

Cochlear™

# Nucleus® CR230 Remote Assistant

User Guide



*Hear now. And always*

  
Cochlear®

The Nucleus® CR230 Remote Assistant is a hand-held device that allows you to control and monitor the Cochlear Nucleus CP802 or CP810 Sound Processor (“CP800 Series”), CP910 or CP920 Sound Processor (“CP900 Series”) or Kanso® Sound Processor (Model: CP950).\*

Your remote assistant provides access to key information about your sound processor, including status (e.g. battery status), and troubleshooting details.

You can use your remote assistant to adjust your sound processor settings. If you are a bilateral recipient, your remote assistant can be used to control both sound processors.

This guide is intended for Cochlear implant recipients and their carers using the Cochlear Nucleus CP802, CP810, CP910, or CP920 Sound Processor or Kanso Sound Processor (Model: CP950).

If you are a parent or carer, you can use the remote assistant to monitor and manage a child’s sound processor.

For more information on your sound processor, refer to its user guide.

\* Not all products are approved in all countries.

**Note**

Refer to the *Warnings* section for warnings and cautions relating to the use of the CR230 Remote Assistant and components.



**Note**

Please also refer to your *Important Information* document for essential advice that applies to Cochlear implant systems.



## Symbols used in this guide



**Note**

Important information or advice.



**Tip**

Time saving hint.



**Caution (no harm)**

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



**Warning (harmful)**

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

# CR230 Remote Assistant

## Front



## Back



ABOUT

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## Intended purpose

The CR230 Remote Assistant is intended to be used to control normal operating functions and monitor the performance of a processing unit as part of a hearing implant system.

## Indications

The CR230 Remote Assistant is indicated for Cochlear Nucleus implant recipients with a compatible Cochlear sound processor. Compatible Cochlear sound processors are:

- Nucleus CP802 Processing Unit (Model: CP802)
- Nucleus CP810 Processing Unit (Model: CP810)
- Nucleus CP910 Processing Unit (Model: CP910)
- Nucleus CP920 Processing Unit (Model: CP920)
- Kanso Sound Processor (Model: CP950)

## Contraindications

The CR230 Remote Assistant is not indicated for use with sound processors other than those listed in *Indications*.

## Intended patient population

The CR230 Remote Assistant is intended for patients with a compatible Cochlear sound processor. There are no restrictions for the intended patient population of the remote control in terms of age, weight, health or other condition.

# Benefits

The sound processor operates in conjunction with a compatible Cochlear Nucleus implant system. Potential benefits of receiving a Cochlear Nucleus implant system include:

- better understanding of speech in quiet
- better understanding of speech in noise
- increased satisfaction based on hearing capabilities.

# Intended users

Intended users of the CR230 Remote Assistant are:

- Recipients of a compatible Cochlear Nucleus implant.
- Carers of recipients, who carry out recipient functions as needed. Carers may include parents of paediatric recipients who are less than 12 years old, and nurses or other carers of otherwise dependant recipients.
- Audiologists and clinicians.



## Hold and use

Hold the remote assistant in the palm of your hand. Keep it within two metres (about six feet) of the sound processor. If the distance is more than two metres, you may experience longer response times or loss of communication.



If you experience interference in the communication between your processor and the remote assistant, try the following:

- Hold the remote assistant in a different position.
- Move away from the vicinity of any electronic equipment that may be causing interference.

# Navigate

Press the Home button to return to the previous menu or **Home** screen

Press the left arrow button to move back through the screens

Press the OK button to select an option on a screen or enter a menu



When prompted, press the up and down arrow buttons to select options in menus or change settings

Press the right arrow button to scroll forward through the screens



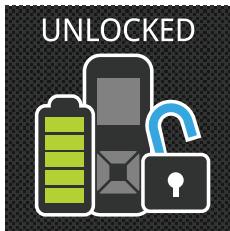
ABOUT

## Lock and unlock

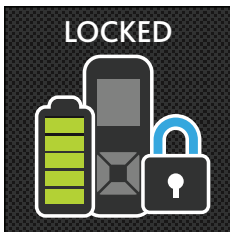
The remote assistant can be locked to prevent buttons being accidentally pressed.

Slide the lock-unlock slider down to lock the remote assistant, and up to unlock.





The **Unlocked** or **Locked** screens will display based on the position of the slider.



You cannot turn off the remote assistant while it is locked.

**Tip**

Use the lock-unlock slider to show the battery level of your remote assistant.



ABOUT



# Charge

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# Charge battery

Cochlear recommends that you fully charge the battery:

- before using the remote assistant for the first time
- when the remote assistant **Battery Status** screen shows that the battery is low
- once a week, even if the remote assistant does not indicate that the battery is low or empty.

## Tip

The remote assistant has an integrated battery that cannot be replaced.



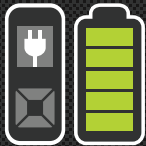
It may take two to four hours to fully charge a completely empty battery. As the battery ages, it may take longer to fully charge the battery.

A fully charged battery should provide you with enough battery life for one to two weeks. However, battery life varies depending on:

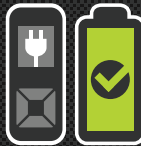
- amount of usage
- whether you turn off your remote assistant when not in use
- whether your remote assistant is controlling one or two sound processors.

The battery's lifespan is at least 400 charge cycles.

CHARGING



CHARGED



## Tip

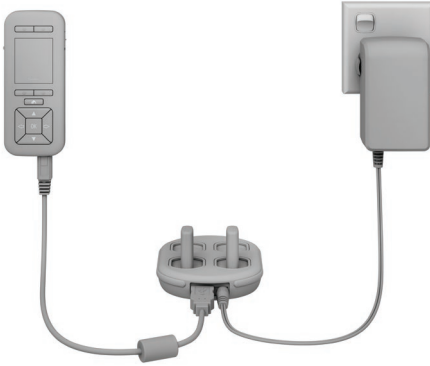
When charging correctly, the Charging screen will display, followed by the Charged screen when the battery is full.



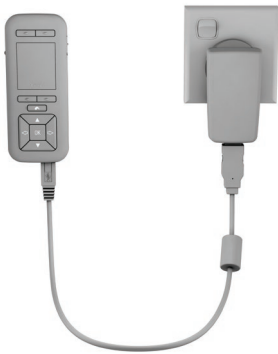
## Caution

Ensure that you only use battery charging equipment supplied by Cochlear to charge the remote assistant battery.

There are three options for charging:



- A Use the Cochlear™ Nucleus® Battery Charger and the Cochlear™ Nucleus® Battery Charging Kit.



- B Use the Cochlear™ Nucleus® CR200 Series Charging Kit.

**Note**

You cannot switch off the remote assistant when it is plugged in.



- C Use the USB port on a computer. Leave the computer turned on to charge the remote assistant.





# Turn on

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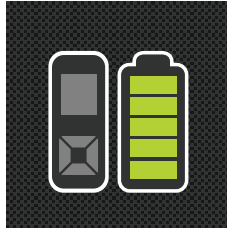
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## Turn on

To turn on the remote assistant, press and hold the OK button until the two **Startup** screens display. The **Battery Status** screen and your **Home** screen will display after the **Startup** screens.



Startup screen



Battery Status screen

### Note

If this is the first time the remote assistant is being used, the **Select Language** screen will display instead of the **Home** screen.

## Select language

You will be prompted to select a language the first time you use the remote assistant:

1. When the **Select Language** screen displays, press the up or down arrow button to highlight your preferred language.



### Tip

You can reset the remote assistant and start again if you selected the wrong language (see *Reset remote assistant* on page 66).

### Note

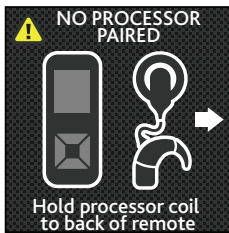
The remote assistant remembers your selected language when you turn it off.

2. Press the OK button to select.

# Pair

Pairing allows two devices to communicate with each other.

If a sound processor is not paired with the remote assistant, the **No Processor Paired** screen will display. Depending on the type of the sound processor you have, place either the coil or the sound processor on the back of your remote assistant.



## Tip

You will see the "Behind the Ear" image, whether you have a CP800 Series Sound Processor, CP900 Series Sound Processor or a Kanso Sound Processor.



## Note

For details on pairing your remote assistant with wireless accessories, see the *True Wireless Accessories Supplement*.



If there is already a sound processor paired, you can pair again with a different sound processor at any time.

Before pairing, ensure the sound processor is switched on:

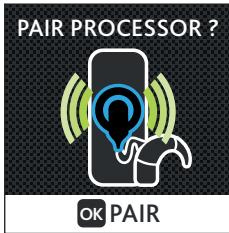
1. Hold the coil or the sound processor on the coil guide at the back of the remote assistant.



TURN ON

The **Pair Processor** screen will display.

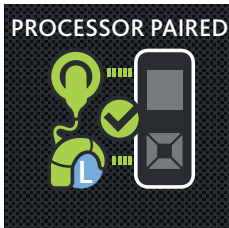
2. Press the OK button to pair.



### Note

If you are a bilateral user, you will need to repeat steps 1 and 2 for your second sound processor.

When pairing is complete, the **Processor Paired** screen will display, followed by your **Home** screen.



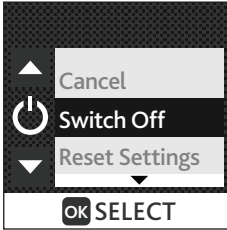
### Tip

Several remotes can be paired to one sound processor. For recipients who travel, this is useful when a remote is needed in two locations, e.g. school and home or home and clinic.

# Turn off

To turn the remote assistant off:

1. Press and hold the OK button until the menu displays.



**Switch Off** will already be highlighted.

2. Press the OK button to select.



TURN ON



# Use

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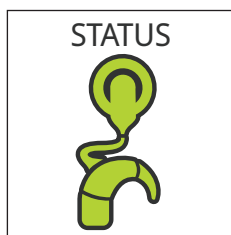
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# Status indicators

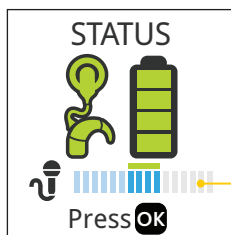
Your remote assistant allows you to display key information about your sound processor, including the battery status.

## Check sound processor status

To check the status of your sound processor press the OK button from your **Home** screen. Two animated **Status** screens will display:



The first **Status** screen will display the sound processor status indicator. Green means everything is working.



The second **Status** screen will display information about the sound processor battery and sound levels.

Sound meter bar

The sound meter bar shows sound being "heard" by the sound processor.



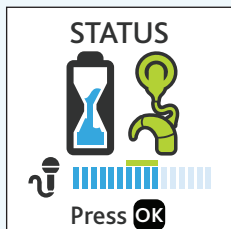
**Soft sound**  
(20–50 dBA)



**Moderate sound**  
(50–70 dBA)



**Loud sound**  
(70–100 dBA)



### Tip

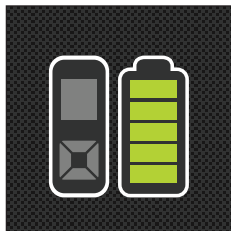
An hourglass may briefly display instead of the battery in the second Status screen. This indicates that the remote assistant is waiting for an update from the sound processor.



If there are problems with the sound processor or battery, an alert screen will display. See *Alert screens* on page 62.

## Check battery status

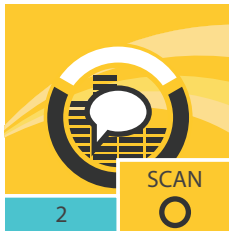
A **Battery Status** screen is displayed when you first switch on your remote assistant.



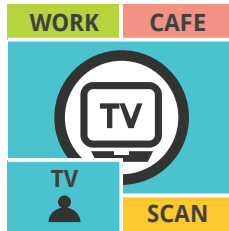
# Programs on your Home screen

While most recipients will have two programs on their remote assistants, your clinician may provide up to four programs based on your hearing requirements. These programs will be displayed on your **Home** screen.

For example:



Home screen with two programs



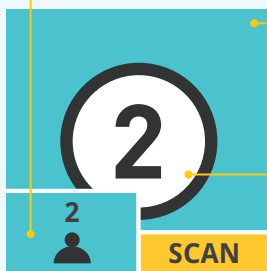
Home screen with four programs

## Tip

The background picture and colour on your Home screen will change depending on which program is active.



The tab for the active program will be bigger than the others.



The program and screen background colour will match.

The picture on the screen will show the active program.

# SCAN program

The SCAN program (if set up by your clinician) detects and automatically adjusts your sound processor to the current sound environment.

## Icons associated with the SCAN program



SCAN



Quiet



Noise



Speech



Speech in noise



Wind



Music

### Note

You can hide the SCAN icons by navigating to the **Settings** screen and then to the **SCAN Icons** screen. When the SCAN icons are hidden, the SCAN feature will still function normally but you will not see the icons change on the **Home** screen.



USE

## Custom icons

Your clinician can set the icon which displays for each of your custom programs. These icons let you see which program is active.



1 On 1



Café



Car



Distance



Groups



Home



Music



Outdoor



School



Shopping



TV



Work

# Change programs

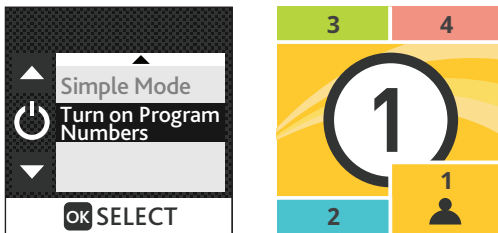
Up to four programs may be set up by your clinician. Use the program buttons to change between programs.



# Display numbers instead of program names

If you prefer to see numbers instead of program names displayed on your **Home** screen:

1. Press and hold the OK button to display the menu.
2. Press the down arrow button to highlight **Turn on Program Numbers**.



3. Press the OK button to select.

### Tip

To revert to displaying program names, repeat these steps but select the Turn off Program Numbers option.



# Practice mode

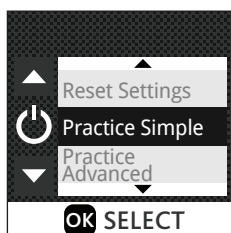
Practice mode allows you to familiarise yourself with the remote assistant before you start using it.

## Note

In Practice mode, adjustments or changes to settings are not saved or sent to the sound processor.

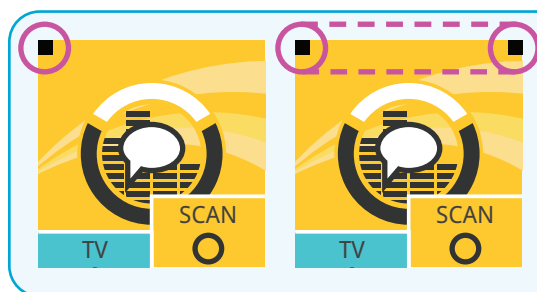
To enter **Practice mode**:

1. Press and hold the OK button.
2. When the menu displays, press the down arrow button to highlight **Practice Simple** or **Practice Advanced**.



3. Press the OK button to select.

The **Start Practice Mode** screen will briefly display, followed by the **Home** screen in Practice mode.



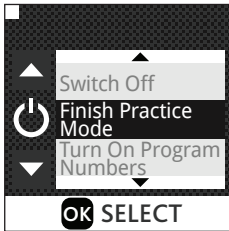
## Tip

The remote assistant displays one square for Simple Practice mode and two squares for Advanced Practice mode.

## Finish Practice mode

To finish Practice mode:

1. Press and hold the OK button to display the menu.



**Finish Practice Mode** will already be highlighted.

2. Press the OK button to select.

The **Practice Mode Finished** screen will briefly display followed by the **Home** screen.



USE

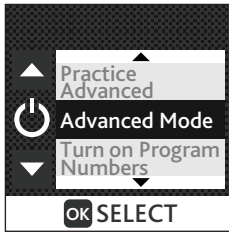
# Advanced mode

Your remote assistant is set to Simple mode by default. Simple mode provides access to features that are most relevant for your hearing requirements.

If required, you can switch to Advanced mode to adjust settings on your sound processor and remote assistant.

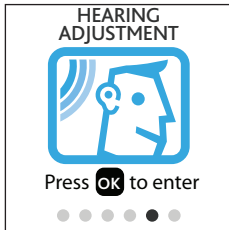
To change to Advanced mode:

1. Press and hold the OK button to display the menu.
2. Press the down arrow button to highlight **Advanced mode**.



3. Press the OK button to select.

Navigate to the following screens to adjust hearing or change settings when you are in Advanced mode.



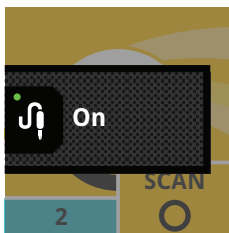
**Note**  
The Hearing Adjustment screen is only displayed if enabled by your clinician.

For more information see *Master volume* on page 43 and *Settings* on page 46.

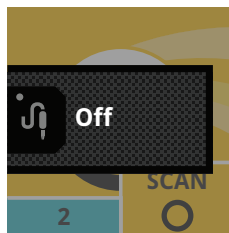
## Plug-in audio accessories

If you connect a plug-in audio accessory to your sound processor, a pop-up will briefly display on your remote assistant. A small icon will be superimposed over your **Home** screen while the accessory is connected, and another pop-up will briefly display when the accessory is disconnected.

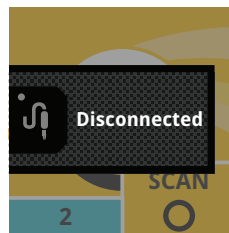
For example:



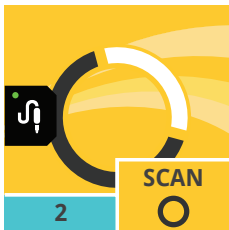
Accessory on



Accessory off



Accessory disconnected



As soon as an accessory is connected, it immediately sends sound to the sound processor.

When an accessory is in the 'on', or 'active' state, a small icon with a green dot displays on the **Home** screen.

If an accessory is connected to your sound processor, you must manually turn off the accessory input to hear sound from the sound processor's microphones. Use the telecoil button to control the accessory (on and off) when it is connected. See *Telecoil*, page 34.



USE

# Wireless accessories

If you use a Cochlear True Wireless™ Accessory with your sound processor, your remote assistant can be used to control the wireless accessory and monitor its status.

### Note

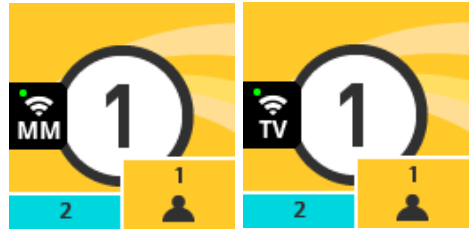
Before you can stream audio, you must first pair the wireless accessory to your sound processor. See the *True Wireless Accessories Supplement* for details.



## To use the Mini Microphone or TV Streamer

1. To start streaming audio, either:

Long-press the Telecoil button. Your Mini Microphone/TV Streamer displays as an icon on the Home screen.



### Tip

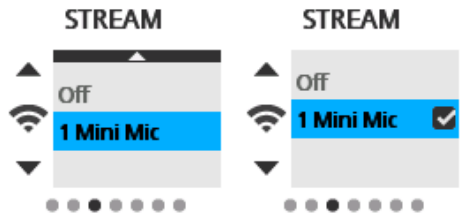
You can long-press the Telecoil button again to select the next paired wireless accessory.



or

From the Home screen, press the right arrow button until you see the Stream selector screen.

Scroll down the list to the channel you want to use and press OK.

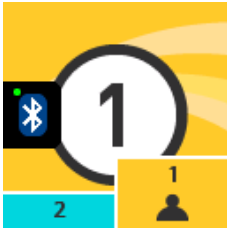


2. To stop streaming, either:

Short-press the Telecoil button.

or

Select OFF on the Stream selector screen then press OK.



#### Note

You use the controls on the Phone Clip to make and receive calls. While the Phone Clip is streaming, it will display as a Bluetooth® icon on the Home screen.



USE

# Telecoil

Listen to hearing loops and hear voices on the telephone with the telecoil. Your clinician can set up your sound processor with manual telecoil and also auto telecoil (if available). Auto telecoil detects the telecoil signal automatically whenever you use a telecoil-compatible phone or are in range of a hearing loop.

You cannot use telecoil at the same time as an audio accessory.

## Note

You can also use a Cochlear Wireless Phone Clip to make phone calls. See *Wireless accessories* on page 32.

To use telecoil or auto telecoil:

1. Short-press the telecoil button once to turn telecoil on.
2. Short-press the telecoil button again (within 5 seconds) to turn auto telecoil on.
3. Short-press the telecoil button again to turn telecoil or auto telecoil off.

## Tip

If you are a bilateral recipient and you have an accessory plugged into one sound processor, pressing the telecoil button on the remote assistant or the sound processor will control the accessory.



When you use the telecoil or auto telecoil, the following icons may display on your **Home** screen:



### Telecoil

#### Telecoil on

Telecoil is active on your sound processor.



### Auto telecoil

#### Auto telecoil on (receiving)

Auto telecoil is on and your sound processor is in range of and detecting a hearing loop or telephone.



#### Auto telecoil on (standby)

Auto telecoil is on, but your sound processor is not detecting a hearing loop or telephone.



#### Telecoil or auto telecoil off

This icon will briefly display on the screen when you turn off telecoil or auto telecoil.



### Caution

Certain electronic devices or machinery may automatically turn on telecoil when you are in auto telecoil mode (you may hear a buzzing noise). If this happens, move away from the device or machinery and wait a few seconds for auto telecoil to turn itself off, or turn it off manually.

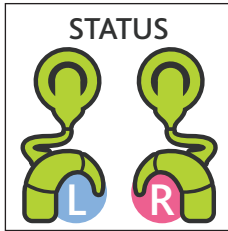


USE

## Bilateral displays and controls

If you are a bilateral user, some of the screens on your remote assistant will have left (L) and right (R) symbols to represent your left and right sound processors.

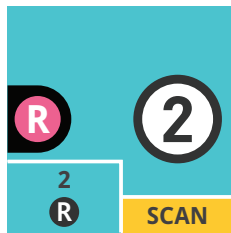
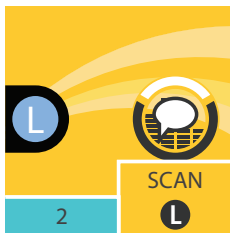
For example:



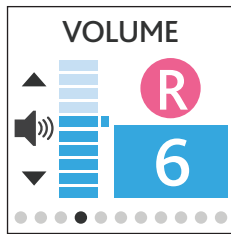
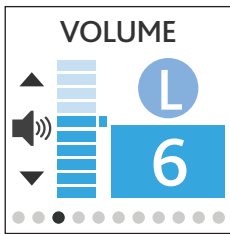
By default, any adjustments you make with your remote assistant will affect your left and right sound processors at the same time (together). However, you can change this setting so that you can make separate adjustments to your left and right sound processors. See *Adjust left/right* on page 49.

If you are a bilateral user, an option in Advanced mode will allow you to control your sound processors separately. When you select '**Separately**' on the **Adjust Left/Right** screen (accessible via the **Settings** screen), some screens on your remote assistant will be repeated to allow you to adjust the left and right sound processors separately.

For example:



Left and right **Home** screens



Left and right **Volume** screens

For information on how to change these settings, see *Adjust left/right* on page 49.





# Adjust

---

Volume and sensitivity	41
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# Adjust

Your clinician may give you the ability to adjust volume, sensitivity (if available), bass, treble and master volume from your remote assistant.

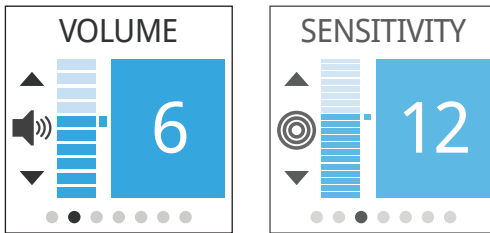
If these controls are set up on your remote assistant, you can access the screens to adjust them by pressing the right arrow button from your **Home** screen.

# Volume and sensitivity

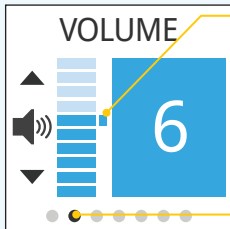
Volume controls your perception of loudness, while sensitivity controls the range of sounds your hear (e.g. soft, background, close or far away). Up to 10 volume and 21 sensitivity settings are available.

To adjust volume or sensitivity levels:

1. From your **Home** screen, press the right arrow button to navigate to the **Volume** or **Sensitivity** screen.



2. Press the up or down arrow button to turn the volume or sensitivity up or down.



This indicates the default value set by your clinician.

This indicates where you are in relation to the **Home** screen.

## Tip

Adjust volume (or sensitivity, if set up) directly from the Home screen by pressing the up or down buttons.



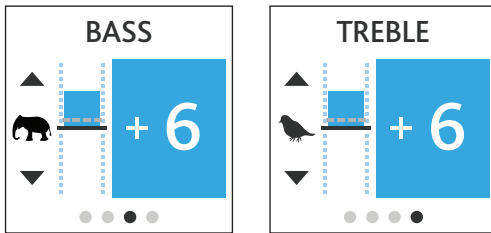
ADJUST

# Bass and treble

If enabled by your clinician, you can adjust your perception of low or high pitch sounds on your remote assistant. These adjustments can be made at the **Bass** or **Treble** screens:

To adjust the bass or treble levels:

1. From your **Home** screen, press the right arrow button to navigate to the **Bass** or **Treble** screens.



2. Press the up or down arrow button to turn the bass or treble levels up or down.

There are 12 bass and treble levels available to you: -6 to +6.



## Warning

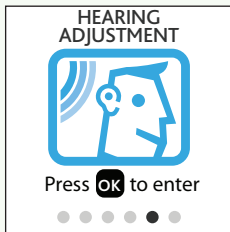
Only adjust these settings when you can hear sounds or speech. Increasing the master volume, bass or treble may cause loud sounds or discomfort at high levels. If this occurs, remove the sound processor/coil immediately and decrease the setting before replacing.

# Master volume

If your clinician has enabled bass and treble controls on your remote assistant, master volume will also be enabled. Master volume allows you to adjust the overall loudness of your sound processor.

To adjust the master volume level:

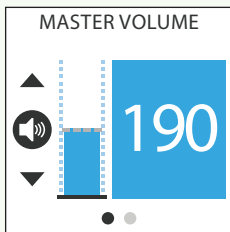
1. From your **Home** screen, press the right arrow button to navigate to the **Hearing Adjustment** screen.



## Warning

Ensure you only adjust these levels when you can hear sounds or speech. Increasing the master volume may cause loud sounds or discomfort at high levels. If this occurs, remove the coil/sound processor immediately. Decrease the master volume before replacing the coil.

2. Press the OK button.



3. At the **Master Volume** screen, press the up or down arrow button to adjust the master volume up or down.
4. When you are satisfied with your adjustments, press the Home button to go back to the **Hearing Adjustment** screen.

The range of master volume levels is 0 to 255.





# Settings

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# Settings

In Advanced mode, you have access to settings that allow you to make additional changes to the way your sound processor and remote assistant operate.

The options available to you from the **Settings** screen allow you to:

- turn wireless accessories on and off
- adjust telecoil to microphone mixing ratio
- adjust accessory to microphone mixing ratio
- adjust left and right sound processors (if you are a bilateral user)
- lock/unlock sound processor buttons
- turn on/off sound processor beeps
- turn on/off sound processor lights
- adjust volume of beeps on the remote assistant
- check wireless microphone performance
- show/hide alert messages on the remote assistant
- show/hide SCAN icons on the remote assistant.



## Tip

To navigate to the **Settings** screen, continually press the right arrow button from your **Home** screen.

After making your changes, press the **Home** button to return to the **Settings** screen. Press the **Home** button again to return to the **Home** screen.

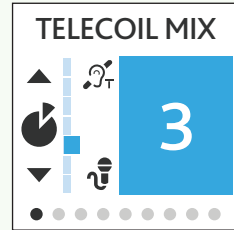


## Telecoil mix

Mixing allows you to combine telecoil and microphone input.

To adjust the telecoil to microphone mixing ratio:

1. Go to the **Settings** screen and press the OK button.
2. When the **Telecoil Mix** screen is displayed, press the up or down arrow button to change the mix.



The number on the screen tells you the ratio of telecoil sound to microphone sound in the mix.

NUMBER	SOUND MIX
100	All telecoil (100%)
6	6 parts telecoil to 1 part microphone
5	5 parts telecoil to 1 part microphone
4	4 parts telecoil to 1 part microphone
3	3 parts telecoil to 1 part microphone
2	2 parts telecoil to 1 part microphone
1	1 part telecoil to 1 part microphone

### Tip

To focus more on the telecoil input and reduce background sounds, increase the number displayed on the Telecoil Mix screen. To hear more background sounds while using the telecoil, decrease the number.

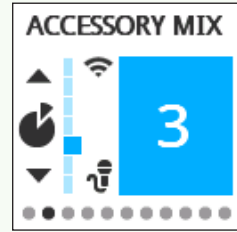


## Accessory mix

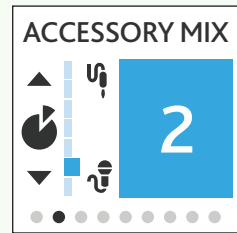
To adjust the wireless or plug-in accessory to microphone mixing ratio (e.g. when using the Wireless Mini Microphone to listen to music):

1. Go to the **Settings** screen and press the OK button.
2. Press the right arrow button to navigate to the **Accessory Mix** screen.
3. Press the up or down arrow button to change the mix.

The number on the screen tells you the ratio of accessory sound to microphone sound in the mix.



Wireless Accessory



Plug-in audio accessory

NUMBER	SOUND MIX
100	All accessory (100%)
6	6 parts accessory to 1 part microphone
5	5 parts accessory to 1 part microphone
4	4 parts accessory to 1 part microphone
3	3 parts accessory to 1 part microphone
2	2 parts accessory to 1 part microphone
1	1 part accessory to 1 part microphone

### Tip

To focus more on the accessory input and reduce background sounds, increase the number displayed on the Accessory Mix screen. To hear more background sounds while using the accessory, decrease the number.

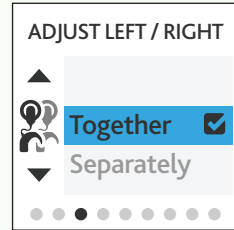


## Adjust left/right

If you are a bilateral user, your remote assistant will allow you to make adjustments to your sound processors, either together (at the same time), or separately.

To adjust this setting:

1. Go to the **Settings** screen and press the OK button.
2. Press the right arrow button to navigate to the **Adjust Left/Right** screen.
3. Press the up or down arrow button to highlight **Together** or **Separately**.
4. Press the OK button to select.



For more information about these features, see *Bilateral displays and controls* on page 36.

### Note

This feature is only available for bilateral users.

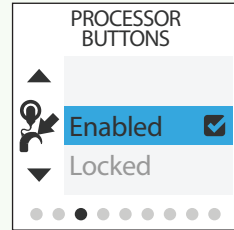


## Sound processor buttons

You can lock the buttons on your sound processor to prevent accidental button presses that may affect your preferred settings.

To lock the sound processor buttons:

1. Go to the **Settings** screen and press the OK button.
2. Press the right arrow button to navigate to the **Processor Buttons** screen.
3. Press the up or down arrow button to highlight **Enabled** or **Locked**.
4. Press the OK button to select.

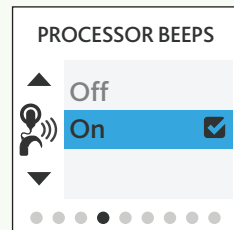


## Sound processor beeps

Sound processor beeps can be turned off or on.

To change sound processor beeps:

1. Go to the **Settings** screen and press the OK button.
2. Press the right arrow button to navigate to the **Processor Beeps** screen.
3. Press the up or down arrow button to highlight **Off** or **On**.
4. Press the OK button to select.







### Note

Only Cochlear implant recipients will be able to hear sound processor beeps.



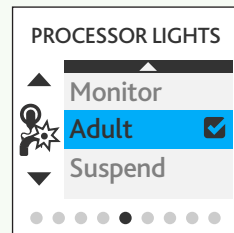
# Sound processor lights

You can turn on or turn off various indicator lights on your sound processor. The following table explains the different options.

	TYPE OF INDICATOR			
	 Key Press	 Alert	 Microphone activity	 Telecoil/Accessory/FM
OPTION	DISPLAYED?			
<b>Child</b>	Yes	Yes	Yes	Yes
<b>Monitor</b>				
When processor on implant	Yes	Yes	No	No
When processor off implant	Yes	Yes	No	Yes
<b>Adult</b>				
When processor on implant	No	No	No	No
When processor off implant	Yes	Yes	No	No
<b>Suspend</b>	No	No	No	No

To change the indicator lights on your sound processor:

1. Go to the **Settings** screen and press the OK button.
2. Press the right arrow button to navigate to the **Processor Lights** screen.
3. Press the up or down arrow button to highlight **Child**, **Monitor**, **Adult** or **Suspend**.
4. Press the OK button to select.



### Note

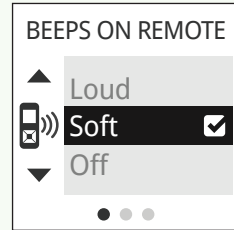
Suspend is a temporary mode. When the sound processor is switched off and on again, the indicator lights on the sound processor will revert to the mode that has been set up by your clinician.

## Beeps on remote assistant

Advanced mode allows you to adjust the volume of alert and key press beeps.

To adjust the beeps on your remote assistant:

1. Go to the **Settings** screen and press the OK button.
2. Press the right arrow button to navigate to the **Beeps on Remote** screen.
3. Press the up or down arrow button to highlight **Off**, **Soft** or **Loud**.
4. Press the OK button to select.



# Check wireless microphone

You can measure and compare the signal level received from your sound processor microphones with the signal received from a remote microphone such as Mini Microphone (MM) or FM device.

To check wireless microphone performance :

1. Go to the **Settings** screen and press the OK button.
2. Press the right arrow button to navigate to the **MM/FM Advantage** screen.
3. Press the OK button to select.

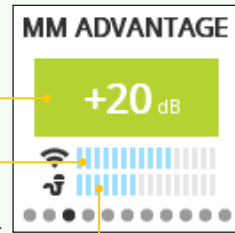
## Note

Before doing this, choose a quiet place with no background noise.

C. Benefit in dB

B. MM/FM level

A. Sound Processor Microphone level



- A. The **Sound Processor Microphone level** bar graph at the bottom.
- B. The **MM/FM level** bar graph in the middle. This is the wireless accessory sound level.
- C. **Benefit in dB** is the difference between the remote microphone and the sound processor microphones. If the number is a negative value, you may need to adjust the remote microphone's volume or there may be too much background noise.



# Alert messages

Alert messages provide information about potential problems with your sound processor or remote assistant, for example a low battery. However, you can change the setting to either hide or show alert messages.

To change the alert messages setting :

1. Go to the **Settings** screen and press the OK button.
2. Press the right arrow button to navigate to the **Alert Messages** screen.
3. Press the up or down arrow button to highlight **Hide** or **Show**.
4. Press the OK button to select.



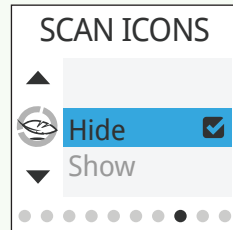
For more information, see *Alert screens* on page 62.

## SCAN icons

If you are using the SCAN program, the icons will display on the **Home** screen to let you know what type of sound environment the sound processor has detected.

You can change this setting to either hide or show SCAN icons.

To change the setting for SCAN icons:



1. Go to the **Settings** screen and press the OK button.
2. Press the right arrow button to navigate to the **SCAN Icons** screen.
3. Press the up or down arrow button to highlight **Hide** or **Show**.
4. Press the OK button to select.

For more information, see *SCAN program* on page 25.





# Care

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If your remote assistant gets wet	58
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# Clean

Keep your remote assistant dry.

To keep your remote assistant clean, wipe the display and buttons with a soft dry cloth.



## Caution

Do not use alcohol, household cleaners or abrasive materials to clean your remote control.

## If your remote assistant gets wet

1. Turn your remote assistant off.
2. Wipe it with a soft dry cloth.
3. Allow your remote assistant to dry for approximately 12 hours.



## Caution

Do not use a drying kit or household appliance (e.g. hairdryer) to dry the remote assistant.

## Store

To protect your remote assistant against impact and scratches, Cochlear recommends that you use the Cochlear™ Nucleus® CR200 Series Protective Case.



When using the remote assistant while it is in a protective case, you may notice a slight decrease in the operating range. If this happens, either hold the remote assistant closer to your sound processor, or remove the remote assistant from the protective case when using it.





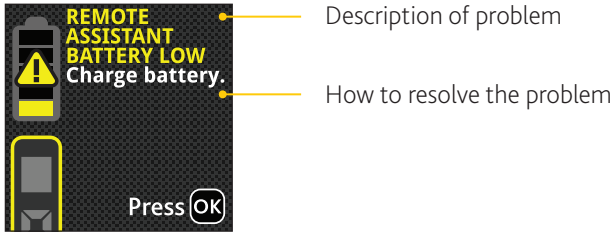
# Troubleshoot

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# Alert screens

The remote assistant displays alert screens when problems occur. These screens include troubleshooting information to help you resolve problems:



Some alerts are warnings (e.g. battery low), while other alerts indicate actions which need to be taken before you can continue to use your remote assistant (e.g. battery empty).

**Tip**  
The part with the problem will flash yellow, e.g. coil, battery, processing unit.

COIL OFF IMPLANT  
Reconnect coil to implant.

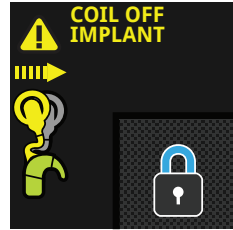
Press OK

PROCESSOR BATTERY LOW  
Replace or recharge battery.

Press OK

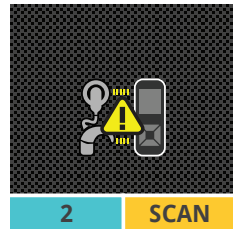
### Alert while screen is locked

If alerts occur while the remote assistant is locked, the remote assistant will beep and the screen will “wake up” with a **Locked** screen that also shows the alert. Unlock the remote assistant to resolve the alert.



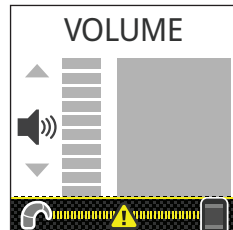
### Out of range alert

If you are out of range, an alert will display on the **Home** screen and at the bottom of all subsequent screens. However, you will not hear an audio alert.



### Adjusting while out of range

If you try to make an adjustment to the sound processor while out of range, a full screen out-of-range alert will occur. You can dismiss the alert by pressing the OK button. You will then be taken back to the last screen you were on.



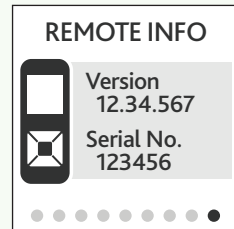
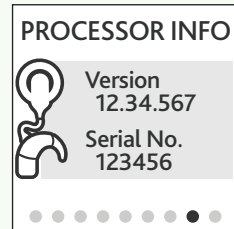
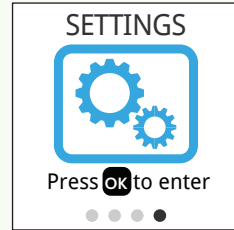
# View system details

Advanced mode allows you to view system details, such as:

- remote assistant version
- sound processor version
- serial numbers.

To view system details:

1. From the **Home** screen, press the right arrow button to navigate to the **Settings** screen.
2. Press the OK button.
3. Keep pressing the right arrow button until you see the **Processor Info** screen and the **Remote Info** screen.



## Tip

Press the Home button to return to the Settings screen. Press the Home button again to return to your Home screen.

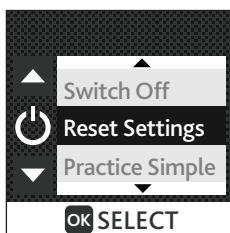


## Reset sound processor settings

If you want to reset your sound processor to the initial settings made by your clinician, you can select the **Reset Settings** option on your remote assistant. This will reset volume, sensitivity and all Advanced mode options.

To reset the settings on your sound processor:

1. Press and hold the OK button until the menu displays.
2. Press the up or down arrow button to highlight **Reset Settings**.



### Note

If you are not paired to a sound processor, you can still access **Reset Settings**, however, it will only reset **Beeps on Remote** and **Alert Messages**.

3. Press the OK button to select.



## Reset remote assistant

If the Home button does not work or the remote assistant freezes, you can reset the remote assistant by using a pointed object to press the hard reset button at the back of the remote assistant.

This will reset the remote assistant to its original settings.

You will have to:

- select your preferred language again
- reset the loudness of the beeps on the remote assistant (the default setting is **Loud**)
- pair the remote assistant to a sound processor again
- reset whether alert messages are shown or hidden (the default setting is **Show**)
- reset whether SCAN icons are shown or hidden (the default setting is **Show**)
- reset the mode to Simple mode or Advanced mode (the default setting is **Simple mode**)
- if you are a bilateral user, reset left/right settings (the default setting is **Together**).



# Other problems

PROBLEM	RESOLUTION
The sound processor is unavailable	<ol style="list-style-type: none"><li>1. Make sure the sound processor is turned on and is within 2 metres of your remote assistant. See <i>Turn on</i>, page 16.</li><li>2. Ensure the sound processor is paired with your remote assistant. See <i>Pair</i>, page 17.</li><li>3. Move to a different location.</li><li>4. Try to pair the sound processor with the remote assistant again.</li><li>5. If you are a bilateral recipient, ensure you have the correct side selected and displayed for troubleshooting. See <i>Adjust left/right</i>, page 49.</li><li>6. If the problem continues, contact your clinician.</li></ol>
You are pressing a key and nothing happens	<ol style="list-style-type: none"><li>1. If you are pressing a key while the remote assistant is locked, a <b>Locked</b> screen will display and you will hear a beep. Unlock the device. See <i>Lock and unlock</i>, page 8.</li><li>2. Try changing to another program. See <i>Change programs</i>, page 27.</li><li>3. Try pressing different keys.</li><li>4. Ensure you are pressing the key correctly.</li><li>5. Press the hard reset button on the back of the remote assistant. See <i>Reset remote assistant</i>, page 66.</li><li>6. If the problem continues, contact your clinician.</li></ol>



PROBLEM	RESOLUTION
Your remote assistant battery did not stay charged for very long	<ol style="list-style-type: none"> <li>1. Check if anything is pressing on the keys of the remote assistant, such as an item in your handbag or pocket. Lock the remote assistant to save power on the battery.</li> <li>2. When charging, ensure the battery tick appears on screen before unplugging.</li> <li>3. If the problem continues, contact your clinician.</li> </ol>
Your remote assistant will not charge	<ol style="list-style-type: none"> <li>1. Check the connections.</li> <li>2. Check the USB connector on the remote assistant and ensure there is no damage or contamination.</li> <li>3. If you are charging your remote assistant using a computer, ensure the computer is “awake” and on.</li> <li>4. Try charging your remote assistant using the USB cable and the Cochlear Global Power Adaptor (provided in the Cochlear Nucleus CR200 Series Charging Kit). See <i>Charge battery</i>, page 12.</li> <li>5. If the problem continues, contact your clinician.</li> </ol>
The remote assistant got wet	<ol style="list-style-type: none"> <li>1. Turn the remote assistant off, wipe it with a soft dry cloth, allow the remote assistant to dry for approximately 12 hours. See <i>If your remote assistant gets wet</i> on page 58.</li> </ol>

# Warnings

- 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. Use the tamper-resistant locks to keep small parts attached to the processing unit where available. 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.
- Do not use your remote assistant if it becomes unusually warm. Notify your clinician immediately.
- Do not place your remote assistant inside any part of your body (e.g. mouth).
- Do not entangle your sound processor, coil or earhook with any machinery or jewellery, e.g. earrings.
- Parents and carers are advised that unsupervised use of long cables (e.g. USB cables) may present a risk of strangulation.
- Do not operate your remote assistant while driving.
- Do not use or store the device in dusty or dirty areas, or expose the device to heat (e.g. do not store in direct sunlight, behind a window or in a car for extended periods of time) or cold temperatures.
- Take care when placing your remote assistant in a bag or pocket with other objects as the display may scratch. Commercially available protective films may be used to protect the remote assistant display from scratches.
- Protect your remote assistant in environments where excessive moisture and dirt can damage it.
- Keep your remote assistant dry.
- Only use a soft dry cloth to clean the surface of your remote assistant.
- Do not bend or compress the display on the remote assistant.

- Do not use excessive force when connecting or disconnecting the USB cable or when using the buttons on the remote assistant.
- If you need to adjust your sound processor volume often, or if adjusting volume ever causes discomfort, contact your clinician.
- Do not push the volume too high for comfort in case a loud noise occurs nearby.
- Do not disassemble, deform or immerse in water. If the remote assistant is not working, return it to your clinician. Warranty will be void if opened.
- Do not attempt to remove the battery. It is an integrated part that cannot be replaced.
- Dispose of electrical components in accordance with your local regulations.
- If you are using a computer to charge your remote assistant, make sure the computer bears the mark required by your local regulation that indicates compliance to the IEC 60950 safety standard for information technology equipment.
- No modification of this equipment is allowed.
- Your remote assistant transmits high frequency radio waves when switched on. On an airplane, turn your remote assistant off during takeoff and landing. Check with airline staff before flying if you are unsure.
- Your remote assistant radiates electromagnetic energy that may interfere with life supporting devices, (e.g. cardiac pacemakers and ICDs). Keep your remote assistant at least 15 cm (6 in) from such devices. Contact the manufacturer of the specific device to find out more.

## Magnetic resonance imaging (MRI)

The sound processor, remote and related accessories (such as the Wireless Programming Pod) are MR Unsafe. Full MRI safety information is available at [www.cochlear.com/warnings](http://www.cochlear.com/warnings) or by calling your regional Cochlear office (contact numbers available at the end of this document).



# Cautions

- Do not use alcohol, household cleaners or abrasive materials to clean your remote assistant.
- Do not use a drying kit or household appliance (e.g. hairdryer) to dry the remote assistant.
- Only use battery charging equipment supplied by Cochlear to charge the remote assistant.
- Certain electronic devices or machinery may automatically turn on telecoil when you are in auto telecoil mode (you may hear a buzzing noise). If this happens, move away from the device or machinery and wait a few seconds for auto telecoil to turn itself off, or turn it off manually.



# Other information

## Physical configuration

The remote assistant comprises:

- Custom analogue and digital integrated circuits based on a microprocessor design, with bi-directional wireless communication capabilities.
- Buttons and a slider for control of sound processor features and its own system features.
- A display for indicating system status and activity.
- A speaker for sounding an audible alert.
- Coil sensor to check if the coil is receiving sound signals from the sound processor and for pairing.
- On-board battery charging circuit.
- A temperature sensor for battery safety.
- A micro USB connector with ferrite bead for charging the remote assistant and updating the firmware.

## Materials

The remote assistant housing, including non-metallic buttons, is made of polycarbonate.

## Wireless communication link

The remote assistant wireless communication link operates in the 2.4 GHz ISM band using GFSK (Gaussian Frequency Shift Keying) on 5 channels. The link uses a proprietary bi-directional communication protocol and operates over a distance of up to 2 metres from the sound processor. When interference is present, the wireless communication link switches between the 5 channels to find a channel where the interference least affects the operation of the link. The remote assistant indicates via its display when the sound processor is not within operating distance, and when the link has been interrupted due to interference.

## Battery life, charge cycles and lifespan

- Battery life means the time a device will run before the disposable batteries must be replaced, or the rechargeable batteries recharged.
- Battery charge cycle is a full charge and discharge of the rechargeable battery.
- Battery lifespan means the total number of charge cycles a rechargeable battery will last before the battery life degrades to 80% of its original fully-charged capacity.

## Dimensions

COMPONENT	LENGTH	WIDTH	DEPTH
CR230 Remote Assistant	110.8 mm	46.3 mm	14.0 mm

## Weight

COMPONENT	WEIGHT
CR230 Remote Assistant	66g

## Operating characteristics

CHARACTERISTIC	VALUE/RANGE
Wireless technology	Proprietary low power bi-directional wireless link
RF frequency	2.4 GHz
Operating battery voltage	3.7 V
Battery charging voltage	4.2 V
Battery capacity	680 mAh (Internal lithium-ion battery)
Charge cycles	≥ 80% capacity after 400 charge / discharge cycles at room temperature
Button and slider functions	Remote assistant on/off, telecoil/auto telecoil on/off, lock and unlock, selection of options, screen navigation, program and setting changes
Wireless transmission range	Up to 2 m
Display	128 x 128 pixels, colour LCD

## Environmental conditions

CONDITION	MINIMUM	MAXIMUM
Storage & transport temperature	-10°C (14°F)	+55°C (+131°F)
Storage & transport humidity	0% RH	90% RH
Operating temperature	+5°C (+41°F)	+40°C (+104°F)
Operating relative humidity	0% RH	90% RH
Operating pressure	700 hPa	1060 hPa

## Electromagnetic compatibility (EMC)



### 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 remote assistant, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

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



## Environmental protection

Your remote assistant contains electronic components subject to the WEEE Directive 2012/19/EU on waste electrical and electronic equipment.

Help protect the environment by not disposing of your remote assistant with your unsorted household waste. Please recycle your remote assistant according to your local regulations.

## Certification and applied standards



The CE mark applies to the Cochlear Nucleus CR230 Remote Assistant.

The Cochlear Nucleus CR230 Remote Assistant also fulfils the essential requirements of Directive 2014/53/EU on Radio Equipment as per the conformity assessment procedure in Annex II. The declaration of conformity may be consulted at [www.cochlear.com/wps/wcm/connect/intl/about/company-information/declaration-of-conformity](http://www.cochlear.com/wps/wcm/connect/intl/about/company-information/declaration-of-conformity)

## Equipment classification

Your remote assistant is an internally powered accessory to a medical device as described in the international standard IEC 60601-1:2005/A1:2012, Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance.

## Radio compliance for Japan

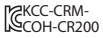
This device is granted pursuant to the Japanese Radio Law (電波法) and the Japanese Telecommunications Business Law (電気通信事業法).

This device should not be modified (otherwise the granted designation number will become invalid).



## Radio compliance for Korea

Warning: This radio equipment has the possibility of radio interference during operation.



## FCC (Federal Communications Commission) and Canadian IC compliance

This device complies with part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions:

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

Changes or modifications made to this equipment not expressly approved by Cochlear Limited may void the FCC authorisation to operate this equipment.

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: WTOR200FF

IC ID: 8039A-R200FF

# Serious incidents

Whilst serious incidents in relation to medical devices are rare, it is acknowledged that incidents may happen. As an organisation, Cochlear recognises the potential for harm and will respond to any reported serious incident.

## What is a serious incident?

A 'serious incident' means any event that directly or indirectly has caused or could have caused an unexpected or unwanted event including any of the following:

- The death of a patient, user or other person,
- The temporary or permanent serious deterioration of a patient's, user's or other person's state of health,
- A serious public health threat.

# Reporting a serious incident

There is no definitive list of events/incidents that constitute a serious incident, however all serious incidents should be reported to:

- Your local Cochlear office  
[www.cochlear.com/intl/contact/global-offices](http://www.cochlear.com/intl/contact/global-offices)

People within the European Union should also report all serious incidents to:

- Your National Competent Authority  
[https://health.ec.europa.eu/medical-devices-sector/new-regulations/contacts\\_en](https://health.ec.europa.eu/medical-devices-sector/new-regulations/contacts_en)

People within Australia should also report all serious incidents to:

- Therapeutic Goods Administration  
<https://www.tga.gov.au>

# Labelling symbols

The following symbols may appear on your sound processor or remote components and/or packaging:



Refer to instruction manual



Consult instructions for use



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



Medical device



Unique device identifier



Compatible sound processor



Manufacturer



Authorised representative in the European Community/European Union



Authorised representative in Switzerland



Catalogue number



Serial number



Batch code



Date of manufacture



Temperature limits



CE registration mark



CE registration mark with notified body number



Radio compliance certification for Australia and New Zealand



Radio compliance certification for Japan



Radio compliance certification for Korea

**Rx Only**

Caution: US law restricts this device to sale by, or on the order of, a physician



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



Keep dry



Coil guide. Used to position the coil against the remote assistant when pairing.

# Trademark legal notice

ACE, Advance Off-Stylet, AOS, Ardium, AutoNRT, Autosensitivity, Baha, Baha SoftWear, BCDrive, Beam, Bring Back the Beat, Button, Carina, Cochlear, 科利耳, コクレア, 코클리어, Cochlear SoftWear, Contour, コントウア, Contour Advance, Custom Sound, DermaLock, Freedom, Hear now. And always, Hugfit, Human Design, Hybrid, Invisible Hearing, Kanso, LowPro, MET, MP3000, myCochlear, mySmartSound, NRT, Nucleus, Osia, Outcome Focused Fitting, Off-Stylet, Piezo Power, Profile, Slimline, SmartSound, Softip, SoundArc, SoundBand, True Wireless, the elliptical logo, Vistafix, Whisper, WindShield and Xidium are either trademarks or registered trademarks of the Cochlear group of companies. Bluetooth is a registered trademark of Bluetooth SIG.

# Notes

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# Notes

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# Hear now. And always

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