Frequency Mixer MCA-ED13280/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=520MHz (dB) @LO (dBm)		
		+15	+17	+19
2180.0	1660.0	9.54	9.07	8.56
2220.0	1700.0	8.88	8.21	7.76
2260.0	1740.0	8.68	8.07	7.66
2300.0	1780.0	8.02	7.60	7.33
2340.0	1820.0	7.82	7.44	7.20
2380.0	1860.0	7.29	6.98	6.82
2420.0	1900.0	7.12	6.95	6.89
2460.0	1940.0	7.09	6.95	6.91
2500.0	1980.0	6.98	6.91	6.94
2540.0	2020.0	7.08	7.01	7.03
2580.0	2060.0	7.17	7.13	7.15
2620.0	2100.0	7.31	7.36	7.47
2660.0	2140.0	7.20	7.24	7.37
2700.0	2180.0	7.30	7.27	7.34
2740.0	2220.0	7.49	7.41	7.42
2780.0	2260.0	7.55	7.39	7.31
2820.0	2300.0	7.71	7.49	7.33
2860.0	2340.0	7.98	7.66	7.42
2900.0	2380.0	8.30	7.96	7.67
2940.0	2420.0	8.76	8.38	8.06
2970.0	2450.0	8.99	8.54	8.13
3010.0	2490.0	9.28	8.80	8.32
3040.0	2520.0	9.70	9.15	8.61
3080.0	2560.0	10.29	9.71	9.16
3110.0	2590.0	10.56	10.03	9.50
3150.0	2630.0	10.58	10.04	9.56
3180.0	2660.0	10.37	9.85	9.44
3220.0	2700.0	10.32	9.71	9.26
3250.0	2730.0	10.34	9.63	9.12
3290.0	2770.0	10.45	9.76	9.22
3320.0	2800.0	10.57	9.85	9.28
3360.0	2840.0	10.82	10.08	9.40
3390.0	2870.0	10.96	10.23	9.59
3430.0	2910.0	11.28	10.44	9.74
3460.0	2940.0	11.39	10.55	9.80
3500.0	2980.0	11.56	10.78	10.10
3530.0	3010.0	11.75	10.81	10.15
3570.0	3050.0	11.71	10.92	10.25
3600.0	3080.0	11.93	11.04	10.38

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+15	+17	+19
2180.0	1660.0	17.94	20.23	26.22
2220.0	1700.0	21.79	22.26	26.11
2260.0	1740.0	20.97	23.97	28.15
2300.0	1780.0	22.26	25.67	30.05
2340.0	1820.0	23.65	26.81	30.31
2380.0	1860.0	24.11	26.25	29.98
2420.0	1900.0	25.74	28.75	35.09
2460.0	1940.0	27.23	31.38	39.14
2500.0	1980.0	25.99	28.83	33.89
2540.0	2020.0	26.82	29.74	34.33
2580.0	2060.0	28.60	31.72	41.42
2620.0	2100.0	29.29	30.72	35.01
2660.0	2140.0	29.34	30.53	33.11
2700.0	2180.0	28.53	29.48	31.80
2740.0	2220.0	27.75	30.47	33.46
2780.0	2260.0	25.56	29.09	32.56
2820.0	2300.0	24.76	27.94	30.87
2860.0	2340.0	23.06	25.37	27.64
2900.0	2380.0	23.58	25.48	28.31
2940.0	2420.0	21.15	23.85	30.15
2970.0	2450.0	22.11	25.99	29.87
3010.0	2490.0	23.12	26.82	30.73
3040.0	2520.0	22.40	25.70	29.36
3080.0	2560.0	22.65	24.55	27.50
3110.0	2590.0	24.41	25.38	27.59
3150.0	2630.0	25.69	28.00	26.64
3180.0	2660.0	24.07	26.31	26.57
3220.0	2700.0	21.95	24.16	25.34
3250.0	2730.0	21.50	23.46	24.59
3290.0	2770.0	23.62	25.48	26.45
3320.0	2800.0	24.42	26.09	27.17
3360.0	2840.0	23.44	24.23	25.68
3390.0	2870.0	22.67	23.52	25.44
3430.0	2910.0	21.67	22.71	24.72
3460.0	2940.0	21.37	23.08	26.05
3500.0	2980.0	22.16	24.60	27.45
3530.0	3010.0	21.91	24.33	27.47
3570.0	3050.0	22.92	25.43	29.83
3600.0	3080.0	22.85	25.77	30.00

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+15dBm (dB) @LO (dBm)		
		+15	+17	+19
2180.0	1660.0	-0.23	-0.23	0.04
2220.0	1700.0	-0.05	0.23	0.37
2260.0	1740.0	0.04	0.27	0.37
2300.0	1780.0	0.21	0.30	0.30
2340.0	1820.0	0.19	0.24	0.23
2380.0	1860.0	0.23	0.22	0.18
2420.0	1900.0	0.19	0.13	0.07
2460.0	1940.0	0.26	0.17	0.10
2500.0	1980.0	0.25	0.16	0.10
2540.0	2020.0	0.13	0.08	0.04
2580.0	2060.0	0.12	0.08	0.05
2620.0	2100.0	0.17	0.09	0.04
2660.0	2140.0	0.19	0.11	0.06
2700.0	2180.0	0.17	0.13	0.08
2740.0	2220.0	0.08	0.06	0.05
2780.0	2260.0	0.11	0.06	0.04
2820.0	2300.0	0.09	0.02	0.01
2860.0	2340.0	0.26	0.13	0.07
2900.0	2380.0	0.42	0.30	0.22
2940.0	2420.0	0.56	0.41	0.29
2970.0	2450.0	0.50	0.40	0.32
3010.0	2490.0	0.32	0.27	0.23
3040.0	2520.0	0.20	0.17	0.18
3080.0	2560.0	-0.03	0.00	0.12
3110.0	2590.0	0.08	0.11	0.17
3150.0	2630.0	0.60	0.50	0.51
3180.0	2660.0	0.87	0.74	0.66
3220.0	2700.0	0.93	0.79	0.66
3250.0	2730.0	0.86	0.75	0.61
3290.0	2770.0	0.64	0.46	0.29
3320.0	2800.0	0.41	0.26	0.18
3360.0	2840.0	0.16	0.13	0.11
3390.0	2870.0	0.03	0.02	0.05
3430.0	2910.0	0.12	0.14	0.17
3460.0	2940.0	-0.02	0.01	0.05
3500.0	2980.0	-0.17	-0.13	-0.07
3530.0	3010.0	-0.24	-0.19	-0.15
3570.0	3050.0	-0.29	-0.28	-0.21
3600.0	3080.0	-0.38	-0.33	-0.23

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2600.1001MHz (dB) @LO (dBm) +17
911.2	1688.9	9.32
852.4	1747.7	8.57
793.7	1806.4	8.20
754.5	1845.6	7.94
695.7	1904.4	7.63
656.5	1943.6	7.39
597.8	2002.3	7.43
558.6	2041.5	7.27
499.8	2100.3	7.24
460.6	2139.5	7.14
401.8	2198.3	7.07
362.7	2237.4	7.10
303.9	2296.2	6.99
264.7	2335.4	7.24
205.9	2394.2	8.21
166.7	2433.4	10.00
108.0	2492.1	12.73
68.8	2531.3	16.43
10.0	2590.1	32.93
30.8	2630.9	23.56
93.3	2693.4	14.58
134.9	2735.0	11.93
197.3	2797.4	9.40
239.0	2839.1	8.72
301.4	2901.5	8.22
343.1	2943.2	8.24
405.5	3005.6	8.39
447.1	3047.2	8.43
509.6	3109.7	8.35
551.2	3151.3	8.39
613.7	3213.8	9.23
655.3	3255.4	9.07
717.8	3317.9	9.36
759.4	3359.5	9.18
821.8	3421.9	9.32
863.5	3463.6	9.23
925.9	3526.0	9.47
967.6	3567.7	9.80
1030.0	3630.1	11.20

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2500.1001MHz (dB) @LO (dBm) +17
50.0	2550.1	19.13
90.0	2590.1	14.40
110.0	2610.1	13.07
150.0	2650.1	10.93
170.0	2670.1	10.02
210.0	2710.1	9.01
230.0	2730.1	8.72
270.0	2770.1	8.07
290.0	2790.1	7.94
330.0	2830.1	7.97
350.0	2850.1	7.91
390.0	2890.1	7.97
410.0	2910.1	8.13
450.0	2950.1	8.20
470.0	2970.1	8.21
510.0	3010.1	8.49
530.0	3030.1	8.49
570.0	3070.1	8.50
590.0	3090.1	8.68
630.0	3130.1	9.02
650.0	3150.1	8.97
690.0	3190.1	9.34
710.0	3210.1	9.45
750.0	3250.1	9.31
770.0	3270.1	9.33
810.0	3310.1	9.51
830.0	3330.1	9.54
870.0	3370.1	9.43
890.0	3390.1	9.48
930.0	3430.1	9.45
950.0	3450.1	9.41
990.0	3490.1	9.70
1010.0	3510.1	9.81
1050.0	3550.1	9.62
1070.0	3570.1	9.74
1110.0	3610.1	10.01
1130.0	3630.1	10.24
1170.0	3670.1	11.25
1190.0	3690.1	11.22

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2700.1001MHz (dB) @LO (dBm) +17
1050.0	1650.1	10.46
1030.0	1670.1	10.98
1010.0	1690.1	10.01
990.0	1710.1	9.67
970.0	1730.1	9.43
950.0	1750.1	9.15
930.0	1770.1	8.88
910.0	1790.1	8.66
890.0	1810.1	8.49
870.0	1830.1	8.37
850.0	1850.1	8.21
810.0	1890.1	8.04
790.0	1910.1	8.01
750.0	1950.1	7.77
730.0	1970.1	7.72
690.0	2010.1	7.73
670.0	2030.1	7.62
630.0	2070.1	7.76
610.0	2090.1	7.75
570.0	2130.1	7.44
550.0	2150.1	7.39
510.0	2190.1	7.35
490.0	2210.1	7.38
450.0	2250.1	7.20
430.0	2270.1	7.10
390.0	2310.1	6.99
370.0	2330.1	6.99
330.0	2370.1	7.03
310.0	2390.1	7.14
270.0	2430.1	8.14
250.0	2450.1	8.32
210.0	2490.1	8.83
190.0	2510.1	9.35
150.0	2550.1	10.89
130.0	2570.1	11.82
90.0	2610.1	14.83
70.0	2630.1	16.84
30.0	2670.1	23.80
10.0	2690.1	33.54

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+15	+17	+19	+15	+17	+19
1660.0	33.93	34.34	34.43	31.63	32.00	31.84
1700.0	35.24	36.18	36.50	30.36	30.76	30.90
1740.0	35.73	36.83	37.43	29.21	29.60	29.85
1780.0	36.49	37.69	38.46	28.42	28.71	28.76
1820.0	36.32	37.77	38.86	27.46	27.80	27.93
1860.0	36.44	38.03	39.33	26.38	26.67	26.80
1900.0	35.87	37.21	38.14	25.50	25.78	25.95
1940.0	35.60	36.73	37.51	24.61	24.73	24.87
1980.0	34.07	34.93	35.63	23.84	23.92	24.04
2020.0	33.34	34.02	34.67	23.06	23.11	23.31
2060.0	31.99	32.59	32.98	22.51	22.70	22.89
2100.0	31.40	32.11	32.52	22.05	22.39	22.52
2140.0	31.89	32.66	33.28	22.28	22.62	22.92
2180.0	32.07	32.91	33.70	22.63	23.12	23.47
2220.0	33.42	34.00	34.61	23.45	23.93	24.50
2260.0	34.56	35.29	36.29	23.57	24.06	24.72
2300.0	39.38	40.79	42.74	24.08	24.64	25.35
2340.0	37.66	37.69	37.86	24.50	25.18	26.07
2380.0	37.23	37.63	38.02	24.69	25.48	26.39
2420.0	43.05	39.47	37.83	27.68	29.37	31.04
2450.0	36.31	35.62	35.60	28.62	30.22	31.91
2490.0	35.86	35.53	35.54	28.54	29.89	31.29
2520.0	36.12	35.91	35.92	28.39	29.61	31.04
2560.0	35.38	35.30	35.47	28.77	29.94	31.47
2590.0	34.81	35.02	35.24	28.86	29.95	31.45
2630.0	34.02	34.56	35.19	28.53	29.23	30.33
2660.0	35.56	36.45	37.64	27.88	28.25	28.81
2700.0	35.39	36.12	37.16	27.41	27.50	27.78
2730.0	34.45	35.00	35.73	27.31	27.38	27.82
2770.0	33.35	33.85	34.35	27.30	27.70	28.33
2800.0	33.28	33.83	34.73	27.11	27.47	28.26
2840.0	35.40	36.04	36.72	26.73	27.20	27.80
2870.0	39.21	39.64	39.38	26.65	27.10	27.56
2910.0	44.42	44.24	42.22	26.62	26.95	27.24
2940.0	46.35	45.49	42.09	26.46	26.86	26.90
2980.0	46.78	44.95	41.78	26.36	26.61	26.82
3010.0	47.89	45.19	41.61	26.35	26.48	26.78
3050.0	47.19	43.82	40.25	26.43	26.81	27.00
3080.0	47.04	42.60	39.43	26.48	26.60	26.92

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+15	+17	+19
2180.0	1660.0	20.12	20.90	21.94
2220.0	1700.0	20.57	21.34	22.18
2260.0	1740.0	21.33	21.88	22.45
2300.0	1780.0	22.00	22.56	23.20
2340.0	1820.0	22.41	22.86	23.32
2380.0	1860.0	22.64	23.05	23.34
2420.0	1900.0	23.31	23.52	23.66
2460.0	1940.0	24.18	24.22	24.17
2500.0	1980.0	24.93	24.86	24.75
2540.0	2020.0	25.71	25.68	25.57
2580.0	2060.0	24.79	24.30	23.73
2620.0	2100.0	23.16	22.43	21.60
2660.0	2140.0	23.96	23.04	21.99
2700.0	2180.0	25.47	24.35	22.97
2740.0	2220.0	27.28	26.01	24.42
2780.0	2260.0	28.11	26.95	25.19
2820.0	2300.0	28.85	28.04	26.45
2860.0	2340.0	30.77	30.44	29.26
2900.0	2380.0	34.14	34.85	34.40
2940.0	2420.0	30.37	28.41	28.54
2970.0	2450.0	31.24	29.93	29.92
3010.0	2490.0	37.22	36.54	37.05
3040.0	2520.0	35.55	35.96	39.89
3080.0	2560.0	34.23	33.62	34.82
3110.0	2590.0	34.55	34.27	35.43
3150.0	2630.0	30.73	32.90	40.18
3180.0	2660.0	28.89	30.90	35.88
3220.0	2700.0	26.21	27.50	30.65
3250.0	2730.0	25.26	26.31	28.79
3290.0	2770.0	24.39	25.28	26.92
3320.0	2800.0	23.39	23.80	24.61
3360.0	2840.0	21.63	21.70	22.18
3390.0	2870.0	20.76	20.73	21.13
3430.0	2910.0	20.30	20.24	20.55
3460.0	2940.0	19.65	19.53	19.61
3500.0	2980.0	18.88	18.74	18.77
3530.0	3010.0	18.32	18.22	18.34
3570.0	3050.0	17.79	17.75	17.86
3600.0	3080.0	17.43	17.42	17.54

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+15	+17	+19
2180.0	1660.0	2.18	1.84	1.55
2220.0	1700.0	1.95	1.66	1.46
2260.0	1740.0	1.80	1.56	1.39
2300.0	1780.0	1.67	1.48	1.36
2340.0	1820.0	1.58	1.41	1.31
2380.0	1860.0	1.50	1.39	1.35
2420.0	1900.0	1.45	1.36	1.35
2460.0	1940.0	1.38	1.35	1.39
2500.0	1980.0	1.37	1.36	1.42
2540.0	2020.0	1.34	1.35	1.40
2580.0	2060.0	1.46	1.48	1.52
2620.0	2100.0	1.53	1.60	1.71
2660.0	2140.0	1.52	1.60	1.71
2700.0	2180.0	1.47	1.52	1.62
2740.0	2220.0	1.47	1.52	1.61
2780.0	2260.0	1.48	1.48	1.52
2820.0	2300.0	1.50	1.48	1.49
2860.0	2340.0	1.64	1.58	1.55
2900.0	2380.0	1.73	1.66	1.63
2940.0	2420.0	1.74	1.69	1.67
2970.0	2450.0	1.84	1.77	1.73
3010.0	2490.0	1.98	1.90	1.85
3040.0	2520.0	2.27	2.18	2.12
3080.0	2560.0	2.66	2.56	2.47
3110.0	2590.0	2.79	2.73	2.67
3150.0	2630.0	2.88	2.85	2.88
3180.0	2660.0	2.78	2.75	2.79
3220.0	2700.0	2.86	2.78	2.78
3250.0	2730.0	3.12	2.96	2.90
3290.0	2770.0	3.15	2.97	2.88
3320.0	2800.0	3.32	3.13	3.00
3360.0	2840.0	3.62	3.38	3.19
3390.0	2870.0	3.50	3.28	3.10
3430.0	2910.0	3.80	3.54	3.35
3460.0	2940.0	4.06	3.77	3.54
3500.0	2980.0	3.90	3.64	3.44
3530.0	3010.0	4.12	3.82	3.60
3570.0	3050.0	4.25	3.95	3.71
3600.0	3080.0	4.19	3.88	3.66

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+15	+17	+19
1660.0	20.22	19.98	19.76
1700.0	18.70	18.30	17.75
1740.0	17.05	16.72	16.11
1780.0	15.67	15.39	15.00
1820.0	13.09	12.71	12.35
1860.0	11.17	11.03	10.82
1900.0	8.81	8.60	8.31
1940.0	7.02	6.86	6.71
1980.0	5.33	5.19	5.04
2020.0	4.06	3.98	3.91
2060.0	3.24	3.21	3.19
2100.0	2.92	2.95	2.98
2140.0	3.08	3.15	3.23
2180.0	3.53	3.64	3.75
2220.0	4.35	4.48	4.63
2260.0	5.22	5.34	5.47
2300.0	6.30	6.44	6.58
2340.0	6.81	6.83	6.83
2380.0	7.20	7.22	7.25
2420.0	7.73	7.87	7.97
2450.0	9.28	9.33	9.38
2490.0	11.09	11.24	11.38
2520.0	11.38	11.38	11.31
2560.0	12.18	12.26	12.35
2590.0	12.99	13.19	13.29
2630.0	12.80	12.71	12.35
2660.0	13.81	13.92	13.81
2700.0	14.15	14.26	14.03
2730.0	13.70	13.49	12.99
2770.0	14.38	14.38	14.38
2800.0	13.92	13.81	13.60
2840.0	13.29	12.99	12.52
2870.0	14.03	13.92	13.70
2910.0	13.60	13.09	12.52
2940.0	13.39	12.99	12.35
2980.0	13.60	13.29	12.89
3010.0	12.61	12.18	11.53
3050.0	12.44	12.09	11.77
3080.0	11.85	11.53	11.17

IF (OUT) (MHz)	IF VSWR @LO=2180MHz (:1) @LO (dBm)		
	+15	+17	+19
50.0	22.00	20.95	19.98
90.0	10.19	9.63	9.13
130.0	6.07	5.81	5.58
170.0	3.78	3.67	3.58
210.0	2.74	2.72	2.72
250.0	2.02	2.04	2.09
290.0	1.64	1.71	1.81
330.0	1.34	1.43	1.55
390.0	1.21	1.33	1.46
430.0	1.28	1.34	1.44
490.0	1.49	1.51	1.56
530.0	1.68	1.66	1.68
590.0	1.84	1.80	1.78
630.0	1.96	1.90	1.85
690.0	2.14	2.04	1.95
730.0	2.26	2.15	2.05
790.0	2.30	2.16	2.03
830.0	2.34	2.20	2.06
890.0	2.36	2.19	2.02
930.0	2.35	2.19	2.03
990.0	2.27	2.14	2.01
1030.0	1.99	1.88	1.77
1090.0	2.09	1.90	1.80
1130.0	2.02	1.88	1.75
1190.0	1.85	1.72	1.60
1230.0	1.75	1.60	1.47
1290.0	1.70	1.55	1.42
1330.0	1.63	1.48	1.34
1390.0	1.58	1.43	1.29
1430.0	1.51	1.36	1.24
1490.0	1.45	1.34	1.24
1530.0	1.46	1.36	1.30
1590.0	1.57	1.52	1.49
1630.0	1.67	1.64	1.63
1690.0	1.94	1.94	1.95
1730.0	2.15	2.17	2.20
1790.0	2.58	2.64	2.70
1830.0	2.87	2.95	3.05
1890.0	3.32	3.48	3.65

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+2	11	13	17	22	31	30	53	50	65
1	-	15	+0	26	15	43	31	39	31	45	49	53
2	67	49	60	53	53	60	49	48	61	52	61	56
3	>90	31	43	15	26	+0	15	7	29	31	40	28
4	>90	22	17	13	11	+2	+7	+2	11	13	17	22
5	>90	28	40	31	29	7	15	+0	26	15	43	31
6	>90	56	60	52	61	48	49	60	53	53	60	49
7	>90	53	49	46	31	39	31	44	15	26	+0	15
8	>90	65	50	53	30	30	22	17	13	11	+2	+7
9	>90	65	74	53	42	45	28	40	31	29	7	15
10	---	---	75	75	>83	66	56	61	52	61	48	49
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

Test conditions: RF IN: 2600 MHz; 0.00 dBm.
LO IN: 2080 MHz; +17.00 dBm
IF OUT: 520 MHz; -7.19 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	8	21	23	26	30	49	42	61	66	80
1	-	15	+0	26	15	42	32	39	33	46	52	54
2	47	40	38	43	43	38	40	42	64	46	48	47
3	78	32	42	15	26	+0	15	7	30	30	38	29
4	>90	30	26	23	21	8	3	8	21	23	26	30
5	>90	29	38	30	30	7	15	+0	26	15	42	32
6	>90	47	48	46	64	42	41	38	43	43	38	41
7	>90	54	52	46	33	39	32	42	15	26	+0	15
8	>90	80	66	61	42	49	30	26	23	21	8	3
9	>90	71	84	52	43	44	29	38	30	30	7	15
10	---	---	66	59	77	52	47	48	46	64	42	41
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 2600 MHz; 10.00 dBm.
LO IN: 2080 MHz; +17.00 dBm
IF OUT: 520 MHz; 2.68 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.