

# **Cochlear™ Nucleus® Kanso® 3**

## **Sound Processor**

### **User Guide**

## Symbols used in this document

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**Note:** Important information or advice.

---



**Tip:** Time saving hint.

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**Caution (no harm):**

Special care to be taken to ensure safety and effectiveness. Could cause damage to equipment.

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**Warning (harmful):**

Potential safety hazards and serious adverse reactions. Could cause harm to person.

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# About this guide

This guide is intended for hearing implant recipients and their carers using the:

- Cochlear™ Nucleus® Kanso® 3 Nexa™ Sound Processor (Model: CP1175)
- Cochlear™ Nucleus® Kanso® 3 Sound Processor (Model: CP1170)

collectively described as '**Kanso 3 Sound Processors**' unless otherwise stated.

This guide can also be used as a reference by health care professionals.



## Note

- Refer to the relevant sections for Cautions and Warnings relating to the use of the Kanso 3 Sound Processors and other devices.
- Refer to your *Important Information for Recipients* document for essential advice that applies to Cochlear implant systems.

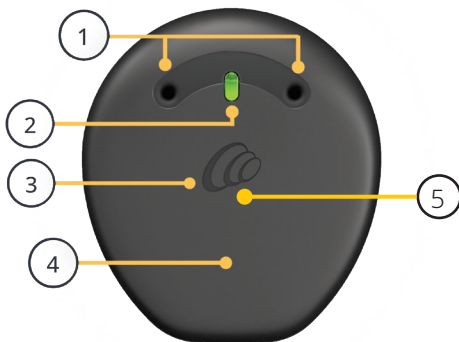


**Warning:** Sound processors and related accessories contain small parts that alone or in combination may pose a hazard of inhalation, choking or ingestion. Swallowing or inhaling small parts can cause severe or fatal injuries.

Always supervise children under 3 years of age and others who may be at risk of inhalation, choking or ingestion of small parts when they use the sound processor and related accessories. When not in use, keep small parts, and combinations of small parts, out of reach from children. If small parts are swallowed or inhaled, seek immediate medical attention.

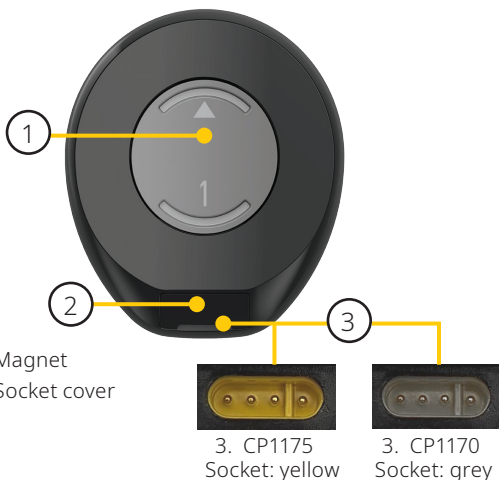
# Kanso 3 Sound Processors

## Front



- 1. Microphone ports
- 2. LED light indicator
- 3. Cochlear logo
- 4. Microphone cover
- 5. Tap interface

## Back



- 1. Magnet
- 2. Socket cover

3. CP1175  
Socket: yellow

3. CP1170  
Socket: grey

# Introduction

## Sound processor compatibility

The **Kanso 3 Sound Processors** are intended to be used in combination with other devices as part of a hearing implant system to provide hearing sensation. The sound processor converts audio sounds into electrical signals to send to the implant, and also provides power to the implant.

The **Cochlear™ Nucleus® Kanso® Magnet** is intended to align and hold the sound processor to a hearing implant.

Device	Implants	Magnet
Cochlear™ Nucleus® Kanso® 3 Nexa™ Sound Processor	Nexa (CI1000) Series Implants: CI1012, CI1022, CI1024 and CI1032	Cochlear Magnet strength 1/2(I) to 5(I)
Cochlear™ Nucleus® Kanso® 3 Sound Processor	CI600 Series Implants: CI612, CI622, CI624 and CI632	Cochlear Magnet strength 1/2(I) to 5(I)
	CI500 Series Implants: CI512, CI522, CI532 and ABI541	Cochlear Magnet strength 1/2 to 6
	CI24RE Series Implants: CI422, CI24RE (CA), CI24RE (ST), CI24REH (Hybrid L24)	Cochlear Magnet Reverse Polarity strength 1/2 to 6
	CI24R Series Implants: CI24R (CS), CI24R (CA), CI24R (ST)	
	CI24M Series Implants: CI24M, ABI24M, CI 11+11+2M	



**Note:** For a full list of compatible accessories please refer to *Compatible accessories* on page 100.



# Power

## Charge your sound processor

Your sound processor has an internal battery that needs regular charging.

Charge your sound processor as soon as you receive it.

To recharge your sound processor's internal battery:

- place it in the **Cochlear™ Home Charger**. The Home Charger is a dedicated charging dock. It integrates charging capability with the ability to dry the sound processor, or
- attach it to the **Cochlear™ Portable Charger**. The Portable Charger recharges the sound processor while you can continue to use the sound processor.

Refer to the *Chargers User Guide* for details.



**Warning:** To charge your sound processor:

- Use Cochlear equipment only.
- Do not use non-Cochlear equipment.



Home Charger



Portable Charger

# Use

## Pair with remote devices

Before using your sound processor with a compatible Apple® or Android™ device, or the Cochlear™ Remote Control, you need to pair your sound processor with the remote device.

Please refer to the Nucleus Smart App or Remote control user guides for details. 'Remote Control' refers to the CR310 Remote Control.



**Warning:** Consider security when connecting your sound processor to devices such as smartphones or tablets. Only connect to devices that are protected, for example, by password or PIN access control. Do not connect to devices that have had their operating system altered.

## Made for iPhone

The Kanso 3 Sound Processors are a verified Made for iPhone / iPod / iPad hearing device. This allows you to use the control and audio streaming functions of compatible Apple devices.

If you wear a sound processor for one ear and a compatible hearing aid on the other ear, you can control them both and stream audio to both using a compatible Apple device. Your clinician can check compatibility and set this up for you.

## Android

The Kanso 3 Sound Processors are compatible with the ASHA (Audio Streaming for Hearing Aid) protocol. This allows you to use the audio streaming functions of compatible Android devices.

device<sup>1</sup>

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<sup>1</sup> For compatibility information and devices visit:  
[www.cochlear.com/compatibility](http://www.cochlear.com/compatibility)

# Nucleus Smart App

With a compatible Apple or Android device<sup>1</sup>, you can use the Nucleus Smart App to control and monitor your sound processor. Please refer to your *Nucleus Smart App user guide* for details.

## Control options

The table below lists options for how you can control your sound processor.



**Note:** Some functions are only available if enabled by your clinician.

Function	Tap Sound processor	Remote control	Nucleus Smart App
Turn ON / OFF	X		
Program		X	X
Volume		X	X
Sensitivity		X	X
Audio sources / Wireless devices		X	X
Master volume limit			X
Bass and treble			X
ForwardFocus			X

<sup>1</sup> For compatibility information and devices visit:  
[www.cochlear.com/compatibility](http://www.cochlear.com/compatibility)

## Bimodal control

Bimodal control with a compatible ReSound hearing aid allows you to control and monitor both your sound processor and hearing aid together through the Nucleus Smart App and stream sound to both ears<sup>1</sup>.

## Sound Check

If you need to confirm whether the sound processor is receiving sound, Sound Check is a Nucleus Smart App function that records sound from Kanso 3 Sound Processors and plays it back.

Sound Check records sound from the sound processor microphones.

The Sound Check app function is available on compatible<sup>1</sup> smartphones.



### Note

- Be aware of privacy and consider the content of the recording
- Make sure you are in a quiet place away from microwave ovens, wireless routers or other devices that could cause interference
- Place the smartphone near the sound processor
- The maximum recording time is 30 seconds.
- The quality of speakers on the smartphone and headphones will affect the sound quality on playback.

Refer to the *Nucleus Smart App User Guide* for details.

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<sup>1</sup> For compatibility information and devices visit:  
[www.cochlear.com/compatibility](http://www.cochlear.com/compatibility)

## Tapping

You can tap on your sound processor to turn the sound processor **on** and **off**.

### How to tap

- Tap on the **Cochlear logo**
- Use **quick, firm taps** - do not press



**Tip:** You can tap your sound processor while it is on or off your implant.

Control	Number of taps
Turn ON	Double tap - 2 taps
Turn OFF	Triple tap - 3 taps

## Turn on and off

### Turn on

To turn your sound processor **on**:

- **Auto-on**  
Place sound processor on your head  
or
- **Double-tap**  
Two taps - quick and firm.



As the sound processor turns **on**:

- the light **flashes green**.



**Note:** To enable flight mode, refer to *Use flight mode* on page 49.

## Turn off





To turn your sound processor **off**:

- **Auto-off**  
Remove sound processor from your head and wait two minutes (if enabled by your clinician)  
or
- **Triple-tap**  
Three taps - quick and firm.



As the sound processor turns **off**:

- the light changes to **steady orange**.

Indicator lights	What it means
 Green flashes	Green flashes when turning on sound processor.  The number of flashes indicates the number of the current program (1, 2, 3, 4 ...).
 Quick green flashes	Sound processor flashes while receiving sound from microphones (Child mode only)
 Orange flashes	Sound processor is off the implant.
 Steady flash of orange	Sound processor is turning off.



## Change program


You can choose between programs to change the way your sound processor deals with sound, for example, in noisy or quiet places. Usually two programs are all you need, but your clinician can give you up to four programs.

To switch between **programs** use your Nucleus Smart App or Remote control.



**Note:** You need to pair your sound processor with your Nucleus Smart App or Remote control first. Refer to these user guides for details.

As the program changes, the light **flashes green**.

Indicator lights	What it means
 <p>Green flashes</p>	<p>Green flashes when changing the program.</p> <p>The number of flashes indicates the number of the current program (1, 2, 3, 4 ...).</p>



### Note

- Your clinician will set up 1, 2, 3 or 4 programs.
- If your clinician has enabled SCAN 2 or SCAN 2 FF, your sound processor can automatically respond to the sound environment without you needing to change program.

## Change volume and sensitivity

If set up by your clinician, you can control the levels of volume or sensitivity (if available) using your Nucleus Smart App or Remote control.

Refer to these user guides for details.



**Note:** You need to pair your sound processor with your Nucleus Smart App or Remote control first. Refer to these user guides for details.

## Stream audio

Your sound processor can stream sound from external audio sources.

### Wireless devices

Cochlear True Wireless™ Devices can wirelessly stream sound to your sound processor:

- The **Cochlear™ Wireless TV Streamer** is controlled from your Nucleus Smart App or Remote control.
- The **Cochlear™ Wireless Phone Clip** controls can be used for making hands-free phone calls.
- The **Cochlear™ Mini Mic 2+** has extra connectivity options including a built-in **Telecoil** to provide audio from an induction loop system.  
The Cochlear Mini Mic 2+ is referred to as '**Mini Microphone**' in this guide.



#### Note

- You first need to pair your sound processor with your Nucleus Smart App or Remote control. Refer to accessory user guides for details.
- To select the Mini Microphone or TV Streamer use your Nucleus Smart App or Remote control. Refer to the Nucleus Smart App and Remote control user guides for details.

To switch between **audio sources**, use your Nucleus Smart App or Remote control.



**Note:** You need to pair your sound processor with your Nucleus Smart App or Remote control first. Refer to these user guides for details.

As the audio source changes, the light **flashes blue**.

# Wear

## Wear your sound processor

Place the sound processor on your implant with:

- the Cochlear logo, light and microphone ports facing up
- the flat underneath edge of the sound processor facing down.




**Caution:** Ensure to position your sound processor correctly to obtain the best performance and so it does not fall off the implant.

Refer to *Kanso 3 Sound Processor* on page 5 for diagram of sound processor parts.



Image shows correct placement and orientation of the sound processor on the implant.

Indicator lights	What it means
 Orange flashes	Sound processor is off the implant, or connected to the wrong implant

## People with two implants

Ask your clinician to give you coloured stickers: red for right, and blue for left, to make identifying left and right sound processors more easy.



**Caution:** If you have two implants, you must use the correct sound processor for each implant.



**Note:** When placing the sound processor on an implant, your sound processor will recognise the implant and will not work on the wrong implant.



**Note:** If you notice connectivity problems with initially attaching your second sound processor, retry by attaching both sound processors again but in the opposite sequence.

## People with Nexa CI1000 Series implants and CI600 Series implants

If you have a Nexa CI1000 Series implant or a CI600 Series implant, avoid sliding your sound processor sideways onto your implant. This could cause the sound processor magnet to misalign with your implant.

Always place the sound processor directly down onto your implant.

To place the sound processor on your head:

1. **Hold** the sound processor slightly above the implant location on your head.
2. **Rotate** the sound processor slightly in both directions (clockwise and anti-clockwise).



3. When you feel a strong pull, **place** the sound processor on the implant.
4. **Rotate** the sound processor so that the microphones are facing up.

## Attach a SoftWear pad

The Cochlear SoftWear™ pad is an optional foam soft-pad accessory to provide a cushioned surface to the sound processor. If you experience discomfort when wearing your sound processor, you can attach this adhesive pad to the back of the sound processor.



**Note:** You may need to use a stronger magnet after attaching a SoftWear pad.

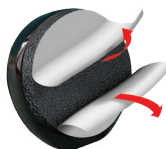
1. **Peel** off the single backing strip on the adhesive side of the pad.



2. **Attach** the pad to the back of the sound processor. **Press** down firmly.



3. **Peel off** the two semicircle backing covers on the cushion side of the pad.



4. **Place** your sound processor on your implant as usual.



**Note:** If you notice any change in the performance of your sound processor after attaching a SoftWear pad, contact your clinician.



## Use a Socket cover

The Cochlear™ Nucleus® Kanso® Socket Cover is an optional accessory that can prevent dust and other material from entering the sound processor socket.

### Insert the Socket cover

1. **Place** the Socket cover in the sound processor socket.



2. **Press** until it clicks into place.



## Remove the Socket cover

Place your thumbnail in the slot at the base and **lift**.



**Warning:** Socket covers can be lost or may be a choking hazard. Keep out of reach of children.



**Note:** When the Socket cover is removed, the socket colour is **yellow** for the Kanso 3 Nexa Sound Processor, and **grey** for the Kanso 3 Sound Processor.

## Attach a Safety line

### For your sound processor

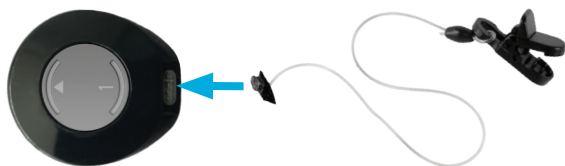
To reduce the risk of losing your sound processor, you can attach a Cochlear Safety Line and clip it onto your clothing or Cochlear Hair Clip.

There are five Safety lines for use with the Kanso 3 Sound Processors:

- **Cochlear™ Safety Line (Short)** - for children. Attaches to recipient's clothing with a snap lock clip and connects to the 4-pin socket of the sound processor.
- **Cochlear™ Safety Line (Long)** - for adults. Attaches to recipient's clothing with a snap lock clip and connects to the 4-pin socket of the sound processor.
- **Cochlear™ Safety Line (Short Loop)**. For use with Cochlear Hair Clip and connects to 4-pin socket of the sound processor.
- **Cochlear™ Safety Line (Short Double Loop)**. For use with Cochlear Hair Clip to loop through Kanso® Halo Accessory or Halo Accessory rings.
- **Nucleus® Safety Line**. Attaches to recipient's clothing with a snap lock clip and loops into a Halo Accessory or Kanso Aqua+ attachment point at one end.



**Warning:** Parents and carers are advised that unsupervised use of long cables (for example, Safety lines) may present a risk of strangulation.



## For Kanso Aqua+

When using Cochlear™ Nucleus® Kanso® Aqua+ you need a Nucleus Safety Line, which has a loop to connect to Kanso Aqua+.



For details on how to use a Nucleus Safety Line with your Kanso Aqua+ refer to the *Cochlear Nucleus Kanso Aqua+ User Guide*.

## Safety line - long or short

To attach a long or short Safety line to the sound processor:

1. If the Socket cover is in place on the back of the sound processor, **remove** the Socket cover.



2. Put the Safety line connector in the socket and **press** until it clicks into place.



3. **Attach** the clip to clothing

**Long Safety line (adults)**

- a. **Lift** the lever to **open** the clip.

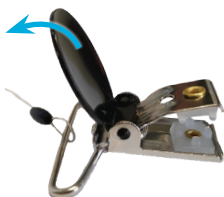


- b. Place the clip on clothing and press **down** on the lever to **close**.

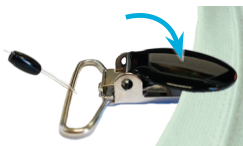


**Short Safety line (children)**

- a. **Lift** the round cover to **open** the clip.



- b. Place the clip on clothing and press **down** on the round cover to **close**.



4. **Place** the sound processor on the implant.

## Safety line - short loop or short double loop


To reduce the risk of losing your sound processor, you can attach a Safety line that clips into your hair.

1. **Pinch** the loop end of the line between your finger and thumb.

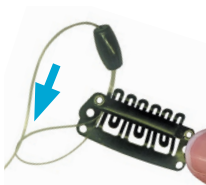


2. **Pass** the loop through the attachment hole in the hair clip.



-  **Tip:** Use the left hole for a left side sound processor and the right hole for a right side sound processor.

3. **Pass** the other end of the line through the loop and **pull** the line tight.



4. **Connect** the other end of the Safety line:
  - for the **short loop**, attach directly to the sound processor
  - for the **short double loop**, attach through the rings of the Halo Accessory which is attached to the sound processor. Refer to *Wear the Halo Accessory* on page 38.

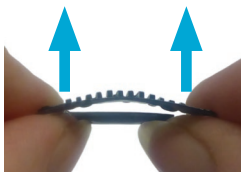
5. If the Socket cover is in place on the back of your processor, **remove** the Socket cover.



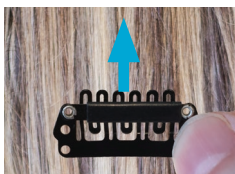
6. Put the Safety line connector in the socket and **press** until it clicks into place.



7. **Press up** on the ends to open the clip.



8. With the teeth facing up and against your hair, **push** the clip up into your hair.



9. **Press down** on the ends to close the clip.



10. **Place** your sound processor on your implant.



## Remove a Safety line

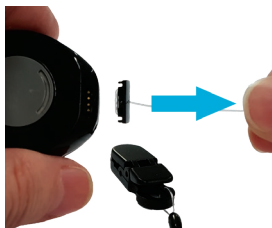
To remove a Safety line from your sound processor either:

Place your thumbnail in the slot at the base and **lift**



or

Hold the line close to the socket and **pull**.



## Wear the Headband

The Cochlear™ Headband is intended to assist with wearing the sound processor as part of a hearing implant system.

It is an optional accessory that holds the sound processor in place during physical activities.



**Warning:** The Headband should be used by recipients who can either remove the sound processor themselves if it is causing discomfort or who can indicate any discomfort to their parent or caregiver.

## Headband sizing

To choose a Headband, measure your head circumference:

Size	Circumference
XS	40 - 48 cm
S	45 - 53 cm
M	48 - 58 cm
L	53 - 63 cm



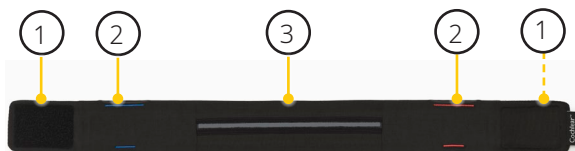
### Note

- The Headband may affect the performance of your sound processor. If you notice any change, contact your clinician.
- It is recommended to remove the Headband at least once daily while sleeping. The Headband should not be worn without removal for more than 30 days.

## Fit the Headband

To fit the Headband, follow these steps.

1. **Open** the Headband and lay it flat, with the anti-slip section facing you and the longer pocket lines at the top.



- 1 Hook and loop fastener
- 2 Pocket for processor
- 3 Anti-slip section for forehead

2. **Open** the correct **pocket** for your sound processor:

- left-side pocket (blue) for left sound processor
- right-side pocket (red) for right sound processor.



3. **Insert** your sound processor into the pocket, making sure that:

- the back of the sound processor (with magnet) is facing towards you
- the bottom of the sound processor (straight edge) goes in first.



4. If you have **two** sound processors, place your second sound processor in the other pocket.
5. **Place** the Headband on your head, making sure that:
  - the anti-slip section is against your forehead
  - your sound processor is over your implant
  - the Headband fits firmly
  - the hook and loop fastener join is secure (press firmly).



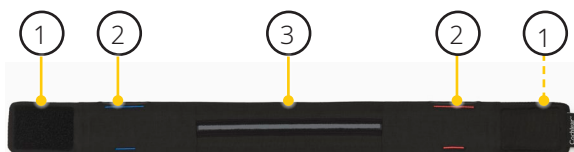
## Fit the Headband with Portable Charger

You can charge your sound processor while you are wearing it in the Headband, using the Cochlear Portable Charger. At the base of each Headband pocket there is an opening for the charger cable.

For more information on the charger, refer to the *Chargers User Guide*.

To fit the Headband with charger, follow these steps:

1. **Open** the Headband and lay it flat, with the anti-slip section facing you, and the longer pocket lines at the top.



- 1 Hook and loop fastener
- 2 Pocket for processor
- 3 Anti-slip section for forehead

2. **Open the base** of the correct **pocket** for your sound processor:

- left-side pocket (blue) for left sound processor
- right-side pocket (red) for right sound processor.



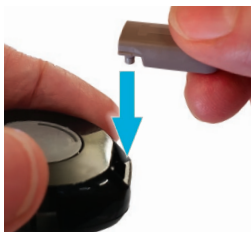
3. **Feed** the Portable Charger connector and cable through the pocket's bottom opening and out through the top opening.



4. If the Socket cover is in place on the back of your sound processor, **remove** the Socket cover.



5. **Attach** your Portable Charger connector to the sound processor.



6. **Insert** your sound processor into the pocket, making sure that the back of the sound processor (with magnet) is facing towards you.



7. **Attach** the Portable Charger to your clothing.  
For more information on the Portable Charger, refer to the *Chargers User Guide*.

8. **Place** the Headband on your head, making sure that:
- the anti-slip section is against your forehead
  - your sound processor is over your implant
  - the Headband fits firmly
  - the hook and loop fastener join is secure (press firmly).

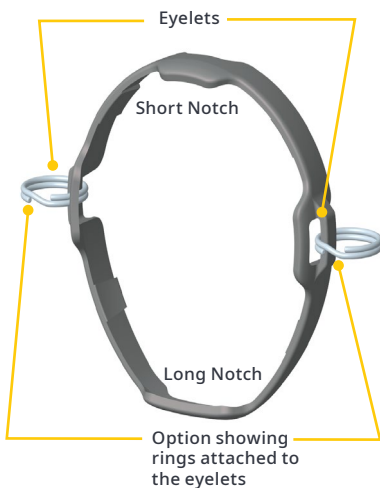


## Wear the Halo Accessory

The Kanso® Halo Accessory is a loss prevention device for your sound processor. This device provides increased security against dropping the sound processor.



**Warning:** The Halo Accessory should be used by recipients who can either remove the sound processor themselves if it is causing discomfort or who can indicate any discomfort to their parent or caregiver.





## Two options to wear the Halo Accessory

1. Use **rings** as anchor points to attach to the eyelets.



or

2. Use **Cochlear Safety lines (short double loop)** as anchor points to attach to the eyelets.

Remove any rings on the Halo Accessory first.

- a. Thread one end of the Safety line through the eyelet.
- b. Thread the other end through the hole in the hairclip and loop.
- c. Repeat for the second Safety line.



**Note:** Using Safety lines may assist with hairclip orientation if difficulty with using rings. The Safety line allows rotation adjustment of the hairclip without affecting its connection.

Hairclips will be required to attach to the rings or Safety lines.

## Use the Halo Accessory

1. **Align** the eyelets and notches of the Halo Accessory with the sound processor:

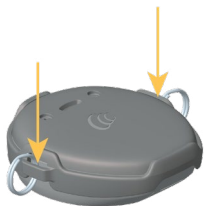
- shorter notch aligns with the top
- longer notch aligns with the base of the sound processor.



2. **Ensure** that the Halo Accessory is aligned parallel to the sound processor.

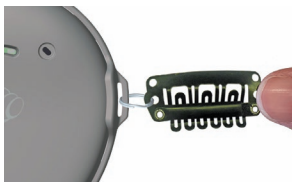


3. **Gently push** the Halo Accessory until it slides into place on the sound processor. Ensure the sound processor is securely attached.



**Note:** Fit the Halo Accessory over the sound processor, rather than fitting the sound processor into the Halo Accessory.

4. **Thread** the hairclips to both sides of the rings (or Safety lines if using), attached to the Halo Accessory.



**Note:** Ensure the **teeth of the hairclips face into the head** to grip the hair.

5. **Mount** the sound processor on to the implant, with hairclips hanging from the rings (or Safety lines if using).



6. **Attach** each hairclip to the hair:

- a. **Bend open** the hairclip from the edges to expand it out.

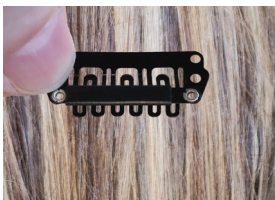


**Note:** The image is shown without the sound processor attached to illustrate how the hairclip expands open to grip the hair.

- b. **Attach** the hairclip teeth into the hair.



**Note:** Hairclip teeth direction may face up or down depending on individual preference.



- c. **Press** the edges of the hairclip to close.



7. **Check** if the hairclips are secure and orient in a V-shape with the sound processor.



Halo Accessory with rings



Halo Accessory with Safety lines



**Warning:** To avoid damage to your sound processor, ensure the Halo Accessory is properly secured.



**Note:** When the Halo Accessory is on your sound processor, a Portable Charger can be attached.

## Remove the Halo Accessory

1. **Detach** hairclips from your hair.
2. **Remove** your sound processor from the implant.
3. **Support** the Halo Accessory on either side with your fingers.
4. **Push** the sound processor through with your thumbs.



### Caution

- The Halo Accessory is a loss prevention device. Do not use it for any other purpose.
- If your Halo Accessory appears damaged or worn, replace it with a new Halo Accessory.

## Change the magnet

Use the Cochlear™ Magnet Tool to change your magnet.

If the magnet is:

- too weak, your sound processor may fall off
- too strong, it may cause discomfort.

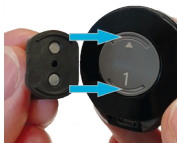
Magnet strengths range from:

- ½ (weakest) to **6** (strongest) for **standard** magnets
- ½ (**I**) (weakest) to **5(I)** strongest for '**I**' magnets.

## Remove the magnet

To remove the magnet from your sound processor:

1. **Place** the tool on the magnet.  
**Insert** the tool ridges into the magnet grooves.



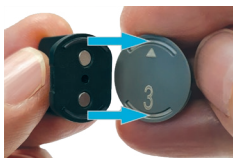
2. **Turn** the tool anti-clockwise and pull the magnet out.



## Insert a magnet

To insert a magnet into your sound processor:

1. **Place** the tool on the magnet.  
**Insert** the tool edges into the magnet grooves.



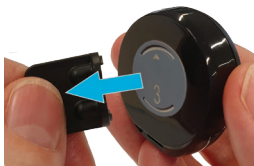
2. **Insert** the magnet into the sound processor.



3. **Turn** the tool clockwise until the magnet **clicks** into place.



4. **Remove** the tool from the magnet and store in a safe place.



**Warning:** Magnet tools can be lost or may be a choking hazard. Keep out of reach of children.



## Sport and exercise



**Note:** If you want to use your sound processor while bathing, swimming or showering, ask your clinician about Kanso Aqua+.

1. Use accessories such as the Safety line, Headband or Halo Accessory to help hold your sound processor in place when you play sport or exercise.
2. After exercise, wipe your sound processor with a soft cloth to remove sweat or grime.
3. Check your Microphone cover for dirt. Refer to *Replace the Microphone cover* on page 54.

## Travel




**Note:** Visit [www.cochlear.com/clinic-finder](http://www.cochlear.com/clinic-finder) to find the nearest clinic in places you are travelling.

- Take a printout from your clinician of your most recent programs in case you need help with your sound processor.
- If you have a backup sound processor, check that it is programmed correctly and take it with you.
- It is safe to move through metal detectors and full body scanners with your sound processor on.
- Ask your clinician for a Patient Identification/Implant card. In the unlikely event that your implant sets off a metal detector this card will help explain that you have an implanted medical device.
- If you need to remove your sound processor as you move through airport security, place it in a case in your hand luggage.
- Your sound processor transmits high frequency radio waves when switched on, and may need to be placed in a flight-safe mode during take-off and landing (refer to *Use flight mode* on page 49). Check with airline staff before flying if you are unsure.
- If you use the Remote control for your sound processor, switch it off before take-off as it transmits high frequency radio waves when switched on.

## Use flight mode

To switch your sound processor to flight mode:

1. **Remove** the sound processor from your head.
2. **Quadruple-tap** (4 taps, quick and firm) on the Cochlear logo.
3. Within **5 seconds**, place the sound processor back on your head.

Indicator light	What it means
 Steady green	Sound processor enters flight mode.  Green light stays on until the sound processor is placed on the implant.

To switch flight mode **off**:

- turn your sound processor off and on again.

Refer to *Turn on and off* on page 12.

# Care



## Caution

- Do not use cleaning agents or alcohol to clean your sound processor or accessories.
- Turn your sound processor off before cleaning or performing maintenance.

## Regular care

### Every day

- Check all parts and accessories (for example, SoftWear pad, Safety line) for dirt and moisture. Wipe the sound processor with a soft dry cloth.
- Keep your sound processor free from moisture by drying it every night in the Home Charger.
- Check the Microphone cover for signs of dirt or grime. Replace as needed. Refer to *Replace the Microphone cover* on page 54.

### Every month

- Replace a used SoftWear pad that is worn or damaged, or has accumulated dirt or moisture that cannot be wiped off. Refer to *Attach a SoftWear pad* on page 22. If you have a comfort problem that is not helped by changing the SoftWear pad, contact your clinician.
- Check used Safety lines for signs of wear. Replace as needed. Refer to *Attach a Safety line* on page 25.

### Every three months

- Replace the Microphone cover. This is very important for the quality of sound. Refer to *Replace the Microphone cover* on page 54.

### Every six months

- If your sound processor has not been charged, charge the sound processor to ensure the internal battery does not deteriorate.

## Headband



**Caution:** Before cleaning your Headband, remove the sound processor.

If the Headband is dirty:

- Wash in cold water (machine or hand wash)
- Do not bleach
- Do not tumble dry
- Iron on medium heat
- Wash the Headband as needed or at least once per week if worn continuously.

## Halo Accessory



**Caution**

- Do not use cleaning agents or alcohol to clean your Halo Accessory.
- To avoid deformation or breakage of your Halo Accessory, do not wring or twist it.
- The Halo Accessory is a loss prevention device. Do not use it for any other purpose.
- Always use the Halo Accessory with a compatible sound processor.
- If your Halo Accessory appears damaged or worn, replace it with a new one.
- Check the Halo Accessory for dirt or moisture regularly. Wipe the Halo Accessory with a soft dry cloth.
- Check if the Halo Accessory is becoming loose or showing signs of wear. Replace as needed.

## Storage

### Home Charger

Store your sound processor at night in the Home Charger provided by Cochlear.

Store the fully assembled sound processor overnight for optimal drying effect.

Refer to the *Chargers User Guide*.



## Change the Microphone cover

Replace your Cochlear™ Kanso® 3 Microphone Cover every three months, or if your sound quality degrades or the microphone ports contain dirt.

Microphone ports



**Caution:** When the Microphone cover is removed, sensitive microphones are exposed. Do not touch the microphones as this could damage your sound processor.

Microphones



## Replace the Microphone cover

### Remove the old Microphone cover

1. **Place** your thumbnail in the slot at the flat base and **lift** firmly.



2. **Slide** your thumbnail around both sides to release the cover.



3. **Lift** the cover off.





## Place the new Microphone cover on your sound processor

1. **Select** a new Microphone Cover designed for Kanso 3 Sound Processors.



**Note:** The Kanso 3 Microphone cover can be distinguished by its **vertical** LED light indicator. Image 1 and 2 show the location of the vertical LED indicator.



1. Microphone cover LED lens      2. Sound processor LED light indicator

2. **Align** the top of the microphone cover to the top of the sound processor.
3. **Locate** the sound processor LED light indicator.
4. Carefully **place** the microphone cover over the sound processor, ensuring the microphone cover LED lens is aligned directly over the sound processor LED light indicator.



5. **Press** all around the outside edge with your thumbs to ensure the cover is tightly sealed.



**Note:** Ensure the Kanso 3 new Microphone cover is fully sealed over the sound processor for optimum sound quality.

## Water, sand and dirt

Your sound processor is protected against failure from dust penetration and temporary immersion in fresh water.

With the Portable Charger attached, your sound processor is protected from dust penetration and fresh water splashing.

Parts	Rating
Kanso 3 Sound Processors only	IP68
Kanso 3 Sound Processors with Portable Charger attached	IP54

The Kanso 3 Sound Processors are a precision electronic device, so please take the following precautions.

### Water

If your sound processor gets **wet**:

1. Dry it with a soft cloth.
2. Replace the Microphone cover. Refer to *Replace the Microphone cover* on page 54.
3. Place your sound processor in the Home Charger to dry. Refer to the *Chargers User Guide*.



**Note:** If you want to use your sound processor while bathing, swimming or showering, ask your clinician about Kanso Aqua+.

## Sand and dirt

If **sand** or **dirt** enters the sound processor, use a small soft brush to carefully clean all indents and cavities in the casing of the sound processor.







# Lights and beeps



## Lights

Your clinician can set up your sound processor to show some or all of the following light indications.




### Turning on and off

Light	What it means
 Quick green flashes	Sound processor flashes while receiving sound from microphones (Child mode only)
 Quick green flashes	Turning on sound processor.  The number of flashes indicates the number of the current program
 Steady orange	Sound processor is turning off
 Steady green	Sound processor enters flight mode (when set to flight mode after four taps)



### Charging

Light	What it means
 Pulses of green	Sound processor is charging
 Steady green	Sound processor is fully charged


## Alerts

Light	What it means
 Flash of orange every second	Sound processor flashes while it is off your head (or connected to the wrong implant)
 Orange flashes	Sound processor battery is low. Charge battery
 Steady orange	Fault. Contact your clinician. Stays on until the issue is resolved



## Audio sources

Light	What it means
 Quick blue flashes for 4 seconds	Sound processor flashes when successful pairing to wireless device, or mobile phone
 Steady blue	Sound Check function in Nucleus Smart App is recording sound from your sound processor

## ForwardFocus

Light	What it means
 Quick green flash	Turning ForwardFocus On/Off




## Volume, sensitivity, bass treble

Light	What it means
 Two quick green flashes	Sound processor flashes while changing volume, sensitivity, master volume, bass, treble
 Quick green flash followed by quick orange flash	Sound processor flashes when limit reached for volume, sensitivity, master volume, bass, treble



## Beeps

Your clinician can set up your sound processor so you can hear the following beeps. The beeps are only audible to the recipient.

### Turning on and off




Beep	What it means
 <p>Short high beeps</p>	Changing the program. The number of beeps indicates the number of the selected program
 <p>Short high beep</p>	Changing volume or sensitivity level (if available)
 <p>Four low sequences</p>	<p>General Fault. Contact your clinician.</p> <p>Stays on until the issue is resolved</p>

### Wireless devices




Beep	What it means
 <p>3-tone chime</p>	Connecting with wireless device to begin streaming audio
 <p>Short low beep</p>	When stopping streaming






## Charging

Beep	What it means
 Short high beep	Sound processor is fully charged
 Short low beep	The Portable Charger is disconnected
 Four long low beep sequences	Charging fault

## Alerts - Battery


Beep	What it means
 Two short low beeps	Battery low alert Recharge your sound processor.
 Short low beep (16 times)	Battery is empty and sound processor is turning off. Recharge your sound processor.
 Four long low beeps over four seconds	General fault. If Portable Charger attached, charging error. Consult your clinician.

## Adjusting bass and treble \*

Beep	What it means
 Long medium beep	Adjusting master volume level
 Long loud high beep	Adjusting treble level
 Long loud low beep	Adjusting bass level



\* If available, Nucleus Smart App and Remote control only

## ForwardFocus \*

Beep	What it means
 Short high beep	Turning ForwardFocus on/off

\* If available, Nucleus Smart App only

## Sound Check \*

Beep	What it means
 3-tone chime	Connecting with wireless device to begin streaming audio
 Short low beep	When stopping streaming

\* If available, Nucleus Smart App only

## Receive new or replacement sound processor (without programs)

### People with Nexa (CI1000) Series implants






A new or replacement sound processor comes without any programs.

To copy your existing programs from the implant to the sound processor is an initial one-time-only process. The copy process takes approximately 20 seconds.



#### Caution for Bilateral Recipients:

Ensure to place the sound processor on the correct (intended) side of the head, else the new sound processor programs will be set up for the other ear and need to be reset by the clinician.

Beep	What it means
 Short high beeps	Sound processor has completed set up, and is ready to use.  The number of beeps indicates the number of the current program (1,2,3,...).
Light	What it means
 Flash of orange every second	Sound processor flashes while it is off your head.
 Steady green	Sound processor one-time-only copy of programs in progress.  The program copy takes approximately 20 seconds.
 Green flashes	Sound processor is ready to use.  The number of flashes indicates the number of the current program (1, 2, 3 ...).
 Steady orange	Fault. Contact your clinician.  Stays on until the issue is resolved.

# Troubleshoot

Contact your clinician if you have any concerns regarding the operation or safety of your sound processor.

Problem	Resolution
Sound processor will not turn on	<ol style="list-style-type: none"><li>1. Try turning the sound processor on again. Refer to <i>Turn on and off</i> page 12.</li><li>2. If you have two implants, check that you are wearing the correct sound processor on each implant.</li><li>3. Ensure sound processor battery is charged.</li><li>4. If the problem continues, contact your clinician.</li></ol>
The sound processor switches off	This is normal operation of Auto-off, as the sound processor automatically switches off when not connected to the implant for more than two minutes (if enabled by your clinician).
You want to perform a regular check on your sound processor	Refer to <i>Regular care</i> on page 50.
Sound processor does not attach as strongly as usual	Ensure the sound processor is oriented properly on your head. Refer to <i>Wear your sound processor</i> on page 18.
You are not sure what sound processor beeps or light flashes mean	Refer to <i>Lights</i> on page 59 and <i>Beeps</i> on page 62.

Problem	Resolution
You want to confirm your sound processor is receiving sound	<ol style="list-style-type: none"> <li>1. Check the light on the top of the sound processor (if enabled). Refer to <i>Lights</i> on page 59.</li> <li>2. If you have the Nucleus Smart App, use the Status screen to check the sound processor is receiving sound.</li> <li>3. If you have the Nucleus Smart App, use Sound Check to record sound received by your sound processor. A hearing person can listen to the recording to check sound received by the sound processor. Refer to your <i>Nucleus Smart App user guide</i> for details.</li> <li>4. If the problem continues, contact your clinician.</li> </ol>
The sound processor becomes hot	Remove the sound processor from your head immediately and contact your clinician.
People with two implants: You do not hear sound on initially attaching your second sound processor	If you have two implants and notice connectivity problems with initially attaching your second sound processor, retry by attaching both sound processors again but in the opposite sequence.

Problem	Resolution
You experience tightness, discomfort or develop a skin irritation at your implant site	<ol style="list-style-type: none"> <li>1. Try using an adhesive SoftWear pad. Refer to <i>Attach a SoftWear pad</i> on page 22.</li> <li>2. If you are using a retention aid, such as a headband, this may be placing pressure on your sound processor. Adjust your retention aid, or try a different aid.</li> <li>3. Your sound processor magnet may be too strong. Ask your clinician to change to a weaker magnet and use a retention aid such as the Safety line if required. Refer to <i>Change the magnet</i> on page 45.</li> <li>4. If the problem continues, contact your clinician.</li> </ol>
You do not hear sound or sound is intermittent	<ol style="list-style-type: none"> <li>1. Try a different program. Refer to <i>Change program</i> on page 15.</li> <li>2. Ensure you are using the correct magnet for your implant. If unsure, contact your clinician.</li> <li>3. If you use the Remote control, turn up the volume.</li> <li>4. If you have the Nucleus Smart App, turn up the volume or sensitivity.</li> <li>5. Ensure the sound processor is properly oriented on your head. Refer to <i>Wear your sound processor</i> on page 18.</li> <li>6. If the problem continues, contact your clinician.</li> </ol>

Problem	Resolution
You do not hear sound from a wireless device	<ol style="list-style-type: none"> <li>1. Interference from nearby electrical devices can sometimes disrupt streaming from a wireless device. Try moving away from any device that might be causing this interference.</li> <li>2. Check that the wireless device is charged and turned on.</li> <li>3. Check that the wireless device is paired with your sound processor.</li> <li>4. Check the volume of the wireless device.</li> <li>5. If you have the Nucleus Smart App, use the Status screen to check the sound processor is receiving sound from the device.</li> <li>6. If you have the Nucleus Smart App, check and adjust the device/microphone volume.</li> <li>7. If available, try a different sound processor.</li> <li>8. For more troubleshooting, refer to the <i>True Wireless Accessories User Guide</i>.</li> </ol>
You hear intermittent sound, a buzzing sound, or distorted speech	<ol style="list-style-type: none"> <li>1. Check for sources of interference such as radio and TV transmission towers (within approximately 1.6 km or 1 mile), shopping centre or airport security systems, and mobile phones.</li> <li>2. Try moving away from any source of magnetic or electronic interference.</li> <li>3. If the problem continues, contact your clinician.</li> </ol>

Problem	Resolution
Sound is too loud or uncomfortable	<ol style="list-style-type: none"> <li>1. Try a different program. Refer to <i>Change program</i> on page 15.</li> <li>2. If you use the Remote control, turn down the volume.</li> <li>3. If you have the Nucleus Smart App, turn down the volume or sensitivity.</li> <li>4. If you have two sound processors (one for each side), ensure you have them on the correct side.</li> <li>5. If the problem continues, remove your external equipment immediately (for example, sound processor(s)) and contact your clinician.</li> </ol>
Sound is too quiet or muffled	<ol style="list-style-type: none"> <li>1. If you use the Remote control, turn up the volume.</li> <li>2. If you use the Nucleus Smart App, turn up the volume or sensitivity.</li> <li>3. Try a different program. Refer to <i>Change program</i> on page 15.</li> <li>4. Try changing the Microphone cover. Refer to <i>Change Microphone cover</i> on page 53.</li> <li>5. If the problem continues, contact your clinician.</li> </ol>
The sound processor gets wet	<p>Dry the sound processor with a soft cloth, change the microphone cover, and place the sound processor in the Home Charger, provided by Cochlear, to dry. Refer to <i>Water, sand and dirt</i> on page 57.</p>



Problem	Resolution
Battery does not last as long as usual	<p>To gain longest life from your battery, the following measures can assist by reducing battery draw:</p> <ol style="list-style-type: none"><li>1. If you are using a non-recommended retention aid that covers your sound processor, replace it with an aid recommended by Cochlear.</li><li>2. Ensure you are using the correct magnet for your implant. If unsure, contact your clinician.</li><li>3. Ensure the sound processor is oriented properly on your head. Refer to <i>Wear your sound processor</i> on page 18.</li><li>4. If the problem continues, contact your clinician.</li></ol>

# Cautions

- Young children who are developing motor skills are at greater risk of an impact to the head from a hard object (for example, table or chair). Impact to the sound processor may cause damage to the sound processor or its parts. Impact to the head in the area of the Cochlear Nucleus implant could damage the implant and result in its failure.
- Avoid placing metallic or magnetic objects near your sound processor while it is on your implant or in the Home Charger. This could affect the sound quality while wearing your sound processor, or could damage your Home Charger.
- Most patients can benefit from electrical stimulation levels that are considered safe, based on animal experimental data. The long-term effects of such stimulation in humans are unknown.
- Your sound processor may be affected by other sound processors or coils. Always keep your sound processor more than 1 cm (1/2 in) away from other sound processors or coils.

# Warnings

## For parents and carers

- Sound processors and related accessories contain small parts that alone or in combination may pose a hazard of inhalation, choking or ingestion. Swallowing or inhaling small parts can cause severe or fatal injuries. Always supervise children under 3 years of age and others who may be at risk of inhalation, choking or ingestion of small parts when they use the sound processor and related accessories. When not in use, keep small parts, and combinations of small parts, out of reach from children. If small parts are swallowed or inhaled, seek immediate medical attention.
- Removable parts of the system (for example, Socket cover, magnets, SoftWear pad, Safety line) can be lost or may be a choking or strangulation hazard. Keep out of reach of children.
- Carers are advised that unsupervised use of long cables (for example, Safety lines, accessory cables or the Headband) may present a risk of strangulation.
- Carers must routinely check devices that are worn on the body for signs of overheating (for example, sound processor, Portable Charger). Remove the device immediately if it becomes hot and contact your clinician.
- Carers must routinely check for signs of discomfort or skin irritation at the implant site. Remove the device immediately if it becomes hot and contact your clinician.
- Carers must monitor for signs of discomfort or skin irritation if a retention aid (for example, Headband) is used that applies pressure to the sound processor. Remove the aid immediately if there is any discomfort or pain, and contact your clinician.

## Sound processors and parts

- Each sound processor is programmed specifically for each implant. Never wear another person's sound processor or lend your sound processor to another person.
- Use your Cochlear implant system only with approved devices and accessories.
- If you experience a significant change in performance, remove your sound processor and contact your clinician.
- Your sound processor and other parts of the system contain complex electronic parts. These parts are durable but must be treated with care.
- No modification of this equipment is allowed. Warranty will be void if modified.
- If you experience tightness or pain at the implant site, or develop significant skin irritation, stop using your sound processor and contact your clinician.
- If your sound processor becomes warmer than usual, remove it immediately and seek advice from your clinician. Parents and carers: if your recipient indicates discomfort, check if their sound processor is warmer than usual.
- Do not apply continued pressure to the sound processor when in contact with the skin (for example, sleeping while lying on sound processor, or using tight fitting headwear).
- If the coil magnet is too strong, pressure sores may develop at the implant site. If this happens, or if you experience any discomfort in this area, contact your clinician.

- Do not push the volume too high for comfort in case a loud noise occurs nearby.
- If you need to adjust the volume often, or if adjusting volume ever causes discomfort, contact your clinician.
- Do not place the sound processor, or parts, in any household devices (for example, microwave oven, dryer).
- Do not expose the sound processor, or parts, to heat (for example, never leave them in sunlight, behind a window, or in a car).
- The Halo Accessory and sound processor should be protected from excessive heat sources such as prolonged exposure to bright sunlight. Before wearing the Halo Accessory and sound processor, check the surface to ensure it is not too hot to wear without discomfort to skin.
- The magnetic attachment of your sound processor to your implant may be affected by other magnetic forces.
- Store spare magnets safely and away from cards that may have a magnetic strip (for example, credit cards, bus tickets).
- Your device contains magnets that should be kept away from life supporting devices (for example, cardiac pacemakers and ICDs (implantable cardioverter defibrillators) and magnetic ventricular shunts), as the magnets may affect the function of these devices. Keep your sound processor at least 15 cm (6 in) from such devices. Contact the manufacturer of the specific device to find out more.

- Your sound processor and Remote control radiate electromagnetic energy that may interfere with life supporting devices (for example, cardiac pacemakers and ICDs). Keep your sound processor and Remote control at least 15 cm (6 in) from such devices. Contact the manufacturer of the specific device to find out more.
- Do not use cleaning agents or alcohol to clean your sound processor or accessories.
- Do not operate your sound processor beyond these temperature and humidity ranges:  
+5° C (41° F) to +40° C (104° F) and 0% RH to 90% RH.
- Remove the sound processor before entering a room where an MRI scanner is located.
- Your sound processor magnet may be affected by metallic or magnetic objects. Keep metallic or magnetic objects away from your sound processor.
- Remove the sound processor immediately if the sound level is uncomfortably loud and inform your clinician.
- Only use battery chargers supplied or recommended by Cochlear. Use of other battery chargers may result in harm or injury.
- Do not place the device or accessories inside any part of your body (for example, nose, mouth).
- Seek medical advice before entering any environment that may adversely affect the operation of your Cochlear implant, including areas protected by a warning notice preventing entry by patients fitted with a pacemaker.

- Some types of digital mobile telephones (for example, Global System for Mobile communications (GSM) as used in some countries), may interfere with the operation of your external equipment. You may hear distorted sound when close, 1 to 4 m (~3 to 12 ft), to a digital mobile telephone in use.
- For Cochlear Nucleus cochlear implant recipients only, the maximum diving depth is 40 m (~131 ft). Seek medical advice before diving to ensure you do not have any conditions that might make diving contraindicated (for example, middle ear infection). When wearing a mask, avoid pressure over the implant site.
- Before activities that create electrostatic discharge (for example, playing on plastic slides), remove your sound processor. In rare cases, discharge of static electricity can damage your Cochlear implant's electrical components or corrupt the sound processor's program. If static electricity is present (for example, when putting on clothes over your head, or getting out of a vehicle), before the Cochlear implant system touches any object or person, you should touch something conductive, such as a metal door handle.
- Use only as intended.
- Report unexpected problems to your clinician.

## Medical treatments

### Magnetic resonance imaging (MRI)



The **Kanso 3 Sound Processors, Remote control and related accessories** (such as the Wireless Programming Pod) are MR Unsafe.

Full MRI safety information is available at [www.cochlear.com/mri](http://www.cochlear.com/mri)

or by calling your regional Cochlear office. Contact numbers are listed at the end of this document.



## Medical treatments generating induced currents, heat and vibration

Having a cochlear implant means extra care must be taken when receiving some medical treatments. Before starting medical treatment, the information in this section should be discussed with the recipient's physician.

The sound processor must be removed before starting any of the medical treatments listed in this section.

Some medical treatments generate induced currents that may cause tissue damage or permanent damage to the implant. Before initiating any of the following treatments, deactivate the device.

Warnings for specific treatments are provided below.

Condition	Warning
Diathermy	Do not use therapeutic or medical diathermy (thermopenetration) using electromagnetic radiation (magnetic induction coils or microwave). High currents induced into the electrode lead can cause tissue damage to the cochlea/brainstem or permanent damage to the implant. Medical diathermy using ultrasound may be used below the head and neck.
Electroconvulsive therapy	Do not use electroconvulsive therapy on an implant patient under any circumstances. Electroconvulsive therapy can cause tissue damage or damage to the implant.

Condition	Warning
Electrosurgery	<p>Electrosurgical instruments can induce radio frequency currents that could flow through the electrode.</p> <p>Monopolar electrosurgical instruments must not be used on the head or neck of an implant patient as induced currents could cause damage to cochlear/neural tissues or permanent damage to the implant.</p> <p>When using bipolar electrosurgical instruments on the head and neck of a patient, the cautery electrodes must not contact the implant and should be kept more than 1 cm (½ in.) from the electrodes.</p>
Ionising radiation therapy	<p>Do not use ionizing radiation therapy directly over the implant as it may cause damage to the implant.</p>
Neurostimulation	<p>Do not use neurostimulation directly over the implant. High currents induced into the electrode lead can cause tissue damage to the cochlea/brainstem or permanent damage to the implant.</p>
Therapeutic ultrasound	<p>Do not use therapeutic levels of ultrasound energy directly over the implant, as it may inadvertently concentrate the ultrasound field and cause tissue damage or damage to the implant.</p>

# Other information

## Physical configuration

The sound processor comprises:

- Two omni-directional microphones for receiving sound.
- Custom analogue and digital integrated circuits with digital signal processing (DSP) and bi-directional communication capabilities.
- Tri-colour visual indication of sound processor function or problem.
- Tap interface allowing the user to turn the sound processor on and off.
- Magnet available in various strengths to attach the sound processor to the implant.
- Proprietary 4-pin socket programming connector, and for use to attach Portable Charger and Safety lines.

The internal battery provides power to the sound processor, which transfers energy and data to the implant.

## Sound processor

### Materials

Processing unit	Polyamide
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Magnet casing	Acrylonitrile butadiene styrene (ABS)
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### Dimensions

#### Length

#### Width

#### Depth

Sound processor (typical values)	38 mm	34 mm	12.5 mm
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### Weight

### Weight

Sound processor and magnet	14.2 g
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### Coil characteristics

### Value

Operating voltage	2.33 V
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Operating frequency	5 MHz
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Operating characteristics	Value / range
Sound input frequency range	100 Hz to 8 kHz
Wireless technology	Proprietary low power bi-directional wireless link Published commercial wireless protocol (Bluetooth Low Energy)
RF frequency	2.4 GHz
Input operating voltage	4.75 V to 5.35 V
Power consumption	Model CP1170: 20 mW to 100 mW Model CP1175: 15 mW to 65 mW
Charge cycles	≥ 80% capacity after 2000 charge/discharge cycles at room temperature
Battery type	Lithium ion
Battery capacity	650 mWh
Tap functions	Turn sound processor on and off
Remote communications range	At least 2 m (6 1/2 ft) (Remote control) At least 3 m (10 ft) (Phone Clip) At least 7 m (23 ft) (Mini Microphone, TV Streamer) At least 2 m (6 1/2 ft) (Made for iPhone control) At least 7 m (23 ft) (Made for iPhone streaming) At least 7 m (23 ft) (Android streaming*) * available only on compatible Android devices

## Wireless communication link

The wireless communication link operates in the 2.4 GHz ISM band using GFSK (Gaussian frequency-shift keying), and a proprietary bidirectional communication protocol. It continuously switches between channels to avoid interference on any specific channel.

- The Remote control operates over 4 channels, over a distance of at least 2 metres (6 1/2 feet) from the sound processor. It indicates via its display when the sound processor is out of operating distance (or switched off) or when the link is interrupted due to broad spectrum interference (refer to the remote control user guide for more information).
- The True Wireless devices operate over 16 channels, over a distance of at least 3 metres (10 feet) or the Phone Clip, and 7 metres (23 feet) for the Mini Microphone and TV Streamer.

Bluetooth® Smart also operates in the 2.4 GHz ISM band, using frequency hopping over 37 channels to combat interference. Operating range is at least 7 metres (23 feet), and the Nucleus Smart App indicates when the sound processor is out of operating distance (or switched off) or when the link is interrupted due to broad spectrum interference.

Environmental conditions	Minimum	Maximum
Storage and transport temperature	-10° C (14° F)	+55° C (131° F)
Storage and transport humidity and Operating relative humidity	0% RH	90% RH
Operating pressure	700 hPa	1060 hPa
Operating temperature of <b>sound processor and its accessories</b>	+5° C (41° F)	+40° C (104° F)
<p>The temperature of the <b>sound processor and its accessories</b> may rise by up to 2.8° C (5° F) during normal operation. This could result in the components reaching a temperature of +42.8° C (+109° F) when operated at maximum environmental temperature of +40° C (104° F).</p>		
Operating temperature of <b>sound processor with Portable Charger</b>	+5° C (41° F)	+37° C (98.6° F)
<p>The temperature of the <b>sound processor used during charging with the Portable Charger</b> may rise by up to 5.1° C (9.2° F) during normal operation. This could result in these components reaching a temperature of +42.1° C (+107.8° F) when operated at maximum environmental temperature of +37° C (+98.6° F).</p>		

## SoftWear pad specifications

### SoftWear pad materials

Layer 1	Polyurethane medical tape
Layer 2	Soft pad polyurethane foam
Layer 3	Double-sided adhesive film
Layer 4	Finger lift tape
Layer 5	Release liner

### Dimensions

Diameter (assembled)    Ø 29 mm ±1 mm

## Headband specifications

### Headband materials

Fabric	83% polyester, 17% elastane
Thread	100% polyester
Silicone strip, non-slip	Silicone rubber
Silicone strip backing tape	90% polyester, 10% spandex
Hook and loop fastener	40% nylon, 60% polyester



## Halo Accessory specifications

### Halo Accessory materials

Halo Accessory	Nylon
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Rings	316 Stainless Steel
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Dimensions	Weight	Width	Depth
Halo Accessory	1 g	38.9 mm	40.1 mm

# Electromagnetic compatibility (EMC)

## Guidance and manufacturer’s declaration - electromagnetic emissions

The Kanso 3 sound processor is intended for use in the electromagnetic environment specified below. The customer or the user of the Kanso 3 sound processor should assure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment-Guidance
RF emissions CISPR 11	Group 1	The Kanso 3 sound processor uses Radio Frequency (RF) energy only for its internal function. Therefore, RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
	Class B	(Normal Mode, Wireless Programming Mode) The Kanso 3 sound processor is suitable for use in all establishments, including domestic and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

## Guidance and manufacturer's declaration - electromagnetic immunity

The Kanzo 3 sound processors are intended for use in the electromagnetic environment specified below. The customer or the user of the Kanzo 3 sound processors should assure that it is used in such an environment.

Immunity Test	Compliance Level	Electromagnetic Environment-Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	Contact discharge: $\pm 8$ kV  Air discharge: $\pm 2, \pm 4, \pm 8, \pm 15$ kV	The Kanzo 3 sound processor is designed to remain functional after exposure to an ESD event..
Electrical fast transient/burst IEC 61000-4-4	Not applicable	Not applicable
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	Not applicable	Not applicable
Power frequency (50/60 Hz) magnetic field IEC61000-4-8	30 A/m	The Kanzo 3 sound processor is designed to meet medical equipment EMC standards.  Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

## Guidance and manufacturer's declaration - electromagnetic immunity

The Kanso 3 sound processors are intended for use in the electromagnetic environment specified below. The customer or the user of the Kanso 3 sound processors should assure that it is used in such an environment.

### Electromagnetic environment - guidance

Portable and mobile RF communications equipment should be used no closer to any part of the Kanso 3 sound processors, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

**Immunity Test:** Conducted RF IEC 61000-4-6

**Compliance Level:** 3 V 0.15 to 80 MHz; 6 V in ISM 0.15 to 80 MHz

Recommended separation distance  $d=1.16\sqrt{P}$

**Immunity Test:** Radiated RF IEC 61000-4-3

**Compliance Level:** 10V/m 80 MHz to 2.7 GHz

$d=0.35 \sqrt{P}$  80MHz to 800MHz

$d=0.70 \sqrt{P}$  800 MHz to 2.7 GHz

where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).

Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.

Interference may occur in the vicinity of equipment marked with the following symbol:



## Electromagnetic environment - guidance

**Immunity Test:** Proximity fields from RF wireless communications equipment IEC 61000-4-3.

**Compliance Level:** 385 MHz (27V/m); 450, 810, 870, 930, 1720, 1845, 1970, 2450 MHz (28V/m); 710, 745, 780, 5240, 5500, 5785 MHz (9 V/m)



**Warning:** Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 in.) to any part of your Kanso 3 sound processor, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.



**Note:**

- At 80 MHz and 800 MHz, the higher frequency range applies.
- These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
- If abnormal performance is observed, additional measures may be necessary, such as relocating your position, or reorienting the Kanso 3 sound processor or accessories, before attempting the action again.

## Radio Frequency Identification (RFID)

RFID uses electromagnetic fields to automatically identify and track tags attached to objects. Interference may occur in the vicinity of equipment that uses RFID readers, such as shop security, card scanners, contactless payments.



**Note:** The existence of fixed or mobile RFID readers may not be visible as you pass through a RF zone.

## Environmental protection

Help protect the environment by not disposing of your sound processor, batteries or accessories with your unsorted household waste. Please recycle your sound processor according to your local regulations

## Equipment classification

Your sound processor is internally powered equipment Type B applied part as described in the international standard IEC 60601-1:2005/A1:2012+A2:2020, Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance.

## **FCC (Federal Communications Commission) compliance**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules, including Part 15B for equipment classes with Unintentional Radiators. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

## **RF exposure safety**

This device complies with the FCC RF exposure limits and has been evaluated in compliance with portable exposure condition.

There is no limitation as to which distance can be used from the human body.

## Class B device notice

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

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

**FCC ID: WTO-CP1170 and WTO-CP1175**

## Supplier's declaration of conformity

### 47 CFR § 2.1077 Compliance Information

Unique identifier: CP1170 and CP1175

Responsible party: Cochlear Americas

10350 Park Meadows Drive  
Lone Tree, CO 80124, USA

Toll free: +1 800 483 3123

Telephone: +1 303 790 9010

<https://www.cochlear.com/us>



Cochlear Ltd warrants that each unit marketed under this Supplier's Declaration of Conformity will be identical to the unit tested and found acceptable with the standards.

The devices will continue to comply within the variation that can be expected due to quantity production and testing on statistical basis.

The records maintained by the responsible party will continue to reflect the devices being produced under the Supplier's Declaration of Conformity.

## ISED compliance

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with ISED license-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

## CAN ICES-003 (B)

This Class B digital apparatus complies with Canadian ICES-003

**IC: 8039A-CP1170 and 8039A-CP1175**

## Labelling symbols

The following symbols may appear on your sound processor, accessories, or packaging:



Consult instructions for use



Refer to instruction manual



Specific warnings or precautions associated with the device, which are not otherwise found on the label



Manufacturer



Compatible sound processors



Compatible implants series.

Please refer *Sound processor compatibility* page 6



Authorised representative in the European Community/European Union



Authorised representative in Switzerland



Unique Device Identifier



Medical Device



Catalogue number



Serial number



Batch code



Date of manufacture



Temperature limits

	CE registration mark
	CE registration mark with notified body number
	Contains or presence of natural rubber latex. May cause allergy.
	Radio compliance certification for Australia and New Zealand
	Radio compliance certification for Japan
	Radio compliance certification for Korea
	Recyclable material
	Dispose of electrical components in accordance with your local regulations
	Dispose of batteries separately from normal waste and according to your local regulations
	Type B applied part
<b>Rx Only</b>	By prescription. Caution: US law restricts this device to sale by, or on the order of, a physician
	Model number

## **IP54**

### Ingress Protection Rating

- Protected against access of solid foreign objects greater than or equal to 1.0 mm diameter.
  - Protected against excessive dust penetration that could interfere with satisfactory operation.
  - Protected against failure from splashing water.
- 

## **IP68**

### Ingress Protection Rating

- Protected against access of solid foreign objects greater than or equal to 1.0 mm diameter.
  - Protected against dust penetration.
  - Protected against failure from continuous immersion in water up to 1 metre deep for up to 1 hour.
-

## **Privacy and the collection of personal information**

During the process of receiving a Cochlear device, personal information about the user/recipient or their parent, guardian, carer and hearing health professional will be collected for use by Cochlear and others involved in care with regard to the device.

For more information please read Cochlear's Privacy Policy on [www.cochlear.com](http://www.cochlear.com) or request a copy from Cochlear at the address nearest you.

## **Reliability reports**

Reliability reports are available on [www.cochlear.com](http://www.cochlear.com)

## Compatible accessories

Category	Accessories
Retention	Cochlear Nucleus Kanso Magnet, Cochlear Headband, Cochlear SoftWear pad
Loss prevention	Kanso Halo Accessory, Cochlear Safety Line (Short), Cochlear Safety Line (Long), Cochlear Safety Line (Short Loop), Cochlear Safety Line (Short Double Loop), Cochlear Hair Clip
Water-safe	Cochlear Nucleus Kanso Aqua+, Nucleus Safety Line
Care and maintenance	Cochlear Kanso 3 Microphone Cover, Cochlear Nucleus Kanso Socket Cover, Cochlear Magnet Tool
Wireless	Cochlear Remote Control, True Wireless Devices- Cochlear Wireless Phone Clip, Cochlear Wireless Mini Mic 2+, Cochlear Wireless TV Streamer, Cochlear Wired Programming Pod, Cochlear Wireless Programming Pod
Power	Cochlear Home Charger, Cochlear Portable Charger, Cochlear Portable Charger Cable (Short), Cochlear Portable Charger Cable (Long), Cochlear USB Power Adaptor
Miscellaneous	Recipient Backpack, Nucleus Bilateral Identification Adhesive Labels, Cochlear Personalisation Stickers

## Trademark legal notice

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## Notes

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## Notes

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# Hear now. And always

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