

Test Report... FCC ID: O78SCV99L

**Assembled from Manufacture Measurements performed to EIA/TIA-603
and
Measurements made at ADRad Communications, Inc.**

29 April 2001

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1.0 Specification Information

Model Numbers:	SCV99L, SCV32L, or SCV08 (Same RF and controller)	
Number of Channels:	99, 32, or 8 channels dependent on model number.	
Frequency Range:	148 to 174 MHz	
Channel Spacing:	12.5 or 25 kHz	
Transmitter Power Output	1 or 5 watt, user or programmer selectable. (± 1 dB)	
Battery Voltage:	7.5 volts	
Current Drain:	Tx...	1800 mA @ 5 watts
		800 mA @ 1 watt
	Rx...	160 mA @ 2 50 mW of Rx audio
		50 mA @ standby
Antenna Impedance:	50 Ohms	
Frequency Stability:	± 2.5 ppm	
Temperature Range:	-30°C to $+60^{\circ}\text{C}$	
Nominal Battery Voltage:	7.5 VDC (6 cells NiCad or NMHy)	
Emission Designations:	12.5 kHz Channel	(2x2.5kHz deviation)+(2x3kHz) 11k0F3E
	25.0 kHz Channel	(2x5.0kHz deviation)+(2x3kHz) 16k0F3E
	for 3 kHz maximum modulation frequency	

All measurements made to TIA/EIA-603 procedures

2.0 RF Power Output

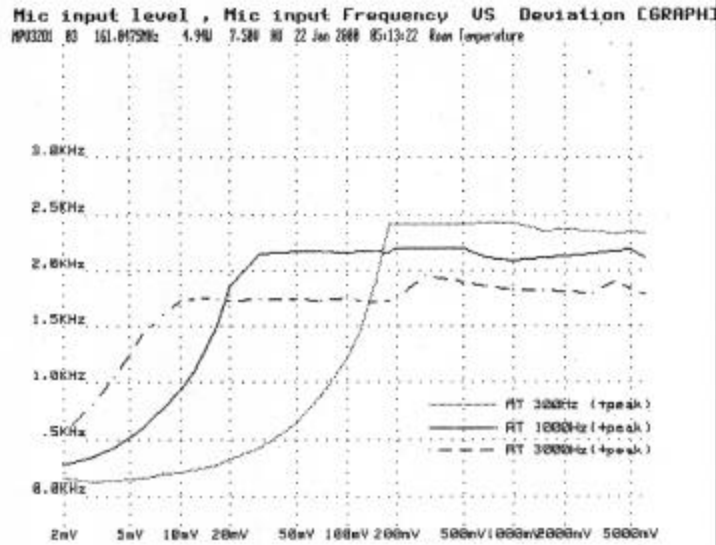
At 5 watt Output Level

<i>DC Voltage @ -15%</i>	<i>DC Voltage @ Nominal 7.5 VDC</i>	<i>DC Voltage @ +15%</i>
4.5 Watts	5.5 Watts	6.5 Watts

At 1 watt Output Level

<i>DC Voltage @ -15%</i>	<i>DC Voltage @ Nominal 7.5 VDC</i>	<i>DC Voltage @ +15%</i>
0.95 Watts	1.00 Watts	1.05 Watts

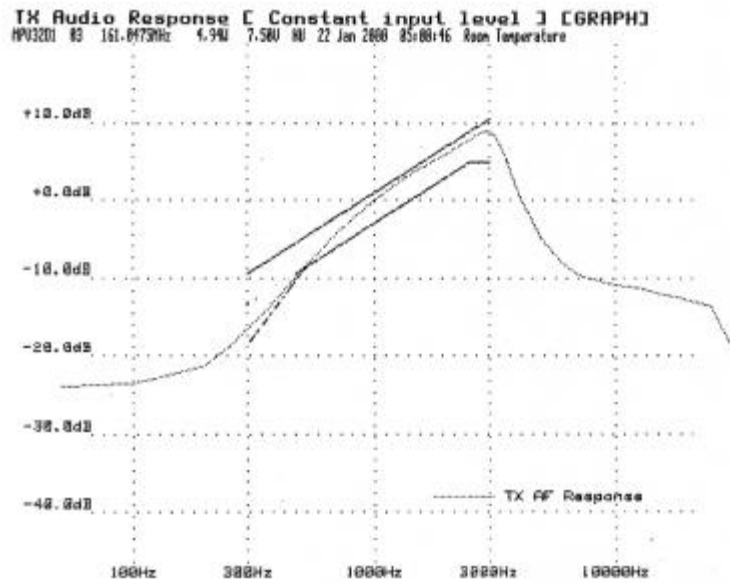
3.0 Modulation Characteristics



Mic input level , Mic input Frequency US Deviation [DATA]

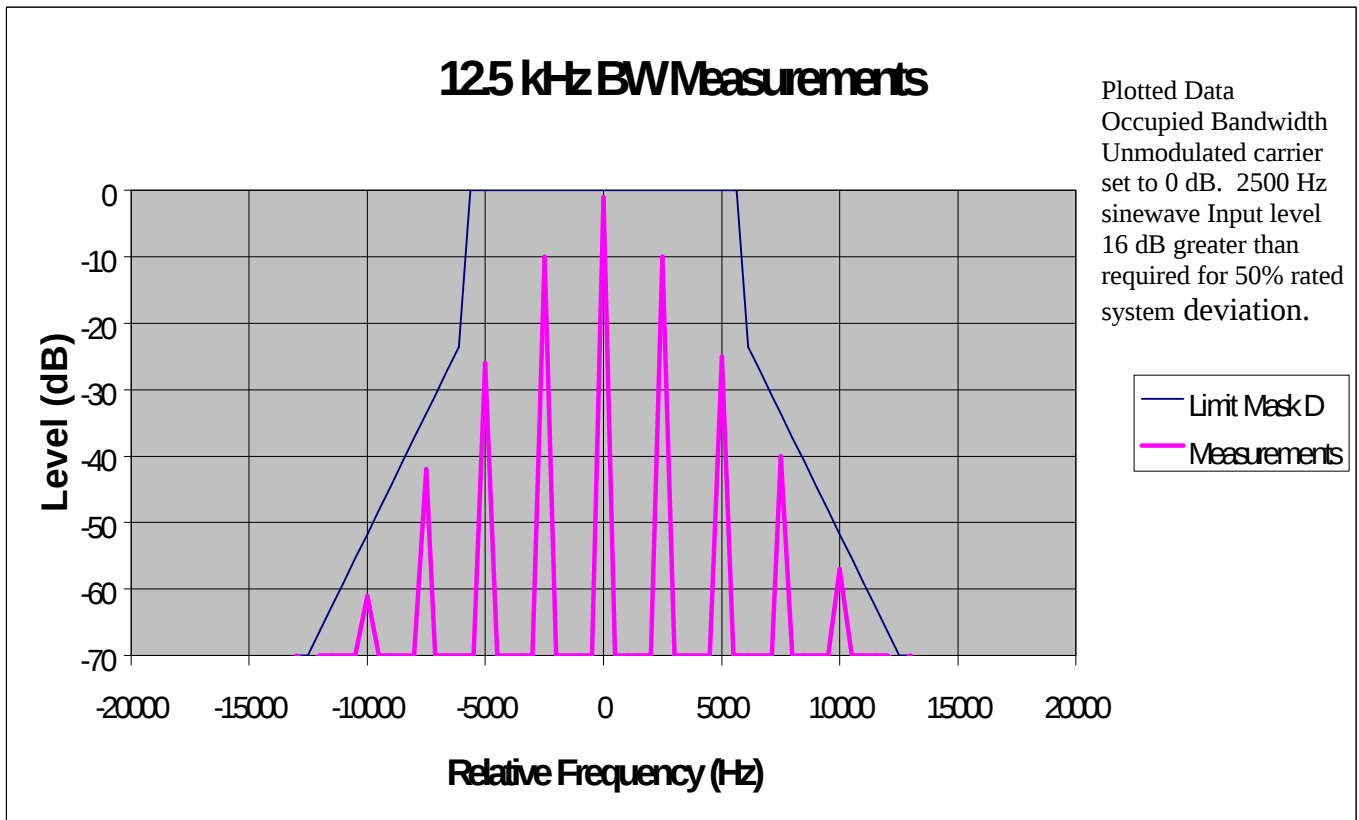
MP13201 43 161.0475MHz 4.94U 7.58U HU 22 Jan 2000 05:14:03 Room Temperature

Mic input level [mV]	Mic input frequency Deviation of 300Hz [KHz]		Mic input frequency Deviation of 1000Hz [KHz]		Mic input frequency Deviation of 3000Hz [KHz]	
	+ Peak	- Peak	+ Peak	- Peak	+ Peak	- Peak
2.0	.16	.15	.27	.24	.57	.54
3.0	.13	.11	.35	.31	.81	.78
4.0	.14	.11	.43	.40	1.05	.99
5.0	.15	.12	.52	.49	1.26	1.22
6.0	.16	.14	.60	.58	1.43	1.40
7.0	.17	.15	.70	.65	1.52	1.56
8.0	.19	.15	.77	.74	1.61	1.57
10.0	.21	.18	.93	.90	1.73	1.55
12.0	.23	.20	1.10	1.06	1.74	1.55
15.0	.25	.24	1.35	1.32	1.75	1.58
17.0	.28	.24	1.52	1.50	1.74	1.61
20.0	.32	.28	1.86	1.75	1.73	1.60
30.0	.43	.39	2.15	1.94	1.74	1.60
40.0	.54	.52	2.16	2.02	1.74	1.61
50.0	.65	.62	2.17	2.07	1.74	1.61
70.0	.89	.85	2.17	2.08	1.73	1.61
100.0	1.22	1.19	2.16	2.10	1.75	1.61
120.0	1.46	1.43	2.17	2.09	1.73	1.60
150.0	.91	1.80	2.17	2.08	1.72	1.62
180.0	.42	2.13	2.16	2.08	1.73	1.62
200.0	.41	2.21	2.19	2.08	1.75	1.64
300.0	.41	2.34	2.19	2.07	1.95	1.69
500.0	.42	2.40	2.19	2.05	1.89	1.71
700.0	.43	2.43	2.11	2.14	1.86	1.74
1000.0	.43	2.43	2.09	2.11	1.83	1.71
1500.0	.43	2.40	2.11	2.11	1.82	1.71
2000.0	.43	2.40	2.13	2.11	1.81	1.70
3000.0	.43	2.40	2.13	2.11	1.80	1.70
4000.0	.43	2.33	2.17	2.08	1.89	1.73
5000.0	.43	2.33	2.18	2.08	1.84	1.75
6000.0	.43	2.33	2.18	2.13	1.79	1.68

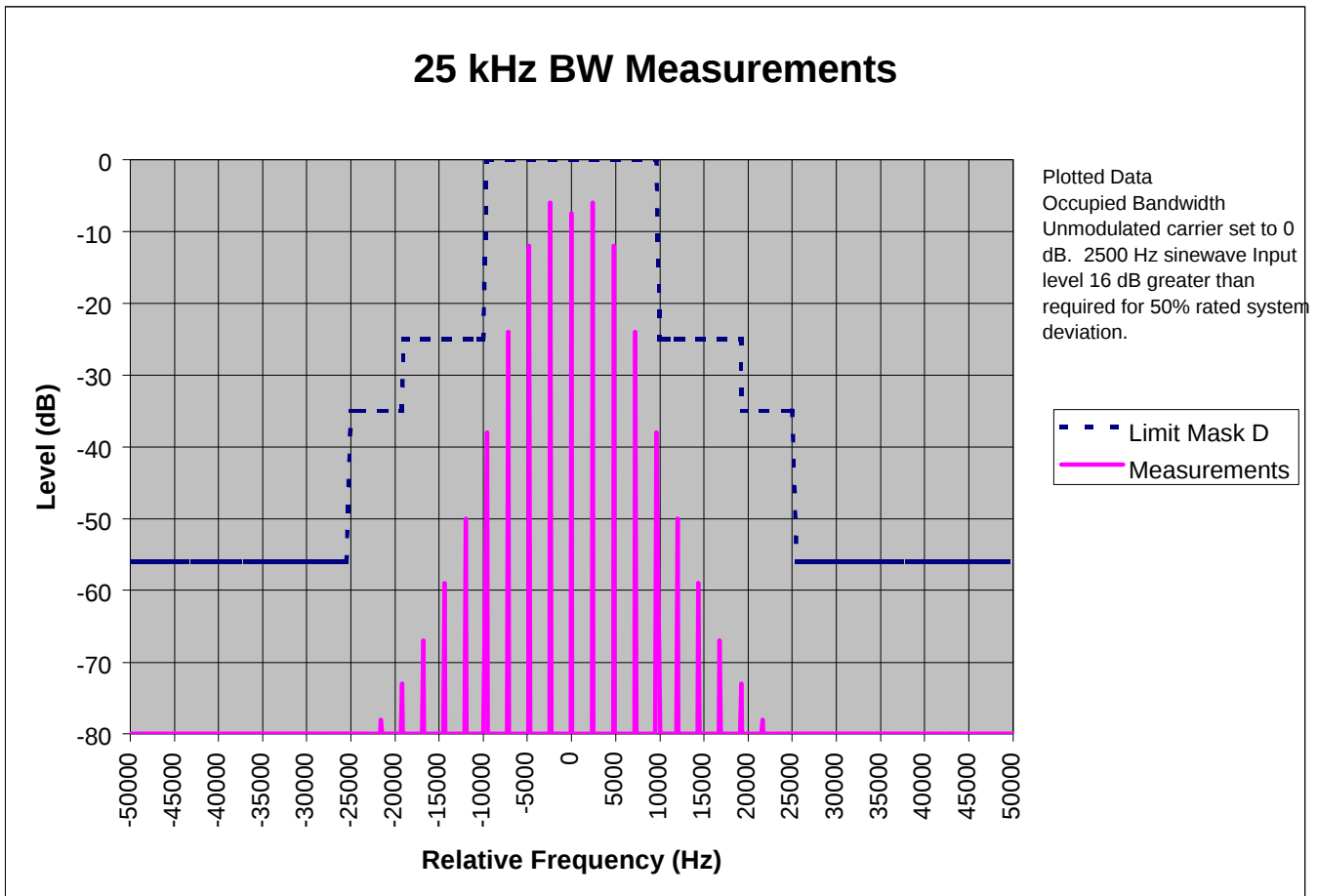


4.0 Occupied Bandwidth

Plotted from data taken.



Plotted from data taken.



5.0 Spurious Emissions (Conducted)

CHANNEL SPACING : 12.5 KHz TEST METHOD : EIA
 SYSTEM DEVIATION : 2.5 KHz TEST DEVIATION : 1.5 KHz
 SUPPLY VOLTAGE : 7.50 Volts
 RATED AUDIO POWER : .10 Watts
 SPK IMPEDANCE : 8.0 Ohms
 Test Operator : HU
 Measurement Date : 20 Jan 2000 1st IF : -21.400MHz
 Issued Date : 03:24:06 / 20 Jan 2000 2nd IF : -455.000KHz

----- TX -----				
SERIAL NUMBER	02	03	03	03
TEMPERATURE °C	+25.0	+25.0	+25.0	+25.0
RF FREQUENCY MHz	148.0500	154.0500	161.0475	168.9500
TEST VOLTAGE V	7.50	7.50	7.50	7.50
CARRIER POWER W	4.61	4.82	4.95	4.98
POWER DOWN 3min %	-1.36	-.97	-.47	-.38
POWER DOWN 3min %	-2.87	-2.08	-1.42	-1.04
MOD LIMIT (+) KHz	2.07	2.06	2.08	2.10
MOD LIMIT (-) KHz	2.07	2.02	2.00	1.98
SPOURIOUS 1 dB	-70.2	-72.7	-71.3	-71.0
at RF FREQ MHz	147.972	154.125	160.966	169.023
SPOURIOUS 2 dB	-73.3	-73.3	-73.5	-74.3
at RF FREQ MHz	147.953	153.958	161.137	169.032
SPOURIOUS 3 dB	-81.3	-82.7	-81.7	-82.5
at RF FREQ MHz	141.550	147.550	183.214	169.450
SPOURIOUS 4 dB	-79.8	-81.0	-80.8	-82.0
at RF FREQ MHz	205.719	183.157	183.163	182.880
SPOURIOUS 5 dB	-69.0	-76.2	-71.8	-78.8
at RF FREQ MHz	304.087	317.547	1910.335	1485.504
HUM & NOISE ON dB				
HUM & NOISE OFF dB				
MOD SENSITIVITY mV	14.58	15.54	14.83	15.90
CURRENT A	1.650	1.650	1.650	1.650
RF DISTORTION %	1.5	1.4	1.8	2.1
RF RESP 30kHz dB	-16.69	-16.94	-17.26	-17.51
RF RESP 30kHz dB	+8.64	+8.74	+8.74	+8.87
FREQ ACCURACY Hz	+70	+30	-410	+30
POWER DOWN 3min W	4.61	4.82	4.95	4.98
POWER DOWN 3min W	4.55	4.77	4.92	4.96
POWER DOWN 3min W	4.48	4.72	4.88	4.93
HUM & Noise on dB	46.7	47.9	47.4	46.7
HUM & Noise off dB	51.9	52.9	52.2	51.7

Spurious with Five watt output, dBc ref to fundamental. All others >-20 dB below requirement

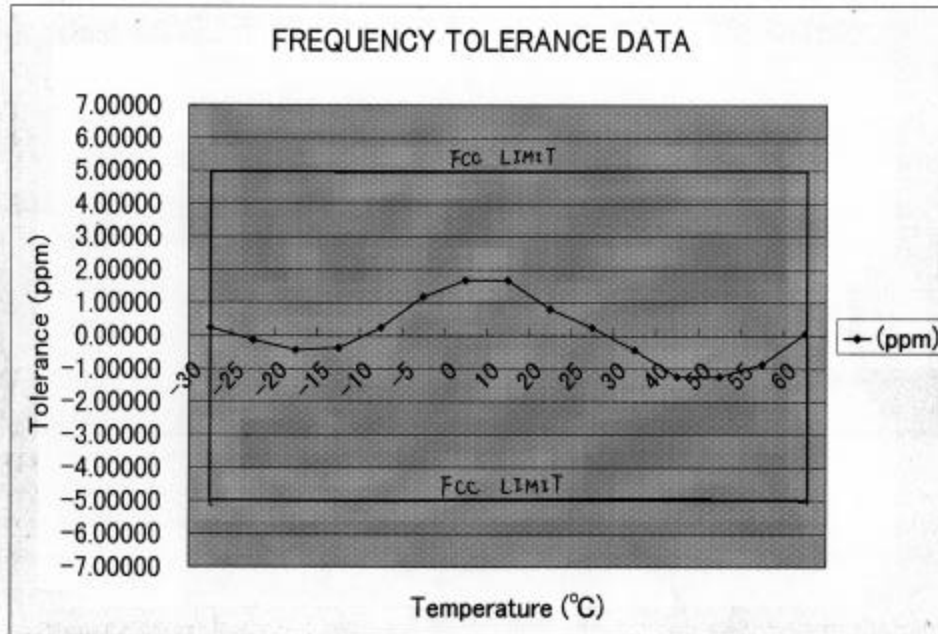
----- (LOW POWER) -----				
CARRIER POWER W	1.12	1.17	1.16	1.08
FREQ ACCURACY Hz	-110	-0	-610	-150
CURRENT A	.725	.888	.713	.713
MOD LIMIT (+) KHz	2.07	2.08	2.10	2.12
MOD LIMIT (-) KHz	2.08	2.04	2.02	2.00
HUM & NOISE ON dB				
HUM & NOISE OFF dB				
SPOURIOUS 1 dB	-79.8	-75.5	-73.8	-73.8
at RF FREQ MHz	148.550	154.383	183.214	169.283
SPOURIOUS 2 dB	-75.0	-75.5	-74.8	-74.7
at RF FREQ MHz	183.153	183.157	183.163	182.880
SPOURIOUS 3 dB	-63.2	-67.8	-71.2	-73.2
at RF FREQ MHz	304.087	317.547	331.566	1485.504

Spurious with One watt output, dBc ref to fundamental

6.0 Frequency Stability

FCC Limit is +/- 2.5 ppm.

DC Voltage @ -15%	DC Voltage @ Nominal 7.5 VDC	DC Voltage @ +15%
+58 Hz (+0.47 ppm)	+128 Hz (+0.8 ppm)	+138 Hz (+0.86 ppm)



7.0 Transient Frequency Characteristics

