Frequency Mixer MBA-10VL

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		-3	0	+3
660.0	690.0	13.72	11.02	9.87
680.0	710.0	12.36	10.15	9.13
700.0	730.0	11.43	9.52	8.57
720.0	750.0	10.77	9.19	8.33
740.0	770.0	10.14	8.87	8.06
760.0	790.0	9.66	8.60	7.87
780.0	810.0	9.28	8.38	7.72
800.0	830.0	9.08	8.29	7.71
820.0	850.0	8.84	8.13	7.62
840.0	870.0	8.87	8.20	7.71
860.0	890.0	8.79	8.15	7.71
880.0	910.0	8.66	8.07	7.68
900.0	930.0	8.65	8.08	7.71
920.0	950.0	8.75	8.16	7.79
940.0	970.0	8.76	8.15	7.79
960.0	990.0	8.67	8.07	7.71
980.0	1010.0	8.83	8.21	7.85
1000.0	1030.0	8.98	8.36	7.98
1020.0	1050.0	8.97	8.37	8.02
1040.0	1070.0	9.11	8.51	8.11
1060.0	1090.0	9.11	8.57	8.19
1080.0	1110.0	9.26	8.71	8.30
1100.0	1130.0	9.18	8.68	8.32
1120.0	1150.0	9.37	8.86	8.55
1140.0	1170.0	9.39	8.90	8.59
1160.0	1190.0	9.34	8.85	8.58
1180.0	1210.0	9.49	8.97	8.64
1200.0	1230.0	9.64	9.08	8.72
1220.0	1250.0	9.74	9.14	8.68
1250.0	1280.0	9.84	9.15	8.63
1270.0	1300.0	10.02	9.24	8.63
1300.0	1330.0	10.22	9.32	8.72
1320.0	1350.0	10.41	9.48	8.89
1350.0	1380.0	10.55	9.56	9.04
1370.0	1400.0	10.83	9.76	9.22
1400.0	1430.0	11.24	10.21	9.71
1420.0	1450.0	11.42	10.45	10.01
1450.0	1480.0	11.65	10.57	10.13
1470.0	1500.0	11.81	10.77	10.41
1500.0	1530.0	11.71	10.84	10.59

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		-3	0	+3
660.0	690.0	2.43	6.00	5.72
680.0	710.0	3.63	5.11	5.54
700.0	730.0	4.27	4.45	5.62
720.0	750.0	3.26	3.35	5.29
740.0	770.0	3.26	3.39	5.77
760.0	790.0	2.75	3.70	5.34
780.0	810.0	2.58	3.18	4.53
800.0	830.0	1.74	2.75	3.89
820.0	850.0	2.16	2.71	3.93
840.0	870.0	1.88	2.87	4.11
860.0	890.0	1.79	2.34	3.45
880.0	910.0	1.40	2.24	3.50
900.0	930.0	1.95	2.73	4.27
920.0	950.0	2.10	3.12	5.15
940.0	970.0	2.55	3.76	5.97
960.0	990.0	3.29	5.14	7.96
980.0	1010.0	4.78	7.15	10.83
1000.0	1030.0	4.55	6.65	8.81
1020.0	1050.0	6.23	7.40	8.86
1040.0	1070.0	6.49	7.22	7.65
1060.0	1090.0	7.63	7.15	7.00
1080.0	1110.0	7.13	5.40	4.87
1100.0	1130.0	11.09	6.20	4.58
1120.0	1150.0	13.08	6.53	4.26
1140.0	1170.0	10.89	6.06	3.87
1160.0	1190.0	11.08	7.39	5.03
1180.0	1210.0	11.47	8.48	6.59
1200.0	1230.0	13.00	8.61	7.54
1220.0	1250.0	13.13	10.48	9.46
1250.0	1280.0	10.12	13.42	12.52
1270.0	1300.0	6.91	10.24	11.94
1300.0	1330.0	5.83	10.63	13.23
1320.0	1350.0	5.80	9.99	12.84
1350.0	1380.0	4.79	8.46	11.61
1370.0	1400.0	5.10	8.62	11.77
1400.0	1430.0	7.32	9.26	11.83
1420.0	1450.0	7.74	9.25	11.98
1450.0	1480.0	10.86	10.07	11.96
1470.0	1500.0	8.54	10.96	11.80
1500.0	1530.0	6.69	12.58	11.83

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=-3dBm (dB) @LO (dBm)		
		-3	0	+3
660.0	690.0	-0.61	0.14	0.07
680.0	710.0	-0.20	0.39	0.27
700.0	730.0	0.10	0.55	0.40
720.0	750.0	0.42	0.54	0.46
740.0	770.0	0.59	0.58	0.48
760.0	790.0	0.65	0.56	0.47
780.0	810.0	0.66	0.51	0.42
800.0	830.0	0.80	0.51	0.39
820.0	850.0	0.80	0.49	0.35
840.0	870.0	0.72	0.43	0.24
860.0	890.0	0.66	0.37	0.20
880.0	910.0	0.78	0.43	0.24
900.0	930.0	0.75	0.37	0.22
920.0	950.0	0.76	0.38	0.22
940.0	970.0	0.74	0.42	0.29
960.0	990.0	0.90	0.58	0.41
980.0	1010.0	0.80	0.49	0.37
1000.0	1030.0	0.80	0.45	0.35
1020.0	1050.0	0.84	0.47	0.36
1040.0	1070.0	0.88	0.50	0.37
1060.0	1090.0	0.87	0.44	0.37
1080.0	1110.0	0.94	0.47	0.36
1100.0	1130.0	0.99	0.49	0.38
1120.0	1150.0	0.99	0.46	0.34
1140.0	1170.0	0.99	0.46	0.30
1160.0	1190.0	1.13	0.55	0.34
1180.0	1210.0	1.07	0.49	0.29
1200.0	1230.0	1.03	0.46	0.23
1220.0	1250.0	0.94	0.40	0.25
1250.0	1280.0	0.96	0.42	0.29
1270.0	1300.0	1.05	0.51	0.34
1300.0	1330.0	0.95	0.43	0.29
1320.0	1350.0	0.87	0.46	0.30
1350.0	1380.0	0.85	0.49	0.28
1370.0	1400.0	0.70	0.43	0.29
1400.0	1430.0	0.50	0.31	0.27
1420.0	1450.0	0.50	0.27	0.26
1450.0	1480.0	0.63	0.23	0.26
1470.0	1500.0	0.73	0.18	0.20
1500.0	1530.0	0.92	0.19	0.15

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=900MHz (dB) @LO (dBm) 0
360.0	540.0	10.52
339.4	560.6	9.67
318.8	581.2	8.54
298.2	601.8	7.78
277.6	622.4	7.45
257.1	642.9	7.34
236.5	663.5	6.98
215.9	684.1	6.79
195.3	704.7	6.56
174.7	725.3	6.65
154.1	745.9	6.58
133.5	766.5	6.70
112.9	787.1	6.75
92.4	807.6	7.00
78.6	821.4	7.07
58.0	842.0	7.41
44.3	855.7	7.51
23.7	876.3	7.78
10.0	890.0	8.23
35.8	935.8	8.15
61.5	961.5	8.16
100.2	1000.2	8.18
126.0	1026.0	8.29
164.6	1064.6	8.46
190.4	1090.4	8.58
229.0	1129.0	8.72
254.8	1154.8	8.88
293.5	1193.5	8.95
319.2	1219.2	8.87
357.9	1257.9	8.79
383.7	1283.7	8.75
422.3	1322.3	8.57
448.1	1348.1	8.58
486.7	1386.7	8.59
512.5	1412.5	8.48
551.2	1451.2	8.42
576.9	1476.9	8.63
615.6	1515.6	8.99
641.3	1541.3	9.21
680.0	1580.0	10.03

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=789.9MHz (dB) @LO (dBm) 0
10.1	800.0	8.51
30.1	820.0	8.12
50.1	840.0	8.61
70.1	860.0	8.51
90.1	880.0	8.66
110.1	900.0	8.73
130.1	920.0	8.85
150.1	940.0	8.99
170.1	960.0	8.86
190.1	980.0	8.97
210.1	1000.0	9.00
230.1	1020.0	9.06
250.1	1040.0	9.23
270.1	1060.0	9.30
290.1	1080.0	9.39
310.1	1100.0	9.59
330.1	1120.0	9.66
350.1	1140.0	9.81
370.1	1160.0	9.76
390.1	1180.0	9.80
410.1	1200.0	9.76
430.1	1220.0	9.68
450.1	1240.0	9.57
470.1	1260.0	9.51
490.1	1280.0	9.43
500.1	1290.0	9.52
520.1	1310.0	9.41
530.1	1320.0	9.33
550.1	1340.0	9.29
560.1	1350.0	9.23
580.1	1370.0	9.25
590.1	1380.0	9.28
610.1	1400.0	9.27
620.1	1410.0	9.32
640.1	1430.0	9.26
650.1	1440.0	9.40
670.1	1460.0	9.85
680.1	1470.0	10.05
700.1	1490.0	10.92
710.1	1500.0	11.24

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1010.1MHz (dB) @LO (dBm) 0
490.1	520.0	10.97
480.1	530.0	10.57
470.1	540.0	10.18
460.1	550.0	9.82
450.1	560.0	9.49
440.1	570.0	8.91
430.1	580.0	8.41
420.1	590.0	8.00
410.1	600.0	7.74
400.1	610.0	7.64
390.1	620.0	7.54
380.1	630.0	7.41
370.1	640.0	7.44
360.1	650.0	7.39
350.1	660.0	7.28
340.1	670.0	7.17
330.1	680.0	7.17
320.1	690.0	7.16
310.1	700.0	7.07
300.1	710.0	7.03
290.1	720.0	7.06
280.1	730.0	7.05
260.1	750.0	6.92
250.1	760.0	6.96
230.1	780.0	6.91
220.1	790.0	6.87
200.1	810.0	6.98
190.1	820.0	6.93
170.1	840.0	7.12
160.1	850.0	7.24
140.1	870.0	7.45
130.1	880.0	7.63
110.1	900.0	7.74
100.1	910.0	7.92
80.1	930.0	7.95
70.1	940.0	8.11
50.1	960.0	8.29
40.1	970.0	8.25
20.1	990.0	8.49
10.1	1000.0	8.76

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	-3	0	+3	-3	0	+3
690.0	25.56	26.86	27.74	26.00	26.79	27.81
710.0	25.99	27.06	27.50	24.69	25.49	26.53
730.0	26.43	27.33	27.42	23.45	24.39	25.38
750.0	26.88	27.39	27.35	22.25	23.37	24.52
770.0	27.52	27.51	27.28	21.38	22.58	23.80
790.0	27.64	27.33	27.01	20.27	21.58	23.03
810.0	27.36	27.00	26.77	19.24	20.60	22.24
830.0	26.61	26.19	26.10	18.35	19.76	21.44
850.0	25.61	25.44	25.54	17.49	18.90	20.53
870.0	24.43	24.42	24.67	16.78	18.19	19.87
890.0	23.24	23.44	23.90	16.14	17.56	19.23
910.0	22.52	22.84	23.33	15.49	16.89	18.50
930.0	21.84	22.38	23.03	14.97	16.33	17.88
950.0	20.90	21.45	22.20	14.53	15.86	17.27
970.0	20.21	20.78	21.54	14.11	15.31	16.66
990.0	19.93	20.48	21.17	13.67	14.87	16.15
1010.0	19.48	20.00	20.60	13.44	14.52	15.73
1030.0	19.34	19.81	20.33	13.14	14.16	15.24
1050.0	19.33	19.63	20.04	12.84	13.76	14.72
1070.0	19.24	19.48	19.75	12.64	13.44	14.22
1090.0	19.24	19.39	19.49	12.48	13.14	13.77
1110.0	19.66	19.73	19.63	12.38	12.91	13.30
1130.0	20.10	19.94	19.62	12.41	12.77	12.98
1150.0	20.13	19.93	19.57	12.46	12.68	12.71
1170.0	20.49	20.15	19.58	12.48	12.56	12.38
1190.0	20.83	20.38	19.76	12.65	12.49	12.25
1210.0	21.02	20.30	19.52	12.93	12.56	12.10
1230.0	21.34	20.36	19.33	13.10	12.59	11.93
1250.0	21.56	20.40	19.29	13.44	12.65	12.00
1280.0	21.90	20.34	19.03	14.11	13.00	12.09
1300.0	22.18	20.42	18.99	14.77	13.36	12.27
1330.0	22.31	20.22	18.67	15.54	13.67	12.36
1350.0	22.28	20.00	18.33	16.00	13.84	12.40
1380.0	22.29	19.77	17.84	16.83	14.30	12.45
1400.0	21.96	19.53	17.42	17.11	14.60	12.45
1430.0	20.98	18.77	16.81	16.64	14.35	12.31
1450.0	19.95	18.13	16.27	16.21	14.27	12.34
1480.0	18.60	17.20	15.51	15.45	13.95	12.18
1500.0	17.81	16.54	14.98	14.88	13.54	11.86
1530.0	16.55	15.46	14.13	14.10	12.88	11.52

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		-3	0	+3
660.0	690.0	13.10	14.58	15.17
680.0	710.0	13.13	14.61	15.19
700.0	730.0	13.00	14.37	14.88
720.0	750.0	13.10	14.38	14.78
740.0	770.0	13.17	14.10	14.50
760.0	790.0	13.18	14.03	14.25
780.0	810.0	13.30	13.94	14.10
800.0	830.0	13.34	13.96	13.76
820.0	850.0	13.53	14.07	13.80
840.0	870.0	13.29	13.67	13.40
860.0	890.0	13.24	13.38	13.01
880.0	910.0	12.97	13.14	12.62
900.0	930.0	12.72	12.80	12.32
920.0	950.0	12.49	12.50	12.06
940.0	970.0	12.09	12.10	11.85
960.0	990.0	11.91	11.70	11.47
980.0	1010.0	11.59	11.29	11.09
1000.0	1030.0	11.39	11.16	10.73
1020.0	1050.0	11.23	10.81	10.54
1040.0	1070.0	11.06	10.63	10.30
1060.0	1090.0	11.19	10.63	10.37
1080.0	1110.0	11.26	10.64	10.24
1100.0	1130.0	11.48	10.90	10.43
1120.0	1150.0	11.54	10.93	10.58
1140.0	1170.0	12.27	11.56	11.03
1160.0	1190.0	12.31	11.76	11.14
1180.0	1210.0	12.91	12.02	11.40
1200.0	1230.0	13.00	12.04	11.15
1220.0	1250.0	13.26	12.14	11.16
1250.0	1280.0	13.47	11.94	10.91
1270.0	1300.0	13.44	11.92	10.93
1300.0	1330.0	13.32	11.67	10.86
1320.0	1350.0	12.92	11.44	10.77
1350.0	1380.0	12.34	11.04	10.54
1370.0	1400.0	12.08	11.04	10.59
1400.0	1430.0	11.43	10.65	10.36
1420.0	1450.0	11.07	10.50	10.36
1450.0	1480.0	10.86	10.18	9.98
1470.0	1500.0	10.71	9.87	9.56
1500.0	1530.0	10.60	9.77	9.54

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		-3	0	+3
660.0	690.0	7.41	6.13	5.54
680.0	710.0	6.28	5.25	4.70
700.0	730.0	5.38	4.52	4.05
720.0	750.0	4.62	3.95	3.53
740.0	770.0	3.95	3.45	3.09
760.0	790.0	3.43	3.07	2.78
780.0	810.0	3.04	2.75	2.52
800.0	830.0	2.70	2.48	2.33
820.0	850.0	2.40	2.25	2.14
840.0	870.0	2.18	2.07	2.01
860.0	890.0	1.95	1.88	1.86
880.0	910.0	1.78	1.73	1.73
900.0	930.0	1.64	1.59	1.61
920.0	950.0	1.52	1.51	1.53
940.0	970.0	1.41	1.42	1.47
960.0	990.0	1.32	1.37	1.43
980.0	1010.0	1.24	1.32	1.39
1000.0	1030.0	1.19	1.30	1.38
1020.0	1050.0	1.21	1.33	1.41
1040.0	1070.0	1.28	1.39	1.47
1060.0	1090.0	1.38	1.49	1.56
1080.0	1110.0	1.48	1.58	1.66
1100.0	1130.0	1.59	1.70	1.77
1120.0	1150.0	1.73	1.82	1.88
1140.0	1170.0	1.88	1.96	2.02
1160.0	1190.0	2.03	2.09	2.14
1180.0	1210.0	2.18	2.23	2.28
1200.0	1230.0	2.34	2.39	2.45
1220.0	1250.0	2.49	2.52	2.57
1250.0	1280.0	2.76	2.79	2.84
1270.0	1300.0	2.94	2.94	2.98
1300.0	1330.0	3.14	3.13	3.16
1320.0	1350.0	3.33	3.33	3.33
1350.0	1380.0	3.52	3.51	3.51
1370.0	1400.0	3.68	3.66	3.66
1400.0	1430.0	3.84	3.81	3.82
1420.0	1450.0	3.95	3.87	3.86
1450.0	1480.0	4.10	3.93	3.92
1470.0	1500.0	4.19	3.98	3.95
1500.0	1530.0	4.19	3.96	3.91

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	-3	0	+3
690.0	6.15	4.10	4.01
710.0	5.07	3.64	3.78
730.0	4.28	3.26	3.53
750.0	3.58	2.95	3.31
770.0	3.03	2.72	3.17
790.0	2.63	2.57	3.10
810.0	2.34	2.43	3.04
830.0	2.09	2.31	2.97
850.0	1.87	2.20	2.89
870.0	1.70	2.12	2.85
890.0	1.57	2.07	2.84
910.0	1.46	2.02	2.80
930.0	1.38	1.97	2.75
950.0	1.33	1.94	2.70
970.0	1.33	1.92	2.68
990.0	1.35	1.91	2.65
1010.0	1.40	1.91	2.62
1030.0	1.47	1.92	2.59
1050.0	1.55	1.92	2.56
1070.0	1.63	1.94	2.52
1090.0	1.72	1.95	2.49
1110.0	1.81	1.97	2.46
1130.0	1.91	1.99	2.44
1150.0	2.01	2.01	2.40
1170.0	2.11	2.02	2.34
1190.0	2.22	2.03	2.29
1210.0	2.34	2.04	2.23
1230.0	2.44	2.05	2.19
1250.0	2.52	2.05	2.14
1280.0	2.68	2.07	2.08
1300.0	2.80	2.09	2.06
1330.0	2.93	2.15	2.07
1350.0	3.02	2.21	2.09
1380.0	3.31	2.36	2.12
1400.0	3.55	2.47	2.13
1430.0	3.67	2.54	2.13
1450.0	3.67	2.57	2.13
1480.0	3.79	2.63	2.12
1500.0	3.77	2.61	2.08
1530.0	3.50	2.45	1.96

IF (OUT) (MHz)	IF VSWR @LO=1000.1MHz (:1) @LO (dBm)		
	-3	0	+3
10.0	2.54	2.23	2.01
30.0	2.56	2.26	2.03
50.0	2.56	2.25	2.03
70.0	2.59	2.28	2.06
90.0	2.65	2.36	2.15
110.0	2.71	2.42	2.21
130.0	2.67	2.39	2.20
150.0	2.72	2.45	2.26
170.0	2.78	2.51	2.32
190.0	2.84	2.58	2.39
210.0	2.84	2.58	2.42
230.0	2.86	2.61	2.46
250.0	2.86	2.61	2.46
270.0	2.93	2.68	2.52
290.0	2.94	2.71	2.56
310.0	2.90	2.68	2.53
330.0	2.89	2.66	2.51
350.0	2.90	2.67	2.52
370.0	2.91	2.66	2.52
390.0	2.87	2.64	2.50
430.0	2.81	2.58	2.44
450.0	2.81	2.57	2.41
490.0	2.79	2.54	2.37
510.0	2.75	2.51	2.35
550.0	2.77	2.51	2.32
570.0	2.77	2.50	2.30
610.0	2.78	2.50	2.29
630.0	2.84	2.53	2.30
670.0	2.89	2.56	2.32
690.0	2.89	2.57	2.33
730.0	2.90	2.58	2.33
750.0	2.93	2.60	2.34
790.0	2.87	2.54	2.29
810.0	2.81	2.50	2.25
850.0	2.64	2.33	2.09
870.0	2.56	2.25	2.01
910.0	2.33	2.02	1.80
930.0	2.19	1.90	1.70
970.0	1.98	1.68	1.49
990.0	1.85	1.57	1.41

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+10	15	22	33	16	32	22	33	30	35
1	-	4	+0	13	20	32	37	39	41	36	37	44
2	>90	40	34	41	50	63	54	51	48	54	50	53
3	>90	57	58	44	50	50	57	>64	>64	>64	>64	59
4	>90	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64
5	>90	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64
6	>90	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64
7	>90	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64
8	>90	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64
9	>90	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64
10	>90	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64	>64
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 900 MHz; -18.00 dBm.
LO IN: 930 MHz; +0.00 dBm
IF OUT: 30 MHz; -26.4 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	1	29	39	46	27	44	38	52	43	57
1	-	3	+0	18	22	41	42	47	47	45	49	69
2	78	36	29	31	45	48	50	49	46	53	49	61
3	>90	42	51	29	39	36	45	51	56	56	59	53
4	>90	62	60	59	47	47	52	58	62	58	62	64
5	>90	63	69	62	64	46	48	54	59	67	69	69
6	>90	>74	>74	>74	73	>74	62	57	66	63	>74	71
7	>90	72	>74	>74	>74	73	74	62	62	69	69	>74
8	>90	>74	>74	>74	>74	>74	>74	>74	67	69	>74	>74
9	>90	>74	>74	>74	>74	>74	>74	>74	>74	73	>74	>74
10	>90	>74	>74	>74	>74	>74	>74	>74	>74	>74	>74	>74
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 900 MHz; -8.00 dBm.
LO IN: 930 MHz; +0.00 dBm
IF OUT: 30 MHz; -16.21 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.