

Albert Broadcast Services, Inc.
PO Box 11836
Charlotte, NC 28220-1836
(704) 507-4987

November 20, 2023

Harrill Hamrick
PO Box 600
Mooresville, NC 28115

Re: 2023 NRSC Emissions Report for WHIP-AM

Dear Harrill:

I am pleased to enclose your 2023 NRSC Equipment Performance Measurement for station WHIP, certifying compliance with section 73.44 of the Federal Communications Commission rules and regulations regarding emission requirements.

This document or a copy thereof should be uploaded to the station public access file for the station. If I can be of further service, please do not hesitate to contact me directly.

Cordially,

Stu Albert, President

AM Transmission System (NRSC) Emission
Measurements

WHIP

Mooreville, NC

October 30, 2023

AM Transmission System Emission Measurements

WHIP Mooreville, NC

October 30, 2023

The radiated emissions of WHIP, 1350 KHz, Mooreville, NC were measured on October 30, 2023. The measurements were made by Albert Broadcast Services, Inc. utilizing an RF Spectrum Analyzer, Anritsu model MS2720T, serial number 1616060. The analyzer was warmed for a period of 15 minutes to its normalized temperature before measurements began. The instrument was located one kilometer from the station's antenna. The receive antenna connected to the spectrum analyzer was a three-turn broadband, non pre-amplified loop antenna manufactured by Belar Corporation.

The spectrum analyzer was set to operate with maximum (no) video filter, 300 Hz resolution filter bandwidth and utilizing peak hold duration for each measurement. Sweep resolutions of 5.0, 10.0 and 20.0 KHz per horizontal division were utilized where appropriate to allow various degrees of measurement resolution.

Emissions from 10.2 KHz to 20 KHz removed from the carrier were measured at greater than 25 dB below the un-modulated carrier level. Emissions 20 KHz to 30 KHz removed from the carrier were measured at greater than 35 dB below the un-modulated carrier. Emissions from 30 KHz to 60 KHz removed from the carrier were attenuated at least 5+1dB/KHz below the un-modulated carrier level. Emissions between 60KHz and 75KHz were measured at greater than 65 dB below the un-modulated carrier level. Emissions removed by more than 75 KHz were measured up to 5.0 MHz, using a Potomac FIM-41 field intensity meter, serial number 1542, in addition to observation on the spectrum analyzer.

The measurements contained herein certify that the station was found in compliance with Federal Communication Communications Commission rule 73.44 regarding emission limitations at the time of measurement.

Steward R. Albert, President
Albert Broadcast Services, Inc.

Harmonic Measurements

WHIP
Mooresville, NC
10/30/2023

The following tabulated results of Harmonic Ratio were measured by noting the dB scale reading at the carrier frequency, then tuning the field intensity meter to the desired harmonic and measuring the field strength, while noting the N number positions that the Full Scale switch of the field strength meter was moved to obtain an on scale reading. The Harmonic Ratio was then calculated using the formula:

$$\text{dB (Harmonic)} - \text{dB (Fundamental)} + (N \times 20) \text{dB}$$

Required level of attenuation: $43 + 10 \log(\text{power in watts})$ or 80 dB,
whichever is less.

Station power: 1,000 watts
Attenuation Required: 73dB

<u>Frequency</u>	<u>Measured Field Strength (dB)</u>	<u>Harmonic Ratio</u>
1350 KHz (Carrier)	800 mV/m (2.0 dB Ref)	Reference
2700 KHz		-85.0 dB
4050 KHz		-93.0 dB

Ref Lvl
-11.4 dBm

Input Atten
10.0 dB

Detection
Peak

#RBW
300 Hz

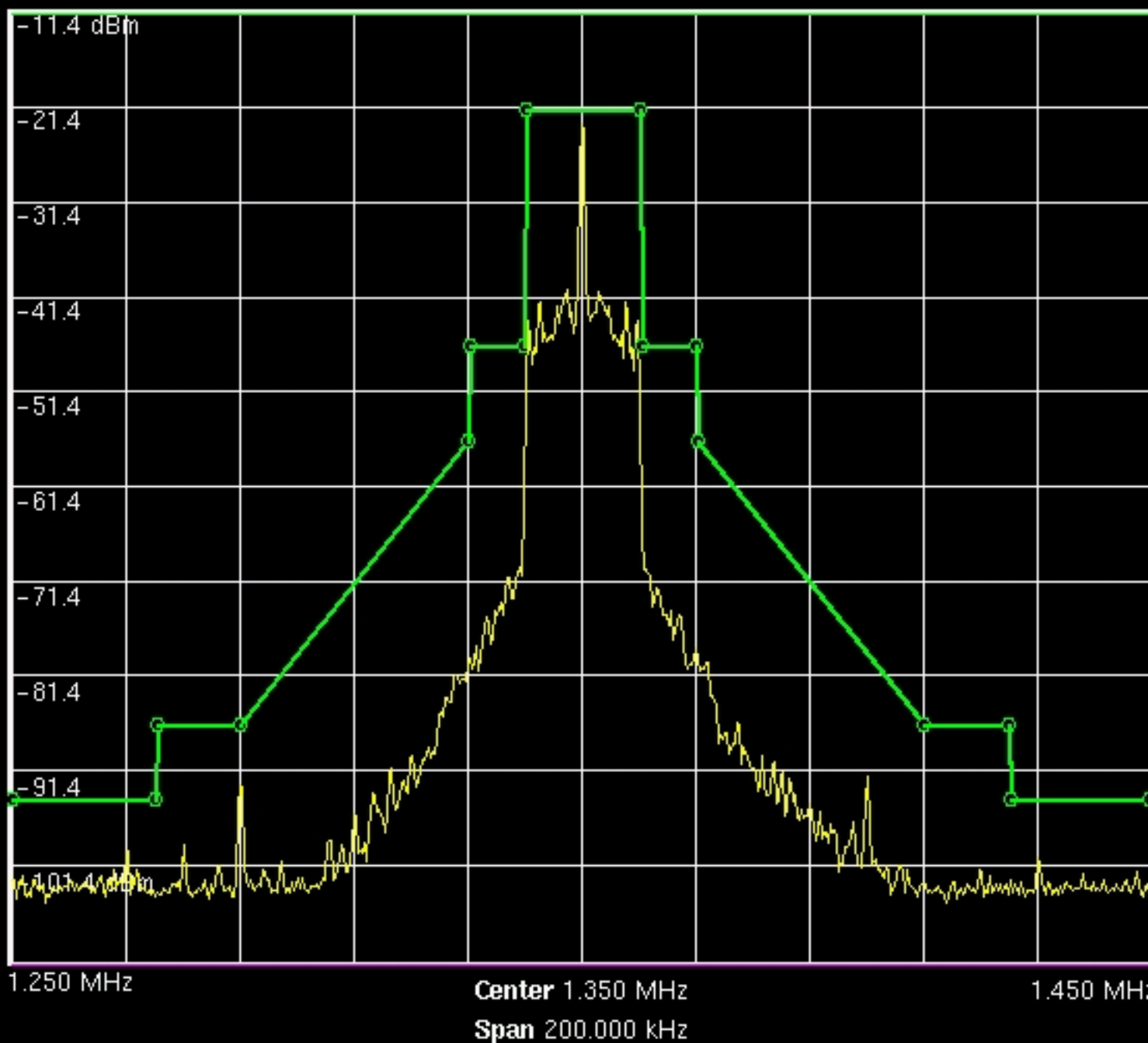
#VBW
3 MHz

Sweep Time
67 ms

Traces
A: Max Hold
B: Trace Hold

Sweep (Fast)
Continuous

Freq Ref
Int Std Accy



- Restore
- Default Quick Name Buttons
- Change
- Quick Name
- Change
- Save Location
- Change Type
- Setup/JPEG/...

Freq	Amplitude	Span	BW	Marker
------	-----------	------	----	--------

Ref Lvl
-11.4 dBm

Input Atten
10.0 dB

Detection
Peak

#RBW
300 Hz

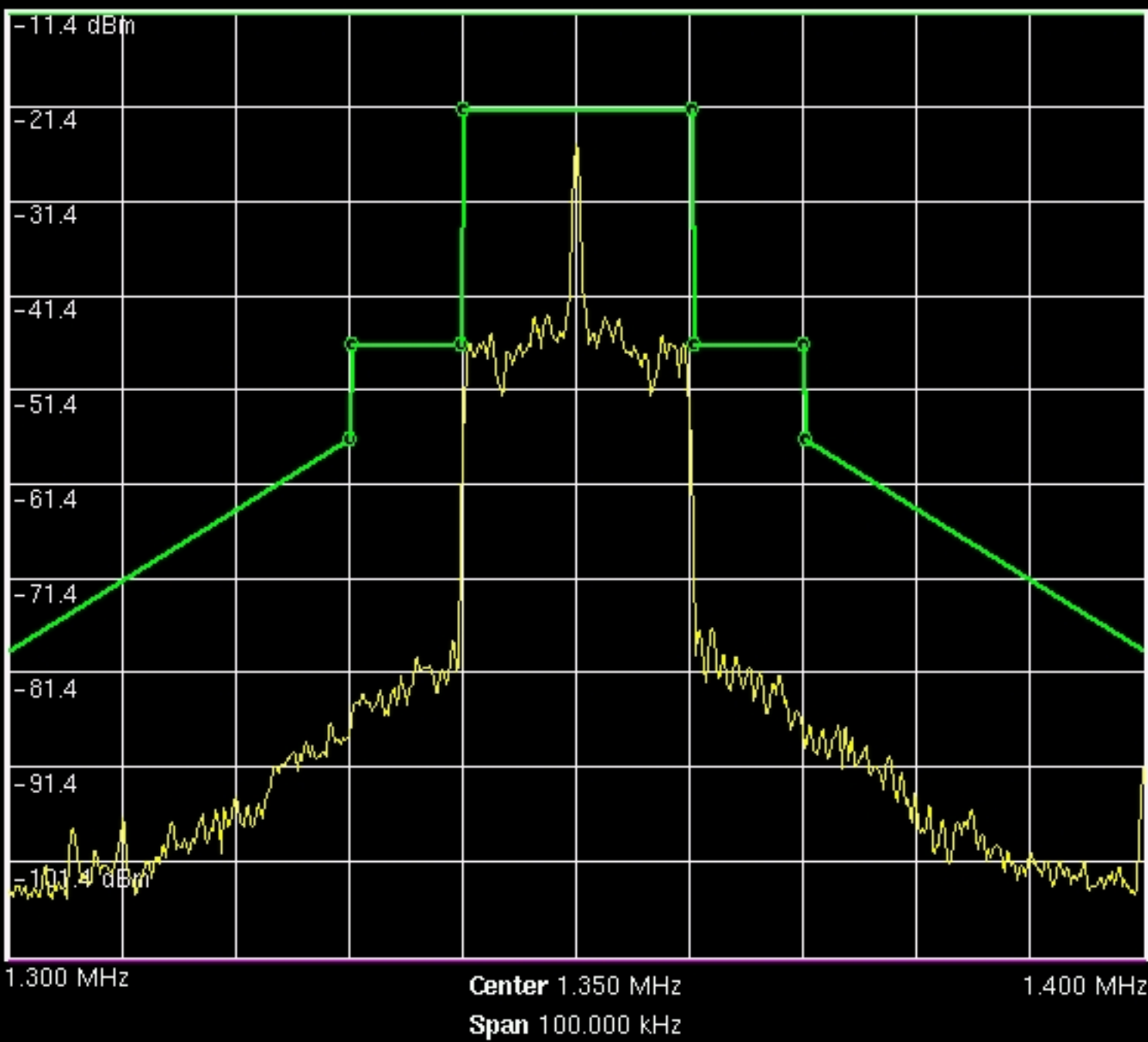
#VBW
3 MHz

Sweep Time
67 ms

Traces
A: Max Hold
B: Trace Hold

Sweep (Fast)
Continuous

Freq Ref
Int Std Accy



- Restore
- Default Quick Name Buttons
- Change
- Quick Name
- Change
- Save Location
- Change Type
- Setup/JPEG/...

Freq	Amplitude	Span	BW	Marker
------	-----------	------	----	--------

Ref Lvl
-6.7 dBm

Input Atten
15.0 dB

Detection
Peak

#RBW
300 Hz

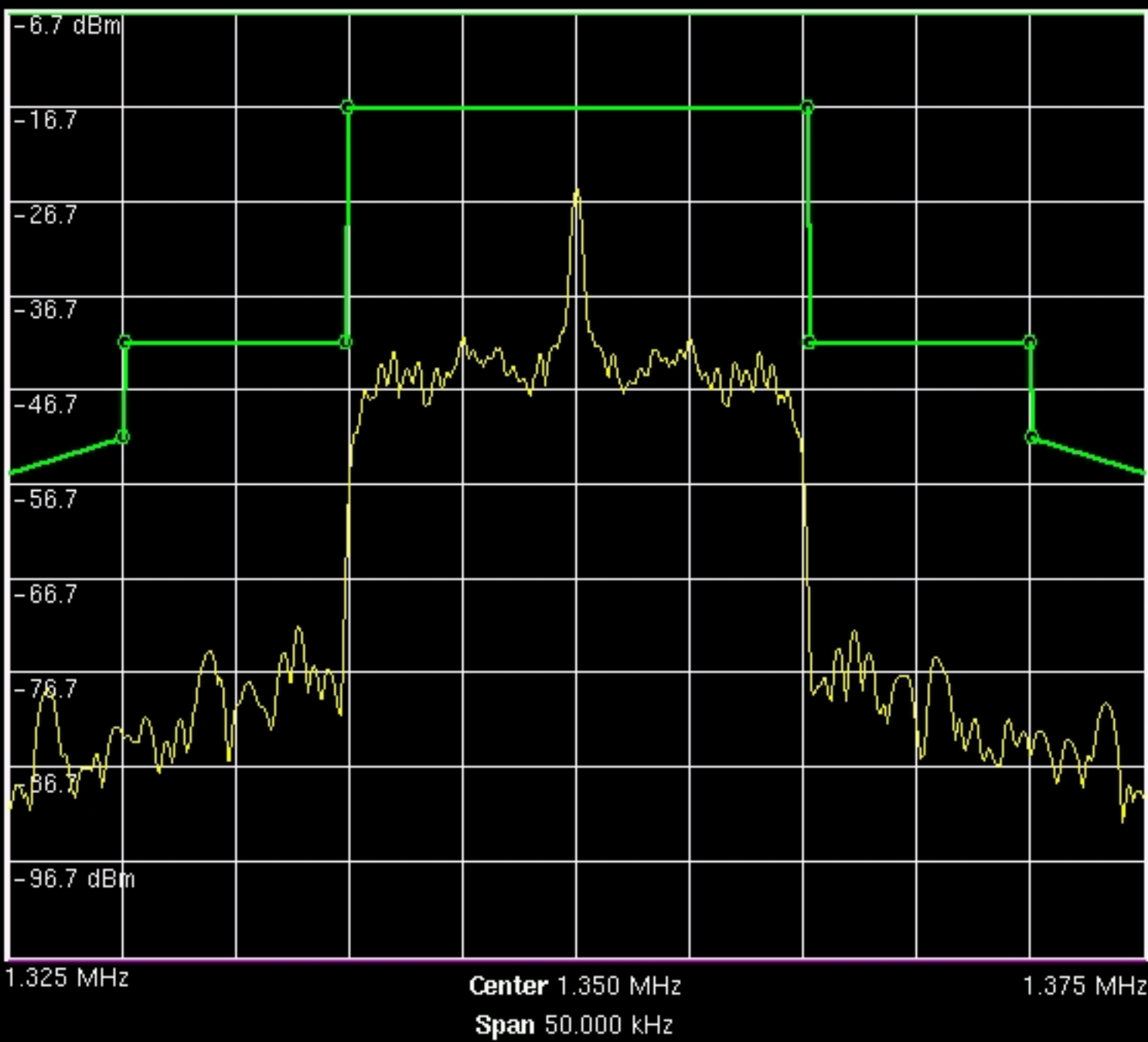
#VBW
3 MHz

Sweep Time
67 ms

Traces
A: Max Hold
B: Trace Hold

Sweep (Fast)
Continuous

Freq Ref
Int Std Accy



- Restore
- Default Quick Name Buttons
- Change
- Quick Name
- Change
- Save Location
- Change Type
- Setup/JPEG/...

Freq	Amplitude	Span	BW	Marker
------	-----------	------	----	--------