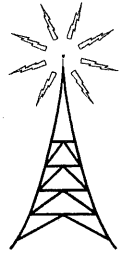


**D<sup>2</sup>**

**D Squared Broadcast Technologies, Inc.  
P.O. Box 48  
Madison, GA 30650**

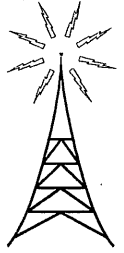


**FM BROADCAST STATION  
EMISSIONS MEASUREMENTS**

**WRAS-FM  
Atlanta, GA  
August 26, 2014**



**D Squared Broadcast Technologies, Inc.**  
**P.O. Box 48**  
**Madison, GA 30650**



**WRAS-FM**  
**Atlanta, GA**  
**August 26, 2014**

**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, along with tests and measurements, including compliance measurements on broadcast facilities.**

**Member: IEEE**

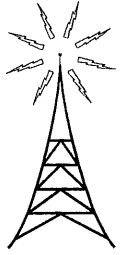


---

**Daniel L. Davis, CPBE**      **08/26/2014**  
**FCC Lic. No. PG-6-14509**  
**SBE CPBE No. 50651**  
**GA Lic. No. LVU-003485**

# D<sup>2</sup>

**D Squared Broadcast Technologies, Inc.**  
**P.O. Box 48**  
**Madison, GA 30650**



**WRAS-FM**  
**Atlanta, GA**  
**August 26, 2014**

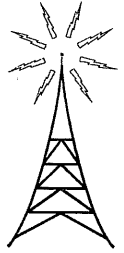
**EMISSIONS MEASUREMENTS  
PROCEDURES**

RF proof of performance measurements were conducted on this radio station using an Anritsu MS2721B spectrum analyzer. A sample of the transmission system output was taken from the transmitter site wattmeter Through-Line section, using a directional sample element. The spectrum analyzer plot includes a mask, showing the FCC/NRSC emissions limits for IBOC operation at the -14db injection level.

Attenuators, band-pass filters, and band-rejection filters were used as necessary to prevent overload of the spectrum analyzer, when testing for harmonics. Filter insertion loss was taken into consideration, when setting the reference level offset on the analyzer. The system was checked from the second harmonic through the fifteenth harmonic, and no measureable harmonics were found.

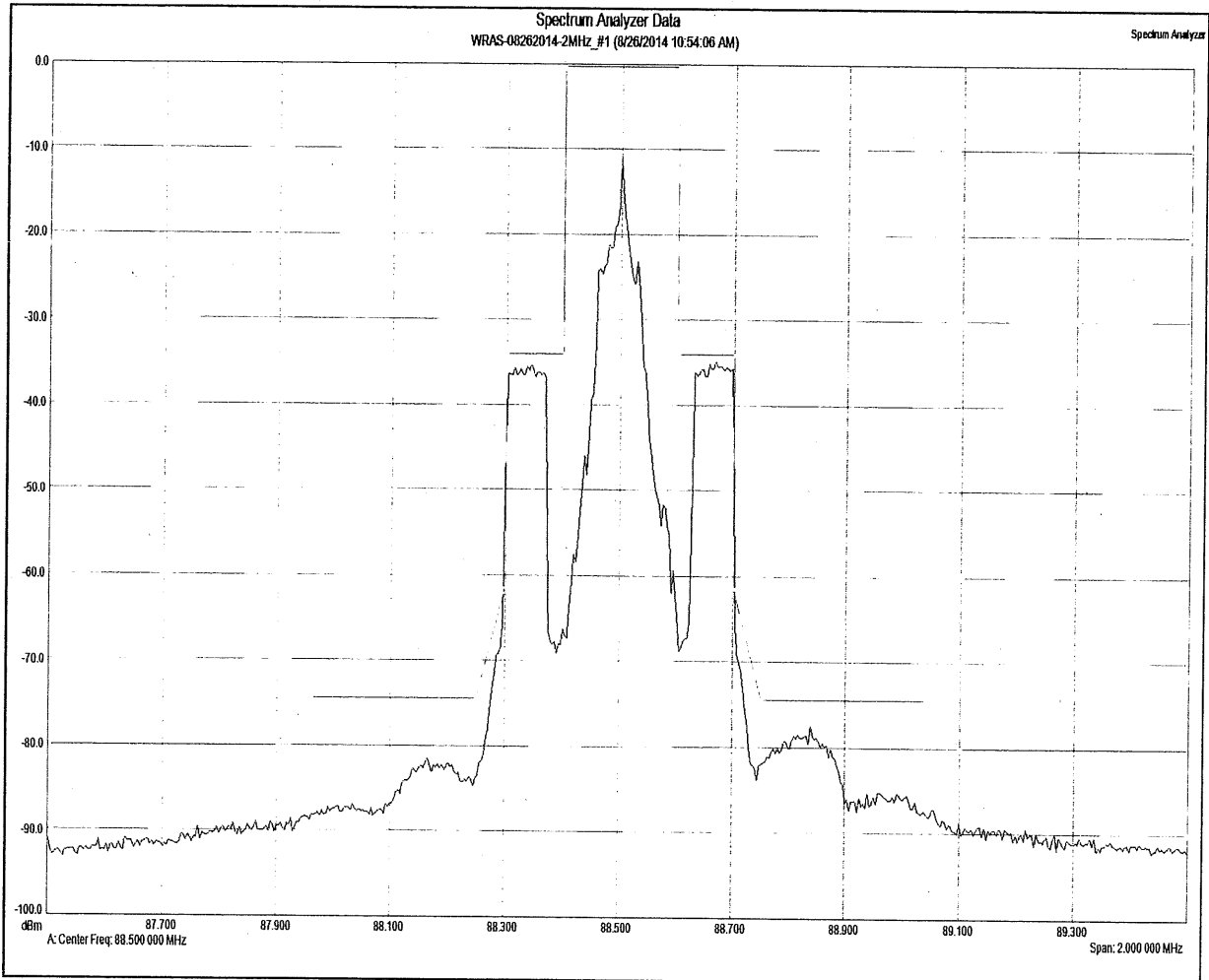


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**Madison, GA 30650**



**WRAS-FM**  
**Atlanta, GA**  
**August 26, 2014**

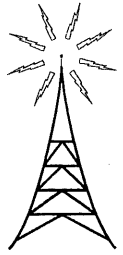
2 MHz Span At Station Frequency



Trace A data: Trace Average		Measurement Parameters	
Trace Mode	Average	Slop Frequency	89.500 000 MHz
Preamp	OFF	Frequency Span	2.000 000 MHz
Min Sweep Time	0.001 S	Reference Level	3.000 dBm
Reference Level Offset	3 dB	Scale	10.0 dB/div
Input Attenuation	20.0 dB	Serial Number	807109
RBW	1.0 MHz	Base Ver.	V3.46
VBW	3.0 MHz	App Ver.	V4.42
Detection	RMS	Model	MS2721B
Center Frequency	88.500 000 MHz	Options	9, 20, 31
Start Frequency	87.500 000 MHz	Date	8/26/2014 10:54:06 AM
		Device Name	D-Squared



**D Squared Broadcast Technologies, Inc.**  
**P.O. Box 48**  
**Madison, GA 30650**



10 New Maple Ave Unit 305 Pine Brook, NJ 07058 - USA Phone: 1-800-ANRITSU Fax: 973-575-0092

**Certificate Of Calibration**  
**Premium Calibration**

This certifies that the product listed below has been calibrated in compliance with a quality system registered to ISO 9001:2000 and in compliance with ISO/IEC 17025:2005 and ANSI/NCSL Z540-1-1994 (R2002) in accordance with documented procedures using test equipment and standards whose accuracy is traceable to international standards, national standards laboratory (e.g. NIST, NPL, ETL), or derived from ratio type self calibration techniques.

The ANRITSU suggested calibration interval is 12 months and the Calibration Due Date\* based on that interval is 10-June-2011.

Model: MS2721B	Customer Id: 10070149
Serial Number: 0807109	Customer: D SQUARED BROADCAST TECHNOLOGIES, INC
Calibration Date: 10-June-2010	1451 PARSONAGE ROAD
Sales Order: N/A	MADISON, GA 30650
Repair Order: CW000504	
Temperature: 23 °C (limit 18°C to 28°C)	Customer PO: VISA 9509
Rel. Humidity: 41 % (limit 10% to 80% Non Condensing)	Calibrated By: ANRITSU COMPANY
Test Procedure: 8002	ACUS SERVICE EAST
Procedure Rev: A	10 NEW MAPLE AVENUE UNIT 305
Subcontractor Used: No	PINE BROOK, NJ 07058
Calibrated on-site at customer's location? <input type="checkbox"/>	

As Received Condition
Physical Condition: Good
Within Tolerance: No
Note below if Out of Tolerance and/or describe physical condition if poor:
Defective input-does not see signal. No pre data taken.

As Shipped Condition
Within Tolerance: Yes
Limited or No Service Performed (Note Below): No

**Certificate Number:** US00037107

Certified By: DAVID DI IORIO

Signature:

Approved By: Department Management

Signature: \_\_\_\_\_

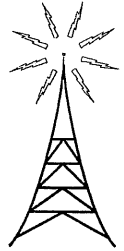
\* This suggestion is based on Anritsu's global experience with this product. Your application may require a different calibration interval due to factors such as required accuracy, control limits, connector wear or other factors in your measurement process.

ISO 9001:2000 REGISTERED - CERTIFICATE NUMBER NQA 8495

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**P.O. Box 48**  
**Madison, GA 30650**



10 New Maple Ave Unit 305 Pine Brook, NJ 07058 - USA Phone: 1-800-ANRITSU Fax: 973-575-0092

**Standards and Test Equipment Used**

Model Number	Description	Serial Number	Cal Due Date	Asset Nbr
ET6000-RBI	FREQUENCY REFERENCE	7717	31-January-2011	CSE00563
CT485B	RECORDER, STRIP CHART	900107118W1	05-September-2010	CSE00360
MG3692B	GENERATOR, SIGNAL	062108	02-October-2011	CSE00587
ML2438A	METER, POWER	05030001	03-September-2010	CSE00375
SC7400	POWER SENSOR	034585	16-July-2010	CSE00583
44-10	ATTENUATOR, FIXED	BV9105	08-December-2010	CSE00392
28N50-2	TERMINATION	201039	30-September-2011	CSE00550
360	ANALYZER, VECTOR NETWORK	703005	05-January-2011	CSW01199
3653	CAL KIT, COAX	80017	05-November-2010	CSE00027
MG3700A	GENERATOR, SIGNAL	6200409100	03-March-2011	32809

**Certificate Number:** US00037107

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ACF 2025-1, Rev. C

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