Frequency Mixer SYM-ED7348/2

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	6.31	6.15	5.78
110.6	140.6	6.21	6.00	5.96
211.1	241.1	6.40	6.18	6.07
311.5	341.5	6.50	6.20	6.09
412.0	442.0	6.67	6.36	6.23
512.5	542.5	6.68	6.38	6.25
613.0	643.0	6.78	6.48	6.32
713.4	743.4	6.80	6.51	6.37
813.9	843.9	6.84	6.56	6.43
914.4	944.4	6.81	6.57	6.46
1014.9	1044.9	6.88	6.67	6.56
1115.4	1145.4	7.03	6.81	6.69
1235.9	1265.9	6.98	6.79	6.69
1336.4	1366.4	6.95	6.78	6.71
1457.0	1487.0	6.93	6.75	6.69
1557.5	1587.5	6.96	6.79	6.74
1678.0	1708.0	7.17	6.94	6.85
1778.5	1808.5	7.39	7.13	7.04
1899.1	1929.1	7.68	7.32	7.20
1999.6	2029.6	8.03	7.62	7.43
2120.1	2150.1	8.24	7.79	7.57
2220.6	2250.6	8.49	8.00	7.76
2341.2	2371.2	8.70	8.21	7.97
2441.7	2471.7	8.77	8.31	8.04
2562.3	2592.3	8.85	8.41	8.12
2662.7	2692.7	9.00	8.57	8.34
2783.3	2813.3	9.09	8.69	8.49
2883.8	2913.8	9.13	8.75	8.56
3004.4	3034.4	9.29	8.87	8.67
3104.8	3134.8	9.40	9.00	8.80
3225.4	3255.4	9.17	8.75	8.55
3325.9	3355.9	9.30	8.81	8.55
3446.5	3476.5	9.20	8.76	8.51
3546.9	3576.9	9.37	8.93	8.66
3667.5	3697.5	9.82	9.32	8.98
3768.0	3798.0	10.05	9.52	9.16
3888.6	3918.6	10.45	9.78	9.37
3989.0	4019.0	10.80	10.02	9.52
4109.6	4139.6	11.08	10.18	9.63
4210.1	4240.1	11.54	10.40	9.81

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
10.1	40.1	30.89	32.24	27.51
110.6	140.6	21.57	22.10	24.63
211.1	241.1	21.65	23.39	24.60
311.5	341.5	22.18	23.20	27.55
412.0	442.0	21.89	25.65	33.42
512.5	542.5	23.46	28.75	28.31
613.0	643.0	25.41	26.97	25.57
713.4	743.4	28.96	27.02	26.00
813.9	843.9	28.20	25.30	24.31
914.4	944.4	24.04	23.65	24.02
1014.9	1044.9	23.52	23.37	24.13
1115.4	1145.4	22.47	22.56	23.54
1235.9	1265.9	21.97	22.06	22.77
1336.4	1366.4	21.02	21.96	22.52
1457.0	1487.0	19.98	21.48	22.83
1557.5	1587.5	20.47	21.06	22.01
1678.0	1708.0	23.16	22.92	23.70
1778.5	1808.5	28.87	26.12	25.94
1899.1	1929.1	23.43	28.28	30.66
1999.6	2029.6	22.48	26.82	32.86
2120.1	2150.1	24.10	28.68	28.53
2220.6	2250.6	26.31	28.71	27.84
2341.2	2371.2	24.08	23.85	24.15
2441.7	2471.7	22.37	22.79	23.23
2562.3	2592.3	21.71	22.04	22.28
2662.7	2692.7	21.25	22.04	22.33
2783.3	2813.3	21.02	21.87	22.06
2883.8	2913.8	20.77	21.58	22.14
3004.4	3034.4	20.70	21.09	22.19
3104.8	3134.8	21.60	20.83	21.30
3225.4	3255.4	21.12	20.68	20.84
3325.9	3355.9	20.88	21.31	21.04
3446.5	3476.5	20.35	21.46	21.22
3546.9	3576.9	19.07	20.97	21.18
3667.5	3697.5	18.49	20.24	21.56
3768.0	3798.0	18.14	19.77	21.74
3888.6	3918.6	18.33	19.93	22.16
3989.0	4019.0	18.11	18.98	20.96
4109.6	4139.6	17.20	18.44	20.39
4210.1	4240.1	16.38	17.56	19.26

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+10dBm (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	0.44	0.54	0.04
110.6	140.6	0.57	0.35	0.24
211.1	241.1	0.54	0.35	0.21
311.5	341.5	0.59	0.44	0.30
412.0	442.0	0.62	0.45	0.30
512.5	542.5	0.75	0.58	0.38
613.0	643.0	0.78	0.59	0.41
713.4	743.4	0.82	0.60	0.43
813.9	843.9	0.77	0.55	0.36
914.4	944.4	0.74	0.52	0.37
1014.9	1044.9	0.67	0.49	0.35
1115.4	1145.4	0.51	0.37	0.27
1235.9	1265.9	0.45	0.33	0.26
1336.4	1366.4	0.39	0.27	0.22
1457.0	1487.0	0.33	0.22	0.18
1557.5	1587.5	0.33	0.20	0.15
1678.0	1708.0	0.28	0.17	0.12
1778.5	1808.5	0.32	0.21	0.13
1899.1	1929.1	0.35	0.25	0.18
1999.6	2029.6	0.32	0.25	0.20
2120.1	2150.1	0.39	0.35	0.26
2220.6	2250.6	0.40	0.32	0.28
2341.2	2371.2	0.41	0.33	0.28
2441.7	2471.7	0.40	0.34	0.31
2562.3	2592.3	0.46	0.40	0.40
2662.7	2692.7	0.44	0.34	0.37
2783.3	2813.3	0.44	0.34	0.32
2883.8	2913.8	0.46	0.34	0.33
3004.4	3034.4	0.47	0.35	0.30
3104.8	3134.8	0.49	0.36	0.33
3225.4	3255.4	0.58	0.38	0.33
3325.9	3355.9	0.59	0.43	0.31
3446.5	3476.5	0.85	0.52	0.41
3546.9	3576.9	0.86	0.51	0.38
3667.5	3697.5	0.92	0.51	0.36
3768.0	3798.0	1.04	0.57	0.41
3888.6	3918.6	1.15	0.57	0.38
3989.0	4019.0	1.11	0.54	0.35
4109.6	4139.6	1.29	0.67	0.44
4210.1	4240.1	1.32	0.76	0.45

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1322.6MHz (dB) @LO (dBm) +17
1310.1	12.5	7.84
1270.1	52.5	7.80
1230.1	92.5	7.82
1190.1	132.5	7.74
1150.1	172.5	7.71
1110.1	212.5	7.67
1070.1	252.5	7.63
1030.1	292.5	7.60
990.1	332.5	7.47
950.1	372.5	7.47
910.1	412.5	7.43
870.1	452.5	7.37
830.1	492.5	7.31
790.1	532.5	7.25
750.1	572.5	7.27
730.1	592.5	7.19
690.1	632.5	7.19
670.1	652.5	7.25
630.1	692.5	7.08
610.1	712.5	7.15
570.1	752.5	7.10
550.1	772.5	7.12
510.1	812.5	7.07
490.1	832.5	7.03
450.1	872.5	7.06
430.1	892.5	6.92
390.1	932.5	7.00
370.1	952.5	7.01
330.1	992.5	6.98
310.1	1012.5	6.97
270.1	1052.5	6.93
250.1	1072.5	6.91
210.1	1112.5	6.81
190.1	1132.5	6.86
150.1	1172.5	6.83
130.1	1192.5	6.80
90.1	1232.5	6.82
70.1	1252.5	6.81
30.1	1292.5	6.81
10.1	1312.5	7.24

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=489.9MHz (dB) @LO (dBm) +17
10.2	500.1	6.77
110.2	600.1	6.29
210.2	700.1	6.31
310.2	800.1	6.34
410.2	900.1	6.37
510.2	1000.1	6.37
610.2	1100.1	6.51
710.2	1200.1	6.78
810.2	1300.1	6.97
910.2	1400.1	6.99
1010.2	1500.1	6.98
1110.2	1600.1	6.95
1210.2	1700.1	7.00
1310.2	1800.1	7.02
1410.2	1900.1	6.99
1510.2	2000.1	7.04
1610.2	2100.1	7.16
1710.2	2200.1	7.25
1810.2	2300.1	7.28
1910.2	2400.1	7.38
1990.2	2480.1	7.50
2090.2	2580.1	7.79
2170.2	2660.1	7.92
2270.2	2760.1	8.25
2350.2	2840.1	8.45
2450.2	2940.1	8.71
2530.2	3020.1	8.90
2630.2	3120.1	8.90
2710.2	3200.1	8.82
2810.2	3300.1	8.91
2890.2	3380.1	8.87
2990.2	3480.1	8.75
3070.2	3560.1	8.60
3170.2	3660.1	8.65
3250.2	3740.1	8.79
3350.2	3840.1	8.91
3430.2	3920.1	9.00
3530.2	4020.1	9.36
3610.2	4100.1	9.67
3710.2	4200.1	10.07

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2635.1MHz (dB) @LO (dBm) +17
2620.1	15.0	10.14
2560.3	74.8	10.05
2500.6	134.5	10.05
2440.8	194.3	9.87
2381.0	254.1	9.94
2321.2	313.9	9.92
2261.5	373.6	9.85
2201.7	433.4	9.86
2141.9	493.2	9.69
2082.2	552.9	9.75
2022.4	612.7	9.67
1962.6	672.5	9.65
1882.9	752.2	9.59
1823.2	811.9	9.50
1743.5	891.6	9.35
1683.7	951.4	9.23
1604.0	1031.1	9.16
1544.2	1090.9	9.09
1464.5	1170.6	9.05
1404.8	1230.3	9.05
1325.1	1310.0	8.98
1265.3	1369.8	8.94
1185.6	1449.5	8.85
1125.8	1509.3	8.87
1046.1	1589.0	8.89
986.4	1648.7	8.92
906.7	1728.4	9.00
846.9	1788.2	9.09
767.2	1867.9	9.12
707.4	1927.7	9.07
627.7	2007.4	9.11
568.0	2067.1	9.11
488.3	2146.8	8.96
428.5	2206.6	8.80
348.8	2286.3	8.70
289.0	2346.1	8.59
209.3	2425.8	8.58
149.6	2485.5	8.54
69.9	2565.2	8.53
10.1	2625.0	8.99

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
40.1	37.35	40.60	43.64	46.09	50.12	53.30
140.6	40.45	43.81	47.01	46.97	47.93	46.99
241.1	42.06	45.68	49.44	46.24	44.04	42.48
341.5	42.51	46.90	51.64	44.08	41.22	39.82
442.0	43.93	49.32	55.51	41.98	39.16	37.66
542.5	44.67	51.52	66.33	40.60	37.83	36.17
643.0	45.47	52.38	57.09	39.49	36.74	35.36
743.4	44.48	49.02	50.22	38.61	35.97	34.46
843.9	43.21	45.44	45.63	38.36	35.77	34.38
944.4	41.48	42.71	42.73	37.81	35.56	34.18
1044.9	39.71	40.24	40.07	37.15	35.24	34.14
1145.4	38.33	38.60	38.48	37.16	35.56	34.37
1265.9	37.12	37.40	37.25	36.92	35.81	34.78
1366.4	35.96	36.07	36.21	36.31	35.77	35.16
1487.0	35.41	35.31	35.36	35.93	35.92	35.45
1587.5	35.37	35.57	35.30	36.13	36.70	36.35
1708.0	34.52	35.24	35.43	36.74	37.82	37.54
1808.5	33.66	34.95	35.53	36.69	38.71	39.17
1929.1	32.51	33.34	34.22	37.25	40.00	41.48
2029.6	32.15	33.35	34.49	37.46	41.40	44.11
2150.1	31.14	32.41	33.60	37.24	41.56	46.75
2250.6	30.73	31.66	32.77	36.98	40.67	44.95
2371.2	30.57	31.52	32.57	36.75	40.20	43.93
2471.7	30.54	31.71	32.74	37.19	40.91	45.15
2592.3	30.41	31.45	32.62	38.14	41.96	46.00
2692.7	30.78	31.52	32.74	39.73	43.89	48.03
2813.3	31.07	32.13	33.41	43.93	48.45	47.10
2913.8	31.08	32.55	34.10	49.06	48.02	43.71
3034.4	30.89	32.50	34.18	50.66	43.80	40.06
3134.8	31.08	32.69	34.42	49.74	42.48	39.47
3255.4	32.00	33.70	35.63	42.60	39.29	37.50
3355.9	31.82	33.66	35.67	39.56	36.92	35.48
3476.5	33.94	36.38	38.80	37.98	36.15	35.00
3576.9	32.54	35.14	37.85	35.63	34.56	33.85
3697.5	33.23	36.38	39.24	34.73	34.33	33.38
3798.0	32.70	35.94	38.97	34.18	34.22	33.57
3918.6	32.07	34.57	36.77	33.55	33.97	33.93
4019.0	32.58	35.20	37.31	32.78	33.49	33.70
4139.6	32.38	35.54	38.63	30.99	32.06	32.40
4240.1	32.20	36.25	41.30	29.83	30.90	31.60

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	31.73	31.39	31.85
110.6	140.6	33.29	34.18	34.80
211.1	241.1	34.33	35.29	35.71
311.5	341.5	36.44	36.44	36.86
412.0	442.0	37.58	38.33	39.09
512.5	542.5	38.79	39.46	39.19
613.0	643.0	41.18	40.73	41.05
713.4	743.4	43.39	41.93	42.60
813.9	843.9	45.22	44.52	42.88
914.4	944.4	53.72	48.45	48.45
1014.9	1044.9	61.27	62.19	52.67
1115.4	1145.4	56.18	60.70	66.12
1235.9	1265.9	47.73	47.80	48.40
1336.4	1366.4	46.19	47.00	48.26
1457.0	1487.0	45.59	45.69	47.01
1557.5	1587.5	43.14	43.43	44.90
1678.0	1708.0	40.78	41.77	43.11
1778.5	1808.5	39.80	40.30	41.20
1899.1	1929.1	38.49	38.60	39.67
1999.6	2029.6	37.55	37.77	37.62
2120.1	2150.1	35.36	35.35	35.51
2220.6	2250.6	33.81	34.29	34.98
2341.2	2371.2	34.12	34.60	35.42
2441.7	2471.7	34.63	34.40	34.31
2562.3	2592.3	35.70	36.04	36.43
2662.7	2692.7	37.14	36.97	36.65
2783.3	2813.3	34.06	33.75	33.55
2883.8	2913.8	35.56	34.73	33.75
3004.4	3034.4	38.80	37.22	35.96
3104.8	3134.8	39.68	39.14	38.84
3225.4	3255.4	38.18	37.69	37.29
3325.9	3355.9	37.24	36.71	35.81
3446.5	3476.5	34.85	34.28	33.50
3546.9	3576.9	35.48	34.58	33.80
3667.5	3697.5	36.48	36.06	35.97
3768.0	3798.0	35.51	35.04	35.19
3888.6	3918.6	34.19	34.04	33.70
3989.0	4019.0	32.39	32.23	31.74
4109.6	4139.6	29.30	29.25	28.94
4210.1	4240.1	26.29	26.45	26.22

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
10.1	40.1	1.32	1.35	1.31
110.6	140.6	1.22	1.14	1.09
211.1	241.1	1.26	1.19	1.14
311.5	341.5	1.33	1.25	1.20
412.0	442.0	1.43	1.34	1.29
512.5	542.5	1.52	1.44	1.38
613.0	643.0	1.62	1.53	1.47
713.4	743.4	1.70	1.61	1.54
813.9	843.9	1.75	1.65	1.59
914.4	944.4	1.75	1.67	1.60
1014.9	1044.9	1.73	1.65	1.59
1115.4	1145.4	1.69	1.61	1.55
1235.9	1265.9	1.59	1.52	1.47
1336.4	1366.4	1.46	1.40	1.35
1457.0	1487.0	1.32	1.25	1.20
1557.5	1587.5	1.25	1.17	1.12
1678.0	1708.0	1.18	1.10	1.04
1778.5	1808.5	1.15	1.06	1.02
1899.1	1929.1	1.14	1.07	1.03
1999.6	2029.6	1.17	1.11	1.09
2120.1	2150.1	1.22	1.18	1.16
2220.6	2250.6	1.37	1.34	1.31
2341.2	2371.2	1.60	1.56	1.54
2441.7	2471.7	1.80	1.76	1.73
2562.3	2592.3	2.07	2.02	1.97
2662.7	2692.7	2.25	2.20	2.15
2783.3	2813.3	2.40	2.34	2.29
2883.8	2913.8	2.50	2.44	2.38
3004.4	3034.4	2.58	2.49	2.42
3104.8	3134.8	2.67	2.57	2.49
3225.4	3255.4	2.75	2.61	2.50
3325.9	3355.9	2.83	2.67	2.52
3446.5	3476.5	2.86	2.68	2.53
3546.9	3576.9	2.81	2.63	2.48
3667.5	3697.5	2.76	2.57	2.39
3768.0	3798.0	2.71	2.51	2.33
3888.6	3918.6	2.64	2.42	2.23
3989.0	4019.0	2.62	2.39	2.20
4109.6	4139.6	2.51	2.29	2.11
4210.1	4240.1	2.44	2.22	2.06

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
40.1	1.77	2.56	3.51
140.6	1.69	2.43	3.31
241.1	1.65	2.35	3.18
341.5	1.62	2.29	3.08
442.0	1.60	2.24	2.98
542.5	1.57	2.18	2.89
643.0	1.54	2.13	2.79
743.4	1.51	2.07	2.70
843.9	1.47	2.01	2.60
944.4	1.43	1.95	2.51
1044.9	1.40	1.89	2.42
1145.4	1.38	1.85	2.35
1265.9	1.34	1.80	2.29
1366.4	1.33	1.78	2.26
1487.0	1.33	1.78	2.27
1587.5	1.34	1.78	2.26
1708.0	1.34	1.77	2.23
1808.5	1.33	1.75	2.20
1929.1	1.31	1.72	2.17
2029.6	1.28	1.68	2.10
2150.1	1.23	1.60	2.00
2250.6	1.17	1.51	1.87
2371.2	1.11	1.40	1.71
2471.7	1.06	1.33	1.61
2592.3	1.03	1.29	1.53
2692.7	1.08	1.29	1.51
2813.3	1.14	1.32	1.51
2913.8	1.21	1.37	1.55
3034.4	1.28	1.44	1.59
3134.8	1.35	1.51	1.65
3255.4	1.43	1.59	1.73
3355.9	1.48	1.64	1.78
3476.5	1.55	1.71	1.85
3576.9	1.60	1.75	1.88
3697.5	1.65	1.79	1.90
3798.0	1.69	1.83	1.93
3918.6	1.76	1.89	1.99
4019.0	1.82	1.94	2.03
4139.6	1.90	2.01	2.11
4240.1	1.94	2.04	2.13

IF (OUT) (MHz)	IF VSWR @LO=2625MHz (:1) @LO (dBm)		
	+14	+17	+20
10.0	1.16	1.04	1.11
70.6	1.15	1.05	1.12
131.2	1.14	1.08	1.15
191.7	1.16	1.11	1.16
252.3	1.17	1.15	1.21
312.9	1.17	1.17	1.24
373.5	1.18	1.19	1.27
434.1	1.20	1.23	1.30
494.7	1.19	1.24	1.32
555.2	1.19	1.26	1.35
615.8	1.21	1.28	1.38
676.4	1.20	1.30	1.40
737.0	1.22	1.33	1.43
797.6	1.25	1.38	1.49
858.1	1.26	1.40	1.52
918.7	1.29	1.43	1.56
999.5	1.32	1.47	1.61
1060.1	1.35	1.51	1.65
1140.9	1.36	1.51	1.65
1201.4	1.40	1.56	1.70
1282.2	1.42	1.58	1.72
1342.8	1.43	1.58	1.73
1423.6	1.44	1.59	1.73
1484.1	1.43	1.57	1.71
1564.9	1.44	1.58	1.70
1625.5	1.43	1.55	1.65
1706.3	1.44	1.54	1.63
1766.9	1.41	1.49	1.58
1847.6	1.47	1.53	1.61
1908.2	1.52	1.57	1.63
1989.0	1.63	1.66	1.70
2049.6	1.71	1.72	1.74
2130.3	1.87	1.86	1.87
2190.9	2.00	1.99	1.99
2271.7	2.20	2.16	2.15
2332.3	2.29	2.25	2.23
2413.1	2.43	2.38	2.34
2473.6	2.59	2.53	2.49
2554.4	2.73	2.66	2.61
2615.0	2.87	2.82	2.78

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+23	+17	+14	2	+3	13	+8	10	10	13
1	-	3	+0	6	+20	23	+7	21	+0	13	14	22
2	66	32	30	>48	31	32	28	35	31	31	30	39
3	>90	>48	25	>48	>48	>48	31	>48	40	>48	44	47
4	>90	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48
5	>90	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48
6	>90	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48
7	>90	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48
8	>90	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48
9	>90	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48
10	>90	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48	>48
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 1562.5 MHz; -5.00 dBm.**
LO IN: 1592.5 MHz; +17.00 dBm
IF OUT: 30 MHz; -42.37 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+9	+2	3	17	14	28	8	30	22	32
1	-	8	+0	10	+15	33	+1	28	6	21	20	30
2	47	31	23	52	28	26	26	30	37	28	31	38
3	87	32	8	30	34	34	15	47	27	45	28	35
4	>90	47	39	35	37	55	38	46	46	52	50	44
5	>90	61	40	45	29	42	47	47	31	>62	42	57
6	>90	>62	51	60	48	46	47	>62	47	55	59	61
7	>90	>62	58	>62	54	56	47	57	62	>62	49	>62
8	>90	62	>62	>62	62	>62	57	57	55	>62	57	>62
9	>90	>62	>62	>62	>62	>62	>62	>62	>62	>62	>62	>62
10	>90	>62	>62	>62	>62	>62	>62	>62	>62	>62	>62	>62
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 1562.5 MHz; 5.00 dBm.**
LO IN: 1592.5 MHz; +17.00 dBm
IF OUT: 30 MHz; -27.61 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.