

Frequency Mixer

SRA-2+

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	6.65	5.93	5.93
50.1	80.1	6.64	6.18	6.00
90.1	120.1	6.57	6.14	5.97
130.1	160.1	6.70	6.27	6.02
170.1	200.1	6.60	6.18	5.97
210.1	240.1	6.84	6.37	6.13
250.1	280.1	6.70	6.24	6.02
290.1	320.1	6.87	6.41	6.19
330.1	360.1	6.91	6.41	6.17
370.1	400.1	6.93	6.41	6.16
410.1	440.1	7.25	6.74	6.47
450.1	480.1	7.21	6.72	6.46
490.1	520.1	7.62	7.16	6.90
530.1	560.1	7.37	6.96	6.73
570.1	600.1	7.42	7.04	6.81
610.1	640.1	7.16	6.77	6.55
650.1	680.1	6.98	6.62	6.42
690.1	720.1	6.92	6.50	6.28
730.1	760.1	6.68	6.26	6.07
770.1	800.1	6.77	6.29	6.03
810.1	840.1	6.68	6.17	5.89
850.1	880.1	6.88	6.36	6.06
890.1	920.1	6.80	6.30	6.01
930.1	960.1	6.70	6.22	5.95
970.1	1000.1	6.70	6.23	5.95
1010.1	1040.1	6.64	6.19	5.93
1050.1	1080.1	6.71	6.26	5.99
1090.1	1120.1	6.78	6.33	6.07
1130.1	1160.1	6.89	6.47	6.23
1170.1	1200.1	7.09	6.66	6.39
1210.1	1240.1	7.29	6.91	6.66
1250.1	1280.1	7.56	7.16	6.88
1290.1	1320.1	7.88	7.51	7.27
1330.1	1360.1	8.19	7.82	7.57
1370.1	1400.1	8.63	8.27	8.04
1410.1	1440.1	8.98	8.65	8.45
1450.1	1480.1	9.40	9.06	8.89
1490.1	1520.1	9.83	9.56	9.46
1530.1	1560.1	10.19	9.93	9.84
1550.1	1580.1	10.47	10.26	10.21

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	14.95	16.15	16.17
50.1	80.1	10.81	10.50	12.46
90.1	120.1	9.87	11.47	17.27
130.1	160.1	8.89	13.24	20.99
170.1	200.1	10.59	18.81	14.72
210.1	240.1	13.68	15.61	14.70
250.1	280.1	16.67	13.57	13.90
290.1	320.1	14.07	13.10	14.07
330.1	360.1	13.14	12.11	12.52
370.1	400.1	9.12	10.05	11.55
410.1	440.1	8.34	9.06	10.42
450.1	480.1	7.78	8.94	10.59
490.1	520.1	7.53	9.31	11.56
530.1	560.1	8.26	9.91	11.76
570.1	600.1	6.91	7.85	9.06
610.1	640.1	7.49	8.01	8.97
650.1	680.1	7.59	8.27	9.07
690.1	720.1	7.92	8.76	9.50
730.1	760.1	8.19	9.40	10.34
770.1	800.1	8.23	10.36	11.70
810.1	840.1	8.53	11.43	13.63
850.1	880.1	6.24	8.16	9.56
890.1	920.1	4.86	6.05	7.17
930.1	960.1	4.26	5.34	6.33
970.1	1000.1	3.86	4.81	5.85
1010.1	1040.1	3.74	4.81	6.10
1050.1	1080.1	3.33	4.67	5.98
1090.1	1120.1	3.48	4.76	6.08
1130.1	1160.1	3.37	4.84	6.29
1170.1	1200.1	3.41	5.10	6.73
1210.1	1240.1	3.48	5.34	7.34
1250.1	1280.1	3.45	5.62	8.15
1290.1	1320.1	3.89	6.25	9.02
1330.1	1360.1	3.93	6.56	9.56
1370.1	1400.1	5.39	8.77	12.30
1410.1	1440.1	6.97	11.63	15.04
1450.1	1480.1	10.88	12.94	15.07
1490.1	1520.1	10.68	10.76	13.66
1530.1	1560.1	9.11	9.80	13.06
1550.1	1580.1	8.36	9.59	12.58

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	1.44	1.02	0.42
50.1	80.1	1.36	0.85	0.70
90.1	120.1	1.29	0.92	0.70
130.1	160.1	1.37	0.92	0.64
170.1	200.1	1.57	1.17	0.84
210.1	240.1	1.36	1.00	0.75
250.1	280.1	1.69	1.26	1.00
290.1	320.1	1.56	1.20	0.94
330.1	360.1	1.70	1.37	1.11
370.1	400.1	1.68	1.43	1.21
410.1	440.1	1.58	1.30	1.10
450.1	480.1	1.60	1.34	1.17
490.1	520.1	1.25	1.01	0.86
530.1	560.1	1.47	1.15	0.98
570.1	600.1	1.41	1.14	0.99
610.1	640.1	1.64	1.34	1.18
650.1	680.1	1.77	1.50	1.31
690.1	720.1	1.84	1.64	1.48
730.1	760.1	2.05	1.86	1.66
770.1	800.1	1.91	1.79	1.66
810.1	840.1	1.87	1.75	1.63
850.1	880.1	1.54	1.36	1.26
890.1	920.1	1.47	1.20	1.09
930.1	960.1	1.54	1.18	1.01
970.1	1000.1	1.52	1.10	0.90
1010.1	1040.1	1.63	1.13	0.87
1050.1	1080.1	1.59	1.06	0.77
1090.1	1120.1	1.58	1.02	0.72
1130.1	1160.1	1.57	0.96	0.63
1170.1	1200.1	1.45	0.86	0.56
1210.1	1240.1	1.47	0.85	0.53
1250.1	1280.1	1.33	0.75	0.47
1290.1	1320.1	1.25	0.71	0.45
1330.1	1360.1	1.22	0.69	0.44
1370.1	1400.1	1.02	0.61	0.42
1410.1	1440.1	1.06	0.63	0.43
1450.1	1480.1	0.92	0.58	0.38
1490.1	1520.1	0.90	0.55	0.37
1530.1	1560.1	0.84	0.54	0.37
1550.1	1580.1	0.79	0.52	0.36

REV. X3

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=510.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1010.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+7			+7			+7
500.1	10.0	6.98	10.0	20.1	6.24	1000.1	10.0	8.75
490.1	20.0	6.91	50.0	60.1	6.01	979.9	30.2	8.55
480.1	30.0	6.90	90.0	100.1	6.06	959.7	50.4	8.41
470.1	40.0	6.95	110.0	120.1	5.98	939.5	70.6	8.38
460.1	50.0	6.99	150.0	160.1	6.08	919.3	90.8	8.30
450.1	60.0	7.04	170.0	180.1	5.87	899.1	111.0	8.13
440.1	70.0	7.07	210.0	220.1	5.80	878.9	131.2	7.98
430.1	80.0	7.14	230.0	240.1	5.92	858.7	151.4	7.88
420.1	90.0	7.13	270.0	280.1	6.07	838.5	171.6	7.86
410.1	100.0	7.13	290.0	300.1	5.81	818.3	191.8	7.72
400.1	110.0	7.20	330.0	340.1	5.91	798.1	212.0	7.56
390.1	120.0	7.13	350.0	360.1	6.12	777.9	232.2	7.45
380.1	130.0	7.10	390.0	400.1	5.95	757.7	252.4	7.30
370.1	140.0	7.12	410.0	420.1	6.22	737.4	272.7	7.27
360.1	150.0	7.12	450.0	460.1	6.20	717.2	292.9	7.11
350.1	160.0	7.10	470.0	480.1	5.99	697.0	313.1	7.00
340.1	170.0	7.30	510.0	520.1	6.24	676.8	333.3	6.93
330.1	180.0	7.22	530.0	540.1	6.28	656.6	353.5	6.80
320.1	190.0	7.08	570.0	580.1	6.47	636.4	373.7	6.75
310.1	200.0	7.02	590.0	600.1	6.34	616.2	393.9	6.59
290.1	220.0	7.11	630.0	640.1	6.52	575.8	434.3	6.55
280.1	230.0	6.95	650.0	660.1	6.71	555.6	454.5	6.61
260.1	250.0	7.13	690.0	700.1	7.05	515.2	494.9	6.50
250.1	260.0	7.12	710.0	720.1	6.82	495.0	515.1	6.56
230.1	280.0	6.99	750.0	760.1	6.79	454.6	555.5	6.51
220.1	290.0	7.04	770.0	780.1	6.88	434.4	575.7	6.32
200.1	310.0	6.96	810.0	820.1	7.05	394.0	616.1	6.34
190.1	320.0	7.03	830.0	840.1	7.12	373.8	636.3	6.33
170.1	340.0	6.92	870.0	880.1	6.84	333.4	676.7	6.29
160.1	350.0	7.07	890.0	900.1	7.09	313.2	696.9	6.37
140.1	370.0	6.93	930.0	940.1	7.14	272.8	737.3	6.45
130.1	380.0	6.95	950.0	960.1	7.22	252.5	757.6	6.42
110.1	400.0	7.01	990.0	1000.1	7.72	212.1	798.0	6.61
100.1	410.0	6.91	1010.0	1020.1	7.69	191.9	818.2	6.62
80.1	430.0	7.00	1050.0	1060.1	7.97	151.5	858.6	6.44
70.1	440.0	6.94	1070.0	1080.1	8.47	131.3	878.8	6.44
50.1	460.0	6.97	1110.0	1120.1	8.86	90.9	919.2	6.26
40.1	470.0	6.91	1130.0	1140.1	9.27	70.7	939.4	6.18
20.1	490.0	7.04	1170.0	1180.1	9.86	30.3	979.8	6.14
10.1	500.0	7.25	1190.0	1200.1	10.14	10.1	1000.0	6.36

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+4	+7	+10	+4	+7	+10
40.1	71.16	68.08	65.88	70.43	72.15	74.27
80.1	71.27	65.74	63.77	63.31	65.70	67.26
120.1	69.50	65.36	63.34	59.91	62.01	64.51
160.1	69.42	65.14	61.78	57.08	59.16	61.71
200.1	67.50	63.86	60.63	55.17	57.34	59.56
240.1	62.49	60.79	58.26	53.54	55.77	57.82
280.1	58.47	58.69	57.61	52.20	54.55	56.51
320.1	54.94	57.04	57.27	51.13	53.40	55.44
360.1	52.44	53.99	54.02	49.88	51.89	53.89
400.1	50.47	52.74	53.95	49.38	51.40	53.20
440.1	48.80	49.85	50.65	48.96	50.86	52.81
480.1	48.06	50.08	50.53	48.63	50.33	51.91
520.1	47.43	51.06	52.60	48.30	50.19	51.51
560.1	46.14	48.63	50.90	47.21	49.69	51.78
600.1	44.73	46.50	48.22	46.42	48.64	50.74
640.1	44.61	46.39	47.86	45.27	47.16	48.98
680.1	43.61	45.39	46.40	44.17	46.04	47.94
720.1	43.33	45.60	46.39	43.55	45.76	48.05
760.1	42.81	46.08	47.93	42.81	45.33	47.80
800.1	40.17	42.71	45.31	41.92	44.43	46.84
840.1	38.84	40.14	41.47	41.11	43.80	46.48
880.1	37.60	38.86	40.26	40.74	43.42	46.19
920.1	37.45	38.86	40.47	40.50	43.15	45.96
960.1	37.28	38.75	40.33	40.49	43.02	45.71
1000.1	37.34	38.94	40.47	40.68	43.15	45.76
1040.1	38.02	39.56	40.82	40.83	43.34	46.04
1080.1	38.32	39.91	40.70	41.21	43.92	46.97
1120.1	40.03	42.14	42.62	41.12	44.08	47.91
1160.1	43.25	47.13	47.40	40.16	42.86	46.71
1200.1	46.20	51.75	48.86	39.79	42.05	45.32
1240.1	45.78	48.67	46.39	40.17	41.90	44.41
1280.1	42.51	43.68	42.66	41.58	43.02	44.91
1320.1	38.86	39.40	38.80	44.07	45.58	47.06
1360.1	37.29	37.43	37.07	46.06	47.94	49.07
1400.1	36.03	35.76	35.38	48.58	50.82	51.45
1440.1	35.57	35.06	34.52	50.06	51.49	50.71
1480.1	35.05	34.54	33.89	50.63	51.17	49.92
1520.1	34.30	33.68	33.15	51.87	50.77	49.04
1560.1	34.42	33.89	33.29	50.82	49.46	47.81
1580.1	33.81	33.24	32.65	51.85	49.42	47.42

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	53.79	53.80	53.62
50.1	80.1	42.12	40.78	42.16
90.1	120.1	36.80	36.81	37.97
130.1	160.1	33.99	34.16	34.58
170.1	200.1	32.68	33.68	33.91
210.1	240.1	32.16	32.83	33.12
250.1	280.1	31.28	32.22	32.68
290.1	320.1	30.92	31.91	32.90
330.1	360.1	29.98	31.07	31.92
370.1	400.1	29.91	30.46	31.02
410.1	440.1	29.84	30.86	31.15
450.1	480.1	29.91	30.94	31.85
490.1	520.1	28.86	29.83	30.68
530.1	560.1	27.43	28.02	28.35
570.1	600.1	26.25	26.41	26.65
610.1	640.1	24.86	25.12	25.06
650.1	680.1	24.13	24.14	24.27
690.1	720.1	23.81	23.75	23.94
730.1	760.1	23.82	23.92	24.11
770.1	800.1	24.26	24.42	24.47
810.1	840.1	24.69	24.53	24.45
850.1	880.1	24.97	24.51	24.12
890.1	920.1	24.80	24.10	23.54
930.1	960.1	24.43	23.66	22.78
970.1	1000.1	23.70	22.94	22.20
1010.1	1040.1	22.50	21.86	21.16
1050.1	1080.1	20.93	20.33	19.76
1090.1	1120.1	19.59	18.97	18.39
1130.1	1160.1	18.27	17.61	17.12
1170.1	1200.1	16.98	16.32	15.83
1210.1	1240.1	15.89	15.18	14.67
1250.1	1280.1	14.98	14.27	13.75
1290.1	1320.1	14.20	13.45	12.97
1330.1	1360.1	13.48	12.83	12.30
1370.1	1400.1	12.81	12.19	11.76
1410.1	1440.1	12.17	11.58	11.24
1450.1	1480.1	11.54	11.09	10.74
1490.1	1520.1	11.09	10.73	10.42
1530.1	1560.1	10.71	10.36	10.15
1550.1	1580.1	10.54	10.24	10.02

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)				IF (OUT) (MHz)	IF VSWR @LO=1000MHz (:1)			
		@LO (dBm)				@LO (dBm)					@LO (dBm)			
		+4	+7	+10		+4	+7	+10	+4		+7	+10		
10.1	40.1	1.36	1.25	1.08	40.1	1.96	2.84	3.97	10.0	1.32	1.42	1.50		
50.1	80.1	1.38	1.19	1.07	80.1	1.78	2.49	3.42	30.0	1.25	1.36	1.43		
90.1	120.1	1.35	1.18	1.08	120.1	1.88	2.67	3.69	50.0	1.29	1.41	1.49		
130.1	160.1	1.38	1.21	1.14	160.1	1.81	2.55	3.50	70.0	1.30	1.41	1.49		
170.1	200.1	1.42	1.28	1.20	200.1	1.83	2.56	3.51	90.0	1.27	1.37	1.44		
210.1	240.1	1.50	1.36	1.27	240.1	1.86	2.62	3.58	110.0	1.29	1.38	1.45		
250.1	280.1	1.60	1.46	1.36	280.1	1.84	2.56	3.47	130.0	1.35	1.46	1.53		
290.1	320.1	1.72	1.57	1.46	320.1	1.91	2.68	3.62	150.0	1.34	1.44	1.50		
330.1	360.1	1.87	1.70	1.59	360.1	1.90	2.62	3.52	170.0	1.33	1.41	1.46		
370.1	400.1	2.03	1.84	1.70	400.1	1.96	2.71	3.62	190.0	1.38	1.47	1.52		
410.1	440.1	2.21	2.01	1.86	440.1	1.98	2.70	3.58	210.0	1.38	1.46	1.52		
450.1	480.1	2.38	2.15	1.99	480.1	2.03	2.76	3.65	230.0	1.38	1.45	1.50		
490.1	520.1	2.57	2.33	2.15	520.1	2.07	2.80	3.67	250.0	1.41	1.47	1.51		
530.1	560.1	2.65	2.43	2.28	560.1	2.10	2.81	3.66	270.0	1.43	1.50	1.54		
570.1	600.1	2.69	2.48	2.35	600.1	2.17	2.89	3.74	290.0	1.39	1.44	1.48		
610.1	640.1	2.66	2.43	2.30	640.1	2.18	2.87	3.70	310.0	1.40	1.45	1.48		
650.1	680.1	2.59	2.34	2.20	680.1	2.26	2.96	3.79	330.0	1.44	1.49	1.53		
690.1	720.1	2.52	2.24	2.07	720.1	2.29	2.95	3.75	350.0	1.40	1.44	1.48		
730.1	760.1	2.42	2.10	1.90	760.1	2.35	3.01	3.80	370.0	1.37	1.40	1.42		
770.1	800.1	2.38	2.04	1.80	800.1	2.40	3.05	3.82	390.0	1.39	1.42	1.44		
810.1	840.1	2.37	2.04	1.80	840.1	2.42	3.06	3.81	430.0	1.33	1.36	1.38		
850.1	880.1	2.34	2.06	1.86	880.1	2.48	3.11	3.84	450.0	1.32	1.34	1.35		
890.1	920.1	2.20	1.94	1.76	920.1	2.53	3.13	3.83	490.0	1.27	1.30	1.34		
930.1	960.1	2.04	1.77	1.60	960.1	2.59	3.19	3.88	510.0	1.23	1.25	1.28		
970.1	1000.1	1.91	1.64	1.46	1000.1	2.63	3.21	3.89	550.0	1.17	1.21	1.26		
1010.1	1040.1	1.79	1.52	1.35	1040.1	2.67	3.23	3.89	570.0	1.11	1.16	1.23		
1050.1	1080.1	1.72	1.46	1.29	1080.1	2.72	3.26	3.90	610.0	1.07	1.14	1.21		
1090.1	1120.1	1.67	1.44	1.32	1120.1	2.75	3.29	3.91	630.0	1.05	1.14	1.22		
1130.1	1160.1	1.64	1.46	1.41	1160.1	2.77	3.27	3.88	670.0	1.08	1.15	1.22		
1170.1	1200.1	1.66	1.55	1.56	1200.1	2.82	3.31	3.91	690.0	1.16	1.21	1.27		
1210.1	1240.1	1.73	1.69	1.75	1240.1	2.86	3.33	3.90	730.0	1.27	1.28	1.32		
1250.1	1280.1	1.82	1.86	1.98	1280.1	2.90	3.36	3.92	750.0	1.34	1.36	1.40		
1290.1	1320.1	1.95	2.06	2.23	1320.1	2.96	3.40	3.94	790.0	1.51	1.50	1.52		
1330.1	1360.1	2.09	2.27	2.51	1360.1	2.99	3.40	3.92	810.0	1.57	1.55	1.56		
1370.1	1400.1	2.32	2.58	2.88	1400.1	3.05	3.45	3.97	850.0	1.85	1.83	1.83		
1410.1	1440.1	2.57	2.93	3.30	1440.1	3.07	3.42	3.90	870.0	1.91	1.87	1.86		
1450.1	1480.1	2.92	3.39	3.82	1480.1	3.13	3.47	3.96	910.0	2.23	2.19	2.17		
1490.1	1520.1	3.27	3.80	4.25	1520.1	3.21	3.52	3.98	930.0	2.36	2.30	2.27		
1530.1	1560.1	3.56	4.12	4.57	1560.1	3.31	3.59	4.04	970.0	2.67	2.59	2.55		
1550.1	1580.1	3.72	4.27	4.68	1580.1	3.37	3.65	4.10	990.0	2.88	2.80	2.74		

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	23	30	29	38	24	26	19	55	25	59
1	-	23	+0	34	20	31	39	30	30	30	44	38
2	>90	66	65	65	>69	54	>69	>69	61	59	45	61
3	>90	62	52	65	53	>69	51	61	>69	61	60	68
4	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
5	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
6	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
7	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
8	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
9	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
10	>90	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69	>69
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

Test conditions:

RF IN: 500.5 MHz; -14.00 dBm.

LO IN: 530.5 MHz; +7.00 dBm

IF OUT: 30 MHz; -21.09 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	32	39	38	50	35	39	35	65	44	64
1	-	23	+0	39	18	36	42	35	33	38	53	49
2	72	60	63	69	78	51	61	66	56	52	42	65
3	>90	45	36	50	38	54	38	45	61	47	53	54
4	>90	>79	74	71	73	65	67	60	72	>79	70	66
5	>90	73	65	74	52	64	53	64	52	66	>79	62
6	>90	>79	>79	>79	>79	>79	>79	>79	73	76	>79	>79
7	>90	75	>79	>79	>79	>79	75	76	67	72	69	75
8	>90	>79	>79	>79	>79	>79	>79	>79	78	>79	>79	>79
9	>90	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79
10	>90	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:

RF IN: 500.5 MHz; -4.00 dBm.

LO IN: 530.5 MHz; +7.00 dBm

IF OUT: 30 MHz; -11.17 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.