


FCC PART 15 CLASS B
EMI MEASUREMENT AND TEST REPORT
For

ShenZhen Foscam Intelligent Technology Co., Ltd.

North Wing, 5/F, Block 1, Vision Shenzhen Business Park,
No.9 Gaoxin 9th South Road, Shenzhen Hi-tech Industrial Park,
Nanshan District, Shenzhen, 518057, China

FCC ID: ZHHFI9820W

September 13, 2012

This Report Concerns: Original Report	Equipment Type: Wireless IP Camera
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Test Engineer of performing the tests:	Adam Yang <i>Adam Yang</i>
Report No.:	BST12081022Y-1E-3-2
Receive EUT Date/Test Date:	August 31, 2012/ September 3-12, 2012
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TABLE OF CONTENTS

1.	GENERAL INFORMATION	3
1.1.	Report information.....	3
1.2.	Measurement Uncertainty	3
2.	PRODUCT DESCRIPTION	4
2.1.	EUT Description	4
2.2.	Block Diagram of EUT Configuration	4
2.3.	Support Equipment List	4
2.4.	Test Conditions	5
3.	FCC ID LABEL.....	6
4.	TEST RESULTS SUMMARY	7
	Modifications	7
5.	TEST EQUIPMENT USED	8
6.	CONDUCTED EMISSION TEST	9
6.1.	Block Diagram of Test Setup.....	9
6.2.	Test Standard	9
6.3.	Conducted Emission Limit(Class B)	10
6.4.	EUT Configuration on Test	10
6.5.	Operating Condition of EUT	10
6.6.	Test Procedure	10
6.7.	Test Result	10
7.	RADIATED EMISSION MEASUREMENT	13
7.1.	Block Diagram of EUT Configuration	13
7.2.	Test Standard	13
7.3.	Radiated Emission Limit(Class B)	14
7.4.	EUT Configuration on Test	14
7.5.	Operating Condition of EUT	14
7.6.	Test Procedure	15
7.7.	Test Result	15

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 Foscam Intelligent Technology Co., Ltd.
 Address : North Wing, 5/F, Block 1, Vision Shenzhen Business Park,
 No.9 Gaoxin 9th South Road, Shenzhen Hi-tech Industrial Park,
 Nanshan District, Shenzhen, 518057, China

Manufacturer : ShenZhen Foscam Intelligent Technology Co., Ltd.
 Address : North Wing, 5/F, Block 1, Vision Shenzhen Business Park,
 No.9 Gaoxin 9th South Road, Shenzhen Hi-tech Industrial Park,
 Nanshan District, Shenzhen, 518057, China

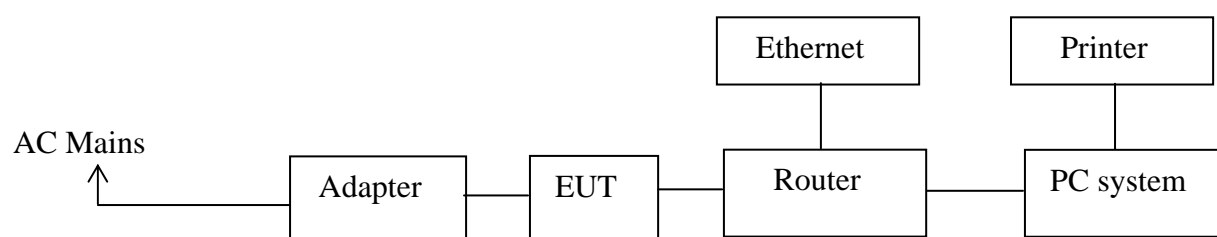
EUT Description : Wireless IP Camera

Trade Name : FOSCAM

Model Number : FI9820W, FI9801W, FI9802W, FI9821W, FI9828W, FI9826W,
 FI9829W, FI9806W, FI8909W, FI8916W

Power Supply : DC 5V (Powered by Adapter)

2.2. Block Diagram of EUT Configuration



2.3. Support Equipment List

Name	Model No	S/N	Manufacturer	Used “ ”
Adapter Input: AC 100-240V, 50-60Hz, 0.5A Output: DC 5V, 2000mA	SAW-0502000	--	Shenzhen Yingyuan Electronics Co.,Ltd	
PC system	AM1830	N/A	Acer	
Printer	HP1020	N/A	HP	
Router	PL-R860	N/A	TP-LINK	

2.4. Test Conditions

Temperature: 23~27

Relative Humidity: 50~63 %

3. FCC ID LABEL

FCC ID: ZHHFI9820W

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

Remark: “N/A” means “Not applicable.”

Modifications

No modification was made.

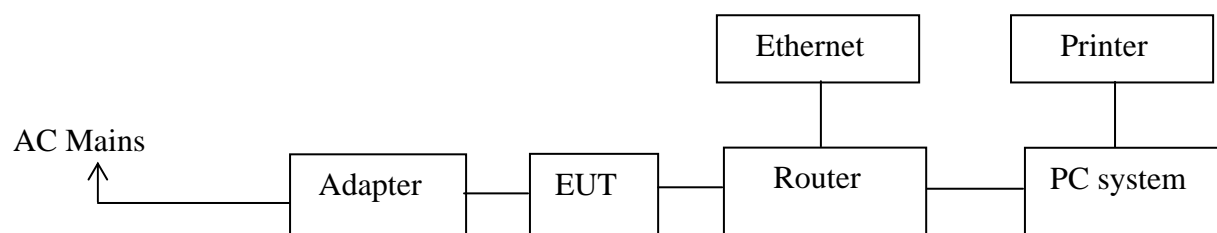
5. TEST EQUIPMENT USED

Equipment/Facilities	Manufacturer	Model	Serial no.	Date of Cal.	Cal. Interval
3m Semi-Anechoic Chamber	Changzhou Chengyu	EC3048	N/A	May 5, 2012	1 Year
Broadband antenna	SCHWARZBECK	VULB 9168	VULB9168-438	Aug. 14, 2012	1 Year
Horn antenna	R&S	HF906	10027	Aug. 14, 2012	1 Year
ETS Horn Antenna	ETS	3160	SEL0076	May 8, 2012	1 Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	Apr. 6, 2012	1 Year
Spectrum analyzer	Agilent	E4443A	MY46185649	Apr. 6, 2012	1 Year
Spectrum analyzer	Agilent	E4440A	MY46187335	Apr. 6, 2012	1 Year
Spectrum analyzer	Agilent	E4446A	MY45300103	Apr. 6, 2012	1 Year
Test receiver	R&S	ESCI	100492	Apr. 6, 2012	1 Year
Test receiver	R&S	ESCI	101202	Apr. 6, 2012	1 Year
L.I.S.N.	SCHWARZBECK	NSLK8126	8126466	Apr. 6, 2012	1 Year
L.I.S.N.	SCHWARZBECK	NSLK8126	8126487	Apr. 6, 2012	1 Year
Cable	Resenberger	N/A	NO.1	Apr. 6, 2012	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Apr. 6, 2012	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Apr. 6, 2012	1 Year
Pre-amplifier	SCHWARZBECK	BBV9743	9743-019	Apr. 6, 2012	1 Year
Pre-amplifier	R&S	AFS33-1800 2650-30-8P-44	SEL0080	Apr. 6, 2012	1 Year

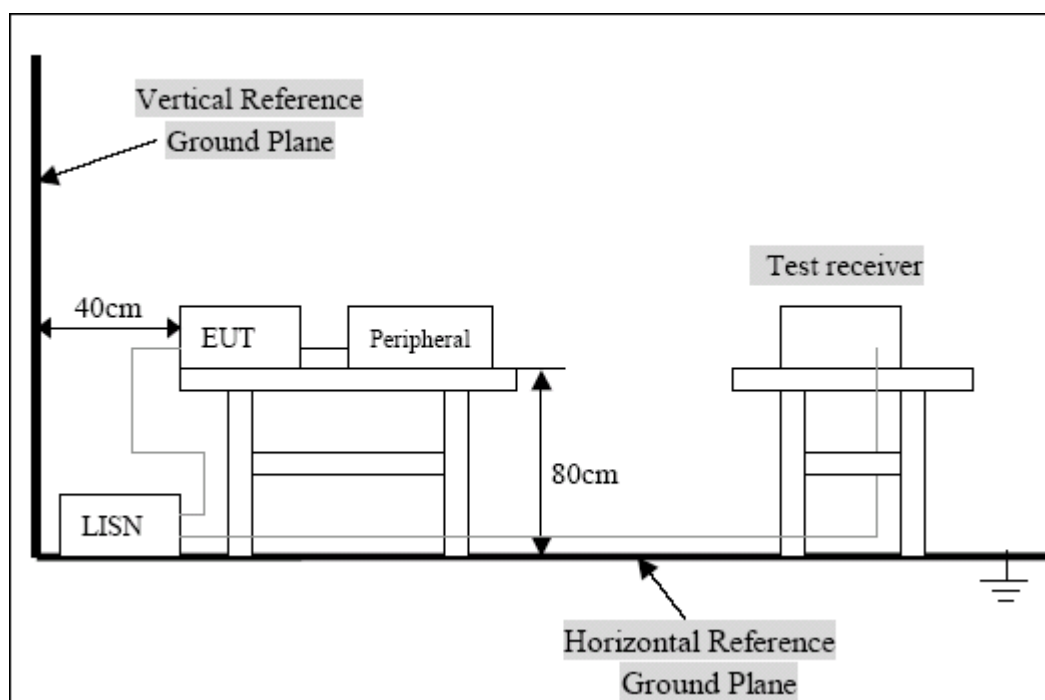
6. CONDUCTED EMISSION TEST

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.

6.5. 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 (Connect to a router and the router attached to PC) and test it.

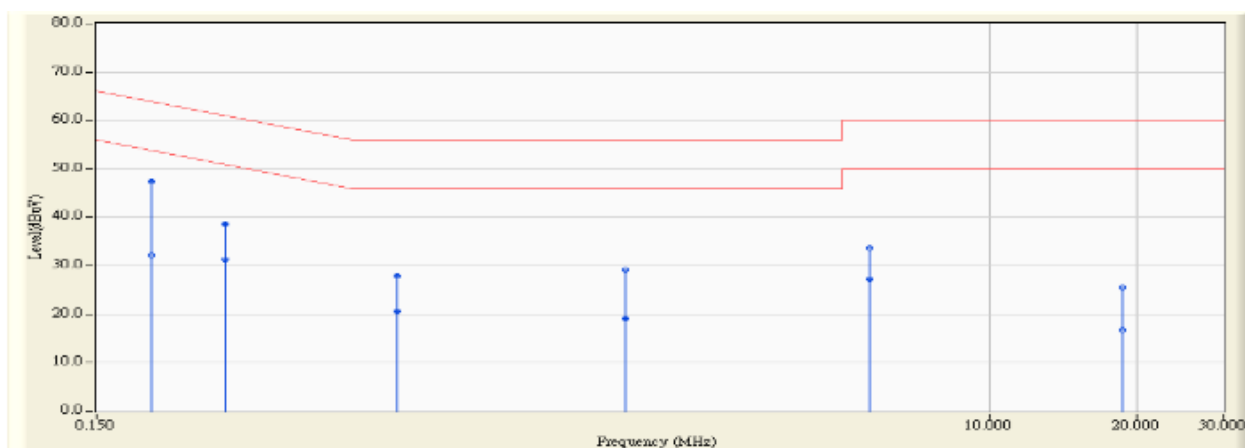
6.6. Test Procedure

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 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

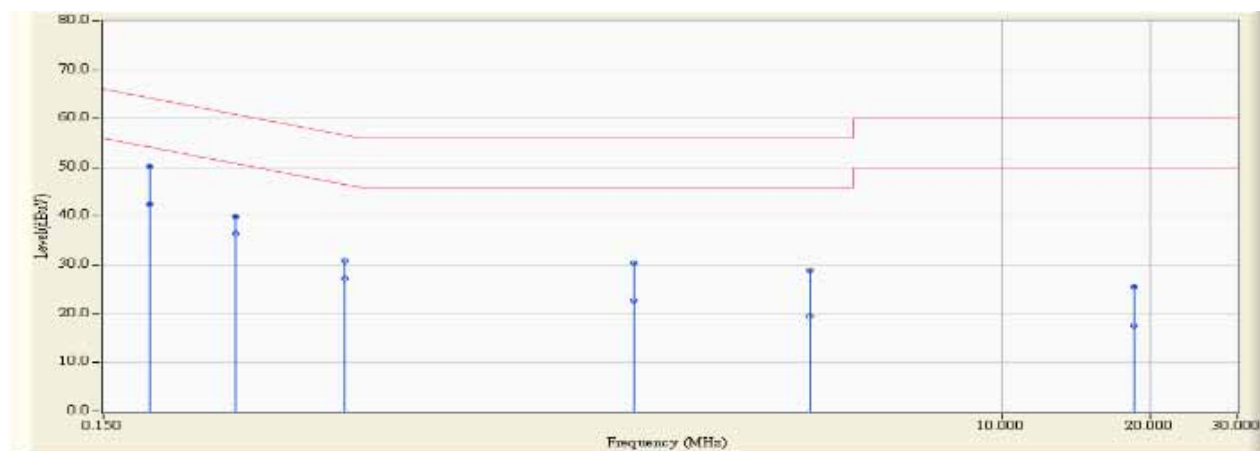
Pass

L Line



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.194	9.608	37.894	47.501	-16.362	63.864	QUASIPeAK
2		0.194	9.608	22.458	32.065	-21.798	53.864	AVERAGE
3		0.274	9.670	28.936	38.607	-22.389	60.996	QUASIPeAK
4		0.274	9.670	21.579	31.249	-19.746	50.996	AVERAGE
5		0.618	9.810	18.115	27.924	-28.076	56.000	QUASIPeAK
6		0.618	9.810	10.829	20.638	-25.362	46.000	AVERAGE
7		1.802	9.834	19.314	29.148	-26.852	56.000	QUASIPeAK
8		1.802	9.834	9.278	19.112	-26.888	46.000	AVERAGE
9		5.678	9.890	23.852	33.743	-26.257	60.000	QUASIPeAK
10		5.678	9.890	17.343	27.233	-22.767	50.000	AVERAGE
11		18.674	10.264	15.261	25.524	-34.476	60.000	QUASIPeAK
12		18.674	10.264	6.378	16.642	-33.358	50.000	AVERAGE

N Line

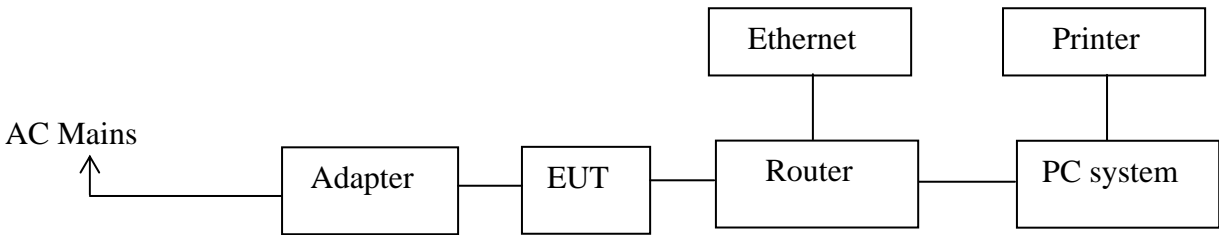


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV)	Margin (dB)	Limit (dBμV)	Detector Type
1		0.186	9.676	40.595	50.271	-13.942	64.213	QUASIPeAK
2	*	0.186	9.676	32.698	42.374	-11.840	54.213	AVERAGE
3		0.278	9.778	30.194	39.972	-20.904	60.875	QUASIPeAK
4		0.278	9.778	26.601	36.379	-14.497	50.875	AVERAGE
5		0.462	9.871	21.082	30.952	-25.704	56.657	QUASIPeAK
6		0.462	9.871	17.297	27.167	-19.490	46.657	AVERAGE
7		1.786	9.899	20.557	30.456	-25.544	56.000	QUASIPeAK
8		1.786	9.899	12.917	22.816	-23.184	46.000	AVERAGE
9		4.066	9.917	19.069	28.986	-27.014	56.000	QUASIPeAK
10		4.066	9.917	9.527	19.444	-26.556	46.000	AVERAGE
11		18.510	10.170	15.288	25.458	-34.542	60.000	QUASIPeAK
12		18.510	10.170	7.329	17.499	-32.501	50.000	AVERAGE

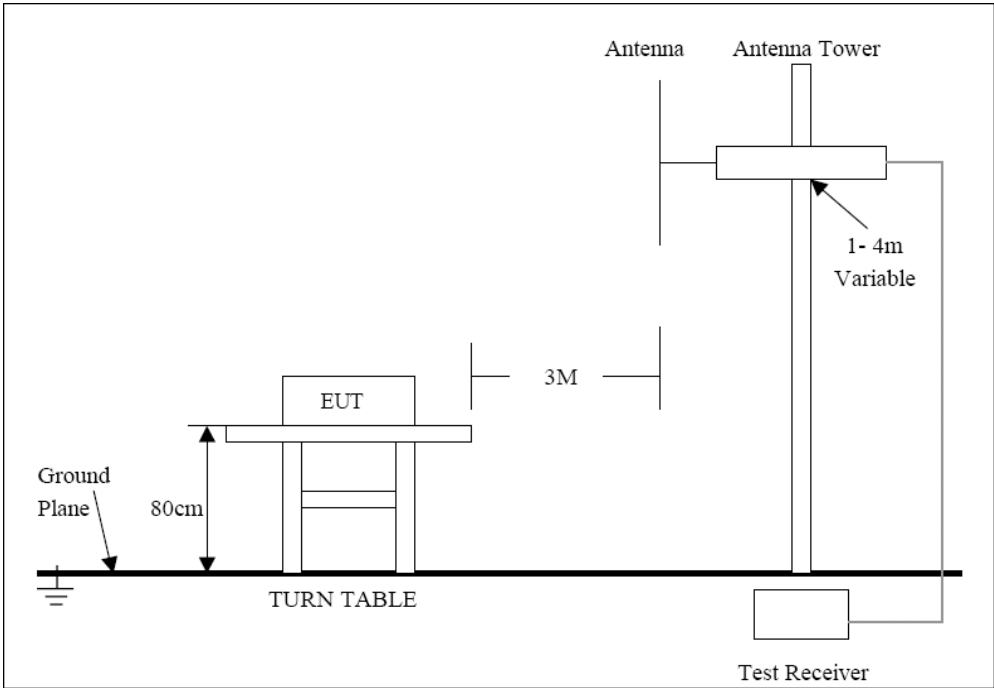
7. RADIATED EMISSION MEASUREMENT

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 (Connect to a router and the router attached to PC) and test 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.

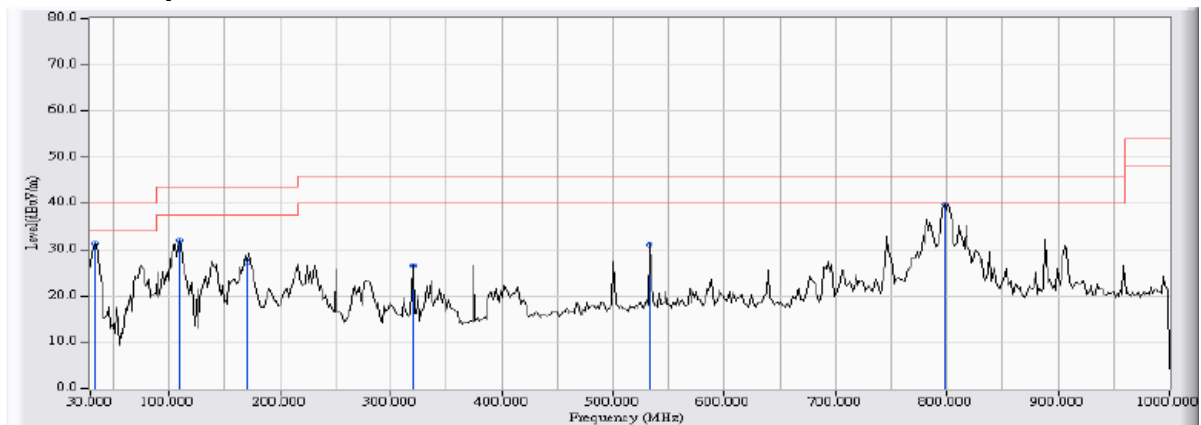
The bandwidth of test receiver is set at 9kHz in below 30MHz. and set at 120kHz in 30-1000MHz.

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. The measurements greater than 20dB below the limit are not report.

7.7. Test Result

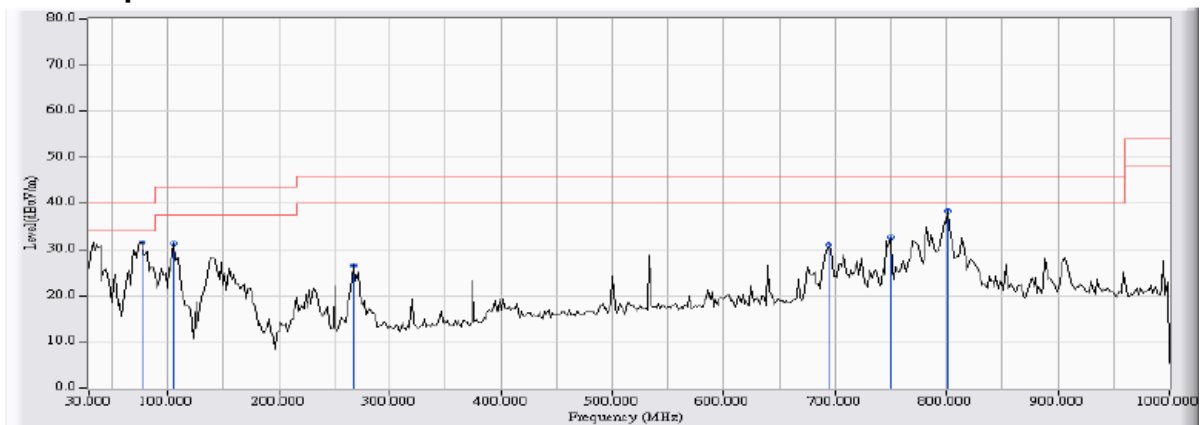
PASS

Horizontal polarization



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	33.233	-10.505	41.812	31.307	-8.693	40.000	PEAK
2	109.217	-12.724	44.706	31.982	-11.518	43.500	PEAK
3	170.650	-14.349	41.763	27.413	-16.087	43.500	PEAK
4	319.383	-9.707	36.273	26.566	-19.434	46.000	PEAK
5	532.783	-4.952	36.006	31.054	-14.946	46.000	PEAK
6	* 797.917	-2.676	42.635	39.959	-6.041	46.000	PEAK

Vertical polarization



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	76.883	-17.261	48.757	31.496	-8.504	40.000	PEAK
2	105.983	-13.004	44.285	31.281	-12.219	43.500	PEAK
3	267.650	-10.785	37.368	26.582	-19.418	46.000	PEAK
4	694.450	-3.953	35.109	31.156	-14.844	46.000	PEAK
5	749.417	-3.297	35.831	32.535	-13.465	46.000	PEAK
6	* 801.150	-2.642	41.049	38.407	-7.593	46.000	PEAK