

Engineering Statement in support of  
FCC FORM 349  
LONG FORM APPLICATION FOR  
FM TRANSLATOR AUCTION WINDOW 100  
BNPFT 20180129AEJ FID:202245

**Introduction:**

This is an application by BARDSTOWN RADIO TEAM, LLC (the Applicant) for a new translator in auction window 100.

The translator will serve as a fill-in for AM station WBRT, Facility ID 48244. The applicant is the licensee of WBRT.

The proposed site is an existing, unregistered, antenna tower. The antenna will be attached to a new mast installed at the top of the tower. The overall tower height will be increased by 3-meters. The applicant has reasonable assurance of use of the tower and facility.

The proposal will use a Propagation Systems PSIFMT-1 modified by the antenna manufacturer to limit the translator's service contour to within 25-miles of the primary station

This application was prepared using FCC 30-arc-second terrain data.

### Section III-A Engineering Data:

#### Tech Box Data:

1. Channel: 235
2. Primary Station: Facility ID 48244, Callsign WBRT, Bardstown, KY, 1320kHz
3. Delivery Method: Other
4. Antenna Location Coordinates: 37° 33' 05" N (NAD-27)  
85° 17' 21" W
5. Antenna Structure Registration Number: NA
6. Antenna Location Site Elevation: 245 meters AMSL
7. Overall Tower Height: 48 meters AGL
8. Height of Radiation Center: 47 meters AGL (H) 47 meters AGL(V)
9. Effective Radiated Power: 0.250 kW(H) 0.250 kW (V)
10. Transmitting Antenna: directional PSI PSIFMT-1.
11. Booster or Fill-in within protected contour: Yes.
12. Interference: Yes.
  - a) Contour Overlap Requirements: Checked.
  - b) TV Channel 6 Protection: Not Checked.
13. Unattended Operation: Yes
14. Multiple Translators: Yes
15. NEPA, Yes.
  - a) Operation of this facility will not have a significant environmental impact. This proposal is a collocation on an existing tower. The height of the tower is increased by this proposal.
  - b) The Applicant will cooperate with all site users, managers and owners with regard to the cessation of operation or the reduction of operating power, whenever it is necessary to comply with the FCC Regulations and Guidelines on Human Exposure to Non-Ionizing RF Radiation.
  - c) The proposed site is in compliance with permissible exposure requirements based on calculations using OET-65, see the RFR Exhibit. Based on this information the proposed facility is in compliance with 47 C.F.R. Section 1.1306 with regards to radio-frequency electromagnetic exposure.

## Antenna Pattern (Azimuth)

**RFSoftware, Inc.**

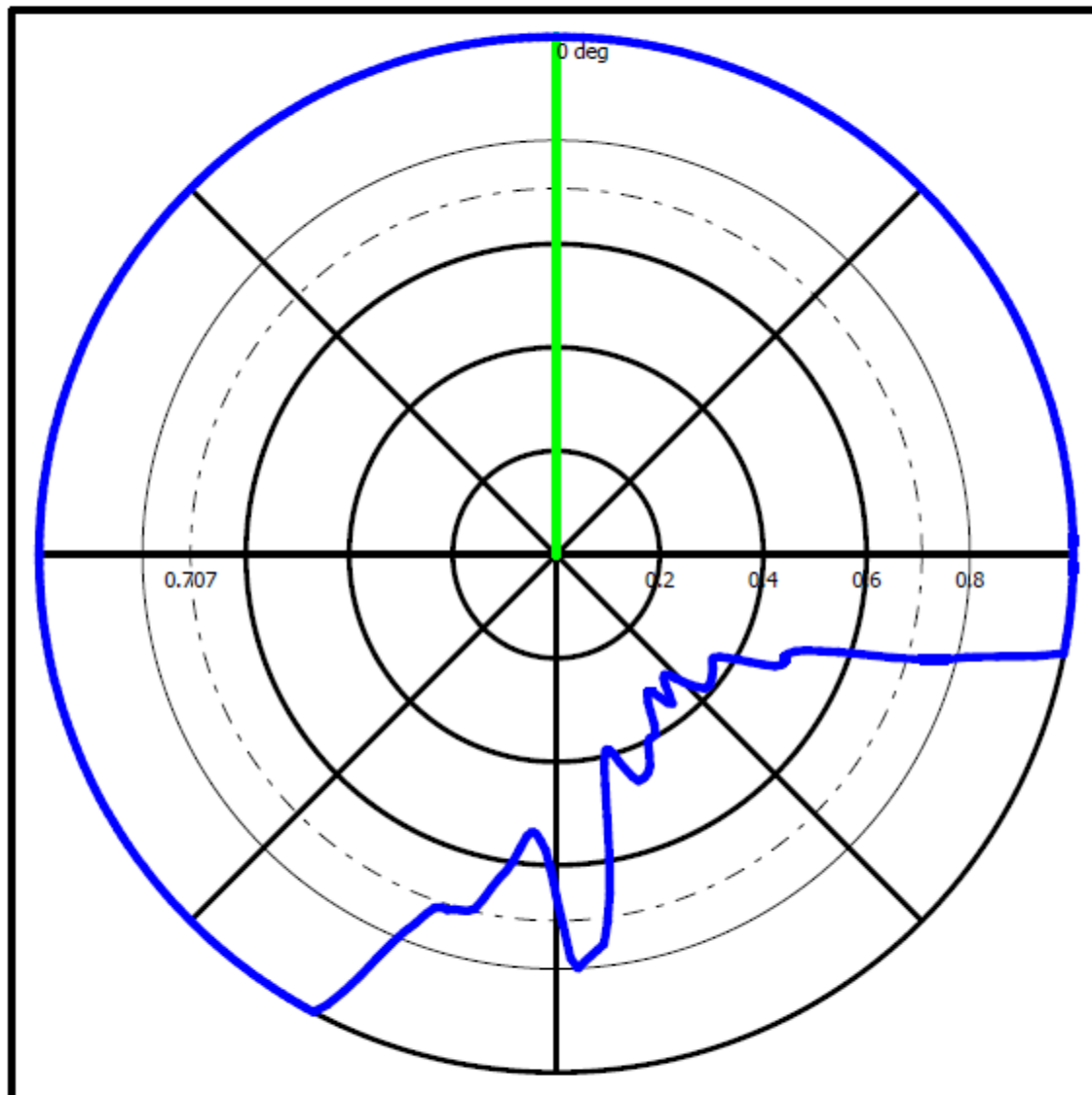
Job: WBRT\_Xlator\_23Jan2018.fmj

Description: PSIFMT-1 Custom

rfInvestigator Version 3.8.16

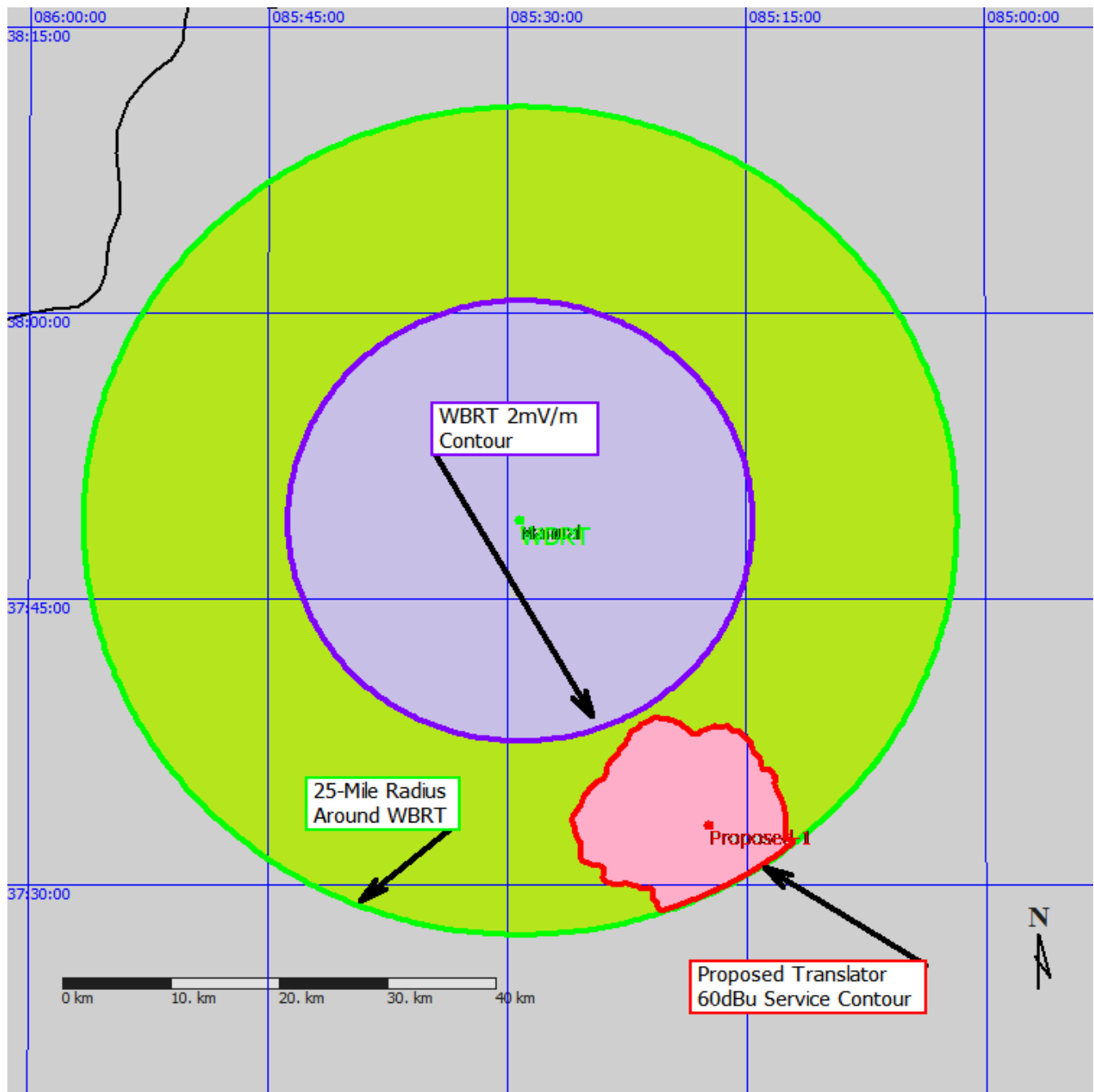
Pattern RMS = 0.894

Date: 1/24/2018 6:29:28 PM



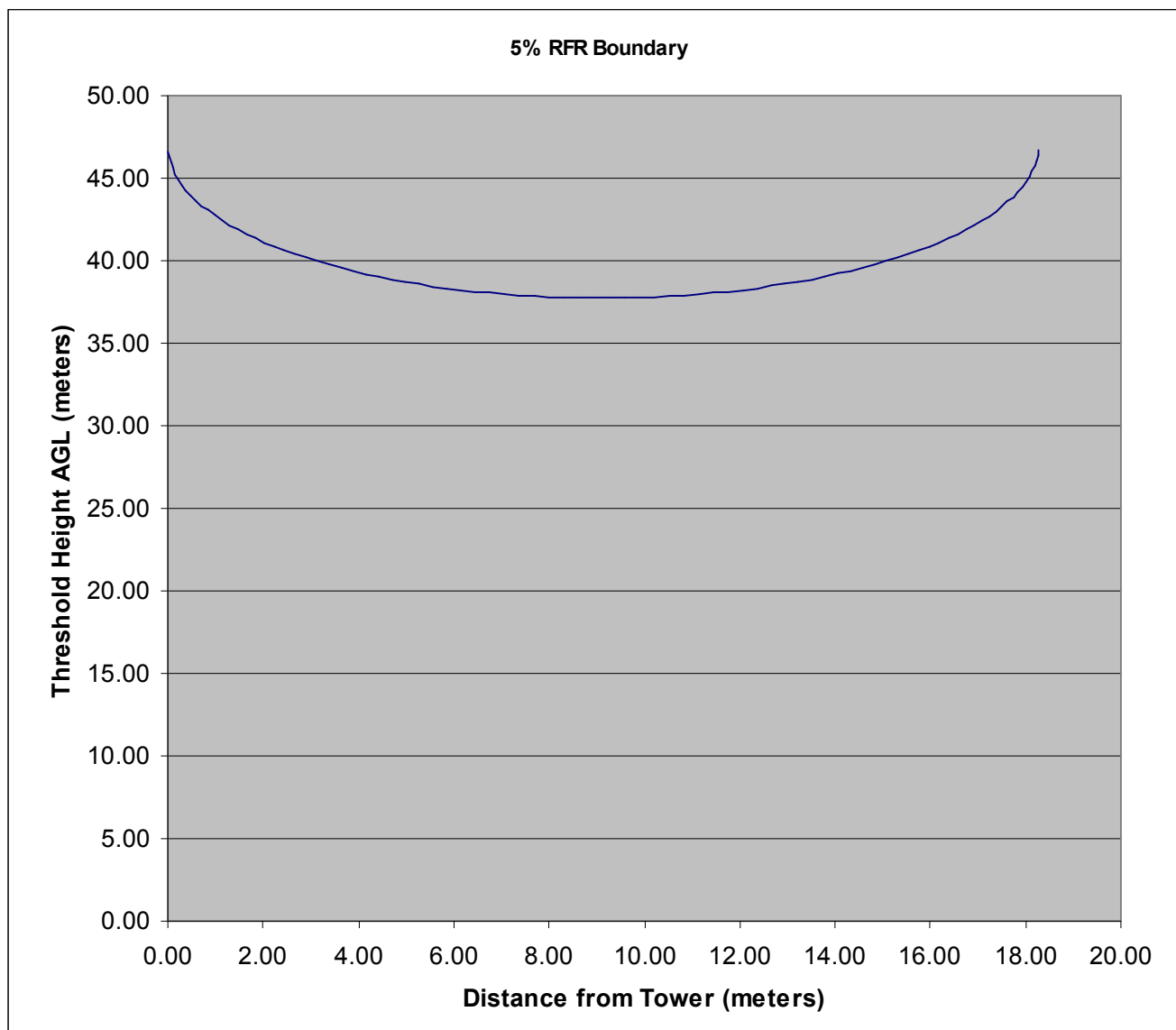
Degree	Field	Degree	Field	Degree	Field	Degree	Field	Degree	Field	Degree	Field
000	1.000	060	1.000	120	0.406	180	0.659	240	1.000	300	1.000
010	1.000	070	1.000	130	0.389	190	0.634	250	1.000	310	1.000
020	1.000	080	1.000	140	0.327	200	0.739	260	1.000	320	1.000
030	1.000	090	1.000	150	0.379	210	1.000	270	1.000	330	1.000
040	1.000	100	1.000	160	0.465	220	1.000	280	1.000	340	1.000
050	1.000	110	0.545	170	0.592	230	1.000	290	1.000	350	1.000

## Fill-In Exhibit



*Illustration 1: The proposed service contour is contained within 25 miles of the Primary station.*

## RFR Exhibit



*Illustration 2: 5% Exposure Boundary.*

Assuming an isotropic radiator the rf exposure level 18.3-meters from the antenna will be 49.9uW/cm<sup>2</sup>. This level is less than 5% of the maximum exposure level. Since the antenna is mounted 47-meters AGL no point below 28.7-meters AGL will experience an increase in rf levels of 5% or more due to this proposal.

Based on manufacturer antenna pattern information and procedures outlined in OET-65 the 0.05mW/cm<sup>2</sup> boundary (5% of the maximum permitted exposure level) is more than 37-meters above the ground.