

NRSC-2 MEASUREMENT

Occupied Bandwidth, and Harmonics

For

Radio Station

WIMS-AM

Conducted on

July 27, 2019

Measurements Performed by

Radio Aids

Precision Frequency Measurements

P.O. Box 1121

Mishawaka, IN 46546

574-229-6280

FOREWORD

This report contains the results of measurements as described in Section 73.1590 of the rules and regulations of the Federal Communications Commission that were conducted on July 27, 2019 on behalf of Radio Station **WIMS, Michigan City, IN**. **WIMS** operates on 1420 Khz with a power of 5,000 watts daytime and 500 watts night time directional.

These measurements show the extent to which **WIMS** complies with the occupied bandwidth and harmonic emission requirements of the Commission's rules, specifically Sections 73.44 regarding AM Transmission Emission Limitations.

METHODS AND EQUIPMENT USED

The occupied bandwidth portions of the measurements were conducted using an Anritsu Model MS2721B. The antenna used is a Loop antenna with 15 feet of RG-214 coaxial cable.

For this report the analyzer was operated in the peak hold mode for numerous sweeps totaling a minimum of 10 minutes for each measurement. Specifics on the measurement are located on each page.

For identification and measurements of harmonics a Potomac model FIM-41 was employed.

Measurements were made during daytime hours that occurred after sunrise and concluded prior to two hours before sunset to minimize skywave interference.

Please note that any adjacent peaks or spurs were other radio Stations and not caused by **WIMS-AM**.

LOCATION OF MEASUREMENTS

The measurements were made at a location within one kilometer from the **WIMS** transmitter site. The attached map shows the location relative to the transmitter site.

RESULTS

The results of the occupied bandwidth portion of the measurements are the spectrographs shown in Figures A and B. All spectrographs were made with the station operating under normal conditions and with programming containing primarily music.

QUALIFICATIONS OF ENGINEER

Robert Henning, located in Mishawaka, Indiana, hereby states that he has been actively involved in Broadcast Engineering since 1990; His qualifications as a technical consultant are a matter of record with the FCC. He holds an FCC General Radiotelephone License, and Certification from the Society of Broadcast Engineers. He also certifies that he has prepared this report for Radio Station **WIMS**; that he made the equipment performance measurements of Radio Station **WIMS**; and that all the data contained in this report is accurate and correct to the best of his knowledge and ability.

TABLE A

Spurious and harmonic emissions observed between
530 KHZ and 5000 KHz for operation of **WIMS-AM**

Frequency	Relationship	Signal Relative To Carrier	Minimum Attenuation required by 73.44
1420 kHz	Carrier (840 V/m)	0.0 dBc	-----
2840 KHz	2nd Harmonic	-83.52 dBc	80 dBc
4260 Khz	3 rd Harmonic	-90.18 dBc	80 dBc

A 4th harmonic reading was not available due to limitation of the
FIM-41

Frequency Measurement at the time of Study:

1,540,002.735

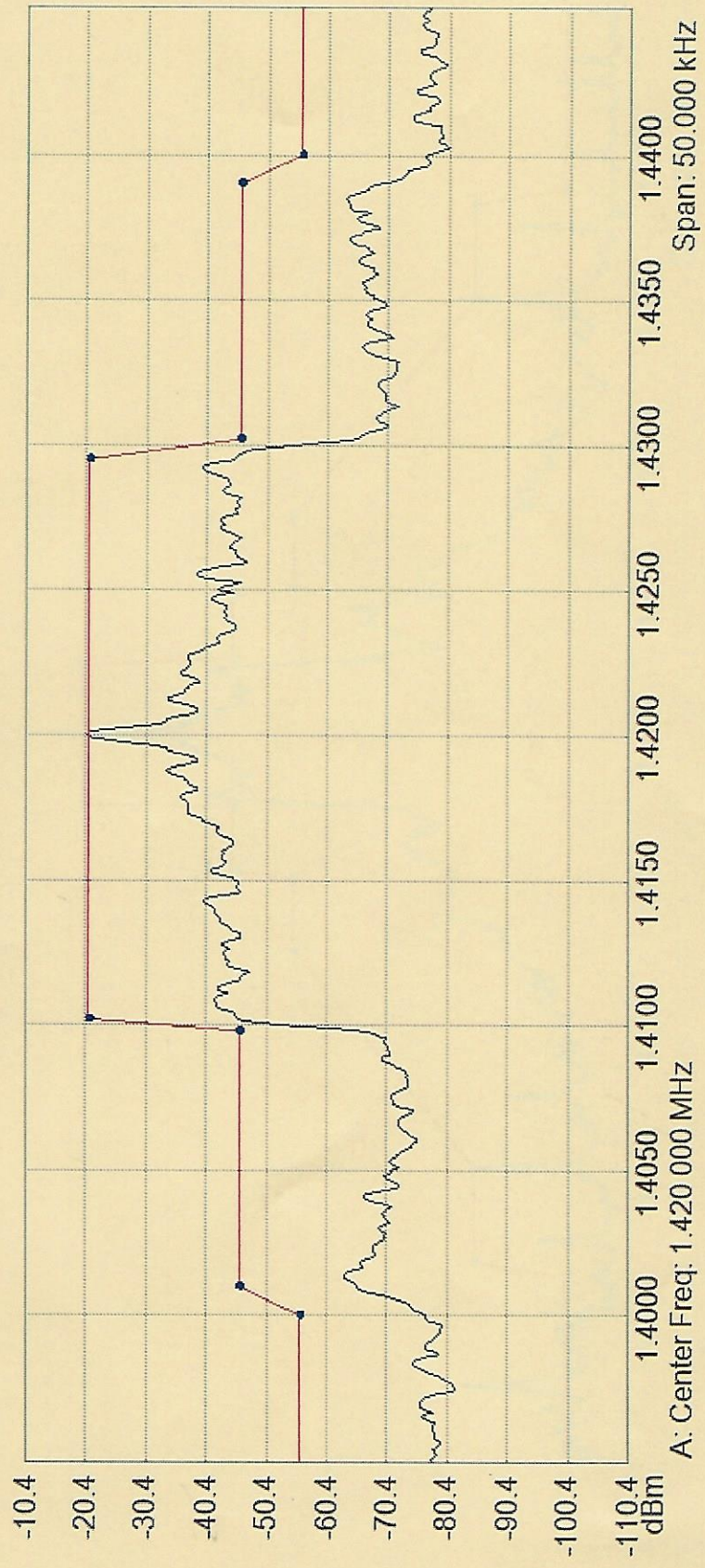
The MAIN Transmitter of radio station **WIMS-AM** was found to be
operating within N.R.S.C and compliance with Section 73.44

A copy of this report should be made part of the station's on-line
Public File, and designated Chief Operator should place the
original with station Operating Logs. In addition, a PDF copy of
this report is available for email as well. Please contact us.

PLEASE NOTE: To fully comply with F.C.C. Rule 73.1590, this
NRSC-2 report must be conducted no later than 14 months from
the date at the top of this report.

Spectrum Analyzer Data
 WIMS-FIG-A (7/28/2019 12:18:40 PM)

Spectrum Analyzer



Trace A data:

Trace Mode = Max Hold
 Preamplifier = OFF
 Min Sweep Time = 0.001 S
 Reference Level Offset = 0 dB
 Input Attenuation = 0.0 dB
 RBW = 300.0 Hz
 VBW = 100.0 Hz

Detection = Peak

Center Frequency = 1.420 000 MHz
 Start Frequency = 1.395 000 MHz
 Stop Frequency = 1.445 000 MHz
 Frequency Span = 50.000 000 kHz
 Reference Level = -10.400 dBm
 Scale = 10.0 dB/div
 Serial Number = 717197

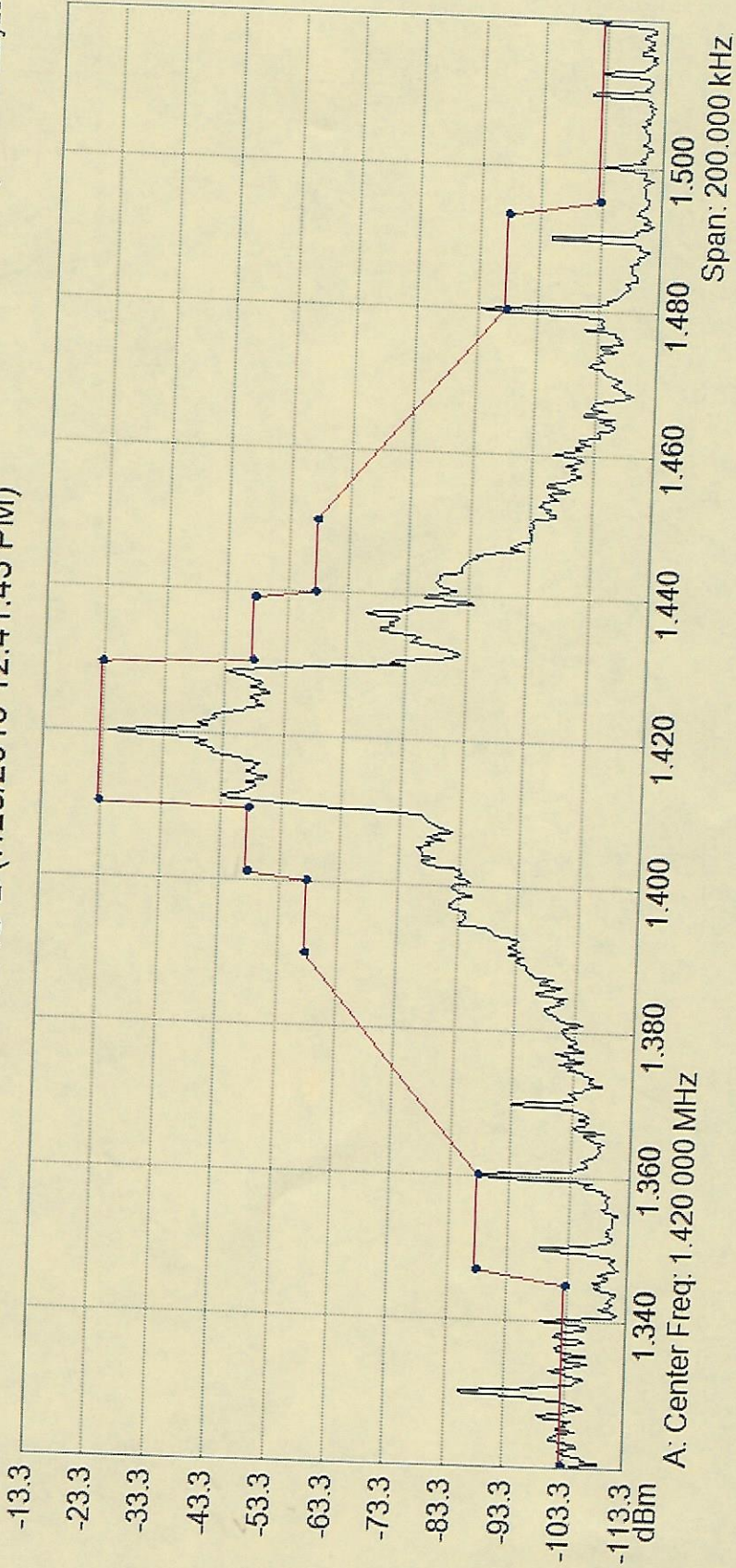
Base Ver. = V5.71

App Ver. = V5.73
 Model = MS2721B
 Options = 9, 19, 44, 65
 Date = 7/28/2019 12:18:40 PM
 Device Name =

Spectrum Analyzer Data

WIMS-FIG-B (7/28/2019 12:41:43 PM)

Spectrum Analyzer



Trace A data:

Trace Mode = Max Hold
 Preamplifier = OFF
 Min Sweep Time = 0.001 S
 Reference Level Offset = 0 dB
 Input Attenuation = 0.0 dB
 RBW = 300.0 Hz
 VBW = 100.0 Hz

Detection = Peak

Center Frequency = 1.420 000 MHz
 Start Frequency = 1.320 000 MHz
 Stop Frequency = 1.520 000 MHz
 Frequency Span = 200.000 000 kHz
 Reference Level = -13.300 dBm
 Scale = 10.0 dB/div
 Serial Number = 717197

Base Ver. = V5.71

App Ver. = V5.73
 Model = MS2721B
 Options = 9, 19, 44, 65
 Date = 7/28/2019 12:41:43 PM
 Device Name =

WIMS-AM
NRSC-2

1 Kilometer Boundary NRSC Measurement

NRSC Measurement Site

WIMS Towers

Legend
1 Kilometer Boundary NRSC Measurement



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