

Frequency Mixer

ADE-ED14540/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	7.30	6.83	6.61
19.1	49.1	7.24	6.78	6.56
28.1	58.1	7.29	6.84	6.63
40.1	70.1	7.28	6.82	6.61
49.1	79.1	7.25	6.77	6.55
58.1	88.1	7.25	6.76	6.53
70.1	100.1	7.31	6.80	6.58
79.1	109.1	7.30	6.83	6.63
88.1	118.1	7.32	6.86	6.67
100.1	130.1	7.35	6.88	6.66
120.1	150.1	7.29	6.83	6.60
141.1	171.1	7.36	6.91	6.70
169.1	199.1	7.36	6.84	6.62
190.1	220.1	7.41	6.95	6.75
218.1	248.1	7.36	6.87	6.68
246.1	276.1	7.45	6.97	6.79
260.1	290.1	7.47	7.00	6.81
288.1	318.1	7.42	6.98	6.79
309.1	339.1	7.51	7.08	6.89
330.1	360.1	7.43	7.01	6.83
358.1	388.1	7.53	7.11	6.93
379.1	409.1	7.47	7.05	6.86
400.1	430.1	7.55	7.14	6.93
428.1	458.1	7.56	7.18	7.00
449.1	479.1	7.59	7.18	6.99
470.1	500.1	7.65	7.22	7.00
498.1	528.1	7.67	7.24	7.00
519.1	549.1	7.70	7.30	7.08
547.1	577.1	7.71	7.32	7.11
568.1	598.1	7.70	7.29	7.08
589.1	619.1	7.79	7.37	7.15
617.1	647.1	7.82	7.33	7.11
638.1	668.1	7.90	7.39	7.15
659.1	689.1	7.91	7.40	7.16
687.1	717.1	8.06	7.54	7.27
708.1	738.1	8.18	7.70	7.40
729.1	759.1	8.24	7.79	7.49
757.1	787.1	8.33	7.92	7.65
778.1	808.1	8.41	8.02	7.75
806.1	836.1	8.54	8.14	7.87

RF (IN) (MHz)	LO (MHz)	IP-3 INPUT (dBm)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	18.82	19.55	20.23
19.1	49.1	19.05	19.87	20.09
28.1	58.1	17.30	18.06	18.64
40.1	70.1	16.77	17.40	18.02
49.1	79.1	16.27	16.93	17.61
58.1	88.1	17.38	17.82	18.16
70.1	100.1	17.29	17.63	17.98
79.1	109.1	16.36	16.92	17.44
88.1	118.1	14.97	15.94	16.53
100.1	130.1	14.73	15.67	16.23
120.1	150.1	15.83	16.24	16.51
141.1	171.1	14.62	15.15	16.36
169.1	199.1	14.62	15.07	17.42
190.1	220.1	14.02	14.87	18.08
218.1	248.1	13.64	14.92	19.08
246.1	276.1	13.52	15.75	20.67
260.1	290.1	13.23	15.79	20.44
288.1	318.1	13.29	17.18	21.61
309.1	339.1	13.36	17.20	21.48
330.1	360.1	13.61	17.84	20.52
358.1	388.1	14.28	20.86	20.72
379.1	409.1	13.69	19.69	20.34
400.1	430.1	14.71	20.50	20.76
428.1	458.1	15.30	19.50	18.24
449.1	479.1	15.56	19.51	17.16
470.1	500.1	16.76	22.25	18.19
498.1	528.1	16.56	21.03	19.47
519.1	549.1	19.95	21.64	21.24
547.1	577.1	19.90	19.95	18.81
568.1	598.1	26.36	21.55	19.08
589.1	619.1	24.52	21.48	17.93
617.1	647.1	24.68	21.75	17.55
638.1	668.1	23.60	24.28	18.67
659.1	689.1	26.97	23.52	19.60
687.1	717.1	20.95	22.39	20.40
708.1	738.1	18.34	19.33	19.80
729.1	759.1	17.19	17.34	17.98
757.1	787.1	16.80	16.37	16.71
778.1	808.1	16.48	15.44	15.35
806.1	836.1	15.80	15.24	15.27

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	0.38	0.12	0.03
19.1	49.1	0.42	0.15	0.05
28.1	58.1	0.41	0.18	0.09
40.1	70.1	0.46	0.21	0.11
49.1	79.1	0.47	0.20	0.11
58.1	88.1	0.47	0.18	0.08
70.1	100.1	0.44	0.20	0.08
79.1	109.1	0.50	0.21	0.10
88.1	118.1	0.53	0.22	0.10
100.1	130.1	0.53	0.22	0.11
120.1	150.1	0.53	0.20	0.10
141.1	171.1	0.47	0.19	0.09
169.1	199.1	0.48	0.19	0.08
190.1	220.1	0.53	0.20	0.09
218.1	248.1	0.52	0.22	0.09
246.1	276.1	0.49	0.19	0.09
260.1	290.1	0.50	0.17	0.08
288.1	318.1	0.59	0.21	0.11
309.1	339.1	0.54	0.20	0.12
330.1	360.1	0.53	0.20	0.13
358.1	388.1	0.51	0.19	0.11
379.1	409.1	0.61	0.27	0.18
400.1	430.1	0.60	0.25	0.17
428.1	458.1	0.60	0.28	0.16
449.1	479.1	0.65	0.33	0.18
470.1	500.1	0.66	0.35	0.22
498.1	528.1	0.75	0.40	0.27
519.1	549.1	0.73	0.37	0.23
547.1	577.1	0.80	0.44	0.28
568.1	598.1	0.86	0.48	0.29
589.1	619.1	0.98	0.58	0.39
617.1	647.1	0.99	0.68	0.46
638.1	668.1	1.03	0.76	0.54
659.1	689.1	1.00	0.74	0.53
687.1	717.1	1.06	0.76	0.58
708.1	738.1	0.93	0.62	0.48
729.1	759.1	0.87	0.58	0.45
757.1	787.1	0.84	0.50	0.36
778.1	808.1	0.90	0.53	0.37
806.1	836.1	0.92	0.54	0.38

Frequency Mixer

ADE-ED14540/1

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=128MHz (dB)
		@LO (dBm)
		+10
117.9	10.1	6.97
113.9	14.1	6.93
107.9	20.1	6.97
101.9	26.1	6.93
95.9	32.1	6.90
91.9	36.1	6.90
85.9	42.1	6.92
79.9	48.1	6.90
73.9	54.1	6.90
69.9	58.1	6.87
63.9	64.1	6.87
57.9	70.1	6.65
51.9	76.1	6.87
45.9	82.1	6.84
41.9	86.1	6.79
35.9	92.1	6.79
29.9	98.1	6.86
23.9	104.1	6.92
19.9	108.1	6.93
13.9	114.1	6.92
10.1	138.1	7.06
26.1	154.1	6.87
42.1	170.1	6.84
58.1	186.1	6.62
74.1	202.1	6.85
90.1	218.1	6.90
106.1	234.1	6.87
122.1	250.1	6.86
138.1	266.1	6.84
154.1	282.1	6.83
170.1	298.1	6.83
186.1	314.1	6.87
202.1	330.1	6.92
218.1	346.1	6.85
234.1	362.1	6.85
250.1	378.1	6.78
266.1	394.1	6.86
282.1	410.1	6.91
298.1	426.1	6.93
314.1	442.1	6.91

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10MHz (dB)
		@LO (dBm)
		+10
10.1	20.1	6.90
18.1	28.1	6.80
26.1	36.1	6.79
38.1	48.1	6.78
46.1	56.1	6.78
58.1	68.1	6.56
66.1	76.1	6.76
78.1	88.1	6.66
86.1	96.1	6.75
94.1	104.1	6.78
106.1	116.1	6.77
114.1	124.1	6.78
126.1	136.1	6.82
134.1	144.1	6.72
146.1	156.1	6.76
154.1	164.1	6.75
162.1	172.1	6.70
174.1	184.1	6.73
182.1	192.1	6.75
194.1	204.1	6.73
202.1	212.1	6.75
214.1	224.1	6.77
222.1	232.1	6.75
234.1	244.1	6.71
242.1	252.1	6.70
250.1	260.1	6.63
262.1	272.1	6.67
270.1	280.1	6.67
282.1	292.1	6.67
290.1	300.1	6.74
302.1	312.1	6.71
310.1	320.1	6.70
318.1	328.1	6.73
330.1	340.1	6.68
338.1	348.1	6.64
350.1	360.1	6.63
358.1	368.1	6.61
370.1	380.1	6.61
378.1	388.1	6.66
390.1	400.1	6.65

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=246MHz (dB)
		@LO (dBm)
		+10
235.9	10.1	6.98
231.9	14.1	6.96
225.9	20.1	6.97
219.9	26.1	7.00
213.9	32.1	6.98
207.9	38.1	6.98
201.9	44.1	7.00
195.9	50.1	7.01
189.9	56.1	7.04
183.9	62.1	6.99
179.9	66.1	6.97
173.9	72.1	6.98
167.9	78.1	6.97
161.9	84.1	6.95
155.9	90.1	6.91
149.9	96.1	6.93
143.9	102.1	6.95
137.9	108.1	6.98
131.9	114.1	6.95
125.9	120.1	6.94
121.9	124.1	6.93
115.9	130.1	6.98
109.9	136.1	7.04
103.9	142.1	7.00
97.9	148.1	6.95
91.9	154.1	6.96
85.9	160.1	7.00
79.9	166.1	7.01
73.9	172.1	6.98
67.9	178.1	6.93
63.9	182.1	6.88
57.9	188.1	6.72
51.9	194.1	6.83
45.9	200.1	6.92
39.9	206.1	6.89
33.9	212.1	6.91
27.9	218.1	6.96
21.9	224.1	6.99
15.9	230.1	6.99
9.9	236.1	7.01

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	65.21	65.11	64.61	53.94	57.00	60.37
44.6	64.51	64.82	64.13	53.73	56.79	60.24
49.1	64.66	64.54	63.75	53.70	56.65	59.86
53.6	64.63	64.19	63.42	53.65	56.48	59.62
58.1	64.30	63.98	63.04	53.48	56.31	59.31
62.6	64.13	63.75	62.69	53.30	56.05	58.90
67.1	63.82	63.37	62.31	53.32	55.88	58.53
72.5	63.59	62.93	61.88	53.10	55.62	58.20
77.0	63.40	62.62	61.53	52.90	55.35	57.84
81.5	62.95	62.21	61.05	52.71	55.09	57.39
86.0	62.71	61.80	60.70	52.26	54.49	56.71
90.5	62.45	61.35	60.23	51.85	53.93	55.88
95.0	62.04	60.90	59.78	51.40	53.32	54.94
100.4	61.66	60.56	59.34	50.99	52.90	54.41
104.9	61.33	60.23	58.84	50.41	52.27	53.67
109.4	61.04	59.95	58.33	49.94	51.56	52.69
113.9	60.69	59.54	57.95	49.74	51.24	52.27
118.4	60.33	59.39	57.61	49.38	50.83	51.89
122.9	60.09	59.15	57.28	48.94	50.44	51.57
127.4	59.77	58.91	56.99	48.55	49.90	50.99
150.1	58.03	57.18	55.09	48.27	49.31	50.21
185.1	55.96	53.28	52.69	48.11	49.24	50.14
220.1	53.57	51.18	51.48	47.84	49.13	50.20
255.1	50.47	49.42	50.21	47.62	48.81	49.83
290.1	48.13	47.99	48.74	47.55	48.57	49.54
325.1	46.61	47.11	47.99	47.47	48.59	49.68
367.1	44.75	45.74	46.68	47.03	48.43	49.68
402.1	43.64	44.68	45.49	46.48	48.09	49.50
437.1	42.83	44.12	45.15	45.77	47.19	48.51
472.1	42.21	43.37	44.03	45.52	46.73	47.94
507.1	41.78	43.10	43.59	45.25	46.39	47.73
542.1	40.88	42.28	43.01	45.32	46.46	47.86
577.1	39.73	40.97	41.62	45.56	46.67	47.96
619.1	38.90	40.00	40.42	46.01	47.05	48.10
654.1	38.62	39.75	40.12	46.52	47.79	48.57
689.1	38.64	39.68	39.97	46.54	48.20	49.30
724.1	39.20	40.19	40.59	46.07	47.87	49.19
759.1	39.22	40.39	40.82	45.88	47.61	49.03
794.1	38.65	39.63	40.02	45.43	46.79	48.05
836.1	38.36	39.01	39.15	45.28	46.39	47.62

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	49.11	50.37	52.53
19.1	49.1	45.87	46.63	47.61
28.1	58.1	43.52	43.83	44.39
40.1	70.1	40.66	41.06	41.45
49.1	79.1	39.02	39.30	39.82
58.1	88.1	37.66	37.89	38.17
70.1	100.1	36.17	36.44	36.78
79.1	109.1	35.31	35.61	35.86
88.1	118.1	34.38	34.67	34.93
100.1	130.1	33.27	33.56	33.84
120.1	150.1	31.81	32.12	32.39
141.1	171.1	30.48	30.86	31.16
169.1	199.1	29.04	29.43	29.71
190.1	220.1	28.33	28.78	29.06
218.1	248.1	27.24	27.67	27.93
246.1	276.1	26.41	26.90	27.15
260.1	290.1	25.90	26.37	26.59
288.1	318.1	25.45	25.93	26.16
309.1	339.1	24.85	25.33	25.58
330.1	360.1	24.62	25.09	25.33
358.1	388.1	24.00	24.46	24.69
379.1	409.1	23.81	24.28	24.56
400.1	430.1	23.44	23.88	24.15
428.1	458.1	23.17	23.67	23.95
449.1	479.1	22.89	23.44	23.76
470.1	500.1	22.76	23.38	23.75
498.1	528.1	22.40	22.94	23.29
519.1	549.1	22.10	22.57	22.89
547.1	577.1	21.56	21.99	22.27
568.1	598.1	21.17	21.60	21.87
589.1	619.1	21.04	21.52	21.90
617.1	647.1	20.79	21.39	21.89
638.1	668.1	20.66	21.39	21.95
659.1	689.1	20.57	21.37	21.97
687.1	717.1	20.37	21.17	21.82
708.1	738.1	20.20	20.97	21.67
729.1	759.1	19.95	20.61	21.25
757.1	787.1	19.73	20.32	20.85
778.1	808.1	19.41	19.89	20.30
806.1	836.1	19.17	19.57	19.91

Frequency Mixer

ADE-ED14540/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=354MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+7	+10	+13		+7	+10	+13		+7	+10	+13
10.1	40.1	1.03	1.25	1.43	40.1	1.09	1.54	2.18	10.1	1.49	1.41	1.37
19.1	49.1	1.06	1.28	1.46	49.1	1.08	1.52	2.14	18.1	1.48	1.39	1.35
28.1	58.1	1.04	1.26	1.44	58.1	1.08	1.52	2.14	30.1	1.47	1.39	1.34
40.1	70.1	1.05	1.27	1.46	70.1	1.10	1.54	2.16	36.1	1.47	1.38	1.34
49.1	79.1	1.05	1.27	1.46	79.1	1.11	1.55	2.19	44.1	1.47	1.38	1.33
58.1	88.1	1.04	1.27	1.45	88.1	1.10	1.56	2.21	52.1	1.46	1.38	1.33
70.1	100.1	1.03	1.26	1.45	100.1	1.13	1.58	2.23	62.1	1.46	1.37	1.33
79.1	109.1	1.06	1.30	1.49	109.1	1.13	1.57	2.21	70.1	1.46	1.37	1.33
88.1	118.1	1.07	1.29	1.48	118.1	1.13	1.55	2.18	78.1	1.45	1.37	1.32
100.1	130.1	1.06	1.26	1.45	130.1	1.14	1.53	2.13	88.1	1.45	1.37	1.32
120.1	150.1	1.07	1.28	1.47	150.1	1.17	1.53	2.11	96.1	1.45	1.37	1.32
141.1	171.1	1.09	1.29	1.48	171.1	1.20	1.58	2.18	108.1	1.46	1.37	1.33
169.1	199.1	1.08	1.29	1.46	199.1	1.21	1.60	2.23	114.1	1.46	1.37	1.33
190.1	220.1	1.11	1.30	1.44	220.1	1.22	1.57	2.17	122.1	1.46	1.37	1.33
218.1	248.1	1.11	1.29	1.41	248.1	1.25	1.58	2.15	132.1	1.46	1.38	1.34
246.1	276.1	1.15	1.30	1.40	269.1	1.27	1.62	2.22	140.1	1.47	1.39	1.34
260.1	290.1	1.14	1.28	1.37	290.1	1.27	1.64	2.27	148.1	1.47	1.39	1.35
288.1	318.1	1.17	1.30	1.38	318.1	1.28	1.62	2.23	158.1	1.47	1.38	1.34
309.1	339.1	1.16	1.25	1.33	339.1	1.29	1.62	2.20	166.1	1.46	1.38	1.34
330.1	360.1	1.18	1.26	1.34	360.1	1.29	1.65	2.25	174.1	1.45	1.37	1.33
358.1	388.1	1.17	1.24	1.31	388.1	1.31	1.71	2.34	184.1	1.46	1.37	1.33
379.1	409.1	1.18	1.25	1.33	409.1	1.32	1.70	2.31	192.1	1.46	1.38	1.34
400.1	430.1	1.19	1.22	1.28	430.1	1.31	1.68	2.28	200.1	1.46	1.38	1.35
428.1	458.1	1.19	1.22	1.27	458.1	1.32	1.72	2.32	210.1	1.47	1.39	1.35
449.1	479.1	1.20	1.20	1.25	479.1	1.33	1.76	2.39	218.1	1.47	1.39	1.35
470.1	500.1	1.19	1.18	1.24	500.1	1.33	1.77	2.41	226.1	1.47	1.39	1.35
498.1	528.1	1.21	1.17	1.21	528.1	1.33	1.75	2.37	236.1	1.47	1.40	1.36
519.1	549.1	1.20	1.15	1.18	549.1	1.34	1.77	2.38	244.1	1.48	1.40	1.36
547.1	577.1	1.21	1.15	1.16	577.1	1.36	1.83	2.47	254.1	1.48	1.41	1.37
568.1	598.1	1.21	1.13	1.13	598.1	1.37	1.85	2.50	262.1	1.48	1.40	1.37
589.1	619.1	1.24	1.15	1.14	619.1	1.37	1.85	2.48	270.1	1.48	1.40	1.36
617.1	647.1	1.24	1.13	1.13	647.1	1.36	1.83	2.45	280.1	1.47	1.40	1.36
638.1	668.1	1.27	1.14	1.14	668.1	1.37	1.86	2.50	288.1	1.47	1.39	1.36
659.1	689.1	1.26	1.12	1.11	689.1	1.38	1.90	2.55	296.1	1.46	1.39	1.36
687.1	717.1	1.32	1.17	1.12	717.1	1.40	1.90	2.55	306.1	1.46	1.40	1.36
708.1	738.1	1.33	1.18	1.10	738.1	1.41	1.91	2.55	314.1	1.47	1.40	1.37
729.1	759.1	1.36	1.22	1.12	759.1	1.42	1.93	2.56	322.1	1.47	1.41	1.37
757.1	787.1	1.38	1.25	1.15	787.1	1.45	1.99	2.64	332.1	1.47	1.40	1.37
778.1	808.1	1.41	1.29	1.19	808.1	1.47	2.01	2.67	340.1	1.47	1.40	1.37
806.1	836.1	1.45	1.33	1.23	836.1	1.47	2.00	2.64	348.1	1.47	1.40	1.37

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	---	---	18.02	19.29	28.60	25.03	32.86	26.04	47.74	30.33	24.63	34.22
1	---	20.25	---	35.29	11.65	31.61	21.69	26.19	32.53	24.30	28.57	25.08
2	115.88	67.68	72.59	67.82	72.99	69.21	74.89	77.34	84.01	67.79	71.00	65.96
3	130.42	78.64	62.87	86.29	60.62	84.93	60.61	76.05	61.10	69.37	61.68	64.00
4	131.27	99.10	100.05	97.41	97.52	92.41	100.13	102.34	99.96	102.70	98.73	99.94
5	131.35	98.14	98.86	102.65	98.62	99.24	98.47	100.61	99.06	100.92	99.34	97.52
6	131.85	102.60	102.43	101.21	101.60	93.46	97.32	90.27	98.44	100.98	102.28	100.88
7	130.26	99.55	102.09	99.24	101.80	101.36	98.07	101.13	98.89	100.87	99.49	98.82
8	129.71	103.27	101.07	101.14	101.17	100.02	100.84	96.18	100.02	96.86	100.92	98.81
9	130.30	100.98	101.25	97.80	99.29	102.24	100.27	99.84	93.04	97.96	91.85	100.68
10	130.10	100.16	99.66	100.90	99.45	102.14	99.83	100.52	100.62	97.28	99.02	97.22
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 246 MHz; -15 dBm.
 LO IN: 276 MHz; +10.00 dBm
 IF OUT: 30.00 MHz; -22.01 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	---	---	30.64	31.89	42.12	37.95	46.61	40.14	61.50	46.89	41.49	52.42
1	---	20.57	---	36.89	11.46	33.74	20.44	28.66	30.44	28.19	34.21	30.65
2	104.64	75.60	65.66	74.88	64.82	69.06	63.24	63.86	65.06	56.94	72.91	56.79
3	123.54	56.64	46.35	61.41	43.45	68.60	43.74	55.44	42.50	48.76	41.69	43.94
4	125.19	73.54	76.51	74.73	77.94	75.60	79.69	80.95	84.98	82.24	90.64	74.64
5	122.15	70.53	59.65	80.47	57.36	89.85	55.14	74.64	54.98	71.26	56.12	64.51
6	122.66	82.24	90.92	83.57	96.42	83.40	108.66	95.60	96.24	92.62	88.70	88.34
7	122.36	84.92	72.82	94.36	71.57	87.30	72.19	84.75	72.43	86.45	77.33	85.70
8	122.72	101.42	102.15	107.38	101.59	114.43	97.34	99.07	93.32	91.59	96.14	93.68
9	121.57	91.21	89.82	91.87	88.46	90.88	92.60	94.75	99.82	96.86	84.44	102.48
10	120.75	111.74	106.11	107.35	104.86	105.80	102.53	106.35	103.61	108.62	101.51	100.04
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 246 MHz; -5 dBm.
 LO IN: 276 MHz; +10.00 dBm
 IF OUT: 30.00 MHz; -11.94 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 represents the Harmonics level of the RF Input Signal to the mixer