Frequency Mixer SYM-EDR5126

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	6.29	5.82	5.61
90.9	120.9	6.29	5.78	5.59
171.8	201.8	6.35	5.86	5.71
252.6	282.6	6.42	5.98	5.80
333.5	363.5	6.66	6.12	5.88
414.3	444.3	6.90	6.30	6.00
495.1	525.1	7.12	6.34	5.97
576.0	606.0	7.34	6.54	6.10
656.8	686.8	7.49	6.64	6.23
737.7	767.7	7.51	6.62	6.27
818.5	848.5	7.42	6.57	6.28
899.3	929.3	7.25	6.47	6.25
980.2	1010.2	7.15	6.45	6.26
1061.0	1091.0	7.23	6.56	6.33
1141.8	1171.8	7.31	6.63	6.36
1202.5	1232.5	7.42	6.67	6.40
1283.3	1313.3	7.65	6.73	6.42
1343.9	1373.9	7.72	6.71	6.37
1424.8	1454.8	7.93	6.80	6.41
1485.4	1515.4	8.04	6.85	6.42
1566.3	1596.3	8.24	6.97	6.48
1626.9	1656.9	8.33	7.00	6.54
1707.7	1737.7	8.63	7.13	6.66
1768.4	1798.4	8.99	7.35	6.77
1849.2	1879.2	9.13	7.56	6.99
1909.8	1939.8	9.32	7.72	7.10
1990.7	2020.7	9.61	7.89	7.28
2051.3	2081.3	9.96	8.14	7.45
2132.1	2162.1	10.08	8.35	7.66
2192.8	2222.8	10.31	8.50	7.74
2273.6	2303.6	10.70	8.78	7.92
2334.2	2364.2	10.60	8.92	8.14
2415.1	2445.1	10.66	8.99	8.33
2475.7	2505.7	11.05	9.08	8.43
2556.5	2586.5	11.14	9.31	8.66
2617.2	2647.2	10.91	9.32	8.84
2698.0	2728.0	10.89	9.25	8.84
2758.6	2788.6	10.99	9.48	9.05
2839.5	2869.5	10.97	9.67	9.30
2900.1	2930.1	10.88	9.75	9.39

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
10.1	40.1	32.63	24.08	30.55
90.9	120.9	25.41	23.32	23.37
171.8	201.8	21.79	21.44	26.75
252.6	282.6	22.08	28.95	31.14
333.5	363.5	23.66	23.37	30.24
414.3	444.3	23.94	29.00	38.98
495.1	525.1	23.74	27.73	27.69
576.0	606.0	23.38	29.40	35.33
656.8	686.8	21.01	25.70	33.21
737.7	767.7	28.12	22.36	27.57
818.5	848.5	27.35	25.08	30.76
899.3	929.3	23.68	24.04	33.25
980.2	1010.2	21.61	28.15	29.78
1061.0	1091.0	24.01	26.25	28.50
1141.8	1171.8	22.88	33.74	27.27
1202.5	1232.5	23.37	25.84	30.95
1283.3	1313.3	23.38	24.10	29.03
1343.9	1373.9	21.79	26.25	28.37
1424.8	1454.8	19.98	31.60	26.48
1485.4	1515.4	19.54	24.61	28.18
1566.3	1596.3	19.26	23.13	29.17
1626.9	1656.9	19.50	27.26	29.99
1707.7	1737.7	19.40	26.58	31.16
1768.4	1798.4	19.38	29.06	28.96
1849.2	1879.2	19.21	24.87	31.74
1909.8	1939.8	18.26	22.46	30.33
1990.7	2020.7	17.36	24.05	30.54
2051.3	2081.3	17.15	21.51	30.61
2132.1	2162.1	17.77	20.41	33.49
2192.8	2222.8	18.13	24.00	32.80
2273.6	2303.6	18.73	25.98	28.16
2334.2	2364.2	20.20	24.74	27.73
2415.1	2445.1	21.17	23.54	26.41
2475.7	2505.7	19.51	24.28	25.01
2556.5	2586.5	19.16	34.13	24.53
2617.2	2647.2	19.56	24.82	25.48
2698.0	2728.0	20.42	26.37	27.14
2758.6	2788.6	21.50	26.78	28.49
2839.5	2869.5	26.42	26.64	28.20
2900.1	2930.1	30.12	23.79	28.83

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+14dBm (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	0.98	0.61	0.42
90.9	120.9	1.02	0.70	0.48
171.8	201.8	1.04	0.67	0.51
252.6	282.6	1.22	0.77	0.58
333.5	363.5	1.09	0.80	0.62
414.3	444.3	1.01	0.78	0.65
495.1	525.1	0.99	0.85	0.72
576.0	606.0	0.87	0.79	0.72
656.8	686.8	0.76	0.76	0.68
737.7	767.7	0.87	0.86	0.68
818.5	848.5	0.97	0.83	0.58
899.3	929.3	1.14	0.85	0.56
980.2	1010.2	1.37	0.84	0.55
1061.0	1091.0	1.36	0.71	0.49
1141.8	1171.8	1.22	0.60	0.43
1202.5	1232.5	1.17	0.54	0.38
1283.3	1313.3	1.04	0.52	0.37
1343.9	1373.9	1.00	0.45	0.31
1424.8	1454.8	0.81	0.40	0.26
1485.4	1515.4	0.89	0.41	0.26
1566.3	1596.3	0.82	0.41	0.26
1626.9	1656.9	0.79	0.43	0.24
1707.7	1737.7	0.68	0.43	0.22
1768.4	1798.4	0.50	0.43	0.23
1849.2	1879.2	0.51	0.38	0.23
1909.8	1939.8	0.49	0.40	0.25
1990.7	2020.7	0.49	0.48	0.28
2051.3	2081.3	0.43	0.54	0.36
2132.1	2162.1	0.57	0.52	0.40
2192.8	2222.8	0.54	0.55	0.46
2273.6	2303.6	0.48	0.49	0.44
2334.2	2364.2	0.48	0.49	0.43
2415.1	2445.1	0.41	0.49	0.44
2475.7	2505.7	0.22	0.52	0.47
2556.5	2586.5	0.11	0.46	0.50
2617.2	2647.2	0.12	0.45	0.39
2698.0	2728.0	0.25	0.64	0.44
2758.6	2788.6	0.36	0.63	0.39
2839.5	2869.5	0.57	0.58	0.34
2900.1	2930.1	0.70	0.59	0.34

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1000.1MHz (dB) @LO (dBm) +17
980.0	20.1	7.05
960.2	39.9	7.00
940.4	59.7	7.11
920.6	79.5	7.11
900.8	99.3	7.12
881.0	119.1	7.13
861.2	138.9	7.16
841.4	158.7	7.10
821.6	178.5	7.12
801.8	198.3	7.11
782.0	218.1	7.06
762.2	237.9	7.05
742.4	257.7	7.08
722.7	277.4	7.15
702.9	297.2	7.06
683.1	317.0	7.07
663.3	336.8	7.12
643.5	356.6	7.13
623.7	376.4	7.13
603.9	396.2	7.13
564.3	435.8	7.13
544.5	455.6	7.11
504.9	495.2	7.02
485.1	515.0	6.92
445.5	554.6	7.14
425.7	574.4	7.04
386.1	614.0	7.16
366.3	633.8	7.07
326.7	673.4	7.11
306.9	693.2	7.00
267.3	732.8	6.96
247.6	752.5	6.87
208.0	792.1	6.83
188.2	811.9	6.74
148.6	851.5	6.68
128.8	871.3	6.63
89.2	910.9	6.53
69.4	930.7	6.51
29.8	970.3	6.46
10.0	990.1	6.44

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +17
10.0	20.1	6.04
50.8	60.9	6.04
91.6	101.7	5.99
132.5	142.6	5.92
173.3	183.4	6.02
214.1	224.2	5.94
254.9	265.0	6.00
295.8	305.9	6.01
336.6	346.7	5.94
377.4	387.5	6.01
418.2	428.3	5.98
459.0	469.1	6.04
499.9	510.0	6.06
540.7	550.8	6.10
581.5	591.6	6.16
622.3	632.4	6.23
663.2	673.3	6.35
704.0	714.1	6.35
744.8	754.9	6.37
785.6	795.7	6.44
826.4	836.5	6.45
867.3	877.4	6.47
908.1	918.2	6.51
948.9	959.0	6.56
989.7	999.8	6.59
1030.5	1040.6	6.63
1071.4	1081.5	6.70
1112.2	1122.3	6.74
1153.0	1163.1	6.79
1193.8	1203.9	6.80
1234.7	1244.8	6.81
1255.1	1265.2	6.82
1295.9	1306.0	6.85
1316.3	1326.4	6.86
1357.1	1367.2	6.90
1377.5	1387.6	6.93
1418.4	1428.5	6.98
1438.8	1448.9	7.00
1479.6	1489.7	7.09
1500.0	1510.1	7.12

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2000.1MHz (dB) @LO (dBm) +17
1500.0	500.1	7.60
1459.2	540.9	7.74
1418.4	581.7	7.80
1377.5	622.6	7.75
1336.7	663.4	7.72
1295.9	704.2	7.70
1255.1	745.0	7.64
1214.2	785.9	7.51
1173.4	826.7	7.40
1132.6	867.5	7.31
1091.8	908.3	7.23
1051.0	949.1	7.19
1010.1	990.0	7.12
969.3	1030.8	7.08
928.5	1071.6	7.07
887.7	1112.4	7.04
846.8	1153.3	7.04
806.0	1194.1	7.06
765.2	1234.9	7.05
724.4	1275.7	7.10
683.6	1316.5	7.11
642.7	1357.4	7.14
601.9	1398.2	7.16
561.1	1439.0	7.22
520.3	1479.8	7.33
479.5	1520.6	7.37
438.6	1561.5	7.41
397.8	1602.3	7.44
357.0	1643.1	7.46
316.2	1683.9	7.51
275.3	1724.8	7.57
254.9	1745.2	7.61
214.1	1786.0	7.64
193.7	1806.4	7.65
152.9	1847.2	7.70
132.5	1867.6	7.74
91.6	1908.5	7.74
71.2	1928.9	7.77
30.4	1969.7	7.88
10.0	1990.1	7.77

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
10.1	25.26	28.16	48.29	41.21	44.89	30.92
90.9	35.87	38.99	52.13	43.20	48.03	42.25
171.8	37.61	41.15	50.18	44.55	49.69	44.74
252.6	38.35	42.09	45.18	47.30	48.99	46.20
333.5	38.48	42.51	42.70	50.35	45.93	47.08
414.3	38.36	42.38	40.91	52.28	43.78	47.43
495.1	38.17	42.54	39.51	50.31	42.28	47.97
576.0	37.64	41.78	38.88	48.70	41.99	45.97
656.8	36.92	40.45	38.42	48.02	41.17	43.31
737.7	36.39	39.96	37.62	45.74	40.24	42.35
818.5	36.14	39.03	37.19	43.77	39.49	40.61
899.3	36.04	38.20	36.78	42.07	38.83	38.98
980.2	35.30	36.99	36.32	40.71	38.06	37.51
1061.0	34.08	35.76	35.85	38.96	37.29	36.34
1141.8	32.99	34.71	35.89	37.39	36.80	35.52
1202.5	32.22	34.34	35.88	36.51	36.57	35.16
1283.3	31.15	33.59	36.13	35.98	36.52	34.61
1343.9	30.49	32.97	35.96	35.70	36.33	34.19
1424.8	29.93	32.43	36.03	35.26	36.19	33.63
1485.4	29.96	32.32	36.06	35.01	36.08	33.78
1566.3	30.34	32.52	36.11	34.49	35.65	34.16
1626.9	30.35	32.83	35.78	34.17	35.51	34.49
1707.7	30.02	32.94	35.89	33.51	35.15	35.46
1768.4	29.81	32.59	35.42	32.87	34.39	35.46
1849.2	29.67	32.16	34.53	32.08	33.35	34.50
1909.8	29.49	31.98	34.03	31.55	32.74	34.30
1990.7	29.25	31.66	33.16	31.06	32.13	33.93
2051.3	29.23	31.30	32.98	30.91	31.80	33.75
2132.1	29.23	31.16	32.32	30.72	31.24	33.34
2192.8	29.37	31.20	31.65	30.75	30.99	33.29
2273.6	29.72	31.42	31.05	30.92	30.93	33.30
2334.2	30.39	31.95	31.16	31.01	30.88	33.55
2415.1	31.23	32.85	31.49	30.72	30.85	34.20
2475.7	31.63	33.25	31.66	30.49	30.64	34.84
2556.5	33.06	34.14	31.32	29.82	30.09	35.68
2617.2	34.21	34.91	30.91	29.37	29.83	35.99
2698.0	35.07	35.11	30.43	28.81	29.50	35.41
2758.6	34.98	34.69	30.32	28.62	29.30	34.14
2839.5	34.36	34.48	30.23	28.33	29.16	32.76
2900.1	33.91	34.48	30.12	28.12	29.19	32.39

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	32.16	31.79	31.83
90.9	120.9	32.81	32.56	32.34
171.8	201.8	33.56	33.35	33.26
252.6	282.6	34.43	35.13	34.57
333.5	363.5	35.26	35.86	35.54
414.3	444.3	36.35	36.15	36.47
495.1	525.1	37.14	36.96	37.84
576.0	606.0	37.11	37.37	38.41
656.8	686.8	39.21	38.10	39.97
737.7	767.7	42.51	41.04	41.79
818.5	848.5	44.59	45.08	46.99
899.3	929.3	44.22	47.66	53.99
980.2	1010.2	44.55	47.18	49.74
1061.0	1091.0	42.48	42.91	43.07
1141.8	1171.8	40.06	39.94	39.11
1202.5	1232.5	39.06	38.29	36.07
1283.3	1313.3	38.35	36.60	34.33
1343.9	1373.9	37.90	36.21	33.96
1424.8	1454.8	37.51	35.72	33.37
1485.4	1515.4	36.67	35.26	33.06
1566.3	1596.3	35.62	35.35	32.81
1626.9	1656.9	34.65	34.93	33.05
1707.7	1737.7	33.14	35.35	32.76
1768.4	1798.4	31.65	34.78	32.55
1849.2	1879.2	30.68	34.28	32.09
1909.8	1939.8	30.11	33.82	32.08
1990.7	2020.7	29.06	32.43	31.93
2051.3	2081.3	28.29	31.37	31.58
2132.1	2162.1	28.16	30.95	31.29
2192.8	2222.8	28.25	31.01	31.76
2273.6	2303.6	28.51	31.79	32.26
2334.2	2364.2	29.10	32.58	33.27
2415.1	2445.1	29.94	34.01	35.19
2475.7	2505.7	30.71	35.43	37.15
2556.5	2586.5	32.16	37.76	39.99
2617.2	2647.2	33.84	41.09	43.31
2698.0	2728.0	35.16	43.09	47.84
2758.6	2788.6	35.48	42.19	47.92
2839.5	2869.5	36.36	41.07	44.95
2900.1	2930.1	36.62	39.51	42.83

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
10.1	40.1	1.53	1.44	1.09
90.9	120.9	1.36	1.20	1.14
171.8	201.8	1.41	1.26	1.14
252.6	282.6	1.50	1.37	1.11
333.5	363.5	1.67	1.51	1.07
414.3	444.3	1.85	1.66	1.04
495.1	525.1	2.02	1.79	1.05
576.0	606.0	2.18	1.95	1.06
656.8	686.8	2.32	2.05	1.08
737.7	767.7	2.37	2.12	1.12
818.5	848.5	2.40	2.16	1.14
899.3	929.3	2.36	2.13	1.17
980.2	1010.2	2.28	2.08	1.20
1061.0	1091.0	2.24	2.03	1.20
1141.8	1171.8	2.17	1.95	1.26
1202.5	1232.5	2.08	1.84	1.30
1283.3	1313.3	1.95	1.75	1.38
1343.9	1373.9	1.84	1.66	1.44
1424.8	1454.8	1.70	1.57	1.53
1485.4	1515.4	1.61	1.50	1.56
1566.3	1596.3	1.50	1.39	1.60
1626.9	1656.9	1.43	1.31	1.62
1707.7	1737.7	1.39	1.24	1.63
1768.4	1798.4	1.39	1.21	1.64
1849.2	1879.2	1.36	1.18	1.66
1909.8	1939.8	1.32	1.14	1.67
1990.7	2020.7	1.30	1.08	1.70
2051.3	2081.3	1.29	1.06	1.78
2132.1	2162.1	1.30	1.11	1.93
2192.8	2222.8	1.37	1.21	2.03
2273.6	2303.6	1.55	1.40	2.19
2334.2	2364.2	1.69	1.57	2.29
2415.1	2445.1	1.96	1.83	2.40
2475.7	2505.7	2.22	2.04	2.47
2556.5	2586.5	2.58	2.35	2.57
2617.2	2647.2	2.82	2.57	2.64
2698.0	2728.0	3.20	2.88	2.72
2758.6	2788.6	3.50	3.16	2.80
2839.5	2869.5	3.79	3.47	2.89
2900.1	2930.1	3.96	3.65	2.95

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
10.1	1.37	1.68	2.35
90.9	1.05	1.56	2.27
171.8	1.03	1.56	2.27
252.6	1.01	1.58	2.30
333.5	1.06	1.60	2.31
414.3	1.06	1.59	2.27
495.1	1.06	1.56	2.20
576.0	1.08	1.55	2.15
656.8	1.09	1.55	2.13
737.7	1.05	1.53	2.11
818.5	1.06	1.51	2.08
899.3	1.12	1.50	2.06
980.2	1.19	1.50	2.03
1061.0	1.25	1.51	2.01
1141.8	1.27	1.51	2.00
1202.5	1.25	1.50	1.97
1283.3	1.25	1.50	1.95
1343.9	1.27	1.52	1.95
1424.8	1.30	1.53	1.93
1485.4	1.32	1.54	1.92
1566.3	1.39	1.55	1.92
1626.9	1.44	1.55	1.92
1707.7	1.54	1.58	1.91
1768.4	1.60	1.61	1.89
1849.2	1.66	1.63	1.88
1909.8	1.71	1.63	1.85
1990.7	1.73	1.62	1.77
2051.3	1.74	1.62	1.73
2132.1	1.74	1.59	1.67
2192.8	1.75	1.56	1.59
2273.6	1.73	1.52	1.50
2334.2	1.71	1.48	1.43
2415.1	1.70	1.44	1.35
2475.7	1.70	1.41	1.28
2556.5	1.65	1.35	1.21
2617.2	1.60	1.29	1.15
2698.0	1.55	1.23	1.08
2758.6	1.49	1.18	1.03
2839.5	1.42	1.13	1.04
2900.1	1.38	1.11	1.08

IF (OUT) (MHz)	IF VSWR @LO=2000.1MHz (:1) @LO (dBm)		
	+14	+17	+20
10.0	2.26	1.51	1.32
49.7	2.21	1.48	1.19
89.5	2.23	1.50	1.20
129.2	2.21	1.50	1.24
168.9	2.18	1.46	1.26
208.7	2.19	1.47	1.30
248.4	2.14	1.42	1.31
288.1	2.13	1.41	1.38
327.9	2.07	1.39	1.41
367.6	2.01	1.34	1.47
407.3	1.99	1.33	1.52
447.1	1.91	1.29	1.57
486.8	1.87	1.25	1.65
526.5	1.86	1.25	1.68
566.3	1.77	1.19	1.75
606.0	1.77	1.19	1.81
645.7	1.76	1.19	1.85
685.5	1.67	1.13	1.90
725.2	1.71	1.16	1.93
764.9	1.65	1.12	1.97
804.7	1.61	1.11	2.02
844.4	1.64	1.13	2.06
884.1	1.56	1.09	2.05
923.9	1.56	1.11	2.07
963.6	1.54	1.10	2.04
1003.3	1.48	1.09	2.03
1043.1	1.51	1.14	2.03
1082.8	1.50	1.12	1.99
1122.5	1.43	1.12	1.93
1162.3	1.48	1.17	1.93
1202.0	1.44	1.13	1.87
1241.7	1.44	1.21	1.82
1281.5	1.52	1.21	1.81
1321.2	1.43	1.18	1.68
1360.9	1.52	1.29	1.67
1380.8	1.54	1.27	1.65
1420.5	1.48	1.24	1.55
1440.4	1.48	1.29	1.51
1480.1	1.61	1.35	1.52
1500.0	1.60	1.33	1.47

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	16	16	20	37	32	51	31	46	44	52
1	-	32	+0	36	15	31	23	39	47	42	49	61
2	>100	55	53	54	54	58	53	65	58	69	61	71
3	>100	71	66	71	56	74	61	64	59	71	66	69
4	>100	90	84	83	>92	80	89	85	90	89	>92	>92
5	>100	>92	>92	>92	92	>92	84	>92	88	>92	89	>92
6	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
7	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
8	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
9	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	92	>92
10	>100	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 1000.1 MHz; -1.00 dBm.**
LO IN: 1030.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; -7.62 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	25	27	32	54	46	62	52	66	67	70
1	-	34	+0	39	15	34	26	45	56	52	57	82
2	85	47	44	49	47	50	47	63	53	66	54	68
3	>100	56	41	55	39	55	48	51	43	56	61	59
4	>100	75	75	58	65	57	61	57	65	66	64	66
5	>100	74	69	71	59	70	57	68	58	62	60	70
6	>100	96	89	77	75	73	82	67	73	70	73	72
7	>100	85	76	92	70	77	66	76	68	72	74	69
8	>100	96	90	87	>102	84	82	79	85	81	79	80
9	>100	>102	94	95	89	97	85	102	81	100	79	88
10	>100	>102	>102	98	99	92	102	85	91	81	90	79
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 1000.1 MHz; 9.00 dBm.**
LO IN: 1030.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; 2.33 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.