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Name of Test:

Unwanted Emissions (Transmitter Conducted)

Limit(s), dBc $-(50+10 \times \text{LOG } P) = -60$ (10 Watts) $-(50+10 \times \text{LOG } P) = -50$ (1 Watt)

g0380293: 2003-Aug-14 Thu 08:43:00

State: 1:Low Power VHF

Ambient Temperature: 22°C $\pm$ 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc
136.525000	272.949000	-72.7	-78.5
155.025000	310.060500	-57.1	-62.9
173.975000	348.173000	-74.4	-80.2
136.525000	409.747000	-73.3	-79.1
155.025000	465.078500	-60.5	-66.3
173.975000	521.792000	-74.5	-80.3
136.525000	546.182500	-73.7	-79.5
155.025000	620.321500	-73.8	-79.6
136.525000	682.786000	-73.6	-79.4
173.975000	695.655500	-72.9	-78.7
155.025000	775.352500	-73.4	-79.2
136.525000	819.294000	-73.1	-78.9
173.975000	870.102500	-74.6	-80.4
155.025000	930.234500	-73.5	-79.3
136.525000	955.538000	-73.8	-79.6
173.975000	1043.736500	-74	-79.8
155.025000	1085.073500	-73.3	-79.1
136.525000	1092.420000	-74.3	-80.1
173.975000	1217.868000	-74.1	-79.9
136.525000	1228.739500	-74.3	-80.1
155.025000	1240.030000	-73.5	-79.3
136.525000	1365.409500	-72.8	-78.6
173.975000	1391.558000	-74	-79.8
155.025000	1394.989000	-72.6	-78.4
136.525000	1502.013000	-72.6	-78.4
155.025000	1550.141000	-73.2	-79
173.975000	1565.581000	-72.7	-78.5
136.525000	1638.405500	-73.7	-79.5
155.025000	1705.504000	-72.6	-78.4
173.975000	1739.500000	-72.6	-78.4
136.525000	1774.894000	-72.6	-78.4
155.025000	1860.517000	-73.1	-78.9
136.525000	1911.269500	-73.2	-79
173.975000	1913.718000	-73.5	-79.3
155.025000	2015.211500	-72.7	-78.5
136.525000	2047.966000	-73.2	-79
173.975000	2087.556500	-72.9	-78.7
155.025000	2170.409500	-72.4	-78.2
173.975000	2261.582500	-72.1	-77.9
155.025000	2325.591000	-72.8	-78.6
173.975000	2435.866000	-70.7	-76.5
173.975000	2609.701000	-74.4	-80.2

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Name of Test:

Unwanted Emissions (Transmitter Conducted)

Limit(s), dBc $-(50+10 \times \text{LOG } P) = -60$ (10 Watts) $-(50+10 \times \text{LOG } P) = -50$ (1 Watt)

g0380292: 2003-Aug-14 Thu 08:38:00

State: 2:High Power VHF

Ambient Temperature: 22°C ± 3°C

Frequency Tuned, MHz	Frequency Emission, MHz	Level, dBm	Level, dBc
136.525000	273.135500	-73.8	-79.6
155.025000	310.066500	-73.9	-79.7
173.975000	348.135000	-73.8	-79.6
136.525000	409.812000	-73.9	-79.7
155.025000	464.864500	-74.1	-79.9
173.975000	521.988000	-73.4	-79.2
136.525000	546.310500	-73.9	-79.7
155.025000	620.194500	-74.2	-80
136.525000	682.666000	-72.6	-78.4
173.975000	695.680500	-73.8	-79.6
155.025000	775.282500	-74	-79.8
136.525000	819.135500	-74	-79.8
173.975000	870.067000	-74.3	-80.1
155.025000	930.316500	-74.2	-80
136.525000	955.905000	-72.9	-78.7
173.975000	1043.935500	-74.3	-80.1
155.025000	1085.285000	-73.9	-79.7
136.525000	1092.228000	-73.3	-79.1
173.975000	1217.817500	-73.4	-79.2
136.525000	1228.768500	-73.9	-79.7
155.025000	1240.366500	-73.8	-79.6
136.525000	1365.211500	-73.1	-78.9
173.975000	1391.555500	-73.8	-79.6
155.025000	1395.040500	-73.2	-79
136.525000	1501.949500	-71.8	-77.6
155.025000	1550.244000	-72.9	-78.7
173.975000	1565.780000	-73.4	-79.2
136.525000	1638.272500	-72.2	-78
155.025000	1705.373500	-72.7	-78.5
173.975000	1739.562500	-72.5	-78.3
136.525000	1775.011000	-73	-78.8
155.025000	1860.107500	-72.1	-77.9
136.525000	1911.177500	-72.9	-78.7
173.975000	1913.730500	-73.3	-79.1
155.025000	2015.108500	-72.4	-78.2
136.525000	2047.740500	-72.6	-78.4
173.975000	2087.688500	-73	-78.8
155.025000	2170.550500	-72.3	-78.1
173.975000	2261.632500	-73	-78.8
155.025000	2325.125000	-71.8	-77.6
173.975000	2435.766500	-71.9	-77.7
173.975000	2609.684500	-74.5	-80.3

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Name of Test:

Field Strength of Spurious Radiation (Cont.)

- J) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.
- K) Repeat step J) with both antennas vertically polarized for each spurious frequency.
- L) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps J) and K) by the power loss in the cable between the generator and the antenna and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna.
- M) The levels recorded in step L) are absolute levels of radiated spurious emissions in dBm. The radiated spurious emissions in dB can be calculated by the following:

Radiated spurious emissions dB =

$$10\log_{10}(\text{TX power in watts}/0.001) - \text{the levels in step l)}$$

NOTE: It is permissible that other antennas provided can be referenced to a dipole.

Test Equipment:

Asset	Description	s/n	Cycle	Last Cal
(as applicable)				
Transducer				
i00088	EMCO 3109-B 25MHz-300MHz	2336	12 mo.	Sep-02
i00089	Apral 2001 200MHz-1GHz	001500	12 mo.	Sep-02
i00103	EMCO 3115 1GHz-18GHz	9208-3925	12 mo.	Sep-02
Amplifier				
i00028	HP 8449A	2749A00121	12 mo.	Mar-03
Spectrum Analyzer				
i00029	HP 8563E	3213A00104	12 mo.	Mar-03
i00048	HP 8566B	2511AD1467	6 mo.	Jul-03

Microphone, Antenna Port, and Cabling

Microphone	<u>No</u>	Cable Length	<u>1.0</u> Meters
Antenna Port Terminated	<u>Yes</u>	Load	<u>50 Ohm</u>
All Ports Terminated by Load	<u>No</u>	Peripheral	<u>No</u>
		Antenna Gain	<u>0 dBd</u>