# EQ Adjustment Illustration

EXAMPLE 1: Wide Weak Bass Response
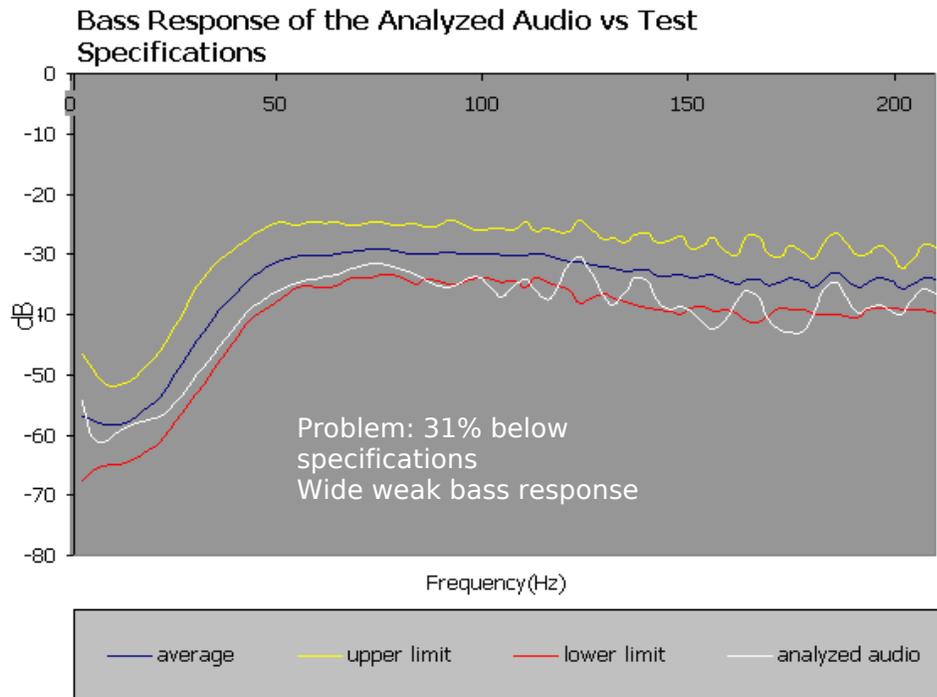


Bass Response of the Analyzed Audio vs Test Specifications

Problem: 31% below specifications
Wide weak bass response

Legend: average — upper limit — lower limit — analyzed audio

Solution:

1.) Identify the lower and upper estimated frequency range of the problem by looking at the response plot:

Lower estimated problem frequency = 25Hz
Upper estimated problem frequency = 200Hz

2.) Estimate the amount of boost or cut in dB. You can learn some tips here:
(Read EQ Best Practices.pdf in Documentation)

Supposing you will assign a moderate boost to correct this weak bass response.
Gain= +2.0dB (for moderate boost)

3.) Go to APPENDIX G. Center Freq & Q in AudioSpectro FIRE Spreadsheet tool.
You can also use MY_EQ_ADJUSTMENTS sheet in AudioSpectro FIRE sheet to organize
and remember lots of EQ settings.

4.) Based on the calculator, it provides the following recommended EQ tweaks:

Center Freq= 113Hz

Q=1.9

EQ gain= +2.0dB

Output gain= -1.3dB

Implement the center freq, Q adjustment, EQ gain and output gain in your parametric equalizer (see screenshot below):
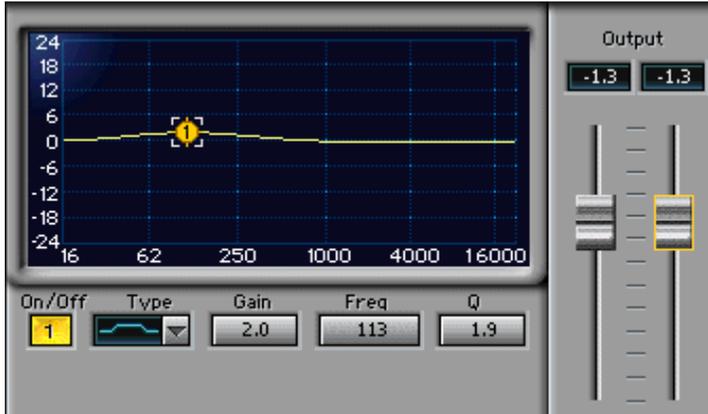


EXAMPLE 2: Narrow and Weak Mid-Frequency Response
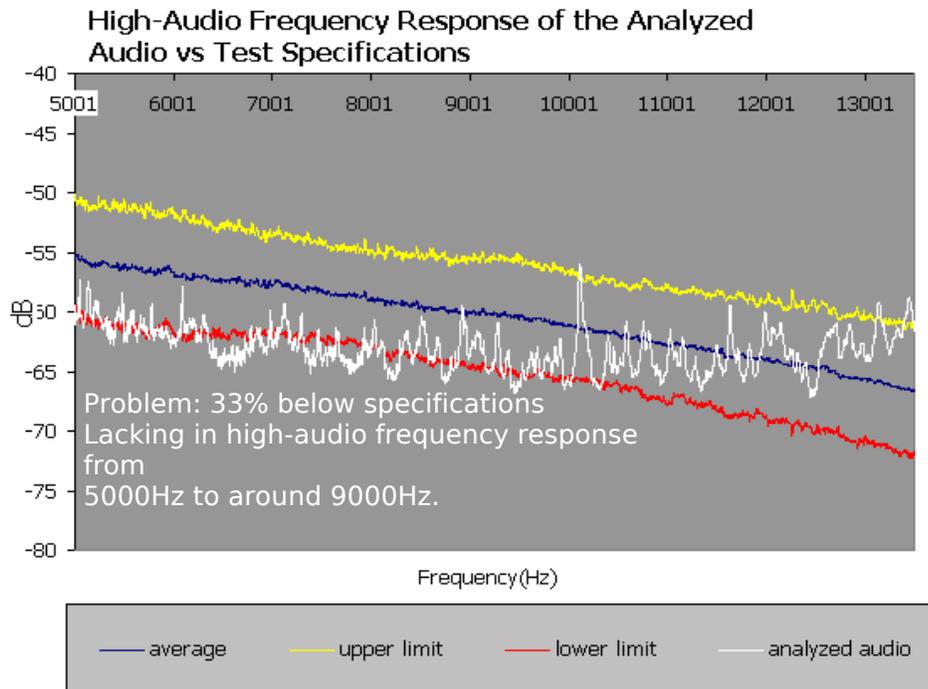


High-Audio Frequency Response of the Analyzed Audio vs Test Specifications

Problem: 33% below specifications
Lacking in high-audio frequency response from
5000Hz to around 9000Hz.

Frequency(Hz)

— average    — upper limit    — lower limit    — analyzed audio

Solution:

1.) Identify the lower and upper estimated frequency range of the problem by looking at the response plot:

Lower estimated problem frequency = 5000Hz

Upper estimated problem frequency = 9000Hz

2.) Estimate the amount of boost or cut in dB. You can learn some tips here:
(Read EQ Best Practices.pdf in Documentation)

Supposing you will assign a moderate boost to correct this weak mid-frequency response.
Gain= +1.5dB (for moderate boost)

3.) Go to APPENDIX G. Center Freq & Q in AudioSpectro FIRE Spreadsheet tool.
You can also use MY_EQ_ADJUSTMENTS sheet in AudioSpectro FIRE sheet to organize
and remember lots of EQ settings.

4.)Based on the calculator, it provides the following recommended EQ tweaks:

Center Freq= 7000Hz
Q=5.3
EQ gain= +1.5dB
Output gain=-1.0dB

Implement the center freq, Q adjustment and compensation gain on your parametric equalizer
(see screenshot below):
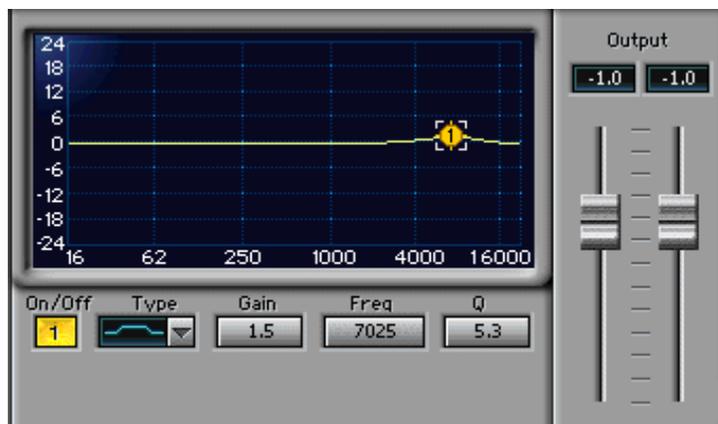
EXAMPLE 3: Extreme Lows and Highs in the Same Frequency Band
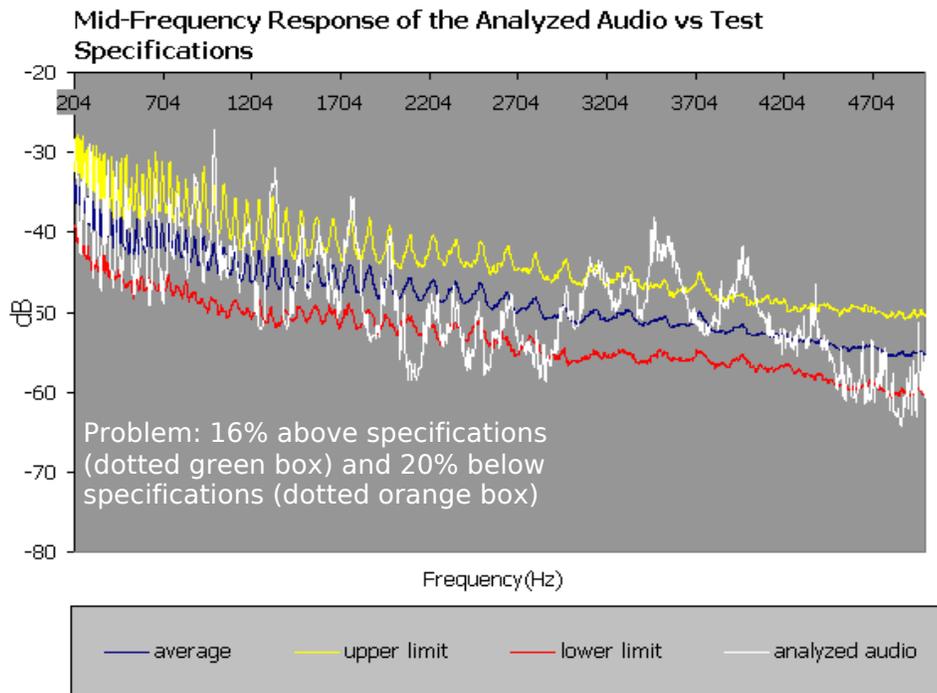
## Mid-Frequency Response of the Analyzed Audio vs Test Specifications

Problem: 16% above specifications (dotted green box) and 20% below specifications (dotted orange box)

Frequency(Hz)

— average    — upper limit    — lower limit    — analyzed audio

### Solution:

1.) Identify the lower and upper estimated frequency range of the problem by looking at the response plot:

Below Specifications:

Lower estimated problem frequency = 1800Hz
Upper estimated problem frequency = 2800Hz

Above Specifications:

Lower estimated problem frequency = 3200Hz
Upper estimated problem frequency = 4500Hz

2.) Estimate the amount of boost or cut in dB. You can learn some tips here:
(Read EQ Best Practices.pdf in Documentation)

Below Specifications:

Supposing you will assign a slight boost to correct the frequency range below specifications.
Gain= +1.5dB (for slight boost)

Above Specifications:

Supposing you will assign a moderate cut to correct the frequency range above specifications:
Gain= -2.0dB (moderate cut)

3.) Go to APPENDIX G. Center Freq & Q in AudioSpectro FIRE Spreadsheet tool.
You can also use MY_EQ_ADJUSTMENTS sheet in AudioSpectro FIRE sheet to organize
and remember lots of EQ settings.

4.)Based on the calculator, it provides the following recommended EQ tweaks:

For correcting below specifications:

Center Freq= 2300Hz
Q=6.9
EQ Gain=+1.5dB
Output gain= -1.0dB

Implement the center freq, Q adjustment and compensation gain on your parametric equalizer
(see screenshot below):
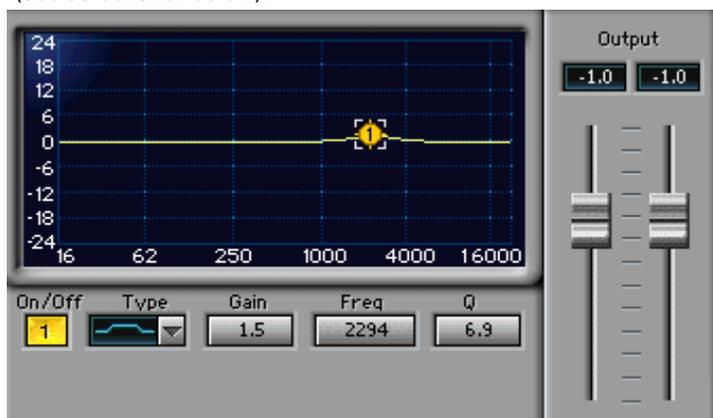


For correcting above specifications:

Center Freq= 3850Hz
Q=8.9
EQ Gain= -2.0dB
Output Gain= 0dB

Implement the center freq, Q adjustment and compensation gain on your parametric equalizer
(see screenshot below):
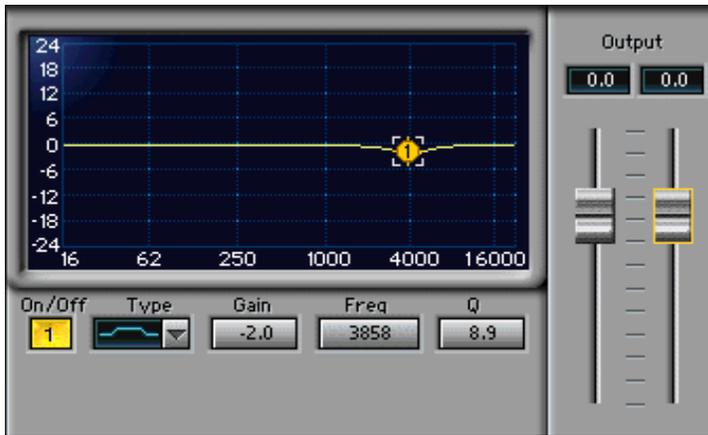
NOTE: It is important to use your ear to confirm the accuracy of the adjustments made using this tool.