Frequency Mixer ADEX-ED12872/4

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+4	+7	+10
10.10	40.10	6.81	6.25	6.12
70.10	100.10	7.02	6.59	6.36
130.10	160.10	7.09	6.64	6.43
190.10	220.10	6.88	6.53	6.36
250.10	280.10	7.03	6.67	6.47
310.10	340.10	6.95	6.60	6.41
370.10	400.10	6.92	6.59	6.41
430.10	460.10	6.90	6.55	6.35
490.10	520.10	6.93	6.57	6.37
550.10	580.10	6.98	6.65	6.43
610.10	640.10	6.91	6.58	6.39
670.10	700.10	6.83	6.50	6.33
730.10	760.10	7.11	6.67	6.42
790.10	820.10	7.22	6.74	6.42
850.10	880.10	7.35	6.85	6.49
910.10	940.10	7.38	6.87	6.51
970.10	1000.10	6.97	6.48	6.19
1030.10	1060.10	6.70	6.27	6.04
1090.10	1120.10	6.56	6.14	5.93
1150.10	1180.10	6.52	6.10	5.88
1210.10	1240.10	6.67	6.21	5.97
1270.10	1300.10	6.73	6.30	6.04
1330.10	1360.10	6.98	6.56	6.28
1390.10	1420.10	7.22	6.82	6.57
1450.10	1480.10	7.40	7.05	6.82
1510.10	1540.10	7.72	7.41	7.20
1550.10	1580.10	7.87	7.61	7.42
1610.10	1640.10	8.32	8.11	7.95
1650.10	1680.10	8.50	8.32	8.19
1710.10	1740.10	9.00	8.81	8.68
1750.10	1780.10	9.24	9.05	8.94
1810.10	1840.10	9.69	9.49	9.39
1850.10	1880.10	9.97	9.74	9.67
1910.10	1940.10	10.46	10.19	10.10
1950.10	1980.10	10.77	10.47	10.39
2010.10	2040.10	11.18	10.84	10.75
2050.10	2080.10	11.55	11.12	11.02
2110.10	2140.10	11.90	11.45	11.31
2150.10	2180.10	12.31	11.76	11.55
2210.10	2240.10	12.73	12.14	11.86

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+4	+7	+10
10.10	40.10	18.28	21.04	24.02
70.10	100.10	19.97	24.07	28.14
130.10	160.10	19.69	23.30	22.42
190.10	220.10	28.05	21.59	22.10
250.10	280.10	20.70	20.63	20.36
310.10	340.10	17.68	18.14	18.23
370.10	400.10	21.04	22.22	21.15
430.10	460.10	18.32	17.12	16.91
490.10	520.10	17.03	16.45	16.33
550.10	580.10	16.92	18.19	18.71
610.10	640.10	16.75	17.19	17.66
670.10	700.10	16.50	16.57	16.55
730.10	760.10	27.26	18.02	15.93
790.10	820.10	19.96	18.74	14.42
850.10	880.10	18.21	17.45	12.84
910.10	940.10	12.01	11.29	9.95
970.10	1000.10	8.92	8.49	7.73
1030.10	1060.10	7.47	7.51	7.12
1090.10	1120.10	6.81	7.13	6.95
1150.10	1180.10	6.25	6.73	6.93
1210.10	1240.10	5.96	6.79	7.44
1270.10	1300.10	6.01	7.08	8.20
1330.10	1360.10	6.05	7.29	8.76
1390.10	1420.10	6.78	8.00	9.46
1450.10	1480.10	8.14	9.34	10.61
1510.10	1540.10	9.89	11.30	12.39
1550.10	1580.10	10.75	12.11	13.04
1610.10	1640.10	12.11	13.35	14.03
1650.10	1680.10	12.39	13.57	14.15
1710.10	1740.10	13.26	14.49	15.11
1750.10	1780.10	13.59	15.06	15.92
1810.10	1840.10	14.34	15.81	16.46
1850.10	1880.10	14.78	16.39	16.75
1910.10	1940.10	16.05	17.92	18.05
1950.10	1980.10	16.57	18.40	18.84
2010.10	2040.10	18.17	20.18	20.83
2050.10	2080.10	18.61	20.33	22.13
2110.10	2140.10	19.40	20.67	22.76
2150.10	2180.10	18.26	20.71	21.67
2210.10	2240.10	16.73	21.33	22.38

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB) @LO (dBm)		
		+4	+7	+10
10.10	40.10	0.53	0.46	0.37
70.10	100.10	0.50	0.42	0.27
130.10	160.10	0.46	0.33	0.22
190.10	220.10	0.62	0.42	0.29
250.10	280.10	0.49	0.35	0.28
310.10	340.10	0.54	0.39	0.30
370.10	400.10	0.59	0.45	0.39
430.10	460.10	0.56	0.43	0.39
490.10	520.10	0.58	0.48	0.44
550.10	580.10	0.60	0.48	0.44
610.10	640.10	0.72	0.56	0.52
670.10	700.10	0.92	0.72	0.65
730.10	760.10	0.93	0.78	0.72
790.10	820.10	1.03	0.93	0.90
850.10	880.10	1.14	1.05	1.07
910.10	940.10	1.22	1.14	1.14
970.10	1000.10	1.64	1.52	1.48
1030.10	1060.10	1.90	1.71	1.63
1090.10	1120.10	2.05	1.80	1.67
1150.10	1180.10	2.18	1.89	1.68
1210.10	1240.10	2.14	1.84	1.61
1270.10	1300.10	2.15	1.84	1.58
1330.10	1360.10	1.96	1.67	1.43
1390.10	1420.10	1.89	1.59	1.35
1450.10	1480.10	1.77	1.50	1.29
1510.10	1540.10	1.56	1.31	1.13
1550.10	1580.10	1.50	1.24	1.09
1610.10	1640.10	1.21	0.94	0.80
1650.10	1680.10	1.14	0.86	0.70
1710.10	1740.10	0.88	0.61	0.49
1750.10	1780.10	0.81	0.53	0.41
1810.10	1840.10	0.65	0.40	0.29
1850.10	1880.10	0.59	0.35	0.25
1910.10	1940.10	0.45	0.27	0.19
1950.10	1980.10	0.44	0.25	0.18
2010.10	2040.10	0.33	0.20	0.13
2050.10	2080.10	0.31	0.19	0.12
2110.10	2140.10	0.25	0.17	0.11
2150.10	2180.10	0.25	0.18	0.13
2210.10	2240.10	0.18	0.13	0.12

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=510.1MHz (dB) @LO (dBm) +7
500.10	10.00	6.94
490.10	20.00	6.86
480.10	30.00	6.83
470.10	40.00	6.78
460.10	50.00	6.85
450.10	60.00	6.78
440.10	70.00	6.84
430.10	80.00	6.85
420.10	90.00	6.86
410.10	100.00	6.74
400.10	110.00	6.67
390.10	120.00	6.64
380.10	130.00	6.58
370.10	140.00	6.59
360.10	150.00	6.59
350.10	160.00	6.60
340.10	170.00	6.56
330.10	180.00	6.57
320.10	190.00	6.54
310.10	200.00	6.56
290.10	220.00	6.51
280.10	230.00	6.49
260.10	250.00	6.53
250.10	260.00	6.54
230.10	280.00	6.52
220.10	290.00	6.52
200.10	310.00	6.52
190.10	320.00	6.47
170.10	340.00	6.47
160.10	350.00	6.54
140.10	370.00	6.57
130.10	380.00	6.55
110.10	400.00	6.53
100.10	410.00	6.55
80.10	430.00	6.49
70.10	440.00	6.49
50.10	460.00	6.56
40.10	470.00	6.54
20.10	490.00	6.49
10.10	500.00	6.44

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10MHz (dB) @LO (dBm) +7
10.10	20.10	6.53
30.10	40.10	6.41
50.10	60.10	6.35
70.10	80.10	6.38
90.10	100.10	6.20
110.10	120.10	6.24
130.10	140.10	6.26
150.10	160.10	6.22
170.10	180.10	6.28
190.10	200.10	6.50
210.10	220.10	6.26
230.10	240.10	6.29
250.10	260.10	6.48
270.10	280.10	6.54
290.10	300.10	6.62
310.10	320.10	6.56
330.10	340.10	6.51
350.10	360.10	6.47
390.10	400.10	6.63
410.10	420.10	7.04
450.10	460.10	6.83
470.10	480.10	6.64
510.10	520.10	6.81
530.10	540.10	6.82
570.10	580.10	6.88
590.10	600.10	6.88
630.10	640.10	7.17
650.10	660.10	7.00
690.10	700.10	7.24
710.10	720.10	7.18
750.10	760.10	7.36
770.10	780.10	7.35
810.10	820.10	7.46
830.10	840.10	7.47
870.10	880.10	7.37
890.10	900.10	7.40
930.10	940.10	7.16
950.10	960.10	7.21
990.10	1000.10	7.11
1010.10	1020.10	7.16

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1023.1MHz (dB) @LO (dBm) +7
1013.10	10.00	7.07
993.10	30.00	7.00
973.10	50.00	6.92
953.10	70.00	6.87
933.10	90.00	6.80
913.10	110.00	6.72
893.10	130.00	6.70
873.10	150.00	6.65
853.10	170.00	6.61
833.10	190.00	6.58
813.10	210.00	6.56
793.10	230.00	6.54
773.10	250.00	6.53
753.10	270.00	6.53
733.10	290.00	6.49
713.10	310.00	6.52
693.10	330.00	6.47
673.10	350.00	6.48
633.10	390.00	6.47
613.10	410.00	6.46
573.10	450.00	6.42
553.10	470.00	6.44
513.10	510.00	6.40
493.10	530.00	6.44
453.10	570.00	6.48
433.10	590.00	6.52
393.10	630.00	6.41
373.10	650.00	6.40
333.10	690.00	6.39
313.10	710.00	6.41
273.10	750.00	6.42
253.10	770.00	6.45
213.10	810.00	6.47
193.10	830.00	6.47
153.10	870.00	6.55
133.10	890.00	6.54
93.10	930.00	6.52
73.10	950.00	6.51
33.10	990.00	6.38
13.10	1010.00	6.25

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+4	+7	+10	+4	+7	+10
40.10	67.76	64.76	81.40	59.78	56.08	54.25
100.10	66.05	67.01	66.07	44.27	40.99	38.73
160.10	65.38	67.47	67.86	39.27	36.34	34.46
220.10	68.19	71.13	72.09	37.56	34.52	32.46
280.10	76.34	76.47	73.39	36.88	33.57	30.98
340.10	69.01	65.84	63.78	35.52	32.17	29.74
400.10	63.69	60.70	57.72	34.12	31.37	28.70
460.10	57.71	54.79	52.87	31.89	29.87	27.69
520.10	55.98	53.46	51.33	29.93	29.02	27.20
580.10	55.43	53.03	50.28	27.94	27.88	26.74
640.10	56.97	50.93	47.62	26.41	26.59	25.84
700.10	51.90	47.52	45.18	25.15	25.33	25.00
760.10	46.60	45.16	43.76	24.32	24.43	24.12
820.10	44.22	44.18	43.53	23.28	23.85	23.54
880.10	44.93	45.23	44.86	22.05	23.02	23.17
940.10	47.64	47.66	46.52	21.05	22.46	23.03
1000.10	54.91	50.13	47.07	20.00	21.53	22.12
1060.10	65.24	55.18	49.03	18.72	19.99	20.68
1120.10	49.33	53.76	48.70	17.72	18.95	19.77
1180.10	43.71	47.59	46.55	16.99	18.31	19.30
1240.10	39.36	42.99	44.78	16.54	17.92	19.07
1300.10	35.89	38.88	41.15	16.08	17.55	18.78
1360.10	33.07	35.68	37.84	15.80	17.33	18.54
1420.10	30.94	33.24	35.21	15.73	17.42	18.67
1480.10	29.34	31.41	33.18	15.71	17.61	19.04
1540.10	28.09	29.92	31.53	15.75	17.89	19.55
1580.10	27.41	29.27	30.85	15.74	17.98	19.77
1640.10	26.71	28.58	30.16	15.79	18.10	20.06
1680.10	26.23	28.17	29.82	15.86	18.19	20.21
1740.10	25.66	27.69	29.44	16.15	18.52	20.61
1780.10	25.28	27.32	29.15	16.32	18.66	20.81
1840.10	25.02	27.13	29.07	16.78	19.19	21.44
1880.10	24.84	26.96	28.96	17.08	19.51	21.81
1940.10	24.72	26.89	28.93	17.57	20.07	22.45
1980.10	24.68	26.84	28.85	17.92	20.42	22.79
2040.10	24.78	26.95	28.92	18.72	21.31	23.73
2080.10	24.80	26.85	28.74	19.07	21.63	24.01
2140.10	24.98	27.00	28.71	19.71	22.33	24.58
2180.10	25.09	27.03	28.55	19.98	22.52	24.63
2240.10	25.30	27.05	28.29	20.51	22.98	24.89

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+4	+7	+10
10.10	40.10	49.46	49.53	48.51
70.10	100.10	33.65	33.10	33.59
130.10	160.10	28.80	28.92	29.06
190.10	220.10	26.14	26.24	26.16
250.10	280.10	24.63	24.65	24.73
310.10	340.10	23.48	23.73	23.78
370.10	400.10	22.95	23.27	23.33
430.10	460.10	22.21	22.51	22.66
490.10	520.10	21.77	22.12	22.45
550.10	580.10	21.66	22.12	22.66
610.10	640.10	21.94	22.68	23.14
670.10	700.10	21.33	21.89	22.26
730.10	760.10	19.74	19.91	19.91
790.10	820.10	18.00	17.99	17.86
850.10	880.10	16.70	16.64	16.60
910.10	940.10	15.82	15.84	16.02
970.10	1000.10	15.50	15.57	15.77
1030.10	1060.10	15.33	15.48	15.72
1090.10	1120.10	15.50	15.66	15.92
1150.10	1180.10	15.61	15.70	15.88
1210.10	1240.10	15.67	15.59	15.66
1270.10	1300.10	15.78	15.61	15.46
1330.10	1360.10	15.30	15.05	14.78
1390.10	1420.10	14.44	14.15	13.80
1450.10	1480.10	13.30	12.97	12.69
1510.10	1540.10	11.87	11.58	11.34
1550.10	1580.10	10.85	10.56	10.36
1610.10	1640.10	9.47	9.17	8.98
1650.10	1680.10	8.72	8.38	8.17
1710.10	1740.10	7.76	7.41	7.21
1750.10	1780.10	7.30	6.93	6.70
1810.10	1840.10	6.64	6.26	6.06
1850.10	1880.10	6.25	5.86	5.64
1910.10	1940.10	5.65	5.36	5.18
1950.10	1980.10	5.44	5.11	4.91
2010.10	2040.10	5.09	4.78	4.59
2050.10	2080.10	4.95	4.66	4.45
2110.10	2140.10	4.70	4.42	4.26
2150.10	2180.10	4.65	4.36	4.19
2210.10	2240.10	4.38	4.14	4.00

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+4	+7	+10
10.10	40.10	1.37	1.29	1.22
70.10	100.10	1.49	1.39	1.33
130.10	160.10	1.42	1.33	1.28
190.10	220.10	1.44	1.37	1.32
250.10	280.10	1.45	1.38	1.33
310.10	340.10	1.43	1.37	1.33
370.10	400.10	1.46	1.40	1.37
430.10	460.10	1.45	1.39	1.36
490.10	520.10	1.43	1.38	1.36
550.10	580.10	1.41	1.37	1.35
610.10	640.10	1.37	1.34	1.33
670.10	700.10	1.37	1.36	1.36
730.10	760.10	1.37	1.35	1.35
790.10	820.10	1.33	1.31	1.30
850.10	880.10	1.31	1.28	1.27
910.10	940.10	1.24	1.19	1.16
970.10	1000.10	1.15	1.10	1.09
1030.10	1060.10	1.08	1.02	1.05
1090.10	1120.10	1.14	1.15	1.19
1150.10	1180.10	1.25	1.26	1.30
1210.10	1240.10	1.44	1.45	1.47
1270.10	1300.10	1.63	1.65	1.67
1330.10	1360.10	1.81	1.82	1.83
1390.10	1420.10	2.05	2.06	2.05
1450.10	1480.10	2.21	2.21	2.20
1510.10	1540.10	2.35	2.35	2.32
1550.10	1580.10	2.48	2.48	2.46
1610.10	1640.10	2.56	2.57	2.56
1650.10	1680.10	2.67	2.68	2.68
1710.10	1740.10	2.69	2.69	2.68
1750.10	1780.10	2.78	2.77	2.76
1810.10	1840.10	2.73	2.71	2.69
1850.10	1880.10	2.80	2.77	2.74
1910.10	1940.10	2.71	2.66	2.63
1950.10	1980.10	2.78	2.71	2.69
2010.10	2040.10	2.68	2.61	2.58
2050.10	2080.10	2.73	2.66	2.62
2110.10	2140.10	2.61	2.55	2.51
2150.10	2180.10	2.68	2.60	2.56
2210.10	2240.10	2.59	2.52	2.48

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+4	+7	+10
40.10	1.43	2.06	2.99
100.10	1.18	1.75	2.50
160.10	1.24	1.84	2.65
220.10	1.23	1.78	2.52
280.10	1.23	1.80	2.55
340.10	1.27	1.86	2.61
400.10	1.29	1.87	2.59
460.10	1.32	1.91	2.63
520.10	1.38	1.98	2.71
580.10	1.42	2.01	2.72
640.10	1.46	2.06	2.76
700.10	1.53	2.11	2.80
760.10	1.58	2.15	2.82
820.10	1.67	2.26	2.93
880.10	1.70	2.29	2.95
940.10	1.75	2.32	2.97
1000.10	1.77	2.35	3.00
1060.10	1.76	2.32	2.96
1120.10	1.87	2.43	3.08
1180.10	1.96	2.49	3.13
1240.10	2.08	2.58	3.19
1300.10	2.21	2.71	3.31
1360.10	2.27	2.75	3.33
1420.10	2.36	2.84	3.41
1480.10	2.40	2.85	3.42
1540.10	2.41	2.83	3.37
1580.10	2.48	2.89	3.43
1640.10	2.56	2.91	3.41
1680.10	2.68	3.00	3.50
1740.10	2.78	3.03	3.47
1780.10	2.90	3.13	3.56
1840.10	3.00	3.14	3.51
1880.10	3.13	3.25	3.60
1940.10	3.22	3.25	3.55
1980.10	3.37	3.37	3.65
2040.10	3.45	3.35	3.58
2080.10	3.60	3.47	3.65
2140.10	3.66	3.44	3.57
2180.10	3.82	3.55	3.66
2240.10	3.93	3.56	3.61

IF (OUT) (MHz)	IF VSWR @LO=MHz (:1) @LO (dBm)		
	+4	+7	+10
10.00	1.32	1.15	1.03
29.75	1.35	1.17	1.05
49.50	1.38	1.19	1.07
69.25	1.36	1.18	1.06
89.00	1.35	1.17	1.05
108.75	1.36	1.18	1.06
128.50	1.37	1.19	1.07
148.25	1.39	1.21	1.09
168.00	1.38	1.21	1.08
187.75	1.39	1.21	1.09
207.50	1.40	1.22	1.10
227.25	1.40	1.22	1.10
247.00	1.40	1.23	1.11
266.75	1.43	1.25	1.13
286.50	1.40	1.23	1.11
306.25	1.44	1.27	1.15
326.00	1.42	1.25	1.14
345.75	1.47	1.30	1.18
365.50	1.44	1.28	1.17
385.25	1.46	1.29	1.18
405.00	1.44	1.29	1.18
424.75	1.48	1.33	1.23
444.50	1.46	1.32	1.23
464.25	1.47	1.32	1.23
484.00	1.48	1.34	1.25
503.75	1.48	1.34	1.26
523.50	1.51	1.38	1.32
543.25	1.46	1.34	1.28
563.00	1.50	1.38	1.33
582.75	1.47	1.36	1.30
602.50	1.53	1.42	1.37
622.25	1.48	1.39	1.36
642.00	1.49	1.40	1.37
661.75	1.46	1.38	1.36
681.50	1.50	1.41	1.39
701.25	1.48	1.42	1.41
721.00	1.48	1.41	1.40
740.75	1.47	1.42	1.43
780.25	1.46	1.42	1.43
800.00	1.42	1.38	1.40

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	2	19	3	20	16	27	29	37	37	40
1	-	15	+0	36	14	44	23	40	42	45	> 69	43
2	> 90	66	44	> 69	44	68	44	64	58	> 69	68	62
3	> 90	> 69	> 69	> 69	67	> 69	61	> 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: 505.00 MHz; -14.00 dBm.
LO IN: 535.00 MHz; +7.00 dBm
IF OUT: 30.00 MHz; -20.87 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	11	29	14	31	27	40	41	52	54	54
1	-	16	+0	34	14	46	25	43	43	51	75	49
2	72	50	34	59	34	55	36	59	51	58	58	58
3	> 90	54	45	56	54	62	45	66	54	60	65	62
4	> 90	66	56	66	58	74	62	76	53	67	72	70
5	> 90	70	66	64	56	73	58	73	60	> 79	> 79	> 79
6	> 90	> 79	> 79	> 79	69	75	67	76	65	> 79	73	> 79
7	> 90	> 79	> 79	> 79	> 79	> 79	> 79	> 79	> 79	> 79	> 79	> 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: 505.00 MHz; -4.00 dBm.
LO IN: 535.00 MHz; +7.00 dBm
IF OUT: 30.00 MHz; -10.88 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.