

Graphic Equalizer

Graphic Equalizer Form in MatDeck can be used to tune frequency components of the input signal. Graphic Equalizer form is defined using the function `equalizefirform()`, whose arguments are widget parent and form name as string. The widget parent argument is used to combine multiple forms in one object, thus if the form is used alone, the widget parent is set to zero. The function `equalizefirresult()` is used to process input signal and produce result by equalizer defined using Form. Graphic Equalizer Form allows design of the equalizer by setting values of the amplitude response of the equalizer at a given frequency band by using the 31 slider. Number of frequency bands, that is number of sliders, is selected according to common audio standard. The user can also specify the sampling rate, interpolation method which is used to calculate the desired frequency response. The equalizer filter is designed using windowing method, where user can specify window function to be used, and filter length that should be odd number.

The graph in the Form displays obtained frequency response of the Equalizer. Button "Flatten" is used to restore desired values of the equalizer frequency response to zero dB.

Inverse Equalizer Form is too large and cannot fit within A4 portrait page. It is recommended to use landscape A4 page, or A3.

`w:=equalizefirform(0, "equalizer")` Define Graphic Equalizer Form

`xsignal:=ynodes(sin(x), 0, 1000, 1000)` Test signal processed by Graphic Equalizer

`Result:=equalizefirresult(w, xsignal)` Process the test signal by Equalizer with settings entered in the Form

`Result = 1000 elements vector` Resultant signal processed by Form

