Frequency Mixer HJK-ED12712/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=140MHz (dB) @LO (dBm)		
		+7	+10	+13
110.1	250.1	12.44	10.97	10.19
150.1	290.1	10.11	8.96	8.41
190.1	330.1	8.54	7.60	7.21
230.1	370.1	7.25	6.61	6.33
270.1	410.1	6.79	6.21	6.06
310.1	450.1	6.36	5.85	5.75
350.1	490.1	6.25	5.63	5.52
390.1	530.1	6.29	5.54	5.31
430.1	570.1	6.47	5.70	5.39
470.1	610.1	6.92	6.13	5.77
510.1	650.1	6.83	6.11	5.79
550.1	690.1	7.00	6.24	5.93
590.1	730.1	7.08	6.30	5.99
630.1	770.1	7.25	6.41	6.09
670.1	810.1	7.64	6.73	6.37
710.1	850.1	7.90	6.98	6.56
750.1	890.1	8.35	7.39	6.90
780.1	920.1	8.71	7.70	7.12
820.1	960.1	9.05	7.93	7.25
850.1	990.1	9.32	8.14	7.42
890.1	1030.1	9.43	8.23	7.48
920.1	1060.1	9.58	8.36	7.59
960.1	1100.1	9.64	8.45	7.71
990.1	1130.1	9.66	8.51	7.81
1030.1	1170.1	9.65	8.58	7.96
1060.1	1200.1	9.70	8.66	8.10
1100.1	1240.1	9.85	8.90	8.39
1130.1	1270.1	9.84	8.96	8.48
1170.1	1310.1	9.90	9.08	8.63
1200.1	1340.1	9.97	9.21	8.79
1240.1	1380.1	9.89	9.16	8.75
1270.1	1410.1	9.93	9.21	8.80
1310.1	1450.1	9.94	9.21	8.80
1340.1	1480.1	9.91	9.15	8.72
1380.1	1520.1	10.03	9.28	8.87
1410.1	1550.1	10.18	9.40	8.97
1450.1	1590.1	10.41	9.59	9.14
1480.1	1620.1	10.78	9.94	9.51
1520.1	1660.1	11.17	10.25	9.78
1550.1	1690.1	11.57	10.61	10.15

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+7	+10	+13
110.1	250.1	18.38	23.20	27.90
150.1	290.1	17.23	20.42	26.10
190.1	330.1	15.79	19.59	23.82
230.1	370.1	14.94	20.11	23.93
270.1	410.1	13.75	20.59	26.19
310.1	450.1	13.56	19.96	23.90
350.1	490.1	13.54	18.23	21.92
390.1	530.1	14.22	17.82	20.18
430.1	570.1	15.08	19.41	22.08
470.1	610.1	15.33	20.67	24.00
510.1	650.1	14.68	19.33	20.68
550.1	690.1	14.04	17.76	17.62
590.1	730.1	13.94	18.56	19.19
630.1	770.1	13.82	18.64	21.14
670.1	810.1	14.32	18.67	22.12
710.1	850.1	14.73	19.04	24.07
750.1	890.1	15.29	19.64	24.52
780.1	920.1	16.65	22.21	27.59
820.1	960.1	18.80	24.26	26.19
850.1	990.1	19.58	20.67	22.14
890.1	1030.1	21.12	20.61	21.66
920.1	1060.1	19.22	19.15	20.69
960.1	1100.1	19.09	18.11	19.04
990.1	1130.1	22.95	17.35	18.50
1030.1	1170.1	18.56	16.29	18.14
1060.1	1200.1	17.32	16.66	18.38
1100.1	1240.1	15.95	16.90	18.63
1130.1	1270.1	15.56	16.98	18.55
1170.1	1310.1	15.45	17.79	19.41
1200.1	1340.1	15.05	17.91	19.68
1240.1	1380.1	15.27	18.56	20.91
1270.1	1410.1	15.50	18.93	21.78
1310.1	1450.1	16.04	19.52	24.26
1340.1	1480.1	17.03	20.61	26.28
1380.1	1520.1	17.93	21.84	25.90
1410.1	1550.1	18.45	22.48	26.72
1450.1	1590.1	18.73	22.86	25.33
1480.1	1620.1	18.88	23.06	25.56
1520.1	1660.1	19.13	23.41	25.55
1550.1	1690.1	19.57	24.02	25.88

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+7dBm (dB) @LO (dBm)		
		+7	+10	+13
110.1	250.1	0.40	0.18	0.08
150.1	290.1	0.67	0.28	0.12
190.1	330.1	0.94	0.32	0.14
230.1	370.1	1.32	0.41	0.17
270.1	410.1	1.55	0.50	0.16
310.1	450.1	1.81	0.65	0.22
350.1	490.1	1.92	0.81	0.35
390.1	530.1	1.85	0.87	0.46
430.1	570.1	1.76	0.75	0.41
470.1	610.1	1.68	0.63	0.30
510.1	650.1	1.78	0.63	0.27
550.1	690.1	1.83	0.64	0.23
590.1	730.1	1.91	0.71	0.24
630.1	770.1	1.87	0.72	0.23
670.1	810.1	1.74	0.70	0.23
710.1	850.1	1.58	0.62	0.18
750.1	890.1	1.34	0.49	0.12
780.1	920.1	1.07	0.33	0.04
820.1	960.1	0.77	0.19	-0.02
850.1	990.1	0.51	0.08	-0.06
890.1	1030.1	0.40	0.04	-0.06
920.1	1060.1	0.32	0.03	-0.05
960.1	1100.1	0.34	0.06	0.00
990.1	1130.1	0.51	0.15	0.06
1030.1	1170.1	0.62	0.25	0.11
1060.1	1200.1	0.72	0.26	0.11
1100.1	1240.1	0.77	0.27	0.11
1130.1	1270.1	0.77	0.27	0.11
1170.1	1310.1	0.77	0.25	0.10
1200.1	1340.1	0.75	0.24	0.09
1240.1	1380.1	0.79	0.24	0.10
1270.1	1410.1	0.77	0.24	0.11
1310.1	1450.1	0.83	0.27	0.13
1340.1	1480.1	0.86	0.27	0.14
1380.1	1520.1	0.85	0.29	0.15
1410.1	1550.1	0.91	0.31	0.16
1450.1	1590.1	0.84	0.29	0.16
1480.1	1620.1	0.75	0.27	0.16
1520.1	1660.1	0.75	0.27	0.15
1550.1	1690.1	0.62	0.23	0.15

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=460.1MHz (dB) @LO (dBm) +10
450.0	10.1	6.91
425.0	35.1	7.24
400.0	60.1	7.03
375.0	85.1	6.93
350.0	110.1	6.60
325.0	135.1	6.47
305.0	155.1	6.23
280.0	180.1	5.83
260.0	200.1	5.62
235.0	225.1	5.48
215.0	245.1	5.40
190.0	270.1	5.67
170.0	290.1	5.86
145.0	315.1	6.03
125.0	335.1	6.19
100.0	360.1	6.15
80.0	380.1	6.24
55.0	405.1	6.25
35.0	425.1	6.20
10.0	450.1	5.89
54.5	514.6	5.80
128.7	588.8	5.95
188.0	648.1	5.90
262.1	722.2	6.03
321.5	781.6	6.21
395.6	855.7	6.76
454.9	915.0	7.17
529.1	989.2	7.24
588.4	1048.5	6.86
662.6	1122.7	6.44
721.9	1182.0	6.25
796.1	1256.2	6.23
855.4	1315.5	6.28
929.6	1389.7	6.59
988.9	1449.0	7.18
1063.0	1523.1	7.91
1122.4	1582.5	8.80
1196.5	1656.6	9.72
1255.8	1715.9	10.07
1330.0	1790.1	10.12

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=380.1MHz (dB) @LO (dBm) +10
10.0	390.1	5.86
70.0	450.1	5.75
130.0	510.1	5.53
190.0	570.1	5.56
250.0	630.1	5.73
310.0	690.1	5.87
370.0	750.1	6.09
430.0	810.1	6.70
490.0	870.1	7.16
550.0	930.1	7.22
610.0	990.1	6.89
670.0	1050.1	6.61
730.0	1110.1	6.30
790.0	1170.1	6.25
850.0	1230.1	6.17
910.0	1290.1	6.19
970.0	1350.1	6.50
1030.0	1410.1	6.89
1090.0	1470.1	7.51
1150.0	1530.1	8.38
1210.0	1590.1	9.19
1270.0	1650.1	9.79
1330.0	1710.1	9.83
1390.0	1770.1	9.82
1450.0	1830.1	9.60
1510.0	1890.1	9.27
1550.0	1930.1	9.25
1610.0	1990.1	9.00
1650.0	2030.1	9.04
1710.0	2090.1	8.91
1750.0	2130.1	9.03
1810.0	2190.1	8.97
1850.0	2230.1	9.14
1910.0	2290.1	9.10
1950.0	2330.1	9.30
2010.0	2390.1	9.43
2050.0	2430.1	9.67
2110.0	2490.1	9.90
2150.0	2530.1	10.20
2210.0	2590.1	10.37

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=540.1MHz (dB) @LO (dBm) +10
530.0	10.1	7.12
520.0	20.1	7.10
510.0	30.1	7.28
500.0	40.1	7.48
490.0	50.1	7.39
480.0	60.1	7.40
470.0	70.1	7.38
460.0	80.1	7.45
450.0	90.1	7.38
440.0	100.1	7.23
430.0	110.1	7.26
420.0	120.1	7.24
410.0	130.1	7.17
400.0	140.1	7.13
380.0	160.1	6.91
370.0	170.1	6.84
350.0	190.1	6.44
340.0	200.1	6.28
320.0	220.1	6.02
310.0	230.1	5.87
290.0	250.1	5.70
280.0	260.1	5.64
260.0	280.1	5.62
250.0	290.1	5.64
230.0	310.1	5.87
220.0	320.1	5.99
200.0	340.1	6.18
190.0	350.1	6.30
170.0	370.1	6.33
160.0	380.1	6.43
140.0	400.1	6.58
130.0	410.1	6.60
110.0	430.1	6.66
100.0	440.1	6.50
80.0	460.1	6.55
70.0	470.1	6.48
50.0	490.1	6.39
40.0	500.1	6.39
20.0	520.1	6.25
10.0	530.1	6.16

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+7	+10	+13	+7	+10	+13
250.1	40.81	45.01	47.96	43.16	48.50	51.94
290.1	41.11	45.30	48.04	44.61	49.80	52.05
330.1	40.54	45.64	49.08	45.65	51.14	52.35
370.1	40.70	45.81	48.81	46.98	50.80	50.13
410.1	40.11	45.95	49.61	46.88	50.48	49.20
450.1	40.84	46.67	50.35	47.98	50.57	48.55
490.1	40.54	46.36	50.88	48.08	50.39	47.97
530.1	41.35	46.70	51.98	49.00	51.33	48.18
570.1	42.18	48.36	52.41	49.85	52.03	48.04
610.1	41.85	47.10	48.58	49.89	54.66	49.91
650.1	41.13	44.98	46.98	52.05	62.07	58.92
690.1	42.81	46.70	51.60	65.59	57.83	52.70
730.1	44.51	49.27	58.63	61.09	54.08	50.36
770.1	44.61	49.51	60.74	60.82	53.70	50.10
810.1	44.66	48.97	56.50	61.81	53.87	50.45
850.1	44.25	47.93	53.38	62.62	53.84	50.20
890.1	43.68	46.95	51.20	59.05	52.80	48.94
920.1	43.13	45.84	49.10	56.13	51.72	47.83
960.1	42.44	44.83	47.48	53.53	50.27	46.52
990.1	41.83	44.03	46.38	52.25	49.34	45.82
1030.1	41.02	43.17	45.39	50.34	48.03	44.91
1060.1	40.64	42.79	45.04	49.21	46.94	44.05
1100.1	40.22	42.38	44.67	48.24	45.80	43.11
1130.1	39.84	41.98	44.18	47.76	45.38	42.74
1170.1	39.42	41.41	43.47	47.30	45.21	42.62
1200.1	39.23	41.20	43.15	46.99	45.16	42.72
1240.1	38.78	40.80	42.64	46.23	45.26	43.22
1270.1	38.75	40.90	42.99	45.52	45.12	43.46
1310.1	38.36	40.51	42.67	44.98	45.31	44.38
1340.1	38.19	40.27	42.37	44.85	45.68	45.36
1380.1	38.04	40.03	41.97	44.52	45.63	45.84
1410.1	38.04	40.01	41.89	43.94	45.03	45.63
1450.1	38.19	40.07	41.88	42.52	43.39	44.18
1480.1	38.39	40.40	42.22	41.27	42.01	42.85
1520.1	38.94	40.99	42.87	39.68	40.30	41.05
1550.1	39.53	41.71	43.65	38.60	39.15	39.82
1590.1	40.08	42.41	44.45	37.33	37.90	38.53
1620.1	40.70	43.11	45.26	36.39	36.94	37.55
1660.1	41.30	43.80	46.03	35.36	35.89	36.50
1690.1	41.88	44.36	46.69	34.73	35.26	35.87

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+7	+10	+13
110.1	250.1	43.63	44.84	46.17
150.1	290.1	42.36	43.41	44.68
190.1	330.1	41.70	43.13	44.89
230.1	370.1	41.73	42.86	44.10
270.1	410.1	42.76	44.47	45.99
310.1	450.1	44.03	46.23	47.87
350.1	490.1	45.47	46.54	47.31
390.1	530.1	44.89	45.83	48.47
430.1	570.1	48.63	51.59	51.34
470.1	610.1	49.47	46.89	45.54
510.1	650.1	48.09	46.19	45.74
550.1	690.1	47.15	45.64	44.48
590.1	730.1	46.15	44.39	42.54
630.1	770.1	51.68	48.33	45.48
670.1	810.1	67.93	55.75	49.30
710.1	850.1	48.31	49.89	49.05
750.1	890.1	43.84	44.00	44.13
780.1	920.1	40.26	40.42	40.91
820.1	960.1	37.88	38.04	38.71
850.1	990.1	37.13	37.03	37.44
890.1	1030.1	36.92	36.74	36.99
920.1	1060.1	37.17	36.87	36.92
960.1	1100.1	37.46	36.96	36.54
990.1	1130.1	37.03	36.37	35.61
1030.1	1170.1	35.19	34.42	33.69
1060.1	1200.1	33.47	32.65	32.00
1100.1	1240.1	31.49	30.79	30.35
1130.1	1270.1	30.55	30.02	29.73
1170.1	1310.1	30.17	29.96	29.92
1200.1	1340.1	29.72	29.64	29.73
1240.1	1380.1	29.05	29.15	29.34
1270.1	1410.1	28.89	29.15	29.47
1310.1	1450.1	29.30	29.73	30.15
1340.1	1480.1	30.25	30.73	31.21
1380.1	1520.1	32.32	32.71	33.10
1410.1	1550.1	33.77	34.08	34.41
1450.1	1590.1	35.86	36.31	36.63
1480.1	1620.1	37.37	38.10	38.53
1520.1	1660.1	38.66	40.10	40.95
1550.1	1690.1	39.34	41.25	42.36

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+7	+10	+13
110.1	250.1	11.53	9.63	8.81
150.1	290.1	5.52	4.88	4.57
190.1	330.1	3.47	3.14	3.03
230.1	370.1	2.27	2.12	2.11
270.1	410.1	1.70	1.61	1.65
310.1	450.1	1.32	1.28	1.36
350.1	490.1	1.25	1.02	1.15
390.1	530.1	1.45	1.21	1.15
430.1	570.1	1.74	1.47	1.35
470.1	610.1	2.00	1.70	1.55
510.1	650.1	2.19	1.86	1.68
550.1	690.1	2.38	1.96	1.75
590.1	730.1	2.57	2.09	1.85
630.1	770.1	2.80	2.26	1.98
670.1	810.1	3.10	2.52	2.21
710.1	850.1	3.41	2.83	2.48
750.1	890.1	3.75	3.16	2.78
780.1	920.1	4.09	3.48	3.06
820.1	960.1	4.35	3.70	3.24
850.1	990.1	4.54	3.84	3.37
890.1	1030.1	4.54	3.89	3.45
920.1	1060.1	4.36	3.78	3.39
960.1	1100.1	4.22	3.73	3.42
990.1	1130.1	4.00	3.62	3.40
1030.1	1170.1	3.73	3.48	3.36
1060.1	1200.1	3.65	3.47	3.41
1100.1	1240.1	3.45	3.38	3.38
1130.1	1270.1	3.33	3.33	3.37
1170.1	1310.1	3.21	3.27	3.35
1200.1	1340.1	3.04	3.15	3.24
1240.1	1380.1	2.85	3.00	3.11
1270.1	1410.1	2.70	2.88	3.02
1310.1	1450.1	2.46	2.66	2.81
1340.1	1480.1	2.38	2.59	2.76
1380.1	1520.1	2.35	2.58	2.76
1410.1	1550.1	2.38	2.60	2.78
1450.1	1590.1	2.65	2.88	3.06
1480.1	1620.1	2.96	3.18	3.35
1520.1	1660.1	3.47	3.67	3.84
1550.1	1690.1	4.04	4.24	4.41

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+7	+10	+13
250.1	2.52	1.56	1.28
290.1	2.38	1.52	1.31
330.1	2.43	1.52	1.34
370.1	2.27	1.48	1.37
410.1	2.29	1.47	1.40
450.1	2.11	1.43	1.42
490.1	2.05	1.41	1.46
530.1	1.96	1.39	1.49
570.1	1.87	1.39	1.55
610.1	1.82	1.39	1.59
650.1	1.72	1.39	1.63
690.1	1.68	1.38	1.67
730.1	1.60	1.38	1.69
770.1	1.52	1.37	1.74
810.1	1.46	1.37	1.76
850.1	1.39	1.39	1.81
890.1	1.35	1.41	1.85
920.1	1.32	1.43	1.88
960.1	1.27	1.46	1.93
990.1	1.26	1.47	1.96
1030.1	1.22	1.50	2.00
1060.1	1.18	1.51	2.03
1100.1	1.17	1.54	2.07
1130.1	1.16	1.57	2.11
1170.1	1.15	1.58	2.13
1200.1	1.14	1.60	2.16
1240.1	1.14	1.62	2.18
1270.1	1.15	1.64	2.20
1310.1	1.19	1.68	2.27
1340.1	1.22	1.70	2.29
1380.1	1.27	1.74	2.33
1410.1	1.32	1.79	2.40
1450.1	1.38	1.82	2.41
1480.1	1.43	1.86	2.45
1520.1	1.51	1.92	2.52
1550.1	1.56	1.94	2.51
1590.1	1.64	2.01	2.59
1620.1	1.71	2.06	2.63
1660.1	1.79	2.10	2.66
1690.1	1.87	2.18	2.74

IF (OUT) (MHz)	IF VSWR @LO=680.1MHz (:1) @LO (dBm)		
	+7	+10	+13
10.1	1.18	1.09	1.27
30.1	1.21	1.05	1.23
50.1	1.20	1.06	1.24
70.1	1.23	1.03	1.20
90.1	1.21	1.05	1.23
110.1	1.25	1.02	1.18
130.1	1.32	1.05	1.12
150.1	1.33	1.05	1.11
170.1	1.35	1.07	1.09
190.1	1.39	1.11	1.07
210.1	1.46	1.17	1.01
230.1	1.55	1.25	1.08
250.1	1.55	1.25	1.08
270.1	1.61	1.31	1.13
290.1	1.73	1.41	1.23
310.1	1.79	1.47	1.29
330.1	1.87	1.54	1.36
340.1	1.89	1.57	1.38
360.1	1.99	1.66	1.46
370.1	2.01	1.69	1.51
390.1	2.11	1.79	1.60
400.1	2.14	1.83	1.65
420.1	2.20	1.88	1.70
430.1	2.22	1.92	1.76
450.1	2.27	1.97	1.80
460.1	2.28	2.00	1.86
480.1	2.31	2.03	1.89
490.1	2.32	2.06	1.94
510.1	2.30	2.03	1.91
520.1	2.31	2.05	1.94
540.1	2.28	2.00	1.90
550.1	2.28	2.00	1.90
570.1	2.26	1.94	1.84
580.1	2.27	1.93	1.83
600.1	2.25	1.87	1.73
610.1	2.29	1.88	1.73
630.1	2.25	1.80	1.62
640.1	2.28	1.81	1.60
660.1	2.29	1.78	1.54
670.1	2.33	1.81	1.54

Frequency Mixer HJK-ED12712/1

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	30	19	38	38	33	44	40	49	54	45
1	-	42	+0	44	16	42	23	37	36	42	32	53
2	80	64	79	65	70	67	74	63	73	74	65	65
3	>100	81	69	>86	66	80	66	73	56	77	61	>86
4	>100	>86	>86	>86	84	83	>86	86	>86	>86	>86	>86
5	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
6	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
7	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
8	>100	>86	>86	>86	>86	>86	80	>86	81	>86	>86	>86
9	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
10	>100	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86	>86
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 460 MHz; -8.00 dBm.
LO IN: 600 MHz; +10.00 dBm
IF OUT: 140 MHz; -14.04 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	42	29	52	51	46	58	59	65	78	74
1	-	43	+0	43	16	44	26	41	43	49	42	64
2	60	54	56	54	65	64	58	59	64	77	66	68
3	93	64	48	88	40	61	53	56	39	58	45	65
4	>100	79	78	75	74	72	76	74	70	74	73	77
5	>100	86	70	84	62	87	62	72	62	71	59	81
6	>100	85	87	91	84	83	79	89	79	88	87	86
7	>100	95	86	92	80	88	77	89	79	85	80	90
8	>100	>96	>96	>96	91	87	91	88	85	94	93	>96
9	>100	>96	>96	>96	93	>96	90	>96	89	>96	>96	>96
10	>100	>96	>96	>96	>96	>96	>96	>96	94	93	>96	>96
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 460 MHz; 2.00 dBm.
LO IN: 600 MHz; +10.00 dBm
IF OUT: 140 MHz; -4.17 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.