

RADIO & TV BROADCAST SERVICES

**WOODS COMMUNICATIONS, INC.**

Office: 541-357-9090 • Fax: 678-866-6148 • woodscommunications@gmail.com  
30703 Camas Swale, Rd., OR 97455

2023

LPD TV OCCUPIED BANDWIDTH AND SPURIOUS EMISSIONS  
MEASUREMENTS  
K47HT – ROSEBURG, OREGON

26 February 2023

## MEASUREMENT REPORT

On the morning of January 29, 2023, equipment performance measurements were gathered as contemplated in 47 CFR §73.1590 (a) through (d) and described in 47 CFR §73.687 (e) & 47 CFR § 73.699, for digital low power broadcast station (LPD) K47HT located on Mt. Nebo Ridge in Roseburg, Oregon. These measurements were made subsequent to the installation of a new transmitter and antenna.

Measurements were made while the station was broadcasting programming material typical of its daily operation. K47HT transmits on channel 14 (470 – 476 MHz). K47HT was operating at its full permitted power of 3,800 Watts, ERP and 230 Watts TPO. K47HT couples through an eight-pole stringent mask filter into a tower mounted SL-8 UHF Slot Antenna.

### MEASUREMENT PROCEDURE:

A sample of the K47HT signal was taken both at the output and at the mask filter output through a calibrated directional coupler port provided by the manufacturer.

This samples were coupled to a Anritsu M2713E spectrum analyzer, (S/N 1016084), within current calibration. The analyzer was set to a center frequency of 473 MHz, with various spans, resolution bandwidth of 1 kHz, video filtering of 3 kHz and using an average detector. The analyzer set to peak hold mode and allowed to collect data for 10 minutes. The resulting plots were saved in the analyzer's memory and a copies are included below.

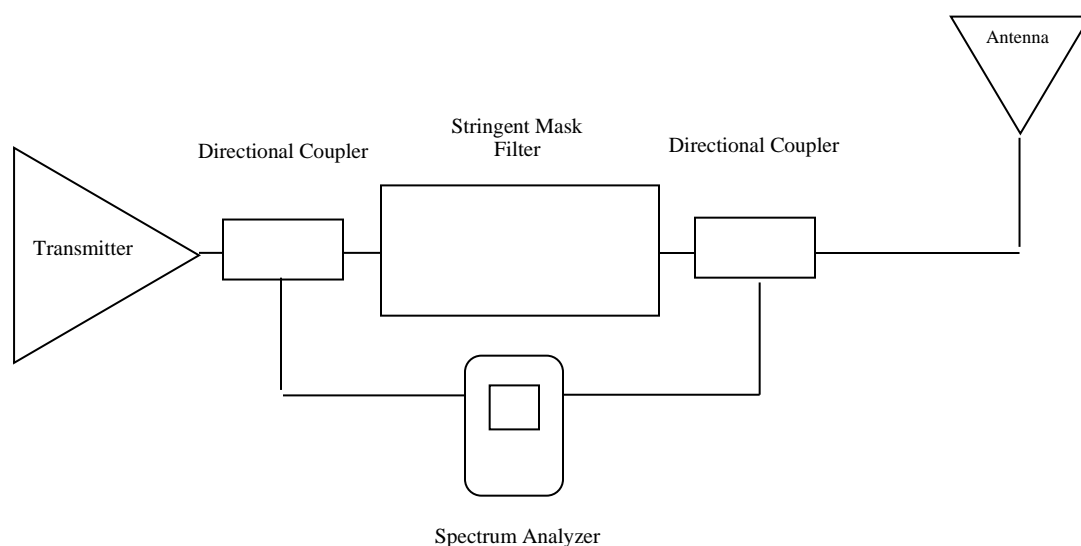
47 CFR §73.687 (e, 4) requires that channel 14 signals below 470 Mhz be attenuated to the extent necessary to prevent receiver desensitization or intermodulation.

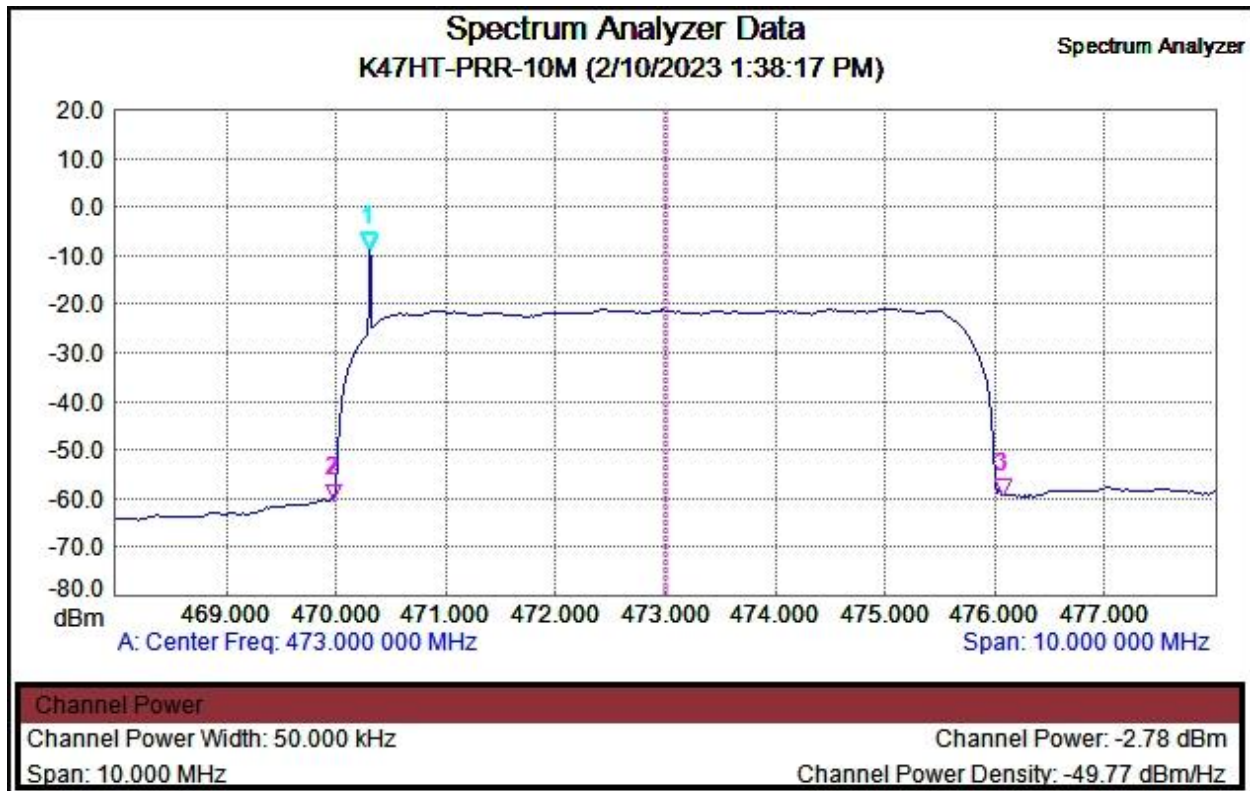
The plots below readily shows that the occupied bandwidth of the K47HT signal lies within the limits established in 47 CFR § 73.699.

The spectrum analyzer was set to 20 MHz span, 1 kHz resolution bandwidth, and 3 kHz video filtering to measure spurious signals and harmonics beyond 600 kHz from the carrier. At this resolution bandwidth, the internal noise of the analyzer is reduced sufficiently to resolve signals below -73 dBC. The analyzer was initially set at 10 MHz center frequency and then incremented successively by 20 MHz to scan the spectrum from 9 kHz to 1 GHz. Any signals that were greater than -73 dBC were noted. No such signals were found. No inter-modulation products, spurious signals or harmonics were found that could be attributed to the operation of K47HT.

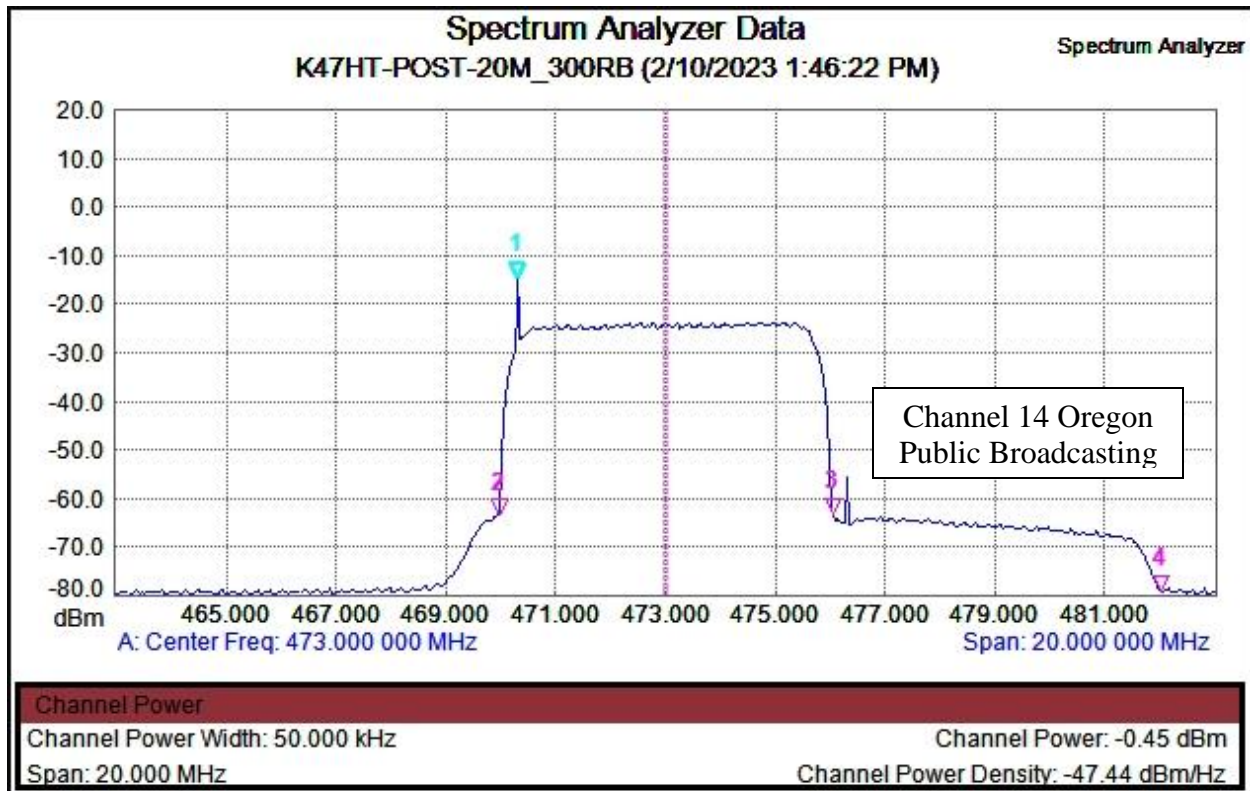
In light of the above measurements I believe that K47HT is in full compliance with the requirements of 47 CFR §73.687 (e) & 47 CFR § 73.699.

#### MEASUREMENT BLOCK DIAGRAM:



MEASUREMENT PLOT TX OUTPUT:

| Measurement Parameters     |                 |                 |                      |
|----------------------------|-----------------|-----------------|----------------------|
| Trace A data:Trace Average | 10              | Stop Frequency  | 478.000 000 MHz      |
| Trace Mode                 | Average         | Frequency Span  | 10.000 000 MHz       |
| Preamp                     | ON              | Reference Level | -40.000 dBm          |
| Min Sweep Time             | 0.001 S         | Scale           | 10.0 dB/div          |
| Reference Level Offset     | -60 dB          | Serial Number   | 1016084              |
| Input Attenuation          | 0.0 dB          | Base Ver.       | V6.02                |
| RBW                        | 1.0 kHz         | App Ver.        | V7.25                |
| VBW                        | 300.0 Hz        | Model           | MS2713E              |
| Detection                  | RMS             | Options         | 10, 21, 31           |
| Center Frequency           | 473.000 000 MHz | Date            | 2/10/2023 1:38:17 PM |
| Start Frequency            | 468.000 000 MHz | Device Name     | jacob                |

MEASUREMENT MASK FILTER OUTPUT:

## Measurement Parameters

|                        |                 |                 |                      |
|------------------------|-----------------|-----------------|----------------------|
| Trace Mode             | Normal          | Stop Frequency  | 483.000 000 MHz      |
| Preamp                 | ON              | Frequency Span  | 20.000 000 MHz       |
| Min Sweep Time         | 0.001 S         | Reference Level | -40.000 dBm          |
| Reference Level Offset | -60 dB          | Scale           | 10.0 dB/div          |
| Input Attenuation      | 0.0 dB          | Serial Number   | 1016084              |
| RBW                    | 300.0 Hz        | Base Ver.       | V6.02                |
| VBW                    | 100.0 Hz        | App Ver.        | V7.25                |
| Detection              | RMS             | Model           | MS2713E              |
| Center Frequency       | 473.000 000 MHz | Options         | 10, 21, 31           |
| Start Frequency        | 463.000 000 MHz | Date            | 2/10/2023 1:46:22 PM |
|                        |                 | Device Name     | jacob                |



TRANSMITTER T.P.O. OBSERVED 230 WATTS:

## ENGINEER'S STATEMENT:

I hereby affirm that:

I have been retained by Better Life Television., licensee of K47HT, to ascertain its station's compliance with 47 CFR §73.687 (e) & 47 CFR § 73.699 and to prepare this report;

This report and associated exhibits were prepared by me, and are based on measurements made by me;

To the best of my knowledge all statements made herein are true and reflect the actual facts of the matter;

I am a Broadcast Engineer of 32 years experience and certified with the Society of Broadcast Engineers as a Certified Professional Broadcast Engineer (CPBE) member No. 16407 and;

My credentials are contained in other filings and are a matter of public record with the Federal Communications Commission.

Respectfully submitted this 26<sup>th</sup> day February of 2023,



ELECTRONIC SIGNATURE

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Thomas A. Woods Jr.

– WOODS COMMUNICATIONS INC. –  
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