

## FREQUENCY BAND DESIGNATIONS

<b>CURRENT FREQUENCY DESIGNATIONS</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>				
<b>PREVIOUS FREQUENCY DESIGNATIONS</b>	<b>P</b>	<b>L</b>	<b>S</b>	<b>C</b>		<b>X</b>		<b>Ku</b>	<b>K</b>	<b>Ka</b>			
	0.5	1.0	2.0	3.0	4.0	6.0	8.0	10.0	12.4	18.0	20.0	26.5	40.0
	FREQUENCY - GHz												

## POWER CONVERSION

dBm	Volts	Watts	dBm	Volts	mW	dBm	mV	nW	dBm	uV	pW
50	70.71	100.0	0	0.2236	1.00	-50	0.707	10.000	-99	2.509	0.1259
49	63.02	79.4	-1	0.199	0.794	-51	0.630	7.943	-100	2.236	0.1000
48	56.17	63.1	-2	0.178	0.631	-52	0.562	6.310	-101	1.993	0.0794
47	50.06	50.1	-3	0.158	0.501	-53	0.501	5.012	-102	1.776	0.0631
46	44.62	39.8	-4	0.141	0.398	-54	0.446	3.981	-103	1.583	0.0501
45	39.76	31.6	-5	0.126	0.316	-55	0.398	3.162	-104	1.411	0.0398
44	35.44	25.1	-6	0.112	0.251	-56	0.354	2.512	-105	1.257	0.0316
43	31.59	20.0	-7	0.100	0.200	-57	0.316	1.995	-106	1.121	0.0251
42	28.15	15.8	-8	0.089	0.158	-58	0.282	1.585	-107	0.999	0.0200
41	25.09	12.6	-9	0.079	0.126	-59	0.251	1.259	-108	0.890	0.0158
40	22.36	10.0	-10	0.071	0.100	-60	0.224	1.000	-109	0.793	0.0126
39	19.93	7.9	-11	0.063	0.079	-61	0.199	0.794	-110	0.707	0.0100
38	17.76	6.3	-12	0.056	0.063	-62	0.178	0.631	<b>dBm    uV    fW</b>		
37	15.83	5.0	-13	0.050	0.050	-63	0.158	0.501	-111	0.630	7.943
36	14.11	4.0	-14	0.045	0.040	-64	0.141	0.398	-112	0.562	6.310
35	12.57	3.2	-15	0.040	0.032	-65	0.126	0.316	-113	0.501	5.012
34	11.21	2.5	-16	0.035	0.025	-66	0.112	0.251	-114	0.446	3.981
33	9.99	2.0	-17	0.032	0.020	-67	0.100	0.200	-115	0.398	3.162
32	8.90	1.6	-18	0.028	0.016	-68	0.089	0.158	-116	0.354	2.512
31	7.93	1.3	-19	0.025	0.013	-69	0.079	0.126	-117	0.316	1.995
30	7.07	1.0	-20	0.022	0.010	-70	0.071	0.100	-118	0.282	1.585
<b>dBm    Volts    mW</b>			-21	0.020	0.008	<b>dBm    uV    pW</b>			-119	0.251	1.259
29	6.30	794.3	-22	0.018	0.006	-71	63.02	79.43	-120	0.224	1.000
28	5.62	631.0	-23	0.016	0.005	-72	56.17	63.10	-121	0.199	0.794
27	5.01	501.2	<b>dBm    mV    uW</b>			-73	50.06	50.12	-122	0.178	0.631
26	4.46	398.1	-24	14.11	3.981	-74	44.62	39.81	-123	0.158	0.501
25	3.98	316.2	-25	12.57	3.162	-75	39.76	31.62	-124	0.141	0.398
24	3.54	251.2	-26	11.21	2.512	-76	35.44	25.12	-125	0.126	0.316
23	3.16	199.5	-27	9.99	1.995	-77	31.59	19.95	-126	0.112	0.251
22	2.82	158.5	-28	8.90	1.585	-78	28.15	15.85	-127	0.100	0.200
21	2.51	125.9	-29	7.93	1.259	-79	25.09	12.59	-128	0.089	0.158
20	2.24	100.0	-30	7.07	1.000	-80	22.36	10.00	-129	0.079	0.126
19	1.99	79.4	-31	6.30	0.794	-81	19.93	7.943	-130	0.071	0.100
18	1.78	63.1	-32	5.62	0.631	-82	17.76	6.310	-131	0.063	0.079
17	1.58	50.1	-33	5.01	0.501	-83	15.83	5.012	-132	0.056	0.063
16	1.41	39.8	-34	4.46	0.398	-84	14.11	3.981	-133	0.050	0.050
15	1.26	31.6	-35	3.98	0.316	-85	12.57	3.162	-134	0.045	0.040
14	1.12	25.1	-36	3.54	0.251	-86	11.21	2.512	-135	0.040	0.032
13	1.00	20.0	-37	3.16	0.200	-87	9.99	1.995	-136	0.035	0.025
12	0.89	15.8	-38	2.82	0.158	-88	8.90	1.585	-137	0.032	0.020
11	0.79	12.6	-39	2.51	0.126	-89	7.93	1.259	-138	0.028	0.016
10	0.71	10.0	-40	2.24	0.100	-90	7.07	1.000	-139	0.025	0.013
9	0.63	7.94	-41	1.99	0.079	-91	6.30	0.794	-140	0.022	0.010
8	0.56	6.31	-42	1.78	0.063	-92	5.62	0.631			
7	0.50	5.01	-43	1.58	0.050	-93	5.01	0.501			
6	0.45	3.98	-44	1.41	0.040	-94	4.46	0.398			
5	0.40	3.16	-45	1.26	0.032	-95	3.98	0.316			
4	0.35	2.51	-46	1.12	0.025	-96	3.54	0.251			
3	0.32	2.00	-47	1.00	0.020	-97	3.16	0.200			
2	0.28	1.58	-48	0.890	0.016	-98	2.82	0.158			
1	0.25	1.26	-49	0.793	0.013						



**SWR REDUCTION WITH VARIOUS INPUT PADS**

<b>PAD</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>
<b>0.00</b>	<b>1.300</b>	<b>1.500</b>	<b>1.700</b>	<b>2.000</b>	<b>2.500</b>	<b>3.000</b>	<b>3.500</b>	<b>4.000</b>
0.25	1.281	1.466	1.648	1.918	2.359	2.788	3.206	3.613
0.50	1.263	1.434	1.601	1.845	2.236	2.608	2.961	3.299
0.75	1.247	1.405	1.558	1.780	2.128	2.452	2.755	3.039
1.00	1.231	1.378	1.519	1.720	2.032	2.318	2.580	2.821
1.25	1.217	1.353	1.483	1.667	1.947	2.200	2.428	2.636
1.50	1.203	1.330	1.450	1.618	1.871	2.096	2.297	2.477
1.75	1.191	1.309	1.419	1.573	1.803	2.004	2.181	2.339
2.00	1.179	1.289	1.391	1.533	1.741	1.922	2.079	2.218
2.50	1.158	1.253	1.341	1.461	1.635	1.782	1.909	2.018
3.00	1.140	1.223	1.299	1.401	1.547	1.669	1.772	1.860
3.50	1.124	1.196	1.262	1.350	1.474	1.575	1.660	1.732
4.00	1.110	1.173	1.230	1.306	1.411	1.497	1.568	1.628
5.00	1.086	1.135	1.179	1.236	1.314	1.376	1.426	1.468
6.00	1.068	1.106	1.139	1.183	1.241	1.287	1.324	1.355
7.00	1.053	1.083	1.109	1.142	1.187	1.222	1.249	1.272
8.00	1.042	1.065	1.086	1.112	1.146	1.172	1.193	1.210
9.00	1.033	1.052	1.067	1.088	1.114	1.134	1.150	1.163
10.00	1.026	1.041	1.053	1.069	1.090	1.105	1.118	1.128
12.00	1.017	1.026	1.033	1.043	1.056	1.065	1.073	1.079
14.00	1.010	1.016	1.021	1.027	1.035	1.041	1.045	1.049
16.00	1.007	1.010	1.013	1.017	1.022	1.025	1.028	1.031
18.00	1.004	1.006	1.008	1.011	1.014	1.016	1.018	1.019
20.00	1.003	1.004	1.005	1.007	1.009	1.010	1.011	1.012
25.00	1.001	1.001	1.002	1.002	1.003	1.003	1.004	1.004
30.00	1.000	1.000	1.001	1.001	1.001	1.001	1.001	1.001
<b>PAD</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>	<b>SWR</b>
<b>0.00</b>	<b>5.000</b>	<b>6.000</b>	<b>8.000</b>	<b>10.000</b>	<b>13.000</b>	<b>15.000</b>	<b>20.000</b>	<b>1M</b>
0.25	4.396	5.141	6.526	7.788	9.482	10.498	12.713	34.752
0.50	3.928	4.504	5.519	6.386	7.472	8.085	9.329	17.391
0.75	3.555	4.013	4.787	5.419	6.174	6.582	7.377	11.610
1.00	3.251	3.623	4.233	4.713	5.267	5.558	6.109	8.724
1.25	2.999	3.307	3.799	4.175	4.599	4.817	5.220	6.997
1.50	2.788	3.046	3.451	3.753	4.087	4.256	4.564	5.848
1.75	2.607	2.827	3.165	3.413	3.682	3.817	4.059	5.030
2.00	2.452	2.641	2.927	3.134	3.356	3.465	3.661	4.419
2.50	2.199	2.343	2.555	2.704	2.861	2.937	3.072	3.570
3.00	2.004	2.115	2.278	2.390	2.506	2.562	2.659	3.010
3.50	1.848	1.937	2.065	2.152	2.241	2.283	2.357	2.615
4.00	1.723	1.795	1.897	1.966	2.036	2.069	2.126	2.323
5.00	1.534	1.584	1.652	1.698	1.744	1.765	1.802	1.925
6.00	1.402	1.437	1.486	1.517	1.549	1.563	1.588	1.671
7.00	1.307	1.332	1.367	1.390	1.413	1.423	1.441	1.499
8.00	1.236	1.255	1.281	1.298	1.314	1.322	1.335	1.377
9.00	1.183	1.198	1.217	1.230	1.242	1.248	1.257	1.288
10.00	1.143	1.154	1.169	1.178	1.188	1.192	1.199	1.222
12.00	1.088	1.094	1.103	1.109	1.114	1.117	1.121	1.135
14.00	1.055	1.059	1.064	1.067	1.071	1.072	1.075	1.083
16.00	1.034	1.037	1.040	1.042	1.044	1.045	1.047	1.052
18.00	1.021	1.023	1.025	1.026	1.028	1.028	1.029	1.032
20.00	1.013	1.014	1.016	1.016	1.017	1.018	1.018	1.020
25.00	1.004	1.005	1.005	1.005	1.005	1.006	1.006	1.006
30.00	1.001	1.001	1.002	1.002	1.002	1.002	1.002	1.002



**VSWR TO RETURN LOSS CONVERSION**

SWR	Return Loss dB	Reflection Coefficient	Trans. Loss dB	SWR	Return Loss dB	Reflection Coefficient	Trans. Loss dB
1.01	46.06	.005	-.0001	1.60	12.74	.231	-.238
1.02	40.09	.010	-.0004	1.62	12.52	.237	-.250
1.03	36.61	.015	-.0009	1.64	12.31	.242	-.263
1.04	34.15	.020	-.0017	1.66	12.11	.248	-.276
1.05	32.26	.024	-.0026	1.68	11.91	.254	-.289
1.06	30.71	.029	-.0037	1.70	11.73	.259	-.302
1.07	29.42	.034	-.0050	1.72	11.54	.265	-.315
1.08	28.30	.038	-.0064	1.74	11.37	.270	-.329
1.09	27.32	.043	-.0081	1.76	11.20	.275	-.342
1.10	26.44	.048	-.0099	1.78	11.04	.281	-.356
1.11	25.66	.052	-.012	1.80	10.88	.286	-.370
1.12	24.94	.057	-.014	1.85	10.51	.298	-.405
1.13	24.29	.061	-.016	1.90	10.16	.310	-.440
1.14	23.69	.065	-.019	1.95	9.84	.322	-.475
1.15	23.13	.070	-.021	2.00	9.54	.333	-.512
1.16	22.61	.074	-.024	2.05	9.26	.344	-.548
1.17	22.12	.078	-.027	2.10	9.00	.355	-.584
1.18	21.66	.083	-.030	2.15	8.75	.365	-.621
1.19	21.23	.087	-.033	2.20	8.52	.375	-.658
1.20	20.83	.091	-.036	2.25	8.30	.385	-.695
1.21	20.44	.095	-.039	2.30	8.09	.394	-.732
1.22	20.08	.099	-.043	2.50	7.36	.429	-.881
1.23	19.73	.103	-.046	3.00	6.02	.500	-1.25
1.24	19.40	.107	-.050	3.50	5.11	.556	-1.60
1.25	19.08	.111	-.054	4.00	4.44	.600	-1.94
1.26	18.78	.115	-.058	4.50	3.93	.636	-2.25
1.27	18.49	.119	-.062	5.00	3.52	.667	-2.55
1.28	18.22	.123	-.066	5.50	3.19	.692	-2.83
1.29	17.95	.127	-.070	6.00	2.92	.714	-3.10
1.30	17.69	.130	-.075	6.50	2.69	.733	-3.35
1.31	17.45	.134	-.079	7.00	2.50	.750	-3.59
1.32	17.21	.138	-.083	7.50	2.33	.765	-3.82
1.33	16.98	.142	-.088	8.00	2.18	.778	-4.03
1.34	16.75	.145	-.093	8.50	2.05	.789	-4.24
1.35	16.54	.149	-.097	9.00	1.94	.800	-4.44
1.36	16.33	.153	-.102	9.50	1.84	.810	-4.63
1.37	16.13	.156	-.107	10.0	1.74	.818	-4.81
1.38	15.94	.160	-.112	11.0	1.58	.833	-5.15
1.39	15.75	.163	-.117	12.0	1.45	.846	-5.47
1.40	15.56	.167	-.122	13.0	1.34	.857	-5.76
1.42	15.21	.174	-.133	14.0	1.24	.867	-6.04
1.44	14.88	.180	-.144	15.0	1.16	.875	-6.30
1.46	14.56	.187	-.155	16.0	1.09	.882	-6.55
1.48	14.26	.194	-.166	17.0	1.02	.889	-6.78
1.50	13.98	.200	-.177	18.0	.97	.895	-7.00
1.52	13.71	.206	-.189	19.0	.92	.900	-7.21
1.54	13.45	.213	-.201	20.0	.87	.905	-7.41
1.56	13.20	.219	-.213	25.0	.70	.923	-8.30
1.58	12.96	.225	-.225	30.0	.58	.935	-9.04