

Coupling ~to~ Main Line Insertion Loss Conversion Table ~for~ Directional Couplers

Coupling (dB)	Main Line Insertion Loss (dB)
3.0	3.021
3.5	2.570
4.0	2.205
4.5	1.903
5.0	1.651
5.5	1.438
6.0	1.256
6.5	1.101
7.0	0.967
7.5	0.850
8.0	0.749
8.5	0.661
9.0	0.584
9.5	0.517
10.0	0.458
10.5	0.405
11.0	0.359
11.5	0.319
12.0	0.283
12.5	0.251
13.0	0.223
13.5	0.198
14.0	0.176
14.5	0.157
15.0	0.140
15.5	0.124
16.0	0.110
16.5	0.098

Coupling (dB)	Main Line Insertion Loss (dB)
16.5	0.098
17.0	0.088
17.5	0.078
18.0	0.069
18.5	0.062
19.0	0.055
19.5	0.049
20.0	0.044
20.5	0.039
21.0	0.035
21.5	0.031
22.0	0.027
22.5	0.024
23.0	0.022
23.5	0.019
24.0	0.017
24.5	0.015
25.0	0.014
25.5	0.012
26.0	0.011
26.5	0.010
27.0	0.009
27.5	0.008
28.0	0.007
28.5	0.006
29.0	0.005
29.5	0.005
30.0	0.004

- = Formulas = -

$ML(dB) = 10 * \log \left(\frac{P_{in}}{P_{out}} \right)$	Where: P _{in} = Input Power in Watts P _{out} = Output Power in Watts P _{cp} = Coupled Power in Watts ML = Main Line Power Ratio in dB CP = Coupled Port Power Ratio in dB
$CP(dB) = 10 * \log \left(\frac{P_{in}}{P_{cp}} \right)$	
$ML(dB) = 10 * \log \left(\frac{1}{1 - 10^{-\frac{CP}{10}}} \right)$	

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