

# CENTRE OF TESTING SERVICE INTERNATIONAL

**OPERATE ACCORDING TO ISO/IEC 17025** 

# FCC ID TEST REPORT

TEST REPORT NUMBER: CGZ3131220-01227-EF



CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China

#### **CENTRE OF TESTING SERVICE**





	TEST REPORT For FCC ID					
	47 CFR PART 15 OCT, 2012					
Report Reference No						
Date of issue	·					
·	. CENTRE OF TESTING SERVICE CO., LTD.					
Address	A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China					
Testing location/ procedure	. Full application of Harmonised standards ■					
	Partial application of Harmonised standards $\square$					
	Other standard testing method $\square$					
Applicant's name	. Creation Electronics Ltd.					
Address	. Unit 7, 10/F., Corporation Square 8 Lam Lok Street,Kowloon Bay,Hong Kong					
Test specification						
Standard						
Test Report Form No	. CTSEMC-1.0					
TRF Originator	. CENTRE OF TESTING SERVICE CO., LTD.					
Master TRF	. Dated 2009-01					
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Test item description	USB BLUETOOTH WIRELESS SPEAKER					
Trade Mark	Creatron					
Manufacturer	Creation Electronics Ltd.					
Model/Type reference	BS-200					
Ratings	Adapter Input:AC 100~240V 50~60Hz ; Output:DC 5V					
Operating Frequency	2402.0MHz ~2480.0MHz					
Result	. Positive					

No le

Supervised by:

Approved by:

Kate zhang / Fileadministrators

Compiled by:

Duke yang / Technique principal

Vincent yao / Manager

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## FCCID-TEST REPORT

 Test Report No. :
 CGZ3131220-01227-EF
 02 January 2014 Date of issue

Type / Model	BS-200	
EUT	USB BLUETOOTH WIRELESS SPEAKER	
Applicant	Creation Electronics Ltd.	
Address	Unit 7, 10/F., Corporation Square 8 Lam Lok Street, Kowloon Bay, Hong Kong	
Telephone	+852-22469736	
Fax	+852-22469762	
Contact	K.S. Wong	
Manufacturer	Creation Electronics Ltd.	
Address	Unit 7, 10/F., Corporation Square 8 Lam Lok Street, Kowloon Bay, Hong Kong	
Telephone	+852-22469736	
Fax	+852-22469762	
Contact	K.S. Wong	
Test report holder	Creation Electronics Ltd.	
Address	Unit 7, 10/F., Corporation Square 8 Lam Lok Street,Kowloon Bay,Hong Kong	
Telephone	+852-22469736	
Fax	+852-22469762	
Contact	K.S. Wong	

# Test Result according to the standards on page 1: PASSED

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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#### 1.TEST STANDARDS

The tests were performed according to following standards:

- 47 CFR PART 15 OCT, 2012
- ANSI C63.4-2009

#### 2.SUMMARY

#### 2.1 GENERAL REMARKS

Date of receipt of test sample	20 December 2013
Testing commenced on	20 December 2013~08 January 2014
Testing concluded on	08 January 2014

#### 2.2 FINAL ASSESSMENT

TI FA	C requirements		4   !		4 41	1!		
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- fulfilled.
- ☐ not fulfilled.

The equipment under test

- fulfils the FCC requirements cited on page 1.
- □ **does not** fulfil the FCC requirements cited on page 1.

#### 3.EQUIPMENT UNDER TEST

#### 3.1 Power supply system utilised

Power supply voltage : ■ AC 120V/60Hz

#### 3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: 1

Serial number: Prototype

#### 3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

- ☐ Standby
- ☐ TX- Y position
- ☐ TX- Zposition
- TX- X position

Operation mode 1:TX-X Position Low (2402MHz) , TX-X Position Middle (2442MHz ),

TX-X Position High (2480MHz)

Note:Operation mode 1 TX -X position of EUT is the radiated test worst case; so only these test results be recorded in the test report.

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### 3.4 EUT configuration

#### 3.4.1. Description of configuration (EUT)

Description	:	USB BLUETOOTH WIRELESS SPEAKER
Model Number	:	BS-200
Operation frequency	:	2402~ 2480 MHz ISM Band
Radio Technology	:	V3.0+EDR
Modulation Technology	:	GFSK, π/4-DQPSK,8DPSK modulation
Antenna	:	PCB antenna, met requirement of FCC 15.203

#### 3.4.2. Tested Supporting System Details

#### 3.4.2.1. Monitor

M/N	:	E7722-f
S/N		CN-02W486-64180-3B7-01MP
Manufacturer	:	DELL
Power Cord		Unshielded, Detachabled, 1.8m , 3Pin
FCC	:	By DoC

#### 3.4.2.2.Personal Computer

M/N	:	DIMENSION 4600
S/N		CN-OTO486-42940-37M-00XB
Manufacturer		DELL
Power Cord		Unshielded, Detachabled, 1.8m , 3Pin
FCC		By DoC

#### 3.4.2.3. Keyboard

M/N	:	SK-8110
S/N		CN-07N244-71616-37T-B293
Manufacturer		DELL
Data Cable	:	Shielded, Detachabled
FCC		By DoC

#### 3.4.2.4. Mouse

M/N	:	M-UR69
S/N	:	LNA33029188
Manufacturer	:	DELL
Data Cable	:	Shielded, Detachabled, 1.8m
FCC	:	By DoC

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#### 4.TEST ENVIRONMENT

#### 4.1 Address of the test laboratory

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

#### 4.2 Test facility

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

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

#### IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on June 6, 2011.

#### FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No.791995, July 13,2012.

#### 4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

#### 4.4 Definitions of symbols used in this test report

- - The black square indicates that the listed condition, standard or equipment is applicable for this report.
- ☐ The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

#### 4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

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#### 4.6 Measurement Uncertainty

Test Item	em Frequency Range Uncertainty		Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
	30MHz~300MHz	±3.14dB	(1)
Radiation emission (3m)	300MHz~1000MHz	±3.18dB	(1)
	1GHz~26.5GHz	±3.54dB	(1)

<sup>(1).</sup> This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 5. Summary of standards and results

#### 5.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION					
Description of Test Item	Standard	Results			
Conducted Emission Test	FCC Part 15 : 15.207 ANSI C63.4-2009	PASSED			
Radiated Emission Test	FCC Part 15 C: 15.249 FCC Part 15 : 109 ANSI C63.4-2009	PASSED			
Band Edge Compliance Test	FCC Part 15 C: 15.249 ANSI C63.4-2009	PASSED			
N/A is an abbreviation for Not Applicable.					

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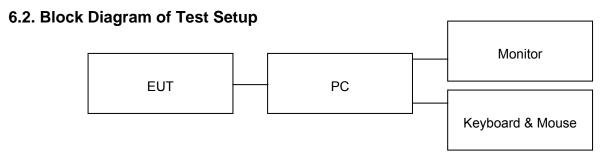




#### 6. Power Line Conducted Emission Test

#### **6.1.Test Equipment**

Conduc	Conducted Disturbance						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.		
1	EMI Test Receiver	ROHDE & SCHWARZ	ESHS10	842884/012	2013/11		
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2013/11		
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/026	2013/11		
4	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100301	2013/11		
5	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2013/11		



(EUT: USB BLUETOOTH WIRELESS SPEAKER)

#### 6.3. Power Line Conducted Emission Test Limits

Standard:RSS-Gen:7.2.4,FCC Part 15: 15.207,ANSI C63.4-2009

		Maximum RF L	ine Voltage
Frequency		Quasi-Peak Level	Average Level
. requeriey		dB(μV)	dB(μV)
150kHz	~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz	~ 5MHz	56	46
5MHz	~ 30MHz	60	50

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

#### **6.4.Test Procedure**

The XBOX Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

# 6.5. Power Line Conducted Emission Test Results

#### PASSED.

The frequency range from 150KHz~30MHz is investigated. Please see the following pages.

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<sup>2.</sup> The lower limit shall apply at the transition frequencies.

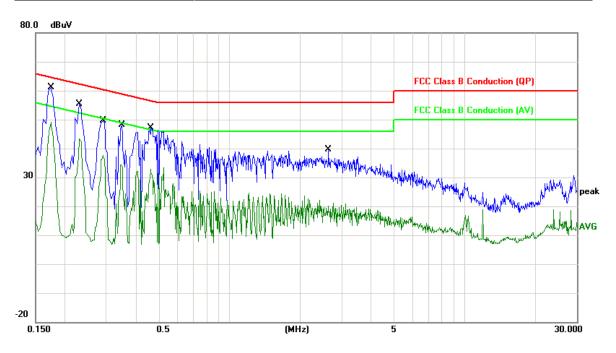






Test point:	L	Result:	■ - passed
Frequency range:	0.15MHz~30MHz		☐ - not passed

EUT	USB BLUETOOTH WIRELESS SPEAKER
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test Date:	20 December 2013~08 January 2014
Operator	Duke
MODEL NO	BS-200



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	0.1740	9.78	46.43	56.21	64.77	-8.56	QP
2	0.1740	9.78	26.41	36.19	54.77	-18.58	AVG
3	0.2300	9.78	34.84	44.62	62.45	-17.83	QP
4	0.2300	9.78	16.33	26.11	52.45	-26.34	AVG
5	0.2900	9.79	30.12	39.91	60.52	-20.61	QP
6	0.2900	9.79	7.41	17.20	50.52	-33.32	AVG
7	0.3500	9.80	30.74	40.54	58.96	-18.42	QP
8	0.3500	9.80	15.65	25.45	48.96	-23.51	AVG
9	0.4660	9.83	35.31	45.14	56.58	-11.44	QP
10	0.4660	9.83	19.33	29.16	46.58	-17.42	AVG
11	2.6420	9.88	22.40	32.28	56.00	-23.72	QP
12	2.6420	9.88	7.48	17.36	46.00	-28.64	AVG
Remark	Other frequen	icy mini ma	rgin all >10 dB	of Limit		•	

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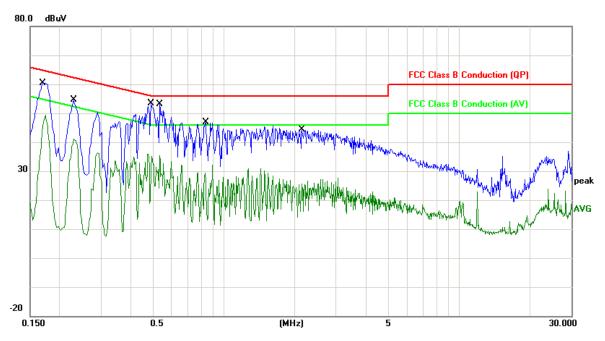
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Test point: N Result: ■ - passed □ - not passed



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	0.1700	9.78	47.83	57.61	64.96	-7.35	QP
2	0.1700	9.78	35.89	45.67	54.96	-9.29	AVG
3	0.2300	9.78	42.66	52.44	62.45	-10.01	QP
4	0.2300	9.78	31.24	41.02	52.45	-11.43	AVG
5	0.4900	9.84	39.14	48.98	56.17	-7.19	QP
6	0.4900	9.84	14.83	24.67	46.17	-21.50	AVG
7	0.5340	9.84	39.23	49.07	56.00	-6.93	QP
8	0.5340	9.84	19.63	29.47	46.00	-16.53	AVG
9	0.8380	9.83	33.28	43.11	56.00	-12.89	QP
10	0.8380	9.83	15.45	25.28	46.00	-20.72	AVG
11	2.1540	9.87	29.68	39.55	56.00	-16.45	QP
12	2.1540	9.87	10.22	20.09	46.00	-25.91	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit	·		

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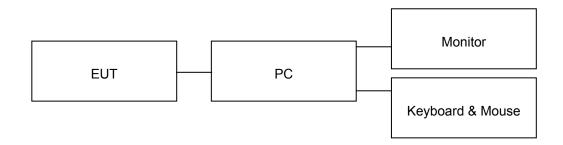
## 7. Radiated disturbance (electric field)

## 7.1.Test Equipment

Radiated disturbance (electric field)							
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.		
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2013/11		
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2013/03		
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2013/03		
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2013/03		
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03		
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2013/11		

#### 7.2.Block Diagram of Test Setup

#### 7.2.1 Block Diagram of connection between EUT and simulators



(EUT: USB BLUETOOTH WIRELESS SPEAKER)

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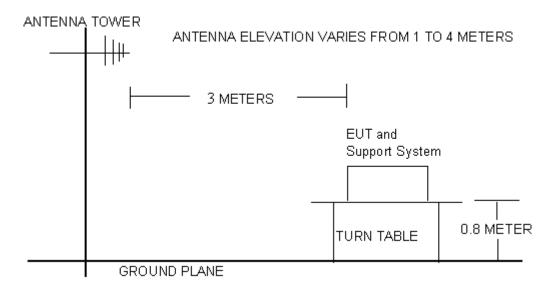
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#### 7.2.2 Anechoic Chamber Setup Diagram



#### 7.3. Radiated Emission Limit:

Standard: FCC 15.249, FCC 15.209.

Except as provided in paragraph (a) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (mV/m)	Field Strength of Harmonics (µV/m)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

FRE	QUEN	CY	DISTANCE	FIELD STRENGTHS LIMIT	
	MHz		Meters	μV/m	dB(μV)/m
0.009	~	0.490	300	2400/F(kHz)	
0.490	~	1.705	30	24000/F(kHz)	
1.705	~	30	30	30	
30	~	88	3	100	40.0
88	~	216	3	150	43.5
216	~	960	3	200	46.0
960	~	1000	3	500	54.0
Λ.	Above 1000		2	Other:74.0 dB(µ	ιV)/m (Peak)
Ai	oove i	000	3	54.0 dB(μV)/m (Average)	

Remark:

- (1) Emission level  $dB\mu V = 20 \log Emission level \mu V/m$
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

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#### 7.4.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009on radiated emission Test.

The frequency range from 30MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 120kHz RBW below 1GHz and a Peak and Average detector with 1MHz RBW above 1GHz,

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 300kHz VBW below 1GHz and a Peak detector with1MHz VBW above 1GHz, A average detector with 3KHz VBW above 1GHz

Pretest x, y, z position of EUT, final, select the worst case x position test and record the test results in the report.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on section 7.5

#### 7.5. Radiated Emission Test Results

#### PASSED.

The frequency range from 9KHz~30MHz,30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

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Test Mode:	TX –X Position Mode	Result:	- passed
Frequency range:	9KHz~30MHz		$\square$ - not passed

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.	
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
Rema	Remark: The test result reading value is to low, margin all > 10dB of the limit.							

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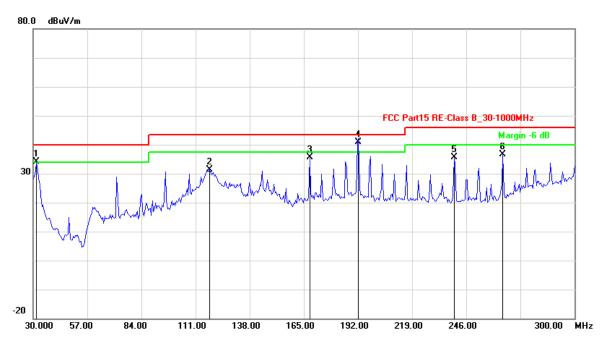




Channel:	TX –X Position Mode Low 2402MHz	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	30MHz-26.5GHz		

EUT	USB BLUETOOTH WIRELESS SPEAKER
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	20 December 2013~08 January 2014
Operator	Duke
MODEL NO	BS-200

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2402.00	2.81	91.87	94.68	114.00	-19.32	Peak
2	2402.00	2.81	86.64	89.45	94.00	-4.55	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	31.6232	-19.92	53.94	34.02	40.00	-5.98	QP
2	118.1964	-18.57	50.02	31.45	43.50	-12.05	QP
3	167.9760	-17.10	52.67	35.57	43.50	-7.93	QP
4	192.3246	-12.16	53.02	40.86	43.50	-2.64	QP
5	239.9399	-13.13	48.83	35.70	46.00	-10.30	QP
6	264.2886	-12.25	48.87	36.62	46.00	-9.38	QP
Remark	: Other frequen	ncy mini ma	rgin all >10 dB	of Limit			

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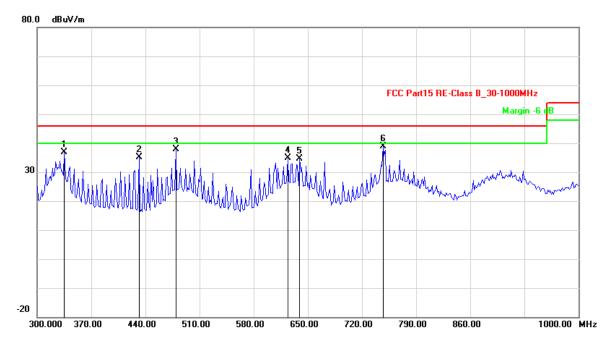
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	335.0701	-14.31	51.11	36.80	46.00	-9.20	QΡ
2	431.8637	-15.55	50.80	35.25	46.00	-10.75	QP
3	479.5591	-9.77	47.55	37.78	46.00	-8.22	QP
4	624.0481	-7.18	41.98	34.80	46.00	-11.20	QP
5	639.4790	-7.60	42.16	34.56	46.00	-11.44	QP
6	747.4950	-6.54	45.36	38.82	46.00	-7.18	QP
Remark:	Other frequen	cy mini ma	rgin all >10 dB	of Limit			

#### Above 1GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1000.0000	-5.75	54.08	48.33	79.00	-30.67	peak
2	1000.0000	-5.75	41.43	35.68	59.00	-23.32	AVG
3	1595.190	-1.34	51.08	49.74	79.00	-29.26	peak
4	1595.190	-1.34	37.82	36.48	59.00	-22.52	AVG
5	3116.232	6.97	43.33	50.30	79.00	-28.70	peak
6	3116.232	6.97	31.32	38.29	59.00	-20.71	AVG
7	4328.657	10.58	39.15	49.73	79.00	-29.27	peak
8	4328.657	10.58	27.11	37.69	59.00	-21.31	AVG
9	5915.832	15.11	40.78	55.89	79.00	-23.11	peak
10	5915.832	15.11	28.17	43.28	59.00	-15.72	AVG
11	8164.329	19.65	39.57	59.22	79.00	-19.78	peak
12	8164.329	19.65	27.66	47.31	59.00	-11.69	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit			·

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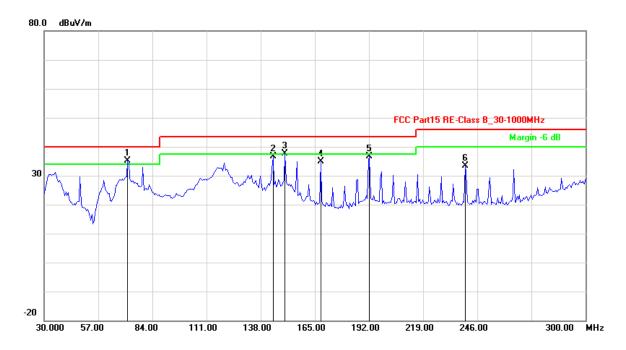






Channel: TX –X Position Mode Low 2402MHz Result: □ - passed
Test point: Vertical □ - not passed
Frequency range: 30MHzHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2402.00	2.81	93.22	96.03	114.00	-17.97	Peak
2	2402.00	2.81	88.16	90.97	94.00	-3.03	AVG



No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	71.6633	-22.57	57.72	35.15	40.00	-4.85	QP
2	144.1683	-16.78	53.49	36.71	43.50	-6.79	QP
3	150.1202	-17.36	55.11	37.75	43.50	-5.75	QP
4	167.9760	-17.10	52.02	34.92	43.50	-8.58	QP
5	192.3246	-12.16	48.68	36.52	43.50	-6.98	QP
6	239.9399	-13.13	46.41	33.28	46.00	-12.72	QP
Remark:	Other frequen	cy mini ma	rgin all >10 dB	of Limit			

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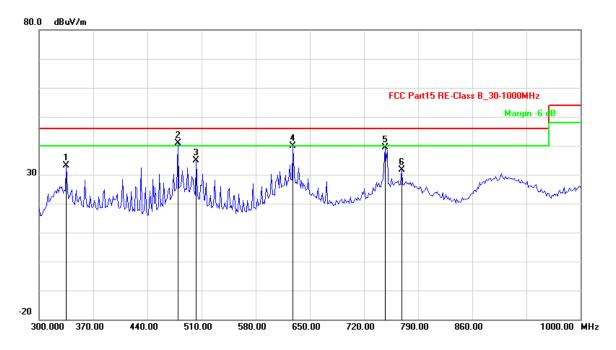
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	335.0701	-14.31	47.35	33.04	46.00	-12.96	QP		
2	479.5591	-9.77	50.60	40.83	46.00	-5.17	QP		
3	503.4068	-10.68	45.54	34.86	46.00	-11.14	QP		
4	628.2565	-7.29	47.11	39.82	46.00	-6.18	QP		
5	747.4950	-6.54	45.83	39.29	46.00	-6.71	QP		
6	768.5371	-5.69	37.20	31.51	46.00	-14.49	QP		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

#### Above 1GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1000.0000	-5.75	56.81	51.06	79.00	-27.94	peak
2	1000.0000	-5.75	44.43	38.68	59.00	-20.32	AVG
3	1264.529	-3.44	50.16	46.72	79.00	-32.28	peak
4	1264.529	-3.44	38.02	34.58	59.00	-24.42	AVG
5	1573.146	-1.35	49.81	48.46	79.00	-30.54	peak
6	1573.146	-1.35	38.41	37.06	59.00	-21.94	AVG
7	3050.100	6.76	42.48	49.24	79.00	-29.76	peak
8	3050.100	6.76	30.13	36.89	59.00	-22.11	AVG
9	5496.994	13.76	40.34	54.10	79.00	-24.90	peak
10	5496.994	13.76	29.53	43.29	59.00	-15.71	AVG
11	8120.240	19.53	38.89	58.42	79.00	-20.58	peak
12	8120.240	19.53	27.05	46.58	59.00	-12.42	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit			

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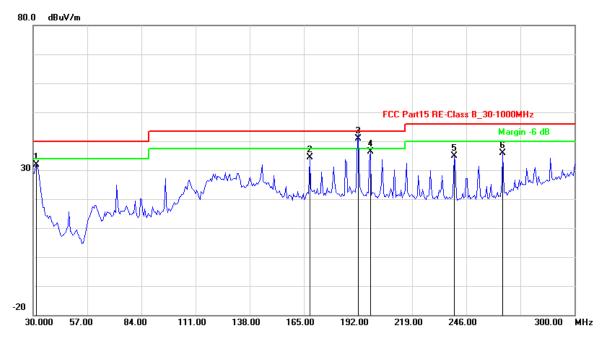




Channel:	TX –X Position Mode Middle 2442MHz	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	30MHz-26.5GHz		

EUT	USB BLUETOOTH WIRELESS SPEAKER
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	20 December 2013~08 January 2014
Operator	Duke
MODEL NO	BS-200

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2442.00	3.18	91.24	94.42	114.00	-19.58	Peak
2	2442.00	3.18	86.18	89.36	94.00	-4.64	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	31.6232	-19.92	51.91	31.99	40.00	-8.01	QP		
2	167.9759	-17.10	51.55	34.45	43.50	-9.05	QP		
3	192.3246	-12.16	53.03	40.87	43.50	-2.63	QP		
4	198.2765	-12.55	48.84	36.29	43.50	-7.21	QP		
5	239.9398	-13.13	47.98	34.85	46.00	-11.15	QP		
6	264.2885	-12.25	48.25	36.00	46.00	-10.00	QP		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

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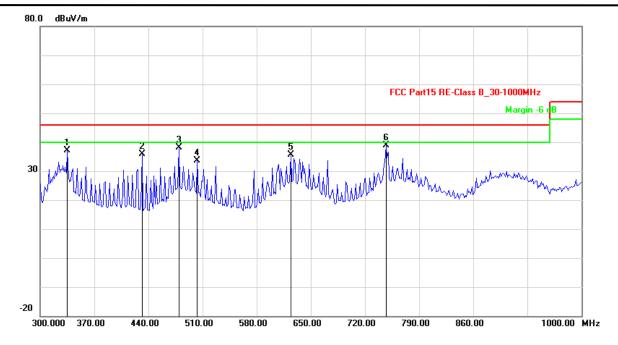
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	335.0701	-14.31	51.38	37.07	46.00	-8.93	QP		
2	431.8637	-15.55	51.50	35.95	46.00	-10.05	QP		
3	479.5591	-9.77	48.01	38.24	46.00	-7.76	QP		
4	503.4068	-10.68	44.20	33.52	46.00	-12.48	QP		
5	624.0481	-7.18	42.84	35.66	46.00	-10.34	QP		
6	747.4950	-6.54	45.30	38.76	46.00	-7.24	QP		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

#### Above 1GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1000.0000	-5.75	57.37	51.62	79.00	-27.38	peak
2	1000.0000	-5.75	44.42	38.67	59.00	-20.33	AVG
3	1749.499	-1.27	57.88	56.61	79.00	-22.39	peak
4	1749.499	-1.27	45.65	44.38	59.00	-14.62	AVG
5	2983.968	6.51	44.02	50.53	79.00	-28.47	peak
6	2983.968	6.51	32.28	38.79	59.00	-20.21	AVG
7	3667.335	8.74	41.07	49.81	79.00	-29.19	peak
8	3667.335	8.74	29.29	38.03	59.00	-20.97	AVG
9	5232.465	12.91	38.72	51.63	79.00	-27.37	peak
10	5232.465	12.91	25.55	38.46	59.00	-20.54	AVG
11	8142.285	19.59	38.94	58.53	79.00	-20.47	peak
12	8142.285	19.59	26.79	46.38	59.00	-12.62	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit			

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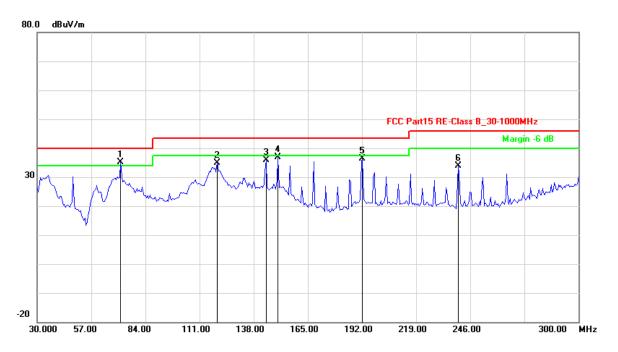






Channel: TX –X Position Mode Middle 2442MHz Result: ■ - passed
Test point: Vertical □ - not passed
Frequency range: 30MHzHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2442.00	3.18	92.99	96.17	114.00	-17.83	Peak
2	2442.00	3.18	87.56	90.74	94.00	-3.26	AVG



No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.		
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)			
1	71.6633	-22.57	57.61	35.04	40.00	-4.96	QP		
2	119.8196	-18.17	53.06	34.89	43.50	-8.61	QP		
3	144.1683	-16.78	52.78	36.00	43.50	-7.50	QP		
4	150.1202	-17.36	54.23	36.87	43.50	-6.63	QP		
5	192.3246	-12.16	48.58	36.42	43.50	-7.08	QP		
6	239.9399	-13.13	47.08	33.95	46.00	-12.05	QP		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

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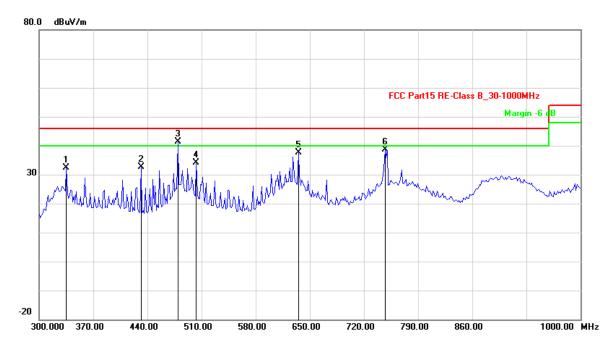
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	335.0701	-14.31	46.72	32.41	46.00	-13.59	QP		
2	431.8637	-15.55	48.28	32.73	46.00	-13.27	QP		
3	479.5591	-9.77	51.11	41.34	46.00	-4.66	QP		
4	503.4068	-10.68	44.75	34.07	46.00	-11.93	QP		
5	635.2705	-7.48	45.04	37.56	46.00	-8.44	QP		
6	747.4950	-6.54	45.14	38.60	46.00	-7.40	QP		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

#### Above 1GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1000.0000	-5.75	57.84	52.09	79.00	-26.91	peak
2	1000.0000	-5.75	45.78	40.03	59.00	-18.97	AVG
3	1595.190	-1.34	52.47	51.13	79.00	-27.87	peak
4	1595.190	-1.34	41.04	39.70	59.00	-19.30	AVG
5	2829.659	5.64	43.74	49.38	79.00	-29.62	peak
6	2829.659	5.64	31.83	37.47	59.00	-21.53	AVG
7	4020.040	9.86	39.96	49.82	79.00	-29.18	peak
8	4020.040	9.86	27.76	37.62	59.00	-21.38	AVG
9	5254.509	12.98	38.52	51.50	79.00	-27.50	peak
10	5254.509	12.98	25.71	38.69	59.00	-20.31	AVG
11	8120.240	19.53	38.93	58.46	79.00	-20.54	peak
12	8120.240	19.53	26.84	46.37	59.00	-12.63	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit	•		

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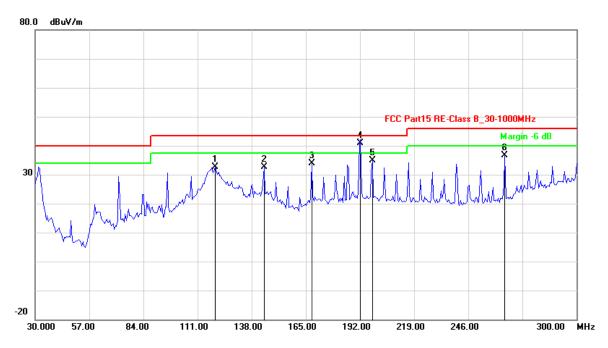




Channel:	TX –X Position Mode High 2480MHz	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	30MHz-26.5GHz		

EUT	USB BLUETOOTH WIRELESS SPEAKER
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	20 December 2013~08 January 2014
Operator	Duke
MODEL NO	BS-200

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2480.00	3.57	90.81	94.38	114.00	-19.62	Peak
2	2480.00	3.57	85.70	89.27	94.00	-4.73	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	119.8196	-18.17	50.76	32.59	43.50	-10.91	QP		
2	144.1683	-16.78	49.40	32.62	43.50	-10.88	QP		
3	167.9760	-17.10	51.09	33.99	43.50	-9.51	QP		
4	192.3246	-12.16	52.96	40.80	43.50	-2.70	QP		
5	198.2766	-12.55	47.37	34.82	43.50	-8.68	QP		
6	264.2886	-12.25	48.93	36.68	46.00	-9.32	QP		
Remark	: Other frequen	Remark: Other frequency mini margin all >10 dB of Limit							

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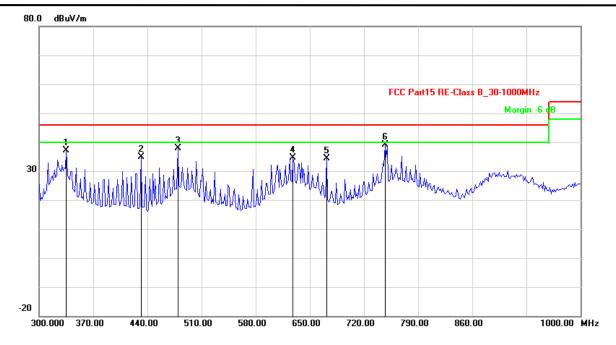
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	335.0701	-14.31	51.46	37.15	46.00	-8.85	QP	
2	431.8637	-15.55	50.47	34.92	46.00	-11.08	QP	
3	479.5591	-9.77	47.63	37.86	46.00	-8.14	QP	
4	628.2565	-7.29	42.02	34.73	46.00	-11.27	QP	
5	671.7435	-12.40	46.77	34.37	46.00	-11.63	QP	
6	747.4950	-6.54	45.55	39.01	46.00	-6.99	QP	
Remark	Remark: Other frequency mini margin all >10 dB of Limit							

#### Above 1GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1000.0000	-5.75	54.78	49.03	79.00	-29.97	peak
2	1000.0000	-5.75	43.01	37.26	59.00	-21.74	AVG
3	1595.190	-1.34	50.74	49.40	79.00	-29.60	peak
4	1595.190	-1.34	38.98	37.64	59.00	-21.36	AVG
5	3138.277	7.04	42.39	49.43	79.00	-29.57	peak
6	3138.277	7.04	30.10	37.14	59.00	-21.86	AVG
7	3909.820	9.52	40.46	49.98	79.00	-29.02	peak
8	3909.820	9.52	26.77	36.29	59.00	-22.71	AVG
9	4857.715	11.83	38.36	50.19	79.00	-28.81	peak
10	4857.715	11.83	26.43	38.26	59.00	-20.74	AVG
11	8737.475	21.27	39.31	60.58	79.00	-18.42	peak
12	8737.475	21.27	27.99	49.26	59.00	-9.74	AVG
Remark:	Other frequen	cy mini ma	rgin all >10 dB	of Limit			·

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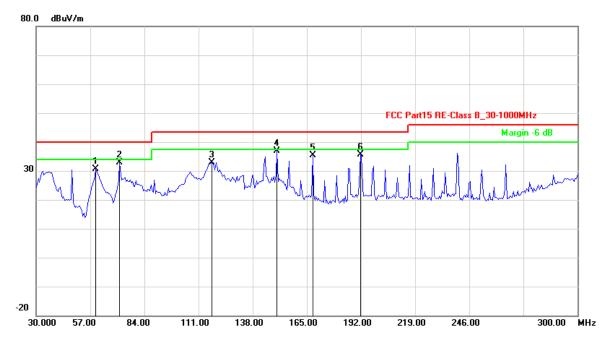


Channel: TX –X Position Mode High 2480MHz Result: □ - passed

Test point: Vertical □ - not passed

Frequency range: 30MHzHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2480.00	3.57	93.35	96.92	114.00	-17.08	Peak
2	2480.00	3.57	87.44	91.01	94.00	-2.99	AVG



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	59.7595	-24.62	55.29	30.67	40.00	-9.33	QP		
2	71.6633	-22.57	55.42	32.85	40.00	-7.15	QP		
3	117.6553	-18.70	51.66	32.96	43.50	-10.54	QP		
4	150.1202	-17.36	54.23	36.87	43.50	-6.63	QΡ		
5	167.9759	-17.10	52.36	35.26	43.50	-8.24	QP		
6	191.7835	-12.13	47.73	35.60	43.50	-7.90	QP		
Remark	Remark: Other frequency mini margin all >10 dB of Limit								

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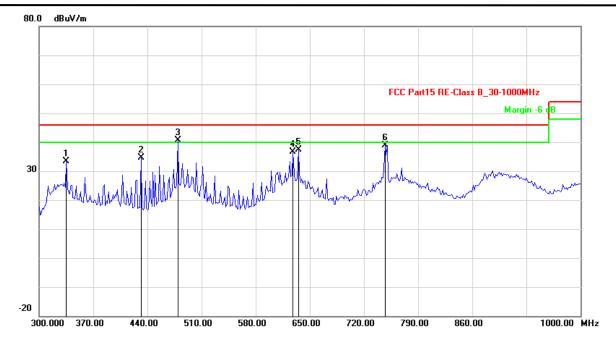
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	335.0701	-14.31	47.63	33.32	46.00	-12.68	QP	
2	431.8637	-15.55	50.11	34.56	46.00	-11.44	QP	
3	479.5591	-9.77	50.30	40.53	46.00	-5.47	QP	
4	628.2565	-7.29	44.03	36.74	46.00	-9.26	QP	
5	635.2705	-7.48	44.83	37.35	46.00	-8.65	QP	
6	747.4950	-6.54	45.50	38.96	46.00	-7.04	QP	
Remark	Remark: Other frequency mini margin all >10 dB of Limit							

#### Above 1GHz

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1000.0000	-5.75	58.10	52.35	79.00	-26.65	peak
2	1000.0000	-5.75	44.73	38.98	59.00	-20.02	AVG
3	1595.190	-1.34	50.61	49.27	79.00	-29.73	peak
4	1595.190	-1.34	38.73	37.39	59.00	-21.61	AVG
5	3314.629	7.61	41.81	49.42	79.00	-29.58	peak
6	3314.629	7.61	28.87	36.48	59.00	-22.52	AVG
7	3953.908	9.66	40.18	49.84	79.00	-29.16	peak
8	3953.908	9.66	28.02	37.68	59.00	-21.32	AVG
9	5739.479	14.54	39.61	54.15	79.00	-24.85	peak
10	5739.479	14.54	27.59	42.13	59.00	-16.87	AVG
11	8208.417	19.78	39.44	59.22	79.00	-19.78	peak
12	8208.417	19.78	28.33	48.11	59.00	-10.89	AVG
Remark:	Other frequen	cy mini ma	rgin all >10 dB	of Limit			

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# 9. Band Edge Compliance test

#### 9.1. Test Equipment

Band Edge Compliance test								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.			
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	10868	2013/11			
2	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2013/03			
3	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03			

#### 9.2. Test Information

EUT	USB BLUETOOTH WIRELESS SPEAKER
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	20 December 2013~08 January 2014
Operator	Duke
MODEL NO	BS-200

#### 9.3. Test procedure

- 1. The EUT operates at hopping-off test mode. The lowest or highest channels are tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
- 2. Max hold the trace of the setp 1,and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.
- 3. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz / VBW=3kHz(1/duty cycle) / Sweep=AUTO

#### 9.4. Test Results

#### PASSED.

The EUT operates at hopping-off test mode. The lowest and highest channels are tested to verify the band edge emissions.

Test Mode	Channel	Test Result Highest Emission (dBuv/m)				
	Marked Frequency	Horizo	ontal	Vertical		
		Peak	Average	Peak	Average	
Low Channel	2390MHz	41.18	28.98	42.81	29.76	
	2400MHz	67.25	62.25	68.87	63.44	
High Channel	2483.5MHz	50.20	47.39	53.36	49.52	
	2500MHz	37.32	27.79	40.06	28.57	

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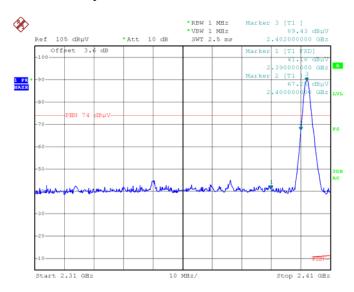






#### Band Edges(CH Low) Detector mode:Peak

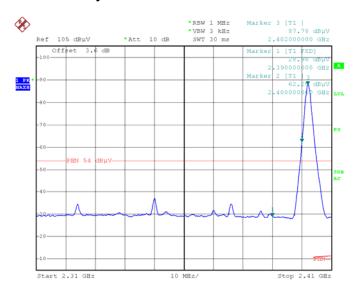
#### Polarity:Horizontal



Date: 8.JAN.2014 10:39:16

# Band Edges(CH Low) Detector mode: Average

#### **Polarity: Horizontal**



Date: 8.JAN.2014 10:28:09

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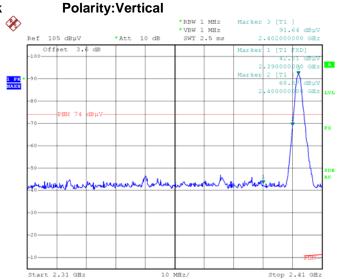
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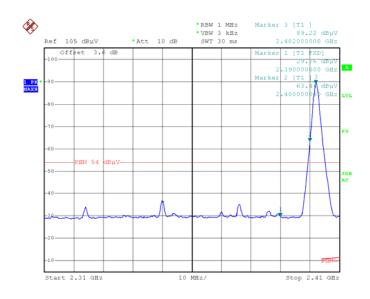




Date: 8.JAN.2014 10:39:59

# Band Edges(CH Low) Detector mode:Average

#### Polarity: Vertical



Date: 8.JAN.2014 10:28:46

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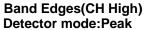
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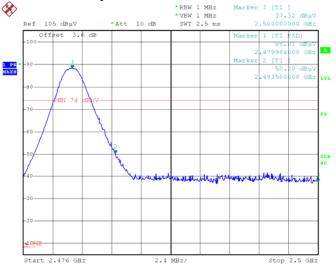








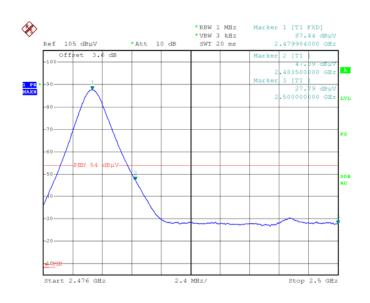
#### Polarity:Horizontal



Date: 8.JAN.2014 09:54:42

# Band Edges(CH High) Detector mode: Average

#### **Polarity:Horizontal**



Date: 8.JAN.2014 10:13:14

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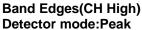
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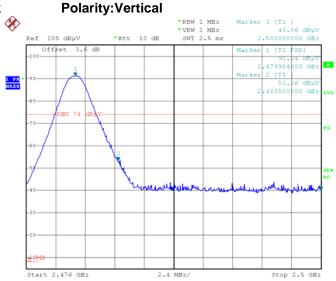
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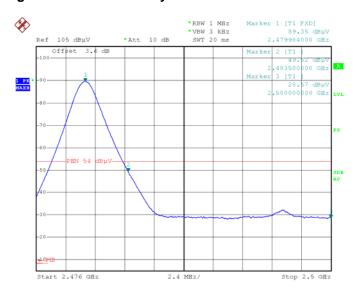




Date: 8.JAN.2014 09:53:45

#### Band Edges(CH High) Detector mode:Average

#### Polarity: Vertical



Date: 8.JAN.2014 10:12:51

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# 10. Deviation to test specifications

The following identical model(s):

SP5686-ASST-PL

Belong to the tested device:

Product description: USB BLUETOOTH WIRELESS SPEAKER

Model name: BS-200

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