

Pediatric fitting guide

June 2016

Phonak Target Junior mode

This guide aims to provide a detailed introduction to Phonak Target Junior mode for hearing care professionals who fit children of all ages.

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Introduction

For children with any level of hearing loss, it is essential to have access to all speech cues in both quiet and noisy environments in order to develop age-appropriate speech and language. The combination of the dedicated pediatric hearing aid family, Phonak Sky™ V, with cutting edge Roger technology, can overcome even the most challenging listening situations. In this guide, detailed instructions are provided on how Junior mode optimizes the settings of Phonak Sky V hearing instruments with Roger technology for children and verification.

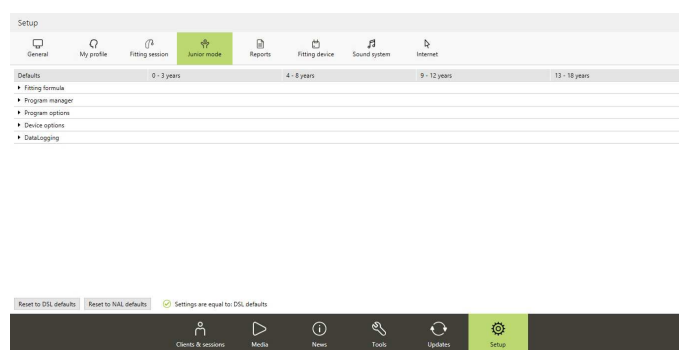
Junior mode defaults

Prior to the first fitting using Phonak Target, it is recommended to review the Junior mode defaults for all age ranges **0–3, 4–8, 9–12** and **13–18 years**. These defaults allow for more flexible and efficient pediatric fittings and have been reviewed by the Phonak Pediatric Advisory Board, which includes pediatric audiology specialists and key opinion leaders from around the world and also reflect the latest research evidence to truly meet the unique listening needs of children.

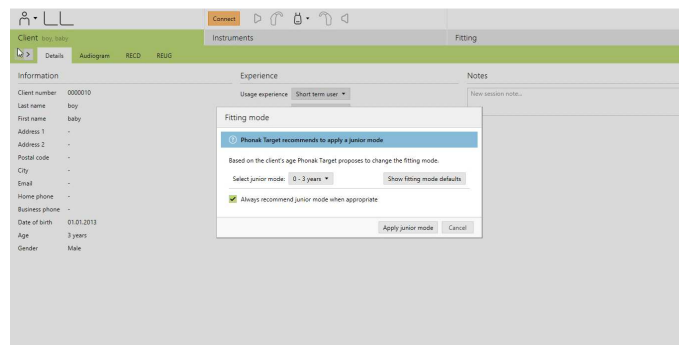
To view the current defaults, go to **[Setup]**, click on **[Junior mode]**. Under **[Defaults]** there are topics **[Fitting formula / Program manager / Program options / Device options / DataLogging]** that can be accessed.

If preferred, these defaults can be changed to suit your personal fitting philosophy. Each topic has a drop down menu that enables you to personalize settings for all future pediatric fittings.

Fitting defaults are provided for both DSL and NAL. To choose the appropriate defaults for either fitting formula or to restore the original defaults that you may have changed, click on **[Reset to DSL defaults]** or **[Reset to NAL defaults]**.



Entering the **date of birth** into NOAH or in standalone software will trigger a **Junior mode fitting** prompt with the recommended age range. Click **[Apply Junior mode]** to begin the fitting or change the age range that best reflects the needs of the individual.

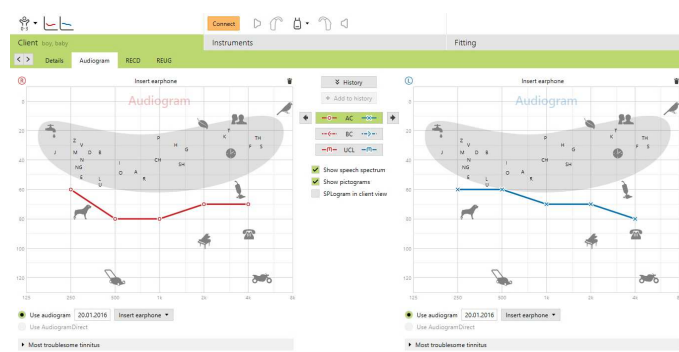


Client data

Audiogram

The audiogram can be enlarged and viewed. Click on **[Client]** and then **[Audiogram]** to view the audiogram. To enlarge the audiogram, click on **[Client view]**.

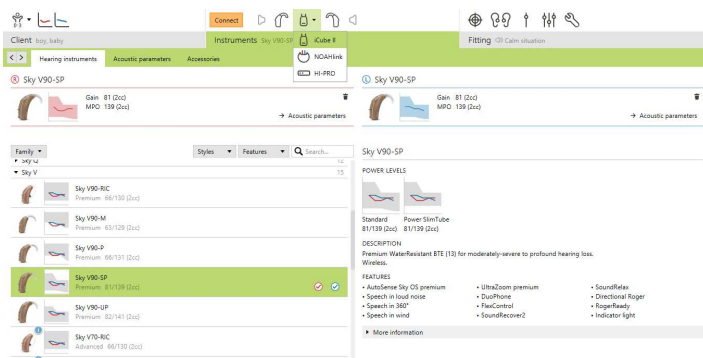
If desired, the speech spectrum and sound samples can be layered over the audiogram and then printed to support a variety of use cases such as counseling parents/caregivers. Click on **[Show speech spectrum]** or **[Show pictograms]**.



Connecting the hearing instruments

Select how you wish to program the hearing instruments **[NOAHlink/iCube II/Hi-PRO]** via the drop down menu located centrally at the top of the main screen.

Sky V, like all other Venture hearing instruments, can be fitted using the iCube II and requires fresh batteries in the hearing instruments for wireless programming. Click **[Connect]** to establish the connection to the hearing instruments.

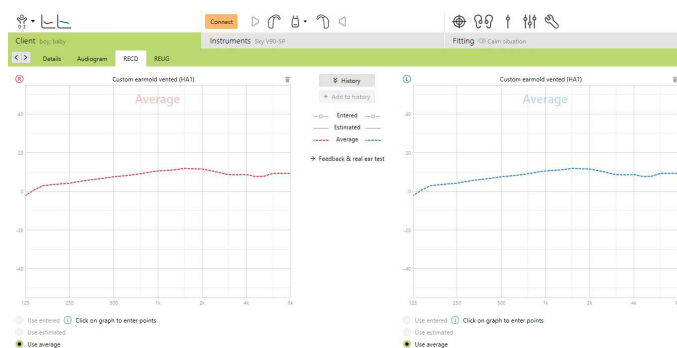


Note: When hearing instruments are initially connected, a notification to attach a tamperproof solution will appear for individuals between 0-3 years. If a connected hearing instrument does not have a tamperproof solution available, a different notification will appear.

RECD

RECD values can be accessed via **[Client]** then **[RECD]**. Different RECD values can be used in Phonak Target:

- **[Use entered]** these are the measured RECD values entered from verification equipment. To enter an RECD measured on an external verification device, manually click on the graph or import it from NOAH by clicking **[RECD history]**.
- **[Use estimated]** this is not recommended for children and not available in Junior mode. It is an estimated RECD based upon the characteristics on an adult ear and the results of the feedback test.
- **[Use average]** these are the average earmold RECD values based upon the age of the individual and algorithm (i.e. DSLv5 or NAL-NL2) used.



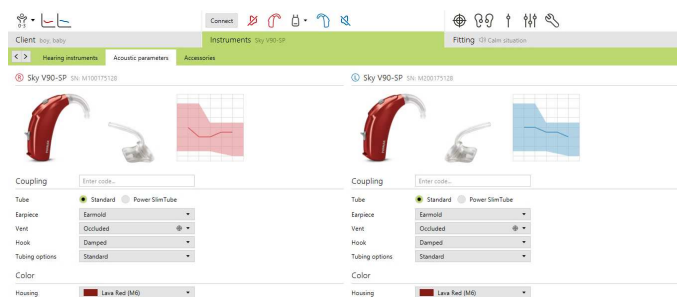
Acoustic parameters

For optimal pre-calculation, it is very important the coupling and acoustic parameters of the hearing instruments match those entered into Phonak Target. Once hearing instruments are connected, the **Acoustic parameters** screen will automatically pop up.

The defaults for individuals between 0-3 years of age are **hook, standard tubing, and occluded** regardless of level of hearing loss.

If you wish to access the **acoustic parameters** screen at any time during a fitting, click on **[Instruments]**, then **[Acoustic parameters]**.

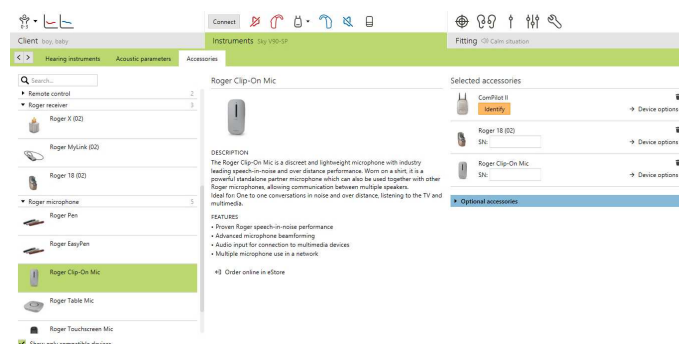
Please verify or change the coupling options as needed so they correspond to the fitting.



Accessories

Under **[Instruments]** then **[Accessories]**, select the accessory devices that will be used. Most accessories do not need any additional programming. For all Sky V instruments with DAI, the **Roger/DAI+Mic** program will automatically appear in the program structure and cannot be deleted.

Details on how to set up additional programs can be found in the section on **Adding programs or changing program structure**.



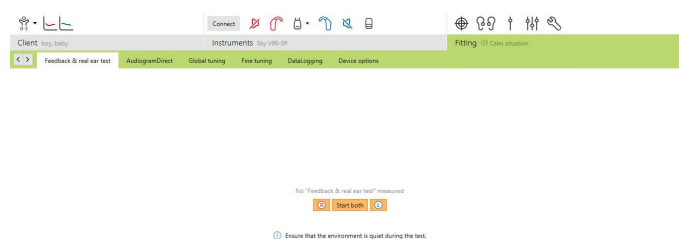
Fitting

Feedback and real ear test

If a child can sit quietly, it is highly recommended to run the feedback test prior to making any fine tuning adjustments.

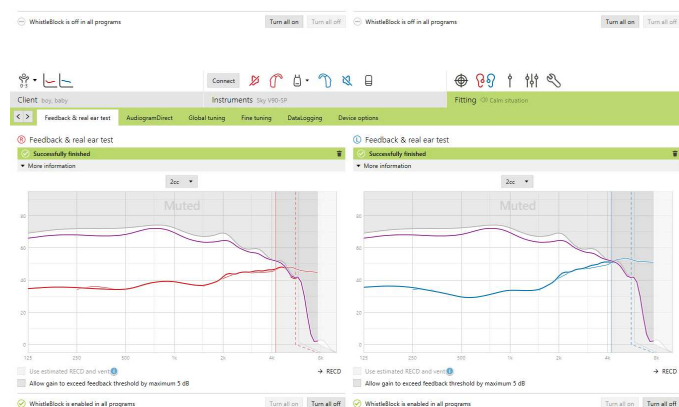
To run the feedback test, go to **[Fitting]** and then **[Feedback & real ear test]**. The test can either be run in both ears consecutively without stopping or in one ear at a time.

When the feedback test is complete, measurements will automatically be applied.



The measured feedback results are displayed as a solid purple line. The red/blue curves represent the available gain for a 50 dB speech input that can be viewed in Real ear, 2cc or insertion gain.

If the child moved or the feedback test was interrupted, the results can be discarded by clicking on the trash can and then repeated.



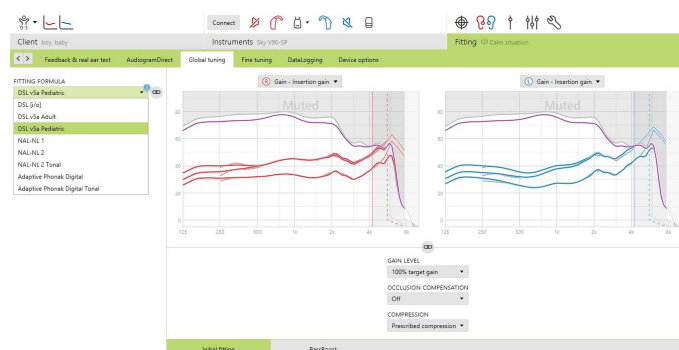
AudiogramDirect

AudiogramDirect can be accessed in the tab **[Fitting] > [AudiogramDirect]**.

It is only recommended for use with older children and does not replace diagnostic audiologic assessments.

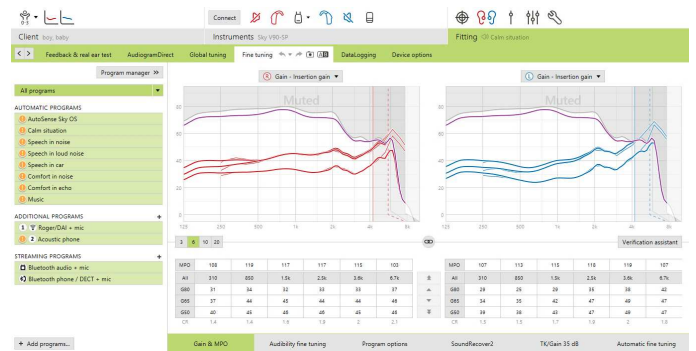
Global tuning

Global tuning can be accessed via **[Fitting] [Global tuning]**. Global tuning allows initial fitting adjustments for **Fitting formula**, **Gain level**, **Occlusion compensation**, **Compression setting** and **BassBoost**.



Fine tuning

Fine tuning can be accessed via **[Fitting]** then **[Fine tuning]**. Gain adjustments for the G50, G65, and G80 curves as well as the MPO can be made via **[Gain & MPO]**.



Adding programs or changing program structure

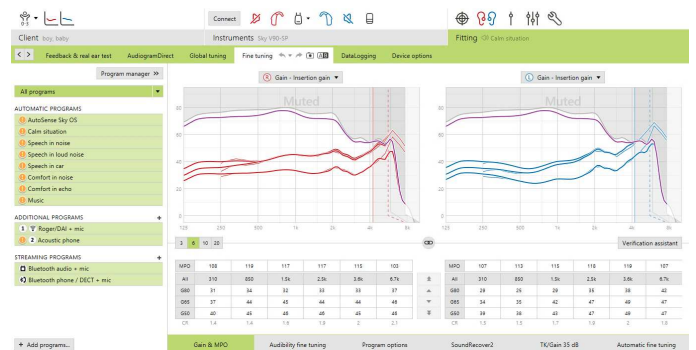
From the **[Gain & MPO]** screen, click on **[Program manager]**. Here the startup program, program structure, and streaming programs can be customized. To add programs, click on **[+ Add programs...]**.

Verification assistant

Verification systems are not always consistent with the types of stimuli available and how the output results are displayed. The wide variety of signal processing schemes, gain and compression variables, frequency lowering, and noise management algorithms in hearing instruments also impact the verification of the gain and MPO settings. As a result, the displayed output results may not always be an accurate representation of true function leading to misinterpretation and/or unnecessary fine tuning.

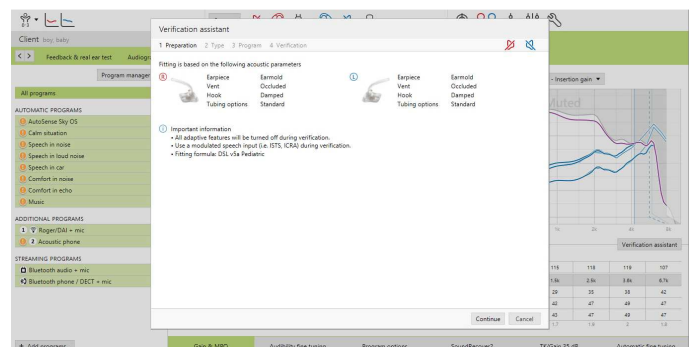
To address these challenges, Phonak Target offers a helpful Verification assistant to simplify and streamline the verification process. Verification assistant is available as a default when using Junior mode or when enabled in Phonak Target setup.

The **Verification assistant** can be accessed via **[Fine tuning]**, **[Gain & MPO]** and then clicking on **[Verification assistant]**.



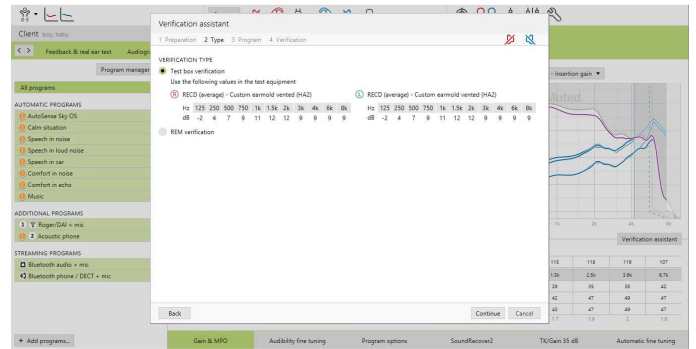
The assistant will then guide you through a series of steps:

Step 1 [Preparation]: This step starts with confirming the acoustic parameters and coupling being applied to the fitting.

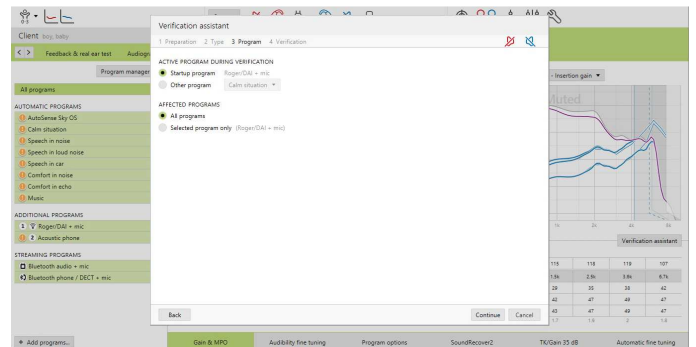


Step 2 [Type]: The next step will determine whether Testbox or REM verification will be performed. If Testbox is chosen, the RECDs being applied to the fitting will be highlighted. For REM, there are some helpful hints listed.

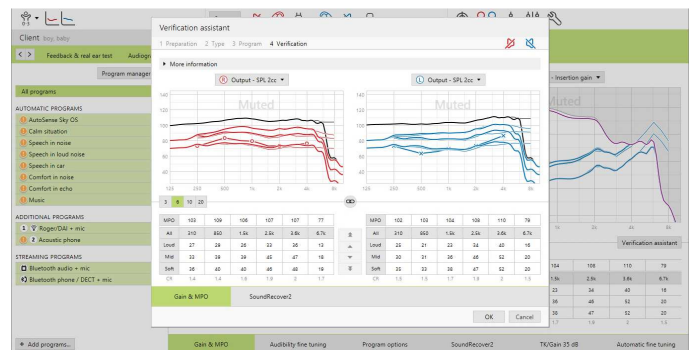
Note: It is recommended for Testbox verification that the RECD values are confirmed and match the RECD values from your verification equipment.



Step 3 [Program]: 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.



Step 4 [Verification]: This step will deactivate all adaptive features of the hearing instruments including SoundRecover2 and allow for adjustment first of gain and MPO and then SoundRecover2.



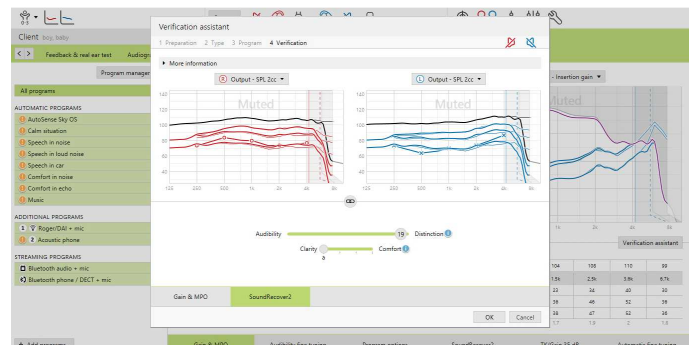
When an instrument is muted or unmuted, a watermark can be seen above the curve display (i.e. Muted or Speech). The speech watermark serves as a reminder of the recommended input signal to optimize target matching.

The available curve displays correlate with the type of verification being performed. Testbox will show a 2cc Gain or Output curve while REM will show Insertion gain, Real ear gain or Real ear SPL output curves.

SoundRecover2

To adjust SoundRecover2, click on **[SoundRecover2]**, and then **[Adjust SoundRecover2]**. SoundRecover2, when enabled in the fitting, is automatically activated while in this screen of the verification assistant. This will allow for individual fine tuning adjustments for **Audibility** and **Distinction** and if required, for **Clarity** and **Comfort**.

Click **[OK]** to confirm any adjustments made in the verification assistant and return to the standard fitting mode. All adaptive features, including SoundRecover2 will be automatically reactivated. If there is a need to discard any adjustments made during verification, click **[Cancel]**.

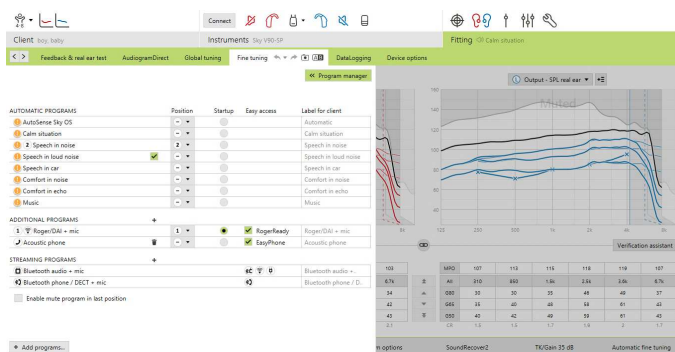


For further information on verifying SoundRecover2, please refer to:

Best Practice Protocol SoundRecover2 Pediatric Verification, Phonak, 2016.

Program options

SoundCleaning features such as **NoiseBlock**, **WindBlock**, **EchoBlock** and **SoundRelax** can be activated, deactivated, or changed in strength under **[Fine tuning]** and **[Program options]**.



TK/Gain 35

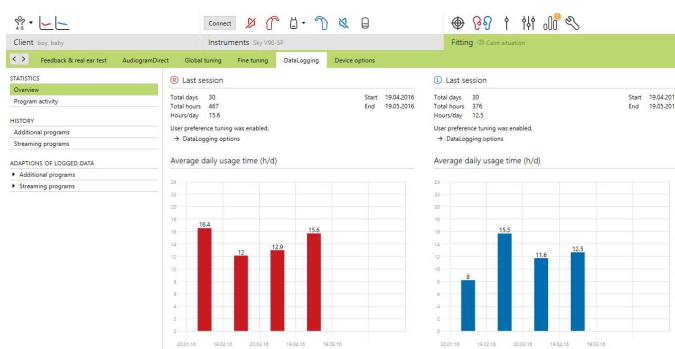
The amplification of soft (G35) input sounds can be adjusted with this tuning tool. An increase of gain for soft input sounds lowers the threshold knee point (TK) and vice versa.

Select the values with the cursor to adjust them. Underneath the gain values the TK values are shown for each channel. The gain / output curve for soft input sounds is shown in the curve display.

DataLogging

DataLogging can provide information about which listening environments the child has been in and for how long. Some examples of the type of information DataLogging can provide include average hours of daily use, breakdown of the automatic and additional programs and also volume adjustments. This is a very useful tool for determining whether adjustments need to be made at a follow up appointment or further counseling is needed.

To access DataLogging information, go to **[Fitting]** and **[DataLogging]**.

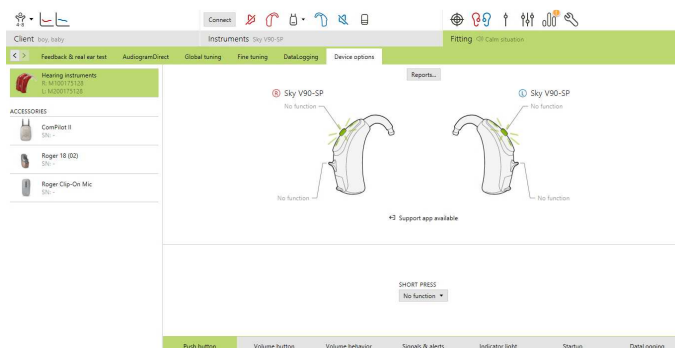


Device options

Device options allow for adjustments to functions including **Push button**, **Volume control** and **Volume behavior**, **Signals and alerts**, **Indicator light**, **Startup** and **DataLogging**.

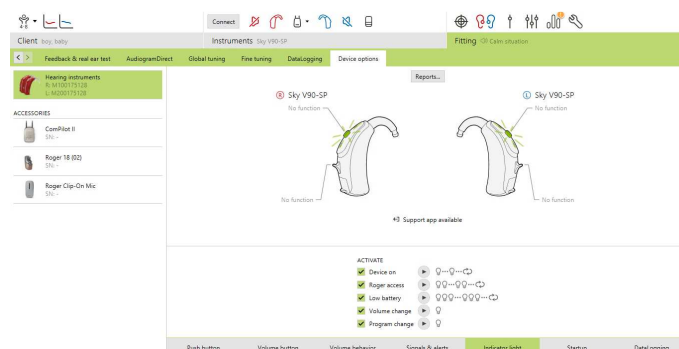
Go to **[Fitting]**, **[Device options]**, and click on **[Push button]** or **[Volume control]**. The push button and volume control function defaults can be changed either by drop down menu or by clicking the chosen selection.

The volume behavior (relevant for older children) can be adjusted under **[Device options]**, **[Volume behavior]**.



To change the default settings for the indicator light patterns, go to **[Fitting]**, **[Device options]**, and click on **[Indicator light]**. There are five indicator light patterns that can be activated or deactivated by checking the box beside each option.

Options include: **Device on**, **Roger Access**, **Low Battery**, **Volume change** and **Program change**. When the hearing instrument is connected, each pattern can be demonstrated on the hearing instrument by clicking the **[Play]** button beside each option.



Follow up fitting

For any follow up fitting, once instruments are connected, the fitting session always starts in the **[Gain & MPO]** screen under **[Fine tuning]**.

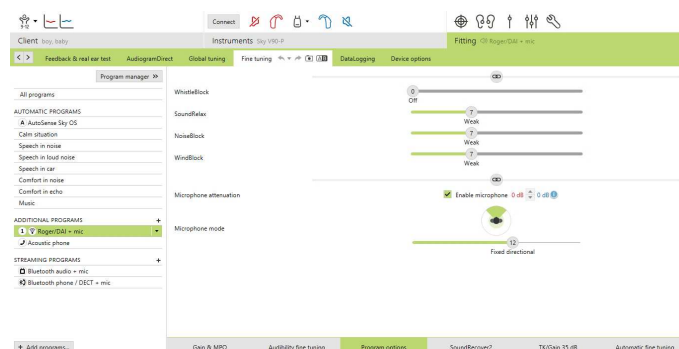
Additional programs using Junior mode (0-18 years)

Roger/DAI+Mic as startup

In Junior mode, the **[Roger/DAI+Mic]** program is automatically available in the program structure and cannot be deleted. **[Roger/DAI+Mic]** is set as the **Startup** program for DSL fittings (0-18 years). The hearing instrument will be in the **[Roger/DAI+Mic]** program every time it is switched on.

Remarks:

- [Roger/DAI+Mic]** defaults to an active onboard microphone with 0 dB attenuation. This is the recommended setup to ensure microphone attenuation does not reduce awareness of surrounding sounds through the hearing instrument microphones, as this may pose a serious risk in a variety of situations such as school, in the car, play areas, or traffic.



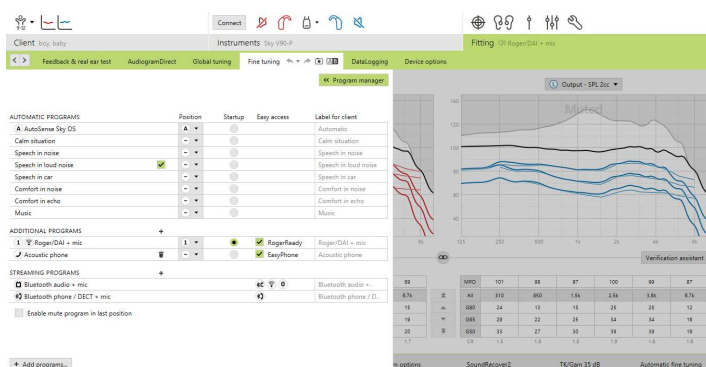
- The proven benefits of directional microphones are available within the **[Roger/DAI+Mic]** program. Under **[Program options]**, **[Microphone mode]** three options are available: **Omni directional**, **Real Ear Sound** and adaptively activated **Fixed directional**. Default access to these settings differ by age group and fitting formula. To change the default setting move the **[Microphone mode]** slider left or right.

RogerReady

RogerReady is enabled by default in Junior mode and is active in both the **Startup** program and in **AutoSense Sky OS**.

Remarks:

- This means that the hearing instrument can start-up in **AutoSense Sky OS** and with **RogerReady** activated, it will automatically switch to **[Roger/DAI+Mic]** when a transmitter is sending a signal to an attached receiver that is in range.



If preferred, **RogerReady** can be disabled. Click on **[Fitting]**, **[Fine tuning]**, click and open **[Program manager]**. Under **[Additional programs]**, **[Roger/DAI+Mic]** uncheck the box for **RogerReady**. The **[Roger/DAI+Mic]** program will remain in the program structure, however to be accessible, it must be the **Startup** program or be accessed via the **push button** or **remote control**.

CROS II fittings in Junior mode (DSL)

In Junior mode 0-3 and 4-8 years, the default program setup is **[Roger/DAI+Mic]** as **Startup** with the push button disabled by default.

To access **CROS II**, go to **[Fine tuning]**, **[Program manager]** and set the position of **Calm situation** to the **Startup** and remove all other programs from the program sequence.

Save and disconnect.

When Roger is used via DAI, **RogerReady** is enabled by default and will activate the **[Roger/DAI+Mic]** program when the Roger microphone is transmitting. When the **[Roger/DAI+Mic]** program is activated **CROS II** will automatically be disabled.

When the Roger microphone is no longer transmitting for approximately a minute, the aid will switch back to **Calm Situation** and the **CROS II** will be activated. The connect beeps will be heard.

Remarks:

- For Junior mode 9-12 and 13-18 DSL fittings, the **Startup** program is **[Roger/DAI+Mic]** and the push button is enabled by default. AutoSense Sky OS is available via the push button as an additional program. To access **CROS II**, toggle to AutoSense Sky OS.
- For NAL fittings in Junior mode all age groups, AutoSense Sky OS is the default **Startup** program.

Overview of Junior mode defaults

Overview of DSL default settings

Program Structure	0–3 years	4–8 years	9–12 years	13–18 years
Startup	Roger/DAI+Mic	Roger/DAI+Mic	Roger/DAI+Mic	Roger/DAI+Mic
AutoSense Sky OS	Disabled	Disabled	Enabled	Enabled
Roger/DAI+Mic	Omni	Real Ear Sound	Fixed directional	Fixed directional
Indicator light	Enabled	Enabled	Disabled	Disabled
Push Button	Disabled	Disabled	Enabled	Enabled
EasyPhone	Disabled	Enabled-DuoPhone	Enabled-DuoPhone	Enabled-DuoPhone
Volume Control	Disabled	Disabled	Enabled	Enabled

Overview of 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
AutoSense Sky OS	Enabled	Enabled	Enabled	Enabled
Roger/DAI+Mic	Fixed directional	Fixed directional	Fixed directional	Fixed directional
Indicator light	Enabled	Enabled	Disabled	Disabled
Push button	Disabled	Disabled	Enabled	Enabled
EasyPhone	Enabled-DuoPhone	Enabled-DuoPhone	Enabled-DuoPhone	Enabled-DuoPhone
Volume control	Disabled	Disabled	Enabled	Enabled