

INTERMODULATION MEASUREMENT REPORT
AUXILIARY (STAND-BY) ANTENNA
STATIONS WJGL(FM)/WFYV-FM/WXXJ(FM)
JACKSONVILLE, FLORIDA

Technical Report

This Technical Report was prepared on behalf of radio station WJGL(FM) 245C at Jacksonville, Florida, WFYV-FM on Channel 283C at Atlantic Beach, Florida and WXXJ(FM) on Channel 275C at Jacksonville.¹ The aforementioned stations have auxiliary (stand-by) construction permits to implement these facilities into a shared (common) antenna system located at its Hogan Road tower. The construction permit for these stations each have a special condition requiring measurements to be done to ensure no harmful intermodulation emissions occur from these auxiliary operations. This report provides the results of these measurements.

Measurement Procedure

The possible intermodulation products caused by the mixing of the aforementioned stations into the combiner were measured by the undersigned. The equipment used for the measurements included a calibrated *HP 4395A Network/Spectrum/Impedance Analyzer* and *Trilithic Tuneable Bandpass Filter (5VFSS/110-5-50-CC)*.

¹ See FCC File Numbers: BXPB-20120608ACQ, BXPB-20120608ACO and BXPB-20120608ACP.

Both the unmodulated fundamental emissions and the predicted resulting possible intermodulation products were measured to ensure compliance with Section 73.317 of the Commission's Rules. All the stations were operating into the combiner and master antenna system at the parameters (transmitter power output) they will eventually be licensed. Any possible intermodulation products occurring within the FM broadcast band were specifically analyzed, which includes the below frequencies. Below is a tabulation of the specifically measured emissions:

Fundamental Frequencies:

96.9 MHz, 102.9 MHz, 104.5 MHz

Intermodulation Possibilities (2A-B)

90.9 MHz, 89.3 MHz, 101.3 MHz, 106.1 MHz

Intermodulation Possibilities (A+B-C)

95.3 MHz, 98.5 MHz, 93.7 MHz, 100.1 MHz, 92.5 MHz

Also, the spectrum analyzer was scanned for possible intermodulation products were occurring outside the FM broadcast band, such as the 2nd harmonic of the fundamental emission and the FAA aeronautical band. Note, for some of the measurements, nearby stations either on or adjacent to the possible intermodulation products were obtained.

The results of the measurements are tabulated below:

Frequency (MHz)	Level Referenced to Carrier (dB) ²
90.9	82.6
89.3	80.6
101.3	81.8
106.1	81.7

² Most of the possible intermodulation measurements occurred at the noise floor of the spectrum analyzer.

Frequency (MHz)	Level Referenced to Carrier (dB) ²
95.3	81.6
98.5	80.2
93.7	80.4
100.1	82.2
92.5	80.1

Therefore, based upon these measurements, the WJGL(FM), WFYV-FM and WXXJ(FM) auxiliary transmission system located at the Hogan Road tower is in compliance with Section 73.317 of the Commission's Rules

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