

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=20MHz (dB)		
		@LO (dBm)		
		+19	+21	+23
90.1	70.1	6.13	6.01	6.00
120.1	100.1	6.19	6.01	6.02
150.1	130.1	6.03	5.92	5.96
180.1	160.1	6.05	5.97	6.02
240.1	220.1	6.07	5.99	6.04
270.1	250.1	6.09	6.02	6.08
300.1	280.1	6.13	6.07	6.12
340.1	320.1	6.14	6.06	6.12
370.1	350.1	6.18	6.12	6.20
410.1	390.1	6.24	6.17	6.24
440.1	420.1	6.25	6.17	6.23
480.1	460.1	6.34	6.25	6.30
510.1	490.1	6.33	6.25	6.31
550.1	530.1	6.35	6.28	6.35
580.1	560.1	6.37	6.29	6.35
620.1	600.1	6.39	6.30	6.35
650.1	630.1	6.50	6.38	6.41
690.1	670.1	6.65	6.43	6.42
720.1	700.1	6.74	6.51	6.47
760.1	740.1	6.94	6.69	6.61
790.1	770.1	6.99	6.70	6.60
830.1	810.1	7.01	6.68	6.58
860.1	840.1	6.99	6.67	6.60
900.1	880.1	6.94	6.68	6.64
930.1	910.1	6.88	6.67	6.64
970.1	950.1	6.96	6.76	6.73
1000.1	980.1	7.05	6.85	6.81
1040.1	1020.1	7.21	6.99	6.93
1070.1	1050.1	7.37	7.12	7.05
1110.1	1090.1	7.58	7.32	7.23
1140.1	1120.1	7.80	7.49	7.38
1180.1	1160.1	8.13	7.77	7.61
1210.1	1190.1	8.48	8.02	7.84
1250.1	1230.1	9.15	8.44	8.12
1280.1	1260.1	9.79	8.83	8.36
1320.1	1300.1	11.37	9.71	8.89
1350.1	1330.1	13.18	10.80	9.56

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+19	+21	+23
90.1	70.1	26.55	25.99	33.85
120.1	100.1	27.11	27.21	28.35
150.1	130.1	26.08	28.68	35.91
180.1	160.1	25.52	34.84	36.10
240.1	220.1	32.34	32.09	31.15
270.1	250.1	33.21	30.84	30.80
300.1	280.1	31.41	30.86	32.83
340.1	320.1	30.17	30.16	32.21
370.1	350.1	27.66	28.92	32.54
410.1	390.1	31.55	33.34	35.54
440.1	420.1	29.20	31.58	34.41
480.1	460.1	25.80	26.44	28.63
510.1	490.1	24.30	26.72	30.72
550.1	530.1	27.01	30.56	34.88
580.1	560.1	30.67	33.78	34.57
620.1	600.1	29.29	30.90	31.24
650.1	630.1	26.18	28.38	29.36
690.1	670.1	26.28	26.26	27.90
720.1	700.1	23.15	26.46	26.81
760.1	740.1	20.61	21.42	22.92
790.1	770.1	19.79	19.84	20.42
830.1	810.1	18.53	18.75	20.08
860.1	840.1	17.91	19.06	21.48
900.1	880.1	17.94	20.42	23.69
930.1	910.1	19.03	22.34	26.48
970.1	950.1	20.48	24.39	27.94
1000.1	980.1	21.32	24.92	26.78
1040.1	1020.1	21.91	24.63	25.68
1070.1	1050.1	21.73	24.45	25.68
1110.1	1090.1	21.34	23.86	25.34
1140.1	1120.1	20.44	23.18	25.06
1180.1	1160.1	19.11	22.16	24.61
1210.1	1190.1	17.74	20.92	23.88
1250.1	1230.1	16.23	18.85	21.87
1280.1	1260.1	15.80	17.93	20.51
1320.1	1300.1	16.07	17.27	19.14
1350.1	1330.1	18.25	17.48	19.02

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+16dBm (dB)		
		@LO (dBm)		
		+19	+21	+23
90.1	70.1	1.47	1.28	1.10
120.1	100.1	1.37	1.24	1.02
150.1	130.1	1.45	1.22	0.98
180.1	160.1	1.49	1.24	1.01
240.1	220.1	1.29	1.07	0.86
270.1	250.1	1.27	1.07	0.87
300.1	280.1	1.19	0.99	0.78
340.1	320.1	1.16	0.96	0.74
370.1	350.1	1.10	0.90	0.69
410.1	390.1	1.04	0.84	0.63
440.1	420.1	1.06	0.86	0.66
480.1	460.1	0.97	0.79	0.61
510.1	490.1	0.98	0.77	0.58
550.1	530.1	0.96	0.75	0.58
580.1	560.1	0.89	0.68	0.53
620.1	600.1	1.02	0.76	0.59
650.1	630.1	1.05	0.79	0.61
690.1	670.1	1.11	0.88	0.67
720.1	700.1	1.21	0.98	0.79
760.1	740.1	1.17	0.95	0.76
790.1	770.1	1.29	1.06	0.85
830.1	810.1	1.46	1.15	0.90
860.1	840.1	1.63	1.23	0.89
900.1	880.1	2.11	1.39	0.93
930.1	910.1	2.40	1.47	0.96
970.1	950.1	2.83	1.69	1.06
1000.1	980.1	3.15	1.91	1.19
1040.1	1020.1	3.58	2.24	1.38
1070.1	1050.1	3.88	2.50	1.55
1110.1	1090.1	4.28	2.88	1.81
1140.1	1120.1	4.71	3.29	2.10
1180.1	1160.1	4.95	3.61	2.38
1210.1	1190.1	5.16	3.86	2.59
1250.1	1230.1	5.38	4.34	3.09
1280.1	1260.1	5.10	4.34	3.23
1320.1	1300.1	4.46	4.35	3.56
1350.1	1330.1	3.34	3.93	3.52

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=320MHz (dB)
		@LO (dBm)
		+21
309.9	10.1	6.18
291.7	28.3	6.17
273.5	46.5	6.16
255.4	64.6	6.16
237.2	82.8	6.17
219.0	101.0	6.14
200.8	119.2	6.08
182.7	137.3	6.04
164.5	155.5	6.07
146.3	173.7	6.00
128.1	191.9	6.03
110.0	210.0	5.95
91.8	228.2	5.95
73.6	246.4	5.87
55.4	264.6	5.96
37.3	282.7	5.99
19.1	300.9	5.99
10.0	330.0	6.27
71.8	391.8	5.90
102.7	422.7	5.98
164.6	484.6	6.01
195.5	515.5	6.00
257.3	577.3	6.12
288.2	608.2	6.11
350.0	670.0	6.22
380.9	700.9	6.16
442.8	762.8	6.18
473.7	793.7	6.13
535.5	855.5	6.17
566.4	886.4	6.12
628.2	948.2	6.13
659.2	979.2	6.16
721.0	1041.0	6.33
751.9	1071.9	6.30
813.7	1133.7	6.61
844.6	1164.6	6.74
906.5	1226.5	7.37
937.4	1257.4	7.73
999.2	1319.2	9.43
1030.1	1350.1	10.46

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=315.1MHz (dB)
		@LO (dBm)
		+21
10.0	325.1	6.30
30.0	345.1	6.02
50.0	365.1	5.94
70.0	385.1	5.94
90.0	405.1	5.85
110.0	425.1	5.93
130.0	445.1	6.03
150.0	465.1	5.95
170.0	485.1	5.97
190.0	505.1	5.98
210.0	525.1	6.01
230.0	545.1	6.09
250.0	565.1	6.06
270.0	585.1	6.16
290.0	605.1	6.12
310.0	625.1	6.13
350.0	665.1	6.20
370.0	685.1	6.22
410.0	725.1	6.16
430.0	745.1	6.11
470.0	785.1	6.16
490.0	805.1	6.15
530.0	845.1	6.14
550.0	865.1	6.11
590.0	905.1	6.12
610.0	925.1	6.13
650.0	965.1	6.20
670.0	985.1	6.21
710.0	1025.1	6.26
730.0	1045.1	6.27
770.0	1085.1	6.35
790.0	1105.1	6.42
830.0	1145.1	6.69
850.0	1165.1	6.76
890.0	1205.1	7.09
910.0	1225.1	7.36
950.0	1265.1	7.86
970.0	1285.1	8.31
1010.0	1325.1	9.62
1030.0	1345.1	10.30

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=326.1MHz (dB)
		@LO (dBm)
		+21
316.0	10.1	6.19
310.0	16.1	6.14
304.0	22.1	6.16
298.0	28.1	6.18
292.0	34.1	6.13
286.0	40.1	6.18
280.0	46.1	6.16
274.0	52.1	6.14
268.0	58.1	6.23
262.0	64.1	6.18
256.0	70.1	6.17
250.0	76.1	6.22
244.0	82.1	6.18
238.0	88.1	6.16
232.0	94.1	6.16
226.0	100.1	6.14
214.0	112.1	6.11
208.0	118.1	6.11
196.0	130.1	6.07
190.0	136.1	6.04
178.0	148.1	6.04
172.0	154.1	6.05
160.0	166.1	6.01
154.0	172.1	6.03
142.0	184.1	5.98
136.0	190.1	6.03
124.0	202.1	5.99
118.0	208.1	6.01
106.0	220.1	5.99
100.0	226.1	6.00
88.0	238.1	5.94
82.0	244.1	5.86
70.0	256.1	5.81
64.0	262.1	5.84
52.0	274.1	5.95
46.0	280.1	5.98
34.0	292.1	5.94
28.0	298.1	5.97
16.0	310.1	5.95
10.0	316.1	6.25

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+19	+21	+23	+19	+21	+23
70.1	52.77	53.67	54.18	53.69	53.53	52.95
100.1	53.61	53.87	53.57	52.24	51.38	50.24
130.1	53.69	53.24	52.51	50.65	49.27	47.92
160.1	53.65	52.90	51.80	49.83	48.42	46.84
220.1	53.72	51.84	50.25	47.55	46.03	44.21
250.1	55.05	52.85	51.09	47.41	45.81	43.92
280.1	54.68	52.57	50.97	46.45	44.99	43.12
320.1	54.47	52.54	50.73	45.76	44.28	42.26
350.1	53.49	52.52	51.57	45.12	43.91	42.07
390.1	52.20	52.06	51.72	44.47	43.39	41.67
420.1	49.66	49.90	50.22	44.42	43.46	41.89
460.1	47.74	48.25	48.88	43.91	43.20	41.94
490.1	46.29	46.81	47.38	43.55	43.02	42.01
530.1	44.74	44.98	45.34	42.86	42.72	42.03
560.1	44.14	44.32	44.60	42.35	42.30	41.72
600.1	42.89	43.14	43.37	41.85	42.03	41.56
630.1	41.96	42.32	42.52	41.27	41.64	41.22
670.1	40.05	40.60	40.91	41.08	41.60	41.27
700.1	38.11	38.57	39.01	40.90	41.68	41.57
740.1	36.36	36.56	36.93	40.37	41.33	41.39
770.1	36.14	36.34	36.57	39.88	40.89	40.58
810.1	36.13	36.33	36.66	39.46	40.39	39.99
840.1	36.23	36.56	36.85	39.19	40.06	39.52
880.1	36.00	36.35	36.67	38.73	39.65	39.22
910.1	36.46	36.86	37.34	38.72	39.78	39.63
950.1	35.75	36.18	36.63	38.61	39.77	39.64
980.1	35.59	36.00	36.45	38.38	39.51	39.26
1020.1	35.13	35.53	36.00	38.12	39.17	38.81
1050.1	34.16	34.48	34.90	38.02	38.97	38.75
1090.1	33.48	33.86	34.28	37.87	38.70	38.51
1120.1	32.65	33.08	33.54	37.86	38.61	38.42
1160.1	31.43	31.95	32.44	37.93	38.57	38.37
1190.1	30.62	31.16	31.68	37.51	38.01	37.79
1230.1	29.52	30.21	30.76	36.80	37.27	37.16
1260.1	28.66	29.38	29.95	36.41	36.96	36.95
1300.1	27.69	28.51	29.20	35.34	35.94	36.24
1330.1	26.96	27.80	28.55	34.61	35.23	35.84

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+19	+21	+23
90.1	70.1	37.52	38.71	40.92
120.1	100.1	38.13	39.36	41.83
150.1	130.1	37.75	37.93	37.51
180.1	160.1	42.59	43.38	44.99
240.1	220.1	46.81	47.13	47.24
270.1	250.1	48.80	48.66	48.36
300.1	280.1	48.46	49.06	50.31
340.1	320.1	47.81	45.78	39.34
370.1	350.1	45.80	45.43	44.53
410.1	390.1	43.59	43.16	42.61
440.1	420.1	42.33	41.90	41.27
480.1	460.1	41.18	40.88	40.55
510.1	490.1	39.24	38.78	37.84
550.1	530.1	38.04	37.68	37.02
580.1	560.1	36.96	36.80	36.42
620.1	600.1	36.12	35.81	35.41
650.1	630.1	35.96	35.62	35.16
690.1	670.1	36.22	35.50	34.89
720.1	700.1	36.50	35.60	34.58
760.1	740.1	36.84	36.31	35.41
790.1	770.1	37.39	37.00	36.51
830.1	810.1	37.05	36.83	36.42
860.1	840.1	36.71	36.58	36.13
900.1	880.1	37.25	37.26	36.66
930.1	910.1	38.00	37.87	37.56
970.1	950.1	38.65	38.53	38.10
1000.1	980.1	38.96	38.70	37.89
1040.1	1020.1	39.15	38.64	37.33
1070.1	1050.1	40.05	39.88	39.41
1110.1	1090.1	40.41	40.28	39.68
1140.1	1120.1	40.05	39.43	38.07
1180.1	1160.1	40.76	39.74	37.61
1210.1	1190.1	41.72	40.25	37.24
1250.1	1230.1	42.53	41.32	38.64
1280.1	1260.1	42.06	41.18	39.29
1320.1	1300.1	41.92	41.21	39.00
1350.1	1330.1	41.55	41.58	37.38

Frequency Mixer

HJK-ED9172

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=300MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+19	+21	+23		+19	+21	+23		+19	+21	+23
90.1	70.1	1.25	1.19	1.14	70.1	2.11	2.83	3.77	20.0	1.04	1.02	1.04
120.1	100.1	1.24	1.16	1.13	100.1	1.92	2.52	3.25	25.0	1.05	1.05	1.07
150.1	130.1	1.19	1.15	1.13	130.1	1.91	2.51	3.22	30.0	1.06	1.08	1.11
180.1	160.1	1.21	1.19	1.17	160.1	1.72	2.21	2.77	35.0	1.05	1.08	1.12
240.1	220.1	1.23	1.22	1.22	220.1	1.56	2.01	2.52	50.0	1.04	1.04	1.07
270.1	250.1	1.28	1.27	1.26	250.1	1.45	1.84	2.28	60.0	1.07	1.08	1.10
300.1	280.1	1.28	1.27	1.27	280.1	1.35	1.72	2.13	65.0	1.09	1.10	1.12
340.1	320.1	1.31	1.30	1.29	320.1	1.26	1.61	1.99	75.0	1.07	1.09	1.12
370.1	350.1	1.33	1.32	1.32	350.1	1.20	1.52	1.87	80.0	1.06	1.07	1.09
410.1	390.1	1.35	1.34	1.33	390.1	1.19	1.48	1.81	90.0	1.11	1.09	1.09
440.1	420.1	1.37	1.35	1.35	420.1	1.26	1.48	1.79	95.0	1.14	1.13	1.13
480.1	460.1	1.42	1.39	1.38	460.1	1.51	1.67	1.93	105.0	1.16	1.17	1.18
510.1	490.1	1.42	1.41	1.40	490.1	1.71	1.84	2.09	110.0	1.15	1.16	1.18
550.1	530.1	1.43	1.42	1.41	530.1	1.93	2.08	2.33	120.0	1.11	1.12	1.13
580.1	560.1	1.42	1.41	1.40	560.1	2.11	2.31	2.60	125.0	1.12	1.12	1.13
620.1	600.1	1.45	1.43	1.42	600.1	2.36	2.60	2.93	135.0	1.18	1.17	1.18
650.1	630.1	1.49	1.45	1.43	630.1	2.65	2.93	3.29	140.0	1.19	1.19	1.20
690.1	670.1	1.56	1.48	1.44	670.1	3.09	3.41	3.83	150.0	1.17	1.18	1.19
720.1	700.1	1.67	1.56	1.48	700.1	3.50	3.81	4.23	155.0	1.14	1.15	1.16
760.1	740.1	1.79	1.67	1.56	740.1	4.28	4.64	5.07	165.0	1.18	1.17	1.17
790.1	770.1	1.84	1.70	1.59	770.1	4.84	5.23	5.72	170.0	1.21	1.20	1.20
830.1	810.1	1.86	1.70	1.58	810.1	5.54	5.93	6.32	180.0	1.24	1.24	1.25
860.1	840.1	1.81	1.67	1.58	840.1	6.13	6.53	7.00	185.0	1.22	1.23	1.24
900.1	880.1	1.80	1.69	1.61	880.1	6.58	7.00	7.53	195.0	1.20	1.19	1.20
930.1	910.1	1.79	1.70	1.63	910.1	6.81	7.28	7.76	200.0	1.22	1.21	1.21
970.1	950.1	1.81	1.72	1.66	950.1	7.31	7.97	8.72	210.0	1.29	1.28	1.28
1000.1	980.1	1.87	1.79	1.72	980.1	7.50	8.20	8.90	215.0	1.30	1.30	1.31
1040.1	1020.1	1.94	1.86	1.79	1020.1	7.76	8.47	9.13	225.0	1.26	1.26	1.28
1070.1	1050.1	1.97	1.89	1.82	1050.1	8.12	8.99	9.79	230.0	1.23	1.24	1.25
1110.1	1090.1	2.08	1.99	1.92	1090.1	8.27	8.99	9.58	240.0	1.26	1.25	1.25
1140.1	1120.1	2.13	2.04	1.96	1120.1	8.60	9.43	10.02	245.0	1.30	1.29	1.29
1180.1	1160.1	2.21	2.11	2.03	1160.1	9.43	10.37	11.24	255.0	1.33	1.33	1.34
1210.1	1190.1	2.31	2.19	2.10	1190.1	9.53	10.25	10.62	260.0	1.31	1.31	1.32
1250.1	1230.1	2.43	2.26	2.15	1230.1	10.07	10.89	11.53	270.0	1.28	1.27	1.27
1280.1	1260.1	2.54	2.33	2.19	1260.1	10.69	11.46	12.18	275.0	1.31	1.29	1.29
1320.1	1300.1	2.86	2.52	2.33	1300.1	10.75	11.09	11.17	285.0	1.39	1.38	1.38
1350.1	1330.1	3.14	2.71	2.44	1330.1	11.53	11.93	12.26	290.0	1.40	1.40	1.40

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	22	27	33	34	37	34	38	31	45	46
1	-	44	+0	37	10	44	15	55	23	57	35	51
2	63	60	69	67	68	77	72	74	76	67	69	63
3	>90	>85	69	>85	63	82	62	84	62	84	67	85
4	>90	>85	>85	>85	84	>85	80	>85	>85	>85	>85	>85
5	>90	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85
6	>90	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85
7	>90	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85
8	>90	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85
9	>90	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85
10	>90	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85	>85
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 320 MHz; 1.00 dBm.
LO IN: 300 MHz; +21.00 dBm
IF OUT: 20 MHz; -4.62 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	32	37	42	46	46	47	50	46	63	64
1	-	43	+0	38	11	45	17	55	25	61	36	57
2	43	51	57	55	59	64	59	62	65	58	61	55
3	63	73	49	69	45	64	41	62	39	68	44	73
4	>90	79	85	84	83	79	>95	77	87	80	80	74
5	>90	85	60	85	67	92	69	>95	66	89	67	89
6	>90	>95	76	83	77	86	77	88	77	87	78	87
7	>90	89	71	87	69	84	72	86	70	89	69	87
8	>90	88	70	87	67	82	66	87	68	90	70	85
9	>90	89	79	83	83	85	81	87	78	86	77	88
10	>90	74	64	78	66	87	69	88	67	89	66	>95
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 320 MHz; 11.00 dBm.
LO IN: 300 MHz; +21.00 dBm
IF OUT: 20 MHz; 5.34 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.