Frequency Mixer MCA1-24LH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+7	+10	+13
220.0	250.0	21.03	12.03	7.73
300.0	330.0	6.94	5.68	5.47
380.0	410.0	5.36	5.05	4.92
460.0	490.0	6.49	5.73	5.26
540.0	570.0	7.64	6.60	6.07
620.0	650.0	6.76	6.48	6.28
700.0	730.0	6.26	6.04	5.96
780.0	810.0	6.61	6.16	5.97
860.0	890.0	7.10	6.65	6.37
940.0	970.0	7.17	6.72	6.48
1020.0	1050.0	7.08	6.76	6.60
1100.0	1130.0	7.17	6.85	6.66
1180.0	1210.0	7.83	7.09	6.68
1260.0	1290.0	8.84	7.74	7.09
1340.0	1370.0	8.00	7.21	6.60
1420.0	1450.0	6.74	6.17	5.87
1500.0	1530.0	6.37	5.79	5.51
1580.0	1610.0	5.93	5.25	5.12
1660.0	1690.0	5.54	5.21	5.15
1740.0	1770.0	5.56	5.29	5.25
1820.0	1850.0	5.59	5.32	5.24
1900.0	1930.0	5.67	5.26	5.18
1980.0	2010.0	6.44	5.73	5.36
2060.0	2090.0	7.47	6.53	5.96
2140.0	2170.0	7.67	6.70	6.15
2200.0	2230.0	7.47	6.49	6.03
2280.0	2310.0	7.93	6.40	5.95
2340.0	2370.0	9.02	6.45	5.97
2420.0	2450.0	9.68	6.57	6.13
2480.0	2510.0	9.85	6.88	6.58
2560.0	2590.0	11.96	7.59	6.83
2620.0	2650.0	13.15	8.51	7.19
2700.0	2730.0	11.19	8.92	7.84
2760.0	2790.0	9.65	8.72	8.33
2840.0	2870.0	8.59	7.83	7.73
2900.0	2930.0	8.86	7.76	7.39
2980.0	3010.0	9.30	8.24	7.78
3040.0	3070.0	9.22	8.54	8.28
3120.0	3150.0	10.11	9.59	9.27
3180.0	3210.0	10.88	10.30	9.89

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+7	+10	+13
220.0	250.0	-4.30	2.18	11.44
300.0	330.0	7.29	11.98	16.35
380.0	410.0	11.71	15.62	16.10
460.0	490.0	8.28	10.86	13.64
540.0	570.0	8.68	12.33	14.62
620.0	650.0	9.71	10.04	11.44
700.0	730.0	11.29	14.47	14.50
780.0	810.0	16.83	12.83	12.76
860.0	890.0	19.36	21.27	19.81
940.0	970.0	19.97	17.11	17.91
1020.0	1050.0	15.45	17.63	23.43
1100.0	1130.0	16.99	18.52	19.11
1180.0	1210.0	16.66	18.53	17.67
1260.0	1290.0	10.53	13.37	15.64
1340.0	1370.0	10.55	9.38	10.11
1420.0	1450.0	10.17	9.59	9.29
1500.0	1530.0	7.01	7.83	9.75
1580.0	1610.0	11.86	16.99	17.16
1660.0	1690.0	16.96	17.71	16.59
1740.0	1770.0	18.04	19.41	17.96
1820.0	1850.0	13.05	16.26	17.48
1900.0	1930.0	11.92	16.21	17.61
1980.0	2010.0	7.74	9.74	17.94
2060.0	2090.0	9.52	12.59	14.92
2140.0	2170.0	8.57	10.29	13.63
2200.0	2230.0	8.53	10.18	13.83
2280.0	2310.0	7.89	10.95	16.93
2340.0	2370.0	7.02	13.76	17.99
2420.0	2450.0	7.45	17.97	21.56
2480.0	2510.0	7.50	14.23	17.74
2560.0	2590.0	3.59	14.58	23.71
2620.0	2650.0	4.35	17.91	18.90
2700.0	2730.0	9.12	18.99	17.52
2760.0	2790.0	9.60	14.40	17.60
2840.0	2870.0	8.93	10.86	12.80
2900.0	2930.0	9.64	11.12	11.87
2980.0	3010.0	14.32	12.34	13.65
3040.0	3070.0	11.76	14.86	17.77
3120.0	3150.0	18.54	22.60	20.89
3180.0	3210.0	18.58	21.63	21.06

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB)		
		@LO (dBm)		
		+7	+10	+13
220.0	250.0	-8.36	-1.70	0.51
300.0	330.0	2.46	1.54	0.91
380.0	410.0	2.66	2.08	1.67
460.0	490.0	2.40	2.24	2.05
540.0	570.0	1.07	1.25	1.15
620.0	650.0	1.08	0.86	0.68
700.0	730.0	0.86	0.55	0.39
780.0	810.0	0.76	0.64	0.50
860.0	890.0	0.62	0.45	0.38
940.0	970.0	0.59	0.42	0.29
1020.0	1050.0	0.61	0.38	0.24
1100.0	1130.0	0.76	0.48	0.33
1180.0	1210.0	0.93	0.74	0.57
1260.0	1290.0	0.44	0.47	0.45
1340.0	1370.0	1.23	1.18	1.15
1420.0	1450.0	1.51	1.28	1.13
1500.0	1530.0	1.54	1.30	1.08
1580.0	1610.0	1.35	0.85	0.51
1660.0	1690.0	1.24	0.68	0.41
1740.0	1770.0	1.27	0.69	0.42
1820.0	1850.0	1.41	0.80	0.50
1900.0	1930.0	1.23	0.70	0.36
1980.0	2010.0	1.40	1.16	0.94
2060.0	2090.0	0.96	1.02	1.03
2140.0	2170.0	1.18	0.93	0.83
2200.0	2230.0	1.24	0.86	0.63
2280.0	2310.0	1.12	0.93	0.63
2340.0	2370.0	0.70	1.02	0.56
2420.0	2450.0	0.29	0.97	0.42
2480.0	2510.0	0.09	0.90	0.42
2560.0	2590.0	-0.73	1.04	0.58
2620.0	2650.0	-1.27	0.71	0.55
2700.0	2730.0	-0.42	0.29	0.35
2760.0	2790.0	0.65	0.50	0.32
2840.0	2870.0	1.35	0.87	0.59
2900.0	2930.0	1.15	0.90	0.71
2980.0	3010.0	0.86	0.67	0.45
3040.0	3070.0	1.05	0.60	0.40
3120.0	3150.0	0.74	0.44	0.30
3180.0	3210.0	0.69	0.37	0.24

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1210.1MHz (dB)
		@LO (dBm)
		+10
770.1	440.0	10.23
751.1	459.0	10.08
732.1	478.0	10.04
713.1	497.0	9.78
694.1	516.0	9.25
675.1	535.0	8.74
656.1	554.0	8.25
637.1	573.0	7.60
618.1	592.0	6.97
599.1	611.0	6.48
580.1	630.0	6.34
561.1	649.0	6.41
542.1	668.0	6.43
523.1	687.0	6.75
504.1	706.0	6.99
485.1	725.0	7.41
466.1	744.0	8.17
447.1	763.0	8.94
428.1	782.0	8.73
409.1	801.0	8.97
390.1	820.0	8.62
371.1	839.0	8.59
352.1	858.0	8.38
333.1	877.0	8.02
314.1	896.0	7.86
295.1	915.0	7.77
276.1	934.0	7.65
257.1	953.0	7.45
238.1	972.0	7.30
219.1	991.0	7.24
200.1	1010.0	7.15
181.1	1029.0	7.09
162.1	1048.0	6.92
143.1	1067.0	6.79
124.1	1086.0	6.80
105.1	1105.0	6.87
86.1	1124.0	6.90
67.1	1143.0	6.94
29.1	1181.0	6.87
10.1	1200.0	7.10

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=289.9MHz (dB)
		@LO (dBm)
		+10
10.1	300.0	6.64
30.1	320.0	5.91
50.1	340.0	5.83
70.1	360.0	5.83
90.1	380.0	5.74
110.1	400.0	5.70
130.1	420.0	5.62
150.1	440.0	5.67
170.1	460.0	5.72
190.1	480.0	5.92
210.1	500.0	6.10
230.1	520.0	6.16
250.1	540.0	6.26
270.1	560.0	6.34
290.1	580.0	6.43
310.1	600.0	6.65
330.1	620.0	6.61
350.1	640.0	6.75
370.1	660.0	6.61
390.1	680.0	6.43
410.1	700.0	6.63
430.1	720.0	6.52
450.1	740.0	7.20
470.1	760.0	7.48
490.1	780.0	7.28
510.1	800.0	7.04
530.1	820.0	6.65
550.1	840.0	6.67
570.1	860.0	6.65
590.1	880.0	6.44
610.1	900.0	6.47
630.1	920.0	6.51
670.1	960.0	6.31
690.1	980.0	6.43
730.1	1020.0	6.93
750.1	1040.0	7.30
790.1	1080.0	7.91
810.1	1100.0	8.23
850.1	1140.0	9.69
870.1	1160.0	10.55

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2410.1MHz (dB)
		@LO (dBm)
		+10
830.1	1580.0	10.53
810.1	1600.0	9.71
790.1	1620.0	9.21
770.1	1640.0	8.75
750.1	1660.0	8.31
730.1	1680.0	8.12
710.1	1700.0	8.13
690.1	1720.0	8.09
670.1	1740.0	7.93
650.1	1760.0	7.93
630.1	1780.0	7.74
610.1	1800.0	7.62
590.1	1820.0	7.69
570.1	1840.0	7.64
550.1	1860.0	7.64
530.1	1880.0	7.46
510.1	1900.0	7.38
490.1	1920.0	7.39
470.1	1940.0	7.34
450.1	1960.0	7.40
430.1	1980.0	7.45
410.1	2000.0	7.66
390.1	2020.0	7.75
370.1	2040.0	7.80
350.1	2060.0	7.95
330.1	2080.0	7.92
310.1	2100.0	8.00
290.1	2120.0	7.98
270.1	2140.0	7.81
250.1	2160.0	7.76
230.1	2180.0	7.50
210.1	2200.0	7.40
190.1	2220.0	7.13
170.1	2240.0	6.99
150.1	2260.0	7.04
130.1	2280.0	7.02
90.1	2320.0	6.83
70.1	2340.0	6.73
30.1	2380.0	6.66
10.1	2400.0	6.81

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+7	+10	+13	+7	+10	+13
250.0	49.89	49.46	55.98	25.61	25.73	25.31
330.0	45.72	48.39	47.58	20.52	21.71	23.59
410.0	40.77	41.07	41.41	20.52	22.97	24.87
490.0	38.23	38.89	39.53	22.17	24.26	25.97
570.0	52.13	49.16	47.42	24.63	26.92	28.46
650.0	44.43	44.21	44.49	27.07	27.40	27.04
730.0	42.14	41.01	40.29	27.72	26.68	25.99
810.0	40.61	40.32	39.62	32.35	31.66	30.51
890.0	39.15	39.43	39.54	29.57	30.89	31.94
970.0	38.86	38.90	39.03	23.52	24.80	25.91
1050.0	40.62	40.32	40.08	23.15	24.17	24.83
1130.0	41.38	40.62	39.98	26.59	27.50	27.77
1210.0	42.52	41.16	40.04	29.38	31.02	31.95
1290.0	43.87	42.59	41.58	29.62	31.74	33.50
1370.0	41.09	40.30	39.88	28.59	30.93	33.01
1450.0	54.42	50.23	44.46	26.85	29.54	32.40
1530.0	47.33	42.12	38.46	25.08	27.06	29.78
1610.0	40.93	37.80	35.42	24.09	27.32	30.52
1690.0	37.37	34.33	32.56	24.80	27.55	30.22
1770.0	38.11	37.07	35.05	22.28	24.23	26.32
1850.0	34.99	32.82	31.22	20.67	22.37	24.28
1930.0	33.54	32.31	31.29	19.95	21.47	23.10
2010.0	33.02	31.74	31.00	20.53	21.79	23.39
2090.0	34.88	33.20	31.95	22.42	23.90	25.75
2170.0	31.33	30.46	29.85	22.94	24.14	25.07
2230.0	32.79	31.78	30.32	21.75	22.67	23.31
2310.0	33.36	34.14	33.18	21.78	22.40	22.46
2370.0	32.87	33.48	33.04	21.14	22.33	22.77
2450.0	34.70	34.80	32.49	27.74	29.20	28.42
2510.0	38.52	39.22	34.79	33.12	32.28	29.86
2590.0	42.38	42.77	40.00	38.26	33.58	28.13
2650.0	45.82	44.47	40.38	37.75	31.98	27.04
2730.0	67.95	42.98	37.65	34.61	28.67	25.16
2790.0	45.17	36.88	34.04	31.42	26.74	24.72
2870.0	36.45	32.12	30.51	28.89	26.08	24.74
2930.0	38.08	37.21	36.78	27.69	26.13	25.35
3010.0	37.64	35.05	33.59	26.39	26.22	25.35
3070.0	33.05	32.35	31.98	25.08	25.01	24.62
3150.0	32.09	32.23	32.30	23.18	24.08	24.55
3210.0	32.93	33.61	34.16	22.34	23.81	24.86

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+7	+10	+13
220.0	250.0	31.08	27.05	24.45
300.0	330.0	20.97	18.72	17.98
380.0	410.0	16.77	16.11	15.61
460.0	490.0	14.47	14.11	13.82
540.0	570.0	19.00	18.14	17.65
620.0	650.0	27.00	25.63	24.63
700.0	730.0	29.87	29.07	27.63
780.0	810.0	31.07	29.59	27.93
860.0	890.0	31.57	29.52	28.20
940.0	970.0	32.63	31.43	30.78
1020.0	1050.0	38.46	38.14	37.91
1100.0	1130.0	31.73	31.34	30.99
1180.0	1210.0	28.78	28.30	27.95
1260.0	1290.0	23.91	23.68	23.67
1340.0	1370.0	22.41	21.09	20.33
1420.0	1450.0	24.14	23.55	22.49
1500.0	1530.0	24.47	23.04	21.90
1580.0	1610.0	23.74	23.23	23.06
1660.0	1690.0	23.06	22.85	22.88
1740.0	1770.0	22.30	21.61	21.35
1820.0	1850.0	22.71	22.37	22.20
1900.0	1930.0	21.94	21.17	20.88
1980.0	2010.0	26.40	25.62	24.96
2060.0	2090.0	31.46	29.87	28.33
2140.0	2170.0	21.12	19.50	18.66
2200.0	2230.0	27.64	25.25	24.41
2280.0	2310.0	39.58	34.15	29.15
2340.0	2370.0	38.31	27.63	25.17
2420.0	2450.0	51.49	30.59	26.86
2480.0	2510.0	30.89	25.53	23.16
2560.0	2590.0	24.44	22.65	21.16
2620.0	2650.0	22.38	21.60	20.43
2700.0	2730.0	20.70	19.00	18.29
2760.0	2790.0	19.43	17.78	17.01
2840.0	2870.0	18.34	16.95	16.24
2900.0	2930.0	18.13	16.97	16.23
2980.0	3010.0	17.57	16.59	15.77
3040.0	3070.0	16.69	15.99	15.49
3120.0	3150.0	15.54	15.10	14.76
3180.0	3210.0	14.99	14.63	14.31

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+7	+10	+13
220.0	250.0	11.46	6.30	3.73
300.0	330.0	2.18	1.96	1.96
380.0	410.0	1.62	1.52	1.46
460.0	490.0	2.77	2.52	2.34
540.0	570.0	4.15	3.70	3.45
620.0	650.0	3.65	3.50	3.40
700.0	730.0	3.53	3.07	2.85
780.0	810.0	3.88	3.46	3.09
860.0	890.0	4.16	3.80	3.55
940.0	970.0	4.09	3.73	3.52
1020.0	1050.0	3.85	3.60	3.47
1100.0	1130.0	4.03	3.82	3.65
1180.0	1210.0	4.59	4.21	3.90
1260.0	1290.0	4.84	4.45	4.21
1340.0	1370.0	3.86	3.42	3.13
1420.0	1450.0	3.01	2.67	2.37
1500.0	1530.0	2.51	2.04	1.68
1580.0	1610.0	1.69	1.36	1.27
1660.0	1690.0	1.42	1.22	1.16
1740.0	1770.0	1.30	1.19	1.18
1820.0	1850.0	1.17	1.05	1.04
1900.0	1930.0	1.28	1.06	1.11
1980.0	2010.0	1.73	1.48	1.29
2060.0	2090.0	2.17	1.92	1.74
2140.0	2170.0	2.42	2.16	1.99
2200.0	2230.0	2.51	2.19	2.04
2280.0	2310.0	2.69	2.20	2.03
2340.0	2370.0	3.00	2.22	2.07
2420.0	2450.0	3.24	2.23	2.05
2480.0	2510.0	3.20	2.21	2.02
2560.0	2590.0	3.87	2.85	2.61
2620.0	2650.0	4.52	3.56	3.21
2700.0	2730.0	4.28	3.73	3.45
2760.0	2790.0	3.93	3.54	3.40
2840.0	2870.0	3.57	3.13	2.97
2900.0	2930.0	3.80	3.33	3.06
2980.0	3010.0	3.77	3.27	2.94
3040.0	3070.0	3.47	3.17	2.99
3120.0	3150.0	3.75	3.56	3.40
3180.0	3210.0	3.94	3.77	3.63

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+7	+10	+13
250.0	27.59	25.19	18.30
330.0	11.31	7.05	6.37
410.0	2.80	3.06	3.76
490.0	1.45	1.88	2.49
570.0	1.42	1.41	1.83
650.0	1.91	1.70	2.00
730.0	2.16	2.11	2.53
810.0	2.51	2.82	3.40
890.0	2.79	3.33	4.09
970.0	2.64	3.41	4.35
1050.0	2.42	3.33	4.38
1130.0	2.72	3.52	4.50
1210.0	3.20	3.73	4.51
1290.0	3.60	3.70	4.17
1370.0	3.79	3.67	3.90
1450.0	3.50	3.10	3.24
1530.0	3.03	2.24	2.21
1610.0	2.85	1.95	1.81
1690.0	2.61	1.71	1.52
1770.0	2.03	1.31	1.30
1850.0	1.79	1.31	1.49
1930.0	1.91	1.66	1.83
2010.0	2.28	2.04	2.19
2090.0	2.92	2.38	2.40
2170.0	4.05	2.75	2.42
2230.0	5.07	3.13	2.50
2310.0	7.14	4.01	2.70
2370.0	8.68	5.28	3.15
2450.0	9.38	6.11	3.52
2510.0	9.79	5.87	3.41
2590.0	10.31	6.26	3.80
2650.0	10.02	6.09	3.95
2730.0	8.39	4.96	3.86
2790.0	6.68	4.46	3.94
2870.0	5.13	4.23	4.16
2930.0	4.24	3.90	4.07
3010.0	3.30	3.38	3.62
3070.0	2.70	2.87	3.18
3150.0	2.22	2.51	2.82
3210.0	2.31	2.62	2.91

IF (OUT) (MHz)	IF VSWR @LO=2400MHz (:1) @LO (dBm)		
	+7	+10	+13
10.0	2.20	1.17	1.08
30.0	2.14	1.18	1.09
50.0	2.19	1.23	1.11
70.0	2.22	1.26	1.13
90.0	2.24	1.28	1.16
110.0	2.29	1.31	1.20
130.0	2.40	1.38	1.23
150.0	2.48	1.43	1.28
170.0	2.52	1.46	1.32
190.0	2.60	1.51	1.37
210.0	2.72	1.56	1.38
230.0	2.83	1.64	1.45
250.0	2.89	1.69	1.50
270.0	2.98	1.72	1.51
290.0	3.07	1.75	1.52
310.0	3.21	1.82	1.54
330.0	3.33	1.89	1.59
350.0	3.43	1.92	1.60
370.0	3.54	1.95	1.60
390.0	3.66	2.00	1.60
410.0	3.84	2.12	1.67
430.0	3.97	2.16	1.68
450.0	4.00	2.18	1.68
470.0	4.11	2.24	1.71
490.0	4.22	2.31	1.75
510.0	4.27	2.32	1.76
530.0	4.26	2.33	1.76
550.0	4.32	2.35	1.78
570.0	4.32	2.32	1.77
590.0	4.33	2.33	1.78
610.0	4.34	2.33	1.80
630.0	4.34	2.34	1.84
650.0	4.24	2.30	1.85
670.0	4.19	2.32	1.94
690.0	4.17	2.37	2.05
710.0	4.09	2.44	2.21
730.0	3.99	2.48	2.36
750.0	3.95	2.63	2.61
790.0	3.88	3.09	3.30
810.0	3.90	3.36	3.65

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	4	21	8	23	19	24	35	43	36	49
1	-	14	+0	19	27	22	36	38	27	44	36	49
2	74	52	66	60	53	54	44	59	54	54	60	55
3	>90	52	64	61	48	64	57	63	67	65	54	63
4	>90	>73	>73	>73	>73	>73	>73	>73	70	>73	>73	>73
5	>90	>73	>73	>73	>73	>73	71	>73	>73	>73	>73	>73
6	>90	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73
7	>90	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73
8	>90	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73
9	>90	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73
10	>90	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

Test conditions: RF IN: 1350 MHz; -10.00 dBm.
LO IN: 1380 MHz; +10.00 dBm
IF OUT: 30 MHz; -17.19 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	14	31	19	35	32	36	43	63	47	68
1	-	13	+0	21	28	25	41	46	35	60	53	68
2	54	45	51	45	45	49	42	56	52	56	57	64
3	>90	38	45	45	29	43	43	49	55	62	47	55
4	>90	80	59	72	71	55	78	64	51	60	64	57
5	>90	57	66	54	59	>83	43	54	53	57	63	63
6	>90	61	67	78	67	80	75	64	78	68	60	69
7	>90	74	70	71	73	67	65	>83	53	66	60	67
8	>90	>83	>83	75	>83	>83	78	>83	>83	67	76	74
9	>90	82	>83	>83	77	82	79	77	74	>83	63	>83
10	>90	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	76
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1350 MHz; 0.00 dBm.
LO IN: 1380 MHz; +10.00 dBm
IF OUT: 30 MHz; -7.25 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.