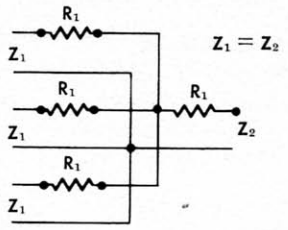
PARALLEL MIXER OR BRANCHING NETWORK



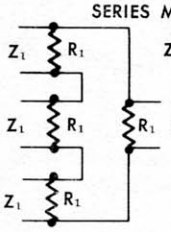
$$\frac{N-1}{N+1}Z = R_1$$

N = Number of inputs

Example: Three-position Mixer Circuit

$$\frac{3-1}{3+1} = \frac{2}{4} \times 600\Omega = 300\Omega = R_1$$

SERIES MIXER OR BRANCHING NETWORK



$$Z_1 = Z_2 \quad \frac{N+1}{N-1}Z = R_1$$

N = Number of Inputs

PAD LOSS TABLE

Mismatch db	Ratio	Min. Loss db	Mismatch db	Ratio	Min. Loss db	Mismatch db	Ratio	Min. Loss db	Mismatch db	Ratio	Min. Loss db	Mismatch db	Ratio	Min. Loss db
0.	1.0	0.	2.550	5.0	12.53	4.440	9.0	15.30	6.790	17.0	18.18	9.890	37.0	21.67
.00986	.1	2.705	2.607	.1	12.63	4.480	.1	15.36	6.890	.5	18.32	9.940	.5	21.73
.03604	.2	3.770	2.667	.2	12.72	4.510	.2	15.40	7.010	18.0	14.43	10.00	38.0	21.77
.0778	.3	4.548	2.725	.3	12.83	4.550	.3	15.44	7.110	.5	18.57	10.05	.5	21.83
.1223	.4	5.180	2.778	.4	12.91	4.600	.4	15.50	7.220	19.0	18.68	10.10	39.0	21.90
.172	.5	5.723	2.837	.5	13.00	4.640	.5	15.54	7.340	.5	18.80	10.17	.5	21.93
.240	.6	6.190	2.893	.6	13.08	4.660	.6	15.60	7.425	20.0	18.92	10.21	40.0	21.97
.308	.7	6.615	2.932	.7	13.17	4.700	.7	15.67	7.510	.5	19.02	10.28	.5	22.07
.366	.8	6.990	2.997	.8	13.26	4.740	.8	15.70	7.600	21.0	19.13	10.31	41.0	22.11
.440	.9	7.340	3.050	.9	13.33	4.780	.9	15.74	7.700	.5	19.22	10.37	.5	22.15
.510	2.0	7.665	3.090	6.0	13.41	4.800	10.0	15.79	7.795	22.0	19.33	10.42	42.0	22.20
.570	.1	7.955	3.155	.1	13.48	4.880	.2	15.87	7.895	.5	19.42	10.47	.5	22.26
.660	.2	8.235	3.208	.2	13.57	4.950	.4	15.95	7.980	23.0	19.52	10.51	43.0	22.32
.732	.3	8.490	3.240	.3	13.65	5.010	.6	16.05	8.055	.5	19.62	10.57	.5	22.38
.804	.4	8.740	3.293	.4	13.71	5.090	.8	16.13	8.140	24.0	19.73	10.60	44.0	22.40
.883	.5	8.970	3.341	.5	13.79	5.150	11.0	16.22	8.213	.5	19.83	10.66	.5	22.47
.962	.6	9.185	3.400	.6	13.87	5.220	.2	16.32	8.300	25.0	19.91	10.69	45.0	22.51
1.030	.7	9.388	3.453	.7	13.92	5.290	.4	16.38	8.380	.5	20.00	10.77	.5	22.54
1.088	.8	9.580	3.490	.8	14.00	5.340	.6	16.47	8.460	26.0	20.10	10.81	46.0	22.60
1.168	.9	9.775	3.540	.9	14.07	5.410	.8	16.53	8.540	.5	20.17	10.83	.5	22.67
1.244	3.0	9.950	3.600	7.0	13.13	5.470	12.0	16.63	8.630	27.0	20.24	10.88	47.0	22.70
1.312	.1	10.01	3.630	.1	14.20	5.545	.2	16.70	8.680	.5	20.30	10.93	.5	22.73
1.387	.2	10.30	3.683	.2	14.27	5.600	.4	16.77	8.760	28.0	20.40	10.97	48.0	22.77
1.468	.3	10.47	3.735	.3	14.32	5.650	.6	16.84	8.845	.5	20.49	11.02	.5	22.83
1.527	.4	10.62	3.778	.4	14.40	5.700	.8	16.92	8.920	29.0	20.55	11.06	49.0	22.90
1.598	.5	10.76	3.810	.5	14.46	5.750	13.0	16.97	8.970	.5	20.63	11.10	.5	22.93
1.670	.6	10.90	3.853	.6	14.51	5.820	.2	17.03	9.040	30.0	20.70	11.14	50.0	22.96
1.733	.7	11.04	3.908	.7	14.58	5.875	.4	17.12	9.095	.5	20.78	11.55	55.0	23.38
1.807	.8	11.18	3.948	.8	14.65	5.930	.6	17.18	9.160	31.0	20.87	11.83	60.0	23.55
1.868	.9	11.31	3.985	.9	14.70	5.990	.8	17.25	9.250	.5	20.94	12.23	65.0	24.11
1.938	4.0	11.43	4.025	8.0	14.77	6.050	14.0	17.32	9.320	32.0	21.00	12.55	70.0	24.44
2.000	.1	11.56	4.085	.1	14.83	6.093	.2	17.38	9.360	.5	21.07	12.84	75.0	24.74
2.070	.2	11.68	4.105	.2	14.88	6.150	.4	17.43	9.440	33.0	21.13	12.97	80.0	25.02
2.130	.3	11.80	4.160	.3	14.92	6.205	.6	17.50	9.480	.5	21.21	13.37	85.0	25.32
2.200	.4	11.88	4.200	.4	14.97	6.295	.8	17.57	9.560	34.0	21.28	13.62	90.0	25.53
2.266	.5	12.02	4.255	.5	15.05	6.300	15.0	17.63	9.600	.5	21.34	13.81	95.0	25.77
2.318	.6	12.13	4.285	.6	15.10	6.420	.5	17.78	9.660	35.0	21.40	14.07	100.0	25.89
2.391	.7	12.23	4.320	.7	15.15	6.550	16.0	17.92	9.710	.5	21.46			
2.431	.8	12.33	4.360	.8	15.20	6.666	.5	18.05	9.770	36.0	21.51			
2.490	.9	12.43	4.400	.9	15.25				9.840	.5	21.57			

How To Use The Pad Loss Table: Where the impedance ratio is known, the Pad Loss Chart provides the mismatch loss and the minimum loss of the impedance matching network. The center column of each section is the impedance ratio. Mismatch loss is listed to the left, and minimum loss to the right. For example, a 600-ohm line loaded with a 1800-ohm resistor provides a ratio of 3.0. To the left of the 3.0 ratio is the mismatch loss (1.244) and the minimum loss figure, to the right, is 9.960.

All loss figures are in decibels.