Frequency Mixer ADE-ED12872/10

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	6.60	5.81	5.60
50.1	80.1	6.53	6.22	6.07
90.1	120.1	6.49	6.17	6.09
130.1	160.1	6.48	6.18	6.01
170.1	200.1	6.45	6.18	6.07
210.1	240.1	6.47	6.21	6.08
250.1	280.1	6.47	6.22	6.08
290.1	320.1	6.45	6.21	6.09
330.1	360.1	6.53	6.24	6.09
370.1	400.1	6.50	6.28	6.15
410.1	440.1	6.63	6.34	6.19
450.1	480.1	6.61	6.29	6.13
490.1	520.1	6.68	6.39	6.20
530.1	560.1	6.72	6.49	6.35
570.1	600.1	6.72	6.48	6.36
610.1	640.1	6.80	6.50	6.34
650.1	680.1	6.82	6.47	6.31
690.1	720.1	6.99	6.53	6.29
730.1	760.1	7.18	6.63	6.33
770.1	800.1	7.35	6.75	6.38
810.1	840.1	7.58	6.97	6.55
850.1	880.1	7.68	7.06	6.62
890.1	920.1	7.88	7.31	6.88
930.1	960.1	7.92	7.43	7.09
970.1	1000.1	7.94	7.54	7.37
1010.1	1040.1	7.98	7.67	7.61
1050.1	1080.1	7.99	7.75	7.74
1110.1	1140.1	8.02	7.82	7.81
1150.1	1180.1	8.09	7.92	7.95
1210.1	1240.1	8.12	8.02	8.10
1250.1	1280.1	8.35	8.26	8.37
1310.1	1340.1	8.61	8.52	8.59
1350.1	1380.1	9.03	8.90	8.94
1410.1	1440.1	9.42	9.23	9.18
1450.1	1480.1	9.98	9.70	9.61
1510.1	1540.1	10.49	10.13	10.01
1550.1	1580.1	11.22	10.72	10.57
1610.1	1640.1	12.62	11.52	11.25
1650.1	1680.1	12.80	11.86	11.71
1710.1	1740.1	13.92	12.50	12.23

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+4	+7	+10
10.1	40.1	16.37	18.91	19.70
50.1	80.1	19.24	19.39	19.46
90.1	120.1	19.25	19.42	19.46
130.1	160.1	19.26	19.41	19.49
170.1	200.1	19.27	19.41	19.46
210.1	240.1	19.27	19.40	19.46
250.1	280.1	19.27	19.39	19.46
290.1	320.1	19.27	19.40	19.45
330.1	360.1	16.88	19.38	19.46
370.1	400.1	15.58	16.07	19.43
410.1	440.1	19.01	17.47	19.12
450.1	480.1	18.53	18.46	19.27
490.1	520.1	18.87	18.59	16.50
530.1	560.1	13.70	16.31	19.32
570.1	600.1	12.30	13.15	15.81
610.1	640.1	12.45	13.63	18.26
650.1	680.1	14.50	16.44	12.25
690.1	720.1	15.73	14.95	13.40
730.1	760.1	14.31	14.97	13.42
770.1	800.1	17.68	14.62	11.31
810.1	840.1	14.97	11.47	8.50
850.1	880.1	9.48	7.93	6.16
890.1	920.1	7.55	6.80	6.23
930.1	960.1	7.45	6.94	7.88
970.1	1000.1	7.14	7.04	9.71
1010.1	1040.1	7.49	8.07	13.33
1050.1	1080.1	8.85	10.79	14.25
1110.1	1140.1	11.07	13.17	13.08
1150.1	1180.1	11.66	13.82	14.09
1210.1	1240.1	11.66	13.96	14.99
1250.1	1280.1	11.36	13.81	15.14
1310.1	1340.1	10.64	14.50	15.97
1350.1	1380.1	10.63	14.70	16.61
1410.1	1440.1	10.77	14.88	16.04
1450.1	1480.1	10.22	15.38	14.80
1510.1	1540.1	10.36	14.82	14.03
1550.1	1580.1	9.58	14.76	13.46
1610.1	1640.1	9.79	11.49	16.42
1650.1	1680.1	8.82	12.17	15.72
1710.1	1740.1	8.64	10.68	15.16

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=0dBm (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	0.98	0.55	0.20
50.1	80.1	0.69	0.49	0.35
90.1	120.1	0.69	0.51	0.34
130.1	160.1	0.68	0.46	0.34
170.1	200.1	0.76	0.52	0.38
210.1	240.1	0.62	0.43	0.32
250.1	280.1	0.69	0.49	0.40
290.1	320.1	0.67	0.47	0.40
330.1	360.1	0.64	0.50	0.41
370.1	400.1	0.71	0.55	0.48
410.1	440.1	0.64	0.49	0.45
450.1	480.1	0.80	0.67	0.60
490.1	520.1	0.77	0.64	0.63
530.1	560.1	0.89	0.73	0.70
570.1	600.1	0.96	0.83	0.82
610.1	640.1	1.07	0.91	0.93
650.1	680.1	1.22	1.05	1.06
690.1	720.1	1.29	1.16	1.23
730.1	760.1	1.38	1.31	1.38
770.1	800.1	1.40	1.38	1.49
810.1	840.1	1.38	1.36	1.49
850.1	880.1	1.39	1.42	1.59
890.1	920.1	1.37	1.40	1.55
930.1	960.1	1.36	1.35	1.43
970.1	1000.1	1.37	1.30	1.22
1010.1	1040.1	1.36	1.17	0.95
1050.1	1080.1	1.32	1.01	0.76
1110.1	1140.1	1.17	0.79	0.64
1150.1	1180.1	1.09	0.70	0.60
1210.1	1240.1	0.95	0.66	0.58
1250.1	1280.1	0.94	0.63	0.56
1310.1	1340.1	0.98	0.65	0.58
1350.1	1380.1	1.05	0.67	0.58
1410.1	1440.1	1.08	0.70	0.67
1450.1	1480.1	1.10	0.71	0.69
1510.1	1540.1	1.07	0.68	0.70
1550.1	1580.1	1.05	0.65	0.65
1610.1	1640.1	1.08	0.85	0.54
1650.1	1680.1	0.98	0.67	0.48
1710.1	1740.1	0.88	0.76	0.53

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=260.1MHz (dB) @LO (dBm) +7
250.1	10.0	6.25
243.9	16.2	6.17
237.8	22.3	6.19
231.6	28.5	6.14
225.5	34.6	6.14
219.3	40.8	6.17
213.2	46.9	6.11
207.0	53.1	6.15
200.9	59.2	6.09
194.7	65.4	6.12
188.6	71.5	6.11
182.4	77.7	6.15
176.3	83.8	6.18
170.1	90.0	6.16
163.9	96.2	6.17
157.8	102.3	6.10
151.6	108.5	6.07
145.5	114.6	6.04
139.3	120.8	6.06
133.2	126.9	6.06
127.0	133.1	6.09
120.9	139.2	6.15
114.7	145.4	6.10
108.6	151.5	6.10
102.4	157.7	6.05
96.3	163.8	6.11
90.1	170.0	6.14
83.9	176.2	6.17
77.8	182.3	6.21
71.6	188.5	6.10
65.5	194.6	6.19
59.3	200.8	6.15
53.2	206.9	6.19
47.0	213.1	6.15
40.9	219.2	6.14
34.7	225.4	6.23
28.6	231.5	6.21
22.4	237.7	6.30
16.3	243.8	6.30
10.1	250.0	6.76

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10MHz (dB) @LO (dBm) +7
10.1	20.1	6.39
50.6	60.6	6.07
91.1	101.1	6.01
131.6	141.6	5.99
172.1	182.1	6.22
212.6	222.6	5.55
253.1	263.1	5.88
293.6	303.6	6.09
334.1	344.1	5.76
374.5	384.5	6.20
415.0	425.0	6.48
455.5	465.5	6.23
496.0	506.0	6.00
536.5	546.5	6.34
577.0	587.0	6.03
617.5	627.5	6.49
658.0	668.0	6.29
698.5	708.5	6.31
739.0	749.0	5.85
779.5	789.5	6.59
820.0	830.0	6.51
860.5	870.5	6.71
901.0	911.0	6.76
941.5	951.5	6.53
982.0	992.0	7.05
1022.4	1032.4	6.59
1062.9	1072.9	7.07
1103.4	1113.4	6.89
1143.9	1153.9	6.83
1184.4	1194.4	7.05
1224.9	1234.9	7.21
1265.4	1275.4	7.19
1305.9	1315.9	7.81
1346.4	1356.4	7.94
1386.9	1396.9	8.41
1447.6	1457.6	10.22
1488.1	1498.1	10.07
1548.9	1558.9	10.83
1589.4	1599.4	11.73
1650.1	1660.1	12.60

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=510.1MHz (dB) @LO (dBm) +7
500.1	10.0	6.35
490.1	20.0	6.23
480.1	30.0	6.19
470.1	40.0	6.14
460.1	50.0	6.18
450.1	60.0	6.16
440.1	70.0	6.08
430.1	80.0	6.11
420.1	90.0	6.12
410.1	100.0	6.10
400.1	110.0	6.09
390.1	120.0	6.09
380.1	130.0	6.05
370.1	140.0	6.04
360.1	150.0	6.10
350.1	160.0	6.12
340.1	170.0	6.05
330.1	180.0	6.09
320.1	190.0	6.10
310.1	200.0	6.10
290.1	220.0	6.11
280.1	230.0	6.09
260.1	250.0	6.11
250.1	260.0	6.14
230.1	280.0	6.11
220.1	290.0	6.18
200.1	310.0	6.15
190.1	320.0	6.16
170.1	340.0	6.19
160.1	350.0	6.23
140.1	370.0	6.16
130.1	380.0	6.23
110.1	400.0	6.27
100.1	410.0	6.20
80.1	430.0	6.28
70.1	440.0	6.25
50.1	460.0	6.31
40.1	470.0	6.27
20.1	490.0	6.44
10.1	500.0	6.91

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+4	+7	+10	+4	+7	+10
40.1	58.52	57.49	57.02	45.81	50.49	57.07
80.1	52.40	51.71	51.24	39.12	43.34	48.64
120.1	49.16	48.27	47.70	36.74	41.52	46.74
160.1	46.75	46.09	45.56	34.60	38.96	43.48
200.1	45.13	44.40	43.86	33.00	37.17	41.41
240.1	43.61	42.81	42.26	31.78	35.92	39.95
280.1	42.64	41.77	41.17	30.10	33.83	37.36
320.1	41.06	40.35	39.81	29.35	33.04	36.29
360.1	40.41	39.56	38.92	28.34	32.10	35.08
400.1	39.84	38.95	38.18	27.74	31.29	34.23
440.1	39.18	38.40	37.85	27.31	30.61	32.93
480.1	38.24	37.50	36.91	26.84	30.43	32.43
520.1	37.55	37.07	36.42	26.28	29.98	32.28
560.1	36.43	36.05	35.64	25.83	29.01	31.18
600.1	35.71	35.40	34.97	26.23	28.99	30.23
640.1	34.84	34.44	34.22	26.74	29.16	29.36
680.1	34.04	33.69	33.32	27.82	29.91	29.09
720.1	33.26	32.68	32.28	28.93	30.40	28.33
760.1	32.49	31.75	31.28	29.00	29.45	26.43
800.1	31.92	31.11	30.61	28.74	27.47	24.21
840.1	31.36	30.75	30.31	28.66	26.56	22.95
880.1	31.28	30.70	30.31	28.17	25.16	21.57
920.1	31.45	30.90	30.63	27.16	23.85	20.56
960.1	31.82	31.37	31.44	25.85	22.20	19.28
1000.1	32.55	32.39	32.48	23.99	20.49	17.51
1040.1	33.56	33.69	33.86	22.40	18.94	16.11
1080.1	34.60	34.62	34.31	20.50	17.11	14.41
1140.1	35.55	35.16	34.47	17.70	14.73	12.52
1180.1	34.51	34.15	33.62	15.75	13.23	11.31
1240.1	31.47	31.07	30.53	13.28	11.37	9.74
1280.1	29.40	28.82	28.30	11.97	10.41	8.96
1340.1	26.81	26.12	25.60	10.46	9.17	7.92
1380.1	25.05	24.37	23.88	9.64	8.48	7.30
1440.1	22.64	22.06	21.82	8.75	7.61	6.68
1480.1	20.97	20.58	20.37	8.19	7.21	6.28
1540.1	18.92	18.80	18.64	7.47	6.63	5.68
1580.1	17.67	17.69	17.68	7.12	6.34	5.48
1640.1	16.09	16.21	16.41	6.59	5.81	5.20
1680.1	15.14	15.39	15.65	6.48	5.74	5.18
1740.1	13.89	14.35	14.70	6.08	5.53	5.10

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	61.97	60.80	59.92
50.1	80.1	47.18	48.40	46.33
90.1	120.1	43.50	42.23	42.10
130.1	160.1	40.10	39.80	39.82
170.1	200.1	38.49	38.30	37.88
210.1	240.1	37.45	37.06	36.92
250.1	280.1	37.47	36.78	36.30
290.1	320.1	36.97	36.65	36.32
330.1	360.1	37.17	36.74	36.38
370.1	400.1	37.20	36.21	35.69
410.1	440.1	37.05	36.18	35.32
450.1	480.1	37.66	37.23	37.11
490.1	520.1	37.87	37.99	38.37
530.1	560.1	35.72	35.98	36.05
570.1	600.1	32.48	31.97	31.17
610.1	640.1	30.22	29.87	29.65
650.1	680.1	27.93	27.74	27.11
690.1	720.1	25.73	24.99	24.37
730.1	760.1	24.15	23.49	22.95
770.1	800.1	23.11	22.73	22.48
810.1	840.1	22.89	22.82	23.03
850.1	880.1	23.12	23.19	23.90
890.1	920.1	24.01	24.12	25.36
930.1	960.1	25.88	26.39	27.95
970.1	1000.1	28.30	29.38	30.23
1010.1	1040.1	32.84	34.50	33.90
1050.1	1080.1	37.25	35.25	32.59
1110.1	1140.1	34.23	31.43	30.00
1150.1	1180.1	29.80	28.40	27.29
1210.1	1240.1	25.68	24.77	23.80
1250.1	1280.1	23.24	22.47	21.58
1310.1	1340.1	20.34	19.62	18.92
1350.1	1380.1	18.66	18.12	17.61
1410.1	1440.1	16.88	16.41	16.12
1450.1	1480.1	15.64	15.36	15.15
1510.1	1540.1	13.82	13.60	13.44
1550.1	1580.1	12.94	12.90	12.77
1610.1	1640.1	12.28	12.41	12.41
1650.1	1680.1	11.66	11.90	11.97
1710.1	1740.1	10.58	11.05	11.10

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+4	+7	+10
10.1	40.1	1.07	1.20	1.27
50.1	80.1	1.02	1.10	1.16
90.1	120.1	1.03	1.11	1.17
130.1	160.1	1.05	1.13	1.18
170.1	200.1	1.05	1.13	1.19
210.1	240.1	1.08	1.15	1.20
250.1	280.1	1.08	1.15	1.20
290.1	320.1	1.10	1.18	1.23
330.1	360.1	1.11	1.19	1.25
370.1	400.1	1.11	1.18	1.23
410.1	440.1	1.12	1.19	1.24
450.1	480.1	1.15	1.24	1.31
490.1	520.1	1.17	1.25	1.33
530.1	560.1	1.18	1.25	1.31
570.1	600.1	1.20	1.26	1.32
610.1	640.1	1.20	1.28	1.34
650.1	680.1	1.20	1.29	1.35
690.1	720.1	1.18	1.26	1.33
730.1	760.1	1.18	1.24	1.31
770.1	800.1	1.24	1.27	1.32
810.1	840.1	1.34	1.34	1.37
850.1	880.1	1.48	1.48	1.50
890.1	920.1	1.66	1.65	1.66
930.1	960.1	1.85	1.85	1.86
970.1	1000.1	2.04	2.08	2.10
1010.1	1040.1	2.22	2.29	2.35
1050.1	1080.1	2.40	2.49	2.55
1110.1	1140.1	2.60	2.72	2.78
1150.1	1180.1	2.76	2.88	2.95
1210.1	1240.1	2.94	3.06	3.14
1250.1	1280.1	3.06	3.20	3.27
1310.1	1340.1	3.25	3.34	3.42
1350.1	1380.1	3.35	3.41	3.48
1410.1	1440.1	3.52	3.52	3.54
1450.1	1480.1	3.59	3.55	3.57
1510.1	1540.1	3.69	3.65	3.67
1550.1	1580.1	3.70	3.65	3.69
1610.1	1640.1	3.62	3.62	3.68
1650.1	1680.1	3.49	3.51	3.60
1710.1	1740.1	3.25	3.34	3.47

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+4	+7	+10
40.1	1.99	2.94	4.19
80.1	1.82	2.57	3.58
120.1	1.91	2.75	3.85
160.1	1.85	2.66	3.70
200.1	1.85	2.63	3.65
240.1	1.90	2.72	3.78
280.1	1.85	2.62	3.60
320.1	1.93	2.74	3.78
360.1	1.91	2.68	3.66
400.1	1.96	2.76	3.76
440.1	1.98	2.77	3.76
480.1	2.01	2.78	3.75
520.1	2.08	2.88	3.86
560.1	2.09	2.87	3.84
600.1	2.17	2.96	3.95
640.1	2.17	2.92	3.84
680.1	2.24	2.99	3.92
720.1	2.32	3.05	3.96
760.1	2.39	3.13	4.01
800.1	2.49	3.24	4.12
840.1	2.52	3.26	4.11
880.1	2.59	3.35	4.21
920.1	2.62	3.35	4.19
960.1	2.66	3.37	4.17
1000.1	2.68	3.36	4.11
1040.1	2.68	3.30	3.97
1080.1	2.67	3.22	3.79
1140.1	2.65	3.10	3.61
1180.1	2.63	3.05	3.51
1240.1	2.68	3.02	3.40
1280.1	2.70	2.97	3.26
1340.1	2.76	2.94	3.15
1380.1	2.77	2.86	3.02
1440.1	2.77	2.81	2.89
1480.1	2.75	2.72	2.78
1540.1	2.74	2.67	2.68
1580.1	2.72	2.61	2.60
1640.1	2.70	2.58	2.55
1680.1	2.74	2.63	2.58
1740.1	2.73	2.59	2.54

IF (OUT) (MHz)	IF VSWR @LO=510.1MHz (:1) @LO (dBm)		
	+4	+7	+10
10.0	1.40	1.22	1.08
20.0	1.41	1.23	1.08
30.0	1.37	1.20	1.05
40.0	1.43	1.26	1.11
50.0	1.41	1.24	1.10
60.0	1.38	1.21	1.07
70.0	1.43	1.26	1.11
80.0	1.38	1.21	1.09
90.0	1.36	1.18	1.05
100.0	1.43	1.25	1.11
110.0	1.39	1.22	1.09
120.0	1.41	1.24	1.10
130.0	1.46	1.29	1.15
140.0	1.40	1.23	1.12
150.0	1.42	1.24	1.10
160.0	1.46	1.29	1.15
170.0	1.39	1.23	1.11
180.0	1.43	1.26	1.12
190.0	1.46	1.29	1.16
200.0	1.40	1.24	1.12
220.0	1.47	1.31	1.18
230.0	1.43	1.26	1.13
250.0	1.49	1.33	1.21
260.0	1.45	1.28	1.16
280.0	1.48	1.32	1.21
290.0	1.47	1.30	1.17
310.0	1.49	1.32	1.21
320.0	1.52	1.34	1.21
340.0	1.53	1.37	1.25
350.0	1.56	1.38	1.26
370.0	1.51	1.35	1.24
380.0	1.56	1.39	1.26
400.0	1.54	1.37	1.25
410.0	1.63	1.45	1.32
430.0	1.59	1.42	1.31
440.0	1.67	1.50	1.38
460.0	1.59	1.43	1.31
470.0	1.68	1.51	1.39
490.0	1.64	1.47	1.35
500.0	1.76	1.59	1.47

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	6	23	8	32	10	31	18	44	21	45
1	-	30	+0	44	11	44	18	32	28	46	39	49
2	>90	>69	50	>69	49	>69	48	>69	47	69	53	>69
3	>90	>69	>69	>69	>69	>69	67	>69	>69	>69	>69	>69
4	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
5	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
6	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
7	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
8	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
9	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
10	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 255 MHz; -15.00 dBm.**
LO IN: 285 MHz; +7.00 dBm
IF OUT: 30 MHz; -21.34 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	16	33	19	45	22	42	31	60	35	59
1	-	30	+0	44	12	45	19	34	29	50	40	53
2	75	68	42	74	41	67	39	62	42	>79	47	70
3	>90	68	49	69	50	71	56	65	45	54	54	63
4	>90	>79	71	73	63	73	61	72	56	>79	56	71
5	>90	76	68	>79	61	>79	60	>79	59	>79	62	>79
6	>90	>79	76	>79	>79	>79	76	>79	77	>79	75	>79
7	>90	>79	>79	>79	>79	>79	>79	>79	>79	>79	77	>79
8	>90	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79
9	>90	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79
10	>90	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 255 MHz; -5.00 dBm.**
LO IN: 285 MHz; +7.00 dBm
IF OUT: 30 MHz; -11.3 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.