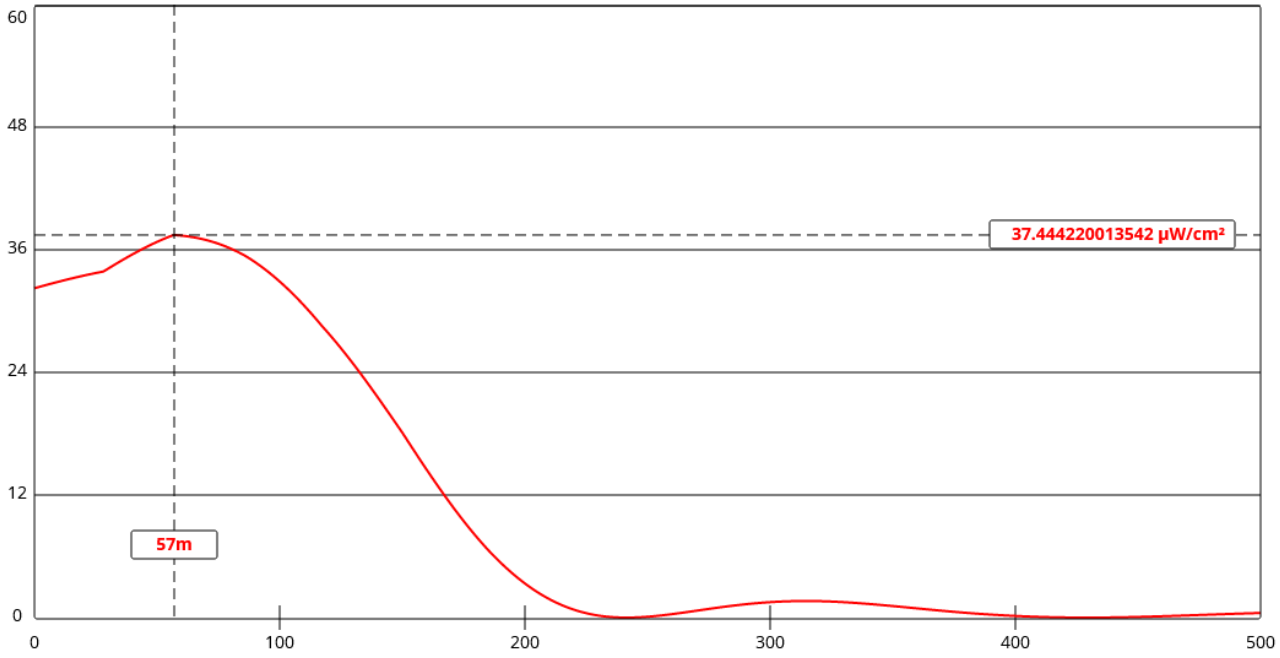
# Nonionizing Radiofrequency Radiation Exposure Exhibit
# University Radio Foundation, Inc.
# July 2019

The Charlotte Transmitter site for University Radio Foundation, Inc. is a 380 meter tower with WFAE, WRFX, WHKY-TV (DTS2), and WTVI (DT). Because there are multiple facilities which are not categorically excluded, an exhibit is provided.

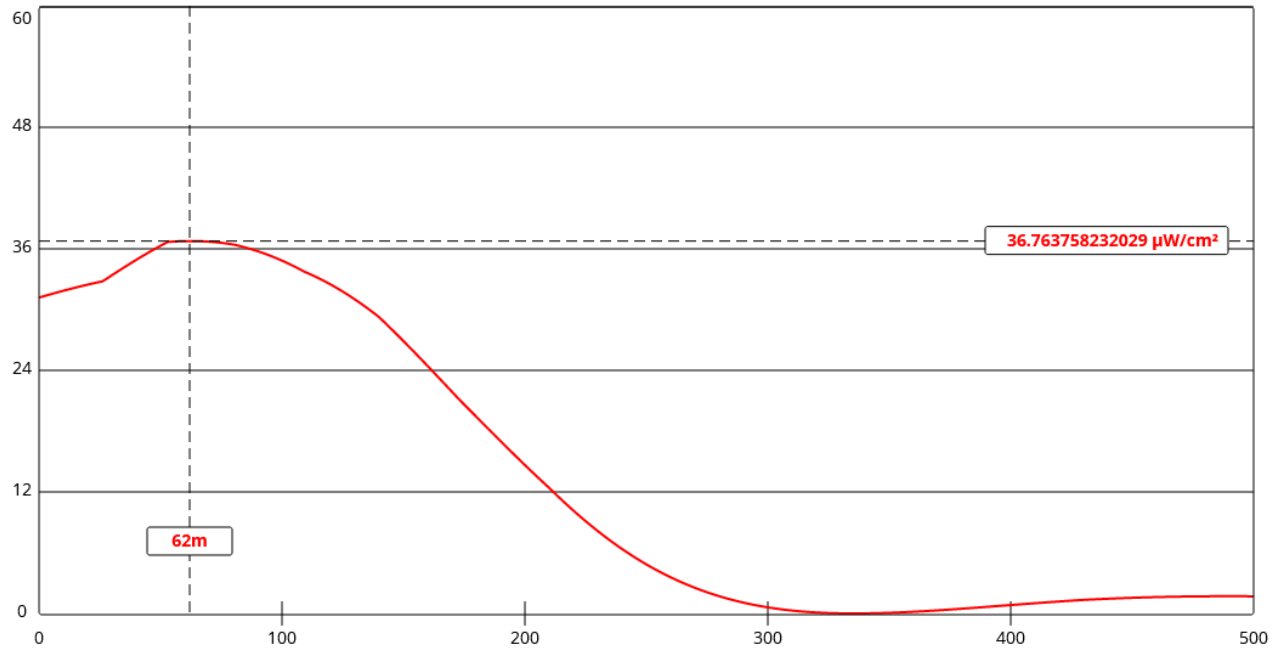
## FM Model Evaluation of WFAE

The facility was analyzed using the program FM Model on the FCC web site. The Dielectric DCBR C3SP-5FM/13H-1-N antenna is a 5 level antenna with elements spaced 1.0 wavelengths with an effective radiate power of 100 kilowatts and a radiation center 326 meters above ground level. This is an EPA Type 1: Ring-and-Stub or "Other" antenna. The program output for 2 meters above ground level is shown below. The predicted power density is 37.4 $\mu W/cm^2$, or 18.7% of the limit for General Population/Uncontrolled Exposure, as shown below.



## FM Model Evaluation of WRFX

The facility was analyzed using the program FM Model on the FCC web site. The Dielectric JADP 3/3/1 antenna is a 3 level antenna with elements spaced 1.0 wavelengths with an effective radiate power of 84 kilowatts and a radiation center 304 meters above ground level. This is an EPA Type 1: Ring-and-Stub or "Other" antenna. The program output for 2 meters above ground level is shown below. The predicted power density is 36.8 μW/cm$^2$, or 18.4% of the limit for General Population/Uncontrolled Exposure, as shown below.



## WHKY-TV (DTS2) Television Evaluation

WHKY-TV (DTS2) is licensed on Channel 40, with 18 kilowatts and a radiation center 152 meters above ground level. The antenna is an ERI ALP16M4ESBR-40 model. The facility is scheduled to transition to channel 14 with 286 kilowatts total ERP at 152 meters above ground level. The antenna is an ERI ALP16M4ESBR-14 model. The transition is scheduled for completion in September 2019. Only the higher power version is studied here. The worst case method in OET-65 was used to calculate the power density at 2 meters above ground level. The result is 22.2 $mW/cm^2$. The maximum predicted level is 7.0% of the Uncontrolled/Public Limit.

## WTVI (DT) Television Evaluation

WTVI (DT) is licensed on Channel 11, with 2.65 kilowatts and a radiation center 348 meters above ground level. The antenna is an Andrew ATW2V1-HSOC model. The worst case method in OET-65 was used to calculate the power density at 2 meters above ground level. The result is 0.74 $\mu W/cm^2$. The maximum predicted level is less than 0.4% of the Uncontrolled/Public Limit, and well below the 5% threshold of responsibility specified in OET-65.

## Summary

The highest contribution from each service is tabulated below.

| Facility | Percent of Uncontrolled/Public Exposure Limit |
|---|---|
| WFAE | 18.7 |
| WRFX | 18.4 |
| WHKY-TV (DTS2) | 7.0 |
| WTVI (DT) | 0.4 |
| Sum | 44.5 |

The total RF exposure is below the limits for Uncontrolled/Public Exposure. The entire site is fenced with signage indicating the nature of the exposure.

## 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 Nonionizing Radiofrequency Radiation Exposure Exhibit, for University Radio Foundation, Inc., 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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