Frequency Mixer HJK-ED9494A/2

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=82MHz (dB) @LO (dBm)		
		+14	+17	+20
280.1	198.1	13.13	11.09	9.46
350.1	268.1	11.08	9.37	8.02
420.1	338.1	9.47	8.14	7.36
490.1	408.1	8.28	7.54	7.10
560.1	478.1	7.70	7.18	6.87
630.1	548.1	8.14	7.85	7.67
700.1	618.1	7.31	7.20	7.17
770.1	688.1	7.10	7.01	7.00
840.1	758.1	7.01	6.88	6.82
910.1	828.1	7.24	7.09	6.99
980.1	898.1	7.64	7.47	7.38
1050.1	968.1	8.14	7.82	7.62
1120.1	1038.1	8.30	7.88	7.62
1190.1	1108.1	8.43	7.98	7.71
1260.1	1178.1	8.53	8.09	7.86
1330.1	1248.1	8.77	8.30	8.07
1400.1	1318.1	9.13	8.60	8.33
1470.1	1388.1	9.34	8.79	8.54
1540.1	1458.1	9.61	9.03	8.75
1610.1	1528.1	10.04	9.37	9.03
1680.1	1598.1	10.22	9.43	9.01
1750.1	1668.1	9.99	9.18	8.78
1820.1	1738.1	9.82	9.06	8.72
1890.1	1808.1	9.96	9.15	8.81
1960.1	1878.1	10.07	9.23	8.88
2030.1	1948.1	9.97	9.22	8.88
2110.1	2028.1	10.11	9.37	9.00
2180.1	2098.1	10.43	9.67	9.24
2260.1	2178.1	10.63	9.87	9.49
2330.1	2248.1	10.49	9.86	9.55
2410.1	2328.1	10.31	9.78	9.51
2480.1	2398.1	10.20	9.69	9.43
2560.1	2478.1	10.22	9.77	9.54
2630.1	2548.1	10.21	9.81	9.65
2710.1	2628.1	10.21	9.89	9.78
2780.1	2698.1	10.24	9.95	9.86
2860.1	2778.1	10.39	10.12	10.02
2930.1	2848.1	10.55	10.34	10.26
3010.1	2928.1	10.73	10.54	10.49
3080.1	2998.1	10.85	10.68	10.63

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
280.1	198.1	9.89	12.57	16.66
350.1	268.1	13.09	17.36	19.86
420.1	338.1	20.33	24.02	26.46
490.1	408.1	22.42	24.98	25.93
560.1	478.1	17.86	19.36	21.30
630.1	548.1	20.82	20.75	24.39
700.1	618.1	26.46	29.88	32.80
770.1	688.1	30.23	32.67	34.56
840.1	758.1	31.53	34.06	34.48
910.1	828.1	29.68	31.91	34.16
980.1	898.1	26.54	28.76	31.46
1050.1	968.1	22.11	24.78	27.33
1120.1	1038.1	21.86	25.51	28.49
1190.1	1108.1	22.03	26.21	28.35
1260.1	1178.1	22.03	25.91	28.77
1330.1	1248.1	22.26	26.02	27.32
1400.1	1318.1	22.05	26.15	28.44
1470.1	1388.1	21.97	26.09	30.63
1540.1	1458.1	22.38	26.02	31.49
1610.1	1528.1	23.52	26.68	31.37
1680.1	1598.1	23.64	27.02	30.17
1750.1	1668.1	23.45	27.32	29.86
1820.1	1738.1	22.80	26.03	28.91
1890.1	1808.1	21.67	24.41	27.18
1960.1	1878.1	21.06	23.56	26.69
2030.1	1948.1	21.09	23.70	27.19
2110.1	2028.1	21.10	23.52	27.50
2180.1	2098.1	21.23	23.26	26.91
2260.1	2178.1	21.42	23.53	26.52
2330.1	2248.1	22.06	24.56	27.73
2410.1	2328.1	23.11	25.78	29.28
2480.1	2398.1	23.91	26.50	29.81
2560.1	2478.1	23.96	26.45	29.58
2630.1	2548.1	23.75	26.72	30.10
2710.1	2628.1	23.81	27.41	31.31
2780.1	2698.1	24.17	27.99	32.53
2860.1	2778.1	24.23	28.00	33.06
2930.1	2848.1	24.11	28.03	33.36
3010.1	2928.1	24.46	28.61	32.99
3080.1	2998.1	24.66	29.20	33.41

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+15dBm (dB) @LO (dBm)		
		+14	+17	+20
280.1	198.1	2.09	1.84	1.52
350.1	268.1	1.98	1.59	1.15
420.1	338.1	1.73	1.11	0.46
490.1	408.1	1.59	0.41	0.04
560.1	478.1	1.10	0.41	0.18
630.1	548.1	0.58	0.56	0.56
700.1	618.1	0.57	0.24	0.11
770.1	688.1	0.24	0.12	0.08
840.1	758.1	0.19	0.10	0.08
910.1	828.1	0.26	0.13	0.09
980.1	898.1	0.57	0.29	0.17
1050.1	968.1	1.76	0.96	0.45
1120.1	1038.1	1.48	0.84	0.35
1190.1	1108.1	1.08	0.62	0.25
1260.1	1178.1	1.03	0.59	0.25
1330.1	1248.1	1.02	0.60	0.28
1400.1	1318.1	0.95	0.57	0.26
1470.1	1388.1	0.95	0.57	0.26
1540.1	1458.1	0.80	0.48	0.22
1610.1	1528.1	0.68	0.44	0.20
1680.1	1598.1	0.62	0.49	0.26
1750.1	1668.1	0.54	0.52	0.27
1820.1	1738.1	0.55	0.58	0.30
1890.1	1808.1	0.45	0.60	0.33
1960.1	1878.1	0.31	0.54	0.31
2030.1	1948.1	0.28	0.46	0.27
2110.1	2028.1	0.18	0.37	0.23
2180.1	2098.1	0.08	0.29	0.21
2260.1	2178.1	0.06	0.25	0.19
2330.1	2248.1	0.17	0.25	0.16
2410.1	2328.1	0.31	0.28	0.16
2480.1	2398.1	0.40	0.33	0.19
2560.1	2478.1	0.47	0.34	0.17
2630.1	2548.1	0.50	0.30	0.15
2710.1	2628.1	0.47	0.25	0.13
2780.1	2698.1	0.40	0.19	0.10
2860.1	2778.1	0.34	0.15	0.07
2930.1	2848.1	0.33	0.13	0.06
3010.1	2928.1	0.30	0.12	0.05
3080.1	2998.1	0.25	0.09	0.04

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=860.1MHz (dB) @LO (dBm) +17
650.0	210.1	13.50
614.4	245.7	11.99
578.9	281.2	11.26
543.3	316.8	10.11
507.8	352.3	9.61
472.2	387.9	8.99
436.7	423.4	8.36
401.1	459.0	8.24
365.6	494.5	7.99
330.0	530.1	8.28
294.4	565.7	7.87
258.9	601.2	7.42
223.3	636.8	7.22
187.8	672.3	7.08
152.2	707.9	6.99
116.7	743.4	6.91
81.1	779.0	6.95
45.6	814.5	6.96
10.0	850.1	7.62
72.8	932.9	7.07
198.3	1058.4	7.27
292.5	1152.6	7.60
418.1	1278.2	8.15
512.2	1372.3	8.50
637.8	1497.9	8.93
731.9	1592.0	9.10
857.5	1717.6	9.14
951.7	1811.8	9.26
1077.2	1937.3	9.19
1171.4	2031.5	9.18
1296.9	2157.0	9.13
1391.1	2251.2	8.93
1516.7	2376.8	8.76
1610.8	2470.9	8.83
1736.4	2596.5	9.13
1830.6	2690.7	9.44
1956.1	2816.2	10.01
2050.3	2910.4	10.36
2175.8	3035.9	10.97
2270.0	3130.1	11.54

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=824.1MHz (dB) @LO (dBm) +17
10.0	834.1	7.52
70.0	894.1	6.96
130.0	954.1	7.05
190.0	1014.1	7.13
250.0	1074.1	7.23
310.0	1134.1	7.52
370.0	1194.1	7.71
430.0	1254.1	8.06
490.0	1314.1	8.33
550.0	1374.1	8.47
610.0	1434.1	8.70
670.0	1494.1	8.90
730.0	1554.1	8.90
790.0	1614.1	9.03
850.0	1674.1	9.25
910.0	1734.1	9.12
970.0	1794.1	9.23
1030.0	1854.1	9.20
1090.0	1914.1	9.18
1150.0	1974.1	9.23
1210.0	2034.1	9.10
1270.0	2094.1	9.08
1330.0	2154.1	9.02
1390.0	2214.1	8.80
1450.0	2274.1	8.79
1510.0	2334.1	8.66
1570.0	2394.1	8.65
1630.0	2454.1	8.78
1690.0	2514.1	9.00
1750.0	2574.1	9.07
1810.0	2634.1	9.29
1870.0	2694.1	9.55
1930.0	2754.1	9.79
1990.0	2814.1	10.09
2050.0	2874.1	10.36
2110.0	2934.1	10.57
2150.0	2974.1	10.80
2210.0	3034.1	11.18
2250.0	3074.1	11.42
2310.0	3134.1	11.83

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=896.1MHz (dB) @LO (dBm) +17
670.0	226.1	12.69
650.0	246.1	12.14
630.0	266.1	11.80
610.0	286.1	11.38
590.0	306.1	10.64
570.0	326.1	10.06
550.0	346.1	9.83
530.0	366.1	9.60
510.0	386.1	9.25
490.0	406.1	8.87
470.0	426.1	8.53
450.0	446.1	7.77
430.0	466.1	8.42
410.0	486.1	8.29
390.0	506.1	8.17
370.0	526.1	8.27
350.0	546.1	8.32
340.0	556.1	8.08
320.0	576.1	7.79
310.0	586.1	7.68
290.0	606.1	7.46
280.0	616.1	7.39
260.0	636.1	7.30
250.0	646.1	7.27
230.0	666.1	7.24
220.0	676.1	7.13
200.0	696.1	7.03
190.0	706.1	7.06
170.0	726.1	7.02
160.0	736.1	6.96
140.0	756.1	6.99
130.0	766.1	6.97
110.0	786.1	6.97
100.0	796.1	7.01
80.0	816.1	7.05
70.0	826.1	7.00
50.0	846.1	7.05
40.0	856.1	7.09
20.0	876.1	7.16
10.0	886.1	7.63

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
198.1	58.85	56.34	54.59	54.86	53.64	52.44
268.1	53.53	51.73	50.60	51.15	50.54	49.93
338.1	49.48	48.30	47.56	50.11	49.52	48.93
408.1	47.30	46.48	45.84	50.04	49.06	48.49
478.1	45.41	45.02	44.76	42.46	40.38	39.07
548.1	43.11	42.42	42.01	39.24	39.49	39.89
618.1	41.36	41.22	41.06	36.27	36.52	36.95
688.1	40.44	40.76	40.89	31.53	31.73	32.07
758.1	42.42	43.16	43.57	28.26	28.43	28.74
828.1	43.96	44.97	45.33	28.13	28.41	28.72
898.1	40.69	41.74	42.52	29.95	30.59	31.13
968.1	40.76	41.83	42.26	29.83	30.66	31.28
1038.1	40.14	40.63	40.97	29.73	30.58	31.22
1108.1	39.44	40.40	41.14	29.45	30.26	30.85
1178.1	39.74	41.57	43.38	28.83	29.50	30.01
1248.1	38.16	39.44	40.58	28.06	28.46	28.79
1318.1	37.55	38.74	39.89	28.01	28.37	28.63
1388.1	37.51	38.55	39.51	28.25	28.65	28.91
1458.1	38.61	39.75	40.87	28.67	29.14	29.44
1528.1	39.24	39.87	40.36	28.91	29.40	29.66
1598.1	38.36	38.27	38.22	29.31	29.82	30.05
1668.1	36.35	36.24	36.14	29.86	30.24	30.28
1738.1	34.57	34.93	35.13	30.36	30.31	30.09
1808.1	33.42	34.18	34.69	30.70	30.26	29.91
1878.1	32.86	33.90	34.61	31.00	30.23	29.78
1948.1	32.51	33.47	34.12	30.93	30.01	29.53
2028.1	32.37	33.36	33.89	30.78	29.88	29.25
2098.1	32.10	33.14	33.66	30.54	29.72	29.08
2178.1	31.95	32.88	33.50	30.42	29.40	28.92
2248.1	32.07	32.91	33.41	30.18	29.18	28.75
2328.1	32.23	32.91	33.10	30.16	29.16	28.48
2398.1	31.69	32.27	32.42	30.34	29.43	28.77
2478.1	31.41	31.81	31.95	31.51	30.53	29.89
2548.1	31.47	31.70	31.98	33.54	32.40	31.96
2628.1	31.96	32.40	32.75	37.58	36.20	35.80
2698.1	32.56	33.11	33.55	45.58	42.95	42.08
2778.1	33.32	34.16	34.62	43.60	44.80	45.62
2848.1	33.89	34.88	35.44	35.66	36.36	36.68
2928.1	34.68	35.78	36.33	30.84	31.32	31.49
2998.1	35.47	36.62	37.18	27.90	28.36	28.48

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
280.1	198.1	43.59	42.49	41.86
350.1	268.1	41.46	43.41	44.81
420.1	338.1	40.66	38.33	36.89
490.1	408.1	39.38	37.60	35.98
560.1	478.1	39.37	39.06	38.80
630.1	548.1	37.90	38.60	41.82
700.1	618.1	39.38	40.03	40.58
770.1	688.1	37.30	38.22	39.87
840.1	758.1	39.00	39.59	40.49
910.1	828.1	47.97	51.05	50.95
980.1	898.1	42.07	43.85	44.42
1050.1	968.1	43.31	43.64	43.28
1120.1	1038.1	37.87	37.39	36.71
1190.1	1108.1	36.53	36.29	35.87
1260.1	1178.1	38.35	38.01	37.28
1330.1	1248.1	38.97	38.44	37.94
1400.1	1318.1	37.37	35.84	34.83
1470.1	1388.1	35.97	34.24	33.00
1540.1	1458.1	34.37	32.61	31.40
1610.1	1528.1	32.49	31.07	30.10
1680.1	1598.1	31.21	30.72	30.43
1750.1	1668.1	30.85	31.90	32.80
1820.1	1738.1	31.96	34.71	37.87
1890.1	1808.1	33.24	36.31	39.60
1960.1	1878.1	33.37	34.56	35.15
2030.1	1948.1	31.87	32.02	31.96
2110.1	2028.1	29.67	29.43	29.15
2180.1	2098.1	27.76	27.39	26.96
2260.1	2178.1	25.93	25.55	25.18
2330.1	2248.1	24.81	24.29	23.91
2410.1	2328.1	24.35	23.84	23.48
2480.1	2398.1	24.96	24.51	24.19
2560.1	2478.1	26.78	26.66	26.47
2630.1	2548.1	29.10	29.12	29.01
2710.1	2628.1	32.29	32.43	32.38
2780.1	2698.1	35.42	35.68	35.62
2860.1	2778.1	39.17	39.90	39.98
2930.1	2848.1	41.89	43.75	44.80
3010.1	2928.1	41.94	42.93	43.80
3080.1	2998.1	40.96	40.84	40.89

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
280.1	198.1	2.23	1.92	1.69
350.1	268.1	1.97	1.69	1.51
420.1	338.1	1.71	1.52	1.43
490.1	408.1	1.61	1.49	1.45
560.1	478.1	1.63	1.54	1.51
630.1	548.1	1.41	1.50	1.64
700.1	618.1	1.44	1.51	1.59
770.1	688.1	1.43	1.45	1.49
840.1	758.1	1.49	1.47	1.48
910.1	828.1	1.57	1.53	1.51
980.1	898.1	1.70	1.63	1.59
1050.1	968.1	1.93	1.85	1.81
1120.1	1038.1	2.10	2.01	1.96
1190.1	1108.1	2.15	2.05	2.00
1260.1	1178.1	2.11	2.02	1.97
1330.1	1248.1	2.02	1.92	1.87
1400.1	1318.1	1.94	1.82	1.77
1470.1	1388.1	1.85	1.72	1.67
1540.1	1458.1	1.74	1.62	1.56
1610.1	1528.1	1.70	1.58	1.52
1680.1	1598.1	1.68	1.56	1.50
1750.1	1668.1	1.69	1.54	1.48
1820.1	1738.1	1.66	1.49	1.43
1890.1	1808.1	1.59	1.41	1.35
1960.1	1878.1	1.55	1.35	1.27
2030.1	1948.1	1.52	1.34	1.26
2110.1	2028.1	1.49	1.33	1.27
2180.1	2098.1	1.44	1.30	1.25
2260.1	2178.1	1.43	1.30	1.25
2330.1	2248.1	1.44	1.33	1.29
2410.1	2328.1	1.43	1.35	1.33
2480.1	2398.1	1.41	1.36	1.36
2560.1	2478.1	1.40	1.38	1.40
2630.1	2548.1	1.39	1.39	1.42
2710.1	2628.1	1.37	1.40	1.45
2780.1	2698.1	1.40	1.45	1.51
2860.1	2778.1	1.43	1.50	1.58
2930.1	2848.1	1.43	1.52	1.60
3010.1	2928.1	1.48	1.56	1.64
3080.1	2998.1	1.58	1.67	1.74

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
198.1	102.19	96.51	91.43
268.1	49.64	49.64	48.26
338.1	34.07	33.42	32.79
408.1	22.58	22.29	21.46
478.1	14.38	14.03	13.60
548.1	8.51	8.31	8.12
618.1	4.91	4.78	4.62
688.1	2.45	2.39	2.30
758.1	2.10	2.12	2.12
828.1	3.53	3.59	3.63
898.1	5.83	5.91	5.93
968.1	8.64	8.77	8.77
1038.1	10.96	11.09	11.09
1108.1	12.44	12.44	12.18
1178.1	13.92	13.81	13.39
1248.1	15.53	15.53	15.26
1318.1	15.53	15.26	14.87
1388.1	15.53	15.13	14.38
1458.1	16.11	15.81	15.26
1528.1	15.39	15.26	14.87
1598.1	14.03	13.60	12.99
1668.1	13.60	13.19	12.44
1738.1	13.49	13.19	12.71
1808.1	12.09	11.77	11.38
1878.1	11.31	10.96	10.31
1948.1	10.89	10.62	10.19
2028.1	10.02	9.85	9.58
2098.1	9.28	9.04	8.77
2178.1	8.51	8.31	7.90
2248.1	7.90	7.73	7.44
2328.1	7.31	7.20	7.02
2398.1	6.81	6.68	6.53
2478.1	6.07	5.93	5.74
2548.1	5.47	5.31	5.09
2628.1	4.93	4.80	4.67
2698.1	4.40	4.30	4.20
2778.1	3.75	3.65	3.56
2848.1	3.22	3.13	3.03
2928.1	2.68	2.61	2.55
2998.1	2.28	2.24	2.21

IF (OUT) (MHz)	IF VSWR @LO=814MHz (:1) @LO (dBm)		
	+14	+17	+20
10.0	1.15	1.26	1.35
30.0	1.11	1.21	1.30
50.0	1.13	1.22	1.30
70.0	1.20	1.27	1.35
90.0	1.22	1.30	1.38
110.0	1.23	1.29	1.36
130.0	1.28	1.33	1.39
150.0	1.35	1.38	1.44
170.0	1.40	1.44	1.49
190.0	1.44	1.47	1.52
210.0	1.49	1.51	1.55
230.0	1.54	1.55	1.58
250.0	1.64	1.65	1.68
270.0	1.64	1.65	1.68
290.0	1.69	1.69	1.72
310.0	1.69	1.68	1.70
330.0	1.80	1.78	1.78
350.0	1.81	1.79	1.80
370.0	1.89	1.85	1.85
390.0	1.86	1.83	1.83
410.0	1.93	1.88	1.86
430.0	2.02	1.96	1.94
450.0	2.04	1.98	1.95
470.0	2.06	1.99	1.96
490.0	2.09	2.01	1.96
510.0	2.16	2.07	2.02
530.0	2.20	2.10	2.04
550.0	2.23	2.13	2.07
570.0	2.22	2.11	2.04
590.0	2.29	2.17	2.09
610.0	2.28	2.15	2.07
630.0	2.35	2.22	2.13
650.0	2.31	2.18	2.09
670.0	2.36	2.22	2.13
690.0	2.32	2.18	2.08
710.0	2.38	2.23	2.12
730.0	2.34	2.20	2.09
760.0	2.37	2.22	2.11
780.0	2.31	2.16	2.05
810.0	2.43	2.35	2.29

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	4	14	19	19	28	37	43	42	37	49
1	-	30	+0	36	12	35	25	36	30	38	39	45
2	63	64	55	65	51	58	52	61	52	69	55	65
3	>90	80	72	75	70	74	72	75	79	77	77	77
4	>90	>83	>83	>83	>83	>83	>83	>83	>83	>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: 860.1 MHz; 0.00 dBm.
LO IN: 778.1 MHz; +17.00 dBm
IF OUT: 82 MHz; -7.01 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	14	23	30	29	39	51	58	55	52	52
1	-	30	+0	36	12	36	26	36	32	39	42	46
2	43	53	46	53	41	48	42	51	43	58	46	55
3	66	58	53	58	51	57	51	58	59	59	56	59
4	>90	73	79	68	69	68	66	70	64	81	67	72
5	>90	89	84	91	78	85	75	84	75	82	78	84
6	>90	>93	>93	>93	>93	>93	87	88	88	90	84	>93
7	>90	>93	>93	>93	>93	>93	>93	92	90	89	>93	87
8	>90	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93
9	>90	>93	>93	>93	>93	>93	>93	>93	>93	>93	89	>93
10	>90	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 860.1 MHz; 10.00 dBm.
LO IN: 778.1 MHz; +17.00 dBm
IF OUT: 82 MHz; 2.96 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.