

FCC AND ISED CERTIFICATION TEST REPORT

FOR

Applicant	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
Equipment under Test	:	Portable Bluetooth Speaker
Model No.	:	XTREME 3G
Trade Mark	:	JBL
FCC ID	:	APIJBLXTREME3G
IC	:	6132A-JBLXTREME3G
Manufacturer	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, SongshanLakeSci&Tech, IndustryPark, Dongguan
City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, **E-mail:** ddt@dgddt.com, <http://www.dgddt.com>

REPORT

Table of Contents

	Test report declares.....	4
1.	Summary of Test Results.....	5
2.	General Test Information	6
2.1.	Description of EUT	6
2.2.	Accessories of EUT.....	7
2.3.	Assistant equipment used for test.....	7
2.4.	Block diagram of EUT configuration for test	7
2.5.	Test environmentconditions	8
2.6.	Deviations of test standard.....	8
2.7.	Test laboratory	8
2.8.	Measurement uncertainty.....	8
3.	Equipment Used During Test.....	9
4.	20dB Bandwidth and 99% Bandwidth.....	11
4.1.	Block diagram of test setup.....	11
4.2.	Limits	11
4.3.	Test procedure	11
4.4.	Test result.....	11
4.5.	Original test data	12
5.	Radiated Emission	15
5.1.	Block diagram of test setup.....	15
5.2.	Limit.....	16
5.3.	Test procedure	17
5.4.	Test result.....	18
6.	Band Edge Compliance	23
6.1.	Block diagram of test setup.....	23
6.2.	Limit.....	23
6.3.	Test Procedure	23
6.4.	Test result.....	23
7.	Power Line Conducted Emission	36
7.1.	Block diagram of test setup.....	36
7.2.	Power line conducted emission limits	36
7.3.	Test procedure	36
7.4.	Test Result	37
8.	Antenna Requirements	40
8.1.	Limit.....	40
8.2.	Result	40

Test Report Declare

Applicant	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
Equipment under Test	:	Portable Bluetooth Speaker
Model No.	:	XTREME 3G
Trade mark	:	JBL
Manufacturer	:	Harman International Industries, Inc.
Address	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C, RSS-210 Issue 10 December 2019.

Test procedure used:

ANSI C63.10:2013, RSS-Gen Issue 5, Apr. 2018.

We Declare:

The equipment described above is tested by Dongguan Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Dongguan Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC&ISED standards.

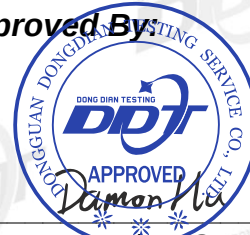
Report No:	DDT-R20052205-1E6		
Date of Receipt:	May15, 2020	Date of Test:	May 15, 2020 ~ Aug. 18, 2020

Prepared By:

Sam Li

Sam Li/Engineer

Approved By:



Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Aug. 18, 2020	

1. Summary of Test Results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	Standard	Results
20dB Bandwidth and 99% Bandwidth	FCC Part 15: 15.215 ANSI C63.10:2013 RSS-210 Issue 10 RSS-Gen Issue 5	Pass
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.249 ANSI C63.10:2013 RSS-210 Issue 10 RSS-Gen Issue 5	Pass
Band Edge Compliance	FCC Part 15: 15.205 FCC Part 15: 15.249 ANSI C63.10:2013 RSS-210 Issue 10 RSS-Gen Issue 5	Pass
Power Line Conducted Emission	FCC Part 15: 15.207 ANSI C63.10:2013 RSS-Gen Issue 5	Pass
Antenna requirement	FCC Part 15: 15.203 RSS-Gen Issue 5	Pass

2. General Test Information

2.1. Description of EUT

EUT* Name	: Portable Bluetooth Speaker
Model Number	: XTREME 3G
EUT function description	: Please reference user manual of this device
Power supply	: DC 5V/9V/12V/15V/20V 3.0A from external AC Adapter DC 7.26 V Polymer Li-ion built-in battery
Operation frequency	: 2407MHz-2475MHz
Modulation	: GFSK, $\pi/4$ -DQPSK, 8DPSK
Antenna Type	: Dedicated FPC antenna, maximum PK gain:3.39dBi
Serialnumber	: GT0012-FK0000244 for conducted test GT0012-FK0000242 for radiation test

Note: EUT is the abbreviation of equipment under test.

EUT channels and frequencies list:

Channel information					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
5	2407	28	2430	51	2453
6	2408	29	2431	52	2454
7	2409	30	2432	53	2455
8	2410	31	2433	54	2456
9	2411	32	2434	55	2457
10	2412	33	2435	56	2458
11	2413	34	2436	57	2459
12	2414	35	2437	58	2460
13	2415	36	2438	59	2461
14	2416	37	2439	60	2462
15	2417	38	2440	61	2463
16	2418	39	2441	62	2464
17	2419	40	2442	63	2465
18	2420	41	2443	64	2466
19	2421	42	2444	65	2467
20	2422	43	2445	66	2468
21	2423	44	2446	67	2469
22	2424	45	2447	68	2470
23	2425	46	2448	69	2471
24	2426	47	2449	70	2472
25	2427	48	2450	71	2473
26	2428	49	2451	72	2474
27	2429	50	2452	73	2475

2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
AC Adapter	Group Intellect Power Technology Limited	GHWM-PD6 0W-WC	Input: 100-240V ~ 50/60 Hz 1.5A Output: 5.0V---3.0A, 9.0V---3.0A, 12.0V---3.0A, 15.0V---3.0A, 20.0V---3.0A	N/A

Battery information

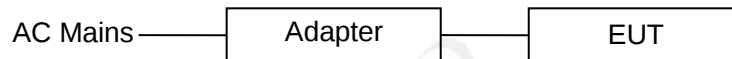
Description of Accessories	Manufacturer	Model number	Description	Remark
Rechargeable Li-ion Battery	Guangzhou Great Power Energy & Technology Co., Ltd.	GSP-2S2P-Xt3	Rated Capacity: 7.26V 5000mAh 36.3Wh;	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
Notebook	DELL	Latitude D610	FCC DOC	00045-534-136-300
Adapter	SAMSUNG	EP-TA200	N/A	Input: 100-240~, 50/60Hz, 0.5A; Output: 9V/1.67A or 5V/2A

2.4. Block diagram of EUT configuration for test

Tx Mode:



Test software: FCCTool.exe

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.

Tested mode, channel, information		
Mode	Channel	Frequency (MHz)
GFSK Tx mode	CH5	2407
	CH39	2441
	CH73	2475
$\pi/4$ -DQPSK Tx mode	CH5	2407
	CH39	2441
	CH73	2475
8DPSK Tx mode	CH5	2407
	CH39	2441
	CH73	2475

2.5. Test environment conditions

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

Temperature range:	21-25°C
Humidity range:	40-75%
Pressure range:	86-106kPa

2.6. Deviations of test standard

No deviation.

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com

CNAS Registration No. CNAS L6451; A2LA Certificate Number: 3870.01;

FCC Designation Number: CN1182; FCC Test Firm Registration Number: 540522

Industry Canada Site Registration Number: 10288A-1

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86dB (10MHz ≤ f < 3.6GHz); 1.38dB (3.6GHz ≤ f < 8GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74dB
Power Spectral Density	0.74dB (10MHz ≤ f < 3.6GHz); 1.38dB (3.6GHz ≤ f < 8GHz)
Conducted spurious emissions	0.86dB (10MHz ≤ f < 3.6GHz); 1.40dB (3.6GHz ≤ f < 8GHz) 1.66dB (8GHz ≤ f < 22GHz)
Uncertainty for radio frequency (RBW<20kHz)	3×10 ⁻⁸
Temperature	0.4°C
Humidity	2%
Uncertainty for Radiation Emission test (30MHz-1GHz)	4.70dB (Antenna Polarize: V) 4.84dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1GHz-18GHz)	4.10dB(1-6GHz) 4.40dB (6GHz-18GHz)
Uncertainty for Power line conduction emission test	3.32dB (150kHz-30MHz)

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

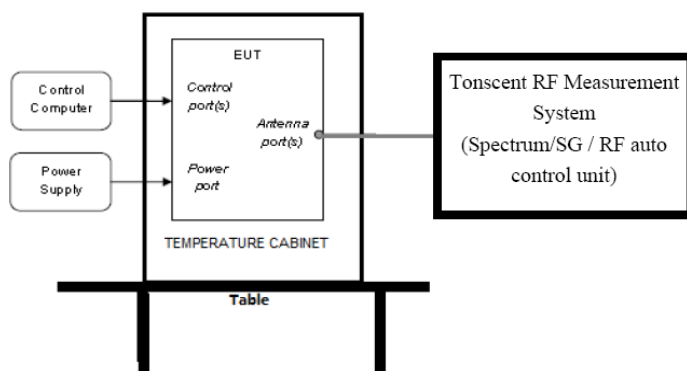
3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
RF Connected Test (Tonscend RF Measurement System)					
Spectrum analyzer	R&S	FSU26	200071	Sep. 29, 2019	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jul. 01, 2020	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Sep. 29, 2019	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180737	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150010	Jul. 01, 2020	1 Year
Power Sensor	Agilent	U2021XA	MY55150011	Jul. 01, 2020	1 Year
DC Power Source	MATRIS	MPS-3005L-3	D813058W	Jul. 01, 2020	1 Year
RF Cable	Micable	C10-01-01-1	100309	Sep. 29, 2019	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	Oct. 21, 2019	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.7	N/A	N/A
Radiation 1#chamber					
EMI Test Receiver	R&S	ESU8	100316	Sep. 29, 2019	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	Nov. 15, 2019	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 29, 2019	1 Year
Double Ridged Horn Antenna	R&S	HF907	100276	Nov. 15, 2019	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	Sep. 29, 2019	1 Year
Pre-amplifier	A.H.	PAM-0118	360	Sep. 29, 2019	1 Year
Pre-amplifier	TERA-MW	TRLA-0040 G35	101303	Sep. 29, 2019	1 Year
RF Cable	HUBSER	CP-X2+ CP-X1	W11.03+ W12.02	Sep. 29, 2019	1 Year
RF Cable	N/A	5m+6m+1m	06270619	Sep. 29, 2019	1 Year
MI Cable	HUBSER	C10-01-01-1 M	1091629	Sep. 29, 2019	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
Radiation 2#chamber					
EMI Test Receiver	R&S	ESCI	101364	Sep. 29, 2019	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	Jul. 01, 2020	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	9163-994	Nov. 15, 2019	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 29, 2019	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120	02108	Jul. 11, 2020	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	Sep. 29, 2019	1 Year

Pre-amplifier	TERA-MW	TRLA-0040 G35	101303	Sep. 29, 2019	1 Year
RF Cable	N/A	14+1.5m	06270619	Sep. 29, 2019	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
Power Line Conducted Emissions Test					
EMI Test Receiver	R&S	ESU8	100316	Sep. 29, 2019	1 Year
LISN 1	R&S	ENV216	101109	Sep. 29, 2019	1 Year
LISN 2	R&S	ESH2-Z5	100309	Sep. 29, 2019	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Sep. 29, 2019	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Sep. 29, 2019	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A

4. 20dB Bandwidth and 99% Bandwidth

4.1. Block diagram of test setup



4.2. Limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

4.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Set the spectrum analyzer as follows:

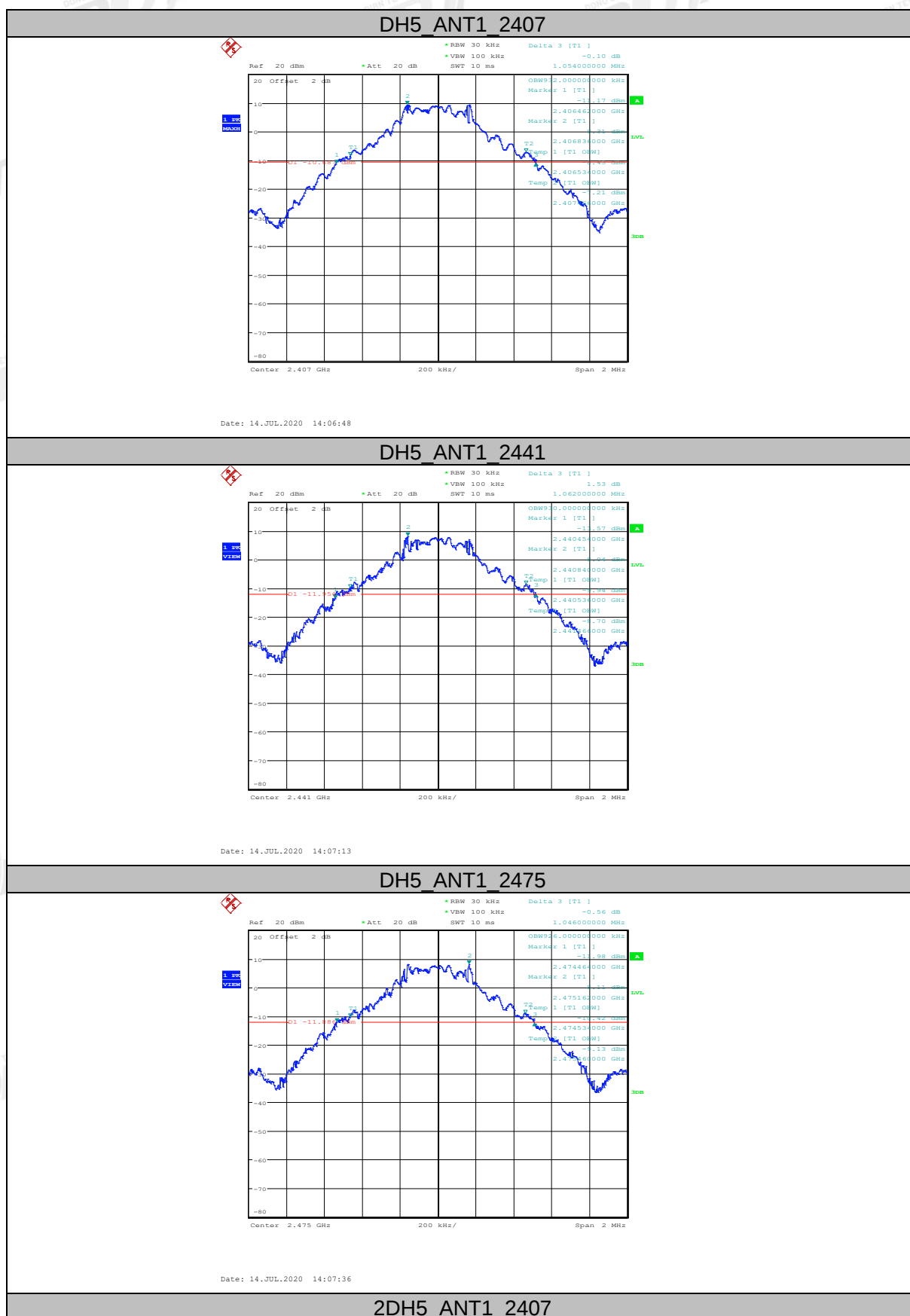
RBW:	30kHz
VBW:	100kHz
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

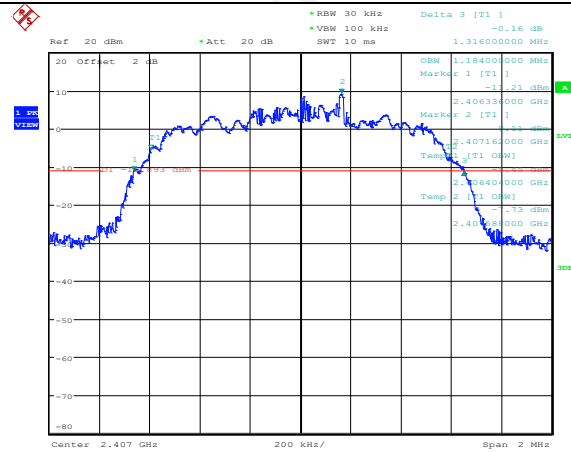
(3) Allow the trace to stabilize, measure the 20dB and 99% bandwidth of signal.

4.4. Test result

TestMode	Freq. (MHz)	99% bandwidth Result (MHz)	20dB bandwidth Result (MHz)	Verdict
GFSK	2407	0.934	1.054	Pass
	2441	0.930	1.062	Pass
	2475	0.926	1.046	Pass
$\pi/4$ -DQPSK	2407	1.184	1.316	Pass
	2441	1.178	1.320	Pass
	2475	1.190	1.324	Pass
8DPSK	2407	1.200	1.298	Pass
	2441	1.192	1.294	Pass
	2475	1.192	1.294	Pass

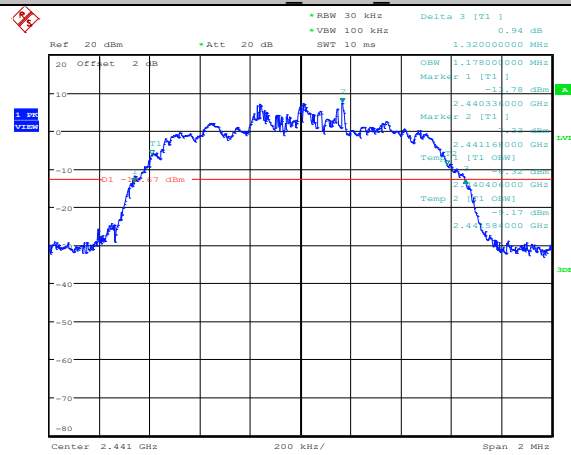
4.5. Original test data





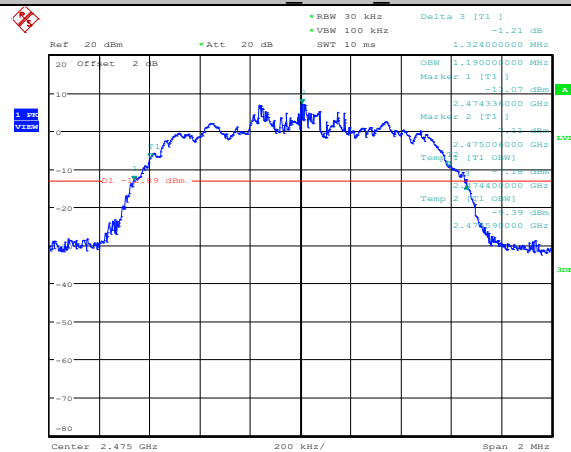
Date: 14.JUL.2020 14:08:00

2DH5 ANT1 2441



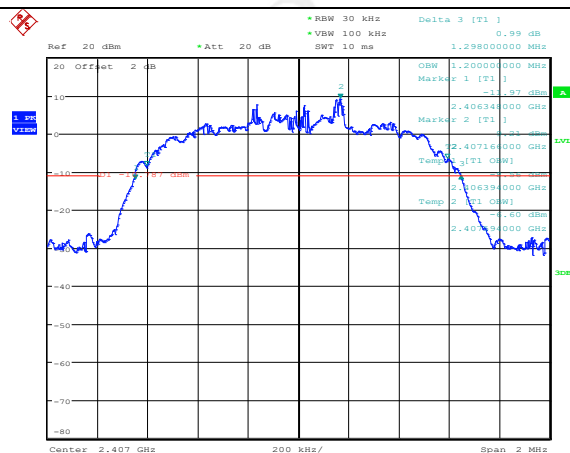
Date: 14.JUL.2020 14:08:25

2DH5 ANT1 2475



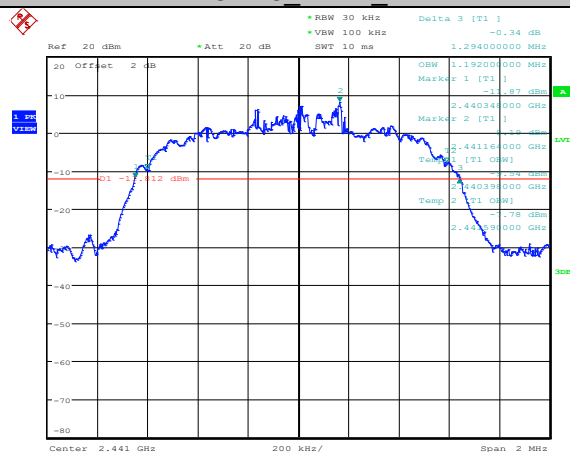
Date: 14.JUL.2020 14:08:50

3DH5 ANT1 2407



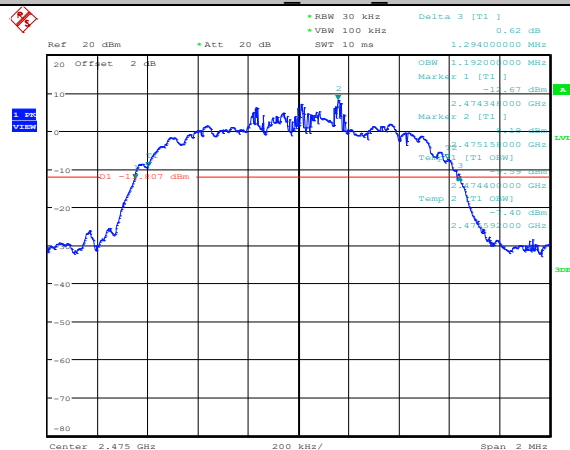
Date: 14.JUL.2020 14:09:08

3DH5 ANT1_2441



Date: 14.JUL.2020 14:09:27

3DH5 ANT1_2475

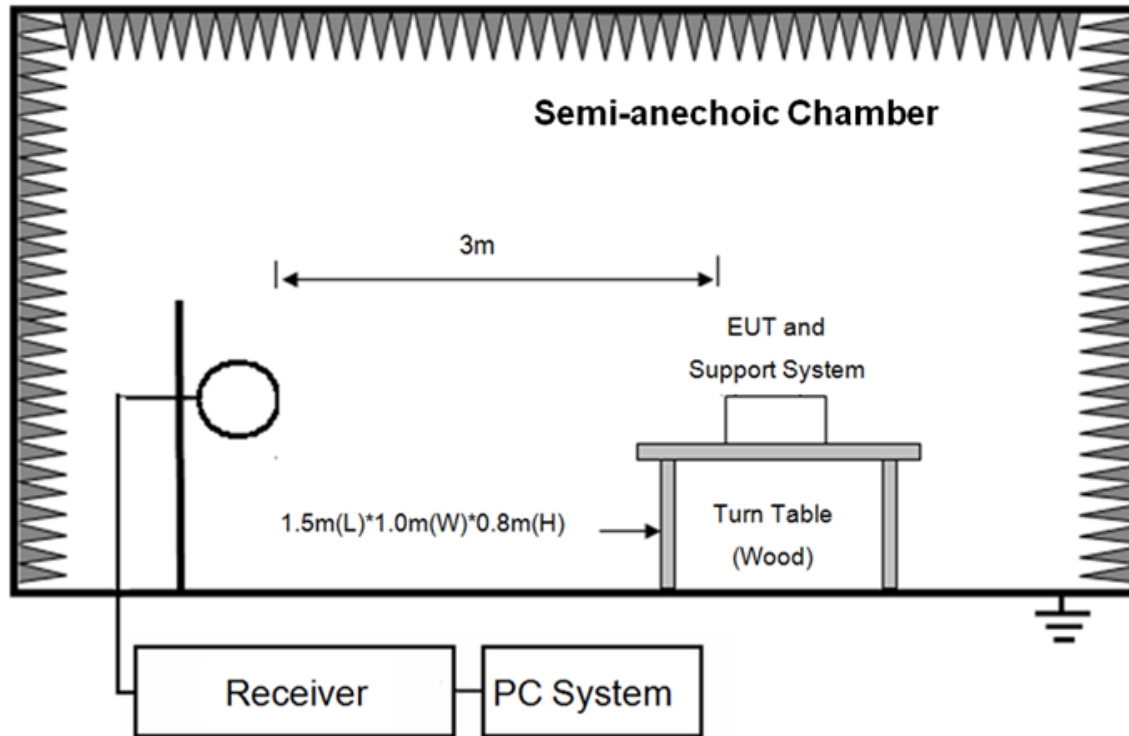


Date: 14.JUL.2020 14:09:46

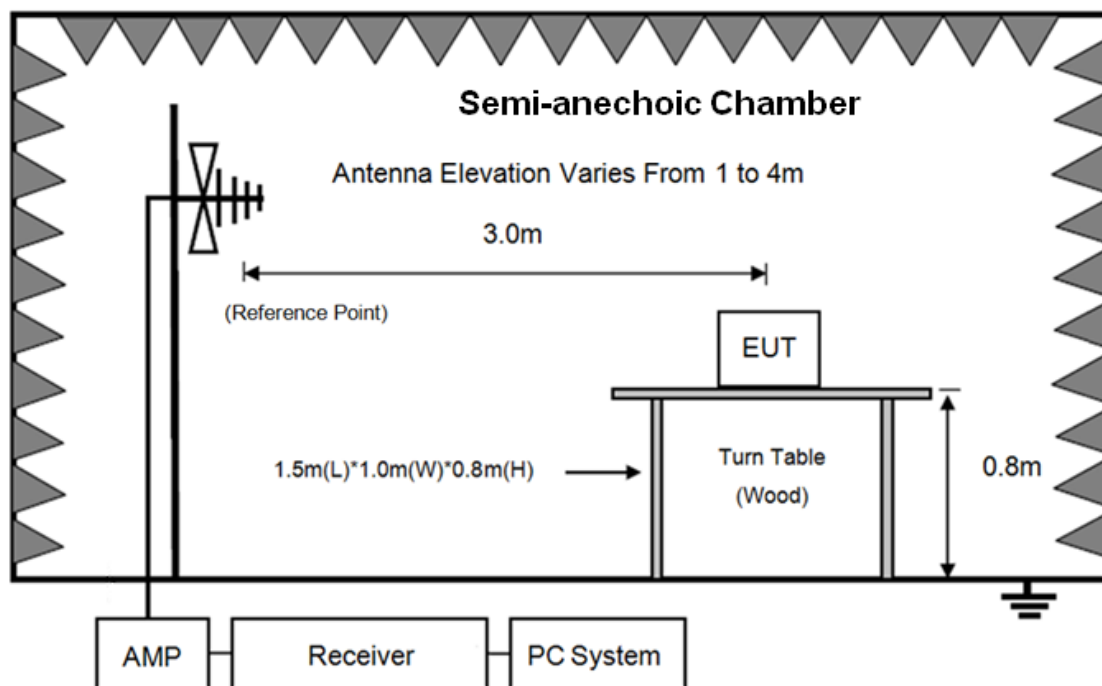
5. Radiated Emission

5.1. Block diagram of test setup

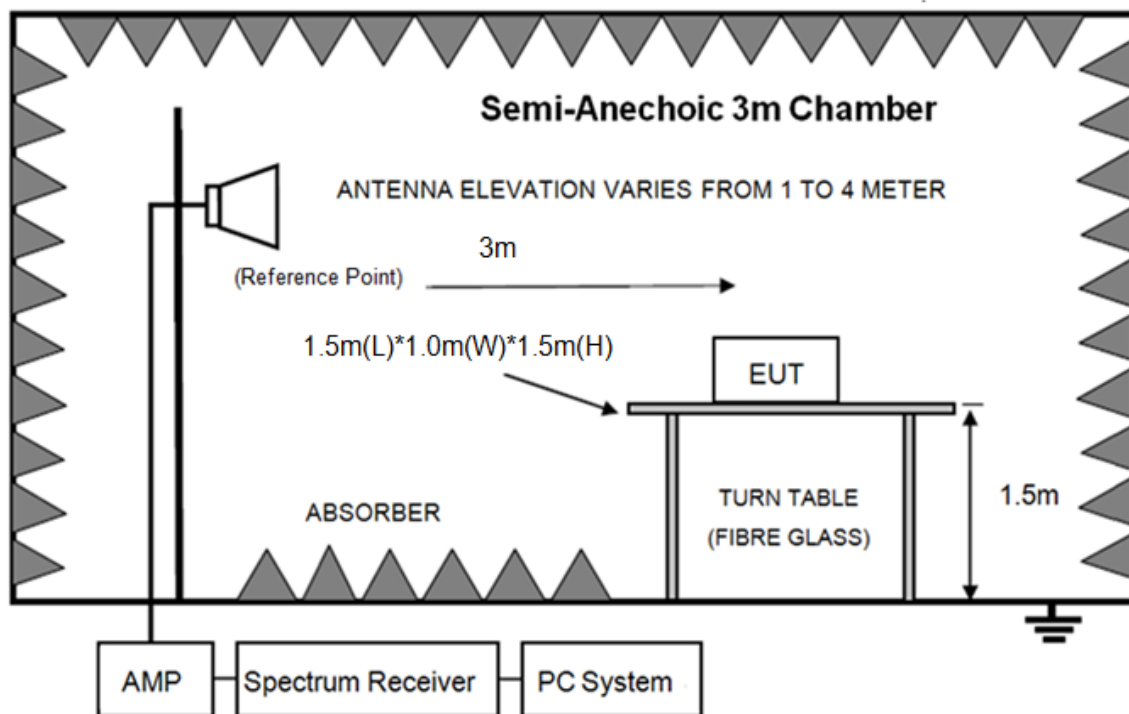
In 3m Anechoic Chamber Test Setup Diagram for 9kHz-30MHz



In 3m Anechoic Chamber Test Setup Diagram for 30MHz-1GHz



In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

5.2. Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000MHz	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	
Field Strength of Fundamental emission for 2.4GHz-2.4835GHz	3	94.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average) 114.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak)	
Field Strength of Harmonics	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

Remark:

- (1) Emission level $\text{dB}\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$
- (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.
- (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000MHz, radiated emission limits in these three bands are based on measurements employing an average detector.

5.3. Test procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.
- (2) Setup EUT and assistant system according clause 2.3 and 4.2
- (3) Test antenna was located 3 m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.
 - (a) Change work frequency or channel of device if practicable.
 - (b) Change modulation type of device if practicable.
 - (c) Change power supply range from 85% to 115% of the rated supply voltage
 - (d) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
- (4) Spectrum frequency from 9kHz to 25GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9kHz to 30MHz and 18GHz to 25GHz, so below final test was performed with frequency range from 30MHz to 18GHz.
- (5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10:2013 on Radiated Emission test.
- (6) For emissions from 30MHz to 1GHz, Quasi-Peak values were measured with EMI Receiver and the bandwidth of Receiver is 120 kHz.
- (7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; according ANSI C63.10:2013 clause 4.1.4.2.2 procedure for average measure.
- (8) For fundamental frequency test, set spectrum analyzer's RBW=3MHz, VBW=10MHz. Peak detector for PK, according ANSI C63.10:2013 clause 4.1.4.2.2 procedure for average measure.
- (9) X axis, Y axis, Z axis are tested, and worse setup X axis is reported.

5.4. Test result

PASS. (See below detailed test result)

All the emissions except fundamentalemission from 9kHz to 25GHz were comply with 15.209 limit.

Note1: According exploratory test no any obvious emission was detected from 9kHz to 30MHz and 18GHz to 25GHz, so the final test was performed with frequency range from 30MHz to 18GHz and recorded in below.

Note2: For emissions below 1GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1GHz, the final test was only performed with EUT working in GFSK, Tx 2407MHz mode.

Note3: For emissions above 1GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

Field Strength of the Fundamental Signal

Freq. (MHz)	Read level (dBμV)	Antenn a Factor (dB/m)	PRM Facto r(dB)	Cable Loss (dB)	ResultL evel(dB μV/m)	Limit (dBμV/ m)	Margin (dB)	Detector type	Polarization
GFSK Tx mode									
2407.00	107.10	27.51	43.21	4.05	95.45	114.00	-18.55	Peak	HORIZONTAL
2407.00	98.32	27.51	43.21	4.05	86.67	94.00	-7.33	Average	HORIZONTAL
2441.00	109.46	27.58	43.23	4.08	97.89	114.00	-16.11	Peak	HORIZONTAL
2441.00	100.02	27.58	43.23	4.08	88.45	94.00	-5.55	Average	HORIZONTAL
2475.00	112.27	27.65	43.25	4.12	100.79	114.00	-13.21	Peak	HORIZONTAL
2475.00	100.32	27.65	43.25	4.12	88.84	94.00	-5.16	Average	HORIZONTAL
2407.00	104.96	27.51	43.21	4.05	93.31	114.00	-20.69	Peak	VERTICAL
2441.00	107.45	27.58	43.23	4.08	95.88	114.00	-18.12	Peak	VERTICAL
2441.00	99.33	27.58	43.23	4.08	87.76	94.00	-6.24	Average	VERTICAL
2475.00	109.69	27.65	43.25	4.12	98.21	114.00	-15.79	Peak	VERTICAL
2475.00	98.79	27.65	43.25	4.12	87.31	94.00	-6.69	Average	VERTICAL
$\pi/4$ -DQPSK Tx mode									
2407.00	109.96	27.51	43.21	4.05	98.31	114.00	-15.69	Peak	HORIZONTAL
2407.00	96.66	27.51	43.21	4.05	85.01	94.00	-8.99	Average	HORIZONTAL
2441.00	111.58	27.58	43.23	4.08	100.01	114.00	-13.99	Peak	HORIZONTAL
2441.00	101.13	27.58	43.23	4.08	89.56	94.00	-4.44	Average	HORIZONTAL
2475.00	109.08	27.65	43.25	4.12	97.60	114.00	-16.40	Peak	HORIZONTAL
2475.00	98.78	27.65	43.25	4.12	87.30	94.00	-6.70	Average	HORIZONTAL
2407.00	105.86	27.51	43.21	4.05	94.21	114.00	-19.79	Peak	VERTICAL
2441.00	108.14	27.58	43.23	4.08	96.57	114.00	-17.43	Peak	VERTICAL
2441.00	99.79	27.58	43.23	4.08	88.22	94.00	-5.78	Average	VERTICAL
2475.00	112.72	27.65	43.25	4.12	101.24	114.00	-12.76	Peak	VERTICAL
2475.00	98.76	27.65	43.25	4.12	87.28	94.00	-6.72	Average	VERTICAL
8DPSK Tx mode									
2407.00	109.43	27.51	43.21	4.05	97.78	114.00	-16.22	Peak	HORIZONTAL
2441.00	113.16	27.58	43.23	4.08	101.59	114.00	-12.41	Peak	HORIZONTAL
2441.00	96.22	27.58	43.23	4.08	84.65	94.00	-9.35	Average	HORIZONTAL
2475.00	115.81	27.65	43.25	4.12	104.33	114.00	-9.67	Peak	HORIZONTAL
2475.00	103.42	27.65	43.25	4.12	91.94	94.00	-2.06	Average	HORIZONTAL
2407.00	109.53	27.51	43.21	4.05	97.88	114.00	-16.12	Peak	VERTICAL
2407.00	91.64	27.51	43.21	4.05	79.99	94.00	-14.01	Average	VERTICAL
2441.00	107.96	27.58	43.23	4.08	96.39	114.00	-17.61	Peak	VERTICAL
2441.00	91.62	27.58	43.23	4.08	80.05	94.00	-13.95	Average	VERTICAL
2475.00	115.75	27.65	43.25	4.12	104.27	114.00	-9.73	Peak	VERTICAL
2475.00	103.21	27.65	43.25	4.12	91.73	94.00	-2.27	Average	VERTICAL
Result: Pass									

Note: 1. Scan with GFSK, $\pi/4$ -DQPSK, 8DPSK, the worst case is GFSK Mode

2. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

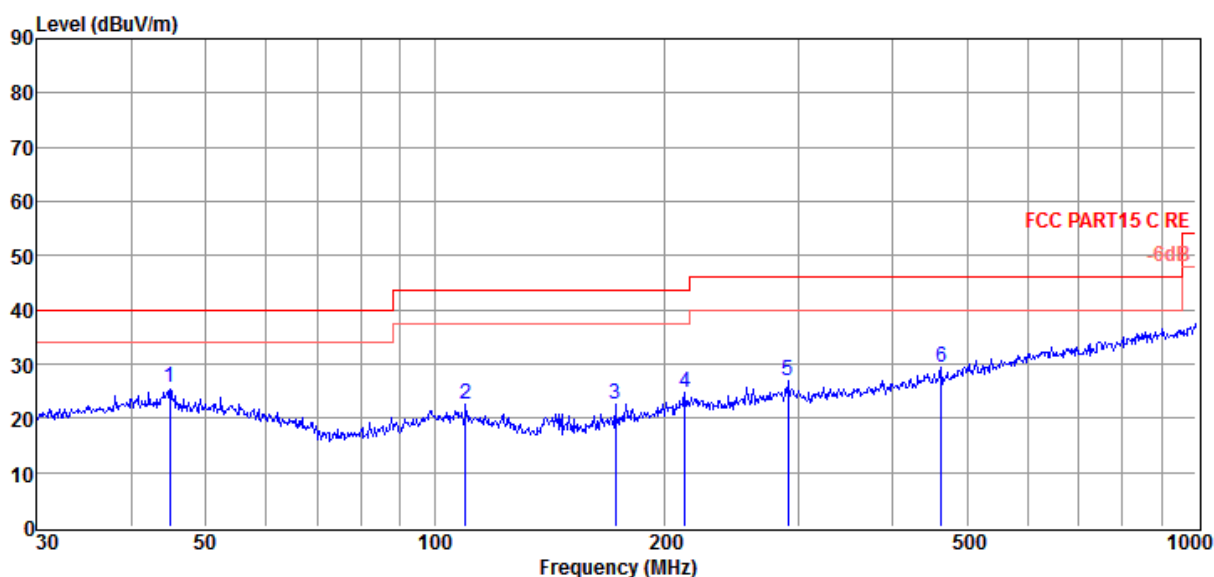
3: For emissions above 1GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

Radiated Emission test (below 1GHz)

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#
Test Date : 2020-07-07
EUT : Portable Bluetooth Speaker
Power Supply : Battery
Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa
Memo :
E:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC BELOW1G.EM6
Tested By : Ella
Model Number : XTREME 3G
Test Mode : Tx mode
Antenna/Distance : 2019 VULB 9163 2#/3m/HORIZONTAL

Data: 5



Item (Mark)	Freq. (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Detector	Polarization
1	44.90	7.95	13.88	3.74	25.57	40.00	-14.43	QP	HORIZONTAL
2	109.80	6.56	11.60	4.28	22.44	43.50	-21.06	QP	HORIZONTAL
3	172.60	8.40	9.51	4.69	22.60	43.50	-20.90	QP	HORIZONTAL
4	213.02	7.90	11.80	4.92	24.62	43.50	-18.88	QP	HORIZONTAL
5	291.04	7.86	13.81	5.33	27.00	46.00	-19.00	QP	HORIZONTAL
6	462.35	6.41	16.93	6.12	29.46	46.00	-16.54	QP	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

E:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC BELOW1G.EM6

Test Date : 2020-07-07

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

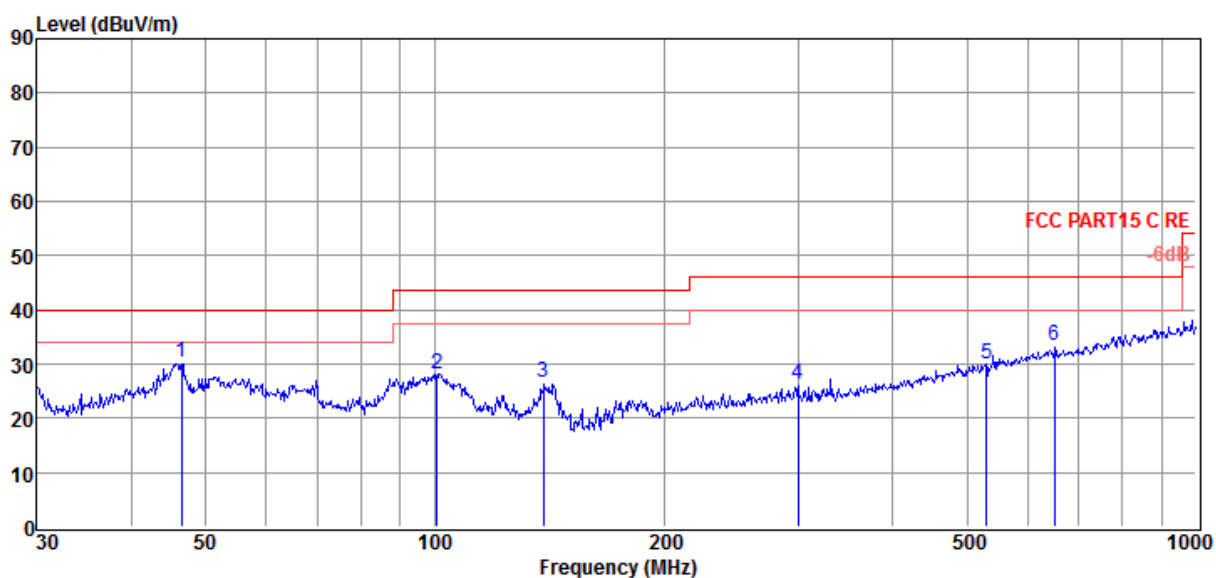
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 VULB 9163 2#/3m/VERTICAL

Memo :

Data: 6



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	46.50	12.83	13.69	3.76	30.28	40.00	-9.72	QP	VERTICAL
2	100.58	12.29	11.69	4.21	28.19	43.50	-15.31	QP	VERTICAL
3	138.87	13.66	8.35	4.48	26.49	43.50	-17.01	QP	VERTICAL
4	300.37	6.86	14.01	5.37	26.24	46.00	-19.76	QP	VERTICAL
5	530.10	5.49	18.21	6.43	30.13	46.00	-15.87	QP	VERTICAL
6	651.94	6.78	19.62	6.99	33.39	46.00	-12.61	QP	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

Radiated Emission test (above 1GHz)

Freq. (MHz)	Read level (dBμV)	Antenn a Factor (dB/m)	PRM Facto r(dB)	Cable Loss (dB)	ResultL evel(dB μV/m)	Limit (dBμV/ m)	Margin (dB)	Detector type	Polarization
Tx mode 2407MHz									
4808.00	48.54	32.23	43.48	6.16	43.45	74.00	-30.55	Peak	HORIZONTAL
7239.00	44.55	37.14	42.90	7.83	46.62	74.00	-27.38	Peak	HORIZONTAL
9636.00	45.28	39.21	42.47	9.10	51.12	74.00	-22.88	Peak	HORIZONTAL
11744.00	44.05	39.41	42.31	10.23	51.38	74.00	-22.62	Peak	HORIZONTAL
13155.00	43.45	39.82	41.11	10.73	52.89	74.00	-21.11	Peak	HORIZONTAL
15110.00	40.84	39.78	40.19	11.64	52.07	74.00	-21.93	Peak	HORIZONTAL
4808.00	49.68	32.23	43.48	6.16	44.59	74.00	-29.41	Peak	VERTICAL
7460.00	44.48	37.28	42.87	8.08	46.97	74.00	-27.03	Peak	VERTICAL
9381.00	43.71	39.00	42.51	8.90	49.10	74.00	-24.90	Peak	VERTICAL
11081.00	43.67	40.29	42.34	9.40	51.02	74.00	-22.98	Peak	VERTICAL
12815.00	43.20	39.23	41.45	10.66	51.64	74.00	-22.36	Peak	VERTICAL
14124.00	41.32	40.88	40.29	11.02	52.93	74.00	-21.07	Peak	VERTICAL
Tx mode 2441MHz									
4876.00	51.05	32.33	43.46	6.20	46.12	74.00	-27.88	Peak	HORIZONTAL
7460.00	45.25	37.28	42.87	8.08	47.74	74.00	-26.26	Peak	HORIZONTAL
9755.00	45.85	39.30	42.44	9.19	51.90	74.00	-22.10	Peak	HORIZONTAL
11931.00	44.02	39.18	42.30	10.46	51.36	74.00	-22.64	Peak	HORIZONTAL
14056.00	41.65	40.89	40.29	10.97	53.22	74.00	-20.78	Peak	HORIZONTAL
14889.00	41.83	40.18	40.21	11.57	53.37	74.00	-20.63	Peak	HORIZONTAL
4876.00	52.23	32.33	43.46	6.20	47.30	74.00	-26.70	Peak	VERTICAL
7239.00	44.24	37.14	42.90	7.83	46.31	74.00	-27.69	Peak	VERTICAL
9704.00	43.24	39.26	42.45	9.15	49.20	74.00	-24.80	Peak	VERTICAL
11336.00	43.89	39.93	42.33	9.72	51.21	74.00	-22.79	Peak	VERTICAL
13189.00	43.36	39.86	41.07	10.74	52.89	74.00	-21.11	Peak	VERTICAL
14889.00	41.53	40.18	40.21	11.57	53.07	74.00	-20.93	Peak	VERTICAL
Tx mode 2475MHz									
4944.00	51.55	32.42	43.43	6.24	46.78	74.00	-27.22	Peak	HORIZONTAL
7426.00	44.72	37.26	42.88	8.04	47.14	74.00	-26.86	Peak	HORIZONTAL
9636.00	44.11	39.21	42.47	9.10	49.95	74.00	-24.05	Peak	HORIZONTAL
10945.00	44.07	40.38	42.35	9.30	51.40	74.00	-22.60	Peak	HORIZONTAL
13189.00	43.04	39.86	41.07	10.74	52.57	74.00	-21.43	Peak	HORIZONTAL
14889.00	41.20	40.18	40.21	11.57	52.74	74.00	-21.26	Peak	HORIZONTAL
4950.00	53.82	32.43	43.43	6.24	49.06	74.00	-24.94	Peak	VERTICAL
7409.00	44.68	37.25	42.88	8.02	47.07	74.00	-26.93	Peak	VERTICAL
10350.00	44.11	39.99	42.38	9.35	51.07	74.00	-22.93	Peak	VERTICAL
13189.00	42.76	39.86	41.07	10.74	52.29	74.00	-21.71	Peak	VERTICAL
14481.00	41.56	40.80	40.25	11.28	53.39	74.00	-20.61	Peak	VERTICAL
16215.00	40.89	39.35	40.09	11.73	51.88	74.00	-22.12	Peak	VERTICAL
Result: Pass									

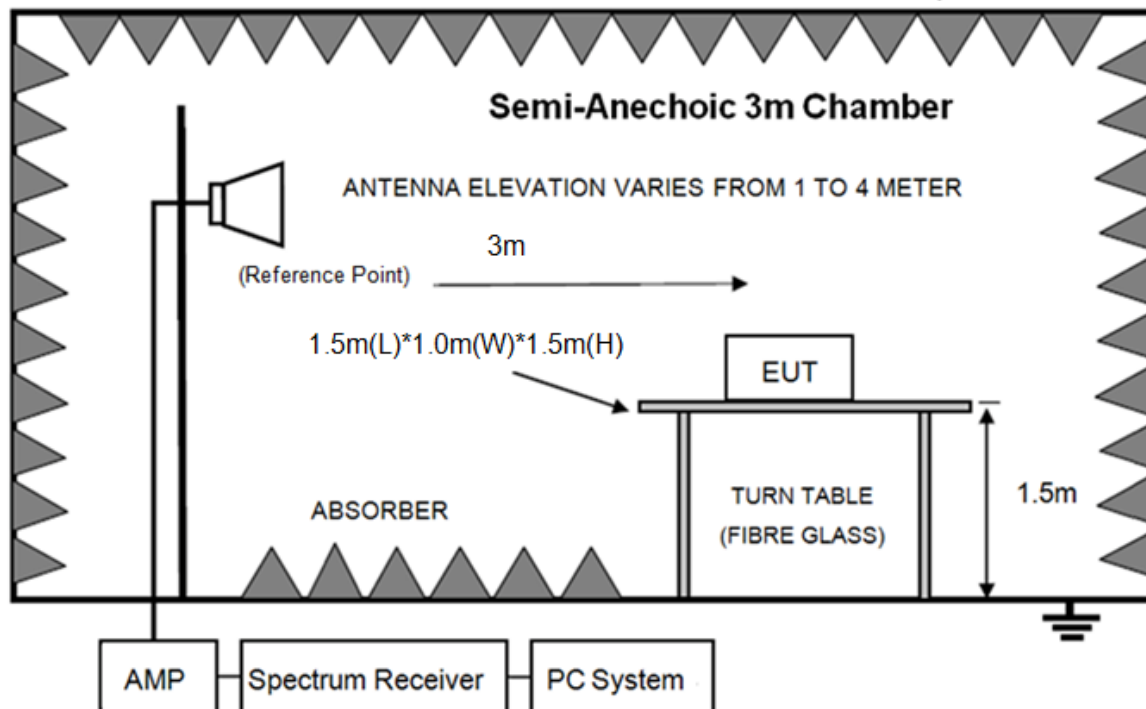
Note: 1. 30MHz~25GHz: (Scan with GFSK, $\pi/4$ -DQPSK, 8DPSK, the worst case is GFSK Mode)

2. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

3: For emissions above 1GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

6. Band Edge Compliance

6.1. Block diagram of test setup



6.2. Limit

All the lower and upper band-edges emissions appearing within 2310 MHz to 2390 MHz and 2483.5 MHz to 2500 MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

6.3. Test Procedure

Same with clause 8.3 except change investigated frequency range from 2310 MHz to 2410 MHz and 2470 MHz to 2500 MHz.

Remark: All restriction band have been tested, and only the worst case is shown in report.

6.4. Test result

PASS. (See below detailed test result)

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-08-17

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

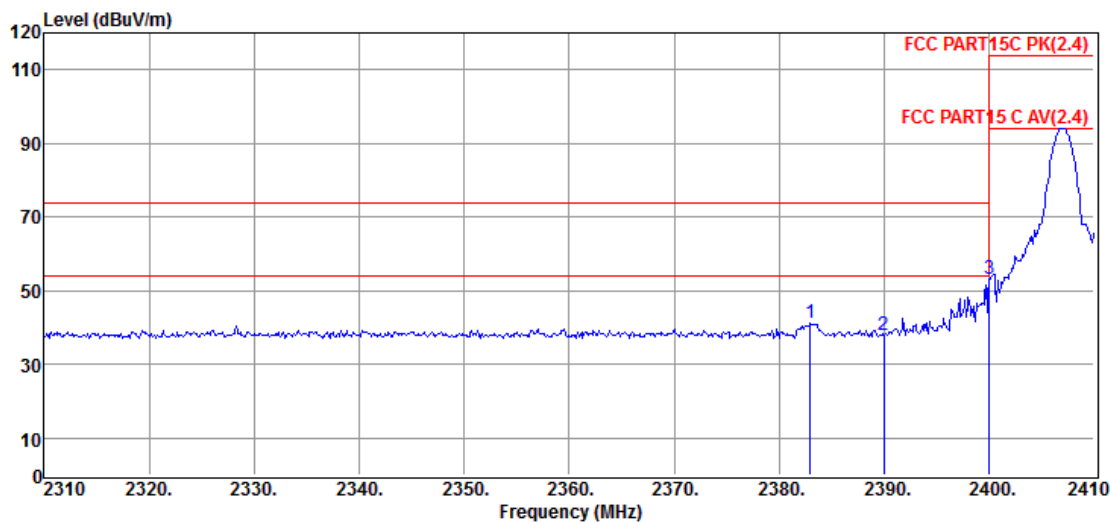
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/VERTICAL

Memo : DH5 2407

Data: 67



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2383.00	52.99	27.47	43.20	4.03	41.29	74.00	-32.71	Peak	VERTICAL
2	2390.00	49.77	27.48	43.21	4.03	38.07	74.00	-35.93	Peak	VERTICAL
3	2400.00	65.05	27.50	43.21	4.04	53.38	74.00	-20.62	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-08-17

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

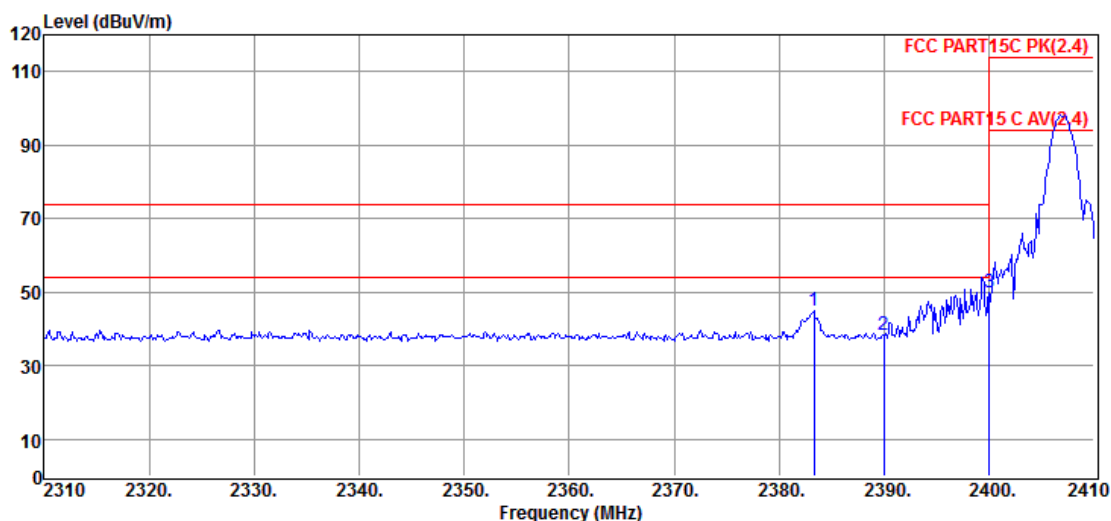
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/HORIZONTAL

Memo : DH5 2407

Data: 70



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2383.30	56.71	27.47	43.20	4.03	45.01	74.00	-28.99	Peak	HORIZONTAL
2	2390.00	50.24	27.48	43.21	4.03	38.54	74.00	-35.46	Peak	HORIZONTAL
3	2400.00	61.58	27.50	43.21	4.04	49.91	74.00	-24.09	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-07-08

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

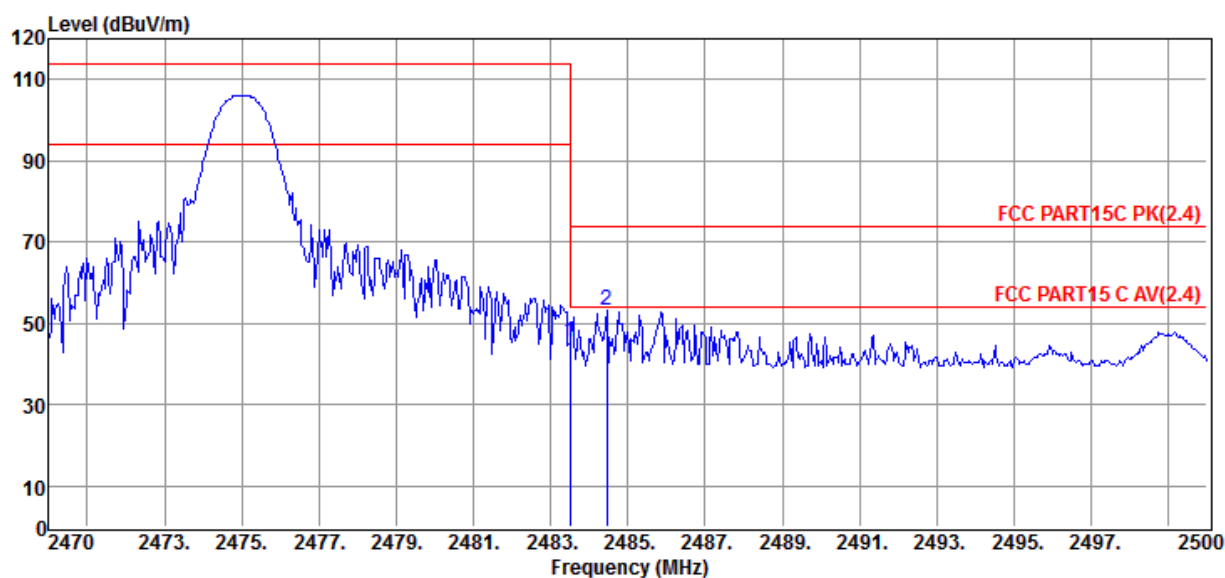
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/HORIZONTAL

Memo : DH5 2475

Data: 43



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	56.77	27.67	4.12	45.31	74.00	-28.69	Peak	HORIZONTAL
2	2484.46	64.64	27.67	4.13	53.19	74.00	-20.81	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-07-08

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

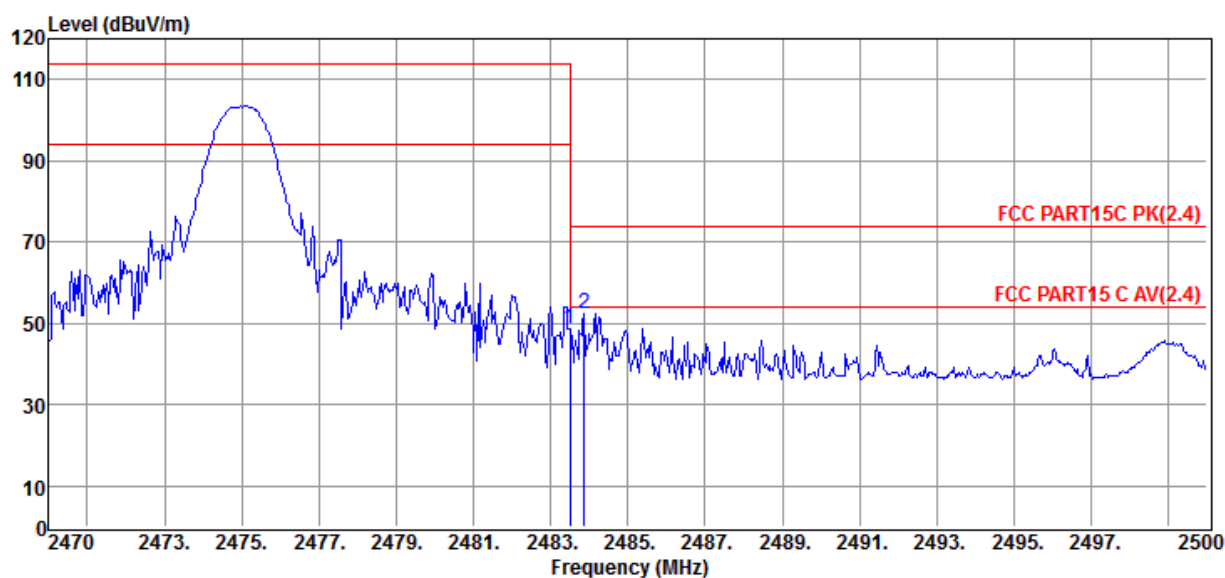
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/VERTICAL

Memo : DH5 2475

Data: 44



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	60.08	27.67	4.12	48.62	74.00	-25.38	Peak	VERTICAL
2	2483.86	63.97	27.67	4.12	52.51	74.00	-21.49	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-08-17

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

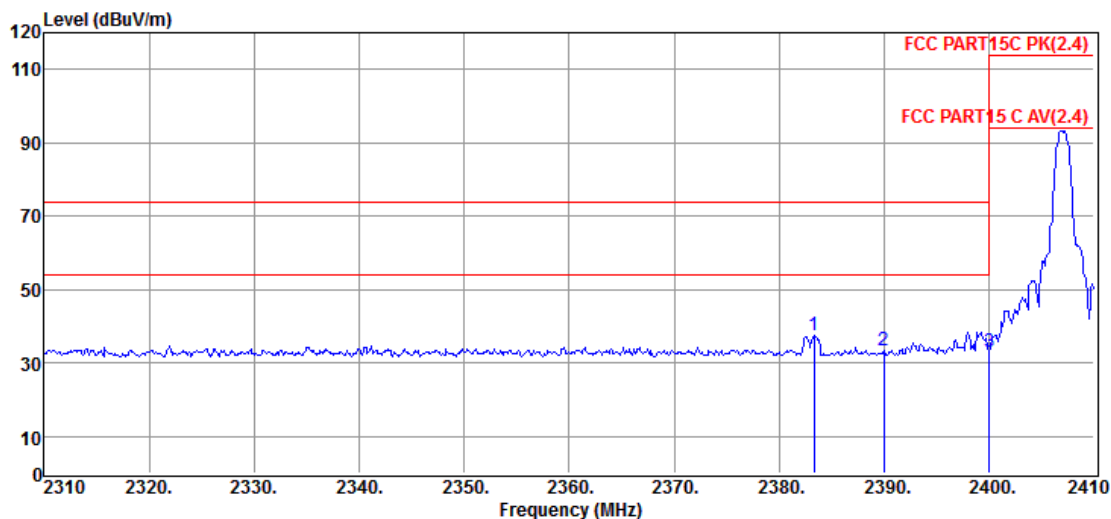
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/VERTICAL

Memo : 2DH5 2407

Data: 72



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2383.30	49.08	27.47	43.20	4.03	37.38	74.00	-36.62	Peak	VERTICAL
2	2390.00	45.15	27.48	43.21	4.03	33.45	74.00	-40.55	Peak	VERTICAL
3	2400.00	44.84	27.50	43.21	4.04	33.17	74.00	-40.83	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-08-17

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

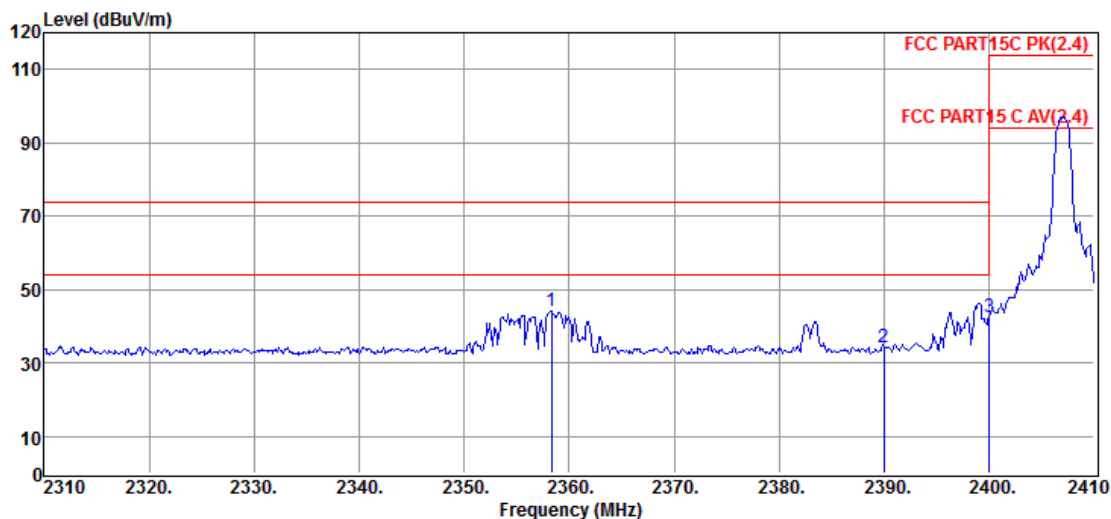
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/HORIZONTAL

Memo : 2DH5 2407

Data: 74



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2358.30	55.89	27.42	43.19	4.00	44.12	74.00	-29.88	Peak	HORIZONTAL
2	2390.00	45.88	27.48	43.21	4.03	34.18	74.00	-39.82	Peak	HORIZONTAL
3	2400.00	54.12	27.50	43.21	4.04	42.45	74.00	-31.55	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-07-08

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

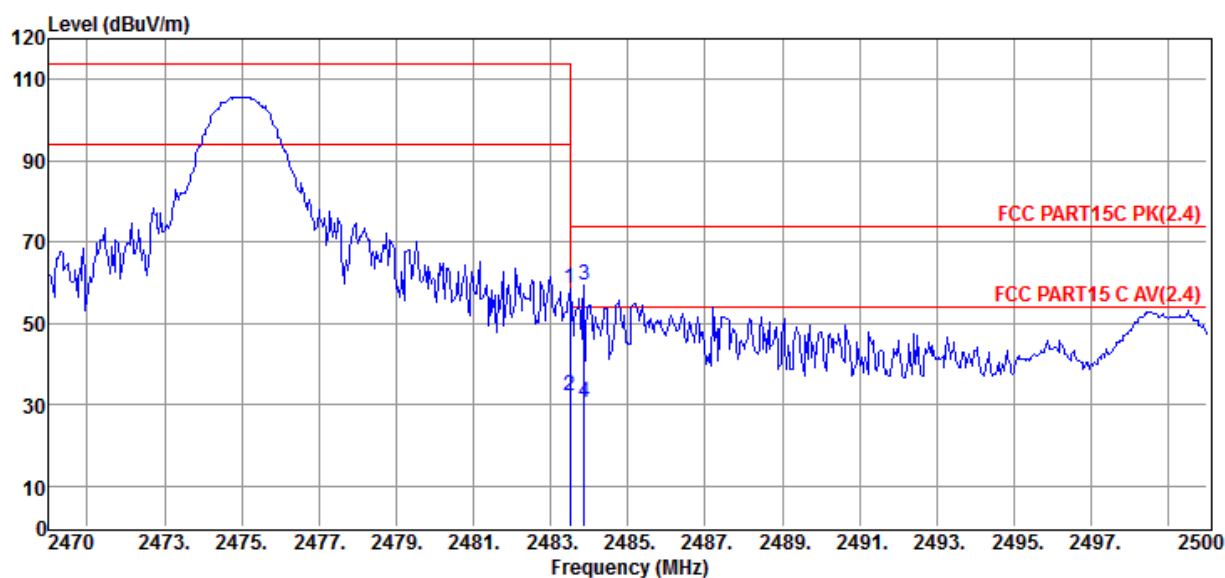
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/HORIZONTAL

Memo : 2DH5 2475

Data: 47



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	69.84	27.67	4.12	58.38	74.00	-15.62	Peak	HORIZONTAL
2	2483.50	43.61	27.67	4.12	32.15	54.00	-21.85	Average	HORIZONTAL
3	2483.86	70.86	27.67	4.12	59.40	74.00	-14.60	Peak	HORIZONTAL
4	2483.86	42.16	27.67	4.12	30.70	54.00	-23.30	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-07-08

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

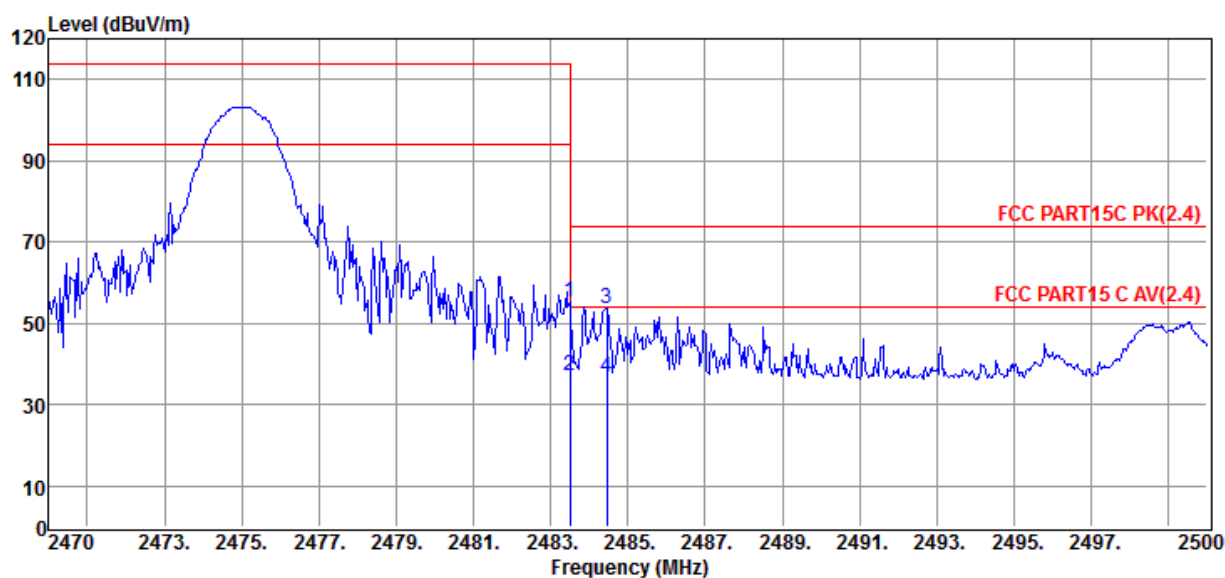
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/VERTICAL

Memo : 2DH5 2475

Data: 48



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	66.76	27.67	4.12	55.30	74.00	-18.70	Peak	VERTICAL
2	2483.50	48.60	27.67	4.12	37.14	54.00	-16.86	Average	VERTICAL
3	2484.46	65.23	27.67	4.13	53.78	74.00	-20.22	Peak	VERTICAL
4	2484.46	47.95	27.67	4.13	36.50	54.00	-17.50	Average	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-08-17

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

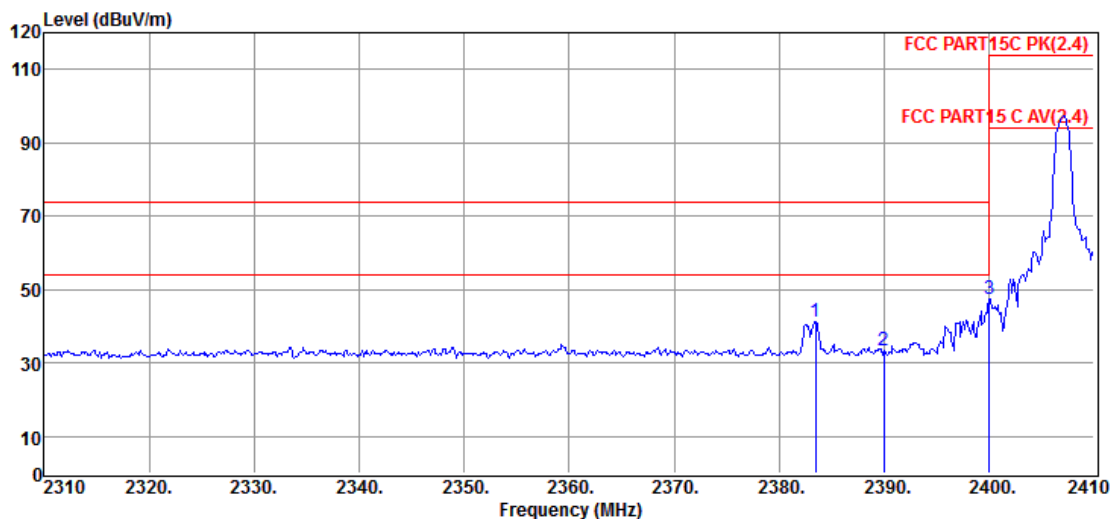
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/HORIZONTAL

Memo : 3DH5 2407

Data: 75



Item (Mark)	Freq. (MHz)	Read Level (dBUV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBUV/m)	Limit Line (dBUV/m)	Over Limit (dB)	Detector	Polarization
1	2383.50	53.02	27.47	43.20	4.03	41.32	74.00	-32.68	Peak	HORIZONTAL
2	2390.00	45.20	27.48	43.21	4.03	33.50	74.00	-40.50	Peak	HORIZONTAL
3	2400.00	58.92	27.50	43.21	4.04	47.25	74.00	-26.75	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-08-17

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

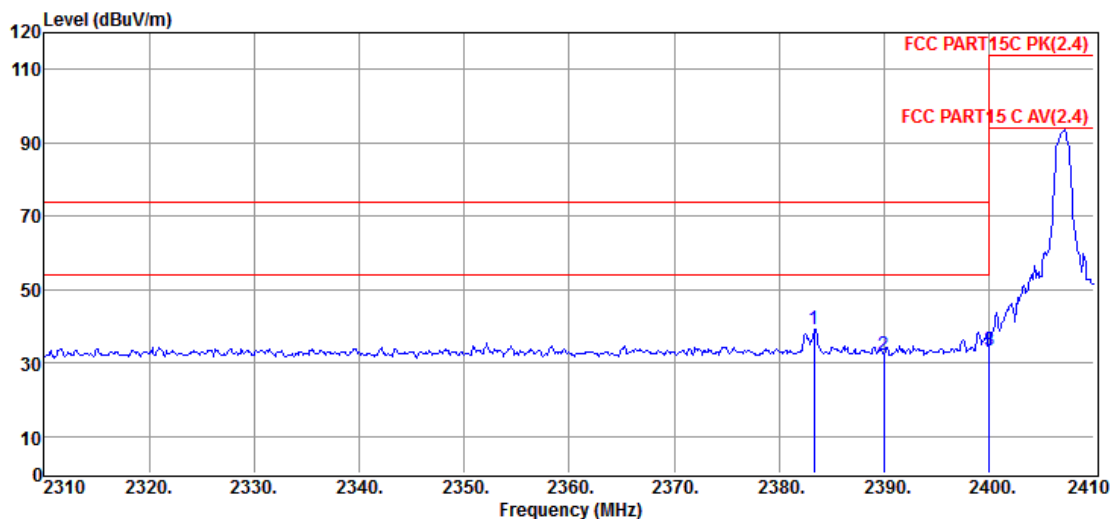
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/VERTICAL

Memo : 3DH5 2407

Data: 77



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2383.30	50.93	27.47	43.20	4.03	39.23	74.00	-34.77	Peak	VERTICAL
2	2390.00	44.02	27.48	43.21	4.03	32.32	74.00	-41.68	Peak	VERTICAL
3	2400.00	45.17	27.50	43.21	4.04	33.50	74.00	-40.50	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-07-08

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

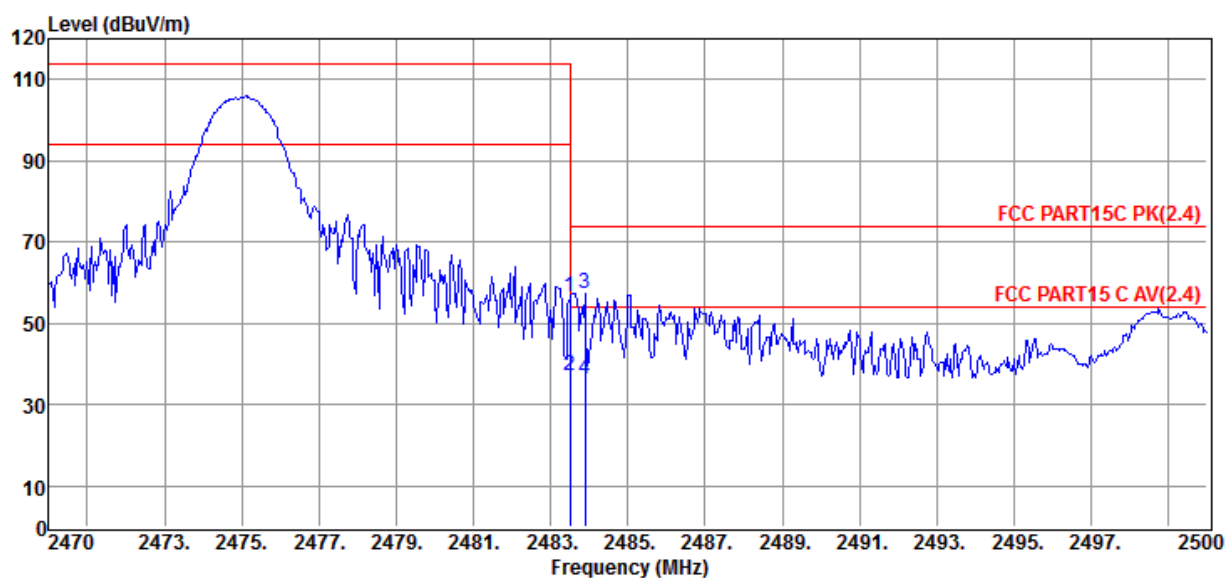
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/HORIZONTAL

Memo : 3DH5 2475

Data: 51



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	67.79	27.67	4.12	56.33	74.00	-17.67	Peak	HORIZONTAL
2	2483.50	48.60	27.67	4.12	37.14	54.00	-16.86	Average	HORIZONTAL
3	2483.89	68.71	27.67	4.12	57.25	74.00	-16.75	Peak	HORIZONTAL
4	2483.89	47.86	27.67	4.12	36.40	54.00	-17.60	Average	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site : DDT 3m Chamber 2#

D:\2020 RE2# Report Data\Q20052205 XTREME3G
GUOQUANG\FCC ABOVE1G.EM6

Test Date : 2020-07-08

Tested By : Ella

EUT : Portable Bluetooth Speaker

Model Number : XTREME 3G

Power Supply : Battery

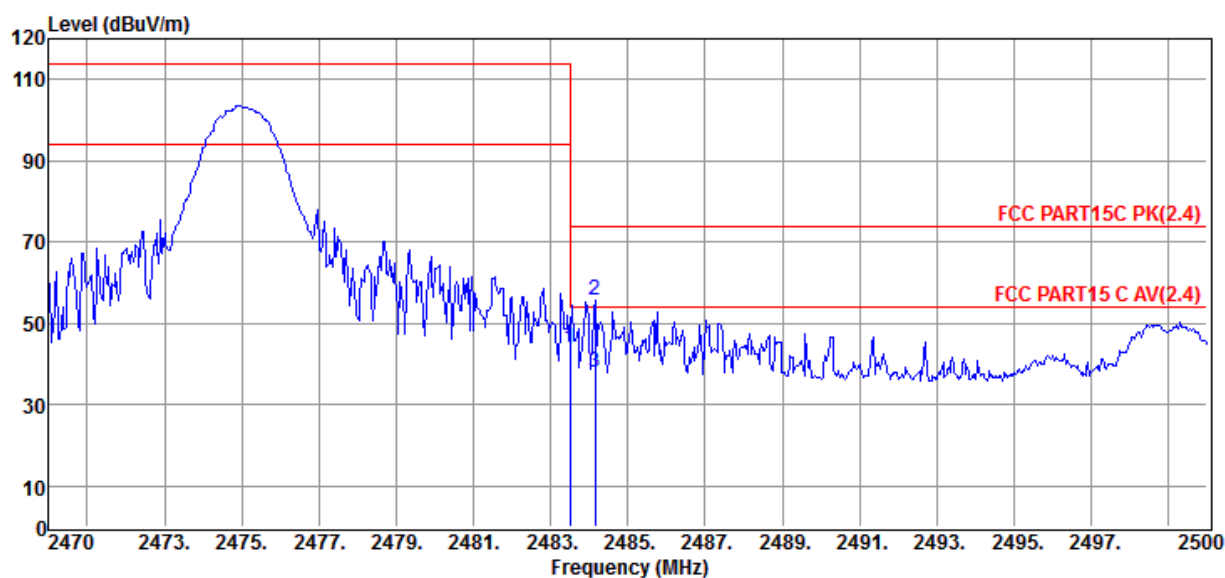
Test Mode : Tx mode

Condition : Temp:24.5°C,Humi:55%,Press:100.1kPa

Antenna/Distance : 2019 BBHA9120D/3m/VERTICAL

Memo : 3DH5 2475

Data: 52



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	55.04	27.67	4.12	43.58	74.00	-30.42	Peak	VERTICAL
2	2484.16	67.15	27.67	4.12	55.69	74.00	-18.31	Peak	VERTICAL
3	2484.16	49.60	27.67	4.12	38.14	54.00	-15.86	Average	VERTICAL

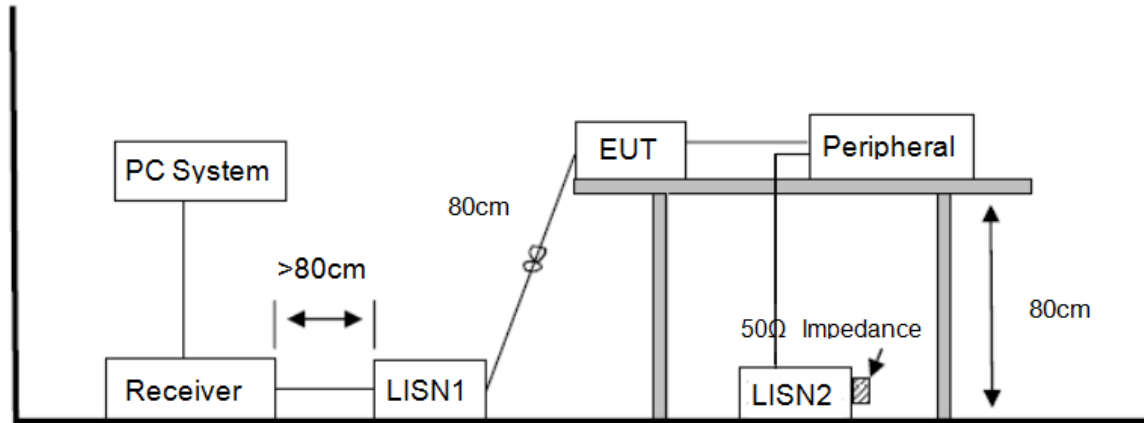
Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

7. Power Line Conducted Emission

7.1. Block diagram of test setup



7.2. Power line conducted emission limits

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

7.3. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 7.1 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level. The EUT configuration and worse cable configuration of the above highest emission levels were

recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

7.4. Test Result

PASS. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

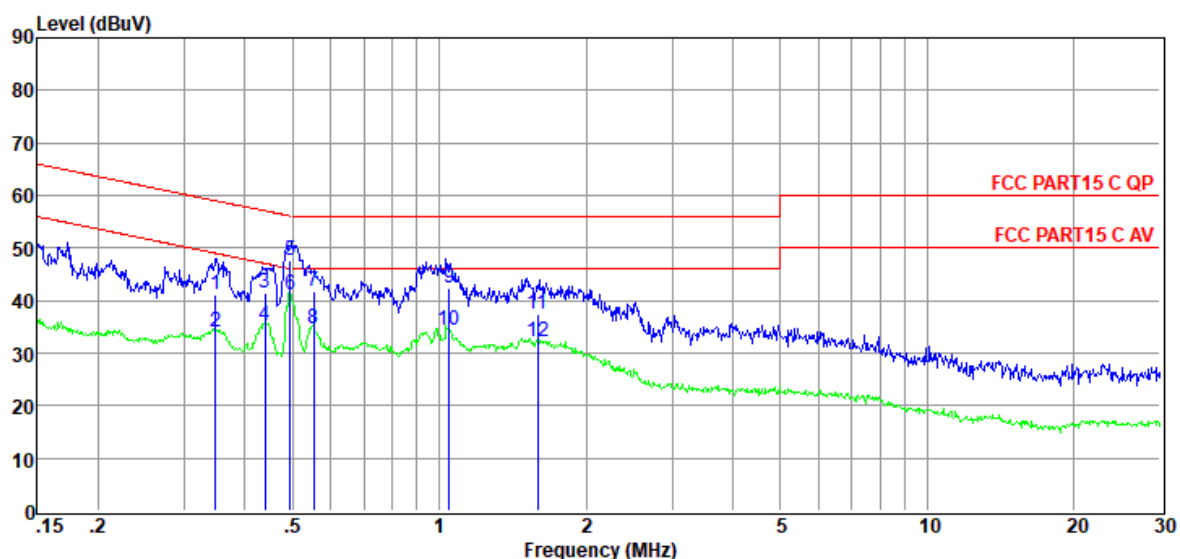
Note2: “----” means Peak detection; “-----” means Average detection.

Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/60Hz, recorded worst case.

TR-4-E-010 Conducted Emission Test Result

Test Site	: DDT 1# Shield Room	D:\2020 CE report data\Q20052205-1E\20200731 FCC.EM6
Test Date	: 2020-07-17	Tested By : Bote Huang
EUT	: Portable Bluetooth Speaker	Model Number : XTREME 3G
Power Supply	: AC 120V/60Hz	Test Mode : Tx mode
Condition	: TEMP:24.8°C, RH:41.8%, BP:101.4kPa	LISN : 2019 ENV216 1#/NEUTRAL
Memo	:	

Data: 12



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.35	21.52	9.60	0.02	9.86	41.00	59.00	-18.00	QP	NEUTRAL
2	0.35	14.67	9.60	0.02	9.86	34.15	49.00	-14.85	Average	NEUTRAL
3	0.44	21.92	9.60	0.02	9.86	41.40	57.07	-15.67	QP	NEUTRAL
4	0.44	15.79	9.60	0.02	9.86	35.27	47.07	-11.80	Average	NEUTRAL
5	0.49	28.17	9.60	0.02	9.86	47.65	56.10	-8.45	QP	NEUTRAL
6	0.49	21.58	9.60	0.02	9.86	41.06	46.10	-5.04	Average	NEUTRAL
7	0.55	22.14	9.60	0.02	9.86	41.62	56.00	-14.38	QP	NEUTRAL
8	0.55	15.11	9.60	0.02	9.86	34.59	46.00	-11.41	Average	NEUTRAL
9	1.05	22.86	9.60	0.03	9.86	42.35	56.00	-13.65	QP	NEUTRAL
10	1.05	14.87	9.60	0.03	9.86	34.36	46.00	-11.64	Average	NEUTRAL
11	1.59	18.07	9.60	0.04	9.86	37.57	56.00	-18.43	QP	NEUTRAL
12	1.59	12.74	9.60	0.04	9.86	32.24	46.00	-13.76	Average	NEUTRAL

Note: 1. Result Level = Read Level + LISN Factor + Pulse LimiterFactor + Cable loss.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

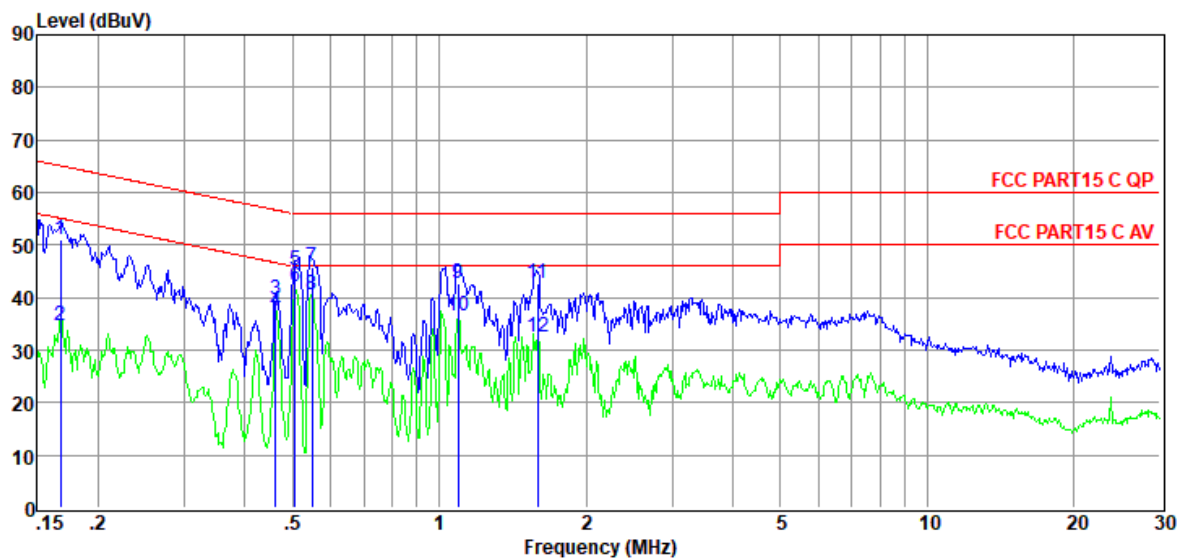
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).

4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site : DDT 1# Shield Room **D:\2020 CE report data\Q20052205-1E\20200731 FCC.EM6**
Test Date : 2020-07-17 **Tested By** : Bote Huang
EUT : Portable Bluetooth Speaker **Model Number** : XTREME 3G
Power Supply : AC 120V/60Hz **Test Mode** : Tx mode
Condition : TEMP:24.8°C, RH:41.8%,
BP:101.4kPa **LISN** : 2019 ENV216 1#/NEUTRAL
Memo :

Data: 14



Item	Freq.	Read Level	LISN Factor	Cable Loss	Pulse Limiter Factor	Result Level	Limit Line	Over Limit	Detector	Phase
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)		
1	0.17	31.50	9.60	0.01	9.86	50.97	65.08	-14.11	QP	NEUTRAL
2	0.17	15.07	9.60	0.01	9.86	34.54	55.08	-20.54	Average	NEUTRAL
3	0.46	20.06	9.60	0.02	9.86	39.54	56.67	-17.13	QP	NEUTRAL
4	0.46	17.98	9.60	0.02	9.86	37.46	46.67	-9.21	Average	NEUTRAL
5	0.51	25.58	9.60	0.02	9.86	45.06	56.00	-10.94	QP	NEUTRAL
6	0.51	22.69	9.60	0.02	9.86	42.17	46.00	-3.83	Average	NEUTRAL
7	0.55	26.15	9.60	0.02	9.86	45.63	56.00	-10.37	QP	NEUTRAL
8	0.55	21.11	9.60	0.02	9.86	40.59	46.00	-5.41	Average	NEUTRAL
9	1.09	23.32	9.60	0.03	9.86	42.81	56.00	-13.19	QP	NEUTRAL
10	1.09	17.00	9.60	0.03	9.86	36.49	46.00	-9.51	Average	NEUTRAL
11	1.59	23.25	9.60	0.04	9.86	42.75	56.00	-13.25	QP	NEUTRAL
12	1.59	12.90	9.60	0.04	9.86	32.40	46.00	-13.60	Average	NEUTRAL

Note: 1. Result Level = Read Level + LISN Factor + Pulse LimiterFactor + Cable loss.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).

4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

8. Antenna Requirements

8.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

8.2. Result

The antennas used for this product are dedicated FPCantenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 3.39 dBi.

END OF REPORT