

Frequency Mixer

JYM-28H+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)			RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)			RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+10dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+14	+17	+20			+14	+17	+20			+14	+17	+20
10.1	40.1	6.32	6.00	6.00	10.1	40.1	26.37	23.95	23.39	10.1	40.1	0.30	0.19	0.14
90.9	120.9	6.12	5.88	5.77	90.9	120.9	21.05	19.80	20.48	90.9	120.9	0.42	0.26	0.16
171.7	201.7	6.25	5.98	5.83	171.7	201.7	17.64	18.69	21.74	171.7	201.7	0.41	0.26	0.18
252.5	282.5	6.39	6.08	5.88	252.5	282.5	17.10	20.68	26.05	252.5	282.5	0.41	0.29	0.22
333.2	363.2	6.48	6.07	5.88	333.2	363.2	18.71	23.89	25.46	333.2	363.2	0.44	0.43	0.34
414.0	444.0	6.60	6.12	5.90	414.0	444.0	19.04	23.22	23.20	414.0	444.0	0.61	0.56	0.44
494.8	524.8	6.65	6.16	5.96	494.8	524.8	19.39	22.93	23.77	494.8	524.8	0.66	0.61	0.48
575.6	605.6	6.50	6.11	5.95	575.6	605.6	19.76	20.48	21.30	575.6	605.6	0.92	0.76	0.58
656.4	686.4	6.53	6.15	5.99	656.4	686.4	18.33	20.43	21.90	656.4	686.4	0.99	0.82	0.64
737.2	767.2	6.66	6.24	6.02	737.2	767.2	18.32	20.32	21.51	737.2	767.2	0.98	0.85	0.69
817.9	847.9	6.60	6.27	6.10	817.9	847.9	16.96	18.40	19.95	817.9	847.9	1.03	0.87	0.72
898.7	928.7	6.44	6.18	6.07	898.7	928.7	16.42	17.74	19.07	898.7	928.7	1.14	0.96	0.81
979.5	1009.5	6.28	6.08	5.98	979.5	1009.5	16.83	18.48	20.21	979.5	1009.5	1.09	0.91	0.79
1060.3	1090.3	6.17	5.98	5.90	1060.3	1090.3	17.27	18.93	20.15	1060.3	1090.3	1.06	0.91	0.78
1141.1	1171.1	6.07	5.91	5.84	1141.1	1171.1	17.49	18.67	19.42	1141.1	1171.1	1.00	0.89	0.77
1221.9	1251.9	6.08	5.87	5.80	1221.9	1251.9	17.61	18.45	19.56	1221.9	1251.9	0.90	0.80	0.71
1302.6	1332.6	6.08	5.89	5.81	1302.6	1332.6	18.40	19.00	20.10	1302.6	1332.6	0.81	0.72	0.64
1383.4	1413.4	6.07	5.88	5.82	1383.4	1413.4	18.76	20.20	21.32	1383.4	1413.4	0.75	0.65	0.59
1464.2	1494.2	6.10	5.91	5.85	1464.2	1494.2	20.92	21.52	22.32	1464.2	1494.2	0.71	0.63	0.59
1545.0	1575.0	6.19	6.02	5.96	1545.0	1575.0	20.48	21.21	21.99	1545.0	1575.0	0.67	0.58	0.55
1625.8	1655.8	6.27	6.07	6.02	1625.8	1655.8	21.92	22.81	20.94	1625.8	1655.8	0.71	0.58	0.53
1706.6	1736.6	6.42	6.18	6.10	1706.6	1736.6	19.51	20.09	17.44	1706.6	1736.6	0.73	0.62	0.56
1787.4	1817.4	6.43	6.16	6.10	1787.4	1817.4	15.62	15.54	14.71	1787.4	1817.4	0.83	0.69	0.62
1868.1	1898.1	6.43	6.17	6.13	1868.1	1898.1	13.79	14.35	14.96	1868.1	1898.1	0.97	0.76	0.63
1948.9	1978.9	6.37	6.15	6.15	1948.9	1978.9	14.27	15.34	15.85	1948.9	1978.9	1.13	0.84	0.67
2029.7	2059.7	6.45	6.22	6.19	2029.7	2059.7	14.89	15.98	16.75	2029.7	2059.7	1.20	0.92	0.77
2110.5	2140.5	6.50	6.28	6.26	2110.5	2140.5	17.30	18.28	18.07	2110.5	2140.5	1.09	0.87	0.75
2191.3	2221.3	6.62	6.35	6.30	2191.3	2221.3	18.12	19.56	19.84	2191.3	2221.3	0.99	0.78	0.69
2272.1	2302.1	6.76	6.40	6.34	2272.1	2302.1	18.63	19.36	20.02	2272.1	2302.1	0.90	0.76	0.68
2352.8	2382.8	6.88	6.55	6.47	2352.8	2382.8	17.68	18.26	19.22	2352.8	2382.8	0.87	0.73	0.65
2433.6	2463.6	7.04	6.70	6.61	2433.6	2463.6	16.56	17.77	18.87	2433.6	2463.6	0.79	0.66	0.58
2514.4	2544.4	7.21	6.89	6.77	2514.4	2544.4	16.15	17.57	18.44	2514.4	2544.4	0.73	0.62	0.54
2595.2	2625.2	7.40	7.11	7.01	2595.2	2625.2	15.87	17.85	18.81	2595.2	2625.2	0.74	0.59	0.49
2676.0	2706.0	7.66	7.43	7.35	2676.0	2706.0	15.70	17.42	18.49	2676.0	2706.0	0.74	0.59	0.47
2756.8	2786.8	7.99	7.82	7.76	2756.8	2786.8	15.47	16.90	17.77	2756.8	2786.8	0.70	0.54	0.46
2817.4	2847.4	8.31	8.15	8.09	2817.4	2847.4	15.22	16.62	17.73	2817.4	2847.4	0.63	0.48	0.41
2898.1	2928.1	8.84	8.70	8.68	2898.1	2928.1	15.02	16.27	17.39	2898.1	2928.1	0.57	0.41	0.34
2958.7	2988.7	9.27	9.14	9.17	2958.7	2988.7	15.43	16.96	18.00	2958.7	2988.7	0.56	0.43	0.34
3039.5	3069.5	9.94	9.83	9.89	3039.5	3069.5	15.62	16.74	17.65	3039.5	3069.5	0.49	0.43	0.36
3100.1	3130.1	10.43	10.32	10.37	3100.1	3130.1	15.82	17.07	18.29	3100.1	3130.1	0.43	0.39	0.36



Frequency Mixer

JYM-28H+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1400.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=400.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2800.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+17			+17			+17
600.0	800.1	6.00	10.0	410.1	6.09	700.0	2100.1	7.61
584.9	815.2	5.98	27.7	427.8	6.11	682.3	2117.8	7.59
569.7	830.4	5.98	45.4	445.5	6.09	664.6	2135.5	7.54
554.6	845.5	5.92	63.1	463.2	6.17	646.9	2153.2	7.53
539.5	860.6	5.93	80.8	480.9	6.13	629.2	2170.9	7.50
524.4	875.7	5.86	98.5	498.6	6.13	611.5	2188.6	7.51
509.2	890.9	5.85	116.2	516.3	6.09	593.8	2206.3	7.52
494.1	906.0	5.81	133.8	533.9	6.14	576.2	2223.9	7.59
479.0	921.1	5.80	151.5	551.6	6.18	558.5	2241.6	7.61
463.8	936.3	5.80	169.2	569.3	6.22	540.8	2259.3	7.62
448.7	951.4	5.76	186.9	587.0	6.19	523.1	2277.0	7.62
433.6	966.5	5.78	204.6	604.7	6.18	505.4	2294.7	7.60
418.5	981.6	5.73	222.3	622.4	6.15	487.7	2312.4	7.57
403.3	996.8	5.73	240.0	640.1	6.19	470.0	2330.1	7.54
388.2	1011.9	5.70	257.7	657.8	6.24	452.3	2347.8	7.54
373.1	1027.0	5.74	275.4	675.5	6.27	434.6	2365.5	7.48
357.9	1042.2	5.73	293.1	693.2	6.26	416.9	2383.2	7.44
342.8	1057.3	5.72	310.8	710.9	6.26	399.2	2400.9	7.41
327.7	1072.4	5.74	328.5	728.6	6.31	381.5	2418.6	7.45
312.6	1087.5	5.72	346.2	746.3	6.34	363.8	2436.3	7.41
297.4	1102.7	5.76	363.8	763.9	6.44	346.2	2453.9	7.39
282.3	1117.8	5.74	381.5	781.6	6.48	328.5	2471.6	7.38
267.2	1132.9	5.79	399.2	799.3	6.53	310.8	2489.3	7.37
252.1	1148.0	5.77	416.9	817.0	6.50	293.1	2507.0	7.34
236.9	1163.2	5.80	434.6	834.7	6.61	275.4	2524.7	7.37
221.8	1178.3	5.81	452.3	852.4	6.55	257.7	2542.4	7.39
206.7	1193.4	5.84	470.0	870.1	6.62	240.0	2560.1	7.40
191.5	1208.6	5.88	487.7	887.8	6.53	222.3	2577.8	7.41
176.4	1223.7	5.86	505.4	905.5	6.58	204.6	2595.5	7.43
161.3	1238.8	5.89	523.1	923.2	6.53	186.9	2613.2	7.46
146.2	1253.9	5.84	540.8	940.9	6.62	169.2	2630.9	7.49
131.0	1269.1	5.87	558.5	958.6	6.62	151.5	2648.6	7.53
115.9	1284.2	5.83	576.2	976.3	6.70	133.8	2666.3	7.53
100.8	1299.3	5.83	593.8	993.9	6.66	116.2	2683.9	7.57
85.6	1314.5	5.84	611.5	1011.6	6.69	98.5	2701.6	7.60
70.5	1329.6	5.84	629.2	1029.3	6.67	80.8	2719.3	7.68
55.4	1344.7	5.87	646.9	1047.0	6.72	63.1	2737.0	7.73
40.3	1359.8	5.86	664.6	1064.7	6.73	45.4	2754.7	7.81
25.1	1375.0	5.91	682.3	1082.4	6.76	27.7	2772.4	7.90
10.0	1390.1	5.91	700.0	1100.1	6.77	10.0	2790.1	7.95

Frequency Mixer

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Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+14	+17	+20	+14	+17	+20
10.1	25.69	28.40	31.12	44.09	47.03	49.67
90.9	36.56	40.06	43.87	44.37	47.06	48.53
171.7	39.21	42.83	45.82	44.50	45.54	44.85
252.5	40.28	42.88	44.38	43.79	42.95	41.83
333.2	40.18	42.03	42.57	43.04	41.18	40.09
414.0	39.85	41.31	41.09	42.21	39.81	38.71
494.8	39.92	40.95	40.32	41.47	38.94	37.66
575.6	41.57	41.43	39.94	40.60	38.65	37.51
656.4	42.74	41.89	39.94	41.32	38.66	37.39
737.2	43.15	41.86	40.06	40.69	38.26	36.83
817.9	45.09	42.12	39.80	41.28	38.87	37.31
898.7	45.55	41.70	39.73	42.15	39.35	37.82
979.5	43.59	40.52	38.95	45.38	41.05	38.89
1060.3	42.79	40.14	39.32	48.67	42.48	39.65
1141.1	51.29	45.27	42.17	48.88	43.21	40.57
1221.9	56.60	49.94	44.54	55.36	46.50	42.65
1302.6	52.23	47.16	43.36	50.35	53.60	46.96
1383.4	43.51	41.16	39.82	44.52	51.84	49.29
1464.2	41.28	39.36	38.18	41.98	47.13	52.47
1545.0	39.37	37.95	36.96	41.26	47.02	53.78
1625.8	39.09	37.64	36.61	40.57	45.79	55.07
1706.6	39.18	37.37	36.10	41.19	45.15	49.89
1787.4	40.14	37.81	36.16	41.01	43.53	45.76
1868.1	44.80	41.75	39.18	40.02	41.09	42.50
1948.9	46.70	45.80	42.99	40.22	41.53	42.24
2029.7	49.20	50.52	49.66	40.04	41.68	41.56
2110.5	51.67	52.52	57.19	40.36	41.05	40.36
2191.3	51.91	56.66	60.31	39.03	38.56	37.78
2272.1	53.40	56.69	57.60	38.15	36.74	35.49
2352.8	48.78	48.64	49.86	37.15	36.11	34.76
2433.6	47.39	49.13	50.23	35.40	33.96	33.07
2514.4	45.94	48.97	50.35	34.33	32.65	31.51
2595.2	44.91	45.46	45.71	33.78	32.18	30.69
2676.0	43.46	42.91	41.53	32.58	31.39	30.20
2756.8	42.73	42.13	39.98	31.59	30.50	29.42
2817.4	41.30	41.09	38.85	31.22	29.75	28.65
2898.1	38.64	37.39	35.79	31.18	29.98	28.76
2958.7	37.41	35.63	33.92	30.72	29.64	28.82
3039.5	35.46	33.41	31.22	30.59	29.91	29.00
3100.1	34.36	31.73	29.42	30.36	30.00	29.41

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+14	+17	+20
10.1	40.1	33.98	33.80	35.32
90.9	120.9	33.99	34.35	34.75
171.7	201.7	33.57	33.83	33.76
252.5	282.5	33.53	33.75	33.83
333.2	363.2	33.24	33.28	33.69
414.0	444.0	33.02	33.03	33.42
494.8	524.8	33.11	33.27	33.32
575.6	605.6	33.49	33.53	33.55
656.4	686.4	33.63	33.69	34.06
737.2	767.2	35.73	36.06	35.98
817.9	847.9	37.43	37.04	36.69
898.7	928.7	37.38	36.78	36.04
979.5	1009.5	36.38	35.38	34.85
1060.3	1090.3	35.79	35.02	34.51
1141.1	1171.1	34.71	34.20	33.75
1221.9	1251.9	34.10	33.30	32.92
1302.6	1332.6	35.32	34.37	33.72
1383.4	1413.4	37.98	36.70	35.51
1464.2	1494.2	39.97	39.87	39.17
1545.0	1575.0	42.86	43.53	44.59
1625.8	1655.8	48.66	56.34	50.58
1706.6	1736.6	41.79	45.38	42.85
1787.4	1817.4	36.14	39.39	40.20
1868.1	1898.1	34.05	36.87	39.60
1948.9	1978.9	35.38	37.08	38.45
2029.7	2059.7	32.86	34.81	38.59
2110.5	2140.5	31.44	31.56	33.25
2191.3	2221.3	30.35	30.33	30.69
2272.1	2302.1	29.24	29.14	29.23
2352.8	2382.8	28.01	28.06	28.21
2433.6	2463.6	27.10	26.92	26.96
2514.4	2544.4	26.22	25.82	25.64
2595.2	2625.2	25.77	25.19	24.84
2676.0	2706.0	25.43	25.16	24.99
2756.8	2786.8	24.93	25.01	24.91
2817.4	2847.4	24.04	24.33	24.49
2898.1	2928.1	23.37	23.56	23.89
2958.7	2988.7	23.13	23.31	23.56
3039.5	3069.5	22.69	22.93	23.13
3100.1	3130.1	22.34	22.63	23.06

Frequency Mixer

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Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)		
		@LO (dBm)		
		+14	+17	+20
10.1	40.1	1.66	1.65	1.65
90.9	120.9	1.20	1.17	1.17
171.7	201.7	1.25	1.20	1.18
252.5	282.5	1.30	1.24	1.20
333.2	363.2	1.36	1.28	1.23
414.0	444.0	1.43	1.33	1.26
494.8	524.8	1.46	1.34	1.27
575.6	605.6	1.47	1.36	1.28
656.4	686.4	1.50	1.38	1.31
737.2	767.2	1.52	1.41	1.34
817.9	847.9	1.52	1.43	1.37
898.7	928.7	1.50	1.42	1.36
979.5	1009.5	1.46	1.40	1.36
1060.3	1090.3	1.43	1.37	1.34
1141.1	1171.1	1.37	1.32	1.31
1221.9	1251.9	1.33	1.29	1.28
1302.6	1332.6	1.29	1.25	1.24
1383.4	1413.4	1.23	1.21	1.20
1464.2	1494.2	1.20	1.17	1.16
1545.0	1575.0	1.15	1.12	1.13
1625.8	1655.8	1.12	1.09	1.10
1706.6	1736.6	1.15	1.10	1.09
1787.4	1817.4	1.19	1.12	1.10
1868.1	1898.1	1.23	1.15	1.12
1948.9	1978.9	1.21	1.13	1.12
2029.7	2059.7	1.20	1.14	1.11
2110.5	2140.5	1.18	1.10	1.10
2191.3	2221.3	1.22	1.11	1.06
2272.1	2302.1	1.25	1.11	1.04
2352.8	2382.8	1.26	1.12	1.03
2433.6	2463.6	1.26	1.13	1.07
2514.4	2544.4	1.22	1.14	1.13
2595.2	2625.2	1.19	1.18	1.21
2676.0	2706.0	1.23	1.27	1.33
2756.8	2786.8	1.32	1.40	1.47
2817.4	2847.4	1.42	1.51	1.59
2898.1	2928.1	1.59	1.71	1.80
2958.7	2988.7	1.75	1.89	1.99
3039.5	3069.5	2.00	2.12	2.23
3100.1	3130.1	2.22	2.33	2.44

LO (MHz)	LO VSWR (:1)		
	@LO (dBm)		
	+14	+17	+20
10.1	1.93	2.60	3.56
90.9	1.73	2.48	3.43
171.7	1.74	2.51	3.45
252.5	1.76	2.55	3.50
333.2	1.77	2.53	3.47
414.0	1.74	2.47	3.37
494.8	1.69	2.39	3.23
575.6	1.65	2.32	3.13
656.4	1.65	2.29	3.06
737.2	1.63	2.25	3.00
817.9	1.58	2.19	2.92
898.7	1.56	2.13	2.83
979.5	1.52	2.07	2.73
1060.3	1.51	2.02	2.65
1141.1	1.50	1.97	2.57
1221.9	1.50	1.92	2.48
1302.6	1.49	1.87	2.40
1383.4	1.49	1.82	2.33
1464.2	1.48	1.79	2.27
1545.0	1.46	1.73	2.20
1625.8	1.45	1.66	2.11
1706.6	1.46	1.64	2.05
1787.4	1.44	1.59	1.98
1868.1	1.41	1.54	1.92
1948.9	1.40	1.48	1.85
2029.7	1.40	1.45	1.80
2110.5	1.38	1.39	1.73
2191.3	1.34	1.30	1.63
2272.1	1.31	1.22	1.54
2352.8	1.27	1.17	1.50
2433.6	1.27	1.11	1.46
2514.4	1.31	1.12	1.44
2595.2	1.36	1.19	1.46
2676.0	1.41	1.29	1.52
2756.8	1.47	1.41	1.62
2817.4	1.53	1.50	1.71
2898.1	1.63	1.66	1.88
2958.7	1.72	1.78	2.01
3039.5	1.84	1.94	2.17
3100.1	1.95	2.07	2.30

IF (OUT) (MHz)	IF VSWR @LO=2800.1MHz (:1)		
	@LO (dBm)		
	+14	+17	+20
10.0	2.22	2.10	2.01
27.7	2.23	2.12	2.01
45.4	2.23	2.11	2.01
63.1	2.25	2.13	2.02
80.8	2.33	2.20	2.08
98.5	2.37	2.23	2.12
116.2	2.31	2.18	2.06
133.8	2.26	2.13	2.01
151.5	2.25	2.10	1.99
169.2	2.24	2.09	1.97
186.9	2.22	2.08	1.96
204.6	2.26	2.10	1.97
222.3	2.34	2.17	2.03
240.0	2.33	2.15	2.00
257.7	2.26	2.07	1.93
275.4	2.26	2.07	1.92
293.1	2.32	2.11	1.96
310.8	2.30	2.09	1.93
328.5	2.24	2.04	1.88
346.2	2.20	2.00	1.84
363.8	2.19	1.98	1.82
381.5	2.16	1.95	1.79
399.2	2.15	1.94	1.78
416.9	2.20	1.98	1.81
434.6	2.18	1.96	1.79
452.3	2.07	1.85	1.70
470.0	1.99	1.79	1.64
487.7	2.01	1.80	1.65
505.4	2.05	1.84	1.68
523.1	2.03	1.81	1.66
540.8	1.96	1.75	1.60
558.5	1.91	1.70	1.56
576.2	1.87	1.67	1.53
593.8	1.86	1.66	1.51
611.5	1.87	1.67	1.52
629.2	1.86	1.66	1.51
646.9	1.77	1.58	1.45
664.6	1.68	1.50	1.38
682.3	1.68	1.50	1.38
700.0	1.72	1.54	1.41

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	30	20	34	44	30	40	29	58	46	60
1	-	38	+0	40	16	41	28	55	29	38	45	60
2	>100	40	41	42	44	40	66	54	53	51	48	70
3	>100	55	43	49	39	62	40	69	55	66	48	53
4	>100	69	82	51	73	50	54	76	82	69	74	68
5	>100	77	74	73	50	62	56	56	60	68	75	76
6	>100	70	79	82	78	58	62	65	63	61	73	89
7	>100	75	77	89	80	83	68	74	67	68	76	87
8	>100	85	84	99	97	88	83	67	73	75	71	69
9	>100	97	>99	84	93	90	88	87	72	74	73	96
10	>100	>99	99	98	83	91	95	90	>99	75	86	74
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1600.1 MHz; 5.00 dBm.
 LO IN: 1630.01 MHz; +17.00 dBm
 IF OUT: 29.91 MHz; -1.24 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	18	10	24	36	20	27	17	43	31	46
1	-	43	+0	38	15	40	27	52	27	37	43	53
2	>100	51	64	60	60	52	67	61	59	58	61	86
3	>100	74	65	72	66	71	65	78	72	84	65	70
4	>100	>89	>89	>89	>89	>89	88	87	>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: 1600.1 MHz; -5.00 dBm.
 LO IN: 1630.01 MHz; +17.00 dBm
 IF OUT: 29.91 MHz; -11.07 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.

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