

Compliance with Special Operating Condition or Restriction Number 1 for W237EG

There is no occupied bandwidth measurement requirement for W243DH. However, Special Operating Condition or Restriction 1 on the construction permit for W237EG, file number BMPFT-20150901AAE, requires measurement of spurious emissions with all stations using the shared antenna operating simultaneously. This Exhibit provides details of compliance with 47 C.F.R. Sections 73.317(b) through (d).

There is one (1) other station authorized using the shared antenna, W237EG, file number BMPFT-20150901AAE. In addition, translator stations W232CW and W256CV use separate antennas on the same tower. All four translators were in operation throughout the measurements. In addition, station WASU (FM), is authorized on a nearby tower. It was observed to be operational throughout the measurements.

Measurements were made on a Tektronix 2710 Spectrum analyzer, connected to a Sierra Electronics 642A-Z directional coupler, inserted between the output of the combiner and the transmission line to the antenna. The coupling factor at the frequencies in question is 49 dB and the directivity is 20 dB.

Modulation was observed and verified to be within the limits of §73.317(b) and §73.317(c). There are no likely intermodulation products within 600 kHz of the carrier frequencies, and none were observed.

Section 73.317(d) requires that the emissions more than 600 kHz from the carrier be attenuated by at least $43 + 10 \log_{10}(\text{Power, in Watts})$ below the unmodulated carrier. W243DH is authorized with an Effective Radiated Power of 14 Watts. The requirement for emissions more than 600 kHz from the carrier is therefore 54.5 dB below the unmodulated

carrier. The system was calibrated through the coupler, and produced a level of -17.8 dBm at carrier frequency. The maximum permissible level beyond 600 kHz is therefore -72.3 dBm.

Notch filters were then inserted between the coupler and the spectrum analyzer at each frequency operating on the shared antenna. Each filter has an attenuation of 25 dB at the center frequency and a 3 dB bandwidth of 3 MHz. Levels are adjusted for the filter attenuation.

Measurements were made at the third order and fifth order predicted intermodulation frequencies, as tabulated here:

Frequency (MHz)	Observed Signal dBm	Relative Level dB	Adjusted Level dB	Notes
92.9	-81	-68	-68	Not IM
94.1	-93.6	-83	-81.5	Not IM
97.7	-87	-74	-72.5	IM
99.9	-98	-85	-85	Not IM

When measuring each frequency, the W243DH transmitter was turned off and on to see if it was contributing to the observed level. At only one frequency, 97.7 Hz, was the signal related to operation of W243DH. At all other frequencies, the measurement reflects the noise floor, including signals incident on the antenna.

Measurements were then taken at and around harmonic frequencies up to 1,000 MHz. Only the third harmonic at 285.9 MHz was observed. The level was -105.8 dBm, a relative signal of -88.0. In addition, the coupler relative efficiency increases by 9.5 dB at that frequency, for an adjusted relative level of -97.5 dB. All other harmonics through the 10th harmonic were below the noise floor, typically -115 dBm, or a relative level of -97.7 dB.

The facilities, as constructed, are in compliance with 47 C.F.R. Sections 73.317(b) through (d).