

Special Operating Conditions or Restrictions 6 of the WBIG-FM Construction Permit States that:

“Upon commencement of program tests in accordance with Section 73.1620, the auxiliary facility authorized by BXLH-20020227AAW WILL BE CANCELLED due to a violations of Section 73.1675 (a) (1). The licensee may seek modification of license for the auxiliary facility in accordance with Section 73.1675 (c) (1) to bring the auxiliary facility into compliance with Section 73.1675 (a) (1).”

The licensee has filed a modification of license for the auxiliary facility authorized by BXLH-20020227AAW (file number BMLH20070713AAR) specifying a reduction in the ERP which brings the auxiliary facility into compliance with 73.1675 (a) (1) with regard to the facilities specified in this application.

In response to Special Operating Conditions or Restrictions 7 of the WBIG-FM Construction Permit, Program Tests at WFRE(FM) commenced with the facilities authorized by BPH-20070412ACA, a license application was filed to cover the WFRE(FM) construction permit and the license (BLH-20070612AAN) has been granted.



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

**AMFM Radio Licenses, L.L.C.**  
**WBIG-FM – 100.3 MHz**  
**Washington, DC (Facility ID No: 54459)**  
**WMZQ-FM – 98.7 MHz**  
**Washington, DC (Facility ID No: 73305)**

**July 17, 2007**

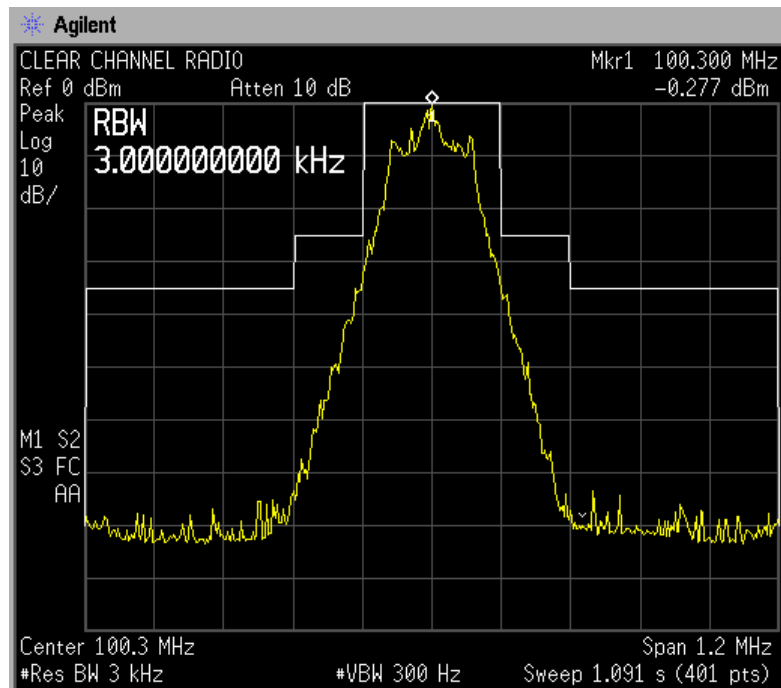
## **Occupied Bandwidth and Spurious Emissions Measurements**

Measurements were conducted to demonstrate that WBIG-FM, Washington, DC and WMZQ-FM, Washington, DC 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 July 17, 2007, with both stations simultaneously utilizing the shared antenna as specified in “Special operating conditions or restrictions 3” of the WBIG-FM Construction Permit BPH-20070412ABZ. The spectrum analyzer used for the measurements was an Agilent Technologies model E4402B, S/N MY41441731. A sample of the WBIG-FM and WMZQ-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.

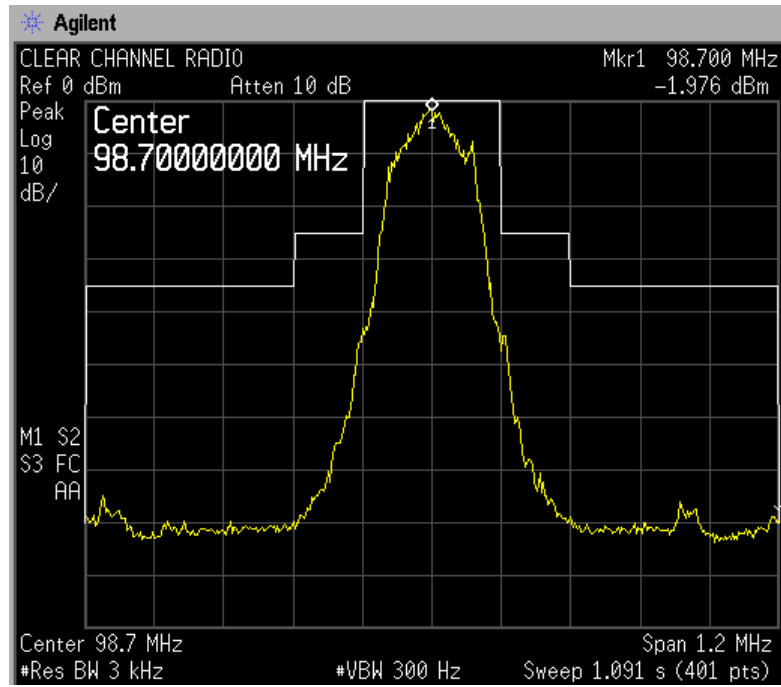
The measured unmodulated carrier level of both stations was 0 dBm and was used as the reference for all harmonic, spurious and intermodulation measurements. All measurements were conducted with the transmitters and associated equipment adjusted as used in normal program operation.

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, 2 and 3, all 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. All 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**  
**WBIG-FM**



**Figure 2**  
**WMZQ-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 44.1 dB at 100.3 MHz and 44.8 dB at 98.7 MHz.

The most likely intermodulation frequencies in the range 3 MHz to 550 MHz that could be produced by the combined operation of WBIG-FM and WMZQ-FM and harmonic frequencies through the 5<sup>th</sup> harmonic were calculated and the results of the measurements at these frequencies are listed in Table 1.

**Table 1**

Frequency A 100.3  
Frequency B 98.7

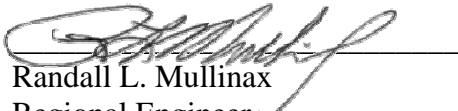
DESCRIPTION	FREQ. MHZ	ATTENUATION DB	DESCRIPTION	FREQ. MHZ	ATTENUATION DB
A + B	199	>100	(2 X B) + (3 X A)	498.3	>100
A + (2 X B)	297.7	>100	3 X A	300.9	>100
B + (2 X A)	299.3	>100	(3 X A) - B	202.2	>100
A + (3 X B)	396.4	>100	3 X B	296.1	>100
B + (3 X A)	399.6	>100	(3 X B) - A	195.8	>100
2 X A	200.6	>100	(3 X A) - (2 X B)	103.5	86
(2 X A) - B	101.9	>100	(3 X B) - (2 X A)	95.5	96
2 X B	197.4	>100	(3 X A) - (3 X B)	4.8	>100
(2 X B) - A	97.1	96	4 X A	401.2	>100
(2 X A) + (2 X B)	398	>100	4 X B	394.8	>100
(2 X A) - (2 X B)	3.2	>100	5 X A	501.5	>100
(2 X A) + (3 X B)	496.7	>100	5 X B	493.5	99

Note: Attenuation values include the impact of local FM stations WASH – 97.1 MHz, WTOP – 103.5 MHz and WPGC – 95.5 MHz.

While special attention was given to the “product” frequencies listed in Table 1, measurements were conducted covering the entire range of frequencies between 3.0 MHz and 550 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 WBIG-FM and WMZQ-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 -80 dBm (80 dB below the unmodulated carrier level which was 0 dBm) the WBIG-FM and WMZQ-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 WBIG-FM and WMZQ-FM.

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

  
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