Frequency Mixer RMS-1LH

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+7	+10	+13
2.0	32.0	7.08	6.73	6.55
5.0	35.0	6.14	5.87	5.71
10.0	40.0	6.47	6.17	5.99
49.8	79.8	6.05	5.69	5.50
89.5	119.5	6.00	5.68	5.52
129.2	159.2	6.03	5.75	5.60
168.9	198.9	6.06	5.77	5.63
208.6	238.6	6.04	5.78	5.64
248.3	278.3	6.12	5.86	5.69
287.9	317.9	6.13	5.87	5.71
327.6	357.6	6.21	5.93	5.74
367.3	397.3	6.27	5.98	5.77
446.7	476.7	6.37	6.02	5.79
486.4	516.4	6.43	6.07	5.81
526.1	556.1	6.49	6.14	5.87
565.8	595.8	6.54	6.18	5.92
585.6	615.6	6.58	6.20	5.94
625.3	655.3	6.61	6.18	5.90
645.2	675.2	6.68	6.21	5.91
684.9	714.9	6.76	6.19	5.87
704.7	734.7	6.87	6.22	5.88
744.4	774.4	7.11	6.34	5.92
764.3	794.3	7.22	6.40	5.95
803.9	833.9	7.51	6.67	6.15
823.8	853.8	7.60	6.80	6.26
863.5	893.5	7.76	7.07	6.51
883.3	913.3	7.75	7.13	6.60
923.0	953.0	7.85	7.34	6.90
942.9	972.9	7.85	7.40	7.02
982.6	1012.6	7.89	7.50	7.22
1002.4	1032.4	7.91	7.56	7.32
1061.9	1091.9	8.03	7.76	7.57
1101.6	1131.6	8.14	7.89	7.76
1121.5	1151.5	8.27	8.03	7.89
1161.2	1191.2	8.46	8.25	8.12
1181.0	1211.0	8.60	8.41	8.31
1220.7	1250.7	8.91	8.75	8.65
1240.6	1270.6	9.11	8.95	8.85
1280.3	1310.3	9.63	9.48	9.38
1300.1	1330.1	9.94	9.76	9.64

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+7	+10	+13
10.1	40.1	22.03	24.09	30.14
49.8	79.8	21.17	22.89	21.43
89.5	119.5	20.98	19.45	21.98
129.2	159.2	19.11	20.24	21.21
168.9	198.9	19.37	19.69	20.10
208.6	238.6	17.91	18.90	19.08
248.3	278.3	18.01	19.19	17.85
287.9	317.9	17.57	16.97	17.40
327.6	357.6	16.26	16.10	17.35
367.3	397.3	16.08	15.65	16.86
407.0	437.0	17.53	16.68	17.05
446.7	476.7	17.26	17.28	18.66
486.4	516.4	14.24	16.02	18.53
526.1	556.1	12.55	13.17	15.68
565.8	595.8	11.73	12.44	14.98
585.6	615.6	11.81	12.82	15.08
625.3	655.3	12.39	14.21	17.64
645.2	675.2	13.15	15.61	19.52
684.9	714.9	13.86	19.54	24.38
704.7	734.7	13.69	20.89	20.35
744.4	774.4	12.73	17.99	24.15
764.3	794.3	12.29	18.48	25.42
803.9	833.9	11.61	16.08	25.66
823.8	853.8	11.47	15.60	22.56
863.5	893.5	12.17	16.17	20.57
883.3	913.3	13.00	16.78	20.23
923.0	953.0	14.30	18.05	26.63
942.9	972.9	14.79	17.87	23.78
982.6	1012.6	14.47	17.84	19.84
1002.4	1032.4	13.82	16.68	18.27
1042.1	1072.1	13.45	15.82	17.14
1061.9	1091.9	13.49	15.60	16.13
1101.6	1131.6	13.62	14.85	15.55
1121.5	1151.5	13.56	14.71	15.14
1161.2	1191.2	13.19	14.79	15.40
1181.0	1211.0	13.32	14.57	15.74
1220.7	1250.7	13.97	15.27	16.84
1240.6	1270.6	14.18	15.59	17.04
1280.3	1310.3	13.17	14.46	16.03
1300.1	1330.1	11.85	12.78	14.42

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB) @LO (dBm)		
		+7	+10	+13
10.1	40.1	1.06	0.78	0.53
49.8	79.8	1.25	1.00	0.77
89.5	119.5	1.18	0.96	0.75
129.2	159.2	1.22	0.94	0.75
168.9	198.9	1.20	0.91	0.70
208.6	238.6	1.22	0.94	0.72
248.3	278.3	1.18	0.93	0.71
287.9	317.9	1.19	0.94	0.77
327.6	357.6	1.19	0.96	0.77
367.3	397.3	1.22	1.00	0.80
407.0	437.0	1.33	1.06	0.89
446.7	476.7	1.38	1.16	0.98
486.4	516.4	1.46	1.29	1.09
526.1	556.1	1.47	1.27	1.10
565.8	595.8	1.58	1.36	1.19
585.6	615.6	1.60	1.37	1.23
625.3	655.3	1.82	1.58	1.40
645.2	675.2	1.82	1.60	1.43
684.9	714.9	2.05	1.83	1.62
704.7	734.7	2.06	1.82	1.62
744.4	774.4	2.01	1.91	1.70
764.3	794.3	1.97	1.88	1.69
803.9	833.9	1.77	1.74	1.62
823.8	853.8	1.80	1.76	1.66
863.5	893.5	1.63	1.57	1.49
883.3	913.3	1.72	1.62	1.55
923.0	953.0	1.63	1.45	1.33
942.9	972.9	1.67	1.43	1.31
982.6	1012.6	1.69	1.38	1.21
1002.4	1032.4	1.64	1.32	1.12
1042.1	1072.1	1.57	1.21	1.05
1061.9	1091.9	1.50	1.20	1.01
1101.6	1131.6	1.55	1.20	1.03
1121.5	1151.5	1.45	1.13	1.01
1161.2	1191.2	1.41	1.09	0.99
1181.0	1211.0	1.40	1.07	0.98
1220.7	1250.7	1.27	0.96	0.95
1240.6	1270.6	1.26	0.93	0.91
1280.3	1310.3	1.14	0.84	0.87
1300.1	1330.1	1.14	0.85	0.89

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=250.1MHz (dB)
		@LO (dBm)
		+10
240.0	10.1	5.85
234.1	16.0	5.83
228.2	21.9	5.80
222.3	27.8	5.81
216.4	33.7	5.80
210.5	39.6	5.79
204.6	45.5	5.79
198.7	51.4	5.77
192.8	57.3	5.75
186.9	63.2	5.74
181.0	69.1	5.74
175.1	75.0	5.77
169.2	80.9	5.73
163.3	86.8	5.74
157.4	92.7	5.71
151.5	98.6	5.68
145.6	104.5	5.70
139.7	110.4	5.68
133.8	116.3	5.68
127.9	122.2	5.66
122.1	128.0	5.65
116.2	133.9	5.66
110.3	139.8	5.70
104.4	145.7	5.69
98.5	151.6	5.69
92.6	157.5	5.69
86.7	163.4	5.69
80.8	169.3	5.70
74.9	175.2	5.71
69.0	181.1	5.70
63.1	187.0	5.68
57.2	192.9	5.68
51.3	198.8	5.68
45.4	204.7	5.71
39.5	210.6	5.72
33.6	216.5	5.72
27.7	222.4	5.70
21.8	228.3	5.72
15.9	234.2	5.71
10.0	240.1	5.86

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)
		@LO (dBm)
		+10
10.0	20.1	5.51
22.3	32.4	5.41
34.6	44.7	5.42
46.9	57.0	5.45
59.2	69.3	5.44
71.5	81.6	5.49
83.8	93.9	5.49
96.2	106.3	5.50
108.5	118.6	5.52
120.8	130.9	5.50
133.1	143.2	5.49
145.4	155.5	5.55
157.7	167.8	5.57
170.0	180.1	5.57
182.3	192.4	5.60
194.6	204.7	5.58
206.9	217.0	5.60
219.2	229.3	5.61
231.5	241.6	5.61
243.8	253.9	5.63
256.2	266.3	5.68
268.5	278.6	5.69
280.8	290.9	5.71
293.1	303.2	5.71
305.4	315.5	5.71
317.7	327.8	5.75
330.0	340.1	5.75
342.3	352.4	5.74
354.6	364.7	5.77
366.9	377.0	5.80
379.2	389.3	5.83
391.5	401.6	5.83
403.8	413.9	5.79
416.2	426.3	5.81
428.5	438.6	5.83
440.8	450.9	5.88
453.1	463.2	5.92
465.4	475.5	5.92
477.7	487.8	5.94
490.0	500.1	5.98

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB)
		@LO (dBm)
		+10
490.0	10.1	6.00
477.7	22.4	5.98
465.4	34.7	5.94
453.1	47.0	5.92
440.8	59.3	5.91
428.5	71.6	5.85
416.2	83.9	5.83
403.8	96.3	5.81
391.5	108.6	5.79
379.2	120.9	5.80
366.9	133.2	5.80
354.6	145.5	5.78
342.3	157.8	5.80
330.0	170.1	5.81
317.7	182.4	5.81
305.4	194.7	5.82
293.1	207.0	5.80
280.8	219.3	5.81
268.5	231.6	5.83
256.2	243.9	5.85
243.8	256.3	5.86
231.5	268.6	5.87
219.2	280.9	5.85
206.9	293.2	5.88
194.6	305.5	5.88
182.3	317.8	5.88
170.0	330.1	5.89
157.7	342.4	5.91
145.4	354.7	5.93
133.1	367.0	5.96
120.8	379.3	5.94
108.5	391.6	5.94
96.2	403.9	5.95
83.8	416.3	5.94
71.5	428.6	5.96
59.2	440.9	5.97
46.9	453.2	5.95
34.6	465.5	5.96
22.3	477.8	5.96
10.0	490.1	6.04

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+7	+10	+13	+7	+10	+13
2.0	65.89	68.96	71.56	55.04	58.87	62.73
5.0	65.11	67.37	69.67	54.46	56.74	57.76
10.0	63.38	65.16	66.06	52.78	52.79	52.34
49.8	60.59	60.16	59.79	52.26	50.84	49.94
89.5	55.82	55.26	55.26	46.92	45.84	45.37
129.2	52.50	52.39	52.19	43.66	43.26	42.91
168.9	50.80	50.72	50.56	41.72	41.54	41.25
208.6	49.16	49.03	48.82	40.65	40.39	39.83
248.3	48.02	48.01	47.79	40.20	39.56	38.63
287.9	46.60	46.41	46.33	39.90	38.78	37.57
327.6	46.24	45.92	45.68	39.03	37.59	36.08
367.3	44.87	44.83	44.54	37.70	36.30	35.01
446.7	41.01	41.37	41.40	34.30	33.07	31.96
486.4	39.90	40.02	40.15	33.45	31.78	30.78
526.1	38.50	38.49	38.30	32.68	31.24	29.81
565.8	37.79	37.45	37.06	31.23	30.07	28.92
585.6	37.47	37.00	36.52	30.62	29.39	28.29
625.3	36.50	35.78	35.08	28.58	27.46	26.44
645.2	36.33	35.59	34.94	27.80	26.67	25.63
684.9	35.49	34.72	33.88	26.17	25.13	24.07
704.7	35.07	34.01	33.16	25.49	24.22	23.33
744.4	34.45	33.55	32.85	24.42	22.96	22.13
764.3	33.79	33.06	32.31	23.97	22.66	21.60
803.9	33.20	32.52	31.95	23.10	21.67	20.52
823.8	33.23	32.88	32.44	22.69	21.46	20.14
863.5	33.14	32.93	32.96	22.09	20.89	19.62
883.3	33.00	32.89	32.86	21.63	20.66	19.36
923.0	33.23	33.65	34.09	20.66	19.82	18.59
942.9	33.43	34.14	34.82	20.32	19.53	18.28
982.6	34.24	35.50	36.38	19.35	18.54	17.18
1002.4	35.36	37.20	38.29	18.90	17.97	16.81
1061.9	38.85	40.25	38.37	17.48	16.47	15.38
1101.6	44.54	39.02	35.24	16.37	15.49	14.44
1121.5	47.97	37.96	34.02	15.94	15.11	13.98
1161.2	42.58	34.19	31.12	15.15	14.38	13.35
1181.0	38.66	32.46	29.73	14.74	14.05	13.04
1220.7	34.28	29.90	27.63	14.00	13.39	12.45
1240.6	32.44	28.76	26.71	13.71	13.14	12.22
1280.3	29.47	26.53	24.98	13.09	12.47	11.74
1300.1	28.33	25.75	24.33	12.86	12.29	11.61

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+7	+10	+13
10.1	40.1	49.78	45.15	43.06
49.8	79.8	35.91	35.70	35.65
89.5	119.5	31.02	31.38	31.12
129.2	159.2	28.62	28.87	28.86
168.9	198.9	27.04	27.19	27.15
208.6	238.6	25.87	26.08	26.20
248.3	278.3	25.15	25.37	25.57
287.9	317.9	24.86	25.17	25.40
327.6	357.6	24.49	24.86	25.27
367.3	397.3	24.26	24.70	25.12
407.0	437.0	24.59	25.14	25.69
446.7	476.7	25.13	26.06	26.83
486.4	516.4	25.12	26.00	26.59
526.1	556.1	23.41	23.83	24.20
565.8	595.8	21.16	21.17	21.18
585.6	615.6	20.04	19.92	19.88
625.3	655.3	18.33	18.13	17.97
645.2	675.2	17.57	17.38	17.20
684.9	714.9	16.68	16.48	16.34
704.7	734.7	16.34	16.13	16.07
744.4	774.4	15.76	15.70	15.76
764.3	794.3	15.52	15.54	15.74
803.9	833.9	15.07	15.16	15.36
823.8	853.8	14.89	14.93	15.15
863.5	893.5	14.43	14.56	14.85
883.3	913.3	14.26	14.36	14.61
923.0	953.0	13.86	14.01	14.23
942.9	972.9	13.66	13.82	14.01
982.6	1012.6	13.25	13.39	13.51
1002.4	1032.4	12.99	13.08	13.15
1042.1	1072.1	12.39	12.44	12.40
1061.9	1091.9	12.10	12.09	12.00
1101.6	1131.6	11.46	11.38	11.24
1121.5	1151.5	11.13	10.99	10.84
1161.2	1191.2	10.49	10.31	10.12
1181.0	1211.0	10.11	9.89	9.69
1220.7	1250.7	9.41	9.19	8.99
1240.6	1270.6	9.02	8.85	8.68
1280.3	1310.3	8.29	8.15	8.03
1300.1	1330.1	7.96	7.85	7.77

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+7	+10	+13
5.0	35.0	1.15	1.16	1.18
10.0	40.0	1.09	1.08	1.11
49.8	79.8	1.06	1.04	1.10
89.5	119.5	1.05	1.05	1.10
129.2	159.2	1.05	1.06	1.10
168.9	198.9	1.05	1.07	1.11
208.6	238.6	1.05	1.09	1.13
248.3	278.3	1.05	1.09	1.13
287.9	317.9	1.05	1.10	1.14
327.6	357.6	1.06	1.10	1.15
367.3	397.3	1.05	1.10	1.15
407.0	437.0	1.05	1.12	1.17
446.7	476.7	1.06	1.13	1.19
486.4	516.4	1.06	1.14	1.20
526.1	556.1	1.07	1.14	1.20
565.8	595.8	1.08	1.15	1.20
585.6	615.6	1.09	1.15	1.20
625.3	655.3	1.10	1.16	1.21
645.2	675.2	1.11	1.17	1.22
684.9	714.9	1.17	1.21	1.26
704.7	734.7	1.21	1.25	1.30
744.4	774.4	1.32	1.34	1.38
764.3	794.3	1.39	1.40	1.44
803.9	833.9	1.53	1.53	1.55
823.8	853.8	1.61	1.60	1.62
863.5	893.5	1.75	1.74	1.76
883.3	913.3	1.83	1.83	1.84
923.0	953.0	1.99	2.02	2.04
942.9	972.9	2.08	2.11	2.14
982.6	1012.6	2.25	2.30	2.34
1002.4	1032.4	2.31	2.36	2.41
1042.1	1072.1	2.46	2.52	2.57
1061.9	1091.9	2.53	2.59	2.65
1101.6	1131.6	2.66	2.71	2.77
1121.5	1151.5	2.73	2.79	2.84
1161.2	1191.2	2.84	2.87	2.91
1181.0	1211.0	2.88	2.92	2.95
1220.7	1250.7	2.96	2.99	3.01
1240.6	1270.6	2.98	3.00	3.02
1280.3	1310.3	3.04	3.06	3.08
1300.1	1330.1	3.04	3.06	3.07

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+7	+10	+13
5.0	1.61	2.42	3.53
10.0	1.58	2.33	3.49
49.8	1.68	2.50	3.57
89.5	1.61	2.36	3.34
129.2	1.65	2.46	3.50
168.9	1.62	2.38	3.35
208.6	1.66	2.45	3.46
248.3	1.68	2.47	3.47
287.9	1.69	2.47	3.45
327.6	1.76	2.57	3.60
367.3	1.76	2.54	3.52
407.0	1.81	2.62	3.63
446.7	1.86	2.66	3.66
486.4	1.90	2.69	3.67
526.1	1.96	2.78	3.78
565.8	1.99	2.79	3.78
585.6	2.01	2.82	3.80
625.3	2.07	2.86	3.83
645.2	2.10	2.88	3.84
684.9	2.17	2.95	3.90
704.7	2.21	2.99	3.94
744.4	2.29	3.06	3.98
764.3	2.33	3.11	4.04
803.9	2.40	3.19	4.11
823.8	2.42	3.20	4.10
863.5	2.46	3.26	4.17
883.3	2.48	3.28	4.19
923.0	2.50	3.26	4.12
942.9	2.50	3.26	4.10
982.6	2.53	3.27	4.10
1002.4	2.53	3.26	4.06
1042.1	2.53	3.20	3.95
1061.9	2.53	3.20	3.94
1101.6	2.53	3.15	3.85
1121.5	2.52	3.12	3.79
1161.2	2.55	3.12	3.76
1181.0	2.56	3.11	3.73
1220.7	2.58	3.08	3.65
1240.6	2.60	3.08	3.64
1280.3	2.63	3.09	3.60
1300.1	2.63	3.06	3.54

IF (OUT) (MHz)	IF VSWR @LO=500.1MHz (:1) @LO (dBm)		
	+7	+10	+13
5.0	1.31	1.18	1.08
10.0	1.31	1.18	1.08
22.4	1.72	1.49	1.31
34.7	1.66	1.41	1.23
47.0	1.73	1.49	1.31
59.3	1.78	1.52	1.33
71.6	1.78	1.52	1.33
83.9	1.78	1.53	1.34
96.3	1.74	1.49	1.30
108.6	1.72	1.48	1.29
120.9	1.74	1.49	1.31
133.2	1.76	1.51	1.33
145.5	1.77	1.52	1.33
157.8	1.77	1.51	1.33
170.1	1.77	1.51	1.33
182.4	1.77	1.52	1.33
194.7	1.76	1.51	1.33
207.0	1.75	1.51	1.33
219.3	1.75	1.51	1.32
231.6	1.74	1.49	1.32
243.9	1.75	1.50	1.32
256.3	1.75	1.50	1.32
268.6	1.76	1.51	1.33
280.9	1.75	1.50	1.32
293.2	1.73	1.49	1.31
305.5	1.71	1.47	1.30
317.8	1.71	1.47	1.30
330.1	1.72	1.48	1.31
342.4	1.74	1.50	1.32
354.7	1.74	1.50	1.33
367.0	1.73	1.48	1.31
379.3	1.71	1.47	1.30
391.6	1.70	1.47	1.31
403.9	1.71	1.48	1.31
416.3	1.72	1.48	1.32
428.6	1.71	1.48	1.32
440.9	1.69	1.46	1.31
453.2	1.71	1.47	1.31
465.5	1.71	1.49	1.33
477.8	1.72	1.50	1.34
490.1	1.72	1.49	1.34

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	21	35	30	45	29	58	36	55	40	51
1	-	20	+0	31	12	36	19	42	32	53	40	51
2	95	62	41	61	41	61	42	62	45	68	59	79
3	>100	48	47	53	53	59	43	53	42	69	56	59
4	>100	78	57	74	56	71	56	65	53	74	56	78
5	>100	65	58	60	53	63	51	61	49	67	50	71
6	>100	84	68	88	67	84	70	79	72	75	67	91
7	>100	87	70	>94	67	76	77	77	80	74	69	74
8	>100	>94	84	90	85	92	83	94	86	84	80	80
9	>100	86	87	90	74	81	71	79	77	74	82	81
10	>100	>94	>94	>94	>94	>94	91	>94	90	92	92	91
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 250.1 MHz; 0.00 dBm.
LO IN: 280.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -6.07 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	13	25	16	32	16	45	24	44	29	39
1	-	20	+0	30	12	35	18	41	31	45	42	44
2	>100	71	44	67	45	67	45	67	48	76	61	68
3	>100	74	64	71	60	70	55	>84	57	74	64	72
4	>100	>84	76	>84	76	>84	84	>84	81	>84	>84	>84
5	>100	>84	>84	>84	>84	>84	>84	>84	80	>84	82	>84
6	>100	>84	>84	>84	>84	>84	83	>84	>84	>84	>84	>84
7	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84	>84
8	>100	>84	>84	>84	>84	>84	>84	>84	80	>84	>84	>84
9	>100	>84	>84	>84	>84	>84	>84	>84	>84	69	>84	>84
10	>100	>84	>84	>84	>84	>84	>84	>84	>84	>84	73	>84
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 250.1 MHz; -10.00 dBm.
LO IN: 280.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -15.98 dBm

Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.