

Comprehensive Technical Statement

Southern New Mexico Radio Foundation

Minor Modification to FM Translator

K242CB, FCC Facility ID # 156993, Alamogordo, NM

International Border Area - Mexico - Conditional Grant Requested

Introduction

The tower used by the subject translator has collapsed. The owner has acquired an existing 100' tower and proposes to relocate the translator to that tower. The translator is operating from the proposed tower at reduced power under STA-20171206ACP.

The following changes are proposed:

- Transmitter location
- Antenna height

This translator was not a participant in any of the 2016-2017 AM Improvement Cross-service translator windows. This is an independent minor change application.

Data Sources

Distances were calculated using the FCC method defined in 73.208 of the Commission's Rules.

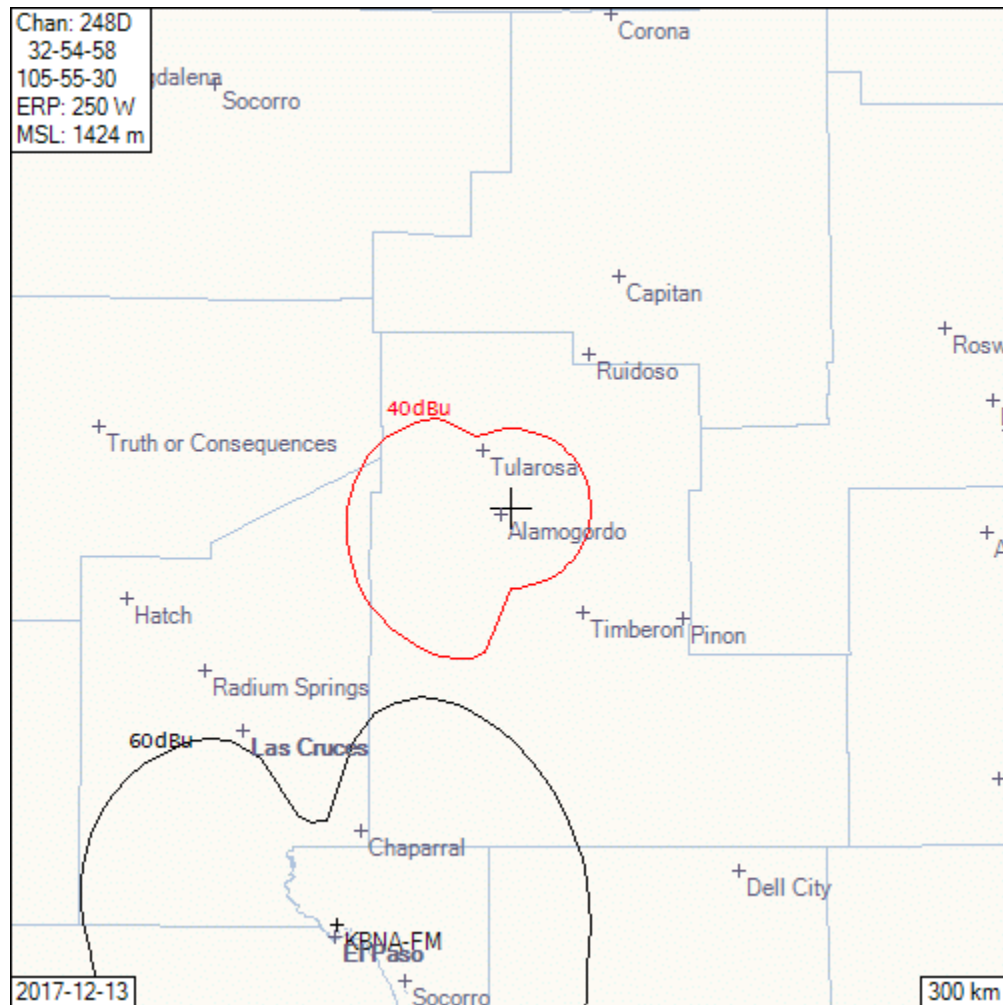
All contours shown in this report were generated using antenna center above mean sea level, NAD-27 coordinates, and the FCC online HAAT calculator, which uses 30-second terrain data.

Dates shown on the maps represent the last change date in the CDBS downloads in use at the time this statement was prepared.

Detailed Interference Study

The following collection of maps and the narrative accompanying each show that no prohibited overlap will occur between the proposed facility and any potentially conflicting facility or proposal. Interfering f(50,10) contours are shown as red polygons, and protected f(50,50) contours are shown as black polygons.

Map 1 – Co-channel Outbound Interference



There is no overlap of the interfering contour with the protected contour of any station or proposal. The nearest potential conflict is KBNA in El Paso, TX. The contours miss by more than 10 km, and clearly do not overlap.

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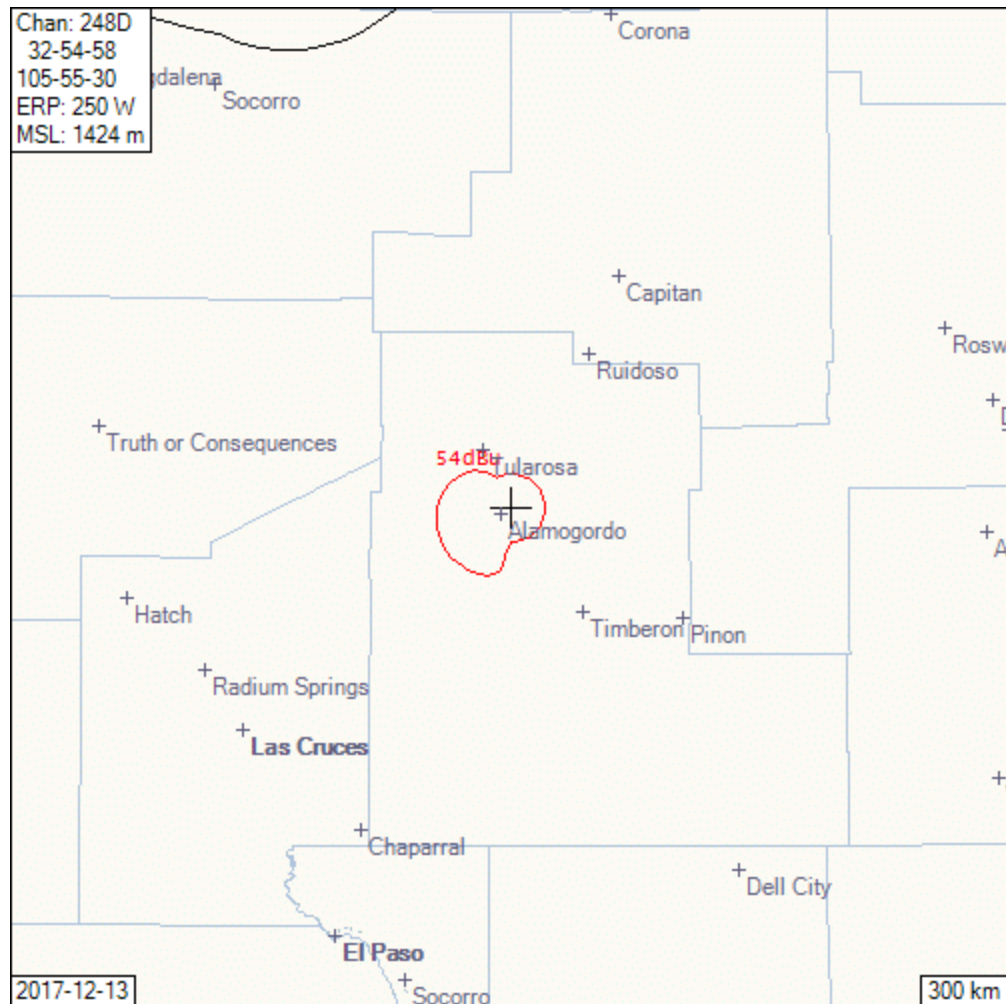
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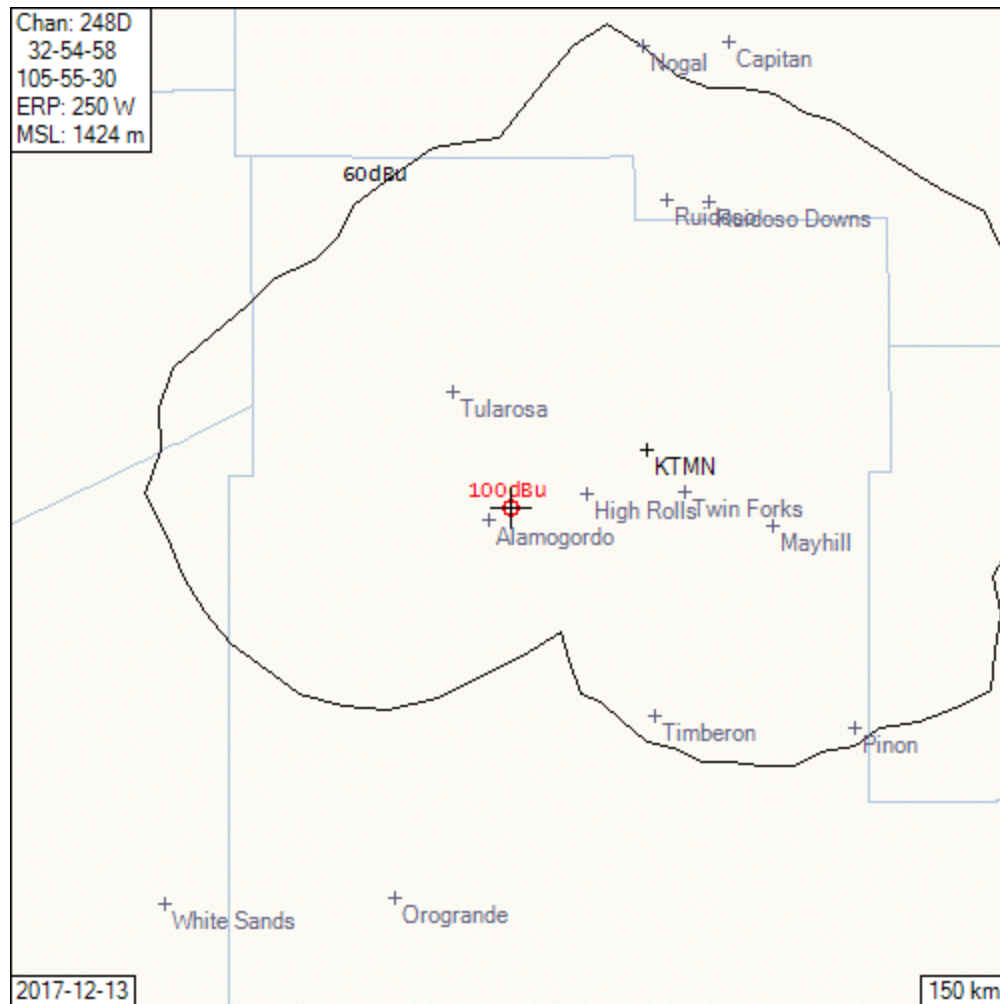
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Map 2 – First Adjacent Outbound Interference



There is no overlap of the interfering contour with the protected contour of any station or proposal.

Map 3 – Second/Third Adjacent Outbound Interference Detail



The proposed site is located within the protected contour of KTMN, FCC Facility ID # 191499. A detailed interference showing is provided below.

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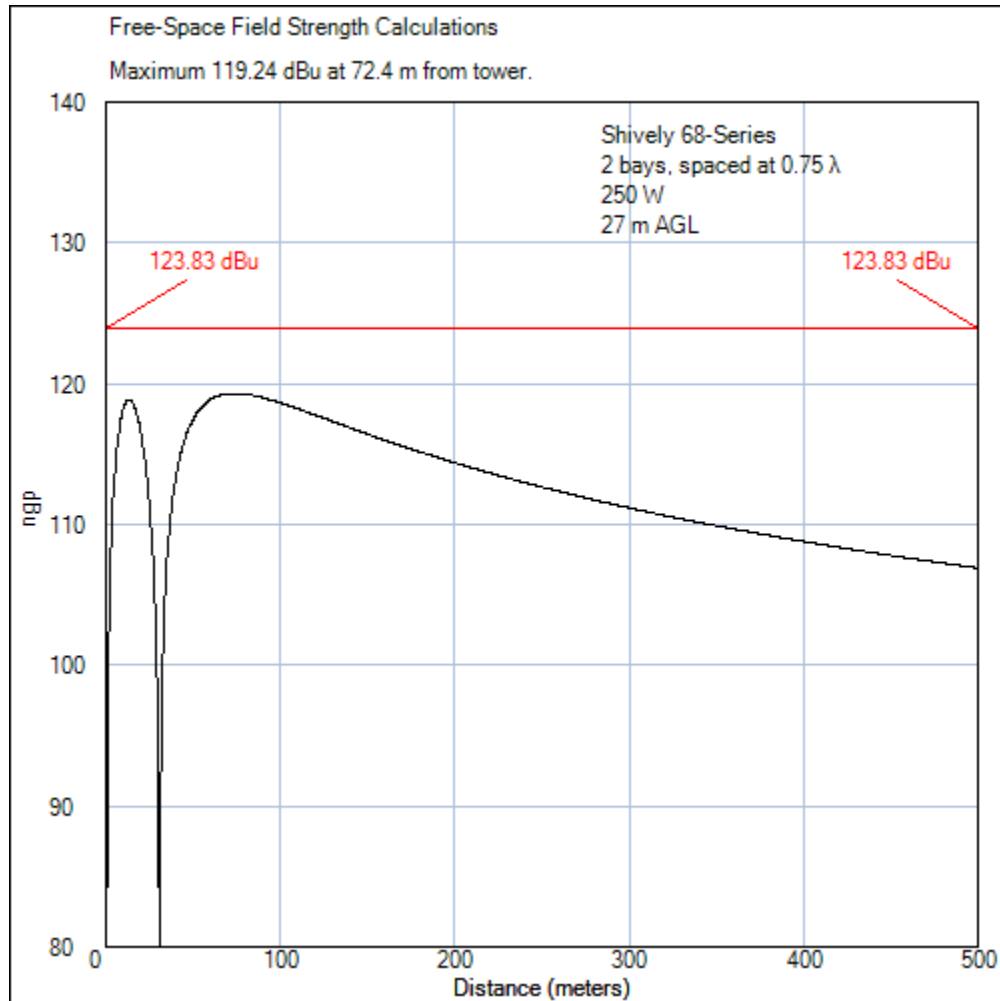
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Second Adjacent Channel Interference Showing: KTMN

The KTMN signal strength at the site is 83.83 dBu, and the interfering signal level is 123.83 dBu free-space.

The proposed antenna is an OMB Model MP-2, with two bays spaced at 0.75λ .



The above plot shows the signal strength on the ground in the vicinity of the site, with a red horizontal line indicating the 123.83 dBu limit.

The maximum interfering signal is 119.24, more than 4 dB below the limit.

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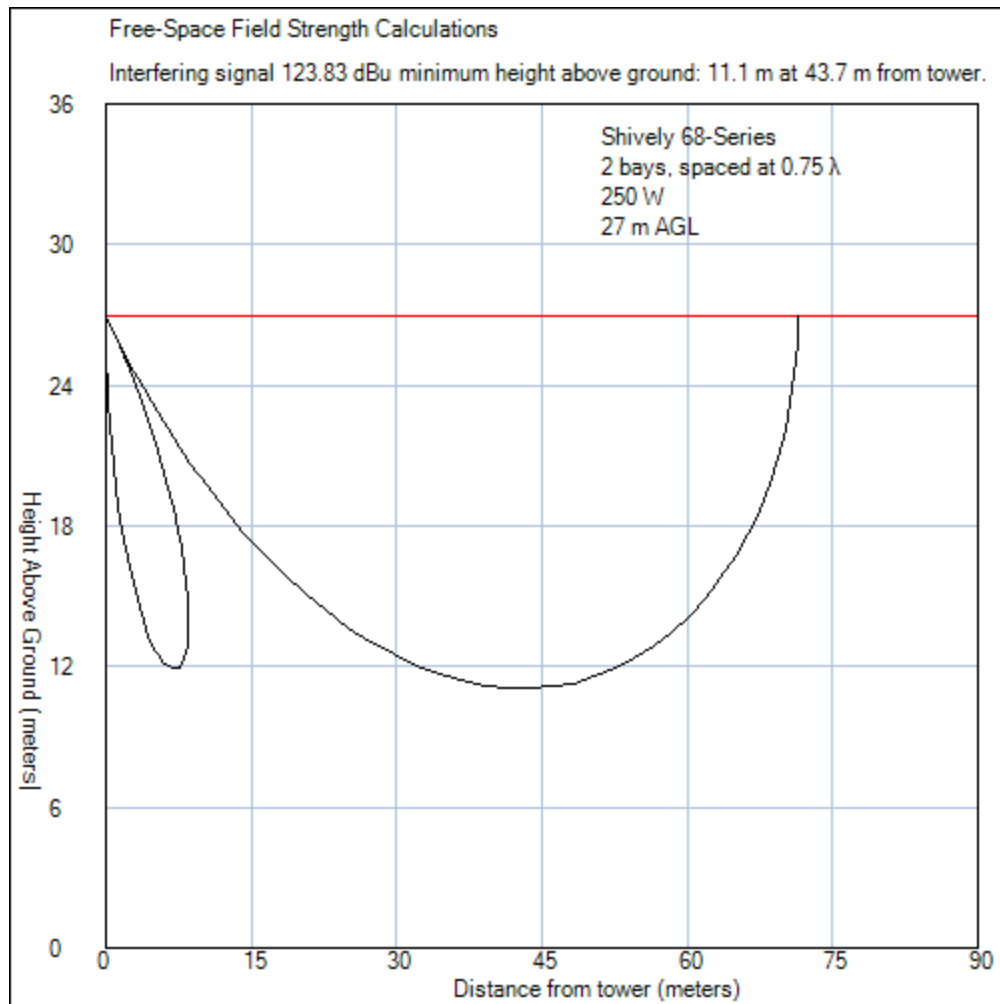
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Looked another way, the interfering signal is at 11 m above the ground at any point:



There are no buildings of more than 7 m height in the immediate area. Therefore, the interfering signal will not reach any populated area, satisfying the requirements of §74.1204(d).

IF Separation requirements

There are no IF separation requirements with respect to channel 248.

Channel 6 Interference

The proposed facility is not on a channel that is implicated in channel 6 interference.

Quiet Zones

The proposed site is outside the National Radio Quiet Zone (National Radio Astronomy Observatory Notification Area) in West Virginia.

The proposed site is outside the Arecibo Observatory notification area in Puerto Rico.

The proposed site is not within a 100 km extension of the Table Mountain Radio Receiving Zone in Colorado.

Protected Monitoring Stations

The nearest Protected Monitoring Station is 384 km distant, in Douglas, AZ. This is well beyond any potential 80 dBu contour.

International

The FM Agreements with Canada and Mexico require evaluation and potential coordination of any proposal within 320 km of the border.

The distance to the nearest point along the US/Canada border is 1,787 km. Coordination with Canada is not required.

The distance to the nearest point along the US/Mexico border is **137.1 km** from the proposed site. Evaluation with respect to Mexican facilities and proposals is required.

§74.1235(d)(2) provides guidance on the matter. The proposed 60 dBu f(50,50) contour must fall **no less than 116.3 km** from the border.

The maximum extent of the proposed 60 dBu f(50,50) contour is **15.7 km**.

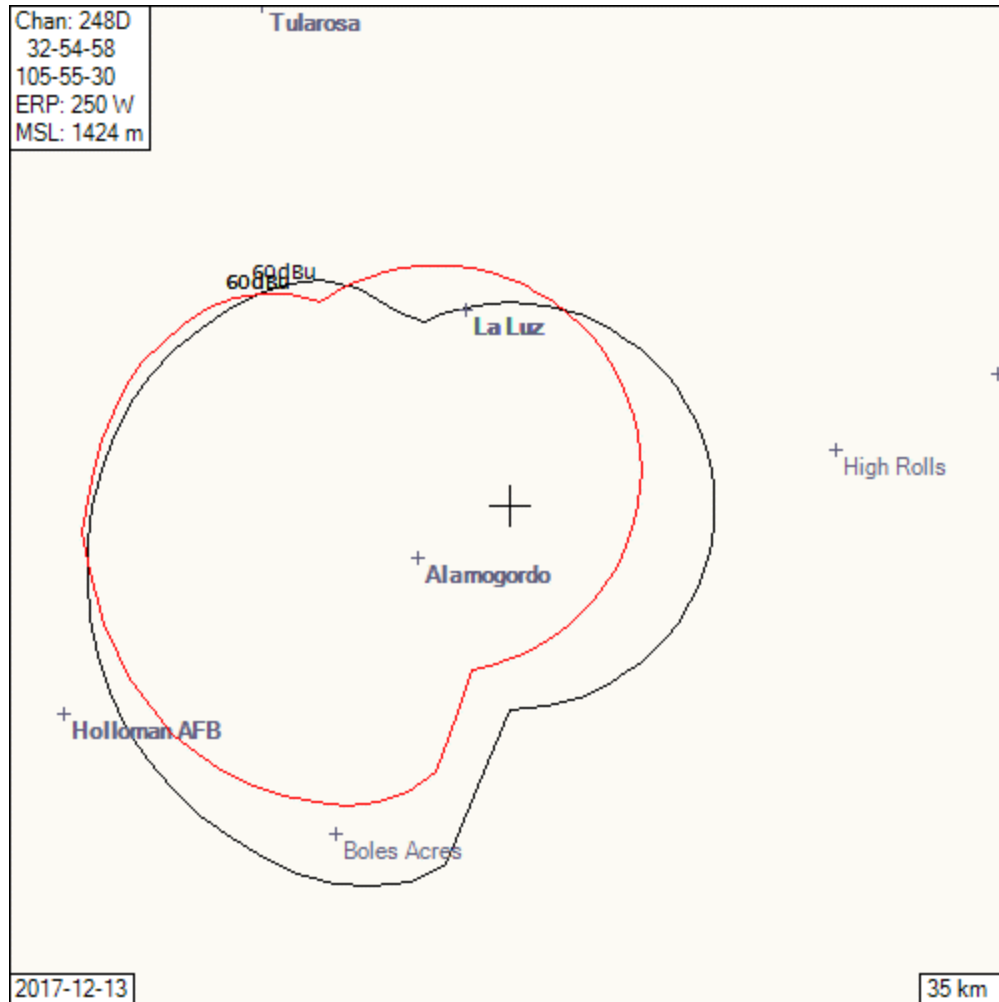
The nearest the 60 dBu contour can possibly come to the border is:

$$137.1 - 15.7 = 121.4 \text{ km}$$

The requirement is therefore met, and the proposal should be acceptable.

Should it be determined that Mexican concurrence would be required, the applicant hereby requests a grant conditioned on such approval.

Minor Change



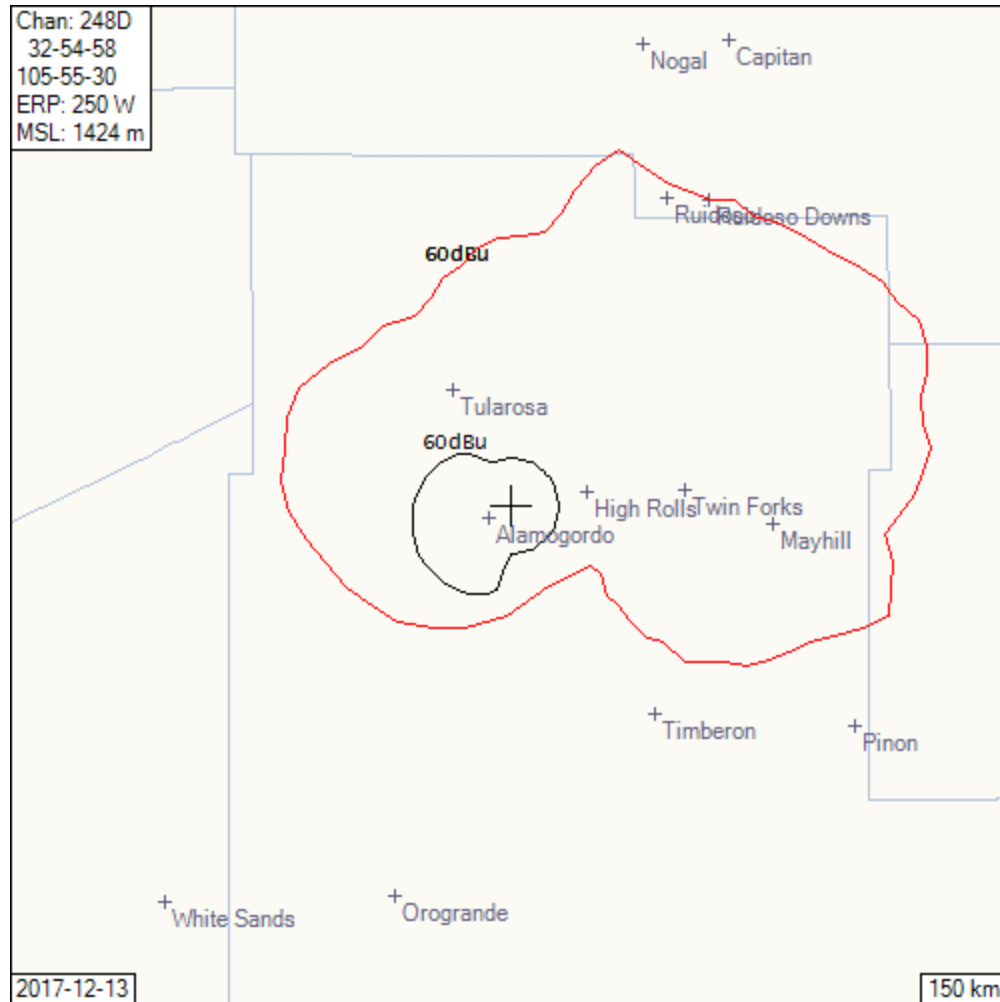
The proposed 60 dBu f(50,50) contour is drawn as a black polygon.

The licensed 60 dBu f(50,50) contour is drawn as a red polygon.

No channel change is proposed.

The application is therefore for a minor change.

Fill-In Translator



The primary station is KHII, FCC Facility ID # 89990, licensed to Cloudcroft, NM.

The proposed 60 dBu f(50,50) contour is drawn as a black polygon.

The KHII 60 dBu f(50,50) contour is drawn as a red polygon.

The proposed contour falls entirely within the KHII 60 dBu f(50,50) contour.

The proposal is for fill-in service.

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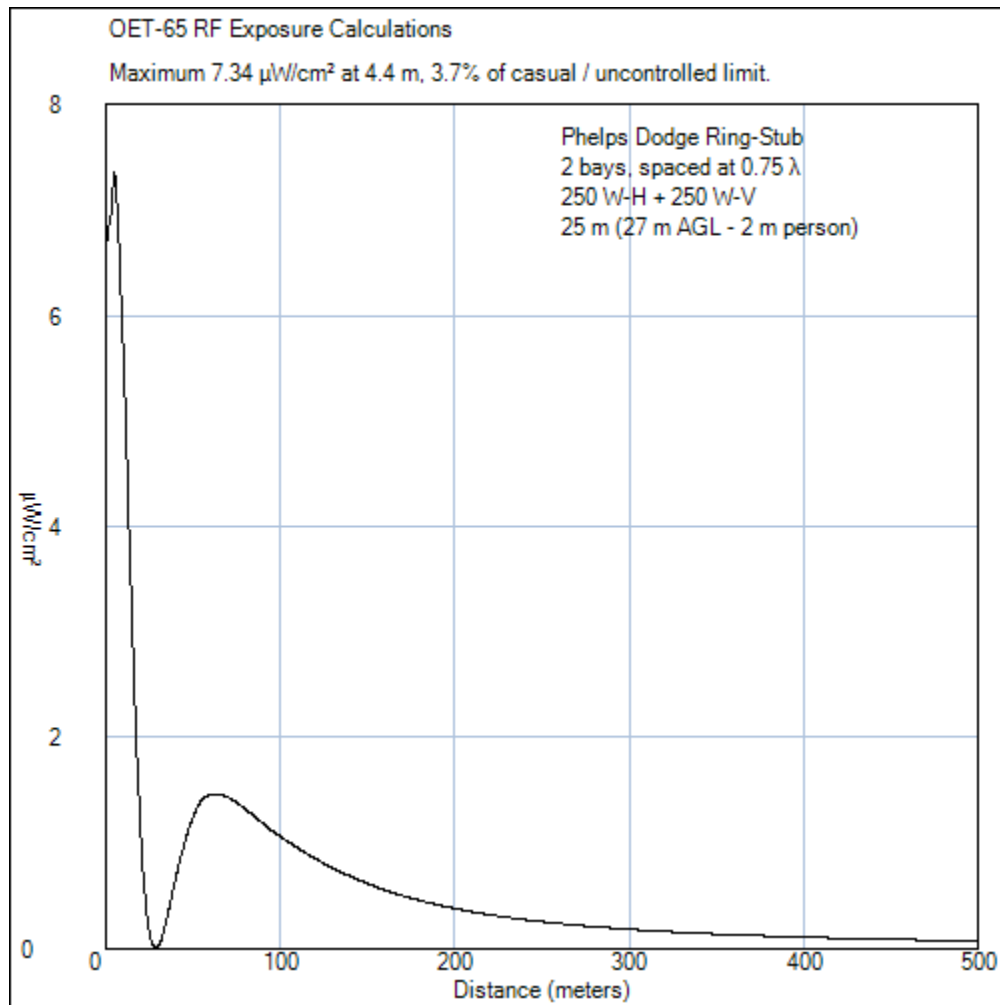
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Environmental

The proposed site is an existing 30 m tower. No construction, excavation, or increase to the height of the tower is proposed.

The proposed effective radiated power is 250 W-H + 250 W-V. The two-bay OMB model MP antenna will be mounted 27 m above ground level. Assuming the worst-case OET Type 1 antenna model, the OET-65 algorithm returns a maximum exposure of less than 4% of the limit for casual / uncontrolled exposure:



Appropriate access controls and safety signage will be provided. The applicant agrees to reduce power or shut down in order to protect workers on the tower.

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Form 349 Tech Box Data

Channel	248
Primary Station	Facility ID 89990 KHII (FM) Cloudcroft, NM
Delivery Method	Other (Terrestrial)
Coordinates (NAD-27)	32 54 58 N Lat 105 55 30 W Lon
Coordinates (NAD-83)	32 54 58.2 N Lat 105 55 31.9 W Lon
ASR	none, not required
Site Elevation AMSL	1397 m
Overall Tower Height AGL	30 m
Radiation Center AGL	27 m
Effective Radiated Power	250 W-H + 250 W-V
Antenna type	Non-Directional
Manufacturer / Model	OMB MP2-SS-(0.75)

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