

Kinston, North Carolina  
Application for Minor Modification of FM Translator W253AX  
On Channel 253  
by  
Conner Media Corporation

Exhibit 17  
Nonionizing Radio Frequency Radiation Analysis

January 2011

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Table of Contents

Description	Page
Declaration.....	2
Narrative .....	3
Figure 1: FM Model output for W253AX and WZUP .....	5

Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 17, Nonionizing Radio Frequency Radiation Analysis, for Conner Media Corporation, and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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### Narrative

This Exhibit supports a minor modification application for FM translator W253AX, Kinston, North Carolina. The modifications proposed are an increase in Effective Radiated Power and a change to fill-in status for the existing primary station.

Translator W253AX is licensed on the tower of WLNR (AM), Kinston, North Carolina. Also located on the tower is WZUP, La Grange, North Carolina. This Exhibit shows that the proposed operation is in compliance with nonionizing radiation regulations.

### Radio Frequency Radiation Evaluation

The proposed W253AX facilities, when evaluated under worst case methods in OET-65, will create  $0.0022 \text{ mW/cm}^2$  two meters above ground level. A single bay Shively 6812-1 antenna is proposed which reduces the power density at ground level. Computer program FM Model, developed by the EPA, predicts the maximum power density of  $.00049 \text{ mW/cm}^2$  at a distance of 79 meters from the tower base. This is less than 1% of the maximum permitted  $0.20 \text{ mW/cm}^2$  for general population/uncontrolled exposure. This level is de minimis. Nonetheless, the remaining facilities at the site are described below.

WLNR is licensed on 1230 kHz with 1,000 watts and a tower which is 131.9 electrical degrees or 0.366 wavelength tall. Using the methods in OST-65, the required fence distance is 1.47 meters or 4 foot 10 inches. The actual fence is more than 5 feet from the active components of the tower at its closest approach. The site is therefore more protective than the minimum for the AM station. The tower site is fenced with a locked gate, and the facility is marked with signs indicating the presence of non-ionizing RF radiation. The site use agreement with other users of the site includes provisions to prevent excess exposure to maintenance workers on the tower. The agreement includes requirements that the users

remove power from antennas when personnel are on the tower in the vicinity of the antenna to avoid exposing workers to non-ionizing radiation.

The licensed WZUP facilities, when evaluated under worst case methods in OET-65, will create  $0.23 \text{ mW/cm}^2$  two meters above ground level. A 4 bay full wave spaced Shively 6813-4 antenna is proposed which reduces the power density at ground level. Computer program FM Model, developed by the EPA, predicts the maximum power density of  $.00178 \text{ mW/cm}^2$  at a distance of 38 meters from the tower base. This is less than 1% of the maximum permitted  $0.20 \text{ mW/cm}^2$  for general population/uncontrolled exposure.

Figure 1 below shows the output of FM Model for the two FM facilities authorized or proposed at the site. As the graph shows, the maximum density for the two FM stations occur at different distances from the tower base. Also, the contribution from each FM station is minimal at the tower base where the power density from AM station is the greatest.

As required for all broadcast facilities by §1.1307(b), the subject facility complies with the maximum exposure limits in 47 C.F.R. §1.1310 TABLE 1.—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE) both part (A) Limits for Occupational/Controlled Exposures and part (B) Limits for General Population/Uncontrolled Exposure. The evaluation was conducted using the procedures in OET Bulletin 65, Edition 97-01, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, and the computer program FM Model developed by the Environmental Protection Administration.

Figure 1: FM Model output for W253AX and WZUP

