Frequency Mixer MCA1T-12GL+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+1	+4	+7
3000.0	3030.0	13.43	11.47	10.03
3300.0	3330.0	9.34	8.15	7.42
3500.0	3530.0	7.59	6.92	6.47
3800.0	3830.0	6.49	5.96	5.65
4100.0	4130.0	5.75	5.31	5.07
4300.0	4330.0	5.62	5.14	4.93
4600.0	4630.0	5.50	5.19	5.08
4900.0	4930.0	5.66	5.37	5.22
5100.0	5130.0	7.31	6.62	6.24
5400.0	5430.0	6.91	6.30	6.08
5700.0	5730.0	7.85	7.12	6.79
5900.0	5930.0	7.34	6.68	6.28
6200.0	6230.0	6.91	6.20	5.80
6400.0	6430.0	7.39	6.41	5.93
6827.0	6857.0	7.34	6.27	5.79
7718.0	7748.0	7.82	6.51	6.05
8312.0	8342.0	7.87	6.57	6.08
9203.0	9233.0	7.81	6.11	5.72
9674.0	9704.0	8.68	6.61	6.12
9962.0	9992.0	8.90	6.88	6.41
10394.0	10424.0	7.84	6.53	6.20
10826.0	10856.0	8.67	6.71	6.39
11000.0	11030.0	9.27	6.87	6.49
11150.0	11180.0	10.90	7.90	6.99
11300.0	11330.0	10.74	7.95	7.15
11400.0	11430.0	10.68	7.78	7.15
11550.0	11580.0	11.55	8.01	7.34
11650.0	11680.0	11.22	7.93	7.16
11800.0	11830.0	9.87	7.39	6.84
11950.0	11980.0	10.42	7.76	7.17
12000.0	12030.0	9.61	7.39	6.91
12100.0	12130.0	9.87	7.62	6.98
12514.0	12544.0	10.40	8.97	8.70
13204.0	13234.0	16.08	11.27	9.98
13618.0	13648.0	13.92	12.13	11.51
14032.0	14062.0	20.93	17.33	16.42
14308.0	14338.0	20.33	17.77	16.94
14722.0	14752.0	18.47	16.22	15.60
15136.0	15166.0	28.14	19.50	15.24

RF (IN) (MHz)	LO (MHz)	IP-3 INPUT (dBm) @LO (dBm)		
		+1	+4	+7
3000.0	3030.0	3.00	5.06	7.19
3300.0	3330.0	4.23	4.34	5.56
3500.0	3530.0	6.11	7.45	7.62
3800.0	3830.0	4.67	6.45	5.63
4100.0	4130.0	7.57	8.95	11.00
4300.0	4330.0	8.40	9.39	9.19
4600.0	4630.0	9.69	9.65	9.50
4900.0	4930.0	8.47	11.26	14.59
5100.0	5130.0	10.21	13.74	13.21
5400.0	5430.0	7.72	10.26	10.64
5700.0	5730.0	8.70	11.80	11.57
5900.0	5930.0	10.03	10.52	12.50
6200.0	6230.0	9.95	9.08	10.80
6400.0	6430.0	10.89	9.83	10.30
6827.0	6857.0	9.63	14.02	12.60
7718.0	7748.0	5.65	9.49	9.75
8312.0	8342.0	6.78	13.41	12.54
9500.0	9530.0	6.45	9.44	13.18
9674.0	9704.0	6.43	9.51	11.52
9962.0	9992.0	7.35	9.95	11.44
10394.0	10424.0	8.00	10.25	13.65
10826.0	10856.0	11.12	11.36	13.89
11000.0	11030.0	10.26	12.09	13.94
11150.0	11180.0	5.65	13.33	15.09
11300.0	11330.0	6.18	9.82	12.90
11400.0	11430.0	6.34	10.65	12.02
11550.0	11580.0	4.26	11.18	12.22
11650.0	11680.0	5.23	10.54	11.59
11800.0	11830.0	9.98	9.32	10.38
11950.0	11980.0	9.25	13.78	12.14
12000.0	12030.0	10.63	10.49	11.38
12100.0	12130.0	9.23	12.55	12.29
12514.0	12544.0	10.77	10.93	10.46
13204.0	13234.0	4.80	12.24	15.46
13618.0	13648.0	15.06	19.62	18.56
14032.0	14062.0	6.17	11.13	15.49
14308.0	14338.0	9.43	11.67	14.69
14722.0	14752.0	9.30	16.62	12.53
15136.0	15166.0	3.90	11.82	14.54

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB) @LO (dBm)		
		+1	+4	+7
3000.0	3030.0	1.88	1.74	1.70
3300.0	3330.0	1.69	1.73	1.80
3500.0	3530.0	2.20	1.79	1.73
3800.0	3830.0	2.20	1.83	1.74
4100.0	4130.0	2.22	1.79	1.63
4300.0	4330.0	2.12	1.69	1.54
4600.0	4630.0	2.08	1.32	1.06
4900.0	4930.0	2.01	0.97	0.67
5100.0	5130.0	2.07	1.66	1.44
5400.0	5430.0	2.55	2.06	1.90
5700.0	5730.0	1.76	1.17	0.94
5900.0	5930.0	1.67	0.91	0.76
6200.0	6230.0	1.77	0.91	0.59
6400.0	6430.0	1.52	1.00	0.63
6827.0	6857.0	1.74	1.14	0.75
7718.0	7748.0	1.55	1.02	0.75
8312.0	8342.0	1.16	0.73	0.57
9203.0	9233.0	1.19	0.96	0.74
9674.0	9704.0	0.79	0.82	0.66
9962.0	9992.0	0.85	0.83	0.69
10394.0	10424.0	1.07	0.67	0.65
10826.0	10856.0	0.59	0.63	0.44
11000.0	11030.0	0.24	0.62	0.35
11150.0	11180.0	-0.35	0.35	0.40
11300.0	11330.0	-0.28	0.32	0.44
11400.0	11430.0	-0.31	0.41	0.43
11550.0	11580.0	-0.85	0.36	0.34
11650.0	11680.0	-0.67	0.37	0.47
11800.0	11830.0	0.19	0.64	0.66
11950.0	11980.0	-0.05	0.51	0.47
12000.0	12030.0	0.45	0.71	0.65
12100.0	12130.0	0.45	0.70	0.70
12514.0	12544.0	1.84	1.49	1.22
13204.0	13234.0	-1.72	0.30	0.19
13618.0	13648.0	0.39	0.23	0.32
14032.0	14062.0	-0.28	0.36	0.28
14308.0	14338.0	0.18	0.42	0.27
14722.0	14752.0	0.96	0.75	0.32
15136.0	15166.0	-3.96	-0.51	0.34

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=7900MHz (dB) @LO (dBm) +4
2990.0	4910.0	11.60
2890.0	5010.0	11.79
2790.0	5110.0	11.67
2402.0	5498.0	10.46
2156.0	5744.0	8.91
1951.0	5949.0	8.62
1746.0	6154.0	8.38
1500.0	6400.0	7.68
1324.0	6576.0	7.58
1129.0	6771.0	7.03
934.0	6966.0	6.54
700.0	7200.0	6.56
610.0	7290.0	6.16
560.0	7340.0	5.98
460.0	7440.0	6.04
370.0	7530.0	6.11
295.0	7605.0	6.16
220.0	7680.0	6.15
130.0	7770.0	6.10
55.0	7845.0	6.02
10.0	7910.0	6.33
110.0	8010.0	5.96
210.0	8110.0	5.96
554.0	8454.0	6.07
812.0	8712.0	6.41
1027.0	8927.0	6.33
1242.0	9142.0	6.65
1500.0	9400.0	7.01
1676.0	9576.0	7.22
1871.0	9771.0	7.78
2066.0	9966.0	8.58
2300.0	10200.0	9.33
2390.0	10290.0	10.10
2440.0	10340.0	9.97
2580.0	10480.0	10.39
2664.0	10564.0	10.29
2734.0	10634.0	10.22
2804.0	10704.0	10.62
2888.0	10788.0	11.07
2958.0	10858.0	10.77

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=3800MHz (dB) @LO (dBm) +4
10.0	3810.0	7.08
30.0	3830.0	6.40
60.0	3860.0	6.38
80.0	3880.0	6.39
110.0	3910.0	6.29
220.0	4020.0	6.32
260.0	4060.0	6.31
320.0	4120.0	6.25
380.0	4180.0	6.23
420.0	4220.0	6.10
480.0	4280.0	6.16
540.0	4340.0	6.42
580.0	4380.0	6.43
640.0	4440.0	6.49
680.0	4480.0	6.48
797.0	4597.0	6.43
908.0	4708.0	6.40
982.0	4782.0	6.44
1093.0	4893.0	6.55
1204.0	5004.0	6.66
1278.0	5078.0	6.92
1389.0	5189.0	7.05
1500.0	5300.0	7.23
1618.0	5418.0	7.30
1912.0	5712.0	8.00
2206.0	6006.0	8.09
2402.0	6202.0	9.74
2584.0	6384.0	12.72
2610.0	6410.0	13.12
2649.0	6449.0	13.09
2688.0	6488.0	13.72
2714.0	6514.0	13.57
2753.0	6553.0	13.24
2792.0	6592.0	13.30
2818.0	6618.0	12.98
2857.0	6657.0	12.84
2896.0	6696.0	12.57
2922.0	6722.0	12.09
2961.0	6761.0	12.41
3000.0	6800.0	11.90

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=12000MHz (dB) @LO (dBm) +4
3468.0	8532.0	12.20
3430.0	8570.0	11.67
3373.0	8627.0	11.91
3335.0	8665.0	11.05
3278.0	8722.0	11.41
3221.0	8779.0	11.00
3183.0	8817.0	11.57
3126.0	8874.0	11.31
3069.0	8931.0	11.77
3000.0	9000.0	11.79
2760.0	9240.0	12.35
2520.0	9480.0	12.94
2360.0	9640.0	11.86
2072.0	9928.0	11.98
2028.0	9972.0	12.59
1962.0	10038.0	11.77
1896.0	10104.0	11.72
1852.0	10148.0	11.40
1786.0	10214.0	11.13
1720.0	10280.0	11.31
1676.0	10324.0	11.08
1610.0	10390.0	11.09
1544.0	10456.0	11.25
1500.0	10500.0	10.97
1404.9	10595.1	10.78
1337.4	10662.6	10.88
1292.4	10707.6	11.02
1224.9	10775.1	10.92
1179.9	10820.1	10.97
1112.4	10887.6	10.92
1044.9	10955.1	11.35
999.9	11000.1	11.16
766.0	11234.0	11.22
490.0	11510.0	10.55
306.0	11694.0	10.48
30.0	11970.0	10.17
18.0	11982.0	10.05
16.0	11984.0	10.22
13.0	11987.0	10.06
10.0	11990.0	10.36

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+1	+4	+7	+1	+4	+7
3030.0	30.05	36.32	39.17	5.92	5.74	5.68
3330.0	31.55	34.56	37.06	7.68	7.83	7.77
3530.0	31.13	31.42	32.00	10.35	10.35	9.83
3830.0	32.09	31.35	30.35	13.28	12.33	11.20
4130.0	34.48	32.41	30.43	15.71	13.88	12.53
4330.0	37.18	33.97	31.16	15.42	13.73	12.51
4630.0	32.06	29.91	28.02	15.47	14.34	13.40
4930.0	28.80	26.46	25.13	13.38	13.22	12.94
5130.0	27.16	28.90	28.87	12.02	12.37	12.59
5430.0	20.03	21.25	22.13	10.84	11.98	12.93
5730.0	18.23	20.44	22.46	12.46	14.21	15.70
5930.0	20.34	22.77	24.86	15.93	17.96	19.79
6230.0	23.74	25.77	27.17	21.80	23.66	25.49
6430.0	25.63	27.67	29.21	25.89	27.64	29.32
6857.0	30.93	33.38	35.28	35.32	35.72	35.60
7748.0	43.03	40.37	38.30	43.37	41.39	39.22
8342.0	37.75	35.78	33.99	54.65	62.36	64.04
9530.0	29.54	26.88	24.45	30.77	31.96	33.73
9704.0	29.13	27.39	24.54	29.50	29.87	30.44
9992.0	25.81	25.65	23.55	25.90	25.20	24.33
10424.0	22.61	23.66	23.19	27.63	25.78	23.93
10856.0	22.01	23.06	23.05	25.54	25.82	25.51
11030.0	22.53	23.28	23.33	23.88	24.60	24.96
11180.0	23.15	23.53	23.57	22.71	23.53	24.27
11330.0	23.24	23.26	22.98	21.27	22.25	23.38
11430.0	22.78	22.67	22.24	20.70	21.69	22.93
11580.0	23.25	22.92	22.31	20.60	21.49	22.83
11680.0	22.40	22.18	21.62	20.02	20.94	22.29
11830.0	20.98	20.99	20.60	19.06	20.12	21.58
11980.0	19.71	19.99	19.87	19.22	20.10	21.33
12030.0	19.32	19.74	19.73	18.40	19.35	20.60
12130.0	18.53	19.16	19.41	18.59	19.40	20.41
12544.0	14.84	16.41	17.65	17.69	17.48	17.34
13234.0	23.24	25.44	28.58	12.70	12.79	13.08
13648.0	22.03	22.75	21.34	10.33	10.81	11.39
14062.0	16.80	15.71	14.55	12.20	12.69	12.66
14338.0	16.82	15.31	13.74	17.72	15.85	14.29
14752.0	13.59	13.05	12.40	19.55	18.44	17.37
15166.0	10.27	10.48	10.92	21.28	21.31	21.24

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+1	+4	+7
3000.0	3030.0	23.91	23.97	24.17
3300.0	3330.0	25.55	27.70	29.24
3500.0	3530.0	25.81	27.81	28.86
3800.0	3830.0	25.59	25.67	25.01
4100.0	4130.0	23.68	23.18	22.38
4300.0	4330.0	23.38	22.27	21.10
4600.0	4630.0	18.55	17.36	16.23
4900.0	4930.0	14.87	14.06	13.43
5100.0	5130.0	16.21	15.31	14.45
5400.0	5430.0	9.82	9.51	9.27
5700.0	5730.0	7.76	8.27	8.52
5900.0	5930.0	9.24	10.02	10.47
6200.0	6230.0	12.31	13.14	13.88
6400.0	6430.0	14.00	14.70	15.43
6827.0	6857.0	17.64	18.19	18.69
7718.0	7748.0	28.85	27.73	26.93
8312.0	8342.0	26.02	25.00	24.32
9500.0	9530.0	18.71	19.85	20.64
9674.0	9704.0	18.88	20.56	21.93
9962.0	9992.0	20.21	21.79	22.83
10394.0	10424.0	16.37	18.03	18.99
10826.0	10856.0	18.11	19.56	20.63
11000.0	11030.0	18.33	19.39	20.07
11150.0	11180.0	19.08	19.56	19.85
11300.0	11330.0	19.85	20.56	20.91
11400.0	11430.0	21.04	21.63	21.87
11550.0	11580.0	23.00	22.65	22.39
11650.0	11680.0	24.24	22.97	22.24
11800.0	11830.0	24.41	21.97	20.77
11950.0	11980.0	23.82	20.64	19.15
12000.0	12030.0	23.59	20.71	19.32
12100.0	12130.0	22.29	19.75	18.29
12514.0	12544.0	16.31	15.84	15.32
13204.0	13234.0	10.55	10.86	10.92
13618.0	13648.0	9.33	9.46	9.64
14032.0	14062.0	8.07	8.18	8.22
14308.0	14338.0	9.11	9.48	9.64
14722.0	14752.0	13.72	13.51	13.33
15136.0	15166.0	15.00	14.97	14.91

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+1	+4	+7
3000.0	3030.0	4.01	3.15	2.56
3300.0	3330.0	3.21	2.66	2.38
3500.0	3530.0	2.71	2.26	2.07
3800.0	3830.0	2.43	2.04	1.80
4100.0	4130.0	2.14	1.79	1.55
4300.0	4330.0	2.23	1.88	1.60
4600.0	4630.0	1.83	1.53	1.31
4900.0	4930.0	1.58	1.37	1.27
5100.0	5130.0	2.54	2.25	2.01
5400.0	5430.0	1.78	1.58	1.44
5700.0	5730.0	1.56	1.44	1.37
5900.0	5930.0	1.65	1.47	1.39
6200.0	6230.0	2.00	1.70	1.50
6400.0	6430.0	2.31	1.93	1.64
6827.0	6857.0	1.96	1.60	1.34
7718.0	7748.0	2.68	2.31	2.14
8312.0	8342.0	4.12	3.41	3.04
9203.0	9233.0	2.42	1.88	1.69
9674.0	9704.0	6.83	4.74	4.28
9962.0	9992.0	2.94	2.17	1.95
10394.0	10424.0	1.50	1.59	1.75
10826.0	10856.0	3.22	2.58	2.47
11000.0	11030.0	2.58	1.98	1.82
11150.0	11180.0	3.08	2.33	2.07
11300.0	11330.0	3.15	2.47	2.25
11400.0	11430.0	3.13	2.45	2.24
11550.0	11580.0	3.21	2.48	2.30
11650.0	11680.0	3.16	2.45	2.28
11800.0	11830.0	3.08	2.41	2.22
11950.0	11980.0	3.02	2.34	2.16
12000.0	12030.0	3.02	2.38	2.18
12100.0	12130.0	2.95	2.31	2.08
12514.0	12544.0	2.68	2.42	2.26
13204.0	13234.0	2.43	2.10	1.89
13618.0	13648.0	2.75	2.64	2.45
14032.0	14062.0	3.23	3.12	3.05
14308.0	14338.0	3.84	3.63	3.41
14722.0	14752.0	2.28	2.18	2.10
15136.0	15166.0	2.81	2.87	2.92

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+1	+4	+7
3030.0	2.62	2.75	2.93
3330.0	2.71	2.78	3.01
3530.0	2.71	2.80	3.17
3830.0	2.46	2.74	3.28
4130.0	2.19	2.70	3.44
4330.0	1.88	2.45	3.19
4630.0	1.72	2.39	3.18
4930.0	1.66	2.25	2.97
5130.0	1.76	2.28	2.95
5430.0	1.90	2.34	3.01
5730.0	2.43	2.67	3.21
5930.0	2.79	2.81	3.21
6230.0	3.24	3.00	3.16
6430.0	3.38	3.01	3.12
6857.0	4.66	3.69	3.63
7748.0	5.99	3.63	2.95
8342.0	4.58	2.97	2.43
9233.0	4.78	2.98	2.19
9704.0	6.33	3.63	2.43
9992.0	5.69	3.50	2.42
10424.0	3.70	2.48	1.90
10856.0	3.87	2.66	1.97
11030.0	4.59	3.10	2.26
11180.0	5.60	3.72	2.55
11330.0	6.18	3.92	2.57
11430.0	6.28	3.96	2.55
11580.0	5.23	3.62	2.37
11680.0	4.84	3.36	2.22
11830.0	4.57	3.07	2.05
11980.0	4.95	3.39	2.27
12030.0	4.12	2.80	1.91
12130.0	3.77	2.66	1.87
12544.0	1.88	1.74	1.72
13234.0	2.92	2.48	1.98
13648.0	1.89	1.47	1.20
14062.0	2.74	2.19	1.75
14338.0	2.70	2.25	1.87
14752.0	2.99	2.66	2.37
15166.0	2.52	2.54	2.59

IF (OUT) (MHz)	IF VSWR @LO=9500MHz (:1) @LO (dBm)		
	+1	+4	+7
10.0	2.39	1.31	1.08
34.0	2.08	1.19	1.01
70.0	2.09	1.25	1.10
94.0	2.03	1.22	1.10
130.0	2.10	1.28	1.08
198.0	2.08	1.27	1.14
224.0	2.16	1.35	1.17
263.0	2.17	1.38	1.24
302.0	2.17	1.38	1.24
328.0	2.24	1.43	1.26
367.0	2.26	1.49	1.34
406.0	2.28	1.44	1.29
432.0	2.39	1.53	1.34
471.0	2.32	1.53	1.40
497.0	2.37	1.51	1.34
566.0	2.47	1.62	1.46
674.0	2.63	1.69	1.48
746.0	2.80	1.82	1.56
854.0	2.93	1.90	1.62
962.0	3.01	1.94	1.63
1034.0	3.84	2.32	1.90
1142.0	3.59	2.23	1.81
1250.0	3.45	2.21	1.81
1314.0	3.91	2.49	2.04
1530.0	2.90	2.00	1.69
1638.0	2.67	1.93	1.66
1746.0	2.82	2.09	1.82
1870.0	2.14	1.63	1.45
1930.0	2.22	1.70	1.51
2020.0	2.07	1.68	1.54
2050.0	2.36	1.80	1.61
2110.0	2.16	1.70	1.56
2170.0	2.13	1.76	1.64
2260.0	1.98	1.58	1.47
2410.0	1.77	1.61	1.59
2500.0	1.62	1.58	1.61
2640.0	1.56	1.60	1.68
2730.0	1.66	1.81	1.94
3000.0	2.37	2.86	3.09

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	10	37	29	---	---	---	---	---	---	---
1	-	18	+0	31	45	46	---	---	---	---	---	---
2	84	45	62	53	63	52	61	---	---	---	---	---
3	>90	>69	>69	68	50	>69	68	>69	---	---	---	---
4	---	---	>69	>69	>69	>69	>69	>69	>69	---	---	---
5	---	---	---	>69	>69	>69	>69	>69	>69	>69	---	---
6	---	---	---	---	>69	>69	>69	>69	>69	>69	>69	---
7	---	---	---	---	---	>69	>69	>69	>69	>69	>69	>69
8	---	---	---	---	---	---	>69	>69	>69	>69	>69	>69
9	---	---	---	---	---	---	---	>69	>69	>69	>69	>69
10	---	---	---	---	---	---	---	---	>69	>69	>69	>69
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

Test conditions: RF IN: 7750 MHz; -14.00 dBm.
LO IN: 7720 MHz; +4.00 dBm
IF OUT: 30 MHz; -20.87 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	20	46	42	---	---	---	---	---	---	---
1	-	18	+0	33	45	48	---	---	---	---	---	---
2	65	36	55	47	57	50	65	---	---	---	---	---
3	83	47	60	50	35	53	61	68	---	---	---	---
4	---	---	76	61	71	59	78	63	75	---	---	---
5	---	---	---	71	>79	>79	47	>79	69	78	---	---
6	---	---	---	---	>79	>79	>79	68	>79	76	>79	---
7	---	---	---	---	---	>79	>79	>79	61	>79	>79	78
8	---	---	---	---	---	---	>79	>79	>79	77	>79	>79
9	---	---	---	---	---	---	---	>79	>79	>79	75	>79
10	---	---	---	---	---	---	---	---	>79	>79	>79	>79
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 7750 MHz; -4.00 dBm.
LO IN: 7720 MHz; +4.00 dBm
IF OUT: 30 MHz; -11.02 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.