

Frequency Mixers

Model

T-74-09-01

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

ROSE-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)			freq. (MHz)	Isolation L-R (dB)			LO	Isolation L-I (dB)		
		+4dBm	+7dBm	+10dBm		+4dBm	+7dBm	+10dBm		+4dBm	+7dBm	+10dBm
1.000	31.000	5.67	5.45	5.34	1.000	32.33	34.92	37.55	66.11	67.77	68.84	
2.000	32.000	5.46	5.27	5.16	2.000	34.96	37.59	40.14	64.35	65.02	65.10	
5.000	35.000	5.26	5.04	4.94	5.000	38.52	41.17	43.73	59.81	59.48	58.85	
10.000	40.000	5.31	5.04	4.91	10.000	40.39	42.84	45.20	55.48	54.45	53.88	
20.000	50.000	5.29	5.06	4.93	20.000	40.87	42.95	44.78	49.26	48.34	47.81	
40.933	70.933	5.60	5.28	5.07	40.933	39.08	40.34	41.16	42.55	41.63	41.28	
50.000	80.000	5.38	5.12	5.00	50.000	38.39	39.28	39.86	40.52	39.65	39.38	
60.900	90.900	5.45	5.19	5.01	60.900	37.74	38.51	38.94	39.18	38.46	38.21	
100.000	70.000	5.43	5.14	4.99	100.000	36.80	36.62	36.21	36.49	35.64	35.20	
120.800	90.800	5.38	5.13	4.98	120.800	36.55	36.20	35.67	36.06	35.30	34.77	
160.733	130.733	5.28	5.09	4.97	160.733	35.52	34.21	33.38	34.05	33.10	32.47	
200.000	170.000	5.27	5.08	4.99	200.000	34.90	32.97	31.92	32.96	31.83	31.06	
240.600	210.600	5.37	5.17	5.07	240.600	33.33	31.27	30.28	30.19	29.54	29.23	
300.000	270.000	5.46	5.23	5.10	300.000	31.41	29.42	28.34	27.50	27.31	27.24	
340.433	310.433	5.48	5.25	5.17	340.433	29.84	27.80	26.75	25.53	25.44	25.47	
400.333	370.333	5.46	5.21	5.03	400.333	27.80	26.14	25.34	23.06	23.22	23.44	
460.233	430.233	5.66	5.44	5.28	460.233	26.92	25.11	24.08	21.43	21.77	21.89	
500.000	470.000	5.74	5.46	5.24	500.000	26.88	25.19	24.13	20.62	21.08	21.38	
540.100	510.100	5.90	5.65	5.48	540.100	25.79	24.29	23.34	19.27	19.74	20.07	
600.000	570.000	6.34	5.89	5.61	600.000	25.17	24.10	23.51	18.29	19.03	19.67	

mixer VSWR

φ detection

freq. MHz	VSWR, RF port			VSWR, LO port			freq. (MHz)	VSWR, IF port			freq. MHz	max. DC output mV	DC offset mV
	+4dBm	+7dBm	+10dBm	+4dBm	+7dBm	+10dBm		+4dBm	+7dBm	+10dBm			
5.000	1.21	1.14	1.12	1.68	2.49	3.45	5.000	1.47	1.32	1.22	1.000	-242.57	+16
10.000	1.20	1.11	1.06	1.64	2.42	3.34	10.000	1.48	1.33	1.23	2.000	-243.96	+17
20.000	1.19	1.09	1.03	1.73	2.55	3.48	20.000	1.48	1.33	1.23	5.000	-247.52	+18
42.188	1.18	1.08	1.02	1.65	2.46	3.42	42.188	1.48	1.33	1.23	10.000	-246.63	+19
50.000	1.18	1.08	1.02	1.65	2.46	3.41	50.000	1.48	1.33	1.23	20.000	-244.39	+24
79.375	1.18	1.08	1.03	1.66	2.44	3.39	79.375	1.50	1.35	1.25	40.933	-242.09	+35
100.000	1.17	1.08	1.03	1.64	2.41	3.33	100.000	1.51	1.36	1.26	50.000	-242.56	+32
135.156	1.17	1.08	1.04	1.66	2.42	3.36	135.156	1.55	1.40	1.29	60.900	-241.95	+23
153.750	1.17	1.08	1.04	1.67	2.43	3.34	153.750	1.57	1.41	1.31	100.000	-244.81	-31
172.344	1.17	1.08	1.05	1.66	2.40	3.28	172.344	1.59	1.43	1.33	120.800	-244.13	-63
200.000	1.17	1.08	1.06	1.65	2.36	3.24	200.000	1.62	1.46	1.36	160.733	-244.76	-48
246.719	1.16	1.08	1.07	1.68	2.40	3.25	246.719	1.68	1.53	1.41	200.000	-240.52	+2.28
265.313	1.16	1.09	1.08	1.65	2.36	3.18	265.313	1.71	1.55	1.44	240.600	-243.88	+3.47
300.000	1.16	1.09	1.09	1.68	2.34	3.14	300.000	1.78	1.61	1.49	300.000	-251.35	+12.43
339.688	1.16	1.11	1.11	1.69	2.37	3.15	339.688	1.83	1.64	1.52	340.433	-241.84	+16.64
395.469	1.17	1.14	1.15	1.74	2.36	3.05	395.469	1.91	1.73	1.59	400.333	-213.57	+15.89
451.250	1.19	1.18	1.20	1.73	2.29	2.93	451.250	1.98	1.79	1.66	460.233	-207.08	+14.31
500.000	1.22	1.22	1.25	1.84	2.40	3.11	500.000	2.04	1.85	1.72	500.000	-205.21	+18.70
544.219	1.26	1.27	1.29	1.90	2.43	3.16	544.219	2.07	1.90	1.77	540.100	-201.66	+29.21
600.000	1.31	1.33	1.36	2.01	2.63	3.41	600.000	2.08	1.93	1.81	600.000	-210.10	+36.97

Measurements at RF & LO Power +7 dBm

1 to 600 MHz

Mini-Circuits**ULTRA-REL™ MIXERS**
5-YR. GUARANTEE *

T-74-09-01

mixer harmonic intermodulation

(relative to desired IF output)

RF CAL	0	-	6	9	13	23	12	20	17	30	25	35
RF ORDER HARMONIC	0	-	6	9	13	23	12	20	17	30	25	35
1	-	18	+0	32	11	36	18	39	23	36	28	41
2	93	56	47	57	47	53	48	53	46	52	45	56
3	94	72	70	75	69	74	64	>76	62	72	60	71
4	>97	>76	75	>76	>76	75	>76	>76	>76	75	>76	>76
5	95	>76	74	>76	75	>77	>76	>75	>76	>76	>76	75
6	>96	>77	>76	>76	75	>77	>76	>76	75	>76	>76	>76
7	>96	>76	>76	>76	>76	>76	>76	>76	75	>76	>76	>77
8	>96	>76	>76	75	>76	>76	>76	>77	74	>76	>76	75
9	95	>75	>75	75	73	>75	>76	>76	>76	>76	>76	>76
10	>95	>75	75	>76	>75	75	>76	72	>75	>77	>76	>76
	0	1	2	3	4	5	6	7	8	9	10	
	LO Harmonic Order											

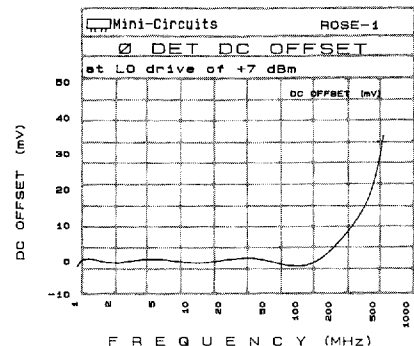
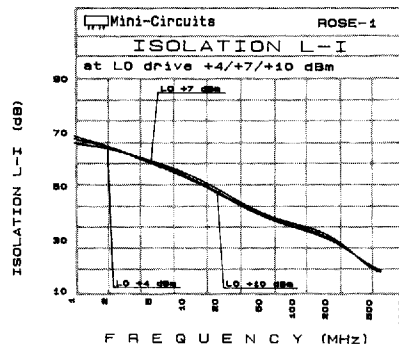
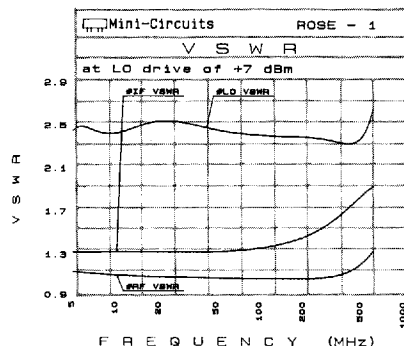
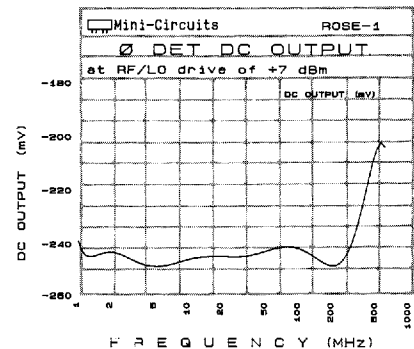
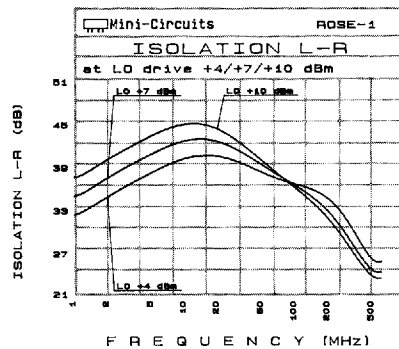
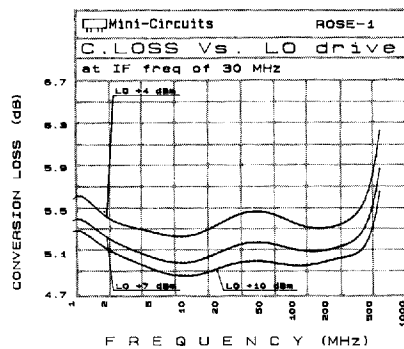
test conditions: RF IN: 185.10 MHz; -15.04 DBM
LO IN: 155.01 MHz; +6.99 DBM
IF OUT: 30.09 MHz; -20.23 DBM

RF CAL	0	-	15	19	26	35	25	34	33	42	45	50
RF ORDER HARMONIC	0	-	15	19	26	35	25	34	33	42	45	50
1	-	18	+0	32	11	37	18	42	24	39	29	44
2	82	49	41	52	42	52	42	51	40	47	42	53
3	>96	53	50	57	58	61	64	63	50	56	48	56
4	>97	79	63	64	60	62	60	58	59	56	56	55
5	>97	67	71	65	62	68	60	67	57	68	55	78
6	>96	84	72	81	72	84	75	80	78	75	80	71
7	>96	80	81	82	82	81	>86	81	80	80	74	82
8	>96	84	82	78	82	79	80	81	85	82	>86	81
9	>96	>85	>86	>86	81	>86	83	>86	>86	83	82	84
10	95	>85	85	>86	85	>85	>85	>86	>86	>86	>86	>86
	0	1	2	3	4	5	6	7	8	9	10	
	LO Harmonic Order											

test conditions: RF IN: 185.10 MHz; -5.02 DBM
LO IN: 155.01 MHz; +6.99 DBM
IF OUT: 30.09 MHz; -10.14 DBM

typical performance curves

(production unit)



In Stock...Immediate Delivery