

Frequency Mixer

ADE-ED8108/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=71MHz (dB)		
		@LO (dBm)		
		+14	+17	+20
190.0	261.0	15.90	10.89	9.42
240.0	311.0	12.49	9.22	8.21
290.0	361.0	11.49	8.08	7.38
340.0	411.0	10.49	7.74	7.18
390.0	461.0	9.39	7.15	6.71
440.0	511.0	9.04	7.26	6.83
490.0	561.0	8.14	6.81	6.42
540.0	611.0	8.18	6.91	6.53
590.0	661.0	7.73	6.74	6.29
640.0	711.0	7.82	6.85	6.41
690.0	761.0	7.60	6.75	6.37
740.0	811.0	7.69	6.82	6.44
790.0	861.0	7.77	6.92	6.42
840.0	911.0	7.86	6.84	6.37
890.0	961.0	7.91	7.00	6.48
940.0	1011.0	7.92	7.05	6.49
990.0	1061.0	8.17	7.28	6.75
1040.0	1111.0	8.14	7.16	6.58
1080.0	1151.0	8.09	6.89	6.21
1130.0	1201.0	7.90	6.50	5.90
1170.0	1241.0	7.87	6.25	5.69
1220.0	1291.0	7.90	6.33	5.69
1260.0	1331.0	7.71	6.27	5.66
1310.0	1381.0	7.78	6.52	5.81
1350.0	1421.0	7.88	6.82	6.15
1400.0	1471.0	8.10	7.39	6.77
1440.0	1511.0	8.04	7.59	7.14
1490.0	1561.0	7.94	7.54	7.18
1530.0	1601.0	7.92	7.55	7.24
1580.0	1651.0	8.15	7.75	7.46
1620.0	1691.0	8.26	7.84	7.63
1670.0	1741.0	8.74	8.22	7.95
1710.0	1781.0	9.11	8.50	8.08
1760.0	1831.0	9.86	9.25	8.74
1800.0	1871.0	10.07	9.52	9.02
1850.0	1921.0	10.52	9.87	9.35
1890.0	1961.0	10.54	9.81	9.32
1940.0	2011.0	10.84	10.04	9.70
1980.0	2051.0	10.61	9.95	9.67
2030.0	2101.0	10.88	10.39	10.14

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+14	+17	+20
190.0	261.0	15.12	22.44	22.20
240.0	311.0	17.55	19.16	24.75
290.0	361.0	16.25	21.97	24.68
340.0	411.0	16.40	25.35	26.76
390.0	461.0	16.47	21.29	24.68
440.0	511.0	18.17	20.49	26.15
490.0	561.0	22.73	21.31	28.68
540.0	611.0	23.70	23.55	27.42
590.0	661.0	22.35	24.69	34.29
640.0	711.0	20.79	23.82	29.71
690.0	761.0	18.52	23.56	27.21
740.0	811.0	17.01	23.61	29.22
790.0	861.0	16.14	22.22	28.33
840.0	911.0	16.18	20.27	26.29
890.0	961.0	16.56	19.72	24.01
940.0	1011.0	16.74	19.73	24.08
990.0	1061.0	16.84	19.35	22.49
1040.0	1111.0	18.29	21.26	22.92
1080.0	1151.0	19.09	21.10	20.74
1130.0	1201.0	19.60	18.97	19.35
1170.0	1241.0	17.87	17.98	18.63
1220.0	1291.0	16.71	17.38	18.24
1260.0	1331.0	16.24	17.06	18.00
1310.0	1381.0	16.31	17.85	18.80
1350.0	1421.0	16.33	18.20	19.62
1400.0	1471.0	17.28	18.89	20.50
1440.0	1511.0	17.99	18.29	19.25
1490.0	1561.0	18.82	18.54	19.06
1530.0	1601.0	20.73	20.05	19.95
1580.0	1651.0	23.15	22.46	20.98
1620.0	1691.0	25.51	28.30	23.15
1670.0	1741.0	21.24	22.68	27.64
1710.0	1781.0	19.07	20.82	22.25
1760.0	1831.0	17.99	19.89	21.32
1800.0	1871.0	18.56	20.81	23.28
1850.0	1921.0	18.97	21.95	24.70
1890.0	1961.0	19.48	22.77	24.23
1940.0	2011.0	20.88	22.82	24.33
1980.0	2051.0	22.42	22.75	23.82
2030.0	2101.0	23.00	23.02	23.83

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+15dBm (dB)		
		@LO (dBm)		
		+14	+17	+20
190.0	261.0	-2.97	-0.55	-0.14
240.0	311.0	-1.36	-0.17	0.01
290.0	361.0	-1.10	0.24	0.10
340.0	411.0	-0.64	0.28	0.12
390.0	461.0	0.08	0.53	0.27
440.0	511.0	0.43	0.36	0.19
490.0	561.0	1.22	0.53	0.34
540.0	611.0	1.17	0.45	0.26
590.0	661.0	1.51	0.67	0.52
640.0	711.0	1.61	0.73	0.56
690.0	761.0	1.70	0.90	0.70
740.0	811.0	1.72	1.05	0.83
790.0	861.0	1.55	1.05	0.95
840.0	911.0	1.87	1.41	1.26
890.0	961.0	1.91	1.42	1.30
940.0	1011.0	2.11	1.52	1.40
990.0	1061.0	2.10	1.54	1.35
1040.0	1111.0	2.43	1.78	1.54
1080.0	1151.0	2.55	2.08	1.83
1130.0	1201.0	2.71	2.47	2.08
1170.0	1241.0	2.85	2.91	2.44
1220.0	1291.0	2.83	3.09	2.77
1260.0	1331.0	2.89	3.22	3.02
1310.0	1381.0	2.72	3.07	3.11
1350.0	1421.0	2.45	2.68	2.77
1400.0	1471.0	2.08	2.00	2.09
1440.0	1511.0	2.10	1.81	1.75
1490.0	1561.0	2.14	1.81	1.70
1530.0	1601.0	2.17	1.84	1.68
1580.0	1651.0	1.95	1.64	1.45
1620.0	1691.0	1.93	1.60	1.34
1670.0	1741.0	1.54	1.36	1.13
1710.0	1781.0	1.26	1.12	1.06
1760.0	1831.0	0.58	0.47	0.54
1800.0	1871.0	0.46	0.29	0.34
1850.0	1921.0	0.24	0.15	0.25
1890.0	1961.0	0.38	0.36	0.41
1940.0	2011.0	0.38	0.46	0.39
1980.0	2051.0	0.82	0.74	0.59
2030.0	2101.0	1.11	0.84	0.64

Frequency Mixer

ADE-ED8108/1

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=667.5MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=459.9MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=875.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+17			+17			+17
567.5	100.0	10.52	10.1	470.0	7.33	775.1	100.0	10.30
537.8	129.7	8.03	50.5	510.4	7.01	755.5	119.6	8.24
508.0	159.5	8.21	91.0	550.9	7.00	735.9	139.2	8.02
478.3	189.2	7.08	131.4	591.3	7.08	716.3	158.8	8.13
448.6	218.9	6.47	171.9	631.8	7.13	696.6	178.5	7.43
418.8	248.7	6.47	212.3	672.2	7.15	677.0	198.1	6.90
389.1	278.4	6.07	252.8	712.7	7.24	657.4	217.7	6.44
359.4	308.1	5.54	293.2	753.1	7.31	637.8	237.3	6.58
329.6	337.9	5.41	333.7	793.6	7.51	618.2	256.9	6.35
299.9	367.6	5.47	374.1	834.0	7.50	598.6	276.5	6.25
270.2	397.3	5.55	414.6	874.5	7.56	578.9	296.2	5.85
240.4	427.1	5.75	455.0	914.9	7.80	559.3	315.8	5.76
210.7	456.8	5.98	495.5	955.4	7.97	539.7	335.4	5.63
181.0	486.5	6.18	535.9	995.8	8.13	520.1	355.0	5.58
151.2	516.3	6.23	576.4	1036.3	8.10	500.5	374.6	5.45
121.5	546.0	6.41	616.8	1076.7	8.03	480.9	394.2	5.33
91.8	575.7	6.41	657.3	1117.2	7.86	461.3	413.8	5.31
62.0	605.5	6.37	697.7	1157.6	7.80	441.6	433.5	5.27
32.3	635.2	6.52	738.2	1198.1	7.85	422.0	453.1	5.37
10.0	677.5	7.06	798.9	1258.8	7.81	402.4	472.7	5.50
141.3	808.8	6.81	839.3	1299.2	7.63	382.8	492.3	5.63
272.7	940.2	7.12	900.0	1359.9	7.60	363.2	511.9	5.72
404.0	1071.5	7.93	940.4	1400.3	7.58	343.6	531.5	5.86
535.3	1202.8	7.57	1001.1	1461.0	7.61	323.9	551.2	5.98
666.7	1334.2	7.59	1041.6	1501.5	7.54	304.3	570.8	6.02
798.0	1465.5	7.36	1102.2	1562.1	7.54	284.7	590.4	6.12
929.3	1596.8	6.93	1142.7	1602.6	7.51	265.1	610.0	6.13
1060.7	1728.2	6.96	1203.4	1663.3	7.56	245.5	629.6	6.25
1192.0	1859.5	7.07	1243.8	1703.7	7.62	225.9	649.2	6.38
1323.3	1990.8	6.67	1304.5	1764.4	7.81	206.3	668.8	6.37
1454.7	2122.2	6.49	1344.9	1804.8	7.79	186.6	688.5	6.51
1553.2	2220.7	6.81	1405.6	1865.5	7.70	167.0	708.1	6.53
1684.5	2352.0	7.82	1446.1	1906.0	7.45	147.4	727.7	6.61
1783.0	2450.5	8.74	1506.7	1966.6	7.28	127.8	747.3	6.67
1914.3	2581.8	9.28	1547.2	2007.1	7.42	108.2	766.9	6.64
2012.8	2680.3	8.70	1607.9	2067.8	8.05	88.6	786.5	6.67
2144.2	2811.7	8.41	1648.3	2108.2	8.46	68.9	806.2	6.71
2242.7	2910.2	8.57	1709.0	2168.9	9.20	49.3	825.8	6.76
2374.0	3041.5	9.46	1749.4	2209.3	9.63	29.7	845.4	6.76
2472.5	3140.0	10.26	1810.1	2270.0	10.27	10.1	865.0	7.18

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+14	+17	+20	+14	+17	+20
261.0	50.91	50.82	50.09	45.25	47.88	54.52
311.0	47.60	47.74	48.57	43.49	47.90	48.44
361.0	45.17	45.05	45.94	41.97	44.80	45.93
411.0	42.98	43.35	45.14	41.21	41.63	45.06
461.0	40.95	41.94	43.78	39.97	39.80	43.93
511.0	39.58	41.18	43.16	38.31	38.36	42.24
561.0	38.06	39.66	41.56	36.39	36.81	40.10
611.0	36.76	38.31	40.42	34.71	35.85	39.41
661.0	36.29	38.44	40.79	33.52	36.04	40.63
711.0	36.01	38.51	40.79	32.67	35.06	38.47
761.0	35.67	38.86	41.11	32.02	34.95	38.01
811.0	35.13	37.87	40.19	31.22	34.44	37.58
861.0	34.72	36.77	39.58	30.72	34.02	37.59
911.0	34.47	37.45	40.21	29.72	32.91	36.36
961.0	33.80	36.58	39.21	29.09	32.25	35.54
1011.0	32.70	35.24	37.79	28.03	30.93	34.09
1061.0	31.60	33.94	36.32	27.08	29.15	31.45
1111.0	30.58	32.86	35.17	25.78	27.55	29.54
1151.0	29.54	31.82	34.28	25.42	27.22	29.41
1201.0	28.16	30.59	33.41	24.96	26.92	29.34
1241.0	27.41	30.16	33.35	24.83	26.88	29.32
1291.0	26.25	28.95	32.14	24.60	26.68	29.01
1331.0	25.91	28.81	32.06	24.33	26.55	28.87
1381.0	25.10	28.04	31.38	24.21	26.46	28.74
1421.0	24.83	27.98	31.31	23.98	26.31	28.54
1471.0	24.53	27.74	30.81	23.87	26.21	28.36
1511.0	24.61	27.91	30.93	23.66	26.19	28.45
1561.0	24.83	28.15	31.18	23.96	26.73	29.21
1601.0	24.90	28.34	31.50	24.07	27.10	29.70
1651.0	24.90	28.46	31.83	24.41	27.76	30.65
1691.0	24.85	28.31	31.89	24.30	27.73	30.95
1741.0	24.63	27.85	31.31	24.26	27.58	30.82
1781.0	24.62	27.54	30.55	24.16	27.27	30.24
1831.0	24.89	27.75	30.49	24.43	27.50	30.25
1871.0	24.86	27.73	30.44	24.42	27.44	30.11
1921.0	25.42	28.52	31.40	25.34	28.50	31.23
1961.0	25.70	29.02	31.88	25.82	29.26	31.86
2011.0	26.50	29.89	32.36	27.74	31.25	33.16
2051.0	26.49	29.54	31.77	28.17	31.11	32.66
2101.0	26.25	29.03	31.19	27.79	30.13	31.66

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+14	+17	+20
190.0	261.0	27.63	28.55	29.24
240.0	311.0	25.24	26.85	27.13
290.0	361.0	23.21	24.99	25.14
340.0	411.0	22.34	24.14	24.46
390.0	461.0	21.20	22.96	23.69
440.0	511.0	20.32	22.03	23.00
490.0	561.0	19.38	20.89	21.58
540.0	611.0	18.73	20.57	21.40
590.0	661.0	18.51	20.42	21.85
640.0	711.0	18.27	20.72	22.54
690.0	761.0	18.83	21.35	22.87
740.0	811.0	18.78	21.73	22.95
790.0	861.0	18.79	21.18	22.16
840.0	911.0	18.21	19.82	20.45
890.0	961.0	17.70	18.93	19.66
940.0	1011.0	17.09	18.09	18.85
990.0	1061.0	16.88	17.93	18.66
1040.0	1111.0	16.76	17.72	18.39
1080.0	1151.0	17.07	18.32	19.28
1130.0	1201.0	17.95	19.85	21.12
1170.0	1241.0	18.45	20.94	22.59
1220.0	1291.0	20.05	22.84	24.64
1260.0	1331.0	22.06	25.53	26.48
1310.0	1381.0	26.78	33.00	29.15
1350.0	1421.0	36.82	38.74	27.90
1400.0	1471.0	30.67	25.95	23.69
1440.0	1511.0	24.09	20.71	18.73
1490.0	1561.0	19.82	17.18	15.36
1530.0	1601.0	16.99	14.94	13.32
1580.0	1651.0	14.57	12.93	11.49
1620.0	1691.0	13.11	11.70	10.42
1670.0	1741.0	11.71	10.58	9.51
1710.0	1781.0	10.72	9.81	8.92
1760.0	1831.0	9.46	8.64	7.96
1800.0	1871.0	8.67	7.89	7.26
1850.0	1921.0	7.72	6.89	6.29
1890.0	1961.0	7.05	6.29	5.78
1940.0	2011.0	6.37	5.73	5.52
1980.0	2051.0	5.97	5.53	5.49
2030.0	2101.0	5.94	5.78	5.76

Frequency Mixer

ADE-ED8108/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=865MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+14	+17	+20		+14	+17	+20		+14	+17	+20
190.0	261.0	16.89	10.56	8.64	261.0	4.61	3.14	2.58	10.0	2.19	1.69	1.44
240.0	311.0	11.46	7.90	6.26	311.0	4.05	2.80	2.37	30.5	2.13	1.63	1.38
290.0	361.0	9.08	5.93	4.96	361.0	3.98	2.72	2.24	51.0	2.13	1.63	1.38
340.0	411.0	7.50	4.95	4.32	411.0	3.70	2.53	2.15	71.5	2.20	1.68	1.42
390.0	461.0	6.28	4.32	3.87	461.0	3.63	2.41	2.10	92.0	2.22	1.70	1.44
440.0	511.0	5.34	3.95	3.66	511.0	3.54	2.26	2.06	112.4	2.18	1.67	1.41
490.0	561.0	4.45	3.60	3.39	561.0	3.35	2.13	2.01	132.9	2.18	1.67	1.40
540.0	611.0	3.97	3.34	3.16	611.0	3.27	2.05	2.03	153.4	2.18	1.67	1.40
590.0	661.0	3.52	3.10	2.95	661.0	3.02	1.98	2.02	173.9	2.21	1.69	1.41
640.0	711.0	3.30	2.90	2.78	711.0	2.97	1.95	2.04	194.4	2.25	1.72	1.44
690.0	761.0	3.12	2.81	2.72	761.0	2.71	1.89	2.06	214.9	2.25	1.72	1.43
740.0	811.0	2.99	2.72	2.63	811.0	2.62	1.87	2.11	235.4	2.20	1.68	1.40
790.0	861.0	2.95	2.74	2.60	861.0	2.40	1.81	2.10	255.9	2.19	1.66	1.38
840.0	911.0	2.79	2.59	2.47	911.0	2.31	1.79	2.14	276.3	2.27	1.74	1.45
890.0	961.0	2.69	2.53	2.43	961.0	2.14	1.77	2.14	296.8	2.29	1.76	1.46
940.0	1011.0	2.58	2.41	2.30	1011.0	2.03	1.77	2.21	317.3	2.25	1.72	1.43
990.0	1061.0	2.52	2.36	2.25	1061.0	1.93	1.78	2.24	337.8	2.21	1.69	1.40
1040.0	1111.0	2.35	2.17	2.05	1111.0	1.81	1.80	2.33	358.3	2.30	1.76	1.46
1080.0	1151.0	2.24	2.02	1.88	1151.0	1.74	1.79	2.33	378.8	2.32	1.78	1.49
1130.0	1201.0	2.01	1.75	1.62	1201.0	1.65	1.79	2.37	399.3	2.27	1.75	1.47
1170.0	1241.0	1.89	1.60	1.48	1241.0	1.56	1.75	2.36	419.8	2.25	1.74	1.46
1220.0	1291.0	1.70	1.42	1.31	1291.0	1.53	1.78	2.40	440.2	2.29	1.77	1.49
1260.0	1331.0	1.57	1.29	1.19	1331.0	1.48	1.80	2.45	460.7	2.32	1.80	1.53
1310.0	1381.0	1.46	1.22	1.05	1381.0	1.46	1.81	2.45	481.2	2.27	1.78	1.51
1350.0	1421.0	1.46	1.26	1.11	1421.0	1.44	1.87	2.55	501.7	2.30	1.80	1.54
1400.0	1471.0	1.55	1.45	1.35	1471.0	1.42	1.86	2.52	522.2	2.32	1.82	1.56
1440.0	1511.0	1.64	1.59	1.54	1511.0	1.43	1.94	2.64	542.7	2.33	1.83	1.58
1490.0	1561.0	1.82	1.81	1.81	1561.0	1.40	1.93	2.60	563.2	2.29	1.82	1.58
1530.0	1601.0	1.96	1.95	1.96	1601.0	1.42	1.99	2.69	583.7	2.34	1.86	1.62
1580.0	1651.0	2.21	2.18	2.20	1651.0	1.41	2.00	2.68	604.1	2.30	1.84	1.61
1620.0	1691.0	2.34	2.28	2.29	1691.0	1.44	2.04	2.75	624.6	2.28	1.83	1.61
1670.0	1741.0	2.59	2.48	2.44	1741.0	1.47	2.09	2.79	645.1	2.28	1.85	1.65
1710.0	1781.0	2.74	2.59	2.49	1781.0	1.50	2.11	2.82	665.6	2.29	1.86	1.65
1760.0	1831.0	2.96	2.80	2.68	1831.0	1.53	2.16	2.86	686.1	2.23	1.82	1.63
1800.0	1871.0	2.99	2.84	2.71	1871.0	1.54	2.14	2.84	706.6	2.17	1.78	1.62
1850.0	1921.0	3.04	2.87	2.75	1921.0	1.56	2.16	2.86	727.1	2.17	1.81	1.66
1890.0	1961.0	3.01	2.84	2.73	1961.0	1.52	2.10	2.77	768.0	2.07	1.72	1.59
1940.0	2011.0	3.01	2.86	2.80	2011.0	1.53	2.12	2.83	788.5	1.99	1.68	1.58
1980.0	2051.0	3.03	2.91	2.86	2051.0	1.50	2.07	2.75	829.5	1.91	1.60	1.52
2030.0	2101.0	3.09	3.01	2.97	2101.0	1.57	2.15	2.87	850.0	1.84	1.54	1.47

REV. X2
ADE-ED8108/1
101013
Page 4 of 5

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)											
	0	-	-	12	21	14	27	30	33	43	46	38	52
	1	-	14	+0	22	11	28	36	34	37	59	44	60
	2	60	53	47	51	51	68	49	60	66	69	75	61
	3	>90	57	55	57	55	63	51	65	72	65	65	83
	4	>90	>83	80	79	76	77	76	>83	82	>83	>83	>83
	5	>90	>83	>83	>83	>83	>83	>83	>83	83	>83	>83	>83
	6	>90	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
	7	>90	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
	8	>90	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
	9	>90	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
	10	>90	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83	>83
	RF CAL		0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 667.5 MHz; 0.00 dBm.
LO IN: 738.5 MHz; +17.00 dBm
IF OUT: 71 MHz; -6.76 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)											
	0	-	-	24	33	28	43	44	48	67	58	53	77
	1	-	15	+0	22	13	29	36	39	47	69	57	67
	2	41	49	43	51	37	52	40	52	60	66	66	71
	3	67	39	35	39	42	42	33	46	62	50	52	73
	4	>90	73	60	54	53	62	54	70	54	61	66	74
	5	>90	61	63	72	46	64	54	55	46	56	66	59
	6	>90	88	>93	85	70	68	69	73	59	73	69	74
	7	>90	93	>93	79	86	72	61	62	66	61	58	74
	8	>90	>93	90	83	88	80	78	69	80	71	66	71
	9	>90	92	>93	92	91	91	84	75	71	81	77	73
	10	>90	>93	>93	>93	>93	>93	93	85	77	82	83	77
RF CAL		0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 667.5 MHz; 10.00 dBm.
LO IN: 738.5 MHz; +17.00 dBm
IF OUT: 71 MHz; 3.23 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.