

**Engineering Statement
In Support of an Application
For Construction Permit**

WEAS-FM, Springfield, Georgia

Human Exposure To Radiofrequency Radiation Study

<u>CALL</u>	<u>Service</u>	<u>Channel</u>	<u>Freq.</u>	<u>Polarization</u>	<u>Antenna Height** (AGL)</u>	<u>ERP (kW)</u>	<u>Relative Field Factor</u>	<u>Vertical Predicted Power Density (mW/cm²)</u>	<u>FCC Uncontrolled Limit (mW/cm²)</u>	<u>Percent of Uncontrolled Limit</u>
WEAS-FM	FM	226	93.1	H&V	299	100.000	1.000	0.0034185	0.200	1.7092%
WQBT	FM	231	94.1	H&V	398	100.000	1.000	0.0021922	0.200	1.0961%
WAEV	FM	247	97.3	H&V	398	100.000	1.000	0.0021922	0.200	1.0961%
WGTS	DTV	27	551	H	457	1000.000	0.300	0.0806666	0.367	21.9601%
WGTS	TV	28	557	H	458	5000.000	0.300	0.0003614	0.371	0.0973%

Total Percentage of ANSI value = 25.959%

* The antenna height indicated above is 2 meters less than the actual antenna height so that the predicted power density consider the 2 meter human height allowance.

The elevation patterns for the antenna of the following facility was used to determine the power density. Furthermore, the highest field between the depression angles of 70 and 90 degrees were used. At a depression angle of 70 degrees or less, the inclination of the angle would place the area of concern above 2 meters. The computations were derived by using the following formula:

$$(33.41 * \text{Total ERP in kW considering the elevation pattern tabulations}) / (\text{COR in meters} - 2 \text{ meter})^2$$

WEAS-FM has a ERI Model FMH-12AC (12 bay, full-wave spaced) antenna mounted a tower located 299 meters above ground level with 100 kw (ERP). For study purposes, the ERI or Jampro JBCP “Rototiller” (EPA) antenna of the FM Model for Windows was used to compute the power density. The facility produces 2.204 $\mu\text{W}/\text{cm}^2$ at 2 meters from the base of the tower. The highest level of power density (3.419 $\mu\text{W}/\text{cm}^2$) is located at 66 meters from the base of the tower.

WAEV and WQBT has a ERI Model SHPX-10AC6-SP (10 bay, full-wave spaced) antenna used as a common antenna mounted 398 meters above ground level with 100 kw (ERP) each. For study purposes, the ERI or Jampro JBCP “Rototiller” (EPA) antenna of the FM Model for Windows was used to compute the power density for each facility. WAEV produces 1.278 $\mu\text{W}/\text{cm}^2$ at 2 meters from the base of the tower. The highest level of power density (2.192 $\mu\text{W}/\text{cm}^2$) is located at 96 meters from the base of the tower. WQBT produces 1.278 $\mu\text{W}/\text{cm}^2$ at 2 meters from the base of the tower. The highest level of power density (2.192 $\mu\text{W}/\text{cm}^2$) is located at 96 meters from the base of the tower.

WGTS (TV) has an analog and digital facility on the same structure. The WTGS digital facility has an Andrew Model AL8 antenna mounted at 458 meters above ground level with 1000 kw (ERP). Equation (2), found on page 30 of Supplement A to FCC OET Bulletin No. 65 was used to determine to power density at the base of the tower, which gave the results of 80.667 $\mu\text{W}/\text{cm}^2$.

The WGTS analog facility has a RCA Model TFU45J Custom antenna mounted 457 meters above ground level with 5000 kw (ERP.. Attached is the elevation pattern provided by Dielectric was used to determine the power density at the base of the tower. The relative field strength of 0.03 was used for the computations. With a relative field of 0.03, WGTS (analog facility) produces a power density of 0.361 $\mu\text{W}/\text{cm}^2$.

As demonstrated, the total percentage of the ANSI values at the study site, considering the radiation of all facilities is 25.959% of the limit for “uncontrolled” environments and 5.19% of the limit for “controlled” environments.

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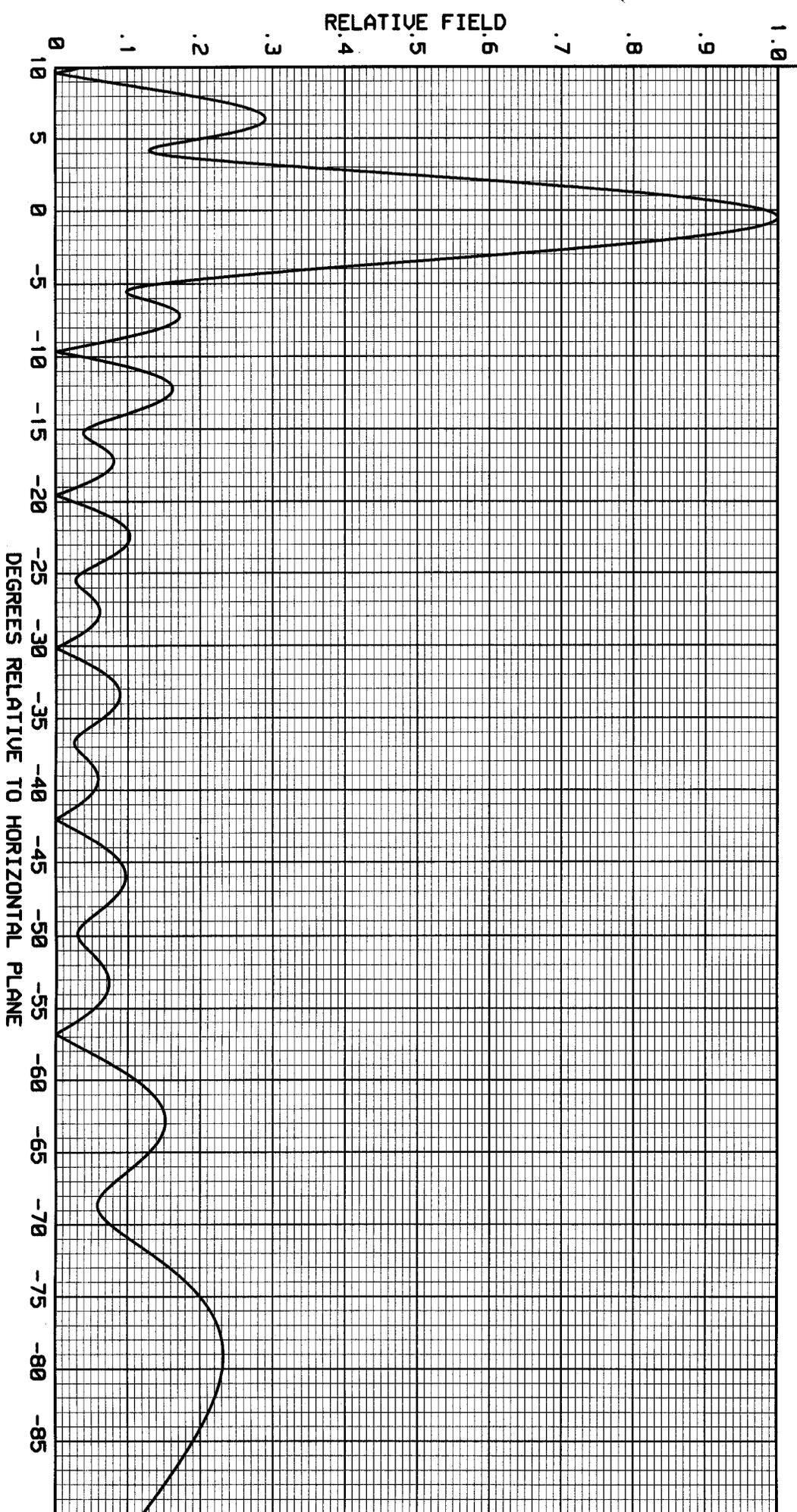
-----THEORETICAL-----
VERTICAL PLANE RELATIVE FIELD

5-24-04

12 ERI TYPE SHP, SHPX, LP, OR LPX ELEMENTS
-.5 DEGREE(S) ELECTRICAL BEAM TILT
10 PERCENT FIRST NULL FILL
0 PERCENT SECOND NULL FILL

ELEMENT SPACING:
1 WAVELENGTH

POWER GAIN IS 6.327 IN THE HORIZONTAL PLANE(6.547 IN THE MAX.)



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-----THEORETICAL-----
VERTICAL PLANE RELATIVE FIELD
2 ERI TYPE SHP, SHPX, LP, OR LPX ELEMENTS
0 DEGREE(S) ELECTRICAL BEAM TILT
0 PERCENT FIRST NULL FILL
0 PERCENT SECOND NULL FILL

2-16-99
ELEMENT SPACING:
1 WAVELENGTH

POWER GAIN IS .997 IN THE HORIZONTAL PLANE(.997 IN THE MAX.)

