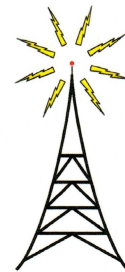


D²

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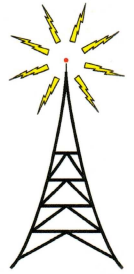


**FCC NRSC-2
EMISSIONS MEASUREMENTS**

**WFSC-AM
Franklin, NC
January 29, 2023**



D Squared Broadcast Technologies, Inc.
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WFSC-AM
Franklin, NC
January 29, 2023

Qualifications

Daniel L. Davis deposes and says:

That he prepared the attached exhibit and that all work contained in that exhibit is true of his knowledge and belief, and as to such statements made on belief, they are believed to be true.

That he currently holds a F.C.C. General Class Radiotelephone License and had held a FCC First Class Radiotelephone License for ten years prior to receiving the General Class License in 1985. He also holds Professional Broadcast Engineer certification through the Society of Broadcast Engineers, and has been a member of the SBE since 1983.

That he received the degree of Master of Education from the University of Georgia in 1978, and that his undergraduate program of study was strong in Mathematics and Physics.

That he has been involved in the technical aspects of broadcasting since 1975, and has performed design, installation, project management, troubleshooting, and maintenance on broadcast facilities, including compliance measurements in connection with this work.

MEMBER IEEE



Daniel L. Davis 01/29/2023
FCC Lic. No. PG-6-14509
SBE CPBE No. 50651
GA Lic. No. LVU-003485



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WFSC-AM
Franklin, NC
January 29, 2023

AM BROADCAST STATION
EMISSIONS MEASUREMENTS
PROCEDURES

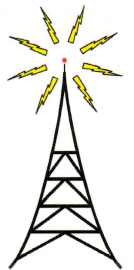
A suitable location was chosen within the main lobe of the transmitting antenna. A Chris Scott model LP-3 calibrated loop antenna was used. The antenna is non-resonant in the AM broadcast band, making it appropriate for measuring emissions near the carrier, with high accuracy. NRSC measurements were conducted using an Anritsu model MS2721B spectrum analyzer. The display was allowed to accumulate over a period of ten minutes, using the Max Hold feature. Analyzer settings were as indicated on the plots. Limit Masks of the FCC NRSC-2 specifications were overlaid on the spectrum analyzer plots, to show compliance or noncompliance with §73.44 of the FCC rules. Any apparently excessive emissions, which are actually signals from other radio services, are highlighted. Whenever harmonics were being measured, either a high-Q notch filter or a bandpass filter was switched in, to attenuate the carrier by several db. This allowed the analyzer input sensitivity to be increased without experiencing overload. The published antenna factor data was entered into the spectrum analyzer antenna table. Any measureable harmonics are included in the spectrum analyzer plot section of this report.

CONCLUSION

The measured third harmonic slightly exceeds FCC limits, as shown on page-6 of this report. It is possible that the third harmonic trap needs adjustment in the transmitter.



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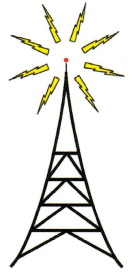
WFSC-AM
Franklin, NC
January 29, 2023

Harmonics Test

	HARMONIC FREQUENCY	RESULTS
NUMBER	MHz	
2	2.10	-89.74 dB See Plot
3	3.15	-78.82 dB See Plot
4	4.20	Not Detected
5	5.25	-86.35 dB See Plot
6	6.30	Not Detected
7	7.35	"
8	8.40	"
9	9.45	"
10	10.50	"
11	11.55	"
12	12.60	"
13	13.65	"
14	14.70	"
15	15.75	"

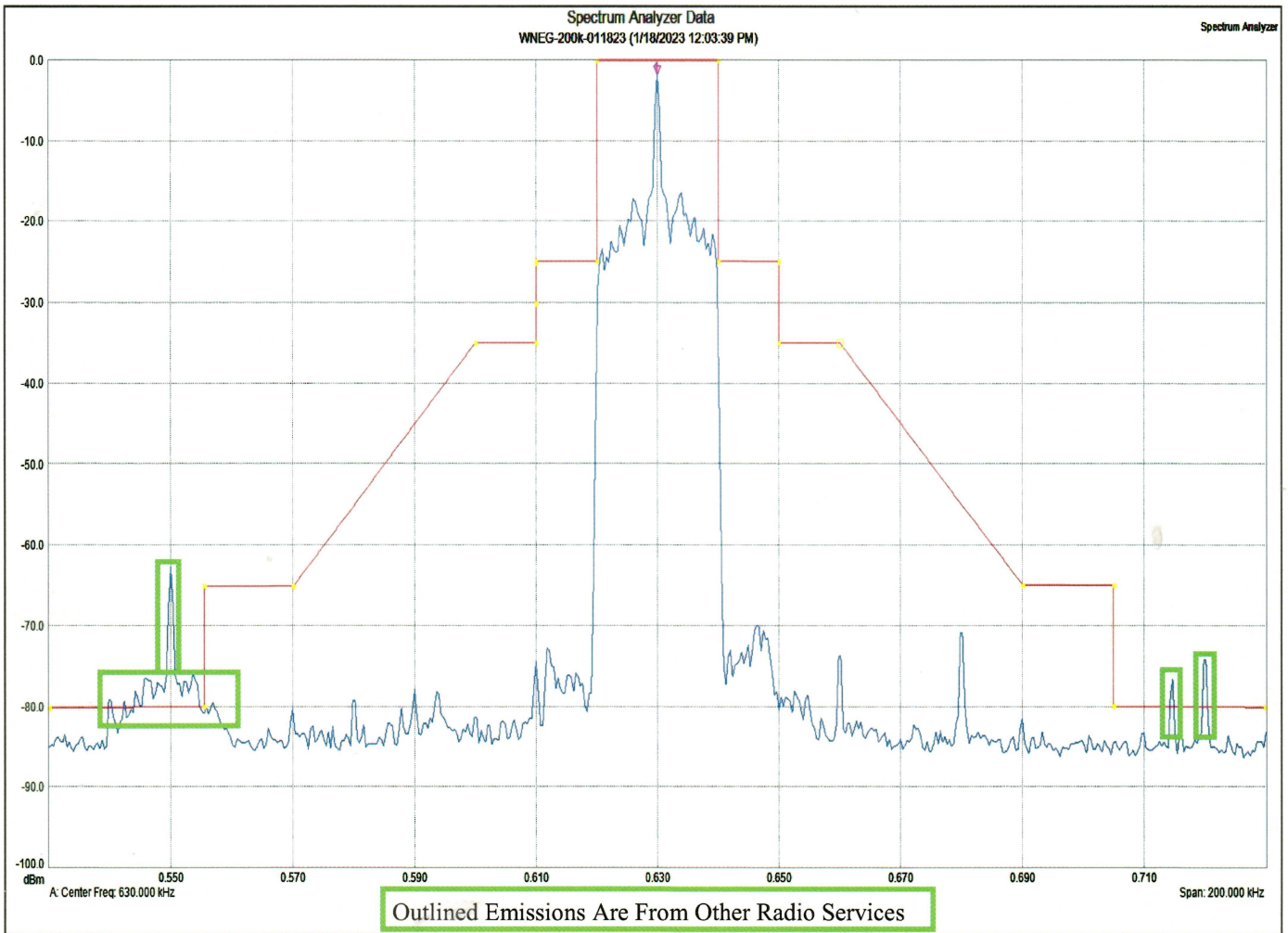


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200 kHz Span



Measurement Parameters		Reference Level	
Trace Mode	Max Hold	Scale	-46.000 dBm
Preamp	ON	GPS Longitude	10.0 dB/div
Min Sweep Time	0.001 S	GPS Latitude	W 83 19 37
Reference Level Offset	-46 dB	GPS Fix Time	N 34 34 31
Input Attenuation	0.0 dB	Serial Number	01 18 2023 17 04 41
RBW	300.0 Hz	Base Ver.	807109
VBW	3.0 MHz	App Ver.	V5.71
Detection	Peak	Model	V5.73
Center Frequency	630.000 000 kHz	Options	MS2721B
Start Frequency	530.000 000 kHz	Date	9. 20. 31
Stop Frequency	730.000 000 kHz	Device Name	1/18/2023 12:03:39 PM
Frequency Span	200.000 000 kHz		D-Squared

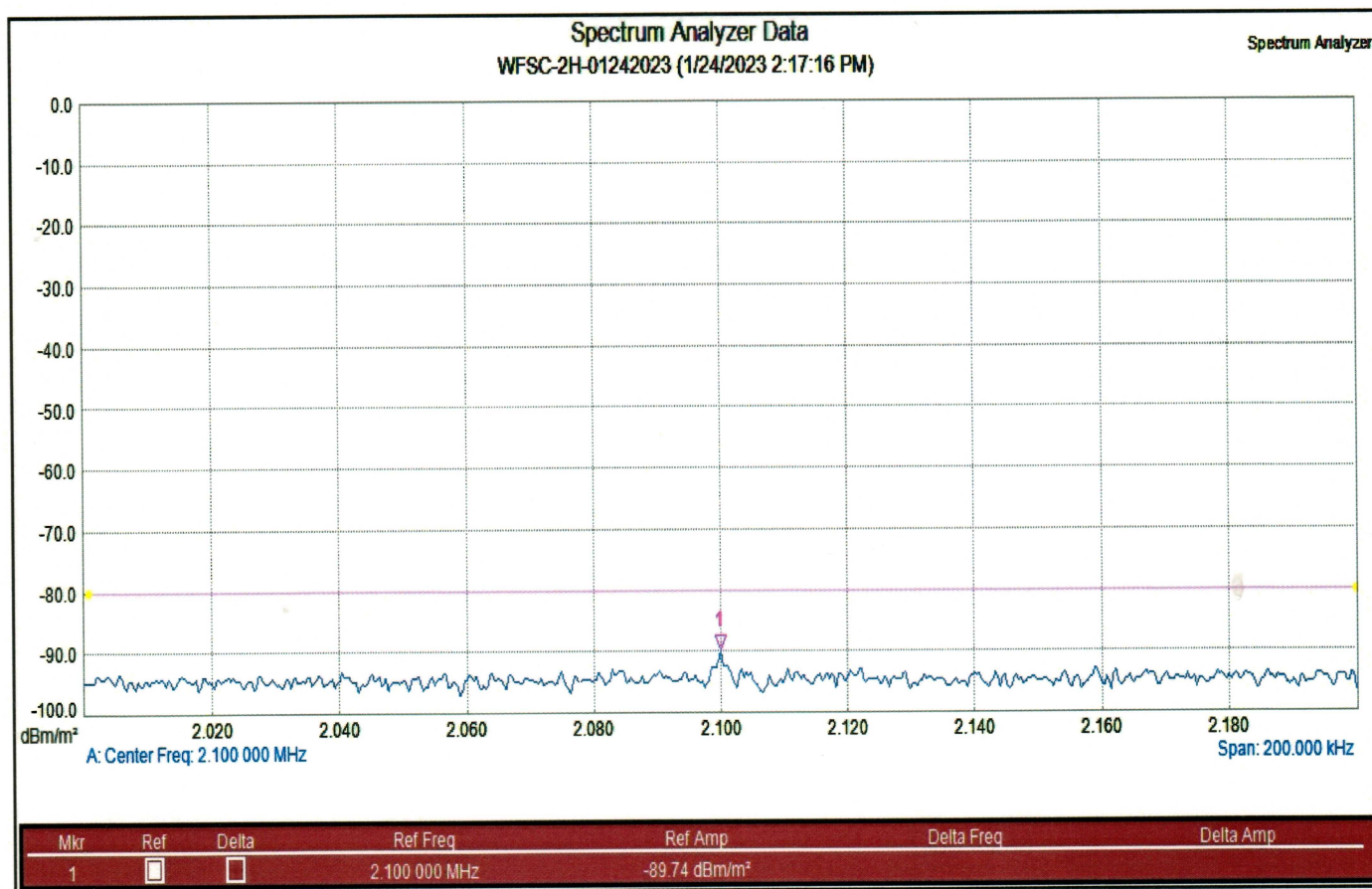


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Second Harmonic



Measurement Parameters			
Trace A data: Trace Average	10	Reference Level	-28.500 dBm/m ²
Trace Mode	Average	Scale	10.0 dBm ² /div
Preamp	OFF	GPS Longitude	W 83 21 57
Min Sweep Time	0.001 S	GPS Latitude	N 35 12 41
Reference Level Offset	-28.5 dB	GPS Fix Time	01 24 2023 19 18 21
Input Attenuation	0.0 dB	Field Strength	ON
RBW	300.0 Hz	Serial Number	807109
VBW	3.0 MHz	Base Ver.	V5.71
Detection	Peak	App Ver.	V5.73
Center Frequency	2.100 000 MHz	Model	MS2721B
Start Frequency	2.000 000 MHz	Options	9, 20, 31
Stop Frequency	2.200 000 MHz	Date	1/24/2023 2:17:16 PM
Frequency Span	200.000 000 kHz	Device Name	D-Squared

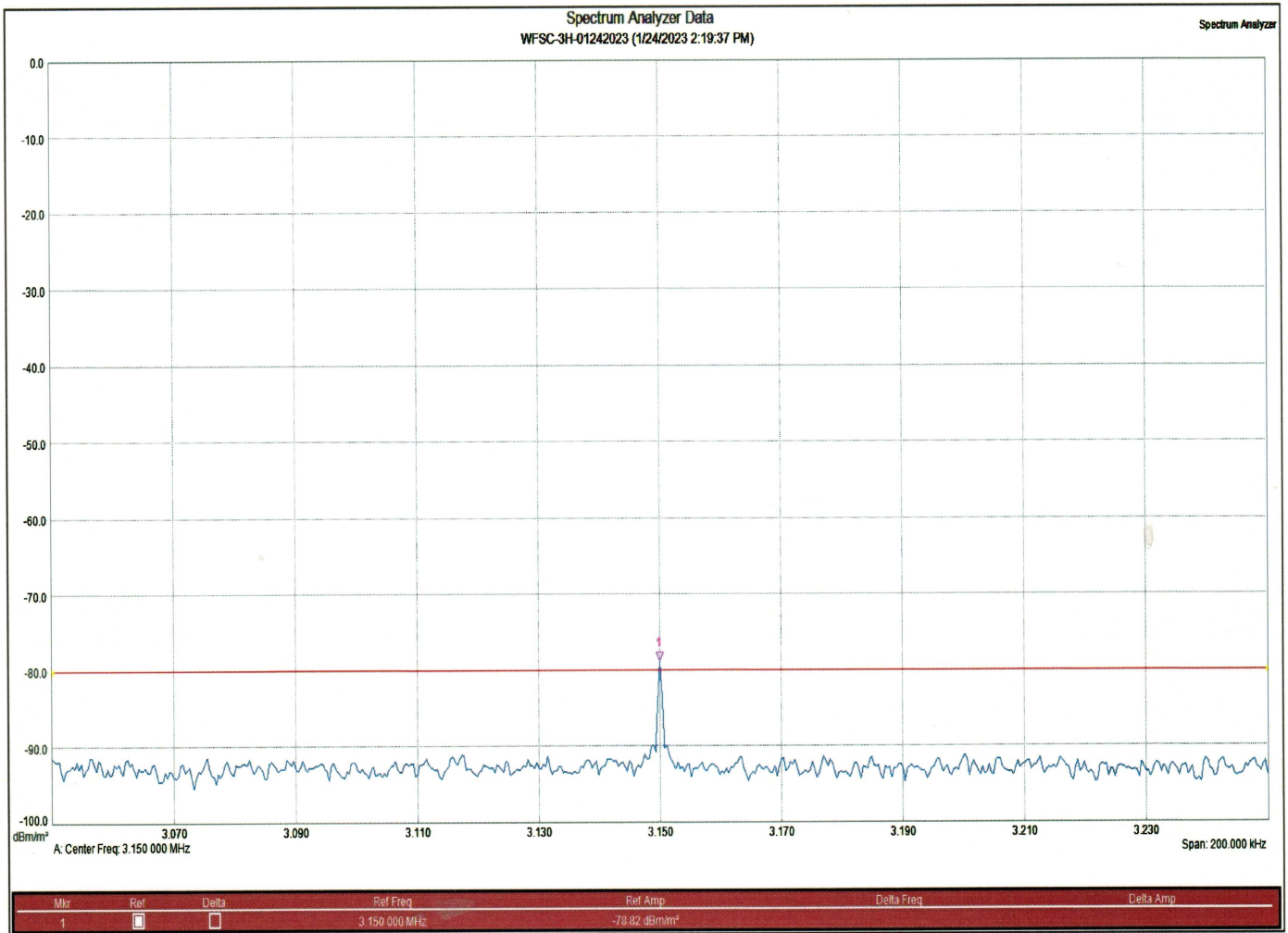


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Franklin, NC
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Third Harmonic



Measurement Parameters			
Trace A data: Trace Average	10	Reference Level	-28.500 dBm/m²
Trace Mode	Average	Scale	10.0 dBm/div
Preamp	OFF	GPS Longitude	W 83 21 57
Min Sweep Time	0.001 S	GPS Latitude	N 35 12 41
Reference Level Offset	-28.5 dB	GPS Fix Time	01/24/2023 19:20:41
Input Attenuation	0.0 dB	Field Strength	ON
RBW	300.0 Hz	Serial Number	807109
VBW	3.0 MHz	Base Ver.	V5.71
Detection	Peak	App Ver.	V5.73
Center Frequency	3.150 000 MHz	Model	MS2721B
Start Frequency	3.050 000 MHz	Options	9.20.31
Stop Frequency	3.250 000 MHz	Date	1/24/2023 2:19:37 PM
Frequency Span	200.000 000 kHz	Device Name	D-Squared

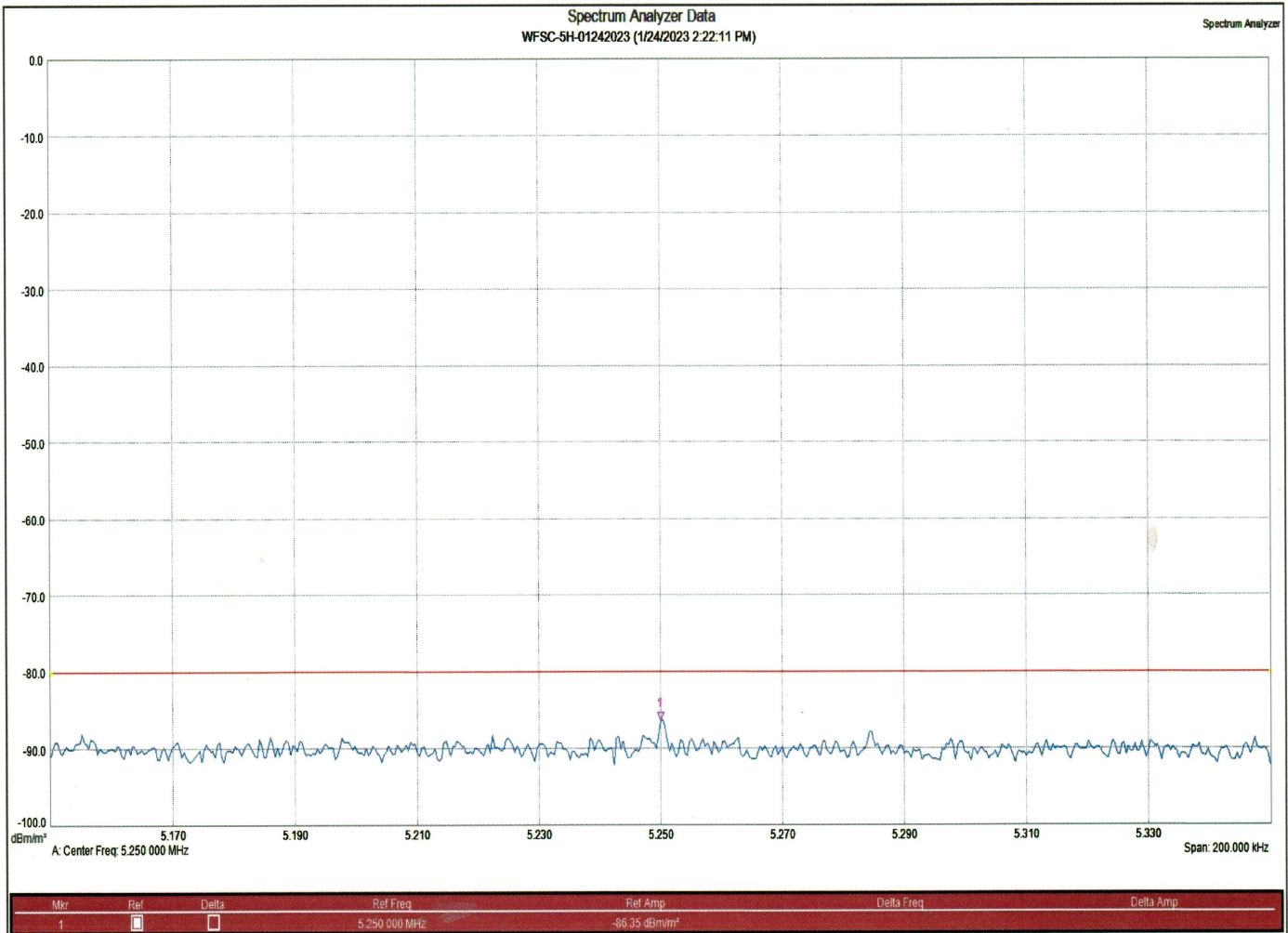


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Fifth Harmonic

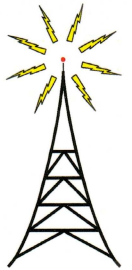


Mkr	Ref	Delta	Ref Freq	Ref Amp	Delta Freq	Delta Amp
1	<input type="checkbox"/>	<input type="checkbox"/>	5.250 000 MHz	-86.35 dBm/m²		

Measurement Parameters			
Trace A data Trace Average	10	Reference Level	-28.500 dBm/m²
Trace Mode	Average	Scale	10.0 dBm/div
Preamp	OFF	GPS Longitude	W 83 21 57
Min Sweep Time	0.001 S	GPS Latitude	N 35 12 41
Reference Level Offset	-28.5 dB	GPS Fix Time	01 24 2023 19 23 16
Input Attenuation	0.0 dB	Field Strength	ON
RBW	300.0 Hz	Serial Number	807109
VBW	3.0 MHz	Base Ver.	V5.71
Detection	Peak	App Ver.	V5.73
Center Frequency	5.250 000 MHz	Model	MS2721B
Start Frequency	5.150 000 MHz	Options	9.20.31
Stop Frequency	5.350 000 MHz	Date	1/24/2023 2:22:11 PM
Frequency Span	200.000 000 kHz	Device Name	D-Squared



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Franklin, NC
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Frequency Measurement

The carrier frequency of this radio station was measured, using an Anritsu MS2721B spectrum analyzer, with a frequency counter option. This analyzer also has a GPS frequency reference option, with the following specifications.

- GPS High Frequency Accuracy when GPS antenna is connected:**
 ±25 ppb with GPS ON, 3 minutes after satellite lock in the selected operating mode
- Internal High Accuracy, when GPS antenna is not connected:**
 Better than ±50 ppb for 3 days from a High Accuracy GPS Lock and within 0 °C to 50 °C ambient temperature

Licensed Frequency	1050.000 kHz
Measured Frequency	1050.002985 kHz
FCC Tolerance	± 20 Hz
Deviation	+ 2.985 Hz

The carrier frequency of this station is within FCC tolerance.

