Using Cochlear technology in the classroom

FOR PARENTS, TEACHERS, AND EDUCATIONAL AUDIOLOGISTS

Contents

Sound processor basics

Resources

This guide is intended as an overview for the use of different wireless technologies in the classroom, but it is not a full instruction guide. Further support and instruction manuals for all of the Cochlear products mentioned may be found at
www.cochlear.com/us

Introduction

Whether they are learning the Pythagorean theorem in a classroom, scoring a run in kickball, or catching up with friends in a busy cafeteria, Cochlear is here to support a superior hearing exerpeince for your students and a seamless integration of Cochlear technology into your classroom. Cochlear is excited by the wide array of options that exists that have the potential to enhance each student's ability to hear inside and outside of the classroom; however, we also recognize that what works for each student may be different. We hope that this guide will assist you in discovering what works for your student(s).

This guide is designed to assist Parents, Teachers, Educational Audiologists, and other school professionals in the selection, fitting and monitoring of assistive wireless technology for each of your students. In the past several years, student's options for wireless connections have expanded, leaving professionals with a continued need for updated information. Cochlear is commited to helping each recipient hear their best. That includes ensuring our young recipients are able to maximize their use of wireless systems in the classroom and supporting schools in their efforts to create a learning environment that reduces stress for teachers while enabling a student to maximize their listening potential.

It is important to note that this guide focuses on the wireless capabilities for maximizing your student's potential. Cochlear encourages you to work in tandem with the child's clinical professionals to consider other strategies that can ultimately help set the child up for success. Common considerations might include the positioning of the student in the classroom, determining how to approach a student who might be apprehensive of using assistive wireless technology due to concerns about their self image, along with exploring how hearing therapy can help to maximize the student's listening potential. We wish you every luck in figuring out how to set your student up for success!

As technology has evolved, the language we use has changed as well. Here are some terms that are used in this guide to discuss wireless technology in the classroom:[1]

Frequency Modulation (FM) System

Traditional remote microphone technology which generally consists of a transmitter used by the speaker (ie, teacher) and a receiver that is coupled to the student's hearing instrument or sound processor; the transmitter sends an FM signal to the receiver

Digital Modulation (DM) System

Newer remote microphone technology in which the transmitter and receiver are connected using digital wireless technology (ie, paired) rather than via a traditional FM signal

Neckloop

A personal assistive listening device which can send a transmitted signal to the individual's personal hearing device (ie, hearing aid or sound processor) via electromagnetic induction or telecoil

Remote Microphone Hearing Assistance Technologies (RM-HAT)

A collective way to refer to all remote microphone systems (ie, both FM and DM systems)

Signal-to-Noise Ratio (SNR)

The amount (in decibels) by which the amplitude of the desired signal (usually speech) exceeds that of an interfering signal

Streaming

The digital transmission of an audio signal to a hearing instrument or sound processor

Remote Microphone Hearing Assistance Technology (RM-HAT) in the classroom[1]

The American National Standards Institute (ANSI) has defined the following appropriate acoustical environments in schools:[2]

Unoccupied classroom levels must not exceed 35 dBA

The signal-to-noise ratio should be at least +15 dB at the child's ears

Unoccupied classroom reverberation must not surpass 0.6 seconds in smaller rooms and 0.7 seconds in larger rooms

Acoustic environment

Environments should be evaluated for their ambient background noise level and reverberation.

The ANSI standards are voluntary and while many schools have adopted the standards, studies have shown that unoccupied classroom noise levels can range from 42–62 dBA[3], much higher than the ANSI standard. Recent studies have looked at classrooms built or renovated within the last decade and found that noise levels still generally exceed the ANSI standards.[4] With attention and modification to heating, ventilation and air conditioning (HVAC) systems, noise levels can be significantly reduced, although this may be expensive to achieve.[3,4] Noise in the classroom can have a significant effect on understanding, listening effort, attention and even teacher stress.[5] Because the acoustic environment is so important and can vary from classroom to classroom, acoustics should be evaluated in each environment. Since remote microphone systems are designed to improve signal-to-noise ratio in difficult listening conditions, they are not generally used in environments that meet the ANSI standards noted above except in special circumstances.

Academic setting

Children in a modern classroom need to hear different things during the school day in a multitude of settings. Students often find themselves in a dynamic learning environment where they meet in small groups, sit together in a large group or interact with classroom technology. Consider a high school student: most of the time, they will probably want to hear the teacher's voice while the teacher lectures. But there will be times they will need to listen to a computer-based assessment or a video in the classroom or an assembly. They may also work in small groups and need to listen to a group of 6–8 of their peers. These needs should all be considered when choosing technology. In contrast, the needs of a child in a pre-kindergarten classroom may be quite different. It may be rare for a kindergartner to sit in a row and listen to the teacher and most of their learning will take place at small stations or in small groups with their peers. RM-HAT must be flexible enough to be used in a variety of settings throughout the school day.

Student characteristics

Social/Emotional: The motivation of the student and the adults supporting the student should be considered when selecting RM-HAT. Social or emotional factors such as self-image and self-advocacy abilities may also have some impact on the decision to use RM-HAT or may inform choice of device. As many educational audiologists know, a student who is resistant to the use of RM-HAT for social reasons may not demonstrate benefit from even the most technologically advanced system.

Age/Cognitive Level: The student's age and cognitive development will have an impact on which devices will be most useful for them in the classroom. Consider a very young child who is unable to care for the equipment or report if they are having issues with their sound. In this case, it will be critical that an adult check the equipment once or twice a day and also perform listening checks with the child to ensure they are hearing well. On the other hand, an older child may be able to check and care for their equipment without daily support.

Cochlear suggests at least 3–6 months of cochlear implant experience prior to FM use. In general, children under five years of age should be very closely monitored when using remote microphone technology due to the possibility that they may not reliably report what they are hearing.

RM-HAT options with Cochlear technology

Microphone options to stream directly to sound processor

Sound Processor(s)	RM-HAT Options				
Nucleus 8 (CP1110)	Mini Microphone 2+ (MM2+)	Universal Receiver with MM2+	Dedicated Receiver: Roger 20	Personal Neckloop System*	
Nucleus 7 (CP1000)	Mini Microphone 2+ (MM2+)	Universal Receiver with MM2+	Dedicated Receiver: Roger 20	Personal Neckloop System*	
Nucleus 6 with Accessory Port (CP910)	Mini Microphone 2+ (MM2+)	Universal Receiver with MM2+	Universal Receiver with Euro Adaptor	Dedicated Receiver: Roger 14	Personal Neckloop System*
Kanso 2 or Kanso	Mini Microphone 2+ (MM2+)	Universal Receiver with MM2+			
Osia 2	Mini Microphone 2+ (MM2+)	Universal Receiver with MM2+			
Baha 6 Max	Mini Microphone 2+ (MM2+)	Universal Receiver with MM2+			
Baha 5	Mini Microphone 2+ (MM2+)	Universal Receiver with MM2+			

* Neckloop fittings will not be covered in detail in this guide. All Nucleus Behind-the-Ear Sound Processors (Nucleus 8, Nucleus 7, Nucleus 6, Nucleus 5) have telecoil capability. See the overview of each sound processor for details on how to activate the telecoil. Note that for some sound processor (Nucleus 8, Nucleus 7 and Nucleus 6) the telecoil has to be enabled during programming of the sound processor to be available for use. Please follow guidelines from the manufacturers for the neckloops (ie, Phonak myLink or Oticon Arc) for further guidance in setting up these systems.
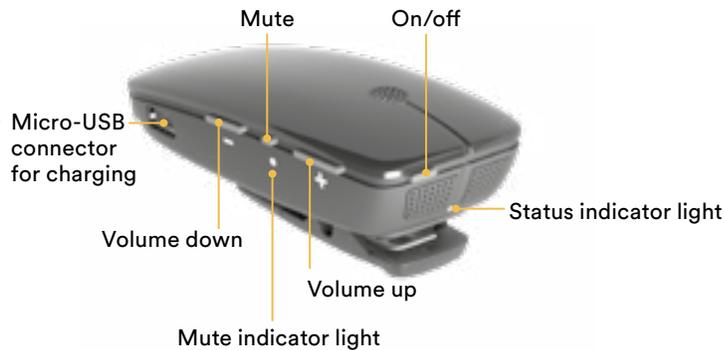
Mini Microphone 2+ (MM2+)

The portable wireless clip-on microphone is used to transmit speech and sound directly to the sound processor without the need for any extra devices—no cables, cords or necklaces.

- ✓ Inexpensive compared to other systems.
- ✓ Stream sound directly to any student with a Cochlear sound processor, ReSound hearing aid, or a classroom full of such users.
- ✓ Extended audio input capabilities, including a built-on microphone, telecoil, line-in direct audio input, and FM connectivity.

Mute   On/off

Charge the battery

Recharges in 3 hours with included charger. Up to 11 hours of talk time on a single battery charge.*

Micro-USB connector for charging

Volume down

Volume up

Mute indicator light

Status indicator light

Clip

Pairing button

Mode button

Built-in microphone mode light

Battery level

Press and hold the mode button. The mode lights will flash to indicate charge level.
4 lights = 100% charge
3 lights = 75% charge
2 lights = 50% charge
1 light = 25% charge

Telecoil mode light

Line-in mode light

FM mode light

FM connector

Line-in connector

Telecoil

A built-in telecoil can be used to pick up audio from a room loop or personal loop system.

Change mode

To view the current mode of operation, press the mode button once. The indicator light of the current mode will light up.

To change the mode, press the mode button again until the indicator light of the desired mode is lit.
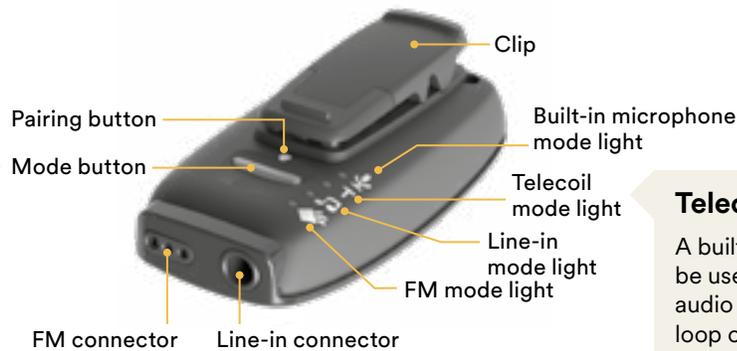
FM connectivity

Use with a Europin device such as a universal receiver.

Line-in direct audio input

A 3.5 mm audio port on the bottom of the MM2+ can be used to connect to external audio sources such as TVs, smart boards, laptops, etc.

* Battery life may vary depending on use.

Built-in microphone mode

There are two ways to use the MM2+ built-in microphone:

A **For improved one-to-one communication over a distance or in a noisy environment:**
Clip the MM2+ upright on the speaker, **6 inches or less** from their mouth. This streams their speech directly to paired Cochlear sound processor(s) and/or ReSound hearing aid(s) while reducing background noise.

B **For improved small group discussion:**
Place the MM2+ flat on a table or other surface. This streams audio from all directions directly to paired Cochlear sound processor(s) and/or ReSound hearing aid(s).

Upright
Captures sound from one speaker and reduces background noise

Laying flat
Captures sound from all directions

Tips for use

- MM2+ has a range of over 80 feet with clear line of sight.
- When something is first plugged in, the MM2+ will automatically switch to that source. Use the mode button to switch audio sources.
- If the MM2+ is out of range of the processor, the processor will automatically switch out of streaming mode in 5 minutes; it will not automatically switch back into streaming mode if 5 minutes has passed, so the user will need to activate streaming when they want to listen to the MM2+ again.
- One MM2+ may be paired to multiple hearing instruments or sound processors; one sound processor may be paired with up to three MM2+.

Universal receiver with MM2+

- ✓ Can use a universal receiver with Europin connection (e.g. Phonak Roger) so purchase of a receiver dedicated to each processor is not necessary.
- ✓ User can flip easily between universal receiver input and other audio sources or MM2+ input.
- ✓ MM2+ with a single universal receiver streams to any student with a Cochlear sound processor, ReSound hearing aid, or a classroom full of such users.
- ✓ Preserves sound processing from universal receiver system and delivers it directly to the processor.

Steps for fitting

1. Before first use, pair the MM2+ and processor.

2. Configure the universal receiver according to manufacturer instructions.

3. To begin using, plug the universal receiver into the MM2+ then have the user start streaming.

Instructions for pairing a sound processor to MM2+:

- **Nucleus 8 and 7 Sound Processors**
- **Kanso 2 Sound Processor**
- **Osia 2 Sound Processor**
- **Baha 6 Max Sound Processor**
- **Baha 5 Sound Processor**

Sound processor pairing videos:

Click for more information

For more information on any of the features and functions of the MM2+, please see the user manual:

Click for more information

- The MM2+ will not automatically start or stop streaming when the transmitter is turned on or off; ensure the user manually starts and stops streaming when necessary.
- Data logging for this configuration will be shown as MM2+ usage rather than "FM" usage.

Tips for use

Remote controls & apps

Accessories	Compatible Sound Processors	Processor Controls Available	Monitoring Available	Notes
CR310 Remote Control	Nucleus 8 Nucleus 7 Kanso 2	• Volume or sensitivity • Program changes • Streaming	• None	Symbol on the LCD for accessory is the same no matter which accessory is connected
CR230 Remote Assistant	Kanso Nucleus 6	• Volume • Sensitivity • Program changes • Mixing ratio • Streaming selection	• Coil on/off • Battery alerts • Audio meter • Accessory advantage • Visual verification of RM-HAT	Remote must be in "advanced mode" for mixing ratio to be accessible
CR210 Remote Control	Kanso Nucleus 6	• Volume or sensitivity • Program changes • Streaming	• None	Symbol on the LCD for accessory is the same no matter which accessory is connected
Remote Control 2	Osia 2 Baha 6 Max Baha 5 Baha 5 Power Baha 5 SuperPower	• Volume • Program changes • Streaming selection	• Battery alerts	
Nucleus Smart App*	Nucleus 8 Nucleus 7 Kanso 2	• Volume • Sensitivity • Program changes • Mixing ratio • Streaming selection	• Coil on/off • Battery alerts • Audio meter • Hearing tracker • Visual verification of RM-HAT	Requires creation of a patient or caregiver account Available for iOS and Android devices
Osia Smart App*	Osia 2	• Volume • Program changes • Mixing ratio • Streaming selection • Troubleshooting	• Battery alerts • Sound processor status and usage	Requires creation of a patient or caregiver account Available for iOS and Android devices
Baha Smart App*	Baha 6 Max	• Volume • Program changes • Mixing ratio • Streaming selection	• Battery alerts • Sound processor status and usage	Requires creation of a patient or caregiver account Available for iOS and Android devices
Baha 5 Smart App*	Baha 5 Baha 5 Power Baha 5 SuperPower	• Volume • Program changes • Mixing ratio • Streaming selection	• Battery alerts • Sound processor status and usage	Creation of a patient account is not required Available for iOS and Android devices

⧉ Click for more information

* For the most current list of compatible devices and instructions on pairing: www.cochlear.com/compatibility

Cochlear remote controls

These remotes allow your student to discreetly adjust volume/programs without needing to touch the processor.

CR310 Remote Control

- ✓ Allows your student to adjust commonly-used functions, such as:
    - Change programs
    - Turn volume or sensitivity (if available) up and down
    - Control audio streaming from wireless devices
    - Turn telecoil on and off (if enabled)*

- ✓ Controls up to two Nucleus 8, Nucleus 7, or Kanso 2 Sound Processors (bilateral); or one of each at the same time.

Steps for pairing

To pair Nucleus 8 or Nucleus 7 sound processor: Turn on Remote. Hold coil to back of remote until pairing is complete

To pair Kanso 2 sound processor: Turn on Remote. Hold sound processor to the back of the remote until pairing is complete.

Enable Telecoil/ Streaming to wireless accessories

Volume up

Change programs

Volume down

Powered with disposable CR2032 or 5004LC 3V standard lithium coin cell batteries

Remote Control 2

- ✓ Allows your student to adjust commonly-used functions, such as:
    - Change programs
    - Turn volume up and down
    - Control audio streaming from wireless devices

- ✓ Controls up to two Baha Sound Processors or two Osia 2 Sound Processors (bilateral) at the same time.

Steps for pairing

1. Make sure the Remote Control 2 is fully charged and is turned ON. Switch off the Baha Sound Processor.

2. Press the pairing button on the Remote Control 2 once using the tip of a pen or similar object. The 'search' icon will display on the screen and the Remote Control 2 will now be in pairing mode for 20 seconds.

3. While pairing mode is active, you can switch on the sound processor. Successful pairing will be indicated by an audible melody played in the sound processor.

Home
On/off
Change programs
Select left processor only
Pairing button

Volume up
Mute
Select right processor only
Streaming
Volume down

Micro-USB connector for charging
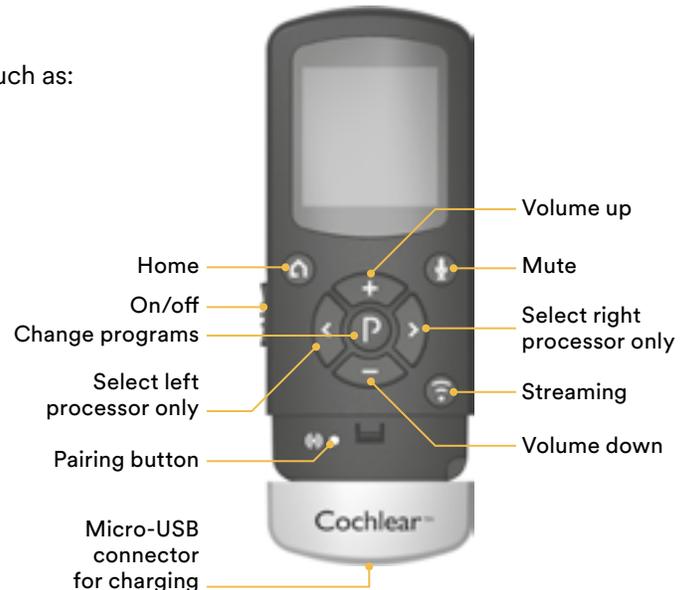
✧ **Click for more information**

* The Kanso 2 Sound Processor does not have an integrated telecoil but it can be connected to assistive listening devices utilizing the telecoil functionality of the Mini Microphone 2+. The telecoil of the Mini Microphone 2+ is optimized for room loop use.

13

Apple® and Android™ devices
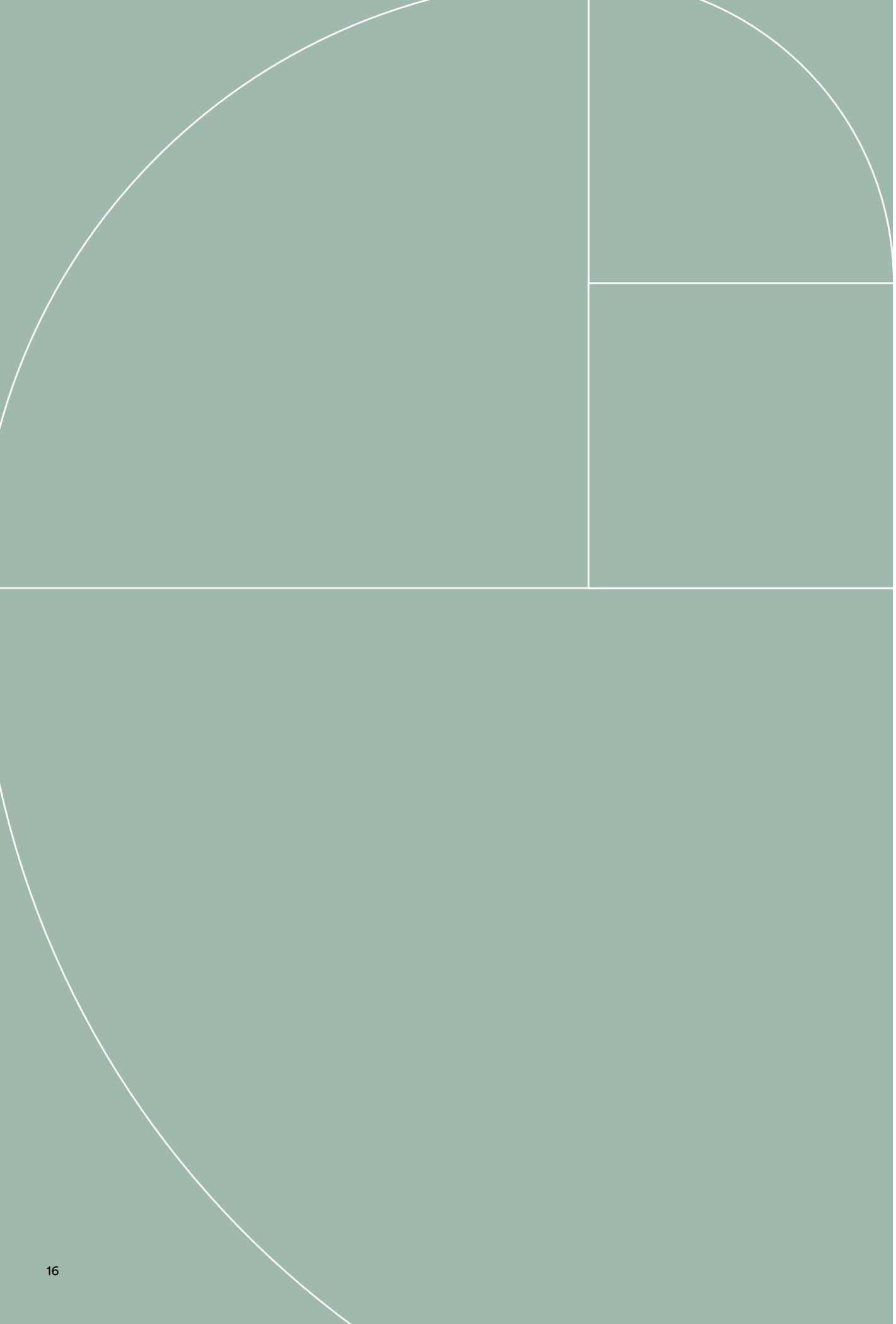
Direct-to-device streaming technology

Students with Nucleus 8, Nucleus 7, Kanso 2, Osia 2 or Baha 6 Max Sound Processors can stream audio directly from compatible Apple or Android* devices. Students may independently utilize controls and features on their smart phone or other compatible device by using a Nucleus, Osia or Baha Smart App or built-in features on a smart phone, Apple Watch, or iPad.

*For the most current list of compatible devices and instructions on pairing:
www.cochlear.com/compatibility

Made for
🍎 iPhone | iPad | iPod

android 🤖

Nucleus® 8 Sound Processor
(CP1110)

Nucleus 7 Sound Processor
(CP1000)

Nucleus 8 Slimline coil
(includes cable)

Magnet

Microphone cover

Microphones

Indicator light

Control button

Processing unit

Earhook

Serial number

Battery

Tamper-resistant lock

Smaller, smarter, and better connected. The Nucleus 8 Sound Processor offers direct streaming to compatible Apple and Android devices. Students can stream sound directly to their sound processor, control and manage their settings, track their data and locate a lost sound processor. Students can also access Cochelar's True Wireless accessories including the Mini Microphone 2+. The Nucleus 8 Sound Processor features enhanced SmartSound® iQ 2 with SCAN 2* technology which more accurately senses changes in a student's listening environment and automatically adjusts their hearing settings to deliver clearer sound. When Bluetooth® LE Audio technology becomes available, a firmware update will allow your student to connect their Nucleus 8 Sound Processor to compatible devices. This will make it easier for students to bring sound closer—in more places and from more devices than ever before.

* SCAN 2 SCAN, SNR-NR and WNR are approved for use with any recipient ages 6 years and older, who is able to 1) complete objective speech perception testing in quiet and in noise in order to determine and document performance 2) report a preference for different program settings. SCAN is FDA approved for use with any recipient age 6 years old and older, to be used at the discretion of the recipient/parent/caregiver.

Nucleus Sound Processor basics

Remove/attach rechargeable battery

1. Twist the battery module as shown to release it from the processing unit.

2. Pull the battery module from the processing unit.

3. Align raised marker and arrow on battery module towards back of processing unit.

4. Twist the battery module as shown to attach the parts. The processor turns on automatically.

Change disposable batteries
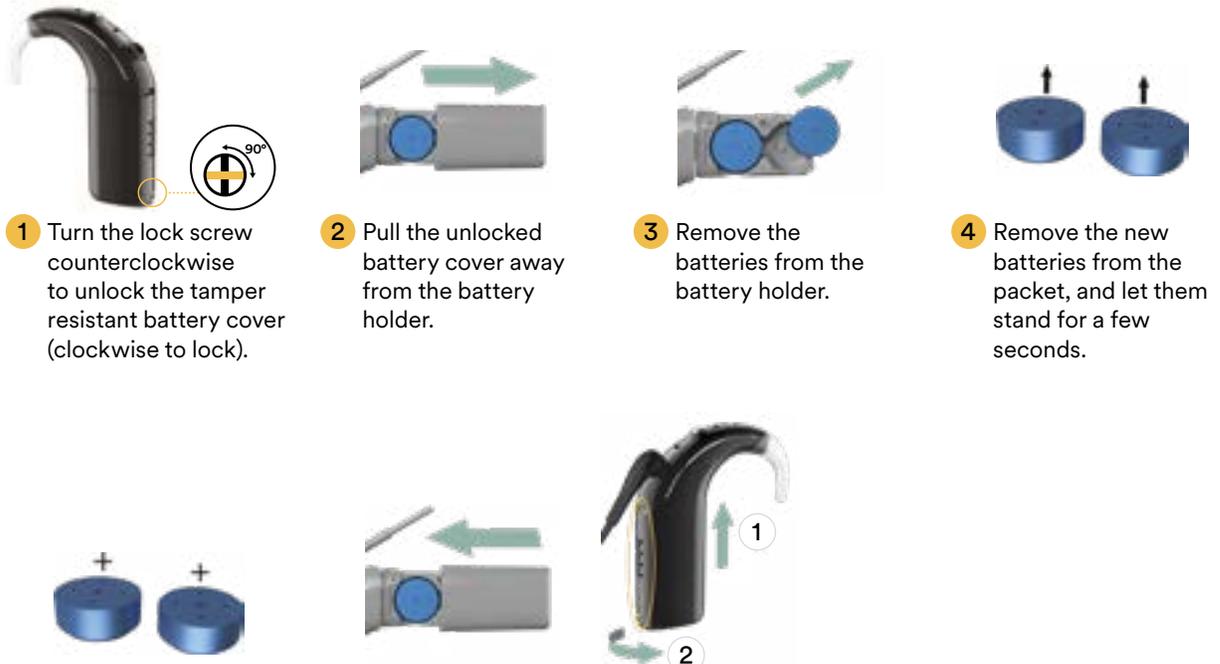
1. Turn the lock screw counterclockwise to unlock the tamper resistant battery cover (clockwise to lock).

2. Pull the unlocked battery cover away from the battery holder.

3. Remove the batteries from the battery holder.

4. Remove the new batteries from the packet, and let them stand for a few seconds.

5. Insert the batteries into the battery holder with the flat side (positive terminal) facing up.

6. Replace the battery cover by sliding it up towards the processing unit. Lock the cover if required. Your sound processor will automatically turn on.

⚠️

WARNING

Never put batteries in your mouth. If swallowed, immediately contact your physician or local poison information service.

Turn on or off

To turn on, either:

- Connect the battery (see above), or
- If the battery is already connected, short-press the button.

To turn off, either:

- Disconnect the battery (see above), or
- Press and hold the button for 5 seconds. The light will change to steady **orange** as the processor turns off.

Telecoil

- Press and hold the button for 2 seconds then release to turn on telecoil.
- Short press the button to turn off telecoil.

Note: Telecoil must be enabled by the clinician.

Blue: telecoil/accessory is working

Green: telecoil/accessory is off

Enable wireless streaming

- Press and hold the button for 2 seconds then release to stream audio. Press and release again if you need to cycle to the next audio source.
- Short press the button to stop streaming.

Blue: streaming audio

Green: flashing green means telecoil is not in use

Audio signals

A hearing care professional may have set up your student's processor so they can hear the following audio signals. The sounds are only audible to the recipient when the processor is attached over the implant.

General signals
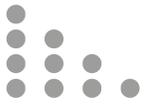
Audio signals	What it means
1–4 short high beeps	Change program. Number of beeps indicates the number of the current program.
1 short high beep	Volume level increased/decreased by one step
1 short high then 1 short low beep	Volume limit reached
1 low beep	Processor button is locked
1 short high then 1 short low beep	Locking processor button
1 short low then 1 short high beep	Unlocking processor button
1 long high beep	Switching between using the microphones and telecoil
2 short low beeps	Processor batteries are low. Change batteries.
Short low beeps for 4 seconds	Batteries are empty and processor is turning off. Change batteries.
4 long low beeps over 4 seconds	General fault. Consult your student's caregiver or clincian.

Wireless signals

Audio signals	What it means
Ripple tone in upward melody	Connecting with wireless accessory to begin streaming audio
1 short low beep	Wireless streaming stopped

Indicator lights

Everyday use

Light	What it means
	Processor flashes while receiving sound from microphones (child mode only)
	Turning on and changing programs. Number of flashes indicates the number of the current program.
	Turning off processor

Streaming audio

| Light	What it means
	Processor flashes when pairing to wireless accessory is successful
	Processor flashes while receiving audio from an audio source (child mode only)

Locking button

Light	What it means
	Locking processor button
	Unlocking processor button
	Processor button is locked

Alerts

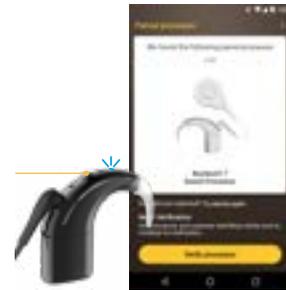| Light	What it means
	Processor flashes while it is off the recipient's head (or connected to the wrong implant)
	Processor batteries are low. Change batteries.
	Fault. Contact your student's carergiver or clinician. Stays on until the issue is resolved.

Pair with a compatible Apple device

The Nucleus 7 and Nucleus 8 Sound Processors are Made for iPhone®/iPod® hearing devices.
This allows your student to use the control and audio streaming functions of compatible Apple devices.

N8 N7
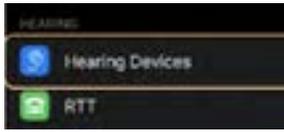
1. To pair with a compatible Apple device: Open 'Settings', select 'Accessibility' and then select 'Hearing Devices'.

2. Turn the sound processor(s) off, then on.

3. Select the name of the processor on the iOS pairing menu and once the connection has been established, accept pairing. When pairing starts, the processor will flash **blue** for 4 seconds and sound 6 beeps.

4. The sound processor will flash **blue** for 4 seconds and sound a ripple tone when pairing to the compatible Apple device has been successful.

Pair with a compatible Android device

The Nucleus 7 Sound Processor is compatible with the ASHA (Audio Streaming for Hearing Aid) protocol. This allows your student to use the audio streaming functions of compatible Android devices.

1. Switch on Bluetooth® on the Android smartphone. Tap the Nucleus Smart icon to start the app.

2. Turn the processor off. As the processor turns off, the light changes to steady **orange**.

3. Place the sound processor into pairing mode by turning it on.

4. When the processor(s) display, tap the screen once to start pairing. Tap Verify processor within the App. Follow the screen prompts to Verify the sound processor(s).

For the most current list of compatible devices and additional instructions on pairing:
**www.cochlear.com/compatibility**

Pair with a Mini Microphone 2+ (MM2+)

1 Remove the sound processor from the ear. Disconnect the battery.

2 Turn on the MM2+.

3 Place the wireless device in 'pairing mode' by gently using a pen to press once on the pairing button. The status indicator light will flash yellow and the MM2+ will be in pairing mode for 20 seconds.

**Note:** pressing once pairs to first accessory channel. Pairing to the second and third channel requires two and three presses of the pairing button respectively.

4 While pairing mode is active (20 seconds), attach the battery to the Nucleus 7 Sound Processor. A **blue** indicator light flashes to show that pairing has been successful.

MM2+ streaming

For the sound processor to receive signal from the MM2+, streaming must be turned on. Streaming may be turned on in one of three ways (shown below):

### MM2+ streaming using the button on the sound processor
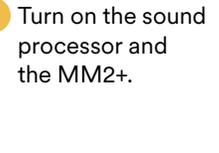
1 Turn on the sound processor and the MM2+.
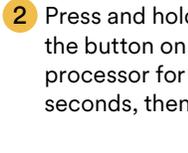
2 Press and hold the button on the processor for 2 seconds, then release.

**3** A **blue** light on the processor will indicate that streaming has started.

MM2+ streaming using the Remote Control (CR310)
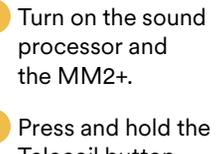
1 Turn on the sound processor and the MM2+.

2 Press and hold the Telecoil button for 2 seconds, then release. Audio will start streaming through the MM2+.

3 To stop streaming, tap the Telecoil button.

Telecoil button

MM2+ streaming using the Nucleus Smart App
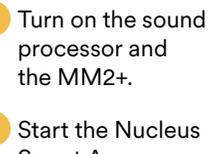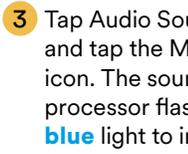
1 Turn on the sound processor and the MM2+.

2 Start the Nucleus Smart App.
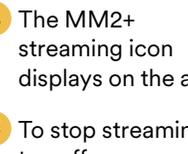
3 Tap Audio Sources and tap the MM2+ icon. The sound processor flashes a **blue** light to indicate streaming
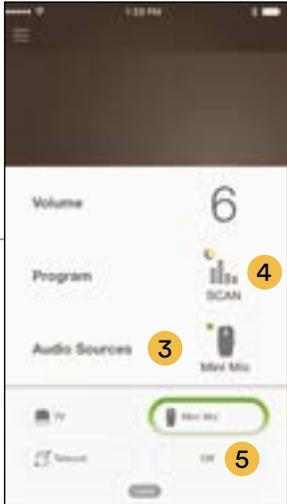
4 The MM2+ streaming icon displays on the app.
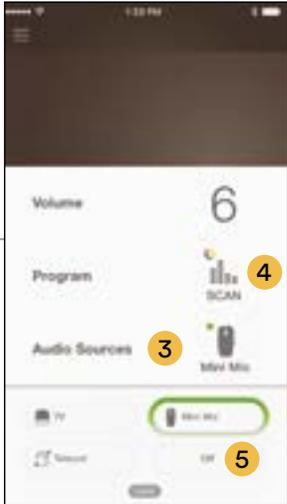
5 To stop streaming, tap off.
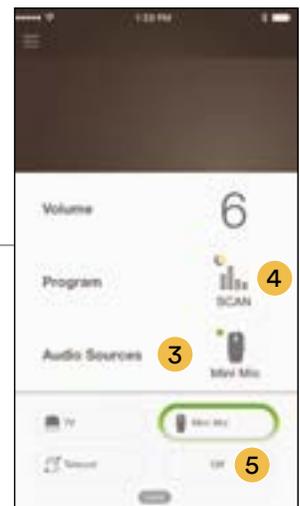
Dedicated receiver (Phonak Roger™ 20)

✓ AutoFM feature is utilized on the sound processor; whenever the transmitter is turned on or off by the teacher, the receiver is automatically activated or deactivated.

✓ FM use may be monitored independently in the data logging (ie, not included in the accessory streaming data).

Steps for fitting

1 Disconnect the battery from the Nucleus 8 or Nucleus 7 Sound Processor.

2 Connect the Roger 20 to the sound processor, then connect the battery to the Roger 20.

3 Set up the Roger system according to manufacturer guidelines.

⚠️

WARNING

Some accessories that fit between the sound processor and the battery module prevent the battery module from being locked to the sound processor, which means the battery module can be removed and poses a choking or ingestion hazard. Always supervise.

Visual check

On a student's paired smart phone, input from connected devices can be checked. You can also check if sound is transmitting to one or both sound processors. Visually confirming device function can be used to confirm bilateral signal vs. unilateral signal reception from RM-HAT technology or other wireless devices.

- ✓ Monitor device connection for young children
- ✓ Troubleshoot connections to RM-HAT devices

Visual verification of streaming with MFi (Made for iPhone)

1. Open compatible iOS device. Tap on the Settings icon.

2. Select the Accessibility menu, then Hearing Devices.

3. To ensure connectivity to Roger 20 system or MM2+, confirm a checkmark next to the Roger 20/or MM2+ menu option.
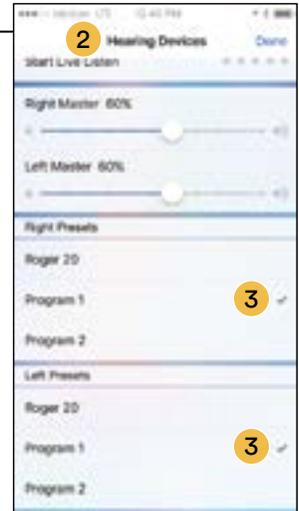
Visual verification of Roger 20 streaming through Nucleus Smart App

1. As soon as transmitter is turned on, the processor connects.

2. Open compatible Nucleus Smart App.

3. Review the Home Screen, and review the Audio Source.

4. If the FM is transmitting, a **green** dot will appear next to Roger 20.

5. If FM is not sending signal, or is in standby, a gray dot will appear next to the Roger 20.
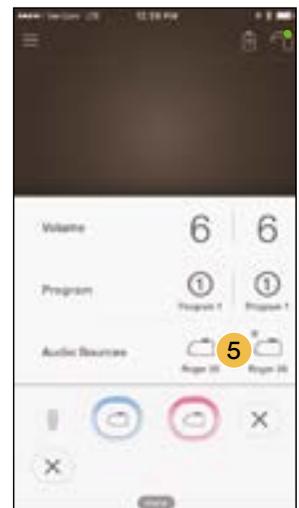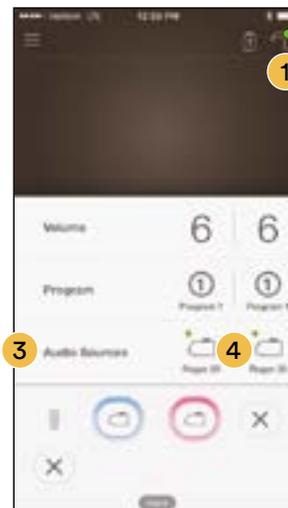
Monitor Earphones

Monitor Earphones may be used with Nucleus 8 and Nucleus 7 Sound Processors to allow non-users to listen to the input from the sound processor microphone. They may also be used to listen to the input from RM-HAT technology or other wireless devices.

- ✓ Confirm the RM-HAT signal is audible
- ✓ Routinely monitor N7 microphone input for young children
- ✓ Troubleshoot any device concerns

Steps for fitting

1. Disconnect the battery from the sound processor.

2. Connect the monitor earphone adaptor to the sound processor.

3. Connect the battery to the monitor earphone adaptor.

4. Plug earphones into 3.5mm jack of adaptor (any non-noise canceling earphones can be used). You are now listening to the microphones of the processor; to listen to streaming (ie, MM2+), simply start streaming on the processor.
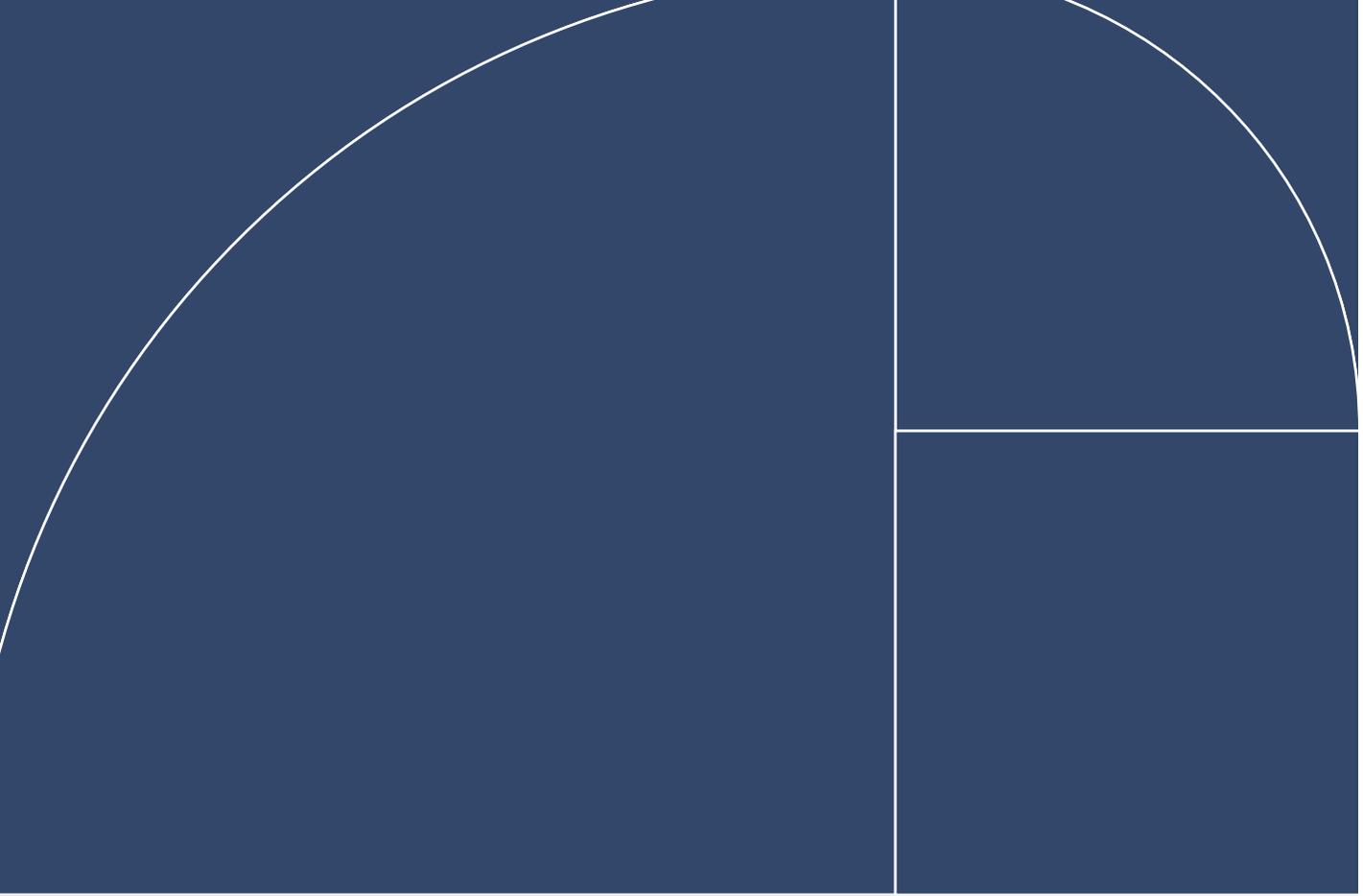
5. To connect the Roger 20 receiver to the monitor earphones, connect in the order shown to the right.
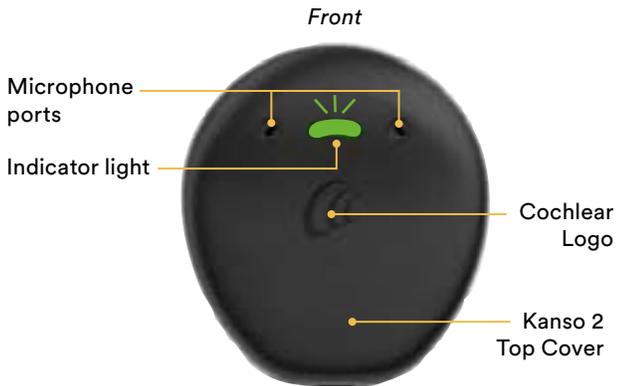
Roger 20 receiver

Monitor earphone adaptor

Battery module

⚠️ **WARNING**

Some accessories that fit between the sound processor and the battery module prevent the battery module from being locked to the sound processor, which means the battery module can be removed and poses a choking or ingestion hazard. Always supervise.
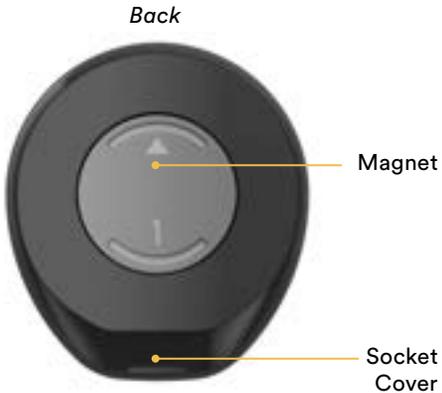
Kanso® 2 Sound Processor
(CP1150)

Front

Microphone ports

Indicator light

Cochlear Logo

Kanso 2 Top Cover

Back

Magnet

Socket Cover

The Kanso 2 Sound Processor is an all-in-one off-the-ear sound processor with equal connectivity and hearing performance options to the Nucleus 7 Sound Processor. The Kanso 2 contains a processing unit, microphones, coil, magnet and internal battery. The processor can be controlled by using the Nucleus® Smart App ('app') or a Cochlear CR310 Remote Control ('remote'). For more information on using the app or remote please refer to the user guides.

Kanso 2 Sound Processor basics

Charging options

Home Charger

- The processor charges wirelessly while being stored in the powered Home Charger provided by Cochlear.
- Store the fully assembled processor overnight for optimal drying effect.

Portable Charger for on-the-go use

Turn on or off

Auto-on:

- Place processor on head or
- Double-tap (2 taps – quick and firm)

As the processor turns on, the light flashes **green**.

Auto-off:

- Remove it from the head and wait 2 minutes (if enabled by a clinician) or
- Triple-tap (3 taps – quick and firm)

As the processor turns off, the light changes to steady **orange**.

Audio signals

A hearing care professional may have set up your student's processor so they can hear the following audio signals. The sounds are only audible to the recipient when the processor is attached over the implant.

General signals

Audio signals	What it means
1–4 short high beeps	Change program. Number of beeps indicates the number of the current program.
1 short high beep	Volume level increased/decreased by one step
1 short high then 1 short low beep	Volume limit reached
2 short low beeps	Processor batteries are low. Recharge the processor.
Short low beeps for 4 seconds	Batteries are empty and processor is turning off. Recharge the processor.
4 long low beeps over 4 seconds	General fault or if Portable Charger attached, charging error. Consult your student's caregiver or clinician.

Wireless signals

Audio signals	What it means
3-tone chime	Connecting with wireless accessory to begin streaming audio
1 short beep	Wireless streaming stopped

Indicator lights

Everyday use

| Light	What it means
Quick green flashes	Processor flashes while receiving sound from microphones (child mode only)
Quick green flashes	Turning on and changing programs. Number of flashes indicates the number of the current program.
Long flash of orange	Turning off processor

Alerts

Light	What it means
Flash of orange every second	Processor flashes while it is off the recipient's head (or connected to the wrong implant)
Orange flashes	Processor batteries are low. Change batteries.
Steady orange	Fault. Contact your student's caregiver or clinician. Stays on until the issue is resolved.

Pair with a compatible Apple device

The Kanso 2 Sound Processor is a Made for iPhone® / iPod® hearing device. This allows your student to use the control and audio streaming functions of compatible Apple devices.

1 Turn the processor off. As the processor turns off, the light changes to steady **orange**.
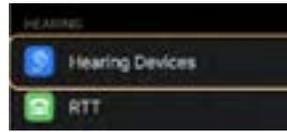
2 To pair with a compatible Apple® device: Open 'Settings', select 'Accessibility' and then select 'Hearing Devices'.

3 While the Apple device is searching for compatible hearing devices, place the sound processor into pairing mode by turning it on.

4 Select the name of the processor on the iOS pairing menu and once the connection has been established, accept pairing. The sound processor will flash **blue** when pairing to the Apple device has been successful.

Pair with a compatible Android device

The Kanso 2 Sound Processor is compatible with the ASHA (Audio Streaming for Hearing Aid) protocol. This allows your student to use the audio streaming functions of compatible Android devices.

1 Switch on Bluetooth on the Android smartphone. Tap the Nucleus Smart icon to start the app.

2 Turn the processor off. As the processor turns off, the light changes to steady **orange**.

3 Place the sound processor into pairing mode by turning it on.

4 When the processor(s) display, tap the screen once to start pairing. Tap Verify processor within the App. Follow the screen prompts to Verify the sound processor(s). The sound processor will flash **blue** when pairing to the Android device has been successful.

For the most current list of compatible devices and additional instructions on pairing:
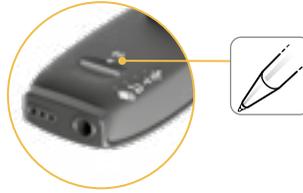**www.cochlear.com/compatibility**

K2

Pair with a Mini Microphone 2+ (MM2+)

1 Turn the processor off. As the processor turns off, the light changes to steady **orange**.

2 Turn on the MM2+.

3 Place the wireless device in 'pairing mode' by gently using a pen to press once on the pairing button. The status indicator light will flash yellow and the MM2+ will be in pairing mode for 20 seconds.

Note: pressing once only pairs to first accessory channel. Pairing to the second and third channel requires two and three presses of the pairing button respectively.

4 While the wireless device is in pairing mode, turn the sound processor on to allow it to be discoverable by the wireless device. The sound processor will flash **blue** when pairing to the wireless device has been successful.

MM2+ streaming

For the sound processor to receive signal from the MM2+, streaming must be turned on. Streaming may be turned on in one of two ways (shown below):

MM2+ streaming using the Remote Control (CR310)

1 Turn the sound processor off by tapping it three times. The light will change to **orange**.

2 Turn the sound processor on by simply tapping it twice.

3 Turn the remote control on and place the back of the sound processor on the back of the remote control. The sound processor will flash **green** and the remote control will display the program number and loudness to confirm pairing was successful.
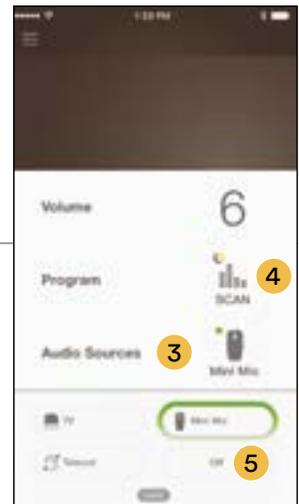
MM2+ streaming using the Nucleus Smart App

1 Turn on the sound processor and the MM2+.

2 Start the Nucleus Smart App.

3 Tap Audio Sources and tap the MM2+ icon. The sound processor flashes a **blue** light to indicate streaming

4 The MM2+ streaming icon displays on the app.

5 To stop streaming, tap off.

Sound Check

Monitor the sound quality of microphone input using Sound Check for the Kanso 2 Sound Processor. Before using Sound Check, make sure you are in a quiet environment and away from other devices that could cause intereference such as microwaves, other Bluetooth devices or wireless routers. There are in-app instructions and tips to help you obtain a good quality recording.

K2

1 Open the Nucleus Smart App and tap the processor status icon to open the status screen.

2 Tap the Sound Check icon to open Sound Check.

**3** If the recipient wears two processors, select the sound processor side you want to test.

4 Tap the microphone button to begin recording sound from the sound processor microphones. The recipient will hear a tone sequence at the start of recording and, while recording, the sound processor light will stay a steady **blue**.

5 The recording time is displayed on the screen. The maximum recording time is 30 seconds.

6 Tap the stop button to finish recording. The recipient will hear the sound processor beep at the end of the recording.
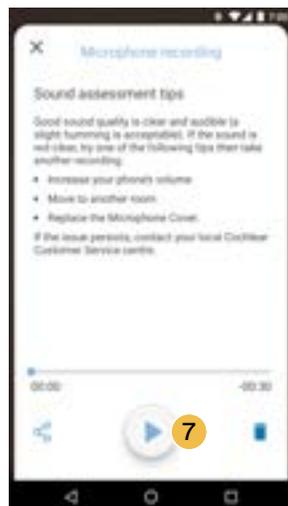
7 Tap the play button to listen to your recording to assess the quality of sound that the Kanso 2 Sound Processors are recieving. Recordings are saved on the smartphone until the user chooses to delete them.
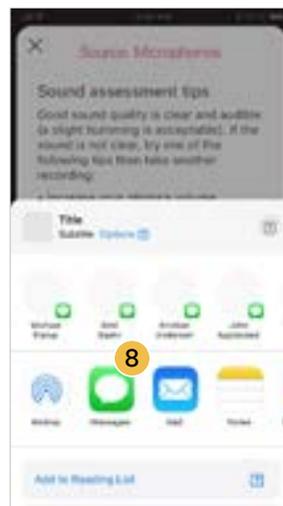
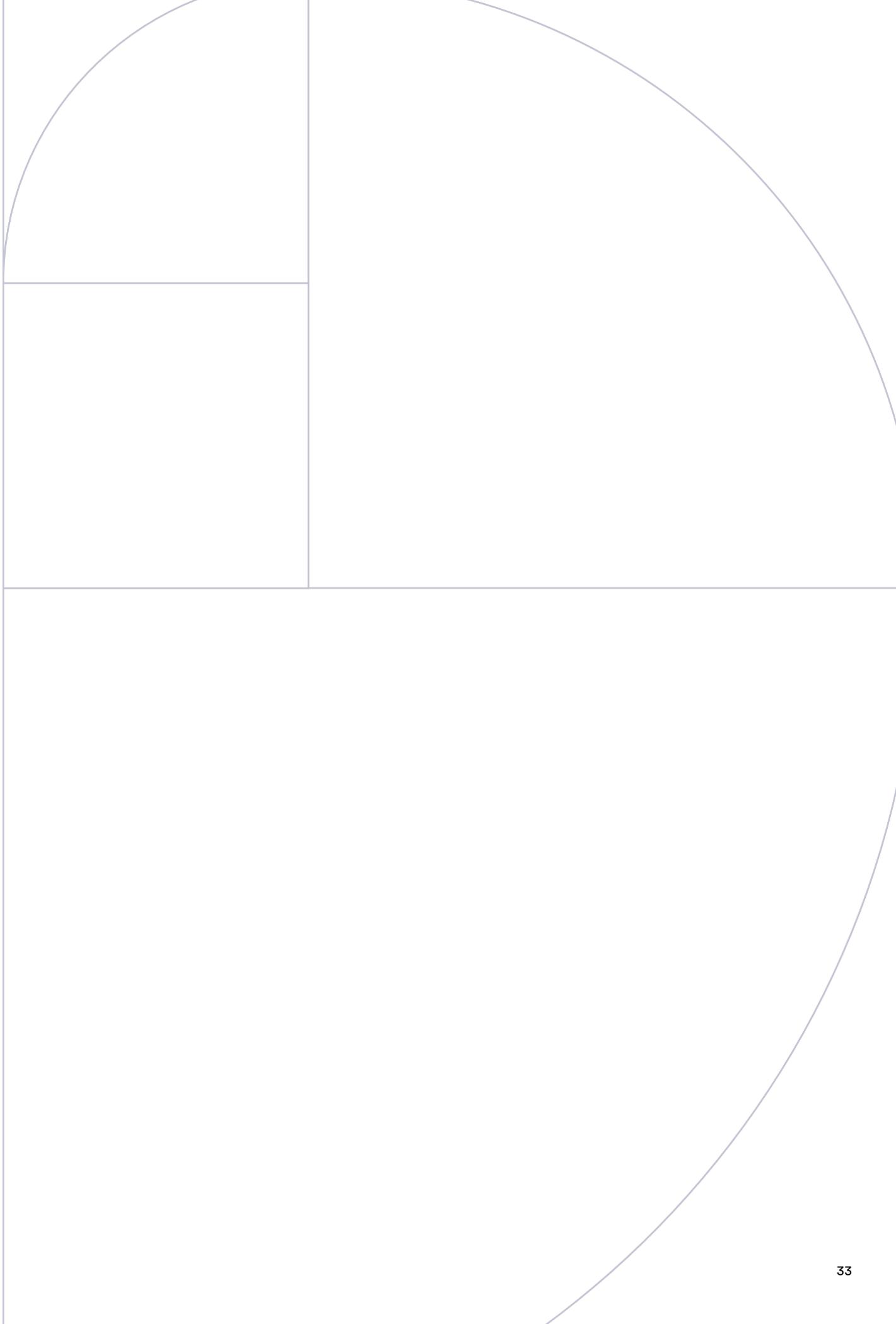**8** Recordings can be shared via messages on the smartphone.
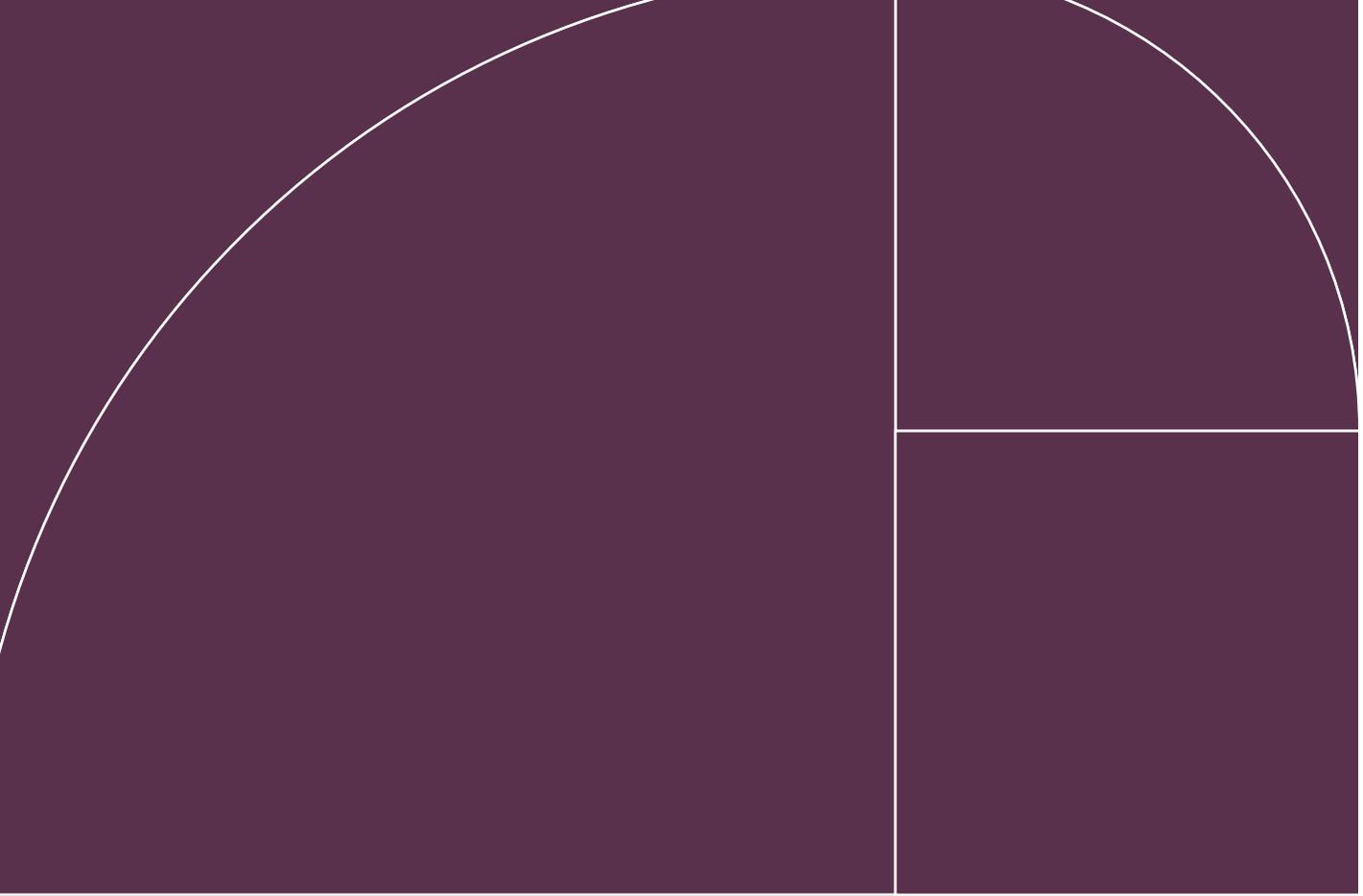
31

K2

Visual check

On a student's paired smart phone, input from connected devices can be checked. You can also check sound is transmitting to one or both sound processors if a student has a hearing implant on both ears.

- ✓ Monitor device connection for young children
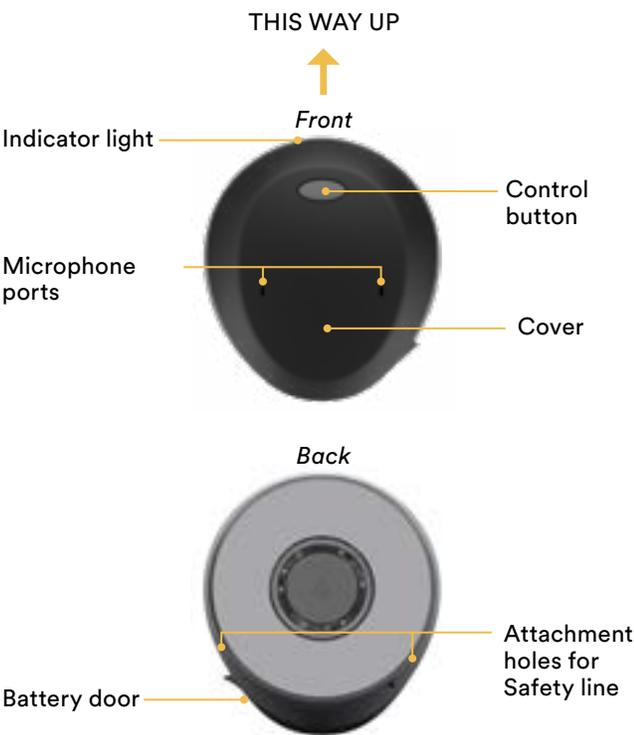- ✓ Troubleshoot connections to RM-HAT devices

Visual verification of streaming with MFi (Made for iPhone)

1 Open compatible iOS device. Tap on the Settings icon.

2 Select the Accessibility menu, then Hearing Devices.

3 To ensure connectivity to MM2+, confirm a checkmark next to the MM2+ menu option.

Osia® 2 Sound Processor

THIS WAY UP
↑

Front

Indicator light ————

Control button

Microphone ports ————

Cover

Back

Attachment holes for Safety line

Battery door ————

The slim, off-the-ear Osia 2 Sound Processor is light and comfortable to wear. As an all-in-one unit, a student simply places it on their head, behind the ear, adjusts their hair and they are ready to go. There are no small pieces to bother with and their ear is left open and free.

Additionally, the Osia System has a fitting range of up to 55 dB SNHL. This means it can address a wide range of hearing loss levels to help your student hear better now, and in the future.

In the United States, the Osia 2 System is cleared for children ages twelve and older.
In Canada, the Osia 2 System is approved for children ages five and older

Osia 2 Sound Processor basics

Change the battery

The Osia 2 Sound Processor uses a high power 675 (PR44) zinc air disposable battery designed for hearing implant use.

1 Hold the sound processor with the front facing you. Open the battery door until it is completely open.

2 Remove the old battery. Dispose of the battery according to local regulations.

3 Remove the sticker on the + side of the new battery and let it stand for a few seconds. Insert the new battery with the + sign facing upwards in the battery door.

4 Gently close the battery door.

Lock and unlock the battery door

You can lock the battery door to prevent it from opening accidentally (tamper-proof). This is recommended when the sound processor is being used by a child.

To lock the battery door:
Close the battery door and place the Tamperproof tool into the battery door slot. Slide the locking pin up into place.

To unlock the battery door:
Place the Tamperproof tool into the battery door slot. Slide the locking pin down into place.

Click for more information

⚠️

CAUTION

If a standard 675 battery is used, the device will not function.

⚠️

WARNING

Batteries can be harmful if swallowed, put in the nose or in the ear. Be sure to keep your batteries out of reach of small children, other recipients in need of supervision and household pets. In the event of a battery being swallowed, put in the nose or in the ear, seek immediate medical attention at the nearest emergency center.

Turn on or off

To turn on:

The Osia 2 Sound Processor is turned on when the battery door (located at the bottom of the processor) is closed. If enabled, and attached to the implant, audio signals will let your student know that the device is starting up.

It will automatically go into sleep mode after you remove it from your student's head (~30 seconds). When it is attached again, it will automatically turn on again within a few seconds. As sleep mode will still consume some power, the device should be turned off when not in use.

To turn off:

The processor is turned off when the battery door is open.

Change volume

A hearing care professorial has set the volume level for your student's sound processor.

Your student can adjust the volume level with a compatible Cochlear remote control, Cochlear Wireless Phone Clip, iPhone, iPad or iPod touch.

Enable wireless streaming

Activate wireless audio streaming

Press and hold the control button on the sound processor until you hear an audio signal.

Deactivate wireless audio streaming

Press and release the control button on the sound processor. The sound processor will return to the previously used program.

02 Audio signals

A hearing care professional may have set up your student's processor so they can hear the following audio signals. The sounds are only audible to the recipient when the processor is attached over the implant.

General signals

Audio signals	What it means
● ● ● ● ● 5 beeps	Start up
● ● ● ● ● ● ● ● ● ● 1–4 beeps	Change program. Number of beeps indicates the number of the current program.
● 1 beep	Volume level increased/decreased by one step
▬▬▬▬ 1 long beep	Volume limit reached
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● 4 beeps 4 times	Low battery warning

Wireless signals

Audio signals	What it means
♪♪♪♪♪ Ripple tone in upward melody	Wireless Accessory pairing confirmation.
♪♪♪♪♪ Ripple tone upward melody	Wireless streaming activated
♪♪♪♪♪ 2× ripple tone downward melody	End wireless streaming due to low battery voltage and return to program
● ● ● ● ● ● ♪♪♪♪♪ 6 beeps followed by ripple tone upward melody (about 20 seconds after pairing)	MFi pairing confirmation
♪♪♪♪♪ Ripple tone upward melody	Change from one wireless accessory to another

Indicator lights

A hearing care professional can set up your student's sound processor to show the following light indications.

General signals

Light	What it means
● ● ● ● ● Green flashes	No implant or wrong implant detected
▬▬▬▬ Steady green	When connection to implant is successful steady green light will be seen for 5 seconds.
● ● ● ● ● ● ● ● ● ● Quick orange flashes	Changing programs. Number of flashes indicates the number of the current program.
● 1 quick orange flash	Volume level increased/decreased by one step
▬▬▬ Long flash of orange	Volume limit reached
● ● ● ● ● … Rapid orange flashes for 2.5 seconds	Low battery warning

Wireless signals

Light	What it means
▬▬▬ ● 1 long orange flash followed by 1 short orange flash	Wireless streaming activated

Pair with a compatible Apple device

The Osia sound processor is a Made for iPhone (MFi) hearing device. This allows control of the sound processor and streaming of audio directly from iPhone, iPad or iPod touch. For compatibility details, and pairing instructions visit ✳ www.cochlear.com.

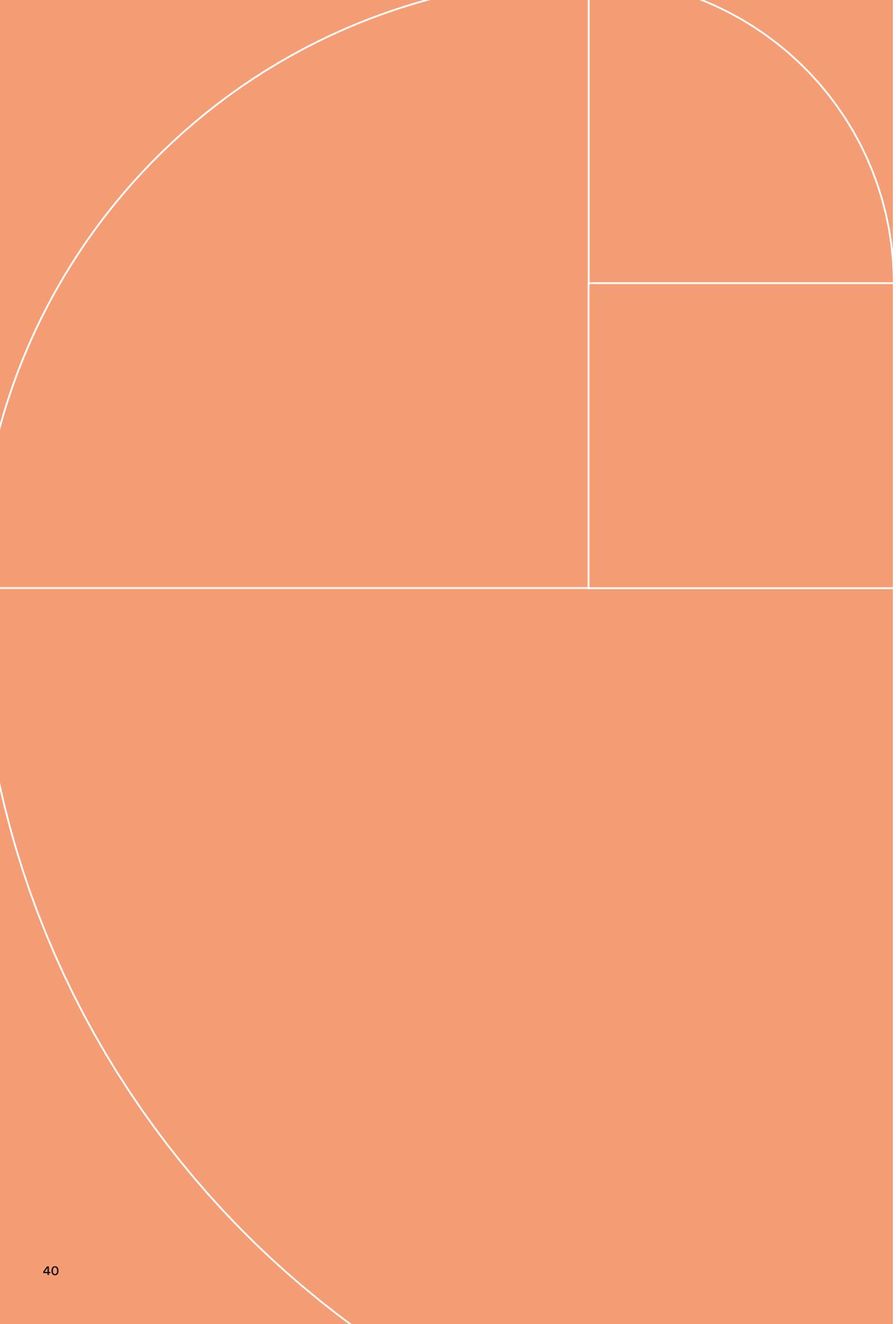## Pair with a Mini Microphone 2+ (MM2+)

1 Remove the sound processor from the ear. Remove the battery or open battery door.

2 Turn on the MM2+.

3 Press the pairing button on the MM2+ once using the tip of a pen or similar object. The LED will flash yellow every 2 seconds and the MM2+ will now be in pairing mode for 20 seconds.

4 While pairing mode is active (20 seconds), turn on the sound processor. Successful pairing will be indicated by an audible melody played in the sound processor.

MM2+ streaming

For the sound processor to receive signal from the MM2+, streaming must be turned on. Streaming may be turned on using the Baha Remote Control 2.

1 Turn on the sound processor and the MM2+.

2 Press the streaming button on the remote once to start streaming. If the sound processor is paired with more than one wireless accessory press once, twice, or three times to toggle between the accessories.

3 To stop streaming. Press Home button and return to program 1 and default volume settings or press Program button and return to the last used program and volume settings.

For the most current list of compatible devices and additional instructions on pairing:
✳ **www.cochlear.com/compatibility**

39

Baha® 6 Max Sound Processor

Control button

Microphone ports

Indicator light

Attachment hole
for safety line

Snap coupling

Battery door

The Baha 6 Max Sound Processor is the first of it's kind—a premium-power sound processor in a very small size, featuring a fitting range up to 55 dB SNHL (sensorineural hearing loss).

The Baha 6 Max works by utilizing bone conduction to transmit sounds to the cochlea (inner ear) with the purpose of enhancing hearing. The Baha 6 Max Sound processor is intended to be used as part of the Cochlear Baha System to pick up surrounding sound and transfer it to the skull bone, via a Baha Implant, Baha Softband or Baha SoundArc™ The Baha 6 Max, along with the Baha System, can be used unilaterally or bilaterally.

The Baha 6 Max is indicated for patients with conductive hearing loss, mixed hearing loss and SSD (single-sided deafness).

In the United States and Canada, the placement of a bone-anchored implant is contraindicated in children below the age of 5.

Baha 6 Max Sound Processor basics

Change the battery

The Baha 6 Max Sound Processor uses a 312 size type hearing aid battery (1.45 Volt zinc air, non-rechargeable).

1. To replace the battery, remove the sound processor from the head and hold the sound processor with the front facing down. Gently open the battery door until it is completely open.

2. Remove the old battery. Dispose of the battery according to local regulations.

3. Remove the new battery from the packet and peel away the sticker on the + side. Insert the battery into the battery compartment with the + side facing up.

4. Gently close the battery door.

Use the tamper-resistant battery door

To prevent the accidental opening of the battery door, an optional tamper-resistant battery door is available. This is particularly useful to prevent children, and other recipients in need of supervision, from accidentally accessing the battery.

To lock the battery door and turn on the device:
Gently close the battery door until it is completely closed.

To unlock the battery door and turn off the device:
Carefully insert the tamper resistant tool or the tip of a pen in the small hole on the battery door and gently open the door.

Click for more information

⚠️
WARNING
Batteries can be harmful if swallowed, put in the nose or in the ear. Be sure to keep your batteries out of reach of small children and other recipients in need of supervision. Before use, verify that the tamper-resistant battery door is properly closed. In the event a battery is accidentally swallowed, or stuck in the nose or in the ear, seek immediate medical attention at the nearest emergency center.

Turn on or off

Turn on:
Close the battery door completely.

Turn off:
Gently open the battery door until you feel the first "click".

When the sound processor is turned off and back on again, it will return to Program 1 and default volume level. If enabled, audio signals and/or indicator lights will indicate that the sound processor is starting up.

Audio signals

A hearing care professional may have set up your student's processor so they can hear the following audio signals. The sounds are only audible to the recipient when the processor is attached over the implant, or attached to their Softband or SoundArc™.

General signals

Audio signals	What it means
5 beeps	Start up
1–4 beeps	Change program. Number of beeps indicates the number of the current program.
1 beep	Volume level increased/decreased by one step
1 long beep	Volume limit reached
2 × 4 beeps	Low battery warning

Wireless signals

Audio signals	What it means
Ripple tone in upward melody	Wireless accessory pairing confirmation
Ripple tone upward melody	Wireless streaming activated
Ripple tone upward melody	Change from one wireless accessory to another

Change volume

A hearing care professional has set the volume level for your student's sound processor.

NOTE: Your student can change the program and adjust the volume using the optional Cochlear Baha Remote Control, Cochlear Wireless Phone Clip, Baha Smart App or from a compatible smart phone or smart device.

Indicator lights

A hearing care professional can set up your student's sound processor to show the following light indications. All light flashes are **green**.

Everyday use

Light	What it means
4 seconds of steady green	Start up
1–4 green flashes	Change program. Number of flashes indicates the number of the current program.
1 short green flash	Volume level increased/decreased by one step
1 long green flash	Volume limit reached
Repeated series of rapid green flashes	Low battery warning

Wireless signals

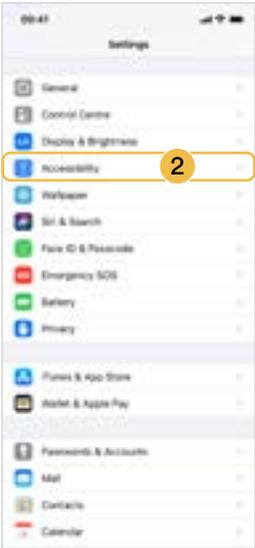| Light	What it means
1 long green flash followed by 1 green flash	Wireless streaming activated

43

B6 Pair with a compatible Apple device

Baha 6 Max Sound Processor is Made for iPhone. This allows your student to use the control and audio streaming functions of compatible Apple devices
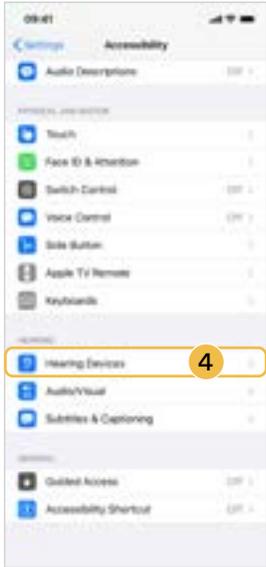

1 Turn on Bluetooth functionality on the Apple device.
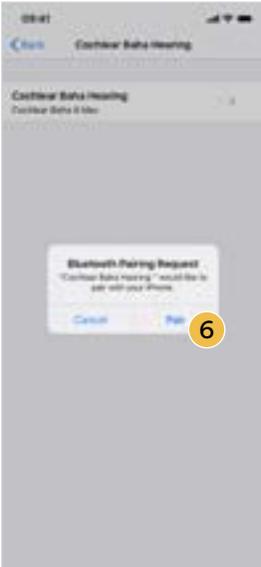
2 Go to Settings > Accessibility.

3 Restart the sound processor by opening and closing the battery door.
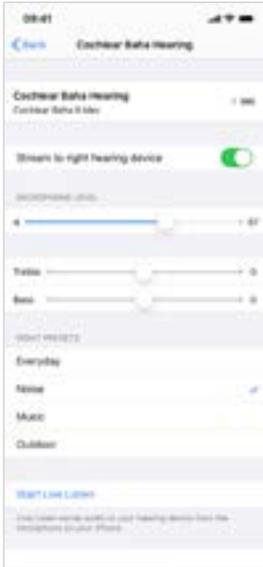
4 Select Hearing Devices in the Accessibility menu.

5 The sound processor will be listed under MFI HEARING DEVICES

6 Tap on the name of the user/sound processor model. A pairing request will appear. Press "Pair" to initiate the pairing process.

Note: When pairing two sound processors, there will be two separate pairing requests.

7 The Apple device will pair and connect to the sound processor.

Note: Do not start any streaming to the sound processor until final pairing is confirmed.
A series of 6 beep tones will be heard in the sound processor, followed by a ripple tone approximately 20 seconds later. Alternatively, wait for 120 seconds to be certain that pairing is complete.

Pair with a compatible Android device

The Baha 6 Max Sound Processor is compatible with the ASHA (Audio Streaming for Hearing Aid) protocol. This allows your student to use the audio streaming functions of compatible Android devices.
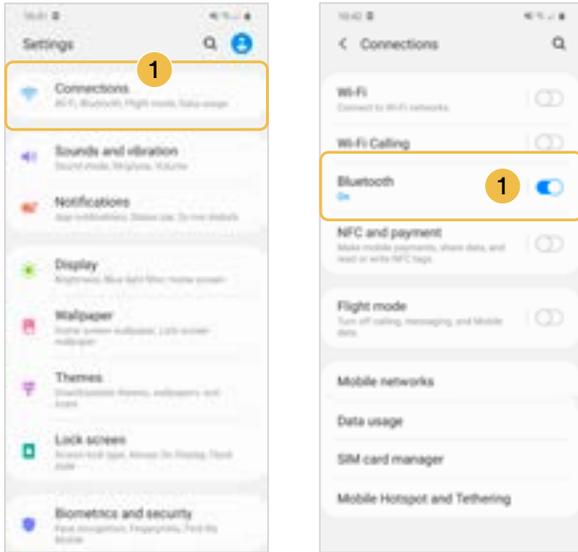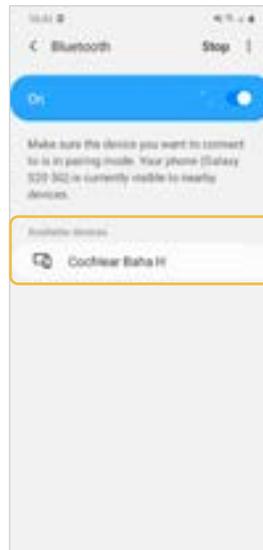
1 Go to Settings > Connections > Bluetooth and make sure Bluetooth is turned on

2 Restart the sound processor by opening and closing the battery door.
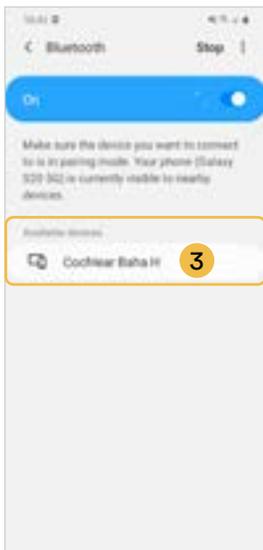
3 The sound processor will be listed under Available devices. If the sound processor does not appear, restart it and also tap 'Scan' in the top-right corner of the smartphone screen.

4 Tap on the name of the sound processor in the list to establish a connection.
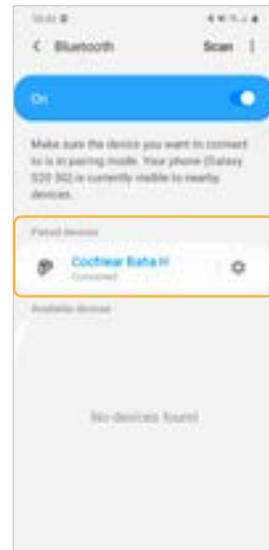
5 The smartphone will pair and connect to the sound processor.

For the most current list of compatible devices and additional instructions on pairing:
www.cochlear.com/compatibility

B6

Pair with a Mini Microphone 2+ (MM2+)

1 Remove the sound processor from the ear. Remove the battery or open battery door.

2 Turn on the MM2+.

3 Press the pairing button on the MM2+ once using the tip of a pen or similar object. The LED will flash yellow every 2 seconds and the MM2+ will now be in pairing mode for 20 seconds.

4 While pairing mode is active (20 seconds), turn on the sound processor. Successful pairing will be indicated by either an audible melody played in the sound processor, or by a flashing light on the sound processor (depending on the type of sound processor).

MM2+ streaming

For the sound processor to receive signal from the MM2+, streaming must be turned on. Streaming may be turned on in one of two ways (shown below):

MM2+ streaming using the button on the sound processor

To activate wireless audio streaming:

- Press and hold the control button on the sound processor until your student hears an audio signal.
- If the sound processor is paired with more than one wireless device, your student can toggle between the devices in the different channels by pressing the control button (long press) on their sound processor once, twice or three times, until they have selected the accessory they want.

To end wireless audio streaming:

- Press and release (short press) the control button on the sound processor. The sound processor will return to the previously used program.

NOTE: For additional guidance regarding e.g. pairing, please refer to the user guide of the relevant Cochlear wireless device.

Click for more information

MM2+ streaming using the Baha Remote Control 2

1 Turn on the sound processor and the MM2+.

2 Press the streaming button on the remote once to start streaming. If the sound processor is paired with more than one wireless accessory press once, twice, or three times to toggle between the accessories.

3 To stop streaming. Press Home button and return to program 1 and default volume settings, or press Program button and return to the last used program and volume settings.

Visual check

On a student's paired smart phone, input from connected devices can be checked. You can also check sound is transmitting to one or both sound processors if a student has a hearing implant on both ears.

- ✓ Monitor device connection for young children
- ✓ Troubleshoot connections to RM-HAT devices
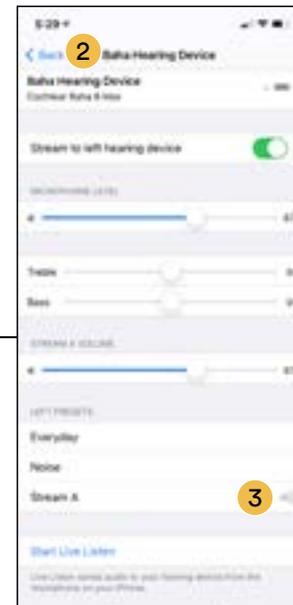
Visual verification of streaming with MFi (Made for iPhone)

1. Open compatible iOS device. Tap on the Settings icon.

2. Select the Accessibility menu, then Hearing Devices.

3. To ensure connectivity to Mini Microphone 2+ confirm that the sound icon is next to the 'Stream' device listed under Presets.

Listening check

Family members and friends can "share the experience" of bone conduction hearing. If you are a parent, teacher or caregiver you may want to test whether the sound processor is working properly.

Two ways to listen to a sound processor:

Baha Softband   Baha SoundArc   Test rod

A With a Baha Softband or Baha SoundArc™
Connect the sound processor to the Softband or SoundArc. Put the Softband or SoundArc on your head, turn the volume up, put your fingers in your ears and listen.
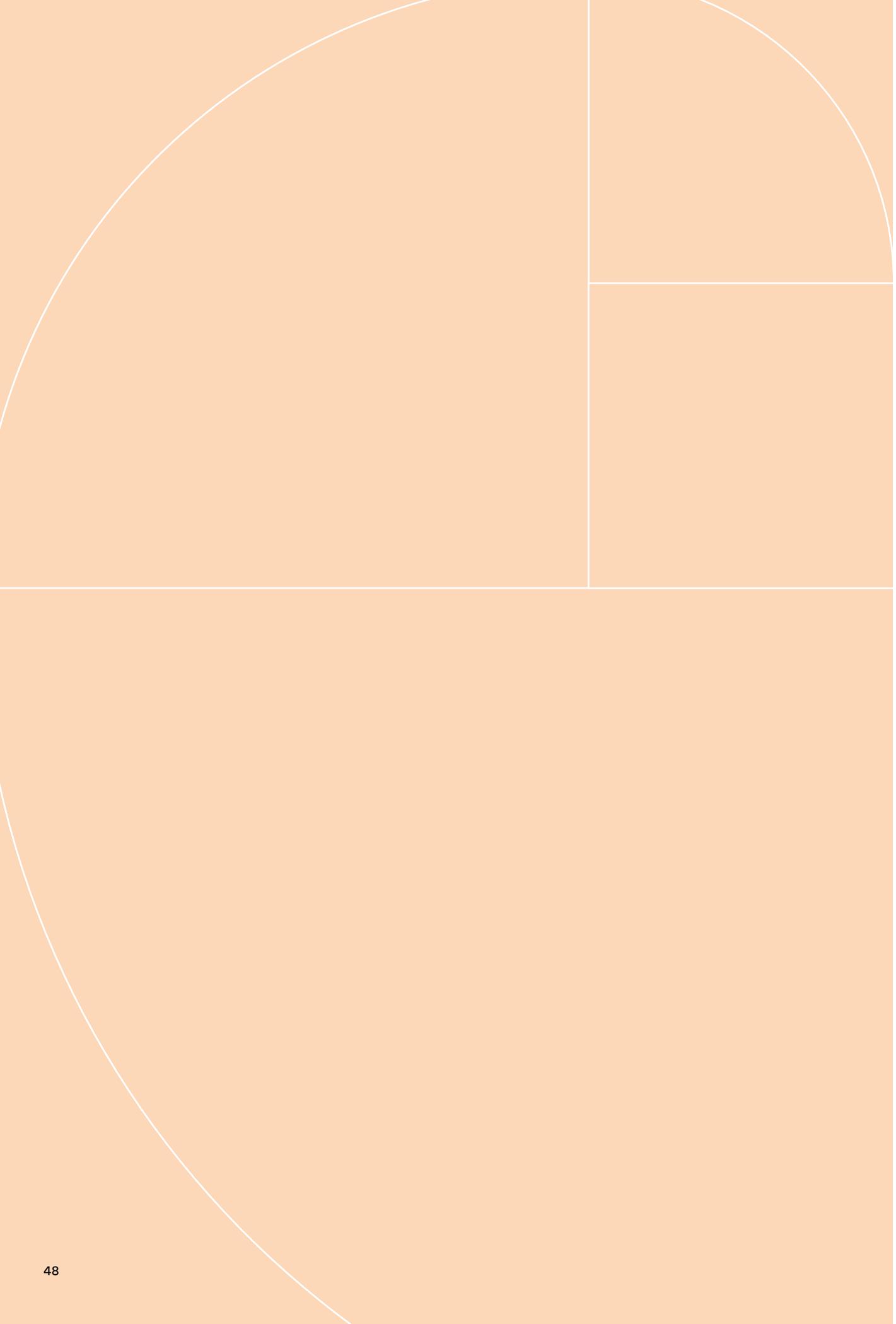
B With a test rod
Turn on the sound processor and attach it on the test rod by tilting it into place. You will feel the snap coupling "click" into the notch on the test rod.

Hold the test rod against the skull bone behind an ear. (Ensure you are holding the test rod, and not the sound processor). Plug both ears and listen.

To test if a sound processor is working:

- Snap the sound processor or actuator unit onto a test rod, hold the test rod between your fingers, and speak gently into the microphone. If you can feel the vibrations in the rod it is working properly.

- Make sure the sound processor is not touching anything other than the connector to prevent feedback from occurring.

Baha® 5 Sound Processors

Baha 5

Program/
streaming
button

312 battery

Baha 5 Power

Program/streaming
button

Volume rocker

Visual indicator

Built in tamper
proof battery door

675 battery

Baha 5 SuperPower

Decoupled
transducer

Program/
streaming/
volume buttons

Visual
indicator

Adaptable
earhook

Rechargeable battery

The Baha 5 family of sound processors includes the Baha 5, Baha 5 Power and Baha 5 SuperPower. The Baha 5 Sound Processor fits bone conduction thresholds up to 45 dBHL. The Baha 5 Power Sound Processor is a fully featured sound processor, adding an LED light and integrated tamper-proof battery door, with a larger fitting range up to 55 dBHL. The revolutionary Baha 5 SuperPower merges Baha and Nucleus technology to offer the most powerful head-worn sound processor in the industry with a fitting range up to 65 dBHL.[7–9] All Baha 5 processors provide unparalleled wireless connectivity with Made for iPhone capabilities, the Baha Smart App for iPhone® and Android™ devices and compatibility with Cochlear's True Wireless accessories.
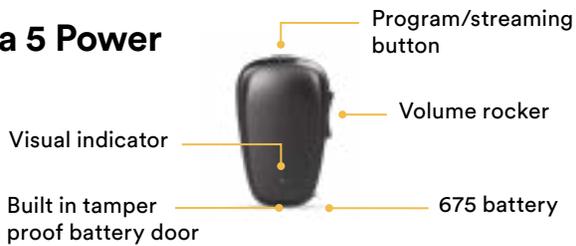
In the United States and Canada, the placement of a bone-anchored implant is contraindicated in children below the age of 5.

Baha 5 Sound Processor basics

Change the battery: Baha 5 and Baha 5 Power

Baha 5 Sound Processor uses battery type 312. Baha 5 Power Sound Processor uses battery type 675.

1 To replace the battery, remove the sound processor from the head and hold the sound processor with the front facing down. Gently open the battery door until it is completely open.

2 Remove the old battery. Dispose of the battery according to local regulations.

3 Remove the new battery from the packet and peel away the sticker on the + side. Insert the battery into the battery compartment with the + side facing up.

4 Gently close the battery door.

Change the battery: Baha 5 SuperPower

Baha 5 SuperPower Sound Processor uses rechargeable batteries—two sizes are available, compact and standard (with longer battery life). Baha 5 SuperPower battery charger: cycle batteries in different sockets when recharging to wear the sockets evenly.

1 Remove the battery: Twist the battery module to remove it from the processing unit.

2 Attach the battery: Align the battery module to the processor socket to fit the parts together. Twist the battery module clockwise to attach the parts. The processor will turn on automatically.

Use the tamper-resistant battery door

To prevent the accidental opening of the battery door, an optional tamper-resistant battery door is available. This is particularly useful to prevent children, and other recipients in need of supervision, from accidentally accessing the battery.

To lock the battery door and turn on the device:

Gently close the battery door until it is completely closed.

Click for more information

To unlock the battery door and turn off the device:

Carefully insert the tamper resistant tool or the tip of a pen in the small hole on the battery door and gently open the door.

⚠️

WARNING

Batteries can be harmful if swallowed, put in the nose or in the ear. Be sure to keep batteries out of reach of small children, other recipients in need of supervision and household pets. In the event of a battery being swallowed, put in the nose or in the ear, seek immediate medical attention at the nearest emergency center.

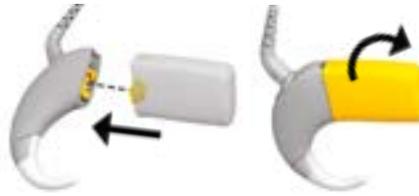## Turn on or off:
Baha 5 and Baha 5 Power
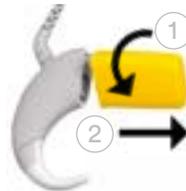

Turn on:
Close the battery door completely.

Turn off:
Click

Open the battery door until you feel the first "click".

Turn on or off:
Baha 5 SuperPower

Turn on: Connect the battery module.

Turn off: Disconnect the battery.

Audio signals

A hearing care professional may have set up your student's processor so they can hear the following audio signals. The sounds are only audible to the recipient when the processor is attached over the implant, or attached to their Softband or SoundArc™.

General signals

Audio signals	What it means
10 beeps	Start up
1–4 beeps	Change program. Number of beeps indicates the number of the current program.
1 beep	Volume level increased/ decreased by one step
1 long beep	Volume limit reached
4 beeps 2 times	Low battery warning

Wireless signals

Audio signals	What it means
5 beep upward melody	Wireless accessory pairing confirmation
5 beep upward melody	Wireless streaming activated
5 beeps	End wireless streaming due to low battery voltage and return to program
6 beeps followed by ripple tone upward melody (about 20 seconds after pairing)	MFi pairing confirmation

Indicator lights

Only the Baha 5 Power and the Baha 5 SuperPower have indicator lights that can be configured by the clinician. All light flashes are **orange**.

Everyday use

Light	What it means
Steady orange	Processor on
Quick orange flashes	Changing programs. Number of flashes indicates the number of the current program.
1 long flash followed by 1 short flash	Wireless streaming activated
Quick orange flashes	Wireless streaming deactivated
1 quick flash	Volume level increased/decreased by one step
Rapid orange flashes	Low battery warning

51

B5

Pair with a compatible Apple device

Baha 5 Sound Processor Portfolio (Baha 5, Baha 5 Power and Baha 5 SuperPower) are a Made for iPhone (MFi) hearing device. This allows your student to control their sound processor and stream audio directly from an iPhone, iPad or iPod touch.

1. To pair the sound processor turn on Bluetooth on your student's iPhone, iPad or iPod touch.

2. Turn off the sound processor and go to Settings > General > Accessibility on your student's iPhone, iPad or iPod touch.

3. Turn on the sound processor and select Hearing Aids in the Accessibility menu.

4. When displayed, tap on the sound processor name under "Devices" and press Pair when prompted.

For the most current list of compatible devices
and additional instructions on pairing:
www.cochlear.com/compatibility

Pair with a Mini Microphone 2+ (MM2+)

Click

1. Remove the sound processor from the ear. Remove the battery or open battery door.

2. Turn on the MM2+.

3. Press the pairing button on the MM2+ once using the tip of a pen or similar object. The LED will flash yellow every 2 seconds and the MM2+ will now be in pairing mode for 20 seconds.

4. While pairing mode is active (20 seconds), turn on the sound processor. Successful pairing will be indicated by either an audible melody played in the sound processor, or by a flashing light on the sound processor (depending on the type of sound processor).

MM2+ streaming

For the sound processor to receive signal from the MM2+, streaming must be turned on. Streaming may be turned on in one of two ways (shown below):

MM2+ streaming using the button on the sound processor

Baha 5 and Baha 5 Power:

- To activate streaming of a paired wireless device, press and hold the top button on the sound processor until your student hears a melody (about 2 seconds).
- To turn streaming off, short press the button.

Baha 5 Super Power:

- To activate streaming of a paired wireless device, press and hold the lower button until your student hears a melody (2 seconds).
- To turn streaming off, short press the lower button.

MM2+ streaming using the Baha Remote Control 2

1. Turn on the sound processor and the MM2+.

2. Press the streaming button on the remote once to start streaming. If the sound processor is paired with more than one wireless accessory press once, twice, or three times to toggle between the accessories.

3. To stop streaming. Press Home button and return to program 1 and default volume settings or press Program button and return to the last used program and volume settings.

Cochlear

B5 Listening check

Family members and friends can "share the experience" of bone conduction hearing. If you are a parent, teacher or caregiver you may want to test whether the sound processor is working properly.

Two ways to listen to a sound processor:

Baha Softband

Baha SoundArc

Test rod

A With a Baha Softband or Baha SoundArc™
Connect the sound processor to the Softband or SoundArc. Put the Softband or SoundArc on your head, turn the volume up, put your fingers in your ears and listen.

B With a test rod
Turn on the sound processor and attach it on the test rod by tilting it into place. You will feel the snap coupling "click" into the notch on the test rod.

Hold the test rod against the skull bone behind an ear. (Ensure you are holding the test rod, and not the sound processor). Plug both ears and listen.

To test if a sound processor is working:

- Snap the sound processor or actuator unit onto a test rod, hold the test rod between your fingers, and speak gently into the microphone. If you can feel the vibrations in the rod it is working properly.

- Make sure the sound processor is not touching anything other than the connector to prevent feedback from occurring.

Functional listening evaluation[10]

While use of monitor earphones, or listening checks can confirm a signal, the best way to ensure the student is receiving benefit from wireless or remote microphone technology is to perform a more formal evaluation.[10] This method may be used for any Cochlear sound processor.

1. Choose a listening task in which the listener can score in the range of 50–80% correct in quiet.

2. Administer the task without visual cues in quiet using the sound processor at a normal setting.
   – The child and examiner should be about 3 feet apart.
   – The suggested presentation level is 60 dB SPL at the listener's ear, or normal conversational speech.

3. Repeat the test in quiet through the wireless or remote microphone system only.

4. May set the mixing ratio of the processor to "accessory only" to ensure the student is not hearing the speech through the environmental microphone (may also use a sound isolated booth for this testing).

5. Performance in the two conditions should be equivalent—if not, the FM receiver settings may need to be optimized.

6. Further testing may be performed in the presence of background noise to evaluate the remote microphone advantage, if desired.

Troubleshooting

Troubleshooting of RM-HAT relies on a knowledge of both the sound processor and RM-HAT system that is being used. Any user reports (ie, no sound or static) should be confirmed with monitor earphones whenever possible, especially for younger children or those with limited auditory skills. The table below provides some tips for different types of complaints. Note that some tips will be more relevant for certain types of RM-HAT than others.

Problem	Sound Processor	Receiver	Transmitter
No sound	• Check batteries • Check coil/cable • Check sound processor microphone via monitor earphones or audio meter on remote or app • Replace interface for FM receiver (ie, Euro Adaptor, MM2+)	• Ensure receiver is paired to transmitter • Ensure receiver is in operating range • Check the FM receiver on another sound processor/hearing instrument • Check that the volume settings are high enough for use	• Check connections • Check position of microphone • Check that the microphone is not muted • Check battery • Ensure within operating range • Check settings are correct
Poor sound quality	• Check sensitivity settings • Change batteries • For Baha 6 Max: Check that the sound processor is not wet. If it is wet, let the sound processor dry before use. • For whistling (Baha and Osia 2 Sound Processors): Check to ensure that the sound processor is not in contact with items such as glasses or a hat, or in contact with the head or ear.	• Check connections • Check volume setting	• Change position of microphone • Ensure within operating range • Check sound quality of transmitter with another receiver • Ensure cable to mic is not frayed/kinked (if appropriate)
Equipment does not respond to commands	• Check batteries • Ensure the processor buttons are not locked (see user manual for details)		• Check the transmitter is not locked • Reboot the transmitter, if available
Listening is poorer with the RM-HAT system than with the processor alone	• Check the volume and sensitivity settings • Check the receiver and transmitter on another device to confirm which device has the issue	• Increase the gain in the receiver (if available) • Check the settings in the receiver (per manufacturer guidelines) • Check connection to processor (ie, change Euro Adaptor or MM2+)	• Ensure microphone is working and positioned correctly for optimum pick up of signal
Student can hear input from RM-HAT but not from environment	• Check the volume and sensitivity settings • Check that the appropriate program is being used	• Check the receiver settings (per manufacturer guidelines)	• Check the transmitter settings (per manufacturer guidelines)
Trouble connecting to Smart App	• Restart sound processor		• Check that the app is running on the device • Restart app • Restart device

Student information worksheet

You may fill out this worksheet with the student's parent or guardian or your school's audiologist to help you prepare for your student with a Cochlear sound processor.

Student: _____

Sound Processor:

☐ Nucleus 8   ☐ Nucleus 7   ☐ Kanso 2   ☐ Osia 2   ☐ Baha 6 Max   ☐ Baha 5 SuperPower   ☐ Baha 5 Power   ☐ Baha 5
☐ Other: _____

Student's experience with their Cochlear sound processor(s):
☐ Not likely to need assistance
☐ Moderately experienced but may need support with: _____
☐ Limited ability to manage sound processor independently

Paired accessories:

☐ MiniMicrophone 2+   ☐ Roger 20   ☐ Personal neckloop system   ☐ CR310 Remote Control   ☐ Remote Control 2
☐ Smart phone   ☐ iPad   ☐ Apple Watch
☐ Other: _____

Preferred RM-HAT microphone and notes: _____

_____

Contact information:

School audiologist: _____

School audiologist contact info: _____

Caregiver(s): _____

Caregiver(s) contact info: _____

Notes:

_____

_____

_____

_____

_____

_____

_____

_____
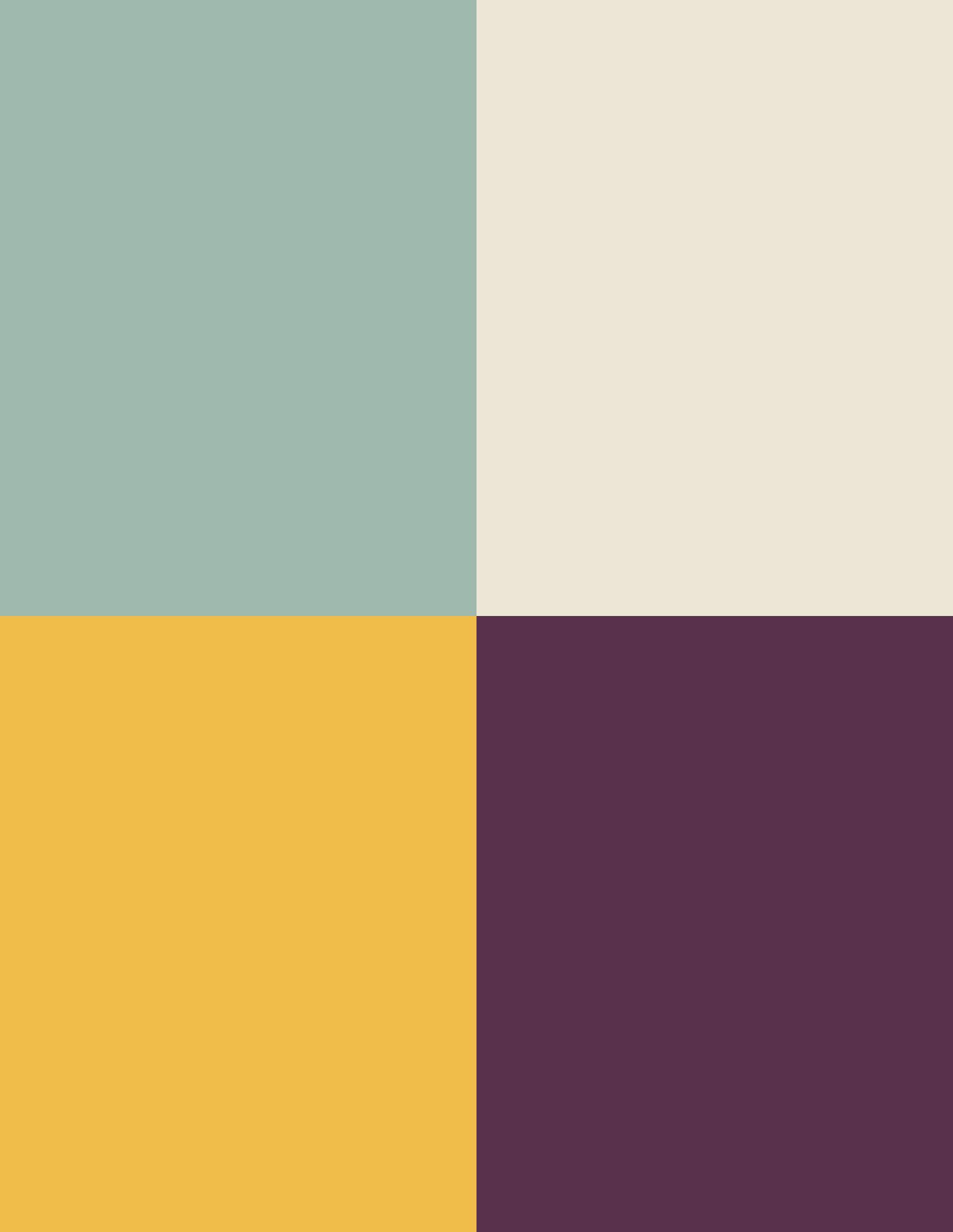
Hear now. And always

Cochlear is dedicated to helping people with moderate to profound hearing loss experience a world full of hearing. As the global leader in implantable hearing solutions, we have provided more than 650,000 devices and helped people of all ages to hear and connect with life's opportunities.

We aim to give people the best lifelong hearing experience and access to next generation technologies. We collaborate with leading clinical, research and support networks to advance hearing science and improve care.

That's why more people choose Cochlear than any other hearing implant company.

References

1. DeConde Johnson, C., Anderson, V., Boothroyd, A., Eiten, L., Abbott Gabbard, S., Lewis, D., & Thibodeau, L. (n.d.). American Academy of Audiology Clinical Practice Guidelines: Remote Microphone Hearing Assistance Technologies for Children and Youth from Birth to 21 Years. Retrieved November 2, 2018, from https://audiology-web.s3.amazonaws.com/migrated/HAT_Guidelines_Supplement_A.pdf.53996ef7758497.54419000.pdf.

2. American National Standards Institute, "American National Standard Acoustical Performance Criteria, Design Requirements and Guidelines for Schools, Part 1: Permanent Schools (ANSI/ASA S12.60 Part 1)," ANSI, Washington, DC, 2010.

3. Crandell, C. C., & Smaldino, J. J. (2000). Classroom Acoustics for Children With Normal Hearing and With Hearing Impairment. Language Speech and Hearing Services in Schools, 31(4), 362. doi:10.1044/0161-1461.3104.362.

4. Lange, J., Erickson, R., Grenzer, G., Melby, G., Kvernstoen, S., Rönnholm, S., & Bergeron, K. (n.d.). Classroom Acoustical Study. Retrieved November 2, 2018, from http://www.ahrinet.org/App_Content/ahri/files/standards pdfs/Classroom Acoustical Study.pdf.

5. Technical Committee on Architectural Acoustics of the Acoustical Society of America, "Classroom Acoustics: A resource for creating learning environments with desirable listening conditions," 2003. [Online]. Available: http://www.acousticalsociety.org/sites/default/files/docs/classroom_acoutics_1.pdf. [Accessed 1 December 2017].

6. Cochlear Limited, "D1190805. CP1000 Processor Size Comparison.," Data on File, 2017, Mar.

7. D801287, Cochlear Baha 5 Power datasheet.

8. D770056, Cochlear Baha 5 SuperPower datasheet.

9. D1333582, MPO measurements of Oticon Medical Ponto 3 SuperPower device.

10. C. Johnson, "Functional Listening Evaluation," 2004. [Online]. Available: https://www.handsandvoices.org/pdf/func_eval.pdf. [Accessed December 2017]

Please seek advice from your health professional about treatments for hearing loss. Outcomes may vary, and your health professional will advise you about the factors which could affect your outcome. Always read the instructions for use. Not all products are available in all countries. Please contact your local Cochlear representative for product information.

Views expressed are those of the individual. Consult your health professional to determine if you are a candidate for Cochlear technology.

Cochlear Sound Processors are compatible with Apple and Android devices. Cochlear Smart Apps are available on App Store and Google Play. For compatibility information visit www.cochlear.com/compatibility.

Cochlear Americas
10350 Park Meadows Drive
Lone Tree, CO 80124 USA
Telephone: 303 790 9010
Support: 800 483 3123

Cochlear Canada Inc.
2500-120 Adelaide Street West
Toronto, ON M5H 1T1 Canada
Support: 800 483 3123

www.cochlear.com/us

FUN3118 ISS5 JAN23

Follow us on