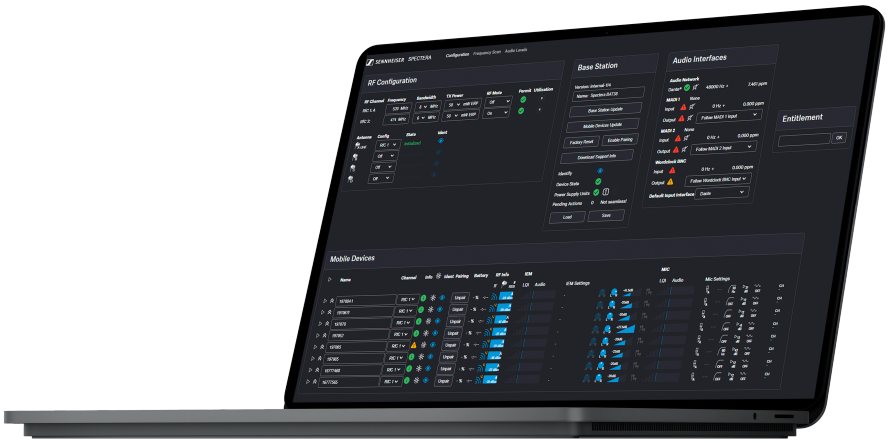

Spectera WebUI

WebUI Control Software

PDF export of the original HTML instructions

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1. Preface

PDF export of the original HTML instructions

This PDF document is an automated export of an interactive set of HTML instructions. It may be the case that not all contents and interactive elements are contained in the PDF as they cannot be presented in this format. Furthermore, automatically generated page breaks may cause coherent contents to be moved slightly. We can therefore only guarantee the completeness of the information in the HTML instructions, and recommend that you use these. You can find these in the download section of the website under www.sennheiser.com/download.

2. Product information

Information about supported devices, design, functionality and the main features of the software at a glance.

Spectera WebUI is a self-hosted, browser-based and user-friendly interface for the dedicated control and monitoring of Spectera devices.

The WebUI offers you an intuitive **Configuration** with essential remote control and monitoring functions, such as IEM volume, latency, audio level and settings, RF status, battery status and much more. The **Frequency Scan** provides a continuous spectrum scan via Spectera's innovative DAD antenna. Plus, the **Audio Levels view** shows all inputs and outputs of the connected interfaces on one page. All audio channels and links are summarized in the **Audio IO** view and can be easily adjusted.

Key Features

- Self-hosted, browser-based and user-friendly interface for the dedicated control and monitoring of Spectera devices.
- Online interface for full system management.
- A tool-tip provides contextual additional information that appears when hovering over an element with the mouse.
- Complete remote control and monitoring of all Spectera ecosystem components, including the Base Station, DAD antenna, and SEK bodypacks, all on a single page.
- Unprecedented remote control and monitoring capabilities, plus visibility of:
    - Interference Level (IF)
    - Receive Signal Strength Indication (RSSI)
    - Link Quality Input (LQI)
    - IEM settings (Interface, CH, Mode, Focus, Balance, Volume)
    - MIC settings (Mic/Line, Cable Emulation, Low Cut, Preamp Gain, Test Tone, Mode, CH)
- Continuous spectrum scanning via DAD antenna available.
- Regional license key for activating the Base Station.

3. User manual

Detailed description of the WebUI navigation and configuration.

> **i** Please navigate to the desired chapters by clicking on the related information.

Related information

Get started
Basic configuration
RF configuration
Base Station
Audio interfaces
Mobile Devices
Activating the license
Frequency Scan
Audio levels

Get started

Starting the WebUI for the first time, including device authentication and license entitlement.

> **i** Before using the WebUI, you will need the assigned IP address of the Base Station (see Network).

> **i** If the Base Station IP is used via LinkDesk at the same time, the control buttons in the WebUI are deactivated. In this case, the user can monitor, but can no longer intervene actively.

To start the self-hosted WebUI for Spectera WebUI:

- Depending on the firmware version of your Base Station, enter the following URL into your browser:
  - Firmware 0.8.x: `https://deviceIP/specteracontrol/index.html`
  - Firmware ≥1.0.0: `https://deviceIP/specterawebui/index.html`

✓ A prompt screen is displayed.

> **i** When authenticating the Base Station for the first time, you will be asked to create a new password for the device.

▶ If you are logging in for the first time, enter a new device password. If you have already logged in, enter the password you have already assigned for authentication.

> **i** Please note that the new password must meet the following requirements:
>
> - At least ten characters
> - At least one lowercase letter
> - At least one uppercase letter
> - At least one number
> - At least one special character: !#$%&()*+,-./:;<=>?@[]^_{|}~
> - Maximum length: 64 characters

> **i** If you have forgotten the password, you can manually reset the device to the factory settings (see **Reset**).

▶ Click on **Submit** to set the password or to continue.

✓ Since the certificate is unknown to your browser, a security warning is displayed the first time you run the application. The security warning depends on the browser you are using.

▶ Depending on your browser, click on **Advanced** and then on:

- **Continue to localhost (unsafe)** (Microsoft Edge)
- **Proceed to localhost (unsafe)** (Google Chrome)
- **Accept the Risk and Continue** (Firefox)
- or similar (other browsers).

✓ The WebUI has been started.

> **i** Operational data is collected to continuously improve the stability and functionality of Spectera. The data is pseudonymized to ensure there is no direct personal reference. Tracking can be disabled in the settings (see chapter Enabling/disabling data collection).

Related information

Basic configuration

Resetting the device password

Resetting the device password

You can reset the assigned device password on your Base Station to its factory settings.

> **i** To change or reset the device password, the device must be reset to factory settings.

NOTICE

Data loss during the factory reset

All audio devices will be unpaired and all audio routes will be deleted.

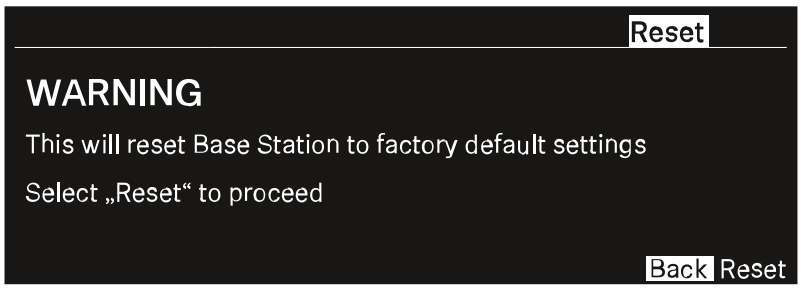
All settings (including the device password) are reset to the default values. The license remains activated.

After the reset, the device is restarted automatically.

- Do not reset the Base Station during an active live audio transmission.

To reset the Base Station to factory default settings:

- On the Base Station, rotate the jog-dial and navigate to the menu **Reset**.
- Press the jog-dial to enter the menu.
  - ✓ A warning will appear.



- Rotate the jog-dial to **Reset**.
- Press the jog-dial again.
  - ✓ The Base Station will be set back to factory settings and reboot.

> **i** After rebooting, check the IP address as it may have changed.

✓ The Base Station has been reset to its factory default settings.

Basic configuration

Start your basic configuration with the recommended steps.

> **i** If the Base Station IP is used via LinkDesk at the same time, the control buttons in the WebUI are deactivated. In this case, the user can monitor, but can no longer intervene actively.

When setting up the WebUI for the first time, we recommend following these first steps to successfully configure the system from the outset:

- Activating the license
- Enabling/disabling data collection
- Scanning the RF frequency
- Configuring RF channels
- Assigning an antenna to an RF channel
- Pairing/unpairing mobile devices
- Selecting audio link mode (IEM)
- Selecting audio link mode (Mic/Line)
- Assigning an RF channel
- Selecting the Mic/Line input

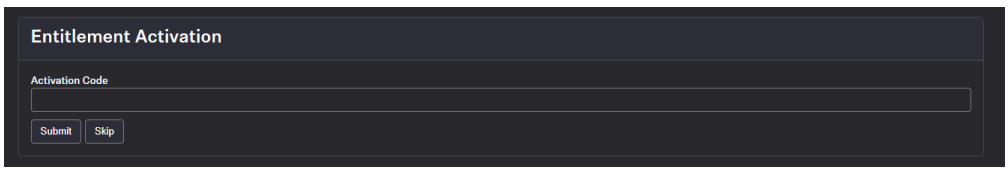
Activating the license

Under Entitlement, you can enter and activate the current license for the frequency spectrum.

> **i** The purchased license (included in the product) is only valid for the region for which the product was designed and approved. The license may not be used in other regions.

> **i** Please note that an Internet connection is required to activate the license.

When you start the device for the first time, your license key is requested.



To activate the license:

- Enter your purchased license and click on **Submit**.

Your license has been activated.

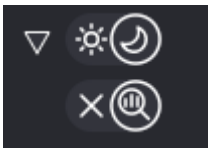
Enabling/disabling data collection

Spectera collects operational data to enhance stability and functionality.

The data is pseudonymized to ensure there is no direct personal reference.

To enable/disable data collection:

- On the start page, navigate to the top navigation at the top right.
- Click on the triangle to expand the settings.



- Click on:
  - the X to stop data collection
  - the magnifying glass to enable data collection.

✓ Data collection has been enabled/disabled.

Scanning the RF frequency

You can run a frequency scan to check the current frequency situation in your surrounding area.

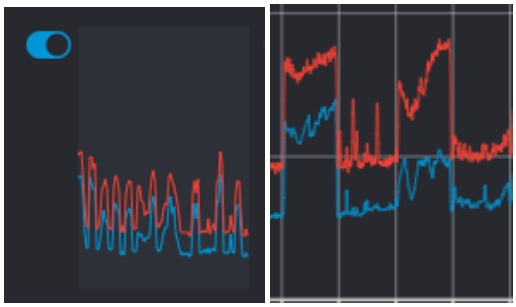
The frequency scan provides an overview of the frequency situation in your location. You can save the antenna configuration as a .csv info file. This file can be used as a backup file to recapitulate your settings or as local frequency information for your specific environment. You can scan the frequencies of all antennas connected to the Base Station.

The scan can be initiated:

- via the RF configuration tab to see a small extract without any details or
- via the Frequency Scan tab for a detailed overview of the frequency situation.

The scan results will be displayed in two different curves:

- **Peak** (red) = Maximum value
- **RMS** (blue) = Average power or strength



i Please note that the antenna must not be assigned to an RF channel before scanning (see Assigning an antenna to an RF channel).

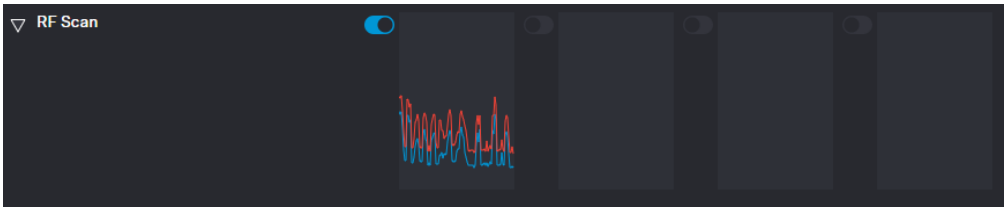
To scan the RF frequency via the RF configuration tab:

▶ In the top bar, navigate to **Configuration** > **RF Configuration**.

✓ Under the **RF Scan** drop-down menu, there are four toggle switches that enable and disable the scan function for each connected antenna.

- Click on the toggle switch of the antenna to be scanned in order to start an immediate scan.

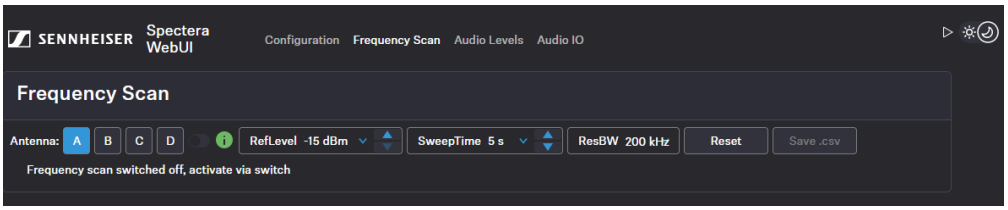
  The square is highlighted with a blue dot and the scan result is displayed in a small frequency curve after approx. 5 seconds.



- In order to view the results,
  - click on the small frequency icon or
  - navigate to **Frequency Scan** in the top bar.

To scan the RF frequency via the Frequency Scan tab:

- In the top bar, navigate to the tab **Frequency Scan**.



- Select your antenna to be scanned and adjust your desired settings.

- Switch on the toggle to start the scan.
  - The frequency scan is started and the result is displayed in a detailed frequency diagram. Supported frequency ranges are shown in green and unsupported ranges in gray.

To reset a scan:

- Click on **Reset**.
  - The current scan will be reset.

To save the scan results as `.csv`:

- Click on **Save.csv**.
  - The antenna configuration has been downloaded locally to your computer as a `.csv` file.

✓ The frequency of your connected antenna has been scanned.

Related information

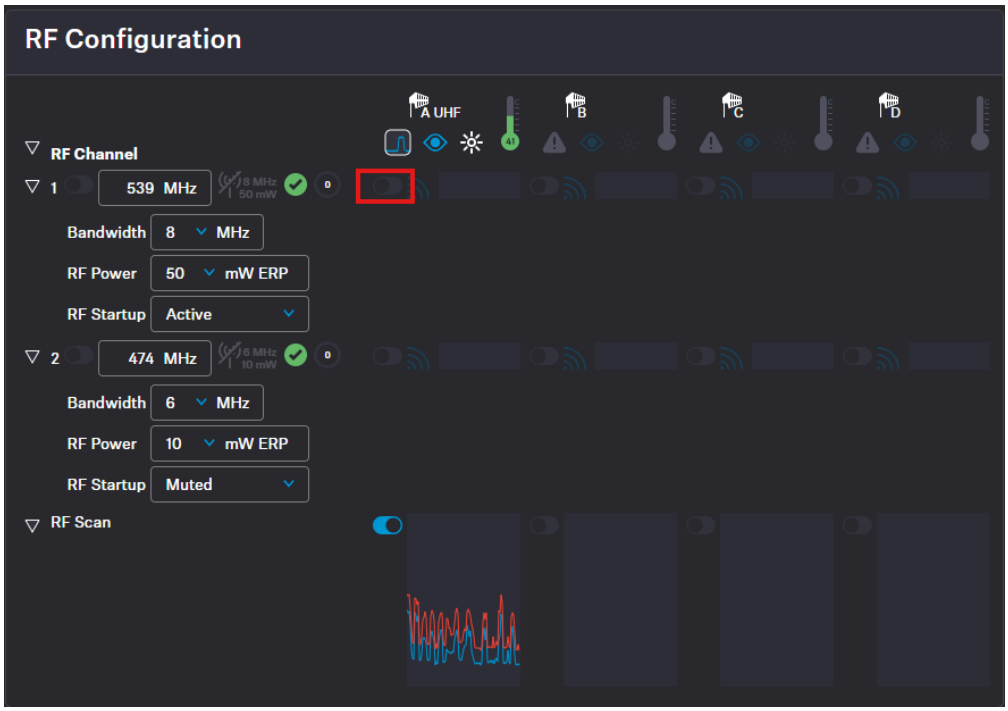
Assigning an antenna to an RF channel

Assigning an antenna to an RF channel

You can choose between up to four connected antennas to assign them to your two possible RF channels.

> i For additional reliability in terms of redundancy or to extend your range, you can assign up to four antennas per channel and use them simultaneously.

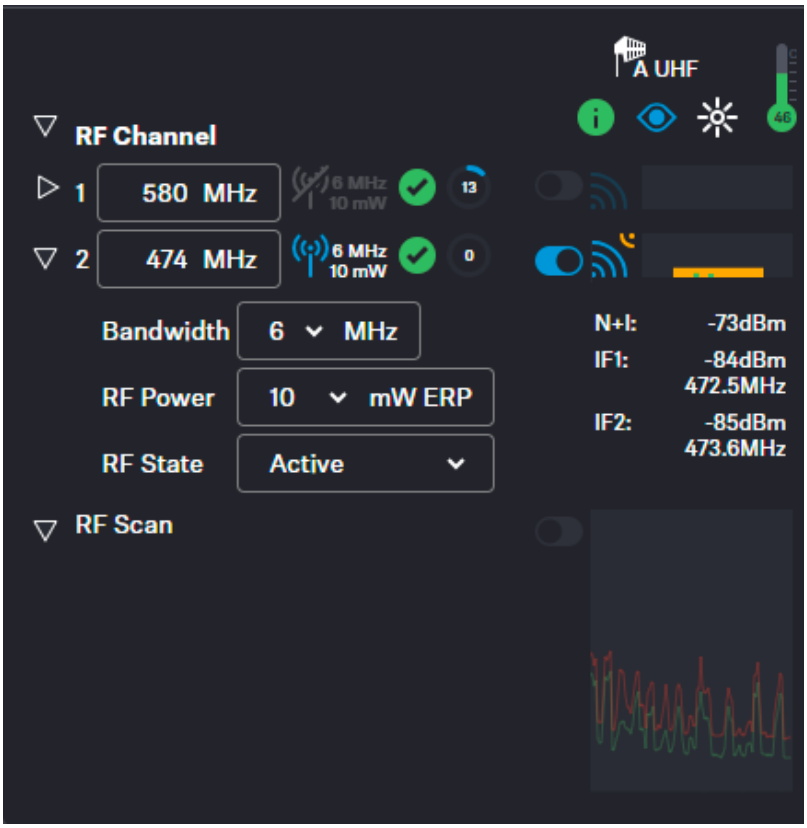
The antennas can be assigned and unassigned, e.g. to perform an RF scan or to switch between the configured RF channels.



To assign an antenna for an RF channel:

- In the top bar, navigate to **Configuration** > **RF Configuration**.
- In your RF channel row, click on the toggle switch next to the utilization and interference icon  .

  The toggle switch turns blue  . The antenna has been assigned to the RF channel and any potential interference is indicated by the icon.



The antenna has been assigned to a specific RF channel.

Related information

Scanning the RF frequency

Pairing/unpairing mobile devices

In the WebUI, you can pair up to 128 mobile devices to a Base Station within one RF channel.

Mobile devices can only be paired and operated with one Base Station at a time. If a mobile device is to be used with another Base Station, it must first be paired again.

> **i** Please unmute at least one RF channel before pairing if this was not done automatically.

To pair a mobile device:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Click on **Enable Pairing**.
  - The Base Station starts the pairing process for 300 seconds.
- Switch on your mobile device and activate **Pairing Mode** if it has not been activated automatically (**Switching the SEK on and off**).
  - After a few seconds, the available mobile devices are displayed in the list below under **Mobile Devices**. A verification PIN is displayed on the mobile device and in the WebUI.

- Verify the PIN on the mobile device and click on **Pair**.
  - The mobile device has been paired successfully. The device state color changes to:
    - green (successfully paired)
    - gray (assigned RF channel not on air)
    - yellow (firmware mismatch) or
    - red (unconnected, no RF channel selected, not available)

To unpair a mobile device:

> To unpair a paired device, the audio links must first be deactivated.

- In the top bar, navigate to **Configuration** > **Mobile Devices**.
- Click on the button **Unpair** > **Confirm** in the line of the mobile device to be unpaired.
  - The mobile device has been successfully unpaired.

> The mobile devices have been successfully paired/unpaired.

Selecting audio link mode (Mic/Line)

You can select the audio mode for your Mic/Line link.

> **i** Please note that the bandwidth utilization varies depending on the link mode.

The following modes are available:

-  Max Range
-  Max Link Density
-  Live Link Density
-  LIVE
-  Live Low Latency
-  RAW
-  RAW Live Low Latency

To select the audio mode:

1. In the top bar, navigate to **Configuration** > **Mobile Devices** > **Mic Settings**.
2. Select the audio mode from the drop-down list **Link Mode**.

> ✓ The audio mode has been selected.

Selecting audio link mode (IEM)

You can select the audio mode for your IEM link.

> Please note that the bandwidth utilization varies depending on the link mode.

The following modes are available:

-  Max Range
-  Max Link Density
-  Live Link Density Range
-  Live Link Density Range
-  Live Low Latency
-  Live Ultra Low Latency

To select the audio mode:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **IEM Settings**.
- Select the audio mode from the drop-down list **Link Mode**.

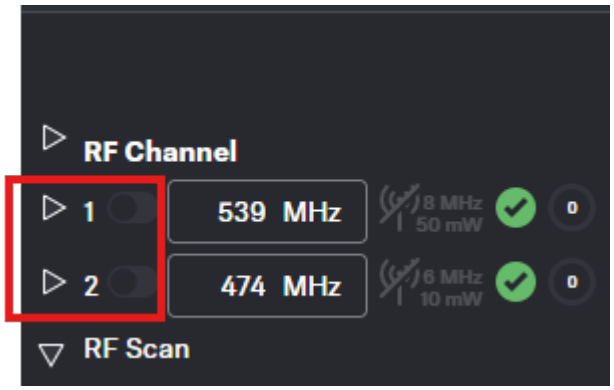
> The audio mode has been selected.

Assigning an RF channel

You can assign a configured RF channel to your mobile device.

To assign the RF channel:

- In the top bar, navigate to **Configuration** > **Mobile Devices**.
- Select your configured channel under **RF Channel**.



- Enable the toggle switch of the configured RF channel.

✓ The RF channel has been assigned to your mobile device.

Selecting the Mic/Line input

You can select the audio input as the signal source for your Mic/Line link.

> **i** For a smooth system configuration, we recommend first selecting the link modes and afterwards assigning the channels:
>
> - Selecting audio link mode (Mic/Line)
> - Selecting audio link mode (IEM)
> - Adding/removing an audio channel (Mic/Line)
> - Selecting an audio channel (IEM link)
> - Selecting the IEM audio interface

> **i** You can route audio links to several channels. Routing can be performed easily via the routing matrix (see Audio inputs and outputs).

The following input signals are available:

- Auto (unknown)
- Mic
- Line

To choose the audio input:

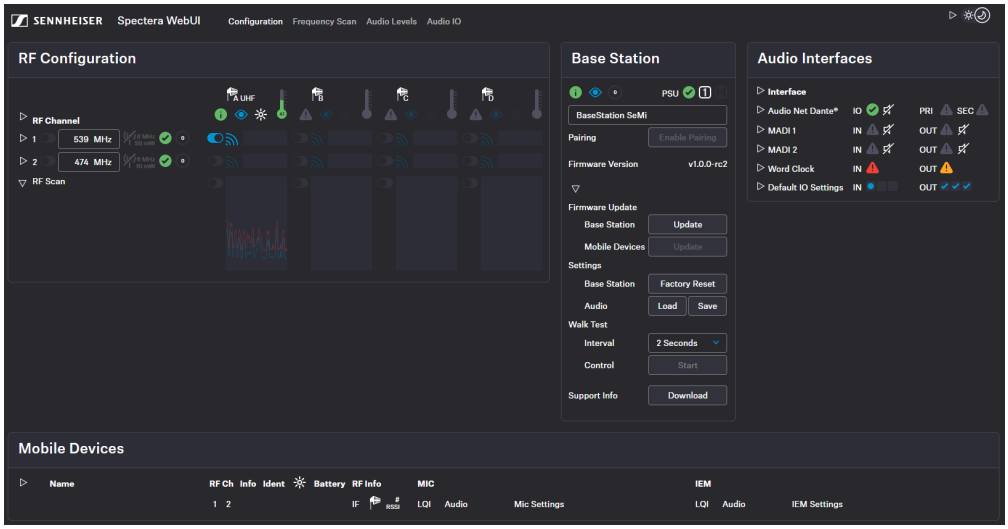
- In the top bar, navigate to **Configuration** > **Mobile Devices** > **Mic Settings**.
- Select the audio input from the drop-down list **Mic/Line**.

✓ The audio input has been selected.

Related information
Audio inputs and outputs

Configuration

Under Configuration, you can set the essential settings for the RF channel, antenna, Base Station and mobile devices.



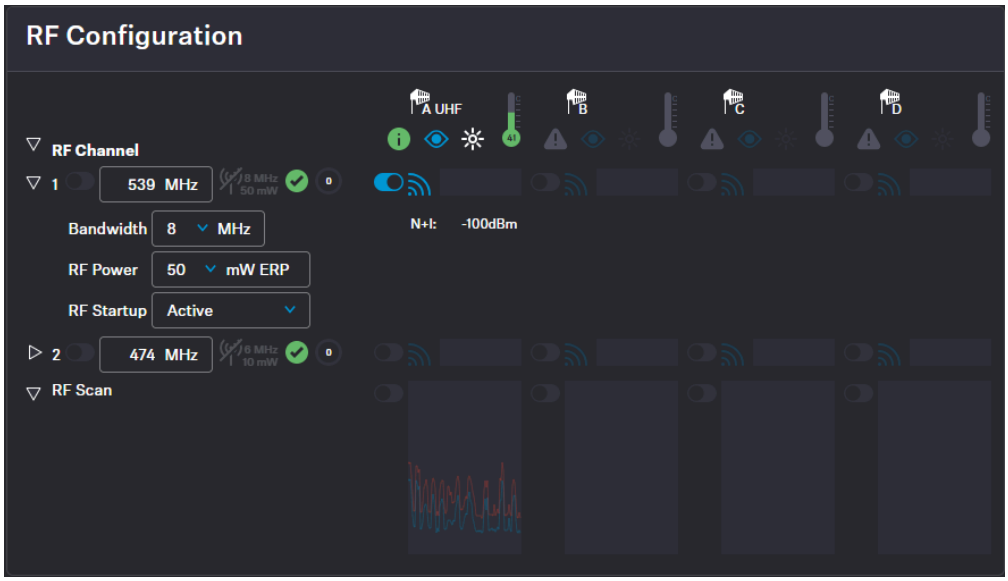
Please navigate to the desired chapters by clicking on the related information.

Related information

RF configuration
Base Station
Audio interfaces
Mobile Devices
Activating the license

RF configuration

Here you can set up your RF channel and check the status of local permissions, your connected antenna, and any potential frequency interference in the surrounding area.



RF Channel

- Display of two possible configurable RF channels **RfC 1** and **RfC 2**
- Display of the antenna (A-D) assigned to the RF channel

Frequency

- Settings for frequency of the RF channel
- The input is accepted via the **ENTER** key

> The input cannot be accepted by switching with **TAB**.

- Status indication of the RF channel with current settings
- Permission indication for local country based on RF channel settings
  - Valid properties acc. to the license and local regulations
  - Invalid properties acc. to the license and local regulations

> The frequency and bandwidth must comply with local regulations.

- Capacity utilization of the entire RF bandwidth in %

Bandwidth

- Settings for bandwidth of the RF channel

> The input cannot be accepted by switching with **TAB**.

> The frequency and bandwidth must comply with local regulations. Permission is displayed via the icons  (valid) and  (invalid).

RF Power

- Setting for the transition power of the transmitter

> The frequency and bandwidth must comply with local regulations. Permission is displayed via the icons  (valid) and  (invalid).

RF Startup

- Settings for the first RF start after switching off the device or when waking up the device after it has been in standby mode.

Antenna

-  Display of available antennas (A-D)
-  Readiness status of the RF channel
-  Identification button for configured antenna (flashes white 3x)
-  LED brightness of the antenna LED (off, dim, standard, bright)
- 

Current antenna temperature
-  Indication for active RF
-  Frequency indication without any interference
-  Frequency indication with interference in the surrounding area

Related information
Configuring RF channels
Assigning an antenna to an RF channel

Scanning the RF frequency

You can run a frequency scan to check the current frequency situation in your surrounding area.

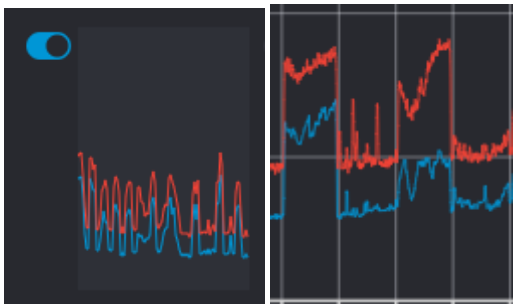
The frequency scan provides an overview of the frequency situation in your location. You can save the antenna configuration as a .csv info file. This file can be used as a backup file to recapitulate your settings or as local frequency information for your specific environment. You can scan the frequencies of all antennas connected to the Base Station.

The scan can be initiated:

- via the RF configuration tab to see a small extract without any details or
- via the Frequency Scan tab for a detailed overview of the frequency situation.

The scan results will be displayed in two different curves:

- **Peak** (red) = Maximum value
- **RMS** (blue) = Average power or strength

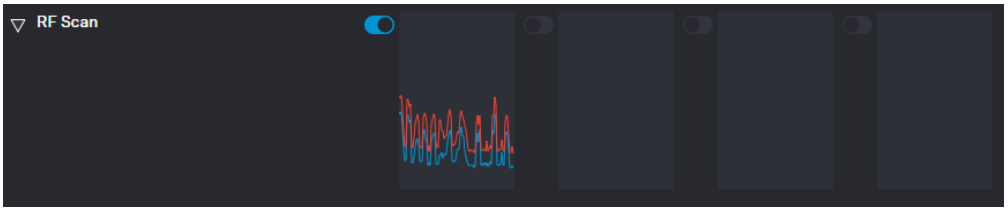


Please note that the antenna must not be assigned to an RF channel before scanning (see Assigning an antenna to an RF channel).

To scan the RF frequency via the RF configuration tab:

1. In the top bar, navigate to **Configuration** > **RF Configuration**.
   - Under the **RF Scan** drop-down menu, there are four toggle switches that enable and disable the scan function for each connected antenna.

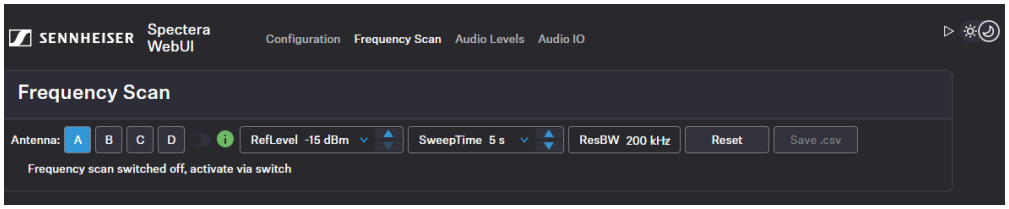
2. Click on the toggle switch of the antenna to be scanned in order to start an immediate scan.
   - The square is highlighted with a blue dot and the scan result is displayed in a small frequency curve after approx. 5 seconds.



3. In order to view the results,
   - click on the small frequency icon or
   - navigate to **Frequency Scan** in the top bar.

To scan the RF frequency via the Frequency Scan tab:

- In the top bar, navigate to the tab **Frequency Scan**.



- Select your antenna to be scanned and adjust your desired settings.
- Switch on the toggle to start the scan.
  - The frequency scan is started and the result is displayed in a detailed frequency diagram. Supported frequency ranges are shown in green and unsupported ranges in gray.

To reset a scan:

- Click on **Reset**.
  - The current scan will be reset.

To save the scan results as `.csv` :

- Click on **Save.csv**.
  - The antenna configuration has been downloaded locally to your computer as a `.csv` file.

✓ The frequency of your connected antenna has been scanned.

Related information

Assigning an antenna to an RF channel

Configuring RF channels

Here you can find out how to configure the RF channel correctly from the outset.

> The current local permissions are displayed when the frequency is selected.

To configure an RF channel:

- In the top bar, navigate to **Configuration** > **RF Configuration**.
- For channel RF1, enter the frequency under **1** and confirm with **ENTER**.
- Next, select the **Bandwidth** and the **RF Power** for your location.
  - The applicability of your settings is indicated by an icon:
    -  green: applicable
    -  red: not applicable
- Under **RF Startup**, select the mute option for the configured RF channel:
  - Active
  - Muted
  - Last state = When switching on or leaving standby mode, the last used RF state is restored
  - The RF Channel has been assigned to the operating antenna.

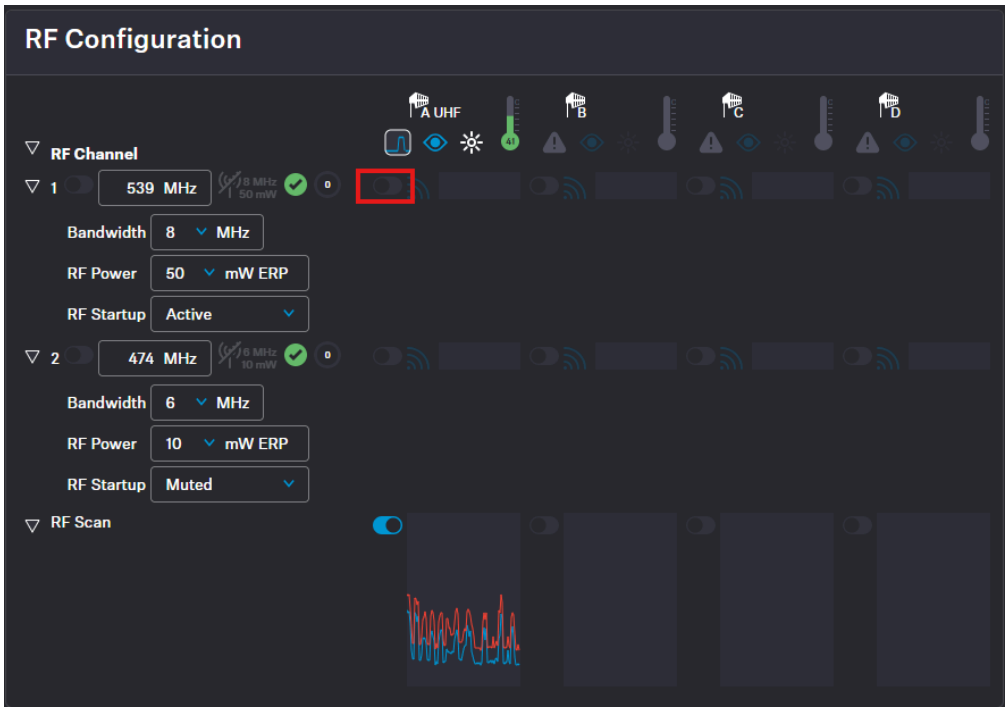
✓ The RF Channel has been configured.

Assigning an antenna to an RF channel

You can choose between up to four connected antennas to assign them to your two possible RF channels.

> i For additional reliability in terms of redundancy or to extend your range, you can assign up to four antennas per channel and use them simultaneously.

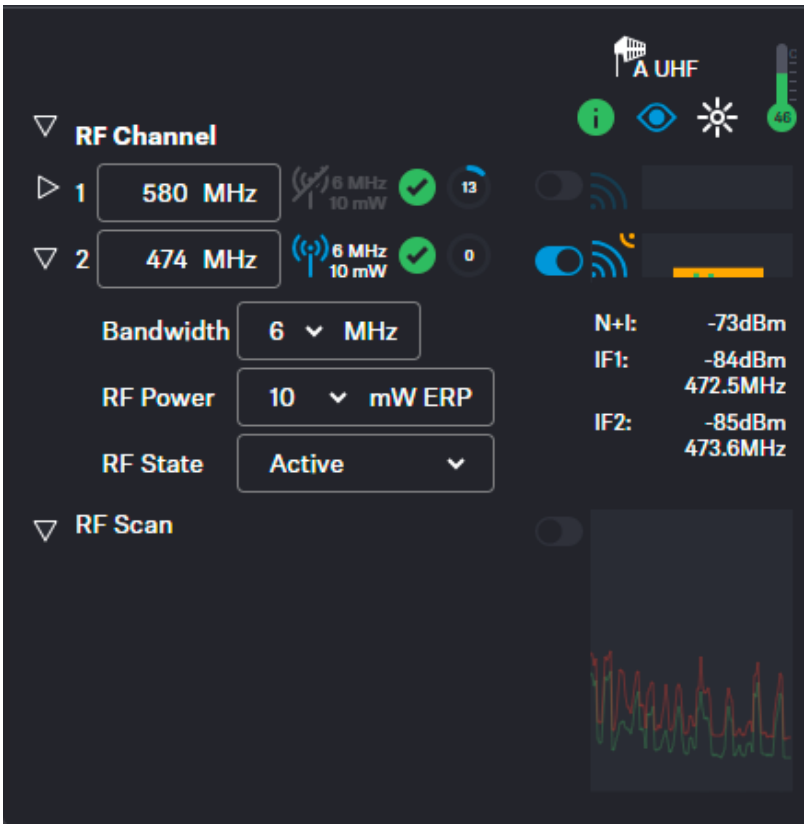
The antennas can be assigned and unassigned, e.g. to perform an RF scan or to switch between the configured RF channels.



To assign an antenna for an RF channel:

- In the top bar, navigate to **Configuration** > **RF Configuration**.
- In your RF channel row, click on the toggle switch next to the utilization and interference icon  .

  The toggle switch turns blue  . The antenna has been assigned to the RF channel and any potential interference is indicated by the icon.



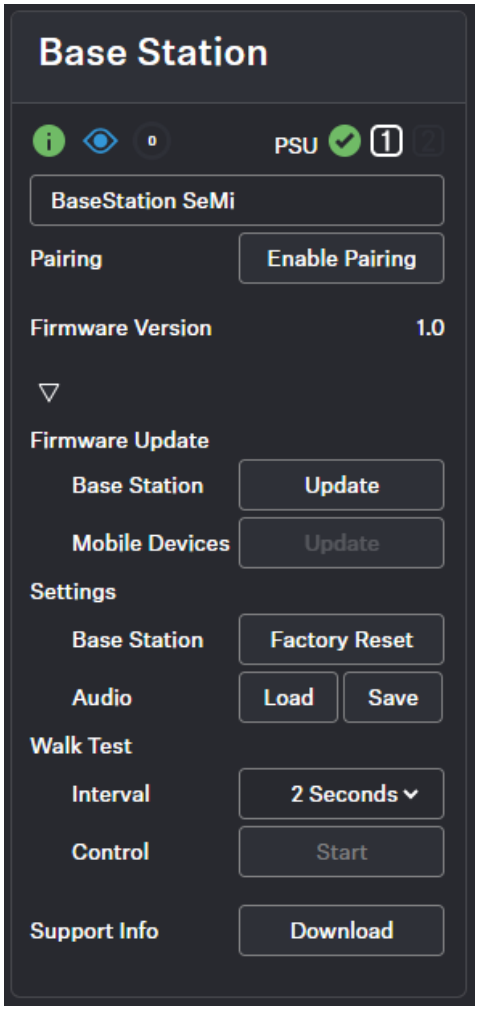
The antenna has been assigned to a specific RF channel.

Related information

Scanning the RF frequency

Base Station

Here, you can check the basic settings of the Base Station and easily perform tasks such as firmware updates, walk tests, or restoring it to factory settings.



General

- Device state color
- Identify button (see Identifying the Base Station)
- 0 Indication for pending actions
- 1 Connection status and number of connected power supply units
- Name of your Base Station (see Changing the device name)

Enable Pairing

- Triggers the Pairing function of the Base Station for 300 sec. (see Pairing/unpairing mobile devices)

Firmware Update

- Base Station
  - Update service for the Base Station (see Updating the firmware (Base Station))
- Mobile Devices
  - Update service for mobile devices (see Updating the firmware (mobile devices))

Settings

- Base Station
  - Factory Reset - resets the Base Station to the factory defaults (see Resetting the Base Station)
- Audio
  - Saving/loading audio settings as `.json` file (Saving/loading audio settings)

Walk Test

- Interval: interval of the walk test (see Performing a walk test)
- Control: Starting/Stopping the walk test

Download Support Info

- Downloads archived support information

> **i** The automatically generated file contains basic information about the product and the last saved product configuration before a possible issue. Ideally, this file should always be saved as a backup and sent to the support team in the event of a support case.

Related information

Changing the device name
Updating the firmware (Base Station)
Updating the firmware (mobile devices)
Resetting the Base Station
Pairing/unpairing mobile devices
Identifying the Base Station
Saving/loading audio settings

Changing the device name

You can change the device name for your Base Station.

For security reasons, please do not enter any sensitive personal data as the device name.

To change the device name:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Edit the name under **Name** and confirm with **ENTER**.
  - The name is immediately transmitted to the Base Station and saved.

The device name has been changed.

Updating the firmware (Base Station)

The firmware version of the Base Station can be downloaded and updated manually.

The firmware version for the Base Station also includes the latest versions for the antennas and the mobile devices. While the antennas are updated automatically, the updates for the mobile devices must be started explicitly.

> **i** Please download the latest firmware version for your Base Station under: sennheiser.com/spectera-base-station.

NOTICE

Data loss during firmware update

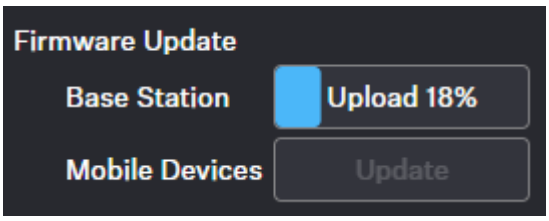
The audio transmission is interrupted during the firmware update of the Base Station, the antenna or the mobile device.

After the firmware update, the device is restarted automatically.

- Do not update the firmware during an active live audio transmission.

To update your Base Station firmware:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Under **Firmware Update** > **Base Station** click on **Update**.
  - A new upload window opens.
- Select the manually downloaded `.sennpkg` file.
  - The firmware file has been selected. The firmware starts the update automatically. The update process is indicated by the current percentage value.



> **i** After the successful update, the Base Station restarts and automatically begins the update on the connected antennas. Please refresh your browser after the entire update process.

✓ The firmware has been updated once the update is installed.

Related information

Updating the firmware (mobile devices)

Updating the firmware (mobile devices)

The update of the firmware version of mobile devices can be initiated using the Update button.

The latest firmware version for the mobile devices will be delivered with the latest firmware version of the Base Station. To update to a new version, the update process must be initialized individually.

> **i** Please note that firmware versions are not backward compatible. The latest compatible version is included in the firmware update package for the Base Station.

NOTICE

Data loss during firmware update

The audio transmission is interrupted during the firmware update of the Base Station, the antenna or the mobile device.

After the firmware update, the device is restarted automatically.

- Do not update the firmware during an active live audio transmission.

To update your mobile device firmware:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Under **Firmware Update** > **Mobile Devices** click on **Update**.
  - The update process will start automatically and show the progress as a percentage 

. After a successful update, the mobile device is restarted and paired automatically.

> **i** The firmware update is a disruptive process. The mobile devices will update and reboot in sequence. This process will take roughly 20 seconds: during this time audio will be lost. Please stay in reach of the Base Station, do not remove the battery from the mobile devices during the process and do not close the application.

✓ The firmware has been updated.

Resetting the Base Station

You can reset the Base Station to the factory settings remotely.

i You can also reset the Base Station to the factory settings directly via the device.

NOTICE

Loss of data after resetting to factory settings

All settings are reset to the factory settings!

All devices will be unpaired and all audio routes will be deleted!

The user password will be reset!

The entitlement will remain.

- Make sure that no connections are being actively used at the time of the reset.

To reset the Base Station:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Under **Settings** click on **Factory Reset**.

✓ The Base Station has been reset.

Pairing/unpairing mobile devices

In the WebUI, you can pair up to 128 mobile devices to a Base Station within one RF channel.

Mobile devices can only be paired and operated with one Base Station at a time. If a mobile device is to be used with another Base Station, it must first be paired again.

> **i** Please unmute at least one RF channel before pairing if this was not done automatically.

To pair a mobile device:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Click on **Enable Pairing**.
  - The Base Station starts the pairing process for 300 seconds.
- Switch on your mobile device and activate **Pairing Mode** if it has not been activated automatically (**Switching the SEK on and off**).
  - After a few seconds, the available mobile devices are displayed in the list below under **Mobile Devices**. A verification PIN is displayed on the mobile device and in the WebUI.

- Verify the PIN on the mobile device and click on **Pair**.
  - The mobile device has been paired successfully. The device state color changes to:
    - green (successfully paired)
    - gray (assigned RF channel not on air)
    - yellow (firmware mismatch) or
    - red (unconnected, no RF channel selected, not available)

To unpair a mobile device:

> To unpair a paired device, the audio links must first be deactivated.

- In the top bar, navigate to **Configuration** > **Mobile Devices**.
- Click on the button **Unpair** > **Confirm** in the line of the mobile device to be unpaired.

  The mobile device has been successfully unpaired.

The mobile devices have been successfully paired/unpaired.

Identifying the Base Station

You can remotely identify your Base Station.

To identify the Base Station:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Click on the  **Identify** icon.
  - The icon on the Base Station card flashes. The Base Station display shows "Identify".

✓ The Base Station has been identified.

Saving/loading audio settings

You can save your audio settings and load them at a later time.

> **i** In order to apply the audio settings, a familiar ID of the previously assigned mobile device is expected in connection with the hardware configuration of the Base Station described in this document. Unknown IDs of the mobile device or unknown hardware configurations will result in the settings not being accepted successfully.

The audio settings can be exported in a `.json` file.

To save your audio settings:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Under **Settings** click on **Save**.
  - ✓ Your audio settings have been exported as a `.json` file.

To load your saved audio settings:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Under **Settings** click on **Load**.
  - ✓ A new upload window opens.
- Select your saved file and click on **Open**.
  - ✓ Your audio settings file has been successfully loaded.

✓ The audio settings have been successfully saved/loaded.

Performing a walk test

A walk test allows you to check the reception quality of your radio links within the operating environment.

The automatically generated data is used to provide an overview of the frequency behavior with the simulated devices and their configuration under the intended conditions. The result is represented as plain data in a `.json` file. The implementation of a graphical representation of the result is in planning.

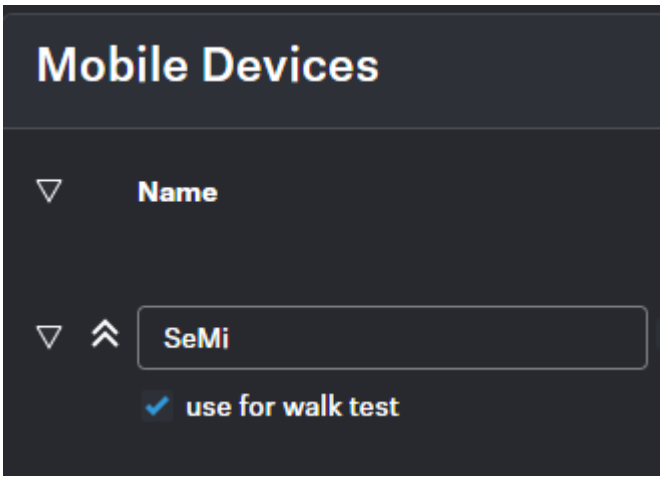
You can specify the measurement interval of the walk test in seconds:

- 1
- 2
- 3
- 4
- 5
- 10
- 20
- 30

> **i** If the total data rate is too high, individual values are omitted.

To perform a walk test:

- Switch on the transmitter and the receiver of the radio link you want to check.
- In addition, switch on all other devices that you want to use in the operating environment.
- Navigate to **Configuration** > **Mobile Devices** and select the checkbox **use for walk test** for the device to be tested.



- Navigate to **Configuration** > **Base Station**, select the measuring interval for the walk test and click on **Start**.
  - The walk test has been started.
- Walk the operating environment with the mobile device.
- Click on **Stop** as soon as the walk test has been performed.
  - The results of the walk test are automatically downloaded locally to your computer as a `.json` file.

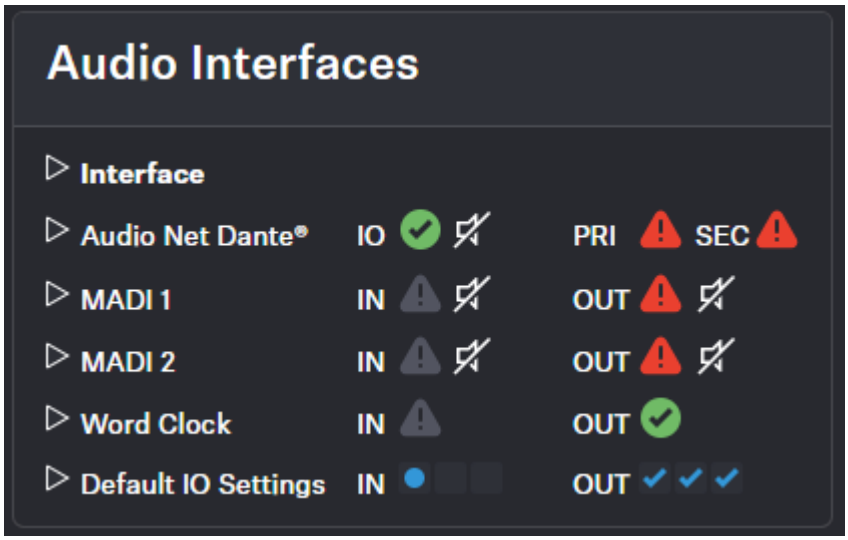
The walk test has been performed successfully.

Audio interfaces

Here you can monitor all available interfaces and manage the outputs.

A built-in sample rate converter can be used to convert the outputs to predetermined frequencies and generate a custom sample rate for any audio channel. The following settings are available for MADI 1, MADI 2 and Word Clock interfaces:

- Leader 48 kHz
- Leader 96 kHz
- Follow MADI 1 Input
- Follow MADI 2 Input
- Follow World Clock Input
- Follow Audio Network



The interface status is indicated by the following colors:

- : OK
- : Not used
- : Attention, e.g.: "fallback active"
- : Warning, e.g.: "input not toggling"

Audio Network

- Dante®
- Dante® Primary
- Dante® Secondary

MADI 1

- Input
- Output

MADI 2

- Input
- Output

Word Clock BNC

- Input
- Output

Default Input Interface

- Dante®
- MADI 1
- MADI 2

Related information
Selecting the default audio input/output source

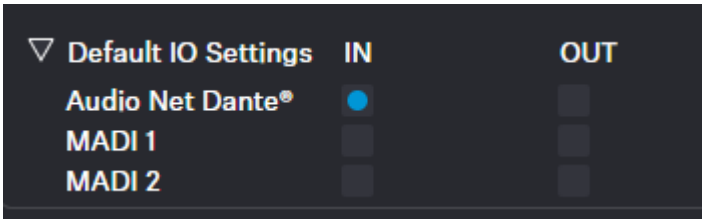
Selecting the default audio input/output source

You can select the default source for the audio input and output of your audio interface.

To select the default input interface:

- In the top bar, navigate to **Configuration RF** > **Audio Interfaces**.
- Select the input interface under **Default IO Settings**.

  The default input interface has been selected.



To select the clock source output:

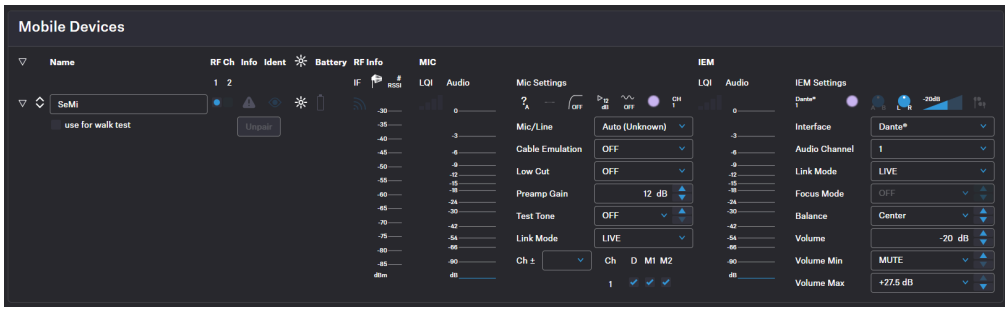
- Select the desired setting for the clock source under:
  - **MADI 1**
  - **MADI 2**
  - **Word Clock BNC**

  The clock source output has been selected.

The audio interfaces have been selected.

Mobile Devices

Here you can configure specific settings for mobile devices.



The following interactions can be made for each mobile device:

General

- Changing the name of the device (see Changing the device name)
- Assigning an RF channel (see Assigning an RF channel)
-  Monitoring the status of the device (connection status, temperature, entitlement, data-transition etc)
-  Changing the LED brightness (see Setting the LED brightness)
-  Identifying the device (see Identifying your mobile device)
- Pairing/unpairing the device (see Pairing/unpairing mobile devices)
-  Monitoring the battery status
-  Interference level at mobile device
-  Receive Single Strength Indication at the dominant antenna
-  Link Quality Input (LQI)

MIC

-  Link Quality Input (LQI) (see Selecting audio link mode (Mic/Line))
-  Input Mic/Line (see Selecting audio link mode (Mic/Line))
-  Cable Emulation (see Activating/deactivating cable emulation)
- 

Low Cut (see Activating/deactivating Low Cut)
- 

Preamp Gain (see Setting the Preamp Gain)
- 

Test Tone (see Activating/deactivating Test Tone)
-  Link Mode (color depends on the mode) (see Selecting audio link mode (Mic/Line))
- 

Assigned channel (see Assigning an RF channel)

In-Ear Monitoring (IEM)

- Interface (see Selecting the default audio input/output source)
- Channel (see Selecting an audio channel (IEM link))
- Mode (see Selecting audio link mode (IEM))
  -  Max Range
  -  Max Link Density
  -  Live Link Density Range
  -  Live Link Density Range
  -  Live Low Latency
  -  Live Ultra Low Latency
- 

Focus (see Activating Focus mode)
- 

Balance / Center (see Adjusting the balance)
- 

Volume (see Setting the volume)
-  Headphone

General settings
Changing the device name
Assigning an RF channel
Setting the LED brightness
Identifying your mobile device
Pairing/unpairing mobile devices

IEM settings
Selecting the IEM audio interface
Selecting an audio channel (IEM link)
Selecting audio link mode (IEM)
Activating Focus mode
Adjusting the balance
Setting the volume
Setting the min volume
Setting the max volume

Mic/Line settings
Selecting the Mic/Line input
Activating/deactivating cable emulation
Activating/deactivating Low Cut
Setting the Preamp Gain
Activating/deactivating Test Tone
Selecting audio link mode (Mic/Line)
Adding/removing an audio channel (Mic/Line)

Pairing/unpairing mobile devices

In the WebUI, you can pair up to 128 mobile devices to a Base Station within one RF channel.

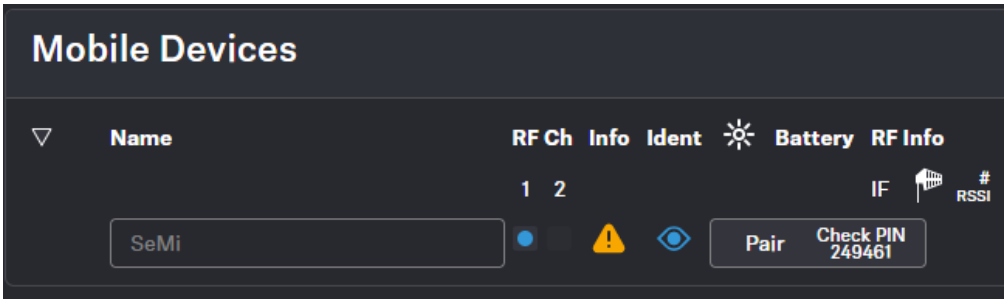
Mobile devices can only be paired and operated with one Base Station at a time. If a mobile device is to be used with another Base Station, it must first be paired again.

> **i** Please unmute at least one RF channel before pairing if this was not done automatically.

To pair a mobile device:

- In the top bar, navigate to **Configuration** > **Base Station**.
- Click on **Enable Pairing**.
  - ✓ The Base Station starts the pairing process for 300 seconds.

- Switch on your mobile device and activate **Pairing Mode** if it has not been activated automatically (**Switching the SEK on and off**).
  - After a few seconds, the available mobile devices are displayed in the list below under **Mobile Devices**. A verification PIN is displayed on the mobile device and in the WebUI.



- Verify the PIN on the mobile device and click on **Pair**.
  - The mobile device has been paired successfully. The device state color changes to:
    - green (successfully paired)
    - gray (assigned RF channel not on air)
    - yellow (firmware mismatch) or
    - red (unconnected, no RF channel selected, not available)

To unpair a mobile device:

> To unpair a paired device, the audio links must first be deactivated.

- In the top bar, navigate to **Configuration** > **Mobile Devices**.
- Click on the button **Unpair** > **Confirm** in the line of the mobile device to be unpaired.
  - The mobile device has been successfully unpaired.

✓ The mobile devices have been successfully paired/unpaired.

Identifying your mobile device

You can remotely identify your mobile device.

To identify the mobile device:

- In the top bar, navigate to **Configuration** > **Mobile Devices**.
- Click on the  **Identify** icon.
  - The LED on the mobile device flashes white alternately for 5 seconds.

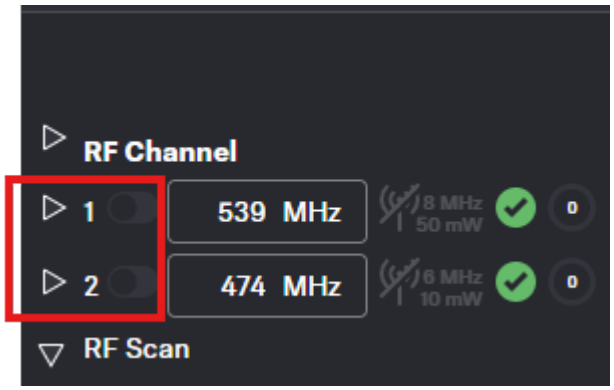
✓ The mobile device has been identified.

Assigning an RF channel

You can assign a configured RF channel to your mobile device.

To assign the RF channel:

- In the top bar, navigate to **Configuration** > **Mobile Devices**.
- Select your configured channel under **RF Channel**.



- Enable the toggle switch of the configured RF channel.

✓ The RF channel has been assigned to your mobile device.

Selecting audio link mode (IEM)

You can select the audio mode for your IEM link.

> Please note that the bandwidth utilization varies depending on the link mode.

The following modes are available:

-  Max Range
-  Max Link Density
-  Live Link Density Range
-  Live Link Density Range
-  Live Low Latency
-  Live Ultra Low Latency

To select the audio mode:

1. In the top bar, navigate to **Configuration** > **Mobile Devices** > **IEM Settings**.
2. Select the audio mode from the drop-down list **Link Mode**.

> The audio mode has been selected.

Selecting audio link mode (Mic/Line)

You can select the audio mode for your Mic/Line link.

> Please note that the bandwidth utilization varies depending on the link mode.

The following modes are available:

-  Max Range
-  Max Link Density
-  Live Link Density
-  LIVE
-  Live Low Latency
-  RAW
-  RAW Live Low Latency

To select the audio mode:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **Mic Settings**.
- Select the audio mode from the drop-down list **Link Mode**.

> The audio mode has been selected.

Selecting the Mic/Line input

You can select the audio input as the signal source for your Mic/Line link.

> **i** For a smooth system configuration, we recommend first selecting the link modes and afterwards assigning the channels:
>
> - Selecting audio link mode (Mic/Line)
> - Selecting audio link mode (IEM)
> - Adding/removing an audio channel (Mic/Line)
> - Selecting an audio channel (IEM link)
> - Selecting the IEM audio interface

> **i** You can route audio links to several channels. Routing can be performed easily via the routing matrix (see Audio inputs and outputs).

The following input signals are available:

- Auto (unknown)
- Mic
- Line

To choose the audio input:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **Mic Settings**.
- Select the audio input from the drop-down list **Mic/Line**.

✓ The audio input has been selected.

Related information
Audio inputs and outputs

Adding/removing an audio channel (Mic/Line)

You can assign an audio channel number and the interface output for your Mic/Line link.

> **i** You can route audio links to several channels. Routing can be performed easily via the routing matrix (see Audio inputs and outputs).

To add an audio channel:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **Mic Settings**.
- Select the channel number from the drop-down list **Channel** which is indicated with a plus in front of it (e.g. **+1**).

To remove the link channel:

- Select the channel number from the drop-down list **Channel** which is indicated with a minus in front of it (e.g. **-1**).

To select the output interface of the assigned link channel:

- Activate/deactivate the check-boxes under **D** (for DANTE®), **M1** (for MADI 1) and/or **M2** (for MADI 2).

✓ The audio channel and the audio interface output has been added/removed.

Performing a walk test

A walk test allows you to check the reception quality of your radio links within the operating environment.

The automatically generated data is used to provide an overview of the frequency behavior with the simulated devices and their configuration under the intended conditions. The result is represented as plain data in a `.json` file. The implementation of a graphical representation of the result is in planning.

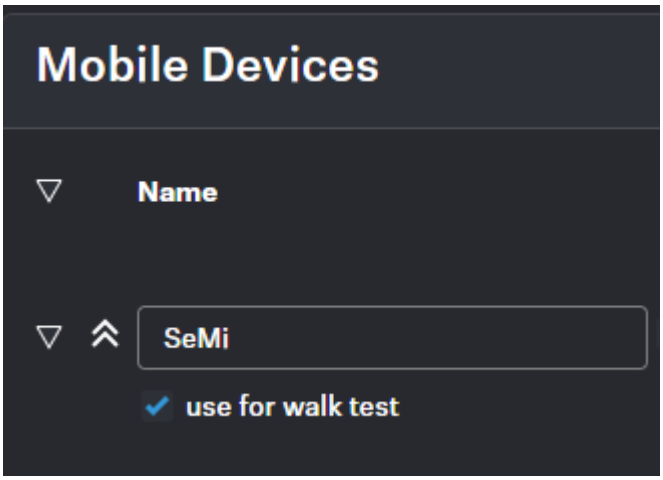
You can specify the measurement interval of the walk test in seconds:

- 1
- 2
- 3
- 4
- 5
- 10
- 20
- 30

> **i** If the total data rate is too high, individual values are omitted.

To perform a walk test:

- Switch on the transmitter and the receiver of the radio link you want to check.
- In addition, switch on all other devices that you want to use in the operating environment.
- Navigate to **Configuration** > **Mobile Devices** and select the checkbox **use for walk test** for the device to be tested.



- Navigate to **Configuration** > **Base Station**, select the measuring interval for the walk test and click on **Start**.
  - The walk test has been started.
- Walk the operating environment with the mobile device.
- Click on **Stop** as soon as the walk test has been performed.
  - The results of the walk test are automatically downloaded locally to your computer as a `.json` file.

The walk test has been performed successfully.

Changing the device name

You can change the device name for your mobile device.

> For security reasons, please do not enter any sensitive personal data as the device name.

To change the device name:

- In the top bar, navigate to **Configuration** > **Mobile Devices**.
- Edit the name under **Name** and confirm with **ENTER**.
  - The name is immediately transmitted to the mobile device and saved.

The device name has been changed.

Setting the LED brightness

You can adjust the brightness of your LED on the mobile device.

There are four settings for the LED brightness:

-  OFF
-  Dim
-  Standard
-  Bright

To change the LED brightness:

- In the top bar, navigate to **Configuration** > **Mobile Devices**.
- Click on the  icon multiple times to set the LED to your desired brightness.

✓ The LED brightness has been set.

Selecting the IEM audio interface

You can select the desired audio interface as the signal source for your IEM link.

The following interfaces are available:

- Dante®
- MADI 1
- MADI 2

To choose the audio interface:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **IEM Settings**.
- Select the audio interface from the drop-down list **Interface**.

✓ The audio interface has been selected.

Related information

Audio inputs and outputs

Selecting an audio channel (IEM link)

You can assign an audio channel number for your IEM link.

> **i** For a smooth system configuration, we recommend first selecting the link modes and afterwards assigning the channels:
>
> - Selecting audio link mode (Mic/Line)
> - Selecting audio link mode (IEM)
> - Adding/removing an audio channel (Mic/Line)
> - Selecting an audio channel (IEM link)
> - Selecting the IEM audio interface

> **i** It is also possible to select an existing link (marked with *), as long as it is using the same RF channel.

To add an audio channel:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **IEM Settings**.
- Select the channel number from the drop-down list **Audio Channel**.

✓ The audio channel has been selected.

Activating Focus mode

You can activate/deactivate Focus mode for your IEM link.

> The **Focus** setting has no function in the mono configuration.

With the **Focus** setting, the two audio channels are added together and reach the listener's left and right ears as mixed mono signals. The percentage distribution of channels A and B can be used to set the mix of the incoming mono signals.

The following values can be selected directly and adjusted individually in steps of 0.5%:

- OFF
- 100% A
- 90% A 10% B
- 80% A 20% B
- 70% A 30% B
- 60% A 40% B
- 50% A 50% B
- 40% A 60% B
- 30% A 70% B
- 20% A 80% B
- 10% A 90% B
- 100% B

> For **Focus Mode** a stereo link mode has to be selected first.

To activate Focus mode:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **IEM Settings**.
- Select the focus mode from the drop-down list **Focus Mode**.

To deactivate Focus mode:

- Select the value **OFF**.

> **Focus Mode** has been activated/deactivated.

Adjusting the balance

You can change the balance for your IEM link.

The following values can be selected directly and adjusted individually in steps of 1%:

- 100% Left
- 75% Left
- 50% Left
- 25% Left
- Center
- 25% Right
- 50% Right
- 75% Right
- 100% Right

To change the balance:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **IEM Settings**.
- Select the balance mode from the drop-down list **Balance**.

✓ The balance mode has been changed.

Setting the volume

The volume can be controlled directly from the device as well as from the WebUI.

If the volume value is changed on the device, this change is displayed in the WebUI in real time.

WARNING

Hearing damage due to high volumes

This product is capable of producing sound pressure levels exceeding 85 dB (A). Volume levels that are too high may damage your hearing.

- Reduce the volume and the microphone amplification, if applicable, before using the product.

To set the volume:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **IEM Settings**.
- Enter the desired volume level in dB under **Volume**.

✓ The volume has been set.

Setting the min volume

You can set a predefined min volume for your IEM link.

The volume set here is the minimum level that is sent to your dedicated mobile device.

The following values can be selected directly and adjusted individually in steps of 0.5 dB:

- -6 dB
- -12 dB
- -18 dB
- -24 dB
- -30 dB
- -36 dB
- -42 dB
- -48 dB
- -54 dB
- -60 dB
- MUTE

WARNING

Hearing damage due to high volumes

This product is capable of producing sound pressure levels exceeding 85 dB (A). Volume levels that are too high may damage your hearing.

- ▶ Reduce the volume and the microphone amplification, if applicable, before using the product.

To set the min volume:

- ▶ In the top bar, navigate to **Configuration** > **Mobile Devices** > **IEM Settings**.
- ▶ Select the min volume level in dB under **Volume min**.

✓ The min volume has been set.

Setting the max volume

You can set a predefined max volume for your IEM link.

The volume set here is the maximum level that is transmitted to your connected mobile device.

The following values can be selected directly and adjusted individually in steps of 0.5 dB:

- -27.5 dB
- -24 dB
- -18 dB
- -12 dB
- -6 dB
- 0 dB
- +6 dB
- +12 dB
- +18 dB
- +24 dB
- +27.5 dB

WARNING

Hearing damage due to high volumes

This product is capable of producing sound pressure levels exceeding 85 dB (A). Volume levels that are too high may damage your hearing.

- ▶ Reduce the volume and the microphone amplification, if applicable, before using the product.

To set the max volume:

- ▶ In the top bar, navigate to **Configuration** > **Mobile Devices** > **IEM Settings**.
- ▶ Select the max volume level in dB under **Volume max**.

✓ The max volume has been set.

Activating/deactivating cable emulation

You can emulate the capacitance of connected cables and influence the sound of your mic/line input.

> Cable emulation is only applicable for the line input.

The following presets are available:

- OFF
- Short
- Mid
- Long

To activate cable emulation:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **Mic Settings**.
- Select the value from the drop-down list **Cable Emulation**.

To deactivate cable emulation:

- Select the value **OFF**.

> The cable emulation value has been activated/deactivated.

Activating/deactivating Low Cut

You can reduce or remove low frequencies in the audio signal while allowing high frequencies to pass through.

This allows low-frequency ambient noise to be filtered out of the audio signal, thereby improving the clarity of the audio.

The following presets are available:

- OFF
- 30 Hz
- 60 Hz
- 80 Hz
- 100 Hz
- 120 Hz

To activate Low Cut:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **Mic Settings**.
- Select the value from the drop-down list **Low Cut**.

To deactivate Low Cut:

- Select the value **OFF**.

✓ Low Cut has been activated/deactivated.

Setting the Preamp Gain

With the preamp you can increase the audio level for your Mic/Line output.

To set the gain:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **Mic Settings**.
- Enter the desired preamp gain level in 1 dB increments under **Preamp Gain**.

✓ The Preamp Gain has been set.

Activating/deactivating Test Tone

With a constant test tone, you can simulate and test the performance of your audio devices in different dB levels.

The following values can be selected directly and adjusted individually in steps of 1 dB:

- OFF
- -60 dB
- -54 dB
- -48 dB
- -42 dB
- -36 dB
- -30 dB
- -24 dB
- -18 dB
- -12 dB
- -6 dB
- 0 dB

To activate the Test Tone:

- In the top bar, navigate to **Configuration** > **Mobile Devices** > **Mic Settings**.
- Select the value from the drop-down list under **Test Tone**.

To deactivate the Test Tone:

- Select the value **OFF**.

✓ The Test Tone has been activated/deactivated.

Activating the license

Under Entitlement, you can enter and activate the current license for the frequency spectrum.

> The purchased license (included in the product) is only valid for the region for which the product was designed and approved. The license may not be used in other regions.

> Please note that an Internet connection is required to activate the license.

When you start the device for the first time, your license key is requested.

To activate the license:

- Enter your purchased license and click on **Submit**.

Your license has been activated.

Frequency Scan

You can use an RF scan to examine the current frequency situation of your connected antenna.

> Make sure that no antenna is activated!

You can monitor and control the following settings in the Frequency Scan menu:

- Selecting the antenna (A-D) connected to the Base Station
- Setting the RefLevel (reference level for frequency scan)
- Setting the Sweep time for frequency scan between 2s (fast update rate) and 60s (slow update rate)
- Setting the resolution bandwidth
- Resetting the peak trace
- Saving all settings to a `.csv` file

Related information

Scanning the RF frequency

Scanning the RF frequency

You can run a frequency scan to check the current frequency situation in your surrounding area.

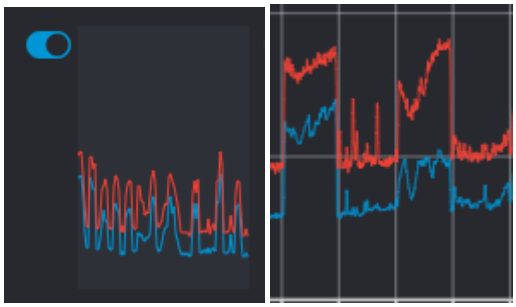
The frequency scan provides an overview of the frequency situation in your location. You can save the antenna configuration as a .csv info file. This file can be used as a backup file to recapitulate your settings or as local frequency information for your specific environment. You can scan the frequencies of all antennas connected to the Base Station.

The scan can be initiated:

- via the RF configuration tab to see a small extract without any details or
- via the Frequency Scan tab for a detailed overview of the frequency situation.

The scan results will be displayed in two different curves:

- **Peak** (red) = Maximum value
- **RMS** (blue) = Average power or strength



ℹ Please note that the antenna must not be assigned to an RF channel before scanning (see Assigning an antenna to an RF channel).

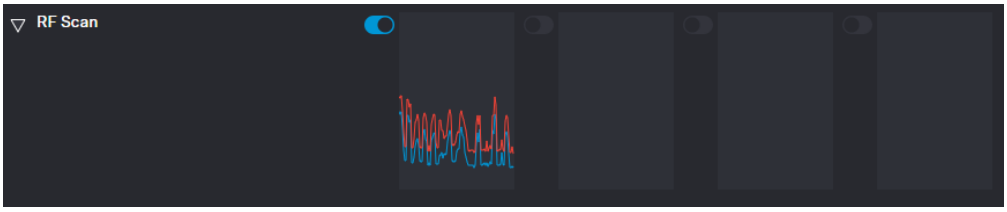
To scan the RF frequency via the RF configuration tab:

▶ In the top bar, navigate to **Configuration** > **RF Configuration**.

✓ Under the **RF Scan** drop-down menu, there are four toggle switches that enable and disable the scan function for each connected antenna.

- Click on the toggle switch of the antenna to be scanned in order to start an immediate scan.

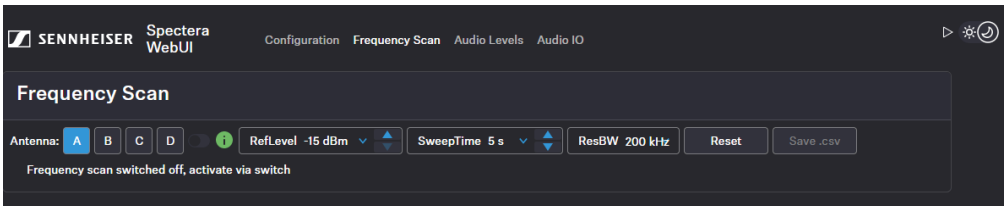
  The square is highlighted with a blue dot and the scan result is displayed in a small frequency curve after approx. 5 seconds.



- In order to view the results,
  - click on the small frequency icon or
  - navigate to **Frequency Scan** in the top bar.

To scan the RF frequency via the Frequency Scan tab:

- In the top bar, navigate to the tab **Frequency Scan**.



- Select your antenna to be scanned and adjust your desired settings.

- Switch on the toggle to start the scan.
  - The frequency scan is started and the result is displayed in a detailed frequency diagram. Supported frequency ranges are shown in green and unsupported ranges in gray.

To reset a scan:

- Click on **Reset**.
  - The current scan will be reset.

To save the scan results as `.csv`:

- Click on **Save.csv**.
  - The antenna configuration has been downloaded locally to your computer as a `.csv` file.

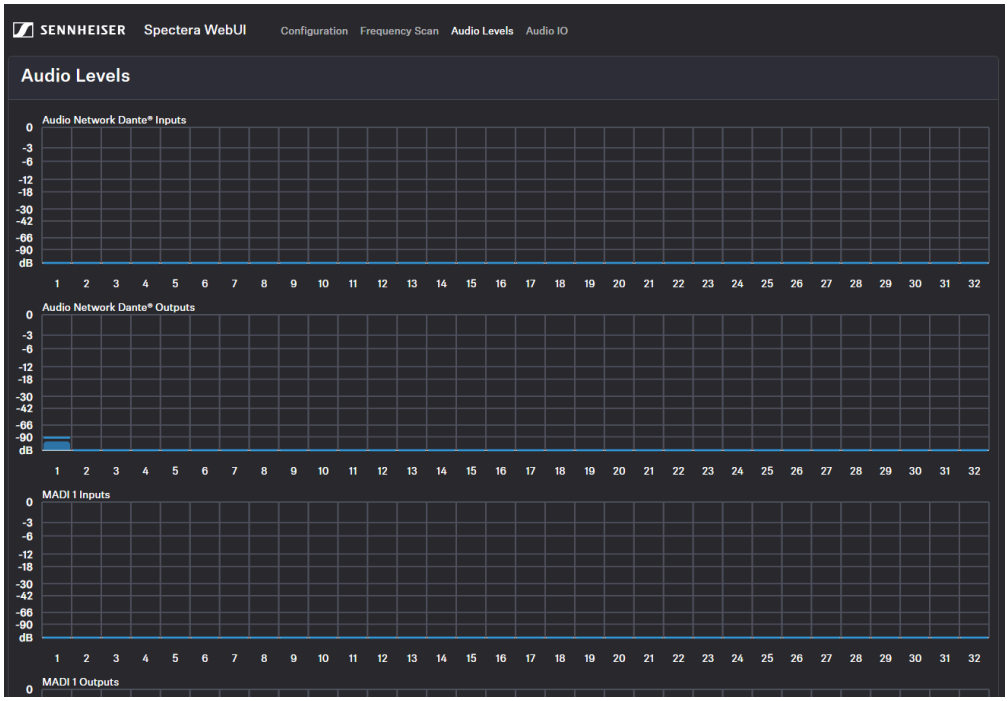
✓ The frequency of your connected antenna has been scanned.

Related information

Assigning an antenna to an RF channel

Audio levels

Under Audio Levels you can monitor all interfaces at a glance.



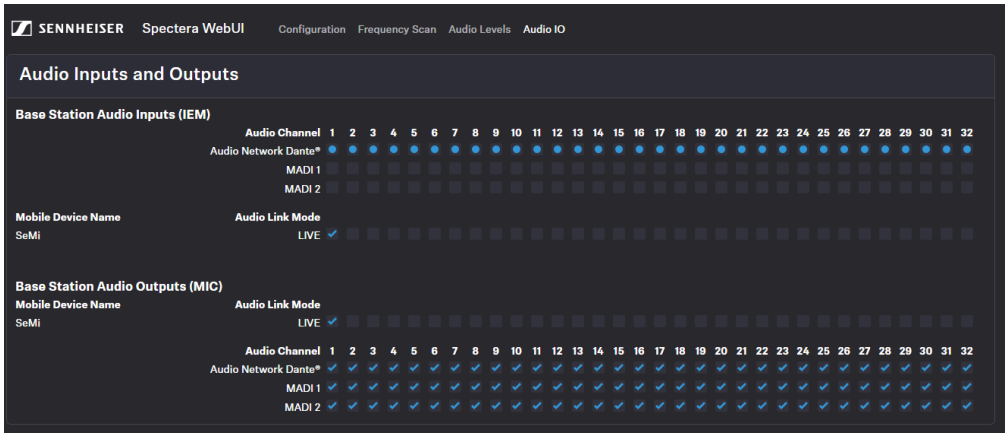
All interfaces are sorted according to their inputs and outputs and displayed visually with a frequency response:

- Dante® Inputs
- Dante® Outputs
- MADI 1 Inputs
- MADI 1 Outputs
- MADI 2 Inputs
- MADI 2 Outputs

Audio inputs and outputs

Here you have an overview of all channels at a glance and can assign the audio network input and output for the link channels directly and easily.

The link modes assigned in the mobile devices are displayed here. You can select the desired channels directly and assign them to your audio network input or output.



Related information

Selecting the IEM audio interface
Selecting an audio channel (IEM link)
Selecting audio link mode (IEM)
Selecting audio link mode (Mic/Line)

4. Specifications

System requirements and ports requirements for inbound and outbound traffic.

System requirements

Recommended for Host PC Client

- Intel i5 Dual Core processor/M1 Mac/or similar
- 16 GB RAM
- Gigabit LAN interface
- Windows® 10 or higher
- Mac OS Big Sonoma or later
- IPv4 network

Port requirements

Address	Port	Protocol	Type	Service	Usage
ANY	443	HTTPS (TCP)	Unicast	Spectera Base Station API	Communication to devices
sennheiseruserinsights.matomo.cloud	443	HTTPS (TCP)	Unicast	Sennheiser user insights	Analytics of usage and operational data
cdn.matomo.cloud	443	HTTPS (TCP)	Unicast	Sennheiser user insights	Analytics of usage and operational data

Client browser

- Google Chrome (latest version)
- Mozilla Firefox (latest version)
- Microsoft Edge (latest version)
- Apple Safari (latest version)
- JavaScript must be activated

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