FCC Part 15.109

Measurement and Test Report

For

Shenzhen Top-Tech Technology Co., Ltd.

7/F, No.1, 9 Zone, Guangyayuan Village, Bantian Street Office, Longgang District, Shenzhen, China

FCC ID: WZXTOPTECH008

Report Concerns: Original Report	**Equipment Type:** Generic Media Player
Model:	A509
Report No.:	STR09018013I
Test/Witness Engineer:	Jason
Test Date:	2008-12-22 to 2008-12-29
Issue Date:	2009-01-08
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 Top-Tech Technology Co., Ltd.
Address of applicant:	7/F, No.1, 9 Zone, Gangyayuan Village, Bantian Street Office, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen Top- Tech Technology Co., Ltd.
Address of manufacturer:	7/F, No.1, 9 Zone, Gangyayuan Village, Bantian Street Office, Longgang District, Shenzhen, China

General Description of E.U.T

Items	Description
EUT Description:	Generic Media Player
Trade Name:	TOPGUIDE
Model No.:	A509
Adding Model:	A510, A527, A318, A528
Rated Voltage:	DC 3.7V
Rated Current:	/
Size:	9.5x5.5x1.5 cm

The test data is gathered from a production sample, provided by the manufacturer. Test is carried out with A509 since the others listed in the report have the different appearances only without electronic construction changed.

1.2 Test Standards

The following report is prepared on behalf of the Shenzhen Top-Tech Technology Co., Ltd. in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, 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 susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the Operating Instructions.

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.

1.7 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
IBM	Notebook	T22	LV14893
TP-LINK	Modem	TM-EC5658V	KT99CTQC-508
Lenovo	Printer	3110	OD65133711480

1.8 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	0.8	Shielded	Without Core
Earphone Cable	0.8	Unshielded	Without Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. §15.107(a) CONDUCTED EMISSIONS

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

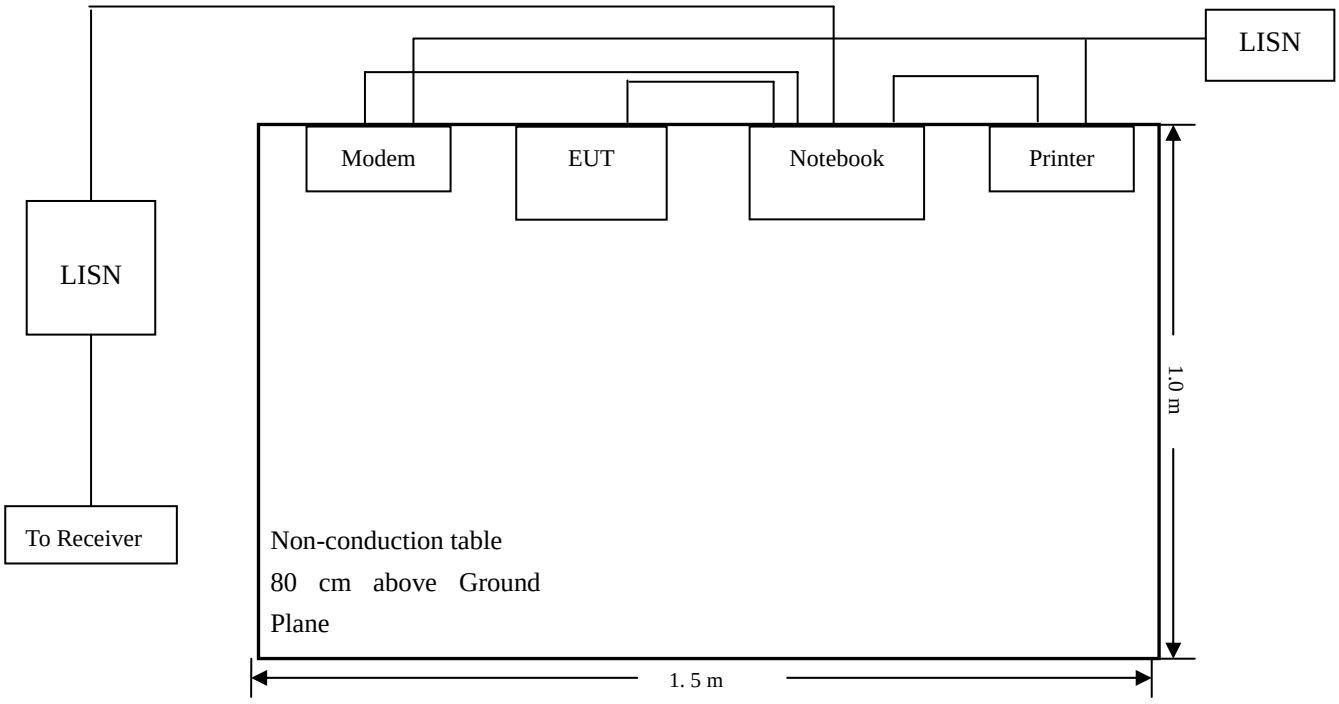
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2008-01-25	2009-01-24
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2008-01-25	2009-01-24
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2008-01-25	2009-01-24
AMN	Rohde & Schwarz	ESH3-Z5	828304/014	2008-01-25	2009-01-24

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

3.3 Test Procedure

Test is conducting under the description of 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.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC 15.107 Conducted margin for a Class B device, with the *worst* margin reading of:

-7.47 dBμV at **0.210 MHz** in the **Line Ave** detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC 15.107	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	QP/Ave/Pk	Line/Neutral	dBμV	dB
0.210	45.72	Ave	Line	53.19	-7.47
0.154	57.54	Pk	Line	65.77	-8.23
0.174	54.46	Pk	Neutral	64.75	-10.29
0.566	33.93	Ave	Neutral	46.00	-12.06
0.566	33.79	Ave	Line	46.00	-12.20
4.098	32.70	Ave	Line	46.00	-13.29
0.214	38.68	Ave	Neutral	53.04	-14.36
3.742	31.56	Ave	Neutral	46.00	-14.43
1.342	29.34	Ave	Neutral	46.00	-16.65
1.766	29.03	Ave	Line	46.00	-16.96
5.298	32.56	Ave	Line	50.00	-17.43
0.566	38.08	Pk	Neutral	56.00	-17.91
0.466	38.59	Pk	Line	56.57	-17.98
7.974	31.85	Ave	Neutral	50.00	-18.14
3.670	37.11	Pk	Line	56.00	-18.88
4.798	36.56	Pk	Neutral	56.00	-19.44

Emission attenuated more than 20dB of the limit is not reported.

Plot of Conducted Emissions Test Data

Conducted Disturbance

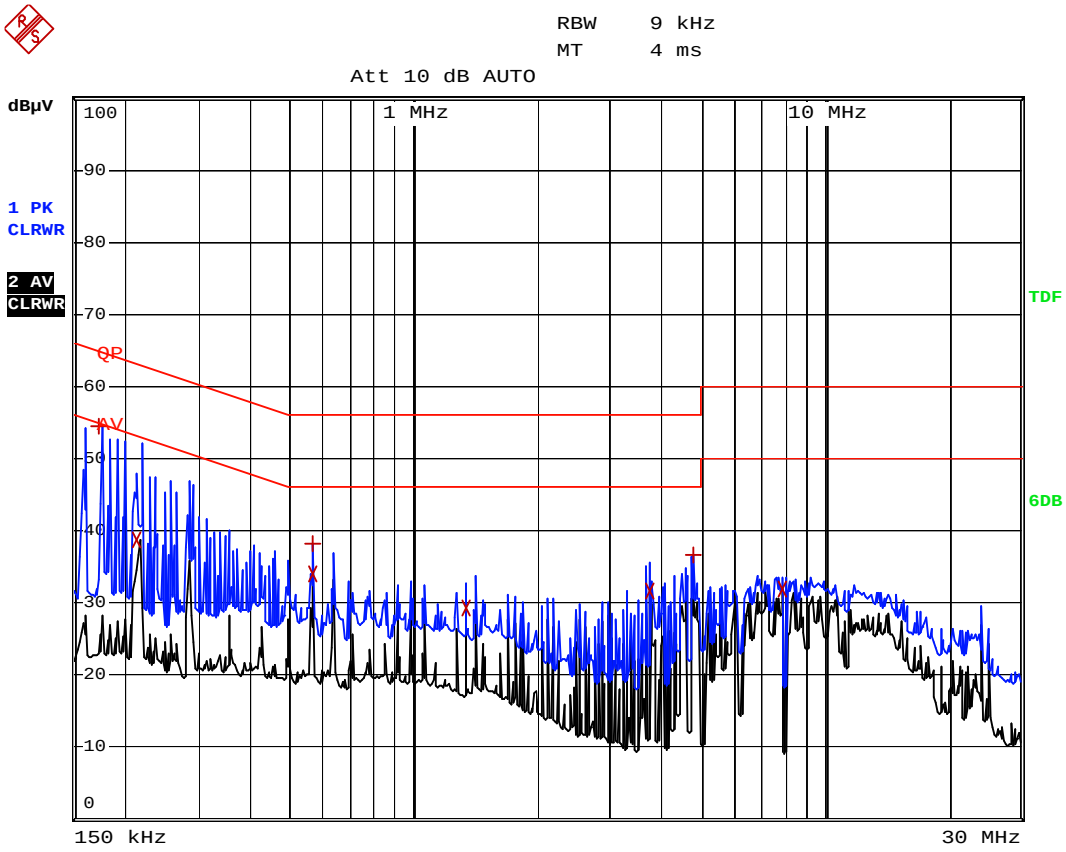
EUT: Generic Media Player

M/N: A509

Operating Condition: Reading and Writing

Test Specification: N

Comment: 120V/60Hz; USB 5V



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Plot of Conducted Emissions Test Data

Conducted Disturbance

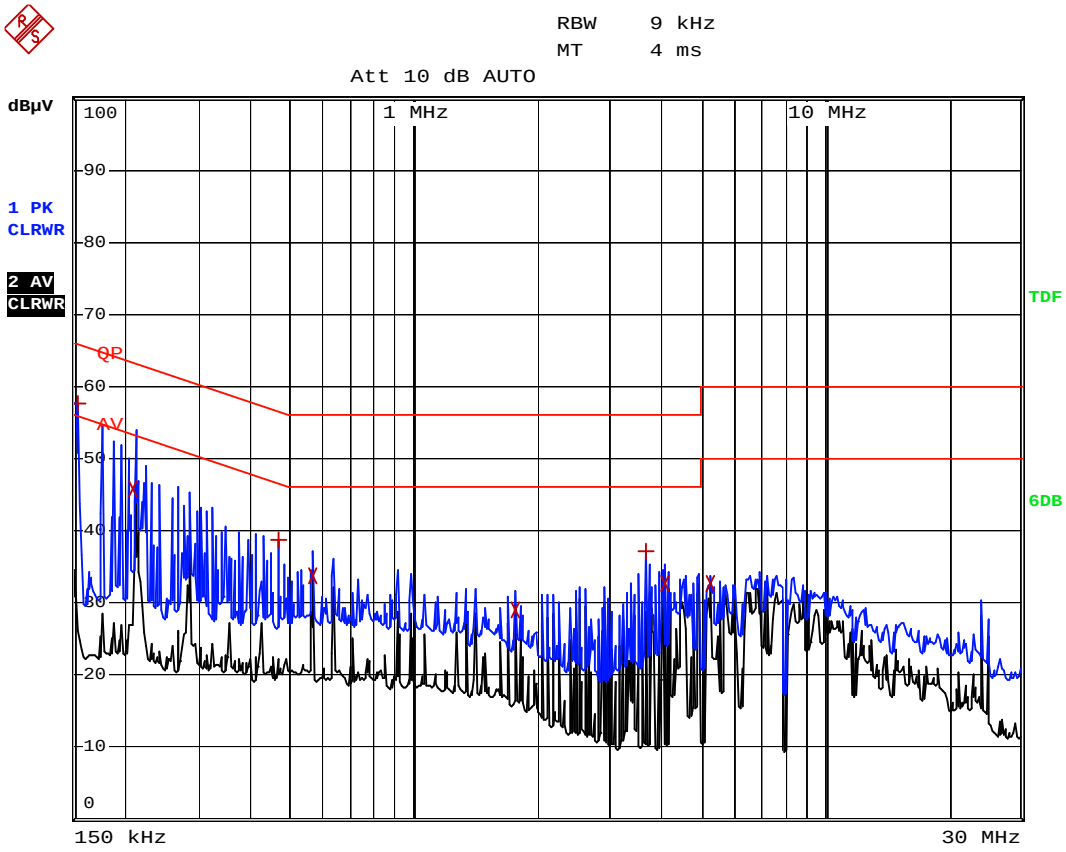
EUT: Generic Media Player

M/N: A509

Operating Condition: Reading and Writing

Test Specification: L

Comment: 120V/60Hz; USB 5V



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4. §15.109(a)- RADIATED EMISSION

4.1 Measurement Uncertainty

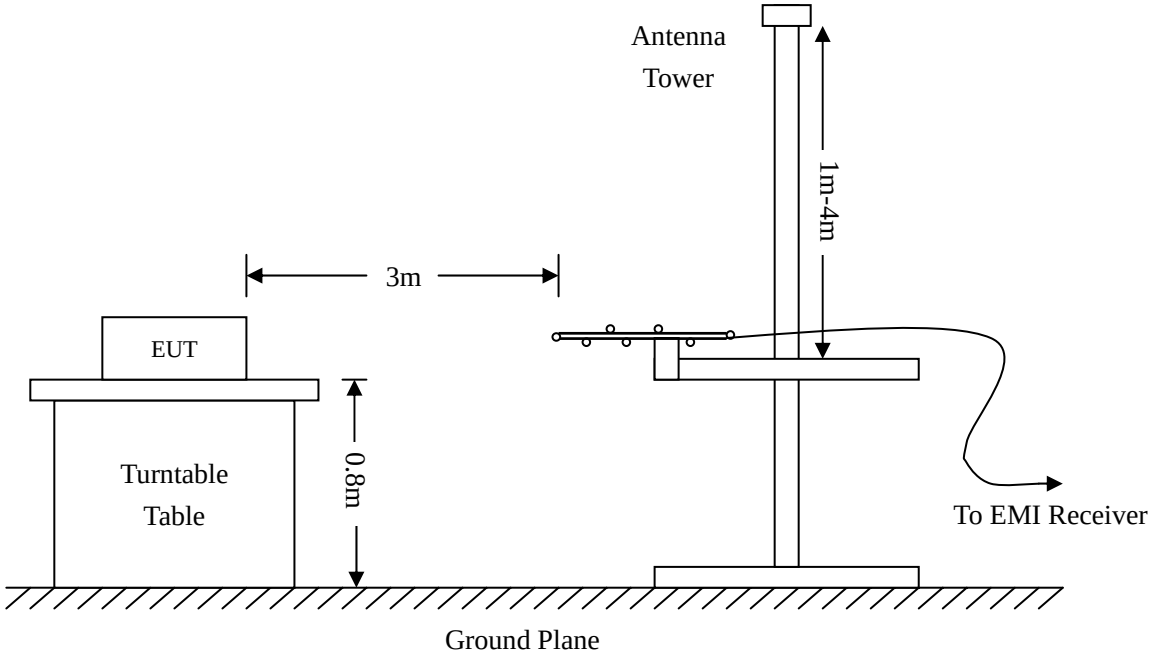
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 3.0 dB.

4.2 Test Equipment List and Details

Description	Manufacturer	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

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.109 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.



4.4 Test Receiver Setup

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

Start Frequency ..... 30 MHz
Stop Frequency..... 1000 MHz
Sweep Speed ..... Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 120 kHz
Quasi-Peak Adapter Mode ..... Normal

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 – 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 15B Limit

4.6 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.7 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC 15B Class B standards, and had the worst margin of:

-6.34 dBμV at **189.1076MHz** in the **Horizontal** polarization, **Playing** mode, **30 MHz to 1 GHz, 3Meters**
-3.02 dBμV at **338.8546 MHz** in the **Horizontal** polarization, **Reading and Writing** mode, **30 MHz to 1 GHz, 3Meters**

Plot of Radiation Emissions Test

Radiated Disturbance

EUT: Generic Media Player

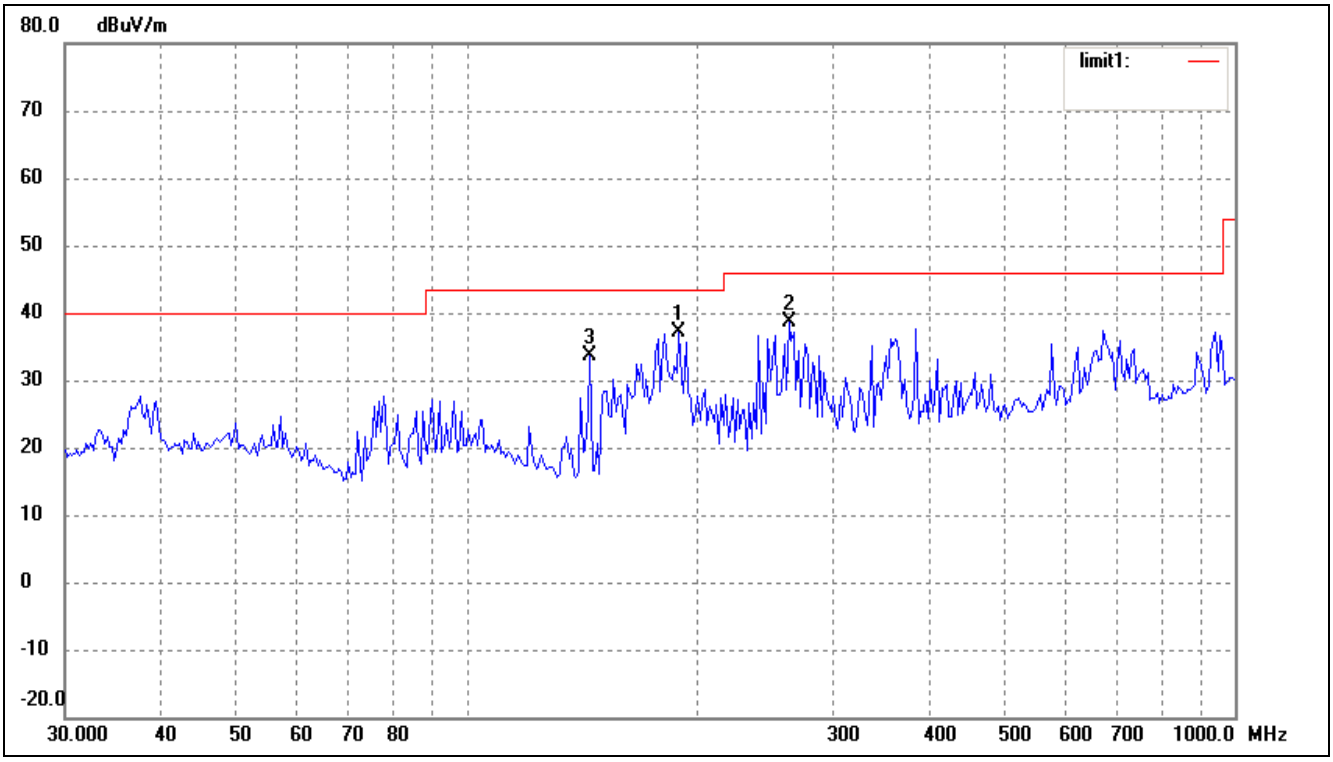
M/N: A509

Operating Condition: Playing

Test Specification: Horizontal & Vertical

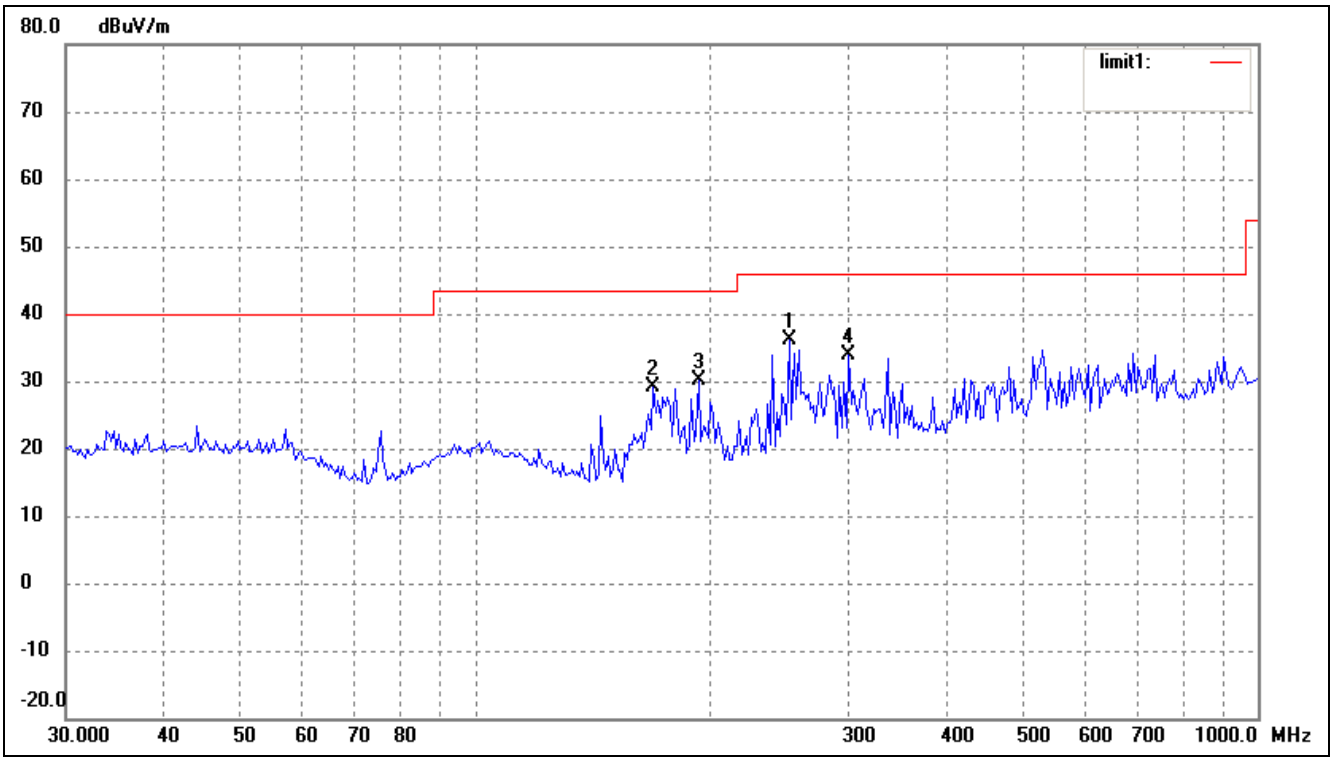
Comment: DC 3.7V battery

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	189.1076	31.58	5.58	37.16	43.50	-6.34	360	100	peak
2	263.1155	30.52	8.00	38.52	46.00	-7.48	360	100	peak
3	144.7899	30.39	3.26	33.65	43.50	-9.85	0	200	peak

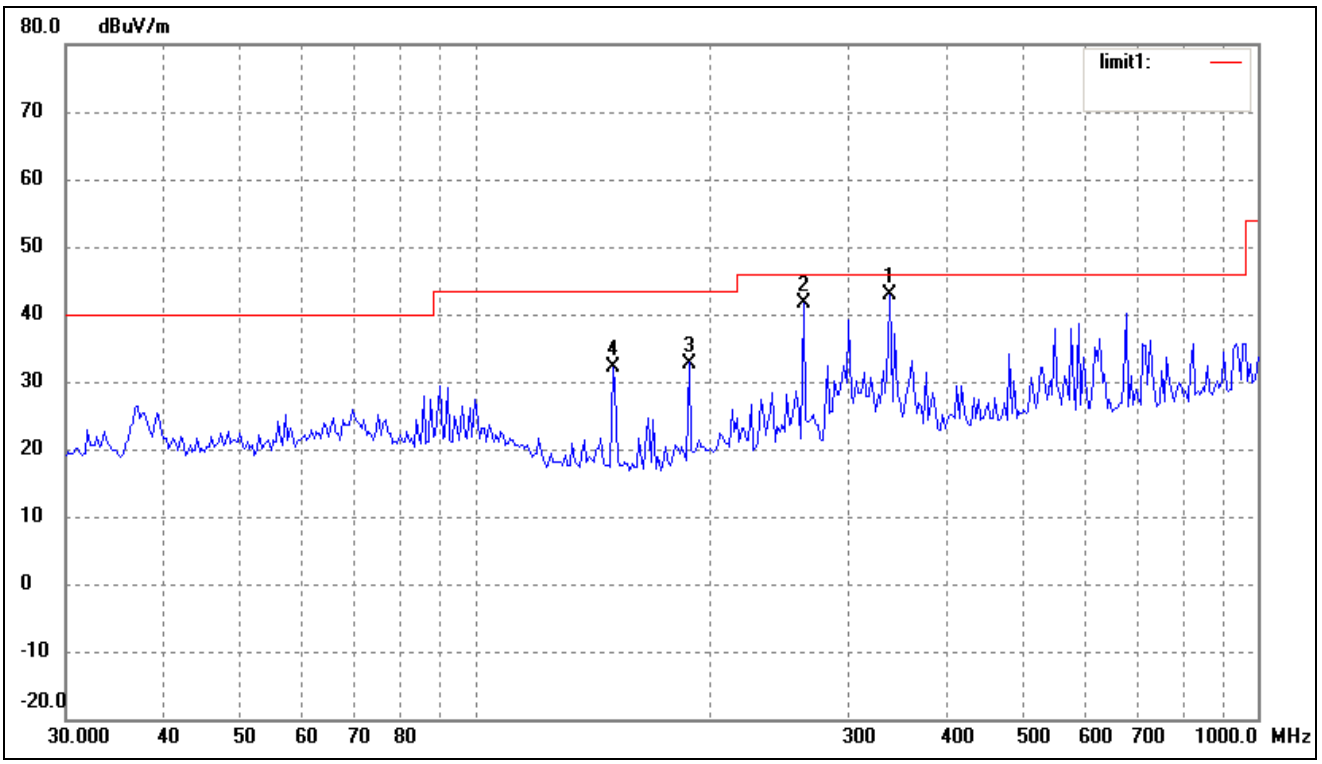
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	252.2523	28.49	7.74	36.23	46.00	-9.77	360	100	peak
2	168.9970	25.00	4.02	29.02	43.50	-14.48	360	200	peak
3	193.1366	24.48	5.67	30.15	43.50	-13.35	0	200	peak
4	300.6988	25.16	8.66	33.82	46.00	-12.18	0	200	peak

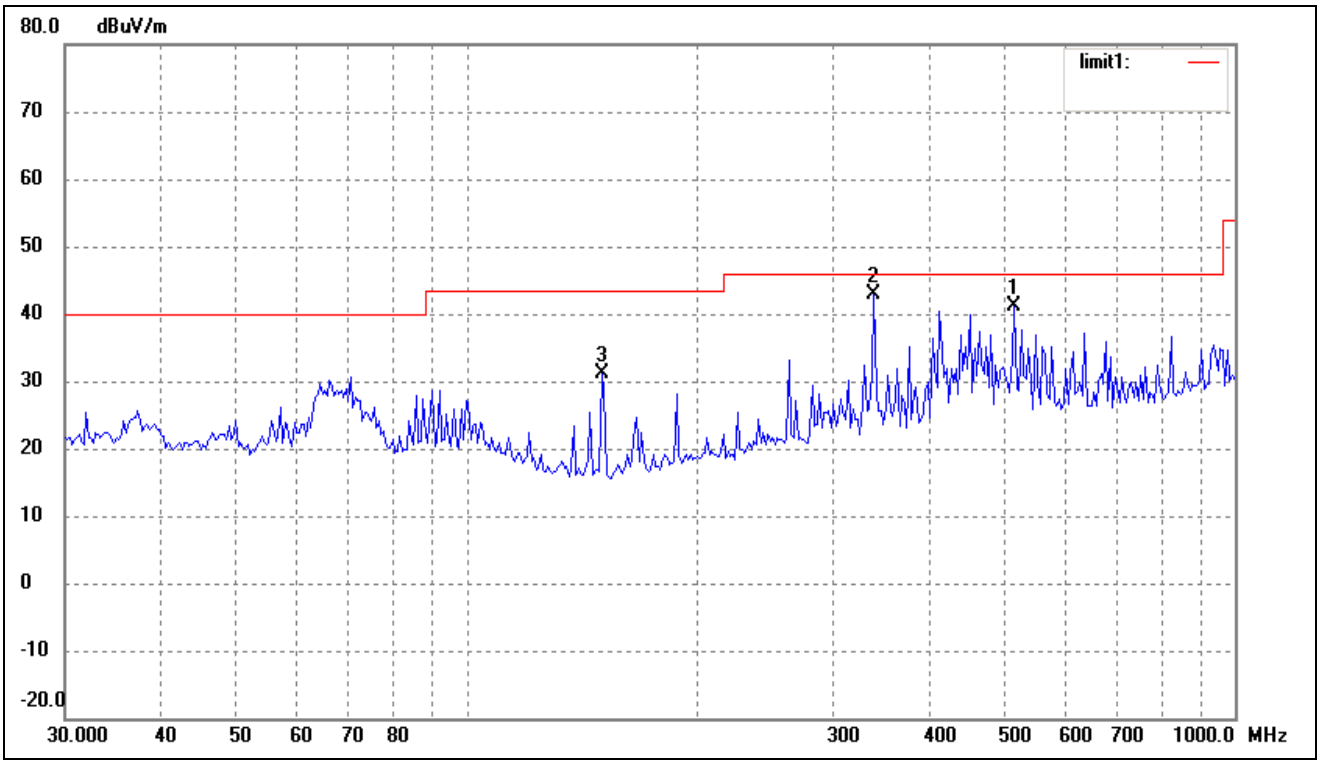
Radiated Disturbance
EUT: Generic Media Player
M/N: A509
Operating Condition: Reading and Writing
Test Specification: Horizontal & Vertical
Comment: AC120V/60Hz; Connect to PC, USB 5V

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	338.8546	33.78	9.20	42.98	46.00	-3.02	300	201	QP
2	263.1154	33.55	8.00	41.55	46.00	-4.45	205	105	QP
3	187.7832	27.29	5.46	32.75	43.50	-10.75	360	100	peak
4	149.9676	28.80	3.31	32.11	43.50	-11.39	0	200	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	516.5651	30.04	11.19	41.23	46.00	-4.77	204	114	QP
2	338.8546	33.61	9.20	42.81	46.00	-3.19	224	105	QP
3	149.9676	27.78	3.31	31.09	43.50	-12.41	360	200	peak