Wireless Technology in the Classroom

For Nucleus® and Baha® Recipients

Hear now. And always

Cochlear®

Contents

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

This guide is intended to assist parents, teachers, educational audiologists and other school professionals in the selection, fitting and monitoring of assistive wireless technology for Nucleus™ Cochlear implant and Baha® recipients. In the past several years, wireless connection options for students with different types of hearing implants have expanded, leaving professionals with a need for updated information. Cochlear is committed 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 also supporting schools in their efforts to create a learning environment that enables listening.

As technology has evolved, the language we use has changed as well. Below 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

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

Acoustic Environment

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

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. More 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.

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 will not get benefit from even the most technologically advanced system.

AGE/COGNITIVE LEVEL

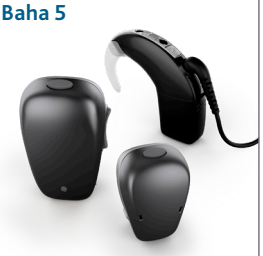
The student's age and cognitive development will have an impact on which devices will be most useful for them in the classroom. Consider a very young child who is unable to care for the equipment or report if they are having issues with their sound. In this case, it will be critical that an adult check 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 recommends 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.

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. All these needs should be considered when choosing technology. In contrast, the needs of a child in a pre-kindergarten classroom may be quite different. It will probably be rare for a kindergartener to sit in rows and listen to the teacher and most of their learning may 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.

Remote Microphone Hearing Assistive Technology (RM-HAT) Options for Students with Cochlear Technology

Sound Processor(s)	RM-HAT Options				
Nucleus 7 (CP1000) 	 Mini Microphone 2+ (MM2+)	 Universal Receiver with MM2+	 Dedicated Receiver: Roger 20	 Personal Neckloop System*	
Kanso 	 Mini Microphone 2+ (MM2+)	 Universal Receiver with MM2+	 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*
Nucleus 6 without Accessory Port (CP920) 	 Mini Microphone 2+ (MM2+)	 Universal Receiver with MM2+	 Personal Neckloop System*		
Nucleus 5 (CP800) 	 Dedicated Receiver: Roger 14	 Universal Receiver with Euro Adaptor	 Personal Neckloop System*		
Baha 5 	 Mini Microphone 2+ (MM2+)	 Universal Receiver with MM2+	 Personal Neckloop System*		

*Neckloop fittings will not be covered in detail in this guide. All Nucleus Sound Processors (Nucleus 7, Nucleus 6, Kanso, Nucleus 5) have telecoils. See the overview of each processor for details on how to activate the telecoil. Note that for some processors (Nucleus 7, Nucleus 6 and Kanso) the telecoil has to be enabled during programming of the 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.

Remote Controls & Apps for Baha and Nucleus Devices

Accessories	Compatible Sound Processors	Processor Controls Available	Monitoring Available	Notes
Nucleus Smart App 	**Nucleus 7**	• Volume • Sensitivity • Program Changes • Mixing Ratio • Streaming Selection	• Coil on/off • Battery Alerts • Audio Meter • Hearing Tracker • Visual verification of RM-HAT	Use of the Smart App requires creation of a patient or caregiver account
CR310 Remote Control 	**Nucleus 7**	• Volume or Sensitivity • Program Changes • Streaming	• None	Symbol on the LCD for accessory is the same no matter which accessory is connected
Baha Remote Control 	**Baha 5** **Baha 5 Power** **Baha 5 SuperPower** **Baha 4**	• Volume • Program Changes • Streaming Selection	• Battery Alerts	Infrequently used
Baha Smart App 	**Baha 5** **Baha 5 Power** **Baha 5 SuperPower**	• Volume • Program Changes • Mixing Ratio • Streaming Selection	• Battery Alerts	Creation of a patient account is not required.
CR230 Remote Assistant 	**Nucleus 6** **Nucleus 5**	• 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 	**Nucleus 6**	• Volume or Sensitivity • Program Changes • Streaming	• None	Symbol on the LCD for accessory is the same no matter which accessory is connected
CR110 Remote Assistant 	**Nucleus 5**	• Volume • Sensitivity • Program Changes • Mixing Ratio	• Coil on/off • Battery Alerts • Audio Meter	Remote must be in "Advanced Mode" for mixing ratio to be accessible

Fitting Remote Microphone Hearing Assistive Technology (RM-HAT)

Nucleus 7 Sound Processor (CP1000)

The revolutionary Nucleus 7 Sound Processor – released in 2017 – is the smallest and lightest behind-the-ear hearing solution for cochlear implant recipients[6] and the industry's first Made for iPhone cochlear implant sound processor.[7] With the Nucleus 7 Sound Processor, recipients can stream sound directly to their sound processor, control and manage their settings, track their data and locate a lost processor. In addition to Made for iPhone technology, Nucleus 7 Sound Processor users can also access Cochlear's True Wireless accessories, including the Mini Microphone 2+ to connect to the world around them. With dual microphones and Cochlear's most advanced sound management system – SmartSound® iQ with SCAN* – The Nucleus 7 Sound Processor helps recipients hear their best even in noisy environments.

*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.

HOW TO CHANGE BATTERIES

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

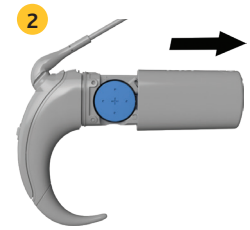
- Twist the battery module as shown to attach the parts.
- The processor turns on automatically.

Change disposable batteries

1

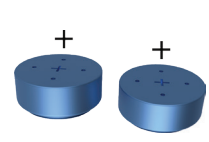
- Turn the lock screw counterclockwise to unlock the tamper resistant battery cover (clockwise to lock).

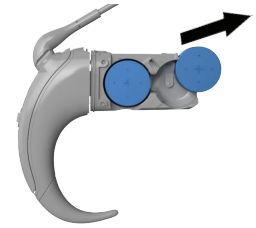
2



- Slide to open.

3





- Insert two new 675 (PR44) zinc air disposable batteries (not silver oxide or alkaline), flat side facing up.
- The processor turns on automatically.

TURN ON AND OFF

To turn on, either:

- Connect the battery (see pg. 8), or
- If the battery is already connected, short-press the button.

To turn off, either:

- Disconnect the battery (see pg. 8), or
- Press and hold the button for 5 seconds. The light will change to steady orange as the processor turns off.

CHANGE PROGRAMS

- Short-press the button to switch between programs.

MINI MICROPHONE

- Once the processor has been paired to the mini microphone (see pg. 10), 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.

Blue: Wireless Accessory is streaming audio.

Short press the button to stop streaming.

Green: Wireless Accessory is not streaming.

TELECOIL

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

Blue: telecoil/accessory is working.

Green: telecoil/accessory is off.

NUCLEUS SMART APP

Use the Nucleus Smart App to:

- Lock the sound processor's control button.
- Change volume and sensitivity.

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.

LOCKING BUTTONS

LIGHT	WHAT IT MEANS
●●	Locking processor buttons.
●●	Unlocking processor buttons.
●	Processor buttons are locked.

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).

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 clinician. Stays on until the issue is resolved.

Mini Microphone 2+ (MM2+)

Advantages:

- Direct streaming from the remote microphone to the processor (discreet option).
- Inexpensive compared to other systems.
- Compatible with Nucleus, Baha and ReSound technology.
- Extended audio input capabilities, including conference microphone, line-in direct audio input, telecoil, and Euro adaptor (see next option for Universal Receiver with MM2+).

Steps for fitting:

PAIRING

Follow the steps below to pair the Sound Processor to the MM2+

1. Remove the Sound Processor from the ear. Disconnect the battery.
2. Turn on the microphone.
3. Press the pairing button on the Mini Microphone 2+ once using the tip of a pen or similar object. The LED will flash yellow every 2 seconds and the Mini Microphone will now be in pairing mode for 20 seconds.
4. While pairing mode is active (20 seconds), attach the battery to Nucleus 7 Sound Processor. A blue indicator light flashes to show that pairing has been successful.

STREAMING

Streaming using the Buttons on the Sound Processor

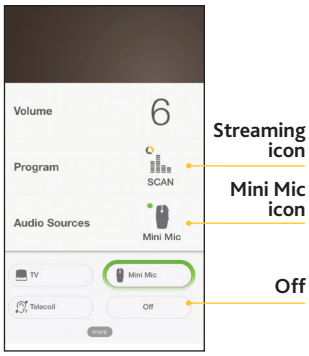
1. Turn on the sound processor and the MM2+.
2. Press and hold the button on the processor for 2 seconds, then release.
3. A blue light on the processor will indicate that streaming has started.

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 Mini Microphone.
3. To stop streaming. Tap the Telecoil button.

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 Mini Mic icon. The sound processor flashes a blue light to indicate streaming.
4. The Mini Mic streaming icon displays on the app.
5. To stop streaming, tap off.



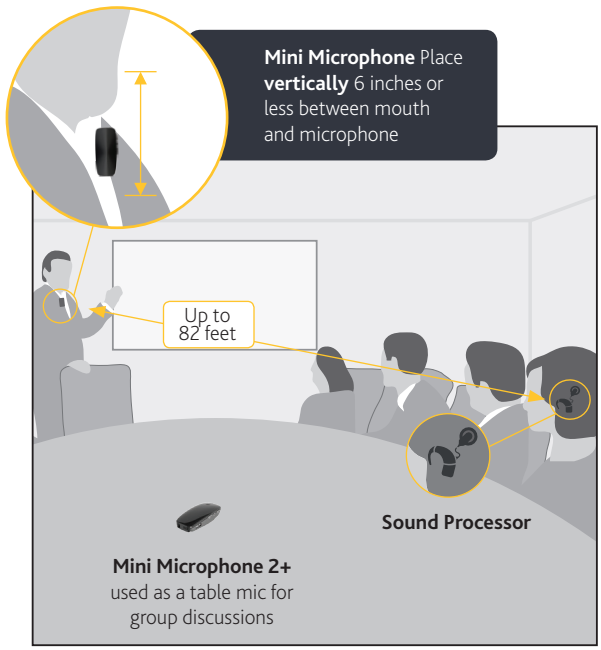
Tips for Use:

- Keep the MM2+ 6 inches or less from the speaker's mouth in an upright position (the upright position ensures the MM2+ is in a directional setting, which helps reduce background noise).
- To use in a small group/conference setting, place the MM2+ horizontally on the table or desk (this puts the MM2+ into an omnidirectional microphone setting).
- The mode button can be used to toggle between audio sources (note that when something is first plugged in, the MM2+ will automatically switch to that source.)
- 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 3 MM2+ (see user manual for details).

EXTENDED AUDIO CAPABILITIES INCLUDE:

Conference Microphone

- Directional microphone becomes omnidirectional when the mic is placed in a horizontal position (ideal for small group/ conference use).



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.

Telecoil

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

Euro Adaptor

- Can be used to connect traditional RM-HAT technology through the MM2+ (see pg. 12).

Universal Receiver with MM2+

Advantages:

- Can use any universal receiver with Europin connection (ie, Phonak Roger, Oticon Amigo) so purchase of a receiver dedicated to this 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 can stream to a bilaterally implanted child, a child using a Nucleus 7 Sound Processor and a 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.

Tips for use:

- Most users will prefer a 1:1 mixing ratio set for streaming the MM2+ in this configuration. This can be set in the Nucleus 7 Sound Processor using the programming software or using the Nucleus Smart App (see information about the App in the Made for iPhone section at the end of this guide).
- 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.

Dedicated Receiver (Phonak Roger 20)

Advantages:

- 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 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.

Tips for use:

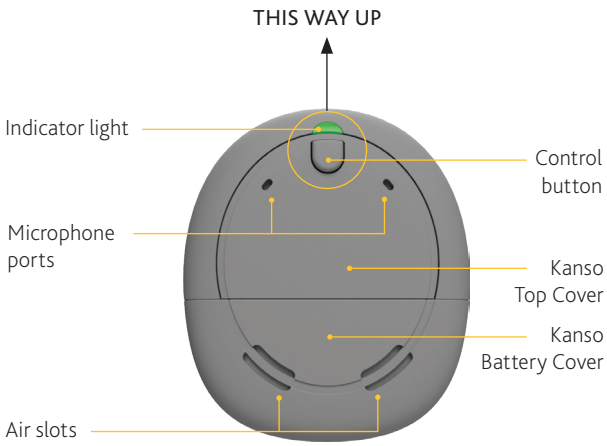
Most users prefer a mixing ratio of 1:1 for use with Roger systems. This can be set in the Nucleus 7 Sound Processor using the Sound Processor programming software or using the Nucleus Smart App (see information about the App in the Made for iPhone section at the end of this guide).

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.

Fitting Remote Microphone Hearing Assistive Technology (RM-HAT)

Kanso Sound Processor (CP950)



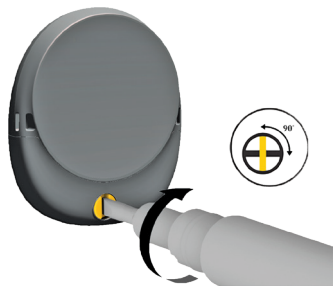
The Kanso Sound Processor, introduced in 2016, is a simple, discreet, off-the-ear sound processor. Kanso uses the same dual microphone technology and SmartSound iQ with SCAN* as our behind-the-ear sound processors, allowing recipients to hear their best no matter which style suits them. Kanso is compatible with our True Wireless accessories, such as the Mini Microphone 2+ and is splash and dust resistant.**

*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.

**The Kanso Sound Processor is water resistant to level IP54 of the International Standard IEC60529.

HOW TO CHANGE BATTERIES

Lock and unlock battery cover



LOCKED

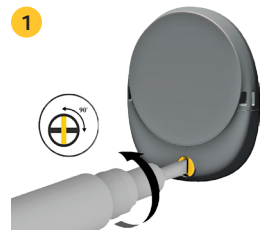
- To lock, turn the screw clockwise until it is horizontal.

UNLOCKED

- To unlock, turn counterclockwise until it is vertical.

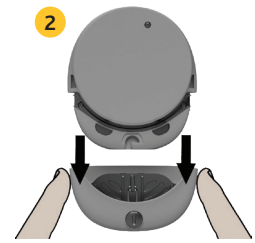
Change batteries

1



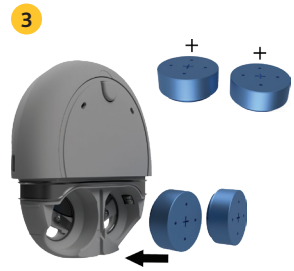
- Turn the lock screw counterclockwise to unlock the battery cover (clockwise to lock).

2



- Slide to open. Use your fingers on the sides to pull off the cover.

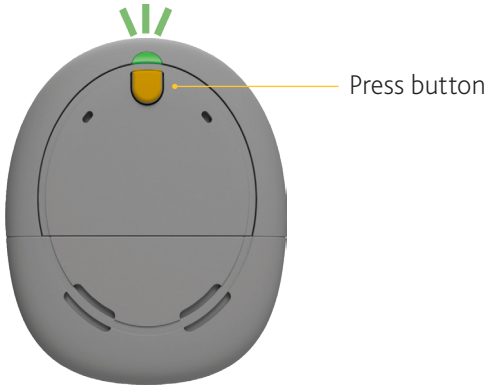
3



- Insert two new p675 high power zinc air disposable batteries, flat side facing up.

4

- Replace battery cover. Turn lock screw clockwise to lock.



TURN ON AND OFF

- Press button to turn on.
- To turn off, press and hold button until the light is a steady orange.

NOTE: Sound processor turns off automatically when it has been off the implant for two minutes.

CHANGE PROGRAM

- Press button to change program.
- Number of beeps or green flashes (if set up by the clinician) indicates the program number.

STREAM AUDIO

- Press and hold button (2 seconds) to stream audio sources.
- Press and release again to cycle to next audio source.

  Blue: streaming audio.

  Tap button to stop streaming.

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.
●●●●●…	Processor flashes while receiving sound from audio source (Child mode only).
▬	Turning off processor.

ALERTS

LIGHT	WHAT IT MEANS
● ● ●…	Processor flashes while coil is off (or connected to the wrong implant).
●●●●●	Processor batteries are low. Change batteries.
▬	Fault. Contact the clinician. Stays on until the issue is resolved.

Mini Microphone 2+ (MM2+)

Advantages:

- Direct streaming from the remote microphone to the processor (discreet option).
- Inexpensive compared to other systems.
- Compatible with Nucleus, Baha and ReSound technology.
- Extended audio input capabilities, including conference microphone, line-in direct audio input, telecoil, and Euro adaptor (see next option for Universal Receiver with MM2+).

Steps for fitting:

PAIRING

Follow the steps below to pair the Sound Processor to the MM2+

1. Press and hold Kanso® button until the light is steady orange. Release your finger and processor will now be off.
2. Turn on the microphone.
3. Press the pairing button on the Mini Microphone 2+ once using the tip of a pen or similar object. The LED will flash yellow every 2 seconds and the Mini Microphone will now be in pairing mode for 20 seconds.
4. While pairing mode is active (20 seconds), press and hold the Kanso button to power the processor on. A blue indicator light flashes to show that pairing has been successful.

STREAMING

Streaming using the Buttons 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.

Streaming using the Remote Control (CR210)

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 Mini Microphone.
3. To stop streaming. Tap the Telecoil button.

Streaming using the Remote Assistant

1. Turn on the sound processor and the MM2+.
2. Press and hold the side button for 2 seconds, then release. Audio will start streaming through the Mini Microphone.
3. To stop streaming, tap the side button.

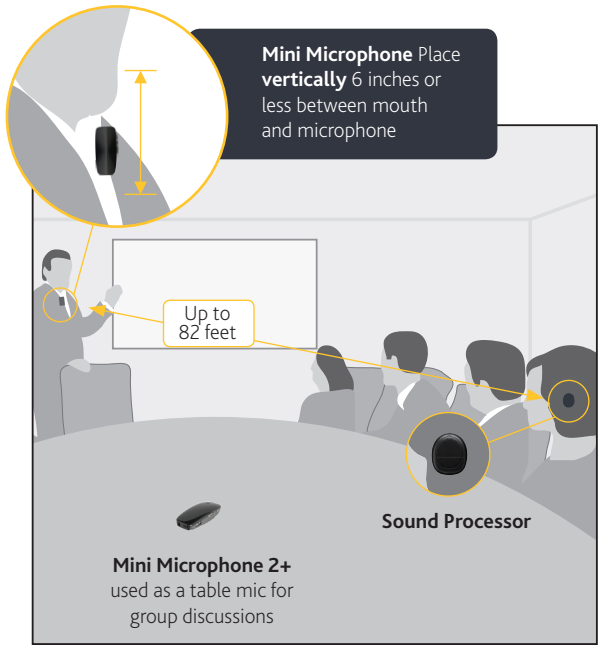
Tips for Use:

- Keep the MM2+ 6 inches or less from the speaker's mouth in an upright position (the upright position ensures the MM2+ is in a directional setting, which helps reduce background noise).
- To use in a small group/conference setting, place the MM2+ horizontally on the table or desk.
- The mode button can be used to toggle between audio sources note that when something is first plugged in, the MM2+ will automatically switch to that source.
- 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 3 MM2+ (see user manual for details).

EXTENDED AUDIO CAPABILITIES INCLUDE:

Conference Microphone

- Directional microphone becomes omnidirectional when the mic is placed in a horizontal position (ideal for small group/ conference use).



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.

Telecoil

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

Euro Adaptor

- Can be used to connect traditional RM-HAT technology through the MM2+ (see pg. 18)

Universal Receiver with MM2+

Advantages:

- Can use any universal receiver with Europin connection (ie, Phonak Roger, Oticon Amigo) so purchase of a receiver dedicated to this 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 can stream to a bilaterally implanted child, a child using a Kanso Sound Processor and a 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.

Tips for use:

- Most users will prefer a 1:1 mixing ratio set for streaming the MM2+ in this configuration. This can be set in the Kanso programming software.
- 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.

Fitting Remote Microphone Hearing Assistive Technology (RM-HAT)

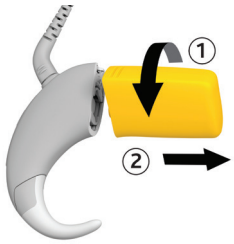
Nucleus 6 Sound Processor (CP910 and CP920)

The Cochlear Nucleus 6 family of sound processors, released in 2013, deliver hearing performance across a range of acoustic environments. The introduction of SmartSound iQ with SCAN*, connectivity with True Wireless accessories, Data logging and new user controls such as Master Volume allow for a simply smarter hearing experience. The Nucleus 6 family includes the CP910, which has an accessory port and the smaller CP920 which does not have an accessory port.

*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.

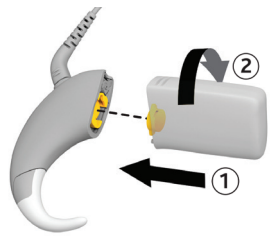
HOW TO CHANGE BATTERIES

Remove/attach rechargeable battery



REMOVE

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

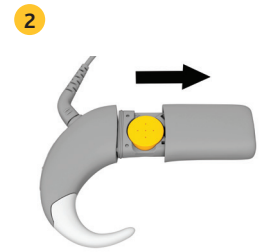


ATTACH

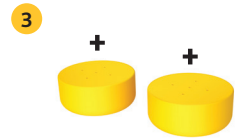
- Twist the battery module as shown to attach the parts.
- The processor will turn on automatically.

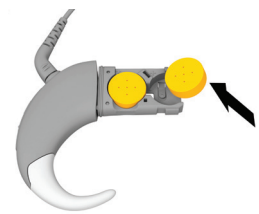
Change disposable batteries

- Turn the lock screw counterclockwise to unlock the tamper resistant battery cover (clockwise to lock).



- Slide to open.





- Insert two new p675 high power zinc air disposable batteries (not silver oxide or alkaline), flat side facing up.
- Processor turns on automatically.

TURN ON AND OFF

- Either connect battery or short-press lower button to turn on.
- Long-press the lower button (about two seconds) to turn off.

LOCK PROCESSOR BUTTONS

- Short-press and release both buttons at once to lock or unlock buttons. (Orange light means buttons locked.)

CHANGE PROGRAMS

- Short-press and release lower button to change programs.
- Number of beeps or green flashes (if set up by the clinician) indicates the program number.

MINI MICROPHONE

Long-press the upper button to start streaming audio from the Mini Microphone or TV Streamer.

Short-press to turn off.

Blue: Wireless Accessory is streaming audio.

Green: microphones are working.

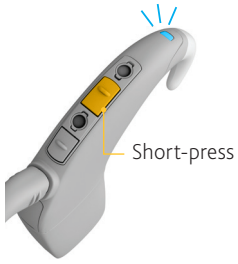
TIP: Long-press again to cycle to the next paired Wireless Accessory.

TELECOIL

Short-press the upper button to turn manual telecoil on and off.

Blue: telecoil/accessory is working.

Green: microphones are working.



EVERYDAY USE

LIGHT	WHAT IT MEANS
●●●●● …	Processor flashes while receiving sound from telecoil/audio accessory (if set up by the clinician).
●●●●● …	Processor flashes while receiving sound from microphones (if set up by clinician).
● / ●● / ●●● / ●●●●	Turning on and changing programs. Number of flashes indicates the number of the current program.
▬	Turning off processor.

WIRELESS ACCESSORIES

LIGHT	WHAT IT MEANS
●	Pairing to Wireless Accessory is successful.

TELECOIL/PLUG-IN AUDIO ACCESSORIES

LIGHT	WHAT IT MEANS
▬	Changing from microphone to telecoil/ plug-in audio accessory.
▬	Changing from telecoil/plug-in audio accessory to microphone.

LOCKING BUTTONS

LIGHT	WHAT IT MEANS
▬ ▬	Locking processor buttons.
▬ ▬	Unlocking processor buttons.
●	Processor buttons are locked.

ALERTS

LIGHT	WHAT IT MEANS
● ● ● …	Processor flashes while coil is off (or connected to the wrong implant).
●●●●●	Processor battery is empty. Charge battery.
▬	Fault. Contact clinician. Stays on until the issue is resolved.

Mini Microphone 2+ (MM2+)

Advantages:

- Direct streaming from the remote microphone to the processor (discreet option).
- Inexpensive compared to other systems.
- Compatible with Nucleus, Baha and ReSound technology.
- Extended audio input capabilities, including conference microphone, line-in direct audio input, telecoil, and Euro adaptor (see next option for Universal Receiver with MM2+).

Steps for fitting:

PAIRING

Follow the steps below to pair the Sound Processor to the MM2+

1. Remove the Sound Processor from the ear. Disconnect the battery.
2. Turn on the microphone.
3. Press the pairing button on the Mini Microphone 2+ once using the tip of a pen or similar object. The LED will flash yellow every 2 seconds and the Mini Microphone will now be in pairing mode for 20 seconds.
4. While pairing mode is active (20 seconds), attach the battery to Nucleus 6 Sound Processor. A blue indicator light flashes to show that pairing has been successful.

STREAMING

Streaming using the Buttons 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.

Streaming using the Remote Control (CR210)

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 Mini Microphone.
3. To stop streaming. Tap the Telecoil button.

Streaming using the Remote Assistant

1. Turn on the sound processor and the MM2+.
2. Press and hold the side button for 2 seconds, then release. Audio will start streaming through the Mini Microphone.
3. To stop streaming, tap the side button.

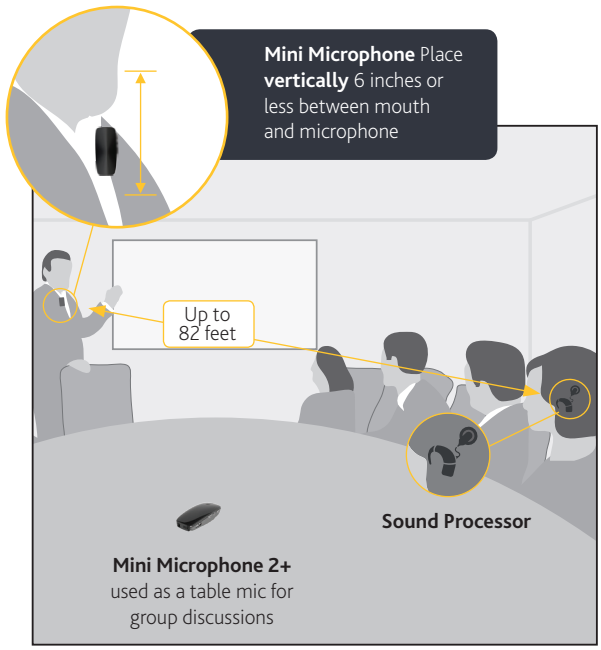
Tips for Use:

- Keep the MM2+ 6 inches or less from the speaker's mouth in an upright position (the upright position ensures the MM2+ is in a directional setting, which helps reduce background noise).
- To use in a small group/conference setting, place the MM2+ horizontally on the table or desk.
- The mode button can be used to toggle between audio sources note that when something is first plugged in, the MM2+ will automatically switch to that source.
- 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 3 MM2+ (see user manual for details).

EXTENDED AUDIO CAPABILITIES INCLUDE:

Conference Microphone

- Directional microphone becomes omnidirectional when the mic is placed in a horizontal position (ideal for small group/ conference use).



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.

Telecoil

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

Euro Adaptor

- Can be used to connect traditional RM-HAT technology through the MM2+ (see pg. 18)

Universal Receiver with MM2+

Advantages:

- Can use any universal receiver with Europin connection (ie, Phonak Roger, Oticon Amigo) so purchase of a receiver dedicated to this 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 can stream to a bilaterally implanted child, a child using a Nucleus 6 Sound Processor and a 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.

Tips for use:

- Most users will prefer a 1:1 mixing ratio set for streaming the MM2+ in this configuration. This can be set in the Nucleus 6 in the programming software or using the Nucleus Smart App (see information about the App in the Made for iPhone section at the end of this guide).
- 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.

Euro Adaptor with Universal Receiver for CP910 only

Advantages:

- Can use any universal receiver with Europin connection (ie, Phonak Roger, Oticon Amigo) so purchase of a receiver dedicated to this processor is not necessary.
- 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, separately from the accessory streaming data).

Steps for fitting:

1. Turn the processor off (press and hold the lower button).
2. Lift open the accessory cover with a screwdriver or locking tool.
3. Push the Euro Adaptor into the accessory port until it clicks into place.
4. The accessory cover may be lowered onto the top of the Euro adaptor to help hold it in place.
5. Connect the universal receiver to the Euro Adaptor.
6. Configure the universal receiver according to manufacturer guidelines.

Tips for use:

Most users prefer a mixing ratio of 1:1 for use with most RM-HAT systems. This can be set in the programming software or using the CR230 Remote Assistant.

Dedicated Receiver: Roger 14 or ML14i for CP910 only

Advantages:

- 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. Turn the processor off (press and hold the lower button).
2. Lift open the accessory cover with a screwdriver or locking tool.
3. Push the Roger 14/ML14i receiver into the accessory port until it clicks into place.
4. The accessory cover should be lowered onto the top of the Roger 14/ML14i to hold into place.
5. Set up the Roger system according to manufacturer guidelines.

Tips for use:

Most users prefer a mixing ratio of 1:1 for use with Roger systems. This can be set in the Nucleus 6 Sound Processor using the programming software.

Fitting Remote Microphone Hearing Assistive Technology (RM-HAT)

Nucleus 5 Sound Processor (CP810)

The Nucleus 5 Sound Processor, introduced in 2010, set a new benchmark in hearing performance when it was released. The compact and discreet size, as well as stylish and ergonomic design, provided improved retention and comfort for adults and children. The Nucleus 5 sound processor communicates wirelessly with the CR110 Remote Assistant, providing control to the patient. SmartSound 2 provides customized programs for different listening environments, helping recipients select the best possible program for noisy environments.

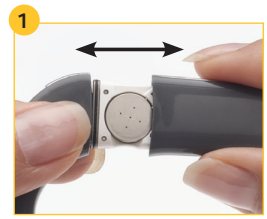
HOW TO CHANGE BATTERIES

Remove/attach rechargeable battery

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

- Pull the battery module from the processing unit.

Change disposable batteries



- Slide to open.

- Insert two new zinc air disposable batteries flat side facing up.

- Processor turns on automatically.

TURN ON AND OFF

- To turn on the processor, press and hold the lower button for at least one second.
- To turn off the processor, press and hold the lower button for at least one second.

LOCK PROCESSOR BUTTONS

- Short-press and release both buttons at once to lock or unlock buttons.

NOTE: This must be enabled by the programming clinician.

CHANGE PROGRAMS

- Short-press and release lower button to change programs.

CHANGE VOLUME OR SENSITIVITY

- Quick press to upper button to increase.
- Quick press to lower button to increase.

NOTE: This option will only be available if clinician has enabled.

TELECOIL INPUT

- Press the upper button to turn on.
- Press the upper button to turn off.

NOTE: This feature must be enabled by the programming clinician

EVERYDAY USE

LIGHT	WHAT IT MEANS
●●●●● …	Processor flashes while receiving sound from telecoil/audio accessory (if set up by the clinician).
●●●●● …	Processor flashes while receiving sound from microphones (if set up by the clinician).
● ●● ●●● ●●●●	Turning on and changing programs. Number of flashes indicates the number of the current program.
▬	Turning off processor.

VOLUME OR SENSITIVITY

LIGHT	WHAT IT MEANS
●	You are changing volume or sensitivity. (Advanced option only.)

TELECOIL/PLUG-IN AUDIO ACCESSORIES

LIGHT	WHAT IT MEANS
▬	Changing from microphone to telecoil/ plug-in audio accessory.
▬	Changing from telecoil/plug-in audio accessory to microphone.

LOCKING BUTTONS

LIGHT	WHAT IT MEANS
●●	Locking processor buttons.
●●	Unlocking processor buttons.
●	Processor buttons are locked.

ALERTS

LIGHT	WHAT IT MEANS
●●●● …	Processor flashes while coil is off (or connected to the wrong implant).
●●●●●●	Processor battery is empty. Charge battery.
▬	Fault. Contact the clinician. Stays on until the issue is resolved.

Dedicated Receiver: Roger 14 or ML14i

Advantages:

- Cosmetically-appealing solution for an FM receiver.
- Receiver is automatically turned on when the transmitter is turned on (user must manually stop the accessory by pressing the top button when the transmitter is turned off, otherwise processor is left in accessory mode and has a limited input dynamic range).

Steps for fitting:

1. Turn the processor off (press and hold the lower button).
2. Lift open the accessory cover with a screwdriver or locking tool.
3. Push the Roger 14/ML14i into the accessory port until it clicks into place.
4. The accessory cover should be lowered onto the top of the Roger 14 to help hold it in place.
5. Configure the Roger 14/ML14i according to manufacturer guidelines.

Tips for use:

Most users prefer a mixing ratio of 1:1 for use with Roger systems. This can be set in the programming software or using the CR110 Remote Assistant.

ACTIVATING FM

Using the CR110 Remote Assistant

Follow the steps below to activate FM using the CR110 Remote Assistant.

1. Turn on the sound processor with the Roger 14/ML14i receiver in place.
2. Turn on the CR110 Remote Assistant by pressing and holding the Cochlear button. Press and hold the Telecoil button for two seconds, then release.
3. To stop listening to FM transmission, tap the Telecoil button.

Note: Only Nucleus 5 sound processors that are build standard C or later are compatible with adaptive FM systems such as Roger 14 or ML14i; if there are questions about compatibility for a Nucleus 5 sound processor, please contact Cochlear.

Euro Adaptor with Universal Receiver

Advantages:

- Any universal receiver that has a Europin connection can be used.
- Receiver is automatically turned on when the transmitter is turned on (user should manually stop the accessory by pressing the top button when the transmitter is turned off, otherwise processor is left in accessory mode and has a limited input dynamic range).

Steps for fitting:

1. Turn the processor off (press and hold the lower button).
2. Lift open the accessory cover with a screwdriver or locking tool.
3. Push the Euro Adaptor into the accessory port until it clicks into place.
4. The accessory cover may be lowered onto the top of the Euro adaptor to help hold it in place.
5. Connect the universal receiver to the Euro Adaptor.
6. Configure the universal receiver according to manufacturer guidelines.

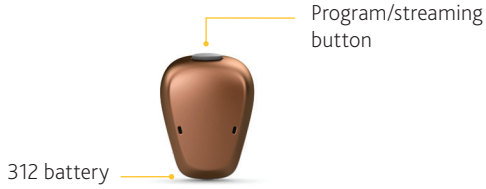
Tips for use:

Most users prefer a mixing ratio of 1:1 for use with most RM-HAT systems. This can be set in the programming software or using the CR110 Remote Assistant.

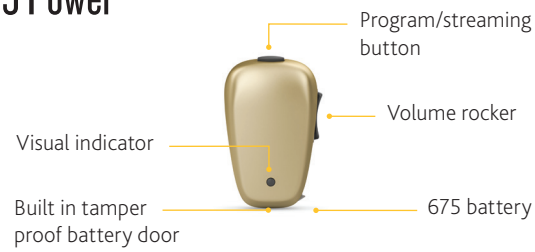
Fitting Remote Microphone Hearing Assistive Technology (RM-HAT)

Baha 5 Sound Processors

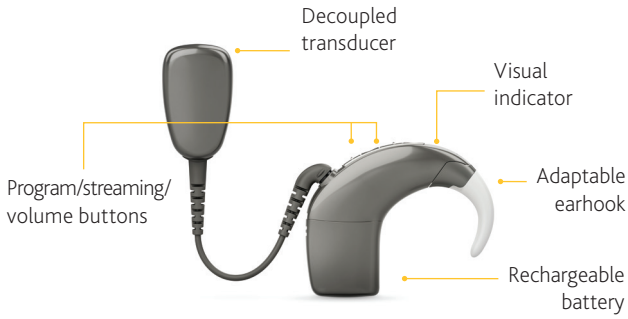
Baha 5



Baha 5 Power



Baha 5 SuperPower



The Baha 5 family of sound processors include the Baha 5, Baha 5 Power and Baha 5 SuperPower. The Baha 5 sound processor is the smallest in the industry[14] with the power output to fit 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.[8-11] 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.

TURNING ON/OFF

Easy On/Off Function

- Baha 5 and Baha 5 Power processors are turned on when the battery door (located at the bottom of the processor) is closed. The processor is turned off when the battery door is open. Baha 5 SuperPower is turned on when a rechargeable battery is attached, and turned off when the battery is detached.

STREAMING ON/OFF

- To change programs, simply press the button at the top of the processor.
- To activate streaming of a paired wireless device, press and hold the top button on the sound processor for about two seconds, until you hear the audible melody.

PROCESSOR BUTTONS AND 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.

BUTTON	LIGHT	WHAT IT MEANS
Turn on processor	▬	Close the battery door completely (Baha 5 Power) or attach battery (Baha 5 SuperPower).
Turn off processor	▬	Open battery door until you feel the first click (Baha 5 Power) or detach battery (Baha 5 SuperPower).
Change program	●●●●● …	Press the button (Baha 5 Power) or press and hold upper button (Baha 5 SuperPower).
Activate streaming	● …	Press and hold the button (Baha 5 Power), or press and hold lower button (Baha 5 SuperPower).
Stop streaming	●●●●● …	Press the button again (Baha 5 Power), or press and hold upper button (Baha 5 SuperPower).
Change Volume	● …	Use the volume rocker on the side of the processor (Baha 5 Power) or press and release upper/lower button to increase/decrease (Baha 5 SuperPower).

Mini Microphone 2+ (MM2+)

Advantages:

- Direct streaming from the remote microphone to the processor (discreet option).
- Inexpensive compared to other systems.
- Compatible with Nucleus, Baha and ReSound technology.
- Extended audio input capabilities, including conference microphone, line-in direct audio input, telecoil, and Euro adaptor (see next option for Universal Receiver with MM2+).

Steps for fitting:

PAIRING

Follow the steps below to pair the Sound Processor to the MM2+

1. Remove the Sound Processor from the ear. Remove the battery or open battery door.
2. Turn on the Mini Microphone.
3. Press the pairing button on the Mini Microphone 2+ once using the tip of a pen or similar object. The LED will flash yellow every 2 seconds and the Mini Microphone 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).

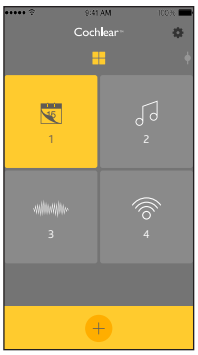
STREAMING

Streaming using the Remote Control

1. Turn on the sound processor and the MM2+.
2. Press the streaming button 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.

Streaming using the Baha5 Smart App

1. Turn on the sound processor and the MM2+.
2. Start the Baha 5 Smart App.
3. Tap over the Wireless icon.
4. To stop streaming, tap over another program.



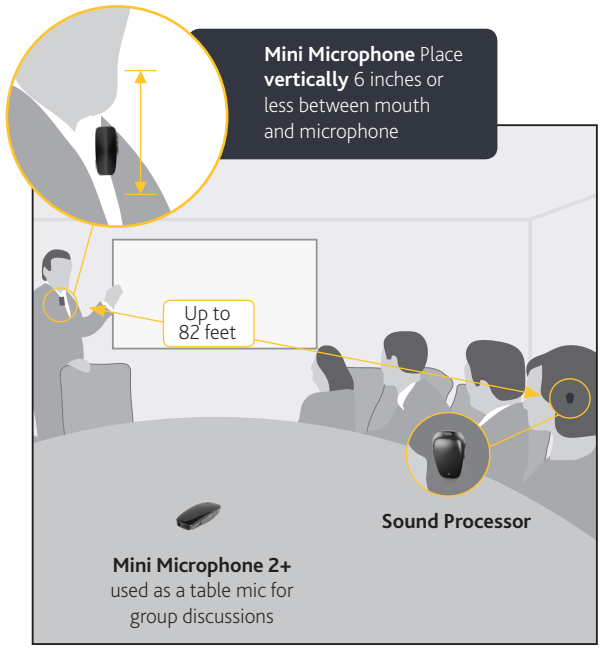
Tips for Use:

- Keep the MM2+ 6 inches or less from the speaker's mouth in an upright position (the upright position ensures the MM2+ is in a directional setting, which helps reduce background noise).
- To use in a small group/conference setting, place the MM2+ horizontally on the table or desk.
- The mode button can be used to toggle between audio sources note that when something is first plugged in, the MM2+ will automatically switch to that source.
- 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 3 MM2+ (see user manual for details).

EXTENDED AUDIO CAPABILITIES INCLUDE:

Conference Microphone

- Directional microphone becomes omnidirectional when the mic is placed in a horizontal position (ideal for small group/ conference use).



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.

Telecoil

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

Euro Adaptor

- Can be used to connect traditional RM-HAT technology through the MM2+ (see pg. 18).

Universal Receiver with MM2+

Advantages:

- Can use any universal receiver with Europin connection (ie, Phonak Roger, Oticon Amigo) so purchase of a receiver dedicated to this 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 can stream to a bilaterally implanted child, a child using any of the Baha 5 Sound Processors and a 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.

Tips for use:

- Most users will prefer a 1:1 mixing ratio set for streaming the MM2+ in this configuration. This can be set in the Baha 5 programming software.
- 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.

Visual Verification of RM-HAT Technology

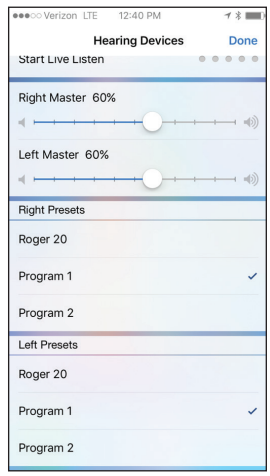
Visual verification using the Smart App (Nucleus 7 Sound Processor and Baha 5 Sound Processors) or remote controls (earlier processors) allows non-users to confirm input from the RM-HAT. Visually confirming device function can also be used to confirm bilateral signal vs. unilateral signal reception from RM-HAT technology or other wireless devices.

USE VISUAL VERIFICATION TO:

- Routinely monitor the device fitting (especially with small children)
- Troubleshoot any device concerns

Nucleus 7 Sound Processor Visual Verification of Streaming Through MFi (Made for iPhone)

1. Open iOS compatible iOS device. Tap on the Settings icon.
2. Select the General menu option, then Accessibility, then MFi Hearing Devices.
3. To ensure connectivity to Roger 20 system or MiniMic, confirm a checkmark next to the Roger 20/or MiniMic menu option.

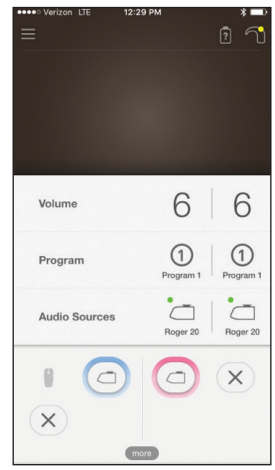


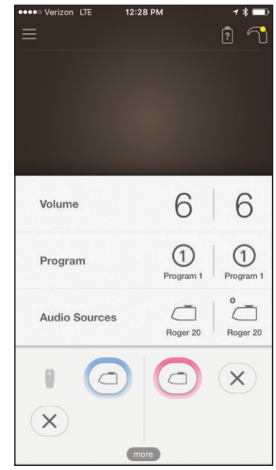
Kanso and Nucleus 6 Visual Verification of Roger 14 Streaming Through CR230 Remote Assistant

1. If using AutoFM soon as the transmitter is turned on, the processor connects and an FM icon will display on the CR230 screen.
2. To manually turn FM on and off tap the side button of the CR230.

Nucleus 7 Sound Processor Visual Verification of Roger 20 Streaming Through 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 grey dot will appear next to the Roger 20.





Remote Microphone Hearing Assistance Technology (RM-HAT)

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 mixing ratio settings • Check Sensitivity settings • Change batteries	• 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 (if appropriate) is not frayed/kinked
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 availalable
Listening is poorer with the RM-HAT system than with the processor alone	• Check that the correct program is being used in the processor • Check the mixing ratio • 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
Recipient can hear input from RM-HAT but not from environment	• Check the mixing ratio • 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)

Use of Monitor Earphones

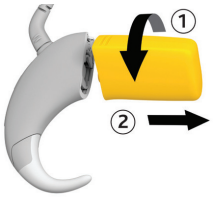
Use of Monitor Earphones

Monitor Earphones may be used with Nucleus 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. Use monitor earphones to:

- confirm the RM-HAT signal is audible
- routinely monitor the device fitting (especially with small children)
- troubleshoot any device concerns

NUCLEUS 7 SOUND PROCESSOR MONITOR EARPHONES AND ADAPTOR

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 earphones non-noise cancelling earphones can be used).
5. You are now listening to the microphone of the processor; to listen to streaming (ie, MM2+), simply start streaming on the processor.
6. To connect the Roger 20, connect in the order shown below.



NUCLEUS 5/6 MONITOR EARPHONES

1. Power the processor off by pressing and holding the top button.
2. Lift the accessory door using a small screwdriver or locking tool.
3. Plug in the monitor earphones until you feel a click.
4. If desired, connect a receiver (ie, Euro Adaptor with universal receiver, Roger 14, etc) to the port in the middle of the cable of the monitor earphones.
5. Power the processor on by pressing the top button.
6. You are now listening to the processor microphone and/or the RM-HAT technology.

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.

TEST ROD TO LISTEN TO/CONFIRM BAHA FITTINGS

Professionals may listen to RM-HAT on a Baha sound processor by using a Baha test rod. Place the test rod on the forehead or mastoid to listen to the device; it may be easiest to hear the sound by plugging the ears.

Functional Listening Evaluation[13]

While the use of monitor earphones 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:[13]

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

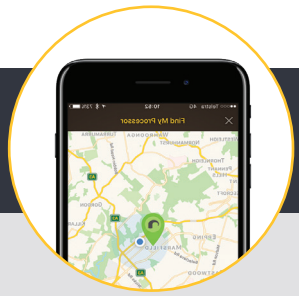
2. Administer the task without visual cues in quiet using the sound processor at a normal setting.
   - The child and examiner should be about 3 feet apart.
   - The suggested presentation level is 60 dB SPL at the listener's ear, or normal conversational speech.

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.



Other Wireless Devices in the Classroom

Apple's Made for iPhone Technology

Made for iPhone (MFi) technology has given cochlear implant and Baha recipients more access than ever before to audio devices. MFi allows for direct streaming from any iOS device running iOS 10 or later – this includes devices such as iPhone,® iPad® or iPod touch®. In the classroom, iPads have been shown to increase academic performance and improve engagement and motivation.[12]

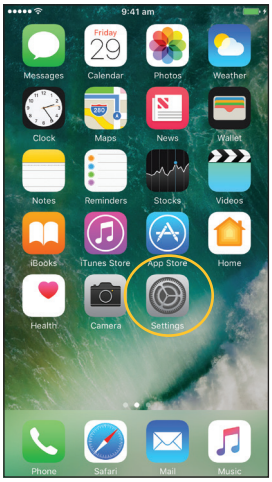
Students with Nucleus 7 Sound Processor or Baha 5 Sound Processor can stream directly from their iOS devices by pairing them as shown below. One processor may be paired with multiple iOS devices. More information about using MFi technology can be found on both Cochlear's and Apple's websites.

Nucleus 7 Sound Processor Pairing Guide (for iPhone/iPod touch/iPad)

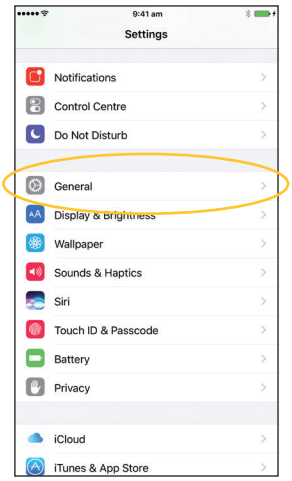
PAIRING THE PROCESSOR

NOTE: If you have other sound processor(s) or hearing aid(s) already paired, you need to unpair them first.

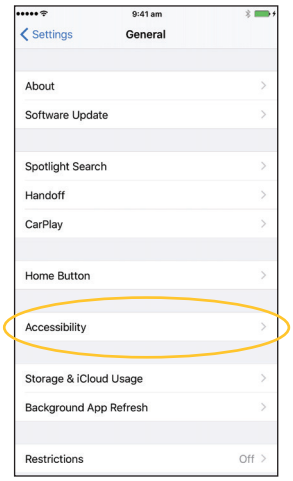
1 On the iOS device, open Settings.



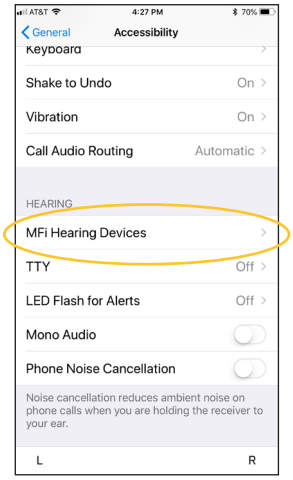
2 Select General.



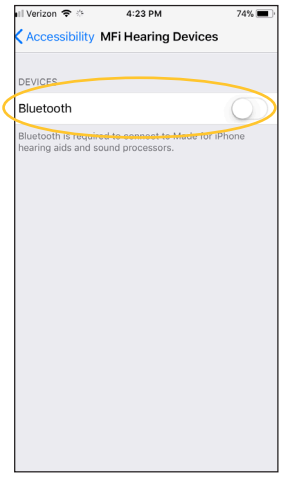
3 Select Accessibility.



4 Scroll down and select MFi Hearing Devices.



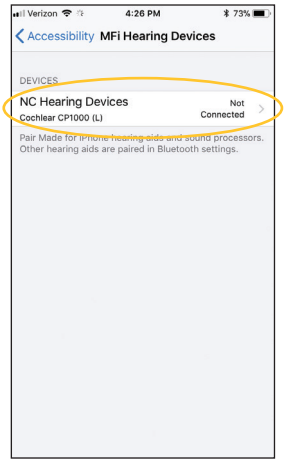
5 If Bluetooth® is not turned on, select it now.



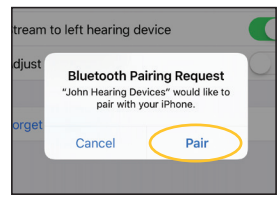
6 Turn the sound processor(s) OFF, then ON. If you have two processors, do both of them now, one after the other. The Apple device will search for the sound processor(s)...

NOTE: If you use a sound processor and a compatible hearing aid, you can also pair both of them in this way.

7 Select the processor when it displays on the screen.



8 Tap Pair to confirm pairing. If you have two processors, you will see this message twice.



When pairing starts:

- Blue flash for 4 seconds.
- 6 beeps.

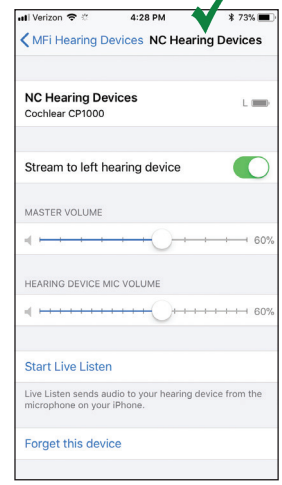
Pairing may take up to 120 seconds.

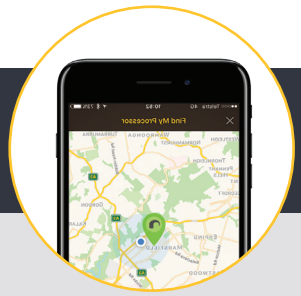
When pairing is finished:

- Blue flash for 4 seconds.
- Ripple tone.

NOTE: Don't start to stream audio until pairing is finished.

9 Successful pairing!





Other Wireless Devices in the Classroom

Smart App available for Nucleus Technology

Cochlear and Apple technology also allow for the use of Smart Apps with the Nucleus 7 Sound Processor and Baha 5 Sound Processor to control and monitor the sound processors. In the classroom, the apps can be used to confirm fittings, start streaming, monitor devices and even track the hearing of a recipient. Apps may be found on the Apple Store by searching for “Nucleus Smart App” or “Baha Smart App”. First, pair the phone with the iOS device as noted above, then follow the app instructions to connect to the App.

Nucleus 7 Sound Processor Smart App features:

MONITOR AND CONTROL THE NUCLEUS 7 SOUND PROCESSOR

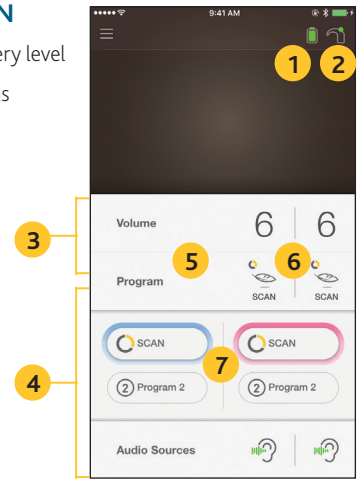
Follow the steps below to connect the sound processor to the Smart App

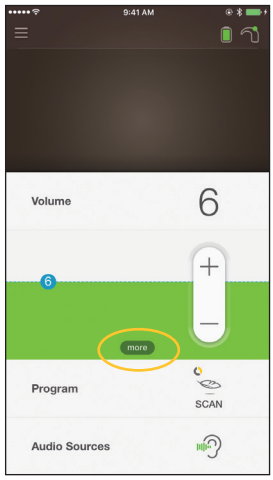
1. Tap the Nucleus Smart icon to start the app.
2. Set up the app. The first time you run the app, a series of screens step you through setting it up.

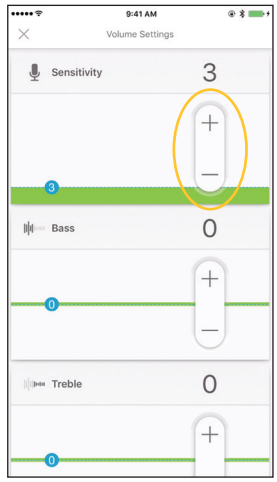
NOTE: You will need to log in to the app using the Cochlear account.

THE HOME SCREEN

1. Sound processor battery level
2. Sound processor status
3. Control panel (closed)
4. Control panel (open)
5. Setting name
6. Setting current value
7. Setting controls







HEARING TRACKER:

Provides information about sound processor usage to caregivers and patients

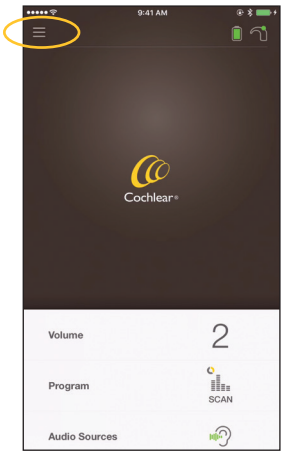
Adjust:

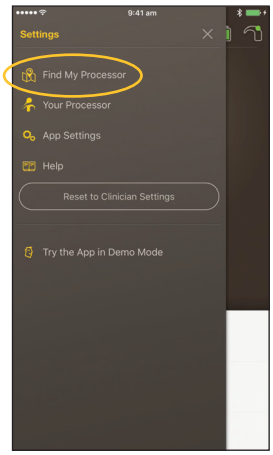
- Streamed volume
- Programs
- Bass and treble
- Streamed audio
- Sensitivity
- Master volume limit

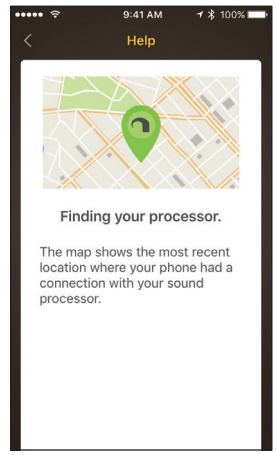
1. Start streaming from an Audio Source.
2. Tap more to open the appropriate control panel.
3. Tap + / - to change settings.
4. Tap X at top left to close the Audio Source Settings control panel.

FIND MY PROCESSOR:

Locates a lost sound processor by providing the last place the processor was connected to the Smart App.







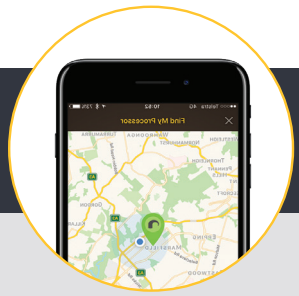
TROUBLESHOOTING

You have trouble connecting to the app

1. Restart the sound processor.
2. Restart the app.
3. Restart the device running the app.

You don't receive notifications

1. Check that the app is running on the device.



Other Wireless Devices in the Classroom

Apple's Made for iPhone Technology

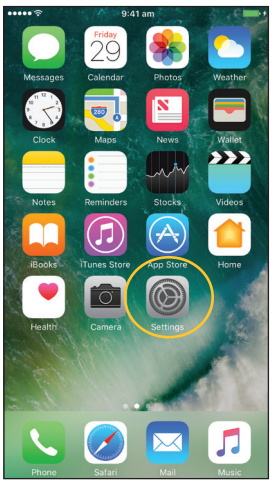
The Baha 5 Sound Processors are the first sound processors that can stream sound directly from iPhone, iPad or iPod touch—without the need for a secondary device or bulky neck-worn hardware. Baha 5 sound processors make it easy for your patients to connect with the people and devices they love.

Baha 5 Sound Processors Pairing Guide (for iPhone/iPod touch/iPad)

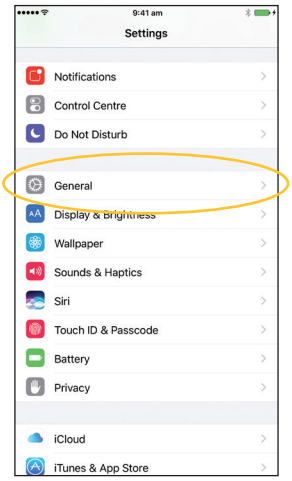
PAIRING THE PROCESSOR

NOTE: If you have other sound processor(s) or hearing aid(s) already paired, you need to unpair them first.

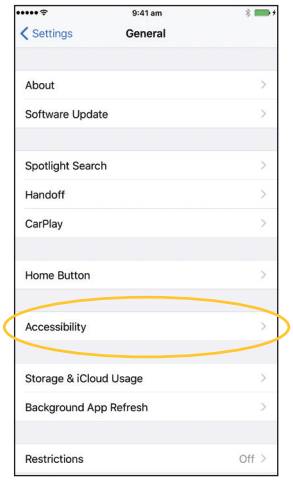
1 On the iOS device, open Settings.



2 Select General.

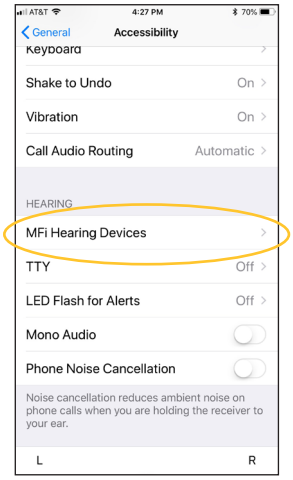


3 Select Accessibility.

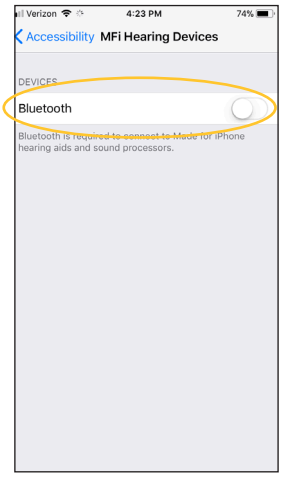


NOTE: If the *MFi Hearing Devices* screen opens now, go to Step 5.

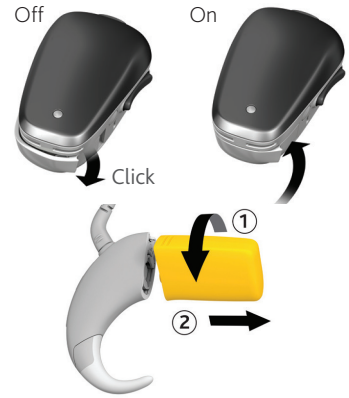
4 Scroll down and select MFi Hearing Devices.



5 If Bluetooth is not turned on, select it now.

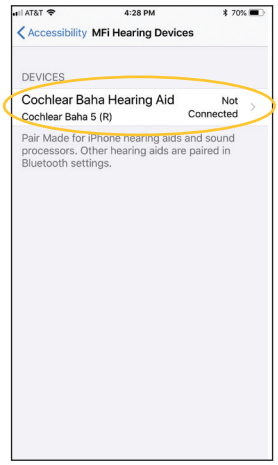


6 Turn the sound processor(s) OFF, then ON. If you have two processors, do both of them now, one after the other (within the same time window.) The device searches for the sound processor(s)...

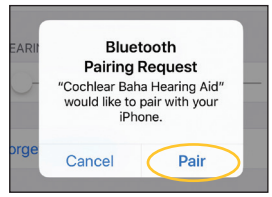


NOTE: If you use a sound processor and a compatible hearing aid, you can also pair both of them in this way.

7 Select the sound processor's name when it displays on the screen.



8 Tap Pair to confirm pairing. If you have two processors, you will see this message twice.

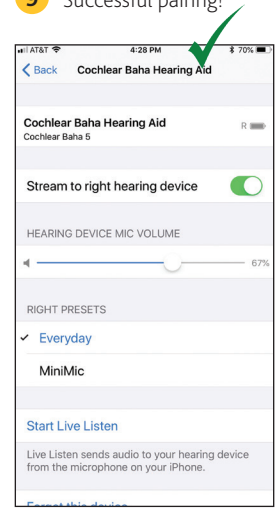


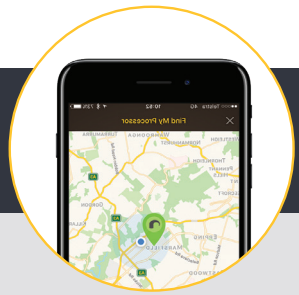
A series of 6 beep tones will be heard, followed by a ripple tone approximately 20 seconds later.

Pairing may take up to 120 seconds.

NOTE: Do not start any streaming to the sound processor until final pairing is confirmed.

9 Successful pairing!





Other Wireless Devices in the Classroom

Baha 5 Smart App

With the Baha 5 Smart App, your patients can control their Baha 5 sound processor directly from their smartphone and personalize their listening experience directly from their iPhone or Android™ device.

Baha Smart App features:

- Control the Baha 5 sound processor directly from a compatible smartphone
- Personalize the hearing experience of the user
- Change programs
- Adjust volume
- Receive assistance and get handy operating tips
- Start wireless streaming
- Monitor battery life
- Locate a lost sound processor

Baha 5 Smart App features:

MONITOR AND CONTROL THE BAHA 5 SOUND PROCESSOR

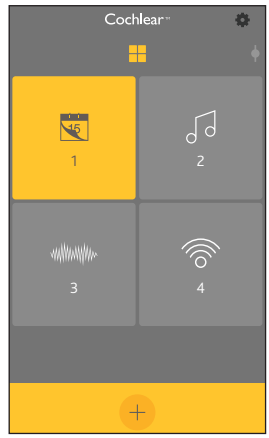
Follow the steps below to connect the sound processor to the Baha 5 Smart App

1. Make sure that the sound processor is paired to the smartphone via Bluetooth.
   - The sound processor should have a fresh battery.
   - Turn off any wireless accessories.
2. Turn OFF the sound processor and then turn ON the sound processor to make it discoverable.
3. Tap the Baha Smart App icon to start the app.
4. Read through the Terms of Use and the introductory tutorial slides (visible at first-time-use only).
5. Choose to connect/pair device.
6. Please wait for the Baha 5 Smart App to connect to and pair to the sound processor.
7. You're ready to run the Cochlear Baha 5 Smart App.

NOTE: When pairing to two sound processors, turn them on simultaneously. If you have additional questions about pairing the smartphone to the sound processor, please refer to the Setup Guide for Android and iPhone.

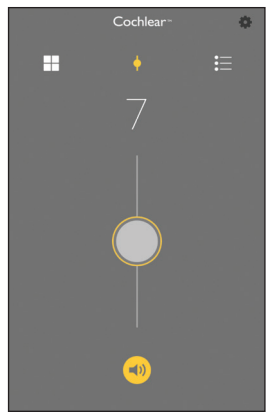
THE HOME SCREEN

Change programs on the sound processor(s) and activate wireless streaming.



ADJUST VOLUME

Adjust the volume on the sound processor(s) and Cochlear Wireless Accessories.



LOCATE DEVICE:

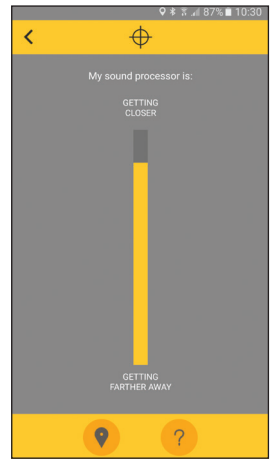
Locate a lost sound processor by signal strength or by map view.

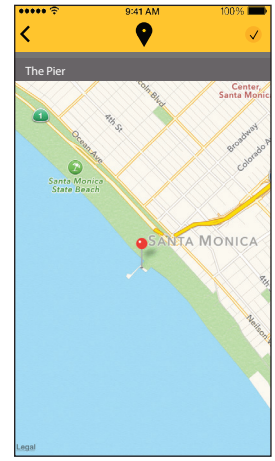
Signal strength:

- Locate a sound processor that is still within range (there is still a connection between processor and smartphone).
- The bar displays how close or far away you are from the sound processor.

Map view:

- Locate a sound processor that is out of range (there is no connection between processor and smartphone).
- The map will pin the location where the last connection between sound processor and phone was lost.

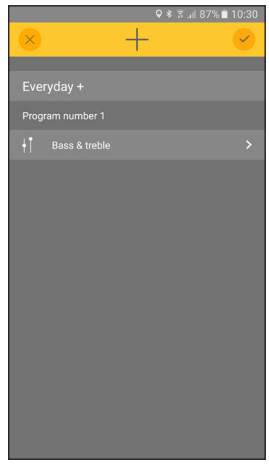




PROGRAM +

Users can adjust treble and bass settings and create personalized programs (Program+).

If user has a compatible Apple device, they can Geo Tag a program and it will automatically get activated once the user is inside the specified area. They can also adjust the size of the area triggering the program activation in the app.

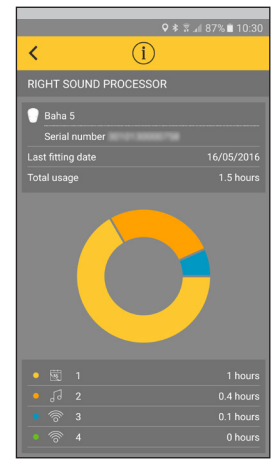


SOUND PROCESSOR INFORMATION

View sound processor information and usage.

The system information page displays sound processor information, last fitting date, program adjustments, locations and usage.

NOTE: This page can be shared with hearing care professionals during fittings as support information to data logging to help guide to the appropriate fitting.



TROUBLESHOOTING

You have trouble connecting to the app

- Restart the sound processor.
- Restart the app.
- Restart the device running the app.

You don't receive notifications

- Check that the app is running on the device.

Additional Resources

- Nucleus 7 Sound Processor Instructional Videos and Manuals: *http://www.cochlear.com/wps/wcm/connect/us/recipients/nucleus-7*
- *Kanso Instructional Videos and Manuals: https://www.cochlear.com/us/recipients/kanso*
- Nucleus 6 Instructional Videos and Manuals: *http://www.cochlear.com/wps/wcm/connect/us/recipients/nucleus-6/nucleus-6-support-and-community/self-support/manuals*
- Nucleus 5 Instructional Videos and Manuals: https://www.cochlear.com/us/recipients/nucleus-5/nucleus-5-basics
- Baha 5 Instructional Videos and Manuals: https://www.cochlear.com/us/recipients/baha-5/baha-5-basics
- Baha 5 Power Instructional Videos and Manuals: : https://www.cochlear.com/us/recipients/baha-5-power/baha-5-power-basics
- Baha 5 SuperPower Instructional Videos and Manuals: https://www.cochlear.com/us/recipients/baha-5-superpower/baha-5-superpower-basics
- How to pair with an Apple Device: *https://support.apple.com/en-us/HT201466*
- Phonak Configurator: *http://www.phonakpro.com/com/b2b/en/support/roger-support-center/roger-configurator.html*

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Notes:

Hear now. And always

As the global leader in implantable hearing solutions, Cochlear is dedicated to bringing the gift of sound to people with moderate to profound hearing loss. We have helped over 450,000 people of all ages live full and active lives by reconnecting them with family, friends and community.

We aim to give our recipients the best lifelong hearing experience and access to innovative future technologies. For our professional partners, we offer the industry's largest clinical, research and support networks.

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Nucleus Smart App is compatible with iPhone 5 and iPod touch 6th generation devices (or later) running iOS 10 or higher. It is not designed for use with other Apple® devices.

The Nucleus 7 Sound Processor is compatible with iPhone 8 Plus, iPhone 8, iPhone 7 Plus, iPhone 7, iPhone 6s Plus, iPhone 6s, iPhone 6 Plus, iPhone 6, iPhone SE, iPhone 5s, iPhone 5c, iPhone 5, iPad Pro (12.9-inch), iPad Pro (9.7-inch), iPad Air 2, iPad Air, iPad mini 4, iPad mini 3, iPad mini 2, iPad mini, iPad (4th generation) and iPod touch (6th generation) using iOS 10.0 or later. Apple, the Apple logo, FaceTime, Made for iPad logo, Made for iPhone logo, Made for iPod logo, iPhone, iPad Pro, iPad Air, iPad mini, iPad and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc., registered in the U.S. and other countries.

Cochlear Baha 5 Sound Processors are compatible with iPhone 8 Plus, iPhone 8, iPhone 7 Plus, iPhone 7, iPhone 6s Plus, iPhone 6s, iPhone 6 Plus, iPhone 6, iPhone SE, iPhone 5s, iPhone 5c, iPhone 5, iPad Pro (12.9 inch), iPad Pro (9.7 inch), iPad Air 2, iPad Air, iPad mini 4, iPad mini 3, iPad mini 2, iPad mini, iPad (4th generation), iPod touch (6th generation) and iPod touch (5th generation) using iOS 7 or later.

The Baha 5 Smart App works together with all Cochlear Baha 5 sound processors. It is verified on iPhone, iPad and iPod touch running iOS 9.1 and Samsung Galaxy S6 and S7 running Android OS 5.0 Lollipop. For more detailed device compatibility see the Baha 5 Smart App description on App Store or Google Play.

Information accurate as of June, 2018.

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Cochlear Americas
13059 East Peakview Avenue
Centennial, CO 80111 USA
Telephone: 1 303 790 9010
Support: 1 800 483 3123

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

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