Frequency Mixer JMS-2+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	7.00	6.08	5.90
49.8	79.8	7.45	6.98	6.79
89.5	119.5	7.52	7.06	6.84
129.2	159.2	7.46	7.03	6.80
168.9	198.9	7.44	7.07	6.83
208.6	238.6	7.40	7.02	6.79
248.3	278.3	7.43	6.96	6.81
287.9	317.9	7.34	6.97	6.79
327.6	357.6	7.38	7.00	6.83
367.3	397.3	7.34	7.01	6.83
407.0	437.0	7.30	7.05	6.81
446.7	476.7	7.32	7.05	6.80
486.4	516.4	7.38	7.04	6.85
526.1	556.1	7.37	7.07	6.78
565.8	595.8	7.43	7.05	6.81
585.6	615.6	7.41	7.04	6.81
625.3	655.3	7.46	7.06	6.85
645.2	675.2	7.44	7.14	6.91
684.9	714.9	7.47	7.15	6.89
704.7	734.7	7.47	7.13	6.88
744.4	774.4	7.58	7.19	6.95
764.3	794.3	7.56	7.20	7.03
803.9	833.9	7.65	7.26	7.09
823.8	853.8	7.72	7.31	7.08
863.5	893.5	7.83	7.44	7.25
883.3	913.3	7.87	7.45	7.21
923.0	953.0	7.97	7.54	7.36
942.9	972.9	8.02	7.61	7.34
982.6	1012.6	8.13	7.67	7.36
1002.4	1032.4	8.21	7.70	7.42
1042.1	1072.1	8.30	7.81	7.54
1061.9	1091.9	8.48	7.88	7.55
1101.6	1131.6	8.55	8.00	7.65
1121.5	1151.5	8.56	8.04	7.68
1161.2	1191.2	8.69	8.14	7.80
1181.0	1211.0	8.83	8.26	7.89
1220.7	1250.7	8.83	8.23	7.90
1240.6	1270.6	8.99	8.43	8.07
1280.3	1310.3	9.08	8.54	8.12
1300.1	1330.1	9.15	8.61	8.26

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+4	+7	+10
10.1	40.1	20.58	19.55	21.69
49.8	79.8	17.10	23.21	24.61
89.5	119.5	25.98	23.46	19.70
129.2	159.2	15.70	17.45	18.71
168.9	198.9	20.64	19.21	22.06
208.6	238.6	16.94	18.28	19.60
248.3	278.3	19.23	23.39	21.01
287.9	317.9	14.94	19.13	19.37
327.6	357.6	16.18	19.14	16.68
367.3	397.3	16.07	18.93	18.18
407.0	437.0	20.34	16.63	17.56
446.7	476.7	25.48	19.66	21.97
486.4	516.4	21.90	17.04	14.66
526.1	556.1	20.86	18.40	19.56
565.8	595.8	16.55	25.28	18.45
585.6	615.6	18.02	15.13	17.39
625.3	655.3	16.12	23.01	16.59
645.2	675.2	29.42	22.38	19.77
684.9	714.9	17.40	16.77	14.88
704.7	734.7	19.49	15.25	16.50
744.4	774.4	18.66	20.32	21.44
764.3	794.3	18.26	16.03	20.65
803.9	833.9	18.84	19.35	23.37
823.8	853.8	15.75	16.30	17.23
863.5	893.5	15.36	21.97	15.81
883.3	913.3	12.82	18.42	15.18
923.0	953.0	11.48	17.00	17.95
942.9	972.9	11.45	16.53	18.52
982.6	1012.6	12.25	16.90	15.29
1002.4	1032.4	11.37	15.07	22.53
1042.1	1072.1	12.72	16.82	29.44
1061.9	1091.9	10.88	16.74	21.45
1101.6	1131.6	11.45	18.80	17.17
1121.5	1151.5	11.48	16.69	20.85
1161.2	1191.2	12.29	17.70	14.82
1181.0	1211.0	13.23	16.90	17.88
1220.7	1250.7	13.35	17.19	15.98
1240.6	1270.6	12.98	13.03	16.18
1280.3	1310.3	12.57	12.64	14.42
1300.1	1330.1	11.71	12.45	14.13

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	0.55	0.41	0.33
49.8	79.8	0.53	0.43	0.26
89.5	119.5	0.50	0.34	0.33
129.2	159.2	0.55	0.38	0.24
168.9	198.9	0.57	0.41	0.19
208.6	238.6	0.48	0.35	0.31
248.3	278.3	0.58	0.42	0.28
287.9	317.9	0.59	0.38	0.28
327.6	357.6	0.61	0.46	0.26
367.3	397.3	0.63	0.49	0.33
407.0	437.0	0.66	0.49	0.25
446.7	476.7	0.63	0.46	0.30
486.4	516.4	0.65	0.46	0.29
526.1	556.1	0.65	0.41	0.30
565.8	595.8	0.65	0.40	0.27
585.6	615.6	0.60	0.45	0.35
625.3	655.3	0.59	0.38	0.23
645.2	675.2	0.82	0.63	0.45
684.9	714.9	0.79	0.43	0.46
704.7	734.7	0.76	0.50	0.40
744.4	774.4	0.91	0.57	0.43
764.3	794.3	0.82	0.58	0.40
803.9	833.9	0.87	0.55	0.50
823.8	853.8	1.04	0.80	0.59
863.5	893.5	0.88	0.76	0.52
883.3	913.3	0.86	0.64	0.53
923.0	953.0	1.06	0.74	0.58
942.9	972.9	1.17	0.92	0.72
982.6	1012.6	1.09	0.98	0.76
1002.4	1032.4	1.22	0.90	0.74
1042.1	1072.1	1.14	0.85	0.74
1061.9	1091.9	1.02	0.88	0.80
1101.6	1131.6	1.04	0.85	0.73
1121.5	1151.5	0.99	0.82	0.76
1161.2	1191.2	1.07	0.87	0.74
1181.0	1211.0	1.09	0.91	0.73
1220.7	1250.7	1.09	0.82	0.57
1240.6	1270.6	1.05	0.84	0.70
1280.3	1310.3	0.94	0.77	0.68
1300.1	1330.1	1.17	1.00	0.73

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB) @LO (dBm) +7
460.0	40.1	7.03
448.8	51.4	6.99
437.5	62.6	7.02
426.3	73.9	7.00
415.0	85.1	6.96
403.8	96.4	6.90
392.5	107.6	6.88
381.3	118.9	6.86
370.0	130.1	6.81
358.8	141.4	6.80
347.5	152.6	6.81
336.3	163.9	6.79
325.0	175.1	6.78
313.8	186.4	6.78
302.5	197.6	6.78
291.3	208.9	6.77
280.0	220.1	6.76
268.8	231.4	6.75
257.5	242.6	6.77
246.3	253.9	6.75
235.0	265.1	6.71
223.8	276.4	6.71
212.5	287.6	6.79
201.3	298.9	6.78
190.0	310.1	6.80
178.8	321.4	6.78
167.5	332.6	6.79
156.3	343.9	6.78
145.0	355.1	6.81
133.8	366.4	6.83
122.5	377.6	6.83
111.3	388.9	6.85
100.0	400.1	6.83
88.8	411.4	6.84
77.5	422.6	6.82
66.3	433.9	6.88
55.0	445.1	6.89
43.8	456.4	6.87
21.3	478.9	6.95
10.0	490.1	7.36

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=20.1MHz (dB) @LO (dBm) +7
10.0	30.1	7.38
29.4	49.5	6.84
48.8	68.9	6.86
68.2	88.3	6.87
87.6	107.7	6.89
107.0	127.1	6.89
126.4	146.5	6.90
145.8	165.9	6.93
165.2	185.3	6.94
184.6	204.7	6.96
204.0	224.1	6.95
223.4	243.5	6.98
242.8	262.9	7.00
262.2	282.3	7.03
281.6	301.7	7.05
301.0	321.1	7.05
320.4	340.5	7.07
339.8	359.9	7.07
378.6	398.7	7.18
398.0	418.1	7.13
436.8	456.9	7.39
456.2	476.3	7.23
495.0	515.1	7.23
514.4	534.5	7.24
553.2	573.3	7.33
572.6	592.7	7.32
611.4	631.5	7.41
630.8	650.9	7.41
669.6	689.7	7.43
689.0	709.1	7.44
727.8	747.9	7.48
747.2	767.3	7.47
786.0	806.1	7.49
805.4	825.5	7.47
844.2	864.3	7.51
863.6	883.7	7.47
902.4	922.5	7.48
921.8	941.9	7.48
960.6	980.7	7.48
980.0	1000.1	7.45

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1000.1MHz (dB) @LO (dBm) +7
980.0	20.1	8.00
960.6	39.5	7.92
941.2	58.9	7.87
921.8	78.3	7.84
902.4	97.7	7.78
883.0	117.1	7.72
863.6	136.5	7.66
844.2	155.9	7.67
824.8	175.3	7.63
805.4	194.7	7.61
786.0	214.1	7.59
766.6	233.5	7.55
747.2	252.9	7.56
727.8	272.3	7.55
708.4	291.7	7.53
689.0	311.1	7.48
669.6	330.5	7.45
650.2	349.9	7.47
611.4	388.7	7.47
592.0	408.1	7.43
553.2	446.9	7.43
533.8	466.3	7.42
495.0	505.1	7.45
475.6	524.5	7.44
436.8	563.3	7.50
417.4	582.7	7.50
378.6	621.5	7.40
359.2	640.9	7.41
320.4	679.7	7.45
301.0	699.1	7.41
262.2	737.9	7.43
242.8	757.3	7.45
204.0	796.1	7.46
184.6	815.5	7.45
145.8	854.3	7.51
126.4	873.7	7.50
87.6	912.5	7.53
68.2	931.9	7.54
29.4	970.7	7.60
10.0	990.1	7.67

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+4	+7	+10	+4	+7	+10
10.1	60.50	68.19	68.66	62.58	65.18	62.34
49.8	59.41	57.79	58.18	53.32	51.93	51.37
89.5	54.55	54.38	54.14	48.98	47.36	46.61
129.2	51.89	52.18	51.88	45.77	44.68	43.87
168.9	50.48	50.77	50.45	43.96	42.86	42.09
208.6	49.59	49.68	49.11	42.57	41.55	40.79
248.3	48.82	48.76	48.14	41.52	40.50	39.63
287.9	48.33	47.94	47.20	40.69	39.68	38.78
327.6	47.72	47.18	46.36	39.96	38.87	37.94
367.3	46.95	46.30	45.48	39.15	38.07	37.19
407.0	46.04	45.40	44.64	38.60	37.60	36.75
446.7	45.06	44.51	43.86	37.85	36.89	36.05
486.4	43.92	43.47	42.94	37.31	36.47	35.75
526.1	42.95	42.68	42.26	36.69	35.79	35.15
565.8	41.82	41.70	41.46	36.25	35.33	34.55
585.6	41.32	41.25	41.09	36.11	35.28	34.44
625.3	40.16	40.22	40.16	35.32	34.85	34.20
645.2	39.66	39.80	39.78	34.99	34.63	34.14
684.9	38.70	38.96	39.05	34.33	34.02	33.78
704.7	38.13	38.47	38.62	33.90	33.55	33.35
744.4	37.21	37.67	37.95	33.17	32.66	32.42
764.3	36.77	37.28	37.62	33.00	32.39	32.05
803.9	35.89	36.48	36.91	32.63	31.96	31.37
823.8	35.54	36.18	36.64	32.47	31.89	31.23
863.5	34.86	35.55	36.10	32.15	32.06	31.44
883.3	34.54	35.25	35.82	31.93	32.08	31.55
923.0	34.04	34.83	35.46	31.22	31.77	31.54
942.9	33.74	34.54	35.19	30.98	31.75	31.78
982.6	33.19	34.05	34.75	30.40	31.36	31.74
1002.4	32.90	33.79	34.54	30.18	31.20	31.70
1042.1	32.36	33.28	34.06	29.61	30.70	31.44
1061.9	32.16	33.10	33.89	29.63	30.72	31.50
1101.6	31.63	32.61	33.42	29.10	30.22	31.17
1121.5	31.38	32.37	33.19	28.97	30.03	31.00
1161.2	30.86	31.91	32.75	28.62	29.60	30.66
1181.0	30.55	31.64	32.50	28.45	29.29	30.30
1220.7	29.95	31.08	31.99	28.30	28.90	29.72
1240.6	29.76	30.91	31.85	28.46	28.97	29.71
1280.3	29.09	30.26	31.24	28.87	29.18	29.66
1300.1	28.83	30.00	31.01	29.21	29.49	29.87

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	36.05	35.83	40.87
49.8	79.8	36.54	35.78	36.51
89.5	119.5	31.32	31.19	30.60
129.2	159.2	28.27	28.19	28.28
168.9	198.9	26.37	26.33	26.26
208.6	238.6	24.97	24.89	24.83
248.3	278.3	23.95	23.86	23.84
287.9	317.9	23.18	23.14	23.11
327.6	357.6	22.56	22.54	22.52
367.3	397.3	22.06	22.07	22.06
407.0	437.0	21.72	21.79	21.80
446.7	476.7	21.40	21.49	21.54
486.4	516.4	21.06	21.11	21.20
526.1	556.1	20.80	20.83	20.86
565.8	595.8	20.43	20.47	20.48
585.6	615.6	20.23	20.30	20.33
625.3	655.3	19.68	19.80	19.88
645.2	675.2	19.36	19.49	19.59
684.9	714.9	18.64	18.76	18.88
704.7	734.7	18.28	18.42	18.52
744.4	774.4	17.48	17.62	17.71
764.3	794.3	17.14	17.26	17.34
803.9	833.9	16.39	16.47	16.53
823.8	853.8	16.08	16.16	16.22
863.5	893.5	15.45	15.51	15.57
883.3	913.3	15.16	15.22	15.28
923.0	953.0	14.68	14.72	14.78
942.9	972.9	14.45	14.50	14.55
982.6	1012.6	14.02	14.06	14.13
1002.4	1032.4	13.86	13.90	13.96
1042.1	1072.1	13.53	13.58	13.66
1061.9	1091.9	13.42	13.47	13.55
1101.6	1131.6	13.14	13.21	13.28
1121.5	1151.5	13.04	13.11	13.19
1161.2	1191.2	12.78	12.86	12.93
1181.0	1211.0	12.70	12.78	12.84
1220.7	1250.7	12.56	12.65	12.69
1240.6	1270.6	12.48	12.59	12.66
1280.3	1310.3	12.41	12.55	12.65
1300.1	1330.1	12.38	12.54	12.66

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+4	+7	+10
10.1	40.1	1.33	1.22	1.16
49.8	79.8	1.32	1.39	1.44
89.5	119.5	1.17	1.24	1.30
129.2	159.2	1.22	1.32	1.38
168.9	198.9	1.16	1.24	1.30
208.6	238.6	1.25	1.34	1.39
248.3	278.3	1.24	1.33	1.40
287.9	317.9	1.24	1.33	1.39
327.6	357.6	1.29	1.37	1.43
367.3	397.3	1.28	1.37	1.43
407.0	437.0	1.31	1.39	1.45
446.7	476.7	1.30	1.38	1.44
486.4	516.4	1.31	1.39	1.44
526.1	556.1	1.31	1.38	1.44
565.8	595.8	1.35	1.43	1.49
585.6	615.6	1.34	1.42	1.48
625.3	655.3	1.42	1.51	1.58
645.2	675.2	1.47	1.56	1.63
684.9	714.9	1.47	1.55	1.62
704.7	734.7	1.54	1.63	1.70
744.4	774.4	1.62	1.71	1.78
764.3	794.3	1.59	1.68	1.74
803.9	833.9	1.66	1.75	1.82
823.8	853.8	1.68	1.76	1.83
863.5	893.5	1.57	1.63	1.69
883.3	913.3	1.59	1.66	1.73
923.0	953.0	1.63	1.69	1.74
942.9	972.9	1.57	1.62	1.67
982.6	1012.6	1.64	1.70	1.76
1002.4	1032.4	1.71	1.76	1.82
1042.1	1072.1	1.71	1.76	1.81
1061.9	1091.9	1.80	1.84	1.90
1101.6	1131.6	2.00	2.04	2.08
1121.5	1151.5	2.04	2.06	2.10
1161.2	1191.2	2.27	2.29	2.32
1181.0	1211.0	2.39	2.39	2.41
1220.7	1250.7	2.44	2.43	2.44
1240.6	1270.6	2.55	2.53	2.53
1280.3	1310.3	2.62	2.59	2.57
1300.1	1330.1	2.58	2.56	2.54

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+4	+7	+10
10.1	1.61	2.22	3.12
49.8	1.84	2.63	3.65
89.5	1.83	2.60	3.60
129.2	1.80	2.55	3.50
168.9	1.84	2.59	3.55
208.6	1.79	2.51	3.41
248.3	1.84	2.57	3.50
287.9	1.84	2.56	3.48
327.6	1.84	2.58	3.49
367.3	1.90	2.66	3.60
407.0	1.86	2.58	3.47
446.7	1.90	2.63	3.54
486.4	1.88	2.58	3.45
526.1	1.90	2.60	3.47
565.8	1.94	2.65	3.52
585.6	1.92	2.61	3.47
625.3	1.96	2.67	3.52
645.2	2.00	2.73	3.60
684.9	1.99	2.69	3.52
704.7	2.00	2.68	3.51
744.4	2.07	2.77	3.61
764.3	2.03	2.70	3.50
803.9	2.05	2.71	3.49
823.8	2.11	2.80	3.61
863.5	2.12	2.77	3.56
883.3	2.13	2.78	3.56
923.0	2.21	2.89	3.69
942.9	2.21	2.86	3.64
982.6	2.20	2.82	3.56
1002.4	2.23	2.86	3.62
1042.1	2.29	2.92	3.68
1061.9	2.32	2.96	3.72
1101.6	2.31	2.94	3.67
1121.5	2.35	2.97	3.70
1161.2	2.39	3.00	3.73
1181.0	2.34	2.94	3.64
1220.7	2.38	2.97	3.68
1240.6	2.45	3.06	3.79
1280.3	2.44	3.01	3.70
1300.1	2.45	3.01	3.70

IF (OUT) (MHz)	IF VSWR @LO=1001.1MHz (:1) @LO (dBm)		
	+4	+7	+10
10.1	3.77	1.96	2.03
30.3	2.00	1.75	1.83
50.5	1.85	1.66	1.45
70.7	1.87	1.58	1.41
90.9	1.99	1.71	1.53
111.1	2.08	1.77	1.60
131.3	2.02	1.72	1.57
151.5	1.95	1.66	1.52
171.7	1.93	1.68	1.53
191.9	1.99	1.74	1.59
212.1	1.99	1.73	1.58
232.3	1.96	1.71	1.56
252.5	1.92	1.68	1.55
272.8	1.92	1.70	1.57
293.0	1.96	1.73	1.58
313.2	1.91	1.69	1.55
333.4	1.87	1.66	1.52
353.6	1.84	1.65	1.54
373.8	1.87	1.66	1.56
394.0	1.89	1.69	1.59
434.4	1.83	1.65	1.57
454.6	1.83	1.66	1.57
495.0	1.85	1.69	1.61
515.2	1.86	1.68	1.61
555.6	1.83	1.69	1.63
575.8	1.87	1.73	1.67
616.2	1.84	1.71	1.66
636.4	1.83	1.71	1.68
676.8	1.86	1.74	1.70
697.0	1.85	1.73	1.70
737.4	1.84	1.74	1.71
757.7	1.86	1.76	1.73
798.1	1.83	1.72	1.70
818.3	1.82	1.72	1.70
858.7	1.86	1.75	1.74
878.9	1.84	1.74	1.71
919.3	1.80	1.71	1.69
939.5	1.83	1.72	1.71
979.9	1.83	1.71	1.68
1000.1	1.87	1.83	1.87

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	7	28	16	24	26	33	37	32	36	50
1	-	14	0	30	12	38	19	38	37	41	50	37
2	110	61	52	70	53	64	52	71	57	77	69	60
3	112	83	75	85	73	78	64	87	77	83	75	79
4	110	98	95	96	90	83	101	101	94	104	92	99
5	121	108	104	101	102	91	100	105	104	98	103	107
6	113	103	104	106	104	100	93	88	97	105	104	98
7	119	107	114	122	110	104	106	101	93	103	105	106
8	117	113	99	102	110	99	97	108	91	92	97	99
9	119	103	104	102	104	98	108	105	96	92	87	101
10	119	101	107	110	111	107	105	105	113	93	99	91
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 500.1 MHz; -14.00 dBm.
LO IN: 530.01 MHz; +7.00 dBm
IF OUT: 29.91 MHz; -20.87 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	17	38	27	34	40	44	50	47	52	76
1	-	14	0	30	12	39	20	41	37	46	57	43
2	97	51	44	56	43	54	45	60	51	64	67	56
3	119	61	51	62	54	55	46	60	49	57	58	57
4	112	72	78	75	66	81	68	81	59	74	63	78
5	114	77	76	76	63	75	59	71	58	77	60	80
6	109	103	85	92	81	85	78	83	74	84	75	89
7	127	98	89	98	79	93	79	90	79	88	84	83
8	115	103	108	108	106	103	101	118	91	95	93	97
9	117	102	110	108	104	102	103	106	101	102	91	115
10	118	110	117	113	114	111	103	105	116	110	105	105
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 500.1 MHz; -4.00 dBm.
LO IN: 530.01 MHz; +7.00 dBm
IF OUT: 29.91 MHz; -11.05 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.