# Table of Contents

- Introduction .................................................. [03]
- Sound Processor Portfolio ................................... [04]
- Selecting a Sound Processor ................................ [06]
- Taking Care of the Sound Processor ...................... [07]
- Managing the Selected Baha System ....................... [08]
- Baha Connect .................................................. [09]
- Baha Attract .................................................... [12]
- Baha Softband .................................................. [16]
- General Programming Steps ................................. [19]
- Accessories ..................................................... [21]
- Wireless ......................................................... [21]
- Baha 3 and Baha 3 Power Accessories .................... [28]
- FM System Tips ................................................ [29]
- Frequently Asked Questions ............................... [32]
Introduction

This guide covers the steps required for the successful fitting of a Cochlear® Baha® Sound Processor for both adult and pediatric patients. It also provides information on the aftercare required and the accessories that are available for the Baha Systems.

Each part of the fitting process included in this guide should be covered during a fitting session. Demonstrating care and use of the sound processor as well as care for the selected Baha System are of particular importance. However, the order of the steps involved in the fitting process can be modified to suit individual preferences.

The Fitting Guide is part of a range of Baha audiology documents designed to guide you through the process of identifying patients, determining the most appropriate Baha System for each patient, selecting a suitable sound processor for patients, fitting the chosen device and providing follow-up support.
Sound Processor Portfolio

Overview

There are several sound processors available in the Baha portfolio to meet the needs and level of hearing loss of the patient.

**Baha 4 Sound Processor**

- Premium head-worn device with Ardium™ platform (advanced DSP and wireless capabilities)
- Bone-conduction thresholds ≤ 45 dB HL averaged across 500, 1000, 2000, and 3000 Hz
- Air-conduction thresholds may extend into this area

**Baha BP110 Power Sound Processor**

- Head-worn discreet power device
- Bone-conduction thresholds ≤ 55 dB HL averaged across 500, 1000, 2000, and 3000 Hz
- Air-conduction thresholds may extend into this area

**Baha Cordelle II**

- Super power, body-worn device
- Bone-conduction thresholds ≤ 65 dB HL averaged across 500, 1000, 2000, and 3000 Hz
- Air-conduction thresholds may extend into this area

These fitting ranges should be considered for patients with conductive and mixed hearing loss. The indication for patients with Single-sided Sensorineural Deafness requires good hearing (equal to or less than 20 dB at 500, 1000, 2000, and 3000 Hz) and a non-functioning poorer ear.
## Product Specifications

<table>
<thead>
<tr>
<th></th>
<th>Baha 4 Sound Processor</th>
<th>Baha BP110 Power</th>
<th>Baha Cordelle II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fitting range</strong></td>
<td>Up to 45 dB SNHL</td>
<td>Up to 55 dB SNHL</td>
<td>Up to 65 dB SNHL</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>30x21x12 mm</td>
<td>36x22x12 mm</td>
<td>90x34x26 mm bodyworn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>29x23x10 headworn</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>11.6g incl. battery</td>
<td>15.2g incl. battery</td>
<td>88g incl. battery bodyworn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20g headworn</td>
</tr>
<tr>
<td><strong>Platform</strong></td>
<td>Ardium Wireless</td>
<td>Baha 3</td>
<td>Baha 2</td>
</tr>
<tr>
<td><strong>Battery type</strong></td>
<td>13</td>
<td>675</td>
<td>9V IEC 6F22</td>
</tr>
<tr>
<td><strong>No. of channels</strong></td>
<td>17</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td><strong>No. of programs</strong></td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Visual status indicators</strong></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Tamper-proof option</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Direct audio input</strong></td>
<td>Universal Europin</td>
<td>Universal Europin</td>
<td>3.5 mm</td>
</tr>
<tr>
<td><strong>Wireless</strong></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Wireless accessories</strong></td>
<td>Cochlear Wireless Mini Microphone</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cochlear Wireless Phone Clip</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cochlear Wireless TV Streamer</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cochlear Baha Remote Control</td>
<td>No</td>
</tr>
<tr>
<td><strong>Audio accessories</strong></td>
<td>Telecoil, Audio adapter, FM receiver</td>
<td>Telecoil, Audio adapter, FM receiver</td>
<td>Audio adapter</td>
</tr>
<tr>
<td><strong>Built-in telecoil</strong></td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Colors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>Brown</td>
<td>Brown</td>
<td>Brown</td>
</tr>
<tr>
<td></td>
<td>Gray</td>
<td>Gray</td>
<td>Gray</td>
</tr>
<tr>
<td></td>
<td>Blue</td>
<td>Blue</td>
<td>Blue</td>
</tr>
<tr>
<td><strong>Cochlear Baha prescription</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Feedback analyzer</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>BC Direct</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>BC Select</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Wireless fitting</strong></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Selecting a Sound Processor

Type of hearing loss

Conductive hearing loss

For candidates with a purely conductive loss, we recommend focusing on the sound processor which offers the features most suitable for the candidate’s own requirements, as most Baha devices can provide sufficient amplification.

Mixed hearing loss

The fitting range of the selected sound processor must cover the extent of the sensorineural loss. In common with other hearing devices, the clinical rule of thumb is: if the hearing loss is in the lower third of the fitting range, a more powerful sound processor may produce better outcomes. Providing a second device for situations where more power is required could also be considered.

When using the Baha Attract System, soft tissue attenuation must be taken into account (see the Candidate Selection Guide for more information).

Single-sided sensorineural deafness (SSD)

For most candidates with SSD, the choice of sound processor can simply be based on which device they find offers the most useful features. In some cases, however, the sound processor may need to be capable of delivering added amplification to provide sufficient audibility in the contralateral ear. SSD candidates may benefit from a more powerful head-worn processor when there is:

- Larger than expected interaural attenuation. Extra amplification will be required to ensure audibility in the good ear.
- Sensorineural hearing loss progressively developing in the ‘good’ ear due to presbycusis or noise exposure. Extra gain will be required to amplify the sound above the candidate’s thresholds.

Additional considerations regarding sound processor selection

Improved audibility in difficult listening situations

There may be circumstances where additional audibility is needed. A sound processor with wireless connectivity can provide benefits through the use of a remote microphone which can dramatically increase the signal-to-noise ratio. Alternatively, a more powerful processor may make sounds (especially those in higher frequencies, such as ‘s’ and ‘sh’) easier to understand. A processor with a specific noise program may also ensure audibility and comfort.

Listening at a distance

A sound processor with wireless connectivity can provide benefits through the use of a remote microphone located closer to the sound source, which can dramatically increase the signal-to-noise ratio. A more powerful sound processor can amplify soft sounds so they become more audible, enabling better hearing at a distance, in a church, for example. Accessories such as the Telecoil should also be considered as a means of improving hearing at a distance when used with a loop.

Sound processor handling

A sound processor with wireless connectivity can provide the benefit of a remote control for those who find it difficult to manipulate the buttons on the sound processor.

Pediatric considerations

For children a processor with wireless accessories like the Mini Microphone can be very useful for parents to communicate with their child in noisy environments like traffic or in the playground. A remote control may also be a very useful tool for the parent to monitor the status and settings of their child’s sound processor.
Taking Care of the Sound Processor

It is important to keep the sound processor visibly clean. Instruct the patient to regularly wipe the sound processor with a soft, dry cloth or with an alcohol wipe and to gently brush the snap coupling with a soft hearing aid brush or similar.

**NOTE:** The sound processor is not water proof. Make sure not to use water or any other liquid when cleaning it. The snap coupling is a sensitive part of the sound processor. Avoid using excessive force when cleaning it.

**User kit and documentation**

All sound processors are delivered in a kit that includes the sound processor, useful accessories and patient user information such as a user manual, warranty information and device registration form.

**Testing the sound processor**

All Baha sound processors are delivered with a "share the experience" test rod. The purpose of the test rod is to encourage the user’s relatives and friends to share the experience of bone conducted hearing. It is also useful for checking that a sound processor is working properly.

First, snap the user’s sound processor onto the test rod using the same tilting motion required for attaching the processor to an abutment or Sound Processor Magnet. Turn the volume up on the sound processor. Then hold the rod between your index and middle fingers and press it firmly against the skull bone behind your ear, without touching anything other than the rod to prevent feedback from occurring. Use your little finger to cover the ear canal and listen. You may feel the vibrations in the rod, this means the sound processor is working properly. Listen to the sound processor.

Alternatively, you can connect the sound processor to a Baha Softband. Put the Softband on your head, turn the volume up, put your fingers in your ears and listen.
How to Manage the Selected Baha System

The sound processor can be connected in three ways: on an abutment, with a magnet or with a Baha Softband. This section provides information about attaching the sound processor to each of these connections and also gives advice on how to best take care of them.

The Baha 4 Connect System consists of:

- Cochlear Baha BI300 Implant
- Cochlear Baha BA400 Abutment (DermaLock™)
- Cochlear Baha Sound Processor

Baha Connect System

The Baha 4 Attract System consists of:

- Cochlear Baha BI300 Implant
- Cochlear Baha BIM400 Implant Magnet
- Cochlear Baha Sound Processor Magnet
- Cochlear Baha Sound Processor

Baha Attract System

The Baha Softband System consists of:

- Cochlear Baha Softband
- Cochlear Baha Sound Processor

Baha Softband System
Baha Connect System

Attaching and removing the sound processor

Patients can practice connecting and disconnecting a "dummy" processor to a snap trainer to avoid damaging their own sound processor.

Instruct the patient to:

• Hold the sound processor so that the snap coupling is accessible.

• Use the tilt technique to connect and disconnect the sound processor to reduce pressure on the abutment and prevent any discomfort.

• To release, place one finger under the sound processor and gently lift until it releases.

When familiar with the tilt technique, the patient can practice connecting/disconnecting the sound processor on their own abutment.

NOTE: Inspect the skin around the abutment before a sound processor is connected. Remove any skin debris from around the base of the abutment and inside the abutment itself. Should there be any sign of skin irritation around the abutment area, apply a mild antibiotic cream/ointment.

Instruct the patients to:

• Move hair away from the abutment. Hold the sound processor with the buttons positioned upwards, tilt it and gently snap it into place.

• To release, place one finger under the sound processor and gently lift until it releases.

NOTE: To avoid feedback (whistling), make sure that the sound processor is not touching any other items such as glasses or a hat.
Safety line

The safety line prevents the sound processor from being lost if it is inadvertently knocked off, for example during sporting activities. Cochlear recommends that children wear the safety line at all times. The safety line is also considered useful for new users.

Abutment cover

An abutment cover can be used to protect the abutment when the patient is not wearing the sound processor. The abutment cover should also be used during hair treatments such as coloring. During rough contact sports, a sweatband can be worn over the abutment for additional protection.

Taking care of the abutment connection

Good hygiene is critical to maintaining the Baha Connect System. Patients who are unable to clean the abutment need help from their family or caregivers.

After surgery

After the dressing has been removed, the patient should maintain good daily hygiene at home to avoid redness or soreness around the abutment. For the first few weeks, the patient should wash their hair gently to avoid interfering with the tissue integration during the healing phase, and use an alcohol-free cleaning wipe to keep the skin around the abutment clean.

Daily cleaning

After the first few weeks, the patient can start cleaning the outside of the abutment daily while taking a bath or shower, using mild soap and plenty of warm water. Afterwards, a cleaning wipe should be used to make sure that all debris has been removed. Make sure that the patients understand that the focus should be to remove crust and debris from around the base of the abutment rather than cleaning the skin. The use of a hand mirror is recommended to make sure that the abutment gets cleaned properly from all angles.

Once the abutment is clean, the area should be gently dried with a clean towel or tissue. Any hair that may have wrapped around the abutment should be removed. If a hair dryer is used, the patient should avoid overheating the abutment area.

Weekly cleaning

The inside of the abutment should be cleaned on a weekly basis, using the wipes or the cleaning brush.
Cleaning brush

After the initial healing period, the abutment cleaning brush can be used as an alternative to the wipes to clean the outside and inside of the abutment. If the cleaning brush is used, provide the patient with the following information.

- Always rinse the abutment cleaning brush in mild soap and warm water and let it air dry.
- Change the brush every three months or if there is an infection.
- Bilateral patients should use two separate cleaning brushes (one for each abutment) to avoid cross-contamination.

Signs of problems

Instruct the patient to clean the skin and apply a mild antibiotic cream/ointment if any redness and/or soreness should occur around the abutment. If soreness persists, the patient must contact the clinic.

MRI Patient Information

The patient should refer to the MRI Reference Card included in the document pack if they are to undergo an MRI (Magnetic Resonance Imaging) procedure.

Baha Connect System Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Background</th>
<th>Possible solution/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflammation and infection around the abutment.</td>
<td>Poor or excessive personal hygiene.</td>
<td>Clean the entire implant site, if appropriate apply antimicrobial cream. Provide the patient with appropriate after care instructions.</td>
</tr>
<tr>
<td>Skin over-growth.</td>
<td>N/A</td>
<td>Treatment with topical steroid cream or a longer abutment may be considered.</td>
</tr>
</tbody>
</table>
Baha Attract System

Selecting the Sound Processor Magnet

**NOTE:** Do not fit a Sound Processor Magnet before the wound is sufficiently healed.

The Cochlear Baha Sound Processor Magnets are available in different strengths to suit individual patients and lifestyles. Flap thickness and other factors such as hair thickness and skin compression will impact required magnet strength, as illustrated in Table 1. It is very important to choose an Sound Processor Magnet that provides firm retention while ensuring wearing comfort. If the magnet is too weak, the sound processor may fall off and if it is too strong, the patient may feel discomfort or experience skin soreness and irritation.

**NOTE:** Always attach the safety line to the sound processors to avoid dropping it during the fitting process. If the patient is likely to use accessories attached to the sound processor, attach the relevant accessory when selecting a Sound Processor Magnet as the added weight may affect the choice of magnets.

### Table 1.

<table>
<thead>
<tr>
<th>Sound Processor Magnet</th>
<th>Soft tissue thickness, mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>No. 6</td>
<td></td>
</tr>
<tr>
<td>No. 5</td>
<td></td>
</tr>
<tr>
<td>No. 4</td>
<td></td>
</tr>
<tr>
<td>No. 3</td>
<td>Extra</td>
</tr>
<tr>
<td>No. 2</td>
<td>Normal</td>
</tr>
<tr>
<td>No. 1</td>
<td>Start</td>
</tr>
<tr>
<td>No. 2 with 2 SoftWear Pads</td>
<td></td>
</tr>
<tr>
<td>No. 1 with 2 SoftWear Pads</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** The Sound Processor Magnet listed as NORMAL for the correlating soft tissue thickness will, in most cases, provide sufficient retention. The EXTRA may be needed if, for example, the patient has a lot of hair underneath the Sound Processor Magnet. If the soft tissue thickness is unknown, you may start with the Sound Processor Magnet 1 or 2 in children and Sound Processor Magnet 3 in adults.
Selection process

If the soft tissue thickness is known, start with the Sound Processor Magnet listed as START for the correlating soft tissue thickness indicated in the chart on the previous page.

- Attach the sound processor to the selected Sound Processor Magnet.

- Locate the implant magnet beneath the skin and place the Sound Processor Magnet over it, ensuring the arrow is pointing towards the top of the patient’s head.

- Ask the patient to move and shake his/her head as they would in normal everyday activities.

- If the sound processor falls off, try a stronger magnet (START ➔ NORMAL ➔ EXTRA) until the sound processor remains securely in place.

- During the selection process, ask the patient if the Sound Processor Magnet causes any discomfort. This may indicate that a weaker magnet should be used.

NOTE: During the first few weeks, patients should restrict sound processor use to a few hours a day. As the skin adapts to the pressure, the wearing time can be gradually increased.

Attaching and removing the sound processor

Instruct the patient to:

- Attach the safety line to the sound processor.

- Hold the Sound Processor Magnet with one hand or put it on a flat surface.

- Hold the sound processor with the buttons positioned upwards (toward the UP arrow on the Sound Processor Magnet), tilt it and gently snap it into place on the Sound Processor Magnet. It may be easier to turn the processor at this point.

- Make sure that the marking on the Sound Processor Magnet is facing upwards to ensure good retention and place the Sound Processor Magnet and sound processor over the implant behind the ear.

- To remove it from the head, grasp the Sound Processor Magnet with the sound processor still attached.

- To remove the sound processor from the Sound Processor Magnet, place one finger under the sound processor and gently tilt until it releases.

NOTE: To avoid feedback (whistling), ensure that the sound processor is not touching any other items, such as glasses or a hat. For optimal retention, make sure that there is not too much hair underneath the Sound Processor Magnet when placed over the implant.
Taking care of the magnet connection

The Sound Processor Magnet should be kept clean and the Baha SoftWear™ Pad should be changed regularly.

NOTE: For maximum comfort, patients should always use a Baha SoftWear Pad.

Sound Processor Magnet care

The patient should keep the Sound Processor Magnet and pad clean by using an alcohol-free wipe. Running water should not be used to clean the Sound Processor Magnet or the pad. The snap attachment on the magnet should be kept clean using a soft brush.

The Baha SoftWear Pad should be changed regularly or in the following cases:

- If an accumulation of dirt or moisture on the pad that cannot be wiped off.
- If the pad appears worn or damaged.
- If the patient experiences a gradual deterioration in wearing comfort (if changing the pad does not help, the patients should contact the clinic).

Changing the Baha SoftWear Pad

1. Remove the Baha SoftWear Pad from the Sound Processor Magnet by lifting and gripping the unglued portion and then slowly release the pad from the Sound Processor Magnet. Make sure that any remains from the adhesive are completely removed from the Sound Processor Magnet.

2. Select a new pad and remove the cover sheet from the side where the soft material is slightly visible to expose the adhesive.

3. Attach it to the Sound Processor Magnet. Make sure that the pad is centered and covers the entire Sound Processor Magnet surface.

4. Remove the remaining cover sheet, which is divided in the center, before the patient starts wearing the Sound Processor Magnet.
Signs of problems

Instruct the patient to remove the Sound Processor Magnet if any irritation is noted to let the skin rest. If discomfort and/or skin irritation persists, the patient should contact the clinic as it may be necessary to change to a lower strength Sound Processor Magnet.

Patient information

Ensure that the patient understands that the implant contains a magnet that should be kept away from life support devices, e.g. cardiac pacemakers and ICDs (implantable cardioverter defibrillators) and magnetic ventricular shunts as the magnets may affect the function of these devices. The patient should also be aware of that the magnet might attract other metallic objects that are held in close proximity (e.g. hairdresser’s scissors, etc.)

The patient should be instructed to:

- Remove the sound processor and Sound Processor Magnet for any treatment involving ionizing radiation, e.g. for X-rays, CT scan and radiation therapy.

- Refer to the MRI Reference Card included in the document pack if the patient is to undergo an MRI (Magnetic Resonance Imaging) procedure.

- Keep the Sound Processor Magnet in a safe place and away from magnetic cards (e.g. credit cards, bus cards, etc.) as these may be damaged by the magnet.

Baha Attract System Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Background</th>
<th>Possible solution/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistent irritation or skin soreness.</td>
<td>Magnet is too strong.</td>
<td>Ensure that the SoftWear Pad is attached to the Sound Processor Magnet. Consider changing to a weaker Sound Processor Magnet.</td>
</tr>
<tr>
<td>Sound processor falls off too easily.</td>
<td>Magnet is too weak.</td>
<td>Ensure that the safety line is attached to the sound processor to reduce the risk of loss or damage. Consider changing to a stronger Sound Processor Magnet.</td>
</tr>
</tbody>
</table>
The Baha Softband is latex-free and has built-in safety releases, which are designed to open if the Baha Softband should catch on an object. It is available in unilateral (Figure 1) and bilateral (Figure 2) versions.

Pediatric fittings are particularly challenging because the results can often be difficult to verify (refer to the Pediatric Evaluation and Fitting Guide for details on validating pediatric fittings). When using a Baha Softband, the sound signal from a Baha device is reduced by approximately 10 dB\(^1\), compared to the sound from a device fitted to an osseointegrated implant. Therefore, Cochlear recommends that you use a stronger sound processor for the test than the child’s audiogram indicates. This will have a greater impact on the higher frequencies. High frequencies weaken when passing through skin more than low frequency signals.\(^{1,2}\)
Fitting the Baha Softband

It is important for a child to have a positive first experience with the Baha Softband.

1. Program the sound processor for the child’s individual hearing loss using the Baha Fitting Software. Optimize the sound processor fitting by selecting suitable parameters in the BC Select screen. Also, whenever possible, conduct BC Direct measurements, which are in-situ bone conduction thresholds, using the child’s processor.

2. Attach the sound processor to the plastic snap connector disc.

3. Test that the sound processor works by first putting the Softband around your own head, covering your ears and introducing sound.

4. Put the Softband around the child’s head, quite loosely at first. It may be helpful to let the child familiarize themselves with the Softband before putting in on their head.

5. Place the plastic snap connector disc against the mastoid or another bony location on the skull. Avoid placing it on the temple bone, as this may be uncomfortable for the child. Check that the entire snap connector disc is in contact with the skull.

6. Tighten the Softband until it is close-fitting enough to ensure effective sound transmission (able to fit one finger between the head and the Baha Softband) while also loose enough so as not to cause discomfort. Once the Baha Softband is tight enough to transmit sound effectively, additional tightening will only increase the sound marginally.

7. Ask the parent or carer to talk to the child or sing a song to provide a pleasant hearing experience. Watch for the child’s reaction.

* In infants, mastoid placement may not be possible until the child has sufficient head control. Forehead placement may be appropriate, especially during stroller time or rides in the car.
Period of use

- Initially, keep the Baha Softband on for very short periods of time (10–15 minutes).
- Use for longer periods once the child accepts the Baha Softband.
- Change the position of the plastic snap connector disc regularly.
- Reduce the time of use if there is any sign of discomfort. This is to ensure that the child maintains positive associations with using the Baha Softband.

The amount of sound transferred is based on both the volume setting and the contact area of the plastic snap connector disc.

**NOTE:** The position of the plastic snap connector disc should be rotated regularly to avoid discomfort and soreness. If soreness arises, avoid placing the plastic snap connector disc on this area for several days. Should the soreness persist, discontinue use of the Baha Softband for a couple of days or until soreness is gone. Once the Baha Softband is tight enough to transmit sound effectively, additional tightening will only increase the sound marginally. Never use the safety release (disc) to open or close the Baha Softband.

Care instructions

The Baha Softband can be washed by hand at 104°F (40°C) or cooler. Use a mild soap but avoid fabric softeners. Do not tumble dry or iron. The disc(s) can be cleaned with a small brush. Never use any strong chemical solutions.

**Warning! A Baha sound processor contains small parts. Constant adult supervision is required for Baha users under 3 years of age.**

**NOTE:** If the wearer has an implant, do not place the Baha Softband directly over the implant/abutment during the healing period as this may hinder osseointegration.
General Programming Steps

Checking the sound processors

1. **Insert a fresh battery in your Baha Sound Processor**
   Gently slide the battery door downwards and remove the door. Insert the new battery, using the magnetic removal tool if needed. Slide the battery door back into its locked position. Inserting a new battery will turn the sound processor on.

2. **Switch on the sound processor**
   If a sound processor is not already turned on, turn it on by pressing the start button. In the Baha 4 sound processor a start-up delay, represented by a sequence of 10 beeps will be heard.

3. **Check the sound processor’s functionality**
   Test the sound processor by holding the snap connector and blowing gently into the microphone. You will feel it vibrate.

Using the Baha Fitting Software

Launch the Baha Fitting Software in NOAH or using the stand-alone version on your desktop.

For more detailed programming information, see the Baha Fitting Software Desk Reference.

General buttons

- **Client**
  Enter patient information or audiogram during this task.

- **Selection**
  Select a sound processor and optimize fitting by selecting the options that match your patient in BC Select.

- **Fitting**
  Perform a Feedback Analyzer test *(if available)* and a BC Direct test, carry out fine-tuning or receive guidance in the Hearing Mentor. Set the specific Program Settings or conduct counseling based on the data in Data Logging.

- **Finalize**
  Pair or unpair the wireless accessories *(if available)*. Fine-tune the Beep Settings and the General Settings. Print a Session Report, export and save your programming session.
# Programming Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Background</th>
<th>Possible solution/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which programming interfaces are compatible with the Baha Fitting Software?</td>
<td>N/A</td>
<td>The BFS 4.0 is compatible with HI-PRO Serial, HI-PRO USB, HI-PRO 2, NOAHlink, Speedlink and Airlink™ interfaces. Previous versions could have compatibility issues, so please upgrade to BFS 4.0.</td>
</tr>
<tr>
<td>The programming speed is very slow when using the HI-PRO serial programming interface.</td>
<td>The HI-PRO serial is using an old communication protocol, hence the decrease in speed. This programming interface will soon have to be obsoleted.</td>
<td>We recommend upgrading to an HI-PRO 2 for a faster programming with all types of fitting software.</td>
</tr>
<tr>
<td>When trying to connect to a BP100 or BP110 using the HI-PRO, the connection fails.</td>
<td>1. A Baha 4 Sound Processor was previously connected. 2. If the HI-PRO drivers were installed previous to the installation of the BFS the COM ports will not be set correctly. This could also occur if the HI-PRO configuration step was never performed during the HI-PRO driver installation process or if the HI-PRO was not connected to the computer during installation of the HI-PRO drivers.</td>
<td>1. Restart the BFS. 2. Perform an HI-PRO configuration to set the COM ports correctly.</td>
</tr>
</tbody>
</table>
Accessory Overview

Wireless

A number of accessories have been developed for Baha sound processors. The accessories are designed to maximize access to technologies that make listening easier in specific environments.

The Cochlear 2.4 GHz wireless technology used in the Baha 4 Sound Processor enables simple-to-use and robust connectivity to speech and audio sources without the need for intermediate devices. With the Cochlear 2.4 GHz system, the Baha user may connect directly to up to three streaming accessories, such as the TV Streamer and/or the Mini Microphone, plus a Remote Control and Phone Clip. In addition, several Baha users may share the signal transmitted from one wireless accessory. In addition, the Cochlear Wireless Accessories portfolio provides direct speech and audio streaming and new means of changing and monitoring sound processor status. The wireless accessories can easily be paired manually or by using the Baha Fitting Software.

Cochlear Wireless Mini Microphone

The Mini Microphone is a versatile solution in many situations when the patient needs to hear over a distance or where background noise is problematic. It will provide benefit in situations such as:

- In meetings, when listening to a presenter
- When traveling by car, bus or train
- Dining at a restaurant
- Participating in a class at the gym

The Mini Microphone is a small, lightweight, portable personal audio streamer that transmits sound directly to the Baha 4 Sound Processor. It may be clipped onto clothing and will transmit speech wirelessly to the Baha sound processor over a distance of up to 21 feet. It allows multiple Baha users to be connected to the same Mini Microphone. When used as an audio streamer, the Mini Microphone can be placed next to a sound source such as a television speaker or connected directly to an audio device such as an MP3 player via a 3.5 mm cable.

Troubleshooting

<table>
<thead>
<tr>
<th>Question</th>
<th>Background</th>
<th>Possible solution/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>A sound processor unintentionally drops out of the streaming program.</td>
<td>The battery in the sound processor is so depleted that it no longer supports audio streaming.</td>
<td>Replace the battery in the sound processor with a new one and activate streaming again.</td>
</tr>
<tr>
<td>The sound from the Mini Microphone is too high or is distorted.</td>
<td>An audio device has been connected to the Line-in plug and the audio level from this device is too high.</td>
<td>Adjust the volume using the “+” and “-” keys on the Mini Microphone or use the volume control on the external audio device itself until the best sound level and quality is obtained.</td>
</tr>
<tr>
<td>The sound from the Mini Microphone is still either too low or too high.</td>
<td>The audio volume level of the sound processors is not suitable for listening.</td>
<td>Adjust the volume on the sound processor itself or alternatively, using the “+” and “-” keys on the Remote Control.</td>
</tr>
<tr>
<td>Question</td>
<td>Background</td>
<td>Possible solution/Answer</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The sound level from the Mini Microphone is very low.</td>
<td>The Mini Microphone is not being worn correctly by the speaker. The sound received by the microphone is very low. An audio device has been connected to the Line-in plug and the audio level from this device is too low.</td>
<td>Clip the Mini Microphone on the speaker’s jacket or other clothing or hang it around the speaker’s neck using the lanyard so that the device is within 6-8 inches of the speaker’s mouth. Increase the volume using the “+” key on the Mini Microphone. Adjust the volume using the “+” and “-” keys on the Mini Microphone or use the volume control on the external audio device until the best sound level and quality is obtained.</td>
</tr>
<tr>
<td>The sound from the Mini Microphone is distorted or drop-outs occur frequently.</td>
<td>The Mini Microphone and sound processors are at the edge of the wireless range. The Mini Microphone and sound processors do not have sufficient line of sight.</td>
<td>Ensure that the Mini Microphone and sound processors are within wireless range. Ensure that streaming is not obstructed between the Mini Microphone and the sound processor.</td>
</tr>
<tr>
<td>Pressing the streaming button on the Remote Control has no effect.</td>
<td>The Mini Microphone and sound processor have not been paired. The Remote Control and sound processor are not within wireless range.</td>
<td>Carry out the pairing process. Ensure that the Remote Control and sound processor are within wireless range and activate streaming again.</td>
</tr>
<tr>
<td>Pressing the streaming button on the sound processor for more than 3 seconds has no effect.</td>
<td>The Mini Microphone and sound processor have not been paired.</td>
<td>Carry out the pairing process.</td>
</tr>
<tr>
<td>When pressing the pairing button on the Mini Microphone, no pairing melody is played in the sound processor.</td>
<td>The Mini Microphone and sound processor are not within wireless range. The Mini Microphone and sound processor have not been in pairing mode simultaneously.</td>
<td>Ensure that the Mini Microphone and sound processor are within wireless range and repeat the pairing process. Repeat the pairing process and ensure that your sound processor is turned on within 20 seconds after the pairing button has been pressed on the Mini Microphone.</td>
</tr>
<tr>
<td>The streaming button on the Remote Control has been pressed but no streamed audio signal is found when searched for (indicated by an ‘X’ icon on the display).</td>
<td>The Mini Microphone and sound processor are not within wireless range. The Mini Microphone is not switched on. The battery level of the Cochlear Mini Microphone is too low to support streaming. An audio device has been connected to the Line-in plug but the device is switched off or the output has been muted.</td>
<td>Ensure that the Mini Microphone and sound processor are within wireless range and activate streaming again. Switch on the Mini Microphone and activate streaming again. Charge the battery. Switch on or unmute the external audio device.</td>
</tr>
<tr>
<td>There is no sound in the sound processors although they are still in the streaming program.</td>
<td>The Mini Microphone and sound processor are not within wireless range. The Mini Microphone is no longer switched on. The battery level of the Mini Microphone has become too low to support streaming. An audio device has been connected to the Line-in plug but the device has been switched off.</td>
<td>Ensure that the Mini Microphone and sound processor are within wireless range again. Switch on the Mini Microphone and activate streaming again. Charge the battery. Switch on or unmute the external audio device.</td>
</tr>
</tbody>
</table>
Cochlear Baha Remote Control

The Remote Control simplifies the daily use of the Baha 4 Sound Processor. With easy to use buttons, it provides all users, even those with limited dexterity, with a means of adjusting program and volume settings.

- Allows discreet adjustment of the sound processor, reduces the risk of feedback.
- Provides large buttons for simple volume or program changes.
- Makes it possible to monitor the child’s sound processor from a distance.
- Makes streaming to other wireless accessories easier.

The display gives a clear overview of the settings of the sound processor and allows users, parents and caregivers to monitor the sound processor status and settings.

Troubleshooting

<table>
<thead>
<tr>
<th>Question</th>
<th>Background</th>
<th>Possible solution/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>No information is shown in the display after it has been activated.</td>
<td>The Remote Control and sound processors have not been paired.</td>
<td>Carry out the pairing process.</td>
</tr>
<tr>
<td>The pairing button on the Remote Control has been pressed but the search icon on the display is not replaced by the status of the sound processor.</td>
<td>The Remote Control and sound processor are not within wireless range.</td>
<td>Ensure that the Remote Control and sound processor are within wireless range and repeat the pairing process. Repeat the pairing process and ensure that the battery is inserted in the sound processor within 20 seconds after the pairing button has been pressed on the Remote Control.</td>
</tr>
<tr>
<td>The 'search' icon on the Remote Control is displayed constantly.</td>
<td>The Remote Control and sound processor are not within wireless range.</td>
<td>Ensure that the Remote Control and sound processor are within wireless range. Switch on the sound processor. Replace the battery in the sound processor with a new one.</td>
</tr>
<tr>
<td>Two different program numbers or icons are shown on the display.</td>
<td>The two sound processors are not in the same program. There can be several reasons for this, e.g. that one of the sound processors was not within wireless range when a command was given from the Remote Control or because you have changed programs on one of the sound processors by pressing its button.</td>
<td>Align the sound processor program using the Remote Control or the program button on the sound processor.</td>
</tr>
<tr>
<td>When changing volume on the sound processors using the &quot;+&quot; or &quot;-&quot; keys, the volume does not change on one of the sound processors.</td>
<td>Volume control is activated for one sound processor only (i.e. only one of the &quot;&lt;&quot; and &quot;&gt;&quot; arrows are shown on Remote Control display).</td>
<td>Press the &quot;&lt;&quot; or &quot;&gt;&quot; key as appropriate to also activate the volume control for the other sound processor.</td>
</tr>
</tbody>
</table>
Cochlear Wireless Phone Clip

The Phone Clip makes talking on the phone easier for Baha users. It is a small and lightweight clip-on accessory with a built-in microphone and Bluetooth® capability. It links the Baha sound processor to any Bluetooth-enabled telephone, thereby allowing the user to hear the telephone directly through the Baha 4 Sound Processor.

- Hands-free calling direct to the Baha 4 Sound Processor.
- Hear the Bluetooth-enabled navigation system directly in the Baha 4 Sound Processor.
- Discreetly adjust the Baha 4 Sound Processor by using the Phone Clip as a remote control.
- Stream music from a Bluetooth-enabled device.

In addition, the Phone Clip will pick up speech from the user and transmit it to the telephone so that the user may communicate freely on the phone without holding the handset, even with the handset several feet away. In this way the Baha processor in combination with the Phone Clip will act as a wireless headset.

Troubleshooting

<table>
<thead>
<tr>
<th>Question</th>
<th>Background</th>
<th>Possible solution/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Phone Clip does not respond to any (long or short) presses on the answer/hang-up button.</td>
<td>The battery in the Phone Clip is depleted.</td>
<td>Charge the battery.</td>
</tr>
<tr>
<td>The pairing button on the Phone Clip has been pressed but no pairing melody is played in the sound processor after the battery is inserted.</td>
<td>The Phone Clip and sound processor are not within wireless range.  The Phone Clip and sound processor have not been in pairing mode simultaneously.</td>
<td>Ensure that the Phone Clip and sound processors are within wireless range and repeat the pairing process. Repeat the pairing process and ensure that the battery is inserted on the sound processor within 20 seconds after the pairing button has been pressed on the Phone Clip.</td>
</tr>
<tr>
<td>The Phone Clip cannot be found by the mobile phone when searching for it in the Bluetooth menu.</td>
<td>The Phone Clip and mobile phone are not within wireless range.  The Phone Clip is not in Bluetooth pairing mode.</td>
<td>Ensure that the Phone Clip and mobile phone are within wireless range and repeat the Bluetooth pairing process. The Phone Clip is only in Bluetooth pairing mode for 120 seconds after having been activated. Repeat the Bluetooth pairing process.</td>
</tr>
<tr>
<td>Bluetooth pairing failed.</td>
<td>The Phone Clip left Bluetooth pairing mode before the mobile phone completed the pairing process. The wrong 4-digit PIN code has been entered.</td>
<td>Repeat the Bluetooth pairing process and ensure that the process is completed within 120 seconds after having been activated in the Phone Clip. Repeat the Bluetooth pairing process and if a PIN code is requested, enter 0000 (four zeros).</td>
</tr>
</tbody>
</table>
Cochlear Wireless TV Streamer

The TV Streamer sends stereo sound directly to the Baha 4 Sound Processor from up to 21 feet away. The Baha 4 wearer is able to hear a balance of sound from the sound processor and the TV so that they can follow conversations while watching TV. The TV Streamer allows the Baha user to adjust the sound level from the TV so that they can watch without turning up the TV volume to levels that might disturb others. The TV Streamer can easily be connected to a TV, stereo, computer or other audio source and the long range allows users to move around freely while enjoying high quality sound. The low latency of the Cochlear 2.4 GHz technology virtually eliminates the risk of echo effects and lip sync issues. Due to the unique properties of the Cochlear 2.4 GHz system, several users can enjoy TV together using a single TV Streamer. For convenience, streaming between the TV and the Baha 4 Sound Processor will be automatically reconnected if the user leaves the room and returns within 5 minutes.

Troubleshooting

<table>
<thead>
<tr>
<th>Question</th>
<th>Background</th>
<th>Possible solution/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressing the streaming button on the Remote Control has no effect.</td>
<td>The TV Streamer and sound processors have not been paired. The Remote Control and sound processors are not within wireless range.</td>
<td>Carry out the pairing process. Ensure that the Remote Control and sound processors are within wireless range and activate streaming again.</td>
</tr>
<tr>
<td>Pressing the button on the sound processor for more than 3 seconds has no effect.</td>
<td>The TV Streamer and sound processor have not been paired.</td>
<td>Carry out pairing process.</td>
</tr>
<tr>
<td>No pairing melody is played in the sound processor when the button on the TV Streamer has been pressed.</td>
<td>The TV Streamer and sound processor are not within wireless range. The TV Streamer and sound processor have not been in pairing mode simultaneously.</td>
<td>Ensure that the TV Streamer and sound processors are within wireless range and repeat the pairing process. Repeat the pairing process and ensure that the battery on both sound processors are inserted within 20 seconds after the pairing button has been pressed on the TV Streamer.</td>
</tr>
<tr>
<td>When the streaming button on the Remote Control has been pressed, no streamed audio signal is found when searched for (indicated by an ‘X’ icon on the display).</td>
<td>The TV Streamer and sound processors are not within wireless range. The TV Streamer cables are not connected correctly to the TV. The TV Streamer is switched off or the sound from the TV output has been muted.</td>
<td>Ensure that the TV Streamer and sound processors are within wireless range and activate streaming again. Check that the cables between the TV Streamer and the TV are connected correctly and activate streaming again. Switch on the TV Streamer or unmute the TV and activate streaming again.</td>
</tr>
<tr>
<td>There is no sound in the sound processor although it is in streaming mode.</td>
<td>The TV Streamer and sound processors are not within wireless range. The TV might have been switched off or the sound from the TV has been muted.</td>
<td>Ensure that the TV Streamer and sound processors are within wireless range. Switch on or unmute the TV.</td>
</tr>
<tr>
<td>The sound from the TV Streamer is distorted.</td>
<td>The audio input level from the TV is too high.</td>
<td>Adjust the volume using the volume button on the TV Streamer until the sound is no longer distorted.</td>
</tr>
<tr>
<td>The volume level from the TV Streamer is very low.</td>
<td>The audio input level from the TV is too low.</td>
<td>Adjust the volume using the “+” and “-” keys on the TV Streamer until the sound is sufficiently loud.</td>
</tr>
<tr>
<td>Question</td>
<td>Background</td>
<td>Possible solution/Answer</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The sound from the TV Streamer is distorted or drop-outs occur from</td>
<td>The TV Streamer and sound processors are on the edge of the wireless range.</td>
<td>Move a little closer to the TV Streamer, ensure that it is placed in a suitable position and that streaming is not obstructed.</td>
</tr>
<tr>
<td>time to time.</td>
<td>The TV Streamer and sound processors do not have sufficient line of sight.</td>
<td></td>
</tr>
<tr>
<td>The sound from the TV Streamer is not synchronized with the TV picture.</td>
<td>Your TV cannot synchronize the sound from the selected audio outputs and the picture.</td>
<td>If possible, try using another audio output from your TV.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Audio streaming from the TV Streamer has almost no latency and does not contribute to any lip sync errors.</td>
</tr>
<tr>
<td>The sound from the TV Streamer is not synchronized with the sound</td>
<td>Your TV is not able to synchronize sound from the selected audio outputs</td>
<td>If possible, try using another audio output from your TV.</td>
</tr>
<tr>
<td>from the TV loudspeakers.</td>
<td>with the sound from the TV loudspeakers.</td>
<td>Audio streaming from the TV Streamer has almost no latency and does not contribute to any echo effects. If the problem persists, refer to the TV Streamer User Manual for instructions about fixing latency issues.</td>
</tr>
<tr>
<td>The sound from the sound processor is either too low or too high.</td>
<td>The audio input level is not suitable for listening.</td>
<td>Adjust the volume control on the sound processor, then adjust the volume using the “+” and “-” keys on the TV Streamer until the sound level is suitable. Alternatively, use the “+” and “-” keys on the Remote Control (optional) for this operation.</td>
</tr>
<tr>
<td>A sound processor unintentionally drops out of the streaming mode.</td>
<td>The TV Streamer and sound processor have been out of wireless range for more than 5 minutes. The battery in the sound processor is so depleted that it no longer supports audio streaming.</td>
<td>Ensure that the TV Streamer and sound processors are within wireless range and activate streaming again. Replace the battery in the sound processor.</td>
</tr>
</tbody>
</table>
How to pair the Wireless Accessories

1. Make sure that the Wireless Accessory battery is fully charged.

2. Turn off the Baha 4 Sound Processor by either removing the battery or pressing the "volume down" button.

3. Turn on the Wireless Accessory.

4. Remove the silver cap (where applicable) from the Wireless Accessory.

5. Press the pairing button on the Wireless Accessory once using the tip of a pen or similar object. The LED will flash yellow every two seconds and the device will now be in pairing mode for 20 seconds.

6. While pairing mode is active, turn on the sound processor either by inserting the battery or pressing the "volume up" button.

7. Successful pairing will be indicated by an audible melody played in the sound processor.
Baha 3 and Baha 3 Power Accessories

NOTE: These accessories connect to the compatible sound processor through the Direct Audio Input (DAI).

Audio adapter

The audio adapter allows direct input from personal stereos, TVs, MP3 players and other external audio equipment. The audio adapter also protects sound processors from sudden power peaks.

Warning! It is extremely dangerous and potentially fatal to connect any equipment that is plugged into a 110 and/or 220 V power supply without using the Audio adapter. Only connection cables supplied by Cochlear should be used. Non-standard connection cables can cause damage to the sound processor(s) and injury to the patient. Cochlear is not liable for any damage resulting from incorrect use or connecting incorrect equipment.

Telecoil unit

The telecoil unit is specifically designed to improve sound when using telephones. In addition, with the head-worn devices, it enables access to loop facilities in homes and public buildings.
FM System Tips

FM Receiver

FM technology makes it possible to improve signal to noise ratio in situations like:

- Listening in background noise (a child in a noisy classroom)
- Listening from a distance (when listening to a presentation in a large conference room)

Both the Phonak and Oticon FM systems have been designed to work with the Baha 3 and Baha 4 Sound Processors by Cochlear. There have also been successful installations with the Comfort Audio system. Dynamic FM (a feature from Phonak) automatically varies gain in the FM receiver according to changes in the ambient noise levels. Traditional FM systems use only fixed gain settings. The Phonak Microlink FM receiver enables the use of most Phonak FM transmitters. For more information about the FM receivers and orders, please contact Phonak at www.phonak.com.

Ear-level FM receivers

An FM receiver is connected directly to the sound processor through the DAI port and wirelessly communicates with the transmitter when connected either automatically or manually. Use of an ear-level receiver can reduce the Baha sound processor’s battery life by 10-40% depending on the hearing loss and type of FM receiver used. Dynamic FM receivers use more power than traditional ear-level FM receivers.

Neckloop Systems

A neckloop is a necklace-size loop of covered wire that includes FM. The Cochlear Baha telecoil accessory is used to pick up the electromagnetic field that the neckloop produces and activates automatically when connected to the sound processor via the DAI port. An FM neckloop receiver is worn around the neck of someone who has a sound processor with telecoil. When the transmitter and receiver are turned on, the wireless connection is established either automatically or manually.

Body-worn Systems

An FM cable connects the Baha sound processor to a commercially available body-worn FM receiver through the DAI port on the sound processor. Body-worn FM receivers are used with an FM transmitter and microphone, which picks up the speaker’s voice. Once the transmitter and the receiver are turned on, the wireless connection is established between the two devices either automatically or manually.
To consider when fitting an FM system

- Depending on the child’s age, Cochlear recommends at least 3-6 months of Baha sound processor experience prior to FM use. This gives a younger child time to develop some basic listening skills and allows the clinician to measure baseline speech perception performance.

- Given the known interference issues with FM systems in general, children under five years of age may not be appropriate FM candidates unless they are closely monitored.

- To evaluate if sufficient power is available from the Baha sound processor to support use of an FM system, perform a BC Direct measurement.

- Consider fitting a more powerful sound processor and/or decreasing gain or MPO in lower frequencies in the DAI program.

- Prepare for the school or other external environment at the clinic. Try to use the same FM system as would be used in the classrooms during fitting in the clinic. It is also recommended that a parent, therapist, audiologist or teacher be trained to conduct daily listening checks to ensure that the quality of sound is optimal and to verify proper operation of the FM equipment.

- Address performance expectations and impact on expected battery life prior to fitting. It is important that users and parents/caregivers understand when and how to operate the FM system to ensure optimal hearing benefit and satisfaction.

Fitting an FM receiver

1. Turn all equipment off.

2. Plug the FM receiver into the Baha sound processor.

3. Switch on the Baha sound processor.

4. For Baha 3 sound processors in all programs except for the DAI program, the output of the FM receiver is mixed with the signal of from the sound processor microphones. For the Baha 4 Sound Processor, you will need to create a DAI+Mic program as there is no mixing in the Everyday or Noise programs in this processor.

5. Test the patient’s speech recognition in quiet with the sound processor alone and then through the wireless FM system using the DAI program. Performance should be similar between these two conditions.

**NOTE:** If the Phonak FM is too loud or too soft, the FM programming software, Phonak FM SuccessWare, may be required to optimize the FM volume level. The MLxi on/off button is configurable in Phonak FM SuccessWare. By default this option is disabled but can be enabled to allow manual adjustment of the power setting for the MLxi.
## Troubleshooting FM Receivers

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Answer</th>
<th>Answer</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sound processor</strong></td>
<td>No sound.</td>
<td>Check batteries. Check connections. Check sound processor microphones. Make sure telecoil is inserted if you are using a neck loop receiver. Replace interface that connects to FM receiver (Europlug, cables etc.).</td>
<td><strong>FM receiver</strong></td>
<td>Check battery (if appropriate). Ensure within operating range. Check connection of device. Plug the FM receiver into an amplifier speaker and speak into the transmitter microphone. The FM receiver should work by itself. Check to see that the receiver and transmitter are set to the same channel. Check that settings (e.g. volume) are correct.</td>
</tr>
<tr>
<td><strong>Poor sound quality.</strong></td>
<td>Check mic/DAI program settings. Change batteries. Reduce MPO by up to 10 dB in low frequencies (250-1000 Hz). Reduce gain by up to 6 dB in low frequencies (250-750 Hz).</td>
<td>Check connections. Ensure use within operating range and no interference. Check volume setting. Check battery life (if appropriate). Ensure cables are not frayed or kinked (if appropriate). Ensure compatible technology used with transmitter.</td>
<td><strong>Change position of microphone.</strong></td>
<td>Ensure within operating range. Ensure cables are not frayed or kinked (if appropriate). Use sound check function (if available on transmitter).</td>
</tr>
<tr>
<td><strong>Connection lost repeatedly in the FM System.</strong></td>
<td>Ensure use of Rayovac batteries with 4-ventilation holes. Reduce MPO by up to 10 dB in low frequencies (250-1000 Hz). Reduce gain by up to 6 dB in low frequencies (250-750 Hz). Replace interface that connects to FM receiver (Europlug, cables etc.).</td>
<td>Check connections. Ensure within operating range and no interference. Check volume setting. Check battery life (if appropriate). Ensure cables (if appropriate) are not frayed or kinked.</td>
<td><strong>Change position of microphone.</strong></td>
<td>Ensure within operating range. Ensure cables (if appropriate) are not frayed or kinked. Change channels and resynchronize. Ensure compatible technology is used with transmitter. Consider testing with Phonak Inspiro if issue is with zoomlink or smartlink.</td>
</tr>
</tbody>
</table>
## Frequently Asked Questions

### Sound Processor Troubleshooting

<table>
<thead>
<tr>
<th>Question</th>
<th>Possible solution/Answer</th>
</tr>
</thead>
</table>
| **No sound or weak sound.** | • Try a new battery.  
• Check the program settings and/or adjust the volume.  
• Check the gain settings and make sure that they are optimized according to the patient’s preference.  
• If a Baha Connect System is used try rotating the abutment to check that it is stable. If the abutment connection seems loose, refer the patient to a trained health care professional to have it tightened. |
| **Poor sound quality (distorted/intermittent/crackling/buzzing sound).** | • Try a new battery.  
• Perform a Feedback Analyzer test and analyze the result and see if the optimization of gain resolved the issue.  
• Redo the BC Direct test.  
• If a Baha Connect System is used try rotating the abutment to check that it is stable. If the abutment connection seems loose refer the patient to a trained health care professional to have it tightened. |
| **Feedback problems.** | • Check that items such as hats and glasses do not come in contact with the Baha sound processor.  
• Ensure that neither the head nor the ear come in contact with the sound processor.  
• If a Baha Connect System is used, try rotating the abutment to check that it is stable. If the abutment connection seems loose, refer the user to a trained health care professional to have it tightened.  
• Perform a Feedback Analyzer test and analyze the result and see if the optimization of gain resolved the issue.  
• Redo the BC Direct test.  
• Adjust the volume. |
| **Echo from the user’s own voice (“talking with the head in a barrel”).** | • Decrease gain in the low frequency area.  
• Decrease gain in the mid frequency area. |
| **Sound processor has become damp/wet.** | • Immediately open the battery door and remove the battery.  
• Put the sound processor in a container with drying capsules. Leave the device to dry overnight. Drying kits are available from most hearing health care professionals. |
| **Sound processor will not start.** | • Make sure high quality zinc-air batteries are used (the batteries provided in the sound processor box is Cochlear’s latest recommendation).  
• Make sure the surface on the battery is clean.  
• Try to reinsert the battery as straight as possible using the battery insertion/removal tool. |
## FM fine-tuning recommendations

<table>
<thead>
<tr>
<th>Parameter</th>
<th>When to adjust</th>
<th>Recommendation</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program</td>
<td>Every day program in the Baha 3 sound processor will provide mixing between sound processor microphones and FM when receiver is inserted: recommended for children. DAI program may be used for dedicated listening, mainly in adults. The Baha 4 Sound Processor requires a DAI+Mic program for FM use.</td>
<td>Every day program in the Baha 3 sound processor will provide mixing between sound processor microphones and FM when receiver is inserted: recommended for children. DAI program may be used for dedicated listening, mainly in adults. The Baha 4 Sound Processor requires a DAI+Mic program for FM use.</td>
<td>For children mixing between microphones and FM receiver may improve communication and safety. Program settings can be optimized for use with FM.</td>
</tr>
<tr>
<td>MPO</td>
<td>To increase battery life and reduce risk of sound processor power down.</td>
<td>Reduce MPO in 2 dB steps by up to 10 dB in low frequencies (250-1000 Hz) particularly for BP100 and Baha 4 Sound Processors.</td>
<td>Decreasing the MPO reduces peaks in the current consumption to lower the risk of power down/dropped connection. This has a limited impact on the hearing performance.</td>
</tr>
<tr>
<td>Gain</td>
<td>To improve sound quality.</td>
<td>Reduce low frequency gain (250, 500 &amp; 750 Hz) by 2 dB, repeat in further 2 dB steps if problems persist. Use a more powerful sound processor to avoid exceeding power limits while using FM.</td>
<td>Devices set at max gain may show poorer sound performance as the signal can become distorted due to the increased current consumption when combined with FM.</td>
</tr>
<tr>
<td>Mic Relative DAI</td>
<td>To prioritize FM input for children.</td>
<td>For children: 6 dB For adults: 0 dB</td>
<td>Children use FM mostly in noisy classrooms and may need to prioritize the teacher’s voice while still capturing questions from the class. Adults tend to select dedicated listening through a DAI program or use another program when requiring more awareness of surroundings.</td>
</tr>
<tr>
<td>Battery</td>
<td>To reduce risk of sound processor power down.</td>
<td>Zinc-air Rayovac or other premium brand with 4-ventilation holes (with or without mercury).</td>
<td>Maintains necessary battery oxygenation when using FM to avoid power downs.</td>
</tr>
</tbody>
</table>
## BFS 4.0

<table>
<thead>
<tr>
<th>Question</th>
<th>Background</th>
<th>Possible solution/Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devices programmed with BFS 4.0 will not connect to BFS 2.0 SR2 or older fitting software versions.</td>
<td>A sound processor that has been programmed using the BFS 4.0 contains the new standard and can therefore not communicate with older standards.</td>
<td>You will need to reset the sound processor to factory settings in BFS 4.0. Disconnect the sound processor without clicking “Save” before you can connect to an older fitting software version. You will lose all programming parameters. Consider updating to the Baha Fitting Software 4.0.</td>
</tr>
<tr>
<td>Connected a Baha 4 Sound Processor and then cannot connect a BP100 or BP110 device in the same session.</td>
<td>Constraints related to the new Platform.</td>
<td>Restart the Baha Fitting Software.</td>
</tr>
<tr>
<td>Is it possible to benefit from the increased speed of the HI-PRO 2 with the BFS 4.0?</td>
<td>N/A</td>
<td>Yes, when programming Baha 4 Sound Processors. If you program a Baha 3 device, the speed will be similar to HI-PRO USB.</td>
</tr>
<tr>
<td>The feedback manager shows measurements above full on gain.</td>
<td>N/A</td>
<td>Which means the risk of feedback is minimal at those frequencies.</td>
</tr>
<tr>
<td>A patient wearing a BP110 Power fitted with BFS 4.0 that was previously fitted using BFS 2.0 complains that the sound is weaker.</td>
<td>The gain settings for the BP110 Power have been recalibrated the output for BP110 Power was reduced by 2-3 dB. Please note that this is not a gain limitation, only a correction to the prescription.</td>
<td>If you would like to have an output similar to the previous one, increase gain.</td>
</tr>
<tr>
<td>The shape of the full on gain curve is different for Baha 4 Sound Processors compared to the BP100.</td>
<td>The stable gain curve is different in Baha 4 Sound Processors due to improvements in the platform. The prescription however, is the same for all devices.</td>
<td>N/A</td>
</tr>
<tr>
<td>In Data logging/Program/Volume change view, there is only data for program 1.</td>
<td>This is a known constraint from the new platform. It only supplies data on volume changes for program 1.</td>
<td>Future software feature.</td>
</tr>
<tr>
<td>The patient has been fitted with a Baha 4 Sound Processor with 4 programs but only 3 programs are available.</td>
<td>This only occurs for Baha 4 Sound Processors and only if the device was disconnected before the programming was saved.</td>
<td>Connect the Baha 4 Sound Processor to the BFS, making sure that the 4 programs are selected and save the session before disconnecting the sound processor.</td>
</tr>
<tr>
<td>Question</td>
<td>Background</td>
<td>Possible solution/Answer</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>When using an Airlink to program a Baha 4 Sound Processor, “Cannot save, please try again” is displayed when saving.</td>
<td>This issue can be caused by not having a new battery in the sound processor when programming.</td>
<td>Make sure you always insert a new battery when starting a fitting.</td>
</tr>
<tr>
<td>Cannot connect when using the Airlink programming interface.</td>
<td>N/A</td>
<td>Make sure that the Airlink has been inserted before launching the BFS 4.0 software. Only Baha 4 Sound Processors can be programmed via Airlink. Make sure you have line of sight between Sound Processor and Airlink Bluetooth. Other 2.4 GHz wireless devices in range may decrease transmission speed or even cause connection issues.</td>
</tr>
<tr>
<td>Is it necessary to install the Airlink drivers separately?</td>
<td>N/A</td>
<td>No, they are included in the BFS installation.</td>
</tr>
</tbody>
</table>
As the leading global expert in implantable hearing solutions, Cochlear is dedicated to bringing the gift of sound to people all over the world. For thirty years, Cochlear has pioneered this technology, helping more than a quarter of a million people reconnect to their families and friends.

Along with the industry’s largest investment in research and development, we continue to partner with leading international researchers and hearing professionals, ensuring that we are at the forefront of hearing science.

For our customers, that means access to our latest technologies throughout their lives, and the ongoing support they need.

As your patient’s partner in hearing for life, Cochlear believes it is important to convey not only the benefits, but also the potential risks associated with a Baha procedure.

Not everyone with hearing loss is a candidate for a Baha System. The Baha System is contraindicated in patients with inadequate bone quality or quantity to provide stability and support for the implant, or in patients who will be unable to maintain and clean the skin around the abutment. In the U.S., use of the implanted fixture is also contraindicated in children under age 5 years.

All surgical procedures include an element of risk, and it is impossible to guarantee success. The device may fail to osseointegrate for a number of reasons, including physiological and surgical issues as well as traumatic impact to the implant site. On rare occasions the skin around the abutment may become inflamed from a mild infection or the skin may grow back towards its original thickness. For complete information regarding the risks and benefits of a Baha procedure, please refer to the Instructions for use for the Baha Implant available at www.Cochlear.com/US/BahaIndications

REFERENCES