Frequency Mixer JYM-30H

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+14	+17	+20
2.0	32.0	6.04	5.76	5.71
4.0	34.0	5.89	5.71	5.58
10.0	40.0	4.58	4.33	4.48
90.8	120.8	5.63	5.42	5.34
171.6	201.6	5.76	5.54	5.41
252.3	282.3	5.81	5.54	5.43
413.8	443.8	5.90	5.61	5.49
494.5	524.5	5.92	5.66	5.55
575.3	605.3	5.99	5.74	5.62
656.0	686.0	6.04	5.78	5.66
736.7	766.7	6.13	5.88	5.75
817.5	847.5	6.36	6.08	5.95
898.2	928.2	6.55	6.28	6.14
978.9	1008.9	6.55	6.32	6.21
1059.7	1089.7	6.52	6.34	6.25
1140.4	1170.4	6.40	6.22	6.14
1221.1	1251.1	6.40	6.23	6.15
1301.9	1331.9	6.39	6.21	6.16
1382.6	1412.6	6.40	6.21	6.15
1463.4	1493.4	6.45	6.26	6.19
1544.1	1574.1	6.52	6.33	6.25
1624.8	1654.8	6.62	6.44	6.38
1705.6	1735.6	6.81	6.59	6.50
1867.0	1897.0	7.14	6.86	6.75
1947.8	1977.8	7.22	6.91	6.88
2028.5	2058.5	7.33	7.03	6.97
2109.2	2139.2	7.44	7.13	6.99
2210.2	2240.2	7.42	7.15	7.00
2290.9	2320.9	7.31	7.07	6.94
2391.8	2421.8	7.22	6.97	6.87
2472.6	2502.6	7.22	6.96	6.84
2573.5	2603.5	7.24	7.01	6.91
2654.2	2684.2	7.34	7.10	7.00
2755.1	2785.1	7.46	7.24	7.16
2835.9	2865.9	7.63	7.41	7.36
2936.8	2966.8	8.04	7.83	7.80
3017.5	3047.5	8.42	8.20	8.19
3118.4	3148.4	9.10	8.90	9.04
3199.2	3229.2	9.76	9.57	10.06
3300.1	3330.1	10.45	10.33	11.23

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
10.1	40.1	27.68	27.42	27.47
90.8	120.8	23.03	21.87	22.65
171.6	201.6	20.01	21.01	23.74
252.3	282.3	19.88	22.81	29.38
333.0	363.0	21.15	25.89	39.77
413.8	443.8	22.43	27.39	30.27
494.5	524.5	26.12	31.78	26.77
575.3	605.3	29.78	26.79	26.17
656.0	686.0	28.47	25.01	24.69
736.7	766.7	25.16	24.73	25.64
817.5	847.5	23.76	24.33	24.87
898.2	928.2	22.90	23.83	24.45
978.9	1008.9	21.42	22.18	24.06
1059.7	1089.7	20.47	21.20	21.82
1140.4	1170.4	20.82	21.90	22.80
1221.1	1251.1	21.00	22.22	23.26
1301.9	1331.9	21.09	21.83	22.73
1382.6	1412.6	22.64	22.74	23.75
1463.4	1493.4	23.90	25.12	24.46
1544.1	1574.1	23.89	25.56	25.76
1624.8	1654.8	24.45	24.94	25.20
1705.6	1735.6	26.56	25.33	24.48
1786.3	1816.3	24.89	24.66	23.33
1867.0	1897.0	25.24	24.38	19.52
1947.8	1977.8	22.67	20.67	18.07
2028.5	2058.5	25.53	22.75	22.11
2109.2	2139.2	24.57	24.27	22.04
2210.2	2240.2	20.53	21.91	21.35
2290.9	2320.9	19.29	20.47	20.66
2391.8	2421.8	18.89	19.79	19.76
2472.6	2502.6	17.97	18.61	18.98
2573.5	2603.5	16.95	17.70	17.91
2654.2	2684.2	16.26	16.94	17.12
2755.1	2785.1	15.83	16.54	16.75
2835.9	2865.9	15.86	17.02	16.38
2936.8	2966.8	16.26	18.06	16.35
3017.5	3047.5	17.02	18.78	16.20
3118.4	3148.4	17.95	19.27	15.11
3199.2	3229.2	18.05	18.79	15.58
3300.1	3330.1	17.60	18.10	18.93

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+10dBm (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	0.66	0.46	0.32
90.8	120.8	0.53	0.38	0.25
171.6	201.6	0.53	0.39	0.30
252.3	282.3	0.58	0.48	0.36
333.0	363.0	0.70	0.54	0.42
413.8	443.8	0.80	0.65	0.51
494.5	524.5	0.85	0.67	0.53
575.3	605.3	0.93	0.73	0.57
656.0	686.0	0.95	0.74	0.59
736.7	766.7	0.97	0.78	0.62
817.5	847.5	0.86	0.72	0.62
898.2	928.2	0.69	0.59	0.51
978.9	1008.9	0.58	0.49	0.43
1059.7	1089.7	0.55	0.45	0.42
1140.4	1170.4	0.49	0.43	0.42
1221.1	1251.1	0.43	0.38	0.40
1301.9	1331.9	0.40	0.35	0.36
1382.6	1412.6	0.37	0.33	0.34
1463.4	1493.4	0.35	0.29	0.33
1544.1	1574.1	0.35	0.29	0.33
1624.8	1654.8	0.37	0.28	0.31
1705.6	1735.6	0.39	0.34	0.36
1786.3	1816.3	0.48	0.44	0.48
1867.0	1897.0	0.54	0.51	0.55
1947.8	1977.8	0.63	0.59	0.54
2028.5	2058.5	0.69	0.67	0.62
2109.2	2139.2	0.73	0.72	0.77
2210.2	2240.2	0.92	0.86	0.94
2290.9	2320.9	1.08	1.02	1.09
2391.8	2421.8	1.27	1.23	1.31
2472.6	2502.6	1.34	1.32	1.44
2573.5	2603.5	1.37	1.36	1.54
2654.2	2684.2	1.38	1.38	1.64
2755.1	2785.1	1.39	1.40	1.74
2835.9	2865.9	1.42	1.42	1.77
2936.8	2966.8	1.25	1.24	1.57
3017.5	3047.5	1.12	1.12	1.48
3118.4	3148.4	0.98	1.10	1.47
3199.2	3229.2	1.01	1.06	1.13
3300.1	3330.1	0.95	0.90	0.64

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1500.1MHz (dB)
		@LO (dBm)
		+17
1400.0	100.1	8.59
1359.7	140.4	8.55
1319.4	180.7	8.45
1279.1	221.0	8.37
1238.8	261.3	8.29
1198.6	301.5	8.11
1158.3	341.8	8.03
1118.0	382.1	7.93
1077.7	422.4	7.81
1037.4	462.7	7.75
997.1	503.0	7.67
956.8	543.3	7.59
916.5	583.6	7.53
876.2	623.9	7.47
835.9	664.2	7.40
795.7	704.4	7.32
755.4	744.7	7.29
715.1	785.0	7.15
674.8	825.3	7.10
634.5	865.6	6.98
594.2	905.9	6.84
553.9	946.2	6.75
513.6	986.5	6.61
493.5	1006.6	6.57
453.2	1046.9	6.47
433.0	1067.1	6.44
392.8	1107.3	6.42
372.6	1127.5	6.43
332.3	1167.8	6.44
312.2	1187.9	6.46
271.9	1228.2	6.48
251.7	1248.4	6.46
211.4	1288.7	6.42
191.3	1308.8	6.39
151.0	1349.1	6.38
130.9	1369.2	6.38
90.6	1409.5	6.35
70.4	1429.7	6.36
30.1	1470.0	6.33
10.0	1490.1	6.47

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)
		@LO (dBm)
		+17
10.0	20.1	5.24
50.3	60.4	5.18
90.6	100.7	5.18
130.9	141.0	5.12
171.2	181.3	5.16
211.4	221.5	5.12
251.7	261.8	5.14
292.0	302.1	5.12
332.3	342.4	5.11
372.6	382.7	5.12
412.9	423.0	5.10
453.2	463.3	5.13
493.5	503.6	5.15
533.8	543.9	5.18
574.1	584.2	5.23
614.3	624.4	5.23
654.6	664.7	5.29
694.9	705.0	5.33
735.2	745.3	5.46
775.5	785.6	5.54
815.8	825.9	5.61
856.1	866.2	5.71
896.4	906.5	5.78
916.5	926.6	5.86
956.8	966.9	5.96
977.0	987.1	6.01
1017.2	1027.3	6.05
1037.4	1047.5	6.09
1077.7	1087.8	6.17
1097.8	1107.9	6.20
1138.1	1148.2	6.28
1158.3	1168.4	6.32
1198.6	1208.7	6.38
1218.7	1228.8	6.41
1259.0	1269.1	6.48
1279.1	1289.2	6.56
1319.4	1329.5	6.60
1339.6	1349.7	6.68
1379.9	1390.0	6.75
1400.0	1410.1	6.77

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=3000.1MHz (dB)
		@LO (dBm)
		+17
1400.0	1600.1	8.04
1359.7	1640.4	8.07
1319.4	1680.7	8.06
1279.1	1721.0	8.11
1238.8	1761.3	8.12
1198.6	1801.5	8.14
1158.3	1841.8	8.20
1118.0	1882.1	8.23
1077.7	1922.4	8.24
1037.4	1962.7	8.29
997.1	2003.0	8.28
956.8	2043.3	8.24
916.5	2083.6	8.19
876.2	2123.9	8.09
835.9	2164.2	7.99
795.7	2204.4	7.86
755.4	2244.7	7.77
715.1	2285.0	7.69
674.8	2325.3	7.67
634.5	2365.6	7.65
594.2	2405.9	7.57
553.9	2446.2	7.55
513.6	2486.5	7.51
493.5	2506.6	7.47
453.2	2546.9	7.46
433.0	2567.1	7.45
392.8	2607.3	7.44
372.6	2627.5	7.45
332.3	2667.8	7.45
312.2	2687.9	7.46
271.9	2728.2	7.48
251.7	2748.4	7.49
211.4	2788.7	7.53
191.3	2808.8	7.56
151.0	2849.1	7.67
130.9	2869.2	7.71
90.6	2909.5	7.83
70.4	2929.7	7.88
30.1	2970.0	7.99
10.0	2990.1	8.14

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
2.0	36.50	39.50	42.10	40.00	42.20	43.90
4.0	39.10	41.90	44.80	43.70	45.90	47.50
10.0	42.81	45.85	48.82	47.11	50.37	53.07
90.8	42.32	45.48	48.74	45.94	47.15	47.52
171.6	42.90	46.36	50.58	43.06	43.23	42.83
252.3	44.01	49.12	54.65	41.20	40.69	39.58
413.8	45.87	52.31	62.22	37.41	35.78	34.43
494.5	47.06	53.37	61.37	36.14	34.03	32.62
575.3	48.52	53.17	54.64	34.58	32.31	30.94
656.0	47.51	48.43	47.95	33.37	31.05	29.65
736.7	46.11	45.74	45.01	31.78	29.73	28.18
817.5	44.95	43.89	43.09	30.34	28.42	27.01
898.2	43.34	41.81	41.25	29.19	27.02	25.81
978.9	42.32	40.59	39.79	28.47	26.41	25.20
1059.7	42.29	40.29	39.26	27.89	25.84	24.52
1140.4	41.73	39.82	38.79	27.33	25.52	24.27
1221.1	41.39	39.43	38.39	26.88	25.28	24.04
1301.9	41.20	39.40	38.32	26.43	24.86	23.77
1382.6	40.03	38.23	37.48	26.28	24.76	23.66
1463.4	39.07	37.87	37.40	26.00	24.99	23.96
1544.1	39.26	38.73	38.63	25.36	24.56	23.82
1624.8	40.62	40.19	39.98	24.73	24.04	23.44
1705.6	42.23	41.96	41.89	24.33	23.57	23.03
1867.0	45.61	43.87	43.74	23.26	23.03	22.64
1947.8	46.81	44.23	42.98	22.69	22.68	22.39
2028.5	43.17	40.59	39.21	22.17	22.22	21.98
2109.2	42.20	39.35	38.18	21.74	21.79	21.60
2210.2	43.11	41.29	39.49	21.41	21.70	21.70
2290.9	42.19	42.07	41.12	21.30	21.57	21.70
2391.8	40.44	42.03	42.30	21.07	21.46	21.76
2472.6	38.88	40.60	41.92	21.10	21.45	21.75
2573.5	37.86	39.78	41.52	21.19	21.76	21.86
2654.2	36.17	38.05	39.80	20.98	21.82	22.00
2755.1	34.31	35.37	36.61	20.81	21.80	22.15
2835.9	34.01	34.92	35.99	20.67	21.83	22.35
2936.8	33.30	34.10	35.25	20.62	21.85	22.62
3017.5	32.22	33.26	34.30	20.23	21.65	22.40
3118.4	30.96	32.17	33.35	20.03	21.50	22.29
3199.2	31.26	32.68	34.38	19.47	21.16	22.14
3300.1	33.20	34.86	36.58	19.02	20.85	21.95

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	33.46	34.61	33.91
90.8	120.8	34.61	35.18	35.60
171.6	201.6	35.46	35.67	35.90
252.3	282.3	36.68	36.98	37.60
333.0	363.0	37.84	38.84	39.67
413.8	443.8	38.82	39.53	40.62
494.5	524.5	39.17	39.41	39.85
575.3	605.3	39.43	39.37	39.45
656.0	686.0	39.22	39.24	39.45
736.7	766.7	39.64	39.86	40.49
817.5	847.5	39.84	40.08	40.46
898.2	928.2	40.06	39.99	39.82
978.9	1008.9	39.41	39.01	39.37
1059.7	1089.7	38.65	39.00	38.95
1140.4	1170.4	38.03	38.56	39.78
1221.1	1251.1	38.13	38.13	38.09
1301.9	1331.9	38.46	38.75	38.72
1382.6	1412.6	38.39	38.93	39.04
1463.4	1493.4	36.86	36.78	36.71
1544.1	1574.1	34.80	34.40	33.81
1624.8	1654.8	33.17	32.98	32.53
1705.6	1735.6	31.90	31.93	31.85
1786.3	1816.3	31.56	31.50	31.67
1867.0	1897.0	30.79	31.18	31.57
1947.8	1977.8	30.25	30.79	31.40
2028.5	2058.5	29.85	30.17	30.39
2109.2	2139.2	28.95	28.96	29.08
2210.2	2240.2	29.62	29.37	29.36
2290.9	2320.9	30.47	30.23	30.28
2391.8	2421.8	31.45	31.03	31.05
2472.6	2502.6	32.84	32.48	32.09
2573.5	2603.5	33.59	33.89	33.51
2654.2	2684.2	32.60	33.29	33.75
2755.1	2785.1	31.53	31.76	32.08
2835.9	2865.9	30.63	30.65	31.06
2936.8	2966.8	29.61	29.51	30.00
3017.5	3047.5	29.18	29.31	29.70
3118.4	3148.4	29.20	29.73	30.45
3199.2	3229.2	29.83	30.06	29.67
3300.1	3330.1	30.59	30.23	28.84

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
2.0	32.0	1.48	1.37	1.29
4.0	34.0	1.49	1.37	1.29
10.0	40.0	1.53	1.14	1.08
90.8	120.8	1.17	1.08	1.03
171.6	201.6	1.20	1.12	1.07
252.3	282.3	1.25	1.18	1.14
333.0	363.0	1.34	1.27	1.23
413.8	443.8	1.46	1.38	1.33
494.5	524.5	1.58	1.50	1.45
575.3	605.3	1.74	1.66	1.60
656.0	686.0	1.89	1.80	1.74
736.7	766.7	2.01	1.92	1.85
817.5	847.5	2.14	2.04	1.96
898.2	928.2	2.24	2.14	2.07
978.9	1008.9	2.28	2.19	2.13
1059.7	1089.7	2.30	2.21	2.14
1140.4	1170.4	2.26	2.16	2.09
1221.1	1251.1	2.22	2.12	2.05
1301.9	1331.9	2.16	2.04	1.96
1382.6	1412.6	2.09	1.96	1.88
1463.4	1493.4	2.04	1.91	1.82
1544.1	1574.1	2.01	1.88	1.78
1624.8	1654.8	2.00	1.86	1.76
1705.6	1735.6	2.05	1.92	1.81
1786.3	1816.3	2.14	2.00	1.90
1867.0	1897.0	2.20	2.06	1.94
1947.8	1977.8	2.22	2.07	1.89
2028.5	2058.5	2.17	2.03	1.88
2109.2	2139.2	2.10	2.00	1.89
2210.2	2240.2	1.99	1.89	1.81
2290.9	2320.9	1.90	1.80	1.72
2391.8	2421.8	1.78	1.68	1.61
2472.6	2502.6	1.68	1.59	1.53
2573.5	2603.5	1.59	1.50	1.43
2654.2	2684.2	1.52	1.45	1.40
2755.1	2785.1	1.46	1.43	1.43
2835.9	2865.9	1.44	1.46	1.50
2936.8	2966.8	1.50	1.58	1.66
3017.5	3047.5	1.57	1.68	1.79
3118.4	3148.4	1.67	1.78	1.90
3199.2	3229.2	1.81	1.92	2.06
3300.1	3330.1	2.12	2.26	2.47

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
2.0	1.53	2.20	3.02
4.0	1.49	2.18	2.98
10.0	1.60	2.23	3.05
90.8	1.72	2.50	3.47
171.6	1.71	2.49	3.45
252.3	1.71	2.49	3.45
333.0	1.69	2.46	3.40
413.8	1.64	2.37	3.26
494.5	1.56	2.25	3.08
575.3	1.51	2.16	2.92
656.0	1.46	2.08	2.79
736.7	1.41	2.00	2.68
817.5	1.37	1.94	2.59
898.2	1.33	1.87	2.48
978.9	1.28	1.81	2.39
1059.7	1.26	1.76	2.33
1140.4	1.24	1.74	2.29
1221.1	1.23	1.73	2.27
1301.9	1.24	1.73	2.26
1382.6	1.27	1.75	2.27
1463.4	1.31	1.79	2.32
1544.1	1.36	1.84	2.37
1624.8	1.40	1.89	2.42
1705.6	1.43	1.92	2.44
1786.3	1.46	1.93	2.44
1867.0	1.48	1.93	2.42
1947.8	1.49	1.93	2.39
2028.5	1.52	1.95	2.38
2109.2	1.54	1.96	2.39
2210.2	1.58	1.99	2.39
2290.9	1.63	2.03	2.42
2391.8	1.69	2.08	2.45
2472.6	1.77	2.14	2.51
2573.5	1.87	2.24	2.59
2654.2	1.95	2.32	2.67
2755.1	2.08	2.46	2.82
2835.9	2.18	2.57	2.91
2936.8	2.34	2.72	3.07
3017.5	2.43	2.82	3.16
3118.4	2.59	2.96	3.30
3199.2	2.66	3.02	3.35
3300.1	2.73	3.07	3.36

IF (OUT) (MHz)	IF VSWR @LO=3000.1MHz (:1) @LO (dBm)		
	+14	+17	+20
4.0	1.28	1.51	1.68
8.0	1.27	1.50	1.67
10.0	1.75	1.63	1.50
50.3	1.80	1.67	1.55
90.6	1.83	1.70	1.58
130.9	1.88	1.73	1.60
171.2	1.80	1.65	1.51
211.4	1.83	1.68	1.54
251.7	1.81	1.65	1.50
292.0	1.77	1.61	1.46
332.3	1.70	1.54	1.39
372.6	1.68	1.51	1.37
412.9	1.63	1.46	1.31
453.2	1.58	1.41	1.28
493.5	1.59	1.42	1.28
533.8	1.50	1.33	1.20
574.1	1.49	1.33	1.22
614.3	1.47	1.30	1.17
654.6	1.38	1.22	1.14
694.9	1.37	1.22	1.14
735.2	1.31	1.15	1.10
775.5	1.23	1.09	1.13
815.8	1.20	1.07	1.16
856.1	1.15	1.04	1.18
896.4	1.08	1.07	1.25
916.5	1.05	1.11	1.29
956.8	1.04	1.12	1.30
977.0	1.01	1.15	1.33
1017.2	1.07	1.24	1.44
1037.4	1.09	1.26	1.47
1077.7	1.11	1.27	1.48
1097.8	1.16	1.33	1.55
1138.1	1.25	1.44	1.66
1158.3	1.25	1.42	1.64
1198.6	1.31	1.49	1.71
1218.7	1.36	1.55	1.79
1259.0	1.42	1.61	1.85
1279.1	1.43	1.61	1.85
1319.4	1.52	1.72	1.98
1339.6	1.56	1.76	2.02
1379.9	1.63	1.83	2.08
1400.0	1.67	1.88	2.14

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+4	17	6	25	11	34	19	34	29	37
1	-	29	+0	47	14	43	31	48	34	41	54	48
2	91	61	50	67	49	62	51	68	54	72	53	57
3	>100	87	67	88	69	80	82	81	84	87	78	75
4	>100	>89	>89	>89	>89	>89	88	>89	>89	>89	>89	>89
5	>100	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89
6	>100	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89
7	>100	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89
8	>100	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89
9	>100	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89
10	>100	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89	>89
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1500.1 MHz; -5.00 dBm.
LO IN: 1530.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; -11.31 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	6	27	16	35	23	43	33	49	42	52
1	-	29	+0	46	14	46	31	51	35	45	52	49
2	80	54	40	67	38	62	42	58	45	63	46	56
3	>100	68	46	72	47	71	55	67	60	69	57	61
4	>100	89	71	75	62	67	60	65	62	70	65	80
5	>100	80	80	77	78	74	74	73	75	79	83	89
6	>100	87	91	>99	>99	>99	92	82	86	79	86	85
7	>100	>99	>99	96	97	97	92	89	88	90	87	95
8	>100	92	>99	98	>99	>99	>99	>99	92	>99	96	96
9	>100	>99	>99	>99	>99	>99	>99	>99	>99	>99	>99	>99
10	>100	>99	>99	>99	>99	>99	>99	>99	>99	>99	>99	>99
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1500.1 MHz; 5.00 dBm.
LO IN: 1530.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; -1.36 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.