NRSC-2 MEASUREMENT

Occupied Bandwidth, and Harmonics

For

Radio Station

WKRS-AM

Conducted on

December 27, 2020

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 December 27, 2020 on behalf of Radio Station WKRS, Waukegon, IL. WKRS operates on 1220 Khz with a power of 1,000 watts day and 90 watts nighttime directional power.

These measurements show the extent to which WKRS 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.

LOCATION OF MEASUREMENTS

The measurements were made at a location within one kilometer from the WKRS 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 WKRS; that he made the equipment performance measurements of Radio Station WKRS; and that all the data contained in this report is accurate and correct to the best of his knowledge and ability.

TABLE A
DAYTIME OPERATION

Spurious and harmonic emissions observed between

530 KHZ and 5000 KHz for operation of **WKRS-AM**

WKRS-AM

Frequency	Relationship	Signal Relative To Carrier	Minimum Attenuation required by 73.44
1220 kHz	Carrier (840 V/m)	0.0 dBc	-----
2440 KHz	2nd Harmonic	-83.06 dBc	80 dBc
3660 Khz	3rd Harmonic	-102.92 dBc	80 dBc
4880 Khz	4th Harmonic	-112.46 dBc	80 dBc

The 5th Harmonic was beyond the FIM-41 used in the study.

Frequency Measurement at the time of Study:

1,220,999 Hz

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

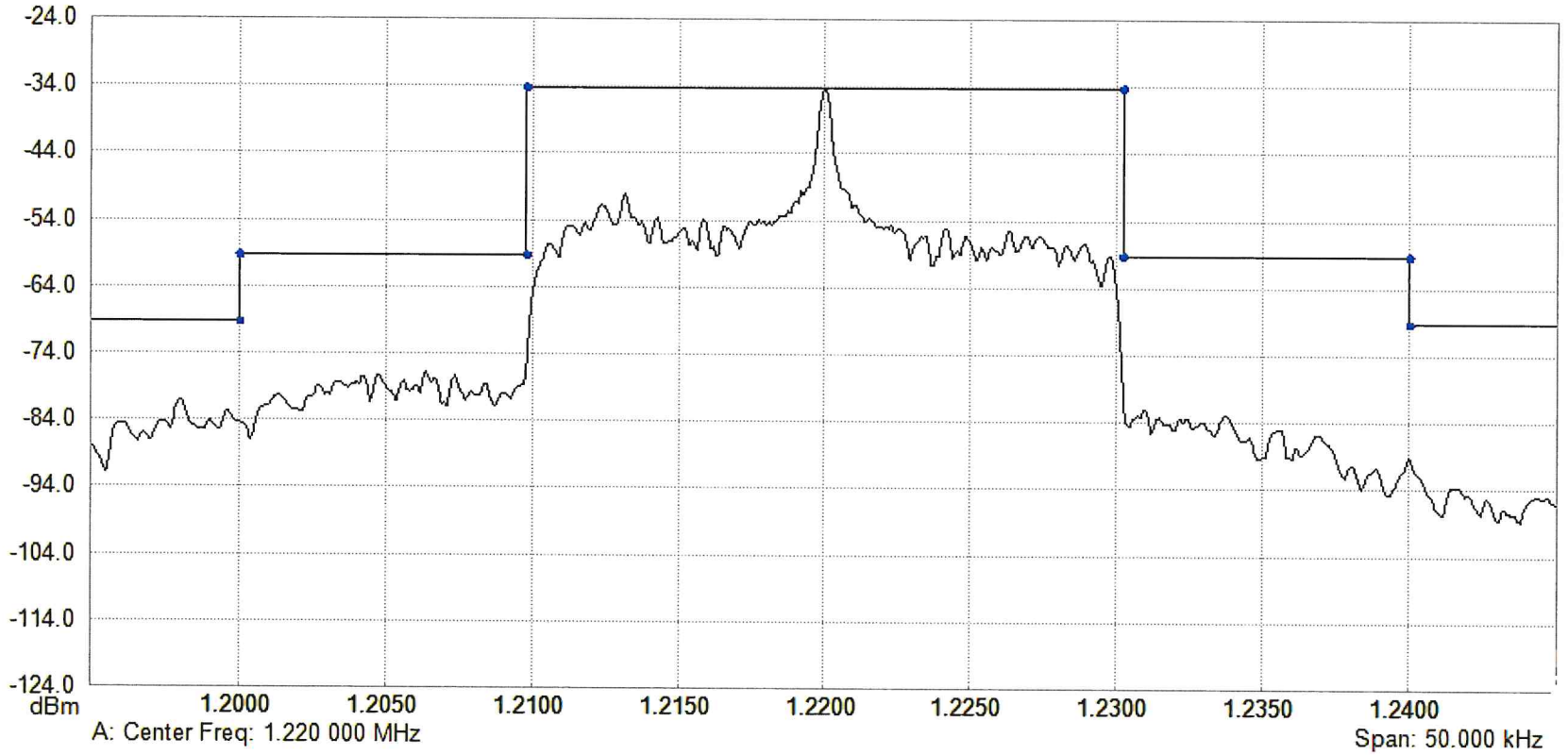
A copy of this report should be made part of the station's on-line Public File, and designated Chief Operator should place the original with station Operating Logs. In addition, a PDF copy of this report is available for email as well. Please contact us.

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

WKRS-A-2020 (12/27/2020 2:26:12 PM)

Spectrum Analyzer



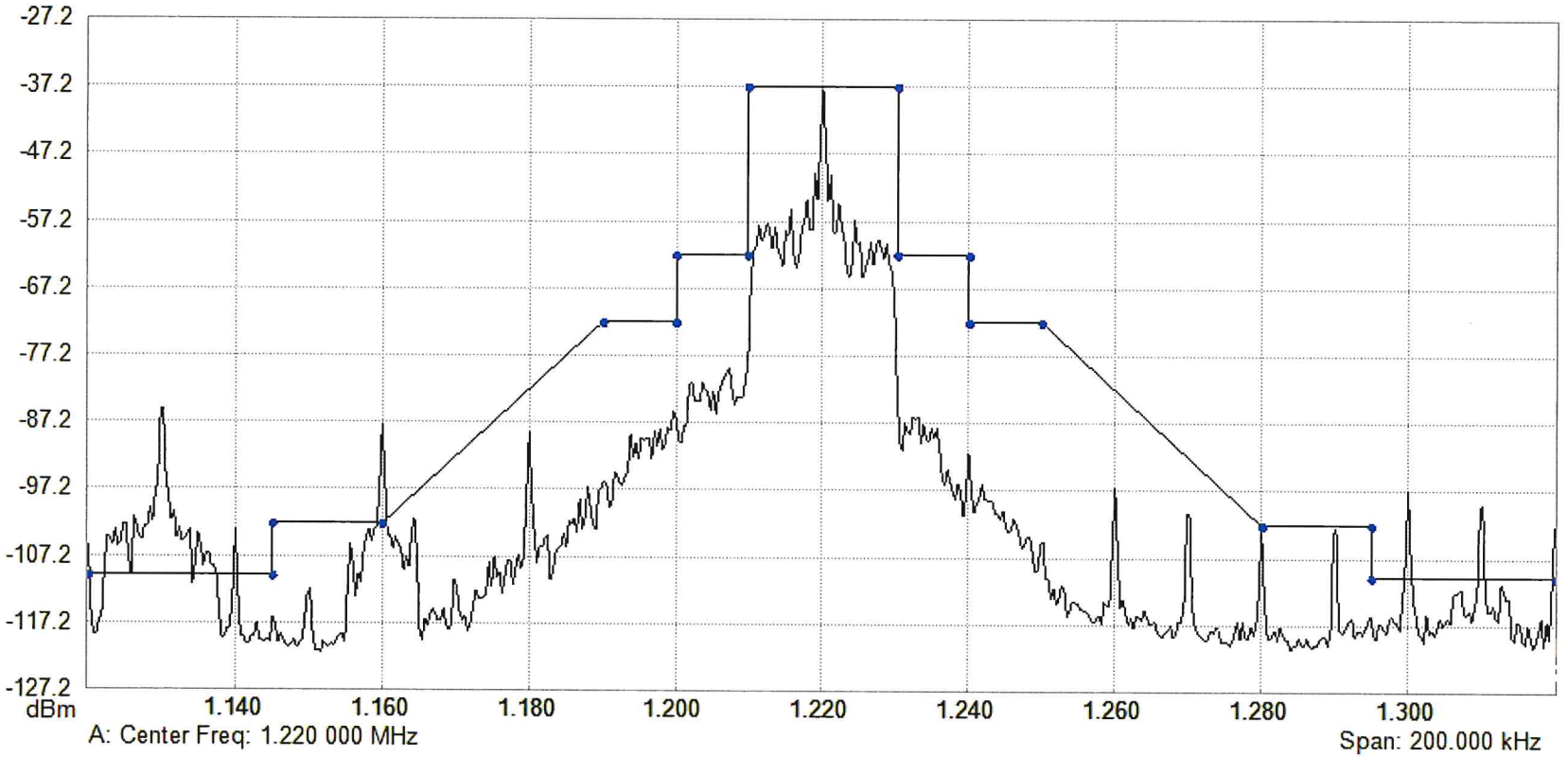
Trace A data:
Trace Mode = Max Hold
Preamp = OFF
Min Sweep Time = 0.001 S
Reference Level Offset = 0 dB
Input Attenuation = 0.0 dB
RBW = 300.0 Hz
VBW = 100.0 Hz
Detection = RMS
Center Frequency = 1.220 000 MHz
Start Frequency = 1.195 000 MHz

Stop Frequency = 1.245 000 MHz
Frequency Span = 50.000 000 kHz
Reference Level = -23.952 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 = 12/27/2020 2:26:12 PM
Device Name =

Spectrum Analyzer Data

WKRS-B-2020 (12/27/2020 2:56:46 PM)

Spectrum Analyzer



Trace A data:
Trace Mode = Max Hold
Preamp = 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 = RMS
Center Frequency = 1.220 000 MHz
Start Frequency = 1.120 000 MHz

Stop Frequency = 1.320 000 MHz
Frequency Span = 200.000 000 kHz
Reference Level = -27.152 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 = 12/27/2020 2:56:46 PM
Device Name =


WKRS-AM NRSC-2 STUDY
Radio Aids Frequency Measurement 574-229-6280
1 Kilometer Radius from Transmitter site
NRSC Measurement Site
WKRS(AM)
Legend
1 Kilometer from Site
NRSC Measurement Site
WKRS(AM)
Washington St
Belvidere St
Central Ave
Ridge Ave
Darrow Ln
Apple Ave
S Dilger Ave
Dodge Ave
Gray Ct
N Lucia Ave
Howard St
Michael Ave
Ted Ave
Mary Ave
Eva Ave
Elaine Ave
Dixie Ave
Barb Ave
Jen Ave
Harvey Blvd
Kehm Blvd
Susan Cir N
Eric Blvd
Diana Ave
Roger Ave
Susan Cir S
Noll Dr
Teske Blvd
Ruth Willcox Ave
Knight Ave
S Staben Ave
Birch Ave
7th St
8th Pkwy
9th Pkwy
10th St
Willow Ave
Cedar Ave
Carney Ave
Marshall Pkwy
S Martin Ave
W Dugdale Rd
S Northpoint Blvd
Frontage Rd
Westmead Rd
Old Skokie Rd
Betty Ave
Waveland Ave
Tower Ct
Bedford Ct
Main St
West St
Rosedale Ave
Bryn Mawr Ave
N Frolic Ave
Baldwin Ave
Metropolitan Ave
Pioneer Rd
Washington Terrace
N McAree Rd
N Sumac Ave
N Orchard Ave
N Gretta Ave
N Martin Ave
S Orchard Ave
S Gretta Ave
Wisconsin Ave
Lake A22
131
120
41
43