

Cochlear™

Nucleus® CR230

Remote Assistant for CP802

User Guide



*Hear now. And always*

  
Cochlear®

The Cochlear™ Nucleus® CR230 Remote Assistant is a hand-held device that allows you to control and monitor the Cochlear™ Nucleus® CP802 Sound Processor.

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

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

This guide is intended for Cochlear implant recipients and their carers using the Cochlear Nucleus CP802 Sound Processor. If you are a parent or carer, you can use the remote assistant to monitor and manage a child's processor.

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

#### **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



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## 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:

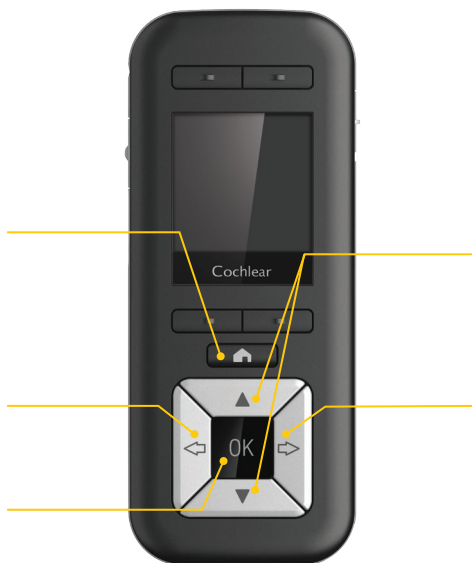
- Hold the remote assistant in a different position.
- Move away from the vicinity of any electronic equipment that may be causing interference.

## 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



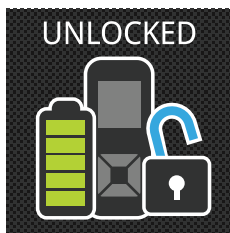
ABOUT

## Lock and unlock

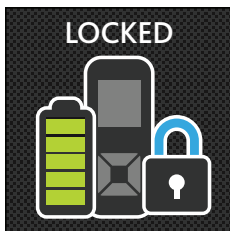
The remote assistant can be locked to prevent buttons being accidentally pressed.

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

---

## 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.



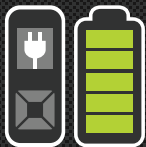
It may take two to four hours to fully charge a completely empty battery. As the battery ages, it may take longer to fully charge the battery.

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

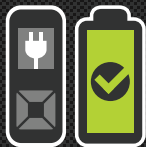
- amount of usage
- whether you turn off your remote assistant when not in use
- whether your remote assistant is controlling one or two sound processors.

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.

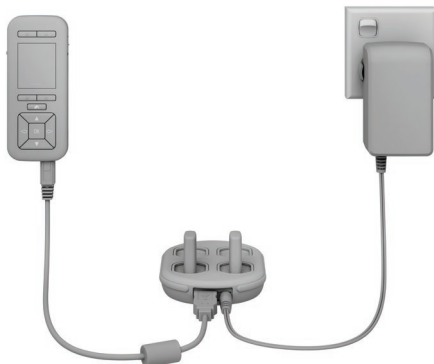


### CAUTION

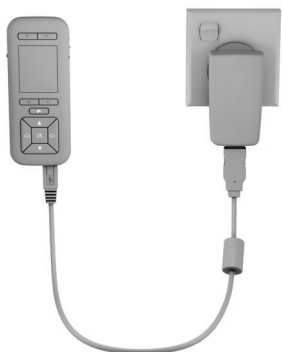
Ensure that you only use battery charging equipment supplied by Cochlear to charge the remote assistant battery.



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.



CHARGE



# Turn on

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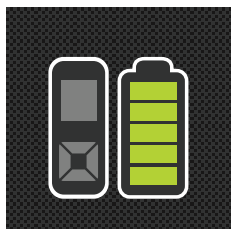
Turn on	14
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## Turn on

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 58).

### NOTE

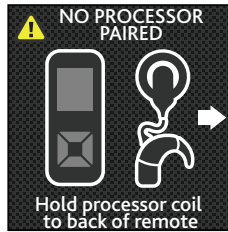
The remote assistant remembers your selected language when you turn it off.

2. Press the OK button to select.

# Pair

Pairing allows two devices to communicate with each other.

If a processor is not paired with the remote assistant, the **No Processor Paired** screen will display. Hold the processor coil to the back of the remote assistant to pair them.



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

Before pairing, ensure the processor is switched on:

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



TURN ON

The **Pair Processor** screen will display.

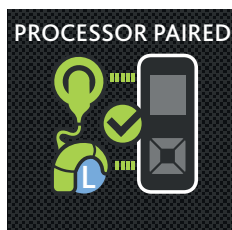
2. Press the OK button to pair.



#### NOTE

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

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



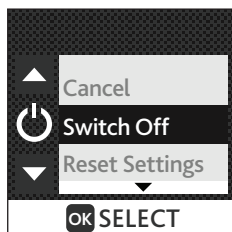
#### TIP

Several remotes can be paired to one 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

---

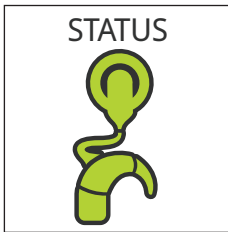
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# Status indicators

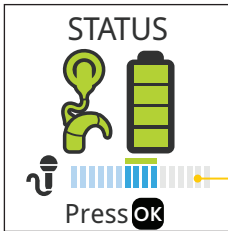
Your remote assistant allows you to display key information about your processor, including the battery status.

## Check processor status

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



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



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

Sound meter bar

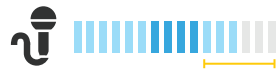
The sound meter bar shows sound being “heard” by the processor.



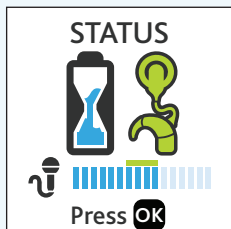
**Soft sound**  
(20–50 dBA)



**Moderate sound**  
(50–70 dBA)



**Loud sound**  
(70–100 dBA)



#### TIP

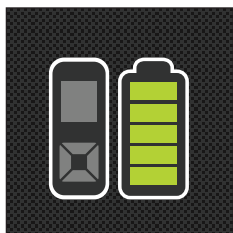
An hourglass may briefly display instead of the battery in the second Status screen. This indicates that the remote assistant is waiting for an update from the processor.



If there are problems with the processor or battery, an alert screen will display. See *Alert screens* on page 54.

## Check battery status

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

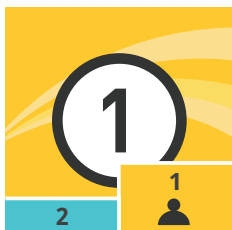


USE

# 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

## 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.

## Change programs

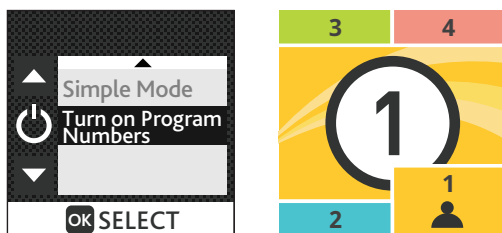
Up to four programs may be set up by your clinician.  
Use the program buttons to change between programs.



## 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

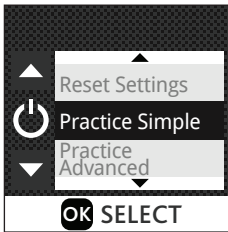
Practice mode allows you to familiarise yourself with the remote assistant before you start using it.

## NOTE

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

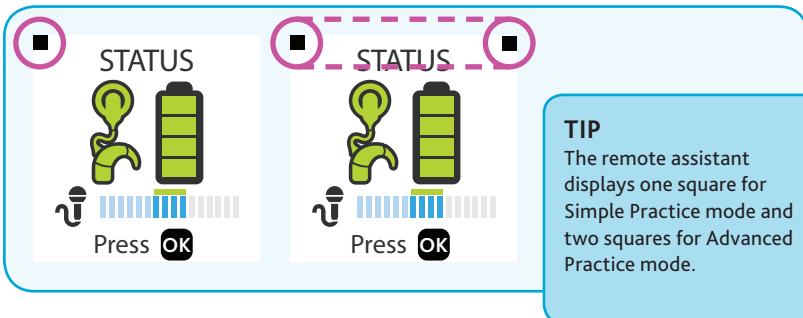
To enter **Practice mode**:

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.



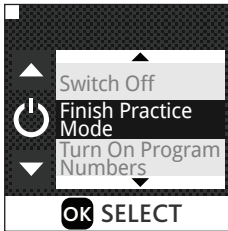
## TIP

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

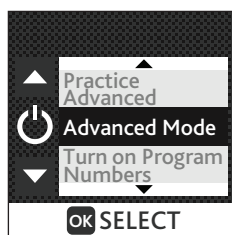
# Advanced mode

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 processor and remote assistant.

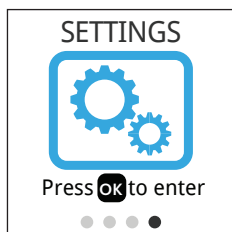
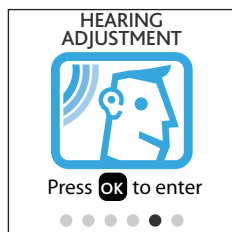
To change to Advanced mode:

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.

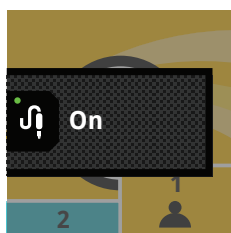
For more information see *Master volume* on page 37 and *Settings* on page 40.



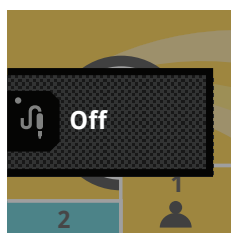
## Plug-in audio accessories

If you connect a plug-in audio accessory to your 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.

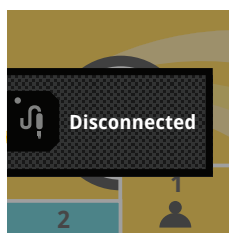
For example:



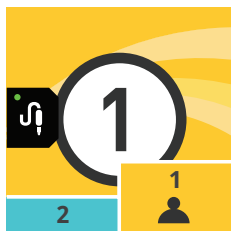
Accessory on



Accessory off



Accessory disconnected



As soon as an accessory is connected, it immediately sends sound to the 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 processor, you must manually turn off the accessory input to hear sound from the processor's microphones. Use the telecoil button to control the accessory (on and off) when it is connected. See *Telecoil*, page 28.



USE

# Telecoil

Hear voices optimised for phone use on the telephone with the telecoil. Your clinician can set up your processor with manual telecoil and also auto telecoil (if available). Auto telecoil detects the telecoil signal automatically whenever you use a telecoil-compatible phone.

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

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 processor, pressing the telecoil button on the remote assistant or the 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 processor.



### Auto telecoil

#### Auto telecoil on (receiving)

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



#### Auto telecoil on (standby)

Auto telecoil is on, but your 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.

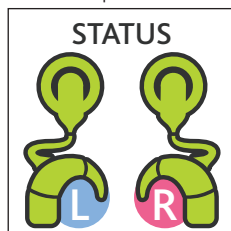


USE

## 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 processors.

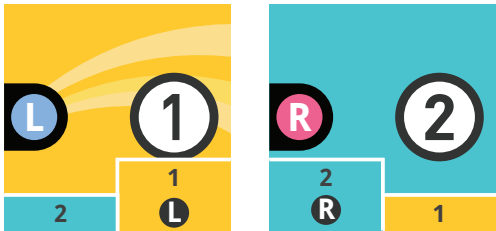
For example:



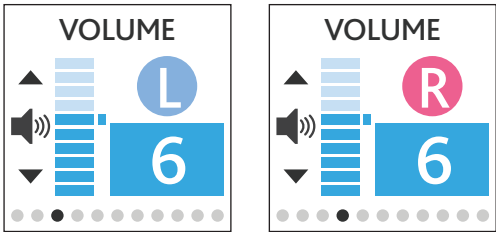
By default, any adjustments you make with your remote assistant will affect your left and right processors at the same time (together). However, you can change this setting so that you can make separate adjustments to your left and right processors. See *Adjust left/right* on page 43.

If you are a bilateral user, an option in Advanced mode will allow you to control your 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 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 43.





# Adjust

---

Volume and sensitivity	35
Bass and treble	36
Master volume	37

# 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.

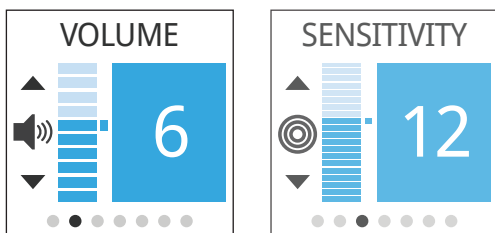


# Volume and sensitivity

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.



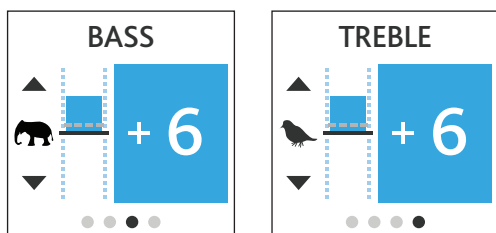
ADJUST

# 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.



## WARNING

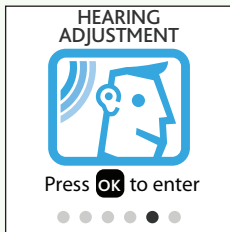
Only adjust these settings when you can hear sounds or speech. Increasing the master volume, bass or treble may cause loud sounds or discomfort at high levels. If this occurs, remove the coil immediately and decrease the setting before replacing.

# Master volume

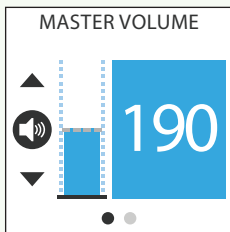
If your clinician has enabled bass and treble controls on your remote assistant, master volume will also be enabled. Master volume allows you to adjust the overall loudness of your sound processor.

To adjust the master volume level:

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



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.



## CAUTION

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 immediately. Decrease the master volume before replacing the coil.



ADJUST



# Settings

---

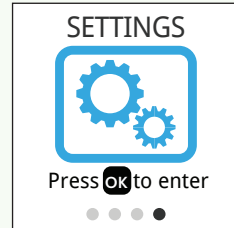
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# Settings

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

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

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



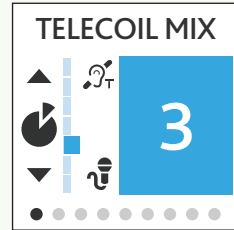
# Telecoil mix

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

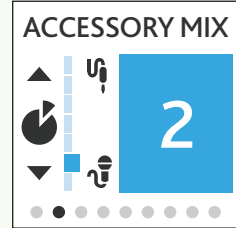
## TIP

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 plug-in accessory to microphone mixing ratio (e.g. when using the Cochlear Nucleus Personal Audio Cable 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.

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.



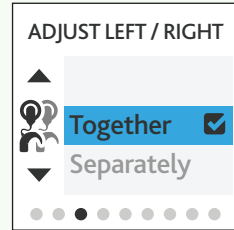


## Adjust left/right

If you are a bilateral user, your remote assistant will allow you to make adjustments to your 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 30.

### NOTE

This feature is only available for bilateral users.

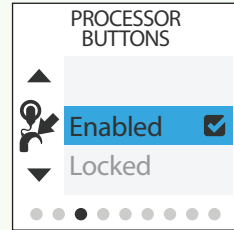


# Processor buttons

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

To lock the 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.

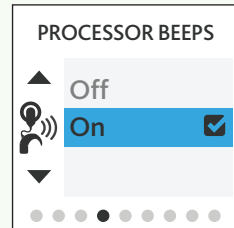


# Processor beeps

Processor beeps can be turned off or on.

To change 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 processor beeps.



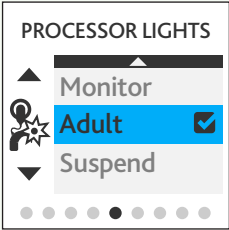
# Processor lights

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

TYPE OF INDICATOR			
			
	Key Press	Alert	Microphone activity
OPTION	DISPLAYED?		
Child	Yes	Yes	Yes
Monitor			
When processor on implant	Yes	Yes	No
When processor off implant	Yes	Yes	No
Adult			
When processor on implant	No	No	No
When processor off implant	Yes	Yes	No
Suspend	No	No	No

To change the indicator lights on your 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.



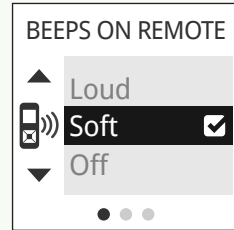
**NOTE**  
Suspend is a temporary mode. When the processor is switched off and on again, the indicator lights on the processor will revert to the mode that has been set up by your clinician.

## 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.



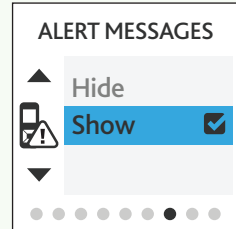
## Alert messages

Alert messages provide information about potential problems with your 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 54.





# Care

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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.



## WARNING

Do not use an oven, microwave or any other electrical or heating device to dry the remote assistant.

## NOTE

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



## 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.



## 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 processor, or remove the remote assistant from the protective case when using it.





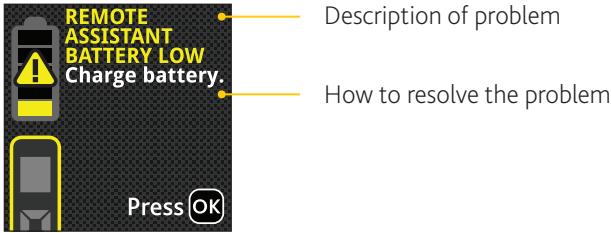
# Troubleshoot

---

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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.

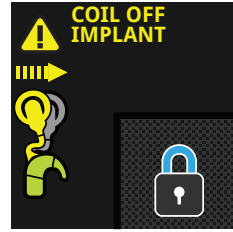
An alert screen with a black background and yellow text. At the top left is a yellow warning triangle. The text reads: "COIL OFF IMPLANT" in bold, followed by "Reconnect coil to implant." in a larger font. Below this is a yellow icon of a coil. At the bottom right, it says "Press OK".

An alert screen with a black background and yellow text. At the top left is a yellow warning triangle. The text reads: "PROCESSOR BATTERY LOW" in bold, followed by "Replace or recharge battery." in a larger font. Below this is a yellow icon of a processor unit with a battery symbol. At the bottom right, it says "Press OK".



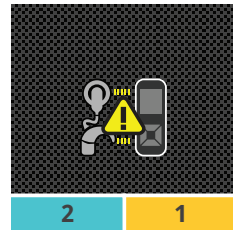
### Alert while screen is locked

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.



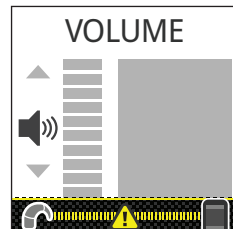
### Out of range alert

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 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.



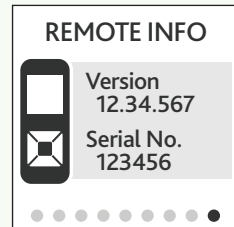
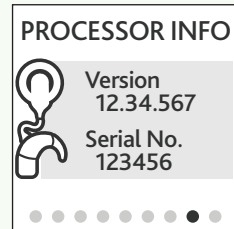
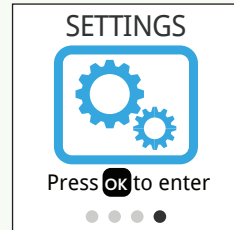
## View system details

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

- remote assistant version
- 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.

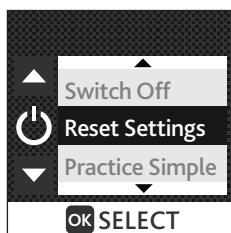


# Reset processor settings

If you want to reset your 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 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 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 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 processor is unavailable	<ol style="list-style-type: none"><li>1. Make sure the processor is turned on and is within 2 metres of your remote assistant. See <i>Turn on</i>, page 14.</li><li>2. Ensure the processor is paired with your remote assistant. See <i>Pair</i>, page 15.</li><li>3. Move to a different location.</li><li>4. Try to pair the 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 43.</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 6.</li><li>2. Try changing to another program. See <i>Change programs</i>, page 23.</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 58.</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 10.</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 50.</li> </ol>



# Warnings

- Do not use your remote assistant if it becomes unusually warm. Notify your clinician immediately.
- Only use battery charging equipment supplied by Cochlear to charge the remote assistant.
- 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, extreme high or cold temperatures (e.g. do not store in direct sunlight, behind a window or in a car for extended periods of time).
- 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 use any commercial or household appliance to dry the 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.
- 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.

# 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 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 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 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 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

## Environmental protection

Your remote assistant contains electronic components subject to the Directive 2002/96/EC 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.

## Equipment classification

Your remote assistant is an 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.

## Certification and applied standards

Your device fulfils the essential requirements listed in Annex 1 of the EC directive 90/385/EEC on Active Implantable Medical Devices as per the conformity assessment procedure in Annex 2.



The year in which authorisation to affix the CE mark was granted was 2015.

The Cochlear Nucleus CR230 Remote Assistant and the Cochlear Nucleus CP802 Sound Processor also fulfil 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)





## 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

## Labelling symbols

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



Refer to instruction manual



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



Manufacturer



Authorised representative in the European Community



Catalogue number



Serial number



Batch code



Date of manufacture



Temperature limits



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



Do not re-use

**Rx Only**

By prescription



Recyclable material



Dispose of electrical components in accordance with your local regulations



Dispose of lithium-ion batteries in accordance with your local regulations



Keep dry



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

## Legal statement

The statements made in this guide are believed to be true and correct as of the date of publication. However, specifications are subject to change without notice.

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ACE, Advance Off-Stylet, AOS, AutoNRT, Autosensitivity, Beam, Button, CareYourWay, Carina, Cochlear, コクレア, Cochlear SoftWear, Codacs, ConnectYourWay, Contour, Contour Advance, Custom Sound, ESprit, Freedom, Hear now. And always, HearYourWay, Hugfit, Hybrid, Invisible Hearing, Kanso, MET, MicroDrive, MP3000, myCochlear, mySmartSound, NRT, Nucleus, Off-Stylet, Slimline, SmartSound, Softip, SPrint, True Wireless, the elliptical logo, WearYourWay and Whisper are either trademarks or registered trademarks of Cochlear Limited. Ardium, Baha, Baha SoftWear, BCDrive, Dermalock, EveryWear, Vistafix, and WindShield are either trademarks or registered trademarks of Cochlear Bone Anchored Solutions AB. Bluetooth is a registered trademark of Bluetooth SIG.

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*Hear now. And always*

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