

# Frequency Mixer

# RMS-2LH+

## Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)			RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)			RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+7	+10	+13			+7	+10	+13			+7	+10	+13
5.0	35.0	7.21	6.77	6.54	10.1	40.1	19.34	22.40	24.96	10.1	40.1	0.52	0.29	0.14
10.0	40.0	7.35	6.92	6.69	50.8	80.8	19.03	21.36	27.85	50.8	80.8	0.58	0.32	0.18
50.8	80.8	7.55	7.01	6.80	91.5	121.5	19.07	22.27	19.65	91.5	121.5	0.40	0.27	0.16
91.5	121.5	7.48	6.99	6.76	132.3	162.3	19.89	19.17	22.94	132.3	162.3	0.55	0.30	0.15
132.3	162.3	7.36	6.93	6.77	173.0	203.0	18.33	19.35	21.88	173.0	203.0	0.48	0.27	0.15
173.0	203.0	7.40	6.98	6.80	213.7	243.7	17.53	18.58	21.64	213.7	243.7	0.46	0.26	0.15
213.7	243.7	7.36	6.97	6.81	254.4	284.4	18.27	21.36	20.33	254.4	284.4	0.51	0.27	0.15
254.4	284.4	7.35	7.03	6.87	295.2	325.2	17.74	19.67	20.63	295.2	325.2	0.48	0.28	0.15
295.2	325.2	7.38	7.04	6.87	335.9	365.9	17.39	20.12	22.58	335.9	365.9	0.48	0.26	0.17
335.9	365.9	7.46	7.12	6.94	376.6	406.6	18.33	20.09	21.40	376.6	406.6	0.48	0.26	0.15
376.6	406.6	7.51	7.15	6.97	417.3	447.3	18.14	20.18	20.38	417.3	447.3	0.48	0.30	0.20
417.3	447.3	7.55	7.20	6.99	458.1	488.1	17.17	18.11	19.90	458.1	488.1	0.48	0.28	0.20
458.1	488.1	7.62	7.27	7.05	498.8	528.8	18.20	19.32	19.19	498.8	528.8	0.51	0.30	0.21
498.8	528.8	7.61	7.26	7.06	539.5	569.5	18.34	20.29	21.56	539.5	569.5	0.56	0.36	0.26
539.5	569.5	7.74	7.33	7.10	580.2	610.2	17.92	21.32	22.32	580.2	610.2	0.54	0.40	0.30
580.2	610.2	7.79	7.34	7.08	620.9	650.9	16.23	18.67	22.65	620.9	650.9	0.57	0.41	0.33
620.9	650.9	7.90	7.46	7.16	661.7	691.7	15.17	16.49	18.67	661.7	691.7	0.62	0.42	0.34
661.7	691.7	7.98	7.57	7.25	702.4	732.4	15.22	16.09	17.71	702.4	732.4	0.73	0.49	0.37
702.4	732.4	8.01	7.60	7.33	743.1	773.1	15.44	15.58	16.75	743.1	773.1	0.75	0.50	0.38
743.1	773.1	8.10	7.69	7.40	783.8	813.8	16.24	16.34	19.20	783.8	813.8	0.85	0.61	0.48
783.8	813.8	8.10	7.61	7.31	824.6	854.6	18.03	17.80	21.21	824.6	854.6	0.91	0.68	0.54
824.6	854.6	8.18	7.60	7.29	865.3	895.3	18.34	20.88	25.44	865.3	895.3	0.92	0.74	0.58
865.3	895.3	8.28	7.60	7.25	906.0	936.0	15.67	21.00	26.35	906.0	936.0	0.92	0.82	0.65
906.0	936.0	8.48	7.68	7.28	946.7	976.7	13.43	21.68	28.59	946.7	976.7	0.79	0.79	0.68
946.7	976.7	8.75	7.86	7.36	987.4	1017.4	12.80	18.97	26.51	987.4	1017.4	0.75	0.76	0.71
987.4	1017.4	8.93	8.03	7.47	1028.2	1058.2	12.53	17.40	27.92	1028.2	1058.2	0.62	0.65	0.66
1028.2	1058.2	9.15	8.29	7.66	1068.9	1098.9	12.81	17.03	21.43	1068.9	1098.9	0.57	0.60	0.63
1068.9	1098.9	9.27	8.50	7.87	1109.6	1139.6	13.26	17.35	20.22	1109.6	1139.6	0.58	0.55	0.59
1150.3	1180.3	9.45	8.86	8.29	1150.3	1180.3	14.02	17.12	19.96	1150.3	1180.3	0.56	0.48	0.53
1191.1	1221.1	9.50	8.95	8.51	1191.1	1221.1	15.37	18.91	21.02	1191.1	1221.1	0.62	0.48	0.48
1231.8	1261.8	9.47	8.97	8.60	1231.8	1261.8	19.65	30.52	23.15	1231.8	1261.8	0.65	0.51	0.45
1292.9	1322.9	9.45	9.00	8.73	1292.9	1322.9	17.17	19.61	20.45	1292.9	1322.9	0.83	0.59	0.45
1333.6	1363.6	9.44	9.02	8.77	1333.6	1363.6	14.89	17.41	19.88	1333.6	1363.6	0.88	0.63	0.49
1394.7	1424.7	9.51	9.16	8.95	1394.7	1424.7	13.91	17.60	19.27	1394.7	1424.7	0.95	0.62	0.50
1435.4	1465.4	9.54	9.25	9.08	1435.4	1465.4	14.24	17.84	18.73	1435.4	1465.4	0.91	0.58	0.48
1496.5	1526.5	9.68	9.40	9.24	1496.5	1526.5	14.66	18.79	17.98	1496.5	1526.5	0.97	0.56	0.49
1537.2	1567.2	9.81	9.55	9.43	1537.2	1567.2	15.06	17.14	18.69	1537.2	1567.2	0.97	0.54	0.47
1598.3	1628.3	10.16	9.87	9.80	1598.3	1628.3	14.46	17.05	18.63	1598.3	1628.3	0.95	0.52	0.43
1639.0	1669.0	10.46	10.14	10.10	1639.0	1669.0	14.06	15.52	16.55	1639.0	1669.0	0.94	0.51	0.40
1700.1	1730.1	10.94	10.58	10.48	1700.1	1730.1	12.22	13.47	15.84	1700.1	1730.1	1.05	0.56	0.45



# Frequency Mixer

# RMS-2LH+

## Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1000.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+10			+10			+10
490.0	10.1	7.34	10.0	20.1	6.95	990.0	10.1	8.05
477.7	22.4	7.28	30.0	40.1	6.79	970.0	30.1	7.99
465.4	34.7	7.24	50.0	60.1	6.90	950.0	50.1	7.94
453.1	47.0	7.27	70.0	80.1	6.91	930.0	70.1	7.97
440.8	59.3	7.30	90.0	100.1	6.91	910.0	90.1	8.00
428.5	71.6	7.26	110.0	120.1	6.91	890.0	110.1	7.91
416.2	83.9	7.24	130.0	140.1	6.87	870.0	130.1	7.84
403.8	96.3	7.21	150.0	160.1	6.91	850.0	150.1	7.85
391.5	108.6	7.18	170.0	180.1	6.96	830.0	170.1	7.86
379.2	120.9	7.17	190.0	200.1	6.98	810.0	190.1	7.81
366.9	133.2	7.07	210.0	220.1	6.94	790.0	210.1	7.79
354.6	145.5	7.06	230.0	240.1	6.95	770.0	230.1	7.78
342.3	157.8	7.09	250.0	260.1	7.02	750.0	250.1	7.71
330.0	170.1	7.11	270.0	280.1	7.05	730.0	270.1	7.78
317.7	182.4	7.10	290.0	300.1	7.04	710.0	290.1	7.77
305.4	194.7	7.08	310.0	320.1	7.05	690.0	310.1	7.72
293.1	207.0	7.06	330.0	340.1	7.11	670.0	330.1	7.69
280.8	219.3	7.05	350.0	360.1	7.09	650.0	350.1	7.72
268.5	231.6	7.06	370.0	380.1	7.18	630.0	370.1	7.73
256.2	243.9	7.07	390.0	400.1	7.20	610.0	390.1	7.69
243.8	256.3	7.08	430.0	440.1	7.21	570.0	430.1	7.68
231.5	268.6	7.09	450.0	460.1	7.27	550.0	450.1	7.68
219.2	280.9	7.09	490.0	500.1	7.29	510.0	490.1	7.69
206.9	293.2	7.11	510.0	520.1	7.31	490.0	510.1	7.68
194.6	305.5	7.11	550.0	560.1	7.35	450.0	550.1	7.71
182.3	317.8	7.08	570.0	580.1	7.41	430.0	570.1	7.71
170.0	330.1	7.08	610.0	620.1	7.42	390.0	610.1	7.68
157.7	342.4	7.11	630.0	640.1	7.48	370.0	630.1	7.69
145.4	354.7	7.12	670.0	680.1	7.60	330.0	670.1	7.75
133.1	367.0	7.16	690.0	700.1	7.57	310.0	690.1	7.80
120.8	379.3	7.16	730.0	740.1	7.63	270.0	730.1	7.82
108.5	391.6	7.13	750.0	760.1	7.64	250.0	750.1	7.84
96.2	403.9	7.15	790.0	800.1	7.56	210.0	790.1	7.79
83.8	416.3	7.16	810.0	820.1	7.53	190.0	810.1	7.76
71.5	428.6	7.16	850.0	860.1	7.54	150.0	850.1	7.73
59.2	440.9	7.18	870.0	880.1	7.54	130.0	870.1	7.72
46.9	453.2	7.18	910.0	920.1	7.59	90.0	910.1	7.70
34.6	465.5	7.23	930.0	940.1	7.66	70.0	930.1	7.71
22.3	477.8	7.27	970.0	980.1	7.78	30.0	970.1	7.89
10.0	490.1	7.40	990.0	1000.1	7.82	10.0	990.1	8.00

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# RMS-2LH+

## Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+7	+10	+13	+7	+10	+13
5.0	62.90	63.03	63.17	61.70	59.74	58.59
10.0	60.72	60.63	60.56	56.64	54.85	53.02
50.8	58.56	58.41	58.36	54.51	51.99	51.10
91.5	53.46	53.39	53.51	48.68	47.38	46.57
132.3	49.95	50.14	50.33	45.33	44.29	43.72
173.0	47.73	47.91	48.20	43.50	42.46	41.92
213.7	46.07	46.26	46.41	41.67	41.17	40.38
254.4	44.56	44.97	45.21	41.09	40.20	39.22
295.2	43.36	43.92	44.20	39.95	39.18	38.30
335.9	42.26	42.72	43.09	39.04	38.15	37.17
376.6	41.15	41.66	42.01	38.79	37.35	36.19
417.3	40.51	41.01	41.33	37.50	36.17	35.13
458.1	39.73	40.22	40.57	36.64	35.12	33.89
498.8	38.79	39.29	39.66	35.59	34.38	33.32
539.5	37.75	38.24	38.50	33.91	32.92	32.29
580.2	36.86	37.34	37.72	33.05	31.80	31.14
620.9	36.20	36.84	37.30	31.95	30.66	29.76
661.7	35.60	36.18	36.68	31.22	30.20	29.20
702.4	35.13	35.69	36.08	30.04	29.39	28.60
743.1	34.55	34.90	35.26	28.95	28.42	27.93
783.8	34.07	34.36	34.55	27.78	27.40	26.90
824.6	33.84	33.99	34.08	26.53	26.21	25.75
865.3	33.33	33.43	33.40	25.59	25.20	24.77
906.0	32.89	32.80	32.56	24.48	23.99	23.63
946.7	32.30	32.25	31.99	23.83	23.38	23.00
987.4	31.93	31.98	31.79	23.06	22.68	22.23
1028.2	31.32	31.53	31.54	22.04	21.70	21.30
1068.9	30.95	31.37	31.57	21.41	21.27	20.90
1150.3	30.37	31.04	31.72	19.84	19.98	19.82
1191.1	30.27	31.12	32.09	19.09	19.33	19.30
1231.8	29.95	30.97	32.10	18.52	18.85	18.69
1292.9	30.14	31.61	33.16	17.51	17.94	17.89
1333.6	30.59	32.42	34.13	16.70	17.19	16.96
1394.7	31.59	34.02	35.87	15.68	16.22	15.99
1435.4	32.74	35.98	37.76	15.02	15.60	15.42
1496.5	35.48	40.94	39.73	14.08	14.60	14.46
1537.2	38.15	46.46	38.68	13.59	14.07	14.01
1598.3	40.44	43.17	35.06	12.69	13.30	13.25
1639.0	40.04	36.61	31.81	12.11	12.68	12.62
1700.1	34.83	32.12	28.86	11.60	12.09	12.09

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	48.07	44.03	47.92
50.8	80.8	36.78	36.84	36.97
91.5	121.5	32.16	32.10	32.12
132.3	162.3	29.59	29.65	29.69
173.0	203.0	27.65	27.70	27.80
213.7	243.7	26.40	26.48	26.56
254.4	284.4	25.30	25.50	25.63
295.2	325.2	24.66	24.81	25.05
335.9	365.9	24.13	24.40	24.51
376.6	406.6	23.79	24.12	24.23
417.3	447.3	23.40	23.79	24.04
458.1	488.1	23.25	23.60	23.85
498.8	528.8	23.11	23.52	23.87
539.5	569.5	22.97	23.43	23.79
580.2	610.2	22.98	23.61	23.96
620.9	650.9	22.77	23.44	24.03
661.7	691.7	22.06	22.71	23.28
702.4	732.4	21.11	21.60	21.97
743.1	773.1	19.96	20.22	20.43
783.8	813.8	18.89	18.88	18.93
824.6	854.6	17.85	17.67	17.66
865.3	895.3	16.85	16.67	16.55
906.0	936.0	16.03	15.89	15.78
946.7	976.7	15.38	15.31	15.25
987.4	1017.4	14.86	14.86	14.91
1028.2	1058.2	14.42	14.45	14.59
1068.9	1098.9	13.99	14.11	14.23
1109.6	1139.6	13.66	13.87	14.02
1150.3	1180.3	13.40	13.67	13.90
1191.1	1221.1	13.15	13.47	13.81
1231.8	1261.8	13.01	13.39	13.69
1292.9	1322.9	12.74	13.16	13.42
1333.6	1363.6	12.61	12.91	13.16
1394.7	1424.7	12.11	12.30	12.39
1435.4	1465.4	11.78	11.93	11.98
1496.5	1526.5	11.38	11.40	11.32
1537.2	1567.2	10.91	10.93	10.80
1598.3	1628.3	10.12	10.09	9.89
1639.0	1669.0	9.58	9.48	9.31
1700.1	1730.1	8.84	8.66	8.46



# Frequency Mixer

# RMS-2LH+

## Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)		
		@LO (dBm)		
		+7	+10	+13
5.0	35.0	1.33	1.36	1.41
10.0	40.0	1.19	1.24	1.30
50.8	80.8	1.17	1.26	1.33
91.5	121.5	1.18	1.27	1.34
132.3	162.3	1.20	1.29	1.35
173.0	203.0	1.20	1.29	1.35
213.7	243.7	1.21	1.30	1.36
254.4	284.4	1.23	1.30	1.35
295.2	325.2	1.23	1.31	1.36
335.9	365.9	1.24	1.31	1.36
376.6	406.6	1.25	1.32	1.37
417.3	447.3	1.26	1.33	1.39
458.1	488.1	1.27	1.34	1.40
498.8	528.8	1.30	1.37	1.42
539.5	569.5	1.31	1.39	1.44
580.2	610.2	1.33	1.41	1.47
620.9	650.9	1.35	1.43	1.49
661.7	691.7	1.37	1.44	1.50
702.4	732.4	1.40	1.47	1.53
743.1	773.1	1.43	1.50	1.55
783.8	813.8	1.47	1.54	1.60
824.6	854.6	1.52	1.60	1.66
865.3	895.3	1.57	1.65	1.71
906.0	936.0	1.62	1.70	1.77
946.7	976.7	1.70	1.77	1.83
987.4	1017.4	1.80	1.86	1.92
1028.2	1058.2	1.93	1.98	2.03
1068.9	1098.9	2.08	2.12	2.16
1109.6	1139.6	2.24	2.28	2.32
1150.3	1180.3	2.40	2.45	2.49
1191.1	1221.1	2.56	2.61	2.66
1231.8	1261.8	2.71	2.78	2.83
1292.9	1322.9	2.96	3.04	3.09
1333.6	1363.6	3.12	3.19	3.24
1394.7	1424.7	3.27	3.34	3.38
1435.4	1465.4	3.42	3.49	3.54
1496.5	1526.5	3.56	3.61	3.65
1537.2	1567.2	3.62	3.67	3.69
1598.3	1628.3	3.62	3.65	3.67
1639.0	1669.0	3.67	3.67	3.70
1700.1	1730.1	3.70	3.69	3.69

LO (MHz)	LO VSWR (:1)		
	@LO (dBm)		
	+7	+10	+13
5.0	1.63	2.36	3.52
10.0	1.60	2.34	3.39
50.8	1.70	2.47	3.43
91.5	1.62	2.28	3.11
132.3	1.68	2.42	3.35
173.0	1.63	2.30	3.16
213.7	1.67	2.39	3.27
254.4	1.68	2.40	3.28
295.2	1.68	2.38	3.24
335.9	1.75	2.49	3.39
376.6	1.73	2.44	3.30
417.3	1.81	2.56	3.45
458.1	1.84	2.57	3.44
498.8	1.88	2.62	3.51
539.5	1.95	2.70	3.58
580.2	1.99	2.72	3.59
620.9	2.08	2.84	3.73
661.7	2.11	2.86	3.74
702.4	2.19	2.96	3.85
743.1	2.25	3.00	3.87
783.8	2.31	3.05	3.90
824.6	2.40	3.13	3.98
865.3	2.47	3.18	4.01
906.0	2.58	3.30	4.14
946.7	2.68	3.41	4.23
987.4	2.77	3.51	4.33
1028.2	2.86	3.62	4.44
1068.9	2.93	3.68	4.51
1109.6	2.97	3.71	4.53
1150.3	3.06	3.79	4.61
1191.1	3.09	3.79	4.57
1231.8	3.15	3.83	4.61
1292.9	3.20	3.83	4.55
1333.6	3.26	3.87	4.55
1394.7	3.31	3.85	4.47
1435.4	3.40	3.90	4.52
1496.5	3.48	3.91	4.46
1537.2	3.60	4.01	4.54
1598.3	3.71	4.04	4.52
1639.0	3.82	4.14	4.55
1700.1	3.90	4.15	4.53

IF (OUT) (MHz)	IF VSWR @LO=1000.1MHz (:1)		
	@LO (dBm)		
	+7	+10	+13
5.0	1.32	1.14	1.01
10.0	1.33	1.15	1.02
30.2	2.20	1.66	1.37
50.4	2.05	1.59	1.31
70.6	2.08	1.59	1.31
90.8	2.13	1.62	1.34
111.0	2.17	1.64	1.36
131.2	2.15	1.64	1.36
151.4	2.08	1.60	1.32
171.6	2.03	1.57	1.30
191.8	2.04	1.57	1.30
212.0	2.04	1.58	1.31
232.2	2.04	1.58	1.31
252.4	2.04	1.58	1.32
272.7	2.05	1.59	1.33
292.9	2.02	1.57	1.30
313.1	1.95	1.52	1.27
333.3	1.91	1.50	1.25
353.5	1.93	1.52	1.27
373.7	1.93	1.52	1.28
393.9	1.92	1.51	1.26
434.3	1.81	1.44	1.22
454.5	1.81	1.45	1.24
494.9	1.88	1.50	1.28
515.1	1.82	1.45	1.24
555.5	1.77	1.43	1.25
575.7	1.82	1.47	1.29
616.1	1.81	1.46	1.27
636.3	1.74	1.42	1.24
676.7	1.72	1.42	1.27
696.9	1.76	1.44	1.29
737.3	1.69	1.39	1.25
757.6	1.66	1.38	1.24
798.0	1.63	1.37	1.26
818.2	1.64	1.37	1.27
858.6	1.61	1.35	1.25
878.8	1.57	1.32	1.23
919.2	1.53	1.31	1.26
939.4	1.54	1.33	1.27
979.8	1.52	1.30	1.24
1000.0	1.41	1.47	1.66

## Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	14	31	19	40	28	54	31	45	46	54
1	-	16	+0	29	13	36	26	49	40	43	49	47
2	93	60	38	55	38	66	39	60	56	59	48	66
3	>100	58	50	60	49	56	42	61	57	61	51	63
4	>100	71	60	69	59	68	63	69	59	75	74	67
5	>100	88	71	67	59	66	56	64	55	70	62	77
6	>100	91	83	91	88	80	78	77	71	75	69	81
7	>100	81	89	91	80	84	83	82	>93	81	80	85
8	>100	>93	>93	>93	>93	91	91	86	85	88	86	85
9	>100	>93	>93	>93	>93	>93	89	90	87	>93	88	91
10	>100	>93	>93	>93	>93	>93	>93	>93	>93	92	>93	>93
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

### LO HARMONICS ORDER

Test conditions: RF IN: 500.1 MHz; 0.00 dBm.  
 LO IN: 530.01 MHz; +10.00 dBm  
 IF OUT: 29.91 MHz; -7.45 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	5	20	7	28	17	41	19	35	31	45
1	-	16	+0	29	13	34	26	44	44	40	43	43
2	>100	67	45	60	45	69	46	65	62	60	56	71
3	>100	70	64	69	61	67	57	73	65	77	63	81
4	>100	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
5	>100	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
6	>100	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
7	>100	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
8	>100	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
9	>100	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
10	>100	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

### LO HARMONICS ORDER

Test conditions: RF IN: 500.1 MHz; -10.00 dBm.  
 LO IN: 530.01 MHz; +10.00 dBm  
 IF OUT: 29.91 MHz; -17.78 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.

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 RMS-2LH+  
 100818  
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