21M.380 Music and Technology
Recording Techniques & Audio Production
Lecture 8: Filters & EQs

Massachusetts Institute of Technology
Music and Theater Arts

Monday, October 3, 2016

Filtering the frequency spectrum

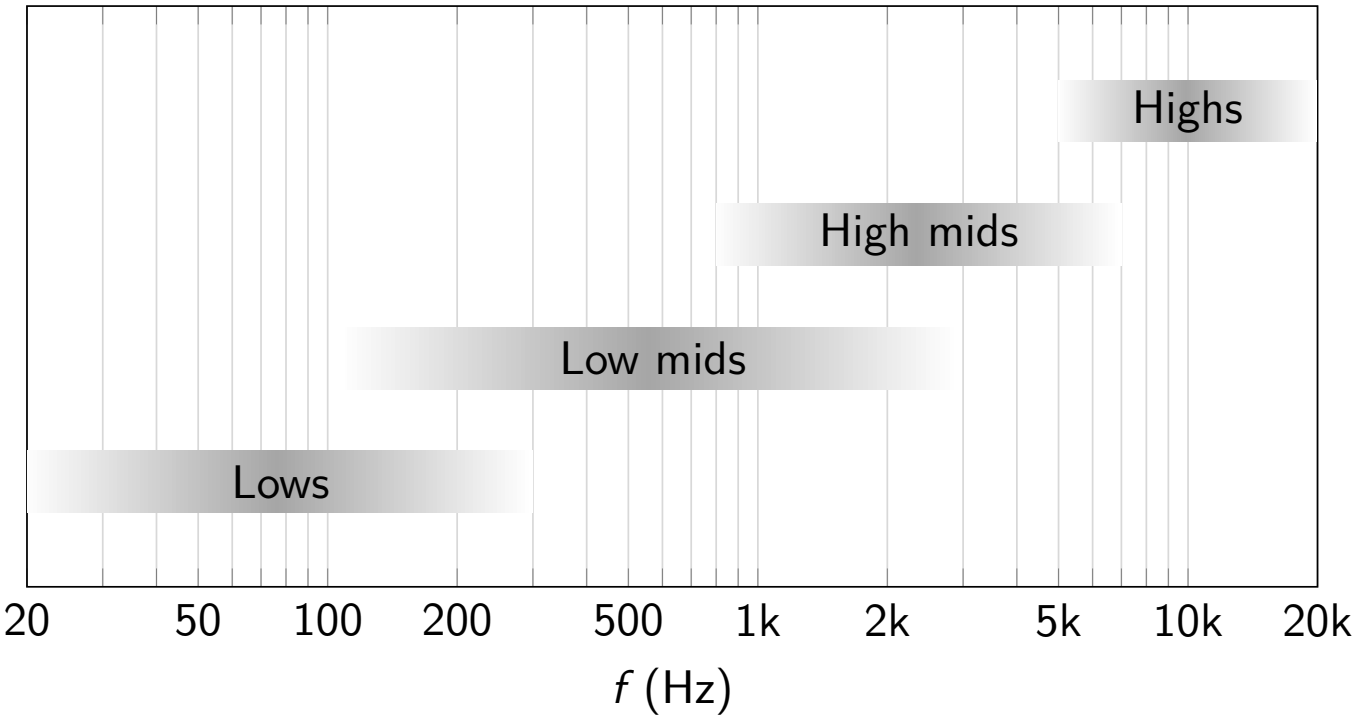

Figure: The basic four-band division of the audible frequency spectrum (after Izhaki 2011a, fig. 14.3)

Filtering the frequency spectrum

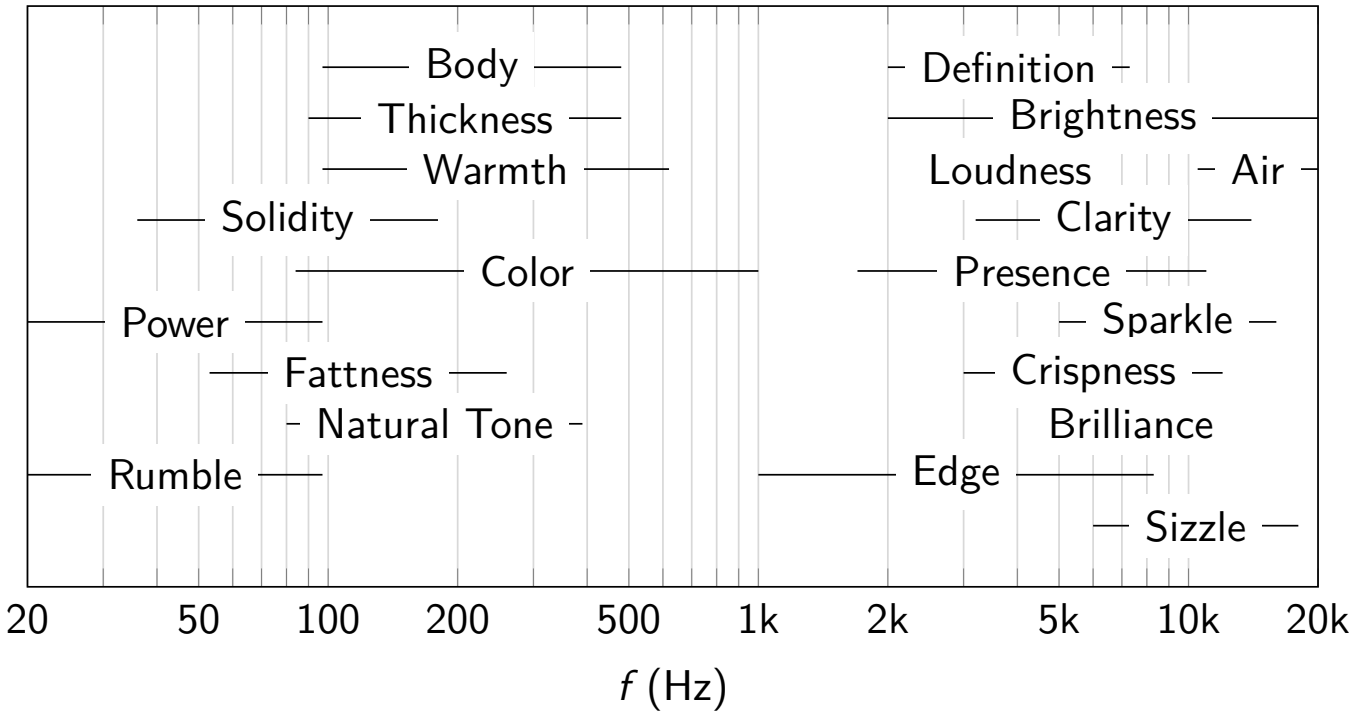

Figure: Qualitative descriptions of various frequency ranges (after Izhaki 2011a, fig. 14.4)

Cut filters

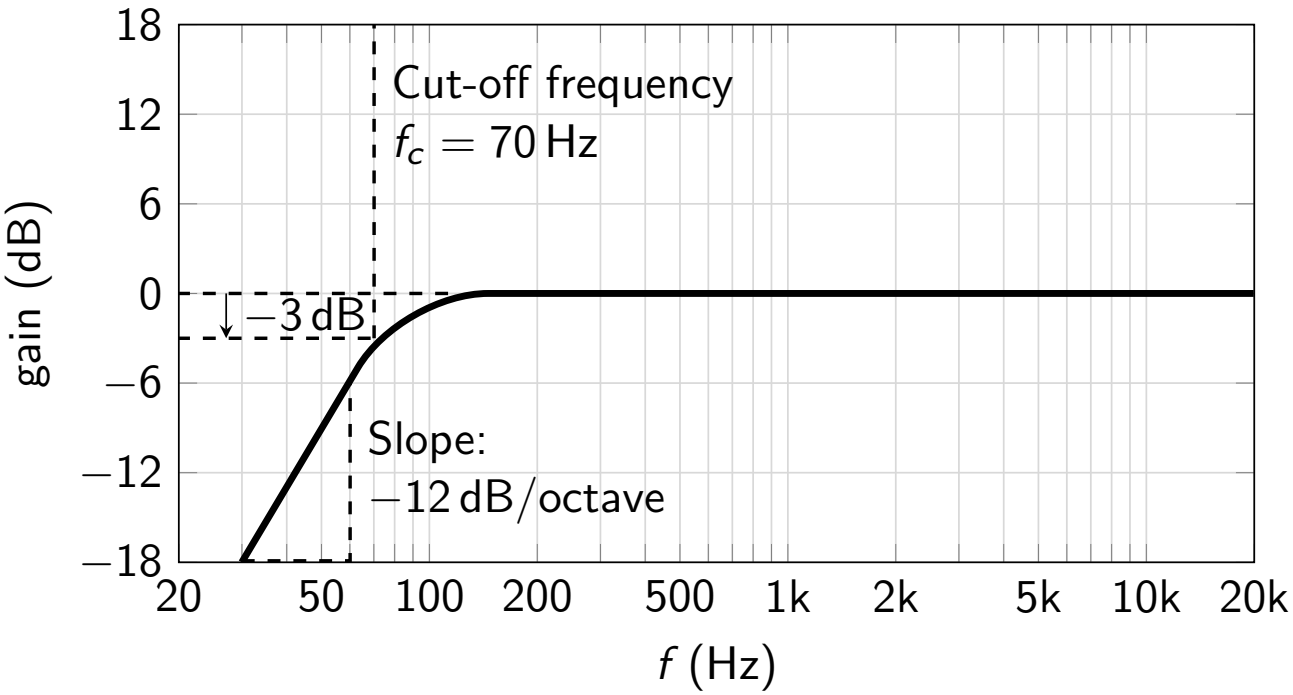

Figure: Frequency response of a low-cut (high-pass) filter

Cut filters

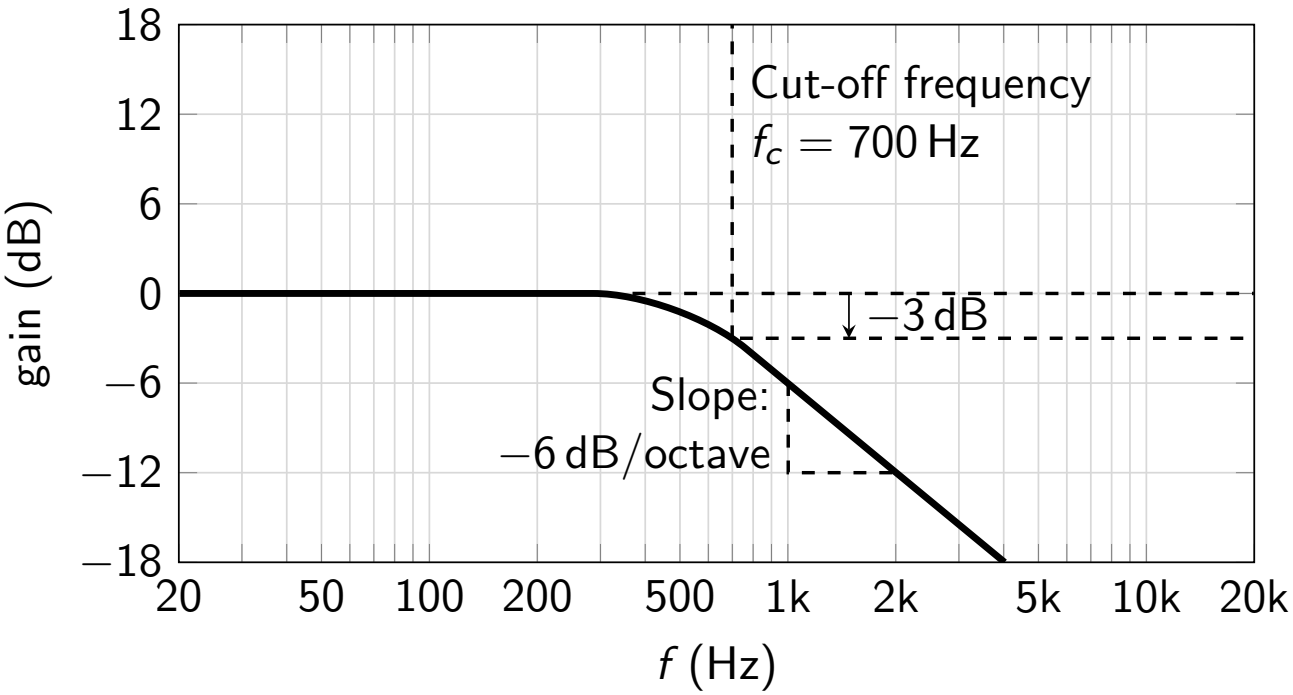

Figure: Frequency response of a high-cut (low-pass) filter

Shelving filters

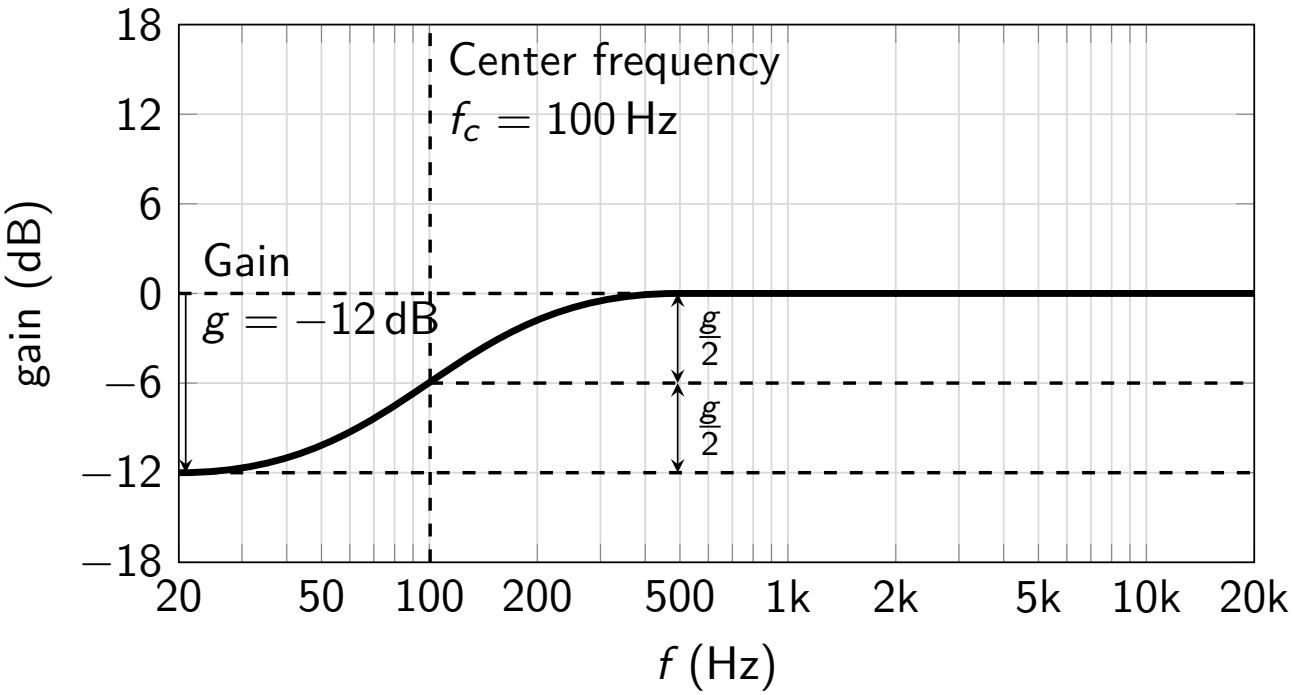

Figure: Frequency response of a low-frequency shelving filter

Shelving filters

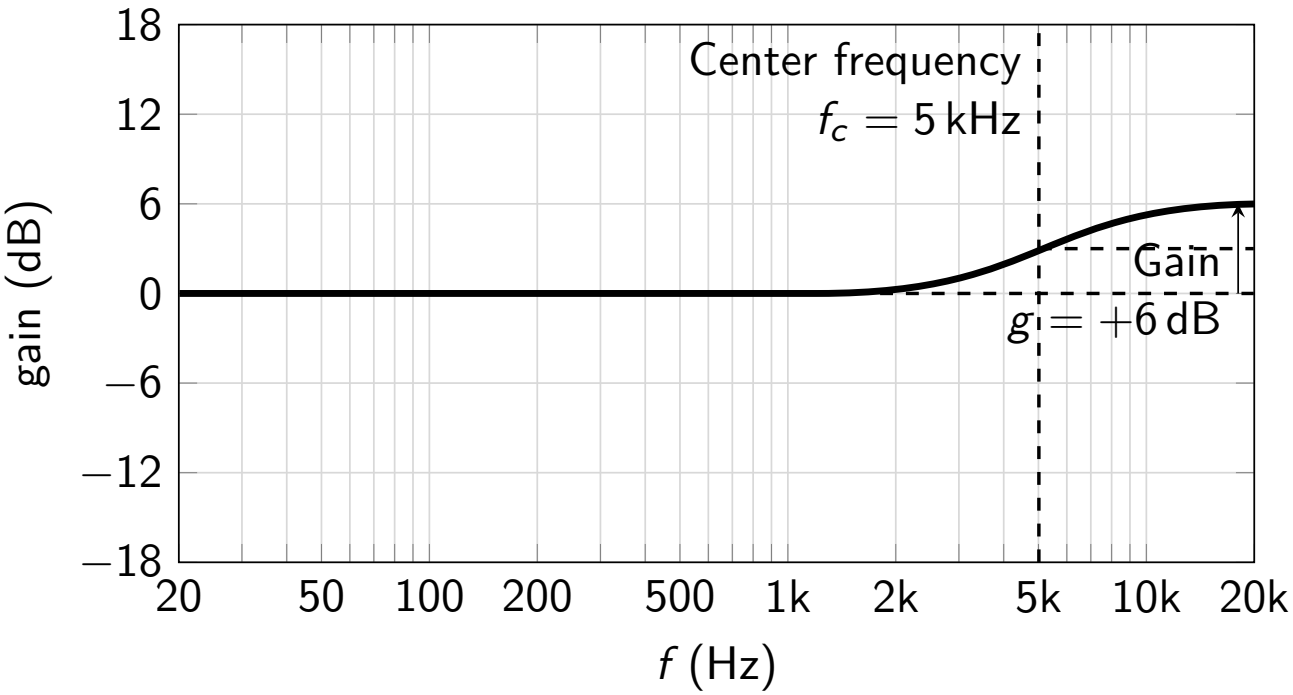

Figure: Frequency response of a high-frequency shelving filter

Peaking filters

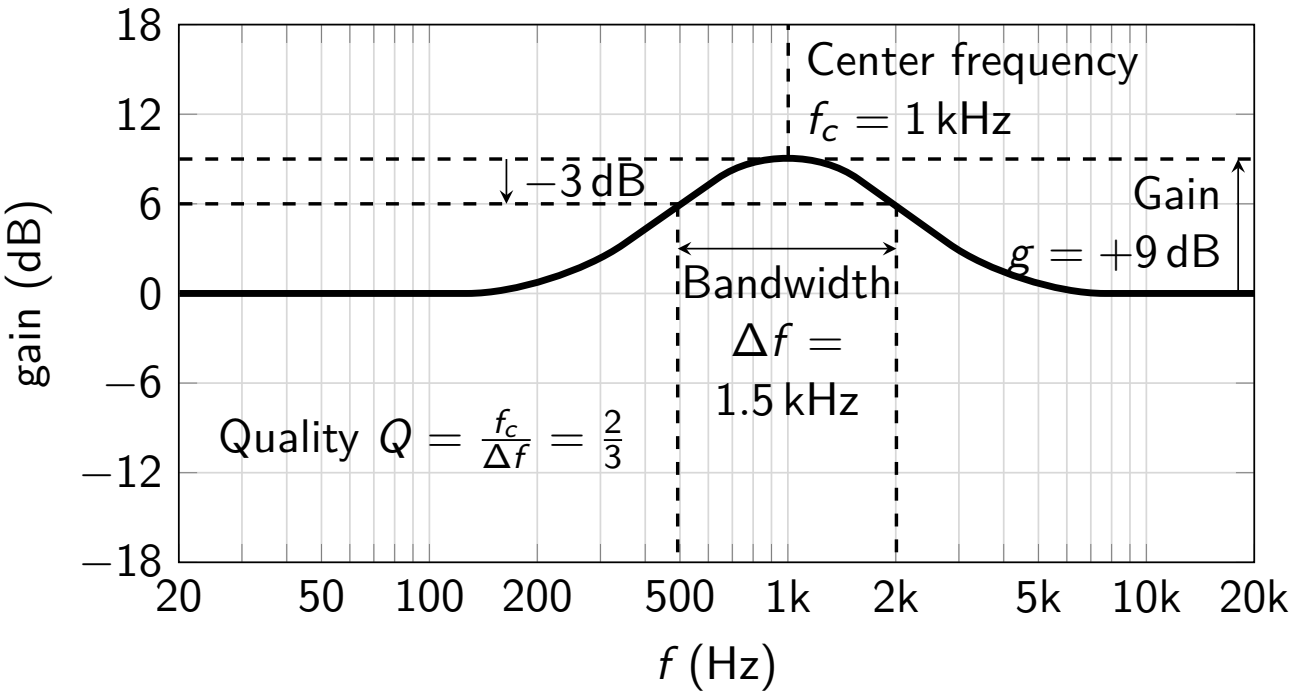

Figure: Frequency response of a peaking filter

Parametric EQs

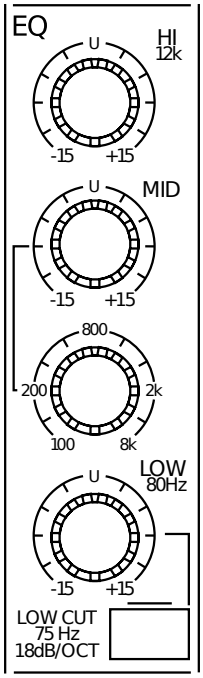

Figure: Parametric EQ in an input channel strip of a Mackie CR1604-VLZ mixing desk (© LOUD Technologies Inc. With edits. All rights reserved. This content is excluded from our Creative Commons license. For more information, see http://ocw.mit.edu/help/faq-fair-use/)

Parametric EQs

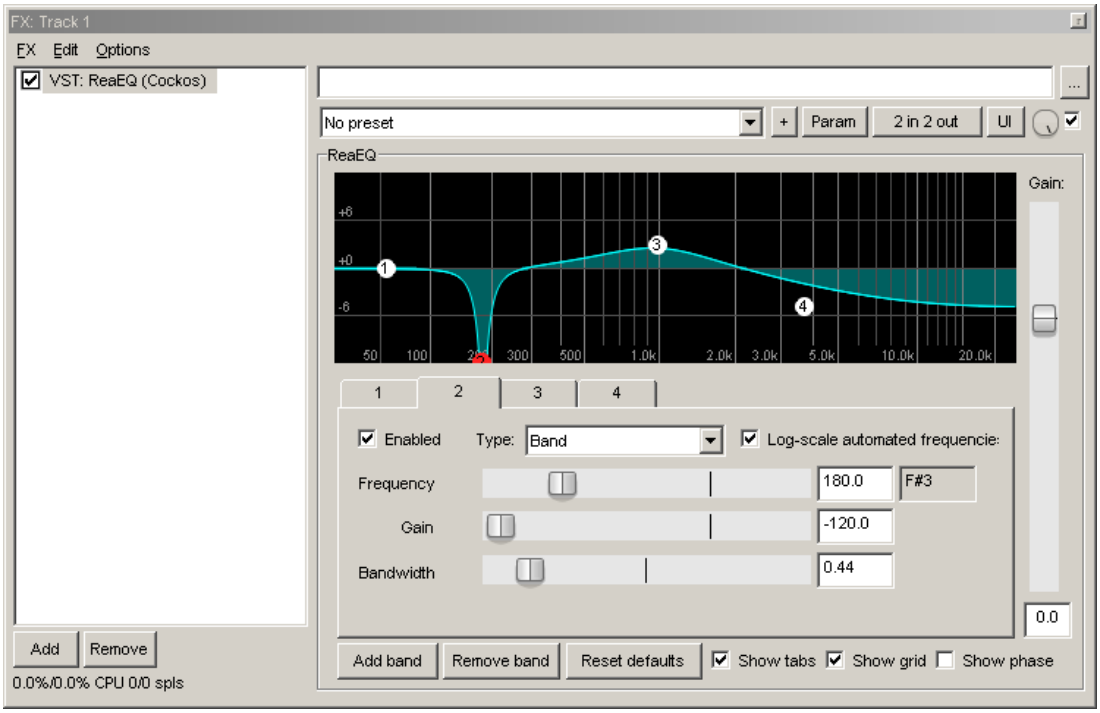

Figure: Cockos *ReaEQ* plugin in a Reaper session (© Cockos. All rights reserved. This content is excluded from our Creative Commons license. For more information, see http://ocw.mit.edu/help/faq-fair-use/)

Parametric EQs

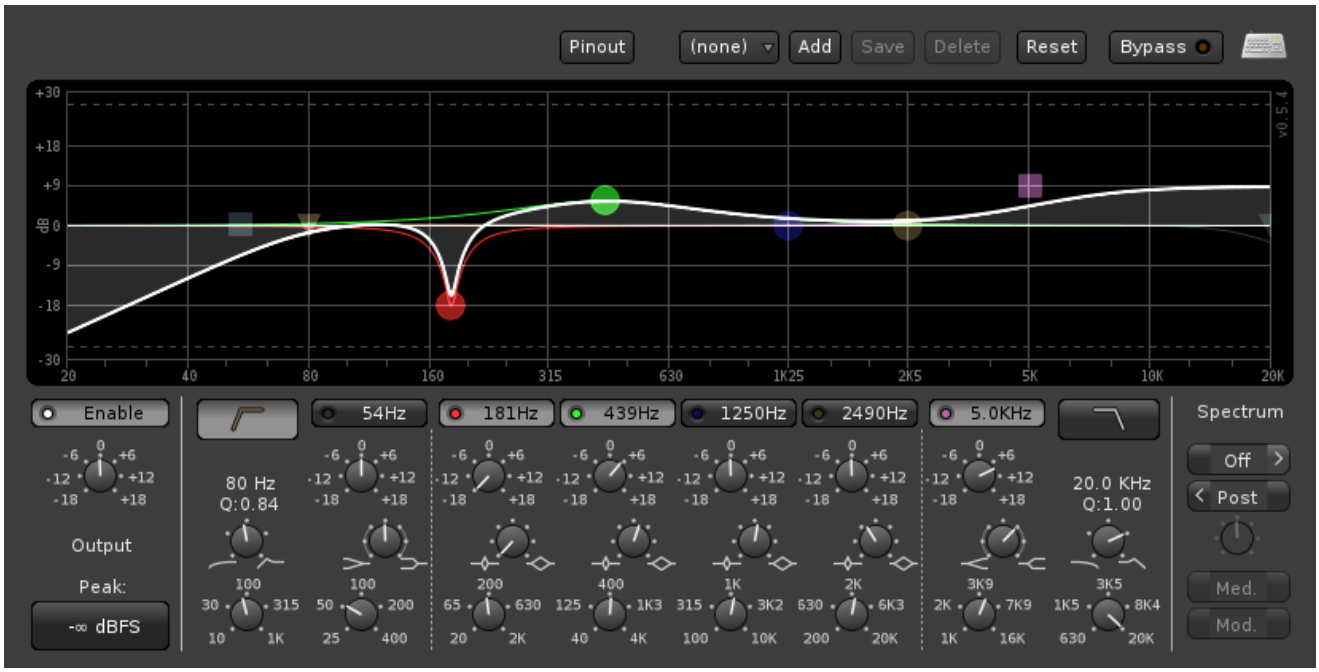

Figure: x42-eq plugin in an Ardour session (© Robin Gareus. GNU General Public License. This content is excluded from our Creative Commons license. For more information, see http://ocw.mit.edu/help/faq-fair-use/)

Parametric EQs

Figure: EQ section of a Joemeek *twinQ* microphone preamp (© Joemeek. With edits. All rights reserved. This content is excluded from our Creative Commons license. For more information, see http://ocw.mit.edu/help/faq-fair-use/)

Parametric EQs

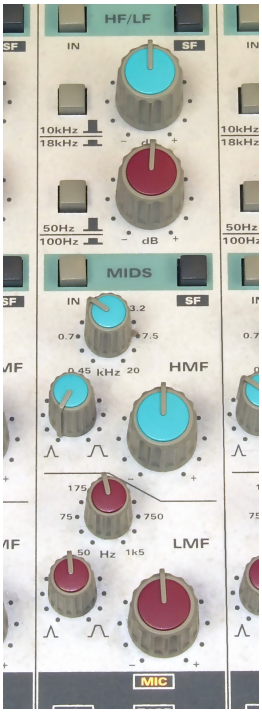

Figure: 4-band parametric EQ on an Audient ASP8024 mixing console (Courtesy of Wikipedia user: lainf. CC BY)

Graphic EQs

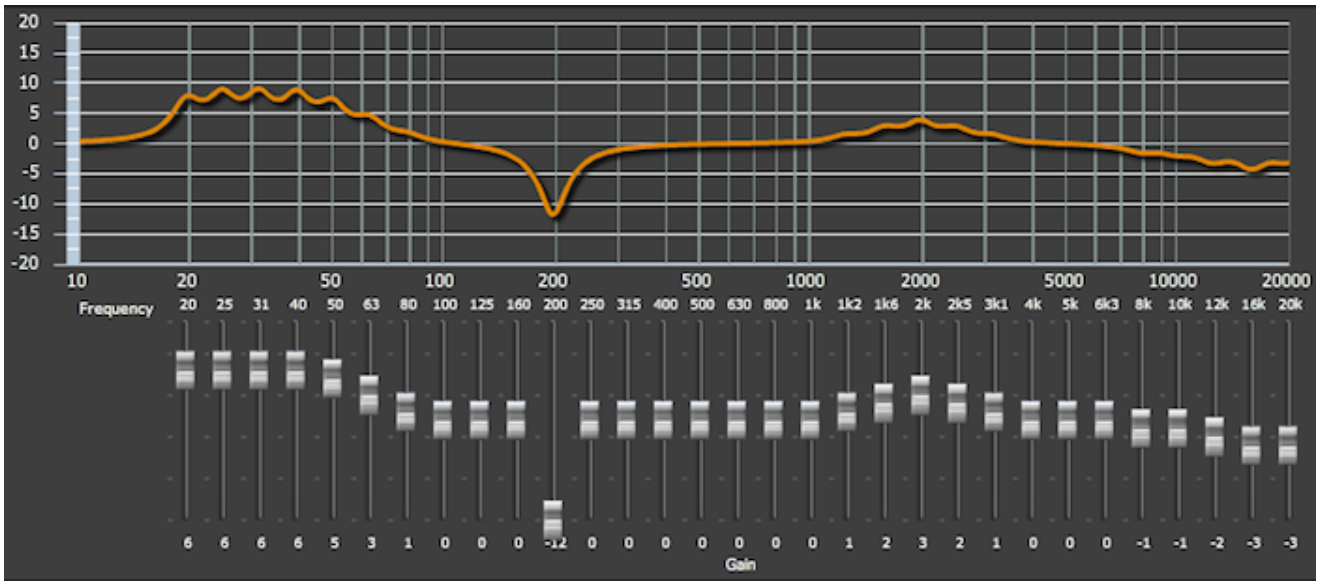

Figure: Graphic EQ and corresponding frequency response in a software plugin by miniDSP (© miniDSP. All rights reserved. This content is excluded from our Creative Commons license. For more information, see http://ocw.mit.edu/help/faq-fair-use/)

Graphic EQs

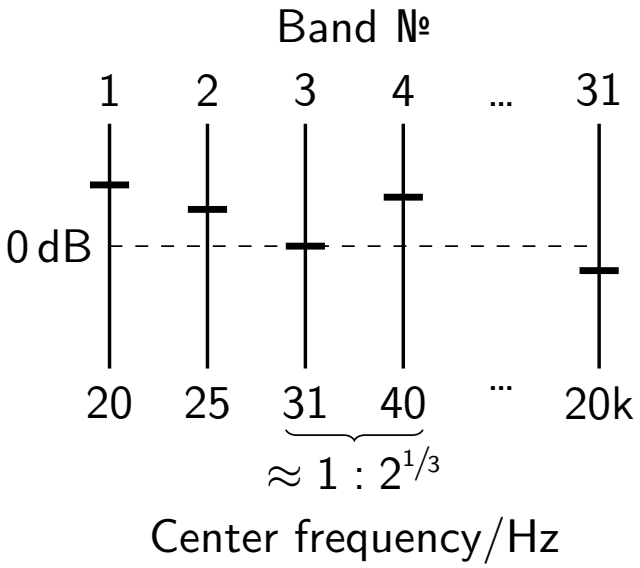

Figure: Principle of a graphic EQ with 31 ⅓-octave bands