


**Upgrading to the Nucleus® 7 Sound Processor**

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Subset of CAM-MKTP-656

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## Learning Objectives



- Distinguish among the considerations for upgrading Nucleus 24 implant recipients using various older sound processor models to the Nucleus® 7 sound processor.
- List the pertinent dates for upgrade availability

## Cochlear's Mission



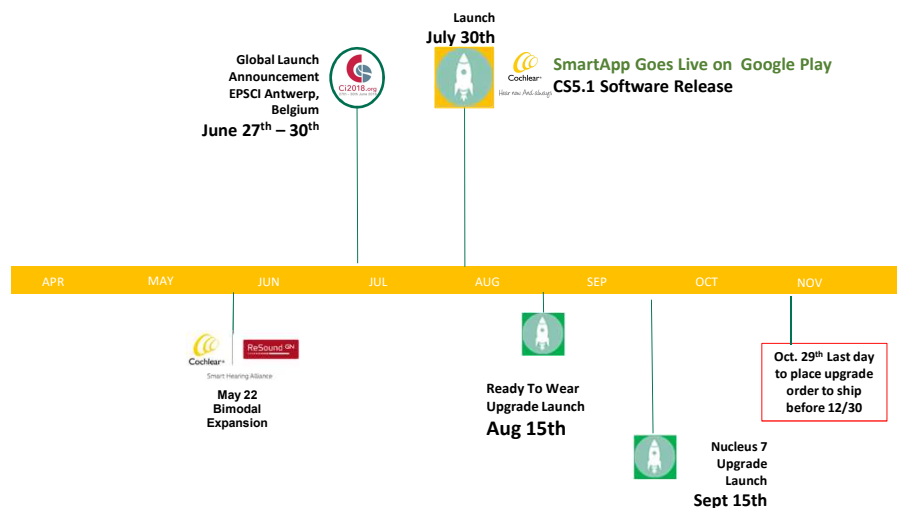
We help people hear and be heard.

We **empower** people to connect with others and live a full life.

We **transform** the way people understand and treat hearing loss.

We **innovate** and bring to market a range of implantable hearing solutions that deliver a lifetime of hearing outcomes.

## Timeline



## Custom Sound 5.1 Logistics




**Online services**

**Resources**

- Product Information
- Resources
- Order Forms
- Professional Education
- For Your Patients
- Clinic Solutions

**Help centre**

Welcome to Cochlear Americas Professionals Resources.

Use the tabs at the left or the links below to access up-to-date product information, product support, images, reimbursement resources, and educational materials.



Nucleus Products



Baha Products



Hybrid Products



Bimodal Resources



Wireless Products



Vista Products





Software Support

Please visit myCochlear Clinic Resources Software Support for software registration link & installation instructions

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## If you need help with installation ...

- Pre-schedule a software installation appointment
  - 30 minute appointments available for booking at <https://calendly.com/peells/software-installation-appointment>
  - Please ensure only ONE support session is scheduled per clinic (with all computers available at that time). Coordinate with your IT support department as required.
- Review the Custom Sound 5.1 Installation Instructions prior to the support session.

## Upgrade Resources



### CI Upgrade Microsite

Walks potential upgraders through sound processor eligibility & accessory choices.

[www.Cochlear.com/US/N7Upgrade](http://www.Cochlear.com/US/N7Upgrade)



### LMN Support

A resource guide geared toward clinicians to help write letters of Medical Necessity. (FUN3273)



### Upgrade Brochure & Reply Card

Printed resource for recipients to understand upgrade options, the process and includes a BRC to let recipients inquire directly with Cochlear. (FUZ694)



### Upgrade Process

A resource geared toward recipients to help walk them through the upgrade process and working with our Reimbursement Billing Department. (FUN1878)



### Upgrade Brochure – Slim Jim/Rack Card

Printed resource provides an overview of “why upgrade” and includes a comparison chart to previous generation processors. Perfect size for clinic displays or patient waiting rooms. (FUN2949)



### Online Recipient Insurance Support Center

Educates recipients on getting insurance coverage for an upgrade or replacement parts and accessories. Includes order forms, video tutorials and more! [www.Cochlear.com/US/InsuranceSupport](http://www.Cochlear.com/US/InsuranceSupport)

## Cochlear™ Nucleus® Implants in the CI24M/R Series

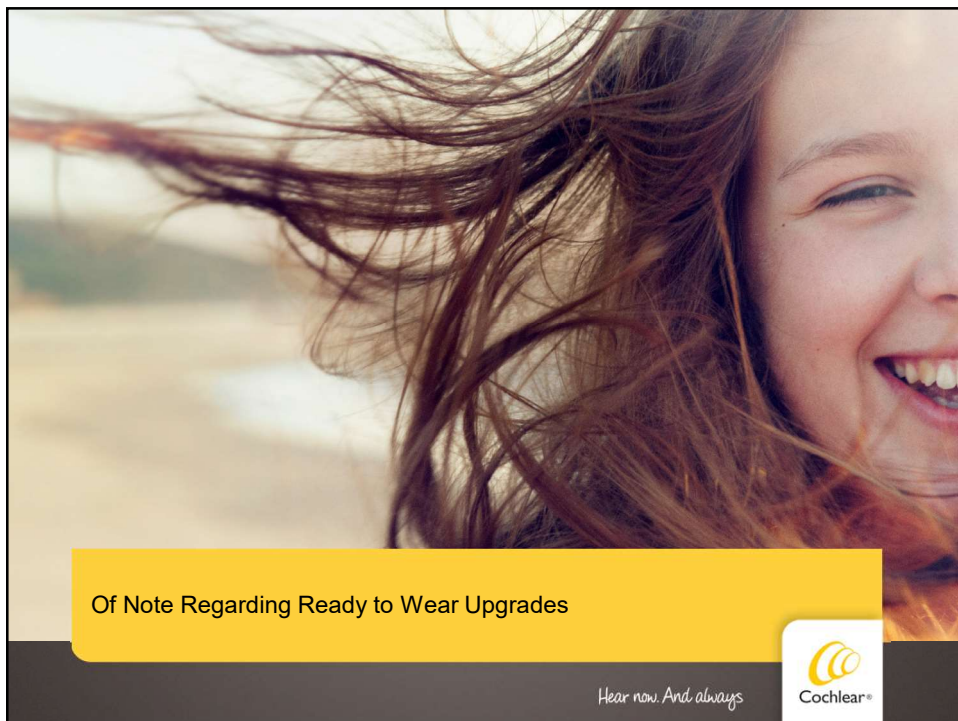


Series	CI24M	CI24R
Common Model Name	24	24
Implant Body (all have removable magnet)		
Available Electrode Arrays (all models have monopolar ground electrodes)	Straight Double Array ABI	Straight Contour
Year of Release	1998	2000
Total Stimulation Rate Available	14,400 Hz	14,400 Hz
Telemetry	Impedance Compliance NRT	Impedance Compliance NRT

## Nucleus 7 Sound Processor for Nucleus 24 Implant Devices



- No new hardware required for Nucleus® 24 implant device users
- Nucleus 7 Sound Processor Slim Coil is compatible
- Custom Sound 5.1 software required



Of Note Regarding Ready to Wear Upgrades

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## Power Optimization



### Auto Power Level Conversion

Maintains Auto Power Level settings from previous processor.



## Auto Power Level Conversion



- The current practice to upgrade a sound processor when the recipient is not in the room involves changing to Manual Power and using a fixed offset in power level.
- Auto Power Level Conversion for upgrades **avoids the need to change to Manual Power and keeps the patient on Auto Power.**
  - N24 implants and newer using a Nucleus 7 Sound Processor
  - Auto Power Level Conversion not available for MAPs using Manual Power
  - Enabled upon writing MAPs to the sound processor using Custom Sound 5.1
  - Estimated power level provided at the time of MAP conversion
    - As always, best clinical practice when seeing recipient in-office includes writing to the processor with coil on head






## Considerations for Upgrading


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## SPrint



- Holds four programs
- SPeak released first, then ACE and CIS
- Input Dynamic Range of 30 dB\* + range of AGC
- May use Sensitivity setting lower than present-day recommended setting\*
- Autosensitivity (ASC) or ADRO
- Only a microphone on the ear
  - Lighter weight than a full processor on the ear
  - Not water resistant – therefore moisture may have damaged over time
- Users may connect directly to phone (ear-level microphone becomes inactive)
- Uses either 1 or 2 AA batteries



\*Contributors to typical soundfield detection thresholds of 30-35 dB HL

## ESPririt



- Holds two programs
- SPeak only (battery life)
- Rotary control: Sensitivity *or* Volume (or disabled)
  - Sensitivity setting typical lower than current recommendations\*
- Autosensitivity (ASC)
- Input Dynamic Range of <30 dB\* + range of AGC
- May have a frequency allocation table not available in Nucleus 7
- Uses 2 size 675 high power Zinc Air batteries
- Different battery cover for accessories
  - External Telecoil or Audio cables

\*Contributors to typical soundfield detection thresholds of 30-35 dB HL

## ESPririt 3G



- Holds two programs
- One Piece Cable/Coil
  - Easy Fit (typical adjustable magnet)
  - Screwset (historical – shown here – magnets under a cover accessed by removing screws)
- Rotary control: Sensitivity\* *or* Volume (or disabled)
- Input Dynamic Range of 30 dB\* + range of AGC
- Autosensitivity (ASC), Whisper
- May have a frequency allocation table not available in Nucleus 7
- Not water resistant (moisture may have degraded microphone over time)
- Inbuilt telecoil
  - 3:1 mixing ratio or T-only
- Uses 3 675 high power Zn Air batteries

\*Contributors to typical soundfield detection thresholds of 30-35 dB HL



## Freedom



- Holds four programs
  - ADRO, ASC, Beam, Whisper: alone or in combination(s); or None
- SmartSound 2 options
- Each program could have different mixing ratios (Accessory & Telecoil)
- Could create program for immediate Telecoil access (“Telecoil Always On”)
- One-piece cable/coil
- Input Dynamic Range of 40 dB + range of AGC
- Access to both Sensitivity & Volume
- First water resistant processor
  - However if microphone protector not changed as recommended, may be listening to degraded sound

## Nucleus 5 Sound Processor



- Holds four programs
  - Everyday, Noise, Focus, & Music
  - Default & customizable SmartSound options under each type
  - Including new Zoom functionality (fixed directionality)
- Auto Telecoil option
- Introduction of MAP, Program, and Processor Settings
- Detachable cable (from coil)
- Input Dynamic Range of 40 dB + range of AGC
- Access to both Sensitivity & Volume
- First processor with Auto Off
  - Does NOT automatically turn ON
- Uses CR110 Remote Assistant

## Nucleus 6 Sound Processor



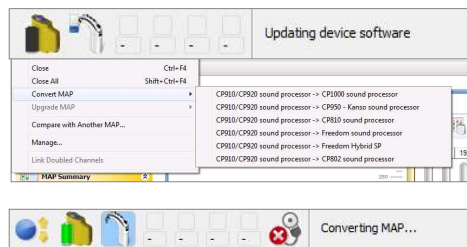
- CP910 or CP920 option
- Holds four programs
  - Default: P1 SCAN, P2 Standard
- Auto Telecoil option
- Detachable cable (from coil)
- Input Dynamic Range of 40 dB + range of AGC
- Access to both Sensitivity & Volume
- Auto On as well as Auto Off
- CR 230 Remote Assistant or CR 210 Remote Control
- True Wireless™ accessories
- Data Logging
- Hybrid™ Hearing\*


\*The Acoustic Component should only be used when behavioral audiometric thresholds can be obtained and the recipient can provide feedback regarding sound quality. The Hybrid L24 Implant is approved in the U.S. for adults ages 18 and older.

## Upgrade Process – Custom Sound 5.1

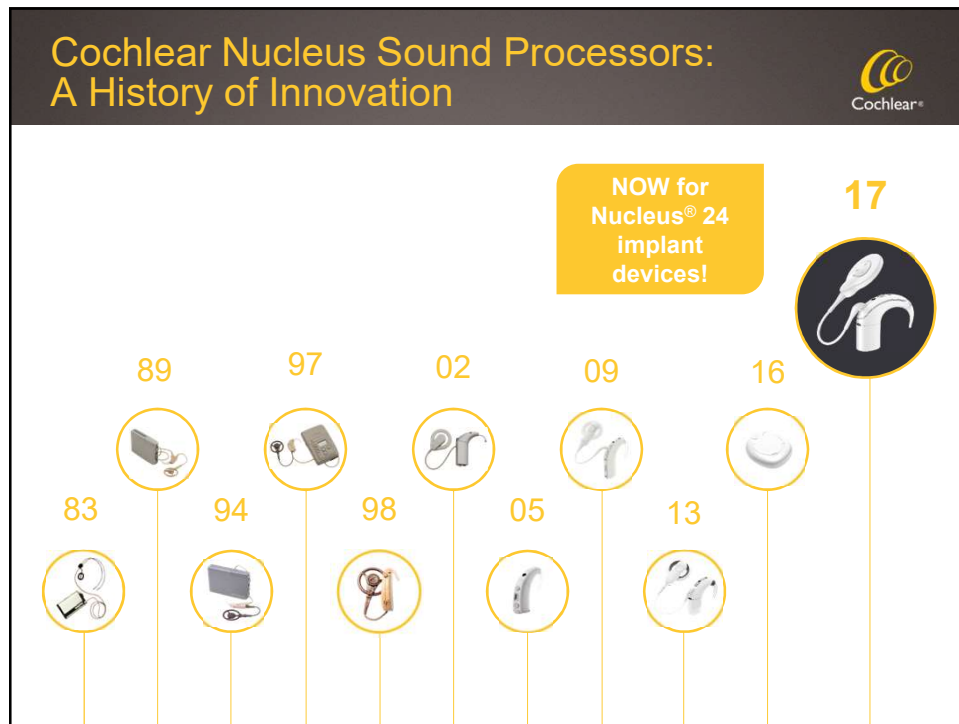



Upon connecting the sound processor to the programming pod, an automatic firmware update (for any processor that was previously programmed using Custom Sound® 5.0 or older) will begin.



1. Convert current MAP to "CP1000 sound processor"
2. Go 'live' with the converted MAP to check the volume and sound quality
3. Ensure Auto Power is used
4. Determine battery suitability
5. 
6. Write to processor with coil on head

Note: Sound processors prior to Freedom will require a conversion to CP900 series and then a conversion from the CP900 MAP to a CP1000 MAP.



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