

Cable Connections

The following cable connections are necessary to perform eABR testing on a patient with a Nucleus[®] cochlear implant:

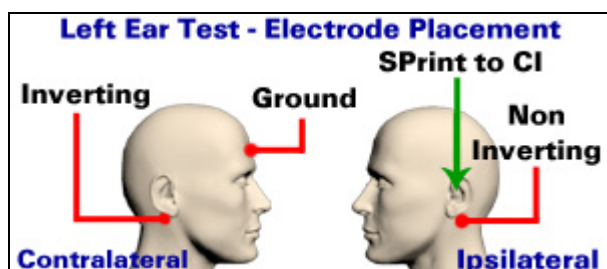
- Cochlear SPrint Processor to the Nucleus cochlear implant using Cochlear's provided cables, to deliver stimulation and synchronization signals.
- Cochlear SPrint Processor to either the CPS or PPS, which in turn is connected to a computer running the Cochlear WinDPS software.
- Trigger output from the CPS IF5 card or from the PPS unit to the trigger input of the IHS USB Box with a BNC cable. An adapter may be needed.
- Fiber optic cable from the IHS USB box to the IHS Opti-Amp.
- Electrode leads from the IHS Opti-Amp to the patient as indicated by this guide or as required by your institution.

The USB box may be connected to the same computer where the WinDPS program resides via USB cable.

Electrode Placement

Cochlear Corporation recommends this setup when testing Nucleus cochlear implants:

- Inverting (-) : Contralateral Mastoid
- Non-Inverting (+) : Ipsilateral Mastoid
- Ground: Forehead or Cz



When testing both ears, in a dual channel system, it is possible to maintain the electrode placement as outlined, while switching the leads at the Opti-Amp end and the stimulus to the opposite ear.

WinDPS and WinConfig Settings

The Cochlear WinConfig program sets the trigger configuration options for the system. Recommended setting for CPS and PPS systems is "Start of stimulus RF frames" for the duration of the eABR.

The Windows[®] Diagnostic and Programming Software (WinDPS) is the program used to generate the stimulation for the Nucleus[®] system cochlear implants. On WinDPS, create a new MAP selecting the SPrint processor and SPEAK coding. Under stimulation mode, wide-bipolar is recommended and select a pulse width of around 100us. Once the MAP is created, select the EABR Tab under the Tools > Preferences menu; select the stimulus duration, rate and other options as necessary; a rate of 17 Hz is recommended for eABR. Consult the WinDPS manual for setting definitions.

SmartEP Settings

Start SmartEP and under the stimulus menu select the appropriate option under Modality > Auditory eABR. Set your EEG and Amplifier settings as necessary. On the control panel, set the number of sweeps and specify which ear to acquire from.

Acquiring a Recording

Start delivery of stimulus on WinDPS using the appropriate SPEAK codes, and then click on Acquire in the SmartEP control panel. Verify that acquisition is taking place on SmartEP. SmartEP will stop acquiring once the number of sweeps specified is reached.

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