

## TECHNICAL REPORT

This technical report has been developed in support of a minor modification to the licensed operation of station KWOX on channel 266C at Woodward, OK seeking an increase in HAAT to maximum Class C – 100 KW/ 600 meters HAAT.

### I. Allocation Analysis:

The data for all terrain and contours utilized in this report were obtained from the V-Soft CONTOUR computer program, which utilizes the V-Soft thirty (30) second terrain database. The program produces contours congruent with Section 73.333 propagation curves.

KWOX will be fully spaced at the new site with respect to existing and proposed facilities, with the exception of KLAU on 267C1 (-0.7 km) that has elected 73.215 processing with respect to KWOX and KFDI-FM on 267C (-0.06 km). In the case of KLAU, its election of 73.215 processing does not result in KWOX being treated as a short-spaced station with respect to facility improvement. The KFDI 0.06 km short-spacing is clearly the result of pre-1989 English system spacing rounding. The change to metric spacings and 0.5 km rounding rather than 0.5 mile rounding would appear to be the origin of this short-spacing. Consequently, KWOX should be able to increase its facility without electing 73.215 processing. To that end, a waiver of 73.207, if required, is hereby requested.

The proposed facility will clearly place a 70 dBu contour over the entire community of Woodward, OK in compliance with Section 73.315 (see E-2). A maximum effective radiated power of 100 kW is specified at a HAAT of 600 meters.

## **II. Tower Site:**

The proposed facility will be located on a new or extended 601 meter tower at the existing KWOX site:

**(NAD 27) 36-16-06 N 99-26-56 W**

A ten-bay, full-wavelength, non-directional antenna will be mounted at a COR of 1276 meters AMSL.

## **III. Blanketing:**

The 115 dBu blanketing contour is calculated to be 3.94 km. The calculation was made in accordance with the Commission's formula:

$$115 \text{ dBu (km)} = 1.609 [0.245 (P \text{ kw})^{1/2}].$$

The applicant accepts the responsibility for correction of any objectionable interference or blanketing problems in accordance with Commission rules.

## **IV. RF Radiation Calculations**

The RF contributions for the proposed modification to KWOX on channel 266C with an ERP of 100 kw (H and V), and the radiation center at 584 meters AGL was

calculated utilizing the Commission's FMMODEL program. At a height of 2 meters above ground level based on a 10 bay antenna, the maximum radiation was calculated to be  $1.02 \mu\text{W}/\text{cm}^2$  at 142 meters from the tower base. This value is 0.51% of the maximum general public exposure of  $200 \text{ microwatts}/\text{cm}^2$ , and is categorically excluded from consideration. It is concluded that the proposed facility is well within RF maximum exposure guidelines.

## **V. Conclusion:**

It is concluded that the proposed modifications to KWOX meet all applicable Commission rules and policies.



Charles M. Anderson November 9, 2004  
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## CM ANDERSON AND ASSOCIATES

## E-1 KWOX Proposed Spacings

REFERENCE

36 16 06 N

CLASS = C

DISPLAY DATES

DATA 10-19-04

99 26 56 W

Current Spacings

SEARCH 10-19-04

----- Channel 266 - 101.1 MHz -----

Call	Channel	Location	Dist	Azi	FCC	Margin
KWOX	LIC 266C	Woodward	OK 0.00	0.0	289.5	-289.50
KLAW	LIC-N 267C1	Lawton	OK 207.80	156.4	208.5	-0.70
KFDIFM	LIC 267C	Wichita	KS 240.44	44.5	240.5	-0.06
AL264	VAC 264C2	Reydon	OK 105.23	201.6	104.5	0.73
AL267	VAC 267C3	McLean	TX 176.46	222.1	175.5	0.96
AL269	VAC 269C2	Sayre	OK 109.78	189.1	104.5	5.28
KXGL.C	CP -N 265C0	Amarillo	TX 241.18	244.6	219.5	21.68
KREJ	LIC 269C2	Medicine Lodge	KS 128.07	32.9	104.5	23.57
KXGL	LIC 265C1	Amarillo	TX 242.63	244.4	208.5	34.13
KIXCFM	LIC 265C2	Quanah	TX 223.32	181.2	187.5	35.82
RADD	ADD 268C3	Waukomis	OK 138.84	87.4	95.5	43.34
KSLS	LIC 268C1	Liberal	KS 149.88	306.2	104.5	45.38
RADD	ADD 266A	Pauls Valley	OK 276.91	129.1	225.5	51.41
KPNC	LIC 265A	Ponca City	OK 217.53	77.6	164.5	53.03
KAYM	LIC 213A	Weatherford	OK 107.12	143.0	28.5	78.62
KAYM.C	CP 213A	Weatherford	OK 107.13	143.0	28.5	78.63
RDEL	DEL 265C2	Quanah	TX 269.05	167.6	187.5	81.55
KATTFM	LIC 263C	Oklahoma City	OK 192.64	112.5	104.5	88.14
RDEL	DEL 263C	Oklahoma City	OK 192.64	112.5	104.5	88.14
RADD	ADD 263C0	Oklahoma City	OK 192.64	112.5	104.5	88.14
KPDR	LIC 213C3	Wheeler	TX 119.05	219.0	30.5	88.55
RADD	ADD 265C3	Iowa Park	TX 269.05	167.6	175.5	93.55
KEOJ	LIC 266A	Caney	KS 327.23	75.1	225.5	101.73
AL266	VAC 266C3	Weinert	TX 340.30	182.8	236.5	103.80
KONE	LIC 266C1	Lubbock	TX 384.25	215.9	269.5	114.75
AL263	VAC 263C3	Estelline	TX 222.88	207.2	95.5	127.38
RADD	ADD 265A	Holdenville	OK 296.33	115.6	164.5	131.83
KXOJFM	LIC 265A	Sapulpa	OK 302.13	93.4	164.5	137.63
KHOK	LIC 264C1	Hoisington	KS 260.00	13.2	104.5	155.50
KMCO	LIC 267C1	McAlester	OK 367.92	111.7	208.5	159.42
RDEL	DEL 267C1	McAlester	OK 367.92	111.7	208.5	159.42
RADD	ADD 267C1	Wilburton	OK 367.92	111.7	208.5	159.42
970203	APP 213A	Chickasha	OK 192.95	136.0	28.5	164.45
AL269	VAC 269A	Turkey	TX 260.61	213.1	94.5	166.11
AP213	APP 213A	Guymon	OK 195.03	284.1	28.5	166.53
970807	APP 213A	Chickasha	OK 195.51	135.2	28.5	167.01
970807	APP 213A	Chickasha	OK 195.51	135.2	28.5	167.01
970807	APP 213A	Chickasha	OK 195.51	135.2	28.5	167.01
KVRS	LIC 212A	Lawton	OK 200.49	155.2	28.5	171.99
AP263	APP 263A	Augusta	KS 267.52	54.3	94.5	173.02
AL263	VAC 263A	Augusta	KS 270.73	53.6	94.5	176.23
VA269	VAC 269C3	Lindsborg	KS 306.21	29.7	95.5	210.71
KNNK	LIC-N 263C2	Dimmitt	TX 323.71	239.3	104.5	219.21

## E-2 KWOX Proposed HAAT Calculation

C Anderson and Associates

N. Lat. = 36 16 06 W. Lng. = 99 26 56

HAAT and Distance to Contour - FCC Method - 30 Arc Sec.

KWOX, Omni Communications, Inc., BLH19840104AA

Azi. AV EL HAAT ERP kW dBk Field 60-F5

000	667.2	608.8	100.0000	20.00	1.000	92.15
045	631.2	644.8	100.0000	20.00	1.000	93.52
090	627.1	648.9	100.0000	20.00	1.000	93.68
135	673.5	602.5	100.0000	20.00	1.000	91.91
180	700.8	575.2	100.0000	20.00	1.000	90.83
225	715.7	560.3	100.0000	20.00	1.000	90.16
270	702.9	573.1	100.0000	20.00	1.000	90.74
315	688.2	587.8	100.0000	20.00	1.000	91.35

Ave El= 675.81 M HAAT= 600.19 M AMSL= 1276 M

## E-3 KWOX Proposed 70dBu Coverage

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### KWOX

BLH19840104AA

Latitude: 36-16-06 N

Longitude: 099-26-56 W

ERP: 100.00 kW

Channel: 266

Frequency: 101.1 MHz

AMSL Height: 1276.0 m

Elevation: 691.32 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

