



FCC TEST REPORT

FCC ID: 2ATQZ-P2

On Behalf of

Shenzhen Mooer Audio Co.,Ltd

Intelligent Pedal

Model No.: PRIME P2

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 : A2307278-C01-R13
Date of Receipt : August 4, 2023
Date of Test : August 4, 2023–September 21, 2023
Date of Report : September 21, 2023
Version Number : V0

TABLE OF CONTENTS

Description	Page
1. Summary of Standards and Results	5
1.1. Description of Standards and Results	5
2. General information	6
2.1. Description of Device (EUT)	6
2.2. Accessories of Device (EUT)	7
2.3. Tested Supporting System Details	7
2.4. Block Diagram of connection between EUT and simulators	7
2.5. Test Mode Description	7
2.6. Test Conditions	7
2.7. Test Facility	8
2.8. Measurement Uncertainty	8
2.9. Test Equipment List	9
3. Spurious Emission	10
3.1. Test Limits	10
3.2. Test Procedure	10
3.3. Test Setup	11
3.4. Test Results	12
4. Power Line Conducted Emission	17
4.1. Test Limits	17
4.2. Test Procedure	17
4.3. Test Setup	17
4.4. Test Results	17
5. Conducted Maximum Output Power	20
5.1. Test limits	20
5.2. Test Procedure	20
5.3. Test Setup	20
5.4. Test Results	20
6. Power Spectral Density	21
6.1. Test limits	21
6.2. Test Procedure	21
6.3. Test Setup	21
6.4. Test Results	21
7. Bandwidth	24
7.1. Test limits	24
7.2. Test Procedure	24
7.3. Test Setup	24
7.4. Test Results	24
8. Band Edge Check	28
8.1. Test limits	28
8.2. Test Procedure	28
8.3. Test Setup	28
8.4. Test Results	28
9. Antenna Requirement	31
9.1. Standard Requirement	31
9.2. Antenna Connected Construction	31
9.3. Results	31
10. Test Setup Photo	32
10.1. Photos of Radiated emission	32
10.2. Photos of Conducted Emission test	33
11. EUT Photo	34

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 Pedal
(A) Model No. : PRIME P2
(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.

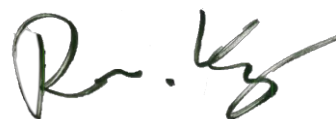
After the test, our opinion is that EUT compliance with the requirement of the above standards.

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).....: Reak Yang
Project Manager



Date of issue.....: September 21, 2023

Revision History

Revision	Issue Date	Revisions	Revised By
V0	September 21, 2023	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
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 Pedal

Model :
Number/HVIN(s) : PRIME P2
Diff. : N/A

Trademark : 

Test Voltage : DC 5V from USB, DC 3.7V from battery

Radio Technology : 2.4g Technology

Operation frequency : 2415-2455MHz

Channel No. : 3 Channels

Modulation type : GFSK

Antenna Type : Chip antenna, Maximum Gain is 1.5dBi.
(Antenna information is provided by applicant.)

Software Version : V1.0

Hardware version : V02

Remark: The EUT has two RF antennas, one of which is a PIFA antenna with a maximum gain of -0.58dBi, and the other is a chip antenna with a maximum gain of 1.5dBi, so this report evaluates the antenna with the largest gain, which is the worst data.

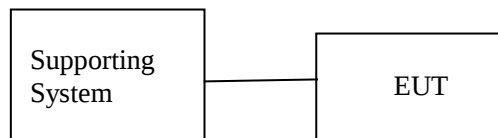
2.2. Accessories of Device (EUT)

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

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1.	Notebook	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: 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

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	2023.07.25	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

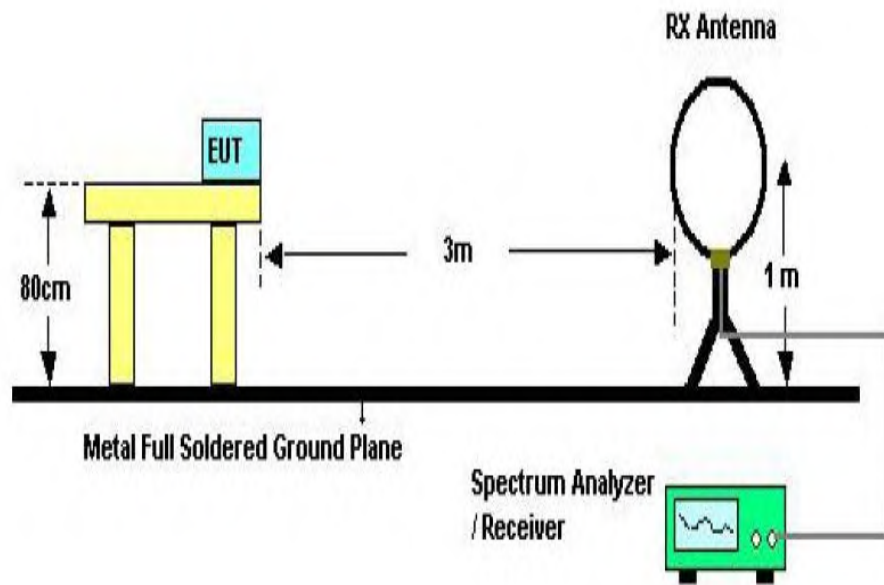
The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground for below 1GHz and 1.5m high for above 1GHz testing, The table was rotated 360 degrees to determine the position of the highest radiation The Test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

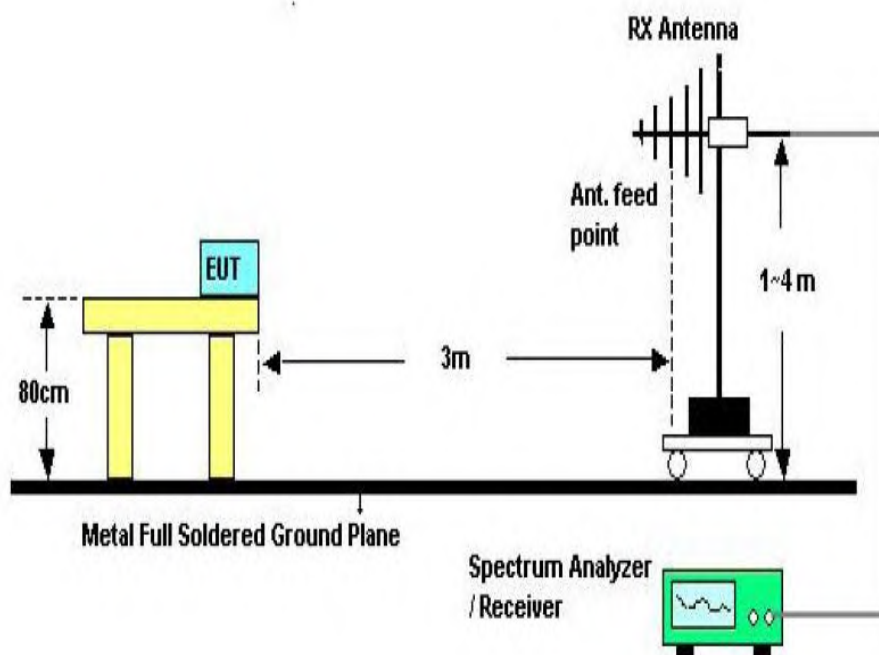
If Peak value comply with QP limit Below 1GHz. The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.

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

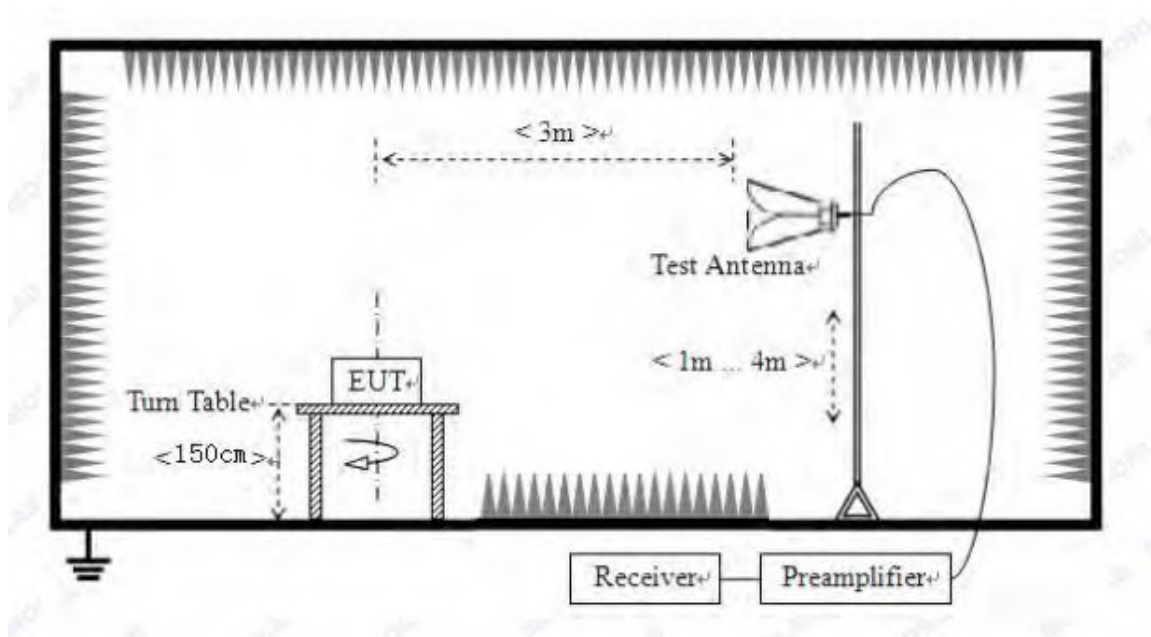
3.3. Test Setup



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.

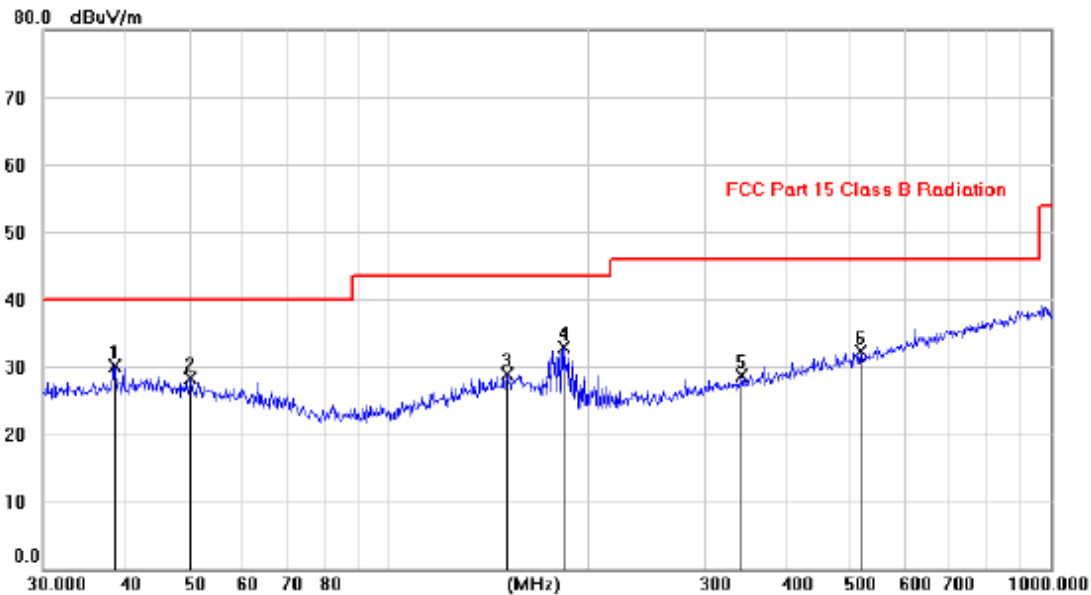
From 9KHz to 30MHz: Conclusion: PASS

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 Pedal	Model No.	PRIME P2
Temperature	24°C	Humidity	56%
Pol	Vertical	Test date	2022/04/07
Test Voltage	DC 5V from USB, DC 3.7V from battery	Test mode	GFSK (2415MHz)

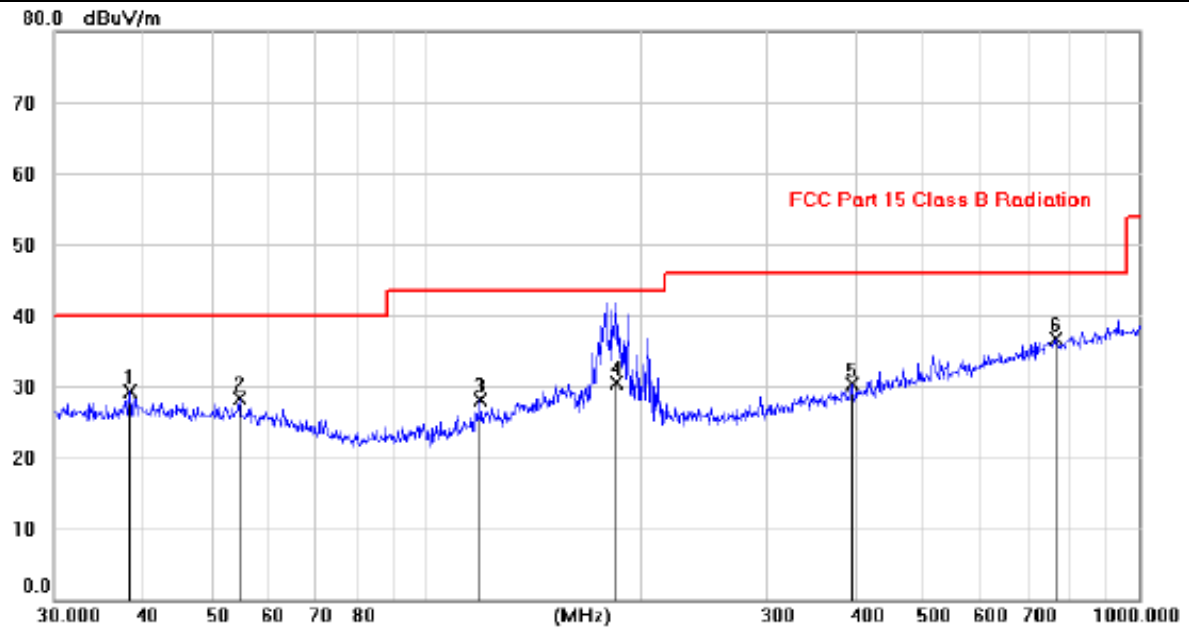


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1	*	38.4809	15.81	14.29	30.10	40.00	-9.90	peak		
2		50.0566	14.30	13.98	28.28	40.00	-11.72	peak		
3		151.3317	13.83	14.99	28.82	43.50	-14.68	peak		
4		184.4090	20.80	12.08	32.88	43.50	-10.62	peak		
5		341.0804	13.74	15.04	28.78	46.00	-17.22	peak		
6		516.7947	13.68	18.54	32.22	46.00	-13.78	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	cm	degree	Comment
1		38.4135	14.94	14.27	29.21	40.00	-10.79	peak		
2		54.6668	14.77	13.59	28.36	40.00	-11.64	peak		
3		119.3314	15.14	12.90	28.04	43.50	-15.46	peak		
4		184.8640	18.39	12.02	30.41	43.50	-13.09	QP	200	0
5		395.5474	14.14	16.12	30.26	46.00	-15.74	peak		
6	*	763.3757	14.05	22.68	36.73	46.00	-9.27	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	42.88	V	33.95	10.18	34.26	52.75	74	-21.25	PK
4830	37.84	V	33.95	10.18	34.26	47.71	54	-6.29	AV
7245	/	/	/	/	/	/	/	/	/
9660	/	/	/	/	/	/	/	/	/
4830	45.92	H	33.95	10.18	34.26	55.79	74	-18.21	PK
4830	36.14	H	33.95	10.18	34.26	46.01	54	-7.99	AV
7245	/	/	/	/	/	/	/	/	/
9660	/	/	/	/	/	/	/	/	/
Test Mode: TX Mid									
4870	41.31	V	33.93	10.2	34.29	51.15	74	-22.85	PK
4870	34.40	V	33.93	10.2	34.29	44.24	54	-9.76	AV
7305	/	/	/	/	/	/	/	/	/
9740	/	/	/	/	/	/	/	/	/
4870	44.50	H	33.93	10.2	34.29	54.34	74	-19.66	PK
4870	33.23	H	33.93	10.2	34.29	43.07	54	-10.93	AV
7305	/	/	/	/	/	/	/	/	/
9740	/	/	/	/	/	/	/	/	/
Test Mode: TX High									
4910	45.13	V	33.98	10.22	34.25	55.08	74	-18.92	PK
4910	36.56	V	33.98	10.22	34.25	46.51	54	-7.49	AV
7365	/	/	/	/	/	/	/	/	/
9820	/	/	/	/	/	/	/	/	/
4910	43.73	H	33.98	10.22	34.25	53.68	74	-20.32	PK
4910	34.34	H	33.98	10.22	34.25	44.29	54	-9.71	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 Pedal	Model No.	PRIME P2
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 Auto Sweep

SGL Count 10/10

1Pk Max

10 dBm

0 dBm

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

M1[1]

M2[1]

M3

M4

M5

-2.15 dBm

2.4230 GHz

-26.80 dBm

4.8211 GHz

Start 30.0 MHz

1001 pts

Stop 26.5 GHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1	1	2.423 GHz	-2.15 dBm		
M2	1	1	4.8211 GHz	-26.80 dBm		
M3	1	1	4.8211 GHz	-26.80 dBm		
M4	1	1	7.071 GHz	-42.19 dBm		
M5	1	1	9.6651 GHz	-41.43 dBm		

Spectrum

Ref Level 20.00 dBm

Offset 7.76 dB

RBW 100 kHz

Att 30 dB

SWT 265 ms

VBW 300 kHz

Mode Auto Sweep

SGL Count 10/10

1Pk Max

10 dBm

0 dBm

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

M1[1]

M2[1]

M3

M4

M5

-2.67 dBm

2.4230 GHz

-26.48 dBm

4.8740 GHz

Start 30.0 MHz

1001 pts

Stop 26.5 GHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1	1	2.423 GHz	-2.67 dBm		
M2	1	1	4.874 GHz	-26.48 dBm		
M3	1	1	4.874 GHz	-26.48 dBm		
M4	1	1	7.3093 GHz	-40.11 dBm		
M5	1	1	9.8768 GHz	-40.18 dBm		

Date: 20.SEP.2023 16:21:29

Date: 20.SEP.2023 16:27:27

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 Auto Sweep

SGL Count 10/10

1Pk Max

10 dBm

0 dBm

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

M1[1]

M2[1]

M3

M4

M5

-3.26 dBm

2.4500 GHz

-25.08 dBm

4.9005 GHz

Start 30.0 MHz

1001 pts

Stop 26.5 GHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1	1	2.45 GHz	-3.26 dBm		
M2	1	1	4.9005 GHz	-25.08 dBm		
M3	1	1	4.9005 GHz	-25.08 dBm		
M4	1	1	7.3357 GHz	-41.26 dBm		
M5	1	1	9.8239 GHz	-40.71 dBm		

Spectrum

Ref Level 20.00 dBm

Offset 7.74 dB

RBW 100 kHz

Att 30 dB

SWT 265 ms

VBW 300 kHz

Mode Auto Sweep

SGL Count 10/10

1Pk Max

10 dBm

0 dBm

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

M1[1]

M2[1]

M3

M4

M5

-3.26 dBm

2.4500 GHz

-25.08 dBm

4.9005 GHz

Start 30.0 MHz

1001 pts

Stop 26.5 GHz

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1	1	2.45 GHz	-3.26 dBm		
M2	1	1	4.9005 GHz	-25.08 dBm		
M3	1	1	4.9005 GHz	-25.08 dBm		
M4	1	1	7.3357 GHz	-41.26 dBm		
M5	1	1	9.8239 GHz	-40.71 dBm		

Date: 20.SEP.2023 15:26:40

Date: 20.SEP.2023 15:26:40

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.

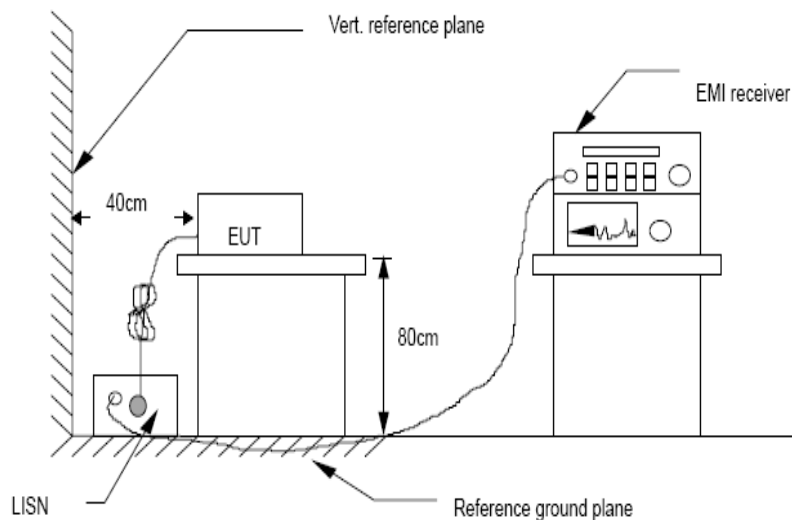
3. The limit decreases in line with the logarithm of the frequency in rang of 0.15 to 0.50 MHz.

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.

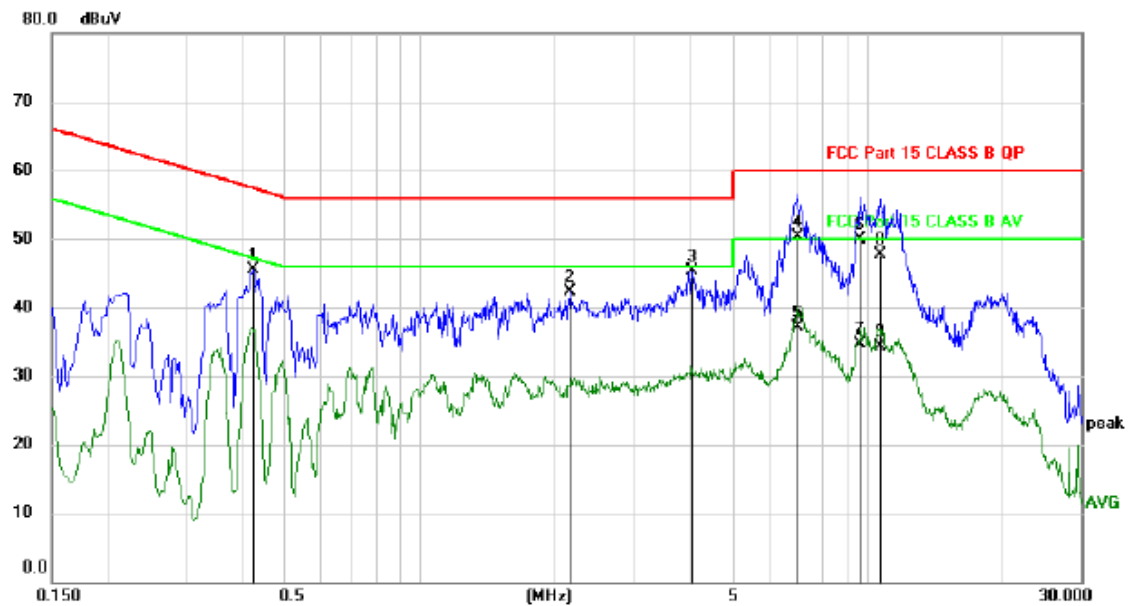
The bandwidth of test receiver is set at 9 kHz.

4.3. Test Setup



4.4. Test Results

EUT Description	Intelligent Pedal	Model No.	PRIME P2
Temperature	24°C	Humidity	56%
Pol	Line	Test date	2022/04/08
Test Voltage	DC 5V from USB, DC 3.7V from battery	Test mode	GFSK (2415MHz)



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.4230	35.65	9.80	45.45	57.39	-11.94	peak	
2	2.1630	32.69	9.71	42.40	56.00	-13.60	peak	
3	4.0560	35.55	9.77	45.32	56.00	-10.68	peak	
4 *	6.9779	40.42	9.80	50.22	60.00	-9.78	QP	
5	6.9780	27.39	9.80	37.19	50.00	-12.81	AVG	
6	9.5969	40.05	9.80	49.85	60.00	-10.15	QP	
7	9.5970	24.99	9.80	34.79	50.00	-15.21	AVG	
8	10.6500	37.97	9.80	47.77	60.00	-12.23	QP	
9	10.6500	24.56	9.80	34.36	50.00	-15.64	AVG	

*: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

5. Conducted Maximum Output Power

5.1. Test limits

Please refer section RSS-247 & 15.247.

5.2. Test Procedure

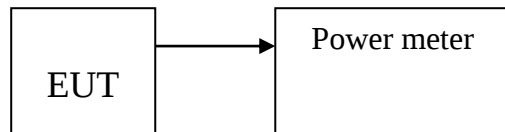
Details see the KDB558074 D01 Meas Guidance V05

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)	Duty Factor (dB)	E.I.R.P (dBm)	Limit (dBm)	Verdict
NVNT	2.4G	2415	Ant1	-2.454	0	-0.95	30	Pass
NVNT	2.4G	2435	Ant1	-2.608	0	-1.11	30	Pass
NVNT	2.4G	2455	Ant1	-2.572	0	-1.07	30	Pass

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.

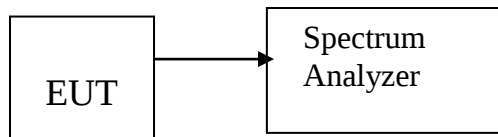
6.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

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.

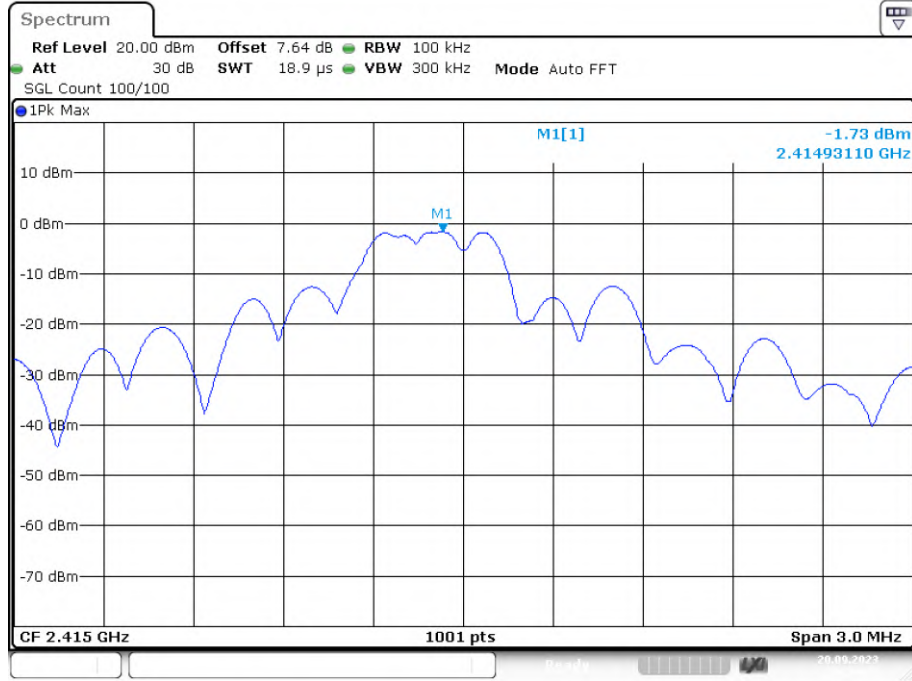
6.3. Test Setup



6.4. Test Results

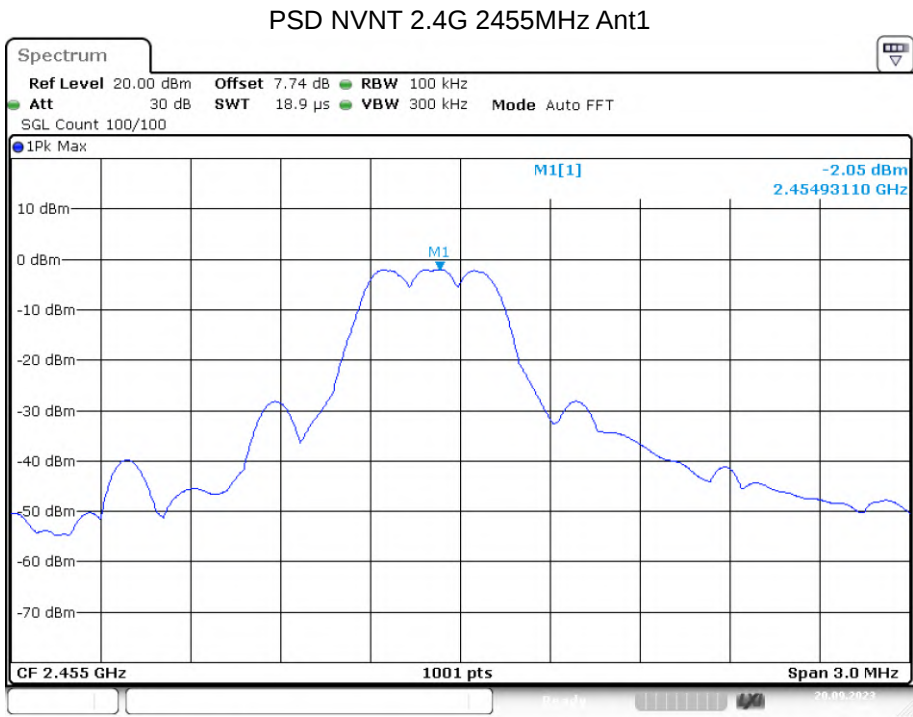
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	2.4G	2415	Ant1	-1.733	8	Pass
NVNT	2.4G	2435	Ant1	-1.983	8	Pass
NVNT	2.4G	2455	Ant1	-2.05	8	Pass

PSD NVNT 2.4G 2415MHz Ant1



PSD NVNT 2.4G 2435MHz Ant1





Date: 20.SEP.2023 15:25:06

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.

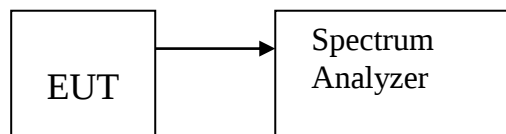
7.2. Test Procedure

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.

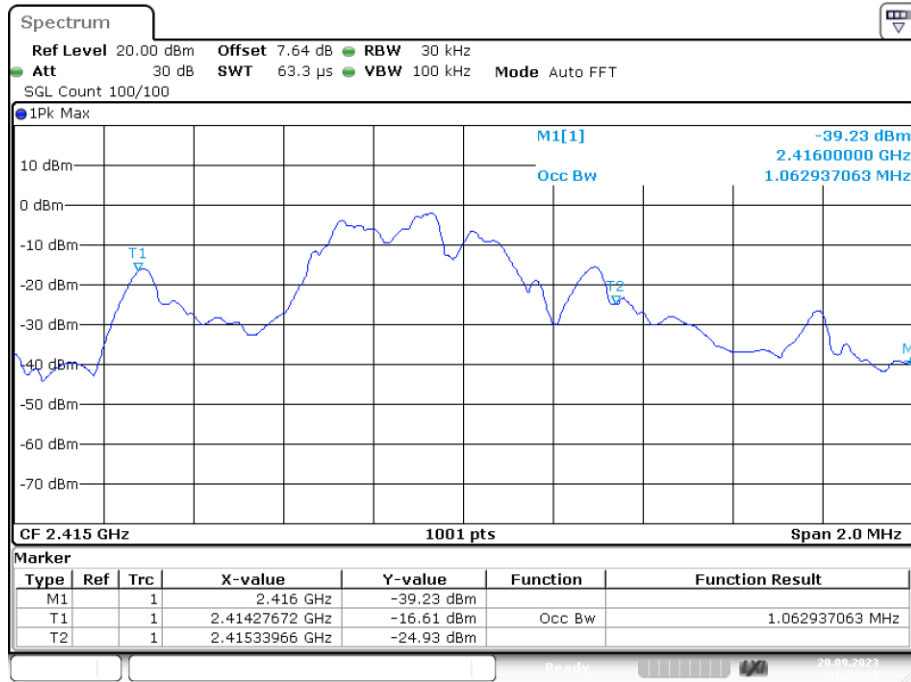
7.3. Test Setup



7.4. Test Results

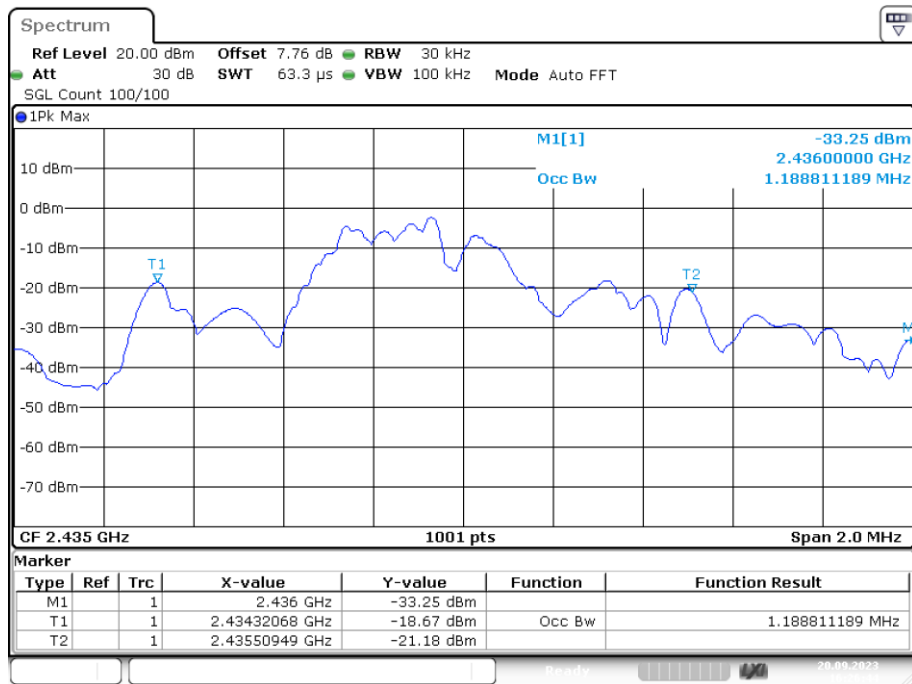
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	-20 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	user	2415	Ant 1	1.063	1.166	/	Pass
NVNT	user	2435	Ant 1	1.189	1.468	/	Pass
NVNT	user	2455	Ant 1	1.059	0.691	/	Pass

OBW NVNT 2.4G 2415MHz Ant1



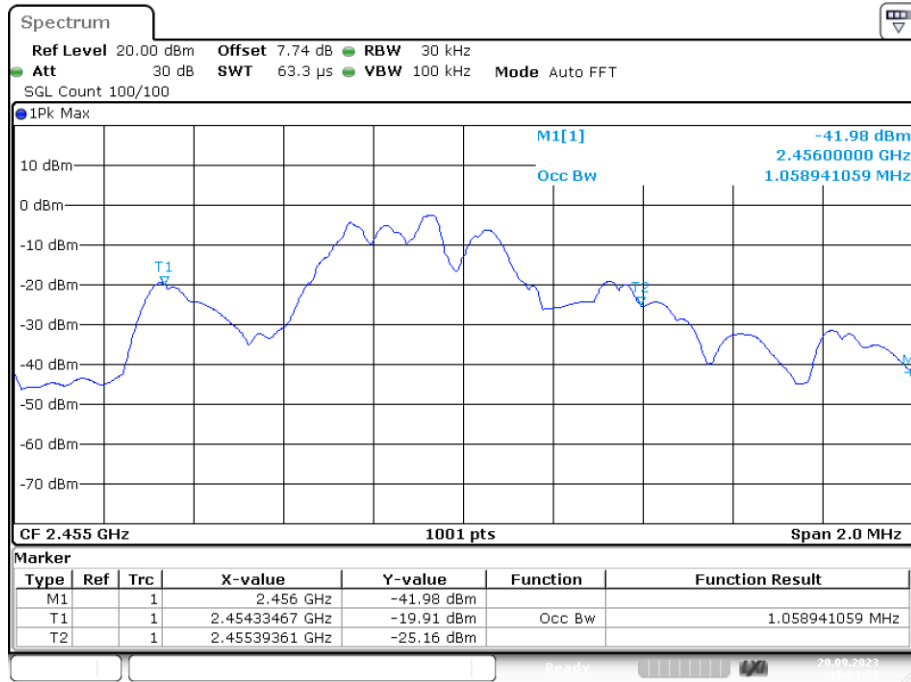
Date: 20.SEP.2023 16:20:35

OBW NVNT 2.4G 2435MHz Ant1



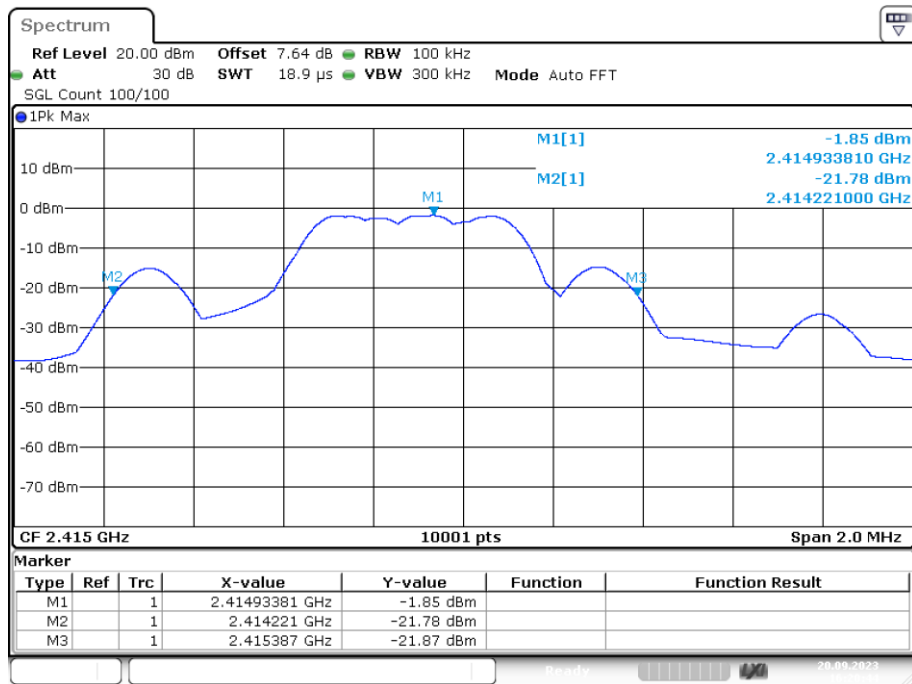
Date: 20.SEP.2023 16:26:44

OBW NVNT 2.4G 2455MHz Ant1

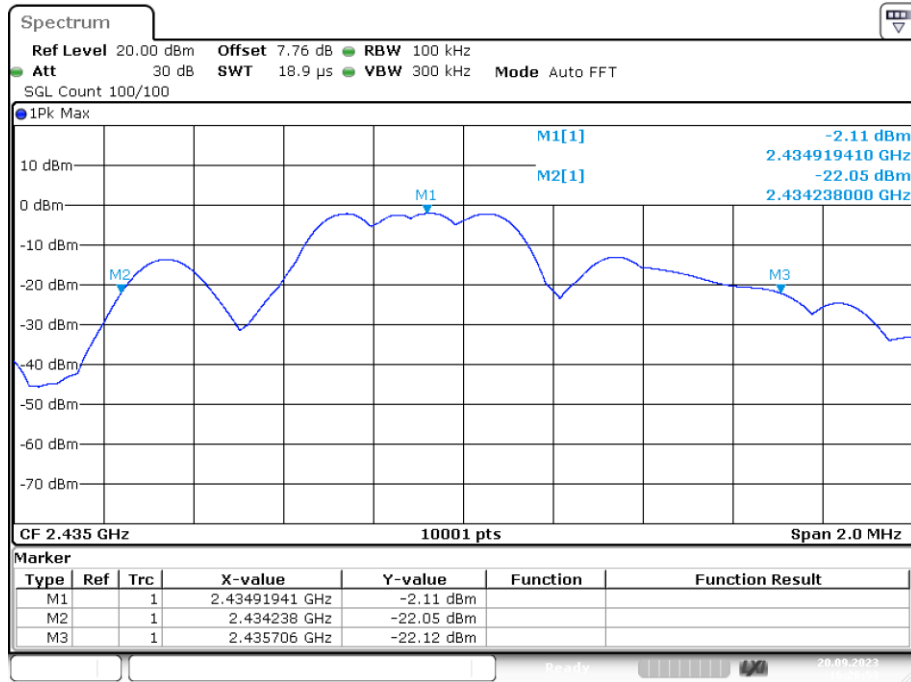


Date: 20.SEP.2023 15:24:50

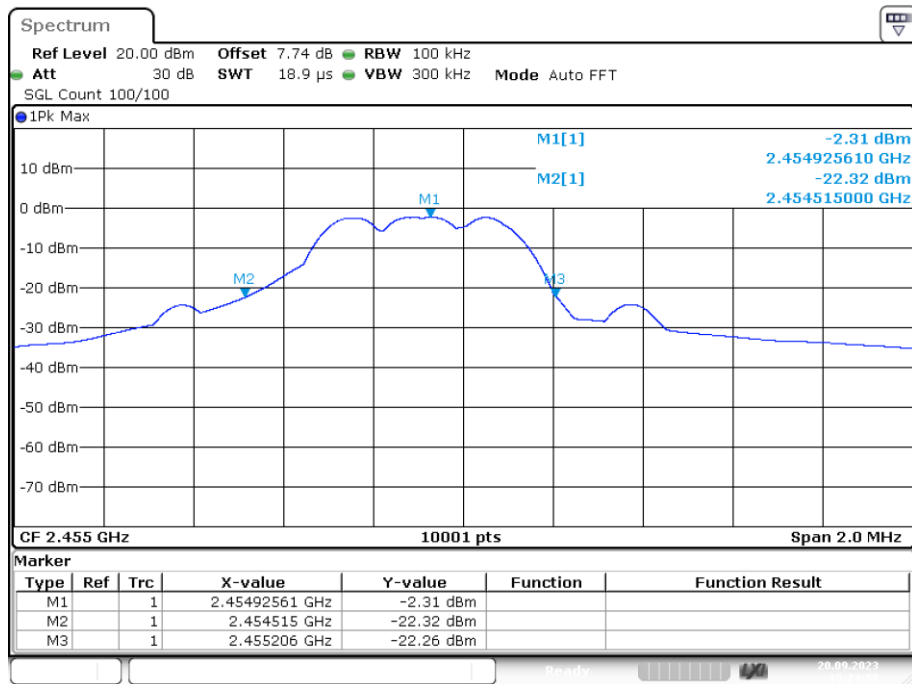
-6dB Bandwidth NVNT 2.4G 2415MHz Ant1



Date: 20.SEP.2023 16:20:44

-6dB Bandwidth NVNT 2.4G 2435MHz Ant1

Date: 20.SEP.2023 16:26:53

-6dB Bandwidth NVNT 2.4G 2455MHz Ant1

Date: 20.SEP.2023 15:24:59

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.

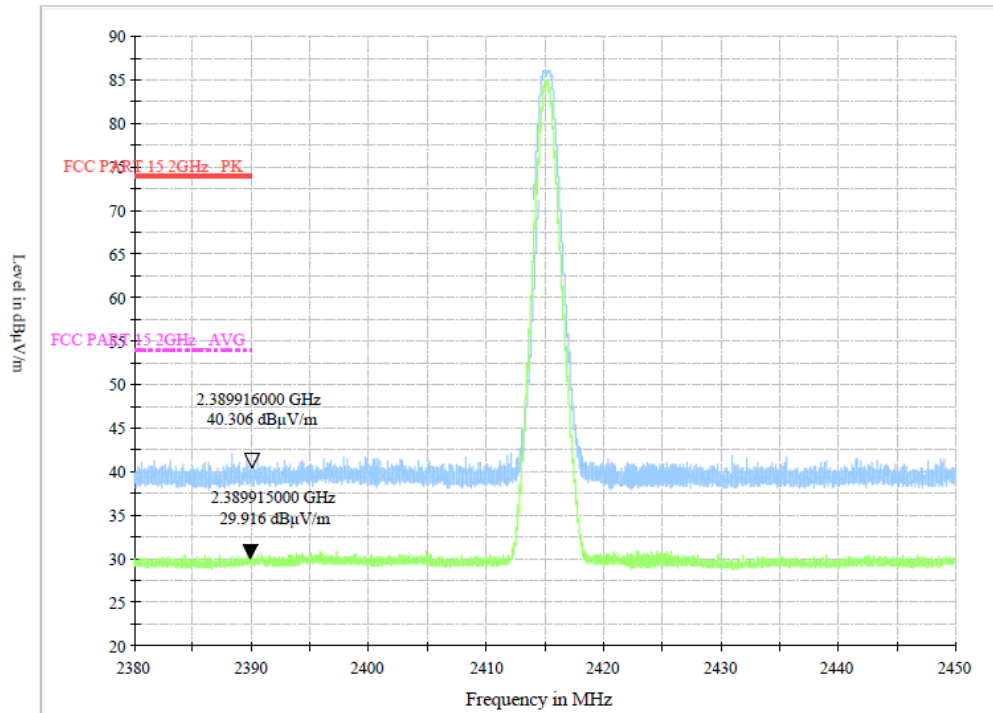
8.3. Test Setup

Same as 5.2.2.

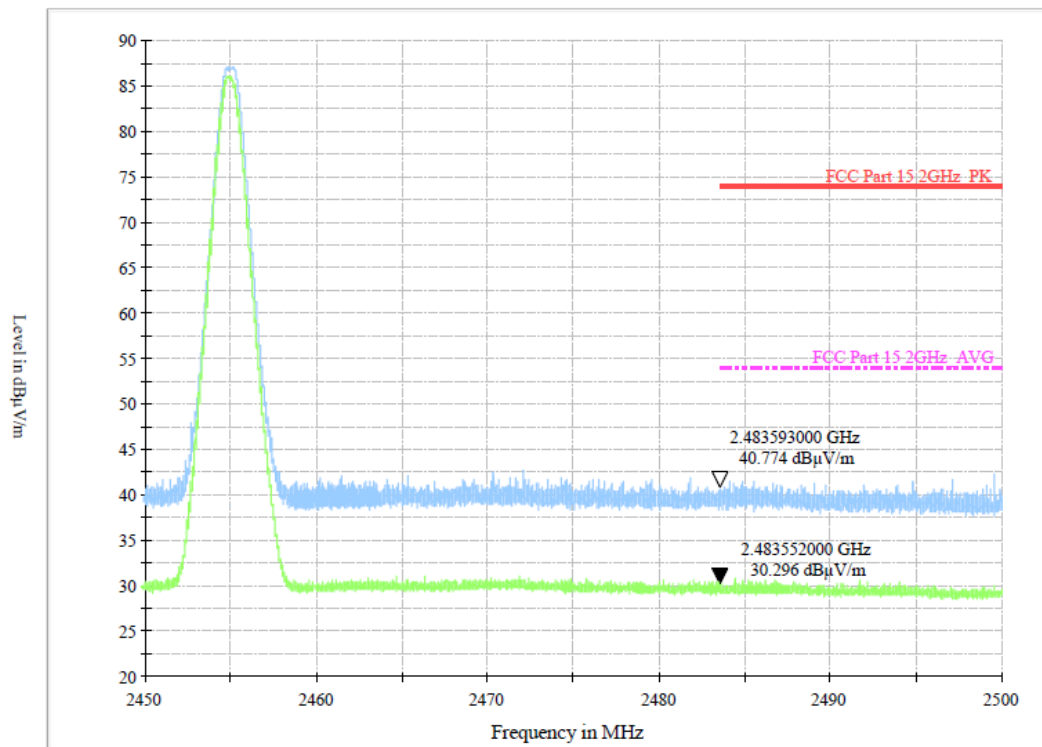
8.4. Test Results

Radiated Method:

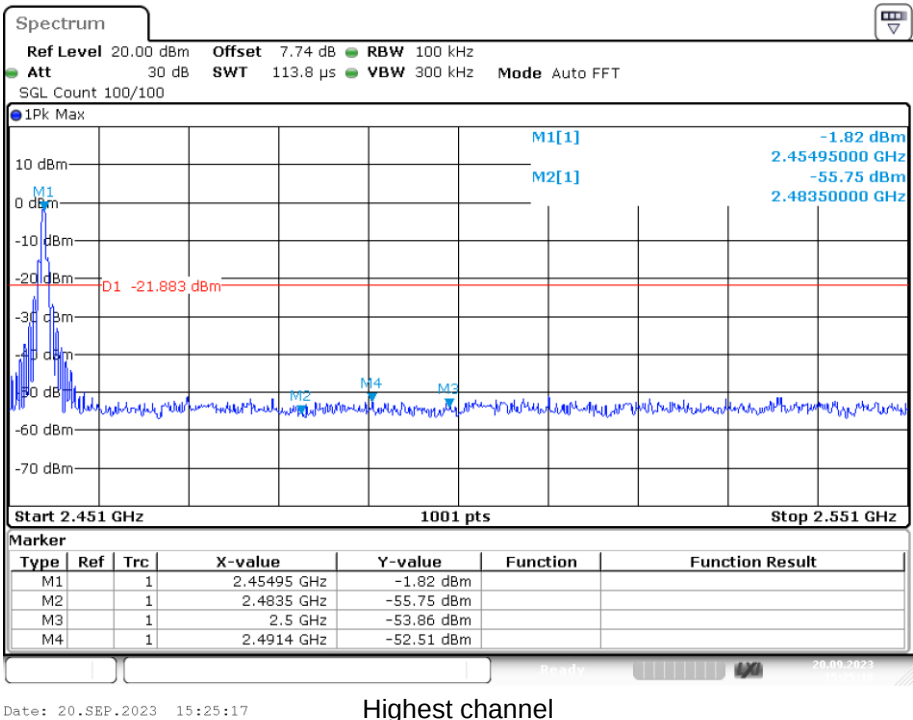
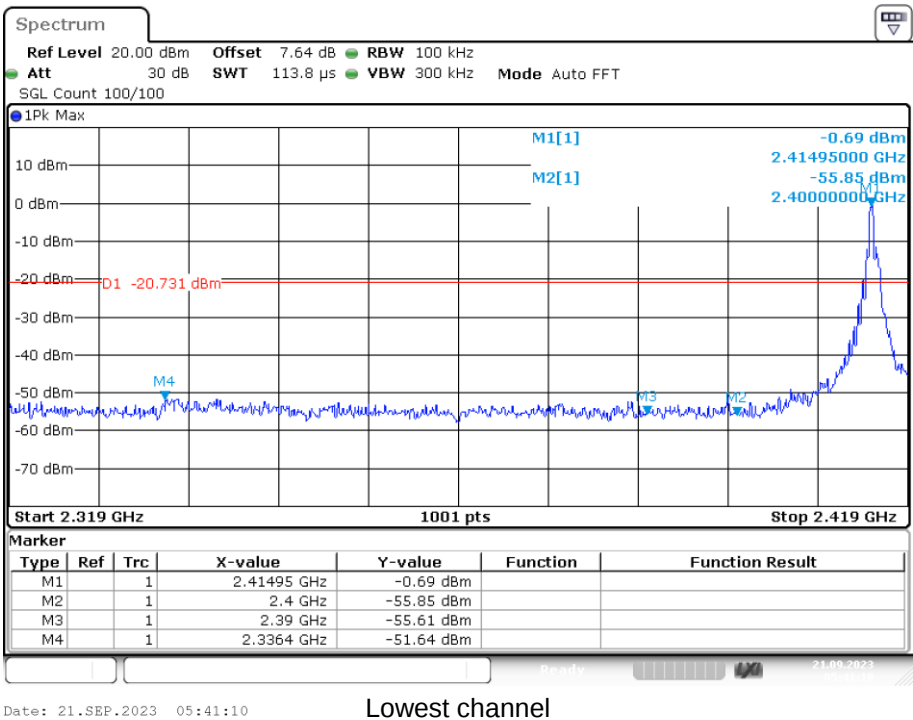
Test Mode: Low



Test Mode: High



Conducted Method:



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

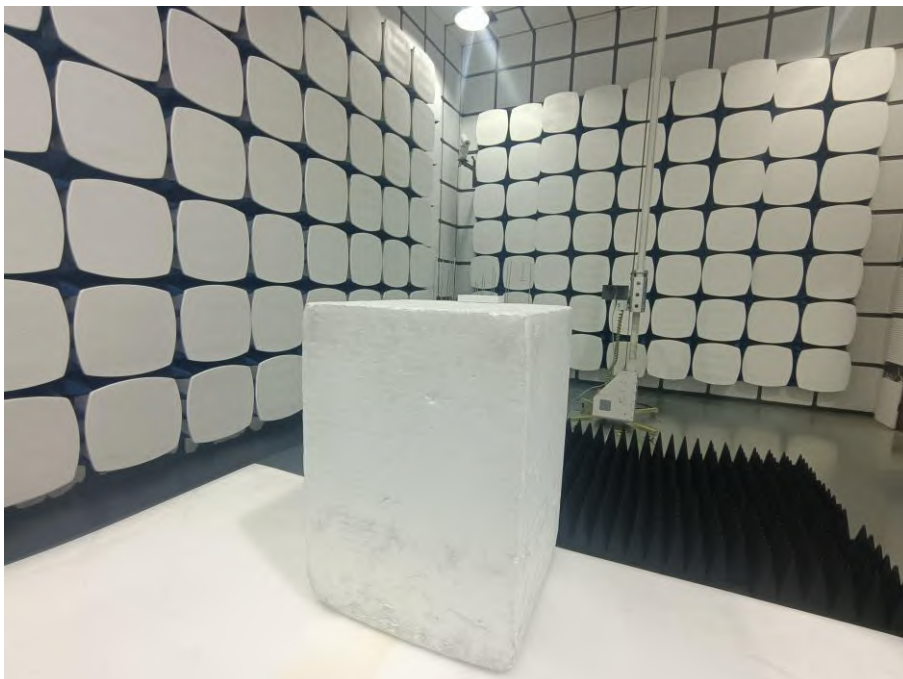
The antenna is PCB antenna and no consideration of replacement. Please see EUT photo for details.

9.3. Results

The EUT antenna 1 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. EUT Photo



