

# Frequency Mixers

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

## Models

ASK-2 (KK-81)  
 (W-38)  
 (X-65)

T-74-09-01



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 + 4 dBm	LO + 7 dBm	LO + 10 dBm	LO + 4 dBm	LO + 7 dBm	LO + 10 dBm	LO + 4 dBm	LO + 7 dBm	LO + 10 dBm
1.000	31.000	8.06	7.37	7.47	76.97	83.47	86.14	82.27	91.97	79.84
2.000	32.000	7.44	7.07	6.90	75.98	80.37	79.56	80.18	87.67	76.46
5.000	35.000	7.13	6.73	6.46	71.68	72.27	71.64	73.98	82.47	70.34
10.000	40.000	7.03	6.62	6.35	66.92	66.17	65.67	67.22	77.87	64.77
20.000	50.000	6.93	6.55	6.30	61.46	61.04	60.44	61.46	73.34	59.64
50.000	80.000	6.96	6.57	6.30	53.29	52.51	51.85	53.95	61.14	50.19
97.677	67.677	7.00	6.59	6.30	47.97	47.22	46.56	48.62	54.12	44.44
100.000	70.000	7.01	6.59	6.30	47.88	47.11	46.48	48.17	53.57	44.46
194.355	164.355	6.89	6.53	6.30	42.90	41.80	40.95	43.31	49.32	39.67
200.000	170.000	6.87	6.53	6.32	42.64	41.66	40.91	42.74	49.33	39.64
291.032	261.032	6.89	6.57	6.34	39.32	38.25	37.39	39.91	47.35	36.34
387.710	357.710	7.02	6.67	6.40	36.38	35.81	35.22	38.80	42.38	33.81
484.387	454.387	7.04	6.68	6.42	33.84	33.54	33.25	34.85	37.69	31.48
500.000	470.000	7.03	6.68	6.43	33.60	33.24	32.94	34.77	36.29	30.48
581.065	551.065	7.21	6.87	6.59	31.84	31.64	31.47	33.08	32.31	28.29
677.742	647.742	7.61	7.12	6.84	29.22	29.02	28.88	29.74	27.88	24.76
774.419	744.419	7.96	7.40	7.04	27.08	26.95	26.89	25.78	24.13	21.89
871.097	841.097	8.48	7.80	7.42	25.95	25.84	25.84	22.00	20.52	19.08
967.774	937.774	8.83	8.22	7.97	25.88	25.87	26.06	18.97	17.33	16.06
1000.000	970.000	9.01	8.38	8.10	25.88	25.95	26.18	17.92	16.29	14.78

## mixer VSWR

## ϕ detection

FREQ. (MHz)	VSWR RF port			VSWR LO port			VSWR IF port			FREQ. (MHz)	max DC output mV	DC offset mV
	LO + 4 dBm	LO + 7 dBm	LO + 10 dBm	LO + 4 dBm	LO + 7 dBm	LO + 10 dBm	LO + 4 dBm	LO + 7 dBm	LO + 10 dBm			
5.000	1.33	1.38	1.43	1.86	2.66	3.59	1.36	1.19	1.07	1.000	221.50	-0.07
10.000	1.22	1.29	1.35	1.78	2.56	3.48	1.36	1.19	1.07	2.000	226.26	-0.06
20.000	1.17	1.24	1.31	1.87	2.67	3.66	1.36	1.19	1.07	5.000	226.60	-0.05
50.000	1.16	1.23	1.29	1.81	2.56	3.48	1.36	1.19	1.07	10.000	230.11	-0.05
95.454	1.15	1.23	1.29	1.79	2.51	3.45	1.37	1.20	1.08	20.000	227.70	-0.04
100.000	1.15	1.22	1.29	1.81	2.53	3.47	1.37	1.20	1.08	50.000	220.13	0.00
185.909	1.15	1.23	1.29	1.80	2.51	3.44	1.41	1.24	1.12	97.677	227.39	0.02
200.000	1.15	1.23	1.29	1.81	2.49	3.39	1.42	1.24	1.13	100.000	226.03	0.02
276.364	1.17	1.24	1.30	1.82	2.49	3.34	1.46	1.28	1.17	194.355	228.90	0.40
366.818	1.20	1.27	1.32	1.88	2.49	3.29	1.49	1.33	1.22	200.000	228.73	0.51
457.273	1.26	1.32	1.38	1.89	2.44	3.13	1.53	1.37	1.27	291.032	231.68	1.67
487.424	1.28	1.34	1.39	1.97	2.56	3.28	1.54	1.39	1.29	387.710	240.54	3.19
500.000	1.29	1.35	1.41	1.98	2.55	3.24	1.54	1.40	1.31	484.387	211.07	4.08
547.727	1.34	1.40	1.45	2.06	2.64	3.35	1.53	1.38	1.28	500.000	207.52	4.17
638.182	1.46	1.52	1.57	2.36	3.03	3.90	1.53	1.40	1.31	581.065	197.07	4.80
728.636	1.64	1.69	1.75	2.64	3.49	4.62	1.52	1.40	1.33	677.742	192.07	8.28
819.091	1.88	1.93	1.97	2.66	3.33	4.09	1.49	1.39	1.35	774.419	190.15	13.51
909.546	2.16	2.20	2.24	2.54	3.00	3.47	1.46	1.39	1.37	871.097	179.18	17.54
969.849	2.41	2.45	2.50	2.57	2.97	3.42	1.44	1.39	1.38	967.774	186.01	15.06
1000.000	2.54	2.58	2.62	2.58	2.98	3.40	1.44	1.39	1.39	1000.000	177.86	13.41



1 to 1000 MHz



mixer harmonic intermodulation

T-74-09-01

(relative to desired IF output)

RF ORDER HARMONIC	RF CAL											
0	-	-	8	10	3	32	14	42	21	45	26	43
1	-	22	0	33	13	26	28	60	36	47	44	51
2	95	53	40	55	39	64	39	60	53	64	54	63
3	>96	72	71	69	72	70	70	68	69	>74	71	>74
4	>96	>75	>75	>75	>76	>76	>76	72	>75	>75	>74	74
5	>96	>75	>75	>75	>75	>76	>76	>76	>76	>75	>75	>75
6	>95	>74	74	72	>75	>76	>76	>76	74	>75	>76	>75
7	95	>75	>75	>74	>75	71	>75	75	74	>76	>76	>75
8	95	>75	73	74	>74	71	>76	>76	>75	>76	>75	>76
9	>95	>75	74	72	>76	74	>74	>75	>75	>76	>75	75
10	95	75	>75	>76	>75	74	74	>74	>76	>75	>76	>76
	0	1	2	3	4	5	6	7	8	9	10	
	LO HARMONICS ORDER											

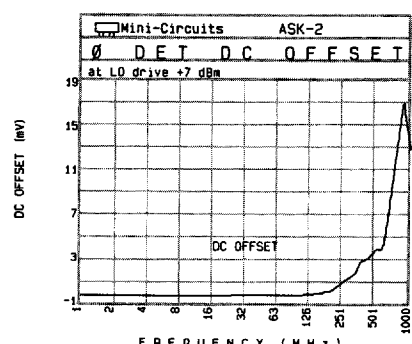
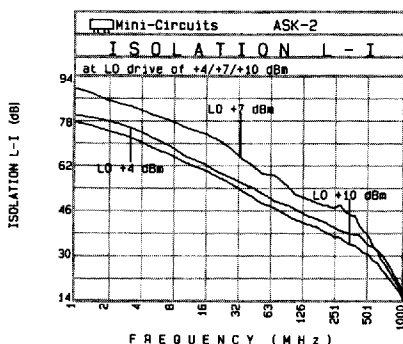
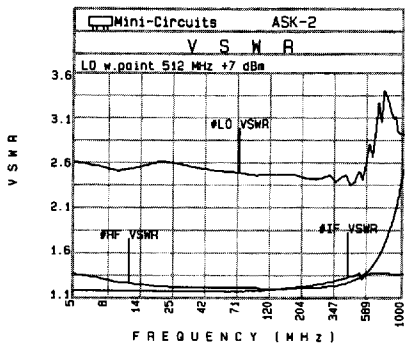
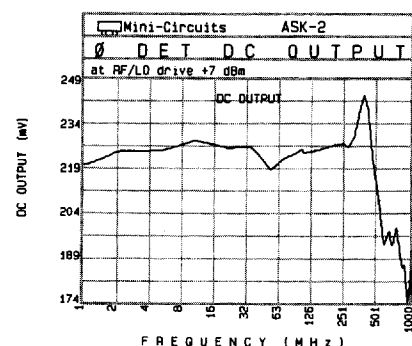
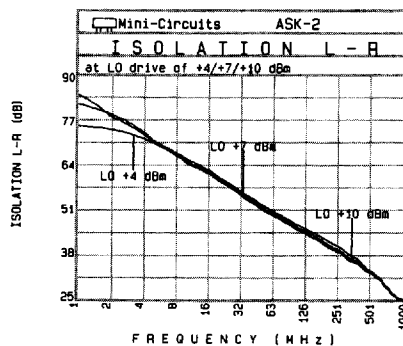
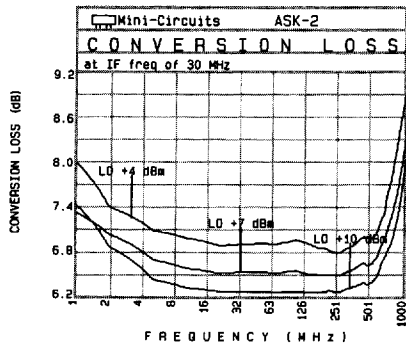
RF ORDER HARMONIC	RF CAL											
0	-	-	15	20	15	41	26	56	34	66	37	66
1	-	21	0	33	13	28	29	63	38	52	50	59
2	84	42	31	49	30	56	33	63	47	63	50	64
3	95	55	54	51	45	60	49	46	53	69	56	63
4	>96	67	67	54	59	54	53	63	48	60	63	66
5	>95	79	76	70	58	64	62	62	65	69	68	78
6	>94	81	81	81	75	71	66	75	65	74	80	74
7	>96	>85	>85	81	>85	79	82	80	77	83	77	78
8	>96	>85	>86	>85	>84	>84	82	80	82	84	76	83
9	>95	83	>85	>85	>85	>84	>85	>85	82	81	85	80
10	>96	>86	>85	84	>85	>85	>84	>85	>86	82	85	>85
	0	1	2	3	4	5	6	7	8	9	10	
	LO HARMONICS ORDER											

test condition RF IN: 500.10 MHz; -14.01 DBM  
LO IN: 470.01 MHz; +7.00 DBM  
IF OUT: 30.09 MHz; -20.68 DBM

test condition RF IN: 500.10 MHz; -3.97 DBM  
LO IN: 470.01 MHz; +7.00 DBM  
IF OUT: 30.09 MHz; -10.70 DBM

typical performance curves

(production unit)



In Stock... Immediate Delivery