Frequency Mixer HJK-212H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=140MHz (dB) @LO (dBm)		
		+14	+17	+20
780.0	640.0	10.62	9.38	8.57
830.0	690.0	9.93	8.77	7.96
880.0	740.0	9.66	8.57	7.88
930.0	790.0	9.17	8.25	7.60
980.0	840.0	9.09	8.21	7.62
1030.0	890.0	8.95	8.21	7.69
1080.0	940.0	8.87	8.20	7.72
1130.0	990.0	8.76	8.15	7.71
1180.0	1040.0	8.70	8.18	7.81
1230.0	1090.0	8.57	8.07	7.70
1280.0	1140.0	8.46	8.00	7.66
1330.0	1190.0	8.31	7.88	7.56
1380.0	1240.0	8.26	7.86	7.57
1430.0	1290.0	8.08	7.72	7.45
1480.0	1340.0	8.05	7.72	7.49
1530.0	1390.0	7.78	7.48	7.26
1580.0	1440.0	7.65	7.36	7.15
1630.0	1490.0	7.41	7.15	6.95
1690.0	1550.0	7.29	6.99	6.76
1740.0	1600.0	7.17	6.86	6.60
1800.0	1660.0	7.07	6.72	6.38
1850.0	1710.0	6.99	6.64	6.24
1910.0	1770.0	6.85	6.55	6.22
1960.0	1820.0	6.94	6.65	6.36
2020.0	1880.0	6.80	6.51	6.28
2070.0	1930.0	6.94	6.64	6.39
2130.0	1990.0	6.93	6.62	6.42
2180.0	2040.0	7.09	6.75	6.50
2240.0	2100.0	7.23	6.88	6.65
2290.0	2150.0	7.37	7.02	6.80
2350.0	2210.0	7.62	7.23	7.02
2400.0	2260.0	7.70	7.30	7.12
2460.0	2320.0	8.05	7.60	7.42
2510.0	2370.0	8.18	7.73	7.58
2570.0	2430.0	8.63	8.11	7.95
2620.0	2480.0	8.81	8.27	8.15
2680.0	2540.0	9.17	8.62	8.55
2730.0	2590.0	9.48	8.88	8.95
2790.0	2650.0	9.79	9.17	9.37
2840.0	2700.0	10.40	9.65	10.28

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
780.0	640.0	10.74	12.66	15.55
830.0	690.0	11.02	13.23	17.14
880.0	740.0	11.24	13.81	17.64
930.0	790.0	11.94	15.08	18.98
980.0	840.0	12.29	15.06	17.59
1030.0	890.0	13.28	15.57	17.76
1080.0	940.0	14.10	16.48	18.67
1130.0	990.0	15.07	17.63	20.00
1180.0	1040.0	16.00	18.59	21.18
1230.0	1090.0	17.03	19.45	21.75
1280.0	1140.0	17.86	20.15	22.34
1330.0	1190.0	18.92	21.24	23.63
1380.0	1240.0	20.02	22.60	25.23
1430.0	1290.0	21.23	24.03	26.71
1480.0	1340.0	23.10	26.34	28.92
1530.0	1390.0	25.08	28.83	31.48
1580.0	1440.0	26.49	30.31	32.83
1630.0	1490.0	28.18	31.90	34.94
1690.0	1550.0	29.12	32.29	35.97
1740.0	1600.0	30.12	33.28	38.40
1800.0	1660.0	30.88	34.72	38.27
1850.0	1710.0	30.68	35.43	36.96
1910.0	1770.0	29.03	32.48	34.95
1960.0	1820.0	27.87	31.27	34.50
2020.0	1880.0	26.92	29.87	33.08
2070.0	1930.0	26.03	29.08	32.39
2130.0	1990.0	25.28	28.35	32.32
2180.0	2040.0	24.02	27.21	30.91
2240.0	2100.0	23.33	26.61	29.93
2290.0	2150.0	22.26	25.44	28.44
2350.0	2210.0	21.06	24.24	27.79
2400.0	2260.0	20.70	23.89	27.39
2460.0	2320.0	19.08	22.36	25.52
2510.0	2370.0	18.95	22.17	25.68
2570.0	2430.0	17.43	20.74	23.98
2620.0	2480.0	17.05	20.35	23.69
2680.0	2540.0	16.21	19.39	22.59
2730.0	2590.0	15.16	18.36	21.54
2790.0	2650.0	14.89	18.35	21.13
2840.0	2700.0	13.46	16.80	19.41

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+20dBm (dB) @LO (dBm)		
		+14	+17	+20
780.0	640.0	10.26	9.26	7.65
830.0	690.0	10.33	9.15	7.44
880.0	740.0	10.30	9.09	7.44
930.0	790.0	9.99	8.63	6.87
980.0	840.0	9.61	8.18	6.45
1030.0	890.0	9.03	7.36	5.36
1080.0	940.0	8.53	6.75	4.78
1130.0	990.0	7.98	6.08	4.05
1180.0	1040.0	7.41	5.42	3.39
1230.0	1090.0	6.72	4.67	2.75
1280.0	1140.0	5.98	3.96	2.17
1330.0	1190.0	5.27	3.29	1.72
1380.0	1240.0	4.43	2.57	1.32
1430.0	1290.0	3.62	1.99	1.04
1480.0	1340.0	2.81	1.54	0.81
1530.0	1390.0	2.15	1.15	0.60
1580.0	1440.0	1.78	0.92	0.45
1630.0	1490.0	1.39	0.67	0.31
1690.0	1550.0	1.28	0.54	0.22
1740.0	1600.0	1.05	0.39	0.16
1800.0	1660.0	0.87	0.31	0.10
1850.0	1710.0	0.80	0.30	0.19
1910.0	1770.0	0.75	0.30	0.18
1960.0	1820.0	0.81	0.33	0.19
2020.0	1880.0	1.20	0.50	0.27
2070.0	1930.0	1.53	0.61	0.30
2130.0	1990.0	2.03	0.86	0.40
2180.0	2040.0	2.74	1.24	0.54
2240.0	2100.0	3.27	1.58	0.66
2290.0	2150.0	4.01	2.20	0.92
2350.0	2210.0	4.80	2.89	1.28
2400.0	2260.0	5.14	3.12	1.49
2460.0	2320.0	6.15	4.15	2.27
2510.0	2370.0	5.98	4.01	2.15
2570.0	2430.0	6.95	5.03	2.82
2620.0	2480.0	7.32	5.47	3.27
2680.0	2540.0	7.55	5.85	3.61
2730.0	2590.0	7.66	6.14	3.71
2790.0	2650.0	7.49	6.04	3.65
2840.0	2700.0	7.92	6.60	3.89

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1900MHz (dB) @LO (dBm) +17
800.0	1100.0	11.56
753.5	1146.5	11.22
707.1	1192.9	11.00
660.6	1239.4	10.68
614.1	1285.9	10.33
567.6	1332.4	9.90
521.2	1378.8	9.47
474.7	1425.3	8.96
428.2	1471.8	8.48
381.8	1518.2	8.05
335.3	1564.7	7.59
288.8	1611.2	7.10
242.4	1657.6	6.83
195.9	1704.1	6.66
149.4	1750.6	6.63
102.9	1797.1	6.58
56.5	1843.5	6.57
10.0	1890.0	6.95
26.9	1926.9	6.58
60.6	1960.6	6.66
94.3	1994.3	6.72
128.0	2028.0	6.85
161.7	2061.7	6.93
195.4	2095.4	7.04
229.1	2129.1	7.26
246.0	2146.0	7.33
279.7	2179.7	7.48
296.6	2196.6	7.61
330.3	2230.3	7.90
347.1	2247.1	7.96
380.9	2280.9	8.16
397.7	2297.7	8.34
431.4	2331.4	8.63
448.3	2348.3	8.75
482.0	2382.0	9.07
498.9	2398.9	9.37
532.6	2432.6	9.78
549.4	2449.4	9.87
583.1	2483.1	10.49
600.0	2500.0	10.98

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1689.9MHz (dB) @LO (dBm) +17
10.1	1700.0	7.11
30.1	1720.0	6.73
50.1	1740.0	6.73
70.1	1760.0	6.74
90.1	1780.0	6.73
100.1	1790.0	6.72
120.1	1810.0	6.75
130.1	1820.0	6.76
150.1	1840.0	6.80
160.1	1850.0	6.83
180.1	1870.0	6.86
190.1	1880.0	6.88
210.1	1900.0	6.95
220.1	1910.0	6.98
240.1	1930.0	7.07
250.1	1940.0	7.12
270.1	1960.0	7.21
280.1	1970.0	7.26
300.1	1990.0	7.38
310.1	2000.0	7.45
330.1	2020.0	7.57
340.1	2030.0	7.64
360.1	2050.0	7.81
370.1	2060.0	7.87
390.1	2080.0	8.03
400.1	2090.0	8.11
420.1	2110.0	8.21
430.1	2120.0	8.35
450.1	2140.0	8.66
460.1	2150.0	8.70
480.1	2170.0	8.85
490.1	2180.0	8.97
510.1	2200.0	9.14
520.1	2210.0	9.28
540.1	2230.0	9.53
550.1	2240.0	9.56
570.1	2260.0	9.69
580.1	2270.0	9.82
600.1	2290.0	9.97
610.1	2300.0	10.09

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2100.1MHz (dB) @LO (dBm) +17
710.1	1390.0	11.07
690.1	1410.0	10.87
670.1	1430.0	10.70
650.1	1450.0	10.45
630.1	1470.0	10.20
610.1	1490.0	9.87
590.1	1510.0	9.59
570.1	1530.0	9.39
550.1	1550.0	9.09
530.1	1570.0	8.75
510.1	1590.0	8.45
490.1	1610.0	8.19
470.1	1630.0	7.96
450.1	1650.0	7.72
430.1	1670.0	7.43
410.1	1690.0	7.29
390.1	1710.0	7.14
370.1	1730.0	7.01
350.1	1750.0	6.66
330.1	1770.0	6.61
310.1	1790.0	6.58
290.1	1810.0	6.57
270.1	1830.0	6.57
250.1	1850.0	6.58
230.1	1870.0	6.58
220.1	1880.0	6.54
200.1	1900.0	6.52
190.1	1910.0	6.55
170.1	1930.0	6.55
160.1	1940.0	6.57
140.1	1960.0	6.60
130.1	1970.0	6.59
110.1	1990.0	6.59
100.1	2000.0	6.61
80.1	2020.0	6.64
70.1	2030.0	6.69
50.1	2050.0	6.70
40.1	2060.0	6.70
20.1	2080.0	6.74
10.1	2090.0	7.08

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
640.0	39.96	39.55	39.28	39.94	39.77	39.66
690.0	40.11	39.65	39.40	39.45	39.27	39.18
740.0	40.06	39.37	39.21	38.89	38.68	38.70
790.0	39.61	39.10	38.85	38.63	38.61	38.53
840.0	39.58	39.31	39.32	38.53	38.47	38.37
890.0	38.86	38.58	38.48	38.94	38.98	38.84
940.0	38.92	38.77	38.77	39.45	39.59	39.58
990.0	39.45	39.47	39.58	40.12	40.32	40.38
1040.0	40.09	40.22	40.15	41.10	41.46	41.69
1090.0	42.41	42.84	43.07	42.05	42.41	42.69
1140.0	44.53	45.43	46.14	43.34	43.74	44.02
1190.0	40.10	40.39	40.65	44.25	44.89	45.25
1240.0	40.51	40.57	40.73	45.27	45.82	46.29
1290.0	42.83	43.17	43.50	46.72	47.35	47.86
1340.0	47.16	47.51	47.61	46.99	47.50	47.88
1390.0	51.82	51.87	51.26	44.63	44.89	45.15
1440.0	57.58	54.75	52.17	41.57	41.69	41.74
1490.0	57.18	53.44	51.10	38.64	38.71	38.72
1550.0	54.99	51.94	50.19	35.97	35.97	36.01
1600.0	51.45	49.35	48.36	34.08	34.10	34.15
1660.0	49.27	47.79	47.51	32.15	32.25	32.30
1710.0	46.24	44.98	45.60	31.18	31.20	31.27
1770.0	44.11	43.16	45.88	30.55	30.82	31.03
1820.0	44.91	43.87	46.05	30.74	31.01	31.44
1880.0	47.97	46.37	52.20	31.57	31.76	32.51
1930.0	52.47	50.02	66.12	32.48	32.74	33.58
1990.0	57.30	52.94	51.57	33.60	33.76	34.56
2040.0	49.45	49.23	45.49	34.22	34.31	34.91
2100.0	44.44	44.60	42.45	34.43	34.49	34.81
2150.0	41.81	41.95	40.28	33.99	34.14	34.31
2210.0	39.72	39.80	38.54	33.25	33.30	33.35
2260.0	38.16	37.87	37.27	32.46	32.34	32.51
2320.0	36.77	36.53	35.97	31.52	31.47	31.54
2370.0	35.90	35.52	35.10	30.74	30.68	30.72
2430.0	35.11	34.73	34.10	29.84	29.80	29.67
2480.0	34.28	34.12	33.61	29.03	29.22	29.05
2540.0	33.95	33.55	33.13	28.37	28.42	28.27
2590.0	33.48	33.29	32.96	27.73	27.88	27.77
2650.0	33.07	32.83	32.50	27.12	27.26	27.11
2700.0	32.99	32.77	32.59	26.64	26.83	26.69

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
780.0	640.0	24.45	23.41	21.56
830.0	690.0	24.93	23.88	22.01
880.0	740.0	25.90	25.19	23.67
930.0	790.0	26.60	25.98	24.46
980.0	840.0	26.62	25.57	23.80
1030.0	890.0	28.90	28.55	27.54
1080.0	940.0	30.39	30.39	29.65
1130.0	990.0	31.56	31.76	31.11
1180.0	1040.0	33.64	34.23	34.30
1230.0	1090.0	34.27	35.21	35.32
1280.0	1140.0	34.40	35.36	35.34
1330.0	1190.0	34.72	35.80	36.03
1380.0	1240.0	35.02	36.26	36.75
1430.0	1290.0	35.13	36.34	36.67
1480.0	1340.0	35.16	36.25	36.70
1530.0	1390.0	35.26	36.18	36.49
1580.0	1440.0	34.78	35.48	35.75
1630.0	1490.0	34.34	34.76	34.88
1690.0	1550.0	33.49	33.77	33.48
1740.0	1600.0	33.28	33.49	33.13
1800.0	1660.0	33.63	33.81	33.38
1850.0	1710.0	34.13	34.19	33.67
1910.0	1770.0	34.56	34.54	34.25
1960.0	1820.0	34.45	34.32	34.10
2020.0	1880.0	33.78	33.47	33.27
2070.0	1930.0	33.21	32.85	32.60
2130.0	1990.0	32.56	32.13	31.89
2180.0	2040.0	32.24	31.69	31.47
2240.0	2100.0	31.76	31.20	30.97
2290.0	2150.0	31.33	30.80	30.61
2350.0	2210.0	30.69	30.15	29.94
2400.0	2260.0	30.09	29.54	29.35
2460.0	2320.0	29.57	29.11	28.90
2510.0	2370.0	29.01	28.62	28.40
2570.0	2430.0	28.49	28.14	27.90
2620.0	2480.0	27.98	27.75	27.50
2680.0	2540.0	27.61	27.40	27.16
2730.0	2590.0	27.29	27.10	26.86
2790.0	2650.0	26.97	26.84	26.65
2840.0	2700.0	26.65	26.56	26.24

Frequency Mixer HJK-212H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
780.0	640.0	1.71	1.75	1.72
830.0	690.0	1.62	1.62	1.56
880.0	740.0	1.54	1.53	1.48
930.0	790.0	1.49	1.47	1.43
980.0	840.0	1.42	1.40	1.37
1030.0	890.0	1.42	1.42	1.40
1080.0	940.0	1.50	1.53	1.54
1130.0	990.0	1.56	1.61	1.64
1180.0	1040.0	1.63	1.68	1.73
1230.0	1090.0	1.70	1.77	1.83
1280.0	1140.0	1.74	1.82	1.89
1330.0	1190.0	1.77	1.85	1.93
1380.0	1240.0	1.76	1.85	1.93
1430.0	1290.0	1.72	1.82	1.91
1480.0	1340.0	1.65	1.75	1.85
1530.0	1390.0	1.54	1.63	1.72
1580.0	1440.0	1.39	1.47	1.56
1630.0	1490.0	1.23	1.29	1.36
1690.0	1550.0	1.05	1.06	1.12
1740.0	1600.0	1.19	1.13	1.08
1800.0	1660.0	1.47	1.41	1.31
1850.0	1710.0	1.66	1.60	1.49
1910.0	1770.0	1.79	1.72	1.62
1960.0	1820.0	1.79	1.71	1.61
2020.0	1880.0	1.73	1.65	1.55
2070.0	1930.0	1.64	1.56	1.48
2130.0	1990.0	1.51	1.43	1.35
2180.0	2040.0	1.43	1.35	1.27
2240.0	2100.0	1.34	1.27	1.20
2290.0	2150.0	1.27	1.20	1.13
2350.0	2210.0	1.18	1.11	1.06
2400.0	2260.0	1.10	1.03	1.07
2460.0	2320.0	1.05	1.05	1.14
2510.0	2370.0	1.06	1.12	1.22
2570.0	2430.0	1.15	1.22	1.34
2620.0	2480.0	1.23	1.31	1.44
2680.0	2540.0	1.34	1.43	1.58
2730.0	2590.0	1.44	1.54	1.71
2790.0	2650.0	1.56	1.67	1.85
2840.0	2700.0	1.68	1.79	2.01

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
640.0	36.20	36.20	35.46
690.0	34.75	34.75	34.07
740.0	34.75	34.75	34.07
790.0	34.07	33.42	32.79
840.0	33.42	32.79	32.18
890.0	32.79	32.18	31.60
940.0	31.60	31.03	29.46
990.0	30.49	29.96	29.46
1040.0	28.49	27.59	26.33
1090.0	26.33	26.33	25.94
1140.0	22.87	22.58	21.20
1190.0	19.76	19.54	19.32
1240.0	19.32	18.90	17.75
1290.0	18.70	18.50	18.11
1340.0	16.56	16.11	15.26
1390.0	14.62	14.62	14.38
1440.0	12.09	11.93	11.46
1490.0	9.85	9.79	9.63
1550.0	7.22	7.08	6.91
1600.0	5.36	5.23	5.12
1660.0	3.56	3.47	3.37
1710.0	2.40	2.33	2.21
1770.0	1.48	1.43	1.30
1820.0	1.02	1.03	1.13
1880.0	1.51	1.57	1.73
1930.0	2.04	2.10	2.30
1990.0	2.78	2.85	3.11
2040.0	3.42	3.47	3.73
2100.0	4.31	4.35	4.61
2150.0	5.02	5.04	5.31
2210.0	5.93	5.89	6.07
2260.0	6.78	6.78	7.08
2320.0	7.70	7.53	7.56
2370.0	8.64	8.55	8.81
2430.0	9.58	9.33	9.28
2480.0	10.43	10.25	10.25
2540.0	11.31	11.03	10.89
2590.0	12.01	11.53	10.89
2650.0	13.19	12.80	12.61
2700.0	13.29	12.44	11.31

IF (OUT) (MHz)	IF VSWR @LO=1840MHz (:1) @LO (dBm)		
	+14	+17	+20
10.0	1.07	1.03	1.09
20.0	1.08	1.03	1.08
30.0	1.09	1.05	1.10
40.0	1.09	1.06	1.11
50.0	1.10	1.06	1.10
60.0	1.13	1.09	1.09
70.0	1.16	1.11	1.11
80.0	1.17	1.13	1.11
90.0	1.20	1.16	1.13
100.0	1.24	1.19	1.15
110.0	1.26	1.21	1.17
120.0	1.28	1.23	1.19
130.0	1.31	1.25	1.20
140.0	1.32	1.27	1.21
150.0	1.35	1.29	1.22
160.0	1.40	1.33	1.25
170.0	1.45	1.38	1.30
180.0	1.48	1.40	1.32
200.0	1.56	1.49	1.40
210.0	1.61	1.53	1.44
230.0	1.64	1.56	1.46
240.0	1.72	1.63	1.51
260.0	1.83	1.73	1.61
270.0	1.89	1.78	1.66
290.0	2.03	1.92	1.78
300.0	2.05	1.94	1.80
320.0	2.18	2.06	1.91
330.0	2.25	2.13	1.97
350.0	2.43	2.29	2.13
360.0	2.52	2.39	2.22
380.0	2.65	2.51	2.33
390.0	2.76	2.61	2.42
410.0	2.89	2.73	2.54
420.0	2.98	2.82	2.62
440.0	3.26	3.09	2.87
450.0	3.30	3.13	2.92
470.0	3.62	3.44	3.21
480.0	3.72	3.53	3.29
500.0	3.86	3.67	3.43
510.0	4.04	3.85	3.60

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	7	25	25	34	31	46	28	35	40	49
1	-	26	+0	43	26	35	50	38	44	41	40	50
2	59	76	73	64	76	77	>83	78	74	>83	68	67
3	>90	>83	>83	>83	74	>83	>83	>83	>83	>83	>83	>83
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: 1900 MHz; 0.00 dBm.
LO IN: 1760 MHz; +17.00 dBm
IF OUT: 140 MHz; -6.53 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	17	36	35	43	41	51	39	46	52	63
1	-	26	+0	43	26	35	51	39	44	42	41	52
2	39	67	62	53	61	67	73	68	63	72	60	60
3	67	83	68	78	52	69	69	76	70	64	69	65
4	>90	86	92	90	>93	77	84	92	89	91	90	87
5	>90	>93	91	>93	>93	>93	>93	>93	>93	>93	>93	>93
6	>90	>93	91	>93	>93	>93	>93	>93	87	>93	>93	>93
7	>90	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93
8	>90	>93	>93	>93	>93	>93	>93	>93	>93	>93	91	>93
9	>90	>93	>93	>93	>93	>93	>93	>93	>93	>93	>93	>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: 1900 MHz; 10.00 dBm.
LO IN: 1760 MHz; +17.00 dBm
IF OUT: 140 MHz; 3.45 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.