
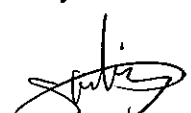


Prüfbericht - Nr.: 17014195 001 <i>Test Report No.:</i>			Seite 1 von 46 <i>Page 1 of 46</i>		
Auftraggeber: <i>Client:</i>			Namtai Electronic (Shenzhen) Co., Ltd. Gusu Industrial Estate, Xixiang, Baoan, Shenzhen Guangdong 518126, P.R. China		
Gegenstand der Prüfung: Wireless SingStar Microphone Receiver <i>Test item:</i>					
Bezeichnung: <i>Identification:</i>		SLEH-00136(Receiver)		Serien-Nr.: n.a. <i>Serial No.:</i>	
Wareneingangs-Nr.: <i>Receipt No.:</i>		163055640		Eingangsdatum: 2009-10-15 <i>Date of receipt:</i>	
Prüfört: <i>Testing location:</i>		TÜV Rheinland (Guangdong) Ltd. EMC Laboratory FCC Registration No.: 833845 Test site Industry Canada No.: 2932C-1 Shenzhen Academy of Metrology and Quality Inspection FCC Registration No.: 274801 Test site Industry Canada No.: 4174A-1 (details refer to clause 2.1)			
Prüfgrundlage: <i>Test specification:</i>		FCC CFR47 Part 15: Subpart C Section 15.247 FCC CFR47 Part 15: Subpart C Section 15.207 FCC CFR47 Part 15: Subpart C Section 15.209 FCC CFR47 Part 15: Subpart B Section 15.107 FCC CFR47 Part 15: Subpart B Section 15.109 RSS-210 Issue 7 June 2007 RSS Gen Issue 2 June 2007 RSS-102 Issue 2 November, 2005			
Prüfergebnis: <i>Test Result:</i>		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test item passed the test specification(s).</i>			
Prüflaboratorium: <i>Testing Laboratory:</i>		TÜV Rheinland (Shenzhen) Co., Ltd.			
geprüft/ tested by:			kontrolliert/ reviewed by:		
					
2009-12-04 Winnie Hou/ Project Engineer			2009-12-08 Sam Lin / Technical Certifier		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges/ Other Aspects:					
Abkürzungen:			Abbreviations:		
P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet			P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested		
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>					

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT*RESULT: Passed***5.1.2 PEAK OUTPUT POWER***RESULT: Passed***5.1.3 99% BANDWIDTH***RESULT: Passed***5.1.4 20DB BANDWIDTH***RESULT: Passed***5.1.5 100KHz BANDWIDTH OF FREQUENCY BAND EDGE***RESULT: Passed***5.1.6 SPURIOUS EMISSION***RESULT: Passed***5.1.7 FREQUENCY SEPARATION***RESULT: Passed***5.1.8 NUMBER OF HOPPING FREQUENCY***RESULT: Passed***5.1.9 TIME OF OCCUPANCY***RESULT: Passed***5.1.10 CONDUCTED EMISSIONS***RESULT: Passed***5.1.11 RADIATED EMISSIONS***RESULT: Passed***5.1.12 RESTRICTED BANDS***RESULT: Passed*

Contents

1.	GENERAL REMARKS	4
1.1	COMPLEMENTARY MATERIALS.....	4
2.	TEST SITES.....	4
2.1	TEST FACILITIES	4
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	5
2.3	TRACEABILITY	6
2.4	CALIBRATION.....	6
2.5	MEASUREMENT UNCERTAINTY.....	6
2.6	LOCATION OF ORIGINAL DATA	6
2.7	STATUS OF FACILITY USED FOR TESTING	6
3.	GENERAL PRODUCT INFORMATION	7
3.1	PRODUCT FUNCTION AND INTENDED USE	7
3.2	RATINGS AND SYSTEM DETAILS.....	7
3.3	INDEPENDENT OPERATION MODES.....	8
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS.....	8
3.5	SUBMITTED DOCUMENTS.....	8
4.	TEST SET-UP AND OPERATION MODES.....	9
4.1	PRINCIPLE OF CONFIGURATION SELECTION	9
4.2	TEST OPERATION AND TEST SOFTWARE	9
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	9
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	9
4.5	TEST SETUP DIAGRAM	10
5.	TEST RESULTS	12
5.1	TRANSMITTER REQUIREMENT & TEST SUITES.....	12
5.1.1	<i>Antenna Requirement.....</i>	<i>12</i>
5.1.2	<i>Peak Output Power</i>	<i>13</i>
5.1.3	<i>99% Bandwidth.....</i>	<i>16</i>
5.1.4	<i>20dB Bandwidth</i>	<i>17</i>
5.1.5	<i>100kHz Bandwidth of Frequency Band Edge</i>	<i>20</i>
5.1.6	<i>Spurious Emission.....</i>	<i>22</i>
5.1.7	<i>Frequency Separation</i>	<i>23</i>
5.1.8	<i>Number of hopping frequency.....</i>	<i>26</i>
5.1.9	<i>Time of Occupancy.....</i>	<i>28</i>
5.1.10	<i>Conducted emissions.....</i>	<i>31</i>
5.1.11	<i>Radiated emissions.....</i>	<i>34</i>
5.1.12	<i>Restricted bands</i>	<i>37</i>
6.	PHOTOGRAPHS OF THE TEST SET-UP	42
7.	LIST OF TABLES.....	46
8.	LIST OF PHOTOGRAPHS.....	46

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test Result of Radiated Emissions

2. Test Sites

2.1 Test Facilities

TÜV Rheinland (Guangdong) Ltd.
EMC Laboratory

Guangzhou Auto Market,
Yuan Gang Section of Guangshan Road,
Guangzhou, P.R. China
FCC Registration No.: 833845
Test site Industry Canada No.: 2932C-1

Shenzhen Academy of Metrology and Quality Inspection
Bldg. of Academy of Metrology and Quality Inspection
Longzhu Road, Nanshan District
Shenzhen, P. R. China
FCC Registration No.: 274801
Test site Industry Canada No.: 4174A-1

The tests at the test site have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Spurious emission and Radiated emission (TUV Guangdong)				
EMI Test Receiver	Rohde & Schwarz	ESCI-3	100216	2010-11-26
Spectrum Analyzer	Rohde & Schwarz	FSP30	100286	2010-08-24
Trilog-Broadband Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	209	2010-11-07
Double-Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF906	100385	2010-08-18
Pre-amplifier	MITEQ	AFS42-00101800-25-S-42	1101599	2010-07-31
Standard Gain Horn Antenna	EMCO	3160-09	21642	N/A
Pre-amplifier	MITEQ	AFS33-18002650-30-8P-44	1108282	2010-07-31
3m Anechoic Chamber	Albatross Project GmbH	N/A	N/A	2010-04-16
Spurious emission and Radiated emission (SMQ)				
Receiver	Rohde & Schwarz	ESI26	838786/013	2010-01-23
Loop Field Strength Antenna	SCHWARZBECK	FMZB1516	113	2011-01-24
3m Anechoic Chamber	Albatross Project GmbH	N/A	N/A	2011-01-30
Radio Test Suite (TUV Guangdong)				
EMI Test Receiver	Rohde & Schwarz	ESCI	100178	2010-09-27
Receiver	R&S	ESCI	100178	2010-09-27
Conducted Emission (TUV Guangdong)				
EMI Test Receiver	Rohde & Schwarz	ESCS30	100316	2010-03-27
Artificial Mains Network	Rohde & Schwarz	ESH2-Z5	100114	2010-03-27

2.3 Traceability

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

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements are $\pm 3\text{dB}$.

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Guangdong) Ltd. test facility located at Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3. General Product Information

3.1 Product Function and Intended Use

The EUT is wireless microphone designed for SONY PlayStation® 2 and PlayStation® 3 for home entertainment. It operates at 2.4GHz ISM frequency band. The whole system is composed of 2 Microphones and a Receiver which contains 2 RF units, each unit can only communicate with one Microphone.

Hopping channel refer to following table, unit: MHz

2405	2407	2409	2411	2413	2415	2417	2419	2421	2423	2425	2427
2429	2431	2433	2435	2437	2439	2441	2443	2447	2449	2451	2453
2455	2457	2459	2461	2463	2465	2467	2469	2471	2473	2475	2477

Every Microphone and receive unit can only use half of frequency points in the same time.

Hopping channel for blue microphone and blue receive unit: MHz

2405	2409	2413	2417	2421	2425	2429	2433	2437
2441	2447	2451	2455	2459	2463	2467	2471	2475

Hopping channel for red microphone and red receive unit: MHz

2407	2411	2415	2419	2423	2427	2431	2435	2439
2443	2449	2453	2457	2461	2465	2469	2473	2477

For details refer to the User Manual, technical description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Rating of EUT

Kind of Equipment:	Wireless SingStar Microphone Receiver
Type Designation:	SLEH-00136(Receiver)
FCC ID	VZVWLMIC1-1
IC	7561A-WLMIC01

Table 3: Technical Specification of EUT

Technical Specification	Value
Operating Frequency band	2405 – 2477 MHz
Channel separation	2MHz
Extreme Temperature Range	5°C to 35°C
Operation Voltage	DC 5V (via PS3 USB port)
Modulation	FHSS, GFSK
Antenna Type	Internal Antenna, Non-User Replaceable
Antenna Gain	-2.7dBi
RF Output Power	0.0009W (-0.54dBm)
External Ports	None
Hopping rate	58.8 times/s

3.3 Independent Operation Modes

The basic operation modes are:

- A. Transmitting
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. Standby
- C. Receiving
- D. Communicate with PS3
- E. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Bill of Material
- PCB Layout
- Photo Document
- Technical Description
- Circuit Diagram
- Instruction Manual
- Rating Label

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2003.

4.3 Special Accessories and Auxiliary Equipment

Kind of Equipment	Manufacturer	Type	S/N
Wireless SingStar Microphone	Namtai	SLEH-00136 (Receiver)	9Y0000017-2
PlayStation3	SONY	PlayStation3	00-27450172-0402783-DECHJOOA
Television	Sony	J29MF1	1519805

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 Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

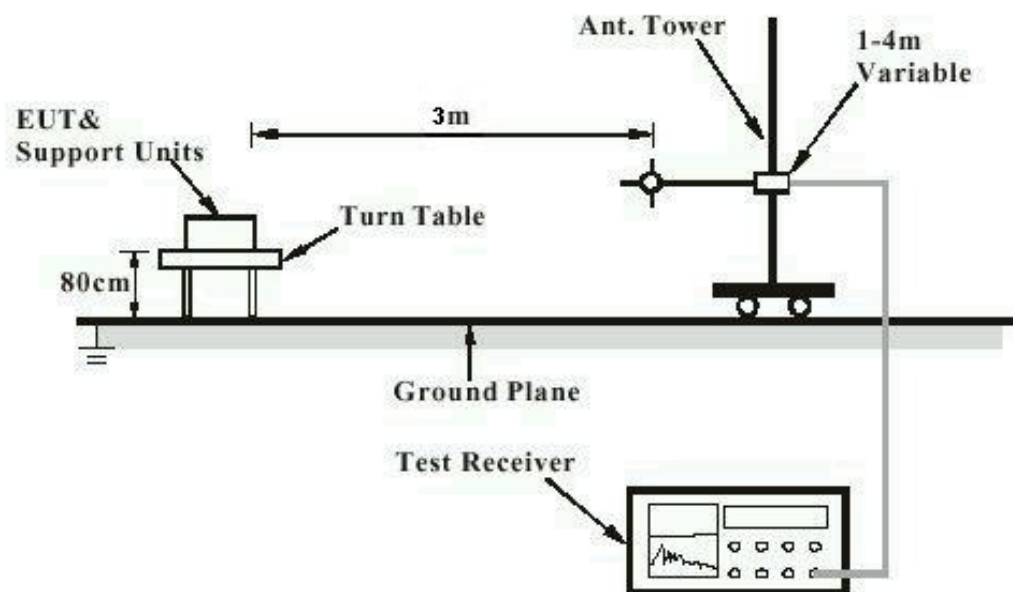


Diagram of Measurement Equipment Configuration for Conduction Measurement

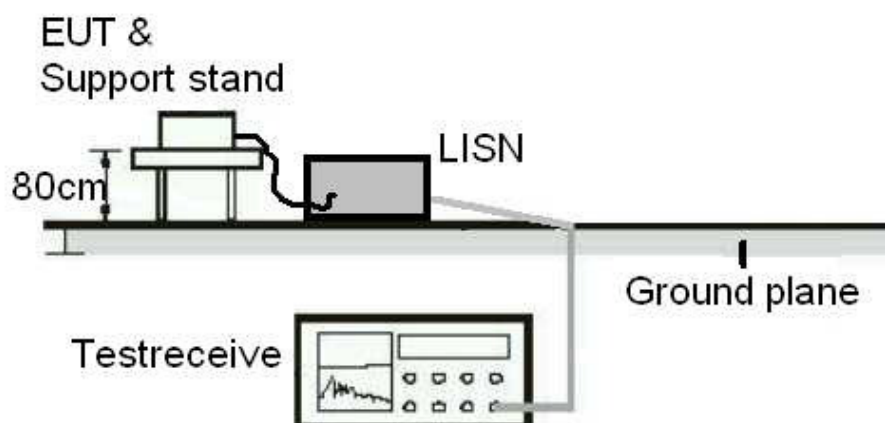
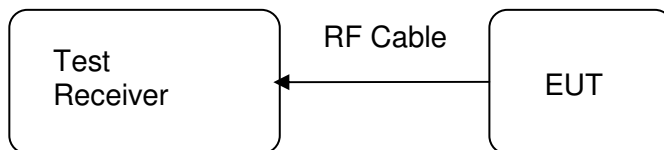


Diagram of Measurement Equipment Configuration for Transmitter Measurement



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Passed**

Test date	:	2009-11-19
Test standard	:	FCC Part 15.247(b)(4) and Part 15.203 RSS Gen 7.1.4
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is -2.7dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply the provision.

Refer to EUT photo for details.

5.1.2 Peak Output Power

RESULT:**Passed**

Test date : 2009-11-19
Test standard : FCC Part 15.247(b)(1)
RSS-210 A8.4 (2)
Basic standard : ANSI C63.4: 2003
Limit : 0.125 Watt
Kind of test site : Shielded room

Test setup

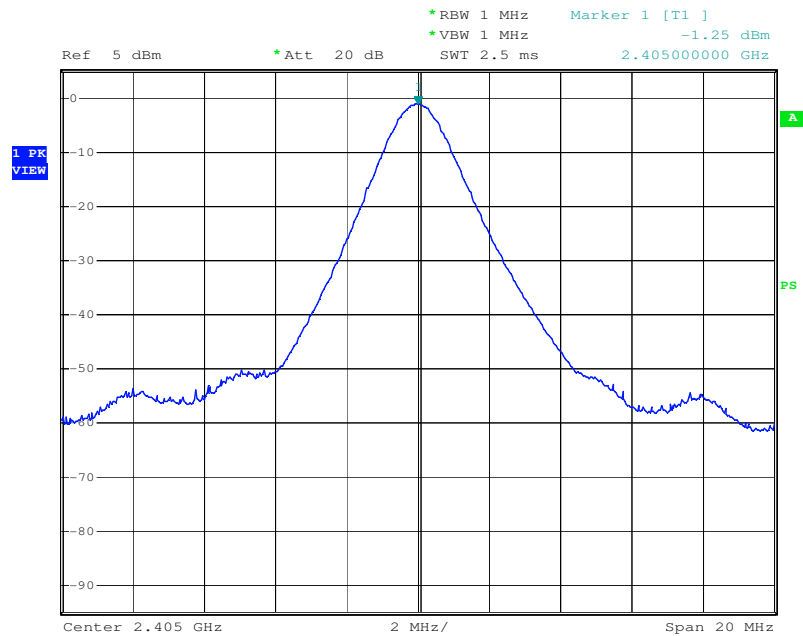
Test Channel : Low/ Middle/ High
Operation Mode : A
Ambient temperature : 23°C
Relative humidity : 50%
Atmospheric pressure : 101 kPa

Table 4: Test result of Peak Output Power

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (W)
		(dBm)	(W)	
Low Channel	2405	-1.25	0.0007	0.125
Middle Channel	2441	-0.54	0.0009	0.125
High Channel	2477	-1.21	0.0007	0.125

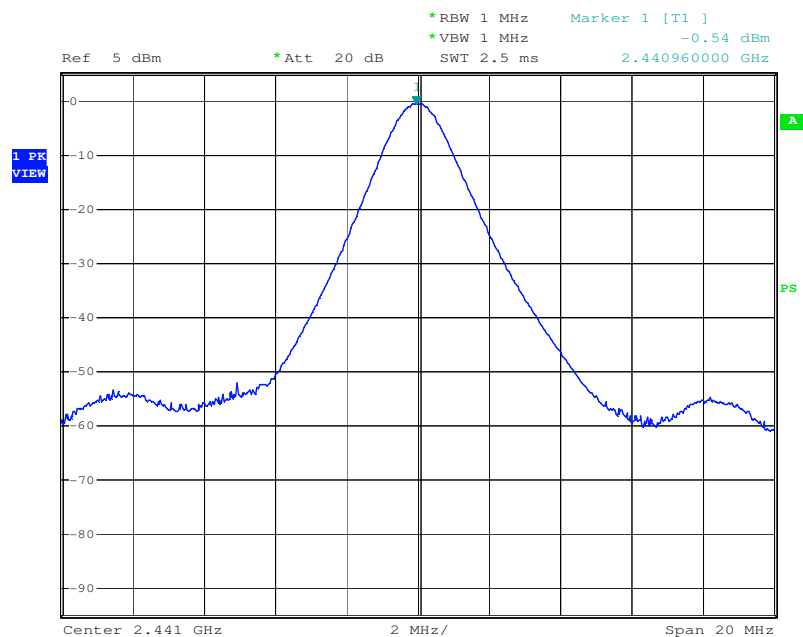
Test Plot of Peak Output Power

Low Channel



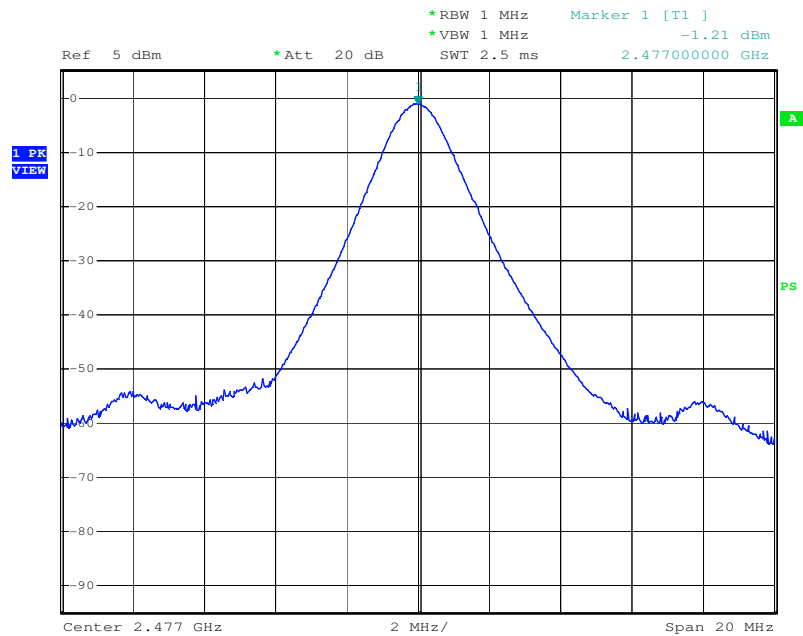
Date: 19.NOV.2009 12:11:13

Middle Channel



Date: 19.NOV.2009 12:15:20

High Channel



Date: 19.NOV.2009 12:16:01

5.1.3 99% Bandwidth

RESULT:**Passed**

Date of testing : 2009-11-19
Test standard : RSS-210
Basic standard : ANSI C63.4: 2003
Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High
Operation Mode : A
Ambient temperature : 23°C
Relative humidity : 50%
Atmospheric pressure : 101 kPa

Table 5: Test result of 99%dB Bandwidth

Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)
Low Channel	2405	2.48
Mid Channel	2441	2.46
High Channel	2477	2.42

5.1.4 20dB Bandwidth

RESULT:**Passed**

Date of testing : 2009-11-19
Test standard : FCC Part 15.247(a)(1)
RSS-210 A8.1 (a)
Basic standard : ANSI C63.4: 2003
Kind of test site : Shielded room

Test setup

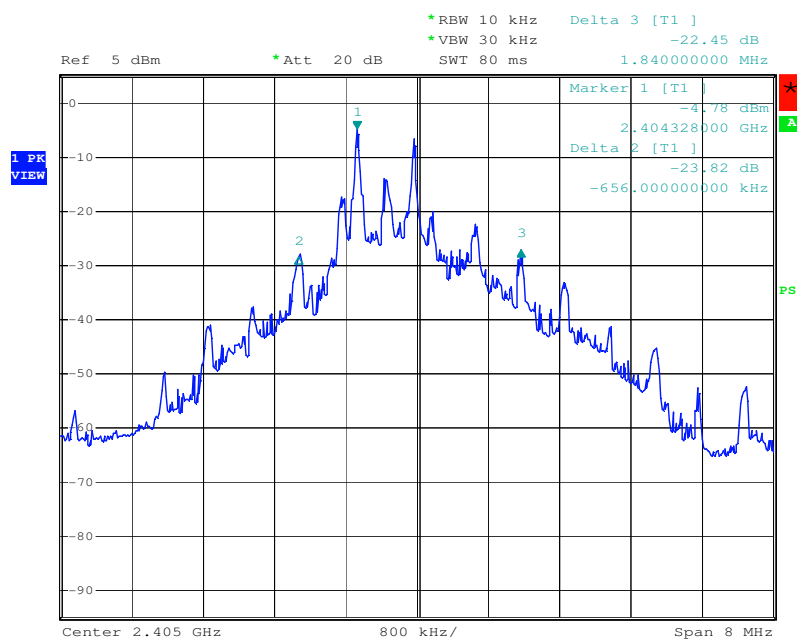
Test Channel : Low/ Middle/ High
Operation Mode : A
Ambient temperature : 23°C
Relative humidity : 50%
Atmospheric pressure : 101 kPa

Table 6: Test result of 20dB Bandwidth

Channel	Channel Frequency (MHz)	20dB Bandwidth (MHz)
Low Channel	2405	2.50
Mid Channel	2441	2.48
High Channel	2477	2.49

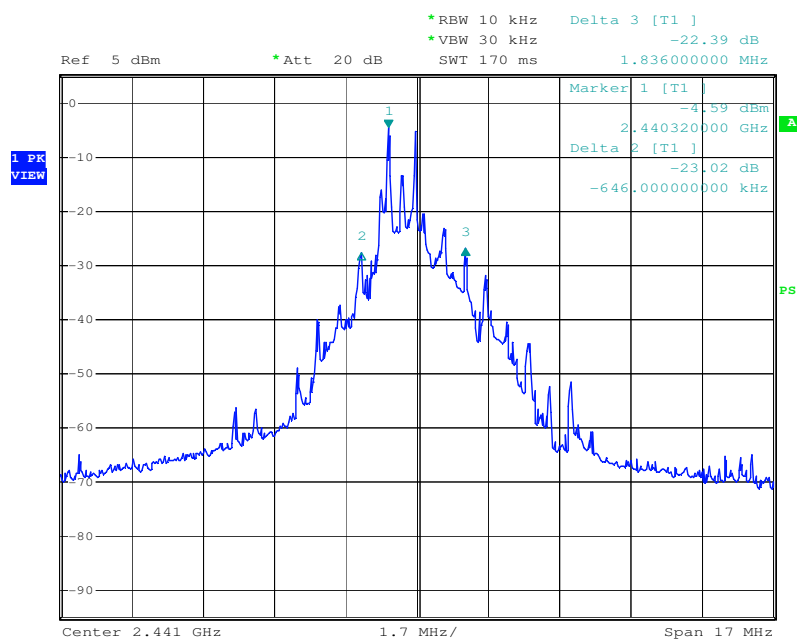
Test Plot of 20dB Bandwidth

Low Channel

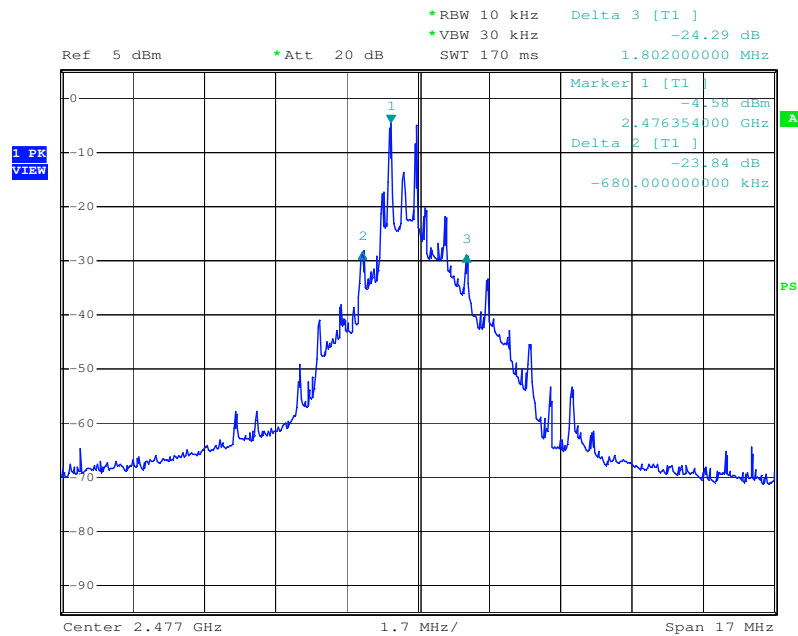


Date: 19.NOV.2009 14:05:55

Middle Channel



Date: 19.NOV.2009 14:10:52

High Channel


Date: 19.NOV.2009 14:12:51

5.1.5 100kHz Bandwidth of Frequency Band Edge

RESULT:**Passed**

Date of testing	:	2009-11-19
Test standard	:	FCC part 15.247(d) RSS-210 A8.5
Basic standard	:	ANSI C63.4: 2003
Limit	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shield room

Test setup

Test Channel	:	Low/ High
Operation mode	:	A
Ambient temperature	:	23°C
Relative humidity	:	50%
Atmospheric pressure	:	101 kPa

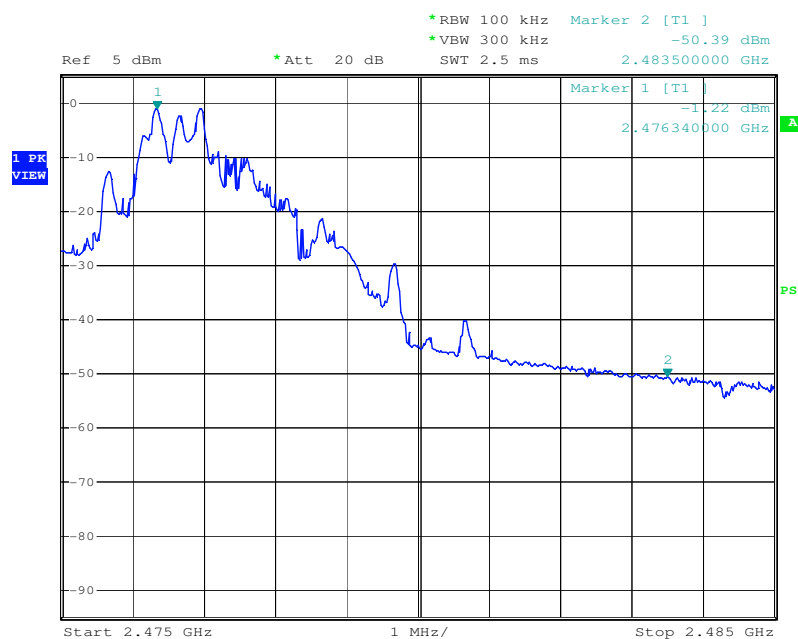
All emissions are more than 20dB below fundamental, details refer to following test plot, and compliance is achieved as well.

Test Plot of 100kHz Bandwidth of Frequency Band Edge Low Channel



Date: 19.NOV.2009 14:08:11

High Channel



Date: 19.NOV.2009 14:16:20

5.1.6 Spurious Emission

RESULT:**Passed**

Date of testing	:	2009-10-15 to 2009-11-24
Test standard	:	FCC part 15.247(d) RSS-210 Clause 2.2
Basic standard	:	ANSI C63.4: 2003
Limits	:	Refer to 15.209(a) of FCC part 15.247(d) Refer to RSS-210 Table 2
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	A, B
Ambient temperature	:	22°C
Relative humidity	:	50%
Atmospheric pressure	:	101 kPa

Remark: Testing was carried out within frequency range 9kHz to the tenth harmonics.

For details refer to Appendix 1.

5.1.7 Frequency Separation

RESULT:
Passed

Date of testing : 2009-11-19
 Test standard : FCC part 15.247(a)(1)
 : RSS-210 A8.1 (b)
 Basic standard : ANSI C63.4: 2003
 Limit : $\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth, whichever is greater

Test setup

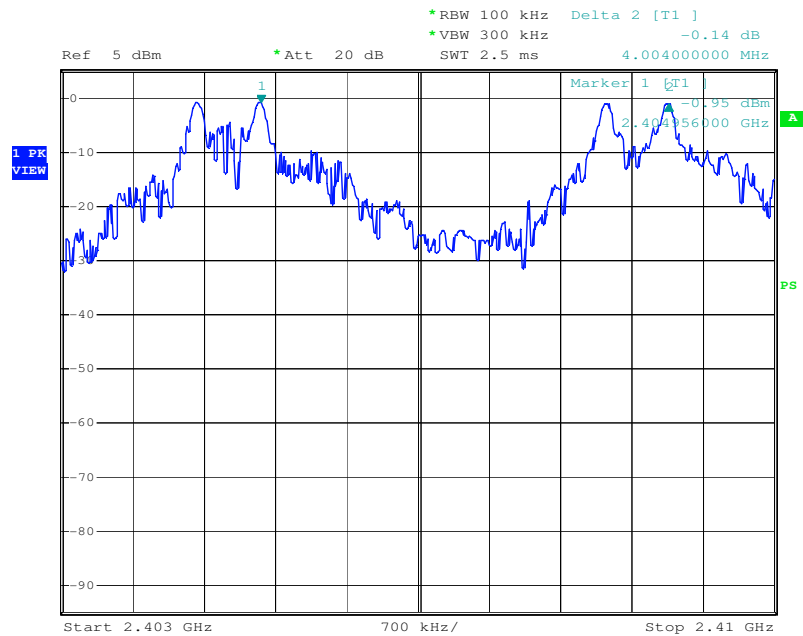
Test Channel : Low/ Middle/ High
 Operation Mode : A
 Ambient temperature : 23°C
 Relative humidity : 50%
 Atmospheric pressure : 101 kPa

Table 7: Test result of Frequency Separation

Channel	Channel Frequency (MHz)	Measured Channel Separation (MHz)	Limit (kHz)	Result
Low Channel	2405	4	$\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth	Pass
Adjacency Channel	2409			
Mid Channel	2441	6	$\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth	Pass
Adjacency Channel	2447			
High Channel	2473	4	$\geq 25\text{kHz}$ or $2/3$ of 20dB bandwidth	Pass
Adjacency Channel	2477			

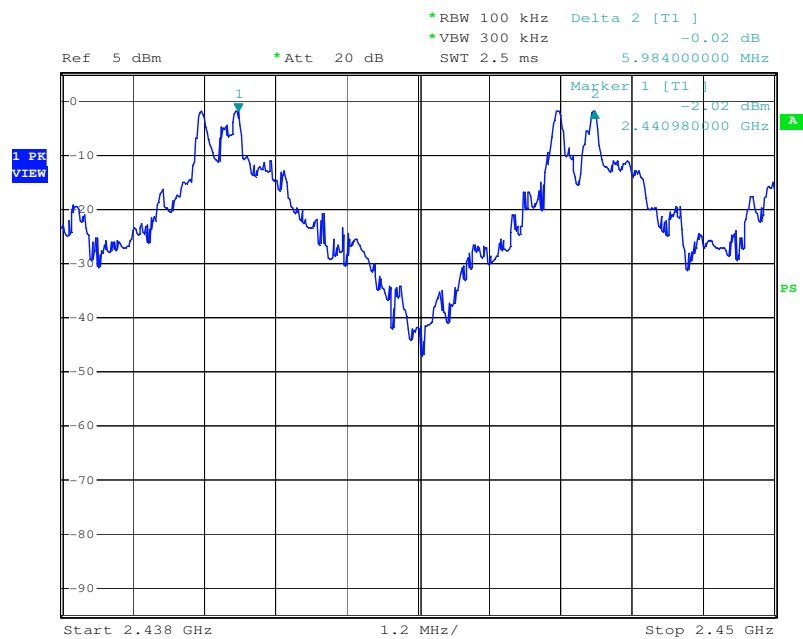
Test Plot of Frequency Separation

Low Channel

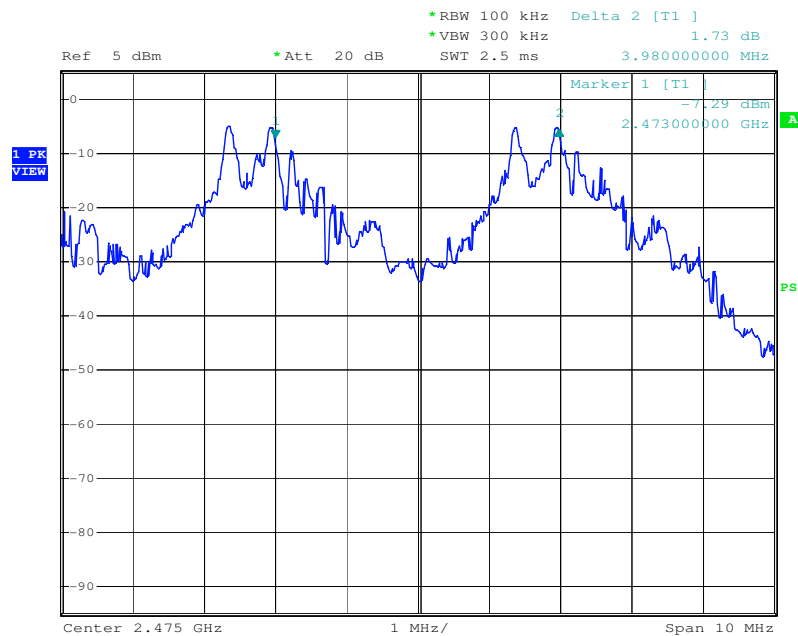


Date: 19.NOV.2009 16:35:40

Middle Channel



Date: 19.NOV.2009 16:30:16

High Channel


Date: 19.NOV.2009 15:56:43

5.1.8 Number of hopping frequency

RESULT:**Passed**

Date of testing : 2009-11-19
Test standard : FCC part 15.247(a)(1)(iii)
RSS-210 A8.1 (d)
Basic standard : ANSI C63.4: 2003
Limits : ≥ 15 non-overlapping channels
Kind of test site : Shield room

Test setup

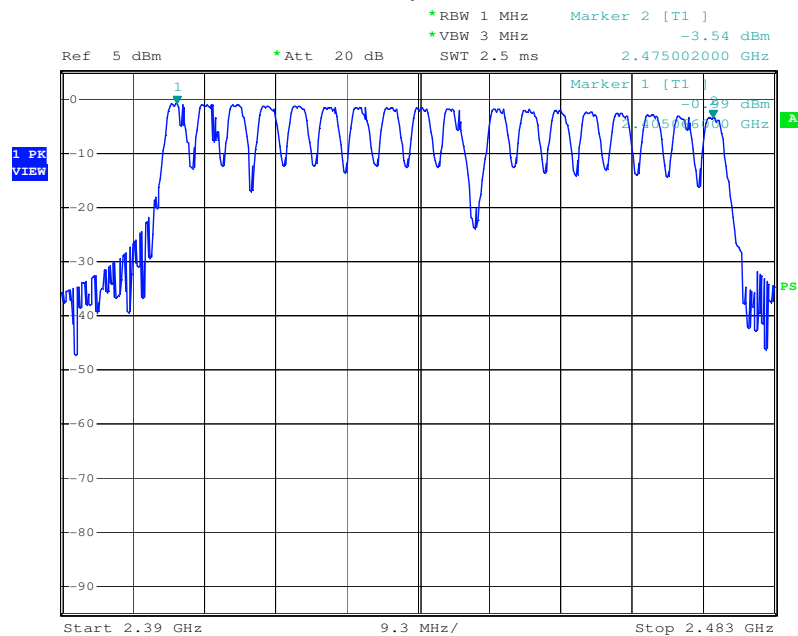
Test Channel : Low/ Middle/ High
Operation Mode : A
Ambient temperature : 23°C
Relative humidity : 50%
Atmospheric pressure : 101 kPa

Table 8: Test result of Number of hopping frequency

Frequency Range	Measured Quantity of Hopping Channel	Limit	Result
<u>2405</u> to <u>2477</u> MHz	18	≥ 15	Pass

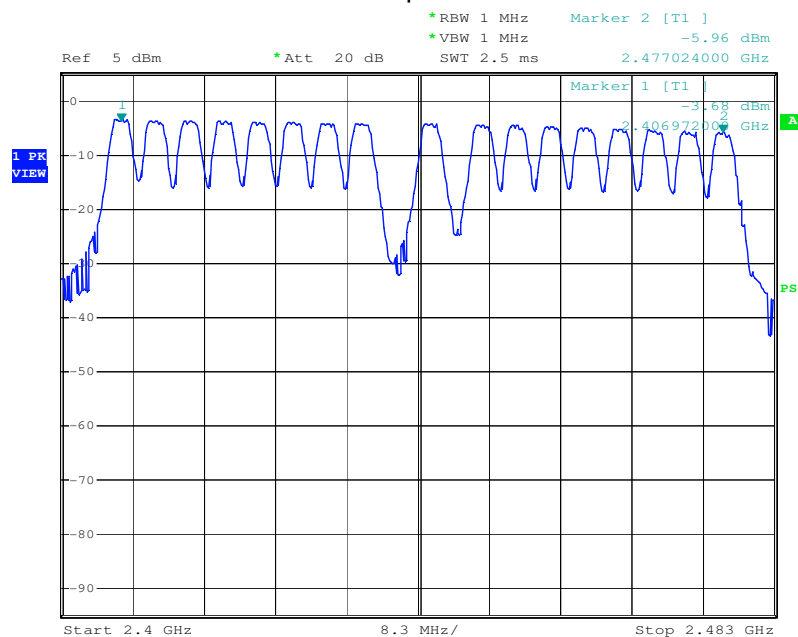
Test Plot of Number of hopping frequencies

RF unit one which communicate with Microphone No.1



Date: 19.NOV.2009 16:22:13

RF unit two which communicate with Microphone No.2



Date: 19.NOV.2009 15:49:50

5.1.9 Time of Occupancy

RESULT:

Passed

Date of testing	:	2009-11-19
Test standard	:	FCC part 15.247(a)(1)(iii) RSS-210 A8.1 (d)
Basic standard	:	ANSI C63.4: 2003
Limits	:	0.4s
Kind of test site	:	Shield room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	A
Ambient temperature	:	23°C
Relative humidity	:	50%
Atmospheric pressure	:	101 kPa

Table 9: Test result of Time of Occupancy

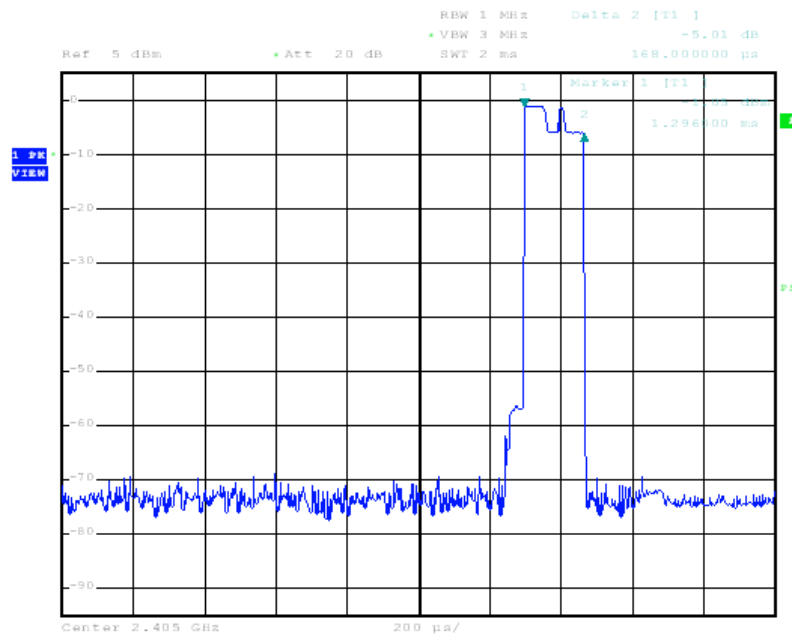
Channel	Pulse width (μs)	Measured Dwell time (s)	Limit (s)	Result
Low Channel	168	0.004	0.4	Pass
Mid Channel	160	0.004	0.4	Pass
High Channel	168	0.004	0.4	Pass

Note:

$$\text{Dwell time} = \text{Pulse width} \times (\text{Hopping rate} / \text{Number of channels}) \times \text{Period}$$
$$\text{Period} = 0.4 \text{ (seconds/ channel)} \times 18 \text{ (channel)} = 7.2 \text{ seconds}$$

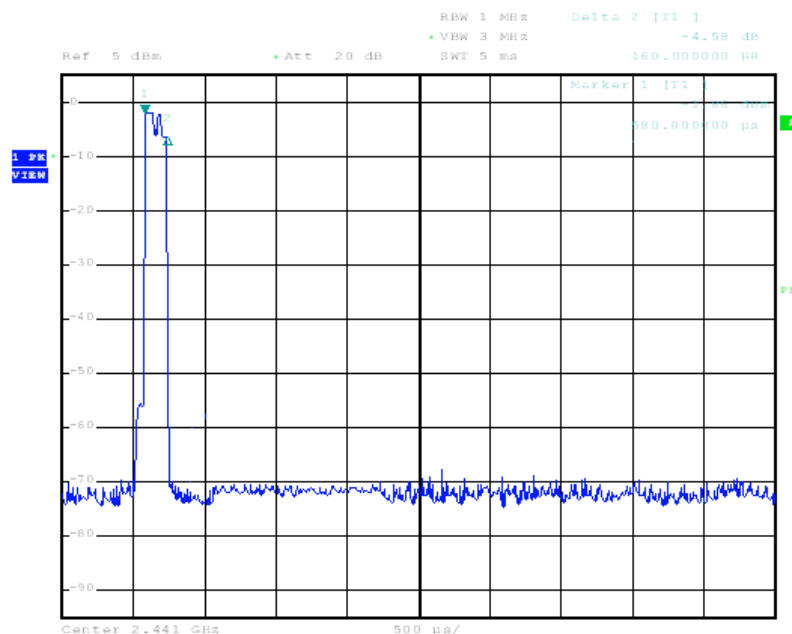
Test Plot of Time of Occupancy

Low Channel

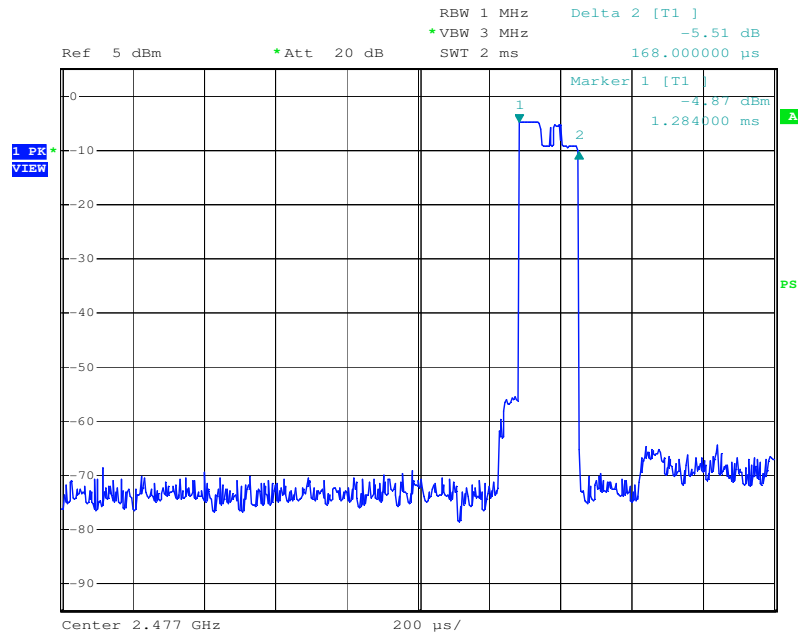


Date: 19.NOV.2009 16:14:12

Middle Channel



Date: 19.NOV.2009 16:19:46

High Channel


Date: 19.NOV.2009 16:10:17

5.1.10 Conducted emissions

RESULT:**Passed**

Date of testing	:	2009-11-18
Test standard	:	FCC Part 15.207(a) FCC Part 15.107(a)
Basic standard	:	ANSI C63.4: 2003
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a) FCC Part 15.107(a)
Kind of test site	:	Shield room

Test setup

Input Voltage (of PC)	:	AC 120V, 60Hz
Operation Mode	:	D
Earthing	:	Connected
Ambient temperature	:	22°C
Relative humidity	:	50%
Atmospheric pressure	:	101 kPa

Refer to following test curve.

Test Plot of Conducted emissions

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

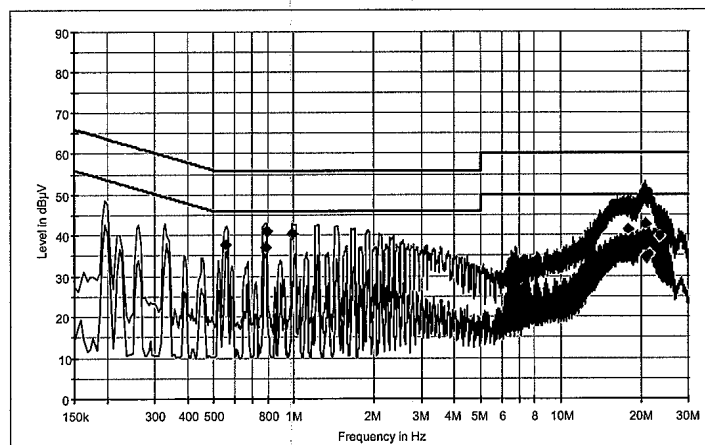
EMC Test Record (EMISSION)

Test Information


Manufacturer: Namtai Electronic(Shenzhen) Co., Ltd
 Test Item: Wireless singstar microphone
 Identification: SLEH-00136(Receiver)
 Test Standard: FCC Part 15
 Test Detail: Conducted Emission
 Operation Mode: D
 Climate Condition: 22°C; 50 %RH; 101kPa.
 Test Voltage/ Freq.: AC120V/ 60Hz
 Port / Line: AC Mains
 Receipt No.: 1163055638 200
 Report No.: 17014192 001
 Result: Pass
 Comment: /

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



2009-11-18, 9:47:39

Tested by: 
 Reviewed by: 

TUV Rheinland (Guangdong) Ltd.

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Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.555000	37.7	1000.000	9.000	L1
0.780000	37.2	1000.000	9.000	N
20.994000	34.7	1000.000	9.000	N
21.061500	34.5	1000.000	9.000	N
21.192000	34.7	1000.000	9.000	N
21.390000	35.5	1000.000	9.000	N

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

Frequency (MHz)	Corr (dB)	Margin (dB)	Limit (dBµV)	Comment
0.555000	10.1	8.3	46.0	
0.780000	10.0	8.8	46.0	
20.994000	11.2	15.3	50.0	
21.061500	11.2	15.5	50.0	
21.192000	11.2	15.3	50.0	
21.390000	11.2	14.5	50.0	

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line
0.789000	41.1	1000.000	9.000	N
0.987000	40.3	1000.000	9.000	N
17.830500	41.5	1000.000	9.000	N
20.800500	42.7	1000.000	9.000	N
23.307000	39.7	1000.000	9.000	L1
23.505000	39.7	1000.000	9.000	L1

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

Frequency (MHz)	Corr (dB)	Margin (dB)	Limit (dBµV)	Comment
0.789000	10.0	14.9	56.0	
0.987000	10.0	15.7	56.0	
17.830500	11.0	18.5	60.0	
20.800500	11.2	17.3	60.0	
23.307000	11.5	20.3	60.0	
23.505000	11.6	20.3	60.0	

2009-11-18, 9:47:39

Tested by:



Reviewed by:



5.1.11 Radiated emissions

RESULT:**Passed**

Date of testing	:	2009-10-15
Test standard	:	FCC Part 15.209
		FCC Part 15.109
		RSS-210 Clause 2.6
Basic standard	:	ANSI C63.4: 2003
Frequency range	:	30 – 1000MHz
Limits	:	FCC Part 15.209(a)
		FCC Part 15.109(a)
		RSS-210 Table 2
Kind of test site	:	3m Semi-Anechoic Chamber

Test Setup

Input Voltage	:	DC 3V
Operation Mode	:	A+C
Earthing	:	Not Connected
Ambient temperature	:	22°C
Relative humidity	:	50%
Atmospheric pressure	:	101 kPa

For details refer to following test curves.

Test Plot of Radiated emissions, Horizontal

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

EMC Test Record (EMISSION)

Test Information

Manufacturer:	Namtai Electronic(Shenzhen) Co., Ltd
Test Item:	Wireless singstar microphone
Identification:	SLEH-00136(Receiver)
Test Standard:	FCC Part 15
Test Detail:	Radiated Emission
Operation Mode:	A+C
Climate Condition:	22°C: 50 %RH
Test Voltage / Freq. :	DC 3.0V 5.0V
Receipt No.:	1163055638 200
Report No.	17014192 001
Result:	Pass
Comment:	Horizontal

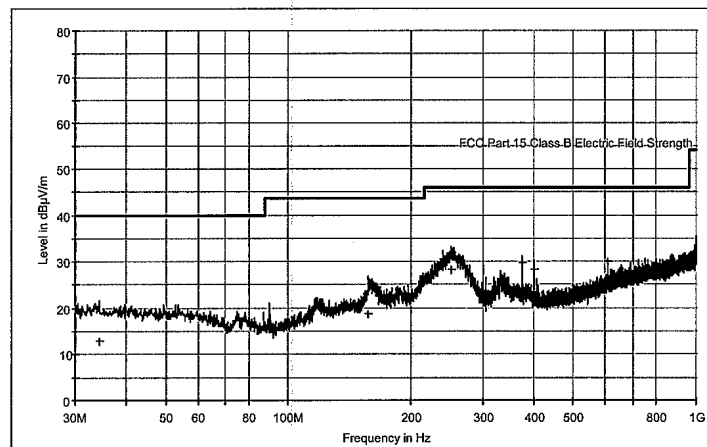


101kPa.



Subrange 1

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



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
34.300000	13.0	14.0	27.0	40.0	H
157.500000	18.7	15.6	24.8	43.5	H
251.700000	28.2	13.6	17.8	46.0	H
375.000000	29.9	16.8	16.1	46.0	H
400.000000	28.2	17.3	17.8	46.0	H
400.000000	28.2	17.3	17.8	46.0	H
605.700000	29.9	21.7	16.1	46.0	H

Date: 10/15/2009 - Time: 1:54:27 PM

Tested by:  Reviewed by: 

Test Plot of Radiated emissions, Vertical

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

EMC Test Record (EMISSION)

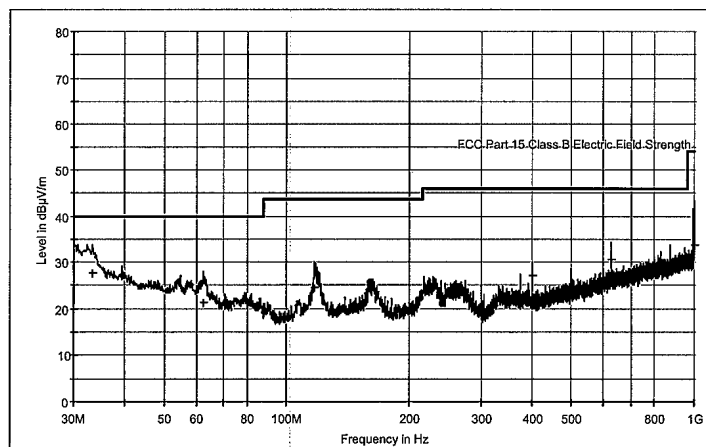
Test Information

Manufacturer: Namtai Electronic(Shenzhen) Co., Ltd
 Test Item: Wireless singstar microphone
 Identification: SLEH-00136(Receiver)
 Test Standard: FCC Part 15
 Test Detail: Radiated Emission
 Operation Mode: A+C
 Climate Condition: 22°C; 50 %RH; 101kPa.
 Test Voltage / Freq.: DC 3.0V- 5.0V
 Receipt No.: 1163055638 200
 Report No.: 17014192 001
 Result: Pass
 Comment: 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 QP

Frequency (MHz)	QuasiPeak (dBμV/m)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Polarity
33.400000	27.6	13.9	12.4	40.0	V
62.600000	21.2	13.2	18.8	40.0	V
117.200000	24.6	13.2	18.9	43.5	V
400.000000	27.2	17.3	18.8	46.0	V
625.000000	30.6	22.2	15.4	46.0	V
999.500000	33.7	26.6	20.2	53.9	V

Date: 10/15/2009 - Time: 2:00:23 PM

Tested by: 

Reviewed by: 

5.1.12 Restricted bands

RESULT:**Passed**

Date of testing	:	2009-11-26
Test standard	:	FCC Part 15.205 RSS-210 Clause 2.2
Basic standard	:	ANSI C63.4: 2003
Limits	:	FCC Part 15.205 RSS-210 Table 2 and 3
Kind of test site	:	3m Semi-Anechoic Chamber

Test Setup

Test Channel	:	Low/ High
Input Voltage	:	DC 3V
Operation Mode	:	A
Earthing	:	Not Connected
Ambient temperature	:	25°C
Relative humidity	:	50%
Atmospheric pressure	:	101 kPa

For details refer to following test curves.

Test Plot of Radiated emissions in restricted bands, Horizontal, Mode A.1

TUV Rheinland (Guangdong) Ltd.

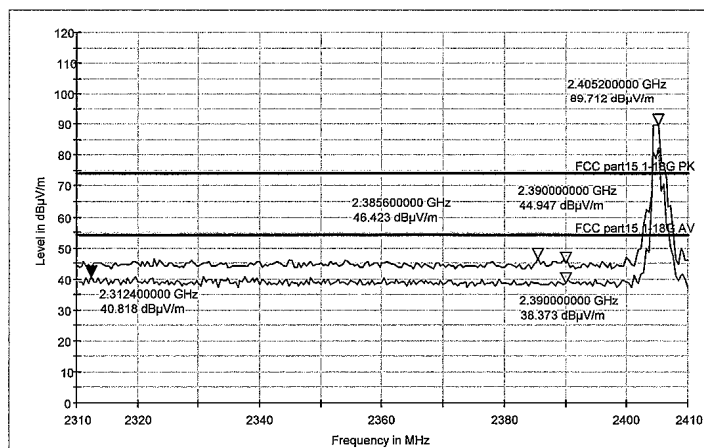
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (EMISSION)

Test Information

Manufacturer:	Namtai
Test Item:	Wireless SingStar Microphone
Identification:	SLEH-00136(Receiver)
Test Standard:	FCC Part 15
Test Detail:	RE
Operation Mode:	Tx @ Low channel
Climate Condition:	25 °C; 50 %RH; 101 kPa.
Test Voltage / Freq. :	DC 5V
Receipt No.:	163055640 200
Report No.	17014194 001
Result:	Pass
Comment:	Horizontal

Subrange 1	
Frequency Range:	2GHz - 3GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Date: 11/26/2009 - Time: 11:07:09 AM

Tested by:



Reviewed by:



Test Plot of Radiated emissions in restricted bands, Vertical, Mode A.1

TUV Rheinland (Guangdong) Ltd.

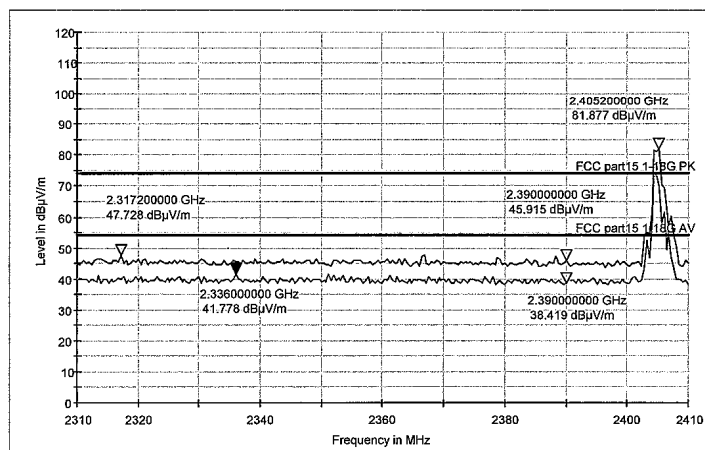
EMC Test Service Hotline: +86-20-28391188

EMC Test Record (EMISSION)

Test Information

Manufacturer:	Namtai
Test Item:	Wireless SingStar Microphone
Identification:	SLEH-00136(Receiver)
Test Standard:	FCC Part 15
Test Detail:	RE
Operation Mode:	Tx @ Low channel
Climate Condition:	25 °C; 50 %RH; 101 kPa.
Test Voltage / Freq. :	DC 5V
Receipt No.:	163055640 200
Report No.:	17014194 001
Result:	Pass
Comment:	Vertical

Subrange 1	
Frequency Range:	2GHz - 3GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Date: 11/26/2009 - Time: 11:04:23 AM

Tested by:



Reviewed by:



Test Plot of Radiated emissions in restricted bands, Horizontal, Mode A.3

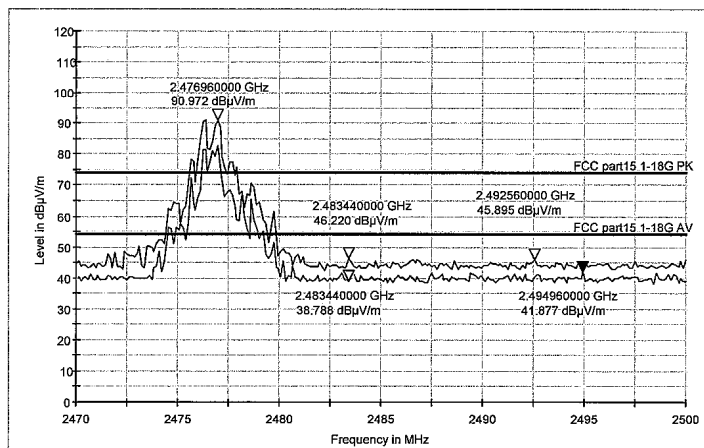
TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

EMC Test Record (EMISSION)

Test Information

Manufacturer:	Namtai		
Test Item:	Wireless SingStar Microphone		
Identification	SLEH-00136(Receiver)		
Test Standard:	FCC Part 15		
Test Detail:	RE		
Operation Mode:	Tx @ High channel		
Climate Condition:	25 °C;	50 %RH;	101 kPa.
Test Voltage / Freq. :	DC 5V		
Receipt No.:	163055640 200		
Report No.	17014194 001		
Result:	Pass		
Comment:	Horizontal		
 Subrange 1			
Frequency Range:	2GHz - 3GHz		
Receiver:	TUV FSP 30		
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906		



Date: 11/26/2009 - Time: 11:11:36 AM

Tested by:



Reviewed by:



Test Plot of Radiated emissions in restricted bands, Vertical, Mode A.3

TUV Rheinland (Guangdong) Ltd.

EMC Test Service Hotline: +86-20-28391188

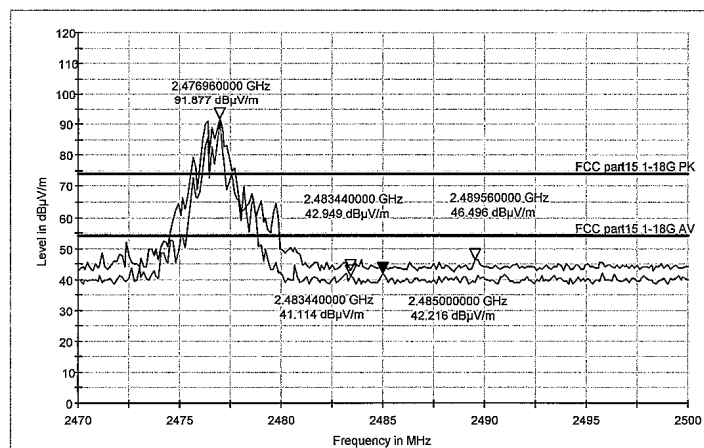
EMC Test Record (EMISSION)

Test Information

Manufacturer:	Namtai
Test Item:	Wireless SingStar Microphone
Identification:	SLEH-00136(Receiver)
Test Standard:	FCC Part 15
Test Detail:	RE
Operation Mode:	Tx @ High channel
Climate Condition:	25 °C; 50 %RH; 101 kPa.
Test Voltage / Freq. :	DC 5V
Receipt No.:	163055640 200
Report No.:	17014194 001
Result:	Pass
Comment:	Vertical

Subrange 1

Frequency Range:	2GHz - 3GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Date: 11/26/2009 - Time: 11:15:23 AM

Tested by:

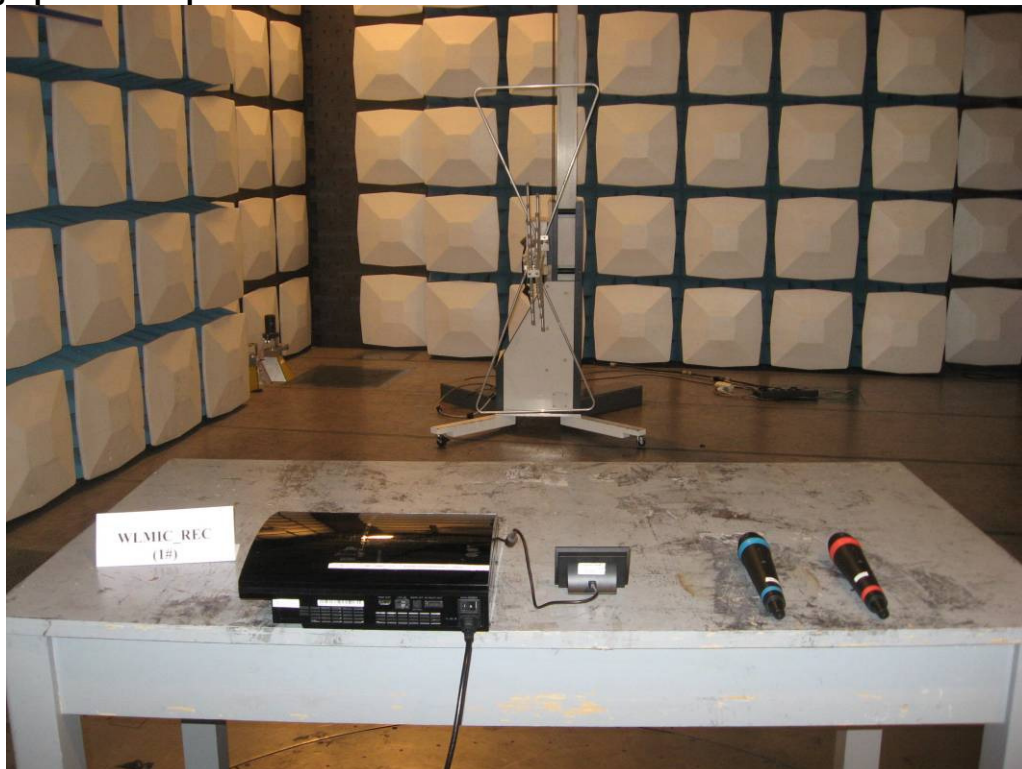


Reviewed by:



6. Photographs of the Test Set-Up

Photograph 1: Set-up for Radiated Emissions



Photograph 2: Set-up for Transmitter test



Photograph 3: Set-up for Spurious Emissions (9kHz-30MHz)



Photograph 4: Set-up for Spurious Emissions (30MHz-1GHz)



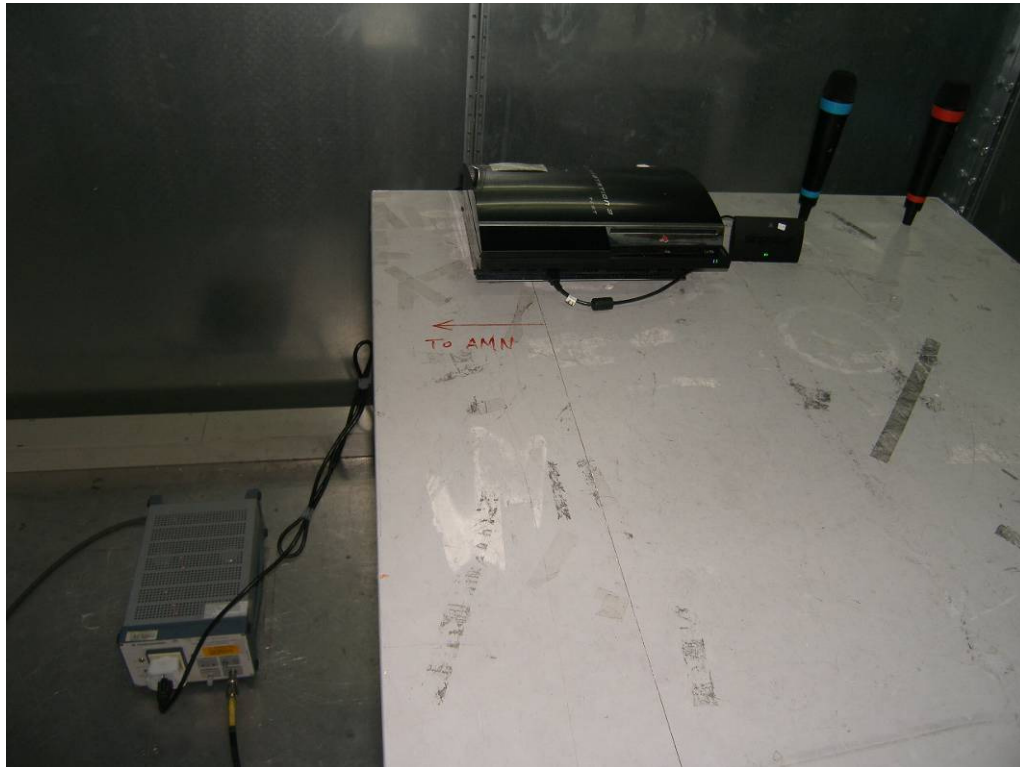
Photograph 5: Set-up for Spurious Emissions (1GHz-18GHz)



Photograph 6: Set-up for Spurious Emissions (18GHz-26GHz)



Photograph 7: Set-up for Conducted Emissions



7. List of Tables

Table 1: List of Test and Measurement Equipment.....	5
Table 2: Rating of EUT	7
Table 3: Technical Specification of EUT	8
Table 4: Test result of Peak Output Power.....	13
Table 5: Test result of 99%dB Bandwidth.....	16
Table 6: Test result of 20dB Bandwidth.....	17
Table 7: Test result of Frequency Separation	23
Table 8: Test result of Number of hopping frequency	26
Table 9: Test result of Time of Occupancy	28

8. List of Photographs

Photograph 1: Set-up for Radiated Emissions	42
Photograph 2: Set-up for Transmitter test	42
Photograph 3: Set-up for Spurious Emissions (9kHz-30MHz)	43
Photograph 4: Set-up for Spurious Emissions (30MHz-1GHz)	43
Photograph 5: Set-up for Spurious Emissions (1GHz-18GHz).....	44
Photograph 6: Set-up for Spurious Emissions (18GHz-26GHz).....	44
Photograph 7: Set-up for Conducted Emissions	45