

**Exhibit B-16A**  
**WAAF-FM Channel 297B Worcester, MA**  
**Statement re WICN-FM Antenna**

The proposed WAAF antenna will be mounted on the same tower as non-commercial/educational FM station WICN, licensed to Worcester, Massachusetts. The WAAF antenna will be mounted at a higher position on the tower than the WICN antenna, and the WAAF transmission lines will therefore pass through the aperture of the WICN directional antenna.

Entercom plans to install two runs of 1 5/8 inch transmission lines to its proposed antenna, i.e. one run to each of the two levels which comprise the proposed panel antenna.

Dielectric Communications, the manufacturer of the WICN directional antenna, was contacted and asked to conduct an azimuthal pattern study to determine whether the addition of two 1 5/8 inch transmission lines in the WICN antenna aperture would have any adverse effect on the WICN directional pattern. The results of that study are summarized in the attached Dielectric "Pattern Certification". Dielectric concludes that "The addition of two 1 5/8 transmission lines on the tower in the aperture of the antenna will have no effect on the directional azimuth pattern of the WICN-FM antenna which is presently in operation."



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## **PATTERN CERTIFICATION**

### **Introduction**

Dielectric was approached by Hatfield and Dawson, Consultant Electrical Engineers and asked to conduct an azimuthal pattern study. This study was to be in relation to a Dielectric manufactured antenna, Model number DCR-H2, which is currently being utilized by WICN-FM. The sole purpose of this study was to demonstrate that the introduction of two 1 5/8 transmission lines fixed to the tower in the aperture of an antenna would have no adverse effect on the WICN-FM Directional Pattern

### **Method of Measurement**

The azimuth pattern was measured in the following manner.

A single model of the DCRH radiator at a scale of 4.4:1 was mounted on a similarly scaled model of the Tower according to information provided us by the station. The antenna mounting configuration was set up in accordance with Dielectric Document C72377 which is the installation drawing for the original antenna erected in 1990. The antenna under test, all parasitics, all known tower appurtenances, and the tower section were rotated through 360 degrees while receiving a signal at the appropriate frequency from a linear cavity-backed source antenna which was rotated as required to excite either vertically or horizontally polarized fields.

The two antennas were mounted at identical elevations and at opposite ends of an anechoic chamber. Reflections and noise were absorbed by RF absorbers surrounding the antenna under test. A HP 8656 Generator and HP 8508A Voltmeter were used to supply the RF signal to the source antenna at 4.4 times the fundamental FM frequency and to receive the signal intercepted by the antenna under test. The received signal was converted to a relative level (in dB), referenced to the source. This level was stored on a computer acting as the master controller on an IEEE-488 based control bus to which all instruments were connected.

A stepper motor was used to provide computer control of the azimuth angle. The test antenna was rotated through the full 360 degrees of azimuth motion while the computer monitored and stored azimuth angle/received level data pairs. The computer also provided the facilities to plot the information to the monitor and printer.

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## MEASUREMENT RESULTS

Utilizing the measurement method outlined above, a baseline azimuth pattern was run for with the antenna set up as documented from the original pattern study. Two lines, appropriately scaled to represent the proposed 1 5/8 transmission lines, were fixed to various places on the tower structure. These various positions included, but were not limited to the tower legs adjacent to that on which the antenna was mounted and the mounting bracketry upon which the other transmission lines pass through the aperture of the antenna. In all instances no effect was noted on the pattern of the WICN-FM antenna azimuth pattern.

## CONCLUSION

The addition of two 1 5/8 transmission lines on the tower in the aperture of the antenna will have no effect on the directional azimuth pattern of the WICN-FM antenna which is presently in operation.

## STATEMENT OF QUALIFICATIONS

Henry Downs received a B.Sc. in Electrical Engineering from the Heriot Watt University in Scotland in 1981 and a Masters Degree in Microwave engineering in 1985. He has over 15 years of experience in r. f. engineering and broadcast technology and has been employed by Dielectric Communications since early 1998.

Signed by: Henry Downs  
Date: 1/18/00

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