Gain Equalizers

RLC Electronics' gain equalizers combine filter and attenuator technology to achieve a desired response. The typical curves that follow are representative of commonly requested responses. VSWR is dependent on frequency of operation, complexity of equalized response, and bandwidth of response. Power handling is dependent on the physical size of the absorptive elements. Since these elements decrease in size with increasing frequency, power handling by 10 GHz is usually in the hundredths of watts. The power capability of these devices is seldom an issue, since their usage is generally in receive stages or in the low power sections preceding transmit amplifiers. These units are used to compensate for such things as cable losses, to gain flatness in amplifiers, and compensate for devices such as couplers and filters which have frequency dependent outputs.

Specifications

E-1-2-3-4

Model Number	Frequency Range (GHz)	VSWR	Insertion Loss
E-	10 MHz to 5 GHz	1.5:1	As Low as 1 dB at Minimum Loss Point
	5 GHz to 18 GHz	1.8:1	

Impedance: 50 ohms

Environment: MIL-E-5400, Class 1A EXCEPT operating temperature -55°C to +85°C

To designate the gain equalizer desired use:

(1) A = linearly increasing loss
B = linearly decreasing loss
C = half sine
D = inverted half sine
E = fine grain

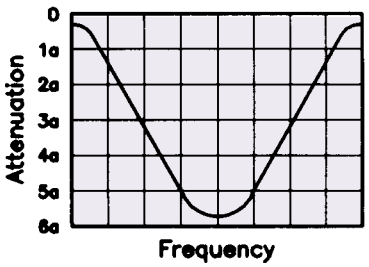
(2) Lower frequency/upper frequency in MHz specify each significant frequency
(3) RLC assigned
(4) connectors R sma, N, T tnc, B bnc, (female) P solder pins, M surface mount

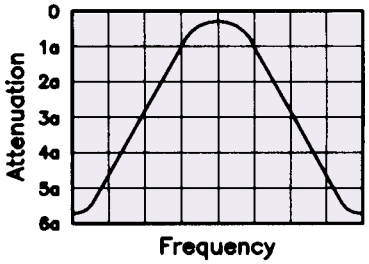
Example: E–A–500/1500–*–R is a .5 – 1.5 GHz equalizer with linearly increasing loss and sma female connectors

RLC ELECTRONICS, INC.
83 Radio Circle, Mount Kisco, New York 10549 • Telephone: 914-241-1334 • Fax: 914-241-1753
e-mail: sales@rlcelectronics.com • www.rlcelectronics.com

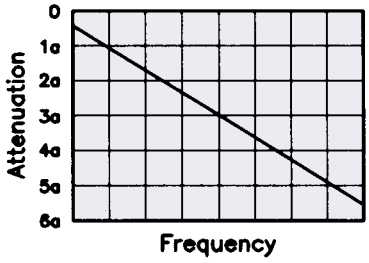
Available Equalizer Responses

Units can have a one–half sine response, with either the greatest or the smallest attenuation being at center frequency. These devices can be used to flatten responses due to devices such as filters and couplers.

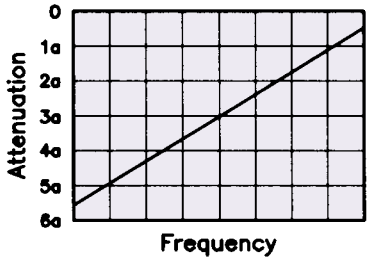




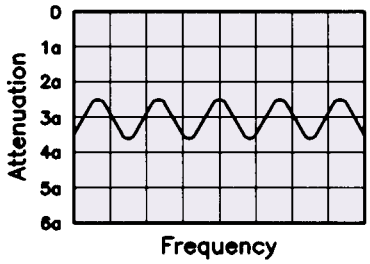
Equalizers can be manufactured with attenuation that increases linearly with increasing frequency.



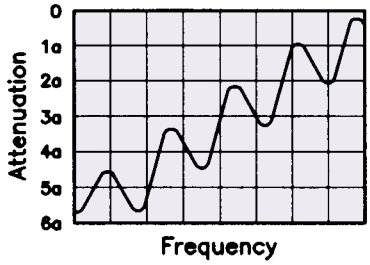
Linearly decreasing loss with increasing frequency can be used to 'flatten' overall response associated with cable losses.



Multiple 'fine gain' attenuation adjustments can be used to compensate for 'ripple'. These compensations are distributed, and limit overall specified response to approximately one octave above the adjustment frequency. These adjustments can be supplied 'tunable'.



Combinations of these responses are also realizable. Combining 'fine grain' with linearly decreasing response results in a response as shown.



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