

Engineering Report
Broadcast Facility Report
August 2022
Direct Measurement of WXVA, Winchester VA

Abstract

This application is to return WXVA (AM) FCC ID 4668, Winchester, VA daytime facilities to direct measurement. WXVA is operating under an STA for night operation. WXVA is licensed for night operation at a separate site.

This application is required because of installation of additional 5G wireless equipment on the tower, and the installation of diplexing equipment to combine the signals of WZFC (AM) and WXVA on the WXVA tower.

Operation

The diplexing equipment included modification of the Folded Unipole using a tuned network at the 150 ft elevation point on the tower to cause the 1400 kHz current from WZFC to shunt the its current to the tower at that point. This network slightly improved the WXVA antenna impedance curve. Additionally a series capacitor was installed common to the feed to the diplexer to reduce the voltages within the diplexer.

The measurement point for antenna measurements is at the output of the diplexer, at the input to the WXVA antenna coupler. There are no shunt components between the antenna through the WXVA branch of the combiner to the WXVA antenna current measurement point.

Measurements were taken with a spectrum analyzer and a short vertical whip antenna a few hundred feet from the tower. There were no intermodulation products visible, and all harmonics of the station were more than 80 db below the carriers of the respective stations.

Conclusion

Both WXVA and WZFC are operating according to the technical requirements of their licenses and construction permit.

Engineer's Statement

This is to certify that this report has been prepared by myself. It is correct and accurate of my own knowledge, except were stated otherwise, and where that is so, the information is correct

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to the best of my knowledge and belief.

I further certify that I am a Licensed Professional Engineer in the State of New Jersey, and the Commonwealth of Pennsylvania with a BSEE degree from the Newark College of Engineering of NJIT, and that I am, and have been for over forty years, regularly engaged in the practice of radio engineering with the firm of Radiotechniques Engineering, LLC, with offices at 402 Tenth Avenue, Haddon Heights, NJ. I am a member of the AFCCE, Senior member of the IEEE and SBE and hold a FCC General Radiotelephone Operator License. My qualifications are a matter of record with the FCC.



30 August 2022

Edward A. Schober, PE