

Table 22.65

Reflection Coefficient, Attenuation, SWR and Return Loss

Reflection Coefficient (%)	Attenuation (dB)	Max SWR	Return Loss, dB	Reflection Coefficient (%)	Attenuation (dB)	Max SWR	Return Loss, dB
1.000	0.000434	1.020	40.00	45.351	1.0000	2.660	6.87
1.517	0.001000	1.031	36.38	48.000	1.1374	2.846	6.38
2.000	0.001738	1.041	33.98	50.000	1.2494	3.000	6.02
3.000	0.003910	1.062	30.46	52.000	1.3692	3.167	5.68
4.000	0.006954	1.083	27.96	54.042	1.5000	3.352	5.35
4.796	0.01000	1.101	26.38	56.234	1.6509	3.570	5.00
5.000	0.01087	1.105	26.02	58.000	1.7809	3.762	4.73
6.000	0.01566	1.128	24.44	60.000	1.9382	4.000	4.44
7.000	0.02133	1.151	23.10	60.749	2.0000	4.095	4.33
7.576	0.02500	1.164	22.41	63.000	2.1961	4.405	4.01
8.000	0.02788	1.174	21.94	66.156	2.5000	4.909	3.59
9.000	0.03532	1.198	20.92	66.667	2.5528	5.000	3.52
10.000	0.04365	1.222	20.00	70.627	3.0000	5.809	3.02
10.699	0.05000	1.240	19.41	70.711	3.0103	5.829	3.01
11.000	0.05287	1.247	19.17				
12.000	0.06299	1.273	18.42				
13.085	0.07500	1.301	17.66				
14.000	0.08597	1.326	17.08				
15.000	0.09883	1.353	16.48				
15.087	0.10000	1.355	16.43				
16.000	0.1126	1.381	15.92				
17.783	0.1396	1.433	15.00				
18.000	0.1430	1.439	14.89				
19.000	0.1597	1.469	14.42				
20.000	0.1773	1.500	13.98				
22.000	0.2155	1.564	13.15				
23.652	0.2500	1.620	12.52				
24.000	0.2577	1.632	12.40				
25.000	0.2803	1.667	12.04				
26.000	0.3040	1.703	11.70				
27.000	0.3287	1.740	11.37				
28.000	0.3546	1.778	11.06				
30.000	0.4096	1.857	10.46				
31.623	0.4576	1.925	10.00				
32.977	0.5000	1.984	9.64				
33.333	0.5115	2.000	9.54				
34.000	0.5335	2.030	9.37				
35.000	0.5675	2.077	9.12				
36.000	0.6028	2.125	8.87				
37.000	0.6394	2.175	8.64				
38.000	0.6773	2.226	8.40				
39.825	0.75000	2.324	8.00				
40.000	0.7572	2.333	7.96				
42.000	0.8428	2.448	7.54				
42.857	0.8814	2.500	7.36				
44.000	0.9345	2.571	7.13				

$$\rho = \frac{\text{SWR} - 1}{\text{SWR} + 1}$$

where $\rho = 0.01 \times$ (reflection coefficient in %)

$$\rho = 10^{-\text{RL}/20}$$

where RL = return loss (dB)

$$\rho = \sqrt{1 - (0.1^X)}$$

where X = A/10 and A = attenuation (dB)

$$\text{SWR} = \frac{1 + \rho}{1 - \rho}$$