



FULL RANGE EQUALIZATION & FILTER RECOMMENDATIONS

(Amended March 1, 2012)

One Systems high performance loudspeaker systems are factory-configured and are nearly always used in passive full range mode. In this configuration, the systems can still benefit from selective parametric or 1/3-octave equalization and high-pass filtering (low-cut).

The equalization and filter settings listed below are recommendations based on the far field frequency response data for each model. For most One Systems models, 1/3-octave parametric filters have been recommended. This allows for comparable equalization to be applied to each system when using a conventional (non-parametric) 1/3-octave equalizer. When bandwidths greater than 1/3 octave are recommended, these bandwidths can be easily approximated by using multiple 1/3-octave filters with appropriate gain settings.

In all cases, high pass filters should be used with each model to provide additional low frequency system protection, increased reliability, and additional amplifier headroom. High-pass filters are highly recommended for use with all professional sound reinforcement systems. The recommended high pass filters are 4th order (24 dB-per-octave) Butterworth filters but 2nd order (12 dB-per-octave) may also be used. In almost all cases the addition of a high pass filter with the appropriate corner frequency will produce audibly superior system performance and enhanced reliability.

103IM

PEQ1: Frequency 4 kHz	Bandwidth: 0.33 octave	Gain: -2 dB
PEQ 2: Frequency 2.5 kHz	Bandwidth: 0.33 octave	Gain: -2 dB
Low Shelf: 12 dB / octave	Frequency: 150 Hz	Gain: +3 dB
HPF: Frequency 70 Hz	24 dB/octave Butterworth	

106IM

PEQ1: Frequency 800 Hz	Bandwidth: 0.33 octave	Gain: -2.0 dB
PEQ2: Frequency 1,000 Hz	Bandwidth: 0.33 octave	Gain: -2.0 dB
PEQ3: Frequency 1,250 Hz	Bandwidth: 0.33 octave	Gain: -2.0 dB
Low Shelf: (12 dB / octave)	Frequency 125 Hz	
HPF: Frequency 70 Hz	24 dB/octave Butterworth	

108IM (105x60)

PEQ1: Frequency 1,250 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
PEQ2: Frequency 100 Hz	Bandwidth: 0.50 octave	Gain: +2.0 dB
HPF: Frequency 65 Hz	24 dB/octave Butterworth	

108IM (60x40)

PEQ1: Frequency 1,600 Hz	Bandwidth: 0.33 octave	Gain: -2.0 dB
PEQ2: Frequency 100 Hz	Bandwidth: 0.5 octave	Gain: +2.0 dB
HPF: Frequency 65 Hz	24 dB/octave Butterworth	

208CIM

PEQ1: Frequency 100 Hz	Bandwidth: 0.5 octave	Gain: +2.5 dB
HPF: Frequency 65 Hz	24 dB/octave Butterworth	

112IM (60x40)

PEQ1: Frequency 1,000 Hz	Bandwidth: 0.5 octave	Gain: -2.0 dB
PEQ2: Frequency 65 Hz	Bandwidth: 0.33 octave	Gain: +3.0 dB
HPF: Frequency 50 Hz	24 dB/octave Butterworth	

112IM (105x60)

PEQ1: Frequency 1,000 Hz	Bandwidth: 0.40 octave	Gain: -2.0 dB
PEQ2: Frequency 65 Hz	Bandwidth: 0.33 octave	Gain: +3.0 dB
HPF: Frequency 50 Hz	24 dB/octave Butterworth	

115TW (105x60)

PEQ1: Frequency 1,250 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
PEQ 2: Frequency 55 Hz	Bandwidth: 0.33 octave	Gain: +3.0 dB
PEQ3: Frequency 2,500 Hz	Bandwidth: 0.33 octave	Gain: -2.0 dB
HPF: Frequency 40 Hz	24 dB/octave Butterworth	

115RW (105x60)

PEQ1: Frequency 1,250 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
PEQ 2: Frequency 55 Hz	Bandwidth: 0.33 octave	Gain: +2.0 dB
PEQ3: Frequency 2,500 Hz	Bandwidth: 0.33 octave	Gain: -2.0 dB
HPF: Frequency 40 Hz	24 dB/octave Butterworth	

115TW (60x40)

PEQ1: Frequency 1,250 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
PEQ 2: Frequency 55 Hz	Bandwidth: 0.33 octave	Gain: +3.0 dB
PEQ3: Frequency 2,500 Hz	Bandwidth: 0.33 octave	Gain: -2.0 dB
HPF: Frequency 40 Hz	24 dB/octave Butterworth	

115RW (60x40)

PEQ1: Frequency 600 Hz	Bandwidth: 0.50 octave	Gain: -2.0 dB
PEQ 2: Frequency 55 Hz	Bandwidth: 0.33 octave	Gain: +2.0 dB
PEQ3: Frequency 2,500 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
HPF: Frequency 40 Hz	24 dB/octave Butterworth	

112UM

PEQ1: Frequency 2,500 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
HPF: Frequency 65 Hz	24 dB/octave Butterworth	

115UM

PEQ1: Frequency 2,500 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
HPF: Frequency 60 Hz	24 dB/octave Butterworth	

212CIM

PEQ1: Frequency 1,000 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
PEQ 2: Frequency 70 Hz	Bandwidth: 0.33 octave	Gain: +2.0 dB
PEQ3: Frequency 3,000 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
HPF: Frequency 55 Hz	24 dB/octave Butterworth	

212IM

PEQ1: Frequency 900 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
HPF: Frequency 50 Hz	24 dB/octave Butterworth	

215RW

PEQ1: Frequency 1,250 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
PEQ 2: Frequency 50 Hz	Bandwidth: 0.33 octave	Gain: +3.0 dB
PEQ3: Frequency 2,500 Hz	Bandwidth: 0.33 octave	Gain: -2.0 dB
HPF: Frequency 40 Hz	24 dB/octave Butterworth	

312CIM

PEQ1: Frequency 3,000 Hz	Bandwidth: 0.33 octave	Gain: -2.5 dB
PEQ 2: Frequency 60 Hz	Bandwidth: 0.33 octave	Gain: +2.0 dB
PEQ3: Frequency 11,500 Hz	Bandwidth: 0.33 octave	Gain: -3.0 dB
HPF: Frequency 50 Hz	24 dB/octave Butterworth	

CrossField Array (CFA)

PEQ1: Frequency 800 Hz	Bandwidth: 0.50 octave	Gain: +2.0 dB
PEQ 2: Frequency 125 Hz	Bandwidth: 1.0 octave	Gain: +2.0 dB
PEQ3: Frequency 4,000 Hz	Bandwidth: 0.33 octave	Gain: -2.0 dB
HPF: Frequency 70 Hz	24 dB/octave Butterworth	

CrossField Array-2 (CFA-2)

PEQ1: Frequency 125 Hz Bandwidth: 0.50 octave Gain: +3.0 dB
 HPF: Frequency 80 Hz 24 dB/octave Butterworth

118Sub-W

PEQ1: Frequency 40 Hz Bandwidth: 0.50 octave Gain: +3.5 dB
 HPF: Frequency 35 Hz 24 dB/octave Butterworth
 LPF: Frequency 80 Hz 24 dB/octave Linkwitz-Riley
 Gain: Set to match high frequency enclosure and acoustic requirements

218Sub-W

PEQ1: Frequency 40 Hz Bandwidth: 0.50 octave Gain: +3.5 dB
 HPF: Frequency 35 Hz 24 dB/octave Butterworth
 LPF: Frequency 80 Hz 24 dB/octave Linkwitz-Riley
 Gain: Set to match high frequency enclosure and acoustic requirements

212Sub-W

PEQ1: Frequency 50 Hz Bandwidth: 0.50 octave Gain: +3.5 dB
 HPF: Frequency 45 Hz 24 dB/octave Butterworth
 LPF: Frequency 80 Hz – 120 Hz 24 dB/octave Linkwitz-Riley
 Gain: Set to match high frequency enclosure and acoustic requirements

112IM-Sub

PEQ1: Frequency 65 Hz Bandwidth: 0.50 octave Gain: +3.5 dB
 HPF: Frequency 35 Hz 24 dB/octave Butterworth
 LPF: Frequency 80 Hz 24 dB/octave Linkwitz-Riley
 Gain: Set to match high frequency enclosure and acoustic requirements
 Set HPF for associated mid/high enclosure to match LPF frequency of 112IM-Sub



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