

Frequency Mixer

ADE-ED7879/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)			RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)			RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+4dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
+7	+10	+13	+7	+10	+13	+7	+10	+13						
10.1	40.1	5.63	5.24	5.16	10.1	40.1	22.89	23.23	25.19	10.1	40.1	0.98	0.80	0.46
40.1	70.1	6.08	5.84	5.69	40.1	70.1	23.80	22.27	23.40	40.1	70.1	0.71	0.51	0.35
80.1	110.1	6.04	5.80	5.69	80.1	110.1	24.32	24.80	23.88	80.1	110.1	0.85	0.62	0.43
110.1	140.1	6.20	5.92	5.80	110.1	140.1	19.79	24.22	20.13	110.1	140.1	0.68	0.48	0.33
150.1	180.1	6.21	5.98	5.87	150.1	180.1	19.67	19.23	17.61	150.1	180.1	0.67	0.46	0.30
180.1	210.1	6.10	5.91	5.82	180.1	210.1	20.79	17.34	16.66	180.1	210.1	0.76	0.50	0.35
220.1	250.1	6.27	6.04	5.92	220.1	250.1	17.58	15.82	15.82	220.1	250.1	0.66	0.42	0.30
250.1	280.1	6.35	6.13	5.99	250.1	280.1	16.23	16.26	16.54	250.1	280.1	0.64	0.42	0.30
290.1	320.1	6.31	6.10	5.97	290.1	320.1	13.46	13.23	14.62	290.1	320.1	0.62	0.42	0.32
320.1	350.1	6.38	6.15	6.04	320.1	350.1	14.75	14.15	14.83	320.1	350.1	0.59	0.41	0.28
360.1	390.1	6.46	6.18	6.01	360.1	390.1	15.59	17.13	19.12	360.1	390.1	0.66	0.47	0.35
390.1	420.1	6.61	6.30	6.08	390.1	420.1	12.78	14.99	19.16	390.1	420.1	0.59	0.45	0.34
430.1	460.1	6.66	6.42	6.24	430.1	460.1	12.26	12.24	13.47	430.1	460.1	0.66	0.46	0.35
460.1	490.1	6.64	6.44	6.28	460.1	490.1	13.13	13.50	14.60	460.1	490.1	0.82	0.57	0.42
500.1	530.1	6.67	6.40	6.21	500.1	530.1	13.39	14.49	16.33	500.1	530.1	0.95	0.68	0.49
530.1	560.1	6.76	6.44	6.26	530.1	560.1	13.27	14.84	17.58	530.1	560.1	1.10	0.77	0.56
570.1	600.1	6.85	6.46	6.28	570.1	600.1	12.74	15.54	19.35	570.1	600.1	1.25	0.89	0.66
600.1	630.1	7.02	6.51	6.27	600.1	630.1	10.13	14.61	18.69	600.1	630.1	1.31	1.01	0.78
640.1	670.1	7.50	6.78	6.40	640.1	670.1	6.19	11.42	17.25	640.1	670.1	1.18	1.10	0.88
670.1	700.1	7.93	7.20	6.61	670.1	700.1	4.67	7.63	13.84	670.1	700.1	1.02	0.99	0.90
710.1	740.1	8.46	7.82	7.14	710.1	740.1	4.59	5.49	8.28	710.1	740.1	0.77	0.70	0.71
740.1	770.1	8.66	8.03	7.40	740.1	770.1	5.45	6.17	7.53	740.1	770.1	0.74	0.69	0.67
780.1	810.1	9.01	8.36	7.76	780.1	810.1	7.02	8.41	10.15	780.1	810.1	0.47	0.44	0.43
810.1	840.1	9.22	8.49	7.80	810.1	840.1	7.25	8.73	10.89	810.1	840.1	0.36	0.38	0.43
850.1	880.1	8.97	8.15	7.48	850.1	880.1	8.00	10.15	13.26	850.1	880.1	0.54	0.59	0.62
880.1	910.1	8.85	7.98	7.40	880.1	910.1	8.91	12.37	15.50	880.1	910.1	0.68	0.76	0.73
920.1	950.1	8.49	7.78	7.39	920.1	950.1	12.17	16.22	18.09	920.1	950.1	0.94	0.89	0.76
950.1	980.1	8.54	7.91	7.57	950.1	980.1	14.13	17.11	18.10	950.1	980.1	0.95	0.85	0.71
990.1	1020.1	8.51	8.03	7.75	990.1	1020.1	16.54	18.16	18.63	990.1	1020.1	0.90	0.77	0.65
1020.1	1050.1	8.67	8.27	8.03	1020.1	1050.1	17.50	17.87	19.08	1020.1	1050.1	0.85	0.69	0.58
1060.1	1090.1	8.87	8.51	8.31	1060.1	1090.1	17.83	18.11	19.58	1060.1	1090.1	0.73	0.58	0.48
1090.1	1120.1	9.15	8.82	8.61	1090.1	1120.1	18.79	19.06	21.64	1090.1	1120.1	0.61	0.47	0.37
1130.1	1160.1	9.38	9.07	8.87	1130.1	1160.1	23.81	23.97	24.06	1130.1	1160.1	0.57	0.43	0.34
1160.1	1190.1	9.62	9.36	9.20	1160.1	1190.1	18.54	19.17	19.77	1160.1	1190.1	0.56	0.38	0.28
1200.1	1230.1	10.06	9.81	9.64	1200.1	1230.1	15.10	16.49	17.55	1200.1	1230.1	0.52	0.34	0.25
1230.1	1260.1	10.21	9.98	9.85	1230.1	1260.1	14.01	15.59	17.05	1230.1	1260.1	0.52	0.30	0.21
1270.1	1300.1	10.64	10.37	10.24	1270.1	1300.1	13.55	15.26	16.77	1270.1	1300.1	0.51	0.30	0.20
1300.1	1330.1	11.03	10.77	10.67	1300.1	1330.1	13.82	16.19	17.45	1300.1	1330.1	0.47	0.26	0.18
1340.1	1370.1	11.46	11.13	10.99	1340.1	1370.1	14.53	16.82	17.38	1340.1	1370.1	0.55	0.33	0.27
1370.1	1400.1	11.77	11.38	11.22	1370.1	1400.1	14.72	17.38	17.73	1370.1	1400.1	0.56	0.37	0.33

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=250.1MHz (dB)
		@LO (dBm) +10
240.0	10.1	5.93
234.9	15.2	5.93
229.8	20.3	5.94
224.7	25.4	5.87
219.6	30.5	5.86
214.4	35.7	5.86
209.3	40.8	5.86
204.2	45.9	5.89
199.1	51.0	5.81
194.0	56.1	5.83
188.9	61.2	5.85
183.8	66.3	5.87
178.7	71.4	5.82
173.6	76.5	5.82
168.4	81.7	5.81
163.3	86.8	5.84
158.2	91.9	5.88
153.1	97.0	5.79
148.0	102.1	5.79
142.9	107.2	5.82
137.8	112.3	5.85
132.7	117.4	5.82
127.6	122.5	5.77
122.4	127.7	5.77
117.3	132.8	5.80
112.2	137.9	5.84
107.1	143.0	5.79
102.0	148.1	5.77
91.8	158.3	5.86
86.7	163.4	5.86
76.4	173.7	5.85
71.3	178.8	5.89
61.1	189.0	5.90
56.0	194.1	5.86
45.8	204.3	5.93
40.7	209.4	5.96
30.4	219.7	5.94
25.3	224.8	5.97
15.1	235.0	6.12
10.0	240.1	6.37

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)
		@LO (dBm) +10
10.0	20.1	5.85
50.0	60.1	5.35
90.0	100.1	5.30
130.0	140.1	5.41
170.0	180.1	5.44
210.0	220.1	5.44
250.0	260.1	5.38
290.0	300.1	5.55
330.0	340.1	5.42
370.0	380.1	5.46
410.0	420.1	5.76
450.0	460.1	5.83
490.0	500.1	5.58
530.0	540.1	5.61
570.0	580.1	5.59
610.0	620.1	5.62
650.0	660.1	5.54
690.0	700.1	5.66
730.0	740.1	5.74
770.0	780.1	5.65
810.0	820.1	5.84
850.0	860.1	5.66
890.0	900.1	5.70
930.0	940.1	5.75
970.0	980.1	5.81
1010.0	1020.1	5.92
1050.0	1060.1	5.99
1090.0	1100.1	6.32
1130.0	1140.1	6.58
1150.0	1160.1	6.80
1190.0	1200.1	7.13
1210.0	1220.1	7.22
1250.0	1260.1	7.71
1270.0	1280.1	7.87
1310.0	1320.1	8.33
1330.0	1340.1	8.70
1370.0	1380.1	9.20
1390.0	1400.1	9.74
1430.0	1440.1	10.49
1450.0	1460.1	11.10

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB)
		@LO (dBm) +10
490.0	10.1	6.24
477.7	22.4	6.14
465.4	34.7	6.09
453.1	47.0	6.19
440.8	59.3	6.13
428.5	71.6	6.10
416.2	83.9	6.07
403.8	96.3	6.11
391.5	108.6	6.05
379.2	120.9	6.07
366.9	133.2	6.00
354.6	145.5	6.07
342.3	157.8	6.06
330.0	170.1	6.11
317.7	182.4	6.07
305.4	194.7	6.12
293.1	207.0	6.08
280.8	219.3	6.11
268.5	231.6	6.10
256.2	243.9	6.14
243.8	256.3	6.11
231.5	268.6	6.09
219.2	280.9	6.10
206.9	293.2	6.19
194.6	305.5	6.24
182.3	317.8	6.20
170.0	330.1	6.28
157.7	342.4	6.23
145.4	354.7	6.32
133.1	367.0	6.25
120.8	379.3	6.27
108.5	391.6	6.23
96.2	403.9	6.28
83.8	416.3	6.24
71.5	428.6	6.32
59.2	440.9	6.36
46.9	453.2	6.45
34.6	465.5	6.42
22.3	477.8	6.52
10.0	490.1	6.91

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+7	+10	+13	+7	+10	+13
40.1	61.96	64.07	66.87	56.78	54.94	53.49
70.1	58.54	61.11	63.73	55.21	53.47	52.46
110.1	55.40	58.29	61.32	53.26	52.12	50.98
140.1	53.37	56.65	60.66	51.91	50.68	49.16
180.1	51.51	54.80	58.21	50.40	49.49	48.14
210.1	50.74	54.28	58.08	48.30	47.62	46.54
250.1	49.55	53.08	56.98	46.68	46.61	45.74
280.1	48.73	52.34	56.24	44.60	45.30	45.08
320.1	47.90	51.72	56.11	42.10	42.88	42.98
350.1	47.11	50.68	54.92	40.67	41.85	42.42
390.1	46.38	49.88	54.43	39.51	40.77	41.76
420.1	46.68	50.75	55.87	39.60	40.38	40.95
460.1	46.29	50.36	55.53	38.90	40.51	41.23
490.1	46.30	50.47	55.81	38.14	40.24	41.50
530.1	46.30	50.71	57.56	37.68	40.66	42.90
560.1	46.40	50.84	56.36	36.33	39.44	42.11
600.1	46.05	49.80	53.50	34.78	37.64	40.22
630.1	45.89	49.10	52.39	33.38	36.16	38.60
670.1	45.48	48.68	51.16	32.62	34.78	37.28
700.1	45.19	48.46	49.46	32.96	34.36	36.84
740.1	43.18	46.12	47.61	33.66	35.15	36.93
770.1	43.23	46.35	48.06	33.91	35.66	37.31
810.1	41.88	44.75	46.60	34.21	35.82	36.93
840.1	41.05	43.67	45.15	33.98	34.98	35.03
880.1	39.86	41.64	42.13	33.86	33.29	32.09
910.1	38.84	39.64	39.50	32.78	31.07	29.87
950.1	37.20	37.28	37.06	30.97	28.96	27.97
980.1	36.03	35.94	35.79	29.70	27.76	26.75
1020.1	34.57	34.27	33.92	28.50	26.64	25.47
1050.1	33.69	33.12	32.46	28.11	26.03	24.69
1090.1	32.92	32.01	31.19	27.90	25.52	24.01
1120.1	32.26	31.14	30.16	27.32	24.81	23.14
1160.1	31.55	30.11	28.89	26.37	24.00	22.26
1190.1	30.75	29.11	27.75	25.57	23.48	21.82
1230.1	29.32	27.67	26.27	23.91	22.26	20.76
1260.1	28.16	26.57	25.21	22.59	21.26	19.86
1300.1	26.77	25.35	24.02	21.33	20.41	19.13
1330.1	25.48	24.24	22.97	20.26	19.62	18.46
1370.1	24.12	23.18	21.97	19.16	18.95	17.95
1400.1	23.28	22.57	21.43	18.35	18.36	17.48

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	48.60	48.66	48.56
40.1	70.1	37.17	37.43	37.24
80.1	110.1	32.03	32.25	32.26
110.1	140.1	29.76	30.12	30.28
150.1	180.1	27.77	28.07	28.23
180.1	210.1	26.69	26.94	27.20
220.1	250.1	25.73	25.99	26.22
250.1	280.1	25.36	25.80	26.12
290.1	320.1	24.79	25.26	25.72
320.1	350.1	24.66	25.07	25.45
360.1	390.1	24.79	25.43	25.97
390.1	420.1	24.84	25.62	26.40
430.1	460.1	24.58	25.20	25.90
460.1	490.1	23.84	24.39	24.94
500.1	530.1	23.19	23.91	24.59
530.1	560.1	22.41	23.10	23.59
570.1	600.1	21.44	21.99	22.29
600.1	630.1	20.54	20.86	21.03
640.1	670.1	20.16	20.40	20.63
670.1	700.1	19.96	20.09	20.33
710.1	740.1	20.29	20.35	20.47
740.1	770.1	20.57	20.54	20.46
780.1	810.1	20.77	20.63	20.44
810.1	840.1	20.44	20.17	19.72
850.1	880.1	19.33	18.86	18.21
880.1	910.1	18.24	17.67	17.05
920.1	950.1	16.75	16.23	15.79
950.1	980.1	15.55	15.09	14.73
990.1	1020.1	14.11	13.72	13.39
1020.1	1050.1	13.08	12.72	12.43
1060.1	1090.1	11.90	11.54	11.26
1090.1	1120.1	11.10	10.72	10.44
1130.1	1160.1	10.18	9.77	9.47
1160.1	1190.1	9.51	9.08	8.76
1200.1	1230.1	8.64	8.19	7.88
1230.1	1260.1	8.12	7.66	7.35
1270.1	1300.1	7.45	6.99	6.68
1300.1	1330.1	6.96	6.50	6.20
1340.1	1370.1	6.39	5.94	5.65
1370.1	1400.1	6.09	5.64	5.36

Frequency Mixer

ADE-ED7879/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=500.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+7	+10	+13		+7	+10	+13		+7	+10	+13
10.1	40.1	1.41	1.37	1.27	40.1	1.68	3.07	6.66	10.1	1.76	1.60	1.45
40.1	70.1	1.26	1.17	1.12	70.1	1.46	2.15	3.20	20.1	1.73	1.57	1.42
80.1	110.1	1.21	1.12	1.05	110.1	1.38	1.98	2.78	30.1	1.73	1.57	1.41
110.1	140.1	1.27	1.16	1.10	140.1	1.42	2.05	2.91	40.1	1.76	1.60	1.44
150.1	180.1	1.19	1.11	1.06	180.1	1.38	1.94	2.66	50.1	1.78	1.61	1.46
180.1	210.1	1.19	1.11	1.06	210.1	1.38	1.94	2.65	60.1	1.75	1.58	1.43
220.1	250.1	1.19	1.11	1.06	250.1	1.42	1.97	2.68	70.1	1.73	1.57	1.41
250.1	280.1	1.16	1.08	1.03	280.1	1.41	1.96	2.65	80.1	1.77	1.61	1.46
290.1	320.1	1.15	1.09	1.04	320.1	1.45	2.01	2.72	90.1	1.82	1.65	1.50
320.1	350.1	1.13	1.07	1.04	350.1	1.47	2.01	2.70	100.1	1.82	1.65	1.50
360.1	390.1	1.11	1.04	1.03	390.1	1.49	2.03	2.71	110.1	1.78	1.61	1.46
390.1	420.1	1.11	1.03	1.04	420.1	1.54	2.10	2.80	120.1	1.75	1.58	1.43
430.1	460.1	1.07	1.01	1.04	460.1	1.56	2.10	2.78	130.1	1.76	1.60	1.44
460.1	490.1	1.05	1.00	1.05	490.1	1.58	2.13	2.81	140.1	1.79	1.62	1.47
500.1	530.1	1.02	1.05	1.10	530.1	1.62	2.17	2.86	150.1	1.78	1.62	1.47
530.1	560.1	1.01	1.05	1.10	560.1	1.64	2.17	2.86	160.1	1.76	1.60	1.44
570.1	600.1	1.04	1.03	1.07	600.1	1.74	2.27	2.97	170.1	1.76	1.59	1.44
600.1	630.1	1.07	1.02	1.05	630.1	1.81	2.33	3.01	180.1	1.80	1.63	1.48
640.1	670.1	1.18	1.10	1.09	670.1	1.85	2.38	3.04	190.1	1.83	1.67	1.52
670.1	700.1	1.26	1.18	1.13	700.1	1.90	2.47	3.15	200.1	1.81	1.65	1.50
710.1	740.1	1.36	1.29	1.24	740.1	1.94	2.51	3.20	210.1	1.77	1.61	1.46
740.1	770.1	1.50	1.43	1.37	770.1	1.95	2.53	3.22	220.1	1.77	1.61	1.46
780.1	810.1	1.62	1.55	1.49	810.1	1.99	2.58	3.30	240.1	1.82	1.66	1.51
810.1	840.1	1.72	1.64	1.58	840.1	1.99	2.57	3.29	250.1	1.79	1.63	1.48
850.1	880.1	1.85	1.77	1.72	880.1	1.99	2.56	3.27	270.1	1.78	1.62	1.47
880.1	910.1	1.90	1.83	1.79	910.1	2.00	2.57	3.30	280.1	1.84	1.67	1.52
920.1	950.1	2.01	1.96	1.94	950.1	2.00	2.57	3.30	300.1	1.80	1.65	1.50
950.1	980.1	2.10	2.06	2.03	980.1	2.01	2.58	3.31	310.1	1.77	1.62	1.47
990.1	1020.1	2.13	2.10	2.08	1020.1	2.09	2.66	3.39	330.1	1.84	1.68	1.53
1020.1	1050.1	2.26	2.23	2.20	1050.1	2.16	2.71	3.42	340.1	1.84	1.68	1.53
1060.1	1090.1	2.29	2.25	2.22	1090.1	2.26	2.77	3.46	360.1	1.78	1.63	1.48
1090.1	1120.1	2.32	2.28	2.24	1120.1	2.37	2.86	3.54	370.1	1.81	1.66	1.51
1130.1	1160.1	2.41	2.35	2.30	1160.1	2.50	2.92	3.55	390.1	1.83	1.68	1.54
1160.1	1190.1	2.42	2.35	2.31	1190.1	2.58	2.96	3.56	400.1	1.79	1.64	1.50
1200.1	1230.1	2.42	2.34	2.28	1230.1	2.76	3.09	3.66	420.1	1.83	1.67	1.53
1230.1	1260.1	2.41	2.32	2.27	1260.1	2.87	3.12	3.64	430.1	1.86	1.70	1.56
1270.1	1300.1	2.34	2.25	2.19	1300.1	3.04	3.20	3.67	450.1	1.80	1.64	1.51
1300.1	1330.1	2.39	2.30	2.25	1330.1	3.16	3.28	3.71	460.1	1.80	1.65	1.51
1340.1	1370.1	2.34	2.24	2.19	1370.1	3.29	3.33	3.67	480.1	1.84	1.69	1.56
1370.1	1400.1	2.31	2.22	2.17	1400.1	3.37	3.38	3.69	490.1	1.81	1.67	1.54

REV. X2

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Page 4 of 5



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Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	17	34	19	29	18	34	25	36	27	47
1	-	16	+0	34	11	32	18	32	37	39	41	41
2	87	>72	53	71	54	>72	55	67	58	68	59	70
3	>90	70	63	68	61	71	59	71	59	>72	66	>72
4	>90	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72
5	>90	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72
6	>90	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72
7	>90	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72
8	>90	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72
9	>90	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72
10	>90	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72	>72
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 250 MHz; -11.00 dBm.
LO IN: 280 MHz; +10.00 dBm
IF OUT: 30 MHz; -18.39 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	24	36	28	44	26	40	33	46	37	68
1	-	7	+0	20	11	34	19	36	33	38	43	41
2	68	64	49	56	48	65	50	76	52	58	51	62
3	>90	44	53	43	43	45	52	44	48	46	55	53
4	>90	>80	69	78	74	71	70	71	76	70	>80	77
5	>90	65	68	64	67	62	62	62	61	62	60	68
6	>90	>80	>80	>80	>80	>80	>80	79	>80	79	>80	77
7	>90	>80	>80	>80	>80	>80	77	77	78	77	76	75
8	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
9	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
10	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 250 MHz; -1.00 dBm.
LO IN: 280 MHz; +10.00 dBm
IF OUT: 30 MHz; -10.31 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.