Frequency Mixer ADE-3L

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		0	+3	+6
10.1	40.1	5.70	4.91	4.71
25.1	55.1	5.59	5.02	4.70
40.1	70.1	5.66	5.10	4.84
55.1	85.1	5.57	5.09	4.89
70.1	100.1	5.37	5.00	4.84
85.1	115.1	5.39	5.01	4.81
100.1	130.1	5.61	5.18	4.96
115.1	145.1	5.59	5.20	4.97
130.1	160.1	5.59	5.18	4.96
145.1	175.1	5.70	5.26	5.03
160.1	190.1	5.73	5.27	5.02
175.1	205.1	5.72	5.36	5.08
190.1	220.1	5.89	5.50	5.26
205.1	235.1	5.84	5.48	5.28
220.1	250.1	5.89	5.46	5.23
235.1	265.1	5.95	5.49	5.23
250.1	280.1	6.00	5.53	5.29
265.1	295.1	6.10	5.61	5.34
280.1	310.1	6.31	5.83	5.47
295.1	325.1	6.46	6.04	5.68
310.1	340.1	6.67	6.28	5.92
325.1	355.1	6.91	6.53	6.22
340.1	370.1	7.06	6.65	6.31
355.1	385.1	7.28	6.82	6.45
370.1	400.1	7.81	7.29	6.84
385.1	415.1	7.95	7.39	6.87
400.1	430.1	8.04	7.40	6.82
415.1	445.1	8.37	7.55	6.79
430.1	460.1	8.17	7.20	6.45
445.1	475.1	8.20	7.25	6.71
455.1	485.1	8.57	7.49	6.89
470.1	500.1	8.34	7.47	7.09
480.1	510.1	8.73	7.85	7.43
495.1	525.1	8.64	7.84	7.49
505.1	535.1	9.06	8.37	8.05
520.1	550.1	9.19	8.40	8.08
530.1	560.1	9.59	8.91	8.66
545.1	575.1	10.20	9.42	9.11
555.1	585.1	10.37	9.69	9.46
570.1	600.1	11.15	10.40	10.12

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		0	+3	+6
10.1	40.1	14.81	14.73	13.72
25.1	55.1	15.21	14.67	14.23
40.1	70.1	12.00	11.54	12.54
55.1	85.1	10.95	11.45	13.99
70.1	100.1	11.63	12.31	15.58
85.1	115.1	9.65	13.11	15.59
100.1	130.1	9.14	13.13	15.52
115.1	145.1	13.90	15.40	15.51
130.1	160.1	15.21	12.73	9.67
145.1	175.1	14.00	12.96	10.40
160.1	190.1	14.90	14.83	12.00
175.1	205.1	12.09	14.23	13.23
190.1	220.1	15.06	10.90	9.67
205.1	235.1	12.29	9.76	9.14
220.1	250.1	14.50	8.76	8.50
235.1	265.1	14.54	8.77	7.78
250.1	280.1	8.62	8.53	8.59
265.1	295.1	5.96	8.60	9.90
280.1	310.1	2.46	4.78	8.78
295.1	325.1	0.56	1.31	5.03
310.1	340.1	-0.13	-0.25	1.36
325.1	355.1	-0.77	-0.92	-0.32
340.1	370.1	-0.79	-0.85	-0.49
355.1	385.1	-0.09	-0.03	0.29
370.1	400.1	0.57	1.06	1.78
385.1	415.1	1.70	2.80	4.21
400.1	430.1	3.77	4.97	6.67
415.1	445.1	4.39	6.04	9.11
430.1	460.1	5.10	8.19	11.91
445.1	475.1	7.76	10.48	13.09
455.1	485.1	8.09	11.83	14.56
470.1	500.1	10.58	11.15	13.25
480.1	510.1	11.66	11.20	13.53
495.1	525.1	8.97	10.35	11.80
505.1	535.1	8.39	9.53	10.77
520.1	550.1	6.72	8.27	8.81
530.1	560.1	6.25	7.31	8.43
545.1	575.1	5.49	6.45	6.74
555.1	585.1	5.48	6.40	6.74
570.1	600.1	5.25	6.34	6.66

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=-3dBm (dB) @LO (dBm)		
		0	+3	+6
10.1	40.1	0.77	0.42	0.51
25.1	55.1	0.34	0.12	0.08
40.1	70.1	0.25	0.16	0.02
55.1	85.1	0.31	0.04	0.15
70.1	100.1	0.38	0.22	0.06
85.1	115.1	0.39	0.23	0.11
100.1	130.1	0.33	0.17	0.03
115.1	145.1	0.36	0.15	0.06
130.1	160.1	0.34	0.18	0.08
145.1	175.1	0.30	0.16	0.11
160.1	190.1	0.36	0.23	0.10
175.1	205.1	0.36	0.19	0.14
190.1	220.1	0.38	0.17	0.06
205.1	235.1	0.43	0.20	0.12
220.1	250.1	0.43	0.21	0.13
235.1	265.1	0.56	0.29	0.16
250.1	280.1	0.61	0.34	0.15
265.1	295.1	0.59	0.38	0.16
280.1	310.1	0.62	0.39	0.19
295.1	325.1	0.68	0.43	0.25
310.1	340.1	0.63	0.41	0.21
325.1	355.1	0.60	0.37	0.22
340.1	370.1	0.60	0.38	0.24
355.1	385.1	0.45	0.25	0.15
370.1	400.1	0.15	-0.01	-0.04
385.1	415.1	0.13	-0.02	-0.02
400.1	430.1	0.09	0.00	0.03
415.1	445.1	0.05	0.02	0.12
430.1	460.1	0.27	0.30	0.34
445.1	475.1	0.31	0.34	0.28
455.1	485.1	0.25	0.32	0.27
470.1	500.1	0.44	0.34	0.25
480.1	510.1	0.41	0.30	0.23
495.1	525.1	0.53	0.37	0.28
505.1	535.1	0.53	0.32	0.24
520.1	550.1	0.64	0.43	0.36
530.1	560.1	0.57	0.36	0.29
545.1	575.1	0.54	0.39	0.35
555.1	585.1	0.51	0.36	0.33
570.1	600.1	0.45	0.38	0.36

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=200.1MHz (dB) @LO (dBm) +3
190.0	10.1	5.61
186.0	14.1	5.58
182.0	18.1	5.55
178.0	22.1	5.50
174.0	26.1	5.41
170.0	30.1	5.37
166.0	34.1	5.34
162.0	38.1	5.36
158.0	42.1	5.38
154.0	46.1	5.38
150.0	50.1	5.28
146.0	54.1	5.28
142.0	58.1	5.29
138.0	62.1	5.32
134.0	66.1	5.32
130.0	70.1	5.27
126.0	74.1	5.24
120.0	80.1	5.21
116.0	84.1	5.26
110.0	90.1	5.29
106.0	94.1	5.22
100.0	100.1	5.32
96.0	104.1	5.25
90.0	110.1	5.27
86.0	114.1	5.23
80.0	120.1	5.17
76.0	124.1	5.13
70.0	130.1	5.19
66.0	134.1	5.23
60.0	140.1	5.21
56.0	144.1	5.20
50.0	150.1	5.26
46.0	154.1	5.29
40.0	160.1	5.29
36.0	164.1	5.30
30.0	170.1	5.27
26.0	174.1	5.29
20.0	180.1	5.33
16.0	184.1	5.41
10.0	190.1	5.33

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +3
10.0	20.1	4.92
30.0	40.1	4.91
50.0	60.1	4.89
70.0	80.1	4.80
90.0	100.1	4.99
110.0	120.1	4.86
130.0	140.1	5.84
150.0	160.1	4.80
170.0	180.1	5.34
190.0	200.1	5.14
210.0	220.1	5.64
230.0	240.1	5.66
250.0	260.1	5.64
260.0	270.1	5.44
280.0	290.1	5.37
290.0	300.1	5.50
310.0	320.1	5.32
320.0	330.1	5.33
340.0	350.1	5.35
350.0	360.1	5.48
370.0	380.1	5.52
380.0	390.1	5.49
400.0	410.1	5.50
410.0	420.1	5.60
430.0	440.1	5.81
440.0	450.1	5.82
460.0	470.1	5.79
470.0	480.1	5.75
490.0	500.1	6.10
500.0	510.1	5.64
520.0	530.1	6.00
530.0	540.1	6.37
550.0	560.1	6.97
560.0	570.1	6.93
580.0	590.1	7.13
590.0	600.1	7.83
610.0	620.1	8.65
620.0	630.1	8.89
640.0	650.1	10.12
650.0	660.1	10.21

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=400.1MHz (dB) @LO (dBm) +3
390.0	10.1	7.57
380.0	20.1	7.42
370.0	30.1	7.37
360.0	40.1	7.25
350.0	50.1	7.28
340.0	60.1	7.17
330.0	70.1	7.18
320.0	80.1	7.09
310.0	90.1	7.08
300.0	100.1	7.04
290.0	110.1	7.02
280.0	120.1	7.13
270.0	130.1	7.02
260.0	140.1	7.13
250.0	150.1	7.04
240.0	160.1	7.02
230.0	170.1	6.96
220.0	180.1	6.94
210.0	190.1	6.97
200.0	200.1	7.07
190.0	210.1	6.90
180.0	220.1	6.70
170.0	230.1	6.80
160.0	240.1	6.76
150.0	250.1	6.77
140.0	260.1	6.75
130.0	270.1	6.69
120.0	280.1	6.72
110.0	290.1	6.69
100.0	300.1	6.82
90.0	310.1	6.78
80.0	320.1	6.97
70.0	330.1	7.35
60.0	340.1	7.41
50.0	350.1	7.60
40.0	360.1	7.60
30.0	370.1	7.89
25.0	375.1	7.88
15.0	385.1	7.78
10.0	390.1	7.75

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	0	+3	+6	0	+3	+6
40.1	55.17	56.96	58.69	55.05	53.46	51.95
55.1	53.02	54.95	56.36	52.89	52.06	50.90
70.1	51.62	53.42	54.88	50.86	50.62	49.80
85.1	50.43	52.03	53.68	48.88	49.04	48.95
100.1	49.48	50.77	51.98	46.78	46.89	46.89
115.1	47.89	49.70	51.50	45.19	45.50	45.27
130.1	46.24	47.29	48.48	42.93	44.15	45.18
145.1	46.01	46.85	47.54	41.54	42.63	43.60
160.1	45.98	47.30	48.29	40.04	40.80	41.64
175.1	45.45	47.52	48.95	39.13	39.76	40.91
190.1	44.02	46.20	48.10	38.86	39.61	40.55
205.1	41.70	43.62	45.22	38.64	40.51	41.53
220.1	40.23	41.88	43.23	37.94	40.46	42.35
235.1	38.43	39.96	41.48	36.66	39.56	42.28
250.1	37.23	38.68	40.46	35.04	37.78	40.44
265.1	36.68	37.81	39.65	33.75	36.51	39.02
280.1	37.29	38.31	40.40	32.61	34.67	36.73
295.1	37.62	38.66	40.81	32.12	33.50	35.54
310.1	38.99	40.17	41.67	32.87	33.45	35.19
325.1	39.27	40.96	42.63	33.38	33.64	34.93
340.1	39.13	41.42	43.70	33.96	34.55	35.38
355.1	38.97	40.99	42.63	34.22	35.23	36.27
370.1	38.78	40.88	42.84	34.50	35.70	36.84
385.1	38.73	40.71	42.34	34.78	35.94	36.89
400.1	38.82	40.29	41.28	35.69	36.40	36.49
415.1	39.51	41.13	42.42	36.37	36.16	34.93
430.1	40.06	41.62	42.06	37.10	35.57	32.87
445.1	40.19	41.44	41.04	37.57	34.36	30.30
460.1	41.16	42.45	39.99	36.67	32.19	27.92
475.1	42.90	42.70	38.37	34.61	29.76	26.13
485.1	44.24	42.39	37.77	33.01	28.42	25.22
500.1	52.00	40.79	35.65	30.90	27.07	24.27
510.1	52.28	40.00	34.61	29.38	26.30	23.71
525.1	43.44	37.35	32.66	27.31	25.03	22.68
535.1	39.47	36.23	31.71	25.88	24.23	22.02
550.1	34.90	33.58	29.81	24.01	23.09	21.15
560.1	32.34	31.77	28.52	22.93	22.35	20.60
575.1	29.58	29.61	27.12	21.40	21.18	19.69
585.1	27.92	28.18	26.04	20.60	20.58	19.25
600.1	25.96	26.50	24.81	19.73	19.88	18.79

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		0	+3	+6
10.1	40.1	37.78	37.69	36.82
25.1	55.1	30.90	30.81	31.09
40.1	70.1	27.29	27.54	27.82
55.1	85.1	25.51	25.96	26.26
70.1	100.1	23.57	24.07	24.46
85.1	115.1	22.45	23.03	23.32
100.1	130.1	22.49	23.30	23.67
115.1	145.1	21.40	22.48	23.34
130.1	160.1	20.82	21.77	22.65
145.1	175.1	21.03	21.74	22.51
160.1	190.1	21.27	21.87	22.46
175.1	205.1	22.30	23.15	23.77
190.1	220.1	24.11	25.60	26.56
205.1	235.1	24.12	25.91	27.29
220.1	250.1	22.91	24.26	25.24
235.1	265.1	20.69	21.45	21.91
250.1	280.1	18.48	18.60	18.52
265.1	295.1	17.15	16.92	16.52
280.1	310.1	16.28	16.07	15.71
295.1	325.1	15.31	15.11	14.83
310.1	340.1	14.79	14.62	14.39
325.1	355.1	14.58	14.38	14.26
340.1	370.1	14.28	14.09	13.91
355.1	385.1	14.43	14.23	14.08
370.1	400.1	14.69	14.46	14.24
385.1	415.1	14.60	14.31	14.07
400.1	430.1	14.50	14.12	13.77
415.1	445.1	14.35	14.02	13.57
430.1	460.1	13.41	13.02	12.60
445.1	475.1	12.49	12.07	11.75
455.1	485.1	12.09	11.70	11.44
470.1	500.1	11.09	10.74	10.47
480.1	510.1	10.57	10.27	10.04
495.1	525.1	9.87	9.56	9.32
505.1	535.1	9.33	9.01	8.69
520.1	550.1	8.71	8.37	8.07
530.1	560.1	8.18	7.80	7.50
545.1	575.1	7.57	7.22	6.90
555.1	585.1	7.17	6.79	6.46
570.1	600.1	6.63	6.30	5.99

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		0	+3	+6
10.1	40.1	1.62	1.13	1.29
25.1	55.1	1.54	1.33	1.25
40.1	70.1	1.63	1.43	1.27
55.1	85.1	1.59	1.39	1.25
70.1	100.1	1.58	1.37	1.23
85.1	115.1	1.54	1.33	1.20
100.1	130.1	1.48	1.29	1.18
115.1	145.1	1.45	1.25	1.14
130.1	160.1	1.42	1.24	1.15
145.1	175.1	1.43	1.25	1.15
160.1	190.1	1.42	1.24	1.13
175.1	205.1	1.39	1.22	1.11
190.1	220.1	1.34	1.19	1.10
205.1	235.1	1.28	1.14	1.06
220.1	250.1	1.24	1.11	1.06
235.1	265.1	1.22	1.07	1.07
250.1	280.1	1.24	1.05	1.07
265.1	295.1	1.25	1.05	1.05
280.1	310.1	1.29	1.10	1.04
295.1	325.1	1.34	1.18	1.08
310.1	340.1	1.40	1.27	1.17
325.1	355.1	1.52	1.40	1.31
340.1	370.1	1.64	1.52	1.43
355.1	385.1	1.75	1.63	1.54
370.1	400.1	1.92	1.80	1.70
385.1	415.1	2.00	1.87	1.76
400.1	430.1	2.11	1.97	1.85
415.1	445.1	2.40	2.22	2.07
430.1	460.1	2.40	2.19	2.07
445.1	475.1	2.46	2.25	2.15
455.1	485.1	2.63	2.40	2.29
470.1	500.1	2.54	2.35	2.25
480.1	510.1	2.74	2.54	2.42
495.1	525.1	2.74	2.54	2.43
505.1	535.1	2.87	2.66	2.55
520.1	550.1	2.86	2.62	2.49
530.1	560.1	2.88	2.65	2.52
545.1	575.1	2.92	2.66	2.52
555.1	585.1	2.86	2.62	2.50
570.1	600.1	2.91	2.66	2.53

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	0	+3	+6
40.1	1.08	1.93	4.33
55.1	1.09	1.72	3.22
70.1	1.11	1.54	2.43
85.1	1.11	1.52	2.36
100.1	1.14	1.54	2.38
115.1	1.16	1.54	2.35
130.1	1.18	1.59	2.42
145.1	1.19	1.59	2.39
160.1	1.21	1.56	2.27
175.1	1.23	1.56	2.24
190.1	1.26	1.61	2.30
205.1	1.27	1.64	2.35
220.1	1.31	1.69	2.42
235.1	1.34	1.71	2.42
250.1	1.39	1.70	2.35
265.1	1.43	1.72	2.33
280.1	1.49	1.78	2.39
295.1	1.52	1.86	2.48
310.1	1.55	1.95	2.60
325.1	1.56	2.00	2.69
340.1	1.58	2.00	2.69
355.1	1.59	2.00	2.68
370.1	1.61	2.01	2.69
385.1	1.64	2.03	2.73
400.1	1.67	2.06	2.76
415.1	1.71	2.07	2.76
430.1	1.74	2.06	2.71
445.1	1.77	2.03	2.65
460.1	1.81	2.03	2.64
475.1	1.85	2.05	2.67
485.1	1.88	2.07	2.71
500.1	1.96	2.13	2.75
510.1	2.03	2.18	2.78
525.1	2.16	2.25	2.81
535.1	2.27	2.31	2.83
550.1	2.45	2.42	2.89
560.1	2.59	2.51	2.95
575.1	2.79	2.65	3.04
585.1	2.92	2.74	3.10
600.1	3.13	2.89	3.18

IF (OUT) (MHz)	IF VSWR @LO=400.1MHz (:1) @LO (dBm)		
	0	+3	+6
10.0	2.77	2.46	2.19
20.0	2.81	2.50	2.21
30.0	2.82	2.51	2.22
40.0	2.78	2.47	2.20
50.0	2.78	2.47	2.20
60.0	2.82	2.51	2.24
70.0	2.78	2.48	2.22
80.0	2.70	2.43	2.19
90.0	2.67	2.39	2.15
100.0	2.74	2.46	2.21
110.0	2.77	2.50	2.26
120.0	2.69	2.45	2.22
130.0	2.64	2.39	2.17
140.0	2.68	2.43	2.20
150.0	2.72	2.48	2.26
160.0	2.65	2.44	2.23
170.0	2.52	2.31	2.13
180.0	2.50	2.29	2.10
190.0	2.58	2.37	2.16
200.0	2.61	2.40	2.22
210.0	2.52	2.33	2.16
220.0	2.46	2.26	2.10
230.0	2.50	2.30	2.11
240.0	2.56	2.36	2.19
250.0	2.48	2.31	2.16
260.0	2.35	2.18	2.04
270.0	2.32	2.13	1.97
280.0	2.41	2.21	2.04
290.0	2.44	2.25	2.09
300.0	2.37	2.19	2.04
310.0	2.31	2.12	1.97
320.0	2.35	2.15	1.98
330.0	2.42	2.21	2.04
340.0	2.38	2.19	2.03
350.0	2.29	2.09	1.93
360.0	2.29	2.07	1.88
370.0	2.39	2.15	1.95
375.0	2.43	2.20	1.99
385.0	2.45	2.22	2.02
390.0	2.44	2.21	2.01

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	12	33	19	36	19	32	36	55	38	52
1	-	21	+0	34	13	39	35	36	32	31	31	46
2	>90	59	61	>67	58	62	63	>67	61	62	64	>67
3	>90	62	62	57	60	61	58	64	62	65	60	>67
4	>90	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67
5	>90	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67
6	>90	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67
7	>90	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67
8	>90	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67
9	>90	>67	>67	>67	>67	>67	>67	>67	>67	64	>67	>67
10	>90	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67	>67
RF CAL		0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 200.1 MHz; -18.00 dBm.**
LO IN: 230.1 MHz; +3.00 dBm
IF OUT: 30 MHz; -23.49 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	22	61	30	46	31	46	46	60	51	63
1	-	23	+0	29	13	40	34	40	37	35	37	58
2	82	46	55	52	53	51	54	62	53	61	63	73
3	>90	47	46	44	46	47	51	52	50	52	48	52
4	>90	>76	72	>76	71	74	69	>76	67	75	>76	74
5	>90	74	>76	62	69	58	60	58	58	67	65	70
6	>90	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
7	>90	>76	>76	>76	>76	75	>76	72	75	75	74	>76
8	>90	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
9	>90	>76	>76	>76	>76	>76	>76	>76	>76	76	>76	>76
10	>90	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76	>76
RF CAL		0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 200.1 MHz; -8.00 dBm.**
LO IN: 230.1 MHz; +3.00 dBm
IF OUT: 30 MHz; -13.56 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.