

Graphic Equalisers.

Equalisers or Graphic equaliser are simply advanced tone controls, bass and treble on your hi-fi.

An equaliser is so name because it is intended to be used to equalise the level of all tones or notes in a replay area be it a living room or concert theatre. The added word of graphic indicates the use of sliding controls which give a graphical representation of the amount of boost or cut of each individual frequency.

Low cost equalisers are based on the use of octave filters whereas better equalisers are based on 1/3 octave filters. It is neither possible nor desirable to adjust only one frequency as this would produce a very unnatural sound and would disturb the sound more than it would improve it. The amount of neighbouring frequencies or bandwidth adjusted by each control is determined in octaves. The octave equaliser has a bandwidth of one octave and the 1/3 octave equaliser a narrower bandwidth of 1/3 of an octave. The bandwidth is determined to be where the minimum to maximum frequencies differ by one octave or 1/3 octave and the level has reduced by 3dB.

response of a 1 octave filter and 1/3 octave filter

Care should be taken when using graphic equalisers. Too much equalisation will make the reproduced sound worse than the un-equalised replayed sound. They can be used very successfully to remove particular room resonances. They can remove a disturbing bass rumble in a reverberant room or hall.