FCC PART 15.235

MEASUREMENT AND TEST REPORT

FOR

SHENZHEN SUPERSTAR ELECTRONIC CO., LTD.

ROOM C-D, 30/F, East Block, Guangye Building, Fuhua Road, Futian District,

Shenzhen, China

FCC ID: UW9JH808D31

Report Concerns: Original Report	**Equipment Type:** VHF Wireless Headphone
Model:	JH-808D31
Report No.:	STR08078086I
Test/Witness Engineer:	Susan Su
Test Date:	2008-07-18 to 2008-07-28
Issue Date:	2008-08-01
Prepared By:	**SEM.Test Compliance Service Co., Ltd.** 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101)
Approved & Authorized By:	Jandy So / PSQ Manager

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	SHENZHEN SUPERSTAR ELECTRONIC CO., LTD.
Address of applicant:	ROOM C-D, 30/F, East Block, Guangye Building, Fuhua Road, Futian District, Shenzhen, China
Manufacturer:	SHENZHEN SUPERSTAR ELECTRONIC CO., LTD.
Address of manufacturer:	ROOM C-D, 30/F, East Block, Guangye Building, Fuhua Road, Futian District, Shenzhen, China

General Description of E.U.T

Items	Description
EUT Description:	VHF Wireless Headphone
Trade Name:	/
Model No.:	JH-808D31
Rated Voltage:	DC 5V adapter
Output Power:	<6dBm
Frequency Range:	49.86MHz
Antenna Type:	Integral Antenna
Size:	11.8X9.8X2.5 cm
For more information refer to the circuit diagram form and the user's manual.	

The test data gathered are from a production sample, provided by the manufacturer.

1.2 Test Standards

The following report of is prepared on behalf of the SHENZHEN SUPERSTAR ELECTRONIC CO., LTD. in accordance with FCC Part 15, Subpart B, Subpart C, and section 15.107, 15.203, 15.205,15.209 and 15.235 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, Subpart C, and section 15.107, 15.203,15.205, 15.209 and 15.235 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

1.3 Related Submittal(s)/Grant(s)

No Related Submittal(s).

1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard

for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

1.5 Test Facility

The Laboratory has been registered and fully described in a report filed with the (**FCC**) Federal Communications Commission. The acceptance letter from the FCC is maintained in files which the Registration No.: **994117**. Measurement required was performed at laboratory of SEM.Test Compliance Service Co., Ltd. at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101).

1.6 EUT Exercise Software

The EUT exercise program used during the testing was designed to exercise the system components. Test is started while the whole system is on.

1.7 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
SUMSUNG	MP3 Player	YP-T10	N/A

1.8 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Power Cable	1.5	Unshielded	Without Core
Ant. Cable	0.8	Unshielded	Without Core

2. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.107 (a)	Conducted Emission	Compliant
§15.203	Antenna Requirement	Compliant
§15.205	Restricted Band of Operation	Compliant
§15.209	Radiated Emission Limit	Compliant
§15.235(a)	Field Strength	Compliant
§15.235(b)	Out of Band Emission	Compliant

3. §15.107 (a)- CONDUCTED EMISSION

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 1.5 dB.

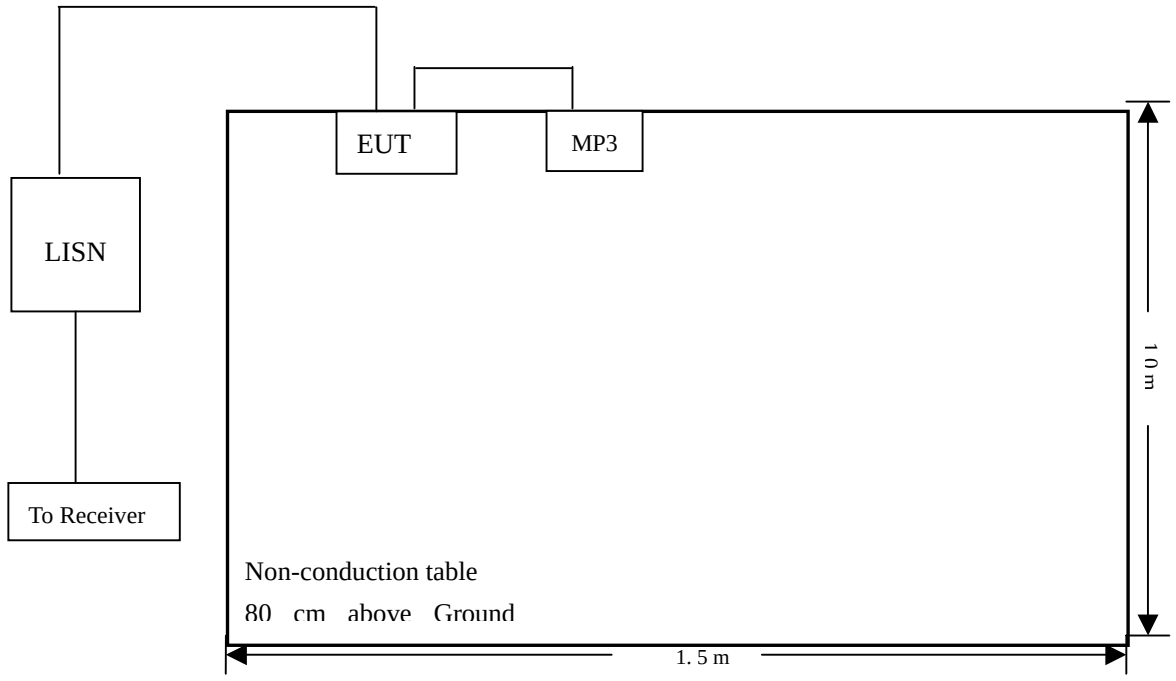
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESCS30	830245/009	2008-01-25	2009-01-24
AMN	Rohde & Schwarz	ESH2-Z5	100002	2008-01-25	2009-01-24
Limiter	Rohde & Schwarz	ESH3-Z2	357.8810.52	2008-01-25	2009-01-24
AMN	Rohde & Schwarz	ESH3-Z5	828304/014	2008-01-25	2009-01-24
Spectrum Analyzer	Aglient	E4402B-ESA	US41192821	2008-01-25	2009-01-24

3.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

3.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 150 kHz
Stop Frequency ..... 30 MHz
Sweep Speed ..... Auto
IF Bandwidth ..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 9 kHz
Quasi-Peak Adapter Mode ..... Normal

3.7 Summary of Test Results/Plots

According to the data in section 3.8, the EUT complied with the FCC 15B Conducted margin for a Class B device, with the *worst* margin reading of:

-11.87 dBμV at **0.494 MHz** in the **Neutral** mode**, Average** detector, **0.15-30MHz**

3.8 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC 15 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	QP/Ave/Pk	Line/Neutral	dBμV	dB
0.494	34.23	Ave	Neutral	46.10	-11.87
1.154	32.76	Ave	Neutral	45.99	-13.23
0.494	31.84	Ave	Line	46.09	-14.25
4.778	31.68	Ave	Neutral	46.00	-14.32
0.990	31.63	Ave	Neutral	45.99	-14.36
1.150	30.29	Ave	Line	45.99	-15.70
0.366	30.39	Ave	Line	48.59	-18.20
0.230	33.89	Ave	Line	52.44	-18.55
0.494	37.46	Pk	Neutral	56.09	-18.63
0.330	30.42	Ave	Line	49.44	-19.02
0.274	31.36	Ave	Line	50.99	-19.63
0.226	32.93	Ave	Neutral	52.85	-19.65
0.182	34.72	Ave	Neutral	54.49	-19.67

Note: Emission attenuated more than 20dB is not reported.

Plot of Conducted Emissions Test Data

Conducted Disturbance

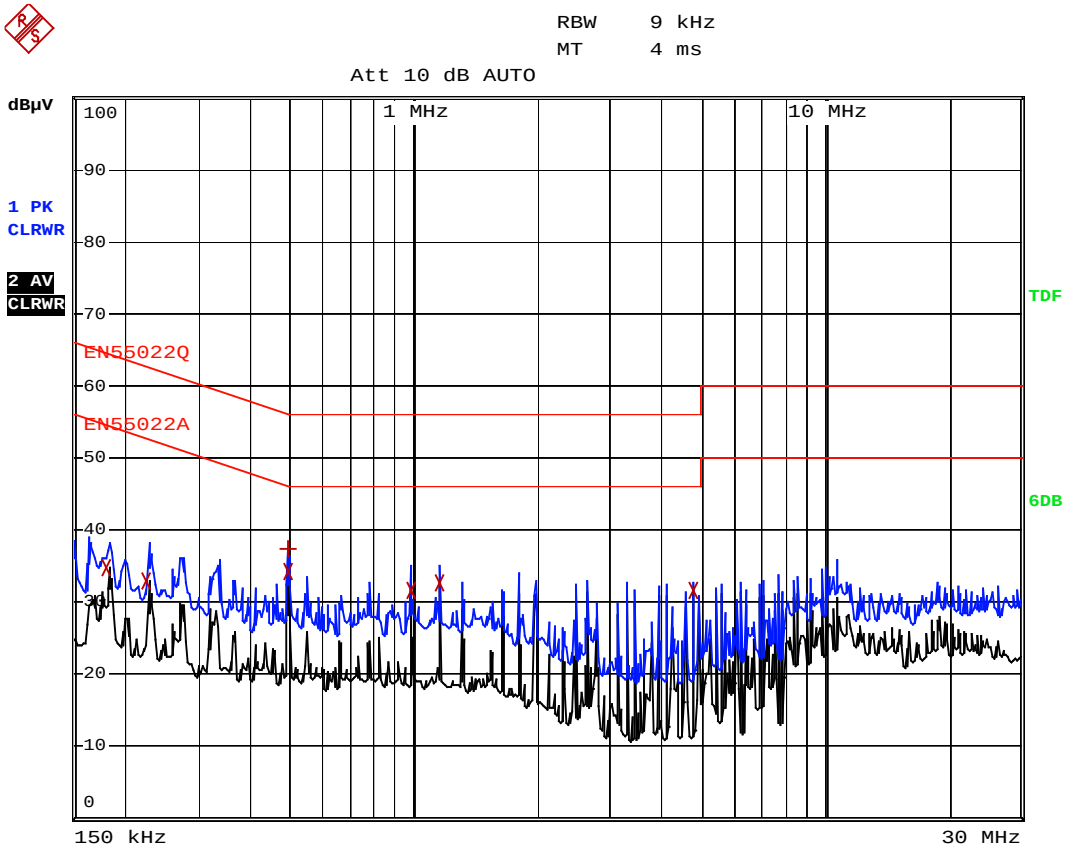
EUT: VHF Wireless Headphone

M/N: JH-808D31

Operating Condition: Running

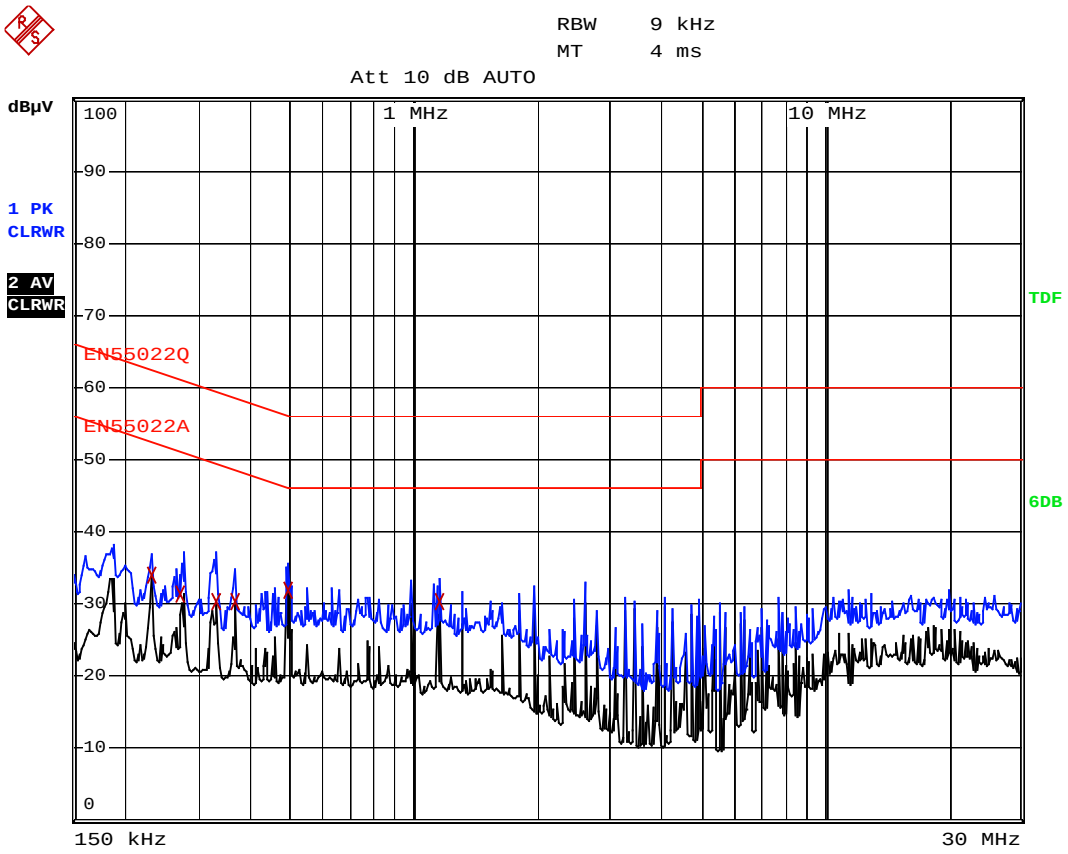
Test Specification: N

Comment: AC 120V/60Hz; DC 5V adapter



Plot of Conducted Emissions Test Data

Conducted Disturbance
EUT: VHF Wireless Headphone
M/N: JH-808D31
Operating Condition: Running
Test Specification: L
Comment: AC 120V/60Hz; DC 5V adapter



4. §15.203 - ANTENNA REQUIREMENT

4.1 Standard Applicable

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. Otherwise, according to FCC 15.235(c)(3), the antenna shall be a single element, one meter or less in length, permanently mounted on the enclosure containing the device.

4.2 Test Result

This product has a permanent antenna, and the length of the antenna is 0.8m, fulfill the requirement of this section.

5. §15.205, §15.209, §15.235- RADIATED EMISSION

5.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ±2.0 dB.

5.2 Standard Applicable

According to §15.235(a), The field strength of any emission within this band shall not exceed 10,000 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

According to §15.235(b) The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in §15.209.

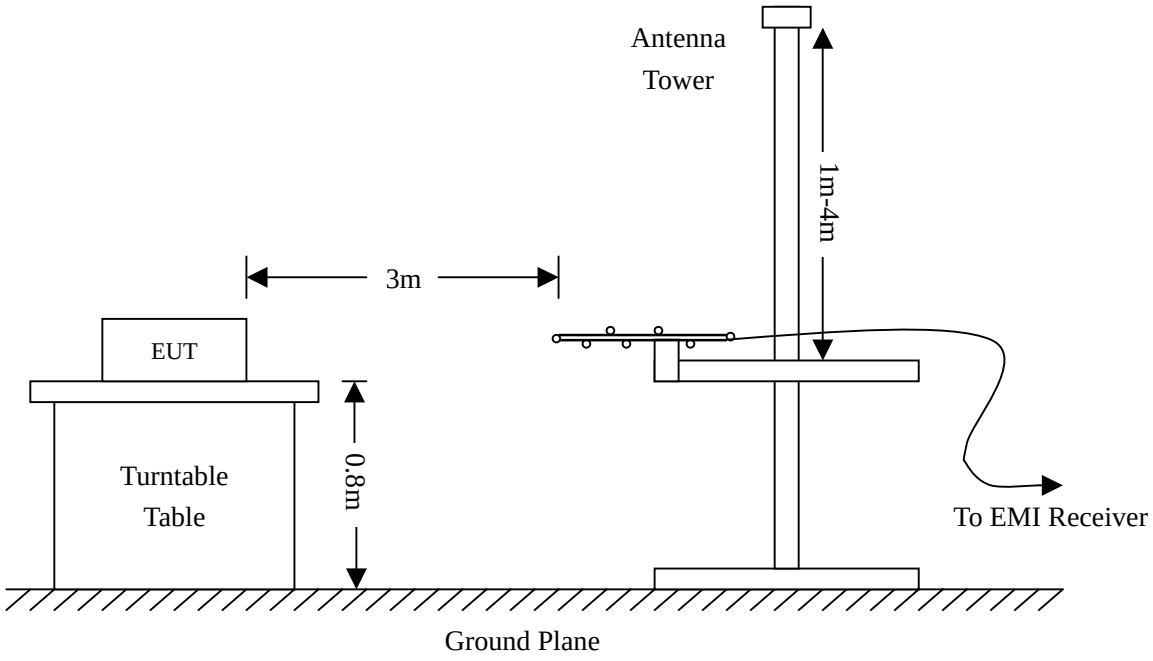
5.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008-01-25	2009-01-24
Positioning Controller	C&C	CC-C-1F	N/A	2008-01-25	2009-01-24
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008-01-25	2009-01-24
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2008-01-25	2009-01-24
RF Switch	EM	EMSW18	SW060023	2008-01-25	2009-01-24
Amplifier	Agilent	8447F	3113A06717	2008-01-25	2009-01-24
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2008-01-25	2009-01-24
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2008-01-25	2009-01-24

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

5.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 15.235(a) and FCC Part 15.209 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.



5.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading – Corr. Factor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15 Limit

5.6 Environmental Conditions

Temperature:	26° C
Relative Humidity:	52%
ATM Pressure:	1022 mbar

5.7 Summary of Test Results/Plots

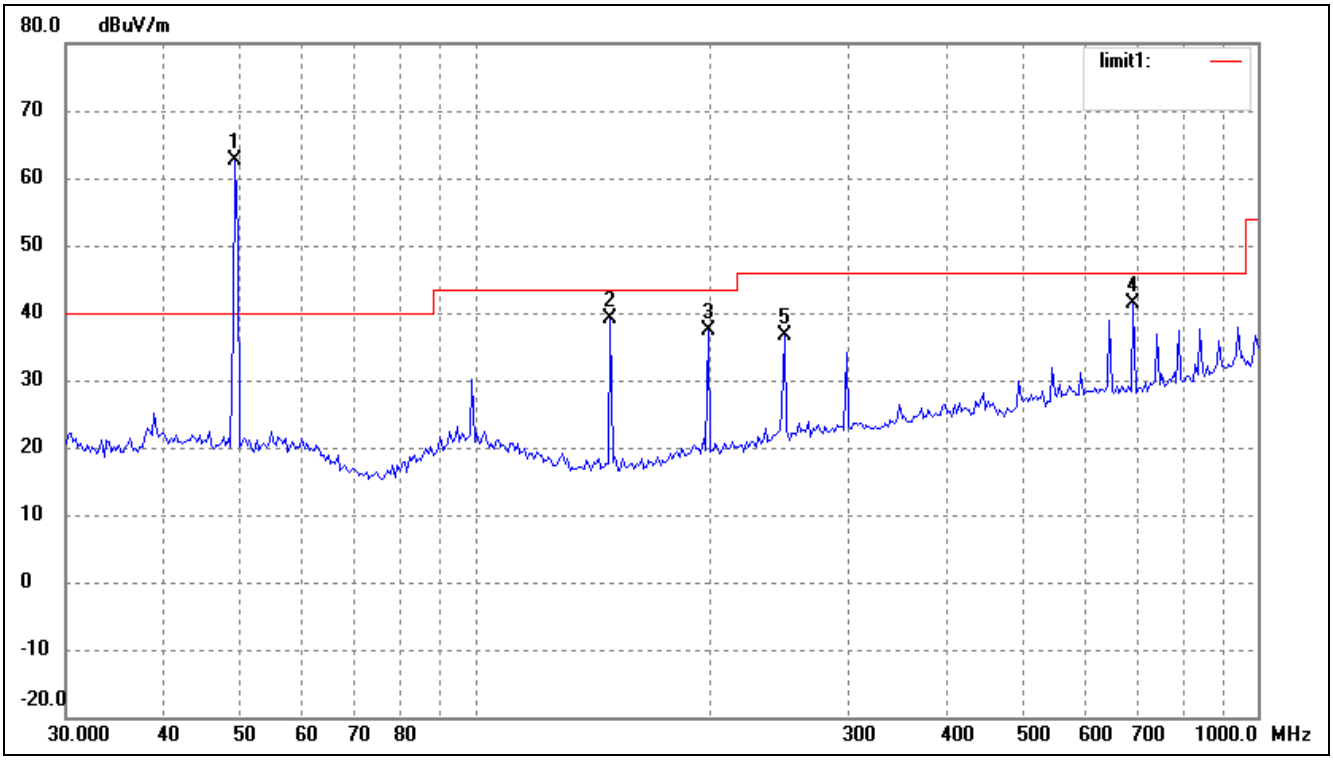
According to the data below, the FCC Part 15.205, 15.209 and 15.235 standards, and had the worst margin of:

-4.27 dBμV at **148.9175 MHz** in the **Horizontal** polarization, **30 MHz to 1 GHz, 3Meters**

Test Mode: Transmitting

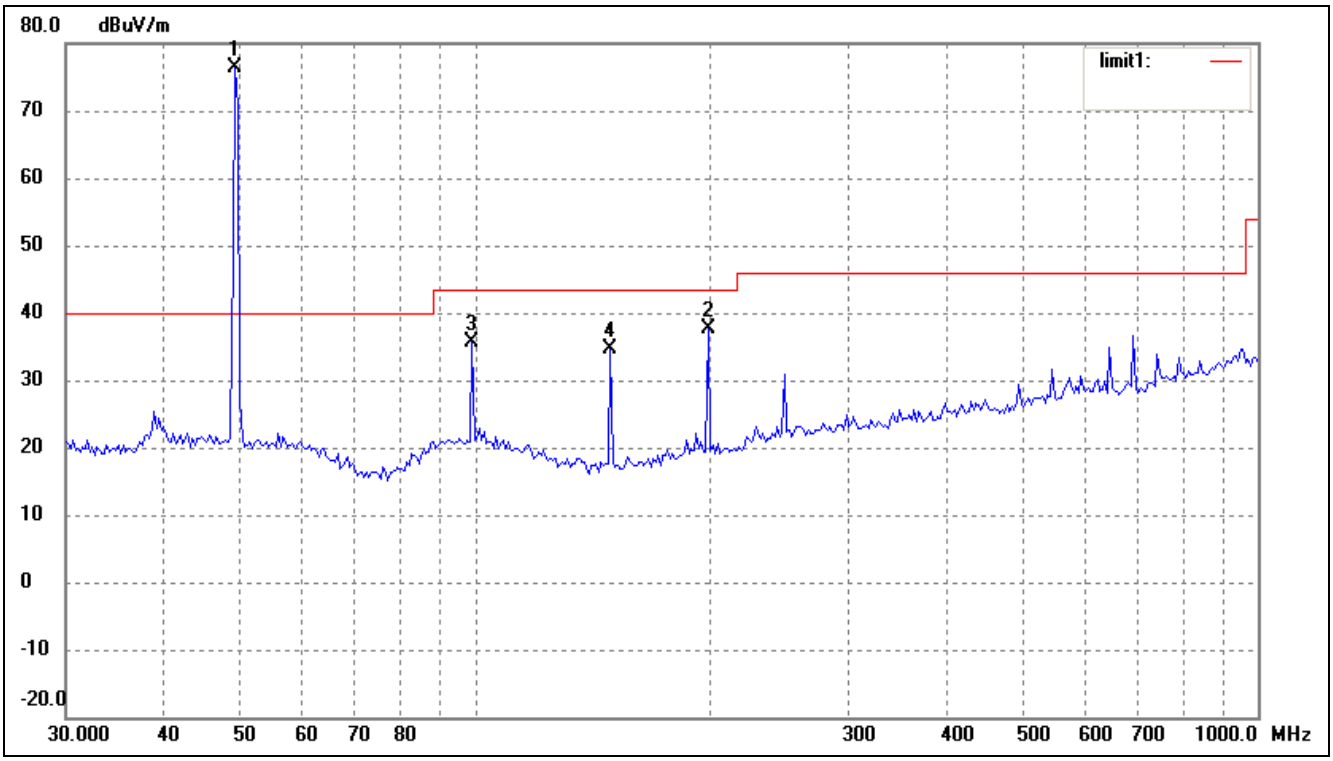
Plot of Radiation Emissions Test

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
Fun.	49.8600	54.54	8.01	62.55	100.00	-37.45	0	130	peak
Fun.	49.8600	53.36	8.01	61.37	80.00	-18.63	0	130	Ave
2	148.9175	35.16	4.07	39.23	43.50	-4.27	60	120	peak
3	198.6424	30.89	6.58	37.47	43.50	-6.03	89	100	peak
4	693.9101	26.97	14.48	41.45	46.00	-4.55	357	200	peak
5	248.7319	27.98	8.66	36.64	46.00	-9.36	11	100	peak

Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
Fun.	49.8600	68.45	8.01	76.46	100.00	-25.54	0	100	peak
Fun.	49.8600	67.42	8.01	75.43	80.00	-4.57	0	100	Ave
2	198.6424	31.16	6.58	37.74	43.50	-5.76	69	200	peak
3	99.0690	27.30	8.36	35.66	43.50	-7.84	73	150	peak
4	148.9175	30.65	4.07	34.72	43.50	-8.78	359	160	peak

6. §15.235(b) OUT OF BAND EMISSIONS

6.1 Standard Applicable

According to FCC 15.235 (c) (4) Emission outside of this band shall be attenuated at least 20dB below the level of the unmodulated carrier.

6.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008-01-25	2009-01-24
Positioning Controller	C&C	CC-C-1F	N/A	2008-01-25	2009-01-24
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008-01-25	2009-01-24
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2008-01-25	2009-01-24
RF Switch	EM	EMSW18	SW060023	2008-01-25	2009-01-24
Amplifier	Agilent	8447F	3113A06717	2008-01-25	2009-01-24
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2008-01-25	2009-01-24
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2008-01-25	2009-01-24

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

6.3 Test Procedure

As the radiation test, set the RBW=10kHz VBW=30kHz, observed the outside band of 49 MHz to 50 MHz, than mark the higher-level emission for comparing with the FCC rules.

6.4 Environmental Conditions

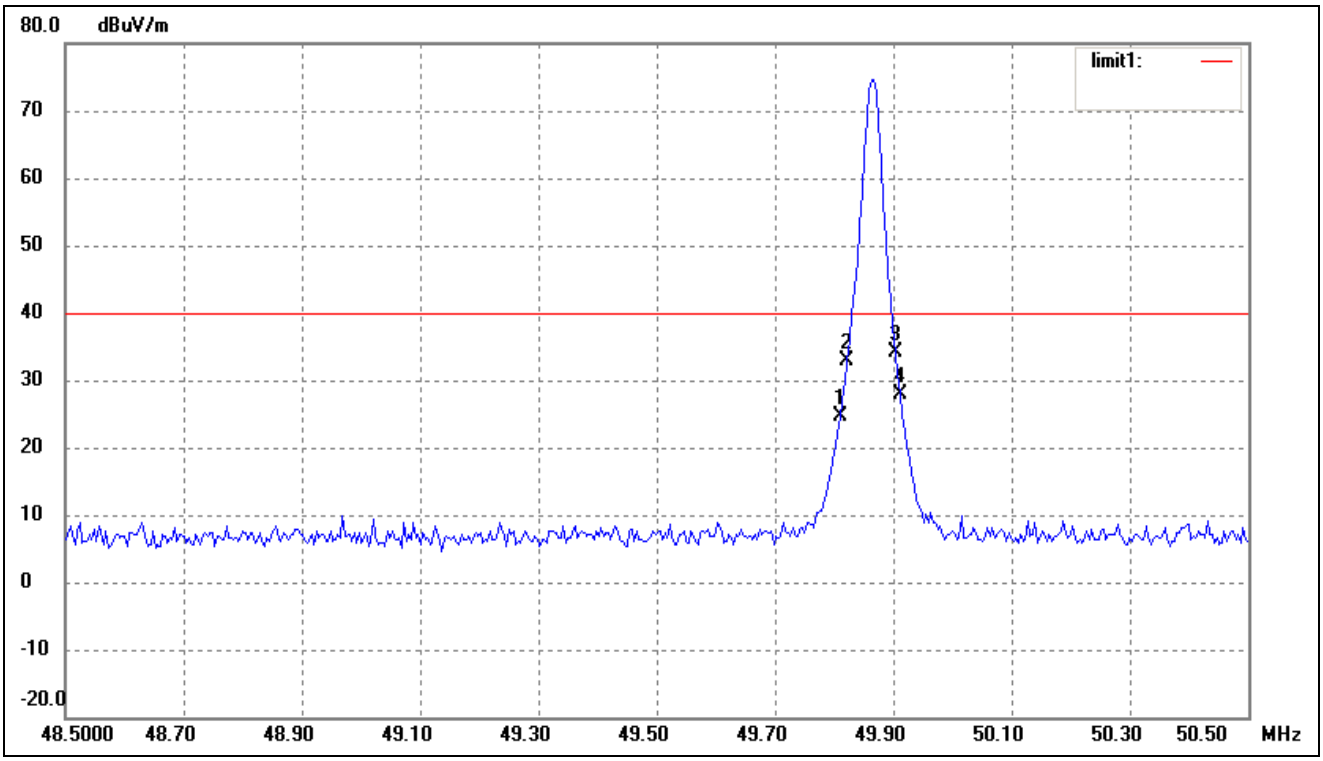
Temperature:	26° C
Relative Humidity:	52%
ATM Pressure:	1022 mbar

6.5 Summary of Test Results/Plots

Frequency MHz	Atten. Emission dB	Atten. Limit dBc
49.8200	>26	26
49.9000	>26	26

Test Result Pass

Refer to the attached plots.



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	49.8100	16.59	7.98	24.57	40.00	-15.43	Pass
2	49.8200	24.82	7.98	32.80	40.00	-7.20	Pass
3	49.9000	26.17	7.98	34.15	40.00	-5.85	Pass
4	49.9100	19.85	7.98	27.83	40.00	-12.17	Pass