



FCC TEST REPORT
FCC ID: 2ATQZ-SD10I

On Behalf of
Shenzhen Mooer Audio Co.,Ltd
Intelligent Amp
Model No.: SD10i

Prepared for : Shenzhen Mooer Audio Co.,Ltd
Address : 6F,Unit D, Jinghang Building, Liuxian 3rd Road, Baoan 71 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 : A2401041-C02-R06
Date of Receipt : January 19, 2024
Date of Test : January 19, 2024 - August 22, 2024
Date of Report : August 22, 2024
Version Number : V0
Test Result : Pass

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TEST REPORT DECLARATION

Applicant : Shenzhen Mooer Audio Co.,Ltd
Address : 6F,Unit D, Jinghang Building, Liuxian 3rd Road, Baoan 71 District, Shenzhen, China
Manufacturer : Shenzhen Mooer Audio Co.,Ltd
Address : 6F,Unit D, Jinghang Building, Liuxian 3rd Road, Baoan 71 District, Shenzhen, China
EUT Description : Intelligent Amp
(A) Model No. : SD10i
(B) Trademark : 

Measurement Standard Used:

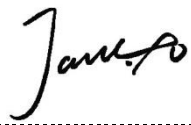
FCC Rules and Regulations Part 15 Subpart C Section 15.247

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).....:	Yannis Wen Project Engineer	
Approved by (name + signature).....:	Jack Xu Project Manager	
Date of issue.....	August 22, 2024	

Revision History

Revision	Issue Date	Revisions	Revised By
V0	August 22, 2024	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	Test Requirement	Standards Paragraph	Result
Conducted Emission	FCC PART 15	15.207	P
Occupied Channel Bandwidth&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. 4. The conclusion of this test report is judged by actual test data without considering measurement uncertainty.			

2. General information

2.1. Description of Device (EUT)

Description/PMN : Intelligent Amp

Model : SD10i
Number/HVIN(s) :
Diff. : N/A

Test Voltage : DC 5V from type-C and DC 7.4V from battery.

Radio Technology : 2.4g Technology

Operation frequency : 2415-2455MHz

Channel No. : 3 Channels

Modulation type : GFSK

Antenna Type : PCB antenna, Maximum Gain is -0.58dBi.
(Antenna information is provided by applicant.)

Software Version : V1.0

Hardware version : V02

Remark: EUT has two RF antennas, only using PCB antennas, with a maximum gain of -0.58dBi, not suitable for chip antennas.

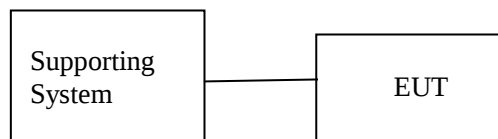
2.2. Accessories of Device (EUT)

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

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1.	AC ADAPTER	Shenzhen HUONIU Technology Co., Ltd.	HNFCQC3024UU	N/A	N/A
2.	Guitar	N/A	N/A	N/A	N/A
3.	GTRS Wireless Footswitch	Shenzhen Mooer Audio Co., Ltd	GWF4	N/A	FCC ID: 2ATQZ-GWF4
4.	Notebook PC	Lenovo	ThinkPad E14	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	2415
	Middle: CH2	2435
	High: CH3	2455

2.6. Test Conditions

Items	Required	Actual
Temperature range:	15-35°C	24°C
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: 12135A

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

2.9. Test Equipment List

Equipment	Manufacture	Model No.	Firmware version	Serial No.	Last cal.	Cal Interval
9*6*6 anechoic chamber	CHENYU	9*6*6	/	N/A	2022.05.17	3Year
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	2.3	102137	2023.08.16	1Year
Spectrum analyzer	Agilent	N9020A	A.14.16	MY499100060	2023.08.16	1Year
Receiver	ROHDE&SCHWARZ	ESR	2.28 SP1	1316.3003K03-10 2082-Wa	2023.08.16	1Year
Receiver	R&S	ESCI	4.42 SP1	101165	2023.08.16	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	/	VULB 9168#627	2023.08.28	1Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	/	2106	2023.08.19	1Year
Loop Antenna	SCHWARZBECK	FMZB 1519B	/	00128	2023.08.19	1Year
RF Cable	Resenberger	Cable 1	/	RE1	2023.08.16	1Year
RF Cable	Resenberger	Cable 2	/	RE2	2023.08.16	1Year
RF Cable	Resenberger	Cable 3	/	CE1	2023.08.16	1Year
Pre-amplifier	HP	HP8347A	/	2834A00455	2023.08.16	1Year
Pre-amplifier	Agilent	8449B	/	3008A02664	2023.08.16	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	/	8126-466	2023.08.16	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	/	101043	2023.08.16	1Year
Horn Antenna	SCHWARZBECK	BBHA 9170	/	00946	2023.08.19	1Year
Preamplifier	SKET	LNPA_1840 -50	/	SK2018101801	2023.08.16	1 Year
Power Meter	Agilent	E9300A	/	MY41496628	2023.08.16	1 Year
Power Sensor	DARE	RPR3006W	/	15100041SNO91	2023.08.16	1 Year
Temp. & Humid. Chamber	Teelong	TL-HW408S	/	TL-20191205-01	2024.07.15	1 Year
Switching Mode Power Supply	JUNKE	JK12010S	/	20140927-6	2023.08.16	1 Year
Adjustable attenuator	MWRFtest	N/A	/	N/A	N/A	N/A
10dB Attenuator	Mini-Circuits	DC-6G	/	N/A	N/A	N/A

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. Spurious Emission

3.1. Test Limits

Frequencies (MHz)	Field Strength (micorvolts/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) $\text{Emission Level(dB uV/m)} = 20 \log \text{Emission Level(uv/m)}$

3.2. Test Procedure

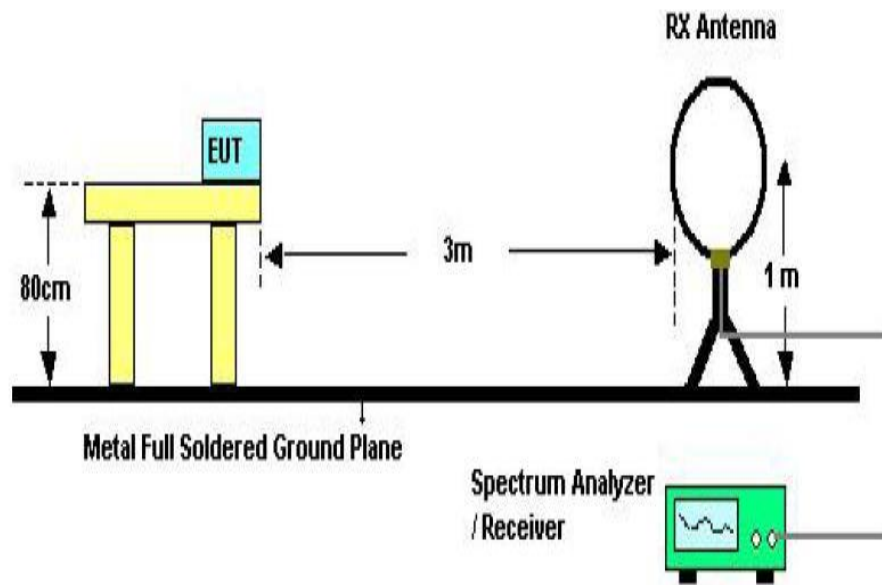
The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground for below 1GHz and 1.5m high for above 1GHz testing, The table was rotated 360 degrees to determine the position of the highest radiation The Test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

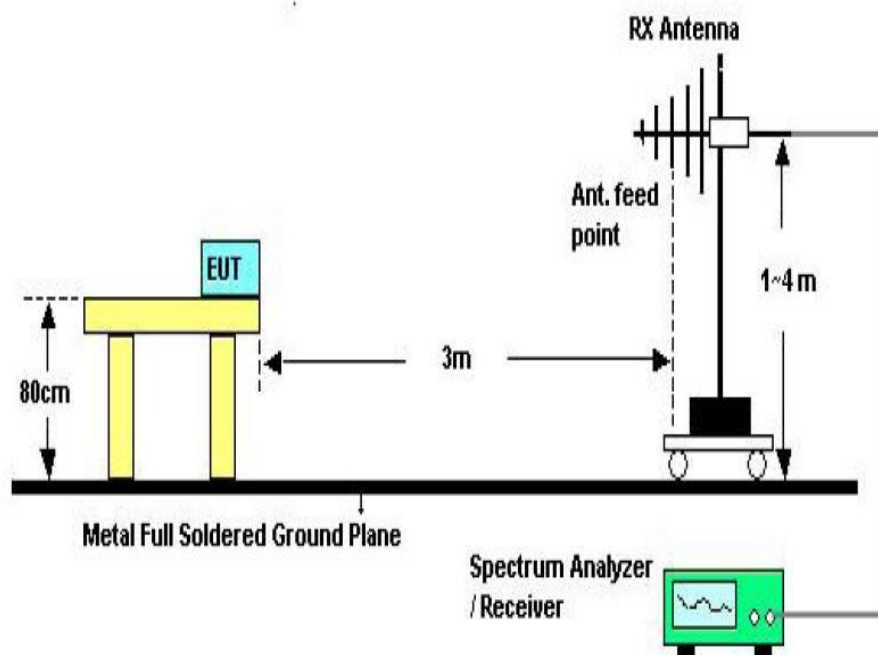
If Peak value comply with QP limit Below 1GHz. The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.

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

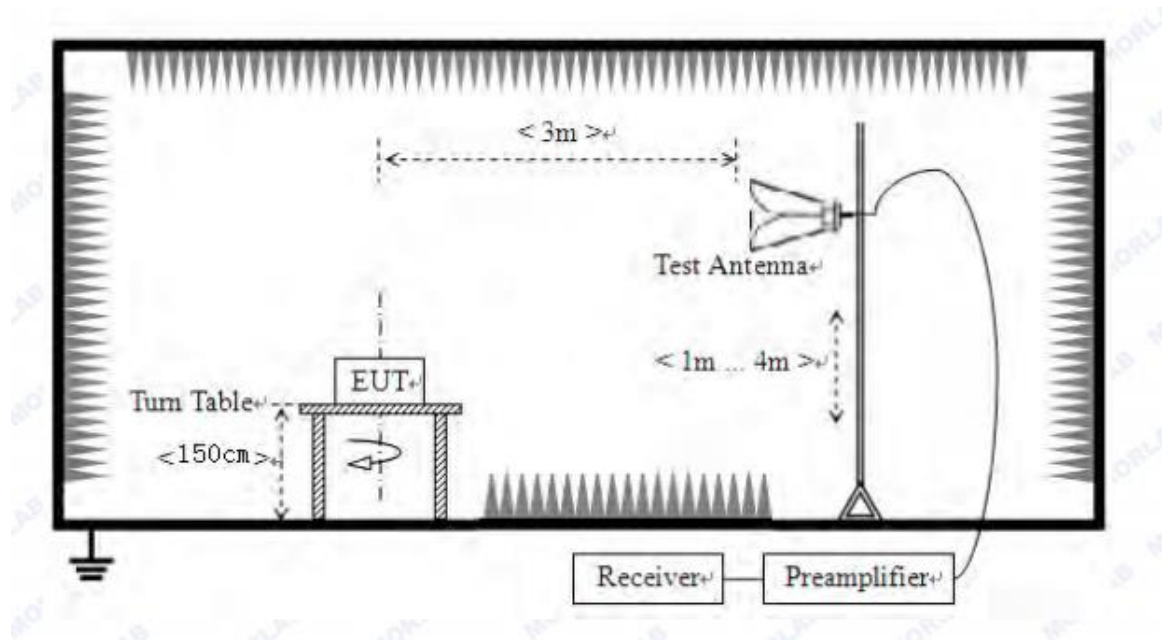
3.3. Test Setup



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 the 10th harmonic from 9 kHz to the EUT.

Detailed information please see the following page.

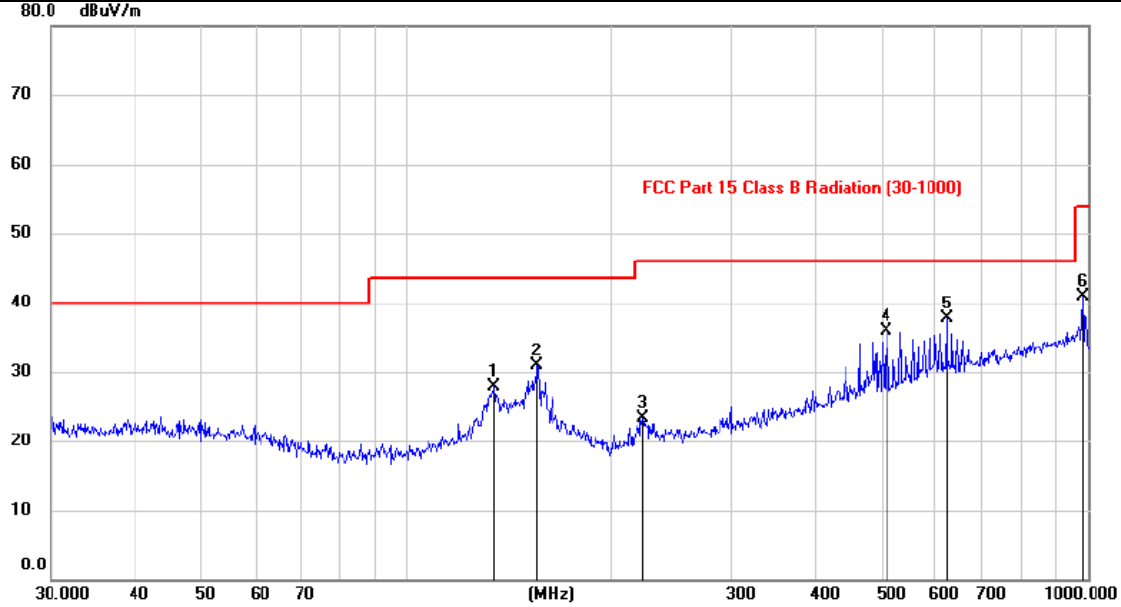
From 9KHz to 30MHz: Conclusion: PASS

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

EUT Description	Intelligent Amp	Model No.	SD10i
Temperature	24°C	Humidity	56%
Pol	Vertical	Test date	2024/8/1
Test Voltage	DC 7.4V from battery	Test mode	GFSK (2415MHz)

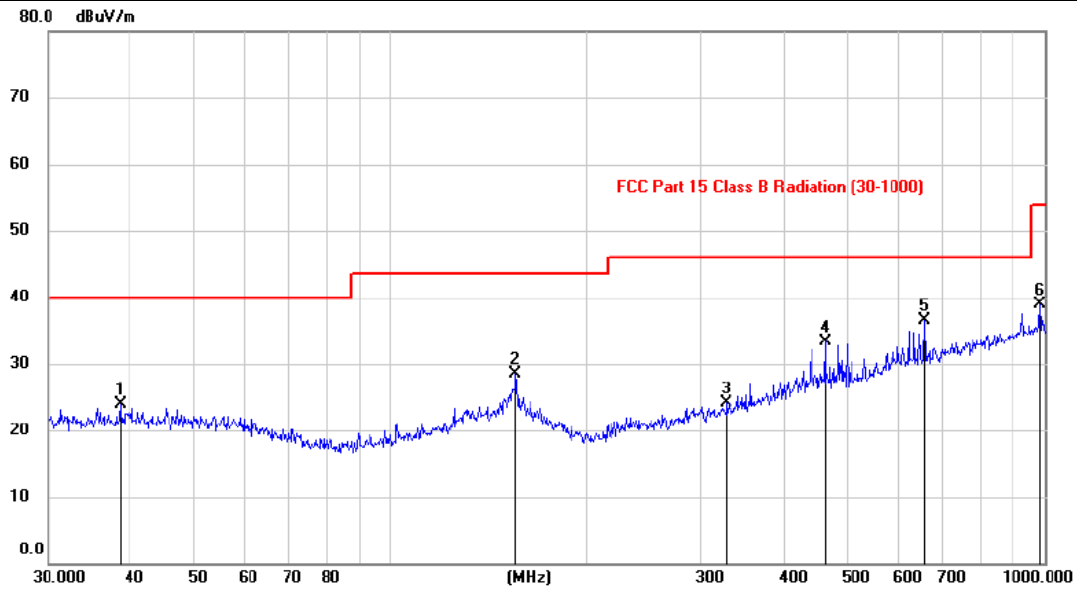


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		134.2293	14.09	13.89	27.98	43.50	-15.52	peak		
2		155.7462	15.78	15.05	30.83	43.50	-12.67	peak		
3		222.4816	11.46	11.88	23.34	46.00	-22.66	peak		
4		508.0800	17.50	18.35	35.85	46.00	-10.15	peak		
5	*	620.9273	17.04	20.61	37.65	46.00	-8.35	peak		
6		983.3094	16.10	24.71	40.81	54.00	-13.19	peak		

Note:1. *:Maximum data; x:Over limit; !:over margin.

2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

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	Detector	cm	degree
1		38.7518	9.43	14.38	23.81	40.00	-16.19	peak		
2		155.8008	13.38	15.05	28.43	43.50	-15.07	peak		
3		327.7722	9.42	14.78	24.20	46.00	-21.80	peak		
4		462.9945	15.57	17.69	33.26	46.00	-12.74	peak		
5	*	655.6097	15.39	21.16	36.55	46.00	-9.45	peak		
6		983.3094	14.24	24.71	38.95	54.00	-15.05	peak		

Note: 1. *:Maximum data; x:Over limit; !:over margin.

2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

*: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 (2415MHz) was listed in this report.

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
4830	48.09	V	33.95	10.18	34.26	57.96	74	-16.04	PK
4830	34.49	V	33.95	10.18	34.26	44.36	54	-9.64	AV
7245	/	/	/	/	/	/	/	/	/
9660	/	/	/	/	/	/	/	/	/
4830	44.39	H	33.95	10.18	34.26	54.26	74	-19.74	PK
4830	36.92	H	33.95	10.18	34.26	46.79	54	-7.21	AV
7245	/	/	/	/	/	/	/	/	/
9660	/	/	/	/	/	/	/	/	/

Test Mode: TX Mid

4870	38.52	V	33.93	10.2	34.29	48.36	74	-25.64	PK
4870	36.08	V	33.93	10.2	34.29	45.92	54	-8.08	AV
7305	/	/	/	/	/	/	/	/	/
9740	/	/	/	/	/	/	/	/	/
4870	37.68	H	33.93	10.2	34.29	47.52	74	-26.48	PK
4870	29.39	H	33.93	10.2	34.29	39.23	54	-14.77	AV
7305	/	/	/	/	/	/	/	/	/
9740	/	/	/	/	/	/	/	/	/

Test Mode: TX High

4910	37.09	V	33.93	10.2	34.29	46.93	74	-27.07	PK
4910	28.89	V	33.93	10.2	34.29	38.73	54	-15.27	AV
7365	/	/	/	/	/	/	/	/	/
9820	/	/	/	/	/	/	/	/	/
4910	41.05	H	33.93	10.2	34.29	50.89	74	-23.11	PK
4910	34.78	H	33.93	10.2	34.29	44.62	54	-9.38	AV
7365	/	/	/	/	/	/	/	/	/
9820	/	/	/	/	/	/	/	/	/

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 method:

EUT Description	Intelligent Amp	Model No.	SD10i
Temperature	24°C	Humidity	56%
Test mode	GFSK (2415MHz)	Test mode	GFSK (2435MHz)

Spectrum

Ref Level 20.00 dBm

Offset 7.64 dB

RBW 100 kHz

Att 30 dB

SWT 265 ms

VBW 300 kHz

Mode Sweep

SQL Count 10/10

1Pk Max

10 dBm

0 dBm

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

M1

M2

M3

M4

M5

D1

0.67 dBm

2.4230 GHz

-36.44 dBm

4.8211 GHz

-19.714 dBm

Start 30.0 MHz

1001 pts

Stop 26.5 GHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	0.67 dBm		
M2		1	4.8211 GHz	-36.44 dBm		
M3		1	4.8211 GHz	-36.44 dBm		
M4		1	7.2298 GHz	-38.38 dBm		
M5		1	9.7445 GHz	-40.45 dBm		

Date: 16.JUL.2024 16:21:39

Spectrum

Ref Level 20.00 dBm

Offset 7.76 dB

RBW 100 kHz

Att 30 dB

SWT 265 ms

VBW 300 kHz

Mode Sweep

SQL Count 10/10

1Pk Max

10 dBm

0 dBm

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

M1

M2

M3

M4

M5

D1

0.90 dBm

2.4230 GHz

-35.30 dBm

4.8740 GHz

-17.371 dBm

Start 30.0 MHz

1001 pts

Stop 26.5 GHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.423 GHz	0.90 dBm		
M2		1	4.874 GHz	-35.30 dBm		
M3		1	4.874 GHz	-35.30 dBm		
M4		1	7.3093 GHz	-37.87 dBm		
M5		1	9.6121 GHz	-40.73 dBm		

Date: 16.JUL.2024 16:23:56

Test mode	GFSK (2455MHz)
-----------	----------------

Spectrum

Ref Level 20.00 dBm

Offset 7.74 dB

RBW 100 kHz

Att 30 dB

SWT 265 ms

VBW 300 kHz

Mode Sweep

SQL Count 10/10

1Pk Max

10 dBm

0 dBm

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

M1

M2

M3

M4

M5

D1

1.56 dBm

2.4500 GHz

-33.72 dBm

4.9005 GHz

-16.656 dBm

Start 30.0 MHz

1001 pts

Stop 26.5 GHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.45 GHz	1.56 dBm		
M2		1	4.9005 GHz	-33.72 dBm		
M3		1	4.9005 GHz	-33.72 dBm		
M4		1	7.3622 GHz	-36.57 dBm		
M5		1	9.718 GHz	-40.86 dBm		

Date: 16.JUL.2024 17:01:35

4. Power Line Conducted Emission

4.1. Test Limits

Frequency MHz	Limits dB(μ V)	
	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.

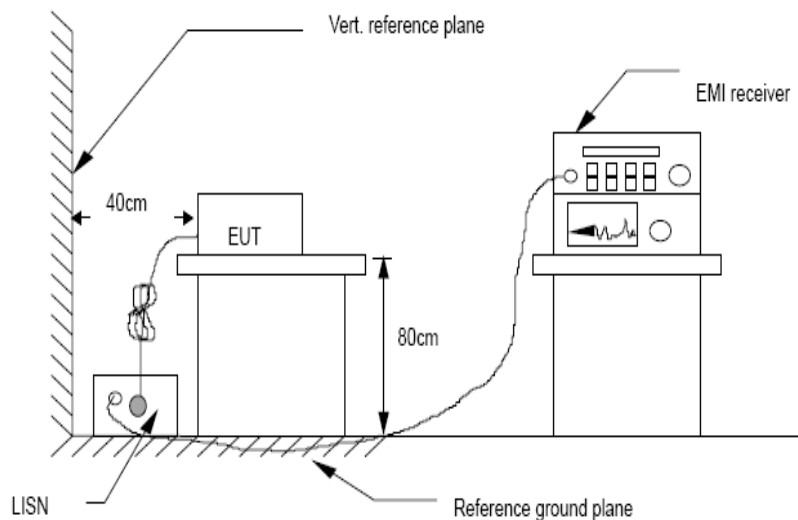
3. The limit decreases in line with the logarithm of the frequency in rang of 0.15 to 0.50 MHz.

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 C63.10:2013 on Conducted Emission Measurement.

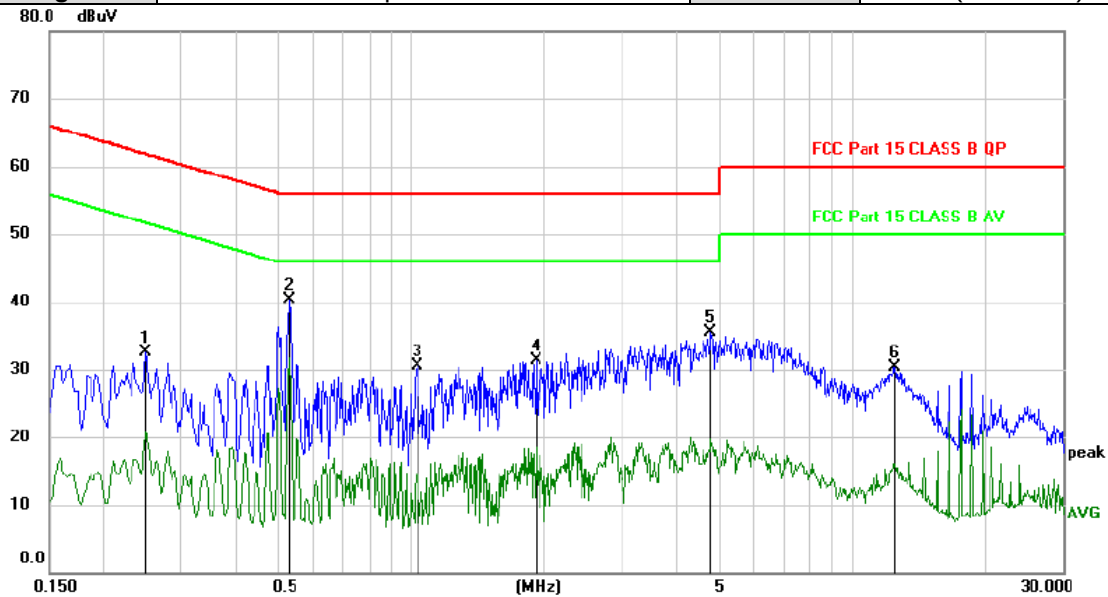
The bandwidth of test receiver is set at 9 kHz.

4.3. Test Setup



4.4. Test Results

EUT Description	Intelligent Amp	Model No.	SD10i
Temperature	24°C	Humidity	56%
Pol	Line	Test date	2024/8/1
Test Voltage	DC 7.4V from adapter	Test mode	GFSK (2415MHz)

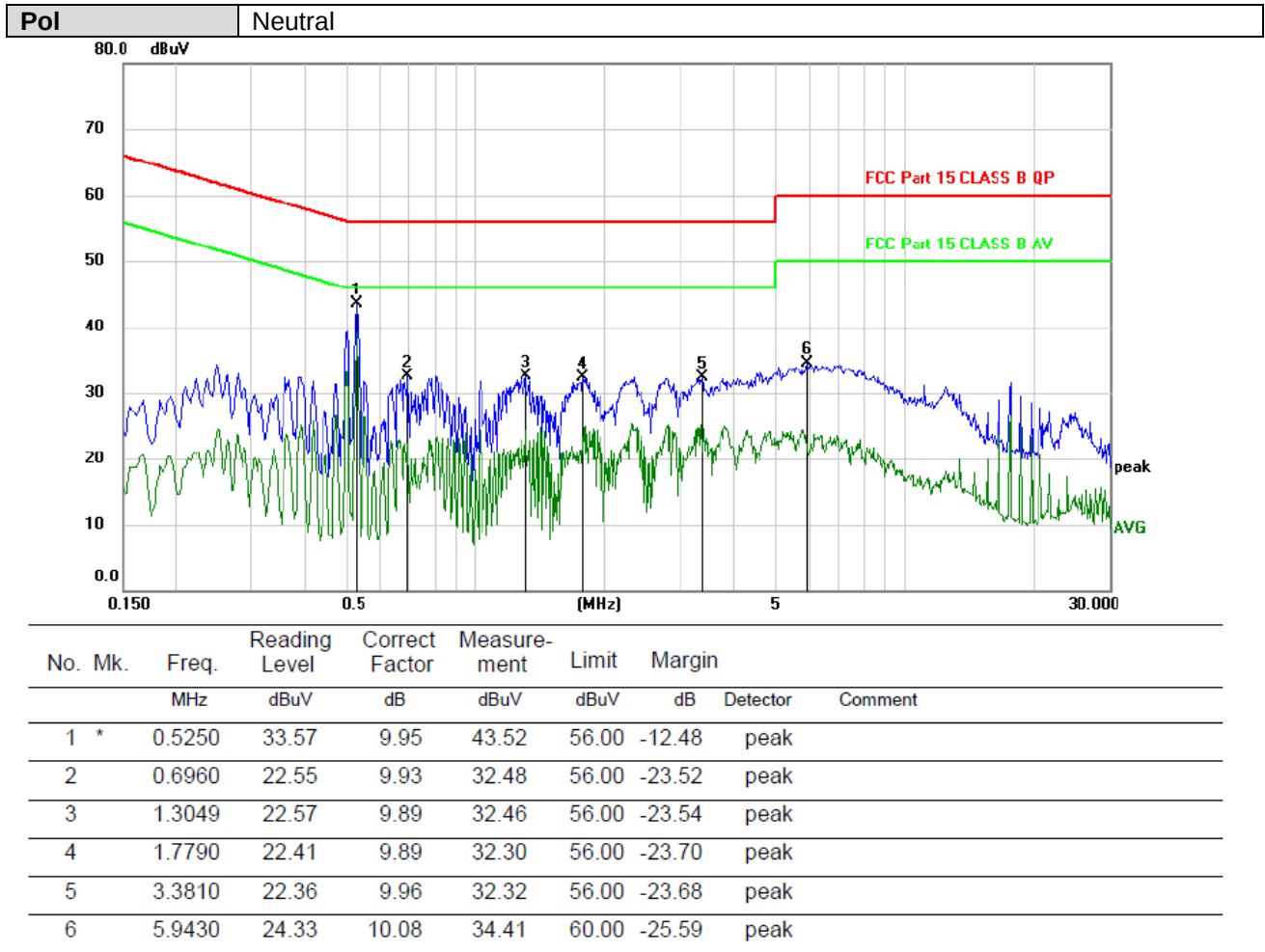


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.2490	22.62	9.97	32.59	61.79	-29.20	peak	
2	*	0.5280	30.42	9.95	40.37	56.00	-15.63	peak	
3		1.0289	20.59	9.92	30.51	56.00	-25.49	peak	
4		1.9170	21.51	9.88	31.39	56.00	-24.61	peak	
5		4.7790	25.52	10.02	35.54	56.00	-20.46	peak	
6		12.4710	20.05	10.27	30.32	60.00	-29.68	peak	

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

(Reference Only)

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



*:Maximum data x:Over limit !:over margin (Reference Only)

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

*: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 (2415MHz) 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

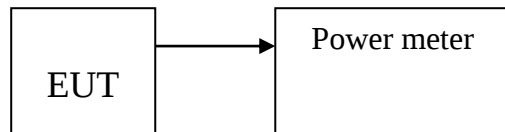
Details see the KDB558074 D01 Meas Guidance V05

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 AVG 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

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	EIRP (dBm)	Limit (dBm)	Verdict
NVNT	2.4G	2415	Ant1	0.866	0.286	30	Pass
NVNT	2.4G	2435	Ant1	1.053	0.473	30	Pass
NVNT	2.4G	2455	Ant1	1.614	1.034	30	Pass

EIRP= Conducted Power (dBm)+Ant Gain(dBi)

6. 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 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 V05

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

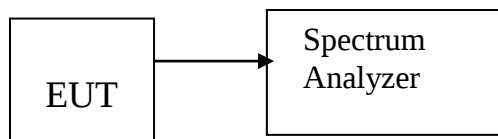
6.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

6.2.3 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 $\text{VBW} \geq 3 \times \text{RBW}$), 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.

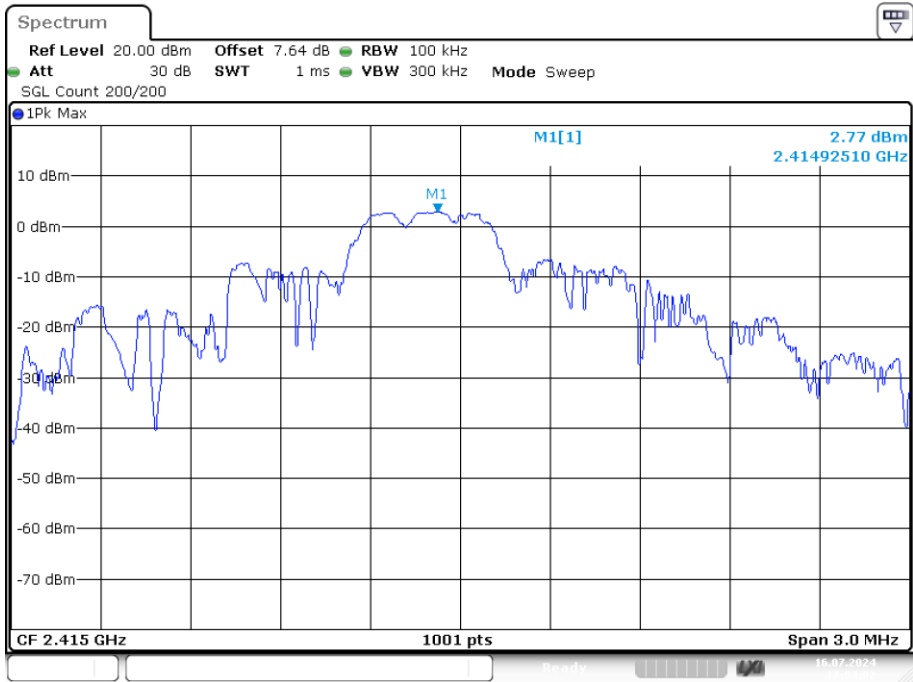
6.3. Test Setup



6.4. Test Results

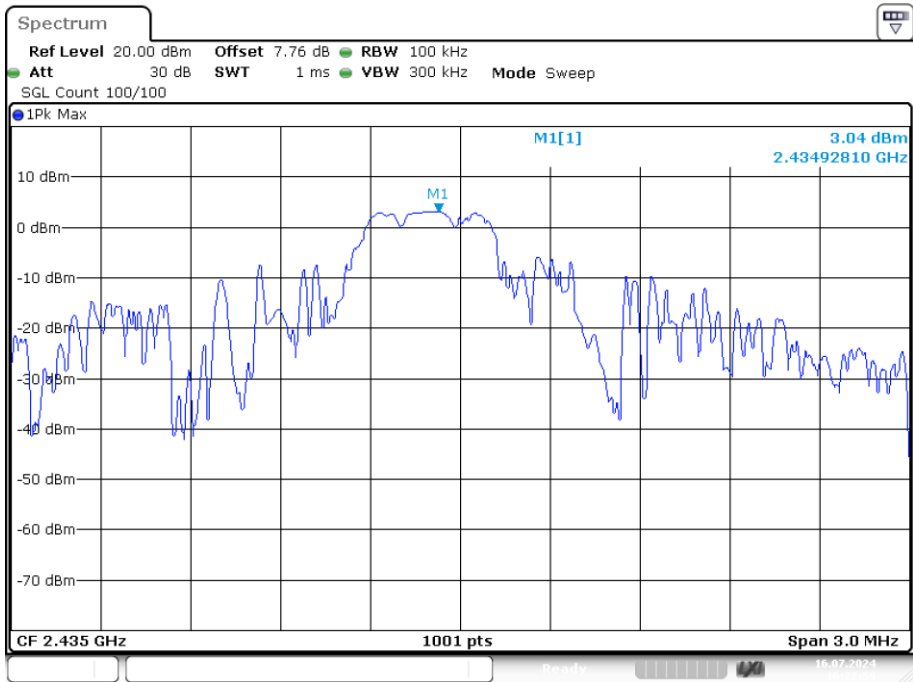
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	2.4G	2415	Ant1	2.771	8	Pass
NVNT	2.4G	2435	Ant1	3.037	8	Pass
NVNT	2.4G	2455	Ant1	3.429	8	Pass

PSD NVNT user 2415MHz Ant1

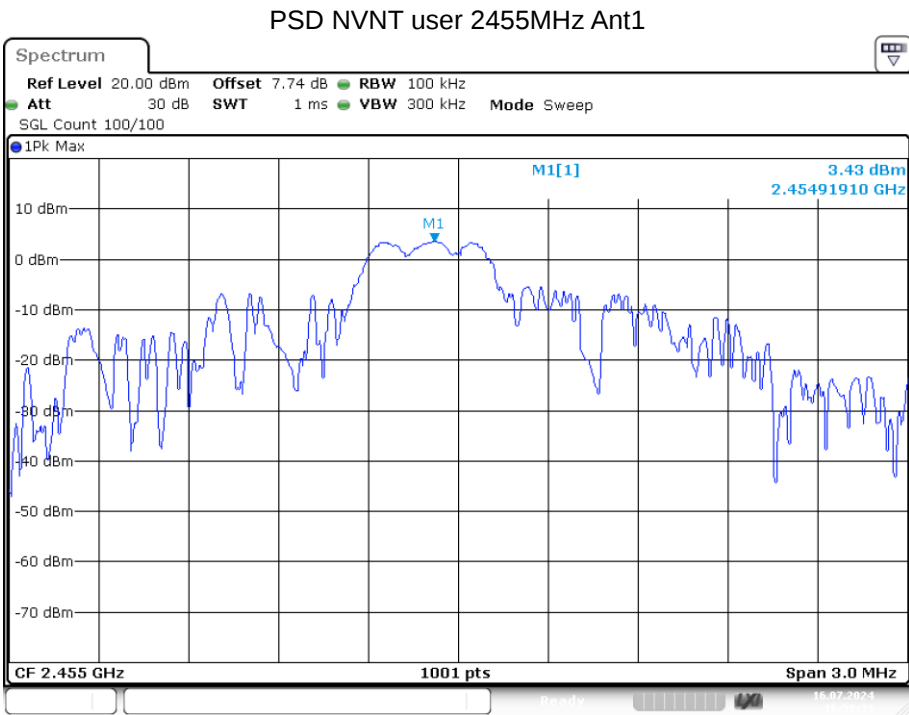


Date: 16.JUL.2024 17:04:01

PSD NVNT user 2435MHz Ant1



Date: 16.JUL.2024 16:22:59



Date: 16.JUL.2024 16:59:32

7. Bandwidth

7.1. Test limits

Please refer section RSS-247 & 15.247

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

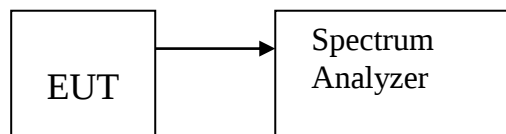
7.2. Test Procedure

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

7.3. Test Setup

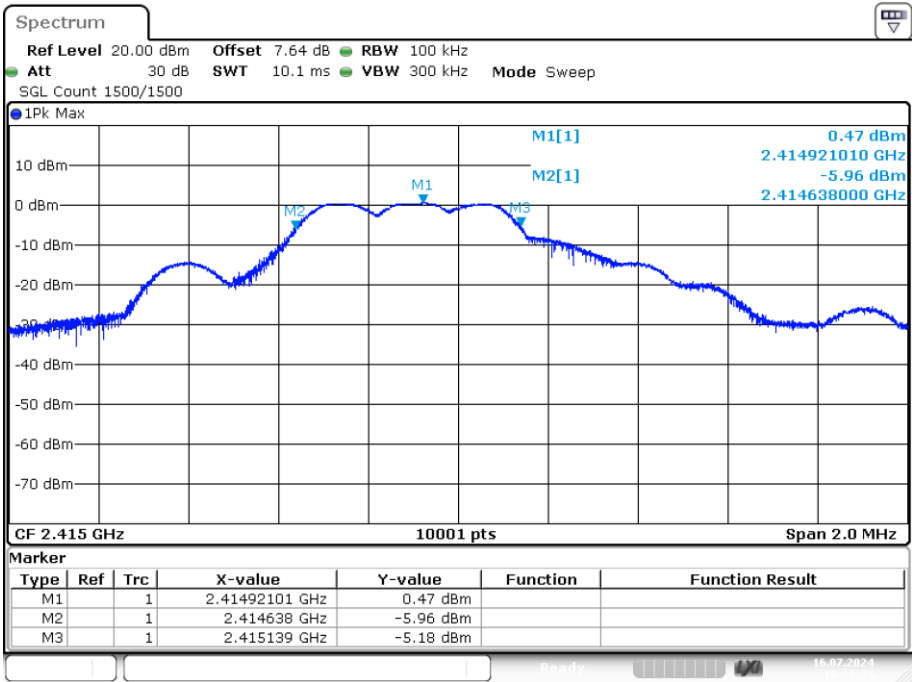


7.4. Test Results

-6dB Bandwidth

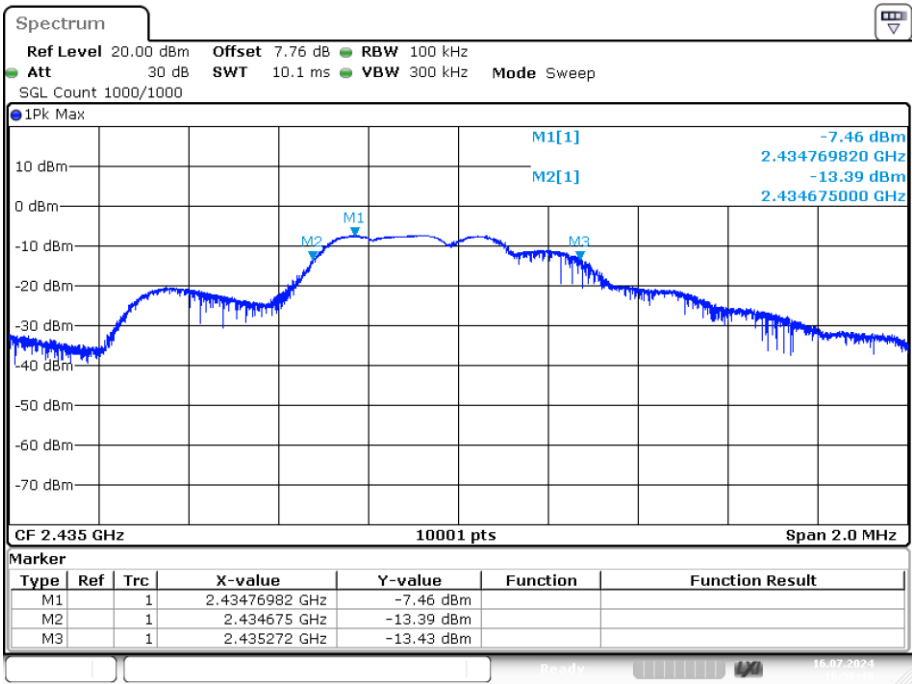
Condition	Mode	Frequency (MHz)	Antenna	-6dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	2.4G	2415	Ant1	0.501	0.5	Pass
NVNT	2.4G	2435	Ant1	0.597	0.5	Pass
NVNT	2.4G	2455	Ant1	0.563	0.5	Pass

-6dB Bandwidth NVNT user 2415MHz Ant1



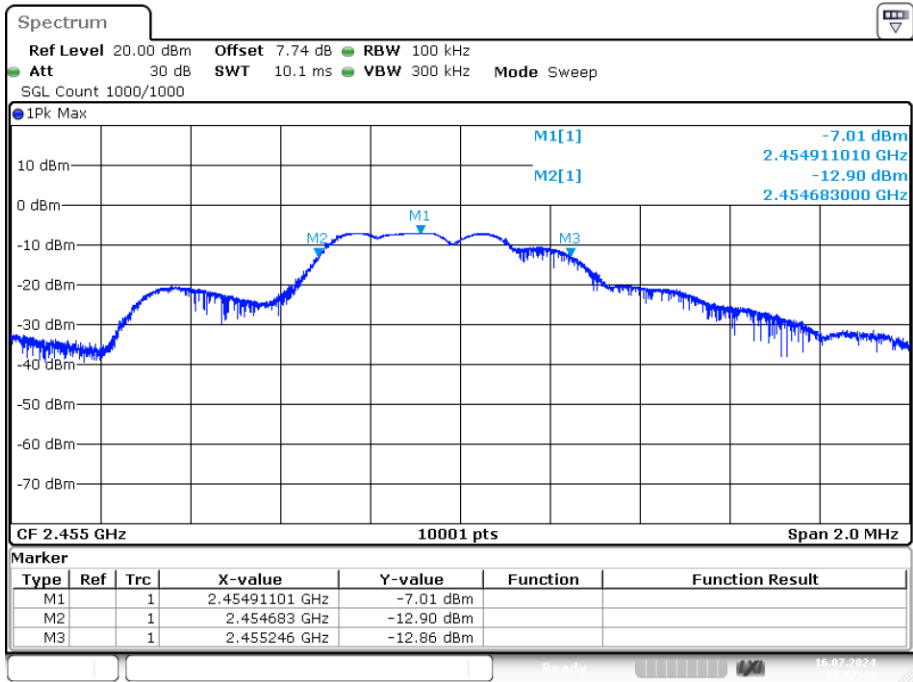
Date: 16.JUL.2024 16:20:25

-6dB Bandwidth NVNT user 2435MHz Ant1



Date: 16.JUL.2024 16:56:40

-6dB Bandwidth NVNT user 2455MHz Ant1

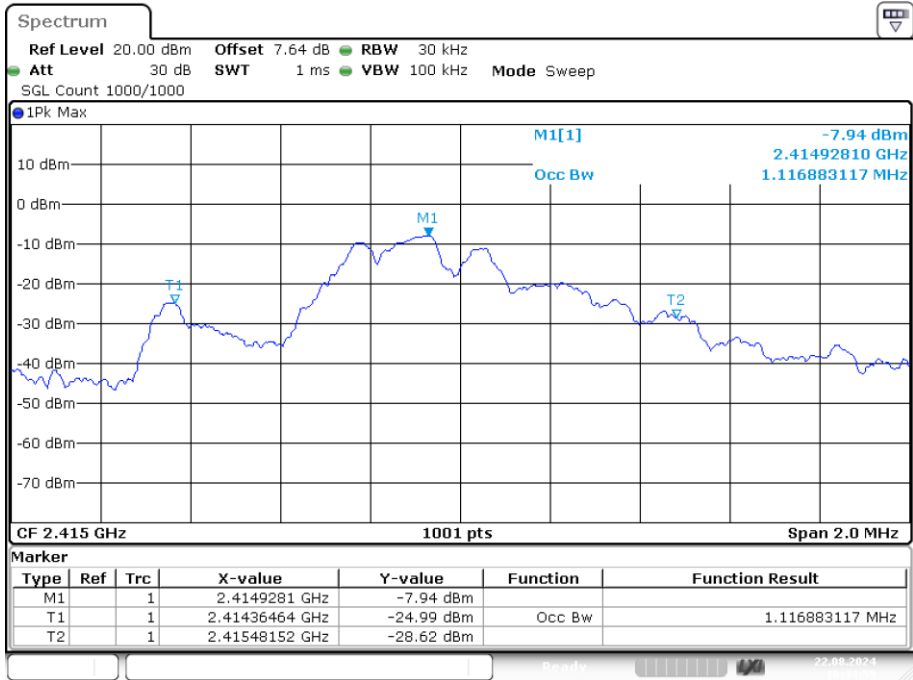


Date: 16.JUL.2024 16:57:48

Occupied Channel Bandwidth

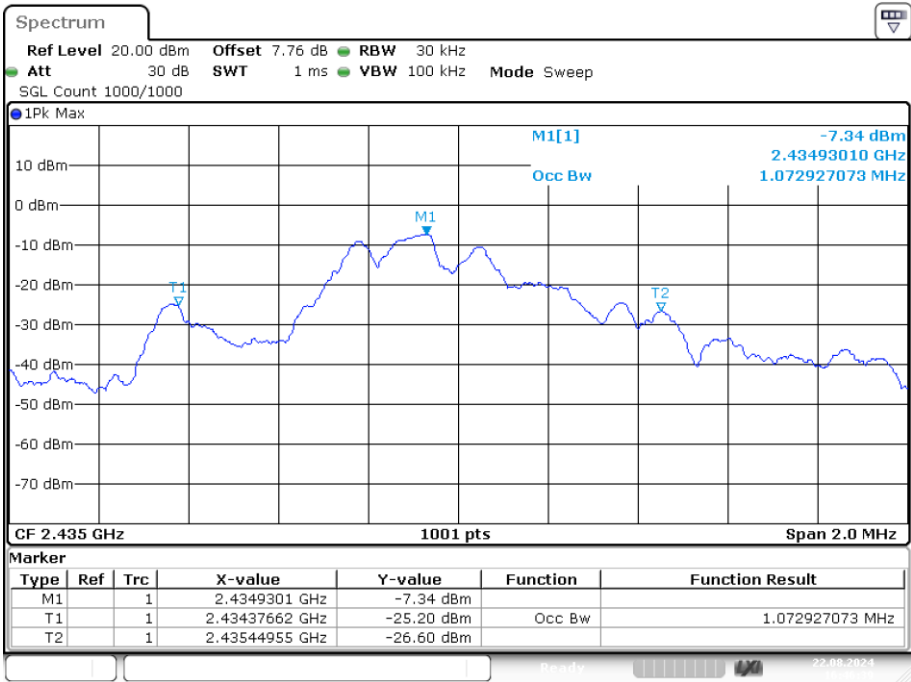
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	2.4G	2415	Ant1	1.117
NVNT	2.4G	2435	Ant1	1.073
NVNT	2.4G	2455	Ant1	1.035

OBW NVNT 2.4G 2415MHz Ant1



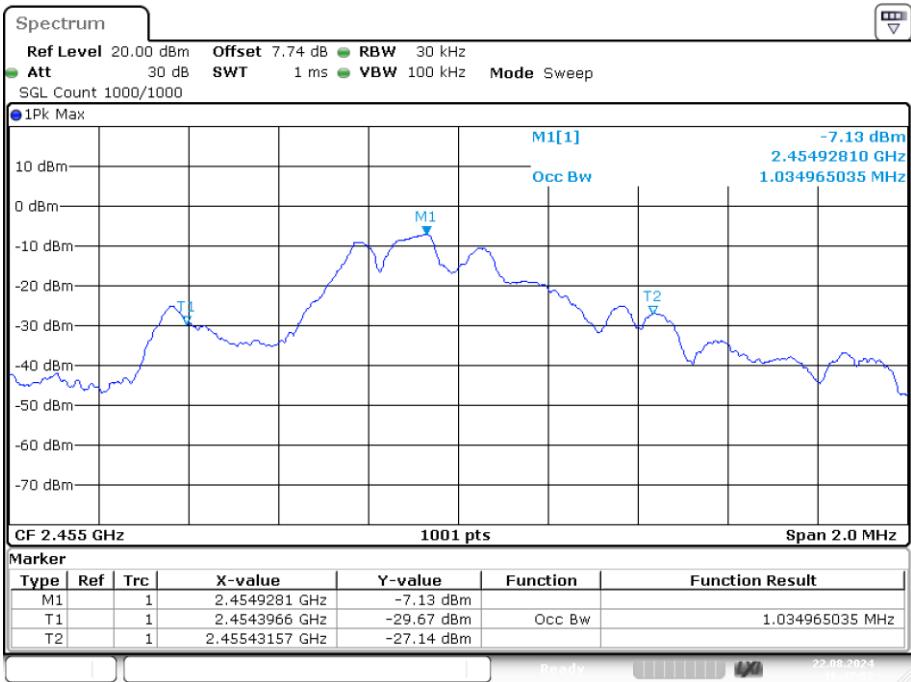
Date: 22.AUG.2024 16:44:58

OBW NVNT 2.4G 2435MHz Ant1



Date: 22.AUG.2024 16:46:39

OBW NVNT 2.4G 2455MHz Ant1



Date: 22.AUG.2024 16:47:52

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 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.

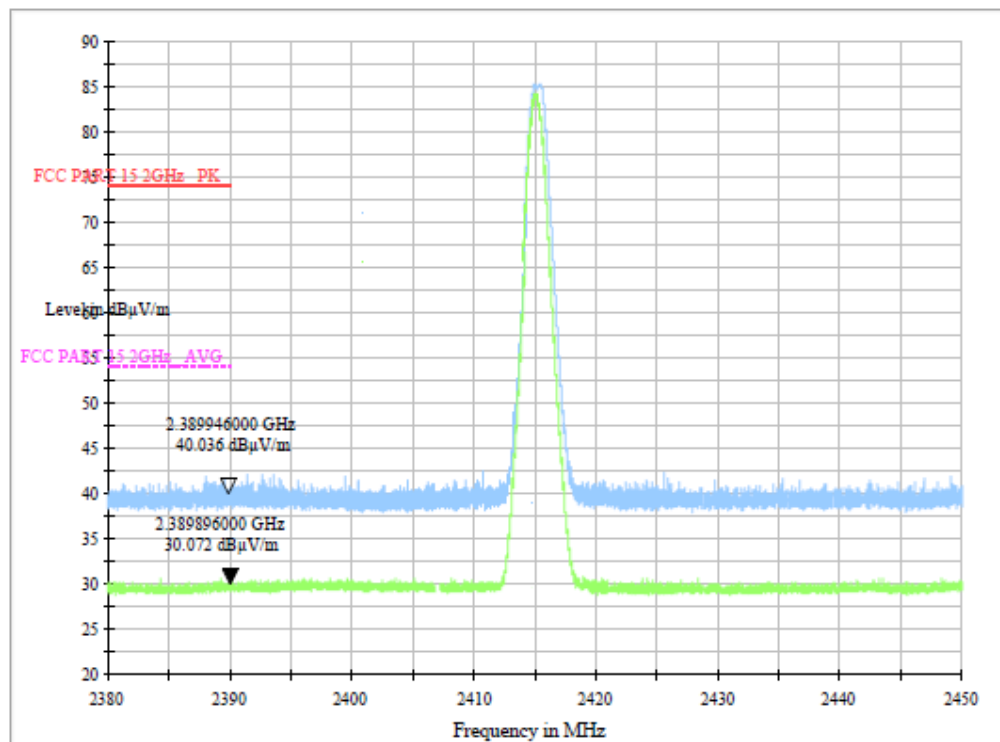
8.3. Test Setup

Same as 5.2.2.

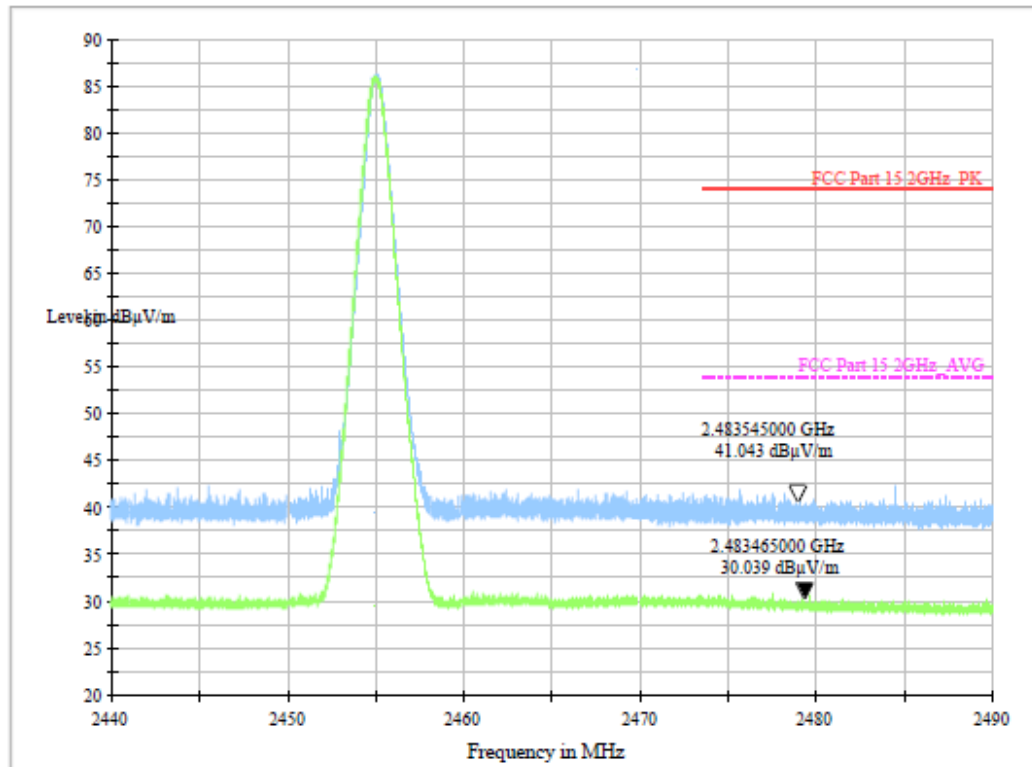
8.4. Test Results

Radiated Method:

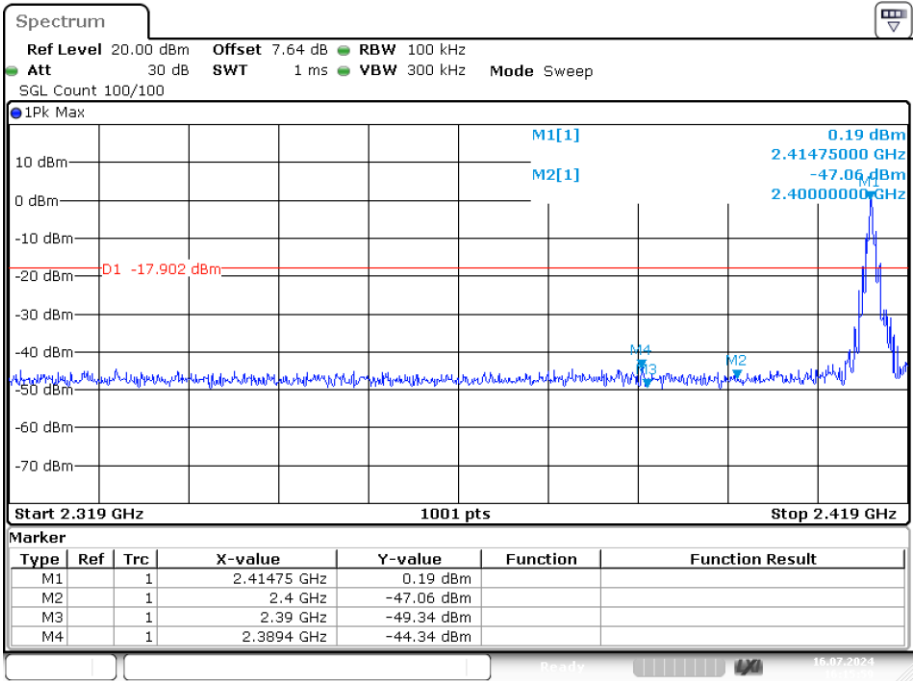
Test Mode: Low



Test Mode: High

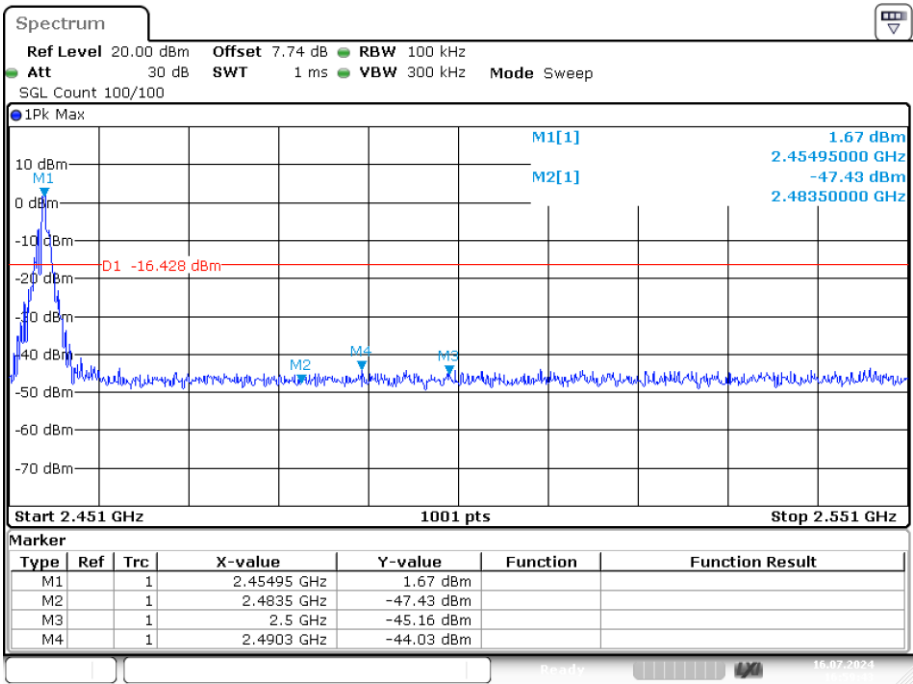


Conducted Method:



Date: 16.JUL.2024 16:15:58

Lowest channel



Date: 16.JUL.2024 16:59:43

Highest channel

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

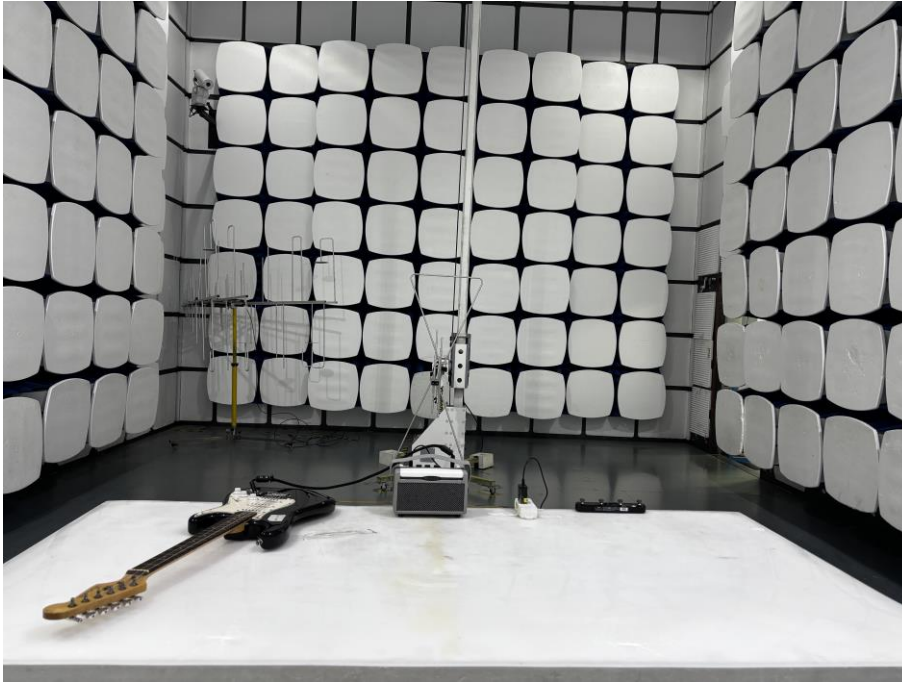
The antenna is PCB antenna and no consideration of replacement. Please see EUT photo for details.

9.3. Results

The EUT antenna is PCB Printed antenna, It complies with the standard requirement.

10. Test Setup Photo

10.1. Photos of Radiated emission

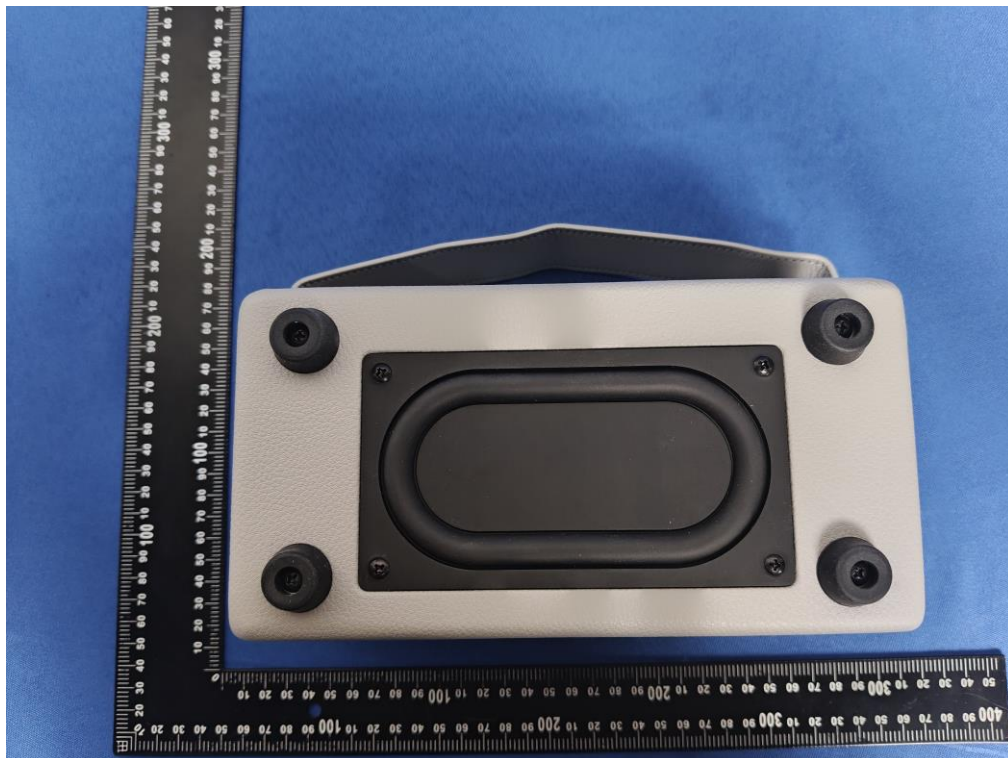


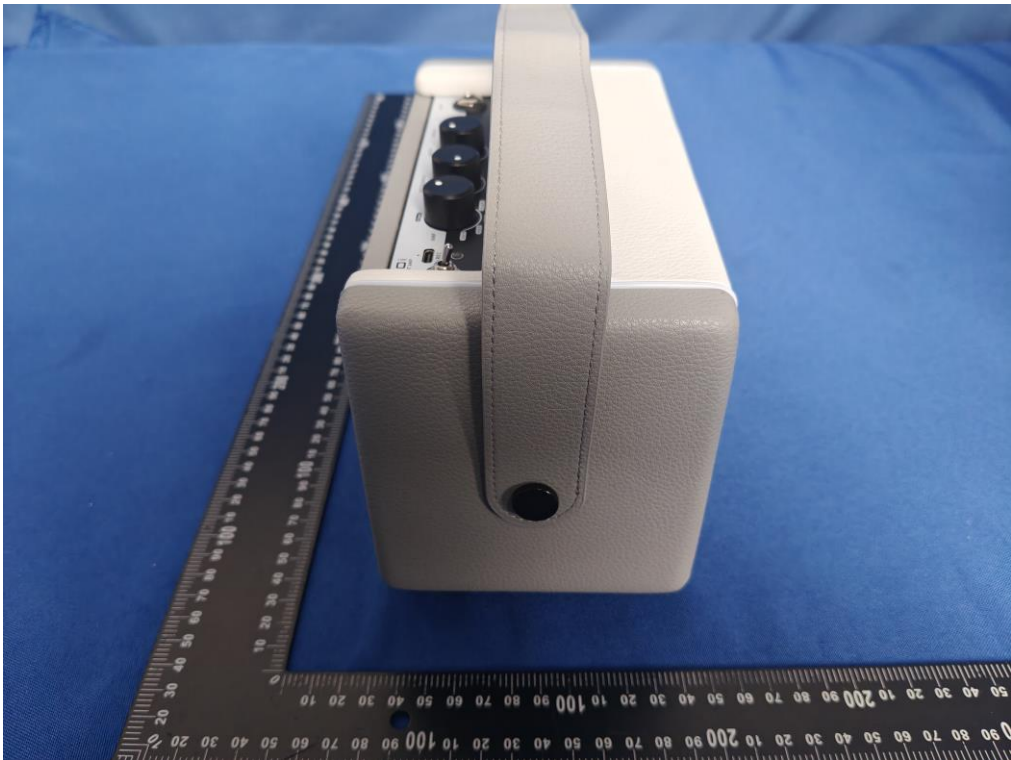
10.2.Photos of Conducted Emission test

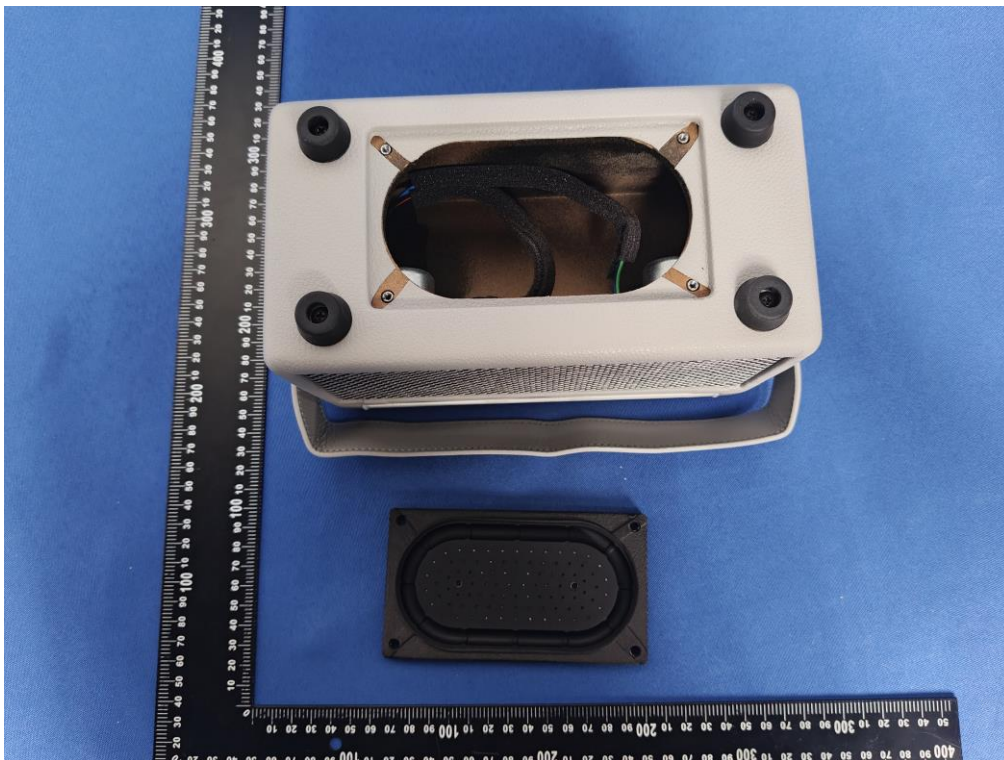
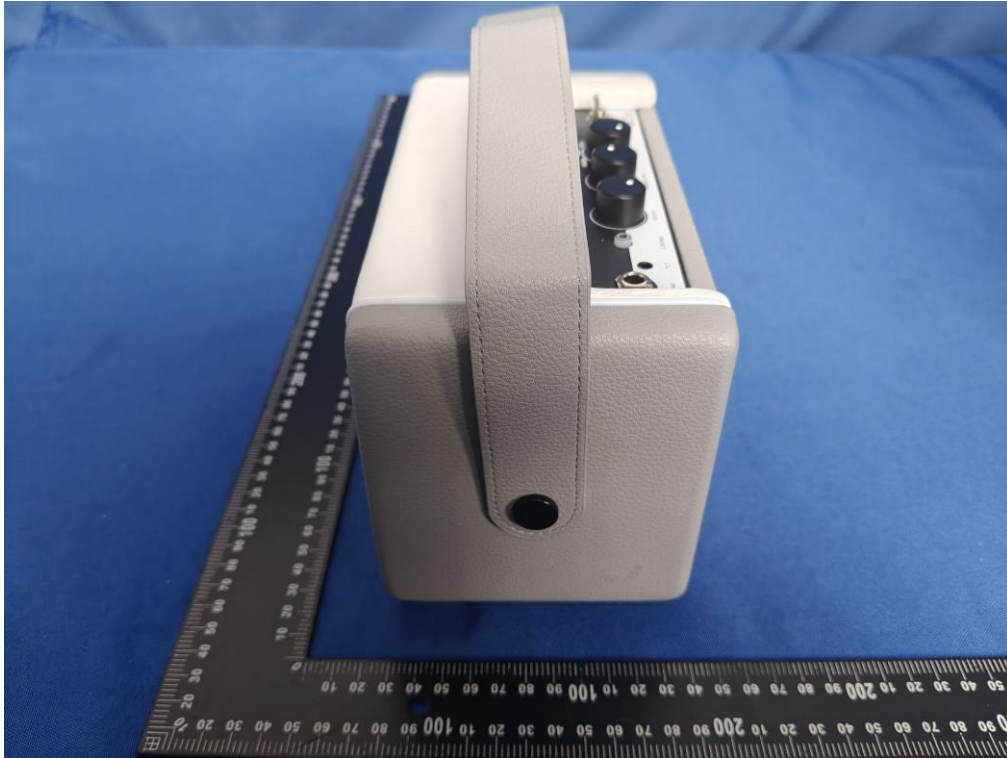


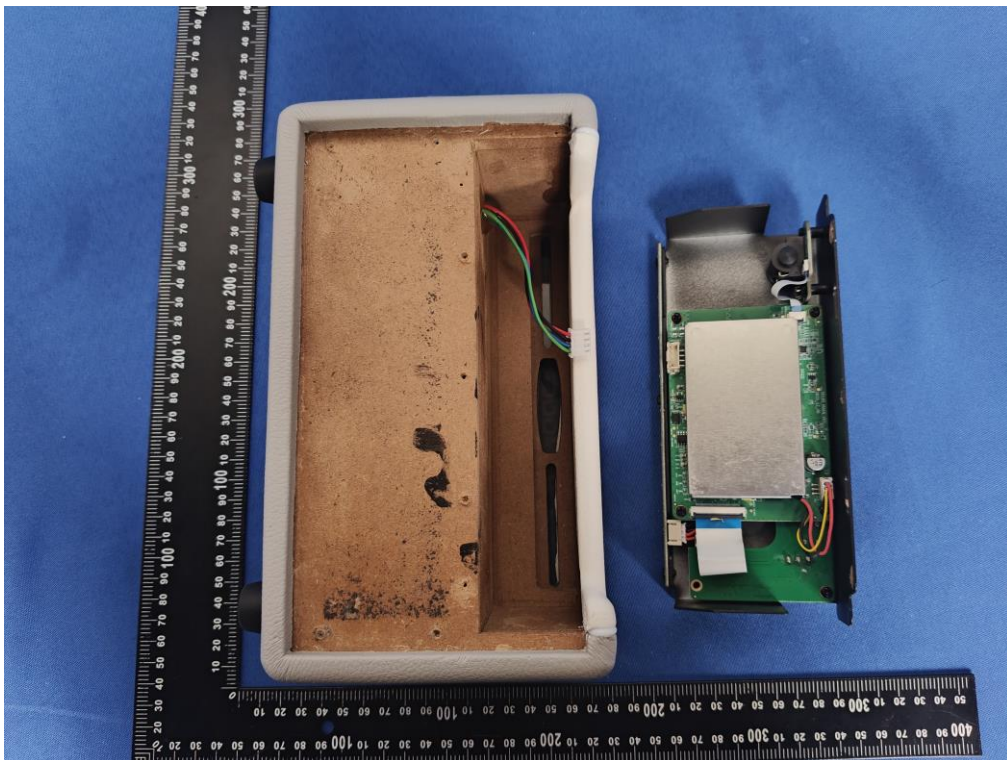
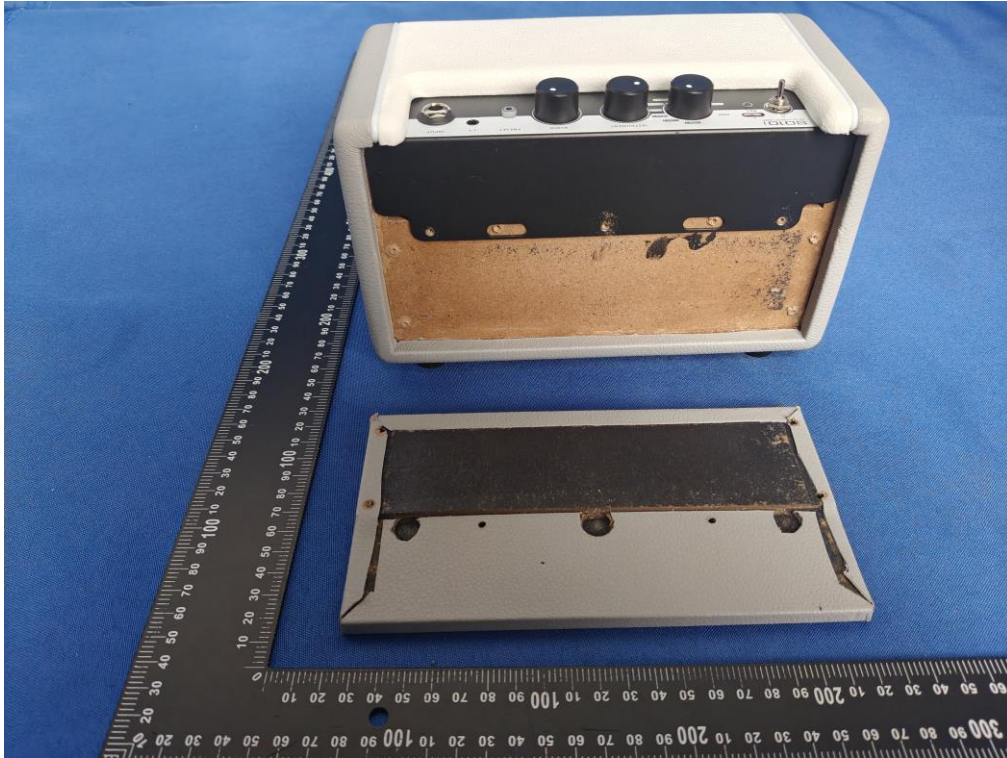
11. EUT Photo

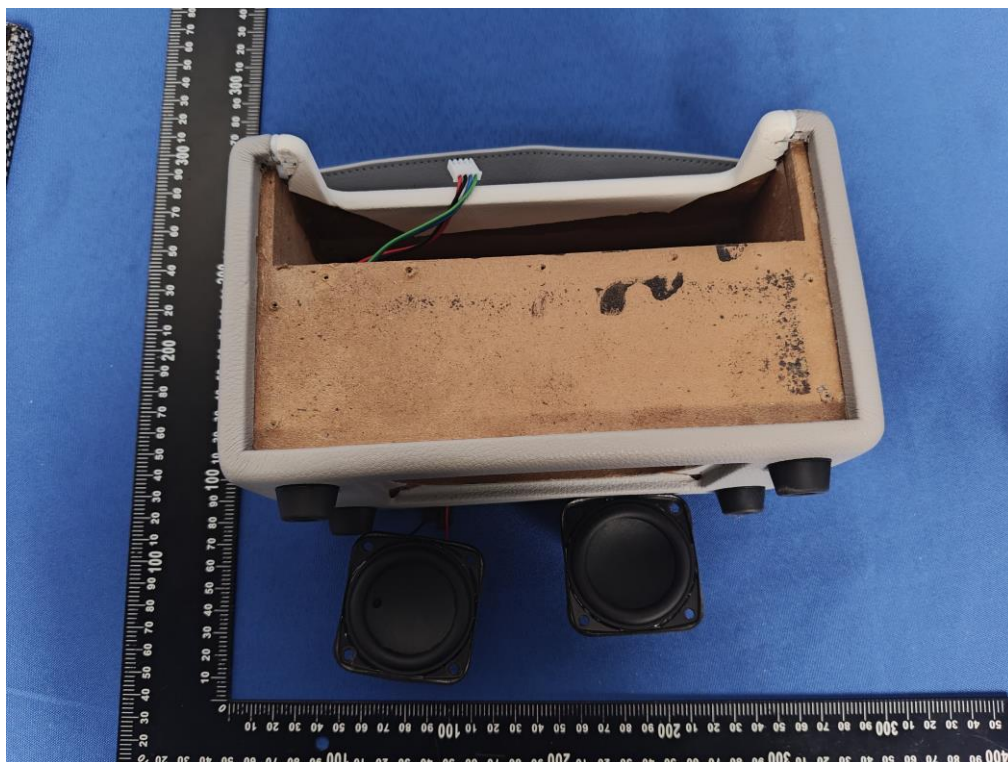
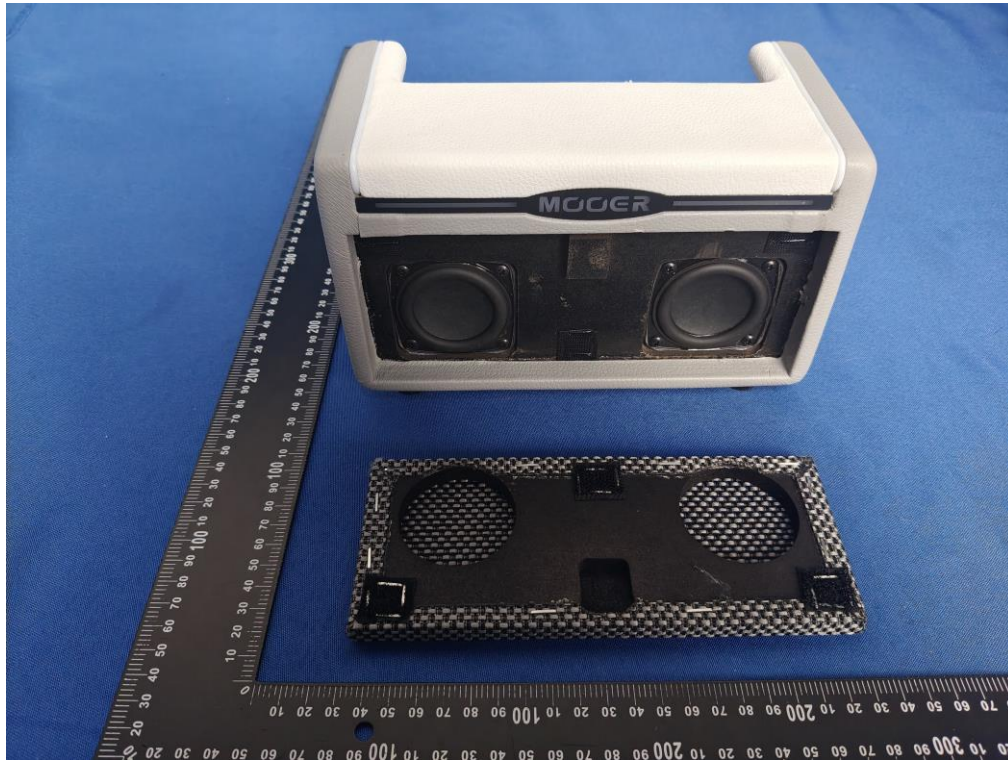


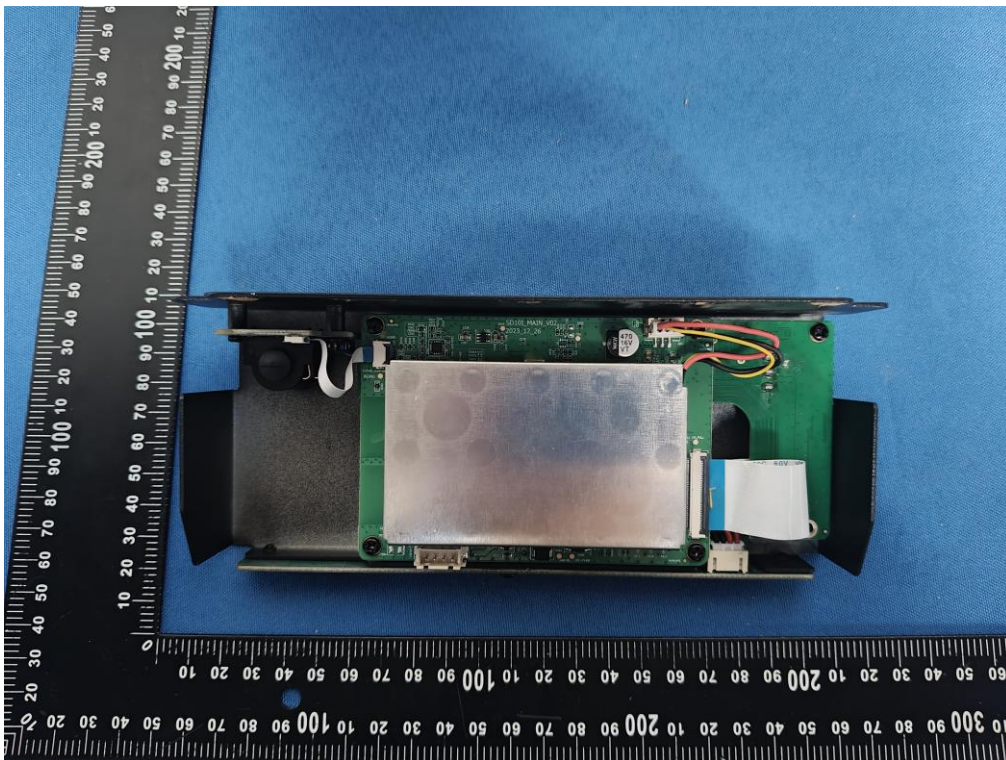
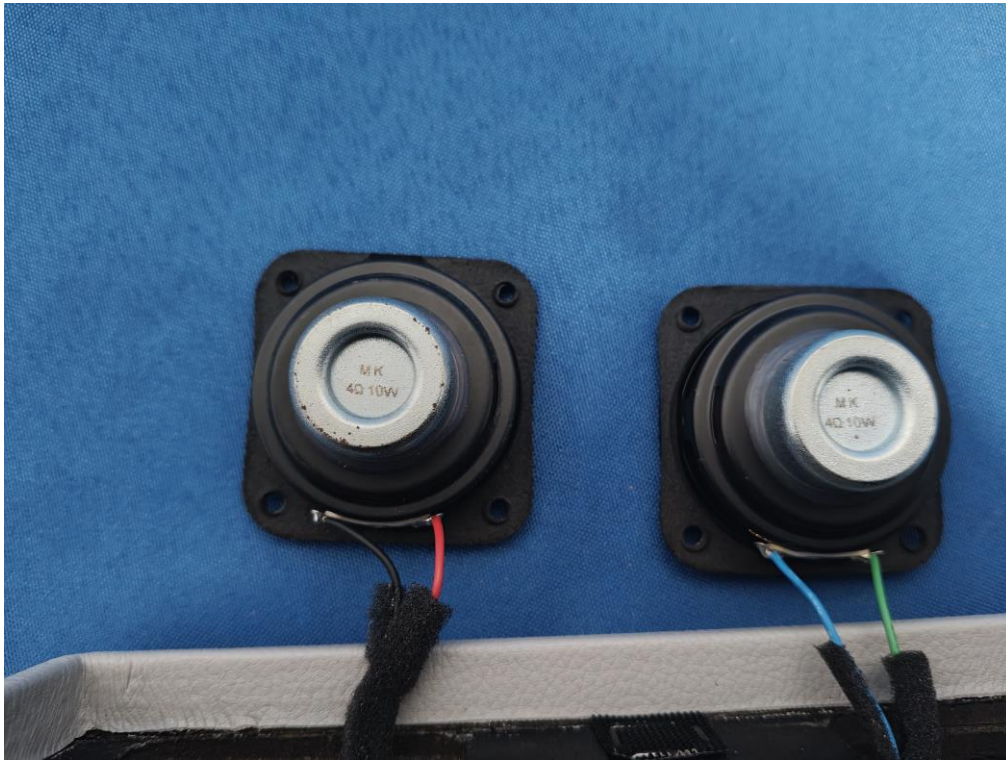


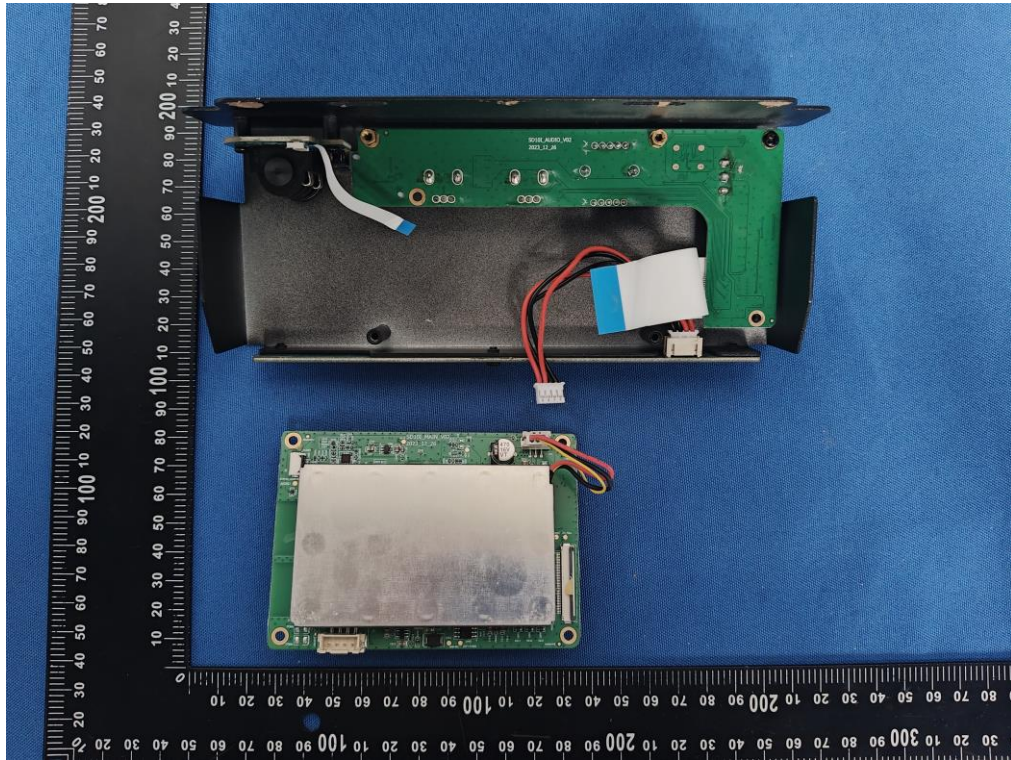


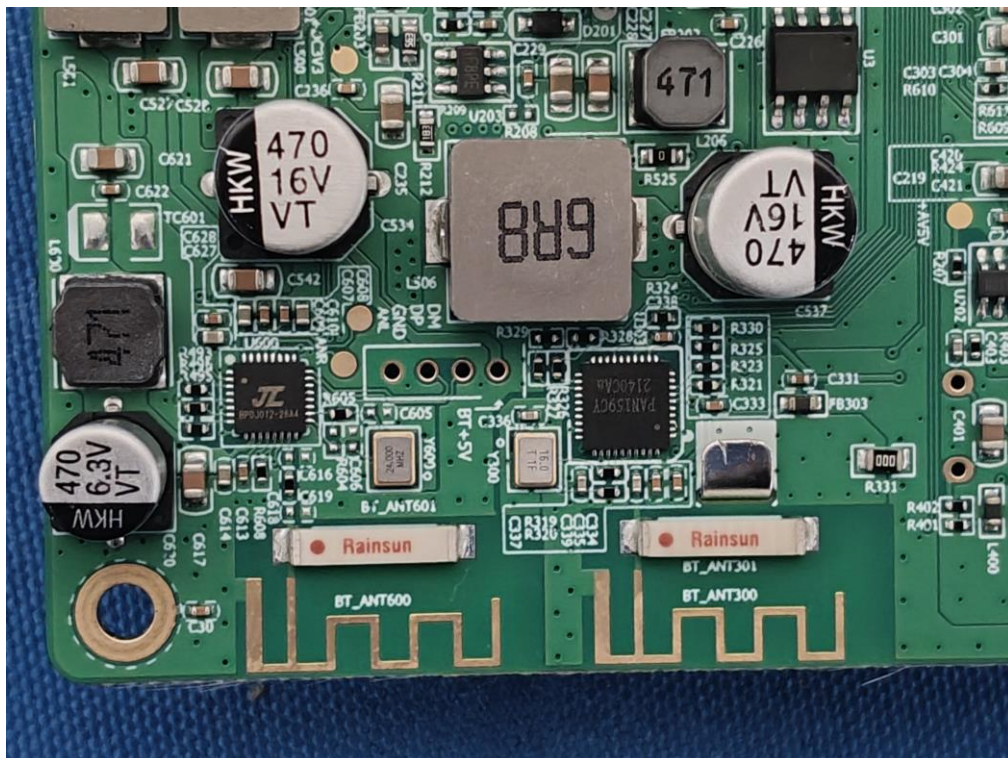
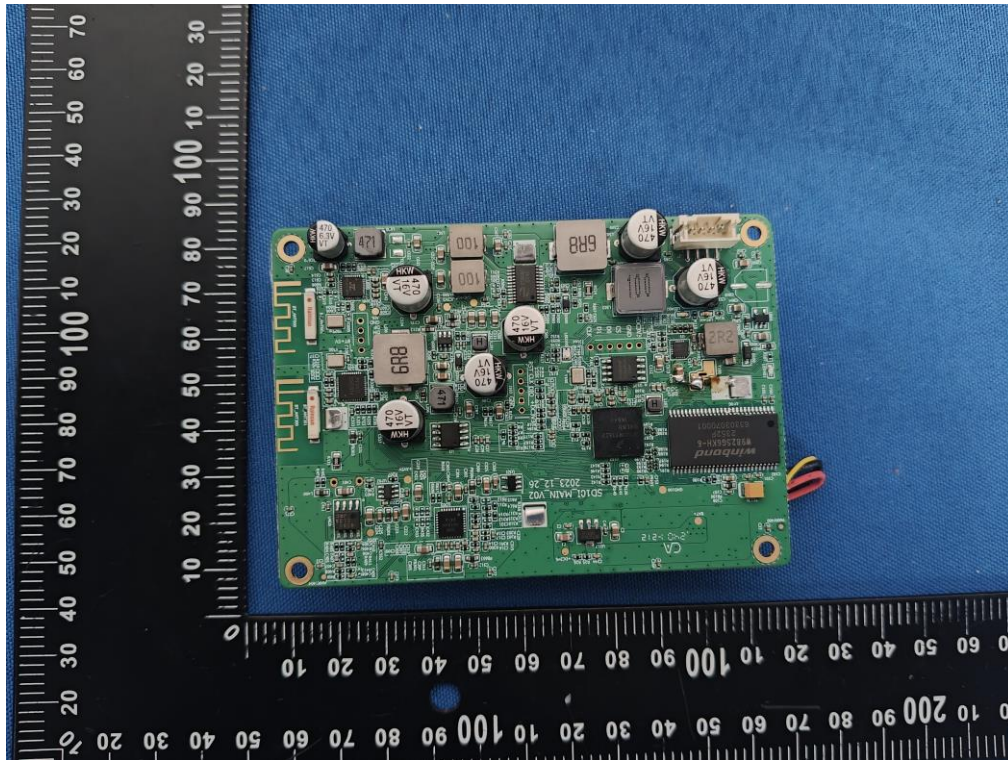


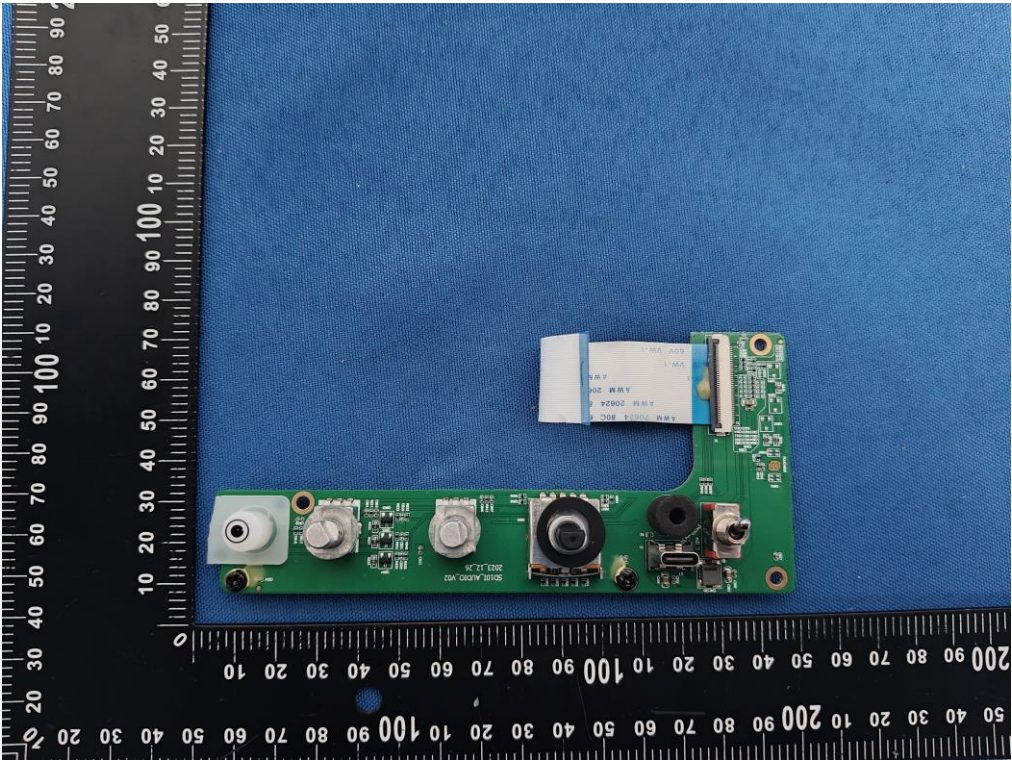
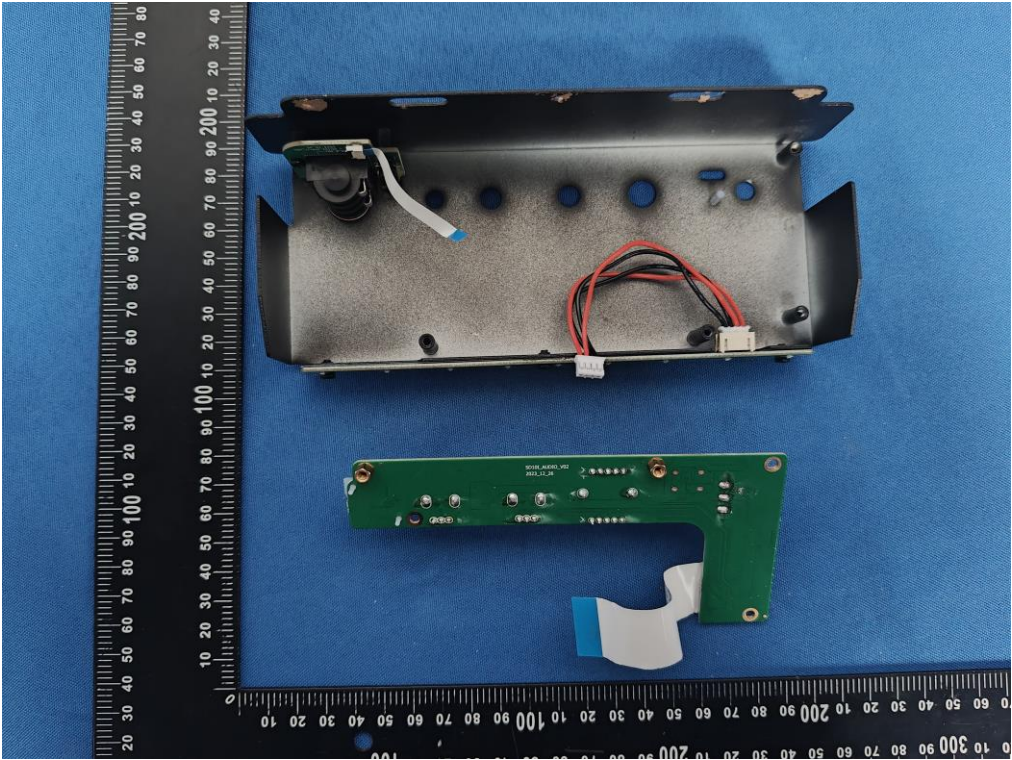


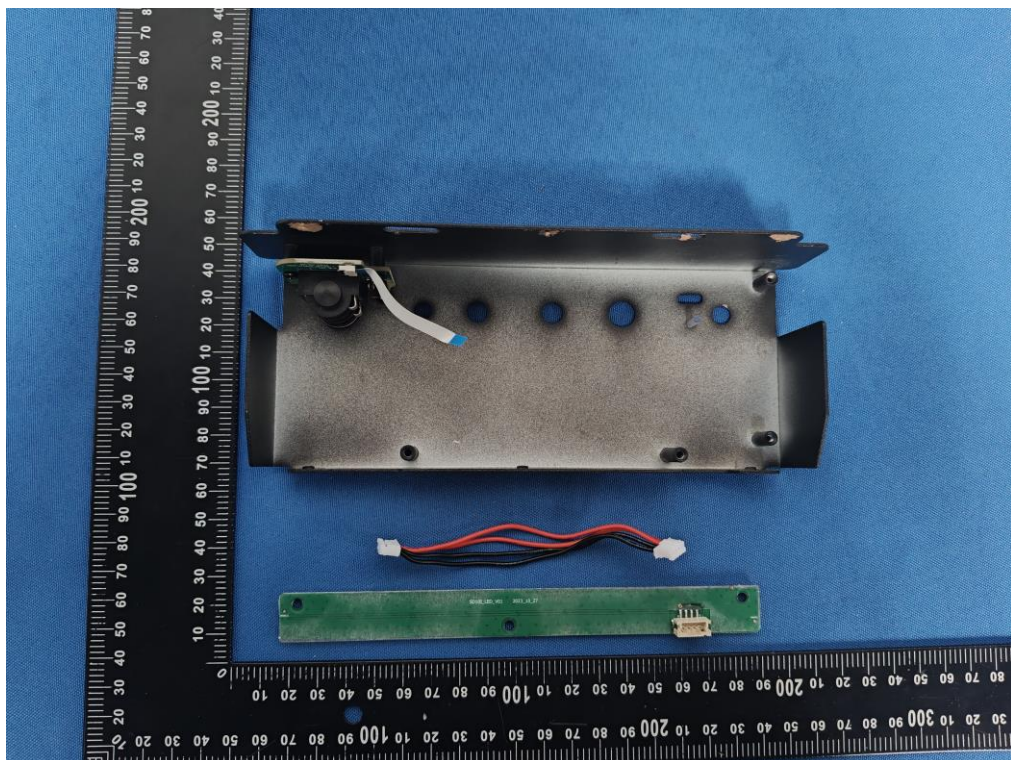
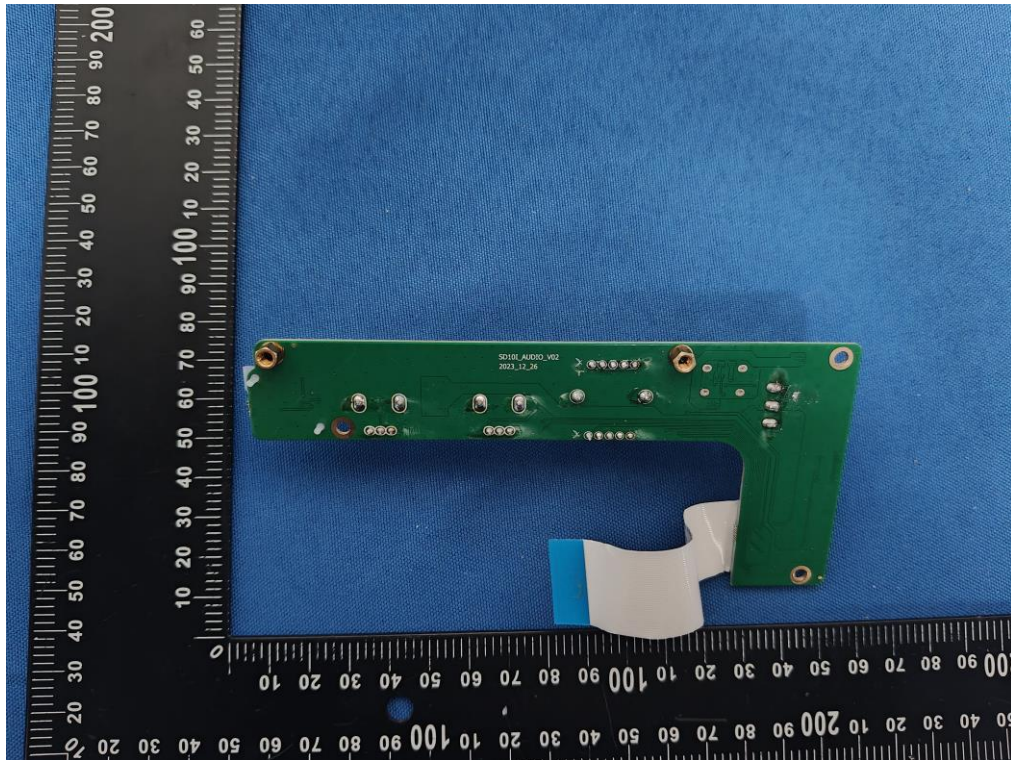


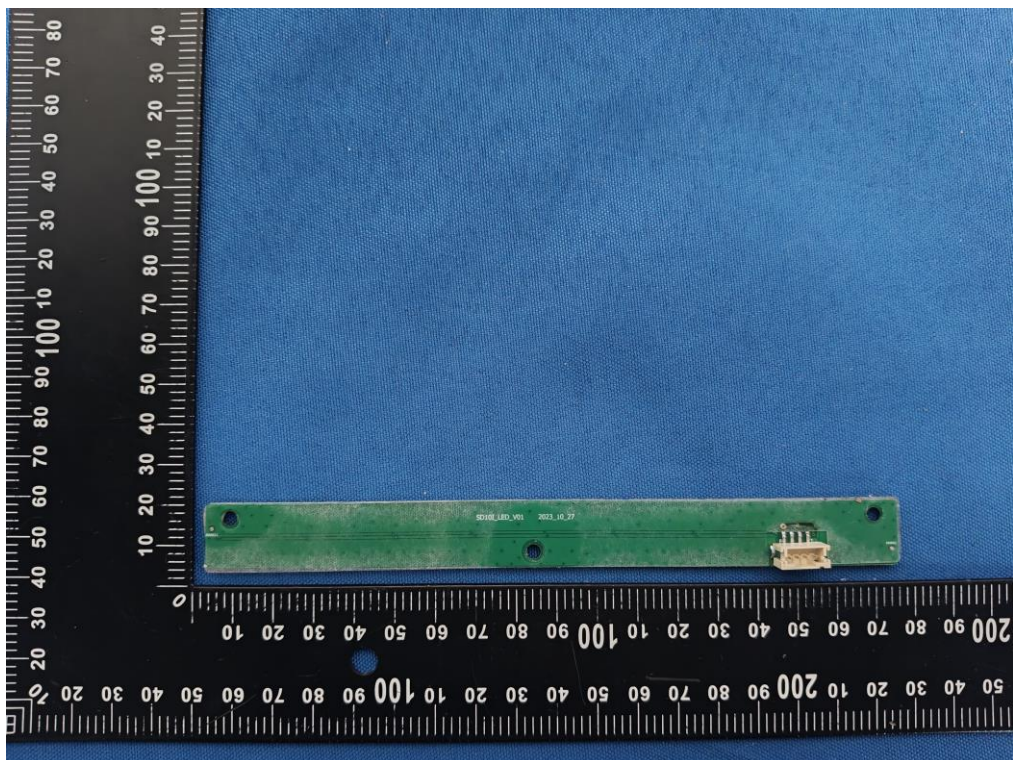
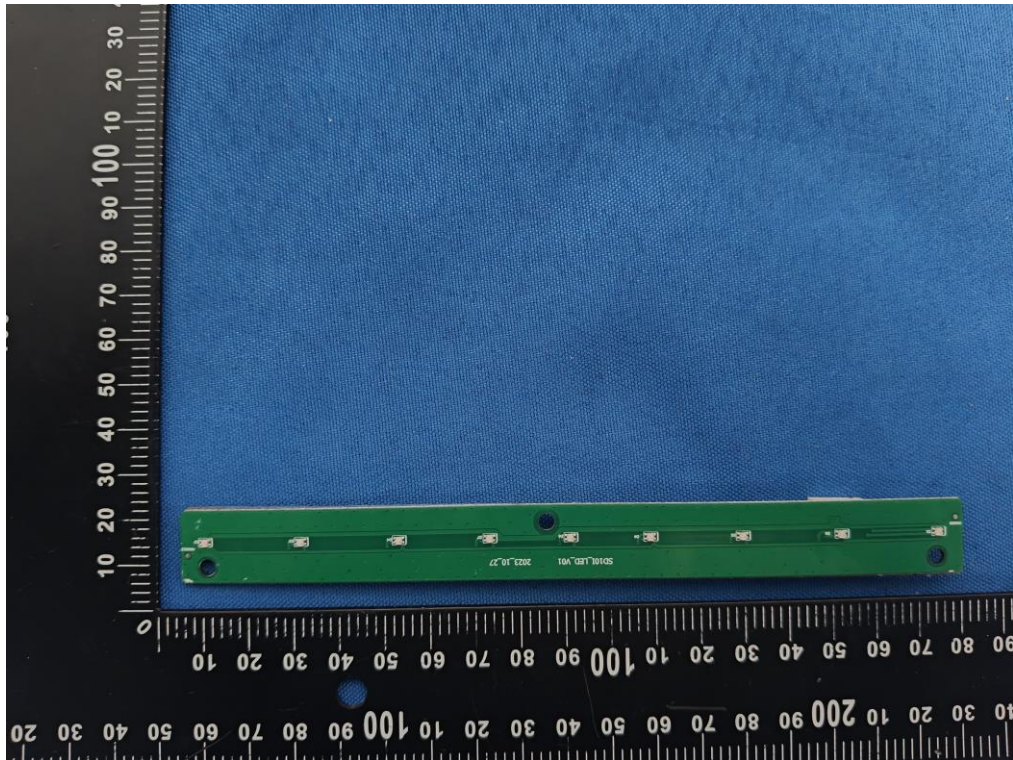


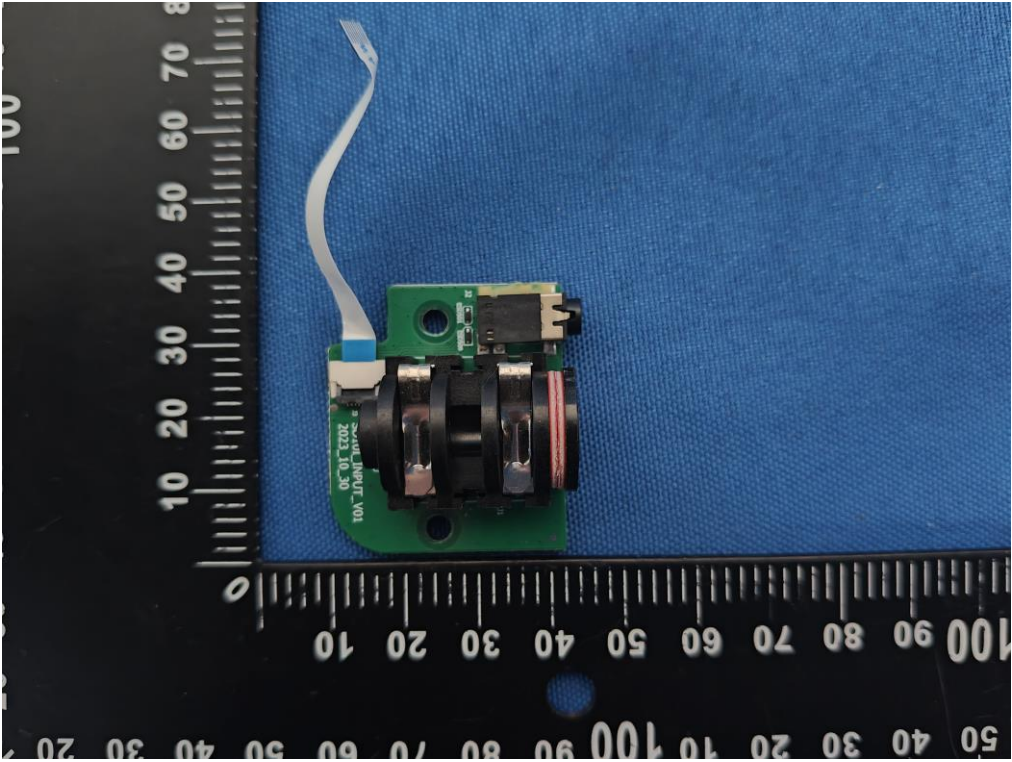
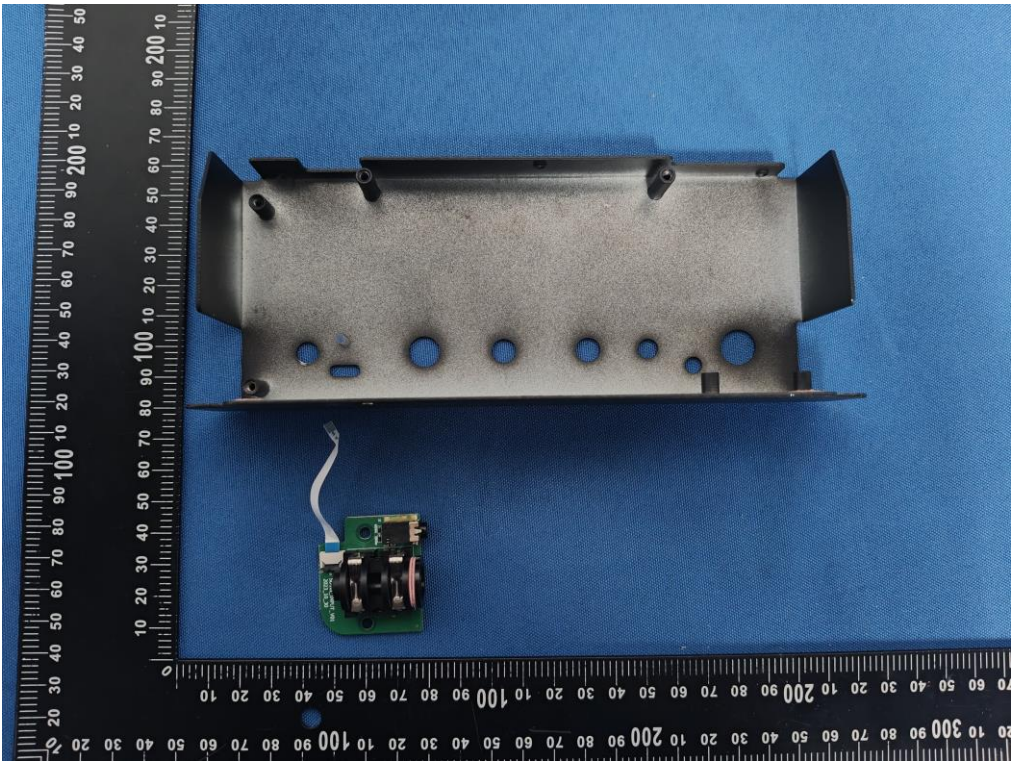


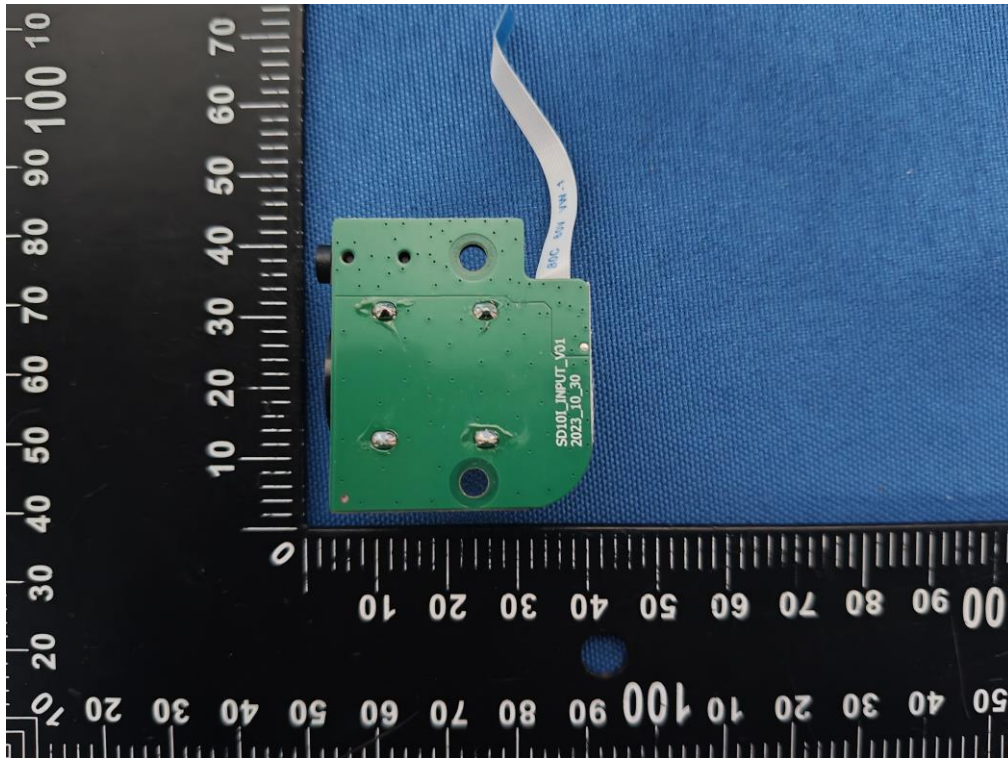












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