Frequency Mixer MBR-EE7756/20

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+14	+17	+20
920.0	950.0	13.74	10.26	9.69
1000.0	1030.0	9.84	8.61	8.33
1080.0	1110.0	7.94	7.51	7.49
1160.0	1190.0	7.22	7.00	6.86
1240.0	1270.0	6.69	6.30	6.08
1320.0	1350.0	5.98	5.78	5.70
1400.0	1430.0	5.66	5.56	5.51
1480.0	1510.0	5.73	5.57	5.49
1560.0	1590.0	5.57	5.42	5.36
1660.0	1690.0	5.56	5.48	5.46
1740.0	1770.0	5.66	5.57	5.56
1840.0	1870.0	5.84	5.74	5.73
1920.0	1950.0	5.91	5.83	5.84
2020.0	2050.0	5.82	5.81	5.88
2100.0	2130.0	5.86	5.84	5.88
2200.0	2230.0	5.63	5.65	5.71
2280.0	2310.0	5.88	5.99	6.17
2460.0	2490.0	7.09	6.86	6.78
2560.0	2590.0	6.93	6.73	6.64
2640.0	2670.0	6.65	6.52	6.46
2740.0	2770.0	6.57	6.45	6.44
2820.0	2850.0	6.37	6.31	6.30
2920.0	2950.0	6.20	6.15	6.18
3000.0	3030.0	6.12	6.04	6.07
3100.0	3130.0	5.97	5.82	5.84
3180.0	3210.0	6.05	5.76	5.71
3280.0	3310.0	6.21	5.86	5.76
3360.0	3390.0	6.41	6.00	5.82
3460.0	3490.0	6.37	5.90	5.78
3540.0	3570.0	6.28	5.83	5.78
3640.0	3670.0	6.27	5.81	5.69
3720.0	3750.0	6.11	5.73	5.64
3820.0	3850.0	6.06	5.76	5.69
3900.0	3930.0	6.13	5.88	5.81
4000.0	4030.0	6.25	6.11	6.13
4080.0	4110.0	6.56	6.49	6.60
4180.0	4210.0	7.24	7.27	7.78
4260.0	4290.0	7.86	8.35	10.36
4360.0	4390.0	9.34	10.70	13.11

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
920.0	950.0	13.23	18.79	22.37
1000.0	1030.0	17.83	17.43	14.65
1080.0	1110.0	15.56	16.31	13.59
1160.0	1190.0	15.12	15.77	12.63
1240.0	1270.0	17.45	15.65	14.88
1320.0	1350.0	17.13	16.13	15.21
1400.0	1430.0	14.13	13.62	13.20
1480.0	1510.0	18.34	18.10	16.56
1560.0	1590.0	13.46	15.90	18.10
1660.0	1690.0	17.50	20.74	23.29
1740.0	1770.0	20.93	22.42	22.25
1840.0	1870.0	23.09	21.39	20.61
1920.0	1950.0	23.69	20.46	19.24
2020.0	2050.0	24.66	22.94	20.86
2100.0	2130.0	23.45	26.16	25.66
2200.0	2230.0	25.86	24.87	26.74
2280.0	2310.0	17.43	19.29	16.74
2460.0	2490.0	17.50	15.21	12.17
2560.0	2590.0	16.20	15.31	12.52
2640.0	2670.0	16.80	15.37	12.92
2740.0	2770.0	16.56	15.47	13.16
2820.0	2850.0	17.84	16.08	13.69
2920.0	2950.0	17.40	16.86	15.24
3000.0	3030.0	17.56	17.79	16.94
3100.0	3130.0	17.78	17.15	17.72
3180.0	3210.0	19.51	20.50	20.90
3280.0	3310.0	19.10	21.56	22.45
3360.0	3390.0	18.74	20.33	21.13
3460.0	3490.0	18.73	18.58	19.52
3540.0	3570.0	18.32	18.54	20.01
3640.0	3670.0	18.04	18.58	20.38
3720.0	3750.0	17.51	18.36	19.59
3820.0	3850.0	17.20	18.20	17.52
3900.0	3930.0	17.47	18.14	16.67
4000.0	4030.0	17.71	17.93	15.74
4080.0	4110.0	18.35	17.69	14.88
4180.0	4210.0	16.99	15.31	11.28
4260.0	4290.0	14.82	11.77	14.01
4360.0	4390.0	12.67	13.36	28.48

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+10dBm (dB) @LO (dBm)		
		+14	+17	+20
920.0	950.0	-1.11	0.86	1.11
1000.0	1030.0	0.96	1.33	1.52
1080.0	1110.0	1.84	1.83	1.84
1160.0	1190.0	2.01	1.84	1.77
1240.0	1270.0	1.86	1.70	1.68
1320.0	1350.0	1.75	1.57	1.57
1400.0	1430.0	1.78	1.64	1.62
1480.0	1510.0	1.73	1.61	1.53
1560.0	1590.0	1.60	1.41	1.28
1660.0	1690.0	1.36	1.18	1.07
1740.0	1770.0	1.21	1.05	0.98
1840.0	1870.0	1.12	1.03	1.03
1920.0	1950.0	0.94	0.85	0.92
2020.0	2050.0	0.67	0.63	0.76
2100.0	2130.0	0.55	0.45	0.59
2200.0	2230.0	1.17	0.90	0.89
2280.0	2310.0	2.31	2.00	1.87
2460.0	2490.0	1.70	1.60	1.66
2560.0	2590.0	1.68	1.55	1.68
2640.0	2670.0	1.69	1.56	1.64
2740.0	2770.0	1.53	1.39	1.49
2820.0	2850.0	1.47	1.27	1.33
2920.0	2950.0	1.41	1.12	1.11
3000.0	3030.0	1.52	1.17	1.08
3100.0	3130.0	1.52	1.06	0.95
3180.0	3210.0	1.59	1.18	1.04
3280.0	3310.0	1.67	1.28	1.24
3360.0	3390.0	1.79	1.43	1.37
3460.0	3490.0	1.92	1.59	1.51
3540.0	3570.0	2.10	1.77	1.68
3640.0	3670.0	2.26	1.94	1.98
3720.0	3750.0	2.41	2.13	2.23
3820.0	3850.0	2.55	2.34	2.55
3900.0	3930.0	2.56	2.48	2.67
4000.0	4030.0	2.48	2.51	2.71
4080.0	4110.0	2.57	2.65	2.97
4180.0	4210.0	2.67	2.94	3.26
4260.0	4290.0	3.15	3.12	1.87
4360.0	4390.0	2.83	1.80	0.16

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1600MHz (dB) @LO (dBm) +17
830.0	770.0	10.74
782.7	817.3	8.85
735.4	864.6	7.34
688.1	911.9	7.01
640.8	959.2	6.70
593.5	1006.5	6.27
546.2	1053.8	6.01
498.8	1101.2	5.83
451.5	1148.5	5.95
404.2	1195.8	6.01
356.9	1243.1	5.94
309.6	1290.4	5.70
262.3	1337.7	5.46
215.0	1385.0	5.20
167.7	1432.3	5.12
120.4	1479.6	5.27
88.8	1511.2	5.48
41.5	1558.5	5.49
10.0	1590.0	5.69
58.5	1658.5	5.49
106.9	1706.9	5.65
179.6	1779.6	5.78
228.1	1828.1	6.07
300.8	1900.8	6.36
349.2	1949.2	6.45
421.9	2021.9	6.40
470.4	2070.4	6.21
543.1	2143.1	6.31
591.5	2191.5	6.56
664.2	2264.2	6.90
712.7	2312.7	7.01
785.4	2385.4	7.33
833.8	2433.8	7.45
906.5	2506.5	7.96
955.0	2555.0	8.20
1027.7	2627.7	8.56
1076.2	2676.2	8.94
1148.8	2748.8	9.26
1197.3	2797.3	9.62
1270.0	2870.0	10.36

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1189.9MHz (dB) @LO (dBm) +17
10.1	1200.0	7.10
30.1	1220.0	6.85
70.1	1260.0	6.84
90.1	1280.0	6.78
130.1	1320.0	6.69
150.1	1340.0	6.75
190.1	1380.0	6.90
210.1	1400.0	6.93
250.1	1440.0	7.05
270.1	1460.0	7.11
310.1	1500.0	7.01
330.1	1520.0	6.98
370.1	1560.0	7.04
390.1	1580.0	7.13
430.1	1620.0	7.23
450.1	1640.0	7.32
490.1	1680.0	7.47
510.1	1700.0	7.48
550.1	1740.0	7.66
570.1	1760.0	7.67
610.1	1800.0	7.75
630.1	1820.0	7.84
670.1	1860.0	7.85
690.1	1880.0	7.83
730.1	1920.0	7.69
750.1	1940.0	7.57
790.1	1980.0	7.52
810.1	2000.0	7.48
850.1	2040.0	7.62
870.1	2060.0	7.87
910.1	2100.0	7.91
930.1	2120.0	8.01
970.1	2160.0	8.34
990.1	2180.0	8.30
1030.1	2220.0	8.51
1050.1	2240.0	8.89
1090.1	2280.0	9.15
1110.1	2300.0	9.34
1150.1	2340.0	9.94
1170.1	2360.0	10.28

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2010.1MHz (dB) @LO (dBm) +17
1150.1	860.0	10.41
1130.1	880.0	9.85
1110.1	900.0	9.26
1090.1	920.0	8.86
1050.1	960.0	7.83
1030.1	980.0	7.37
990.1	1020.0	6.63
970.1	1040.0	6.46
930.1	1080.0	6.27
910.1	1100.0	6.23
870.1	1140.0	6.10
850.1	1160.0	6.10
810.1	1200.0	6.06
790.1	1220.0	6.05
750.1	1260.0	5.94
730.1	1280.0	5.86
690.1	1320.0	5.57
670.1	1340.0	5.50
630.1	1380.0	5.72
610.1	1400.0	5.94
570.1	1440.0	6.36
550.1	1460.0	6.55
510.1	1500.0	6.78
490.1	1520.0	6.91
450.1	1560.0	6.78
430.1	1580.0	6.69
390.1	1620.0	6.39
370.1	1640.0	6.30
330.1	1680.0	6.14
310.1	1700.0	6.01
270.1	1740.0	5.88
250.1	1760.0	5.83
210.1	1800.0	5.67
190.1	1820.0	5.65
150.1	1860.0	5.60
130.1	1880.0	5.63
90.1	1920.0	5.64
70.1	1940.0	5.68
30.1	1980.0	5.74
10.1	2000.0	5.98

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
950.0	34.76	34.46	41.58	13.68	14.58	15.99
1030.0	32.39	34.84	41.62	13.76	14.95	15.50
1110.0	31.58	34.97	42.25	14.56	14.99	14.71
1190.0	30.61	34.73	42.71	15.31	14.74	13.89
1270.0	29.79	35.59	48.69	15.75	14.52	13.78
1350.0	30.51	38.00	53.62	15.89	14.68	14.12
1430.0	29.55	36.41	46.31	16.60	15.54	14.80
1510.0	26.50	34.48	54.27	17.29	16.48	16.01
1590.0	27.61	35.87	39.22	17.71	17.74	17.70
1690.0	28.07	33.27	33.84	18.23	19.36	20.25
1770.0	26.74	30.31	31.07	18.26	19.93	21.29
1870.0	25.65	27.27	28.01	17.77	18.80	19.59
1950.0	24.53	24.97	25.21	16.63	17.01	17.20
2050.0	24.22	23.54	22.84	15.56	15.14	14.64
2130.0	23.33	22.22	21.22	14.37	13.76	13.04
2230.0	22.08	20.32	19.45	13.19	12.11	11.66
2310.0	21.22	19.83	19.17	12.46	11.49	10.93
2490.0	22.70	22.01	21.37	10.47	10.10	9.68
2590.0	22.97	22.90	22.32	9.34	9.27	9.04
2670.0	22.85	23.10	22.62	8.61	8.71	8.60
2770.0	22.12	22.60	22.61	7.94	8.12	8.35
2850.0	21.21	21.45	21.57	7.43	7.79	8.18
2950.0	21.16	20.63	20.30	6.79	7.29	7.85
3030.0	21.89	20.81	20.08	6.33	6.97	7.70
3130.0	22.43	20.92	19.59	5.89	6.61	7.54
3210.0	22.49	20.92	19.59	5.66	6.47	7.51
3310.0	21.69	20.42	19.21	5.42	6.34	7.47
3390.0	20.83	19.29	18.21	5.29	6.29	7.58
3490.0	20.27	18.63	17.62	5.05	6.21	7.61
3570.0	20.37	18.57	17.25	4.75	6.12	7.61
3670.0	20.59	18.18	16.65	4.92	6.32	7.69
3750.0	20.55	18.23	16.30	5.24	6.73	7.71
3850.0	20.94	18.95	17.42	6.03	7.37	8.02
3930.0	21.14	19.81	18.78	6.92	7.93	8.32
4030.0	21.83	21.80	21.57	8.36	8.97	8.99
4110.0	22.50	22.88	22.86	9.86	9.98	9.73
4210.0	22.90	23.05	22.25	11.10	10.92	10.30
4290.0	20.88	20.86	20.40	10.95	10.64	10.32
4390.0	18.43	18.92	17.94	10.92	10.96	10.92

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
920.0	950.0	26.88	23.47	21.38
1000.0	1030.0	34.46	29.11	25.24
1080.0	1110.0	30.11	28.92	26.23
1160.0	1190.0	25.59	24.40	24.66
1240.0	1270.0	25.82	25.86	26.44
1320.0	1350.0	32.49	30.32	29.26
1400.0	1430.0	33.99	32.10	30.62
1480.0	1510.0	26.40	25.69	25.30
1560.0	1590.0	21.88	21.96	22.04
1660.0	1690.0	18.38	18.64	18.84
1740.0	1770.0	16.40	16.76	17.03
1840.0	1870.0	14.45	14.95	15.31
1920.0	1950.0	13.86	14.30	14.72
2020.0	2050.0	13.70	14.07	14.41
2100.0	2130.0	13.39	13.65	13.95
2200.0	2230.0	12.96	13.04	13.16
2280.0	2310.0	11.80	11.90	12.08
2460.0	2490.0	12.42	12.81	13.65
2560.0	2590.0	14.07	14.50	15.28
2640.0	2670.0	15.00	15.54	16.22
2740.0	2770.0	16.04	16.52	17.10
2820.0	2850.0	16.60	16.91	17.16
2920.0	2950.0	17.43	17.66	17.48
3000.0	3030.0	17.78	18.02	17.95
3100.0	3130.0	18.94	18.76	18.59
3180.0	3210.0	19.62	19.58	19.09
3280.0	3310.0	18.82	19.20	18.76
3360.0	3390.0	18.64	18.93	18.82
3460.0	3490.0	18.92	19.22	19.49
3540.0	3570.0	18.55	19.69	20.54
3640.0	3670.0	18.45	21.23	23.06
3720.0	3750.0	19.81	23.91	27.27
3820.0	3850.0	22.71	28.11	34.64
3900.0	3930.0	23.95	30.30	38.79
4000.0	4030.0	24.36	28.89	31.75
4080.0	4110.0	22.08	26.84	31.20
4180.0	4210.0	19.47	23.44	33.56
4260.0	4290.0	19.83	23.69	24.22
4360.0	4390.0	19.23	22.07	21.12

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
920.0	950.0	10.56	7.60	6.37
1000.0	1030.0	6.94	5.44	4.75
1080.0	1110.0	4.80	4.08	3.60
1160.0	1190.0	3.70	3.24	2.86
1240.0	1270.0	2.91	2.59	2.35
1320.0	1350.0	2.30	2.13	2.00
1400.0	1430.0	1.87	1.76	1.67
1480.0	1510.0	1.51	1.44	1.43
1560.0	1590.0	1.26	1.28	1.30
1660.0	1690.0	1.12	1.13	1.17
1740.0	1770.0	1.06	1.07	1.14
1840.0	1870.0	1.13	1.08	1.13
1920.0	1950.0	1.17	1.17	1.23
2020.0	2050.0	1.23	1.27	1.35
2100.0	2130.0	1.22	1.27	1.36
2200.0	2230.0	1.14	1.16	1.22
2280.0	2310.0	1.30	1.23	1.21
2460.0	2490.0	2.33	2.20	2.00
2560.0	2590.0	2.44	2.27	2.07
2640.0	2670.0	2.50	2.31	2.13
2740.0	2770.0	2.51	2.32	2.16
2820.0	2850.0	2.38	2.21	2.08
2920.0	2950.0	2.30	2.10	1.96
3000.0	3030.0	2.22	2.00	1.87
3100.0	3130.0	2.19	1.86	1.69
3180.0	3210.0	2.16	1.79	1.60
3280.0	3310.0	2.10	1.77	1.57
3360.0	3390.0	2.01	1.72	1.54
3460.0	3490.0	1.84	1.56	1.41
3540.0	3570.0	1.72	1.43	1.27
3640.0	3670.0	1.62	1.38	1.24
3720.0	3750.0	1.55	1.37	1.28
3820.0	3850.0	1.52	1.42	1.42
3900.0	3930.0	1.63	1.58	1.59
4000.0	4030.0	1.80	1.80	1.84
4080.0	4110.0	2.07	2.03	2.07
4180.0	4210.0	2.50	2.42	2.49
4260.0	4290.0	2.93	2.85	3.25
4360.0	4390.0	3.86	3.71	3.08

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
950.0	15.00	8.90	7.83
1030.0	9.33	6.53	6.51
1110.0	6.03	5.33	5.74
1190.0	4.66	4.68	5.20
1270.0	3.82	4.06	4.66
1350.0	3.09	3.49	4.16
1430.0	2.52	3.14	3.90
1510.0	2.26	2.92	3.73
1590.0	2.03	2.71	3.50
1690.0	1.80	2.48	3.25
1770.0	1.67	2.33	3.05
1870.0	1.57	2.18	2.86
1950.0	1.49	2.06	2.69
2050.0	1.41	1.96	2.56
2130.0	1.38	1.89	2.45
2230.0	1.40	1.88	2.40
2310.0	1.42	1.86	2.34
2490.0	1.50	1.89	2.33
2590.0	1.56	1.90	2.33
2670.0	1.61	1.91	2.29
2770.0	1.65	1.95	2.33
2850.0	1.71	1.97	2.36
2950.0	1.82	2.01	2.37
3030.0	1.96	2.12	2.44
3130.0	2.03	2.15	2.42
3210.0	2.11	2.09	2.36
3310.0	2.14	2.07	2.21
3390.0	2.11	1.95	2.11
3490.0	1.98	1.77	1.85
3570.0	1.91	1.66	1.70
3670.0	1.83	1.56	1.56
3750.0	1.67	1.34	1.40
3850.0	1.35	1.19	1.32
3930.0	1.17	1.18	1.44
4030.0	1.10	1.39	1.74
4110.0	1.31	1.67	2.05
4210.0	1.69	2.11	2.48
4290.0	1.99	2.41	2.77
4390.0	2.37	2.70	2.85

IF (OUT) (MHz)	IF VSWR @LO=2000MHz (:1) @LO (dBm)		
	+14	+17	+20
10.0	1.34	1.44	1.52
30.0	1.35	1.45	1.54
50.0	1.35	1.44	1.53
70.0	1.31	1.40	1.48
90.0	1.34	1.43	1.51
110.0	1.35	1.44	1.52
130.0	1.32	1.40	1.48
150.0	1.30	1.38	1.45
190.0	1.37	1.44	1.50
210.0	1.35	1.41	1.47
250.0	1.43	1.48	1.52
270.0	1.45	1.49	1.53
310.0	1.55	1.58	1.61
330.0	1.57	1.58	1.60
370.0	1.67	1.67	1.68
390.0	1.78	1.76	1.75
430.0	1.81	1.77	1.75
490.0	2.06	1.99	1.93
510.0	2.16	2.07	2.01
550.0	2.30	2.18	2.09
570.0	2.46	2.33	2.23
610.0	2.57	2.41	2.29
630.0	2.64	2.49	2.37
670.0	2.85	2.68	2.53
690.0	2.82	2.64	2.49
730.0	3.02	2.82	2.66
750.0	2.95	2.76	2.60
790.0	3.00	2.81	2.65
810.0	2.91	2.71	2.56
850.0	2.91	2.72	2.58
870.0	2.70	2.53	2.39
910.0	2.44	2.31	2.20
930.0	2.35	2.22	2.13
970.0	2.02	1.92	1.86
990.0	2.00	1.92	1.87
1030.0	2.09	2.02	1.99
1050.0	2.27	2.21	2.18
1090.0	2.90	2.86	2.84
1110.0	3.23	3.19	3.15

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+9	9	5	9	17	29	25	32	33	33
1	-	15	+0	44	15	36	29	54	29	38	42	52
2	67	57	67	36	47	47	41	47	73	52	53	58
3	>90	68	57	75	51	68	54	64	68	67	58	64
4	>90	>80	>80	>80	>80	>80	79	74	79	>80	>80	79
5	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
6	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
7	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
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: 1600 MHz; -5.00 dBm.
LO IN: 1630 MHz; +17.00 dBm
IF OUT: 30 MHz; -10.48 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	1	20	16	21	27	42	35	50	51	50
1	-	15	+0	48	16	43	30	53	34	42	49	64
2	47	38	62	29	41	34	37	38	57	56	47	63
3	87	45	37	63	37	50	41	50	56	58	48	52
4	>90	53	53	50	69	44	52	50	53	52	64	60
5	>90	73	66	64	63	72	52	64	54	55	68	65
6	>90	74	81	79	72	67	83	67	67	55	66	64
7	>90	81	>89	83	76	75	73	>89	67	83	61	64
8	>90	87	81	86	>89	78	88	80	>89	77	75	64
9	>90	>89	>89	88	>89	>89	>89	>89	>89	86	79	84
10	>90	>89	>89	>89	>89	>89	>89	86	>89	>89	>89	85
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1600 MHz; 5.00 dBm.
LO IN: 1630 MHz; +17.00 dBm
IF OUT: 30 MHz; -0.75 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.