

Frequency Mixer

RMS-2UMH

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	6.46	6.11	5.95
50.4	80.4	6.63	6.30	6.14
90.7	120.7	6.69	6.39	6.22
131.0	161.0	6.84	6.55	6.35
171.3	201.3	7.14	6.75	6.50
211.5	241.5	7.37	6.90	6.58
251.8	281.8	7.64	7.11	6.70
292.1	322.1	7.92	7.29	6.81
332.4	362.4	8.18	7.46	6.94
372.7	402.7	8.45	7.51	6.94
413.0	443.0	8.67	7.64	6.95
453.3	483.3	8.95	7.85	7.14
493.6	523.6	8.97	7.81	7.16
533.9	563.9	9.16	7.93	7.20
574.2	604.2	9.33	7.95	7.25
614.4	644.4	9.25	7.96	7.26
654.7	684.7	9.33	8.11	7.44
695.0	725.0	9.37	8.30	7.67
735.3	765.3	9.38	8.48	7.91
775.6	805.6	9.29	8.56	8.09
815.9	845.9	9.29	8.60	8.22
856.2	886.2	9.29	8.68	8.35
896.5	926.5	9.27	8.76	8.45
916.6	946.6	9.28	8.83	8.53
956.9	986.9	9.24	8.86	8.61
977.1	1007.1	9.28	8.89	8.68
1017.3	1047.3	9.34	8.86	8.72
1037.5	1067.5	9.40	8.88	8.75
1077.8	1107.8	9.51	8.99	8.79
1097.9	1127.9	9.58	8.99	8.84
1138.2	1168.2	9.79	9.07	8.89
1158.4	1188.4	9.91	9.11	8.93
1198.7	1228.7	10.24	9.25	9.01
1218.8	1248.8	10.33	9.27	9.05
1259.1	1289.1	10.63	9.40	9.14
1279.2	1309.2	10.80	9.48	9.19
1319.5	1349.5	11.10	9.72	9.31
1339.7	1369.7	11.29	9.88	9.39
1380.0	1410.0	11.77	10.19	9.57
1400.1	1430.1	12.04	10.29	9.69

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	22.28	23.85	24.00
50.4	80.4	18.71	17.81	16.20
90.7	120.7	15.84	14.40	14.07
131.0	161.0	13.08	12.78	13.70
171.3	201.3	11.66	12.11	13.65
211.5	241.5	10.91	12.06	14.25
251.8	281.8	10.60	12.32	14.88
292.1	322.1	10.39	12.54	15.23
332.4	362.4	10.56	12.90	15.76
372.7	402.7	10.85	13.95	17.16
413.0	443.0	10.96	14.22	17.41
453.3	483.3	11.23	14.42	17.41
493.6	523.6	11.80	15.32	17.64
533.9	563.9	11.36	15.09	18.19
574.2	604.2	11.17	15.08	17.60
614.4	644.4	11.45	15.11	17.63
654.7	684.7	11.82	15.04	17.49
695.0	725.0	12.33	14.75	16.89
735.3	765.3	13.16	14.69	16.99
775.6	805.6	13.99	15.01	16.66
815.9	845.9	14.82	15.94	16.58
856.2	886.2	15.58	16.89	17.59
896.5	926.5	16.60	17.16	18.46
916.6	946.6	17.32	17.24	18.84
956.9	986.9	17.56	18.33	18.29
977.1	1007.1	17.69	19.61	18.43
1017.3	1047.3	17.16	22.47	19.42
1037.5	1067.5	17.11	22.16	20.53
1077.8	1107.8	18.22	19.90	23.99
1097.9	1127.9	18.19	20.19	23.73
1138.2	1168.2	19.62	19.91	24.19
1158.4	1188.4	20.46	19.28	22.46
1198.7	1228.7	20.00	19.96	22.06
1218.8	1248.8	19.59	21.09	22.90
1259.1	1289.1	19.31	24.69	22.41
1279.2	1309.2	19.06	27.73	23.50
1319.5	1349.5	19.29	28.92	24.97
1339.7	1369.7	18.68	25.19	25.61
1380.0	1410.0	18.00	21.33	26.98
1400.1	1430.1	17.54	21.11	31.55

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+9dBm (dB)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	1.18	0.87	0.71
50.4	80.4	0.99	0.73	0.55
90.7	120.7	0.97	0.73	0.58
131.0	161.0	0.99	0.74	0.59
171.3	201.3	0.96	0.76	0.62
211.5	241.5	1.12	0.87	0.77
251.8	281.8	1.10	0.93	0.84
292.1	322.1	1.05	0.93	0.92
332.4	362.4	1.07	1.02	0.99
372.7	402.7	1.01	1.13	1.16
413.0	443.0	1.02	1.15	1.19
453.3	483.3	0.98	1.17	1.22
493.6	523.6	1.00	1.23	1.21
533.9	563.9	0.86	1.23	1.24
574.2	604.2	0.78	1.15	1.18
614.4	644.4	0.83	1.12	1.14
654.7	684.7	0.81	1.01	0.96
695.0	725.0	0.88	0.92	0.90
735.3	765.3	0.81	0.72	0.69
775.6	805.6	0.80	0.62	0.55
815.9	845.9	0.73	0.54	0.41
856.2	886.2	0.61	0.40	0.32
896.5	926.5	0.47	0.24	0.19
916.6	946.6	0.38	0.18	0.14
956.9	986.9	0.30	0.09	0.06
977.1	1007.1	0.25	0.08	0.03
1017.3	1047.3	0.24	0.08	0.03
1037.5	1067.5	0.23	0.07	0.05
1077.8	1107.8	0.25	0.04	0.04
1097.9	1127.9	0.21	0.05	0.04
1138.2	1168.2	0.15	0.03	0.07
1158.4	1188.4	0.12	0.02	0.05
1198.7	1228.7	0.03	0.03	0.05
1218.8	1248.8	0.04	0.05	0.04
1259.1	1289.1	-0.03	0.08	0.02
1279.2	1309.2	-0.03	0.06	0.03
1319.5	1349.5	-0.08	0.03	0.04
1339.7	1369.7	-0.10	0.02	0.05
1380.0	1410.0	-0.13	-0.02	0.05
1400.1	1430.1	-0.18	-0.04	0.06

Frequency Mixer

RMS-2UMH

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)
		+13			+13			+13
480.0	20.1	6.76	20.0	30.1	6.21	500.0	500.1	9.39
468.2	31.9	6.80	32.3	42.4	6.10	487.7	512.4	9.31
456.4	43.7	6.83	44.6	54.7	6.12	475.4	524.7	9.39
444.6	55.5	6.87	56.9	67.0	6.07	463.1	537.0	9.41
432.8	67.3	6.99	69.2	79.3	6.09	450.8	549.3	9.43
421.0	79.1	7.06	81.5	91.6	6.12	438.5	561.6	9.48
409.2	90.9	7.15	93.8	103.9	6.07	426.2	573.9	9.47
397.4	102.7	7.22	106.2	116.3	6.06	413.8	586.3	9.48
385.6	114.5	7.25	118.5	128.6	6.05	401.5	598.6	9.44
373.8	126.3	7.28	130.8	140.9	6.02	389.2	610.9	9.43
362.1	138.0	7.37	143.1	153.2	6.08	376.9	623.2	9.43
350.3	149.8	7.41	155.4	165.5	6.07	364.6	635.5	9.42
338.5	161.6	7.47	167.7	177.8	6.06	352.3	647.8	9.41
326.7	173.4	7.51	180.0	190.1	6.08	340.0	660.1	9.39
314.9	185.2	7.52	192.3	202.4	6.05	327.7	672.4	9.31
303.1	197.0	7.55	204.6	214.7	6.07	315.4	684.7	9.30
291.3	208.8	7.53	216.9	227.0	6.08	303.1	697.0	9.25
279.5	220.6	7.53	229.2	239.3	6.05	290.8	709.3	9.18
267.7	232.4	7.55	241.5	251.6	6.08	278.5	721.6	9.18
255.9	244.2	7.53	253.8	263.9	6.12	266.2	733.9	9.11
244.1	256.0	7.45	266.2	276.3	6.12	253.8	746.3	9.07
232.3	267.8	7.56	278.5	288.6	6.15	241.5	758.6	9.04
220.5	279.6	7.57	290.8	300.9	6.14	229.2	770.9	8.98
208.7	291.4	7.61	303.1	313.2	6.13	216.9	783.2	8.97
196.9	303.2	7.65	315.4	325.5	6.17	204.6	795.5	8.94
185.1	315.0	7.58	327.7	337.8	6.16	192.3	807.8	8.90
173.3	326.8	7.61	340.0	350.1	6.16	180.0	820.1	8.90
161.5	338.6	7.66	352.3	362.4	6.18	167.7	832.4	8.88
149.7	350.4	7.63	364.6	374.7	6.16	155.4	844.7	8.87
137.9	362.2	7.67	376.9	387.0	6.21	143.1	857.0	8.88
126.2	373.9	7.66	389.2	399.3	6.22	130.8	869.3	8.84
114.4	385.7	7.62	401.5	411.6	6.21	118.5	881.6	8.83
102.6	397.5	7.66	413.8	423.9	6.25	106.2	893.9	8.84
90.8	409.3	7.65	426.2	436.3	6.25	93.8	906.3	8.82
79.0	421.1	7.59	438.5	448.6	6.29	81.5	918.6	8.84
67.2	432.9	7.68	450.8	460.9	6.35	69.2	930.9	8.86
55.4	444.7	7.72	463.1	473.2	6.36	56.9	943.2	8.86
43.6	456.5	7.80	475.4	485.5	6.41	44.6	955.5	8.92
31.8	468.3	7.91	487.7	497.8	6.43	32.3	967.8	8.97
20.0	480.1	8.03	500.0	510.1	6.44	20.0	980.1	9.11

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+10	+13	+16	+10	+13	+16
10.1	65.89	66.36	66.53	56.03	56.99	59.16
50.4	54.59	55.20	55.81	52.59	52.37	52.01
90.7	50.27	50.98	51.32	51.39	50.01	49.04
131.0	47.58	48.21	48.54	50.15	48.28	46.49
171.3	45.62	46.20	46.81	49.49	46.39	44.57
211.5	44.11	44.82	45.65	47.94	44.67	42.88
251.8	42.85	43.83	44.77	46.18	43.22	41.59
292.1	42.07	43.04	44.06	44.52	41.79	40.30
332.4	41.19	42.49	43.68	43.25	40.83	39.35
372.7	40.54	41.63	42.81	41.70	39.88	38.60
413.0	40.15	41.01	41.75	40.85	38.87	37.76
453.3	39.76	41.06	41.55	40.31	38.56	37.26
493.6	39.02	40.50	41.24	39.62	38.06	36.96
533.9	37.80	38.66	39.45	39.22	37.97	36.83
574.2	37.11	37.34	37.84	39.32	38.21	37.18
614.4	36.35	36.13	36.49	39.15	37.77	37.10
654.7	35.76	35.34	35.48	39.45	37.76	37.23
695.0	35.28	34.75	34.74	40.11	38.26	37.49
735.3	35.38	34.48	34.32	42.84	39.80	38.30
775.6	36.15	34.91	34.39	50.06	42.28	39.27
815.9	36.55	35.11	34.35	49.09	42.77	39.28
856.2	36.71	35.51	34.43	42.36	40.62	38.18
896.5	36.02	35.08	34.13	38.23	37.43	35.75
916.6	35.46	34.68	33.98	36.95	36.31	34.86
956.9	34.36	33.68	33.24	34.48	34.26	32.96
977.1	34.05	33.33	32.95	33.62	33.49	32.21
1017.3	33.40	32.69	32.26	31.68	31.87	30.73
1037.5	33.40	32.58	32.22	31.11	31.17	30.20
1077.8	33.40	32.03	31.66	29.52	29.50	28.61
1097.9	33.45	31.88	31.41	28.86	28.82	28.03
1138.2	33.50	31.71	30.97	27.46	27.42	26.70
1158.4	33.61	31.51	30.73	26.77	26.60	25.94
1198.7	34.13	31.53	30.46	25.43	25.16	24.54
1218.8	34.37	31.51	30.38	24.80	24.48	23.93
1259.1	34.89	31.82	30.29	23.47	23.09	22.48
1279.2	34.89	31.81	30.15	22.82	22.46	21.84
1319.5	35.00	32.15	30.10	21.50	21.25	20.49
1339.7	34.56	31.88	30.01	20.86	20.54	19.84
1380.0	32.70	31.06	29.42	19.68	19.37	18.64
1400.1	31.48	30.45	28.87	19.13	18.90	18.15

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	14.90	15.46	15.94
50.4	80.4	19.57	19.90	20.13
90.7	120.7	20.31	20.55	20.66
131.0	161.0	20.72	20.88	21.10
171.3	201.3	20.97	21.25	21.50
211.5	241.5	21.43	21.78	22.13
251.8	281.8	21.96	22.36	22.80
292.1	322.1	22.65	23.20	23.64
332.4	362.4	23.46	24.24	24.90
372.7	402.7	24.86	25.67	26.50
413.0	443.0	26.89	27.90	28.44
453.3	483.3	29.35	31.66	32.51
493.6	523.6	32.43	36.46	38.92
533.9	563.9	35.41	36.43	37.39
574.2	604.2	39.08	35.84	35.11
614.4	644.4	36.14	34.75	33.67
654.7	684.7	32.45	33.16	33.11
695.0	725.0	29.57	31.13	31.66
735.3	765.3	27.12	28.23	28.81
775.6	805.6	25.04	25.44	25.99
815.9	845.9	23.56	23.59	23.83
856.2	886.2	22.54	22.43	22.38
896.5	926.5	21.91	21.61	21.43
916.6	946.6	21.65	21.27	21.10
956.9	986.9	21.24	20.70	20.38
977.1	1007.1	20.91	20.36	20.02
1017.3	1047.3	20.11	19.57	19.24
1037.5	1067.5	19.66	19.14	18.87
1077.8	1107.8	18.74	18.29	18.02
1097.9	1127.9	18.38	17.94	17.71
1138.2	1168.2	17.79	17.33	17.14
1158.4	1188.4	17.61	17.13	16.91
1198.7	1228.7	17.16	16.70	16.50
1218.8	1248.8	16.90	16.47	16.25
1259.1	1289.1	16.44	16.11	15.89
1279.2	1309.2	16.15	15.90	15.71
1319.5	1349.5	15.49	15.37	15.27
1339.7	1369.7	15.12	15.12	15.01
1380.0	1410.0	14.36	14.49	14.46
1400.1	1430.1	14.06	14.21	14.23

Frequency Mixer

RMS-2UMH

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=1000.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+10	+13	+16		+10	+13	+16		+10	+13	+16
10.1	40.1	1.38	1.35	1.36	10.1	1.38	1.97	2.74	20.1	1.47	1.35	1.35
50.4	80.4	1.18	1.08	1.08	50.4	1.36	2.13	3.13	32.1	1.42	1.36	1.32
90.7	120.7	1.21	1.09	1.05	90.7	1.34	2.03	2.94	44.1	1.35	1.31	1.30
131.0	161.0	1.24	1.14	1.08	131.0	1.37	2.07	3.00	56.1	1.27	1.22	1.25
171.3	201.3	1.31	1.21	1.15	171.3	1.42	2.07	2.95	68.1	1.20	1.15	1.21
211.5	241.5	1.39	1.29	1.23	211.5	1.46	2.07	2.94	80.1	1.16	1.08	1.15
251.8	281.8	1.51	1.40	1.34	251.8	1.53	2.12	2.97	92.1	1.19	1.09	1.12
292.1	322.1	1.65	1.53	1.46	292.1	1.57	2.10	2.89	104.1	1.22	1.11	1.11
332.4	362.4	1.81	1.68	1.60	332.4	1.63	2.14	2.93	116.1	1.24	1.12	1.12
372.7	402.7	1.99	1.83	1.74	372.7	1.69	2.13	2.86	128.1	1.24	1.14	1.15
413.0	443.0	2.19	2.01	1.90	413.0	1.72	2.13	2.84	140.1	1.23	1.14	1.18
453.3	483.3	2.42	2.22	2.09	453.3	1.81	2.17	2.83	152.1	1.20	1.13	1.18
493.6	523.6	2.61	2.39	2.26	493.6	1.84	2.15	2.78	164.1	1.17	1.10	1.17
533.9	563.9	2.86	2.58	2.43	533.9	1.85	2.16	2.77	176.1	1.16	1.09	1.17
574.2	604.2	3.09	2.77	2.58	574.2	1.88	2.13	2.69	188.1	1.16	1.09	1.16
614.4	644.4	3.25	2.92	2.73	614.4	1.87	2.09	2.65	200.1	1.18	1.09	1.15
654.7	684.7	3.40	3.09	2.89	654.7	1.91	2.07	2.59	212.1	1.20	1.11	1.17
695.0	725.0	3.52	3.24	3.06	695.0	1.94	2.05	2.54	224.1	1.20	1.13	1.19
735.3	765.3	3.58	3.37	3.21	735.3	2.01	2.06	2.52	236.1	1.20	1.15	1.22
775.6	805.6	3.60	3.46	3.33	775.6	2.11	2.07	2.47	248.1	1.18	1.16	1.25
815.9	845.9	3.62	3.51	3.42	815.9	2.20	2.10	2.46	260.1	1.16	1.16	1.26
856.2	886.2	3.65	3.56	3.49	856.2	2.33	2.13	2.42	272.1	1.15	1.16	1.27
896.5	926.5	3.63	3.58	3.53	896.5	2.42	2.15	2.39	284.1	1.15	1.16	1.27
916.6	946.6	3.62	3.58	3.54	916.6	2.49	2.18	2.40	296.1	1.15	1.16	1.27
956.9	986.9	3.56	3.54	3.51	956.9	2.62	2.21	2.37	308.1	1.15	1.18	1.29
977.1	1007.1	3.54	3.52	3.49	977.1	2.67	2.21	2.35	320.1	1.16	1.19	1.31
1017.3	1047.3	3.49	3.45	3.44	1017.3	2.78	2.24	2.33	332.1	1.17	1.21	1.34
1037.5	1067.5	3.47	3.41	3.39	1037.5	2.87	2.26	2.33	344.1	1.17	1.23	1.36
1077.8	1107.8	3.42	3.34	3.31	1077.8	2.96	2.25	2.25	356.1	1.16	1.25	1.39
1097.9	1127.9	3.40	3.31	3.29	1097.9	2.99	2.25	2.22	368.1	1.16	1.27	1.40
1138.2	1168.2	3.38	3.25	3.22	1138.2	3.13	2.30	2.20	380.1	1.17	1.28	1.43
1158.4	1188.4	3.39	3.24	3.19	1158.4	3.17	2.30	2.17	392.1	1.17	1.29	1.44
1198.7	1228.7	3.41	3.20	3.14	1198.7	3.17	2.29	2.10	404.1	1.19	1.31	1.46
1218.8	1248.8	3.42	3.19	3.12	1218.8	3.21	2.31	2.10	416.1	1.20	1.34	1.49
1259.1	1289.1	3.43	3.16	3.07	1259.1	3.26	2.34	2.06	428.1	1.21	1.36	1.52
1279.2	1309.2	3.43	3.15	3.04	1279.2	3.23	2.32	2.02	440.1	1.23	1.39	1.55
1319.5	1349.5	3.42	3.13	3.00	1319.5	3.25	2.32	1.98	452.1	1.24	1.41	1.58
1339.7	1369.7	3.40	3.12	2.97	1339.7	3.27	2.33	1.97	464.1	1.25	1.43	1.60
1380.0	1410.0	3.37	3.09	2.92	1380.0	3.24	2.30	1.91	488.1	1.28	1.48	1.65
1400.1	1430.1	3.37	3.07	2.92	1400.1	3.25	2.29	1.89	500.1	1.30	1.51	1.69

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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	11	21	8	32	12	37	32	52	39	57
1	-	27	+0	31	20	44	40	33	31	42	34	49
2	>100	58	47	57	52	64	55	55	47	59	55	60
3	>100	68	49	57	46	55	53	76	63	58	76	62
4	>100	>86	84	76	68	74	69	78	84	71	67	75
5	>100	>86	>86	>86	78	80	75	78	79	>86	>86	84
6	>100	>86	>86	>86	>86	>86	>86	>86	86	>86	>86	>86
7	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
8	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
9	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
10	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions:

RF IN: 500.1 MHz; -6.00 dBm.

LO IN: 530.01 MHz; +13.00 dBm

IF OUT: 29.91 MHz; -14.09 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	20	32	20	46	28	51	53	70	55	72
1	-	29	+0	29	19	47	56	40	41	57	46	83
2	85	51	41	54	45	66	45	54	51	68	59	74
3	>100	51	31	43	31	44	41	75	48	53	52	64
4	>100	74	66	61	58	64	64	65	65	60	56	73
5	>100	55	67	61	63	55	52	48	56	68	72	56
6	>100	72	64	80	76	69	65	61	63	69	83	61
7	>100	73	64	67	82	75	54	53	51	56	62	79
8	>100	89	86	77	79	93	74	65	66	64	73	74
9	>100	94	75	87	68	71	88	69	62	70	66	64
10	>100	>96	91	94	90	80	79	>96	84	77	84	69
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; +13.00 dBm

IF OUT: 29.91 MHz; -3.7 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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