

# BASE IMPEDANCE and SPURIOUS EMISSION MEASUREMENT REPORT

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## W250CC / W245DA WENU (AM) / WMML (AM)

August 29, 2013

### INTRODUCTION:

Base Impedance and spurious emission measurements were conducted on the co-located Translator facilities of W250CC, 97.9 MHz, .25kw ERP and W245DA, 96.9 MHz, .25kw ERP co-located on the WENU/WMML tower ASRN 1280797. W250CC is licensed to 6 Johnson Road Licenses, Inc (6JRL). 6JRL was also granted a translator construction permit, file number BNPFT-20171201ANM for W245DA, which has been constructed. 6JRL is required to perform spurious emission measurements to insure compliance with 47 C.F.R. sections 73.317(b) and 73.317(d) as stated in special operating condition (3) of the construction permit. 6JRL is also required to measure the base impedance for WENU (AM) and WMML (AM) as stated in special operating conditions (4) and (5) of the construction permit and in accordance with Federal Communications Commission rules and regulations.

### SYSTEM DESIGN:

WENU (AM) and WMML (AM) are diplexed onto a skirted tower, 56.7 meters tall. The diplexing equipment was designed and installed by Phasetek Inc., of Quakertown, Pennsylvania in 1998.

W250CC and W245DA are combined into a Nicom BKG-77-2 2 bay FM antenna side mounted on the WENU/WMML tower. The center of radiation for the FM antenna is 53 Meters AGL. The FM transmitter outputs are combined using a Shively 2640-04/2 filter/combiner.

### SPURIOUS EMISSIONS MEASUREMENTS:

Measurements were made utilizing a TTI PSA6005 spectrum analyzer, serial number 433226, last factory calibrated on July 2, 2015. A MaxRad calibrated omni-directional survey antenna was positioned in a clear space area approximately 6 feet above ground

approximately 550 feet from the FM broadcast antenna and connected to the analyzer input. 73.317 states that all harmonic and spurious emissions be attenuated by a factor of  $43+10(\log \text{ power})$  or 80db, whichever is less. Since the translators each operate with an effective radiated power of 250 watts, the attenuation requirement is 80db.

Results of the measurements are listed below.

INTERMODULATION W245DA (96.9 MHz - 1 MHz = 95.9 MHz): below noise floor (-94 dBm)

INTERMODULATION W250CC (97.9 MHz + 1 MHz = 98.9 MHz): below noise floor (-91 dBm)

INTERMODULATION: W245DA+W250CC (194.8 MHz): -87 dBc

### **BASE IMPEDANCE MEASUREMENTS:**

Measurements were made using a Delta Electronics OIB-3 serial number 080.

WMML (1230 KHz) MEASURED BASE IMPEDANCE: 120 Ohms -j150

WMML (1230 KHz) LICENSED BASE IMPEDANCE: 121.7 Ohms

Variation from licensed value -1.2%.

WENU (1410 KHz) MEASURED BASE IMPEDANCE: 158 Ohms -j272

WENU (1410 KHz) LICENSED BASE IMPEDANCE: 159 Ohms

Variation from licensed value -0.2%

### **CONCLUSION:**

Measurements made of the W250CC and W245DA facility on August 28, 2018 indicate compliance with respect to spurious emission requirements as of the date taken.

Measurements made of the WENU (AM) and WMML (AM) facility on the same date indicate that both stations are operating within the allowable limits of their licensed parameters.

**CERTIFICATION:**

I, Paul H. Thurst, do hereby state that I personally conducted the measurements contained in this report, using properly calibrated test equipment, and utilizing accepted sample and measurement procedures. I have been a member of the Society of Broadcast Engineers since 1995; that I currently certified as a Senior Radio Engineer by the SBE. I am a Graduate of SUNY Ulster; that I have conducted various radio frequency measurements in the past and have written numerous reports of a technical nature which are a matter of record before the FCC. I hereby certify that all of the measurements and data contained in this report are true and correct to the best of my knowledge.

Respectfully Yours,

A handwritten signature in cursive script, appearing to read "Paul H. Thurst", written over a horizontal line.

Paul H. Thurst

Technical Consultant