Inverse Equalizer Form

Inverse Equalizer Form in MatDeck can be used to tune frequency components of the input signal. Inverse Equalizer form is defined using function equalizerinverseform(), whose arguments are widget parent, and the 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 equalizerinverseresult() is used to process input signals and produce result by defining the equalizer using Form. Inverse Equalizer Form allows the design of the equalizer by setting manually the values of the amplitude response of the equalizer at given frequencies points. The number of frequency points, their values, and values of the amplitude response are all user defined. The user can also specify sampling rates, interpolation method which is used to calculate the desired frequency response. The equalizer filter is designed using windowing method, where the user can specify which window function is to be used in addition the filter length 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.
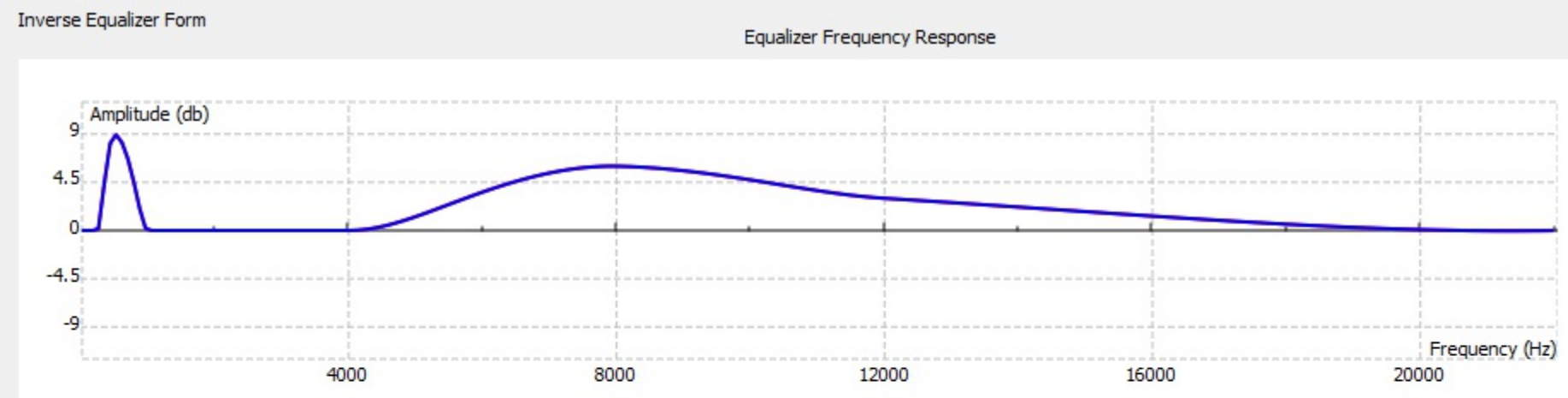
Inverse Equalizer Form is large and cannot fit within A4 portrait page. It is recommended to use landscape A4 page, or A3.

$w :=$ equalizerinverseform$(0$, "eii"$)$ Define Form

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

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

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

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Equalizer Frequency Response

Number of points to specify response: 9

Frequency points (Hz)

50,00	125,00	250,00	500,00	1000,00	2000,00	4000,00	8000,00	12000,00

Desired amplitude (db)

0,00	0,00	0,00	9,00	0,00	0,00	0,00	6,00	3,00

Sampling Rate (Hz)	Filter Lenght	Window Type	Frequency Axis	Interpolation	
44100	999	rectangular ▼	linear ▼	akima ▼	Flatten