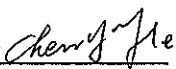
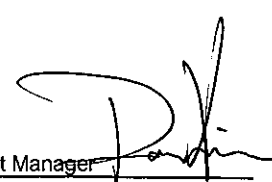


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<i>Test Report No.:</i>		<i>Page 1 of 27</i>	
Auftraggeber: Sam Ash Music Corporation			
<i>Client:</i> 262 Duffy Avenue Hicksville NY, 11801 Unite States			
Gegenstand der Prüfung: Wireless Microphone Receiver			
<i>Test item:</i>			
Bezeichnung: AP1	FCC ID: CCRAP1-AP1B		
<i>Identification:</i> AP1B	<i>FCC ID</i>		
Wareneingangs-Nr.: 173043551	Eingangsdatum: 19.Mar.2009		
<i>Receipt No.:</i>	<i>Date of receipt:</i>		
Prüfört: TÜV Rheinland (Guangdong) Ltd. EMC <i>Testing location:</i> Laboratory Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650, P. R. China	Listed test laboratory according to FCC rules section 2.948 for measuring devices under Parts 15		
Prüfgrundlage: ANSI C63.4:2003 <i>Test specification:</i> FCC Part 15: 20, Sep. 2007 Subpart B section 15.107, 15.109			
Prüfergebnis: Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>Test Result:</i> The test item passed the test specification(s).			
Prüflaboratorium: TÜV Rheinland (Guangdong) Ltd. <i>Testing Laboratory:</i>			
geprüft/ tested by:		kontrolliert/ reviewed by:	
<p>29. Apr. 2009 Cherry He/Project Manager </p> <p>Datum Name/Stellung Unterschrift Date Name/Position Signature</p>		<p>29. Apr. 2009 Liangdong Xie/Project Manager </p> <p>Datum Name/Stellung Unterschrift Date Name/Position Signature</p>	
Sonstiges/ Other Aspects:			
<p>Abkürzungen: P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet</p>		<p>Abbreviations: P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested</p>	
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i></p>			

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TEST SUMMARY

5.1 CONDUCTED EMISSION FOR FCC PART 15 PER SECTION 15.107(A)

RESULT: Pass

5.2 RADIATED EMISSION FOR FCC PART 15 PER SECTION 15.109(A)

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

No appendix attached in this report.

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory

Guangzhou Auto Market, Yuan Gang Section of Guangshan Road
Guangzhou 510650

P. R. China

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Type	Manufacturer	S/N	Calibrated until	Calibrated Interval
EMI Test Receiver	ESCI	Rohde & Schwarz	100216	26.Nov.2009	1 year
Spectrum Analyzer	FSP30	Rohde & Schwarz	100286	24.Aug.2009	1 year
Trilog-Broadband Antenna	VULB9168	SCHWARZBECK MESS-ELEKTRONIK	210	07.Nov.2009	2 year
Double-Ridged Waveguide Horn Antenna	HF906	Rohde & Schwarz	100385	18.Jul.2009	2 year
Double-Ridged Waveguide Horn Antenna	HF906	Rohde & Schwarz	100407	08.May.2009	2 year
Pre-amplifier	AFS42- 00101800- 25-S-42	MITEQ	1101599	31.Jul.2009	2 year
Band Reject Filter	BRM50702	Micro-Tronics	023	15.Feb.2010	2 year
Standard Gain Horn Antenna	3160-09	EMCO	21642	N/A	2 year
Standard Gain Horn Antenna	3160-09	EMCO	21645	N/A	2 year
Pre-amplifier	AFS33- 18002650- 30-8P-44	MITEQ	1108282	31.Jul.2009	2 year
3m Anechoic Chamber	N/A	Albatross Project GmbH	N/A	16.Apr.2010	2 year
EMI Test Receiver	ESCS30	Rohde & Schwarz	100316	16.Mar.2010	1 year
Two-Line V-Network	ESH3-Z5	Rohde & Schwarz	100308	16.Mar.2010	1 year
Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100701	16.Mar.2010	1 year

2.3 Trace ability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

Uncertainty for conducted emissions measurements is ± 2.51 dB.

Uncertainty for radiated emissions measurements is ± 4.94 dB (30MHz-1GHz), ± 4.84 dB (>1GHz).

The reported expanded uncertainty is based on a standard uncertainty multiply by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

2.6 Location of original data

The original copies of all test data taken during actual testing were attached on Page 12-13, 15-22 of this report and delivered to the applicant. A copy has been retained in the TUV Rheinland (Guangzhou) file for certification follow-up purposes.

2.7 Status of facility used for testing

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory; Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650, P. R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements, the register no. 833845

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3 General Product Information

The submitted samples AP1 and AP1B are wireless microphones receivers operating within the frequency range of 642.375 MHz to 645.750 MHz. They have the same circuit and PCB layout, the difference between them is only that the bass processing circuit is functioning or not. For AP1B, this circuit is on, while for AP1, this circuit is off by adding a jumper. According to above information, all the tests are performed on AP1B.

3.1 Product Function and Intended Use

For details, refer to User Manual.

3.2 Ratings and System Details

Frequency range	642.375 MHz - 645.750 MHz.	
Type of antenna	Dual 1/4 wavelength rod antennas	
FCC ID	CCRAP1-AP1B	
Power Consumption	DC 12V, 70mA Power by external AC/DC adaptor	9V battery
Ports	DC input, audio output	
Protection Class	III	

Refer to the technical document and user manual for further information.

3.3 Independent Operation Modes

The basic operation modes are:

Receiving at a fixed frequency within the band 642.375 MHz to 645.750 MHz and not being changed by end user.

For further information refer to User Manual

3.4 Submitted Documents

Block Diagram
Circuit Diagram
PCB Layout
FCC Label
User Manual
Photo Document

4 Test Set-up and Operation Mode

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Refer to Test set-up in chapter 5.

4.3 Special Accessories and Auxiliary Equipment

The product has been tested together with the following linear AC/DC adaptor:

Input : AC 120V, 60Hz
Output : DC 12V, 500mA
Protection class : II

4.4 Countermeasures to achieve EMC Compliance

The test sample, which has been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical document. No additional measures were employed to achieve compliance.

4.5 Test set-up

Diagram 1 of Configuration for Testing Radiated Emission below 1 GHz

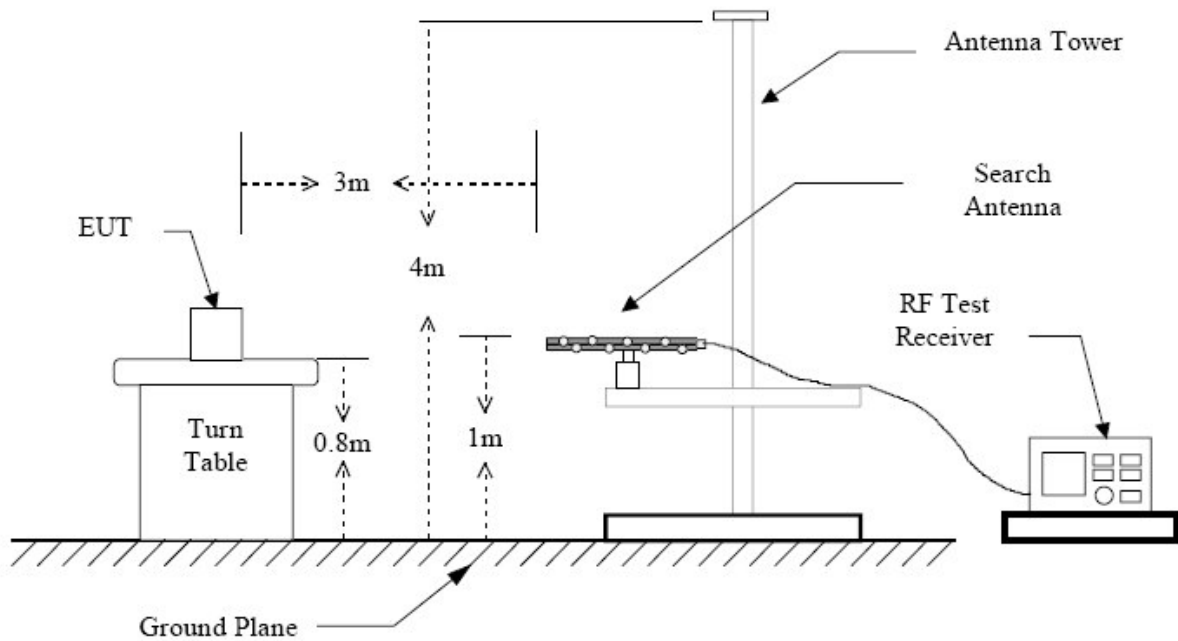
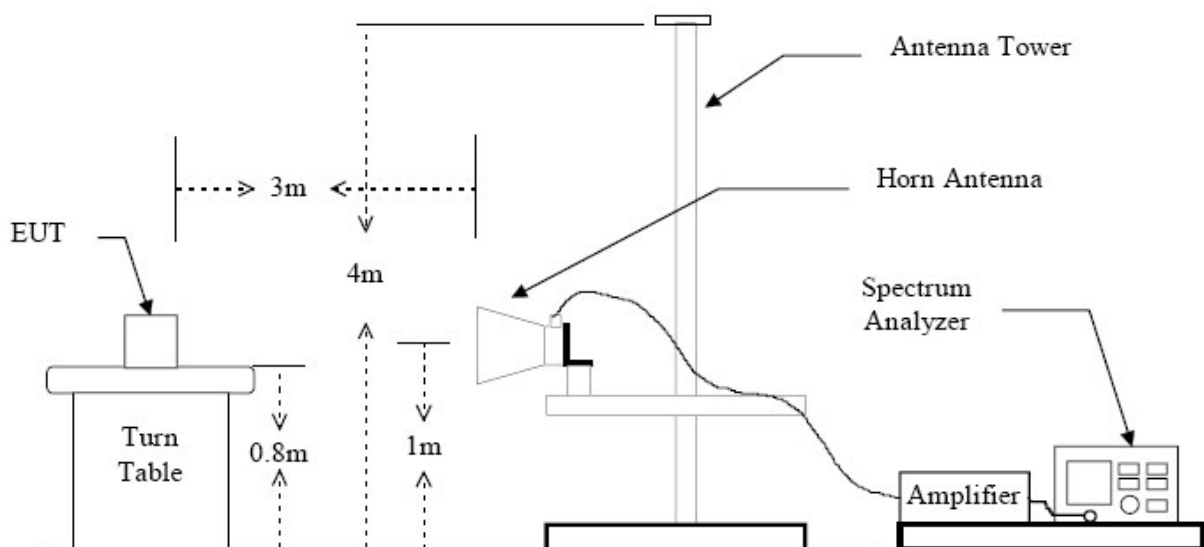


Diagram 2 of Configuration for Testing Radiated Emission above 1 GHz



5 Test Results EMISSION

5.1 Conducted Emission for FCC Part 15 Per Section 15.107(a)

RESULT:

Pass

Date of testing	:	21.Apr.2009
Test specification	:	FCC Part 15 Per Section 15.107(a)
Limits	:	FCC Part 15 Per Section 15.107(a)
Test procedure	:	Procedure specified in ANSI C63.4 were followed
Deviations from Standard Test procedures	:	None
Kind of test site	:	Shielded room
Operation mode	:	Receiving (powered by linear AC/DC adaptor)
Temperature	:	23°C
Humidity	:	50%

Test procedure:

1. Place the EUT as specified in ANSI C63.4 Clause 7.2.1
2. Plug the LISN to a correct power source (pay attention to: AC/DC, voltage, frequency).
4. Connect the EUT to LISN.
5. Connect ESCS30 and LISN via a 50-ohm coaxial cable and a pulse limiter then begin exploratory measurement as specified in ANSI C63.4 Clause 7.2.3
6. Make final measurement as specified in ANSI C63.4 Clause 7.2.4 at L1 and N on the LISN.

If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector may be omitted.

The spectral diagrams in Appendix 1 display the exploratory measurement of un-weighted peak values and average values.

Disturbances other than those mentioned below are small or not detectable.

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Test Information

EUT Name: Wireless Receiver
 Model/Type: AP1B
 Operating Conditions: Receiving
 Comment: AC 120V, 60Hz

Hardware Setup: 1phase LISN ESH3-Z5 to ESCS30
 Level Unit: dB μ V

Subrange	Detectors	IF Bandwidth	Step Size	Meas. Time	Receiver
150kHz - 30MHz	Peak; Average	9kHz	4.5kHz	10ms	ESCS 30

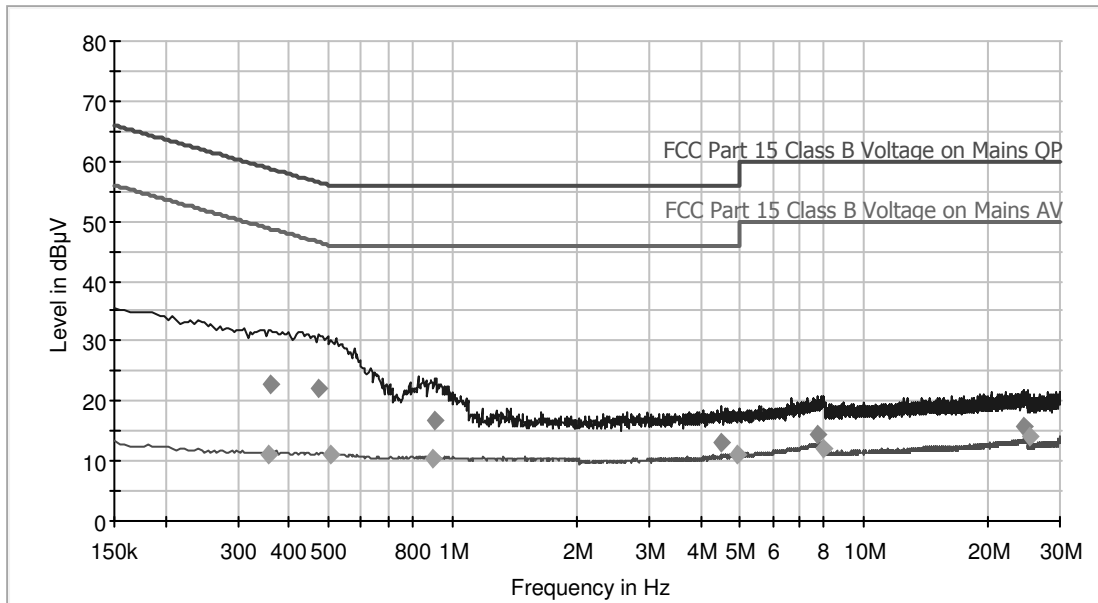


Table 2: Disturbance Voltage on AC Mains

Final Measurement Detector 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.357000	11.2	1000.000	9.000	N
0.505500	11.1	1000.000	9.000	N
0.892500	10.4	1000.000	9.000	N
4.929000	11.0	1000.000	9.000	L1
8.016000	12.1	1000.000	9.000	L1
25.228500	14.0	1000.000	9.000	L1

(continuation of the "Final Measurement Detector 2" table from column 6 ...)

Frequency (MHz)	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.357000	10.0	37.6	48.8	
0.505500	10.1	34.9	46.0	
0.892500	10.1	35.6	46.0	
4.929000	10.5	35.0	46.0	
8.016000	10.5	37.9	50.0	
25.228500	11.4	36.0	50.0	

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.361500	22.9	1000.000	9.000	N
0.474000	22.3	1000.000	9.000	N
0.906000	16.7	1000.000	9.000	N
4.488000	13.0	1000.000	9.000	L1
7.696500	14.5	1000.000	9.000	N
24.486000	15.7	1000.000	9.000	L1

(continuation of the "Final Measurement Detector 1" table from column 6 ...)

Frequency (MHz)	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.361500	10.0	35.8	58.7	
0.474000	10.1	34.2	56.4	
0.906000	10.1	39.3	56.0	
4.488000	10.5	43.0	56.0	
7.696500	10.4	45.5	60.0	
24.486000	11.3	44.3	60.0	

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5.2 Radiated Emission for FCC Part 15 Per Section 15.109(a)

RESULT:

Pass

Date of testing	:	23.Apr.2009
Test specification	:	FCC Part 15 Per Section 15.109(a)
Limits	:	FCC Part 15 Per Section 15.109(a)
Test procedure	:	Procedure specified in ANSI C63.4 were followed
Deviations from Standard Test procedures	:	None
Kind of test site	:	3m Semi-anechoic chamber
Operation mode	:	Receiving at high and low channels
Temperature	:	23°C
Humidity	:	50%

Test procedure:

1. The EUT was turned on and placed on the top of a rotatable table 0.8 meters above the ground with 3-orthogonal XYZ direction and be kept close enough to the measurement receiving antenna (especially for the measurement frequency range above 1 GHz). The table was then rotated 360 degrees to detect the suspected emission frequency points. The position of the worst radiation case with both horizontal and vertical receiving antenna polarization was then recorded together with the suspected emission frequency points above-mentioned.
2. The EUT was then set 3 meters away from the receiving antenna, which was mounted on a variable-height antenna tower.
3. For each suspected emission frequency point recorded in step 1, the EUT was arranged to its worst case that the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to read the maximum emission.

Remark:

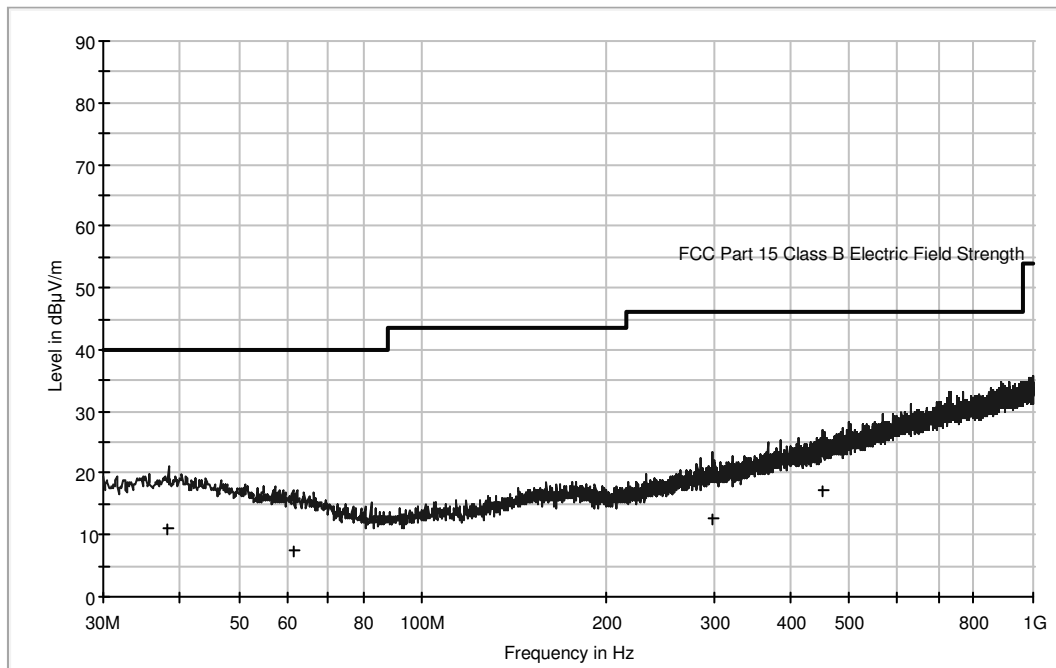
Quick scans were performed for EUT with battery and AC-DC adaptor, and found the EUT with AC-DC adaptor emitted the maximum disturbance; therefore the final measurement was done with AC-DC adaptor.

The external knobs of EUT were adjusted to emit the maximum disturbance; only the worst test data was recorded and attached in this report.

Test Information

EUT Name: Wireless Receiver
 Model Number: AP1B
 Operating Conditions: Receiving at low channel
 Comment: AC 120V, 60Hz; Horizontal

Subrange 1
 Frequency Range: 30MHz - 1GHz
 Receiver: TUV ESCI 3
 Transducer: TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



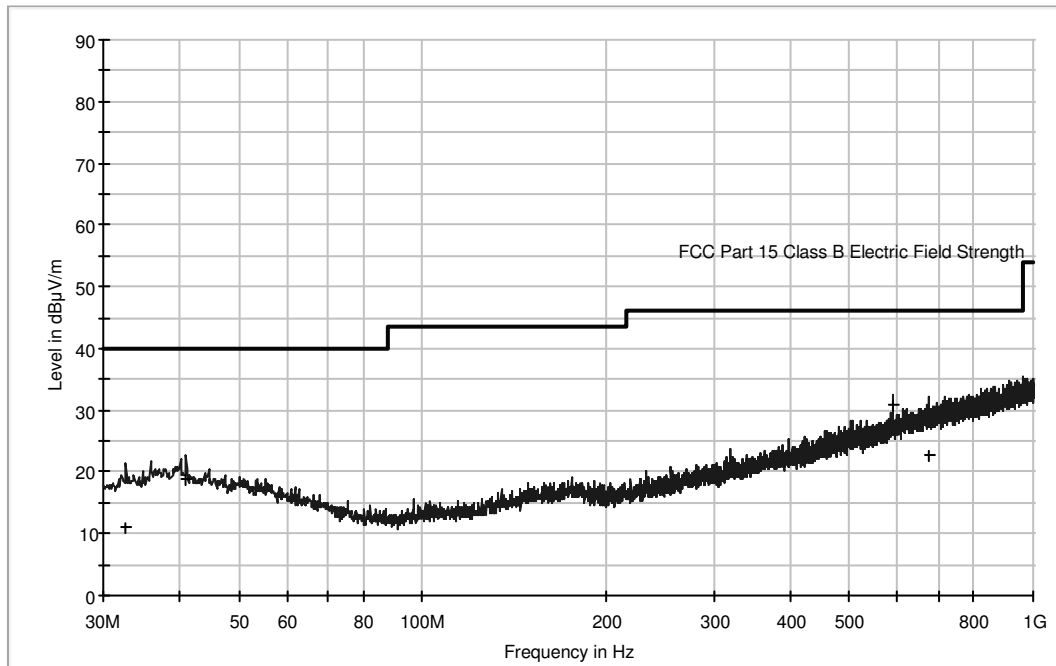
Limit and Margin

Frequency (MHz)	QuasiPeak (dB µ V/m)	Corr. (dB)	Margin (dB)	Limit (dB µ V/m)	Polarity
38.350000	11.0	14.4	29.0	40.0	H
61.300000	7.5	11.4	32.5	40.0	H
298.700000	12.6	16.2	33.4	46.0	H
451.700000	17.2	20.7	28.8	46.0	H

Test Information

EUT Name: Wireless Receiver
 Model Number: AP1B
 Operating Conditions: Receiving at low channel
 Comment: AC 120V, 60Hz; Vertical

Subrange 1
 Frequency Range: 30MHz - 1GHz
 Receiver: TUV ESCI 3
 Transducer: TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



Limit and Margin

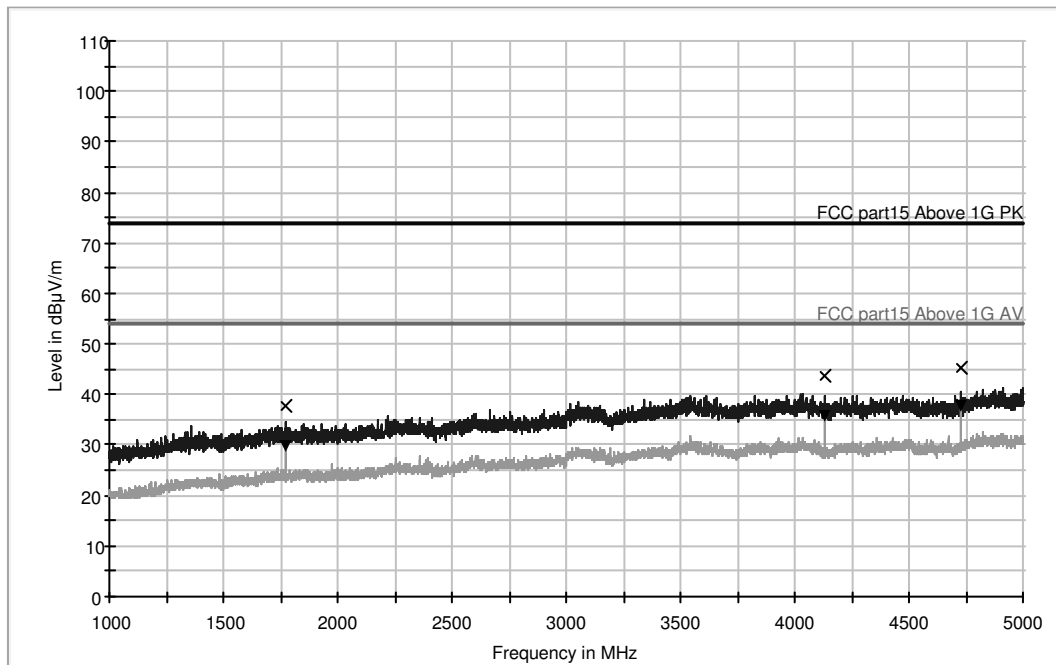
Frequency (MHz)	QuasiPeak (dB µ V/m)	Corr. (dB)	Margin (dB)	Limit (dB µ V/m)	Polarity
32.650000	11.1	13.9	28.9	40.0	V
41.050000	18.9	14.3	21.1	40.0	V
590.600000	30.8	23.9	15.2	46.0	V
676.050000	22.8	25.3	23.2	46.0	V

Test Information

EUT Name: Wireless Receiver
Model Number: AP1B
Operating Conditions: Receiving at low channel
Comment: AC 120V, 60Hz; Horizontal

Subrange 1

Frequency Range: 1GHz - 5GHz
Receiver: TUV FSP 30
Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
1772.000000	37.8	36.2	74.0	H	-14.0
4134.500000	43.8	30.2	74.0	H	-7.9
4725.000000	45.3	28.7	74.0	H	-7.3

Limit and Margin AV

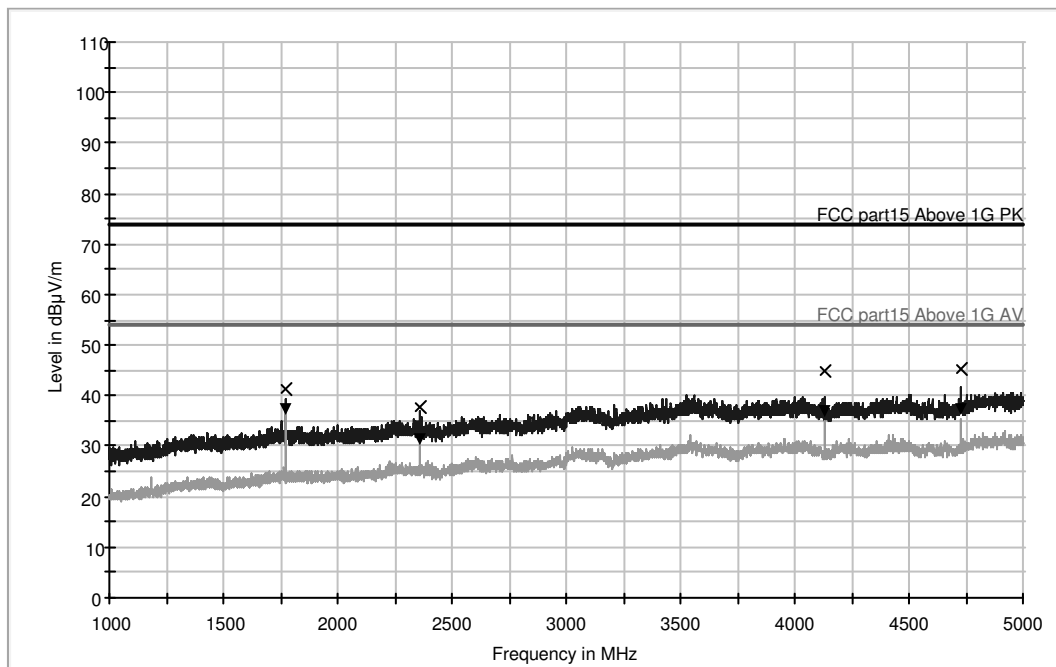
Frequency (MHz)	Average (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
1772.000000	29.7	24.3	54.0	H	-14.0
4134.500000	35.6	18.4	54.0	H	-7.9
4725.000000	37.8	16.2	54.0	H	-7.3

Test Information

EUT Name: Wireless Receiver
Model Number: AP1B
Operating Conditions: Receiving at low channel
Comment: AC 120V 60Hz; Vertical

Subrange 1

Frequency Range: 1GHz - 5GHz
Receiver: TUV FSP 30
Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
1772.000000	41.4	32.6	74.0	V	-14.0
2362.000000	37.6	36.4	74.0	V	-11.9
4134.000000	44.9	29.1	74.0	V	-7.9
4725.000000	45.1	28.9	74.0	V	-7.3

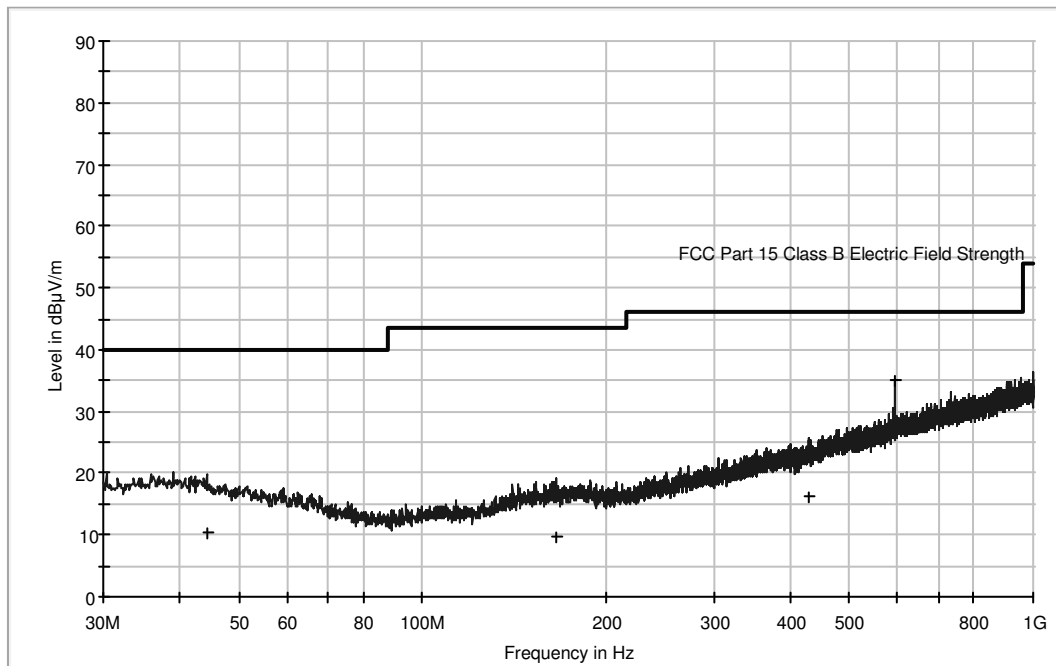
Limit and Margin AV

Frequency (MHz)	Average (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
1772.000000	37.4	16.6	54.0	V	-14.0
2362.000000	31.5	22.5	54.0	V	-11.9
4134.000000	37.1	16.9	54.0	V	-7.9
4725.000000	37.2	16.8	54.0	V	-7.3

Test Information

EUT Name: Wireless Receiver
Model Number: AP1B
Operating Conditions: Receiving at high channel
Comment: AC 120V, 60Hz; Horizontal

Subrange 1
Frequency Range: 30MHz - 1GHz
Receiver: TUV ESCI 3
Transducer: TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



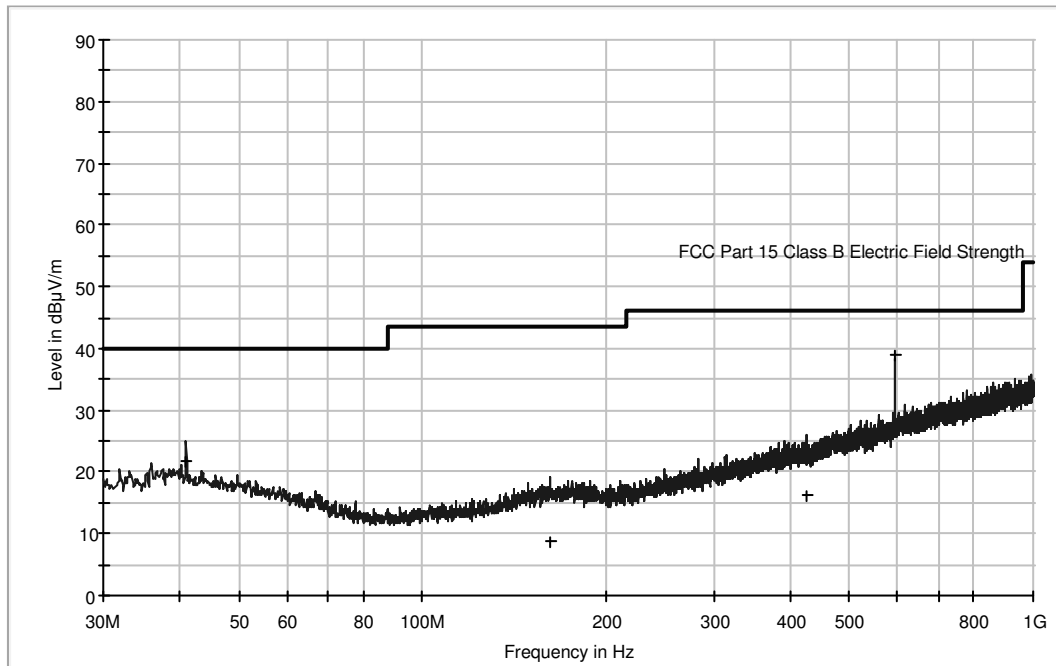
Limit and Margin

Frequency (MHz)	QuasiPeak (dB µ V/m)	Corr. (dB)	Margin (dB)	Limit (dB µ V/m)	Polarity
44.300000	10.3	13.7	29.7	40.0	H
165.300000	9.9	12.9	33.6	43.5	H
429.750000	16.3	19.9	29.7	46.0	H
594.000000	35.0	23.9	11.0	46.0	H

Test Information

EUT Name: Wireless Receiver
 Model Number: AP1B
 Operating Conditions: Receiving at high channel
 Comment: AC 120V, 60Hz; Vertical

Subrange 1
 Frequency Range: 30MHz - 1GHz
 Receiver: TUV ESCI 3
 Transducer: TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



Limit and Margin

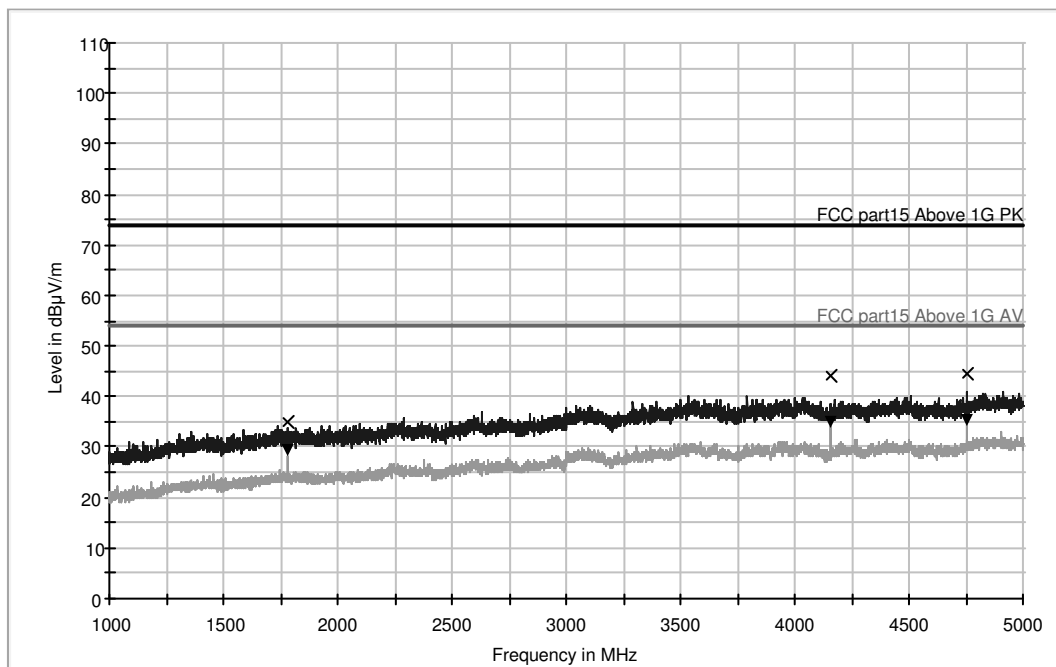
Frequency (MHz)	QuasiPeak (dB µ V/m)	Corr. (dB)	Margin (dB)	Limit (dB µ V/m)	Polarity
41.050000	21.7	14.3	18.3	40.0	V
161.950000	8.8	12.9	34.7	43.5	V
425.100000	16.2	19.8	29.8	46.0	V
594.000000	38.9	23.9	7.1	46.0	V

Test Information

EUT Name: Wireless Receiver
Model Number: AP1B
Operating Conditions: Receiving at high channel
Comment: AC 120V, 60Hz; Horizontal

Subrange 1

Frequency Range: 1GHz - 5GHz
Receiver: TUV FSP 30
Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
1781.500000	35.0	39.0	74.0	H	-14.0
4158.000000	43.9	30.1	74.0	H	-7.8
4752.000000	44.3	29.7	74.0	H	-6.9

Limit and Margin AV

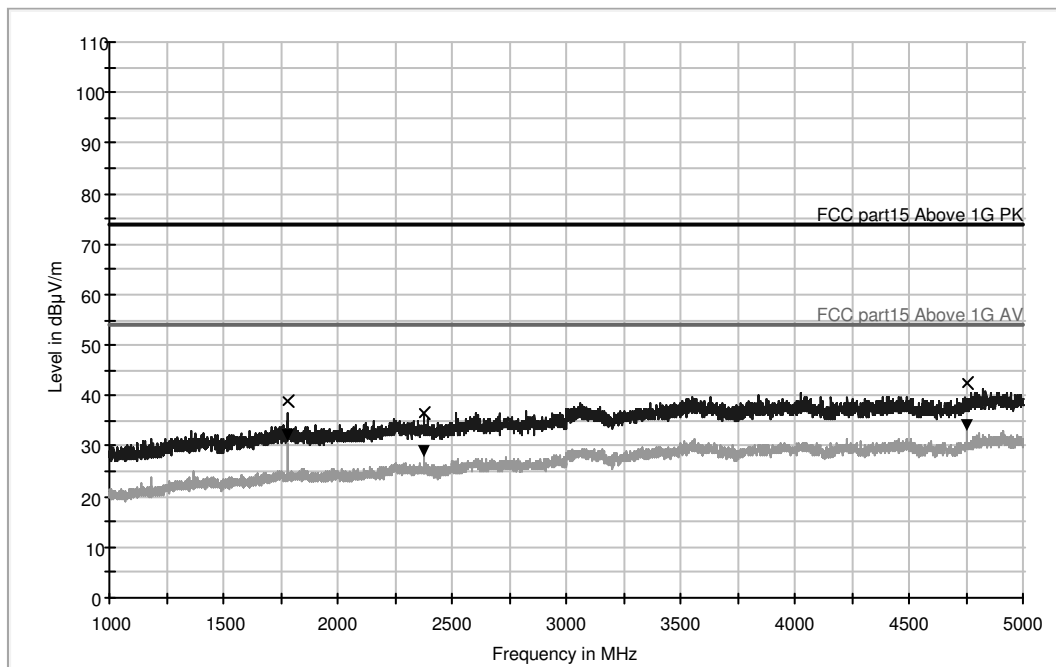
Frequency (MHz)	Average (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
1781.500000	29.2	24.8	54.0	H	-14.0
4158.000000	35.1	18.9	54.0	H	-7.8
4752.000000	35.4	18.6	54.0	H	-6.9

Test Information

EUT Name: Wireless Receiver
 Model Number: AP1B
 Operating Conditions: Receiving at high channel
 Comment: AC 120V, 60Hz; Vertical

Subrange 1

Frequency Range: 1GHz - 5GHz
 Receiver: TUV FSP 30
 Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
1782.000000	38.9	35.1	74.0	V	-14.0
2376.000000	36.5	37.5	74.0	V	-11.9
4752.000000	42.5	31.5	74.0	V	-6.9

Limit and Margin AV

Frequency (MHz)	Average (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
1782.000000	32.3	21.7	54.0	V	-14.0
2376.000000	28.9	25.1	54.0	V	-11.9
4752.000000	34.3	19.7	54.0	V	-6.9

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Disturbances other than those mentioned above are far below the limit or not detectable.

The final measurement for frequencies below 1000MHz is performed with Quasi Peak detector; the final measurement for frequencies above 1000MHz is performed with Average and Peak detector.

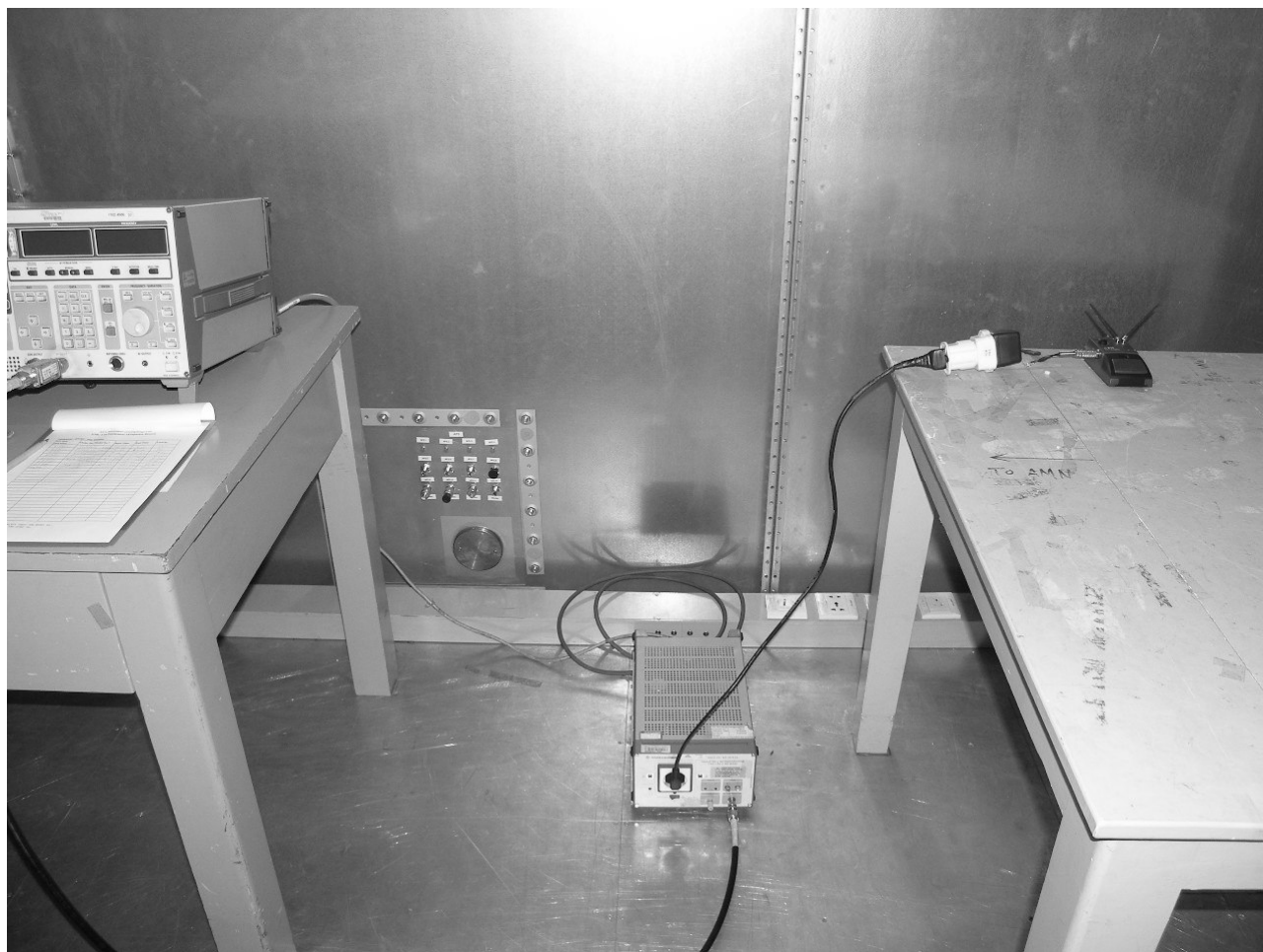
The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz at frequency below 1GHz.

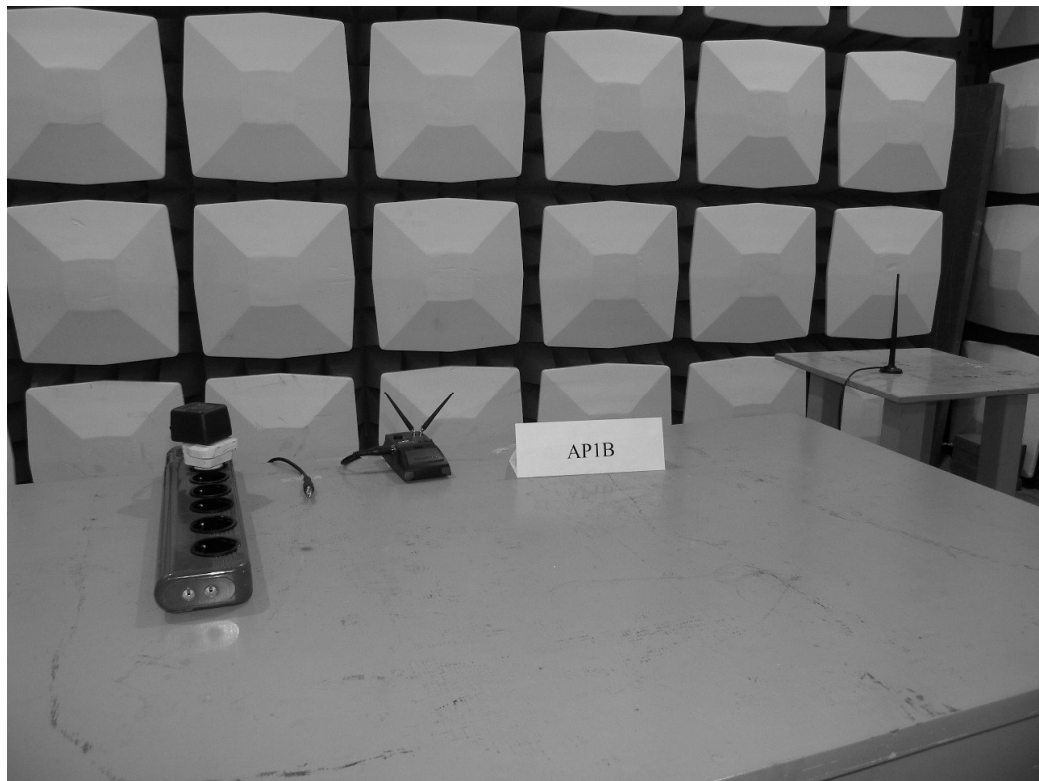
The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz at frequency above 1GHz.

6 Photographs of the Test Set-Up

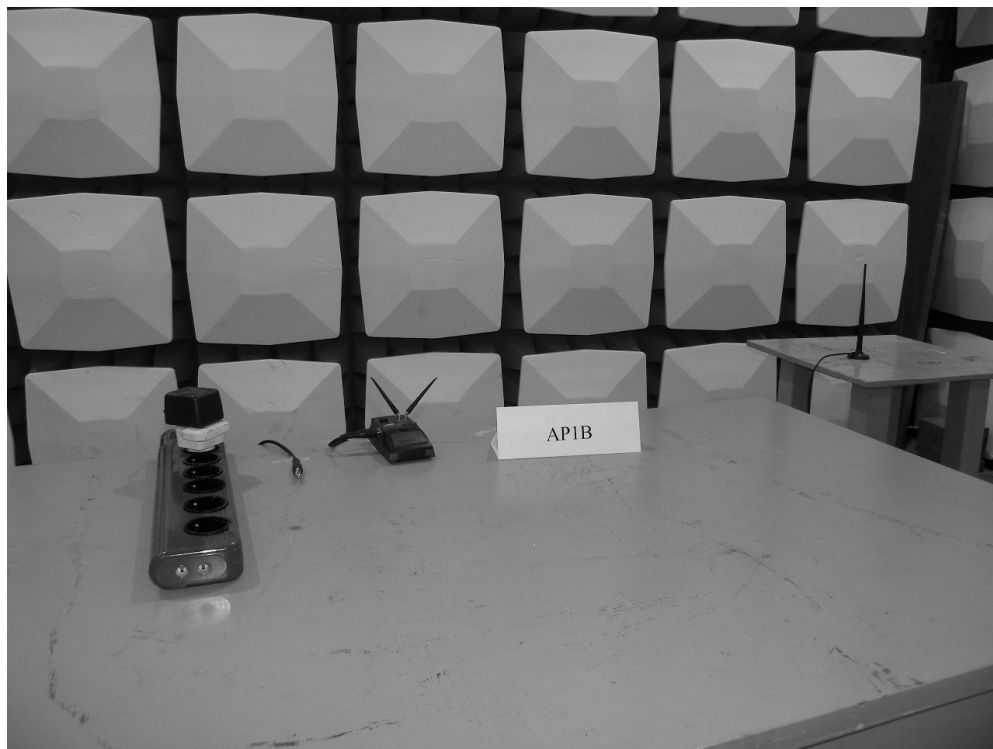
Photograph 1: Set up for Conducted Emission on AC Mains



Photograph 2: Set-up for Radiation Measurement below 1GHz



Photograph 3: Set-up for Radiation Measurement above 1GHz



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