Fixed Attenuator dB Selection Chart

An attenuator is used to decrease the power level of a RF signal. A fixed attenuator is an attenuator that has a single fixed dB value. When purchasing a fixed attenuator you have to specify which dB value you require. The chart below shows how much output power there will be after attenuation of the RF signal.

The dB value can be calculated using a ratio of input power to output power:

decibel (dB) = 10 x $\log_{10}(P_{out}/P_{in})$

50% reduction in power: 10 x log(50 Watt/100 Watt) = -3.0103dB
75% reduction in power: 10 x log(25 Watt/100 Watt) = -6.0206dB
90% reduction in power: 10 x log(10 Watt/100 Watt) = -10dB
99% reduction in power: 10 x log(1 Watt/100 Watt) = -20dB

Value	% Power Output
0dB	100%
1dB	79.43282%
2dB	63.09573%
3dB	50.11872%
4dB	39.81072%
5dB	31.62278%
6dB	25.11886%
7dB	19.95262%
8dB	15.84893%
9dB	12.58925%
10dB	10%
11dB	7.943282%
12dB	6.309573%
13dB	5.011872%
14dB	3.981072%
15dB	3.162278%
16dB	2.511886%
17dB	1.995262%
18dB	1.584893%
19dB	1.258925%

Value	% Power Output
20dB	1%
21dB	0.7943282%
22dB	0.6309573%
23dB	0.5011872%
24dB	0.3981072%
25dB	0.3162278%
26dB	0.2511886%
27dB	0.1995262%
28dB	0.1584893%
29dB	0.1258925%
30dB	0.1%
31dB	0.0794328%
32dB	0.0630957%
33dB	0.0501187%
34dB	0.0398107%
35dB	0.0316228%
36dB	0.0251189%
37dB	0.0199526%
38dB	0.0158489%
39dB	0.0125893%

Value	% Power Output
40dB	0.01%
41dB	0.0079433%
42dB	0.0063096%
43dB	0.0050119%
44dB	0.0039811%
45dB	0.0031623%
46dB	0.0025119%
47dB	0.0019953%
48dB	0.0015849%
49dB	0.0012589%
50dB	0.001%
51dB	0.0007943%
52dB	0.0006310%
53dB	0.0005012%
54dB	0.0003981%
55dB	0.0003162%
56dB	0.0002512%
57dB	0.0001995%
58dB	0.0001585%
59dB	0.0001259%
60dB	0.0001%