by Alango

behear®

LIFE SOUNDS BETTER

BeHear® SMARTO

User Manual

Sound Enhancement by Alango Technologies, Ltd.

BeHear is the brand name for a line of concept, future-looking wearable audio devices that are developed by Alango Technologies, a leading supplier of voice and audio enhancement technologies for the communication and entertainment markets.

BeHear is a registered trademark of Alango Technologies, Ltd.

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Introduction

BeHear SMARTO is a fully customizable hand-held or body-worn personal hearing amplifier. It is easy to operate and provides a substantial hearing boost to allow those with mild to severe hearing challenges to participate fully in live conversations. SMARTO also enables an improved listening experience for streamed audio from a cell phone, television set, or any other device that transmits audio via Bluetooth.

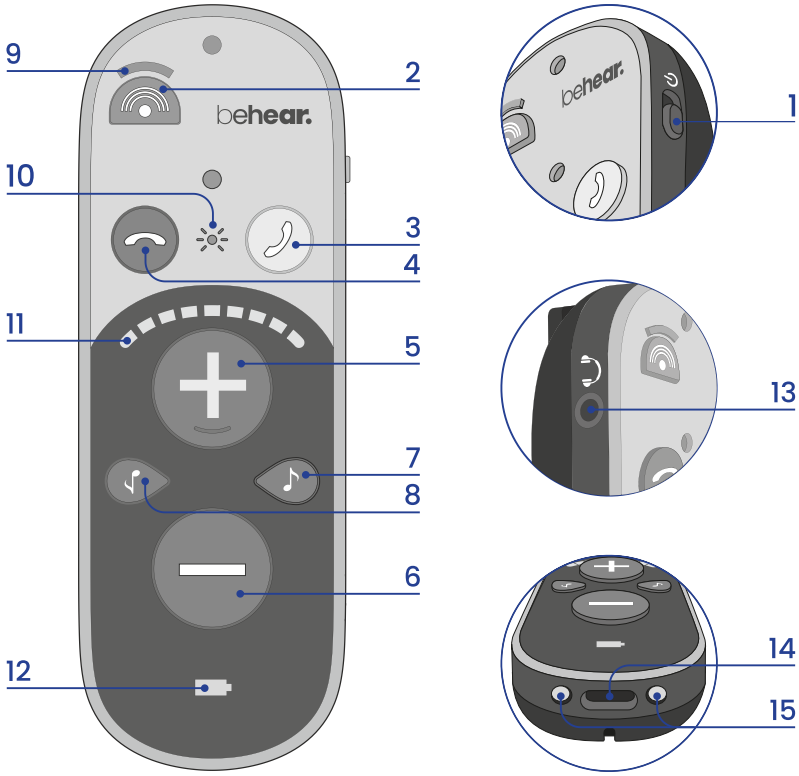
Key Benefits of SMARTO

- **Simple and effective**: With large, colorful buttons for easy operation, it suits those who are limited by mobility, vision, dexterity, or dementia.
- **Tailor-made amplification**: Conversation isn't just louder, it is personalized to suit the user's unique hearing profile.
- **Directionality**: In challenging, noisy conditions users can activate “focus mode”, point the device towards a particular person, and benefit from selective amplification in the direction of interest.
- **Built-in safety feature**: A single-press user-defined emergency call option makes it easy for the user to get assistance, if needed, and gives family members peace of mind.
- **Loud and clear mobile calls**: Comprehension during cell calls is increased due to personalized amplification, noise reduction technology, and Alango's EasyListen™ feature, which slows down incoming speech when desired.
- **Superior audio quality**: Clear dialogue and rich music tones are delivered from streamed television programs, music tracks, podcasts, conference calls, and other audio content.
- **Tinnitus relief therapy**: Customizable masking sound can ease the discomfort of tinnitus.

The BeHear application can be downloaded from the Google Play Store or Apple Store:

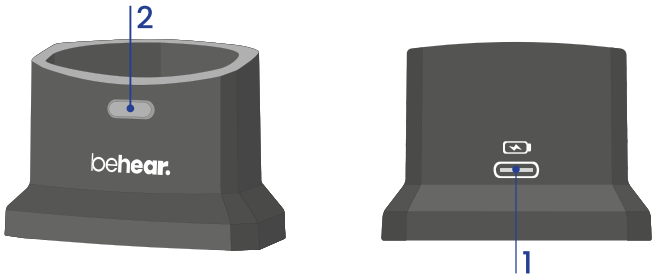
Device Overview

Main Unit



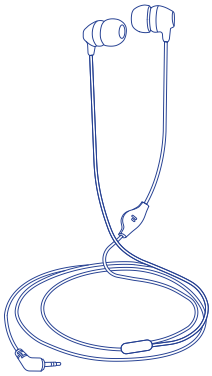
	Icon	Component	Function	
1		Power button	• Shift up and hold to turn BeHear SMARTO on and off. • Press briefly to show battery level (when BeHear SMARTO is on).	
2		Sound Focus button	Press to toggle between Omni (all directions) and Front microphone modes.	
3		Accept button	Handle phone calls (read Handling Phone Calls) Manage audio listening (read Listening to Audio)	
4		Cancel button		
5		Volume up button	Press to increase call, audio, or ambient sound volume.	
6		Volume down button	Press to decrease call, audio, or ambient sound volume.	
7		Tone down button	Press to increase low frequencies (bass).	
8		Tone up button	Press to increase high frequencies (treble).	
9		Sound focus indicator	Shines in amber when the Front mode of the microphone is selected.	
10		Notification LED	Flashing red and blue	Headset is in Bluetooth pairing mode.
			Flashing blue	Headset is connected to a Bluetooth device.
			Flashing amber	Hearing amplifier is active.
11		Sound level indicator	Volume, tone, or sound balance indicator	
12		Battery indicator	Battery level and charging status indicator	
13		Audio jack	Cable port for supplied headsets	
14		USB-C charging port	Insert the supplied cable to charge the battery.	
15		Charging port	Place this side down in the charging cradle to charge the battery.	

Charging Cradle



	Icon	Component	Function
1		USB-C charging port	Insert the supplied cable to charge the battery.
2		Battery status indicator	A window displaying battery status

Headsets



In-ear headset

On-ear headset

Accessories

- Charging cable
- Lanyard
- Earbud sets

Getting Started

Using the Headset

Choosing the Headset

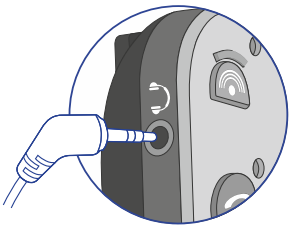
Choose one of the two supplied headsets you want to use with BeHear SMARTO – in-ear or on-ear. When significant sound amplification is required the in-ear headset with properly selected ear buds is the most effective option. The on-ear headset is generally more comfortable for longtime wear.

Personal sound adjustments applied to BeHear SMARTO may vary depending on the type of the headset used. If you choose to customize BeHear SMARTO via the BeHear app, be sure to perform the Hearing Assessment using the type(s) of headset that will be worn.

Note: For best results, we recommend using BeHear SMARTO only with the supplied headsets. They contain components which are used to optimize the user's hearing experience.

Connecting the Headset

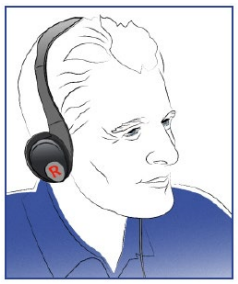
Insert the headset plug firmly into the amplifier.



Putting on the Headset

Both the on-ear and in-ear earphones are marked with "**L**" and "**R**". The side marked "**L**" is for the left ear, and the side marked "**R**" is for the right ear.

Proper earphone placement is critical to determining the direction of incoming sounds.



Choosing the Best Ear Buds for Your Ears

The in-ear headset of your BeHear SMARTO amplifier comes with two shapes of silicone ear buds: open fit "tulip" (factory-installed) and mushroom (supplied in three sizes). The pre-installed "tulip" ear bud is recommended for longtime wear. However, if the buds do not fit snugly and comfortably in your ears you should remove the silicone covers from the earpieces and try different mushroom-type options.

Turning the Amplifier ON and OFF

To turn on BeHear SMARTO:

Shift and hold the Power switch until the unit vibrates and the main LED turns green. Release the switch, which will return to its original position automatically.

To turn off BeHear SMARTO:

Shift and hold the Power switch until the unit vibrates and the main LED turns red. Release the switch, which will return to its original position automatically.

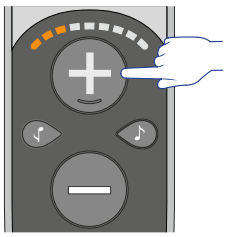
***Note**: The vibration option can be disabled by changing a setting in the BeHear application. See the NOTIFICATIONS section of this manual for details.*

Basic Operation

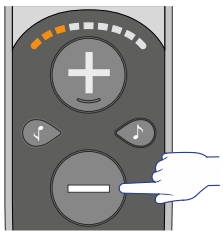
Volume Control

Set Volume Level

- **To increase** the volume press the ⊕ button.



- **To decrease** the volume press the ⊖ button.

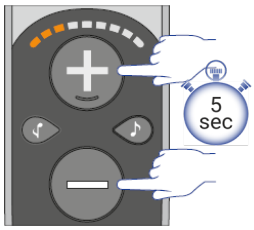


Following any change, the current volume level is displayed on the sound level indicator for 5 seconds.

Set Maximum Volume Level

To protect the user's hearing, BeHear SMARTO supports three different volume ranges (Low, Mid, and High) so that the maximum volume can be set based on the user's personal hearing ability. Gain is limited to the maximum volume in the selected range.

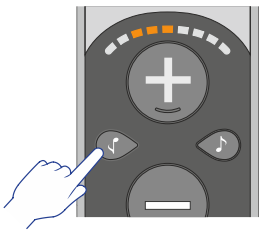
- To change the maximum volume level press and hold the ⊕ and ⊖ buttons simultaneously for more than 5 seconds until the sound level indicators shows the desired level.
- Release the buttons and repeat the action again to scroll between the ranges of maximum volume.



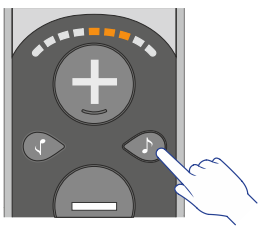
Note: The initial setting (factory default) is **Mid**.

Tone Control

- To increase the **bass** (low frequency sounds) press the ◁ button.



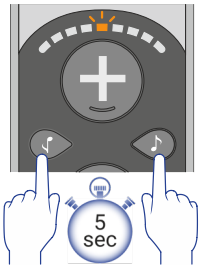
- To increase the **treble** (high frequency sounds) press the ▷ button.



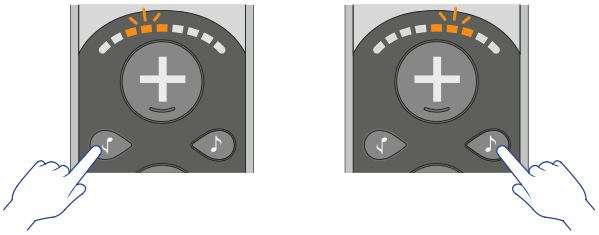
The sound level indicator increases incrementally to the left or right side, respectively. The indication stays active for 5 seconds following the last change.

Left/Right Balance

The balance between left and right ears can be modified in BeHear SMARTO.



- To enable the balance control press and hold the buttons and simultaneously for more than 5 seconds until the sound level indicator starts blinking.
- While the indicator is blinking press the button to change the balance to favor the left ear or press the button to change the balance to favor the right ear. The blinking indication of the sound level indicator will reflect your choice.

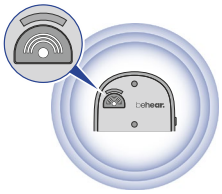


Sound Focus

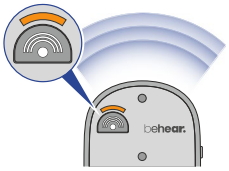
The microphones of BeHear SMARTO amplifier can operate in two different modes – **Omni** and **Front**.

To toggle between the modes, press the button. When the indicator light is lit (in amber) SMARTO is in **Front** mode. When the light is off SMARTO is in **Omni** mode.

In **Omni** mode the SMARTO amplifies nearby sound from all directions.

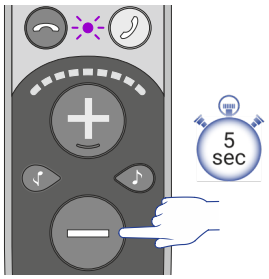


In **Front** mode, only sound in front of the unit is amplified, while background noise is reduced. The user must point SMARTO at the desired sound source to benefit from this mode.

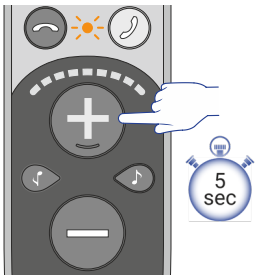


Pause/Resume the Amplifier

- **To pause** the amplifier, press and hold the ⊖ button. The notification LED will blink in purple and the sound level indicator will turn off.



- **To resume** the amplifier from the pause state, press and hold the ⊕ button until the notification LED turns amber.



Lock/Unlock the Buttons

BeHear SMARTO buttons can be locked to prevent accidental settings changes. You can lock all buttons together, or any group of functions separately.

Note: *Power On/Off and Emergency call dialing will always be functional.*

- **To lock all functions** together, press and hold the three buttons ⏻ ⊖ and ⊕ simultaneously for more than 5 seconds until the notification LED blinks red. **To unlock all functions** together repeat this action until the notification LED blinks green.
- **To lock phone call and audio** control (except emergency call dialing), press and hold the two buttons ⏻ and 📞 simultaneously for more than 5 seconds until the notification LED blinks red. **To unlock phone call and audio** control repeat this action until the notification LED blinks green.
- **To lock volume** control, press and hold the two buttons ⏻ and ⊖ simultaneously for more than 5 seconds until the notification LED blinks red. **To unlock volume** control repeat this action until the notification LED blinks green.
- **To lock tone** control, press and hold the two buttons ⏻ and 🔔 simultaneously for more than 5 seconds until the notification LED blinks red. **To unlock tone** control, repeat this action until the notification LED blinks green.
- **To lock sound focus** control, press and hold the two buttons ⏻ and 🔊 simultaneously for more than 5 seconds until the notification LED blinks red. **To unlock sound focus** control, repeat this action until the notification LED blinks green.

Securing the Amplifier

Use the clip to secure the amplifier to your clothing.

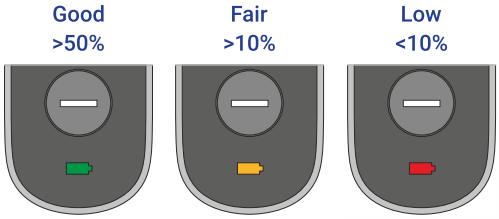
Attach the supplied lanyard to wear the amplifier around your neck.

Checking the Battery Status

When the device is powered on, quickly shift and release the Power switch. The battery LED will flash for 1-2 seconds indicating the current battery level, as follows:

- If the LED turns **green** the status is good (more than 50% battery charge remains).
- If the LED turns **yellow** the status is fair (the battery charge level is between 10% and 50%).
- If the LED turns **red** the status is low (below 10%) and the headset should be recharged immediately.

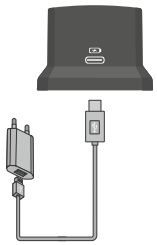
***Note**: If the battery level drops below 10% the LED will flash red periodically.*



Charging the Battery

Charging the battery will take approximately three hours. We recommend charging the battery before using your BeHear SMARTO amplifier for the first time.

To charge the battery using the cradle:



1. Plug the larger end of the supplied cable into a standard AC outlet USB charger adapter, or into the USB port of a computer, and the cable's smaller end into the USB-C port of the charging cradle.

2. Place the BeHear SMARTO amplifier into the cradle. When the amplifier is positioned properly the battery LED will light up.

3. A vibration in the amplifier indicates that charging has started. During charging the battery LED on the device will be red, turning green when BeHear SMARTO is fully charged.

To charge the battery directly by the cable:

1. Plug the larger end of the supplied cable into a standard AC outlet USB charger adapter, or into the USB port of a computer.
2. Plug the cable's smaller end into the USB-C port located in the BeHear SMARTO amplifier.
3. A vibration in the amplifier indicates that charging has started. During charging the battery LED on the amplifier will be red, turning green when BeHear SMARTO is fully charged.

***Note**: The BeHear SMARTO amplifier should not be used while charging.*

Using BeHear SMARTO with Bluetooth

Pairing with Bluetooth Devices

Before you can start using your BeHear SMARTO amplifier with a Bluetooth device (such as a smartphone, TV set, computer, etc.), you need to pair it with the Bluetooth device. Pairing can be done in either of two ways:

- Using your smartphone's (or other device's) Bluetooth setup process. Make sure the Bluetooth function is turned on in the Bluetooth device. The amplifier will appear in the list of available devices as "BeHear SMARTO".
- Using the **BeHear** app (which can be downloaded for free from the Google Play Store or the Apple App Store, see "Installing the Application" later in this manual). After launching the app and placing the headset into pairing mode (see instructions below), the pairing process will proceed. Follow to the application's prompts (see "Connection" below).

How to Place the BeHear SMARTO amplifier into Pairing Mode

1. Make sure the BeHear SMARTO amplifier is powered OFF.
2. Then, shift and hold the power switch for **up to 5 seconds**, until the notification LED alternates red/blue.
3. When the pairing is complete the BeHear SMARTO amplifier will be connected to the Bluetooth device automatically, as indicated by the blue LED which blinks periodically every 5 seconds.

Connecting with Bluetooth Devices

Automatic Connection of Paired Bluetooth Devices

BeHear SMARTO remembers and can connect automatically with the last connected device.

***Note**: When you pair and connect BeHear SMARTO with a second device, the first paired device becomes disconnected.*

> ***RECOMMENDATION:***
> *If a long time has passed between uses, shift the BeHear SMARTO Power switch up briefly to initiate reconnection to the paired smartphone.*

Handling Mobile Phone Calls

You can handle phone calls from the connected Bluetooth smartphone using your BeHear SMARTO amplifier.

- **To answer a call,** press the button.
- **To end a call,** press the button.
- **To reject a call,** press and hold down the button when you hear the incoming call signal.

Emergency Call

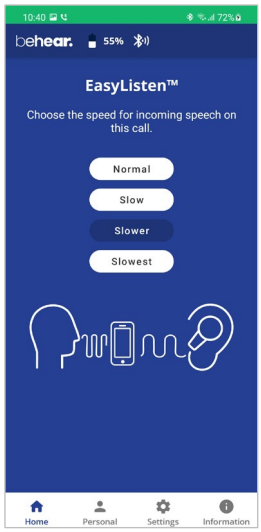
- Use the BeHear app to specify the emergency call number for BeHear SMARTO. From the “Settings” menu, choose the “Device” option, and scroll down to the “Emergency Call” section.

- **To dial the predefined number** press and hold the button until the notification LED blinks red.

EasyListen™ – Slowing Down Incoming Speech

You can slow down incoming speech for mobile phone calls, making it more intelligible. The **EasyListen** function can be controlled from the **BeHear** app:

- Once the phone call has been established, bring the BeHear app to the foreground on your phone.
- Tap the **Slow**, **Slower** or **Slowest** button to activate EasyListen and set the desired speech tempo.
- Tap the **Normal** button to deactivate EasyListen. Speech tempo reverts to normal.



The selected speech tempo is active during the call. Once the current call is complete the tempo reverts to Normal by default. The default state can be changed in the app. See the “BEHEAR FEATURES” section for details.

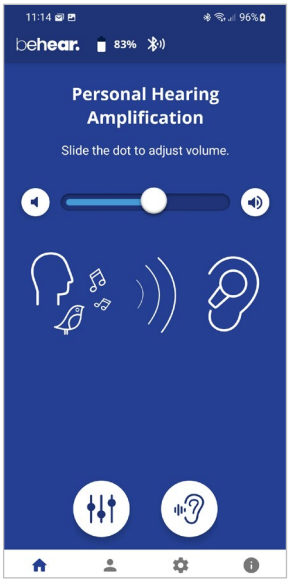
Listening to Audio

You can listen to audio from your phone or any other paired and connected Bluetooth device using your BeHear SMARTO amplifier.

- **To play** an audio source from the connected Bluetooth device press .
- **To pause** the audio press . When the Bluetooth audio is paused, SMARTO will revert (after a few seconds) to ambient hearing mode.

Managing the Amplifier with the BeHear App

- Use the slider to set the desired volume of the ambient sound by touching the round button on the scale and dragging it left (softer) or right (louder).
- Setting the slider to the far left will deactivate Personal Hearing amplification. Moving the slider to the right will reactivate amplification.
- Tap the large round button to enter the advanced **Sound Tuning** screen**.**
- Tap the large round button to enter the advanced **Tinnitus Masking** screen.

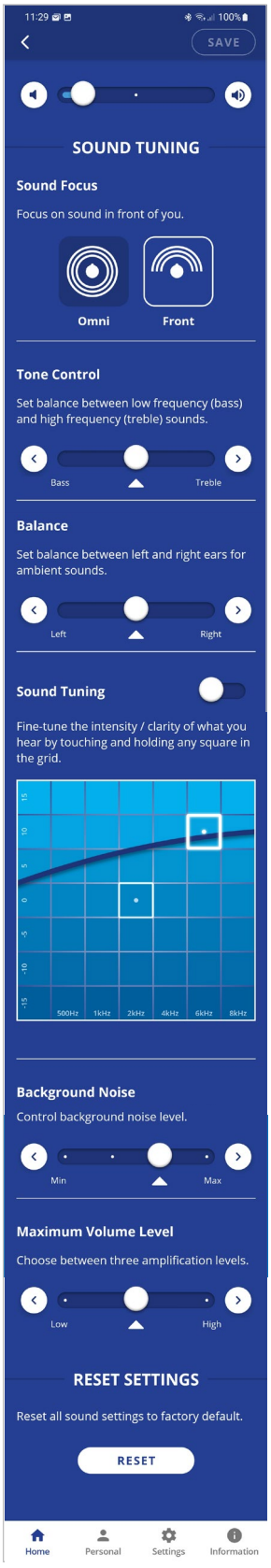


RECOMMENDATION:

For best results we recommend turning off key tones (alerts, notification sounds, keyboard taps, etc.) in the smartphone connected to your BeHear SMARTO amplifier. Alternatively, place the phone in "vibrate" or "silent" mode. This will guarantee smooth and pleasant operation of your BeHear SMARTO as a personal sound amplifier without undesired sound disruptions produced by background smartphone activity.

Advanced Sound Tuning

Configurable sound tuning parameters can be applied to BeHear SMARTO.



- The **Sound Focus** control allows you to restrict the amplification of ambient sounds reaching your ears to a limited angle in front of you. Limiting the angle improves speech intelligibility, reduces background noise, and attenuates the voice of the user.
  Tap the relevant button to set the desired sound focus (**Omni** – no limitation, **Front** – 180◦).
- Set the balance between low frequency (bass) and high frequency (treble) sounds by touching the round button on the **Tone Control** scale and dragging it left to favor bass or right to favor treble.
- Set the desired **Balance** between left and right ears for ambient sounds by touching the round button on the scale and dragging it **Left** or **Right**.
- To find the most comfortable listening level for the current environment, activate the **Sound Tuning** option by sliding the round button to the right.
  Then, touch and hold a square in the **Sound Tuning** grid with your finger until you feel the vibration. Wait for 1-2 seconds until the change is applied (a white frame will appear around the relevant square). Repeat this with other squares to find the position where the hearing is most pleasant to your ears. The Y axis represents changes in amplification (from low at the bottom to high at the top) and the X axis represents different sound frequencies. The dark blue arc indicates the effect of your choice on the amplification level for all the frequencies in the grid.
- Control the level of **Background Noise** by touching the round button on the scale and dragging it left (**Min**) or right (**Max**).
- Set one of the three available ranges of maximum volume (**Low**, **Mid** or **High**). For more information about this setting, see the Set Maximum Volume Level section in this manual.

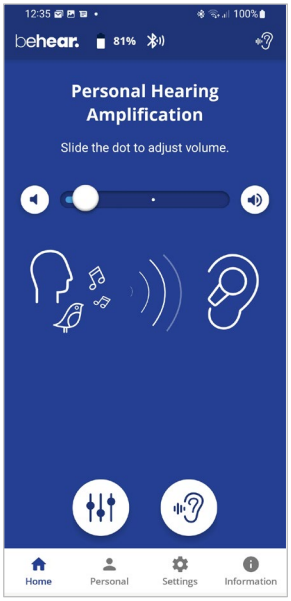
Save and Reset Settings

- Save your changes by tapping **SAVE or** restore the factory defaults by tapping **RESET**.

Tinnitus Masking

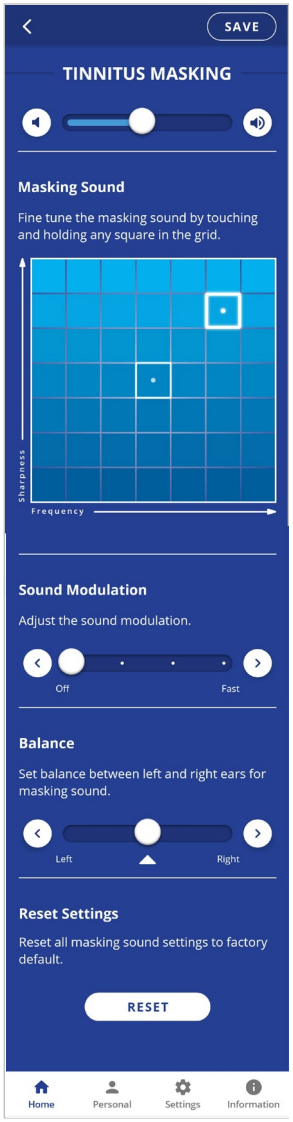
The Tinnitus Masking sound therapy offered in BeHear SMARTO may lessen the discomfort caused by tinnitus, or “ringing in the ears”. When the Tinnitus Masking function is active in your BeHear amplifier, it introduces an artificial masking noise to distract your attention from the tinnitus.

The masking noise can be activated and adjusted using the **BeHear** app.



- From the **Home** screen tap the button to access the **Tinnitus Masking** settings.
- Use the slider to set the desired volume of the masking noise by touching the round button on the scale and dragging it left (softer) or right (louder).
- Setting the slider to the far-left position will deactivate the masking noise. Moving the slider to the right will reactivate the noise.

***Note**: All masking settings are hidden when the Tinnitus Masking is inactive.*



- To find the most comfortable masking sound, touch and hold a square in the **Masking Sound** grid with your finger until you feel a vibration. The change is applied immediately (a white frame will appear around the relevant square). Repeat this with other squares to find the position where the sound is most pleasant to your ears. The Y axis represents changes in sharpness of the signal (from fuzzy noise at the bottom to sharper tones at the top). The X axis represents different sound frequencies, from low on the left to high on the right.
- Choose the most comfortable **Sound Modulation** for the masking noise by touching the round button on the scale and dragging it left (**Off**) or right (**Fast**).
  When the **Off** position is selected, the volume of the masking noise is consistent.
  When any other position is selected, the volume of the masking noise will increase and decrease periodically. The period varies on a scale from 10 sec to 1 sec (**Fast**).
- Set the desired **Balance** between left and right ears for the masking noise by touching the round button on the scale and dragging it **Left** or **Right**.
- Save your changes by tapping **SAVE** or restore all masking sound settings to their factory defaults by tapping **RESET**.

Personalization

We recommend that you adjust the acoustic performance of the amplifier to suit your own personal hearing capabilities and preferences, using the built-in **Hearing Assessment** in the **BeHear** app.

If you have a recent audiogram, you can skip the BeHear Hearing Assessment and enter the values from it manually. Tap the **Personal** option in the bottom menu and enter the values into the table in the **Editor**.

You can also choose a sample audiogram from the app's **Library**.

The results (whether generated from the hearing assessment, chosen from the library, or manually input into the editor) are automatically applied to the BeHear SMARTO to create your hearing profile. Sounds from live conversations, audio play, and phone calls will all be personalized based on this hearing profile.

Hearing Assessment

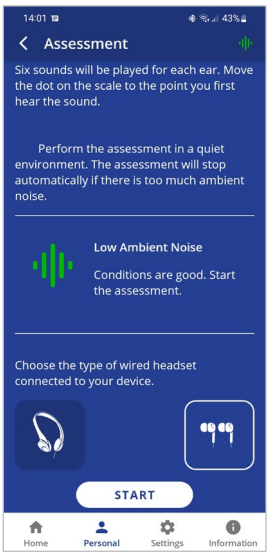
During the assessment, six different testing sounds will be played for each ear, one after the other. Each testing sound represents a different range of audible frequencies. The purpose of the assessment is to determine the best volume for each frequency range based on your unique hearing profile. The results will be saved in the app's **Library** and applied to the headset. They will be used to adjust the audio performance of your personal BeHear SMARTO amplifier.

Two variances of the assessment are available:

- **Basic** assessment. This is the default option, which will be sufficient for most users. During the Basic assessment you will be asked to indicate at which volume the testing sound first becomes audible (**Hearing Threshold**).
- **Advanced** assessment. This assessment is more comprehensive and therefore takes longer. During the Advanced assessment you will need to indicate two different volume levels for each testing sound. One is the **Hearing Threshold**, the same as for the Basic assessment. The other is the **Comfortable Level**, which reflects the volume level at which it is most comfortable for your ear to process the testing sound.

In order to toggle between the Advanced and the Basic assessment tap the **Settings** icon at the bottom of the **BeHear** app screen and select the **Application** option. Scroll down to the **Hearing Assessment Mode** option.

Before Starting the Hearing Assessment



Before starting the assessment, you should verify the following:

- ✓ You have installed and launched the **BeHear** app on your smartphone.
- ✓ You have selected the desired assessment mode – **Basic** (default) or **Advanced**, in the **Application** section of the **Settings** screen**.**
- ✓ The BeHear SMARTO amplifier is turned on and connected to the smartphone via Bluetooth.
- ✓ You have plugged in the headset of the type you will wear when using the amplifier.
- ✓ You are wearing your BeHear SMARTO amplifier, and the ear buds have been placed firmly in your ears according to the marking – "L" for the left ear and "R" for the right ear.
- ✓ You are in a quiet environment.

***Note**: The **BeHear** app monitors the ambient noise during the assessment and will not allow the assessment to proceed if the ambient noise level is too high.*

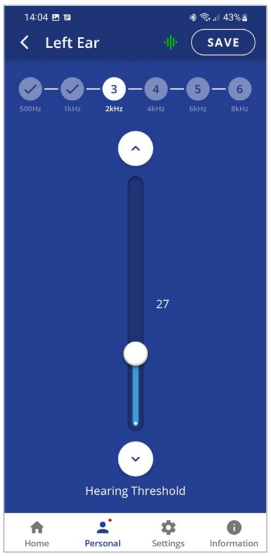
Conducting the Hearing Assessment

To start the assessment:

1. Tap the **Personal** icon at the bottom of the **BeHear** app screen and select the **Assessment** option.
2. Tap an icon showing the type of the headset you've plugged in the amplifier.
3. Tap the **START** button at the bottom of the screen.

The hearing assessment starts with the left ear, goes through six different frequencies and then repeats with the right ear. Advancing to the next frequency (by pressing the **SAVE** button in the upper right-hand corner of the app) can be done only after completing the previous one.

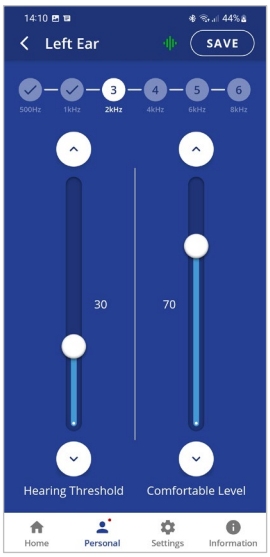
If you use the **Basic** assessment:



1. Set the **Hearing Threshold** level by placing your finger on the round button on the scale and sliding it up until you clearly hear the sound. Then, slowly move the button down to the lowest level at which you can still hear the sound. You can do this as many times as needed to find the correct sound threshold level for your ear.
2. Once the slider is set to the desired position, tap the **SAVE** button at the top right corner of the screen.
3. Repeat that action for the five remaining testing sounds for the left ear, and then repeat the process for the right ear.
4. Save the results, as instructed by the app prompts.

***Note**: The "∧" and "∨" buttons on the screen as well as the volume buttons on the phone can also be used to adjust the volume of the testing sound.*

If you use the **Advanced** assessment:



1. Set the **Hearing Threshold** level by placing your finger on the round button on the scale and sliding it up until you clearly hear the sound, then slowly move it down to the lowest level at which you can still hear the sound. You can do this as many times as needed to find the correct sound threshold level for you.
2. Move the **Comfortable Level** slider to find the most comfortable listening level for the testing sound in the left ear (neither too loud nor too soft).

***Note**: The **Comfortable Level** will always be higher (louder) than the **Hearing Threshold**.*

3. Once both sliders are set to the desired positions, tap the **SAVE** button at the top right corner of the screen.
4. Repeat those actions for the five remaining testing sounds for the left ear, and then repeat the process for the right ear.
5. Save the results, as instructed by the app prompts.

***Note**: Before saving the assessment results you can return at any time to the previous stages of the assessment to verify and modify your input. Simply tap the relevant frequency indicator at the top of the screen to review and/or repeat the assessment for that frequency.*

Hearing Assessment Results

Results of your hearing assessment are stored in the **BeHear** app's **Library** under a unique name. You can see them by tapping the **Personal** icon at the bottom of the app, selecting the **Library** option, and choosing the relevant assessment.

The assessment can be re-taken at any time.

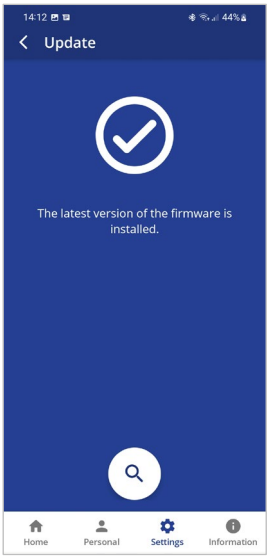
***Note**: Only the most recently applied results are saved and used in the amplifier.*

Checking for Updates

Keeping BeHear SMARTO updated with the latest version of the firmware allows you to enjoy its most advanced features. We recommend checking for updates before you start using your headset.

To check for an update:

1. Make sure the BeHear SMARTO amplifier is powered on and connected to a phone with the **BeHear** application installed.
2. From the bottom menu of the app, choose the **Settings** option and tap the **Update** button in the screen.
   ***Note**: The app checks for updates automatically when the **Auto** option is selected for the **Headset Update Check** in the **Application** section of the **Settings** screen.*
3. If an update is available, launch the update process by following the instructions displayed on the screen.



RECOMMENDATION:
The amplifier and application must stay powered on and connected during the update process.

Mobile Application

Installing the Application

For Android Phones

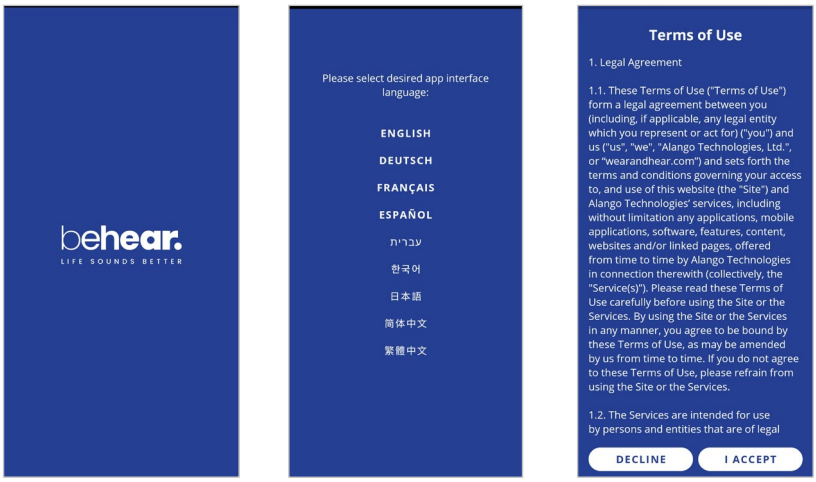
1. Launch the Google Play application and search for **BeHear**.
2. Download, install and launch the application.

For iPhones

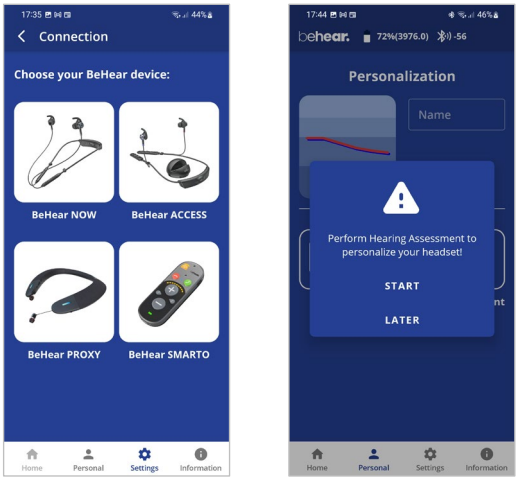
1. Launch the App Store application and search for **BeHear.**
2. Download, install and launch the application.

First Launch

When the app is first launched after downloading you will be prompted to choose a desired language for the interface, and accept the terms of use.



If no BeHear devices are connected to the phone, the app will continue to the **Connection** screen. Otherwise, you will be prompted to perform the **Hearing Assessment**.



Connection

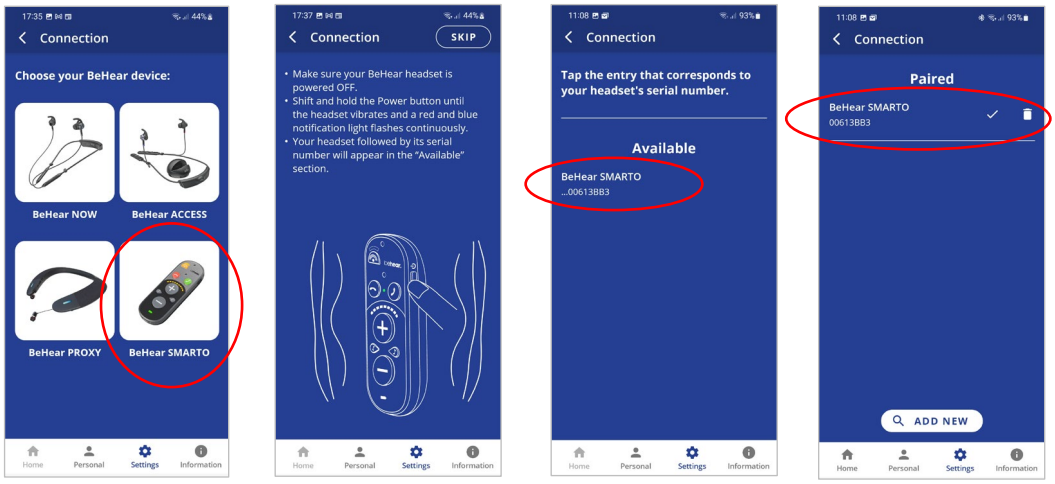
To manage the Bluetooth pairing and connection of your BeHear SMARTO amplifier with a smartphone, tap the **Settings** icon at the bottom of the app screen and choose the **Connection** option.

The app opens the Connection screen automatically when no BeHear device is connected to the phone.

You can display the Connection screen at any time by tapping the **Settings** icon at the bottom of the screen and choosing the **Connection** option.

First Time Connection

1. Tap the **BeHear SMARTO** icon in the Connection screen to initiate connection with your amplifier.
2. Follow the on-screen animated instructions to place your amplifier into Bluetooth pairing mode:
    - *Make sure the BeHear SMARTO amplifier is powered OFF.*
    - *Then, shift and hold the power switch on the amplifier for **up to 5 seconds**, until the notification LED alternates red/blue.*
3. Wait until the list of Available devices appears in the app. It may take up to 30 seconds.
4. The product name **BeHear SMARTO** followed by the last several characters of the device's serial number will appear in the list of **Available** devices. You can verify the device by checking that the serial number printed on the underside of the BeHear SMARTO body (on the white label) matches the number in the list.
5. Select your BeHear SMARTO in the list by tapping the device name. When the pairing and connection process is complete the amplifier will be listed in the **Paired** devices section, followed by a ✓.
6. You can manage connected devices in the **Connection** screen as follows:
    - To **connect a new** BeHear device, tap **ADD NEW** button.
    - To **connect a previously paired** BeHear SMARTO, tap the name of the device in the list.
    - To **disconnect** BeHear SMARTO tap the name of the connected device in the list. To **reconnect** BeHear SMARTO tap the name again.
    - To **unpair** BeHear SMARTO tap the icon.



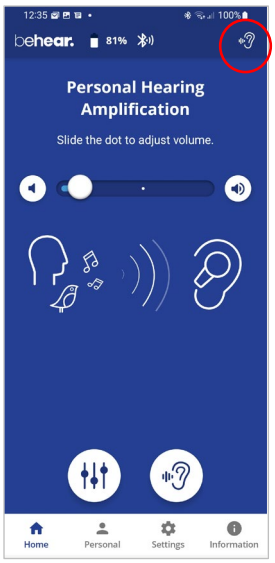
Upon successful connection of a new BeHear SMARTO device you will be prompted to perform the **Hearing Assessment**.

Home Screens

The application's **Home** screen changes automatically depending on the actual state of the headset (personal hearing amplification, phone call handling, or audio play).

Tap the **Home** icon in the bottom menu to return to the **Home** screen from anywhere in the app.

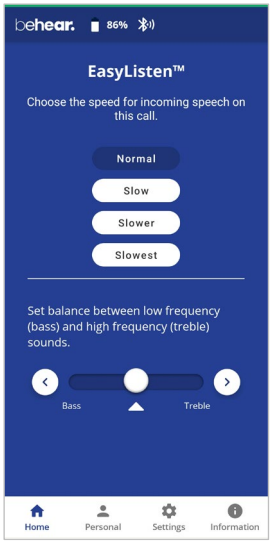
Personal Hearing Amplification State



In this state the **Home** screen supports managing BeHear SMARTO as a personal sound amplifier. Available control functions are:

- Hearing volume control slider with an option to turn hearing amplification OFF and ON.
- Tuning button to manage advanced sound tuning options.
- Tinnitus Masking button to manage Tinnitus Masking sound options. The icon appears in the top status bar when the Tinnitus Masking sound is generated.

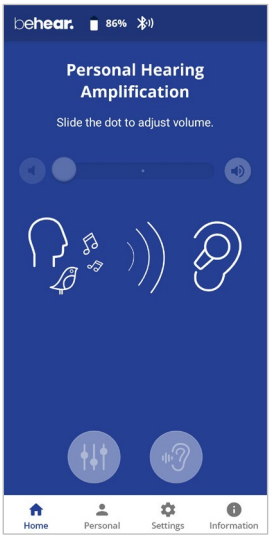
Phone Call State



In this state the **Home** screen supports managing the EasyListen function of the BeHear SMARTO, working as a headset during the mobile phone call. Available control functions are:

- Speech tempo selection buttons – **Normal** (EasyListen disabled), **Slow**, **Slower**, **Slowest**
- Tone control slider

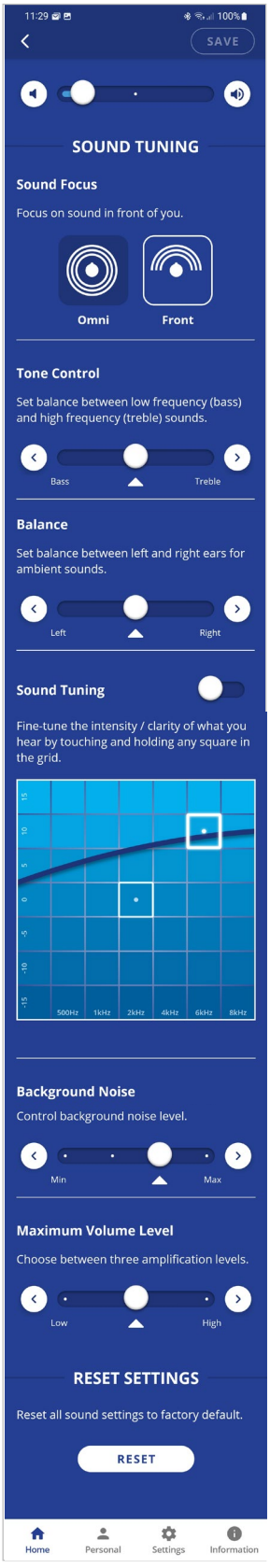
Audio Player State



In this state the **Home** screen is disabled.

***WARNING**:*
*The **Home** screen icon, as well as parts of other screens, are disabled (grayed out) when the BeHear SMARTO amplifier is not connected to the phone. Connect the amplifier to a smartphone to get full functionality from the BeHear app.*

Advanced Sound Tuning for Hearing Amplification Stae



✓ **Volume**

This control sets the desired volume of the ambient sound by touching the round button and dragging it left (softer) or right (louder).

✓ **Sound Focus**

The **Sound Focus** control allows you to restrict the amplification of ambient sounds reaching your ears to a limited angle in front of you. Limiting the angle reduces background noise and improves intelligibility of speech.

Tap any of the two buttons to set the desired sound focus (**Omni** – no limitation, **Front** - 180◦).

✓ **Tone Control**

This control sets the balance between low frequency (bass) and high frequency (treble) sounds. Touching the round button on the scale and dragging it left will emphasize bass while dragging it right will emphasize treble.

✓ **Balance**

This control sets the desired amplification balance between left and right ears. This control manipulates the balance beyond what was determined by the hearing assessment.
The setting is applied to the volume control – in addition to the results of the built-in hearing assessment – and will be active in personal hearing mode only.

***Note:** To set the balance for phone calls and music use the **Balance** control located in the **Settings->Device** menu.*

Slide the round button to set the desired amplification balance between left and right ears.
Touch the triangle to reset the button in the middle of the slider to return it to the levels determined by the hearing assessment (if the assessment was performed).

✓ **Sound Tuning**

This control allows you to adjust sound parameters for the active hearing profile.

Slide the round dot to the right to activate this option. Then, touch and hold any square in the grid until you feel a vibration under your finger. The selected square will be framed in white, and relevant sound changes will be applied to the headset.

Moving to the right from the center position increases the amplification of high frequency signals, while moving to the left increases the amplification of low frequency signals. Moving up and down increases and decreases sound gain, respectively.

The dark blue arc indicates how the modified selection affects the current audiogram.

Return to the recommended position (factory default) by touching and holding the **Center** square**.**

✓ **Background Noise**

This control sets the level of Background Noise.

Touch the round button and drag it left (**Min**) or right (**Max**).

The recommended setting (factory default) is indicated by a triangle.

✓ **Maximum Volume Level**

This control one of the three available ranges of maximum volume. Volume control slider is scaled according to the selected range.
Touch the round button and drag it left (**Low**) or right (**High**).
The recommended setting (factory default) is indicated by a triangle.

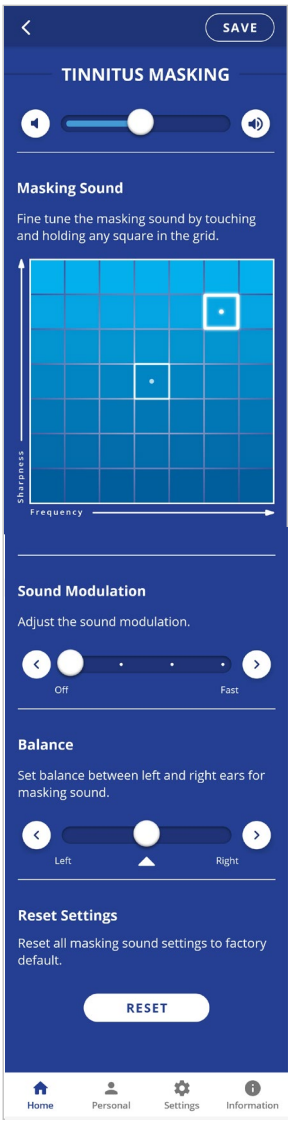
✓ **SAVE**

The **SAVE** button is activated to save the changes made for some of the properties. The reminder "***Press SAVE to apply settings***" appears when the first change is detected.

✓ **RESET SETTINGS**

The **RESET** button restores all settings to their factory default values.

Tinnitus Masking Noise



✓ **Volume**

This control sets the desired volume of the masking noise. Touch the round button and drag it left (softer) or right (louder).
Setting the slider to the far-left position will deactivate the masking noise. Moving the slider to the right will reactivate the noise.

***Note**: All masking settings are hidden when Tinnitus Masking is deactivated.*

✓ **Masking Sound**

This control sets the most comfortable masking sound. Touch and hold a square in the **Masking Sound** grid with your finger until you feel a vibration. The change is applied immediately (a white frame will appear around the relevant square). Repeat this with other squares to find the position where the sound is most pleasant to your ears. The Y axis represents changes in sharpness of the signal (from fuzzy noise at the bottom to sharper tones at the top). The X axis represents different sound frequencies, from low on the left to high on the right.

✓ **Sound Modulation**

This control sets the modulation of the masking noise:
Off - the volume of the masking noise is consistent.
Any other position – the volume of the masking noise will increase and decrease periodically. The period varies on a scale from 10 sec to 1 sec (**Fast**).

✓ **Balance**

This control sets the desired balance between left and right ears for the masking noise. Touch and drag the round button to the left to favor the left ear, and to the right to favor the right ear.

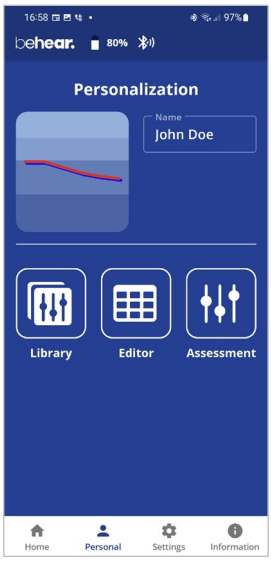
✓ **SAVE**

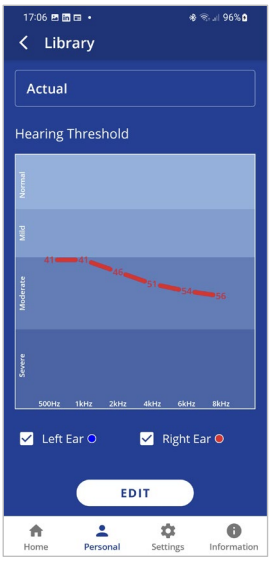
The **SAVE** button saves the changes made for the **TINNITUS MASKING** feature. The reminder "***Press SAVE to apply settings***" appears when the first change is detected.

✓ **Reset Settings**

The **RESET** button restores all **TINNITUS MASKING** settings to their factory default values.

Personalization





Tap the **Personal** icon in the bottom menu to access the Personalization options.

✓ **Library**

Tap the **Library** button to open the library of audiograms.

✓ **Editor**

Tap the **Edit** button to open the editor where personal audiogram values can be entered and modified manually.

✓ **Assessment**

Tap the **Assessment** button to start the Personal Hearing Assessment (to personalize your headset).

✓ **User Name**

Unique names are generated and saved as the User Name for each personal audiogram saved in the library. You can edit the name by tapping on it.

✓ **Actual Audiogram**

The displayed chart depicts the current audiogram values of the connected BeHear ACCESS headset. Tap the chart to display the audiogram in full screen mode.

Here you can:

- ✓ View the current values
- ✓ Tap **EDIT** to enable manual editing of the values

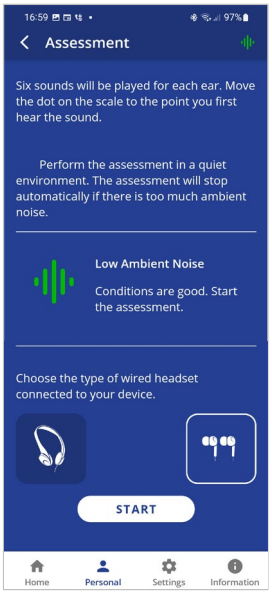
Personal Hearing Assessment

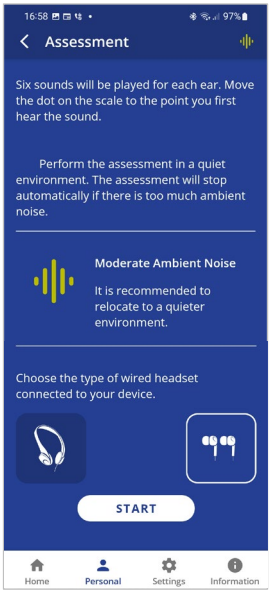
Choose the **Assessment** option in the menu to access the hearing assessment screens.

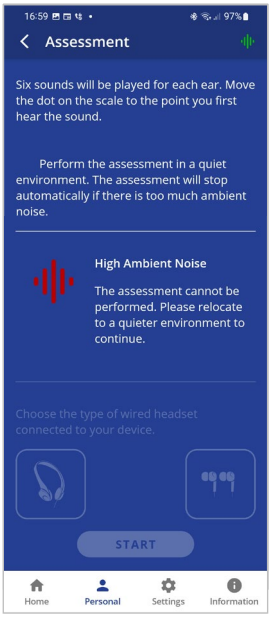
Initial screens of the Hearing Assessment allow you to:

- Start the assessment
- Resume a previously interrupted assessment or discard it and start a new assessment.

You can perform the assessment only if you are in a quiet environment. It is not possible to perform the assessment if the ambient noise level (as determined by the app) is too high.

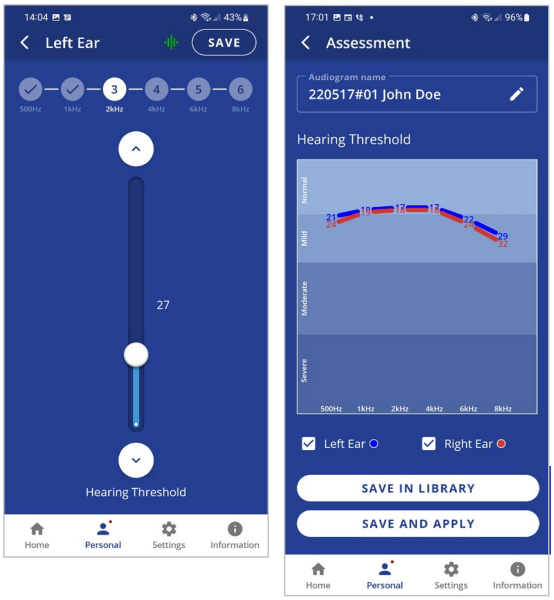






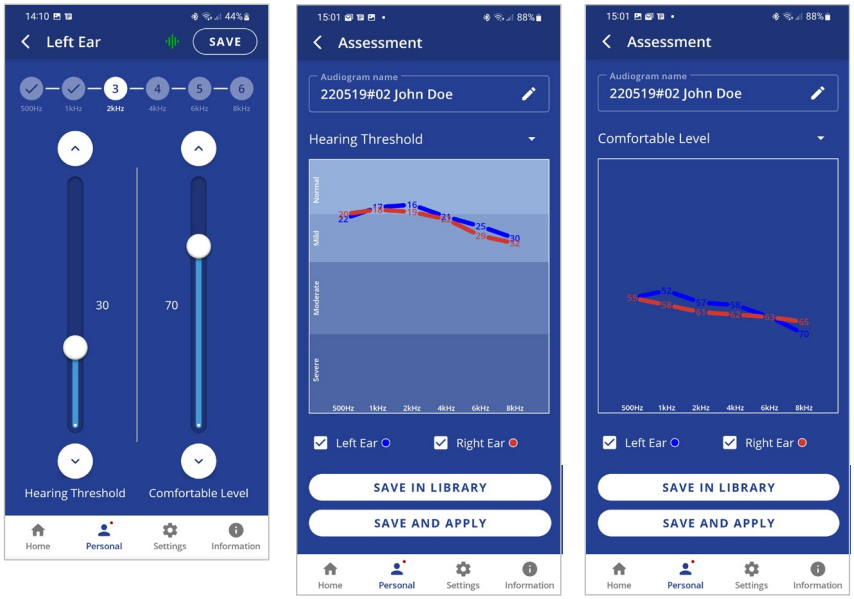
If the **Basic** assessment has been selected in the Device Settings:

- The assessment screens contain a single slider.
- In order to progress with the assessment, you must tap **SAVE** (at the right top corner of the screen) after setting the slider for each frequency.
- The assessment results shown after completing the assessment display a single chart for the hearing threshold results (for both ears).



If the **Advanced** assessment has been selected in the Device Settings:

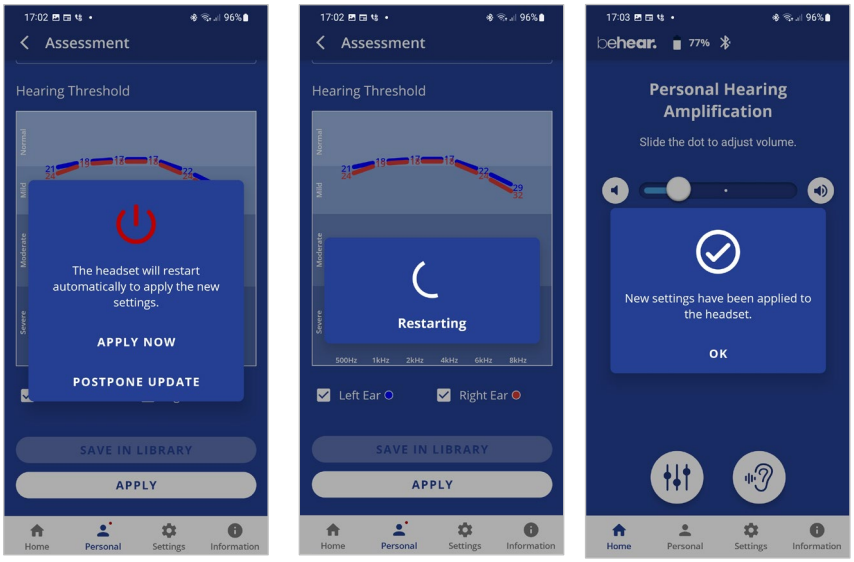
- The assessment screens contain two sliders.
- In order to progress with the assessment, after setting the slider for each frequency you must tap **SAVE** (at the right top corner of the screen). The assessment results shown after completing the assessment display two charts, one for **Hearing Threshold** and the other for **Comfortable** Level. To display the relevant results, tap the chart name.



To save the assessment results and apply them to the headset:

- Tap **SAVE IN LIBRARY** to store the results in the app library. These results may be retrieved and applied to the headset later. The file name is created automatically.
- Tap **SAVE AND APPLY** to store the results in the app library ***and*** apply the personalized parameters to the connected BeHear SMARTO amplifier.
- Choose **APPLY NOW** in the notification dialog to apply the results to the BeHear SMARTO amplifier. The amplifier will restart automatically.

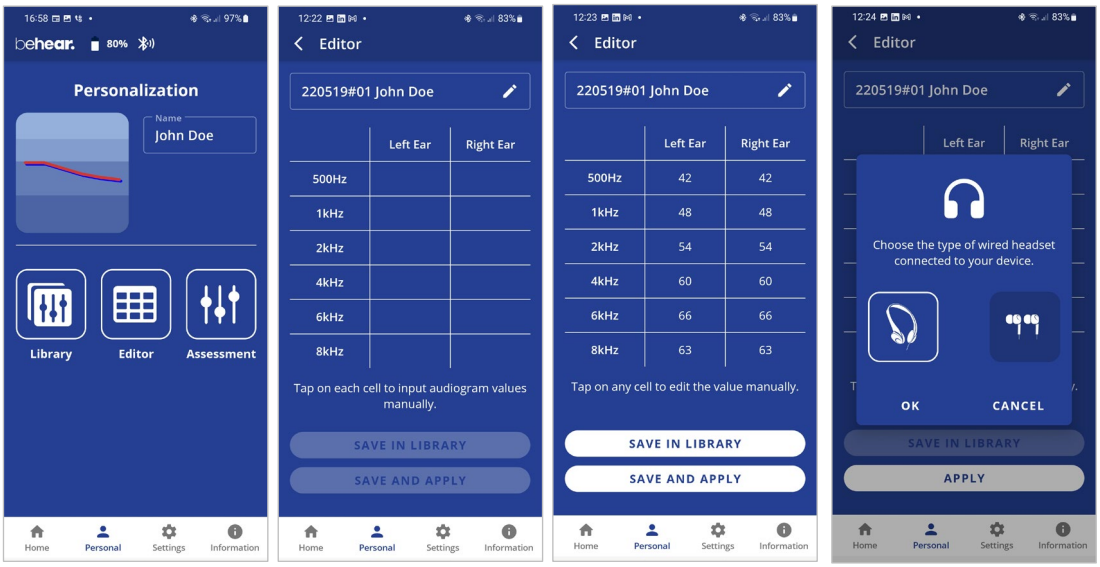
- If the **POSTPONE UPDATE** option is selected, the amplifier and the app will continue to operate normally (without applying the results of the assessment until the amplifier is turned off). The warning icon , along with a red dot near the **Personal** icon will remind you that you have a postponed action. Results of the last assessment are applied automatically when the amplifier is turned back on.



Edit Audiogram

The **Editor** allows you to create a new audiogram by entering hearing loss values manually (typically from the results of a hearing test performed elsewhere). Modifications of existing audiograms can be done here as well.

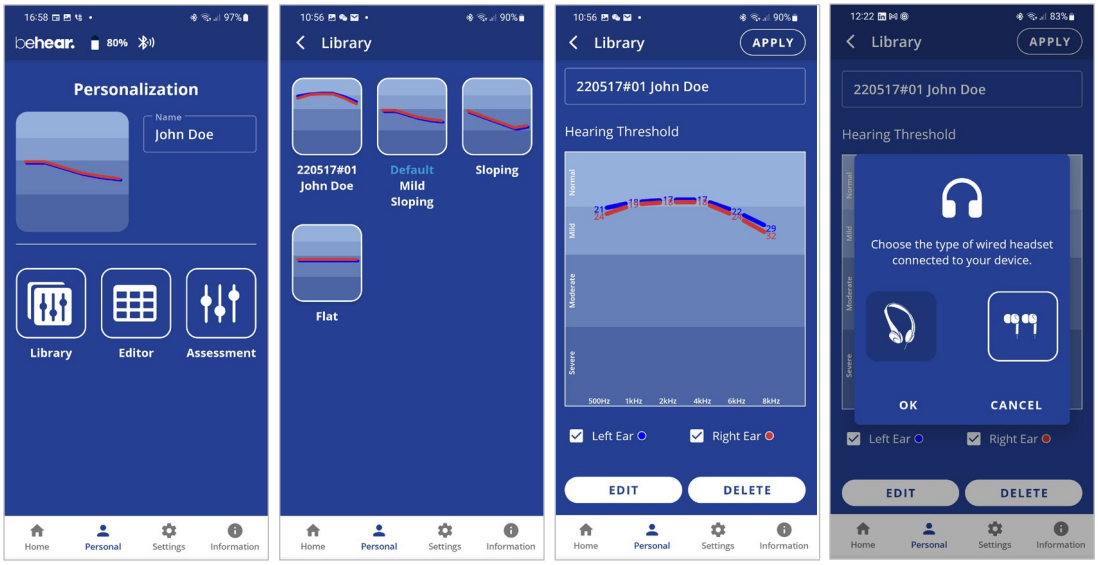
- Choose **Editor** in the Personalization screen to open an empty table for inputting values. The automatically created file name can be changed by tapping on it.
- Input the hearing loss values as they appear in your external audiogram.
- To modify an existing audiogram, tap **EDIT** while viewing the relevant chart.
- Tap **SAVE IN LIBRARY** to store the file or **SAVE AND APPLY** to store the file and apply these personalized parameters to the connected BeHear SMARTO amplifier. You will be prompted to choose the type of wired headset connected to the amplifier (on-ear or in-ear).



Library of Audiograms

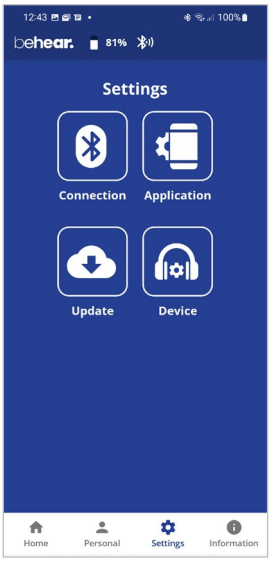
The app library contains factory default audiograms as well as audiograms you have saved.

- Choose **Library** in the Personalization screen to open the gallery of audiograms.
- Tap a chart in the list to display its values in full screen.
- Tap **EDIT** to manually edit the existing values.
- Tap **DELETE** to remove this user audiogram from the library. The default audiograms cannot be deleted.
- Tap **APPLY** to upload the audiogram to your connected BeHear SMARTO amplifier. You will be prompted to choose the type of wired headset connected to the amplifier (on-ear or in-ear).



Settings

Customization of both the headset and the app is done via the Settings screen. Display the Settings screen by choosing the **Settings** icon in the bottom menu.



✓ **Connection**

Tap the **Connection** button to manage the Bluetooth connection of BeHear SMARTO amplifier with the app.

Refer to the Connection section of this manual for detailed explanations.

✓ **Application**

Tap the **Application** button to manage app settings.

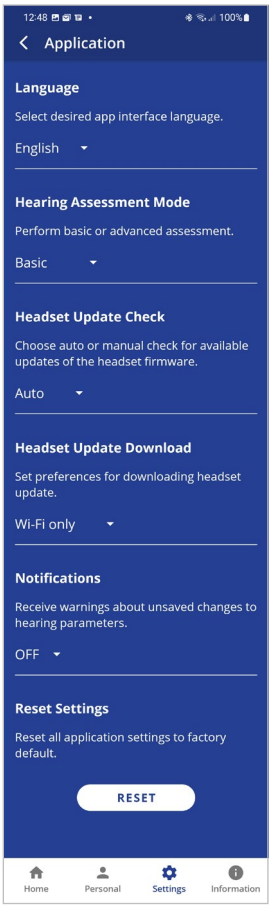
✓ **Device**

Tap the **Device** button to configure the connected BeHear SMARTO amplifier.

✓ **Update**

Tap the **Update** button to manage firmware updates for the connected BeHear device.

Application Settings



✓ **Language**

This setting defines the language of the app interface.

✓ **Hearing Assessment Mode**

This setting defines the type of hearing assessment to be performed:

- **Basic** – the assessment contains one measurement (hearing threshold) for each ear.
- **Advanced** – the assessment contains two measurements (hearing threshold and most comfortable level) for each ear.

The recommended setting (application default) is **Basic**.

✓ **Headset Update Check**

This setting determines how checks for headset firmware updates will be performed:

- **Auto** – app checks for updates automatically
- **Manual** – user needs to enter **Headset Update** screen and check for an available update

The recommended setting (application default) is **Auto**.

✓ **Headset Update Download**

This setting determines the preferred network connection when downloading updates for the headset firmware:

- **Wi-Fi only** – the app performs the headset update automatically only when the phone is connected to the Internet via local Wi-Fi network. A warning notice is displayed when you initiate the update when a Wi-Fi connection is not available.
- **Any Network** – app performs the headset update when the phone is connected to the Internet via any network – Wi-Fi or cellular.

The recommended setting (application default) is **Wi-Fi only**.

✓ **Notifications**

This setting controls the behavior of warnings and notifications about unsaved changes to hearing parameters made in the Personal Hearing screen.

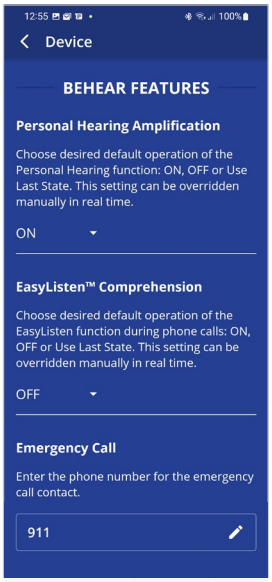
The recommended setting (application default) is **OFF**.

✓ **Reset Settings**

Tap the **RESET** button to restore application defaults.

Device Settings

BEHEAR FEATURES



✓ **Personal Hearing Amplification**

This setting defines the automatic activation behavior for the Personal Hearing function:

- **ON** – automatically turned on when there is no active phone call or music/audio playback
- **OFF** – automatically turned off when there is no active phone call or music/audio playback
- **Last State** – automatically turned on or off according to the last actual state of the device before handling a call or playing a music/audio

The function can be turned on or off manually in real time by moving the slider on the Personal Hearing screen in the application to the left-most position.

The recommended setting (device default) is **ON**.

✓ **EasyListen™ Comprehension**

This setting defines the automatic activation behavior for the EasyListen function of slowing down speech tempo during phone calls, as follows:

- **ON** – automatically turned on when the mobile call starts
- **OFF** – automatically turned off when the mobile call starts
- **Last State** – automatically turned ON or OFF according to the last choice during the previous mobile call

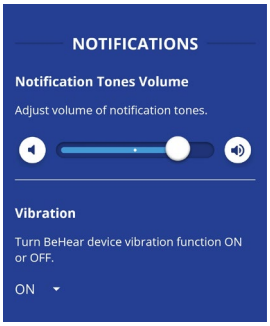
The recommended setting (device default) is **OFF**.

✓ **Emergency Call**

Tap the icon to open the input screen for the emergency phone call number.

Tap SAVE to store the number in BeHear SMARTO. The number will be dialed automatically by pressing and holding the button.

NOTIFICATIONS



✓ **Notification Tones Volume**

This control sets the desired volume of the notification tones by touching the round button and dragging it left (softer) or right (louder).

✓ **Vibration**

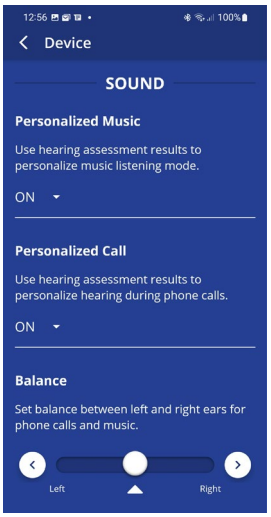
This setting controls vibration notification behavior in the BeHear SMARTO amplifier for the following events:

- Headset power on and power off
- Bluetooth pairing connection/disconnection
- Connecting to the charger
- Incoming call (synchronized with call tone)

The recommended setting (device default) is **ON**.

SOUND

✓ **Personalized Music**



This setting enables or disables sound personalization according to the hearing assessment results for music listening.

The recommended setting (device default) is **ON.**

✓ **Personalized Call**

This setting enables or disables sound personalization according to the hearing assessment results for mobile calls.

The recommended setting (device default) is **ON.**

✓ **Balance**

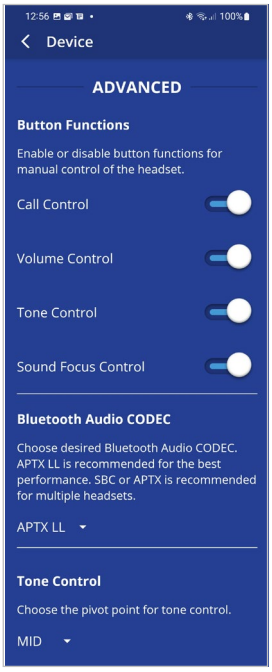
This control sets the desired amplification balance between left and right ears.
The setting is applied to the volume control – in addition to the results of the built-in hearing assessment – and will be active for mobile calls and music only.

Note: *To set the balance for personal hearing mode use the* ***Balance*** *control located in the* ***Advanced Sound Tuning*** *menu.*

Slide the round button to set the desired amplification balance between left and right ears. Touch the triangle to reset the button in the middle of the slider (returning it to symmetrical balance).

ADVANCED

✓ **Button Functions**



This setting locks and unlocks operation of the buttons in the BeHear SMARTO amplifier separately for all functional groups:

- Call control: and buttons
- Volume control: and buttons
- Tone control: and buttons
- Sound Focus control: button

Setting any function to the ON state enables manual control of the function using the buttons on the device as described in this manual.

The recommended settings (device defaults) for all the groups is **ON**.

✓ **Bluetooth Audio CODEC**

This setting determines the desired Bluetooth audio CODEC – APTX LL (Low Latency), APTX or SBC.

- **APTX LL** provides the best performance with minimal latency.
- **APTX** is similar to APTX LL but the latency is slightly longer.
- **SBC** is the standard Bluetooth CODEC supported by all devices, latency is long and not fixed.

Note*: Modification of the Bluetooth audio CODEC will initiate a restart of BeHear SMARTO (after user confirmation).*

The recommended setting (device default) is **APTX LL**.

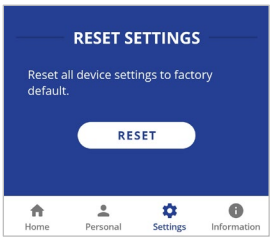
RECOMMENDATION:
Choose ***APTX*** *or* ***SBC*** *audio if you experience sound distortion while your Bluetooth device is connected.*

✓ **Tone Control**

This setting determines the desired pivot point for the tone control.

- **LOW** sets the pivot point at 1kHz, providing a wider range of treble tuning options.
- **MID** sets the pivot point at 2kHz.
- **HIGH** sets the pivot point at 4kHz, providing a wider range of bass tuning options.

The recommended setting (device default) is **MID**.



RESET

✓ **Reset Settings**

Tap the **RESET** button to restore device defaults to their factor settings.

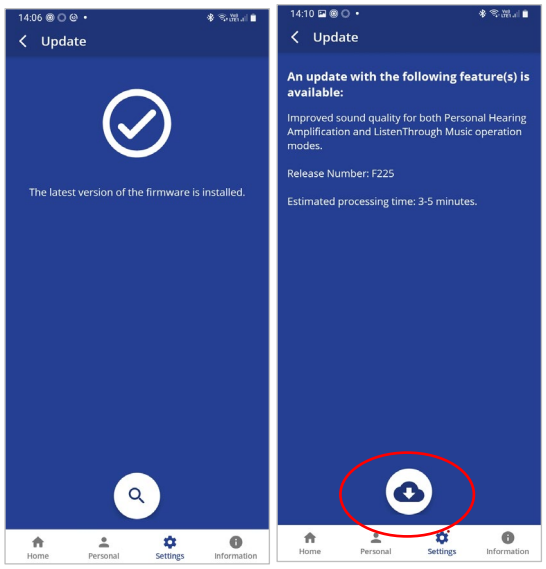
Update

The app supports firmware updates of the connected BeHear SMARTO amplifier, allowing users to enjoy its most advanced features.

You can verify the availability of an update manually by checking the **Update** button in the **Settings** screen.

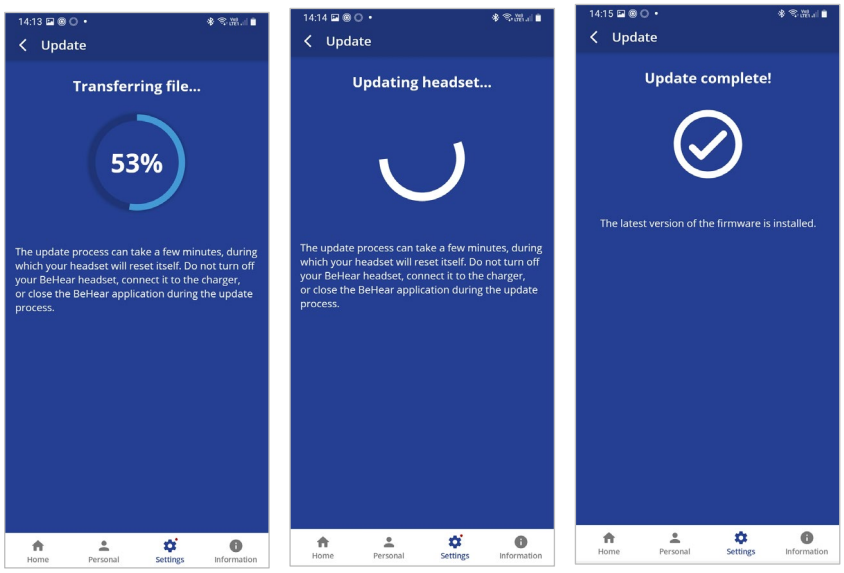
We recommend choosing the **Auto** option for the **Headset Update Check** in the **Application** section of the **Settings** to get automatic notification whenever a new update is available. In this case, this icon will appear in the notification area.

You can learn about the new firmware version prior starting the update.



To initiate the process of downloading the firmware and updating the amplifier tap the **Download** icon. The process will last for several minutes during which time the amplifier and application cannot be used. Normal operation resumes automatically when the update is complete.

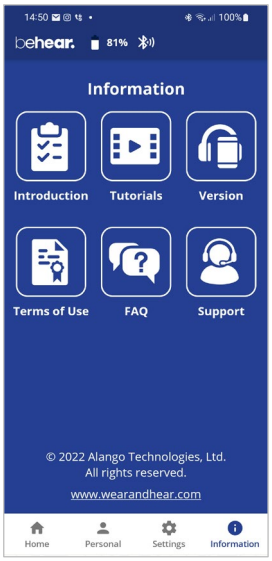
To postpone an update, choose **Later** or exit the **Headset Update** screen. The warning icon will appear at the top of each application screen as reminder to update the firmware. You can initiate an update any time by tapping the **Update** button in the **Settings** screen.



WARNING:

Do not turn off your BeHear SMARTO amplifier, connect it to the charger, or close the BeHear application during the update process.

Information



Information and tutorials about the amplifier and the application are accessible via the **Information** screen. Display the Information screen by tapping the **Information** icon in the bottom menu.

✓ **Introduction**

Tap the **Introduction** button to view introduction screens providing brief descriptions of the major BeHear SMARTO functions.

✓ **Tutorials**

Tap the **Tutorials** button to watch YouTube video tutorials online.

✓ **Version**

Tap the **Version** button to check information about the application and the connected BeHear SMARTO device.

✓ **Terms of Use**

Tap the **Terms of Use** button to review the legal terms of use for the application and connected BeHear SMARTO device.

✓ **FAQ**

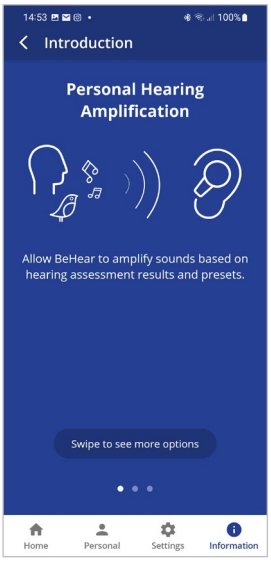
Tap the **FAQ** button to find answers to frequent customers' questions in the Wear&Hear website.

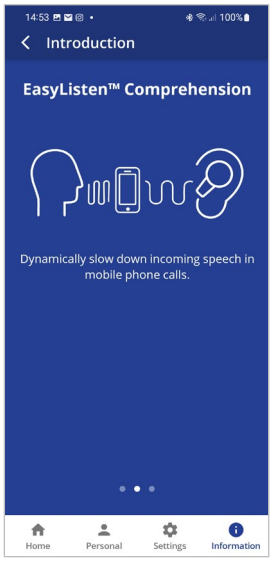
✓ **Support**

Tap the **Support** button to find contact information for technical support.

Introduction

The introduction screens provide brief descriptions of the main BeHear ACCESS functions, such as Personal Hearing Amplification, EasyListen™ Phone Speech Comprehension, and ListenThrough™ Music Appreciation.



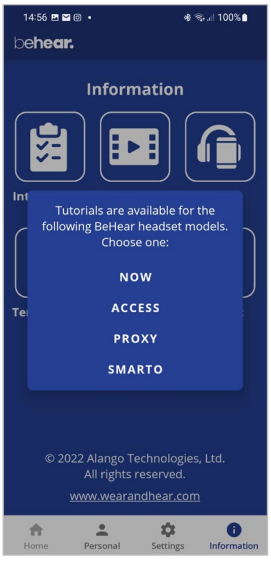


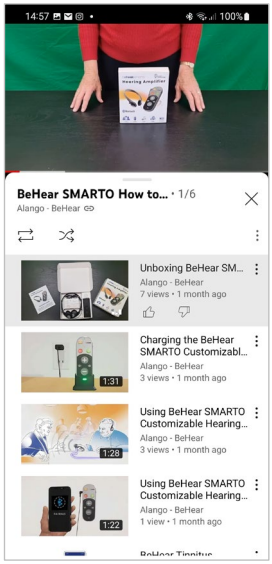
Navigate between the introduction screens by swiping the phone's screen.

Tutorials

Select **SMARTO** in the list of devices to watch YouTube video tutorials for BeHear SMARTO amplifier online.

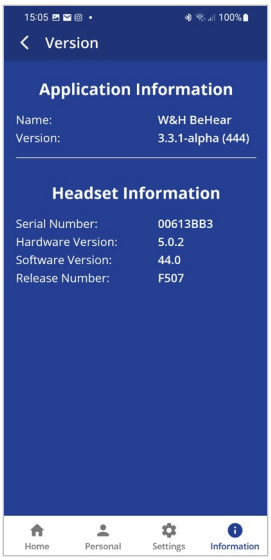
An Internet connection is required to get access to the videos.





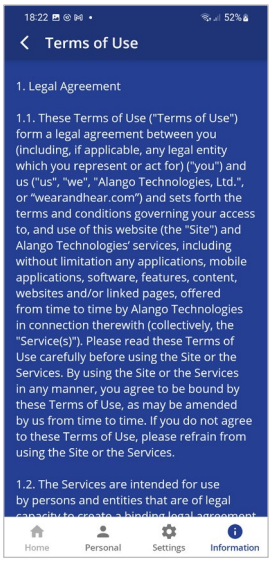
Version

Display the information about the BeHear application and connected BeHear SMARTO amplifier by choosing the **Version** option in the Information screen.



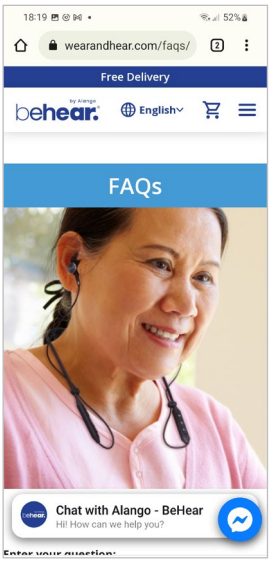
Terms of Use

Review legal terms of use for the BeHear application and connected BeHear SMARTO amplifier by choosing the **Terms of Use** option in the Information screen.



FAQ

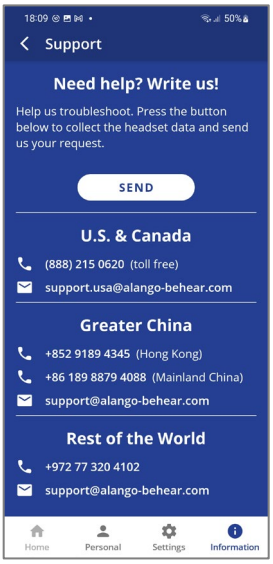
Find answers to frequent customers' questions in the BeHear Web site by choosing the **FAQ** option in the Information screen.

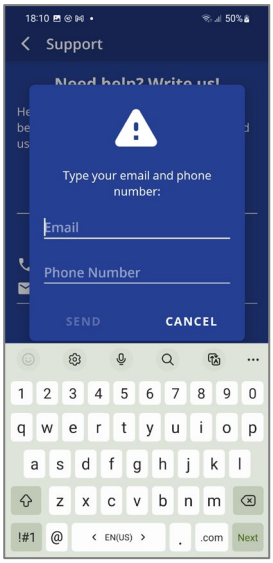


Support

- ✓ Find contact information for technical support by choosing the **Support** option in the Information screen.
- ✓ Send device and app information to support service by tapping **SEND** button.

***Note**: You'll be prompted to type your e-mail and phone number (optional) to allow the Behear support team to reply to your request.*





Troubleshooting

General Issues

Problem	Suggestion
No sound	Check that the amplifier is switched ON (the LED should be blinking in amber, for personal hearing, or blue for Bluetooth) Verify battery level (see Checking the Battery Status) Adjust volume level (see Managing Personal Hearing Using the Manual Controls) Check ear caps for debris
Ear buds are uncomfortable	Experiment with different silicon ear buds and ear hooks (see Fitting the Ear Buds and Hooks to Your Ears)
Phone calls and/or music not routed to the amplifier	Verify Bluetooth pairing (see Pairing with Bluetooth Devices)
Bluetooth connection keeps cutting out	Verify that you are not more than 10 meters (30 feet) from the Bluetooth device.
Personal hearing is interrupted by smartphone notifications	We recommend turning off key tones (alerts, notification sounds, keyboard taps, etc.) in the smartphone connected to your BeHear SMARTO amplifier. It will guarantee smooth and convenient operation of your BeHear SMARTO as a personal sound amplifier without undesired sound disruptions produced by smartphone activity.

Reset the Amplifier

If your BeHear SMARTO behaves unexpectedly you can restart it, remove the Bluetooth connection data and/or restore the original factory configuration.

- **To restart BeHear SMARTO** simply connect it to the charger. All configuration and connection data will be preserved.
- **To restart BeHear SMARTO and remove the Bluetooth connection data only**:
  - Power on the BeHear SMARTO amplifier.
  - Press and hold these two buttons and shift up and hold the power switch simultaneously for approximately 8 seconds until a purple LED blinks twice.
  - The amplifier will restart and then enter pairing mode automatically.
- **To restart BeHear SMARTO amplifier and restore the original factory configuration:**
  - Power on the BeHear SMARTO amplifier.
  - Press and hold these two buttons and shift up and hold the power switch simultaneously for approximately 8 seconds until a red LED blinks once.
  - The amplifier will turn off automatically.
  - Power on the amplifier.

Updating the Firmware

Make sure your BeHear SMARTO is using the latest version of the firmware. You can verify availability of an update by manually checking the **Headset Update** option in the menu.

Update the firmware if a new version is available, using the BeHear smartphone app.

Legal Information

BeHear® is a registered trademark of Alango Technologies, Ltd.

HearLink® is a registered trademark of Alango Technologies, Ltd.

Bluetooth® is the trademark of the Bluetooth (SIG) Inc. and is used under license.

All product and company names mentioned herein are the trademarks or registered trademarks of their respective owners. Any rights not expressly granted herein are reserved.

All other trademarks are property of their respective owners.

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

FCC ID: 2AM3SABH-410

EU Declaration of Conformity

We, Alango Technologies Ltd. of 2 Etgar St. Tirat Carmel, Israel declare under our sole responsibility that our product BeHear SMARTO type **ABH-410** and in combination with our accessories, to which this declaration relates is in conformity with the provisions of the following directives:

- Radio Equipment Directive (RED) **2014/53/EU** by appropriate standards
  ETSI EN 300 328 V2.2.2 (2019-07),
  ETSI EN 301 489-1 V2.2.3 (2019-11),
  EN301 489-17 V3.2.4 (2020-09),
  EN 50332-1:2013,
  EN 50332-2:2013,
  EN 62368-1:2014 + A11:2017,
  EN 62479:2010, EN50633:2017
- Electromagnetic Compatibility Directive (EMC) **2014/30/EU** by appropriate standards
  EN 55032: 2015/A11:2020,
  EN IEC 6100-3-2:2019,
  EN 6100-3-3:2013/A1:2019,
  EN 55035:2017/A11:2020
- Restriction of Hazardous Substances (RoHS) Directives **2011/65/EU & (EU)2015/863** by appropriate standards
  IEC 62321-3-1:2013 / IEC 62321-5:2013,
  IEC 62321-4:2013 + A1:2017,
  IEC 62321-7-2:2017 / IEC 62321-6:2015,
  IEC 62321-7-1:2015 / IEC 62321-8:2017
- Reuse / Recycling / Recovery Targets under the Waste Electrical and Electronic Equipment (WEEE) Directive **2012/19/EU**

Tirat Carmel, May 2022

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Alexander Goldin,

CEO

European Union – Disposal Information

This symbol means that according to local laws and regulations this product and/or its battery shall be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of this product and/or its battery at the time of disposal will help conserve natural resources and ensure it is recycled in a manner that protects human health and the environment.