Frequency Mixer MCA-ED12749/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=220MHz (dB) @LO (dBm)		
		+15	+18	+21
486.0	706.0	11.14	10.57	10.09
516.0	736.0	8.85	8.10	7.52
546.0	766.0	8.07	7.46	7.12
576.0	796.0	7.71	7.25	7.01
606.0	826.0	7.35	7.00	6.78
631.0	851.0	7.33	6.99	6.76
661.0	881.0	7.83	7.42	7.17
686.0	906.0	7.42	7.12	6.92
716.0	936.0	7.28	7.01	6.84
741.0	961.0	7.33	7.03	6.85
771.0	991.0	7.29	6.95	6.73
796.0	1016.0	7.44	7.08	6.85
826.0	1046.0	7.59	7.18	6.90
851.0	1071.0	7.78	7.33	7.03
881.0	1101.0	7.87	7.40	7.09
906.0	1126.0	8.02	7.51	7.19
936.0	1156.0	8.11	7.56	7.22
961.0	1181.0	8.11	7.52	7.17
991.0	1211.0	8.18	7.53	7.16
1016.0	1236.0	8.25	7.58	7.19
1046.0	1266.0	8.23	7.58	7.17
1071.0	1291.0	8.37	7.66	7.23
1101.0	1321.0	8.44	7.71	7.27
1126.0	1346.0	8.42	7.70	7.28
1156.0	1376.0	8.40	7.70	7.28
1181.0	1401.0	8.42	7.71	7.34
1211.0	1431.0	8.59	7.88	7.51
1236.0	1456.0	8.62	7.92	7.58
1266.0	1486.0	8.53	7.86	7.52
1291.0	1511.0	8.53	7.82	7.44
1321.0	1541.0	8.67	7.98	7.52
1346.0	1566.0	8.66	7.93	7.51
1376.0	1596.0	8.63	7.97	7.62
1401.0	1621.0	8.55	7.97	7.68
1431.0	1651.0	8.35	7.90	7.68
1456.0	1676.0	8.31	7.87	7.69
1486.0	1706.0	8.51	8.17	8.00
1511.0	1731.0	8.80	8.53	8.40
1541.0	1761.0	9.75	9.54	9.43
1566.0	1786.0	10.22	9.94	9.79

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+15	+18	+21
486.0	706.0	18.36	19.08	19.83
516.0	736.0	23.99	23.47	23.36
546.0	766.0	25.04	26.02	29.66
576.0	796.0	25.92	28.53	31.41
606.0	826.0	24.88	26.75	28.97
631.0	851.0	23.43	25.08	26.87
661.0	881.0	24.95	26.29	28.08
686.0	906.0	26.27	28.27	30.17
716.0	936.0	25.28	27.16	29.44
741.0	961.0	25.87	27.24	29.59
771.0	991.0	27.66	29.30	31.83
796.0	1016.0	25.42	27.13	29.31
826.0	1046.0	24.19	25.97	28.02
851.0	1071.0	24.13	25.87	27.51
881.0	1101.0	24.32	26.21	27.34
906.0	1126.0	23.69	25.26	26.99
936.0	1156.0	22.82	24.25	25.99
961.0	1181.0	22.78	24.10	25.77
991.0	1211.0	23.01	24.59	26.40
1016.0	1236.0	23.90	25.27	26.79
1046.0	1266.0	25.00	25.64	26.58
1071.0	1291.0	24.94	25.86	26.63
1101.0	1321.0	22.34	24.24	26.21
1126.0	1346.0	21.48	23.52	25.85
1156.0	1376.0	21.04	22.94	25.21
1181.0	1401.0	20.40	21.93	23.68
1211.0	1431.0	19.91	21.09	23.09
1236.0	1456.0	20.57	21.54	23.69
1266.0	1486.0	21.18	22.19	24.32
1291.0	1511.0	20.80	22.35	24.78
1321.0	1541.0	20.62	21.96	22.84
1346.0	1566.0	20.81	21.42	22.43
1376.0	1596.0	20.68	21.50	22.87
1401.0	1621.0	20.28	21.58	23.03
1431.0	1651.0	20.75	22.74	24.55
1456.0	1676.0	21.57	23.64	25.73
1486.0	1706.0	22.53	24.65	26.71
1511.0	1731.0	23.37	25.24	26.84
1541.0	1761.0	25.00	26.01	26.54
1566.0	1786.0	24.00	24.83	26.08

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+20dBm (dB) @LO (dBm)		
		+15	+18	+21
486.0	706.0	1.66	1.62	1.57
516.0	736.0	2.60	2.30	2.01
546.0	766.0	2.72	2.06	1.43
576.0	796.0	2.22	1.43	0.79
606.0	826.0	1.91	1.10	0.49
631.0	851.0	1.73	0.96	0.49
661.0	881.0	1.38	0.98	0.73
686.0	906.0	1.11	0.74	0.41
716.0	936.0	1.10	0.72	0.42
741.0	961.0	1.21	0.82	0.58
771.0	991.0	1.19	0.76	0.47
796.0	1016.0	1.32	0.81	0.45
826.0	1046.0	1.55	1.02	0.62
851.0	1071.0	1.74	1.13	0.65
881.0	1101.0	2.10	1.36	0.79
906.0	1126.0	2.44	1.55	0.87
936.0	1156.0	2.97	1.92	1.12
961.0	1181.0	3.55	2.33	1.31
991.0	1211.0	4.08	2.77	1.57
1016.0	1236.0	4.20	2.90	1.71
1046.0	1266.0	4.28	2.94	1.79
1071.0	1291.0	4.53	3.14	1.90
1101.0	1321.0	5.01	3.59	2.26
1126.0	1346.0	5.40	3.85	2.39
1156.0	1376.0	5.60	3.96	2.43
1181.0	1401.0	5.81	4.22	2.72
1211.0	1431.0	6.18	4.56	2.82
1236.0	1456.0	5.93	4.32	2.66
1266.0	1486.0	5.89	4.36	2.75
1291.0	1511.0	6.07	4.65	3.02
1321.0	1541.0	6.07	4.72	3.12
1346.0	1566.0	5.77	4.36	2.82
1376.0	1596.0	5.93	4.46	2.88
1401.0	1621.0	6.22	4.64	2.92
1431.0	1651.0	5.60	4.02	2.31
1456.0	1676.0	4.75	3.25	1.84
1486.0	1706.0	4.20	2.81	1.57
1511.0	1731.0	3.70	2.41	1.51
1541.0	1761.0	2.91	1.87	1.10
1566.0	1786.0	2.51	1.78	1.16

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=761MHz (dB) @LO (dBm) +18
50.0	711.0	10.36
48.0	713.0	10.07
46.0	715.0	9.77
44.0	717.0	9.55
42.0	719.0	9.31
40.0	721.0	9.11
38.0	723.0	8.92
36.0	725.0	8.79
34.0	727.0	8.67
32.0	729.0	8.56
30.0	731.0	8.47
28.0	733.0	8.39
26.0	735.0	8.30
24.0	737.0	8.23
22.0	739.0	8.19
20.0	741.0	8.16
18.0	743.0	8.10
16.0	745.0	8.06
14.0	747.0	8.15
12.0	749.0	8.17
10.0	751.0	8.30
10.0	771.0	8.12
49.0	810.0	7.43
88.0	849.0	7.21
127.0	888.0	7.44
166.0	927.0	7.07
205.0	966.0	6.96
244.0	1005.0	6.94
283.0	1044.0	7.38
322.0	1083.0	7.74
361.0	1122.0	8.07
400.0	1161.0	8.35
439.0	1200.0	8.59
478.0	1239.0	8.81
517.0	1278.0	8.97
556.0	1317.0	9.31
634.0	1395.0	9.83
673.0	1434.0	9.96
751.0	1512.0	9.95
790.0	1551.0	9.99

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=735.9MHz (dB) @LO (dBm) +18
10.1	746.0	8.31
30.6	766.5	7.75
51.1	787.0	7.61
71.6	807.5	7.46
92.2	828.1	7.30
112.7	848.6	7.20
133.2	869.1	7.32
153.7	889.6	7.37
174.2	910.1	7.07
194.7	930.6	7.09
215.2	951.1	6.99
235.7	971.6	7.03
256.3	992.2	6.92
276.8	1012.7	7.02
297.3	1033.2	7.24
317.8	1053.7	7.58
338.3	1074.2	7.75
358.8	1094.7	7.95
379.3	1115.2	8.08
399.8	1135.7	8.27
420.4	1156.3	8.33
440.9	1176.8	8.52
461.4	1197.3	8.67
481.9	1217.8	8.79
502.4	1238.3	8.92
522.9	1258.8	8.98
543.4	1279.3	9.07
563.9	1299.8	9.26
584.5	1320.4	9.44
605.0	1340.9	9.58
625.5	1361.4	9.66
646.0	1381.9	9.87
666.5	1402.4	9.92
687.0	1422.9	9.98
707.5	1443.4	9.87
728.0	1463.9	9.83
748.6	1484.5	9.88
769.1	1505.0	10.05
789.6	1525.5	10.10
810.1	1546.0	10.17

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=786.1MHz (dB) @LO (dBm) +18
70.1	716.0	9.87
68.6	717.5	9.67
67.0	719.1	9.49
65.5	720.6	9.33
63.9	722.2	9.18
62.4	723.7	9.05
60.9	725.2	8.93
59.3	726.8	8.84
57.8	728.3	8.76
56.3	729.8	8.67
54.7	731.4	8.59
53.2	732.9	8.50
51.6	734.5	8.44
50.1	736.0	8.37
48.6	737.5	8.30
47.0	739.1	8.24
45.5	740.6	8.20
43.9	742.2	8.16
42.4	743.7	8.12
40.9	745.2	8.08
39.3	746.8	8.04
37.8	748.3	8.00
36.3	749.8	7.98
34.7	751.4	7.95
33.2	752.9	7.93
31.6	754.5	7.92
30.1	756.0	7.89
28.6	757.5	7.87
27.0	759.1	7.83
25.5	760.6	7.84
23.9	762.2	7.80
22.4	763.7	7.80
20.9	765.2	7.79
19.3	766.8	7.78
17.8	768.3	7.76
16.3	769.8	7.76
14.7	771.4	7.82
13.2	772.9	7.85
11.6	774.5	7.90
10.1	776.0	7.99

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm) +15	+18	+21	LO-IF ISOLATION (dB) @LO (dBm) +15	+18	+21
706.0	37.01	36.82	36.60	29.66	29.80	29.92
736.0	38.95	39.23	39.40	29.65	29.66	29.65
766.0	36.86	36.75	36.67	29.18	29.35	29.51
796.0	34.86	34.30	33.59	28.90	28.99	29.36
826.0	32.76	32.30	31.86	30.25	30.58	30.83
851.0	30.13	29.82	29.61	34.59	35.35	36.08
881.0	28.00	27.88	27.83	38.64	40.57	41.82
906.0	32.87	32.54	32.32	32.15	33.05	33.72
936.0	35.34	34.78	34.38	29.65	30.91	32.09
961.0	36.46	36.13	35.87	27.81	28.86	29.72
991.0	38.11	37.65	37.31	26.93	27.95	28.74
1016.0	39.00	38.39	37.90	26.82	27.93	28.81
1046.0	39.19	38.70	38.45	26.49	27.61	28.43
1071.0	41.13	40.84	40.79	26.20	27.19	27.94
1101.0	42.89	42.65	42.64	26.20	27.03	27.62
1126.0	44.11	44.02	44.22	26.42	27.18	27.71
1156.0	45.26	45.18	45.46	26.96	27.80	28.35
1181.0	45.42	45.18	45.08	27.24	28.28	28.94
1211.0	45.45	45.18	45.17	27.68	28.80	29.52
1236.0	46.29	46.11	46.06	27.78	29.04	29.99
1266.0	45.81	45.30	44.86	28.24	29.60	30.62
1291.0	45.71	45.05	44.74	28.45	29.91	31.05
1321.0	44.69	44.39	44.33	28.47	30.10	31.44
1346.0	42.85	42.84	42.99	28.53	30.17	31.57
1376.0	41.19	40.91	40.96	28.57	30.00	31.27
1401.0	39.93	39.18	38.91	28.06	29.13	30.04
1431.0	41.98	39.97	38.72	28.21	29.45	30.56
1456.0	51.68	46.12	43.06	30.07	32.31	34.46
1486.0	47.44	49.21	47.86	30.67	33.17	35.70
1511.0	44.57	47.14	47.61	30.53	32.83	35.13
1541.0	43.43	45.55	46.29	30.83	32.89	34.85
1566.0	43.18	44.72	45.64	30.40	31.79	32.98
1596.0	42.52	44.34	45.56	29.66	30.42	30.96
1621.0	42.54	44.94	47.06	29.14	29.66	30.03
1651.0	43.69	46.47	49.65	28.57	28.94	29.27
1676.0	44.48	47.30	50.91	28.22	28.54	28.77
1706.0	44.08	44.90	45.78	27.38	27.57	27.65
1731.0	39.64	39.27	39.31	26.30	26.35	26.53
1761.0	31.92	32.07	31.98	24.70	24.56	24.62
1786.0	28.47	28.41	28.49	24.19	24.05	24.00

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm) +15	+18	+21
486.0	706.0	18.77	18.71	18.92
516.0	736.0	19.25	19.72	20.47
546.0	766.0	23.61	24.54	25.61
576.0	796.0	26.68	27.16	27.74
606.0	826.0	30.18	30.65	31.21
631.0	851.0	32.61	32.72	33.19
661.0	881.0	35.09	31.76	29.70
686.0	906.0	35.08	33.90	33.12
716.0	936.0	33.57	33.80	33.69
741.0	961.0	27.59	27.62	27.47
771.0	991.0	25.86	25.73	25.62
796.0	1016.0	26.08	25.96	26.03
826.0	1046.0	24.65	24.34	24.33
851.0	1071.0	23.95	23.61	23.48
881.0	1101.0	24.74	24.46	24.24
906.0	1126.0	26.04	25.77	25.42
936.0	1156.0	28.09	28.04	27.68
961.0	1181.0	29.04	29.09	29.13
991.0	1211.0	29.10	28.88	28.97
1016.0	1236.0	29.24	28.89	28.79
1046.0	1266.0	29.59	29.06	28.78
1071.0	1291.0	30.22	29.50	28.89
1101.0	1321.0	31.42	30.19	29.02
1126.0	1346.0	32.64	31.11	29.63
1156.0	1376.0	34.31	32.84	31.02
1181.0	1401.0	35.26	34.46	33.09
1211.0	1431.0	32.18	31.75	29.32
1236.0	1456.0	31.95	30.31	26.83
1266.0	1486.0	32.67	31.40	28.60
1291.0	1511.0	30.77	29.44	26.44
1321.0	1541.0	30.39	30.14	26.76
1346.0	1566.0	32.23	31.53	29.76
1376.0	1596.0	30.34	28.83	27.29
1401.0	1621.0	29.36	28.44	27.30
1431.0	1651.0	29.76	29.48	29.23
1456.0	1676.0	32.07	32.13	32.41
1486.0	1706.0	33.38	34.86	37.08
1511.0	1731.0	34.07	32.12	32.48
1541.0	1761.0	24.87	23.42	22.98
1566.0	1786.0	22.69	22.03	21.91

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+15	+18	+21
486.0	706.0	2.85	2.61	2.45
516.0	736.0	3.00	2.66	2.43
546.0	766.0	2.92	2.63	2.46
576.0	796.0	2.82	2.57	2.40
606.0	826.0	2.75	2.52	2.37
631.0	851.0	2.74	2.53	2.39
661.0	881.0	2.29	2.04	1.88
686.0	906.0	2.20	2.02	1.90
716.0	936.0	2.16	1.97	1.85
741.0	961.0	2.13	1.94	1.80
771.0	991.0	2.26	2.06	1.92
796.0	1016.0	2.26	2.07	1.94
826.0	1046.0	2.24	2.02	1.89
851.0	1071.0	2.25	2.02	1.87
881.0	1101.0	2.31	2.05	1.89
906.0	1126.0	2.34	2.08	1.92
936.0	1156.0	2.29	2.03	1.86
961.0	1181.0	2.22	1.96	1.78
991.0	1211.0	2.16	1.91	1.75
1016.0	1236.0	2.08	1.86	1.71
1046.0	1266.0	1.94	1.73	1.61
1071.0	1291.0	1.88	1.67	1.55
1101.0	1321.0	1.80	1.60	1.49
1126.0	1346.0	1.69	1.50	1.40
1156.0	1376.0	1.57	1.41	1.32
1181.0	1401.0	1.49	1.33	1.25
1211.0	1431.0	1.37	1.21	1.14
1236.0	1456.0	1.25	1.11	1.12
1266.0	1486.0	1.19	1.05	1.12
1291.0	1511.0	1.18	1.05	1.08
1321.0	1541.0	1.22	1.11	1.09
1346.0	1566.0	1.25	1.19	1.21
1376.0	1596.0	1.33	1.30	1.32
1401.0	1621.0	1.39	1.38	1.41
1431.0	1651.0	1.49	1.49	1.53
1456.0	1676.0	1.60	1.60	1.63
1486.0	1706.0	1.71	1.71	1.74
1511.0	1731.0	1.77	1.78	1.81
1541.0	1761.0	1.83	1.84	1.86
1566.0	1786.0	1.96	1.96	1.98

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+15	+18	+21
706.0	22.58	22.58	22.00
736.0	21.46	21.20	20.70
766.0	17.75	17.57	17.22
796.0	13.29	12.99	12.71
826.0	9.53	9.38	9.18
851.0	6.97	6.83	6.73
881.0	4.63	4.55	4.46
906.0	3.27	3.21	3.16
936.0	1.99	1.95	1.92
961.0	1.31	1.29	1.27
991.0	1.25	1.27	1.29
1016.0	1.78	1.81	1.83
1046.0	2.56	2.60	2.62
1071.0	3.31	3.36	3.39
1101.0	4.28	4.32	4.33
1126.0	5.13	5.16	5.14
1156.0	6.19	6.26	6.28
1181.0	7.08	7.11	7.11
1211.0	8.01	7.97	7.80
1236.0	8.86	8.86	8.77
1266.0	9.85	9.90	9.90
1291.0	10.62	10.50	10.25
1321.0	11.46	11.38	10.96
1346.0	12.44	12.44	12.26
1376.0	13.29	13.19	12.99
1401.0	13.70	13.39	12.71
1431.0	14.50	14.26	13.92
1456.0	15.39	15.39	15.13
1486.0	16.26	15.81	15.13
1511.0	16.89	16.41	15.39
1541.0	17.75	17.39	16.89
1566.0	17.93	17.57	16.89
1596.0	18.30	17.39	15.96
1621.0	18.90	18.30	17.22
1651.0	19.11	18.70	17.93
1676.0	18.11	17.39	16.11
1706.0	16.56	15.81	14.50
1731.0	14.03	13.60	12.89
1761.0	10.56	10.25	9.79
1786.0	9.08	8.77	8.27

IF (OUT) (MHz)	IF VSWR @LO=776MHz (:1) @LO (dBm)		
	+15	+18	+21
10.0	1.44	1.65	1.81
27.9	1.36	1.55	1.71
45.9	1.37	1.57	1.73
63.8	1.37	1.57	1.73
81.8	1.34	1.52	1.68
99.7	1.34	1.53	1.70
117.7	1.28	1.45	1.60
135.6	1.26	1.41	1.55
153.6	1.30	1.46	1.60
171.5	1.29	1.41	1.53
189.5	1.26	1.37	1.48
207.4	1.31	1.38	1.47
225.4	1.34	1.34	1.39
243.3	1.37	1.35	1.40
261.3	1.44	1.41	1.43
279.2	1.45	1.36	1.35
297.2	1.49	1.39	1.36
315.1	1.62	1.49	1.44
333.1	1.69	1.54	1.46
351.0	1.74	1.59	1.50
369.0	1.86	1.68	1.58
386.9	1.92	1.73	1.61
404.9	2.07	1.88	1.76
422.8	2.22	2.02	1.89
440.8	2.25	2.04	1.90
458.7	2.46	2.23	2.09
476.7	2.66	2.42	2.27
494.6	2.75	2.51	2.36
512.6	3.01	2.78	2.63
530.5	3.12	2.88	2.72
548.5	3.21	2.98	2.83
566.4	3.52	3.30	3.15
584.4	3.60	3.38	3.24
602.3	3.60	3.43	3.31
620.3	3.75	3.60	3.49
638.2	3.67	3.55	3.47
656.2	3.62	3.57	3.54
674.1	3.62	3.58	3.58
692.1	3.34	3.30	3.30
710.0	3.13	3.09	3.10

Frequency Mixer MCA-ED12749/1

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	8	27	32	22	42	35	40	38	40	43
1	-	19	+0	23	15	28	31	35	34	38	44	40
2	52	50	44	58	51	46	48	47	53	47	56	55
3	80	66	53	58	49	57	51	57	55	61	58	81
4	>90	77	72	74	72	80	76	79	71	78	69	81
5	>90	88	>88	83	85	78	85	79	83	83	84	86
6	>90	>88	>88	>88	>88	85	>88	87	87	>88	>88	>88
7	>90	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88
8	>90	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88
9	>90	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88
10	>90	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88	>88
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

Test conditions:

RF IN: 761 MHz; 5.00 dBm.
LO IN: 981 MHz; +18.00 dBm
IF OUT: 220 MHz; -2.04 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	17	32	33	34	47	33	44	39	49	46
1	-	19	+0	22	18	28	38	37	59	40	55	47
2	32	45	33	52	47	35	45	41	64	43	52	56
3	50	51	36	42	32	45	37	54	47	58	53	57
4	71	54	53	49	54	50	61	57	63	55	63	57
5	>90	68	57	58	51	49	45	51	51	62	60	67
6	>90	69	70	68	63	62	57	60	63	81	74	72
7	>90	74	68	70	64	63	55	56	55	59	67	70
8	>90	>98	85	93	93	74	64	73	63	69	69	71
9	>90	80	85	77	78	79	67	72	64	60	66	67
10	>90	85	82	90	87	87	88	80	70	70	66	69
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 761 MHz; 15.00 dBm.
LO IN: 981 MHz; +18.00 dBm
IF OUT: 220 MHz; 7.67 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.