

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	Sum-Port 1	Sum-Port 2	Average	(±dB) Half P-P	(deg) Rel. to 90°	(dB) Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.64	-3.53	-3.11	0.45	-0.22	-33.48	-39.42	-34.63	-38.47	-35.17
415	-2.74	-3.41	-3.09	0.34	-0.22	-33.43	-38.67	-34.47	-38.21	-34.85
430	-2.83	-3.30	-3.07	0.24	-0.23	-33.25	-38.17	-34.35	-38.04	-34.62
445	-2.92	-3.20	-3.06	0.14	-0.23	-33.22	-37.62	-34.19	-37.43	-34.38
460	-3.01	-3.11	-3.06	0.05	-0.22	-33.32	-37.17	-34.10	-36.92	-34.15
475	-3.09	-3.03	-3.06	0.03	-0.22	-33.25	-36.75	-34.11	-36.39	-34.04
490	-3.17	-2.96	-3.07	0.11	-0.22	-33.20	-36.44	-34.16	-36.01	-34.09
505	-3.25	-2.89	-3.07	0.18	-0.22	-33.32	-36.20	-34.26	-35.76	-34.18
520	-3.31	-2.84	-3.08	0.24	-0.22	-33.38	-36.02	-34.37	-35.55	-34.39
535	-3.37	-2.78	-3.09	0.30	-0.21	-33.41	-35.86	-34.54	-35.40	-34.47
550	-3.43	-2.74	-3.10	0.35	-0.21	-33.62	-35.77	-34.76	-35.18	-34.61
565	-3.48	-2.70	-3.11	0.39	-0.20	-33.74	-35.58	-35.00	-35.12	-34.79
580	-3.52	-2.66	-3.11	0.43	-0.19	-33.78	-35.39	-35.32	-35.06	-35.08
595	-3.56	-2.63	-3.12	0.47	-0.18	-33.97	-35.23	-35.81	-35.17	-35.54
610	-3.60	-2.61	-3.13	0.50	-0.17	-34.19	-35.02	-36.14	-35.31	-36.01
625	-3.63	-2.59	-3.14	0.52	-0.16	-34.21	-34.85	-36.68	-35.45	-36.37
640	-3.65	-2.57	-3.14	0.54	-0.16	-34.10	-34.58	-37.02	-35.44	-36.43
655	-3.67	-2.56	-3.15	0.56	-0.14	-34.08	-34.24	-37.17	-35.41	-36.32
670	-3.68	-2.55	-3.15	0.57	-0.14	-33.99	-33.93	-37.19	-35.37	-35.95
685	-3.69	-2.55	-3.16	0.57	-0.13	-33.81	-33.66	-36.89	-35.29	-35.64
700	-3.69	-2.56	-3.16	0.57	-0.13	-33.64	-33.35	-36.49	-35.26	-35.25
715	-3.69	-2.56	-3.16	0.56	-0.12	-33.41	-33.22	-35.98	-35.20	-34.92
730	-3.68	-2.58	-3.16	0.55	-0.11	-33.11	-33.08	-35.63	-35.10	-34.63
745	-3.66	-2.59	-3.16	0.54	-0.11	-32.81	-32.83	-35.22	-35.01	-34.37
760	-3.64	-2.61	-3.16	0.51	-0.11	-32.59	-32.60	-35.03	-34.98	-34.17
775	-3.61	-2.64	-3.15	0.49	-0.09	-32.40	-32.41	-34.74	-35.03	-33.99
790	-3.58	-2.67	-3.15	0.45	-0.07	-32.25	-32.24	-34.43	-35.19	-33.95
805	-3.54	-2.71	-3.14	0.42	-0.05	-31.99	-32.12	-34.13	-35.33	-33.86
820	-3.49	-2.75	-3.14	0.38	-0.04	-31.79	-32.06	-33.74	-35.61	-33.96
835	-3.44	-2.79	-3.13	0.33	-0.03	-31.74	-32.06	-33.53	-35.74	-34.15
850	-3.39	-2.85	-3.13	0.27	-0.02	-31.64	-32.04	-33.36	-35.76	-34.33
865	-3.33	-2.90	-3.12	0.21	0.00	-31.56	-32.04	-33.30	-35.93	-34.45
880	-3.26	-2.97	-3.12	0.15	0.03	-31.54	-32.06	-33.25	-36.11	-34.56
895	-3.19	-3.04	-3.12	0.08	0.05	-31.46	-32.02	-33.07	-36.27	-34.59
910	-3.12	-3.12	-3.12	0.01	0.07	-31.35	-31.99	-32.87	-36.48	-34.52
925	-3.04	-3.21	-3.13	0.09	0.09	-31.36	-32.08	-32.57	-36.64	-34.43
940	-2.95	-3.31	-3.13	0.18	0.12	-31.27	-32.04	-32.38	-36.54	-34.24
955	-2.86	-3.42	-3.15	0.28	0.14	-31.03	-31.92	-32.20	-36.22	-33.97
970	-2.77	-3.53	-3.17	0.39	0.17	-30.98	-31.71	-32.08	-35.63	-33.66
985	-2.67	-3.66	-3.19	0.50	0.21	-30.72	-31.40	-31.92	-35.17	-33.35
1000	-2.57	-3.81	-3.23	0.62	0.24	-30.50	-31.11	-31.70	-34.72	-32.93

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

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	Sum-Port 1	Sum-Port 2	Average	(±dB) Half P-P	(deg) Rel. to 90°	(dB) Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.65	-3.53	-3.11	0.44	0.27	-33.23	-35.17	-38.47	-34.63	-39.42
415	-2.75	-3.41	-3.09	0.33	0.28	-33.24	-34.85	-38.21	-34.47	-38.67
430	-2.85	-3.30	-3.08	0.23	0.30	-33.36	-34.62	-38.04	-34.35	-38.17
445	-2.94	-3.20	-3.07	0.13	0.32	-33.55	-34.38	-37.43	-34.19	-37.62
460	-3.03	-3.11	-3.07	0.04	0.35	-33.57	-34.15	-36.92	-34.10	-37.17
475	-3.11	-3.03	-3.07	0.04	0.37	-33.55	-34.04	-36.39	-34.11	-36.75
490	-3.19	-2.96	-3.08	0.12	0.39	-33.54	-34.09	-36.01	-34.16	-36.44
505	-3.26	-2.89	-3.08	0.19	0.41	-33.55	-34.18	-35.76	-34.26	-36.20
520	-3.33	-2.83	-3.09	0.25	0.42	-33.61	-34.39	-35.55	-34.37	-36.02
535	-3.39	-2.78	-3.10	0.31	0.44	-33.67	-34.47	-35.40	-34.54	-35.86
550	-3.44	-2.73	-3.10	0.36	0.46	-33.77	-34.61	-35.18	-34.76	-35.77
565	-3.50	-2.69	-3.11	0.41	0.48	-33.81	-34.79	-35.12	-35.00	-35.58
580	-3.54	-2.66	-3.12	0.45	0.51	-33.87	-35.08	-35.06	-35.32	-35.39
595	-3.58	-2.63	-3.13	0.48	0.54	-33.92	-35.54	-35.17	-35.81	-35.23
610	-3.62	-2.60	-3.14	0.51	0.56	-33.88	-36.01	-35.31	-36.14	-35.02
625	-3.65	-2.58	-3.15	0.53	0.58	-33.91	-36.37	-35.45	-36.68	-34.85
640	-3.67	-2.57	-3.15	0.55	0.60	-33.77	-36.43	-35.44	-37.02	-34.58
655	-3.68	-2.56	-3.16	0.57	0.62	-33.76	-36.32	-35.41	-37.17	-34.24
670	-3.70	-2.55	-3.16	0.58	0.66	-33.61	-35.95	-35.37	-37.19	-33.93
685	-3.70	-2.55	-3.16	0.58	0.69	-33.68	-35.64	-35.29	-36.89	-33.66
700	-3.71	-2.55	-3.17	0.58	0.73	-33.57	-35.25	-35.26	-36.49	-33.35
715	-3.70	-2.56	-3.17	0.57	0.77	-33.34	-34.92	-35.20	-35.98	-33.22
730	-3.69	-2.57	-3.17	0.56	0.79	-33.10	-34.63	-35.10	-35.63	-33.08
745	-3.67	-2.59	-3.16	0.55	0.81	-32.93	-34.37	-35.01	-35.22	-32.83
760	-3.65	-2.61	-3.16	0.53	0.84	-32.64	-34.17	-34.98	-35.03	-32.60
775	-3.62	-2.63	-3.15	0.50	0.87	-32.51	-33.99	-35.03	-34.74	-32.41
790	-3.59	-2.66	-3.15	0.47	0.90	-32.30	-33.95	-35.19	-34.43	-32.24
805	-3.55	-2.70	-3.15	0.43	0.94	-32.00	-33.86	-35.33	-34.13	-32.12
820	-3.51	-2.74	-3.14	0.39	0.97	-31.87	-33.96	-35.61	-33.74	-32.06
835	-3.46	-2.79	-3.14	0.34	1.00	-31.76	-34.15	-35.74	-33.53	-32.06
850	-3.40	-2.84	-3.13	0.28	1.04	-31.66	-34.33	-35.76	-33.36	-32.04
865	-3.34	-2.90	-3.13	0.22	1.09	-31.57	-34.45	-35.93	-33.30	-32.04
880	-3.28	-2.97	-3.13	0.16	1.14	-31.55	-34.56	-36.11	-33.25	-32.06
895	-3.21	-3.04	-3.13	0.09	1.18	-31.52	-34.59	-36.27	-33.07	-32.02
910	-3.13	-3.12	-3.13	0.01	1.22	-31.45	-34.52	-36.48	-32.87	-31.99
925	-3.05	-3.21	-3.13	0.08	1.29	-31.34	-34.43	-36.64	-32.57	-32.08
940	-2.96	-3.31	-3.14	0.17	1.35	-31.22	-34.24	-36.54	-32.38	-32.04
955	-2.88	-3.42	-3.16	0.27	1.41	-30.96	-33.97	-36.22	-32.20	-31.92
970	-2.78	-3.53	-3.17	0.38	1.47	-30.92	-33.66	-35.63	-32.08	-31.71
985	-2.68	-3.66	-3.20	0.49	1.53	-30.73	-33.35	-35.17	-31.92	-31.40
1000	-2.58	-3.80	-3.23	0.61	1.58	-30.44	-32.93	-34.72	-31.70	-31.11

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

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	Sum-Port 1	Sum-Port 2	Average	(±dB) Half P-P	(deg) Rel. to 90°	(dB) Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.65	-3.52	-3.11	0.45	0.16	-32.80	-34.63	-39.42	-35.17	-38.47
415	-2.75	-3.40	-3.09	0.34	0.17	-32.97	-34.47	-38.67	-34.85	-38.21
430	-2.84	-3.29	-3.07	0.24	0.18	-33.01	-34.35	-38.17	-34.62	-38.04
445	-2.93	-3.19	-3.06	0.14	0.20	-33.09	-34.19	-37.62	-34.38	-37.43
460	-3.02	-3.10	-3.06	0.05	0.22	-33.20	-34.10	-37.17	-34.15	-36.92
475	-3.11	-3.02	-3.07	0.03	0.24	-33.11	-34.11	-36.75	-34.04	-36.39
490	-3.18	-2.95	-3.07	0.11	0.26	-33.12	-34.16	-36.44	-34.09	-36.01
505	-3.26	-2.88	-3.07	0.18	0.29	-33.14	-34.26	-36.20	-34.18	-35.76
520	-3.32	-2.83	-3.08	0.24	0.31	-33.18	-34.37	-36.02	-34.39	-35.55
535	-3.39	-2.77	-3.09	0.30	0.33	-33.17	-34.54	-35.86	-34.47	-35.40
550	-3.44	-2.72	-3.09	0.35	0.34	-33.31	-34.76	-35.77	-34.61	-35.18
565	-3.49	-2.68	-3.10	0.40	0.36	-33.42	-35.00	-35.58	-34.79	-35.12
580	-3.54	-2.65	-3.12	0.44	0.38	-33.55	-35.32	-35.39	-35.08	-35.06
595	-3.58	-2.62	-3.13	0.47	0.40	-33.80	-35.81	-35.23	-35.54	-35.17
610	-3.61	-2.60	-3.13	0.50	0.42	-34.01	-36.14	-35.02	-36.01	-35.31
625	-3.64	-2.58	-3.14	0.53	0.44	-34.21	-36.68	-34.85	-36.37	-35.45
640	-3.66	-2.56	-3.14	0.55	0.46	-34.39	-37.02	-34.58	-36.43	-35.44
655	-3.68	-2.55	-3.15	0.56	0.48	-34.68	-37.17	-34.24	-36.32	-35.41
670	-3.69	-2.54	-3.15	0.57	0.50	-34.63	-37.19	-33.93	-35.95	-35.37
685	-3.70	-2.54	-3.16	0.57	0.53	-34.65	-36.89	-33.66	-35.64	-35.29
700	-3.70	-2.55	-3.16	0.57	0.55	-34.58	-36.49	-33.35	-35.25	-35.26
715	-3.70	-2.56	-3.17	0.57	0.58	-34.40	-35.98	-33.22	-34.92	-35.20
730	-3.69	-2.57	-3.17	0.55	0.60	-34.19	-35.63	-33.08	-34.63	-35.10
745	-3.67	-2.58	-3.16	0.54	0.62	-34.06	-35.22	-32.83	-34.37	-35.01
760	-3.65	-2.60	-3.16	0.52	0.63	-33.88	-35.03	-32.60	-34.17	-34.98
775	-3.62	-2.63	-3.15	0.49	0.66	-33.75	-34.74	-32.41	-33.99	-35.03
790	-3.59	-2.66	-3.15	0.46	0.69	-33.73	-34.43	-32.24	-33.95	-35.19
805	-3.55	-2.69	-3.14	0.42	0.72	-33.42	-34.13	-32.12	-33.86	-35.33
820	-3.51	-2.74	-3.14	0.38	0.74	-33.19	-33.74	-32.06	-33.96	-35.61
835	-3.46	-2.78	-3.13	0.33	0.78	-32.96	-33.53	-32.06	-34.15	-35.74
850	-3.40	-2.83	-3.12	0.28	0.81	-32.80	-33.36	-32.04	-34.33	-35.76
865	-3.34	-2.89	-3.12	0.22	0.85	-32.66	-33.30	-32.04	-34.45	-35.93
880	-3.28	-2.96	-3.12	0.15	0.89	-32.63	-33.25	-32.06	-34.56	-36.11
895	-3.21	-3.04	-3.13	0.08	0.93	-32.53	-33.07	-32.02	-34.59	-36.27
910	-3.14	-3.12	-3.13	0.00	0.97	-32.40	-32.87	-31.99	-34.52	-36.48
925	-3.06	-3.21	-3.14	0.09	1.02	-32.28	-32.57	-32.08	-34.43	-36.64
940	-2.97	-3.30	-3.14	0.18	1.08	-32.05	-32.38	-32.04	-34.24	-36.54
955	-2.88	-3.41	-3.15	0.28	1.13	-31.78	-32.20	-31.92	-33.97	-36.22
970	-2.78	-3.53	-3.17	0.38	1.18	-31.63	-32.08	-31.71	-33.66	-35.63
985	-2.69	-3.65	-3.20	0.50	1.23	-31.48	-31.92	-31.40	-33.35	-35.17
1000	-2.59	-3.80	-3.24	0.62	1.28	-31.29	-31.70	-31.11	-32.93	-34.72

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

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	Sum-Port 1	Sum-Port 2	Average	(±dB) Half P-P	(deg) Rel. to 90°	(dB) Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.65	-3.54	-3.12	0.44	-0.10	-32.89	-38.47	-35.17	-39.42	-34.63
415	-2.75	-3.42	-3.10	0.33	-0.11	-33.00	-38.21	-34.85	-38.67	-34.47
430	-2.85	-3.31	-3.09	0.23	-0.11	-32.95	-38.04	-34.62	-38.17	-34.35
445	-2.94	-3.21	-3.08	0.13	-0.11	-33.14	-37.43	-34.38	-37.62	-34.19
460	-3.02	-3.12	-3.07	0.04	-0.10	-33.18	-36.92	-34.15	-37.17	-34.10
475	-3.11	-3.04	-3.08	0.04	-0.10	-33.08	-36.39	-34.04	-36.75	-34.11
490	-3.19	-2.97	-3.08	0.12	-0.10	-33.07	-36.01	-34.09	-36.44	-34.16
505	-3.26	-2.91	-3.09	0.19	-0.10	-33.17	-35.76	-34.18	-36.20	-34.26
520	-3.33	-2.85	-3.10	0.25	-0.10	-33.13	-35.55	-34.39	-36.02	-34.37
535	-3.39	-2.80	-3.11	0.31	-0.09	-33.05	-35.40	-34.47	-35.86	-34.54
550	-3.44	-2.75	-3.11	0.36	-0.08	-33.20	-35.18	-34.61	-35.77	-34.76
565	-3.49	-2.71	-3.12	0.40	-0.07	-33.30	-35.12	-34.79	-35.58	-35.00
580	-3.54	-2.68	-3.13	0.44	-0.06	-33.36	-35.06	-35.08	-35.39	-35.32
595	-3.58	-2.65	-3.14	0.48	-0.04	-33.57	-35.17	-35.54	-35.23	-35.81
610	-3.61	-2.62	-3.14	0.51	-0.03	-33.85	-35.31	-36.01	-35.02	-36.14
625	-3.64	-2.60	-3.15	0.53	-0.02	-34.00	-35.45	-36.37	-34.85	-36.68
640	-3.66	-2.59	-3.16	0.55	-0.01	-34.28	-35.44	-36.43	-34.58	-37.02
655	-3.68	-2.57	-3.16	0.56	0.01	-34.48	-35.41	-36.32	-34.24	-37.17
670	-3.69	-2.57	-3.17	0.57	0.02	-34.47	-35.37	-35.95	-33.93	-37.19
685	-3.70	-2.57	-3.17	0.58	0.03	-34.43	-35.29	-35.64	-33.66	-36.89
700	-3.70	-2.57	-3.17	0.58	0.05	-34.30	-35.26	-35.25	-33.35	-36.49
715	-3.70	-2.58	-3.18	0.57	0.06	-34.07	-35.20	-34.92	-33.22	-35.98
730	-3.69	-2.59	-3.17	0.56	0.08	-33.87	-35.10	-34.63	-33.08	-35.63
745	-3.67	-2.61	-3.17	0.54	0.09	-33.74	-35.01	-34.37	-32.83	-35.22
760	-3.65	-2.63	-3.17	0.52	0.10	-33.62	-34.98	-34.17	-32.60	-35.03
775	-3.62	-2.65	-3.16	0.50	0.11	-33.55	-35.03	-33.99	-32.41	-34.74
790	-3.59	-2.69	-3.16	0.46	0.13	-33.47	-35.19	-33.95	-32.24	-34.43
805	-3.55	-2.72	-3.15	0.43	0.16	-33.22	-35.33	-33.86	-32.12	-34.13
820	-3.51	-2.76	-3.15	0.38	0.18	-33.02	-35.61	-33.96	-32.06	-33.74
835	-3.45	-2.81	-3.14	0.34	0.19	-32.80	-35.74	-34.15	-32.06	-33.53
850	-3.40	-2.86	-3.14	0.28	0.21	-32.66	-35.76	-34.33	-32.04	-33.36
865	-3.34	-2.92	-3.14	0.22	0.24	-32.56	-35.93	-34.45	-32.04	-33.30
880	-3.27	-2.99	-3.13	0.16	0.27	-32.55	-36.11	-34.56	-32.06	-33.25
895	-3.20	-3.06	-3.13	0.08	0.29	-32.42	-36.27	-34.59	-32.02	-33.07
910	-3.13	-3.14	-3.14	0.01	0.31	-32.34	-36.48	-34.52	-31.99	-32.87
925	-3.05	-3.23	-3.14	0.08	0.35	-32.19	-36.64	-34.43	-32.08	-32.57
940	-2.96	-3.33	-3.15	0.17	0.39	-32.07	-36.54	-34.24	-32.04	-32.38
955	-2.87	-3.43	-3.16	0.27	0.42	-31.80	-36.22	-33.97	-31.92	-32.20
970	-2.78	-3.55	-3.18	0.38	0.46	-31.55	-35.63	-33.66	-31.71	-32.08
985	-2.68	-3.68	-3.21	0.49	0.49	-31.51	-35.17	-33.35	-31.40	-31.92
1000	-2.58	-3.82	-3.24	0.61	0.53	-31.24	-34.72	-32.93	-31.11	-31.70

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

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	Sum-Port 1	Sum-Port 2	Average	(±dB) Half P-P	(deg) Rel. to 90°	(dB) Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.65	-3.57	-3.13	0.46	-0.11	-36.33	-43.67	-38.76	-45.66	-39.47
415	-2.75	-3.45	-3.11	0.35	-0.11	-36.39	-43.30	-38.58	-45.08	-39.19
430	-2.85	-3.34	-3.10	0.25	-0.11	-36.17	-43.29	-38.46	-44.89	-38.83
445	-2.94	-3.24	-3.09	0.15	-0.10	-36.15	-43.14	-38.07	-43.71	-38.37
460	-3.03	-3.15	-3.09	0.06	-0.08	-36.18	-42.59	-37.70	-42.94	-37.91
475	-3.11	-3.07	-3.09	0.02	-0.07	-35.95	-41.87	-37.32	-42.17	-37.54
490	-3.19	-3.00	-3.10	0.10	-0.07	-35.83	-41.25	-37.02	-41.72	-37.36
505	-3.26	-2.93	-3.10	0.17	-0.06	-36.00	-41.07	-36.89	-41.61	-37.24
520	-3.33	-2.87	-3.11	0.23	-0.05	-36.04	-41.19	-36.72	-41.55	-37.14
535	-3.39	-2.82	-3.11	0.29	-0.04	-35.99	-41.42	-36.47	-41.37	-36.82
550	-3.44	-2.77	-3.12	0.34	-0.03	-36.06	-41.41	-36.13	-40.97	-36.36
565	-3.49	-2.73	-3.13	0.38	-0.02	-35.93	-41.11	-35.68	-40.61	-35.89
580	-3.54	-2.70	-3.14	0.42	0.00	-35.70	-40.54	-35.29	-40.16	-35.58
595	-3.58	-2.67	-3.15	0.46	0.01	-35.68	-40.05	-35.17	-39.89	-35.52
610	-3.62	-2.65	-3.16	0.49	0.02	-35.79	-39.69	-35.09	-39.82	-35.55
625	-3.65	-2.63	-3.17	0.51	0.03	-35.70	-39.69	-35.34	-39.80	-35.69
640	-3.67	-2.61	-3.17	0.53	0.04	-35.54	-39.74	-35.44	-39.61	-35.67
655	-3.68	-2.60	-3.17	0.54	0.05	-35.49	-39.66	-35.38	-39.54	-35.55
670	-3.70	-2.60	-3.18	0.55	0.06	-35.39	-39.46	-35.20	-39.37	-35.31
685	-3.70	-2.60	-3.18	0.56	0.07	-35.25	-39.14	-34.83	-39.12	-35.09
700	-3.70	-2.60	-3.18	0.55	0.08	-35.19	-38.77	-34.60	-38.95	-34.95
715	-3.70	-2.61	-3.19	0.55	0.10	-35.09	-38.81	-34.45	-38.84	-34.91
730	-3.69	-2.62	-3.19	0.54	0.11	-34.97	-38.90	-34.51	-38.72	-34.98
745	-3.67	-2.64	-3.19	0.52	0.12	-34.82	-38.81	-34.53	-38.72	-35.04
760	-3.65	-2.66	-3.18	0.50	0.13	-34.74	-38.72	-34.65	-38.68	-35.15
775	-3.62	-2.69	-3.18	0.47	0.16	-34.62	-38.48	-34.68	-38.56	-35.13
790	-3.59	-2.72	-3.18	0.44	0.18	-34.50	-38.07	-34.58	-38.30	-35.09
805	-3.55	-2.76	-3.17	0.40	0.21	-34.25	-37.76	-34.51	-38.01	-35.02
820	-3.50	-2.80	-3.16	0.36	0.23	-34.00	-37.56	-34.37	-37.95	-35.17
835	-3.45	-2.84	-3.16	0.31	0.25	-33.92	-37.57	-34.41	-37.82	-35.39
850	-3.40	-2.90	-3.16	0.25	0.27	-33.75	-37.54	-34.45	-37.57	-35.55
865	-3.34	-2.96	-3.15	0.19	0.29	-33.55	-37.44	-34.50	-37.41	-35.65
880	-3.28	-3.03	-3.16	0.13	0.32	-33.45	-37.25	-34.58	-37.38	-35.81
895	-3.21	-3.10	-3.16	0.05	0.35	-33.26	-36.86	-34.48	-37.12	-35.85
910	-3.13	-3.19	-3.16	0.03	0.39	-33.02	-36.45	-34.31	-36.84	-35.77
925	-3.05	-3.28	-3.17	0.11	0.42	-32.89	-36.23	-34.09	-36.58	-35.64
940	-2.96	-3.37	-3.17	0.21	0.45	-32.68	-35.97	-34.01	-36.17	-35.51
955	-2.88	-3.48	-3.19	0.31	0.49	-32.34	-35.62	-33.85	-35.77	-35.38
970	-2.78	-3.60	-3.21	0.41	0.53	-32.23	-35.18	-33.70	-35.22	-35.22
985	-2.68	-3.74	-3.24	0.53	0.58	-31.94	-34.57	-33.46	-34.76	-35.03
1000	-2.58	-3.88	-3.28	0.65	0.63	-31.71	-34.09	-33.19	-34.29	-34.66

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

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	Sum-Port 1	Sum-Port 2	Average	(±dB) Half P-P	(deg) Rel. to 90°	(dB) Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.67	-3.56	-3.14	0.45	0.20	-36.12	-39.47	-45.66	-38.76	-43.67
415	-2.77	-3.44	-3.12	0.34	0.21	-36.25	-39.19	-45.08	-38.58	-43.30
430	-2.86	-3.34	-3.11	0.24	0.23	-36.43	-38.83	-44.89	-38.46	-43.29
445	-2.95	-3.24	-3.10	0.14	0.25	-36.67	-38.37	-43.71	-38.07	-43.14
460	-3.04	-3.15	-3.10	0.06	0.27	-36.58	-37.91	-42.94	-37.70	-42.59
475	-3.12	-3.07	-3.10	0.03	0.29	-36.40	-37.54	-42.17	-37.32	-41.87
490	-3.20	-2.99	-3.10	0.11	0.32	-36.33	-37.36	-41.72	-37.02	-41.25
505	-3.28	-2.93	-3.11	0.18	0.34	-36.35	-37.24	-41.61	-36.89	-41.07
520	-3.34	-2.87	-3.11	0.24	0.35	-36.39	-37.14	-41.55	-36.72	-41.19
535	-3.40	-2.82	-3.12	0.30	0.37	-36.36	-36.82	-41.37	-36.47	-41.42
550	-3.46	-2.77	-3.13	0.35	0.39	-36.26	-36.36	-40.97	-36.13	-41.41
565	-3.51	-2.73	-3.14	0.39	0.41	-36.03	-35.89	-40.61	-35.68	-41.11
580	-3.56	-2.70	-3.15	0.43	0.44	-35.82	-35.58	-40.16	-35.29	-40.54
595	-3.60	-2.67	-3.16	0.47	0.47	-35.61	-35.52	-39.89	-35.17	-40.05
610	-3.63	-2.64	-3.16	0.50	0.49	-35.42	-35.55	-39.82	-35.09	-39.69
625	-3.66	-2.63	-3.18	0.52	0.51	-35.36	-35.69	-39.80	-35.34	-39.69
640	-3.68	-2.61	-3.18	0.54	0.53	-35.15	-35.67	-39.61	-35.44	-39.74
655	-3.70	-2.60	-3.18	0.55	0.55	-35.12	-35.55	-39.54	-35.38	-39.66
670	-3.71	-2.60	-3.19	0.56	0.58	-34.96	-35.31	-39.37	-35.20	-39.46
685	-3.72	-2.60	-3.20	0.56	0.62	-35.09	-35.09	-39.12	-34.83	-39.14
700	-3.72	-2.60	-3.20	0.56	0.66	-35.09	-34.95	-38.95	-34.60	-38.77
715	-3.71	-2.61	-3.19	0.56	0.70	-35.01	-34.91	-38.84	-34.45	-38.81
730	-3.70	-2.62	-3.19	0.54	0.72	-34.93	-34.98	-38.72	-34.51	-38.90
745	-3.69	-2.63	-3.19	0.53	0.75	-34.96	-35.04	-38.72	-34.53	-38.81
760	-3.66	-2.65	-3.18	0.51	0.78	-34.80	-35.15	-38.68	-34.65	-38.72
775	-3.64	-2.68	-3.19	0.48	0.81	-34.77	-35.13	-38.56	-34.68	-38.48
790	-3.60	-2.71	-3.18	0.45	0.84	-34.57	-35.09	-38.30	-34.58	-38.07
805	-3.57	-2.75	-3.18	0.41	0.88	-34.25	-35.02	-38.01	-34.51	-37.76
820	-3.52	-2.79	-3.17	0.37	0.91	-34.10	-35.17	-37.95	-34.37	-37.56
835	-3.47	-2.84	-3.17	0.32	0.95	-33.95	-35.39	-37.82	-34.41	-37.57
850	-3.42	-2.89	-3.16	0.26	0.98	-33.77	-35.55	-37.57	-34.45	-37.54
865	-3.36	-2.96	-3.16	0.20	1.01	-33.56	-35.65	-37.41	-34.50	-37.44
880	-3.29	-3.03	-3.16	0.13	1.06	-33.47	-35.81	-37.38	-34.58	-37.25
895	-3.22	-3.10	-3.16	0.06	1.11	-33.34	-35.85	-37.12	-34.48	-36.86
910	-3.15	-3.18	-3.17	0.02	1.17	-33.13	-35.77	-36.84	-34.31	-36.45
925	-3.07	-3.27	-3.17	0.11	1.23	-32.87	-35.64	-36.58	-34.09	-36.23
940	-2.98	-3.37	-3.18	0.20	1.29	-32.61	-35.51	-36.17	-34.01	-35.97
955	-2.89	-3.48	-3.20	0.30	1.35	-32.25	-35.38	-35.77	-33.85	-35.62
970	-2.80	-3.60	-3.22	0.41	1.42	-32.16	-35.22	-35.22	-33.70	-35.18
985	-2.70	-3.73	-3.25	0.52	1.48	-31.92	-35.03	-34.76	-33.46	-34.57
1000	-2.60	-3.88	-3.29	0.64	1.54	-31.60	-34.66	-34.29	-33.19	-34.09

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

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	Sum-Port 1	Sum-Port 2	Average	(±dB) Half P-P	(deg) Rel. to 90°	(dB) Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.66	-3.56	-3.13	0.46	0.07	-36.13	-38.76	-43.67	-39.47	-45.66
415	-2.76	-3.44	-3.11	0.35	0.08	-36.32	-38.58	-43.30	-39.19	-45.08
430	-2.86	-3.33	-3.10	0.25	0.09	-36.32	-38.46	-43.29	-38.83	-44.89
445	-2.95	-3.23	-3.09	0.15	0.11	-36.32	-38.07	-43.14	-38.37	-43.71
460	-3.04	-3.14	-3.09	0.06	0.13	-36.32	-37.70	-42.59	-37.91	-42.94
475	-3.12	-3.06	-3.09	0.02	0.15	-36.09	-37.32	-41.87	-37.54	-42.17
490	-3.20	-2.99	-3.10	0.10	0.16	-36.06	-37.02	-41.25	-37.36	-41.72
505	-3.27	-2.93	-3.10	0.17	0.19	-36.08	-36.89	-41.07	-37.24	-41.61
520	-3.34	-2.87	-3.11	0.23	0.20	-36.14	-36.72	-41.19	-37.14	-41.55
535	-3.40	-2.81	-3.12	0.29	0.22	-35.99	-36.47	-41.42	-36.82	-41.37
550	-3.46	-2.77	-3.13	0.34	0.24	-35.94	-36.13	-41.41	-36.36	-40.97
565	-3.51	-2.73	-3.14	0.38	0.25	-35.76	-35.68	-41.11	-35.89	-40.61
580	-3.55	-2.69	-3.14	0.42	0.27	-35.58	-35.29	-40.54	-35.58	-40.16
595	-3.59	-2.67	-3.15	0.46	0.29	-35.54	-35.17	-40.05	-35.52	-39.89
610	-3.63	-2.64	-3.16	0.49	0.31	-35.56	-35.09	-39.69	-35.55	-39.82
625	-3.66	-2.62	-3.17	0.51	0.32	-35.58	-35.34	-39.69	-35.69	-39.80
640	-3.68	-2.61	-3.18	0.53	0.34	-35.56	-35.44	-39.74	-35.67	-39.61
655	-3.70	-2.60	-3.18	0.54	0.35	-35.66	-35.38	-39.66	-35.55	-39.54
670	-3.71	-2.59	-3.19	0.55	0.38	-35.41	-35.20	-39.46	-35.31	-39.37
685	-3.72	-2.59	-3.19	0.56	0.41	-35.28	-34.83	-39.14	-35.09	-39.12
700	-3.72	-2.60	-3.20	0.56	0.43	-35.12	-34.60	-38.77	-34.95	-38.95
715	-3.72	-2.61	-3.20	0.55	0.46	-34.90	-34.45	-38.81	-34.91	-38.84
730	-3.70	-2.62	-3.19	0.54	0.48	-34.70	-34.51	-38.90	-34.98	-38.72
745	-3.69	-2.63	-3.19	0.52	0.50	-34.62	-34.53	-38.81	-35.04	-38.72
760	-3.66	-2.65	-3.18	0.50	0.52	-34.50	-34.65	-38.72	-35.15	-38.68
775	-3.63	-2.68	-3.18	0.47	0.55	-34.37	-34.68	-38.48	-35.13	-38.56
790	-3.60	-2.71	-3.18	0.44	0.58	-34.33	-34.58	-38.07	-35.09	-38.30
805	-3.56	-2.75	-3.17	0.40	0.61	-34.01	-34.51	-37.76	-35.02	-38.01
820	-3.52	-2.79	-3.17	0.36	0.64	-33.76	-34.37	-37.56	-35.17	-37.95
835	-3.47	-2.84	-3.17	0.31	0.68	-33.51	-34.41	-37.57	-35.39	-37.82
850	-3.42	-2.89	-3.16	0.25	0.72	-33.29	-34.45	-37.54	-35.55	-37.57
865	-3.36	-2.95	-3.16	0.19	0.75	-33.08	-34.50	-37.44	-35.65	-37.41
880	-3.29	-3.02	-3.16	0.13	0.78	-33.00	-34.58	-37.25	-35.81	-37.38
895	-3.22	-3.10	-3.16	0.05	0.83	-32.83	-34.48	-36.86	-35.85	-37.12
910	-3.15	-3.18	-3.17	0.03	0.88	-32.63	-34.31	-36.45	-35.77	-36.84
925	-3.07	-3.27	-3.17	0.11	0.93	-32.42	-34.09	-36.23	-35.64	-36.58
940	-2.98	-3.37	-3.18	0.21	0.99	-32.09	-34.01	-35.97	-35.51	-36.17
955	-2.89	-3.48	-3.20	0.31	1.04	-31.72	-33.85	-35.62	-35.38	-35.77
970	-2.80	-3.60	-3.22	0.41	1.10	-31.48	-33.70	-35.18	-35.22	-35.22
985	-2.70	-3.73	-3.25	0.53	1.16	-31.26	-33.46	-34.57	-35.03	-34.76
1000	-2.60	-3.88	-3.29	0.65	1.22	-31.03	-33.19	-34.09	-34.66	-34.29

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

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	Sum-Port 1	Sum-Port 2	Average	(±dB) Half P-P	(deg) Rel. to 90°	(dB) Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.67	-3.58	-3.15	0.45	0.02	-36.22	-45.66	-39.47	-43.67	-38.76
415	-2.77	-3.46	-3.13	0.34	0.02	-36.32	-45.08	-39.19	-43.30	-38.58
430	-2.86	-3.35	-3.11	0.24	0.03	-36.19	-44.89	-38.83	-43.29	-38.46
445	-2.95	-3.25	-3.10	0.14	0.04	-36.37	-43.71	-38.37	-43.14	-38.07
460	-3.04	-3.16	-3.10	0.06	0.06	-36.28	-42.94	-37.91	-42.59	-37.70
475	-3.12	-3.08	-3.10	0.03	0.07	-36.03	-42.17	-37.54	-41.87	-37.32
490	-3.20	-3.01	-3.11	0.11	0.08	-35.97	-41.72	-37.36	-41.25	-37.02
505	-3.27	-2.95	-3.11	0.17	0.09	-36.12	-41.61	-37.24	-41.07	-36.89
520	-3.34	-2.89	-3.12	0.24	0.10	-36.06	-41.55	-37.14	-41.19	-36.72
535	-3.40	-2.83	-3.12	0.29	0.11	-35.85	-41.37	-36.82	-41.42	-36.47
550	-3.46	-2.79	-3.14	0.34	0.13	-35.81	-40.97	-36.36	-41.41	-36.13
565	-3.51	-2.75	-3.15	0.39	0.15	-35.64	-40.61	-35.89	-41.11	-35.68
580	-3.55	-2.71	-3.15	0.43	0.17	-35.38	-40.16	-35.58	-40.54	-35.29
595	-3.59	-2.69	-3.16	0.47	0.19	-35.30	-39.89	-35.52	-40.05	-35.17
610	-3.63	-2.66	-3.17	0.50	0.20	-35.40	-39.82	-35.55	-39.69	-35.09
625	-3.66	-2.64	-3.18	0.52	0.21	-35.35	-39.80	-35.69	-39.69	-35.34
640	-3.68	-2.63	-3.19	0.54	0.23	-35.44	-39.61	-35.67	-39.74	-35.44
655	-3.70	-2.62	-3.19	0.55	0.25	-35.44	-39.54	-35.55	-39.66	-35.38
670	-3.71	-2.61	-3.19	0.56	0.27	-35.25	-39.37	-35.31	-39.46	-35.20
685	-3.71	-2.61	-3.19	0.56	0.28	-35.05	-39.12	-35.09	-39.14	-34.83
700	-3.72	-2.61	-3.20	0.56	0.31	-34.81	-38.95	-34.95	-38.77	-34.60
715	-3.71	-2.62	-3.20	0.56	0.33	-34.55	-38.84	-34.91	-38.81	-34.45
730	-3.70	-2.64	-3.20	0.54	0.35	-34.36	-38.72	-34.98	-38.90	-34.51
745	-3.68	-2.65	-3.20	0.53	0.36	-34.28	-38.72	-35.04	-38.81	-34.53
760	-3.66	-2.67	-3.19	0.51	0.39	-34.21	-38.68	-35.15	-38.72	-34.65
775	-3.63	-2.70	-3.19	0.48	0.41	-34.15	-38.56	-35.13	-38.48	-34.68
790	-3.60	-2.73	-3.19	0.45	0.44	-34.06	-38.30	-35.09	-38.07	-34.58
805	-3.56	-2.77	-3.18	0.41	0.47	-33.80	-38.01	-35.02	-37.76	-34.51
820	-3.52	-2.81	-3.18	0.36	0.49	-33.58	-37.95	-35.17	-37.56	-34.37
835	-3.47	-2.86	-3.18	0.32	0.51	-33.33	-37.82	-35.39	-37.57	-34.41
850	-3.41	-2.91	-3.17	0.26	0.54	-33.14	-37.57	-35.55	-37.54	-34.45
865	-3.35	-2.97	-3.16	0.20	0.56	-32.98	-37.41	-35.65	-37.44	-34.50
880	-3.29	-3.04	-3.17	0.13	0.60	-32.92	-37.38	-35.81	-37.25	-34.58
895	-3.22	-3.12	-3.17	0.06	0.64	-32.73	-37.12	-35.85	-36.86	-34.48
910	-3.14	-3.20	-3.17	0.02	0.67	-32.57	-36.84	-35.77	-36.45	-34.31
925	-3.06	-3.29	-3.18	0.11	0.71	-32.34	-36.58	-35.64	-36.23	-34.09
940	-2.98	-3.39	-3.19	0.20	0.76	-32.12	-36.17	-35.51	-35.97	-34.01
955	-2.89	-3.50	-3.21	0.30	0.80	-31.75	-35.77	-35.38	-35.62	-33.85
970	-2.79	-3.62	-3.22	0.41	0.85	-31.41	-35.22	-35.22	-35.18	-33.70
985	-2.70	-3.75	-3.26	0.52	0.90	-31.29	-34.76	-35.03	-34.57	-33.46
1000	-2.60	-3.90	-3.30	0.64	0.95	-30.99	-34.29	-34.66	-34.09	-33.19

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

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	(dB)			(±dB)	(deg)	(dB)	(dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.66	-3.57	-3.14	0.46	-0.15	-38.40	-42.68	-40.89	-50.26	-43.57
415	-2.76	-3.45	-3.12	0.35	-0.15	-38.51	-43.16	-41.48	-53.75	-43.76
430	-2.86	-3.34	-3.11	0.25	-0.14	-38.27	-44.53	-42.82	-55.80	-43.59
445	-2.95	-3.24	-3.10	0.15	-0.13	-38.25	-46.56	-43.14	-59.76	-42.41
460	-3.03	-3.15	-3.09	0.06	-0.11	-38.03	-46.69	-42.32	-54.95	-40.98
475	-3.12	-3.07	-3.10	0.02	-0.10	-37.39	-45.03	-40.97	-50.94	-39.88
490	-3.20	-3.00	-3.10	0.10	-0.10	-36.97	-43.18	-39.91	-48.82	-39.41
505	-3.27	-2.94	-3.11	0.17	-0.09	-37.04	-42.39	-39.47	-48.41	-39.41
520	-3.34	-2.88	-3.12	0.23	-0.08	-37.01	-42.29	-39.38	-48.04	-39.59
535	-3.40	-2.83	-3.12	0.29	-0.07	-37.01	-42.98	-39.48	-47.16	-39.51
550	-3.45	-2.78	-3.13	0.34	-0.06	-37.10	-43.49	-39.12	-45.36	-39.05
565	-3.50	-2.74	-3.14	0.38	-0.05	-36.83	-43.13	-38.35	-44.01	-38.28
580	-3.55	-2.71	-3.15	0.42	-0.05	-36.50	-41.97	-37.52	-43.04	-37.76
595	-3.59	-2.68	-3.16	0.46	-0.03	-36.41	-40.93	-37.07	-42.87	-37.75
610	-3.63	-2.66	-3.17	0.49	-0.02	-36.57	-40.45	-36.98	-43.17	-38.12
625	-3.66	-2.64	-3.18	0.51	-0.01	-36.56	-40.83	-37.55	-43.82	-38.86
640	-3.68	-2.62	-3.18	0.53	0.00	-36.57	-41.72	-38.19	-43.95	-39.43
655	-3.69	-2.61	-3.18	0.54	0.01	-36.72	-42.82	-38.50	-43.94	-39.68
670	-3.71	-2.61	-3.19	0.55	0.03	-36.75	-43.36	-38.45	-43.63	-39.39
685	-3.71	-2.61	-3.19	0.55	0.04	-36.79	-43.09	-37.87	-43.35	-39.08
700	-3.71	-2.61	-3.19	0.55	0.05	-36.96	-42.57	-37.46	-43.57	-38.82
715	-3.71	-2.62	-3.20	0.55	0.07	-37.02	-43.05	-37.36	-43.97	-38.88
730	-3.70	-2.64	-3.20	0.53	0.08	-37.01	-43.94	-37.71	-44.34	-39.23
745	-3.68	-2.65	-3.20	0.52	0.09	-36.96	-45.22	-38.06	-44.74	-39.48
760	-3.66	-2.67	-3.19	0.49	0.10	-37.05	-46.41	-38.40	-44.74	-39.45
775	-3.63	-2.70	-3.19	0.47	0.13	-37.04	-46.22	-38.21	-44.46	-39.00
790	-3.60	-2.73	-3.19	0.43	0.16	-37.05	-45.16	-37.75	-44.07	-38.43
805	-3.56	-2.77	-3.18	0.40	0.19	-36.75	-44.32	-37.30	-43.63	-37.96
820	-3.51	-2.81	-3.17	0.35	0.21	-36.34	-44.12	-36.99	-43.89	-37.96
835	-3.46	-2.86	-3.17	0.30	0.23	-36.18	-44.68	-37.05	-44.00	-38.23
850	-3.41	-2.92	-3.17	0.25	0.26	-36.00	-45.08	-37.23	-43.70	-38.47
865	-3.35	-2.98	-3.17	0.19	0.28	-35.84	-45.02	-37.41	-43.25	-38.55
880	-3.28	-3.05	-3.17	0.12	0.32	-35.68	-44.22	-37.47	-42.82	-38.46
895	-3.21	-3.12	-3.17	0.05	0.35	-35.35	-42.98	-37.03	-42.13	-38.23
910	-3.14	-3.21	-3.18	0.04	0.39	-34.91	-42.17	-36.51	-41.81	-37.94
925	-3.06	-3.30	-3.18	0.12	0.42	-34.65	-41.93	-36.24	-41.55	-37.77
940	-2.97	-3.40	-3.19	0.21	0.45	-34.30	-41.65	-36.23	-40.99	-37.79
955	-2.89	-3.51	-3.21	0.31	0.48	-33.84	-41.19	-36.25	-40.36	-37.89
970	-2.79	-3.63	-3.23	0.42	0.53	-33.69	-40.31	-36.30	-39.41	-38.06
985	-2.69	-3.76	-3.26	0.54	0.57	-33.32	-38.98	-36.15	-38.70	-38.13
1000	-2.59	-3.91	-3.30	0.66	0.62	-33.00	-37.98	-35.94	-38.04	-37.90

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

NOTES:

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at <https://www.minicircuits.com/terms/viewterm.html>



2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	(dB)			(±dB)	(deg)	(dB)	(dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.69	-3.58	-3.16	0.45	0.26	-38.37	-43.57	-50.26	-40.89	-42.68
415	-2.79	-3.46	-3.14	0.34	0.28	-38.55	-43.76	-53.75	-41.48	-43.16
430	-2.89	-3.35	-3.13	0.23	0.30	-38.76	-43.59	-55.80	-42.82	-44.53
445	-2.98	-3.25	-3.12	0.14	0.33	-38.98	-42.41	-59.76	-43.14	-46.56
460	-3.06	-3.16	-3.11	0.05	0.35	-38.58	-40.98	-54.95	-42.32	-46.69
475	-3.15	-3.08	-3.12	0.04	0.38	-37.96	-39.88	-50.94	-40.97	-45.03
490	-3.23	-3.01	-3.12	0.11	0.40	-37.58	-39.41	-48.82	-39.91	-43.18
505	-3.30	-2.95	-3.13	0.18	0.43	-37.46	-39.41	-48.41	-39.47	-42.39
520	-3.37	-2.89	-3.14	0.24	0.44	-37.48	-39.59	-48.04	-39.38	-42.29
535	-3.43	-2.83	-3.14	0.30	0.46	-37.45	-39.51	-47.16	-39.48	-42.98
550	-3.48	-2.79	-3.15	0.35	0.49	-37.33	-39.05	-45.36	-39.12	-43.49
565	-3.53	-2.75	-3.16	0.40	0.51	-36.96	-38.28	-44.01	-38.35	-43.13
580	-3.58	-2.72	-3.17	0.44	0.54	-36.65	-37.76	-43.04	-37.52	-41.97
595	-3.62	-2.69	-3.18	0.47	0.58	-36.31	-37.75	-42.87	-37.07	-40.93
610	-3.66	-2.67	-3.19	0.50	0.60	-36.17	-38.12	-43.17	-36.98	-40.45
625	-3.68	-2.65	-3.20	0.52	0.63	-36.18	-38.86	-43.82	-37.55	-40.83
640	-3.71	-2.63	-3.20	0.54	0.65	-36.11	-39.43	-43.95	-38.19	-41.72
655	-3.72	-2.62	-3.20	0.55	0.68	-36.29	-39.68	-43.94	-38.50	-42.82
670	-3.73	-2.62	-3.21	0.56	0.72	-36.28	-39.39	-43.63	-38.45	-43.36
685	-3.74	-2.62	-3.22	0.56	0.76	-36.57	-39.08	-43.35	-37.87	-43.09
700	-3.74	-2.62	-3.22	0.56	0.80	-36.77	-38.82	-43.57	-37.46	-42.57
715	-3.74	-2.63	-3.22	0.56	0.85	-36.87	-38.88	-43.97	-37.36	-43.05
730	-3.73	-2.64	-3.22	0.54	0.88	-36.88	-39.23	-44.34	-37.71	-43.94
745	-3.71	-2.66	-3.22	0.53	0.92	-37.08	-39.48	-44.74	-38.06	-45.22
760	-3.69	-2.68	-3.21	0.51	0.95	-37.04	-39.45	-44.74	-38.40	-46.41
775	-3.66	-2.71	-3.21	0.48	0.98	-37.19	-39.00	-44.46	-38.21	-46.22
790	-3.63	-2.74	-3.21	0.45	1.02	-37.08	-38.43	-44.07	-37.75	-45.16
805	-3.59	-2.78	-3.20	0.41	1.06	-36.70	-37.96	-43.63	-37.30	-44.32
820	-3.55	-2.82	-3.20	0.37	1.10	-36.42	-37.96	-43.89	-36.99	-44.12
835	-3.50	-2.87	-3.20	0.32	1.14	-36.17	-38.23	-44.00	-37.05	-44.68
850	-3.44	-2.93	-3.19	0.26	1.18	-35.98	-38.47	-43.70	-37.23	-45.08
865	-3.38	-2.99	-3.19	0.20	1.22	-35.82	-38.55	-43.25	-37.41	-45.02
880	-3.31	-3.06	-3.19	0.13	1.28	-35.67	-38.46	-42.82	-37.47	-44.22
895	-3.25	-3.13	-3.19	0.06	1.33	-35.40	-38.23	-42.13	-37.03	-42.98
910	-3.17	-3.22	-3.20	0.03	1.38	-35.03	-37.94	-41.81	-36.51	-42.17
925	-3.09	-3.31	-3.20	0.11	1.45	-34.60	-37.77	-41.55	-36.24	-41.93
940	-3.00	-3.41	-3.21	0.20	1.52	-34.20	-37.79	-40.99	-36.23	-41.65
955	-2.92	-3.52	-3.23	0.30	1.59	-33.72	-37.89	-40.36	-36.25	-41.19
970	-2.82	-3.64	-3.25	0.41	1.65	-33.58	-38.06	-39.41	-36.30	-40.31
985	-2.72	-3.77	-3.28	0.53	1.72	-33.28	-38.13	-38.70	-36.15	-38.98
1000	-2.62	-3.92	-3.32	0.65	1.79	-32.88	-37.90	-38.04	-35.94	-37.98

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

NOTES:

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.

C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at <https://www.minicircuits.com/terms/viewterm.html>

2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	(dB)			(±dB)	(deg)	(dB)	(dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.68	-3.57	-3.15	0.46	0.18	-38.98	-40.89	-42.68	-43.57	-50.26
415	-2.78	-3.45	-3.13	0.35	0.20	-39.45	-41.48	-43.16	-43.76	-53.75
430	-2.88	-3.34	-3.12	0.25	0.21	-39.79	-42.82	-44.53	-43.59	-55.80
445	-2.97	-3.24	-3.11	0.15	0.24	-39.93	-43.14	-46.56	-42.41	-59.76
460	-3.05	-3.15	-3.10	0.07	0.28	-39.66	-42.32	-46.69	-40.98	-54.95
475	-3.14	-3.07	-3.11	0.02	0.30	-38.81	-40.97	-45.03	-39.88	-50.94
490	-3.22	-3.00	-3.11	0.10	0.32	-38.33	-39.91	-43.18	-39.41	-48.82
505	-3.29	-2.94	-3.12	0.16	0.36	-38.10	-39.47	-42.39	-39.41	-48.41
520	-3.36	-2.88	-3.13	0.23	0.38	-38.08	-39.38	-42.29	-39.59	-48.04
535	-3.42	-2.83	-3.14	0.28	0.40	-37.89	-39.48	-42.98	-39.51	-47.16
550	-3.47	-2.78	-3.14	0.34	0.42	-37.75	-39.12	-43.49	-39.05	-45.36
565	-3.53	-2.74	-3.15	0.38	0.44	-37.35	-38.35	-43.13	-38.28	-44.01
580	-3.57	-2.71	-3.16	0.42	0.46	-36.94	-37.52	-41.97	-37.76	-43.04
595	-3.61	-2.68	-3.17	0.45	0.49	-36.69	-37.07	-40.93	-37.75	-42.87
610	-3.65	-2.66	-3.18	0.48	0.51	-36.56	-36.98	-40.45	-38.12	-43.17
625	-3.68	-2.64	-3.19	0.51	0.54	-36.52	-37.55	-40.83	-38.86	-43.82
640	-3.70	-2.62	-3.19	0.53	0.56	-36.53	-38.19	-41.72	-39.43	-43.95
655	-3.72	-2.61	-3.20	0.54	0.58	-36.74	-38.50	-42.82	-39.68	-43.94
670	-3.73	-2.61	-3.21	0.55	0.62	-36.56	-38.45	-43.36	-39.39	-43.63
685	-3.74	-2.61	-3.21	0.55	0.65	-36.52	-37.87	-43.09	-39.08	-43.35
700	-3.74	-2.62	-3.22	0.55	0.68	-36.42	-37.46	-42.57	-38.82	-43.57
715	-3.74	-2.63	-3.22	0.54	0.71	-36.21	-37.36	-43.05	-38.88	-43.97
730	-3.72	-2.64	-3.21	0.53	0.74	-35.99	-37.71	-43.94	-39.23	-44.34
745	-3.71	-2.65	-3.21	0.51	0.77	-35.97	-38.06	-45.22	-39.48	-44.74
760	-3.68	-2.67	-3.20	0.49	0.80	-35.97	-38.40	-46.41	-39.45	-44.74
775	-3.65	-2.70	-3.20	0.46	0.84	-35.98	-38.21	-46.22	-39.00	-44.46
790	-3.62	-2.73	-3.20	0.43	0.87	-36.08	-37.75	-45.16	-38.43	-44.07
805	-3.58	-2.77	-3.19	0.39	0.91	-35.70	-37.30	-44.32	-37.96	-43.63
820	-3.54	-2.81	-3.19	0.35	0.95	-35.32	-36.99	-44.12	-37.96	-43.89
835	-3.49	-2.86	-3.19	0.30	1.00	-34.97	-37.05	-44.68	-38.23	-44.00
850	-3.43	-2.92	-3.18	0.24	1.05	-34.74	-37.23	-45.08	-38.47	-43.70
865	-3.37	-2.98	-3.18	0.18	1.09	-34.60	-37.41	-45.02	-38.55	-43.25
880	-3.31	-3.05	-3.18	0.11	1.15	-34.55	-37.47	-44.22	-38.46	-42.82
895	-3.24	-3.13	-3.19	0.04	1.20	-34.34	-37.03	-42.98	-38.23	-42.13
910	-3.17	-3.21	-3.19	0.04	1.24	-34.05	-36.51	-42.17	-37.94	-41.81
925	-3.09	-3.30	-3.20	0.13	1.30	-33.72	-36.24	-41.93	-37.77	-41.55
940	-3.00	-3.40	-3.20	0.22	1.37	-33.25	-36.23	-41.65	-37.79	-40.99
955	-2.91	-3.51	-3.22	0.32	1.43	-32.77	-36.25	-41.19	-37.89	-40.36
970	-2.82	-3.63	-3.24	0.43	1.50	-32.47	-36.30	-40.31	-38.06	-39.41
985	-2.72	-3.77	-3.28	0.54	1.56	-32.23	-36.15	-38.98	-38.13	-38.70
1000	-2.62	-3.91	-3.31	0.67	1.62	-31.99	-35.94	-37.98	-37.90	-38.04

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

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- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at <https://www.minicircuits.com/terms/viewterm.html>



2-Way 90° Power Splitter/Combiner

QCH-13+

Typical Performance Data

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

Freq. (MHz)	Total Loss*			Amp. Unb.	Ph. Unb.	Isolation	Return Loss			
	(dB)			(±dB)	(deg)	(dB)	(dB)			
	Sum-Port 1	Sum-Port 2	Average	Half P-P	Rel. to 90°	Port1-Port2	Sum	Port 1	Port 2	Iso
400	-2.68	-3.59	-3.16	0.44	-0.07	-38.94	-50.26	-43.57	-42.68	-40.89
415	-2.78	-3.47	-3.14	0.33	-0.07	-39.35	-53.75	-43.76	-43.16	-41.48
430	-2.88	-3.36	-3.13	0.23	-0.06	-39.46	-55.80	-43.59	-44.53	-42.82
445	-2.97	-3.26	-3.12	0.13	-0.05	-39.92	-59.76	-42.41	-46.56	-43.14
460	-3.05	-3.17	-3.11	0.05	-0.04	-39.54	-54.95	-40.98	-46.69	-42.32
475	-3.14	-3.10	-3.12	0.04	-0.04	-38.68	-50.94	-39.88	-45.03	-40.97
490	-3.22	-3.03	-3.13	0.11	-0.03	-38.17	-48.82	-39.41	-43.18	-39.91
505	-3.29	-2.96	-3.13	0.18	-0.03	-38.11	-48.41	-39.41	-42.39	-39.47
520	-3.36	-2.90	-3.14	0.25	-0.02	-37.93	-48.04	-39.59	-42.29	-39.38
535	-3.42	-2.85	-3.14	0.30	-0.01	-37.66	-47.16	-39.51	-42.98	-39.48
550	-3.48	-2.80	-3.15	0.35	0.01	-37.54	-45.36	-39.05	-43.49	-39.12
565	-3.53	-2.76	-3.16	0.40	0.02	-37.16	-44.01	-38.28	-43.13	-38.35
580	-3.57	-2.73	-3.17	0.44	0.03	-36.66	-43.04	-37.76	-41.97	-37.52
595	-3.61	-2.70	-3.18	0.47	0.05	-36.36	-42.87	-37.75	-40.93	-37.07
610	-3.65	-2.68	-3.19	0.50	0.06	-36.32	-43.17	-38.12	-40.45	-36.98
625	-3.68	-2.66	-3.20	0.53	0.08	-36.20	-43.82	-38.86	-40.83	-37.55
640	-3.70	-2.65	-3.21	0.54	0.09	-36.35	-43.95	-39.43	-41.72	-38.19
655	-3.72	-2.64	-3.21	0.56	0.11	-36.43	-43.94	-39.68	-42.82	-38.50
670	-3.73	-2.63	-3.21	0.57	0.13	-36.32	-43.63	-39.39	-43.36	-38.45
685	-3.73	-2.63	-3.21	0.57	0.14	-36.20	-43.35	-39.08	-43.09	-37.87
700	-3.74	-2.64	-3.22	0.57	0.17	-36.01	-43.57	-38.82	-42.57	-37.46
715	-3.73	-2.65	-3.22	0.56	0.19	-35.74	-43.97	-38.88	-43.05	-37.36
730	-3.72	-2.66	-3.22	0.55	0.21	-35.54	-44.34	-39.23	-43.94	-37.71
745	-3.70	-2.68	-3.22	0.53	0.23	-35.53	-44.74	-39.48	-45.22	-38.06
760	-3.68	-2.70	-3.22	0.51	0.25	-35.59	-44.74	-39.45	-46.41	-38.40
775	-3.65	-2.73	-3.21	0.48	0.27	-35.68	-44.46	-39.00	-46.22	-38.21
790	-3.62	-2.76	-3.21	0.45	0.30	-35.70	-44.07	-38.43	-45.16	-37.75
805	-3.58	-2.80	-3.21	0.41	0.33	-35.40	-43.63	-37.96	-44.32	-37.30
820	-3.54	-2.84	-3.20	0.37	0.35	-35.06	-43.89	-37.96	-44.12	-36.99
835	-3.49	-2.89	-3.20	0.32	0.37	-34.72	-44.00	-38.23	-44.68	-37.05
850	-3.43	-2.94	-3.19	0.26	0.39	-34.53	-43.70	-38.47	-45.08	-37.23
865	-3.37	-3.00	-3.19	0.20	0.41	-34.43	-43.25	-38.55	-45.02	-37.41
880	-3.31	-3.07	-3.19	0.14	0.45	-34.42	-42.82	-38.46	-44.22	-37.47
895	-3.24	-3.15	-3.20	0.06	0.48	-34.18	-42.13	-38.23	-42.98	-37.03
910	-3.16	-3.23	-3.20	0.02	0.51	-33.94	-41.81	-37.94	-42.17	-36.51
925	-3.08	-3.33	-3.21	0.11	0.55	-33.59	-41.55	-37.77	-41.93	-36.24
940	-3.00	-3.43	-3.22	0.20	0.59	-33.25	-40.99	-37.79	-41.65	-36.23
955	-2.91	-3.54	-3.24	0.30	0.64	-32.76	-40.36	-37.89	-41.19	-36.25
970	-2.82	-3.66	-3.26	0.41	0.69	-32.36	-39.41	-38.06	-40.31	-36.30
985	-2.72	-3.79	-3.29	0.52	0.73	-32.24	-38.70	-38.13	-38.98	-36.15
1000	-2.62	-3.94	-3.33	0.65	0.78	-31.91	-38.04	-37.90	-37.98	-35.94

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

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