

Frequency Mixer

ADE-ED11629/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=20MHz (dB)		
		@LO (dBm)		
		+4	+7	+10
30.2	10.2	8.21	7.59	7.30
75.2	55.2	8.08	7.50	7.22
120.2	100.2	8.14	7.55	7.24
165.2	145.2	8.15	7.53	7.23
210.2	190.2	8.03	7.46	7.22
255.2	235.2	8.11	7.52	7.28
300.2	280.2	8.00	7.50	7.27
345.2	325.2	8.11	7.60	7.37
390.2	370.2	8.08	7.60	7.36
435.2	415.2	8.24	7.76	7.52
480.2	460.2	8.24	7.75	7.50
525.2	505.2	8.32	7.84	7.59
570.2	550.2	8.37	7.88	7.63
615.2	595.2	8.48	7.97	7.71
660.2	640.2	8.54	8.02	7.73
705.2	685.2	8.66	8.13	7.84
750.2	730.2	8.74	8.20	7.91
795.2	775.2	8.85	8.31	8.00
840.2	820.2	8.96	8.36	8.03
885.2	865.2	9.12	8.46	8.09
930.2	910.2	9.20	8.49	8.08
975.2	955.2	9.35	8.60	8.16
1020.2	1000.2	9.46	8.74	8.28
1065.2	1045.2	9.50	8.83	8.39
1110.2	1090.2	9.55	8.91	8.50
1155.2	1135.2	9.58	8.97	8.57
1200.2	1180.2	9.63	9.01	8.62
1245.2	1225.2	9.70	9.09	8.71
1290.2	1270.2	9.82	9.19	8.78
1335.2	1315.2	9.90	9.26	8.86
1385.2	1365.2	10.05	9.37	8.93
1430.2	1410.2	10.09	9.41	8.96
1480.2	1460.2	10.28	9.53	9.05
1525.2	1505.2	10.29	9.55	9.07
1575.2	1555.2	10.47	9.68	9.21
1620.2	1600.2	10.58	9.79	9.41
1670.2	1650.2	10.72	10.01	9.67
1715.2	1695.2	10.95	10.28	9.99
1765.2	1745.2	11.26	10.61	10.36
1810.2	1790.2	11.59	10.98	10.75

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+4	+7	+10
30.2	10.2	10.33	10.72	11.05
75.2	55.2	10.41	10.76	11.15
120.2	100.2	10.29	10.65	11.01
165.2	145.2	10.50	10.88	11.26
210.2	190.2	10.26	10.61	10.97
255.2	235.2	10.46	10.87	11.27
300.2	280.2	10.26	10.68	11.04
345.2	325.2	10.38	10.85	11.22
390.2	370.2	10.28	10.70	11.05
435.2	415.2	10.30	10.72	11.13
480.2	460.2	10.22	10.63	11.01
525.2	505.2	10.17	10.58	10.96
570.2	550.2	10.14	10.53	10.90
615.2	595.2	10.06	10.45	10.84
660.2	640.2	10.05	10.42	10.79
705.2	685.2	9.98	10.35	10.70
750.2	730.2	9.91	10.27	10.59
795.2	775.2	9.96	10.31	10.64
840.2	820.2	9.88	10.22	10.54
885.2	865.2	9.92	10.25	10.55
930.2	910.2	9.83	10.08	10.37
975.2	955.2	9.75	9.96	10.23
1020.2	1000.2	9.74	9.89	10.13
1065.2	1045.2	9.64	9.80	10.03
1110.2	1090.2	9.79	9.96	10.20
1155.2	1135.2	9.75	9.93	10.20
1200.2	1180.2	9.82	10.04	10.32
1245.2	1225.2	9.85	10.09	10.39
1290.2	1270.2	9.74	9.99	10.28
1335.2	1315.2	9.82	10.09	10.40
1385.2	1365.2	9.70	9.97	10.28
1430.2	1410.2	9.83	10.11	10.45
1480.2	1460.2	9.72	10.01	10.36
1525.2	1505.2	9.79	10.10	10.53
1575.2	1555.2	9.68	10.03	10.48
1620.2	1600.2	9.70	10.14	10.63
1670.2	1650.2	9.93	10.42	10.97
1715.2	1695.2	9.84	10.41	10.99
1765.2	1745.2	10.11	10.75	11.44
1810.2	1790.2	10.11	10.81	11.58

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=0dBm (dB)		
		@LO (dBm)		
		+4	+7	+10
30.2	10.2	0.01	0.04	-0.06
75.2	55.2	0.21	0.11	0.08
120.2	100.2	0.15	0.05	0.06
165.2	145.2	0.07	0.08	0.05
210.2	190.2	0.19	0.14	0.05
255.2	235.2	0.14	0.10	0.05
300.2	280.2	0.25	0.11	0.09
345.2	325.2	0.19	0.10	0.06
390.2	370.2	0.22	0.13	0.09
435.2	415.2	0.18	0.10	0.08
480.2	460.2	0.19	0.12	0.08
525.2	505.2	0.16	0.11	0.10
570.2	550.2	0.18	0.12	0.11
615.2	595.2	0.19	0.13	0.11
660.2	640.2	0.24	0.16	0.15
705.2	685.2	0.23	0.16	0.15
750.2	730.2	0.28	0.19	0.17
795.2	775.2	0.24	0.16	0.15
840.2	820.2	0.30	0.22	0.20
885.2	865.2	0.33	0.26	0.23
930.2	910.2	0.46	0.38	0.32
975.2	955.2	0.46	0.45	0.40
1020.2	1000.2	0.49	0.51	0.50
1065.2	1045.2	0.50	0.54	0.56
1110.2	1090.2	0.51	0.54	0.57
1155.2	1135.2	0.59	0.60	0.63
1200.2	1180.2	0.59	0.56	0.58
1245.2	1225.2	0.67	0.59	0.59
1290.2	1270.2	0.71	0.61	0.57
1335.2	1315.2	0.81	0.67	0.59
1385.2	1365.2	0.90	0.72	0.60
1430.2	1410.2	0.92	0.71	0.57
1480.2	1460.2	1.00	0.73	0.56
1525.2	1505.2	1.05	0.74	0.53
1575.2	1555.2	1.06	0.71	0.50
1620.2	1600.2	1.03	0.66	0.48
1670.2	1650.2	0.96	0.62	0.46
1715.2	1695.2	0.91	0.58	0.46
1765.2	1745.2	0.86	0.54	0.44
1810.2	1790.2	0.83	0.54	0.42

Frequency Mixer

ADE-ED11629/1

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=425MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=389.9MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=460.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+7			+7			+7
410.0	15.0	7.76	10.1	400.0	7.93	450.1	10.0	7.74
391.0	34.0	7.63	50.1	440.0	7.59	438.8	21.3	7.61
371.9	53.1	7.69	90.1	480.0	7.60	427.5	32.6	7.55
352.9	72.1	7.68	130.1	520.0	7.64	416.3	43.8	7.57
333.8	91.2	7.67	170.1	560.0	7.73	405.0	55.1	7.63
314.8	110.2	7.61	210.1	600.0	7.70	393.7	66.4	7.66
295.7	129.3	7.59	250.1	640.0	7.78	382.4	77.7	7.66
276.7	148.3	7.58	290.1	680.0	7.82	371.1	89.0	7.64
257.6	167.4	7.57	330.1	720.0	7.92	359.8	100.3	7.59
238.6	186.4	7.55	370.1	760.0	8.02	348.6	111.5	7.54
219.5	205.5	7.57	410.1	800.0	8.07	337.3	122.8	7.54
200.5	224.5	7.54	450.1	840.0	8.14	326.0	134.1	7.52
181.4	243.6	7.55	490.1	880.0	8.17	314.7	145.4	7.52
162.4	262.6	7.60	530.1	920.0	8.28	303.4	156.7	7.56
143.3	281.7	7.50	570.1	960.0	8.44	292.2	167.9	7.56
124.3	300.7	7.59	610.1	1000.0	8.55	280.9	179.2	7.55
105.2	319.8	7.56	650.1	1040.0	8.72	269.6	190.5	7.51
86.2	338.8	7.58	690.1	1080.0	8.82	258.3	201.8	7.47
67.1	357.9	7.58	730.1	1120.0	8.94	247.0	213.1	7.47
48.1	376.9	7.66	750.1	1140.0	8.99	235.7	224.4	7.48
29.0	396.0	7.69	790.1	1180.0	9.09	224.5	235.6	7.52
10.0	415.0	8.10	810.1	1200.0	9.08	213.2	246.9	7.48
41.0	466.0	7.67	850.1	1240.0	9.19	201.9	258.2	7.50
102.9	527.9	7.73	870.1	1260.0	9.23	190.6	269.5	7.51
164.8	589.8	7.85	910.1	1300.0	9.32	179.3	280.8	7.53
226.7	651.7	7.91	930.1	1320.0	9.34	168.0	292.1	7.53
288.6	713.6	8.00	970.1	1360.0	9.46	156.8	303.3	7.49
381.4	806.4	8.17	990.1	1380.0	9.49	145.5	314.6	7.46
443.3	868.3	8.24	1030.1	1420.0	9.46	134.2	325.9	7.51
536.2	961.2	8.50	1050.1	1440.0	9.57	122.9	337.2	7.56
598.1	1023.1	8.76	1090.1	1480.0	9.62	111.6	348.5	7.55
691.0	1116.0	9.01	1110.1	1500.0	9.58	100.4	359.7	7.50
752.9	1177.9	9.17	1150.1	1540.0	9.57	89.1	371.0	7.51
845.7	1270.7	9.35	1170.1	1560.0	9.68	77.8	382.3	7.61
907.6	1332.6	9.44	1210.1	1600.0	9.69	66.5	393.6	7.56
1000.5	1425.5	9.52	1230.1	1620.0	9.66	55.2	404.9	7.60
1062.4	1487.4	9.63	1270.1	1660.0	9.87	43.9	416.2	7.58
1155.2	1580.2	9.65	1290.1	1680.0	10.00	32.7	427.4	7.63
1217.1	1642.1	9.81	1330.1	1720.0	10.12	21.4	438.7	7.73
1310.0	1735.0	10.16	1350.1	1740.0	10.26	10.1	450.0	8.05

REV. X2

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Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+4	+7	+10	+4	+7	+10
10.2	62.75	64.83	72.48	63.47	61.54	60.30
55.2	53.66	53.28	52.59	49.09	46.95	45.36
100.2	49.57	49.02	48.38	44.57	42.63	41.23
145.2	46.68	46.28	45.72	41.75	39.55	38.35
190.2	44.57	44.15	43.75	39.22	37.83	36.84
235.2	42.88	42.58	42.22	37.53	36.11	35.22
280.2	41.65	41.33	41.00	36.44	35.19	34.16
325.2	40.66	40.40	40.14	35.28	34.07	33.07
370.2	39.82	39.67	39.49	34.73	33.47	32.37
415.2	38.77	38.79	38.65	34.00	32.67	31.52
460.2	38.10	38.11	38.03	33.58	32.24	31.07
505.2	37.27	37.34	37.38	32.94	31.54	30.40
550.2	36.58	36.70	36.74	32.75	31.37	30.15
595.2	35.78	35.96	36.08	32.26	30.76	29.58
640.2	35.05	35.33	35.48	31.79	30.29	29.01
685.2	34.63	34.98	35.23	31.24	29.66	28.47
730.2	33.95	34.28	34.53	30.81	29.25	28.01
775.2	33.66	33.97	34.14	30.08	28.65	27.39
820.2	33.28	33.51	33.61	29.33	28.04	26.84
865.2	32.93	33.10	33.17	28.57	27.29	26.09
910.2	32.36	32.59	32.65	27.66	26.58	25.55
955.2	31.92	32.22	32.37	26.82	25.81	24.84
1000.2	31.49	31.81	31.98	25.88	25.03	24.16
1045.2	30.99	31.35	31.58	25.03	24.32	23.54
1090.2	30.77	31.08	31.25	24.18	23.50	22.70
1135.2	30.47	30.82	31.00	23.43	22.83	22.11
1180.2	30.30	30.64	30.87	22.70	22.13	21.42
1225.2	30.32	30.57	30.72	22.11	21.50	20.77
1270.2	30.17	30.50	30.58	21.40	20.93	20.31
1315.2	30.16	30.23	30.25	20.66	20.14	19.68
1365.2	30.31	30.20	29.98	19.98	19.52	19.00
1410.2	30.46	30.06	29.69	19.34	18.82	18.32
1460.2	30.86	30.10	29.44	18.76	18.30	17.77
1505.2	30.98	29.80	28.73	17.91	17.54	16.89
1555.2	31.42	29.66	28.36	17.16	16.88	16.28
1600.2	31.52	29.04	27.77	16.40	16.07	15.67
1650.2	31.54	28.85	27.27	15.46	15.46	15.06
1695.2	30.67	27.77	26.34	14.80	14.76	14.54
1745.2	29.46	26.93	25.48	13.91	14.11	13.98
1790.2	28.00	25.83	24.36	13.38	13.70	13.49

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+4	+7	+10
30.2	10.2	41.75	41.68	41.55
75.2	55.2	34.11	33.94	33.83
120.2	100.2	30.31	30.29	30.15
165.2	145.2	27.88	27.87	27.82
210.2	190.2	26.23	26.24	26.30
255.2	235.2	25.00	25.08	25.17
300.2	280.2	24.12	24.25	24.28
345.2	325.2	23.33	23.54	23.68
390.2	370.2	22.83	23.05	23.18
435.2	415.2	22.41	22.71	22.88
480.2	460.2	22.01	22.33	22.54
525.2	505.2	21.59	21.95	22.10
570.2	550.2	21.06	21.41	21.58
615.2	595.2	20.50	20.93	21.11
660.2	640.2	20.04	20.48	20.71
705.2	685.2	19.49	19.86	20.03
750.2	730.2	18.90	19.17	19.26
795.2	775.2	18.18	18.33	18.34
840.2	820.2	17.56	17.62	17.53
885.2	865.2	16.87	16.87	16.74
930.2	910.2	16.42	16.38	16.24
975.2	955.2	15.99	15.92	15.80
1020.2	1000.2	15.65	15.54	15.38
1065.2	1045.2	15.33	15.23	15.09
1110.2	1090.2	15.04	14.92	14.80
1155.2	1135.2	14.79	14.68	14.58
1200.2	1180.2	14.61	14.50	14.38
1245.2	1225.2	14.47	14.33	14.18
1290.2	1270.2	14.37	14.20	14.00
1335.2	1315.2	14.16	13.95	13.72
1385.2	1365.2	13.87	13.65	13.40
1430.2	1410.2	13.52	13.27	13.01
1480.2	1460.2	12.99	12.74	12.44
1525.2	1505.2	12.42	12.14	11.83
1575.2	1555.2	11.75	11.45	11.17
1620.2	1600.2	11.11	10.78	10.49
1670.2	1650.2	10.43	10.11	9.84
1715.2	1695.2	9.80	9.48	9.21
1765.2	1745.2	9.25	8.90	8.63
1810.2	1790.2	8.65	8.29	7.99

Frequency Mixer

ADE-ED11629/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)				IF (OUT) (MHz)	IF VSWR @LO=440MHz (:1)			
		@LO (dBm)				@LO (dBm)					@LO (dBm)			
		+4	+7	+10		+4	+7	+10	+4		+7	+10		
30.2	10.2	1.35	1.31	1.30	10.2	1.14	1.70	2.65	10.1	1.35	1.49	1.56		
75.2	55.2	1.24	1.21	1.19	55.2	1.28	2.03	3.35	20.1	1.34	1.48	1.55		
120.2	100.2	1.32	1.29	1.27	100.2	1.19	1.71	2.46	30.1	1.31	1.43	1.50		
165.2	145.2	1.31	1.28	1.25	145.2	1.27	1.79	2.57	40.1	1.33	1.46	1.54		
210.2	190.2	1.35	1.32	1.30	190.2	1.27	1.71	2.39	50.1	1.32	1.45	1.51		
255.2	235.2	1.35	1.32	1.31	235.2	1.33	1.78	2.50	60.1	1.32	1.44	1.51		
300.2	280.2	1.38	1.36	1.35	280.2	1.33	1.75	2.40	70.1	1.35	1.49	1.57		
345.2	325.2	1.39	1.38	1.37	325.2	1.37	1.81	2.48	80.1	1.36	1.50	1.58		
390.2	370.2	1.42	1.41	1.40	370.2	1.39	1.81	2.45	90.1	1.32	1.46	1.53		
435.2	415.2	1.44	1.44	1.43	415.2	1.41	1.87	2.53	100.1	1.35	1.49	1.57		
480.2	460.2	1.46	1.45	1.45	460.2	1.45	1.90	2.55	110.1	1.31	1.45	1.52		
525.2	505.2	1.48	1.47	1.47	505.2	1.48	1.97	2.64	120.1	1.31	1.44	1.51		
570.2	550.2	1.49	1.49	1.49	550.2	1.52	2.01	2.66	130.1	1.33	1.47	1.54		
615.2	595.2	1.50	1.49	1.49	595.2	1.57	2.09	2.77	140.1	1.30	1.42	1.49		
660.2	640.2	1.50	1.50	1.50	640.2	1.60	2.11	2.77	150.1	1.31	1.44	1.51		
705.2	685.2	1.51	1.51	1.51	685.2	1.66	2.20	2.89	160.1	1.33	1.47	1.55		
750.2	730.2	1.51	1.51	1.51	730.2	1.70	2.24	2.92	170.1	1.30	1.43	1.49		
795.2	775.2	1.52	1.52	1.53	775.2	1.76	2.33	3.02	180.1	1.32	1.45	1.52		
840.2	820.2	1.50	1.50	1.51	820.2	1.80	2.37	3.06	190.1	1.32	1.46	1.54		
885.2	865.2	1.50	1.50	1.51	865.2	1.85	2.44	3.12	200.1	1.29	1.41	1.48		
930.2	910.2	1.45	1.45	1.46	910.2	1.91	2.50	3.19	210.1	1.31	1.44	1.52		
975.2	955.2	1.46	1.46	1.47	955.2	1.96	2.54	3.21	220.1	1.32	1.44	1.51		
1020.2	1000.2	1.41	1.41	1.43	1000.2	2.05	2.65	3.34	230.1	1.28	1.40	1.46		
1065.2	1045.2	1.41	1.42	1.43	1045.2	2.09	2.69	3.36	240.1	1.31	1.44	1.51		
1110.2	1090.2	1.40	1.41	1.43	1090.2	2.18	2.80	3.48	250.1	1.30	1.43	1.50		
1155.2	1135.2	1.40	1.41	1.43	1135.2	2.22	2.84	3.52	260.1	1.29	1.41	1.47		
1200.2	1180.2	1.42	1.43	1.46	1180.2	2.29	2.92	3.59	270.1	1.32	1.45	1.52		
1245.2	1225.2	1.42	1.44	1.47	1225.2	2.37	3.00	3.66	280.1	1.30	1.43	1.49		
1290.2	1270.2	1.47	1.48	1.51	1270.2	2.40	3.01	3.66	290.1	1.29	1.41	1.47		
1335.2	1315.2	1.47	1.49	1.52	1315.2	2.51	3.14	3.79	300.1	1.31	1.45	1.52		
1385.2	1365.2	1.54	1.55	1.58	1365.2	2.52	3.11	3.73	310.1	1.29	1.41	1.47		
1430.2	1410.2	1.56	1.58	1.61	1410.2	2.65	3.25	3.87	320.1	1.28	1.39	1.46		
1480.2	1460.2	1.63	1.65	1.68	1460.2	2.65	3.20	3.78	330.1	1.31	1.43	1.50		
1525.2	1505.2	1.65	1.68	1.72	1505.2	2.77	3.31	3.90	340.1	1.28	1.39	1.44		
1575.2	1555.2	1.73	1.76	1.80	1555.2	2.77	3.28	3.82	360.1	1.31	1.44	1.50		
1620.2	1600.2	1.75	1.79	1.82	1600.2	2.90	3.40	3.95	370.1	1.28	1.39	1.46		
1670.2	1650.2	1.84	1.88	1.90	1650.2	2.96	3.42	3.92	390.1	1.32	1.44	1.51		
1715.2	1695.2	1.86	1.89	1.92	1695.2	3.11	3.55	4.04	400.1	1.28	1.39	1.45		
1765.2	1745.2	1.94	1.99	2.01	1745.2	3.21	3.58	4.02	420.1	1.29	1.40	1.46		
1810.2	1790.2	1.94	1.99	2.01	1790.2	3.35	3.70	4.10	430.1	1.25	1.35	1.41		

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)											
	0	-	-	17	33	25	46	29	51	39	62	50	64
	1	-	15	+0	33	13	39	22	48	37	54	53	58
	2	63	50	38	52	40	64	43	70	46	61	58	68
	3	>90	40	35	49	39	55	50	74	43	55	53	59
	4	>90	62	59	58	52	62	50	66	51	80	54	72
	5	>90	63	48	57	47	68	48	65	49	71	53	81
	6	>90	>82	76	73	65	73	>82	69	73	73	69	79
	7	>90	72	70	71	64	69	57	68	56	73	58	78
	8	>90	>82	>82	>82	>82	81	71	>82	70	>82	66	80
	9	>90	>82	>82	>82	81	>82	77	>82	>82	75	76	79
	10	>90	>82	>82	>82	>82	>82	>82	>82	80	82	76	>82
RF CAL		0	1	2	3	4	5	6	7	8	9	10	

LO HARMONICS ORDER

Test conditions: RF IN: 425 MHz; 0.00 dBm.
LO IN: 405 MHz; +7.00 dBm
IF OUT: 20 MHz; -7.74 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)											
	0	-	-	19	48	27	61	35	67	54	69	61	>86
	1	-	11	+0	58	14	43	28	57	53	74	56	68
	2	43	38	40	42	46	46	53	53	53	79	65	77
	3	69	29	13	32	25	41	34	52	46	62	78	65
	4	>90	50	59	52	46	58	52	57	59	62	60	69
	5	>90	35	23	43	32	57	38	58	47	60	67	70
	6	>90	56	51	59	55	66	70	63	64	64	61	71
	7	>90	34	37	49	40	52	43	62	50	64	60	64
	8	>90	62	54	68	61	76	59	73	65	69	64	71
	9	>90	37	53	53	53	58	50	66	53	66	60	75
	10	>90	67	64	70	66	77	69	78	68	72	66	72
	RF CAL		0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 425 MHz; 10.00 dBm.
LO IN: 405 MHz; +7.00 dBm
IF OUT: 20 MHz; -3.7 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.