

February 2014
FM Translator K252FM
Gallup, New Mexico Channel 252D
Allocation Study

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. There are no stations close enough to require detailed allocation study maps.

The attached spacing study demonstrates compliance with §73.207 of the Commission's Rules regarding spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

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Channel: 252A 98.3 MHz Page 1

Latitude: 35 36 22

Longitude: 108 41 26

Safety Zone: 50 km

Job Title: K252FM GALLUP

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
K249EM CP	WINDOW ROCK, ETC AZ	BNPFT-30327AKC	249D 97.7	0.010 298.0	35-40-16 109-12-28	278.9	47.40 0.00	0 TRANS
K250AI LIC	THOREAU NM	BLFT-70425AAH	250D 97.9	0.013 503.0	35-27-59 108-14-25	110.7	43.68 0.00	0 TRANS
ADD	ST. JOHNS AZ	RM-bg-144*	251C 98.1	0.000 0.0	34-15-58 109-35-11	209.0	169.70 4.70	165 CLOSE
K252ER LIC	CHINLE AZ	BLFT-10729AAF	252D 98.3	0.010 731.0	36-21-07 109-49-54	309.3	132.06 0.00	0 TRANS
K252ER CP	CHINLE AZ	BPFT-30530AGU	252D 98.3	0.010 753.0	36-21-08 109-49-54	309.3	132.08 0.00	0 TRANS
K252FM CP	GALLUP SOUTH NM	BNPFT-30930BLZ	252D 98.3	0.250 503.0	35-36-22 108-41-26	0.0	0.00 0.00	0 TRANS
KABG LIC	LOS ALAMOS NM	BMLH-31230ABO	253C 98.5	100.000 581.0	35-46-49 106-31-37	83.7	196.79 31.79	165 CLEAR
K254CF CP	WINDOW ROCK AZ	BNPFT-30829ACB	254D 98.7	0.041 0.0	35-33-33 109-06-21	262.2	38.00 0.00	0 TRANS

===== END OF FM SPACING STUDY FOR CHANNEL 252 =====

February 2014
FM Translator K252FM
Gallup, New Mexico Channel 252D
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 252D (98.3 MHz) with an effective radiated power of 250 watts. Operation is proposed with an antenna to be mounted on an existing tower on Gibson Peak with FCC Antenna Structure Registration Number 1264427.

RF Exposure Calculations

OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . . For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed operation will produce less than 5% of the applicable exposure limit for both controlled and uncontrolled environments. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\mu W / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system have been made assuming that the antenna will radiate 100% power straight down to a point 2 meters above ground at the base of the tower (66 meters below the antenna). Under this worst-case assumption, the

highest calculated ground level power density from the proposed translator alone occurs at the base of the antenna support structure. At this point the power density is calculated to be $3.8 \mu\text{W}/\text{cm}^2$, which is 0.4% of $1000 \mu\text{W}/\text{cm}^2$ (the FCC standard for controlled environments) and 1.9% of $200 \mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency exposure in excess of FCC guidelines.