

Low Frequency Emission Test Report

An outside testing laboratory for frequency ranges below 1 GHz performed low frequency emission tests. Testing was performed on a pre-production Model 380. Testing was performed on a FCC approved 3 meter test range.

The certified testing facility was:

M. Flom Associates, Inc.
3356 N. San Marcos Pl., #107
Chandler, AZ 85224-1571
Tel. 480 926 3100
Fax. 480 926 3598

The emission tests were performed per 15.209 for the transceiver. The band was searched from the main clock frequency (1.024 MHz) in harmonic steps to 30 MHz. Both the horizontal and vertical planes were searched from 1 meter to 4 meters. A copy of the following is attached:

- 1.0 Test Data Emissions
- 2.0 Pictures of the 3-meter Test Site

The result of the testing is shown on the attached report and no signals were found which exceed the specification.

Approved By: Edward J. Foley
Title: V.P. ENGINEERING

Date: APRIL 8, 2003



M. Flom Associates, Inc. - Global Compliance Center

3356 North San Marcos Place, Suite 107, Chandler, Arizona 85225-7176

www.mflom.com general@mflom.com (480) 926-3100, FAX: 926-3598

April 7, 2003

Southwest Microwave, Inc.
9055 S. McKemy Street
Tempe, AZ 85284-2946

Equipment: FCC ID: CA6380

Gentlemen:

Tests performed on April 7, 2003 for Southwest Microwave Inc on model 380 at M. Flom Associates, Inc. indicate that the product satisfies the requirements of FCC Rule Part 15.209 over the frequency range of 30 MHz – 1 GHz.

The attached data is for incorporation into a final report to be written by Southwest Microwave Inc for submission to the FCC.

Thank you for your business and we look forward to serving you again.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Flom", is written over a horizontal line.

Morton Flom, P. Eng., President
M. Flom Associates, Inc.

DL/cva

g0340003: 2003-Apr-08 Tue 13:00:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, @ m dBuV		C.F., dB	μV/m @ m	
0.000000	1.024000	4.83	3	15.40	20.23	3
0.000000	2.048000	12.03	3	15.40	27.43	3
0.000000	3.072000	-2.03	3	15.40	13.37	3
0.000000	4.096000	2.47	3	15.40	17.87	3
0.000000	5.120000	0.49	3	13.50	13.99	3
0.000000	6.144000	-0.63	3	13.50	12.87	3
0.000000	7.168000	-0.15	3	13.50	13.35	3
0.000000	8.192000	-2.43	3	13.50	11.07	3
0.000000	9.216000	0.18	3	13.50	13.68	3
0.000000	10.214000	2.14	3	12.70	14.84	3
0.000000	11.264000	0.84	3	12.70	13.54	3
0.000000	12.288000	-3.52	3	12.70	9.18	3
0.000000	13.312000	-1.82	3	12.70	10.88	3
0.000000	14.336000	4.69	3	12.70	17.39	3
0.000000	15.360000	10.87	3	11.30	22.17	3
0.000000	16.384000	8.05	3	11.30	19.35	3
0.000000	17.408000	0.65	3	11.30	11.95	3
0.000000	18.432000	-0.41	3	11.30	10.89	3
0.000000	19.456000	0.14	3	11.30	11.44	3
0.000000	20.480000	-2.35	3	9.40	7.05	3
0.000000	21.504000	6.27	3	9.40	15.67	3
0.000000	22.528000	0.84	3	9.40	10.24	3
0.000000	23.552000	0.95	3	9.40	10.35	3
0.000000	24.576000	-0.94	3	7.50	6.56	3
0.000000	25.600000	-2.87	3	7.50	4.63	3
0.000000	26.624000	-0.33	3	7.50	7.17	3
0.000000	27.648000	5.18	3	7.50	12.68	3
0.000000	28.672000	1.07	3	10.10	11.17	3
0.000000	29.696000	-0.37	3	10.10	9.73	3

g0340003: 2003-Apr-07 Tue 13:29:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, @ m dBuV		C.F., dB	μV/m @ m	
0.000000	30.720000	6.50	3	15.31	12.32	3
0.000000	32.770000	4.21	3	15.58	9.76	3
0.000000	34.820000	5.02	3	15.84	11.04	3
0.000000	36.860000	3.45	3	15.80	9.17	3
0.000000	38.910000	6.98	3	15.73	13.66	3
0.000000	40.960000	3.37	3	15.74	9.03	3
0.000000	43.010000	1.26	3	15.83	7.15	3
0.000000	45.060000	9.57	3	15.89	18.75	3
0.000000	47.104000	6.85	3	15.34	12.87	3
0.000000	49.150000	9.64	3	14.82	16.71	3
0.000000	51.200000	8.10	3	14.59	13.63	3
0.000000	53.250000	10.06	3	14.56	17.02	3
0.000000	55.300000	10.78	3	14.55	18.47	3
0.000000	57.340000	9.93	3	14.53	16.71	3
0.000000	59.390000	10.90	3	14.50	18.62	3
0.000000	67.580000	10.53	3	12.88	14.81	3
0.000000	69.632000	12.20	3	12.47	17.12	3
0.000000	71.680000	11.24	3	12.17	14.81	3

g0340003: 2003-Apr-07 Tue 13:29:00

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, @ m dBuV		C.F., dB	μV/m @ m	
0.000000	73.730000	11.16	3	11.90	14.22	3
0.000000	75.780000	16.87	3	11.63	26.61	3
0.000000	79.870000	12.96	3	11.12	16.06	3
0.000000	83.968000	17.47	3	11.59	28.38	3
0.000000	83.970000	8.21	3	11.59	9.77	3
0.000000	86.016000	15.13	3	11.84	22.31	3
0.000000	88.064000	13.60	3	12.08	19.23	3
0.000000	96.256000	14.55	3	13.51	25.29	3
0.000000	98.304000	19.25	3	13.89	45.39	3
0.000000	104.448000	7.34	3	14.66	12.59	3
0.000000	108.544000	6.91	3	15.08	12.57	3
0.000000	110.592000	7.50	3	15.27	13.76	3
0.000000	112.640000	3.17	3	15.47	8.55	3
0.000000	114.688000	9.88	3	15.66	18.92	3
0.000000	116.736000	6.26	3	15.85	12.75	3
0.000000	118.784000	4.54	3	16.02	10.67	3
0.000000	120.832000	1.39	3	16.21	7.59	3
0.000000	122.880000	9.74	3	16.38	20.23	3
0.000000	126.976000	6.19	3	16.60	13.79	3
0.000000	129.024000	8.16	3	16.66	17.42	3
0.000000	131.072000	4.48	3	16.72	11.48	3
0.000000	133.120000	2.59	3	16.78	9.36	3
0.000000	135.168000	5.08	3	16.82	12.45	3
0.000000	139.264000	6.80	3	16.93	15.36	3
0.000000	141.312000	3.67	3	17.00	10.86	3
0.000000	143.360000	0.94	3	17.07	7.95	3
0.000000	145.408000	0.08	3	17.14	7.26	3
0.000000	147.456000	6.32	3	17.22	15.03	3
0.000000	149.504000	4.17	3	17.29	11.83	3
0.000000	151.552000	11.16	3	17.35	26.64	3
0.000000	155.648000	6.60	3	17.47	15.98	3
0.000000	155.648000	11.81	3	17.47	29.11	3
0.000000	157.696000	5.51	3	17.53	14.19	3
0.000000	159.740000	7.26	3	17.58	17.46	3
0.000000	161.790000	1.49	3	17.62	9.03	3
0.000000	163.840000	4.03	3	17.66	12.15	3
0.000000	165.890000	1.50	3	17.69	9.11	3
0.000000	167.940000	3.24	3	17.73	11.18	3
0.000000	169.980000	5.54	3	17.76	14.62	3
0.000000	174.080000	2.86	3	17.83	10.83	3
0.000000	176.130000	7.64	3	17.94	19.01	3
0.000000	178.180000	3.96	3	18.10	12.68	3
0.000000	180.220000	2.95	3	18.25	11.48	3
0.000000	186.370000	3.61	3	18.58	12.87	3
0.000000	188.420000	8.04	3	18.70	21.73	3
0.000000	190.460000	2.66	3	18.80	11.83	3
0.000000	198.660000	-1.98	3	19.23	7.29	3
0.000000	202.750000	1.39	3	19.43	10.99	3
0.000000	210.940000	1.87	3	19.79	12.11	3
0.000000	212.992000	9.65	3	19.88	29.96	3
0.000000	215.040000	0.40	3	19.97	10.44	3
0.000000	217.088000	6.13	3	20.06	20.39	3

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, @ m dBuV		C.F., dB	μV/m @ m	
0.000000	219.136000	7.59	3	20.15	24.38	3
0.000000	221.184000	5.10	3	20.23	18.47	3
0.000000	223.232000	2.86	3	20.32	14.42	3
0.000000	225.280000	1.75	3	20.41	12.82	3
0.000000	227.328000	-2.11	3	20.50	8.31	3
0.000000	229.376000	5.11	3	20.58	19.25	3
0.000000	231.424000	3.51	3	20.67	16.18	3
0.000000	235.520000	3.62	3	20.83	16.69	3
0.000000	237.568000	4.52	3	20.91	18.69	3
0.000000	239.616000	3.04	3	21.00	15.92	3
0.000000	241.664000	3.09	3	21.08	16.16	3
0.000000	243.712000	0.86	3	21.16	12.62	3
0.000000	245.760000	3.90	3	21.24	18.07	3
0.000000	247.808000	2.07	3	21.32	14.77	3
0.000000	249.856000	6.12	3	21.40	23.77	3
0.000000	251.904000	1.91	3	21.85	15.42	3
0.000000	256.000000	6.63	3	22.81	29.65	3
0.000000	258.048000	2.82	3	23.29	20.21	3
0.000000	260.096000	0.47	3	23.76	16.27	3
0.000000	264.192000	2.17	3	24.69	22.03	3
0.000000	266.240000	5.53	3	25.15	34.26	3
0.000000	268.288000	1.36	3	25.62	22.34	3
0.000000	272.384000	1.34	3	26.52	24.72	3
0.000000	274.432000	4.81	3	26.97	38.82	3
0.000000	276.480000	2.65	3	27.41	31.84	3
0.000000	278.528000	1.96	3	27.85	30.94	3
0.000000	280.576000	4.20	3	28.29	42.12	3
0.000000	282.624000	2.82	3	28.74	37.84	3
0.000000	284.672000	2.72	3	29.18	39.36	3
0.000000	288.768000	-0.73	3	30.05	29.24	3
0.000000	290.816000	-0.16	3	30.50	32.89	3
0.000000	292.864000	1.68	3	30.93	42.71	3
0.000000	294.912000	1.84	3	31.35	45.66	3
0.000000	296.960000	2.72	3	31.78	53.09	3
0.000000	299.008000	3.62	3	32.20	61.86	3
0.000000	303.104000	4.00	3	20.44	16.67	3
0.000000	307.200000	3.23	3	20.74	15.79	3
0.000000	311.296000	3.16	3	21.03	16.26	3
0.000000	315.392000	4.03	3	21.34	18.56	3
0.000000	319.488000	1.03	3	21.63	13.58	3
0.000000	323.584000	2.25	3	21.92	16.16	3
0.000000	327.680000	-0.38	3	22.20	12.33	3
0.000000	331.776000	0.00	3	22.48	13.36	3
0.000000	335.872000	1.32	3	22.75	15.98	3
0.000000	339.968000	1.19	3	23.01	16.22	3
0.000000	344.064000	6.04	3	23.28	29.24	3
0.000000	348.160000	2.86	3	23.54	20.89	3
0.000000	352.256000	4.74	3	23.8	26.73	3
0.000000	356.352000	2.82	3	24.05	22.05	3
0.000000	360.448000	1.52	3	24.3	19.54	3
0.000000	364.540000	-1.71	3	24.52	13.82	3
0.000000	368.640000	2.14	3	24.74	22.08	3
0.000000	372.740000	3.45	3	24.95	26.36	3

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, @ m dBuV		C.F., dB	μV/m @ m	
0.000000	376.830000	-0.82	3	25.16	16.48	3
0.000000	380.930000	-0.98	3	25.36	16.56	3
0.000000	385.020000	0.99	3	25.57	21.28	3
0.000000	389.120000	-2.70	3	25.77	14.24	3
0.000000	393.220000	-1.34	3	25.97	17.04	3
0.000000	397.310000	0.13	3	26.17	20.65	3
0.000000	401.410000	-0.94	3	26.31	18.56	3
0.000000	405.500000	1.13	3	26.31	23.55	3
0.000000	409.600000	0.79	3	26.32	22.67	3
0.000000	413.700000	2.28	3	26.32	26.92	3
0.000000	417.790000	2.15	3	26.33	26.55	3
0.000000	421.890000	1.04	3	26.34	23.39	3
0.000000	425.980000	-2.05	3	26.34	16.39	3
0.000000	430.080000	0.92	3	26.35	23.09	3
0.000000	434.180000	0.04	3	26.36	20.89	3
0.000000	438.270000	1.71	3	26.36	25.32	3
0.000000	442.370000	2.45	3	26.37	27.61	3
0.000000	446.460000	-1.98	3	26.38	16.66	3
0.000000	450.560000	-0.30	3	26.38	20.14	3
0.000000	454.660000	-0.87	3	26.38	18.86	3
0.000000	458.750000	0.62	3	26.38	22.39	3
0.000000	462.850000	-0.08	3	26.39	20.68	3
0.000000	466.940000	1.71	3	26.39	25.41	3
0.000000	471.040000	0.00	3	26.38	20.84	3
0.000000	475.140000	1.89	3	26.39	25.94	3
0.000000	479.230000	5.25	3	26.39	38.19	3
0.000000	483.330000	0.53	3	26.39	22.18	3
0.000000	487.420000	2.46	3	26.39	27.76	3
0.000000	495.620000	0.54	3	26.40	22.23	3
0.000000	499.710000	-1.60	3	26.40	17.38	3
0.000000	503.810000	-0.77	3	26.54	19.43	3
0.000000	505.860000	-1.13	3	26.61	18.79	3
0.000000	520.190000	2.89	3	27.11	31.62	3
0.000000	524.290000	1.07	3	27.26	26.09	3
0.000000	528.380000	1.27	3	27.40	27.13	3
0.000000	532.480000	2.21	3	27.53	30.69	3
0.000000	536.580000	-1.70	3	27.67	19.88	3
0.000000	540.670000	1.66	3	27.80	29.72	3
0.000000	544.770000	-0.14	3	27.94	24.55	3
0.000000	548.860000	5.34	3	28.08	46.88	3
0.000000	552.960000	2.70	3	28.24	35.24	3
0.000000	557.060000	1.63	3	28.42	31.81	3
0.000000	559.100000	2.73	3	28.51	36.48	3
0.000000	567.300000	-0.94	3	28.86	24.89	3
0.000000	569.340000	-0.06	3	28.95	27.83	3
0.000000	571.390000	2.23	3	29.03	36.56	3
0.000000	579.580000	1.34	3	29.37	34.32	3
0.000000	583.680000	0.82	3	29.54	32.96	3
0.000000	587.780000	6.03	3	29.70	61.16	3
0.000000	598.020000	0.50	3	30.12	33.96	3
0.000000	610.300000	-1.13	3	30.28	28.67	3
0.000000	612.350000	1.23	3	30.3	37.71	3
0.000000	616.450000	2.71	3	30.32	44.82	3

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, @ m dBuV		C.F., dB	μV/m @ m	
0.000000	620.540000	2.01	3	30.35	41.56	3
0.000000	624.640000	-2.05	3	30.38	26.09	3
0.000000	628.740000	-3.11	3	30.41	23.17	3
0.000000	632.830000	1.76	3	30.44	40.74	3
0.000000	638.980000	-0.70	3	30.48	30.83	3
0.000000	643.070000	2.68	3	30.52	45.71	3
0.000000	647.170000	-1.32	3	30.55	28.94	3
0.000000	651.260000	1.05	3	30.58	38.15	3
0.000000	655.360000	2.45	3	30.62	45.03	3
0.000000	663.550000	3.08	3	30.71	48.92	3
0.000000	667.650000	1.07	3	30.76	39.04	3
0.000000	671.740000	-0.41	3	30.80	33.08	3
0.000000	675.840000	3.47	3	30.85	52.06	3
0.000000	681.980000	0.49	3	30.91	37.15	3
0.000000	686.080000	1.21	3	30.96	40.66	3
0.000000	690.180000	1.11	3	30.99	40.27	3
0.000000	698.370000	3.45	3	31.08	53.27	3
0.000000	702.460000	2.53	3	31.15	48.31	3
0.000000	706.560000	1.92	3	31.22	45.39	3
0.000000	710.660000	-0.53	3	31.29	34.51	3
0.000000	714.750000	-0.70	3	31.36	34.12	3
0.000000	718.850000	-1.77	3	31.43	30.41	3
0.000000	720.900000	0.54	3	31.46	39.81	3
0.000000	729.090000	1.95	3	31.61	47.64	3
0.000000	733.180000	1.53	3	31.68	45.76	3
0.000000	737.280000	-1.14	3	31.75	33.92	3
0.000000	741.380000	-0.60	3	31.82	36.39	3
0.000000	745.470000	0.33	3	31.89	40.83	3
0.000000	749.570000	0.41	3	31.96	41.54	3
0.000000	755.710000	3.80	3	32.04	61.94	3
0.000000	759.810000	0.31	3	32.09	41.69	3
0.000000	763.900000	-0.82	3	32.15	36.86	3
0.000000	768.000000	-0.46	3	32.20	38.64	3
0.000000	772.100000	-1.20	3	32.25	35.69	3
0.000000	776.190000	1.55	3	32.30	49.26	3
0.000000	780.290000	-1.86	3	32.35	33.46	3
0.000000	784.380000	1.18	3	32.41	47.81	3
0.000000	788.480000	0.35	3	32.45	43.65	3
0.000000	792.580000	1.18	3	32.51	48.36	3
0.000000	796.670000	2.99	3	32.56	59.91	3
0.000000	800.770000	1.83	3	32.60	52.66	3
0.000000	804.860000	2.32	3	32.59	55.65	3
0.000000	808.960000	-1.36	3	32.57	36.35	3
0.000000	813.060000	-1.76	3	32.56	34.67	3
0.000000	817.150000	2.71	3	32.55	57.94	3
0.000000	821.250000	-1.19	3	32.53	36.96	3
0.000000	825.340000	2.08	3	32.52	53.76	3
0.000000	829.440000	1.27	3	32.51	48.87	3
0.000000	833.540000	-1.10	3	32.50	37.15	3
0.000000	841.730000	-1.92	3	32.47	33.69	3
0.000000	849.920000	-1.04	3	32.45	37.26	3
0.000000	860.160000	3.94	3	32.50	66.37	3
0.000000	870.400000	2.36	3	32.56	55.72	3

FREQUENCY TUNED, MHz	FREQUENCY EMISSION, MHz	LEVEL, @ m dBuV		C.F., dB	μV/m @ m	
0.000000	880.640000	5.03	3	32.61	76.21	3
0.000000	888.830000	3.49	3	32.64	64.05	3
0.000000	897.020000	-0.74	3	32.69	39.58	3
0.000000	905.220000	1.23	3	33.22	52.78	3
0.000000	913.410000	0.92	3	34.05	56.04	3
0.000000	921.600000	1.52	3	34.86	65.92	3
0.000000	933.890000	0.30	3	36.07	65.84	3
0.000000	942.080000	-2.44	3	36.86	52.60	3
0.000000	946.180000	-0.25	3	37.26	70.88	3
0.000000	950.270000	-5.07	3	37.65	42.56	3
0.000000	954.370000	-0.63	3	38.03	74.13	3
0.000000	958.460000	-7.12	3	38.40	36.64	3
0.000000	966.660000	-4.08	3	39.15	56.69	3
0.000000	974.850000	-5.41	3	39.89	52.97	3
0.000000	983.040000	-5.86	3	40.62	54.70	3
0.000000	991.230000	-1.65	3	41.35	96.61	3
0.000000	999.420000	-3.73	3	42.05	82.41	3

All other emissions in the required measurement range were more than 20 dB below the required limits.

Model 380 Undergoing Low
Frequency EMI Testing



EMI Test Monitoring Site

