Frequency Mixer HJK-ED12444/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=380MHz (dB) @LO (dBm)		
		+14	+17	+20
90.1	470.1	12.21	11.93	11.73
135.1	515.1	9.53	9.26	9.07
180.1	560.1	8.40	8.18	8.03
225.1	605.1	7.33	7.12	6.97
270.1	650.1	7.07	6.89	6.75
315.1	695.1	6.89	6.71	6.57
360.1	740.1	7.15	6.99	6.87
405.1	785.1	7.23	7.07	6.93
450.1	830.1	7.73	7.63	7.55
495.1	875.1	7.67	7.59	7.54
540.1	920.1	7.60	7.50	7.46
585.1	965.1	7.63	7.51	7.45
630.1	1010.1	7.71	7.58	7.51
675.1	1055.1	7.73	7.58	7.51
720.1	1100.1	7.77	7.61	7.52
765.1	1145.1	7.57	7.38	7.25
810.1	1190.1	7.60	7.36	7.21
855.1	1235.1	7.80	7.53	7.34
900.1	1280.1	7.97	7.68	7.46
945.1	1325.1	8.25	7.97	7.76
990.1	1370.1	8.53	8.32	8.16
1035.1	1415.1	8.42	8.23	8.09
1080.1	1460.1	8.36	8.14	7.99
1125.1	1505.1	8.22	7.98	7.84
1170.1	1550.1	8.09	7.83	7.66
1215.1	1595.1	7.99	7.71	7.53
1260.1	1640.1	8.14	7.83	7.62
1305.1	1685.1	8.10	7.76	7.53
1350.1	1730.1	8.15	7.77	7.51
1395.1	1775.1	8.17	7.76	7.48
1440.1	1820.1	8.24	7.84	7.55
1485.1	1865.1	8.35	7.97	7.70
1530.1	1910.1	8.52	8.16	7.92
1575.1	1955.1	8.72	8.40	8.19
1615.1	1995.1	9.02	8.72	8.52
1660.1	2040.1	9.36	9.08	8.90
1700.1	2080.1	9.81	9.56	9.41
1745.1	2125.1	10.25	9.98	9.81
1785.1	2165.1	10.77	10.55	10.41
1830.1	2210.1	11.14	10.89	10.72

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
90.1	470.1	28.63	28.07	29.35
135.1	515.1	29.18	31.06	33.76
180.1	560.1	29.44	29.50	30.29
225.1	605.1	26.21	26.96	28.66
270.1	650.1	25.45	26.78	29.07
315.1	695.1	24.30	26.19	28.95
360.1	740.1	23.88	26.38	29.12
405.1	785.1	24.07	26.96	30.03
450.1	830.1	24.20	27.15	30.10
495.1	875.1	25.01	28.08	31.03
540.1	920.1	25.84	28.98	31.32
585.1	965.1	26.10	29.19	31.04
630.1	1010.1	26.24	29.30	31.35
675.1	1055.1	26.23	29.40	31.70
720.1	1100.1	27.29	30.31	34.19
765.1	1145.1	29.58	32.96	36.55
810.1	1190.1	28.95	32.36	36.20
855.1	1235.1	28.54	32.11	35.39
900.1	1280.1	27.55	31.50	34.98
945.1	1325.1	27.25	31.27	35.12
990.1	1370.1	25.96	29.48	33.41
1035.1	1415.1	25.08	28.50	32.13
1080.1	1460.1	24.63	27.59	31.56
1125.1	1505.1	25.59	28.66	32.41
1170.1	1550.1	25.44	28.24	31.63
1215.1	1595.1	25.39	28.71	32.03
1260.1	1640.1	24.43	28.16	31.73
1305.1	1685.1	24.21	28.33	31.80
1350.1	1730.1	23.39	27.65	31.17
1395.1	1775.1	23.66	27.44	30.10
1440.1	1820.1	22.76	25.76	27.82
1485.1	1865.1	22.19	24.53	26.41
1530.1	1910.1	21.33	23.74	25.39
1575.1	1955.1	21.22	23.63	25.29
1615.1	1995.1	20.77	23.49	25.30
1660.1	2040.1	20.67	23.55	25.31
1700.1	2080.1	20.91	23.81	25.40
1745.1	2125.1	20.37	23.54	25.31
1785.1	2165.1	21.25	24.26	26.25
1830.1	2210.1	20.75	23.95	26.91

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+15dBm (dB) @LO (dBm)		
		+14	+17	+20
90.1	470.1	0.10	0.09	0.10
135.1	515.1	0.27	0.12	0.04
180.1	560.1	0.36	0.12	0.03
225.1	605.1	0.40	0.10	0.02
270.1	650.1	0.28	0.07	0.01
315.1	695.1	0.29	0.09	0.03
360.1	740.1	0.22	0.10	0.05
405.1	785.1	0.15	0.05	0.02
450.1	830.1	0.10	0.04	0.02
495.1	875.1	0.14	0.07	0.04
540.1	920.1	0.15	0.07	0.05
585.1	965.1	0.14	0.08	0.05
630.1	1010.1	0.14	0.07	0.05
675.1	1055.1	0.16	0.08	0.06
720.1	1100.1	0.19	0.12	0.06
765.1	1145.1	0.19	0.11	0.07
810.1	1190.1	0.20	0.11	0.06
855.1	1235.1	0.22	0.11	0.07
900.1	1280.1	0.26	0.13	0.08
945.1	1325.1	0.26	0.13	0.07
990.1	1370.1	0.30	0.15	0.08
1035.1	1415.1	0.35	0.20	0.10
1080.1	1460.1	0.38	0.23	0.13
1125.1	1505.1	0.39	0.23	0.13
1170.1	1550.1	0.47	0.28	0.17
1215.1	1595.1	0.51	0.28	0.16
1260.1	1640.1	0.66	0.32	0.17
1305.1	1685.1	0.77	0.33	0.17
1350.1	1730.1	1.07	0.44	0.20
1395.1	1775.1	1.24	0.50	0.22
1440.1	1820.1	1.63	0.66	0.28
1485.1	1865.1	1.78	0.74	0.33
1530.1	1910.1	2.08	0.89	0.40
1575.1	1955.1	2.03	0.90	0.41
1615.1	1995.1	2.17	0.99	0.45
1660.1	2040.1	2.18	1.02	0.50
1700.1	2080.1	2.03	0.97	0.48
1745.1	2125.1	2.22	1.08	0.51
1785.1	2165.1	1.80	0.89	0.42
1830.1	2210.1	1.97	1.03	0.53

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=835MHz (dB) @LO (dBm) +17
434.9	400.1	10.47
417.2	417.8	8.57
399.5	435.5	7.68
381.8	453.2	7.54
364.1	470.9	7.48
346.4	488.6	7.60
328.7	506.3	7.68
311.0	524.0	7.85
293.3	541.7	7.94
275.6	559.4	7.92
257.9	577.1	7.94
240.2	594.8	7.89
222.5	612.6	7.88
204.7	630.3	7.74
187.0	648.0	7.58
169.3	665.7	7.48
151.6	683.4	7.41
133.9	701.1	7.31
116.2	718.8	7.26
98.5	736.5	7.16
63.1	771.9	7.06
45.4	789.6	7.08
10.0	825.0	7.21
10.0	845.0	7.28
56.3	891.3	7.40
79.4	914.4	7.37
125.6	960.6	7.38
148.8	983.8	7.36
195.0	1030.0	7.22
218.2	1053.2	7.19
264.4	1099.4	7.02
287.6	1122.6	7.02
333.8	1168.8	7.04
356.9	1191.9	7.26
403.2	1238.2	7.82
426.3	1261.3	8.32
472.6	1307.6	9.24
495.7	1330.7	9.74
542.0	1377.0	10.67
565.1	1400.1	11.13

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=790MHz (dB) @LO (dBm) +17
10.1	800.1	7.19
20.1	810.1	7.16
30.1	820.1	7.22
40.1	830.1	7.23
50.1	840.1	7.17
60.1	850.1	7.21
80.1	870.1	7.25
90.1	880.1	7.30
110.1	900.1	7.28
120.1	910.1	7.22
140.1	930.1	7.24
150.1	940.1	7.17
170.1	960.1	7.17
180.1	970.1	7.18
200.1	990.1	7.11
210.1	1000.1	7.13
230.1	1020.1	7.07
240.1	1030.1	6.96
260.1	1050.1	7.03
270.1	1060.1	6.99
290.1	1080.1	7.00
300.1	1090.1	7.00
320.1	1110.1	7.03
330.1	1120.1	7.07
350.1	1140.1	7.14
360.1	1150.1	7.16
380.1	1170.1	7.33
390.1	1180.1	7.46
410.1	1200.1	7.81
420.1	1210.1	8.02
440.1	1230.1	8.40
450.1	1240.1	8.58
470.1	1260.1	8.97
480.1	1270.1	9.20
500.1	1290.1	9.62
510.1	1300.1	9.80
530.1	1320.1	10.24
540.1	1330.1	10.42
560.1	1350.1	10.88
570.1	1360.1	11.08

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=880.1MHz (dB) @LO (dBm) +17
470.0	410.1	11.16
460.0	420.1	10.31
450.0	430.1	9.42
440.0	440.1	8.32
430.0	450.1	7.67
420.0	460.1	7.31
410.0	470.1	7.16
400.0	480.1	7.16
390.0	490.1	7.26
380.0	500.1	7.34
370.0	510.1	7.30
360.0	520.1	7.53
350.0	530.1	7.55
340.0	540.1	7.77
330.0	550.1	7.68
320.0	560.1	7.81
310.0	570.1	7.87
300.0	580.1	7.92
290.0	590.1	7.85
280.0	600.1	7.92
270.0	610.1	7.85
260.0	620.1	7.85
250.0	630.1	7.81
240.0	640.1	7.72
230.0	650.1	7.66
220.0	660.1	7.59
200.0	680.1	7.35
190.0	690.1	7.30
170.0	710.1	7.19
160.0	720.1	7.05
140.0	740.1	6.97
130.0	750.1	6.93
110.0	770.1	6.82
100.0	780.1	6.90
80.0	800.1	6.96
70.0	810.1	7.02
50.0	830.1	7.18
40.0	840.1	7.22
20.0	860.1	7.27
10.0	870.1	7.26

Frequency Mixer HJK-ED12444/1

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
470.1	52.29	52.35	52.84	40.70	40.84	41.01
515.1	46.32	46.25	46.30	39.24	39.42	39.53
560.1	45.19	45.35	45.48	39.52	39.77	39.95
605.1	44.42	44.57	44.61	40.02	40.39	40.63
650.1	44.69	44.89	45.10	39.75	40.08	40.29
695.1	45.39	45.61	45.81	39.45	39.75	39.97
740.1	45.48	45.56	45.66	39.25	39.57	39.82
785.1	45.33	45.40	45.43	38.87	39.19	39.41
830.1	45.74	45.77	45.92	38.62	38.88	39.11
875.1	45.48	45.49	45.94	38.32	38.52	38.75
920.1	46.19	46.06	46.81	37.67	37.78	38.09
965.1	45.58	45.47	45.97	37.39	37.49	37.85
1010.1	44.86	44.80	43.84	37.67	37.69	38.15
1055.1	44.27	44.13	43.45	38.19	38.21	38.56
1100.1	42.82	42.59	43.19	38.67	38.74	38.89
1145.1	44.82	44.45	44.40	38.85	38.96	39.18
1190.1	47.47	46.39	45.62	39.28	39.44	39.60
1235.1	47.75	46.41	45.72	39.84	40.01	40.22
1280.1	52.69	51.52	50.79	40.52	40.71	40.89
1325.1	60.16	61.48	62.45	41.54	41.77	41.99
1370.1	54.00	55.17	55.30	42.77	43.03	43.27
1415.1	49.55	50.02	49.81	44.25	44.55	44.83
1460.1	47.32	47.87	47.46	45.62	46.04	46.35
1505.1	46.03	46.41	46.03	47.09	47.55	47.94
1550.1	45.38	45.93	45.58	47.92	48.49	48.91
1595.1	45.67	46.34	46.19	47.88	48.35	48.72
1640.1	46.10	46.92	46.96	47.07	47.45	47.72
1685.1	47.03	48.05	48.32	45.92	46.11	46.32
1730.1	47.94	49.13	49.61	44.42	44.53	44.67
1775.1	49.26	50.63	51.07	42.83	42.83	42.96
1820.1	50.33	51.54	51.97	41.31	41.26	41.27
1865.1	52.43	53.11	53.07	40.02	39.91	39.90
1910.1	54.68	54.37	53.97	39.39	39.21	39.17
1955.1	60.54	57.75	56.60	39.15	39.01	38.97
1995.1	66.78	60.22	57.87	38.92	38.76	38.71
2040.1	56.50	55.65	54.74	38.29	38.12	38.19
2080.1	52.07	51.78	51.50	37.57	37.33	37.43
2125.1	49.17	48.86	48.56	36.87	36.60	36.69
2165.1	46.87	46.36	45.94	36.16	36.00	35.93
2210.1	44.90	44.58	44.34	35.71	35.68	35.62

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
90.1	470.1	26.06	25.53	25.31
135.1	515.1	23.72	23.21	22.91
180.1	560.1	24.04	23.79	23.60
225.1	605.1	24.44	24.26	24.16
270.1	650.1	25.71	25.61	25.60
315.1	695.1	28.12	28.21	28.30
360.1	740.1	31.10	31.24	31.32
405.1	785.1	34.15	34.49	34.59
450.1	830.1	37.01	37.46	37.60
495.1	875.1	40.40	40.80	41.02
540.1	920.1	44.72	45.53	46.21
585.1	965.1	54.78	58.72	71.43
630.1	1010.1	60.13	60.10	53.75
675.1	1055.1	51.61	53.26	53.51
720.1	1100.1	44.86	45.32	45.71
765.1	1145.1	43.70	43.95	44.43
810.1	1190.1	43.14	43.18	43.40
855.1	1235.1	43.40	43.54	43.82
900.1	1280.1	43.93	44.24	44.63
945.1	1325.1	44.46	44.85	45.23
990.1	1370.1	44.77	45.25	45.65
1035.1	1415.1	44.67	45.27	45.65
1080.1	1460.1	43.49	43.99	44.26
1125.1	1505.1	41.99	42.27	42.32
1170.1	1550.1	40.44	40.54	40.52
1215.1	1595.1	38.89	38.85	38.77
1260.1	1640.1	37.41	37.29	37.17
1305.1	1685.1	36.17	36.01	35.90
1350.1	1730.1	35.33	35.14	35.01
1395.1	1775.1	34.62	34.42	34.31
1440.1	1820.1	33.95	33.70	33.58
1485.1	1865.1	33.14	32.87	32.72
1530.1	1910.1	32.27	31.95	31.80
1575.1	1955.1	31.41	31.09	30.95
1615.1	1995.1	30.79	30.51	30.39
1660.1	2040.1	30.10	29.89	29.80
1700.1	2080.1	29.23	29.06	29.01
1745.1	2125.1	28.02	27.87	27.83
1785.1	2165.1	27.05	26.95	26.93
1830.1	2210.1	26.29	26.22	26.22

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
90.1	470.1	8.39	8.55	8.60
135.1	515.1	4.80	4.84	4.86
180.1	560.1	3.14	3.19	3.22
225.1	605.1	2.33	2.42	2.47
270.1	650.1	1.81	1.92	1.98
315.1	695.1	1.70	1.82	1.90
360.1	740.1	2.00	2.12	2.20
405.1	785.1	2.41	2.52	2.59
450.1	830.1	2.86	3.00	3.09
495.1	875.1	3.04	3.22	3.34
540.1	920.1	3.09	3.26	3.38
585.1	965.1	3.19	3.35	3.47
630.1	1010.1	3.29	3.45	3.57
675.1	1055.1	3.28	3.44	3.57
720.1	1100.1	3.29	3.47	3.61
765.1	1145.1	3.23	3.40	3.53
810.1	1190.1	3.12	3.26	3.37
855.1	1235.1	2.98	3.10	3.19
900.1	1280.1	2.81	2.92	2.99
945.1	1325.1	2.66	2.76	2.82
990.1	1370.1	2.44	2.57	2.65
1035.1	1415.1	2.17	2.30	2.39
1080.1	1460.1	1.87	1.98	2.07
1125.1	1505.1	1.64	1.75	1.82
1170.1	1550.1	1.41	1.51	1.57
1215.1	1595.1	1.25	1.35	1.42
1260.1	1640.1	1.14	1.25	1.31
1305.1	1685.1	1.18	1.25	1.30
1350.1	1730.1	1.23	1.28	1.31
1395.1	1775.1	1.26	1.30	1.33
1440.1	1820.1	1.28	1.32	1.35
1485.1	1865.1	1.34	1.42	1.46
1530.1	1910.1	1.47	1.59	1.65
1575.1	1955.1	1.70	1.85	1.94
1615.1	1995.1	1.95	2.13	2.23
1660.1	2040.1	2.28	2.50	2.61
1700.1	2080.1	2.65	2.90	3.03
1745.1	2125.1	3.05	3.34	3.52
1785.1	2165.1	3.54	3.86	4.08
1830.1	2210.1	4.04	4.39	4.60

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
470.1	14.26	14.26	14.26
515.1	14.87	14.87	14.74
560.1	15.53	15.53	15.39
605.1	15.67	15.53	15.39
650.1	15.13	15.00	14.87
695.1	13.81	13.70	13.60
740.1	11.93	11.85	11.77
785.1	10.25	10.19	10.07
830.1	8.68	8.60	7.83
875.1	7.22	7.17	6.44
920.1	5.95	5.89	4.98
965.1	4.93	4.89	4.15
1010.1	4.18	4.15	3.54
1055.1	3.65	3.63	3.26
1100.1	3.34	3.33	3.29
1145.1	3.57	3.58	3.60
1190.1	3.83	3.87	3.90
1235.1	4.08	4.12	4.15
1280.1	4.38	4.43	4.47
1325.1	4.72	4.77	4.80
1370.1	5.07	5.13	5.16
1415.1	5.47	5.54	5.58
1460.1	5.87	5.93	5.95
1505.1	6.19	6.26	6.28
1550.1	6.49	6.53	6.53
1595.1	6.86	6.91	6.94
1640.1	7.22	7.22	7.17
1685.1	7.60	7.66	7.66
1730.1	7.83	7.83	7.73
1775.1	8.16	8.20	8.16
1820.1	8.27	8.27	8.12
1865.1	8.60	8.64	8.60
1910.1	8.77	8.68	8.47
1955.1	9.13	9.13	9.08
1995.1	9.13	9.04	8.81
2040.1	9.33	9.28	9.13
2080.1	9.43	9.38	9.18
2125.1	9.33	9.23	8.90
2165.1	9.43	9.38	9.28
2210.1	9.08	8.95	8.51

IF (OUT) (MHz)	IF VSWR @LO=880MHz (:1) @LO (dBm)		
	+14	+17	+20
10.0	2.40	2.50	2.57
20.0	2.35	2.44	2.50
30.0	2.36	2.46	2.53
40.0	2.31	2.40	2.46
50.0	2.24	2.33	2.39
60.0	2.33	2.42	2.48
70.0	2.35	2.45	2.51
80.0	2.21	2.29	2.35
90.0	2.28	2.37	2.42
100.0	2.28	2.36	2.42
110.0	2.14	2.22	2.27
120.0	2.10	2.17	2.22
130.0	2.14	2.21	2.25
140.0	2.07	2.13	2.17
150.0	2.03	2.08	2.12
160.0	2.08	2.13	2.17
170.0	2.03	2.07	2.11
180.0	1.94	1.97	2.00
200.0	1.92	1.95	1.97
210.0	1.85	1.86	1.88
230.0	1.91	1.90	1.91
240.0	1.85	1.84	1.85
260.0	1.92	1.90	1.89
270.0	1.87	1.83	1.82
290.0	1.98	1.93	1.91
300.0	1.97	1.92	1.89
320.0	2.18	2.11	2.07
330.0	2.21	2.13	2.09
350.0	2.37	2.28	2.23
360.0	2.42	2.33	2.27
380.0	2.69	2.59	2.53
390.0	2.84	2.74	2.67
410.0	3.15	3.04	2.96
420.0	3.34	3.22	3.15
440.0	3.52	3.34	3.26
450.0	3.79	3.68	3.61
470.0	4.17	4.06	4.00
480.0	4.55	4.44	4.38
500.0	4.86	4.75	4.70
510.0	5.14	5.04	4.99

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	15	17	29	24	33	22	31	45	32	40
1	-	36	+0	51	21	51	52	50	43	54	44	49
2	64	>82	64	76	>82	76	>82	62	71	72	80	67
3	>90	>82	>82	>82	>82	>82	>82	>82	>82	79	>82	>82
4	>90	>82	>82	>82	79	>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: 835 MHz; 0.00 dBm.**
LO IN: 1215 MHz; +17.00 dBm
IF OUT: 380 MHz; -7.56 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	25	27	39	35	44	32	41	47	46	53
1	-	36	+0	51	21	52	53	52	44	54	46	51
2	44	77	51	67	69	64	74	56	63	63	69	62
3	65	>92	81	70	87	76	64	82	76	68	69	76
4	>90	82	>92	>92	76	>92	81	92	91	77	85	84
5	>90	>92	87	>92	83	>92	>92	>92	>92	85	90	88
6	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	>92	90
7	>90	>92	>92	>92	>92	>92	88	>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: 835 MHz; 10.00 dBm.**
LO IN: 1215 MHz; +17.00 dBm
IF OUT: 380 MHz; 2.42 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.