

Frequency Mixer

RMS-5L+

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=-3dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		0	+3	+6			0	+3	+6			0	+3	+6
400.1	430.1	8.43	7.40	6.89	400.1	430.1	9.93	14.07	15.86	400.1	430.1	0.22	0.11	0.08
440.1	470.1	8.00	7.00	6.48	440.1	470.1	11.15	17.16	18.34	440.1	470.1	0.22	0.08	0.10
480.1	510.1	7.81	6.83	6.31	480.1	510.1	7.91	12.47	15.91	480.1	510.1	0.28	0.12	0.09
520.1	550.1	7.53	6.58	6.05	520.1	550.1	8.65	14.11	14.23	520.1	550.1	0.40	0.16	0.19
560.1	590.1	7.38	6.45	5.95	560.1	590.1	8.22	13.63	12.36	560.1	590.1	0.43	0.22	0.21
600.1	630.1	7.19	6.26	5.76	600.1	630.1	7.26	14.47	11.68	600.1	630.1	0.55	0.33	0.32
640.1	670.1	7.13	6.16	5.66	640.1	670.1	8.61	14.97	9.87	640.1	670.1	0.74	0.47	0.38
680.1	710.1	7.03	6.02	5.50	680.1	710.1	8.15	14.02	9.25	680.1	710.1	0.80	0.54	0.44
720.1	750.1	6.98	5.95	5.40	720.1	750.1	7.21	13.73	10.72	720.1	750.1	0.82	0.51	0.43
760.1	790.1	6.99	5.91	5.34	760.1	790.1	7.69	15.15	10.01	760.1	790.1	0.92	0.60	0.47
800.1	830.1	7.01	5.90	5.31	800.1	830.1	7.17	12.26	9.37	800.1	830.1	0.94	0.68	0.52
840.1	870.1	7.15	6.00	5.35	840.1	870.1	6.52	10.94	10.76	840.1	870.1	1.03	0.77	0.57
880.1	910.1	7.29	6.15	5.42	880.1	910.1	7.24	10.10	10.36	880.1	910.1	0.99	0.77	0.64
920.1	950.1	7.47	6.31	5.55	920.1	950.1	7.82	8.77	10.10	920.1	950.1	1.06	0.81	0.72
960.1	990.1	7.70	6.53	5.73	960.1	990.1	10.22	10.81	10.36	960.1	990.1	0.94	0.78	0.75
1000.1	1030.1	7.87	6.70	5.88	1000.1	1030.1	10.65	16.43	10.94	1000.1	1030.1	0.85	0.74	0.81
1040.1	1070.1	8.17	7.03	6.18	1040.1	1070.1	8.59	13.19	15.45	1040.1	1070.1	0.66	0.62	0.65
1080.1	1110.1	8.41	7.31	6.47	1080.1	1110.1	5.69	9.02	14.03	1080.1	1110.1	0.55	0.51	0.56
1120.1	1150.1	8.57	7.63	6.85	1120.1	1150.1	5.17	7.07	11.87	1120.1	1150.1	0.49	0.32	0.38
1160.1	1190.1	8.65	7.80	7.10	1160.1	1190.1	4.74	5.72	8.26	1160.1	1190.1	0.51	0.27	0.26
1200.1	1230.1	8.63	7.87	7.30	1200.1	1230.1	4.73	5.03	6.92	1200.1	1230.1	0.57	0.20	0.19
1240.1	1270.1	8.63	7.92	7.41	1240.1	1270.1	4.93	5.19	8.04	1240.1	1270.1	0.62	0.27	0.19
1280.1	1310.1	8.63	7.90	7.48	1280.1	1310.1	5.32	5.70	7.52	1280.1	1310.1	0.69	0.29	0.19
1320.1	1350.1	8.69	7.88	7.50	1320.1	1350.1	6.59	5.66	6.77	1320.1	1350.1	0.70	0.37	0.26
1360.1	1390.1	8.72	7.87	7.53	1360.1	1390.1	5.92	5.96	7.24	1360.1	1390.1	0.81	0.39	0.25
1400.1	1430.1	8.75	7.83	7.51	1400.1	1430.1	6.02	6.64	6.56	1400.1	1430.1	0.85	0.56	0.27
1440.1	1470.1	8.82	7.84	7.51	1440.1	1470.1	5.66	5.98	6.52	1440.1	1470.1	0.91	0.57	0.36
1480.1	1510.1	8.91	7.83	7.50	1480.1	1510.1	5.51	6.59	6.55	1480.1	1510.1	1.03	0.66	0.44
1520.1	1550.1	9.06	7.86	7.46	1520.1	1550.1	5.28	5.99	6.86	1520.1	1550.1	1.03	0.71	0.46
1560.1	1590.1	9.24	7.89	7.44	1560.1	1590.1	4.90	6.05	6.43	1560.1	1590.1	1.10	0.80	0.51
1600.1	1630.1	9.43	7.98	7.51	1600.1	1630.1	4.16	5.45	6.07	1600.1	1630.1	1.11	0.88	0.56
1640.1	1670.1	9.60	8.05	7.47	1640.1	1670.1	4.28	5.78	6.30	1640.1	1670.1	1.13	0.89	0.60
1680.1	1710.1	9.86	8.21	7.66	1680.1	1710.1	3.90	4.50	5.46	1680.1	1710.1	1.13	0.96	0.74
1720.1	1750.1	10.10	8.38	7.84	1720.1	1750.1	3.46	3.92	4.19	1720.1	1750.1	1.12	0.90	0.70
1760.1	1790.1	10.61	8.70	8.14	1760.1	1790.1	3.23	3.71	3.73	1760.1	1790.1	1.06	0.95	0.69
1780.1	1810.1	11.04	8.96	8.33	1780.1	1810.1	2.82	2.66	3.25	1780.1	1810.1	1.03	1.00	0.69
1820.1	1850.1	11.56	9.27	8.58	1820.1	1850.1	2.78	2.53	3.89	1820.1	1850.1	0.91	0.91	0.60
1840.1	1870.1	11.89	9.46	8.72	1840.1	1870.1	2.72	2.61	5.27	1840.1	1870.1	0.91	0.96	0.57
1880.1	1910.1	12.68	9.90	8.88	1880.1	1910.1	3.89	2.74	5.74	1880.1	1910.1	0.63	0.98	0.64
1900.1	1930.1	12.75	9.95	8.94	1900.1	1930.1	4.23	2.85	6.36	1900.1	1930.1	0.53	0.91	0.57



Frequency Mixer

RMS-5L+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=900.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=400.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1400.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+3			+3			+3
500.0	400.1	5.05	10.0	410.1	7.19	800.0	600.1	7.72
480.4	419.7	4.98	29.8	429.9	7.39	780.3	619.9	7.66
460.8	439.3	4.96	49.5	449.6	7.51	760.5	639.6	7.53
441.2	458.9	4.99	69.3	469.4	7.61	740.7	659.4	7.51
421.6	478.5	4.98	89.0	489.1	7.68	721.0	679.1	7.46
402.0	498.1	4.95	108.8	508.9	7.74	701.3	698.9	7.44
382.4	517.7	4.98	128.5	528.6	7.83	681.5	718.6	7.45
362.8	537.3	5.06	148.3	548.4	7.89	661.7	738.4	7.43
343.2	556.9	5.13	168.0	568.1	7.93	642.0	758.1	7.48
323.6	576.5	5.19	187.8	587.9	7.95	622.3	777.9	7.49
304.0	596.1	5.27	207.5	607.6	7.93	602.5	797.6	7.56
284.4	615.7	5.34	227.3	627.4	7.94	582.7	817.4	7.55
264.8	635.3	5.44	247.0	647.1	7.97	563.0	837.1	7.62
245.2	654.9	5.52	266.8	666.9	8.00	543.3	856.9	7.77
225.6	674.5	5.64	286.5	686.6	7.92	523.5	876.6	7.85
206.0	694.1	5.67	306.3	706.4	7.95	503.8	896.4	8.05
166.8	733.3	5.83	326.0	726.1	7.91	484.0	916.1	8.11
147.2	752.9	5.94	345.8	745.9	7.95	464.3	935.9	8.26
108.0	792.1	5.98	365.5	765.6	7.96	444.5	955.6	8.41
88.4	811.7	6.01	385.3	785.4	7.87	424.8	975.4	8.53
49.2	850.9	6.12	405.0	805.1	7.93	405.0	995.1	8.51
29.6	870.5	6.15	424.8	824.9	7.98	385.3	1014.9	8.55
10.0	910.1	6.13	444.5	844.6	7.96	365.5	1034.6	8.65
29.6	929.7	6.14	464.3	864.4	7.93	345.8	1054.4	8.62
68.8	968.9	6.13	484.0	884.1	7.97	326.0	1074.1	8.60
88.4	988.5	6.15	503.8	903.9	7.98	306.3	1093.9	8.54
127.6	1027.7	6.16	523.5	923.6	7.93	286.5	1113.6	8.44
147.2	1047.3	6.27	543.3	943.4	8.06	266.8	1133.4	8.41
186.4	1086.5	6.36	563.0	963.1	8.07	247.0	1153.1	8.30
206.0	1106.1	6.41	582.8	982.9	8.15	227.2	1172.9	8.23
245.2	1145.3	6.49	602.5	1002.6	8.20	207.5	1192.6	8.13
264.8	1164.9	6.50	622.3	1022.4	8.26	187.8	1212.4	8.12
304.0	1204.1	6.55	642.0	1042.1	8.30	168.0	1232.1	8.04
323.6	1223.7	6.63	661.8	1061.9	8.30	148.3	1251.9	7.97
362.8	1262.9	6.77	681.5	1081.6	8.38	128.5	1271.6	8.02
382.4	1282.5	6.80	701.3	1101.4	8.35	108.8	1291.4	7.94
421.6	1321.7	6.89	721.0	1121.1	8.38	89.0	1311.1	7.96
441.2	1341.3	6.92	740.8	1140.9	8.37	69.2	1330.9	7.92
480.4	1380.5	6.83	780.2	1180.4	8.39	29.8	1370.4	7.91
500.0	1400.1	6.83	800.0	1200.1	8.33	10.0	1390.1	7.80

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	0	+3	+6	0	+3	+6
400.1	27.94	27.20	26.50	28.68	32.28	31.88
440.1	27.53	26.78	26.05	28.26	32.00	31.12
480.1	27.84	27.09	26.37	28.22	32.22	30.82
520.1	28.55	27.76	27.03	27.88	32.37	30.34
560.1	28.85	28.06	27.28	27.90	32.47	29.30
600.1	29.26	28.46	27.63	28.13	32.43	28.20
640.1	30.13	29.36	28.51	28.59	31.59	26.56
680.1	31.60	30.96	30.07	28.80	31.27	25.89
720.1	32.86	32.38	31.29	29.47	30.69	25.02
760.1	33.95	33.91	32.55	30.76	30.26	24.34
800.1	35.67	36.58	34.56	32.88	28.84	23.18
840.1	37.14	40.60	37.31	35.10	27.16	22.02
880.1	36.80	45.35	41.96	36.12	25.65	21.18
920.1	35.29	44.56	46.09	32.61	23.18	19.40
960.1	33.36	38.85	41.40	29.94	21.74	18.26
1000.1	31.38	35.11	37.11	27.80	20.61	17.33
1040.1	29.39	32.14	33.76	25.83	19.56	16.50
1080.1	27.82	29.95	31.25	24.37	18.83	15.99
1120.1	26.90	28.67	29.72	22.69	17.90	15.32
1160.1	25.89	27.39	28.34	21.93	17.48	14.94
1200.1	25.01	26.33	27.21	21.02	16.91	14.44
1240.1	24.31	25.49	26.38	20.03	16.34	13.99
1280.1	23.74	24.84	25.75	18.89	15.66	13.45
1320.1	23.25	24.34	25.23	17.80	14.93	12.89
1360.1	22.91	24.10	25.04	16.91	14.40	12.54
1400.1	22.55	23.82	24.82	15.86	13.65	11.93
1440.1	22.34	23.74	24.84	14.95	13.03	11.47
1480.1	21.97	23.55	24.80	14.16	12.45	11.05
1520.1	21.81	23.56	24.98	13.47	11.98	10.68
1560.1	21.66	23.57	25.16	12.72	11.43	10.24
1600.1	21.16	23.27	25.08	12.27	11.18	10.11
1640.1	20.63	22.89	24.87	11.67	10.78	9.79
1680.1	20.50	22.81	24.86	11.15	10.50	9.64
1720.1	19.78	22.04	24.09	10.69	10.26	9.51
1760.1	19.00	21.09	23.07	10.16	9.92	9.27
1780.1	18.93	20.97	22.94	9.85	9.71	9.11
1820.1	18.16	20.08	22.08	9.17	9.19	8.68
1840.1	18.34	20.23	22.25	8.87	8.93	8.46
1880.1	17.64	19.48	21.52	8.06	8.21	7.86
1900.1	17.59	19.38	21.39	7.67	7.87	7.63

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		0	+3	+6
400.1	430.1	17.71	16.65	16.07
440.1	470.1	17.28	16.22	15.72
480.1	510.1	16.85	15.83	15.39
520.1	550.1	16.84	15.75	15.28
560.1	590.1	17.19	16.01	15.40
600.1	630.1	17.82	16.68	15.96
640.1	670.1	18.75	17.80	17.17
680.1	710.1	19.79	19.03	18.46
720.1	750.1	20.90	20.22	19.61
760.1	790.1	21.82	20.89	20.13
800.1	830.1	22.74	21.07	19.97
840.1	870.1	23.90	21.41	19.78
880.1	910.1	24.38	21.82	19.63
920.1	950.1	23.37	21.84	19.85
960.1	990.1	21.31	20.78	19.59
1000.1	1030.1	19.14	19.04	18.55
1040.1	1070.1	17.55	17.61	17.56
1080.1	1110.1	16.31	16.38	16.47
1120.1	1150.1	15.34	15.36	15.49
1160.1	1190.1	14.58	14.63	14.84
1200.1	1230.1	13.99	14.15	14.45
1240.1	1270.1	13.55	13.81	14.22
1280.1	1310.1	13.25	13.58	14.08
1320.1	1350.1	13.10	13.50	14.04
1360.1	1390.1	13.09	13.55	14.13
1400.1	1430.1	13.14	13.68	14.28
1440.1	1470.1	13.29	13.92	14.55
1480.1	1510.1	13.41	14.15	14.82
1520.1	1550.1	13.57	14.45	15.21
1560.1	1590.1	13.71	14.78	15.66
1600.1	1630.1	13.85	15.09	16.16
1640.1	1670.1	13.88	15.34	16.60
1680.1	1710.1	13.75	15.44	16.89
1720.1	1750.1	13.56	15.43	16.97
1760.1	1790.1	13.24	15.22	16.88
1780.1	1810.1	13.06	15.14	16.95
1820.1	1850.1	12.94	15.16	17.19
1840.1	1870.1	12.97	15.26	17.47
1880.1	1910.1	12.95	15.37	17.79
1900.1	1930.1	13.27	15.77	18.28

Frequency Mixer

RMS-5L+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)		
		@LO (dBm)		
		0	+3	+6
400.1	430.1	4.01	3.57	3.39
440.1	470.1	3.33	2.99	2.86
480.1	510.1	2.85	2.57	2.46
520.1	550.1	2.48	2.23	2.14
560.1	590.1	2.16	1.95	1.87
600.1	630.1	1.95	1.75	1.66
640.1	670.1	1.75	1.55	1.46
680.1	710.1	1.64	1.42	1.31
720.1	750.1	1.55	1.31	1.19
760.1	790.1	1.58	1.31	1.14
800.1	830.1	1.63	1.35	1.18
840.1	870.1	1.81	1.51	1.33
880.1	910.1	2.00	1.69	1.48
920.1	950.1	2.26	1.94	1.72
960.1	990.1	2.52	2.20	1.96
1000.1	1030.1	2.76	2.44	2.19
1040.1	1070.1	3.07	2.75	2.48
1080.1	1110.1	3.27	2.99	2.73
1120.1	1150.1	3.51	3.27	3.04
1160.1	1190.1	3.58	3.43	3.27
1200.1	1230.1	3.62	3.52	3.44
1240.1	1270.1	3.61	3.54	3.53
1280.1	1310.1	3.67	3.58	3.60
1320.1	1350.1	3.65	3.53	3.55
1360.1	1390.1	3.70	3.55	3.57
1400.1	1430.1	3.65	3.47	3.48
1440.1	1470.1	3.70	3.48	3.46
1480.1	1510.1	3.67	3.41	3.35
1520.1	1550.1	3.79	3.45	3.33
1560.1	1590.1	3.73	3.33	3.15
1600.1	1630.1	3.78	3.30	3.08
1640.1	1670.1	3.74	3.20	2.92
1680.1	1710.1	3.84	3.25	2.91
1720.1	1750.1	3.88	3.26	2.87
1760.1	1790.1	3.94	3.32	2.89
1780.1	1810.1	4.14	3.45	2.97
1820.1	1850.1	4.11	3.42	2.92
1840.1	1870.1	4.12	3.42	2.91
1880.1	1910.1	4.56	3.71	3.11
1900.1	1930.1	4.44	3.60	3.01

LO (MHz)	LO VSWR (:1)		
	@LO (dBm)		
	0	+3	+6
400.1	1.26	1.66	2.28
440.1	1.27	1.70	2.32
480.1	1.30	1.72	2.34
520.1	1.30	1.74	2.37
560.1	1.32	1.78	2.40
600.1	1.35	1.82	2.44
640.1	1.39	1.88	2.50
680.1	1.41	1.88	2.49
720.1	1.44	1.92	2.52
760.1	1.46	1.94	2.53
800.1	1.51	1.98	2.57
840.1	1.55	2.03	2.61
880.1	1.58	2.06	2.62
920.1	1.64	2.13	2.70
960.1	1.68	2.15	2.70
1000.1	1.71	2.19	2.72
1040.1	1.75	2.22	2.74
1080.1	1.77	2.23	2.73
1120.1	1.85	2.30	2.81
1160.1	1.88	2.32	2.81
1200.1	1.93	2.36	2.85
1240.1	2.00	2.43	2.90
1280.1	2.04	2.45	2.90
1320.1	2.10	2.48	2.92
1360.1	2.15	2.50	2.91
1400.1	2.20	2.52	2.91
1440.1	2.26	2.57	2.93
1480.1	2.32	2.59	2.93
1520.1	2.38	2.63	2.94
1560.1	2.43	2.64	2.92
1600.1	2.49	2.66	2.92
1640.1	2.54	2.67	2.90
1680.1	2.57	2.68	2.88
1720.1	2.64	2.71	2.89
1760.1	2.67	2.72	2.88
1780.1	2.68	2.71	2.87
1820.1	2.73	2.75	2.90
1840.1	2.76	2.76	2.89
1880.1	2.74	2.75	2.85
1900.1	2.78	2.77	2.86

IF (OUT) (MHz)	IF VSWR @LO=1400.1MHz (:1)		
	@LO (dBm)		
	0	+3	+6
10.0	2.07	1.75	1.48
29.8	1.88	1.46	1.18
49.5	1.81	1.41	1.15
69.3	1.79	1.37	1.11
89.0	1.78	1.44	1.13
108.8	1.84	1.45	1.13
128.5	1.83	1.44	1.13
148.3	1.80	1.42	1.14
168.0	1.80	1.41	1.14
187.8	1.85	1.44	1.16
207.5	1.84	1.45	1.16
227.3	1.83	1.43	1.15
247.0	1.84	1.43	1.14
266.8	1.81	1.41	1.12
286.5	1.80	1.40	1.12
306.3	1.80	1.39	1.12
326.0	1.80	1.39	1.11
345.8	1.77	1.37	1.10
365.5	1.77	1.37	1.09
385.3	1.76	1.35	1.08
405.0	1.75	1.35	1.07
424.8	1.74	1.34	1.07
444.5	1.73	1.32	1.07
464.3	1.73	1.32	1.06
484.0	1.72	1.31	1.05
503.8	1.70	1.29	1.04
523.5	1.69	1.28	1.04
543.3	1.68	1.27	1.05
563.0	1.66	1.26	1.05
582.8	1.64	1.26	1.06
602.5	1.62	1.24	1.08
622.3	1.62	1.23	1.09
642.0	1.60	1.23	1.11
661.8	1.60	1.23	1.12
681.5	1.59	1.21	1.13
701.3	1.57	1.21	1.14
721.0	1.53	1.20	1.17
740.8	1.53	1.20	1.20
780.3	1.50	1.19	1.22
800.0	1.47	1.18	1.24

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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+5	4	11	21	22	39	40	54	50	60
1	-	15	+0	25	19	38	39	43	51	55	70	67
2	112	43	33	48	35	47	55	57	72	70	71	85
3	117	76	59	61	59	65	66	73	83	73	89	84
4	116	91	94	83	78	77	74	88	87	87	93	91
5	115	96	95	102	85	90	77	91	92	110	97	99
6	109	105	111	94	100	89	90	77	84	90	95	100
7	108	100	99	100	97	97	105	89	92	83	92	100
8	120	97	99	108	98	98	99	103	92	85	86	103
9	109	98	102	95	112	102	99	100	94	88	95	94
10	124	94	102	92	106	107	94	106	100	102	88	86
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 900.1 MHz; -18.00 dBm.
 LO IN: 930.01 MHz; +3.00 dBm
 IF OUT: 29.91 MHz; -24.36 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	4	16	22	35	33	52	53	64	66	73
1	-	15	+0	26	21	41	43	54	56	68	72	77
2	99	33	25	38	26	38	49	50	64	71	72	85
3	116	54	41	40	43	59	48	58	61	59	75	73
4	111	58	65	61	63	53	60	56	66	68	83	83
5	110	69	67	73	57	55	58	59	69	68	86	72
6	107	88	79	69	86	75	61	65	67	68	81	80
7	122	101	89	86	82	97	73	73	69	74	82	80
8	105	103	111	99	94	84	93	89	75	76	81	81
9	113	109	103	124	98	94	87	97	88	82	81	89
10	107	113	108	109	110	106	108	108	111	97	94	87
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 900.1 MHz; -8.00 dBm.
 LO IN: 930.01 MHz; +3.00 dBm
 IF OUT: 29.91 MHz; -14.49 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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