Frequency Mixer JYM-20H

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
10.9	40.9	5.86	5.68	5.55
90.3	120.3	5.68	5.50	5.42
170.6	200.6	5.81	5.61	5.50
250.8	280.8	5.88	5.65	5.53
331.0	361.0	5.88	5.65	5.55
491.5	521.5	5.97	5.72	5.61
571.8	601.8	6.01	5.80	5.69
652.0	682.0	6.04	5.84	5.74
732.2	762.2	6.11	5.91	5.80
812.5	842.5	6.22	6.00	5.89
892.7	922.7	6.34	6.14	6.02
972.9	1002.9	6.46	6.28	6.16
1053.2	1083.2	6.49	6.34	6.25
1133.4	1163.4	6.44	6.31	6.24
1233.7	1263.7	6.42	6.29	6.22
1313.9	1343.9	6.40	6.29	6.24
1414.2	1444.2	6.48	6.35	6.30
1494.5	1524.5	6.51	6.37	6.32
1594.8	1624.8	6.53	6.43	6.38
1675.0	1705.0	6.59	6.49	6.46
1775.3	1805.3	6.71	6.57	6.53
1855.5	1885.5	6.83	6.67	6.61
1955.8	1985.8	6.95	6.75	6.67
2036.1	2066.1	7.11	6.90	6.79
2136.4	2166.4	7.30	7.08	6.96
2216.6	2246.6	7.46	7.24	7.10
2397.1	2427.1	7.58	7.35	7.23
2497.4	2527.4	7.69	7.43	7.30
2577.7	2607.7	7.82	7.54	7.39
2678.0	2708.0	7.92	7.64	7.48
2758.2	2788.2	7.95	7.68	7.52
2858.5	2888.5	8.15	7.86	7.72
2938.7	2968.7	8.34	8.06	7.93
3039.0	3069.0	8.69	8.42	8.26
3119.3	3149.3	9.07	8.77	8.60
3219.6	3249.6	9.57	9.25	9.06
3299.8	3329.8	10.11	9.78	9.56
3400.1	3430.1	10.70	10.37	10.13

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
10.1	40.1	28.69	27.54	28.14
90.3	120.3	25.70	23.24	24.61
170.6	200.6	21.28	23.32	25.41
250.8	280.8	21.84	23.57	28.95
331.0	361.0	22.52	26.21	36.42
411.3	441.3	24.31	31.99	30.96
491.5	521.5	25.69	32.45	27.13
571.8	601.8	34.77	26.64	26.04
652.0	682.0	32.71	25.39	24.85
732.2	762.2	26.20	24.38	24.48
812.5	842.5	24.81	25.22	25.41
892.7	922.7	23.31	23.71	24.37
972.9	1002.9	22.08	22.89	23.89
1053.2	1083.2	21.38	22.05	23.16
1133.4	1163.4	20.67	21.94	22.85
1233.7	1263.7	21.46	22.07	23.05
1313.9	1343.9	21.81	22.63	22.79
1414.2	1444.2	21.57	22.18	23.24
1494.5	1524.5	22.43	23.30	24.01
1594.8	1624.8	22.31	23.73	24.28
1675.0	1705.0	23.44	23.46	24.02
1775.3	1805.3	24.59	24.87	25.35
1855.5	1885.5	24.51	24.07	25.07
1955.8	1985.8	24.96	24.50	24.13
2036.1	2066.1	24.51	24.82	25.01
2136.4	2166.4	24.20	25.61	27.12
2216.6	2246.6	23.93	23.57	23.92
2316.9	2346.9	22.17	22.25	22.33
2397.1	2427.1	21.68	22.29	22.80
2497.4	2527.4	20.78	21.63	22.30
2577.7	2607.7	19.39	20.90	21.86
2678.0	2708.0	18.39	19.62	20.63
2758.2	2788.2	17.76	18.71	19.74
2858.5	2888.5	16.88	17.83	18.74
2938.7	2968.7	16.66	17.65	18.58
3039.0	3069.0	16.95	18.14	19.45
3119.3	3149.3	17.36	18.70	20.03
3219.6	3249.6	17.51	18.77	20.03
3299.8	3329.8	17.98	19.39	20.42
3400.1	3430.1	18.84	20.14	20.86

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+10dBm (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	0.68	0.46	0.31
90.3	120.3	0.57	0.38	0.25
170.6	200.6	0.56	0.38	0.26
250.8	280.8	0.59	0.43	0.30
331.0	361.0	0.70	0.53	0.39
411.3	441.3	0.78	0.59	0.43
491.5	521.5	0.85	0.65	0.48
571.8	601.8	0.93	0.67	0.50
652.0	682.0	0.94	0.70	0.51
732.2	762.2	0.95	0.72	0.53
812.5	842.5	0.91	0.71	0.54
892.7	922.7	0.91	0.69	0.55
972.9	1002.9	0.79	0.63	0.51
1053.2	1083.2	0.67	0.52	0.42
1133.4	1163.4	0.61	0.49	0.42
1233.7	1263.7	0.51	0.42	0.38
1313.9	1343.9	0.44	0.35	0.33
1414.2	1444.2	0.36	0.29	0.27
1494.5	1524.5	0.33	0.25	0.25
1594.8	1624.8	0.33	0.25	0.25
1675.0	1705.0	0.32	0.22	0.22
1775.3	1805.3	0.29	0.20	0.18
1855.5	1885.5	0.30	0.19	0.17
1955.8	1985.8	0.35	0.25	0.22
2036.1	2066.1	0.39	0.29	0.27
2136.4	2166.4	0.40	0.32	0.31
2216.6	2246.6	0.42	0.31	0.31
2316.9	2346.9	0.49	0.36	0.34
2397.1	2427.1	0.58	0.42	0.38
2497.4	2527.4	0.60	0.46	0.41
2577.7	2607.7	0.68	0.50	0.45
2678.0	2708.0	0.75	0.58	0.52
2758.2	2788.2	0.87	0.66	0.60
2858.5	2888.5	0.89	0.65	0.59
2938.7	2968.7	0.90	0.66	0.57
3039.0	3069.0	0.88	0.63	0.54
3119.3	3149.3	0.78	0.54	0.46
3219.6	3249.6	0.69	0.44	0.38
3299.8	3329.8	0.63	0.36	0.30
3400.1	3430.1	0.57	0.28	0.22

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1000.1MHz (dB)
		@LO (dBm)
		+17
700.0	300.1	6.62
682.3	317.8	6.61
664.6	335.5	6.59
646.9	353.2	6.62
629.2	370.9	6.59
611.5	388.6	6.55
593.8	406.3	6.50
576.2	423.9	6.50
558.5	441.6	6.48
540.8	459.3	6.51
523.1	477.0	6.48
505.4	494.7	6.46
487.7	512.4	6.42
470.0	530.1	6.40
452.3	547.8	6.41
434.6	565.5	6.39
416.9	583.2	6.37
399.2	600.9	6.31
381.5	618.6	6.32
363.8	636.3	6.29
346.2	653.9	6.34
328.5	671.6	6.32
310.8	689.3	6.34
293.1	707.0	6.29
275.4	724.7	6.33
257.7	742.4	6.29
240.0	760.1	6.33
222.3	777.8	6.30
204.6	795.5	6.34
186.9	813.2	6.30
169.2	830.9	6.35
151.5	848.6	6.32
133.8	866.3	6.35
116.2	883.9	6.30
98.5	901.6	6.33
80.8	919.3	6.28
63.1	937.0	6.32
45.4	954.7	6.29
27.7	972.4	6.34
10.0	990.1	6.40

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)
		@LO (dBm)
		+17
10.0	20.1	5.34
27.7	37.8	5.26
45.4	55.5	5.29
63.1	73.2	5.31
80.8	90.9	5.37
98.5	108.6	5.30
116.2	126.3	5.31
133.8	143.9	5.26
151.5	161.6	5.31
169.2	179.3	5.29
186.9	197.0	5.32
204.6	214.7	5.28
222.3	232.4	5.29
240.0	250.1	5.27
257.7	267.8	5.31
275.4	285.5	5.28
293.1	303.2	5.30
310.8	320.9	5.28
328.5	338.6	5.31
346.2	356.3	5.28
363.8	373.9	5.30
381.5	391.6	5.28
399.2	409.3	5.30
416.9	427.0	5.29
434.6	444.7	5.32
452.3	462.4	5.32
470.0	480.1	5.31
487.7	497.8	5.32
505.4	515.5	5.31
523.1	533.2	5.34
540.8	550.9	5.35
558.5	568.6	5.38
576.2	586.3	5.37
593.8	603.9	5.39
611.5	621.6	5.37
629.2	639.3	5.43
646.9	657.0	5.42
664.6	674.7	5.46
682.3	692.4	5.44
700.0	710.1	5.48

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2000.1MHz (dB)
		@LO (dBm)
		+17
700.0	1300.1	6.99
682.3	1317.8	6.99
664.6	1335.5	7.01
646.9	1353.2	7.00
629.2	1370.9	7.00
611.5	1388.6	6.97
593.8	1406.3	6.99
576.2	1423.9	7.00
558.5	1441.6	6.99
540.8	1459.3	6.98
523.1	1477.0	6.98
505.4	1494.7	6.97
487.7	1512.4	6.98
470.0	1530.1	6.99
452.3	1547.8	6.97
434.6	1565.5	6.96
416.9	1583.2	6.95
399.2	1600.9	6.95
381.5	1618.6	6.92
363.8	1636.3	6.91
346.2	1653.9	6.90
328.5	1671.6	6.90
310.8	1689.3	6.87
293.1	1707.0	6.90
275.4	1724.7	6.89
257.7	1742.4	6.90
240.0	1760.1	6.89
222.3	1777.8	6.90
204.6	1795.5	6.87
186.9	1813.2	6.88
169.2	1830.9	6.86
151.5	1848.6	6.85
133.8	1866.3	6.82
116.2	1883.9	6.83
98.5	1901.6	6.82
80.8	1919.3	6.81
63.1	1937.0	6.79
45.4	1954.7	6.80
27.7	1972.4	6.79
10.0	1990.1	6.85

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	36.48	39.54	42.11	40.00	42.16	43.85
4.0	39.05	41.85	44.78	43.65	45.90	47.47
10.9	40.60	43.45	46.14	45.97	48.50	49.80
90.3	41.60	44.13	46.41	46.11	48.80	50.79
170.6	41.95	44.47	46.63	46.50	48.72	49.91
250.8	42.55	45.33	47.70	47.30	49.05	48.81
331.0	43.16	46.07	48.43	46.82	47.39	46.17
491.5	45.08	48.90	51.77	44.65	42.52	40.69
571.8	47.49	52.53	56.66	42.79	40.22	38.32
652.0	49.57	55.90	65.98	40.71	38.00	36.30
732.2	52.54	58.90	58.74	38.54	36.18	34.42
812.5	56.75	56.13	52.59	36.61	34.60	33.05
892.7	57.57	51.11	48.48	34.64	32.49	31.28
972.9	54.28	47.60	45.06	33.47	31.39	30.08
1053.2	52.72	46.34	43.75	32.25	30.29	29.12
1133.4	51.67	45.92	43.32	31.31	29.53	28.38
1233.7	52.07	45.62	42.82	30.74	29.08	27.92
1313.9	52.90	45.62	42.74	30.51	29.00	27.70
1414.2	51.10	45.43	42.98	29.72	28.33	27.35
1494.5	49.90	45.52	43.39	29.23	28.30	27.45
1594.8	49.07	45.28	43.21	28.45	27.78	27.14
1675.0	49.23	45.82	43.84	27.76	27.21	26.74
1775.3	48.45	46.91	45.20	26.95	26.40	25.93
1855.5	47.78	47.35	46.32	26.42	25.79	25.43
1955.8	46.89	50.13	50.06	26.03	25.66	25.15
2036.1	45.32	49.95	53.16	25.57	25.51	25.25
2136.4	42.21	44.73	46.37	25.18	25.17	25.25
2216.6	39.36	41.15	42.54	24.81	25.07	25.14
2397.1	35.86	38.00	39.78	24.70	25.12	25.44
2497.4	34.49	36.43	38.11	24.75	25.24	25.65
2577.7	33.86	35.75	37.24	24.82	25.34	25.68
2678.0	32.62	34.47	35.85	24.64	25.39	25.76
2758.2	31.90	33.68	34.93	24.65	25.48	25.86
2858.5	31.13	32.81	34.09	24.55	25.49	26.20
2938.7	30.36	32.07	33.56	24.47	25.52	26.42
3039.0	29.67	31.40	32.87	24.34	25.66	26.61
3119.3	29.45	31.34	32.98	24.10	25.51	26.63
3219.6	29.44	31.57	33.49	23.84	25.22	26.30
3299.8	30.04	32.45	34.57	23.62	25.08	26.10
3400.1	31.32	33.97	36.38	23.11	24.55	25.62

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
10.1	40.1	33.82	33.92	34.58
90.3	120.3	34.32	34.70	35.55
170.6	200.6	34.87	35.39	36.23
250.8	280.8	36.23	37.21	38.20
331.0	361.0	37.88	39.20	40.88
411.3	441.3	38.68	40.11	41.93
491.5	521.5	39.82	40.66	41.63
571.8	601.8	40.72	41.83	43.50
652.0	682.0	40.73	42.29	44.87
732.2	762.2	42.09	44.23	47.55
812.5	842.5	41.47	42.14	43.93
892.7	922.7	40.83	40.94	42.03
972.9	1002.9	40.79	41.32	41.92
1053.2	1083.2	40.31	40.94	41.66
1133.4	1163.4	40.51	40.71	41.23
1233.7	1263.7	40.75	40.46	40.55
1313.9	1343.9	40.11	40.18	40.18
1414.2	1444.2	39.63	39.55	39.36
1494.5	1524.5	40.01	39.84	39.82
1594.8	1624.8	42.99	43.24	44.24
1675.0	1705.0	44.90	46.26	48.05
1775.3	1805.3	40.80	40.57	40.67
1855.5	1885.5	36.52	36.60	36.67
1955.8	1985.8	34.01	34.08	33.89
2036.1	2066.1	32.54	32.55	32.49
2136.4	2166.4	30.66	30.78	30.81
2216.6	2246.6	29.89	29.99	30.16
2316.9	2346.9	29.81	29.73	29.90
2397.1	2427.1	29.78	29.64	29.76
2497.4	2527.4	29.77	29.72	29.85
2577.7	2607.7	29.58	29.48	29.67
2678.0	2708.0	29.46	29.32	29.40
2758.2	2788.2	29.67	29.67	29.63
2858.5	2888.5	29.80	30.48	30.78
2938.7	2968.7	29.87	31.13	32.53
3039.0	3069.0	30.21	32.08	35.03
3119.3	3149.3	30.52	32.74	36.33
3219.6	3249.6	31.81	34.04	38.06
3299.8	3329.8	32.78	35.41	39.73
3400.1	3430.1	33.01	36.02	40.11

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
10.9	40.9	1.49	1.37	1.28
90.3	120.3	1.19	1.09	1.03
170.6	200.6	1.20	1.11	1.06
250.8	280.8	1.23	1.15	1.11
331.0	361.0	1.29	1.22	1.18
411.3	441.3	1.36	1.29	1.25
491.5	521.5	1.47	1.40	1.35
571.8	601.8	1.58	1.51	1.46
652.0	682.0	1.69	1.62	1.57
732.2	762.2	1.83	1.74	1.68
812.5	842.5	1.93	1.84	1.77
892.7	922.7	2.02	1.94	1.88
972.9	1002.9	2.10	2.03	1.97
1053.2	1083.2	2.12	2.05	2.00
1133.4	1163.4	2.11	2.04	1.99
1233.7	1263.7	2.07	1.99	1.93
1313.9	1343.9	2.02	1.94	1.88
1414.2	1444.2	1.96	1.86	1.80
1494.5	1524.5	1.89	1.79	1.73
1594.8	1624.8	1.81	1.71	1.64
1675.0	1705.0	1.77	1.66	1.59
1775.3	1805.3	1.74	1.63	1.55
1855.5	1885.5	1.77	1.64	1.56
1955.8	1985.8	1.83	1.70	1.61
2036.1	2066.1	1.87	1.76	1.67
2136.4	2166.4	1.90	1.80	1.72
2216.6	2246.6	1.94	1.83	1.74
2316.9	2346.9	1.97	1.86	1.76
2397.1	2427.1	1.99	1.88	1.79
2497.4	2527.4	1.97	1.87	1.81
2577.7	2607.7	1.94	1.84	1.77
2678.0	2708.0	1.88	1.79	1.72
2758.2	2788.2	1.80	1.72	1.68
2858.5	2888.5	1.71	1.67	1.65
2938.7	2968.7	1.65	1.66	1.68
3039.0	3069.0	1.67	1.72	1.78
3119.3	3149.3	1.76	1.83	1.90
3219.6	3249.6	1.92	2.03	2.12
3299.8	3329.8	2.05	2.19	2.32
3400.1	3430.1	2.24	2.42	2.57

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
10.9	1.47	2.12	2.94
90.3	1.71	2.45	3.35
170.6	1.71	2.45	3.34
250.8	1.71	2.46	3.36
331.0	1.69	2.43	3.30
411.3	1.65	2.35	3.17
491.5	1.59	2.26	3.03
571.8	1.54	2.18	2.91
652.0	1.51	2.13	2.82
732.2	1.48	2.08	2.75
812.5	1.45	2.03	2.67
892.7	1.42	1.98	2.59
972.9	1.39	1.93	2.51
1053.2	1.37	1.88	2.44
1133.4	1.34	1.84	2.39
1233.7	1.32	1.81	2.33
1313.9	1.30	1.78	2.29
1414.2	1.28	1.75	2.25
1494.5	1.27	1.73	2.21
1594.8	1.26	1.71	2.18
1675.0	1.26	1.69	2.14
1775.3	1.26	1.68	2.11
1855.5	1.26	1.66	2.07
1955.8	1.28	1.65	2.04
2036.1	1.30	1.66	2.03
2136.4	1.35	1.68	2.03
2216.6	1.40	1.73	2.07
2316.9	1.48	1.79	2.11
2397.1	1.56	1.87	2.19
2497.4	1.66	1.97	2.28
2577.7	1.75	2.07	2.38
2678.0	1.88	2.20	2.51
2758.2	1.99	2.32	2.62
2858.5	2.15	2.50	2.80
2938.7	2.27	2.61	2.92
3039.0	2.43	2.78	3.09
3119.3	2.55	2.90	3.21
3219.6	2.71	3.06	3.36
3299.8	2.89	3.22	3.52
3400.1	3.09	3.41	3.70

IF (OUT) (MHz)	IF VSWR @LO=2000.1MHz (:1) @LO (dBm)		
	+14	+17	+20
4.0	1.28	1.51	1.68
8.0	1.27	1.50	1.67
10.0	1.18	1.31	1.39
27.7	1.20	1.33	1.43
45.4	1.19	1.34	1.46
63.1	1.19	1.35	1.49
80.8	1.17	1.32	1.45
98.5	1.16	1.30	1.40
116.2	1.20	1.33	1.44
133.8	1.23	1.37	1.49
151.5	1.25	1.39	1.51
169.2	1.23	1.37	1.49
186.9	1.23	1.37	1.49
204.6	1.24	1.37	1.48
222.3	1.24	1.36	1.46
240.0	1.26	1.37	1.47
257.7	1.28	1.40	1.50
275.4	1.31	1.42	1.52
293.1	1.32	1.41	1.50
310.8	1.31	1.41	1.49
328.5	1.34	1.45	1.53
346.2	1.38	1.49	1.58
363.8	1.37	1.47	1.55
381.5	1.34	1.43	1.52
399.2	1.34	1.43	1.51
416.9	1.37	1.46	1.53
434.6	1.41	1.49	1.56
452.3	1.41	1.50	1.57
470.0	1.41	1.51	1.60
487.7	1.41	1.50	1.58
505.4	1.39	1.47	1.53
523.1	1.40	1.48	1.55
540.8	1.46	1.54	1.61
558.5	1.48	1.57	1.63
576.2	1.45	1.53	1.59
593.8	1.42	1.50	1.56
611.5	1.46	1.54	1.60
629.2	1.52	1.58	1.63
646.9	1.52	1.58	1.63
664.6	1.48	1.55	1.60
682.3	1.47	1.53	1.59
700.0	1.48	1.53	1.58

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	2	19	8	21	10	32	15	35	17	41
1	-	33	+0	38	14	40	21	53	32	60	38	46
2	90	71	61	69	56	68	57	64	52	77	52	74
3	>100	>89	62	>89	63	88	65	84	76	>89	77	>89
4	>100	>89	>89	>89	>89	>89	>89	>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: 1000.1 MHz; -5.00 dBm.**
LO IN: 1030.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; -11.4 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	12	29	19	31	21	43	27	47	30	56
1	-	34	+0	38	14	41	21	55	32	62	38	49
2	82	59	51	58	46	55	46	56	43	70	44	65
3	>100	65	41	67	43	68	45	68	55	81	57	81
4	>100	88	83	75	70	75	66	74	66	73	62	80
5	>100	86	74	81	65	80	63	83	63	82	66	90
6	>100	>99	80	97	84	91	84	89	84	86	82	84
7	>100	>99	91	>99	95	92	88	91	83	92	80	94
8	>100	>99	98	>99	96	>99	92	>99	93	96	96	98
9	>100	>99	>99	>99	>99	>99	>99	>99	95	>99	98	>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: 1000.1 MHz; 5.00 dBm.**
LO IN: 1030.01 MHz; +17.00 dBm
IF OUT: 29.91 MHz; -1.43 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.