

# Spectrum Emissions Compliance

Tests were conducted to determine compliance with 47 C.F.R. §73.317(b) through §73.317(d) for W245AJ, Forest Park, OH FAC# 147918 and W237DW, Covington, KY FAC# 147546 sharing a common transmit antenna using a transmit combiner.

## Method Used For Gathering Data

Signals were measured with a transmitter for each station connected to the input ports of a Shively Combiner, Serial No. 33264-1, Model 2930-2/3-FB designated for 95.3 MHz and 96.9 MHz. A Bird Wattmeter model 43 was connected directly between the antenna port of the combiner and the antenna feed line for the antenna system. A Bird 55 dB sample port element 55dB 75 MHz to 150 MHz was used for obtaining a test signal for making measurements. The measurement data were gathered using a Rigol model DSA815 Spectrum Analyzer, serial number DSA8A141800265.

Measurements were taken for spurious emissions on the main channel and harmonic suppression at the second, third, and fourth harmonics to verify compliance with FCC rules. Additionally a sweep up to 500 MHz including a close sweep of the aviation band showed no spurs or harmonics.

## Results

Per §73.317, measurements were made for any spurious emissions at between 120 kHz and 240 kHz either side of the stations operating frequency. Further measurements were made at between 240 kHz and 600 kHz either side of the carrier frequency. These measurements were conducted with no modulation present; and no spurious emissions were noted. Measurements were then made at the second, third, and fourth harmonic frequencies of the described stations operating frequency.

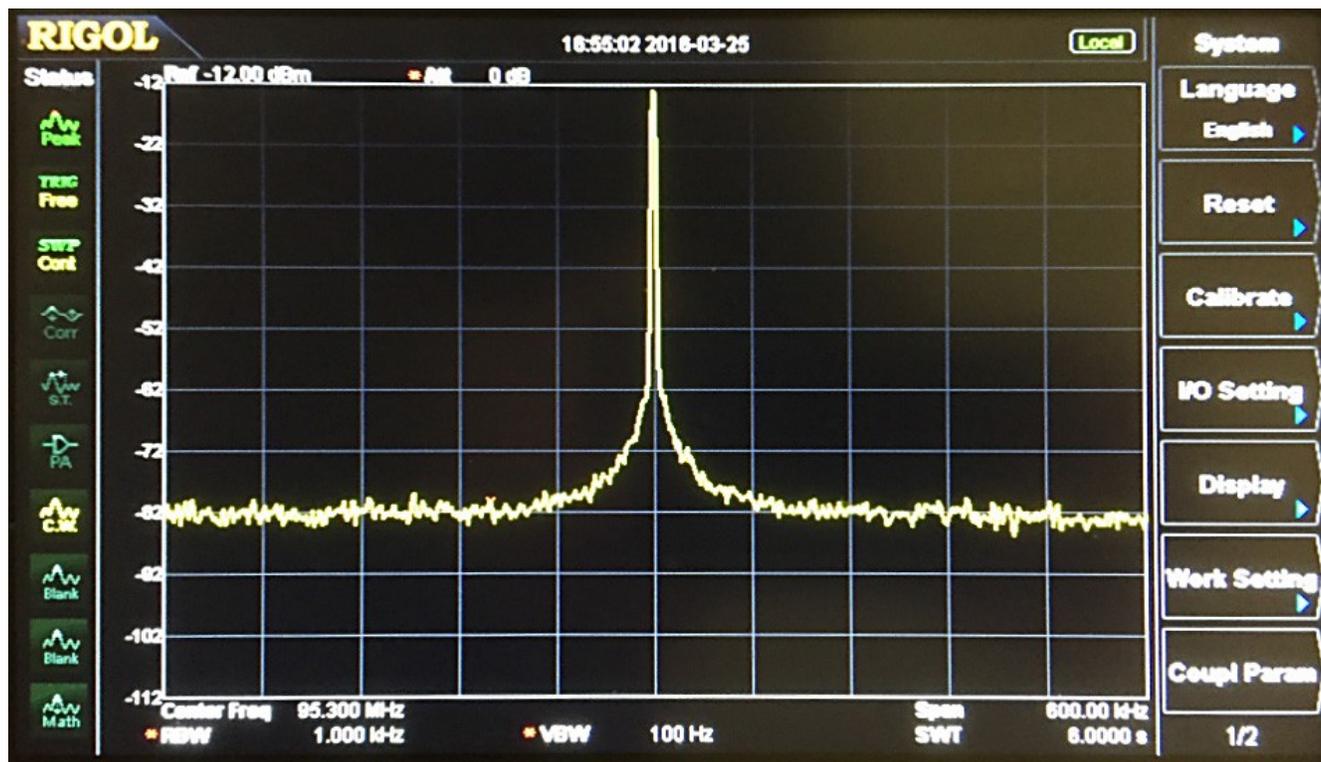
Again, no spurious signals were present. A close scan of Aviation spectrum between 118 MHz & 136 MHz also showed no signs of spurious emissions. A scan of the spectrum, up to and including 500 MHz, was made to look for any other spurious emissions from the W245AJ & W237DW combined transmission system; and none could be found. According to all measurements observed, including but not limited to that presented herein, W245AJ & W237DW are in full compliance with all FCC requirements of 47 C.F.R. §73.317(b) through §73.317(d).

# Certification

I certify that I personally conducted all measurements and prepared all statements within this document as represented herein and that all such work was done using good engineering practice.

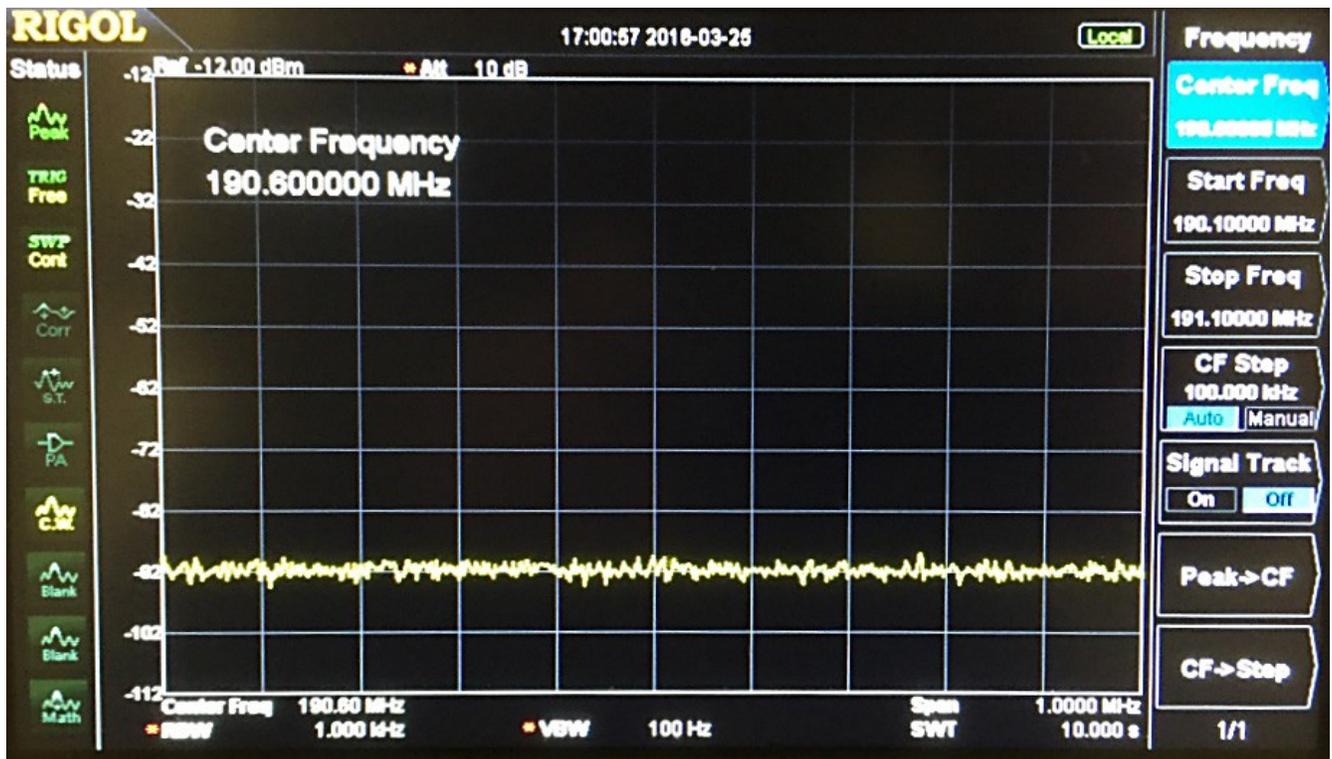
Jeffrey P. Hecht

Compliance with section 73.317(d)

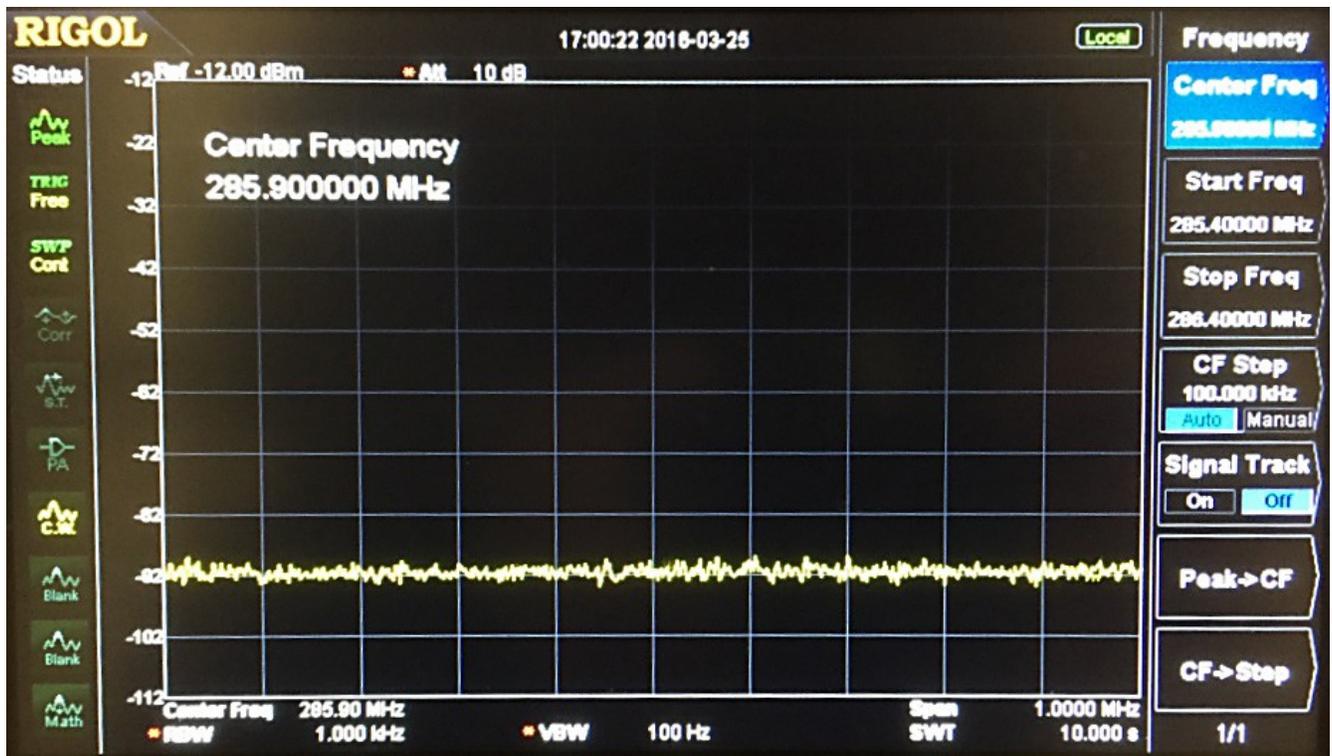


Note: 73.317(d) requires emissions appearing more than 600 KHz from the carrier must be attenuated at least  $43+10\log(\text{power in watts})$  or 80 dB below the unmodulated carrier whichever is the lesser. The transmitter output power is 16 watts, thus the limit for section (d) is 55 dB.

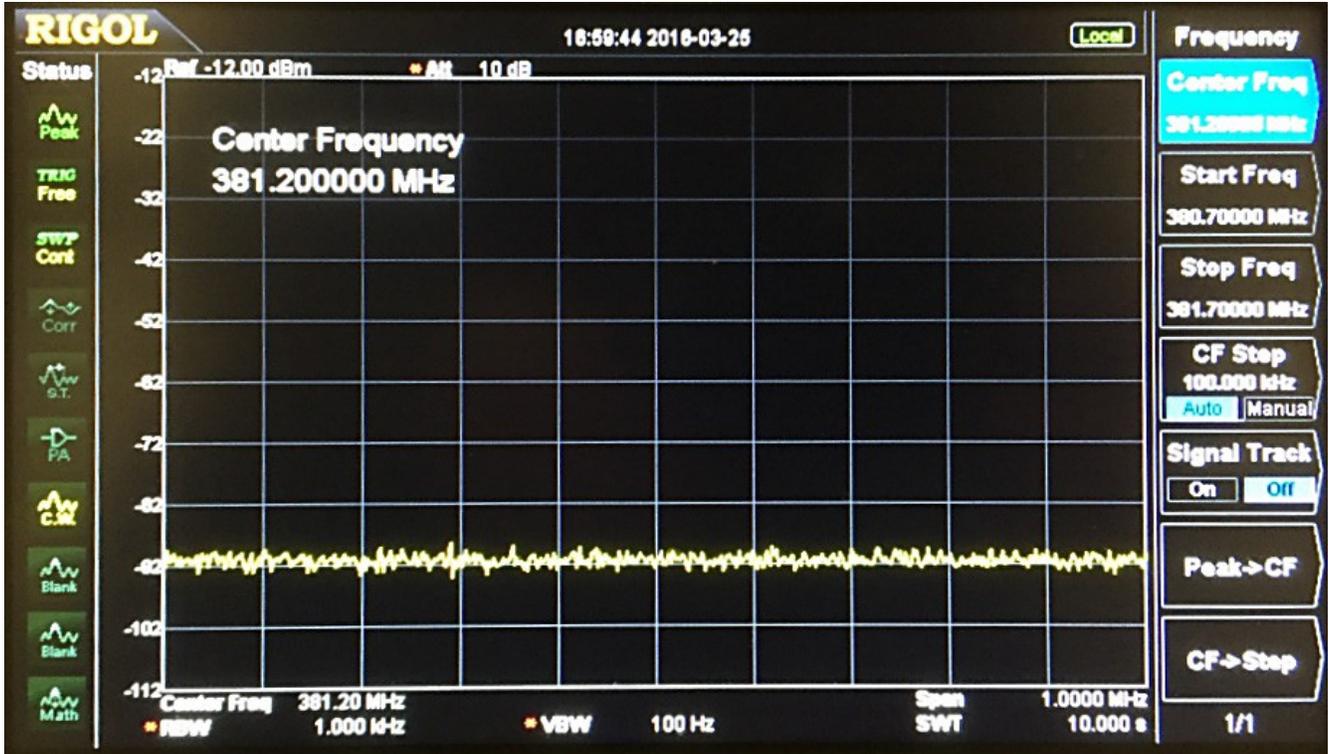
### 2<sup>nd</sup> Harmonic



### 3rd Harmonic



### 4th Harmonic



### Aviation Spectrum

