

Frequency Mixer

LAVI-ED12792

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=200MHz (dB)		
		@LO (dBm)		
		+17	+20	+23
140.1	340.1	10.96	10.40	9.88
160.1	360.1	10.74	10.21	9.82
180.1	380.1	10.46	9.94	9.54
200.1	400.1	10.17	9.70	9.44
220.1	420.1	9.83	9.41	9.12
240.1	440.1	9.56	9.14	8.83
260.1	460.1	9.37	9.00	8.71
280.1	480.1	9.22	8.88	8.69
300.1	500.1	9.00	8.67	8.43
320.1	520.1	8.85	8.56	8.37
340.1	540.1	8.72	8.45	8.24
360.1	560.1	8.66	8.42	8.30
380.1	580.1	8.58	8.34	8.17
400.1	600.1	8.50	8.28	8.14
420.1	620.1	8.45	8.23	8.08
440.1	640.1	8.35	8.15	8.01
460.1	660.1	8.31	8.12	7.99
480.1	680.1	8.27	8.10	7.99
500.1	700.1	8.18	8.00	7.90
520.1	720.1	8.12	7.95	7.85
540.1	740.1	8.11	7.96	7.88
560.1	760.1	8.13	7.99	7.92
580.1	780.1	8.11	7.96	7.88
600.1	800.1	8.07	7.92	7.84
620.1	820.1	8.08	7.95	7.88
640.1	840.1	8.18	8.04	7.96
660.1	860.1	8.26	8.10	8.01
680.1	880.1	8.30	8.13	8.03
700.1	900.1	8.35	8.17	8.07
720.1	920.1	8.43	8.24	8.12
740.1	940.1	8.57	8.36	8.23
760.1	960.1	8.66	8.45	8.31
780.1	980.1	8.69	8.47	8.31
810.1	1010.1	8.80	8.58	8.43
830.1	1030.1	8.90	8.68	8.53
860.1	1060.1	8.99	8.76	8.61
880.1	1080.1	9.09	8.87	8.74
910.1	1110.1	9.53	9.42	9.46
930.1	1130.1	10.29	10.27	10.33
960.1	1160.1	11.10	10.72	10.38

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+17	+20	+23
140.1	340.1	16.72	18.99	20.79
160.1	360.1	17.40	19.81	22.29
180.1	380.1	17.29	19.46	21.49
200.1	400.1	17.70	19.72	21.90
220.1	420.1	18.01	20.37	23.07
240.1	440.1	18.45	20.66	22.91
260.1	460.1	18.87	21.08	23.59
280.1	480.1	19.66	22.01	23.85
300.1	500.1	20.70	23.15	25.93
320.1	520.1	21.49	24.30	27.02
340.1	540.1	22.16	25.28	29.00
360.1	560.1	23.59	27.01	31.23
380.1	580.1	25.04	28.72	32.35
400.1	600.1	26.66	30.67	32.98
420.1	620.1	27.76	31.63	32.82
440.1	640.1	29.34	31.83	34.26
460.1	660.1	30.65	32.43	34.00
480.1	680.1	31.13	32.82	34.67
500.1	700.1	31.09	33.08	34.55
520.1	720.1	31.58	33.37	34.81
540.1	740.1	31.59	33.38	34.83
560.1	760.1	31.91	33.32	35.80
580.1	780.1	31.99	33.94	35.28
600.1	800.1	31.86	33.55	35.23
620.1	820.1	31.99	33.83	34.94
640.1	840.1	31.74	34.09	35.96
660.1	860.1	31.54	33.19	34.75
680.1	880.1	31.09	33.87	34.65
700.1	900.1	30.13	33.09	34.69
720.1	920.1	29.90	32.70	34.39
740.1	940.1	28.90	31.58	33.79
760.1	960.1	28.28	31.76	33.93
780.1	980.1	27.63	30.62	33.45
810.1	1010.1	26.57	29.26	32.67
830.1	1030.1	26.18	28.70	32.25
860.1	1060.1	25.22	27.52	30.45
880.1	1080.1	24.60	26.44	29.07
910.1	1110.1	23.32	25.05	27.11
930.1	1130.1	23.58	26.40	30.52
960.1	1160.1	24.17	28.45	33.34

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+23dBm (dB)		
		@LO (dBm)		
		+17	+20	+23
140.1	340.1	7.86	6.26	4.40
160.1	360.1	7.59	5.90	4.08
180.1	380.1	7.08	5.47	3.77
200.1	400.1	6.34	4.80	3.00
220.1	420.1	5.75	4.29	2.84
240.1	440.1	5.04	3.66	2.31
260.1	460.1	5.02	3.63	2.29
280.1	480.1	4.51	3.09	1.82
300.1	500.1	3.95	2.65	1.55
320.1	520.1	3.45	2.18	1.19
340.1	540.1	3.22	1.98	1.05
360.1	560.1	2.43	1.40	0.69
380.1	580.1	2.13	1.15	0.55
400.1	600.1	2.06	1.09	0.49
420.1	620.1	1.62	0.81	0.35
440.1	640.1	1.51	0.73	0.31
460.1	660.1	1.14	0.50	0.19
480.1	680.1	0.99	0.43	0.17
500.1	700.1	0.75	0.31	0.13
520.1	720.1	0.67	0.27	0.11
540.1	740.1	0.54	0.22	0.11
560.1	760.1	0.51	0.22	0.11
580.1	780.1	0.46	0.19	0.10
600.1	800.1	0.49	0.21	0.10
620.1	820.1	0.47	0.21	0.11
640.1	840.1	0.54	0.24	0.12
660.1	860.1	0.57	0.25	0.12
680.1	880.1	0.64	0.27	0.13
700.1	900.1	0.69	0.30	0.14
720.1	920.1	0.81	0.34	0.16
740.1	940.1	0.84	0.33	0.14
760.1	960.1	0.96	0.38	0.17
780.1	980.1	1.05	0.42	0.18
810.1	1010.1	1.19	0.48	0.20
830.1	1030.1	1.30	0.53	0.21
860.1	1060.1	1.53	0.65	0.28
880.1	1080.1	1.64	0.74	0.35
910.1	1110.1	1.86	0.99	0.60
930.1	1130.1	2.04	1.18	0.61
960.1	1160.1	2.30	1.44	0.65

REV. X3

LAVI-ED12792

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Page 1 of 5



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Frequency Mixer

LAVI-ED12792

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=600.5MHz (dB)
		@LO (dBm)
		+20
250.0	350.5	10.59
238.0	362.5	10.50
226.0	374.5	10.37
214.0	386.5	10.14
202.0	398.5	9.99
190.0	410.5	9.83
178.0	422.5	9.64
166.0	434.5	9.52
154.0	446.5	9.45
142.0	458.5	9.39
130.0	470.5	9.32
118.0	482.5	9.30
106.0	494.5	9.29
94.0	506.5	9.34
82.0	518.5	9.46
70.0	530.5	9.67
58.0	542.5	10.03
46.0	554.5	10.65
34.0	566.5	11.78
22.0	578.5	14.12
10.0	590.5	19.70
44.0	644.5	10.29
112.0	712.5	8.34
180.0	780.5	7.97
248.0	848.5	7.88
316.0	916.5	8.04
384.0	984.5	8.29
452.0	1052.5	8.39
520.0	1120.5	8.75
588.0	1188.5	8.91
656.0	1256.5	9.10
724.0	1324.5	9.16
792.0	1392.5	9.33
860.0	1460.5	9.51
928.0	1528.5	9.51
1030.0	1630.5	9.54
1098.0	1698.5	9.72
1200.0	1800.5	9.98
1268.0	1868.5	10.16
1370.0	1970.5	10.67

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=490.4MHz (dB)
		@LO (dBm)
		+20
10.1	500.5	20.41
50.1	540.5	10.41
90.1	580.5	8.93
130.1	620.5	8.45
170.1	660.5	8.18
210.1	700.5	8.01
250.1	740.5	7.88
290.1	780.5	7.85
330.1	820.5	7.87
370.1	860.5	7.93
410.1	900.5	8.00
450.1	940.5	8.05
490.1	980.5	8.12
530.1	1020.5	8.23
570.1	1060.5	8.40
610.1	1100.5	8.53
650.1	1140.5	8.76
690.1	1180.5	8.86
730.1	1220.5	9.08
770.1	1260.5	9.18
810.1	1300.5	9.30
850.1	1340.5	9.41
890.1	1380.5	9.50
930.1	1420.5	9.51
970.1	1460.5	9.54
1010.1	1500.5	9.57
1050.1	1540.5	9.65
1090.1	1580.5	9.78
1130.1	1620.5	9.87
1170.1	1660.5	10.02
1210.1	1700.5	9.98
1230.1	1720.5	9.98
1270.1	1760.5	10.15
1290.1	1780.5	10.22
1330.1	1820.5	10.40
1350.1	1840.5	10.54
1390.1	1880.5	10.66
1410.1	1900.5	10.67
1450.1	1940.5	10.91
1470.1	1960.5	11.03

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=710.6MHz (dB)
		@LO (dBm)
		+20
370.1	340.5	10.67
360.9	349.7	10.55
351.6	359.0	10.48
342.4	368.2	10.60
333.2	377.4	10.57
323.9	386.7	10.39
314.7	395.9	10.21
305.5	405.1	10.11
296.3	414.3	9.90
287.0	423.6	9.72
277.8	432.8	9.59
268.6	442.0	9.50
259.3	451.3	9.40
250.1	460.5	9.29
240.9	469.7	9.21
231.6	479.0	9.14
222.4	488.2	9.02
213.2	497.4	8.94
203.9	506.7	8.90
194.7	515.9	8.87
185.5	525.1	8.82
176.3	534.3	8.81
167.0	543.6	8.77
157.8	552.8	8.78
148.6	562.0	8.75
139.3	571.3	8.71
130.1	580.5	8.73
120.9	589.7	8.74
111.6	599.0	8.76
102.4	608.2	8.81
93.2	617.4	8.87
83.9	626.7	8.96
74.7	635.9	9.15
65.5	645.1	9.34
56.3	654.3	9.56
47.0	663.6	10.02
37.8	672.8	10.77
28.6	682.0	11.94
19.3	691.3	14.13
10.1	700.5	18.78

Frequency Mixer

LAVI-ED12792

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+17	+20	+23	+17	+20	+23
340.1	41.04	41.58	42.05	45.95	46.32	46.52
360.1	41.07	41.49	41.89	46.45	46.96	47.33
380.1	41.36	41.81	42.40	46.57	46.81	46.73
400.1	41.26	41.67	41.92	46.82	47.15	47.67
420.1	41.39	41.78	42.20	46.86	47.05	46.92
440.1	41.94	42.27	42.73	47.10	47.24	47.22
460.1	42.07	42.41	42.75	47.43	47.58	47.45
480.1	42.36	42.62	43.17	47.83	47.91	47.77
500.1	42.39	42.56	42.83	48.00	47.98	47.77
520.1	43.15	43.33	43.81	48.64	48.54	48.31
540.1	43.29	43.44	43.72	48.74	48.72	48.48
560.1	43.56	43.65	44.20	49.22	49.14	48.84
580.1	43.75	43.77	43.87	49.65	49.75	49.74
600.1	44.05	44.03	44.22	50.23	50.42	50.57
620.1	44.02	43.93	44.28	50.73	50.80	51.11
640.1	44.49	44.54	44.77	51.40	51.66	51.80
660.1	44.77	44.85	45.10	52.04	52.39	52.53
680.1	44.83	44.91	45.17	52.90	53.52	54.17
700.1	45.06	45.18	45.36	53.72	54.67	56.11
720.1	45.75	45.96	46.09	55.91	56.93	60.49
740.1	45.91	46.08	45.75	57.93	58.50	69.15
760.1	46.28	46.51	45.63	57.33	57.23	59.42
780.1	47.14	47.38	46.57	55.33	54.97	55.47
800.1	47.91	48.21	47.29	53.01	52.68	52.74
820.1	48.40	48.73	48.28	51.25	51.04	51.20
840.1	49.49	49.85	49.48	49.98	49.98	49.96
860.1	50.27	50.54	50.59	48.93	49.06	48.91
880.1	50.91	51.22	51.53	48.05	48.28	48.03
900.1	51.79	52.22	52.72	47.62	47.81	47.49
920.1	52.35	52.81	53.56	47.10	47.28	47.17
940.1	52.80	53.46	54.52	46.63	46.82	46.48
960.1	52.77	53.33	54.53	46.45	46.56	46.33
980.1	52.75	53.30	54.42	46.18	46.20	45.67
1010.1	52.42	52.84	54.00	45.18	45.28	44.85
1030.1	51.95	52.30	53.33	44.53	44.64	44.27
1060.1	51.67	51.89	52.89	42.90	42.95	42.63
1080.1	51.91	52.27	53.70	41.44	41.40	41.10
1110.1	55.19	57.52	63.14	38.48	38.52	38.29
1130.1	61.54	68.92	79.60	36.98	37.08	36.95
1160.1	63.52	80.29	70.18	36.07	36.71	37.28

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+17	+20	+23
140.1	340.1	35.09	32.77	29.08
160.1	360.1	38.23	36.32	34.67
180.1	380.1	34.87	30.96	27.18
200.1	400.1	34.92	30.72	28.36
220.1	420.1	35.55	31.61	29.80
240.1	440.1	36.83	31.93	28.56
260.1	460.1	44.71	38.17	35.42
280.1	480.1	39.09	34.05	26.17
300.1	500.1	41.28	42.32	41.55
320.1	520.1	42.50	38.59	29.09
340.1	540.1	39.88	40.29	40.38
360.1	560.1	41.74	39.73	29.70
380.1	580.1	38.49	38.48	37.91
400.1	600.1	39.15	38.08	30.96
420.1	620.1	38.07	37.72	37.28
440.1	640.1	38.00	37.40	36.12
460.1	660.1	37.96	37.51	37.27
480.1	680.1	37.54	37.27	36.60
500.1	700.1	37.59	37.38	37.15
520.1	720.1	37.07	36.91	36.49
540.1	740.1	37.11	36.97	36.78
560.1	760.1	36.90	36.66	36.46
580.1	780.1	36.94	36.71	36.66
600.1	800.1	36.88	36.74	36.85
620.1	820.1	37.09	36.98	36.81
640.1	840.1	36.94	36.65	36.83
660.1	860.1	37.20	37.03	37.04
680.1	880.1	36.94	36.64	36.70
700.1	900.1	37.54	37.42	37.62
720.1	920.1	37.22	36.94	37.00
740.1	940.1	37.91	37.79	38.24
760.1	960.1	37.40	37.05	36.84
780.1	980.1	38.63	38.72	39.33
810.1	1010.1	38.97	39.20	40.11
830.1	1030.1	38.94	38.80	39.24
860.1	1060.1	40.11	40.49	41.60
880.1	1080.1	39.15	39.11	40.21
910.1	1110.1	39.90	39.87	40.56
930.1	1130.1	39.96	39.70	38.16
960.1	1160.1	38.20	38.14	37.99

Frequency Mixer

LAVI-ED12792

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=700.5MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+17	+20	+23		+17	+20	+23		+17	+20	+23
140.1	340.1	1.29	1.24	1.21	340.1	26.74	26.33	26.33	10.0	28.03	26.74	25.94
160.1	360.1	1.31	1.26	1.24	360.1	25.19	25.19	24.83	27.4	7.31	7.08	6.89
180.1	380.1	1.30	1.25	1.23	380.1	23.81	23.49	23.18	44.9	3.95	3.89	3.84
200.1	400.1	1.30	1.26	1.25	400.1	22.58	22.29	22.00	62.3	2.82	2.82	2.84
220.1	420.1	1.29	1.26	1.27	420.1	21.46	21.20	20.95	79.7	2.25	2.30	2.35
240.1	440.1	1.31	1.28	1.28	440.1	20.70	20.70	20.45	97.2	1.97	2.04	2.10
260.1	460.1	1.33	1.31	1.30	460.1	19.54	19.32	19.11	114.6	1.80	1.88	1.96
280.1	480.1	1.35	1.33	1.32	480.1	18.30	17.93	17.57	132.1	1.63	1.71	1.80
300.1	500.1	1.37	1.35	1.34	500.1	17.05	16.89	16.56	149.5	1.55	1.64	1.73
320.1	520.1	1.39	1.36	1.35	520.1	15.96	15.81	15.53	166.9	1.50	1.61	1.70
340.1	540.1	1.41	1.38	1.37	540.1	14.74	14.62	14.38	184.4	1.45	1.55	1.65
360.1	560.1	1.44	1.40	1.39	560.1	13.39	13.19	12.89	201.8	1.42	1.52	1.62
380.1	580.1	1.45	1.42	1.40	580.1	12.09	11.93	11.69	219.2	1.38	1.48	1.57
400.1	600.1	1.48	1.44	1.42	600.1	10.75	10.62	10.31	236.7	1.35	1.44	1.54
420.1	620.1	1.50	1.47	1.44	620.1	9.48	9.38	9.23	254.1	1.36	1.46	1.55
440.1	640.1	1.53	1.50	1.47	640.1	8.23	8.12	7.94	271.5	1.35	1.44	1.53
460.1	660.1	1.56	1.53	1.50	660.1	7.11	7.00	6.76	289.0	1.32	1.40	1.49
480.1	680.1	1.60	1.56	1.53	680.1	6.05	5.97	5.72	306.4	1.32	1.39	1.47
500.1	700.1	1.63	1.59	1.56	700.1	5.19	5.10	4.84	323.8	1.33	1.39	1.45
520.1	720.1	1.65	1.61	1.58	720.1	4.50	4.42	4.11	341.3	1.35	1.40	1.46
540.1	740.1	1.68	1.64	1.61	740.1	4.01	3.94	3.54	358.7	1.35	1.39	1.45
560.1	760.1	1.72	1.67	1.64	760.1	3.72	3.67	3.19	376.2	1.33	1.36	1.40
580.1	780.1	1.76	1.71	1.68	780.1	3.68	3.65	3.25	393.6	1.35	1.37	1.41
600.1	800.1	1.80	1.75	1.70	800.1	3.86	3.85	3.50	411.0	1.38	1.38	1.40
620.1	820.1	1.83	1.77	1.73	820.1	4.23	4.24	3.90	428.5	1.38	1.37	1.39
640.1	840.1	1.87	1.81	1.76	840.1	4.78	4.80	4.57	445.9	1.41	1.40	1.41
660.1	860.1	1.91	1.85	1.79	860.1	5.42	5.47	5.39	463.3	1.41	1.38	1.38
680.1	880.1	1.96	1.90	1.84	880.1	6.21	6.26	6.19	480.8	1.41	1.37	1.36
700.1	900.1	2.00	1.92	1.86	900.1	7.08	7.11	7.02	498.2	1.44	1.39	1.37
720.1	920.1	2.03	1.95	1.89	920.1	8.01	8.05	8.01	515.6	1.45	1.40	1.36
740.1	940.1	2.06	1.99	1.92	940.1	8.95	8.99	9.04	533.1	1.45	1.39	1.35
760.1	960.1	2.11	2.04	1.97	960.1	9.85	9.90	9.85	550.5	1.47	1.40	1.35
780.1	980.1	2.14	2.06	2.00	980.1	10.75	10.69	10.37	567.9	1.46	1.38	1.32
810.1	1010.1	2.17	2.09	2.02	1010.1	12.18	12.18	11.93	585.4	1.49	1.40	1.33
830.1	1030.1	2.18	2.11	2.04	1030.1	13.09	13.09	12.89	602.8	1.51	1.42	1.34
860.1	1060.1	2.23	2.15	2.08	1060.1	13.81	13.70	13.19	620.3	1.48	1.39	1.31
880.1	1080.1	2.24	2.16	2.08	1080.1	14.15	13.70	12.71	637.7	1.51	1.41	1.33
910.1	1110.1	2.18	2.08	1.97	1110.1	14.38	13.92	13.19	655.1	1.51	1.41	1.32
930.1	1130.1	2.05	1.91	1.79	1130.1	13.70	13.39	12.89	672.6	1.52	1.41	1.33
960.1	1160.1	1.97	1.89	1.83	1160.1	13.39	13.39	12.99	690.0	1.57	1.46	1.37

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	24	34	35	22	34	31	35	52	39	43
1	-	28	+0	38	15	46	31	39	39	42	49	46
2	62	68	54	54	68	58	61	66	66	64	>82	70
3	>90	15	38	+0	28	3	53	20	43	33	42	39
4	>90	35	34	24	+8	24	34	35	22	34	31	35
5	>90	20	53	3	28	+0	38	15	46	31	39	39
6	>90	66	61	58	68	54	54	68	58	61	66	66
7	>90	39	31	46	15	38	+0	28	3	53	20	43
8	>90	31	34	22	35	34	24	+8	24	34	35	22
9	>90	42	33	43	20	53	3	28	+0	38	15	46
10	>90	>82	65	66	66	61	58	68	54	54	67	58
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 600 MHz; 0.00 dBm.
LO IN: 800 MHz; +20.00 dBm
IF OUT: 200 MHz; -8 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	31	54	46	30	44	40	45	56	48	52
1	-	28	+0	38	15	45	31	39	40	42	51	46
2	42	57	45	45	57	48	51	57	57	55	87	61
3	66	15	38	+0	28	3	52	20	42	33	42	40
4	>90	46	55	31	2	31	55	46	30	44	39	45
5	>90	20	52	3	28	+0	38	15	45	31	39	39
6	>90	57	51	48	57	45	45	57	48	51	57	57
7	>90	39	31	45	15	38	+0	28	3	52	20	42
8	>90	39	44	30	46	55	31	2	31	55	46	30
9	>90	42	33	42	20	53	3	28	+0	38	15	45
10	>90	87	55	57	57	51	48	57	45	45	57	48
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 600 MHz; 10.00 dBm.
LO IN: 800 MHz; +20.00 dBm
IF OUT: 200 MHz; 2.02 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. X3
LAVI-ED12792
101012
Page 5 of 5