Frequency Mixer LMX-148

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+7	+10	+13
10.1	40.1	6.96	6.58	6.34
70.4	100.4	7.16	6.73	6.63
130.7	160.7	7.15	6.72	6.65
190.9	220.9	7.21	6.74	6.66
251.2	281.2	7.15	6.74	6.67
311.5	341.5	7.19	6.77	6.71
371.8	401.8	7.20	6.80	6.74
432.0	462.0	7.12	6.80	6.73
492.3	522.3	7.17	6.80	6.71
552.6	582.6	7.19	6.81	6.76
612.9	642.9	7.18	6.79	6.72
673.1	703.1	7.21	6.82	6.50
733.4	763.4	7.26	6.84	6.74
793.7	823.7	7.26	6.84	6.70
854.0	884.0	7.27	6.82	6.69
914.2	944.2	7.34	6.89	6.72
974.5	1004.5	7.36	6.93	6.76
1034.8	1064.8	7.36	6.91	6.70
1095.1	1125.1	7.55	7.00	6.98
1155.3	1185.3	7.79	7.19	6.93
1215.6	1245.6	7.89	7.24	6.92
1275.9	1305.9	8.14	7.36	6.99
1336.2	1366.2	8.30	7.44	7.04
1396.4	1426.4	8.37	7.50	7.09
1436.6	1466.6	8.53	7.65	7.19
1496.9	1526.9	8.54	7.68	7.24
1537.1	1567.1	8.68	7.79	7.30
1597.3	1627.3	8.87	7.98	7.47
1637.5	1667.5	8.95	8.05	7.57
1697.8	1727.8	9.27	8.37	7.78
1738.0	1768.0	9.26	8.47	7.95
1798.3	1828.3	9.31	8.52	8.04
1838.4	1868.4	9.26	8.57	8.20
1898.7	1928.7	9.26	8.71	8.43
1938.9	1968.9	9.41	8.95	8.72
1999.2	2029.2	9.50	9.19	9.03
2039.4	2069.4	9.68	9.40	9.27
2099.6	2129.6	9.88	9.64	9.58
2139.8	2169.8	10.01	9.80	9.75
2200.1	2230.1	10.31	10.04	9.96

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+7	+10	+13
10.1	40.1	19.92	21.68	22.98
70.4	100.4	19.42	20.66	20.96
130.7	160.7	20.66	21.22	26.31
190.9	220.9	18.99	20.85	23.93
251.2	281.2	20.17	21.26	20.42
311.5	341.5	19.06	21.89	21.74
371.8	401.8	19.94	18.79	20.70
432.0	462.0	19.28	19.40	20.75
492.3	522.3	18.41	18.88	22.26
552.6	582.6	16.88	17.31	19.92
612.9	642.9	15.66	17.98	22.09
673.1	703.1	16.12	18.48	21.34
733.4	763.4	16.95	18.42	23.29
793.7	823.7	16.18	18.81	26.77
854.0	884.0	16.54	18.93	27.23
914.2	944.2	16.61	19.71	25.93
974.5	1004.5	14.79	17.62	21.81
1034.8	1064.8	13.86	16.34	19.53
1095.1	1125.1	13.41	15.66	20.48
1155.3	1185.3	12.14	15.93	23.82
1215.6	1245.6	11.41	16.77	24.69
1275.9	1305.9	11.01	15.49	22.57
1336.2	1366.2	11.06	16.19	20.99
1396.4	1426.4	11.66	15.91	20.52
1436.6	1466.6	11.49	15.30	19.34
1496.9	1526.9	11.70	15.69	17.57
1537.1	1567.1	11.16	14.19	15.64
1597.3	1627.3	10.30	13.24	13.94
1637.5	1667.5	10.05	12.45	13.81
1697.8	1727.8	9.14	10.98	13.13
1738.0	1768.0	8.85	10.53	12.66
1798.3	1828.3	9.21	11.38	14.22
1838.4	1868.4	10.53	12.92	15.19
1898.7	1928.7	12.24	14.30	16.81
1938.9	1968.9	12.67	14.97	17.41
1999.2	2029.2	14.63	15.99	18.20
2039.4	2069.4	15.37	16.13	18.10
2099.6	2129.6	16.93	16.52	18.14
2139.8	2169.8	17.67	18.08	17.65
2200.1	2230.1	17.12	19.70	18.79

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB) @LO (dBm)		
		+7	+10	+13
10.1	40.1	0.46	0.31	0.20
70.4	100.4	0.65	0.39	0.23
130.7	160.7	0.64	0.37	0.22
190.9	220.9	0.58	0.34	0.20
251.2	281.2	0.56	0.33	0.18
311.5	341.5	0.57	0.35	0.20
371.8	401.8	0.59	0.35	0.21
432.0	462.0	0.60	0.36	0.23
492.3	522.3	0.64	0.38	0.25
552.6	582.6	0.58	0.36	0.25
612.9	642.9	0.52	0.33	0.25
673.1	703.1	0.50	0.29	0.25
733.4	763.4	0.54	0.36	0.25
793.7	823.7	0.56	0.40	0.28
854.0	884.0	0.64	0.43	0.32
914.2	944.2	0.75	0.49	0.36
974.5	1004.5	0.84	0.52	0.40
1034.8	1064.8	0.85	0.52	0.45
1095.1	1125.1	0.92	0.71	0.50
1155.3	1185.3	0.89	0.80	0.53
1215.6	1245.6	0.85	0.74	0.58
1275.9	1305.9	0.81	0.79	0.68
1336.2	1366.2	0.84	0.76	0.69
1396.4	1426.4	0.85	0.78	0.71
1436.6	1466.6	0.80	0.74	0.67
1496.9	1526.9	0.78	0.75	0.69
1537.1	1567.1	0.76	0.83	0.80
1597.3	1627.3	0.71	0.81	0.79
1637.5	1667.5	0.62	0.74	0.76
1697.8	1727.8	0.55	0.62	0.75
1738.0	1768.0	0.56	0.64	0.75
1798.3	1828.3	0.67	0.69	0.72
1838.4	1868.4	0.74	0.69	0.67
1898.7	1928.7	0.83	0.67	0.62
1938.9	1968.9	0.92	0.67	0.59
1999.2	2029.2	0.76	0.52	0.45
2039.4	2069.4	0.71	0.46	0.39
2099.6	2129.6	0.57	0.37	0.28
2139.8	2169.8	0.56	0.31	0.23
2200.1	2230.1	0.47	0.26	0.19

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=750.1MHz (dB) @LO (dBm) +10
730.0	20.1	6.89
711.5	38.6	6.90
693.1	57.0	6.86
674.6	75.5	6.88
656.2	93.9	6.80
637.7	112.4	6.81
619.2	130.9	6.76
600.8	149.3	6.77
582.3	167.8	6.75
563.8	186.3	6.75
545.4	204.7	6.75
526.9	223.2	6.75
508.5	241.6	6.74
490.0	260.1	6.77
471.5	278.6	6.74
453.1	297.0	6.74
434.6	315.5	6.76
416.2	333.9	6.75
397.7	352.4	6.76
379.2	370.9	6.72
360.8	389.3	6.75
342.3	407.8	6.73
323.8	426.3	6.74
305.4	444.7	6.73
286.9	463.2	6.72
268.5	481.6	6.71
250.0	500.1	6.71
231.5	518.6	6.69
213.1	537.0	6.70
194.6	555.5	6.68
176.2	573.9	6.68
157.7	592.4	6.67
139.2	610.9	6.66
120.8	629.3	6.66
102.3	647.8	6.62
83.8	666.3	6.66
65.4	684.7	6.64
46.9	703.2	6.67
28.5	721.6	6.66
10.0	740.1	6.73

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +10
10.0	20.1	6.62
50.5	60.6	6.55
91.1	101.2	6.57
131.6	141.7	6.54
172.2	182.3	6.59
212.7	222.8	6.61
253.3	263.4	6.65
293.8	303.9	6.67
334.4	344.5	6.67
374.9	385.0	6.72
415.5	425.6	6.71
456.0	466.1	6.76
496.6	506.7	6.79
537.1	547.2	6.79
577.7	587.8	6.82
618.2	628.3	6.81
658.8	668.9	6.86
699.3	709.4	6.89
739.9	750.0	6.97
780.4	790.5	6.97
821.0	831.1	6.96
861.5	871.6	7.08
902.1	912.2	7.15
942.6	952.7	7.24
983.2	993.3	7.29
1023.7	1033.8	7.31
1064.2	1074.3	7.29
1104.8	1114.9	7.24
1145.3	1155.4	7.22
1185.9	1196.0	7.19
1226.4	1236.5	7.16
1246.7	1256.8	7.14
1287.3	1297.4	7.13
1307.5	1317.6	7.14
1348.1	1358.2	7.18
1368.4	1378.5	7.20
1408.9	1419.0	7.21
1429.2	1439.3	7.21
1469.7	1479.8	7.21
1490.0	1500.1	7.24

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1500.1MHz (dB) @LO (dBm) +10
1490.0	10.1	7.74
1449.5	50.6	7.62
1408.9	91.2	7.56
1368.4	131.7	7.51
1327.8	172.3	7.54
1287.3	212.8	7.54
1246.7	253.4	7.55
1206.2	293.9	7.56
1165.6	334.5	7.53
1125.1	375.0	7.40
1084.5	415.6	7.54
1044.0	456.1	7.54
1003.4	496.7	7.53
962.9	537.2	7.52
922.3	577.8	7.52
881.8	618.3	7.48
841.2	658.9	7.54
800.7	699.4	7.47
760.1	740.0	7.47
719.6	780.5	7.45
679.0	821.1	7.36
638.5	861.6	7.36
597.9	902.2	7.36
557.4	942.7	7.36
516.8	983.3	7.30
476.3	1023.8	7.24
435.8	1064.3	7.27
395.2	1104.9	7.22
354.7	1145.4	7.20
314.1	1186.0	7.15
273.6	1226.5	7.10
253.3	1246.8	7.07
212.7	1287.4	7.08
192.5	1307.6	7.04
151.9	1348.2	7.04
131.6	1368.5	7.02
91.1	1409.0	7.06
70.8	1429.3	7.09
30.3	1469.8	7.10
10.0	1490.1	7.28

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+7	+10	+13	+7	+10	+13
10.1	65.44	65.15	64.15	61.64	59.83	59.78
70.4	54.69	54.86	54.56	53.22	50.29	49.50
130.7	49.96	50.16	50.11	48.03	45.90	44.39
190.9	46.92	47.10	47.29	45.31	43.16	42.03
251.2	44.63	44.95	45.17	43.05	41.22	40.17
311.5	43.19	43.53	43.68	41.61	39.79	38.73
371.8	41.99	42.32	42.46	40.10	38.53	37.21
432.0	40.87	41.13	41.42	39.11	37.46	36.27
492.3	40.01	40.38	40.64	38.21	36.71	35.47
552.6	39.35	39.72	39.96	36.59	35.41	34.27
612.9	38.55	39.00	39.26	35.32	34.50	33.64
673.1	37.97	38.17	38.75	34.11	33.53	32.86
733.4	37.62	37.95	38.05	32.65	32.59	32.19
793.7	37.59	37.79	37.67	31.42	31.64	31.47
854.0	37.68	37.75	37.70	30.33	30.39	30.44
914.2	37.84	37.64	37.48	29.60	29.67	29.58
974.5	38.12	37.64	37.47	29.17	29.38	29.24
1034.8	38.55	37.84	37.60	28.21	28.70	28.83
1095.1	39.19	38.62	37.79	27.38	28.28	28.65
1155.3	39.96	38.81	37.95	26.75	27.84	28.14
1215.6	40.32	39.20	38.25	25.66	26.84	27.41
1275.9	40.60	39.60	38.54	24.82	26.03	26.84
1336.2	41.08	40.20	38.95	24.11	25.38	26.11
1396.4	42.03	41.04	39.63	23.44	25.18	25.41
1436.6	42.85	40.84	39.95	23.23	24.54	25.05
1496.9	44.90	42.10	40.96	22.76	23.56	24.33
1537.1	46.06	43.09	41.80	22.68	23.45	24.19
1597.3	47.81	46.19	44.23	22.26	23.19	23.93
1637.5	46.89	48.15	46.45	22.04	22.99	23.74
1697.8	42.85	47.71	51.67	21.89	22.93	23.83
1738.0	40.60	45.47	52.85	21.69	22.88	24.00
1798.3	38.36	42.79	51.32	21.68	22.90	24.28
1838.4	36.97	41.34	49.33	21.31	22.62	24.16
1898.7	35.32	39.55	45.45	20.94	22.41	24.12
1938.9	34.99	39.16	44.55	20.74	22.19	23.95
1999.2	33.66	37.47	42.55	20.27	21.62	23.90
2039.4	33.72	37.58	42.11	20.32	21.80	24.00
2099.6	33.05	37.32	40.93	20.20	21.71	24.10
2139.8	33.58	38.55	41.20	20.35	22.13	24.13
2200.1	33.38	39.50	40.34	20.52	24.15	24.28

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+7	+10	+13
10.1	40.1	52.15	54.97	55.20
70.4	100.4	36.86	37.04	37.18
130.7	160.7	32.00	32.50	32.77
190.9	220.9	29.35	29.83	29.95
251.2	281.2	27.58	28.02	28.31
311.5	341.5	26.30	26.76	27.15
371.8	401.8	25.54	26.07	26.56
432.0	462.0	25.22	25.77	26.30
492.3	522.3	24.92	25.58	26.03
552.6	582.6	24.82	25.52	26.04
612.9	642.9	25.11	26.19	26.46
673.1	703.1	25.12	26.88	26.69
733.4	763.4	24.47	24.68	26.21
793.7	823.7	23.89	24.51	25.39
854.0	884.0	23.25	23.92	24.16
914.2	944.2	22.21	22.64	22.48
974.5	1004.5	21.38	21.42	21.43
1034.8	1064.8	20.45	20.06	20.55
1095.1	1125.1	19.51	18.77	19.41
1155.3	1185.3	19.09	19.04	18.71
1215.6	1245.6	18.86	18.32	18.13
1275.9	1305.9	18.62	17.78	17.75
1336.2	1366.2	18.43	17.24	17.42
1396.4	1426.4	18.09	17.36	16.97
1436.6	1466.6	17.94	18.07	16.76
1496.9	1526.9	17.57	17.48	16.42
1537.1	1567.1	17.31	17.06	16.26
1597.3	1627.3	16.81	16.45	15.82
1637.5	1667.5	16.46	16.00	15.50
1697.8	1727.8	15.92	15.38	15.08
1738.0	1768.0	15.51	14.96	14.68
1798.3	1828.3	14.92	14.21	13.90
1838.4	1868.4	14.39	13.64	13.44
1898.7	1928.7	13.53	12.86	12.78
1938.9	1968.9	13.20	12.56	12.44
1999.2	2029.2	12.60	12.06	12.01
2039.4	2069.4	12.45	11.93	11.79
2099.6	2129.6	12.08	11.76	11.40
2139.8	2169.8	12.00	11.93	11.18
2200.1	2230.1	11.82	12.77	10.94

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm) +7	+10	+13
10.1	40.1	1.23	1.30	1.36
70.4	100.4	1.16	1.25	1.31
130.7	160.7	1.17	1.26	1.33
190.9	220.9	1.19	1.27	1.33
251.2	281.2	1.22	1.29	1.34
311.5	341.5	1.23	1.29	1.33
371.8	401.8	1.27	1.30	1.34
432.0	462.0	1.30	1.33	1.36
492.3	522.3	1.33	1.35	1.37
552.6	582.6	1.36	1.35	1.37
612.9	642.9	1.39	1.40	1.39
673.1	703.1	1.42	1.46	1.39
733.4	763.4	1.43	1.37	1.41
793.7	823.7	1.45	1.40	1.42
854.0	884.0	1.45	1.42	1.40
914.2	944.2	1.47	1.43	1.38
974.5	1004.5	1.47	1.42	1.37
1034.8	1064.8	1.46	1.38	1.36
1095.1	1125.1	1.47	1.31	1.37
1155.3	1185.3	1.50	1.48	1.38
1215.6	1245.6	1.53	1.48	1.40
1275.9	1305.9	1.58	1.49	1.42
1336.2	1366.2	1.59	1.49	1.42
1396.4	1426.4	1.57	1.47	1.40
1436.6	1466.6	1.56	1.46	1.39
1496.9	1526.9	1.53	1.43	1.37
1537.1	1567.1	1.51	1.42	1.36
1597.3	1627.3	1.48	1.40	1.35
1637.5	1667.5	1.46	1.39	1.34
1697.8	1727.8	1.46	1.40	1.35
1738.0	1768.0	1.46	1.41	1.37
1798.3	1828.3	1.50	1.47	1.44
1838.4	1868.4	1.55	1.54	1.52
1898.7	1928.7	1.68	1.67	1.67
1938.9	1968.9	1.78	1.78	1.77
1999.2	2029.2	1.96	1.96	1.95
2039.4	2069.4	2.08	2.09	2.08
2099.6	2129.6	2.28	2.30	2.28
2139.8	2169.8	2.42	2.45	2.44
2200.1	2230.1	2.61	2.70	2.65

LO (MHz)	LO VSWR (:1) @LO (dBm) +7	+10	+13
10.1	1.67	2.42	3.20
70.4	1.60	2.35	3.27
130.7	1.67	2.45	3.40
190.9	1.66	2.37	3.24
251.2	1.62	2.36	3.26
311.5	1.67	2.38	3.25
371.8	1.74	2.48	3.31
432.0	1.70	2.39	3.26
492.3	1.70	2.39	3.20
552.6	1.80	2.52	3.33
612.9	1.76	2.44	3.23
673.1	1.76	2.42	3.18
733.4	1.85	2.52	3.25
793.7	1.86	2.49	3.18
854.0	1.84	2.45	3.14
914.2	1.90	2.50	3.17
974.5	1.97	2.54	3.17
1034.8	1.94	2.47	3.13
1095.1	1.95	2.46	3.07
1155.3	2.03	2.55	3.13
1215.6	2.03	2.51	3.04
1275.9	2.02	2.49	3.04
1336.2	2.07	2.54	3.06
1396.4	2.07	2.51	3.01
1436.6	2.09	2.53	3.04
1496.9	2.05	2.43	2.94
1537.1	2.09	2.49	2.97
1597.3	2.07	2.46	2.93
1637.5	2.10	2.49	2.98
1697.8	2.11	2.48	2.94
1738.0	2.11	2.48	2.95
1798.3	2.14	2.49	2.95
1838.4	2.13	2.46	2.92
1898.7	2.14	2.48	2.93
1938.9	2.21	2.56	2.98
1999.2	2.26	2.54	3.00
2039.4	2.35	2.64	3.05
2099.6	2.46	2.68	3.09
2139.8	2.55	2.75	3.14
2200.1	2.67	2.83	3.20

IF (OUT) (MHz)	IF VSWR @LO=1500.1MHz (:1) @LO (dBm) +7	+10	+13
10.0	1.65	1.48	1.41
49.7	1.93	1.49	1.25
89.5	1.90	1.49	1.25
129.2	1.85	1.50	1.28
168.9	1.92	1.50	1.25
208.7	1.85	1.50	1.28
248.4	1.87	1.49	1.25
288.1	1.82	1.46	1.25
327.9	1.79	1.45	1.24
367.6	1.80	1.45	1.24
407.3	1.74	1.42	1.23
447.1	1.79	1.45	1.26
486.8	1.74	1.43	1.25
526.5	1.74	1.44	1.26
566.3	1.77	1.46	1.29
606.0	1.72	1.43	1.26
645.7	1.76	1.47	1.30
685.5	1.73	1.46	1.30
725.2	1.74	1.48	1.30
764.9	1.75	1.51	1.34
804.7	1.74	1.49	1.33
844.4	1.74	1.49	1.35
884.1	1.73	1.51	1.37
923.9	1.75	1.51	1.36
963.6	1.72	1.52	1.40
1003.3	1.76	1.56	1.40
1043.1	1.70	1.52	1.38
1082.8	1.71	1.57	1.43
1122.5	1.72	1.57	1.40
1162.3	1.66	1.57	1.42
1202.0	1.71	1.63	1.45
1241.7	1.65	1.60	1.42
1281.5	1.64	1.66	1.46
1321.2	1.64	1.67	1.43
1360.9	1.55	1.65	1.43
1380.8	1.52	1.59	1.41
1420.5	1.56	1.19	1.45
1440.4	1.52	1.04	1.43
1480.1	1.48	1.18	1.43
1500.0	1.60	1.49	1.83

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	15	27	21	37	30	42	39	60	72	76
1	-	19	+0	30	14	43	26	40	49	41	60	61
2	86	57	39	57	38	65	39	52	52	57	53	72
3	>100	48	50	49	47	57	43	58	55	57	59	54
4	>100	81	63	71	61	72	65	87	61	72	70	63
5	>100	73	65	68	57	66	55	65	55	63	59	69
6	>100	>93	92	86	79	83	72	77	68	77	66	75
7	>100	83	88	86	82	>93	84	85	81	82	79	84
8	>100	>93	>93	>93	>93	>93	88	>93	88	91	87	93
9	>100	>93	>93	>93	>93	>93	91	>93	88	92	87	>93
10	>100	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 750.1 MHz; 0.00 dBm.
LO IN: 780.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -6.9 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	5	17	9	25	19	29	25	53	52	56
1	-	19	+0	31	14	41	26	36	48	35	52	54
2	99	65	46	67	46	80	47	62	58	60	66	66
3	>100	66	63	66	59	68	58	67	63	73	72	79
4	>100	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
5	>100	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
6	>100	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
7	>100	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
8	>100	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
9	>100	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
10	>100	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 750.1 MHz; -10.00 dBm.
LO IN: 780.01 MHz; +10.00 dBm
IF OUT: 29.91 MHz; -16.92 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.