

RADIOFREQUENCY RADIATION ANALYSIS

As required by 47 CFR §73.1690(c), this exhibit is submitted to demonstrate continued compliance with the Commission's radiofrequency radiation guidelines. The instant application specifies an unchanged effective radiated power (ERP) of 100 watts in both the vertical and horizontal polarization planes. The antenna, a Propagation Systems PSIFML-2-.75WS, is a two-bay "crossed vee" antenna with $\frac{3}{4}$ wave vertical spacing between bays. The antenna is side-mounted on fifty-foot (15 meter) lattice tower atop the roof of a building, with a center of radiation 14 meters above roof level (see included elevation sketch). It is presumed that transient workers on the roof of the building will not have received training in radiofrequency radiation safety, and as such, uncontrolled (public) access is presumed. The maximum permissible power density (MPE) for areas of uncontrolled access at FM broadcast frequencies is $200 \mu\text{W}/\text{cm}^2$.

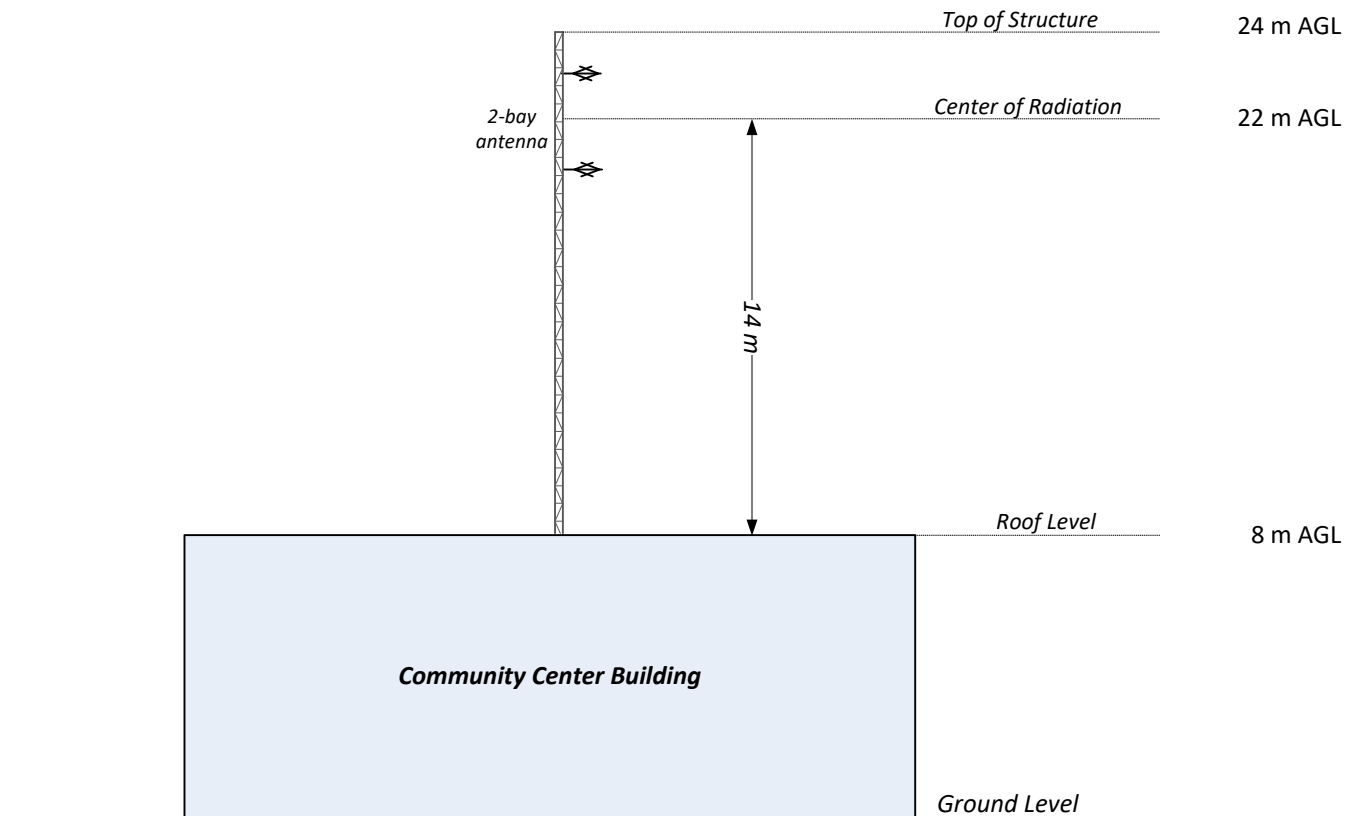
The Commission's online *FM Model* tool was used to predict the exposure level at roof level using the following parameters, all of which are identical to the data presented in the instant application; the results of the *FM Model* are included in the pages that follow.

Channel:	218 (91.5 MHz)
Antenna Type:	EPA Type 2 – Opposed Vee Dipoles
Height (m):	14
ERP-H (W):	100
ERP-V (W):	100
Num of Elements:	2
Bay Spacing (λ)	0.75
Num of Points:	1000

The maximum power density predicted by the model is $2.75 \mu\text{W}/\text{cm}^2$ at a distance of 4.8 meters from the base of the tower. This equates to only 1.38% of the maximum permissible exposure limit. There are no other radiofrequency emitters in proximity to the WDBK antenna. As such, it is presumed that WDBK is in compliance with applicable regulations regarding radiofrequency radiation hazard safety.

The building and antenna structure are existing. The overall height of the structure, both before this antenna replacement and prior to it, is well below the 60.96 meter height permitted without antenna structure registration. The structure likewise clears TOWAIR without registration or an FAA determination. The location is an existing suburban college campus; it is not an environmentally-sensitive area and there are no other adverse environmental impacts caused by the replacement of the WDBK antenna.

**WDBK(FM)
RFR ELEVATION SKETCH**



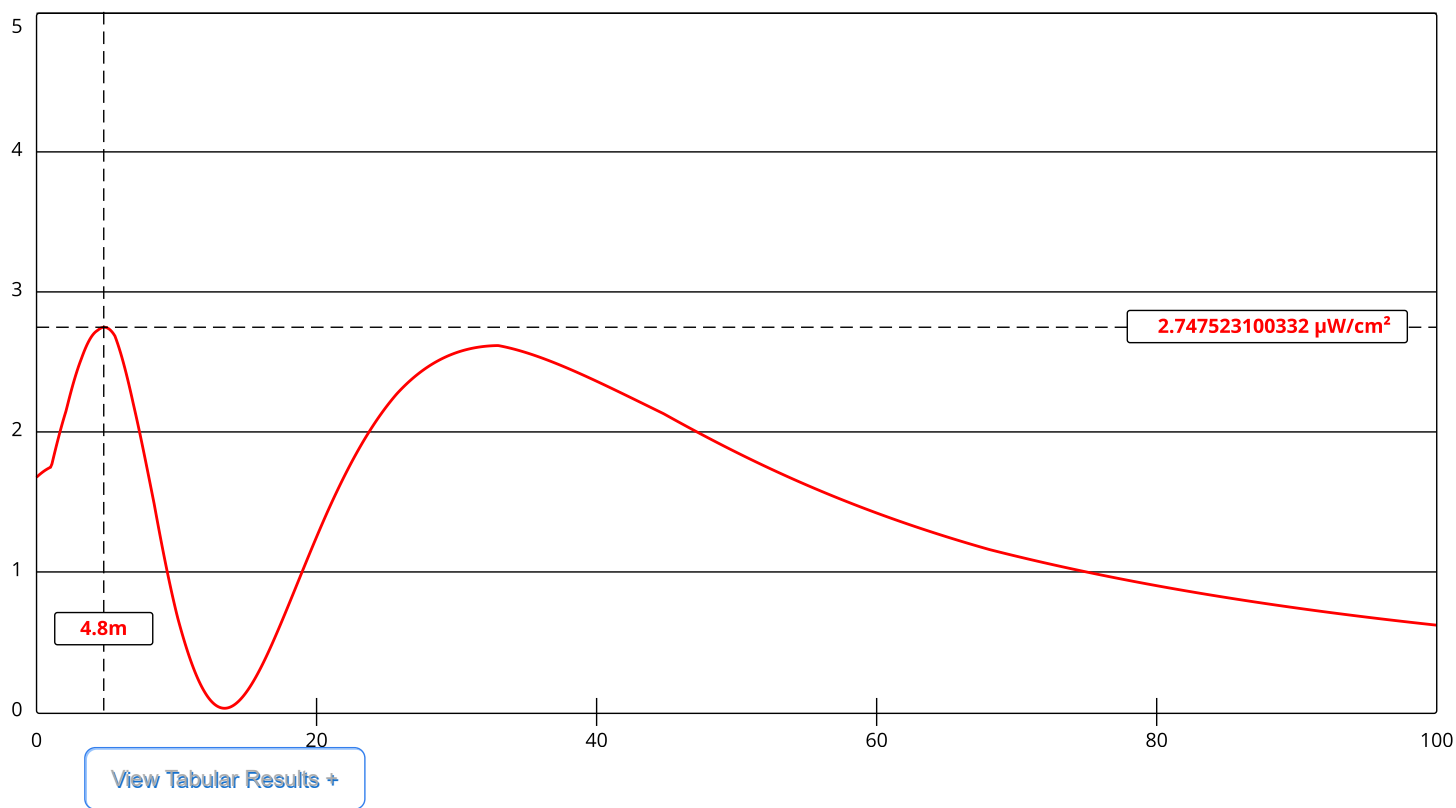
Diagrammatical sketch, not to scale

FM Model

Radio Frequency Safety

[FCC Policy on Human Exposure](#)[RF Safety Highlighted Releases](#)[RF Safety FAQ](#)[FM Model](#)[Body Tissue Dielectric Parameters](#)

The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data [published in 1985 by the EPA](#). [Show More....](#)



Channel Selection	Channel 218 (91.5 MHz) ▼		
Antenna Type +	EPA Type 2: Opposed V Dipole ▼		
Height (m)	14	Distance (m)	100

ERP-H (W)	<input type="text" value="100"/>	ERP-V (W)	<input type="text" value="100"/>
Num of Elements	<input type="text" value="2"/>	λ	<input type="text" value="0.75"/>
Num of Points	<input type="text" value="1000"/>	<input type="button" value="Apply"/>	

Bureau/Office:
[Engineering & Technology](#)

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