

Frequency Mixer

ADEX-10H+

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=+14dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+14	+17	+20			+14	+17	+20			+14	+17	+20
10.1	40.1	8.84	7.09	6.52	10.1	40.1	19.09	24.12	28.24	10.1	40.1	-0.05	0.02	0.03
60.1	90.1	8.93	7.53	6.94	60.1	90.1	20.49	24.74	27.69	60.1	90.1	-0.13	-0.11	-0.05
110.1	140.1	9.16	7.51	6.85	110.1	140.1	19.83	24.34	28.54	110.1	140.1	-0.23	-0.09	0.00
160.1	190.1	8.90	7.40	6.85	160.1	190.1	20.54	25.69	27.00	160.1	190.1	-0.11	0.01	0.03
210.1	240.1	8.86	7.21	6.78	210.1	240.1	20.73	28.71	26.32	210.1	240.1	-0.07	0.09	0.05
260.1	290.1	8.49	7.25	6.85	260.1	290.1	21.74	25.88	34.42	260.1	290.1	0.15	0.06	0.06
310.1	340.1	8.54	7.26	6.86	310.1	340.1	21.59	23.00	26.68	310.1	340.1	0.14	0.09	0.08
360.1	390.1	8.40	7.34	6.87	360.1	390.1	23.56	25.18	27.94	360.1	390.1	0.24	0.08	0.16
410.1	440.1	8.35	7.44	6.97	410.1	440.1	22.70	24.66	22.74	410.1	440.1	0.28	-0.02	0.11
460.1	490.1	8.27	7.37	6.95	460.1	490.1	20.65	24.39	25.17	460.1	490.1	0.39	0.07	0.14
510.1	540.1	8.32	7.22	6.84	510.1	540.1	20.46	30.77	34.75	510.1	540.1	0.42	0.25	0.20
560.1	590.1	8.49	7.26	6.84	560.1	590.1	22.15	27.04	28.34	560.1	590.1	0.27	0.33	0.28
610.1	640.1	8.78	7.58	6.98	610.1	640.1	21.33	21.59	27.92	610.1	640.1	0.12	0.25	0.33
660.1	690.1	8.96	7.87	7.16	660.1	690.1	19.47	18.60	26.60	660.1	690.1	0.04	0.15	0.37
710.1	740.1	9.23	8.23	7.52	710.1	740.1	18.17	17.56	20.02	710.1	740.1	-0.09	-0.01	0.25
760.1	790.1	9.30	8.27	7.58	760.1	790.1	17.56	18.42	20.22	760.1	790.1	-0.08	-0.02	0.25
810.1	840.1	9.17	8.06	7.36	810.1	840.1	18.05	20.80	23.80	810.1	840.1	0.08	0.19	0.43
860.1	890.1	8.71	7.66	7.06	860.1	890.1	20.35	23.96	29.71	860.1	890.1	0.50	0.54	0.68
910.1	940.1	8.32	7.37	6.82	910.1	940.1	24.58	33.43	24.92	910.1	940.1	0.93	0.79	0.81
960.1	990.1	7.88	6.99	6.53	960.1	990.1	25.65	24.78	21.28	960.1	990.1	1.34	1.05	0.96
1010.1	1040.1	7.66	6.79	6.39	1010.1	1040.1	21.32	22.00	20.72	1010.1	1040.1	1.59	1.20	1.00
1060.1	1090.1	7.55	6.69	6.31	1060.1	1090.1	19.44	21.57	22.03	1060.1	1090.1	1.76	1.30	1.04
1110.1	1140.1	7.63	6.78	6.38	1110.1	1140.1	18.44	22.21	24.04	1110.1	1140.1	1.73	1.25	0.99
1160.1	1190.1	7.65	6.88	6.47	1160.1	1190.1	18.25	24.00	26.74	1160.1	1190.1	1.73	1.20	0.98
1210.1	1240.1	7.73	7.04	6.62	1210.1	1240.1	19.09	26.43	28.05	1210.1	1240.1	1.76	1.22	1.02
1260.1	1290.1	7.83	7.19	6.78	1260.1	1290.1	20.26	27.58	27.65	1260.1	1290.1	1.88	1.32	1.12
1300.1	1330.1	8.04	7.38	6.98	1300.1	1330.1	21.15	28.41	28.82	1300.1	1330.1	1.82	1.31	1.10
1350.1	1380.1	8.24	7.49	7.12	1350.1	1380.1	22.27	26.29	30.20	1350.1	1380.1	1.91	1.44	1.16
1390.1	1420.1	8.62	7.73	7.33	1390.1	1420.1	23.31	25.01	26.68	1390.1	1420.1	1.85	1.41	1.12
1440.1	1470.1	9.02	7.93	7.49	1440.1	1470.1	24.62	24.16	24.79	1440.1	1470.1	1.78	1.42	1.12
1480.1	1510.1	9.60	8.21	7.70	1480.1	1510.1	26.05	23.73	24.30	1480.1	1510.1	1.66	1.39	1.09
1530.1	1560.1	10.09	8.54	7.95	1530.1	1560.1	24.02	23.52	24.54	1530.1	1560.1	1.51	1.31	1.03
1570.1	1600.1	10.67	8.88	8.18	1570.1	1600.1	22.43	23.50	24.95	1570.1	1600.1	1.43	1.25	1.00
1620.1	1650.1	11.04	9.22	8.48	1620.1	1650.1	21.04	23.40	24.96	1620.1	1650.1	1.35	1.12	0.95
1660.1	1690.1	11.61	9.64	8.76	1660.1	1690.1	20.04	23.58	24.62	1660.1	1690.1	1.32	1.10	0.97
1710.1	1740.1	11.96	10.04	9.12	1710.1	1740.1	19.59	23.35	24.74	1710.1	1740.1	1.26	1.03	0.97
1750.1	1780.1	12.60	10.42	9.40	1750.1	1780.1	19.26	22.17	23.80	1750.1	1780.1	1.23	1.13	1.05
1800.1	1830.1	13.15	10.86	9.80	1800.1	1830.1	19.00	20.91	22.48	1800.1	1830.1	1.14	1.16	1.12
1840.1	1870.1	14.00	11.28	10.03	1840.1	1870.1	18.37	19.57	20.91	1840.1	1870.1	0.89	1.25	1.23
1890.1	1920.1	14.86	11.99	10.60	1890.1	1920.1	17.06	19.36	19.29	1890.1	1920.1	0.70	1.11	1.21

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB)
		@LO (dBm)
		+17
490.0	10.1	7.76
479.8	20.3	7.74
469.6	30.5	7.77
459.4	40.7	7.71
449.1	51.0	7.76
438.9	61.2	7.72
428.7	71.4	7.62
418.5	81.6	7.63
408.3	91.8	7.65
398.1	102.0	7.52
387.9	112.2	7.53
377.7	122.4	7.57
367.4	132.7	7.38
357.2	142.9	7.57
347.0	153.1	7.49
336.8	163.3	7.36
326.6	173.5	7.40
316.4	183.7	7.30
306.2	193.9	7.19
296.0	204.1	7.24
285.7	214.4	7.17
275.5	224.6	7.05
265.3	234.8	7.15
255.1	245.0	7.08
234.7	265.4	6.99
224.5	275.6	6.87
204.0	296.1	7.02
193.8	306.3	7.01
173.4	326.7	6.99
163.2	336.9	6.99
142.8	357.3	7.07
132.6	367.5	7.02
112.1	388.0	7.16
101.9	398.2	7.16
81.5	418.6	7.22
71.3	428.8	7.29
50.9	449.2	7.37
40.6	459.5	7.32
20.2	479.9	7.33
10.0	490.1	7.33

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10MHz (dB)
		@LO (dBm)
		+17
10.1	20.1	7.08
50.1	60.1	7.09
90.1	100.1	6.91
130.1	140.1	7.16
170.1	180.1	6.99
210.1	220.1	6.98
250.1	260.1	7.12
290.1	300.1	7.26
330.1	340.1	7.32
370.1	380.1	7.33
410.1	420.1	7.59
450.1	460.1	7.57
490.1	500.1	7.58
530.1	540.1	7.72
570.1	580.1	7.91
610.1	620.1	8.13
650.1	660.1	8.36
690.1	700.1	8.46
730.1	740.1	8.51
770.1	780.1	8.47
810.1	820.1	8.43
850.1	860.1	8.16
890.1	900.1	7.96
930.1	940.1	7.98
970.1	980.1	7.86
1010.1	1020.1	7.88
1050.1	1060.1	8.01
1090.1	1100.1	8.26
1130.1	1140.1	8.53
1170.1	1180.1	8.83
1210.1	1220.1	8.97
1250.1	1260.1	9.20
1290.1	1300.1	9.54
1330.1	1340.1	9.91
1370.1	1380.1	10.40
1410.1	1420.1	10.83
1450.1	1460.1	11.04
1490.1	1500.1	11.38
1530.1	1540.1	11.50
1570.1	1580.1	11.93

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1000.1MHz (dB)
		@LO (dBm)
		+17
990.0	10.1	8.41
970.0	30.1	8.28
950.0	50.1	8.15
930.0	70.1	8.04
910.0	90.1	7.98
890.0	110.1	7.90
870.0	130.1	7.65
850.0	150.1	7.63
830.0	170.1	7.52
810.0	190.1	7.38
790.0	210.1	7.37
770.0	230.1	7.29
750.0	250.1	7.31
730.0	270.1	7.21
710.0	290.1	7.24
690.0	310.1	7.24
670.0	330.1	7.17
650.0	350.1	7.24
630.0	370.1	7.19
610.0	390.1	7.25
570.0	430.1	7.13
550.0	450.1	7.17
510.0	490.1	7.26
490.0	510.1	7.14
450.0	550.1	7.04
430.0	570.1	7.07
390.0	610.1	7.27
370.0	630.1	7.29
330.0	670.1	7.52
310.0	690.1	7.55
270.0	730.1	7.79
250.0	750.1	7.90
210.0	790.1	7.97
190.0	810.1	7.76
150.0	850.1	7.60
130.0	870.1	7.34
90.0	910.1	7.00
70.0	930.1	6.89
30.0	970.1	6.75
10.0	990.1	6.79

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Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)					@LO (dBm)		
	+14	+17	+20	+14	+17	+20			+14	+17	+20
40.1	69.96	70.42	69.17	65.42	45.94	40.13	10.1	40.1	49.60	50.64	50.61
90.1	66.61	69.11	68.51	54.95	40.77	35.73	60.1	90.1	34.96	35.41	35.74
140.1	62.83	70.02	77.69	60.64	38.24	32.67	110.1	140.1	30.19	30.74	31.11
190.1	62.31	73.72	64.71	57.97	37.80	32.74	160.1	190.1	27.39	28.05	28.34
240.1	61.01	67.40	61.87	45.84	38.84	32.41	210.1	240.1	25.45	26.24	26.54
290.1	66.50	60.73	55.82	38.85	37.82	32.16	260.1	290.1	24.50	25.09	25.49
340.1	71.77	58.87	54.14	34.43	34.50	30.73	310.1	340.1	23.28	24.06	24.51
390.1	69.40	55.37	50.15	30.71	31.36	29.85	360.1	390.1	22.59	23.39	24.17
440.1	62.51	51.19	47.80	27.39	28.45	29.01	410.1	440.1	21.99	22.90	23.44
490.1	61.75	53.38	48.34	24.50	25.53	26.64	460.1	490.1	21.06	21.81	22.64
540.1	53.27	57.36	47.32	22.39	23.50	24.47	510.1	540.1	20.19	21.50	22.59
590.1	47.63	52.54	45.47	20.94	22.40	23.60	560.1	590.1	19.43	20.96	22.15
640.1	43.63	46.23	43.30	19.73	21.84	23.46	610.1	640.1	19.02	20.34	21.35
690.1	40.27	41.59	40.90	18.70	21.49	23.58	660.1	690.1	18.72	19.67	20.29
740.1	38.02	39.54	39.74	17.80	21.01	23.93	710.1	740.1	18.16	18.76	19.20
790.1	36.86	39.34	39.61	16.91	20.32	23.19	760.1	790.1	17.38	17.66	17.88
840.1	36.92	40.57	40.20	15.91	18.94	21.00	810.1	840.1	16.68	16.88	16.90
890.1	37.29	42.27	41.44	14.85	17.50	19.37	860.1	890.1	16.09	16.12	16.05
940.1	37.21	42.92	42.35	13.59	16.11	18.04	910.1	940.1	15.64	15.67	15.68
990.1	35.84	41.10	42.18	12.63	15.10	17.12	960.1	990.1	15.49	15.63	15.80
1040.1	33.66	37.70	39.25	11.73	14.10	16.20	1010.1	1040.1	15.56	15.82	16.11
1090.1	31.99	35.23	36.50	11.15	13.47	15.60	1060.1	1090.1	15.69	16.02	16.34
1140.1	30.54	33.25	34.25	10.56	12.81	14.90	1110.1	1140.1	15.76	16.07	16.18
1190.1	29.41	31.94	33.12	10.39	12.60	14.68	1160.1	1190.1	15.62	15.79	15.71
1240.1	28.52	31.12	32.64	10.13	12.38	14.46	1210.1	1240.1	15.39	15.32	15.06
1290.1	27.67	30.40	32.38	9.91	12.23	14.31	1260.1	1290.1	14.85	14.70	14.30
1330.1	26.44	29.30	31.47	9.82	12.24	14.34	1300.1	1330.1	14.40	14.17	13.67
1380.1	25.62	28.55	31.00	9.73	12.24	14.41	1350.1	1380.1	13.54	13.26	12.84
1420.1	24.52	27.44	30.07	9.77	12.36	14.68	1390.1	1420.1	12.92	12.50	12.07
1470.1	23.93	26.63	29.29	9.83	12.41	14.84	1440.1	1470.1	12.02	11.41	10.98
1510.1	23.34	25.90	28.74	9.94	12.57	15.15	1480.1	1510.1	11.42	10.61	10.14
1560.1	22.74	25.18	28.00	10.12	12.76	15.38	1530.1	1560.1	10.56	9.71	9.27
1600.1	22.12	24.56	27.40	10.09	12.79	15.55	1570.1	1600.1	9.96	9.06	8.60
1650.1	21.30	23.89	26.75	10.28	13.06	15.85	1620.1	1650.1	9.11	8.29	7.87
1690.1	20.66	23.38	26.31	10.19	13.03	15.94	1660.1	1690.1	8.72	7.89	7.43
1740.1	19.99	22.86	25.81	10.43	13.32	16.24	1710.1	1740.1	8.07	7.34	6.97
1780.1	19.57	22.47	25.46	10.31	13.16	16.15	1750.1	1780.1	7.76	7.02	6.69
1830.1	19.03	21.84	24.70	10.51	13.24	16.10	1800.1	1830.1	7.27	6.65	6.41
1870.1	18.51	21.06	23.80	10.31	12.78	15.50	1840.1	1870.1	7.04	6.43	6.23
1920.1	18.08	20.28	22.73	10.48	12.66	15.10	1890.1	1920.1	6.58	6.05	5.95

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	1.94	1.63	1.48
60.1	90.1	1.83	1.61	1.46
110.1	140.1	1.86	1.61	1.46
160.1	190.1	1.83	1.59	1.46
210.1	240.1	1.83	1.58	1.47
260.1	290.1	1.78	1.58	1.47
310.1	340.1	1.80	1.59	1.48
360.1	390.1	1.79	1.60	1.47
410.1	440.1	1.76	1.60	1.49
460.1	490.1	1.74	1.57	1.48
510.1	540.1	1.70	1.52	1.45
560.1	590.1	1.72	1.53	1.46
610.1	640.1	1.71	1.54	1.47
660.1	690.1	1.69	1.55	1.47
710.1	740.1	1.65	1.53	1.47
760.1	790.1	1.64	1.54	1.47
810.1	840.1	1.57	1.48	1.41
860.1	890.1	1.51	1.42	1.35
910.1	940.1	1.40	1.31	1.25
960.1	990.1	1.32	1.23	1.16
1010.1	1040.1	1.21	1.11	1.07
1060.1	1090.1	1.14	1.04	1.08
1110.1	1140.1	1.07	1.05	1.14
1160.1	1190.1	1.07	1.08	1.15
1210.1	1240.1	1.12	1.14	1.18
1260.1	1290.1	1.18	1.18	1.21
1300.1	1330.1	1.27	1.28	1.31
1350.1	1380.1	1.37	1.40	1.42
1390.1	1420.1	1.47	1.51	1.54
1440.1	1470.1	1.62	1.66	1.68
1480.1	1510.1	1.72	1.77	1.79
1530.1	1560.1	1.88	1.91	1.91
1570.1	1600.1	2.00	2.01	2.01
1620.1	1650.1	2.17	2.15	2.13
1660.1	1690.1	2.31	2.25	2.22
1710.1	1740.1	2.42	2.36	2.32
1750.1	1780.1	2.48	2.40	2.36
1800.1	1830.1	2.53	2.46	2.43
1840.1	1870.1	2.54	2.47	2.44
1890.1	1920.1	2.59	2.52	2.51

LO (MHz)	LO VSWR (:1)		
	@LO (dBm)		
	+14	+17	+20
40.1	1.94	1.07	1.95
90.1	1.70	1.09	1.52
140.1	1.79	1.10	1.54
190.1	1.70	1.13	1.48
240.1	1.77	1.10	1.51
290.1	1.68	1.06	1.50
340.1	1.65	1.05	1.54
390.1	1.55	1.06	1.56
440.1	1.49	1.09	1.60
490.1	1.42	1.11	1.61
540.1	1.34	1.16	1.65
590.1	1.25	1.22	1.71
640.1	1.19	1.27	1.75
690.1	1.14	1.33	1.81
740.1	1.11	1.35	1.83
790.1	1.09	1.36	1.84
840.1	1.09	1.34	1.83
890.1	1.12	1.37	1.86
940.1	1.19	1.42	1.90
990.1	1.30	1.49	1.94
1040.1	1.43	1.58	2.00
1090.1	1.56	1.68	2.07
1140.1	1.68	1.79	2.14
1190.1	1.79	1.90	2.20
1240.1	1.90	1.99	2.28
1290.1	2.00	2.07	2.32
1330.1	2.10	2.14	2.39
1380.1	2.22	2.22	2.44
1420.1	2.35	2.29	2.47
1470.1	2.49	2.39	2.51
1510.1	2.66	2.47	2.55
1560.1	2.75	2.55	2.57
1600.1	2.89	2.64	2.60
1650.1	3.03	2.74	2.65
1690.1	3.18	2.87	2.70
1740.1	3.31	2.97	2.74
1780.1	3.41	3.10	2.78
1830.1	3.56	3.22	2.83
1870.1	3.67	3.37	2.89
1920.1	3.84	3.57	2.99

IF (OUT) (MHz)	IF VSWR @LO=1000MHz (:1)		
	@LO (dBm)		
	+14	+17	+20
10.1	1.61	1.24	1.06
60.1	1.61	1.23	1.05
110.1	1.64	1.27	1.10
160.1	1.59	1.22	1.05
210.1	1.67	1.30	1.14
260.1	1.61	1.26	1.09
310.1	1.69	1.34	1.16
360.1	1.63	1.29	1.13
410.1	1.72	1.37	1.18
460.1	1.67	1.33	1.16
510.1	1.74	1.39	1.21
560.1	1.70	1.36	1.18
610.1	1.73	1.39	1.20
660.1	1.75	1.41	1.22
710.1	1.75	1.41	1.21
760.1	1.73	1.40	1.21
810.1	1.72	1.39	1.20
860.1	1.76	1.43	1.23
910.1	1.71	1.39	1.19
960.1	1.72	1.40	1.20
1010.1	1.68	1.37	1.18
1060.1	1.70	1.39	1.20
1110.1	1.66	1.35	1.17
1160.1	1.66	1.36	1.18
1210.1	1.61	1.32	1.15
1260.1	1.61	1.32	1.16
1300.1	1.60	1.31	1.14
1350.1	1.56	1.28	1.12
1390.1	1.52	1.25	1.10
1440.1	1.53	1.25	1.11
1480.1	1.52	1.24	1.09
1530.1	1.47	1.20	1.06
1570.1	1.43	1.17	1.06
1620.1	1.44	1.18	1.07
1660.1	1.43	1.16	1.05
1710.1	1.39	1.14	1.03
1750.1	1.35	1.10	1.06
1800.1	1.34	1.10	1.06
1840.1	1.34	1.09	1.06
1890.1	1.32	1.08	1.07

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	+1	15	+2	19	16	41	28	49	37	52
1	-	15	+0	46	16	34	32	43	42	61	47	68
2	67	51	34	56	35	53	37	59	52	60	56	68
3	>90	69	68	69	60	69	59	>82	71	>82	80	>82
4	>90	>82	73	>82	73	76	73	76	74	>82	80	>82
5	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
6	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
7	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
8	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
9	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
10	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 500 MHz; -1.00 dBm.
 LO IN: 530 MHz; +17.00 dBm
 IF OUT: 30 MHz; -8.22 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	-	-	9	26	10	29	28	51	43	59	60	64
1	-	15	+0	39	17	35	35	44	42	64	55	73
2	47	41	27	47	26	61	29	49	42	55	58	67
3	70	49	81	49	55	52	47	56	54	62	58	76
4	>90	71	52	63	51	56	68	61	59	66	61	64
5	>90	68	62	64	60	66	56	72	62	87	72	77
6	>90	83	78	74	68	70	62	67	62	69	64	75
7	>90	>92	>92	83	76	86	73	81	76	78	75	80
8	>90	>92	>92	90	86	87	76	84	77	89	84	>92
9	>90	>92	>92	>92	>92	>92	86	82	88	80	82	86
10	>90	>92	>92	>92	>92	>92	>92	>92	>92	>92	90	86
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 500 MHz; 9.00 dBm.
 LO IN: 530 MHz; +17.00 dBm
 IF OUT: 30 MHz; 1.74 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.