Frequency Mixer LRMS-2DJ

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+4	+7	+10
5.0	35.0	7.57	7.12	6.85
10.0	40.0	7.41	7.00	6.73
50.4	80.4	7.28	6.86	6.60
90.7	120.7	7.26	6.83	6.63
131.0	161.0	7.25	6.86	6.71
171.3	201.3	7.21	6.86	6.67
211.5	241.5	7.15	6.80	6.63
251.8	281.8	7.14	6.79	6.67
292.1	322.1	7.13	6.78	6.60
332.4	362.4	7.13	6.80	6.65
372.7	402.7	7.12	6.82	6.66
413.0	443.0	7.09	6.80	6.64
453.3	483.3	7.16	6.83	6.66
493.6	523.6	7.19	6.87	6.70
533.9	563.9	7.21	6.88	6.68
574.2	604.2	7.27	6.91	6.71
614.4	644.4	7.27	6.96	6.76
654.7	684.7	7.31	7.00	6.89
695.0	725.0	7.39	7.07	6.96
735.3	765.3	7.44	7.15	7.05
775.6	805.6	7.60	7.28	7.11
815.9	845.9	7.74	7.43	7.28
856.2	886.2	7.94	7.60	7.44
896.5	926.5	8.03	7.69	7.44
916.6	946.6	8.24	7.83	7.60
956.9	986.9	8.39	8.02	7.72
977.1	1007.1	8.50	8.08	7.78
1017.3	1047.3	8.67	8.23	7.90
1037.5	1067.5	8.78	8.23	7.93
1077.8	1107.8	9.01	8.44	8.09
1097.9	1127.9	9.19	8.51	8.13
1138.2	1168.2	9.44	8.73	8.30
1158.4	1188.4	9.49	8.79	8.35
1198.7	1228.7	9.76	9.00	8.49
1218.8	1248.8	9.77	9.05	8.57
1259.1	1289.1	10.00	9.27	8.78
1279.2	1309.2	10.15	9.42	8.95
1319.5	1349.5	10.41	9.70	9.26
1380.0	1410.0	10.82	10.15	9.71
1400.1	1430.1	10.91	10.27	9.83

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+4	+7	+10
10.1	40.1	22.74	23.84	18.86
50.4	80.4	17.86	17.53	21.18
90.7	120.7	16.58	17.79	20.65
131.0	161.0	16.02	16.72	20.43
171.3	201.3	15.51	17.95	18.28
211.5	241.5	17.08	19.55	18.69
251.8	281.8	16.46	19.32	23.31
292.1	322.1	16.71	18.39	22.89
332.4	362.4	17.80	20.48	18.28
372.7	402.7	15.92	18.69	20.19
413.0	443.0	20.21	19.26	20.97
453.3	483.3	21.15	20.08	20.16
493.6	523.6	22.17	25.36	19.26
533.9	563.9	16.57	17.95	16.10
574.2	604.2	16.78	16.59	16.41
614.4	644.4	15.23	15.83	16.65
654.7	684.7	24.26	16.77	18.16
695.0	725.0	21.37	20.57	17.51
735.3	765.3	15.98	14.93	22.20
775.6	805.6	15.80	14.88	17.96
815.9	845.9	13.04	16.58	20.14
856.2	886.2	12.13	16.73	22.88
896.5	926.5	10.30	14.02	17.78
916.6	946.6	9.53	12.21	18.44
956.9	986.9	8.76	11.88	17.77
977.1	1007.1	8.31	11.87	21.18
1017.3	1047.3	8.43	12.50	18.44
1037.5	1067.5	8.73	12.69	22.89
1077.8	1107.8	8.62	12.79	21.00
1097.9	1127.9	9.03	12.89	20.14
1138.2	1168.2	9.83	13.61	19.34
1158.4	1188.4	9.89	15.25	16.45
1198.7	1228.7	10.28	13.37	14.14
1218.8	1248.8	10.54	12.61	13.73
1259.1	1289.1	10.04	11.89	13.35
1279.2	1309.2	9.92	11.83	13.64
1319.5	1349.5	9.36	12.65	15.04
1339.7	1369.7	9.05	11.83	15.38
1380.0	1410.0	8.48	10.38	13.14
1400.1	1430.1	8.61	10.31	12.21

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	0.89	0.67	0.51
50.4	80.4	0.88	0.55	0.44
90.7	120.7	0.88	0.65	0.52
131.0	161.0	0.93	0.63	0.49
171.3	201.3	0.86	0.68	0.45
211.5	241.5	0.82	0.60	0.47
251.8	281.8	0.88	0.66	0.49
292.1	322.1	0.97	0.67	0.53
332.4	362.4	0.97	0.65	0.49
372.7	402.7	0.94	0.71	0.41
413.0	443.0	0.90	0.65	0.59
453.3	483.3	0.92	0.60	0.51
493.6	523.6	0.89	0.67	0.45
533.9	563.9	0.82	0.51	0.48
574.2	604.2	0.77	0.45	0.43
614.4	644.4	0.73	0.52	0.40
654.7	684.7	0.94	0.67	0.50
695.0	725.0	0.88	0.61	0.44
735.3	765.3	1.06	0.70	0.53
775.6	805.6	0.99	0.70	0.59
815.9	845.9	1.21	0.87	0.76
856.2	886.2	1.31	0.95	0.74
896.5	926.5	1.33	0.95	0.76
916.6	946.6	1.46	1.17	0.93
956.9	986.9	1.42	1.21	0.93
977.1	1007.1	1.44	1.23	1.14
1017.3	1047.3	1.52	1.35	1.13
1037.5	1067.5	1.46	1.29	1.06
1077.8	1107.8	1.45	1.23	1.06
1097.9	1127.9	1.51	1.36	1.16
1138.2	1168.2	1.42	1.37	1.18
1158.4	1188.4	1.36	1.27	1.20
1198.7	1228.7	1.21	1.23	1.20
1218.8	1248.8	1.23	1.26	1.19
1259.1	1289.1	1.19	1.22	1.11
1279.2	1309.2	1.26	1.04	1.14
1319.5	1349.5	1.09	1.14	1.01
1339.7	1369.7	1.22	1.08	0.90
1380.0	1410.0	1.12	0.90	0.76
1400.1	1430.1	1.11	0.70	0.81

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB) @LO (dBm) +7
490.0	10.1	6.96
477.7	22.4	6.96
465.4	34.7	6.93
453.1	47.0	6.92
440.8	59.3	6.93
428.5	71.6	6.89
416.2	83.9	6.84
403.8	96.3	6.80
391.5	108.6	6.79
379.2	120.9	6.77
366.9	133.2	6.72
354.6	145.5	6.71
342.3	157.8	6.72
330.0	170.1	6.70
317.7	182.4	6.69
305.4	194.7	6.70
293.1	207.0	6.69
280.8	219.3	6.68
268.5	231.6	6.67
256.2	243.9	6.69
243.8	256.3	6.64
231.5	268.6	6.60
219.2	280.9	6.61
206.9	293.2	6.70
194.6	305.5	6.70
182.3	317.8	6.71
170.0	330.1	6.70
157.7	342.4	6.67
145.4	354.7	6.73
133.1	367.0	6.71
120.8	379.3	6.73
108.5	391.6	6.72
96.2	403.9	6.73
83.8	416.3	6.71
71.5	428.6	6.74
59.2	440.9	6.73
46.9	453.2	6.75
34.6	465.5	6.77
22.3	477.8	6.82
10.0	490.1	6.77

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +7
10.0	20.1	6.85
30.2	40.3	6.61
50.4	60.5	6.63
70.6	80.7	6.60
90.8	100.9	6.62
111.0	121.1	6.60
131.2	141.3	6.59
151.4	161.5	6.63
171.6	181.7	6.67
191.8	201.9	6.66
212.0	222.1	6.71
232.2	242.3	6.69
252.4	262.5	6.73
272.7	282.8	6.74
292.9	303.0	6.76
313.1	323.2	6.76
333.3	343.4	6.79
353.5	363.6	6.78
373.7	383.8	6.82
393.9	404.0	6.85
434.3	444.4	6.90
454.5	464.6	6.86
494.9	505.0	6.88
515.1	525.2	6.87
555.5	565.6	6.85
575.7	585.8	6.92
616.1	626.2	7.02
636.3	646.4	7.06
676.7	686.8	7.12
696.9	707.0	7.16
737.3	747.4	7.12
757.6	767.7	7.09
798.0	808.1	7.10
818.2	828.3	7.05
858.6	868.7	7.09
878.8	888.9	7.14
919.2	929.3	7.13
939.4	949.5	7.12
979.8	989.9	7.17
1000.0	1010.1	7.12

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1000.1MHz (dB) @LO (dBm) +7
990.0	10.1	8.39
970.0	30.1	8.35
950.0	50.1	8.31
930.0	70.1	8.26
910.0	90.1	8.21
890.0	110.1	8.15
870.0	130.1	8.05
850.0	150.1	8.04
830.0	170.1	8.02
810.0	190.1	7.99
790.0	210.1	7.98
770.0	230.1	7.94
750.0	250.1	7.90
730.0	270.1	7.93
710.0	290.1	7.93
690.0	310.1	7.91
670.0	330.1	7.90
650.0	350.1	7.90
630.0	370.1	7.91
610.0	390.1	7.92
570.0	430.1	7.90
550.0	450.1	7.91
510.0	490.1	7.91
490.0	510.1	7.88
450.0	550.1	7.95
430.0	570.1	7.98
390.0	610.1	7.93
370.0	630.1	7.94
330.0	670.1	7.91
310.0	690.1	7.91
270.0	730.1	7.95
250.0	750.1	8.00
210.0	790.1	8.02
190.0	810.1	8.01
150.0	850.1	8.00
130.0	870.1	7.98
90.0	910.1	7.96
70.0	930.1	7.99
30.0	970.1	8.06
10.0	990.1	8.31

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+4	+7	+10	+4	+7	+10
5.0	75.52	75.17	72.21	66.42	69.37	72.91
10.0	68.33	69.29	68.74	66.13	68.39	69.44
50.4	57.44	57.58	57.53	64.37	55.44	54.42
90.7	52.04	52.07	52.15	54.96	52.55	50.51
131.0	48.89	48.81	48.80	51.86	49.41	47.78
171.3	46.32	46.39	46.37	50.31	47.51	45.93
211.5	44.36	44.41	44.43	48.95	46.25	44.53
251.8	42.80	42.86	42.86	47.33	44.81	43.17
292.1	41.44	41.51	41.48	46.12	43.91	42.18
332.4	40.25	40.25	40.18	44.63	42.60	41.03
372.7	39.27	39.29	39.21	43.07	41.34	39.95
413.0	38.19	38.16	38.09	41.84	40.46	39.16
453.3	37.30	37.22	37.11	40.20	39.43	38.44
493.6	36.62	36.57	36.53	38.93	38.38	37.62
533.9	36.06	36.01	35.94	37.44	37.06	36.55
574.2	35.57	35.50	35.31	36.14	35.99	35.66
614.4	35.00	34.93	34.78	35.11	35.14	34.78
654.7	34.37	34.25	34.03	34.19	34.60	34.49
695.0	33.62	33.50	33.30	33.41	34.06	34.30
735.3	32.91	32.82	32.65	32.47	33.20	33.59
775.6	32.32	32.35	32.32	31.81	32.51	32.90
815.9	31.85	31.90	31.93	31.00	31.65	31.97
856.2	31.57	31.64	31.70	30.24	30.92	31.18
896.5	31.18	31.31	31.40	29.61	30.45	30.73
916.6	31.08	31.25	31.36	29.23	30.18	30.54
956.9	30.74	30.92	31.05	28.62	29.66	30.22
977.1	30.61	30.79	30.92	28.29	29.36	30.00
1017.3	30.28	30.42	30.51	27.70	28.76	29.50
1037.5	30.15	30.27	30.32	27.27	28.30	29.11
1077.8	29.81	29.94	29.91	26.92	27.92	28.78
1097.9	29.57	29.72	29.69	26.62	27.61	28.47
1138.2	28.99	29.09	29.10	26.22	27.18	28.08
1158.4	28.70	28.76	28.74	26.10	27.07	27.96
1198.7	28.05	28.06	28.05	25.75	26.73	27.65
1218.8	27.73	27.71	27.70	25.49	26.46	27.41
1259.1	27.04	27.00	26.99	25.26	26.24	27.23
1279.2	26.71	26.65	26.64	25.07	26.06	27.08
1319.5	26.02	25.93	25.94	24.88	25.84	26.89
1380.0	25.27	25.12	25.12	25.01	26.04	27.07
1400.1	25.08	24.90	24.88	24.90	25.96	26.97

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	34.81	39.94	33.83
50.4	80.4	34.82	35.25	35.54
90.7	120.7	31.26	31.23	30.95
131.0	161.0	28.33	28.55	28.60
171.3	201.3	26.59	26.71	26.59
211.5	241.5	25.44	25.40	25.41
251.8	281.8	24.73	24.72	24.78
292.1	322.1	24.25	24.32	24.27
332.4	362.4	24.12	24.06	24.09
372.7	402.7	23.91	24.12	24.17
413.0	443.0	23.87	24.24	24.47
453.3	483.3	23.85	24.13	24.39
493.6	523.6	23.60	23.75	23.80
533.9	563.9	23.09	23.23	23.31
574.2	604.2	22.20	22.50	22.81
614.4	644.4	20.86	21.33	21.75
654.7	684.7	19.26	19.71	20.16
695.0	725.0	17.70	18.05	18.39
735.3	765.3	16.43	16.63	16.85
775.6	805.6	15.35	15.45	15.59
815.9	845.9	14.49	14.50	14.56
856.2	886.2	13.78	13.77	13.78
896.5	926.5	13.16	13.15	13.19
916.6	946.6	12.88	12.90	12.93
956.9	986.9	12.40	12.40	12.45
977.1	1007.1	12.20	12.22	12.27
1017.3	1047.3	11.84	11.90	11.97
1037.5	1067.5	11.71	11.79	11.90
1077.8	1107.8	11.45	11.61	11.81
1097.9	1127.9	11.32	11.51	11.73
1138.2	1168.2	11.07	11.29	11.56
1158.4	1188.4	10.99	11.24	11.52
1198.7	1228.7	10.87	11.14	11.46
1218.8	1248.8	10.82	11.11	11.45
1259.1	1289.1	10.72	11.00	11.32
1279.2	1309.2	10.67	10.91	11.18
1319.5	1349.5	10.61	10.76	10.87
1339.7	1369.7	10.62	10.73	10.78
1380.0	1410.0	10.68	10.83	10.85
1400.1	1430.1	10.70	10.87	10.90

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+4	+7	+10
5.0	35.0	1.38	1.43	1.48
10.0	40.0	1.25	1.32	1.37
50.4	80.4	1.25	1.34	1.40
90.7	120.7	1.19	1.26	1.34
131.0	161.0	1.25	1.33	1.39
171.3	201.3	1.19	1.27	1.33
211.5	241.5	1.27	1.36	1.41
251.8	281.8	1.27	1.34	1.40
292.1	322.1	1.29	1.37	1.43
332.4	362.4	1.32	1.39	1.45
372.7	402.7	1.34	1.42	1.48
413.0	443.0	1.38	1.47	1.53
453.3	483.3	1.40	1.48	1.54
493.6	523.6	1.42	1.49	1.55
533.9	563.9	1.46	1.54	1.60
574.2	604.2	1.50	1.57	1.63
614.4	644.4	1.56	1.64	1.70
654.7	684.7	1.63	1.71	1.78
695.0	725.0	1.66	1.75	1.82
735.3	765.3	1.75	1.84	1.91
775.6	805.6	1.73	1.81	1.88
815.9	845.9	1.79	1.88	1.94
856.2	886.2	1.72	1.80	1.85
896.5	926.5	1.78	1.84	1.89
916.6	946.6	1.76	1.81	1.86
956.9	986.9	1.72	1.76	1.80
977.1	1007.1	1.78	1.83	1.87
1017.3	1047.3	1.83	1.86	1.90
1037.5	1067.5	1.82	1.85	1.89
1077.8	1107.8	2.05	2.08	2.13
1097.9	1127.9	2.13	2.14	2.18
1138.2	1168.2	2.66	2.65	2.67
1158.4	1188.4	2.48	2.48	2.50
1198.7	1228.7	2.68	2.66	2.66
1218.8	1248.8	2.82	2.79	2.79
1259.1	1289.1	3.10	3.05	3.03
1279.2	1309.2	3.16	3.11	3.08
1319.5	1349.5	3.40	3.33	3.27
1339.7	1369.7	3.52	3.44	3.37
1380.0	1410.0	3.54	3.47	3.40
1400.1	1430.1	3.70	3.63	3.56

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+4	+7	+10
5.0	2.09	2.92	3.99
10.0	1.95	2.76	3.81
50.4	1.95	2.80	3.88
90.7	1.94	2.75	3.81
131.0	1.91	2.72	3.75
171.3	1.93	2.73	3.76
211.5	1.91	2.68	3.66
251.8	1.94	2.72	3.72
292.1	1.95	2.72	3.70
332.4	1.98	2.77	3.76
372.7	2.04	2.85	3.86
413.0	2.03	2.82	3.81
453.3	2.09	2.89	3.89
493.6	2.06	2.82	3.78
533.9	2.09	2.86	3.81
574.2	2.12	2.86	3.79
614.4	2.16	2.92	3.85
654.7	2.24	3.00	3.94
695.0	2.25	3.00	3.92
735.3	2.31	3.07	3.99
775.6	2.31	3.03	3.90
815.9	2.35	3.05	3.90
856.2	2.40	3.11	3.95
896.5	2.44	3.12	3.94
916.6	2.51	3.22	4.08
956.9	2.56	3.25	4.09
977.1	2.58	3.26	4.08
1017.3	2.65	3.35	4.18
1037.5	2.65	3.33	4.14
1077.8	2.67	3.33	4.10
1097.9	2.69	3.36	4.15
1138.2	2.75	3.42	4.22
1158.4	2.80	3.47	4.27
1198.7	2.78	3.43	4.20
1218.8	2.76	3.39	4.15
1259.1	2.83	3.45	4.21
1279.2	2.80	3.41	4.15
1319.5	2.84	3.43	4.18
1339.7	2.92	3.52	4.28
1380.0	2.95	3.54	4.26
1400.1	2.94	3.50	4.20

IF (OUT) (MHz)	IF VSWR @LO=1000.1MHz (:1) @LO (dBm)		
	+4	+7	+10
5.0	1.29	1.14	1.04
10.0	1.30	1.14	1.04
30.1	1.98	1.71	1.47
50.1	1.84	1.55	1.37
70.1	1.79	1.56	1.37
90.1	1.89	1.64	1.43
110.1	1.95	1.69	1.50
130.1	1.89	1.65	1.47
150.1	1.90	1.65	1.46
170.1	1.87	1.65	1.48
190.1	1.93	1.69	1.51
210.1	1.95	1.72	1.54
230.1	1.91	1.68	1.51
250.1	1.91	1.68	1.53
270.1	1.90	1.70	1.55
290.1	1.92	1.73	1.57
310.1	1.91	1.73	1.59
330.1	1.90	1.73	1.58
350.1	1.90	1.72	1.60
370.1	1.91	1.75	1.63
390.1	1.93	1.78	1.67
430.1	1.94	1.80	1.71
450.1	1.94	1.81	1.72
490.1	1.94	1.83	1.76
510.1	1.95	1.85	1.79
550.1	1.95	1.88	1.83
570.1	1.98	1.90	1.86
610.1	1.96	1.90	1.88
630.1	1.99	1.92	1.92
670.1	2.03	1.97	1.97
690.1	2.03	1.97	1.96
730.1	2.02	1.98	2.00
750.1	2.07	2.02	2.03
790.1	2.05	1.99	2.00
810.1	2.02	1.97	1.99
850.1	2.09	2.05	2.07
870.1	2.11	2.06	2.08
910.1	2.06	2.01	2.03
930.1	2.07	2.02	2.05
970.1	2.14	2.07	2.09
990.1	2.13	2.05	2.06

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	11	19	12	29	21	37	21	47	30	45
1	-	17	0	27	12	29	18	40	43	50	47	51
2	107	64	57	62	56	65	54	60	59	71	56	68
3	114	76	72	77	86	78	65	85	85	80	83	86
4	113	94	98	92	90	85	98	93	99	98	97	101
5	131	116	105	96	106	96	86	105	99	101	99	106
6	114	102	100	110	102	101	90	87	106	108	99	112
7	123	106	105	106	109	99	97	96	95	97	109	109
8	123	111	113	101	107	99	98	98	100	95	101	104
9	111	104	100	111	110	109	100	101	102	88	91	99
10	115	112	109	125	109	98	100	107	108	101	98	95
	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; -20.75 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	21	28	23	43	32	50	33	67	45	57
1	-	17	0	28	12	29	19	44	43	54	49	55
2	99	58	48	58	47	60	46	56	54	65	49	67
3	120	62	49	59	52	56	45	64	47	59	65	67
4	109	70	72	70	74	69	71	72	62	68	68	82
5	114	81	73	73	63	80	59	79	58	71	61	84
6	110	104	85	88	82	88	84	90	80	84	82	87
7	115	95	97	92	78	84	79	97	81	92	83	92
8	121	106	102	111	103	100	98	96	98	96	100	98
9	118	118	113	113	104	101	106	99	97	109	89	105
10	114	111	109	118	109	121	106	107	102	111	100	100
	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; -10.91 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.