

**Engineering Exhibit
WSOL-FM, Brunswick, GA
Channel 268C - FID 23830
Application for Modification of Station License
BLH-19890707KD**

INTRODUCTION

WSOL-FM is licensed to operate from a shared antenna system with WMUV(FM). The purpose of this application is to modify the Station License of WSOL-FM to correct the antenna type, geographical coordinates and antenna height above average terrain.

GEOGRAPHICAL COORDINATES AND ANTENNA HEIGHT DATA

The WSOL-FM shared antenna is mounted on a leased tower structure, ASR number 1027315. The coordinates licensed to WSOL-FM differ slightly from those specified on the ASR. As a result, the “Height of radiation center above ground” for WSOL-FM differs by two meters from the licensed value. A tabulation of the presently licensed and proposed coordinates and heights are as follows:

	Licensed	Proposed
Antenna Coordinates (NAD27)		
North Latitude:	30° 49’ 17”	30° 49’ 16”
West Longitude:	81° 44’ 13”	81° 44’ 14”
Height of radiation center above ground (Meters):	447	447
Height of radiation center above mean sea level (Meters):	450	450
Height of radiation center above average terrain (Meters):	446	448*

* HAAT based on 30” terrain data

There are no changes to the structure, or its location and these minor corrections will bring the WSOL-FM license in full compliance with the ASR and will accurately describe the height of the shared antenna. There is also no change to the “Effective radiated power in the Horizontal Plane” and the minor changes proposed herein will have no impact upon existing allocations.

CLASS C STATUS

WSOL-FM is designated as a Class C assignment. Neither the presently licensed facilities nor the minor changes proposed herein for WSOL-FM meet the minimum Class C HAAT set forth in Section 73.211 of the rules; however the minor changes proposed in this application do not warrant a change in the Class C status of WSOL-FM. No physical changes to the WSOL-FM location are proposed since the purpose of this application is to correct the antenna type, geographic coordinates and minor height discrepancies of the existing facilities. Nor has there been an expressed need for spectrum use by the filing of a triggering application or rule making proposal. Consistent with precedent, therefore, it is requested that WSOL-FM maintain its Class C designation in connection with the processing of the subject application.

RF RADIATION COMPLIANCE

The proposed facilities were evaluated in terms of potential radio frequency radiation exposure at ground level in accordance with OET Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation."

This antenna is shared by WSOL-FM and WMUV(FM), in a combined operation. The antenna system is an ERI SHPX-6AC6, 6-bay, full-wave spaced "rototiller" (EPA type 3) antenna, mounted with its center of radiation 447 meters above ground level and will operate with a combined effective radiated power of 162 Kilowatts in both the horizontal and vertical planes. At 2 meters above ground, at 140 meters from the base of the tower, this proposal will contribute worst case 3.73 microwatts per square centimeter, or 0.37 percent of the allowable ANSI limit for controlled exposure, and 1.87 percent of the allowable limit for uncontrolled exposure. It is therefore believed that this proposal is in compliance with OET Bulletin No. 65 as required by the FCC.

Further, the applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The site itself is restricted from public access. The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, as necessary to limit human exposure to levels less than specified by the FCC should anyone be required to climb the tower for maintenance or inspection.

**Occupied Bandwidth and
Spurious Emissions Measurements
To Demonstrate Compliance with
Section 73.317(b) through 73.317(d) of the
FCC Rules and Regulations**

**Citicasters Licenses, L.P.
WSOL-FM – 101.5 MHz
Brunswick, GA (Facility ID No: 23830)
And
Renda Broadcasting Corp. of Nevada
WMUV(FM) – 100.7 MHz
Brunswick, GA (Facility ID No: 48243)
March 9, 2007**

Occupied Bandwidth and Spurious Emissions Measurements

Measurements were conducted to demonstrate that WSOL-FM and WMUV(FM) operating into a combined antenna system, comply with section 73.317(b) through 73.317(d) of the FCC Rules and Regulations. Randall L. Mullinax conducted the measurements on March 9, 2006, with both stations simultaneously utilizing the shared antenna. The spectrum analyzer used for the measurements was an Agilent Technologies model E4402B, S/N MY41441731. A sample of the WSOL-FM and WMUV(FM) signals was derived from the main transmission line at the output of the combiner and was coupled to the analyzer using a short length of RG-223 50Ω double-shielded coaxial cable. Two 6 dB pads (Bird model 5-A-MFN-06) were inserted ahead of the analyzer to avoid overload and to provide isolation.

The measured unmodulated carrier level of WSOL-FM was +3 dBm and the unmodulated carrier level of WMUV(FM) was +1 dBm. Since the WMUV(FM) reference level was lower, it was used as the reference for all harmonic, spurious and intermodulation measurements. All measurements were conducted with the transmitters and associated equipment adjusted as used in normal program operation.

For all occupied bandwidth measurements, the spectrum analyzer was placed in the peak hold mode for at least 10 minutes per measurement before the waveforms were observed. As shown in Figures 1 and 2, both transmitters were observed to be in full compliance with section 73.317(b) of the FCC Rules with emissions appearing on frequencies removed from the carrier frequencies by between 120 kHz and 240 kHz attenuated by at least 25 dB below the unmodulated carrier level indicating the occupied bandwidth of each transmitter to be 240 kHz or less. Both transmitters were also observed to be in full compliance with section 73.317(c) of the FCC Rules with emissions appearing on frequencies removed from the carrier frequencies by between 240 kHz and 600 kHz attenuated by at least 35 dB.

Figure 1
WSOL-FM

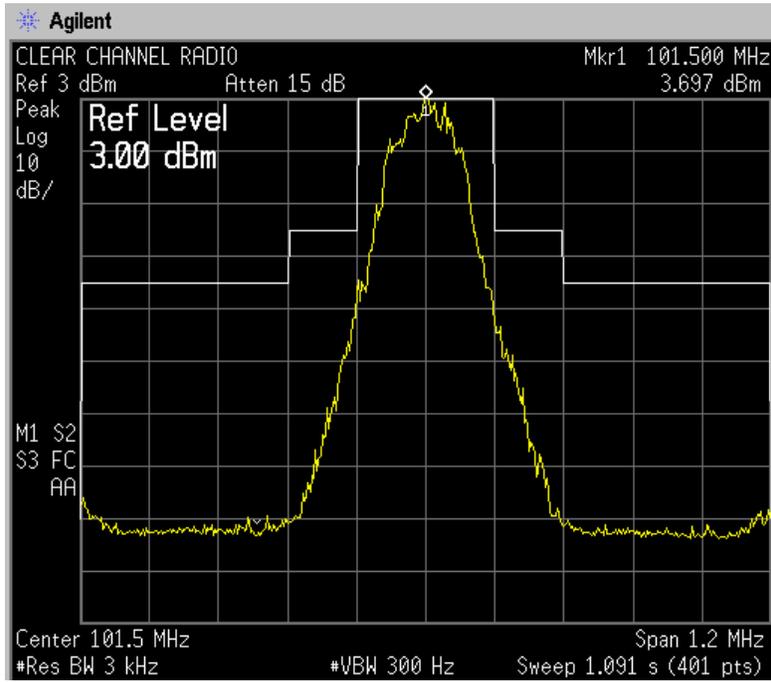
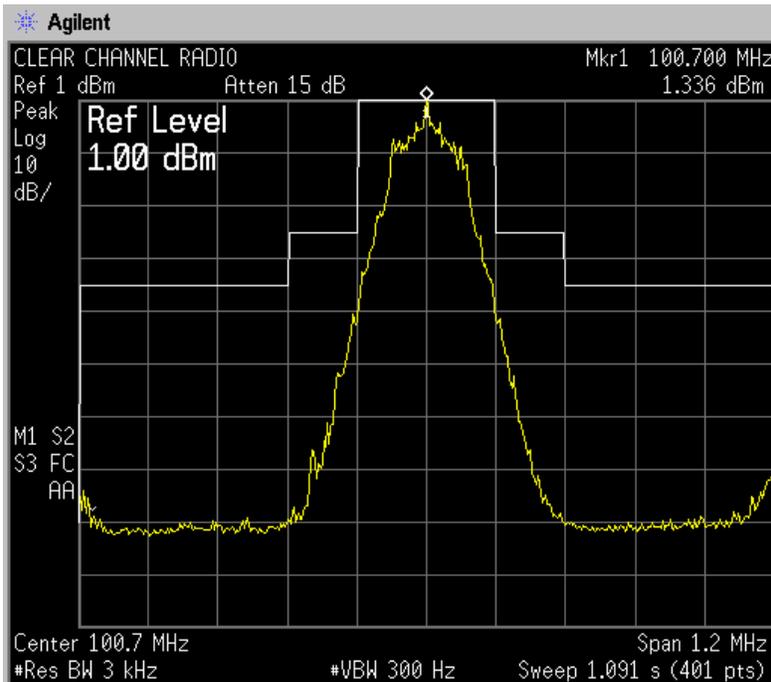


Figure 2
WMUV(FM)



Extensive measurement were also conducted to insure that emissions appearing on frequencies removed from the carrier frequencies by more than 600 kHz were attenuated by at least 80 dB as required by section 73.317(d) of the FCC Rules. To facilitate these measurements, notch filters were placed between the two 6 dB pads so that the spectrum analyzer gain could be increased by up to 20 dB. The filters were necessary to avoid the possible generation of false spurious or intermodulation products in the analyzer. The attenuation of the notch filters was 43.3 dB at 101.5 MHz and 38.9 dB at 100.7 MHz.

All harmonic and intermodulation frequencies in the range of frequencies between 5 MHz and 520 MHz through the 3rd order that could be produced by the combined operation of WSOL-FM and WMUV(FM) were calculated and the results of the measurements at these frequencies are listed in Table 1.

Table 1

Frequency A 101.5
 Frequency B 100.7

DESCRIPTION	FREQ. MHZ	ATTENUATION DB	DESCRIPTION	FREQ. MHZ	ATTENUATION DB
A + B	202.2	94	(2 X B) + (3 X A)	505.9	>100
A + (2 X B)	302.9	90	3 X A	304.5	97
B + (2 X A)	303.7	88	(3 X A) - B	203.8	>100
A + (3 X B)	403.6	>100	3 X B	302.1	98
B + (3 X A)	405.2	>100	(3 X B) - A	200.6	>100
2 X A	203	97	(3 X A) - (2 X B)	103.1	>100
(2 X A) - B	102.3	83	(3 X B) - (2 X A)	99.1	99
2 X B	201.4	>100	4 X A	406	>100
(2 X B) - A	99.9	82	4 X B	402.8	>100
(2 X A) + (2 X B)	404.4	>100	5 X A	507.5	>100
(2 X A) + (3 X B)	505.1	>100	5 X B	503.5	>100

While special attention was given to the “product” frequencies listed in Table 1, measurements were conducted covering the entire range of frequencies between 5 MHz and 520 MHz. The only signals detected at levels attenuated by less than 80 dB below the unmodulated carrier levels and appearing on frequencies removed from the WSOL-FM and WMUV(FM) carrier frequencies by more than 600 kHz were the carriers of nearby FM and Television stations. In each case where these signals were observed to be at a level greater than -79 dBm (80 dB below the unmodulated carrier level of WMUV(FM) which was $+1$ dBm) both the WSOL-FM and WMUV(FM) transmitters were turned off while the amplitude of the signal was observed to be unchanged, indicating that the signal was not the result of the combined operation of WSOL-FM and WMUV(FM).

The results of these measurements confirm that the combined operations of WSOL-FM and WMUV(FM) into the shared antenna are in full compliance with section 73.317(b) through 73.317(d) of the FCC Rules and Regulations.


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Regional Engineer
Clear Channel Radio

ELECTRONICS RESEARCH, INC.
7777 GARDNER ROAD
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FIGURE 1

-----THEORETICAL-----
VERTICAL PLANE RELATIVE FIELD

6 ERI TYPE SHP, SHPX, LP, OR LPX ELEMENTS
+0.00 DEGREE(S) ELECTRICAL BEAM TILT
1 PERCENT FIRST NULL FILL
0 PERCENT SECOND NULL FILL
POWER GAIN IS 3.294 IN THE HORIZONTAL PLANE(3.294 IN THE MAX.)

FEBRUARY 7, 2000
101.5 MHz
ELEMENT SPACING
116.328 INCHES

