

Frequency Mixer

ADE-201FMH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=64MHz (dB)		
		@LO (dBm)		
		+10	+13	+16
40.1	104.1	7.29	7.10	6.94
50.1	114.1	7.25	6.98	6.87
60.1	124.1	7.18	6.95	6.83
72.1	136.1	7.21	7.01	6.88
82.1	146.1	7.10	6.96	6.83
92.1	156.1	7.00	6.88	6.76
106.1	170.1	6.80	6.67	6.55
114.1	178.1	6.54	6.41	6.33
126.1	190.1	6.38	6.28	6.18
136.1	200.1	6.38	6.29	6.17
146.1	210.1	6.27	6.18	6.11
158.1	222.1	6.37	6.27	6.20
168.1	232.1	6.46	6.35	6.24
180.1	244.1	6.54	6.43	6.33
190.1	254.1	6.65	6.52	6.43
200.1	264.1	6.72	6.55	6.43
212.1	276.1	6.80	6.61	6.45
222.1	286.1	6.84	6.62	6.44
232.1	296.1	6.91	6.66	6.45
244.1	308.1	7.13	6.84	6.61
254.1	318.1	7.31	6.99	6.76
266.1	330.1	7.49	7.15	6.88
276.1	340.1	7.64	7.25	6.98
286.1	350.1	7.86	7.44	7.15
298.1	362.1	8.03	7.59	7.25
308.1	372.1	8.17	7.68	7.32
320.1	384.1	8.30	7.77	7.37
330.1	394.1	8.48	7.90	7.47
340.1	404.1	8.69	8.06	7.60
352.1	416.1	8.91	8.25	7.76
362.1	426.1	9.12	8.42	7.92
372.1	436.1	9.32	8.58	8.08
384.1	448.1	9.52	8.77	8.23
394.1	458.1	9.67	8.89	8.35
406.1	470.1	9.83	9.00	8.42
416.1	480.1	9.97	9.10	8.51
426.1	490.1	10.13	9.22	8.59
438.1	502.1	10.37	9.41	8.75
448.1	512.1	10.53	9.54	8.85
460.1	524.1	10.73	9.70	8.97

RF (IN) (MHz)	LO (MHz)	IP-3 INPUT (dBm)		
		@LO (dBm)		
		+10	+13	+16
40.1	104.1	25.42	23.71	23.20
50.1	114.1	20.94	22.27	24.69
60.1	124.1	20.46	22.94	26.22
72.1	136.1	22.40	25.40	28.60
82.1	146.1	24.09	26.84	27.84
92.1	156.1	25.84	29.06	29.44
106.1	170.1	27.88	31.09	32.83
114.1	178.1	28.68	31.26	34.86
126.1	190.1	31.30	34.27	34.33
136.1	200.1	31.62	34.21	36.94
146.1	210.1	31.86	33.45	34.20
158.1	222.1	32.85	33.81	36.44
168.1	232.1	32.67	34.21	36.82
180.1	244.1	29.89	33.03	37.79
190.1	254.1	27.86	29.46	34.32
200.1	264.1	26.37	28.24	29.36
212.1	276.1	24.62	26.97	28.19
222.1	286.1	22.97	25.76	27.56
232.1	296.1	21.31	24.05	26.12
244.1	308.1	19.78	22.68	25.13
254.1	318.1	18.86	21.74	24.32
266.1	330.1	17.69	20.71	23.27
276.1	340.1	16.83	19.71	22.33
286.1	350.1	16.09	18.76	21.67
298.1	362.1	15.54	18.18	20.72
308.1	372.1	15.14	17.66	20.14
320.1	384.1	14.34	16.79	19.18
330.1	394.1	13.58	16.08	18.56
340.1	404.1	13.15	15.67	18.10
352.1	416.1	12.84	15.45	17.84
362.1	426.1	12.40	14.94	17.40
372.1	436.1	11.98	14.49	16.95
384.1	448.1	11.81	14.23	16.57
394.1	458.1	11.78	14.25	16.58
406.1	470.1	11.65	13.99	16.20
416.1	480.1	11.42	13.73	15.93
426.1	490.1	11.17	13.43	15.64
438.1	502.1	11.04	13.35	15.52
448.1	512.1	10.89	13.13	15.22
460.1	524.1	10.72	12.92	14.90

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+16dBm (dB)		
		@LO (dBm)		
		+10	+13	+16
40.1	104.1	1.77	0.85	0.39
50.1	114.1	1.85	1.03	0.55
60.1	124.1	1.82	1.03	0.62
72.1	136.1	1.48	0.83	0.50
82.1	146.1	1.22	0.69	0.43
92.1	156.1	0.99	0.56	0.35
106.1	170.1	0.69	0.39	0.28
114.1	178.1	0.60	0.37	0.26
126.1	190.1	0.46	0.28	0.23
136.1	200.1	0.40	0.23	0.23
146.1	210.1	0.36	0.27	0.21
158.1	222.1	0.33	0.25	0.19
168.1	232.1	0.38	0.24	0.22
180.1	244.1	0.57	0.34	0.26
190.1	254.1	0.78	0.42	0.27
200.1	264.1	1.10	0.57	0.35
212.1	276.1	1.63	0.75	0.42
222.1	286.1	2.26	1.05	0.55
232.1	296.1	2.93	1.47	0.71
244.1	308.1	3.75	1.98	0.94
254.1	318.1	4.33	2.46	1.15
266.1	330.1	4.97	3.01	1.47
276.1	340.1	5.31	3.36	1.72
286.1	350.1	5.58	3.65	2.00
298.1	362.1	5.91	3.99	2.28
308.1	372.1	6.21	4.31	2.55
320.1	384.1	6.74	4.83	2.99
330.1	394.1	7.16	5.28	3.40
340.1	404.1	7.52	5.63	3.73
352.1	416.1	7.94	6.08	4.14
362.1	426.1	8.22	6.33	4.41
372.1	436.1	8.35	6.52	4.59
384.1	448.1	8.41	6.60	4.66
394.1	458.1	8.50	6.72	4.80
406.1	470.1	8.72	6.94	5.04
416.1	480.1	8.88	7.17	5.27
426.1	490.1	9.09	7.41	5.49
438.1	502.1	9.31	7.64	5.76
448.1	512.1	9.49	7.84	5.95
460.1	524.1	9.57	7.92	6.08

Frequency Mixer

ADE-201FMH+

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=146.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=106.1MHz (dB)	IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=186.1MHz (dB)
		@LO (dBm)			@LO (dBm)			@LO (dBm)
		+13			+13			+13
136.0	10.1	11.76	10.0	116.1	7.77	176.0	10.1	12.02
130.0	16.1	10.28	20.0	126.1	7.54	172.0	14.1	11.13
124.0	22.1	9.46	30.0	136.1	7.38	168.0	18.1	10.43
118.0	28.1	8.90	40.0	146.1	7.14	164.0	22.1	9.95
112.0	34.1	8.55	50.0	156.1	7.06	160.0	26.1	9.56
104.0	42.1	8.22	62.0	168.1	6.94	156.0	30.1	9.29
98.0	48.1	7.95	72.0	178.1	6.83	152.0	34.1	9.08
92.0	54.1	7.73	82.0	188.1	6.76	148.0	38.1	8.97
86.0	60.1	7.63	92.0	198.1	6.72	144.0	42.1	8.80
78.0	68.1	7.45	104.0	210.1	6.59	140.0	46.1	8.64
72.0	74.1	7.31	114.0	220.1	6.73	136.0	50.1	8.45
66.0	80.1	7.27	124.0	230.1	6.73	132.0	54.1	8.33
60.0	86.1	7.23	134.0	240.1	6.72	128.0	58.1	8.24
52.0	94.1	7.19	146.0	252.1	6.76	124.0	62.1	8.15
46.0	100.1	7.14	156.0	262.1	6.79	120.0	66.1	8.03
40.0	106.1	7.09	166.0	272.1	6.83	116.0	70.1	7.92
34.0	112.1	7.06	176.0	282.1	6.93	112.0	74.1	7.86
28.0	118.1	6.95	186.0	292.1	7.01	108.0	78.1	7.84
20.0	126.1	6.92	198.0	304.1	7.10	104.0	82.1	7.82
14.0	132.1	7.00	208.0	314.1	7.21	100.0	86.1	7.77
10.0	156.1	6.69	218.0	324.1	7.30	96.0	90.1	7.74
28.0	174.1	6.47	228.0	334.1	7.44	92.0	94.1	7.55
46.0	192.1	6.35	240.0	346.1	7.58	88.0	98.1	7.57
66.0	212.1	6.33	250.0	356.1	7.68	84.0	102.1	7.59
84.0	230.1	6.25	260.0	366.1	7.74	80.0	106.1	7.57
104.0	250.1	6.31	270.0	376.1	7.87	76.0	110.1	7.64
122.0	268.1	6.37	282.0	388.1	7.97	72.0	114.1	7.58
142.0	288.1	6.47	292.0	398.1	8.10	68.0	118.1	7.50
160.0	306.1	6.70	302.0	408.1	8.12	64.0	122.1	7.46
178.0	324.1	6.79	312.0	418.1	8.27	60.0	126.1	7.45
198.0	344.1	6.87	322.0	428.1	8.42	56.0	130.1	7.38
216.0	362.1	6.89	334.0	440.1	8.52	52.0	134.1	7.32
236.0	382.1	6.99	344.0	450.1	8.62	48.0	138.1	7.27
254.0	400.1	7.16	354.0	460.1	8.71	44.0	142.1	7.27
274.0	420.1	7.32	364.0	470.1	8.83	40.0	146.1	7.16
292.0	438.1	7.40	376.0	482.1	8.96	36.0	150.1	7.18
310.0	456.1	7.52	386.0	492.1	9.09	32.0	154.1	7.11
330.0	476.1	7.65	396.0	502.1	9.21	28.0	158.1	7.03
348.0	494.1	7.82	406.0	512.1	9.37	24.0	162.1	7.11
368.0	514.1	7.98	418.0	524.1	9.50	20.0	166.1	7.01

Frequency Mixer

ADE-201FMH+

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)		
	+10	+13	+16	+10	+13	+16			+10	+13	+16
104.1	59.34	59.12	59.35	49.17	49.03	48.98	40.1	104.1	22.32	21.53	20.61
114.1	57.58	57.59	57.74	48.21	48.04	47.93	50.1	114.1	21.17	20.61	20.11
124.1	56.61	56.82	56.96	47.32	47.13	47.00	60.1	124.1	24.33	23.84	23.52
136.1	55.39	55.36	55.19	45.90	45.81	45.67	72.1	136.1	27.85	27.27	26.94
146.1	54.04	53.80	53.70	44.43	44.28	44.15	82.1	146.1	30.37	29.99	29.90
156.1	52.54	52.42	52.12	42.67	42.52	42.36	92.1	156.1	33.69	33.38	33.46
170.1	50.12	49.81	49.62	39.91	39.71	39.50	106.1	170.1	35.95	35.82	35.80
178.1	48.39	48.14	47.93	38.42	38.20	38.01	114.1	178.1	38.53	38.24	38.15
190.1	45.95	45.71	45.58	36.29	36.05	35.86	126.1	190.1	40.42	40.53	40.89
200.1	44.26	44.04	43.90	34.71	34.47	34.27	136.1	200.1	42.57	42.70	42.77
210.1	42.90	42.80	42.64	33.28	33.08	32.89	146.1	210.1	42.15	42.16	42.16
222.1	41.97	41.86	41.99	32.37	32.24	32.37	158.1	222.1	41.05	40.96	41.17
232.1	42.06	42.00	41.99	32.60	32.51	32.51	168.1	232.1	38.65	38.90	39.25
244.1	43.25	43.19	43.12	33.51	33.44	33.37	180.1	244.1	37.46	37.74	37.80
254.1	44.51	44.37	44.34	34.33	34.27	34.22	190.1	254.1	35.86	35.97	36.14
264.1	45.50	45.33	45.25	35.09	35.02	34.96	200.1	264.1	35.55	35.43	35.63
276.1	46.12	45.87	45.74	35.91	35.83	35.77	212.1	276.1	33.92	33.55	33.39
286.1	46.69	46.43	46.24	36.57	36.47	36.40	222.1	286.1	33.78	33.54	33.09
296.1	47.85	47.59	47.34	37.25	37.16	37.09	232.1	296.1	33.56	33.20	32.91
308.1	49.58	49.22	49.01	38.03	37.96	37.89	244.1	308.1	33.24	33.24	32.79
318.1	50.56	50.06	49.72	38.60	38.51	38.46	254.1	318.1	32.71	32.75	32.27
330.1	51.43	50.86	50.49	39.04	38.99	38.93	266.1	330.1	31.73	31.63	31.33
340.1	52.41	51.86	51.35	39.26	39.20	39.16	276.1	340.1	32.13	31.92	31.74
350.1	53.39	52.80	52.30	39.37	39.35	39.32	286.1	350.1	31.08	30.89	30.57
362.1	53.99	53.24	52.74	39.45	39.44	39.42	298.1	362.1	31.96	31.51	31.04
372.1	54.30	53.63	52.98	39.58	39.58	39.59	308.1	372.1	30.86	30.32	29.78
384.1	55.17	54.23	53.50	39.69	39.73	39.76	320.1	384.1	31.79	31.30	30.83
394.1	56.07	55.23	54.46	39.96	40.04	40.08	330.1	394.1	31.22	30.31	29.84
404.1	56.83	55.80	54.93	40.16	40.24	40.30	340.1	404.1	32.54	31.65	30.91
416.1	58.21	56.98	56.00	40.39	40.50	40.59	352.1	416.1	32.40	31.22	30.54
426.1	59.99	58.58	57.45	40.38	40.50	40.60	362.1	426.1	33.38	31.83	31.11
436.1	61.33	60.02	58.70	40.39	40.54	40.67	372.1	436.1	33.93	31.97	31.15
448.1	61.00	60.05	58.93	40.30	40.43	40.57	384.1	448.1	34.83	32.46	31.44
458.1	60.72	59.72	58.58	40.21	40.36	40.53	394.1	458.1	36.10	33.29	32.10
470.1	61.17	60.72	59.72	40.07	40.22	40.37	406.1	470.1	36.80	33.34	31.96
480.1	62.33	62.80	61.90	40.24	40.41	40.55	416.1	480.1	38.64	34.25	32.50
490.1	62.08	63.09	63.17	40.34	40.52	40.73	426.1	490.1	39.87	34.25	32.05
502.1	59.55	60.84	61.21	40.56	40.74	40.98	438.1	502.1	45.69	36.81	33.86
512.1	60.05	61.16	60.77	40.57	40.79	41.02	448.1	512.1	48.76	36.97	33.49
524.1	59.75	62.58	64.88	40.42	40.65	40.87	460.1	524.1	49.76	40.36	35.20

Frequency Mixer

ADE-201FMH+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1)			LO (MHz)	LO VSWR (:1)			IF (OUT) (MHz)	IF VSWR @LO=250.1MHz (:1)		
		@LO (dBm)				@LO (dBm)				@LO (dBm)		
		+10	+13	+16		+10	+13	+16		+10	+13	+16
40.1	104.1	1.65	1.76	1.85	104.1	5.55	5.55	5.54	10.1	1.34	1.29	1.30
50.1	114.1	1.68	1.78	1.88	114.1	5.57	5.57	5.56	14.1	1.36	1.27	1.23
60.1	124.1	1.74	1.85	1.95	124.1	5.50	5.49	5.49	20.1	1.32	1.29	1.25
72.1	136.1	1.74	1.85	1.95	136.1	5.42	5.42	5.42	26.1	1.33	1.30	1.25
82.1	146.1	1.76	1.87	1.99	146.1	5.35	5.35	5.35	32.1	1.41	1.34	1.29
92.1	156.1	1.78	1.89	2.00	156.1	5.21	5.20	5.20	38.1	1.45	1.38	1.34
106.1	170.1	1.85	1.96	2.07	170.1	4.87	4.86	4.84	44.1	1.47	1.42	1.36
114.1	178.1	1.85	1.96	2.07	178.1	4.57	4.55	4.52	50.1	1.47	1.41	1.35
126.1	190.1	1.85	1.95	2.05	190.1	3.90	3.86	3.82	56.1	1.44	1.37	1.32
136.1	200.1	1.86	1.95	2.04	200.1	3.11	3.06	3.01	62.1	1.39	1.33	1.28
146.1	210.1	1.85	1.93	2.02	210.1	2.30	2.25	2.20	68.1	1.37	1.32	1.26
158.1	222.1	1.87	1.96	2.04	222.1	1.66	1.64	1.62	74.1	1.38	1.33	1.28
168.1	232.1	1.74	1.83	1.90	232.1	1.70	1.71	1.73	80.1	1.39	1.34	1.29
180.1	244.1	1.73	1.82	1.90	244.1	2.14	2.17	2.19	86.1	1.41	1.35	1.31
190.1	254.1	1.72	1.82	1.91	254.1	2.55	2.58	2.61	92.1	1.41	1.35	1.30
200.1	264.1	1.60	1.69	1.78	264.1	2.92	2.94	2.97	98.1	1.38	1.32	1.27
212.1	276.1	1.59	1.67	1.76	276.1	3.29	3.30	3.33	104.1	1.34	1.28	1.23
222.1	286.1	1.58	1.66	1.75	286.1	3.53	3.54	3.56	110.1	1.30	1.25	1.20
232.1	296.1	1.56	1.63	1.71	296.1	3.72	3.73	3.74	116.1	1.30	1.25	1.20
244.1	308.1	1.52	1.58	1.65	308.1	3.92	3.92	3.93	122.1	1.34	1.28	1.24
254.1	318.1	1.54	1.60	1.66	318.1	4.04	4.04	4.05	126.1	1.37	1.31	1.27
266.1	330.1	1.55	1.61	1.67	330.1	4.15	4.16	4.17	132.1	1.40	1.35	1.30
276.1	340.1	1.54	1.59	1.65	340.1	4.24	4.25	4.26	138.1	1.41	1.35	1.30
286.1	350.1	1.58	1.63	1.68	350.1	4.32	4.33	4.33	144.1	1.39	1.33	1.28
298.1	362.1	1.63	1.68	1.73	362.1	4.39	4.40	4.40	150.1	1.35	1.29	1.24
308.1	372.1	1.66	1.70	1.76	372.1	4.44	4.45	4.45	156.1	1.30	1.25	1.20
320.1	384.1	1.67	1.71	1.76	384.1	4.50	4.51	4.51	162.1	1.28	1.23	1.18
330.1	394.1	1.75	1.79	1.84	394.1	4.55	4.55	4.55	168.1	1.29	1.24	1.19
340.1	404.1	1.77	1.82	1.87	404.1	4.57	4.58	4.58	174.1	1.31	1.25	1.20
352.1	416.1	1.78	1.82	1.87	416.1	4.60	4.60	4.61	180.1	1.31	1.25	1.21
362.1	426.1	1.82	1.87	1.91	426.1	4.62	4.63	4.63	186.1	1.29	1.24	1.19
372.1	436.1	1.86	1.91	1.96	436.1	4.64	4.65	4.64	192.1	1.25	1.20	1.15
384.1	448.1	1.89	1.95	2.00	448.1	4.69	4.69	4.69	198.1	1.21	1.16	1.12
394.1	458.1	1.91	1.96	2.01	458.1	4.71	4.71	4.71	204.1	1.20	1.15	1.11
406.1	470.1	1.97	2.02	2.07	470.1	4.74	4.74	4.74	210.1	1.22	1.17	1.13
416.1	480.1	2.00	2.07	2.13	480.1	4.76	4.76	4.77	216.1	1.25	1.20	1.16
426.1	490.1	1.99	2.05	2.11	490.1	4.77	4.77	4.77	222.1	1.27	1.22	1.17
438.1	502.1	2.03	2.09	2.15	502.1	4.80	4.80	4.80	228.1	1.27	1.21	1.17
448.1	512.1	2.04	2.10	2.16	512.1	4.80	4.81	4.81	234.1	1.24	1.19	1.14
460.1	524.1	2.06	2.12	2.18	524.1	4.83	4.83	4.83	240.1	1.20	1.15	1.10

Harmonics Tables

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	---	---	-0.56	15.44	25.44	22.46	26.51	16.80	25.27	24.48	27.68	41.40
1	---	29.50	---	33.94	10.35	34.92	20.12	40.95	32.03	41.97	61.77	45.11
2	122.38	73.83	77.02	80.07	80.85	84.28	102.54	87.76	98.97	87.53	91.67	85.95
3	129.28	101.47	88.51	102.27	90.56	101.07	98.81	105.04	103.22	101.72	103.50	102.59
4	129.21	101.52	99.64	93.39	102.29	95.25	101.82	101.45	103.45	102.84	104.04	101.07
5	129.13	102.56	101.71	96.86	99.05	96.32	98.74	100.06	102.92	103.38	103.27	103.42
6	129.61	103.72	101.64	102.31	88.73	102.95	84.74	103.89	99.97	100.64	101.55	103.10
7	129.81	103.98	102.68	99.91	101.18	91.76	103.46	92.11	102.81	99.32	103.55	104.45
8	129.53	103.60	103.29	105.19	101.08	98.77	96.82	96.43	96.03	102.43	103.09	104.49
9	126.01	100.62	101.90	100.44	103.30	99.21	94.74	98.12	93.37	95.09	100.99	102.18
10	129.74	95.80	98.56	86.14	100.88	77.53	98.80	66.30	93.20	64.90	101.57	77.15
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 146 MHz; -15 dBm.
 LO IN: 210 MHz; +13.00 dBm
 IF OUT: 64 MHz; -21.71 dBm

RF HARMONICS ORDER

	(-dBm)	(-dBc)										
0	---	---	9.65	25.63	35.61	32.61	36.74	26.85	35.38	33.86	36.57	53.80
1	---	29.41	---	33.93	10.34	34.94	20.04	41.00	31.73	42.05	61.21	45.18
2	111.01	63.41	67.22	69.71	71.31	73.97	96.73	77.59	87.80	77.53	81.22	75.05
3	122.59	95.34	91.54	95.00	80.38	92.75	78.34	93.60	82.03	94.92	90.20	100.03
4	125.15	101.02	108.99	92.56	104.39	96.53	103.76	107.64	105.41	114.11	108.52	108.88
5	124.02	111.63	96.65	108.83	96.73	106.54	99.77	113.37	99.81	112.48	102.15	109.09
6	120.28	110.67	104.98	110.18	92.27	109.36	88.46	109.82	98.71	111.76	105.73	111.79
7	123.18	113.06	112.84	111.38	112.78	102.21	113.83	102.45	113.89	109.52	111.81	112.78
8	123.09	113.65	112.84	114.47	110.92	107.63	107.31	108.41	107.11	112.79	113.21	114.38
9	120.32	113.98	113.11	104.92	111.26	101.54	101.42	99.67	103.60	93.51	110.38	102.18
10	123.80	109.34	110.26	102.60	113.06	90.80	111.72	80.99	110.65	80.44	111.87	91.16
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 146 MHz; -5 dBm.
 LO IN: 210 MHz; +13.00 dBm
 IF OUT: 64 MHz; -11.54 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