Frequency Mixer LRMS-1HJ

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+14	+17	+20
2.0	32.0	7.57	6.78	6.41
5.0	35.0	7.37	6.57	6.17
10.0	40.0	7.34	6.55	6.16
49.8	79.8	6.85	6.30	6.01
89.5	119.5	6.86	6.25	5.98
129.2	159.2	6.76	6.20	5.97
168.9	198.9	6.75	6.20	5.99
208.6	238.6	6.61	6.14	5.97
248.3	278.3	6.76	6.26	6.05
287.9	317.9	6.60	6.20	6.05
327.6	357.6	6.66	6.26	6.11
367.3	397.3	6.63	6.23	6.07
446.7	476.7	6.85	6.45	6.20
486.4	516.4	6.82	6.44	6.19
526.1	556.1	6.88	6.51	6.26
565.8	595.8	6.83	6.44	6.23
585.6	615.6	6.87	6.46	6.24
625.3	655.3	6.87	6.48	6.29
645.2	675.2	6.95	6.56	6.34
684.9	714.9	7.05	6.64	6.44
744.4	774.4	7.43	6.96	6.66
764.3	794.3	7.54	7.03	6.71
803.9	833.9	7.86	7.32	6.88
823.8	853.8	8.03	7.44	6.97
863.5	893.5	8.42	7.74	7.21
883.3	913.3	8.55	7.88	7.29
923.0	953.0	9.03	8.24	7.58
942.9	972.9	9.19	8.31	7.62
982.6	1012.6	9.49	8.39	7.64
1002.4	1032.4	9.63	8.46	7.69
1042.1	1072.1	9.79	8.51	7.75
1061.9	1091.9	9.93	8.63	7.85
1101.6	1131.6	10.12	8.83	8.04
1121.5	1151.5	10.22	8.93	8.11
1181.0	1211.0	10.36	9.26	8.51
1220.7	1250.7	10.54	9.59	8.91
1240.6	1270.6	10.58	9.70	9.05
1280.3	1310.3	10.90	10.19	9.63
1300.1	1330.1	11.03	10.35	9.85

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
10.1	40.1	26.27	29.17	33.94
49.8	79.8	25.90	28.15	32.43
89.5	119.5	25.53	28.19	28.59
129.2	159.2	27.42	28.63	33.48
168.9	198.9	26.79	27.37	34.62
208.6	238.6	28.95	30.44	29.13
248.3	278.3	24.27	30.03	26.53
287.9	317.9	26.48	29.77	27.63
327.6	357.6	29.58	27.50	26.55
367.3	397.3	29.37	25.02	24.49
407.0	437.0	24.87	22.68	22.92
446.7	476.7	24.92	22.70	22.95
486.4	516.4	25.89	24.36	25.96
526.1	556.1	27.08	25.40	26.28
565.8	595.8	28.45	26.38	26.86
585.6	615.6	25.20	24.68	25.57
625.3	655.3	21.39	22.60	24.13
645.2	675.2	21.11	21.64	22.92
684.9	714.9	18.44	19.80	22.05
704.7	734.7	17.14	18.51	20.72
764.3	794.3	15.05	16.32	19.15
803.9	833.9	14.40	15.39	18.51
823.8	853.8	14.53	15.20	17.92
863.5	893.5	14.26	14.91	16.76
883.3	913.3	14.51	15.06	16.60
923.0	953.0	15.07	16.35	18.12
942.9	972.9	15.67	17.68	20.05
982.6	1012.6	16.97	20.40	24.05
1002.4	1032.4	17.57	21.37	24.41
1042.1	1072.1	17.99	21.33	23.43
1061.9	1091.9	18.01	20.99	22.67
1101.6	1131.6	17.84	19.68	20.74
1121.5	1151.5	17.58	19.18	20.24
1161.2	1191.2	17.91	18.81	20.25
1181.0	1211.0	17.66	18.80	20.55
1220.7	1250.7	18.49	19.55	21.48
1240.6	1270.6	18.99	20.04	22.35
1280.3	1310.3	20.27	22.10	24.51
1300.1	1330.1	21.24	22.92	25.88

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+14dBm (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	1.05	0.63	0.42
49.8	79.8	0.88	0.51	0.32
89.5	119.5	0.79	0.46	0.29
129.2	159.2	0.82	0.50	0.29
168.9	198.9	0.78	0.46	0.26
208.6	238.6	0.90	0.48	0.26
248.3	278.3	0.86	0.47	0.29
287.9	317.9	0.98	0.44	0.26
327.6	357.6	0.95	0.44	0.27
367.3	397.3	0.98	0.48	0.32
407.0	437.0	0.86	0.44	0.30
446.7	476.7	0.87	0.41	0.30
486.4	516.4	0.97	0.47	0.34
526.1	556.1	1.08	0.56	0.38
565.8	595.8	1.22	0.68	0.47
585.6	615.6	1.17	0.66	0.47
625.3	655.3	1.37	0.79	0.50
645.2	675.2	1.32	0.80	0.51
684.9	714.9	1.36	0.85	0.54
704.7	734.7	1.47	0.99	0.63
764.3	794.3	1.41	1.07	0.77
803.9	833.9	1.37	1.02	0.76
823.8	853.8	1.36	1.02	0.82
863.5	893.5	1.15	0.88	0.73
883.3	913.3	1.15	0.88	0.74
923.0	953.0	0.84	0.68	0.62
942.9	972.9	0.71	0.66	0.63
982.6	1012.6	0.59	0.68	0.72
1002.4	1032.4	0.53	0.70	0.75
1042.1	1072.1	0.52	0.80	0.83
1061.9	1091.9	0.43	0.75	0.84
1101.6	1131.6	0.44	0.77	0.85
1121.5	1151.5	0.47	0.77	0.86
1161.2	1191.2	0.59	0.76	0.88
1181.0	1211.0	0.61	0.76	0.87
1220.7	1250.7	0.71	0.80	0.89
1240.6	1270.6	0.76	0.77	0.89
1280.3	1310.3	0.75	0.68	0.78
1300.1	1330.1	0.82	0.65	0.72

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=250.1MHz (dB) @LO (dBm) +17
240.0	10.1	6.30
234.1	16.0	6.32
228.2	21.9	6.20
222.3	27.8	6.25
216.4	33.7	6.23
210.5	39.6	6.19
204.6	45.5	6.26
198.7	51.4	6.19
192.8	57.3	6.17
186.9	63.2	6.22
181.0	69.1	6.17
175.1	75.0	6.29
169.2	80.9	6.20
163.3	86.8	6.18
157.4	92.7	6.26
151.5	98.6	6.14
145.6	104.5	6.19
139.7	110.4	6.20
133.8	116.3	6.11
127.9	122.2	6.12
122.1	128.0	6.05
116.2	133.9	6.04
110.3	139.8	6.14
104.4	145.7	6.08
98.5	151.6	6.11
92.6	157.5	6.08
86.7	163.4	6.04
80.8	169.3	6.10
74.9	175.2	6.09
69.0	181.1	6.09
63.1	187.0	6.08
57.2	192.9	6.04
51.3	198.8	6.06
45.4	204.7	6.10
39.5	210.6	6.12
33.6	216.5	6.15
27.7	222.4	6.12
21.8	228.3	6.16
15.9	234.2	6.20
10.0	240.1	6.22

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +17
10.0	20.1	6.02
22.3	32.4	5.97
34.6	44.7	5.96
46.9	57.0	5.94
59.2	69.3	5.89
71.5	81.6	5.94
83.8	93.9	6.02
96.2	106.3	5.94
108.5	118.6	5.92
120.8	130.9	5.88
133.1	143.2	5.85
145.4	155.5	5.97
157.7	167.8	6.00
170.0	180.1	5.95
182.3	192.4	5.96
194.6	204.7	5.99
206.9	217.0	6.00
219.2	229.3	6.03
231.5	241.6	5.98
243.8	253.9	5.98
256.2	266.3	6.07
268.5	278.6	6.11
280.8	290.9	6.08
293.1	303.2	6.10
305.4	315.5	6.05
317.7	327.8	6.10
330.0	340.1	6.17
342.3	352.4	6.12
354.6	364.7	6.15
366.9	377.0	6.18
379.2	389.3	6.17
391.5	401.6	6.22
403.8	413.9	6.14
416.2	426.3	6.10
428.5	438.6	6.18
440.8	450.9	6.20
453.1	463.2	6.25
465.4	475.5	6.27
477.7	487.8	6.17
490.0	500.1	6.22

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB) @LO (dBm) +17
490.0	10.1	6.45
477.7	22.4	6.40
465.4	34.7	6.36
453.1	47.0	6.41
440.8	59.3	6.44
428.5	71.6	6.33
416.2	83.9	6.32
403.8	96.3	6.26
391.5	108.6	6.22
379.2	120.9	6.23
366.9	133.2	6.10
354.6	145.5	6.05
342.3	157.8	6.08
330.0	170.1	6.08
317.7	182.4	6.03
305.4	194.7	6.00
293.1	207.0	5.95
280.8	219.3	5.93
268.5	231.6	6.00
256.2	243.9	5.99
243.8	256.3	6.02
231.5	268.6	6.06
219.2	280.9	6.02
206.9	293.2	6.04
194.6	305.5	6.04
182.3	317.8	5.99
170.0	330.1	6.02
157.7	342.4	6.05
145.4	354.7	6.06
133.1	367.0	6.14
120.8	379.3	6.13
108.5	391.6	6.13
96.2	403.9	6.21
83.8	416.3	6.21
71.5	428.6	6.25
59.2	440.9	6.33
46.9	453.2	6.31
34.6	465.5	6.40
22.3	477.8	6.48
10.0	490.1	6.53

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
2.0	81.98	79.29	82.48	71.18	69.19	68.76
5.0	71.15	71.51	71.45	68.75	62.98	59.64
10.0	65.40	65.84	66.21	67.50	61.30	57.95
49.8	60.38	60.94	61.46	67.09	66.93	57.90
89.5	54.87	55.52	55.80	58.82	65.15	55.51
129.2	51.17	51.37	52.09	54.48	61.28	52.19
168.9	48.46	48.80	49.64	50.53	58.09	51.23
208.6	46.08	46.99	47.65	47.86	52.67	49.54
248.3	44.39	45.18	45.58	45.86	50.05	48.42
287.9	43.16	44.13	44.31	42.06	45.32	46.27
327.6	41.83	42.64	43.05	39.69	43.01	44.91
367.3	41.00	40.93	41.07	37.59	40.74	42.83
446.7	40.39	40.19	39.98	34.26	37.09	39.84
486.4	39.55	40.22	40.40	33.40	35.40	37.41
526.1	38.11	38.81	39.17	32.67	35.56	36.89
565.8	37.18	37.62	37.67	30.77	34.35	36.79
585.6	36.25	36.75	36.92	30.08	34.02	37.61
625.3	34.93	35.65	35.91	28.64	32.27	37.06
645.2	33.86	34.69	35.27	28.10	31.21	36.07
684.9	32.61	33.32	34.14	27.61	30.35	34.33
744.4	31.71	32.17	33.08	27.12	29.73	32.92
764.3	31.46	31.78	32.48	27.06	29.50	32.76
803.9	31.85	32.25	33.04	27.41	28.88	31.57
823.8	31.77	32.14	32.94	27.60	28.75	30.92
863.5	32.45	33.20	34.15	28.27	28.57	29.38
883.3	32.82	33.93	35.22	28.64	28.79	28.99
923.0	33.45	35.06	36.48	29.17	29.72	29.28
942.9	33.83	35.23	36.04	29.51	30.60	30.07
982.6	34.10	35.28	35.90	29.27	32.29	32.56
1002.4	33.84	34.96	35.59	28.96	32.75	34.36
1042.1	34.09	34.53	34.61	27.44	31.16	35.37
1061.9	34.66	34.93	35.16	26.73	29.92	33.91
1101.6	35.11	34.90	34.90	25.35	27.67	30.90
1121.5	35.13	34.31	33.87	24.77	26.84	29.96
1181.0	34.12	33.58	33.75	23.61	25.21	27.75
1220.7	32.24	32.15	32.56	23.27	24.92	27.58
1240.6	31.47	31.59	32.36	23.04	24.65	27.25
1280.3	29.98	30.57	31.69	23.17	24.98	27.45
1300.1	29.07	29.85	30.91	23.32	25.26	27.84

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	43.46	49.31	40.13
49.8	79.8	32.39	32.52	32.43
89.5	119.5	27.87	28.12	28.16
129.2	159.2	25.26	25.49	25.63
168.9	198.9	23.47	23.73	23.96
208.6	238.6	22.24	22.70	22.98
248.3	278.3	21.63	21.79	21.95
287.9	317.9	21.41	21.88	22.05
327.6	357.6	20.93	21.57	22.10
367.3	397.3	20.74	21.43	22.06
407.0	437.0	21.29	21.82	22.36
446.7	476.7	22.13	22.43	22.55
486.4	516.4	22.76	23.21	23.44
526.1	556.1	21.98	22.59	23.44
565.8	595.8	20.00	20.59	21.57
585.6	615.6	18.89	19.28	20.01
625.3	655.3	17.16	17.19	17.43
645.2	675.2	16.43	16.32	16.37
684.9	714.9	15.29	14.95	14.73
704.7	734.7	14.83	14.52	14.22
744.4	774.4	14.08	13.61	13.30
764.3	794.3	13.65	13.15	12.84
823.8	853.8	12.76	12.36	12.05
863.5	893.5	12.32	12.01	11.74
883.3	913.3	12.07	11.82	11.60
923.0	953.0	11.72	11.52	11.39
942.9	972.9	11.57	11.41	11.27
982.6	1012.6	11.36	11.23	11.15
1002.4	1032.4	11.22	11.11	11.02
1042.1	1072.1	10.93	10.87	10.81
1061.9	1091.9	10.74	10.72	10.74
1101.6	1131.6	10.16	10.18	10.24
1121.5	1151.5	9.88	9.99	10.07
1161.2	1191.2	9.39	9.54	9.70
1181.0	1211.0	9.12	9.29	9.45
1220.7	1250.7	8.71	8.93	9.08
1240.6	1270.6	8.49	8.70	8.83
1280.3	1310.3	8.10	8.24	8.29
1300.1	1330.1	7.90	8.00	8.03

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
2.0	32.0	1.22	1.77	2.58
5.0	35.0	1.15	1.75	2.56
10.0	40.0	1.22	1.82	2.67
49.8	79.8	1.25	1.11	1.02
89.5	119.5	1.25	1.10	1.02
129.2	159.2	1.21	1.08	1.03
168.9	198.9	1.21	1.08	1.05
208.6	238.6	1.18	1.07	1.08
248.3	278.3	1.22	1.10	1.08
287.9	317.9	1.18	1.09	1.11
327.6	357.6	1.18	1.10	1.13
367.3	397.3	1.17	1.10	1.14
407.0	437.0	1.16	1.10	1.15
446.7	476.7	1.18	1.12	1.15
486.4	516.4	1.18	1.16	1.20
526.1	556.1	1.20	1.21	1.25
565.8	595.8	1.22	1.25	1.31
585.6	615.6	1.24	1.27	1.34
625.3	655.3	1.24	1.29	1.37
645.2	675.2	1.24	1.29	1.37
684.9	714.9	1.21	1.26	1.33
704.7	734.7	1.21	1.24	1.30
744.4	774.4	1.19	1.18	1.24
764.3	794.3	1.21	1.18	1.22
803.9	833.9	1.25	1.19	1.22
823.8	853.8	1.29	1.23	1.24
863.5	893.5	1.39	1.33	1.32
883.3	913.3	1.46	1.40	1.39
923.0	953.0	1.64	1.58	1.56
942.9	972.9	1.75	1.68	1.65
982.6	1012.6	1.99	1.90	1.86
1002.4	1032.4	2.13	2.02	1.97
1042.1	1072.1	2.40	2.26	2.19
1061.9	1091.9	2.54	2.39	2.31
1101.6	1131.6	2.78	2.61	2.50
1121.5	1151.5	2.88	2.72	2.60
1181.0	1211.0	3.08	2.95	2.83
1220.7	1250.7	3.20	3.09	2.97
1240.6	1270.6	3.21	3.11	2.99
1280.3	1310.3	3.28	3.20	3.09
1300.1	1330.1	3.28	3.19	3.09

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
2.0	1.31	1.33	1.37
5.0	1.17	1.20	1.25
10.0	1.11	1.15	1.20
49.8	1.03	1.65	2.46
89.5	1.04	1.55	2.24
129.2	1.01	1.61	2.39
168.9	1.05	1.58	2.30
208.6	1.07	1.59	2.31
248.3	1.08	1.63	2.37
287.9	1.14	1.61	2.31
327.6	1.15	1.66	2.40
367.3	1.22	1.68	2.36
407.0	1.23	1.69	2.39
446.7	1.27	1.74	2.43
486.4	1.32	1.74	2.41
526.1	1.34	1.79	2.47
565.8	1.41	1.81	2.46
585.6	1.42	1.82	2.47
625.3	1.49	1.88	2.53
645.2	1.51	1.89	2.52
684.9	1.56	1.93	2.54
704.7	1.58	1.96	2.59
744.4	1.62	2.01	2.61
764.3	1.63	2.02	2.62
803.9	1.65	2.05	2.67
823.8	1.66	2.07	2.68
863.5	1.68	2.06	2.67
883.3	1.69	2.07	2.68
923.0	1.72	2.09	2.70
942.9	1.73	2.09	2.68
982.6	1.76	2.08	2.67
1002.4	1.78	2.09	2.67
1042.1	1.85	2.12	2.69
1061.9	1.88	2.12	2.69
1101.6	1.95	2.16	2.70
1121.5	1.99	2.17	2.71
1181.0	2.12	2.24	2.74
1220.7	2.23	2.29	2.77
1240.6	2.29	2.33	2.80
1280.3	2.42	2.40	2.84
1300.1	2.49	2.43	2.84

IF (OUT) (MHz)	IF VSWR @LO=500.5MHz (:1) @LO (dBm)		
	+14	+17	+20
2.0	1.02	1.07	1.13
5.0	1.01	1.06	1.12
10.0	1.02	1.04	1.10
22.3	1.98	1.74	1.50
34.5	1.88	1.64	1.41
46.8	1.86	1.63	1.42
59.0	1.85	1.62	1.40
71.3	1.83	1.58	1.38
83.5	1.88	1.63	1.42
95.8	1.92	1.67	1.46
108.0	1.98	1.73	1.50
120.3	1.91	1.68	1.45
132.5	1.91	1.68	1.45
144.8	1.87	1.64	1.42
157.0	1.88	1.64	1.42
169.3	1.89	1.65	1.43
181.5	1.94	1.70	1.48
193.8	2.00	1.75	1.52
206.0	1.97	1.73	1.51
218.3	1.98	1.73	1.51
230.5	1.94	1.69	1.48
242.8	1.92	1.68	1.46
255.0	1.91	1.68	1.47
267.3	1.93	1.70	1.49
279.5	1.99	1.75	1.53
291.8	2.01	1.76	1.54
316.3	2.04	1.79	1.56
328.5	1.98	1.74	1.52
340.8	1.97	1.74	1.52
353.0	1.98	1.74	1.53
365.3	2.01	1.77	1.56
377.5	2.03	1.78	1.57
389.8	2.04	1.80	1.58
402.0	2.09	1.84	1.62
414.3	2.11	1.86	1.63
426.5	2.10	1.84	1.62
438.8	2.10	1.85	1.63
451.0	2.05	1.81	1.60
463.3	2.07	1.83	1.63
487.8	2.18	1.94	1.72
500.0	2.07	1.87	1.69

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	22	26	15	28	21	33	52	48	36	40
1	-	16	+0	26	14	31	22	37	36	46	34	48
2	88	71	49	64	48	62	48	63	50	63	65	66
3	>100	59	61	65	57	67	50	68	50	63	47	64
4	>100	79	73	79	72	79	77	85	83	88	79	79
5	>100	79	77	82	73	80	70	78	69	79	69	87
6	>100	89	92	>93	91	>93	87	90	88	>93	87	>93
7	>100	>93	>93	>93	92	>93	91	90	88	92	92	>93
8	>100	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93
9	>100	>93	>93	>93	>93	>93	>93	>93	>93	78	>93	>93
10	>100	>93	>93	>93	>93	>93	>93	>93	>93	>93	83	>93
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 250.1 MHz; -1.00 dBm.
LO IN: 280.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; -7.28 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	33	37	27	42	36	53	54	63	68	66
1	-	16	+0	27	13	34	22	35	34	53	46	60
2	76	60	47	65	44	56	42	54	44	56	64	67
3	>100	44	44	47	49	50	46	47	58	60	42	56
4	>100	70	62	68	59	65	59	63	57	67	58	70
5	>100	61	63	73	59	66	52	59	48	59	48	61
6	>100	73	70	78	68	79	68	75	70	75	68	76
7	>100	74	72	76	67	71	69	71	62	68	60	68
8	>100	87	78	77	77	82	76	84	76	84	78	89
9	>100	88	80	77	77	79	72	81	69	75	68	73
10	>100	>103	101	87	87	84	90	84	85	90	91	102
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 250.1 MHz; 9.00 dBm.
LO IN: 280.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; 2.7 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.