Frequency Mixer HJK-ED12917/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=150MHz (dB) @LO (dBm)		
		+13	+16	+19
260.1	110.1	10.34	8.52	7.36
320.1	170.1	8.13	7.24	6.78
380.1	230.1	7.11	6.76	6.55
440.1	290.1	6.83	6.59	6.44
500.1	350.1	6.66	6.50	6.39
560.1	410.1	6.57	6.47	6.38
620.1	470.1	7.91	7.86	7.87
680.1	530.1	7.23	7.21	7.23
740.1	590.1	7.00	6.97	6.96
800.1	650.1	6.91	6.85	6.82
860.1	710.1	7.12	7.04	6.98
920.1	770.1	7.31	7.21	7.13
980.1	830.1	7.66	7.57	7.52
1040.1	890.1	8.16	8.04	7.97
1100.1	950.1	8.04	7.91	7.81
1160.1	1010.1	8.04	7.91	7.83
1220.1	1070.1	8.20	8.09	8.02
1280.1	1130.1	8.25	8.14	8.07
1340.1	1190.1	8.25	8.09	8.03
1400.1	1250.1	8.39	8.26	8.19
1460.1	1310.1	8.36	8.22	8.14
1520.1	1370.1	8.38	8.22	8.13
1580.1	1430.1	8.44	8.29	8.20
1640.1	1490.1	8.41	8.26	8.20
1700.1	1550.1	8.77	8.64	8.57
1760.1	1610.1	9.12	8.96	8.86
1820.1	1670.1	8.79	8.61	8.53
1880.1	1730.1	8.61	8.47	8.41
1940.1	1790.1	8.56	8.45	8.43
2000.1	1850.1	8.45	8.36	8.35
2060.1	1910.1	8.43	8.34	8.34
2120.1	1970.1	8.79	8.72	8.74
2200.1	2050.1	9.10	9.12	9.20
2260.1	2110.1	9.05	9.06	9.15
2340.1	2190.1	9.18	9.23	9.34
2400.1	2250.1	9.35	9.39	9.50
2480.1	2330.1	9.52	9.55	9.64
2540.1	2390.1	9.66	9.69	9.78
2620.1	2470.1	9.96	9.99	10.07
2680.1	2530.1	10.27	10.32	10.42

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+13	+16	+19
260.1	110.1	9.72	10.49	11.99
320.1	170.1	10.92	13.16	16.89
380.1	230.1	14.26	18.36	19.70
440.1	290.1	16.83	21.29	24.33
500.1	350.1	22.21	28.67	32.37
560.1	410.1	22.76	23.52	25.24
620.1	470.1	20.70	24.28	26.87
680.1	530.1	26.45	28.70	31.25
740.1	590.1	29.37	31.16	33.78
800.1	650.1	29.76	32.82	36.00
860.1	710.1	27.28	30.26	35.19
920.1	770.1	25.74	27.30	29.34
980.1	830.1	23.35	24.86	26.81
1040.1	890.1	23.63	25.67	28.01
1100.1	950.1	22.96	24.38	25.96
1160.1	1010.1	22.12	24.15	26.62
1220.1	1070.1	21.08	22.82	25.51
1280.1	1130.1	20.75	22.21	24.68
1340.1	1190.1	20.31	21.82	24.08
1400.1	1250.1	20.00	21.57	23.75
1460.1	1310.1	19.92	21.38	23.37
1520.1	1370.1	19.84	21.31	23.11
1580.1	1430.1	20.41	22.05	23.73
1640.1	1490.1	21.16	23.72	26.05
1700.1	1550.1	23.67	26.94	28.96
1760.1	1610.1	22.71	26.13	28.85
1820.1	1670.1	18.71	21.62	24.34
1880.1	1730.1	19.00	21.74	24.39
1940.1	1790.1	19.24	21.96	24.84
2000.1	1850.1	19.44	22.00	24.65
2060.1	1910.1	19.80	22.23	24.65
2120.1	1970.1	19.38	21.50	23.89
2200.1	2050.1	21.00	23.49	26.85
2260.1	2110.1	22.08	24.36	28.27
2340.1	2190.1	23.11	25.41	29.85
2400.1	2250.1	23.22	25.15	28.82
2480.1	2330.1	24.01	25.88	28.09
2540.1	2390.1	24.96	26.98	28.95
2620.1	2470.1	25.83	27.91	29.92
2680.1	2530.1	26.21	28.53	30.31

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+20dBm (dB) @LO (dBm)		
		+13	+16	+19
260.1	110.1	11.99	11.64	11.14
320.1	170.1	11.71	10.93	9.46
380.1	230.1	10.52	8.83	6.84
440.1	290.1	11.68	9.12	6.39
500.1	350.1	6.89	5.05	3.17
560.1	410.1	5.16	3.28	1.77
620.1	470.1	2.93	2.07	1.34
680.1	530.1	1.97	0.98	0.43
740.1	590.1	1.33	0.53	0.26
800.1	650.1	1.66	0.56	0.26
860.1	710.1	3.58	1.66	0.44
920.1	770.1	3.69	1.86	0.61
980.1	830.1	3.19	1.54	0.67
1040.1	890.1	3.46	1.91	0.99
1100.1	950.1	4.21	2.57	1.44
1160.1	1010.1	4.37	2.61	1.32
1220.1	1070.1	4.66	2.87	1.46
1280.1	1130.1	5.21	3.26	1.64
1340.1	1190.1	5.62	3.59	1.87
1400.1	1250.1	5.68	3.68	1.86
1460.1	1310.1	6.02	4.01	2.10
1520.1	1370.1	6.22	4.29	2.52
1580.1	1430.1	5.74	4.04	2.42
1640.1	1490.1	6.04	4.11	2.42
1700.1	1550.1	5.92	3.80	2.11
1760.1	1610.1	6.23	4.25	2.53
1820.1	1670.1	6.67	4.82	3.31
1880.1	1730.1	6.45	4.61	3.06
1940.1	1790.1	6.65	4.69	2.99
2000.1	1850.1	6.53	4.64	2.98
2060.1	1910.1	6.20	4.23	2.74
2120.1	1970.1	6.01	4.08	2.64
2200.1	2050.1	5.01	3.14	1.78
2260.1	2110.1	4.88	2.99	1.59
2340.1	2190.1	4.62	2.78	1.34
2400.1	2250.1	4.62	2.78	1.33
2480.1	2330.1	4.24	2.39	1.13
2540.1	2390.1	3.38	1.76	0.76
2620.1	2470.1	3.35	1.78	0.73
2680.1	2530.1	3.28	1.78	0.72

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=925MHz (dB) @LO (dBm) +16
460.0	465.0	8.28
434.0	491.0	7.51
408.1	516.9	7.23
382.1	542.9	7.11
356.2	568.8	7.02
330.2	594.8	7.07
304.2	620.8	7.05
278.3	646.7	7.04
252.3	672.7	7.01
226.3	698.7	7.05
200.4	724.6	7.14
174.4	750.6	7.16
148.5	776.5	7.28
122.5	802.5	7.41
96.5	828.5	7.59
70.6	854.4	7.81
53.3	871.7	7.93
27.3	897.7	7.95
10.0	915.0	8.25
72.7	997.7	7.80
135.4	1060.4	7.81
229.4	1154.4	7.89
292.1	1217.1	7.89
386.2	1311.2	7.86
448.8	1373.8	7.76
542.9	1467.9	7.74
605.6	1530.6	7.96
699.6	1624.6	8.56
762.3	1687.3	8.26
856.3	1781.3	8.23
919.0	1844.0	8.31
1013.1	1938.1	8.29
1075.8	2000.8	8.37
1169.8	2094.8	8.54
1232.5	2157.5	8.69
1326.5	2251.5	8.86
1389.2	2314.2	9.03
1483.3	2408.3	9.41
1546.0	2471.0	9.73
1640.0	2565.0	10.20

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=589.9MHz (dB) @LO (dBm) +16
10.1	600.0	7.46
50.1	640.0	7.01
90.1	680.0	6.96
130.1	720.0	6.84
170.1	760.0	6.88
210.1	800.0	7.40
250.1	840.0	7.66
290.1	880.0	7.82
330.1	920.0	7.54
370.1	960.0	7.39
410.1	1000.0	7.33
450.1	1040.0	7.29
490.1	1080.0	7.25
530.1	1120.0	7.26
570.1	1160.0	7.26
610.1	1200.0	7.26
650.1	1240.0	7.27
690.1	1280.0	7.30
730.1	1320.0	7.34
770.1	1360.0	7.41
810.1	1400.0	7.45
850.1	1440.0	7.61
890.1	1480.0	7.84
950.1	1540.0	8.09
990.1	1580.0	8.64
1050.1	1640.0	8.41
1090.1	1680.0	8.13
1150.1	1740.0	7.92
1190.1	1780.0	7.93
1250.1	1840.0	7.98
1290.1	1880.0	8.03
1350.1	1940.0	8.22
1390.1	1980.0	8.49
1450.1	2040.0	8.79
1490.1	2080.0	8.99
1550.1	2140.0	9.30
1590.1	2180.0	9.55
1650.1	2240.0	9.79
1690.1	2280.0	9.98
1750.1	2340.0	10.28

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1260.1MHz (dB) @LO (dBm) +16
810.1	450.0	9.37
789.6	470.5	7.73
769.1	491.0	7.49
748.6	511.5	7.44
728.0	532.1	7.40
707.5	552.6	7.27
687.0	573.1	7.35
666.5	593.6	7.29
646.0	614.1	7.36
625.5	634.6	7.46
605.0	655.1	7.39
584.5	675.6	7.42
563.9	696.2	7.40
543.4	716.7	7.48
522.9	737.2	7.45
502.4	757.7	7.54
481.9	778.2	7.56
461.4	798.7	7.56
440.9	819.2	7.61
420.4	839.7	7.69
399.8	860.3	8.01
379.3	880.8	8.07
358.8	901.3	8.03
338.3	921.8	7.91
317.8	942.3	7.88
297.3	962.8	7.91
276.8	983.3	7.90
256.3	1003.8	7.97
235.7	1024.4	7.93
215.2	1044.9	7.98
194.7	1065.4	7.99
174.2	1085.9	8.01
153.7	1106.4	8.03
133.2	1126.9	8.04
112.7	1147.4	8.08
92.2	1167.9	8.11
71.6	1188.5	8.12
51.1	1209.0	8.11
30.6	1229.5	8.13
10.1	1250.0	8.58

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+13	+16	+19	+13	+16	+19
110.1	63.74	63.33	63.30	50.17	49.74	49.46
170.1	59.60	59.28	59.08	45.79	45.43	45.22
230.1	57.27	57.10	57.10	42.68	42.33	42.20
290.1	53.25	53.03	52.82	40.46	40.31	40.19
350.1	48.53	48.34	48.06	38.13	37.95	37.80
410.1	38.95	38.54	38.15	35.39	35.17	34.95
470.1	40.53	40.41	40.49	37.52	36.84	36.40
530.1	39.00	38.99	39.07	36.09	35.77	35.47
590.1	39.20	39.14	39.23	36.41	36.11	35.83
650.1	40.92	40.66	40.67	38.23	37.79	37.53
710.1	46.10	45.38	45.12	39.84	39.76	39.62
770.1	48.18	49.64	50.93	37.14	37.28	37.27
830.1	41.97	41.15	40.56	35.61	36.18	36.62
890.1	36.69	36.22	35.90	38.71	38.23	37.56
950.1	38.99	38.94	38.86	36.34	35.98	35.61
1010.1	40.68	40.56	40.39	35.19	35.00	34.80
1070.1	41.28	41.27	41.15	34.37	34.40	34.34
1130.1	41.16	41.10	40.94	33.62	33.66	33.61
1190.1	40.41	40.37	40.22	32.91	32.95	32.88
1250.1	39.68	39.61	39.44	32.43	32.47	32.39
1310.1	38.59	38.49	38.31	32.08	32.17	32.09
1370.1	37.30	37.15	37.13	31.85	31.94	32.03
1430.1	35.81	35.83	35.67	32.18	32.31	32.36
1490.1	34.11	34.08	33.97	33.54	33.83	34.03
1550.1	32.21	32.29	32.46	37.74	37.65	37.27
1610.1	34.20	35.00	35.82	30.99	30.29	29.77
1670.1	38.67	40.36	41.96	27.98	27.52	27.21
1730.1	40.02	41.32	42.21	27.18	26.88	26.57
1790.1	39.49	40.11	40.45	26.91	26.64	26.40
1850.1	38.67	38.94	39.01	26.71	26.56	26.35
1910.1	37.19	37.06	37.23	26.49	26.20	26.24
1970.1	35.74	35.84	36.13	26.33	26.12	26.03
2050.1	37.62	37.97	38.56	26.01	25.68	25.66
2110.1	39.15	39.63	40.12	25.88	25.57	25.34
2190.1	39.37	39.73	39.79	25.63	25.51	25.26
2250.1	37.75	37.35	36.83	25.93	25.73	25.46
2330.1	34.38	33.26	32.62	27.01	26.82	26.90
2390.1	32.04	30.93	30.33	28.11	28.04	28.23
2470.1	30.64	29.89	29.24	29.03	29.06	29.12
2530.1	30.43	29.89	29.38	29.19	29.24	29.20

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+13	+16	+19
260.1	110.1	37.86	37.78	39.51
320.1	170.1	37.24	37.97	40.47
380.1	230.1	37.77	38.89	41.75
440.1	290.1	31.22	29.94	28.93
500.1	350.1	33.34	33.41	33.99
560.1	410.1	31.77	31.64	31.75
620.1	470.1	38.78	39.72	40.14
680.1	530.1	37.73	38.12	38.51
740.1	590.1	36.16	36.40	36.77
800.1	650.1	35.96	36.22	36.59
860.1	710.1	39.01	39.48	39.89
920.1	770.1	33.81	33.39	32.89
980.1	830.1	29.32	28.97	28.65
1040.1	890.1	26.52	26.53	26.57
1100.1	950.1	29.76	30.18	30.44
1160.1	1010.1	31.94	32.32	32.60
1220.1	1070.1	33.08	33.42	33.65
1280.1	1130.1	33.75	34.11	34.50
1340.1	1190.1	33.36	33.51	33.48
1400.1	1250.1	33.27	33.25	33.19
1460.1	1310.1	33.02	32.77	32.33
1520.1	1370.1	32.62	32.51	32.37
1580.1	1430.1	33.04	32.88	32.69
1640.1	1490.1	40.89	40.19	39.89
1700.1	1550.1	40.22	40.88	41.32
1760.1	1610.1	31.61	31.39	31.55
1820.1	1670.1	30.85	31.09	31.65
1880.1	1730.1	32.89	33.21	34.05
1940.1	1790.1	34.28	34.36	35.13
2000.1	1850.1	35.47	35.39	36.19
2060.1	1910.1	36.06	35.71	36.36
2120.1	1970.1	40.12	39.58	41.02
2200.1	2050.1	49.73	47.83	47.86
2260.1	2110.1	47.94	44.96	44.21
2340.1	2190.1	46.51	42.81	41.39
2400.1	2250.1	47.17	44.61	43.14
2480.1	2330.1	39.54	41.27	42.67
2540.1	2390.1	35.75	37.02	38.38
2620.1	2470.1	33.61	34.51	35.68
2680.1	2530.1	32.87	33.53	34.42

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+13	+16	+19
260.1	110.1	1.50	1.55	1.61
320.1	170.1	1.69	1.77	1.83
380.1	230.1	1.95	2.00	2.03
440.1	290.1	2.06	2.11	2.14
500.1	350.1	2.21	2.23	2.25
560.1	410.1	2.32	2.31	2.31
620.1	470.1	2.31	2.39	2.46
680.1	530.1	2.23	2.26	2.29
740.1	590.1	2.23	2.23	2.23
800.1	650.1	2.31	2.28	2.27
860.1	710.1	2.53	2.49	2.47
920.1	770.1	2.75	2.71	2.67
980.1	830.1	2.61	2.57	2.53
1040.1	890.1	2.72	2.67	2.64
1100.1	950.1	2.77	2.72	2.68
1160.1	1010.1	2.73	2.67	2.63
1220.1	1070.1	2.68	2.62	2.58
1280.1	1130.1	2.56	2.50	2.46
1340.1	1190.1	2.45	2.40	2.35
1400.1	1250.1	2.31	2.25	2.21
1460.1	1310.1	2.16	2.11	2.07
1520.1	1370.1	2.03	1.98	1.95
1580.1	1430.1	1.90	1.86	1.83
1640.1	1490.1	1.80	1.77	1.74
1700.1	1550.1	1.67	1.64	1.61
1760.1	1610.1	1.52	1.50	1.49
1820.1	1670.1	1.43	1.42	1.42
1880.1	1730.1	1.39	1.39	1.41
1940.1	1790.1	1.35	1.37	1.41
2000.1	1850.1	1.35	1.39	1.43
2060.1	1910.1	1.38	1.43	1.49
2120.1	1970.1	1.43	1.50	1.58
2200.1	2050.1	1.57	1.67	1.77
2260.1	2110.1	1.69	1.79	1.88
2340.1	2190.1	1.83	1.92	2.03
2400.1	2250.1	1.90	2.00	2.10
2480.1	2330.1	2.07	2.18	2.28
2540.1	2390.1	2.21	2.32	2.42
2620.1	2470.1	2.37	2.48	2.60
2680.1	2530.1	2.48	2.59	2.70

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+13	+16	+19
110.1	29.46	29.96	29.46
170.1	28.96	29.46	28.96
230.1	28.49	28.96	28.49
290.1	27.16	27.59	27.16
350.1	24.14	24.48	23.81
410.1	15.26	15.13	14.74
470.1	9.85	9.79	9.63
530.1	5.33	5.25	5.14
590.1	2.46	2.42	2.36
650.1	1.34	1.33	1.31
710.1	1.53	1.55	1.57
770.1	2.06	2.08	2.10
830.1	2.66	2.68	2.71
890.1	3.22	3.24	3.26
950.1	3.82	3.86	3.87
1010.1	4.34	4.37	4.38
1070.1	4.78	4.80	4.79
1130.1	5.20	5.23	5.23
1190.1	5.51	5.52	5.51
1250.1	5.81	5.83	5.81
1310.1	6.07	6.11	6.09
1370.1	6.24	6.24	6.17
1430.1	6.37	6.39	6.37
1490.1	6.28	6.28	6.24
1550.1	5.58	5.54	5.44
1610.1	5.27	5.28	5.30
1670.1	5.87	5.87	5.83
1730.1	6.37	6.37	6.32
1790.1	6.73	6.73	6.73
1850.1	6.78	6.73	6.66
1910.1	6.86	6.86	6.81
1970.1	6.73	6.68	6.63
2050.1	6.97	6.91	6.78
2110.1	7.08	7.05	6.97
2190.1	6.89	6.86	6.81
2250.1	6.51	6.42	6.28
2330.1	6.05	5.93	5.74
2390.1	5.85	5.79	5.72
2470.1	5.58	5.54	5.49
2530.1	5.22	5.14	5.00

IF (OUT) (MHz)	IF VSWR @LO=1100MHz (:1) @LO (dBm)		
	+13	+16	+19
10.1	2.13	2.29	2.45
30.5	2.12	2.29	2.46
50.9	2.09	2.27	2.42
71.3	2.05	2.22	2.37
91.7	2.08	2.25	2.41
112.1	2.08	2.25	2.40
132.5	2.00	2.16	2.30
153.0	1.98	2.14	2.27
173.4	2.03	2.19	2.33
193.8	1.99	2.14	2.27
214.2	1.90	2.04	2.17
234.6	1.92	2.06	2.19
255.0	1.91	2.04	2.16
275.4	1.88	2.00	2.12
295.8	1.85	1.97	2.08
316.2	1.85	1.96	2.07
336.6	1.80	1.91	2.00
357.0	1.80	1.90	1.99
377.4	1.79	1.89	1.98
397.9	1.76	1.85	1.93
438.7	1.70	1.77	1.84
459.1	1.73	1.80	1.87
499.9	1.64	1.69	1.74
520.3	1.65	1.68	1.73
561.1	1.63	1.65	1.68
581.5	1.62	1.63	1.66
622.3	1.64	1.62	1.63
642.8	1.62	1.61	1.61
683.6	1.61	1.58	1.57
704.0	1.61	1.57	1.56
744.8	1.62	1.58	1.55
765.2	1.61	1.56	1.53
806.0	1.61	1.55	1.51
826.4	1.63	1.56	1.52
867.2	1.54	1.47	1.42
887.7	1.57	1.49	1.44
928.5	1.56	1.48	1.42
948.9	1.56	1.47	1.41
989.7	1.52	1.43	1.36
1010.1	1.52	1.43	1.37

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	14	14	23	21	28	32	42	50	38	45
1	-	25	+0	27	13	29	32	32	45	36	57	40
2	61	56	43	60	44	53	46	62	50	58	55	65
3	>90	82	60	70	58	63	62	63	74	68	76	70
4	>90	>83	>83	>83	74	78	71	75	71	78	82	80
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: 925 MHz; 0.00 dBm.**
LO IN: 775 MHz; +16.00 dBm
IF OUT: 150 MHz; -7.38 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	24	26	34	33	33	52	43	50	45	51
1	-	25	+0	27	14	30	35	34	50	40	49	47
2	41	46	32	46	32	44	36	62	41	48	47	53
3	65	66	44	60	42	51	43	48	57	53	71	59
4	89	72	65	63	53	54	48	52	48	55	60	57
5	>90	79	67	73	64	62	60	60	80	60	74	81
6	>90	84	85	82	84	74	68	68	63	65	61	66
7	>90	>93	85	84	81	80	79	72	75	71	74	76
8	>90	>93	>93	90	90	86	85	90	79	89	74	77
9	>90	>93	>93	>93	>93	>93	92	90	92	84	85	79
10	>90	>93	>93	>93	>93	>93	>93	>93	>93	>93	89	88
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 925 MHz; 10.00 dBm.**
LO IN: 775 MHz; +16.00 dBm
IF OUT: 150 MHz; 2.53 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.