

Arista Fitting Reference Guide

Arista Digital Signal Processor

1. Initial Fitting Procedures:

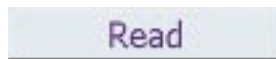
Enter patient information into the Standalone PFS (Standard ProHear) or NOAH database. Enter audiometric thresholds minimally at 500, 1000, 2000, and 4000 Hz.

2. Launch Hearing Aid Fitting Module & Read:

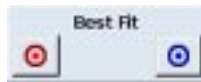
From the PFS Module Launchpad, click on the Hearing Aid Fitting button to launch the Hearing Aid Fitting Module.



Select Binaural, Left Ear, or Right Ear. Click **Read** to establish communication with the hearing aid(s).



Click **Best Fit** to optimally adjust the programmable parameters to approximate the targets for the selected fitting formula. Best Fit buttons can be found in either the button panel in the center of the screen, or in the toolbar.



Note: Once the hearing aid is read, the volume control is disabled until the device is disconnected from the programming cable. Volume adjustments may be made within the software during programming.

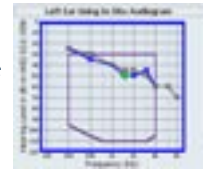
3. In Situ Audiometry:

The hearing aid microphone will be muted in order to perform In Situ Audiometry. Therefore, it is important to instruct the patient prior to entering audiometer mode. Ensure that the hearing aids are fully inserted in the ears. Click on the **Audiometer** tab of the control panel on the lower portion of the screen.



Pure tone thresholds and Uncomfortable Loudness Levels (UCL) may be acquired directly through the hearing aid. Select **Threshold** to establish threshold or select **UCL** to establish uncomfortable loudness levels. Use the keyboard arrows to select the frequency and intensity or click on the desired frequency/intensity

point on the graph. Press and hold the space bar or click **Present Tone** until the red or blue tone indicator appears around the audiogram graph.



The purple boundary on the audiogram represents the upper and lower limits at which tones may be presented. If audiometric thresholds are better than the upper limit of the purple boundary, it is not necessary to perform In Situ testing at those frequencies.

When audiometry is complete, ensure that **Use In Situ Audiogram to Calculate Target** is checked.



Click on the **Adjust** tab. The new audiogram will automatically be used to establish a new fitting formula target and the devices will automatically be Best Fit to this target.

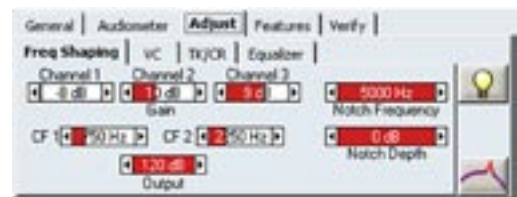
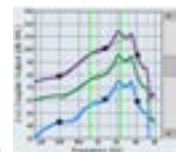
4. Fine Tuning:

From the Adjust tab, access Frequency Shaping, Volume Control, TK/CR and the Equalizer by clicking on the appropriate sub-tab. Within each of these adjustment modes there are 3 main ways to fine tune Arista:

- 1) Drag and drop the curves on the fitting graph
- 2) Adjust the slider controls on the control panel, or
- 3) Utilize the Expert Assistant fitting tool.

Arista Frequency Shaping

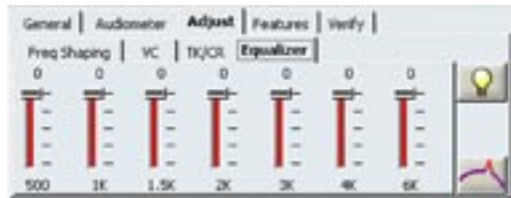
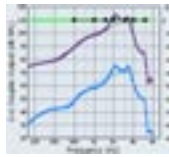
adjustments are made by adjusting the 3 Channels or the 7 Equalizer Bands. Channel adjustments are made to the soft and/or loud curves. The soft and loud responses are brought closer together, the compression ratio increases up to 3.0:1; separating the soft and loud responses decreases the compression ratio to 1.0:1 or linear.



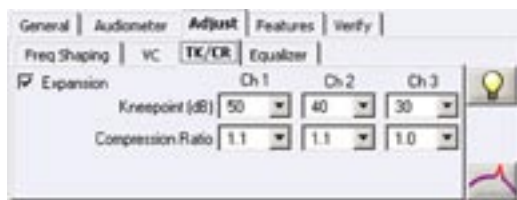
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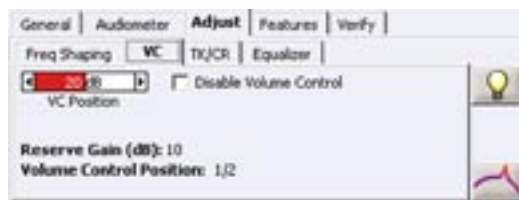
Click on the **Equalizer** sub-tab to fine tune the 7 frequency specific bands. Adjusting the Equalizer bands will affect gain for all three input levels (soft, moderate, and loud) equally and will have no effect on compression settings.



Select the **TK/CR** sub-tab for direct access to the Channel Kneepoints and Channel Compression Ratios.



Click the **VC** sub-tab to make adjustments to the VC Position slider. These adjustments will be audible to the patient during programming.



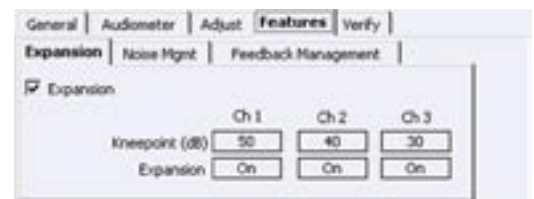
Click on the **Expert Assistant** button, available on the Adjust tab. From the Expert Assistant window, select the patient's complaint (e.g., Tinny) and then click **Begin**. Follow the prompts within the window to complete the adjustment for the complaint.



5. Arista Special Feature Adjustments:

From the Features tab, the following parameters are available: Expansion, Noise Management, Feedback Management, Directionality, and Direct Audio Input. In addition to these adjustments, Arista incorporates programmable Indicator Tones. Each parameter is described in the following sections:

Expansion: To adjust the amount of gain for very soft inputs (below the expansion/compression kneepoint), such as a refrigerator running or computer fan, Expansion may be set to On or Off by unchecking the Expansion Checkbox on the Expansion sub-tab. The default settings are On when any threshold is better than 40 dB HL and Off when all thresholds are poorer than 40 dB HL. This feature is adjustable per memory. Audio files are available to help determine the appropriate Expansion setting. Click on the Audio File Player button in the toolbar or select it from the Activity menu to use this fitting tool.



Noise Management: To improve the client's listening comfort in noisy environments, Noise Management may be activated. When Noise Management is activated, gain in the channel is automatically reduced when the speech/noise ratio (SNR) within the channel is low (noise dominates as input to the channel). The default Noise Management setting is Min. The Min setting provides up to a 10 dB reduction in channel gain. The Max setting provides up to a 20 dB reduction in channel gain. The amount of channel gain reduction occurring at a given time will vary depending upon the channel SNR calculation. When the optional Noise Management feature is set to Off, no automatic gain reduction will occur in the presence of noise. This feature is adjustable per memory. Audio files are available to help determine the appropriate Noise Management setting. Click on the Audio File Player button in the toolbar or select it from the Activity menu to use this fitting tool.



Feedback Management: Feedback Management must be run in the patient's ear and should always be performed in a quiet environment. Prior to running the algorithm, ensure that the room is quiet and the hearing aids are fully inserted in the ears. Instruct the patient to be quiet and still for the entire sequence. Click the Feedback Management button from the Adjust tab or from the Feedback Management sub-tab of the Features tab to start the algorithm. The sophisticated algorithm automatically scans for feedback at the use gain settings, adjusts compression characteristics for low-level inputs, and implements a notch filter when necessary. When the device is programmed with Adaptive Feedback Management checked on the Feedback Management sub-tab, the

acoustic feedback path will be monitored and the gain adjusted in the appropriate channel(s) while the patient is wearing the device(s). **Adaptive Feedback Management** can be activated within the software at any time even when the customized Feedback Management routine has not been executed.

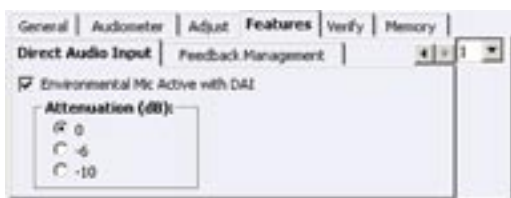


Precision Directional Imaging (PDI): If fitting an Arista PDI MultiMemory device, the Directional sub-tab will be available. Checking the Directional checkbox on the Directional subtab will activate a directional response for the selected memory. Additional frequency response adjustments are available with the Low Frequency Roll Off checkbox. For thresholds



at 500 Hz better than 40 dB HL, the default setting is Full Low Frequency Roll Off. For thresholds at 500 Hz poorer than 40 dB HL, the default setting is Partial Low Frequency Roll Off. The Full Roll Off option provides maximum reduction of the low frequencies, while the Partial Roll Off option offers increased gain to provide audibility for the low frequencies while in the directional mode. Unchecking the Low Frequency Roll Off checkbox will match the gain and frequency response of the directional and omnidirectional modes.

Direct Audio Input (DAI): The DAI sub-tab of the Features tab is available for S13 Arista BTEs and allows the gain differential between the environmental microphone input and DAI signals to be adjusted. The environmental microphone input can be turned on or off by checking or unchecking the "Environmental Mic Active with DAI" checkbox, respectively. When the environmental microphone is turned on, it can be set to 0, -6, or -10 dB below the level of the DAI signal.



Programmable Indicator Tones: The Low Battery and MultiMemory beep tones are adjustable by selecting Indicator Tones from the Activity menu. A tone can be

disabled or a test tone can be presented through the hearing aid to verify audibility.

6. Verify Loudness:

Instruct the patient prior to entering Verify Loudness mode. The hearing aid microphone will be muted within this mode. Ensure that the hearing aids are fully inserted in the ears. Click on the **Verify** tab of the control panel.



Select the desired speed for the tone sweep: Slow, Medium or Fast. Initiate a sweep at any of the 6 frequency points by selecting a point and then selecting either the **Sweep Up** or **Sweep Down** arrow buttons. Alternatively, present a single frequency tone by double-clicking on the point. A yellow light will appear at the current test frequency, and the frequency and level being presented will appear in red text within the control panel.

Adjustments may be made by clicking on the **Adjust** tab and using the Frequency Shaping, Volume Control, TK/CR, or Equalizer control panels. After any modifications, verify the tone or tones again.

7. Program:

Click **Program**, either from the button panel in the



center of the screen or from

Volume Control Position: 2/3

the toolbar, to store program-
ing information into the hearing instrument. After programming the device, set the volume control to the position indicated on the VC sub-tab of the adjust tab in order for programmed gain to be achieved.

