

## 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	4.67	4.80	4.31
30.1	60.1	5.43	5.16	5.09
50.1	80.1	5.46	5.21	5.13
70.1	100.1	5.36	5.17	5.07
90.1	120.1	5.41	5.21	5.10
110.1	140.1	5.41	5.22	5.11
130.1	160.1	5.52	5.29	5.19
150.1	180.1	5.49	5.31	5.18
170.1	200.1	5.51	5.31	5.21
190.1	220.1	5.52	5.33	5.23
210.1	240.1	5.60	5.38	5.28
230.1	260.1	5.58	5.37	5.25
250.1	280.1	5.65	5.41	5.27
270.1	300.1	5.69	5.42	5.29
310.1	340.1	5.82	5.59	5.42
330.1	360.1	5.83	5.59	5.42
370.1	400.1	5.74	5.54	5.43
390.1	420.1	5.82	5.60	5.48
430.1	460.1	6.06	5.71	5.51
450.1	480.1	6.26	5.85	5.61
490.1	520.1	6.67	6.18	5.81
510.1	540.1	6.92	6.44	6.04
550.1	580.1	6.99	6.47	6.04
570.1	600.1	6.93	6.37	5.93
610.1	640.1	6.83	6.26	5.86
630.1	660.1	6.74	6.22	5.88
670.1	700.1	6.73	6.32	6.06
690.1	720.1	6.77	6.39	6.16
730.1	760.1	6.98	6.68	6.49
750.1	780.1	7.16	6.87	6.71
790.1	820.1	7.55	7.27	7.11
810.1	840.1	7.83	7.56	7.43
850.1	880.1	8.47	8.21	8.06
870.1	900.1	8.71	8.47	8.33
910.1	940.1	9.34	9.11	9.00
930.1	960.1	9.70	9.44	9.32
970.1	1000.1	10.41	10.13	10.01
990.1	1020.1	10.84	10.55	10.45
1030.1	1060.1	11.79	11.41	11.33
1050.1	1080.1	12.31	11.88	11.84

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	19.70	20.96	21.98
30.1	60.1	20.96	23.38	25.16
50.1	80.1	17.92	21.07	21.11
70.1	100.1	21.33	23.75	18.53
90.1	120.1	22.51	17.86	16.38
110.1	140.1	19.82	16.74	15.81
130.1	160.1	17.20	15.34	14.56
150.1	180.1	15.03	13.30	14.01
170.1	200.1	16.73	15.02	16.10
190.1	220.1	13.70	14.12	16.61
210.1	240.1	11.70	11.46	13.00
230.1	260.1	11.61	11.92	14.07
250.1	280.1	12.81	14.54	18.78
270.1	300.1	11.13	14.33	21.23
310.1	340.1	11.84	12.41	13.97
330.1	360.1	11.39	12.20	14.47
370.1	400.1	12.33	14.98	18.13
390.1	420.1	13.32	16.62	20.73
430.1	460.1	8.91	13.99	23.21
450.1	480.1	6.60	11.63	19.06
490.1	520.1	3.77	6.13	9.83
510.1	540.1	3.18	4.99	7.92
550.1	580.1	4.07	6.22	10.73
570.1	600.1	5.41	8.67	20.31
610.1	640.1	9.09	16.25	10.45
630.1	660.1	12.24	14.58	9.90
670.1	700.1	19.26	14.34	12.53
690.1	720.1	17.07	15.70	14.48
730.1	760.1	12.98	12.86	11.68
750.1	780.1	12.22	11.77	10.96
790.1	820.1	10.59	9.82	10.07
810.1	840.1	10.11	9.44	10.16
850.1	880.1	9.99	9.96	11.75
870.1	900.1	10.30	10.58	12.80
910.1	940.1	11.37	12.79	13.93
930.1	960.1	11.65	13.04	13.07
970.1	1000.1	11.24	11.87	12.55
990.1	1020.1	10.95	11.40	12.46
1030.1	1060.1	9.96	10.63	10.15
1050.1	1080.1	9.98	11.31	8.37

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	2.12	1.75	1.35
30.1	60.1	1.48	1.19	0.99
50.1	80.1	1.53	1.19	1.08
70.1	100.1	1.64	1.31	1.12
90.1	120.1	1.61	1.22	1.00
110.1	140.1	1.48	1.25	0.97
130.1	160.1	1.36	1.14	0.88
150.1	180.1	1.45	1.12	0.95
170.1	200.1	1.44	1.18	0.97
190.1	220.1	1.43	1.19	0.95
210.1	240.1	1.33	1.04	0.89
230.1	260.1	1.36	1.10	0.91
250.1	280.1	1.35	1.10	0.89
270.1	300.1	1.39	1.15	0.97
310.1	340.1	1.34	1.13	0.98
330.1	360.1	1.43	1.18	1.03
370.1	400.1	1.70	1.40	1.21
390.1	420.1	1.76	1.45	1.25
430.1	460.1	2.09	1.75	1.55
450.1	480.1	2.15	1.86	1.63
490.1	520.1	2.22	2.00	1.79
510.1	540.1	2.17	1.96	1.79
550.1	580.1	2.26	2.08	1.91
570.1	600.1	2.34	2.12	1.93
610.1	640.1	2.31	2.06	1.88
630.1	660.1	2.33	2.08	1.85
670.1	700.1	2.30	2.03	1.79
690.1	720.1	2.23	1.97	1.75
730.1	760.1	2.10	1.86	1.61
750.1	780.1	1.99	1.77	1.56
790.1	820.1	1.80	1.57	1.39
810.1	840.1	1.68	1.44	1.27
850.1	880.1	1.48	1.23	1.08
870.1	900.1	1.41	1.15	1.00
910.1	940.1	1.33	1.04	0.92
930.1	960.1	1.31	1.04	0.95
970.1	1000.1	1.28	1.06	1.03
990.1	1020.1	1.30	1.09	1.07
1030.1	1060.1	1.34	1.20	1.22
1050.1	1080.1	1.37	1.25	1.28

# Frequency Mixer

ADE-R1+

## Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=260.1MHz (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)=510.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+7			+7			+7
250.10	10.00	5.44	10.1	20.1	4.75	500.1	10.0	6.20
245.20	14.90	5.41	20.1	30.1	4.42	490.1	20.0	6.08
240.30	19.80	5.41	30.1	40.1	4.43	480.1	30.0	6.02
235.41	24.69	5.34	40.1	50.1	4.52	470.1	40.0	5.94
230.51	29.59	5.35	50.1	60.1	4.30	460.1	50.0	5.98
225.61	34.49	5.35	60.1	70.1	4.60	450.1	60.0	5.97
220.71	39.39	5.33	70.1	80.1	4.42	440.1	70.0	5.97
215.81	44.29	5.27	80.1	90.1	4.05	430.1	80.0	6.02
210.92	49.18	5.27	90.1	100.1	4.65	420.1	90.0	6.03
206.02	54.08	5.27	100.1	110.1	3.94	410.1	100.0	5.98
201.12	58.98	5.27	110.1	120.1	4.56	400.1	110.0	5.92
196.22	63.88	5.22	120.1	130.1	4.52	390.1	120.0	5.90
191.32	68.78	5.24	130.1	140.1	4.50	380.1	130.0	5.89
186.43	73.67	5.27	140.1	150.1	4.06	370.1	140.0	5.94
181.53	78.57	5.27	150.1	160.1	4.22	360.1	150.0	5.93
176.63	83.47	5.28	160.1	170.1	4.55	350.1	160.0	5.95
171.73	88.37	5.24	170.1	180.1	4.59	340.1	170.0	5.90
166.83	93.27	5.26	180.1	190.1	4.38	330.1	180.0	5.96
161.94	98.16	5.28	190.1	200.1	4.53	320.1	190.0	5.92
157.04	103.06	5.29	200.1	210.1	4.46	310.1	200.0	5.95
147.24	112.86	5.27	210.1	220.1	4.59	290.1	220.0	5.92
142.34	117.76	5.30	220.1	230.1	4.78	280.1	230.0	5.92
132.55	127.55	5.24	240.1	250.1	4.50	260.1	250.0	5.95
127.65	132.45	5.26	250.1	260.1	4.53	250.1	260.0	5.99
117.86	142.24	5.30	270.1	280.1	4.58	230.1	280.0	5.94
112.96	147.14	5.27	280.1	290.1	4.63	220.1	290.0	5.97
103.16	156.94	5.28	300.1	310.1	4.62	200.1	310.0	6.02
98.26	161.84	5.32	310.1	320.1	4.51	190.1	320.0	5.99
88.47	171.63	5.31	330.1	340.1	5.06	170.1	340.0	6.00
83.57	176.53	5.33	340.1	350.1	4.65	160.1	350.0	6.06
73.77	186.33	5.36	360.1	370.1	4.60	140.1	370.0	5.96
68.88	191.22	5.31	370.1	380.1	4.81	130.1	380.0	5.88
59.08	201.02	5.35	390.1	400.1	4.36	110.1	400.0	5.85
54.18	205.92	5.38	400.1	410.1	4.67	100.1	410.0	5.86
44.39	215.71	5.34	420.1	430.1	5.70	80.1	430.0	5.81
39.49	220.61	5.39	430.1	440.1	5.15	70.1	440.0	5.83
29.69	230.41	5.42	450.1	460.1	4.66	50.1	460.0	5.91
24.79	235.31	5.42	460.1	470.1	4.84	40.1	470.0	5.90
15.00	245.10	5.56	480.1	490.1	4.76	20.1	490.0	6.07
10.10	250.00	5.64	490.1	500.1	4.75	10.1	500.0	6.42



# Frequency Mixer

# ADE-R1+

## 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)		
	+4	+7	+10	+4	+7	+10			+4	+7	+10
10.1	70.58	66.75	79.98	59.39	60.18	59.77	10.1	40.1	43.05	42.46	41.80
30.1	68.53	66.18	67.29	53.46	52.51	51.46	30.1	60.1	34.60	34.59	34.65
50.1	66.07	64.91	65.95	49.96	48.60	47.45	50.1	80.1	31.52	31.26	30.99
70.1	61.36	62.43	63.40	46.87	45.44	44.69	70.1	100.1	28.01	28.70	27.70
90.1	61.32	61.26	62.13	44.64	43.57	42.78	90.1	120.1	26.33	25.95	26.73
110.1	60.24	61.03	61.70	42.77	41.84	41.31	110.1	140.1	24.99	25.14	25.51
130.1	59.79	60.79	60.88	41.46	40.51	39.91	130.1	160.1	23.71	24.13	24.89
150.1	59.31	60.53	60.98	40.84	39.87	39.10	150.1	180.1	23.37	23.47	23.63
170.1	60.57	61.00	61.27	39.78	38.84	38.06	170.1	200.1	23.14	22.93	23.22
190.1	59.26	60.47	60.77	39.19	38.30	37.46	190.1	220.1	22.54	22.91	23.26
210.1	57.78	58.35	58.41	38.38	37.22	36.29	210.1	240.1	22.25	23.05	23.05
230.1	56.46	56.66	56.61	38.33	37.06	35.74	230.1	260.1	22.30	22.86	22.93
250.1	57.44	57.39	57.26	38.00	36.54	35.36	250.1	280.1	22.72	22.93	23.37
270.1	54.80	54.78	54.85	37.53	36.00	34.67	270.1	300.1	22.41	22.86	23.30
310.1	49.48	49.64	49.55	36.10	34.47	32.96	310.1	340.1	23.46	24.03	24.61
330.1	47.87	48.40	48.73	35.56	34.09	32.81	330.1	360.1	24.16	24.72	25.63
370.1	44.91	45.28	45.57	33.77	32.33	31.15	370.1	400.1	22.98	23.50	23.84
390.1	44.42	44.91	45.31	32.17	30.72	29.70	390.1	420.1	21.53	21.77	21.96
430.1	43.54	43.31	43.01	30.15	28.43	27.47	430.1	460.1	18.53	18.54	18.47
450.1	43.42	43.17	42.65	29.89	27.74	26.50	450.1	480.1	17.51	17.38	17.32
490.1	43.68	43.44	43.13	30.03	26.59	24.98	490.1	520.1	16.56	16.48	16.74
510.1	44.10	43.48	42.63	30.17	26.70	24.50	510.1	540.1	16.40	16.55	16.66
550.1	43.44	42.58	41.22	29.80	26.74	24.16	550.1	580.1	16.39	16.50	16.82
570.1	42.82	41.57	39.96	29.63	26.45	23.75	570.1	600.1	16.43	16.48	16.65
610.1	39.71	37.74	36.16	28.45	24.80	22.21	610.1	640.1	15.83	15.57	15.52
630.1	38.61	36.73	35.51	27.86	24.10	21.75	630.1	660.1	15.31	15.00	14.82
670.1	37.09	35.54	34.33	26.55	23.12	20.79	670.1	700.1	14.42	14.19	14.04
690.1	36.66	34.84	33.58	25.51	22.30	20.28	690.1	720.1	14.08	13.82	13.66
730.1	35.64	33.24	31.51	23.68	20.92	19.12	730.1	760.1	12.93	12.73	12.46
750.1	34.13	31.83	29.76	22.67	20.40	18.47	750.1	780.1	12.30	12.06	11.74
790.1	31.72	29.09	27.26	21.16	19.08	17.50	790.1	820.1	10.90	10.67	10.30
810.1	30.32	27.70	26.00	20.60	18.69	17.28	810.1	840.1	10.09	9.82	9.50
850.1	27.86	25.53	23.77	19.48	18.12	16.57	850.1	880.1	8.53	8.27	7.98
870.1	26.95	24.70	22.97	18.95	17.69	16.18	870.1	900.1	7.89	7.62	7.34
910.1	24.95	22.93	21.31	18.23	17.33	15.99	910.1	940.1	6.84	6.53	6.19
930.1	24.10	22.25	20.74	17.89	17.12	15.87	930.1	960.1	6.47	6.06	5.81
970.1	22.85	20.98	19.65	17.36	16.76	15.68	970.1	1000.1	5.65	5.29	5.01
990.1	22.01	20.46	19.12	16.96	16.67	15.63	990.1	1020.1	5.24	4.93	4.70
1030.1	20.97	19.42	18.38	16.29	16.22	15.52	1030.1	1060.1	4.68	4.37	4.19
1050.1	20.58	19.17	18.03	16.05	16.19	15.48	1050.1	1080.1	4.45	4.12	3.90



# Frequency Mixer

# ADE-R1+

## Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=510.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+4	+7	+10		+4	+7	+10		+4	+7	+10
10.1	40.1	1.31	1.17	1.08	10.1	1.85	2.62	3.76	10.0	1.92	1.62	1.38
30.1	60.1	1.22	1.13	1.05	30.1	1.89	2.77	3.89	20.0	1.99	1.67	1.42
50.1	80.1	1.18	1.10	1.05	50.1	1.88	2.73	3.84	30.0	1.97	1.65	1.41
70.1	100.1	1.18	1.08	1.03	70.1	1.82	2.62	3.66	40.0	1.92	1.61	1.37
90.1	120.1	1.18	1.08	1.03	90.1	1.80	2.59	3.61	50.0	1.95	1.63	1.39
110.1	140.1	1.17	1.09	1.03	110.1	1.82	2.64	3.67	60.0	2.01	1.69	1.45
130.1	160.1	1.15	1.07	1.02	130.1	1.85	2.68	3.74	70.0	2.00	1.69	1.45
150.1	180.1	1.14	1.07	1.02	150.1	1.85	2.66	3.69	80.0	1.90	1.61	1.38
170.1	200.1	1.13	1.06	1.01	170.1	1.84	2.62	3.60	90.0	1.90	1.60	1.37
190.1	220.1	1.12	1.05	1.01	190.1	1.84	2.62	3.60	100.0	1.99	1.68	1.45
210.1	240.1	1.12	1.05	1.01	210.1	1.87	2.67	3.67	110.0	2.04	1.73	1.49
230.1	260.1	1.10	1.03	1.02	230.1	1.90	2.71	3.73	120.0	1.98	1.68	1.45
250.1	280.1	1.09	1.01	1.04	250.1	1.91	2.69	3.67	130.0	1.95	1.64	1.41
270.1	300.1	1.10	1.02	1.04	270.1	1.92	2.68	3.64	140.0	2.00	1.69	1.46
310.1	340.1	1.07	1.01	1.05	310.1	1.99	2.80	3.79	150.0	2.04	1.73	1.50
330.1	360.1	1.03	1.04	1.10	330.1	2.01	2.82	3.82	160.0	2.00	1.70	1.48
370.1	400.1	1.04	1.11	1.16	370.1	2.02	2.79	3.76	170.0	1.95	1.65	1.44
390.1	420.1	1.04	1.11	1.15	390.1	2.05	2.83	3.81	180.0	1.98	1.68	1.46
430.1	460.1	1.04	1.05	1.09	430.1	2.17	2.92	3.87	190.0	2.05	1.75	1.52
450.1	480.1	1.09	1.01	1.05	450.1	2.25	3.00	3.94	200.0	2.05	1.76	1.53
490.1	520.1	1.20	1.11	1.05	490.1	2.35	3.14	4.09	220.0	1.99	1.70	1.48
510.1	540.1	1.26	1.17	1.11	510.1	2.37	3.18	4.13	230.0	2.05	1.76	1.54
550.1	580.1	1.39	1.30	1.25	550.1	2.37	3.16	4.10	250.0	2.00	1.73	1.54
570.1	600.1	1.45	1.37	1.33	570.1	2.37	3.15	4.09	260.0	1.97	1.70	1.51
610.1	640.1	1.57	1.51	1.48	610.1	2.37	3.13	4.05	280.0	2.06	1.80	1.61
630.1	660.1	1.67	1.62	1.59	630.1	2.34	3.09	3.99	290.0	2.01	1.76	1.58
670.1	700.1	1.83	1.79	1.75	670.1	2.33	3.08	3.97	310.0	2.03	1.76	1.57
690.1	720.1	1.90	1.85	1.83	690.1	2.36	3.12	4.01	320.0	2.10	1.84	1.64
730.1	760.1	2.08	2.04	2.01	730.1	2.43	3.15	4.01	340.0	1.99	1.75	1.59
750.1	780.1	2.16	2.11	2.07	750.1	2.47	3.17	4.00	350.0	2.00	1.75	1.58
790.1	820.1	2.25	2.19	2.15	790.1	2.60	3.27	4.06	370.0	2.04	1.80	1.65
810.1	840.1	2.31	2.25	2.21	810.1	2.67	3.31	4.08	380.0	1.96	1.74	1.59
850.1	880.1	2.36	2.29	2.22	850.1	2.78	3.35	4.06	400.0	2.01	1.77	1.61
870.1	900.1	2.34	2.27	2.21	870.1	2.85	3.38	4.06	410.0	2.04	1.81	1.65
910.1	940.1	2.35	2.27	2.21	910.1	2.99	3.47	4.09	430.0	1.94	1.72	1.58
930.1	960.1	2.35	2.25	2.19	930.1	3.04	3.48	4.07	440.0	1.96	1.74	1.60
970.1	1000.1	2.28	2.18	2.14	970.1	3.14	3.52	4.05	460.0	1.94	1.73	1.62
990.1	1020.1	2.25	2.17	2.12	990.1	3.19	3.55	4.05	470.0	1.87	1.66	1.54
1030.1	1060.1	2.25	2.18	2.14	1030.1	3.22	3.53	3.98	490.0	1.95	1.73	1.60
1050.1	1080.1	2.22	2.16	2.13	1050.1	3.20	3.49	3.92	500.0	1.95	1.75	1.63

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## Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	14	28	11	45	15	39	22	37	39	47
1	-	21	+0	27	11	38	22	39	38	46	51	41
2	95	68	49	67	51	> 80	47	65	52	67	57	73
3	> 100	74	62	75	62	78	58	> 80	74	79	76	>80
4	> 100	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80
5	> 100	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80
6	> 100	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80
7	> 100	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80
8	> 100	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80
9	> 100	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80	> 80
10	> 100	> 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: 250.10 MHz; -14.00 dBm.  
 LO IN: 280.10 MHz; +7.00 dBm  
 IF OUT: 30.00 MHz; -20.13 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	22	43	23	66	27	50	35	50	55	62
1	-	21	+0	28	12	42	24	45	40	53	70	54
2	74	52	40	70	43	57	42	56	46	63	54	63
3	> 100	45	38	49	42	50	36	50	46	55	57	62
4	> 100	67	62	64	60	65	60	77	56	67	59	70
5	> 100	67	60	62	49	78	50	72	52	70	70	74
6	> 100	88	81	78	79	84	79	77	75	75	76	80
7	> 100	88	81	79	67	70	63	75	64	73	61	73
8	> 100	> 90	> 90	> 90	> 90	88	86	82	79	> 90	83	85
9	> 100	86	> 90	> 90	> 90	> 90	75	87	77	87	83	87
10	> 100	> 90	> 90	> 90	> 90	> 90	> 90	> 90	89	> 90	88	87
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

### LO HARMONICS ORDER

Test conditions: RF IN: 250.10 MHz; -4.00 dBm.  
 LO IN: 280.10 MHz; +7.00 dBm  
 IF OUT: 30.00 MHz; -9.81 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.