Frequency Mixer ADE-R11XLH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+7	+10	+13
10.1	40.1	7.33	6.77	6.64
70.1	100.1	7.75	7.24	7.01
130.1	160.1	7.81	7.27	7.03
190.1	220.1	7.85	7.32	7.09
250.1	280.1	7.92	7.39	7.14
310.1	340.1	8.04	7.49	7.22
370.1	400.1	8.09	7.51	7.23
430.1	460.1	8.15	7.58	7.32
490.1	520.1	8.17	7.64	7.36
550.1	580.1	8.18	7.66	7.38
610.1	640.1	8.18	7.59	7.30
670.1	700.1	8.29	7.65	7.34
730.1	760.1	8.46	7.91	7.57
790.1	820.1	8.49	8.05	7.76
850.1	880.1	8.42	8.00	7.74
910.1	940.1	8.29	7.88	7.66
970.1	1000.1	8.17	7.74	7.55
1030.1	1060.1	8.15	7.65	7.44
1090.1	1120.1	8.20	7.57	7.32
1150.1	1180.1	8.30	7.60	7.26
1210.1	1240.1	8.41	7.70	7.28
1270.1	1300.1	8.62	7.93	7.44
1330.1	1360.1	8.69	8.09	7.61
1390.1	1420.1	8.63	8.09	7.61
1450.1	1480.1	8.54	7.99	7.55
1510.1	1540.1	8.31	7.74	7.37
1570.1	1600.1	8.19	7.62	7.32
1630.1	1660.1	8.12	7.60	7.35
1690.1	1720.1	8.09	7.61	7.40
1750.1	1780.1	8.12	7.67	7.47
1810.1	1840.1	8.23	7.78	7.59
1870.1	1900.1	8.40	7.96	7.77
1930.1	1960.1	8.58	8.14	7.93
1990.1	2020.1	8.78	8.35	8.16
2070.1	2100.1	9.19	8.72	8.52
2130.1	2160.1	9.49	8.98	8.78
2210.1	2240.1	9.98	9.48	9.29
2270.1	2300.1	10.43	9.95	9.78
2350.1	2380.1	11.16	10.59	10.42
2410.1	2440.1	11.69	11.05	10.86

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+7	+10	+13
10.1	40.1	16.18	18.07	18.76
70.1	100.1	14.82	15.31	15.16
130.1	160.1	13.12	12.82	14.70
190.1	220.1	11.64	12.83	18.95
250.1	280.1	10.81	14.55	20.87
310.1	340.1	11.65	17.30	17.58
370.1	400.1	13.27	17.23	16.40
430.1	460.1	15.96	14.73	15.27
490.1	520.1	15.12	14.18	15.38
550.1	580.1	13.21	13.58	14.91
610.1	640.1	11.40	12.67	16.94
670.1	700.1	11.01	11.59	13.82
730.1	760.1	10.09	11.30	13.15
790.1	820.1	9.18	10.50	12.81
850.1	880.1	9.29	11.65	15.24
910.1	940.1	9.36	12.42	14.49
970.1	1000.1	9.17	12.06	14.40
1030.1	1060.1	9.97	11.16	13.73
1090.1	1120.1	12.10	11.23	13.03
1150.1	1180.1	13.60	12.98	12.94
1210.1	1240.1	12.70	17.12	15.56
1270.1	1300.1	10.13	14.59	22.33
1330.1	1360.1	8.61	10.97	18.45
1390.1	1420.1	8.08	9.72	14.55
1450.1	1480.1	8.28	10.02	13.22
1510.1	1540.1	9.31	11.92	14.01
1570.1	1600.1	10.21	12.85	14.90
1630.1	1660.1	10.29	13.10	15.56
1690.1	1720.1	9.77	13.24	15.92
1750.1	1780.1	9.48	13.37	16.60
1810.1	1840.1	9.64	13.74	17.35
1870.1	1900.1	9.73	13.87	17.61
1930.1	1960.1	9.53	13.88	17.75
1990.1	2020.1	10.22	14.67	18.39
2070.1	2100.1	10.23	15.00	18.81
2130.1	2160.1	10.04	15.16	19.31
2210.1	2240.1	10.62	15.66	19.44
2270.1	2300.1	11.13	16.16	18.71
2350.1	2380.1	11.23	16.51	17.48
2410.1	2440.1	12.11	16.04	15.39

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+5dBm (dB) @LO (dBm)		
		+7	+10	+13
10.1	40.1	1.29	0.73	0.58
70.1	100.1	1.27	0.68	0.35
130.1	160.1	1.01	0.53	0.28
190.1	220.1	1.26	0.71	0.44
250.1	280.1	1.18	0.64	0.43
310.1	340.1	1.25	0.77	0.50
370.1	400.1	1.48	1.03	0.76
430.1	460.1	1.45	0.98	0.72
490.1	520.1	1.55	1.11	0.85
550.1	580.1	1.67	1.20	0.93
610.1	640.1	1.56	1.23	0.99
670.1	700.1	1.66	1.42	1.20
730.1	760.1	1.44	1.13	1.01
790.1	820.1	1.47	1.11	0.94
850.1	880.1	1.64	1.26	1.07
910.1	940.1	1.59	1.31	1.16
970.1	1000.1	1.73	1.43	1.25
1030.1	1060.1	1.62	1.45	1.28
1090.1	1120.1	1.44	1.39	1.24
1150.1	1180.1	1.42	1.36	1.29
1210.1	1240.1	1.21	1.14	1.16
1270.1	1300.1	1.35	1.14	1.15
1330.1	1360.1	1.09	0.81	0.82
1390.1	1420.1	1.38	0.90	0.84
1450.1	1480.1	1.56	1.00	0.86
1510.1	1540.1	1.71	1.09	0.85
1570.1	1600.1	2.17	1.34	0.91
1630.1	1660.1	2.15	1.20	0.73
1690.1	1720.1	2.37	1.26	0.66
1750.1	1780.1	2.57	1.29	0.63
1810.1	1840.1	2.48	1.18	0.52
1870.1	1900.1	2.58	1.23	0.52
1930.1	1960.1	2.39	1.15	0.47
1990.1	2020.1	2.32	1.03	0.42
2070.1	2100.1	2.25	1.03	0.40
2130.1	2160.1	2.19	1.00	0.39
2210.1	2240.1	1.90	0.88	0.37
2270.1	2300.1	1.77	0.83	0.38
2350.1	2380.1	1.54	0.78	0.40
2410.1	2440.1	1.23	0.71	0.40

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1010.1MHz (dB) @LO (dBm) +10
990.10	20.00	7.57
970.10	40.00	7.58
950.10	60.00	7.60
930.10	80.00	7.59
910.10	100.00	7.59
890.10	120.00	7.60
870.10	140.00	7.59
850.10	160.00	7.58
830.10	180.00	7.57
810.10	200.00	7.57
790.10	220.00	7.50
770.10	240.00	7.51
750.10	260.00	7.52
730.10	280.00	7.50
710.10	300.00	7.43
690.10	320.00	7.46
670.10	340.00	7.49
650.10	360.00	7.44
630.10	380.00	7.41
610.10	400.00	7.40
570.10	440.00	7.40
550.10	460.00	7.41
510.10	500.00	7.42
490.10	520.00	7.43
450.10	560.00	7.58
430.10	580.00	7.60
390.10	620.00	7.60
370.10	640.00	7.67
330.10	680.00	7.64
310.10	700.00	7.70
270.10	740.00	7.77
250.10	760.00	7.79
210.10	800.00	7.87
190.10	820.00	7.86
150.10	860.00	7.87
130.10	880.00	7.83
90.10	920.00	7.75
70.10	940.00	7.75
30.10	980.00	7.71
10.10	1000.00	8.25

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10MHz (dB) @LO (dBm) +10
10.1	20.1	7.40
50.1	60.1	6.80
90.1	100.1	6.62
130.1	140.1	6.74
170.1	180.1	6.47
210.1	220.1	6.57
250.1	260.1	6.43
310.1	320.1	6.38
350.1	360.1	6.38
410.1	420.1	6.32
450.1	460.1	6.22
510.1	520.1	6.26
550.1	560.1	6.18
610.1	620.1	6.27
650.1	660.1	6.25
710.1	720.1	6.37
750.1	760.1	6.38
810.1	820.1	6.44
850.1	860.1	6.58
910.1	920.1	6.55
950.1	960.1	6.66
1010.1	1020.1	6.64
1050.1	1060.1	6.60
1110.1	1120.1	6.90
1150.1	1160.1	7.15
1210.1	1220.1	7.31
1250.1	1260.1	7.65
1310.1	1320.1	7.90
1350.1	1360.1	8.02
1410.1	1420.1	8.31
1450.1	1460.1	8.16
1510.1	1520.1	8.25
1550.1	1560.1	8.13
1610.1	1620.1	8.35
1650.1	1660.1	8.51
1710.1	1720.1	9.09
1750.1	1760.1	9.42
1810.1	1820.1	10.11
1850.1	1860.1	10.51
1910.1	1920.1	11.13

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2020.1MHz (dB) @LO (dBm) +10
1940.1	80.0	10.66
1900.3	119.8	10.25
1860.5	159.6	9.86
1800.8	219.3	9.40
1761.0	259.1	9.17
1701.3	318.8	8.82
1661.5	358.6	8.66
1601.9	418.2	8.36
1562.1	458.0	8.28
1502.4	517.7	8.03
1462.6	557.5	7.95
1402.9	617.2	7.79
1363.1	657.0	7.73
1303.4	716.7	7.57
1263.6	756.5	7.49
1203.9	816.2	7.35
1164.1	856.0	7.32
1104.4	915.7	7.26
1064.6	955.5	7.31
1004.9	1015.2	7.30
965.2	1054.9	7.36
905.5	1114.6	7.45
865.7	1154.4	7.52
806.0	1214.1	7.65
766.2	1253.9	7.75
706.5	1313.6	7.79
666.7	1353.4	7.86
607.0	1413.1	7.90
567.2	1452.9	7.89
507.5	1512.6	7.87
467.7	1552.4	7.85
408.0	1612.1	7.89
368.2	1651.9	7.94
308.6	1711.5	8.01
268.8	1751.3	8.06
209.1	1811.0	8.14
169.3	1850.8	8.19
109.6	1910.5	8.25
69.8	1950.3	8.32
10.1	2010.0	8.96

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+7	+10	+13
10.1	40.1	1.87	1.68	1.65
70.1	100.1	1.22	1.03	1.13
130.1	160.1	1.31	1.10	1.09
190.1	220.1	1.37	1.15	1.07
250.1	280.1	1.37	1.18	1.09
310.1	340.1	1.37	1.21	1.12
370.1	400.1	1.52	1.35	1.25
430.1	460.1	1.58	1.42	1.33
490.1	520.1	1.58	1.42	1.30
550.1	580.1	1.71	1.54	1.42
610.1	640.1	1.81	1.62	1.48
670.1	700.1	1.86	1.64	1.50
730.1	760.1	1.92	1.74	1.58
790.1	820.1	2.03	1.88	1.74
850.1	880.1	2.07	1.94	1.83
910.1	940.1	1.85	1.73	1.67
970.1	1000.1	1.93	1.82	1.78
1030.1	1060.1	1.97	1.84	1.83
1090.1	1120.1	1.91	1.70	1.68
1150.1	1180.1	2.06	1.75	1.64
1210.1	1240.1	2.19	1.87	1.66
1270.1	1300.1	2.16	1.90	1.67
1330.1	1360.1	2.15	1.93	1.71
1390.1	1420.1	2.16	1.96	1.77
1450.1	1480.1	1.88	1.70	1.57
1510.1	1540.1	1.71	1.54	1.45
1570.1	1600.1	1.66	1.51	1.45
1630.1	1660.1	1.51	1.40	1.39
1690.1	1720.1	1.35	1.26	1.28
1750.1	1780.1	1.33	1.21	1.22
1810.1	1840.1	1.26	1.19	1.26
1870.1	1900.1	1.17	1.07	1.19
1930.1	1960.1	1.21	1.02	1.14
1990.1	2020.1	1.14	1.06	1.20
2070.1	2100.1	1.17	1.10	1.23
2130.1	2160.1	1.22	1.19	1.31
2210.1	2240.1	1.33	1.34	1.44
2270.1	2300.1	1.40	1.37	1.43
2350.1	2380.1	1.48	1.47	1.53
2410.1	2440.1	1.56	1.57	1.64

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+7	+10	+13
40.1	1.74	2.46	3.34
100.1	1.67	2.34	3.17
160.1	1.72	2.42	3.30
220.1	1.69	2.38	3.23
280.1	1.69	2.36	3.20
340.1	1.73	2.43	3.28
400.1	1.73	2.43	3.25
460.1	1.79	2.48	3.31
520.1	1.83	2.54	3.35
580.1	1.87	2.56	3.35
640.1	1.93	2.62	3.40
700.1	2.00	2.70	3.48
760.1	2.05	2.75	3.52
820.1	2.12	2.80	3.58
880.1	2.15	2.80	3.53
940.1	2.24	2.88	3.61
1000.1	2.35	2.99	3.72
1060.1	2.44	3.08	3.76
1120.1	2.59	3.26	3.97
1180.1	2.61	3.27	3.96
1240.1	2.73	3.41	4.12
1300.1	2.73	3.40	4.11
1360.1	2.75	3.36	4.02
1420.1	2.82	3.42	4.10
1480.1	2.76	3.30	3.95
1540.1	2.83	3.38	4.06
1600.1	2.86	3.43	4.12
1660.1	2.94	3.48	4.15
1720.1	3.12	3.67	4.35
1780.1	3.25	3.76	4.39
1840.1	3.45	3.90	4.47
1900.1	3.70	4.11	4.68
1960.1	3.88	4.18	4.67
2020.1	4.24	4.47	4.93
2100.1	4.68	4.78	5.17
2160.1	4.84	4.77	5.04
2240.1	5.34	5.09	5.28
2300.1	5.91	5.54	5.70
2380.1	6.32	5.72	5.74
2440.1	6.66	5.83	5.72

IF (OUT) (MHz)	IF VSWR @LO=2010.1MHz (:1) @LO (dBm)		
	+7	+10	+13
10.0	1.42	1.44	1.46
50.0	1.26	1.29	1.31
90.0	1.24	1.28	1.30
130.0	1.24	1.27	1.30
170.0	1.24	1.28	1.30
210.0	1.24	1.28	1.30
250.0	1.24	1.27	1.30
290.0	1.23	1.27	1.30
330.0	1.23	1.27	1.31
370.0	1.22	1.26	1.30
410.0	1.21	1.25	1.30
450.0	1.20	1.25	1.30
490.0	1.19	1.25	1.31
530.0	1.19	1.25	1.31
570.0	1.17	1.24	1.30
610.0	1.17	1.25	1.32
650.0	1.17	1.26	1.33
710.0	1.17	1.26	1.34
750.0	1.18	1.27	1.35
810.0	1.20	1.29	1.37
850.0	1.22	1.30	1.38
910.0	1.28	1.36	1.43
950.0	1.32	1.38	1.44
1010.0	1.40	1.45	1.51
1050.0	1.47	1.51	1.55
1110.0	1.57	1.59	1.62
1150.0	1.66	1.67	1.69
1210.0	1.77	1.77	1.77
1250.0	1.88	1.86	1.85
1310.0	2.01	1.99	1.97
1350.0	2.12	2.08	2.06
1410.0	2.28	2.24	2.21
1450.0	2.39	2.35	2.32
1510.0	2.57	2.53	2.49
1550.0	2.67	2.64	2.60
1610.0	2.82	2.80	2.76
1650.0	2.94	2.91	2.88
1710.0	3.07	3.04	3.01
1750.0	3.14	3.11	3.08
1810.0	3.21	3.17	3.13

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+7	+10	+13	+7	+10	+13
40.1	59.96	56.91	55.33	69.48	69.62	69.51
100.1	52.66	49.85	48.16	61.70	61.63	61.69
160.1	49.22	46.12	44.68	57.04	57.06	57.16
220.1	46.87	44.40	43.18	53.91	54.10	54.13
280.1	45.88	43.78	42.27	51.62	51.73	51.63
340.1	45.36	43.07	41.32	49.73	49.69	49.51
400.1	43.83	41.53	39.74	48.54	48.30	48.03
460.1	42.55	40.31	38.92	46.89	46.79	46.52
520.1	40.47	39.35	37.94	45.51	45.15	44.85
580.1	37.80	36.88	36.35	44.50	44.27	44.00
640.1	36.16	35.03	34.21	44.02	43.62	43.34
700.1	34.63	34.37	33.87	43.77	43.09	42.41
760.1	33.16	33.20	33.31	43.09	42.89	42.25
820.1	31.99	31.99	32.15	41.48	41.42	41.11
880.1	31.18	30.73	30.61	40.02	39.82	39.73
940.1	30.83	30.45	30.08	39.17	39.27	39.48
1000.1	30.01	30.04	29.65	38.19	38.61	39.17
1060.1	28.84	29.44	29.18	37.81	38.47	38.98
1120.1	27.71	28.49	28.67	37.33	37.93	38.46
1180.1	26.79	27.72	28.29	36.80	37.37	37.89
1240.1	26.03	27.07	28.05	36.30	36.86	37.34
1300.1	25.04	25.95	27.18	35.65	36.18	36.74
1360.1	24.16	24.88	25.93	34.80	35.26	35.85
1420.1	24.10	24.78	25.52	33.80	34.14	34.49
1480.1	24.25	24.97	25.66	32.86	33.05	33.40
1540.1	24.59	25.49	26.05	32.09	32.28	32.55
1600.1	24.80	25.97	26.62	31.43	31.74	32.00
1660.1	24.65	26.04	26.89	30.71	31.04	31.34
1720.1	24.36	26.02	27.17	29.89	30.29	30.68
1780.1	23.92	25.90	27.34	29.05	29.59	30.01
1840.1	23.66	25.88	27.54	28.45	29.10	29.60
1900.1	23.44	25.91	27.87	28.00	28.80	29.46
1960.1	23.49	26.11	28.37	27.68	28.64	29.39
2020.1	23.79	26.52	28.89	27.44	28.47	29.34
2100.1	24.51	27.50	30.13	27.49	28.56	29.42
2160.1	25.11	28.29	31.13	27.56	28.62	29.46
2240.1	26.28	29.70	32.88	27.89	29.01	29.86
2300.1	27.54	31.31	34.89	28.52	29.66	30.40
2380.1	29.00	33.42	37.83	29.24	30.33	31.01
2440.1	30.26	35.06	40.02	29.70	30.81	31.25

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+7	+10	+13
10.1	40.1	54.14	53.37	54.16
70.1	100.1	36.99	37.13	37.00
130.1	160.1	32.14	32.15	32.29
190.1	220.1	29.15	29.40	29.53
250.1	280.1	27.42	27.64	27.65
310.1	340.1	26.33	26.46	26.78
370.1	400.1	25.51	25.72	25.94
430.1	460.1	25.53	25.87	26.08
490.1	520.1	25.18	25.89	26.39
550.1	580.1	24.95	25.50	25.83
610.1	640.1	24.72	24.99	25.30
670.1	700.1	24.58	24.96	25.41
730.1	760.1	23.62	24.34	25.15
790.1	820.1	21.76	22.32	23.01
850.1	880.1	19.83	20.27	20.68
910.1	940.1	18.25	18.53	18.69
970.1	1000.1	16.84	17.03	17.10
1030.1	1060.1	15.89	15.99	16.05
1090.1	1120.1	15.29	15.38	15.44
1150.1	1180.1	14.90	14.94	15.07
1210.1	1240.1	14.55	14.64	14.84
1270.1	1300.1	14.29	14.35	14.47
1330.1	1360.1	13.96	14.07	14.14
1390.1	1420.1	13.65	13.82	13.95
1450.1	1480.1	13.43	13.62	13.75
1510.1	1540.1	13.19	13.39	13.47
1570.1	1600.1	12.80	13.07	13.13
1630.1	1660.1	12.39	12.51	12.53
1690.1	1720.1	11.80	11.91	11.91
1750.1	1780.1	11.18	11.14	11.06
1810.1	1840.1	10.30	10.16	10.01
1870.1	1900.1	9.60	9.34	9.08
1930.1	1960.1	8.88	8.52	8.21
1990.1	2020.1	8.25	7.82	7.47
2070.1	2100.1	7.57	7.01	6.63
2130.1	2160.1	7.10	6.43	6.01
2210.1	2240.1	6.61	5.86	5.44
2270.1	2300.1	6.18	5.43	5.02
2350.1	2380.1	5.97	5.07	4.67
2410.1	2440.1	5.73	4.82	4.49

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	14	20	19	33	12	23	26	38	38	47
1	-	10	+0	27	23	21	36	29	37	34	43	47
2	79	56	47	59	49	46	43	55	37	51	46	60
3	> 90	50	52	70	51	58	56	49	64	61	64	59
4	> 90	72	67	> 73	63	71	63	70	66	71	60	70
5	> 90	> 73	> 73	> 73	> 73	72	> 73	> 73	> 73	> 73	> 73	> 73
6	> 90	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73
7	> 90	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73
8	> 90	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73
9	> 90	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73
10	> 90	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73	> 73
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 1005.00 MHz; -10.00 dBm.
LO IN: 1035.00 MHz; +10.00 dBm
IF OUT: 30.00 MHz; -17.29 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	23	27	28	41	28	38	45	50	55	60
1	-	10	+0	28	22	27	38	36	42	51	53	64
2	59	40	48	42	47	49	44	49	37	47	50	58
3	> 90	33	36	56	34	47	50	37	52	46	53	53
4	> 90	60	58	61	56	57	64	52	52	57	47	59
5	> 90	55	67	54	58	65	51	60	55	49	68	60
6	> 90	70	67	71	72	76	61	66	62	64	62	78
7	> 90	76	75	63	76	65	67	69	59	67	66	58
8	> 90	78	78	75	80	80	72	75	68	72	68	71
9	> 90	> 82	> 82	> 82	> 82	71	> 82	72	72	78	67	74
10	> 90	> 82	> 82	> 82	> 82	80	> 82	> 82	74	76	74	74
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 1005.00 MHz; .00 dBm.
LO IN: 1035.00 MHz; +10.00 dBm
IF OUT: 30.00 MHz; -7.50 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.