

ENGINEERING REPORT

Spurious Emissions Measurement Study Pursuant to 47 C.F.R. §73.317(b)

associated with the licensing of
W277BS.C – Ithaca, NY

BPFT-20100128AHD

March, 2010

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RF Signal Purity Proof for the Combined Master Antenna W277BS – Ithaca, NY & W254BF – Ithaca, NY

This firm has been retained to prepare the required engineering report in support of this Spurious Emissions Measurement Study for the di-plexed operation of FM Translators W277BS – Ithaca, NY and W254BF – Ithaca, NY. This study has been conducted pursuant to 47 C.F.R. §73.317(b) and is associated with, and a condition of licensing for, W277BS construction permit BPFT-20100128AHD.

W277BS operates on 103.3 MHz with a maximum effective radiated power (ERP) of 0.250 kW circular polarization. W254BF operates on 98.7 MHz with a maximum effective radiated power (ERP) of 0.035 kW circular polarization. The common antenna is mounted on tower two of the four tower WNYY(AM) – Ithaca, NY, 1470 kHz nighttime directional array. The common FM antenna is a two bay Scala CL-FM log periodic antenna mounted 84 meters above ground level (AGL) for the horizontal component and 80 meters above ground level (AGL) for the vertical component. The antenna is matched with a Nicom Starpoint FSD-800 double cavity di-plexer. Factory settings were matched employing information from the FCC database concerning the W277BS and W254BF operating parameters; and manufacturer specifications for the di-plexer.

RF signal purity measurements were conducted on March 4, 2010 during the equipment test operations associated with W277BS construction permit BPFT-20100128AHD. Measurements were conducted by Mr. Jay Waggoner, chief engineer of W277BS and W254BF (Ithaca branch of Saga Communications of New England, LLC.). Mr. Waggoner conducted his measurements utilizing a Tektronix Model 2712 spectrum analyzer, serial number B-022961 with all three transmitters in full operation employing the Nicom diplexer for the dual FM operations. A broad spectral sweep found no obvious products above the analyzer noise floor. Using a computer generated mixing product chart, high resolution, low noise floor measurements were also made out to the 1st, 2nd and 3rd order. With the exception of noted carrier frequencies, nothing was observed over the noise floor of the analyzer as reported in the **Exhibit A** attachment.


Attached as **Exhibit A** is a copy of the 1st, 2nd and 3rd order potential mixing product measurement results for the harmonic relationships associated with the 103.3 MHz and 98.7 MHz combined operation. As a result of these studies, it has been concluded the proposed di-plexed operation of W277BS and W254BF meets or exceeds the requirements of 47 C.F.R. §73.317(b) and the special condition of licensing associated with BPFT-20100128AHD.

CERTIFICATION OF ENGINEERS

The data utilized in this report was taken from the FCC Secondary Database and data on file. While this information is believed accurate, errors or omissions in the database and file data are possible. This firm may not be held liable for damages as a result of such data errors or omissions.

The report has been prepared by properly trained electronics specialists under the direction of the undersigned whose qualifications are a matter of record before the Federal Communications Commission. I declare under penalty of the laws of perjury that the contents of this report are true and accurate to the best of my knowledge and belief.

March 4, 2010

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Exhibit A

Tabulation of Potential Mixing Products W277BS (103.3 MHz) & W254BF (98.7 MHz)

Frequency (MHz)	Measured Level (dBc)
94.10	-60.3 dB
95.76	-56.0 dB
97.23	-56.0 dB
98.70	Carrier – W254BF*
100.17	-56.0 dB
100.36	-56.0 dB
101.64	-57.0 dB
101.83	-56.0 dB
103.30	Carrier – W277BS*
104.77	-63.8 dB
106.24	56.0 dB
107.90	-56.0 dB
195.93	-62.3 dB
197.40	-56.0 dB
198.87	-56.0 dB
202.00	-56.0 dB
205.13	-56.0 dB
206.60	-56.0 dB
208.07	-56.0 dB
296.10	-70.0 dB
300.70	-56.2 dB
305.30	-56.2 dB
309.90	-56.0 dB
*No intermodulation mixing was noted on any carrier frequency	