

Frequency Mixer

ADE-ED14942/1A

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB)			RF (IN) (MHz)	LO (MHz)	IP-3 INPUT (dBm)			RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+9dBm (dB)		
		@LO (dBm)					@LO (dBm)					@LO (dBm)		
		+10	+13	+16			+10	+13	+16			+10	+13	+16
10.1	40.1	7.69	7.06	6.78	10.1	40.1	22.74	25.63	28.31	10.1	40.1	0.10	0.04	0.01
30.1	60.1	7.54	6.90	6.64	30.1	60.1	21.98	25.78	26.33	30.1	60.1	0.10	0.06	0.03
60.1	90.1	7.68	6.97	6.67	60.1	90.1	22.64	26.19	29.12	60.1	90.1	0.08	0.03	0.02
80.1	110.1	7.51	6.81	6.56	80.1	110.1	25.57	26.55	39.62	80.1	110.1	0.20	0.10	0.06
110.1	140.1	7.60	6.85	6.60	110.1	140.1	23.91	30.26	33.26	110.1	140.1	0.16	0.11	0.04
130.1	160.1	7.51	6.75	6.55	130.1	160.1	24.06	32.27	35.41	130.1	160.1	0.20	0.15	0.06
160.1	190.1	7.43	6.72	6.56	160.1	190.1	23.59	35.60	31.76	160.1	190.1	0.34	0.21	0.09
180.1	210.1	7.15	6.60	6.46	180.1	210.1	35.01	32.88	33.25	180.1	210.1	0.42	0.20	0.10
210.1	240.1	7.11	6.66	6.53	210.1	240.1	30.41	34.30	29.68	210.1	240.1	0.31	0.12	0.04
230.1	260.1	6.93	6.52	6.39	230.1	260.1	27.89	31.37	27.69	230.1	260.1	0.34	0.14	0.08
260.1	290.1	7.01	6.62	6.48	260.1	290.1	32.20	30.62	28.22	260.1	290.1	0.23	0.07	0.02
280.1	310.1	6.82	6.49	6.37	280.1	310.1	27.78	29.87	27.38	280.1	310.1	0.27	0.11	0.07
310.1	340.1	6.82	6.51	6.38	310.1	340.1	31.09	26.92	27.58	310.1	340.1	0.24	0.09	0.04
340.1	370.1	6.76	6.47	6.33	340.1	370.1	28.82	29.99	26.71	340.1	370.1	0.28	0.13	0.08
360.1	390.1	6.73	6.46	6.33	360.1	390.1	28.34	28.92	28.93	360.1	390.1	0.32	0.15	0.10
390.1	420.1	6.71	6.40	6.29	390.1	420.1	29.09	26.67	28.32	390.1	420.1	0.31	0.17	0.10
410.1	440.1	6.70	6.40	6.24	410.1	440.1	30.73	24.72	25.27	410.1	440.1	0.24	0.17	0.09
440.1	470.1	6.63	6.36	6.20	440.1	470.1	28.92	31.35	25.42	440.1	470.1	0.19	0.13	0.08
460.1	490.1	6.65	6.39	6.23	460.1	490.1	32.49	31.92	30.02	460.1	490.1	0.15	0.09	0.06
490.1	520.1	6.68	6.35	6.22	490.1	520.1	26.56	36.27	38.11	490.1	520.1	0.27	0.13	0.09
510.1	540.1	6.74	6.38	6.22	510.1	540.1	25.10	28.47	28.93	510.1	540.1	0.29	0.14	0.09
540.1	570.1	6.72	6.33	6.15	540.1	570.1	25.47	24.75	26.93	540.1	570.1	0.37	0.24	0.17
560.1	590.1	6.72	6.29	6.10	560.1	590.1	26.39	23.02	24.62	560.1	590.1	0.41	0.30	0.21
590.1	620.1	6.74	6.37	6.14	590.1	620.1	28.59	25.65	23.22	590.1	620.1	0.37	0.26	0.19
610.1	640.1	6.78	6.40	6.16	610.1	640.1	29.24	28.53	23.24	610.1	640.1	0.30	0.20	0.16
640.1	670.1	6.71	6.40	6.20	640.1	670.1	31.00	30.04	26.39	640.1	670.1	0.29	0.19	0.14
670.1	700.1	6.65	6.37	6.18	670.1	700.1	27.84	30.28	32.51	670.1	700.1	0.27	0.17	0.12
690.1	720.1	6.73	6.47	6.29	690.1	720.1	28.30	27.31	27.39	690.1	720.1	0.27	0.17	0.11
720.1	750.1	6.68	6.41	6.23	720.1	750.1	24.03	28.39	29.07	720.1	750.1	0.36	0.23	0.16
740.1	770.1	6.71	6.44	6.25	740.1	770.1	23.33	27.54	26.99	740.1	770.1	0.41	0.28	0.21
770.1	800.1	6.66	6.34	6.12	770.1	800.1	20.33	23.53	24.56	770.1	800.1	0.55	0.38	0.31
790.1	820.1	6.73	6.34	6.11	790.1	820.1	19.69	22.74	23.50	790.1	820.1	0.62	0.43	0.34
820.1	850.1	6.66	6.21	6.01	820.1	850.1	18.47	20.20	21.03	820.1	850.1	0.63	0.45	0.32
840.1	870.1	6.77	6.25	6.04	840.1	870.1	19.75	19.60	20.40	840.1	870.1	0.60	0.47	0.34
870.1	900.1	6.89	6.32	6.06	870.1	900.1	22.86	18.66	19.20	870.1	900.1	0.55	0.52	0.39
890.1	920.1	7.04	6.42	6.10	890.1	920.1	21.55	17.94	17.80	890.1	920.1	0.52	0.54	0.43
920.1	950.1	7.08	6.48	6.13	920.1	950.1	22.18	18.26	17.51	920.1	950.1	0.53	0.54	0.45
940.1	970.1	7.19	6.58	6.17	940.1	970.1	25.12	20.10	18.06	940.1	970.1	0.53	0.56	0.49
970.1	1000.1	7.20	6.62	6.19	970.1	1000.1	21.69	19.09	17.84	970.1	1000.1	0.48	0.50	0.46
1000.1	1030.1	7.45	6.85	6.36	1000.1	1030.1	24.20	21.48	18.81	1000.1	1030.1	0.49	0.50	0.49

Frequency Mixer

ADE-ED14942/1A

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=445MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=380MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=510.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+13			+13			+13
434.9	10.1	6.62	10.1	390.1	6.34	500.0	10.1	6.54
414.9	30.1	6.61	25.1	405.1	6.32	488.0	22.1	6.58
394.9	50.1	6.49	40.1	420.1	6.40	476.0	34.1	6.58
369.9	75.1	6.47	55.1	435.1	6.41	464.0	46.1	6.50
349.9	95.1	6.44	70.1	450.1	6.49	450.0	60.1	6.43
329.9	115.1	6.35	85.1	465.1	6.48	438.0	72.1	6.36
304.9	140.1	6.21	100.1	480.1	6.48	426.0	84.1	6.28
284.9	160.1	6.16	115.1	495.1	6.44	414.0	96.1	6.29
264.9	180.1	6.17	135.1	515.1	6.54	400.0	110.1	6.25
239.9	205.1	6.20	150.1	530.1	6.48	388.0	122.1	6.21
219.9	225.1	6.11	165.1	545.1	6.61	376.0	134.1	6.22
199.9	245.1	6.10	180.1	560.1	6.59	362.0	148.1	6.13
174.9	270.1	6.19	195.1	575.1	6.61	350.0	160.1	6.09
154.9	290.1	6.25	210.1	590.1	6.56	338.0	172.1	6.09
129.9	315.1	6.24	225.1	605.1	6.58	326.0	184.1	6.03
109.9	335.1	6.18	240.1	620.1	6.69	312.0	198.1	6.04
89.9	355.1	6.17	260.1	640.1	6.85	300.0	210.1	6.05
64.9	380.1	6.31	275.1	655.1	6.91	288.0	222.1	6.05
44.9	400.1	6.31	290.1	670.1	6.95	274.0	236.1	6.09
24.9	420.1	6.27	305.1	685.1	6.98	262.0	248.1	6.06
10.1	455.1	6.31	320.1	700.1	6.92	250.0	260.1	6.06
35.1	480.1	6.42	335.1	715.1	6.99	238.0	272.1	6.05
65.1	510.1	6.47	350.1	730.1	7.06	224.0	286.1	6.03
90.1	535.1	6.41	365.1	745.1	7.18	212.0	298.1	6.11
120.1	565.1	6.43	385.1	765.1	7.29	200.0	310.1	6.12
145.1	590.1	6.49	400.1	780.1	7.26	186.0	324.1	6.12
175.1	620.1	6.61	415.1	795.1	7.13	174.0	336.1	6.18
205.1	650.1	6.66	430.1	810.1	7.11	162.0	348.1	6.14
230.1	675.1	6.77	445.1	825.1	7.17	150.0	360.1	6.11
260.1	705.1	6.92	460.1	840.1	7.23	136.0	374.1	6.16
285.1	730.1	6.94	475.1	855.1	7.26	124.0	386.1	6.13
315.1	760.1	7.00	490.1	870.1	7.27	112.0	398.1	6.18
345.1	790.1	7.03	510.1	890.1	7.23	98.0	412.1	6.21
370.1	815.1	7.08	525.1	905.1	7.21	86.0	424.1	6.24
400.1	845.1	6.99	540.1	920.1	7.26	74.0	436.1	6.28
425.1	870.1	7.05	555.1	935.1	7.32	62.0	448.1	6.24
455.1	900.1	7.28	570.1	950.1	7.38	48.0	462.1	6.23
485.1	930.1	7.28	585.1	965.1	7.38	36.0	474.1	6.23
510.1	955.1	7.24	600.1	980.1	7.28	24.0	486.1	6.22
540.1	985.1	7.25	620.1	1000.1	7.16	10.0	500.1	6.30

Frequency Mixer

ADE-ED14942/1A

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)		
	@LO (dBm)			@LO (dBm)		
	+10	+13	+16	+10	+13	+16
40.1	61.29	62.73	63.41	56.65	55.41	55.03
60.1	57.71	59.27	60.18	56.52	55.44	55.08
90.1	54.19	55.48	56.04	56.40	54.91	54.19
110.1	52.29	53.64	54.26	56.19	54.72	54.03
140.1	50.16	51.30	52.52	55.81	54.19	54.56
160.1	49.01	49.98	51.35	55.42	53.71	54.36
190.1	47.27	48.34	49.65	53.94	53.13	53.82
210.1	46.24	47.80	49.23	52.60	52.83	53.51
240.1	44.89	46.67	48.12	51.49	52.31	52.86
260.1	44.26	46.08	47.47	51.12	51.64	51.99
290.1	43.37	45.09	46.34	50.94	50.87	51.22
310.1	42.89	44.81	46.18	50.63	50.39	50.13
340.1	42.30	44.14	45.50	50.06	50.18	50.17
370.1	41.72	43.56	44.82	50.13	48.59	48.18
390.1	41.25	43.12	44.46	49.73	48.55	47.28
420.1	40.89	42.80	44.19	48.71	48.79	48.20
440.1	40.66	42.38	43.69	47.73	47.45	47.56
470.1	40.33	42.25	43.60	47.55	45.15	44.77
490.1	40.01	41.88	43.25	47.69	45.61	44.08
520.1	39.31	41.57	43.18	45.75	46.14	44.94
540.1	39.42	41.47	43.03	44.57	45.65	44.75
570.1	39.09	40.87	42.17	41.80	43.20	42.79
590.1	38.96	40.81	42.07	41.20	42.26	42.25
620.1	38.84	41.11	42.36	41.91	40.31	40.87
640.1	38.48	40.88	42.19	42.65	40.08	39.78
670.1	38.39	40.76	42.20	42.25	39.97	38.84
700.1	38.21	40.45	42.02	41.99	40.15	38.73
720.1	38.10	40.21	41.80	41.79	40.22	38.77
750.1	37.84	39.86	41.29	41.33	40.01	38.57
770.1	37.66	39.52	40.84	40.52	39.59	38.42
800.1	37.40	39.22	40.71	39.25	38.64	38.54
820.1	37.53	39.38	40.89	38.64	37.82	37.81
850.1	37.92	39.91	41.24	38.06	36.92	36.48
870.1	38.26	40.30	41.53	37.48	36.66	36.08
900.1	38.28	40.47	41.66	35.88	36.28	35.58
920.1	38.13	40.64	41.72	35.28	36.11	35.35
950.1	38.02	40.74	41.61	34.44	35.67	34.91
970.1	37.55	40.42	41.12	33.92	35.10	34.61
1000.1	37.17	40.38	41.48	33.63	34.25	34.19
1030.1	36.49	39.75	41.12	33.88	33.94	34.06

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB)		
		@LO (dBm)		
		+10	+13	+16
10.1	40.1	55.53	56.16	53.69
30.1	60.1	45.40	47.34	47.48
60.1	90.1	39.35	40.71	41.79
80.1	110.1	37.19	38.86	39.91
110.1	140.1	34.21	35.72	36.57
130.1	160.1	32.96	34.86	35.62
160.1	190.1	31.16	32.80	33.34
180.1	210.1	30.67	32.27	32.71
210.1	240.1	29.29	30.49	30.88
230.1	260.1	28.78	30.15	30.64
260.1	290.1	27.62	28.77	29.23
280.1	310.1	27.39	28.47	28.99
310.1	340.1	26.34	27.24	27.68
340.1	370.1	25.92	26.77	27.37
360.1	390.1	25.41	26.27	26.79
390.1	420.1	24.82	25.77	26.29
410.1	440.1	24.28	25.11	25.81
440.1	470.1	23.82	24.62	25.40
460.1	490.1	23.62	24.36	25.06
490.1	520.1	22.86	23.80	24.34
510.1	540.1	22.44	23.42	23.97
540.1	570.1	22.14	23.29	24.04
560.1	590.1	22.04	23.33	24.22
590.1	620.1	21.72	22.82	23.69
610.1	640.1	21.39	22.45	23.38
640.1	670.1	21.27	22.18	23.10
670.1	700.1	21.46	22.22	22.98
690.1	720.1	21.39	22.06	22.71
720.1	750.1	21.48	22.28	22.97
740.1	770.1	21.48	22.30	23.08
770.1	800.1	21.96	23.17	24.26
790.1	820.1	22.03	23.47	24.66
820.1	850.1	22.52	24.29	25.38
840.1	870.1	22.68	24.58	25.75
870.1	900.1	23.03	25.10	26.61
890.1	920.1	23.03	25.31	27.24
920.1	950.1	23.50	25.95	28.32
940.1	970.1	23.69	26.15	28.86
970.1	1000.1	24.41	26.78	29.71
1000.1	1030.1	24.97	27.45	30.83

Frequency Mixer

ADE-ED14942/1A

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=510MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+10	+13	+16		+10	+13	+16		+10	+13	+16
10.1	40.1	1.49	1.37	1.31	40.1	1.08	1.67	2.51	10.1	1.07	1.09	1.16
30.1	60.1	1.46	1.33	1.26	60.1	1.07	1.66	2.47	15.1	1.07	1.09	1.17
60.1	90.1	1.48	1.34	1.27	90.1	1.07	1.71	2.56	20.1	1.06	1.10	1.17
80.1	110.1	1.44	1.30	1.23	110.1	1.10	1.67	2.48	25.1	1.06	1.10	1.18
110.1	140.1	1.46	1.31	1.24	140.1	1.12	1.60	2.37	30.1	1.05	1.11	1.18
130.1	160.1	1.45	1.29	1.23	160.1	1.11	1.62	2.39	40.1	1.05	1.10	1.18
160.1	190.1	1.46	1.30	1.24	190.1	1.11	1.67	2.48	45.1	1.06	1.09	1.17
180.1	210.1	1.41	1.27	1.22	210.1	1.10	1.64	2.42	50.1	1.07	1.09	1.16
210.1	240.1	1.40	1.28	1.23	240.1	1.09	1.60	2.34	55.1	1.07	1.08	1.15
230.1	260.1	1.37	1.26	1.21	260.1	1.08	1.65	2.43	65.1	1.08	1.07	1.14
260.1	290.1	1.39	1.28	1.23	290.1	1.07	1.69	2.47	70.1	1.09	1.06	1.14
280.1	310.1	1.35	1.25	1.21	310.1	1.06	1.68	2.43	75.1	1.09	1.07	1.14
310.1	340.1	1.35	1.26	1.22	340.1	1.07	1.69	2.42	80.1	1.08	1.07	1.14
340.1	370.1	1.32	1.24	1.20	370.1	1.10	1.75	2.50	90.1	1.07	1.08	1.16
360.1	390.1	1.32	1.24	1.20	390.1	1.12	1.79	2.55	95.1	1.07	1.09	1.16
390.1	420.1	1.32	1.23	1.19	420.1	1.12	1.74	2.45	100.1	1.06	1.09	1.16
410.1	440.1	1.32	1.24	1.19	440.1	1.16	1.75	2.44	105.1	1.06	1.09	1.16
440.1	470.1	1.29	1.22	1.18	470.1	1.21	1.85	2.59	110.1	1.07	1.08	1.16
460.1	490.1	1.28	1.22	1.18	490.1	1.23	1.86	2.57	120.1	1.08	1.07	1.14
490.1	520.1	1.30	1.22	1.19	520.1	1.15	1.78	2.46	125.1	1.08	1.06	1.13
510.1	540.1	1.30	1.22	1.19	540.1	1.18	1.81	2.48	130.1	1.09	1.05	1.12
540.1	570.1	1.27	1.19	1.15	570.1	1.23	1.86	2.53	135.1	1.09	1.05	1.12
560.1	590.1	1.26	1.17	1.13	590.1	1.26	1.89	2.57	145.1	1.09	1.06	1.12
590.1	620.1	1.23	1.16	1.12	620.1	1.29	1.89	2.55	150.1	1.09	1.06	1.13
610.1	640.1	1.24	1.16	1.11	640.1	1.30	1.91	2.57	155.1	1.08	1.07	1.14
640.1	670.1	1.22	1.16	1.13	670.1	1.38	2.02	2.74	160.1	1.08	1.07	1.14
670.1	700.1	1.19	1.14	1.11	700.1	1.42	2.01	2.68	170.1	1.08	1.07	1.14
690.1	720.1	1.19	1.15	1.13	720.1	1.44	2.02	2.68	175.1	1.08	1.06	1.13
720.1	750.1	1.16	1.12	1.10	750.1	1.47	2.07	2.74	180.1	1.09	1.06	1.13
740.1	770.1	1.15	1.11	1.09	770.1	1.51	2.09	2.76	185.1	1.09	1.05	1.12
770.1	800.1	1.14	1.09	1.07	800.1	1.52	2.06	2.68	190.1	1.10	1.04	1.11
790.1	820.1	1.14	1.09	1.09	820.1	1.54	2.05	2.66	200.1	1.11	1.03	1.10
820.1	850.1	1.10	1.05	1.07	850.1	1.61	2.15	2.80	205.1	1.12	1.04	1.10
840.1	870.1	1.11	1.05	1.07	870.1	1.68	2.25	2.91	210.1	1.12	1.04	1.10
870.1	900.1	1.11	1.03	1.06	900.1	1.71	2.24	2.85	215.1	1.12	1.05	1.11
890.1	920.1	1.12	1.03	1.05	920.1	1.74	2.29	2.89	225.1	1.11	1.06	1.12
920.1	950.1	1.12	1.03	1.04	950.1	1.81	2.41	3.04	230.1	1.10	1.06	1.12
940.1	970.1	1.13	1.05	1.03	970.1	1.84	2.43	3.04	235.1	1.10	1.05	1.12
970.1	1000.1	1.14	1.07	1.06	1000.1	1.88	2.45	3.06	240.1	1.10	1.05	1.12
1000.1	1030.1	1.19	1.13	1.11	1030.1	1.89	2.46	3.07	250.1	1.11	1.03	1.10

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	---	---	23.84	30.36	31.22	33.53	23.81	41.51	26.71	50.72	40.88	43.23
1	---	15.93	---	30.18	12.68	40.97	17.82	29.64	40.45	45.15	45.14	42.82
2	92.41	66.77	52.34	60.55	52.49	63.52	50.61	57.23	46.73	60.56	45.11	54.60
3	109.87	50.97	45.84	53.52	51.69	69.15	42.72	64.80	49.21	57.89	60.13	75.25
4	114.01	77.05	70.23	78.20	77.58	87.78	76.51	76.83	77.26	81.95	73.84	79.10
5	125.15	80.55	79.42	78.11	81.10	74.61	70.99	72.86	68.70	75.29	63.92	73.64
6	113.76	97.11	81.35	88.33	82.23	90.97	85.08	93.29	92.34	97.26	84.60	89.56
7	119.20	101.07	92.26	87.70	89.32	86.87	83.40	85.95	90.18	87.98	83.32	87.44
8	123.82	107.49	108.77	104.51	96.36	101.01	99.30	99.71	99.90	100.83	112.24	106.01
9	118.59	110.14	106.53	138.09	104.27	108.72	102.31	110.65	99.47	103.25	134.66	107.94
10	123.09	113.03	115.22	113.34	121.92	121.92	113.28	117.01	111.56	115.04	105.52	117.57
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

Test conditions: RF IN: 445 MHz; 0 dBm.
LO IN: 475 MHz; +13.00 dBm
IF OUT: 30 MHz; -6.01 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	---	---	32.68	43.84	39.43	54.41	37.33	59.57	44.84	72.48	53.33	64.52
1	---	19.58	---	34.03	13.73	41.41	25.13	46.67	54.93	58.89	51.92	66.81
2	89.14	61.01	61.27	48.31	61.91	56.45	48.03	56.98	51.41	65.14	51.58	57.12
3	96.95	24.08	17.12	48.72	28.85	58.45	34.14	52.19	43.06	50.29	66.23	63.06
4	104.43	57.15	56.33	62.25	60.04	64.55	66.54	65.33	59.23	78.64	58.50	74.55
5	105.35	37.45	50.85	42.14	35.98	44.33	43.67	50.59	50.50	52.33	75.83	58.36
6	93.51	74.38	63.95	60.03	65.03	63.87	62.40	65.23	62.72	70.03	72.38	74.05
7	104.21	47.85	44.69	44.14	49.18	49.44	66.98	51.06	49.08	55.60	56.55	63.43
8	106.60	79.69	74.23	65.94	69.27	67.43	76.86	76.49	67.15	80.08	76.80	77.88
9	95.54	62.43	59.71	56.70	54.97	60.45	57.32	60.80	52.23	54.46	57.07	61.44
10	104.03	85.24	74.74	75.71	75.94	74.45	75.67	64.70	69.73	95.45	72.74	76.26
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

Test conditions: RF IN: 445 MHz; 10 dBm.
LO IN: 475 MHz; +13.00 dBm
IF OUT: 30 MHz; 2.62 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 represents the Harmonics level of the RF Input Signal to the mixer