

Frequency Mixer

ADE-R6LH+

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	4.91	4.73	4.51
20.1	50.1	4.99	4.81	4.66
30.1	60.1	5.14	4.86	4.69
40.1	70.1	5.04	4.81	4.77
50.1	80.1	5.00	4.83	4.70
60.1	90.1	5.06	4.86	4.78
70.1	100.1	4.98	4.86	4.76
80.1	110.1	4.89	4.75	4.71
90.1	120.1	5.01	4.83	4.72
100.1	130.1	5.20	4.91	4.76
110.1	140.1	5.35	5.11	4.93
120.1	150.1	5.39	5.21	5.06
130.1	160.1	5.30	5.15	5.05
140.1	170.1	5.26	5.12	5.02
150.1	180.1	5.31	5.16	5.14
160.1	190.1	5.35	5.24	5.26
170.1	200.1	5.53	5.30	5.24
180.1	210.1	5.69	5.38	5.24
190.1	220.1	5.83	5.57	5.34
200.1	230.1	5.96	5.76	5.56
210.1	240.1	5.98	5.82	5.66
220.1	250.1	5.96	5.77	5.60
230.1	260.1	6.15	5.92	5.66
240.1	270.1	6.13	5.86	5.57
250.1	280.1	6.41	6.05	5.79
260.1	290.1	6.53	6.14	5.83
270.1	300.1	6.84	6.45	6.15
280.1	310.1	7.01	6.58	6.25
290.1	320.1	6.95	6.62	6.36
300.1	330.1	7.28	6.90	6.66
310.1	340.1	7.20	6.95	6.81
320.1	350.1	7.68	7.51	7.38
330.1	360.1	7.76	7.59	7.58
340.1	370.1	8.50	8.38	8.43
350.1	380.1	8.66	8.55	8.78
360.1	390.1	9.22	9.22	9.41
370.1	400.1	9.44	9.39	9.51
375.1	405.1	9.85	9.79	9.88
385.1	415.1	10.23	10.15	10.20
390.1	420.1	10.55	10.41	10.42

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	18.12	20.48	20.32
20.1	50.1	21.53	23.68	26.82
30.1	60.1	17.75	18.83	21.06
40.1	70.1	18.81	21.33	27.51
50.1	80.1	20.74	27.59	19.80
60.1	90.1	16.70	19.19	21.28
70.1	100.1	18.68	20.58	18.11
80.1	110.1	17.75	15.58	14.37
90.1	120.1	22.10	16.39	14.44
100.1	130.1	20.73	18.35	15.66
110.1	140.1	17.51	17.57	15.34
120.1	150.1	22.06	17.95	16.19
130.1	160.1	21.21	16.68	16.56
140.1	170.1	20.89	15.61	13.96
150.1	180.1	17.17	13.95	12.85
160.1	190.1	15.97	13.54	13.74
170.1	200.1	14.19	14.35	13.81
180.1	210.1	9.62	12.26	12.57
190.1	220.1	6.85	8.81	12.07
200.1	230.1	5.84	6.63	9.87
210.1	240.1	5.16	5.45	7.22
220.1	250.1	5.25	5.46	6.42
230.1	260.1	5.63	5.88	6.73
240.1	270.1	5.77	6.41	7.01
250.1	280.1	6.43	6.67	7.81
260.1	290.1	6.29	6.85	8.56
270.1	300.1	8.09	8.14	10.43
280.1	310.1	8.05	9.01	11.38
290.1	320.1	8.92	10.40	14.11
300.1	330.1	9.35	11.20	14.98
310.1	340.1	9.88	12.16	16.81
320.1	350.1	10.08	12.60	17.22
330.1	360.1	10.56	13.67	16.86
340.1	370.1	10.86	13.63	16.94
350.1	380.1	11.18	13.91	16.12
360.1	390.1	11.53	14.36	17.12
370.1	400.1	12.90	15.98	17.01
375.1	405.1	13.39	16.14	17.35
385.1	415.1	14.43	17.02	17.67
390.1	420.1	14.03	15.96	17.32

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB)		
		@LO (dBm)		
		+7	+10	+13
10.1	40.1	1.60	1.19	1.04
20.1	50.1	1.57	1.19	0.95
30.1	60.1	1.42	1.14	0.88
40.1	70.1	1.51	1.14	0.94
50.1	80.1	1.48	1.20	0.93
60.1	90.1	1.53	1.13	0.91
70.1	100.1	1.51	1.17	0.95
80.1	110.1	1.58	1.17	0.94
90.1	120.1	1.36	1.11	0.81
100.1	130.1	1.20	0.99	0.77
110.1	140.1	1.02	0.85	0.71
120.1	150.1	0.99	0.81	0.64
130.1	160.1	1.23	0.94	0.75
140.1	170.1	1.44	1.05	0.84
150.1	180.1	1.63	1.13	0.84
160.1	190.1	1.82	1.15	0.76
170.1	200.1	1.91	1.31	0.85
180.1	210.1	2.10	1.59	1.07
190.1	220.1	2.25	1.74	1.22
200.1	230.1	2.29	1.87	1.36
210.1	240.1	2.60	2.14	1.69
220.1	250.1	2.71	2.35	1.92
230.1	260.1	2.64	2.27	1.93
240.1	270.1	2.71	2.35	2.05
250.1	280.1	2.41	2.11	1.78
260.1	290.1	2.35	2.07	1.74
270.1	300.1	2.06	1.73	1.47
280.1	310.1	2.02	1.72	1.50
290.1	320.1	1.96	1.62	1.42
300.1	330.1	2.00	1.68	1.46
310.1	340.1	1.97	1.61	1.38
320.1	350.1	1.96	1.60	1.15
330.1	360.1	1.82	1.45	1.16
340.1	370.1	1.60	1.19	0.90
350.1	380.1	1.60	1.20	0.74
360.1	390.1	1.34	0.91	0.65
370.1	400.1	1.43	1.03	0.81
375.1	405.1	1.33	0.97	0.79
385.1	415.1	1.21	0.87	0.78
390.1	420.1	1.23	0.91	0.81



Frequency Mixer

ADE-R6LH+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=135.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=260.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+10			+10			+10
125.1	10.0	5.40	10.1	20.1	4.70	250.1	10.0	8.03
122.2	12.9	5.36	20.9	30.9	4.43	243.9	16.2	7.92
119.2	15.9	5.37	31.6	41.6	4.65	237.8	22.3	7.80
116.3	18.8	5.32	42.4	52.4	4.67	231.6	28.5	7.70
113.3	21.8	5.30	53.2	63.2	4.71	225.5	34.6	7.59
110.4	24.7	5.23	63.9	73.9	4.59	219.3	40.8	7.62
107.4	27.7	5.21	74.7	84.7	4.67	213.2	46.9	7.47
104.5	30.6	5.24	85.5	95.5	4.95	207.0	53.1	7.42
101.5	33.6	5.17	96.3	106.3	4.88	200.9	59.2	7.28
98.6	36.5	5.20	107.0	117.0	4.76	194.7	65.4	7.32
95.6	39.5	5.13	117.8	127.8	4.90	188.6	71.5	7.29
92.7	42.4	5.15	128.6	138.6	5.09	182.4	77.7	7.33
89.7	45.4	5.15	139.3	149.3	5.26	176.3	83.8	7.30
86.8	48.3	5.15	150.1	160.1	5.32	170.1	90.0	7.22
83.8	51.3	5.12	160.9	170.9	5.26	163.9	96.2	7.23
80.9	54.2	5.07	171.6	181.6	5.39	157.8	102.3	7.06
77.9	57.2	5.12	182.4	192.4	5.07	151.6	108.5	7.09
75.0	60.1	5.17	193.2	203.2	5.11	145.5	114.6	6.94
72.0	63.1	5.13	203.9	213.9	5.17	139.3	120.8	6.99
69.1	66.0	5.12	214.7	224.7	5.21	133.2	126.9	6.85
66.1	69.0	5.15	225.5	235.5	5.39	127.0	133.1	6.89
63.2	71.9	5.15	236.3	246.3	5.23	120.9	139.2	6.71
60.2	74.9	5.15	247.0	257.0	5.43	114.7	145.4	6.59
57.3	77.8	5.09	257.8	267.8	5.22	108.6	151.5	6.54
54.3	80.8	5.02	268.6	278.6	5.42	102.4	157.7	6.45
51.4	83.7	5.03	279.3	289.3	5.54	96.3	163.8	6.48
48.4	86.7	5.01	290.1	300.1	5.65	90.1	170.0	6.30
45.5	89.6	4.99	300.9	310.9	5.80	83.9	176.2	6.28
42.5	92.6	4.95	311.6	321.6	6.00	77.8	182.3	6.06
39.6	95.5	4.95	322.4	332.4	6.20	71.6	188.5	6.12
36.6	98.5	5.00	333.2	343.2	6.64	65.5	194.6	6.05
33.7	101.4	5.01	343.9	353.9	6.81	59.3	200.8	6.09
30.7	104.4	5.01	354.7	364.7	7.29	53.2	206.9	6.12
27.8	107.3	4.98	365.5	375.5	7.66	47.0	213.1	6.21
24.8	110.3	5.00	376.3	386.3	7.63	40.9	219.2	6.42
21.9	113.2	5.06	387.0	397.0	8.25	34.7	225.4	6.50
18.9	116.2	5.05	397.8	407.8	8.47	28.6	231.5	6.61
16.0	119.1	5.02	408.6	418.6	9.37	22.4	237.7	6.55
13.0	122.1	5.01	419.3	429.3	10.24	16.3	243.8	6.58
10.1	125.0	5.10	430.1	440.1	10.24	10.1	250.0	6.69

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)					@LO (dBm)		
	+7	+10	+13	+7	+10	+13			+7	+10	+13
40.1	63.87	63.56	64.75	72.47	61.81	57.53	10.1	40.1	32.13	32.02	32.12
50.1	60.86	61.80	62.71	62.06	64.67	61.05	20.1	50.1	27.83	28.02	28.10
60.1	58.73	59.85	60.87	53.96	57.40	61.75	30.1	60.1	25.58	25.54	26.02
70.1	58.95	59.58	59.75	49.50	52.74	56.80	40.1	70.1	23.62	23.83	24.38
80.1	57.80	60.17	61.33	47.66	50.61	54.90	50.1	80.1	22.30	22.09	22.95
90.1	54.15	55.64	57.17	45.27	47.89	50.96	60.1	90.1	21.69	22.09	22.97
100.1	56.13	55.81	55.60	42.55	45.60	49.49	70.1	100.1	20.78	20.93	22.77
110.1	62.60	60.89	60.09	41.29	43.88	46.96	80.1	110.1	20.55	20.78	21.05
120.1	60.87	63.35	63.14	40.67	43.29	46.18	90.1	120.1	20.05	20.78	20.94
130.1	54.12	58.40	61.28	41.49	43.94	47.10	100.1	130.1	20.37	20.91	21.57
140.1	48.19	50.60	52.67	39.86	42.43	45.13	110.1	140.1	21.40	21.35	22.01
150.1	46.95	48.95	50.79	38.19	40.51	42.72	120.1	150.1	22.35	22.76	23.11
160.1	44.70	46.59	48.35	36.34	38.08	39.79	130.1	160.1	23.72	24.79	25.31
170.1	42.48	44.29	45.90	35.29	36.56	37.53	140.1	170.1	24.40	25.66	26.49
180.1	41.74	43.44	44.65	34.41	34.87	35.13	150.1	180.1	22.04	23.04	24.08
190.1	41.03	42.90	44.35	32.88	32.55	32.41	160.1	190.1	19.24	20.11	20.29
200.1	41.26	43.63	45.27	33.08	32.76	32.00	170.1	200.1	17.45	17.87	18.18
210.1	41.22	43.49	43.93	32.62	33.79	31.97	180.1	210.1	16.05	16.56	16.91
220.1	40.80	42.30	42.86	32.03	34.28	32.30	190.1	220.1	14.97	15.49	15.91
230.1	40.38	41.69	43.32	31.90	33.69	33.69	200.1	230.1	14.28	14.56	14.87
240.1	40.10	41.53	43.26	31.59	33.09	34.05	210.1	240.1	14.24	14.42	14.54
250.1	39.61	40.52	41.12	31.26	32.48	33.14	220.1	250.1	13.99	14.34	14.40
260.1	38.91	39.64	39.91	30.94	31.74	31.55	230.1	260.1	14.00	14.17	14.64
270.1	38.51	39.10	39.03	30.87	30.98	29.35	240.1	270.1	13.82	13.90	14.50
280.1	38.30	38.24	37.03	30.83	29.71	26.70	250.1	280.1	14.13	14.30	14.53
290.1	37.97	37.41	35.47	30.52	27.79	24.16	260.1	290.1	14.21	14.14	14.60
300.1	37.98	36.38	33.52	29.89	25.81	22.27	270.1	300.1	13.94	13.99	13.92
310.1	37.43	34.16	31.16	28.86	23.83	20.88	280.1	310.1	13.65	13.41	13.38
320.1	36.05	31.80	29.24	27.45	22.46	20.01	290.1	320.1	12.62	12.43	12.31
330.1	35.60	30.70	28.30	26.58	21.78	19.54	300.1	330.1	12.23	11.85	11.65
340.1	35.10	29.62	27.23	25.65	21.22	19.30	310.1	340.1	11.04	10.91	10.64
350.1	34.49	28.67	25.95	25.39	21.22	18.94	320.1	350.1	10.31	10.09	9.85
360.1	33.44	27.68	25.07	25.04	21.02	18.82	330.1	360.1	9.46	9.27	9.07
370.1	32.92	26.99	24.16	24.61	20.61	18.34	340.1	370.1	8.85	8.53	8.18
380.1	31.57	25.79	22.69	24.12	20.44	17.83	350.1	380.1	8.26	7.95	7.57
390.1	29.39	24.39	21.54	23.16	19.97	17.60	360.1	390.1	7.52	7.36	7.04
400.1	27.12	23.30	20.64	21.86	19.23	16.98	370.1	400.1	7.17	6.82	6.56
405.1	26.03	22.66	20.18	21.24	18.86	16.76	375.1	405.1	7.04	6.59	6.30
415.1	24.27	21.72	19.37	20.53	18.61	16.57	385.1	415.1	6.26	6.12	5.92
420.1	23.55	21.35	18.98	20.01	18.29	16.33	390.1	420.1	6.14	5.98	5.64

Frequency Mixer

ADE-R6LH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=250MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+7	+10	+13		+7	+10	+13		+7	+10	+13
10.1	40.1	1.39	1.30	1.17	40.1	1.47	2.23	3.14	10.1	2.27	2.07	1.83
20.1	50.1	1.42	1.25	1.17	50.1	1.46	2.17	3.01	15.1	2.27	2.08	1.85
30.1	60.1	1.42	1.28	1.20	60.1	1.44	2.09	2.89	20.1	2.23	2.03	1.80
40.1	70.1	1.38	1.27	1.19	70.1	1.42	2.04	2.80	25.1	2.17	1.98	1.75
50.1	80.1	1.37	1.27	1.20	80.1	1.42	2.03	2.77	30.1	2.15	1.96	1.74
60.1	90.1	1.37	1.24	1.16	90.1	1.44	2.05	2.79	35.1	2.18	2.00	1.79
70.1	100.1	1.35	1.23	1.15	100.1	1.47	2.10	2.87	40.1	2.23	2.05	1.84
80.1	110.1	1.29	1.18	1.12	110.1	1.52	2.16	2.95	45.1	2.23	2.05	1.84
90.1	120.1	1.24	1.14	1.07	120.1	1.55	2.21	3.01	50.1	2.18	2.01	1.80
100.1	130.1	1.26	1.13	1.06	130.1	1.59	2.24	3.02	55.1	2.15	1.97	1.76
110.1	140.1	1.25	1.16	1.08	140.1	1.59	2.24	3.01	60.1	2.17	1.99	1.78
120.1	150.1	1.20	1.13	1.10	150.1	1.58	2.20	2.95	65.1	2.25	2.06	1.85
130.1	160.1	1.16	1.11	1.11	160.1	1.59	2.17	2.90	70.1	2.29	2.12	1.92
140.1	170.1	1.11	1.10	1.13	170.1	1.60	2.16	2.88	75.1	2.27	2.10	1.91
150.1	180.1	1.07	1.11	1.18	180.1	1.65	2.18	2.90	80.1	2.20	2.04	1.87
160.1	190.1	1.04	1.13	1.19	190.1	1.72	2.25	2.97	85.1	2.15	2.00	1.83
170.1	200.1	1.03	1.11	1.18	200.1	1.81	2.35	3.08	90.1	2.18	2.02	1.84
180.1	210.1	1.11	1.07	1.14	210.1	1.88	2.47	3.18	95.1	2.25	2.09	1.91
190.1	220.1	1.19	1.06	1.08	220.1	1.90	2.53	3.26	100.1	2.29	2.14	1.96
200.1	230.1	1.25	1.13	1.05	230.1	1.89	2.54	3.28	105.1	2.25	2.11	1.95
210.1	240.1	1.32	1.22	1.14	240.1	1.88	2.51	3.26	110.1	2.15	2.03	1.89
220.1	250.1	1.34	1.25	1.18	250.1	1.86	2.48	3.22	115.1	2.09	1.97	1.84
230.1	260.1	1.44	1.34	1.25	260.1	1.85	2.47	3.21	120.1	2.11	1.99	1.85
240.1	270.1	1.49	1.38	1.27	270.1	1.86	2.48	3.22	125.1	2.18	2.05	1.90
250.1	280.1	1.59	1.45	1.35	280.1	1.88	2.50	3.25	130.1	2.22	2.08	1.93
260.1	290.1	1.66	1.52	1.43	290.1	1.90	2.52	3.26	135.1	2.19	2.06	1.92
270.1	300.1	1.75	1.60	1.52	300.1	1.91	2.52	3.25	140.1	2.13	2.01	1.87
280.1	310.1	1.84	1.70	1.63	310.1	1.92	2.51	3.23	145.1	2.10	1.99	1.86
290.1	320.1	1.84	1.73	1.67	320.1	1.92	2.48	3.20	150.1	2.14	2.03	1.90
300.1	330.1	2.02	1.92	1.85	330.1	1.92	2.47	3.17	155.1	2.18	2.06	1.94
310.1	340.1	1.98	1.89	1.83	340.1	1.95	2.47	3.16	165.1	2.12	2.01	1.89
320.1	350.1	2.13	2.02	1.95	350.1	1.99	2.49	3.17	170.1	2.11	1.99	1.86
330.1	360.1	2.11	2.00	1.92	360.1	2.04	2.52	3.19	180.1	2.17	2.06	1.93
340.1	370.1	2.25	2.13	2.04	370.1	2.12	2.58	3.22	185.1	2.15	2.05	1.94
350.1	380.1	2.21	2.08	2.00	380.1	2.21	2.65	3.27	195.1	2.01	1.90	1.80
360.1	390.1	2.23	2.11	2.03	390.1	2.32	2.72	3.31	200.1	2.04	1.91	1.78
370.1	400.1	2.18	2.05	1.97	400.1	2.43	2.77	3.31	210.1	2.20	2.06	1.91
375.1	405.1	2.20	2.07	1.99	405.1	2.49	2.79	3.31	215.1	2.16	2.04	1.90
385.1	415.1	2.15	2.03	1.96	415.1	2.61	2.84	3.31	225.1	2.03	1.90	1.75
390.1	420.1	2.17	2.04	1.96	420.1	2.66	2.85	3.30	230.1	2.11	1.95	1.77

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	11	18	12	40	24	40	38	44	36	48
1	-	20	+0	32	12	36	34	47	34	46	30	49
2	88	56	48	59	50	54	61	67	64	>75	63	69
3	>90	66	59	62	59	69	57	60	56	65	58	67
4	>90	>75	74	>75	>75	72	73	>75	>75	>75	>75	>75
5	>90	>75	>75	74	>75	63	>75	74	73	>75	>75	>75
6	>90	>75	>75	>75	>75	>75	>75	>75	>75	>75	>75	>75
7	>90	>75	>75	>75	>75	>75	>75	>75	>75	>75	>75	>75
8	>90	>75	>75	>75	>75	>75	>75	>75	>75	>75	>75	>75
9	>90	>75	>75	>75	>75	>75	>75	>75	72	>75	>75	>75
10	>90	>75	>75	>75	>75	>75	>75	>75	>75	>75	>75	>75
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 125 MHz; -10.00 dBm.
 LO IN: 155 MHz; +10.00 dBm
 IF OUT: 30 MHz; -15.39 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	23	29	22	50	36	54	49	54	45	65
1	-	21	+0	28	12	34	37	66	42	55	39	52
2	66	48	42	50	42	45	63	63	63	67	59	65
3	>90	63	39	54	41	54	46	57	50	62	50	56
4	>90	67	57	70	62	62	57	67	64	75	68	78
5	>90	66	55	59	58	58	55	56	59	61	60	63
6	>90	>85	82	>85	73	79	73	79	76	74	80	82
7	>90	75	73	74	77	68	65	64	61	66	65	69
8	>90	>85	>85	>85	82	>85	81	81	82	81	78	81
9	>90	84	>85	84	>85	80	74	78	76	72	68	71
10	>90	84	>85	>85	>85	>85	>85	>85	>85	>85	>85	81
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 125 MHz; 0.00 dBm.
 LO IN: 155 MHz; +10.00 dBm
 IF OUT: 30 MHz; -5.28 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.