

Frequency Mixer

LAVI-ED12344A/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=70MHz (dB)		
		@LO (dBm)		
		+19	+21	+23
10.1	80.1	7.00	6.90	6.81
40.1	110.1	7.06	6.95	6.88
70.1	140.1	7.28	7.21	7.14
100.1	170.1	7.41	7.33	7.26
130.1	200.1	7.39	7.30	7.23
160.1	230.1	7.45	7.37	7.31
190.1	260.1	7.47	7.39	7.33
220.1	290.1	7.36	7.29	7.23
250.1	320.1	7.37	7.30	7.24
280.1	350.1	7.51	7.43	7.37
310.1	380.1	7.40	7.32	7.26
340.1	410.1	7.41	7.34	7.29
370.1	440.1	7.52	7.45	7.40
400.1	470.1	7.52	7.45	7.40
430.1	500.1	7.56	7.49	7.45
460.1	530.1	7.63	7.58	7.54
490.1	560.1	7.63	7.57	7.53
520.1	590.1	7.64	7.58	7.53
550.1	620.1	7.74	7.69	7.65
580.1	650.1	7.85	7.80	7.75
610.1	680.1	7.95	7.88	7.83
640.1	710.1	8.00	7.93	7.88
670.1	740.1	8.01	7.94	7.89
700.1	770.1	8.00	7.94	7.86
730.1	800.1	8.05	7.98	7.94
760.1	830.1	8.09	8.02	7.97
790.1	860.1	8.12	8.04	7.99
820.1	890.1	8.20	8.12	8.06
850.1	920.1	8.28	8.21	8.14
880.1	950.1	8.40	8.32	8.27
910.1	980.1	8.56	8.49	8.43
940.1	1010.1	8.71	8.62	8.56
970.1	1040.1	8.80	8.70	8.64
1000.1	1070.1	8.90	8.80	8.72
1040.1	1110.1	9.07	8.95	8.84
1070.1	1140.1	9.23	9.09	8.96
1110.1	1180.1	9.73	9.55	9.40
1140.1	1210.1	10.35	10.16	10.02
1180.1	1250.1	11.45	11.24	11.07
1210.1	1280.1	12.83	12.58	12.38

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+19	+21	+23
10.1	80.1	23.69	25.84	27.71
40.1	110.1	26.99	27.60	28.34
70.1	140.1	26.88	27.85	28.88
100.1	170.1	27.08	28.31	29.03
130.1	200.1	27.35	28.46	29.48
160.1	230.1	27.66	28.58	29.69
190.1	260.1	28.49	29.63	30.73
220.1	290.1	28.91	30.11	31.29
250.1	320.1	28.40	29.68	30.86
280.1	350.1	28.23	29.44	30.67
310.1	380.1	29.09	30.44	31.95
340.1	410.1	28.96	30.47	31.79
370.1	440.1	29.39	30.79	32.05
400.1	470.1	29.92	31.57	32.78
430.1	500.1	30.34	31.87	33.81
460.1	530.1	31.02	32.74	34.27
490.1	560.1	31.56	33.26	34.83
520.1	590.1	32.19	34.06	35.95
550.1	620.1	33.25	34.60	36.38
580.1	650.1	32.73	34.40	36.02
610.1	680.1	32.92	34.76	35.94
640.1	710.1	33.16	34.45	35.96
670.1	740.1	32.85	34.48	35.92
700.1	770.1	33.45	35.15	37.16
730.1	800.1	33.03	34.99	36.42
760.1	830.1	32.59	34.51	35.93
790.1	860.1	32.21	34.04	36.33
820.1	890.1	31.27	33.32	34.73
850.1	920.1	30.36	31.99	33.65
880.1	950.1	30.04	31.61	33.29
910.1	980.1	29.71	31.36	33.02
940.1	1010.1	29.27	31.18	33.41
970.1	1040.1	28.65	30.72	32.56
1000.1	1070.1	27.47	29.57	31.56
1040.1	1110.1	25.47	27.36	29.26
1070.1	1140.1	23.53	25.39	27.26
1110.1	1180.1	20.30	21.83	23.48
1140.1	1210.1	18.96	20.48	22.13
1180.1	1250.1	16.93	18.58	20.61
1210.1	1280.1	15.41	16.69	18.43

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+20dBm (dB)		
		@LO (dBm)		
		+19	+21	+23
10.1	80.1	3.07	1.92	1.15
40.1	110.1	1.13	0.65	0.42
70.1	140.1	0.64	0.41	0.28
100.1	170.1	0.60	0.39	0.27
130.1	200.1	0.55	0.36	0.25
160.1	230.1	0.55	0.36	0.24
190.1	260.1	0.45	0.30	0.20
220.1	290.1	0.39	0.26	0.17
250.1	320.1	0.43	0.28	0.19
280.1	350.1	0.52	0.34	0.22
310.1	380.1	0.41	0.26	0.17
340.1	410.1	0.37	0.24	0.16
370.1	440.1	0.37	0.24	0.16
400.1	470.1	0.39	0.25	0.16
430.1	500.1	0.32	0.19	0.13
460.1	530.1	0.27	0.16	0.11
490.1	560.1	0.27	0.16	0.11
520.1	590.1	0.33	0.20	0.13
550.1	620.1	0.30	0.17	0.11
580.1	650.1	0.30	0.18	0.11
610.1	680.1	0.29	0.16	0.10
640.1	710.1	0.30	0.18	0.11
670.1	740.1	0.34	0.20	0.13
700.1	770.1	0.34	0.21	0.13
730.1	800.1	0.40	0.24	0.15
760.1	830.1	0.45	0.27	0.17
790.1	860.1	0.49	0.29	0.17
820.1	890.1	0.61	0.37	0.23
850.1	920.1	0.71	0.45	0.26
880.1	950.1	0.80	0.48	0.28
910.1	980.1	0.96	0.57	0.32
940.1	1010.1	1.21	0.67	0.37
970.1	1040.1	1.48	0.82	0.45
1000.1	1070.1	1.85	1.08	0.60
1040.1	1110.1	2.63	1.69	0.98
1070.1	1140.1	3.28	2.30	1.43
1110.1	1180.1	4.11	3.07	2.13
1140.1	1210.1	4.68	3.61	2.58
1180.1	1250.1	5.16	4.13	3.09
1210.1	1280.1	5.27	4.24	3.22

Frequency Mixer

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=490.1MHz (dB)
		@LO (dBm)
		+21
480.0	10.1	9.76
447.6	42.5	8.15
415.2	74.9	7.95
399.0	91.1	7.96
366.6	123.5	7.92
350.3	139.8	7.86
317.9	172.2	7.84
301.7	188.4	7.82
269.3	220.8	7.72
253.1	237.0	7.72
220.7	269.4	7.68
204.5	285.6	7.63
172.1	318.0	7.67
155.9	334.2	7.63
123.4	366.7	7.65
107.2	382.9	7.66
74.8	415.3	7.67
58.6	431.5	7.66
26.2	463.9	7.64
10.0	480.1	7.78
34.8	524.9	7.53
59.7	549.8	7.60
109.3	599.4	7.58
134.1	624.2	7.54
183.8	673.9	7.84
208.6	698.7	7.84
258.3	748.4	7.75
283.1	773.2	7.76
332.8	822.9	7.87
357.6	847.7	7.94
407.2	897.3	8.09
432.1	922.2	8.12
481.7	971.8	8.38
506.6	996.7	8.41
556.2	1046.3	8.58
581.0	1071.1	8.72
630.7	1120.8	8.88
655.5	1145.6	9.03
705.2	1195.3	9.81
730.0	1220.1	10.43

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)
		@LO (dBm)
		+21
10.0	20.1	7.82
50.0	60.1	6.94
90.0	100.1	6.84
130.0	140.1	6.87
170.0	180.1	6.87
190.0	200.1	6.96
230.0	240.1	7.05
250.0	260.1	7.01
290.0	300.1	6.97
310.0	320.1	7.10
350.0	360.1	7.11
370.0	380.1	7.08
410.0	420.1	7.10
430.0	440.1	7.14
470.0	480.1	7.18
490.0	500.1	7.19
530.0	540.1	7.26
550.0	560.1	7.30
590.0	600.1	7.37
610.0	620.1	7.33
650.0	660.1	7.26
670.0	680.1	7.34
710.0	720.1	7.31
730.0	740.1	7.38
770.0	780.1	7.58
790.0	800.1	7.55
830.0	840.1	7.68
850.0	860.1	7.60
890.0	900.1	7.74
910.0	920.1	7.89
950.0	960.1	8.09
970.0	980.1	8.18
1010.0	1020.1	8.27
1030.0	1040.1	8.25
1070.0	1080.1	8.53
1090.0	1100.1	8.50
1130.0	1140.1	8.87
1150.0	1160.1	8.97
1190.0	1200.1	9.61
1210.0	1220.1	10.00

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=970.1MHz (dB)
		@LO (dBm)
		+21
960.0	10.1	10.88
940.0	30.1	9.54
920.0	50.1	9.40
900.0	70.1	9.29
880.0	90.1	9.17
860.0	110.1	9.14
840.0	130.1	9.10
810.0	160.1	9.07
790.0	180.1	9.04
760.0	210.1	9.02
740.0	230.1	9.09
710.0	260.1	8.94
690.0	280.1	8.96
660.0	310.1	8.98
640.0	330.1	8.91
610.0	360.1	8.94
590.0	380.1	8.96
560.0	410.1	8.91
540.0	430.1	8.87
510.0	460.1	8.81
490.0	480.1	8.77
460.0	510.1	8.73
440.0	530.1	8.64
410.0	560.1	8.68
390.0	580.1	8.65
360.0	610.1	8.65
340.0	630.1	8.58
310.0	660.1	8.52
290.0	680.1	8.40
260.0	710.1	8.45
240.0	730.1	8.44
210.0	760.1	8.41
190.0	780.1	8.34
160.0	810.1	8.30
140.0	830.1	8.28
110.0	860.1	8.27
90.0	880.1	8.27
60.0	910.1	8.34
40.0	930.1	8.36
10.0	960.1	8.63

REV. X2

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Frequency Mixer

LAVI-ED12344A/1

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+19	+21	+23	+19	+21	+23
80.1	62.50	62.12	61.79	44.80	44.52	44.35
110.1	59.11	58.54	58.05	44.15	44.02	43.88
140.1	57.94	56.90	56.54	44.10	44.03	44.00
170.1	56.60	55.81	55.08	44.00	43.94	43.93
200.1	56.53	55.76	55.25	43.36	43.22	43.09
230.1	56.27	55.49	54.89	42.77	42.65	42.58
260.1	55.44	54.71	54.13	41.89	41.77	41.70
290.1	54.95	54.27	53.63	40.93	40.82	40.76
320.1	54.95	54.30	53.72	40.16	40.00	39.89
350.1	54.72	54.07	53.52	39.63	39.44	39.29
380.1	53.02	52.55	52.27	38.96	38.79	38.68
410.1	51.53	51.18	50.89	38.27	38.10	37.98
440.1	50.00	49.69	49.42	37.76	37.58	37.47
470.1	49.64	49.37	49.10	37.94	37.78	37.68
500.1	48.67	48.36	48.28	38.17	37.98	38.03
530.1	47.67	47.36	47.36	37.99	37.76	37.49
560.1	46.09	45.82	45.70	37.70	37.49	37.47
590.1	44.67	44.38	44.34	37.37	37.13	37.16
620.1	43.90	43.84	43.70	37.30	37.26	37.03
650.1	43.65	43.62	43.48	36.97	36.89	36.63
680.1	42.96	42.76	42.71	36.18	36.01	36.02
710.1	41.68	41.45	41.41	35.90	35.69	35.65
740.1	41.06	40.85	40.83	35.88	35.54	35.43
770.1	41.02	41.10	40.98	36.18	36.07	35.80
800.1	41.48	41.44	41.62	36.57	36.25	36.26
830.1	42.22	42.31	42.59	37.11	36.85	36.86
860.1	43.92	44.05	44.39	38.03	37.72	37.67
890.1	46.00	46.04	46.36	39.19	38.77	38.74
920.1	48.24	48.16	47.92	41.00	40.85	40.66
950.1	46.29	45.89	45.35	42.77	42.79	42.83
980.1	42.95	42.51	41.96	43.53	43.50	43.38
1010.1	40.52	39.92	39.67	42.63	42.30	42.19
1040.1	39.53	39.03	38.84	42.72	42.41	42.33
1070.1	39.51	39.00	38.80	43.20	42.81	42.72
1110.1	39.96	39.63	39.19	44.47	44.23	43.84
1140.1	40.35	39.96	39.41	45.84	45.44	44.89
1180.1	40.67	40.20	39.49	47.43	46.80	45.85
1210.1	41.19	40.70	40.02	49.72	49.14	48.26
1250.1	42.23	41.76	41.05	52.09	52.36	52.18
1280.1	43.20	42.73	42.09	50.04	50.39	50.57

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+19	+21	+23
10.1	80.1	34.89	35.34	36.57
40.1	110.1	37.77	38.07	38.57
70.1	140.1	38.49	38.29	37.88
100.1	170.1	39.93	39.25	38.13
130.1	200.1	47.89	48.63	52.26
160.1	230.1	57.28	63.54	64.02
190.1	260.1	60.39	58.46	55.10
220.1	290.1	44.21	43.61	42.44
250.1	320.1	43.49	42.74	41.33
280.1	350.1	44.18	43.38	42.18
310.1	380.1	45.54	45.67	45.73
340.1	410.1	43.89	43.71	43.24
370.1	440.1	41.86	41.36	40.76
400.1	470.1	40.03	39.39	38.38
430.1	500.1	39.05	38.31	37.26
460.1	530.1	39.90	39.46	39.85
490.1	560.1	39.55	39.20	38.83
520.1	590.1	39.59	39.27	38.84
550.1	620.1	39.55	39.19	38.67
580.1	650.1	40.51	40.30	39.99
610.1	680.1	40.57	40.37	40.27
640.1	710.1	40.28	40.04	39.85
670.1	740.1	39.75	39.65	39.56
700.1	770.1	39.47	39.32	39.25
730.1	800.1	39.62	39.56	39.54
760.1	830.1	39.59	39.54	39.59
790.1	860.1	39.62	39.48	39.41
820.1	890.1	38.96	38.74	38.70
850.1	920.1	39.24	39.05	38.95
880.1	950.1	39.68	39.60	39.64
910.1	980.1	39.30	39.30	39.28
940.1	1010.1	38.56	38.43	38.33
970.1	1040.1	37.32	37.25	37.19
1000.1	1070.1	35.95	35.88	35.87
1040.1	1110.1	34.14	34.08	34.18
1070.1	1140.1	32.71	32.65	32.69
1110.1	1180.1	32.34	32.35	32.66
1140.1	1210.1	32.39	32.31	32.50
1180.1	1250.1	30.47	29.60	28.77
1210.1	1280.1	29.42	27.97	26.65

Frequency Mixer

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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)		
		@LO (dBm)		
		+19	+21	+23
10.1	80.1	1.18	1.20	1.22
40.1	110.1	1.20	1.22	1.25
70.1	140.1	1.18	1.21	1.23
100.1	170.1	1.19	1.21	1.23
130.1	200.1	1.20	1.22	1.24
160.1	230.1	1.22	1.24	1.26
190.1	260.1	1.25	1.27	1.29
220.1	290.1	1.27	1.29	1.31
250.1	320.1	1.27	1.30	1.32
280.1	350.1	1.27	1.29	1.31
310.1	380.1	1.28	1.30	1.32
340.1	410.1	1.28	1.30	1.32
370.1	440.1	1.27	1.29	1.30
400.1	470.1	1.26	1.28	1.30
430.1	500.1	1.26	1.28	1.29
460.1	530.1	1.25	1.27	1.29
490.1	560.1	1.24	1.26	1.27
520.1	590.1	1.22	1.23	1.24
550.1	620.1	1.20	1.21	1.22
580.1	650.1	1.18	1.19	1.19
610.1	680.1	1.17	1.17	1.17
640.1	710.1	1.17	1.16	1.16
670.1	740.1	1.17	1.17	1.16
700.1	770.1	1.18	1.17	1.16
730.1	800.1	1.20	1.19	1.17
760.1	830.1	1.23	1.21	1.20
790.1	860.1	1.25	1.23	1.21
820.1	890.1	1.28	1.25	1.23
850.1	920.1	1.29	1.27	1.24
880.1	950.1	1.29	1.27	1.24
910.1	980.1	1.30	1.27	1.24
940.1	1010.1	1.31	1.27	1.25
970.1	1040.1	1.33	1.30	1.27
1000.1	1070.1	1.37	1.33	1.30
1040.1	1110.1	1.43	1.39	1.36
1070.1	1140.1	1.48	1.44	1.40
1110.1	1180.1	1.53	1.49	1.44
1140.1	1210.1	1.55	1.51	1.46
1180.1	1250.1	1.58	1.55	1.51
1210.1	1280.1	1.57	1.54	1.51

LO (MHz)	LO VSWR (:1)		
	@LO (dBm)		
	+19	+21	+23
80.1	7.31	7.31	7.28
110.1	6.89	6.89	6.89
140.1	7.38	7.34	7.34
170.1	7.66	7.66	7.66
200.1	8.01	8.01	8.01
230.1	8.20	8.20	8.16
260.1	8.23	8.23	8.20
290.1	8.05	8.05	8.05
320.1	7.73	7.73	7.73
350.1	7.34	7.31	7.31
380.1	6.73	6.73	6.73
410.1	6.09	6.09	6.09
440.1	5.52	5.52	5.52
470.1	4.87	4.88	4.88
500.1	4.25	4.25	4.26
530.1	3.70	3.71	3.70
560.1	3.25	3.26	3.26
590.1	2.84	2.85	2.86
620.1	2.49	2.50	2.50
650.1	2.22	2.22	2.22
680.1	2.03	2.04	2.04
710.1	1.94	1.95	1.96
740.1	1.95	1.96	1.97
770.1	2.06	2.07	2.09
800.1	2.25	2.26	2.27
830.1	2.50	2.51	2.52
860.1	2.78	2.79	2.80
890.1	3.05	3.06	3.08
920.1	3.31	3.31	3.32
950.1	3.52	3.53	3.54
980.1	3.65	3.67	3.68
1010.1	3.68	3.68	3.67
1040.1	3.64	3.65	3.65
1070.1	3.47	3.48	3.50
1110.1	3.14	3.14	3.14
1140.1	2.86	2.87	2.88
1180.1	2.46	2.47	2.47
1210.1	2.20	2.20	2.20
1250.1	1.88	1.89	1.89
1280.1	1.68	1.68	1.69

IF (OUT) (MHz)	IF VSWR @LO=1040MHz (:1)		
	@LO (dBm)		
	+19	+21	+23
10.0	1.18	1.22	1.25
30.0	1.22	1.26	1.29
50.0	1.21	1.25	1.28
70.0	1.25	1.29	1.32
90.0	1.28	1.31	1.34
110.0	1.30	1.33	1.35
130.0	1.38	1.40	1.42
150.0	1.39	1.41	1.43
170.0	1.43	1.45	1.47
190.0	1.50	1.52	1.53
210.0	1.53	1.54	1.56
230.0	1.61	1.62	1.64
250.0	1.62	1.63	1.64
270.0	1.68	1.68	1.69
290.0	1.76	1.76	1.76
310.0	1.77	1.77	1.77
350.0	1.86	1.86	1.85
370.0	1.90	1.90	1.90
410.0	1.97	1.96	1.96
430.0	2.04	2.03	2.02
470.0	2.08	2.06	2.05
490.0	2.15	2.13	2.12
530.0	2.16	2.13	2.11
550.0	2.15	2.12	2.10
590.0	2.23	2.20	2.17
610.0	2.16	2.12	2.10
650.0	2.21	2.17	2.13
670.0	2.22	2.17	2.14
710.0	2.13	2.08	2.04
730.0	2.17	2.12	2.08
770.0	2.13	2.08	2.03
790.0	2.14	2.08	2.04
830.0	2.12	2.07	2.02
850.0	2.12	2.07	2.01
890.0	2.11	2.05	2.00
910.0	2.06	2.00	1.94
950.0	2.09	2.03	1.97
970.0	2.05	1.99	1.93
1010.0	2.00	1.93	1.88
1030.0	2.04	1.97	1.92

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	14	19	16	26	35	45	37	46	50	55
1	-	33	+0	37	12	42	22	44	33	46	41	51
2	55	61	63	63	63	55	54	54	55	56	57	58
3	83	86	68	82	65	81	69	79	72	80	78	84
4	>90	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87
5	>90	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87
6	>90	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87
7	>90	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87
8	>90	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87
9	>90	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87
10	>90	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87	>87
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions:

RF IN: 490.1 MHz; 5.00 dBm.

LO IN: 560.1 MHz; +21.00 dBm

IF OUT: 70 MHz; -2.95 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	24	27	25	34	44	52	43	52	46	57
1	-	33	+0	37	13	43	23	45	36	48	39	53
2	36	52	53	53	54	46	45	45	46	46	49	50
3	55	70	50	67	48	63	50	62	53	63	59	66
4	76	90	81	80	77	76	78	74	75	72	74	73
5	>90	94	76	92	76	86	75	84	80	85	79	89
6	>90	>96	>96	>96	95	>96	91	>96	91	>96	>96	>96
7	>90	>96	>96	>96	>96	>96	>96	>96	>96	92	>96	>96
8	>90	>96	>96	>96	>96	>96	>96	>96	94	>96	>96	>96
9	>90	>96	>96	>96	>96	>96	>96	92	>96	>96	>96	>96
10	>90	>96	>96	>96	>96	>96	>96	>96	>96	>96	>96	>96
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions:

RF IN: 490.1 MHz; 15.00 dBm.

LO IN: 560.1 MHz; +21.00 dBm

IF OUT: 70 MHz; 6.38 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.

REV. X2

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