FREQUENCY LOWERING

PRODUCT AVAILABILITY: All Devices* *Except A2 Classic

1. Launch **Inspire X**, then connect hearing devices and **Get Started**. Refer to the ***Initial Fit Protocol QuickTips*** for additional information.
2. The presence of green and yellow shaded regions on the frequency response indicates that Frequency Lowering is on.
3. Select **Frequency Lowering** from the left navigation bar.

Engineered to enhance real-time audibility by identifying high-frequency speech cues and replicating them in a lower-frequency region.

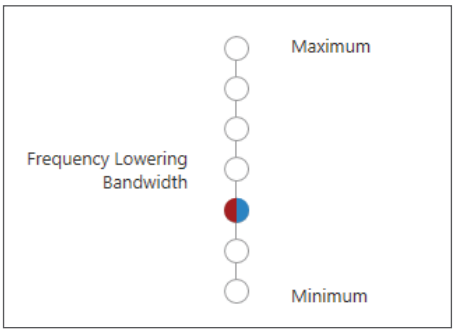
FREQUENCY LOWERING DEFAULTS

Frequency Lowering defaults on or off based on the patient's audiogram and the Smart Candidacy Criteria. Frequency Lowering always defaults off in pediatric fittings, in the presence of an asymmetrical loss, and for government services accounts.

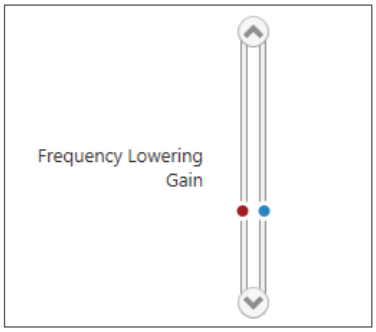
Frequency Lowering may be enabled on a per-memory basis:

1. Select the desired memory to adjust.
2. Select the **on** or **off radio button** for that memory.

Select **Display High Frequency Speech Input** to enable/disable the feature. Enabling the feature populates a visual representation of the spectral energy in a high frequency consonant sound /s/ prior to the application of Frequency Lowering.



Frequency Lowering Bandwidth



Frequency Lowering Gain

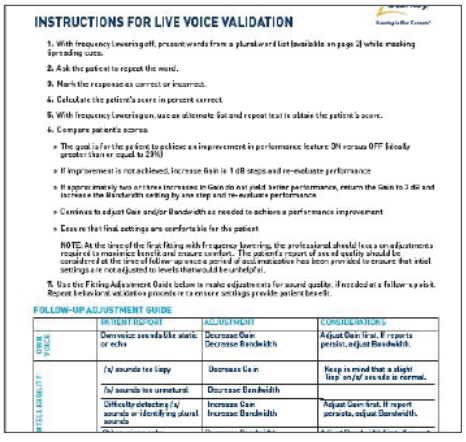
FREQUENCY LOWERING ADJUSTMENTS

Frequency Lowering Gain adjusts the gain of the recreated signal in 1dB steps to maximize the audibility of high-frequency speech cues. The default ON setting is 3dB for all hearing losses.

Frequency Lowering Bandwidth adjusts the frequency response of the source (green) and the target (yellow) regions where high-frequency speech cues will be copied and replicated, respectively.

VERIFICATION AND TROUBLESHOOTING

1. Select **Expert Assistant** on the left navigation bar, then **Frequency Lowering** from the drop-down menu to select a complaint and implement recommended changes.
2. Refer to the ***Frequency Lowering Validation QuickTip*** to view information on verification and validation of the feature and adjustment suggestions.


INSTRUCTIONS FOR LIVE VOICE VALIDATION

1. With frequency lowering off, present words from a phonetically balanced list (available on page 3) while masking spreading occurs.
2. Ask the patient to repeat the word.
3. Mark the responses as correct or incorrect.
4. Calculate the patient's score in percent correct.
5. With frequency lowering on, use an alternate list and repeat test to obtain the patient's score.
6. Compare patient's scores.
   - The goal is for the patient to achieve an improvement in performance (score ON versus OFF) of clinically greater than or equal to 20%.
   - If improvement is not achieved, increase Gain in 1 dB steps and re-evaluate performance.
   - If approximately two or three increases in Gain do not yield better performance, return the Gain to 3 dB and increase the Bandwidth setting by one step and re-evaluate performance.
   - Continue to adjust Gain and/or Bandwidth as needed to achieve a performance improvement.
   - Ensure that final settings are comfortable for the patient.

NOTE: At the time of the first fitting with frequency lowering, the professional should focus on adjustments required to maximize benefit and ensure comfort. The patient's report of sound quality should be considered at the time of follow-up once a period of acclimatization has been provided to ensure that initial settings are not adjusted to levels that would be unhelpful.

7. Use the Fitting Adjustment Guide below to make adjustments for sound quality, if needed at a follow-up visit. Repeat behavioral validation procedures to ensure settings provide patient benefit.

FOLLOW-UP ADJUSTMENT GUIDE

	PATIENT REPORT	ADJUSTMENT	CONSIDERATIONS
OWN VOICE	Own voice sounds like static or echo	Decrease Gain Decrease Bandwidth	Adjust Gain first. If reports persist, adjust Bandwidth.
INTELLIGIBILITY	/s/ sounds too sharp	Decrease Gain	Keep in mind that a slight lisp on /s/ sounds is normal.
	/s/ sounds too unnatural	Decrease Bandwidth	
	Difficulty detecting /s/ sounds or identifying plural sounds	Increase Gain Increase Bandwidth	Adjust Gain first. If report persists, adjust Bandwidth.

Frequency Lowering Validation