Stripline Surface Mount

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration A.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.83	-4.91	-3.64	1.54	-0.23	-27.48	-29.06	-29.01	-28.46	-28.47
160	-1.99	-4.61	-3.49	1.31	-0.21	-27.31	-29.13	-29.22	-28.69	-28.52
170	-2.14	-4.35	-3.38	1.10	-0.19	-27.09	-29.08	-29.31	-28.82	-28.47
180	-2.28	-4.12	-3.30	0.91	-0.18	-26.88	-29.05	-29.43	-28.97	-28.38
190	-2.42	-3.92	-3.23	0.74	-0.16	-26.70	-28.96	-29.44	-29.01	-28.24
200	-2.55	-3.75	-3.19	0.59	-0.13	-26.53	-28.74	-29.35	-28.96	-28.08
210	-2.67	-3.59	-3.15	0.45	-0.12	-26.35	-28.58	-29.29	-28.94	-27.97
220	-2.79	-3.45	-3.13	0.32	-0.10	-26.33	-28.54	-29.31	-28.99	-27.96
230	-2.90	-3.33	-3.12	0.21	-0.07	-26.31	-28.56	-29.34	-29.04	-27.92
240	-2.99	-3.23	-3.11	0.11	-0.04	-26.29	-28.62	-29.40	-29.08	-27.93
250	-3.08	-3.14	-3.11	0.02	-0.02	-26.31	-28.80	-29.52	-29.21	-27.99
260	-3.16	-3.06	-3.11	0.07	-0.01	-26.46	-28.99	-29.65	-29.41	-28.12
270	-3.24	-3.00	-3.12	0.14	0.04	-26.54	-29.20	-29.69	-29.46	-28.32
280	-3.30	-2.94	-3.12	0.19	0.09	-26.68	-29.53	-29.93	-29.69	-28.56
290	-3.35	-2.90	-3.13	0.24	0.15	-26.93	-30.00	-30.24	-30.01	-28.90
300	-3.39	-2.87	-3.14	0.28	0.18	-27.17	-30.57	-30.74	-30.37	-29.29
310	-3.42	-2.84	-3.14	0.31	0.22	-27.43	-31.25	-31.28	-30.86	-29.74
320	-3.44	-2.83	-3.15	0.32	0.28	-27.75	-31.84	-31.71	-31.33	-30.16
330	-3.45	-2.82	-3.15	0.33	0.33	-28.05	-32.38	-32.13	-31.70	-30.56
340	-3.45	-2.83	-3.15	0.33	0.39	-28.33	-33.05	-32.74	-32.23	-31.09
350	-3.45	-2.84	-3.16	0.32	0.45	-28.67	-33.91	-33.52	-32.92	-31.74
360	-3.43	-2.86	-3.15	0.30	0.50	-29.10	-34.79	-34.40	-33.63	-32.35
370	-3.40	-2.90	-3.16	0.27	0.56	-29.44	-35.76	-35.38	-34.49	-33.01
380	-3.36	-2.94	-3.16	0.23	0.63	-29.76	-36.65	-36.06	-35.43	-33.58
390	-3.31	-2.99	-3.15	0.18	0.68	-30.14	-37.10	-36.52	-36.27	-34.09
400	-3.25	-3.06	-3.16	0.12	0.74	-30.35	-37.64	-37.00	-37.11	-34.72
410	-3.19	-3.13	-3.16	0.05	0.81	-30.55	-38.33	-37.58	-38.38	-35.52
420	-3.11	-3.22	-3.17	0.03	0.90	-30.86	-38.48	-37.76	-39.42	-36.09
430	-3.03	-3.32	-3.18	0.13	1.00	-31.03	-38.07	-37.36	-39.95	-36.46
440	-2.93	-3.44	-3.19	0.23	1.10	-30.91	-36.93	-36.31	-39.72	-36.38
450	-2.83	-3.58	-3.22	0.35	1.19	-30.70	-35.32	-34.89	-38.12	-35.65
460	-2.72	-3.74	-3.26	0.48	1.28	-30.30	-33.63	-33.33	-36.26	-34.61
470	-2.60	-3.91	-3.30	0.63	1.41	-29.71	-32.23	-32.01	-34.54	-33.33
480	-2.48	-4.11	-3.37	0.79	1.57	-29.04	-30.68	-30.50	-32.64	-31.78
490	-2.35	-4.34	-3.46	0.96	1.75	-28.23	-29.15	-29.05	-30.88	-30.21
500	-2.22	-4.60	-3.57	1.16	1.93	-27.25	-27.69	-27.61	-29.23	-28.75
510	-2.07	-4.90	-3.71	1.38	2.15	-26.20	-26.25	-26.20	-27.61	-27.23
520	-1.93	-5.23	-3.89	1.61	2.40	-25.20	-24.92	-24.91	-26.10	-25.81
530	-1.80	-5.62	-4.12	1.87	2.72	-24.25	-23.75	-23.73	-24.78	-24.57
540	-1.66	-6.05	-4.39	2.16	3.10	-23.29	-22.66	-22.59	-23.55	-23.38
550	-1.52	-6.55	-4.73	2.47	3.56	-22.37	-21.56	-21.50	-22.38	-22.26

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration B.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.82	-4.91	-3.63	1.53	-0.25	-27.39	-28.47	-28.46	-29.01	-29.06
160	-1.98	-4.61	-3.49	1.31	-0.22	-27.24	-28.52	-28.69	-29.22	-29.13
170	-2.13	-4.35	-3.38	1.10	-0.20	-27.01	-28.47	-28.82	-29.31	-29.08
180	-2.28	-4.12	-3.30	0.91	-0.18	-26.83	-28.38	-28.97	-29.43	-29.05
190	-2.42	-3.92	-3.23	0.74	-0.17	-26.66	-28.24	-29.01	-29.44	-28.96
200	-2.55	-3.75	-3.19	0.58	-0.14	-26.44	-28.08	-28.96	-29.35	-28.74
210	-2.67	-3.59	-3.15	0.44	-0.11	-26.24	-27.97	-28.94	-29.29	-28.58
220	-2.79	-3.45	-3.13	0.32	-0.09	-26.21	-27.96	-28.99	-29.31	-28.54
230	-2.90	-3.33	-3.12	0.20	-0.07	-26.20	-27.92	-29.04	-29.34	-28.56
240	-2.99	-3.23	-3.11	0.10	-0.04	-26.20	-27.93	-29.08	-29.40	-28.62
250	-3.08	-3.14	-3.11	0.01	-0.03	-26.24	-27.99	-29.21	-29.52	-28.80
260	-3.16	-3.06	-3.11	0.07	-0.03	-26.39	-28.12	-29.41	-29.65	-28.99
270	-3.23	-2.99	-3.11	0.14	0.03	-26.50	-28.32	-29.46	-29.69	-29.20
280	-3.30	-2.94	-3.12	0.20	0.08	-26.63	-28.56	-29.69	-29.93	-29.53
290	-3.35	-2.90	-3.13	0.24	0.13	-26.89	-28.90	-30.01	-30.24	-30.00
300	-3.39	-2.87	-3.14	0.28	0.17	-27.12	-29.29	-30.37	-30.74	-30.57
310	-3.42	-2.84	-3.14	0.31	0.20	-27.41	-29.74	-30.86	-31.28	-31.25
320	-3.44	-2.83	-3.15	0.33	0.26	-27.70	-30.16	-31.33	-31.71	-31.84
330	-3.45	-2.82	-3.15	0.34	0.31	-27.99	-30.56	-31.70	-32.13	-32.38
340	-3.45	-2.82	-3.15	0.34	0.37	-28.26	-31.09	-32.23	-32.74	-33.05
350	-3.45	-2.84	-3.16	0.33	0.42	-28.60	-31.74	-32.92	-33.52	-33.91
360	-3.43	-2.86	-3.15	0.31	0.47	-28.98	-32.35	-33.63	-34.40	-34.79
370	-3.40	-2.89	-3.15	0.28	0.53	-29.32	-33.01	-34.49	-35.38	-35.76
380	-3.36	-2.94	-3.16	0.24	0.60	-29.66	-33.58	-35.43	-36.06	-36.65
390	-3.31	-2.99	-3.15	0.19	0.66	-29.99	-34.09	-36.27	-36.52	-37.10
400	-3.25	-3.05	-3.15	0.13	0.71	-30.22	-34.72	-37.11	-37.00	-37.64
410	-3.19	-3.13	-3.16	0.06	0.77	-30.44	-35.52	-38.38	-37.58	-38.33
420	-3.11	-3.22	-3.17	0.03	0.85	-30.74	-36.09	-39.42	-37.76	-38.48
430	-3.02	-3.32	-3.17	0.12	0.94	-30.88	-36.46	-39.95	-37.36	-38.07
440	-2.93	-3.44	-3.19	0.23	1.03	-30.82	-36.38	-39.72	-36.31	-36.93
450	-2.82	-3.58	-3.22	0.35	1.11	-30.58	-35.65	-38.12	-34.89	-35.32
460	-2.71	-3.73	-3.25	0.48	1.20	-30.22	-34.61	-36.26	-33.33	-33.63
470	-2.60	-3.91	-3.30	0.62	1.33	-29.66	-33.33	-34.54	-32.01	-32.23
480	-2.48	-4.11	-3.37	0.79	1.48	-28.96	-31.78	-32.64	-30.50	-30.68
490	-2.35	-4.34	-3.46	0.96	1.65	-28.13	-30.21	-30.88	-29.05	-29.15
500	-2.21	-4.60	-3.57	1.16	1.83	-27.17	-28.75	-29.23	-27.61	-27.69
510	-2.07	-4.90	-3.71	1.37	2.04	-26.14	-27.23	-27.61	-26.20	-26.25
520	-1.93	-5.23	-3.89	1.61	2.29	-25.17	-25.81	-26.10	-24.91	-24.92
530	-1.79	-5.62	-4.11	1.87	2.59	-24.22	-24.57	-24.78	-23.73	-23.75
540	-1.65	-6.06	-4.39	2.16	2.97	-23.27	-23.38	-23.55	-22.59	-22.66
550	-1.51	-6.56	-4.73	2.47	3.40	-22.35	-22.26	-22.38	-21.50	-21.56

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration C.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.82	-4.91	-3.63	1.54	-0.33	-27.51	-29.01	-29.06	-28.47	-28.46
160	-1.97	-4.61	-3.49	1.31	-0.31	-27.48	-29.22	-29.13	-28.52	-28.69
170	-2.12	-4.35	-3.38	1.10	-0.30	-27.40	-29.31	-29.08	-28.47	-28.82
180	-2.27	-4.12	-3.29	0.91	-0.30	-27.31	-29.43	-29.05	-28.38	-28.97
190	-2.41	-3.92	-3.23	0.74	-0.29	-27.23	-29.44	-28.96	-28.24	-29.01
200	-2.54	-3.75	-3.19	0.59	-0.27	-27.17	-29.35	-28.74	-28.08	-28.96
210	-2.66	-3.59	-3.15	0.45	-0.25	-27.04	-29.29	-28.58	-27.97	-28.94
220	-2.78	-3.45	-3.13	0.32	-0.23	-27.03	-29.31	-28.54	-27.96	-28.99
230	-2.89	-3.33	-3.12	0.21	-0.21	-27.01	-29.34	-28.56	-27.92	-29.04
240	-2.98	-3.23	-3.11	0.10	-0.18	-26.90	-29.40	-28.62	-27.93	-29.08
250	-3.07	-3.14	-3.11	0.02	-0.16	-26.87	-29.52	-28.80	-27.99	-29.21
260	-3.15	-3.06	-3.11	0.07	-0.16	-26.97	-29.65	-28.99	-28.12	-29.41
270	-3.22	-3.00	-3.11	0.14	-0.11	-27.02	-29.69	-29.20	-28.32	-29.46
280	-3.29	-2.94	-3.12	0.19	-0.07	-27.14	-29.93	-29.53	-28.56	-29.69
290	-3.34	-2.90	-3.13	0.24	-0.03	-27.35	-30.24	-30.00	-28.90	-30.01
300	-3.38	-2.86	-3.13	0.28	0.01	-27.58	-30.74	-30.57	-29.29	-30.37
310	-3.41	-2.84	-3.13	0.31	0.05	-27.76	-31.28	-31.25	-29.74	-30.86
320	-3.43	-2.83	-3.14	0.32	0.10	-28.06	-31.71	-31.84	-30.16	-31.33
330	-3.44	-2.82	-3.14	0.33	0.14	-28.30	-32.13	-32.38	-30.56	-31.70
340	-3.44	-2.83	-3.15	0.33	0.19	-28.59	-32.74	-33.05	-31.09	-32.23
350	-3.43	-2.84	-3.15	0.32	0.23	-28.89	-33.52	-33.91	-31.74	-32.92
360	-3.42	-2.86	-3.15	0.30	0.28	-29.32	-34.40	-34.79	-32.35	-33.63
370	-3.39	-2.89	-3.15	0.27	0.35	-29.67	-35.38	-35.76	-33.01	-34.49
380	-3.35	-2.94	-3.15	0.23	0.41	-30.08	-36.06	-36.65	-33.58	-35.43
390	-3.30	-2.99	-3.15	0.18	0.46	-30.45	-36.52	-37.10	-34.09	-36.27
400	-3.24	-3.05	-3.15	0.12	0.51	-30.78	-37.00	-37.64	-34.72	-37.11
410	-3.18	-3.13	-3.16	0.05	0.57	-31.03	-37.58	-38.33	-35.52	-38.38
420	-3.10	-3.22	-3.16	0.03	0.64	-31.44	-37.76	-38.48	-36.09	-39.42
430	-3.02	-3.32	-3.17	0.13	0.74	-31.66	-37.36	-38.07	-36.46	-39.95
440	-2.92	-3.44	-3.19	0.23	0.82	-31.62	-36.31	-36.93	-36.38	-39.72
450	-2.82	-3.58	-3.22	0.35	0.90	-31.41	-34.89	-35.32	-35.65	-38.12
460	-2.71	-3.73	-3.25	0.48	0.98	-31.05	-33.33	-33.63	-34.61	-36.26
470	-2.59	-3.91	-3.30	0.63	1.11	-30.43	-32.01	-32.23	-33.33	-34.54
480	-2.47	-4.11	-3.37	0.79	1.26	-29.78	-30.50	-30.68	-31.78	-32.64
490	-2.34	-4.34	-3.45	0.96	1.42	-28.95	-29.05	-29.15	-30.21	-30.88
500	-2.20	-4.60	-3.56	1.16	1.59	-27.91	-27.61	-27.69	-28.75	-29.23
510	-2.06	-4.90	-3.71	1.38	1.79	-26.82	-26.20	-26.25	-27.23	-27.61
520	-1.92	-5.24	-3.89	1.61	2.04	-25.80	-24.91	-24.92	-25.81	-26.10
530	-1.78	-5.62	-4.11	1.87	2.34	-24.79	-23.73	-23.75	-24.57	-24.78
540	-1.65	-6.06	-4.39	2.16	2.71	-23.78	-22.59	-22.66	-23.38	-23.55
550	-1.51	-6.56	-4.73	2.47	3.14	-22.80	-21.50	-21.56	-22.26	-22.38

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration D.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.83	-4.90	-3.63	1.54	-0.15	-27.63	-28.46	-28.47	-29.06	-29.01
160	-1.98	-4.60	-3.48	1.31	-0.11	-27.59	-28.69	-28.52	-29.13	-29.22
170	-2.13	-4.35	-3.38	1.10	-0.07	-27.48	-28.82	-28.47	-29.08	-29.31
180	-2.28	-4.12	-3.30	0.91	-0.05	-27.40	-28.97	-28.38	-29.05	-29.43
190	-2.42	-3.92	-3.23	0.74	-0.03	-27.32	-29.01	-28.24	-28.96	-29.44
200	-2.55	-3.74	-3.19	0.58	-0.01	-27.24	-28.96	-28.08	-28.74	-29.35
210	-2.68	-3.59	-3.16	0.44	0.02	-27.09	-28.94	-27.97	-28.58	-29.29
220	-2.79	-3.45	-3.13	0.32	0.04	-27.11	-28.99	-27.96	-28.54	-29.31
230	-2.90	-3.33	-3.12	0.20	0.08	-27.12	-29.04	-27.92	-28.56	-29.34
240	-3.00	-3.22	-3.11	0.10	0.11	-27.08	-29.08	-27.93	-28.62	-29.40
250	-3.09	-3.13	-3.11	0.01	0.14	-27.08	-29.21	-27.99	-28.80	-29.52
260	-3.17	-3.06	-3.12	0.07	0.14	-27.15	-29.41	-28.12	-28.99	-29.65
270	-3.24	-2.99	-3.12	0.14	0.20	-27.22	-29.46	-28.32	-29.20	-29.69
280	-3.30	-2.93	-3.12	0.20	0.25	-27.28	-29.69	-28.56	-29.53	-29.93
290	-3.35	-2.89	-3.13	0.24	0.31	-27.47	-30.01	-28.90	-30.00	-30.24
300	-3.39	-2.86	-3.13	0.28	0.34	-27.65	-30.37	-29.29	-30.57	-30.74
310	-3.42	-2.83	-3.14	0.31	0.39	-27.84	-30.86	-29.74	-31.25	-31.28
320	-3.45	-2.82	-3.15	0.33	0.45	-28.16	-31.33	-30.16	-31.84	-31.71
330	-3.46	-2.82	-3.15	0.34	0.51	-28.44	-31.70	-30.56	-32.38	-32.13
340	-3.46	-2.82	-3.15	0.34	0.57	-28.67	-32.23	-31.09	-33.05	-32.74
350	-3.45	-2.83	-3.15	0.32	0.63	-29.02	-32.92	-31.74	-33.91	-33.52
360	-3.43	-2.85	-3.15	0.31	0.69	-29.47	-33.63	-32.35	-34.79	-34.40
370	-3.40	-2.89	-3.15	0.28	0.76	-29.82	-34.49	-33.01	-35.76	-35.38
380	-3.36	-2.93	-3.15	0.24	0.83	-30.18	-35.43	-33.58	-36.65	-36.06
390	-3.31	-2.98	-3.15	0.19	0.90	-30.64	-36.27	-34.09	-37.10	-36.52
400	-3.26	-3.05	-3.16	0.13	0.95	-30.92	-37.11	-34.72	-37.64	-37.00
410	-3.19	-3.12	-3.16	0.06	1.03	-31.18	-38.38	-35.52	-38.33	-37.58
420	-3.11	-3.21	-3.16	0.03	1.12	-31.65	-39.42	-36.09	-38.48	-37.76
430	-3.03	-3.32	-3.18	0.12	1.22	-31.86	-39.95	-36.46	-38.07	-37.36
440	-2.93	-3.44	-3.19	0.23	1.32	-31.81	-39.72	-36.38	-36.93	-36.31
450	-2.83	-3.57	-3.22	0.35	1.42	-31.58	-38.12	-35.65	-35.32	-34.89
460	-2.72	-3.73	-3.25	0.48	1.52	-31.20	-36.26	-34.61	-33.63	-33.33
470	-2.60	-3.91	-3.30	0.62	1.65	-30.59	-34.54	-33.33	-32.23	-32.01
480	-2.48	-4.11	-3.37	0.78	1.82	-29.88	-32.64	-31.78	-30.68	-30.50
490	-2.35	-4.34	-3.46	0.96	2.00	-29.06	-30.88	-30.21	-29.15	-29.05
500	-2.21	-4.60	-3.57	1.16	2.18	-28.02	-29.23	-28.75	-27.69	-27.61
510	-2.07	-4.89	-3.70	1.37	2.41	-26.93	-27.61	-27.23	-26.25	-26.20
520	-1.93	-5.23	-3.89	1.61	2.68	-25.89	-26.10	-25.81	-24.92	-24.91
530	-1.79	-5.61	-4.11	1.87	3.00	-24.87	-24.78	-24.57	-23.75	-23.73
540	-1.65	-6.05	-4.38	2.15	3.38	-23.83	-23.55	-23.38	-22.66	-22.59
550	-1.52	-6.55	-4.73	2.47	3.84	-22.85	-22.38	-22.26	-21.56	-21.50

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration A.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.83	-4.91	-3.64	1.55	-0.35	-25.98	-26.63	-26.58	-26.13	-26.03
160	-1.99	-4.61	-3.49	1.32	-0.30	-25.99	-26.77	-26.75	-26.28	-26.13
170	-2.14	-4.35	-3.38	1.11	-0.27	-25.98	-26.93	-26.88	-26.45	-26.27
180	-2.28	-4.12	-3.30	0.93	-0.24	-26.01	-27.21	-27.11	-26.67	-26.48
190	-2.42	-3.92	-3.23	0.76	-0.20	-26.10	-27.53	-27.39	-26.91	-26.70
200	-2.55	-3.75	-3.19	0.60	-0.15	-26.21	-27.81	-27.66	-27.12	-26.96
210	-2.67	-3.59	-3.15	0.46	-0.11	-26.30	-28.14	-28.03	-27.43	-27.28
220	-2.79	-3.45	-3.13	0.34	-0.07	-26.53	-28.55	-28.49	-27.84	-27.70
230	-2.90	-3.33	-3.12	0.22	-0.01	-26.72	-28.99	-28.91	-28.25	-28.08
240	-2.99	-3.23	-3.11	0.12	0.03	-26.86	-29.44	-29.38	-28.65	-28.46
250	-3.08	-3.14	-3.11	0.03	0.07	-27.04	-30.01	-29.91	-29.12	-28.88
260	-3.16	-3.06	-3.11	0.05	0.11	-27.33	-30.58	-30.45	-29.63	-29.33
270	-3.24	-3.00	-3.12	0.12	0.16	-27.56	-31.06	-31.00	-30.04	-29.78
280	-3.30	-2.94	-3.12	0.18	0.23	-27.80	-31.67	-31.67	-30.56	-30.22
290	-3.35	-2.90	-3.13	0.23	0.29	-28.12	-32.38	-32.37	-31.19	-30.73
300	-3.39	-2.87	-3.14	0.26	0.33	-28.39	-33.18	-33.26	-31.85	-31.35
310	-3.42	-2.84	-3.14	0.29	0.37	-28.67	-34.12	-34.25	-32.69	-31.99
320	-3.44	-2.83	-3.15	0.31	0.43	-29.05	-35.03	-35.21	-33.52	-32.59
330	-3.45	-2.82	-3.15	0.32	0.49	-29.43	-35.73	-36.18	-34.22	-33.15
340	-3.45	-2.83	-3.15	0.31	0.56	-29.76	-36.70	-37.49	-35.11	-33.82
350	-3.45	-2.84	-3.16	0.30	0.62	-30.14	-38.07	-39.14	-36.38	-34.73
360	-3.43	-2.86	-3.15	0.28	0.67	-30.58	-39.43	-40.95	-37.81	-35.75
370	-3.40	-2.90	-3.16	0.25	0.74	-30.95	-40.86	-43.00	-39.53	-36.79
380	-3.36	-2.94	-3.16	0.21	0.81	-31.36	-42.03	-44.05	-41.61	-37.76
390	-3.31	-2.99	-3.15	0.16	0.88	-31.82	-41.77	-43.45	-43.57	-38.49
400	-3.25	-3.06	-3.16	0.10	0.93	-32.01	-41.34	-41.95	-45.43	-39.24
410	-3.19	-3.13	-3.16	0.03	1.02	-32.10	-40.72	-40.12	-46.88	-39.97
420	-3.11	-3.22	-3.17	0.06	1.11	-32.24	-39.07	-38.07	-44.35	-39.56
430	-3.03	-3.32	-3.18	0.15	1.22	-32.19	-37.05	-35.99	-40.79	-38.38
440	-2.93	-3.44	-3.19	0.26	1.34	-31.79	-34.99	-34.15	-37.88	-36.69
450	-2.83	-3.58	-3.22	0.38	1.45	-31.21	-33.06	-32.41	-35.34	-34.84
460	-2.72	-3.74	-3.26	0.51	1.55	-30.43	-31.48	-30.85	-33.34	-33.19
470	-2.60	-3.91	-3.30	0.66	1.70	-29.57	-30.11	-29.49	-31.63	-31.63
480	-2.48	-4.11	-3.37	0.82	1.89	-28.67	-28.82	-28.19	-30.04	-30.11
490	-2.35	-4.34	-3.46	1.00	2.09	-27.77	-27.53	-26.95	-28.54	-28.67
500	-2.22	-4.60	-3.57	1.20	2.30	-26.79	-26.27	-25.76	-27.17	-27.36
510	-2.07	-4.90	-3.71	1.42	2.55	-25.76	-25.04	-24.62	-25.86	-26.05
520	-1.93	-5.23	-3.89	1.65	2.84	-24.78	-23.91	-23.55	-24.65	-24.82
530	-1.80	-5.62	-4.12	1.92	3.20	-23.87	-22.91	-22.58	-23.58	-23.77
540	-1.66	-6.05	-4.39	2.20	3.63	-22.96	-21.97	-21.63	-22.57	-22.72
550	-1.52	-6.55	-4.73	2.52	4.12	-22.11	-21.02	-20.73	-21.57	-21.74

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration B.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.82	-4.91	-3.63	1.54	-0.37	-25.91	-26.03	-26.13	-26.58	-26.63
160	-1.98	-4.61	-3.49	1.32	-0.33	-25.93	-26.13	-26.28	-26.75	-26.77
170	-2.13	-4.35	-3.38	1.11	-0.29	-25.91	-26.27	-26.45	-26.88	-26.93
180	-2.28	-4.12	-3.30	0.92	-0.26	-25.96	-26.48	-26.67	-27.11	-27.21
190	-2.42	-3.92	-3.23	0.75	-0.22	-26.07	-26.70	-26.91	-27.39	-27.53
200	-2.55	-3.75	-3.19	0.60	-0.17	-26.14	-26.96	-27.12	-27.66	-27.81
210	-2.67	-3.59	-3.15	0.46	-0.13	-26.21	-27.28	-27.43	-28.03	-28.14
220	-2.79	-3.45	-3.13	0.33	-0.08	-26.43	-27.70	-27.84	-28.49	-28.55
230	-2.90	-3.33	-3.12	0.22	-0.04	-26.62	-28.08	-28.25	-28.91	-28.99
240	-2.99	-3.23	-3.11	0.12	0.00	-26.78	-28.46	-28.65	-29.38	-29.44
250	-3.08	-3.14	-3.11	0.03	0.03	-26.98	-28.88	-29.12	-29.91	-30.01
260	-3.16	-3.06	-3.11	0.06	0.07	-27.25	-29.33	-29.63	-30.45	-30.58
270	-3.23	-2.99	-3.11	0.12	0.11	-27.52	-29.78	-30.04	-31.00	-31.06
280	-3.30	-2.94	-3.12	0.18	0.17	-27.75	-30.22	-30.56	-31.67	-31.67
290	-3.35	-2.90	-3.13	0.23	0.23	-28.08	-30.73	-31.19	-32.37	-32.38
300	-3.39	-2.87	-3.14	0.27	0.27	-28.34	-31.35	-31.85	-33.26	-33.18
310	-3.42	-2.84	-3.14	0.29	0.31	-28.65	-31.99	-32.69	-34.25	-34.12
320	-3.44	-2.83	-3.15	0.31	0.36	-29.01	-32.59	-33.52	-35.21	-35.03
330	-3.45	-2.82	-3.15	0.32	0.42	-29.37	-33.15	-34.22	-36.18	-35.73
340	-3.45	-2.82	-3.15	0.32	0.48	-29.68	-33.82	-35.11	-37.49	-36.70
350	-3.45	-2.84	-3.16	0.31	0.53	-30.05	-34.73	-36.38	-39.14	-38.07
360	-3.43	-2.86	-3.15	0.29	0.59	-30.45	-35.75	-37.81	-40.95	-39.43
370	-3.40	-2.89	-3.15	0.26	0.64	-30.82	-36.79	-39.53	-43.00	-40.86
380	-3.36	-2.94	-3.16	0.22	0.72	-31.24	-37.76	-41.61	-44.05	-42.03
390	-3.31	-2.99	-3.15	0.17	0.79	-31.64	-38.49	-43.57	-43.45	-41.77
400	-3.25	-3.05	-3.15	0.10	0.85	-31.86	-39.24	-45.43	-41.95	-41.34
410	-3.19	-3.13	-3.16	0.03	0.92	-31.96	-39.97	-46.88	-40.12	-40.72
420	-3.11	-3.22	-3.17	0.05	1.01	-32.10	-39.56	-44.35	-38.07	-39.07
430	-3.02	-3.32	-3.17	0.15	1.11	-32.01	-38.38	-40.79	-35.99	-37.05
440	-2.93	-3.44	-3.19	0.26	1.22	-31.69	-36.69	-37.88	-34.15	-34.99
450	-2.82	-3.58	-3.22	0.38	1.31	-31.09	-34.84	-35.34	-32.41	-33.06
460	-2.71	-3.73	-3.25	0.51	1.43	-30.35	-33.19	-33.34	-30.85	-31.48
470	-2.60	-3.91	-3.30	0.66	1.56	-29.51	-31.63	-31.63	-29.49	-30.11
480	-2.48	-4.11	-3.37	0.82	1.75	-28.58	-30.11	-30.04	-28.19	-28.82
490	-2.35	-4.34	-3.46	1.00	1.94	-27.68	-28.67	-28.54	-26.95	-27.53
500	-2.21	-4.60	-3.57	1.20	2.15	-26.71	-27.36	-27.17	-25.76	-26.27
510	-2.07	-4.90	-3.71	1.42	2.39	-25.70	-26.05	-25.86	-24.62	-25.04
520	-1.93	-5.23	-3.89	1.65	2.68	-24.75	-24.82	-24.65	-23.55	-23.91
530	-1.79	-5.62	-4.11	1.92	3.02	-23.84	-23.77	-23.58	-22.58	-22.91
540	-1.65	-6.06	-4.39	2.20	3.44	-22.95	-22.72	-22.57	-21.63	-21.97
550	-1.51	-6.56	-4.73	2.52	3.92	-22.09	-21.74	-21.57	-20.73	-21.02

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration C.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.82	-4.91	-3.63	1.54	-0.42	-26.02	-26.58	-26.63	-26.03	-26.13
160	-1.97	-4.61	-3.49	1.32	-0.38	-26.02	-26.75	-26.77	-26.13	-26.28
170	-2.12	-4.35	-3.38	1.11	-0.36	-26.01	-26.88	-26.93	-26.27	-26.45
180	-2.27	-4.12	-3.29	0.92	-0.33	-26.04	-27.11	-27.21	-26.48	-26.67
190	-2.41	-3.92	-3.23	0.75	-0.30	-26.12	-27.39	-27.53	-26.70	-26.91
200	-2.54	-3.75	-3.19	0.60	-0.26	-26.23	-27.66	-27.81	-26.96	-27.12
210	-2.66	-3.59	-3.15	0.46	-0.22	-26.33	-28.03	-28.14	-27.28	-27.43
220	-2.78	-3.45	-3.13	0.33	-0.17	-26.54	-28.49	-28.55	-27.70	-27.84
230	-2.89	-3.33	-3.12	0.22	-0.13	-26.72	-28.91	-28.99	-28.08	-28.25
240	-2.98	-3.23	-3.11	0.12	-0.08	-26.82	-29.38	-29.44	-28.46	-28.65
250	-3.07	-3.14	-3.11	0.03	-0.04	-27.00	-29.91	-30.01	-28.88	-29.12
260	-3.15	-3.06	-3.11	0.05	0.00	-27.32	-30.45	-30.58	-29.33	-29.63
270	-3.22	-3.00	-3.11	0.12	0.04	-27.55	-31.00	-31.06	-29.78	-30.04
280	-3.29	-2.94	-3.12	0.18	0.10	-27.86	-31.67	-31.67	-30.22	-30.56
290	-3.34	-2.90	-3.13	0.23	0.15	-28.24	-32.37	-32.38	-30.73	-31.19
300	-3.38	-2.86	-3.13	0.26	0.20	-28.61	-33.26	-33.18	-31.35	-31.85
310	-3.41	-2.84	-3.13	0.29	0.24	-28.97	-34.25	-34.12	-31.99	-32.69
320	-3.43	-2.83	-3.14	0.31	0.29	-29.47	-35.21	-35.03	-32.59	-33.52
330	-3.44	-2.82	-3.14	0.32	0.35	-29.88	-36.18	-35.73	-33.15	-34.22
340	-3.44	-2.83	-3.15	0.32	0.40	-30.32	-37.49	-36.70	-33.82	-35.11
350	-3.43	-2.84	-3.15	0.31	0.45	-30.77	-39.14	-38.07	-34.73	-36.38
360	-3.42	-2.86	-3.15	0.29	0.50	-31.34	-40.95	-39.43	-35.75	-37.81
370	-3.39	-2.89	-3.15	0.26	0.57	-31.81	-43.00	-40.86	-36.79	-39.53
380	-3.35	-2.94	-3.15	0.21	0.64	-32.42	-44.05	-42.03	-37.76	-41.61
390	-3.30	-2.99	-3.15	0.16	0.71	-32.95	-43.45	-41.77	-38.49	-43.57
400	-3.24	-3.05	-3.15	0.10	0.76	-33.30	-41.95	-41.34	-39.24	-45.43
410	-3.18	-3.13	-3.16	0.03	0.83	-33.42	-40.12	-40.72	-39.97	-46.88
420	-3.10	-3.22	-3.16	0.05	0.92	-33.65	-38.07	-39.07	-39.56	-44.35
430	-3.02	-3.32	-3.17	0.15	1.02	-33.56	-35.99	-37.05	-38.38	-40.79
440	-2.92	-3.44	-3.19	0.26	1.12	-33.08	-34.15	-34.99	-36.69	-37.88
450	-2.82	-3.58	-3.22	0.38	1.22	-32.30	-32.41	-33.06	-34.84	-35.34
460	-2.71	-3.73	-3.25	0.51	1.32	-31.34	-30.85	-31.48	-33.19	-33.34
470	-2.59	-3.91	-3.30	0.66	1.45	-30.29	-29.49	-30.11	-31.63	-31.63
480	-2.47	-4.11	-3.37	0.82	1.64	-29.25	-28.19	-28.82	-30.11	-30.04
490	-2.34	-4.34	-3.45	1.00	1.83	-28.24	-26.95	-27.53	-28.67	-28.54
500	-2.20	-4.60	-3.56	1.20	2.03	-27.13	-25.76	-26.27	-27.36	-27.17
510	-2.06	-4.90	-3.71	1.41	2.27	-26.02	-24.62	-25.04	-26.05	-25.86
520	-1.92	-5.24	-3.89	1.65	2.55	-25.00	-23.55	-23.91	-24.82	-24.65
530	-1.78	-5.62	-4.11	1.91	2.90	-24.04	-22.58	-22.91	-23.77	-23.58
540	-1.65	-6.06	-4.39	2.20	3.31	-23.11	-21.63	-21.97	-22.72	-22.57
550	-1.51	-6.56	-4.73	2.52	3.79	-22.24	-20.73	-21.02	-21.74	-21.57

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration D.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.83	-4.90	-3.63	1.55	-0.29	-26.10	-26.13	-26.03	-26.63	-26.58
160	-1.98	-4.60	-3.48	1.32	-0.24	-26.10	-26.28	-26.13	-26.77	-26.75
170	-2.13	-4.35	-3.38	1.11	-0.20	-26.07	-26.45	-26.27	-26.93	-26.88
180	-2.28	-4.12	-3.30	0.93	-0.16	-26.10	-26.67	-26.48	-27.21	-27.11
190	-2.42	-3.92	-3.23	0.76	-0.12	-26.19	-26.91	-26.70	-27.53	-27.39
200	-2.55	-3.74	-3.19	0.60	-0.07	-26.29	-27.12	-26.96	-27.81	-27.66
210	-2.68	-3.59	-3.16	0.46	-0.03	-26.36	-27.43	-27.28	-28.14	-28.03
220	-2.79	-3.45	-3.13	0.33	0.02	-26.60	-27.84	-27.70	-28.55	-28.49
230	-2.90	-3.33	-3.12	0.22	0.07	-26.82	-28.25	-28.08	-28.99	-28.91
240	-3.00	-3.22	-3.11	0.12	0.12	-26.98	-28.65	-28.46	-29.44	-29.38
250	-3.09	-3.13	-3.11	0.03	0.16	-27.18	-29.12	-28.88	-30.01	-29.91
260	-3.17	-3.06	-3.12	0.05	0.20	-27.48	-29.63	-29.33	-30.58	-30.45
270	-3.24	-2.99	-3.12	0.12	0.25	-27.73	-30.04	-29.78	-31.06	-31.00
280	-3.30	-2.93	-3.12	0.18	0.31	-27.97	-30.56	-30.22	-31.67	-31.67
290	-3.35	-2.89	-3.13	0.23	0.37	-28.33	-31.19	-30.73	-32.38	-32.37
300	-3.39	-2.86	-3.13	0.26	0.41	-28.67	-31.85	-31.35	-33.18	-33.26
310	-3.42	-2.83	-3.14	0.29	0.45	-29.03	-32.69	-31.99	-34.12	-34.25
320	-3.45	-2.82	-3.15	0.31	0.51	-29.56	-33.52	-32.59	-35.03	-35.21
330	-3.46	-2.82	-3.15	0.32	0.58	-30.02	-34.22	-33.15	-35.73	-36.18
340	-3.46	-2.82	-3.15	0.32	0.64	-30.38	-35.11	-33.82	-36.70	-37.49
350	-3.45	-2.83	-3.15	0.31	0.70	-30.90	-36.38	-34.73	-38.07	-39.14
360	-3.43	-2.85	-3.15	0.28	0.76	-31.49	-37.81	-35.75	-39.43	-40.95
370	-3.40	-2.89	-3.15	0.25	0.83	-31.97	-39.53	-36.79	-40.86	-43.00
380	-3.36	-2.93	-3.15	0.21	0.91	-32.53	-41.61	-37.76	-42.03	-44.05
390	-3.31	-2.98	-3.15	0.16	0.98	-33.19	-43.57	-38.49	-41.77	-43.45
400	-3.26	-3.05	-3.16	0.10	1.05	-33.50	-45.43	-39.24	-41.34	-41.95
410	-3.19	-3.12	-3.16	0.03	1.13	-33.63	-46.88	-39.97	-40.72	-40.12
420	-3.11	-3.21	-3.16	0.06	1.23	-33.91	-44.35	-39.56	-39.07	-38.07
430	-3.03	-3.32	-3.18	0.15	1.34	-33.80	-40.79	-38.38	-37.05	-35.99
440	-2.93	-3.44	-3.19	0.26	1.45	-33.28	-37.88	-36.69	-34.99	-34.15
450	-2.83	-3.57	-3.22	0.38	1.56	-32.47	-35.34	-34.84	-33.06	-32.41
460	-2.72	-3.73	-3.25	0.51	1.68	-31.49	-33.34	-33.19	-31.48	-30.85
470	-2.60	-3.91	-3.30	0.66	1.82	-30.43	-31.63	-31.63	-30.11	-29.49
480	-2.48	-4.11	-3.37	0.82	2.02	-29.34	-30.04	-30.11	-28.82	-28.19
490	-2.35	-4.34	-3.46	1.00	2.22	-28.33	-28.54	-28.67	-27.53	-26.95
500	-2.21	-4.60	-3.57	1.20	2.44	-27.22	-27.17	-27.36	-26.27	-25.76
510	-2.07	-4.89	-3.70	1.42	2.69	-26.11	-25.86	-26.05	-25.04	-24.62
520	-1.93	-5.23	-3.89	1.66	3.00	-25.07	-24.65	-24.82	-23.91	-23.55
530	-1.79	-5.61	-4.11	1.92	3.36	-24.10	-23.58	-23.77	-22.91	-22.58
540	-1.65	-6.05	-4.38	2.20	3.78	-23.15	-22.57	-22.72	-21.97	-21.63
550	-1.52	-6.55	-4.73	2.52	4.28	-22.27	-21.57	-21.74	-21.02	-20.73

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration A.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.83	-4.91	-3.64	1.54	-0.50	-24.50	-24.92	-25.03	-24.74	-24.43
160	-1.99	-4.61	-3.49	1.32	-0.47	-24.43	-24.87	-24.95	-24.64	-24.35
170	-2.14	-4.35	-3.38	1.12	-0.43	-24.39	-24.86	-24.95	-24.66	-24.35
180	-2.28	-4.12	-3.30	0.93	-0.39	-24.45	-24.98	-25.05	-24.72	-24.47
190	-2.42	-3.92	-3.23	0.76	-0.33	-24.62	-25.26	-25.31	-24.91	-24.68
200	-2.55	-3.75	-3.19	0.61	-0.27	-24.80	-25.59	-25.64	-25.15	-24.98
210	-2.67	-3.59	-3.15	0.47	-0.22	-24.95	-26.01	-26.01	-25.42	-25.35
220	-2.79	-3.45	-3.13	0.35	-0.16	-25.21	-26.52	-26.49	-25.81	-25.81
230	-2.90	-3.33	-3.12	0.23	-0.08	-25.46	-27.05	-26.95	-26.23	-26.26
240	-2.99	-3.23	-3.11	0.13	-0.01	-25.71	-27.55	-27.45	-26.65	-26.74
250	-3.08	-3.14	-3.11	0.04	0.05	-26.07	-28.19	-28.05	-27.13	-27.29
260	-3.16	-3.06	-3.11	0.04	0.11	-26.53	-28.95	-28.78	-27.79	-27.96
270	-3.24	-3.00	-3.12	0.11	0.17	-26.94	-29.79	-29.55	-28.36	-28.66
280	-3.30	-2.94	-3.12	0.17	0.24	-27.34	-30.70	-30.38	-28.99	-29.37
290	-3.35	-2.90	-3.13	0.21	0.32	-27.82	-31.68	-31.18	-29.64	-30.10
300	-3.39	-2.87	-3.14	0.25	0.36	-28.30	-32.70	-32.23	-30.33	-30.88
310	-3.42	-2.84	-3.14	0.28	0.41	-28.82	-33.80	-33.30	-31.07	-31.72
320	-3.44	-2.83	-3.15	0.30	0.47	-29.47	-35.00	-34.56	-31.99	-32.67
330	-3.45	-2.82	-3.15	0.30	0.54	-30.08	-36.49	-36.02	-33.03	-33.77
340	-3.45	-2.83	-3.15	0.30	0.61	-30.65	-38.23	-37.81	-34.14	-35.03
350	-3.45	-2.84	-3.16	0.29	0.66	-31.33	-40.59	-39.96	-35.42	-36.46
360	-3.43	-2.86	-3.15	0.27	0.72	-32.05	-43.60	-42.79	-36.86	-38.13
370	-3.40	-2.90	-3.16	0.24	0.78	-32.70	-47.67	-45.86	-38.46	-40.06
380	-3.36	-2.94	-3.16	0.20	0.86	-33.37	-52.06	-47.51	-40.45	-42.73
390	-3.31	-2.99	-3.15	0.15	0.93	-34.14	-51.10	-45.17	-42.81	-47.15
400	-3.25	-3.06	-3.16	0.09	0.99	-34.55	-45.43	-41.57	-43.76	-54.99
410	-3.19	-3.13	-3.16	0.01	1.08	-34.73	-41.07	-38.43	-42.33	-50.13
420	-3.11	-3.22	-3.17	0.07	1.18	-34.74	-38.08	-36.06	-40.00	-43.32
430	-3.03	-3.32	-3.18	0.17	1.30	-34.33	-35.99	-34.17	-37.64	-39.46
440	-2.93	-3.44	-3.19	0.28	1.42	-33.52	-33.98	-32.45	-35.20	-36.68
450	-2.83	-3.58	-3.22	0.40	1.54	-32.63	-32.25	-30.84	-33.04	-34.31
460	-2.72	-3.74	-3.26	0.54	1.66	-31.57	-30.65	-29.35	-31.25	-32.33
470	-2.60	-3.91	-3.30	0.68	1.83	-30.40	-29.10	-27.98	-29.63	-30.49
480	-2.48	-4.11	-3.37	0.85	2.04	-29.20	-27.66	-26.72	-28.14	-28.85
490	-2.35	-4.34	-3.46	1.03	2.26	-28.06	-26.39	-25.57	-26.82	-27.42
500	-2.22	-4.60	-3.57	1.23	2.50	-26.95	-25.25	-24.51	-25.63	-26.18
510	-2.07	-4.90	-3.71	1.45	2.77	-25.86	-24.14	-23.47	-24.45	-24.95
520	-1.93	-5.23	-3.89	1.69	3.09	-24.85	-23.05	-22.47	-23.32	-23.77
530	-1.80	-5.62	-4.12	1.95	3.49	-23.90	-22.01	-21.52	-22.29	-22.70
540	-1.66	-6.05	-4.39	2.24	3.97	-22.95	-21.01	-20.59	-21.30	-21.66
550	-1.52	-6.55	-4.73	2.57	4.54	-22.06	-20.08	-19.74	-20.39	-20.70

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration B.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.82	-4.91	-3.63	1.54	-0.47	-24.45	-24.43	-24.74	-25.03	-24.92
160	-1.98	-4.61	-3.49	1.32	-0.43	-24.38	-24.35	-24.64	-24.95	-24.87
170	-2.13	-4.35	-3.38	1.11	-0.38	-24.33	-24.35	-24.66	-24.95	-24.86
180	-2.28	-4.12	-3.30	0.93	-0.33	-24.42	-24.47	-24.72	-25.05	-24.98
190	-2.42	-3.92	-3.23	0.76	-0.27	-24.59	-24.68	-24.91	-25.31	-25.26
200	-2.55	-3.75	-3.19	0.61	-0.20	-24.74	-24.98	-25.15	-25.64	-25.59
210	-2.67	-3.59	-3.15	0.47	-0.13	-24.88	-25.35	-25.42	-26.01	-26.01
220	-2.79	-3.45	-3.13	0.34	-0.07	-25.14	-25.81	-25.81	-26.49	-26.52
230	-2.90	-3.33	-3.12	0.23	-0.01	-25.39	-26.26	-26.23	-26.95	-27.05
240	-2.99	-3.23	-3.11	0.13	0.05	-25.66	-26.74	-26.65	-27.45	-27.55
250	-3.08	-3.14	-3.11	0.04	0.11	-26.03	-27.29	-27.13	-28.05	-28.19
260	-3.16	-3.06	-3.11	0.04	0.16	-26.47	-27.96	-27.79	-28.78	-28.95
270	-3.23	-2.99	-3.11	0.11	0.23	-26.92	-28.66	-28.36	-29.55	-29.79
280	-3.30	-2.94	-3.12	0.17	0.31	-27.30	-29.37	-28.99	-30.38	-30.70
290	-3.35	-2.90	-3.13	0.22	0.38	-27.79	-30.10	-29.64	-31.18	-31.68
300	-3.39	-2.87	-3.14	0.26	0.43	-28.26	-30.88	-30.33	-32.23	-32.70
310	-3.42	-2.84	-3.14	0.28	0.48	-28.82	-31.72	-31.07	-33.30	-33.80
320	-3.44	-2.83	-3.15	0.30	0.54	-29.43	-32.67	-31.99	-34.56	-35.00
330	-3.45	-2.82	-3.15	0.31	0.61	-30.02	-33.77	-33.03	-36.02	-36.49
340	-3.45	-2.82	-3.15	0.31	0.68	-30.59	-35.03	-34.14	-37.81	-38.23
350	-3.45	-2.84	-3.16	0.30	0.73	-31.25	-36.46	-35.42	-39.96	-40.59
360	-3.43	-2.86	-3.15	0.28	0.79	-31.93	-38.13	-36.86	-42.79	-43.60
370	-3.40	-2.89	-3.15	0.25	0.86	-32.57	-40.06	-38.46	-45.86	-47.67
380	-3.36	-2.94	-3.16	0.20	0.93	-33.24	-42.73	-40.45	-47.51	-52.06
390	-3.31	-2.99	-3.15	0.15	1.01	-33.92	-47.15	-42.81	-45.17	-51.10
400	-3.25	-3.05	-3.15	0.09	1.08	-34.37	-54.99	-43.76	-41.57	-45.43
410	-3.19	-3.13	-3.16	0.02	1.16	-34.55	-50.13	-42.33	-38.43	-41.07
420	-3.11	-3.22	-3.17	0.07	1.26	-34.54	-43.32	-40.00	-36.06	-38.08
430	-3.02	-3.32	-3.17	0.17	1.37	-34.11	-39.46	-37.64	-34.17	-35.99
440	-2.93	-3.44	-3.19	0.28	1.48	-33.39	-36.68	-35.20	-32.45	-33.98
450	-2.82	-3.58	-3.22	0.40	1.59	-32.49	-34.31	-33.04	-30.84	-32.25
460	-2.71	-3.73	-3.25	0.53	1.72	-31.47	-32.33	-31.25	-29.35	-30.65
470	-2.60	-3.91	-3.30	0.68	1.89	-30.33	-30.49	-29.63	-27.98	-29.10
480	-2.48	-4.11	-3.37	0.85	2.09	-29.11	-28.85	-28.14	-26.72	-27.66
490	-2.35	-4.34	-3.46	1.03	2.32	-27.97	-27.42	-26.82	-25.57	-26.39
500	-2.21	-4.60	-3.57	1.23	2.55	-26.87	-26.18	-25.63	-24.51	-25.25
510	-2.07	-4.90	-3.71	1.45	2.83	-25.80	-24.95	-24.45	-23.47	-24.14
520	-1.93	-5.23	-3.89	1.69	3.15	-24.82	-23.77	-23.32	-22.47	-23.05
530	-1.79	-5.62	-4.11	1.96	3.55	-23.87	-22.70	-22.29	-21.52	-22.01
540	-1.65	-6.06	-4.39	2.25	4.03	-22.93	-21.66	-21.30	-20.59	-21.01
550	-1.51	-6.56	-4.73	2.57	4.58	-22.04	-20.70	-20.39	-19.74	-20.08

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration C.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.82	-4.91	-3.63	1.54	-0.54	-24.71	-25.03	-24.92	-24.43	-24.74
160	-1.97	-4.61	-3.49	1.32	-0.51	-24.63	-24.95	-24.87	-24.35	-24.64
170	-2.12	-4.35	-3.38	1.12	-0.49	-24.58	-24.95	-24.86	-24.35	-24.66
180	-2.27	-4.12	-3.29	0.93	-0.45	-24.62	-25.05	-24.98	-24.47	-24.72
190	-2.41	-3.92	-3.23	0.77	-0.41	-24.73	-25.31	-25.26	-24.68	-24.91
200	-2.54	-3.75	-3.19	0.61	-0.34	-24.87	-25.64	-25.59	-24.98	-25.15
210	-2.66	-3.59	-3.15	0.47	-0.28	-24.96	-26.01	-26.01	-25.35	-25.42
220	-2.78	-3.45	-3.13	0.35	-0.22	-25.15	-26.49	-26.52	-25.81	-25.81
230	-2.89	-3.33	-3.12	0.24	-0.15	-25.35	-26.95	-27.05	-26.26	-26.23
240	-2.98	-3.23	-3.11	0.14	-0.08	-25.53	-27.45	-27.55	-26.74	-26.65
250	-3.07	-3.14	-3.11	0.05	-0.02	-25.84	-28.05	-28.19	-27.29	-27.13
260	-3.15	-3.06	-3.11	0.04	0.03	-26.29	-28.78	-28.95	-27.96	-27.79
270	-3.22	-3.00	-3.11	0.11	0.10	-26.64	-29.55	-29.79	-28.66	-28.36
280	-3.29	-2.94	-3.12	0.16	0.17	-27.05	-30.38	-30.70	-29.37	-28.99
290	-3.34	-2.90	-3.13	0.21	0.23	-27.51	-31.18	-31.68	-30.10	-29.64
300	-3.38	-2.86	-3.13	0.25	0.29	-28.02	-32.23	-32.70	-30.88	-30.33
310	-3.41	-2.84	-3.13	0.28	0.34	-28.59	-33.30	-33.80	-31.72	-31.07
320	-3.43	-2.83	-3.14	0.30	0.39	-29.30	-34.56	-35.00	-32.67	-31.99
330	-3.44	-2.82	-3.14	0.30	0.45	-29.98	-36.02	-36.49	-33.77	-33.03
340	-3.44	-2.83	-3.15	0.30	0.51	-30.71	-37.81	-38.23	-35.03	-34.14
350	-3.43	-2.84	-3.15	0.29	0.56	-31.52	-39.96	-40.59	-36.46	-35.42
360	-3.42	-2.86	-3.15	0.27	0.62	-32.49	-42.79	-43.60	-38.13	-36.86
370	-3.39	-2.89	-3.15	0.24	0.68	-33.39	-45.86	-47.67	-40.06	-38.46
380	-3.35	-2.94	-3.15	0.20	0.77	-34.53	-47.51	-52.06	-42.73	-40.45
390	-3.30	-2.99	-3.15	0.15	0.83	-35.69	-45.17	-51.10	-47.15	-42.81
400	-3.24	-3.05	-3.15	0.08	0.89	-36.76	-41.57	-45.43	-54.99	-43.76
410	-3.18	-3.13	-3.16	0.01	0.97	-37.33	-38.43	-41.07	-50.13	-42.33
420	-3.10	-3.22	-3.16	0.08	1.06	-37.54	-36.06	-38.08	-43.32	-40.00
430	-3.02	-3.32	-3.17	0.17	1.17	-36.79	-34.17	-35.99	-39.46	-37.64
440	-2.92	-3.44	-3.19	0.28	1.29	-35.43	-32.45	-33.98	-36.68	-35.20
450	-2.82	-3.58	-3.22	0.40	1.40	-33.89	-30.84	-32.25	-34.31	-33.04
460	-2.71	-3.73	-3.25	0.54	1.52	-32.38	-29.35	-30.65	-32.33	-31.25
470	-2.59	-3.91	-3.30	0.69	1.68	-30.85	-27.98	-29.10	-30.49	-29.63
480	-2.47	-4.11	-3.37	0.85	1.88	-29.47	-26.72	-27.66	-28.85	-28.14
490	-2.34	-4.34	-3.45	1.03	2.09	-28.21	-25.57	-26.39	-27.42	-26.82
500	-2.20	-4.60	-3.56	1.23	2.33	-26.98	-24.51	-25.25	-26.18	-25.63
510	-2.06	-4.90	-3.71	1.45	2.59	-25.83	-23.47	-24.14	-24.95	-24.45
520	-1.92	-5.24	-3.89	1.69	2.92	-24.79	-22.47	-23.05	-23.77	-23.32
530	-1.78	-5.62	-4.11	1.96	3.31	-23.82	-21.52	-22.01	-22.70	-22.29
540	-1.65	-6.06	-4.39	2.25	3.78	-22.88	-20.59	-21.01	-21.66	-21.30
550	-1.51	-6.56	-4.73	2.57	4.32	-22.00	-19.74	-20.08	-20.70	-20.39

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

2-Way 90° Power Splitter/Combiner QCH-451+

Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration D.

Freq. (MHz)	Total Loss* (dB)			Amp. Unb. (±dB)	Ph. Unb. (deg)	Isolation (dB)	Return Loss (dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
150	-1.83	-4.90	-3.63	1.54	-0.43	-24.80	-24.74	-24.43	-24.92	-25.03
160	-1.98	-4.60	-3.48	1.31	-0.38	-24.72	-24.64	-24.35	-24.87	-24.95
170	-2.13	-4.35	-3.38	1.11	-0.33	-24.65	-24.66	-24.35	-24.86	-24.95
180	-2.28	-4.12	-3.30	0.93	-0.27	-24.70	-24.72	-24.47	-24.98	-25.05
190	-2.42	-3.92	-3.23	0.76	-0.20	-24.82	-24.91	-24.68	-25.26	-25.31
200	-2.55	-3.74	-3.19	0.61	-0.14	-24.94	-25.15	-24.98	-25.59	-25.64
210	-2.68	-3.59	-3.16	0.47	-0.08	-25.02	-25.42	-25.35	-26.01	-26.01
220	-2.79	-3.45	-3.13	0.34	-0.01	-25.23	-25.81	-25.81	-26.52	-26.49
230	-2.90	-3.33	-3.12	0.23	0.06	-25.46	-26.23	-26.26	-27.05	-26.95
240	-3.00	-3.22	-3.11	0.13	0.13	-25.68	-26.65	-26.74	-27.55	-27.45
250	-3.09	-3.13	-3.11	0.04	0.20	-26.00	-27.13	-27.29	-28.19	-28.05
260	-3.17	-3.06	-3.12	0.05	0.25	-26.43	-27.79	-27.96	-28.95	-28.78
270	-3.24	-2.99	-3.12	0.11	0.32	-26.80	-28.36	-28.66	-29.79	-29.55
280	-3.30	-2.93	-3.12	0.17	0.39	-27.14	-28.99	-29.37	-30.70	-30.38
290	-3.35	-2.89	-3.13	0.22	0.46	-27.59	-29.64	-30.10	-31.68	-31.18
300	-3.39	-2.86	-3.13	0.26	0.51	-28.06	-30.33	-30.88	-32.70	-32.23
310	-3.42	-2.83	-3.14	0.29	0.57	-28.63	-31.07	-31.72	-33.80	-33.30
320	-3.45	-2.82	-3.15	0.30	0.64	-29.37	-31.99	-32.67	-35.00	-34.56
330	-3.46	-2.82	-3.15	0.31	0.71	-30.09	-33.03	-33.77	-36.49	-36.02
340	-3.46	-2.82	-3.15	0.31	0.77	-30.73	-34.14	-35.03	-38.23	-37.81
350	-3.45	-2.83	-3.15	0.30	0.84	-31.62	-35.42	-36.46	-40.59	-39.96
360	-3.43	-2.85	-3.15	0.28	0.90	-32.57	-36.86	-38.13	-43.60	-42.79
370	-3.40	-2.89	-3.15	0.25	0.97	-33.49	-38.46	-40.06	-47.67	-45.86
380	-3.36	-2.93	-3.15	0.21	1.05	-34.61	-40.45	-42.73	-52.06	-47.51
390	-3.31	-2.98	-3.15	0.15	1.13	-35.97	-42.81	-47.15	-51.10	-45.17
400	-3.26	-3.05	-3.16	0.09	1.20	-37.00	-43.76	-54.99	-45.43	-41.57
410	-3.19	-3.12	-3.16	0.02	1.29	-37.64	-42.33	-50.13	-41.07	-38.43
420	-3.11	-3.21	-3.16	0.07	1.40	-37.98	-40.00	-43.32	-38.08	-36.06
430	-3.03	-3.32	-3.18	0.17	1.51	-37.17	-37.64	-39.46	-35.99	-34.17
440	-2.93	-3.44	-3.19	0.27	1.63	-35.70	-35.20	-36.68	-33.98	-32.45
450	-2.83	-3.57	-3.22	0.40	1.75	-34.12	-33.04	-34.31	-32.25	-30.84
460	-2.72	-3.73	-3.25	0.53	1.89	-32.56	-31.25	-32.33	-30.65	-29.35
470	-2.60	-3.91	-3.30	0.68	2.06	-31.01	-29.63	-30.49	-29.10	-27.98
480	-2.48	-4.11	-3.37	0.84	2.27	-29.58	-28.14	-28.85	-27.66	-26.72
490	-2.35	-4.34	-3.46	1.02	2.49	-28.31	-26.82	-27.42	-26.39	-25.57
500	-2.21	-4.60	-3.57	1.23	2.73	-27.09	-25.63	-26.18	-25.25	-24.51
510	-2.07	-4.89	-3.70	1.44	3.02	-25.93	-24.45	-24.95	-24.14	-23.47
520	-1.93	-5.23	-3.89	1.69	3.36	-24.89	-23.32	-23.77	-23.05	-22.47
530	-1.79	-5.61	-4.11	1.95	3.76	-23.89	-22.29	-22.70	-22.01	-21.52
540	-1.65	-6.05	-4.38	2.24	4.25	-22.93	-21.30	-21.66	-21.01	-20.59
550	-1.52	-6.55	-4.73	2.56	4.82	-22.05	-20.39	-20.70	-20.08	-19.74

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.