

Frequency Mixer

RMS-2D+

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=+1dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
+4	+7	+10	+4	+7	+10	+4	+7	+10	+4	+7	+10			
5.0	35.0	7.57	7.12	6.85	10.1	40.1	17.93	23.03	25.27	10.1	40.1	0.44	0.27	0.16
10.0	40.0	7.41	7.00	6.73	50.4	80.4	19.27	21.01	24.10	50.4	80.4	0.36	0.21	0.12
50.4	80.4	7.04	6.62	6.41	90.8	120.8	17.43	19.04	20.39	90.8	120.8	0.36	0.21	0.14
90.8	120.8	7.06	6.64	6.43	110.9	140.9	20.00	18.94	19.59	110.9	140.9	0.37	0.23	0.14
110.9	140.9	7.06	6.67	6.47	151.3	181.3	16.82	17.89	17.96	151.3	181.3	0.36	0.23	0.13
151.3	181.3	7.09	6.70	6.51	171.5	201.5	17.46	17.84	21.33	171.5	201.5	0.38	0.22	0.13
171.5	201.5	7.08	6.69	6.52	211.8	241.8	20.78	20.54	29.25	211.8	241.8	0.35	0.20	0.13
211.8	241.8	7.04	6.69	6.52	232.0	262.0	17.49	23.49	23.65	232.0	262.0	0.36	0.22	0.13
232.0	262.0	7.06	6.72	6.54	272.3	302.3	19.87	19.23	20.72	272.3	302.3	0.35	0.20	0.13
272.3	302.3	7.08	6.76	6.58	292.5	322.5	19.44	19.81	21.67	292.5	322.5	0.36	0.22	0.13
292.5	322.5	7.06	6.73	6.57	332.8	362.8	17.01	20.53	22.44	332.8	362.8	0.33	0.19	0.12
332.8	362.8	7.08	6.76	6.61	353.0	383.0	18.69	28.70	18.94	353.0	383.0	0.34	0.20	0.13
353.0	383.0	7.08	6.77	6.61	393.3	423.3	22.64	20.43	19.40	393.3	423.3	0.33	0.20	0.13
393.3	423.3	7.12	6.81	6.64	413.5	443.5	22.09	21.55	25.21	413.5	443.5	0.34	0.22	0.13
413.5	443.5	7.07	6.78	6.60	453.8	483.8	20.71	20.74	24.79	453.8	483.8	0.34	0.21	0.14
453.8	483.8	7.12	6.81	6.65	474.0	504.0	21.42	24.67	21.44	474.0	504.0	0.33	0.21	0.14
474.0	504.0	7.14	6.82	6.64	514.3	544.3	19.11	24.96	22.10	514.3	544.3	0.29	0.18	0.13
514.3	544.3	7.14	6.82	6.65	534.5	564.5	26.04	22.38	27.26	534.5	564.5	0.31	0.21	0.15
534.5	564.5	7.14	6.85	6.66	574.8	604.8	16.81	16.42	17.30	574.8	604.8	0.30	0.20	0.15
574.8	604.8	7.22	6.91	6.73	595.0	625.0	15.82	16.81	16.18	595.0	625.0	0.32	0.20	0.16
595.0	625.0	7.26	6.94	6.74	635.4	665.4	17.38	15.56	15.94	635.4	665.4	0.36	0.26	0.21
635.4	665.4	7.33	7.00	6.80	655.5	685.5	20.11	15.98	17.54	655.5	685.5	0.35	0.25	0.19
655.5	685.5	7.36	7.04	6.86	695.9	725.9	22.37	19.49	18.16	695.9	725.9	0.37	0.25	0.20
695.9	725.9	7.42	7.12	6.92	716.0	746.0	23.64	23.42	20.02	716.0	746.0	0.36	0.25	0.19
716.0	746.0	7.45	7.14	6.96	756.4	786.4	20.49	19.90	21.26	756.4	786.4	0.39	0.26	0.19
756.4	786.4	7.50	7.20	7.02	776.5	806.5	19.69	17.14	18.66	776.5	806.5	0.41	0.26	0.20
776.5	806.5	7.58	7.29	7.11	816.9	846.9	20.40	23.07	21.09	816.9	846.9	0.46	0.30	0.24
837.0	867.0	7.67	7.38	7.22	837.0	867.0	18.64	17.80	19.62	837.0	867.0	0.46	0.31	0.22
877.4	907.4	7.75	7.43	7.26	877.4	907.4	16.20	19.35	20.42	877.4	907.4	0.54	0.36	0.27
897.6	927.6	7.74	7.43	7.26	897.6	927.6	16.19	24.33	24.42	897.6	927.6	0.53	0.35	0.26
937.9	967.9	7.89	7.54	7.35	937.9	967.9	14.15	21.25	18.53	937.9	967.9	0.63	0.46	0.34
958.1	988.1	8.01	7.62	7.43	958.1	988.1	13.98	20.98	18.45	958.1	988.1	0.63	0.46	0.35
998.4	1028.4	8.17	7.71	7.48	998.4	1028.4	12.67	19.24	17.99	998.4	1028.4	0.66	0.51	0.41
1018.6	1048.6	8.26	7.78	7.52	1018.6	1048.6	11.71	19.98	17.68	1018.6	1048.6	0.67	0.52	0.42
1058.9	1088.9	8.46	7.92	7.62	1058.9	1088.9	9.96	16.98	19.63	1058.9	1088.9	0.69	0.58	0.47
1079.1	1109.1	8.51	7.95	7.62	1079.1	1109.1	10.20	17.53	19.57	1079.1	1109.1	0.65	0.56	0.48
1119.4	1149.4	8.70	8.09	7.70	1119.4	1149.4	9.82	15.41	18.83	1119.4	1149.4	0.64	0.57	0.51
1139.6	1169.6	8.83	8.21	7.79	1139.6	1169.6	9.39	13.80	19.39	1139.6	1169.6	0.62	0.56	0.51
1179.9	1209.9	9.05	8.41	7.94	1179.9	1209.9	9.67	13.92	24.11	1179.9	1209.9	0.54	0.51	0.49
1200.1	1230.1	9.14	8.48	8.01	1200.1	1230.1	9.70	14.25	20.62	1200.1	1230.1	0.54	0.51	0.47

REV. X2

RMS-2D+

100818

Page 1 of 5



IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED • RoHS compliant

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661



The Design Engineers Search Engine finds the model you need, instantly • For detailed performance specs & shopping online see



Frequency Mixer

RMS-2D+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=510.1MHz (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)=1010.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+7			+7			+7
500.0	10.1	6.92	30.2	20.1	6.38	1000.0	10.1	7.92
487.4	22.7	6.92	50.2	40.1	6.33	979.8	30.3	7.89
474.9	35.2	6.86	70.2	60.1	6.37	959.6	50.5	7.82
462.3	47.8	6.84	90.2	80.1	6.39	939.4	70.7	7.77
449.7	60.4	6.84	110.2	100.1	6.40	919.2	90.9	7.75
437.2	72.9	6.83	130.2	120.1	6.44	899.0	111.1	7.70
424.6	85.5	6.80	150.2	140.1	6.41	878.8	131.3	7.62
412.1	98.0	6.76	170.2	160.1	6.42	858.6	151.5	7.62
399.5	110.6	6.74	190.2	180.1	6.45	838.4	171.7	7.62
386.9	123.2	6.73	210.2	200.1	6.47	818.2	191.9	7.59
374.4	135.7	6.68	230.2	220.1	6.47	798.0	212.1	7.57
361.8	148.3	6.69	250.2	240.1	6.47	777.8	232.3	7.55
349.2	160.9	6.68	270.2	260.1	6.47	757.6	252.5	7.43
336.7	173.4	6.67	290.2	280.1	6.48	737.3	272.8	7.55
324.1	186.0	6.68	310.2	300.1	6.53	717.1	293.0	7.55
311.5	198.6	6.67	330.2	320.1	6.52	696.9	313.2	7.49
299.0	211.1	6.66	350.2	340.1	6.54	676.7	333.4	7.49
286.4	223.7	6.66	370.2	360.1	6.54	656.5	353.6	7.50
273.8	236.3	6.66	390.2	380.1	6.52	636.3	373.8	7.50
261.3	248.8	6.68	410.2	400.1	6.50	616.1	394.0	7.52
248.7	261.4	6.69	450.2	440.1	6.59	575.7	434.4	7.50
236.2	273.9	6.68	470.2	460.1	6.54	555.5	454.6	7.50
223.6	286.5	6.69	510.2	500.1	6.61	515.1	495.0	7.50
211.0	299.1	6.70	530.2	520.1	6.60	494.9	515.2	7.52
198.5	311.6	6.70	570.2	560.1	6.58	454.5	555.6	7.55
185.9	324.2	6.69	590.2	580.1	6.62	434.3	575.8	7.60
173.3	336.8	6.71	630.2	620.1	6.67	393.9	616.2	7.56
160.8	349.3	6.72	650.2	640.1	6.64	373.7	636.4	7.56
148.2	361.9	6.73	690.2	680.1	6.74	333.3	676.8	7.58
135.6	374.5	6.73	710.2	700.1	6.83	313.1	697.0	7.59
123.1	387.0	6.74	750.2	740.1	6.82	272.7	737.4	7.63
110.5	399.6	6.72	770.2	760.1	6.87	252.4	757.7	7.69
97.9	412.2	6.73	810.2	800.1	6.89	212.0	798.1	7.71
85.4	424.7	6.74	830.2	820.1	6.89	191.8	818.3	7.71
72.8	437.3	6.74	870.2	860.1	6.80	151.4	858.7	7.73
60.3	449.8	6.76	890.2	880.1	6.82	131.2	878.9	7.70
47.7	462.4	6.74	930.2	920.1	6.74	90.8	919.3	7.66
35.1	475.0	6.77	950.2	940.1	6.74	70.6	939.5	7.64
22.6	487.5	6.80	990.2	980.1	6.73	30.2	979.9	7.67
10.0	500.1	6.86	1010.2	1000.1	6.74	10.0	1000.1	7.85

REV. X2
RMS-2D+
100818
Page 2 of 5



IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED • RoHS compliant
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661



The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+4	+7	+10	+4	+7	+10
5.0	75.52	75.17	72.21	66.42	69.37	72.91
10.0	68.33	69.29	68.74	66.13	68.39	69.44
50.4	56.92	56.88	56.83	59.49	55.69	53.52
90.8	51.48	51.44	51.40	55.55	51.37	49.15
110.9	49.67	49.62	49.59	54.42	50.15	47.85
151.3	46.73	46.74	46.79	51.67	47.53	45.40
171.5	45.57	45.63	45.70	50.92	46.82	44.65
211.8	43.65	43.76	43.82	49.34	45.44	43.24
232.0	42.86	42.98	43.05	48.51	44.70	42.49
272.3	41.45	41.56	41.60	47.31	43.67	41.39
292.5	40.80	40.91	40.94	47.00	43.43	41.12
332.8	39.69	39.77	39.76	45.49	42.36	40.17
353.0	39.13	39.21	39.21	44.62	41.68	39.59
393.3	38.28	38.36	38.33	43.17	40.83	38.90
413.5	37.74	37.80	37.75	42.32	40.10	38.25
453.8	36.99	37.00	36.97	40.55	38.94	37.27
474.0	36.56	36.53	36.47	40.07	38.76	37.20
514.3	35.96	35.94	35.84	38.30	37.39	36.24
534.5	35.67	35.70	35.63	37.61	36.79	35.73
574.8	35.21	35.24	35.21	36.24	35.71	34.82
595.0	34.96	34.95	34.91	35.65	35.25	34.41
635.4	34.53	34.42	34.28	34.26	34.21	33.66
655.5	34.36	34.19	33.99	33.74	33.82	33.46
695.9	33.89	33.73	33.44	32.87	32.97	32.71
716.0	33.62	33.54	33.28	32.31	32.46	32.24
756.4	33.07	33.05	32.88	31.55	31.84	31.68
776.5	32.81	32.83	32.72	31.17	31.46	31.30
837.0	32.14	32.17	32.14	29.99	30.36	30.20
877.4	31.74	31.76	31.74	29.45	30.06	30.03
897.6	31.54	31.58	31.60	28.94	29.65	29.74
937.9	31.36	31.38	31.42	28.19	28.98	29.22
958.1	31.33	31.37	31.41	27.84	28.62	28.89
998.4	31.22	31.23	31.20	27.15	27.84	28.17
1018.6	31.10	31.12	31.06	26.85	27.46	27.71
1058.9	30.81	30.79	30.64	26.33	26.91	27.17
1079.1	30.57	30.57	30.43	26.12	26.71	26.96
1119.4	30.16	30.13	29.94	25.57	26.12	26.35
1139.6	29.93	29.88	29.68	25.36	25.95	26.22
1179.9	29.53	29.44	29.23	25.03	25.60	25.97
1200.1	29.21	29.08	28.87	24.86	25.44	25.82

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	45.87	36.46	49.14
50.4	80.4	37.15	36.85	36.87
90.8	120.8	32.43	32.25	32.08
110.9	140.9	30.98	30.80	30.65
151.3	181.3	28.69	28.53	28.39
171.5	201.5	27.89	27.73	27.61
211.8	241.8	26.58	26.44	26.34
232.0	262.0	26.08	25.93	25.82
272.3	302.3	25.45	25.35	25.26
292.5	322.5	25.16	25.07	25.01
332.8	362.8	24.78	24.65	24.56
353.0	383.0	24.66	24.55	24.45
393.3	423.3	24.47	24.45	24.40
413.5	443.5	24.35	24.40	24.39
453.8	483.8	24.32	24.43	24.52
474.0	504.0	24.16	24.24	24.28
514.3	544.3	23.86	23.90	23.90
534.5	564.5	23.77	23.78	23.77
574.8	604.8	23.27	23.29	23.33
595.0	625.0	22.99	23.10	23.20
635.4	665.4	21.89	22.18	22.42
655.5	685.5	21.30	21.67	21.99
695.9	725.9	19.96	20.35	20.75
716.0	746.0	19.36	19.70	20.07
756.4	786.4	18.10	18.32	18.58
776.5	806.5	17.52	17.68	17.89
816.9	846.9	16.65	16.76	16.90
837.0	867.0	16.17	16.25	16.36
877.4	907.4	15.55	15.60	15.68
897.6	927.6	15.19	15.23	15.29
937.9	967.9	14.57	14.58	14.61
958.1	988.1	14.29	14.30	14.35
998.4	1028.4	13.83	13.88	13.96
1018.6	1048.6	13.62	13.71	13.82
1058.9	1088.9	13.32	13.47	13.63
1079.1	1109.1	13.22	13.41	13.62
1119.4	1149.4	12.94	13.17	13.47
1139.6	1169.6	12.80	13.05	13.38
1179.9	1209.9	12.61	12.89	13.28
1200.1	1230.1	12.56	12.85	13.27

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=1010.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+4	+7	+10		+4	+7	+10		+4	+7	+10
5.0	35.0	1.38	1.43	1.48	5.0	2.09	2.92	3.99	5.0	1.29	1.14	1.04
10.0	40.0	1.25	1.32	1.37	10.0	1.95	2.76	3.81	10.0	1.30	1.14	1.04
50.4	80.4	1.18	1.26	1.32	50.4	1.90	2.70	3.76	30.3	1.79	1.53	1.36
90.8	120.8	1.17	1.26	1.32	90.8	1.89	2.68	3.71	50.5	1.73	1.48	1.32
110.9	140.9	1.19	1.27	1.33	110.9	1.86	2.61	3.60	70.7	1.72	1.45	1.31
151.3	181.3	1.19	1.27	1.33	151.3	1.89	2.67	3.67	90.9	1.74	1.49	1.33
171.5	201.5	1.19	1.28	1.34	171.5	1.89	2.66	3.65	111.1	1.78	1.52	1.36
211.8	241.8	1.21	1.29	1.35	211.8	1.87	2.61	3.58	131.3	1.74	1.50	1.35
232.0	262.0	1.21	1.29	1.35	232.0	1.92	2.69	3.69	151.5	1.73	1.48	1.34
272.3	302.3	1.23	1.31	1.37	272.3	1.93	2.69	3.69	171.7	1.75	1.52	1.37
292.5	322.5	1.24	1.32	1.38	292.5	1.90	2.64	3.60	191.9	1.77	1.53	1.39
332.8	362.8	1.26	1.34	1.40	332.8	1.92	2.67	3.62	212.1	1.78	1.54	1.39
353.0	383.0	1.28	1.36	1.41	353.0	1.94	2.70	3.67	232.3	1.77	1.53	1.39
393.3	423.3	1.30	1.38	1.44	393.3	1.92	2.66	3.58	252.5	1.73	1.50	1.37
413.5	443.5	1.31	1.39	1.45	413.5	1.96	2.71	3.67	272.8	1.73	1.51	1.38
453.8	483.8	1.33	1.41	1.47	453.8	2.00	2.76	3.73	293.0	1.75	1.54	1.41
474.0	504.0	1.34	1.42	1.48	474.0	2.00	2.73	3.67	313.2	1.71	1.51	1.40
514.3	544.3	1.36	1.43	1.49	514.3	2.01	2.75	3.67	333.4	1.71	1.51	1.41
534.5	564.5	1.38	1.45	1.51	534.5	2.01	2.75	3.67	353.6	1.71	1.54	1.44
574.8	604.8	1.42	1.49	1.54	574.8	2.04	2.75	3.67	373.8	1.72	1.56	1.47
595.0	625.0	1.44	1.51	1.57	595.0	2.07	2.80	3.73	394.0	1.76	1.60	1.51
635.4	665.4	1.48	1.56	1.62	635.4	2.11	2.84	3.76	434.4	1.75	1.60	1.54
655.5	685.5	1.51	1.60	1.67	655.5	2.14	2.87	3.78	454.6	1.77	1.63	1.58
695.9	725.9	1.56	1.64	1.72	695.9	2.16	2.89	3.79	495.0	1.78	1.66	1.61
716.0	746.0	1.59	1.67	1.74	716.0	2.14	2.85	3.73	515.2	1.79	1.68	1.64
756.4	786.4	1.63	1.71	1.77	756.4	2.20	2.91	3.79	555.6	1.79	1.70	1.67
776.5	806.5	1.66	1.73	1.80	776.5	2.21	2.92	3.79	575.8	1.83	1.74	1.72
816.9	846.9	1.69	1.77	1.83	816.9	2.23	2.92	3.78	616.2	1.83	1.75	1.73
837.0	867.0	1.70	1.78	1.84	837.0	2.29	3.00	3.86	636.4	1.85	1.78	1.77
877.4	907.4	1.70	1.78	1.84	877.4	2.30	2.97	3.80	676.8	1.87	1.80	1.80
897.6	927.6	1.72	1.80	1.86	897.6	2.27	2.91	3.70	697.0	1.88	1.82	1.83
937.9	967.9	1.70	1.77	1.83	937.9	2.36	3.01	3.82	737.4	1.88	1.83	1.84
958.1	988.1	1.69	1.76	1.82	958.1	2.37	3.01	3.81	757.7	1.90	1.86	1.88
998.4	1028.4	1.70	1.76	1.82	998.4	2.39	3.00	3.77	798.1	1.89	1.85	1.87
1018.6	1048.6	1.71	1.77	1.83	1018.6	2.47	3.12	3.91	818.3	1.89	1.85	1.88
1058.9	1088.9	1.74	1.80	1.85	1058.9	2.52	3.16	3.93	858.7	1.92	1.88	1.90
1079.1	1109.1	1.79	1.84	1.90	1079.1	2.50	3.11	3.85	878.9	1.91	1.86	1.89
1119.4	1149.4	1.87	1.91	1.97	1119.4	2.55	3.17	3.92	919.3	1.90	1.86	1.88
1139.6	1169.6	1.93	1.96	2.02	1139.6	2.57	3.19	3.94	939.5	1.91	1.86	1.89
1179.9	1209.9	2.08	2.11	2.15	1179.9	2.57	3.19	3.91	979.9	1.94	1.88	1.90
1200.1	1230.1	2.17	2.18	2.22	1200.1	2.62	3.25	3.98	1000.1	1.90	1.85	1.87

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	9	18	10	32	20	30	25	48	25	42
1	-	17	+0	29	12	33	18	36	39	47	42	42
2	103	63	51	61	50	64	49	57	54	69	57	68
3	117	73	71	78	80	76	63	88	73	78	78	85
4	118	89	91	93	90	88	99	93	92	89	91	102
5	123	109	100	105	103	105	92	94	97	102	96	104
6	124	101	113	115	111	110	98	92	96	100	107	99
7	109	104	113	109	102	98	99	91	87	102	110	119
8	124	108	110	106	105	104	99	113	87	92	103	99
9	107	108	112	105	105	119	99	111	102	88	87	110
10	117	106	103	101	104	106	99	99	106	94	91	99
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions:

RF IN: 500.1 MHz; -14.00 dBm.
LO IN: 530.01 MHz; +7.00 dBm
IF OUT: 29.91 MHz; -20.72 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	18	27	21	49	32	42	37	69	39	52
1	-	17	+0	29	12	33	19	39	39	52	45	48
2	99	58	42	58	42	64	42	56	49	60	50	67
3	116	54	50	58	58	57	45	67	48	55	62	64
4	121	67	84	67	66	66	65	69	57	64	63	81
5	118	77	70	88	63	82	60	72	58	81	60	83
6	118	99	80	87	78	84	82	88	78	79	80	82
7	120	95	92	90	77	84	77	88	79	88	83	86
8	113	108	105	114	99	102	101	110	101	94	108	100
9	112	110	111	121	104	102	104	102	102	96	92	101
10	123	120	110	111	115	119	102	102	104	113	96	99
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; +7.00 dBm
IF OUT: 29.91 MHz; -10.93 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.

REV. X2

RMS-2D+

100818

Page 5 of 5



IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED • RoHS compliant

P.O. Box 350166, Brooklyn, New York 11235-0006 (718) 934-4500 Fax (718) 332-4661



The Design Engineers Search Engine finds the model you need, instantly • For detailed performance specs & shopping online see

