

# USER GUIDE

PLATINUM SERIES™ *Sound Processor*



*By Advanced Bionics*











# User Guide

for the Platinum Series™ Sound Processor

# Labeling

The symbols below are used on the labeling for the product and for transportation, and their meanings are as follows:

<b>CAUTION:</b> Federal law restricts this device to sale, distribution and use by or on the order of a physician.			
 European Community Mark of Conformity Authorized to affix the CE Mark in 2000			
<b>REF</b>	Model Number	<b>SN</b>	Serial Number
	See Instructions for Use		Store at temperatures between -20° C and +55° C
	Fragile		Do not get wet
	Type of Protection: BF		Date of Manufacture xx-xxxx
	Dispose of Properly		

EN60601-1 Classification Information:

Ordinary Construction

Continuous Operation

Internally Powered Equipment

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## Platinum Series Sound Processor

Your audiologist will demonstrate the adjustable controls of the Platinum Series Sound Processor (PSP) and instruct you on appropriate settings.

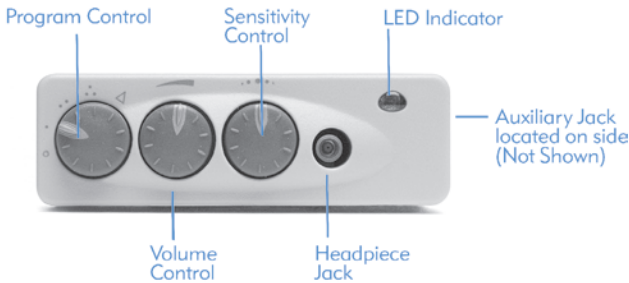


Figure 1: Platinum Series Sound Processor.

### **Program Control**

The program control, on the left side of the control panel, is used to turn the processor on and off, to select one of three programs, and to test the headpiece microphone. The dots on the program selector represent different programs on the processor programmed by your audiologist. The single • represents program # 1, •• represents program # 2, and ••• represents program # 3. Your audiologist will determine how many programs are appropriate and instruct you on when to use each program. The  $\Delta$  position represents the headpiece microphone tester function detailed in the “Using the Platinum Series Sound Processor” section of this manual. The (o) position will turn the processor off.

### **Volume Control**

The volume control, indicated by  $\text{—}$  and located to the right of the program control, allows the user to adjust the loudness level of the processor. Turning the control to the left (toward the smaller end of the scale) decreases the volume. Turning the control to the right (toward the larger end of the scale) increases the volume. The volume range (how soft to how loud the volume can be adjusted) is programmed for you by your audiologist.

During your programming session, the audiologist will program your processor so that the 12:00 position on the volume dial represents your most comfortable loudness level.

## Sensitivity Control

The sensitivity control indicated by **••••** and located to the right of the volume control, determines the quietest level of sound that will be picked up from the environment by the microphone. The sensitivity control is typically set at 12:00 for daily device use. Turning the control to the left decreases the sensitivity so that softer sounds are not picked up by the microphone. This may help eliminate background noise. Turning the control to the right increases the sensitivity so that softer or more distant sounds can be picked up by the microphone.

## Headpiece Jack

The headpiece jack is located to the right of the sensitivity control. The headpiece cable, which connects the processor to the headpiece, is inserted here.

## Dual Color LED Indicator

The LED (Light-Emitting Diode) indicator is a light located on the control panel adjacent to the headpiece jack that indicates three primary functions: battery charge status, lock status, and microphone/system status. Depending on the function, the LED will illuminate with either a red or a green light.

### Battery Charge Status

When the processor program control is turned from the off position (o) to positions **•**, **••**, or **•••**, the red LED indicator will blink as follows:

- 3-4 quick blinks indicate that the battery is fully charged.
- 2 quick blinks indicate that the battery is sufficiently charged to power the system.
- 1 quick blink indicates that the battery charge is nearly depleted.

To check the battery charge status while the processor is in operation, turn the processor off and then back on to any program position. The red LED indicator sequence will indicate the battery charge status.

### Lock Status

Lock refers to the successful communication between the processor and implant.

When the processor program control is turned from the off (o) position to positions **•**, **••**, or **•••**, and the battery charge sequence is complete, the red LED indicator begins to flash approximately once per second, indicating lock has not yet been achieved. Flashing will continue until the headpiece is properly positioned on the head. Flashing red will resume if there is any problem with communication or loss of lock between the processor and the implant.

### Microphone/System Status

When the battery and lock sequences are complete, microphone and system status can be verified. The green LED indicator will flicker in response to loud sounds presented near the microphone verifying that the microphone is receiving sound, that data is being transmitted to the implant, and that the processor is receiving information back from the implant. Increasing the sensitivity will cause the green LED to flash in response to softer sounds, while decreasing the sensitivity will require more intense sounds for the LED to react. The green light is not expected to illuminate continuously during everyday use, especially if the user is in a quiet environment. Also, the green LED will not illuminate in response to sounds if your audiologist has disabled the Automatic Gain Control (AGC) program feature for the selected program position.

### IntelliLink™ Implant ID Safety Feature or Processor Error Condition

The IntelliLink safety feature checks the implant ID to make sure it is the correct one that is programmed for stimulation with the processor. A rapidly blinking red light will appear should you accidentally attempt to use the wrong processor or attempt to lock to the wrong implant in the case of bilateral implants. A rapidly blinking red light might alternatively indicate, in rare instances, that there is a processor error condition. If this should occur, first turn the processor to the off (o) position, remove and reconnect the battery, and turn the processor back on to the desired program or try another program position. If you are unable to resolve the problem, please contact your audiologist for additional troubleshooting.

### Audible Alarm

The audible alarm is an optional feature that can be activated at the time of programming. It is designed primarily for children in order to alert parents and teachers when the system is not transmitting sound to the implant or the battery is near depletion. If the child's headpiece falls off the head, the processor will begin to beep and the red LED will flash. When the child's headpiece is replaced and data is again being transmitted successfully, the alarm will stop. Beeping when the headpiece is in place indicates a communication problem between the processor and implant. For more information, refer to the *"Using the Platinum Series Sound Processor"* section of this manual. Additionally, when the battery is near depletion and cannot power the processor, the alarm will emit a slow beeping tone until the battery dies or is replaced.



## Auxiliary Jack

The auxiliary jack is located on the side of the processor near the control panel. The auxiliary microphone and telephone adapter provided with the system are connected here. This jack is also used to connect other external auditory input sources, such as battery-powered FM systems, MP3 players, television audio amplifiers or other assistive listening devices.

The Microphone Tester Earphones provided by AB are also connected here. When the program switch is in the  $\Delta$  position, these earphones allow a subjective listening assessment of the quality of the sound as it is received by the headpiece microphone. Also, intermittencies in the headpiece cable may be detected. If a problem is noted, please refer to the "Using the Platinum Series Sound Processor" section of this manual.

**Note:** To use the auxiliary jack, the processor must contain a program set up for auxiliary input. Consult with your audiologist regarding the correct program position to use with auxiliary input.

**Caution:** Your PSP should be serviced only at AB. Do not attempt to open or repair the processor. Unauthorized opening of the processor will void the warranty.

## Headpiece & Cable

### *Single-Unit Headpiece*

The single-unit headpiece integrates the system's microphone and transmitter in an attractive headpiece, which is easily worn directly over the implant.

Two different headpieces are available for use with the processor depending on your implant type. A "flat bottom" style headpiece is used with the Clarion 1.0, 1.2 and CII Bionic Ear cochlear implants because these have a flat surface ceramic casing. A "curved bottom" style headpiece is used with the HiRes 90K® implant. The curved headpiece is designed to conform more comfortably to the shape of this implant. Both style headpieces function in the same way.

Your headpiece is held in place by a magnet which lines up with an internal magnet that is located in the implant. When placing the headpiece on your head, the headpiece centers itself as the two magnets attract each other. If the headpiece does not couple with the implant correctly, the red LED indicator (on the processor) will flash once per second (and the alarm will sound if this feature is activated) when the processor is turned on. This will continue until lock is obtained. The headpiece comes with an adjustable magnetic strength. During programming, your audiologist will determine the most appropriate magnetic strength for you using the minimum magnet size to achieve good headpiece retention. If you experience problems with headpiece retention, irritation or skin redness under the area of the headpiece, contact your programming center.

**NOTE :** We recommend that you do not add or remove magnets from the headpiece without first consulting your programming center.

The microphone in the headpiece is located behind the hole on the color cap. The jack that connects the cable to the headpiece is located at the bottom of the headpiece.

**NOTE :** Your headpiece should be serviced only at AB. Do not attempt to open or repair the headpiece base. Unauthorized opening of the headpiece base will void the warranty.

### *Color Caps*

Your Platinum Headpiece comes with six interchangeable Headpiece Color Caps, a headpiece color cap removal tool to change the color cap, and a headpiece clip.

**NOTE:** The headpiece magnet(s) is located under the color cap. Be careful not to lose the magnet(s) when changing the color caps. Felt disks are included with the headpiece to secure the magnets in place.

## Changing the Platinum Headpiece Color Cap:



Figure 2: Headpiece Color Cap Removal Tool.

1. Open the Headpiece by inserting the Headpiece Color Cap Removal Tool into the slot above the headpiece cable connector and pushing the tool straight back to lift the color cap as shown below.

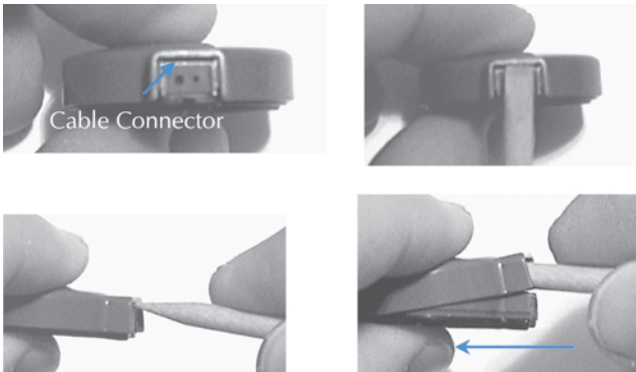


Figure 3: Removing the Headpiece Color Cap.

2. Close the headpiece by carefully aligning the Headpiece Color Cap on the headpiece and pressing both parts together to snap them back into place.

**NOTE:** Make sure that no debris is blocking the microphone hole on the headpiece.

## Headpiece Clip



Figure 4: Headpiece Clip.

### Attaching the Headpiece Clip to the Headpiece:

The Headpiece Clip is used to help keep the headpiece in place on the side of the head using some hair clipped under it to keep it from being easily bumped off.

**NOTE :** The Headpiece Clip does not work with the curved bottom headpiece used with the HiRes 90K implant. If you have this newer model implant, please disregard the following instructions regarding use of the clip.

1. Open the headpiece as per the *“Changing the Platinum Headpiece Color Cap”* instructions on the previous page.
2. Position the clip so that the flexible metal hinge fits between the grip tabs on the headpiece cap – from the bottom view, approximately the 2:00 position for a right side implant or the 7:00 position for a left side implant.

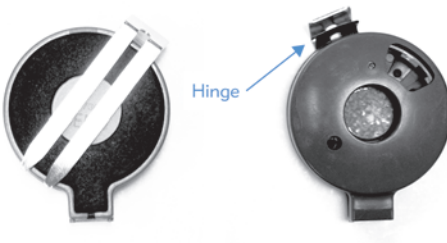


Figure 5: Headpiece with Headpiece Clip.

3. Carefully fit the Headpiece Color Cap over the clip’s hinge and snap it back into place.



Figure 6: Fitting the Headpiece Color Cap.

### Using the Headpiece with the Clip:

1. Hold the hair over the implant flat to the skull with the index finger of one hand.



Figure 7: Placing the Headpiece.

2. Grip the headpiece and open the clip between your fingers and thumb as shown.



Figure 8: Gripping the Headpiece.

3. Guide the clip along the skin and under the hair, then release when the headpiece is positioned over the implant.



Figure 9: Headpiece in Place.

**NOTE :** The clip works best when it is placed perpendicular to the direction of the hair (see Figure 7).

## Cable

The cable connects the headpiece to the processor and provides the pathway for relaying information between the internal and external components of the system. Cables are available in multiple lengths in either beige or brown. Each cable includes a small clip that can be used with clothing to help hold the cable in place. At one end of the cable is a two-pin plug that is inserted into the headpiece. Please note that the pins are of different diameters and must be inserted correctly. A small coaxial plug is located at the other end of the cable. This plug is inserted into the headpiece jack on the processor.

To remove the cable from the headpiece, always hold the cable's strain relief (the plastic plug) and gently pull it away. The cable should be removed from the headpiece only when it is being replaced.

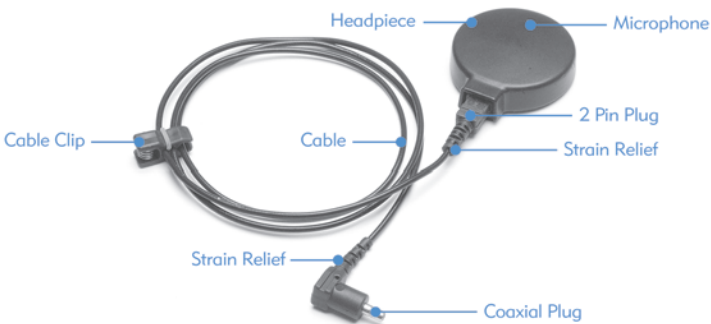


Figure 10: Headpiece with Cable.

**NOTE:** Be sure the processor is turned off before removing the cable from the headpiece.

## Batteries & Battery Charger

A Lithium Ion rechargeable battery or a compartment that accommodates three standard AA batteries powers your PSP.

When you are not using your processor, it should be turned off; otherwise, the battery will continue to drain.

**NOTE:** Remove the rechargeable battery or the AA battery compartment from the processor when it is not likely to be used for an extended period of time.

To prevent intermittent operation of the processor, the battery contacts on the rechargeable battery or battery compartment and on the processor should be kept free from dirt and dust. Gently clean the contacts with a hearing aid brush or dry cotton swab at least once a month.

If the rechargeable battery is dropped, inspect it for evidence of damage or cracking. If any evidence of damage is seen, the battery should be replaced.

**WARNING:** Batteries may explode if disposed of in fire. To prevent injury or burns, do not allow metal objects, such as keys or coins, to contact or short circuit the battery terminals. Covers are provided for use when carrying rechargeable batteries or the AA battery compartment.

**WARNING:** Power supplies and battery chargers should be operated in an open area to ensure adequate airflow. While no injury cases have resulted, components may become hot during normal use or a fault condition. If the device's temperature results in discomfort or pain when touched, disconnect the power source and contact your local AB representatives.

### *Battery Replacement*

To remove the rechargeable battery or AA battery compartment:

- Turn the processor off (o).
- Gently press and raise the release lever on the side of the processor.



Figure 11: Battery Release Lever.

- Slide the battery in the direction of the lever until it disconnects from the processor.

To insert the rechargeable battery or AA battery compartment:

- Locate the slide tracks on the underside of the processor and the top of the battery.
- Position the battery so the battery contact is toward the lever on the processor.
- Guide the battery into the tracks on the processor.
- Slide the battery onto the processor until it engages.
- Do not force the battery into the processor. The battery is designed to be inserted in only one direction.

To insert batteries into the AA battery compartment:

- Unsnap battery pack utilizing thumb recess on top of pack.
- When inserting AA (or LR06) batteries, make sure that the positive and negative contacts on the batteries are lined up correctly as noted on the label inside the battery compartment.
- Replace the cover by hooking the case together at the bottom and gently snapping it until closed.
- Insert the AA battery compartment using steps outlined above.
- When the AA battery compartment is not in use, keep it protected with the battery cover.

**CAUTION:** Do not attempt to operate your system with the rechargeable battery or AA batteries improperly inserted as it may damage the internal components of the processor.

**NOTE:** For proper disposal of rechargeable batteries in Europe, please return depleted batteries to the nearest local AB representative or the designated programming /follow-up center. In the United States and Canada, please call the Rechargeable Battery Recycling Corporation hotline at 800.822.8837 or visit their website at [www.rbr.com](http://www.rbr.com).



## Battery Charger

The battery charger provided with your processor is designed so that two lithium ion rechargeable batteries can be charged simultaneously. It is compatible with batteries provided with the AB Platinum Series Sound Processor and the S-Series Processor only. Batteries do not need to be fully depleted before recharging.



Figure 12: Battery Charger.

### Light Emitting Diode (LED) Indicators:

A green LED below the power symbol on the battery charger illuminates when sufficient power is flowing to the unit. Each charger bay has a two color status LED.

The following table summarizes the different states of the LED:

<u>LED Color</u>	<u>Indication</u>
Green	Battery is fully charged or there is no battery in the charger bay.
Red	Battery is being charged.
Blinking Red Error	Battery needs to be replaced.
Off	No power or electrical overload (reset by removing the power connection from the charger and then reconnecting power).

To charge the lithium ion rechargeable batteries:

- Place charger on a flat surface.
- Connect the power supply cord to the power supply. Connect the cable from the power supply to the charger. Plug power supply cord into power outlet.



Figure 13: Connecting the Power Supply to the Charger.

- Gently insert one or two rechargeable batteries in the charger so that the contacts on each battery match up with the contacts in the charger. The charger is designed so that batteries will only insert in one direction.



Figure 14: Battery Charger with Battery.

- The batteries will start charging automatically.
- If a partially charged battery is placed in the charger, the battery may be fully charged in a shorter period of time. The battery can be removed at anytime. The charger and batteries will not be damaged if the batteries are left in the charger longer than the required charging time (approximately 3.5 hours). It is a good idea to use the batteries on a rotating basis to maximize battery life. Batteries can be labeled (e.g, 1, 2, 3) to keep track of the rotation.

**CAUTION:** The charger is only designed for use with the processor lithium ion rechargeable batteries provided by AB. Do not attempt to charge off-the-shelf batteries used inside the AA battery compartment.

The rechargeable batteries and charger contacts should be kept free from dirt and dust. Dirty contacts can result in charger malfunction. Gently clean the contacts with a hearing aid brush or dry cotton swab being careful not to bend the contact pins. This should be done at least once a month.

If the charger is dropped, inspect the device for evidence of damage or cracking. If any evidence of damage is seen, the battery charger should be replaced. Prior to use, you should inspect the charger power cord to ensure that it is not frayed or damaged and that the plug is not broken. If your power cord appears to be damaged, it should be replaced.

### *Using the Car Charger Adapter*

After inserting the car adapter (AB-5620) into your car's power outlet, connect the cable from the car adapter to the charger.



Figure 15: Car Charger Adapter.

## Accessories

### Carrying Cases

A variety of carrying cases are available for your processor. Pediatric Kits are packaged with a belt and harness case. Adult Kits come with a belt worn carrying case that is also available in additional colors and styles that can be purchased as accessories.

**NOTE:** Nylon carrying cases are hand washable in mild soap. Air dry only; do not machine dry.

### Harness Case

A harness with an attached case allows the processor to be worn at the child's side. The harness is constructed of durable cotton and is adjustable. The attached case is lined with neoprene and constructed of lightweight cotton. The harness case is large enough to contain the processor with the control panel cover.

### Control Panel Cover

The control panel cover helps prevent accidental adjustment of processor controls during activity. In addition, it provides protection from sand in play areas.



Figure 16: Platinum Series Harness Case.

### Leather Carrying Case

The belt worn leather carrying case secures the processor at the waist. A clip on the back of the case attaches it to your waistband or belt. Cable protector holes located near the belt clip extend the life of headpiece cables when used as illustrated on the following page. See Figures 18-20.



Figure 17: Leather Carrying Cases.

### Sport Carrying Case

A lined water-resistant case, which can be worn on the waist or a belt, is provided. A flap secured with velcro folds over the top of the processor to protect the controls, and a clip on the back of the case secures it to your waistband. A belt loop on the case provides additional security for more physical activities. Cable protector holes located near the belt clip extend the life of headpiece cables when used as illustrated on the following page. See Figures 18-20.

## Extending the Life of Your Headpiece Cables

1. Plug in the cable as shown.



Figure 18: Feeding the Cable.

2. Feed the cable through the far buttonhole.



Figure 19: Feeding the Cable Through Far Buttonhole.

3. Feed the cable through the other buttonhole.

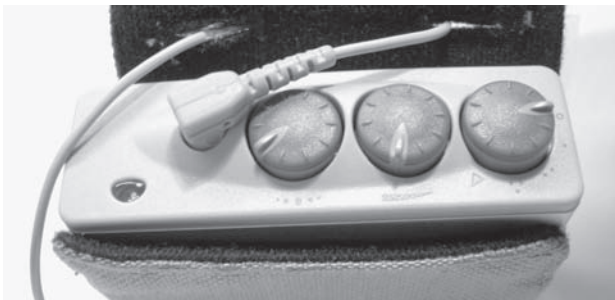


Figure 20: Feeding the Cable Through Other Buttonhole.

## Auxiliary Microphone

You may find that using the auxiliary microphone (also called a lapel microphone) is preferable in some or all listening environments. The auxiliary microphone can be hand-held or worn on your lapel or collar. You may want to experiment with several microphone positions to find out which location is best for you.

To use the auxiliary microphone:

1. Turn the processor off by turning the program switch to the off (o) setting.
2. Plug the auxiliary microphone into the auxiliary jack located on the side of the processor.
3. Place the microphone in a secure position using the cable clip provided.
4. Turn the processor on by turning the program switch to ●, ●●, or ●●●, depending on which program you want, and adjust the volume and sensitivity as necessary. To use the auxiliary microphone, the PSP must contain a program set up for auxiliary input.
5. Turn your processor off prior to removing the auxiliary microphone.

When the auxiliary microphone is used, the microphone located in the headpiece may remain on or shut off depending on how your system is programmed by your audiologist. Please verify program setting with your audiologist to ensure the setting is appropriate for use with your auxiliary microphone.

**IMPORTANT:** The auxiliary microphone provided by AB is designed to work specifically with your processor. For this reason, please do not use any microphone other than the ones designated by AB for the PSP.

## Telecoil Pickup

The telecoil pickup provides an interface to audio induction loop assistive listening systems, (e.g., “room loops” and “neck loops”) and an alternative to placing the telephone receiver next to the microphone of the headpiece or auxiliary microphone.

To use the telecoil pickup, plug the connector of the pickup into the auxiliary jack on the side of the processor. For use with audio induction loops, position the telecoil pickup inside the perimeter of the audio loop. For use with a hearing aid compatible telephone, attach the suction cup to the earpiece of the telephone receiver. When using the telecoil pickup with a telephone having a textured (non-smooth) finish, it will be necessary to hold the telecoil pickup in place while using the telephone.

**HINT:** It may be necessary to move the telecoil pickup around the earpiece of the telephone receiver to find the best signal, or “sweet spot.”

## Telephone Adapter

The telephone adapter provides an alternative to placing the telephone receiver next to the microphone of the headpiece or auxiliary microphone.

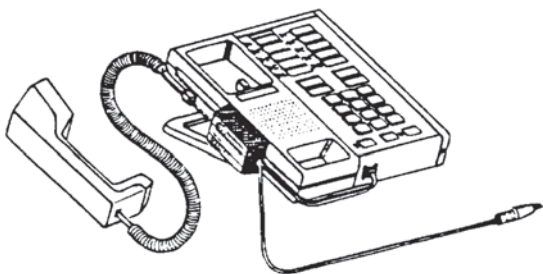


Figure 21: Telephone Adapter.

Set up the telephone adapter as follows:

- Unplug the handset cord from the telephone base.
- Plug the short cord into the handset jack on the telephone base.
- Mount the unit in a convenient location with the adhesive pad.
- Plug the handset into the modular jack on the telephone adapter.

To use the telephone adapter, plug the long gray cable into the auxiliary jack on the side of the processor. Adjust your volume and sensitivity controls as needed.

**NOTE:** Only use the telephone adapter with phones that have the dial pad in the base. The adapter will not work with phones that have the dial pad in the handset.

## Microphone Tester Earphones

The headpiece microphone tester earphones allow a subjective listening assessment of the quality of the sound as it is received by the headpiece microphone. Intermittencies in the headpiece cable can also be detected.

To use the microphone tester earphones, turn the program switch on the processor to the microphone tester ( $\Delta$ ) position, plug connector of the earphones into the auxiliary jack on the side of the processor and place the earphones over your ears.

**NOTE:** Using the microphone tester earphones will disable the green LED, and the patient will not be able to hear through his/her cochlear implant system. The microphone tester earphones are provided in the pediatric Platinum Series Sound Processor Kit or may be purchased through AB. The microphone test should only be performed using the earphones supplied by AB to help ensure accurate sound evaluation.



## *Other Battery-Powered Audio Input Devices*

In addition to the accessories that are provided with the your processor, you may want to use other external audio input devices. The same auxiliary jack that is used for the auxiliary microphone or telephone adapter can be used for other battery-powered external audio input sources such as FM systems or MP3 players. Consult with your audiologist regarding which program position should be used with auxiliary audio input devices.



**WARNING:** Only plug battery operated devices into the auxiliary jack. Do not use with devices that are running on AC power and are connected to the wall outlet power supply unless you are using an appropriate patch cable. Patch cables contain special electronic components. A patch cable was not included in your kit. Interfacing to a device plugged directly into an electrical outlet, such as a television, could result in damage to your processor and also could deliver unpleasant sensations or sounds to you.

Please contact AB prior to using such a device to determine if you have the appropriate cables and connectors and that the device in question is compatible with your system.

# Using the Platinum Series Sound Processor

## Getting Started – Quick Steps

In order to use your processor, follow the steps below:

1. Verify that the processor program switch is in the off position (o).
2. Check that a charged battery or an AA battery pack has been correctly inserted onto the processor.
3. Adjust the volume (  ) so that the indicator notch on the control is all the way to the left.
4. Check the position of the sensitivity control (  ) so that the indicator notch on the control is at the 12:00 position.
5. Check that the headpiece connector is properly plugged into the headpiece jack on the processor.
6. Place the headpiece on your head over the implant.
7. Turn the processor on by turning the program switch to the appropriate position (as determined by your audiologist). Note that the red LED indicator should blink 1-4 times to indicate the battery charge status.
8. Verify that the red LED indicator on the processor stops flashing once successful communication or “lock” is established with the implant.
9. Readjust the volume and sensitivity controls as necessary. Adjustment of the controls may vary throughout the day depending upon the listening environment.

**WARNING:** While no injury cases have resulted, components of the system may become hot during normal use or a fault condition. If a particular device’s temperature results in discomfort or pain, promptly remove the product and contact your local AB representatives.

**IMPORTANT:** Use only the processor that has been programmed especially for you. Using a different processor, which has been loaded with a different program, may be ineffective in providing sound information or may cause physical discomfort.

Be sure to turn the processor off before removing the headpiece.

**NOTE:** Under limited circumstances, the cochlear implant system may cause interference with TV reception. Based on internal testing and field experience, there is no evidence that this interference causes safety-related hazards. Consult your programming center or AB for assistance.

## *Adjusting for Background Noise*

In some situations, background noise may interfere with your ability to hear clearly. Background noise can be particularly distracting in situations where a large number of people are speaking at once or in a noisy environment. Decreasing the sensitivity of the processor by turning the sensitivity control toward the left may help eliminate some of the background noise. Using the auxiliary microphone may also be helpful.

## *Using the Telephone*

Your clinician may recommend when it is appropriate to begin working with the telephone. The telephone can be used by placing the phone directly over the headpiece, over the auxiliary microphone, by using the telecoil pickup, or by using the telephone adapter.

Experiment with all modes of telephone communication. Be patient. Telephone communication with the implant often improves over time as one gains experience using the device. When using the telecoil pickup, the telephone handset must be hearing aid-compatible, meaning the phone has an electromagnetic coupling capacity.

Digital cellular phones: Using or being in close vicinity to someone using certain digital cellular phones may cause interference with the cell phone's reception. If such interference occurs, you can turn off your processor or move a greater distance from the source. Before purchasing a digital cellular phone, you should evaluate whether or not interference is evident. No such interference has been noted with cellular phones using analog technology.

## Troubleshooting Guide

The following is a description of the most common problems you may encounter with your processor and solutions for addressing those problems. After trying the remedies below, if the problem persists, contact your programming center or AB for support.

### *No Sound Heard; No Response From User*

- Ensure that the cable is inserted into the processor and the headpiece is properly positioned. Turn the processor off (o) and back to position ●, ●●, or ●●●.
- If the red LED indicator:
  - Does not blink or blinks once, replace the lithium ion battery or battery compartment with another fully-charged lithium ion battery or new AA batteries.
  - Blinks quickly 2 to 4 times and then flashes continuously, replace the cable first and then headpiece if flashing continues.
  - Blinks quickly 2 to 4 times, followed by 1 flash, no sounds are heard, replace the headpiece. If a headpiece is not available, use the auxiliary microphone with a program that is set up to allow auxiliary input and repeat the process.
  - Blinks quickly 2 to 4 times, followed by 1 flash, green LED illuminates in response to loud speech at the site of the microphone, and sounds are heard, the system is functioning properly.

### *User Hears Static*

- Ensure that the sensitivity control is properly set (12:00 position).
- Replace the cable.
- Check and clean battery contacts.

### *User Hears Muffled or Distorted Sounds*

- Ensure that the sensitivity control is properly set (12:00 position).
- Ensure that nothing is covering the headpiece microphone opening.
- Check and clean battery contacts.
- Use the green LED, auxiliary microphone or microphone tester earphones to determine if a new microphone is needed for the headpiece.

## *Headpiece Falls Off*

- Use the cable clip to provide additional stability to prevent the headpiece from falling to the ground.
- If your headpiece frequently falls off during normal activities, it may indicate the need for a stronger magnet. Contact your programming center.

## *Headpiece or Processor Gets Wet*

- Turn the processor off immediately.
- Remove headpiece.
- Remove power source.
- Contact your programming center or AB for further instructions.

**IMPORTANT:** Do not attempt to clean or dry the headpiece or processor. Do not use if exposure to fluids is suspected.

**WARNING:** If your system appears to be working, but you experience deterioration in the volume or the quality and clarity of sound, contact your audiologist as your processor may need to be reprogrammed.

**CAUTION:** Your processor should be serviced only at AB. Do not attempt to open or repair the processor. Do not continue to use the processor if any part of it is damaged. Unauthorized opening of the processor, or other equipment, will void the warranty and may compromise system performance.

## Performing a System Check

You can verify your system's operating status in three simple steps:

- Step 1) Check battery charge status.
- Step 2) Check lock status.
- Step 3) Check microphone and system status.

To assure the system's overall proper functioning, perform all three steps. Once you get used to the steps, it takes less than one minute to complete a system check.

### Step 1: Check Battery Charge Status

Turn the processor program control to the off (o) position and then to the desired program position ●, ●●, or ●●●.

Next, observe the red LED indicator. The red LED light sequence will indicate the battery charge status, as:

- 3-4 quick blinks indicate that the battery is fully charged.
- 2 quick blinks indicate that the battery is sufficiently charged to power the system.
- 1 quick blink indicates that the battery charge is nearly depleted. The battery should be replaced.

Instructions on how to change the battery are provided later in this section.

### Step 2: Check Lock Status

The term lock refers to the successful transmission of continuous signals between the processor, cable, headpiece and the implant across the skin.

To check the lock status, continue to observe the LED indicator. After the fast blinking battery test sequence, the red LED will continue to flash approximately once per second if the headpiece is not in its proper position over the implant.

Adjust the position of the headpiece over the implant until the red LED stops flashing (Note: If the audible alarm feature has been activated during programming, the alarm will beep once each second until proper lock status is achieved. The audible alarm feature is usually programmed to be active in young children who typically do not report interruptions in sound transmission).

When the headpiece is properly positioned over the implant, the red LED will stop flashing. This signifies that the system is sending information correctly between the headpiece and the implant. If lock cannot be established, replace the cable or headpiece, as described later in this section. If the problem continues, contact your audiologist.

### Step 3: Microphone and System Status

When the battery and lock sequences are complete, the microphone and system status can be verified.

To check the microphone and system status, turn the program control to the desired program position.

Adjust the volume and sensitivity controls each to the 12:00 position.

Observe the green LED indicator as you snap your fingers or speak loudly near the microphone. The green light should illuminate with each snap of your fingers and with each syllable.

If the green light still does not illuminate, try using the auxiliary microphone and repeat the system check sequence steps 1-3, as just described. Successful verification of the microphone and system status with the auxiliary microphone would indicate that the headpiece needs to be replaced.

**Note:** The green LED will not light up when using a program with the AGC disabled. Check with your programming center regarding which program to use for assessing the microphone status.

### Replacing Components

The three most common actions required to restore your processor to proper functioning are: (1) changing the lithium ion battery, (2) replacing the cable, and (3) replacing the headpiece, as described below.

#### Lithium Ion Rechargeable Battery

The PSP is powered by a custom-designed, rechargeable lithium ion battery. An alternative battery compartment, accepting three AA (or LR06) batteries, can be used with the processor.

As described in *“Performing a System Check,”* Step 1, a depleted or nearly depleted rechargeable battery should be replaced with a fully-recharged battery by taking the following actions.

#### To Change the Lithium Ion Rechargeable Battery:

- Turn the program control to the off (o) position.
- Remove the used rechargeable battery by gently pressing and raising the release lever on the left side of the processor, while at the same time sliding the battery case toward the lever. Return the used rechargeable battery to the charger, according to the instructions in the *“Batteries and Battery Charger”* section found earlier in this *user guide*.
- Using another fully-charged lithium ion battery, align the slide track on the top of the replacement battery with the slide track on the underside of the processor.
- Guide the battery onto the processor slide track and slide the battery until it

engages into place on the processor. Do not force the battery. It is designed to be inserted in only one direction; forcing may jam or damage the slide mechanism.

- Perform the system check sequence, Steps 1-3, as described at the beginning of this section.

#### To Replace the AA Battery Compartment:

- Unsnap the AA battery compartment utilizing the thumb recess on the top of the compartment.
- Insert AA batteries into the battery compartment, making sure that the positive and negative contacts are in the correct orientations, as labeled inside the cover.
- Replace the cover by hooking the case together at the bottom and gently snapping it closed.
- Align the slide track on the top of the replacement battery compartment with the slide track on the underside of the processor.
- Guide the battery compartment onto the processor slide track and slide until it engages into place on the processor. Do not force the battery compartment, it is designed to be inserted in only one direction. Forcing the battery compartment may jam or damage the slide mechanism.
- Perform the system check sequence, steps 1-3, as described in the beginning of this section.

### *The Cable*

The cable transfers signals between the headpiece and the processor. At one end of the cable is a single-pin (coaxial) plug that is inserted into the headpiece jack. The jack is located at the top of the processor. At the other end of the cable is a two-pin plug that is inserted into the headpiece. A strain relief portion near the two-pin plug is designed to protect the cable from damage during handling.

#### To Replace the Cable:

- Turn the program control to the off (o) position.
- Remove the headpiece from the cable by holding the cable at its strain relief portion and gently pulling the cable away from the headpiece. Disconnect the cable from the processor.
- Insert the single-pin plug of the replacement cable into the headpiece jack on the processor, and insert the two-pin plug into the headpiece connector. Take care to match the larger pin on the plug to the larger hole of the headpiece connector.
- Repeat the system check, steps 1-3. If the microphone function is not restored, reconnect the first cable, and replace the headpiece.



## Headpiece

### To Replace the Headpiece:

- Turn the program control to the off (o) position.
- Remove the headpiece from the cable by holding the cable at its strain relief portion and gently pulling the cable away from the headpiece.
- Insert the two-pin plug into the replacement headpiece. Take care to match the larger pin on the plug to the larger hole of the headpiece connector.
- Repeat the system check, steps 1-3.

**NOTE:** Be sure the processor is turned off before removing the headpiece cable.

When replacing the processor headpiece we recommend that you consult with your programming center to verify proper headpiece fitting and sound quality adjustment.

Table 1: Troubleshooting Action Table

<b>Troubleshooting Action Table</b>	
<b>PROBLEM</b>	<b>ACTION</b>
During battery status check, no flash or only one flash is observed.	<ul style="list-style-type: none"> <li>• Replace rechargeable battery or AA battery pack.</li> <li>• If there are no blinks after replacement, clean the contacts with a hearing aid brush or dry cotton swab.</li> <li>• If problem continues, contact your cochlear implant center.</li> </ul>
Red LED indicator continuously blinks at one-second intervals – and/or – audible alarm, if activated, sounds at one-second intervals.	<ul style="list-style-type: none"> <li>• Remove and re-lock headpiece with implant.</li> <li>• Replace headpiece cable.</li> <li>• If problem continues, report immediately to your cochlear implant center. You may need a new headpiece or reprogramming.</li> </ul>
Continuous rapid blinks of the red LED indicator. (Indicates wrong processor in use or processor error condition.)	<ul style="list-style-type: none"> <li>• Verify the correct processor is in use.</li> <li>• In the case of 2 implants (bilateral user) verify the correct processor is locked with the correct left or right implant.</li> <li>• Change program control to another program position.</li> <li>• Remove, clean battery contacts and reconnect battery to processor.</li> <li>• Try an alternate battery.</li> <li>• Report problem to cochlear implant center.</li> </ul>
Green LED does not illuminate to loud speech near microphone.	<ul style="list-style-type: none"> <li>• Recheck battery status. If okay, perform next step.</li> <li>• Check sensitivity setting (12:00) or try increasing for assessment only.</li> <li>• Plug in an auxiliary microphone. If LED lights, then replace headpiece.</li> <li>• Plug the microphone tester earphones into the external input port of the processor and turn the function switch to mic test (<math>\Delta</math>). Please refer to "Using the Platinum Series Sound Processor" section for info on the microphone tester earphones.</li> <li>• If problem continues, immediately report to your cochlear implant center.</li> </ul>
User reports hearing no sound.	<ul style="list-style-type: none"> <li>• Repeat the system check steps: 1. Battery charge status, 2. Lock status, 3. Microphone/System status.</li> <li>• Check processor and control settings.</li> <li>• Try auxiliary mic.</li> <li>• Try another program.</li> <li>• If problem continues, immediately report to your cochlear implant center.</li> </ul>
User reports hearing static.	<ul style="list-style-type: none"> <li>• Ensure that the cable is inserted into the processor and that the headpiece is positioned properly on the user's head.</li> <li>• Turn the volume and sensitivity controls to the 12:00 positions.</li> <li>• If user still reports "static," replace the cable.</li> <li>• Visually inspect the microphone for signs of debris or wear.</li> <li>• If available, try an auxiliary microphone or alternate headpiece.</li> <li>• Use the microphone tester earphones and the microphone tester function (<math>\Delta</math>).</li> </ul>
User reports that sounds are muffled or distorted.	<ul style="list-style-type: none"> <li>• Confirm that no clothing or material is obstructing the microphone opening.</li> <li>• Repeat the same steps as when static is reported.</li> </ul>

## Caring for Your Cochlear Implant System

Although your processor has been designed and built to withstand daily wear and tear, care must be taken to protect both the implanted and external components of the system. For a detailed discussion of clinical results, warnings and precautions please refer to the package insert supplied separately. It is a good idea to carry your Patient Identification Card with you at all times.

### *Cleaning*

If necessary, the processor and headpiece can be cleaned with a slightly dampened cloth or tissue. Take care that water does not drip into any connectors or the microphone. Water should not be allowed inside either the processor or headpiece.

**CAUTION:** Immersion in water will damage the processor and headpiece electronics.

To prevent intermittent operation of the processor, the battery contacts on the battery pack and on the processor should be kept free from dirt and dust. Clean the contacts at least once a month with a hearing-aid brush or dry cotton swab.

### *Processor Protection*

Your processor contains advanced electronics that can be damaged. Care should always be taken when using or handling your device. If the processor is dropped, check it for proper functioning. If you suspect that the processor has been damaged, contact your cochlear implant center for a replacement. Additionally, the programming cable connector located on the underside of your processor should be kept free from dirt and dust, as well as contact with objects that may damage the connector.

Care should be taken to avoid the following:

- Dropping the processor.
- Leaving the processor any place where it can come in contact with water or moisture. Remember to remove the processor and headpiece when bathing, showering, or swimming.
- Exposing the processor, headpiece, and lithium ion batteries to extreme temperatures (below 32° Fahrenheit [0° Celsius] or above 115° Fahrenheit [45° Celsius]). Store lithium ion batteries in a cool location at or below normal room temperature.
- Exposing the headpiece to organic vapors such as those produced by petroleum based products.

To maintain and improve the life of the headpiece microphone we recommend that you store your headpiece in a Dry Aid kit overnight or when not in use. A Dry Aid kit is available separately for purchase from AB and other sources. While the processor has been built to be as sturdy as possible, it should be treated with gentle care and attention. Additionally, you should check your cable regularly (every week or so) to see if it is frayed or damaged. Avoid making sharp bends or kinks with the cable. If your cable appears to be damaged, it should be replaced.

### *Implant Protection*

The implant is capable of withstanding the effects of running, exercise and normal activity. Regardless of the activity, precautions must be taken in order to avoid a blow to the head, which could damage the implanted device resulting in device failure.

**WARNING:** When engaging in physical activities that include the possibility of trauma or impact, extra precautions should be taken, such as using a protective helmet, to reduce the risk of damage to the implant. Contact sports in which blows to the head or impact at the implant site are likely to occur should be avoided. If it is suspected that the device has been damaged, contact your audiologist.

### *Electrostatic Discharge*

Your processor and its attachments are designed to withstand most static events without damage or interruption to your programs. However, there is a chance that high levels of static electricity will generate extreme electrostatic discharge events that may damage electronic components. Therefore, care should be taken to avoid exposing the headpiece, cables or sound processor to situations in which high levels of static electricity are created.

Electrostatic Discharge (ESD) is present when you feel a spark jump from your body. ESD events are more likely to occur in very dry or cold environments. ESD events are less common in humid areas.

High levels of electrostatic charge are known to build up under the following circumstances:

- Walking on carpets
- Sliding on plastic slides
- Exiting an automobile
- Pulling sweaters on and off
- Touching TV or computer screens
- Removing bedding materials

You should take the following basic precautions in order to reduce the chances of an ESD event:

- Electrostatic potential can be safely reduced by touching any person or object with your fingers prior to contact with a headpiece, cables or sound processor. Hand contact will safely equalize electric charge and prevent sparks from jumping to the processor system. When approached by someone (for example on carpet), touch him or her first with your hand prior to them touching your external components. Parents are advised to touch their child before they touch a headpiece or sound processor that their child is wearing. Also, before placing any part of a processor system on a table or other surface, you should first touch the surface.
- Avoid contact between your processor/cables/headpiece and metal surfaces before you touch the metal surface with your hand. Children should remove their headpiece and processor before engaging in activities that commonly create static electricity, such as playing on plastic play equipment.
- Carefully exit motor vehicles, particularly in dry, cold weather. Try to avoid contact between processor system components and any vehicle metal as you exit.
- When possible, remove your external equipment prior to removing sweaters.
- The screens of televisions and computer monitors are highly charged. Contact is a problem for two reasons: First, the charge on screens can cause sparks. Second, brushing or touching a screen can transfer a charge that will then discharge when you come in contact with another object or person. Do not touch TV or computer screens.
- Use fabric softener when washing clothes and bedding, this will reduce the likelihood of charge generation. If you strip a bed while wearing a processor system, please remember to use your hands to safely reduce any charge buildup you may have acquired.

**REMEMBER: "Touch with hands first!"**

### *Airport Security Metal Detectors*

Metal detectors and security scanners will not damage your implant. However, the implant system may activate the detector alarm as you pass through a security metal detector. Remember to carry your Patient Identification Card with you at all times. You might also hear a distorted sound caused by the magnetic field around the security scanner door or hand-held screening wand. Turning down the volume on your Processor before passing through security screening will ensure that those sounds, if they occur, are not too loud or uncomfortable.

### *X-Ray Machines*

X-Ray machines will not damage the implant but may damage the headpiece microphone. Avoid placing the headpiece in checked or carry-on baggage that is screened with x-rays. During airport security screening, the headpiece should either be worn through the metal detector or be hand-examined.

## Contact Us

Advanced Bionics is committed to providing the highest quality products and service to our customers. We welcome your comments regarding the Platinum Series Sound Processor or your suggestions to improve our products. Please feel free to contact Advanced Bionics or discuss your suggestions with your implant professional.

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