

Compression

The Compression screen allows for adjustment of compression kneepoints, ratios and time constants parameters for Axio products. Some scenarios where you may need to adjust the compression parameters include adjusting sound quality for previous hearing aid wearers (for patients who have previously worn linear devices), adjusting for recruitment or for reports of “muffled” sound quality.

The Compression screen provides access for adjustments to:

- Threshold Kneepoints (TK)** The input level in dB SPL at which a channel begins to apply compression. The default TK values displayed in Inspire® are based on the Long Term Average Speech Spectrum (LTASS) of a Soft (50 dB SPL) speech signal.
- Compression Ratios (CR)** It represents how much the output of the hearing instrument changes in relation to changes in the input. Thus, it is determined by dividing the change in the input by the change in the output. The CR is expressed as a ratio, i.e. 5:1, 3:1, 2:1, etc.

Threshold Kneepoints

Changes to Threshold Kneepoints (TK) can be made in a variety of ways.

- **Threshold Kneepoint Preset:** clicking on the adjustment points along the preset bar raises TK settings in all channels in 8 dB increments from the default Low position up to the maximum, High position.



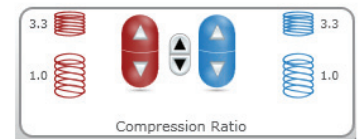
- **Frequency specific adjustments to the TK** can be made with the up and down arrows. Selected frequencies are highlighted in orange. Changes to TK settings using the arrows are made in 4 dB increments.



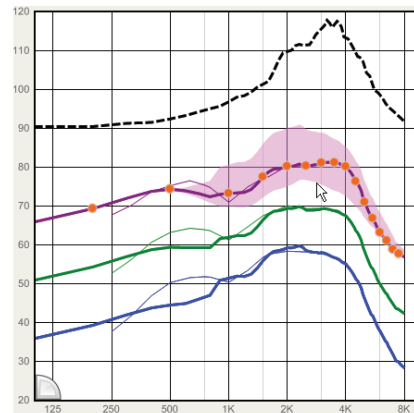
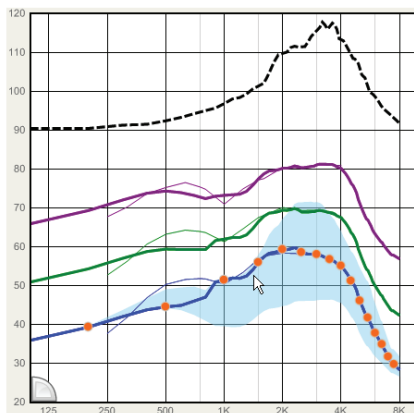
Compression Ratios

Changes to Compression Ratios (CR) can be made in a variety of ways:

- Frequency-specific adjustments to the CR can be made with the up and down arrows. Selected frequencies are highlighted in orange. When changing the Compression Ratios in this manner, you are increasing or decreasing the output for Loud sounds.
- The spring graphics which appear on this screen are for visual reference only. While no adjustments can be made with the graphics, the tight spring labeled 3.3 indicates maximum compression, while the looser, larger spring labeled 1.0 serves as a reminder that this value has less compression.



- Using the drag and drop function on the Gain for Soft inputs (blue) or Gain for Loud inputs (purple) curves also changes CR settings. Selected frequencies are highlighted in orange. The range of adjustment for Soft sounds is highlighted by the blue shaded region. The range of adjustment for Loud sounds is highlighted by the purple shaded region.



- Using the drag and drop function on the Gain for Soft or Gain for Loud curves on the **Quick Fit** and **Fine Tuning** screens will also change compression ratios.



- The range of settings for the Compression Ratio parameter is a minimum of 1.0:1 (linear or no compression) to a maximum of 3.3:1.

Values for Threshold Kneepoints and Compression Ratios may be viewed by clicking on the down arrow.



| ▶ | LOW FREQUENCIES | | | | MID FREQUENCIES | | | | HIGH FREQUENCIES | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|-----------------|-----|------|------|-----------------|------|------|------|------------------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 200 | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | 5500 | 6000 | 6500 | 7000 | 7500 | | | | | | | | | | | | | | | | |
| TK | 43 | 43 | 46 | 46 | 37 | 37 | 32 | 32 | 29 | 29 | 26 | 26 | 24 | 24 | 23 | 23 | 22 | 22 | 21 | 21 | 19 | 19 | 19 | 19 | 19 | 19 | 18 | 18 | 18 | 18 | 17 | 17 |
| CR | 1.0 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.4 | 1.4 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.1 | 1.1 | 1.2 | 1.2 | 1.1 | 1.1 | 1.2 | 1.2 | 1.2 | 1.2 |
| Compression time constants | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Compression Ratios

Inspire provides the ability to adjust the Compression Time Constants for the Axio iM32 devices. To access the compression time constants, click on the **Compression time constants** label in the Expanded View, as shown above. Once you click on the label, a pop-up window appears which provides three settings for time constants: **Slower**, **Default** or **Faster**. Compression Time Constants are set to the same default for all fittings. Changes to time constants impact all memories, and therefore, are referred to as global adjustments.

- Default Attack time: 20 ms
 Release time: 2 sec
- Slower Attack time: 5 sec
 Release time: 5 sec
- Faster Attack time: 15 ms
 Release time: 50 sec