

Frequency Mixer

RMS-1MH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+10	+13	+16
2.0	32.0	7.33	6.87	6.69
5.0	35.0	6.39	5.99	5.81
10.0	40.0	6.66	6.21	6.01
49.6	79.6	6.44	6.06	5.78
89.0	119.0	6.43	6.02	5.77
128.5	158.5	6.39	6.06	5.85
167.9	197.9	6.34	6.06	5.85
207.4	237.4	6.31	6.05	5.86
246.8	276.8	6.35	6.11	5.91
286.3	316.3	6.36	6.11	5.92
325.7	355.7	6.40	6.18	5.98
365.2	395.2	6.41	6.18	5.98
404.6	434.6	6.46	6.22	5.98
444.1	474.1	6.50	6.28	6.08
483.5	513.5	6.56	6.28	6.07
523.0	553.0	6.64	6.31	6.00
562.4	592.4	6.69	6.40	6.04
601.9	631.9	6.74	6.49	6.17
641.3	671.3	6.84	6.57	6.31
680.8	710.8	6.94	6.64	6.37
720.2	750.2	7.15	6.74	6.43
759.7	789.7	7.32	6.79	6.42
799.1	829.1	7.70	6.98	6.49
838.6	868.6	8.08	7.28	6.59
878.0	908.0	8.39	7.58	6.77
917.5	947.5	8.58	7.87	7.22
956.9	986.9	8.64	8.00	7.51
996.4	1026.4	8.68	8.15	7.79
1035.9	1065.9	8.83	8.37	8.00
1075.3	1105.3	8.78	8.31	7.96
1114.8	1144.8	8.73	8.29	8.02
1154.2	1184.2	8.75	8.31	8.05
1193.7	1223.7	8.81	8.44	8.24
1213.4	1243.4	8.90	8.55	8.36
1252.8	1282.8	9.09	8.83	8.69
1272.6	1302.6	9.28	9.02	8.87
1312.0	1342.0	9.70	9.47	9.33
1331.7	1361.7	9.88	9.67	9.56
1371.2	1401.2	10.34	10.06	9.98
1390.9	1420.9	10.62	10.28	10.19
1430.4	1460.4			
1450.1	1480.1			

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	22.39	34.79	28.91
49.6	79.6	22.93	25.90	29.33
89.0	119.0	21.97	27.40	28.52
128.5	158.5	25.21	28.49	23.49
167.9	197.9	26.81	22.67	22.94
207.4	237.4	25.28	21.49	24.90
246.8	276.8	22.46	21.30	26.77
286.3	316.3	20.21	21.42	26.73
325.7	355.7	20.21	24.17	23.32
365.2	395.2	20.16	22.91	22.51
404.6	434.6	22.00	22.54	21.63
444.1	474.1	22.98	20.89	18.86
483.5	513.5	20.17	24.35	19.76
523.0	553.0	21.07	28.76	20.09
562.4	592.4	21.87	20.04	21.12
601.9	631.9	19.44	18.00	18.29
641.3	671.3	18.39	17.17	17.00
680.8	710.8	16.57	15.09	15.04
720.2	750.2	16.00	14.15	15.89
759.7	789.7	15.96	14.84	18.44
799.1	829.1	14.38	16.33	19.80
838.6	868.6	12.03	15.41	19.69
878.0	908.0	11.01	13.27	18.70
917.5	947.5	11.75	14.19	16.41
956.9	986.9	13.20	15.70	16.45
996.4	1026.4	15.55	18.19	17.20
1035.9	1065.9	19.12	20.36	20.51
1075.3	1105.3	22.57	26.16	26.05
1114.8	1144.8	24.50	19.63	21.85
1154.2	1184.2	18.64	15.76	18.78
1193.7	1223.7	14.63	14.07	17.72
1213.4	1243.4	13.70	13.68	16.83
1252.8	1282.8	13.04	13.54	16.32
1272.6	1302.6	13.04	13.63	15.97
1312.0	1342.0	13.22	13.79	15.89
1331.7	1361.7	13.45	13.87	15.94
1371.2	1401.2	14.17	14.54	16.26
1390.9	1420.9	14.58	15.31	16.99
1430.4	1460.4	14.49	16.90	18.28
1450.1	1480.1	13.76	16.68	18.19

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+9dBm (dB)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	1.04	0.72	0.48
49.6	79.6	1.03	0.83	0.62
89.0	119.0	1.05	0.84	0.61
128.5	158.5	1.17	0.86	0.61
167.9	197.9	1.11	0.79	0.55
207.4	237.4	1.25	0.85	0.62
246.8	276.8	1.19	0.84	0.61
286.3	316.3	1.23	0.88	0.66
325.7	355.7	1.19	0.84	0.63
365.2	395.2	1.17	0.86	0.64
404.6	434.6	1.16	0.83	0.69
444.1	474.1	1.15	0.80	0.66
483.5	513.5	1.28	0.94	0.75
523.0	553.0	1.17	0.94	0.78
562.4	592.4	1.22	0.97	0.87
601.9	631.9	1.41	1.05	0.92
641.3	671.3	1.56	1.09	0.98
680.8	710.8	1.73	1.23	1.10
720.2	750.2	1.92	1.42	1.21
759.7	789.7	2.03	1.64	1.34
799.1	829.1	1.90	1.72	1.42
838.6	868.6	1.78	1.77	1.59
878.0	908.0	1.62	1.61	1.63
917.5	947.5	1.53	1.56	1.57
956.9	986.9	1.59	1.56	1.58
996.4	1026.4	1.56	1.48	1.47
1035.9	1065.9	1.60	1.41	1.33
1075.3	1105.3	1.55	1.24	1.15
1114.8	1144.8	1.66	1.25	1.18
1154.2	1184.2	1.76	1.28	1.16
1193.7	1223.7	1.89	1.36	1.16
1213.4	1243.4	1.90	1.38	1.15
1252.8	1282.8	2.41	1.67	1.27
1272.6	1302.6	2.19	1.41	1.07
1312.0	1342.0	2.34	1.41	0.97
1331.7	1361.7	2.35	1.35	0.90
1371.2	1401.2	2.66	1.39	0.90
1390.9	1420.9	2.76	1.39	0.90
1430.4	1460.4	3.09	1.63	1.14
1450.1	1480.1	3.21	1.78	1.30

Frequency Mixer

RMS-1MH+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=250.1MHz (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)=500.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+13			+13			+13
240.0	10.1	6.17	10.0	20.1	6.04	490.0	10.1	6.32
234.1	16.0	6.16	22.3	32.4	5.95	477.7	22.4	6.31
228.2	21.9	6.13	34.6	44.7	5.95	465.4	34.7	6.27
222.3	27.8	6.12	46.9	57.0	5.99	453.1	47.0	6.25
216.4	33.7	6.12	59.2	69.3	5.97	440.8	59.3	6.25
210.5	39.6	6.11	71.5	81.6	6.01	428.5	71.6	6.15
204.6	45.5	6.11	83.8	93.9	6.03	416.2	83.9	6.12
198.7	51.4	6.08	96.2	106.3	6.01	403.8	96.3	6.09
192.8	57.3	6.07	108.5	118.6	6.02	391.5	108.6	6.03
186.9	63.2	6.05	120.8	130.9	6.01	379.2	120.9	6.02
181.0	69.1	6.06	133.1	143.2	6.01	366.9	133.2	5.98
175.1	75.0	6.08	145.4	155.5	6.06	354.6	145.5	5.94
169.2	80.9	6.05	157.7	167.8	6.08	342.3	157.8	5.94
163.3	86.8	6.04	170.0	180.1	6.09	330.0	170.1	5.94
157.4	92.7	6.05	182.3	192.4	6.12	317.7	182.4	5.93
151.5	98.6	5.99	194.6	204.7	6.11	305.4	194.7	5.93
145.6	104.5	5.99	206.9	217.0	6.13	293.1	207.0	5.90
139.7	110.4	5.98	219.2	229.3	6.16	280.8	219.3	5.90
133.8	116.3	5.94	231.5	241.6	6.15	268.5	231.6	5.92
127.9	122.2	5.89	243.8	253.9	6.19	256.2	243.9	5.92
122.1	128.0	5.87	256.2	266.3	6.24	243.8	256.3	5.93
116.2	133.9	5.89	268.5	278.6	6.26	231.5	268.6	5.95
110.3	139.8	5.93	280.8	290.9	6.28	219.2	280.9	5.93
104.4	145.7	5.92	293.1	303.2	6.27	206.9	293.2	5.96
98.5	151.6	5.92	305.4	315.5	6.27	194.6	305.5	5.97
92.6	157.5	5.91	317.7	327.8	6.32	182.3	317.8	5.97
86.7	163.4	5.90	330.0	340.1	6.34	170.0	330.1	5.99
80.8	169.3	5.91	342.3	352.4	6.34	157.7	342.4	6.01
74.9	175.2	5.92	354.6	364.7	6.37	145.4	354.7	6.03
69.0	181.1	5.91	366.9	377.0	6.40	133.1	367.0	6.07
63.1	187.0	5.89	379.2	389.3	6.40	120.8	379.3	6.06
57.2	192.9	5.88	391.5	401.6	6.41	108.5	391.6	6.06
51.3	198.8	5.88	403.8	413.9	6.38	96.2	403.9	6.09
45.4	204.7	5.92	416.2	426.3	6.42	83.8	416.3	6.09
39.5	210.6	5.93	428.5	438.6	6.48	71.5	428.6	6.13
33.6	216.5	5.93	440.8	450.9	6.54	59.2	440.9	6.16
27.7	222.4	5.93	453.1	463.2	6.54	46.9	453.2	6.16
21.8	228.3	5.93	465.4	475.5	6.50	34.6	465.5	6.19
15.9	234.2	5.96	477.7	487.8	6.47	22.3	477.8	6.20
10.0	240.1	6.04	490.0	500.1	6.46	10.0	490.1	6.27

Frequency Mixer

RMS-1MH+

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+10	+13	+16	+10	+13	+16
2.0	76.01	74.51	74.01	68.31	65.71	64.46
5.0	69.66	68.76	68.46	63.66	61.00	59.73
10.0	64.01	63.07	62.89	58.52	55.80	54.50
49.6	54.33	53.63	52.79	49.70	47.81	45.81
89.0	50.16	49.16	48.70	45.12	43.24	41.30
128.5	47.19	47.06	46.34	42.25	40.50	39.15
167.9	46.04	45.92	44.93	40.13	39.13	37.72
207.4	45.19	44.64	43.19	39.41	38.43	36.48
246.8	44.85	43.76	42.15	39.33	37.86	35.67
286.3	43.36	42.24	40.78	39.11	37.44	35.00
325.7	42.08	40.77	39.15	38.71	36.74	34.05
365.2	41.21	39.83	38.15	37.72	35.83	33.13
404.6	39.91	38.64	37.03	36.60	34.66	32.17
444.1	38.03	37.19	35.95	35.27	33.60	30.91
483.5	35.56	35.22	34.37	33.08	32.39	30.62
523.0	33.76	33.21	32.33	31.24	30.29	28.93
562.4	32.72	31.85	31.01	31.04	28.85	27.02
601.9	31.90	31.05	30.16	31.50	29.09	26.27
641.3	31.42	30.41	29.25	30.40	28.69	26.05
680.8	30.91	29.62	28.33	28.72	27.68	25.47
720.2	30.23	28.93	27.42	26.63	26.26	24.26
759.7	29.44	27.90	26.37	24.96	24.93	23.06
799.1	28.61	27.22	25.63	23.18	23.37	21.97
838.6	27.59	26.49	25.08	21.68	21.48	20.53
878.0	26.88	25.88	24.63	21.50	20.40	19.29
956.9	26.06	25.09	23.97	20.80	19.72	17.78
996.4	25.77	24.97	24.07	20.24	19.40	17.48
1035.9	25.37	24.61	24.01	19.47	18.75	16.82
1075.3	25.04	24.59	24.24	18.82	18.37	16.42
1154.2	24.49	24.28	24.37	16.89	16.82	14.95
1193.7	24.47	24.53	24.85	15.85	16.04	14.60
1213.4	24.33	24.35	24.81	15.26	15.61	14.07
1252.8	24.46	24.73	25.25	14.18	14.70	13.37
1272.6	24.63	25.00	25.40	13.61	14.22	12.98
1312.0	25.50	25.71	25.48	12.52	13.23	12.16
1331.7	25.89	25.74	25.13	12.03	12.63	11.71
1371.2	27.23	26.36	24.91	11.36	11.89	11.14
1390.9	27.71	26.42	24.68	11.05	11.52	10.84
1430.4	27.67	25.77	23.75	11.02	11.24	10.52
1450.1	27.46	25.32	23.35	11.06	11.20	10.38

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	45.18	45.77	45.93
49.6	79.6	33.63	33.29	32.78
89.0	119.0	28.91	28.87	28.71
128.5	158.5	26.40	26.34	26.29
167.9	197.9	24.66	24.67	24.63
207.4	237.4	23.54	23.59	23.59
246.8	276.8	22.76	22.77	22.86
286.3	316.3	22.43	22.46	22.53
325.7	355.7	22.21	22.42	22.55
365.2	395.2	22.16	22.45	22.75
404.6	434.6	22.40	22.69	22.96
444.1	474.1	22.81	23.06	23.13
483.5	513.5	23.13	23.39	23.55
523.0	553.0	23.22	23.46	24.04
562.4	592.4	22.52	22.62	23.07
601.9	631.9	20.89	20.87	20.98
641.3	671.3	18.93	18.83	18.83
680.8	710.8	17.12	16.95	17.08
720.2	750.2	15.46	15.37	15.51
759.7	789.7	14.16	14.10	14.13
799.1	829.1	13.22	13.12	13.10
838.6	868.6	12.55	12.52	12.56
878.0	908.0	11.95	11.98	12.21
917.5	947.5	11.42	11.37	11.86
956.9	986.9	10.96	10.90	11.41
996.4	1026.4	10.58	10.62	11.11
1035.9	1065.9	10.33	10.52	10.97
1075.3	1105.3	10.08	10.36	10.85
1114.8	1144.8	9.93	10.33	10.92
1154.2	1184.2	9.83	10.36	11.08
1193.7	1223.7	9.81	10.50	11.33
1213.4	1243.4	9.80	10.61	11.35
1252.8	1282.8	9.91	10.62	11.09
1272.6	1302.6	9.88	10.48	10.79
1312.0	1342.0	9.56	9.94	9.94
1331.7	1361.7	9.27	9.55	9.47
1371.2	1401.2	8.50	8.62	8.51
1390.9	1420.9	8.13	8.16	8.04
1430.4	1460.4	7.47	7.41	7.33
1450.1	1480.1	7.09	7.09	7.02

Frequency Mixer

RMS-1MH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=500.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+10	+13	+16		+10	+13	+16		+10	+13	+16
5.0	35.0	1.16	1.13	1.15	5.0	1.38	2.10	3.07	5.0	1.41	1.24	1.14
10.0	40.0	1.12	1.06	1.09	10.0	1.33	2.01	2.91	10.0	1.42	1.25	1.14
49.6	79.6	1.11	1.03	1.07	49.6	1.09	1.42	2.42	22.4	1.82	1.65	1.47
89.0	119.0	1.12	1.02	1.07	89.0	1.09	1.41	2.33	34.7	1.79	1.62	1.45
128.5	158.5	1.10	1.02	1.07	128.5	1.11	1.44	2.40	47.0	1.81	1.65	1.48
167.9	197.9	1.08	1.02	1.08	167.9	1.12	1.43	2.35	59.3	1.84	1.68	1.52
207.4	237.4	1.07	1.03	1.10	207.4	1.12	1.46	2.40	71.6	1.86	1.70	1.53
246.8	276.8	1.07	1.03	1.10	246.8	1.13	1.47	2.41	83.9	1.85	1.68	1.52
286.3	316.3	1.06	1.04	1.11	286.3	1.14	1.49	2.40	96.3	1.85	1.68	1.51
325.7	355.7	1.04	1.04	1.12	325.7	1.17	1.52	2.47	108.6	1.84	1.67	1.50
365.2	395.2	1.03	1.06	1.14	365.2	1.18	1.54	2.45	120.9	1.84	1.67	1.50
404.6	434.6	1.02	1.07	1.16	404.6	1.21	1.58	2.50	133.2	1.85	1.68	1.50
444.1	474.1	1.02	1.08	1.15	444.1	1.24	1.61	2.53	145.5	1.85	1.68	1.51
483.5	513.5	1.02	1.10	1.17	483.5	1.27	1.64	2.55	157.8	1.85	1.68	1.52
523.0	553.0	1.04	1.11	1.22	523.0	1.31	1.68	2.59	170.1	1.85	1.69	1.52
562.4	592.4	1.05	1.12	1.23	562.4	1.35	1.73	2.61	182.4	1.87	1.71	1.53
601.9	631.9	1.08	1.14	1.23	601.9	1.40	1.78	2.68	194.7	1.89	1.72	1.54
641.3	671.3	1.10	1.17	1.25	641.3	1.43	1.82	2.70	207.0	1.89	1.73	1.54
680.8	710.8	1.12	1.20	1.28	680.8	1.48	1.87	2.74	219.3	1.90	1.72	1.54
720.2	750.2	1.13	1.22	1.29	720.2	1.52	1.91	2.75	231.6	1.89	1.72	1.54
759.7	789.7	1.13	1.21	1.28	759.7	1.57	1.96	2.78	243.9	1.88	1.71	1.54
799.1	829.1	1.15	1.21	1.28	799.1	1.64	2.01	2.82	256.3	1.89	1.72	1.54
838.6	868.6	1.20	1.22	1.29	838.6	1.69	2.07	2.84	268.6	1.89	1.72	1.54
878.0	908.0	1.27	1.27	1.32	878.0	1.75	2.14	2.92	280.9	1.89	1.72	1.54
917.5	947.5	1.33	1.33	1.37	917.5	1.80	2.20	2.94	293.2	1.88	1.70	1.53
956.9	986.9	1.39	1.41	1.44	956.9	1.85	2.27	2.99	305.5	1.87	1.69	1.51
996.4	1026.4	1.48	1.51	1.54	996.4	1.91	2.34	3.04	317.8	1.86	1.69	1.51
1035.9	1065.9	1.58	1.61	1.66	1035.9	1.97	2.40	3.06	330.1	1.86	1.69	1.51
1075.3	1105.3	1.66	1.70	1.76	1075.3	2.03	2.47	3.12	342.4	1.86	1.69	1.51
1114.8	1144.8	1.73	1.78	1.86	1114.8	2.08	2.51	3.11	354.7	1.86	1.68	1.51
1154.2	1184.2	1.81	1.88	1.97	1154.2	2.15	2.58	3.15	367.0	1.85	1.68	1.50
1193.7	1223.7	1.91	2.00	2.09	1193.7	2.20	2.63	3.15	379.3	1.85	1.67	1.50
1213.4	1243.4	1.96	2.05	2.15	1213.4	2.23	2.64	3.14	391.6	1.86	1.68	1.51
1252.8	1282.8	2.07	2.17	2.25	1252.8	2.29	2.69	3.15	403.9	1.88	1.70	1.52
1272.6	1302.6	2.13	2.23	2.31	1272.6	2.31	2.72	3.15	416.3	1.89	1.70	1.52
1312.0	1342.0	2.23	2.33	2.40	1312.0	2.35	2.72	3.10	428.6	1.87	1.69	1.51
1331.7	1361.7	2.29	2.39	2.45	1331.7	2.37	2.73	3.10	440.9	1.85	1.67	1.50
1371.2	1401.2	2.34	2.46	2.53	1371.2	2.43	2.77	3.12	453.2	1.85	1.67	1.50
1390.9	1420.9	2.35	2.47	2.54	1390.9	2.44	2.77	3.09	465.5	1.86	1.69	1.51
1430.4	1460.4	2.34	2.44	2.53	1430.4	2.52	2.80	3.08	477.8	1.88	1.70	1.53
1450.1	1480.1	2.33	2.41	2.50	1450.1	2.56	2.84	3.10	490.1	1.89	1.71	1.54

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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	11	17	12	21	13	29	20	41	31	47
1	-	17	+0	27	13	31	19	32	30	49	36	44
2	>100	59	41	53	42	49	41	50	42	58	53	67
3	>100	73	63	68	57	62	51	73	53	66	53	65
4	>100	76	64	79	67	70	69	68	64	71	71	78
5	>100	83	>88	83	78	80	73	81	70	88	72	82
6	>100	>88	>88	>88	88	87	>88	84	87	86	84	>88
7	>100	>88	>88	>88	>88	>88	>88	84	86	>88	87	>88
8	>100	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88
9	>100	>88	>88	>88	>88	>88	>88	>88	>88	72	>88	>88
10	>100	>88	>88	>88	>88	>88	>88	>88	>88	>88	80	>88
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 250.1 MHz; -6.00 dBm.
LO IN: 280.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -12.06 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	20	26	25	35	27	48	35	60	43	63
1	-	17	+0	27	12	32	19	34	30	73	41	52
2	88	51	38	56	38	49	38	46	39	55	46	61
3	>100	44	45	50	56	53	45	47	44	50	50	57
4	>100	77	57	61	56	58	56	53	51	54	50	62
5	>100	57	57	58	56	60	52	57	49	59	48	65
6	>100	73	63	80	64	72	68	67	68	61	60	62
7	>100	80	69	75	69	70	81	69	66	66	62	69
8	>100	74	72	66	64	66	65	77	74	82	81	73
9	>100	82	83	80	72	76	69	73	78	74	77	74
10	>100	88	84	84	84	75	77	72	75	79	71	86
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 250.1 MHz; 4.00 dBm.
LO IN: 280.01 MHz; +13.00 dBm
IF OUT: 29.91 MHz; -2.13 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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