

# Frequency Mixers

**Model**

T-74-09-01

LEVEL 7 (+7dBm LO, up to +1dBm RF)

**ASK-1**

SCIENTIFIC/ MINI-CIRCUITS



**computer-automated performance data**  
typical production unit / for data of other models consult factory

## mixer conversion loss and isolation

RF MHz	LO MHz	Conversion Loss (dB)			Isolation L-R (dB)			Isolation L-I (dB)		
		LO +4dBm	LO +7dBm	LO +10dBm	LO +4dBm	LO +7dBm	LO +10dBm	LO +4dBm	LO +7dBm	LO +10dBm
1.000	31.00	5.61	5.34	5.16	39.10	41.73	44.04	39.04	40.78	42.48
5.000	35.00	5.28	5.14	4.90	41.35	43.83	46.14	45.93	48.03	49.94
10.000	40.00	5.24	5.10	4.87	42.10	44.31	46.27	47.06	49.23	50.33
20.000	50.00	5.33	5.10	4.89	41.21	43.27	44.87	46.03	47.31	47.18
50.000	80.00	5.21	5.07	4.86	40.33	41.89	42.46	43.68	43.53	41.68
100.000	70.00	5.09	4.98	4.82	39.93	41.22	41.75	41.82	41.32	40.36
124.930	94.93	5.18	5.07	4.90	39.54	40.40	40.49	39.25	38.91	38.11
166.240	136.24	5.29	5.14	4.98	39.26	40.04	40.44	36.95	37.11	37.23
207.550	177.55	5.31	5.19	4.98	39.26	39.72	39.36	35.80	36.06	35.67
228.210	198.21	5.20	5.11	4.90	38.88	39.43	37.92	34.36	34.77	34.32
269.520	239.52	5.24	5.17	4.97	38.87	39.11	39.52	32.97	33.40	34.08
310.830	280.83	5.50	5.34	5.16	38.11	38.68	38.01	31.41	32.44	32.86
352.140	322.14	5.48	5.31	5.09	35.92	36.90	36.78	29.97	31.38	31.89
372.790	342.79	5.49	5.36	5.21	33.94	34.94	33.83	29.59	31.09	31.65
414.100	384.10	5.53	5.33	5.15	33.25	33.57	33.66	30.29	31.83	33.34
455.410	425.41	5.79	5.57	5.35	32.21	32.53	32.17	29.66	31.14	32.51
496.720	466.72	6.07	5.67	5.35	31.04	30.97	30.86	28.78	29.46	29.39
538.030	508.03	6.18	5.75	5.39	30.80	30.78	30.29	28.51	28.57	27.79
558.690	528.69	6.15	5.72	5.45	30.06	29.47	29.81	28.45	27.11	26.81
600.000	570.00	6.27	5.82	5.52	29.46	28.98	28.82	27.11	25.59	24.20

## mixer VSWR

## φ detection

freq. MHz	VSWR, RF port			VSWR, LO port			VSWR, IF port			max. output/DC offset vs. freq.		
	LO +4dBm	LO +7dBm	LO +10dBm	LO +4dBm	LO +7dBm	LO +10dBm	LO +4dBm	LO +7dBm	LO +10dBm	freq. (MHz)	max. DC output mV	DC offset mv
5.001	1.23	1.15	1.13	1.89	3.01	4.50	1.49	1.35	1.27	1.000	-228.02	+4.07
20.000	1.19	1.12	1.06	1.91	2.92	4.12	1.49	1.36	1.27	5.000	-228.76	+2.52
43.388	1.17	1.10	1.04	1.91	2.87	4.04	1.48	1.36	1.26	20.000	-227.06	+2.57
50.000	1.16	1.09	1.04	1.91	2.86	4.01	1.48	1.36	1.26	39.646	-225.37	+2.80
81.776	1.15	1.08	1.03	1.82	2.67	3.67	1.48	1.36	1.26	78.292	-226.95	+2.99
100.970	1.14	1.08	1.03	1.83	2.75	3.72	1.50	1.36	1.27	100.000	-226.11	+2.96
139.360	1.12	1.06	1.03	1.82	2.68	3.43	1.49	1.37	1.27	136.260	-227.74	+2.86
177.750	1.10	1.04	1.03	1.88	2.68	3.41	1.51	1.38	1.28	174.910	-225.41	+2.47
200.000	1.08	1.03	1.03	1.83	2.64	3.36	1.53	1.39	1.30	200.000	-228.13	+2.24
235.330	1.06	1.01	1.04	1.86	2.61	3.40	1.55	1.42	1.32	232.880	-226.65	+1.73
273.720	1.03	1.03	1.07	1.91	2.72	3.52	1.58	1.45	1.34	271.520	-218.89	+1.15
312.100	1.04	1.06	1.10	1.98	2.70	3.47	1.61	1.47	1.38	310.170	-210.92	+5.8
350.490	1.08	1.10	1.13	2.05	2.84	3.48	1.65	1.51	1.41	348.810	-207.49	+2.1
388.880	1.13	1.15	1.18	2.12	3.08	3.67	1.69	1.55	1.44	387.460	-206.24	-1.11
427.270	1.18	1.20	1.23	2.17	3.20	3.67	1.71	1.59	1.49	426.110	-212.46	-1.04
465.660	1.24	1.26	1.27	2.25	3.16	3.72	1.75	1.63	1.54	464.750	-213.69	-1.82
500.000	1.29	1.31	1.32	2.30	3.29	3.80	1.78	1.67	1.58	500.000	-201.73	-1.83
523.240	1.33	1.34	1.35	2.40	3.28	3.94	1.80	1.69	1.61	522.720	-197.65	-2.55
561.630	1.39	1.40	1.40	2.49	3.48	4.10	1.84	1.73	1.65	561.370	-189.45	-2.83
600.000	1.46	1.47	1.46	2.65	3.57	4.30	1.85	1.73	1.66	600.000	-187.27	-3.58

Measurements at RF & LO Power +7 dBm

1 to 600 MHz



**ULTRA-REL™ MIXERS**  
5-YR. GUARANTEE\*

00-53

T-74-09-01

**mixer harmonic intermodulation**  
(relative to desired IF output)

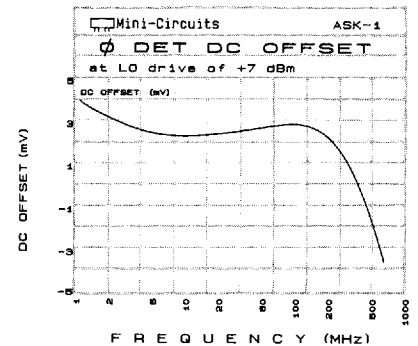
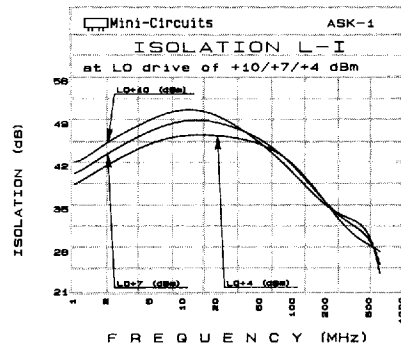
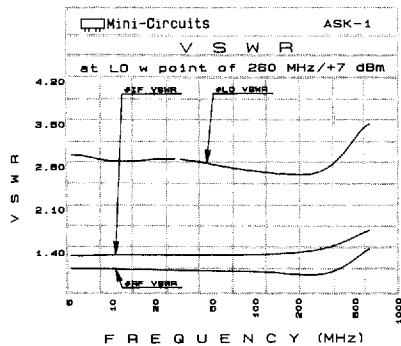
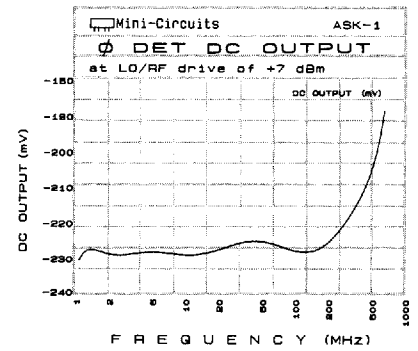
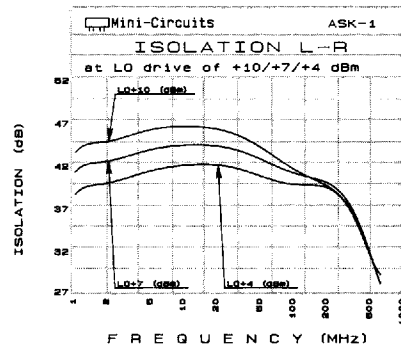
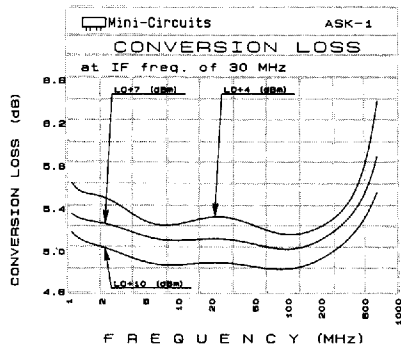
RF ORDER HARMONIC	RF CAL	0	1	2	3	4	5	6	7	8	9	10
0	>90	-30	26	35	39	38	46	51	55	48		57
1	>90	21	-	35	11	41	19	49	25	41	36	54
2	77	56	58	61	56	59	54	58	54	55	62	67
3	85	49	45	53	46	58	51	55	46	55	41	51
4	85	62	69	61	68	61	66	63	65	64	65	65
5	85	82	60	67	54	73	52	70	51	70	51	74
6	85	79	>83	80	>83	>83	>83	76	>83	73	82	73
7	83	79	72	>83	69	77	69	77	65	76	63	73
8	85	79	81	80	>83	>83	>83	>83	>83	>83	>83	>83
9	85	80	80	80	77	80	76	>83	79	>83	82	>83
10	85	78	79	80	80	79	80	>83	>83	>83	>83	>83

RF ORDER HARMONIC	RF CAL	0	1	2	3	4	5	6	7	8	9	10
0	>80	-	20	17	24	28	26	30	36	47	32	42
1	>80	21	-	35	12	38	19	51	22	33	32	43
2	75	56	60	56	59	57	58	57	57	57	66	63
3	74	70	72	>73	67	>73	60	>73	59	73	60	>73
4	75	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73
5	76	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73
6	74	70	>73	>73	>73	>73	>73	>73	>73	>73	>73	>73
7	76	69	70	>73	>73	>73	>73	>73	>73	>73	>73	>73
8	75	70	69	69	71	>73	>73	>73	>73	>73	>73	>73
9	75	69	70	70	70	>73	>73	>73	>73	>73	>73	>73
10	74	69	69	70	70	>73	>73	>73	>73	>73	>73	>73

test conditions: RF 185.100 MHz INPUT P. -4.06DBM  
LO 155.010 MHz INPUT P. +7.45DBM  
IF=30.090MHZ IF AMPLIT. -9.55 DBM

test conditions: RF 185.100 MHz INPUT P. -13.95DBM  
LO 155.010 MHz INPUT P. +6.86DBM  
IF=30.090MHZ IF AMPLIT. -19.42 DBM

**typical performance curves**  
(production unit)



**In Stock...immediate Delivery**