FCC PART 15.239

MEASUREMENT AND TEST REPORT

FOR

Lantian Electronics(Shenzhen) Co., Ltd.

Building A2, Area 4, Fuqiao Industial Park, Qiaotaou Village, Bao'an Zone, Shenzhen, China

FCC ID: VXGLM9001B

Report Concerns: Original Report	**Equipment Type:** Wireless Earphone
Model:	LM-9001B
Report No.:	STR09058117I
Test/Witness Engineer:	
Test Date:	2009-06-02 to 2009-06-05
Issue Date:	2009-06-19
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: Lantian Electronics (Shenzhen) Co., Ltd.

Address of applicant: Building A2, Area 4, Fuqiao Industrial Park, Qiaotou Village, Bao'an Zone, Shenzhen, China

Manufacturer: Lantian Electronics (Shenzhen) Co., Ltd.

Address of manufacturer: Building A2, Area 4, Fuqiao Industrial Park, Qiaotou Village, Bao'an Zone, Shenzhen, China

General Description of E.U.T

Items	Description
EUT Description:	Wireless Earphone
Trade Name:	/
Model No.:	LM-9001B
Rated Voltage:	DC 3V
Output Power:	<48dBuv/m
Frequency Range:	88.1MHz
Antenna Type:	Integral Antenna
Size:	7.9x5.5x2.5cm
Comment:	Manual Operation Device
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 Lantian Electronics (Shenzhen) Co., Ltd. in accordance with FCC Part 15, Subpart C, and section 15.239, 15.203 and 15.209 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.239, 15.203 and 15.209 of the Federal Communication Commissions 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. The EUT was tested in all three orthogonal planes and the worse case was showed.

1.5 Test Facility

- **FCC – Registration No.: 994117**
  SEM.Test Compliance Services Co., Ltd. EMC 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 our files and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**
  The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

1.6 EUT Exercise Software

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

1.7 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
Apple	iPod	NANO	5U638776VQ5

1.8 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Cord/Without Cord
Audio Cable	0.85	Unshielded	Without Cord

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.203 Antenna Requirement	Compliant
§15.209 General Requirement	Compliant
§15.239 (c) Out of band emission Testing	Compliant
§15.239 (a) Emission Bandwidth Testing	Compliant
§15.239 (b) Radiated Emission	Compliant

3. §15.203 - ANTENNA REQUIREMENT

3.1 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.

3.2 Test Result

This product has a permanent antenna, fulfill the requirement of this section.

4. §15.209, §15.239 (b)(c)- RADIATED EMISSION

4.1 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 ±3.0 dB.

4.2 Standard Applicable

According to §15.239(b), The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 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 §15.239(c), The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed the general radiated emission limits in §15.209.

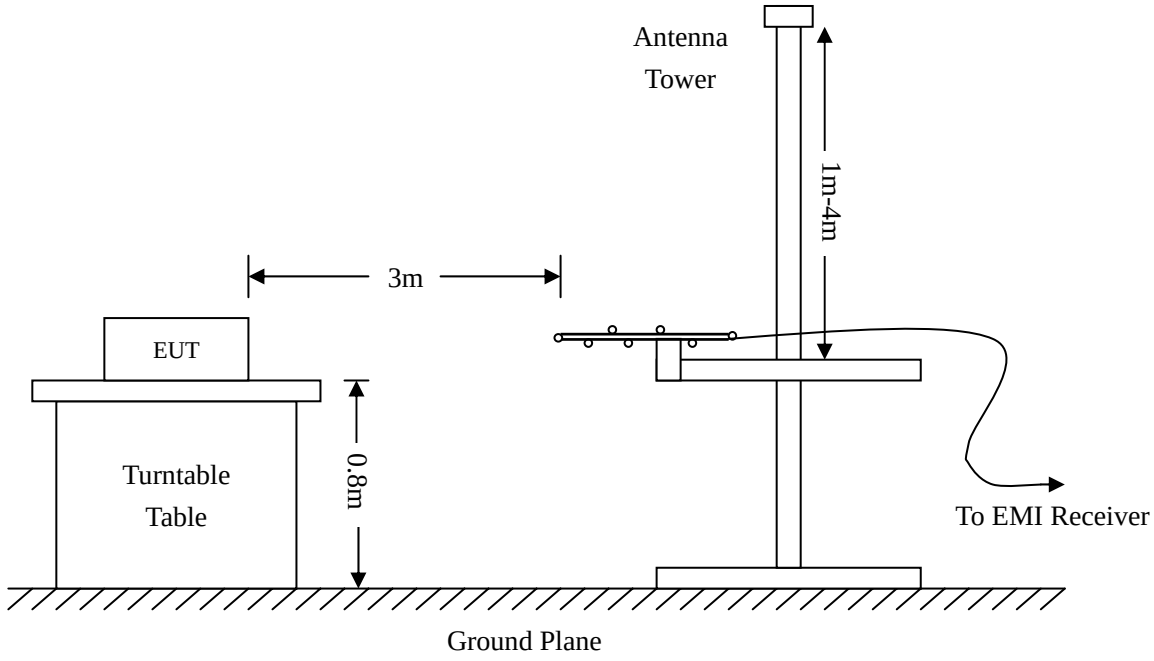
4.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008-07-08	2009-07-07
Positioning Controller	C&C	CC-C-1F	N/A	2008-07-08	2009-07-07
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008-07-08	2009-07-07
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2008-07-08	2009-07-07
RF Switch	EM	EMSW18	SW060023	2008-07-08	2009-07-07
Amplifier	Agilent	8447F	3113A06717	2008-07-08	2009-07-07
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2008-07-08	2009-07-07
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2008-07-08	2009-07-07

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

4.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.239(b) and FCC Part 15.209 Limit.



4.5 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 +Ant.Loss +Cab. Loss – Ampl.Gain

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 15.239 Limit

4.6 Environmental Conditions

Temperature:	21° C
Relative Humidity:	50%
ATM Pressure:	1011 mbar

4.7 Summary of Test Results/Plots

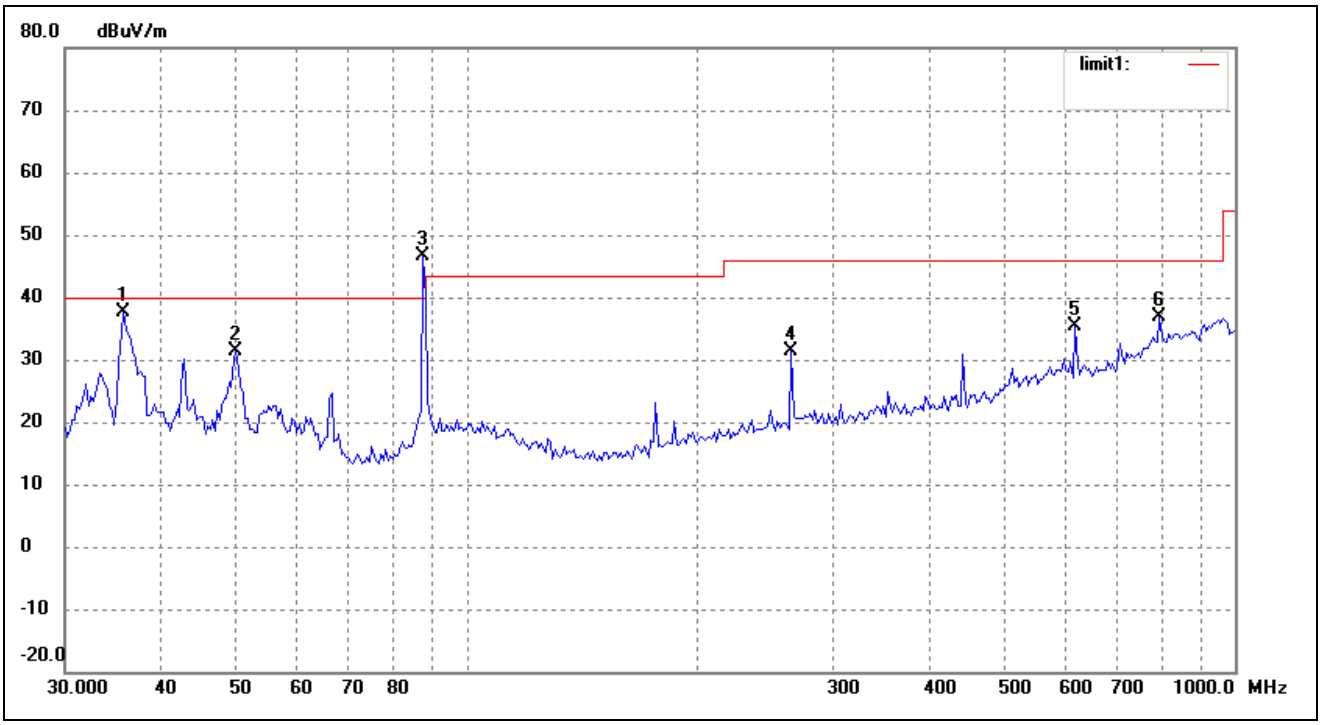
According to the data below, the FCC Part 15.209 and 15.239 standards, and had the worst margin of:

-1.41 dBμV at **88.1 MHz** in the **Horizontal** polarization, **Low Channel, 30 MHz to 18 GHz, 3Meters**

Plot of Radiation Emissions Test

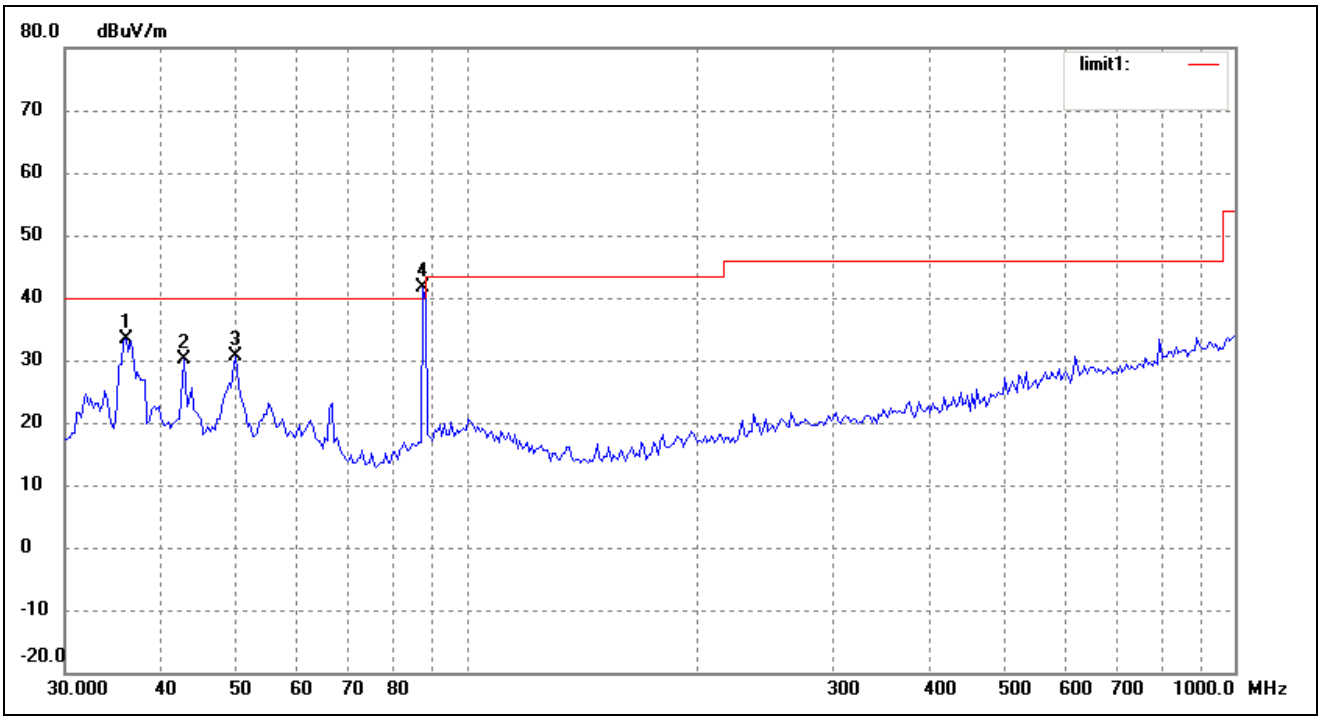
Low Channel

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	35.7617	30.76	6.80	37.56	40.00	-2.44	12	100	peak
2	50.1080	23.68	7.69	31.37	40.00	-8.63	36	100	peak
3	88.1000	40.72	5.87	46.59	48.00	-1.41	26	100	Ave(Fundamental)
3	88.1000	41.93	5.87	47.80	68.00	-20.20	231	100	Peak(Fundamental)
4	264.9709	23.28	8.06	31.34	46.00	-14.66	100	100	peak
5	620.1167	20.20	15.16	35.36	46.00	-10.64	20	100	peak
6	798.6205	19.90	17.04	36.94	46.00	-9.06	36	100	peak

Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	36.0139	26.60	6.87	33.47	40.00	-6.53	100	100	peak
2	42.9305	22.15	7.97	30.12	40.00	-9.88	12	100	peak
3	50.1080	23.01	7.69	30.70	40.00	-9.30	33	100	peak
4	88.1000	35.71	5.87	41.58	48.00	-6.42	56	100	Ave(Fundamental)
4	88.1000	36.21	5.87	42.08	68.00	-25.92	56	100	Peak(Fundamental)

Note: The EUT was tested in all three orthogonal planes and frequency rang 30MHz to the tenth harmonics. Emissions attenuated closely to the noise base are not reported.

5. §15.239(a) EMISSION BANDWIDTH TESTING

5.1 Standard Applicable

According to FCC 15.239(a), Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88–108 MHz.

5.2 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Agilent	Spectrum Analyzer	E4402B	US41192821	2008-07-08	2009-07-07
ETS	Receiver Antenna	2175	57337	2008-07-08	2009-07-07
ETS	50 ohm Coaxial Cable	SUCOFLEX 104	25498514	2008-07-08	2009-07-07

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

5.3 Test Procedure

With the EUT's antenna attached, the EUT's 26dB Bandwidth power was received by the test antenna, which was connected to the spectrum analyzer with the START, and STOP frequencies set to the EUT's operation band.

5.4 Environmental Conditions

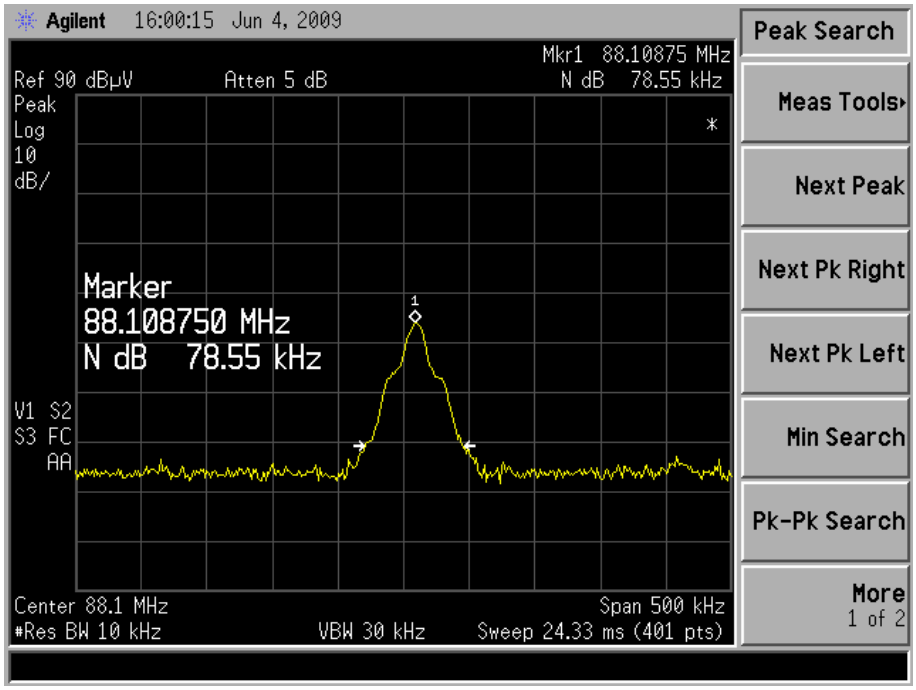
Temperature:	21° C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

5.5 Summary of Test Results/Plots

Frequency MHz	Emission Bandwidth KHz	Limit KHz
88.1	78.55	200
/	/	/
/	/	/

Test Result Pass

Refer to the attached plots.



6. §15.249(b) OUT OF BAND EMISSIONS

6.1 Standard Applicable

According to §15.239(c), The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed the general radiated emission limits in §15.209.

6.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008-07-08	2009-07-07
Positioning Controller	C&C	CC-C-1F	N/A	2008-07-08	2009-07-07
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008-07-08	2009-07-07
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2008-07-08	2009-07-07
RF Switch	EM	EMSW18	SW060023	2008-07-08	2009-07-07
Amplifier	Agilent	8447F	3113A06717	2008-07-08	2009-07-07
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2008-07-08	2009-07-07
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2008-07-08	2009-07-07

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 Lowest and Highest Transmitting Channel, observed the outside band of 88MHz to 108MHz, than mark the higher-level emission for comparing with the FCC rules.

6.4 Environmental Conditions

Temperature:	22° C
Relative Humidity:	54%
ATM Pressure:	1012 mbar

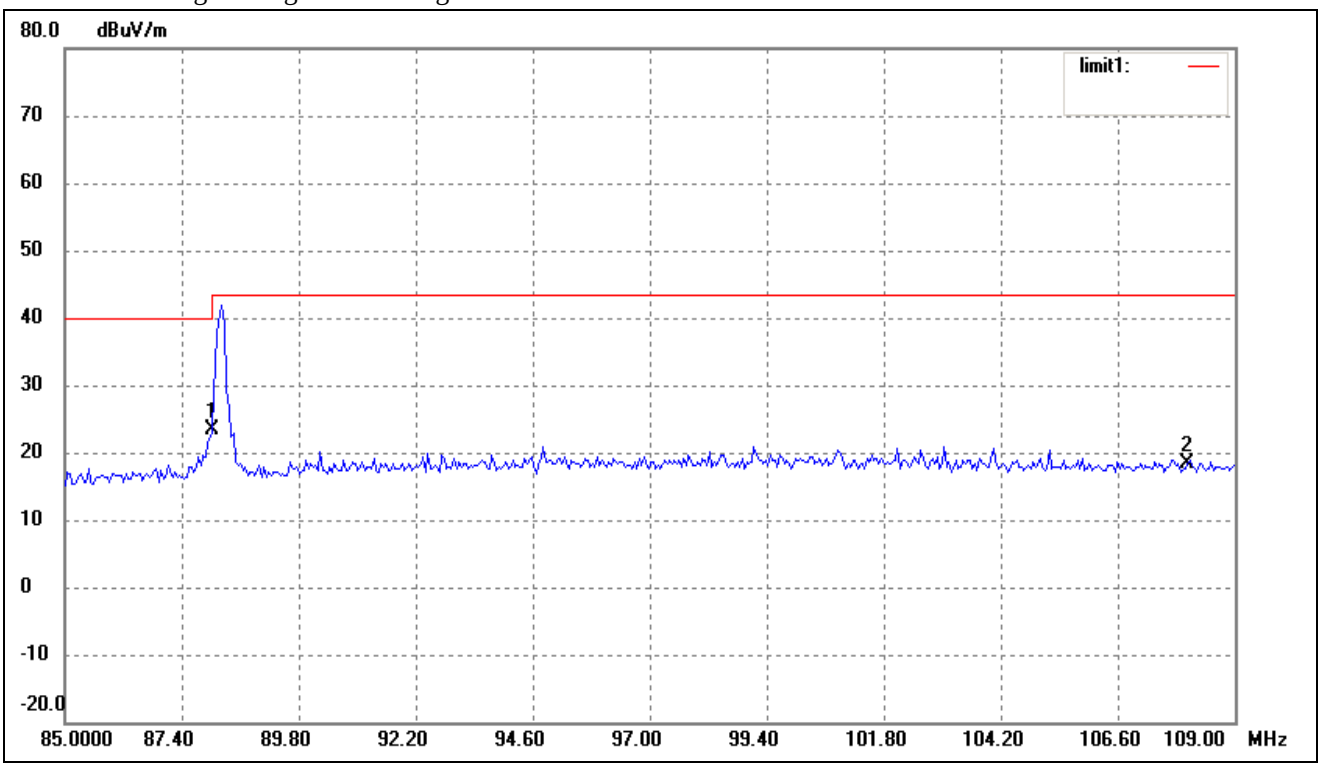
6.5 Summary of Test Results/Plots

Frequency MHz	Emission dBμV/m	Limit dBμV/m
88	23.41	40
108	18.29	43.5

Test Result Pass

Refer to the attached plots.

Lowest Bandedge & Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	88.0000	17.52	5.89	23.41	40.00	-16.59	360	100	peak
2	108.0000	11.18	7.11	18.29	43.50	-25.21	360	100	peak

******* END OF REPORT *******