

## TECHNICAL REPORT

This technical report has been developed in support of an application for a minor modification to KWYN-FM 223C2 at Wynne, AR. A change in tower site is requested.

### **I. Allocation Analysis:**

The data for all terrain in this report was obtained from the V-Soft PROBE 3 computer program, utilizing the NGDC thirty (30) second terrain database. The 60 and 70 dBu F(50,50) contours were plotted accordingly. The HAAT was calculated using CONTOUR with the same database.

KWYN-FM meets 73.207 spacing requirements at the proposed transmitter site to all facilities and allocations, as is demonstrated in exhibit E-1.

An effective radiated power of 50.0 kW is specified at a HAAT of 150 meters (60 dBu = 52.2 km).

The following exhibits are provided:

- E-1 KWYN-FM Spacing Study
- E-2 KWYN-FM HAAT Calculation
- E-3 KWYN-FM 70 dBu Contour Plot
- E-4 KWYN-FM 70 dBu Enhanced Contour Plot

### **II. Site:**

The facility is to be located on a new 542ft (165m) guyed steel tower, at coordinates: **(NAD 27) 35-01-43 W 90-32-31 N.**

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**III. Community 70 dBu Coverage:**

KWYN-FM will place a 70 dBu contour over 62.2% of the 2000 U.S. Census city boundary area, but it will provide 90.0% coverage to the population of the community of Wynne, AR, as is demonstrated in exhibit E-4. **Consequently, a waiver of Section 73.315 is requested for this facility.**

**IV. Blanketing:**

The 115 dBu blanketing contour is calculated to be 2.79 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.

**V. Antenna System and Environmental Considerations:**

A ten bay full-wavelength antenna will be mounted on the tower at a COR AGL of 146 meters. To the applicant's knowledge, no adverse impact will result to any applicable 1.1307 category. Consequently, no environmental statement is provided.

The RF contribution for the proposed facility was calculated utilizing the Commission's FMMODEL program at a height 2 meters above ground level. The maximum radiation was found to be 8.29 microwatts/cm<sup>2</sup> at 35 meters, which is below

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5% of the maximum 200 microwatts/cm<sup>2</sup> permissible for general public exposure, and excludes it from consideration for a detailed RF analysis.

**VI. Conclusion:**

It is concluded that the minor modification of KWYN-FM is in full compliance with the Commission rules and policies.



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E-1 KWYN-FM Spacing Study

REFERENCE  
 35 01 43.0 N.  
 90 32 31.0 W.

CLASS = C2  
 Current Spacings

DISPLAY DATES  
 DATA 01-10-07  
 SEARCH 01-10-07

----- Channel 223 - 92.5 MHz -----

Call	Channel	Location		Azi	Dist	FCC	Margin
KWYN-FM	LIC-N 223C2	Wynne	AR	319.2	25.15	189.5	-164.35
WKRA-FM	LIC 224A	Holly Springs	MS	104.4	106.29	105.5	0.79
WMFS	LIC-D 225A	Bartlett	TN	73.5	56.76	54.5	2.26
KIPR	LIC 222C1	Pine Bluff	AR	244.2	165.98	157.5	8.48
WYNU	LIC 222C0	Milan	TN	58.1	186.82	175.5	11.32
WESE	LIC-N 223A	Baldwyn	MS	110.5	181.96	165.5	16.46
WESE.C	CP 223C3	Baldwyn	MS	112.0	193.40	176.5	16.90
KASU	LIC-D 220C1	Jonesboro	AR	352.9	96.40	78.5	17.90
KASR.C	CP 224C3	Vilonia	AR	271.7	139.56	116.5	23.06
AL8097	RSV 224C3	Vilonia	AR	273.0	140.72	116.5	24.22
KPPL	LIC-N 223C3	Poplar Bluff	MO	4.3	202.64	176.5	26.14
WKXY.C	CP -N 221A	Clarksdale	MS	182.1	90.74	54.5	36.24
WKXY	LIC-N 221A	Clarksdale	MS	182.1	90.74	54.5	36.24
WOHT	LIC 222A	Grenada	MS	156.2	141.74	105.5	36.24
WOHT.C	CP 222A	Grenada	MS	156.2	141.98	105.5	36.48
KFFA-FM	LIC-N 276C3	Helena	AR	188.2	56.16	16.5	39.66
AL2231	RSV 222C2	Cherokee Village	AR	330.7	170.80	129.5	41.30
KSAR	LIC-N 222C2	Thayer	MO	330.7	170.80	129.5	41.30
KASR	LIC 224A	Conway	AR	273.7	170.79	105.5	65.29
KZLE	LIC 226C1	Batesville	AR	312.2	143.88	78.5	65.38
WUMS	LIC 221A	University	MS	123.4	125.23	54.5	70.73
WQST-FM	LIC 223C0	Forest	MS	160.5	313.23	238.5	74.73
WDTL-FM	LIC 225C2	Cleveland	MS	184.3	143.55	57.5	86.05
WWGM	LIC 226C3	Alamo	TN	59.6	155.24	55.5	99.74
KELE-FM	LIC 223A	Mountain Grove	MO	327.3	279.82	165.5	114.32
KELE-FM	RSV 223A	Mountain Grove	MO	327.3	279.82	165.5	114.32
KWOZ	LIC 277C	Mountain View	AR	303.6	153.90	34.5	119.40
AL9075	VAC 224A	Gassville	AR	309.0	225.51	105.5	120.01
WAUM	LIC 220A	Duck Hill	MS	147.9	181.18	54.5	126.68
KHPQ	LIC-N 221C3	Clinton	AR	292.0	187.18	55.5	131.68
AU7057817	VAC 224A	Bearden	AR	233.2	239.41	105.5	133.91
WOWL	LIC-N 220C2	Burnsville	MS	92.6	194.95	57.5	137.45
KLSC	LIC 225C2	Malden	MO	20.5	195.49	57.5	137.99

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E-2 KWYN-FM HAAT Calculation

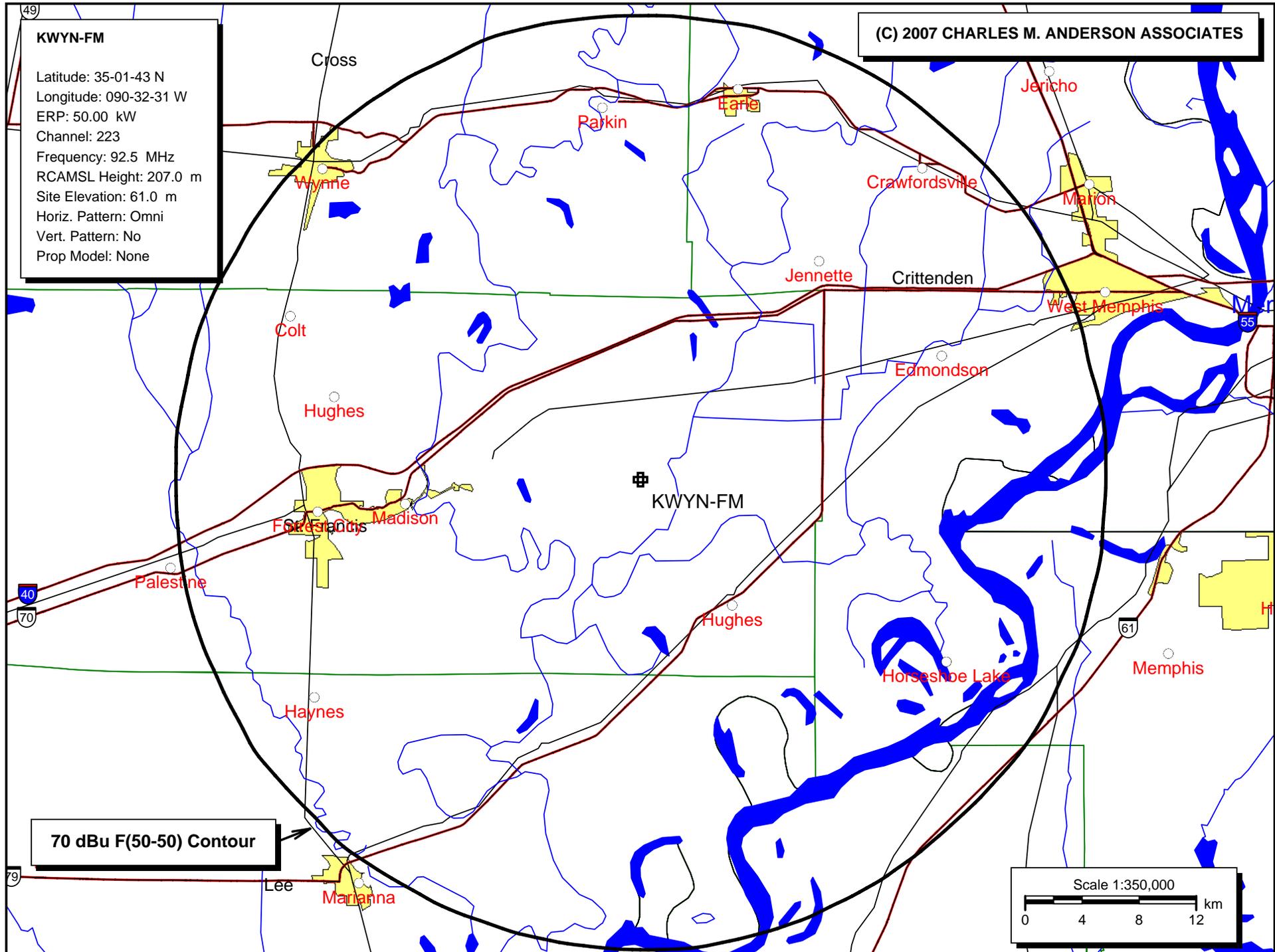
N. Lat. = 350143 W. Lng. = 903231

HAAT and Distance to Contour - FCC Method - NGDC 30 SEC

Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	58.1	148.9	50.0000	16.99	1.000	52.05
045	56.9	150.1	50.0000	16.99	1.000	52.21
090	56.9	150.1	50.0000	16.99	1.000	52.21
135	57.2	149.8	50.0000	16.99	1.000	52.16
180	54.2	152.8	50.0000	16.99	1.000	52.57
225	54.7	152.3	50.0000	16.99	1.000	52.49
270	57.5	149.5	50.0000	16.99	1.000	52.13
315	57.5	149.5	50.0000	16.99	1.000	52.13

Ave El= 56.63 M HAAT= 150.37 M AMSL= 207M

# E-3 KWYN-FM 70 dBu Plot



# E-4 KWYN-FM 70 dBu Enhanced Plot

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## KWYN-FM

Latitude: 35-01-43 N  
Longitude: 090-32-31 W  
ERP: 50.00 kW  
Channel: 223  
Frequency: 92.5 MHz  
RCAMSL Height: 207.0 m  
Site Elevation: 61.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

70 dBu F(50-50) Contour

Wynne

Wynne, AR  
2000 U.S. Census  
City Boundary Population = 8,483  
  
KWYN-FM 70 dBu Contour  
Population = 7,638 (90.0%)

