as it is responding, DS100 A is automatically set to «Read» on the «Settings» page in En-Bridge. Its data is polled and forwarded to the bridged devices.
- DS100 B is polled in the background to monitor its online status, but its data is not forwarded. Rather, En-Bridge compares the polled data from both machines. Should DS100 A differ from DS100 B regarding the polled object data, which happens when R1 or another OSC controller that is not integrated through
- En-Bridge only modifies object data on DS100 A, En-Bridge automatically modifies the data on DS100 B to match DS100 A.
- Should DS100 A not respond to polling commands anymore, the «Read» status will automatically be switched to DS100 B. From then on, its data will not only be polled but also forwarded to all bridged devices.
- DS100 B therefore takes over the functionality of DS100 A in this situation. DS100 B retains the «Read» status as long as it responds to polling commands. Should DS100 A come back online, it will become the backup for DS100 B and will be treated in the same way as DS100 B when DS100 A is the «Read» device.
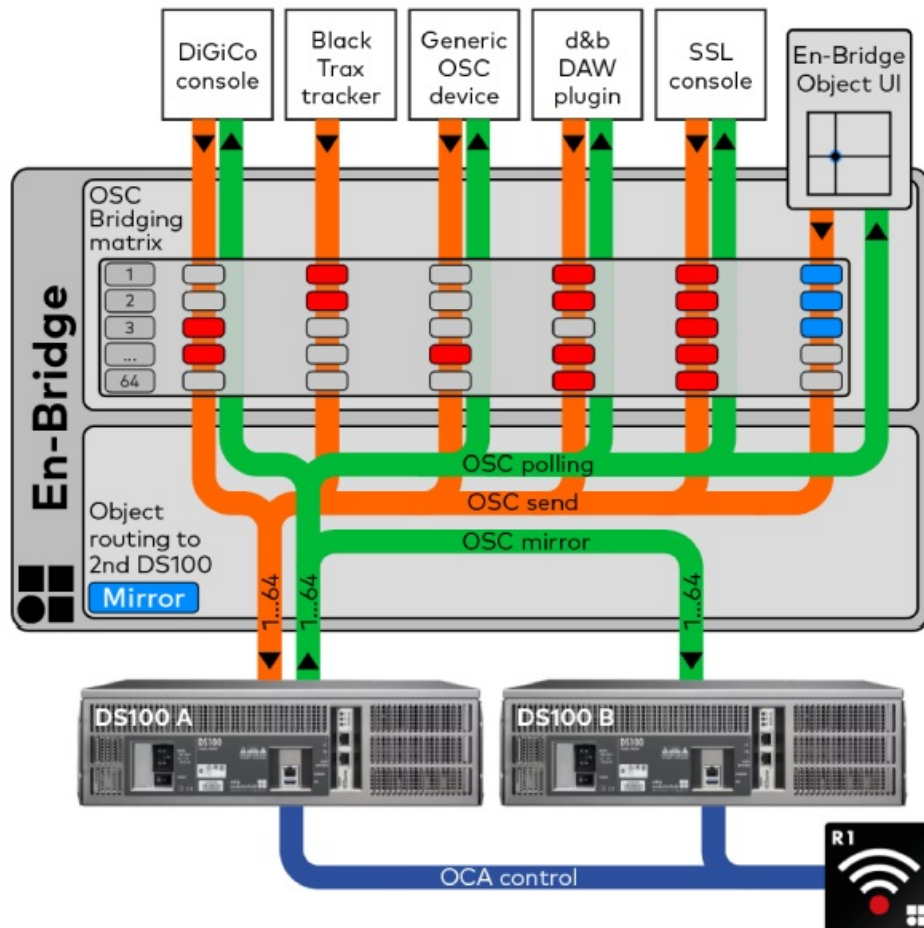
Testing and troubleshooting features

En-Bridge object GUI

En-Bridge features a simplified GUI on the «Sound objects» page. It appears whenever you select a single sound object from the list.

The GUI shows…

- Relative «x/y position»,
- «En-Space gain»,
- «Spread»
- and «Delay mode»
    - … of the object as polled from the DS100, as long as

      «Read DS100» is active ( ) for this object.

      Set «UI active» ( ) for an object to not only monitor its parameters but also manipulate them directly in En-Bridge.
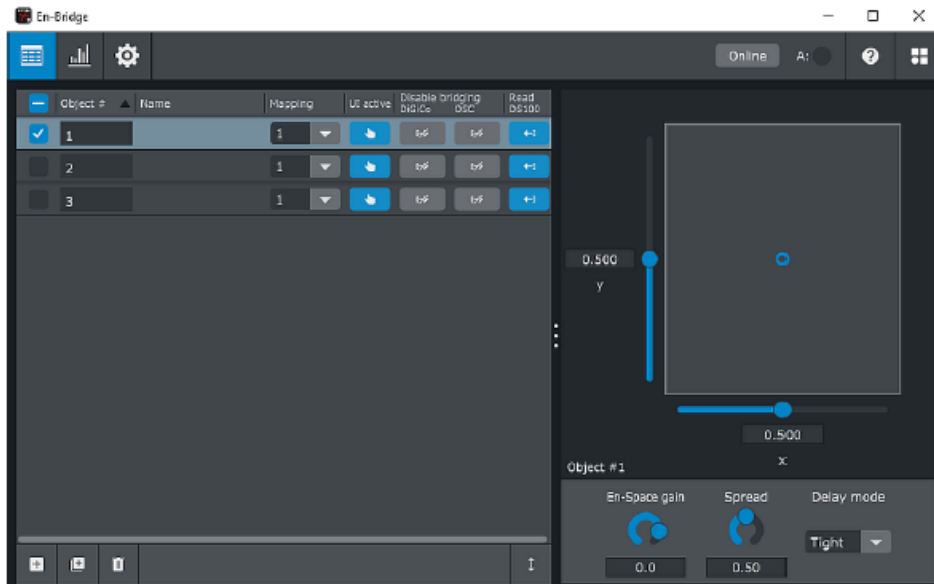
Statistics page

1. The «Statistics» page must be enabled on the «Settings» page under «General settings» by clicking the bar-graph icon.

   ↳ A navigation icon ( ) then appears on the top left of the application window.

   The graph on the left shows the traffic rate of all active bridging modules over time, color-coded according to bridging module.

2. Click the «DS100» LED ( ) at the bottom right of the graph window to also show the outgoing DS100 traffic.

   ↳ The traffic rate scale automatically adjusts according to the highest occurring value in any of the displayed graphs.

   On the right, the last 200 messages are shown in tabular form.
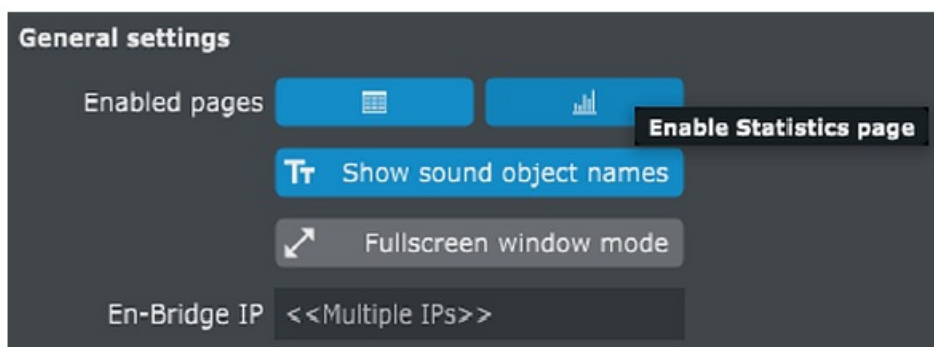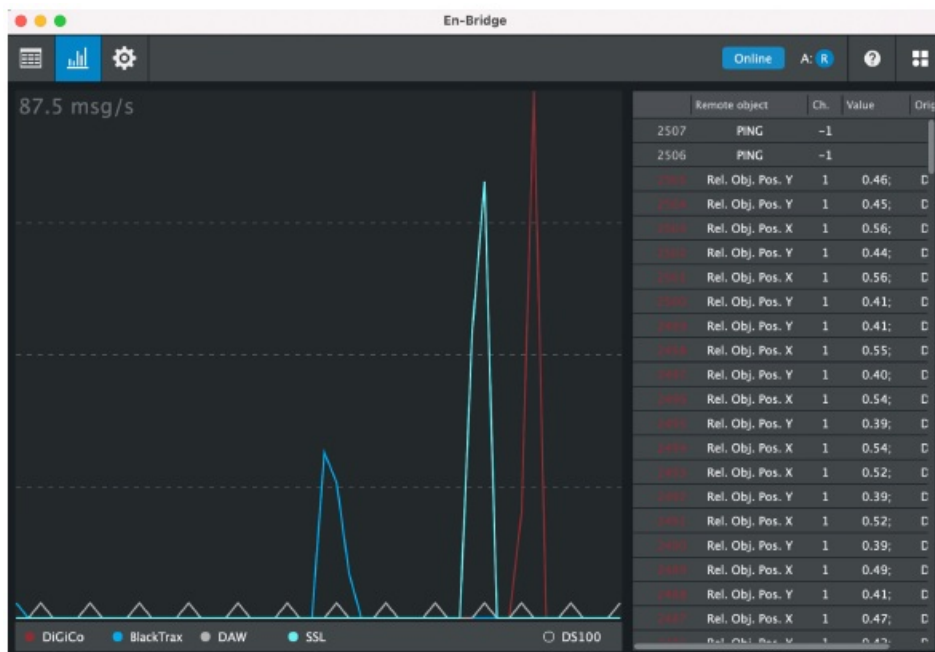
Bridging modules

The various bridging modules to connect to different bespoke devices can be configured on the «General settings» page. We will continuously expand the list of available modules.

NOTICE!
Important note when using multiple bridging modules

Many bridging modules require a Send port (the UDP port on the bridged device to which En-Bridge sends data, which is also the port number from which En-Bridge sends this data) and a Receive port (the UDP port on which En-Bridge receives data from the bridged device, which corresponds to the port number from which the bridged device sends data). These port numbers must be unique for each bridging module.

d&b Generic OSC bridging

- Use this module to interface a DS100 with bridging devices for which no bespoke module exists in En-Bridge.
- You might have to configure the bridged device to send (and receive) OSC messages in a format that conforms to what the DS100 expects.
- Please check the settings/documentation of the bridged device and verify the message format and content using the
  «Statistics» page in En-Bridge.
  ↳ In case it is not desired that En-Bridge returns OSC data to the bridged generic device, please activate the «Disable OSC return channel».

d&b DAW plug-in bridging

Use this module to interface a DS100 with a DAW or console using a variant of the d&b Soundscape plug-in, e.g., Avid consoles.

1. Enter the IP address of the console's or DAW's control port in the respective field in the module.
2. In the plug-in in the DAW or the console, enter the IP address of the host running En-Bridge.
   ↳ Please also consult the d&b Soundscape plug-in manual.

DiGiCo OSC bridging

- Use this module to connect DiGiCo consoles from the Sdxx or Quantum series (firmware V 1528 or newer) to d&b Signal Engines to control up to 128 sound objects.
- The basic functionality of the DiGiCo OSC bridging module is identical to the d&b Generic OSC bridging module. Nevertheless, the DiGiCo module is available in addition to the generic one so that a DiGiCo console and another generic OSC controller can be used simultaneously.

Note:

- The "T" (Theater) variant of the DiGiCo firmware with the "Auto-update" option enabled may cause excessive traffic due to its built-in parameter polling feature.
- To prevent traffic overloads, we recommend a reasonable minimum interval between firing snapshots on the console in such situations.
    - Use the «Statistics» page to check the traffic rate.

To configure En-Bridge

1. Enter the IP address of the console's control port.
2. Enter the UDP port number on which the console is listening and to which En-Bridge should be sending polled OSC messages in the «Send port».
3. Enter the UDP port number from which the console is sending messages and to which En-Bridge should be listening for messages in the «Receive port».

To configure your DiGiCo console

1. First select «External Control» from the Setup menu on the master screen.
2. Switch «Enable External Control» to «YES».
3. Switch on «Suppress OSC retransmit» to prevent the console from replying to every incoming OSC message.
4. Switch on «Recall with session» if loading a session should trigger the console to send all OSC messages initially.
5. Select «add device» «other osc».
6. Enter a name of your choice.
7. Enter the IP address of the computer running En-Bridge.
8. Under «Send», enter the UDP port number that corresponds to the «Receive» port number configured in En-Bridge.
9. Under «Rcv», enter the UDP port number that corresponds to the «Send» port number configured in En-Bridge.
10. Click «OK» to confirm.
11. Click the red cross in the «Enabled» column to the right of your entries.
    ↳ A green check mark will appear instead.
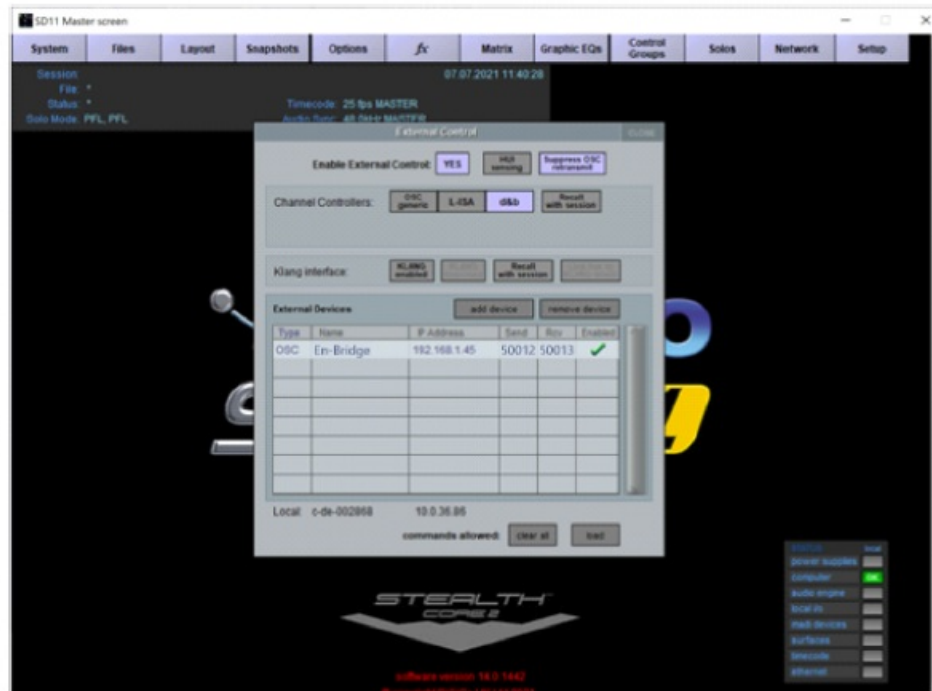
- On any desired «Input» or «Group Control» strip, switch on «d&b Control» in the «Channel Outputs» window.

  ↳ The standard panner will change to the D&B soundscape control.

- With the Soundscape control open, tap «Object Number» or «Mapping» to specify the sound object ID and mapping area.

  ↳ Note: Sound object IDs 65 – 128 require En-Bridge to be configured in Extend mode.

Solid State Logic OSC bridging

Use this module to interface with SSL Live consoles running firmware version 5.2 or newer.

1. Enter the IP address of the console's control port.
2. Enter the UDP port number on which the console is listening for messages and to which En-Bridge should be sending polled OSC messages in «Send port».
3. Enter the UDP port number from which the console is sending messages and to which En-Bridge should be listening for messages in «Receive port».
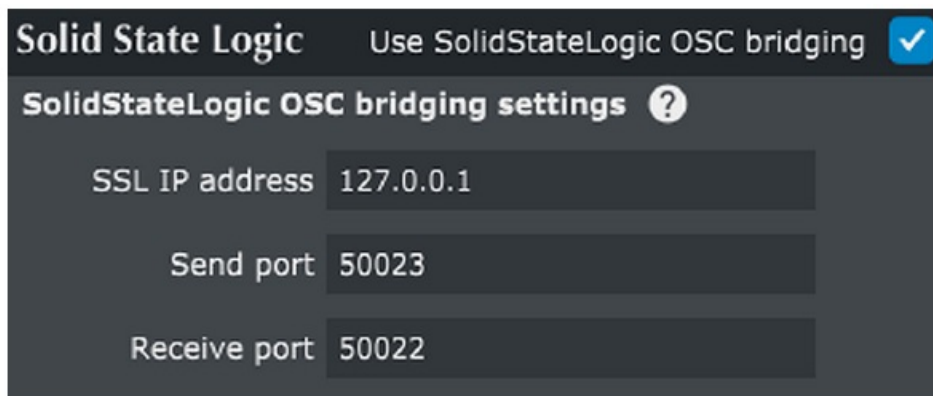
On the SSL Live console

1. Go to MENU Þ Setup Þ EXTERNAL CONTROL.
2. From the list in the top half of the screen, tap «d&b Soundscape».
3. In the lower half of the screen, tap «Enable Control».
   ↳ It should light up in blue.

4. Under «Host IP Address», enter the IP address of the computer running En-Bridge.
5. Under «Incoming Port», enter the UDP port number from which En-Bridge is sending and to which the console should be listening.
6. Under «Host RX Port», enter the UDP port number from which the SSL console is sending and on which En-Bridge should be receiving data.
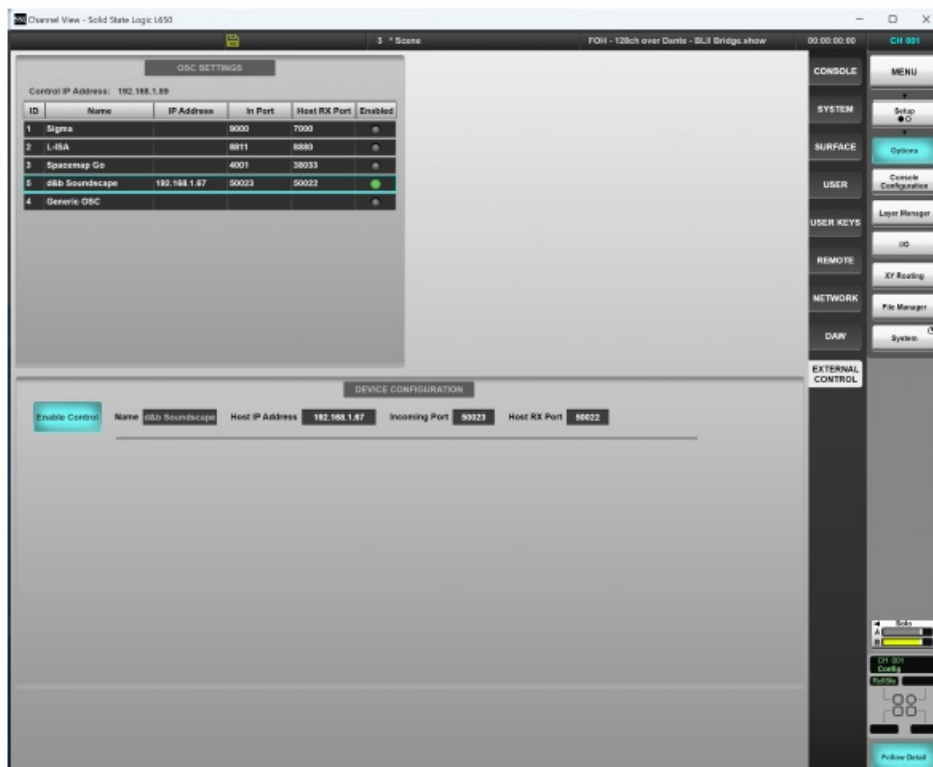
Channel path

1. Tap «External Control», which is located right above the Input/Routing button.
2. In the right half of the screen, tap «Select Device» to select «d&b Soundscape».
   ↳ The sound object ID a channel path controls corresponds to the channel number by default. The «Control Path Num Offset» control allows you to operate a different sound object ID by inserting the offset between the channel path number and the desired object ID into the respective field.
3. Further below, select the desired mapping area.

BlackTrax RTTrPM bridging

Use this module to integrate a BlackTrax tracking system. En-Bridge will translate the BlackTrax protocol into OSC.

On the BlackTrax «Settings» page, apply the following settings:

1. Under «Receive port», enter the UDP port number on which En-Bridge should listen for incoming messages.
   ↳ Beacon indices allow remapping of BlackTrax beacon numbers to sound object IDs, if necessary. By default, the BlackTrax beacon numbers will be used as sound object IDs. The same applies to any beacon IDs that are not remapped.
2. Set «Certroid position» as the «Data type».
   ↳ Absolute or Relative refers to how the incoming xy values should be interpreted, either as absolute values in meters or relative to the selected mapping area.
3. Set coordinate system rotations or inversions, as required.
4. Define the offset of the BlackTrax origin from the d&b origin (in d&b coordinates).
5. Set the mapping area to which the incoming values should be linked when the mode is set to relative.
   ↳ The «Mapping min.» and «Mapping max.» controls allow to define the corners of the mapping area using the BlackTrax coordinate system. Beacons that leave the boundaries of this area will be mapped alongside the borders of the area and will not be positioned further outward.

In the BlackTrax software, add an active output and label it appropriately, e.g. «En-Bridge».

Note: Make sure that «Send: Centroid» under «Output Options» is checked.

Under «Network», apply the following settings:

1. **NIC:** Select the network interface of the BlackTrax system which is in the same physical and logical network as En-Bridge.
2. **Communication:** Set to «Unicast».
3. **Address:** Enter the IP address of the computer running En-Bridge.

4. **Port:** Enter the same UDP port number as in the BlackTrax RTTrPM bridging module in En-Bridge.
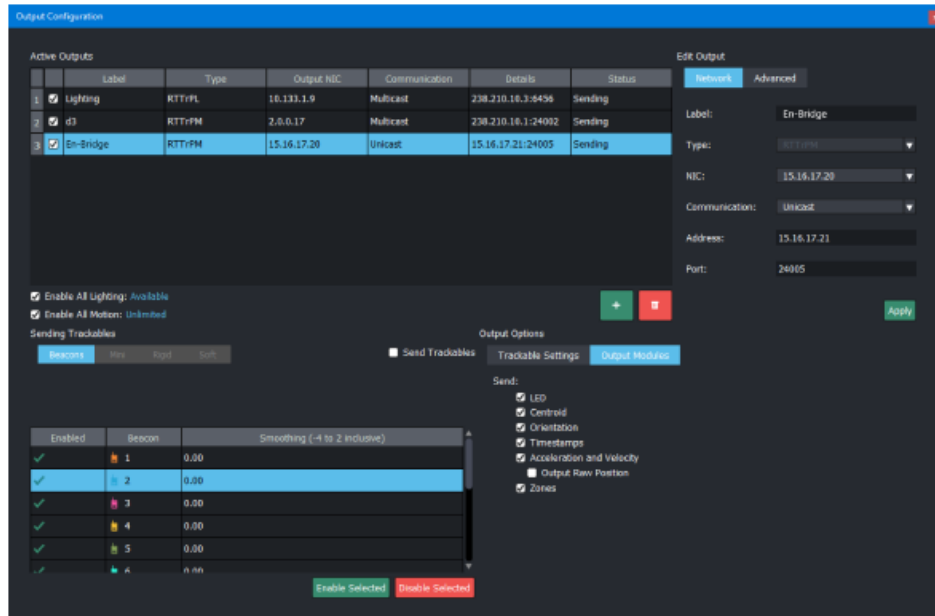
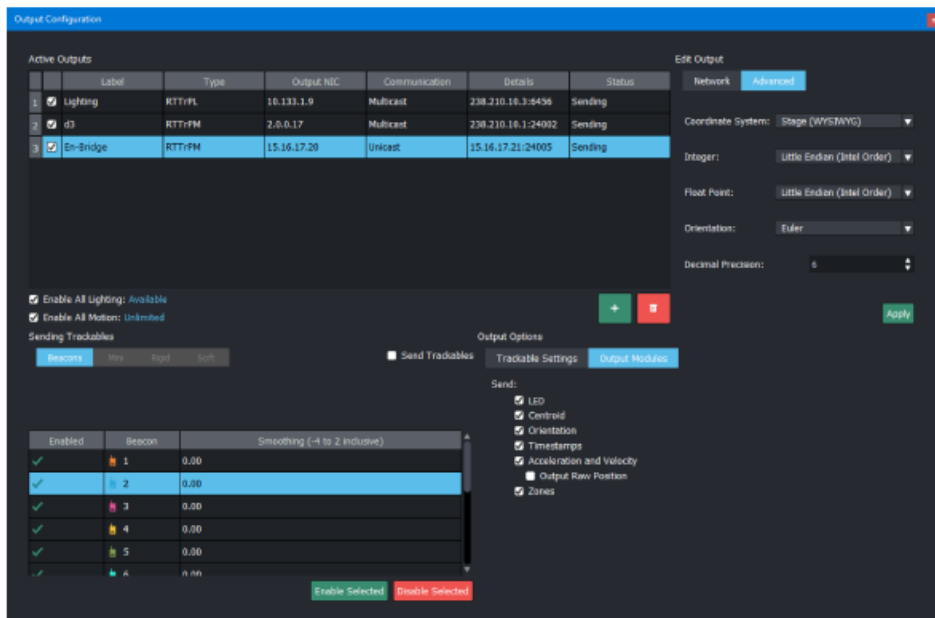**Under «Advanced», apply the following settings:**

1. **Coordinate System:** «Stage».

   ↳ This corresponds to the Soundscape x/y order.

2. **Integer:** Little Endian (Intel Order).

3. **Float Point:** Little Endian (Intel order).

4. **Orientation:** Euler.

Documents / Resources

d b En-Bridge Software [pdf] User Guide
En-Bridge Software, En-Bridge, Software

References

- ⊞ **Professional audio solutions from Germany | d&b audiotechnik**
- **User Manual**