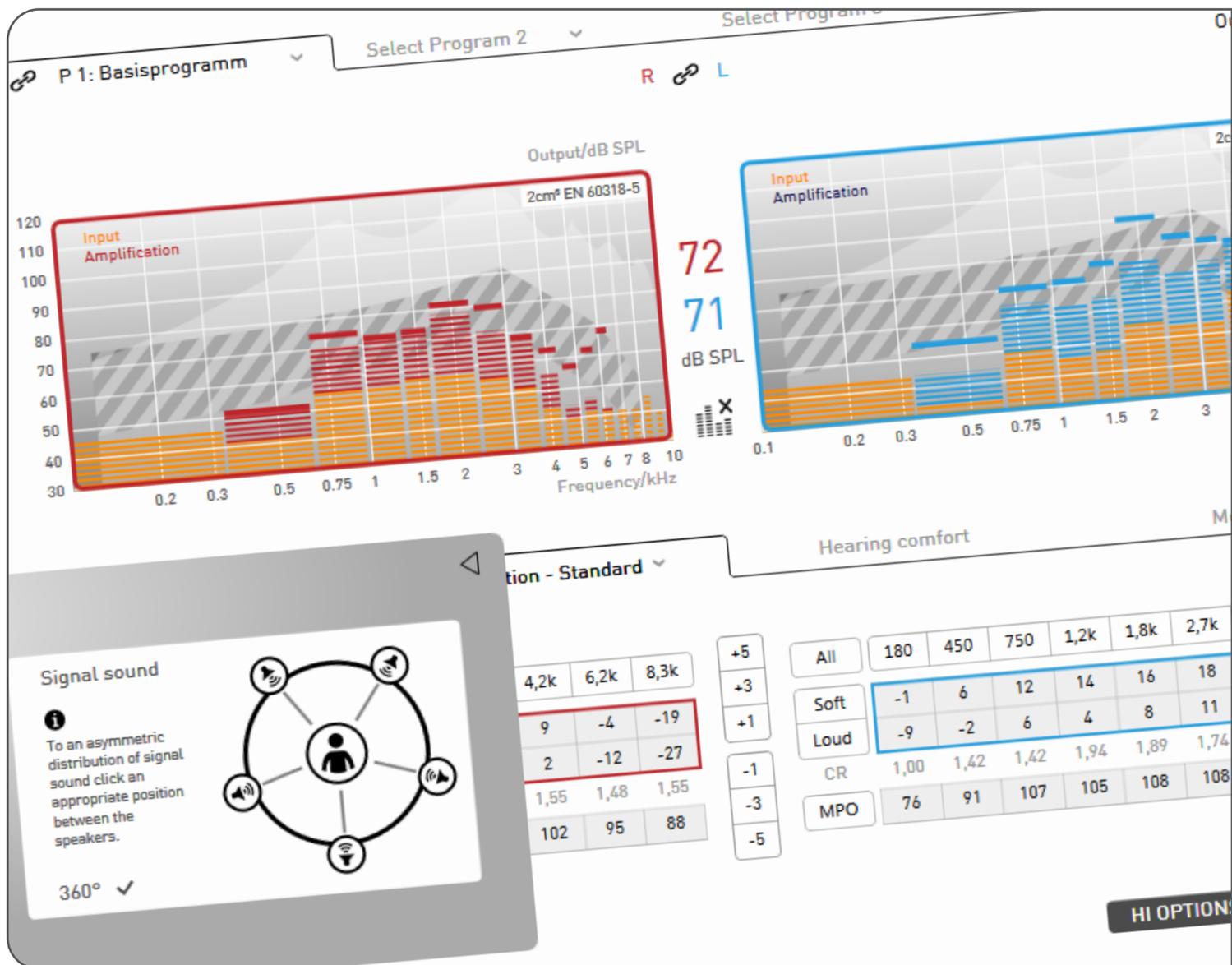


AUDIFIT 5

●● User manual 2023-12



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1 Introduction

audifit 5 is a software application used to program audifon hearing systems to adapt them to the individual needs of people with hearing problems.

Hearing systems reduce the consequences of hearing loss as much as possible. Personal discomfort thresholds for loud noises are also taken into consideration during this process. In quiet environments, as well as in situations with background noise, the aim is to improve speech comprehension and reduce the auditory effort.

The noise generator module can be used as an integral part of tinnitus therapy. If set up and used correctly, the noise used in combination with other therapeutic measures is intended to help reduce the perception of tinnitus.

The current version 5.8 supports the following product ranges, including product variants with a noise generator module and product variants with rechargeable technology.

WINGS chip platform:

- lewi
- risa

COSMA chip platform:

- rega
- kami
- sino
- sueno pro
- via pro

STORM chip platform:

- faro
- saga
- libra
- miro
- vico
- sueno

The audifit 5 stand-alone installation features a dedicated database which facilitates efficient management of client data:

- Personal data
- Session list
- Audiogram

In addition, the new GDPR - General Data Protection Regulation – EU 2016/679 (DSGVO - Data Protection Basic Regulation) is supported in both the stand-alone and Noah version.

1.1 User requirements

The adaptation of audifon hearing systems using audifit software must be carried out by a hearing care professional or an expert with professional training in the field of audiology. The integrated noise generator module can be optionally activated and used to support tinnitus therapy.

The hearing care professional should be trained to adapt hearing systems and know the requirements for adapting the noise generator module for the treatment of chronic tinnitus. Association to a recognized tinnitus management program is recommended.

1.2 Indication and contraindication

audifon hearing systems are designed for use in patients with minor through to profound hearing loss. Devices with the audifon CROS/BiCROS module can also be used to treat deafness in one ear. In addition, it is possible to adjust the noise generator module to treat chronic tinnitus. Activation of the module as part of tinnitus therapy is suitable for adults aged 18 years and older.

1 Introduction

Behind-the-ear hearing instruments should not be used for children under 36 months of age. In-the-ear hearing instruments are not suitable for children and adolescents under 16 years of age, as the shape of the ear canal can still change a lot.

Hearing instruments should not be used if patients have the following contraindications:

- Hearing loss mainly caused by central hearing disorders.
- Insufficient size and shape of the ear canal.
- Deformity of the ear canal that prevent easy insertion and removal of the hearing instruments.
- Impairments of the outer ear and/or ear canal, such as: chronic inflammation or skin irritation; cholesteatoma.
- Allergies to materials following skin contact.

Patients who are unable to operate the devices on their own require competent assistance. Hearing instruments should only be provided to mentally disabled persons and children if recommended by a doctor. A comprehensive risk assessment should be completed for each individual case. Close supervision by a caregiver is recommended to ensure the hearing instruments are used correctly and to prevent accidental ingestion of hearing instruments or parts of them.

1.3 System requirements

audifit 5 can be used on systems that meet the following requirements:

Supported operating systems:

Windows 7, 32- and 64-bit
Windows 8, 32- and 64-bit
Windows 8.1, 32- and 64-bit
Windows 10, 32- and 64-bit
Windows 11, 32- and 64-bit

Minimum requirements:

- Hardware: PC, 2 GHz CPU, 1.5 GB HDD, 2 GB RAM
- Screen resolution: 1024*768
- Ports: 1x USB 2.0 for HIPRO USB or NOAHlink™
- NOAHlink™ properties and NOAHlink™ firmware: Version 1.56.05, Kernel version 1.55.03, Bootloader 8
- HIPRO: Firmware version 3.00
- Noahlink Wireless™: Firmware version 2.19, April 2019
- Software: NOAH™ 4, Windows 7, Internet Explorer 6.0, Adobe Acrobat Reader

Recommended:

- Hardware: PC with DVD drive, 2 GHz CPU, 2 GB HDD, 4 GB RAM
- Screen resolution: 1280*1024
- Ports: 1x USB 2.0 for HIPRO, NOAHlink™ or Noahlink Wireless™
- NOAHlink™ properties and NOAHlink™ firmware: Version 1.56.05, Kernel version 1.55.03, Bootloader: 8
- Noahlink Wireless™: Firmware version 2.24, November 2022
- HIPRO: Firmware version 4.01
- Software: NOAH 4, Windows 10, Adobe Acrobat Reader

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1 Introduction

User group:

The adaptation of hearing systems using the fitting software must be carried out by specialists with professional training in the field of audiology, such as an audiologist or hearing instrument specialists.

The software can usually be used by professionals without training. However, training may be necessary in connection with the demonstration of (new) hearing system features.

Use of programming interfaces:

- Noahlink Wireless™
- Cable-connected hearing instruments
For details of the cables used, please refer to the cable guide.

Intended use:

The audifon fitting software is intended for the configuration and adaptation of digital and digitally programmable audifon hearing instruments and noise generators.

2 Fast fitting

The next few pages outline a fast fitting procedure.

2.1 Settings after starting the program for the first time

After starting audifit 5 for the first time, you must set the following program options (Settings menu → Options):

- Enter user information (name of acoustician, etc.)
- Select the fitting mode, programmer box, wait screen, read protection and languages (the fitting mode must be set to fast fitting)

2.2 Fast fitting

The steps required to fit a hearing instrument are set out below in the quick start guide. Clicking on the appropriate button at the bottom of the screen provides a step-by-step guide for the fitting procedure.

You can also go directly to the desired step by clicking on the menu item.

1. Entering client information and client audiograms

After the program starts, the client management section appears. Once a new client has been entered or an existing client selected, the client audiogram can be entered by pressing "Add audiogram".

Continue to the next step with **"Next session"**

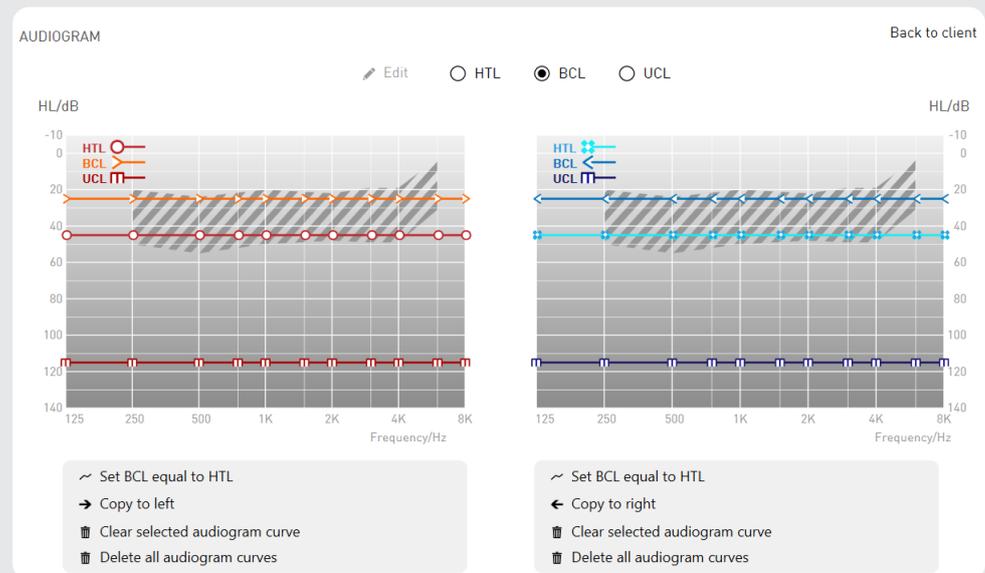


Fig.: Stand-alone client audiogram

2 Fast fitting

2. Selecting the hearing instrument

The hearing instrument is selected automatically when a device is connected. Please select the desired programming interface for instrument detection. Alternatively, you can select the instrument manually if you have not connected it yet.

☞ Only program interfaces that are really available are displayed.

Continue to the next step with **“Initial fitting”**

DETECT HEARING INSTRUMENTS

Please select the desired connection type.

 If you would like to use the Noahlink Wireless, please switch on the hearing aids now. After switching on, you have 3 minutes to connect to the fitting software.

 If you would like to use the HI-PRO please connect the devices with the appropriate cables.

 If you want to simulate the devices you are able to select hearing instruments manually.

Fig.: Automatic hearing instrument detection

3. Selecting the presets

Once the hearing instrument has been selected, the presets “Type of fitting”, “Fitting rationale” and “Acclimatisation level” should be selected:

Continue to the next step with **“Fitting – First Fit”**

R  L

<input type="radio"/> Easy Thin Tube	<input type="radio"/> Easy Thin Tube
<input checked="" type="radio"/> Standard Tube	<input checked="" type="radio"/> Standard Tube
Venting: Occluded ▾	Venting: Occluded ▾

Fitting rationale: Comfort Logix
 NAL-NL1

Acclimatisation level: 1 Novice user
 2 Experienced user
 3 Long-term user

Fig.: Selecting the presets

4. Feedback Check (only available for instruments with the “Cosma” chip platform)

The Feedback Check to initialise the Adaptive Feedback Guard is executed before the First Fit and thus individually sets the system to your client’s adaptive situation. This optimises the performance of the instrument in relation to the stability of the gain in conjunction with the selected acoustic connection (ear mould). The duration of the initialisation only takes around ten seconds per side and should be completed at every new fitting.

2 Fast fitting

5. Fitting the hearing instrument

Once the First Fit has been programmed into the instrument, the actual fitting can begin. This involves adjusting the following settings in the fitting section: input function, gain, noise generator module, hearing comfort, equaliser, sound, and compression. The instrument can be fine-tuned with the help of the fitting suggestions.

Continue to the next step with **"Completion"**

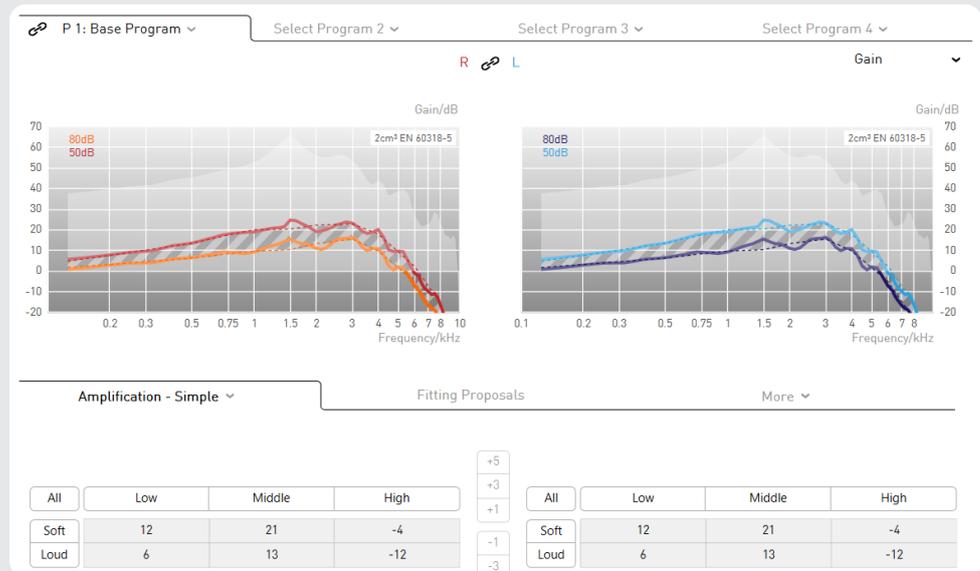


Fig.: Fitting the hearing instrument

6. Completing the session

To conclude, information is once again shown about the recent fitting session.

The session is concluded by pressing the **"Burn and save"** button.

3 User interface

audifit 5 enables the fast and intuitive fitting of hearing instruments. The "Navigation menu" is used to navigate through the fitting session. The "Navigation button" is used to systematically work through the hearing instrument fitting. Once all the settings have been configured in the "Working section", click on the "Navigation button" to go to the next menu item. This guides the user step-by-step through all the menu items.

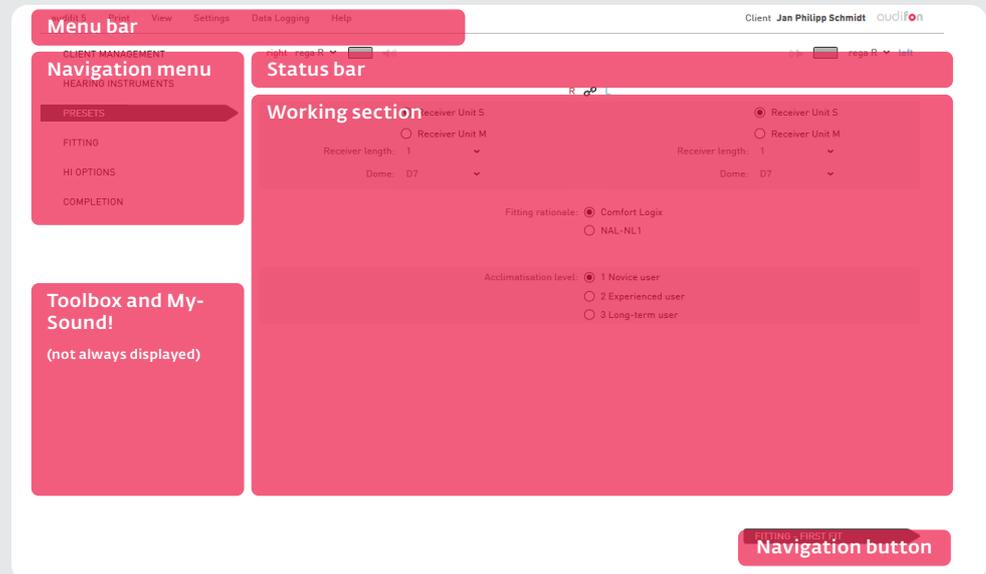


Fig.: Screen view

☞ Two additional buttons may appear in the "Navigation button" area. The button with a grey background allows you to make an alternative selection (such as a follow-up fitting). You can return to menu items that have already been worked through at any time by clicking the "Navigation menu".

3.1 Menu bar section



Fig.: Menu bar

audifit 5

The menu item "audifit 5" offers the following options:

- Export client information
- Import client information from audifit 4 or audifit 5
- User management
- Save the session
- Exit the program

Print

- Print the fitting report
- Print appendix to the operating instructions

View

Allows the client screen to be switched on and off on a second monitor.

☞ If a second monitor is available, the client screen will be shown on it by default.

3 User interface

Settings

Program options are accessed in the menu bar under “Settings” → “Options”. The following settings are available:

- Fitting
- Calibration (MySound!)
- User information

The hearing instruments can be set to maximum test gain under “Measurement settings” (see 5.3).



Warning: Damage to hearing!

The instruments are set to the maximum test gain for measuring purposes. The hearing instrument must not be near the client's ear at this setting! Otherwise there is a risk of damaging the residual hearing.

↳ Fitting

The following settings are available under “Fitting”:

- Select default fitting mode
- Programmer box selection
- Wait screen
- Security (read protection)
- Language

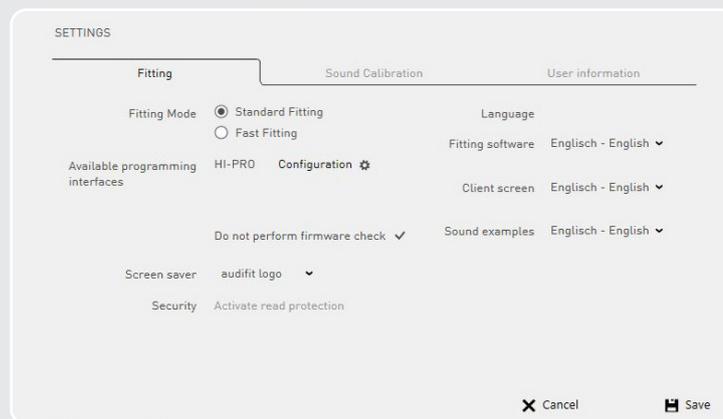


Fig.: Program options for fitting

Fitting mode

Allows selection of standard fitting or fast fitting. If fast fitting mode is selected, the “Presets” and “HI options” menu items will be skipped during the procedure (via the navigation buttons). The “Fitting” menu item also has an optimised layout.

You can, however, go to the skipped sections by clicking directly on the menu item. The fitting mode can be changed at any time in the drop-down menu above the menu items.

Programmer box selection

Select the programmer box to be used (such as HI-PRO or NOAHlink™ or Noahlink Wireless™). As soon as a Noahlink Wireless™ is connected to the computer, it is displayed within the program options.

This can be used by setting the tick (default setting after installation) before the programming interface.

☞ You can use either a cable-connected or wireless interface for the device selection. This selection is available for every device detection that is started. For cable-connected use, refer to the cable guide for the cables to be used.

3 User interface

Wait screen

Allows selection of a logo that (if available) appears on the client screen during the fitting.

Security

Allows activation or deactivation of the readout protection for the hearing instrument. If read protection is to be used for all fittings, a PIN code can be entered here.

Language

Select the language for the software, client screen and sound examples. The client screen appears in the client's language, while the fitting software appears in the language of the acoustician. The appendix to the operating instructions is printed out in the client's language. The sound examples are played back in the client's language.

↳ *Calibration*

Allows calibration of the 5-channel MySound! system with any sound level meter. This means that a noise can be played back for each of the five speakers.

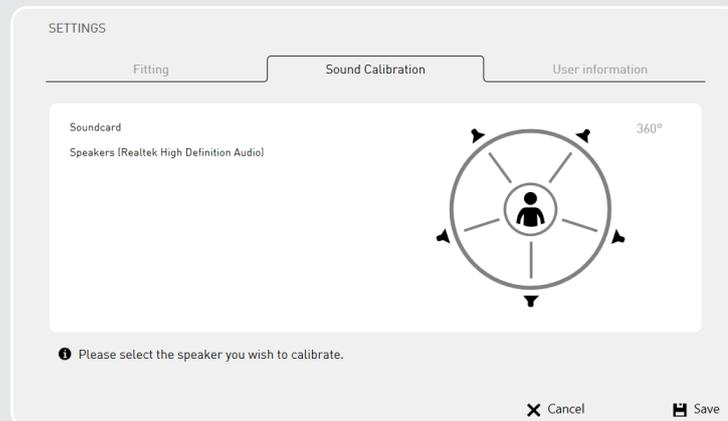


Fig.: Calibration of the MySound! system

↳ *User information*

Enter the name and address of the audiologist and select a logo.

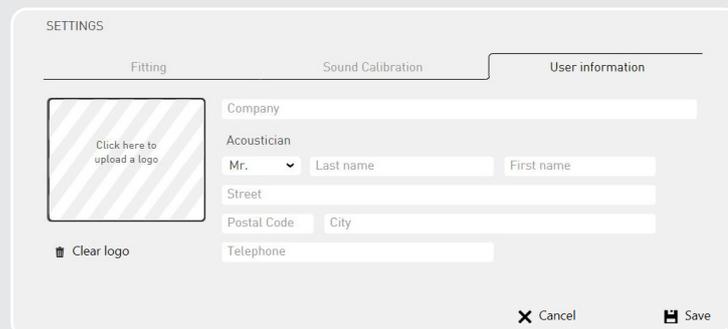


Fig.: Entering user information

Data logging

The data logging function records the client's usage behaviour.

The recorded data can be displayed and read out by clicking on "Data logging" in the menu bar:

- Display recorded data from a previously saved session
- Read out recorded data from a connected hearing instrument

3 User interface

The graph of the recorded data contains information about the duration of usage, duration of use per program, and Sound Dynamix.

☞ “Data logging” records your client’s usage behaviour. Explain the function to your client before you activate it and observe the relevant data protection guidelines in your country.



Fig.: Display of recorded data

☞ To display/read out the logged data, the “Data logging” option, if available for the hearing instrument, must be enabled.

3.2 Fitting mode section

Here you can choose between the “Fast fitting” and “Standard fitting” fitting modes.

If “Fast fitting” mode is selected, the “Presets” and “HI options” menu items will be skipped during the procedure (via the navigation buttons). The “Fitting” menu item also has a simplified layout.

You can, however, go to the skipped sections by clicking directly on the menu item. The fitting mode can be changed at any time in the drop-down menu above the menu items.

☞ The desired fitting mode can be set as the default in the settings.

3.3 Navigation menu section

The navigation menu guides the user step-by-step through the hearing instrument fitting. The individual menu items can be selected directly or accessed with the “Navigation buttons” during a systematic fitting procedure.

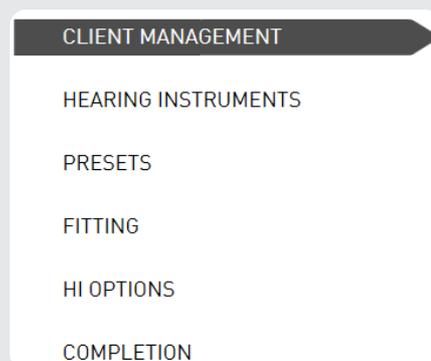


Fig.: Navigation menu

3 User interface

☞ Greyed-out menu items can only be selected once the necessary information (such as the audiogram) has been entered.

3.4 ToolBox/ MySound! section

ToolBox

The ToolBox offers further selection options during the hearing instrument fitting ("Fitting" and "HI options" menu items):

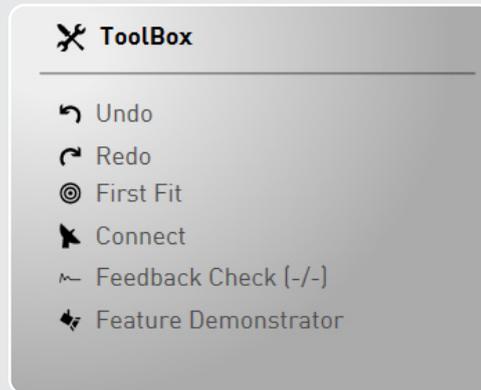


Fig.: ToolBox

- ↳ *Undo/redo*
Allows device to be reset to the last configured setting or the re-implementation of a setting that has just been changed (such as the gain).
Both options (undo/redo) will be discarded upon leaving the current navigation section.
- ↳ *First Fit*
Creates a First Fit based on the audiogram entered and presets selected.
- ↳ *Connect*
Connects to the hearing instruments.
- ↳ *Feedback Check*
Starts the Feedback Check to initialise the Feedback Guard.
- ↳ *Read out hearing instrument*
Reads out the settings from the hearing instruments.
- ↳ *Program*
Stores all of the settings made in the hearing instruments.
- ↳ *Feature Demonstrator*
The Feature Demonstrator allows the demonstration of various hearing instrument features by playing back sound examples.

3 User interface

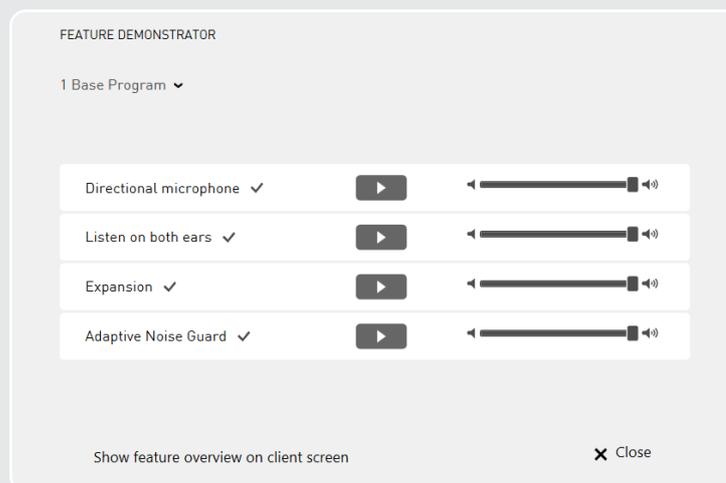


Fig.: Feature Demonstrator

The steps below summarise the use of the Feature Demonstrator:

- Select the hearing instrument program in which the feature is to be demonstrated.
- Select the active hearing instrument features by clicking on the feature.
- Play back the sound sample by clicking the play button of the desired feature.
- The nature of the sound samples changes over time. It is therefore recommended that the sounds are played in their entirety.
- During sound playback, the client can activate/deactivate the feature on the client screen and experience its effect.

MySound!

Various hearing situations can be compiled and played back in the MySound! box.

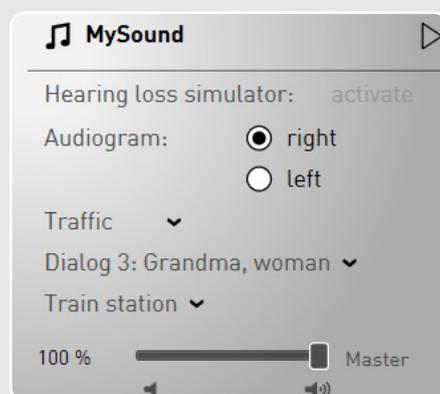


Fig.: MySound!

3 User interface

Hardware setup

MySound! is optimised for the following hardware setup:

- A special five-channel MySound! amplifier in conjunction with broadband speakers can quickly switch between surround sound and free-field audiometry. The MySound! amplifier allows calibration of the entire system with any audiometer.
- Any standard 5.1 sound system with subwoofer can be used. Please note, that in this case, the system cannot be perfectly calibrated.
- MySound! allows interactive advice and fitting based on a hardware setup with two monitors: one for the hearing care professional and the other monitor (response monitor) for the client. A touchscreen is recommended for the client.

MySound! uses sound examples to enable the interactive fine-tuning of the hearing instruments in three steps:

- Mixing ambient noises (such as traffic or a restaurant) and useful sounds (such as dialogue or siren) to simulate realistic sound environments.
- Scale selection (volume or sound) and evaluation of the sound environment by the client.
- Depending on the client's response, the expert system proposes adjustment options. The fitting proposals can be programmed directly into the hearing instruments.

Fitting tip:

Position and move the useful sound around the different speakers.

To do this, expand the MySound! box by clicking on the arrow. Use this versatile tool to test the client's spatial and directional hearing.

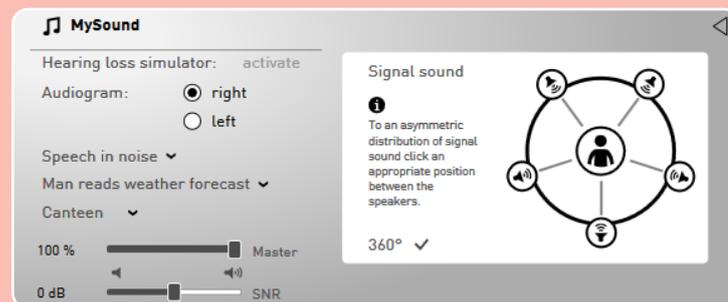


Fig.: MySound! extension

The hearing loss simulator ("Activate hearing loss simulator" button) simulates the client's hearing loss and makes it audible to others. To this end, the audio reproduction of the played back sound sample is dampened to the degree reflected by the hearing loss entered in the audiogram. The client's hearing sensation can thus be reproduced for an outsider.

3 User interface

3.5 Status bar section

The status bar displays the following:

- Selected hearing instruments.
- Clicking the down arrow allows individual reading out or connection of the hearing instruments or the performance of a First Fit.
- Connection status of the connected hearing instruments.
- Mute the connected hearing instruments (click speaker button).
- When using the NoahLink Wireless™, the name of the interface is displayed between the devices.



Fig.: Noahlink Wireless™

The following status information is displayed:

-  The hearing instrument is not connected
-  The hearing instrument is connected and has been modified
-  The hearing instrument is connected
-  A communication error has occurred with the hearing instrument

 The green status indicates that the displayed settings match the settings of the hearing instrument. The yellow status indicates that the settings configured in the software have been transferred to the hearing instrument but have not yet been permanently programmed.

4 Fitting procedure

4.1 Client management

Client management appears at the start of every hearing instrument fitting. This is where the following client data can be managed:

- Personal data
- Session list
- Audiogram

Client list

New clients can be created or existing clients selected by double-clicking in the client list.



Fig.: Client database

Entering client data

When you create a new client or select an existing client, the client data view will appear. Here, the client audiogram can be added or edited. Previous sessions can also be accessed.

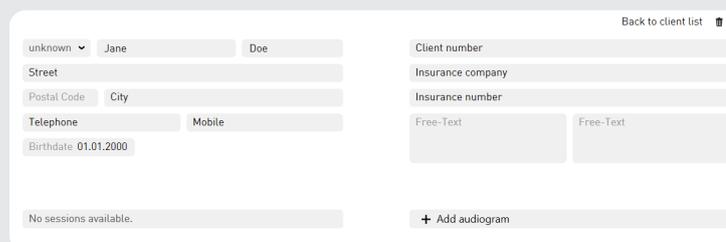


Fig.: Entering client data

👉 To create a client, you need to at least enter a first name and surname. A hearing instrument cannot be fitted unless audiogram data points have been entered. To delete a client from the client list, click on the adjacent "Delete current client data" button.

Entering an audiogram

Once a client has been created/selected, the audiogram screen can be accessed by clicking "Add audiogram" or "Edit". Clicking "Edit" again will open the audiogram data points for editing.

The following threshold values can be entered:

- HTL – Air conduction threshold
- BCL – Bone conduction threshold
- UCL – Uncomfortable level

4 Fitting procedure

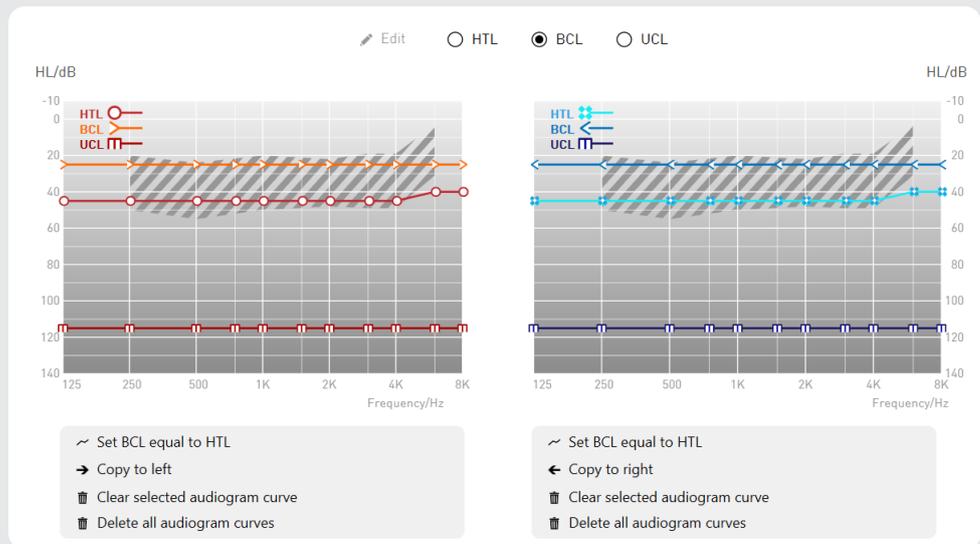


Fig.: Entering audiogram data points

Additional data that can be entered:

- “Set HTL equal to BCL” – sets the air conduction threshold equal to the bone conduction threshold
- “Copy to left/right” – copies the audiogram from the other side
- “Clear selected audiogram curve” – deletes the selected curve only
- “Delete all audiogram curves” – deletes the audiogram data points entered

Once audiogram data point entry is complete, continue to the next step by clicking the “Next session” button or enter client data with “Back to client”. Either way, the audiogram data points entered will be saved.

4.2 Hearing instruments

To identify the hearing instruments used for the hearing instrument fitting, select the desired programming interface for device detection. Alternatively, you can select the instrument manually if you have not connected it yet.

☞ Only available programming interfaces are displayed.

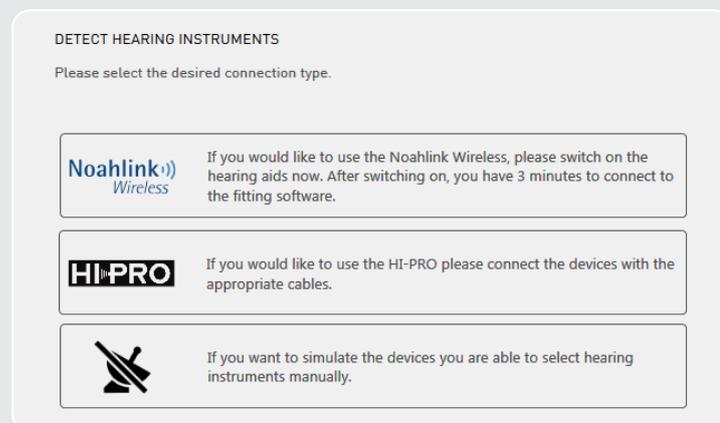


Fig.: Detecting hearing instruments



Warning: Damage to hearing!

The hearing instrument is not yet set for the client at the initial fitting. The hearing instrument must not be placed to the client's ear until after the First Fit! Otherwise there is a risk of damaging the residual hearing.

4 Fitting procedure

Automatic hearing instrument detection

To automatically select the hearing instruments, connect them to the suitable programming interface. The detected hearing instruments will be displayed with the serial numbers for the respective side (right/left).

RITE hearing instruments (Receiver In The Ear)

☞ Receiver unit S is the default setting for RITE hearing instruments. If another type of receiver unit is used, select it in the next step, "Presets". The follow-up fitting for new sessions is completed by the receiver unit of the connected device.

CROS/BiCROS hearing instruments

☞ The receiver (Rx) and transmitter (Tx) must always be combined for CROS/BiCROS hearing instruments.

Selecting hearing instruments manually

Alternatively, the hearing instruments can be selected manually. To do so, select the desired hearing instruments.

RITE hearing instruments (Receiver In The Ear)

☞ For RITE hearing instruments, also select the receiver unit used.

CROS/BiCROS hearing instruments

☞ For CROS/BiCROS hearing instruments, always select the receiver (Rx) and transmitter (Tx). The selection is supported by a selection assistant.

Further information

After the hearing instruments have been selected, the following information about them is available:

- Data specification
- Fitting range (with air conduction audiogram)
- Features
- Colour options

☞ If the fitting range area is shaded, the fitting range refers to devices with open fitting.

4.3 Presets

Configure the following settings in the "Presets" section:

- Type of fitting
- Fitting rationale
- Acclimatisation level

R L

Easy Thin Tube Easy Thin Tube

Standardschlauch Standardschlauch

Vent-Durchmesser: Verschlossen ▼ Vent-Durchmesser: Verschlossen ▼

Anpassformel: Comfort Logix NAL-NL1

Akklimatisierungsstufe: 1 Erstanwender 2 Erfahrener Anwender 3 Langzeitanwender

Programme zur Verwendung des multistreamers setzen ✓

Fig.: Presets

Ear pairing

If the hearing instrument fitting is for both ears, the presets for the right and left sides can be linked by pressing "Pairing of settings in both devices".



4 Fitting procedure

CROS/BiCROS hearing instruments are always fitted online and do not allow ear pairing.

Type of fitting

Depending on the hearing instrument selected, various fitting options are available:

↳ Fitting BTE hearing instruments

• Closed fitting (with ear mould):

If an ear mould is used for the fitting, select the closed fitting and specify the vent diameter.

• Easy ThinTube (open fitting with thin sound tube):

If an open fitting with thin sound tube is used, select the sound tube and dome size.

↳ Fitting ITE hearing instruments

Only the vent diameter must be specified for ITE hearing instruments.

☞ If the vent diameter is greater than 3 mm, select "open".

↳ Fitting RITE (Receiver In The Ear) hearing instruments

For RITE hearing instruments, select the receiver unit used and its length and dome size.

For devices with the "WINGS" chip platform there is automatic hearing device detection. The receiver unit connect to the hearing instrument is automatically detected and selected.



Fig.: Automatic receiver recognition with Wings

↳ Fitting hearing instruments with the "multistreamer pro" accessory

For hearing instruments with the "multistreamer pro" accessory, the programs can be automatically preset for its use. This entails setting all possible programs to the determined hearing situations.

↳ Fitting CROS/BiCROS hearing instruments

The CROS settings are displayed for CROS/BiCROS hearing instruments. At this point, CROS or BiCROS can be selected. The CROS setting changes the fitting rationale to NAL-CROS, and the acclimatisation level is not available.

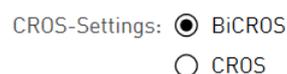


Fig.: CROS settings

Fitting rationale

Selecting the desired fitting rule:

- Comfort Logix (fitting rule optimally tailored to audifon hearing systems)
- NAL-NL1 (developed to maximise speech understanding at a comfortable volume for the client)
- NAL-CROS (fitting rule according to NAL for CROS hearing instruments)

4 Fitting procedure

Acclimatisation level

Select one of three possible acclimatisation levels:

- Level 1: Novice user
- Level 2: Experienced user
- Level 3: Long-term user (target gain according to fitting rule)

4.4 Noahlink Wireless™ device selection and side allocation (only for devices with the “WINGS” chip platform)

For device detection with Noahlink Wireless™, all audifon hearing instruments on the WINGS platform that are in the area are displayed.

The device name and serial number of the device are displayed.

Two devices can be selected for fitting and allocated to the relevant side. (The devices are listed from top to bottom, according to proximity to the Noahlink Wireless™ device)

Then the devices are visible for fitting for the right and left side.

☞ If the device has previously already been programmed, the individual device name is displayed, consisting of the client's first name and the serial number. In the course of fitting this is changed to the current client name and is displayed again at the end of fitting.

The screenshot shows a software interface titled "SELECT SIDE". It prompts the user to "Please select the hearing aids and the desired side:". On the left, there is a list of four devices with their names and serial numbers: "lewi S V063737", "lewi R V061259", "lewi S V063732", and "lewi R V061264". On the right, under the heading "Please select side:", there are two columns of buttons labeled "Right" and "Left". The "Right" buttons are highlighted with an orange border, indicating they are selected for all four devices. At the bottom of the interface, there are two buttons: "Abbrechen" (Cancel) on the left and "Weiter" (Next) on the right.

Fig.: Wireless device selection and side allocation

4.5 Feedback Check (only on devices with the “COSMA” chip platform)

Before the First Fit the Feedback Check is carried out to initialise the Adaptive Feedback Guard, individually adjusting the system to your client's adaptive situation. This optimises the performance of the instrument in relation to the stability of the gain in conjunction with the selected acoustic connection (ear mould). The duration of the initialisation only takes around ten seconds per side and should be completed at every new fitting.

4 Fitting procedure

FEEDBACK CHECK

A measurement signal, to configure the feedback cancellation system in the hearing aids, will be played to the hearing aids.

Please connect the hearing aids to the customer ear and start the test.

The process takes about 10 seconds.

You can also bypass the procedure and start the Feedback Check later out of the toolbox.

 Client screen active ✓

Close

Only right

Both

Only left

Fig.: Feedback Check start screen

Before starting the Feedback Check near the client's ear, ensure that the device fits perfectly.

Feedback Check - Countdown

1

 Client screen active ✓

Fig.: Countdown to the start

Feedback Check - Measurement left

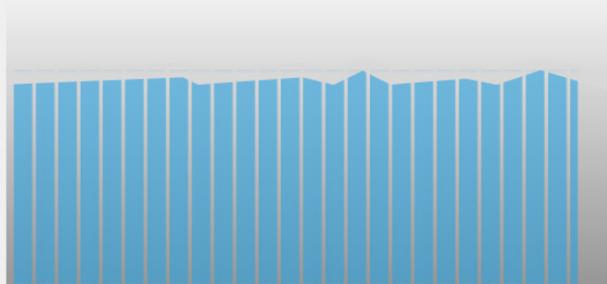


Fig.: Feedback Check – right/left test sequence

Apply the settings if the Feedback Check was completed successfully.

4 Fitting procedure

Feedback Check - Finalisation

The Feedback Check was successful.



Repeat

Accept

Fig.: Feedback check finalisation

🔧 Complete the Feedback Check again if you have made major changes to the acoustic connection to the ear (e.g. when switching from Easy Thin Tube to a standard tube with ear mould).

4.6 Fitting

The following settings can be configured for the hearing instrument's individual programs in the "Fitting" section:

- Input function
- Gain
- Noise
- Hearing comfort
- Equaliser
- Sound
- Compression
- It is also possible to interactively fine-tune the instrument under "Fitting proposals".

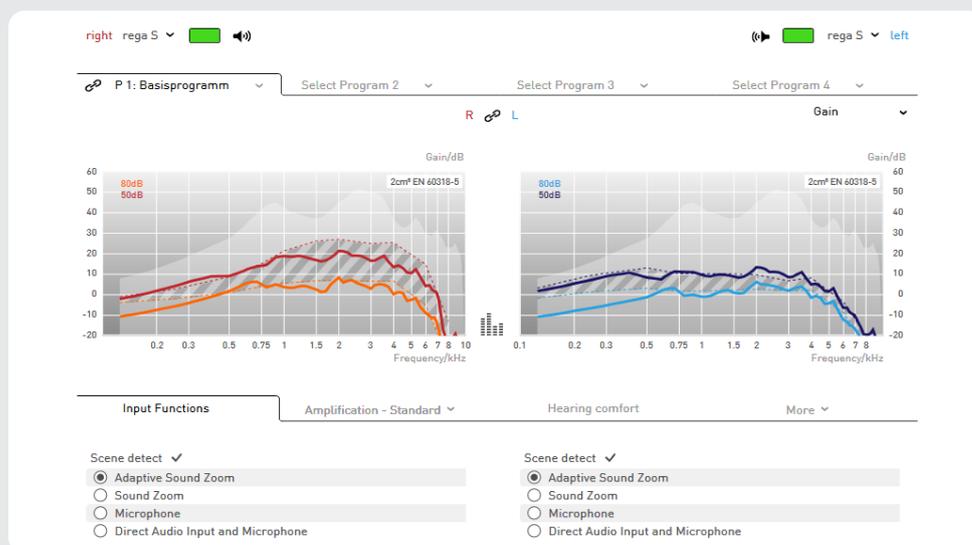


Fig.: Overview of the "Fitting" section

The ToolBox and MySound! sections are shown on the left side of the screen during the fitting. The method of displaying the curves can be selected from the drop-down menu in the top right-hand corner.

4 Fitting procedure

Ear pairing

If the hearing instrument fitting is for both ears, the fitting settings for the right and left side can be linked by pressing "Pair settings on both sides". CROS/BiCROS hearing instruments are always fitted online and do not allow ear pairing.

Program coupling

The settings made in Program 1 (basic program) are transferred to all other programs with the active  button.

Live View

(Cosma chip platform): During fitting, "Live View" can be activated in the "Gain" and "Output" displays. The real level of the sound at the ear is displayed here live. To activate, press the icon between the graphs.

Activate Live View: 

Deactivate Live View: 

Program selection

The individual programs can be selected below the status bar. Clicking on a program opens a drop-down menu from which the desired hearing program (such as "Speech in noise" or "Phone") can be selected.

The following preset hearing programs are available:

- **Speech in noise:** The focus is on speech comprehension. Speech is retained while background noise is reduced.
- **Music:** Sound-optimised program for playing back music
- **Comfort in noise:** Reduces the output for noisy input levels and reduces the gain over the entire frequency range for added hearing comfort in noisy environments.
- **Telephone:** Program optimised for the telephone (activates available telephone loop and microphone)
- **4, 6, 8, 12, and 18 dB lower:** Lowers the gain compared to the basic program.

The following hearing programs are also available for hearing instruments with the noise generator module under the "Tinnitus module" input:

- **Noise combi program:** A combined signal (hearing instrument signal and white noise) is produced to correct the hearing loss and to support tinnitus therapy.
- **Only noise:** Only noise is produced.

For hearing instruments with the Auto-T-Coil or Auto-Phone function, the following variants can be selected for the four hearing programs:

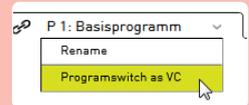
- **Auto T-Coil:** When a telephone receiver is held to the ear, the instrument automatically switches to Program 4 – telephone loop and microphone are activated.
- **Auto phone:** When a telephone receiver is held to the ear, the instrument automatically switches to Program 4 – a telephone-optimised microphone program is activated.

4 Fitting procedure

☞ Once the phone call is over (or the receiver is moved away from ear) the instrument switches back to the last program in use.

☞ Fitting tip: Hearing instruments with just one program switch

If the hearing instrument has just one program switch, the programs available for volume control can be used. To do this, select "Program switch as VC" from the drop-down menu of Program 1.



Input function

Depending on the type of hearing instrument, the desired input function for the selected program can be set:

- Microphone
- Directional microphone
- Line-in
- Line-in and microphone
- Adaptive directional microphone
- Sound Dynamix (including control rate)
- Scene Detect
- Binaural T-Coil
- Binaural T-Coil and microphone



Fig.: Input function

☞ Hearing instruments with Sound Dynamix

If the hearing instrument has Sound Dynamix (automatic program toggle), it can be activated as an input function. The hearing instrument will then automatically distinguish between quiet, speech in a quiet setting, noise, speech in a noisy setting, music, and wind. The time it takes to switch programs can be regulated in increments of 5, 10, and 20 seconds. In the individual programs that Sound Dynamix selects, the directional microphones, noise reduction, feedback suppression and gain are affected.

☞ Hearing instruments with Scene Detect

The hearing instruments uses Scene Detect to classify the input signal into seven different categories: Quiet, wind, machine noise, music, speech in a quiet setting, speech in a noisy setting and other noise. Depending on the classification, the settings for the Adaptive Feedback Guard, Adaptive Noise Guard, Machine Noise Guard and Wind Shield are automatically optimised for the hearing situation detected in each case. A special gain setting is also implemented for the music input signal.

4 Fitting procedure

- ↳ *Wireless hearing instruments with binaural telephony*
For hearing instruments with binaural telephony, which are selected in Auto-Program/Program 4, the input function options for the binaural T-Coil are with and without microphone.
- ↳ *CROS/BiCROS hearing instruments*
For CROS/BiCROS hearing instruments, the input function is only available on the receiver (Rx) side. In CROS mode, only the microphone is available and always active.

Gain

The gain table shown allows setting of the channel gain.

Select the gain values to be changed:

- Select individual gain values in the table by clicking on a cell or dragging the cursor over several cells.
- The "All" button selects all cells.
- The "Soft" and "Loud" buttons select the entire row.
- Clicking the frequency selects the entire column.

Clicking the "+" and "-" buttons changes the selected gain values by the specified increment.



Warning: Damage to hearing!

On devices with an output sound intensity greater or equal to 132 dB SPL, this can damage the hearing. The volume of the hearing instruments must be selected very carefully. Prolonged use at too high a level can impair the residual hearing.



Fig.: Setting the gain

4 Fitting procedure

The gain table view can be simplified by clicking on the "Gain" tab:

All	Low	Middle	High
Soft	12	21	-4
Loud	6	13	-12

Fig.: Simplified gain table

☞ If the soft and loud sounds are selected at the same time, the compression ratio in the channels remains constant.

If the gains are set either just for soft or just for loud sounds, the compression ratio is adjusted automatically. The higher (lower) the displayed compression ratio is, the more (less) the input signal is compressed.

Compression is used when the natural dynamic range has to be limited to the client's residual dynamic range.

The MPO (Maximum Power Output) limits the output sound pressure level of the hearing system. Sound pressure levels that exceed the set threshold are reduced in the gain. The MPO should be set according to the client's uncomfortable level.

☞ If the audiogram contains uncomfortable threshold values, the AGCo threshold is automatically set by the First Fit.

Some hearing systems with four or fewer WDRC channels allow the crossover frequencies between the channels to be set.

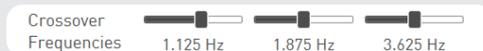


Fig.: Setting crossover frequencies

☞ Fitting tip: Changing crossover frequencies

The crossover frequencies can be modified to allow special settings for all parameters in a specific channel. The crossover frequency can, for example, be set to a value that drastically changes the target curve. This allows better fine-tuning of the frequency response.

↳ Live View (Cosma chip platform)

During fitting, "Live View" can be activated in the "Gain" and "Output" displays. The real level of the sound at the ear is displayed live. In the output view, the orange bars indicate the input level on the hearing instrument, the red and blue bars indicate the gain through the hearing instrument. The values in the middle of the screen indicate the averaged level of the sound at the front microphone.

The Live View screen can also be displayed on the client screen. In this screen, it is possible to explain the device settings to the client by playing sound files.

4 Fitting procedure

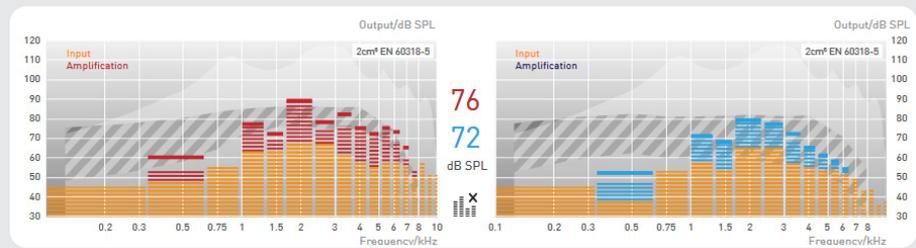


Fig.: In this view, the red and blue bars indicate the respective gain of the instrument.

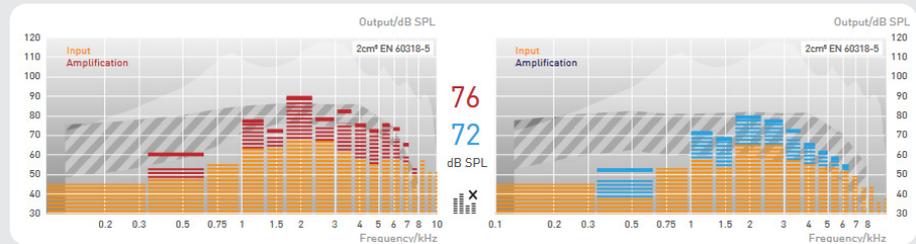


Fig.: The levels between the graphs indicate the averaged input levels.

☞ Use the view only to display the activity of the instrument. You should not activate this display while the instrument settings are being implemented to minimise the communication time between the software and instruments.

↳ CROS/BiCROS hearing instruments

For CROS/BiCROS hearing instruments, the gain is only available on the receiver (Rx) side.

In BiCROS mode, the balance between Tx and Rx can be adjusted on the transmitter side (Tx) regardless of the program. Negative values decrease the transmitter volume compared to the receiver, while positive values increase it.

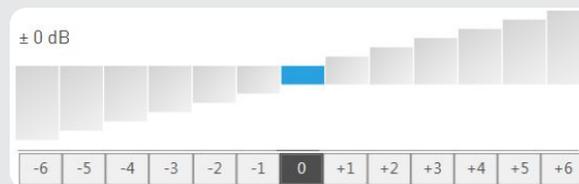


Fig.: Setting the balance between Tx and Rx

Noise generator module

Hearing instruments with an integrated noise generator to support tinnitus therapies and pure tinnitus instruments are programmed in the "Tinnitus module" section.

↳ Noise (STORM chip platform)

The noise can also be added to the selected input signal or as a "Only noise" program without an input signal. The following setting options are available:

- Noise level
- Low cut
- High cut

4 Fitting procedure

The curve displayed shows the spectrum set for white noise.

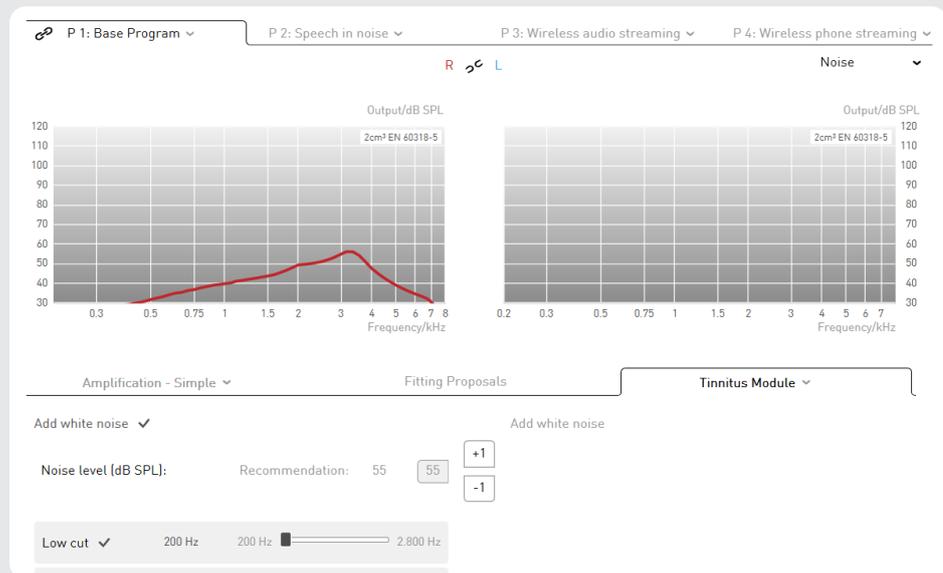


Fig.: Noise level settings

↳ Noise (Cosma chip platform)

In hearing instruments with the Cosma chip platform, noise levels can be adjusted via the gain matrix.

There is also an option to choose between three different pre-defined noise types:

- White noise: Noise with the same sound pressure level in all frequency bands
- Pink noise: A noise with a decreasing level for high frequencies
- Sound of the sea: A noise for which the volume swells and subsides (fluctuates) and that simulates the characteristic sound of the ocean. The speed of the fluctuation can be set in three stages via the "Modulation" drop-down menu.

Based on the three noise types mentioned above, the sound and volume of the noise can be adjusted to the individual requirements of your client.

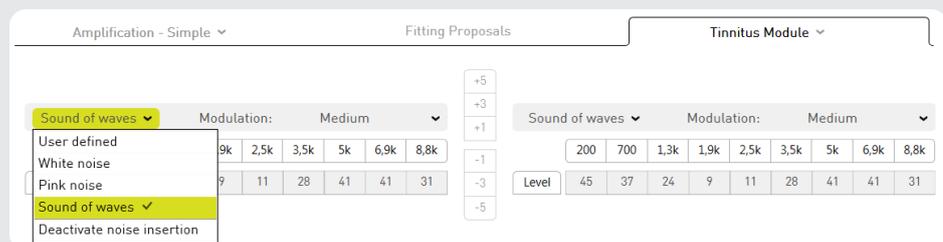


Fig.: Cosma noise level settings



Warning: Damage to hearing!

The maximum volume of the noise generator module lies in a range which according to occupational safety regulations can lead to hearing loss.

For users without hearing loss, a maximum sound pressure level of 70 dB SPL (at 2 cm³ coupler) should not be exceeded when using the noise generator module. For users with hearing loss, the respective hearing loss must be taken into account when adjusting the noise generator module. The noise generator module should not be used under any circumstances at an unpleasant volume for the user.

4 Fitting procedure

For sound pressure levels up to 80 dB SPL (at 2 cm³ coupler), the noise generator module can be used for up to 8 hours a day. At higher sound pressure levels, the safe wearing duration is reduced accordingly. The noise generator module should not be used for more than 2 hours per day at higher sound pressure levels.

Higher sound pressure levels and/or a longer period of use may result in permanent deterioration of residual hearing.

Hearing comfort

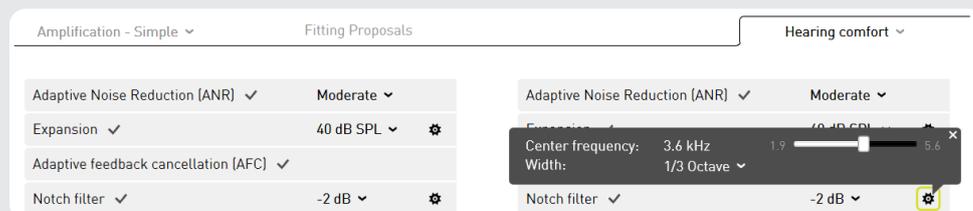


Fig.: Hearing comfort

The hearing comfort section provides the following options for reducing background noise and feedback:

- Adaptive ambient noise reduction (ANR)
- Expansion
- Adaptive feedback cancellation (AFC)
- Notch filter

↳ Adaptive Noise Reduction (ANR)

Adaptive ambient noise reduction (ANR) automatically lowers the gain in the frequency bands with the poorest signal-to-noise ratio. ANR is particularly effective when the client is dependent on good speech understanding in an acoustic environment with a wide range of background noise. You can choose from three different ANR settings:

- *Soft:*
The gain is reduced by approx. 3–4 dB per band. This setting is used to obtain maximum speech quality.
- *Moderate:*
The gain is reduced by approx. 6–7 dB per band.
- *Strong:*
The gain is reduced by approx. 9–10 dB per band. This setting is used to minimise background noise.

↳ Expansion

The expansion (squelch) reduces the audibility of soft background noise such as air conditioning or computers. The expansion also reduces noises caused by the components of the actual hearing instrument, primarily by the microphone. Clients with normal hearing in the low frequency range can find the inherent noise especially annoying.

In order to activate the expansion in a soft acoustic environment, a threshold value is specified for the input signal. The gain is reduced as soon as the signal falls below this value, reducing the audibility of the microphone noise and improving sound quality. Above the threshold value, the hearing instrument returns to normal gain. The default setting for the expansion threshold is preset to 40 dB SPL.

↳ Adaptive Feedback Cancellation (AFC)

Adaptive feedback cancellation (AFC) estimates the proportion of the signal attributable to feedback and automatically eliminates it. AFC does not reduce the gain. Adaptive feedback cancellation is especially important for open fittings.

4 Fitting procedure

AFC can be switched on and off.

AFC² contains an improved and more detailed model of the feedback path, allowing more accurate feedback elimination. This makes even higher gains possible before feedback occurs (known as “added stable gain”).

☞ The hearing instrument consumes more energy when the AFC/AFC² algorithm is used.

↳ Notch filter

Unlike AFC, a notch filter reduces the gain in a certain narrow frequency range to prevent feedback. The notch filter can therefore reduce sound quality. The digital notch filter can be programmed so that its centre frequency of the notch filter lowers the gain of the critical frequency causing the feedback.

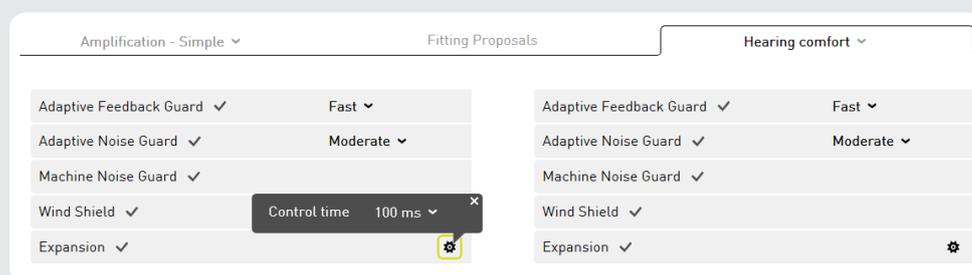


Fig.: Cosma hearing comfort

The amount by which the gain can be reduced is between 2 and 16 dB. Clicking on the adjacent button selects the frequency at which the notch filter's centre frequency is to be positioned. The width of the notch filter can be defined between one octave for a wide band and 1/12 of an octave for a very narrow band. The notch filter changes the frequency response of the hearing instrument, resulting in poorer audibility in the corresponding frequency range.

Hearing comfort (on devices with the “Cosma” chip platform)

↳ Adaptive Noise Guard

The noise reduction on devices with the “Cosma” chip platform continuously estimates the signal noise ratio (SNR) of the input signal on all available channels. If a poor value is detected on one of the channels, the channel gain is temporarily reduced to minimise the impact of the noise. The higher the proportion of the noise, the more the gain is reduced. This makes it possible for speech within the noise to be understood at low concentration levels. At the same time, the adaptive noise guard also effectively suppresses any disruptive noise in simple noise situations.

- *Moderate; client profile*
 - Will rarely be in very noisy hearing situations
 - Wants natural sound and minimal audible controls
- *Strong; client profile*
 - Frequently in very noisy hearing situations
 - Wants to improve understanding of speech in these situations

Use “moderate” as the default setting in the basic program, and the “strong” setting in a separate hearing program for comfort or language during disruptive noise.

↳ Expansion

The expansion enables you to reliably suppress any noise generated by the microphone without affecting important signals and to remove any quiet background noise, such as the noise of a fan on the work or home computer, from the surrounding area.

4 Fitting procedure

The setting levels consist of three different control times ranging from 10 ms to 500 ms, which allow you to respond to your client's individual sound sensitivity.

↳ *Adaptive Feedback Guard*

The Adaptive Feedback Guard permanently estimates the feedback path, so that it can also react to changing situations and any uncomfortable feedback is avoided. The Adaptive Feedback Guard should always be switched on to ensure that there is no feedback noise even in acoustically difficult situations (brushing hair aside, hat, close to a door frame).

A special mode has been developed to listen to music, it reacts more gently and is thus optimised to the special requirements for suppressing the feedback of the music input signal.

Setting levels: fast and slow

☞ Always leave the Adaptive Feedback Guard switched on and use the "slow" setting in a hearing program for music.

↳ *Wind Shield*

If the person wearing the hearing instrument is in a windy environment, turbulence at the microphone openings can cause rustling background noises. Wind Shield recognises these and reacts by temporarily reducing the gain in the corresponding frequency range.

☞ Always leave Wind Shield activated. Due to the automatic control, it is only implemented when the client is actually in a corresponding situation.

↳ *Machine Noise Guard*

The instruments from the rega range automatically classify the relevant hearing situation that the client is in. If any machine noise is detected, the instrument temporarily reduces the gain for low frequencies to minimise the noise pollution.

MySound! noise example for demonstration purposes: Traffic noise

☞ Always leave the Machine Noise Guard activated. Due to the automatic control, it is only implemented when the client is actually in a correspondingly classified hearing situation.

4 Fitting procedure

Equaliser

The equaliser allows high-precision correction of hearing loss. Each of the equaliser controllers alters the gain in the corresponding frequency band. The level for the selected frequency can be lowered or raised using the adjacent buttons.

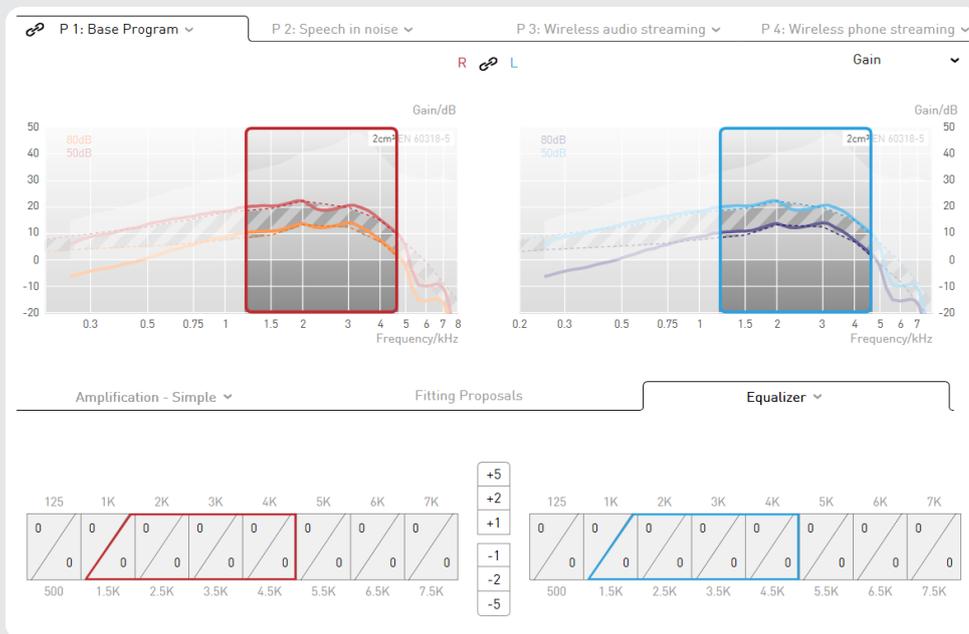


Fig.: Equaliser

🔑 The default setting for the equaliser is maximum.

🔑 Fitting tip: Working with the equaliser

1. Use the gain table to raise the hearing system gain above the target gain.
2. Open the equaliser
3. Use the equaliser controllers to fine-tune the gain values.

4 Fitting procedure

Compression

The compression tab allows:

- Definition of the trigger points of the AGCi (TK = Threshold Kneepoint)
- Selection of the compression method (not on "Cosma" instruments)

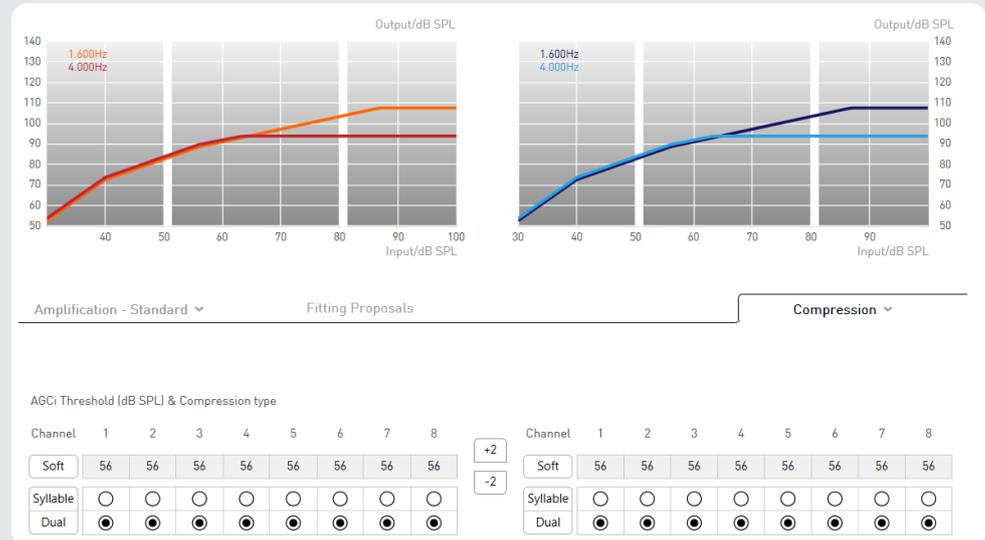


Fig.: Compression

The AGCi (TK) trigger point refers to the input volume in the respective channel at which the compression is activated. All input signals below the level of the TK trigger point are amplified in a linear manner. Above the TK, the gain decreases as the input level increases in accordance with the compression ratio (CR).

Syllabic or dual compression can be activated for each channel independently or for all channels simultaneously by selecting the corresponding button.

- **Dual compression**

Fast Attack – Fast Release:

fast compression for sudden peaks in the input signal

Slow Attack – Slow Release:

slow compression for adjusting the gain to the acoustic environment

- **Syllabic compression**

Fast time constants for adjusting the gain to the natural fluctuations in the level of speech

Fitting tip: Syllabic compression versus dual compression

If a client with profound hearing loss complains of poor speech comprehension in noise, the hearing instrument is probably staying at a reduced gain for too long due to the dual compression component. Changing to syllabic compression can reduce this effect. If syllabic compression is used for mild to medium hearing loss, the client may hear the "pumping" of the compression.

4 Fitting procedure

Fitting proposals

↳ Sound-based fitting assistant

A five-channel audio reproduction allows fine-tuning of the hearing instrument in realistic hearing situations. In the MySound! box (on the left-hand side of the screen), various hearing situations can be combined with a useful sound. If the client reports volume/sound sensitivity in the set hearing situation, audifit 5 suggests specific fitting proposals, such as reducing the volume.

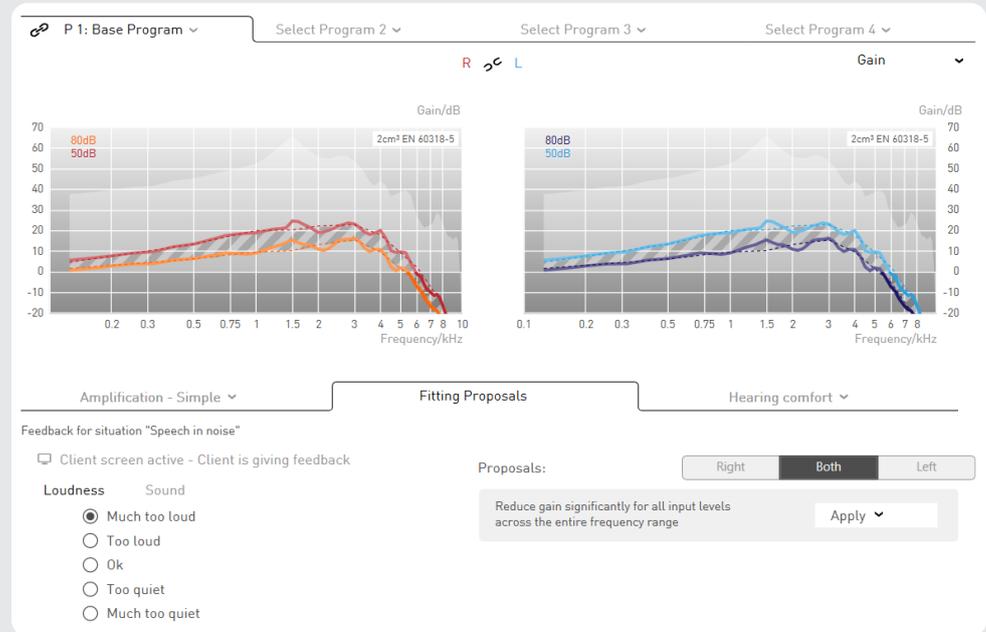


Fig.: Fitting proposals

The instrument is fine-tuned in a three-step process:

- **Step 1** – Sound selection: simulation of realistic sound environments by mixing ambient noises (such as traffic or household) and useful sounds (such as dialogue or siren). The option of spatially positioning the useful sound is a versatile tool for demonstrating spatial and directional hearing.
- **Step 2** – Client feedback: the client rates the sound environment on a selected scale (volume or sound).
- **Step 3** – Fine-tuning the hearing instrument parameters: audifit 5 suggests adjustment options according to the client's response. These can be programmed directly into the hearing instrument.

↳ CROS/BiCROS hearing instruments

For CROS/BiCROS hearing instruments, the fitting proposals are only available on the receiver (Rx) side.

↳ Text-based fitting assistant

The fitting assistant can also be used without playing sounds. The text-based fitting assistant provides a variety of descriptions of different situations with possible client problems. By selecting the problem, different solutions are offered, which are transmitted directly to the devices by simple confirmation in the fitting software. Thus, even without expert knowledge, it is possible to adjust the instruments to satisfy your clients.

4 Fitting procedure

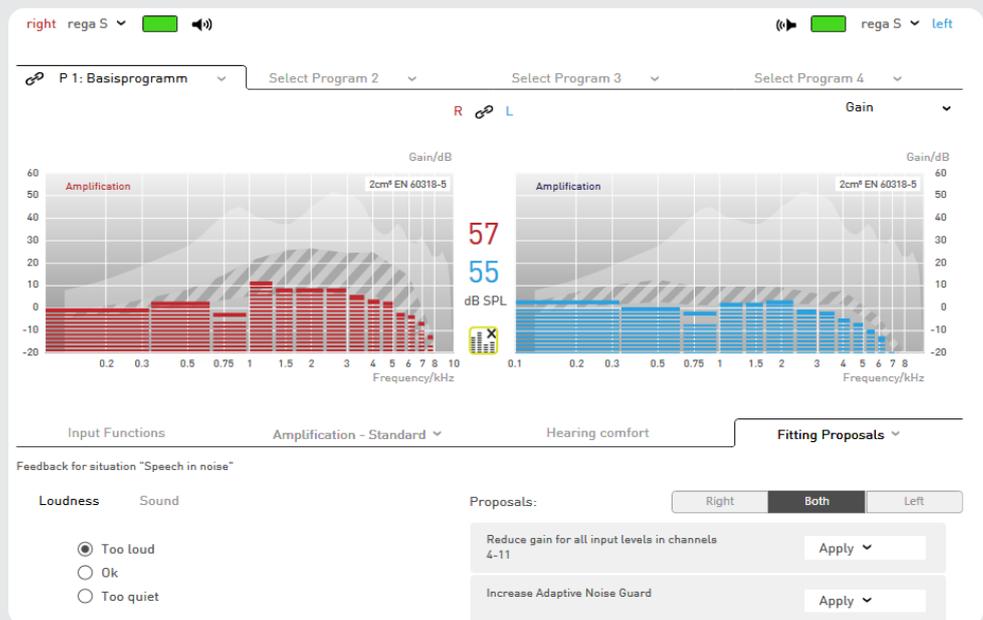


Fig.: Fitting assistant

4.7 Hearing instrument options

The following settings are available in the hearing instrument options section:

- Function of the control element (if available)
- Control range of volume control
- Volume of indicator sounds
- Data logging activation (if available)
- Start-up delay
- easyclick (if available)

↳ CROS/BiCROS hearing instruments

CROS/BiCROS hearing instruments are always fitted online and do not allow ear pairing. On the transmitter (Tx) side, only the battery warning signal is available and separately adjustable.

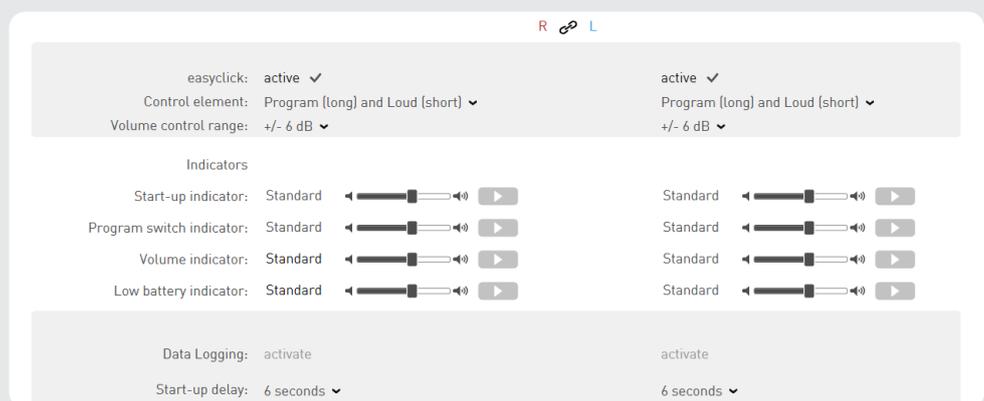


Fig.: Hearing instrument options

Function of the control element and control range

If the hearing instrument has a rocker switch, you can choose "Volume", "Program", or "Program (long) and loud (short)". If "Program (long) and Volume (short)" is selected, pressing and holding toggles through the activated hearing programs, while pressing and releasing adjusts the volume within the set control range.

If the device has a volume control, it can only be enabled or disabled.

4 Fitting procedure

For hearing systems with tinnitus function, it is possible to choose "Noise volume" in the drop down menu to determine whether the volume change on the control element should either affect the audio signal, noise, or both.

Note: If the hearing instrument has a digital volume control, it is disabled during fitting. At the end of hearing instrument fitting and each time the hearing systems are switched on, the volume control is in the neutral position and can be adjusted within the volume control range.

↳ *easyclick (only for hearing instruments with wireless function)*

- easyclick wirelessly synchronises the program and volume settings of two hearing systems.

Control range of volume control

The volume control range can be varied between ± 4 dB and ± 10 dB. It determines the extent to which the client can adjust the volume.

Indicator sounds

The indicator sounds section allows the individual volume setting or deactivation of the following:

- Start-up indicator
- Program switch indicator
- Volume tone
- Low battery indicator

The  "play" button allows indicator sounds to be played directly on the connected instrument.



Warning: Damage to hearing!

On devices with an output sound intensity greater or equal to 132 dB SPL, this can damage the hearing. The volume of the hearing instruments must thus be selected very carefully. Prolonged use at too high a level can impair the residual hearing.

Activating data logging

If data logging is activated, the client's usage behaviour and program use will be recorded. This data can be read out and displayed under "Data Logging" in the menu.

Start-up delay

The start-up delay is the time between switching on the instrument and instrument activation. A delay is particularly advisable for open hearing instrument fittings and ITE instruments to avoid feedback whistling during insertion.

☞ The start-up indicator sounds after the specified start-up time.

4 Fitting procedure

4.8 Completion

Before the settings are programmed to the instrument and the session is saved, all of the essential settings are shown again in an overview.

The following functions are available at this point:

- Appendix to the operating instructions
- Print fitting report
- Remarks
- Read protection
- App hearing instrument name (only for devices with the "WINGS" chip platform)

Hearing instrument name:	Right: lewi R		Left: lewi R	
Receiver unit:	S		S	
App instrument name:	John HA#SL		John HA#SL	
Serial number:				
Fitting rationale:	Comfort Logix		Comfort Logix	
Acclimatisation level:	1 Novice user		1 Novice user	
Receiver length:	1		1	
Dome:	Open 7 mm		Open 7 mm	
Programs:	1 Base Program 2 Copy Base Program 3 Noise Comfort 4 Music		1 Base Program 2 Copy Base Program 3 Noise Comfort 4 Music	
Binaural synchronization:	On		On	
easyclick:	On		On	
Control element:	Volume control and program switch		Volume control and program switch	
Volume control range:	+/- 6 dB		+/- 6 dB	
Indicator sounds:	Volume Control, Low battery, Program switch indicator, Startup, System indicators		Volume Control, Low battery, Program switch indicator, Startup, System indicators	
Data Logging:	Off		Off	
Start-up delay:	6 seconds		6 seconds	

 Annex to user manual  Print fitting report  Comment  Read protection **PROGRAM AND SAVE** 

Fig.: Completion

Appendix to the operating instructions

This printable appendix contains information about the hearing instrument used and relevant information for the client (such as program assignment).

Print fitting report

The fitting report contains both client data and all the settings configured on the hearing instruments fitted during the session.

Remarks

Any comments about the current session can be entered here. They can be viewed in the client management.

Read protection

The read protection function prevents third parties from reading out fitting data. A PIN code of up to four digits can be entered.

Program and save

Writes the fitting data to the connected hearing instruments and saves and ends the session. Clicking on the "⚙️" symbol offers the following options: the data is written to the connected hearing instruments, the session data is saved, or both. App hearing instrument name are only displayed for instruments with the "WINGS" chip platform.

 The new app hearing instrument name is also displayed in the final summary. This is made up of the client's first name and the serial number. This individual hearing instrument name is displayed in the "audifon app" in Bluetooth device detection. For further information please visit our website or see the app operating instructions.

5 Other program options

Follow-up fitting allows the fitting settings to be adjusted for the following:

- Hearing instruments belonging to clients who have already had a session
- New clients who already have hearing instruments

5.1 Follow-up fitting

To perform a follow-up fitting, proceed as follows:

1. Select the existing client in the client management or create a new client (for new clients who already have a hearing instrument).
2. Choose whether you would like to continue a session or start a new one.



Fig.: Open session

3. In the "Hearing instruments" menu, select the "Follow-up fitting" button



Fig.: Begin fitting

When the "Follow-up fitting" button is selected, the data for the connected hearing instruments is read out and compared with the data saved in the session. If there are discrepancies between the two sets of data, decide whether to use the session data or the data currently on the hearing instrument for the follow-up fitting. Once this selection has been made, the "Fitting" menu item is displayed.

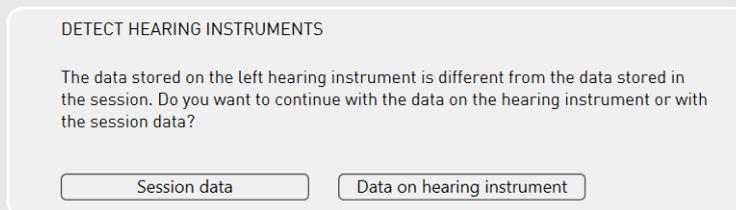


Fig.: Discrepancies between session data and hearing instrument data

If there is no session data available or the session data and the data on the hearing instrument are identical, you will be taken directly to the "Fitting" menu.

The follow-up fitting process is the same as that already explained from the "Fitting" chapter onwards.

☞ During the follow-up fitting, the "Preset" menu item, and thus the First Fit, will be skipped, as these steps have already been carried out in a previous session.

5.2 Exporting/ importing client information

audifit 5 enables the export and import of client data.

This means that client records from several installations can be synchronised, or client data can be transferred from audifit 4.

Exporting client information

Select "Export clients" from the menu bar:

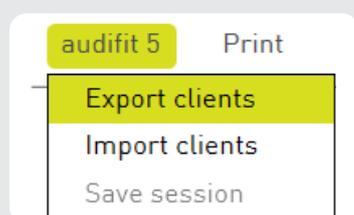


Fig.: Exporting client information

5 Other program options

Once the file name and location have been selected, all client data contained in the client management will be exported as an XML file.

Importing client information

The import function allows clients to be imported from auditfit 4 and auditfit 5. To do so, select "Import clients" from the menu bar:



Fig.: Importing client information

Once you have selected an XML or AF4 file, all client data it contains will be transferred to the auditfit 5 client management.

☞ You can import the following file types:

- AF4 file format: client data exported from auditfit 4
- XML file format: client data exported from auditfit 5

5.3 User management

To support the new data protection guidelines in the stand-alone version, a user management system has been incorporated in auditfit version 5.8 and higher.

☞ If auditfit is installed under NOAH™, this function is not visible as NOAH™ already supports and complies with the data protection guidelines with its own user management system. For more information on the NOAH™ version and handling, refer to the NOAH™ user manual.

1. Following installation of the stand-alone version a new login screen is displayed when the software is started.
2. The user cannot be changed until a new user has been created in the user management.
3. The default password for the administrator is 1234. This password can be changed in the user management.

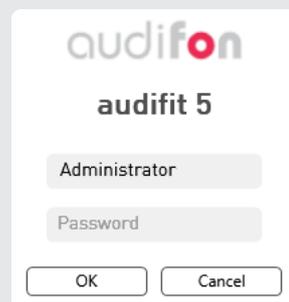


Fig.: Administrator login

A password does not initially need to be entered. The software can be started as usual without any further inputs by confirming with "OK".

If no changes are required here, the software can continue to be used in this manner. However, changing the password is recommended.

If you wish to enter a password for the administrator or create a new user, you can do this in the User management menu.

5 Other program options

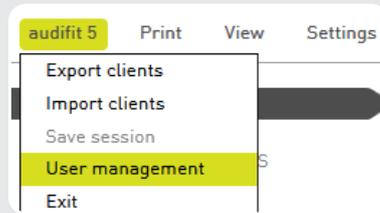


Fig.: Select user management

Selecting "User management" opens other program options. You can create new users or edit existing ones here. You can enter the user's first and last name as well as the user name. A password can be allocated to every user. The password must consist of at least three characters.

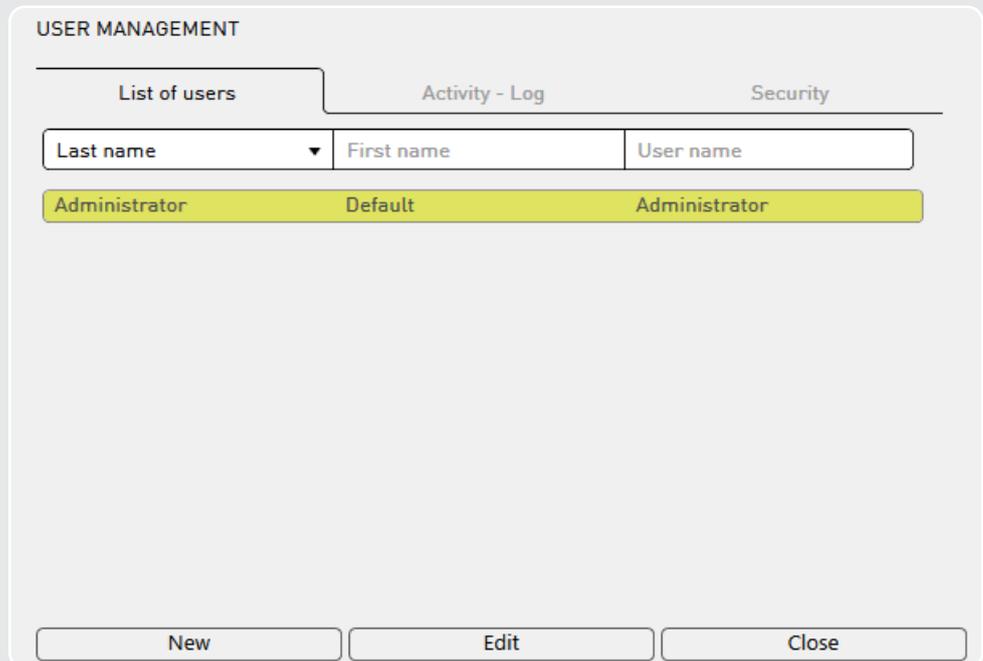
A screenshot of the 'USER MANAGEMENT' dialog box. It has three tabs: 'List of users' (selected), 'Activity - Log', and 'Security'. Below the tabs are three input fields: 'Last name' (with a dropdown arrow), 'First name', and 'User name'. Below these fields is a table with one row: 'Administrator' | 'Default' | 'Administrator'. At the bottom are three buttons: 'New', 'Edit', and 'Close'.

Fig.: User management

Creating a new or editing an existing user

Every user created can be edited after starting the software. Confirm your changes with "OK". Edited login data will take effect after restarting the software.

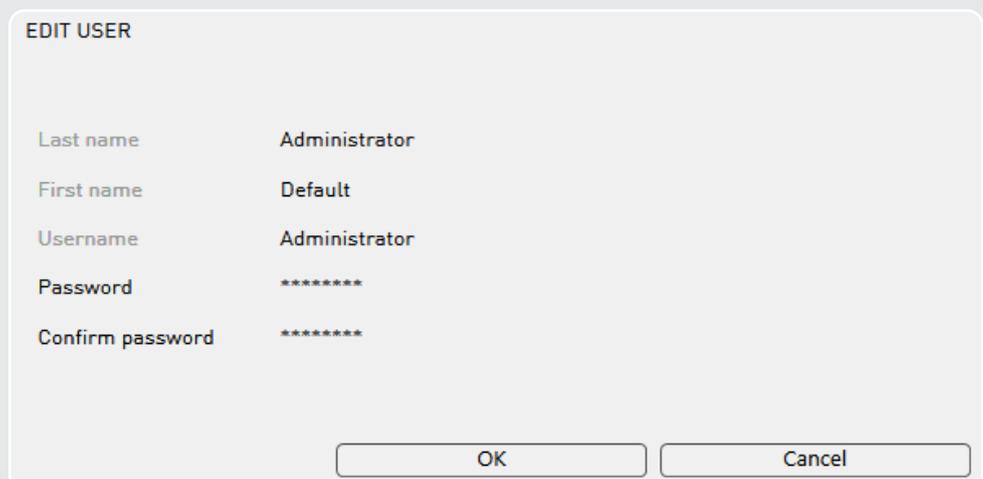
A screenshot of the 'EDIT USER' dialog box. It contains five labels and their corresponding values: 'Last name' (Administrator), 'First name' (Default), 'Username' (Administrator), 'Password' (*****), and 'Confirm password' (*****). At the bottom are two buttons: 'OK' and 'Cancel'.

Fig.: Edit users

5 Other program options

Password prompt

If you do not wish to enter the password whenever you start the software, disable the password prompt in the Security item in user management. This setting is selected by default on new installations.

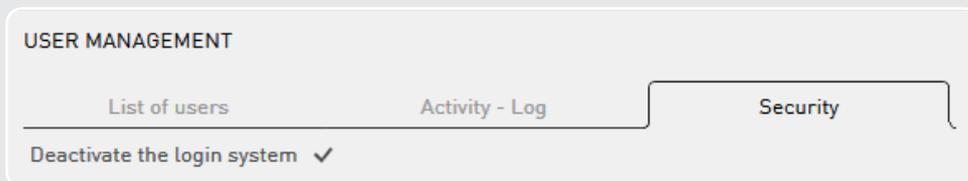


Fig.: Password prompt

Activity log

All client-relevant activities are saved in user management.

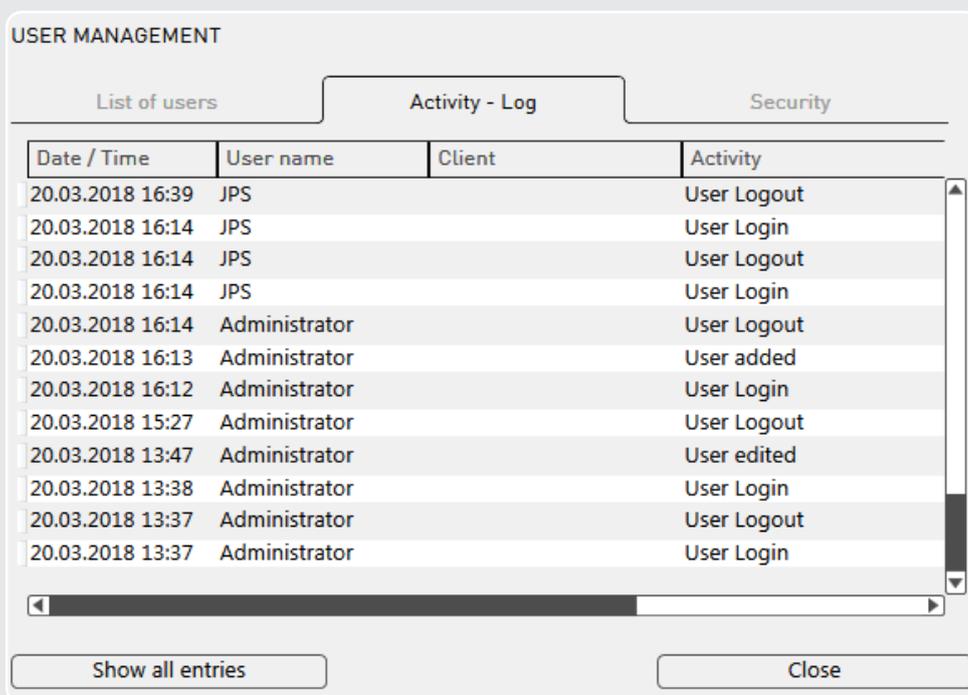


Fig.: User management activity log

5.4 Measurement settings

Hearing instruments can be set to maximum test gain as explained below. The values contained in the data specifications can be reproduced with this setting.



Warning: Damage to hearing!

The instruments are set to the maximum test gain for measuring purposes. The hearing instrument must not be near the client's ear at this setting! Otherwise there is a risk of damaging the residual hearing.

Set the instrument to the maximum test gain as follows:

1. Connect the hearing instruments to be measured.
2. Select "Settings" and "Measurement settings" from the menu bar (no session may be active!).
3. Select "Apply" (Program 1 is temporarily moved to measurement settings) or "Program" (Program 1 is permanently moved to measurement settings). Other programs on the instrument are disabled in the measurement settings.

5 Other program options

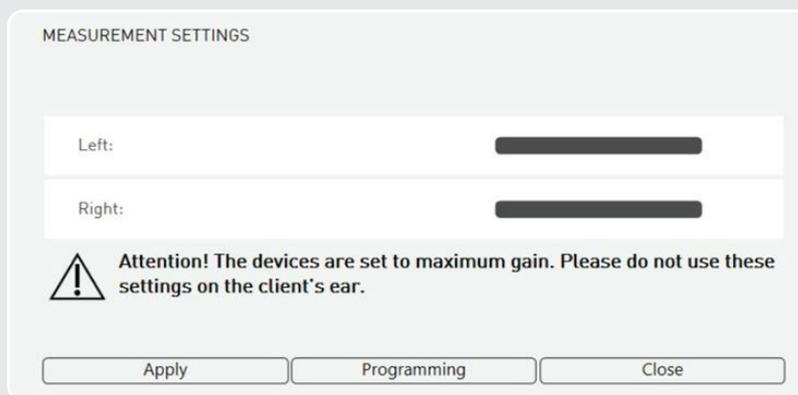


Fig.: Program measurement settings or use them temporarily

☞ If "Apply" is selected, the measurement settings are only temporarily transferred to the instrument. After the programming connection has been aborted or "Close" has been selected, the instrument reverts to its original state.

5.5 Instrument firmware update

The WINGS device range supports a firmware update. Within the fitting software, the devices can be checked and, if necessary, updated with a firmware update. Please note that the firmware update can only be carried out with the wired HIPRO 2.

Procedure:

Launch the "Firmware update" function from the menu in the fitting software.

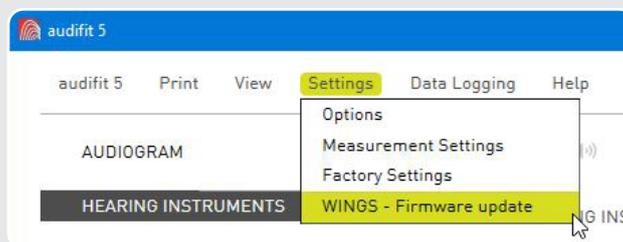


Fig.: WINGS instrument update selection

☞ Please note that this function cannot be performed during a fitting.

- If you are already in a fitting session, please exit it.
- Restart the software if necessary.

Safety instructions:

Attention! Please do not perform the update while the instrument is on the client's ear.

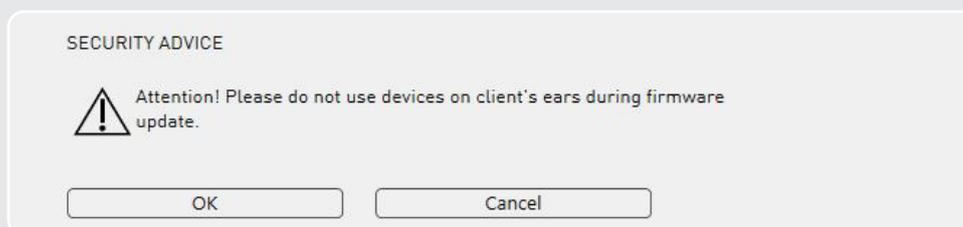


Fig.: Safety instructions

Connect one or two devices to the Hipro 2. The following NOTE appears:

5 Other program options

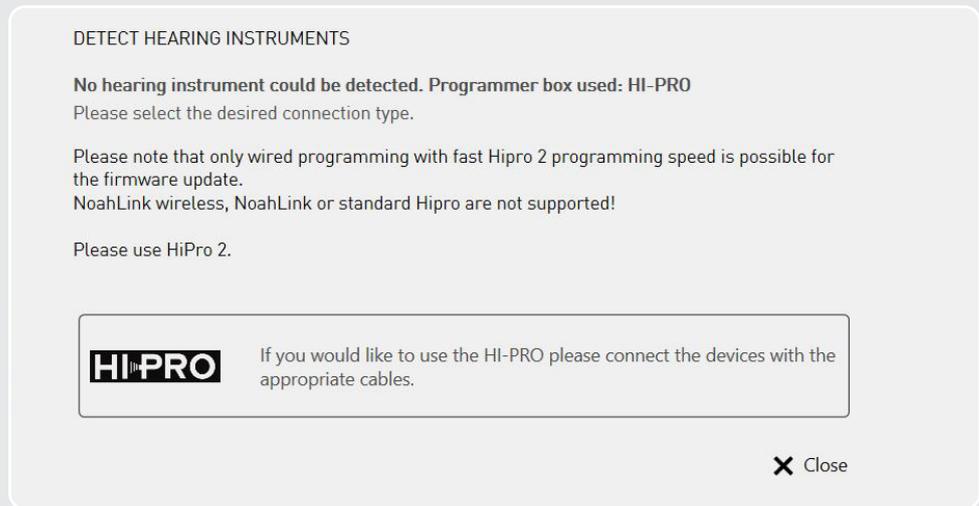


Fig.: Programming interfaces note

Select the interface used and start the firmware update:

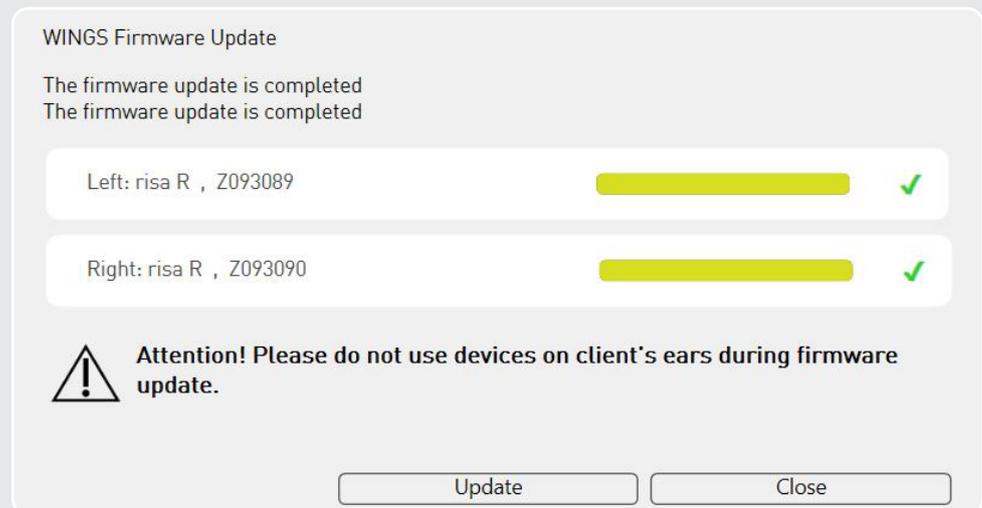


Fig.: Implementing the update

After a successful update of the firmware, close the update screen and continue with the client's fitting.

Now you can use the instruments as usual.

5 Other program options

5.6 Country and language selection

The country and language selection is requested during the installation of audifit. Select the appropriate options.



Fig.: Country and language selection

☞ When a country is selected, the appropriate range of instruments available is displayed.

6 Troubleshooting

Description	Hardware components	Possible causes	Solution
NOAHlink properties returns "Driver error" report	Programmer box	After the programmer box is turned on, it cannot be reconnected because of a driver error.	Remove the battery from the programmer box. Insert the battery again. Turn the programmer box on and reconnect.
Windows reports "Server is busy" during session	PC	Insufficient PC memory.	Close all unnecessary applications and click "Retry" in the message.
	NOAHlink/HiPro programmer box	The connection to the programming box, and thus to the hearing instrument, is unstable.	Check the hardware using the following steps:
Hearing instrument is not recognised	PC	NOAHlink driver no longer works.	Re-install NOAHlink Properties.
Connection to hearing instrument lost during session	PC	NOAHlink driver version or NOAHlink version is outdated.	Install the recommended version of NOAHlink Properties and NOAHlink Kernel.
		USB connection is faulty/ loose contact.	Try another USB port on the computer.
	USB cable	Cable breakage.	Try another USB cable.
		Cable too long.	Use a USB cable that is no longer than 1 m.
	NOAHlink Bluetooth Dongle	Objects between the Bluetooth dongle and programmer box are impairing the wireless connection.	Place the Bluetooth stick within sight of, and at a distance of about 1 m from NOAHlink.

Continued →

6 Troubleshooting

Description	Hardware components	Possible causes	Solution
	NOAHlink/HiPro programmer box	NOAHlink battery is dead or no longer effective = PC LED indicator lit red.	Insert a newly recharged battery.
		When the programmer box is accessed, the PC LED indicator does not flash.	Under "Options" in the fitting software, choose the connected programmer box. Disconnect and reconnect the USB cable between the PC and programmer box. Pair and connect NOAHlink with NOAHlink Properties. Restart the fitting software.
		When the connected hearing instruments are recognised, the LED indicators on the programmer box ("left"/"right") do not flash.	Check the cable connection between the programmer box and hearing instrument. Use the Cable Guide to check the selection of the appropriate programming cable and adapter. Verify that a battery has been inserted into the ITE instrument.
	Programming cable, programming cable adapter	Cable selection.	Use the Cable Guide to check the selection of the appropriate programming cable and adapter.
		Broken cable.	Replace faulty programming cable.
		Worn plug contact/connector.	Replace faulty programming cable and adapter.

Continued →

6 Troubleshooting

Description	Hardware components	Possible causes	Solution
	Hearing instrument	ITE is not recognised.	Insert the battery to program ITE. In the fitting software, the hearing instrument selection will indicate whether the instrument requires a battery to be programmed.
		Plug contact bent or broken.	Send hearing instrument in for service.

7 Key to symbols



Attention

Indicates a situation that may result in serious, moderate or minor injury. Indicates the need for the user to consult the instructions for use for important cautionary information such as warnings and precautions that cannot, for a variety of reasons, be presented on the medical device itself.



Note

Indicates possible damage to property.



Information

Additional information for a better understanding of the device.



Manufacturer

Indicates the medical device manufacturer in accordance with EU Medical Device Regulation (EU) 2017/745 and EU Directives 90/385/EEC, 93/42/EEC and 98/79/EC.



Consult instructions

Follow instructions for use.



Medical device

Indicates the item is a medical device.



Item number

Indicates the manufacturer's item number so that the medical device can be identified.



CE mark

The device complies with all required EU regulations and directives.
The four digit number indicates the identification of the notified body.

8.1 Chip platforms

Feature set (Wings and Cosma)



Wings overview

- Wireless programming (Noahlink Wireless™ compatibility)
- Wireless streaming: Audio/telephone and remote control via audifon app
- Easyclick: Synchronization of controls (volume and program toggle)
- Binaural synchronisation (synchronisation of scene detection and associated functions)



Cosma overview

- A sampling rate of 20 kHz for the A/D conversion speaks for itself and allows higher bandwidth
- Unsurpassed sound experience with up to 10 kHz bandwidth
- Detailed fitting and precise pre-calculation enabled by up to 18 compression channels
- Lip-sync sound thanks to a signal delay of only 5 ms



10 k HD sound

With an audio bandwidth of up to 10 kHz, the Cosma chip platform comes very close to natural hearing ability, and helps with better speech comprehension.

Up to 18 channels allow precise frequency and dynamic adjustment.

Especially when listening to music and in a noisy environment, hearing instrument wearers benefit from the high bandwidth of the Cosma chip technology.

- Up to 18 channels allow sophisticated and detailed adjustments
- Up to 18 channels MPO for reliable settings in noisy environments
- Adjustable parameters are AGCi threshold, as well as gain for quiet and noisy signals



Adaptive Feedback Guard and Feedback Check

The Adaptive Feedback Guard is built to react rapidly to changing situations and therefore prevent unpleasant feedback, without impairing speech comprehension or sound quality. To be able to directly react to acoustically challenging situations, a permanent rating of the feedback path is carried out. Thanks to the Adaptive Feedback Guard, sound changes are now being securely prevented even before a feedback is heard. Combined with the Feedback Check, the Adaptive Feedback Guard can realize up to 20 dB more gain for open fittings, and starts to work from just 1 kHz.

We have developed a special music listening mode that now reacts gentler and is therefore optimised for the special needs of the incoming music signal (slow option).



Scene Detect

Scene Detect performs an automatic environmental classification of up to seven different acoustic situations, such as "speech in noise", "wind" or "music". Depending on the hearing situation detected, the algorithms will be adapted to enable optimum speech comprehension, and the hearing aid user does not have to perform any manual adjustments.

Environmental classification of situations

- Quiet (level < 50 dB)
- Wind (detected wind noise and level > 60 dB in affected channels)
- Machine noise (machine noise level > 50 dB)
- Music (level > 50 dB)
- Speech in a quiet setting (level > 50 dB)
- Speech in a noisy setting (level > 50 dB speech and noise)
- Noise (level > 50 dB)



Adaptive Sound Zoom

Adaptive Sound Zoom, in addition to Sound Zoom, offers automatic switching of the directionality and adaptation of the directivity, so that the noise coming from the rear is suppressed to a maximum. Adaptive Sound Zoom also controls the frequency-dependent direction of attenuation.

With Sound Zoom, the directional characteristic hypercardioid is permanently set. The time constants are optimized frequency-dependent with Sound Zoom, thus achieving the maximum attenuation in each frequency channel. For better speech comprehension, a slight reduction takes place in the low frequency range.



Adaptive Noise Guard

The noise reduction of the Cosma platform estimates the SNR of the input signal 625 times per second. The signal-to-noise ratio of the front microphone in the respective adjustment channel is separately evaluated in each adjustment channel.

Depending on this, the gain for this channel is reduced accordingly.

The gain change takes place in the millisecond range and is independent of the level.

The Adaptive Noise Guard feature works independently of the additional noise reduction systems triggered by the situation recognition. The strongest setting is used for the respective reduction of the gain. The maximum reduction in the gain can be set in the fitting software. This value then applies to all fitting channels. The actual reduction corresponding to the respective interference signal automatically adapts to the selected maximum reduction.

↳ *“Moderate” client profile*

- Client will rarely be in very noisy hearing situations
- Client wants natural sound and minimal audible controls

↳ *“Strong” client profile*

- Client will frequently be in very noisy hearing situations
- Client wants to improve understanding of speech in these situations

Machine Noise Guard

If the signal level is uniform and loud, the signal is interpreted as machine noise. As a result, the gain is reduced in all bands in which the noise occurs. The maximum reduction can be selected incrementally in each hearing program.

The attack and release times are preset with 3 seconds each. An interaction occurs between the wind noise suppression and machine noise suppression. If wind is present at the same time, the stronger value and the time constants for wind are used for the reduction in the bands for low and medium frequencies (100 Hz to 1500 Hz).

Wind Noise Guard

In a windy environment, turbulence at the microphone openings can cause rustling background noises. Thanks to the sophisticated Cosma algorithm, any irritating noise is reliably prevented. The system responds with a temporary reduction in gain in the affected channels.

- Detected wind reduces the gain in low and medium channels
- Affected frequencies: 100 Hz to 1500 Hz
- The Wind Shield algorithm analyses the environment 625 times per second

The detection time for the wind detection is in the range of 5 seconds to 10 seconds. The response time for the subsequent gain change is 200 milliseconds and the after effect time is 1 second.



Integrated noise generator module

The tinnitus features of the Cosma platform allow the adjustment of modulation and modulated noise. Different modes can be selected. Because of the large adjustment range of the noise gauge and the variations of the modulation, the noise generator module by audifon offers the best precondition for tinnitus therapies. In tinnitus mode, the hearing instrument generates white noise. The level of the noise can be set in 9 adjustment channels in 1 dB increments.

Modes that can be selected in the noise generator module include:

- White or pink noise
- Individually adjustable noise (adjustable in 9 channels)
- Three types of modulation: slow, medium and fast modulation

Music detection

When the situation recognition detects music, a new programmable setting for the gain for quiet and loud signals is applied. The gain settings for music are available separately for each of the 4 hearing programs.

The response time and the after effect time of the switchover are specified at 6 seconds. The machine noise suppression as well as the SNR controlled noise suppression are deactivated. At the same time, the effect of the adaptive feedback manager is reduced slightly.



Live View

Live View constantly reads the following data from the hearing instrument:

- Input level and output level per adjustment channel
- Broadband signal level at front microphone
- Current gain changes per channel triggered by the noise suppression

New data is provided by the hearing instrument approximately every 125 ms. The speed at which the data is transferred to the software depends greatly on the transmission rate of the programming box used.

Expansion

At low signal levels, the expansion acts so that the gain is not perceived as unpleasant.

The control times of the expansion are 10 ms, 100 ms and 500 ms. 100 ms are preset.

Compression

The WDRC operates at Cosma with an attack time (start-up time) of 5 ms and a release time (switch-off time) of 100 ms.

8 Glossary

8.2 Storm chip platform

Adaptive directionality

During adaptive directionality, the signals from two microphones are offset against one another, to suppress any disruptive noise, that could affect the speech comprehension of the person wearing the hearing instrument, as effectively as possible. In this case, the basic assumption is that the useful signal comes from the front, which is why it is not affected.

Adaptive directionality is a tried and tested and important technology for improving speech comprehension in noisy environments.

Adaptive feedback cancellation (AFC/AFC²)

An efficient feedback management system is an essential feature, especially for open services.

Adaptive systems continuously evaluate the feedback path to also be able to react to changing and acoustically challenging situations. Depending on the technology, the gain is reduced or inversely phased signals are used to avoid and eliminate feedback. Due to these strategies, significantly higher and stable gains can be implemented during fittings.

Adaptive ambient noise reduction (ANR)

Adaptive ambient noise reductions are used to make it easier for the person wearing the hearing instrument to understand speech in noisy situations and to ensure that noisy environments are not as intrusive. In this context, the input signal is continuously analysed over the entire frequency range in relation to the distance of the noise signal and the gain is temporarily reduced in frequency ranges with a poor SNR.

Auto T-Coil

Auto T-Coil is a hearing instrument function that is designed to ensure the hearing instrument automatically activates the T-Coil via a magnetic field (e.g. via a telephone receiver with a magnet glued on, if required).

Auto phone

Auto Phone functions like Auto T-Coil, although a hearing program for the automatic activation can be implemented as required.

Binaural T-Coil

In this mode, the signal received via the T-Coil is transmitted to the hearing system on the other ear so that the signal is audible on both sides. If desired, the slightly reduced microphone signal can also be added.

Crossfader

audifon hearing instruments offer a crossfader to minimise potential variations in signal strength when switching between programs: As soon as the hearing program is changed, the audio signal fades out, and the program switch tone (if featured) sounds; the audio signal only cuts in again after you have switched to the new hearing program.

Data logging

The data logging function records the client's usage behaviour. The recorded data, such as information about the duration of usage, duration of use per program and Sound Dynamix, can be read out from the connected hearing instrument.

easyclick

easyclick wirelessly synchronises the program or volume settings of two hearing systems.

Expansion (Squelch)

Squelch is an expansion circuit which is intended to reduce or eliminate microphone noise by dimming the gain as the input sound pressure decreases.

8 Glossary

Notch filter

The notch filter is an electronic filter used to filter out frequencies within a narrow frequency range. The notch filter can be used to attenuate unwanted feedback and interfering frequencies by reducing the signal level of the relevant frequency.

Sound Dynamix

Sound Dynamix constantly analyses the signal recorded by the microphones and classifies it as one of the following hearing situations:

- Quiet
- Speech in a quiet setting
- Noise
- Speech in noisy setting
- Music
- Wind noise

According to this classification, the parameter settings of the hearing system are always configured to ensure optimum hearing comfort/optimum speech intelligibility.

Wireless Phone and Audio Streaming

If Wireless Audio Streaming is activated in Program 3, the hearing systems can receive audio signals from the multistreamer pro.

If Wireless Phone Streaming is activated in Program 4, phone calls can be received directly in the hearing systems via the multistreamer pro.



audifon Solutions for better hearing



Service Centre

Download the latest technical information for service and maintenance, including the latest versions of our audifon software.

This user manual is available online or in a bound version.

Any questions?

Please contact our audifon Support Center:
support@audifon.com

Observe the safety instructions regarding organisational proactive and reactive measures. (2017/746/EU 23.4 ab)



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