

# Phonak

## Step-by-step Guide.

### Fitting hearing aids in Phonak Target fitting software

The Phonak Target fitting software is intended to be used by qualified hearing care professionals to configure, program, and fit hearing aids to client-specific requirements. This guide provides detailed information on how to navigate a hearing aid fitting in Phonak Target 9.0 and newer.

# Content

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# Overview

The screenshot shows the Phonak Target software interface. At the top, there is a menu bar with 'File', 'Fitting', 'eService', and 'Help'. Below the menu bar, there are three main sections: 'Client' (Slim), 'Instruments' (Slim L90-R), and 'Fitting' (Calm situation). The 'Instruments' section is currently active, showing details for two Slim L90-R (S) hearing aids. Each aid has a gain of 47 (2cc), an MPO of 111 (2cc), and a receiver 'S'. Below this, there is a list of hearing aid families with their respective counts: Audéo L (12), Audéo P (14), Audéo M (4), Bolero M (8), CROS (11), Naída L (8), Naída P (8), Naída M (4), Naída Link M (1), Sky Link M (1), Sky L (8), Sky M (9), Slim (1), and Virto P (14). The 'Slim' family is selected. To the right, there is a detailed view of the Slim L90-R, including a 'RECEIVERS' section with four graphs (S, M, MAV, P) and their respective gain/MPO values. Below the graphs, there is a 'DESCRIPTION' and 'FEATURES' section. The 'DESCRIPTION' states: 'Premium WaterResistant external receiver instrument (rechargeable) for mild to severe hearing loss. Direct connectivity (Bluetooth®)'. The 'FEATURES' section lists: AutoSense OS 5.0 premium, StereoZoom 2.0, SpeechSensor, Health functionalities, Speech enhancer, UltraZoom premium, Motion sensor hearing, Dynamic noise cancellation, Comfort in echo, Environmental balance, Tinnitus balance, SoundRecover2, Tap control, RogerDirect, and DuoPhone. There is also a 'More information' link.

Phonak Target is divided into three sections: dashboard, navigation, and work area.

## Dashboard and navigation




The three tabs [Client], [Instruments] and [Fitting], as well as the dashboard above offer easy navigation and status information.

You can hover on each of the icons in the dashboard to see key information such as creation date of the audiogram, serial numbers of the hearing aids, fitting formula, feedback test status, Bluetooth® side, and more.

Client	Instruments	Fitting
Information on the client, such as personal data, audiogram, RECD, and REUG.	Information on hearing aids, acoustic parameters, and accessories.	All hearing aid adjustments and fine tuning.

## Work area

The work area is the space where the selected content is shown. Phonak Target has a color code:

-  Indicates a restriction in functionality that may impact the client's experience or highlights important information that requires your attention.
-  Highlights relevant fitting information being applied.
-  Provides further clarification or hints about features or functionalities available within Target. To enable hints, click on the information icon in the dashboard, located to the far right. The icon turns blue when enabled. To turn off the hints, click on the icon again.

The screenshot shows the Phonak Target software interface. The notification sidebar on the right contains the following items:

- No audiogram**: Audiogram is missing at least on one side.
- Receiver problem**: There is a problem with the detected receiver.
- No "Feedback & real ear test"**: "Feedback & real ear test" is missing at least on one side.
- Tap control**: "Tap control" behavior changed by the client.
- Bluetooth phone**: Bluetooth bandwidth (fixed/adaptive) changed by the client.
- Out of charger**: "Auto on from charger" behavior changed by the client.
- DataLogging**: The client spent 24% of the time in manual and/or client-made programs.

The main window shows an audiogram graph with a 'Muted' label and a table of MPO values:

MPO	73	86	93	96	100	107	111	109	106	95
All	250	500	750	1k	1.5k	2k	3k	4k	6k	8k
G80	1	1	2	3	10	21	28	28	26	20
G65	1	1	2	3	13	28	37	36	34	28
G50	1	1	2	3	15	32	41	38	34	28
CR	1	1	1	1	1.2	1.6	1.8	1.5	1.4	1.4

### Notification sidebar

The notification sidebar provides quick access to information or reminders that can support you in completing a fitting or foster conversations with your client.

Some examples of notifications may include:

- Feedback test not performed
- Receiver check failed, indicating a mismatch between the receiver detected and what has been entered into Target.
- Audiogram information missing
- Configuration changes made by the client using the myPhonak app.

If you wish to see the notifications, click [Notifications] to expand the sidebar.

# Setup

Phonak Target File eService Help

Setup

General My profile **Fitting session** Junior mode Reports Fitting device Sound system Internet

**Diagnostics**

Instruments

Fitting

Easy navigation

AudiogramDirect

Presentation

Diagnostics

Default measurement condition

Bone conduction symbol

Left  Right

Left  Right

Use Auditory Brainstem Response (ABR)

DSL v5a - ABR nHL correction values

250	500	750	1k	1.5k	2k	3k	4k	6k	8k	Hz
30	20	17	15	12	10	7	5	5	5	dB

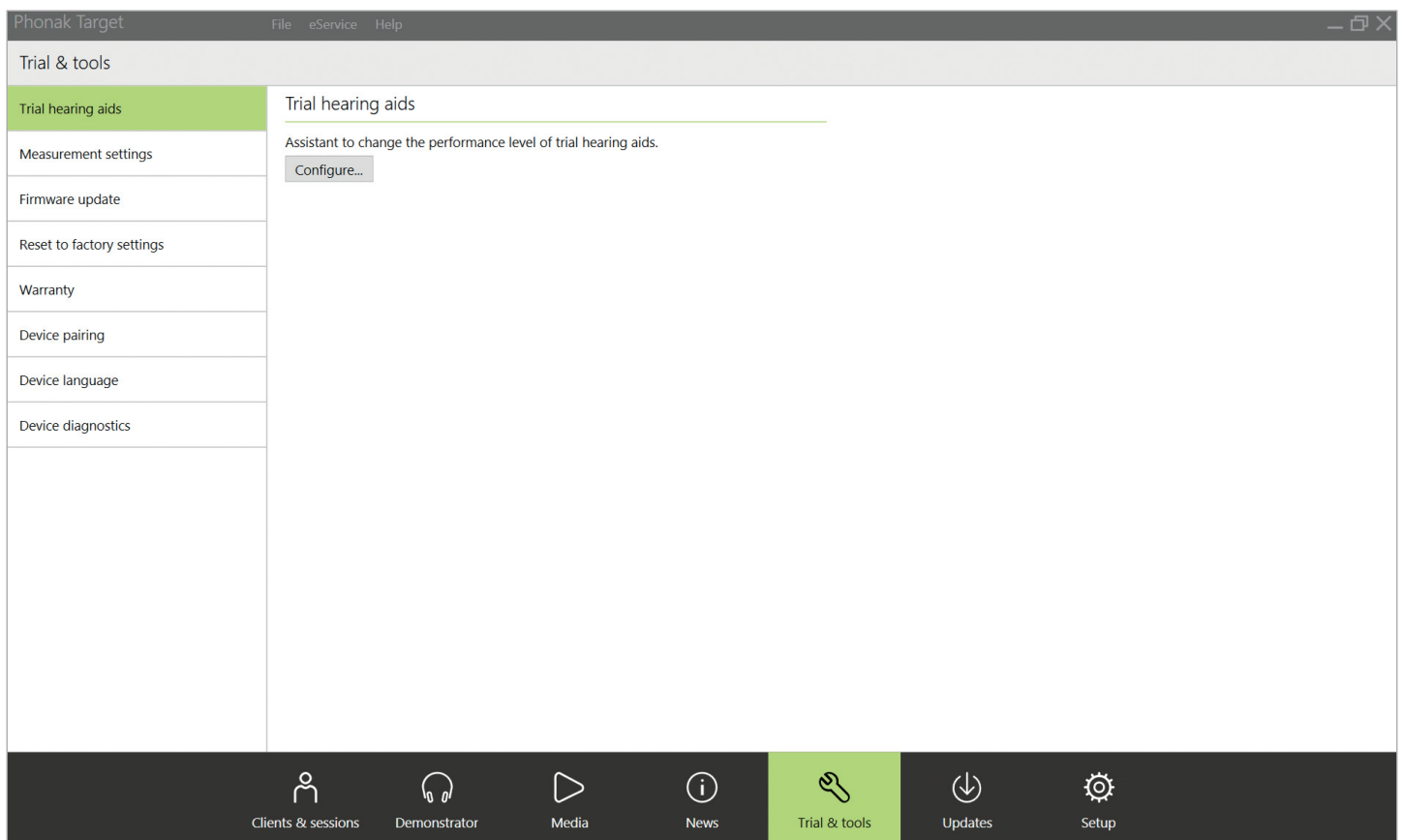
Clients & sessions Demonstrator Media News Trial & tools Updates **Setup**

Within [Setup], you can customize and change the default parameters to better suit your fitting workflow.

Under [Fitting session], you can set:

- Diagnostics preferences
  - Select default measurement condition: insert earphones, headphones, loudspeaker or occluded earmold.
  - Entry of Auditory Brainstem Response (ABR) measurements.
- Default fitting formula
  - Select from Adaptive Phonak Digital (APD), NAL, or DSL fitting formulas.
- Enable password-protected fitting
  - Enter a password to protect the fitting data on the hearing aid.
- AudiogramDirect
  - Configure the test setup to your individual preferences.

# Trial & tools



Within [Trial & tools], you can find tools for testing, updating and resetting hearing aids or accessories.

## Trial hearing aids

Phonak Trial hearing aids allow you to offer your client the opportunity to experience different performance levels in a single hearing aid. Trial hearing aids are offered as BTE and RIC hearing aids with direct connectivity. The ability to change performance levels in Target allows you to address a client's needs from the first visit.

Select the desired performance level and press [Continue]. Target will configure the performance level selected. When finished, you can then start again for the contralateral side. Once the process is complete, the hearing aids are ready to be fit in a client's fitting session.

The trial period duration can be configured between 2 and 8 weeks, with 6 weeks set as the default. If you connect the hearing aids to the fitting software at any time, including during a Remote Support session, a new trial period starts from that date.

If the trial period expires, then a tone is played in the hearing aids 1x/hour for 6 days after the expiration time. Then, the tone will play 1x/minute making the hearing aids non-functional. This eliminates the need for you to remember what timeframe was set.

After the trial period ends and the client wishes to pursue new hearing aids and with their preferred settings, save the client's existing session to the new hearing aids.

A performance level change is not possible during a Phonak Remote Support session.

Before fitting a new client with Trial hearing aids, reset the Trial hearing aids to factory settings to remove any previous fitting information.

## Measurement settings

Under [Measurement settings], you can activate measurement settings in order to measure the reference test gain (RTG), full-on gain (FOG), or maximum power output (MPO) settings of the hearing aids.

## Firmware update

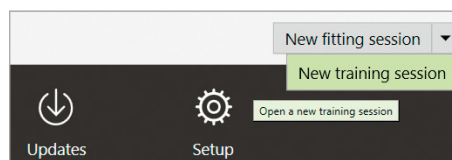
Under [Firmware update], you can update the firmware, when needed, for fitting interfaces, hearing aids, accessories, chargers and Roger™ devices.

# Training mode

Training mode allows you to simulate a fitting. All Target fitting functionalities are available allowing you to become more familiar with how the software works. No physical devices are needed.

To access training mode, click on the down arrow next to [New fitting session]. Anything done in training mode cannot be saved.

Select the hearing aids you wish to simulate from the hearing aid list within [Instruments]. Click on [Connect] to begin the simulation.



## Audiogram and RECD

### Audiogram

#### Using Phonak Target within Noah

The audiogram data from Noah will be automatically imported into Target and taken into account for the pre-calculation. A history of all audiograms is visible by clicking on [History].

#### Using Phonak Target as standalone

In a standalone version of Phonak Target, enter the audiogram in the [Audiogram] screen within [Client]. To have an overview of the client's audiograms from previous fitting sessions, they can be added to the history by clicking on [+ Add to history].

Ensure the correct audiogram transducer has been selected (headphones, insert ear phones, occluded earmold, loudspeaker, ABR – insert earphone, and ABR – occluded earmold).

If the client has conductive hearing loss, enter in the bone conduction thresholds. All fitting formulas (DSL, NAL and APD) have compensation for bone conduction.

The speech spectrum and examples of sounds can be layered over the audiogram to support or assist with counseling. Click on [Show speech spectrum], [Show pictograms] and/or [SPLogram in client view]. Refer to the Client view section below for more information.

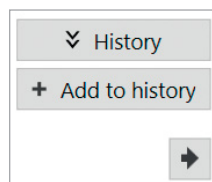
### RECD

RECD values can be accessed via [Client] then [RECD].

When entering RECD values, Target will ask you to confirm how you performed the RECD you are entering, including which earpiece (insert earphone vs earmold) and which coupler (ITE vs BTE coupler) were used. Once this information has been provided, enter the RECD values.

If you already have an existing RECD that you wish to apply to the fitting, Target allows you to import this RECD from Noah. The RECD you wish to use can be selected by clicking [History]. Select the appropriate RECD by clicking the [R] or [L] icon from the bar above.

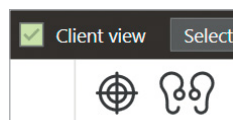
If you already have an RECD for one ear and you were not able to obtain it for the second ear, and both ears are similar, the RECD can be transferred to the other ear. By clicking the arrow located between the right and left graphs, an RECD performed on one ear can be copied to the other ear.



## Client view

Client view helps to facilitate the counseling process for your client and their communication partners. Information about hearing, hearing loss, and devices can be presented on your computer screen or on a second display screen.

To access Client view, click [Client view] in the upper right hand corner of the black menu bar.



## Preparation of the hearing aids

### iCube II or Noahlink Wireless

No cables to the hearing aids are needed. Just insert the battery and turn on the hearing aid by closing the battery compartment. For rechargeable, turn on the hearing aid.

### NOAHlink or Hi-Pro

Connect the programing cables to the hearing aids and the fitting device. Please use Phonak labeled cables.

## Connect the hearing aids

Within the client's fitting session confirm that the correct fitting interface is shown. To change the fitting device, use the pull down arrow next to the fitting device in the dashboard.

Click [Connect] to start the fitting. The connected hearing aids will appear in the dashboard. Hearing aids available for pairing will automatically appear.



If a hearing aid is not found, open/close the battery door or turn off/on the rechargeable hearing aids to initiate pairing mode.

With Noahlink Wireless only, press the multifunction button on the hearing aid to highlight it in the list when multiple hearing aids are available or to confirm the side to assign to a client. Hearing aids which have been fitted together are identified as a linked pair.

### Automatic selection of experience level

Phonak Target automatically pre-selects the experience level for new fittings using Adaptive Phonak Digital by looking at the fitting session history. This sets the foundation for a more individualized initial fit and leverages all the benefits of AutoSense OS™ for your client.

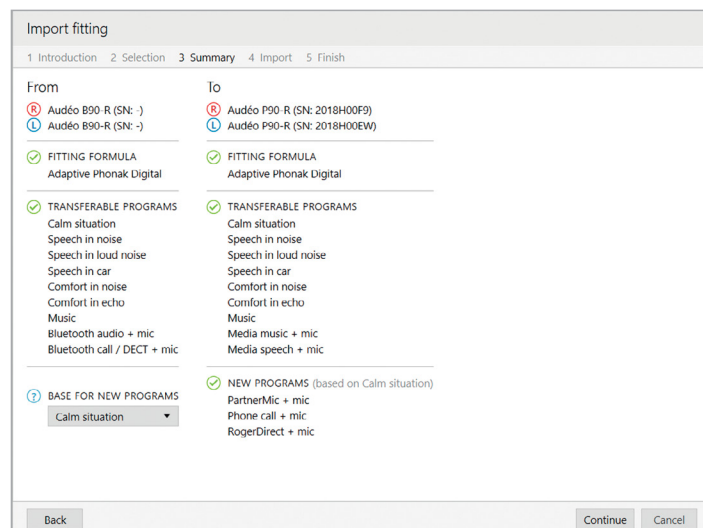
The experience level has an influence on the hearing aids' global gain settings. The global gain settings can be adjusted under [Global tuning].

## Transfer fitting

Target lets you transfer some settings from a fitting session to a new selection of hearing aids. The transfer fitting tool can be found within the [Fitting] dropdown menu, located in the top black menu bar. During the transfer process, Target will prompt you about which settings can or cannot be transferred.

The fitting-related settings that can be transferred are:

- Global gain level
- Fitting formula
- Compression setting from Global tuning
- Occlusion compensation setting
- MPO values
- Program structure
- SoundRecover settings





The acoustic parameters and feedback test results are not transferred over because Target does not know whether you will use the same acoustic parameters with the new hearing aids. Also, the fine tuning will not be transferred over.

If the acoustic parameters of the hearing aids you want to transfer settings into is calculated differently (i.e. Target calculates a 2 mm earmold vent for the new hearing aids, but

the coupling chosen is occluded), then change the acoustic parameters in Target before the settings are transferred from the previous hearing aids to the new hearing aids.

Transferring a fitting is not possible to or from a bimodal fitting.

## Instruments

The screenshot shows the Phonak Target software interface. The top menu includes File, Fitting, eService, and Help. The main window is divided into several sections:

- Client:** Target, Phonak
- Instruments:** Audéo P90-R
- Fitting:** Calm situation

Below the navigation tabs (Hearing aids, Acoustic parameters, Details, Accessories), two hearing aid configurations are displayed:

- Audéo P90-R (P) SN: 2018H00F9:** Shows a hearing aid with a red earpiece. The acoustic graph shows a red shaded area with a line representing the acoustic parameters. The receiver is set to 'P'.
- Audéo P90-R (M) SN: 2018H00EW:** Shows a hearing aid with a blue earpiece. The acoustic graph shows a blue shaded area with a line representing the acoustic parameters. The receiver is set to 'M'.

Below the graphs, the acoustic parameters are listed:

Parameter	Audéo P90-R (P)	Audéo P90-R (M)
Acoustic code	402286	XXXXXX
Earpiece	cShell	cShell
Vent	According acoustic code	Ø 0.9 - 1.1 mm
Receiver	P	M
Wire length	OP R	OM L

### Acoustic parameters and receiver check

Phonak Target automatically links acoustic parameters together when they are the same. You can view, change or unlink the acoustic parameters at any time.

Click on [Instruments] > [Acoustic parameters]. Enter or confirm the correct coupling information.

If the client has a custom earpiece manufactured by Phonak, the acoustic code on the earpiece can be entered. The acoustic code is a 6 digit code printed on the earpiece. Entering in the acoustic code will automatically enter the appropriate acoustic parameter information.

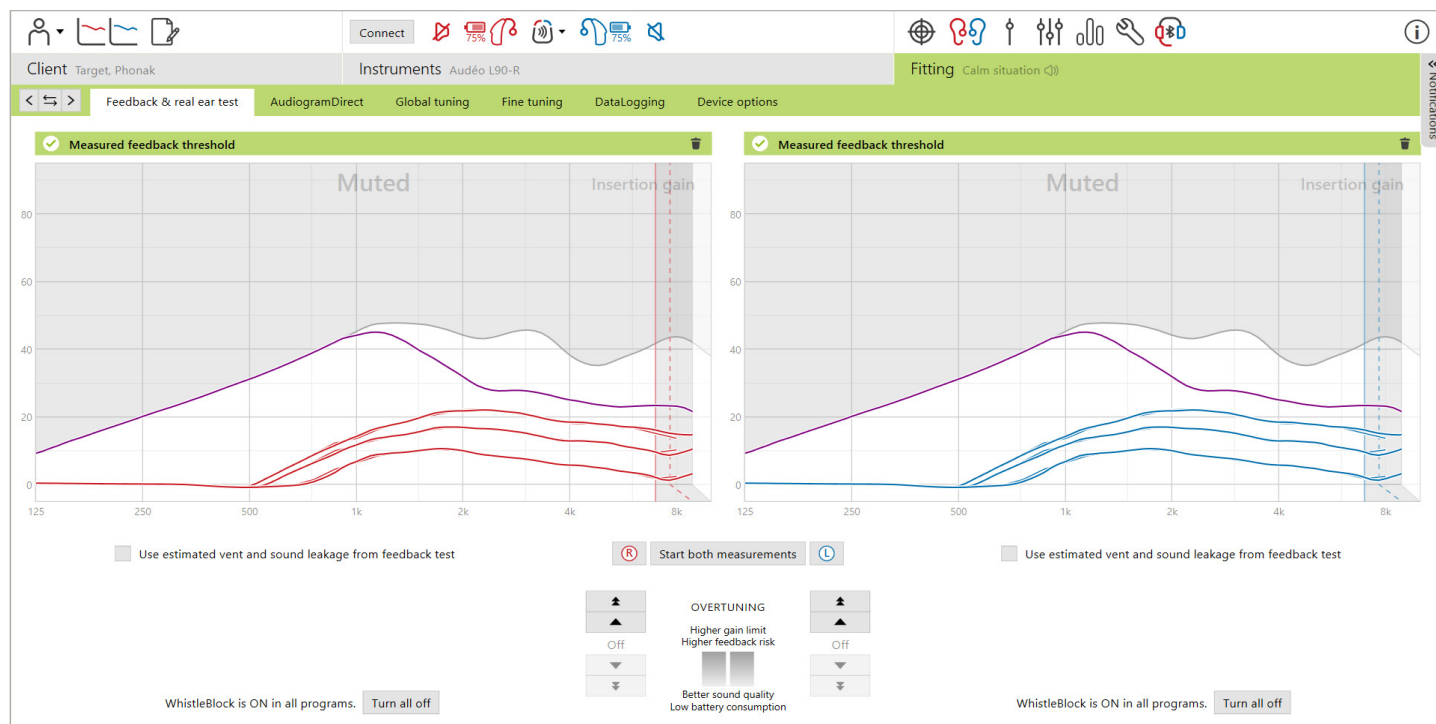
The attached receiver fitted onto the hearing aid is automatically checked against what is selected in Target when hearing aids are connected. This check can also be done by clicking [Check] in the acoustic parameters screen. If there is a

mismatch, it is possible for you to rectify the mismatch either in the acoustic parameters screen or by replacing the receiver to match what is entered in Target.

### Accessories

Accessories can be manually selected in [Instruments] > [Accessories]. Check [Show only compatible accessories] to only see the list of accessories that are compatible with the selected hearing aids.

# Feedback & real ear test



It is recommended to perform the feedback and real ear test at the first fitting appointment. The test can be run in both ears consecutively or one ear at a time. The test combines the individual feedback threshold, characteristics of the client's ear canal and the acoustic parameter settings for a more accurate fitting calculation.

This measured feedback threshold is visually represented in Phonak Target as a solid purple line.

The estimated feedback threshold is an estimation that in most clients' environments they will not experience feedback under everyday conditions. It is visually represented as a dotted purple line. The estimated feedback threshold does not take into account the individualized ear acoustics as it is only estimated based upon the information entered into Target.

The feedback test cannot be performed during a Phonak Remote Support session.

## Feedback threshold overtuning

Overtuning allows further flexibility and control when adjusting the feedback threshold. With overtuning you can find the optimal balance between achieving more high frequency gain in order to reach prescribed targets without introducing artifacts. Feedback threshold overtuning applies to Paradise hearing aids and newer.

The feedback threshold can be increased in step sizes of one or three until reaching the maximum gain limit of the hearing aid. The step size is not provided in decibel units, but corresponds to the number of overtuning steps you have in total to reach the maximum gain limit.

The maximum gain that can be reached is 12 dB. Information on the additional gain applied can be seen in the gray or green banner above the curve display.



## WhistleBlock

WhistleBlock is designed to cancel out transient feedback. It is enabled by default after a feedback test has been performed.

When a feedback test has not been performed, WhistleBlock is off. You can enable WhistleBlock in all programs by clicking [Turn all on] at the bottom of the [Feedback & real ear test] screen. However, for an optimal configuration of WhistleBlock, it is recommended to perform the feedback test.

If desired, WhistleBlock can be further finetuned for each individual program under [Fine tuning] > [Program options].

As soon as feedback threshold overtuning is enabled, WhistleBlock moves to maximum strength and cannot be adjusted, with the exception of the acoustic music program. As overtuning the feedback threshold increases the gain limit across the frequency range, strengthening WhistleBlock helps to prevent the client from perceiving whistling at lower frequencies.

## Use estimated vent and sound leakage from feedback test

Clicking [Use estimated vent and sound leakage from feedback test] replaces the acoustic vent information entered into the acoustic parameters screen. You are using the information from the feedback test to determine the actual venting of the earpiece. Checking the box will change the pre-calculation of the fitting.

The checkbox is available only if the system can do the vent estimation.

It is recommended to check the box:

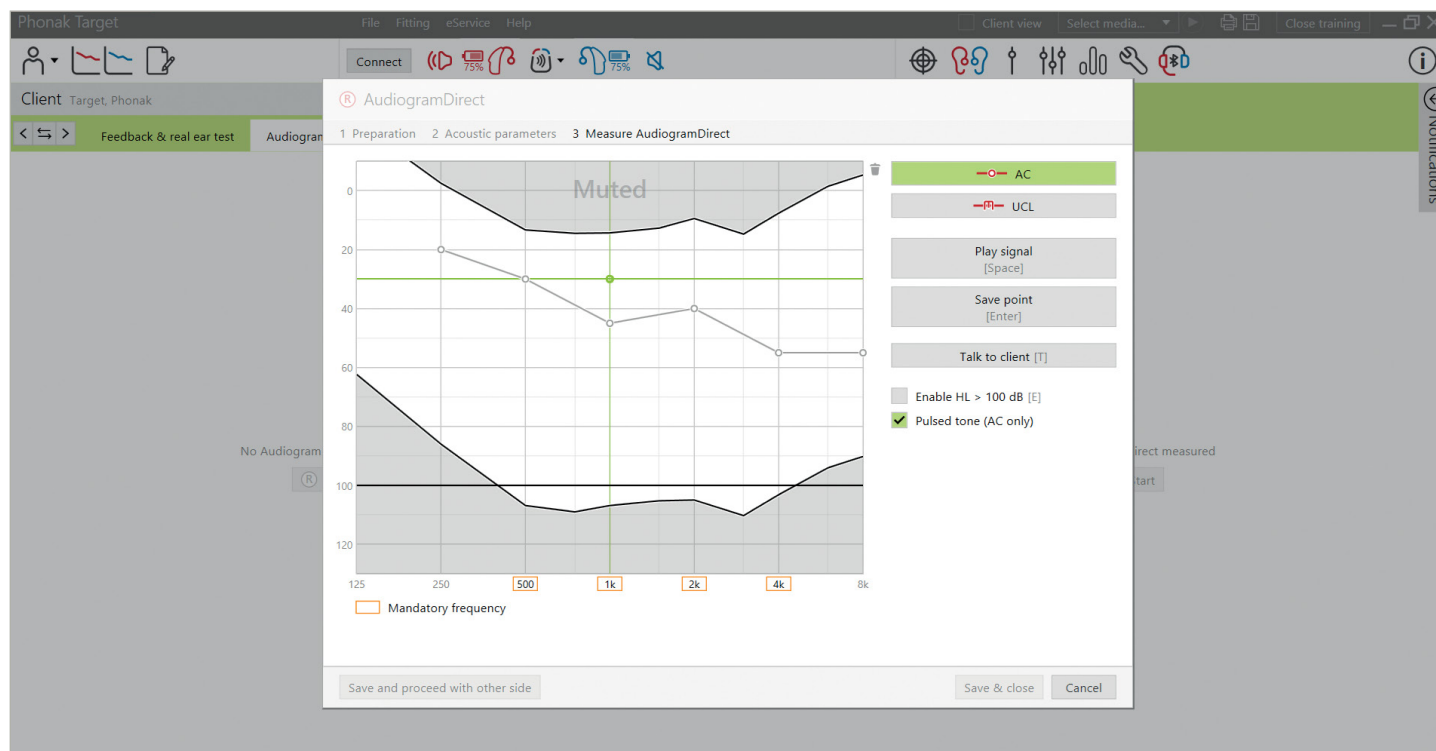
- when fitting a dome earpiece as fitting of the domes can vary significantly across individuals.
- with custom earpieces that do not have an acoustic code. (Custom earpiece was not manufactured by Phonak.)
- when the venting on the earpiece has been modified by the hearing care professional.

The checkbox is not available when:

- the client is 10 years or younger.
- the fitting is more occluded or the feedback threshold has a high ceiling. With a more occluded fitting or a high feedback threshold, there is no vent to predict as sound leakage is minimal.
- fitting Universal SlimTip and ActiveVent™ Receiver.

This checkbox can be enabled per default for your fittings within the Setup tab. Go to [Setup] > [Fitting session] > [Fitting] and select [Enable vent estimation per default].

# AudiogramDirect



AudiogramDirect is an in-situ hearing test within Phonak Target. You can test a client's hearing directly through their hearing aids, taking into account the properties of the individual ear and the chosen hearing aids. AudiogramDirect does not replace diagnostic audiological assessments.

Confirm that the feedback test has been measured before using AudiogramDirect. Click [AudiogramDirect] > [Start] to test air conduction (AC) hearing thresholds and uncomfortable loudness levels (UCLs) using the connected hearing aids. UCL measurements are optional.

AC thresholds can be performed for each frequency from 250 Hz to 6000 Hz. The four mandatory frequencies for AC thresholds are 500 Hz, 1000 Hz, 2000 Hz and 4000 Hz. To overcome potential steady state environmental noise, pulsed tones are selected by default to measure thresholds.

Navigate AudiogramDirect using the computer keyboard or mouse. To switch between the frequencies using the computer keyboard, press the [Arrow] keys. Play the tone signal by pressing the [Space] bar and save the threshold using the [Enter] key or the [S] key. Talk to the client by pressing the [T] key.

To switch between the frequencies using the mouse, click on the frequency you wish to test and play the tone signal by clicking and holding [Play signal]. To save the measured threshold, double click on the point you wish to save. Talk to the client by clicking [Talk to client].

By default, Target will recalculate the hearing aid settings based on AudiogramDirect results, unless this option is manually unchecked.

Previous hearing tests can be compared and reviewed by clicking on [History].

UCL measurements are disabled during a Phonak Remote Support session.

# Global tuning



Go to [Global tuning] > [Initial fitting] if adjustments to the fitting formula, gain level, occlusion compensation, or compression are required. The gain level and compression settings are based on the client's usage experience and the selected fitting formula.

## Auto acclimatization

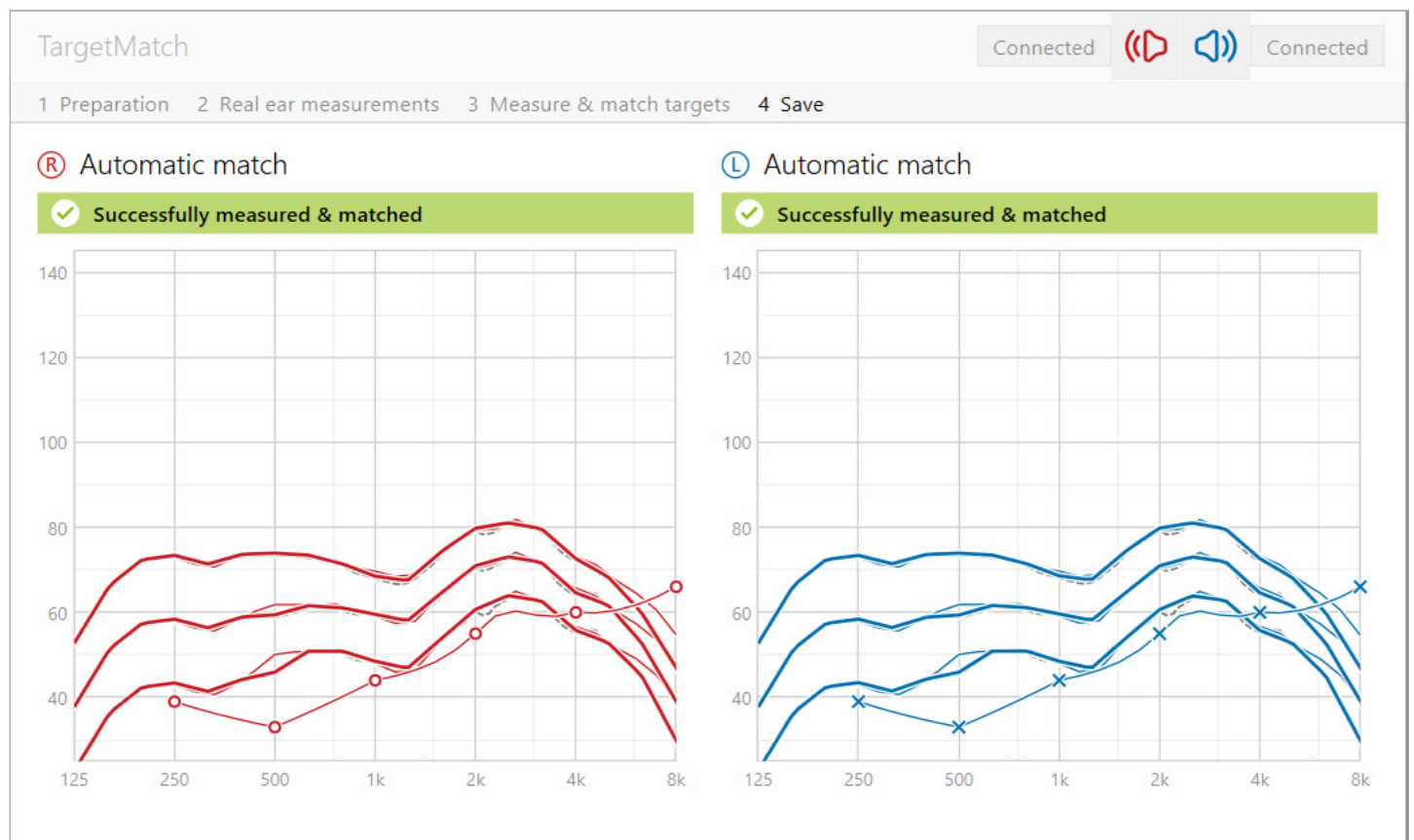
Automatically acclimatize a client to a higher overall gain level by setting a target gain level you wish the client to reach and the number of days the client would need to reach that target gain. The benefit for the client is the hearing aid gradually and comfortably acclimatizes, instead of you having to increase the gain session by session manually.

Select [Auto acclimatization] in the gain level menu within [Initial fitting].

With Phonak Marvel and previous generations, confirm the feedback test has been run prior to enabling auto acclimatization. Click on [...] to specify the start level, the end level and the duration in which the gain of the hearing aid automatically increases to the set end level.

With Phonak Paradise hearing aids and newer, tick the checkbox. Specify a target gain and the remaining days the client would need to reach the target gain.

# TargetMatch



TargetMatch is an automated guidance system for real ear measurements. It guides you through a step-by-step workflow of calibration, probe tube placement, unaided measurements, aided measurements, and automatic target matching.

Before beginning TargetMatch, verify that the acoustic parameters entered into Target matches what is configured to the hearing aid. Also, it is recommended to perform the feedback test and to make sure the the box to [use estimated vent and sound leakage from feedback test] is checked.

TargetMatch can be accessed via [Global tuning]. Click [R] / [Start both] / [L] to start. The assistant will then guide you through a series of steps.

The hearing aid adaptive features are set automatically during the measurements and will be restored to their original states afterwards.

TargetMatch always uses the open REM workflow. This means it automatically mutes/unmutes the hearing aid and measures the environmental noise when appropriate.

The signal used for aided measurements is the International Speech Test Signal (ISTS).

## TargetMatch 1.0

TargetMatch 1.0 is available when using Phonak Target within Noah and with Natus Aurical FreeFit and Aurical HIT test box.

The workflow with Aurical uses a proprietary software interface, allowing for a proprietary workflow.

The Natus Otosuite software version needed is 4.88 or later.

## Preparation

TargetMatch 1.0 can match targets for all gain levels (70% to 110%). The selected targets are based on the gain level the hearing aids are set to in [Global Tuning]. If the hearing aids are set to 80% gain level, then the targets in TargetMatch 1.0 will be set to 80%.

The fitting formula used is taken from the fitting formula selected in [Global tuning].

Select whether you wish to perform measurements via [REM] or [Test box].

## Calibration

Complete the probe tube calibration by attaching new probe tubes to the probe assemblies of the REM system. Check that the calibration results fall within the shaded region. It is recommended to perform probe tube calibration with every new set of probe tubes.

## Unaided measurements

Guided probe tube placement is a function that assists you with placing the probe tube at the correct insertion depth. It is available for clients age 10 years and above, and designed to be used with nonsurgical adult ears.



Click [R Start] / [L Start] to begin the REUG measurement with guided probe tube placement.

Once the probe tube is placed at the ear opening, click [Start] or press the power button on the Aurical FreeFit to start the guided probe tube placement. Carefully move the probe tube towards the eardrum as indicated. The values are presented in millimeters and match the scale on the probe tubes provided by Natus. The green check mark indicates when the probe tube is at the correct position.

Click [Measure] or press the power button on the Aurical FreeFit to start the REUG measurement.

### Aided measurements

Insert the hearing aids into the client's ears. Make sure the probe tube position does not change while inserting the hearing aids. Click on [Start measurement] to measure the acoustic transformation measurements, including acoustic coupling, real-ear occluded gain (REOG), and microphone location effect (MLE).

Select the program that will be active during the aided response measurements and how you wish to perform verification.

- Automatic match – automatically run the measurements and adjust the hearing aid output to match targets. This sequence of measuring and matching will be performed twice.
- Manual match – manually adjust hearing aid responses to match targets.
- Measure responses only – measure hearing aid responses only without adjusting the hearing aid.

The aided responses will be performed at soft speech at 50 dB SPL, average speech at 65 dB SPL and loud speech at 80 dB SPL.

For test box measurements, you will be reminded to place the hearing aids into the test box. Click on [Start measurement] to obtain the hearing aid responses.

### Finalizing TargetMatch 1.0

The results screen is displayed in output view. The different lines indicate:

- dark red/blue lines are the aided responses from the hearing aid
- light red/blue lines are the standard targets
- dotted gray lines are the individualized targets

The individualized targets are based on the audiogram, fitting rationale, the acoustic transformation measurements and the feedback threshold. It shows the targets that can be achieved.

Click [Save] to apply the changes to the fitting and store all measurements to Noah. The results can be reviewed afterwards either in Otosuite or Phonak Target.

### TargetMatch 2.0

TargetMatch 2.0 is on the IMC2 protocol. IMC2 stands for Inter Module Communication 2. It is an industry standard for a software interface, allowing fitting software and REM software to "talk" to each other directly.

### Preparation

TargetMatch 2.0 is available when using Phonak Target version 9.0 and later within Noah. It is compatible with:

- Auditdata Primus Pro with software version 4.1.0 or higher
- Interacoustics Affinity 2.0 and Affinity Compact with software version 2.19 or higher
- Signia Unity 3 with software version 5.9.0 or higher

When you start TargetMatch 2.0, it will recalculate the hearing aids to 100% gain level. The measurement will be performed in the client's startup program. The automatic adjustments made in the startup program will be applied to the other programs in the client's fitting.

Select the preferred fitting formula to use. This fitting formula will be applied to the client's fitting after completing TargetMatch 2.0. Select the REM system you will be using. This selection only needs to be done once.

### Calibration

Complete the probe tube calibration by attaching new probe tubes to the probe assemblies of the REM system. Check that the calibration results fall within the shaded region. This shaded region will differ depending on which REM manufacturer you are working with.

It is recommended to perform probe tube calibration with every new set of probe tubes. However, if the probe tube calibration has already been performed, this step can be skipped.

### Unaided measurements

The unaided measurement includes probe tube placement combined with the REUG measurement. Once the probe tube is inserted into the ear canal, click [Start].

During the measurement, the placement of the probe tube will be checked for clients age 10 years and above. With a correct placement, a green checkmark appears. With a poor placement, an orange message will appear and troubleshooting tips will be provided to help improve the measurement.

You can choose to skip this step. When skipping, average REUG will be applied.

### Aided measurements

Insert the hearing aids into the client's ears. Make sure the probe tube position does not change during insertion.

Select which input levels to measure. Average speech at 65 dB SPL is mandatory. Soft speech at 50 dB SPL and loud speech at 80 dB SPL are optional. It is recommended to measure and match at all three levels to ensure that optimal dynamic range can be achieved for soft, medium and loud signals. You have the option to reselect and remeasure levels as needed. The sequence of measuring and matching the 65 dB level will be performed twice.

In this step, REOG will be measured and applied, as well.

## Global gain level

After successful completion of these measurements, the global gain level can be modified, especially if the client is not yet acclimatized to 100% gain settings. When reducing the global gain level, only the overall gain will be reduced while the automatic fine tuning will be preserved.

With Paradise hearing aids and newer, you can enable and adjust auto acclimatization within this step. For previous generation of hearing aids, the global gain level and the auto acclimatization period can be modified in [Global tuning].

Click [Save] to save the results and apply the changes to the fitting.

## Verification assistant

Verification assistant

1 Preparation 2 Type 3 Program 4 Verification

Fitting is based on following acoustic parameters

Receiver	P	Receiver	M
Earpiece	cShell	Earpiece	cShell
Vent	AOV	Vent	Ø 0.9 - 1.1 mm
Wire length	1P R	Wire length	1M L

Use the following values in the test equipment

RECD (average) - Insert earphoneIA-1	RECD (average) - Insert earphoneIA-1
Hz 125 250 500 750 1k 1.5k 2k 3k 4k 6k 8k	Hz 125 250 500 750 1k 1.5k 2k 3k 4k 6k 8k
dB 5 5 5 6 7 9 10 11 11 13 16	dB 5 5 5 6 7 9 10 11 11 13 16

Important information

- All adaptive features will be turned off during verification.
- Use a modulated speech input (i.e. ISTS, ICRA) during verification.
- Fitting formula: Adaptive Phonak Digital

When performing verification outside of TargetMatch, the wide variety of signal processing schemes, gain and compression variables, frequency lowering, and noise management algorithms in hearing aids can impact the verification of the gain and MPO settings. To address these challenges, enable verification assistant to turn off adaptive features for a streamlined verification process.

Verification assistant can be accessed via [Fine tuning] > [Gain & MPO] > [Verification assistant]. The assistant will then guide you through a series of steps.

Select whether test box or REM verification will be performed. For test box verification, confirm that the RECD values entered into Target match your verification equipment.

Choose the program that will be active during verification and indicate whether the adjustments will be applied to the active program or to all programs.

All adaptive features of the hearing aids will be deactivated to allow for adjustment of gain and MPO. The available curve displays correlate with the type of verification being performed. Test box will show either a 2cc output or 2cc gain curve, while REM will show insertion gain or real ear SPL output curve.

To enable SoundRecover2, go to [SoundRecover] on the lower part of the window. To change the settings click on [Adjust SoundRecover].

Click [Apply] to confirm any adjustments made and return to the standard fitting mode. SoundRecover2 will be reactivated at default. If there is a need to discard any adjustments made during verification, click [Cancel].



# Fine tuning

The screenshot displays the fine tuning interface. At the top, it shows the client name 'Target, Phonak', the instrument 'Audéo L90-R', and the fitting program 'Calm situation'. The main area contains two frequency response graphs, both labeled 'Calm situation', showing gain across frequencies from 125 to 8k Hz. Below the graphs are two tables of MPO values for frequencies: 77, 94, 102, 104, 106, 110, 114, 111, 107, 95. The left sidebar has a 'Program manager' with a list of programs including 'AutoSense OS 5.0', 'Calm situation', 'Speech in noise', 'Speech in loud noise', 'Speech in car', 'Comfort in noise', 'Comfort in echo', 'Music', 'AutoSense OS 5.0 (streaming)', 'Media speech + mic', 'Media music + mic', 'PartnerMic + mic', 'Phone call + mic', and 'RogerDirect + mic'. At the bottom, there are tabs for 'Gain & MPO', 'Program options', 'Audibility fine tuning', 'SoundRecover2', 'Automatic fine tuning', and 'Tinnitus balance'.

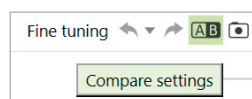
Fine tuning gives access to more specific fitting functionalities such as adjusting gain and MPO, as well as hearing performance and sound cleaning features, for an individualized fitting.

The left side of the fine tuning screen is used for the handling of programs. Click [All programs] to adjust all programs simultaneously. Click [AutoSense OS] to modify all acoustic automatic programs or [AutoSense OS (streaming)] to modify automatic streaming programs.

To modify a single program, click on the program, e.g. [Calm situation], in the list and adjust as needed. The undo or redo arrows are located next to [Fine tuning] and can be used to undo or redo steps in the fine tuning screen.

## Compare settings

This tool provides a convenient way for your client to compare your latest hearing aid settings resulting from your recent adjustments from the previous hearing aid settings. You can compare and choose programs from earlier fittings without leaving the session.



The first snapshot of the hearing aid settings will be taken automatically after connecting the hearing aids to Target. In the fine tuning screen, additional snapshots can be taken manually at any time. Use sounds from the integrated

media player, to directly involve your client in selecting the preferred settings.

## Program manager

To manage the programs, click on [Program manager] above the programs. The startup program, program structure, and streaming programs can be customized here.

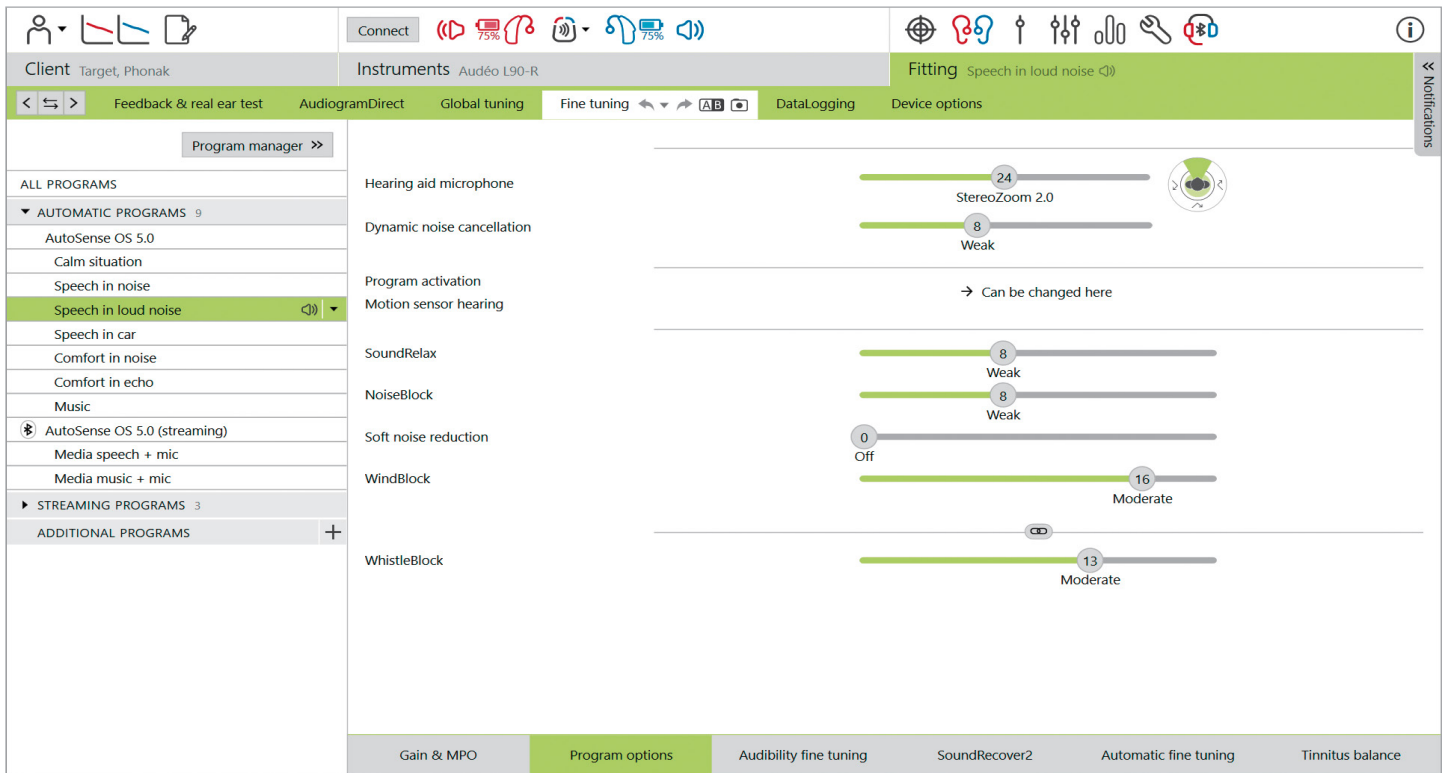
Click on the [+] icon to add an additional manual program.

## Gain & MPO

The gain values are adjustable for soft, moderate and loud input sounds. The optimum fitting range is available if the individual UCL measurement values were entered into the client's audiogram, otherwise average values are used. To modify the MPO simultaneously in all channels, click [MPO] shown on the left beside the MPO values.

The overall gain can be changed by clicking [All].

The gain or MPO values can be changed by clicking on the up or down arrow next to the table. You have the option to make one step changes (single arrow) or three step changes (double arrow). These steps do not equal to changes in decibels. If you wish to view the compression ratio for each frequency channel, they are shown in the row directly underneath the gain values.



## Program options

Program options can be adjusted from the default settings. The features can be activated, deactivated, or changed in strength for each program individually. The available ranges within each scale are visible and depend upon performance level.

In a binaural fitting, the settings of the features are coupled for the left and right sides by default.

To enable the option to uncouple the features between sides, go to [Fitting], located in the black menu bar, and select [Advanced L/R coupling].

## StereoZoom 2.0

StereoZoom 2.0, is a binaural beamformer that enhances the signal-to-noise ratio from the front and back in challenging environments. StereoZoom 2.0, active only in the Speech in loud noise program, smoothly increases its focus strength based on the noise floor level.

The hearing aid microphone mode slider sets the microphone directionality from UltraZoom blended with StereoZoom 2.0, allowing for more spatial awareness, to StereoZoom 2.0 only, allowing for more speech focus to the front.

The client can further personalize the microphone directionality for their specific listening environments using the Speech Focus slider in the myPhonak app.

## Dynamic Noise Cancellation

Dynamic Noise Cancellation is a spatial noise cancellation feature that works in combination with a directional beamformer to improve the SNR in challenging situations. It is microphone dependent so it is only activated when the beamformer is fully activated and switches off as soon as the SNR reaches 18 dB and higher.

It is featured in Speech in noise and Speech in loud noise programs only. Dynamic Noise Cancellation is available with Paradise hearing aids and newer. It is recommended to allow Dynamic Noise Cancellation to be adjusted and personalized for each situation by the client using the myPhonak app, especially as the acoustic environment greatly differs from situation to situation.

## Speech Enhancer

Speech Enhancer is an adaptive algorithm designed to enhance the peaks of a speech signal in quiet situations. It is featured in Calm situation and it is on by default when the global gain level is set to 90% or above. Speech Enhancer is available with Paradise hearing aids and newer.

When Speech Enhancer is active, it will apply up to 10 dB additional gain in the following circumstances:

- Speech between 30-50 dB input level is detected
- A minimum SNR of 10 dB

When adjusting the Speech Enhancer slider, the maximum gain that can be achieved is 10 dB. For optimal use of Speech Enhancer, verify that the feedback threshold is not limiting available headroom.

## Motion Sensor Hearing

Motion Sensor Hearing changes the beamformer setting to Real Ear Sound and deactivates Dynamic Noise Cancellation when having a conversation while walking in a noisy environment. It only activates when the AutoSense OS classification is Speech in noise or Speech in loud noise.

Motion Sensor Hearing is on wide (Real Ear Sound) by default, but the other values are mixed (fixed directional), narrow (UltraZoom) and off. The more you move the slider to the left, the narrower the microphone mode will become.

Motion Sensor Hearing is available with Paradise rechargeable hearing aids and newer.

## Soft noise reduction

Soft noise reduction reduces gain for very soft input sounds, such as fans, air conditioners and clock ticking. It is for softer input broadband sounds around 30 to 35 dB.

This feature is available with Paradise hearing aids and newer.

The Soft noise reduction slider is available in all programs. The default setting is off.

When adjusting the slider to a strong setting, the amount of gain attenuation applied increases. The amount of attenuation applied across the frequency range depends on the acoustic characteristics of the incoming signal. The maximum amount of attenuation that can be achieved is 20 dB within a frequency band.

## NoiseBlock

NoiseBlock is a single channel noise reduction method that works in frequency bands. NoiseBlock works well for stationary noise sources and omnidirectional microphone settings.

NoiseBlock is available in all programs. When adjusting the slider to a stronger setting, the amount of gain attenuation applied increases. The maximum attenuation that can be achieved is 10 dB.

## Streaming activation behavior

For hearing aids with direct connectivity, the default switching behavior to access streaming can be modified (TV Connector, Roger, PartnerMic™):

- Automatic – the hearing aids will automatically switch and receive a streamed signal (default).
- Manual – no beep is heard and the program is added as the last program.
- Manual (with beep) – a beep is heard in the hearing aids and the client manually accepts to receive a streamed signal.

## RogerDirect™ + mic

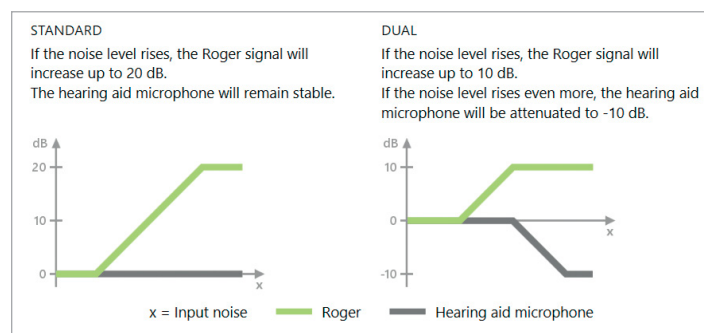
The options to set microphone directionality and microphone attenuation relative to the Roger signal can be set in [Program options].

The three microphone options available are omnidirectional, Real Ear Sound and fixed directional. To change the default microphone option, move the hearing aid microphone slider.

The hearing aid microphone is set to 0 dB attenuation to ensure awareness of surrounding sounds.

The RogerDirect adaptive behavior is either standard adaptive or dual adaptive.

- Standard adaptive (default) – As the noise level increases, the Roger signal adapts automatically (up to +20 dB) while the hearing aid microphone is not attenuated.
- Dual adaptive – As the noise level increases, the Roger signal increases automatically (up to +10 dB) while the hearing aid microphone is attenuated (up to -10 dB).



## Audibility fine tuning

Audibility fine tuning is a way to personalize settings to accommodate the individual user preferences and listening needs. This approach addresses the need for fine tuning to specific hearing targets, such as speech, own voice, overall loudness and individual phonemes crucial for speech recognition and intelligibility.

Selectable sound samples and the related gain are shown in the curve display. To access the various sound samples, the Phonak Target sounds and media files must be installed onto your computer. The sound sample can also be used to simulate a specific listening environment.

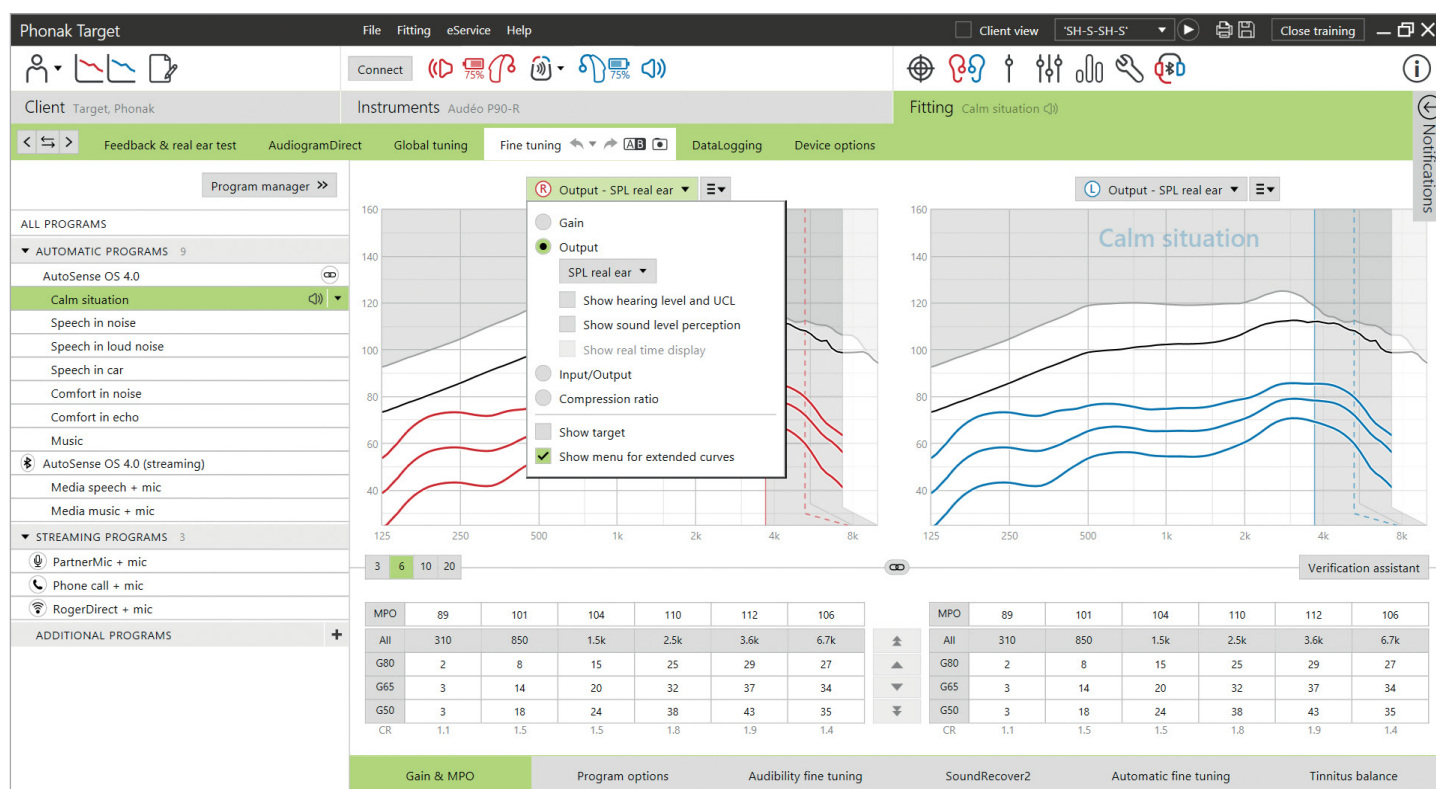
The gain values are displayed for soft, moderate and loud input sounds. Adjustments impact only the gain levels and frequencies which are relevant to enhancing the audibility of the selected speech area. This is indicated by the different shades of red/right and blue/left.

## Automatic fine tuning

Automatic fine tuning is a situation-based fine tuning tool. The available adjustments are dependent on the client's evaluation of the sound situation. The fine tuning steps are clearly displayed before the action will be applied.

Depending on the selected program, a recommended sound sample is pre-selected. The sound samples can be played to simulate the listening environment. In order to access the sound samples, ensure the Phonak Target sounds and media files have been installed onto your computer.

## Curve display views



Target offers several curve display options to choose from. Each option offers a different view of how amplification is provided by the hearing aid, and can further support in the fine tuning process, depending on your fitting objectives. Below are the descriptions for each view.

### Gain

#### Insertion gain

The insertion gain view shows the amplification, in dB, applied at the eardrum by the hearing aid. The client's own ear canal resonance (REUG) is removed to focus on the gain the hearing aid applies to achieve the target output signal.

Insertion gain is the difference between real ear aided response and real ear unaided response ( $REAR - REUR = REIG$ ).

### Real ear

The real ear view shows the gain applied, in dB, to the hearing aid across frequencies, in addition to the client's ear canal resonance.

### 2cc

The 2cc view shows the gain of the hearing aid in relation to a 2cc coupler.

## Output

Output is the sum of the input signal plus the gain applied by the hearing aid.

## HL

Hearing level (HL) in dB.

The output of a hearing aid is measured in dB SPL. To compare entered hearing thresholds and UCLs to the output of the hearing aid, these data are converted into dB HL.

## Real ear

The real ear view shows the sum of the frequency response of a hearing aid and the direct sound. The direct sound is when sounds reach the eardrum directly without passing through the hearing aid microphone. This typically occurs with open domes and vented earmolds.

As the client's auditory characteristics are specified in dB SPL, you can determine whether a particular signal of interest will be audible, comfortable or uncomfortable.

## 2cc

The 2cc view shows the response of the hearing aid in dB SPL as measured in a 2cc coupler.

## Real time display

The real time display view can be selected in the dropdown menu. Choose this option for further fine tuning and counseling support. When [Client view] is enabled, the real time display can be seen in a client-friendly enlarged view or on a second screen. Speech intelligibility improvements, gain, output, SoundRecover2, and frequency resolution can be demonstrated.

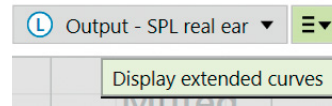
## Input/output

The input/output curve represents the aided output in dB SPL real ear or 2cc for a selected frequency, plotted against increasing input level on the x-axis.

The input/output curve can be used to adjust the kneepoints and compression.

With open fittings, it is recommended to use the 1000 Hz or 2000 Hz view. At lower frequencies you see more of the venting effects.

## Extended curve display



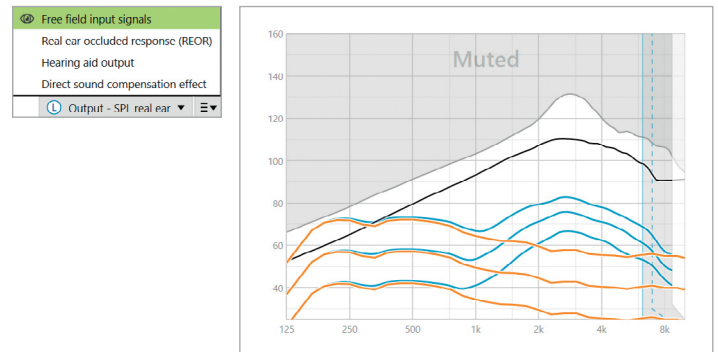
The extended curve display options provide functional transparency for:

- free field input level
- real ear occluded response (REOR)/ real ear occluded gain (REOG)
- hearing aid output
- direct sound compensation
- vent compensation

The extended curve display options can be found in the curve display dropdown menu.

## Free field input signals

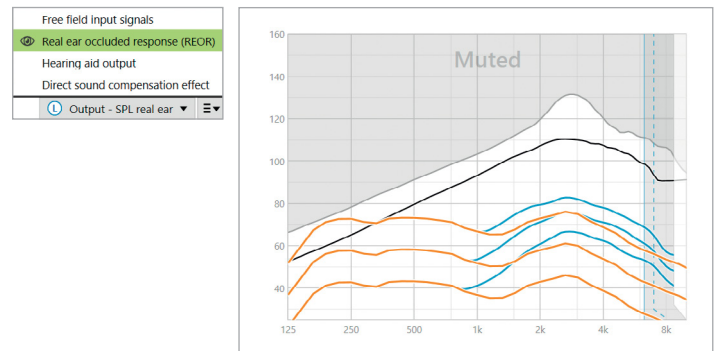
Viewing free field input curves can demonstrate how the real ear aided gain (REAG) plus the free field input curves equals real ear aid response (REAR).



Select [Output - HL] or [Output - SPL real ear] display to view the free field input signals.

## REOR/REOG

REOR/REOG is the effect that can be seen when the hearing aid is inserted in the client's ear and turned off.



REOR: select [Output - HL] or [Output - SPL real ear] display.  
REOG: select [Gain - insertion gain] or [Gain - real ear] display.



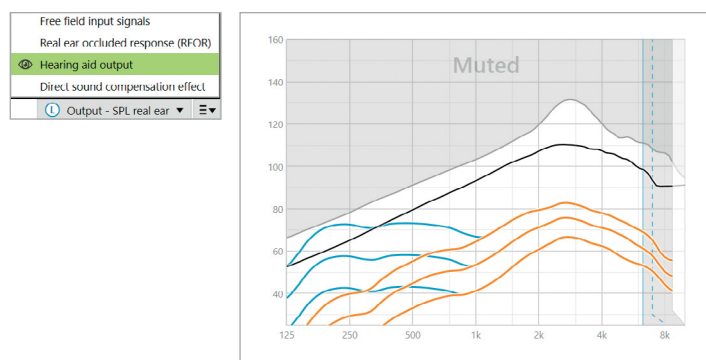
The purpose of REOR/REOG is to determine the venting characteristics of the client's earpiece. You can use this information to determine if the vent is performing as expected by allowing certain frequencies to pass through it, as well as determine if the presence of a vent is introducing undesired acoustic effects that could impact amplification.

Looking at the curve display with REOR/REOG you see:

- which area in the response curve is dominated by the direct sound coming through the vent.
- what response to expect if the hearing aid is muted or turned off.

### Hearing aid output

Hearing aid output refers to the amplified signal that is delivered to the ear measured in dB SPL.



To convert the view to another scale, select [Output - HL] or [Output - SPL real ear], or [Gain - insertion gain] or [Gain - real ear].

When handling the gain and MPO tool for certain frequencies you may not see an effect or changes in the curve display when increasing or decreasing the steps. If you notice no effect in the curve display when handling certain frequencies, you can view the hearing aid output curve together with the REOR view to further understand why.

The hearing aid output and the REOR displays can be used to identify where and at which frequencies the direct sound is masking the hearing aid output. As a result, fine tuning in this frequency range does not result in any perceivable changes.

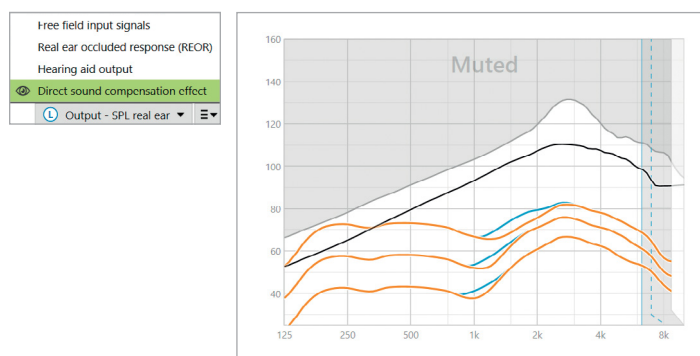
### Direct sound compensation effect

Direct sound compensation effect is when sounds reach the eardrum directly without being processed by the hearing aid microphone. This typically occurs with open domes and vented earmolds, as the direct sound enters the ear through the vent of the earpiece.

An example of when you may wish to view the direct sound compensation effect is when you perform REMs or test box measurements.

### REMs

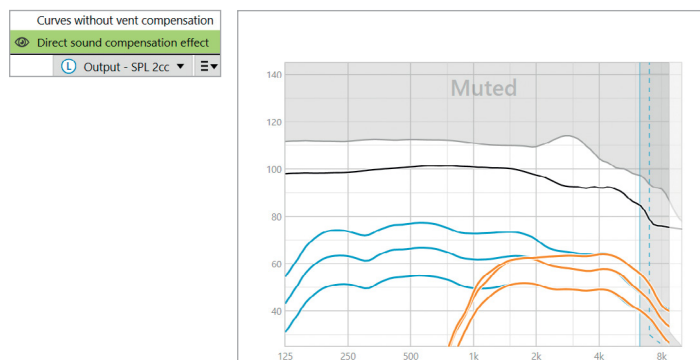
Measuring the hearing aids with REM equipment may unveil small dips in the measured responses compared with the curve displays seen in Target. This is due to the client receiving a combination of the amplified sound and direct sound entering through the ear through the vent of the earpiece.



Looking at the direct sound compensation effect within [Output - SPL real ear] will show that this small deviation is necessary for the purpose of sound quality improvement, such as preventing the client's own voice from sounding "hollow" or "echoey".

### Test box measurements

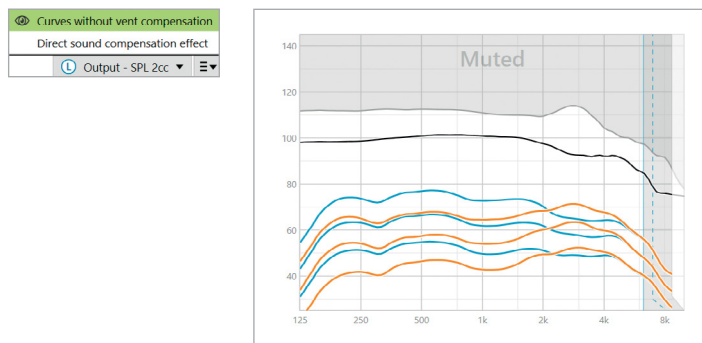
Measuring hearing aids in the test box without activating verification assistant may result in abnormal readings, especially if the hearing aid has been fitted with a vented acoustic coupling.



Viewing the direct sound compensation effect within the [Output - SPL 2cc] curve display will show that the hearing aids are working as intended in the areas affected by direct sound.

## Curves without vent compensation

Open couplings and vents especially allow low frequency sounds generated by the hearing aid to leave through the vent (vent loss).



Select [Output - SPL 2cc] or [Gain - 2cc] display.

The [Curves without vent compensation] show the gain applied without compensating for the vent, meaning without compensating for the low frequencies leaking out of the vent. Viewing this curve allows you to check how the response would differ.

## SoundRecover2



SoundRecover2 is a frequency compression system with adaptive behavior.

For binaural fittings, the cut-off frequency and the frequency compression ratio are calculated based on the better ear.

SoundRecover2 is:

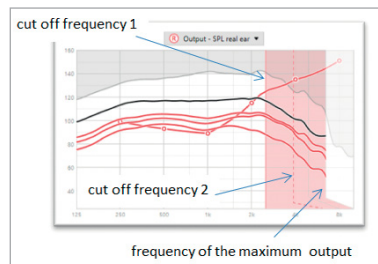
- on by default for flat or sloping hearing losses where the 8 kHz threshold is 40 dB HL or poorer.
- off by default for reverse sloping losses (8 kHz  $\geq$  30 dB better than 3 kHz).

SoundRecover2 is defined by two cut-off frequencies, CT1 and CT2.

SoundRecover2 settings can be viewed in the curve display. The shaded area gives information for which frequency range it is active in.

- The first solid line is cut off frequency 1 (CT1).
- The dotted line is cut off frequency 2 (CT2).
- The third line is the maximum output frequency.

Adaptive compression is applied to frequencies in the shaded area between CT1 and CT2. This frequency region is only compressed if the input is dominated by high frequency energy.



Frequencies in the shaded area between CT2 and the maximum output frequency are always compressed. Frequencies below CT1 are always uncompressed. There is no output at frequencies above the maximum output frequency.

To disable SoundRecover2, click on [Fine tuning] > [SoundRecover2]. Disable by unchecking the [Enable SoundRecover2] checkbox.

To fine tune SoundRecover2, click on [Fine tuning] > [SoundRecover2].

Changing the sliders will influence the cut off frequencies, compression ratio and the maximum output frequency.

- Slide toward [Audibility] to increase the ability to detect an /s/ and /sh/.
- Slide toward [Distinction] to increase the ability to distinguish the difference between /s/ and /sh/.
- Slide toward [Comfort] to increase the naturalness of sounds, such as male voices, own voice, or music.

During fine tuning, it is recommended to adjust the [Audibility/Distinction] slider first. The [Clarity/Comfort] slider will reset each time the [Audibility/Distinction] slider is adjusted in order to optimize sound quality for low and mid frequency sounds.



# Tinnitus Balance



The Tinnitus Balance noise generator is available in all Phonak hearing aids, except Phonak Sky™ pediatric products. Phonak does not have any recommended clinical fitting guidelines for fitting Tinnitus Balance to children under the age of 18 years.

The noise produced provides a means of sound enrichment that can be used as part of a tinnitus management program, either in the context of masking or sound therapy.

The spectral characteristics of the noise generator can be adjusted to meet each client's specific needs. The default characteristics are calculated based on the client's audiogram; alternatively, white or pink noise can be selected. The noise generator can be incorporated into the automatic program or an additional manual program.

## Audiogram

The gain level and shape of the generated noise will be pre-calculated individually for each ear based on the audiogram, and the gain and MPO characteristics of the hearing aid. For a more precise pre-calculation, you can also input the client's most troublesome tinnitus frequency.

Click on [Client] > [Audiogram] > [Most troublesome tinnitus] below the curve displays. Enter the frequency and level of the client's most troublesome perceived tinnitus. The ranges for these values are 125 Hz to 16,000 Hz and 0 dB SL to 45 dB SL.

When available, the Tinnitus Handicap Inventory (THI) questionnaire result can be entered in the [THI] field. This THI value is not used in pre-calculation.

## Global Tuning

The noise generator can be enabled in [Fitting] > [Global tuning] > [Tinnitus Balance]. When enabled, the shape of the generated noise is shown in green. The curve display must be set to [Output].

Below the curve displays you can increase or decrease the noise level and also change the shape to more low- or high-frequency emphasis. The values of the maximum noise level are also shown for each hearing aid.

In the upper left hand corner of each display, an indicator shows the free field equivalent dB(A) level, which is enlarged when you hover over it with the mouse.

Within the dropdown menu of [Tinnitus Balance shape], the default, [Set to hearing loss], can be changed to [Set to white noise] or [Set to pink noise].

## High noise levels

The maximum output level of the Tinnitus Balance noise generator is limited to 85 dB(A). In accordance to common noise exposure guidelines, a warning message will be shown when the noise generator level exceeds 80 dB(A). If this occurs, the recommended maximum wearing time per day will appear below the maximum noise level. Also, the color of the Tinnitus Balance noise generator shape will change from green to orange.

## Fine tuning

More detailed adjustments to the Tinnitus Balance noise generator can be found in [Fine tuning] > [Tinnitus Balance]. Access to every channel of the chosen hearing aid allows for a precise adjustment to the loudness and shape of the generated noise.

Changes to the noise generator within the automatic programs will be automatically applied to all AutoSense OS programs (i.e. noise is constant across all automatic programs). The majority of tinnitus clients will utilize amplification and the noise generator in all situations, therefore when enabled, the noise generator is on by default within all automatic programs and added manual programs.

## Program customization

You can create additional programs for specific use cases.

Gain and noise generator program:

- Clients may want the noise generator and gain activated in a specific situation (e.g. for use where they are most bothered by their tinnitus). The Tinnitus Balance noise generator can be used in a single manual program and disabled in automatic programs.

Noise generator only program:

- Clients with normal hearing may desire a noise generator program only. The gain can be muted by clicking [Gain options] as long as the Tinnitus Balance noise generator is active. The mute option is available in additional programs only in the [Tinnitus Balance] tab.

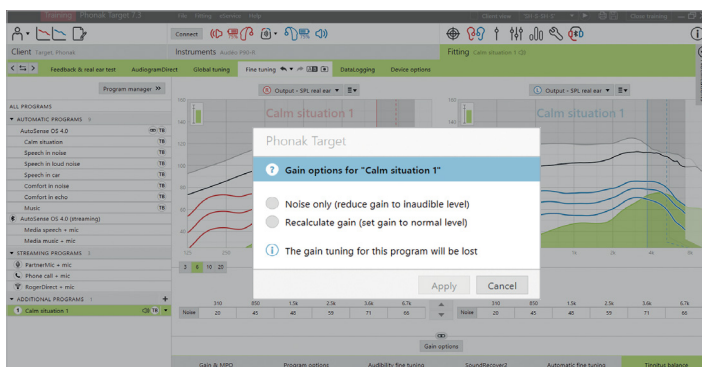
If needed, the fine tuning of the Tinnitus Balance noise generator can be reset by clicking on the recalculation icon in the dashboard.

In [Fitting] > [DataLogging], you can review adjustments to the noise generator made by the client. This option is only available if you have selected the volume control to access changes to the generated noise, instead of the hearing aid gain.

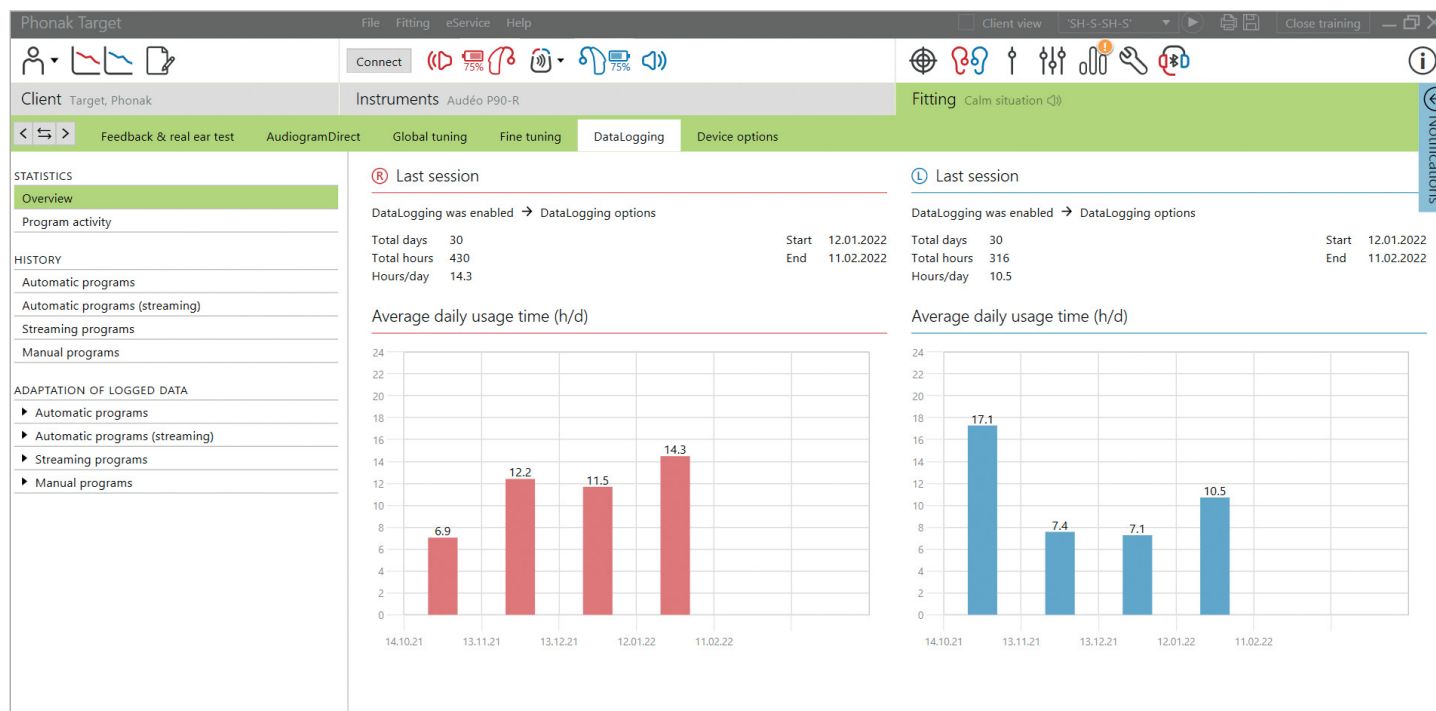
By clicking [Device options] you can configure the volume control behavior to control either the hearing aid gain or noise generator levels.

QuickSync allows for synchronized ear-to-ear changes on both sides for volume changes and Tinnitus Balance. The benefit is that the client only needs to make a change to volume or Tinnitus Balance on one hearing aid and the other hearing aid automatically adjusts.

However, the client may prefer to make individual adjustments per hearing aid because they perceive differences in how their tinnitus sounds between ears or their tinnitus fluctuates in loudness and frequency. For these clients, you can turn off QuickSync by unchecking the box [L/R sync (QuickSync)]. The ability to disable QuickSync is only applicable with Phonak Lumity hearing aids or newer.



# DataLogging



DataLogging is a tool for gaining knowledge about:

- how long a client spends in a specific sound environment
  - usage time.
- how often a client makes a volume adjustment
  - adaptation changes.

If the client consistently changes the volume setting for a particular program, you can choose to apply the volume adaptations to the client's fitting under [Adaptation of logged data].

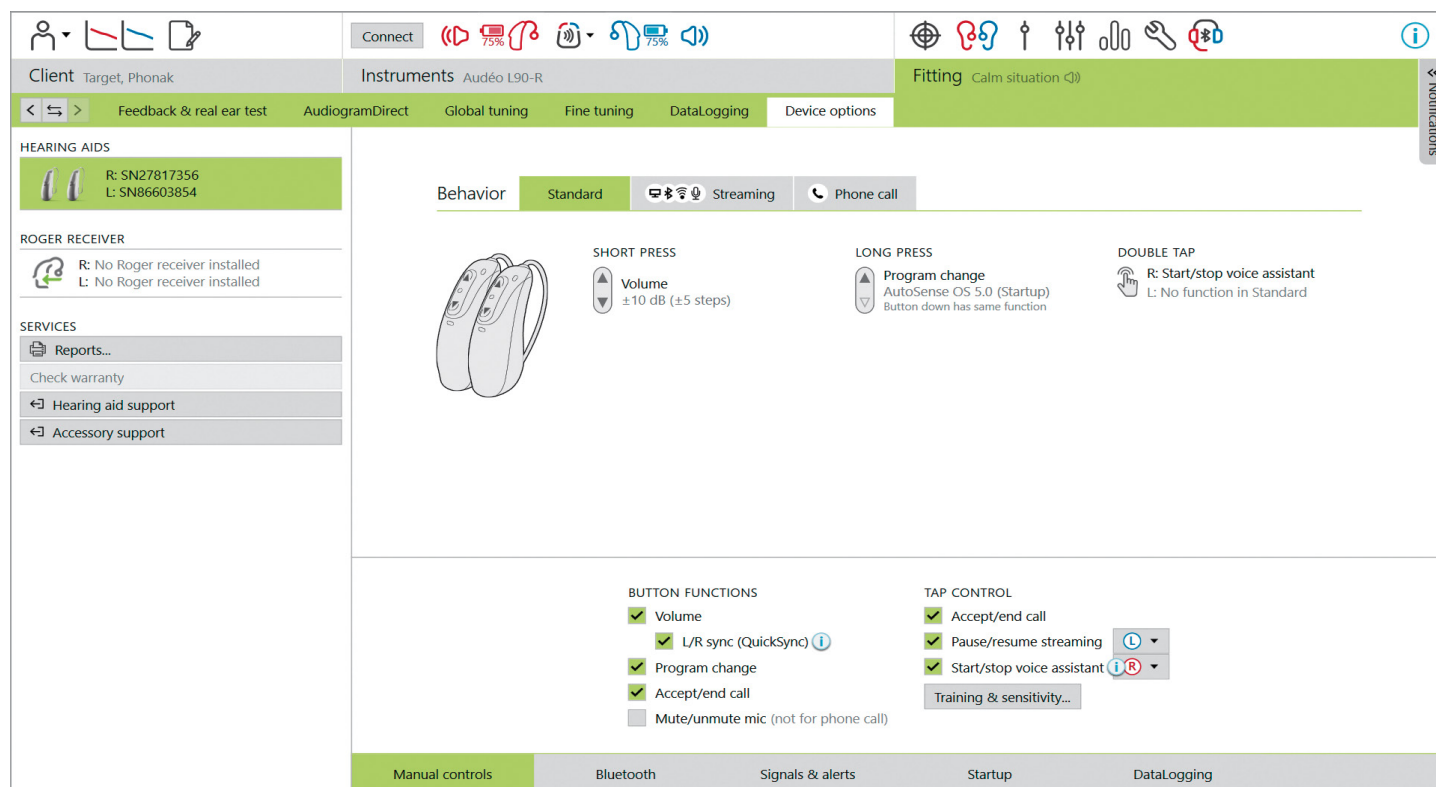
DataLogging can support your client counseling approach and may also provide important outcome indicators for hearing aid satisfaction and benefit. With each new client, you are prompted to confirm if the client has consented to having DataLogging enabled as this decision belongs to the client. This consent is in the [Client] tab. The orange prompt appears next to the Client icon in the dashboard and in the notification sidebar. The orange prompt disappears once the consent selection (yes or no) has been made.

When a consent has not been selected, DataLogging remains on by default. To disable DataLogging, select no.

Data is collected from the last time it was connected to Phonak Target until the next time it is connected to Target. Target averages all of this data and then calculates the overall percentage of time that the hearing aid was in each of the different states.

As AutoSense OS and AutoSense Sky OS are constantly blending between classifications, DataLogging only registers the dominant classification. For example, if the blend is 30% Speech in noise and 70% Comfort in noise, DataLogging will register Comfort in noise as the dominant program of the mixture and store the usage time spent in Comfort in noise.

# Device options



By clicking [Device options] you can configure hearing aid options such as manual controls, signals and alerts, startup behavior or DataLogging. For an overview of the multifunction button and Tap Control behaviors in different listening situations, click on [Standard], [Streaming] or [Phone call].

Phonak hearing aids have QuickSync which allow for synchronized ear-to-ear changes on both sides. The benefit is that clients only need to make a change on one hearing aid and the other hearing automatically adjusts.

However, not all clients benefit from synchronized volume changes, especially if they have fluctuating hearing loss, asymmetrical hearing loss, and/or tinnitus. They may require further flexibility in how their volume is set monaurally to maintain audibility and comfort.

With Lumity hearing aids and newer, you have the option to turn off QuickSync for volume and Tinnitus Balance by unchecking the box [L/R sync (QuickSync)].

When the hearing aid is connected, each configuration can be demonstrated on the hearing aid in [Signals & alerts].

The status of RogerDirect installation can be viewed by clicking [RogerDirect] on the left side of the screen within [Device options]. The status can also be viewed by hovering over the hearing aid icon in the dashboard.

## Bluetooth

Configuring the Bluetooth name, side and managing pairings can be found by clicking on [Bluetooth].

Selection of the adaptive versus fixed bandwidth applies to the quality of phone calls. It is recommended to choose adaptive bandwidth for optimal sound quality.

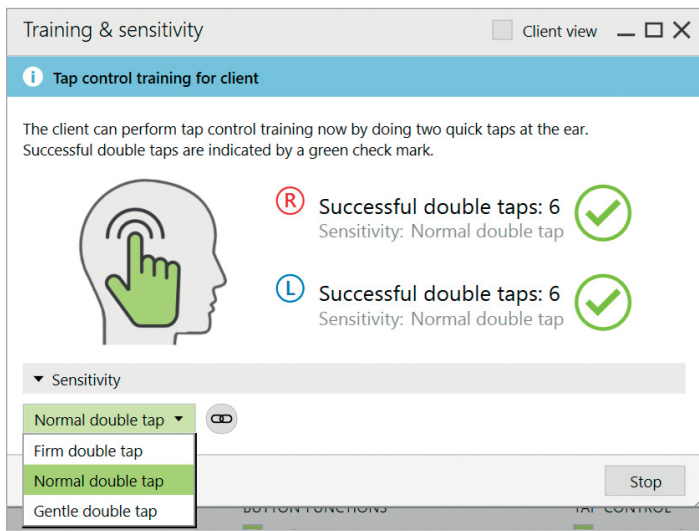
Adaptive bandwidth offers a higher sampling rate, meaning it can provide additional higher frequency information, compared to fixed bandwidth. Select fixed bandwidth if the client reports issues where the far end speaker cannot hear the hearing aid wearer.

The client has the option to adjust the Bluetooth bandwidth setting in the myPhonak app.

## Tap Control training and sensitivity

With Paradise rechargeable hearing aids and newer, Tap Control can be configured in [Manual controls]. Tap Control can be used to accept/end phone call, pause/resume streaming, and start/stop the smartphone's voice assistant.

When the hearing aids are connected, click on [Training & sensitivity] to coach the client on the double tap gesture and to determine how sensitive the double tap sensor should be. The training window can be displayed in a client-friendly view for improved client engagement.



The default setting for sensitivity is "Normal". The setting "Firm" means a strong double tap motion is needed to activate Tap Control. The setting "Gentle" means a light double tap motion is sufficient to activate Tap Control.

When the client double taps successfully, a green check mark appears.

The client has the option to adjust the Tap Control configuration in the myPhonak app.

## Indicator light

Indicator light is only available with Phonak Sky hearing aids and the Phonak Naída™ Link M hearing aid. There are five light patterns that can be activated or deactivated by checking the box beside each option under [Indicator light] within [Device Options]. The options include:

- Device on
- Roger access
- Low battery
- Volume change
- Program change

When the hearing aid is connected, each pattern can be demonstrated on the hearing aid by clicking the [Demo] button beside each option.

## Client reports

In [Device options], there is the option to email or print a customizable fitting report for the client to take home. The report contains hearing aid information, as well as program information. The report can be printed in several languages based on the client's preference. The report can also be printed with larger fonts to improve readability.

## Junior mode

Depending on the age of the child, Junior mode offers age specific DSL or NAL defaults and hearing aid configurations optimized to meet the needs of children. Junior mode includes four age ranges:

- 0-3 years
- 4-8 years
- 9-12 years
- 13-18 years

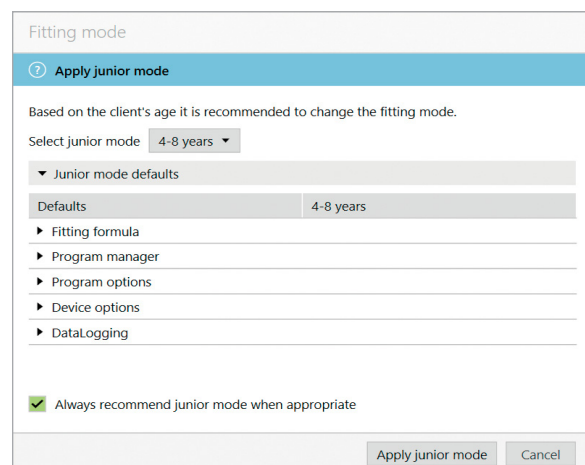
These default settings are endorsed by the Phonak Pediatric Advisory Board and National Acoustics Laboratory. They provide a starting point for flexible and efficient pediatric fittings. Within [Setup], you can customize and change the Junior mode default parameters to better suit your pediatric fitting workflow.

Entering the date of birth will automatically trigger a Junior mode fitting prompt for children between the ages 0 – 18 years after opening a new client session. You can manually change the appropriate age range in the dropdown menu for the child if you believe the behavioral/physical age is different from the chronological default age.

Click [Apply Junior mode] to continue.

A notification to attach a tamperproof solution will appear for children between 0-3 years when hearing aids are initially connected. If the available hearing aid does not have a tamperproof solution, a different notification will appear.

The startup program for both DSL and NAL fittings, across all Junior mode age groups, is AutoSense Sky OS.



## Overview of Junior mode DSL default settings

Program structure	0–3 years	4–8 years	9–12 years	13–18 years
Startup	AutoSense Sky OS	AutoSense Sky OS	AutoSense Sky OS	AutoSense Sky OS
Roger/DAI+Mic	Real Ear Sound	Fixed directional	Fixed directional	Fixed directional
Indicator light	Enabled	Enabled	Disabled	Disabled
Push button	Disabled	Disabled	Enabled	Enabled
Volume control	Disabled	Disabled	Enabled	Enabled

## Overview of Junior mode NAL default settings

Program structure	0–3 years	4–8 years	9–12 years	13–18 years
Startup	AutoSense Sky OS	AutoSense Sky OS	AutoSense Sky OS	AutoSense Sky OS
Roger/DAI+Mic	Fixed directional	Fixed directional	Fixed directional	Fixed directional
Indicator light	Enabled	Enabled	Disabled	Disabled
Push button	Disabled	Disabled	Enabled	Enabled
Volume control	Disabled	Disabled	Enabled	Enabled

## ActiveVent fitting considerations

ActiveVent is a receiver with a mechanical vent that can be steered to open or close based on the classified sound environment or signal. It is compatible with Phonak RIC Paradise rechargeable hearing aids and newer.

ActiveVent is suited for clients with mild to moderate hearing loss. ActiveVent is not recommended for clients with tinnitus, hyperacusis or phonophobia. It is not recommended for clients with excessive cerumen or with moisture-related issues. ActiveVent is not recommended for clients under 18 years of age as it has not been validated with children.

ActiveVent receiver is only compatible with APD 2.0, APD Contrast 2.0, and NAL fitting formulas. It is not compatible with DSL fitting formulas.

### Acoustic characteristics

ActiveVent Receiver has similar acoustic characteristics as the M receiver. The acoustic vent properties are similar to a vented dome and an occluded earpiece. The open state is equivalent to 3.5 mm vent and the closed state is equivalent to an occluded custom earpiece.

ActiveVent can be fitted with two alternative earpieces: Universal SlimTip AV or customized Titanium SlimTip AV. The Universal SlimTip AV is made of silicone and can be used to demo the benefit of ActiveVent in the clinic. The Universal SlimTip AV is to be used as a temporary earpiece while the custom earpiece is being made. The Titanium SlimTip AV is made of medical grade titanium and is custom made to the client's ear anatomy.

### Feedback & real ear test

The ActiveVent status is set to open when the feedback test is performed.

A feedback test is recommended, especially when fitting the Universal SlimTip AV as this can allow you to verify if the fit is appropriate for the client. If the feedback threshold appears to limit the amount of gain available or reduce available headroom, reevaluate the SlimTip shape chosen.

### Program options

To modify the ActiveVent status for each program, click [Program options].

Looking at the program manager, you see a CV symbol next to some of the programs. The CV symbol means ActiveVent is set to closed in those programs. If you do not see a CV symbol, ActiveVent is set to open.

The ActiveVent status is set to open in the following AutoSense OS acoustic programs:

- Calm situation
- Speech in noise
- Comfort in noise
- Comfort in echo

The vent status is not adjustable in the above programs, as they are automatic blending programs.

However, if you create a manual program, for example, Speech in noise, and choose to unlink it from AutoSense OS, you would be able to adjust the ActiveVent status in the manual Speech in noise program if needed.





You have the flexibility to modify the ActiveVent status in all the other programs. These include the:

- exclusive AutoSense OS programs (Speech in loud noise, Speech in Car, and Music)
- streaming programs
- manual programs not linked to AutoSense OS

### Fine tuning

When fine tuning in individual programs, consider if the ActiveVent status is appropriate for that individual program before making gain changes. When toggling between the open and closed vent status, you see the gain changes reflected in the curve display. Changing the vent status may be sufficient in addressing a client's subjective sound quality reports. If the vent status selected is appropriate, then proceed with additional fine tuning changes, if needed.

Each time you switch between programs or vent status within Target, it is possible the client will perceive the vent status changing.

ActiveVent is not compatible with TargetMatch. When performing REMs using standalone verification equipment and the hearing aid is in the Calm situation program, select "open" as the vent status in the measurement system. If you wish to perform REMs in a Speech in loud noise program, select "occluded" in the measurement system as the hearing aid vent status will be closed. When performing test box measurements, use Verification assistant available within Target. This will ensure the hearing aids are in the correct vent status (closed status) while measurements are being performed.

### Mute function

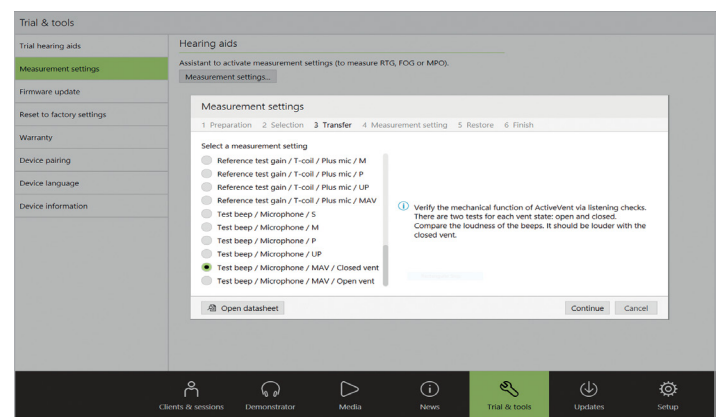
Enable the mute function to enhance the streaming quality for the client. The mute function can be enabled in [Device

options]. With a long press down on the multifunction button, the hearing aid microphones become muted. This allows the client to enjoy listening to media streaming with reduced environmental noise.

### Checking ActiveVent receiver functionality

The receiver [Check] within the client session will indicate if there is a mismatch between the receiver information entered into Target compared to what is physically connected to the hearing aid. However, it cannot indicate if ActiveVent itself is functioning correctly.

To perform a listening check and verify the mechanical function of ActiveVent, go to [Measurement settings] under [Trial & tools], located outside the client session. There are two measurements to choose from in order to verify each ActiveVent states, open versus closed.



When performing the measurement for each vent status, you will hear a tonal signal and can compare the loudness of the signal between the open status and the closed status. You should expect the signal to be louder when it is played via the closed status. This would indicate the mechanical function of ActiveVent is working as expected.

## CROS and BiCROS fitting

When entering in audiogram information, it is recommended to enter the audiogram information for both ears, even if the better hearing ear is within normal hearing limits. The reason for this is because Target sets a 40 dB HL flat hearing loss for an empty audiogram. For a client with normal hearing in the better hearing ear, this can result in overamplification.

The CROS transmitter wirelessly transmits sound to the hearing aid via Binaural VoiceStream Technology™ (BVST). As soon as you unmute and enable both the CROS microphone and hearing aid microphone in Target, a notification appears stating that BVST will activate. The CROS and BiCROS system will briefly reboot. This is an automatic reboot and the client may hear the hearing aid briefly turn off and back on again. The wireless connection between the CROS transmitter and the hearing aid is enabled.

To adjust the loudness ratio between the CROS transmitter and the hearing aid, click [CROS Balance] within [Global tuning]. To adjust the microphone mode for the CROS transmitter, click [Program options] within [Fine tuning].

Click [Device options] to adjust the manual control settings for the CROS and BiCROS system. By default, the multifunction button on the CROS transmitter is enabled for CROS Balance. The multifunction button on the hearing aid is enabled for volume change.

When streaming from accessories, the CROS signal will be paused. The CROS signal will automatically resume when streaming is stopped. The hearing aid will switch back to the startup program and the reconnection beeps between the hearing aid and the CROS transmitter will be presented.

## Bimodal fitting considerations

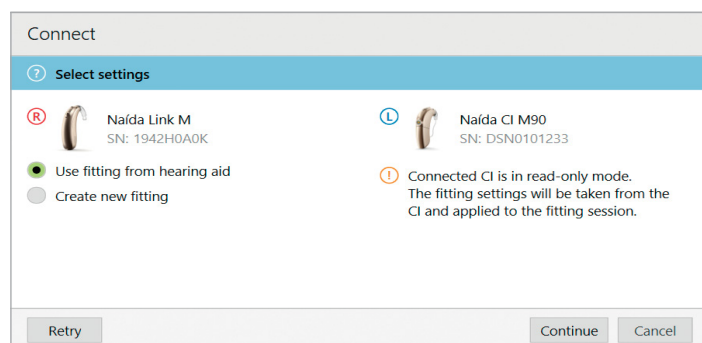
The Phonak Naída Link M can be used in a bimodal fitting with an Advanced Bionics (AB) Naída™ CI M90 sound processor. The Phonak Sky™ Link M can be used in a bimodal fitting with an AB Sky CI™ M sound processor.

In the bimodal hearing solution, the hearing aid and sound processor work together in a coordinated, dynamic way. For example, when the listening environment changes, the switch to a different hearing program applies automatically to both the hearing aid and the sound processor. Furthermore, the connectivity options available for the hearing aid function seamlessly with the sound processor.

Open the fitting session and confirm that the Noahlink Wireless is shown. Connect both the hearing aid and the sound processor to start the fitting. Devices available for pairing will automatically appear. Following connection of the hearing aid and the sound processor to the client's fitting session, Target will automatically align the program structure and device options of the hearing aid to match the sound processor.

Proceed with using Phonak Target as you would in a standard fitting session to complete the fitting of the Naída Link M or Sky Link M hearing aid. The Naída CI M90 or the Sky CI M90 sound processor is in read-only mode. No changes can be made or saved to the sound processor. You can view the sound processor settings and use the information to match the relevant settings on the hearing aid side.

Close the session at any time by clicking [Save & close session] in the top right corner of the screen. The wireless connection between the hearing and the sound processor starts automatically once they are disconnected from the fitting session.



### Fitting formula

With adult bimodal fittings, Target may prompt you to select Adaptive Phonak Digital (APD) Bimodal as the fitting formula. Recalculate the fitting to align the hearing aid to APD Bimodal recommendations. When using APD Bimodal, it aligns the frequency response, loudness growth, and compression between the hearing aid and the sound processor.

With pediatric bimodal fittings, it is recommended to use a fitting formula that has been validated with children, such as DSL and NAL fitting formulas. DSL and NAL fitting formulas are designed to optimize speech intelligibility and speech development in children.



Please note that APD Bimodal has not been validated with children.

The fitting formula can always be changed as desired in [Global tuning] under [Fitting].

### Modifiable hearing aid settings

Accessible functionalities that can be modified on the hearing aid include:

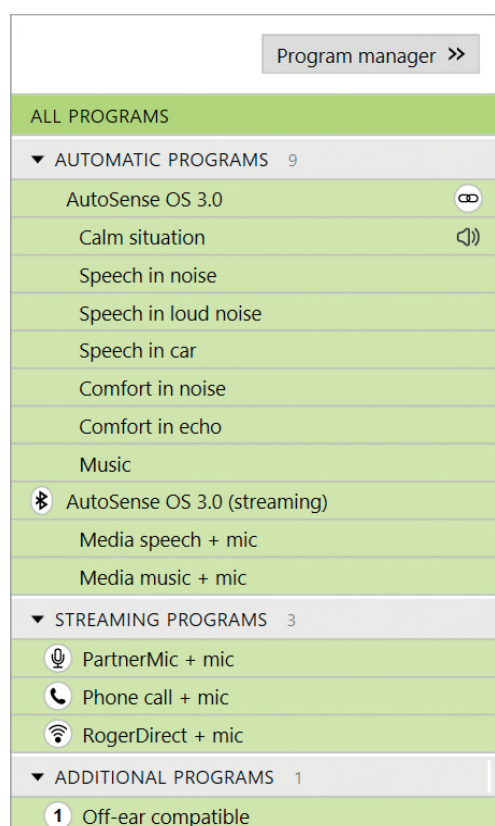
- acoustic parameters
- feedback and real ear test
- fitting formula
- fine tuning of gain and MPO
- program option settings within each program. The program structure cannot be changed.
- SoundRecover2
- signals and alerts

### Off-ear compatible program

Off-ear compatible program may be generated in the program structure when the sound processor is read-out. The off-ear compatible program is for the sound processor in a bimodal fitting.

The microphone on the sound processor switches to the microphone on the magnetic headpiece. The microphone mode is in omnidirectional.

In order for the Naida Link M or Sky Link M to stay aligned with the sound processor, there is an off-ear compatible program in the hearing aid. In the hearing aid, the settings will be based on the Calm situation program.



Adults may choose this wearing option for relaxing, without the weight of the sound processor behind the ear, or when the sound processor is placed in a waterproof case for swimming or doing sports. With small children, they often wear the sound processor clipped to their clothing as their little ears may have difficulty accommodating the sound processor worn on their ear.

### SoundRecover2

For adult bimodal fittings, a systematic review by Vroegop et al (2018) concluded that "Current evidence suggests that frequency lowering or transposition is not beneficial," especially as the high frequency audibility is expected to come from the sound processor.<sup>1</sup> In addition, the subjective benefit of SoundRecover2 from the hearing aid may change when more high frequency information is available via the sound processor. Thus, the decision to activate SoundRecover2 in the hearing aid should be made on a case by case basis.

For pediatric bimodal fittings, it is recommended to continue to use SoundRecover2, especially if the child is used to listening with SoundRecover2.

### Loudness balancing

When both the hearing aid and sound processor are connected to Target, there is no synchronization between the devices. For example, if you are fine tuning the gain settings in a manual program on the hearing aid side, Target cannot switch the sound processor into the same manual program. The sound processor stays locked in its start-up program.

Therefore, for loudness balancing within specific programs, it is recommended to only connect the hearing aid to Target, after the sound processor settings have been saved to Target. In this way the client can manually change the program on the sound processor to the same program that needs fine tuning on the hearing aid side.

# Remote Support

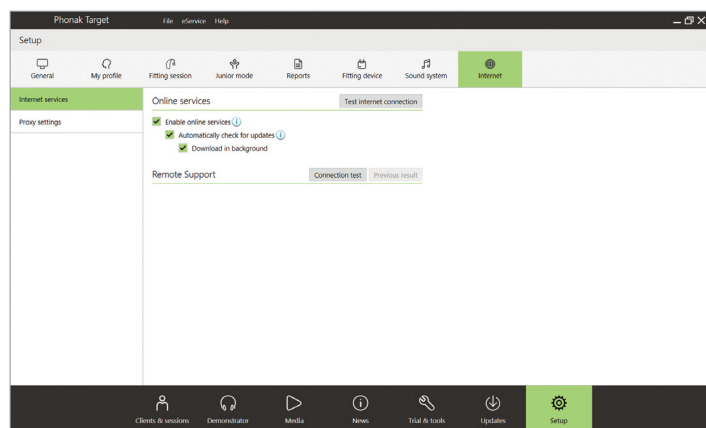
Phonak Remote Support is designed to support the client's fitting by providing hearing aid care from a distance. If the client needs adjustments to their compatible Phonak hearing aid settings, this can be done in real time, in their own environment, e.g. at home, rather than in a clinic.

## Requirements

- Latest Phonak Target software version available for optimal experience.
- Most current myPhonak app version installed on the client's mobile phone.
- An initial hearing aid fitting must be performed in the clinic.
- Computer with an integrated webcam or microphone or an external webcam and microphone connected to the computer. For better sound quality, use headphones with a microphone connection.
- Stable internet connection (Wi-Fi, LAN or 4G) with at least 5 Mbit/s of data transfer connection for uploads and downloads.

## Set up for Phonak Remote Support

Internet connection can be checked within Target to ensure the setup is appropriate for a Remote Support session. Click on [Setup] > [Internet] > [Internet services] > [Connection test]. Once completed, the status will be shown.



Select the client for Remote Support. If there is more than one clinic site available, select the clinic where the remote session will take place.

An initial hearing aid fitting must be performed in the clinic. Upon clicking [Save & close session], Remote Support is enabled. For an existing client, the hearing aids must be connected to Phonak Target in the clinic and upon saving the session, Remote Support is automatically activated.

The client must download the myPhonak app onto their smartphone and pair the hearing aids to the app before a Remote Support session can take place. Once this has been completed, client status will be updated in Phonak Target. The [Manage eSolutions] icon allows you to manage the client's status by viewing the phone pairing status or removing the client from Remote Support.

## Begin the video call and follow up session

At the time of the appointment, click on [Start Remote Support]. You and your client will be connected to the video call. You may have to wait for the client to enter the Phonak Remote Support session with the myPhonak app.

Once connected, you will see and hear your client. Make sure the video and microphone on your computer are enabled. Switching between an integrated or external microphone or webcam can be performed before or during a session by clicking on the settings icon which is located at the top right hand corner of the Remote Support screen.

As soon as the client enters the Remote Support session and has accepted the camera and microphone requests on their smartphone, both videos are displayed on the screen.

It is recommended that the client has new batteries in their hearing aids or sufficient charge in their rechargeable hearing aids before connecting to the Remote Support session.

Click on [Open fitting session] to open the client's fitting session in Phonak Target. Click on [Connect] to connect to the hearing aids.

Once the hearing aids are connected, use Phonak Target as you typically would in a follow-up session. The hearing aids are live and any adjustments you make are sent to the hearing aids in real-time.


The following functions are not available during the Remote Support session.

- Feedback and real ear test.
- Increasing MPO.
- Firmware upgrades.

It is not possible to end Phonak Remote Support with the client until the fitting session in Target has been saved and closed. In the event that the connection between the client's hearing aids and Target gets interrupted during an active Remote Support session, the hearing aids will reboot and keep the last valid fitting.

After fitting is complete, click on [Save & close session] to save the fitting to the hearing aids and Target.

Remote Support session. Click [Yes] to confirm and disconnect from your client's smartphone.

To end the Phonak Remote Support session, click on  to end the call. Target will ask if you wish to close the Phonak

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## Finishing the fitting session

You can close the session at any time by clicking [Save & close session] in the top right corner of the screen. Select the items to save. The save dialog will confirm the successful save of the hearing aids. After the save, Phonak Target will guide you to the start screen. If you are working under Noah, you can go back to Noah by clicking on [Back to NOAH] at the top right corner of the start screen.

1. Vroegop JL, Goedegeure A, & Van Der Schroeff MP. (2018). How to optimally fit a hearing aid for bimodal cochlear implant users: A systematic review. *Ear and Hearing*, 39(6), 1039–1045. <https://doi.org/10.1097/AUD.0000000000000577>

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Since 1947, Phonak is dedicated to preserving social, emotional and physical life quality by opening new acoustic worlds. We believe that well-hearing equates to well-being and thus is essential for living life to the fullest. Today we offer the broadest portfolio of innovative hearing solutions. And, together with our hearing care professionals, we keep on focusing on what matters most: improving speech understanding, changing people's lives and having a positive effect on society as a whole.

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