FCC Test Report

For

Sound Innovatioon Development Ltd.

EUT Name: IDESIGN WIRELESS SPEAKER

Model No.: 623389

Brand Name: Brookstone

Prepared By:

Asia Institute Technology (Dongguan) Limited

No.6 Binhe Road, Tianxin Village, Huangjiang, Dongguan, Guangdong, China.

Date of Receipt: Feb 02, 2009

Date of Test: Feb 02~04, 2009

Date of Issue: Feb 14, 2009

Test Result: Pass

Verification of Compliance

Client Information:

Applicant:	Sound Innovatioon Development Ltd.
Applicant add.:	17/F Cheuk Nang Centre 9 Hillwood Road, Tsim Sha Tsui, Kowloon, Hong Kong.

EUT Information:

EUT Name:	IDESIGN WIRELESS SPEAKER
Model No.:	623389
Brand Name:	Brookstone

Test procedure used: ANSI C63.4-2003

This device described above has been tested by Asia Institute Technology (Dongguan) Limited, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
*This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. government.

NVLAP Lab. Code: 200800-0

Reviewed by: Bovey. Yang
Test director/Bovey. yang

Date: 2009. 2. 14

Approved by: Kleven. Hu
Technical director/Kleven.hu

Date: 2009. 2. 14

1 Contents

2 Test Summary

Test	Test Requirement	Test Method	Criterion	Result
Mains Terminals Disturbance Voltage, 150kHz to 30MHz	FCC Part 15 Subpart B	FCC Part 15 Subpart B ANSI C63.4: 2003	Limits	PASS
Radiated Emissions 30MHz to 1GHz	FCC Part 15 Subpart B	FCC Part 15 Subpart B ANSI C63.4: 2003	Limits	PASS
Remark: None				
Model description: N/A				

3 Test Facility

The test facility is recognized, certified or accredited by the following organizations:

.NVLAP- Lab Code: 200800-0

Asia Institute Technology (Dongguan) Limited has been accredited by NVLAP on April 29, 2008.

.FCC- Registration No: 248337

The 3m Semi-Anechoic Chamber, 3m/10m Open Area Test Site and Shielding Room of Asia Institute Technology (Dong guan) Limited have been registered by Federal Communications Commission (FCC) on Dec.07, 2006.

.Industry Canada(IC)-Registration No: IC6819A-1 & IC6819A-2

The 3m Semi-Anechoic Chamber and 3m/10m Open Area Test Site of Asia Institute Technology (Dongguan) Limited have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing on Nov.07, 2006.

.VCCI- Registration No: R-2482 & C-2730

The 3m/10m Open Area Test Site and Shielding Room of Asia Institute Technology (Dongguan) Limited have been registered by Voluntary Control Council for Interference on Jan.24, 2007.

.TUV Rhineland

Asia Institute Technology (Dongguan) Limited has been assessed on Jan.16, 2007 that it can carry out EMC tests by order and under supervision of TUV Rhineland.

.ITS- Registration No: TMPSHA031

Asia Institute Technology (Dongguan) Limited has been assessed and included in Intertek Shanghai TMP Program regarding Laboratory facilities and test equipment on Nov.10, 2006.

3.1 Deviation from standard

None

3.2 Abnormalities from standard conditions

None

4 General Information

4.1 General Description of EUT

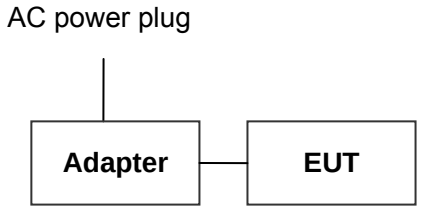
Manufacturer:	Sound Innovatioon Development Ltd.
Manufacturer Address:	17/F Cheuk Nang Centre 9 Hillwood Road, Tsim Sha Tsui,Kowloon, Hong Kong.
EUT Name:	IDESIGN WIRELESS SPEAKER
Model No:	623389
Brand Name:	Brookstone
Serial No:	N/A
Power Supply:	DC12V from adapter AC 100V~120V, 50/60Hz
Test Supply:	AC 120V, 60Hz
Power Cord:	N/A
DC Output Line	1.5m / Unshielded / Undetachable/ Without ferrite core
Signal Cable:	N/A

Key component's information:				
No.	component name	Brand Name	Model No:	Serial No:
N/A	N/A	N/A	N/A	N/A

4.2 Description of Test setup

EUT was tested in normal configuration (Please See following Block diagram)

1. Block diagram of EUT configuration



4.3 Peripheral List

No.	Equipment	Manufacturer	Model No.	Serial No.	Power cord	signal cable
1	N/A	N/A	N/A	N/A	N/A	N/A

5 Equipments List for All Test Items

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Test Receiver	R&S	ESCI	100124	2008.12.29	2009.12.28
2	LISN	Kyoritsu	KNW-242	8-837-4	2008.04.09	2009.04.08
3	LISN	Kyoritsu	KNW-407	8-1789-3	2008.04.09	2009.04.08
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2008.09.11	2009.03.10
5	Spectrum Analyzer	ADVANTEST	R3132	160400005	2008.04.09	2009.04.08
6	EMI Measuring Receiver	Schaffner	SCR3501	235	2008.04.16	2009.04.15
7	Low Noise Pre Amplifier	Tsj	MLA-10K01-B01-27	1205323	2008.09.11	2009.03.10
8	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9160	9160-3206	2008.07.03	2009.07.02
9	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2008.09.11	2009.03.10

6 Emission Test Results

6.1 Mains Terminals Disturbance Voltage Measurement

Test Date:	Feb 3, 2009
Frequency Range:	150kHz to 30MHz
Class/Severity:	Section 15.107 of FCC Part 15 Subpart B
Detector	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximum peak within 6dB of Average Limit

6.1.1 E.U.T. Operation

Operating Environment:

Temperature:	20 °C	Humidity:	54% RH	Atmospheric Pressure:	102	Kpa
EUT Operation:	Running					

6.1.2 Test Specification

EUT was placed upon a wooden test table 0.8m above the horizontal metal reference plane and 0.4m from the vertical ground plane, and it was connected to an AMN. The closest distance between the boundary of the EUT and the surface of the AMN is 0.8m. All peripherals were connected to another AMN, and placed at a distance of 10cm from each other. A spectrum and receiver was connected to the RF output port of the AMN. Both average and quasi-peak value were detected.

Associated with the conducted emission test data in this report is a ±1.18dB measurement uncertainty. And we judge whether it is compliance with the limits or not just base on measurement results, not taking into account this uncertainty. If the uncertainty is considered, there will be possibility of Fail.

6.1.3 Measurement Data

An initial pre-scan was performed on the live and neutral lines.

Quasi-peak or average measurements were performed at the frequency which maximum peak emissions were detected.

Please refer to the attached quasi-peak & average measurement data.

Line

Frequency (MHz)	Factor (dB)	Reading Level (dBµV)	Quasi peak (dBµV)	Margin (dB)	Limit (dBµV)	Reading Level (dBuV)	Average (dBµV)	Margin (dB)	Limit (dBµV)
0.570	10.775	38.592	49.367	-6.633	56.000	31.892	42.667	-3.333	46.000
0.902	10.926	38.259	49.185	-6.815	56.000	28.759	39.685	-6.315	46.000
1.558	11.070	38.982	50.052	-5.948	56.000	28.582	39.652	-6.348	46.000
2.106	11.195	41.640	52.835	-3.165	56.000	31.240	42.435	-3.565	46.000
*2.949	11.330	41.574	52.904	-3.096	56.000	31.674	43.004	-2.996	46.000
24.125	11.980	43.366	55.346	-4.654	60.000	27.066	39.046	-10.954	50.000

Neutral

Frequency (MHz)	Factor (dB)	Reading Level (dBuV)	Quasi peak (dBµV)	Margin (dB)	Limit (dBµV)	Reading Level (dBuV)	Average (dBµV)	Margin (dB)	Limit (dBµV)
0.802	10.914	40.103	51.017	-4.983	56.000	29.303	40.217	-5.783	46.000
1.418	11.035	38.850	49.885	-6.115	56.000	28.850	39.885	-6.115	46.000
1.814	11.137	41.688	52.825	-3.175	56.000	29.088	40.225	-5.775	46.000
*2.729	11.310	42.099	53.409	-2.591	56.000	29.399	40.709	-5.291	46.000
4.089	11.360	41.185	52.545	-3.455	56.000	25.185	36.545	-9.455	46.000
16.403	11.740	41.192	52.932	-7.068	60.000	28.992	40.732	-9.268	50.000

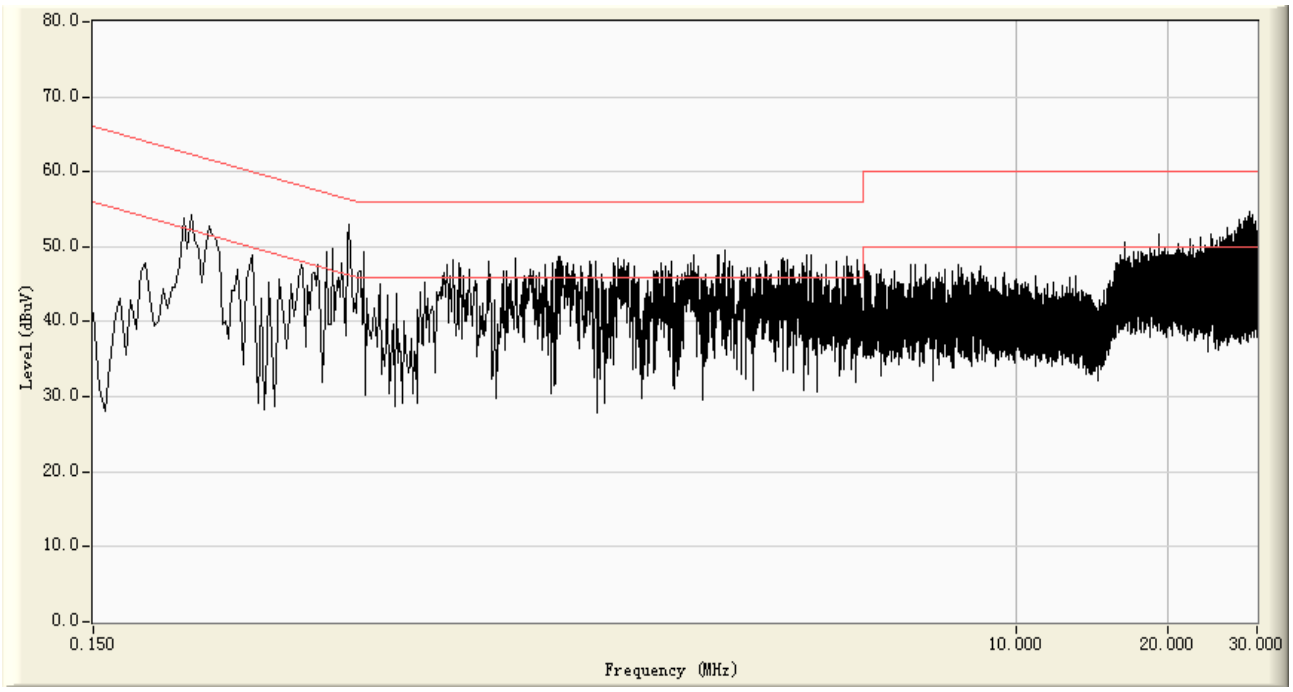
Note: '*' means the worst case

Quasi peak/Average = Reading Level + Factor

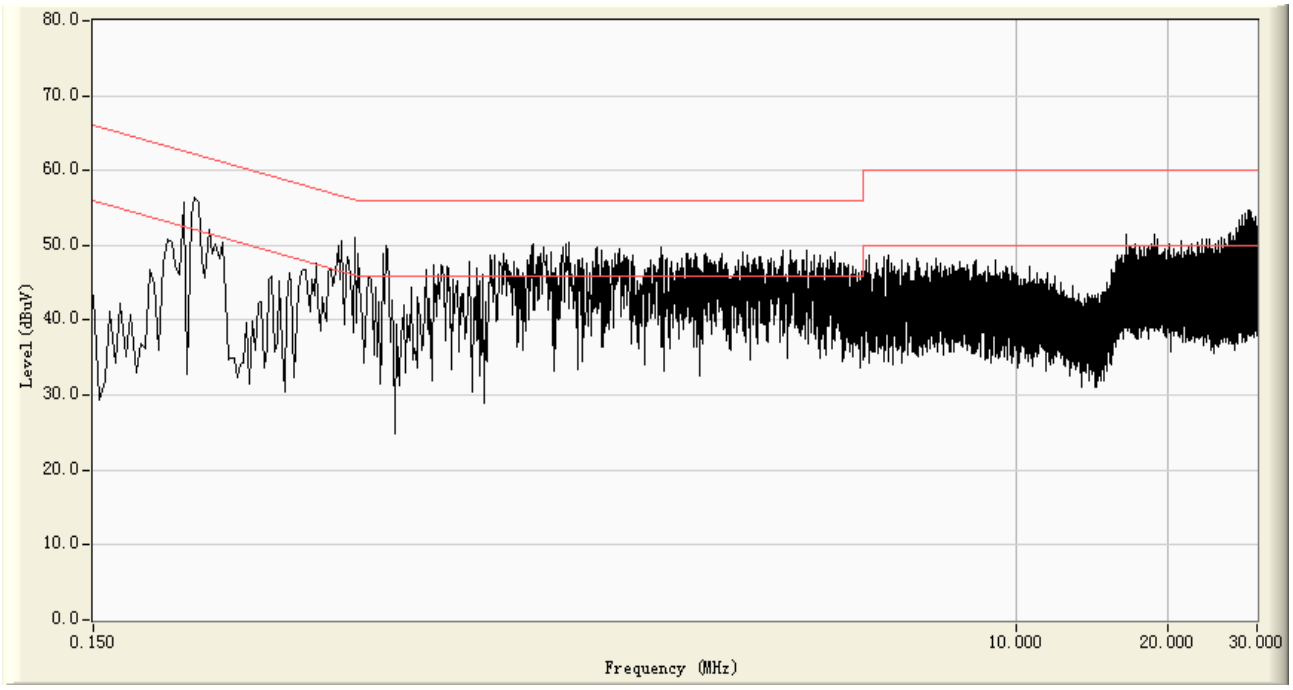
Factor= Cable Loss + LISN insertion loss

Mode: Left Speaker CH3

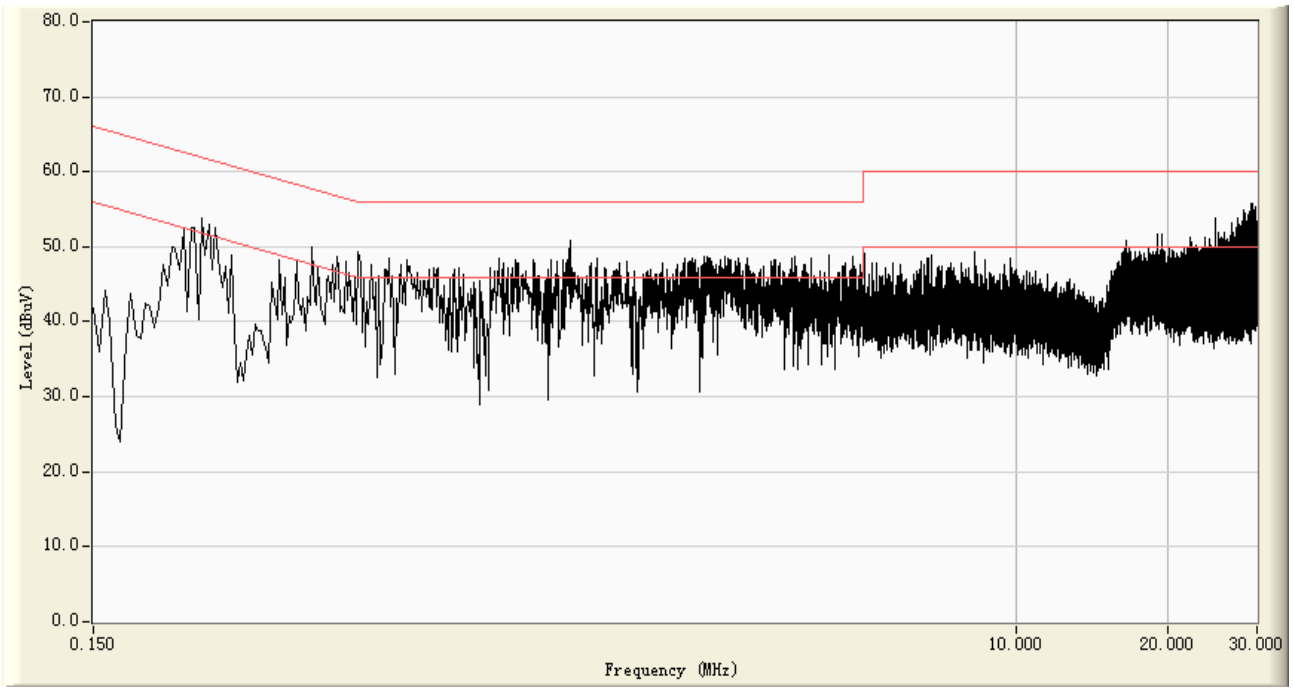
Line --Operating mode: Left Speaker CH1



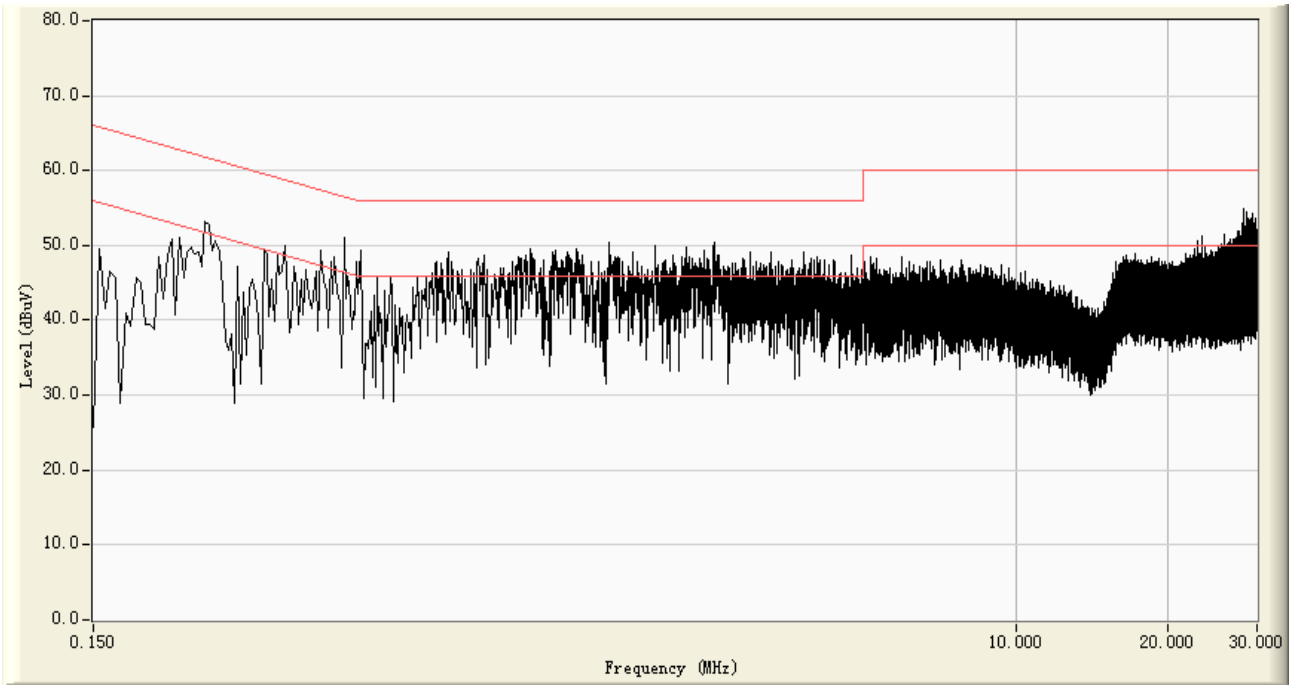
Neutral --Operating mode: Left Speaker CH1



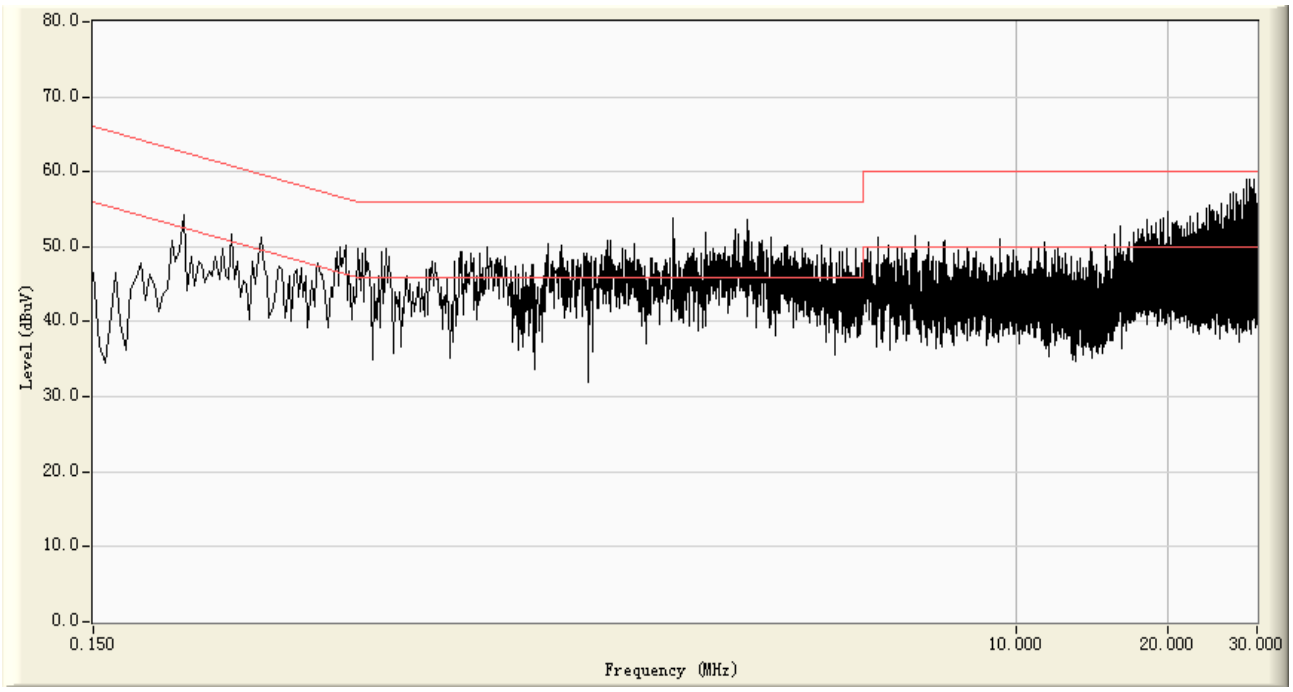
Line --Operating mode: Left Speaker CH2



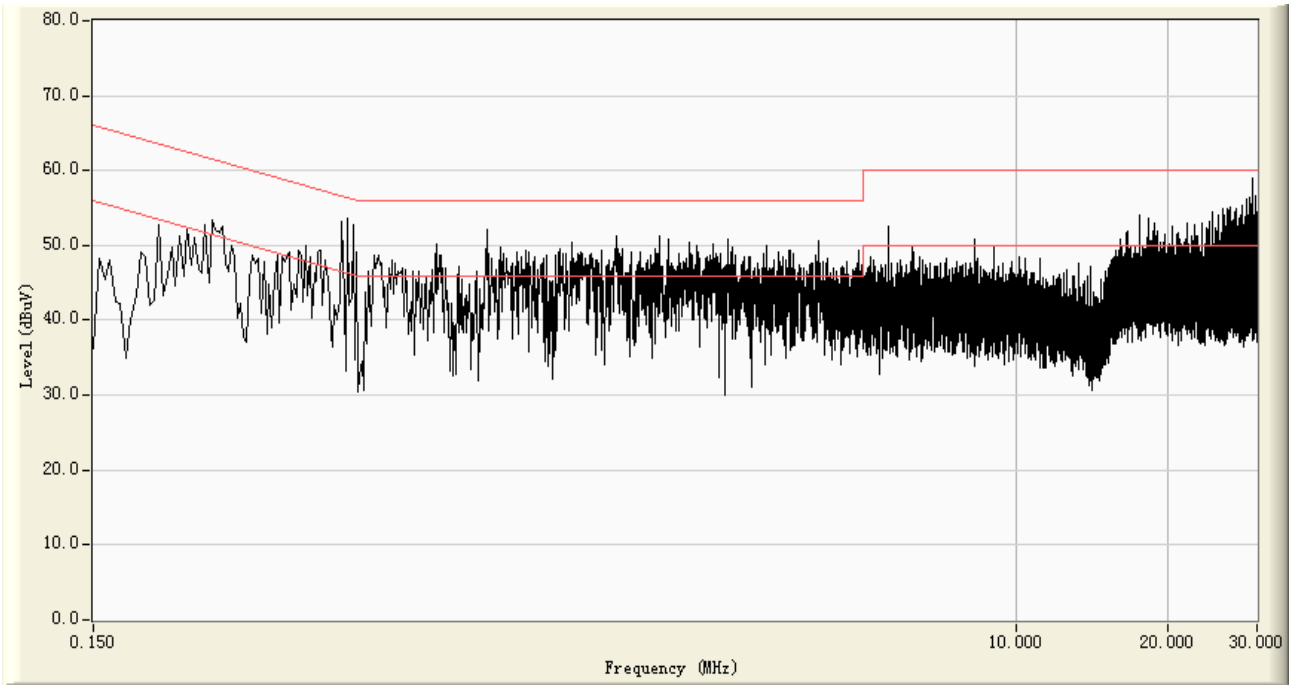
Neutral --Operating mode: Left Speaker CH2



Line --Operating mode: Left Speaker CH3



Neutral --Operating mode: Left Speaker CH3



Line

Frequency (MHz)	Factor (dB)	Reading Level (dBuV)	Quasi peak (dBµV)	Margin (dB)	Limit (dBµV)	Reading Level (dBuV)	Average (dBµV)	Margin (dB)	Limit (dBµV)
0.226	10.672	45.925	56.597	-7.232	63.829	33.925	44.597	-9.232	53.829
0.582	10.783	39.045	49.828	-6.172	56.000	26.945	37.728	-8.272	46.000
1.938	11.159	41.207	52.366	-3.634	56.000	26.707	37.866	-8.134	46.000
22.078	11.926	42.516	54.442	-5.558	60.000	27.316	39.242	-10.758	50.000
26.433	12.050	42.855	54.905	-5.095	60.000	27.355	39.405	-10.595	50.000
*28.632	12.110	44.700	56.810	-3.190	60.000	26.000	38.110	-11.890	50.000

Neutral

Frequency (MHz)	Factor (dB)	Reading Level (dBuV)	Quasi peak (dBµV)	Margin (dB)	Limit (dBµV)	Reading Level (dBuV)	Average (dBµV)	Margin (dB)	Limit (dBµV)
2.689	11.301	40.339	51.640	-4.360	56.000	29.939	41.240	-4.760	46.000
3.361	11.350	37.902	49.252	-6.748	56.000	28.802	40.152	-5.848	46.000
6.505	11.430	41.828	53.258	-6.742	60.000	29.228	40.658	-9.342	50.000
19.230	11.820	40.695	52.515	-7.485	60.000	31.795	43.615	-6.385	50.000
25.765	11.970	41.159	53.129	-6.871	60.000	30.159	42.129	-7.871	50.000
*29.868	12.110	43.692	55.802	-4.198	60.000	30.492	42.602	-7.398	50.000

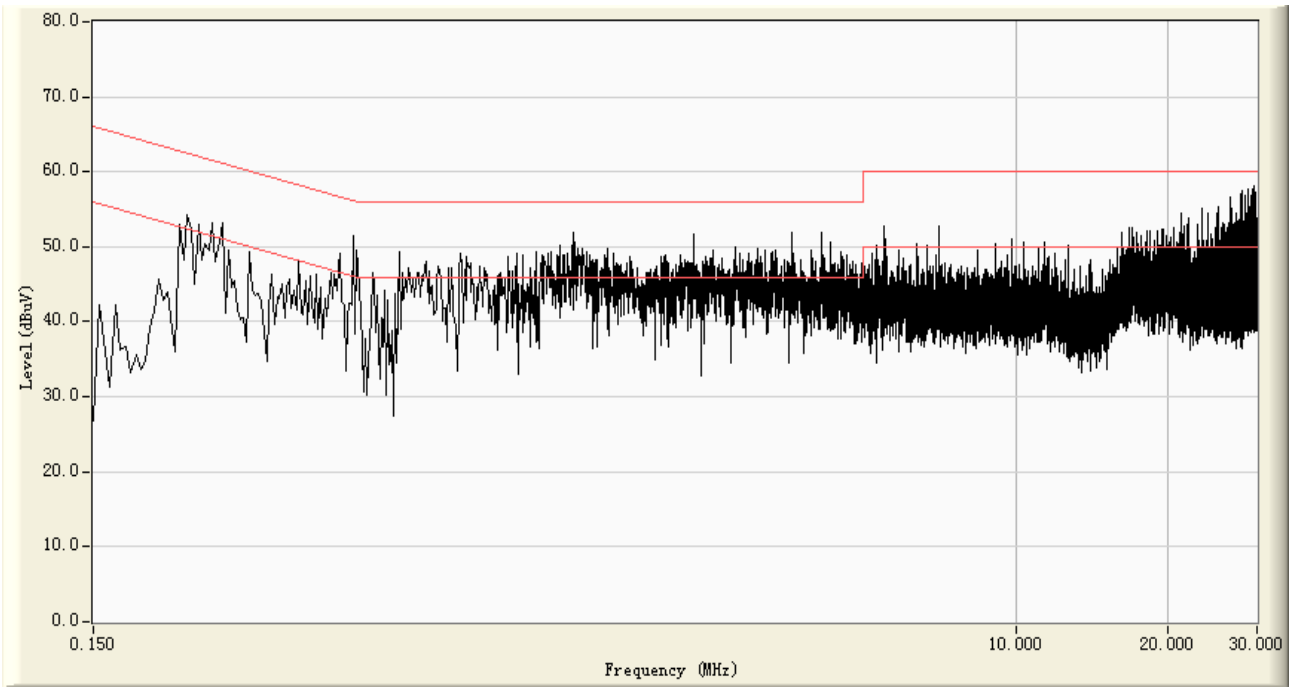
Note: '*' means the worst case

Quasi peak/Average = Reading Level + Factor

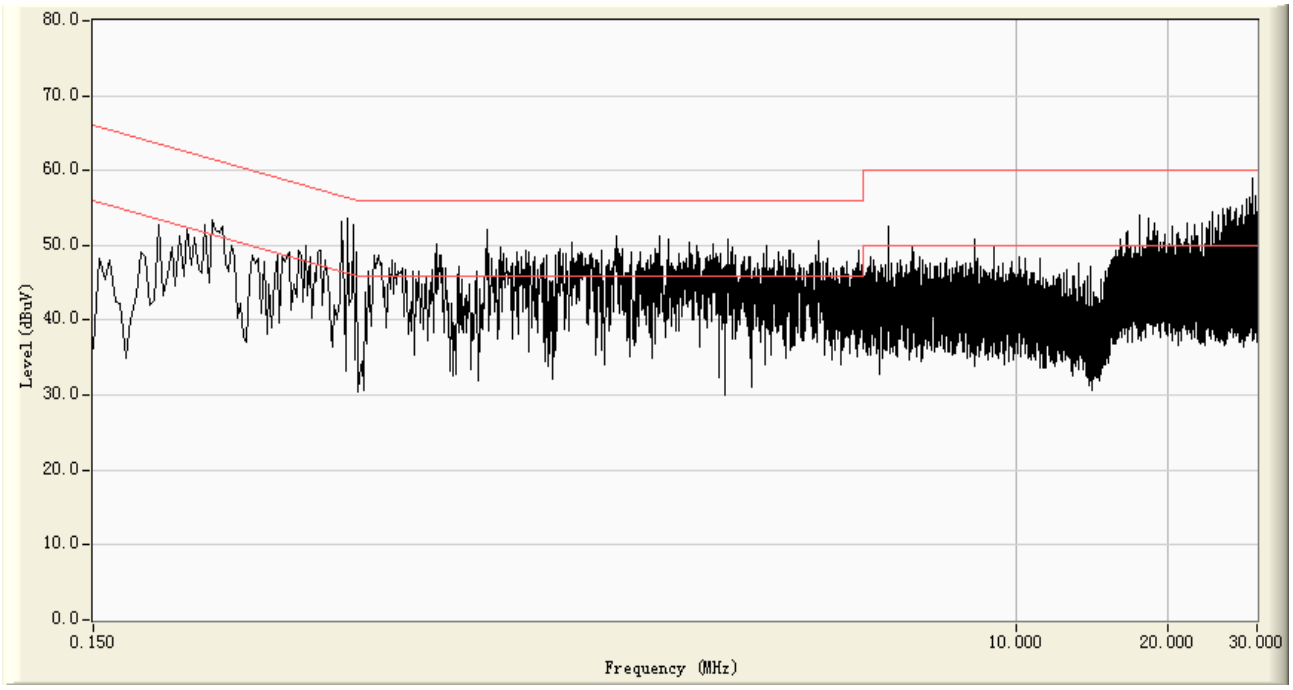
Factor= Cable Loss + LISN insertion loss

Mode: Right Speaker CH3

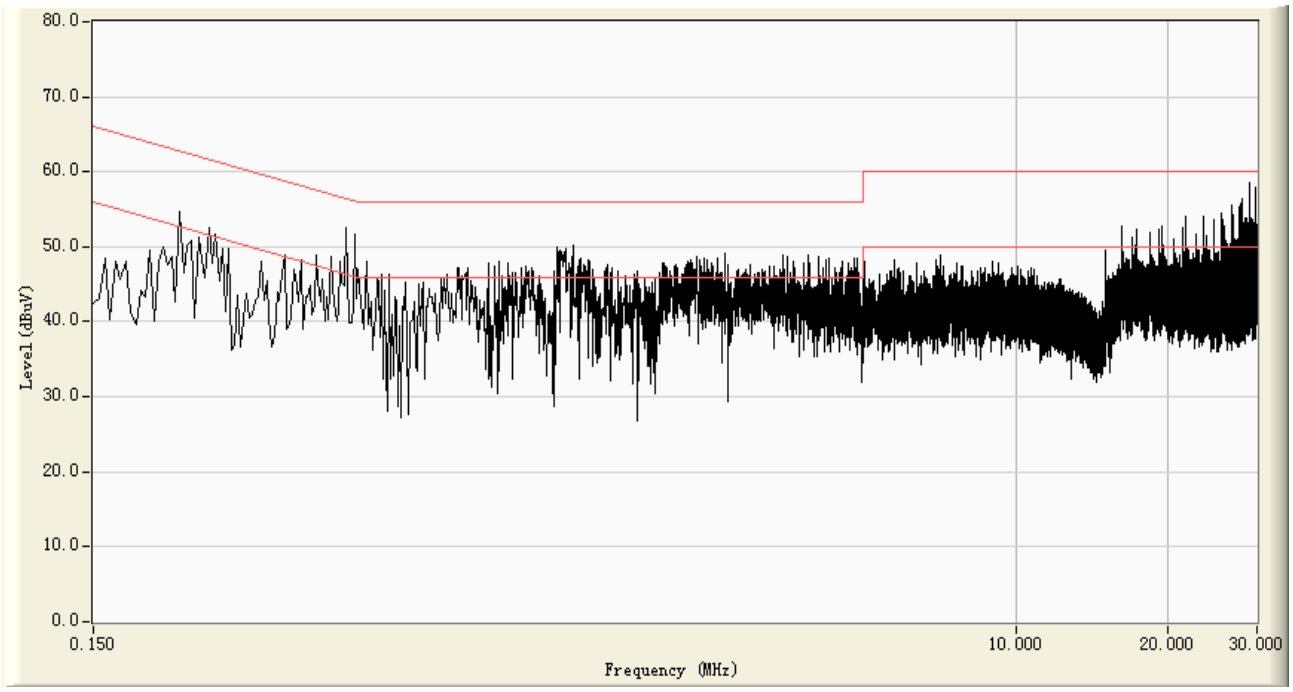
Line --Operating mode: Right Speaker CH1



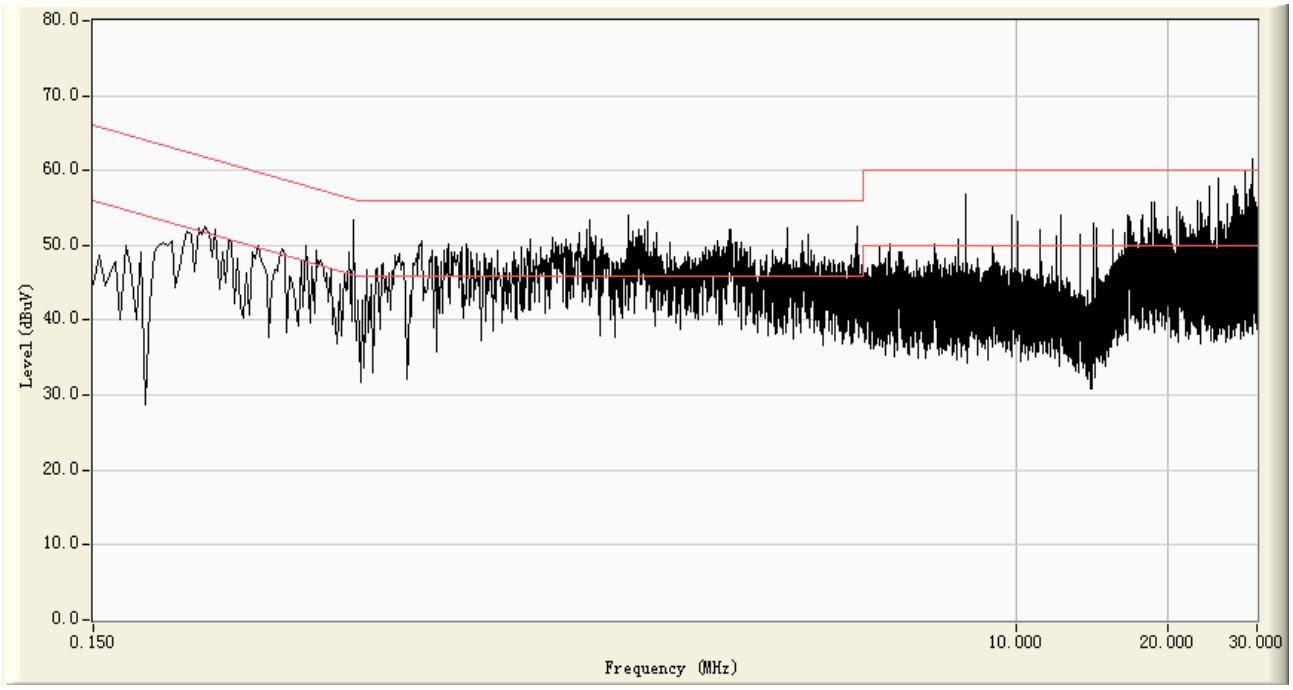
Neutral --Operating mode: Right Speaker CH1



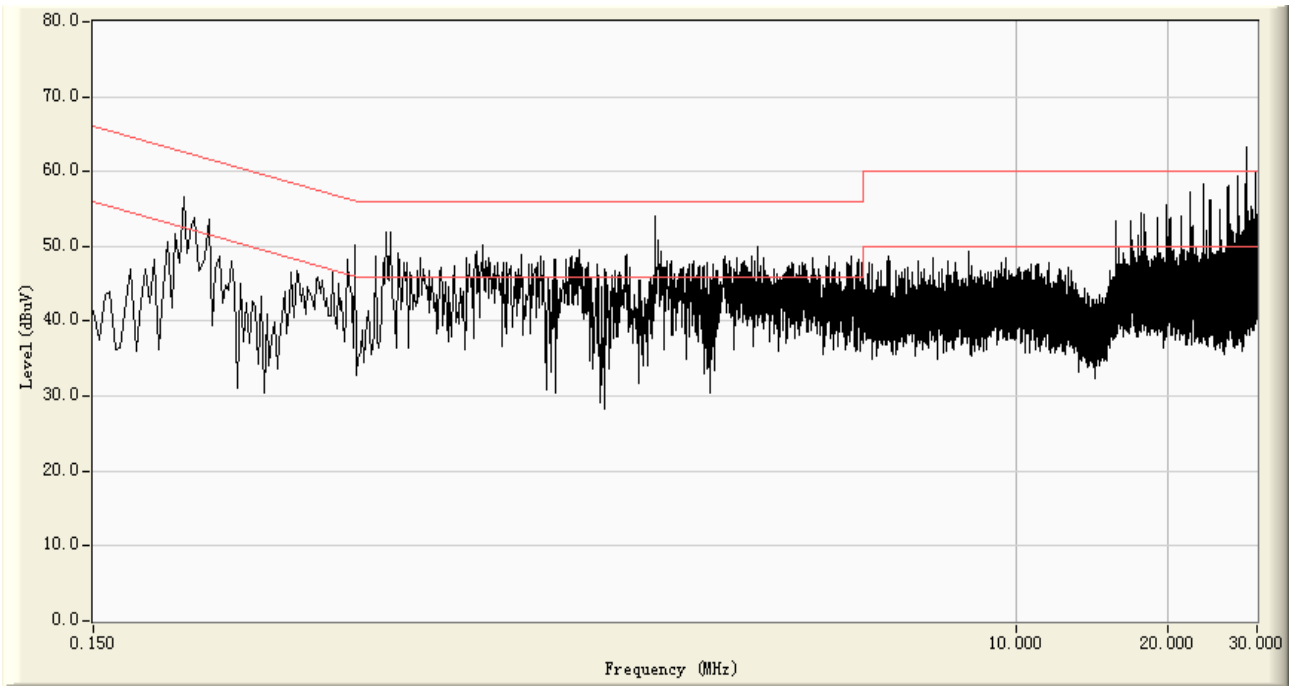
Line --Operating mode: Right Speaker CH2



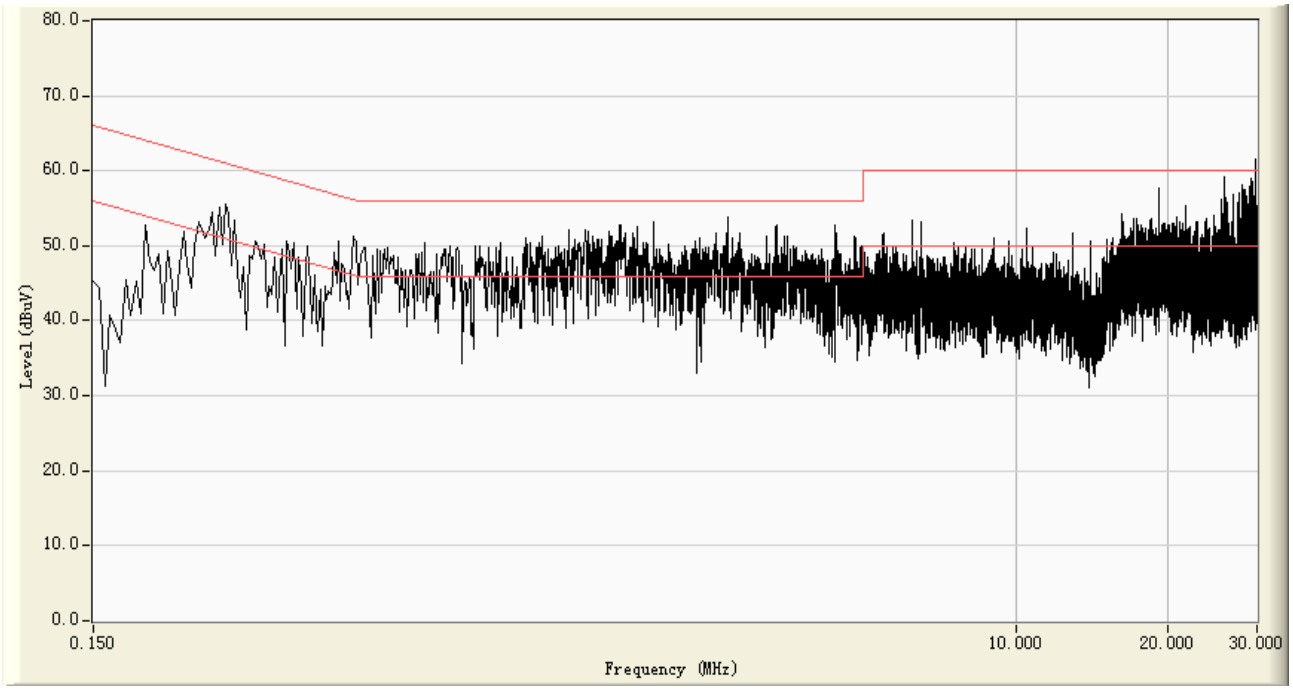
Neutral --Operating mode: Right Speaker CH2



Line --Operating mode: Right Speaker CH3



Neutral --Operating mode: Right Speaker CH3



6.2 Radiated Emissions Measurement

Test Date:	Feb 4, 2009
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3 m
Limits:	Section 15.109 of FCC Part 15 Subpart B
Detector:	Peak for pre-scan (120kHz resolution bandwidth)
	Quasi-Peak if maximum peak within 6dB of limit

6.2.1 E.U.T. Operation

Operating Environment:

Temperature:	21 °C	Humidity:	53% RH	Atmospheric Pressure:	102	Kpa
EUT Operation:	Running.					

6.2.2 Test Specification

EUT was placed upon a wooden test table which was placed on the turn table 0.8m above the horizontal metal ground plane, and operating in the mode as mentioned above. A receiving antenna was placed 3m away from the EUT. During testing, turn around the turn table and move the antenna from 1m to 4m to find the maximum field-strength reading. All peripherals were placed at a distance of 10cm between each other. Both horizontal and vertical antenna polarities were tested.

Associated with the radiated emission test data in this report is a ±3.4dB measurement uncertainty. And we judge whether it is compliance with the limits or not just base on measurement results, not taking into account this uncertainty. If the uncertainty is considered, there will be possibility of Fail.

6.2.3 Measurement Data

An initial pre-scan was performed in the 3m chamber using the spectrum analyzers in peak detection mode. The EUT was measured by Biology antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

The following quasi-peak measurements were performed on the EUT.

Antenna Polar.	Frequency (MHz)	Factor (dB)	QP Reading (dBμV/m)	QP Level (dBμV/m)	Margin (dB)	Limits (dBμV/m)
Vertical	*32.910	13.430	23.477	36.907	-3.093	40.000
Vertical	43.580	14.090	18.892	32.982	-7.018	40.000
Vertical	58.130	14.180	14.312	28.492	-11.508	40.000
Vertical	94.020	11.690	15.001	26.691	-16.809	43.500
Vertical	188.110	14.390	8.129	22.519	-20.981	43.500
Vertical	915.610	30.070	9.979	40.049	-5.951	46.000
Horizontal	32.910	13.430	20.107	33.537	-6.463	40.000
Horizontal	35.820	13.690	18.476	32.166	-7.834	40.000
Horizontal	48.430	14.070	5.798	19.868	-20.132	40.000
Horizontal	114.390	13.780	2.384	16.164	-27.336	43.500
Horizontal	191.020	14.090	7.436	21.526	-21.974	43.500
Horizontal	*915.610	30.070	11.151	41.221	-4.779	46.000

Note: '*' means the worst case
Measurement Level = Reading Level + Factor
Factor=Ant Factor + Cable Loss
Mode: Left Speaker CH1

Antenna Polar.	Frequency (MHz)	Factor (dB)	QP Reading (dBμV/m)	QP Level (dBμV/m)	Margin (dB)	Limits (dBμV/m)
Vertical	*34.850	13.630	23.796	37.426	-2.574	40.000
Vertical	43.580	14.090	17.720	31.810	-8.190	40.000
Vertical	49.400	14.050	17.854	31.904	-8.096	40.000
Vertical	91.110	11.410	14.944	26.354	-17.146	43.500
Vertical	114.390	13.780	12.470	26.250	-17.250	43.500
Vertical	914.640	30.060	11.983	42.043	-3.957	46.000
Horizontal	32.910	13.430	20.435	33.865	-6.135	40.000
Horizontal	35.820	13.690	18.687	32.377	-7.623	40.000
Horizontal	49.400	14.050	6.183	20.233	-19.767	40.000
Horizontal	191.020	14.090	6.701	20.791	-22.709	43.500
Horizontal	270.560	16.190	2.138	18.328	-27.672	46.000
Horizontal	*914.640	30.060	10.691	40.751	-5.249	46.000

Note: '*' means the worst case

Measurement Level = Reading Level + Factor

Factor=Ant Factor + Cable Loss

Mode: Left Speaker CH2

Antenna Polar.	Frequency (MHz)	Factor (dB)	QP Reading (dBμV/m)	QP Level (dBμV/m)	Margin (dB)	Limits (dBμV/m)
Vertical	*32.910	13.430	23.210	36.640	-3.360	40.000
Vertical	43.580	14.090	19.017	33.107	-6.893	40.000
Vertical	49.400	14.050	18.175	32.225	-7.775	40.000
Vertical	92.080	11.500	15.508	27.008	-16.492	43.500
Vertical	117.300	14.100	11.606	25.706	-17.794	43.500
Vertical	916.580	30.100	11.568	41.668	-4.332	46.000
Horizontal	31.940	13.370	18.263	31.633	-8.367	40.000
Horizontal	33.880	13.530	20.653	34.183	-5.817	40.000
Horizontal	34.850	13.630	19.997	33.627	-6.373	40.000
Horizontal	49.400	14.050	4.933	18.983	-21.017	40.000
Horizontal	191.020	14.090	8.201	22.291	-21.209	43.500
Horizontal	*916.580	30.100	10.638	40.738	-5.262	46.000

Note: '*' means the worst case

Measurement Level = Reading Level + Factor

Factor=Ant Factor + Cable Loss

Mode: Left Speaker CH3

Antenna Polar.	Frequency (MHz)	Factor (dB)	QP Reading (dBμV/m)	QP Level (dBμV/m)	Margin (dB)	Limits (dBμV/m)
Vertical	*32.910	13.430	23.858	37.288	-2.712	40.000
Vertical	49.400	14.050	18.034	32.084	-7.916	40.000
Vertical	57.160	14.110	14.736	28.846	-11.154	40.000
Vertical	92.080	11.500	15.836	27.336	-16.164	43.500
Vertical	114.390	13.780	12.447	26.227	-17.273	43.500
Vertical	892.330	29.550	12.698	42.248	-3.752	46.000
Horizontal	32.910	13.430	20.442	33.872	-6.128	40.000
Horizontal	35.820	13.690	19.077	32.767	-7.233	40.000
Horizontal	49.400	14.050	4.808	18.858	-21.142	40.000
Horizontal	58.130	14.180	1.375	15.555	-24.445	40.000
Horizontal	192.960	13.960	7.773	21.733	-21.767	43.500
Horizontal	*892.330	29.550	13.142	42.692	-3.308	46.000

Note: '*' means the worst case

Measurement Level = Reading Level + Factor

Factor=Ant Factor + Cable Loss

Mode: Right Speaker CH1

Antenna Polar.	Frequency (MHz)	Factor (dB)	QP Reading (dBμV/m)	QP Level (dBμV/m)	Margin (dB)	Limits (dBμV/m)
Vertical	*32.910	13.430	23.791	37.221	-2.779	40.000
Vertical	43.580	14.090	18.501	32.591	-7.409	40.000
Vertical	58.130	14.180	14.156	28.336	-11.664	40.000
Vertical	90.140	11.320	15.945	27.265	-16.235	43.500
Vertical	116.330	14.000	11.737	25.737	-17.763	43.500
Vertical	891.360	29.530	13.325	42.855	-3.145	46.000
Horizontal	32.910	13.430	20.450	33.880	-6.120	40.000
Horizontal	35.820	13.690	19.359	33.049	-6.951	40.000
Horizontal	48.430	14.070	5.243	19.313	-20.687	40.000
Horizontal	193.930	13.900	7.732	21.632	-21.868	43.500
Horizontal	293.840	16.940	4.612	21.552	-24.448	46.000
Horizontal	*891.360	29.530	12.615	42.145	-3.855	46.000

Note: '*' means the worst case

Measurement Level = Reading Level + Factor

Factor=Ant Factor + Cable Loss

Mode: Right Speaker CH2

Antenna Polar.	Frequency (MHz)	Factor (dB)	QP Reading (dBμV/m)	QP Level (dBμV/m)	Margin (dB)	Limits (dBμV/m)
Vertical	*32.910	13.430	23.721	37.151	-2.849	40.000
Vertical	42.610	14.070	18.197	32.267	-7.733	40.000
Vertical	58.130	14.180	14.195	28.375	-11.625	40.000
Vertical	90.140	11.320	15.031	26.351	-17.149	43.500
Vertical	187.140	14.520	7.812	22.332	-21.168	43.500
Vertical	893.300	29.570	12.987	42.557	-3.443	46.000
Horizontal	33.880	13.530	20.427	33.957	-6.043	40.000
Horizontal	48.430	14.070	4.110	18.180	-21.820	40.000
Horizontal	58.130	14.180	1.773	15.953	-24.047	40.000
Horizontal	186.170	14.640	6.813	21.453	-22.047	43.500
Horizontal	306.450	17.300	4.313	21.613	-24.387	46.000
Horizontal	*893.300	29.570	12.401	41.971	-4.029	46.000

Note: '*' means the worst case

Measurement Level = Reading Level + Factor

Factor=Ant Factor + Cable Loss

Mode: Right Speaker CH3