

Frequency Mixer

JMS-5

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	5.82	5.57	5.33
49.9	79.9	6.05	5.68	5.48
89.7	119.7	5.96	5.60	5.44
129.5	159.5	6.02	5.68	5.49
169.3	199.3	6.03	5.74	5.58
209.2	239.2	6.09	5.76	5.58
249.0	279.0	6.13	5.80	5.61
288.8	318.8	6.20	5.88	5.65
328.6	358.6	6.27	5.90	5.69
368.4	398.4	6.36	5.98	5.72
408.2	438.2	6.40	5.99	5.74
448.0	478.0	6.44	6.07	5.80
487.8	517.8	6.51	6.08	5.82
527.6	557.6	6.51	6.08	5.82
567.4	597.4	6.58	6.09	5.80
607.2	637.2	6.77	6.22	5.90
647.1	677.1	6.88	6.35	6.01
686.9	716.9	7.06	6.48	6.12
726.7	756.7	7.14	6.55	6.16
766.5	796.5	7.34	6.71	6.31
806.3	836.3	7.46	6.89	6.45
846.1	876.1	7.67	7.09	6.69
885.9	915.9	7.70	7.21	6.83
965.5	995.5	7.67	7.32	7.05
1005.3	1035.3	7.64	7.32	7.08
1045.2	1075.2	7.66	7.35	7.11
1085.0	1115.0	7.72	7.37	7.15
1124.8	1154.8	7.74	7.43	7.18
1164.6	1194.6	7.80	7.48	7.25
1204.4	1234.4	7.83	7.47	7.27
1244.2	1274.2	7.96	7.60	7.37
1284.0	1314.0	8.01	7.59	7.42
1323.8	1353.8	8.12	7.69	7.47
1363.6	1393.6	8.21	7.72	7.52
1403.4	1433.4	8.24	7.79	7.57
1443.2	1473.2	8.34	7.88	7.65
1483.1	1513.1	8.56	7.95	7.78
1522.9	1552.9	8.74	8.11	7.81
1562.7	1592.7	8.92	8.24	7.92
1602.5	1632.5	9.21	8.40	8.02

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	15.21	16.42	19.75
49.9	79.9	18.64	15.40	15.58
89.7	119.7	13.60	12.86	14.82
129.5	159.5	11.05	13.99	17.12
169.3	199.3	11.37	13.20	17.26
209.2	239.2	11.90	15.44	19.74
249.0	279.0	12.35	16.31	21.90
288.8	318.8	12.85	17.26	23.25
328.6	358.6	14.54	19.83	20.30
368.4	398.4	15.79	17.24	17.46
408.2	438.2	16.05	18.92	17.58
448.0	478.0	15.72	18.08	16.31
487.8	517.8	16.55	16.09	14.89
527.6	557.6	15.08	14.33	14.88
567.4	597.4	14.61	14.37	14.72
607.2	637.2	13.75	13.95	14.15
647.1	677.1	11.54	13.04	13.48
686.9	716.9	10.32	12.03	12.68
726.7	756.7	9.64	11.26	12.77
766.5	796.5	8.81	10.96	11.44
806.3	836.3	8.58	10.42	11.74
846.1	876.1	7.85	9.83	11.30
885.9	915.9	7.99	9.10	10.84
965.5	995.5	8.12	9.11	10.04
1005.3	1035.3	9.02	9.36	10.18
1045.2	1075.2	9.81	9.75	10.45
1085.0	1115.0	10.51	10.21	10.67
1124.8	1154.8	10.95	11.11	11.07
1164.6	1194.6	12.61	11.85	11.48
1204.4	1234.4	13.05	14.22	12.53
1244.2	1274.2	13.02	14.21	14.82
1284.0	1314.0	12.17	13.56	14.96
1323.8	1353.8	12.56	14.46	15.21
1363.6	1393.6	11.98	13.73	15.15
1403.4	1433.4	12.47	14.51	16.03
1443.2	1473.2	12.13	14.46	17.47
1483.1	1513.1	13.01	15.34	16.05
1522.9	1552.9	12.17	13.48	15.85
1562.7	1592.7	12.31	14.86	17.00
1602.5	1632.5	12.94	14.39	16.70

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	1.14	0.89	0.74
49.9	79.9	1.41	1.15	0.93
89.7	119.7	1.55	1.22	0.99
129.5	159.5	1.60	1.31	1.02
169.3	199.3	1.53	1.31	1.06
209.2	239.2	1.62	1.29	0.99
249.0	279.0	1.68	1.29	1.12
288.8	318.8	1.70	1.44	1.14
328.6	358.6	1.79	1.47	1.33
368.4	398.4	1.82	1.56	1.32
408.2	438.2	1.86	1.65	1.48
448.0	478.0	2.06	1.70	1.58
487.8	517.8	2.05	1.82	1.62
527.6	557.6	2.01	1.83	1.55
567.4	597.4	2.11	1.81	1.60
607.2	637.2	2.10	1.78	1.57
647.1	677.1	2.32	2.03	1.83
686.9	716.9	2.04	1.92	1.61
726.7	756.7	2.10	1.91	1.75
766.5	796.5	1.96	1.82	1.56
806.3	836.3	1.76	1.69	1.53
846.1	876.1	1.61	1.66	1.50
885.9	915.9	1.44	1.36	1.20
965.5	995.5	1.40	1.12	0.92
1005.3	1035.3	1.34	1.13	1.02
1045.2	1075.2	1.07	0.92	0.77
1085.0	1115.0	1.08	0.77	0.64
1124.8	1154.8	1.01	0.77	0.68
1164.6	1194.6	1.02	0.65	0.70
1204.4	1234.4	0.93	0.73	0.56
1244.2	1274.2	0.98	0.80	0.66
1284.0	1314.0	0.96	0.77	0.55
1323.8	1353.8	1.05	0.70	0.56
1363.6	1393.6	1.00	0.69	0.52
1403.4	1433.4	1.01	0.63	0.50
1443.2	1473.2	0.86	0.66	0.57
1483.1	1513.1	0.97	0.72	0.56
1522.9	1552.9	0.81	0.61	0.41
1562.7	1592.7	0.97	0.61	0.34
1602.5	1632.5	0.92	0.59	0.40

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=750.1MHz (dB)
		@LO (dBm) +7
10.1	740.0	6.83
28.8	721.3	6.85
47.5	702.6	6.85
66.3	683.9	6.89
85.0	665.1	6.89
103.7	646.4	6.89
122.4	627.7	6.90
141.1	609.0	6.85
159.8	590.3	6.85
178.6	571.5	6.80
197.3	552.8	6.78
216.0	534.1	6.75
234.7	515.4	6.72
253.4	496.7	6.70
272.2	478.0	6.66
290.9	459.2	6.68
309.6	440.5	6.69
328.3	421.8	6.65
347.0	403.1	6.62
365.7	384.4	6.58
384.5	365.6	6.49
403.2	346.9	6.54
421.9	328.2	6.52
440.6	309.5	6.50
459.3	290.8	6.46
478.1	272.1	6.47
496.8	253.3	6.46
515.5	234.6	6.42
534.2	215.9	6.42
552.9	197.2	6.41
571.6	178.5	6.46
590.4	159.7	6.50
609.1	141.0	6.50
627.8	122.3	6.54
646.5	103.6	6.53
665.2	84.9	6.61
684.0	66.2	6.60
702.7	47.4	6.59
721.4	28.7	6.58
740.1	10.0	6.59

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)
		@LO (dBm) +7
20.1	10.0	6.01
60.5	50.4	5.66
100.9	90.8	5.67
141.3	131.2	5.63
181.7	171.6	5.68
222.1	212.0	5.72
242.3	232.2	5.77
262.6	252.5	5.79
282.8	272.7	5.77
303.0	292.9	5.84
323.2	313.1	5.85
343.4	333.3	5.88
363.6	353.5	5.89
383.8	373.7	5.91
404.0	393.9	5.94
424.2	414.1	5.95
444.4	434.3	5.99
464.6	454.5	6.03
484.8	474.7	6.02
505.0	494.9	6.01
525.2	515.1	6.05
545.4	535.3	6.11
565.6	555.5	6.12
585.8	575.7	6.21
606.0	595.9	6.22
626.2	616.1	6.28
646.4	636.3	6.35
666.6	656.5	6.41
686.8	676.7	6.48
707.0	696.9	6.54
727.2	717.1	6.59
747.5	737.4	6.65
767.7	757.6	6.76
787.9	777.8	6.83
808.1	798.0	6.91
848.5	838.4	7.10
888.9	878.8	7.28
929.3	919.2	7.48
969.7	959.6	7.72
1010.1	1000.0	7.93

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1500.1MHz (dB)
		@LO (dBm) +7
500.1	1000.0	10.00
540.5	959.6	9.75
580.9	919.2	9.51
621.3	878.8	9.29
661.7	838.4	9.07
702.1	798.0	8.92
722.3	777.8	8.86
742.6	757.6	8.82
762.8	737.4	8.57
783.0	717.1	8.51
803.2	696.9	8.52
823.4	676.7	8.46
843.6	656.5	8.43
863.8	636.3	8.39
884.0	616.1	8.36
904.2	595.9	8.36
924.4	575.7	8.31
944.6	555.5	8.29
964.8	535.3	8.28
985.0	515.1	8.27
1005.2	494.9	8.22
1025.4	474.7	8.21
1045.6	454.5	8.25
1065.8	434.3	8.25
1086.0	414.1	8.30
1106.2	393.9	8.26
1126.4	373.7	8.31
1146.6	353.5	8.26
1166.8	333.3	8.33
1187.0	313.1	8.31
1207.2	292.9	8.31
1227.5	272.7	8.30
1247.7	252.5	8.25
1267.9	232.2	8.28
1288.1	212.0	8.20
1328.5	171.6	8.13
1368.9	131.2	8.07
1409.3	90.8	8.02
1449.7	50.4	8.03
1490.1	10.0	8.32

Frequency Mixer

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Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)					@LO (dBm)		
	+4	+7	+10	+4	+7	+10			+4	+7	+10
40.1	63.33	61.66	69.58	48.53	63.12	70.31	10.1	40.1	37.76	34.83	46.50
79.9	65.31	63.27	61.33	53.74	71.59	56.20	49.9	79.9	41.77	39.49	40.61
119.7	62.95	63.61	59.92	48.81	69.88	51.27	89.7	119.7	38.03	36.02	35.83
159.5	59.58	63.08	58.63	44.79	59.58	48.10	129.5	159.5	34.91	33.98	33.81
199.3	56.82	63.16	58.03	42.70	54.14	45.05	169.3	199.3	33.71	32.91	32.45
239.2	54.76	63.77	57.74	40.82	50.61	42.78	209.2	239.2	32.60	31.82	31.60
279.0	53.21	63.82	56.96	39.85	47.51	40.08	249.0	279.0	31.98	31.37	30.95
318.8	51.93	65.53	56.30	39.35	45.04	38.01	288.8	318.8	31.73	30.99	30.45
358.6	50.40	65.34	56.19	39.03	42.46	35.95	328.6	358.6	31.26	30.67	30.14
398.4	49.60	67.14	55.14	39.34	39.53	33.81	368.4	398.4	30.31	29.97	29.58
438.2	48.27	62.58	54.78	39.41	38.22	32.67	408.2	438.2	29.13	28.88	28.57
478.0	47.35	59.71	53.95	39.79	35.74	30.79	448.0	478.0	27.73	27.41	27.22
517.8	46.12	56.45	53.07	40.00	34.45	29.80	487.8	517.8	26.04	25.89	25.73
557.6	44.92	54.51	53.04	39.55	32.55	28.26	527.6	557.6	24.52	24.39	24.28
597.4	44.30	52.87	51.74	38.47	30.89	26.94	567.4	597.4	23.16	23.04	22.99
637.2	43.85	51.26	49.67	36.78	29.42	25.79	607.2	637.2	21.90	21.89	21.85
677.1	43.69	49.99	47.45	34.49	27.98	24.75	647.1	677.1	20.84	20.83	20.87
716.9	43.19	49.01	46.35	32.79	26.90	23.95	686.9	716.9	20.04	20.05	20.17
756.7	42.83	48.75	45.64	30.43	25.37	22.75	726.7	756.7	19.55	19.64	19.74
796.5	42.14	49.31	46.64	28.54	24.15	21.81	766.5	796.5	19.34	19.43	19.57
836.3	41.18	49.40	47.74	26.76	22.84	20.73	806.3	836.3	19.25	19.42	19.59
876.1	40.38	49.52	50.17	25.02	21.58	19.69	846.1	876.1	19.36	19.54	19.73
915.9	38.86	46.56	56.46	23.84	20.67	18.89	885.9	915.9	19.42	19.73	19.98
995.5	36.69	41.60	50.14	21.62	18.97	17.34	965.5	995.5	19.71	20.12	20.49
1035.3	35.77	39.90	45.76	20.79	18.31	16.74	1005.3	1035.3	19.78	20.22	20.65
1075.2	35.10	38.81	43.48	20.08	17.77	16.27	1045.2	1075.2	19.76	20.22	20.65
1115.0	34.39	37.73	41.60	19.37	17.19	15.74	1085.0	1115.0	19.63	20.09	20.50
1154.8	34.04	37.23	40.73	18.60	16.61	15.26	1124.8	1154.8	19.44	19.84	20.17
1194.6	33.57	36.60	39.85	17.96	16.08	14.82	1164.6	1194.6	19.23	19.56	19.86
1234.4	33.06	35.97	39.02	17.30	15.52	14.32	1204.4	1234.4	19.07	19.33	19.54
1274.2	32.68	35.48	38.38	16.63	14.97	13.85	1244.2	1274.2	18.90	19.08	19.22
1314.0	32.13	34.79	37.53	16.13	14.57	13.50	1284.0	1314.0	18.79	18.92	19.02
1353.8	31.50	34.00	36.53	15.57	14.11	13.09	1323.8	1353.8	18.66	18.75	18.81
1393.6	30.94	33.31	35.72	15.12	13.77	12.80	1363.6	1393.6	18.51	18.57	18.63
1433.4	30.32	32.58	34.85	14.65	13.43	12.51	1403.4	1433.4	18.29	18.35	18.42
1473.2	29.69	31.77	33.87	14.18	13.08	12.23	1443.2	1473.2	17.94	18.05	18.13
1513.1	29.07	31.01	33.00	13.71	12.72	11.93	1483.1	1513.1	17.50	17.62	17.73
1552.9	28.44	30.28	32.19	13.29	12.43	11.69	1522.9	1552.9	16.96	17.12	17.25
1592.7	27.69	29.38	31.17	12.90	12.13	11.43	1562.7	1592.7	16.36	16.51	16.70
1632.5	27.13	28.67	30.35	12.57	11.87	11.22	1602.5	1632.5	15.77	15.95	16.12

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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=500.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+4	+7	+10		+4	+7	+10		+4	+7	+10
10.1	40.1	1.46	1.47	1.51	40.1	1.77	2.49	3.34	10.1	1.13	1.23	1.40
49.9	79.9	1.22	1.19	1.23	79.9	1.89	2.73	3.82	30.3	1.13	1.22	1.30
89.7	119.7	1.16	1.06	1.02	119.7	1.86	2.68	3.72	50.5	1.08	1.24	1.42
129.5	159.5	1.11	1.02	1.03	159.5	1.83	2.63	3.62	70.7	1.06	1.25	1.41
169.3	199.3	1.19	1.11	1.07	199.3	1.86	2.64	3.62	90.9	1.04	1.22	1.40
209.2	239.2	1.15	1.08	1.06	239.2	1.83	2.57	3.49	111.1	1.08	1.19	1.33
249.0	279.0	1.22	1.16	1.13	279.0	1.88	2.62	3.55	131.3	1.13	1.21	1.35
288.8	318.8	1.24	1.19	1.16	318.8	1.89	2.62	3.52	151.5	1.12	1.25	1.40
328.6	358.6	1.32	1.27	1.24	358.6	1.90	2.64	3.52	171.7	1.12	1.24	1.41
368.4	398.4	1.37	1.31	1.28	398.4	1.97	2.71	3.58	191.9	1.14	1.25	1.39
408.2	438.2	1.45	1.39	1.36	438.2	1.95	2.65	3.47	212.1	1.16	1.26	1.41
448.0	478.0	1.53	1.47	1.43	478.0	2.00	2.69	3.50	232.3	1.20	1.31	1.44
487.8	517.8	1.64	1.58	1.53	517.8	1.99	2.63	3.38	252.6	1.21	1.32	1.47
527.6	557.6	1.70	1.63	1.58	557.6	2.00	2.63	3.37	272.8	1.20	1.32	1.47
567.4	597.4	1.84	1.76	1.70	597.4	2.04	2.65	3.35	293.0	1.23	1.34	1.48
607.2	637.2	1.94	1.84	1.77	637.2	2.07	2.66	3.34	313.2	1.24	1.36	1.50
647.1	677.1	2.11	2.01	1.93	677.1	2.12	2.71	3.37	333.4	1.26	1.39	1.53
686.9	716.9	2.23	2.11	2.02	716.9	2.12	2.66	3.29	353.6	1.26	1.40	1.55
726.7	756.7	2.45	2.33	2.23	756.7	2.14	2.67	3.27	373.8	1.25	1.39	1.54
766.5	796.5	2.63	2.49	2.38	796.5	2.16	2.65	3.20	394.0	1.26	1.39	1.54
806.3	836.3	2.81	2.68	2.57	836.3	2.18	2.65	3.17	414.2	1.28	1.41	1.55
846.1	876.1	2.97	2.86	2.77	876.1	2.24	2.70	3.21	434.4	1.27	1.41	1.57
885.9	915.9	2.96	2.90	2.84	915.9	2.25	2.69	3.17	454.6	1.28	1.43	1.57
965.5	995.5	2.86	2.84	2.82	995.5	2.33	2.75	3.20	495.0	1.30	1.44	1.58
1005.3	1035.3	2.93	2.90	2.88	1035.3	2.33	2.72	3.16	515.2	1.32	1.45	1.60
1045.2	1075.2	2.83	2.79	2.77	1075.2	2.36	2.74	3.17	535.4	1.31	1.46	1.61
1085	1115	2.96	2.91	2.88	1115	2.35	2.69	3.09	555.6	1.32	1.46	1.61
1124.8	1154.8	2.91	2.84	2.79	1154.8	2.39	2.72	3.11	575.8	1.32	1.47	1.62
1164.6	1194.6	3.04	2.95	2.89	1194.6	2.41	2.71	3.08	596.0	1.34	1.49	1.64
1204.4	1234.4	2.98	2.88	2.80	1234.4	2.42	2.70	3.05	616.2	1.35	1.51	1.66
1244.2	1274.2	3.06	2.93	2.84	1274.2	2.46	2.73	3.07	636.4	1.34	1.50	1.65
1284	1314	2.99	2.85	2.75	1314	2.46	2.69	3.01	676.8	1.35	1.50	1.65
1323.8	1353.8	3.01	2.86	2.75	1353.8	2.51	2.72	3.03	717.2	1.39	1.55	1.71
1363.6	1393.6	2.91	2.75	2.65	1393.6	2.56	2.73	3.02	757.7	1.38	1.55	1.70
1403.4	1433.4	2.89	2.73	2.62	1433.4	2.60	2.75	3.02	798.1	1.44	1.62	1.77
1443.2	1473.2	2.84	2.67	2.56	1473.2	2.70	2.82	3.07	838.5	1.46	1.64	1.80
1483.1	1513.1	2.92	2.73	2.61	1513.1	2.75	2.84	3.06	878.9	1.49	1.67	1.83
1522.9	1552.9	2.92	2.72	2.60	1552.9	2.88	2.93	3.14	919.3	1.55	1.74	1.90
1562.7	1592.7	3.04	2.82	2.69	1592.7	3.00	3.01	3.19	959.7	1.56	1.75	1.91
1602.5	1632.5	3.10	2.86	2.72	1632.5	3.11	3.08	3.22	1000.1	1.66	1.85	2.01