

**Occupied Bandwidth Measurements**

**on**

**Auxiliary Facilities**

**of**

**WPXY-FM, 97.9 MHz, 4.2 kW**

**and**

**WCMF-FM, 96.5 MHz, 4.2 kW**

**Rochester, New York**

August 4, 2016

*by:*

*Hungry Wolf Electronics, 119 Mulberry Lane, Milton, NY*

Occupied bandwidth measurements were made on WPXY-FM, 97.9 MHz, and WCMF-FM, 96.5 MHz, on August 4, 2016. At the time of the measurements, both transmitters were operating through a combiner into their auxiliary antenna, which is located on a tower ASR #1228608, off Pinnacle Hill Road, in Rochester, New York.

The relevant requirements are stated in CFR73.317 as follows:

(b) Any emission appearing on a frequency removed from the carrier by between 120 kHz and 240 kHz inclusive must be attenuated at least 25 dB below the level of the unmodulated carrier. Compliance with this requirement will be deemed to show the occupied bandwidth to be 240 kHz or less.

(c) Any emission appearing on a frequency removed from the carrier by more than 240 kHz and up to and including 600 kHz must be attenuated at least 35 dB below the level of the unmodulated carrier.

(d) Any emission appearing on a frequency removed from the carrier by more than 600 kHz must be attenuated at least  $43 + 10 \text{ Log}_{10}(\text{Power, in watts})$  dB below the level of the unmodulated carrier, or 80 dB, whichever is the lesser attenuation.

WPXY and WCMF both normally transmit HD radio signals. In both cases these are space combined; the main antenna is interleaved for this purpose. There is no provision for HD transmission when using the aux antenna, so all transmitted signals on the aux antenna are analog.

The instant measurements were made at a sample port in the antenna transmission line after the combiner. The measurements were made using an Agilent N9340B spectrum analyzer, serial number CN034800002. An external attenuator was used to keep the input signal at levels that did not overdrive the analyzer. A 300 KHz resolution bandwidth was used to set the carrier level on the analyzer. Neither the attenuator nor the amplitude settings of the analyzer were adjusted after this initial setting, so all readings are relative to this maximum. The 300 KHz RBW trace is left on screen for reference in some of the attached screenshots.

WPXY and WCMF are located in an antenna farm which supports a number of other broadcast facilities. Signals from five of these facilities were visible at the sample port in use: WRUR, 88.5 MHz, WXXI, 91.5 MHz, WZNG, 94.1 MHz, W234AZ, 94.7 MHz, and WKGS, 106.7 MHz. These signals appeared at the same levels with the WPXY and WCMF transmitters fully off.

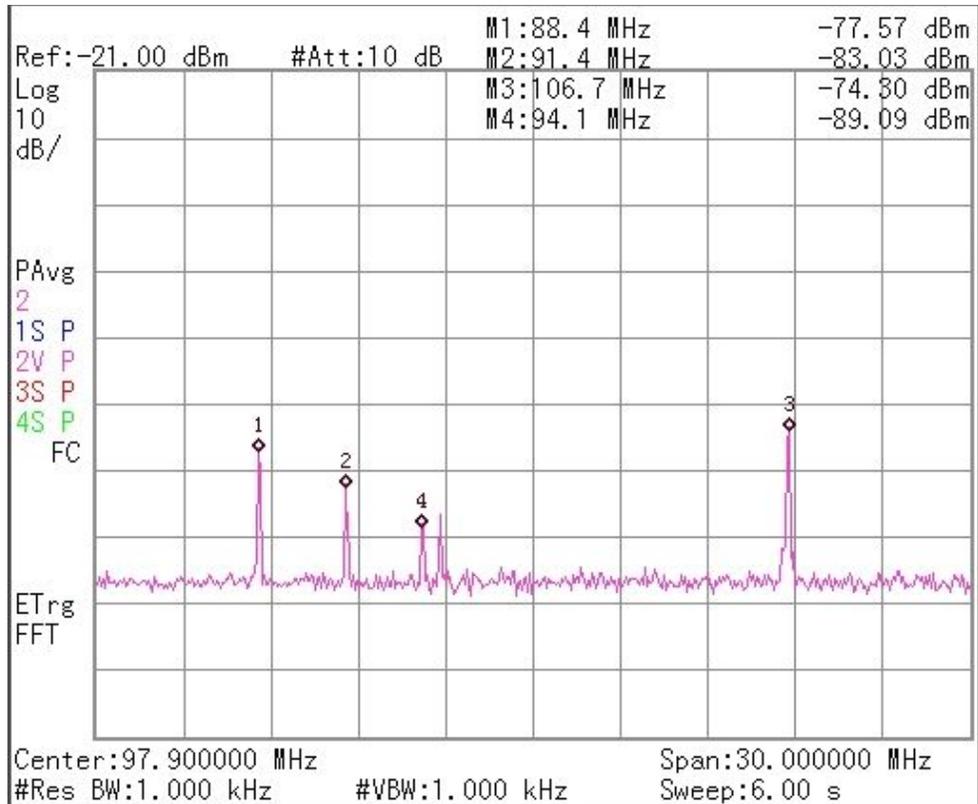
During the time of the test both WPXY and WCMF were modulated with normal program material.

The spectrum was examined from about 80 MHz to beyond the second harmonic of the stations, and also near the third and fourth harmonics. Representative screenshots are included here. No emissions were detected that exceed the limits of CFR 73.317. The operation into this auxiliary antenna is thus compliant.

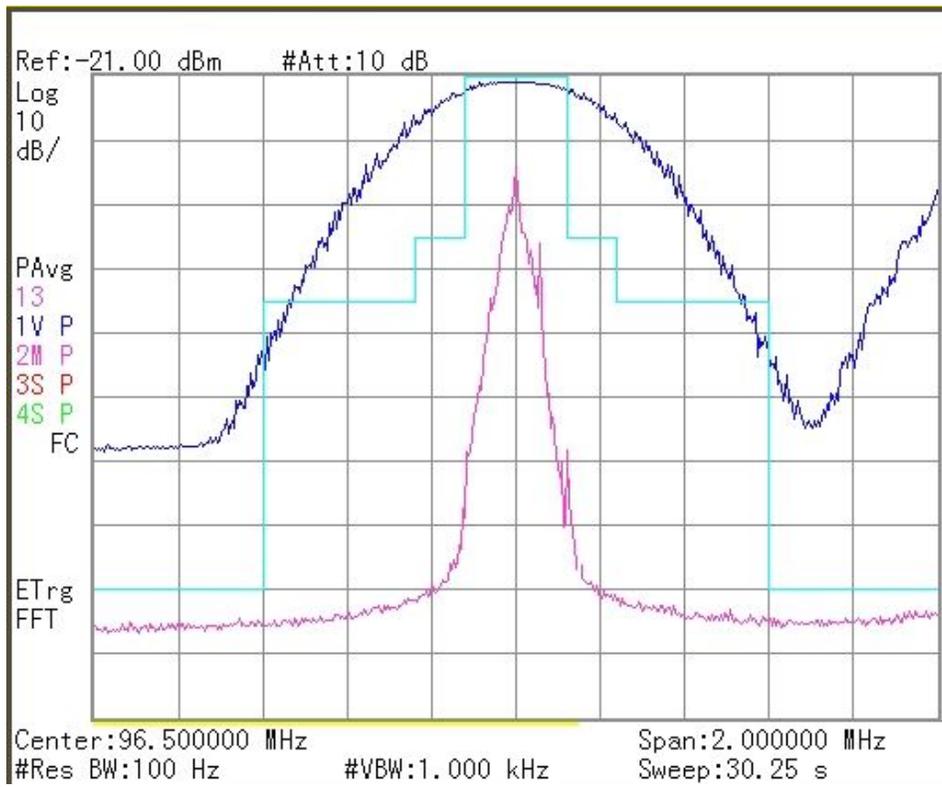
All measurements were made by me, and are complete and accurate to the best of my knowledge and belief.

A handwritten signature in cursive script, written in dark ink, which reads "William Weeks". The signature is contained within a light gray rectangular box.

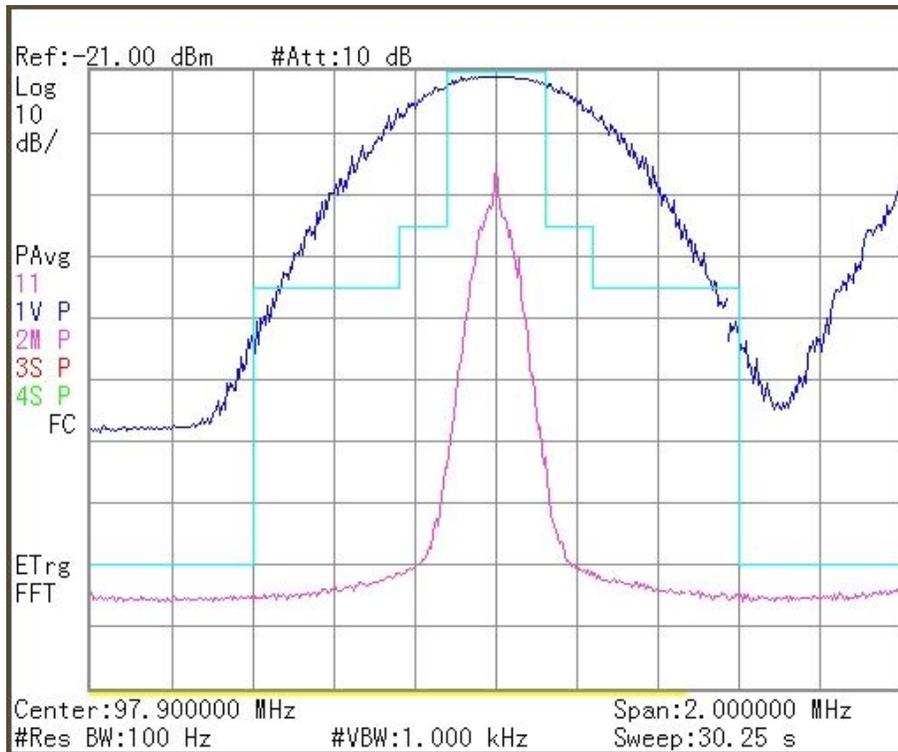
William Weeks, August 5, 2016



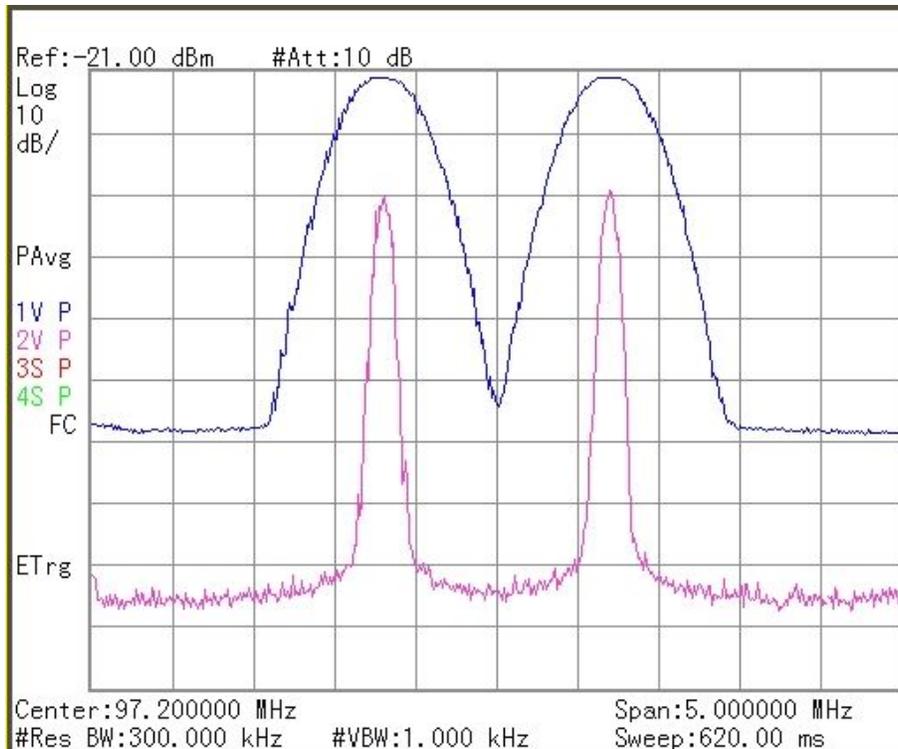
30 MHz wide spectrum, WPXY and WCMF carriers fully off



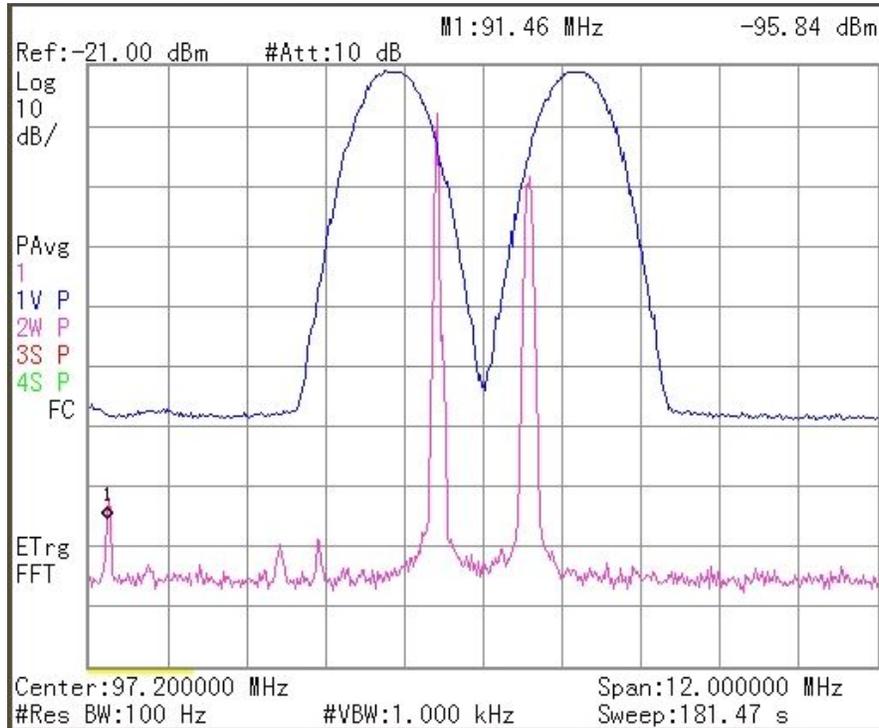
WCMF showing compliance with mask at 2 MHz span



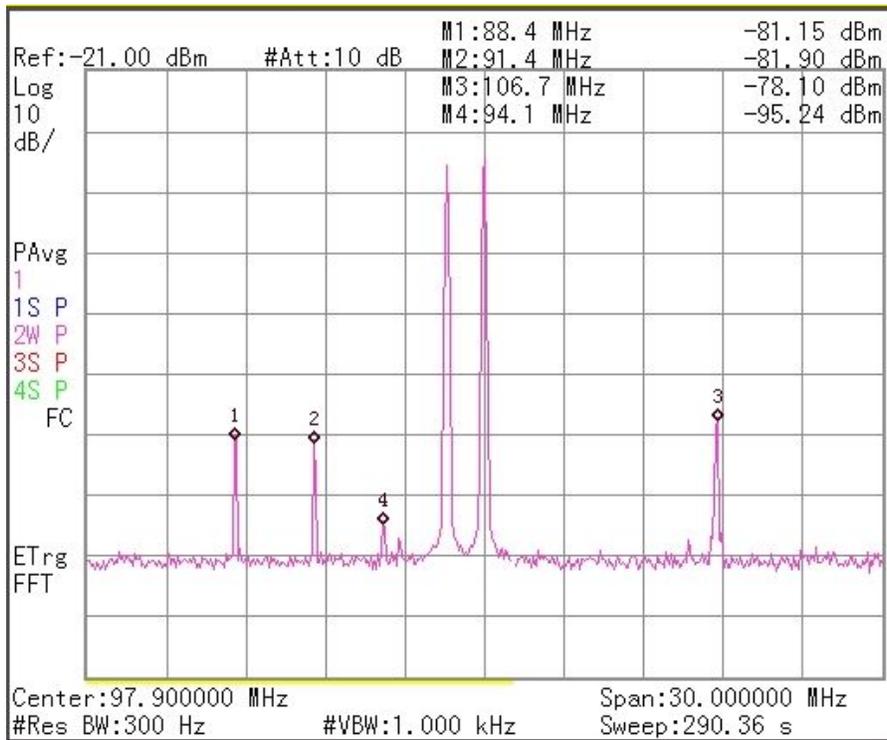
*WPXY showing compliance with mask at 2 MHz span*



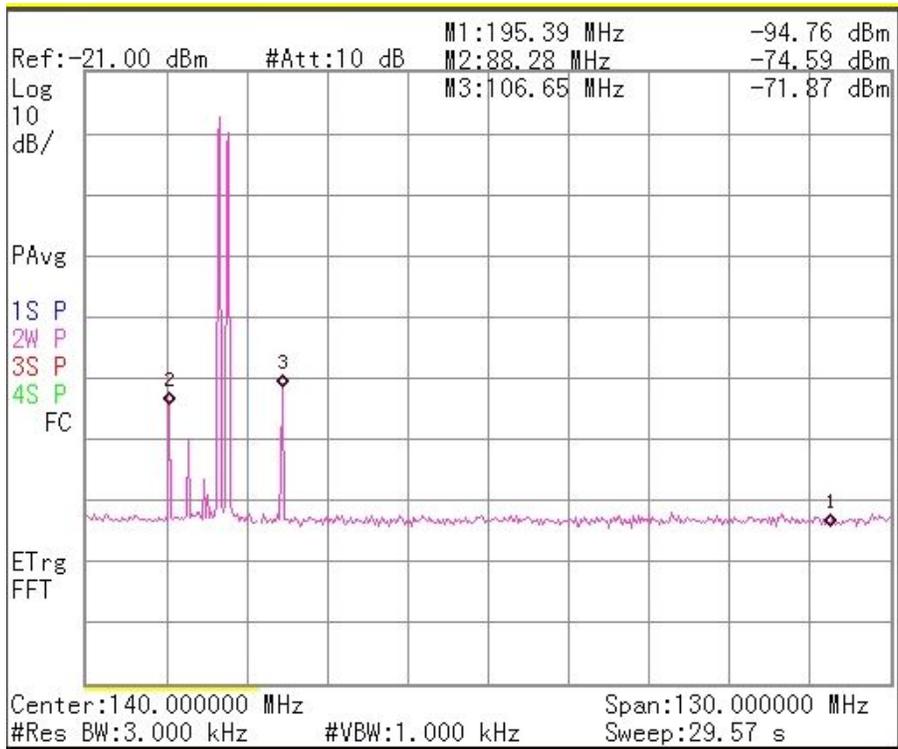
*No anomalies on screen at 5 MHz span*



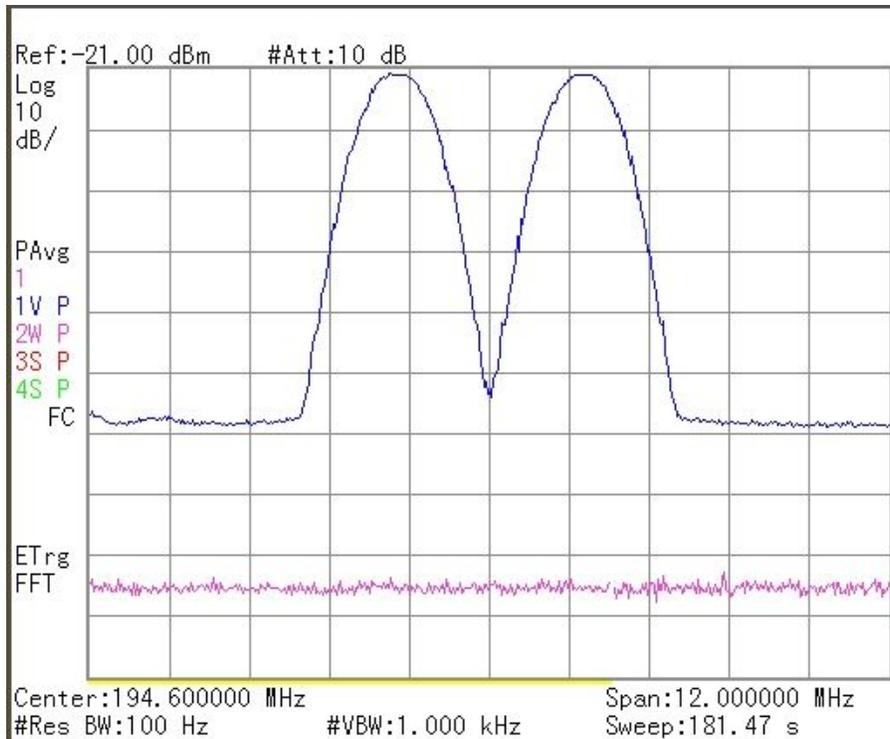
*WXXI, WZNG, and W234AZ carriers visible*



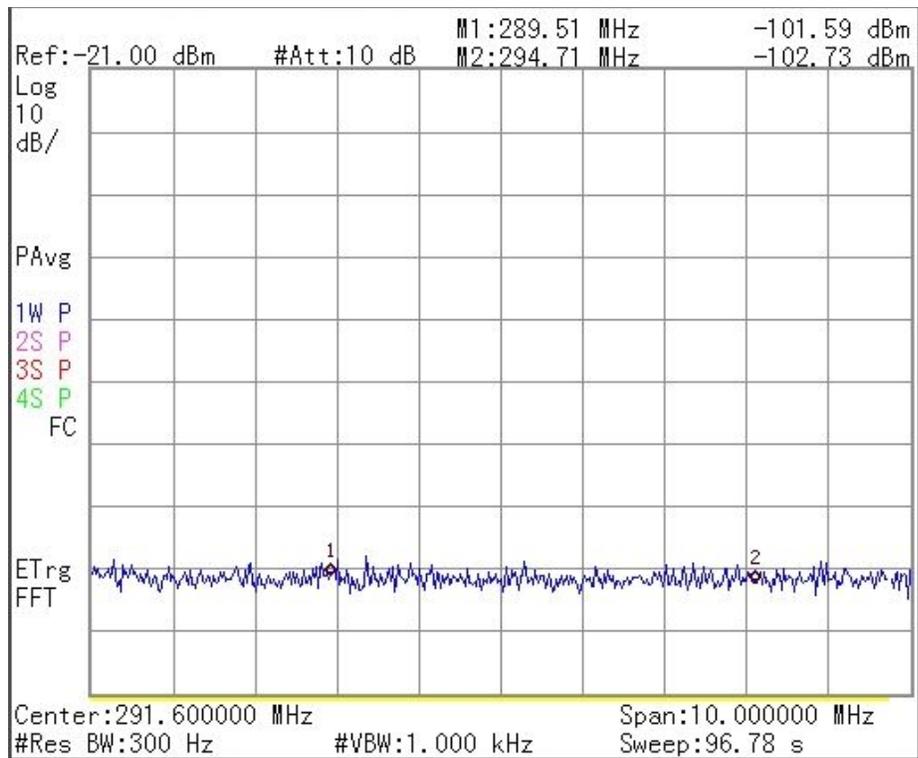
*No anomalies above the noise floor other than the identified stations*



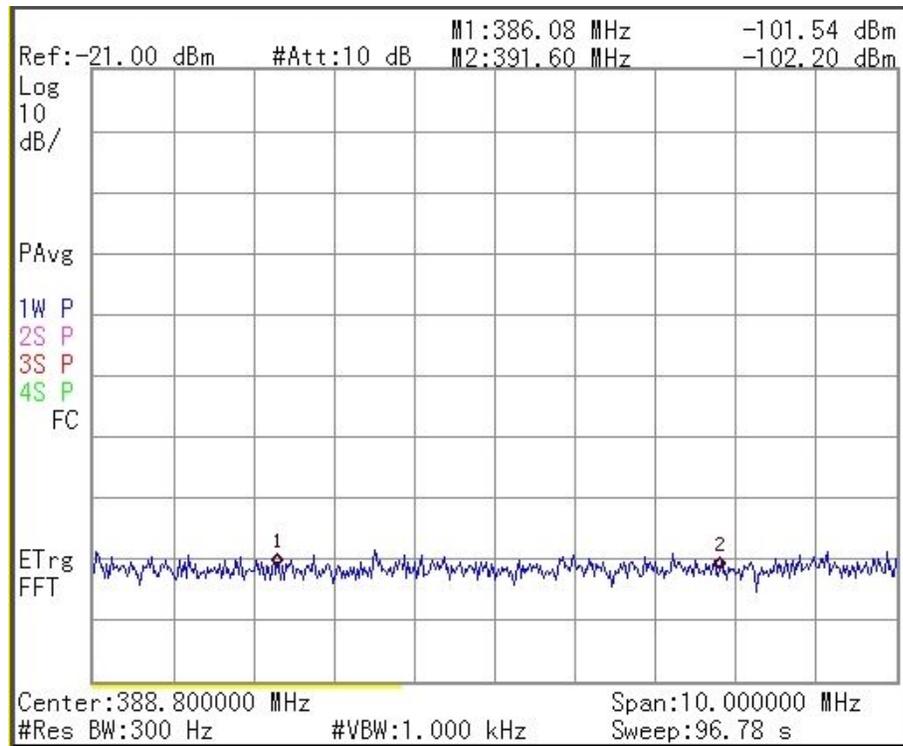
*Spectrum from carrier to Second Harmonic area*



*Frequencies around the second harmonics*



*Frequencies around the third harmonics*



*Frequencies around the fourth harmonics*