Frequency Mixer ZLW-1W+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	5.71	5.63	5.34
40.1	70.1	5.97	5.65	5.46
70.1	100.1	6.00	5.69	5.56
100.1	130.1	6.04	5.76	5.63
130.1	160.1	5.98	5.69	5.55
160.1	190.1	5.97	5.71	5.57
190.1	220.1	5.95	5.72	5.61
220.1	250.1	5.92	5.68	5.56
250.1	280.1	5.91	5.68	5.56
280.1	310.1	5.87	5.67	5.59
310.1	340.1	5.84	5.65	5.56
340.1	370.1	5.94	5.69	5.57
370.1	400.1	5.97	5.74	5.61
400.1	430.1	6.01	5.77	5.64
430.1	460.1	5.98	5.75	5.63
460.1	490.1	6.08	5.91	5.81
490.1	520.1	6.13	5.95	5.87
520.1	550.1	6.20	6.03	5.96
550.1	580.1	6.28	6.14	6.07
580.1	610.1	6.40	6.22	6.10
610.1	640.1	6.50	6.25	6.09
640.1	670.1	6.62	6.29	6.11
670.1	700.1	6.84	6.42	6.19
700.1	730.1	7.00	6.49	6.18
730.1	760.1	7.18	6.59	6.20
760.1	790.1	7.42	6.75	6.26
800.1	830.1	7.61	6.93	6.40
830.1	860.1	7.62	6.91	6.37
870.1	900.1	7.83	7.08	6.52
900.1	930.1	7.93	7.14	6.59
940.1	970.1	8.00	7.18	6.65
970.1	1000.1	8.07	7.26	6.75
1010.1	1040.1	8.57	7.74	7.21
1040.1	1070.1	9.21	8.39	7.84
1080.1	1110.1	10.21	9.56	9.05
1110.1	1140.1	10.61	10.14	9.78
1150.1	1180.1	10.89	10.59	10.36
1180.1	1210.1	11.07	10.82	10.62
1220.1	1250.1	11.44	11.21	11.04
1250.1	1280.1	11.76	11.54	11.39

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+4	+7	+10
10.1	40.1	15.23	16.03	15.77
40.1	70.1	14.76	14.91	14.57
70.1	100.1	13.02	13.74	17.18
100.1	130.1	12.06	15.37	21.19
130.1	160.1	13.80	19.69	20.53
160.1	190.1	15.34	21.15	21.21
190.1	220.1	18.36	18.75	17.62
220.1	250.1	18.55	19.16	18.23
250.1	280.1	19.66	19.99	21.22
280.1	310.1	13.80	14.61	15.50
310.1	340.1	10.17	10.85	12.77
340.1	370.1	11.11	11.05	12.81
370.1	400.1	20.27	18.26	21.19
400.1	430.1	19.39	17.98	17.42
430.1	460.1	15.48	18.19	21.19
460.1	490.1	12.36	12.62	14.74
490.1	520.1	10.91	11.69	13.40
520.1	550.1	9.59	10.99	13.22
550.1	580.1	8.81	10.54	12.70
580.1	610.1	7.75	10.56	13.98
610.1	640.1	6.40	9.71	13.98
640.1	670.1	5.79	8.89	12.26
670.1	700.1	5.35	8.70	11.62
700.1	730.1	4.39	8.21	12.15
730.1	760.1	3.41	6.89	11.96
760.1	790.1	2.63	5.75	10.14
800.1	830.1	3.03	6.21	10.94
830.1	860.1	3.93	7.01	12.30
870.1	900.1	5.13	8.17	12.35
900.1	930.1	5.53	8.52	11.17
940.1	970.1	6.39	9.51	11.93
970.1	1000.1	7.28	10.54	13.28
1010.1	1040.1	7.78	11.07	13.57
1040.1	1070.1	7.53	10.42	12.93
1080.1	1110.1	7.33	9.17	11.01
1110.1	1140.1	8.16	9.64	11.14
1150.1	1180.1	10.50	11.77	13.06
1180.1	1210.1	12.61	13.31	14.34
1220.1	1250.1	16.45	15.10	15.68
1250.1	1280.1	17.80	16.57	16.30

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	1.15	0.59	0.43
40.1	70.1	0.89	0.68	0.50
70.1	100.1	0.92	0.66	0.51
100.1	130.1	0.84	0.58	0.41
130.1	160.1	0.86	0.61	0.42
160.1	190.1	0.83	0.57	0.41
190.1	220.1	0.83	0.52	0.38
220.1	250.1	0.77	0.52	0.37
250.1	280.1	0.73	0.49	0.35
280.1	310.1	0.76	0.52	0.37
310.1	340.1	0.74	0.51	0.38
340.1	370.1	0.63	0.45	0.33
370.1	400.1	0.68	0.50	0.41
400.1	430.1	0.71	0.51	0.41
430.1	460.1	0.82	0.60	0.44
460.1	490.1	0.94	0.68	0.50
490.1	520.1	1.03	0.74	0.53
520.1	550.1	1.19	0.85	0.62
550.1	580.1	1.33	0.95	0.69
580.1	610.1	1.44	1.04	0.78
610.1	640.1	1.56	1.16	0.92
640.1	670.1	1.66	1.25	0.99
670.1	700.1	1.73	1.32	1.01
700.1	730.1	1.76	1.41	1.08
730.1	760.1	1.76	1.44	1.13
760.1	790.1	1.70	1.45	1.17
800.1	830.1	1.60	1.41	1.20
830.1	860.1	1.70	1.56	1.38
870.1	900.1	1.57	1.49	1.34
900.1	930.1	1.56	1.51	1.39
940.1	970.1	1.70	1.71	1.59
970.1	1000.1	1.82	1.89	1.80
1010.1	1040.1	1.68	1.88	1.91
1040.1	1070.1	1.30	1.58	1.70
1080.1	1110.1	0.60	0.79	0.95
1110.1	1140.1	0.35	0.38	0.44
1150.1	1180.1	0.31	0.23	0.18
1180.1	1210.1	0.29	0.18	0.12
1220.1	1250.1	0.23	0.13	0.09
1250.1	1280.1	0.20	0.12	0.08

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=375.1MHz (dB) @LO (dBm) +7
365.0	10.1	6.05
355.9	19.2	5.97
346.8	28.3	5.96
337.7	37.4	5.92
328.6	46.5	5.86
319.5	55.6	5.84
310.4	64.7	5.78
301.3	73.8	5.76
292.2	82.9	5.75
283.1	92.0	5.69
274.0	101.1	5.67
264.9	110.2	5.63
255.8	119.3	5.61
246.7	128.4	5.64
237.6	137.5	5.61
228.5	146.6	5.63
219.4	155.7	5.61
210.3	164.8	5.60
201.2	173.9	5.64
192.1	183.0	5.59
182.9	192.2	5.65
173.8	201.3	5.62
164.7	210.4	5.61
155.6	219.5	5.67
146.5	228.6	5.67
137.4	237.7	5.68
128.3	246.8	5.64
119.2	255.9	5.61
110.1	265.0	5.64
101.0	274.1	5.62
91.9	283.2	5.64
82.8	292.3	5.65
73.7	301.4	5.65
64.6	310.5	5.66
55.5	319.6	5.65
46.4	328.7	5.67
37.3	337.8	5.68
28.2	346.9	5.67
19.1	356.0	5.72
10.0	365.1	5.83

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +7
10.0	20.1	5.77
50.0	60.1	5.66
90.0	100.1	5.72
130.0	140.1	5.85
170.0	180.1	5.74
210.0	220.1	5.61
250.0	260.1	5.86
290.0	300.1	5.94
330.0	340.1	5.98
370.0	380.1	5.50
410.0	420.1	5.98
450.0	460.1	6.37
490.0	500.1	6.53
530.0	540.1	6.66
570.0	580.1	6.47
610.0	620.1	5.98
650.0	660.1	5.88
690.0	700.1	5.92
730.0	740.1	5.80
770.0	780.1	5.67
810.0	820.1	5.89
850.0	860.1	5.79
890.0	900.1	5.76
930.0	940.1	5.75
970.0	980.1	5.46
1010.0	1020.1	5.55
1050.0	1060.1	5.65
1090.0	1100.1	5.98
1130.0	1140.1	5.85
1170.0	1180.1	6.21
1210.0	1220.1	6.66
1250.0	1260.1	6.78
1290.0	1300.1	7.14
1330.0	1340.1	7.36
1370.0	1380.1	7.79
1410.0	1420.1	8.56
1450.0	1460.1	9.20
1490.0	1500.1	9.49
1530.0	1540.1	10.19
1550.0	1560.1	10.42

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=750.1MHz (dB) @LO (dBm) +7
740.0	10.1	7.30
720.0	30.1	7.20
700.0	50.1	7.15
680.0	70.1	7.04
660.0	90.1	6.98
640.0	110.1	6.92
620.0	130.1	6.94
600.0	150.1	6.88
580.0	170.1	6.92
560.0	190.1	6.85
540.0	210.1	6.85
520.0	230.1	6.86
500.0	250.1	6.89
480.0	270.1	7.00
460.0	290.1	6.98
440.0	310.1	6.98
420.0	330.1	6.94
400.0	350.1	6.92
380.0	370.1	6.93
360.0	390.1	6.89
340.0	410.1	6.95
320.0	430.1	6.95
300.0	450.1	6.89
280.0	470.1	6.83
260.0	490.1	6.77
240.0	510.1	6.70
220.0	530.1	6.74
200.0	550.1	6.67
180.0	570.1	6.62
160.0	590.1	6.46
140.0	610.1	6.40
130.0	620.1	6.43
110.0	640.1	6.38
100.0	650.1	6.41
80.0	670.1	6.44
70.0	680.1	6.33
50.0	700.1	6.31
40.0	710.1	6.28
20.0	730.1	6.29
10.0	740.1	6.55

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+4	+7	+10	+4	+7	+10
40.1	62.17	64.86	66.46	67.21	64.48	62.75
70.1	59.96	63.02	64.73	63.25	60.40	58.69
100.1	58.85	60.78	62.83	61.41	58.54	57.25
130.1	57.06	59.21	61.53	59.28	56.96	55.41
160.1	55.28	57.65	59.56	57.62	55.59	54.01
190.1	54.02	56.10	58.03	56.30	54.49	52.76
220.1	53.01	54.62	56.24	53.97	52.80	51.36
250.1	52.00	54.09	55.98	51.57	50.65	49.63
280.1	51.16	53.02	54.19	49.38	49.55	49.58
310.1	49.61	51.26	52.89	48.00	48.01	46.95
340.1	48.97	50.17	51.38	45.23	47.17	48.33
370.1	48.96	51.00	52.57	43.12	43.68	44.88
400.1	48.46	50.05	51.72	42.79	42.41	41.91
430.1	48.57	49.38	50.00	41.84	43.89	44.12
460.1	48.33	49.16	49.66	40.25	42.03	43.59
490.1	47.45	49.68	51.22	39.44	41.19	43.19
520.1	45.19	46.46	47.70	39.03	40.27	42.10
550.1	44.24	45.39	46.74	38.58	38.16	38.54
580.1	44.36	45.70	46.89	39.41	38.55	37.65
610.1	42.34	43.54	44.96	39.04	39.93	39.12
640.1	41.47	43.39	45.82	36.53	38.84	39.99
670.1	42.35	44.93	47.39	34.62	36.75	38.94
700.1	41.43	43.23	44.87	33.30	35.26	37.55
730.1	40.70	42.31	43.99	32.54	34.38	36.44
760.1	40.45	42.00	43.73	31.72	33.37	35.03
790.1	40.35	42.16	44.14	30.67	32.04	33.38
830.1	41.52	44.39	47.76	28.89	30.01	31.62
860.1	42.49	46.01	49.90	28.88	29.69	31.33
900.1	41.70	43.73	45.59	29.85	30.47	31.64
930.1	40.60	42.02	43.41	31.09	31.63	32.62
970.1	40.02	41.38	43.01	33.14	33.81	34.73
1000.1	40.32	42.14	44.32	34.96	35.81	36.60
1040.1	41.65	44.22	46.99	34.17	34.89	35.63
1070.1	40.96	42.65	44.28	31.43	32.09	33.01
1110.1	39.82	40.74	41.98	29.00	29.72	30.69
1140.1	41.95	42.47	43.41	27.84	28.69	29.73
1180.1	43.80	44.05	44.62	27.41	28.42	29.44
1210.1	43.48	43.89	44.36	27.75	28.78	29.68
1250.1	43.49	43.85	44.11	28.79	29.64	30.28
1280.1	43.70	44.11	44.23	29.69	30.39	30.83

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	48.19	48.60	48.57
40.1	70.1	40.71	40.97	40.40
70.1	100.1	37.02	36.91	37.22
100.1	130.1	34.92	35.06	35.27
130.1	160.1	33.62	33.92	33.97
160.1	190.1	32.61	33.01	33.24
190.1	220.1	31.96	32.26	32.77
220.1	250.1	32.61	32.74	32.81
250.1	280.1	33.32	34.03	34.29
280.1	310.1	32.92	34.38	35.73
310.1	340.1	32.96	33.98	34.77
340.1	370.1	33.24	33.74	33.78
370.1	400.1	32.31	32.48	32.71
400.1	430.1	32.87	33.76	34.85
430.1	460.1	31.88	33.41	34.84
460.1	490.1	28.29	28.73	29.14
490.1	520.1	25.84	25.72	25.64
520.1	550.1	24.37	24.16	23.98
550.1	580.1	22.78	22.46	22.23
580.1	610.1	21.78	21.38	21.12
610.1	640.1	21.33	20.83	20.55
640.1	670.1	20.85	20.18	19.73
670.1	700.1	20.56	19.84	19.39
700.1	730.1	20.71	20.06	19.57
730.1	760.1	20.92	20.38	19.97
760.1	790.1	20.97	20.69	20.49
800.1	830.1	20.90	20.82	20.80
830.1	860.1	20.16	20.02	19.86
870.1	900.1	19.41	19.25	19.04
900.1	930.1	19.00	18.84	18.62
940.1	970.1	18.17	18.03	17.89
970.1	1000.1	17.31	17.22	17.08
1010.1	1040.1	16.21	16.11	15.97
1040.1	1070.1	15.46	15.35	15.23
1080.1	1110.1	14.64	14.57	14.49
1110.1	1140.1	13.94	13.84	13.74
1150.1	1180.1	12.84	12.60	12.43
1180.1	1210.1	12.25	11.97	11.77
1220.1	1250.1	11.63	11.34	11.12
1250.1	1280.1	11.23	10.92	10.71

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+4	+7	+10
10.1	40.1	1.22	1.24	1.31
40.1	70.1	1.03	1.07	1.11
70.1	100.1	1.06	1.08	1.13
100.1	130.1	1.05	1.11	1.18
130.1	160.1	1.11	1.18	1.24
160.1	190.1	1.12	1.18	1.24
190.1	220.1	1.12	1.19	1.26
220.1	250.1	1.16	1.23	1.29
250.1	280.1	1.18	1.26	1.32
280.1	310.1	1.17	1.26	1.33
310.1	340.1	1.17	1.26	1.32
340.1	370.1	1.18	1.24	1.29
370.1	400.1	1.20	1.26	1.31
400.1	430.1	1.25	1.33	1.39
430.1	460.1	1.28	1.37	1.44
460.1	490.1	1.28	1.37	1.44
490.1	520.1	1.30	1.39	1.46
520.1	550.1	1.30	1.38	1.44
550.1	580.1	1.26	1.34	1.38
580.1	610.1	1.22	1.28	1.31
610.1	640.1	1.15	1.20	1.23
640.1	670.1	1.09	1.13	1.17
670.1	700.1	1.02	1.07	1.10
700.1	730.1	1.07	1.07	1.10
730.1	760.1	1.18	1.16	1.17
760.1	790.1	1.28	1.25	1.25
800.1	830.1	1.46	1.42	1.41
830.1	860.1	1.61	1.56	1.53
870.1	900.1	1.86	1.80	1.76
900.1	930.1	2.09	2.02	1.97
940.1	970.1	2.41	2.30	2.23
970.1	1000.1	2.66	2.54	2.46
1010.1	1040.1	3.09	2.92	2.81
1040.1	1070.1	3.40	3.22	3.09
1080.1	1110.1	3.91	3.79	3.66
1110.1	1140.1	4.26	4.16	4.08
1150.1	1180.1	4.47	4.43	4.39
1180.1	1210.1	4.73	4.69	4.66
1220.1	1250.1	4.89	4.86	4.82
1250.1	1280.1	4.95	4.89	4.86

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+4	+7	+10
40.1	1.93	2.98	4.53
70.1	1.78	2.62	3.76
100.1	1.76	2.57	3.65
130.1	1.79	2.62	3.73
160.1	1.73	2.50	3.51
190.1	1.70	2.44	3.40
220.1	1.72	2.47	3.44
250.1	1.70	2.42	3.34
280.1	1.67	2.36	3.24
310.1	1.68	2.37	3.26
340.1	1.68	2.35	3.21
370.1	1.66	2.30	3.11
400.1	1.67	2.31	3.12
430.1	1.69	2.30	3.10
460.1	1.67	2.26	3.02
490.1	1.66	2.26	3.01
520.1	1.67	2.25	3.00
550.1	1.65	2.21	2.93
580.1	1.65	2.20	2.91
610.1	1.68	2.22	2.93
640.1	1.69	2.22	2.90
670.1	1.70	2.23	2.91
700.1	1.73	2.27	2.95
730.1	1.76	2.30	2.97
760.1	1.76	2.31	2.98
790.1	1.78	2.35	3.02
830.1	1.80	2.38	3.06
860.1	1.81	2.39	3.07
900.1	1.83	2.41	3.09
930.1	1.86	2.45	3.14
970.1	1.90	2.49	3.19
1000.1	1.94	2.54	3.24
1040.1	2.04	2.64	3.36
1070.1	2.08	2.68	3.40
1110.1	2.17	2.77	3.50
1140.1	2.27	2.88	3.62
1180.1	2.38	2.97	3.70
1210.1	2.51	3.09	3.82
1250.1	2.75	3.30	4.01
1280.1	2.89	3.39	4.08

IF (OUT) (MHz)	IF VSWR @LO=750.1MHz (:1) @LO (dBm)		
	+4	+7	+10
10.0	1.99	1.64	1.44
30.0	2.06	1.70	1.51
50.0	1.95	1.62	1.44
70.0	2.08	1.72	1.53
90.0	2.03	1.69	1.51
110.0	2.14	1.79	1.60
130.0	2.14	1.81	1.64
150.0	2.12	1.79	1.62
170.0	2.27	1.94	1.77
190.0	2.22	1.90	1.74
210.0	2.36	2.04	1.88
230.0	2.31	2.01	1.87
250.0	2.39	2.08	1.94
270.0	2.48	2.18	2.05
290.0	2.45	2.15	2.02
310.0	2.56	2.28	2.17
330.0	2.46	2.19	2.09
350.0	2.62	2.34	2.23
370.0	2.61	2.35	2.25
390.1	2.59	2.33	2.23
410.1	2.66	2.41	2.33
430.1	2.58	2.32	2.24
450.1	2.73	2.46	2.38
470.1	2.64	2.38	2.30
490.1	2.70	2.42	2.33
510.1	2.65	2.38	2.31
530.1	2.62	2.33	2.23
550.1	2.70	2.40	2.30
570.1	2.61	2.29	2.18
590.1	2.69	2.36	2.23
610.1	2.55	2.22	2.09
620.1	2.55	2.19	2.04
640.1	2.65	2.26	2.09
650.1	2.59	2.21	2.04
670.1	2.56	2.15	1.95
680.1	2.62	2.20	1.98
700.1	2.51	2.09	1.87
710.1	2.48	2.04	1.80
730.1	2.61	2.14	1.85
740.1	2.58	2.11	1.84

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	16	42	19	35	19	24	15	32	46	48
1	-	27	+0	35	11	43	18	36	43	34	46	55
2	77	>70	61	>70	62	>70	61	>70	62	64	51	67
3	>90	>70	69	>70	>70	>70	64	>70	>70	>70	>70	67
4	>90	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70
5	>90	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70
6	>90	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70
7	>90	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70
8	>90	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70
9	>90	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70
10	>90	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70	>70
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 375.1 MHz; -14.00 dBm.**
LO IN: 405.1 MHz; +7.00 dBm
IF OUT: 30 MHz; -19.98 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	26	55	29	46	30	36	28	45	61	65
1	-	29	+0	33	12	41	20	41	44	42	61	64
2	57	63	56	68	63	64	65	70	56	62	46	66
3	>90	54	40	56	43	65	38	63	43	53	67	49
4	>90	76	68	71	64	74	64	75	64	80	71	73
5	>90	69	62	66	55	65	55	66	56	63	66	78
6	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	80	>80
7	>90	>80	>80	>80	76	>80	71	>80	70	>80	65	76
8	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
9	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
10	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 375.1 MHz; -4.00 dBm.**
LO IN: 405.1 MHz; +7.00 dBm
IF OUT: 30 MHz; -10.07 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.