

## **TECHNICAL REPORT**

This technical report has been developed for a minor modification to KZZW(FM) 283C1 at Mooreland, OK, FCC file no. BLH-20150409ABG. A tower site correction is submitted. The following exhibits are provided for the form 301:

- E-1 KZZW(FM) Spacing Study
- E-2 KZZW(FM) Overlap Study
- E-3 Interference Contour Plot to 283A Vacant Allocation
- E-4 HAAT Calculation
- E-5 70 dBu Contour Coverage of Mooreland, OK

### **KZZW(FM) Modification Analysis:**

KZZW(FM) will continue to be designated as a 73.215 short-spaced facility with respect to the 283A vacant allocation at Memphis, TX (Exhibit E-1). An overlap study (exhibit E-2) and interference plot (Exhibit E-3) show the KZZW(FM) modification will not produce any interference overlap to other facilities.

### **KZZW(FM) Antenna System:**

The facility is located on the existing tower at corrected coordinates:

**36-16-23N 99-26-45W NAD27.**

An ERI G5CPS-10AC3 ten bay, full-wavelength, nondirectional antenna is mounted at a COR AGL of 352 meters, 1041 meters AMSL, 365 meter HAAT (exhibit E-4) and operates at an ERP of 62.0 kW with beam tilt (60.0 kW w/o). The 70 dBu contour provides coverage entirely over the Mooreland, OK community of license city boundary, shown in exhibit E-5.

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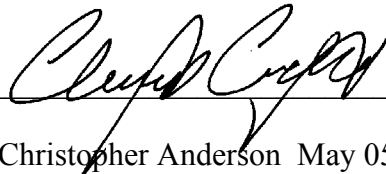
Broadcast Consultants  
1519 Euclid Avenue  
Bowling Green, KY 42103

## **RF Exposure Calculation:**

The RF production of the 62.0 kW facility was calculated using the Commission's FMMODEL program. The maximum RF at a height of 2 meters above ground was calculated to be  $1.74 \mu\text{Watts/cm}^2$  at a distance of 85 meters from the tower, which is below 5% of the  $200 \mu\text{Watts/cm}^2$  permissible for general public/uncontrolled exposure, allowing exclusion from consideration.

## **Conclusion:**

It is concluded that the minor modification of KZZW(FM) is in full compliance with the Commission rules and policies.



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# E-1 KZZW(FM) Mod. Spacing Study

REFERENCE		CLASS = C1	DISPLAY DATES
36 16 23.0 N.			DATA 05-04-15
99 26 45.0 W.	Current Spacings to 3rd Adj.		SEARCH 05-04-15
----- Channel 283 - 104.5 MHz -----			

Call	Channel	Location		Azi	Dist	FCC	Margin
KZZW	CP -N 283C1	Mooreland	OK	207.6	0.59	244.5	-243.9
KZZW	LIC 283A	Mooreland	OK	51.5	26.50	199.5	-173.0
AU9858961	VAC 283A	Memphis	TX	207.6	198.17	199.5	-1.3 <b>(1)</b>
KZBS	LIC-N 282C3	Granite	OK	178.7	143.77	143.5	0.27
KEUC	CP 285A	Ringwood	OK	82.5	103.67	74.5	29.2
KFXJ	LIC-Z 283C2	Augusta	KS	48.0	257.72	223.5	34.2
KLXM	LIC 286A	Weatherford	OK	145.2	110.05	74.5	35.6
KQFX	LIC 282C1	Borger	TX	244.9	217.16	176.5	40.7
KBPD	CP 280C3	Wheeler	TX	218.9	119.63	75.5	44.1

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All separation margins include rounding

(1) KZZW(FM) is designated as a 73.215(c) facility.

## E-2 KZZW(FM) Mod. Overlap Study

REFERENCE 36 16 23.0 N. 99 26 45.0 W.		CH# 283C1 - 104.5 MHz, Pwr= 62 kW, HAAT= 365.0 M, COR= 1041 M Average Protected F(50-50)= 72.29 km 73.215 Omni-directional								DISPLAY DATES DATA 05-04-15 SEARCH 05-04-15	
CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
283C1 Mooreland	<del>KZZW</del>	CP NCX OK		207.6 27.6	0.59 BPH20120301ADS	36 16 06.0 99 26 56.0	62.000 366	172.3 1044	74.9 Brooke Deann Williams	-242.2*	-239.5*
283A Mooreland	<del>KZZW</del>	LIC _CX OK		51.5 231.6	26.50 BLH20120227AAH	36 25 16.0 99 12 51.0	0.250 1	23.8 583	7.1 Brooke Deann Williams	-72.9	-153.7*
282C3 Granite	KZBS«	LIC NCX OK		178.7 358.7	143.77 BLH20081107ABX	34 58 39.0 99 24 35.0	1.700 277	49.9 774	33.1 Bcvi sion	143.5R	0.27M
283A Memphis	AU9858961^	VAC ____ TX		207.6 27.0	198.17 RM10677	34 41 14.0 100 27 03.0	6.000 100	84.8 695	24.9 Maurice Salsa	44.0	6.2
285A Ringwood	KEUC«	CP _HX OK		82.5 263.2	103.67 BNPH20130724ABM	36 23 19.0 98 18 00.0	0.400 78	1.4 475	13.3 Screen Door Broadcasting,	74.5R	29.2M
283C2 Augusta	KFXJ«	LIC ZCX KS		48.0 229.3	257.72 BLH20140903AHM	37 48 15.0 97 16 04.0	47.000 154	135.9 571	52.3 Journal Broadcast Corporat	223.5R	34.2M
286A Weatherford	KLXM«	LIC _HX OK		145.2 325.6	110.04 BLED20140807ABC	35 27 29.0 98 45 05.0	6.000 93	2.3 587	23.3 Better Public Broadcasting	74.5R	35.5M
282C1 Borger	KQFX«	LIC _CN TX		244.9 63.6	217.16 BLH19920521KA	35 25 34.0 101 36 47.0	100.000 175	91.2 1218	61.2 Tejas Broadcasting Ltd., L	176.5R	40.7M
280C3 Wheeler	KBPD«	CP _CX TX		218.9 38.4	119.63 BNPH20110726AHJ	35 25 57.0 100 16 31.0	12.000 144	4.1 889	40.3 Davis Broadcast Co., Inc.	75.5R	44.1M

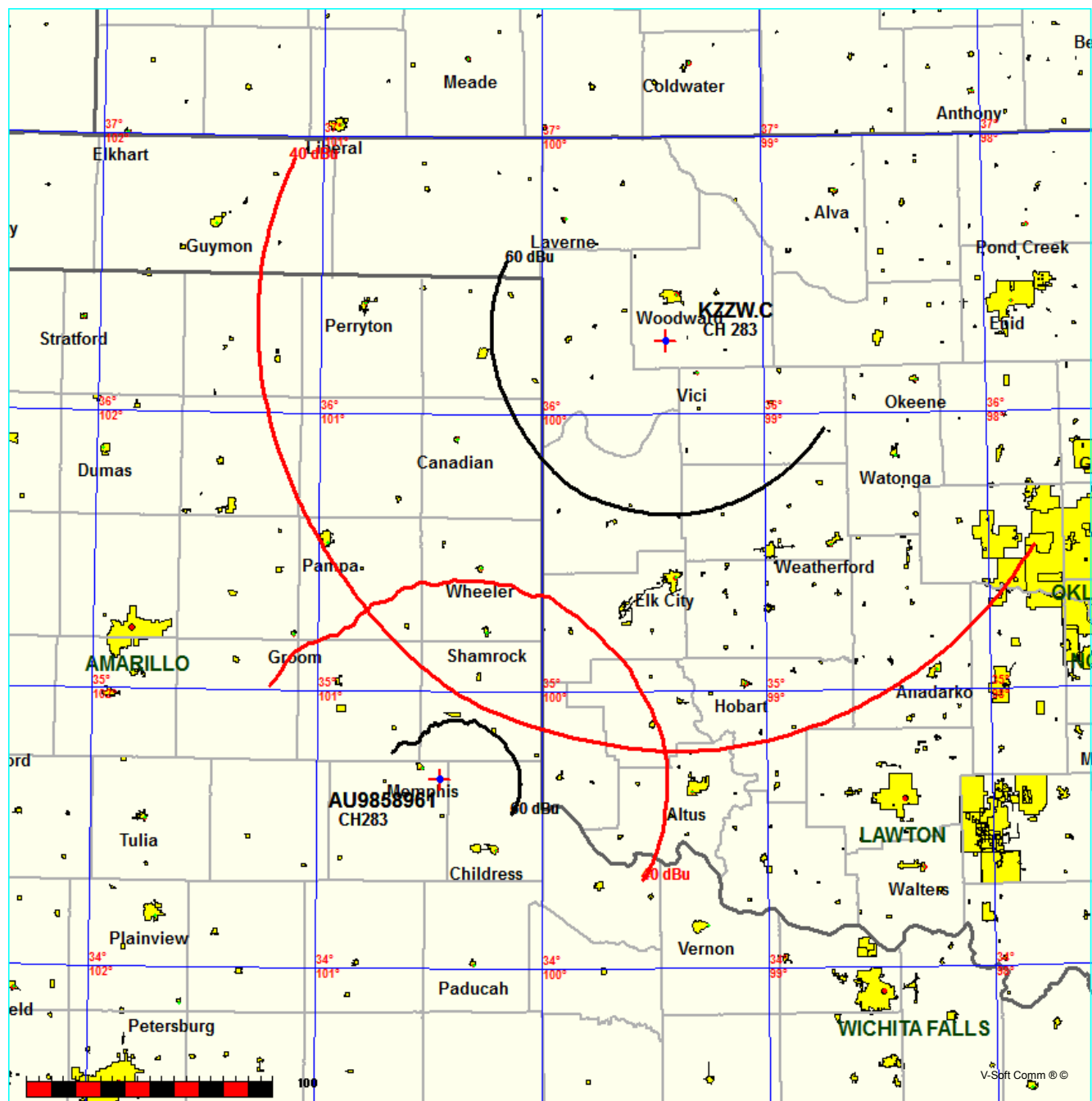
Terrain database is USGS 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference zone= - Zone 2, Co to 3rd adjacent.  
All separation margins (if shown) include rounding. Call signs with strikeout need not be protected.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.  
« = Station meets FCC minimum distance spacing for its class.  
^ = Power and antenna height 'Max classed' as per Sec 73.215 protection requirements

## E-3 KZZW(FM) Mod. Interference Plot to 283A Vacant Allocation

FMCommander Single Allocation Study - 05-05-2015 - USGS 03 SEC  
KZZW.C's Overlaps (In= 43.99 km, Out= 6.18 km)

KZZW CH 283 C1 73.215 N Lat= 36  
16 23.0, Lng= 99 26 45.0 62.0 kW  
365 M HAAT, 1041 M COR Prot.=  
60 dBu, Intef.= 40 dBu

AU9858961 CH 283 A RM10677  
Lat= 34 41 14.0, Lng= 100 27 03.0  
6.0 kW 100 M HAAT, 695.2 M COR  
Prot.= 60 dBu, Intef.= 40 dBu



#### E-4 KZZW(FM).CP Mod. HAAT Calculation

N. Lat. = 361623.0    W. Lng. = 992645.0  
HAAT and Distance to Contour,  
FCC, FM 2-10 Mi, 51 pts Method - USGS 03 SEC

Azi.	AV EL	HAAT	ERP kW	60-F(50-50)
000	665.4	375.6	62.0000	73.04
045	629.7	411.3	62.0000	75.61
090	627.3	413.7	62.0000	75.79
135	671.8	369.2	62.0000	72.59
180	701.2	339.8	62.0000	70.48
225	718.6	322.4	62.0000	69.22
270	703.3	337.7	62.0000	70.33
315	689.0	352.0	62.0000	71.36

Ave El= 675.77 M    HAAT= 365.23 M    AMSL= 1041

E-5 KZZW(FM) Mod. 70 dBu Coverage Plot

