

Technical Report Minor Modification to W251AI

This technical report has been developed in support of a minor modification to the translator W251AI at Pikeville, KY, FCC file no. BLFT-20070814AAO. A reduction in ERP and change of antenna is requested. A subsequent STA application is to be filed for the facility to rebroadcast WPKE(AM), 1240 kHz at Pikeville, KY, facility I.D. 18225.

The following exhibits are provided in support of the form 349 application:

- E-1 Channel Overlap Study
- E-2 60 dBu Coverage Plot within WXCC and
Overlap to the Current Facility
- E-3 Scala FMV DA Pattern

W251AI Antenna System:

Exhibit E-1 shows that the W251AI modification will not cause any interference overlap to any other facilities. The translator is to remain at its existing tower site, ASR no. 1044553, at a COR AGL of 64 meters using a single bay Scala FMV-1 directional antenna, rotated at an azimuth of 55 degrees, and operate at 0.105 kW ERP at coordinates:

37-27-57N 82-33-04W (NAD 27)

Exhibit E-2 shows that the 60 dBu contour is completely contained within the 60 dBu contour of its current WXCC primary facility, as well as its overlap to the 60 dBu

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contour of the current licensed translator facility. The exhibit also shows the modified 60 dBu contour is contained within the 2.0 mV/m contour of WPKE(AM) as well.

RF Exposure Calculation:

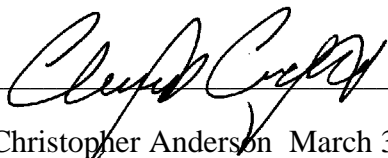
The RF contribution of the 0.105 kW facility was calculated using the formula from the OET Bulletin 65 with a worst-case vertical (F) factor of 1.0:

$$S \text{ (RF in microwatts/cm}^2\text{)} = \frac{33.4 \times F^2 \times (H \text{ ERP} + V \text{ ERP in watts})}{R^2 \text{ (distance to radiation center in meters}^2\text{)}}$$

The resulting RF is 0.912 μ Watts/cm² at the base of the tower, which is well below the 5% threshold of the maximum permissible 200 μ Watts/cm² exposure for general public exposure, allowing exclusion from consideration.

Conclusion:

It is concluded that the minor modification of W251AI complies with all Commission policies and rules.



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E-1 W251AI Overlap Study

REFERENCE
37 27 57.0 N.
82 33 04.0 W.

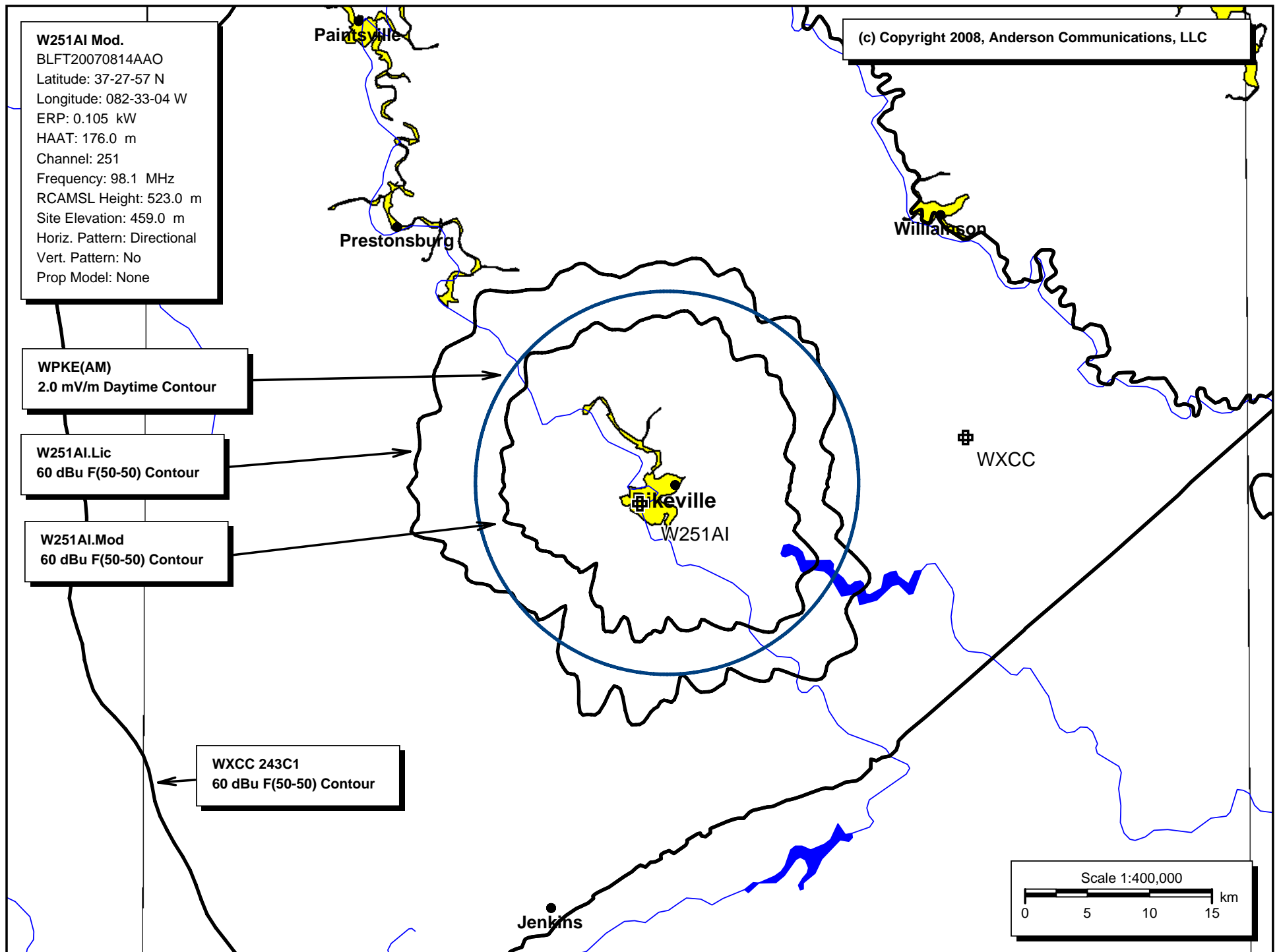
CH# 251D - 98.1 MHz, Pwr= 0.105 kW, HAAT= 176.0 M, COR= 523 M
Average Protected F(50-50)= 13.86 km

DISPLAY DATES
DATA 03-29-08
SEARCH 03-31-08

CH CITY	CALL	TYPE STATE	ANT AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
251D	W251AI	LIC _C_	0.0	0.00	37 27 57.0	0.250	59.6	19.2	-74.39*	-67.91*
Pikeville		KY	0.0	BLFT20070814AAO	82 33 04.0		523	East Kentucky Broadcasting		
251C	WBRF	LIC DEN	122.8	183.73	36 33 34.0	100.000	180.9	78.2	-12.60	54.72
Galax		VA	303.8	BLH19910423KA	80 49 25.0	535	1149	Blue Ridge Radio, Inc.		
250C3	WZQQ	LIC _CN	241.8	63.76	37 11 36.0	1.750	57.5	38.2	-1.69	14.37
Hyden		KY	61.4	BLH19960311KB	83 11 04.0	368	770	Leslie County Broadcasting		
251C1	WBUL-FM	LIC _CX	291.3	178.93	38 02 07.0	100.000	157.8	60.7	9.44	79.36
Lexington		KY	110.2	BMLH20031218ACF	84 27 02.0	171	467	Citicasters Licenses, L.p.		
253C	WTFM	LIC ZCY	162.2	120.53	36 25 54.0	74.000	14.0	96.0	96.68	24.07
Kingsport		TN	342.4	BLH19950213KA	82 08 15.0	683	1305	Holston Valley Broadcastin		
249C3	WRI C-FM	LIC NCX	121.0	67.55	37 09 04.0	3.200	3.3	41.9	49.10	24.99
Richlands		VA	301.4	BLH20070509AAM	81 53 56.0	229	922	Peggy Sue Broadcasting Cor		
250A	WMGA	LIC NCX	0.7	106.35	38 25 26.0	3.500	44.2	29.0	47.38	54.89
Kenova		WV	180.7	BLH20060313ABM	82 32 08.0	133	350	Connoisseur Media, LIc		
248B	WOBE-FM	LIC _CN	34.5	127.20	38 24 22.0	50.000	6.3	67.0	107.11	58.73
Charleston		WV	215.0	BLH7326	81 43 26.0	152	402	Bristol Broadcasting Compa		
252A	WOKE	LIC _CN	341.4	133.83	38 36 26.0	5.200	41.0	26.6	78.30	85.16
Garrison		KY	161.1	BLH19980721KF	83 02 33.0	107	347	Big River Radio, Inc.		
249A	WKCA	CP _CX	316.6	109.08	38 10 33.0	3.000	2.5	26.9	92.93	81.69
Saltillo		KY	136.1	BPH20051212ACO	83 24 28.0	143	438	Gateway Radio Works, Inc.		
249A	AL8211	RSV _	311.4	119.39	38 10 15.0	6.000	2.6	26.8	104.27	92.08
Saltillo		KY	130.8	RM11096	83 34 31.0	100	360			
250L1	WVPP-LP	LIC _	72.5	124.28	37 47 35.0	0.056	11.8	8.4	100.08	97.52
Beckley		WV	253.4	BLL20040503AAU	81 12 17.0	40	737	Calvary Assembly Of God		
252A	WCEF	CP _CX	27.3	163.22	38 46 04.0	6.000	36.5	23.9	111.91	116.79
Ripley		WV	207.9	BPH20060927AFA	81 41 09.0	94	339	Big River Radio, Inc.		
254A	WRVZ	LIC ZCN	36.0	128.47	38 23 53.0	0.630	0.4	10.7	113.84	117.03
Pocatolico		WV	216.5	BLH19960620KA	81 41 06.0	188	434	West Virginia Radio Corpor		
252A	WCEF	LIC _CN	27.3	163.22	38 46 04.0	3.000	30.1	20.5	118.28	120.26
Ripley		WV	207.9	BLH19810305AB	81 41 09.0	91	340	Big River Radio, Inc.		

Terrain database is USGS 03 SEC Distance + R = 73.215 or FCC Spacings in KM, Distance + M = Margin in KM
Contour distances are on direct line to and from reference station. Reference zone = 2. With 3rd Adj Channels.
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 protected contour.
Reference station has protected zone issue: AM tower

E-2 W251AI 60 dBu Plot



E-3 W251AI DA Pattern

03-31-2008

RMS(V)= .796

Bearing Field % Voltage

Graph is Percent Relative Field Voltage

000	=	0.944
010	=	0.967
020	=	0.982
030	=	0.991
040	=	0.997
050	=	1.00
060	=	1.00
070	=	0.997
080	=	0.991
090	=	0.982
100	=	0.967
110	=	0.944
120	=	0.911
130	=	0.870
140	=	0.819
150	=	0.763
160	=	0.706
170	=	0.654
180	=	0.610
190	=	0.578
200	=	0.556
210	=	0.544
220	=	0.537
230	=	0.534
240	=	0.534
250	=	0.537
260	=	0.544
270	=	0.556
280	=	0.578
290	=	0.610
300	=	0.654
310	=	0.706
320	=	0.763
330	=	0.819
340	=	0.870
350	=	0.911

