

## Exhibit 15 Cabinet Radiation

### 2.1053 MEASUREMENTS REQUIRED: FIELD STRENGTH OF SPURIOUS RADIATION.

(a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of § 2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required, with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emissions with reference to the rated power output of the transmitter, assuming all emissions are radiated from half-wave dipole antenna.

### 2.1057 FREQUENCY SPECTRUM TO BE INVESTIGATED

(a) In all the measurements set forth in §§ 2.1051 and 2.1053, the spectrum shall be investigated from the lowest radio frequency signal generated in the equipment, without going below 9 kHz, up to at least the frequency shown below:

(1) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

## Broadcast Electronics Response

The Emco receive antenna was placed five meters from the AM-5E transmitter. Four readings were taken. The first was with the transmitter turned off to acquire the ambient signals received by the antenna. The transmitter was then operated to a power level of 5000 Watts. The next three readings were obtained by observing the radiation from the Front, Right and Left side of the transmitter.

The FCC cabinet radiation limit line on the chart was calculated based on the gain of the receive antenna and the FCC radiation limit calculated below.

Radiation Reference        = Square Root  $(49 * \text{Power}) / \text{Distance}$   
                                     = Square Root  $(49 * 5000) / 5$   
                                     = 99.0 Volts / Meter  
                                     = 160 dBuV / M

The Radiation limit is 80 dB below this value or 80 dBuV / M.

The antenna gain correction factors are given below.

Frequency (MHz)	Electric Antenna Factor (dB)
.5	52.6
1.0	47.9
3.0	39.5
5.0	36.5
10.0	35.6

Specification compliance testing factor to be added to receiver meter reading in dBuV to convert to equivalent electric field intensity in dBuV/meter.

The radiation limit taking into account the antenna factor would then be:

Radiation Limit = 73.9 - Antenna Factor

Frequency (MHz)	Radiation Limit (dBuV / M)	Spectrum Analyzer Limit (dBm)
.5	27.4	-80
1.0	32.1	-75
3.0	40.5	-67
5.0	43.5	-64
10.0	44.4	-63

Exhibit 15A shows a plot of the ambient radiation. This plot was taken with the AM-5E transmitter turned off. The plot shows several signals that are above the noise floor. Two are local radio stations (WGEM 1440 kHz, WTAD 930 kHz) and the others are of an unknown source.

Exhibit 15A-F, A-R, A-L show spectrum analyzer plots of the AM-55E with the Front, Right and Left sides facing the receive antenna. The transmitter was operated at 5000 Watts. There is no detectable radiation coming from the AM-5E transmitter. The FCC limit was drawn on each plot.

Ambient  
2-2-2000

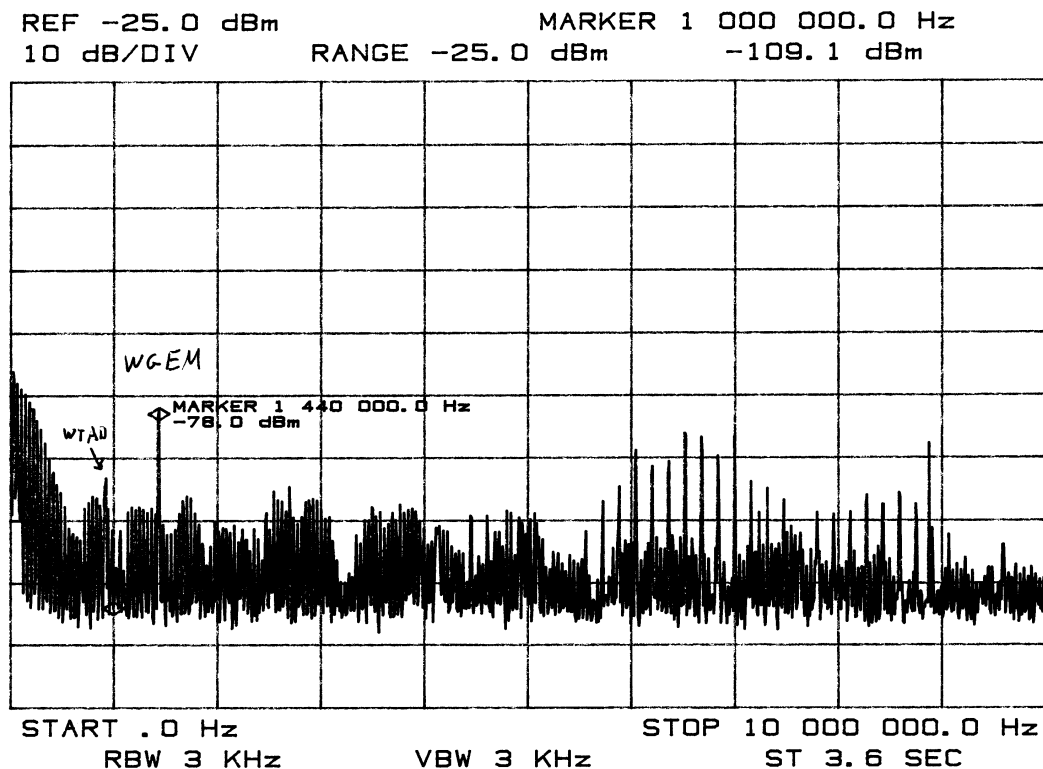
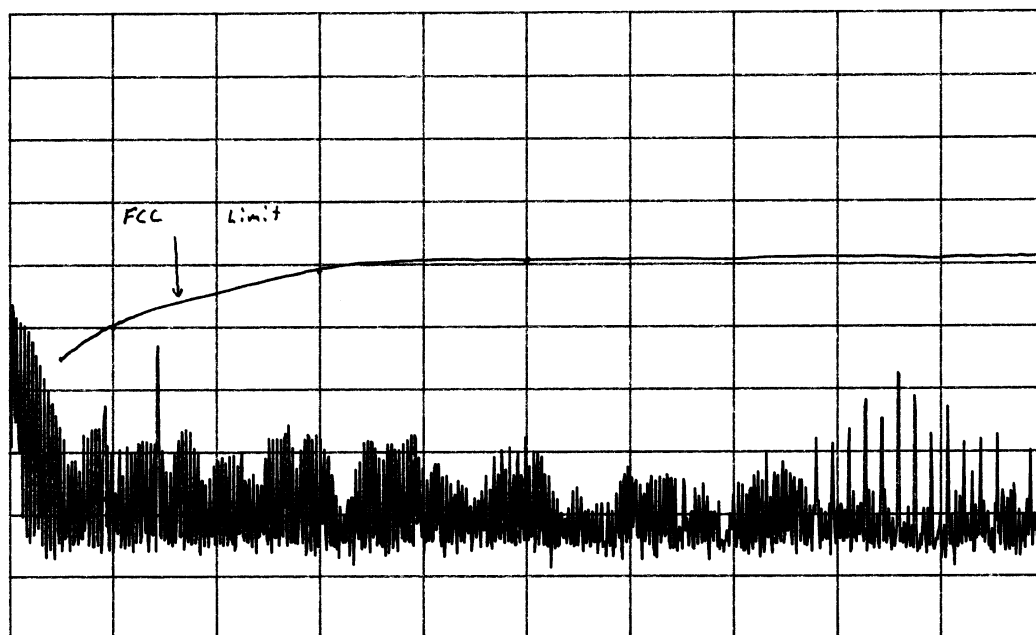


Exhibit 15A

Front  
2-2-2000

REF -25.0 dBm  
10 dB/DIV

MARKER 1 000 000.0 Hz  
RANGE -25.0 dBm -102.4 dBm



START .0 Hz

RBW 3 KHz

VBW 3 KHz

STOP 10 000 000.0 Hz

ST 3.6 SEC

Exhibit 15A-F

Right  
2-2-2000

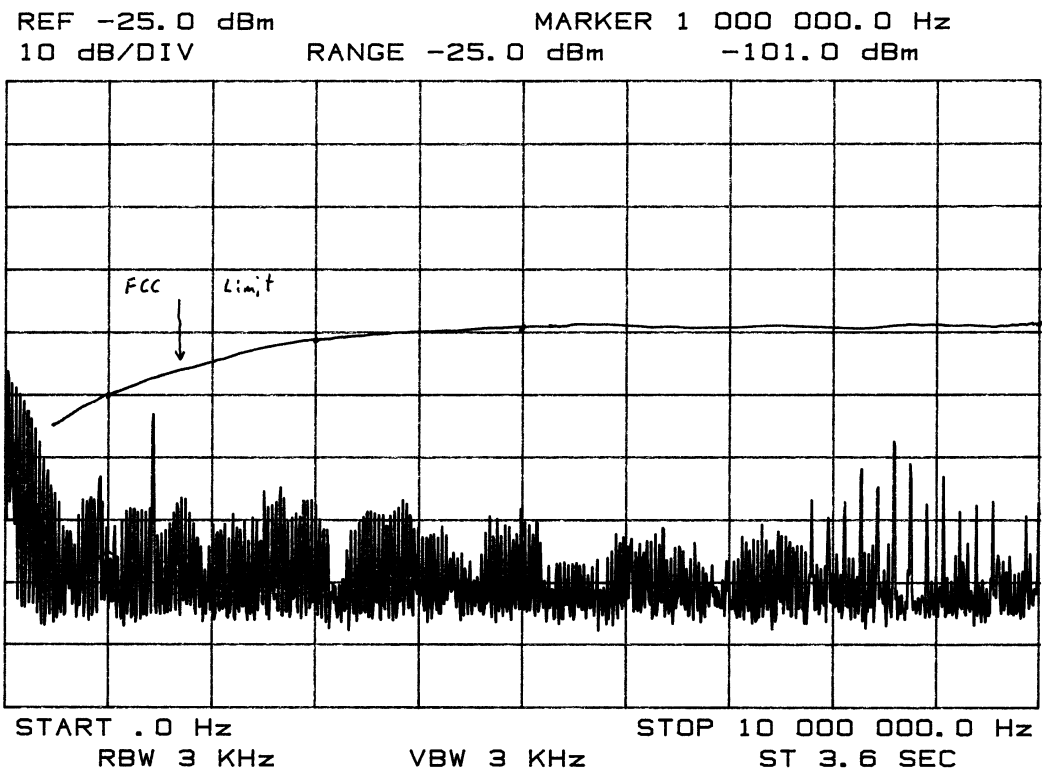
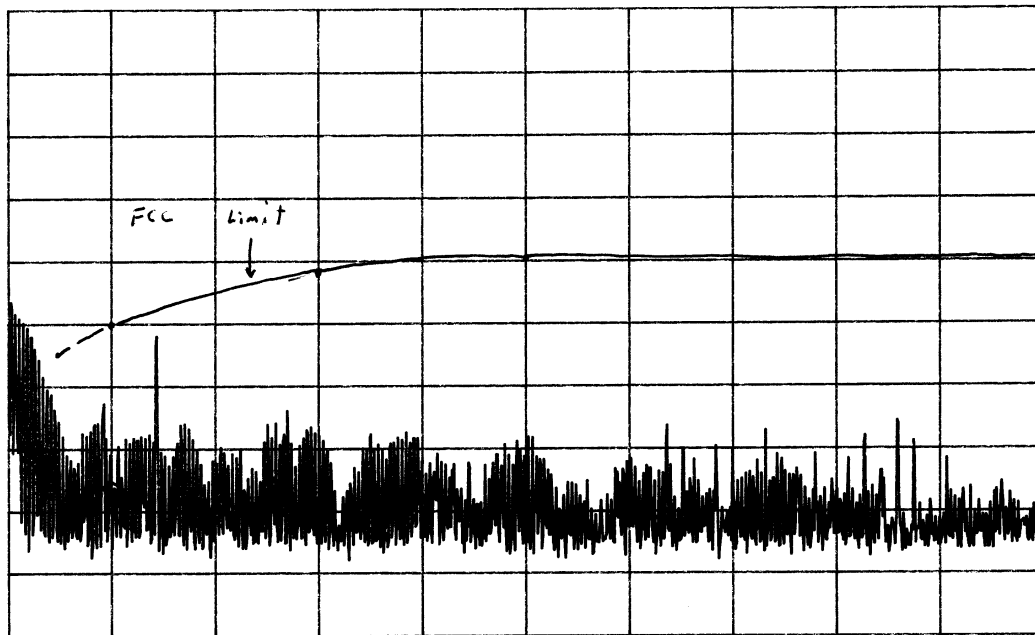


Exhibit 15A-R

Let  
2-2-2000

REF -25.0 dBm  
10 dB/DIV

MARKER 1 000 000.0 Hz  
RANGE -25.0 dBm -101.2 dBm



START .0 Hz

RBW 3 KHz

VBW 3 KHz

STOP 10 000 000.0 Hz

ST 3.6 SEC

Exhibit 15A-L