

FCC PART 15 CLASS B
EMI MEASUREMENT AND TEST REPORT
For
ShenZhen SenZe Electronics Co.,Ltd
4F, Block B, 2nd Industrial Zone, San Wei, XiXiang, Shenzhen, China

FCC ID: AWFSZ-919

June 5, 2012

This Report Concerns: Original Report		Equipment Type: PS3 WIRELESS CONTROLLER	
Test Engineer:		Eric Li <i>Eric Li</i>	
Report No.:		BST12050415Y-1E-3-2	
Receive EUT Date/Test Date:		May 17, 2012/ May 18-29, 2012	
Reviewed By:		Christina Deng <i>Christina Deng</i>	
Prepared By:		 Shenzhen BST Technology Co.,Ltd. 3F, Weames Technology Building, No. 10 Kefa Road, Science Park, Nanshan District, Shenzhen, Guangdong, China Tel: 0755-26747751 ~ 3 Fax: 0755-26747751 ~ 3 ext.826	

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1. GENERAL INFORMATION

1.1. Report information

1.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BST approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BST in any way guarantees the later performance of the product/equipment.

1.1.2.The sample/s mentioned in this report is/are supplied by Applicant, BST therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BST, unless the applicant has authorized BST in writing to do so.

Test Facility -

The test site used to collect the radiated data is located on the address of

Shenzhen Certification Technology Service Co., Ltd

(FCC Registered Test Site Number: 197647) on

2F, Building B, East Area of Nanchang Second Industrial Zone, Gushu 2nd Road,

Bao'an District, shenzhen 518126, China

The Test Site is constructed and calibrated to meet the FCC requirements.

1.2. Measurement Uncertainty

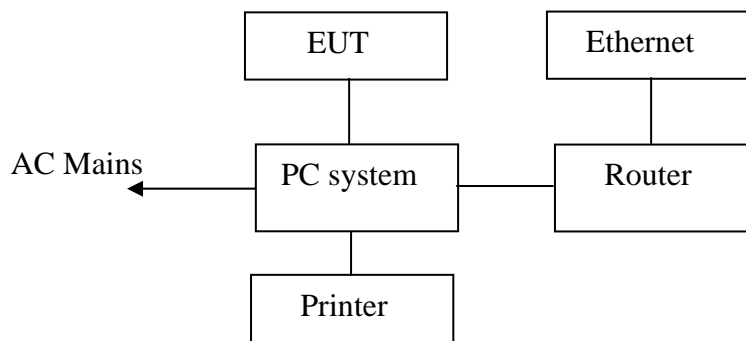
Available upon request.

2. PRODUCT DESCRIPTION

2.1. EUT Description

Applicant : ShenZhen SenZe Electronics Co.,Ltd
 Address : 4F, Block B, 2nd Industrial Zone, San Wei, XiXiang, Shenzhen, China
 Manufacturer : ShenZhen SenZe Electronics Co.,Ltd
 Address : 4F, Block B, 2nd Industrial Zone, San Wei, XiXiang, Shenzhen, China
 EUT Description : PS3 WIRELESS CONTROLLER
 Trade Name : SENZE
 Model Number : SZ-919, SZ-918, SZ-902, SZ-903, SZ-904, SZ-906, SZ-907, SZ-908, SZ-909
 Power Supply : DC 3.7V Li-ion Battery or DC 5V powered by USB

2.2. Block Diagram of EUT Configuration



2.3. Support Equipment List

Name	Model No	S/N	Manufacturer	Used “ ”
PC system	AM1830	N/A	Acer	
Printer	HP1020	N/A	HP	
Router	TL-R402M	07115200391	TP-LINK	

2.4. Test Conditions

Temperature: 20~25

Relative Humidity: 50~63 %

3. FCC ID LABEL

FCC ID: AWFSZ-919

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1. This device may not cause harmful interference, and 2. This device must accept any interference received, including interference that may cause undesired operation.

Label Location on EUT

EUT View/ FCC ID Label Location



4. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

Statement: All testing was performed using the test procedures found in ANSI C63.4-20003.

Modifications

No modification was made.

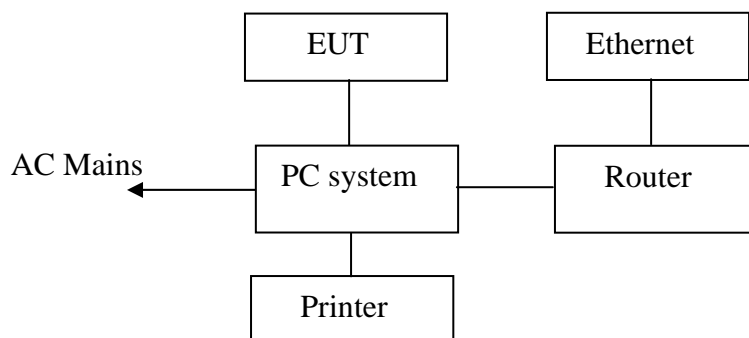
5. TEST EQUIPMENT USED

Equipment/Facilities	Manufacturer	Model #	Serial no.	Date of Cal.	Cal. Interval
Cable	Resenberger	N/A	NO.1	Mar 10 , 2012	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar 10 , 2012	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar 10 , 2012	1 Year
LISN	Rohde & Schwarz	ESH3-Z5	100305	Mar 10 , 2012	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10 , 2012	1 Year
EMI Test Receiver	Rohde & Schwarz	ESP13	100180	Oct.11,2011	1 Year
Spectrum Analyzer	Rohde & Schwarz	FSP40	100273	Sep.10,2011	1 Year
3m Semi-Anechoic Chamber	Albatross Projects	9m×6m×6m	N/A	Feb.20,2012	1 Year
Signal Generator	FLUKE	PM5418 + Y/C	LO747012	Feb.20,2012	1 Year
Signal Generator	FLUKE	PM5418TX	LO738007	Feb.20,2012	1 Year
Loop Antenna	SCHWARZBECK	FMZB1516	113	Jan.30,2012	1 Year
Trilog-Super Broadband Antenna	SCHWARZBECK	VULB9161	9161-4079	Sep.22,2011	1 Year
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-564	Sep.22,2011	1 Year
Horn Antenna	Schwarzbeck	BBHA9170	208 279	May 12, 2012	1 Year
Ultra Broadband Antenna	Rohde & Schwarz	HL-562	100110	June.15,2011	1 Year
AMN	Rohde & Schwarz	ESH3-Z5	100196	Oct.11,2011	1 Year
AMN	Rohde & Schwarz	ESH3-Z5	100197	Oct.11,2011	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	N/A	N/A	N/A
Power Meter	Rohde & Schwarz	NRVD	100041	Feb.20,2012	1 Year
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	Feb.20,2012	1 Year
Coaxial Cable with N-connectors	SCHWARZBECK	AK9515H	95549	Sep.22,2011	1 Year
Radio Communication Test Set	Rohde & Schwarz	CMS 54	846621/024	Feb.20,2012	1 Year
Modulation Analyzer	Hewlett-Packard	8901B	2303A00362	Feb.20,2012	1 Year
Absorbing clamp	Rohde & Schwarz	MDS-21	N/A	Oct.11,2011	1 Year

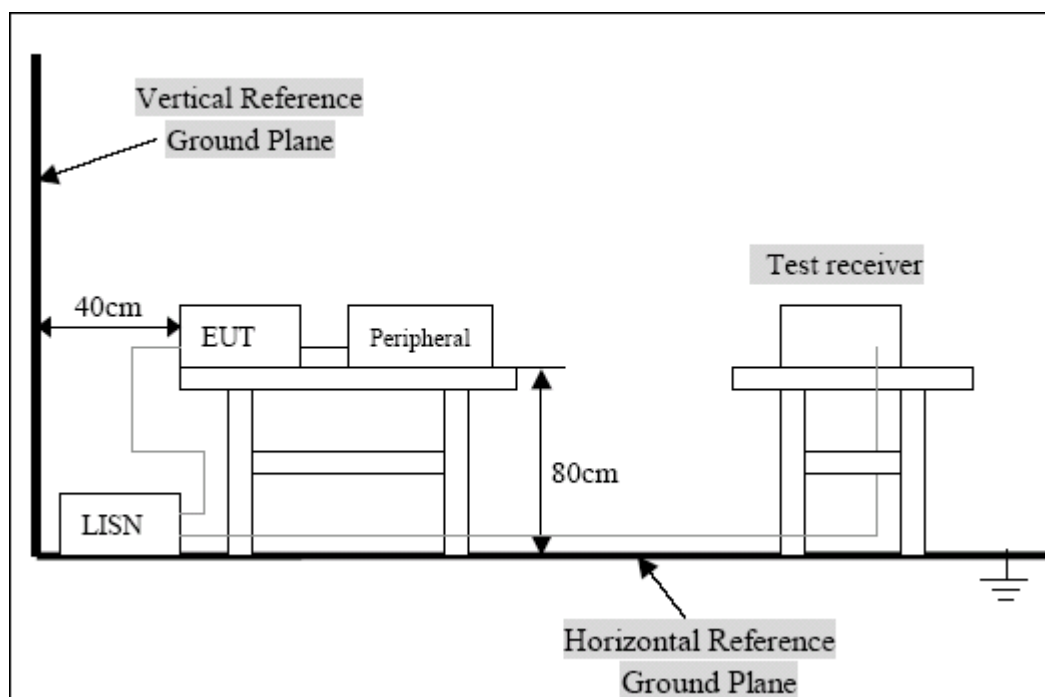
6. CONDUCTED EMISSION TEST

6.1. Block Diagram of Test Setup

6.1.1. Block Diagram of connection between the EUT and the simulators



6.1.2. Test Setup Diagram



6.2. Test Standard

FCC Part 15 CLASS B

ANSI C63.4-2003

6.3. Conducted Emission Limit(Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

6.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet FCC Part 15 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

6.4.1.EUT Information

Model Number: SZ-919

Serial Number: N/A

6.5. Operating Condition of EUT

6.5.1.Setup the EUT and simulators as shown in Section 6.1.

6.5.2.Turn on the power of all equipments.

6.5.3.Let the EUT work in test mode (Charging) and test it.

6.6. Test Procedure

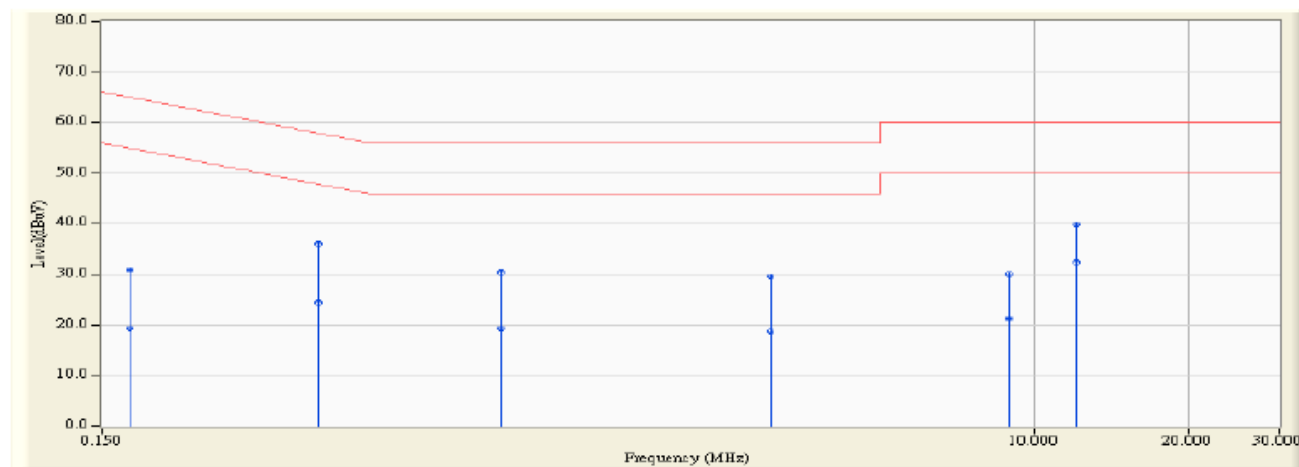
The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

6.7. Test Result

Pass

Date of Test:	<u>May 29, 2012</u>	Temperature:	<u>25°C</u>
EUT:	<u>PS3 WIRELESS CONTROLLER</u>	Humidity:	<u>56%</u>
Model No.:	<u>SZ-919</u>	Power Supply:	<u>DC 5V power by PC USB port</u>
			<u>PC power: AC120V/60Hz</u>
Test Mode:	<u>Charging</u>	Test Engineer:	<u>Eric Li</u>

L Line

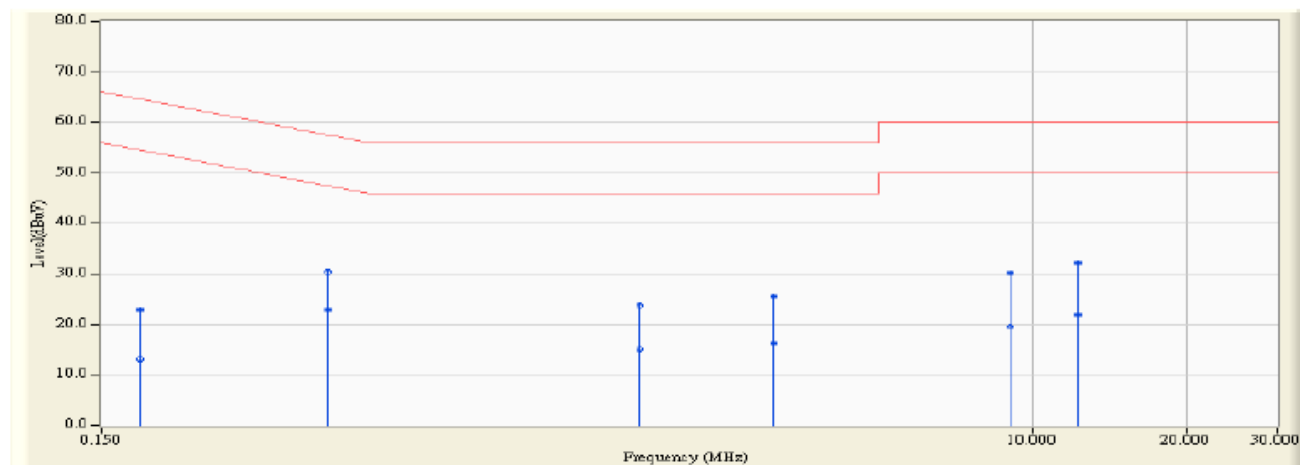


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.170	9.778	21.080	30.858	-34.126	64.983	QUASIPEAK
2		0.170	9.778	9.610	19.388	-35.596	54.983	AVERAGE
3		0.396	9.830	26.160	35.990	-21.945	57.935	QUASIPEAK
4		0.396	9.830	14.520	24.350	-23.585	47.935	AVERAGE
5		0.900	9.662	20.880	30.542	-25.458	56.000	QUASIPEAK
6		0.900	9.662	9.550	19.212	-26.788	46.000	AVERAGE
7		3.048	9.820	19.700	29.520	-26.480	56.000	QUASIPEAK
8		3.048	9.820	8.850	18.670	-27.330	46.000	AVERAGE
9		8.884	9.949	20.110	30.058	-29.942	60.000	QUASIPEAK
10		8.884	9.949	11.240	21.188	-28.812	50.000	AVERAGE
11		12.037	10.069	29.880	39.949	-20.051	60.000	QUASIPEAK
12	*	12.037	10.069	22.210	32.279	-17.721	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

N Line



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.177	9.767	13.230	22.997	-41.612	64.609	QUASIPeAK
2		0.177	9.767	3.410	13.177	-41.432	54.609	AVERAGE
3		0.416	9.838	20.610	30.448	-27.087	57.535	QUASIPeAK
4	*	0.416	9.838	13.090	22.928	-24.607	47.535	AVERAGE
5		1.693	9.745	13.980	23.725	-32.275	56.000	QUASIPeAK
6		1.693	9.745	5.210	14.955	-31.045	46.000	AVERAGE
7		3.107	9.821	15.610	25.431	-30.569	56.000	QUASIPeAK
8		3.107	9.821	6.560	16.381	-29.619	46.000	AVERAGE
9		9.017	9.977	20.370	30.347	-29.653	60.000	QUASIPeAK
10		9.017	9.977	9.640	19.617	-30.383	50.000	AVERAGE
11		12.255	10.127	22.130	32.257	-27.743	60.000	QUASIPeAK
12		12.255	10.127	11.650	21.777	-28.223	50.000	AVERAGE

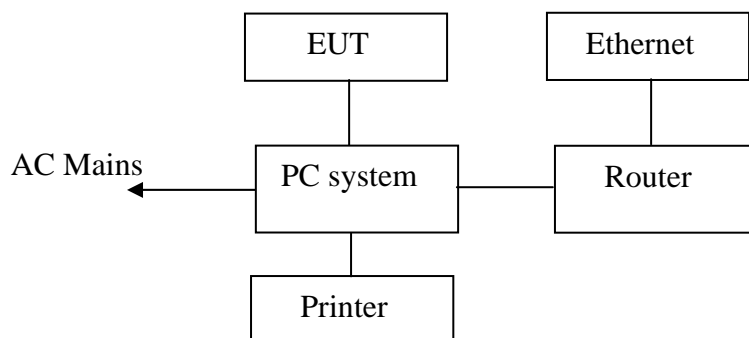
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

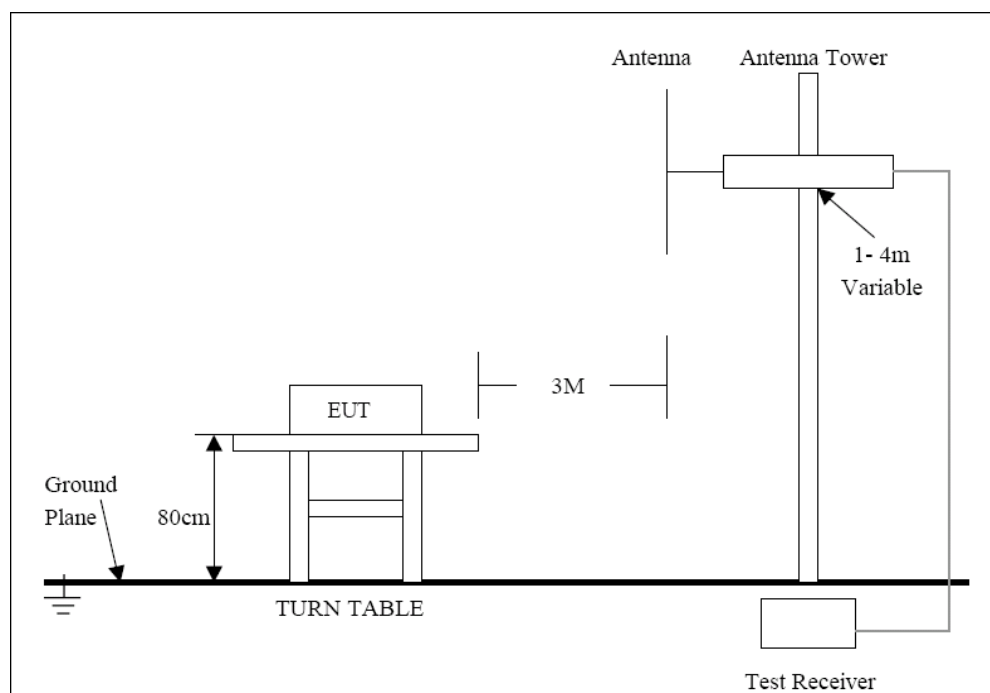
7. RADIATED EMISSION MEASUREMENT

7.1. Block Diagram of EUT Configuration

7.1.1. Block Diagram of connection between the EUT and the simulators



7.1.2. Semi-anechoic Chamber Test Setup Diagram



7.2. Test Standard

FCC Part 15 CLASS B
ANSI C63.4-2003

7.3. Radiated Emission Limit(Class B)

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dB μ V/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
Above 1000	3	54.0

Note:(1) The smaller limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or system.

7.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the Commission requirements and operating regulations in a manner which tends to maximize Its emission characteristics in normal application.

7.5. Operating Condition of EUT

7.5.1.Setup the EUT as shown on Section 7.1

7.5.2.Turn on the power of all equipments.

7.5.3.Let the EUT work in test mode (Charging) and measure it.

7.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Calibrated Loop antenna is used as receiving antenna for frequencies below 30MHz, Calibrated Bilog antenna is used as receiving antenna for frequencies between 30 MHz and 1 GHz, Calibrated Horn antenna is used as receiving antenna for frequencies above 1000MHz. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement.

The bandwidth of test receiver is set at 9kHz in below 30MHz. and set at 120kHz in 30-1000MHz.

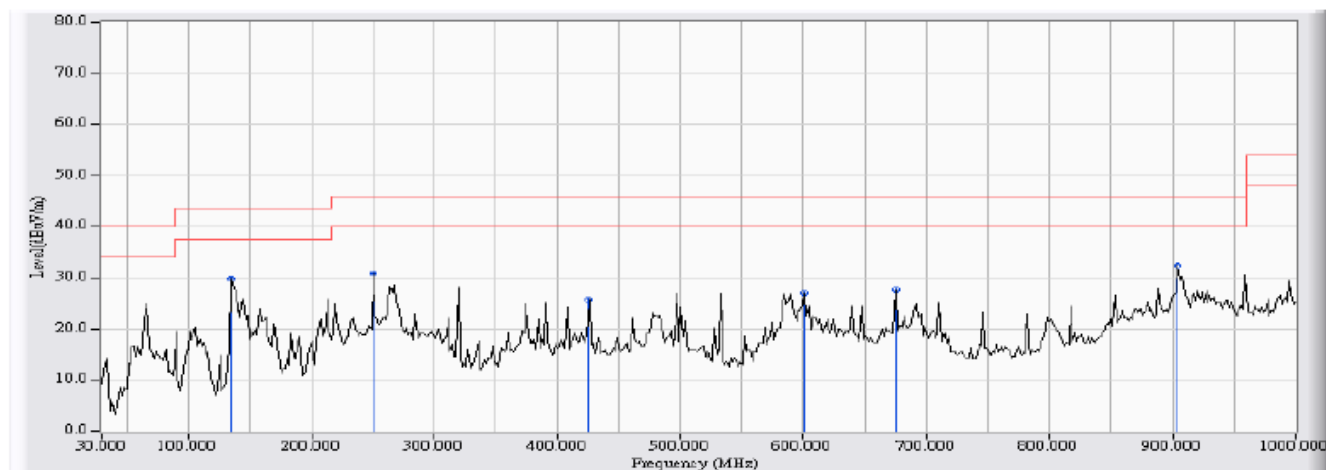
The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Peak detector and Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

The frequency range from 9kHz to 1000MHz is checked.All the test results are listed in Section 7.7.

7.7. Test Result

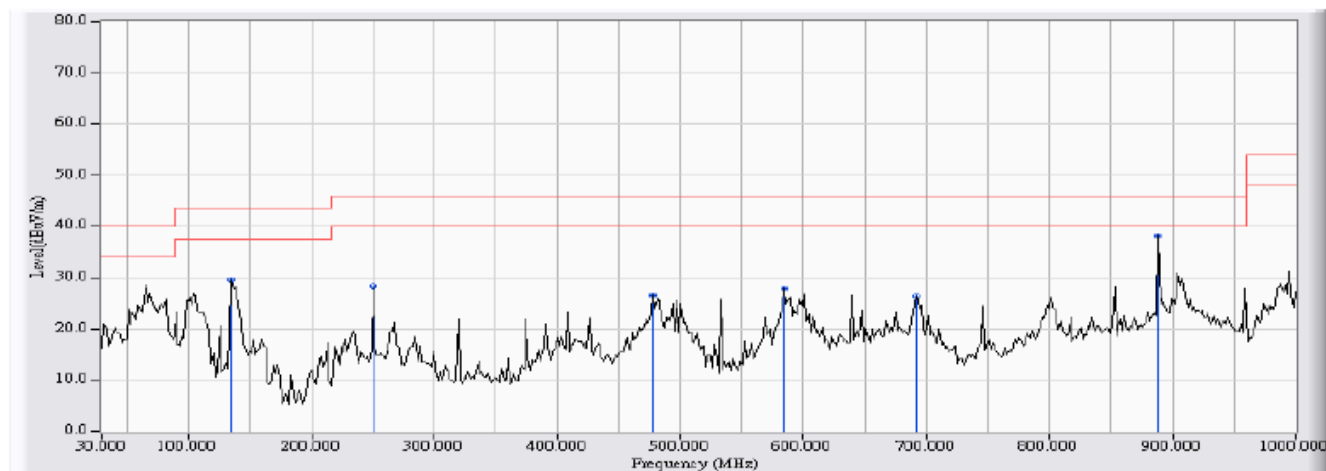
PASS

Horizontal polarization



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	135.083	-15.744	45.634	29.890	-13.610	43.500	Quasi-Peak
2		249.867	-13.345	44.317	30.972	-15.028	46.000	Quasi-Peak
3		426.083	-5.040	30.759	25.719	-20.281	46.000	Quasi-Peak
4		600.683	-2.795	29.807	27.012	-18.988	46.000	Quasi-Peak
5		675.050	-3.408	31.075	27.668	-18.332	46.000	Quasi-Peak
6		904.617	-1.247	33.618	32.371	-13.629	46.000	Quasi-Peak

Vertical polarization



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector Type
1		135.083	-11.868	41.390	29.522	-13.978	43.500	Quasi-Peak
2		249.867	-14.145	42.417	28.272	-17.728	46.000	Quasi-Peak
3		477.817	-4.361	30.962	26.601	-19.399	46.000	Quasi-Peak
4		584.517	-6.303	34.159	27.855	-18.145	46.000	Quasi-Peak
5		691.217	-7.076	33.490	26.414	-19.586	46.000	Quasi-Peak
6	*	888.450	-3.113	41.376	38.263	-7.737	46.000	Quasi-Peak