

**January 2022
KVRQ(FM) Channel 227C3
Texico, New Mexico
Allocation Study**

Background

The instant application proposes a “one step” upgrade of KVRQ from Channel 227A to Channel 227C3, with a change of community of license from Muleshoe, Texas to Texico, New Mexico.

Spacing Study

A single allotment and transmitter site is proposed. The attached spacing study shows that the proposed operation meets the co-channel and adjacent channel spacing requirements for Class C3 stations as prescribed in §73.207 of the Commission's Rules. The spacing study also demonstrates that this proposal is mutually-exclusive with the licensed KVRQ facility at Muleshoe.

The proposed Channel 227C3 allotment site is located 16.8 kilometers from the far side of Texico. The standard 70 dBu contour distance for a Class C3 facility is 23.2 km. Therefore the proposed allotment will provide 70 dBu service to 100% of Texico.

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SEARCH PARAMETERS FM Database Date: 20211230
 Channel: 227C3 93.3 MHz Page 1
 Latitude: 34 26 23.0 (NAD83)
 Longitude: 103 12 46.0
 Safety Zone: 32 km
 Job Title: KVRQ 227C3 TEXICO

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KQIZ-FM LIC	AMARILLO TX	BLH-19841214KT	226C1 93.1	100.000 213.0	35 17 33.1 101 50 49.6	52.3	156.67 12.67	144 CLEAR
K227BJ LIC	PLAINVIEW TX	BLFT-20140508ABP	227D 93.3	0.099 0.0	34 13 16.3 101 41 35.6	99.4	141.93 0.00	0 TRANS
KVRQ LIC	MULESHOE TX	BLH-20190212AAI	227A 93.3	1.300 39.0	34 18 57.3 102 45 22.8	108.1	44.17 -97.83	142 SHORT
NEW APP	LOCKNEY TX	0000157941	227C3 93.3	12.000 62.0	34 7 32.0 101 26 58.2	101.7 SS	166.06 13.06	153 CLEAR
K228DQ LIC	PORTALES NM	BLFT-19970324TA	228D 93.5	0.174 0.0	DA 34 11 33.3 103 16 46.8	192.6	28.10 0.00	0 TRANS
KGMG-LP LIC	CLOVIS NM	BLL-20150819ADH	230L1 93.9	0.100 20.3	34 26 0.2 103 11 16.8	107.2	2.38 0.00	0 LPFM

===== END OF FM SPACING STUDY FOR CHANNEL 227 =====

January 2022
KVRQ(FM) Channel 227C3
Texico, New Mexico
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 227C3 (93.3 MHz) with an effective radiated power of 6.1 kilowatts. Operation is proposed with a 4-element horizontally-polarized omni-directional antenna. The antenna will be side-mounted on an existing tower with FCC Antenna Registration Number 1004619.

RF Exposure Calculations

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.

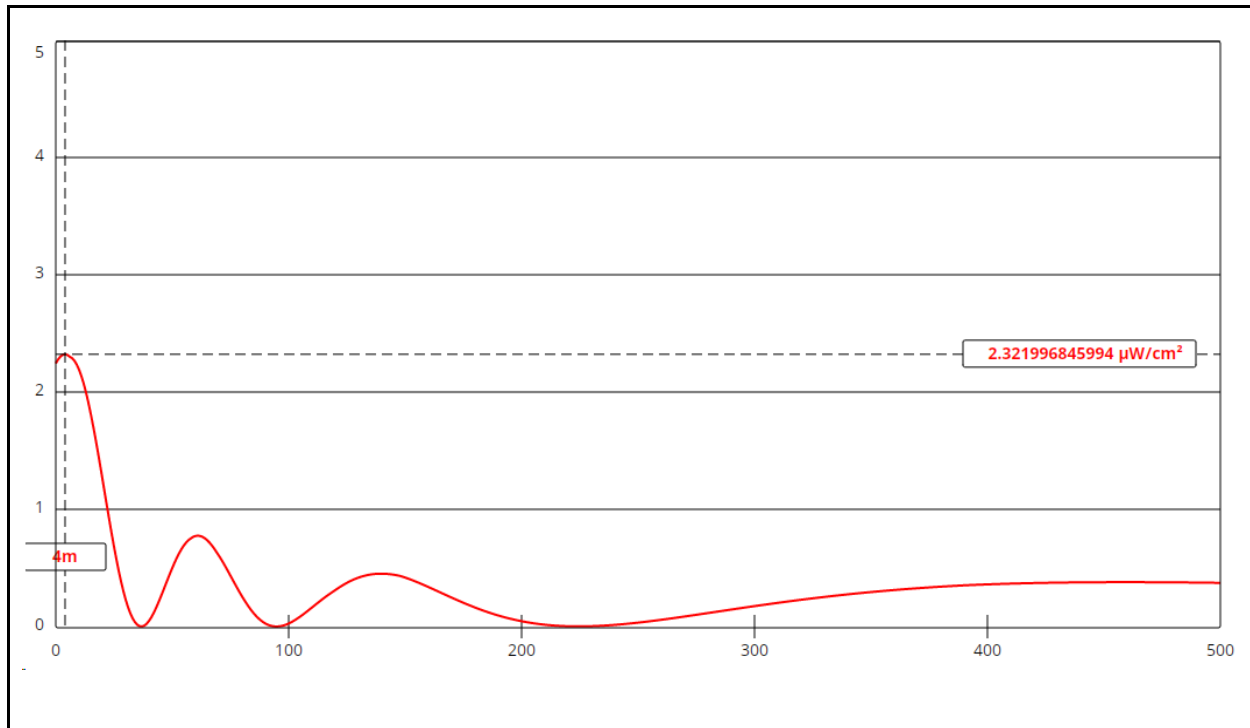
D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 1 element pattern, which is the element pattern for the adopted by the FCC for FMModel calculations, for the Bext model TFLHO-4 antenna proposed for use. The highest calculated ground level power density occurs at a distance of 4 meters from the base of the antenna support structure. At this point the power density is calculated to be 2.3 $\mu W/cm^2$, which is 1.15% of 200 $\mu W/cm^2$ (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 of KVRQ alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307 of the Commission's Rules exempts applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicant's 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.



Ground-Level RF Exposure

OET FMModel

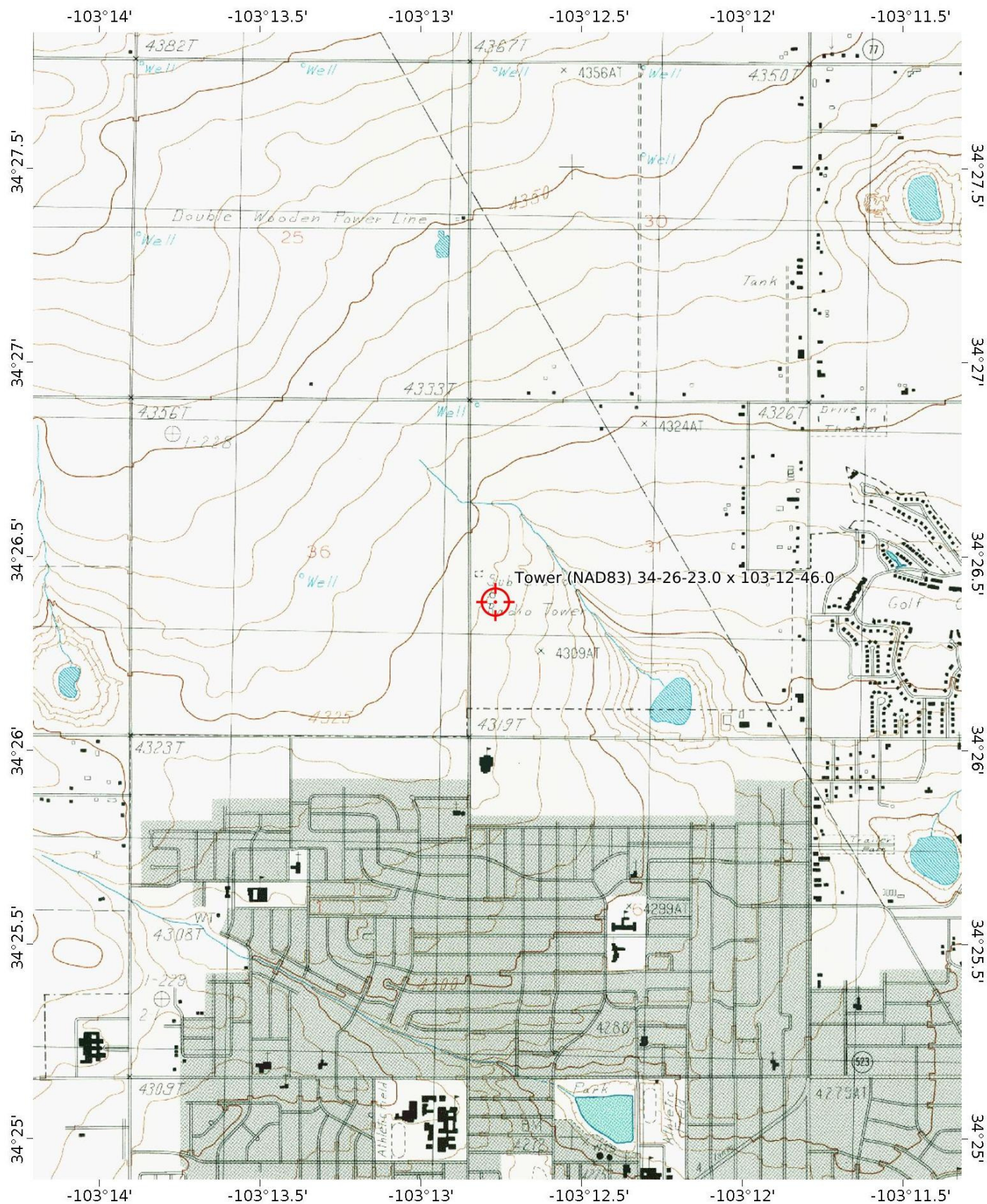
KVRQ 227C3 Texico

Antenna Type: TFLHO-4 (Type 1)
No. of Elements: 4
Element Spacing: 0.85 wavelength

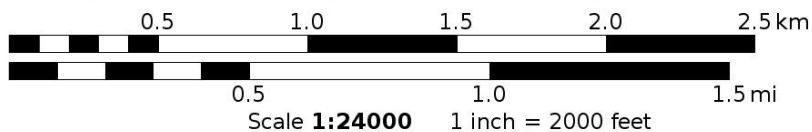
Distance: 500 meters
Horizontal ERP: 6.1 kW
Vertical ERP: zero kW

Antenna Height: 71 meters AGL

Maximum Calculated Power Density is 2.3 $\mu\text{W}/\text{cm}^2$ at 4 meters from the antenna structure.



Mercator Projection
WGS84
UTM Zone 13S



Hatfield & Dawson Consulting Engineers

