

Frequency Mixer

ADE-ED7430/1

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	8.08	7.68	7.23
70.1	100.1	8.00	7.49	7.22
130.1	160.1	7.98	7.44	7.16
190.1	220.1	7.87	7.35	7.12
250.1	280.1	7.83	7.35	7.15
310.1	340.1	7.72	7.30	7.09
350.1	380.1	7.68	7.28	7.09
410.1	440.1	7.66	7.30	7.10
450.1	480.1	7.60	7.22	7.03
510.1	540.1	7.57	7.20	7.00
550.1	580.1	7.55	7.18	6.99
610.1	640.1	7.52	7.12	6.92
650.1	680.1	7.53	7.13	6.92
710.1	740.1	7.59	7.20	6.96
750.1	780.1	7.62	7.24	6.99
810.1	840.1	7.59	7.19	6.95
850.1	880.1	7.50	7.08	6.83
910.1	940.1	7.46	7.00	6.74
950.1	980.1	7.42	6.92	6.65
1010.1	1040.1	7.43	6.85	6.55
1050.1	1080.1	7.37	6.78	6.46
1110.1	1140.1	7.38	6.76	6.39
1150.1	1180.1	7.37	6.78	6.39
1210.1	1240.1	7.37	6.86	6.47
1250.1	1280.1	7.35	6.92	6.57
1310.1	1340.1	7.34	6.97	6.70
1350.1	1380.1	7.36	6.99	6.75
1410.1	1440.1	7.30	6.97	6.78
1450.1	1480.1	7.28	6.98	6.80
1510.1	1540.1	7.36	7.12	7.00
1550.1	1580.1	7.45	7.20	7.09
1610.1	1640.1	7.65	7.46	7.37
1650.1	1680.1	7.81	7.62	7.54
1710.1	1740.1	8.16	7.97	7.91
1750.1	1780.1	8.44	8.25	8.18
1810.1	1840.1	8.89	8.69	8.63
1850.1	1880.1	9.24	9.03	8.95
1910.1	1940.1	9.81	9.57	9.49
1950.1	1980.1	10.23	9.96	9.86
2010.1	2040.1	10.81	10.50	10.39

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	15.77	19.71	20.39
70.1	100.1	15.73	19.85	20.39
130.1	160.1	15.64	18.83	20.42
190.1	220.1	18.48	19.70	20.44
250.1	280.1	17.16	20.32	20.42
310.1	340.1	18.37	20.35	18.87
350.1	380.1	19.90	19.26	18.98
410.1	440.1	19.85	20.35	19.64
450.1	480.1	19.31	19.42	17.85
510.1	540.1	20.21	20.03	16.56
550.1	580.1	17.27	16.73	16.95
610.1	640.1	18.11	16.27	16.62
650.1	680.1	19.58	16.53	16.00
710.1	740.1	17.13	20.40	19.30
750.1	780.1	16.01	18.75	20.50
810.1	840.1	18.03	20.40	20.52
850.1	880.1	19.83	18.85	16.98
910.1	940.1	15.69	14.37	14.14
950.1	980.1	13.86	13.00	13.46
1010.1	1040.1	11.76	11.66	12.19
1050.1	1080.1	10.59	10.71	11.00
1110.1	1140.1	8.93	9.35	9.36
1150.1	1180.1	8.21	8.60	8.31
1210.1	1240.1	7.84	8.10	7.37
1250.1	1280.1	8.09	8.71	8.59
1310.1	1340.1	8.64	10.26	11.89
1350.1	1380.1	9.20	11.27	13.02
1410.1	1440.1	10.42	11.98	13.22
1450.1	1480.1	10.85	12.19	12.85
1510.1	1540.1	10.92	12.66	13.23
1550.1	1580.1	10.72	12.33	13.73
1610.1	1640.1	11.28	13.16	14.86
1650.1	1680.1	12.18	13.98	15.50
1710.1	1740.1	13.50	15.07	16.18
1750.1	1780.1	13.47	15.40	16.75
1810.1	1840.1	12.87	15.02	16.61
1850.1	1880.1	12.05	14.46	16.33
1910.1	1940.1	11.66	13.48	15.21
1950.1	1980.1	11.03	12.88	14.09
2010.1	2040.1	10.69	12.53	13.86

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB)		
		@LO (dBm)		
		+4	+7	+10
10.1	40.1	0.25	0.01	0.12
70.1	100.1	0.27	0.21	0.14
130.1	160.1	0.31	0.20	0.14
190.1	220.1	0.36	0.19	0.11
250.1	280.1	0.33	0.21	0.13
310.1	340.1	0.34	0.21	0.13
350.1	380.1	0.36	0.23	0.15
410.1	440.1	0.35	0.21	0.15
450.1	480.1	0.35	0.23	0.16
510.1	540.1	0.36	0.24	0.18
550.1	580.1	0.39	0.26	0.19
610.1	640.1	0.47	0.33	0.25
650.1	680.1	0.51	0.37	0.28
710.1	740.1	0.56	0.41	0.32
750.1	780.1	0.62	0.47	0.38
810.1	840.1	0.78	0.58	0.47
850.1	880.1	0.92	0.70	0.57
910.1	940.1	1.11	0.90	0.76
950.1	980.1	1.22	1.00	0.87
1010.1	1040.1	1.29	1.13	1.00
1050.1	1080.1	1.37	1.23	1.10
1110.1	1140.1	1.52	1.39	1.28
1150.1	1180.1	1.54	1.40	1.30
1210.1	1240.1	1.60	1.40	1.26
1250.1	1280.1	1.61	1.38	1.20
1310.1	1340.1	1.71	1.42	1.18
1350.1	1380.1	1.72	1.40	1.16
1410.1	1440.1	1.70	1.36	1.12
1450.1	1480.1	1.74	1.37	1.14
1510.1	1540.1	1.56	1.21	1.01
1550.1	1580.1	1.52	1.16	0.99
1610.1	1640.1	1.30	0.97	0.84
1650.1	1680.1	1.29	0.93	0.80
1710.1	1740.1	1.09	0.78	0.69
1750.1	1780.1	1.08	0.76	0.64
1810.1	1840.1	0.98	0.67	0.55
1850.1	1880.1	0.96	0.64	0.50
1910.1	1940.1	0.81	0.55	0.43
1950.1	1980.1	0.81	0.54	0.42
2010.1	2040.1	0.76	0.52	0.41

Frequency Mixer

ADE-ED7430/1

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)=39.9MHz (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
490.1	20.0	7.38	10.1	50.0	7.69	990.1	20.0	7.26
480.1	30.0	7.36	50.1	90.0	7.59	970.1	40.0	7.19
470.1	40.0	7.31	90.1	130.0	7.41	950.1	60.0	7.24
460.1	50.0	7.31	130.1	170.0	7.52	930.1	80.0	7.13
450.1	60.0	7.36	170.1	210.0	7.47	910.1	100.0	7.05
440.1	70.0	7.36	210.1	250.0	7.54	890.1	120.0	6.99
430.1	80.0	7.33	250.1	290.0	7.53	870.1	140.0	6.91
420.1	90.0	7.34	290.1	330.0	7.57	850.1	160.0	6.91
410.1	100.0	7.23	330.1	370.0	7.62	830.1	180.0	6.90
400.1	110.0	7.23	370.1	410.0	7.66	810.1	200.0	6.85
390.1	120.0	7.24	410.1	450.0	7.65	790.1	220.0	6.81
380.1	130.0	7.14	450.1	490.0	7.74	770.1	240.0	6.78
370.1	140.0	7.11	490.1	530.0	7.76	750.1	260.0	6.79
360.1	150.0	7.20	530.1	570.0	7.81	730.1	280.0	6.77
350.1	160.0	7.15	570.1	610.0	7.86	710.1	300.0	6.75
340.1	170.0	7.11	610.1	650.0	7.96	690.1	320.0	6.73
330.1	180.0	7.15	650.1	690.0	8.07	670.1	340.0	6.74
320.1	190.0	7.14	690.1	730.0	8.22	650.1	360.0	6.74
310.1	200.0	7.10	730.1	770.0	8.35	630.1	380.0	6.74
300.1	210.0	7.09	770.1	810.0	8.38	610.1	400.0	6.74
290.1	220.0	7.07	810.1	850.0	8.38	570.1	440.0	6.70
280.1	230.0	7.05	850.1	890.0	8.19	550.1	460.0	6.72
260.1	250.0	7.07	890.1	930.0	8.16	510.1	500.0	6.70
250.1	260.0	7.05	930.1	970.0	8.15	490.1	520.0	6.74
230.1	280.0	7.10	970.1	1010.0	8.10	450.1	560.0	6.78
220.1	290.0	7.07	1030.1	1070.0	8.24	430.1	580.0	6.82
200.1	310.0	7.08	1070.1	1110.0	8.22	390.1	620.0	6.78
190.1	320.0	7.05	1130.1	1170.0	8.44	370.1	640.0	6.79
170.1	340.0	7.07	1170.1	1210.0	8.50	330.1	680.0	6.88
160.1	350.0	7.07	1230.1	1270.0	8.59	310.1	700.0	6.89
140.1	370.0	7.11	1270.1	1310.0	8.63	270.1	740.0	6.93
130.1	380.0	7.11	1330.1	1370.0	8.67	250.1	760.0	6.99
110.1	400.0	7.10	1370.1	1410.0	8.69	210.1	800.0	6.98
100.1	410.0	7.09	1430.1	1470.0	8.89	190.1	820.0	6.92
80.1	430.0	7.08	1470.1	1510.0	8.92	150.1	860.0	6.86
70.1	440.0	7.09	1530.1	1570.0	9.14	130.1	880.0	6.78
50.1	460.0	7.19	1570.1	1610.0	9.37	90.1	920.0	6.66
40.1	470.0	7.19	1630.1	1670.0	9.76	70.1	940.0	6.67
20.1	490.0	7.28	1670.1	1710.0	10.03	30.1	980.0	6.74
10.1	500.0	7.39	1730.1	1770.0	10.64	10.1	1000.0	6.99

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)		
	+4	+7	+10	+4	+7	+10			+4	+7	+10
40.1	66.80	67.71	68.95	58.00	58.53	58.49	10.1	40.1	50.02	49.59	49.07
100.1	58.06	58.98	59.91	51.50	50.60	49.65	70.1	100.1	33.56	34.07	33.58
160.1	53.68	54.77	55.55	46.90	45.41	44.78	130.1	160.1	28.89	28.76	28.89
220.1	50.62	51.65	52.69	42.93	41.90	42.03	190.1	220.1	25.88	25.73	25.89
280.1	48.08	49.16	50.46	40.04	39.88	40.16	250.1	280.1	23.99	23.92	24.09
340.1	45.94	47.09	48.17	38.03	38.35	38.58	310.1	340.1	22.66	22.76	22.93
380.1	44.87	46.01	47.06	37.33	37.77	37.93	350.1	380.1	22.00	21.96	22.11
440.1	44.01	45.21	46.32	36.67	37.17	37.16	410.1	440.1	21.43	21.55	21.64
480.1	42.83	43.92	44.91	36.35	36.75	36.40	450.1	480.1	20.92	21.14	21.27
540.1	41.55	42.72	43.77	35.80	36.30	35.76	510.1	540.1	20.10	20.34	20.75
580.1	40.91	42.01	43.00	35.59	36.17	35.62	550.1	580.1	19.81	20.06	20.28
640.1	40.68	41.49	42.25	36.00	35.64	34.56	610.1	640.1	19.51	19.99	20.40
680.1	40.61	41.38	41.85	36.07	35.42	33.86	650.1	680.1	19.45	20.17	20.71
740.1	40.55	41.27	41.49	36.07	34.92	32.93	710.1	740.1	19.33	19.93	20.45
780.1	39.78	40.49	40.79	35.21	34.29	32.56	750.1	780.1	18.92	19.32	19.69
840.1	39.41	40.25	40.95	33.18	32.12	31.04	810.1	840.1	18.06	18.18	18.28
880.1	38.99	39.86	40.42	31.70	30.48	29.36	850.1	880.1	17.15	17.33	17.31
940.1	38.28	39.38	40.17	29.94	28.49	27.20	910.1	940.1	16.02	16.12	16.16
980.1	37.72	38.88	39.66	29.29	27.68	26.31	950.1	980.1	15.57	15.64	15.79
1040.1	36.73	37.74	38.26	28.43	26.38	24.87	1010.1	1040.1	15.00	15.16	15.39
1080.1	36.30	37.45	38.00	27.84	25.89	24.31	1050.1	1080.1	14.82	15.03	15.25
1140.1	35.62	36.79	37.14	26.88	25.02	23.23	1110.1	1140.1	14.66	14.82	15.03
1180.1	34.88	36.10	36.44	26.34	24.75	23.07	1150.1	1180.1	14.60	14.71	14.90
1240.1	34.06	35.53	36.24	25.05	23.68	22.18	1210.1	1240.1	14.68	14.71	14.88
1280.1	33.23	34.54	35.21	24.31	23.09	21.76	1250.1	1280.1	14.89	14.90	15.04
1340.1	31.94	32.73	32.86	23.08	21.74	20.41	1310.1	1340.1	15.21	15.31	15.43
1380.1	31.24	31.69	31.79	22.40	20.84	19.67	1350.1	1380.1	15.26	15.36	15.44
1440.1	29.76	29.65	29.34	20.92	19.28	18.12	1410.1	1440.1	15.13	15.15	15.08
1480.1	28.87	28.72	28.26	20.03	18.52	17.30	1450.1	1480.1	14.81	14.74	14.61
1540.1	27.44	27.16	26.60	18.81	17.43	16.30	1510.1	1540.1	14.04	13.87	13.59
1580.1	26.75	26.20	25.82	18.38	16.87	15.91	1550.1	1580.1	13.50	13.19	12.91
1640.1	25.41	24.74	24.26	17.47	16.01	15.05	1610.1	1640.1	12.48	12.04	11.70
1680.1	24.86	24.12	23.70	17.17	15.74	14.80	1650.1	1680.1	11.82	11.31	10.94
1740.1	23.51	22.72	22.25	16.45	15.05	14.18	1710.1	1740.1	10.62	10.12	9.71
1780.1	22.93	22.29	21.77	16.10	14.93	14.01	1750.1	1780.1	9.97	9.48	9.08
1840.1	21.84	21.04	20.34	15.43	14.28	13.23	1810.1	1840.1	8.89	8.45	8.04
1880.1	21.38	20.52	19.94	15.21	14.04	13.16	1850.1	1880.1	8.27	7.80	7.47
1940.1	20.24	19.58	18.96	14.44	13.58	12.72	1910.1	1940.1	7.43	7.05	6.76
1980.1	19.92	19.21	18.66	14.31	13.45	12.70	1950.1	1980.1	7.01	6.59	6.31
2040.1	18.98	18.24	17.70	13.85	13.02	12.29	2010.1	2040.1	6.39	6.05	5.79

Frequency Mixer

ADE-ED7430/1

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=1020.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+4	+7	+10		+4	+7	+10		+4	+7	+10
10.1	40.1	1.33	1.19	1.43	40.1	1.14	1.67	2.35	10.0	1.25	1.05	1.07
70.1	100.1	1.23	1.15	1.12	100.1	1.13	1.58	2.17	30.0	1.26	1.05	1.06
130.1	160.1	1.26	1.18	1.14	160.1	1.16	1.61	2.20	50.0	1.27	1.06	1.05
190.1	220.1	1.28	1.20	1.16	220.1	1.18	1.63	2.25	70.0	1.26	1.06	1.06
250.1	280.1	1.26	1.19	1.16	280.1	1.20	1.62	2.19	90.0	1.27	1.07	1.05
310.1	340.1	1.28	1.22	1.19	340.1	1.23	1.67	2.28	110.0	1.26	1.05	1.06
350.1	380.1	1.27	1.22	1.20	380.1	1.23	1.67	2.26	130.0	1.29	1.09	1.03
410.1	440.1	1.29	1.25	1.22	440.1	1.26	1.73	2.35	150.0	1.27	1.07	1.05
450.1	480.1	1.30	1.26	1.24	480.1	1.28	1.75	2.36	170.0	1.30	1.09	1.03
510.1	540.1	1.29	1.26	1.25	540.1	1.31	1.81	2.44	190.0	1.29	1.08	1.04
550.1	580.1	1.27	1.24	1.23	580.1	1.33	1.84	2.47	210.0	1.31	1.10	1.02
610.1	640.1	1.30	1.27	1.26	640.1	1.37	1.89	2.53	230.0	1.31	1.10	1.02
650.1	680.1	1.28	1.25	1.24	680.1	1.41	1.94	2.59	250.0	1.33	1.13	1.04
710.1	740.1	1.29	1.27	1.26	740.1	1.46	2.01	2.67	270.0	1.32	1.12	1.03
750.1	780.1	1.28	1.26	1.24	780.1	1.50	2.07	2.74	290.0	1.35	1.14	1.05
810.1	840.1	1.28	1.25	1.24	840.1	1.55	2.13	2.80	310.0	1.35	1.14	1.04
850.1	880.1	1.25	1.22	1.21	880.1	1.59	2.17	2.85	330.0	1.37	1.17	1.07
910.1	940.1	1.24	1.20	1.18	940.1	1.65	2.24	2.93	350.0	1.38	1.18	1.07
950.1	980.1	1.20	1.15	1.12	980.1	1.71	2.31	3.00	390.0	1.41	1.20	1.10
1010.1	1040.1	1.18	1.11	1.08	1040.1	1.80	2.41	3.12	410.0	1.41	1.21	1.12
1050.1	1080.1	1.15	1.07	1.01	1080.1	1.86	2.48	3.18	450.0	1.43	1.24	1.14
1110.1	1140.1	1.15	1.08	1.04	1140.1	1.95	2.59	3.30	470.0	1.46	1.26	1.16
1150.1	1180.1	1.18	1.13	1.13	1180.1	2.00	2.64	3.35	510.0	1.48	1.29	1.20
1210.1	1240.1	1.24	1.22	1.22	1240.1	2.10	2.76	3.49	530.0	1.47	1.28	1.20
1250.1	1280.1	1.31	1.30	1.32	1280.1	2.13	2.78	3.51	570.0	1.50	1.31	1.23
1310.1	1340.1	1.42	1.43	1.46	1340.1	2.21	2.87	3.61	590.0	1.52	1.34	1.26
1350.1	1380.1	1.50	1.52	1.55	1380.1	2.22	2.86	3.58	630.0	1.53	1.36	1.28
1410.1	1440.1	1.61	1.65	1.68	1440.1	2.28	2.92	3.63	650.0	1.53	1.36	1.29
1450.1	1480.1	1.70	1.74	1.78	1480.1	2.27	2.89	3.58	690.0	1.54	1.37	1.31
1510.1	1540.1	1.86	1.90	1.94	1540.1	2.35	2.98	3.67	710.0	1.54	1.39	1.33
1550.1	1580.1	1.94	1.98	2.01	1580.1	2.38	2.98	3.66	750.0	1.54	1.40	1.35
1610.1	1640.1	2.09	2.12	2.15	1640.1	2.52	3.11	3.77	770.0	1.55	1.41	1.36
1650.1	1680.1	2.15	2.18	2.20	1680.1	2.57	3.13	3.76	810.0	1.55	1.41	1.37
1710.1	1740.1	2.31	2.32	2.33	1740.1	2.72	3.25	3.86	830.0	1.53	1.41	1.38
1750.1	1780.1	2.35	2.34	2.33	1780.1	2.77	3.27	3.84	870.0	1.53	1.41	1.39
1810.1	1840.1	2.46	2.43	2.42	1840.1	2.90	3.37	3.90	890.0	1.53	1.42	1.39
1850.1	1880.1	2.48	2.44	2.41	1880.1	2.94	3.37	3.87	930.0	1.51	1.41	1.40
1910.1	1940.1	2.53	2.47	2.44	1940.1	3.03	3.44	3.90	950.0	1.49	1.41	1.40
1950.1	1980.1	2.50	2.43	2.39	1980.1	3.05	3.43	3.86	990.0	1.48	1.41	1.41
2010.1	2040.1	2.55	2.48	2.43	2040.1	3.09	3.45	3.85	1010.0	1.50	1.45	1.47

Harmonics Tables

RF HARMONICS ORDER	(-dBm)											
	(-dBc)											
0	-	-	8	20	8	34	17	38	24	37	52	52
1	-	13	+0	38	14	37	23	38	37	45	49	39
2	>90	>69	51	60	52	>69	49	65	58	>69	60	>69
3	>90	>69	>69	>69	>69	>69	61	>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	>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												

LO HARMONICS ORDER

Test conditions: RF IN: 525 MHz; -14.00 dBm.
LO IN: 555 MHz; +7.00 dBm
IF OUT: 30 MHz; -21.36 dBm

RF HARMONICS ORDER	(-dBm)											
	(-dBc)											
0	-	-	17	30	19	45	28	48	37	48	57	60
1	-	13	+0	35	13	39	24	41	37	49	54	44
2	73	63	42	53	43	59	41	59	50	73	53	66
3	>90	52	47	56	50	55	45	58	58	58	60	64
4	>90	72	74	67	67	72	76	73	62	70	70	74
5	>90	76	78	70	60	75	59	72	60	75	66	>79
6	>90	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79	>79
7	>90	>79	>79	>79	>79	>79	78	>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: 525 MHz; -4.00 dBm.
LO IN: 555 MHz; +7.00 dBm
IF OUT: 30 MHz; -11.32 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.