Frequency Mixer HJK-ED9494/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=82MHz (dB) @LO (dBm)		
		+14	+17	+20
234.1	152.1	12.47	10.61	9.60
334.1	252.1	9.57	8.25	7.69
434.1	352.1	7.97	7.18	6.86
534.1	452.1	7.04	6.67	6.49
634.1	552.1	7.83	8.02	7.87
734.1	652.1	7.04	7.03	7.05
834.1	752.1	6.76	6.70	6.67
934.1	852.1	6.89	6.76	6.69
1034.1	952.1	7.17	6.93	6.81
1134.1	1052.1	7.60	7.28	7.12
1234.1	1152.1	8.06	7.66	7.46
1334.1	1252.1	8.34	7.90	7.71
1434.1	1352.1	8.61	8.17	7.95
1534.1	1452.1	8.88	8.37	8.14
1634.1	1552.1	9.08	8.52	8.29
1734.1	1652.1	9.36	8.76	8.47
1834.1	1752.1	9.49	8.94	8.69
1934.1	1852.1	9.58	8.99	8.75
2034.1	1952.1	9.62	9.01	8.77
2134.1	2052.1	9.66	9.04	8.78
2214.1	2132.1	9.67	9.12	8.88
2314.1	2232.1	9.74	9.13	8.90
2394.1	2312.1	9.70	9.14	8.91
2494.1	2412.1	9.68	9.17	8.95
2574.1	2492.1	9.63	9.21	9.00
2674.1	2592.1	9.60	9.22	9.06
2754.1	2672.1	9.58	9.20	9.05
2854.1	2772.1	9.56	9.23	9.12
2934.1	2852.1	9.51	9.23	9.13
3034.1	2952.1	9.43	9.23	9.16
3114.1	3032.1	9.41	9.21	9.15
3214.1	3132.1	9.43	9.29	9.24
3294.1	3212.1	9.44	9.30	9.24
3394.1	3312.1	9.58	9.49	9.46
3474.1	3392.1	9.69	9.57	9.53
3574.1	3492.1	9.92	9.80	9.78
3654.1	3572.1	10.05	9.93	9.91
3754.1	3672.1	10.13	9.94	9.94
3834.1	3752.1	10.21	9.88	9.79
3934.1	3852.1	10.56	10.05	9.86

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
234.1	152.1	9.92	12.37	14.40
334.1	252.1	16.66	20.80	21.64
434.1	352.1	22.21	25.76	27.76
534.1	452.1	20.51	22.22	23.53
634.1	552.1	18.04	22.00	21.13
734.1	652.1	28.58	31.48	33.68
834.1	752.1	29.58	32.33	34.65
934.1	852.1	28.52	31.49	34.92
1034.1	952.1	26.41	28.39	30.86
1134.1	1052.1	23.40	28.99	32.09
1234.1	1152.1	23.70	28.46	31.19
1334.1	1252.1	23.54	25.61	25.91
1434.1	1352.1	23.48	27.05	28.59
1534.1	1452.1	23.19	26.70	29.24
1634.1	1552.1	23.85	25.85	27.05
1734.1	1652.1	23.53	25.93	27.70
1834.1	1752.1	21.98	25.03	28.49
1934.1	1852.1	20.83	24.45	27.72
2034.1	1952.1	20.55	24.04	27.02
2134.1	2052.1	20.56	23.83	26.90
2214.1	2132.1	21.06	24.38	27.59
2314.1	2232.1	21.59	25.46	28.91
2394.1	2312.1	21.93	25.85	29.73
2494.1	2412.1	22.63	25.87	29.98
2574.1	2492.1	23.06	25.95	30.38
2674.1	2592.1	23.51	26.96	31.08
2754.1	2672.1	23.64	27.10	31.04
2854.1	2772.1	24.09	27.71	31.81
2934.1	2852.1	24.03	27.57	32.10
3034.1	2952.1	24.45	28.88	34.77
3114.1	3032.1	24.36	29.82	35.31
3214.1	3132.1	24.21	30.00	36.63
3294.1	3212.1	23.39	28.65	34.42
3394.1	3312.1	23.07	27.25	31.46
3474.1	3392.1	23.12	26.31	29.21
3574.1	3492.1	24.30	27.06	29.24
3654.1	3572.1	25.49	29.20	31.36
3754.1	3672.1	23.36	26.89	31.01
3834.1	3752.1	22.89	25.07	27.72
3934.1	3852.1	22.72	26.25	28.77

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+14dBm (dB) @LO (dBm)		
		+14	+17	+20
234.1	152.1	1.97	1.80	0.87
334.1	252.1	2.04	1.72	0.94
434.1	352.1	1.58	0.60	0.18
534.1	452.1	1.01	0.30	0.11
634.1	552.1	0.32	0.23	0.44
734.1	652.1	0.25	0.12	0.08
834.1	752.1	0.20	0.10	0.08
934.1	852.1	0.31	0.14	0.07
1034.1	952.1	0.47	0.20	0.10
1134.1	1052.1	0.58	0.27	0.13
1234.1	1152.1	0.68	0.34	0.15
1334.1	1252.1	0.82	0.44	0.22
1434.1	1352.1	0.86	0.48	0.24
1534.1	1452.1	0.86	0.50	0.24
1634.1	1552.1	0.84	0.53	0.27
1734.1	1652.1	0.81	0.60	0.33
1834.1	1752.1	0.81	0.61	0.31
1934.1	1852.1	0.77	0.57	0.27
2034.1	1952.1	0.68	0.54	0.24
2134.1	2052.1	0.59	0.48	0.21
2214.1	2132.1	0.55	0.40	0.18
2314.1	2232.1	0.53	0.40	0.21
2394.1	2312.1	0.53	0.34	0.18
2494.1	2412.1	0.52	0.30	0.15
2574.1	2492.1	0.53	0.31	0.15
2674.1	2592.1	0.56	0.31	0.16
2754.1	2672.1	0.54	0.27	0.15
2854.1	2772.1	0.49	0.23	0.13
2934.1	2852.1	0.46	0.20	0.11
3034.1	2952.1	0.40	0.17	0.08
3114.1	3032.1	0.38	0.16	0.08
3214.1	3132.1	0.33	0.13	0.07
3294.1	3212.1	0.30	0.12	0.07
3394.1	3312.1	0.32	0.10	0.05
3474.1	3392.1	0.34	0.12	0.05
3574.1	3492.1	0.42	0.14	0.06
3654.1	3572.1	0.52	0.22	0.08
3754.1	3672.1	0.75	0.43	0.18
3834.1	3752.1	0.85	0.61	0.29
3934.1	3852.1	0.70	0.56	0.30

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=836.5MHz (dB) @LO (dBm) +17
620.0	216.5	10.65
586.1	250.4	9.91
552.2	284.3	9.37
518.3	318.2	8.59
484.4	352.1	8.33
450.6	385.9	7.89
416.7	419.8	7.38
382.8	453.7	7.52
348.9	487.6	7.21
315.0	521.5	7.09
281.1	555.4	8.00
247.2	589.3	7.54
213.3	623.2	7.23
179.4	657.1	6.97
145.6	690.9	6.99
111.7	724.8	6.82
77.8	758.7	6.70
43.9	792.6	6.67
10.0	826.5	7.04
73.3	909.8	6.84
200.0	1036.5	6.94
295.0	1131.5	7.07
421.7	1258.2	7.41
516.7	1353.2	7.79
643.3	1479.8	8.33
738.3	1574.8	8.67
865.0	1701.5	9.04
960.0	1796.5	9.16
1086.7	1923.2	9.14
1181.7	2018.2	9.22
1308.3	2144.8	9.38
1403.3	2239.8	9.31
1530.0	2366.5	9.23
1625.0	2461.5	9.13
1751.7	2588.2	8.84
1846.7	2683.2	8.75
1973.3	2809.8	8.88
2068.3	2904.8	9.10
2195.0	3031.5	9.49
2290.0	3126.5	10.19

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=803.9MHz (dB) @LO (dBm) +17
10.1	814.0	6.97
30.5	834.4	6.70
50.8	854.7	6.70
71.2	875.1	6.79
111.9	915.8	6.83
132.2	936.1	6.86
172.9	976.8	6.90
193.3	997.2	6.90
234.0	1037.9	6.94
254.3	1058.2	7.00
295.0	1098.9	7.05
315.4	1119.3	7.06
356.1	1160.0	7.14
376.4	1180.3	7.20
417.1	1221.0	7.32
437.5	1241.4	7.40
478.2	1282.1	7.62
498.5	1302.4	7.72
539.2	1343.1	7.80
559.6	1363.5	7.87
600.3	1404.2	8.07
620.6	1424.5	8.08
661.3	1465.2	8.24
681.7	1485.6	8.42
722.4	1526.3	8.45
742.7	1546.6	8.49
783.4	1587.3	8.72
803.8	1607.7	8.73
844.5	1648.4	8.81
864.8	1668.7	8.94
905.5	1709.4	8.94
925.9	1729.8	8.97
966.6	1770.5	9.10
986.9	1790.8	9.07
1027.6	1831.5	9.05
1048.0	1851.9	9.13
1088.7	1892.6	9.14
1109.0	1912.9	9.10
1149.7	1953.6	9.23
1170.1	1974.0	9.24

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=869.1MHz (dB) @LO (dBm) +17
630.1	239.0	10.22
614.2	254.9	9.97
598.3	270.8	9.71
582.4	286.7	9.42
566.5	302.6	9.00
550.6	318.5	8.71
534.7	334.4	8.56
518.8	350.3	8.38
502.9	366.2	8.30
487.0	382.1	8.19
471.1	398.0	7.92
455.2	413.9	7.75
439.3	429.8	7.36
423.4	445.7	7.55
407.5	461.6	7.48
391.6	477.5	7.42
375.7	493.4	7.30
359.8	509.3	7.24
343.9	525.2	7.25
328.0	541.1	7.46
312.2	556.9	7.99
296.3	572.8	7.65
280.4	588.7	7.48
264.5	604.6	7.40
248.6	620.5	7.29
232.7	636.4	7.17
216.8	652.3	7.16
200.9	668.2	7.00
185.0	684.1	6.92
169.1	700.0	6.86
153.2	715.9	6.76
137.3	731.8	6.76
121.4	747.7	6.76
105.5	763.6	6.72
89.6	779.5	6.71
73.7	795.4	6.69
57.8	811.3	6.63
41.9	827.2	6.64
26.0	843.1	6.67
10.1	859.0	7.00

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
152.1	64.27	63.27	62.86	66.83	63.26	61.86
252.1	56.66	56.36	56.08	59.13	57.22	56.38
352.1	54.20	53.61	53.43	60.04	57.95	57.24
452.1	53.95	54.04	54.09	64.90	75.38	83.16
552.1	44.10	42.91	42.46	42.85	42.78	43.13
652.1	37.60	37.87	38.24	33.78	34.10	34.47
752.1	35.68	35.90	36.24	30.84	31.11	31.41
852.1	41.76	42.62	43.21	33.02	33.71	34.15
952.1	39.21	39.82	40.17	32.63	33.45	33.96
1052.1	39.18	39.98	40.60	30.90	31.31	31.43
1152.1	40.12	40.93	41.57	29.38	29.86	30.17
1252.1	39.57	40.46	41.26	28.94	29.31	29.64
1352.1	37.55	38.23	38.67	29.18	29.74	30.02
1452.1	37.29	37.63	37.93	29.85	30.27	30.55
1552.1	37.64	37.71	37.88	30.73	31.23	31.55
1652.1	38.78	38.46	38.36	32.09	32.77	33.01
1752.1	38.79	38.31	38.04	31.73	32.20	32.21
1852.1	38.61	38.51	38.58	31.04	31.22	31.30
1952.1	38.37	38.52	38.75	31.14	31.15	31.16
2052.1	38.17	38.36	38.59	31.66	31.47	31.35
2132.1	38.00	38.31	38.45	32.30	32.03	31.74
2232.1	38.10	38.17	38.38	33.46	32.46	32.14
2312.1	38.91	38.99	39.12	33.58	32.08	31.54
2412.1	40.47	40.56	40.47	32.47	30.67	29.81
2492.1	41.45	41.76	41.67	30.60	29.29	28.46
2592.1	41.48	41.89	41.94	29.77	28.63	27.95
2672.1	41.43	41.63	41.79	29.93	28.77	28.39
2772.1	41.49	41.66	41.72	31.15	30.15	29.82
2852.1	41.27	41.18	41.11	33.00	31.94	31.67
2952.1	40.07	39.70	39.25	37.34	36.19	35.65
3032.1	40.06	39.31	38.82	44.58	41.51	40.74
3132.1	39.80	39.24	38.90	39.36	39.46	39.79
3212.1	39.55	39.82	39.99	33.74	34.26	34.83
3312.1	37.37	38.01	38.41	29.95	30.56	31.04
3392.1	34.75	34.77	34.85	28.39	29.04	29.54
3492.1	32.13	31.61	31.49	27.53	28.21	28.78
3572.1	30.35	29.86	29.68	27.07	27.88	28.44
3672.1	29.08	28.53	28.12	26.93	27.64	28.01
3752.1	28.29	27.83	27.24	26.85	27.48	27.62
3852.1	27.82	27.24	26.83	27.01	27.24	27.33

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
234.1	152.1	35.71	36.10	42.16
334.1	252.1	37.09	38.48	42.12
434.1	352.1	36.83	37.18	37.80
534.1	452.1	40.75	41.12	40.98
634.1	552.1	33.00	32.65	34.31
734.1	652.1	40.54	40.73	40.71
834.1	752.1	39.69	40.11	40.81
934.1	852.1	38.47	38.72	38.77
1034.1	952.1	34.45	34.49	34.38
1134.1	1052.1	31.44	31.06	30.74
1234.1	1152.1	32.12	31.99	31.67
1334.1	1252.1	34.32	35.17	35.16
1434.1	1352.1	34.94	36.00	36.12
1534.1	1452.1	34.89	35.74	35.41
1634.1	1552.1	34.11	36.19	36.57
1734.1	1652.1	31.89	35.04	37.55
1834.1	1752.1	32.33	35.26	36.97
1934.1	1852.1	33.78	36.74	37.99
2034.1	1952.1	34.44	37.36	38.49
2134.1	2052.1	34.34	37.51	38.43
2214.1	2132.1	34.58	37.82	38.99
2314.1	2232.1	34.28	37.34	38.36
2394.1	2312.1	34.96	37.10	37.63
2494.1	2412.1	37.10	37.90	37.97
2574.1	2492.1	38.75	38.63	38.55
2674.1	2592.1	42.24	41.07	40.60
2754.1	2672.1	46.49	45.13	44.35
2854.1	2772.1	52.08	54.02	50.37
2934.1	2852.1	48.73	51.62	49.26
3034.1	2952.1	44.22	44.95	44.13
3114.1	3032.1	42.33	42.17	41.42
3214.1	3132.1	40.23	39.52	38.79
3294.1	3212.1	38.53	37.56	36.78
3394.1	3312.1	36.40	35.40	34.81
3474.1	3392.1	35.14	34.22	33.71
3574.1	3492.1	33.77	33.03	32.61
3654.1	3572.1	32.66	32.10	31.79
3754.1	3672.1	31.25	30.74	30.56
3834.1	3752.1	30.28	29.61	29.41
3934.1	3852.1	30.30	29.11	28.73

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
234.1	152.1	2.09	1.81	1.71
334.1	252.1	1.70	1.50	1.48
434.1	352.1	1.55	1.46	1.46
534.1	452.1	1.55	1.53	1.53
634.1	552.1	1.50	1.64	1.82
734.1	652.1	1.68	1.77	1.84
834.1	752.1	1.56	1.61	1.64
934.1	852.1	1.60	1.59	1.60
1034.1	952.1	1.78	1.72	1.70
1134.1	1052.1	2.08	1.97	1.93
1234.1	1152.1	2.38	2.26	2.21
1334.1	1252.1	2.47	2.35	2.30
1434.1	1352.1	2.46	2.34	2.29
1534.1	1452.1	2.42	2.29	2.24
1634.1	1552.1	2.35	2.21	2.16
1734.1	1652.1	2.30	2.15	2.09
1834.1	1752.1	2.19	2.04	1.99
1934.1	1852.1	2.11	1.95	1.90
2034.1	1952.1	2.06	1.89	1.83
2134.1	2052.1	2.01	1.84	1.77
2214.1	2132.1	1.93	1.78	1.72
2314.1	2232.1	1.92	1.78	1.73
2394.1	2312.1	1.88	1.76	1.71
2494.1	2412.1	1.86	1.77	1.72
2574.1	2492.1	1.82	1.74	1.70
2674.1	2592.1	1.76	1.70	1.68
2754.1	2672.1	1.74	1.68	1.66
2854.1	2772.1	1.69	1.63	1.61
2934.1	2852.1	1.62	1.57	1.56
3034.1	2952.1	1.55	1.50	1.49
3114.1	3032.1	1.48	1.43	1.43
3214.1	3132.1	1.41	1.39	1.40
3294.1	3212.1	1.40	1.39	1.40
3394.1	3312.1	1.40	1.41	1.43
3474.1	3392.1	1.45	1.47	1.50
3574.1	3492.1	1.49	1.53	1.56
3654.1	3572.1	1.54	1.59	1.63
3754.1	3672.1	1.55	1.61	1.66
3834.1	3752.1	1.59	1.63	1.69
3934.1	3852.1	1.65	1.68	1.72

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
152.1	29.46	28.96	28.03
252.1	23.81	23.49	22.87
352.1	17.93	17.57	17.22
452.1	11.38	11.17	10.89
552.1	5.12	5.04	4.96
652.1	2.63	2.59	2.54
752.1	2.65	2.67	2.68
852.1	4.62	4.67	4.66
952.1	7.28	7.31	7.22
1052.1	9.48	9.48	9.28
1152.1	11.03	11.03	10.75
1252.1	12.01	11.93	11.61
1352.1	12.26	12.18	11.77
1452.1	12.01	11.93	11.53
1552.1	11.38	11.24	10.82
1652.1	10.69	10.50	10.07
1752.1	10.19	10.02	9.53
1852.1	9.48	9.28	8.81
1952.1	8.68	8.47	8.05
2052.1	7.97	7.76	7.41
2132.1	7.53	7.41	7.17
2232.1	6.94	6.83	6.63
2312.1	6.58	6.49	6.37
2412.1	6.09	6.03	5.91
2492.1	5.72	5.66	5.59
2592.1	5.19	5.13	5.04
2672.1	4.73	4.67	4.57
2772.1	4.11	4.05	3.98
2852.1	3.58	3.51	3.43
2952.1	2.93	2.87	2.82
3032.1	2.47	2.42	2.38
3132.1	2.06	2.04	2.03
3212.1	1.91	1.91	1.92
3312.1	1.99	2.03	2.06
3392.1	2.18	2.23	2.26
3492.1	2.47	2.55	2.58
3572.1	2.67	2.74	2.74
3672.1	2.93	3.00	3.00
3752.1	3.08	3.13	3.10
3852.1	3.26	3.30	3.26

IF (OUT) (MHz)	IF VSWR @LO=859MHz (:1) @LO (dBm)		
	+14	+17	+20
10.0	1.13	1.25	1.32
30.5	1.20	1.32	1.40
51.0	1.21	1.32	1.39
71.5	1.17	1.26	1.33
92.1	1.22	1.31	1.38
112.6	1.32	1.40	1.47
133.1	1.34	1.41	1.46
153.6	1.33	1.39	1.45
174.1	1.40	1.46	1.51
194.6	1.50	1.54	1.59
215.1	1.52	1.55	1.58
235.6	1.52	1.56	1.60
256.2	1.60	1.63	1.67
276.7	1.68	1.70	1.72
297.2	1.68	1.69	1.71
317.7	1.73	1.74	1.77
338.2	1.82	1.83	1.85
358.7	1.84	1.82	1.83
379.2	1.84	1.83	1.84
399.7	1.95	1.95	1.96
420.3	2.02	1.99	2.00
440.8	1.96	1.92	1.92
461.3	2.03	1.99	1.99
481.8	2.15	2.11	2.10
502.3	2.14	2.09	2.07
522.8	2.11	2.06	2.04
543.3	2.21	2.14	2.13
563.8	2.28	2.20	2.17
584.4	2.29	2.20	2.16
604.9	2.25	2.17	2.13
625.4	2.34	2.25	2.21
645.9	2.39	2.28	2.23
666.4	2.33	2.21	2.16
686.9	2.37	2.26	2.22
707.4	2.46	2.34	2.28
727.9	2.42	2.28	2.21
748.5	2.36	2.23	2.16
769.0	2.48	2.35	2.28
789.5	2.48	2.33	2.25
810.0	2.40	2.25	2.18

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	7	8	21	19	25	36	40	54	42	62
1	-	33	+0	37	14	35	24	42	35	49	56	52
2	66	66	69	61	66	61	61	66	65	65	72	75
3	>90	>82	72	79	71	80	72	79	76	>82	>82	>82
4	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
5	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
6	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
7	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
8	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
9	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
10	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 836.5 MHz; -1.00 dBm.
LO IN: 754.5 MHz; +17.00 dBm
IF OUT: 82 MHz; -7.79 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	17	18	31	29	36	49	53	61	57	61
1	-	33	+0	37	14	36	24	43	37	49	56	53
2	46	55	59	51	56	52	51	57	55	57	62	66
3	68	73	51	67	50	64	52	62	56	67	62	72
4	>90	92	91	82	84	79	80	82	77	82	81	80
5	>90	>92	>92	>92	88	91	87	89	89	>92	91	>92
6	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
7	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
8	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
9	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
10	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 836.5 MHz; 9.00 dBm.
LO IN: 754.5 MHz; +17.00 dBm
IF OUT: 82 MHz; 2.2 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.