



FCC TEST REPORT

FCC ID: SLF-W226

On Behalf of

Shenzhen Wanfengda Electronics Co., Ltd

Wireless TV Speaker

Model No.: W226

Prepared for : Shenzhen Wanfengda Electronics Co., Ltd
Address : 2F, Building 1, Hezhou Yuye Industrial Zone, Xixiang, Bao'an,
Shenzhen, Guangdong, China, 518128.

Prepared By : Shenzhen Alpha Product Testing Co., Ltd.
Address : Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103,
Shenzhen, Guangdong, China

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Version Number : V0

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TEST REPORT DECLARATION

Applicant : Shenzhen Wanfengda Electronics Co., Ltd
Address : 2F, Building 1, Hezhou Yuye Industrial Zone, Xixiang, Bao'an, Shenzhen,
Guangdong, China, 518128.
Manufacturer : Shenzhen Wanfengda Electronics Co., Ltd
Address : 2F, Building 1, Hezhou Yuye Industrial Zone, Xixiang, Bao'an, Shenzhen,
Guangdong, China, 518128.
EUT Description : Wireless TV Speaker
(A) Model No. : W226
(B) Trademark : **Pohopa**

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247

ANSI C63.10:2013

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....: Lucas Pang
Project Engineer



Approved by (name + signature).....: Simple Guan
Project Manager



Date of issue..... : April 22, 2021

Revision History

Revision	Issue Date	Revisions	Revised By
V0	April 22, 2021	Initial released Issue	Lucas Pang

1. Summary Of Standards And Results

1.1. Description of Standards and Results

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

Test Item	Test Requirement	Standards Paragraph	Result
Conducted Emission	FCC PART 15	15.207	P
6dB Bandwidth	FCC PART 15	15.247 (a)(2)	P
Output Power	FCC PART 15	15.247 (b)(3)	P
Radiated Spurious Emission	FCC PART 15	15.247 (c)	P
Conducted Spurious & Band Edge Emission	FCC PART 15	15.247 (d)	P
Power Spectral Density	FCC PART 15	15.247 (e)	P
Radiated Band Edge Emission	FCC PART 15	15.205	P
Antenna Requirement	FCC PART 15	15.203	P
Note: 1. P is an abbreviation for Pass. 2. F is an abbreviation for Fail. 3. N/A is an abbreviation for Not Applicable.			

2. General Information

2.1. Description of Device (EUT)

Description : Wireless TV Speaker

Trademark : **Pohopa**

Model Number : W226

DIFF. : N/A

Test Voltage : AC 120V/60Hz

Radio Technology : 2.4G

Operation
frequency : 2403-2478MHz

Channel No. : 26Channels

Modulation type : GFSK

Antenna Type : Internal antenna, Maximum Gain is 2dBi(This value is supplied by applicant).

Software version : V1.0

Hardware version : VER:2.0

Connector cable loss : 0.5dB (This value is supplied by applicant).

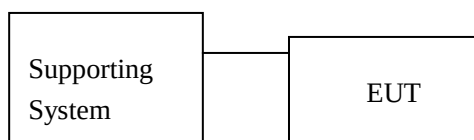
2.2. Accessories of Device (EUT)

Accessories1 : /
 Manufacturer : /
 Model : /
 Ratings : /

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1.	N/A	N/A	N/A	N/A	N/A

2.4. Block Diagram of connection between EUT and simulators



2.5. Test Mode Description

Tested mode, channel, and data rate information		
Mode	Channel	Frequency (MHz)
GFSK	Low :CH1	2403
	Middle: CH13	2439
	High: CH26	2478

2.6. Test Conditions

Items	Required	Actual
Temperature range:	15-35℃	24℃
Humidity range:	25-75%	56%
Pressure range:	86-106kPa	98kPa

2.7. Test Facility

Shenzhen Alpha Product Testing Co., Ltd

Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103,
Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission

Registration Number: 293961

July 15, 2019 Certificated by IC

Registration Number: CN0085

2.8. Measurement Uncertainty

(95% confidence levels, k=2)

Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	2.74dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB(Polarize: V)
	2.57dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.77dB(Polarize: V)
	3.80dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	4.13dB(Polarize: H)
	4.16dB(Polarize: V)
Uncertainty for radio frequency	5.4×10^{-8}
Uncertainty for conducted RF Power	0.37dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

2.9. Test Equipment List

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
9*6*6 anechoic chamber	CHENYU	9*6*6	N/A	2020.09.02	1Year
Spectrum analyzer	ROHDE&SCHWARZ	FSU	1166.1660.26	2020.09.02	1Year
Spectrum analyzer	Agilent	N9020A	MY499100060	2020.09.02	1Year
Receiver	ROHDE&SCHWARZ	ESR	1316.3003K03-102082-Wa	2020.09.02	1Year
Receiver	R&S	ESCI	101165	2020.09.02	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	2019.09.07	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2020.04.12	2Year
Loop Antenna	SCHWARZBECK	FMZB 1519B	00059	2019.09.07	2Year
Cable	Resenberger	N/A	No.1	2020.09.02	1Year
Cable	SCHWARZBECK	N/A	No.2	2020.09.02	1Year
Cable	SCHWARZBECK	N/A	No.3	2020.09.02	1Year
Pre-amplifier	HP	HP8347A	2834A00455	2020.09.02	1Year
Pre-amplifier	Agilent	8449B	3008A02664	2020.09.02	1Year
Temperature controller	Terchy	MHQ	120	2020.09.02	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126-466	2020.09.02	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	101043	2020.09.02	1 Year
20db Attenuator	ICPROBING	IATS1	82347	2020.09.02	1 Year
Power meter	Agilent	E4419B	GB40202122	2020.09.02	1 Year

Software Information			
Test Item	Software Name	Manufacturer	Version
RE	EZ-EMC	EZ	Alpha-3A1
CE	EZ-EMC	EZ	Alpha-3A1
RF-CE	MTS 8310	MW	V2.0.0.0

3. Maximum Peak Output Power

3.1.Limit

Please refer section RSS-247 & 15.247.

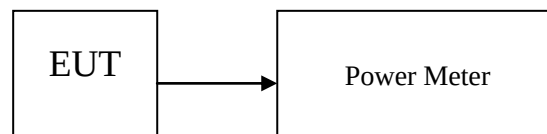
3.2.Test Procedure

Details see the KDB558074 D01 Meas Guidance V05

5.2.1 Place the EUT on the table and set it in transmitting mode.

5.2.2 Measure out each mode and each bands peak output power of EUT.

3.3.Test Setup



3.4.Test Result

Mode	Freq (MHz)	Average Output Power (dBm)	Limit (dBm)	Result
GFSK	2403	1.284	21	Pass
	2439	-0.479	21	Pass
	2478	-2.573	21	Pass
Conclusion: PASS				

4. Power Spectral Density

4.1.Limit

4.1.1 Please refer section RSS-247 & 15.247.

4.1.2 For direct sequence systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

4.1.3 The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

4.2.Test Procedure

Details see the KDB558074 D01 Meas Guidance V05

4.2.1 Place the EUT on the table and set it in transmitting mode.

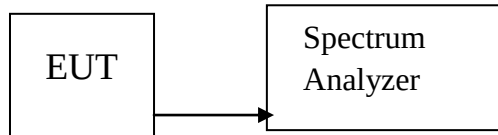
4.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

4.2.3 Detector = RMS. Set the spectrum analyzer as RBW = 3kHz(Set the RBW to: $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$.), VBW = 10kHz(Set the VBW $\geq 3 \times \text{RBW}$), span= $1.5 \times \text{DTS bandwidth}$., detail see the test plot.

4.2.4 Record the max reading.

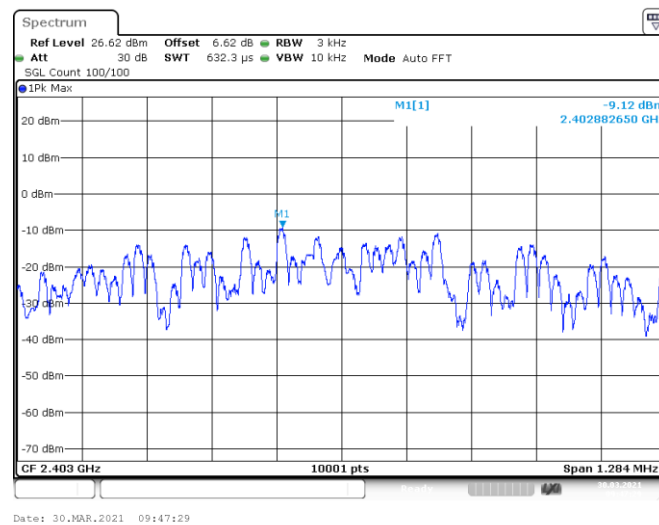
4.2.5 Repeat the above procedure until the measurements for all frequencies are completed.

4.3.Test Setup

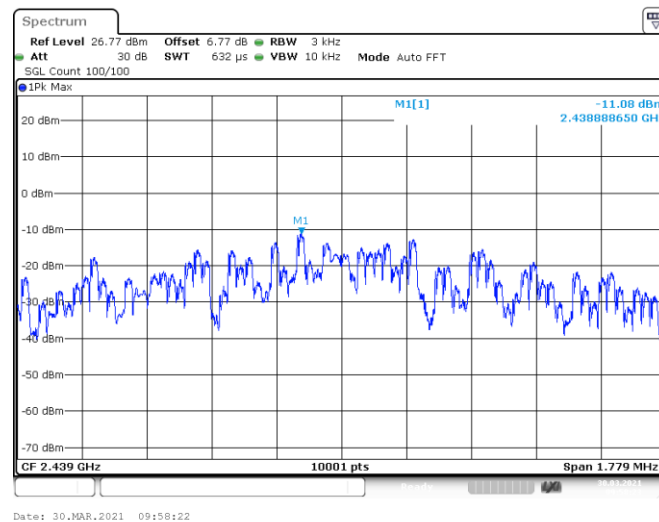


4.4.Test Results

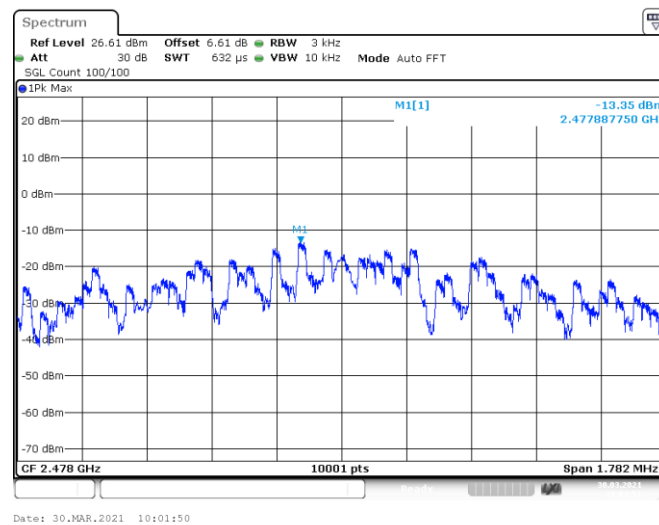
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limit (dBm)	Result
CH1	2403	-9.12	8	PASS
CH20	2439	-11.075	8	PASS
CH40	2478	-13.352	8	PASS
Conclusion: PASS				



Lowest channel



Middle channel



Highest channel

5. Bandwidth

5.1.Limit

Please refer section RSS-247 & 15.247

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500 kHz.

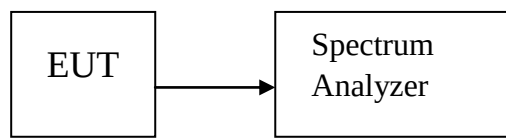
5.2.Test Procedure

Details see the KDB558074 D01 Meas Guidance V05

a) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

b) The test receiver set RBW = 100kHz, VBW $\geq 3 \times$ RBW = 300kHz,, Sweep time set auto, detail see the test plot.

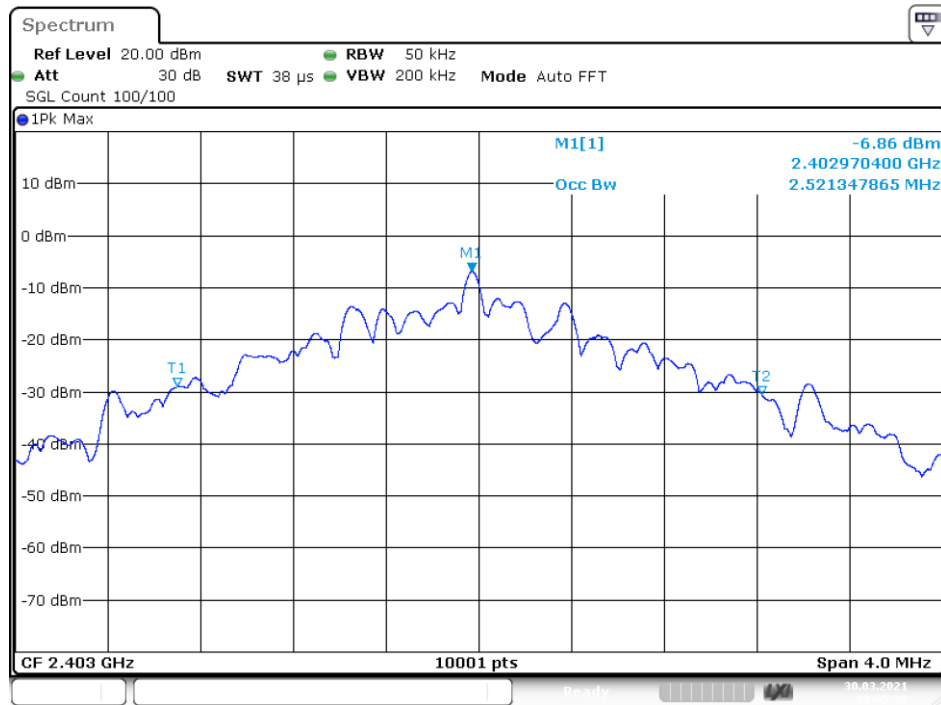
5.3.Test Setup



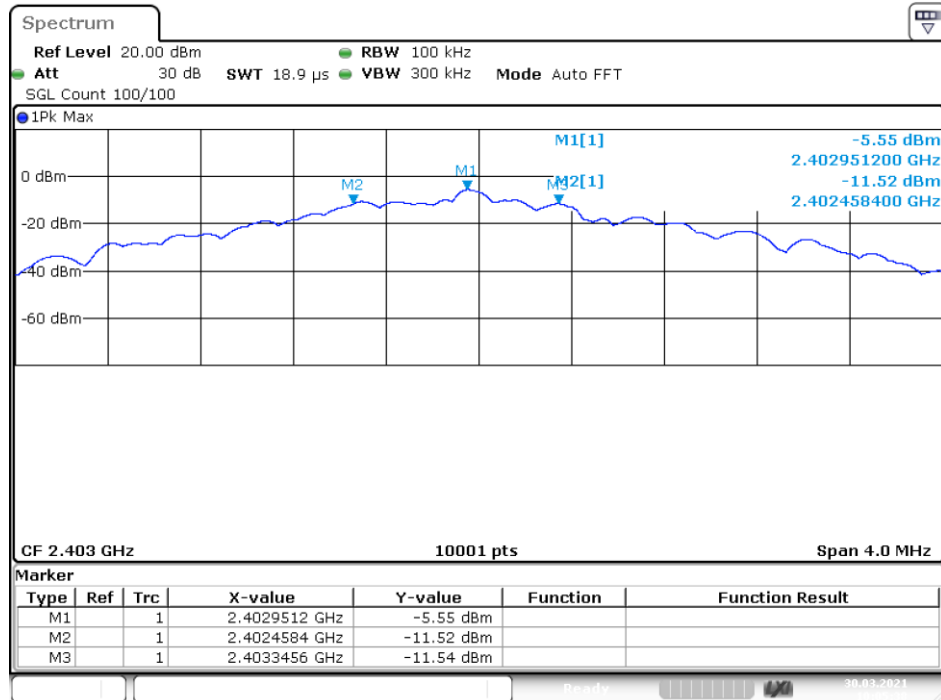
5.4.Test Result

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	user	2403	Ant 1	2.5213	0.8872	0.5	Pass
NVNT	user	2439	Ant 1	2.7377	0.8895	0.5	Pass
NVNT	user	2478	Ant 1	2.453	1.118	0.5	Pass

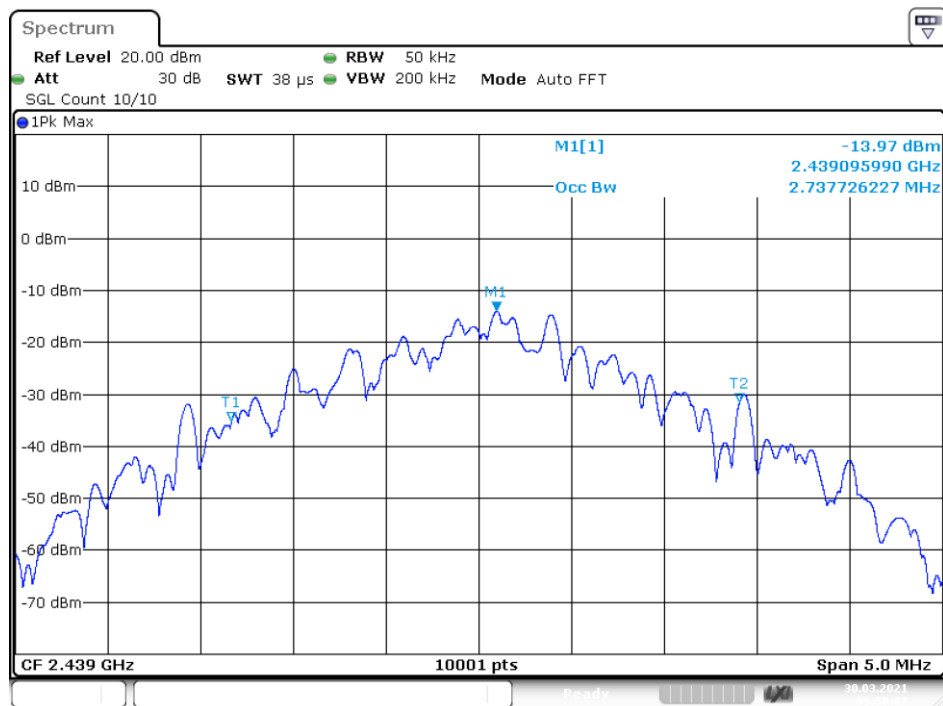
OBW NVNT user 2403MHz Ant1



-6 dB BW NVNT user 2403MHz Ant1

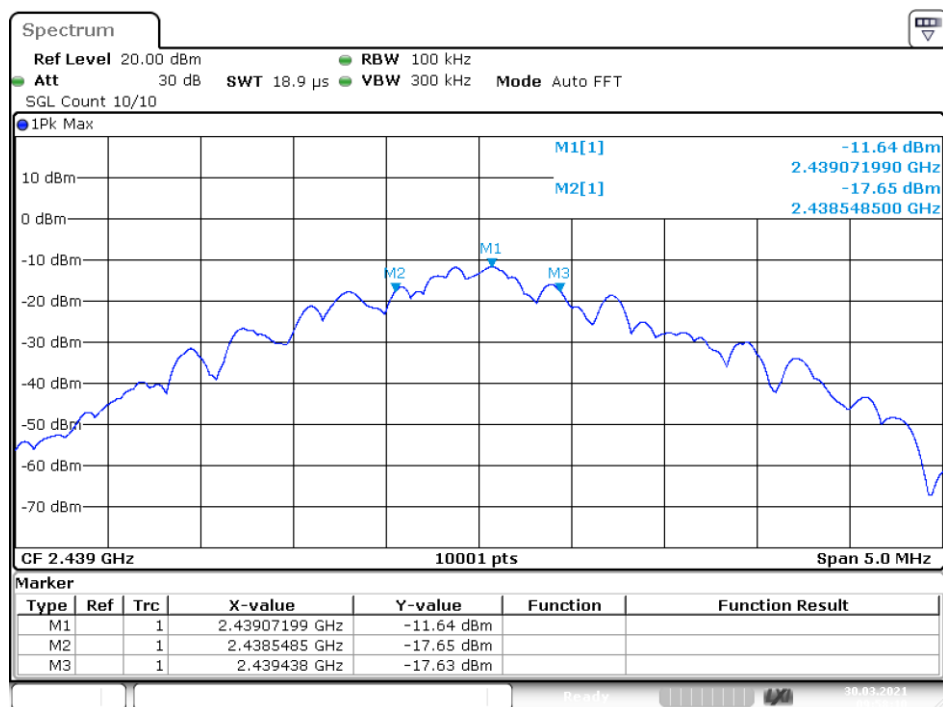


OBW NVNT user 2439MHz Ant1



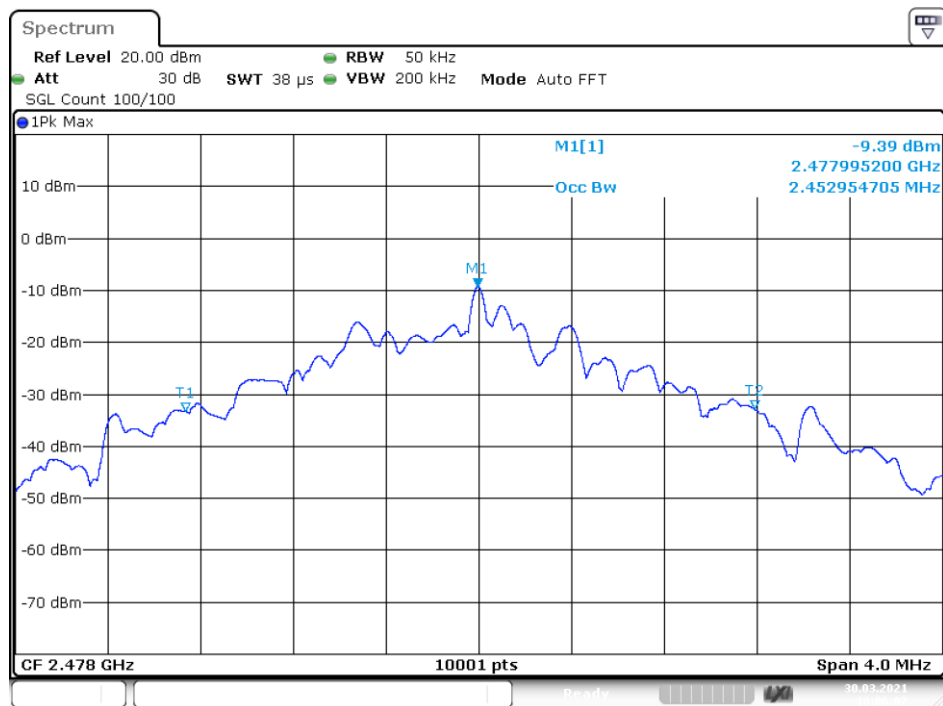
Date: 30.MAR.2021 09:58:08

-6 dB BW NVNT user 2439MHz Ant1



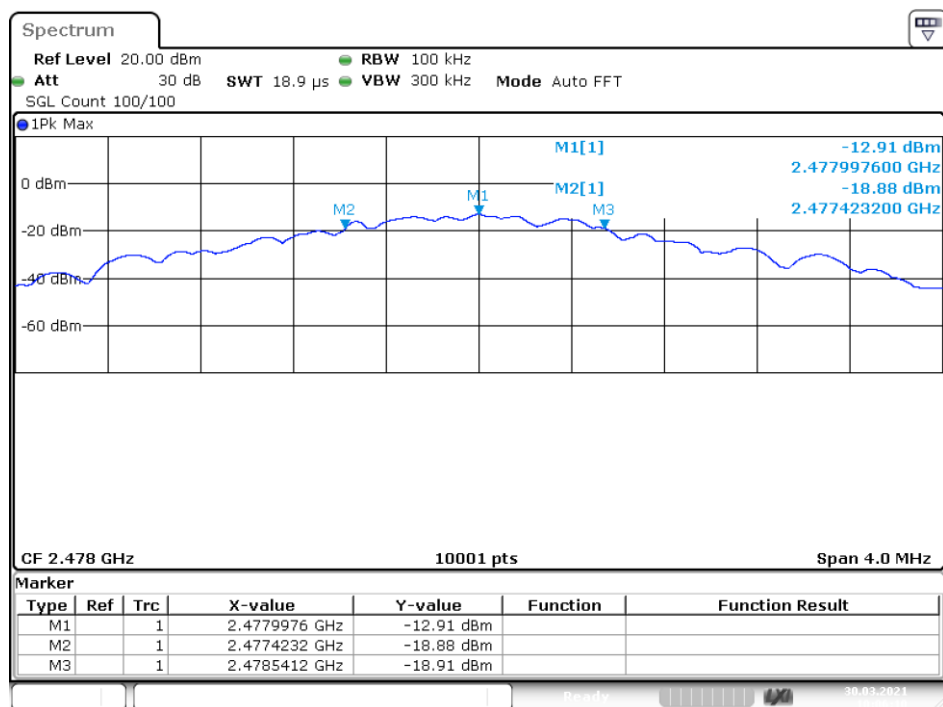
Date: 30.MAR.2021 09:58:10

OBW NVNT user 2478MHz Ant1



Date: 30.MAR.2021 10:06:07

-6 dB BW NVNT user 2478MHz Ant1



Date: 30.MAR.2021 10:06:10

6. Spurious Emission

6.1. Test Limits

Frequencies (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Harmonic emissions limits comply with below 54 dBuV/m at 3m. 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 comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

NOTE:

- a) The tighter limit applies at the band edges.
- b) Emission Level(dB uV/m)=20log Emission Level(uv/m)

6.2. Test Procedure

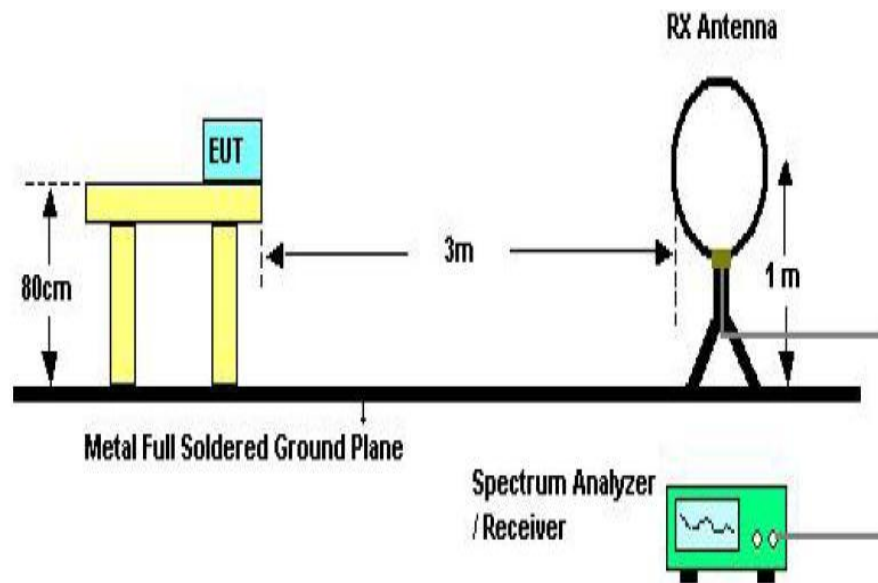
The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground for below 1GHz and 1.5m high for above 1GHz testing, The table was rotated 360 degrees to determine the position of the highest radiation

The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.

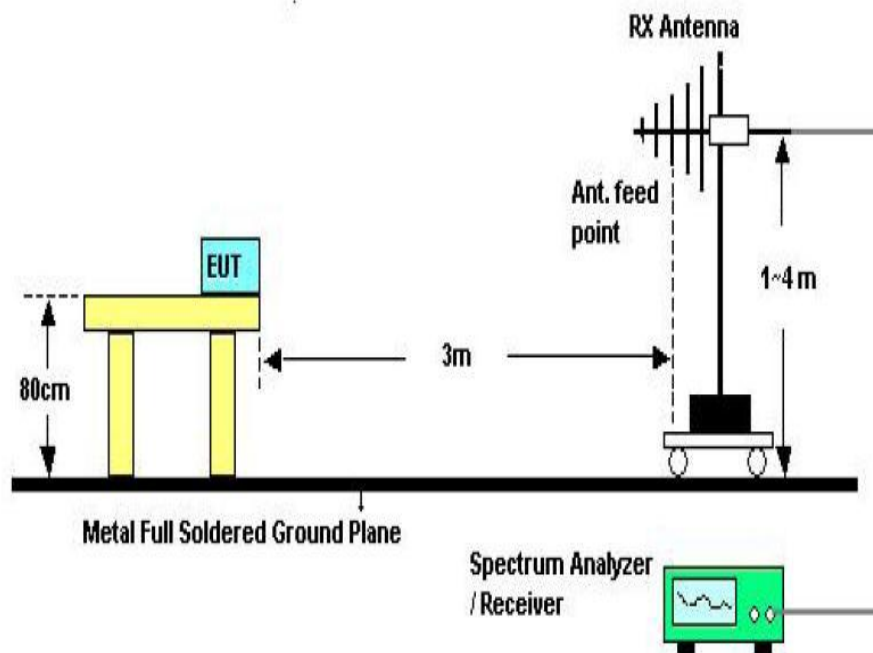
The initial step in collecting conducted emission data is a spectrum analyzer Peak detector mode pre-scanning the measurement frequency range. Significant Peaks are then marked. and then Qusia Peak Detector mode premeasured

If Peak value comply with QP limit Below 1GHz. The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz. For the actual test configuration, please see the test setup photo.

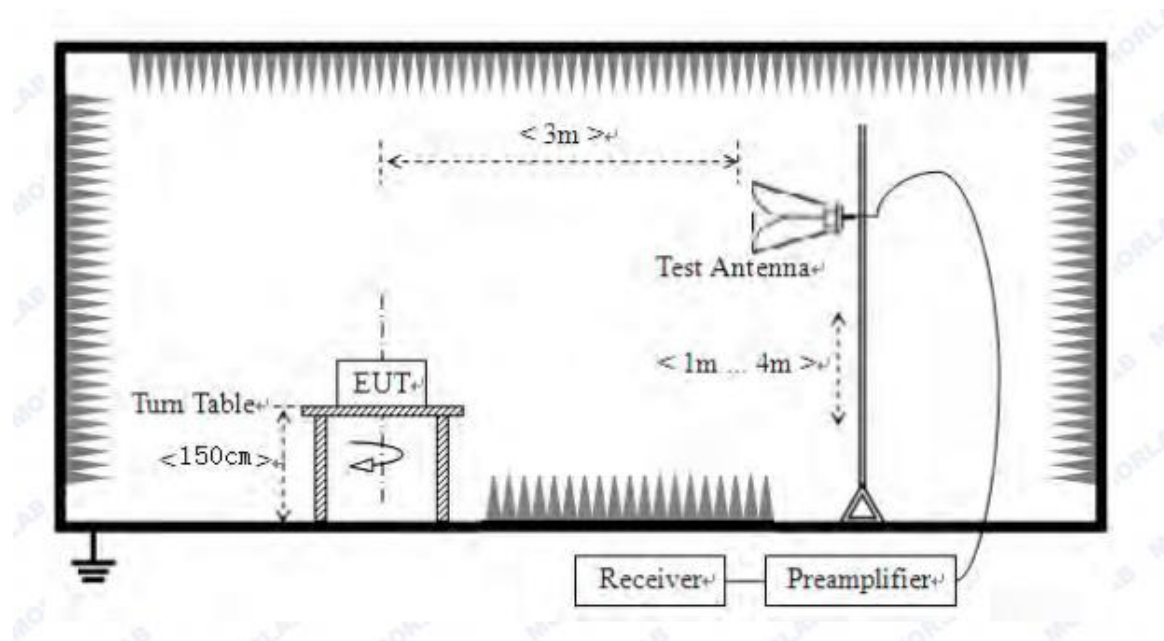
6.3. Test Setup



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

6.4. Test Results

Test Condition

Continual Transmitting in maximum power.

9KHz~150KHz	RBW200Hz	VBW1KHz
150KHz~30MHz	RBW9KHz	VBW 30KHz
30MHz~1GHz	RBW120KHz	VBW 300KHz
Above1GHz	RBW1MHz	VBW 3MHz

We have scanned the 10th harmonic from 9 kHz to the EUT.

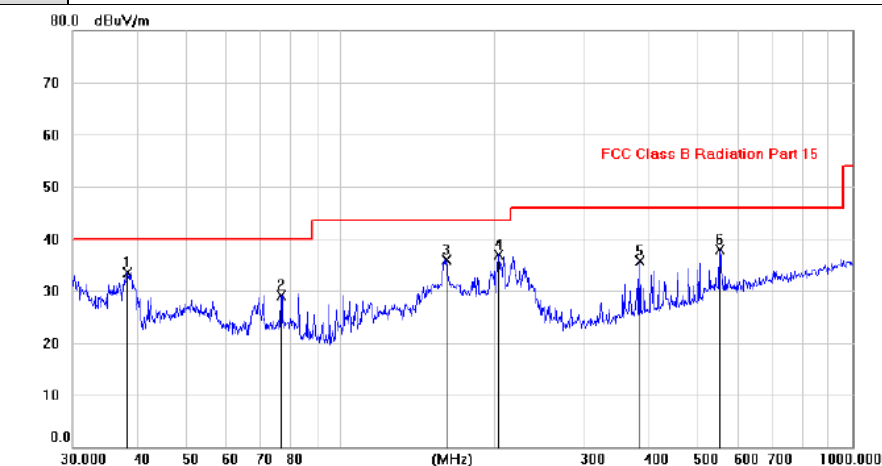
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

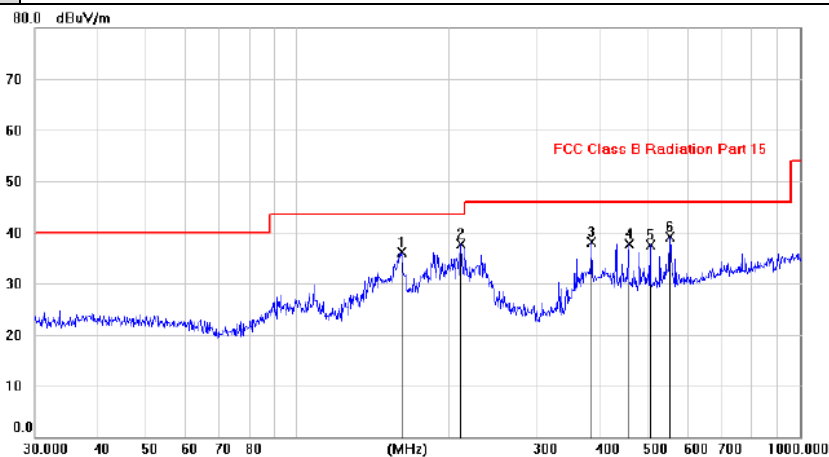
Note: 1.The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

2.Only show the test data of the worst Channel in this report.

From 30MHz to 1000MHz: Conclusion: PASS

Pol Vertical

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	38.3686	19.25	14.24	33.49	40.00	-6.51	peak		
2		76.7539	18.91	10.27	29.18	40.00	-10.82	peak		
3		161.3609	21.08	14.91	35.99	43.50	-7.51	peak		
4		203.7846	25.99	10.96	36.95	43.50	-6.55	peak		
5		384.0215	19.65	15.98	35.63	46.00	-10.37	peak		
6		551.9793	18.68	19.23	37.91	46.00	-8.09	peak		

Pol Horizontal

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		161.3232	21.19	14.91	36.10	43.50	-7.40	peak		
2	*	211.5263	26.57	11.18	37.75	43.50	-5.75	peak		
3		384.0215	22.13	15.98	38.11	46.00	-7.89	peak		
4		456.0124	20.12	17.62	37.74	46.00	-8.26	peak		
5		503.9986	19.16	18.28	37.44	46.00	-8.56	peak		
6		552.0438	19.93	19.23	39.16	46.00	-6.84	peak		

*:Maximum data x:Over limit !:over margin

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

Remark: All modes have been tested, and only worst data of (GFSK) was listed in this report.

From 1G-25GHz

Test Mode: GFSK TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4804	44.06	V	33.95	10.18	34.26	53.93	74	20.07	PK
4804	40.29	V	33.95	10.18	34.26	50.16	54	3.84	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
4824	45.01	H	33.95	10.18	34.26	54.88	74	19.12	PK
4824	36.20	H	33.95	10.18	34.26	46.07	54	7.93	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX Mid									
4882	42.52	V	33.93	10.2	34.29	52.36	74	21.64	PK
4882	35.37	V	33.93	10.2	34.29	45.21	54	8.79	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
4882	46.37	H	33.93	10.2	34.29	56.21	74	17.79	PK
4882	36.03	H	33.93	10.2	34.29	45.87	54	8.13	AV
7323	/	/	/	/	/	/	/	/	/
9764	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX High									
4960	46.68	V	33.98	10.22	34.25	56.63	74	17.37	PK
4960	36.01	V	33.98	10.22	34.25	45.96	54	8.04	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/
4960	42.45	H	33.98	10.22	34.25	52.40	74	21.60	PK
4960	34.25	H	33.98	10.22	34.25	44.20	54	9.80	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/
Note: 1, Result = Read level + Antenna factor + cable loss-Amp factor 2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

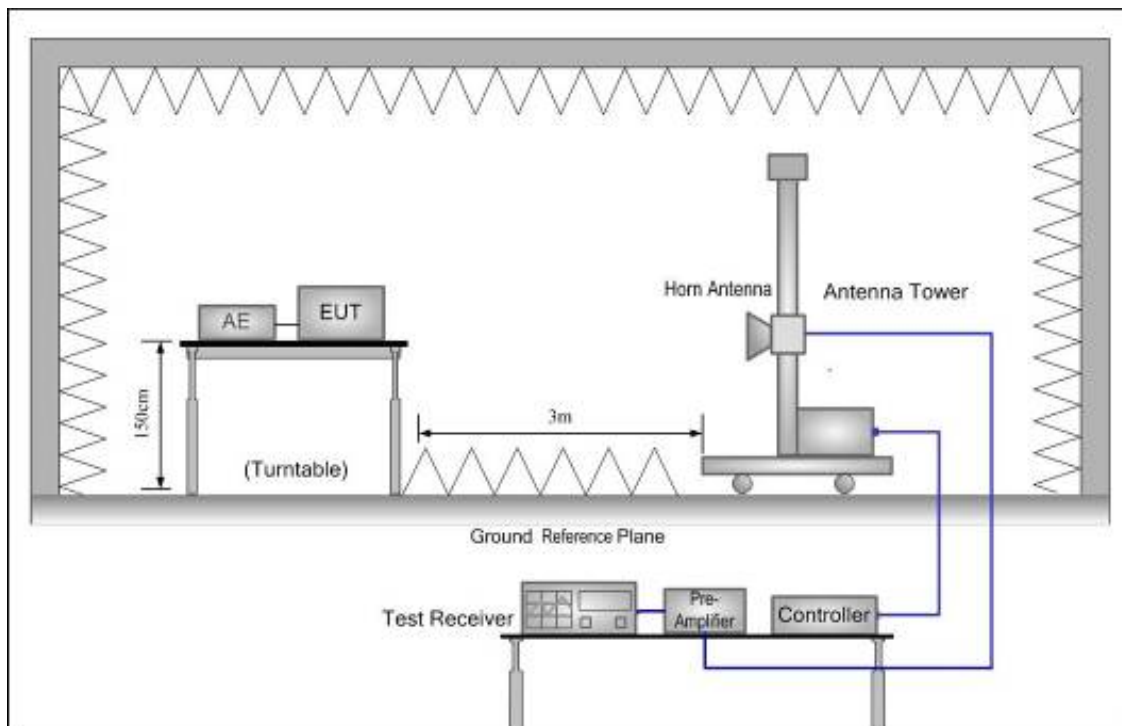
Remark: All modes have been tested, and only worst data of (GFSK) was listed in this report.

Conducted method

EUT Description	Wireless TV Speaker	Model No.	W226																																																																																				
Temperature	24°C	Humidity	56%																																																																																				
Test mode	GFSK(2403MHz)	Test mode	GFSK(2439MHz)																																																																																				
Spectrum Ref Level 6.62 dBm Offset 6.62 dB RBW 100 kHz Att 30 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep SGL Count 10/10 1Pk Max 0 dBm M1[1] -3.19 dBm 2.4120 GHz -10 dBm M2[1] -45.27 dBm 18.2331 GHz -20 dBm D1 -19.080 dBm -30 dBm -40 dBm -50 dBm M3 M4 M5 -60 dBm -70 dBm -80 dBm -90 dBm Start 30.0 MHz 1001 pts Stop 25.0 GHz <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.412 GHz</td><td>-3.19 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>18.2331 GHz</td><td>-45.27 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>4.999 GHz</td><td>-51.15 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>7.0216 GHz</td><td>-49.56 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>9.6435 GHz</td><td>-49.82 dBm</td><td></td><td></td></tr></table> Date: 30.MAR.2021 09:48:02		Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.412 GHz	-3.19 dBm			M2	1		18.2331 GHz	-45.27 dBm			M3	1		4.999 GHz	-51.15 dBm			M4	1		7.0216 GHz	-49.56 dBm			M5	1		9.6435 GHz	-49.82 dBm			Spectrum Ref Level 6.77 dBm Offset 6.77 dB RBW 100 kHz Att 30 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep SGL Count 10/10 1Pk Max 0 dBm M1[1] -3.58 dBm 2.4370 GHz -10 dBm M2[1] -45.59 dBm 18.3080 GHz -20 dBm D1 -20.499 dBm -30 dBm -40 dBm -50 dBm M3 M4 M5 -60 dBm -70 dBm -80 dBm -90 dBm Start 30.0 MHz 1001 pts Stop 25.0 GHz <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.437 GHz</td><td>-3.58 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>18.308 GHz</td><td>-45.59 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>4.8742 GHz</td><td>-50.03 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>7.1215 GHz</td><td>-49.60 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>9.8182 GHz</td><td>-49.40 dBm</td><td></td><td></td></tr></table> Date: 30.MAR.2021 09:58:49		Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.437 GHz	-3.58 dBm			M2	1		18.308 GHz	-45.59 dBm			M3	1		4.8742 GHz	-50.03 dBm			M4	1		7.1215 GHz	-49.60 dBm			M5	1		9.8182 GHz	-49.40 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																																	
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M5	1		9.8182 GHz	-49.40 dBm																																																																																			
Test mode	GFSK(2478MHz)																																																																																						
Spectrum Ref Level 6.61 dBm Offset 6.61 dB RBW 100 kHz Att 30 dB SWT 250 ms VBW 300 kHz Mode Auto Sweep SGL Count 10/10 1Pk Max 0 dBm M1[1] -5.01 dBm 2.4870 GHz -10 dBm M2[1] -45.70 dBm 16.9347 GHz -20 dBm D1 -22.679 dBm -30 dBm -40 dBm -50 dBm M3 M4 M5 -60 dBm -70 dBm -80 dBm -90 dBm Start 30.0 MHz 1001 pts Stop 25.0 GHz <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.487 GHz</td><td>-5.01 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>16.9347 GHz</td><td>-45.70 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>4.9741 GHz</td><td>-51.48 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>7.5709 GHz</td><td>-49.68 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>9.8182 GHz</td><td>-49.96 dBm</td><td></td><td></td></tr></table> Date: 30.MAR.2021 10:02:36		Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		2.487 GHz	-5.01 dBm			M2	1		16.9347 GHz	-45.70 dBm			M3	1		4.9741 GHz	-51.48 dBm			M4	1		7.5709 GHz	-49.68 dBm			M5	1		9.8182 GHz	-49.96 dBm																																														
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7. Band Edge Compliance

7.1. Block Diagram of Test Setup



7.2. Limit

Please refer section RSS-GEN&15.247.

7.3. Test Procedure

Details see the KDB558074 D01 Meas Guidance V05

8.2.1 Put the EUT on a 0.8m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission

8.2.2 Check the spurious emissions out of band.

8.2.3 RBW 1MHz ,VBW 3MHz ,peak detector for peak value , RBW 1MHz ,VBW 3MHz ,RMS detector for AV value.

7.4. Test Result

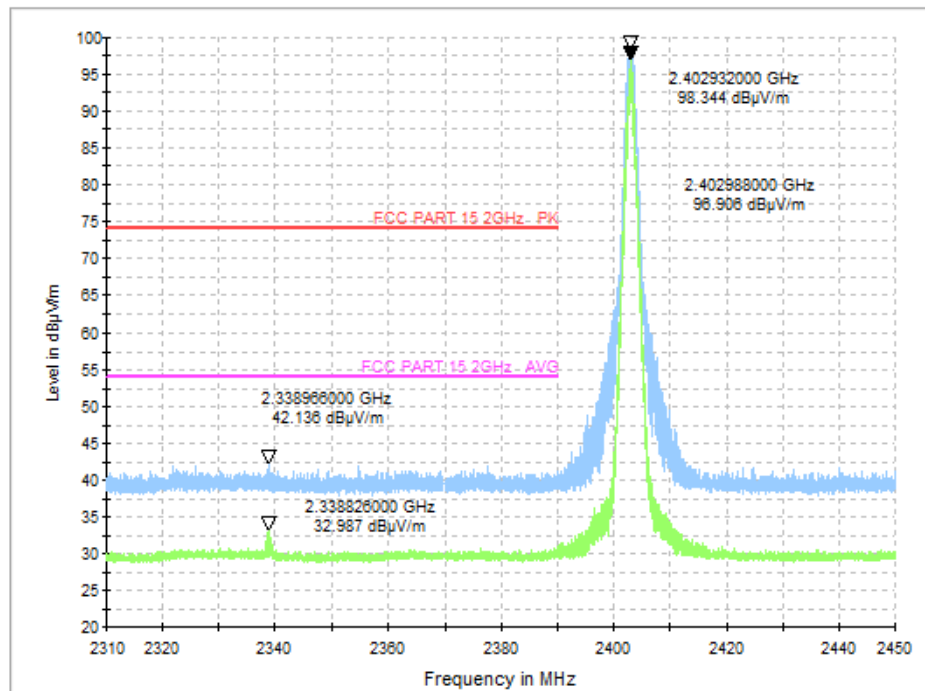
PASS. (See below detailed test data)

Radiated Method:

Hopping-off

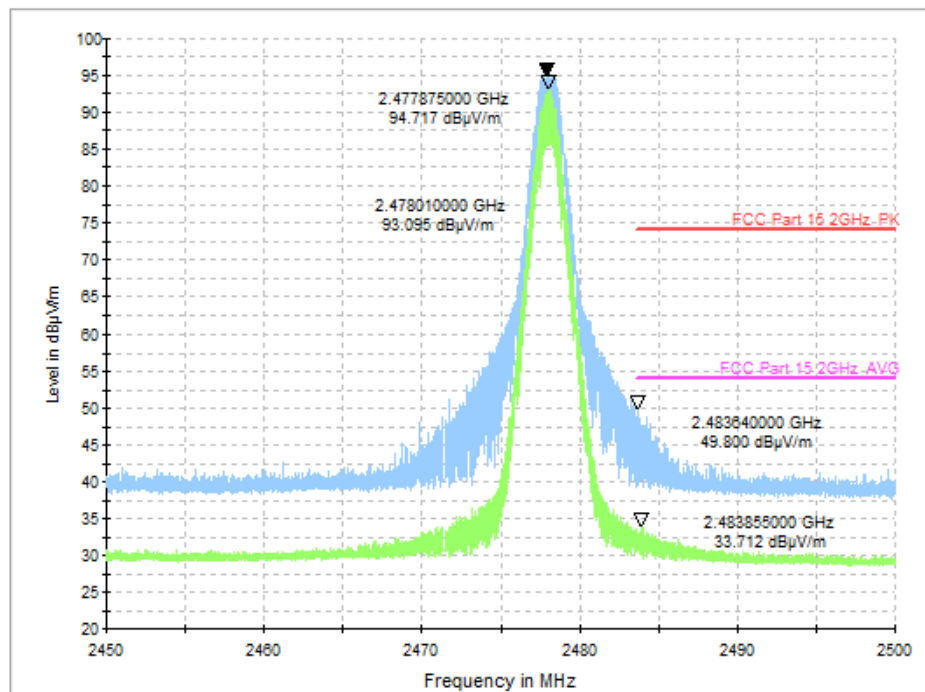
Test Mode:

GFSK-Low



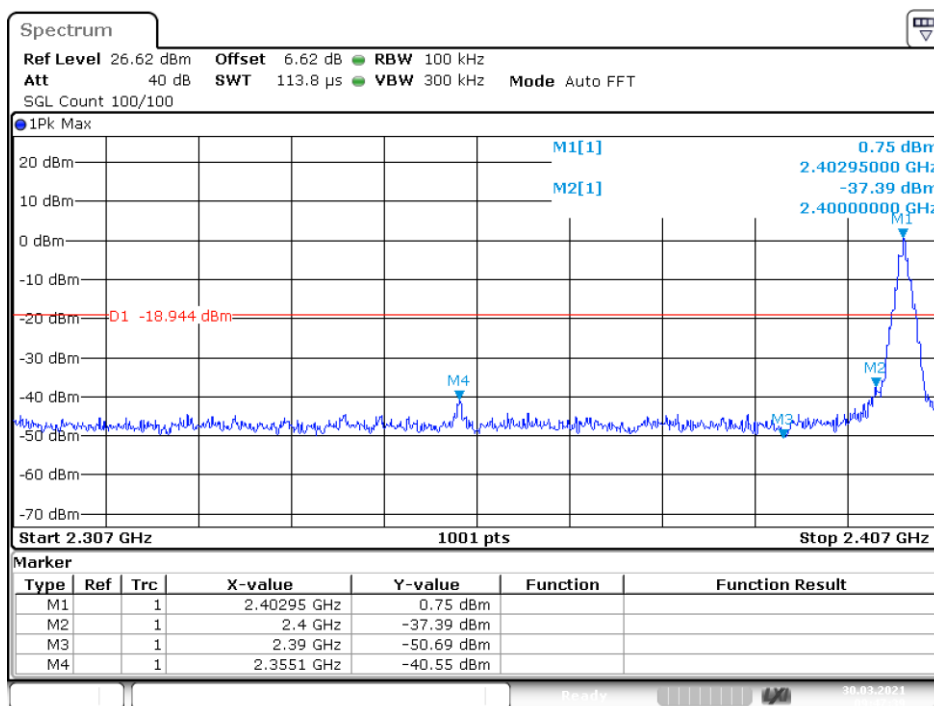
Test Mode:

GFSK-High

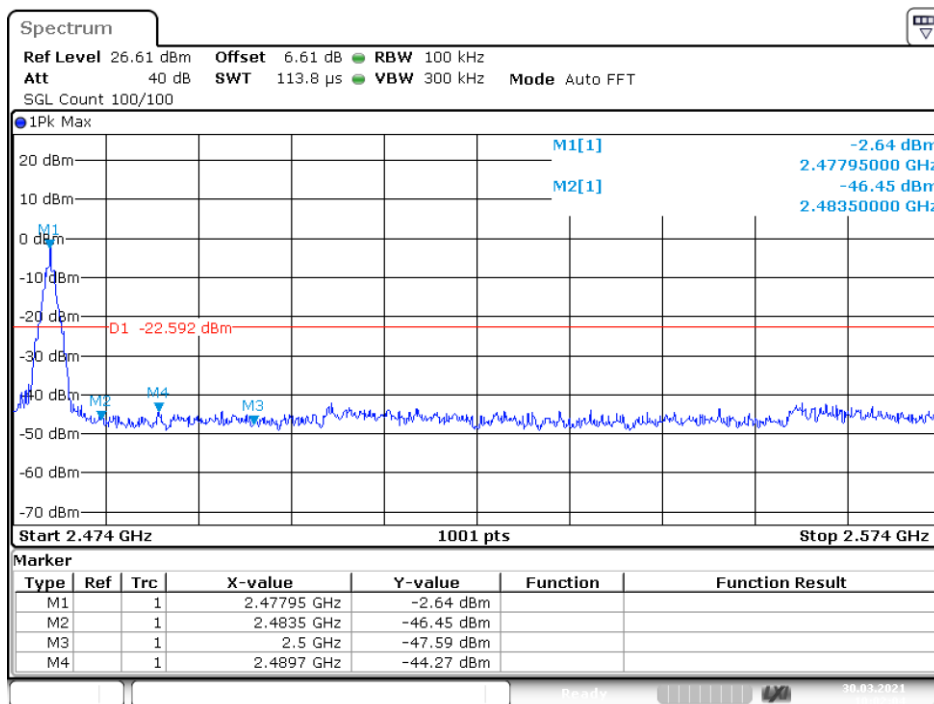


Conducted Method

Band Edge NVNT 1-DH1 2403MHz Ant1 Emission

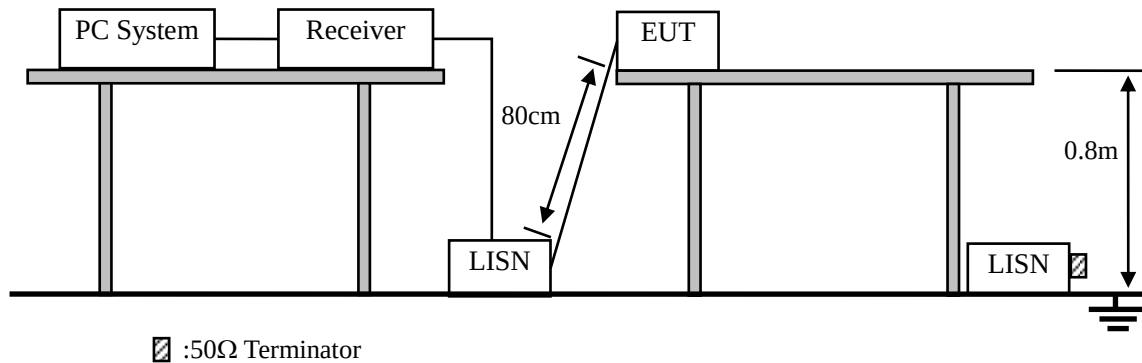


Band Edge NVNT 1-DH1 2480MHz Ant1 Emission



8. Power Line Conducted Emissions

8.1. Block Diagram of Test Setup



8.2. Limit

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

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

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

8.3. Test Procedure

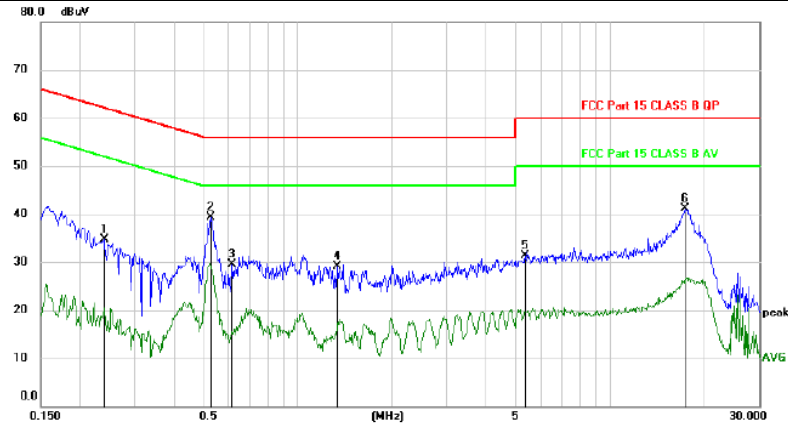
- (1) The EUT was placed on a non-metallic table, 80cm above the ground plane.
- (2) Setup the EUT and simulator as shown in 10.1
- (3) The EUT Power connected to the power mains through a power adapter and a line impedance stabilization network (L.I.S.N1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N2), this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. 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 :2013on conducted Emission test.
- (4) The bandwidth of test receiver is set at 10KHz.
- (5) The frequency range from 150 KHz to 30MHz is checked.

8.4. Test Result

PASS. (See below detailed test data)

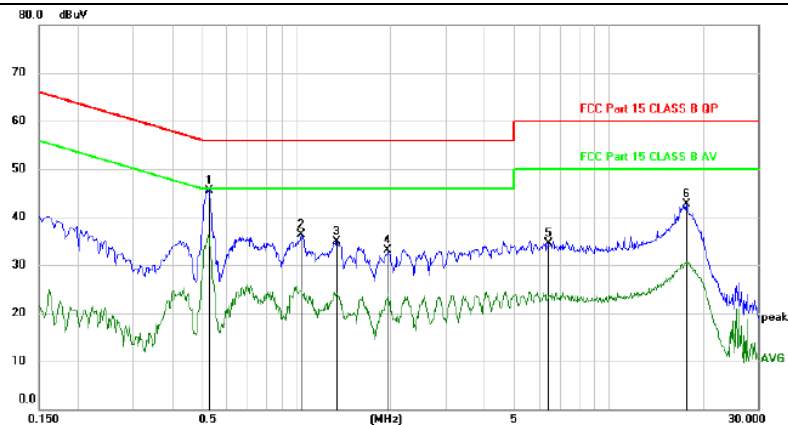
Note: If peak Result comply with AV limit, QP and AV Result is deemed to comply with AV limit

Pol	Line
-----	------



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.2400	24.81	9.96	34.77	62.10	-27.33	peak	
2	*	0.5280	29.38	9.95	39.33	56.00	-16.67	peak	
3		0.6150	19.64	9.92	29.56	56.00	-26.44	peak	
4		1.3410	19.12	9.90	29.02	56.00	-26.98	peak	
5		5.3430	21.17	10.05	31.22	60.00	-28.78	peak	
6		17.3280	30.74	10.40	41.14	60.00	-18.86	peak	

Pol	Neutral
-----	---------



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.5250	35.49	9.95	45.44	56.00	-10.56	peak	
2		1.0350	26.38	9.92	36.30	56.00	-19.70	peak	
3		1.3440	25.00	9.90	34.90	56.00	-21.10	peak	
4		1.9680	23.13	9.88	33.01	56.00	-22.99	peak	
5		6.3960	24.41	10.10	34.51	60.00	-25.49	peak	
6		17.7119	32.26	10.41	42.67	60.00	-17.33	peak	

*:Maximum data x:Over limit !:over margin

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

Remark: All modes have been tested, and only worst data of GFSK was listed in this report.

9. Antenna Requirements

9.1. Standard Requirement

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

9.2. Antenna Connected Construction

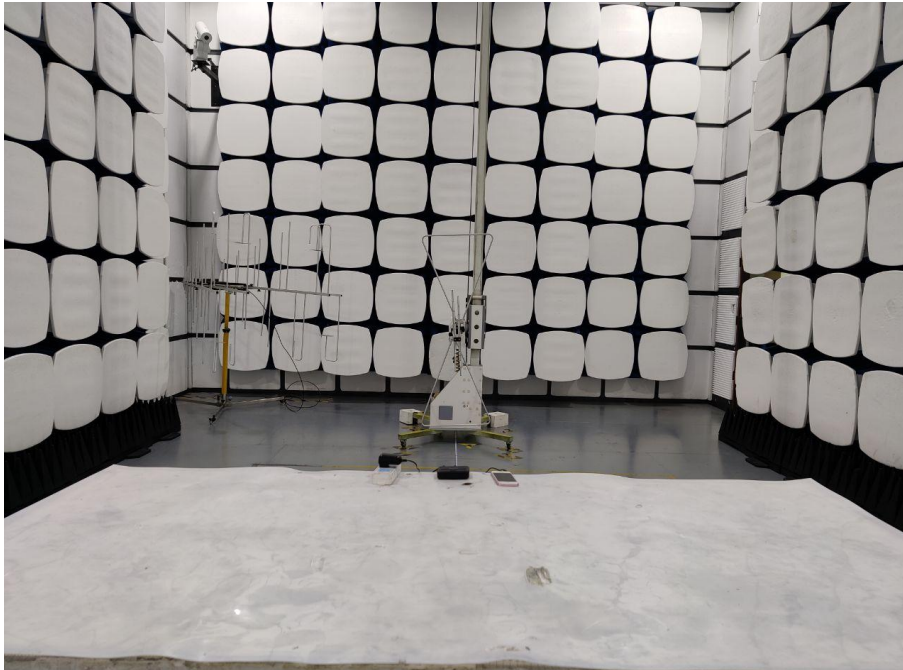
Please see EUT photo for details.

9.3. Results

The EUT antenna is Internal antenna. It complies with the standard requirement.

10. Test Setup Photo

10.1. Photos of Radiated emission



10.2.Photos of Conducted Emission test

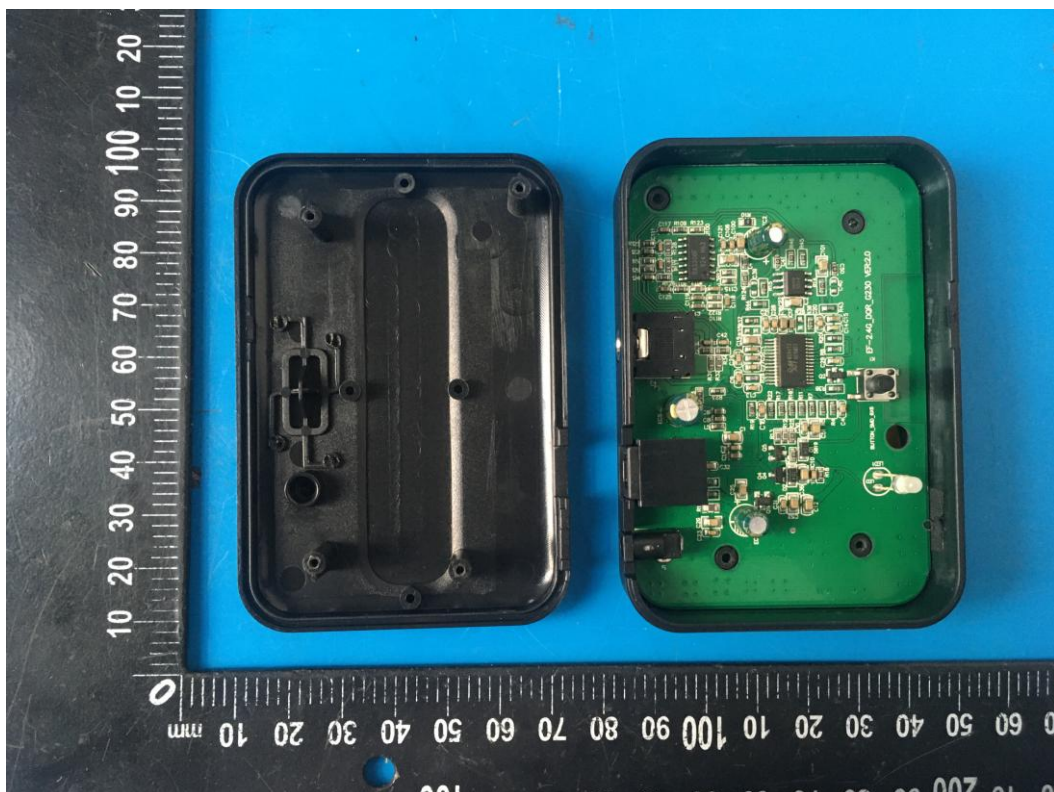


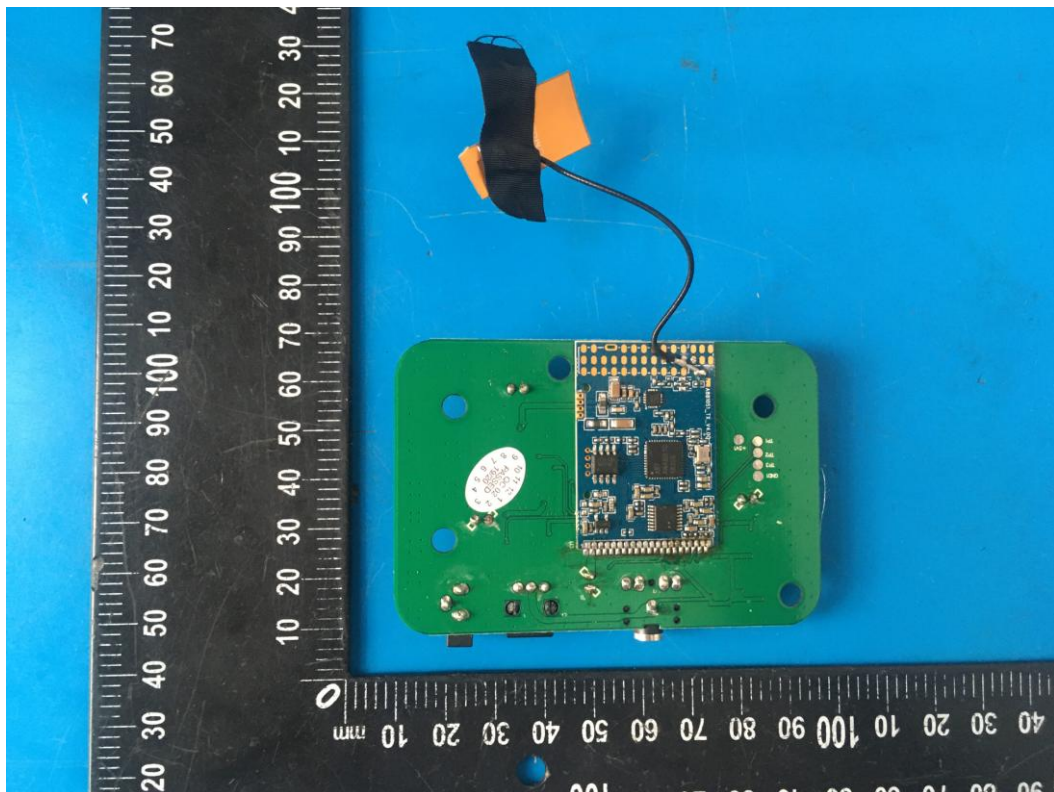
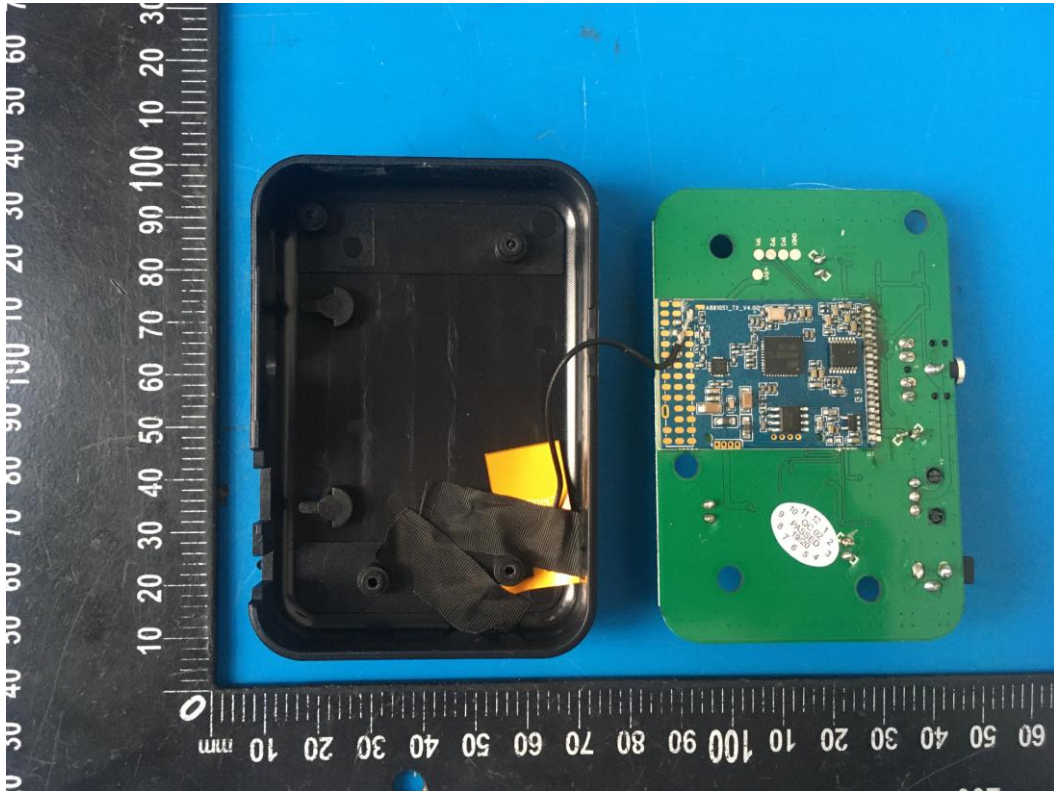
11.Photos Of EUT

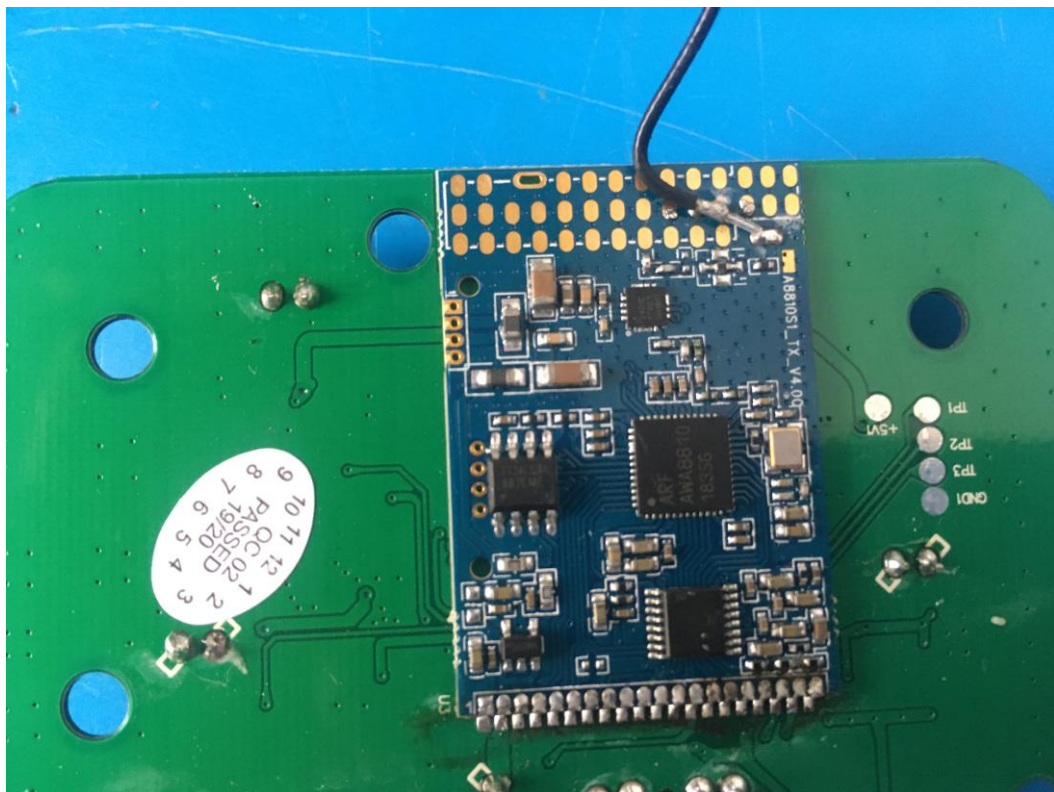
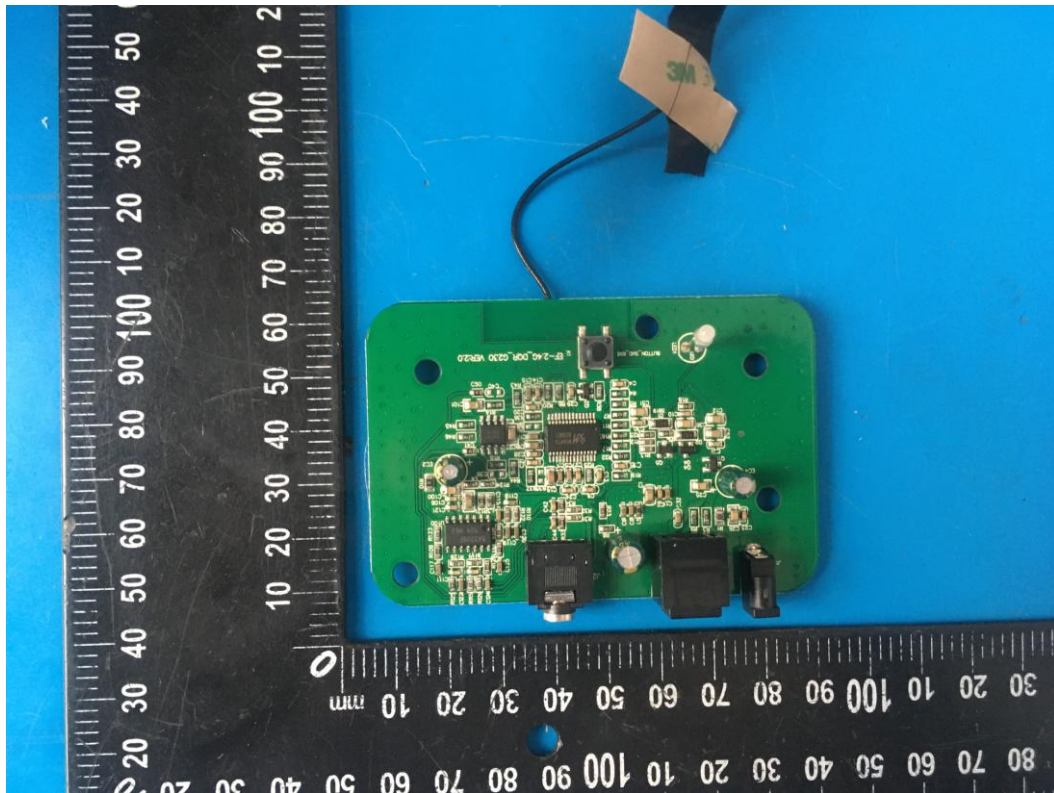












-----THE END OF REPORT-----