

Frequency Mixer

LRMS-ED6331

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	7.26	6.80	6.65
50.1	80.1	7.32	6.93	6.68
90.1	120.1	7.30	6.92	6.71
130.1	160.1	7.26	6.86	6.66
170.1	200.1	7.25	6.86	6.66
210.1	240.1	7.20	6.83	6.64
250.1	280.1	7.21	6.84	6.66
290.1	320.1	7.13	6.81	6.66
330.1	360.1	7.15	6.82	6.65
370.1	400.1	7.14	6.83	6.67
410.1	440.1	7.15	6.86	6.70
450.1	480.1	7.10	6.80	6.64
490.1	520.1	7.12	6.81	6.65
530.1	560.1	7.15	6.85	6.68
570.1	600.1	7.16	6.86	6.69
610.1	640.1	7.17	6.86	6.69
650.1	680.1	7.21	6.91	6.73
690.1	720.1	7.25	6.95	6.78
730.1	760.1	7.32	7.02	6.85
770.1	800.1	7.36	7.06	6.90
810.1	840.1	7.44	7.13	6.96
850.1	880.1	7.55	7.25	7.06
890.1	920.1	7.66	7.36	7.16
930.1	960.1	7.77	7.47	7.27
970.1	1000.1	7.86	7.55	7.35
1010.1	1040.1	7.96	7.63	7.43
1050.1	1080.1	8.04	7.67	7.46
1090.1	1120.1	8.18	7.74	7.50
1130.1	1160.1	8.25	7.75	7.49
1170.1	1200.1	8.41	7.82	7.54
1210.1	1240.1	8.62	7.96	7.61
1250.1	1280.1	8.85	8.14	7.72
1290.1	1320.1	9.13	8.40	7.91
1330.1	1360.1	9.33	8.56	8.07
1370.1	1400.1	9.63	8.85	8.34
1410.1	1440.1	9.95	9.15	8.62
1450.1	1480.1	10.26	9.46	8.88
1490.1	1520.1	10.71	9.89	9.25
1530.1	1560.1	10.99	10.25	9.55
1550.1	1580.1	11.18	10.51	9.81

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	17.38	19.55	20.68
50.1	80.1	18.35	18.23	18.54
90.1	120.1	16.35	16.35	17.66
130.1	160.1	14.26	15.42	19.60
170.1	200.1	14.98	18.83	20.67
210.1	240.1	14.92	18.27	20.68
250.1	280.1	15.96	19.81	20.67
290.1	320.1	19.13	20.59	20.67
330.1	360.1	20.43	20.59	20.67
370.1	400.1	19.82	20.58	20.67
410.1	440.1	20.43	20.57	20.65
450.1	480.1	20.45	20.60	20.68
490.1	520.1	19.34	20.59	20.67
530.1	560.1	19.19	19.89	20.66
570.1	600.1	20.42	20.57	20.65
610.1	640.1	20.41	20.57	20.28
650.1	680.1	20.40	20.54	19.19
690.1	720.1	20.38	20.53	20.61
730.1	760.1	19.29	20.49	20.57
770.1	800.1	17.95	20.15	20.55
810.1	840.1	15.82	20.02	20.52
850.1	880.1	14.36	18.96	20.47
890.1	920.1	12.23	15.27	20.42
930.1	960.1	11.14	13.76	17.97
970.1	1000.1	10.82	13.15	16.27
1010.1	1040.1	10.83	13.42	16.56
1050.1	10			

Frequency Mixer

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Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=590.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1165.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+7			+7			+7
570.1	20.0	7.02	10.1	20.1	6.97	1155.1	10.0	8.45
560.1	30.0	6.96	70.1	80.1	6.85	1125.1	40.0	8.34
550.1	40.0	6.93	130.1	140.1	6.89	1095.1	70.0	8.31
540.1	50.0	6.91	190.1	200.1	6.90	1065.1	100.0	8.28
530.1	60.0	6.96	250.1	260.1	6.95	1035.1	130.0	8.20
520.1	70.0	6.93	310.1	320.1	7.01	1005.1	160.0	8.14
500.1	90.0	6.93	370.1	380.1	6.93	975.1	190.0	8.12
490.1	100.0	6.87	430.1	440.1	6.93	945.1	220.0	8.12
470.1	120.0	6.80	490.1	500.1	7.14	915.1	250.0	8.10
460.1	130.0	6.74	550.1	560.1	7.21	885.1	280.0	8.04
440.1	150.0	6.76	610.1	620.1	7.22	855.1	310.0	8.05
430.1	160.0	6.73	670.1	680.1	7.25	825.1	340.0	8.06
410.1	180.0	6.70	730.1	740.1	7.33	795.1	370.0	8.04
400.1	190.0	6.75	790.1	800.1	7.33	765.1	400.0	8.00
380.1	210.0	6.72	850.1	860.1	7.47	735.1	430.0	8.03
370.1	220.0	6.69	910.1	920.1	7.41	705.1	460.0	8.02
350.1	240.0	6.69	970.1	980.1	7.25	675.1	490.0	7.99
340.1	250.0	6.70	1030.1	1040.1	7.45	645.1	520.0	7.98
320.1	270.0	6.71	1090.1	1100.1	7.13	615.1	550.0	8.00
310.1	280.0	6.70	1150.1	1160.1	7.01	585.1	580.0	7.93
290.1	300.0	6.72	1230.1	1240.1	7.23	555.1	610.0	7.97
280.1	310.0	6.72	1290.1	1300.1	7.33	525.1	640.0	7.98
260.1	330.0	6.71	1370.1	1380.1	7.28	495.1	670.0	7.97
250.1	340.0	6.74	1430.1	1440.1	7.24	465.1	700.0	7.93
230.1	360.0	6.74	1510.1	1520.1	7.34	435.1	730.0	7.93
220.1	370.0	6.73	1570.1	1580.1	7.20	405.1	760.0	7.92
200.1	390.0	6.76	1650.1	1660.1	7.36	375.1	790.0	7.88
190.1	400.0	6.76	1710.1	1720.1	7.50	345.1	820.0	7.89
170.1	420.0	6.74	1790.1	1800.1	7.47	315.1	850.0	7.89
160.1	430.0	6.74	1850.1	1860.1	7.61	285.1	880.0	7.89
140.1	450.0	6.77	1930.1	1940.1	7.94	255.1	910.0	7.92
130.1	460.0	6.76	1990.1	2000.1	7.86	230.1	935.0	7.93
110.1	480.0	6.78	2070.1	2080.1	8.47	200.1	965.0	7.93
100.1	490.0	6.80	2130.1	2140.1	8.42	175.1	990.0	7.92
80.1	510.0	6.79	2210.1	2220.1	8.95	145.1	1020.0	7.95
70.1	520.0	6.78	2270.1	2280.1	9.43	120.1	1045.0	7.91
50.1	540.0	6.81	2350.1	2360.1	9.62	90.1	1075.0	7.87
40.1	550.0	6.83	2410.1	2420.1	10.02	65.1	1100.0	7.89

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	66.37	63.19	62.12	57.97	55.05	53.27
80.1	63.02	60.74	59.47	53.52	50.46	48.76
120.1	61.38	58.31	56.51	50.46	47.11	45.43
160.1	60.70	57.17	55.06	48.67	45.48	43.71
200.1	59.81	55.90	53.53	47.36	44.29	42.57
240.1	58.44	54.64	52.34	45.61	42.88	41.05
280.1	55.94	53.05	51.01	44.80	42.16	40.27
320.1	53.30	51.00	49.51	43.90	40.99	39.25
360.1	51.07	49.56	48.27	42.99	40.52	38.59
400.1	49.06	47.93	46.91	41.59	39.47	37.77
440.1	47.22	46.56	45.90	40.21	38.63	37.00
480.1	45.53	45.15	44.50	39.14	37.81	36.37
520.1	43.77	43.53	43.17	37.60	36.56	35.27
560.1	42.46	42.34	42.23	36.13	35.62	34.69
600.1	41.29	41.24	41.12	34.84	34.47	33.93
640.1	40.48	40.52	40.40	33.77	33.43	32.77
680.1	39.65	39.74	39.70	32.80	32.72	32.05
720.1	38.93	39.02	39.01	31.82	32.00	31.51
760.1	38.38	38.41	38.41	30.84	31.23	31.19
800.1	37.99	38.02	37.83	30.22	30.53	30.54
840.1	37.45	37.53	37.49	29.30	29.41	29.50
880.1	37.03	37.29	37.19	28.93	29.00	28.80
920.1	36.46	36.90	36.88	28.34	28.47	28.14
960.1	35.91	36.50	36.74	27.86	28.04	27.80
1000.1	35.53	36.27	36.68	27.65	28.04	27.77
1040.1	35.01	35.88	36.44	26.99	27.67	27.48
1080.1	34.77	35.71	36.42	26.77	27.74	27.84
1120.1	34.40	35.39	36.17	26.24	27.45	27.71
1160.1	34.21	35.21	36.00	25.69	27.11	27.62
1200.1	34.18	35.09	35.83	25.42	26.86	27.62
1240.1	34.12	35.04	35.60	24.85	26.27	27.15
1280.1	34.18	35.11	35.56	24.56	26.00	27.12
1320.1	34.29	35.28	35.68	24.23	25.59	26.79
1360.1	34.41	35.33	35.82	23.99	25.18	26.43
1400.1	34.49	35.43	35.91	23.92	25.04	26.22
1440.1	34.57	35.45	35.89	23.80	24.87	25.98
1480.1	34.50	35.30	35.69	23.72	24.79	25.79
1520.1	34.54	35.01	35.29	23.98	25.12	26.03
1560.1	34.26	34.55	34.63	23.86	25.21	26.05
1580.1	34.31	34.43	34.43	23.89	25.39	26.30

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	50.43	48.09	47.58
50.1	80.1	36.28	35.45	36.05
90.1	120.1	31.60	31.70	31.26
130.1	160.1	28.87	28.40	28.46
170.1	200.1	27.22	26.92	26.87
210.1	240.1	25.94	25.72	25.52
250.1	280.1	24.74	24.78	24.82
290.1	320.1	24.2		

Frequency Mixer

LRMS-ED6331

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=1155MHz (:1)				
		@LO (dBm)				@LO (dBm)				@LO (dBm)				
		+4	+7	+10		+4	+7	+10		+4	+7	+10		
10.1	40.1	1.08	1.33	1.18	40.1	1.96	2.82	3.95	10.0	1.78	1.52	1.37		
50.1	80.1	1.20	1.30	1.36	80.1	1.80	2.52	3.45	30.0	1.77	1.51	1.37		
90.1	120.1	1.22	1.29	1.36	120.1	1.88	2.66	3.65	50.0	1.78	1.52	1.37		
130.1	160.1	1.21	1.30	1.36	160.1	1.84	2.58	3.54	70.0	1.78	1.52	1.38		
170.1	200.1	1.22	1.30	1.37	200.1	1.81	2.53	3.46	90.0	1.79	1.53	1.39		
210.1	240.1	1.20	1.28	1.35	240.1	1.86	2.62	3.59	110.0	1.79	1.54	1.40		
250.1	280.1	1.21	1.30	1.36	280.1	1.81	2.51	3.41	150.0	1.78	1.53	1.41		
290.1	320.1	1.23	1.32	1.37	320.1	1.85	2.60	3.54	170.0	1.80	1.55	1.42		
330.1	360.1	1.24	1.33	1.39	360.1	1.83	2.55	3.46	210.0	1.81	1.57	1.46		
370.1	400.1	1.28	1.37	1.43	400.1	1.86	2.58	3.50	230.0	1.80	1.57	1.46		
410.1	440.1	1.32	1.41	1.47	440.1	1.90	2.63	3.55	270.0	1.82	1.60	1.50		
450.1	480.1	1.34	1.42	1.49	480.1	1.88	2.59	3.48	290.0	1.83	1.62	1.52		
490.1	520.1	1.36	1.45	1.51	520.1	1.93	2.67	3.58	330.0	1.83	1.63	1.54		
530.1	560.1	1.39	1.46	1.52	560.1	1.93	2.63	3.51	350.0	1.84	1.64	1.57		
570.1	600.1	1.43	1.50	1.56	600.1	1.97	2.69	3.58	390.0	1.87	1.69	1.62		
610.1	640.1	1.46	1.54	1.60	640.1	1.99	2.70	3.57	410.0	1.86	1.69	1.62		
650.1	680.1	1.51	1.58	1.64	680.1	2.01	2.71	3.57	450.0	1.86	1.70	1.65		
690.1	720.1	1.55	1.62	1.68	720.1	2.06	2.77	3.63	470.0	1.88	1.73	1.68		
730.1	760.1	1.57	1.65	1.71	760.1	2.07	2.75	3.58	510.0	1.90	1.75	1.72		
770.1	800.1	1.61	1.69	1.76	800.1	2.12	2.81	3.65	530.0	1.88	1.75	1.72		
810.1	840.1	1.64	1.73	1.79	840.1	2.14	2.82	3.64	570.0	1.90	1.77	1.76		
850.1	880.1	1.65	1.72	1.78	880.1	2.17	2.84	3.65	590.0	1.91	1.79	1.78		
890.1	920.1	1.65	1.71	1.77	920.1	2.20	2.87	3.68	630.0	1.89	1.78	1.78		
930.1	960.1	1.67	1.73	1.78	960.1	2.24	2.89	3.69	650.0	1.90	1.79	1.79		
970.1	1000.1	1.68	1.73	1.77	1000.1	2.26	2.91	3.69	690.0	1.92	1.82	1.83		
1010.1	1040.1	1.73	1.77	1.82	1040.1	2.29	2.92	3.70	710.0	1.89	1.80	1.82		
1050.1	1080.1	1.79	1.83	1.87	1080.1	2.33	2.94	3.69	750.0	1.88	1.79	1.81		
1090.1														

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	6	17	12	22	21	30	31	35	30	60
1	-	15	+0	28	12	29	19	42	43	48	49	45
2	>90	66	51	58	50	69	49	59	56	69	66	65
3	>90	>69	>69	68	>69	>69	66	>69	>69	>69	>69	>69
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	66	>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

LO HARMONICS ORDER

Test conditions: RF IN: 582.5 MHz; -14.00 dBm.
LO IN: 612.5 MHz; +7.00 dBm
IF OUT: 30 MHz; -20.95 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	16	27	23	33	34	43	43	50	44	69
1	-	15	+0	28	12	31	20	44	44	52	54	50
2	70	54	42	52	41	63	42	52	50	58	57	58
3	>90	53	55	57	53	55	46	52	48	65	65	64
4	>90	65	74	61	65	62	66	64	56	62	65	76
5	>90	75	73	73	62	71	59	70	59	74	64	>79
6	>90	>79	>79	>79	>79	77	77	>79	74	>79	>79	>79
7	>90	>79	>79	>79	78	>79	>79	>79	>79	>79	>79	>79
8	>90	>79	>79	>79	>79	>79	>79	>79	>79	>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: 582.5 MHz; -4.00 dBm.
LO IN: 612.5 MHz; +7.00 dBm
IF OUT: 30 MHz; -11.02 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.