7 FCC RULES AND REGULATIONS PART 2 §2.1046 (A): RF POWER OUTPUT: CONDUCTED

7.1 TEST PROCEDURE

ANSI/TIA/EIA-603-1992, section 2.2.1

The EUT was connected to a coaxial attenuator having a 50 Ω load impedance.

7.2 TEST DATA

The following channel (in MHz) were tested: 146.05, 160.05, 173.95

CARRIER OUTPUT POWER (UNMODULATED)

Channel	TX Freq (MHz)	Ch Spacing (kHz)	Power measured (W)
1	146.05	25	5.6
2	160.05	25	5.55
3	173.95	25	5.86
4	146.05	25	5.6
5	160.05	25	5.55
6	173.95	25	5.83
7	146.05	12.5	1.37
8	160.05	12.5	1.192
9	173.95	12.5	1.26
10	146.05	12.5	1.38
11	160.05	12.5	1.196
12	173.95	12.5	1.26

*Measurement accuracy: +/- 3%

Rated Power:

Power Setting	Rated Power (W)
Low	1
High	5

7.3 TEST EQUIPMENT

Power Meter	HP437B	s/n 2949A02966
	HP 8901A	s/n 2545A04102 (power mode)
Power Sensor	HP8481B	s/n 2702A05059
Frequency Counter	HP8901A	s/n 2545A04102 (Frequency mode)

8 PART 2.1046 (A) RF POWER OUTPUT: RADIATED - ERP

8.1 TEST PROCEDURE

Substitution Method:

The EUT was setup at an antenna to EUT distance of 3 meters on an open area test site. The EUT was placed on a nonconductive turntable approximately 0.8 meters above the ground plane.

The physical arrangement of the EUT and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters in order to determine the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations.

The worst-case, maximum radiated emission was recorded and used as reference for the ERP measurement.

The EUT was then replaced by an ½wave dipole antenna and polarized in accordance with the EUT's antenna polarization. The ½wave dipole antenna was connected to a RF signal generator with a coaxial cable.

The search antenna height, and search antenna polarity was set to levels that produced the maximum reading obtained in step 3. The signal generator was adjusted to a level that produced the radiated emission level obtained in step 3.

The signal generator level was recorded and corrected 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 ½wave dipole antenna. The signal generator corrected level is the ERP level

Calculation Method:

$$P_{Watt} = \frac{E_{v/m}{}^{2} x d_{m}{}^{2}}{30x1.64}$$

8.2 TEST DATA

Settings:

- High Power: 5 Watt delivered to antenna
- 5W VX-160V/180V radiated power measurements (3 meter)

Channel 2 (25 kHz channel spacing)

ERP Substitution method

Channel 1 ATV-6A antenna					
Frequency (MHz)	**Signal Generator Level (dBm)**	**Cable Loss (dB)**	**Corrected Antenna Gain (dB)**	**Corrected Signal Generator Level (dBm)**	**ERP* (Watt)**
146.05	36.3	1.05	-0.34	34.9	3.10
Channel 1 ATV-6XL antenna					
Frequency (MHz)	**Signal Generator Level (dBm)**	**Cable Loss (dB)**	**Corrected Antenna Gain (dB)**	**Corrected Signal Generator Level (dBm)**	**ERP* (Watt)**
146.05	34.34	1.05	-0.34	33.0	1.97
Channel 2 ATV-6B antenna					
Frequency (MHz)	**Signal Generator Level (dBm)**	**Cable Loss (dB)**	**Corrected Antenna Gain (dB)**	**Corrected Signal Generator Level (dBm)**	**ERP* (Watt)**
160.045	30.58	1.17	-0.04	29.4	0.865
Channel 2 ATV-6XL antenna					
Frequency (MHz)	**Signal Generator Level (dBm)**	**Cable Loss (dB)**	**Corrected Antenna Gain (dB)**	**Corrected Signal Generator Level (dBm)**	**ERP* (Watt)**
160.045	28.68	1.17	-0.04	27.5	0.558
Channel 3 ATV-6C antenna					
Frequency (MHz)	**Signal Generator Level (dBm)**	**Cable Loss (dB)**	**Corrected Antenna Gain (dB)**	**Corrected Signal Generator Level (dBm)**	**ERP* (Watt)**
173.944	33.78	1.28	-0.04	32.5	1.76
Channel 3 ATV-6XL antenna					
Frequency (MHz)	**Signal Generator Level (dBm)**	**Cable Loss (dB)**	**Corrected Antenna Gain (dB)**	**Corrected Signal Generator Level (dBm)**	**ERP* (Watt)**
173.944	34.92	1.28	-0.04	33.6	2.29

*****Measurement accuracy is +/- 1.5 dB

8.3 TEST EQUIPMENT

Spectrum Analyzer HP8566B
Antenna Roberts ½wave dipoles