

Frequency Mixer

HJK-ED17125/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=650MHz (dB)			RF (IN) (MHz)	LO (MHz)	IP-3 INPUT (dBm)			RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+20dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+14	+17	+20			+14	+17	+20			+14	+17	+20
10.1	660.1	7.74	7.66	7.67	10.1	660.1	30.63	34.45	36.85	10.1	660.1	0.95	0.43	0.19
55.1	705.1	7.43	7.30	7.23	55.1	705.1	30.14	33.27	35.72	55.1	705.1	1.14	0.47	0.20
100.1	750.1	7.50	7.36	7.25	100.1	750.1	30.79	34.55	36.17	100.1	750.1	1.11	0.41	0.17
145.1	795.1	7.00	6.82	6.67	145.1	795.1	31.12	34.48	35.36	145.1	795.1	1.35	0.47	0.16
190.1	840.1	7.04	6.87	6.73	190.1	840.1	32.48	36.88	37.65	190.1	840.1	1.38	0.44	0.11
235.1	885.1	6.78	6.58	6.43	235.1	885.1	32.32	36.59	38.07	235.1	885.1	1.62	0.53	0.13
285.1	935.1	7.00	6.82	6.68	285.1	935.1	29.08	33.18	37.56	285.1	935.1	1.66	0.60	0.19
330.1	980.1	6.94	6.75	6.61	330.1	980.1	27.74	31.75	36.54	330.1	980.1	2.00	0.73	0.23
375.1	1025.1	7.29	7.11	6.99	375.1	1025.1	27.55	31.78	36.85	375.1	1025.1	1.76	0.61	0.22
420.1	1070.1	7.39	7.23	7.12	420.1	1070.1	27.89	32.82	39.09	420.1	1070.1	1.55	0.57	0.22
465.1	1115.1	7.67	7.54	7.44	465.1	1115.1	27.29	32.68	38.94	465.1	1115.1	1.44	0.55	0.24
510.1	1160.1	7.73	7.61	7.55	510.1	1160.1	26.70	31.89	37.21	510.1	1160.1	1.48	0.63	0.29
560.1	1210.1	7.76	7.62	7.55	560.1	1210.1	26.12	31.04	36.17	560.1	1210.1	1.72	0.80	0.36
605.1	1255.1	7.84	7.67	7.57	605.1	1255.1	25.57	30.29	35.80	605.1	1255.1	1.87	0.92	0.43
650.1	1300.1	7.91	7.70	7.58	650.1	1300.1	24.88	29.02	34.85	650.1	1300.1	2.32	1.17	0.52
695.1	1345.1	8.05	7.82	7.66	695.1	1345.1	24.36	27.85	33.22	695.1	1345.1	2.11	1.05	0.53
740.1	1390.1	8.33	8.07	7.90	740.1	1390.1	23.77	26.68	31.65	740.1	1390.1	2.33	1.16	0.60
790.1	1440.1	8.51	8.24	8.05	790.1	1440.1	23.83	26.41	31.37	790.1	1440.1	2.44	1.22	0.62
835.1	1485.1	8.69	8.41	8.21	835.1	1485.1	23.83	26.20	30.62	835.1	1485.1	2.55	1.31	0.69
880.1	1530.1	8.84	8.56	8.36	880.1	1530.1	23.87	26.18	30.28	880.1	1530.1	2.65	1.36	0.72
925.1	1575.1	9.01	8.73	8.53	925.1	1575.1	23.77	25.87	29.69	925.1	1575.1	2.79	1.43	0.75
970.1	1620.1	9.18	8.90	8.70	970.1	1620.1	23.95	25.73	29.29	970.1	1620.1	2.79	1.43	0.77
1015.1	1665.1	9.36	9.10	8.89	1015.1	1665.1	24.87	25.98	29.18	1015.1	1665.1	2.74	1.32	0.66
1065.1	1715.1	9.57	9.32	9.13	1065.1	1715.1	25.80	26.19	28.81	1065.1	1715.1	2.77	1.27	0.57
1110.1	1760.1	9.74	9.51	9.34	1110.1	1760.1	26.24	26.42	28.45	1110.1	1760.1	3.02	1.39	0.57
1155.1	1805.1	9.87	9.66	9.51	1155.1	1805.1	26.74	26.93	28.47	1155.1	1805.1	3.35	1.63	0.64
1200.1	1850.1	9.98	9.79	9.67	1200.1	1850.1	26.24	27.18	28.40	1200.1	1850.1	3.68	1.84	0.72
1245.1	1895.1	10.04	9.86	9.76	1245.1	1895.1	25.47	27.39	28.61	1245.1	1895.1	4.00	2.09	0.85
1295.1	1945.1	10.15	9.97	9.89	1295.1	1945.1	24.20	27.37	28.85	1295.1	1945.1	4.48	2.49	1.05
1340.1	1990.1	10.14	9.95	9.88	1340.1	1990.1	23.44	27.18	28.93	1340.1	1990.1	4.77	2.74	1.19
1385.1	2035.1	10.28	10.07	9.99	1385.1	2035.1	22.31	26.73	28.91	1385.1	2035.1	5.16	3.09	1.44
1430.1	2080.1	10.41	10.19	10.11	1430.1	2080.1	22.04	26.50	28.87	1430.1	2080.1	5.30	3.23	1.53
1475.1	2125.1	10.63	10.39	10.29	1475.1	2125.1	20.96	25.56	29.09	1475.1	2125.1	5.67	3.61	1.80
1520.1	2170.1	10.65	10.38	10.28	1520.1	2170.1	20.79	25.54	29.62	1520.1	2170.1	5.60	3.55	1.79
1570.1	2220.1	10.90	10.57	10.42	1570.1	2220.1	19.70	24.13	29.35	1570.1	2220.1	5.79	3.81	2.01
1615.1	2265.1	10.87	10.50	10.31	1615.1	2265.1	19.44	23.73	28.92	1615.1	2265.1	6.05	4.06	2.21
1660.1	2310.1	11.15	10.70	10.45	1660.1	2310.1	18.57	22.60	27.39	1660.1	2310.1	6.26	4.34	2.49
1705.1	2355.1	11.11	10.60	10.28	1705.1	2355.1	18.17	21.98	26.44	1705.1	2355.1	6.68	4.79	2.90
1750.1	2400.1	11.48	10.89	10.50	1750.1	2400.1	17.35	20.90	25.11	1750.1	2400.1	6.78	4.94	3.10
1800.1	2450.1	11.55	10.91	10.49	1800.1	2450.1	16.88	20.28	24.38	1800.1	2450.1	7.18	5.35	3.49

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=265.1MHz (dB)
		@LO (dBm) +17
255.0	10.1	16.52
243.0	22.1	13.32
231.0	34.1	12.93
219.0	46.1	13.14
207.0	58.1	13.42
195.0	70.1	13.71
183.0	82.1	14.54
169.0	96.1	16.18
157.0	108.1	16.34
145.0	120.1	16.37
133.0	132.1	17.12
121.0	144.1	16.29
109.0	156.1	15.93
95.0	170.1	13.89
83.0	182.1	13.96
71.0	194.1	15.56
59.0	206.1	15.93
47.0	218.1	16.93
155.0	420.1	9.76
215.0	480.1	7.80
275.0	540.1	7.53
335.0	600.1	7.27
395.0	660.1	7.09
455.0	720.1	6.83
515.0	780.1	6.77
575.0	840.1	6.80
635.0	900.1	6.65
695.0	960.1	6.64
755.0	1020.1	6.73
815.0	1080.1	6.83
875.0	1140.1	7.07
935.0	1200.1	7.41
995.0	1260.1	7.70
1055.0	1320.1	7.94
1115.0	1380.1	8.38
1175.0	1440.1	9.24
1235.0	1500.1	10.48
1295.0	1560.1	11.32

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=30MHz (dB)
		@LO (dBm) +17
410.1	440.1	8.67
430.1	460.1	8.02
460.1	490.1	7.55
480.1	510.1	7.50
510.1	540.1	7.42
530.1	560.1	7.34
560.1	590.1	7.48
580.1	610.1	7.47
600.1	630.1	7.43
630.1	660.1	7.40
650.1	680.1	7.40
680.1	710.1	7.39
700.1	730.1	7.38
730.1	760.1	7.27
750.1	780.1	7.27
770.1	800.1	7.31
800.1	830.1	7.27
820.1	850.1	7.18
850.1	880.1	7.24
870.1	900.1	7.21
900.1	930.1	7.14
920.1	950.1	7.11
950.1	980.1	7.19
970.1	1000.1	7.25
990.1	1020.1	7.28
1020.1	1050.1	7.42
1040.1	1070.1	7.51
1070.1	1100.1	7.71
1090.1	1120.1	7.81
1120.1	1150.1	8.04
1140.1	1170.1	8.24
1160.1	1190.1	8.51
1190.1	1220.1	8.66
1210.1	1240.1	8.94
1240.1	1270.1	9.50
1260.1	1290.1	9.80
1290.1	1320.1	10.08
1340.1	1370.1	11.08

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB)
		@LO (dBm) +17
480.0	20.1	16.21
470.0	30.1	14.56
455.0	45.1	14.06
445.0	55.1	14.07
430.0	70.1	14.04
420.0	80.1	14.31
405.0	95.1	14.95
395.0	105.1	15.28
380.0	120.1	15.65
370.0	130.1	16.82
355.0	145.1	17.53
345.0	155.1	16.97
330.0	170.1	14.67
320.0	180.1	13.98
310.0	190.1	14.15
295.0	205.1	16.03
285.0	215.1	17.69
270.0	230.1	21.16
260.0	240.1	22.91
245.0	255.1	24.82
235.0	265.1	28.02
220.0	280.1	32.66
210.0	290.1	32.92
195.0	305.1	32.65
185.0	315.1	31.98
170.0	330.1	27.56
160.0	340.1	25.88
150.0	350.1	25.86
135.0	365.1	26.04
125.0	375.1	23.56
110.0	390.1	19.34
100.0	400.1	16.35
85.0	415.1	13.45
75.0	425.1	11.83
60.0	440.1	10.41
50.0	450.1	10.58
35.0	465.1	11.60
25.0	475.1	13.30

Frequency Mixer

HJK-ED17125/1

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+14	+17	+20	+14	+17	+20
660.1	47.57	47.26	46.88	37.00	37.15	37.28
705.1	45.28	45.00	44.69	36.98	37.21	37.40
750.1	43.26	43.06	42.85	36.77	37.11	37.42
795.1	41.79	41.68	41.59	36.77	37.17	37.56
840.1	40.35	40.32	40.28	36.59	36.98	37.36
885.1	39.73	39.73	39.74	36.98	37.48	37.91
935.1	39.06	39.10	39.20	37.68	38.36	38.98
980.1	37.32	37.22	37.25	38.31	39.20	40.02
1025.1	33.94	33.61	33.44	38.20	39.11	40.00
1070.1	33.29	33.11	33.08	37.70	38.64	39.52
1115.1	33.64	33.53	33.56	37.48	38.49	39.46
1160.1	33.98	33.89	33.93	37.59	38.62	39.62
1210.1	34.54	34.46	34.44	37.45	38.53	39.54
1255.1	35.13	35.04	35.00	37.67	38.72	39.70
1300.1	35.70	35.61	35.56	37.54	38.47	39.33
1345.1	36.15	36.04	35.97	37.85	38.66	39.34
1390.1	36.53	36.41	36.32	38.23	38.95	39.58
1440.1	36.43	36.29	36.16	38.94	39.67	40.30
1485.1	36.17	35.99	35.82	38.96	39.69	40.33
1530.1	35.94	35.73	35.54	39.64	40.37	40.98
1575.1	36.12	35.87	35.67	39.97	40.72	41.40
1620.1	36.02	35.77	35.57	40.36	41.16	41.82
1665.1	36.07	35.79	35.59	40.88	41.61	42.27
1715.1	35.80	35.49	35.28	41.03	41.66	42.21
1760.1	35.80	35.49	35.28	41.51	42.03	42.47
1805.1	35.93	35.59	35.35	41.91	42.32	42.66
1850.1	36.24	35.90	35.66	42.67	42.95	43.25
1895.1	36.14	35.79	35.53	43.06	43.37	43.65
1945.1	36.53	36.17	35.89	43.17	43.52	43.82
1990.1	36.35	36.02	35.76	41.73	41.86	41.95
2035.1	36.88	36.60	36.37	39.68	39.48	39.27
2080.1	36.43	36.19	36.00	37.33	36.99	36.69
2125.1	36.94	36.74	36.56	36.30	35.98	35.72
2170.1	36.16	35.99	35.85	34.96	34.72	34.52
2220.1	36.23	36.12	36.03	34.53	34.34	34.19
2265.1	35.46	35.40	35.36	33.87	33.71	33.59
2310.1	35.46	35.43	35.43	33.85	33.71	33.62
2355.1	34.95	34.91	34.91	33.25	33.13	33.06
2400.1	34.93	34.87	34.85	33.40	33.30	33.24
2450.1	34.84	34.75	34.71	32.69	32.60	32.54

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+14	+17	+20
10.1	660.1	56.39	55.65	53.89
55.1	705.1	42.28	41.39	39.88
100.1	750.1	40.48	40.09	38.80
145.1	795.1	38.65	38.57	37.76
190.1	840.1	38.09	38.17	37.38
235.1	885.1	37.87	38.12	37.41
285.1	935.1	38.91	39.32	38.68
330.1	980.1	40.44	40.90	40.18
375.1	1025.1	47.57	50.68	51.02
420.1	1070.1	54.66	70.94	65.61
465.1	1115.1	57.32	61.39	55.63
510.1	1160.1	58.21	58.22	53.01
560.1	1210.1	59.50	56.04	50.67
605.1	1255.1	57.38	56.32	49.39
650.1	1300.1	52.72	59.46	50.36
695.1	1345.1	48.77	61.34	54.73
740.1	1390.1	45.00	51.57	65.61
790.1	1440.1	42.83	46.83	53.86
835.1	1485.1	42.16	45.15	49.71
880.1	1530.1	42.61	45.52	49.49
925.1	1575.1	43.13	46.26	50.65
970.1	1620.1	43.25	46.81	52.69
1015.1	1665.1	42.07	45.22	50.02
1065.1	1715.1	40.65	43.30	47.38
1110.1	1760.1	39.37	41.56	44.51
1155.1	1805.1	38.41	40.09	42.39
1200.1	1850.1	37.40	38.69	40.32
1245.1	1895.1	37.56	38.56	39.94
1295.1	1945.1	38.01	38.75	39.70
1340.1	1990.1	39.21	39.84	40.49
1385.1	2035.1	40.21	40.65	41.12
1430.1	2080.1	40.37	40.58	40.77
1475.1	2125.1	39.75	39.77	39.84
1520.1	2170.1	39.11	39.05	39.10
1570.1	2220.1	38.66	38.55	38.50
1615.1	2265.1	38.15	37.94	37.85
1660.1	2310.1	38.24	37.99	37.82
1705.1	2355.1	37.58	37.26	37.06
1750.1	2400.1	37.73	37.42	37.19
1800.1	2450.1	37.13	36.78	36.54

Frequency Mixer

HJK-ED17125/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=1195MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+14	+17	+20		+14	+17	+20		+14	+17	+20
10.1	660.1	2.92	2.97	3.46	660.1	3.14	3.11	3.07	70.1	2.79	2.71	2.64
55.1	705.1	2.62	2.77	2.90	705.1	2.67	2.66	2.63	100.1	2.14	2.07	2.03
100.1	750.1	2.49	2.61	2.74	750.1	2.35	2.33	2.31	130.1	1.85	1.80	1.76
145.1	795.1	2.10	2.19	2.29	795.1	2.13	2.12	2.11	160.1	1.71	1.66	1.62
190.1	840.1	1.93	2.03	2.11	840.1	2.02	2.01	2.01	190.1	1.61	1.56	1.52
235.1	885.1	1.88	1.98	2.08	885.1	2.01	2.02	2.03	220.1	1.59	1.54	1.50
285.1	935.1	1.97	2.07	2.17	935.1	2.11	2.13	2.15	250.1	1.57	1.51	1.47
330.1	980.1	2.22	2.32	2.43	980.1	2.29	2.32	2.35	280.1	1.54	1.48	1.44
375.1	1025.1	2.36	2.47	2.57	1025.1	2.56	2.60	2.65	310.1	1.57	1.50	1.46
420.1	1070.1	2.59	2.70	2.81	1070.1	3.02	3.09	3.14	340.1	1.59	1.53	1.48
465.1	1115.1	2.58	2.69	2.79	1115.1	3.58	3.66	3.75	370.1	1.58	1.52	1.47
510.1	1160.1	2.63	2.75	2.86	1160.1	4.21	4.29	4.39	400.1	1.64	1.57	1.51
560.1	1210.1	2.47	2.56	2.65	1210.1	4.96	5.08	5.20	430.1	1.68	1.61	1.56
605.1	1255.1	2.43	2.52	2.60	1255.1	5.64	5.76	5.80	460.1	1.68	1.61	1.55
650.1	1300.1	2.35	2.42	2.48	1300.1	6.23	6.35	6.43	490.1	1.75	1.67	1.61
695.1	1345.1	2.23	2.29	2.35	1345.1	6.63	6.72	6.71	520.1	1.80	1.73	1.67
740.1	1390.1	2.17	2.22	2.27	1390.1	6.89	6.96	6.98	550.1	1.80	1.73	1.67
790.1	1440.1	2.01	2.06	2.11	1440.1	6.85	6.90	6.84	580.1	1.87	1.79	1.73
835.1	1485.1	1.92	1.98	2.03	1485.1	6.71	6.75	6.73	610.1	1.93	1.86	1.80
880.1	1530.1	1.79	1.84	1.89	1530.1	6.43	6.44	6.38	640.1	1.93	1.85	1.79
925.1	1575.1	1.70	1.77	1.82	1575.1	6.09	6.11	6.09	670.1	1.99	1.92	1.86
970.1	1620.1	1.60	1.66	1.72	1620.1	5.72	5.69	5.64	700.1	2.05	1.99	1.93
1015.1	1665.1	1.51	1.59	1.65	1665.1	5.30	5.29	5.28	730.1	2.04	1.98	1.93
1065.1	1715.1	1.45	1.53	1.61	1715.1	4.87	4.86	4.80	760.1	2.10	2.05	2.01
1110.1	1760.1	1.40	1.50	1.58	1760.1	4.49	4.50	4.48	790.1	2.19	2.14	2.12
1155.1	1805.1	1.41	1.51	1.61	1805.1	4.16	4.15	4.11	820.1	2.15	2.12	2.11
1200.1	1850.1	1.39	1.50	1.60	1850.1	3.84	3.84	3.82	850.1	2.26	2.24	2.24
1245.1	1895.1	1.47	1.59	1.70	1895.1	3.54	3.53	3.51	880.1	2.31	2.32	2.34
1295.1	1945.1	1.48	1.60	1.72	1945.1	3.26	3.25	3.24	910.1	2.30	2.32	2.35
1340.1	1990.1	1.61	1.74	1.87	1990.1	3.02	3.01	2.99	940.1	2.43	2.47	2.52
1385.1	2035.1	1.61	1.74	1.86	2035.1	2.82	2.81	2.80	970.1	2.53	2.60	2.66
1430.1	2080.1	1.77	1.92	2.06	2080.1	2.62	2.62	2.61	1000.1	2.55	2.63	2.71
1475.1	2125.1	1.78	1.94	2.09	2125.1	2.47	2.46	2.44	1030.1	2.73	2.82	2.91
1520.1	2170.1	1.91	2.07	2.23	2170.1	2.32	2.32	2.32	1060.1	2.94	3.06	3.18
1570.1	2220.1	1.96	2.13	2.29	2220.1	2.20	2.20	2.18	1090.1	3.03	3.16	3.29
1615.1	2265.1	2.02	2.18	2.34	2265.1	2.10	2.10	2.10	1120.1	3.31	3.46	3.61
1660.1	2310.1	2.09	2.25	2.41	2310.1	2.03	2.03	2.02	1150.1	3.71	3.91	4.09
1705.1	2355.1	2.07	2.21	2.34	2355.1	1.97	1.97	1.98	1160.1	3.77	3.96	4.14
1750.1	2400.1	2.15	2.29	2.42	2400.1	1.95	1.94	1.93	1170.1	3.81	4.01	4.21
1800.1	2450.1	2.13	2.25	2.37	2450.1	1.93	1.93	1.93	1180.1	3.96	4.18	4.39

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	---	---	14	14	44	30	35	39	54	45	33	50
1	---	33	---	48	38	53	30	49	48	56	52	58
2	99	72	49	67	75	76	81	80	102	85	69	84
3	113	86	71	83	94	93	92	93	94	102	96	89
4	115	95	81	97	89	103	95	103	96	101	100	104
5	113	104	91	104	96	104	103	102	102	102	104	100
6	115	104	100	104	100	104	101	101	102	103	103	103
7	114	103	97	103	95	104	101	100	102	103	102	103
8	115	104	101	102	102	106	103	103	103	102	101	102
9	115	102	104	104	103	104	104	102	103	100	103	104
10	113	99	105	95	106	97	104	103	102	102	103	105
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 270 MHz; 0 dBm.
LO IN: 920 MHz; +17.00 dBm
IF OUT: 650 MHz; -7.45 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	---	---	25	24	58	40	45	49	65	54	44	65
1	---	33	---	47	38	53	30	50	55	55	56	63
2	88	58	39	55	63	67	63	76	69	76	64	71
3	97	62	46	64	66	76	67	80	71	98	77	78
4	107	74	67	76	82	88	91	85	92	99	81	85
5	108	90	69	87	78	95	102	101	99	92	102	113
6	108	107	84	95	82	99	104	101	96	98	108	95
7	107	107	85	103	81	114	113	108	92	106	112	114
8	108	110	88	100	86	104	111	111	99	105	111	109
9	106	113	97	112	89	106	105	113	96	111	105	113
10	105	114	105	106	91	105	104	113	105	113	109	115
RF CAL	0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 270 MHz; 10 dBm.
LO IN: 920 MHz; +17.00 dBm
IF OUT: 650 MHz; 2.93 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 represents the Harmonics level of the RF Input Signal to the mixer