



Spectera Solution

PDF export of the original HTML instructions

Contents

1. Preface	4
2. Product information	5
Spectera System	5
Base Station	7
SEK	9
DAD	10
WebUI	11
LinkDesk	12
Accessories	14
Accessories for the Base Station	14
Accessories for the SEK	16
Accessories for the DAD	17
CHG 70N-C network-enabled charger	18
BA 70 rechargeable battery and L 70 USB charger	20
Modular L 6000 charger	21
Charging modules for L 6000 charger	23
3. User manual	
Spectera	
Base Station	27
SEK	72
DAD	
CHG 70N-C charger	110
L 70 USB charger	121
Modular L 6000 charger	124
Cleaning and maintenance	142
WebUI	143
Get started	143
Resetting device password	146
Basic configuration	147
Configuration	161
Frequency Scan	213
Audio Levels	
Audio inputs and outputs	218
LinkDesk	219
Get started	219

	Basic configuration	
	Productions	240
	Base Station	
	Mobile devices	270
	Routing Editor	
	Error handling	
4. 5	Specifications	
	Spectera System	
	Base Station	291
	SEK	296
	DAD	
	WebUI	
	LinkDesk	
	CHG 70N-C charger	
	BA 70 rechargeable battery	
	L 70 USB charger	
	Modular L 6000 charger	
	LM 6060 LM 6061 LM 6062 LM 6070 charging modules	

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

All information about the product, the scope of delivery, the available accessories and the requirements for operating your Spectera solution.

Spectera System Base Station SEK DAD WebUI LinkDesk Accessories Accessories for the Base Station Accessories for the Base Station Accessories for the DAD CHG 70N-C network-enabled charger BA 70 rechargeable battery and L 70 USB charger Modular L 6000 charger Charging modules for L 6000 charger

Spectera System

Sensing Capabilities - Audio detection and transmission

Spectera devices (Base Station, DAD, SEK) build audio transmission system for professional use. Once paired, SEK mobile devices can transmit audio signals captured by a connected microphone over radio frequencies. Due to its bi-directionality, the SEK is able to receive audio signals from DAD and the sound comes out of the headphones, if any connected. Here how it works:

Transmission:

- The SEK picks up sound from microphone and turns it into electrical signals.
- These signals are then prepared for transmission by boosting and modifying them.
- > The signals are sent over radio waves to the DAD Antenna.
- The DAD antenna changes the radio back into electrical signals and sent them to the Base Station for further audio processing.

Receiving:

- > The Base Station forward audio signals to the DAD Antenna.
- > These signals are then prepared for transmission by boosting and modifying them.



- ▶ The signals are sent over radio waves to the SEK mobile devices.
- The SEK changes the radio back into electrical signals and at a further stage, sound will be directed to connected headphones.

Base Station



Base Station | 1350 - 1525 MHz | Art. no. 509162

The license for the Base Station is available in the following versions:

Name	me Art. Frequency range no.		Certified Countries*			
SPECTERA LIC (ZONE 01)	700 532	UHF (470 - 608 MHz, 630 - 698 MHz) 1G4 (1350 - 1400 MHz)	EU + EFTA, United Kingdom, Turkey			
SPECTERA LIC (ZONE 02)	700 533	UHF (470 - 608 MHz, 657 - 663 MHz) 1G4 (1435 - 1525 MHz Certification pending)	USA			
SPECTERA LIC (ZONE 03)	700 534	UHF (470 - 608 MHz, 657 - 663 MHz)	Canada			
SPECTERA LIC (ZONE 04)	700 535	UHF (470 - 534 MHz, 534 - 608 MHz, 630 - 698 MHz)	Singapore			
SPECTERA LIC (ZONE 05)	700 536	UHF (470 - 608 MHz, 630 - 698 MHz) 1G4 (1350 - 1400 MHz)	South Africa - Certification pending			
SPECTERA LIC (ZONE 06)	700 537	UHF (470 - 608 MHz, 630 - 694 MHz)	Malaysia, Qatar			
SPECTERA LIC (ZONE 07)	700 538	UHF (470 - 510 MHz)	Israel - Certification pending			
SPECTERA LIC (ZONE 08)	700 539	UHF (487 - 608 MHz, 630 - 694 MHz)	Indonesia			
SPECTERA LIC (ZONE 09)	700 540	UHF (470 - 608 MHz, 630 - 694 MHz) 1G4 (1350 - 1400 MHz)	United Arab Emirates			
SPECTERA LIC (ZONE 10)	700 541	UHF (470 - 608 MHz, 630 - 698 MHz)	Philippines			
SPECTERA LIC (ZONE 11)	700 542	UHF (520 - 608 MHz, 630 - 694 MHz)	Australia			
SPECTERA LIC (ZONE 12)	700 543	UHF (510 - 606 MHz)	New Zealand			

Name	Art. no.	Frequency range	Certified Countries*
SPECTERA LIC (ZONE 13)	700 544	UHF (479 - 565 MHz)	Hong Kong

* It is the responsibility of the user to inform themselves about the current local regulatory and certification requirements and to comply with them using wireless systems.

- **i** You can find more detailed information about the Base Station in the following sections:
 - Startup and operation: Base Station
 - Specifications: Base Station





The SEK is available in the following versions:

SEK UHF | 470 - 698 MHz | Art. no. 509164

SEK 1G4 | 1350 - 1525 MHz | Art. no. 509163

i You can find more detailed information about the SEK in the following sections:

- Startup and operation: SEK
- Specifications: SEK



DAD



The Digital Antenna Directional (DAD) is available in the following versions:

DAD UHF | 470 - 698 MHz | Art. no. 509169

DAD 1G4 | 1350 - 1525 MHz | Art. no. 509170

i You can find more detailed information about the DAD in the following sections:

- Startup and operation: DAD
- Specifications: DAD

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.

Product information

Software for the world's first wideband bidirectional wireless solution — Spectera.

With LinkDesk and Spectera, you get an intuitive workflow and unprecedented remote control and monitoring capabilities, plus visibility of IEM volume, latency, audio level and settings, RF health, battery status, and more.

The software's RF manager provides a continuous spectrum scan via Spectera's innovative DAD antenna. Plus, LinkDesk's assistive behaviors allow for quick and easy system management, and its production handling allow you to manage, store, and recall multiple Base Station configurations instantly.

Key Features

- Intuitive desktop application for full system management
- Notification system to expedite workflows and troubleshooting
- Assistive behaviors for fast and easy system management
- Production handling: manage, store, and recall multiple Base Station configurations instantly
- Full remote control and monitoring of all Spectera ecosystem components including Base Station, DAD antenna, SEK bodypacks
- Unprecedented remote control and monitoring capabilities, plus visibility of IEM volume, latency, audio level and settings, RF health, battery status, and more
- RF manager for continuous spectrum scan via DAD antenna
- License activation for Base Station

Operating System

- Windows®
- MacOS

Product Support

- Base Station
- DAD antenna
- SEK bodypacks

Language Support

• English



Related information User manual Specifications



Accessories

Accessories for the Base Station Accessories for the SEK Accessories for the DAD CHG 70N-C network-enabled charger BA 70 rechargeable battery and L 70 USB charger Modular L 6000 charger Charging modules for L 6000 charger

Accessories for the Base Station

MADI Cards

MADI Card (BNC) for Base Station | Art. no. 509293



MADI Card (OM) for Base Station | Art. no. 509295



• See Installing slot-in cards



Spectera Filter set

Three exchangable filters for the Base Station | Art. no. 700073



• See Changing the fan filter



Accessories for the SEK

Spectera SEK Antenna

SEK Antenna (UHF) | 470 - 698 MHz | Art. no. 700066



SEK Antenna (1G4) | 1350 - 1525 MHz | Art. no. 700067



• See Mounting the antenna

Spectera SEK Belt Clip

SEK Belt Clip | Art. no. 700071



• See Changing the belt clip

3-pin protective cap MIC/LINE

Exchangeable protective **cap** for the microphone / instrument 3-pin connector | Art. no. 700072



• See Using the protection cap



Accessories for the DAD

Optional cables for DAD



Antenna cable cat 5e | 10 m | Art. no. 700068

Antenna cable cat 5e | 25 m | Art. no. 700069

Antenna cable cat 5e | 50 m | Art. no. 700070

• See Connecting/disconnecting the antenna



CHG 70N-C network-enabled charger



CHG 70N-C | Charger | Art. no. 700332



CHG 70N-C + PSU KIT | CHG 70N-C charger with NT 12-35 CS power supply unit | Art. no. 700333

- **i** You can find more detailed information about the CHG 70N-C in the following sections:
 - Startup and operation: CHG 70N-C charger
 - Specifications: CHG 70N-C charger | BA 70 rechargeable battery



BA 70 rechargeable battery and L 70 USB charger



BA 70 | Rechargeable battery | Art. no. 508860

L 70 USB | Charger | Art. no. 508861

EW-D CHARGING SET | L 70 USB charger with two BA 70 rechargeable batteries | Art. no. 508862

- You can find more detailed information about the BA 70 rechargeable battery and the L 70 USB charger in the following sections:
 - Startup and operation: L 70 USB charger
 - Specifications: L 70 USB charger | BA 70 rechargeable battery

Modular L 6000 charger

The L 6000 charger is used to charge the BA 60, BA 61, BA 62 and BA 70 rechargeable batteries.

The charging modules LM 6060 (for the BA 60), LM 6061 (for the BA 61), LM 6062 (for the BA 62) or LM 6070 (for the BA 70) are required to do so. The rechargeable batteries and charging modules are available separately.



- L 6000 EU | Article no. 507300
- **i** You can find more detailed information about the L 6000 charger and the LM 6060, LM 6061, LM 6062 and LM 6070 charging modules in the following sections:
 - Installation and Operation: Modular L 6000 charger
 - Specifications: Modular L 6000 charger and LM 6060 | LM 6061 | LM 6062 | LM 6070 charging modules

Delivery includes

- 1 L 6000 charger
- 1 mains cables (EU, UK, or US variant)
- 4 dummy caps including screws (preassembled)
- 4 rubber feet
- 1 quick guide
- 1 manual with safety instructions
- 1 manual with technical data and manufacturer declarations



Product overview

View with the charging modules and rechargeable batteries inserted:



View with the LM 6060 charging modules without rechargeable batteries inserted:

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View with the LM 6061 charging modules without rechargeable batteries inserted:



Charging modules for L 6000 charger

The following charging modules are available for the L 6000 charger:

LM 6060

The LM 6060 charging module is installed in the L 6000 charger to charge the BA 60 rechargeable battery.

LM 6060 | Article no. 507198



LM 6061

The LM 6061 charging module is installed in the L 6000 charger to charge the BA 61 rechargeable battery.



LM 6061 | Article no. 507199



LM 6062

The LM 6062 charging module is installed in the L 6000 charger to charge the BA 62 rechargeable battery.



LM 6062 | Article no. 508516



LM 6070

The LM 6070 charging module is installed in the L 6000 charger to charge the BA 70 rechargeable battery of the Evolution Wireless Digital series.

LM 6070 | Article no. 509457



3. User manual

Detailed description of the start-up and operation of your selected hardware and software product.

Manual Spectera Manual WebUI Manual LinkDesk

User manual

Detailed description of the start-up and operation of your selected hardware.

- **i** Instruction manuals about controlling the Spectera System via LinkDesk and Spectera WebUI can be found here:
 - Instruction manual LinkDesk
 - Instruction manual WebUI

Base Station SEK DAD CHG 70N-C charger L 70 USB charger Modular L 6000 charger Cleaning and maintenance

Base Station

Get started General information for the System Product overview Installing slot-in cards Connecting/disconnecting the Base Station to/from the power supply system Connecting to a network **Connecting antennas** Antenna cable extension Connecting word clock Word clock scenarios for digital audio Connecting audio via Dante® Connecting audio via MADI Changing the fan filter Installing the Base Station in a rack Switching the Base Station on and into standby Activating a license Using the headphone output Meaning of the LED Information on the display Navigating the menu Menu structure Updating the Base Station

Get started

Get your Base Station ready to use in a few steps.

After unpacking the Base Station you must update the firmware **before** activating a licence.

i If you use LinkDesk the update is mandatory before activating a licence.



To connect the Base Station to the power supply system:

Connect one mains cable to the power socket on the rear side of the Base Station.



- Connect one mains cable plug into a suitable wall socket.
 - ✓ The Base Station is connected to the power supply.



To connect the Base Station to a network:

> Plug one side of the network cable into the **Control** socket.



Plug the other side of the network cable to a switch, router or directly to a computer.
The Base Station has been connected to a network.

To update the firmware:

If you want to use Spectera WebUI, it depends on the initial firmware version: Firmware 0.8.x use https://deviceIP/specteracontrol/index.html.

Firmware 1.x.x use https://deviceIP/specterawebui/index.html.

i The device IP can be found here: Network.

- In some cases the internet browser might have trouble showing the page. Please use the LinkDesk software.
- If you want to use the free LinkDesk software: Download it from the Sennheiser website sennheiser.com/linkdesk.

The update is mandatory before activating a licence.

Your Base Station is up to date.

You can now add a licence, see Activating a license.

General information for the System

Here you can find general information for your use of the System.

i A license has to be activated, otherwise you cannot use the Base Station.

The Base Station has two independend RF channels. Both variants of the antenna (UHF and 1G4) can be connected to the Base Station at the same time.

You can pair up to 128 mobile devices to a Base Station within one RF channel.

i Mobile devices can only be paired and operated with one Base Station at a time.

Product overview

Front



1 HEADPHONES socket

- see Using the headphone output
- 2 VOLUME control for headphone
 - see Using the headphone output
- 3 Fan inlet with filter
 - see Changing the fan filter
- 4 Display for status information and operating menu
 - see Information on the display
- ${\bf 5}$ LED to indicate the status
 - see Meaning of the LED
- 6 Jog-Dial (UP/DOWN/SET) for navigating the menu
 - see Navigating the menu
- 7 ON/OFF button
 - see Switching the Base Station on and into standby

Back



8 Power socket

- see Connecting/disconnecting the Base Station to/from the power supply system
- 9 4x ruggedized RJ45 Antenna ports
 - see Connecting antennas



- 10 Word clock in/out
 - see Connecting word clock
- 11 ruggedized RJ45 Control port
 - see Connecting to a network
- 12 Cascade in/out
 - see Cascading the Base Stations
- 13 2x ruggedized RJ45 ports for $\textbf{Dante}^{\texttt{@}}$ primary | secondary
 - see Connecting audio via Dante®
- 14 Slot 1 | 2 for MADI Cards
 - see Installing slot-in cards



Installing slot-in cards

The same or different cards can be installed.

Two types of MADI Cards are available, see MADI Cards.

Madi CARD (BNC)

Madi CARD (OM)



CAUTION



Improper handling of the device may result in its damage

Device contains sensitive electronics to electrostatic discharge (ESD).

Observe the precautionary measures for handling components at risk of electrostatic discharge and take appropriate protective measures when touching the device.



To install a MADI Card in the Base Station:

- Completely disconnect the Base Station from the power supply system. See Connecting/disconnecting the Base Station to/from the power supply system.
- Unscrew one of the dummy caps on the Base Station. To do so, you require a torx[®] 10 screwdriver.



Fully slide the MADI Card into the open slot as shown in the figure.

The card can be inserted into the Base Station housing only in one direction. The lettering on the card must face upward.





▶ Tightly screw on the MADI card with max. 65 cNm +/-10%.

Connecting/disconnecting the Base Station to/from the power supply system

Optional for redundancy you can connect the Base Station with two cables. The optional cable is not included.

To connect the Base Station to the power supply system:

Connect one mains cable to the power socket on the rear side of the Base Station.



- Connect one mains cable plug into a suitable wall socket.
 - ✓ The last state is restored: on or standby.
- For redundancy connect an other cable (not included) as well.
 - The Base Station is connected to the power supply.

To completely disconnect the Base Station from the power supply system:

- Unplug both mains cable plugs from the wall socket.
- Unplug both mains cable from the power socket on the rear side of the Base Station.
 - The Base Station is completely disconnected from the power supply.




✓ The Base Station has been connected/disconnected successfully.



Connecting to a network

Connect the Base Station to a network for monitoring and controlling.

To connect the Base Station to a network:

Plug one side of the network cable into the **Control** socket.



Plug the other side of the network cable to a switch, router or directly to a computer.

i An internet connection is only necessary for activation. See Activating a license.

The Base Station has been connected to a network.

You can monitor and control the Base Station via a network connection using LinkDesk or Spectera WebUI.

LinkDesk is freely available and can be downloaded directly from the Sennheiser website.

• sennheiser.com/linkdesk

To start the Spectera WebUI, enter the following URL into your browser:

• https://deviceIP

- **i** The device IP can be found here: Network.



Connecting antennas

You can connect up to four antennas to the Base Station.

Recommandations regarding the antenna setup:

- Keep a distance more than 20 m (787.4") between the antenna and another antenna.
- Keep a distance more than 0.5 m (19.69") between the antenna and a wall.

The cable must

- be a CAT5e or higher,
- have ruggedized plugs and
- not extend 100 m (3937").
- i We recommend using a antenna cable cat 5e (see Accessories for the DAD).
- **i** Both variants (UHF and 1G4) can be connected to the Base Station at the same time.

To connect an antenna to the Base Station:

- Plug on side of the cable into one antenna port (A, B, C or D) at the rear side of the Base Station.
- Plug the other side of the cable into an antenna.



To disconnect an antenna from the Base Station:

- Hold down the push button.
- Unplug the cable from the Base Station.





Antenna cable extension

Longer cable distances are possible with the use of fiber optic cables and media converters.

Sennheiser tested the recommend converters for a complete distance of 4 km (157480.31").

We only recommend the following converters for fully tested functionality:

- Converter with PoE for DAD antenna Lantronix M/GE-PSW-PSE-01
- Converter for the Base Station Lantronix M/GE-T-SFP-01

9 9 6 6 6 ; 6 ; 6	õ			
M/GE-T-	-SFP-01	//	N/GE-PSW-PSE-01	
< 100 m (< 3937.01")	< 38	800 m (< 149606.3*)	< 100 m	(< 3937.01")

i The media converter must not have a switch function.

Connecting word clock

You can use the internal word clock on the Base Station or connect an external word clock.

You can also output the external word clock and cascade it up to 8 Base Stations.

The word clock output transmits only the external word clock that is connected via the word clock input. The internal word clock is not output via the word clock output.

i For more information about the word clock, see Word clock scenarios for digital audio.

To connect an external word clock:

Use a coaxial BNC cable (75 Ω) to connect the external word clock to the word clock in input.





To cascade the word clock:

Connect the cable from the word clock in input of the next Base Station to the word clock out output of the previous Base Station.



Word clock scenarios for digital audio

The Base Station supports two clock rates: 48 kHz and 96 kHz.

You can use either the internal word clock on the Base Station or connect an external word clock.

An external word clock can also be forwarded to a downstream device via the word clock output. This feature allows you to cascade up to 8 Base Station devices.

i Note that only the word clock on the word clock input can be forwarded via the word clock output. The internal word clock is not forwarded via the word clock output.

Word clock with digital audio

If multiple devices with digital audio signals are connected in a production environment, their clock signals must be synchronized via a word clock, otherwise audio errors occur. The word clock of one device becomes the master. All of the other devices become slaves and synchronize with the master.

Dante®

The Audinate Brooklyn III Dante[®] interface installed in the Base Station should be understood as a standalone digital audio device with its own word clock and also has to be clocked either internally or externally.

i You require the Dante Controller software from Audinate for these settings. You can access it using the link: Dante Controller.

Defining the master and slave

The Base Station word clock input, the Base Station internal word clock, the word clock of the Audinate Brooklyn III Dante[®] interface, or the Dante[®] network can be defined as the master.

For LinkDesk see: Configuring interface settings.

For WebUI see: Audio Interfaces.



Connecting audio via Dante®

You can input and output audio via Dante®.

To connect audio via Dante®:

Plug one side of a ruggedized RJ45 cable to the Dante[®] primary socket.



- Plug the other side into a router.
- Download the Dante® Controller.

This is typically a host computer (PC or Mac), with the Dante[®] Controller software application installed. This application configures and controls all the Dante[®] devices and audio streams inside the network.

i Information about the Dante Controller and the Dante[®] network protocol settings is available on the Audinate website: audinate.com.

The Base Station can input and output audio via Dante®.

Shared network mode



In Shared Network Mode both networks for Control and Dante[®] are using the same physical network infrastructure.



Split Network Mode

In Split Network Mode both networks for Control and Dante® are using different physical network infrastructure.



i For more information, please refer to the Network & Security Guide, which can be found in the download section on the Base Station product page sennheiser.com/base-station.



Connecting audio via MADI

To connect audio via MADI:

Plug one side of the (BNC or OM) cable to the installed MADI card.



Plug the other side of the cable to a mixing console.

The Base Station can input and output audio via MADI.



Changing the fan filter

The filter protects the fans from dust.

i Check the filter from time to time and replace it to ensure safe operation and sufficient cooling.

To change the filter:

- Switch the Base Station into standby. See Switching the Base Station on and into standby.
- > Push down the release and pull the cover forward at the same time.



- Remove the filter and dispose it properly.
- Place a new filter in the Base Station. Information about new filter can be found here: Spectera Filter set.
- Make sure that the recesses match those in the device.





Slide the cover into the left side.



> On the right side, press the cover firmly until you hear it click into place.





Installing the Base Station in a rack

You can install the Base Station in any conventional 19" rack. The rack mounting angles are already attached to the device.

Always observe the following information during rack mounting.



Support the Base Station after installation in the rack.



Due to the weight and depth of the device, there is a risk that it may break off in the rack and become damaged as a result.



Version A

- Use special rack mounting rails.
- The design of the rack used must be suitable for the installation of these mounting rails.

Version B

- Use a suitable object to support the device on the rear side.
- Ensure that this object cannot become loose.

The Base Station has been installed in a rack.

Switching the Base Station on and into standby

i The Base Station cannot be switched off. You have to disconnect it from the power supply, see Connecting/disconnecting the Base Station to/from the power supply system.

To switch the Base Station on:

- Short-press the **ON/OFF** button.
 - The Sennheiser Logo appears in the display and the Base Station is booting. When booting is done, the power button LED lights up white.

To switch the Base Station into standby:

- Long-press the **ON/OFF** button.
 - ✓ The display and the LED go off. The ON/OFF button pulses white.

The DAD goes off.

The Base Station has been switched on/into standby.

Activating a license

i A license has to be activated, otherwise you cannot use the Base Station.

The license specifies the country-specific frequency ranges and the RF power.

You can activate a license via LinkDesk or Spectera WebUI.

Only one license per Base Station is possible.

To activate a license:

- Connect the Base Station to the power supply, see Connecting/disconnecting the Base Station to/from the power supply system.
- Connect the Base Station to a network via a switch or router, see Connecting to a network.
 - **i** The Base Station needs a direct Internet access!
- Connect a computer to the same switch or router.
- If you want to activate a license via LinkDesk, follow the steps described here: Activating license.
- If you want to activate a license via Spectera WebUI, follow the steps described here: Activating license.
- Check the product page sennheiser.com/base-station for the latest firmware.

A license has been activated.

Using the headphone output

You can use the headphone output on the front of the Base Station (6.35 mm jack) to listen to the audio signals of the channels.

i First you have to set up audio links in LinkDesk or Spectera WebUI.

WARNING



 \checkmark

Danger due to high volume levels

Volume levels that are too high may damage your hearing.

Turn down the volume of the headphone output before you put on the headphone.

To listen to an audio source:

Connect the headphone to the **HEADPHONES** socket.



- > You can select the audio source here: Headphone.
- Control the volume by turning the VOLUME control next to the HEADPHONES socket.

You can now listen to the selected audio source.

Meaning of the LED

The LED on the front of the Base Station indicates the following information.



Information on the display

Basic information are shown on the display.

The display goes into screen saver after some time.

You can wake up the display by pressing or turning the jog-dial.

The display shows the operating menu, which can be used to configure a few settings (see Menu structure).

i More options and other parameters are available in LinkDesk and Spectera WebUI!

To navigate the menu, see Navigating the menu.

Status messages

In certain situations, status messages may appear on the display.

Critical Temperature -Audio processing stopped Please cool down Base Station! Error - The temperature is critical. The audio processing stopped. Cool down the Base Station.

High Temperature -Check ventilation to avoid audio interruption Warning - The temperature is high. Check the ventilation to avoid audio interruption.

Heating up Base Station Please stand by Warning - The temperature is low. The Base Station is heating up. Please standby.



Navigating the menu

Use the jog-dial to navigate through the operating menu.



Press the jog dial



- Calls up a menu item
- Changes to a submenu
- Saves settings

Turn the jog dial



- Changes to the previous or next menu item
- Changes the setting of a menu item



Menu structure

In the Base Station menu, you can configure a few settings.

i More options and other parameters are available in LinkDesk and Spectera WebUI!

The following settings can be changed:

Mute/Unmute the RF-Channels

• Main menu

Change the IP mode

Network

Select the audio source for the headphone

• Headphone

Reset the Base Station

Reset

Main menu

In this menu item, you can view information about connections.



In the upper part you can view information about the RF channel:

- The selected frequency
- The state of the antenna (mute, active)
- Which antenna port is used for the RF channel.



In the lower part you can view information about the used connection:

- Connected ports are highlighted.
- The order corresponds to the ports on the back.

To mute/unmute the RF channel:

- Press the jog-dial.
 - ✓ The RF Status menu opens.



- Rotate and press the jog-dial to change the settings. You can select between Rf on and Rf Mute.
- Confirm by selecting Save or discard the changes by selecting Back.

The RF Channels have been muted/unmuted.

Network

In this menu item, you can configure the settings for the network connection.

Main Network Dante Headph	none Info License Reset Legal
IP Mode	Autolp/mDNS
IP Addr	169.254.1.1
Netmask	255.255.0.0
Gateway	0.0.0

You can make the following settings here:

IP Mode

- Manual
 - You can change the IP Address, the Netmask and the Gateway.
- Manual/mDNS
 - You can change the IP Address, the Netmask and the Gateway.
- Autolp
 - You can **not** change the IP Address, the Netmask and the Gateway.
- Autolp/mDNS
 - You can **not** change the IP Address, the Netmask and the Gateway.



Dante

In this menu item, you can view information about the two Dante® connections.

Main Network Dante Headphone Info	License Reset Legal
Sampling rate	48 kHz
Primary	Autolp/mDNS
Secondary	Autolp/mDNS
Status	connected

The following information are displayed:

- Sampling rate
- IP mode for Primary
- IP mode for Secondary
- Status

To display a Dante® connection:

- Press the jog-dial to change the Dante[®] connection.
- Rotate the jog-dial to change between Primary and Secondary.

Dante	
Primary	Secondary
IP Addr	XX.XX.XX.XX
Netmask	XXX.XXX.XXX.XXX
Gateway	XX.XX.XX.X

Press the jog-dial to enter the setting.

The selected Dante[®] connection is displayed.

Headphone

In this menu item, you can select the headphone output.

You have to set up audio links via LinkDesk or Spectera WebUI for the mobile devices.

If no audio link is set this note will appear:



i First you have to set up audio links in LinkDesk or Spectera WebUI.

To select an audio link:

- Press the jog-dial to enter the headphone menu. Each audio output will be shown independent.
 - ✓ The created audio links appear.



Turn the jog-dial to select the wanted audio link.

✓ The name of the selected link pulses two times.





- Press the jog-dial to return to the main menu.
 - ✓ The selected link appears.



✓ You can now listen to the selected audio link.



Info

In this menu item, general information can be shown here.

Main Network Dante	Headphone Info License Reset Legal
Name	BaseStation Name
Serial	XXXXXXXXXXX
Firmware	vX.X.X

Name: The name of the Base Station.

Serial: The serial number of the Base Station.

Firmware: The installed firmware version.



License

In this menu item, information about the license can be shown here.

i A license has to be activated, otherwise you cannot use the Base Station.

You can activate a license via LinkDesk or Spectera WebUI.

Only one license per Base Station is possible.

The license specifies the country-specific frequency ranges and the RF power.

No license is activated:



A license is activated



Name of the purchased license:

- Spectera LIC (ZONE 01)
- ...
- Spectera LIC (ZONE XX)

State: Status of the license.

- activated
- unknown



Code:

- The activated license number has 18 digits.
- n/a



Reset

In this menu item, you can reset the Base Station to its 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.

Main Network Dante Headphone Info License Reset Legal Press to reset Base Station

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.

🗸 т

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

Legal

In this menu item, legal information can be shown.

Legal information about the Base Station and connected antennas are displayed depending on the activated license.

If no label are available, the display shows:

Main Network Dante Headphone Info License Reset Legal No legal information available

Updating the Base Station

You can update the firmware of the Base Station via LinkDesk or Spectera WebUI.

All Spectera devices must use the same firmware. The Base Station determines the firmware version.

Please note that firmware versions are not backward compatible.

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 the firmware:

- If you want to update the Base Station via LinkDesk, follow the steps described here: Updating firmware (Base Station).
 - ✓ The LED is flashing green and red during the update.
- If you want to update the Base Station via Spectera WebUI, follow the steps described here: Updating firmware (Base Station).
 - The LED is flashing green and red during the update.

When the update is installed, the Base Station restarts.

The update will be installed on the connected antennas automatically.



The new firmware is distributed to the other devices via the Base Station.

Updating the SEK Updating the DAD

SEK

Product overview Inserting and removing the rechargeable battery Mounting the antenna Using the protection cap Connecting a microphone / instrument Connecting earphones Changing the belt clip Meaning of the LEDs Switching the SEK on and off Information on the display Pairing the SEK to the Base Station Updating the SEK
Product overview



1 LEDs

• see Meaning of the LEDs

2 Status LED

• see Meaning of the LEDs

3 Phones 3.5 mm jack

- see Connecting earphones
- 4 Microphone / Instrument input
 - see Connecting a microphone / instrument

5 Rotary encoder

- with push function
- see Information on the display

6 Antenna

• see Mounting the antenna



7 Display

• see Information on the display

- 8 ON/OFF Button
 - see Switching the SEK on and off

Inserting and removing the rechargeable battery

The SEK operates only with the recharable battery BA 70 (seperate accessory).

i The BA 70 can be charged in the L 70 USB, the L 6000 with LM 6070 or with the SEK in the CHG 70N-C. See Charging the rechargeable battery, Charging the rechargeable batteries in the L 6000 charger and Charging the rechargeable battery.



To insert the recharable battery into the SEK:

Press the two catches and open the battery compartment cover.





▶ Insert the BA 70 rechargeable battery in the battery compartment.





Close the battery compartment.







Mounting the antenna

Two antennas are available, one for each frequency range.

For more information see Spectera SEK Antenna.

The antenna is screwed on when it is delivered.

To mount the antenna to the SEK:

- Connect the antenna to the SEK antenna socket.
- ▶ Tightly screw the antenna coupling ring onto the SEK antenna socket.



The antenna has been mounted.

Using the protection cap

The cap protects the microphone / instrument input, when not in use.

To screw the cap on the SEK:

Screw the cap on the microphone / instrument input socket.







Connecting a microphone / instrument

You can connect a microphone or instrument to the SEK.

To connect a microphone to the SEK:

- Use a 3-pin audio connector to connect the microphone cable to the SEK microphone / instrument input socket.
- Screw the plug's coupling ring onto the microphone / instrument input thread of the SEK.





To connect a instrument to the SEK:

- Use a 3-pin audio connector to connect the instrument cable to the SEK microphone / instrument input socket.
- Screw the plug's coupling ring onto the microphone / instrument input thread of the SEK.





A microphone or instrument has been connected.



Connecting earphones

i You have to set up an audio link in LinkDesk or Spectera WebUI.

CAUTION



Danger due to high volume levels

Volume levels that are too high may damage your hearing.

Turn down the volume of the headphone output before you put on the headphone.

To connect earphones to the SEK:

Turn down the volume.

i The volume can be altered between -100 dB to +27.5 dB in steps of 0.5 dB.

Insert the cable's 3.5 mm jack plug into the phones socket on the SEK.





Changing the belt clip

You can change the belt clip on the SEK or flip it over depending on how you want to wear it.



To remove the belt clip:

- Hold down the belt clip with the thump to the housing.
- Use the other hand to carefully pull back and then out one side of the belt clip.





While still holding the belt clip down, carefully pull back and then out the other side of the belt clip.



To insert the belt clip:

- **i** Always insert one side before the other, not at the same time, as otherwise the belt clip could bend.
- Hold down the belt clip with the thump to the housing.
- Insert one side of the belt clip first.





► Then insert the second side of the belt clip.







Meaning of the LEDs

The Status LED and LEDs can indicate the following information.



1 Status LED

2 LEDs

Status LED

The **Status LED** provides information about the status between the SEK and Base Station, as well as status information for the SEK.

0	The LED is off: • SEK is switched off
•	The LED is orange: • SEK is starting
	The LED is flashing blue:Searching for a new Base Station to pair
••••••••••	 The LED is flashing blue quickly: Pairing to new Base Station is in progress SEK turns off after five minutes, when no Base Station was found
	The LED is blue:Connected to new Base Station, waiting for confirmation
	The LED is flashing green: • SEK is searching for previously paired Base Station



LEDs

The **LEDs** provide information about the mic line input level, if a microphone or instrument is connected to the SEK.

i You have to set up an audio link in LinkDesk or Spectera WebUI.







Switching the SEK on and off

To switch the SEK on:

Short-press the ON/OFF button.



✓ The SEK is starting. The status LED is orange.

To put the SEK in pairing mode:

- ▶ When the SEK is off, long press the ON/OFF button.
 - The SEK is searching for a new Base Station to pair. The status LED is flashing blue.

To switch the SEK off:

- Short-press the ON/OFF button.
 - The status LED goes off.
 - **i** The display will stay on when the device is switched off or the battery has been removed.

/ The SEK has been switched on/off.

When the SEK is unpaired via the software (LinkDesk or Spectera WebUI), the SEK will automatically switch into pairing mode. The status LED is flashing blue.



Information on the display

You can view the following information on the SEKs display.

i The display will stay on when the device is switched off or the battery has been removed.

The order of the displayed information changes depending on the setting.

Press the rotary encoder to navigate through the menu.



To turn on the backlight:

- **i** No microphone or headphone is connected.
- Press the rotary encoder.
 - The backlight is on for five seconds.

To check the battery status:

- **i** No audio link is set.
- Press the rotary encoder for two times.



✓ The battery status displays for five seconds.



To display the headphone volume:

- **i** Only available if in-ear audio link mode is activated.
- Press the rotary encoder.
 - ✓ The backlight is on for five seconds.
- > Press the rotary encoder again within 5 seconds after the first press.

✓ The headphone volume displays for five seconds.



- **i** The volume can be altered between -100 dB to +27.5 dB in steps of 0.5 dB.
- > Turn the rotary encoder slowly to change the volume.
 - ✓ The volume changes by 0.5 dB per click.
- > Turn the rotary encoder quick to change the volume.
 - The volume changes dynamically in larger increments.

To display the mic/line level:

- **i** Only available if mic audio link is activated.
- Press the rotary encoder.
 - The backlight is on for five seconds.
- Press the rotary encoder again within 5 seconds after the first press.
 - ✓ The mic/line level is displayed. The five LEDs show the input level.

To display the E-label:

- **i** The SEK is paired to the Base Station and the activated license uses E-lables.
- Press the rotary encoder.
 - The backlight is on for five seconds.
- Press the rotary encoder till the end of the menu.
- Press the rotary encoder long for E-label screen.
 - ✓ The first page of the E-label displays.
- Press the rotary encoder again to display subsequent E-labels.



- > Press the rotary encoder long to return to the information screen.
- > Press the rotary encoder for two seconds to leave the E-label menu.

Pairing the SEK to the Base Station

i Mobile devices can only be paired and operated with one Base Station at a time.

You can pair up to 128 mobile devices to a Base Station within one RF channel.

Please make sure that on the Base Station

- a RF channel is configured and
- this RF channel is activated (RF on).

To pair the SEK to a Base Station:

- Put the Base Station into Pairing Mode using LinkDesk or Spectera WebUI.
 - ✓ The LED flashes blue.
 - **i** Pairing Mode is activated for five minutes. The audio signal is not interrupted.
- ▶ While the SEK is off, long-press the ON/OFF button until the Status LED is blue.
 - \checkmark The status LED is flashing blue while searching for a new Base Station.
 - When the SEK found the Base Station, the status LED is flashing blue quickly and then is blue.

The SEK appears in the software.

- Confirm the pairing in the software, see LinkDesk: Adding mobile devices and Spectera WebUI: Pairing/unpairing mobile devices.
 - The status LED of the SEK is flashing green quickly while connecting. When connecting is completed, the status LED is green.

To unpair the SEK from a Base Station:

▶ The SEK can only be unpaired in LinkDesk or Spectera WebUI.

- LinkDesk: Pairing/unpairing mobile devices
- Spectera WebUI: Pairing/unpairing mobile devices
- The SEK will automatically switch to pairing mode. The status LED is flashing blue.



The SEK has been paired to a Base Station.

Updating the SEK

You can update the firmware of the SEK via LinkDesk or Spectera WebUI.

All Spectera devices must use the same firmware version. The Base Station determines the firmware version.

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 the firmware:

- If you want to update the SEK via LinkDesk: Updating firmware (mobile devices).
 - ✓ The Status LED is flashing green and red during the update.
- If you want to update the SEK via Spectera WebUI: Updating firmware (mobile devices).
 - ✓ The Status LED is flashing green and red during the update.

The firmware has been updated.

DAD

Product overview Information on antenna setup Meaning of the LED Placing on a stand Connecting/disconnecting the antenna Antenna cable extension Updating the DAD

Product overview



1 LED to indicate the status

- see Meaning of the LED
- 2 Hole for rigging safety cable
- 3 Ruggedized RJ45
 - see Connecting/disconnecting the antenna
- 4 Microphone stand
 - see Information on antenna setup

Information on antenna setup

i Handle with care: The antenna contains electrical components.

Setup with other antennas

- Keep a distance more than 20 m (787.4") between the antenna and another antenna.
- Keep a distance more than 0.5 m (19.69") between the antenna and a wall.





Setup with a mobile device

• Keep a distance more than 5 m (169.85") between the antenna and the mobile device.





Meaning of the LED

The LED on top and below indicates the same information.





Placing on a stand

The thread is suitable for mounting on a standard microphone stand with 3/8" or 5/8" thread.

i Handle with care: The antenna contains electrical components.

CAUTION



Personal injury and damage to property if the antennae should tip or fall over

If you do not secure the antennae against tipping or falling over, they may cause personal injury and damage to property.

Secure antennae so that they cannot tip and fall over. Use safety wires for this purpose. The safety wires, rope terminations and coupling links must comply in their dimensioning and condition with the regulations and standards of the country in which they are used!



To place the DAD on a stand:

Screw the DAD to the stand. Make sure to use the correct hole! • SENNHEISER \checkmark The DAD has been placed on a stand.

Connecting/disconnecting the antenna

The cable supplies power and exchanges data.

i Handle with care: The antenna contains electrical components.

The cable must

- be a CAT5e or higher,
- have ruggedized plugs and
- not extend 100 m (3937").
- **i** We recommend using a antenna cable cat 5e (see Accessories for the DAD).

To connect the antenna to the Base Station:

- Observe the information: Information on antenna setup.
 - **i** The antenna must be connected directly to the Base Station, with no switch in between.

Plug on side of the cable into the antenna.







Plug the other side of the cable into one antenna port (A, B, C or D) at the rear site of the Base Station.



✓ The LED flashes green to connect to the Base Station.

The LED is green, when the antenna is connected to the Base Station and and one or both RF channels are active.

Or the LED is yellow, when the antenna is connected to the Base Station and the radio signal is muted.

Or the LED is flashing green and red, when the firmware is updating automatically.

- i If the Base Station is in standby, the DAD is off.
- > You can connect up to four antennas to one Base Station.

The Base Station has two independend RF channels. Both variants of the antenna (UHF and 1G4) can be connected to the Base Station at the same time.

To disconnect the antenna from the Base Station:

- Hold the push button down.
- Unplug the cable from the Base Station.

To disconnect the cable from the antenna:

Hold the snap-in nose down.



Unplug the cable from the antenna.

The antenna has been connected/disconnected.

Related information Antenna cable extension



Antenna cable extension

Longer cable distances are possible with the use of fiber optic cables and media converters.

Sennheiser tested the recommend converters for a complete distance of 4 km (157480.31").

We only recommend the following converters for fully tested functionality:

- Converter with PoE for DAD antenna Lantronix M/GE-PSW-PSE-01
- Converter for the Base Station Lantronix M/GE-T-SFP-01

	100 m (< 3937.01")	M/GE-T-SFP-01	//	M/GE-PSW-PSI	< 100 m (< 3937.01*)
i	The media o	converter mus	st not have a switch fun	ction.	


Updating the DAD

The firmware of the antenna will update automatically, when connected to the Base Station.

NO	ТΙ	С	F
INO.		C	-

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 the firmware:

- Connect the antenna to a Base Station. See Connecting/disconnecting the antenna. To update the Base Station, see Updating the Base Station.
 - The LED is flashing green and red during the update.

The firmware has been updated.

CHG 70N-C charger

The CHG 70N-C is a network enabled charger featuring two individual charging bays.

Compatible products:

- EW-DX SKM/EW-DX SKM-S handheld transmitter
- EW-DX SK/EW-DX SK 3-PIN bodypack transmitter
- SPECTERA SEK bidirectional transmitter
- BA 70 rechargeable battery

Product overview Connecting/disconnecting the charger to/from the power supply system Connecting a charger in a network Cascading chargers Charging the rechargeable battery Power saving mode

Product overview





1 Charging slots

- See Charging the rechargeable battery
- 2 Status LED of the charging slots
 - See Charging the rechargeable battery



3 Reset button

- Press and hold for 10 seconds to reset the device's network settings, see Connecting a charger in a network
- Press and hold for 4 seconds to enable power saving mode, see Power saving mode
- 4 DC in connection socket for the NT 12-35 CS power supply unit
 - See Connecting/disconnecting the charger to/from the power supply system
- **5 PoE/Ethernet** RJ45 socket for controlling the device over the network and for Power over Ethernet power supply
 - See Connecting a charger in a network
 - See Connecting/disconnecting the charger to/from the power supply system
 - **i** You can cascade up to 5 devices with only one power supply and one network connection. See Cascading chargers.

Connecting/disconnecting the charger to/from the power supply system

You can operate the charger either with the Sennheiser NT 12-35 CS power supply unit or with Power over Ethernet (PoE IEEE 802.3af Class 0). Please refer to the following information.

Power from the NT 12-35 CS power supply unit

- Use only the NT 12-35 CS power supply unit from Sennheiser. It is designed for your charger and ensures safe operation.
 - **1** The power supply unit is available either separately (Sennheiser article number 508995) or together with the charger as a kit (see CHG 70N-C network-enabled charger).

Power from the NT 12-35 CS power supply unit

- **i** Use only the **NT 12-35 CS** power supply unit from Sennheiser. It is designed for your charger and ensures safe operation. The power supply unit is available either separately (Sennheiser article number 508995) or together with the charger as a kit (see CHG 70N-C network-enabled charger).
- Connect the hollow jack plug of the power supply unit to the DC in socket on the charger.
- > Pass the cable through the strain relief.
- Plug the power supply unit into the wall outlet using the correct power cable for your country.





Disconnecting the charger completely from the power supply system

- Unplug the mains cable from the wall socket.
- Unplug the hollow jack plug of the power supply unit from the DC in socket on the charger.

Power over Ethernet (PoE)

- **i** The charger can be powered via **Power over Ethernet** (PoE IEEE 802.3af Class 0).
- Connect the charger to a **PoE**-enabled network switch.



Connecting a charger in a network

You can monitor and control one or more chargers via a network connection using the **Sennheiser Wireless Systems Manager (WSM)** or **Sennheiser Control Cockpit (SCC)** software.

i The network does not have to be a homogeneous network including only chargers. You can integrate the charger into your existing network infrastructure with any other types of devices.



You can integrate the devices into the network individually or cascade up to 5 chargers (see Cascading chargers).

To reset the network settings to their factory defaults:

Hold the **Reset** button for 4 seconds.

i For more information about controlling devices via the Sennheiser Wireless Systems Manager or Sennheiser Control Cockpit software, refer to the instruction manual for the software. You can download the software here:

sennheiser.com/wsm

sennheiser.com/scc



Cascading chargers

You can cascade up to five CHG 70N-C chargers and operate them with a single power supply and a single network connection. This minimizes the cabling required for larger systems.

i The power must be supplied via the NT 12-35 CS power supply unit. Power over Ethernet (PoE) is not possible when cascading.

To cascade the chargers:

- Make sure that no chargers are connected to the power before you start.
- Plug the chargers into each other as shown in the figure.



- Detach the connecting rail on the bottom of the charger.
- Fasten the connecting rail beneath two chargers as shown in the figure.

The power and the network connection are passed on to all devices via the connecting rails.



- Connect the first charger in the cascade to the network (see Connecting a charger in a network).
- Finally, connect the NT 12-35 CS power supply unit to the first charger in the cascade (see Connecting/disconnecting the charger to/from the power supply system).





Charging the rechargeable battery

You can use the CHG 70N-C charger to charge individual BA 70 rechargeable batteries, or to charge EW-DX SKM, EW-DX SKM-S, EW-DX SK, EW-DX SK 3-PIN or Spectera SEK with the BA 70 rechargeable battery already inserted.

To charge the battery:

Insert the individual rechargeable battery or the transmitter with battery already inserted into the charging slot as shown in the figure.



The rechargeable battery will begin charging.

The LED on the charging slot shows the battery's charge level.

LEDs	ゆ
	100 %
	> 60 %
	> 20 %
	> 0 %
	Error

Power saving mode

In power saving mode, the transmitters are charged only once. The charger also does not provide any trickle charge.

To activate power saving mode:

- **i** In power saving mode, the CHG 70N-C cannot be controlled over the network.
- Remove all transmitters and/or rechargeable batteries from the charging slots.
- Hold the **Reset** button for 4 seconds.
 - ✓ The charging slot LEDs light up purple.
- Insert the rechargeable battery/transmitter for charging.
 - The rechargeable battery will begin charging. The charging slot LED turns green once it reaches full charge.

To deactivate power saving mode:

- Disconnect the charger from the power supply system.
- > Then reconnect it to the power supply system.
 - The charger will start up in the configuration that was set before you activated power saving mode.

L 70 USB charger

Connecting/disconnecting the charger to/from the power supply system Charging the rechargeable battery

Connecting/disconnecting the charger to/from the power supply system

To connect the charger to the power supply system:

- Use only the NT 5-20 UCW power supply unit from Sennheiser.
- Connect the USB-C plug on the charging cable to the USB-C port on the side of the charger.
- Plug the power supply unit with the correct country adapter into a suitable power outlet.



To disconnect the charger from the power supply system:

- Unplug the power supply unit from the wall socket.
- Remove the USB-C plug on the charging cable from the USB-C port on the side of the charger.

Charging the rechargeable battery

To charge the BA 70 rechargeable battery in the L 70 USB charger:

Slide the rechargeable battery completely into the charging slot as shown in the figure.



✓ The rechargeable battery will begin charging.

The LED on the charging slot shows the battery's charge level:

LEDs	ゆ
	100 %
	> 60 %
	> 20 %
	> 0 %
	Error

Modular L 6000 charger

These sections contain information about installing, starting up and operating the modular L 6000 charger and the corresponding charging modules.

Product overview Connecting/disconnecting the L 6000 to/from the power supply system Connecting the L 6000 to a network Installing a charging module in the L 6000 charger Installing the L 6000 in a rack Switching the L 6000 on and off Charging the rechargeable batteries in the L 6000 charger Meaning of the LEDs Preparing rechargeable batteries for storage (storage mode) Resetting settings (factory reset) Updating the firmware Operating the L 6000 via a network

Product overview

Front



1 Power status LED

- See Meaning of the LEDs
- 2 Warning status LED
 - See Meaning of the LEDs

3 Reset

• See Resetting settings (factory reset)



4 Dummy caps

See Installing a charging module in the L 6000 charger

Back



1 Power socket

- See Connecting/disconnecting the L 6000 to/from the power supply system
- 2 Ethernet socket
 - See Connecting the L 6000 to a network

Connecting/disconnecting the L 6000 to/from the power supply system

To connect the L 6000 to the power supply system:

- Connect the mains cable IEC connector to the power socket on the rear side of the L 6000.
- Connect the mains cable plug into a suitable wall socket.



To completely disconnect the L 6000 from the power supply system:

- Unplug the mains cable plug from the wall socket.
- Unplug the mains cable IEC connector from the power socket on the rear side of the L 6000.

Connecting the L 6000 to a network

You can monitor and control one or more L 6000s via a network connection using the **Sennheiser Wireless Systems Manager** (WSM) software.

The network does not have to be a homogeneous network including only chargers. You can integrate the L 6000 into your existing network infrastructure with any other types of devices.





To connect the L 6000 to a network:

Connect a network cable with an RJ-45 connector (Cat5 at minimum) to the Ethernet socket on the rear side of the L 6000.



i For more information about controlling devices via the **Sennheiser Wireless Systems Manager** (WSM) software, refer to the instruction manual for the software. You can download the software here:

sennheiser.com/wsm

Installing a charging module in the L 6000 charger

The following charging modules are available for the L 6000 charger.

• LM 6060 -> for charging the BA 60 rechargeable battery



• LM 6061 -> for charging the BA 61 rechargeable battery



• LM 6062 -> for charging the BA 62 rechargeable battery



• LM 6070 -> for charging the BA 70 rechargeable battery





You can combine the LM 6060, LM 6061, LM 6062 and LM 6070 in any way in the L 6000 charger.

To install a charging module in the L 6000 charger:

- Completely disconnect the L 6000 charger from the power supply system. See Connecting/disconnecting the L 6000 to/from the power supply system.
- Unscrew one of the dummy caps on the L 6000. To do so, you require a Torx 10 screwdriver.



Fully slide the charging module into the open charging slot as shown in the figure.

The charging module can be inserted into the L 6000 housing only in one direction. The Sennheiser lettering on the charging module must face upward.



Tightly screw on the charging module.

Always use the latest firmware for the L 6000 charger (version 2.0 or later) to ensure you have access to the full range of functions. You can download the latest firmware from the following address:

sennheiser.com/I-6000

 For more detailed information about charging the BA 60, BA 61 and BA 62 and BA 70 rechargeable batteries, see Charging the rechargeable batteries in the L 6000 charger.

Installing the L 6000 in a rack

You can install the L 6000 charger in any conventional 19" rack.

The rack mounting angles are already attached to the device.

Always observe the following information during rack mounting.

NOTICE



Material damages caused by devices overheating

When there is insufficient ventilation, the devices mounted in the rack may overheat.

- Ensure that there is sufficient ventilation in the rack, particularly if several devices are installed.
- If necessary, install a fan in the rack.



Support the EM 6000 after installation in the rack. Due to the weight and depth of the device, there is a risk that it may break off in the rack and become damaged as a result.



Version A:

- Use special rack mounting rails.
- The design of the rack used must be suitable for the installation of these mounting rails.

Version B:

- Use a suitable object to support the device on the rear side.
- Ensure that this object cannot become loose.

Switching the L 6000 on and off

The L 6000 does not have a separate on/off switch.

Once the power supply is established, the device is switched on.

See Connecting/disconnecting the L 6000 to/from the power supply system.

Charging the rechargeable batteries in the L 6000 charger

To charge the BA 60, BA 61, BA 62 and BA 70 rechargeable batteries with the L 6000 charger, you need the LM 6060, LM 6061, LM 6062 or LM 6070 charging modules.

Before charging, you have to install the charging modules in the L 6000 charger. For installation information, see Installing a charging module in the L 6000 charger.

i Note on the charger firmware

Always use the latest firmware for the L 6000 charger (version 2.0 or later) to ensure you have access to the full range of functions. You can download the latest firmware from the following address:

sennheiser.com/I-6000

i Note on the BA 62 rechargeable battery for the SK 6212 bodypack transmitter

It is possible that new rechargeable batteries cannot be fully charged to 100 % in the first few charging cycles.

The remaining operating time may still be unclear after the first few charging cycles. This will improve over time after more charging cycles because the rechargeable battery calibrates itself.

NOTICE



Damage to the charging contacts in the charging slot

If you touch the contacts in the charging slot, they may become dirty or bent.

When replacing and removing the rechargeable batteries, ensure that you do not touch the charging contacts in the charging slots.



To charge the rechargeable batteries:

- Insert the rechargeable battery into the charging module as shown in the figure until it audibly clicks into place.
 - The rechargeable batteries can be inserted into the charging modules only in one direction. You can see the charge level of the rechargeable batteries from the LEDs on the charging modules (see Meaning of the LEDs).



i At ambient temperatures of 45° C (113° F) and above, the rechargeable batteries can no longer be fully charged. They can only be charged to a maximum of 70 %.

Meaning of the LEDs

You can read the following information from the LEDs on the L 6000 charger and the LM 6060, LM 6061, LM 6062 and LM 6070 charging modules:

L 6000 status LEDs

The L 6000 charger has two status LEDs on the front of the device to the left.



LM 6060 | LM 6061 | LM 6062 | LM 6070 status LEDs

The LM 6060, LM 6061, LM 6062 and LM 6070 modules each have two charging slots. Next to each charging slot, there is a status LED that displays the following status information:





Flashing red >> the charging slot or rechargeable battery is too hot or too cold and the charging process was stopped.



Lights up red >> the rechargeable battery is defective.



Flashing yellow >> the rechargeable battery is being regenerated.



Lights up yellow >> the rechargeable battery is being charged. Charge level 0% to 80%



Flashing green >> the rechargeable battery is being charged. Charge level 81% to 96%



Lights up green >> the rechargeable battery is fully charged. Charge level 100%

LM 6060, LM 6061, LM 6062 and LM 6070 status LEDs in storage mode

If you are operating the L 6000 charger in **storage mode** via **WSM**, the meaning of the status indicators changes. You can find more information under Preparing rechargeable batteries for storage (storage mode).

Preparing rechargeable batteries for storage (storage mode)

If you are not using the rechargeable batteries for a longer period of time and therefore want to store them, the rechargeable batteries should have a charge of approx. 70%.

You can set this level using the **storage mode** from the Sennheiser Wireless Systems Manager (WSM) software.

- To do so, connect the L 6000 charger to a network (see Connecting the L 6000 to a network) and establish the connection with the WSM software.
 - **i** For more information about controlling devices via the **Sennheiser Wireless Systems Manager** (WSM) software, refer to the instruction manual for the software. You can download the software here:

sennheiser.com/wsm

Meaning of the status LEDs in storage mode

In **storage mode**, the status LEDs next to the individual charging slots show the following status information:





inserted.





Flashing green/red >> rechargeable battery not



Flashing green/yellow >> the rechargeable battery has reached the storage charge level of 70%.



Resetting settings (factory reset)

To reset the L 6000 charger settings to the factory settings:

- ▶ Use a pointed object to press the Reset button on the front of the L 6000 charger.
 - The settings are reset to the factory settings.





Updating the firmware

You can update the firmware for the L 6000 charger using the Sennheiser **Wireless Systems Manager** (WSM) software.

- To do so, connect the L 6000 charger to a network (see Connecting the L 6000 to a network) and establish the connection with the WSM software.
 - **i** For more information about controlling devices via the **Sennheiser Wireless Systems Manager** (WSM) software, refer to the instruction manual for the software. You can download the software here:

sennheiser.com/wsm

i You can find the **latest firmware** on the Digital 6000 product page or in the Sennheiser website's download area:

sennheiser.com/digital-6000

sennheiser.com/download

Operating the L 6000 via a network

You can use the Sennheiser **Wireless Systems Manager** software to operate the charger via a network connection.

- To do so, connect the L 6000 charger to a network (see Connecting the L 6000 to a network) and establish the connection with the WSM software.
 - **i** For more information about controlling devices via the **Sennheiser Wireless Systems Manager** (WSM) software, refer to the instruction manual for the software. You can download the software here:

sennheiser.com/wsm

You can perform the following actions using WSM:

- Update the L 6000 charger firmware
- Prepare rechargeable batteries for storage (see Preparing rechargeable batteries for storage (storage mode)).

Cleaning and maintenance

Note the following information when cleaning and maintaining products of the Spectera series.

	NOTICE		
Λ	Liquids can damage the electronics of the product		
<u>/:</u> \	Liquids entering the product housing can cause a short-circuit and damage the electronics.		
	Keep all liquids away from the products.		
	Do not use any solvents or cleansing agents.		
	Disconnect the mains-operated products from the power supply system and remove rechargeable batteries and batteries (if present) before you begin cleaning.		
	Clean all products only with a soft, dry cloth.		

Note the special cleaning instructions below for the following products.

Replacing the Base Stations fan filter

Check the filter from time to time and replace it if necessary. See Changing the fan filter.

Cleaning the L 70 USB and CHG 70N chargers

- Remove all rechargeable batteries from the charging slots.
- Disconnect the charger from the power supply system before cleaning.
- Clean the product with a dry cloth.
- In addition, use a brush to remove dust from the charging slots.
- Clean the charging contacts from time to time with a cotton swab, for instance.



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 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 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 <u>first time</u> 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 device password



Resetting 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.

For an initial setup of the WebUI, we recommend following these first steps to successfully configure the system from the start:

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

Activating 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.

Entitlement Activation	
Activation Code	
Submit Skip	



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 the 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 the data collection
- the magnifying glass to enable the data collection.

The data collection has been enabled/disabled.

Scanning 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 in order to get a small extract without any details or
- via the Frequency Scan tab with 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 for RF channel).

To scan the RF frequency via the RF configuration tab:

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

MARAAN		

- 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 for RF channel

Assigning an antenna for 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 4 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 becomes 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 RF frequency

 \checkmark

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 the 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.

Mob	oile Devices		
▽	Name	RFCh Info Ider	nt 🔆 Battery RFInfo IF 🏴 _{RSSI}
	SeMi]• 4 《	Pair Check PIN 249461

Verify the PIN on the mobile device and click on Pair.

The mobile device has been paired successfully. The device state color changes to:

- Ogreen (successfully paired)
- A gray (assigned RF channel not on air)
- 😬 yellow (firmware mismatch) or
- the red (unconnected, no RF channel selected, not available)

To unpair a mobile device:



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:



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 audio link mode (IEM)

You can select the audio mode for your IEM link.

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

The following modes are available:



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 RF channel

You can assign an 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 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 audio channel (Mic/Line)
 - Selecting audio channel (IEM link)
 - Selecting IEM audio interface
- **i** You can route audio links to several channels. Routing can be done 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.



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

Related information RF Configuration Base Station Audio Interfaces Mobile Devices Activating 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 Configuration				
abla RF Channel	rauhf 10 ⊙ ☆			
	●) N+l: -100dBr	• •		
RF Power 50 v mW ERP RF Startup Active v		·		
▷ 2				

RF Channel

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

Frequency

- Settings for frequency of the RF channel
- The input is accepted via the ENTER key
 - **i** 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
 - **i** 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
 - **i** The input cannot be accepted by switching with **TAB**.
 - **i** 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
 - **i** 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 after standby mode.

Antenna



- Readiness status of the RF channel
- Identification button for configured antenna (flashes 3x white)
- LED Brightness of the Antenna LED (off, dim, standard, bright)
- ⁴⁶ 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 for RF channel

Scanning 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 in order to get a small extract without any details or
- via the Frequency Scan tab with 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 for RF channel).

To scan the RF frequency via the RF configuration tab:

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

	 	J

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.

\bigtriangledown RF Scan			
	MAMARIAN		

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 for RF channel

Configuring RF channels

Here you can find out how to configure the RF channel right from the start.

i 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 for 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 4 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 becomes 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 RF frequency

 \checkmark



Base Station

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

Base Station			
1 💿 💿	psu 🥝 1 🛛		
BaseStation SeMi			
Pairing	Enable Pairing		
Firmware Version	1.0		
\bigtriangledown			
Firmware Update			
Base Station	Update		
Mobile Devices			
Settings			
Base Station	Factory Reset		
Audio	Load Save		
Walk Test			
Interval	2 Seconds 🗸		
Control	Start		
Support Info	Download		

General

- **O** Device State Color
- Identify Button (see Identifying Base Station)
- Indication for pending actions
- Connection status and number of connected power supply units
- Name of your Base Station (see Changing 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 firmware (Base Station))
- Mobile Devices
 - Update service for mobile devices (see Updating 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 info
 - **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 device name Updating firmware (Base Station) Updating firmware (mobile devices) Resetting the Base Station Pairing/unpairing mobile devices Identifying Base Station Saving/Loading audio settings

Changing device name

You can change the device name for your Base Station.

i 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 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.

Firmware Update		
Base Station	Upload 18%	
Mobile Devices	Update	

 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. When the update is installed.

Related information Updating firmware (mobile devices)

Updating 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.
 - \checkmark The update process will start automatically and show the progress in

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

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, don't remove the battery from the mobile devices during the process and don't 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 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 the 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.

Mob	oile Devices		
▽	Name	RFCh Info Ider	nt 🔆 Battery RFInfo IF 🏴 _{RSSI}
	SeMi]• 4 《	Pair Check PIN 249461

Verify the PIN on the mobile device and click on Pair.

The mobile device has been paired successfully. The device state color changes to:

- Ogreen (successfully paired)
- A gray (assigned RF channel not on air)
- 😬 yellow (firmware mismatch) or
- the red (unconnected, no RF channel selected, not available)

To unpair a mobile device:





Identifying 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 ldentify icon.

The icon on the Base Station card flashes. The display of the Base Station 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 Intput
- Follow MADI 2 Intput
- Follow World Clock Input
- Follow Audio Network

Audio Interfaces					
[▷] Interface					
▷ Audio Net Dante®	ю 🤡 🖈	pri 🔺 sec 🔺			
D MADI 1	IN 🔺 🕫	оит 📥 🕫			
D MADI 2	IN 🔔 🕫	оит 🔺 🖍			
▷ Word Clock	IN 🕰	ουτ 🤡			
Default IO Settings	IN 🔍	out 🗸 🗸 🗸			

The interface status is indicated by the following colors:

- A: 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 default audio input/output source

Selecting 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.

Mobile Devices								
∇ Name	RFCh Info Ident 🔆 Batter	y RF Info	міс			IEM		
		IF 🆻 📩	LQI Audio	Mic Settings		LQI Audio	IEM Settings	
▽ \$ SeMi				? <u>,</u> — (ar	⊳12 ~~ ● Сн аз отг ● 1		Dante*	🔒 🤮 -208 🖌
use for walk test				Mic/Line	Auto (Unknown) 🛛 👻		Interface	Dante* V
		-40		Cable Emulation	OFF v		Audio Channel	
		-50	-9	Low Cut	OFF v	-12	Link Mode	LIVE Y
		-60	-15	Preamp Gain	12 dB 🍦		Focus Mode	
		-65	-30	Test Tone	OFF 🗸 🔶	-30	Balance	Center v 🔷
		-75	-42	Link Mode	LIVE V	-42	Volume	-20 dB 🔷
		-80	-66	Ch ± 🗸	Ch D M1 M2	-90	Volume Min	MUTE V 🔷
		d0m					Volume Max	+27.5 dB v

The following interactions can be made for each mobile device:

General

- Changing the name of the device (see Changing device name)
- Assigning an RF channel (see Assigning 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 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)
- OFF Low Cut (see Activating/deactivating Low Cut)
- dB Preamp Gain (see Setting Preamp Gain)
- OFF 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 RF channel)

In-Ear Monitoring (IEM)

- Interface (see Selecting default audio input/output source)
- Channel (see Selecting 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 device name Assigning RF channel Setting the LED brightness Identifying mobile device Pairing/unpairing mobile devices

IEM settings

Selecting IEM audio interface Selecting 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 Preamp Gain Activating/deactivating Test Tone Selecting audio link mode (Mic/Line) Adding/removing 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 the 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.

Mob	oile Devices							
V	Name	RF Ch	Info	Ident	∦	Battery	RF Info	o ∄ # RSSI
	SeMi				Pa	ir ^{Checl} 249	k PIN 461	

- 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)
 - A gray (assigned RF channel not on air)
 - yellow (firmware mismatch) or
 - 4 red (unconnected, no RF channel selected, not available)

To unpair a mobile device:

- **i** 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 unpaired successfully.

The mobile devices have been successfully paired/unpaired.



Identifying 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 RF channel

You can assign an 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.

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

The following modes are available:



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.

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:



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 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 audio channel (Mic/Line)
 - Selecting audio channel (IEM link)
 - Selecting IEM audio interface
- **i** You can route audio links to several channels. Routing can be done 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 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 done 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 device name

You can change the device name for your mobile device.

i 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.

The LED brightness can be adjusted into 4 steps:



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 IEM audio interface

You can select the desired audio interface as 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 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 audio channel (Mic/Line)
 - Selecting audio channel (IEM link)
 - Selecting IEM audio interface
- **i** It is also possible to select an already 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 the Focus Mode for your IEM link.

i 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

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

To activate the 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 the Focus Mode:

Select the value **OFF**.

The 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 set 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

<u>/)2/</u>	

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.

i Cable emulation is only applicable for the line input.

The following presets are available:

- OFF
- Short
- Mid
- Long

 \checkmark

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 the 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 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 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 steps 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**.





Activating 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.

Entitlement Activation	
Activation Code	
Submit Skip	

To activate the license:

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



Frequency Scan

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



i Make sure that no antenna is activated!

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

- Selecting the connected antenna to the Base Station A-D
- 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 RF frequency

Scanning 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 in order to get a small extract without any details or
- via the Frequency Scan tab with 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 for RF channel).

To scan the RF frequency via the RF configuration tab:

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

MARAAN		

- 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 for 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 directly select the desired channels and assign them to your audio network input or output.

SENNHEISER	Spectera WebUI Conf	iguratio		reque	ncy !	Scan	Aud	lio L	evels	5 A	udio	010																			
Audio Inputs	Audio Inputs and Outputs																														
Base Station Audio Inputs (IEM)																															
	Audio Chan	nel 1	2	3	4 8	6		8	9	10	11	12	13	14	15	16	17 1	18 1	19 2	0 2	21 2	22	3 2	6 25	26	27	28	29	30	31 3	2
	Audio Network Dar	nte® 🧕			• •												•		•		•									•	
	ма	DI 1																													
	MAI	DI 2																													
Mobile Device Name	Audio Link M	ode																													
SeMi	L	IVE 🗹																													
Base Station Audio	Outputs (MIC)																														
Mobile Device Name	Audio Link M	ode																													
SeMi		IVE 🗸																													
	Audio Chan	nel 1	2	3	4 5	6	2	8	9	10	11	12	13	14	15	16	17 1	18 1	19 2	0	21 2	22	3 2	4 25	26	27	28	29	30	31 3	2
	Audio Network Dar	ite® 🗹																													
	MA	DI 1 🗹																													
	MA	DI 2 🗹																													

Related information

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

User manual

Detailed description of the installation, start-up and operation of the LinkDesk software.



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

Related information Get started Basic configuration Productions Base Station Mobile devices Routing Editor Error handling

Get started

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

Related information Downloading and installing Signing in Main views and cards

Downloading and installing

The application is freely available and can be downloaded directly from the Sennheiser website.

To download LinkDesk:

- Navigate to the software product page of Sennheiser.
- Navigate to **Download**.
- Accept the listed **Terms and Conditions** and click on **Download**.
 - The download of the latest software version will be started.

To install the software:

- **i** Please note that you need admin rights for the installation!
- Navigate to the folder of the downloaded software package.
- Double click on the application and follow the setup instructions.

✓ You have successfully downloaded and installed the software.

Related information Signing in



Signing in

To start the application, you can sign up for a new account or log in with an existing account.



When you start the software, you will be redirected to a log-in window. Here you can sign up and log in with your new account.

When you sign up for Sennheiser, your credentials will be valid for all brands within the Sennheiser Group.

i You can also skip the log-in and start the software without registration. You can then sign up or log in from the application at any time.

i The login and account data assigned to your account are saved as long as your user account exists. You can delete your user account at any time. Further information can be found in the **consent to the processing of personal data**, which you must read and confirm during the registration process.

To sign up and log in:

- Click on LOG IN / REGISTER.
 - You will be redirected to the registration window. You can log in here if you already have an account.



Log in to your Sennheiser account

il ad	dress
	Next
	Forgot your password?
	OR
	Don't have an account? <mark>Sign up now</mark>
	One login, multiple experiences!
	Your Sennheiser credentials are now valid for all brands
	within the Sennheiser group.

- If you do not yet have an account, click on Sign up now and fill in your registration data:
 - e-mail address*
 - country
 - ✓ A confirmation code will be sent to your registered e-mail address.



Confirm your consent to the processing of personal data and click on **Next**.

SENNHEISER

Create a profile with Sennheiser

nail address *
ountry *
Country
Based on your country, we'll save your personal data at the closest possible location according to our privacy policy.
O I consent to the processing of personal data *
Cancel
Galicei
ready have an account? Click here to log in.
One login, multiple experiences!
One login, multiple experiences! Your Sennheiser credentials are now valid for all brands
One login, multiple experiences! Your Sennheiser credentials are now valid for all brands within the Sennheiser group.

In the second step, type in your personal data. Mandatory blanks are marked with an asterisk*:

- user name*,
- surname,
- family name,
- phone number.



Next, set your new password and enter the conformation code from your e-mail.

SENNHEISER

Create a profile with Sennheiser

email address	
dada@s	ennheiser.com
Country	
Germany	y .
We sent a	verification code to dada@sennheiser.com, please
baste it he	re.
Verification co	de *
Set new	/ nassword
Set new	<i>ı</i> password
Set new	/ password
Set new	v password
Set new New password repeat new pas	v password *
Set new New password repeat new pas	v password * sword *
Set new New password repeat new pas	y password * asword *

Already have an account? Click here to log in.

- Click **Create account** to log in with your credentials.
 - **i** Your Sennheiser credentials are now valid for all brands within the Sennheiser Group. That way, you only need one log-in name and one password.

To start directly without signing up / logging in:

Click on **DO IT LATER**.

The application is started immediately. In order to sign up or log in afterwords, click on the user icon at the top right and then on **Log in**.

You have successfully signed up and/or logged in.

Main views and cards

The main view of the application shows general settings and already created cards.

🔽 SENNHEISER 📃 Productions		🔺 🙆 🏟 – 🗆 🗙	
SORT BY: Latest Edit 🔻		CREATE	
Productions			
Rock Festival - Hanover Last edited less than a minute ago	Concert - Berlin Last edited 3 minutes ago	Gig - Munich Last edited 3 minutes ago	
Device sync ON	Device sync OFF	Device sync OFF	

The top bar contains general settings that can be customized.

Beneath this, all production cards are displayed that are active or inactive depending on the sync status. The production cards can be sorted by:

- Latest edit
- Oldest edit
- Alphabetically A-Z
- Alphabetically Z-A

Related information Settings Productions Device State Colors

Settings

Under Settings, various customizations can be configured for the user and the software.

General

- Setting the user's current country
- Setting the time zone
- Setting the date format



User

• Sign in/registration

Productions

Productions contain a virtual configuration set of devices and settings that are prepared for an upcoming event.

Within a production card, all the required components are clearly visualized in a structural sequence arranged among each other, which enables easy handling and quick access to the important elements.



Each production is divided into sections (only visible once the Base Station and an antenna have been added):

- Frequency Information Visualization
 - Live display of the current frequency spectrum with occupied and free frequencies
 - Scanning RF Spectrum
- Base Stations
 - Summary of all connected or planned Base Stations
- Mobile devices
 - Summary of all connected or planned mobile devices

Related information

Scanning RF spectrum Creating new productions Adding Base Stations Adding mobile devices

Device State Colors

The displayed colors of the device symbols provide a visual indication of the current status of the device.

In addition to the colors, associated messages/warnings are displayed. The following colors may occur:

lcon	Color	Meaning
A	GREEN	successful status (e.g. normal operation mode)
	YELLOW	warning (e.g. not properly configured device (e.g. no audio links))
A	RED	error (e. g. firmware mismatch)
A	WHITE	neutral status (e.g. not connected / offline device)

MOBILE	E DEVICES			0 115	• 4	3	• 16	+
 Lead s RF CHAI BASE ST 100% 	singer 1 NNEL 1 FATION	Laura () SIGNAI C RF CHAI BASE ST 100%	bass LOSS NNEL 1 TATION	Jenny Jenny PEAK C RF CHA BASE S D 100%	Y singer NNEL 1 TATION	1 () () ()	John b DISCONI RF CHAN BASE ST	NECTED NECTED NNEL 1 ATION
IEM/IFB 101 102 101 102 101 101 101 101	MIC/LINE	IEM/IFB	MIC/LINE	IEM/IFB 102 1111 102 011 102 011 102 011 102 011 103 011 100 011 100 010 100 010000000000	MIC/LINE			MIC/LINE

Related information Error handling



Basic configuration

Start your basic configuration with the recommended steps.

For an initial setup, we recommend following these first steps to successfully configure the system from the start:

- Creating new productions
- Adding Base Stations
- Activating license
- Activating antennas
- Scanning RF spectrum
- Adding RF channels
- Pairing/unpairing mobile devices

Creating new productions

With productions, you can create a virtual workplace to plan, manage and monitor your real devices for the upcoming event.



To create a new production:

- Click on **CREATE NEW**, to start a new production.
- Enter a name under **Production Information** and click on **CREATE**.



To create a further production:

In the task bar at the top click on **Productions** > **Create**.

i Please note, that the new production will take lead access to devices in the network, while the other productions will lose access.

Enter a name under **Production Information** and click on **CREATE**.

The production has been created.

Related information

Editing meta information Scanning RF spectrum Identifying Base Stations Adding mobile devices

Adding Base Stations

The networked Base Station can be added to the software using an IP address.

In order to add a Base Station, its IP address is required. You can read the IP address on the display of the device (see Network or Dante).

When adding the Base Station for the first time, three intermediate steps are required:

- Identifying the Base Station via IP
- Authenticating the Base Station using the configured password (Claiming)
- Activating the Base Station license (see Activating license)

To add a Base Station:

- In your production card, activate the function DEVICE SYNCHRONIZATION on the left-hand side of the top bar.
- Click on the + symbol in the heading **BASE STATIONS** bar on the right.
- Enter the correct IP address of the Base Station and click on **Search**.

✓ The Base Station has been identified and is displayed in the results.

Add base station		×
SELECTED DEVICE		
CLAIMED Spectera base station		
Status: Adding to production		
CONFIGURATION		
Keep current configuration stored on the base	station?	
No, reset and add Spectera base station a	s unconfigured	
Yes, keep current configuration and add co devices to the production	onnected mobile	
		и

- **i** When the device is used for the first time, you will be prompted to assign a secure password to the device. In this case, the status **Claiming ...** is displayed.
- **i** If the Base Station has already been used with a previous configuration, this will be retrieved when it is added. You will be asked whether you want to keep the current configuration on the Base Station or continue with an unconfigured Base Station.
- 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

 Your Base Station has been added successfully and is displayed on the Base Station card on the top left. If external antennas are connected to the Base Station, they automatically appear on the card (see Activating antennas).

You will then be prompted to activate the license (Activating license) for your region (if it hasn't been activated yet), or to configure at least one broadband channel to enable pairing and communication between the Base Station and mobile devices.

Related information Scanning RF spectrum Activating antennas Activating license Adding RF channels



Activating antennas

Antennas connected to a Base Station must be selected and activated before use.

The connected antennas are displayed with a white marking in the overview card of the Base Station:



i For detailed information on how to connect the antennas to the Base Station, please refer to the chapter Connecting antennas.

To assign one or more connected antennas to the Base Station:

- Click on your Base Station card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Select the RF channel to which you want to add an additional antenna.
- Under ANTENNAS click on + ADD ANTENNA.
 - All connected antennas are displayed.
- Select the antenna that you want to assign to your RF channel.

The antenna has been assigned and is displayed in the overview of the Base Station card.

Scanning RF spectrum

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

You can scan the frequency environment of all antennas connected to the Base Station.

i Make sure that no antenna is activated! If the scan is started with an active antenna, the RF channel is automatically muted until the scan is completed.



Before activating the connected antenna, you can check the occupancy of the frequency spectrum and examine the surroundings for possible frequency interference.

To start the RF Scan:

- From your production card dashboard, click START SCAN on the right side of the top bar.
 - The connected antenna scans the environment and displays a live graphic within the configured RF channel.
 - **i** You can zoom into the spectrum by pressing CMD and using the scroll function of your mouse. If the scan is started with an active antenna, the RF channel is automatically muted until the scan is completed.

To start the RF scan for another antenna:

In the main window of the RF SCAN click on + to select your antenna and then on START SCAN.

The RF spectrum of your connected antennas has been scanned.



Adding RF channels

You can configure an RF channel and assign it to the available devices.

i To configure an RF channel, at least one antenna must be connected to the BS station (see Connecting antennas).

In order to add a RF channel:

- Click on your Base Station card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Click on:

 \checkmark

- the symbol Add RF channel on the Base Station card OR
- the Base Station card and navigate in the right-hand tab to RF CHANNEL > RF SETTINGS > EDIT.
- ✓ A configuration menu for RF channels appears.
- Select the operating antenna.
- Select the RF power and enter your available frequency and bandwidth.
- Click on SAVE to create the RF channel.

The RF channel has been successfully added and the antenna has been muted.

Pairing/unpairing mobile devices

In LinkDesk 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!
- **i** Mobile device cards cannot be re-ordered. Please add devices in the desired order. Newly added devices are always added at last position to the right.

To pair a mobile device:

- In your production card, activate the function DEVICE SYNCHRONIZATION on the left-hand side of the top bar.
- Click on the button MD Manager on the left-hand side of the top bar.
 - A new window Add mobile devices opens.
- Select your Base Station from the drop down list on the left-hand side and activate the **PAIRING MODE**.
- Switch on your mobile device and activate the **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.
- Click on the button in the line of the mobile device to be paired.
 - ✓ A confirmation code is displayed both in LinkDesk and on the mobile device.
- Compare the displayed code at both endpoints.
- In LinkDesk, click on Confirm to pair the selected mobile device.
 - The mobile device has been paired successfully. The device state color changes to:
 - green: successful operation, or
 - yellow: warning (e. g. if the audio links have not yet been assigned (see also Device State Colors)).



To unpair a mobile device:



Productions

In this chapter you will learn the basic information about productions.

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

Related information Creating new productions Editing meta information Activating device synchronization Deleting productions

Creating new productions

With productions, you can create a virtual workplace to plan, manage and monitor your real devices for the upcoming event.



To create a new production:

- Click on **CREATE NEW**, to start a new production.
- Enter a name under **Production Information** and click on **CREATE**.



To create a further production:

In the task bar at the top click on **Productions** > **Create**.

i Please note, that the new production will take lead access to devices in the network, while the other productions will lose access.

Enter a name under **Production Information** and click on **CREATE**.

The production has been created.

Related information

Editing meta information Scanning RF spectrum Identifying Base Stations Adding mobile devices



Editing meta information

You can edit the meta information of your previously created production card. To edit a production:

- Navigate to **Productions** and click on the three dots of the production card.
- Select **Edit** to edit the meta information of the production.
 - **1** You can edit a description with up to 32 characters. Special characters in general and spaces at the beginning and end of the description are not permitted.

The meta information has been edited.

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Activating device synchronization

Device synchronization connects all your devices like a network hub, making it essential for both existing and newly added devices to work together smoothly.

When you turn on device synchronization, it automatically starts the matching process for Base Stations that are already in use and configured. During this process, you'll be guided step-by-step.

i All settings currently on the Base Station will be replaced with the ones saved in LinkDesk during matching.

To activate device synchronization:

- Click on your created production card.
- Click on the button DEVICE SYNCHRONIZATION at the top left of the product card.

Device synchronization has been activated.

You can now add new components such as Base Stations, mobile devices and antennas to your card.

Related information Adding Base Stations Activating antennas



Deleting productions

The previously created productions can simply be deleted.

	CAUTION
	 This production card will be permanently deleted. Deleted production cards can no longer be restored. Only delete the production card if you are sure.
To delete a p	production:
 Navig delet Select 	gate to Productions and click on the three dots of the production to be ed.
🗸 The	production has been deleted permanently.
Related i Creating	nformation new productions



Base Station

The Base Station is the central hardware for managing and monitoring all compatible Spectera products.

The Base Station is used to connect, configure and monitor antennas and mobile devices all in one.

Summarized view



Depending on the configuration, a Base Station can provide the following summarized device information:



- 🐣 the current warnings about the status of the device
- the IP address
- The connected antennas
- the configured RF channels
- the status of the RF channel, e.g. muted, antenna loss or antenna update
- E the number of routed IEF /IFB inputs
- the number of routed MIC/LINE outputs
- the capacity utilization of the entire RF bandwidth



Details view

BAS	E STATION	RF CHANNEL 1	RF CHANNEL 2
Ŋ	BAT-37	me	
((*))	RF CHANNI	EL 1 (MHZ)	
((*))	RF CHANNI	EL 2 (584.000 MHZ)	×
i	Monitoring d	ata	~
Ð	Interface se	ttings	~
Ŷ	Antenna por	ts	~
Θ	Paired devic	es	~
=,	Hardware de	etails	~

By clicking on the card of the Base Station, a details page appears on the right-hand side of the navigation menu. The page shows detailed information about the device and allows you to edit and monitor the settings for ongoing operation:

- BASE STATION
 - Name and status of the Base Station
 - Device State Colors
 - Identifying Base Stations
 - Status of the RF channel
 - Muting/unmuting RF signals
- Device information:
 - Changing device name
 - Updating firmware (Base Station)
- Monitoring data
 - Here you can monitor the hardware health-state, the configured RF channels and the number of connected power supply units
- Interface settings
 - Overview of all available interfaces for incoming and outgoing links and connections
- Antenna ports
 - Overview of all connected antennas and available antenna ports
- Paired devices
 - Overview of all known devices within the RF channels with its number of linked routes
- Hardware details
 - Detailed information of the Base Station

Related information

Adding Base Stations Activating license **Identifying Base Stations** Activating antennas Adding RF channels Configuring RF channels Scanning RF spectrum Adding mobile devices Pairing/unpairing mobile devices Displaying device information Changing device name Configuring interface settings Muting/unmuting RF signals Resetting RF channels **Removing Base Station** Updating firmware (Base Station)

Identifying Base Stations

You can remotely identify your Base Station.

To identify the Base Station:

- On your Base Station Card, click on the 3 dots and then on Identify under the section Base Station.
 - The icon on the Base Station card flashes. The display of the Base Station shows Identify.



Adding Base Stations

The networked Base Station can be added to the software using an IP address.

In order to add a Base Station, its IP address is required. You can read the IP address on the display of the device (see Network or Dante).

When adding the Base Station for the first time, three intermediate steps are required:

- Identifying the Base Station via IP
- Authenticating the Base Station using the configured password (Claiming)
- Activating the Base Station license (see Activating license)

To add a Base Station:

- In your production card, activate the function DEVICE SYNCHRONIZATION on the left-hand side of the top bar.
- Click on the + symbol in the heading **BASE STATIONS** bar on the right.
- Enter the correct IP address of the Base Station and click on **Search**.

✓ The Base Station has been identified and is displayed in the results.

Add base station		×
SELECTED DEVICE		
CLAIMED Spectera base station		
Status: Adding to production		
CONFIGURATION		
Keep current configuration stored on the base	station?	
No, reset and add Spectera base station a	s unconfigured	
Yes, keep current configuration and add co devices to the production	onnected mobile	
		и

- **i** When the device is used for the first time, you will be prompted to assign a secure password to the device. In this case, the status **Claiming ...** is displayed.
- **i** If the Base Station has already been used with a previous configuration, this will be retrieved when it is added. You will be asked whether you want to keep the current configuration on the Base Station or continue with an unconfigured Base Station.
- 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

 Your Base Station has been added successfully and is displayed on the Base Station card on the top left. If external antennas are connected to the Base Station, they automatically appear on the card (see Activating antennas).

You will then be prompted to activate the license (Activating license) for your region (if it hasn't been activated yet), or to configure at least one broadband channel to enable pairing and communication between the Base Station and mobile devices.

Related information Scanning RF spectrum Activating antennas Activating license Adding RF channels
Activating license

Here you will learn how to activate your region-specific license for your Base Station.

- **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.

After you have successfully added and claimed your Base Station (see Adding Base Stations) you will be prompted to activate the license.

To activate the license:

Add a new Base Station to your production (see Adding Base Stations).



A new license activation window appears:

Enter your purchased product activation key.

- Read and acknowledge the general terms and the end-user license agreement:



Click ENTER to activate the license.

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Your license has been activated successfully.



Activating antennas

Antennas connected to a Base Station must be selected and activated before use.

The connected antennas are displayed with a white marking in the overview card of the Base Station:



i For detailed information on how to connect the antennas to the Base Station, please refer to the chapter Connecting antennas.

To assign one or more connected antennas to the Base Station:

- Click on your Base Station card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Select the RF channel to which you want to add an additional antenna.
- Under ANTENNAS click on + ADD ANTENNA.
 - All connected antennas are displayed.
- Select the antenna that you want to assign to your RF channel.

The antenna has been assigned and is displayed in the overview of the Base Station card.



Adding RF channels

You can configure an RF channel and assign it to the available devices.

i To configure an RF channel, at least one antenna must be connected to the BS station (see Connecting antennas).

In order to add a RF channel:

- Click on your Base Station card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Click on:

 \checkmark

- the symbol Add RF channel on the Base Station card OR
- the Base Station card and navigate in the right-hand tab to RF CHANNEL > RF SETTINGS > EDIT.
- ✓ A configuration menu for RF channels appears.
- Select the operating antenna.
- Select the RF power and enter your available frequency and bandwidth.
- Click on SAVE to create the RF channel.

The RF channel has been successfully added and the antenna has been muted.



Configuring RF channels

You can adjust the RF channel in its antenna selection, frequency and bandwidth.

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

To configure an RF channel:

- Click on your Base Station card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Navigate to the tab **RF CHANNEL 1** or **RF CHANNEL 2**.
- Under ANTENNAS please select the operating antenna, on which the RF channel is to configured.
 - ✓ The antenna has been selected.
- Adjust the desired frequency and bandwidth under: Channel settings > RF SETTINGS > EDIT.

✓ The RF Channel has been configured.

Scanning RF spectrum

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

You can scan the frequency environment of all antennas connected to the Base Station.

i Make sure that no antenna is activated! If the scan is started with an active antenna, the RF channel is automatically muted until the scan is completed.



Before activating the connected antenna, you can check the occupancy of the frequency spectrum and examine the surroundings for possible frequency interference.

To start the RF Scan:

- From your production card dashboard, click START SCAN on the right side of the top bar.
 - The connected antenna scans the environment and displays a live graphic within the configured RF channel.
 - **i** You can zoom into the spectrum by pressing CMD and using the scroll function of your mouse. If the scan is started with an active antenna, the RF channel is automatically muted until the scan is completed.

To start the RF scan for another antenna:

In the main window of the RF SCAN click on + to select your antenna and then on START SCAN.

The RF spectrum of your connected antennas has been scanned.

Adding mobile devices

You can add mobile devices to your connected Base Station.

i When adding mobile devices for the first time, they need to be paired. Devices that have already been paired and **removed** will be displayed in the MD Manager

and can easily be added back to production using the 📩 button.

To add a mobile device:

- In your production card, activate the function DEVICE SYNCHRONIZATION on the left-hand side of the top bar.
- Click on the button MD Manager on the left-hand side of the top bar.
 - A new window opens and shows a list of all known and connected mobile devices.
- Click on PAIRING MODE to set the Base Station to pairing mode.
 - ✓ The Base Station remains in pairing status for 5 minutes.
- Switch on your mobile device and activate the Pairing Mode if it has not been activated automatically (Switching the SEK on and off, Pairing the SEK to the Base Station).
 - After a few seconds, the available mobile devices are displayed in the list.
- Click on the Add button in the line of the mobile device to be added.
 - A confirmation code is displayed both in LinkDesk and on the mobile device.
- Compare the displayed code at both endpoints.
- In LinkDesk, click on **Confirm** to pair the selected mobile device.
 - The mobile device has been added to the Base Station and is indicated as a separate card. The card shows the connected Base Station and the occupied RF channel. The device state color changes to:
 - green: successful operation, or
 - yellow: warning (e.g. if the audio links have not yet been assigned (see also Device State Colors and Routing Editor).

Pairing/unpairing mobile devices

In LinkDesk 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!
- **i** Mobile device cards cannot be re-ordered. Please add devices in the desired order. Newly added devices are always added at last position to the right.

To pair a mobile device:

- In your production card, activate the function DEVICE SYNCHRONIZATION on the left-hand side of the top bar.
- Click on the button MD Manager on the left-hand side of the top bar.
 - A new window Add mobile devices opens.
- Select your Base Station from the drop down list on the left-hand side and activate the **PAIRING MODE**.
- Switch on your mobile device and activate the **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.
- Click on the button in the line of the mobile device to be paired.
 - ✓ A confirmation code is displayed both in LinkDesk and on the mobile device.
- Compare the displayed code at both endpoints.
- In LinkDesk, click on Confirm to pair the selected mobile device.
 - The mobile device has been paired successfully. The device state color changes to:
 - green: successful operation, or
 - yellow: warning (e. g. if the audio links have not yet been assigned (see also Device State Colors)).



To unpair a mobile device:



Displaying device information

You can display detailed information relating to your Spectera device.

Find out here which device information can be displayed in the details view for **mobile** devices or for the Base Station.

In order to display detailed information:

- Click on the card of your Spectera device (Base Station or mobile device).
 - An additional navigation menu will appear on the right-hand side of the window.
- Observe all the details in the menu by scrolling up and down.

Detailed information are displayed.

Related information Base Station Mobile devices



Changing device name

You can change the device name for your Base Station.

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

To change the device name:

- Click on your Base Station card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Navigate to **BASE STATION** > **Device information**.
- Edit the name under **Device name**.
 - The name is immediately transmitted to the Base Station and saved.

The device name has been changed.



Configuring interface settings

You can configure the interfaces of the inputs and outputs on the device individually.

The following interfaces are available for the Base Station:

- AUDIO NETWORK (DANTE)
- MADI 1
- MADI 2

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- WORD CLOCK
 - **i** Once you select the DANTE interface, configuration must be completed through either the Dante Controller or the Domain Manager.

To select and assign an available interface:

- Click on your Base Station card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Navigate to BASE STATION > Interface Settings.
- Assign the desired audio connections to the available interfaces.

The interface settings have been configured.



Muting/unmuting RF signals

You can mute/unmute the RF signals of the configured channels.

The following RF status are possible:

- w muted RF channel
- wnmuted RF channel

In order to mute/unmute the RF signal:

i Attention! Signal transmission will be stopped immediately on all routed links!
Click on your Base Station card.
An additional navigation menu will appear on the right-hand side of the window.
In the tab BASE STATION click on the icon:

in order to mute the RF channel
in order to unmute the RF channel

The RF signal has been muted/unmuted.



Resetting RF channels

You can reset or remove you configured RF channel from the current production.

NOTICE

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-	<u> </u>

By resetting the RF channel, the connected mobile devices are also removed from this production!

The audio signal of connected devices will be interrupted immediately!

Only remove the channel if no active audio is being used.

To reset the RF channel:

- On your Base Station Card, click on the 3 dots and then on Reset RF Ch 1 under the section RF CHANNEL 1.
- Click on **REMOVE**.
 - **1** This function can also be accessed via the RF Channel context tray (click on the Base Station card and navigate to the context tray menu on the right).



Related information Adding RF channels



Resetting 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.



Removing Base Station

You can delete your configured Base Station from the current production.

NOTICE

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L	•	

By removing the Base Station, the connected mobile devices are also removed from this production!

The audio signal of connected devices will be interrupted immediately!

> Only remove the Base Station if no active audio is being used.

To remove the Base Station:

- On your Base Station Card, click on the 3 dots and then on Delete under the section Base Station.
- Click on OK.

The Base Station has been removed.

Related information Adding Base Stations

Updating firmware (Base Station)

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

The DAD antenna updates automatically (about 20 seconds) after the BS is updated or when the DAD is plugged in. RF signals will pause during the update. You'll see the update status on the BS card.

Please download the latest firmware version for your Base Station under: i sennheiser.com/spectera.

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:

- Click on your Base Station card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Navigate to BASE STATION > Device information.
- Under the current Base Station click on UPDATE and then on Update Version
- Click on UPLOAD FILE and select the manually downloaded .sennpkg file.
 - The firmware file has been selected.
- Click on **UPDATE** to start the update process.
 - The firmware starts the update automatically.
 - 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.

Mobile devices

Mobile devices are bodypack transmitters and/or receivers, which are assigned to a Base Station.

On a mobile device, both incoming in-ear signals and outgoing microphone signals can be sent with one device. To do this, the audio link mode must be set.

i Mobile device cards cannot be re-ordered. Please add devices in the desired order. Newly added devices are always added at last position to the right.

Summarized view



Depending on the configuration, a mobile device can provide the following summarized device information:

- the device state color and the name of the device
- 😬 the current warnings about the status of the device
- the connected RF channels and Base Station
- The battery status
- the IEF /IFB input information:
 - LQI Link Quality Input (LQI)
 - I1 Input channel number (e. g. "I 1" for mono or "I 2" and "I 3" for stereo)
- MIC/LINE the output information
- the current volume status



Detail view



By clicking on the card of the mobile device, a details page appears on the right-hand side of the navigation menu. The page shows detailed information about the device and allows you to edit important settings for ongoing operation:

- Name and status of the devices
 - Changing device name
- O Monitoring data
 - Monitoring the readiness state and the battery status of your mobile device
- Input IEM / IFB
 - Changing the balance
 - Changing the headphone volume
 - Changing the headphone volume limiter
 - Monitoring the selected audio link mode
 - Monitoring the configured audio channel
 - Changing the routing configuration with EDIT ROUTES

Output Mic/Line

- Changing the MIC/LINE SELECTION
- Changing the PREAMP GAIN for the microphone output
- Changing the low cut value in order to minimize the wind noise
- Monitoring the selected audio link mode
- Monitoring the configured audio channel

CD Pairing details

- Details about the connected Base Station
- Details about the active RF channel and
- Details about the capacity utilization of the entire RF bandwidth
- Hardware details
 - Product name
 - Type
 - Serial Number
 - FCC Number
 - Firmware version
 - If a firmware update is available, you can start the update here (Updating firmware (Base Station))

Related information

Pairing/unpairing mobile devices Adding mobile devices Displaying device information Changing device name Configuring IEM/IFB input Configuring MIC/LINE output Removing mobile device Updating firmware (mobile devices)

Pairing/unpairing mobile devices

In LinkDesk 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!
- **i** Mobile device cards cannot be re-ordered. Please add devices in the desired order. Newly added devices are always added at last position to the right.

To pair a mobile device:

- In your production card, activate the function DEVICE SYNCHRONIZATION on the left-hand side of the top bar.
- Click on the button MD Manager on the left-hand side of the top bar.
 - A new window Add mobile devices opens.
- Select your Base Station from the drop down list on the left-hand side and activate the PAIRING MODE.
- Switch on your mobile device and activate the 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.

Click on the button in the line of the mobile device to be paired.

✓ A confirmation code is displayed both in LinkDesk and on the mobile device.



- Compare the displayed code at both endpoints.
- In LinkDesk, click on **Confirm** to pair the selected mobile device.

The mobile device has been paired successfully. The device state color changes to:

- green: successful operation, or
- yellow: warning (e. g. if the audio links have not yet been assigned (see also Device State Colors)).

To unpair a mobile device:

- > You can either
 - click on the **unpair** button of the corresponding device in the MD Manager or
 - click on the three dots of the mobile device card and select the



✓ The mobile device has been unpaired successfully.

The mobile devices have been successfully paired/unpaired.

Related information Device State Colors

Adding mobile devices

You can add mobile devices to your connected Base Station.

i When adding mobile devices for the first time, they need to be paired. Devices that have already been paired and removed will be displayed in the MD Manager

and can easily be added back to production using the 📩 button.

To add a mobile device:

- In your production card, activate the function DEVICE SYNCHRONIZATION on the left-hand side of the top bar.
- Click on the button MD Manager on the left-hand side of the top bar.
 - A new window opens and shows a list of all known and connected mobile devices.
- Click on PAIRING MODE to set the Base Station to pairing mode.
 - ✓ The Base Station remains in pairing status for 5 minutes.
- Switch on your mobile device and activate the Pairing Mode if it has not been activated automatically (Switching the SEK on and off, Pairing the SEK to the Base Station).
 - After a few seconds, the available mobile devices are displayed in the list.
- Click on the Add button in the line of the mobile device to be added.
 - A confirmation code is displayed both in LinkDesk and on the mobile device.
- Compare the displayed code at both endpoints.
- In LinkDesk, click on **Confirm** to pair the selected mobile device.
 - The mobile device has been added to the Base Station and is indicated as a separate card. The card shows the connected Base Station and the occupied RF channel. The device state color changes to:
 - green: successful operation, or
 - yellow: warning (e.g. if the audio links have not yet been assigned (see also Device State Colors and Routing Editor).

Displaying device information

You can display detailed information relating to your Spectera device.

Find out here which device information can be displayed in the details view for **mobile** devices or for the Base Station.

In order to display detailed information:

- Click on the card of your Spectera device (Base Station or mobile device).
 - An additional navigation menu will appear on the right-hand side of the window.
- Observe all the details in the menu by scrolling up and down.

Detailed information are displayed.

Related information Base Station Mobile devices



Changing device name

You can change the device name for your mobile device.

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

To change the device name:

- Click on your mobile device card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Edit the name under **Device name**.
 - The name is immediately transmitted to the mobile device and saved.

The device name has been changed.



Configuring IEM/IFB input

You can adjust the $\ensuremath{\mathsf{BALANCE}}$ and $\ensuremath{\mathsf{VOLUME}}$ of the IEM/IFB input.

WARNING

A

Danger due to high volume levels

Volume levels that are too high may damage your hearing.

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

To configure the IEM/IFB input:

- Click on your mobile device card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Click on the drop-down menu Input IEM/IFB and adapt the settings for:
 - BALANCE
 - HEADPHONE VOLUME
 - HEADPHONE VOLUME LIMITER
- Click on EDIT ROUTES to configure the audio link mode.

Related information Defining audio routes



Configuring MIC/LINE output

You can adjust the PREAMP GAIN and LOW CUT of the Output MIC/ LINE.

WARNING

A

Danger due to high volume levels

Volume levels that are too high may damage your hearing.

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

To configure the MIC/LINE output:

- Click on your mobile device card.
 - An additional navigation menu will appear on the right-hand side of the window.
- Click on the drop-down menu **Output MIC/LINE** and adapt the settings for:
 - PREAMP GAIN, to adjust the pre amplification OR
 - LOW CUT, to minimize wind noise.
- Click on EDIT ROUTES to configure the audio link mode.

Related information Defining audio routes

Removing mobile device

You can remove your mobile devices from your current production.

When you remove a mobile device from the production card, LinkDesk will still remember and keep it paired. You can re-add this device to your production card at any time through the MD Manager.



The mobile device has been removed.

Related information Adding mobile devices

Updating firmware (mobile devices)

The firmware version of the mobile devices can be downloaded and updated manually.

The Base Station update typically ensures that all components are included, so no manual downloads are required. Once the Base Station firmware is updated, the user will be guided through the process of updating the Mobile Devices (MDs). MDs with an older firmware version cannot be used until they are updated.

If the user pairs a mobile device with an outdated firmware, it won't work until the update is done. The update can be started from the mobile device context file.

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

NOTICE



Loss of data if the firmware transfer is interrupted

If the transfer is interrupted, this may lead to a loss of data. The devices may be damaged by this.

- Do not remove any connections to the stationary devices during firmware updates.
- Do not disconnect the devices from the mains power. For portable devices, use fully charged batteries where possible!
- Place the portable devices in a stable position in front of the infrared interface for the duration of the update.

To update your mobile device firmware:

Click on your mobile device card.

An additional navigation menu will appear on the right-hand side of the window.

Navigate to the drop-down menu Hardware details.

- Click on UPLOAD FILE and select the manually downloaded firmware.
 - The firmware file has been selected.
- Click on UPDATE to start the update process.
 - **i** The update is done as a broadcast, meaning all mobile devices with outdated firmware will be recognized and updated one by one.





✓ The firmware has been updated.

Routing Editor

The editor serves as a basic configurator for mobile devices and also provides an overview of all connected devices with their total capacity utilization within an RF spectrum.

The editor can be used to:

- Select connected Base Stations and show up the configured RF channels
- Assign RF channels to mobile devices;
- Configure audio link modes for mobile devices;
- Configure audio types for mobile devices
- Assign up to 32 audio links for IEM/IFB input and MIC output

Routing editor BASE STATION BASE STATION BEFI CAPACITY Sourceton Converters Converte	RF 2 CAPACITY	IN (IEM/IFB) CAPACITY	OUT (MIC/LINE) CAPACITY			2 ×
100%		2 / 32	0 / 32			
Device name RF Ch Audio link mode	ITvpe 1 2	3 4 5 6	7 8 9 10	11 12 13 14	15 16	17 18
	Madi 1 C Madi 2 C Dante Z					
Device 23 RF 1 LIVE	Stereo 🕶 L R					
						CLOSE

1. Routing Settings

Base Station

• Summarized view of the selected base station with the configured channels and inputs/outputs.

Mobile devices

• Selection and display of a mobile device by signal type (IEM or MIC).

Groups

• Possibility to group devices and remove groups or the defined routes.

Routing Settings

- The customized configuration of individual paired mobile devices.
- Device name
 - Display of all paired mobile devices.
- RF channel
 - Display of the channel assignment of the individual mobile device.
- Audio link mode
 - Selection of preset audio link modes with indication of their capacity impact:
 - Not set
 - LIVE Link Density
 - LIVE
 - LIVE Low Latency
 - LIVE Ultra Low Latency
- Mode Type
 - Type of the available mode (stereo / mono).
- Audio Links
 - Assignment of individual links for IEM/MIC, with specification of the existing sound type (stereo/mono).

Related information Defining audio routes Removing audio routes

Defining audio routes

With the routing editor, you can easily route the audio of your connected devices and monitor the capacity impact.

The following settings must be made to route the audio:

- Select the affected input or output
- Select a suitable audio link mode
- Select the audio type
- Assign the audio link number

To select the setting for your IEM or MIC channel:

▶ Under **MOBILE DEVICES** click on 🗐 IEM or G MIC.

✓ The channel has been selected.

To select the Audio Link Mode:

- Navigate to the row of the mobile device to be configured and select the desired mode in the Audio link mode column.
 - **i** Depending on the selected mode, the capacity utilization of the HF channel will be adapted and the influence on important parameters will be shown.

✓ The Audio Link mode has been selected.

NOTICE



This action will reset the audio channel assignment and audio link mode for this device

The Audio might be interrupted.

- Make sure that no live audio is being used.
- Navigate to the row of the mobile device to be configured and select the desired mode in the **Type** column.
 - ✓ The audio type has been selected.

To assign the audio link:

- Navigate to the row of the mobile device to be routed and select the desired link in the numbering column.
 - ✓ The audio link has been assigned.

The Audio links have been routed.



Removing audio routes

You can remove defined audio routes from the routing editor.

NOTICE

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This action will reset the audio channel assignment and audio link mode for this device

The Audio might be interrupted.

Make sure that no live audio is being used.

To remove defined audio routes:

- In your production card, navigate to **ROUTING EDITOR**.
- Activate the check-box of the mobile devices for which the audio routes are to be deleted.
- Click on the button **REMOVE ROUTES** > **OK**.

The defined audio routes have been removed.

Error handling

Summary of the typical error messages that can occur and how to resolve them.



- Base Station is currently in-use and cannot be claimed.
 - ▶ Use a different Base Station or deactivate the sync status in a running production (Activating device synchronization).



Unmute the RF channel (see Muting/unmuting RF signals).



Assign an audio link to the mobile device (see Defining audio routes).

4. Specifications

All technical data and system requirements at a glance.

Spectera System Base Station SEK DAD WebUI LinkDesk CHG 70N-C charger BA 70 rechargeable battery L 70 USB charger Modular L 6000 charger LM 6060 | LM 6061 | LM 6062 | LM 6070 charging modules

Spectera System

Transmission scheme

• Multicarrier, TDMA, TDD

RF channel

- Bandwidth: 6 or 8 MHz countrywise limited
- Mobiles devices: up to 128 per RF channel
- Audio links: up to 128 per RF channel

Radio frequency range

- UHF: 470 608 MHz, 630 698 MHz
- 1G4: 1350 1400 MHz, 1435 1525 MHz
- countrywise limited

Audio frequency response

 20 Hz to 20,000 Hz (±1 dB) (Audio link modes with SeDAC and PCM audio codecs only)

Encryption

• AES 256 CTR Mode exp. >10k years


Audio link modes

MIC/LINE	Mono	Max links per RF carrier	Utilized % of RF carrier	Audio codec	La- tency	Range
Raw Low Latency	Mono	8	12.5 %	PCM	1.0 ms	Redu ced
Raw	Mono	16	6.25 %	PCM	1.6 ms	Redu ced
Live Low Latency	Mono	8	12.5 %	SeDAC	1.0 ms	Exten ded
Live	Mono	16	6.25 %	SeDAC	1.6 ms	Exten ded
Live Link Density	Mono	32	3.13 %	SeDAC	2.7 ms	Stand ard
Max Range	Mono	16	6.25 %	OPUS	9.9 ms	Maxi mum
Max Link density	Mono	128*	0.78 %	OPUS	15.2 ms	Redu ced

IEM/IFB	Mono/ Stereo	Max links per RF carrier	Utilized % of RF carrier	Audio codec	La- ten- cy	Range
Live	Mono	16	6.25 %	SeDAC	1.6 ms	Exten ded
Live Link Density	Mono	32	3.13 %	SeDAC	2.7 ms	Stand ard
Max Range	Mono	16	6.25 %	OPUS	9.9 ms	Maxi mum
Max Link density	Mono	128*	0.78 %	OPUS	15.2 ms	Redu ced
Live Ultra Low Latency	Stereo	4 (8 ch)	25 %	SeDAC	0.7 ms	Exten ded
Live Low Latency	Stereo	8 (16 ch)	12.5 %	SeDAC	1.1 ms	Exten ded
Live	Stereo	16 (32 ch)	6.25 %	SeDAC	1.6 ms	Stand ard
Live Link Density	Stereo	32 (64 ch)**	3.13 %	SeDAC	2.7 ms	Redu ced

* Base Stations have 32 audio outputs, for 128 links in a single RF channel, 4 Base Stations and firmware update with cascade port function are required (future release)

| 4 - Specifications



** Base Stations have 32 audio inputs, for 32 stereo links (64 ch) in a single RF channel, 2 Base Stations and firmware update with cascade port function are required (future release)

Base Station

General

RF channels

• 2

Audio inputs and outputs

- Input: up to 32 channels
- Output: up to 32 channels
- Individually selectable from digital audio interfaces

Digital audio inputs and outputs

- Dante[®]
 - Ethernet, 1 Gbit/s
 - 2× ruggedized RJ45 (Primary and Secondary)
 - 32 In, 32 Out, 48 kHz or 96 kHz, 16/24/32 bit
- MADI (AES10)
 - 2× Expansion Slots for MADI Card OM (optical fiber multimode) or MADI Card BNC (separate accessories)
 - 32 In, 32 Out, 48 kHz or 96 kHz, 16/24 bit
- Individual sample rate for each interface

Headphone output

- 6.3 mm jack
- 2x 50 mW at 32 Ω -40 dB THD (1%) at 1 kHz

Antenna connections

• 4 × ruggedized RJ45, PoE supply for up to 4 DAD UHF/1G4

Antenna cable

• Category 5e or higher, S/UTP (maximum 100 m)

Word clock input

- Input: BNC, 75 Ω
- Output: BNC, 75 Ω
- Sampling rates: 48 kHz, 96 kHz



Control

• Ethernet, 1 Gbit/s, ruggedized RJ45

Cascade in / out*

• 2 × SFP+ cages (to be equipped with 10 Gbit/s modules)

Power supply

- 2 x internal redundant
- 100 to 240 V AC, 50/60 Hz

Power consumption

• 70 W

Power plug

• 3-pin, protection class I as per IEC/EN 60320-1

Dimensions (H × W × D with mounting elements)

• 44 × 483 × 373 mm (1.73" × 19.02" × 14.69")

Weight

• Approx. 6.3 kg (13.89 lbs) (without accessories)

Temperature

- Operation: -10 °C to +50 °C (14 °F to 122 °F)
- Storage: -25 °C to +70 °C -13 °F to 158 °F)

Relative air humidity

• 25 % to 95 % (non-condensing)

Dripping and splashing liquids

• The product must not be exposed to dripping and splashing liquids (IP2X)

*Software update with cascade port function required (future release)

Port requirements

Address	Port	Protocol	Туре	Service	Usage		
Device Outbound							
ANY	443	HTTPS (TCP)	Unic ast	Spectera Base Station API	Device Communication to Clients		
sennheiseruserins ights.matomo.cl oud	443	HTTPS (TCP)	Unic ast	Sennheiser User Insights	Analytics of usage and operational data		
cdn.matomo.cl oud							
my.nalpeiron.com	80	HTTPS (TCP)	Unic ast	Sennheiser License Server	Activation of devices		
ANY (see list of NTP servers)	123	NTP	Unic ast	NTP Time Sever	Synchronize system time		
224.0.0.251	5353	mDNS (UDP)	Multic ast	mDNS, DNS-SD	(optional - if desired) Device/Service Discovery		
ANY (see list of Da	nte® po	orts)					
Device Inbound							
ANY	443	HTTPS (TCP)	Unic ast	Spectera Base Station API	Device Communication from Clients		
ANY (see list of Da	nte® po	orts)			Dante® audio and control data		

NTP servers

- pool.ntp.org
- time.nist.gov
- time.aws.com
- time.cloudflare.com

Dante[®] ports

External Dante® ports

Address	Port	Usage	Туре
239.255.0.0/16	4321	ATP Multicast Audio	Multicast

Address	Port	Usage	Туре
239.69.0.0/16	5004	AES67 Multicast Audio	Multicast
224.0.1.129-132	319, 320	РТР	Multicast & Unicast (DDM)
224.0.0.251	5353	mDNS	Multicast
224.0.0.230 - 233	8700 - 8708	Multicast Ctrl & Monit.	Multicast
239.254.1.1	9998	Logging	Multicast
239.254.3.3	9998	TP Logging (if enabled)	Multicast
239.254.44.44	9998	Logging	Multicast
239.255.255. 255	9875	SAP (AES67 discov.)	Multicast
UDP	28800, 28700-28708	Ctrl. & Monitoring.(ext)	Unicast
UDP	38800, 38700-38708	DVS control & monitoring (ext)	Unicast

Internal Dante® ports

Proto- col	Port	Usage	Туре
UDP	14336 -14591	Unicast Audio [Excluding Via]	Unicast
UDP	34336-34600	Unicast Audio [Via Only]	Unicast
UDP	4440, 4444, 4455	Audio Control [Excluding Via]	Unicast
UDP	24440, 24441, 24444, 24455	Audio Control [Via Only]	Unicast
UDP	4777	Via Control [Via Only]	Unicast
TCP	4777	Via Websocket	Unicast
UDP	8850,28900, 24445	Via control & Monitoring (int.)	Unicast
UDP	8850, 38900, 8899	DVS control & monitoring (int.)	Unicast
UDP	8000	Dante Domain Manager Device Port	Unicast
UDP	8001	Dante Millau Device Proxy (int.)	Unicast
UDP	8002	Dante Lock Server	Unicast
UDP	8751	Dante Controller metering port	Unicast
UDP	8800	Control & Monitoring	Unicast
ТСР	8753	mDNS clients (Internal only)	Unicast

Proto- col	Port	Usage	Туре
ТСР	16100-16131	HDCP Authent. for Video Endpoints	Unicast
UDP	61440-61951	FPGA level audio flow keepalive	Unicast
ТСР	4778	DVS websocket (Apple Silicon only)	Unicast

SEK

RF transmission power

• up to 50 mW; countrywise limited

RF channels

• 1

Headphone output

- 3.5 mm TRS jack
- 2 × 300 mW RMS (32 Ω, -40 dB THD, 1 kHz)

Microphone / Instrument / Command input

• 3-pin audio socket

Power supply

• BA 70 rechargeable battery pack

Battery operating time

- up to 7 h (unidirectional microphone use)
- up to 6 h (unidirectional IEM use)
- up to 5 h (bidirectional use)

Dimensions

• approx. 83 x 62 x 21 mm (3.39" x 2.44" x 0.83") (without antenna)

Weight

- approx. 178 g (0.39 lbs) (with BA 70)
- approx. 144 g (0.32 lbs) (without BA 70)

Temperature

- Operation: -10 °C to +50 °C (14 °F to 122 °F)
- Storage: -25 °C to +70 °C -13 °F to 158 °F)

Relative air humidity

• 25 % to 95 % (non-condensing)

DAD

RF transmission power

• up to 100 mW; countrywise limited

RF channels

• 1

Base Station connection

• Ruggedized RJ45 including PoE, max. 100 m cable, CAT5e or better, 1 Gbit/s

Power consumption

• PoE class 2 (< 6.5 W)

Apex angle vertical

- vertical
 - UHF: 65 °
 - 1G4: 62 °
- horizontal
 - UHF: 109 °
 - 1G4: 93 °

Front to back ratio

- UHF: 15 dB
- 1G4: 17 dB

Gain

- UHF: 5 dB
- 1G4: 6.5 dB

Threads for tripod mounting

• Yes / Adapter 3/8" to 5/8"

Dimensions

- UHF: 349 x 292 x 39 mm (13.74" x 11.5" x 1.54")
- 1G4: 231 x 205 x 39 mm (9.09" x 8.07" x 1.54")



Weight

- UHF: 676 g (1.49 lbs)
- 1G4: 534 g (1.18 lbs)

Temperature

- Operation: -10 °C to +50 °C (14 °F to 122 °F)
- Storage: -25 °C to +70 °C -13 °F to 158 °F)

Relative air humidity

• 25 % to 95 % (non-condensing)

IP class

• IP54

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	Туре	Service	Usage
ANY	443	HTTPS (TCP)	Unic ast	Spectera Base Station API	Communication to devices
sennheiseruserins ights.matomo.cl oud	443	HTTPS (TCP)	Unic ast	Sennheiser user insights	Analytics of usage and operational data
cdn.matomo.cl oud	443	HTTPS (TCP)	Unic ast	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

Specifications

All technical data, system and server requirements and needed ports at a glance.

System requirements

Recommended for Host PC Client

- Intel i5 Dual Core processor/M1 Mac/or similar
- 16 GB RAM
- At least 4 GB hard disk space (5 GB for Mac devices)
- Gigabit LAN interface
- Windows[®] 10, 11, Server 2019, Server 2022 (x64) or higher
- Mac OS Big Sonoma or later
- IPv4 network

Port requirements

Address	Port	Protocol	Туре	Service	Usage
LOCALHOST	54 352	HTTPS (TCP)	Unic ast	LinkDesk backend	Internal backend communication
ANY	443	HTTPS (TCP)	Unic ast	Spectera Base Station API	Communication to devices
Accounts EMEA ¹	443	HTTPS (TCP)	Unic ast	Sennheiser CIAM	Sennheiser account
B2C Configuration					Sign-In/Log-In
User insights 4	443	HTTPS (TCP)	Unic ast	Sennheiser user insights	Analytics of usage and operational data
ANY	443	HTTPS (TCP)	Unic ast	Spectera Base Station API	Base Station API Communication from devices
224.0.0.251	5353	mDNS (UDP)	Multic ast	mDNS, DNS-SD	(optional - if desired) Device/service discovery

accounts-pro-emea.sennheiser-cloud.com

b2c-config.sennheisercloud.com

sennheiseruserinsights.matomo.cloud

cdn.matomo.cloud

CHG 70N-C charger

Power supply

- 12 V DC (single unit or cascade of up to 5 units)
- PoE IEEE 802.3af Class 0 (CAT5e or higher), single unit only

Current consumption

max. 3.5 A for a cascade of up to 5 units

Ethernet

- RJ-45 socket, IEEE802.3
- 100Base-TX (half+full duplex)
- 10Base-T (half+full duplex)

Dimensions

Approx. 200 x 104 x 116 mm

Weight

Approx. 640 g, without power supply unit

Charging slots

2

Charging capacity per slot

- BA 70 rechargeable battery or
- EW-DX SK with BA 70 or
- EW-DX SKM with BA 70

Charging voltage

4.35 V

Charging current

min. 344 mA

max. 860 mA

Full charging time

Max. 3.5 h



Temperature range

- Charging: -10 °C to +50 °C
- Storage: -20 °C to +70 °C

Relative humidity

Max. 95% (non-condensing)

BA 70 rechargeable battery

Rated capacity

1720 mAh

Nominal voltage

3.8 V

Charging voltage

max. 4.35 V

Charging time

Typically 3 h @ room temperature

Dimensions

Approx. 54 x 30 x 15

Weight

Approx. 33 g

Temperature range

- Charging: 0 °C +55 °C (32 °F 131 °F)
- Discharging: -10 °C to +55 °C
- Storage: -10 °C to +45 °C

Relative humidity

- Charging/discharging: 25% to 95%, non-condensing
- Storage: 30% to 70%, non-condensing

| 4 - Specifications

L 70 USB charger

Charging capacity

2 Sennheiser BA 70 rechargeable battery packs

Input voltage

Typically 5 V

Input current

max. 2 A

Charging voltage

nominally 4.35 V

Charging current

max. 860 mA per battery pack

Charging time

max. 3.5 h with NT 5-20 UCW power supply unit

Temperature range

- Charging: 0 °C to +55 °C
- Storage: -20 °C to +70 °C

Relative humidity

Max. 95% (non-condensing)

Dimensions

100 × 35 × 70 mm (1 3/4" x 3 7/8" x 7 3/16")

Weight

Approx. 86 g



Modular L 6000 charger

Charging capacity

• Up to 8 rechargeable batteries (BA 60, BA 61, BA 62 and BA 70) across 4 exchangeable charging modules (LM 6060, LM 6061, LM 6062 and LM 6070)

Charging times at 20° C

- BA 60
 - 80%: approx. 1:15 h (approx. 4:45 h operating time)
 - Full: approx. 2:30 h
- BA 61
 - 80%: approx. 1:45 h (approx. 5:00 h operating time)
 - Full: approx. 3:15 h
- BA 62
 - 80%: approx. 1:15 h (approx. 9:30 h operating time)
 - Full: approx. 2:45 h
- BA 70
 - 80%: approx. 1:45 h
 - Full: approx. 3:30 h

Charging temperature range

• 0 to 50 °C (32 °F to 122 °F)

Charging status display

• Multi-colored

Network

• IEEE 802.3-2002 (10/100 Mbit/s), shielded RJ-45 connection

Power supply

• AC 100 – 240 V, 50/60 Hz

Maximum power consumption

• 85 W

Minimum power consumption

• 1 W



Power plug

• 3-pin, protection class I as per IEC/EN 60320-1

Dimensions (H × W × D with mounting elements)

• 44 x 483 x 373 mm

Weight

• 5.1 kg

LM 6060 | LM 6061 | LM 6062 | LM 6070 charging modules

Dimensions (H × W × L)

• 44 x 99 x 182 mm

Weight

• 144 g

Rechargeable battery type

- LM 6060: 2× BA 60
- LM 6061: 2× BA 61
- LM 6062: 2× BA 62
- LM 6070: 2× BA 70



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