FCC TEST REPORT

FCC ID: 2A4RD-SW-208

On Behalf of

Shenzhen Sunwin Technology Co.,Ltd

SPEAKER

Model No.: See Annex for details

Prepared for	:	Shenzhen Sunwin Technology Co.,Ltd
Address	:	No.202 B Bldg, No.13 Futang Rd, Tangxiayong Community, Yanluo Street, Bao’an District, Shenzhen, China

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

Report Number	:	A2202088-C01-R01
Date of Receipt	:	February 21, 2022
Date of Test	:	February 21, 2022-March 9, 2022
Date of Report	:	March 9, 2022
Version Number	:	V0

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TEST REPORT DECLARATION

Applicant	:	Shenzhen Sunwin Technology Co.,Ltd
Address	:	No.202 B Bldg, No.13 Futang Rd, Tangxiayong Community, Yanluo Street, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen Sunwin Technology Co.,Ltd
Address	:	No.202 B Bldg, No.13 Futang Rd, Tangxiayong Community, Yanluo Street, Bao'an District, Shenzhen, China
EUT Description	:	SPEAKER
(A) Model No.	:	See details for Annex
(B) Trademark	:	SANYUN

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247,

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).....…..:	Yannis Wen Project Engineer	Yannis Wen
Approved by (name + signature)…....:	Simple Guan Project Manager	
Date of issue…… ……..:	March 9, 2022	

Revision History

Revision	Issue Date	Revisions	Revised By
V0	March 9, 2022	Initial released Issue	Yannis Wen

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	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: 15.209 FCC Part 15: 15.247(d)	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: 15.247(d)	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/PMN	:	SPEAKER
Model Number/HVIN(s)	:	See details for Annex
Diff.	:	There is no difference except for the appearance, shape and model name. So all the test were performed on the model SW-208.
Trademark	:	SANYUN
Test Voltage	:	AC 120V/60Hz
Radio Technology	:	GFSK for Bluetooth (BT LE)
Operation frequency	:	2402-2480MHz
Channel No.	:	40 channels for Bluetooth (BT LE)
Channel Separation	:	2MHz for Bluetooth (BT LE)
Modulation	:	GFSK for Bluetooth (BT LE)
Antenna Type	:	Internal antenna, Maximum Gain is 1dBi.
Software Version	:	V1.0
Hardware version/FVIN	:	V1.0

Remark:
1. The worst-case simultaneous transmission configuration was evaluated with no non-compliance found. Results in this report are only for Bluetooth BLE function, and there is no other transmitter involved.

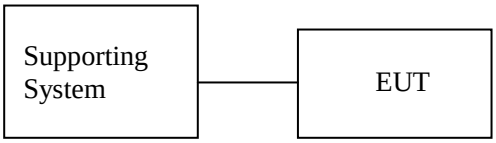
2.2.Accessories of Device (EUT)

Accessories1	:	/
Manufacturer	:	/
Model	:	/
INPUT	:	/
OUTPUT	:	/

2.3.Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification or SDOC
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 : CH0	2402
	Middle: CH19	2440
	High: CH39	2480

The test software “QRCT” was used to control EUT work in Continuous TX mode, and select test channel, wireless mode.

2.6.Test Conditions

Items	Required	Actual
Temperature range:	15-35℃	27℃
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
Designation Number: CN1236

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)	4.16dB(Polarize: H)
	4.13dB(Polarize: V)
Uncertainty for radio frequency	5.4×10-8
Uncertainty for conducted RF Power	0.37dB
Uncertainty for temperature	0.2℃
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	3Year
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	102137	2021.08.25	1Year
Spectrum analyzer	Agilent	N9020A	MY499100060	2021.08.25	1Year
Receiver	ROHDE&SCHWARZ	ESR	1316.3003K03-102082-Wa	2021.08.25	1Year
Receiver	R&S	ESCI	101165	2021.08.25	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	2020.04.12	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2020.04.12	2Year
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00059	2021.08.30	2Year
RF Cable	Resenberger	Cable 1	RE1	2021.08.25	1Year
RF Cable	Resenberger	Cable 2	RE2	2021.08.25	1Year
RF Cable	Resenberger	Cable 3	CE1	2021.08.25	1Year
Pre-amplifier	HP	HP8347A	2834A00455	2021.08.25	1Year
Pre-amplifier	Agilent	8449B	3008A02664	2021.08.25	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126-466	2021.08.25	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	101043	2021.08.25	1 Year
Horn Antenna	SCHWARZBECK	BBHA9170	00946	2021.08.30	2 Year
Preamplifier	SKET	LNPA_1840-50	SK2018101801	2021.08.25	1 Year
Power Meter	Agilent	E9300A	MY41496628	2021.08.25	1 Year
Power Sensor	DARE	RPR3006W	15100041SNO91	2021.08.25	1 Year
Temp. & Humid. Chamber	Weihuang	WHTH-1000-40-880	100631	2021.04.21	1 Year
Switching Mode Power Supply	JUNKE	JK12010S	20140927-6	2021.08.25	1 Year

3. Spurious Emission

3.1. Test Limits

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])

15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		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	29.5
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 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	
Note 1: The peak limit is 20 dB higher than the average limit			
Note 2: Peak limit applies (AVG limit + 20 dB) as well as RSS-247 Section 5.5			

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.

3.2.Test Procedure

The measuring distance of 3m shall be used for measurements at frequency up to 1GH and above 1GHz. The EUT was placed on a rotating 0.8 m high above ground for below 1GHz and 1.5m high for above1GHz testing, The table was rotated 360 degrees to determine the position of the highest radiation.

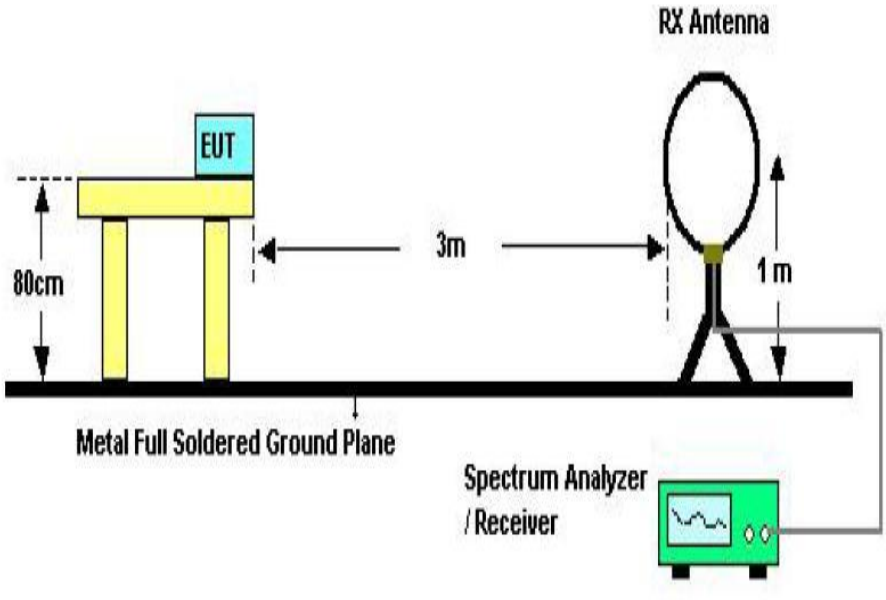
The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.

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

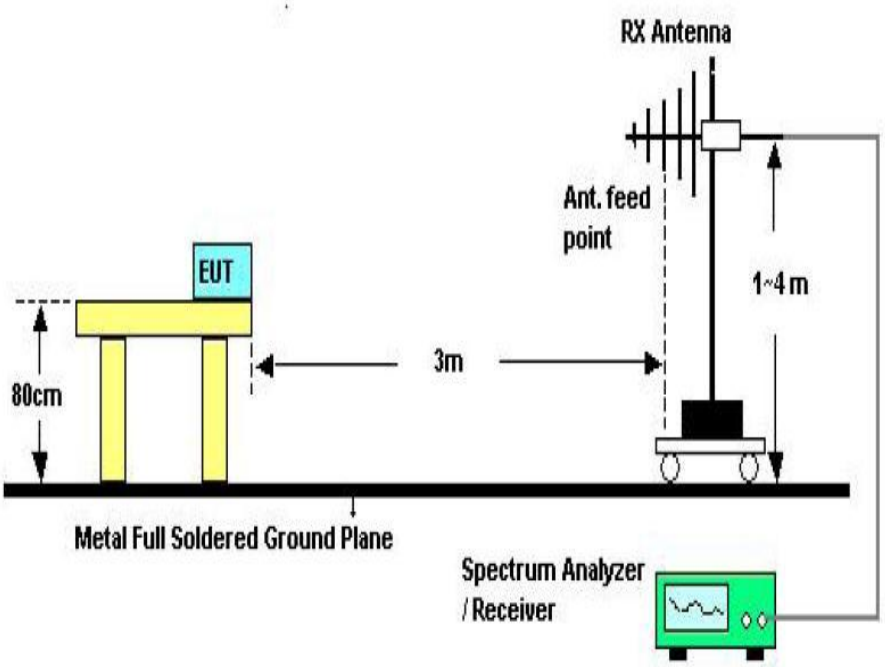
If Peak value comply with QP limit Below 1GHz, the EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.

For the actual test configuration, please see the test setup photo.

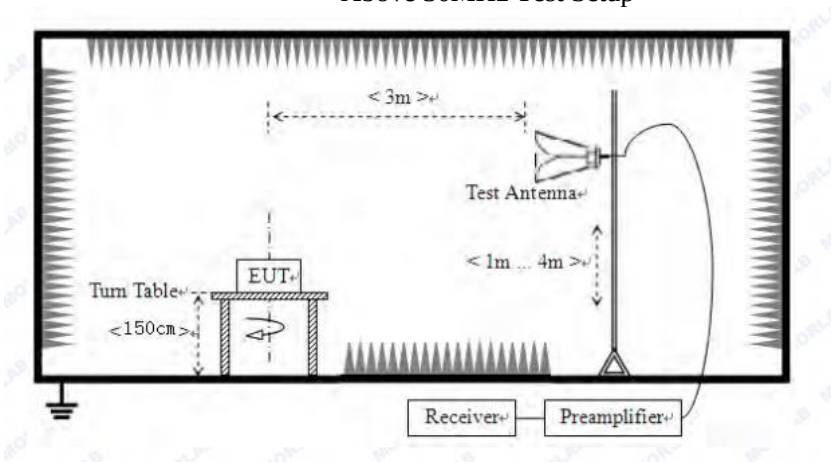
3.3.Test Setup



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

3.4.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 from 9 kHz to the 10th harmonic of the EUT.

Detailed information please see the following page.

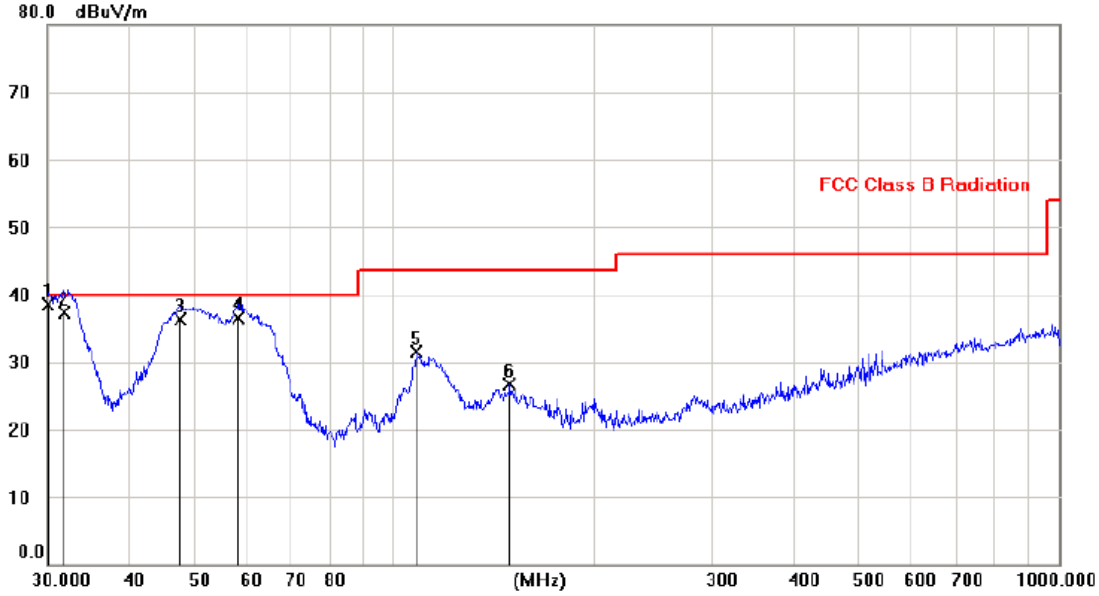
From 9KHz to 30MHz: Conclusion: PASS

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.

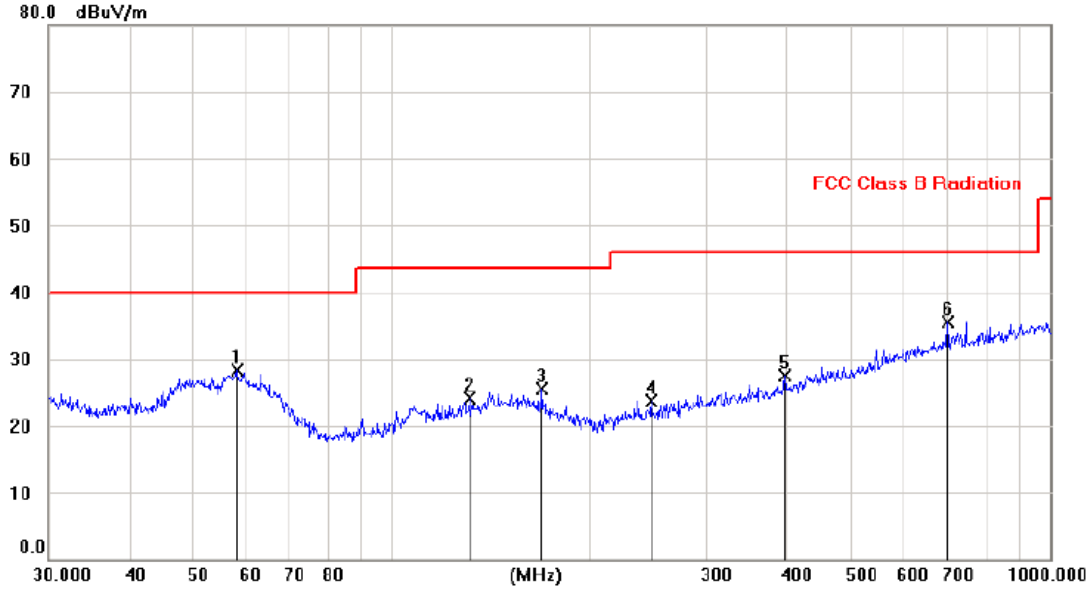
From 30MHz to 1000MHz: Conclusion: PASS

Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	30.0421	25.05	13.52	38.57	40.00	-1.43	QP			
2		31.7663	23.65	13.60	37.25	40.00	-2.75	QP			
3		47.5751	22.30	14.08	36.38	40.00	-3.62	QP			
4		58.3733	23.19	13.35	36.54	40.00	-3.46	QP			
5		107.8751	19.86	11.62	31.48	43.50	-12.02	peak			
6		149.4156	11.60	15.01	26.61	43.50	-16.89	peak			

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		58.0875	14.85	13.40	28.25	40.00	-11.75	peak			
2		131.2811	10.36	13.68	24.04	43.50	-19.46	peak			
3		169.3415	11.41	14.14	25.55	43.50	-17.95	peak			
4		248.3776	11.02	12.73	23.75	46.00	-22.25	peak			
5		395.1315	11.37	16.16	27.53	46.00	-18.47	peak			
6	*	699.9588	13.78	21.74	35.52	46.00	-10.48	peak			

Notes: Above is below 1GHz test data. This report only shall the worst case mode for TX 2402MHz.

From 1G-25GHz

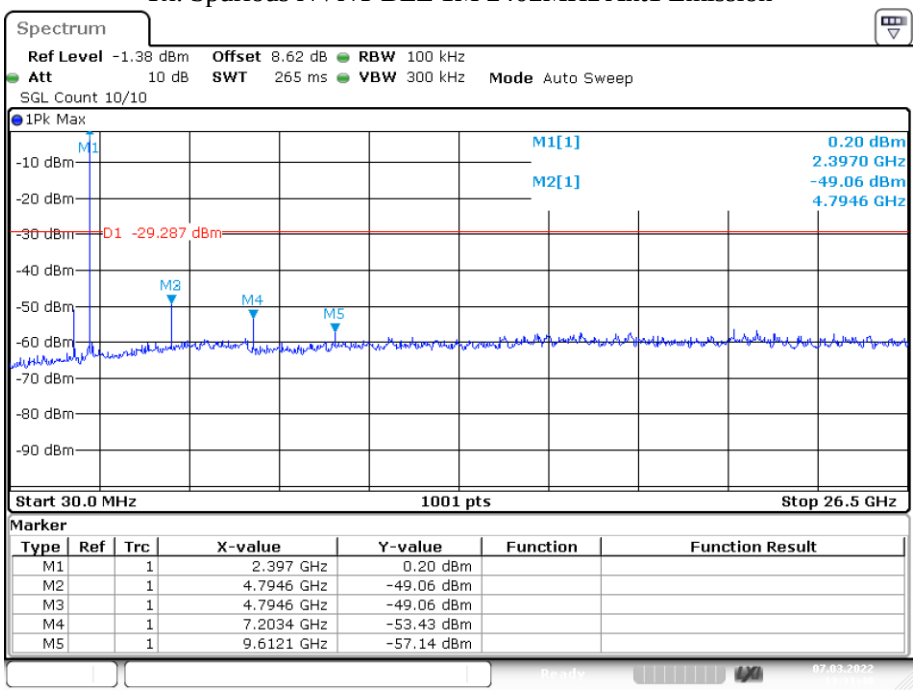
Test Mode: TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4804	44.27	V	33.95	10.18	34.26	54.14	74	-19.86	PK
4804	36.02	V	33.95	10.18	34.26	45.89	54	-8.11	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
4804	43.26	H	33.95	10.18	34.26	53.13	74	-20.87	PK
4804	36.35	H	33.95	10.18	34.26	46.22	54	-7.78	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
Test Mode: TX Mid									
4880	43.89	V	33.93	10.2	34.29	53.73	74	-20.27	PK
4880	33.21	V	33.93	10.2	34.29	43.05	54	-10.95	AV
7320	/	/	/	/	/	/	/	/	/
9760	/	/	/	/	/	/	/	/	/
4880	46.42	H	33.93	10.2	34.29	56.26	74	-17.74	PK
4880	35.14	H	33.93	10.2	34.29	44.98	54	-9.02	AV
7320	/	/	/	/	/	/	/	/	/
9760	/	/	/	/	/	/	/	/	/
Test Mode: TX High									
4960	45.86	V	33.98	10.22	34.25	55.81	74	-18.19	PK
4960	33.01	V	33.98	10.22	34.25	42.96	54	-11.04	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/
4960	42.41	H	33.98	10.22	34.25	52.36	74	-21.64	PK
4960	32.86	H	33.98	10.22	34.25	42.81	54	-11.19	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.

Conducted RF Spurious Emission

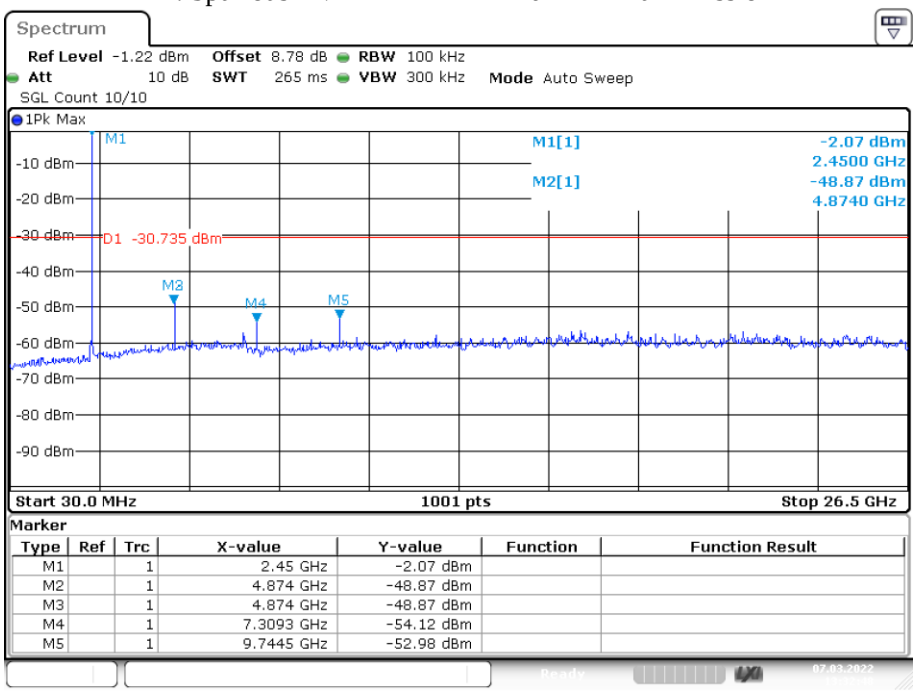
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE	2402	Ant 1	-49.77	-30	Pass
NVNT	BLE	2440	Ant 1	-48.12	-30	Pass
NVNT	BLE	2480	Ant 1	-44.94	-30	Pass

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



Date: 7.MAR.2022 13:31:40

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



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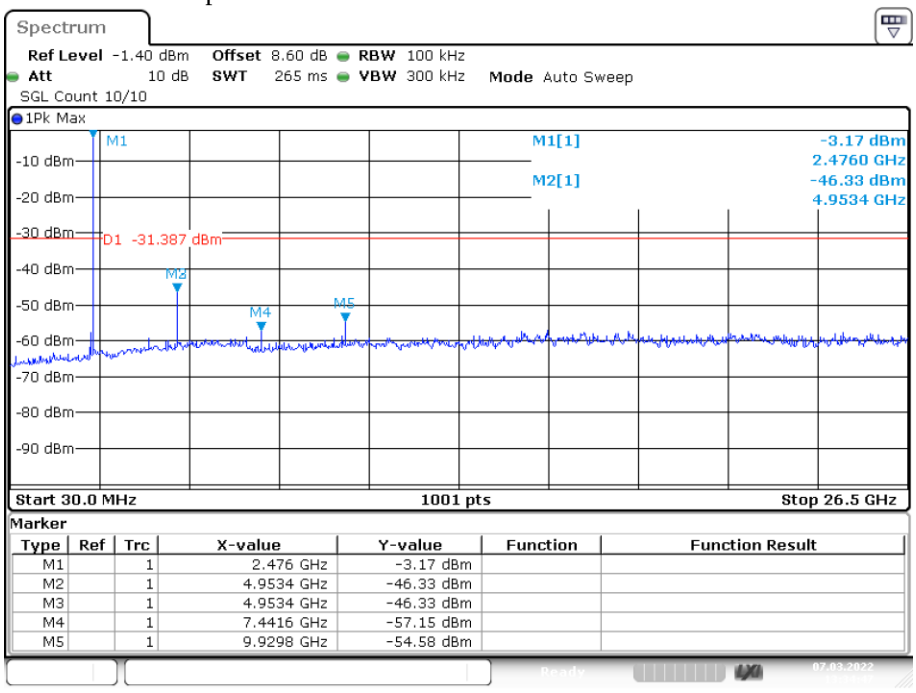
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



Date: 7.MAR.2022 13:34:47

4. Power Line Conducted Emission

4.1. Test Limits

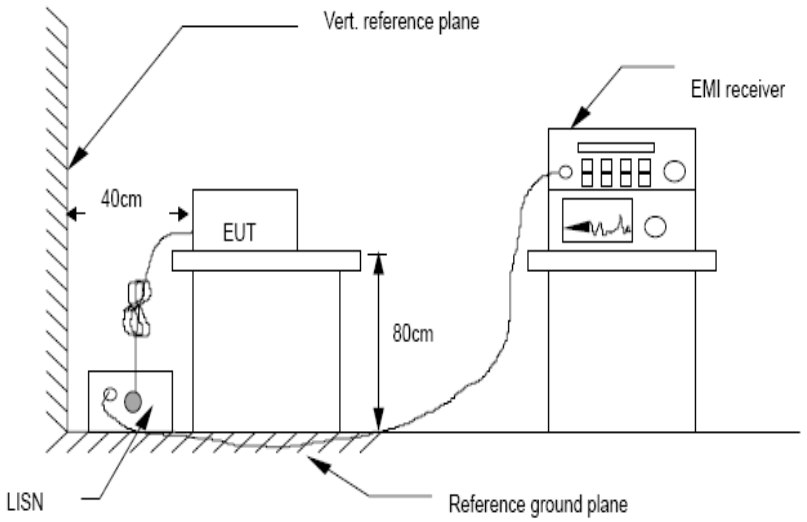
Frequency	Limits dB(μV)	
MHz	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.
3.The limit decreases in line with the logarithm of the frequency in rang of 0.15 to 0.50 MHz.

4.2. Test Procedure

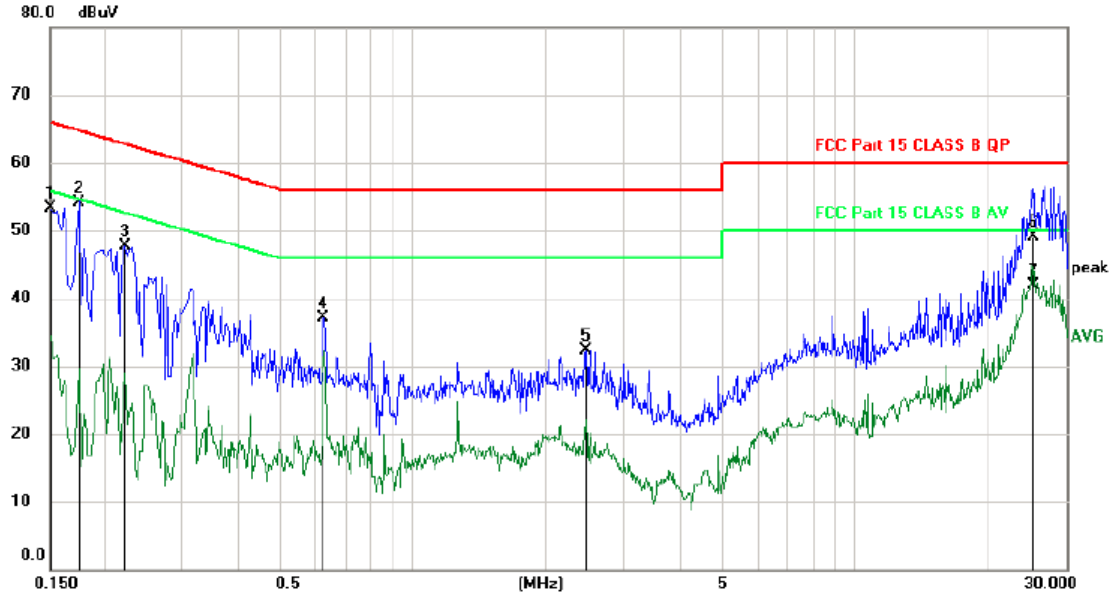
The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines 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 ANSI ANSI C63.10:2013 on Conducted Emission Measurement.
The bandwidth of test receiver is set at 9 kHz.

4.3.Test Setup



4.4.Test Results

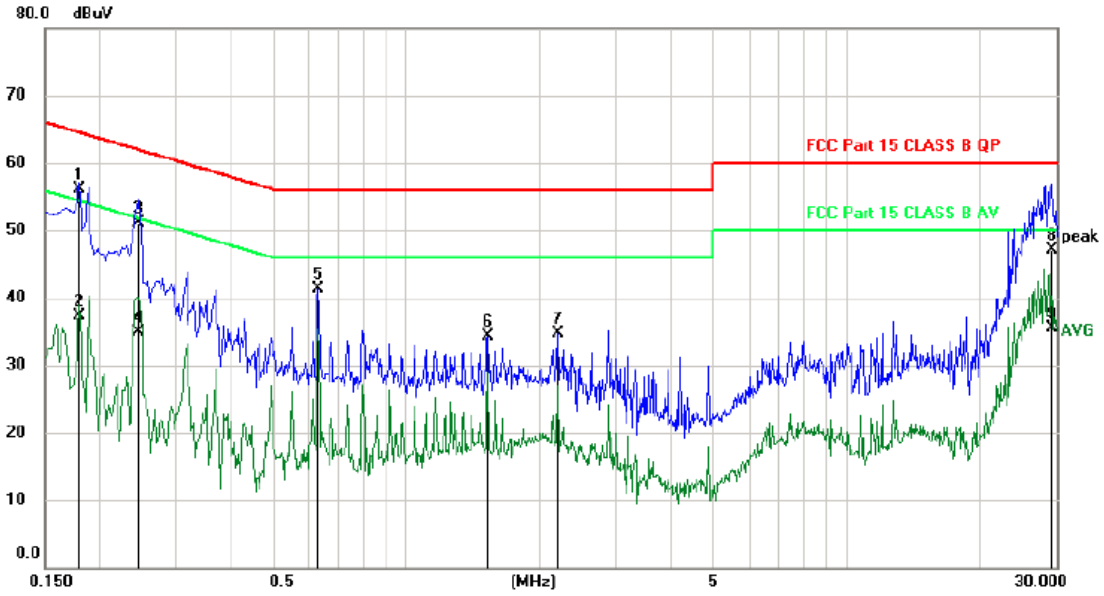
Line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	43.42	9.94	53.36	66.00	-12.64	peak	
2		0.1740	44.27	9.93	54.20	64.77	-10.57	peak	
3		0.2220	37.76	9.94	47.70	62.74	-15.04	peak	
4		0.6270	27.14	9.92	37.06	56.00	-18.94	peak	
5		2.4480	22.39	9.90	32.29	56.00	-23.71	peak	
6		25.2780	38.71	10.45	49.16	60.00	-10.84	QP	
7	*	25.2780	31.38	10.45	41.83	50.00	-8.17	AVG	

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

Neutral:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1800	46.26	9.93	56.19	64.49	-8.30	QP	
2		0.1800	27.42	9.93	37.35	54.49	-17.14	AVG	
3		0.2460	41.07	9.97	51.04	61.89	-10.85	QP	
4		0.2460	24.87	9.97	34.84	51.89	-17.05	AVG	
5		0.6300	31.36	9.92	41.28	56.00	-14.72	peak	
6		1.5300	24.35	9.90	34.25	56.00	-21.75	peak	
7		2.2050	24.77	9.89	34.66	56.00	-21.34	peak	
8		29.2500	36.48	10.64	47.12	60.00	-12.88	QP	
9		29.2500	24.79	10.64	35.43	50.00	-14.57	AVG	

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 mode, Channel 2402MHz (AC 120V/ 60Hz) was listed in this report.

5. Conducted Maximum Output Power

5.1.Test limits

Please refer section RSS-247 & 15.247.

5.2.Test Procedure

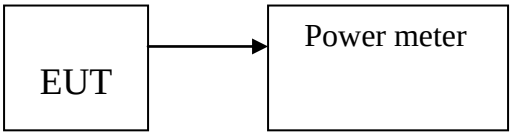
Details see the KDB558074 D01 Meas Guidance v05r02

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.

Note: The cable loss and attenuator loss were offset into measure device as amplitude offset.

5.3.Test Setup



5.4.Test Results

Channel	Frequency (MHz)	PK Output Power (dBm)	Limit (dBm)
CH1	2402	0.778	30
CH20	2440	-0.616	30
CH40	2480	-1.27	30
Conclusion: PASS			

6. Peak Power Spectral Density

6.1.Test limits

6.1.1 Please refer section RSS-247 & 15.247.

6.1.2 For direct sequence systems, the peak 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.

6.1.3 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.

6.2.Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

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

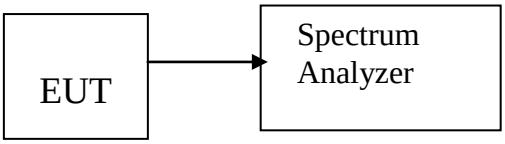
6.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

6.2.3 Set the spectrum analyzer as RBW = 3kHz(Set the RBW to: 3 kHz≤RBW≤100 kHz.), VBW = 10kHz(Set the VBW≥3×RBW), span≥1.5×DTS bandwidth., detail see the test plot.

6.2.4 Record the max reading.

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

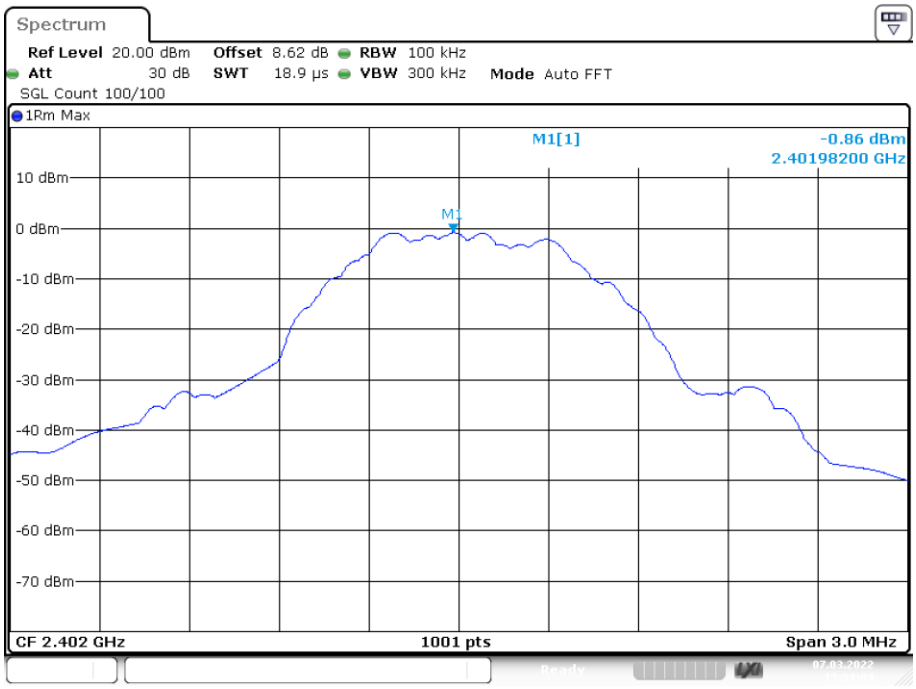
6.3.Test Setup



6.4.Test Results

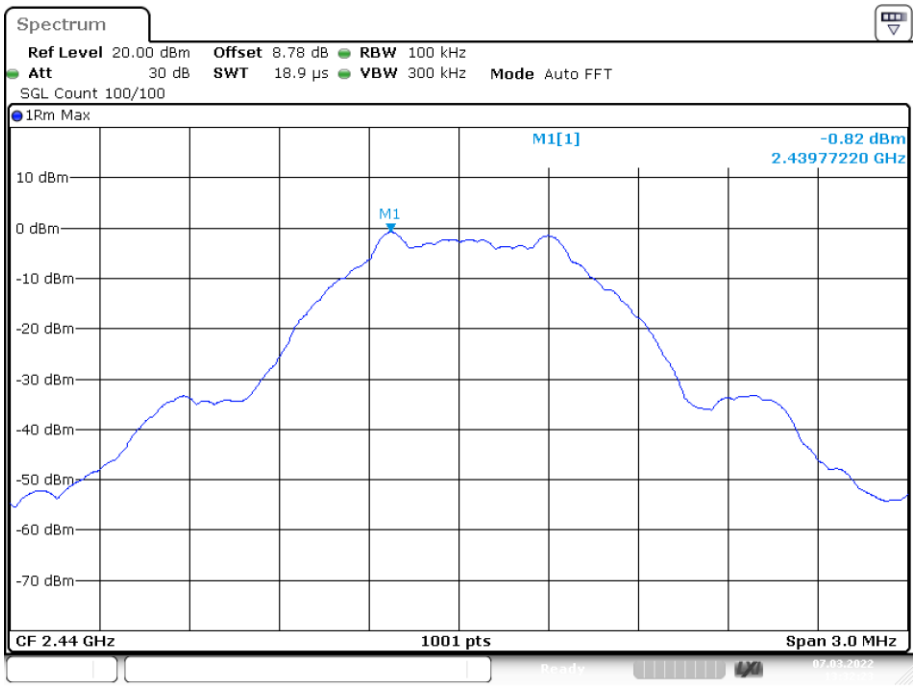
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE	2402	Ant 1	-0.862	8	Pass
NVNT	BLE	2440	Ant 1	-0.823	8	Pass
NVNT	BLE	2480	Ant 1	-1.468	8	Pass

PSD NVNT BLE 1M 2402MHz Ant1



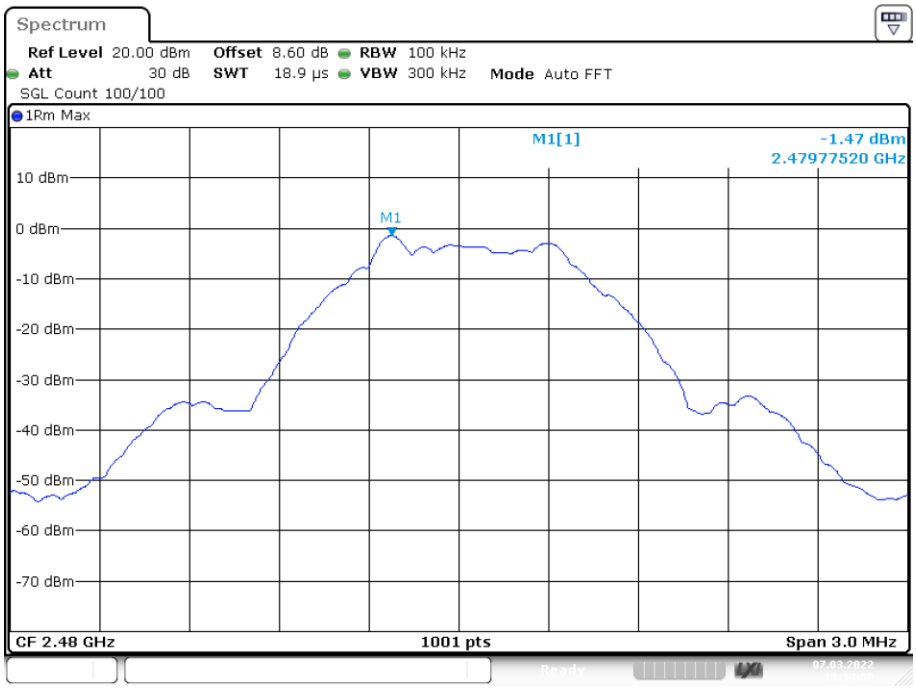
Date: 7.MAR.2022 13:31:04

PSD NVNT BLE 1M 2440MHz Ant1



Date: 7.MAR.2022 13:32:23

PSD NVNT BLE 1M 2480MHz Ant1



Date: 7.MAR.2022 13:34:08

7. Bandwidth

7.1.Test limits

Please refer sectionRSS-247 & 15.247

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

7.2.Test Procedure

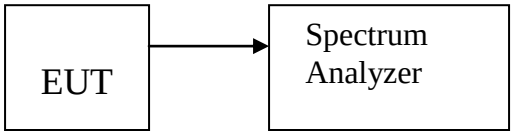
Details see the KDB558074 D01 Meas Guidance v05r02

a) The bandwidth is measured at an amplitude level reduced 6dB 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 =1-5%BW, VBW≥3*RBW, Sweep time set auto, detail see the test plot for 99% Bandwidth.

c) The test receiver set RBW = 100kHz, VBW≥3*RBW =300kHz, Sweep time set auto, detail see the test plot for 6dB Bandwidth.

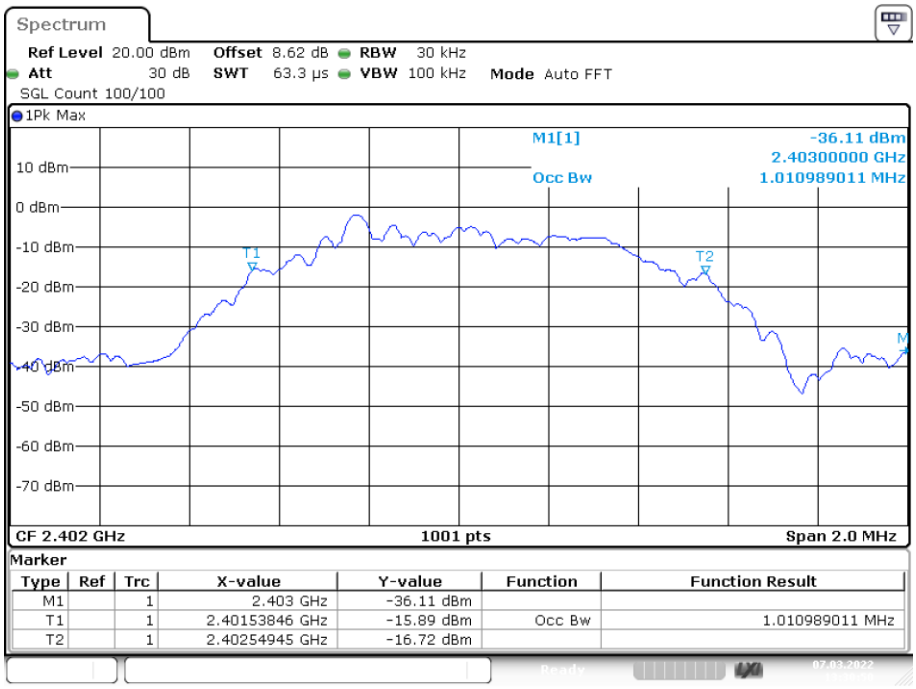
7.3.Test Setup



7.4.Test Results

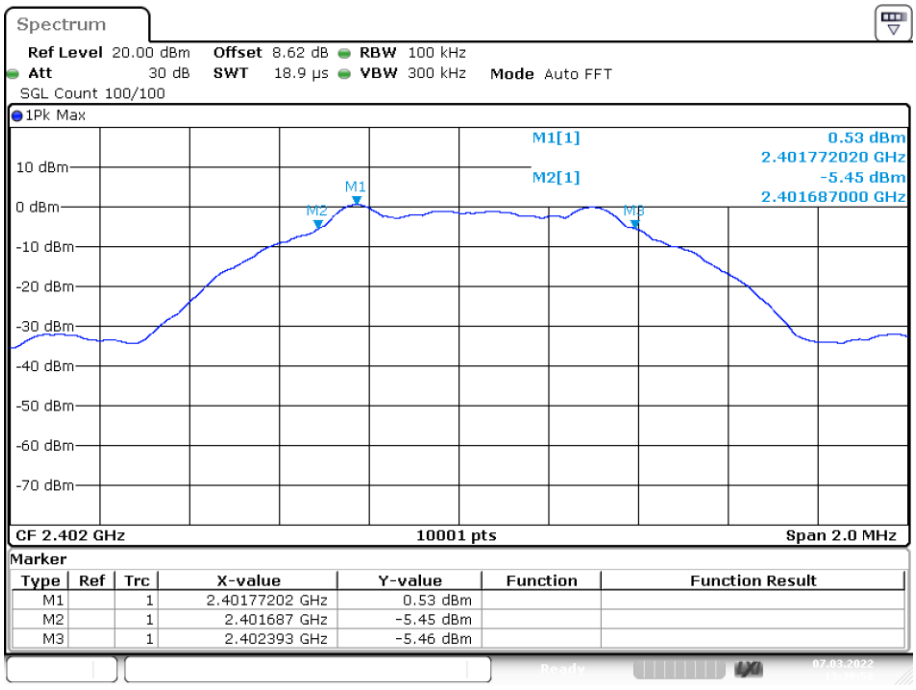
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE	2402	Ant 1	1.011	0.850	0.5	Pass
NVNT	BLE	2440	Ant 1	1.015	0.689	0.5	Pass
NVNT	BLE	2480	Ant 1	1.019	0.667	0.5	Pass

OBW NVNT BLE 2402MHz Ant1



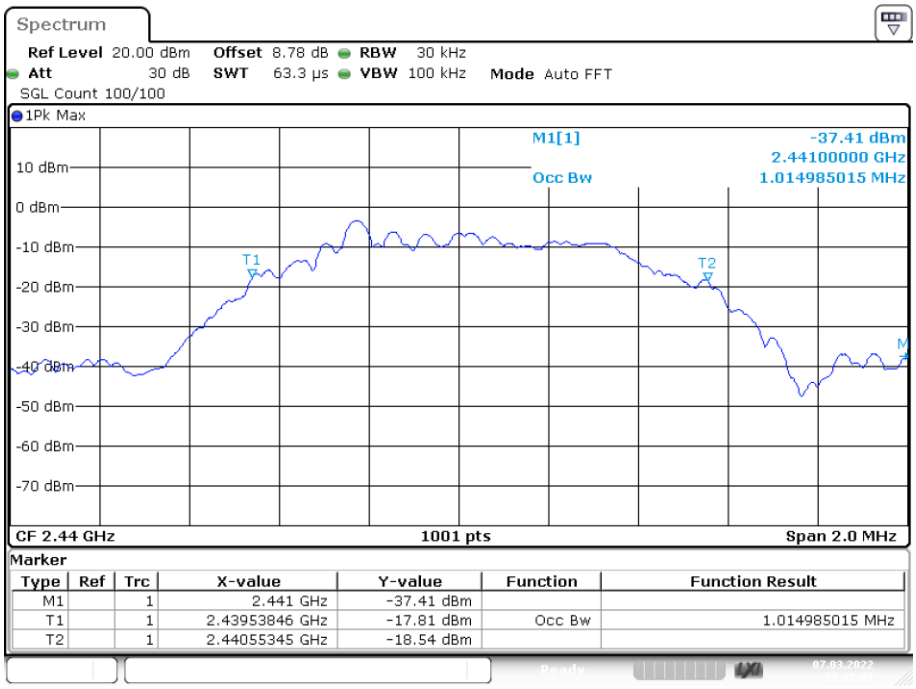
Date: 7.MAR.2022 13:30:49

-6 dB BW NVNT BLE 2402MHz Ant1



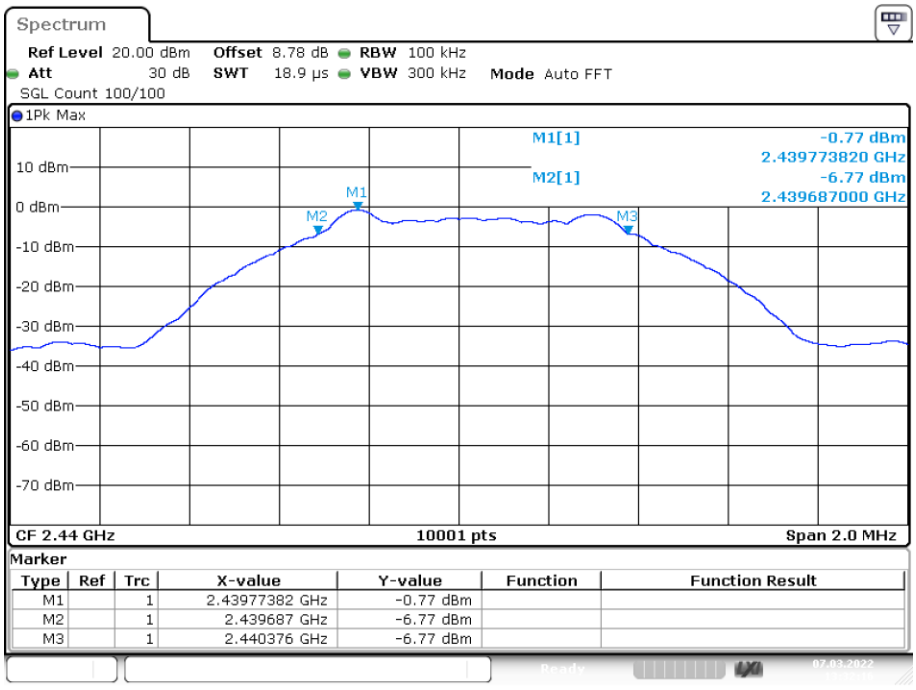
Date: 7.MAR.2022 13:30:57

OBW NVNT BLE 2440MHz Ant1



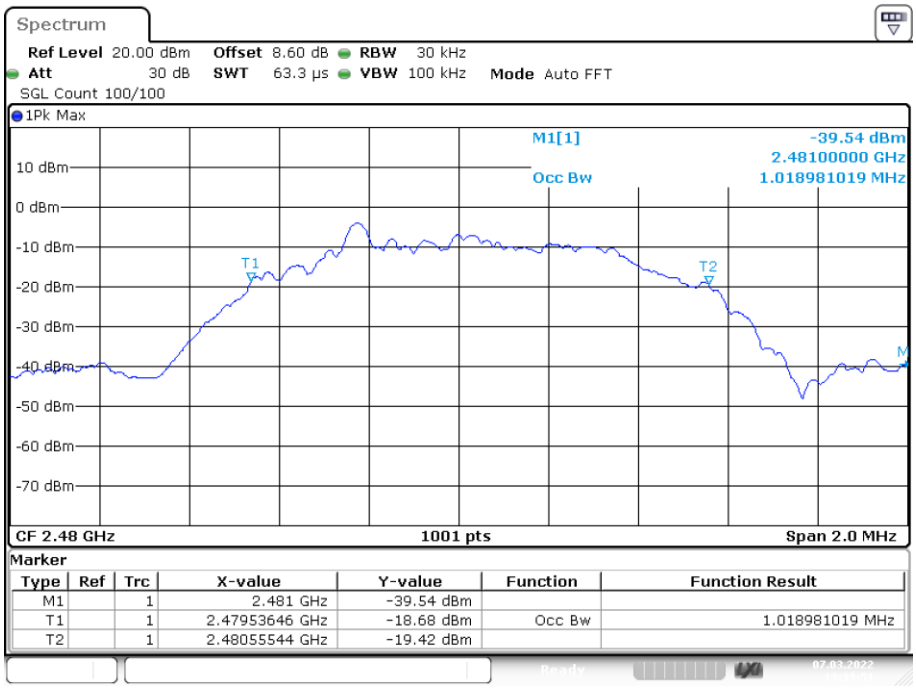
Date: 7.MAR.2022 13:32:07

-6 dB BW NVNT BLE 2440MHz Ant1



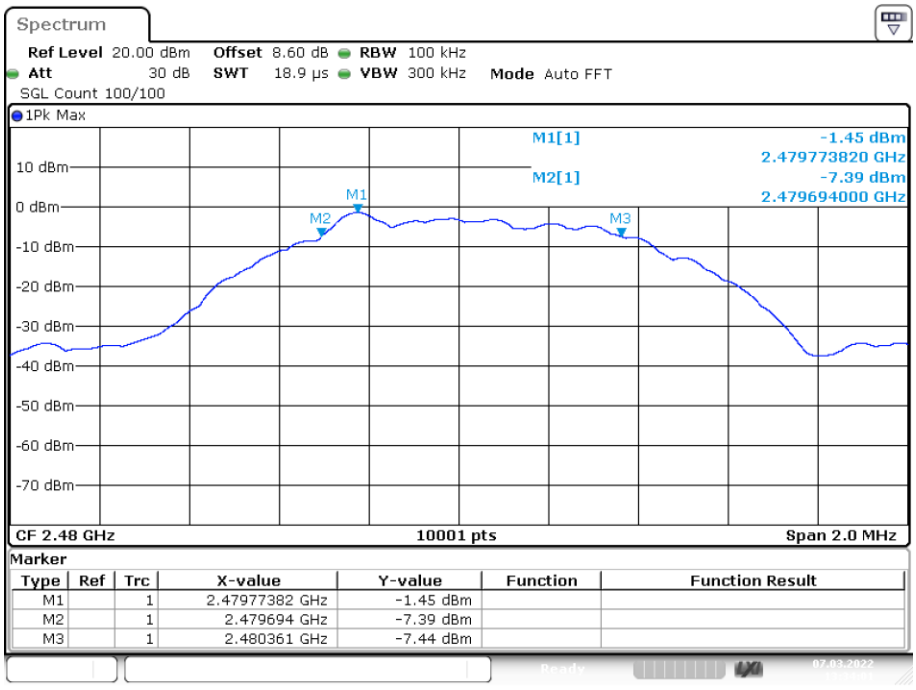
Date: 7.MAR.2022 13:32:16

OBW NVNT BLE 2480MHz Ant1



Date: 7.MAR.2022 13:33:51

-6 dB BW NVNT BLE 2480MHz Ant1



Date: 7.MAR.2022 13:34:00

8. Band Edge Check

8.1.Test limits

Please refer section RSS-GEN&15.247.

8.2.Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

8.2.1 Put the EUT on a 1.5m 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.

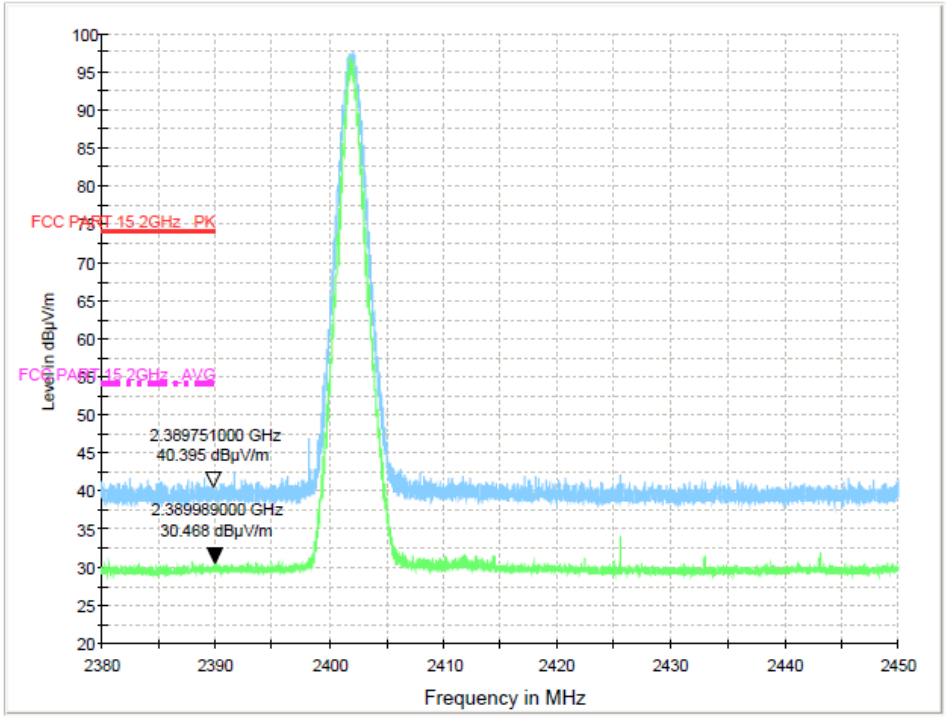
8.3.Test Setup

Same as 3.3 above 1GHz.

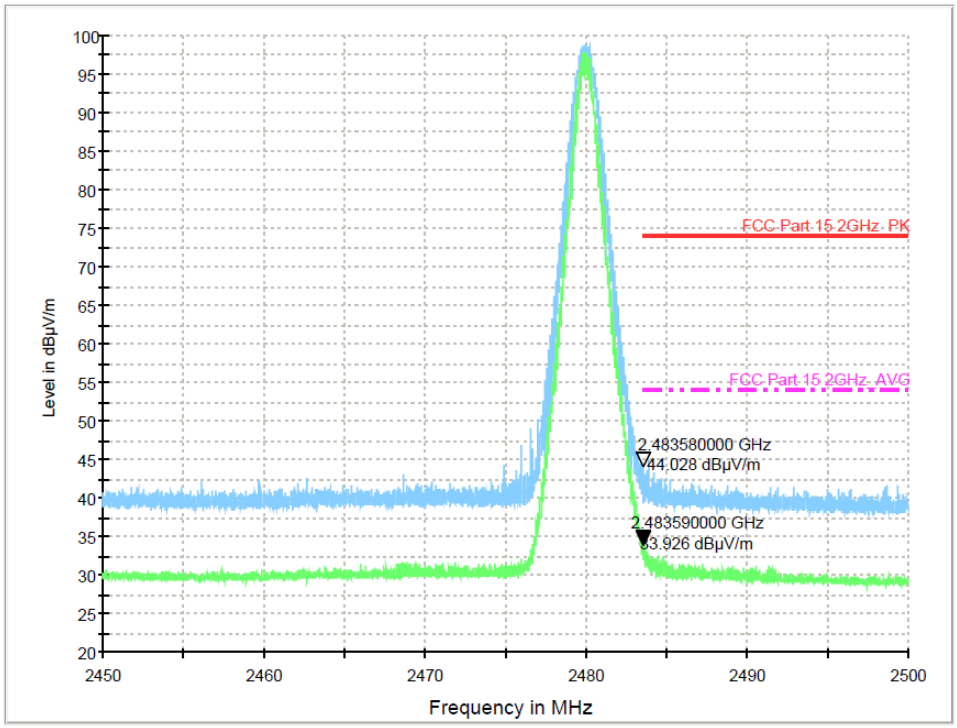
8.4.Test Results

Radiated Method:

Test Mode: GFSK-Low

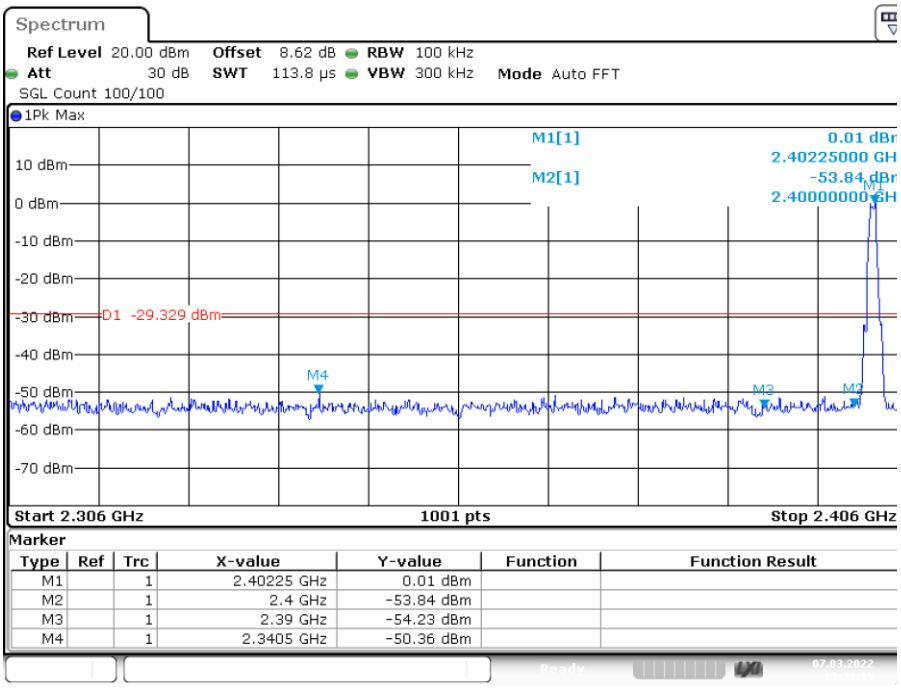


Test Mode: GFSK-High



Conducted Method:
GFSK

Lowest channel

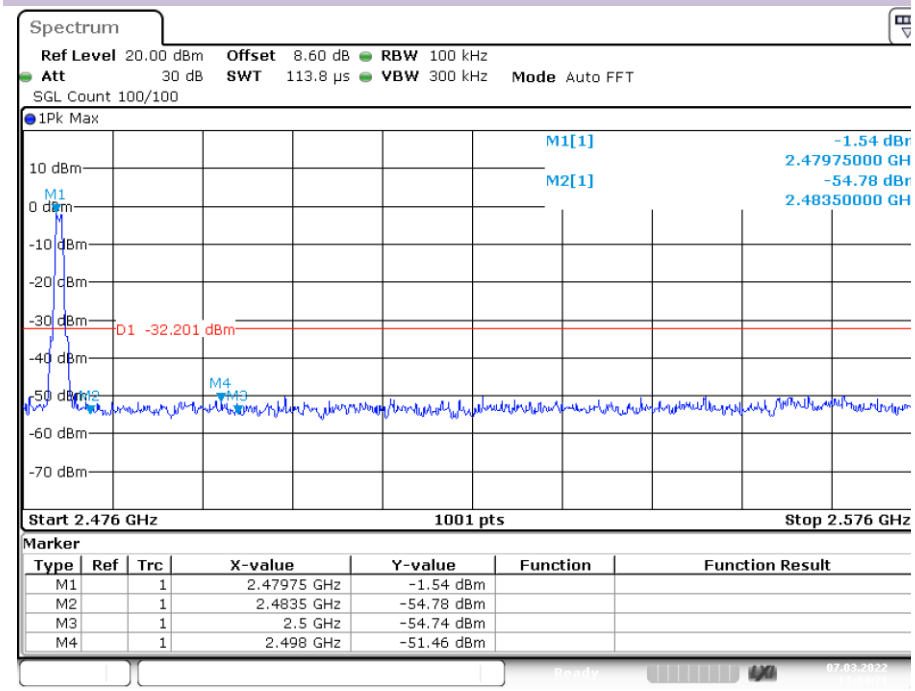


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.40225 GHz	0.01 dBm		
M2		1	2.4 GHz	-53.84 dBm		
M3		1	2.39 GHz	-54.23 dBm		
M4		1	2.3405 GHz	-50.36 dBm		

Date: 7.MAR.2022 13:31:15

Highest channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47975 GHz	-1.54 dBm		
M2		1	2.4835 GHz	-54.78 dBm		
M3		1	2.5 GHz	-54.74 dBm		
M4		1	2.498 GHz	-51.46 dBm		

Date: 7.MAR.2022 13:34:21

9. Antenna Requirement

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

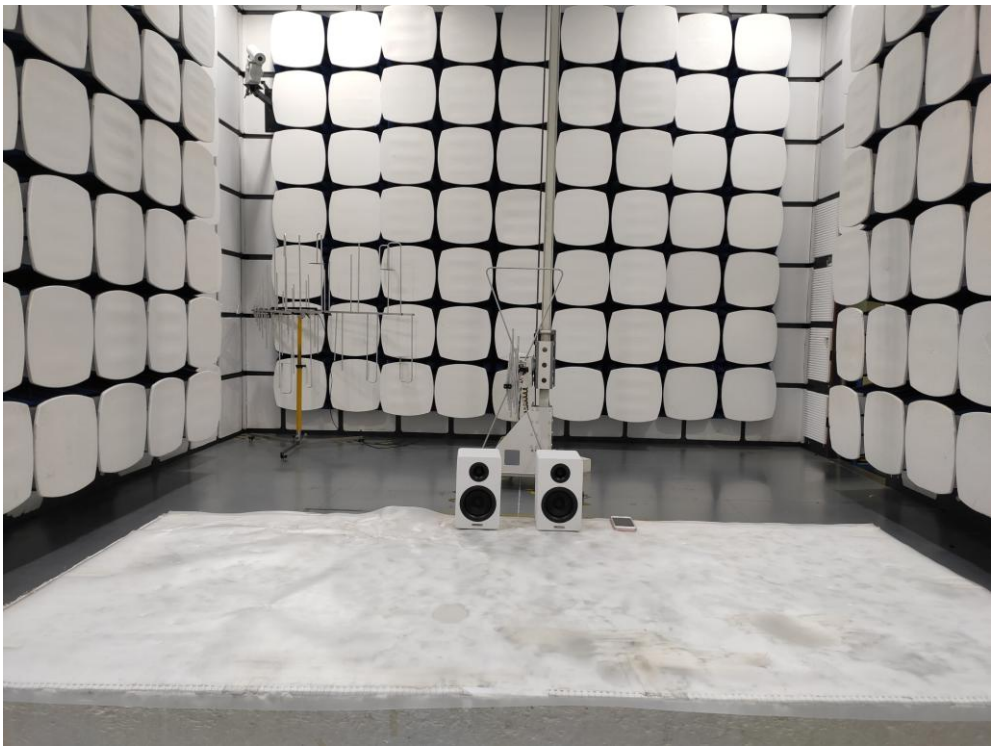
The antenna is Internal antenna and no consideration of replacement. Please see EUT photo for details.

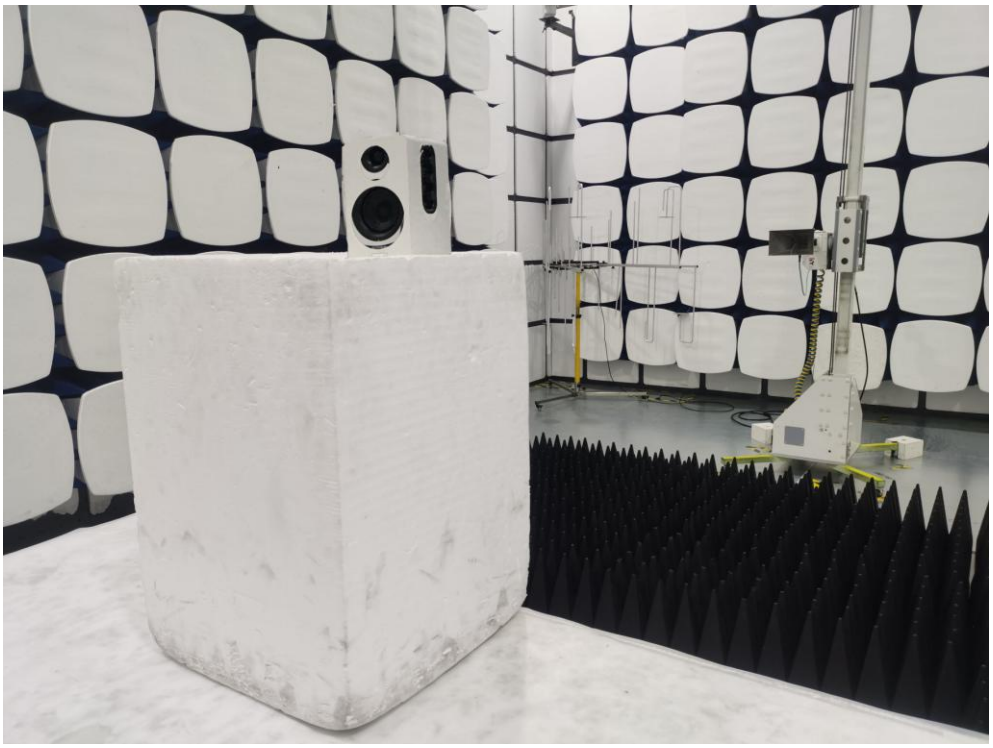
9.3.Results

The EUT antenna is Internal Antenna. It comply with the standard requirement.

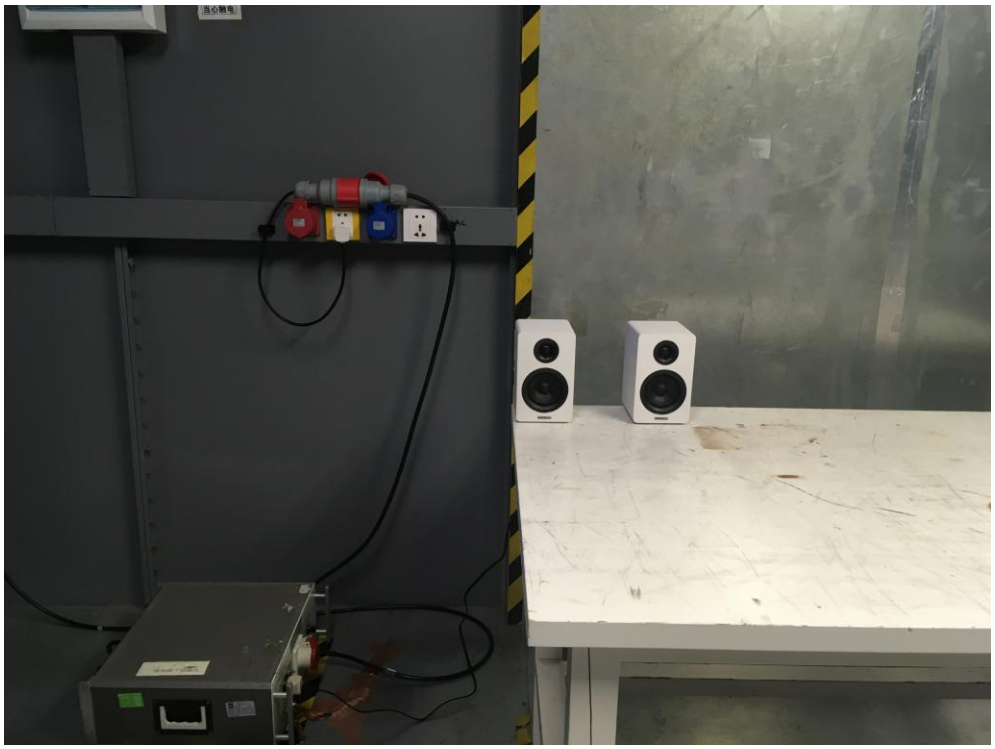
10. Test Setup Photo

10.1. Photos of Radiated emission

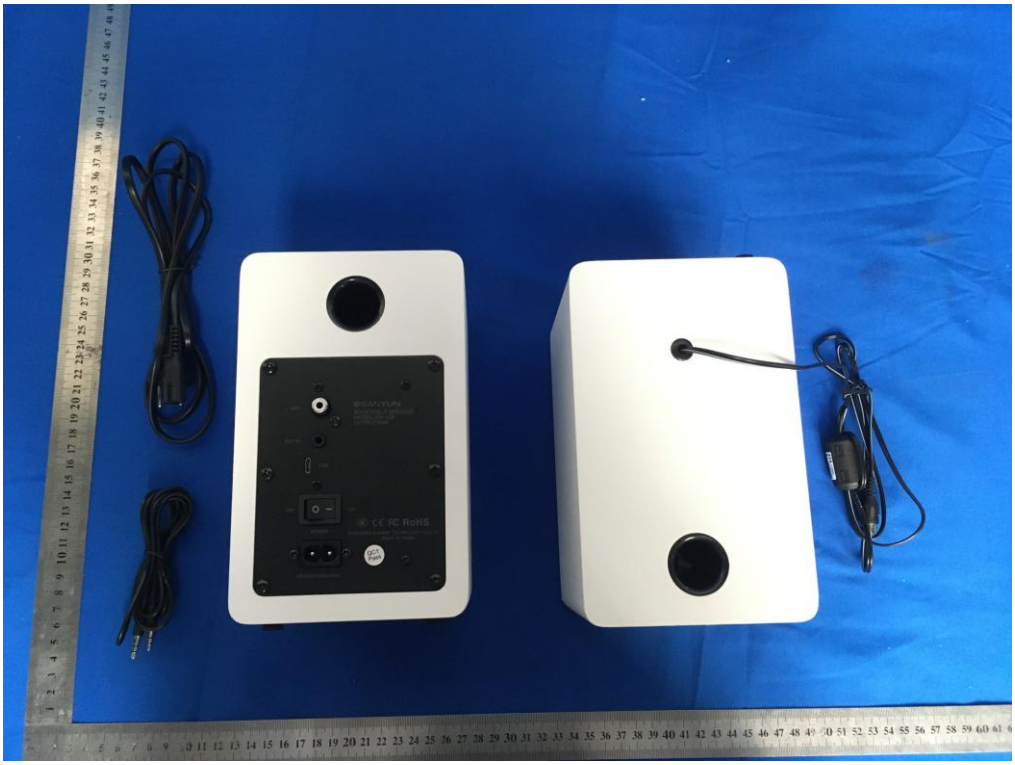


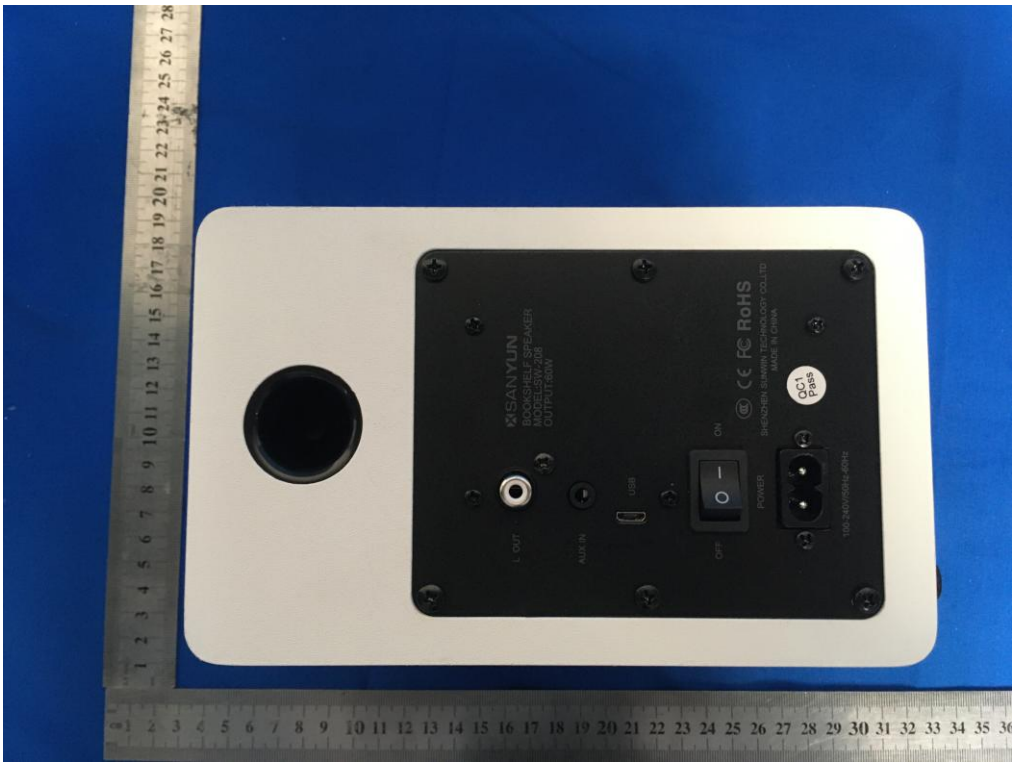


10.2.Photos of Conducted Emission test



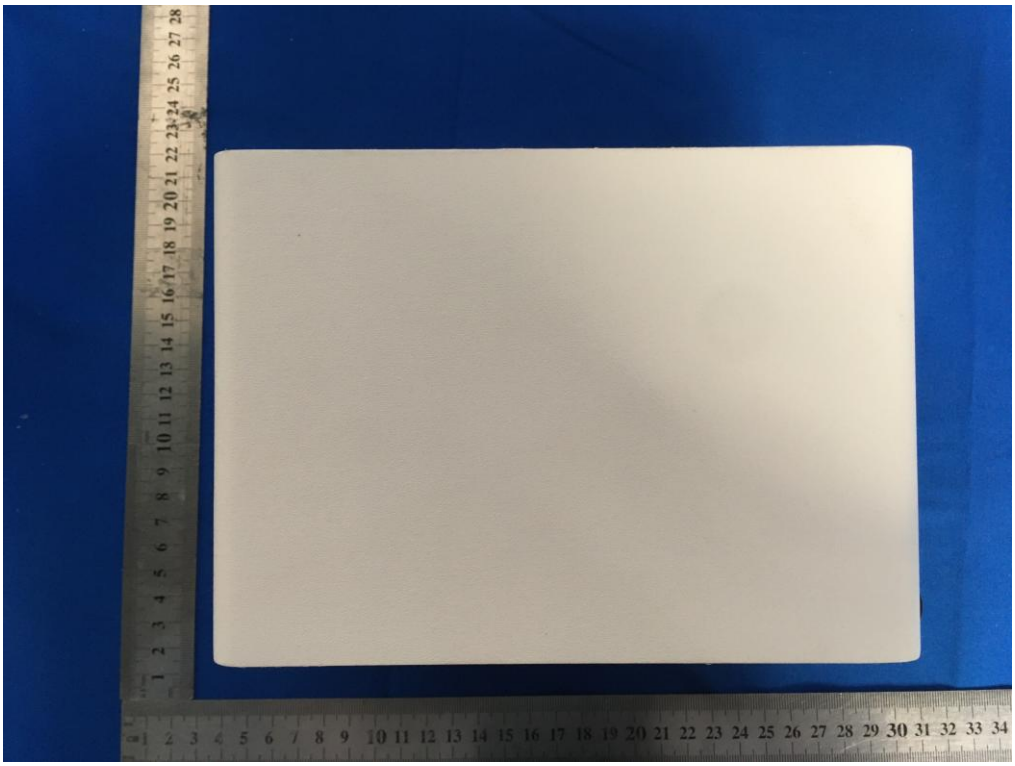
11. Photos of EUT

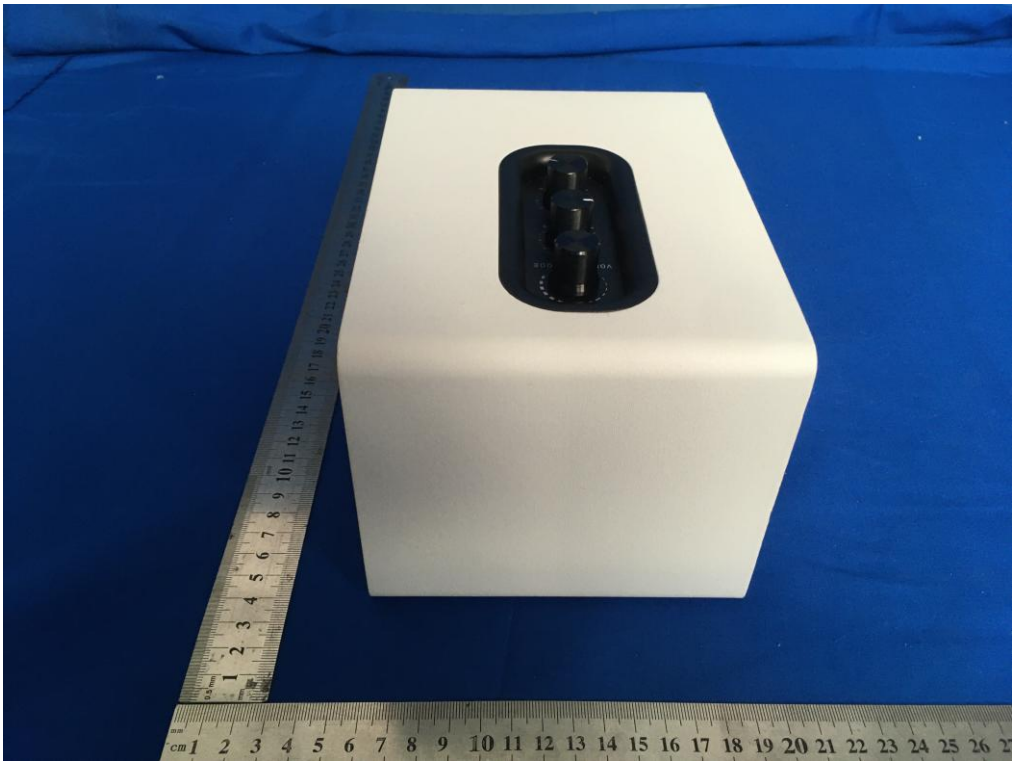


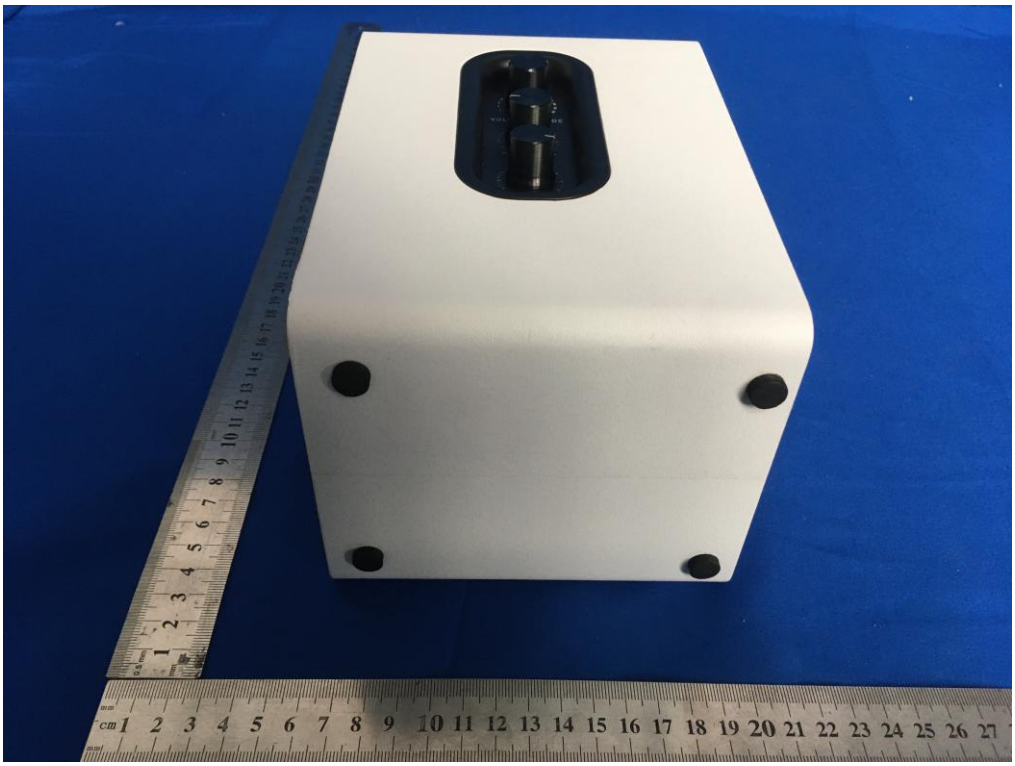


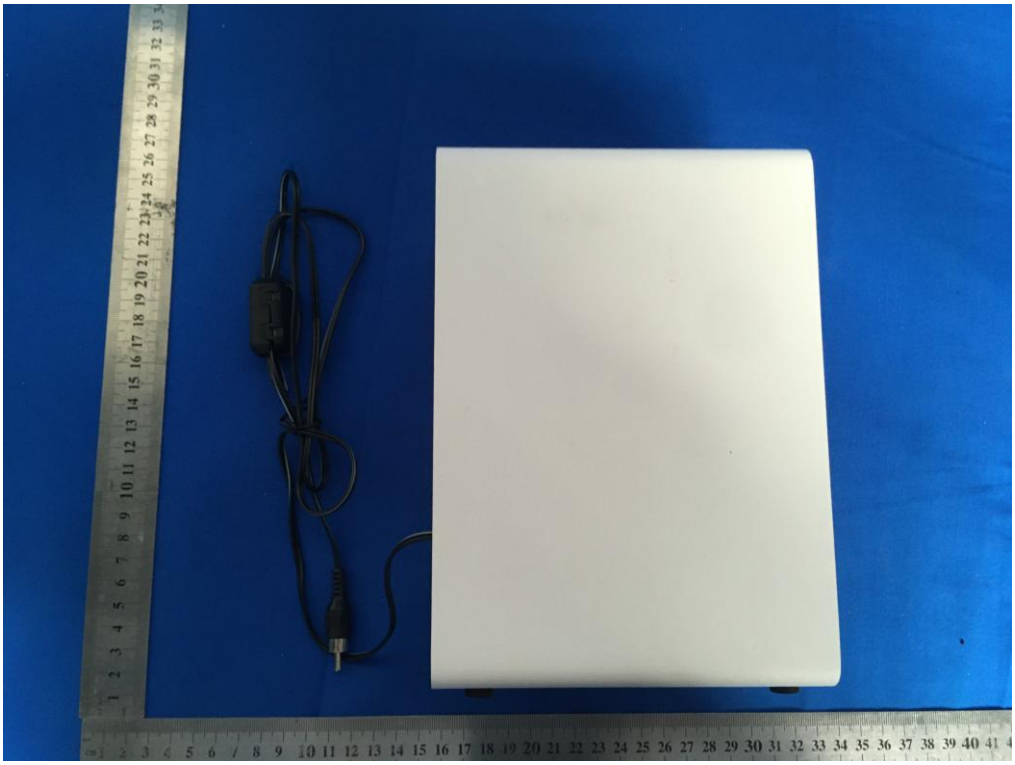

VOLUME / MODE
TREBLE
BASS


XSANYUN

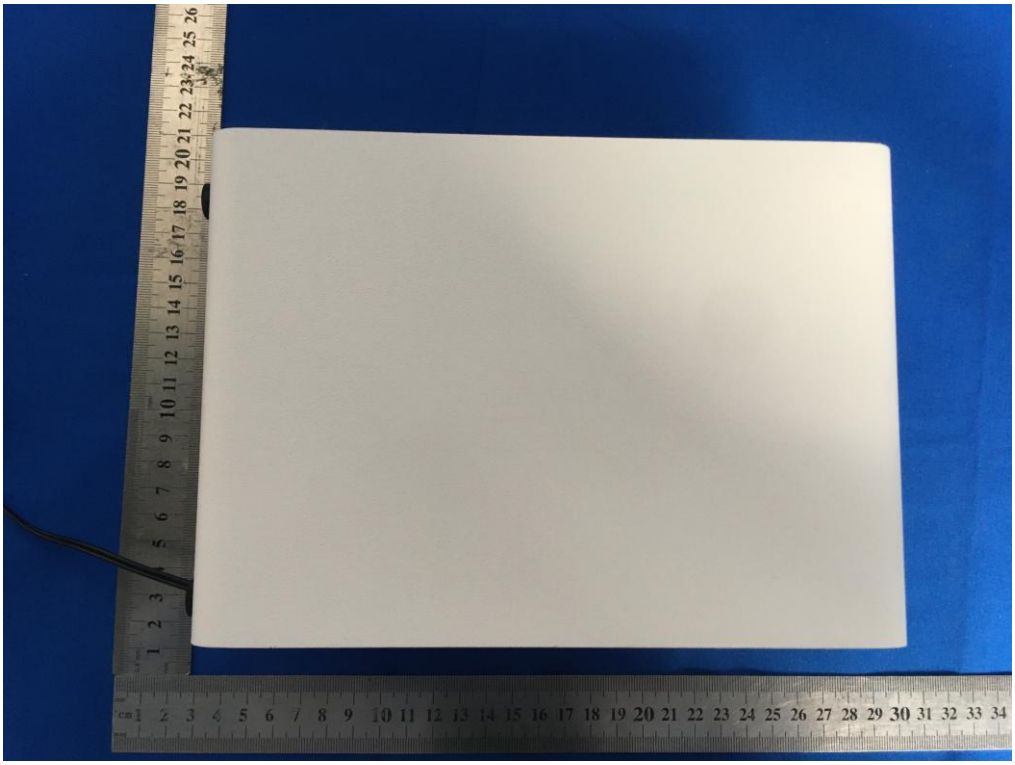


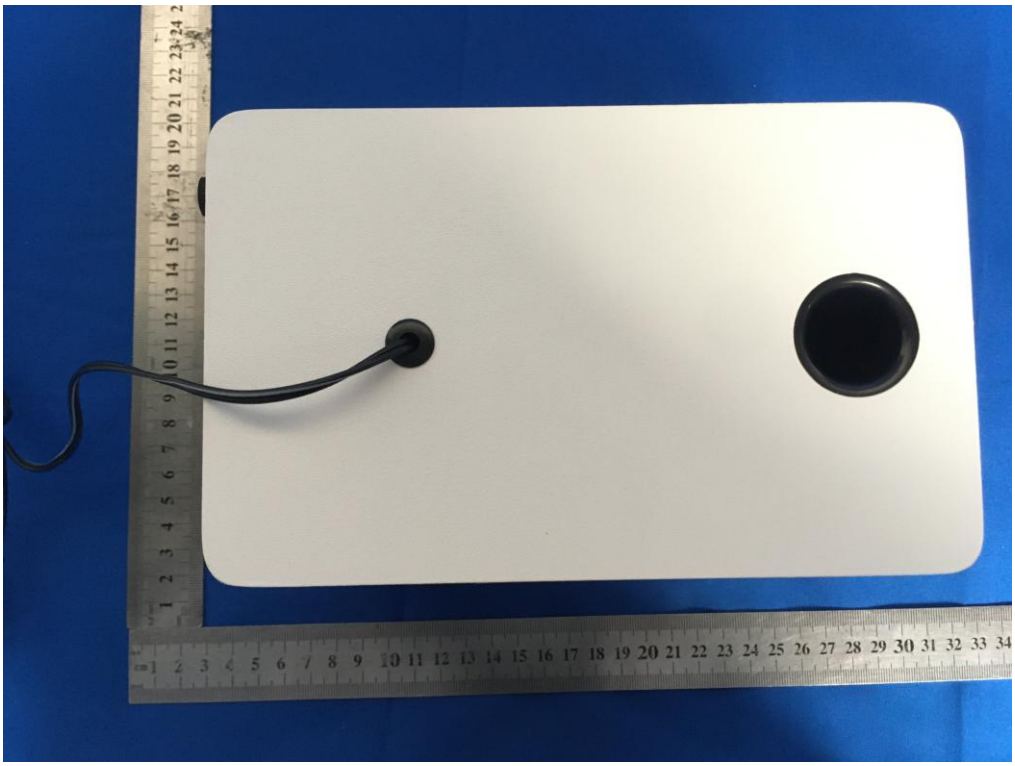


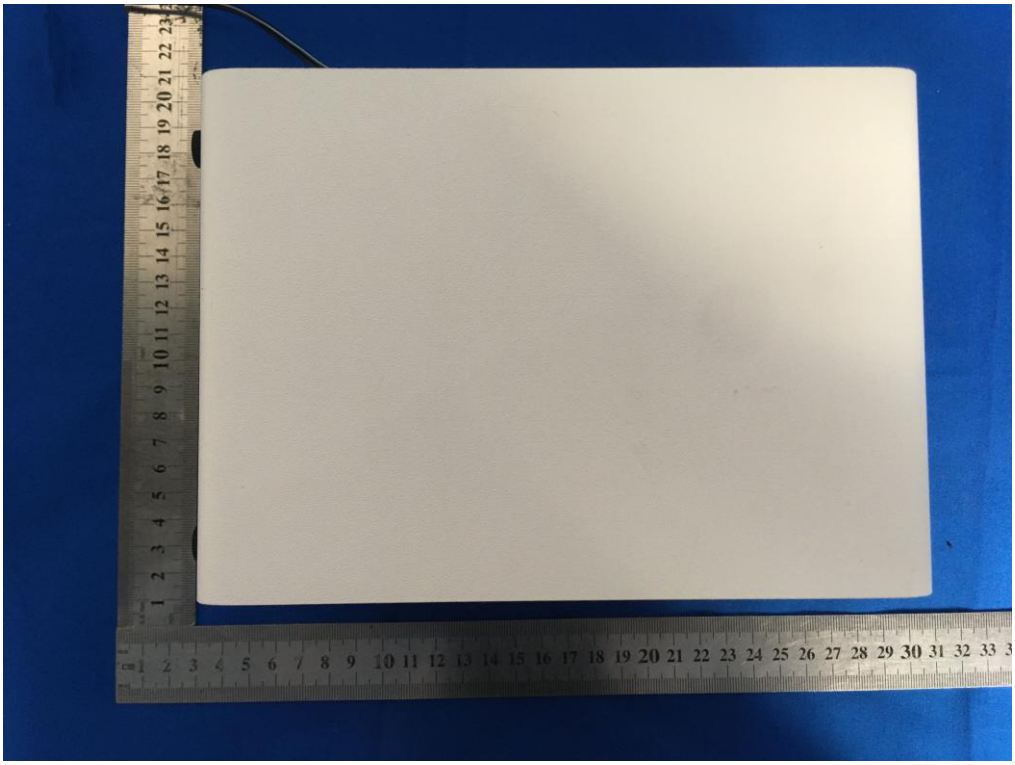


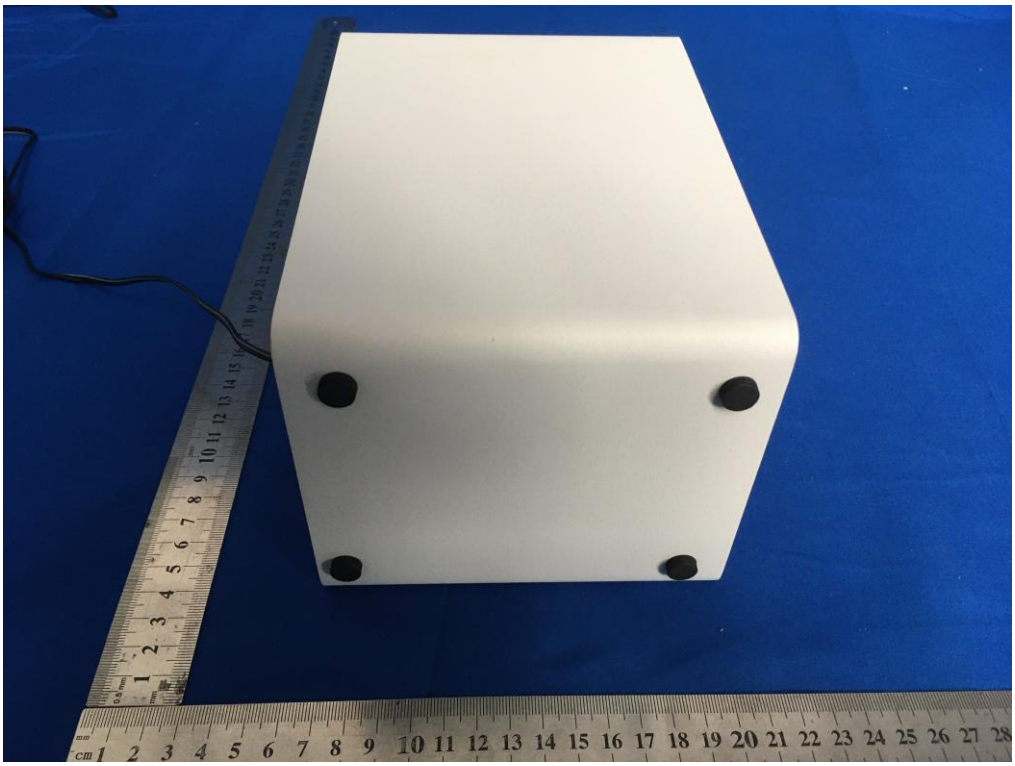


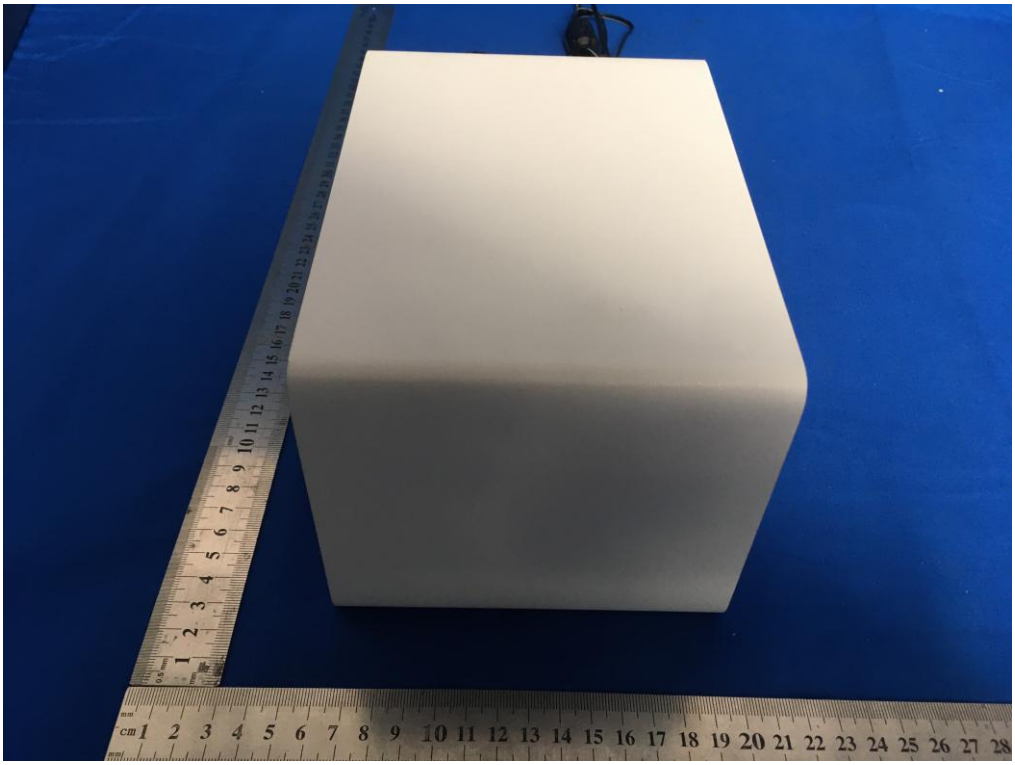

SANKIN

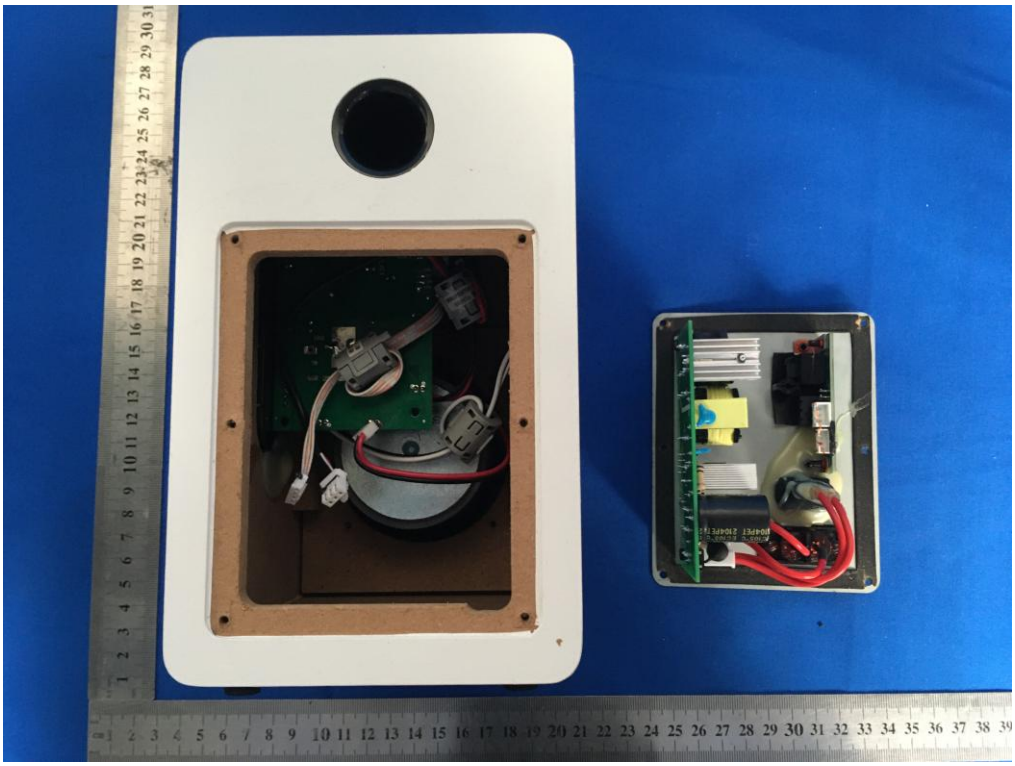


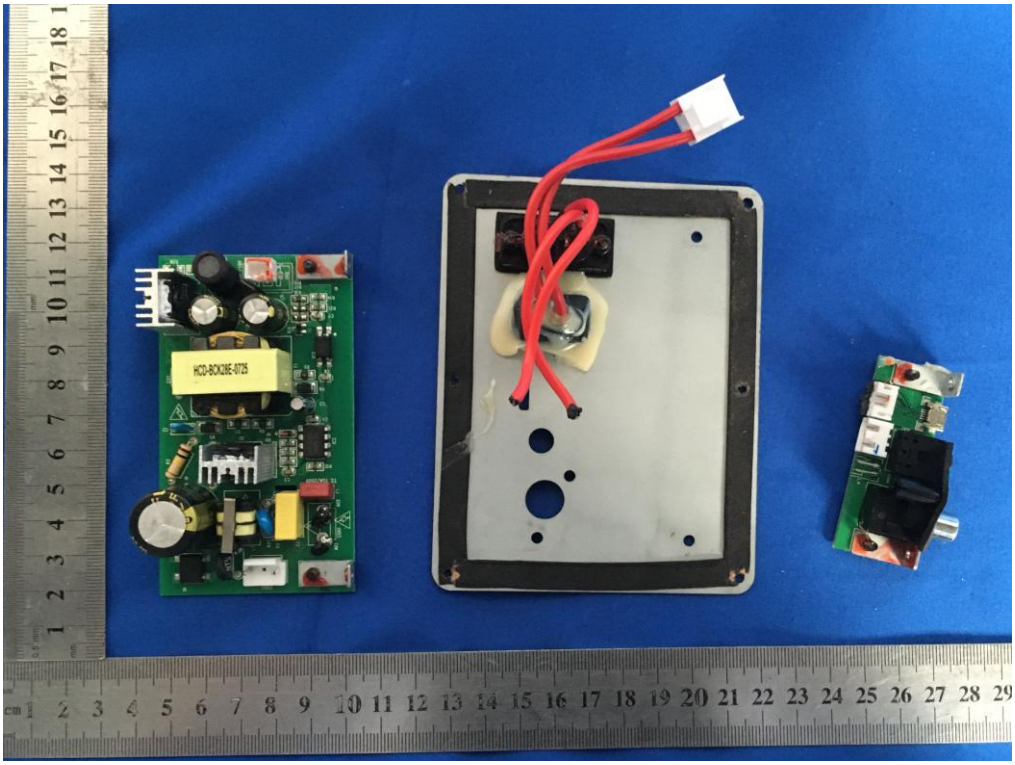


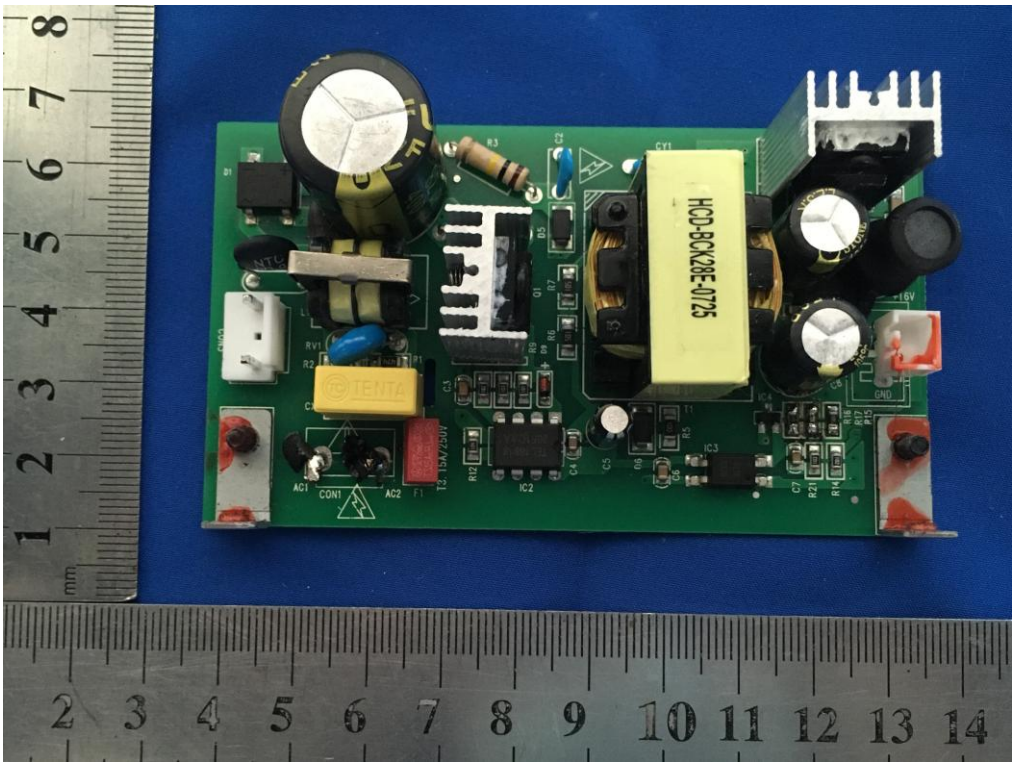


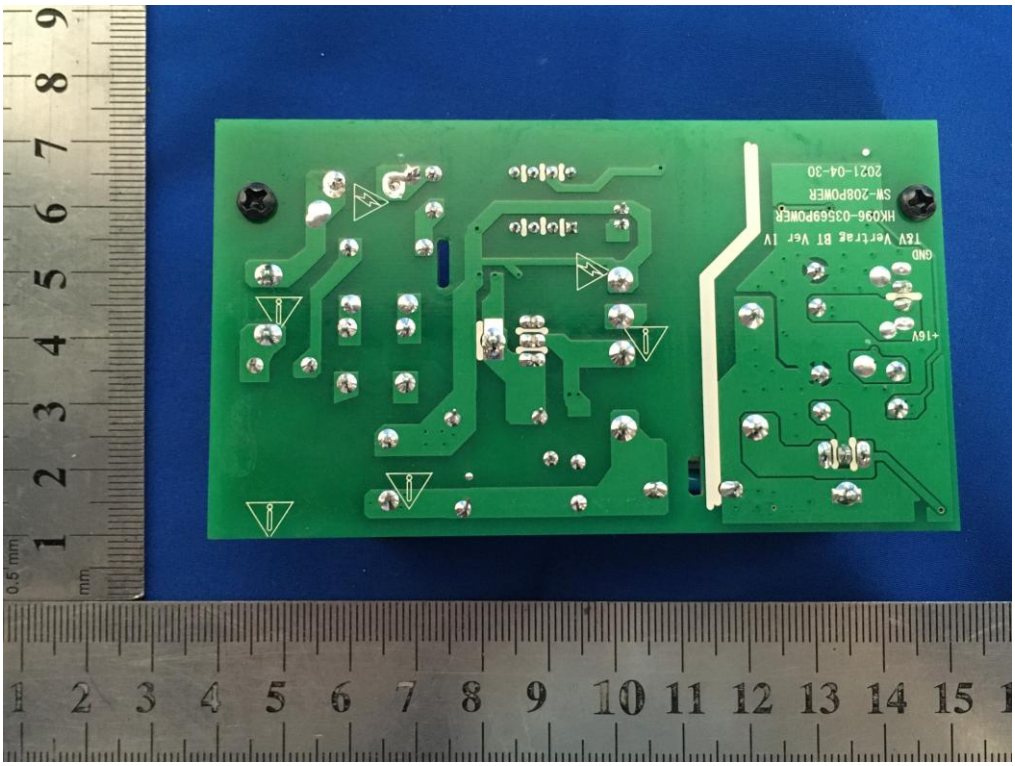


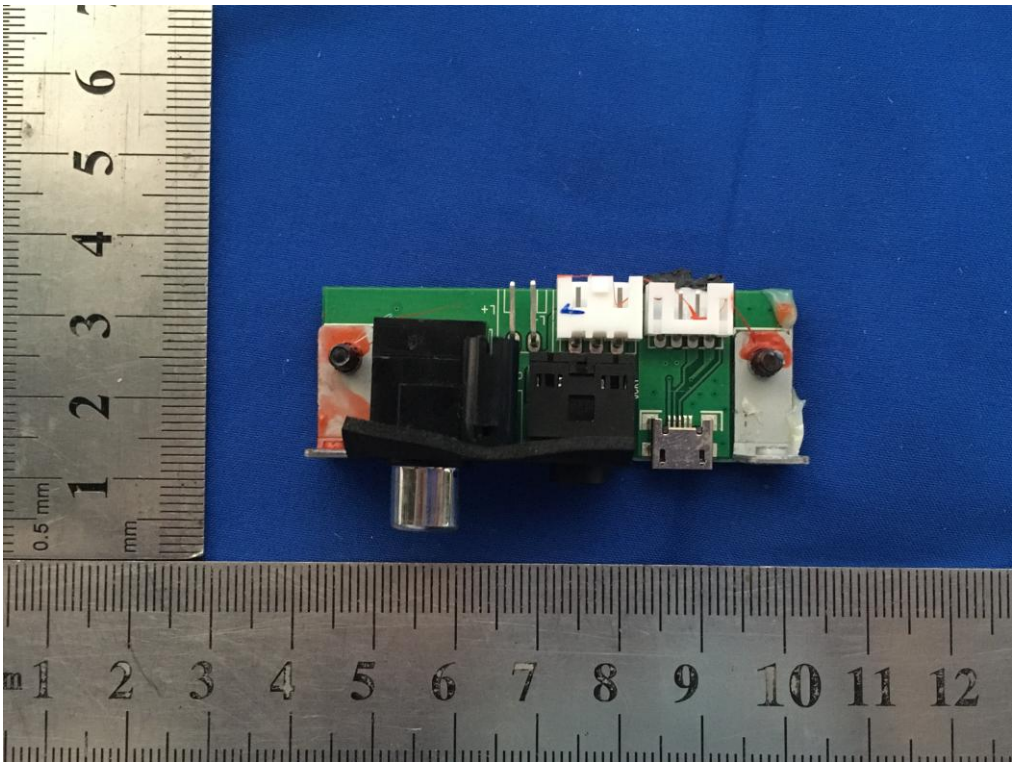


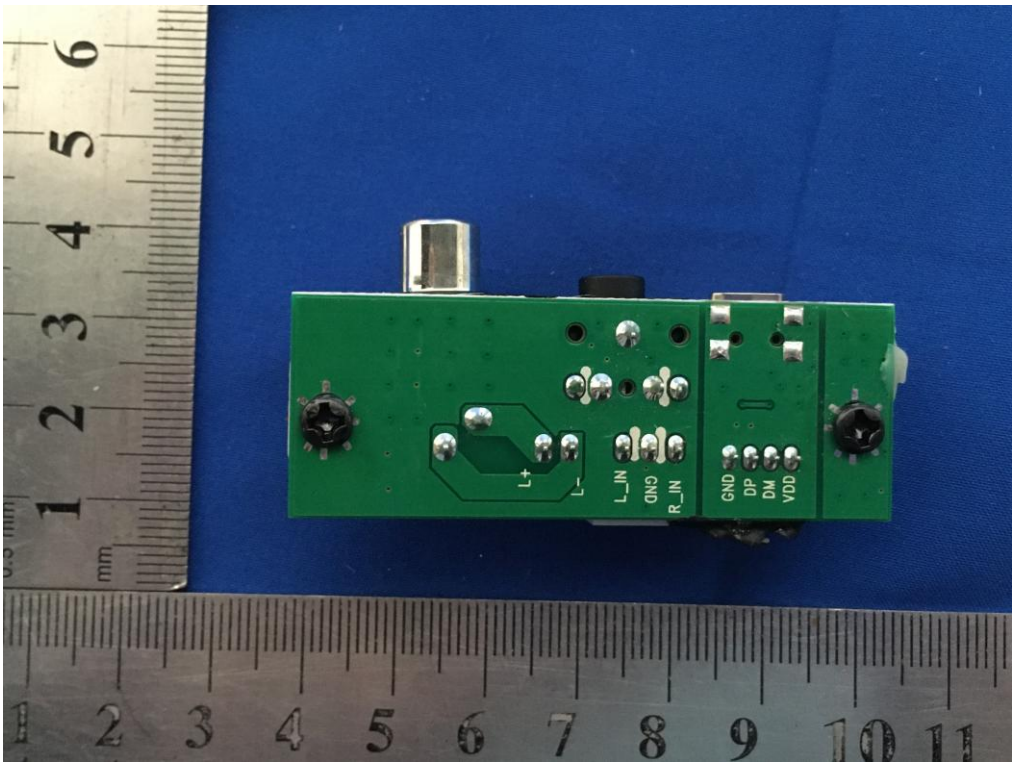


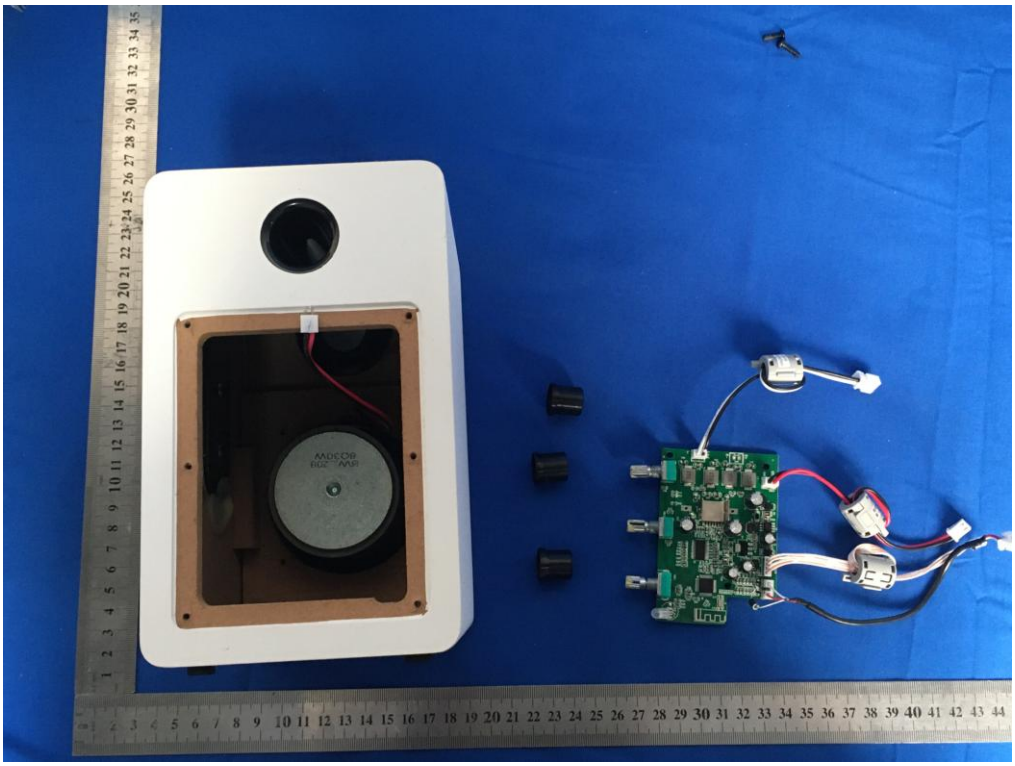

HCD-BCK26E-0725

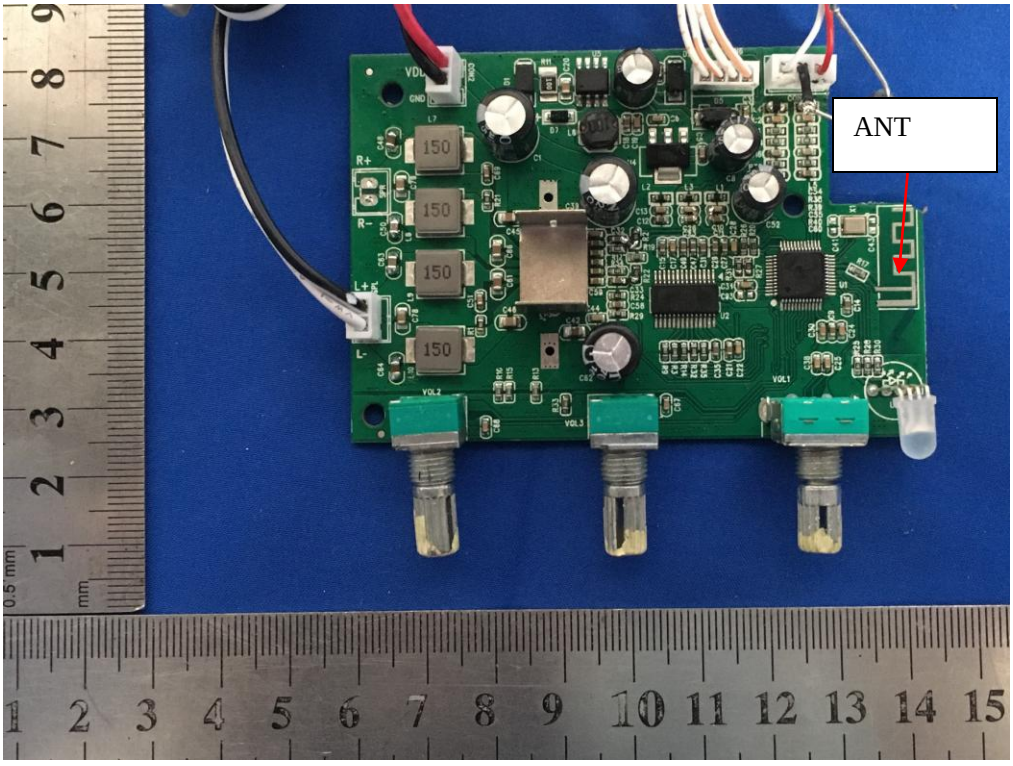

H3D-BCK28E-0725

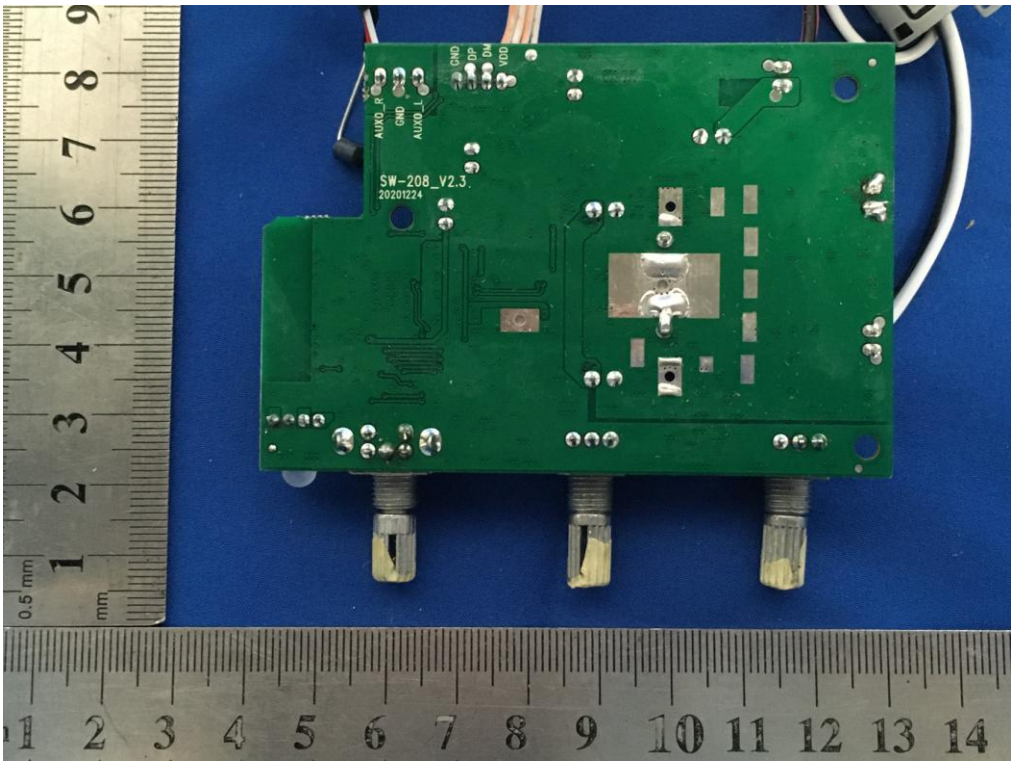

2021-04-30
SW-208POWER
HK096-035699POWER
GND
+16V

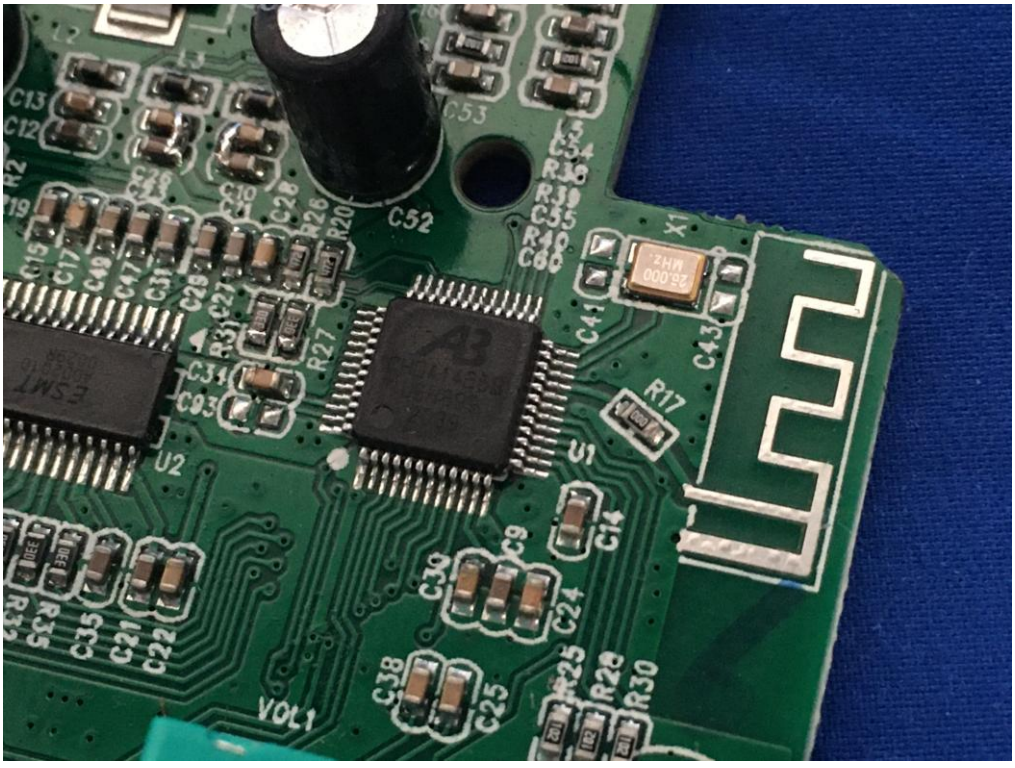


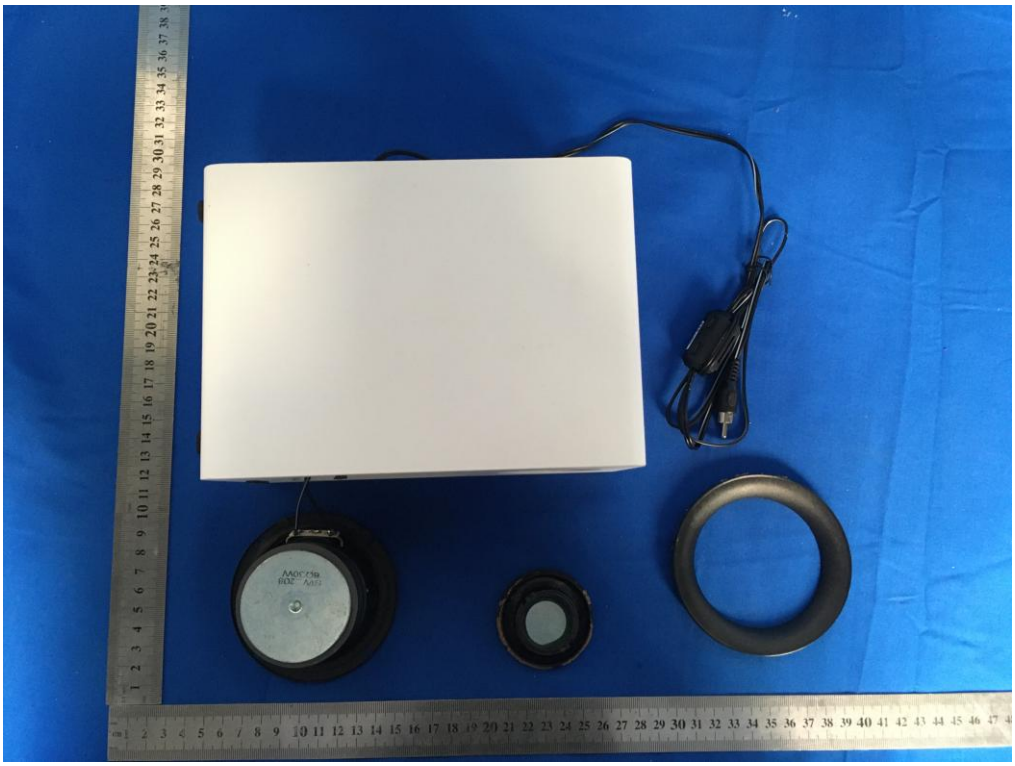

L+
L-
L_IN
GND
R_IN
GND
DP
DM
VDD



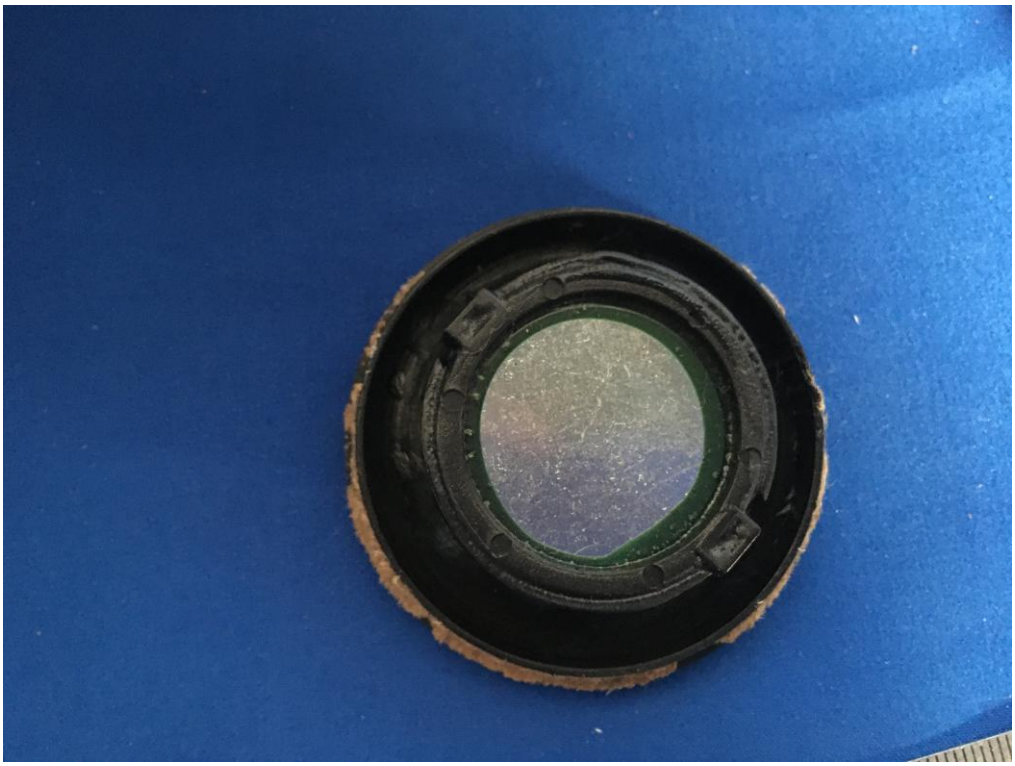

ANT


SW-208_V2.3
20201224
AUXO_R
GND
AUXO_L
GND
DP
DM
VDD
0.5 mm
mm


C53
C52
X1
25.000
MHz
R17
U1
U2
VOL1




SW_208
8030W



12. Annex

Model List				
SW-208	SW-228BT	SW-206	SW-201	SW-202
SW-203	SW-205	SW-209	SW-210	SW-211
SW-212	SW-213	SW-215	SW-216	SW-218
SW-219	SW-220	SW-221	SW-222	SW-223
SW-225	SW-226	SW-228	SW-229	SW-010
SW-009	SW-008	SW-006	SW-005	SW-003
SW-002	SW-001	SW-011	SW-012	SW-013
SW-015	SW-016	SW-018	SW-019	SW-020
SW-021	SW-022	SW-023	SW-025	SW-026
SW-028	SW-029			

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