DEKRA Testing and Certification (Suzhou) Co., Ltd.
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098

Test report No:
24B0863R-RF-US-P06V01

FCC & ISED TEST REPORT

Product Name	LED Lamp
Trademark	PHILIPS; hue; Signify
Model and /or type reference	9290038538, 9290038537, 9290038551, 9290038552
FCC ID	2AGBW9290038538X, 2AGBW9290038537X, 2AGBW9290038551X, 2AGBW9290038552X
IC	20812-38538X, 20812-38537X, 20812-38551X, 20812-38552X
Applicant´s name / address	Signify (China) Investment Co., Ltd No.9, Lane 888, Tian Lin Road, 200233, Shanghai, China
Test method requested, standard	47 CFR FCC Part 15 (Section 15.247) ANSI C63.10: 2013 RSS-Gen Issue 5 RSS-247 Issue 3
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Tim Cao / Project Manager
Approved by (name / position & signature)	Jack Zhang / Manager
Date of issue	2025-01-16
Report Version	V1.0
Report template No	Template_FCC Part 15C-RF-V1.0

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page

COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.
In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Nov. 26, 2024
Date (start test)	Dec. 05, 2024
Date (finish test)	Dec. 10, 2024

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT : Equipment Under Test
QP : Quasi-Peak
CAV : CISPR Average
AV : Average
CDN : Coupling Decoupling Network
SAC : Semi-Anechoic Chamber
OATS : Open Area Test Site
BW : Bandwidth
AM : Amplitude Modulation
PM : Pulse Modulation
HCP : Horizontal Coupling Plane
VCP : Vertical Coupling Plane
U_N : Nominal voltage
*T*x : Transmitter
*R*x : Receiver
N/A : Not Applicable
N/M : Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
24B0863R-RF-US-P06V01	V1.0	Initial issue of report.	2025-01-16

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with 47 CFR FCC Part 15 (Section 15.247),RSS-247 Issue 3. RSS-Gen Issue 5.
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:

- Chapter 1.1 General Description of the Item(s);
- Chapter 1.2 Antenna Informaion;
- Chapter 1.3 Channel List.

USED EQUIPMENT

Conducted Test/ TR8

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Versiom	Software version
Wireless Connectivity Tester	R&S	CMW 270	102593	2024.05.15	2025.05.14	V 4.0.60	N/A
Coaxial Cable	N/A	N/A	2477	2024.06.11	2025.06.10	N/A	N/A
Coaxial Cable	N/A	N/A	2478	2024.06.11	2025.06.10	N/A	N/A
High and low temperature and fast temperature change test box	ASTUOD	ASTD-FBT-225K	N/A	2024.04.21	2025.04.20	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2024.07.11	2025.07.10	N/A	N/A
Test system							
Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Versiom	Software version
MAX Signal Analyzer	Keysight	N9010A	MY48030494	2024.10.26	2025.10.25	A.14.03	N/A
RF Control Unit	Tonscend	JS0806-2	22G8060594	2024.02.06	2025.02.05	N/A	N/A
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY61252529	2024.05.12	2025.05.11	B.01.96	N/A
Frequency extender for EXG or MXG	Keysight	N5182BX07	MY59362500	2024.05.12	2025.05.11	N/A	N/A
EXG-B MW Analog Signal Generator	Keysight	N5173B	MY61252566	2024.07.06	2025.07.05	B.01.95	N/A
Test Software	Tonscend	TS1120	JS1120-3	N/A	N/A	N/A	V3.0.22

AC Power Line Conducted Emission / TR1

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Versiom	Software version
EMI Test Receiver	R&S	ESCI	100726	2024.07.06	2025.07.05	4.42 SP1	N/A
Two-Line V-Network	R&S	ENV 216	101044	2024.10.26	2025.10.25	N/A	N/A
Two-Line V-Network	R&S	ENV 216	101189	2024.07.06	2025.07.05	N/A	N/A
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2024.04.20	2025.04.19	N/A	N/A
Coaxial Cable	Huber+Suhner	RG 223	TR1-C1	2024.04.27	2025.04.26	N/A	N/A
Impedance Stabilization Network	Teseq GmbH	ISN T800	57318	2024.01.20	2025.01.19	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	EMC01	2024.07.04	2025.07.03	N/A	N/A
Dekra test software	Dekra	N/A	N/A	N/A	N/A	N/A	3

Radiated Emission(9KHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Versiom	Software version
EMI Test Receiver	R&S	ESCI	100573	2024.02.06	2025.02.05	4.42 SP3	N/A
Loop Antenna	R&S	HFH2-Z2E	101149	2024.03.27	2025.03.26	N/A	N/A
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2024.03.20	2025.03.19	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2024.05.17	2025.05.16	N/A	N/A
Coaxial Cable	Huber+Suhner	RTS-1909	THM-021	2024.04.27	2025.04.26	N/A	N/A
Dekra test software	Dekra	N/A	N/A	N/A	N/A	N/A	3

Radiated Emission (1GHz-40GHz) / AC5

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Versiom	Software version
EXA Spectrum Analyzer	Keysight	N9020B	MY60112218	2024.11.02	2025.11.01	A.31.05	N/A
Pre-Amplifier	SKET	LNPA_0118G-45	SK2021090101	2024.04.27	2025.04.26	N/A	N/A
Preamplifier	CHENGYI	EMC184045SE	980263	2024.07.06	2025.07.05	N/A	N/A
DRG Horn	ETS-Lindgren	3117	123988	2024.08.29	2025.08.28	N/A	N/A
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2024.05.30	2025.05.29	N/A	N/A
Filter Switch Box	MVE	MSW-F196	C070001S	2024.04.20	2025.04.19	N/A	N/A
Temperature/ Humidity Meter	RTS	RTS-1909	THM-024	2024.05.17	2025.05.16	N/A	N/A
Coaxial Cable	TIMES	ROSENBERGER	LA1-C011-2000/3000	2024.01.25	2025.01.24	N/A	N/A
Cable	Rosenberger	LA1-C011-1000	0523	2024.05.26	2025.05.25	N/A	N/A
Cable	Rosenberger	LA1-C011-1000	0623	2024.05.26	2025.05.25	N/A	N/A
Dekra test software	Dekra	N/A	N/A	N/A	N/A	N/A	3

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95% .

Test item	Uncertainty
AC Power Line Conducted Emission	9kHz~150kHz: 2.80dB 150kHz~30MHz: 2.40dB
Peak Power Output	± 1.27dB
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 3.50 dB 300MHz~1GHz: 3.60 dB Vertical: 30MHz~200MHz: 3.60 dB 300MHz~1GHz: 3.50 dB
Radiated Emission(1GHz~26.5GHz)	Horizontal: 1GHz~18GHz: 5.00 dB Vertical: 1GHz~18GHz: 4.80 dB Horizontal: 18GHz~26.5GHz: 5.30 dB Vertical: 18GHz~26.5GHz: 4.90 dB
RF antenna conducted test	± 1.27dB
Radiated Emission Band Edge	± 3.9 dB
DTS Bandwidth	±150Hz
Occupied Bandwidth	±1kHz
Power Density	±1.27dB

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name ..... :	LED Lamp
Model No. ..... :	9290038538, 9290038537, 9290038551, 9290038552
Trademark. ..... :	PHILIPS; hue; Signify
FCC ID ..... :	2AGBW9290038538X, 2AGBW9290038537X, 2AGBW9290038551X, 2AGBW9290038552X
IC ..... :	20812-38538X, 20812-38537X, 20812-38551X, 20812-38552X
Manufacturer ..... :	Signify (China) Investment Co., Ltd
Manufacturer Address ..... :	No.9, Lane 888, Tian Lin Road, 200233, Shanghai, China
Operating temperature ..... :	-20 ~ +45 ℃
Model difference ..... :	All models have the same mechanical construction, circuit diagram and PCB layout except rated power, software and model name. There are two capacitors in the driver board. So all test was done on model 9290038552. Additional Band Edge and RSE test was done on model 9290038552 with alternative capacitor.

Wireless specifiction ..... :	Bluetooth (LE)					
Operating frequency range(s)	2402~2480MHz					
Type of Modulation ..... :	GFSK					
PHYs ..... :	☒	LE 1M	☒	LE 2M	☒	LE Coded S=2/8
Data Rate ..... :	☒	1Mbit/s	☒	2Mbit/s	☒	500/125 Kbit/s
Number of channel ..... :	40					

Rated power supply ..... :	Voltage and Frequency	
	☐	AC: 220 - 240 V, 50/60 Hz
	☒	AC: 110 - 130 V, 50/60 Hz 7.2 W, 9.5 W
	☐	DC: 24 Vdc
	☐	Poe:
	☐	Adapter:
Mounting position ..... :	☒	Tabletop equipment
	☐	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☐	Hand-held/Portable equipment
	☐	Other:

1.2 Antenna Information

Antenna Delivery ..... :	☒	1TX + 1RX		
	☐	2TX + 2RX		
	☐	Others: ……		
Antenna technology ..... :	☒	SISO		
	☐	MIMO	☐	CDD
			☐	Beam-forming
Antenna Type ..... :	☐	External	☐	Dipole
			☐	Sectorized
	☒	Internal	☐	Ceramic Chip
			☐	PIFA
			☒	Slot Antenna
			☐	Others……..
Antenna Gain ..... :	0.5 dBi			

1.3 Channel List

Bluetooth Working Frequency of Each Channel: (For LE)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2404 MHz	02	2406 MHz	03	2408 MHz
04	2410 MHz	05	2412 MHz	06	2414 MHz	07	2416 MHz
08	2418 MHz	09	2420 MHz	10	2422 MHz	11	2424 MHz
12	2426 MHz	13	2428 MHz	14	2430 MHz	15	2432 MHz
16	2434 MHz	17	2436 MHz	18	2438 MHz	19	2440 MHz
20	2442 MHz	21	2444 MHz	22	2446 MHz	23	2448 MHz
24	2450 MHz	25	2452 MHz	26	2454 MHz	27	2456 MHz
28	2458 MHz	29	2460 MHz	30	2462 MHz	31	2464 MHz
32	2466 MHz	33	2468 MHz	34	2470 MHz	35	2472 MHz
36	2474 MHz	37	2476 MHz	38	2478 MHz	39	2480 MHz

Note: The General Description of the Item , antenna information and Channel List for the EUT in clause 1 are provided and confirmed by the client.

2 DESCRIPTION OF TEST SETUP

2.1 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

Test Mode For Bluetooth	Mode 1: Transmit by LE_1Mbps
	Mode 2: Transmit by LE_2Mbps
	Mode 3: Transmit by LE_ LE Coded S=8
	Mode 4: Transmit by LE_ LE Coded S=2

Note 1: Regards to the frequency band operation: the lowest, middle and highest frequency channel were selected to perform the test, then shown on this report.

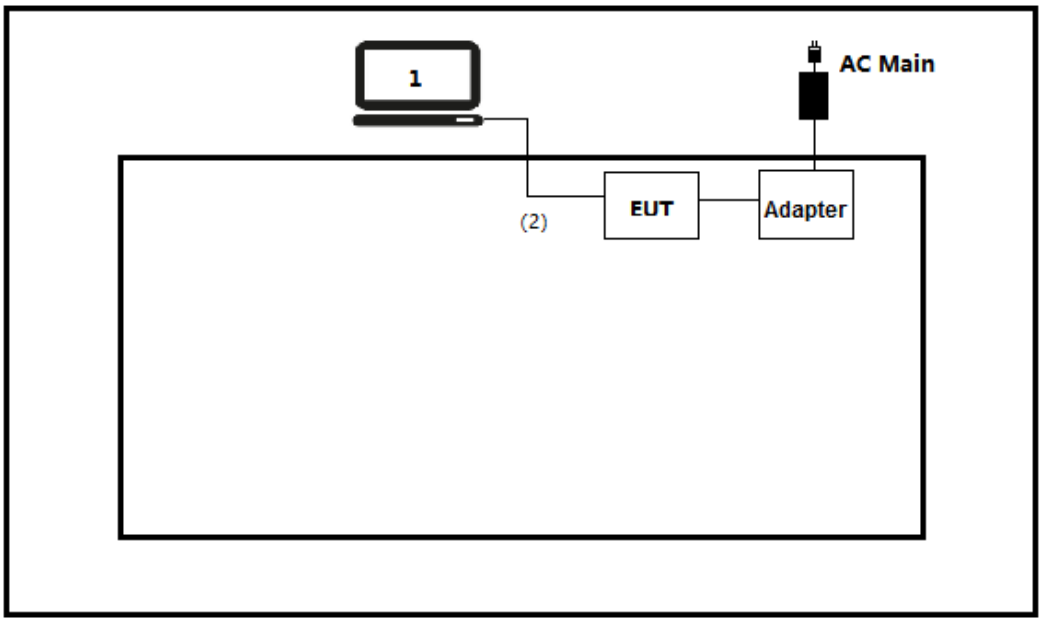
2.2 Auxiliary equipment / Test software for the EUT

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
(1) Notebook	Think pad x220	Lenovo	Adapter
(2) USB Control Cable	N/A	N/A	N/A
(3) USB Control Cable	N/A	N/A	N/A
software	Type / Version	Manufacturer	Supplied by
HueApprobationTool	N/A	N/A	N/A

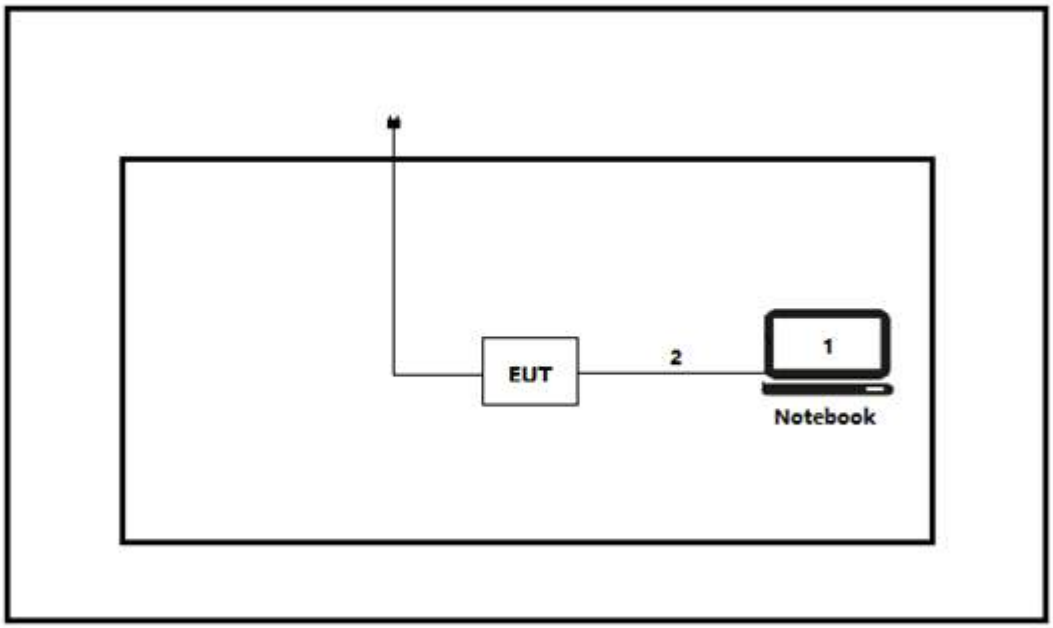
Accessories Information	Cable		
	Length used during test [m]	Attached during test	Shielded
(2)USB Control Cable	1	☒	☒
(3)USB Control Cable	8	☒	☒

2.3 Test Configuration / Block diagram used for tests

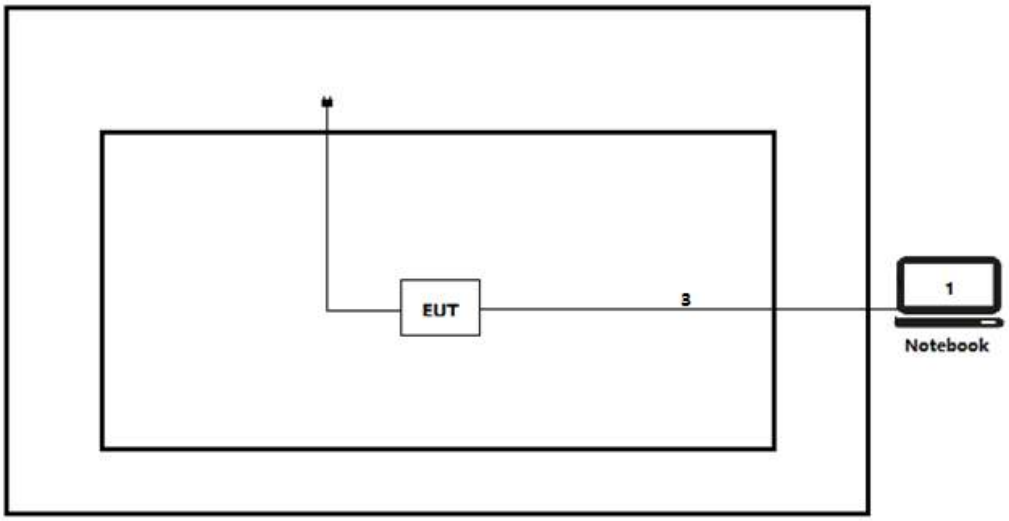
Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Conducted test



Test setup Diagram- Radiated Emission



2.4 Testing process

1	Setup the EUT shown in Section 2.3.
2	Execute the [HueApprobationTool] on the notebook.
3	Configure the test mode, the test channel, and the data rate.
4	Verify that the EUT works properly.

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
CFR 47, FCC Part 15 C	2024	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.
ANSI C63.10	2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
RSS-Gen Issue 5 Amendment 2	2021	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 3	2023	Digital Transmission Systems (DTSs),Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

(Please define the deviations from the standard(s) if applicable)

3.3 Overview of results

Requirement – Test Item of FCC	Standard(s)	Verdict	Remark
20dB Emission Bandwidth	FCC 15.247(a)(2)	PASS	Test data please refer to **Appendix A**
Maximum conducted output power	15.247 (b)(3)	PASS	Test data please refer to **Appendix C**
Maximum power spectral density	FCC 15.247(e)	PASS	Test data please refer to **Appendix D**
Band edge measurements	FCC 15.247(d) FCC 15.205 FCC 15.209	PASS	Test data please refer to **Appendix E**
Conducted Spurious Emission	FCC 15.247(d), FCC 15.209	PASS	Test data please refer to **Appendix F**
Duty cycle	ANSI C63.10:2013	PASS	Test data please refer to **Appendix G**
Emissions in Restricted Bands	FCC 15.205 FCC 15.209	PASS	Test data please refer to **Appendix H**
AC Power Line Conducted Emission	FCC 15.207	PASS	Test data please refer to **Appendix I**
Antenna Requirement	FCC 15.203	PASS	---

Requirement – Test case of ISED	Standard(s)	Verdict	Remark
DTS Bandwidth	RSS-Gen Issue 5 Paragraph 6.7 RSS-247 Issue 3 Paragraph 5.2	PASS	Test data please refer to **Appendix A**
Occupied Channel Bandwidth	RSS-Gen Issue 5 Paragraph 6.7 RSS-247 Issue 3 Paragraph 5.2	PASS	Test data please refer to **Appendix B**
Maximum conducted output power	RSS-247 Issue 3 Paragraph 5.4(d)	PASS	Test data please refer to **Appendix C**
Maximum power spectral density	RSS-247 Issue 3 Paragraph 5.2(b)	PASS	Test data please refer to **Appendix D**
Band edge measurements	RSS-Gen Issue 5 Paragraph 8.10	PASS	Test data please refer to **Appendix E**
Conducted Spurious Emission	RSS-247 Issue 3 Paragraph 5.5	PASS	Test data please refer to **Appendix F**
Duty cycle	ANSI C63.10:2013	PASS	Test data please refer to **Appendix G**
Emissions in Restricted Bands	RSS-Gen Issue 5 Paragraph 8.9	PASS	Test data please refer to **Appendix H**
AC Power Line Conducted Emission	RSS-Gen Issue 5 Paragraph 8.8	N/A	Test data please refer to **Appendix I**
Antenna Requirement	RSS-Gen Issue 5 Paragraph 6.8	PASS	---

3.4 Power setting in test

Mode	Channel	Frequency (MHz)	Power setting
Mode1	00	2402	10
	19	2440	10
	39	2480	10
Mode2	00	2402	10
	19	2440	10
	39	2480	10
Mode3	00	2402	10
	19	2440	10
	39	2480	10
Mode4	00	2402	10
	19	2440	10
	39	2480	10

3.5 Test Matrix

Test item	Model: 9290038552	
	(#1)	(#2)
DTS Bandwidth	☒	☐
Occupied Channel Bandwidth	☒	☐
Maximum conducted output power	☒	☐
Maximum power spectral density	☒	☐
Band edge measurements	☐	☒
Conducted Spurious Emission	☒	☐
Duty cycle	☒	☐
Emissions in Restricted Bands	☐	☒
AC Power Line Conducted Emission	☐	☒
Note1: The only difference between sample #1 and sample #2 is whether to keep the original antenna, sample #1 is a conduction test product that removes the original antenna and is equipped with SMA wires, and sample #2 is a complete product that retains the original antenna.		

3.6 Test Facility

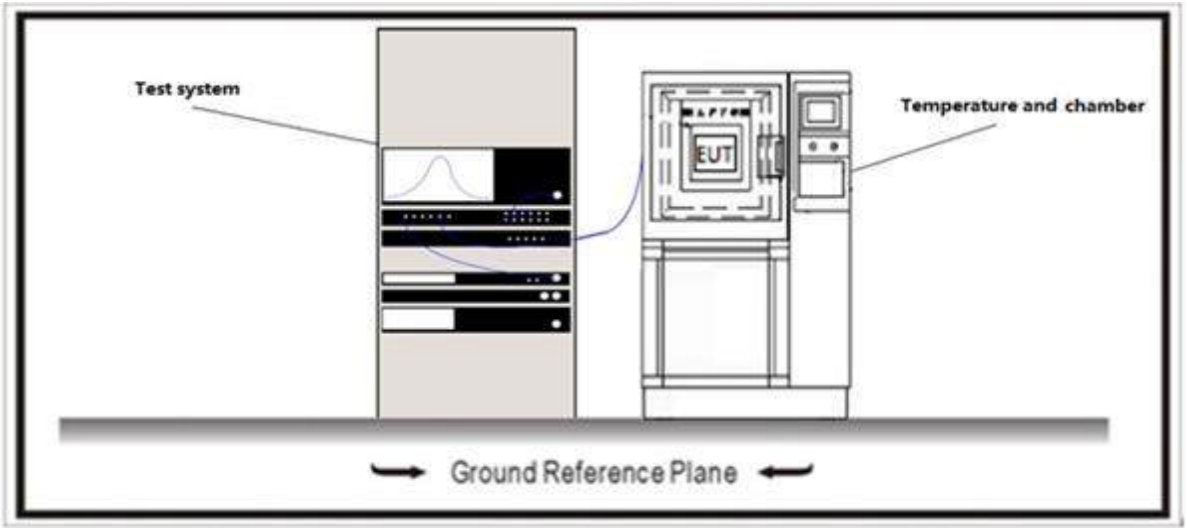
USA	:	**FCC Designation Number: CN1199**
CA	:	**ISED CAB identifier: CN0040**

4 TEST ITEMS OF LIMIT/SETUP/PROCEDURE

4.1 DTS Bandwidth	VERDICT: PASS

4.1.1 Limit	
Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(2); RSS-247 Issue 3 Paragraph 5.2.
Systems using digital modulation techniques operate in the2400-2483.5 MHz .The minimum 6 dB bandwidth shall be at least 500 kHz	

4.1.2 Test Setup



4.1.3 Test Procedure

	Reference Rule		Chapter	Description
☒	ANSI C63.10		11.8	DTS bandwidth
	☒	ANSI C63.10	11.8.1	Option 1
	☐	ANSI C63.10	11.8.2	Option 2

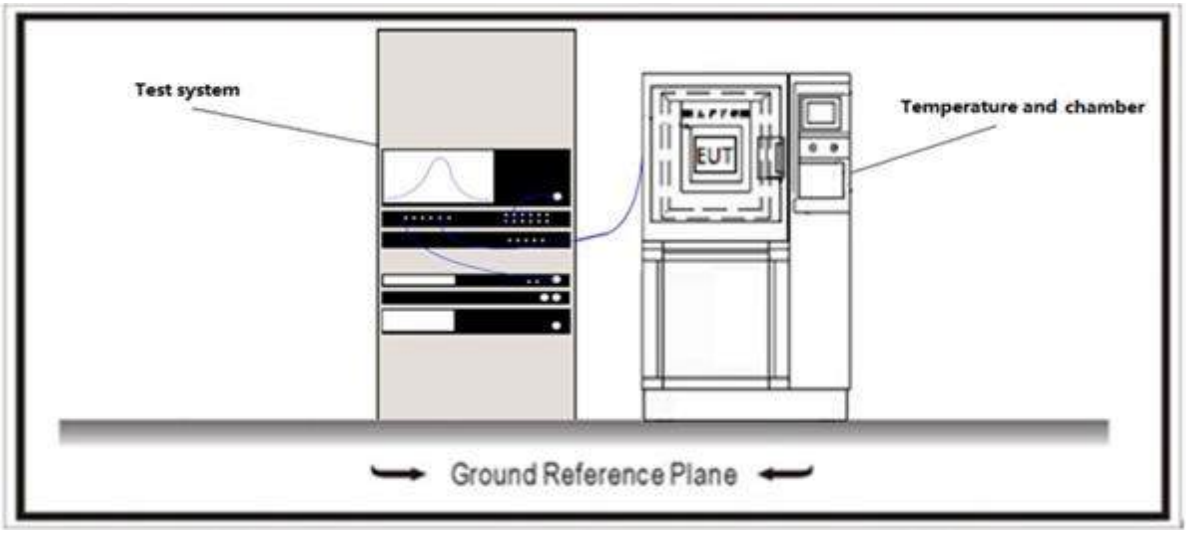
4.2 Occupied Channel Bandwidth	VERDICT: PASS

4.2.1 Limit

Standard	RSS-Gen Issue 5 Paragraph 6.7

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs

4.2.2 Test Setup



4.2.3 Test Procedure

	Reference Rule		Chapter	Description
☒	ANSI C63.10		6.9	Occupied bandwidth tests
	☐	ANSI C63.10	6.9.2	Option 1
	☒	ANSI C63.10	6.9.3	Option 2

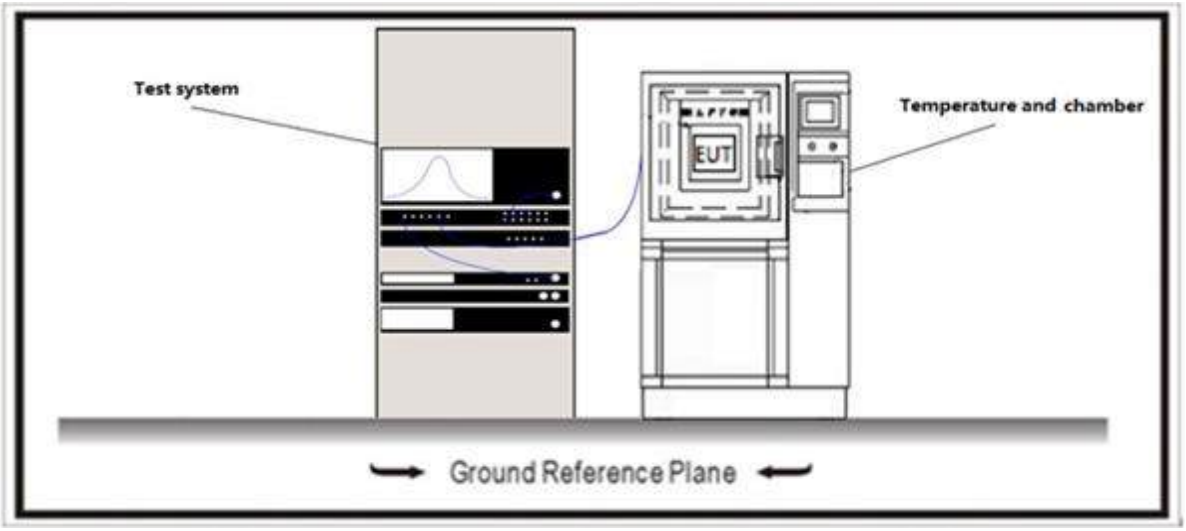
4.3 Maximum Conducted Output Power	VERDICT: PASS

4.3.1 Limit

Standard			FCC Part 15 Subpart C Paragraph 15.247 (b)(3); RSS-247 Issue 3 Paragraph 5.4(d).
☒	GTX ＜6dBi		Pout≤30dBm
☐	GTX ＞6dBi		
	☐	Non-Fix point-point	Pout≤30-(GTX -6)
	☐	Fix point-point	Pout≤30-[(GTX-6)]/3
	☐	Point-to-multipoint	Pout≤30-(GTX-6)
	☐	Overlap Beams	Pout≤30-[(GTX-6)]/3
	☐	Aggregate power transmitted simultaneously on all beams	Pout≤30-[(GTX-6)]/3
	☐	single directional beam	Pout≤30-[(GTX-6)]/3+8dB

Note 1 : GTX directional gain of transmitting antennas.
Note 2 : Pout is maximum peak conducted output power .

4.3.2 Test Setup

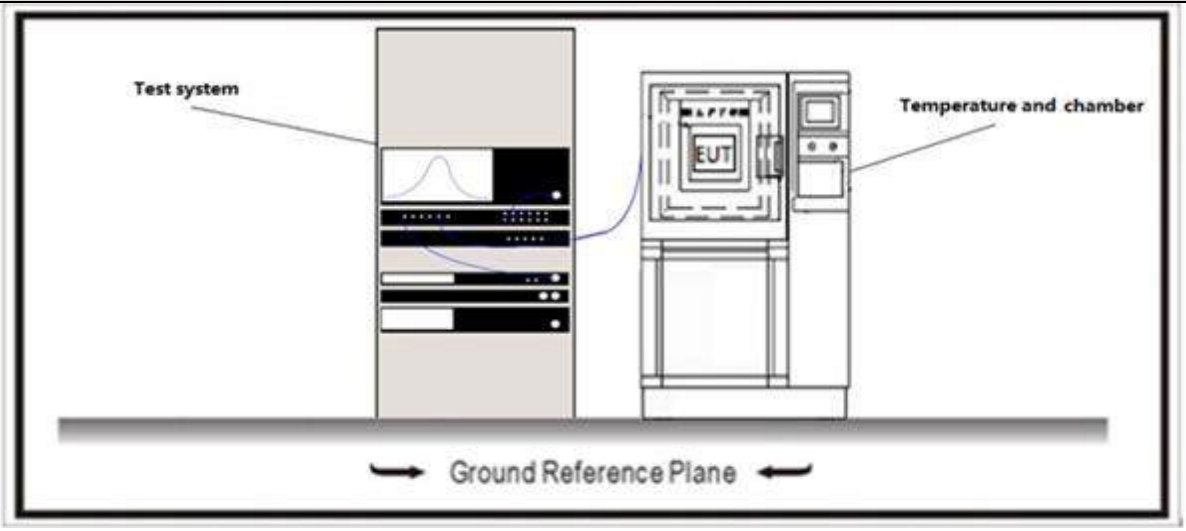


4.3.3 Test Procedure							
	References Rule					Chapter	Description
☒	ANSI C63.10					11.9	Fundamental emission output power
	☐	ANSI C63.10				11.9.1	Maximum peak conducted output power
		☐	ANSI C63.10			11.9.1.1	RBW ≥ DTS bandwidth
		☐	ANSI C63.10			11.9.1.2	Integrated band power method
		☐	ANSI C63.10			11.9.1.3	PKPM1 Peak power meter method
	☒	ANSI C63.10				11.9.2	Maximum conducted (average) output power
		☐	ANSI C63.10			11.9.2.2	Measurement using a spectrum analyzer (SA)
			☐	ANSI C63.10		11.9.2.2.2	Method AVGSA-1(Duty cycle ≥98%)
			☐	ANSI C63.10		11.9.2.2.3	Method AVGSA-1A(Duty cycle ≥98%)
			☐	ANSI C63.10		11.9.2.2.4	Method AVGSA-2(Duty cycle ≤98%)
			☐	ANSI C63.10		11.9.2.2.5	Method AVGSA-2A(Duty cycle ≤98%)
			☐	ANSI C63.10		11.9.2.2.4	Method AVGSA-3
			☐	ANSI C63.10		11.9.2.2.5	Method AVGSA-3A
		☒	ANSI C63.10			11.9.2.3	Measurement using a power meter (PM)
			☒	ANSI C63.10		11.9.2.3.1	Method AVGPM
			☐	ANSI C63.10		11.9.2.3.2	Method AVGPM-G

4.4 Maximum Power Spectral Density	VERDICT: PASS

4.4.1 Limit	
Standard	FCC Part 15 Subpart C Paragraph 15.247 (b)(3); RSS-247 Issue 3 Paragraph 5.2(b).
Power Spectral Density≤8dBm/3kHz	

4.4.2 Test Setup



4.4.3 Test Procedure

	References Rule		Chapter	Description
☒	ANSI C63.10		11.10	Maximum power spectral density level in the fundamental emission
	☒	ANSI C63.10	11.10.2	Method PKPSD (peak PSD)
	☐	ANSI C63.10	11.10.3	Method AVGPSD-1(Duty cycle≥98%)
	☐	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle≥98%)
	☐	ANSI C63.10	11.10.5	Method AVGPSD-2(Duty cycle＜98%)
	☐	ANSI C63.10	11.10.6	Method AVGPSD-2A(Duty cycle＜98%)
	☐	ANSI C63.10	11.10.7	Method AVGPSD-3
	☐	ANSI C63.10	11.10.8	Method AVGPSD-3A

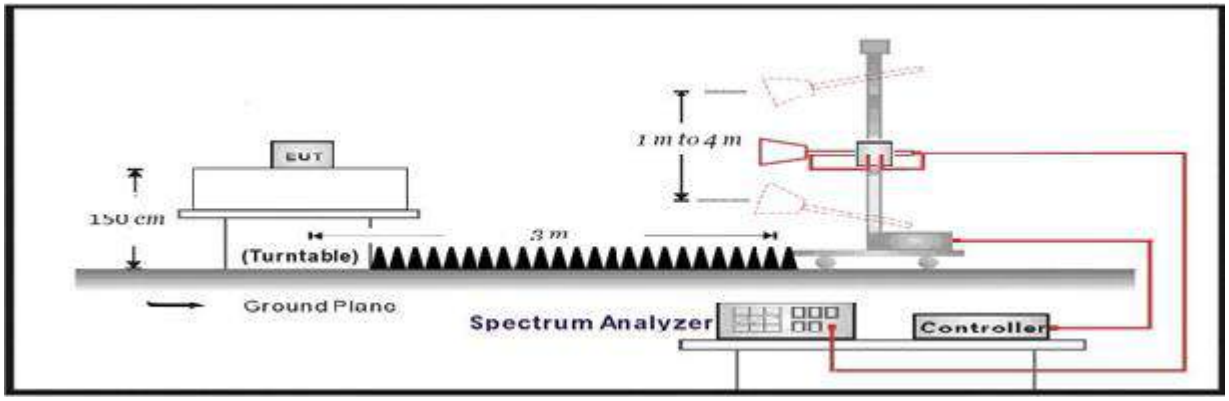
4.5 Band Edge Measurements	VERDICT: PASS

4.5.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247(d) , 15.209; RSS-Gen Issue 5 Paragraph 8.10.			
Frequency bands (MHz)	Detector	Limit (dBμV/m)	RBW (MHz)	Distance (m)
2310-2390 2483.5-2500	PK	74	1	3
	AV	54	1	3
Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.				

4.5.2 Test Setup

Above 1GHz Test Setup:



4.5.3 Test Procedure

	References Rule	Chapter	Description
☒	ANSI C63.10	6.10	Band-edge testing
	☒ ANSI C63.10	6.10.5	Restricted-band band-edge measurements
	☐ ANSI C63.10	6.10.6	Marker-delta method
☒	ANSI C63.10	11.12	Emissions in restricted frequency bands
	☒ ANSI C63.10	11.12.1	Radiated emission measurements
	☒ ANSI C63.10	11.12.2.7	Radiated spurious emission test
☐	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
☐	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency rangeof 30 MHz to 1000 MHz
☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

4.6 Conducted Spurious Emission	VERDICT: PASS

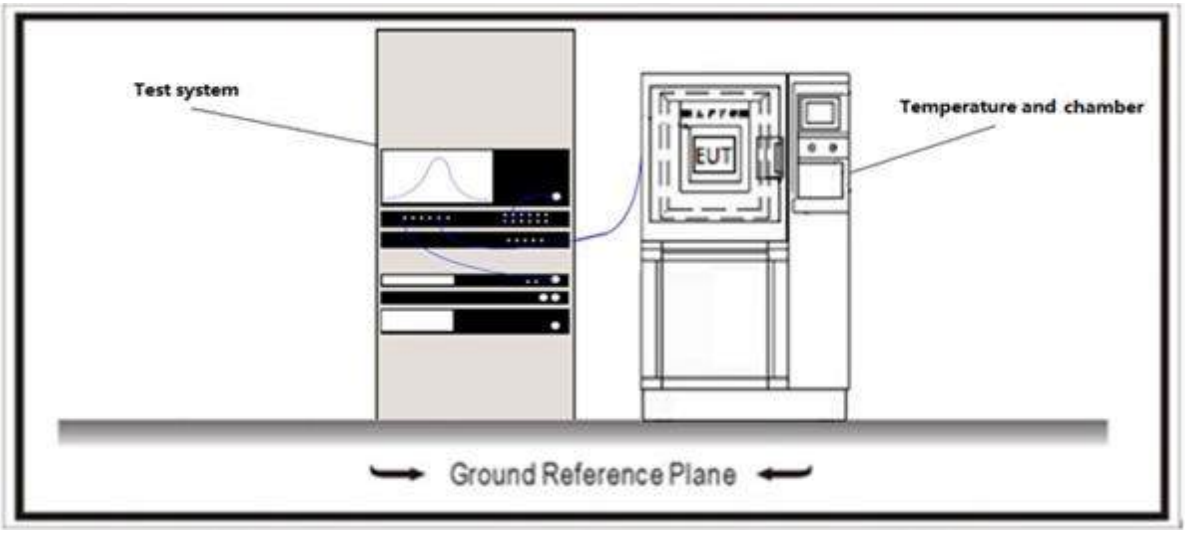
4.6.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247(d); RSS-247 Issue 3 Paragraph 5.5.
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30dBc(Note1)
RF Output power(PK detector)	20dBc(Note2)

Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

4.6.2 Test Setup



4.6.3 Test Procedure

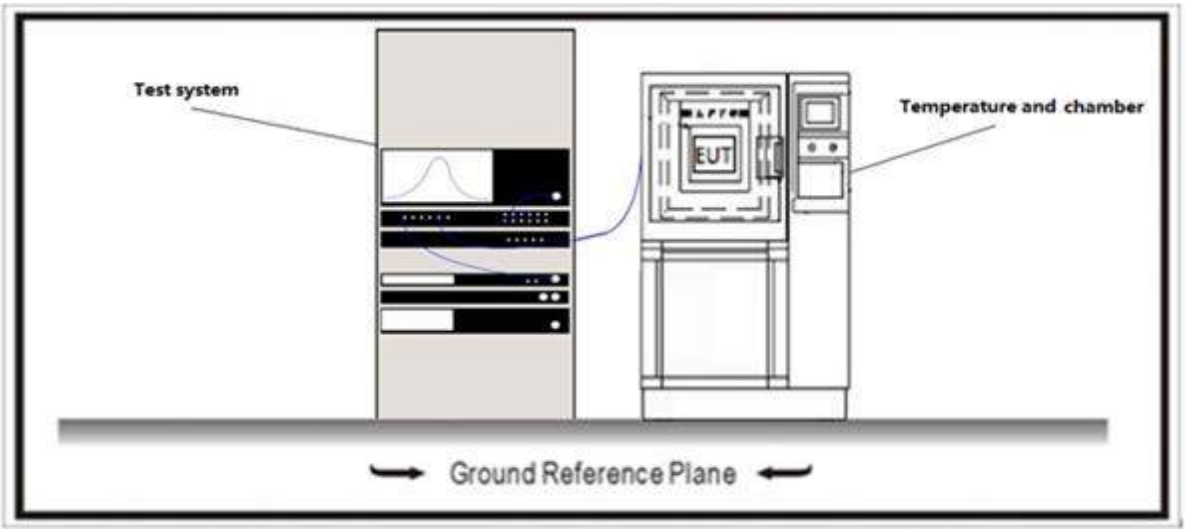
References Rule			Chapter	Description
☒	ANSI C63.10		11.11	Emissions in non-restricted frequency bands
	☒	ANSI C63.10	11.11.1	General
	☒	ANSI C63.10	11.11.2	Reference level measurement
	☒	ANSI C63.10	11.11.3	Emission level measurement

4.7 Duty cycle	VERDICT: PASS

4.7.1 Limit

N/A

4.7.2 Test Setup



4.7.3 Test Procedure

References Rule		Chapter	Description
☒	ANSI C63.10	11.6	Duty cycle (D), transmission duration (T), and maximum power control level

4.8 Emissions in Restricted Bands — VERDICT: PASS

4.8.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.205		
Restricted Bands of operation			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
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
8.81425 – 8.81475	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	
13.36 – 13.41			
Standard	RSS-Gen Issue 5 Paragraph 8.10		
Restricted Bands of operation for IC			
0.090 - 0.110	13.36 - 13.41	960 - 1427	9.0 - 9.2
0.495 - 0.505	16.42 - 16.423	1435 - 1626.5	9.3 - 9.5
2.1735 - 2.1905	16.69475 - 16.69525	1645.5 - 1646.5	10.6 - 12.7
3.020 - 3.026	16.80425 - 16.80475	1660 - 1710	13.25 - 13.4
4.125 - 4.128	25.5 - 25.67	1718.8 - 1722.2	14.47 - 14.5
4.17725 - 4.17775	37.5 - 38.25	2200 - 2300	15.35 - 16.2
4.20725 - 4.20775	73 - 74.6	2310 - 2390	17.7 - 21.4
5.677 - 5.683	74.8 - 75.2	2483.5 - 2500	22.01 - 23.12
6.215 - 6.218	108 - 138	2655 - 2900	23.6 - 24.0
6.26775 - 6.26825	149.9 - 150.05	3260 - 3267	31.2 - 31.8
6.31175 - 6.31225	156.52475 - 156.52525	3332 - 3339	36.43 - 36.5
8.291 - 8.294	156.7 - 156.9	3345.8 - 3358	Above 38.6
8.362 - 8.366	162.0125 - 167.17	3500 - 4400	
8.37625 - 8.38675	167.72 - 173.2	4500 - 5150	
8.41425 - 8.41475	240 - 285	5350 - 5460	
12.29 - 12.293	322 - 335.4	7250 - 7750	
12.51975 - 12.52025	399.9 - 410	8025 - 8500	
12.57675 - 12.57725	608 - 614	--	

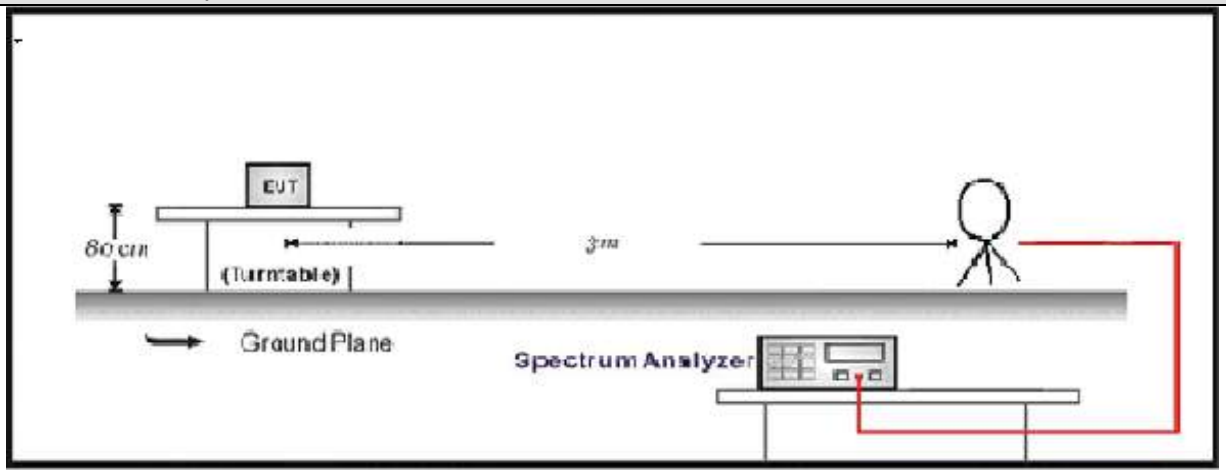
Restricted Band Emissions Limit			
FCC Part 15 Subpart C Paragraph 15.209			
Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30(Note 1)
1.705 - 30	30	29.5	30(Note 1)
30 - 88	100	40	3(Note 2)
88 - 216	150	43.5	3(Note 2)
216 - 960	200	46	3(Note 2)
Above 960	500	54	3(Note 2)
RSS-Gen Issue 5 Paragraph 8.9.			
Frequency (MHz)	Field strength	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	6.37/F(kHz) μA/m	48.5 – 13.8	300(Note 1)
0.49 - 1.705	63.7/F(kHz) μA/m	33.8 - 23	30(Note 1)
1.705 - 30	30 μV/m	29.5	30(Note 1)
30 - 88	100 μV/m	40	3(Note 2)
88 - 216	150 μV/m	43.5	3(Note 2)
216 - 960	200 μV/m	46	3(Note 2)
Above 960	500 μV/m	54	3(Note 2)

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

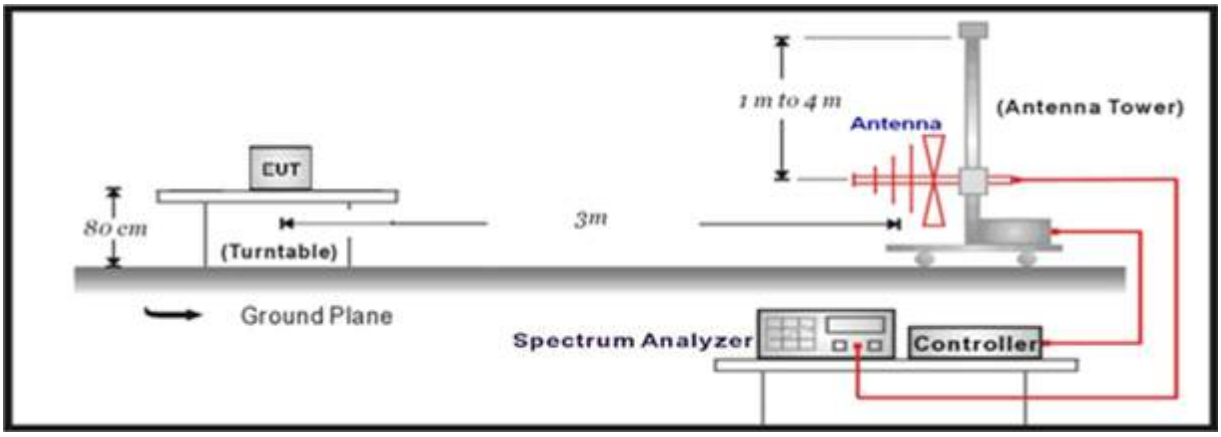
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.8.2 Test Setup

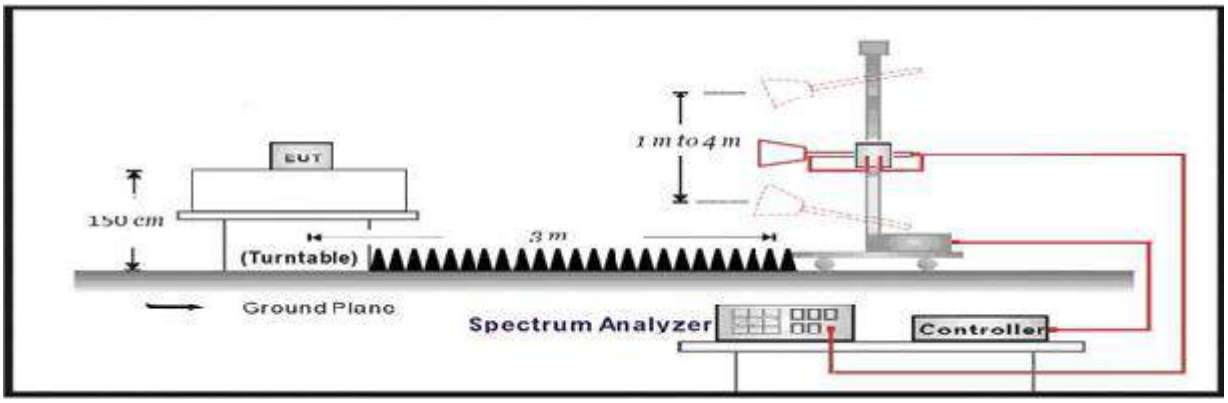
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.8.3 Test Procedure					
	References Rule			Chapter	Description
☒	ANSI C63.10			11.12	Emissions in restricted frequency bands
	☒	ANSI C63.10		11.12.1	Radiated emission measurements
	☒	ANSI C63.10		11.12.2.7	Radiated spurious emission test
		☒	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
		☒	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
		☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

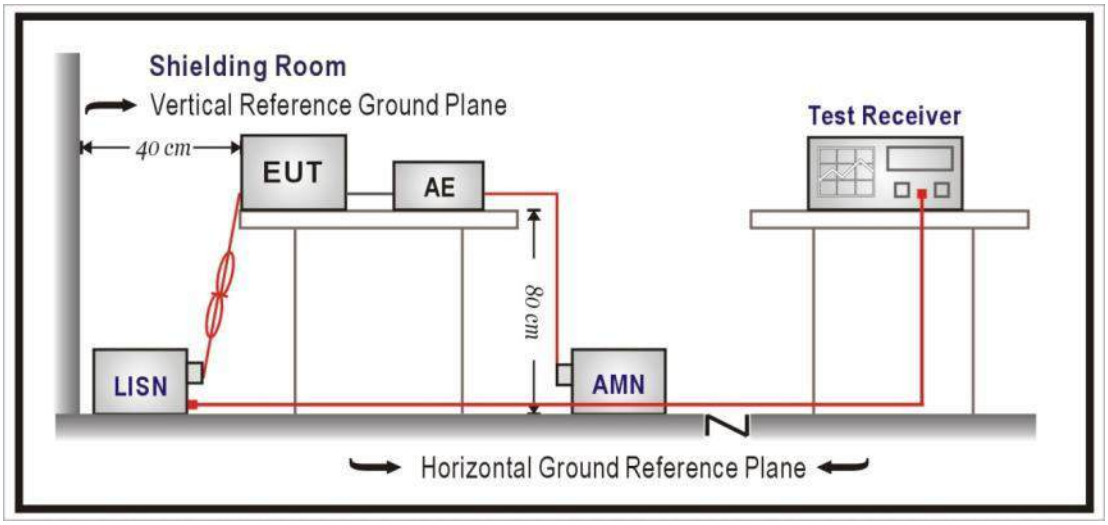
4.9 AC Power Line Conducted Emission	VERDICT: PASS

4.9.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207; RSS-Gen Issue 5 Paragraph 8.8.	
Frequency range [MHz]	Limit: QP [dB(μV)[1)]]	Limit: AV [dB(μV)[1)]]
0,15 - 0,50	66 – 56 [2)]	56 - 46 [2)]
0,50 - 5,0	56	46
5,0 - 30	60	50

[1)] At the transition frequency, the lower limit applies.
[2)] The limit decreases linearly with the logarithm of the frequency.
NOTE 1: The exclusion band for transmitters shall be considered for transmitters operating at frequencies below 30 MHz.
NOTE 2: Where the AC output port is directly connected (or via a circuit breaker) to the AC power input port of the EUT the AC power output port need not to be tested.

4.9.2 Test Setup



4.9.3 Test Procedure

	References Rule	Chapter	Item
☒	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

4.10 Antenna Requirement	VERDICT: PASS

4.10.1 Limit:	
Standard	FCC Part 15 Subpart C Paragraph 15.203; RSS-Gen Issue 5 Paragraph 6.8.
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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.	

4.10.2 Antenna Connector Construction:	
☒	The use of a permanently attached antenna
☐	The antenna use of a unique coupling to the intentional radiator
☐	The use of a nonstandard antenna jack or electrical connector
Please refer to the attached document “Internal Photograph” to show the antenna connector.	

5 TEST SETUP PHOTO AND EUT PHOTO

Remark: The test setup photo and EUT Photo please see appendix.

6 TEST RESULT

Appendix A: DTS Bandwidth

TestMode	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	2402	0.708	2401.752	2402.460	0.5	PASS
BLE_1M	2440	0.700	2439.752	2440.452	0.5	PASS
BLE_1M	2480	0.716	2479.752	2480.468	0.5	PASS
BLE_2M	2402	1.332	2401.452	2402.784	0.5	PASS
BLE_2M	2440	1.328	2439.452	2440.780	0.5	PASS
BLE_2M	2480	1.332	2479.452	2480.784	0.5	PASS
BLE_125K	2402	0.688	2401.764	2402.452	0.5	PASS
BLE_125K	2440	0.692	2439.764	2440.456	0.5	PASS
BLE_125K	2480	0.692	2479.764	2480.456	0.5	PASS
BLE_500K	2402	0.676	2401.760	2402.436	0.5	PASS
BLE_500K	2440	0.708	2439.748	2440.456	0.5	PASS
BLE_500K	2480	0.728	2479.740	2480.468	0.5	PASS

Test Graphs

BLE_1M_Ant1_2402

BLE_1M_Ant1_2440

BLE_1M_Ant1_2480

BLE_2M_Ant1_2402

BLE_2M_Ant1_2440

BLE_2M_Ant1_2480

BLE_125K_Ant1_2402

BLE_125K_Ant1_2440

BLE_125K_Ant1_2480

BLE_500K_Ant1_2402

BLE_500K_Ant1_2440

BLE_500K_Ant1_2480

Appendix B: Occupied Channel Bandwidth

TestMode	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	2402	1.0349	2401.5943	2402.6292	N/A	Pass
	2440	1.0304	2439.5985	2440.6289	N/A	Pass
	2480	1.0321	2479.5982	2480.6303	N/A	Pass
BLE_2M	2402	2.1033	2401.0744	2403.1777	N/A	Pass
	2440	2.1109	2439.0699	2441.1808	N/A	Pass
	2480	2.1116	2479.0705	2481.1821	N/A	Pass
BLE_125K	2402	1.0582	2401.5787	2402.6369	N/A	Pass
	2440	1.0545	2439.5810	2440.6355	N/A	Pass
	2480	1.0558	2479.5823	2480.6381	N/A	Pass
BLE_500K	2402	1.0304	2401.5950	2402.6254	N/A	Pass
	2440	1.0328	2439.5951	2440.6279	N/A	Pass
	2480	1.0310	2479.5975	2480.6285	N/A	Pass

Test Graphs

BLE_1M_Ant1_2402

BLE_1M_Ant1_2440

BLE_1M_Ant1_2480

BLE_2M_Ant1_2402

BLE_2M_Ant1_2440

BLE_2M_Ant1_2480

BLE_125K_Ant1_2402

BLE_125K_Ant1_2440

BLE_125K_Ant1_2480

BLE_500K_Ant1_2402

BLE_500K_Ant1_2440

BLE_500K_Ant1_2480

Appendix C: Maximum conducted output power

TestMode	Frequency[MHz]	Conducted Powert[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	2402	11.18	≤30	11.68	≤36	PASS
BLE_1M	2440	10.97	≤30	11.47	≤36	PASS
BLE_1M	2480	10.27	≤30	10.77	≤36	PASS
BLE_2M	2402	11.17	≤30	11.67	≤36	PASS
BLE_2M	2440	10.92	≤30	11.42	≤36	PASS
BLE_2M	2480	10.29	≤30	10.79	≤36	PASS
BLE_125K	2402	11.20	≤30	11.70	≤36	PASS
BLE_125K	2440	10.93	≤30	11.43	≤36	PASS
BLE_125K	2480	10.32	≤30	10.82	≤36	PASS
BLE_500K	2402	11.21	≤30	11.71	≤36	PASS
BLE_500K	2440	10.95	≤30	11.45	≤36	PASS
BLE_500K	2480	10.31	≤30	10.81	≤36	PASS

Note 1: EIRP=Conducted Peak Power+Antenna gain
Note 2: The antenna gain please refer to clause 1.2

Appendix D: Maximum power spectral density

TestMode	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	2402	-4.85	≤8.00	PASS
	2440	-5.07	≤8.00	PASS
	2480	-5.73	≤8.00	PASS
BLE_2M	2402	-6.60	≤8.00	PASS
	2440	-6.83	≤8.00	PASS
	2480	-7.49	≤8.00	PASS
BLE_125K	2402	4.95	≤8.00	PASS
	2440	4.66	≤8.00	PASS
	2480	4.04	≤8.00	PASS
BLE_500K	2402	-4.84	≤8.00	PASS
	2440	-5.06	≤8.00	PASS
	2480	-5.65	≤8.00	PASS

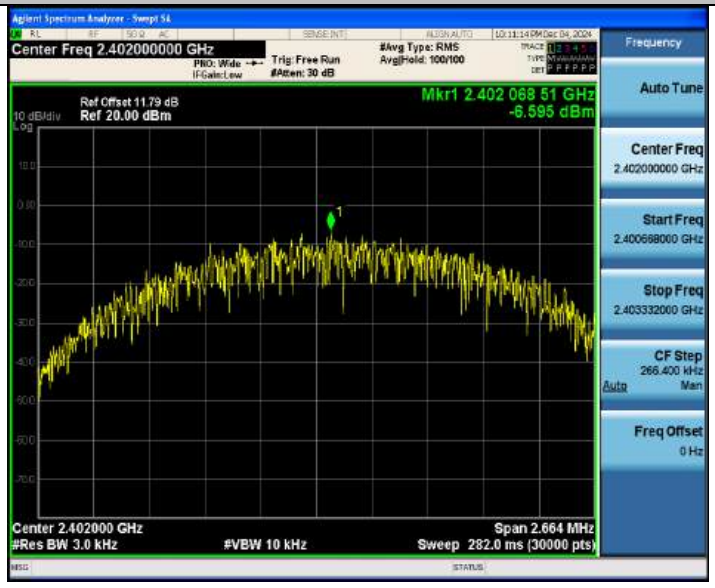
Test Graphs

BLE_1M_Ant1_2402

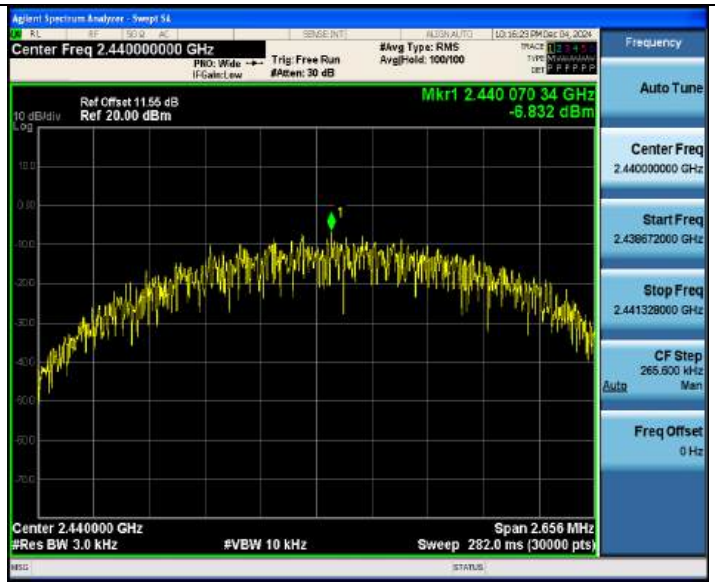
BLE_1M_Ant1_2440

BLE_1M_Ant1_2480

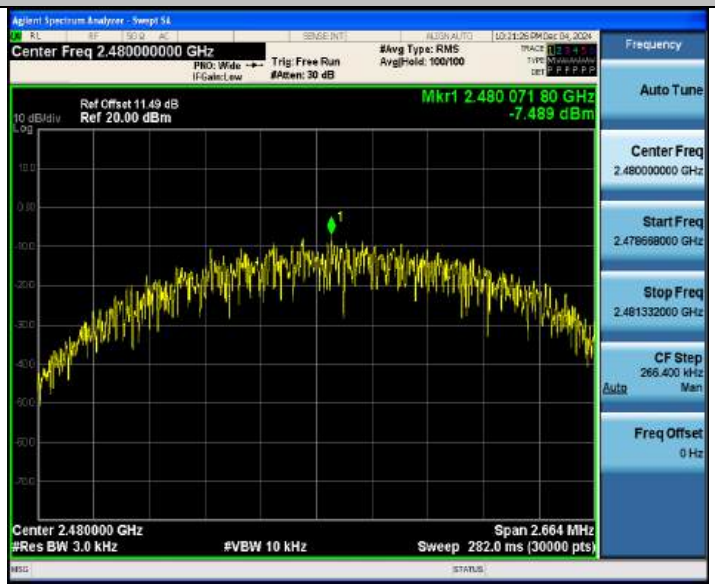
BLE_2M_Ant1_2402



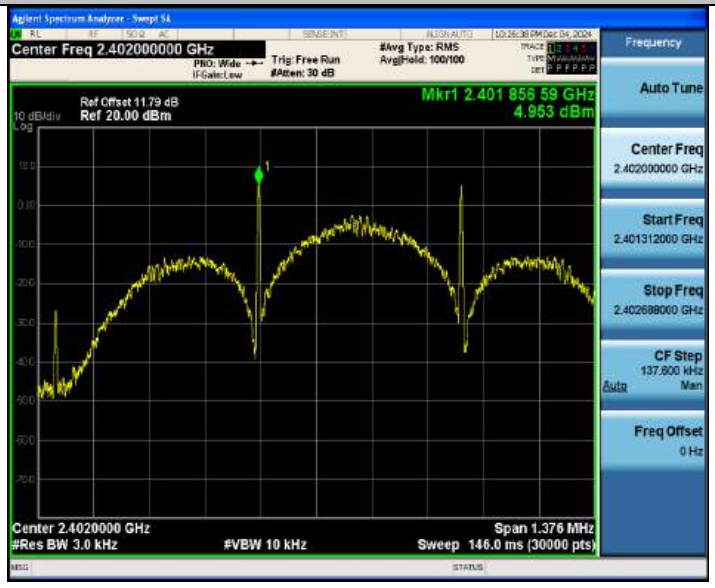
BLE_2M_Ant1_2440



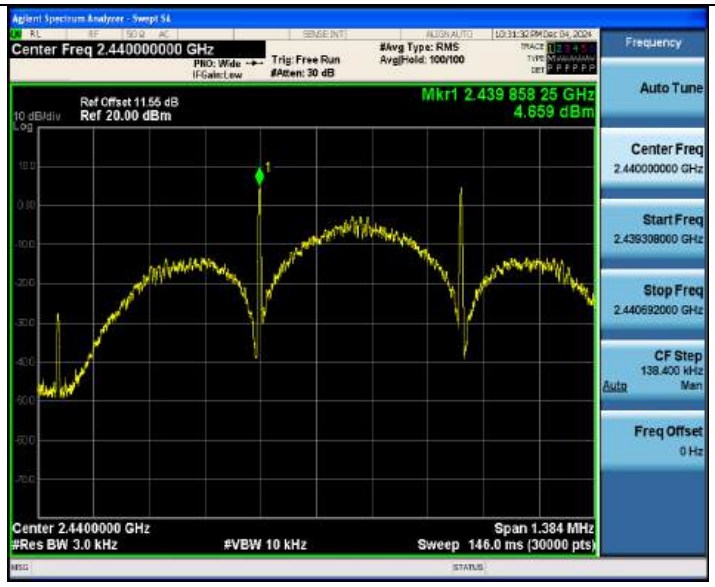
BLE_2M_Ant1_2480



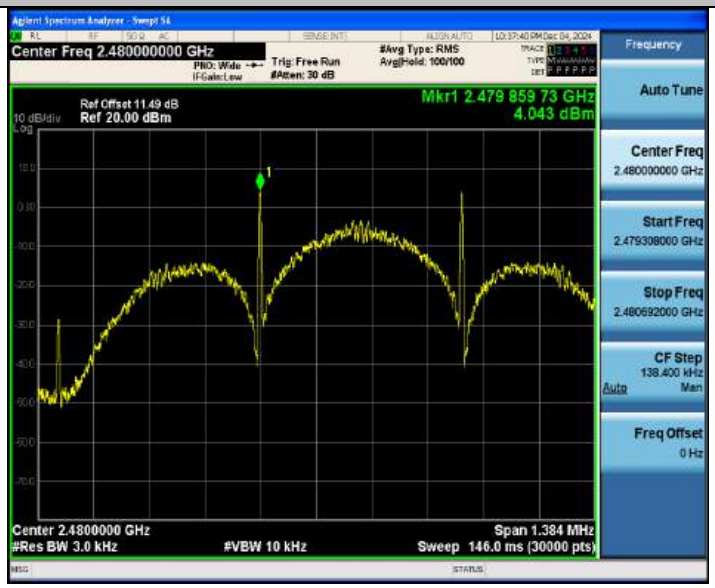
BLE_125K_Ant1_2402



BLE_125K_Ant1_2440



BLE_125K_Ant1_2480



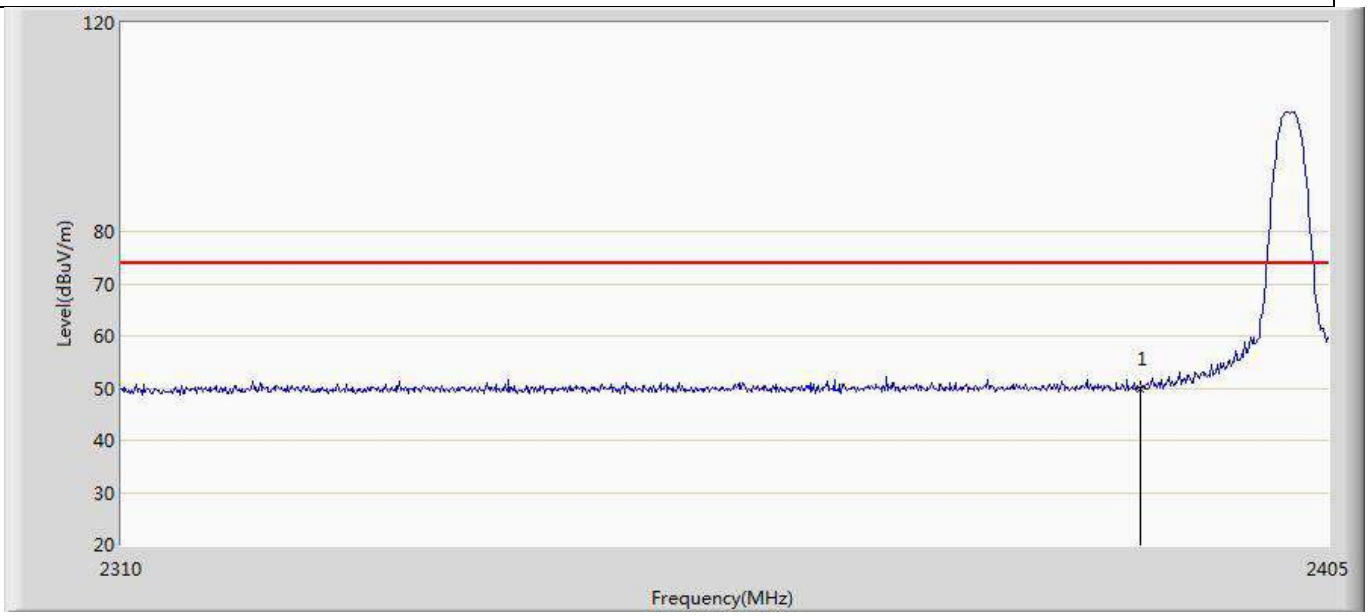
BLE_500K_Ant1_2402

BLE_500K_Ant1_2440

BLE_500K_Ant1_2480

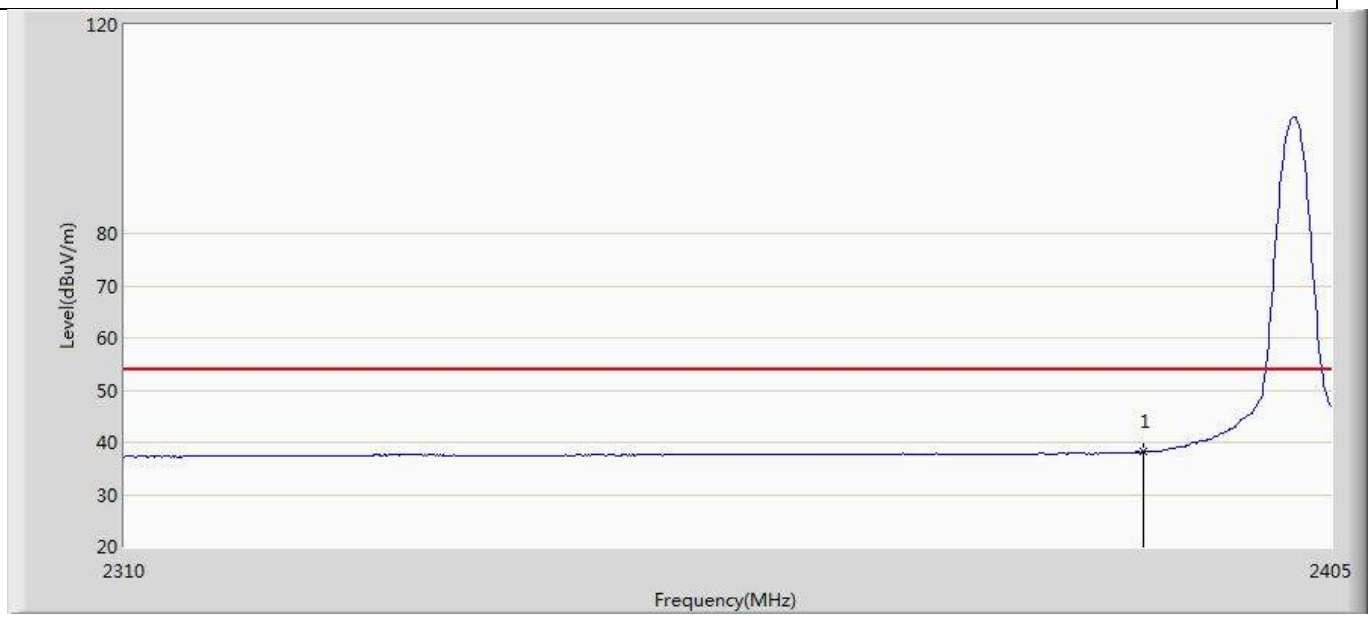
Appendix E: Band edge measurements

Profile: 24B0863R	Page No.: 1
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2402MHz by LE_1Mbps	



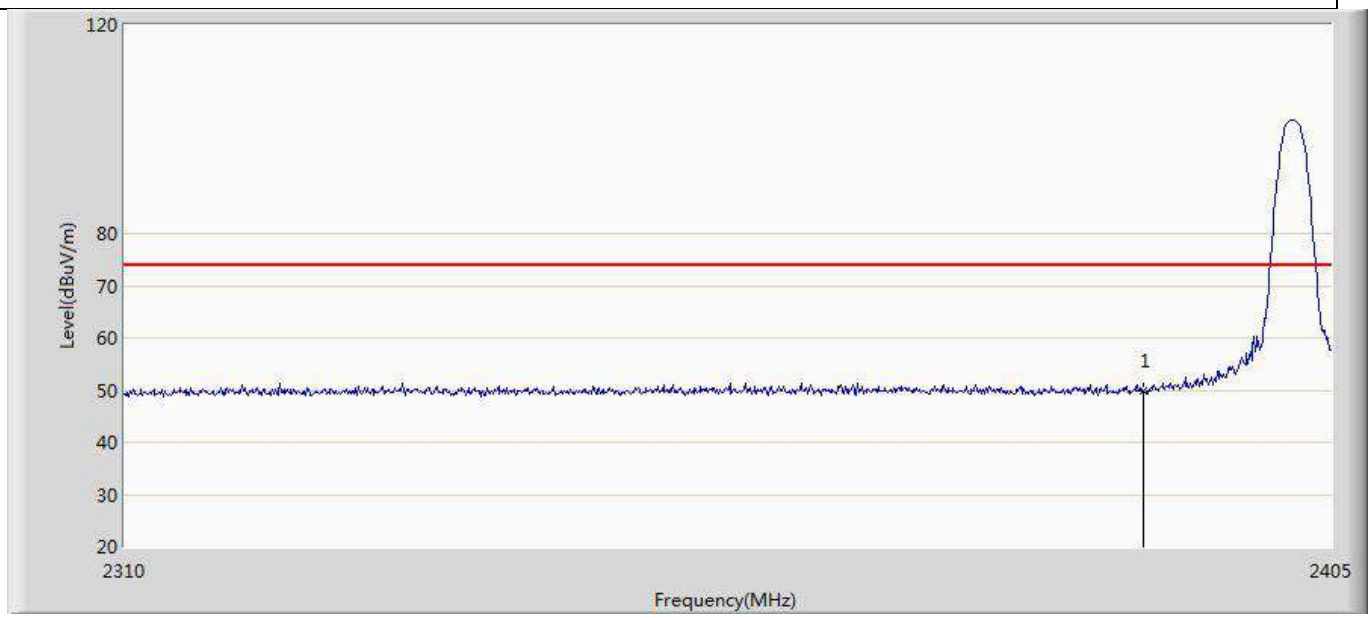
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	49.789	15.688	-24.211	74.000	34.102	PK

Profile: 24B0863R	Page No.: 2
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2402MHz by LE_1Mbps	



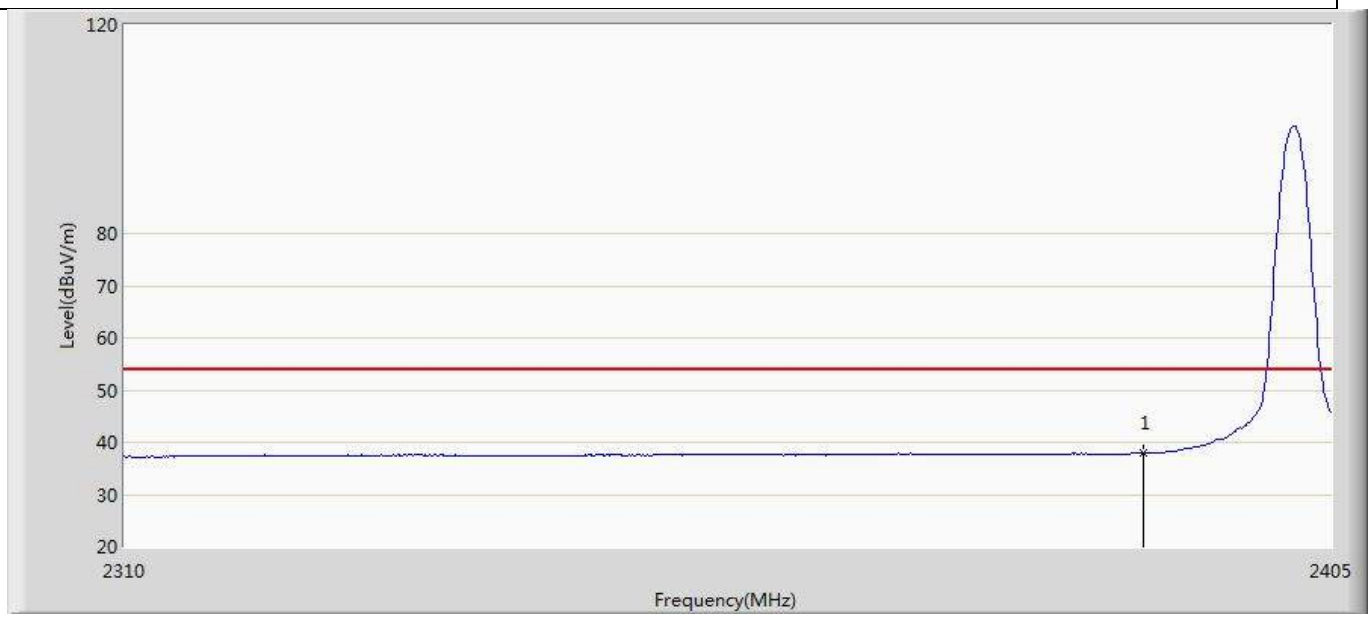
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	38.151	4.050	-15.849	54.000	34.102	AV

Profile: 24B0863R	Page No.: 3
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2402MHz by LE_1Mbps	



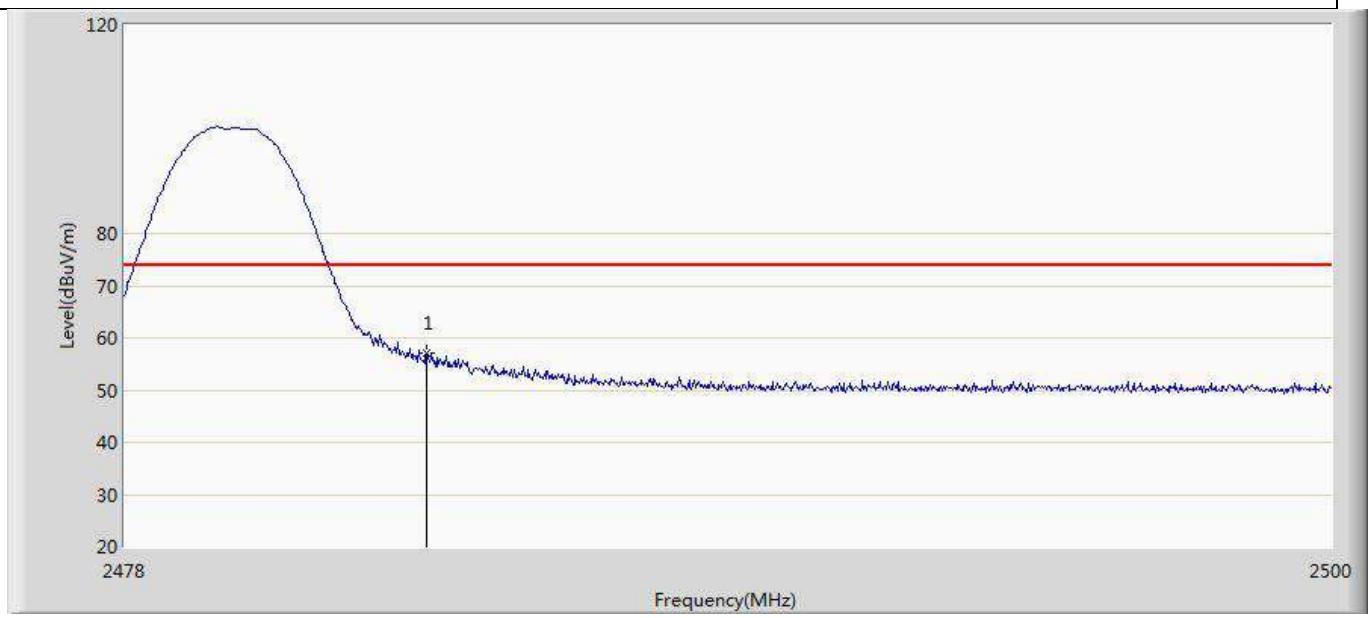
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	49.730	15.629	-24.270	74.000	34.102	PK

Profile: 24B0863R	Page No.: 4
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2402MHz by LE_1Mbps	



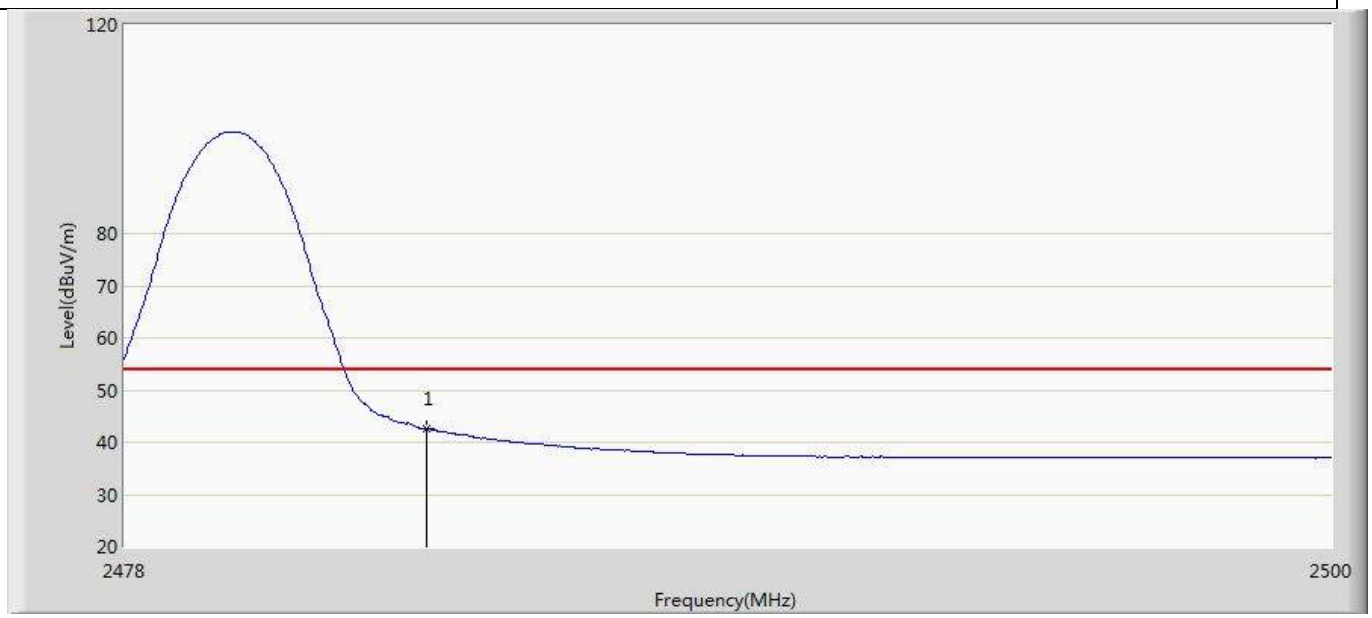
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	37.979	3.878	-16.021	54.000	34.102	AV

Profile: 24B0863R	Page No.: 5
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2480MHz by LE_1Mbps	



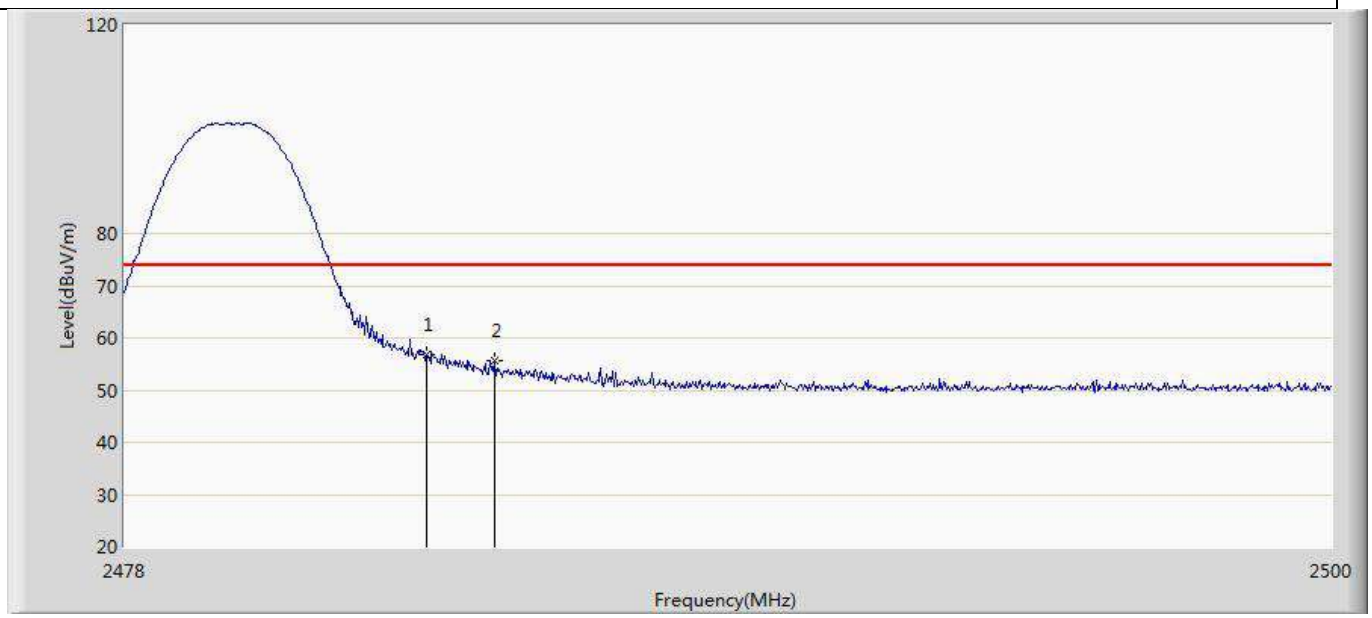
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	57.226	23.113	-16.774	74.000	34.114	PK

Profile: 24B0863R	Page No.: 6
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2480MHz by LE_1Mbps	



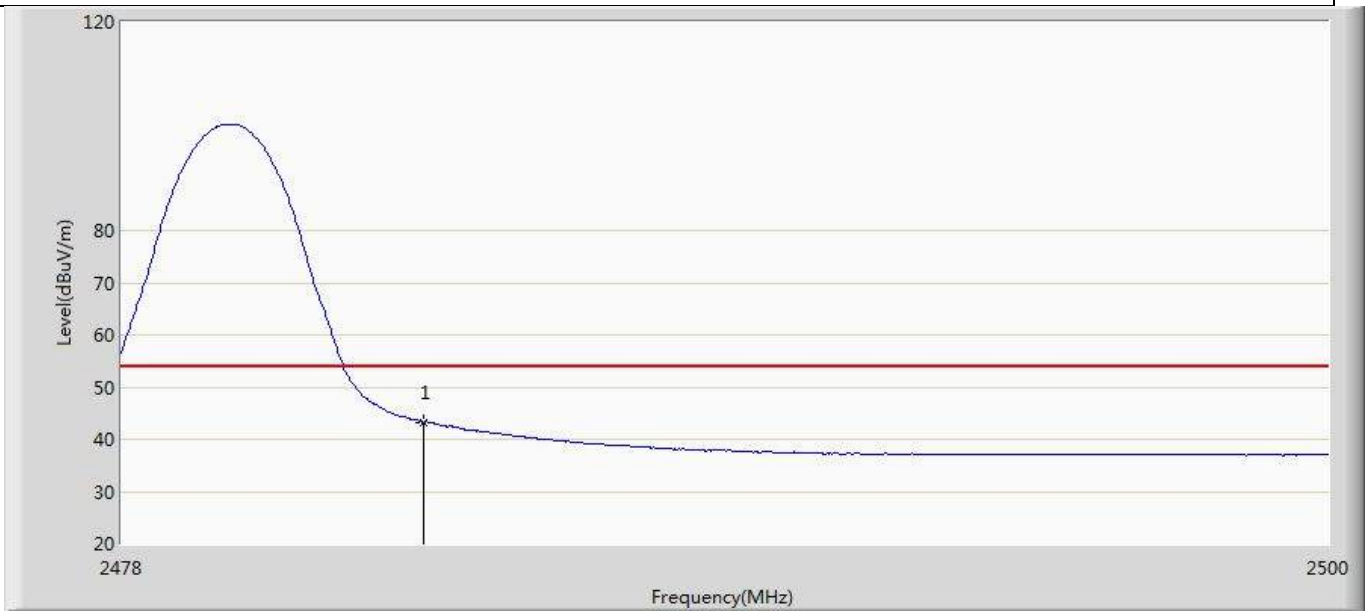
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	42.572	8.459	-11.428	54.000	34.114	AV

Profile: 24B0863R	Page No.: 7
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2480MHz by LE_1Mbps	



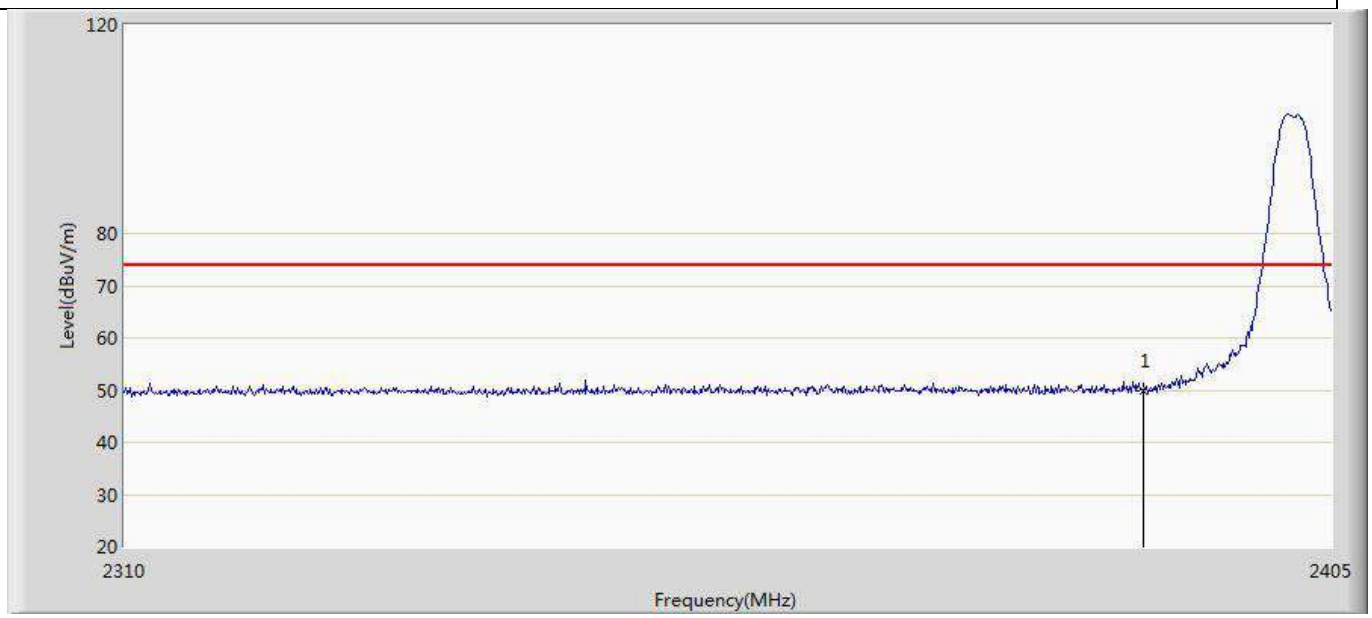
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	56.708	22.595	-17.292	74.000	34.114	PK
2		2484.732	55.609	21.486	-18.391	74.000	34.123	PK

Profile: 24B0863R	Page No.: 8
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2480MHz by LE_1Mbps	



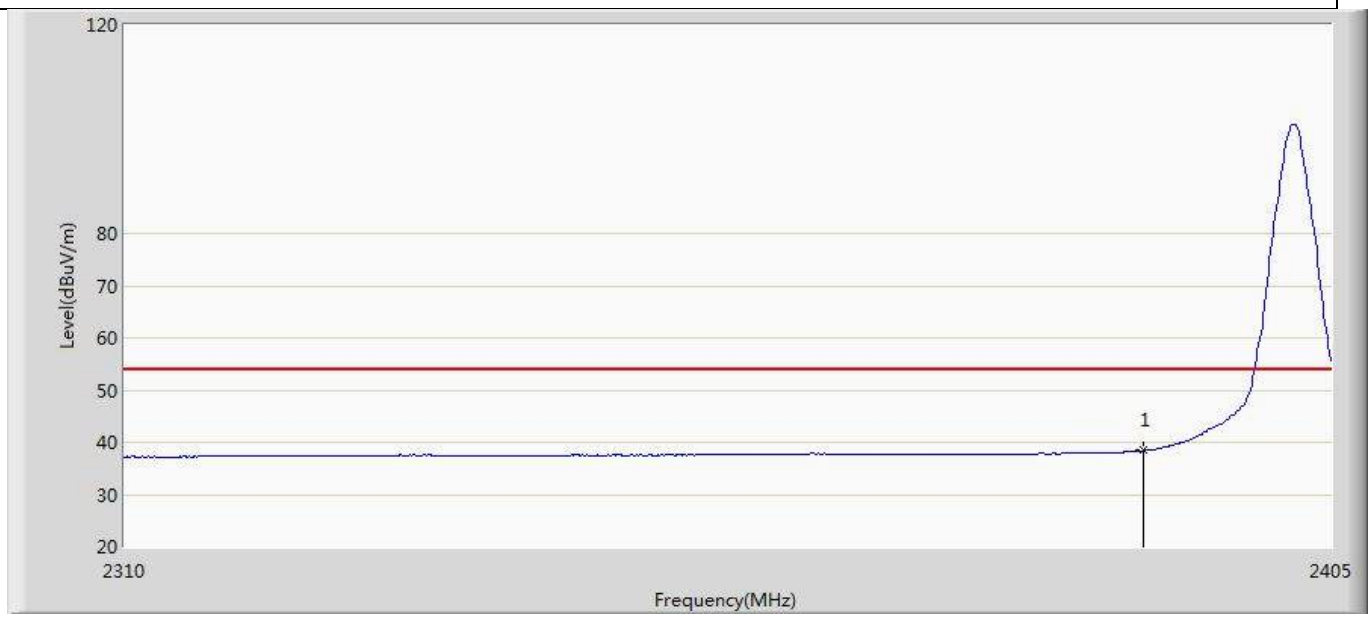
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	43.254	9.141	-10.746	54.000	34.114	AV

Profile: 24B0863R	Page No.: 9
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 2：Transmit at 2402MHz by LE_2Mbps	



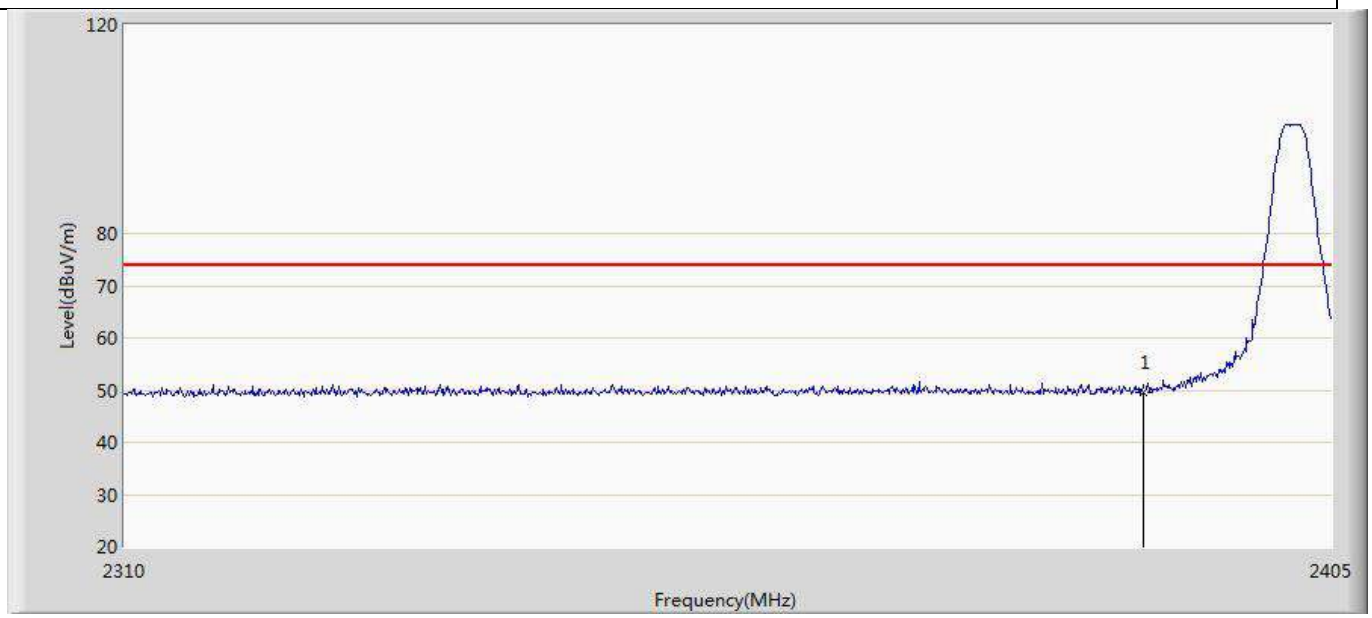
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	49.842	15.741	-24.158	74.000	34.102	PK

Profile: 24B0863R	Page No.: 10
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 2：Transmit at 2402MHz by LE_2Mbps	



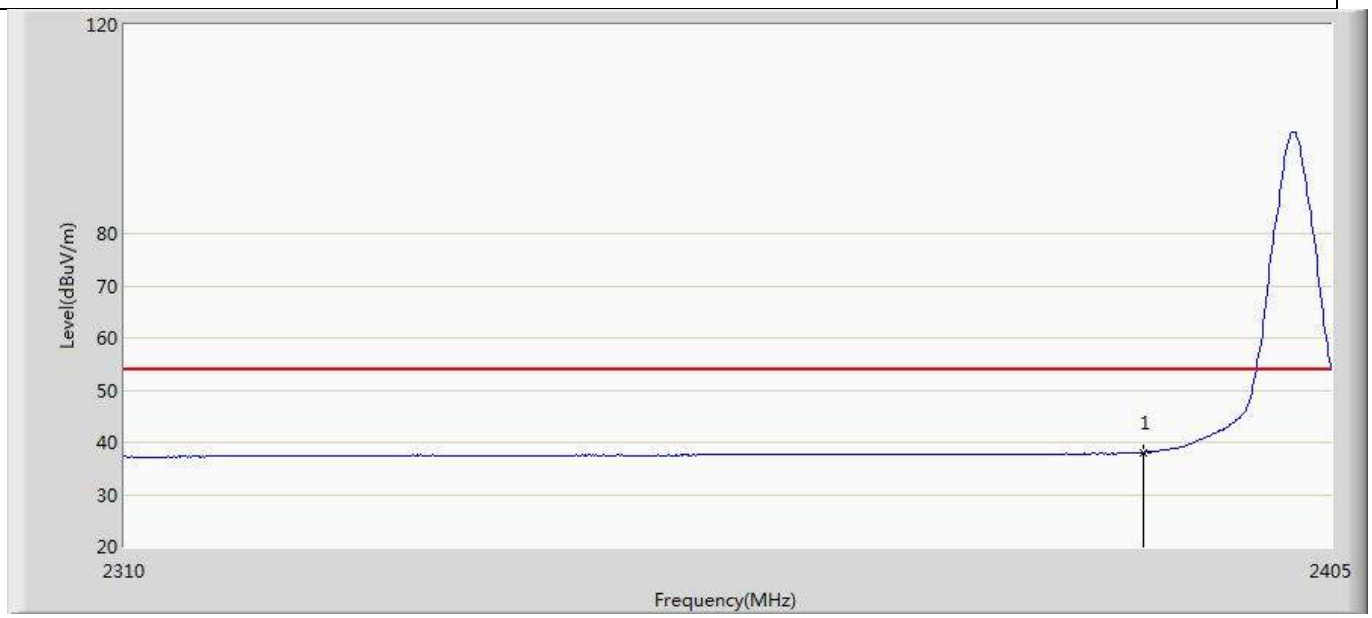
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	38.496	4.395	-15.504	54.000	34.102	AV

Profile: 24B0863R	Page No.: 11
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 2：Transmit at 2402MHz by LE_2Mbps	



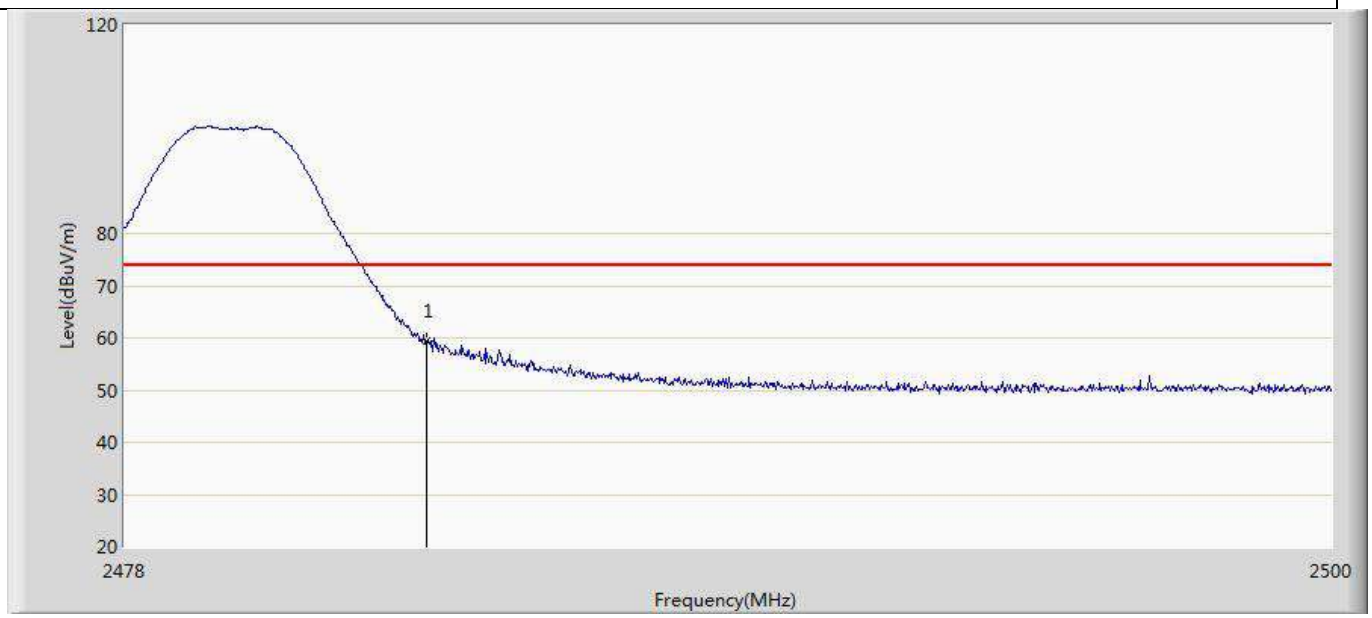
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	49.571	15.470	-24.429	74.000	34.102	PK

Profile: 24B0863R	Page No.: 12
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 2：Transmit at 2402MHz by LE_2Mbps	



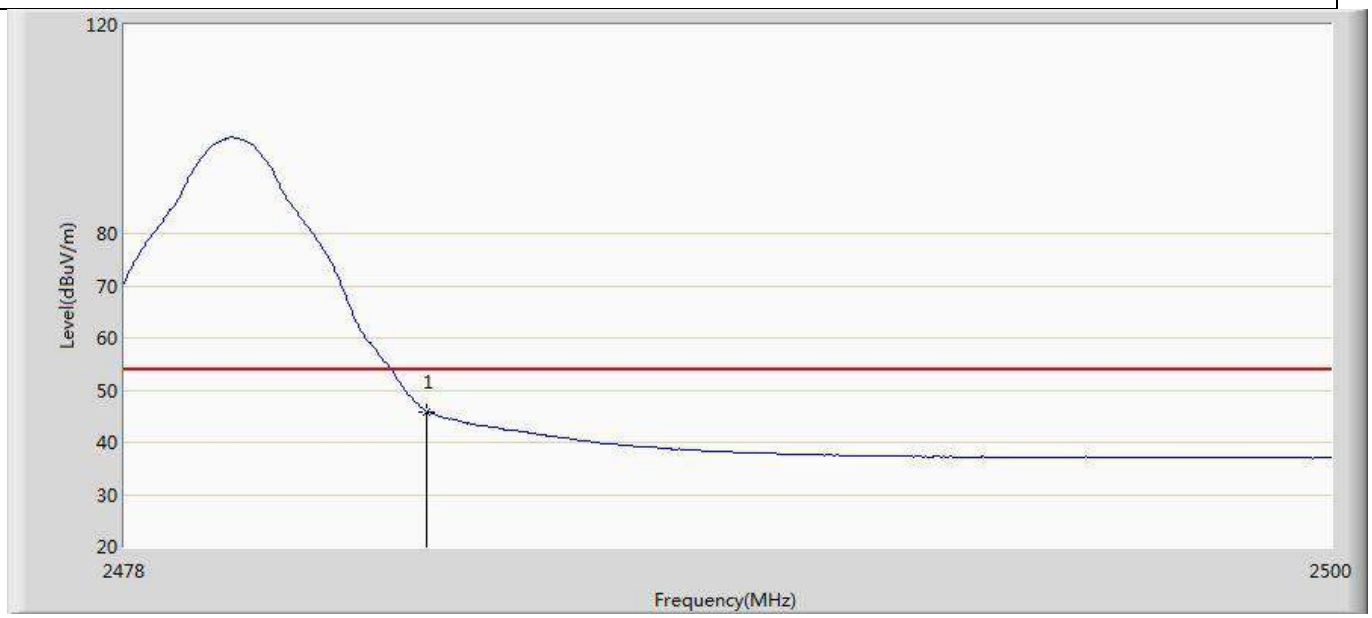
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	38.083	3.982	-15.917	54.000	34.102	AV

Profile: 24B0863R	Page No.: 13
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 2：Transmit at 2480MHz by LE_2Mbps	



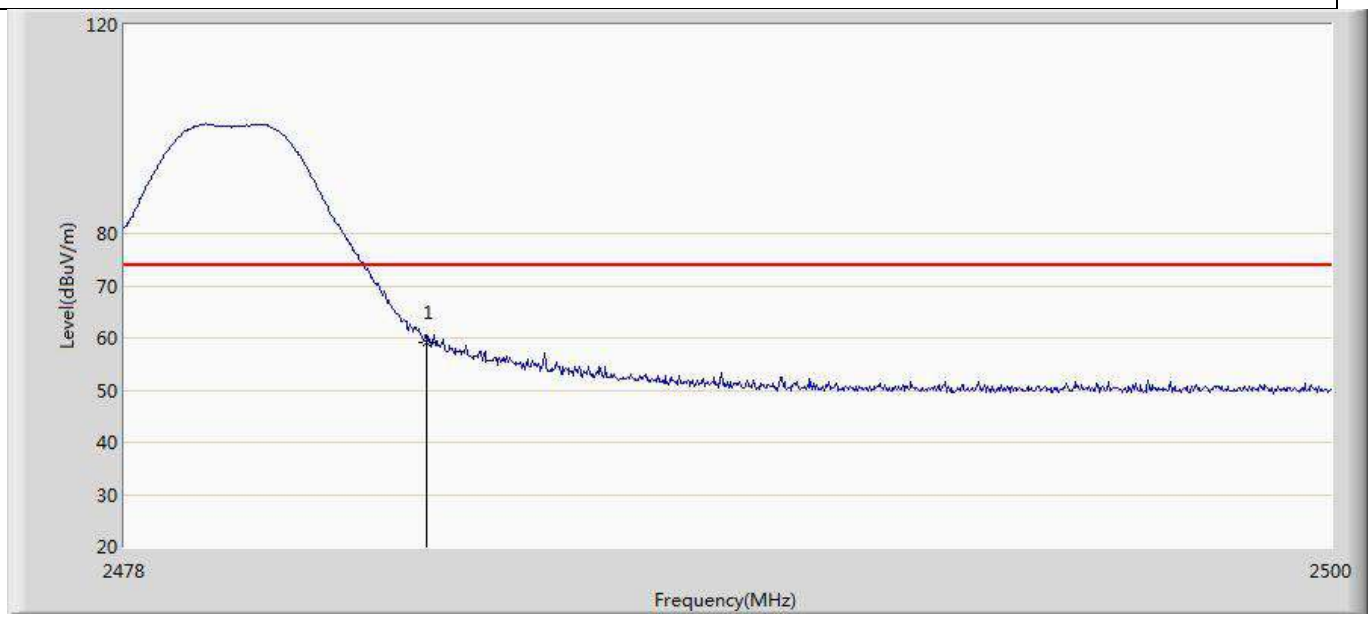
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	59.335	25.222	-14.665	74.000	34.114	PK

Profile: 24B0863R	Page No.: 14
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 2：Transmit at 2480MHz by LE_2Mbps	



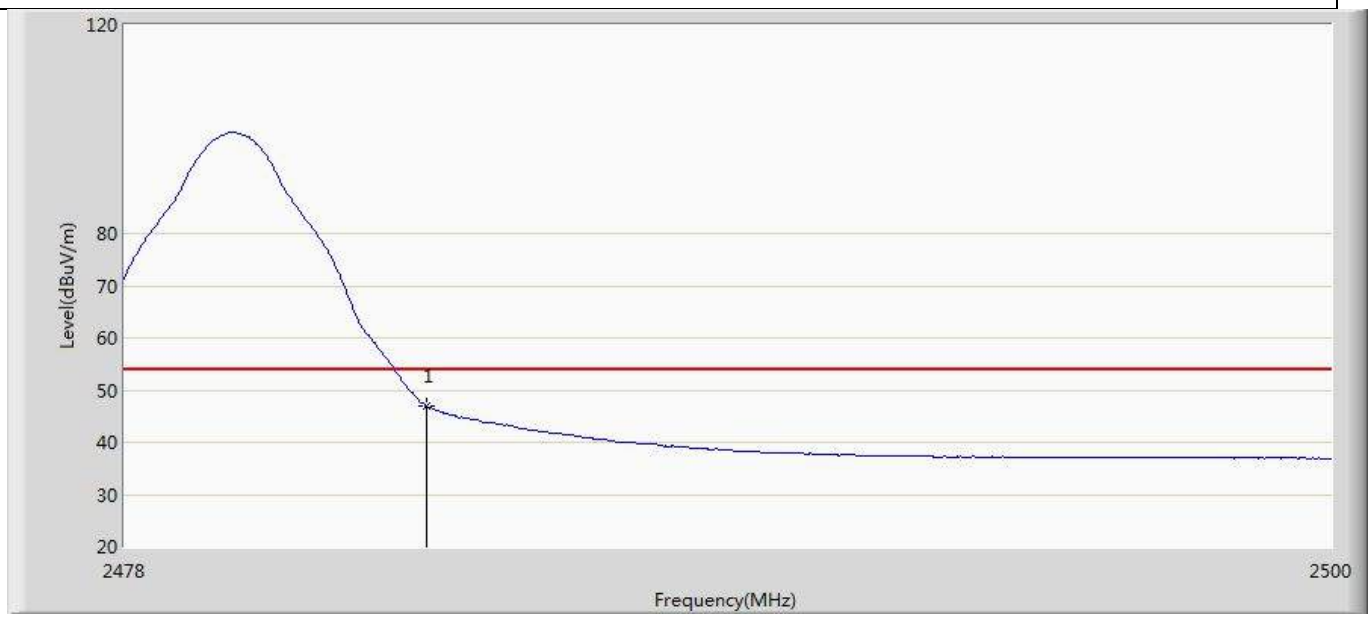
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	45.908	11.795	-8.092	54.000	34.114	AV

Profile: 24B0863R	Page No.: 15
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 00:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 2：Transmit at 2480MHz by LE_2Mbps	



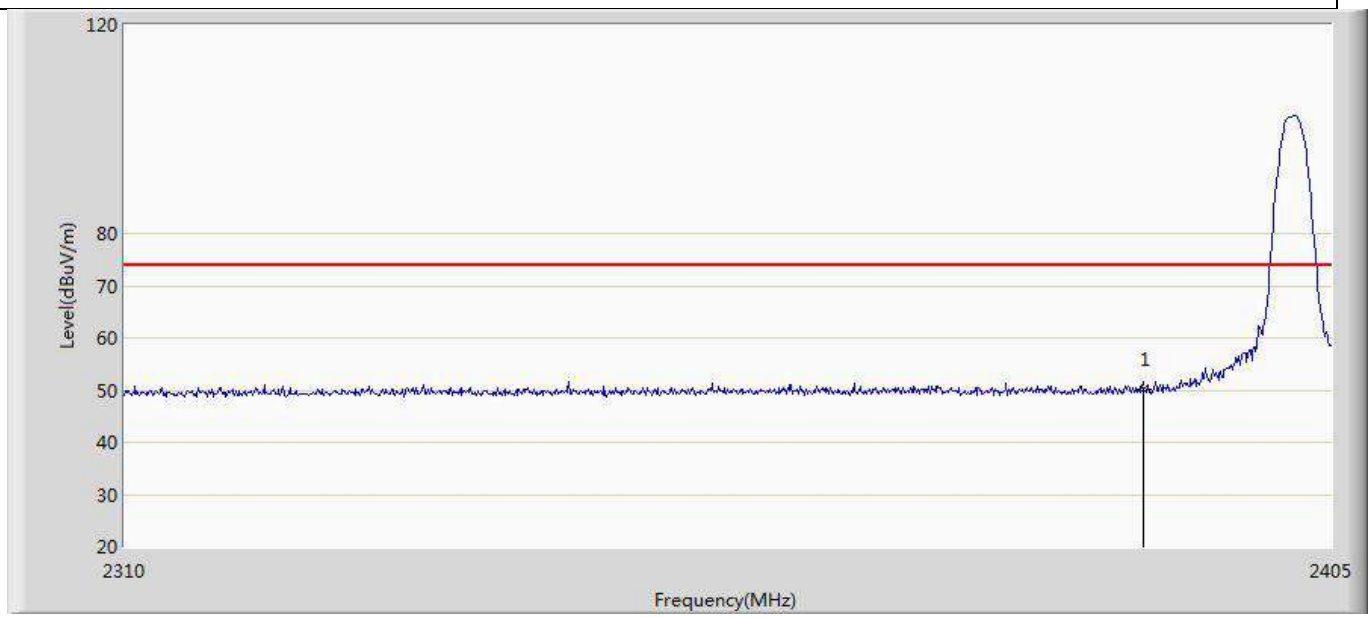
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	59.186	25.073	-14.814	74.000	34.114	PK

Profile: 24B0863R	Page No.: 16
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 2：Transmit at 2480MHz by LE_2Mbps	



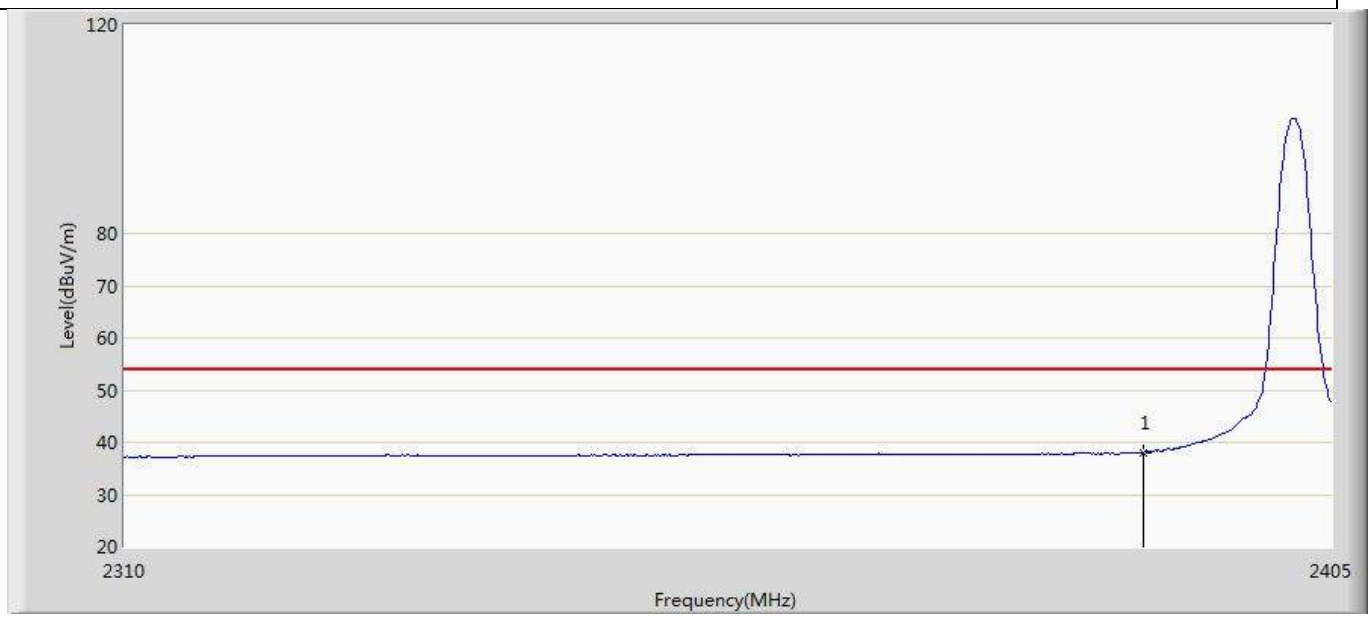
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	46.876	12.763	-7.124	54.000	34.114	AV

Profile: 24B0863R	Page No.: 17
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 3：Transmit at 2402MHz by LE_Coded S=2	



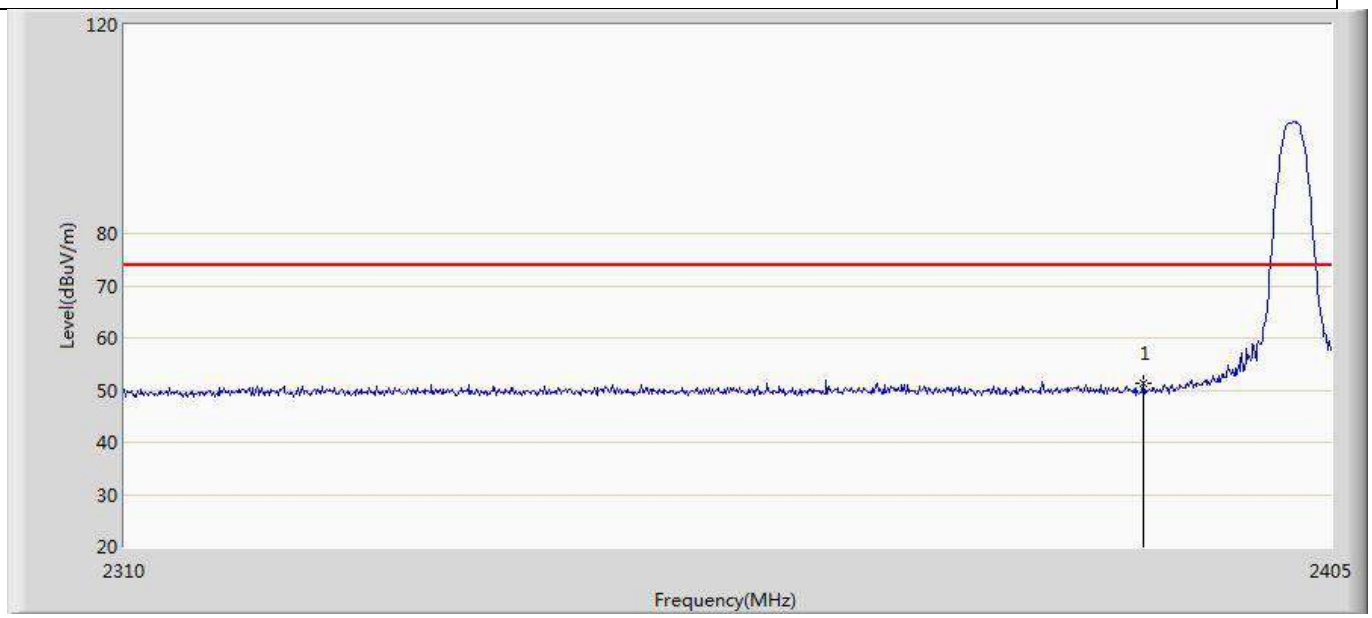
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	50.004	15.903	-23.996	74.000	34.102	PK

Profile: 24B0863R	Page No.: 18
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 3：Transmit at 2402MHz by LE_Coded S=2	



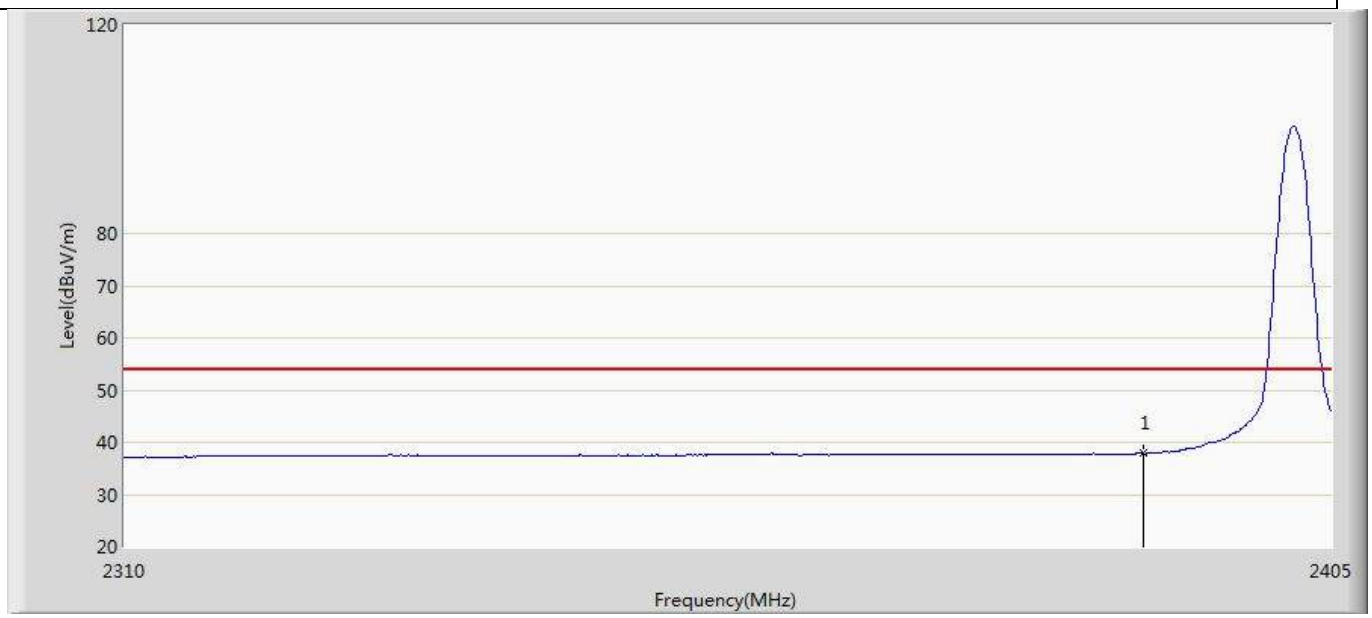
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	38.023	3.922	-15.977	54.000	34.102	AV

Profile: 24B0863R	Page No.: 19
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 3：Transmit at 2402MHz by LE_Coded S=2	



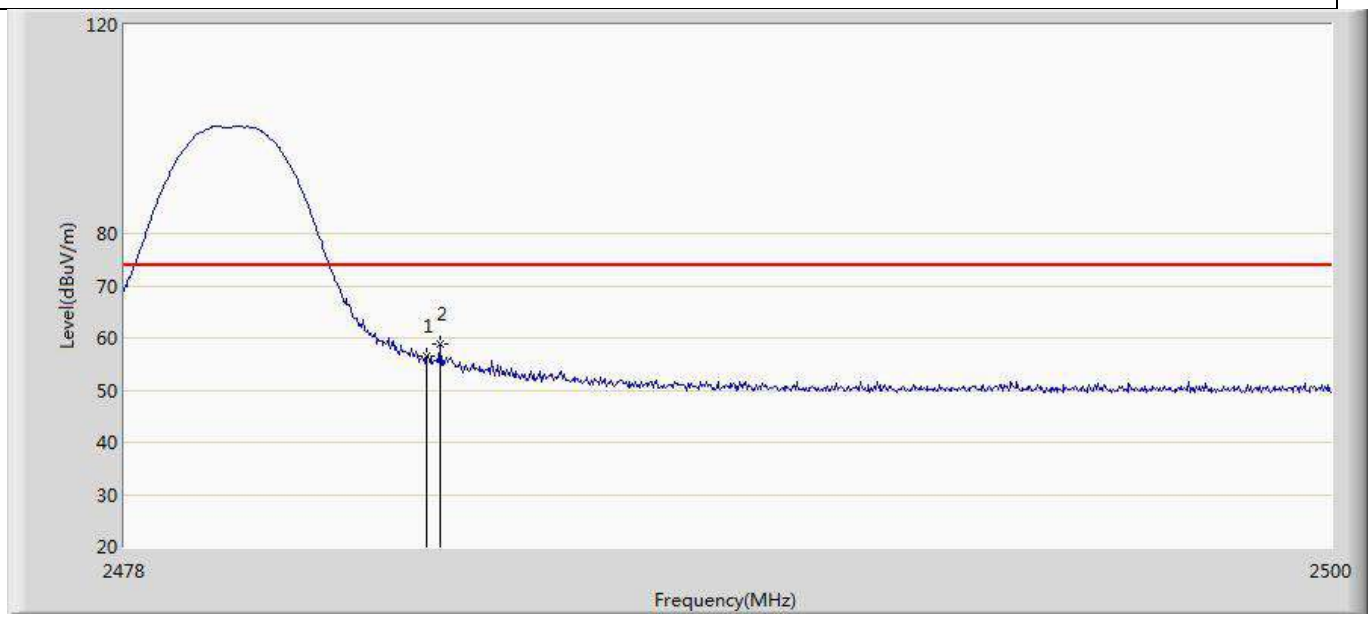
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	51.337	17.236	-22.663	74.000	34.102	PK

Profile: 24B0863R	Page No.: 20
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 3：Transmit at 2402MHz by LE_Coded S=2	



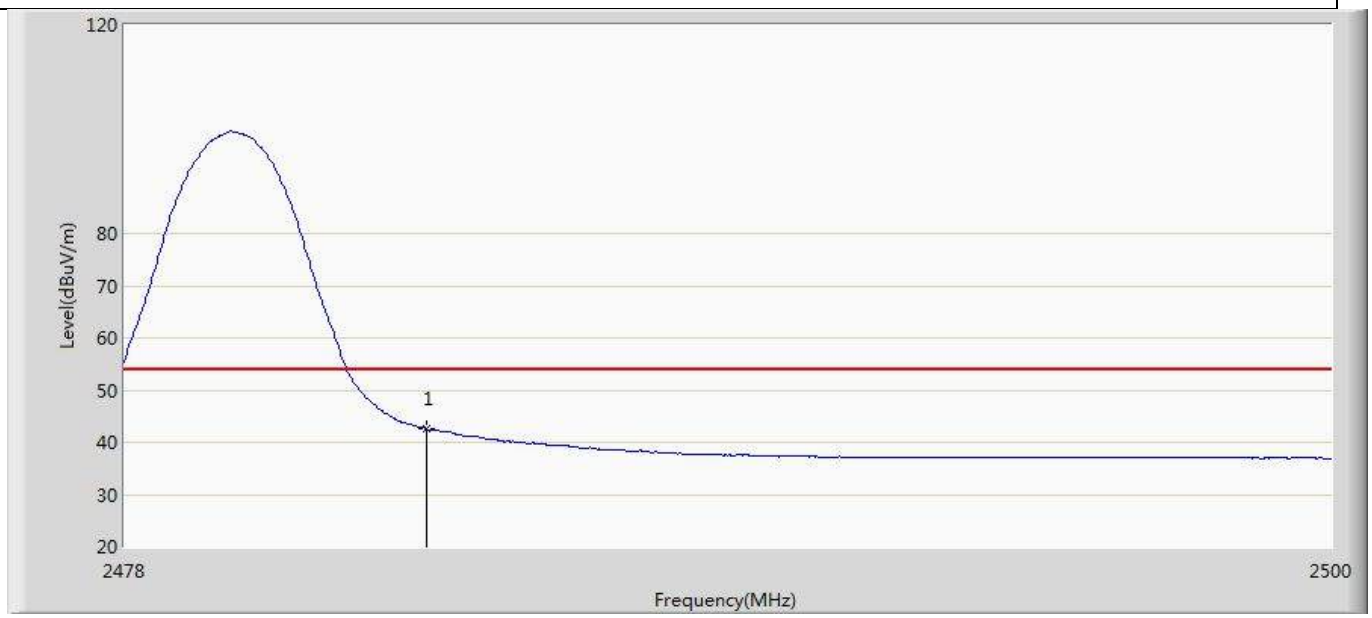
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	37.835	3.734	-16.165	54.000	34.102	AV

Profile: 24B0863R	Page No.: 21
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 3：Transmit at 2480MHz by LE_Coded S=2	



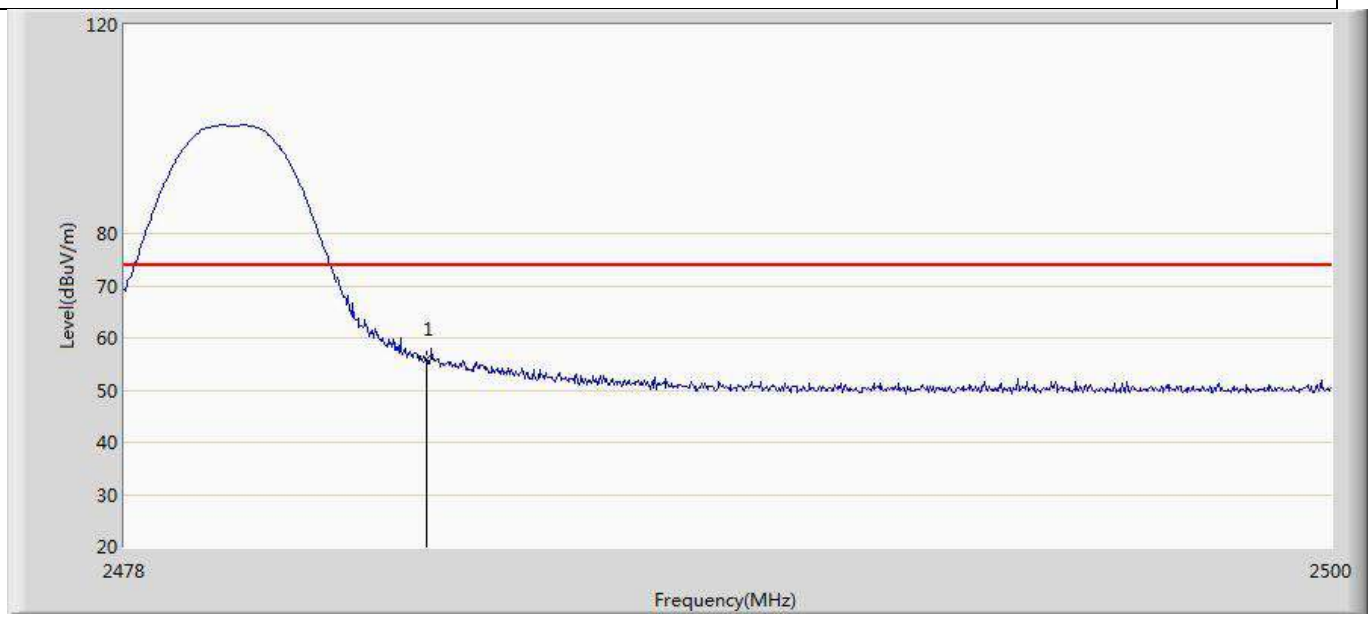
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2483.500	56.431	22.318	-17.569	74.000	34.114	PK
2	*	2483.742	58.741	24.626	-15.259	74.000	34.115	PK

Profile: 24B0863R	Page No.: 22
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 3：Transmit at 2480MHz by LE_Coded S=2	



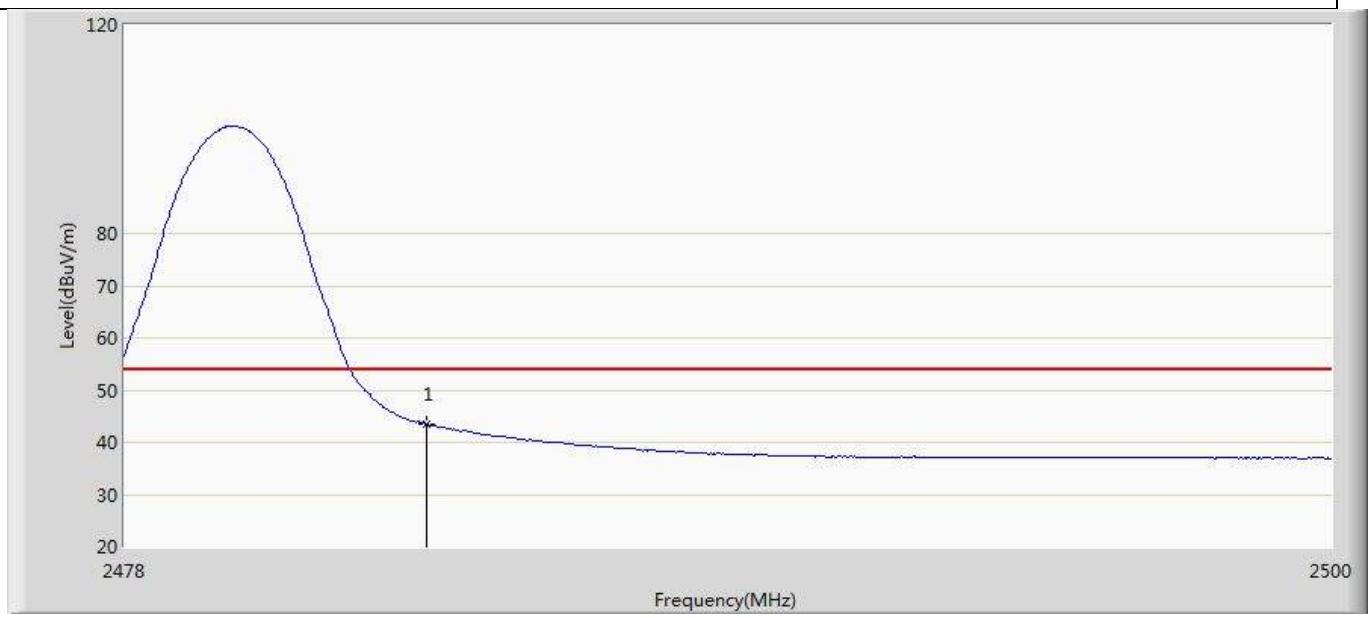
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	42.517	8.404	-11.483	54.000	34.114	AV

Profile: 24B0863R	Page No.: 23
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 3：Transmit at 2480MHz by LE_Coded S=2	



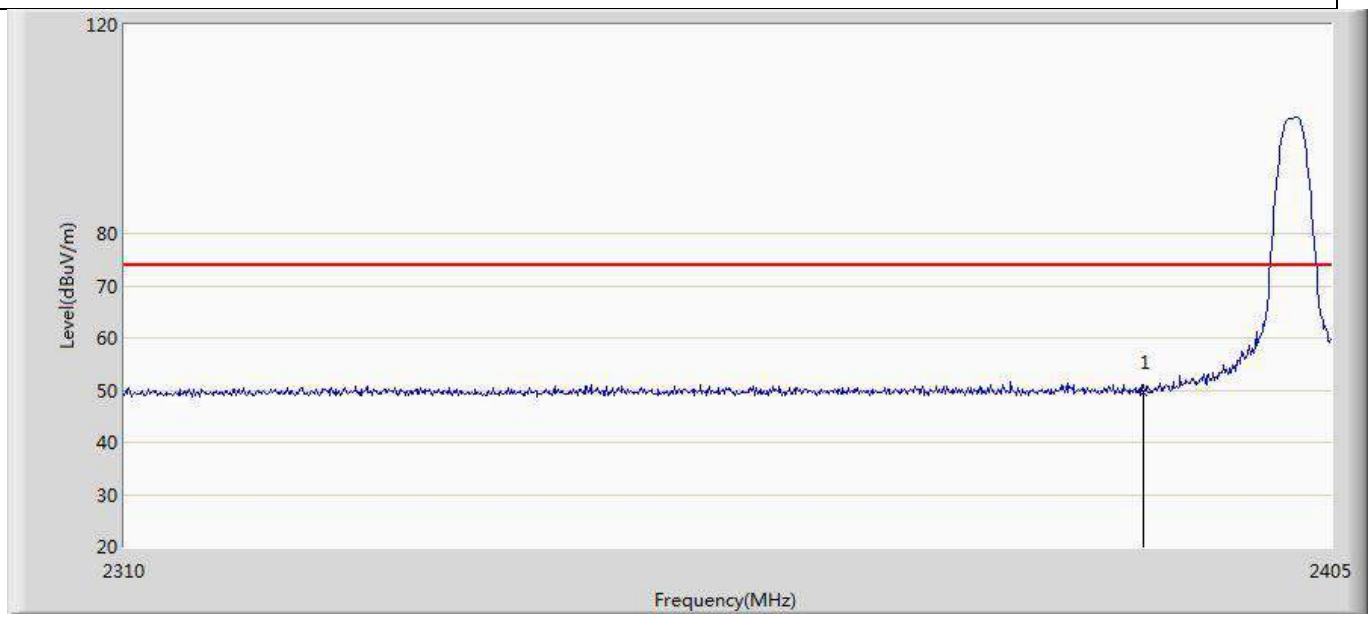
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	55.864	21.751	-18.136	74.000	34.114	PK

Profile: 24B0863R	Page No.: 24
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 3：Transmit at 2480MHz by LE_Coded S=2	



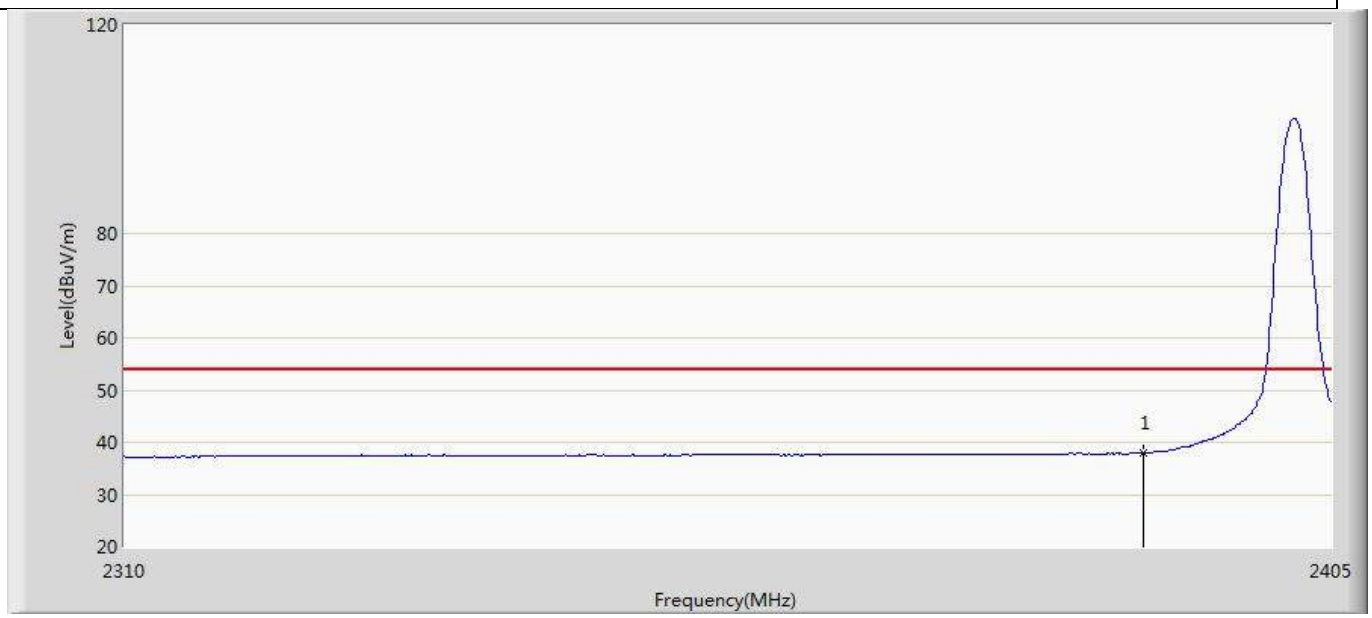
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	43.490	9.377	-10.510	54.000	34.114	AV

Profile: 24B0863R	Page No.: 25
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 4：Transmit at 2402MHz by LE_Coded S=8	



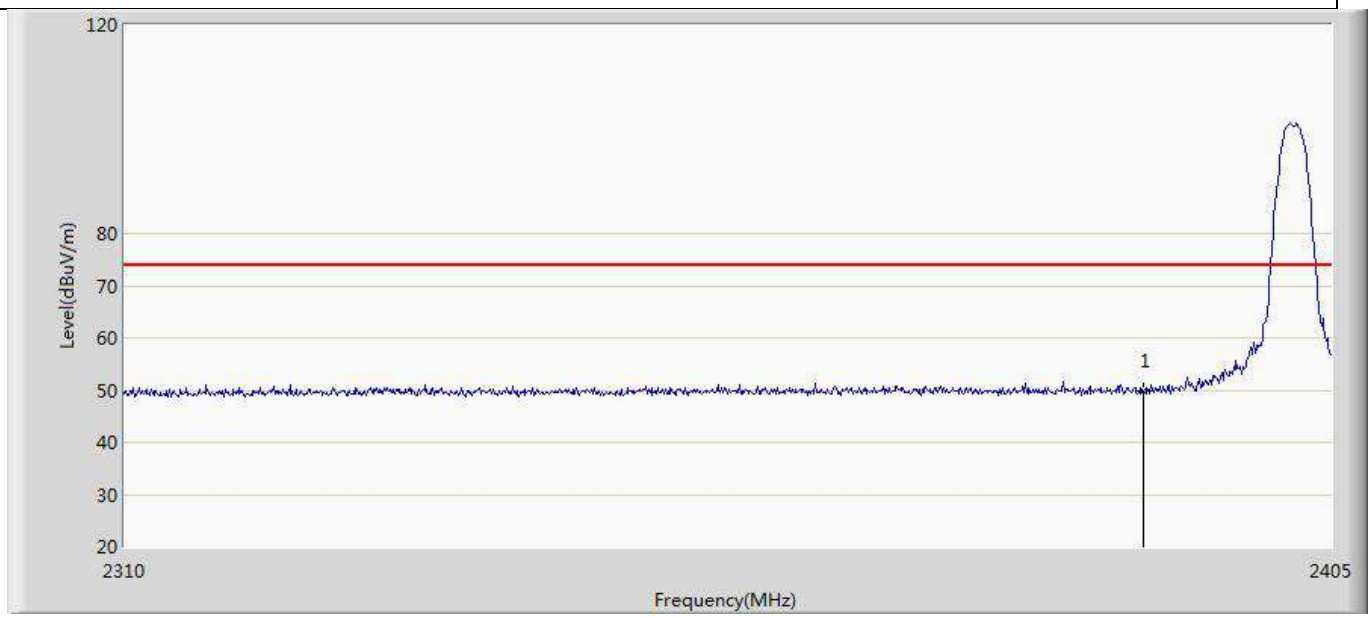
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	49.479	15.378	-24.521	74.000	34.102	PK

Profile: 24B0863R	Page No.: 26
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 4：Transmit at 2402MHz by LE_Coded S=8	



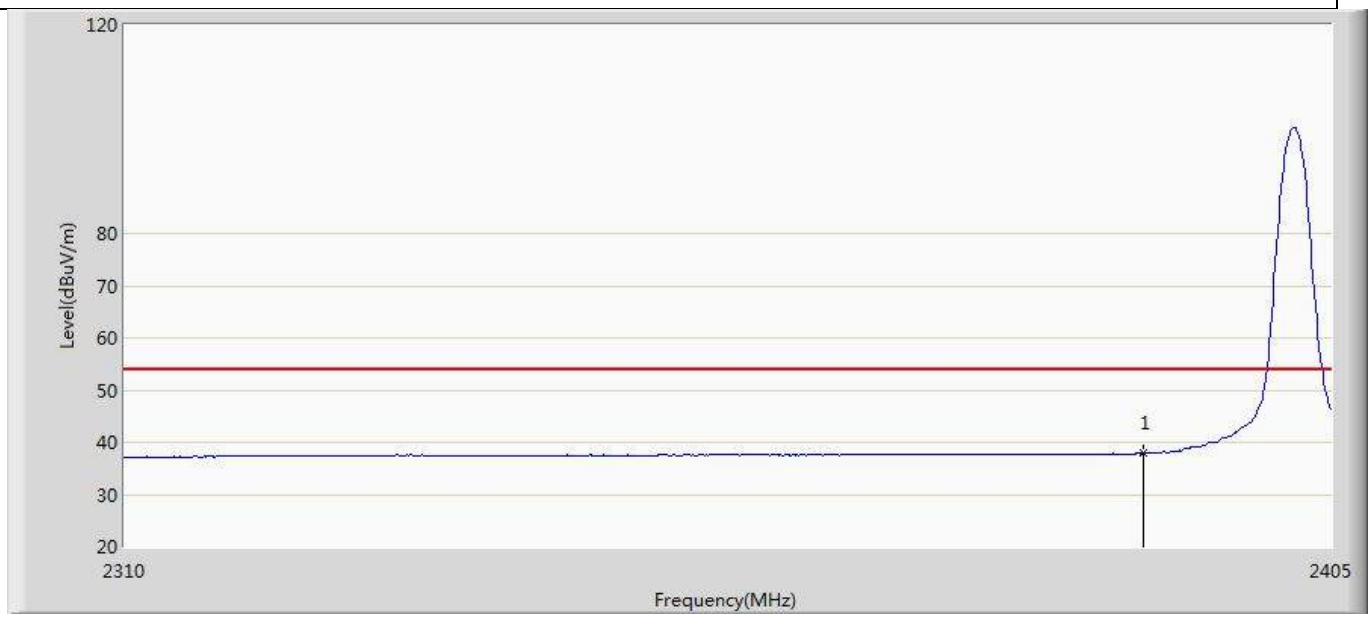
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	38.073	3.972	-15.927	54.000	34.102	AV

Profile: 24B0863R	Page No.: 27
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 4：Transmit at 2402MHz by LE_Coded S=8	



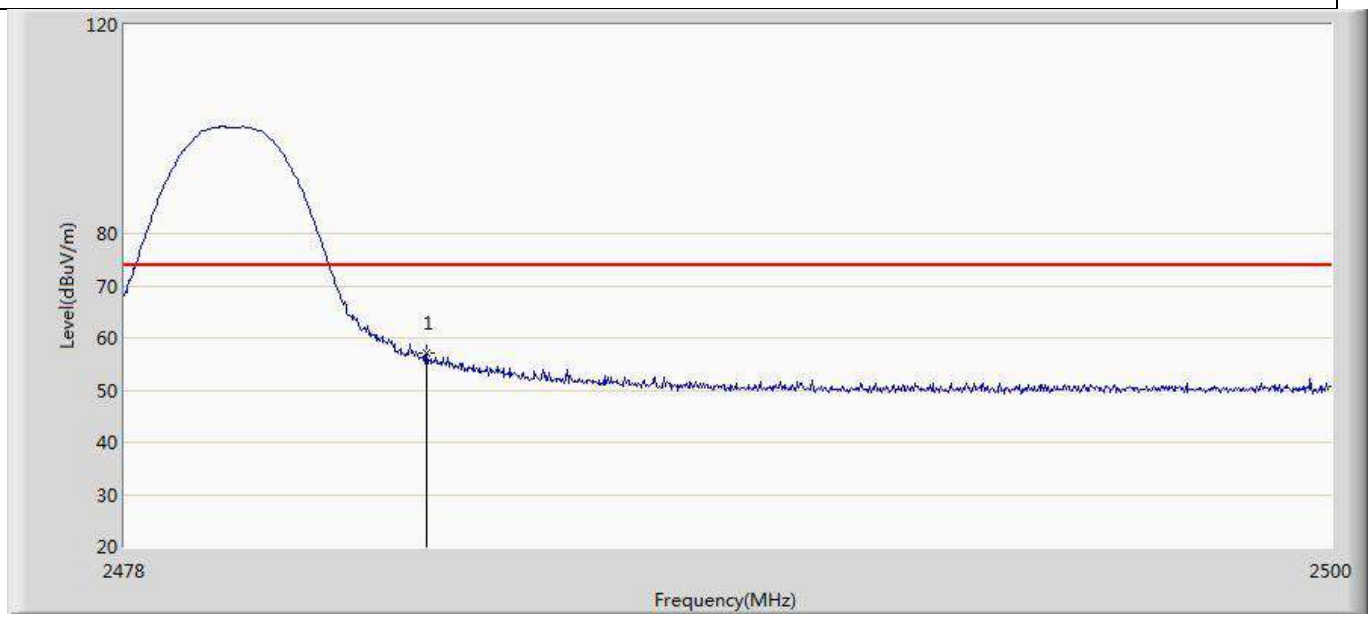
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	49.765	15.664	-24.235	74.000	34.102	PK

Profile: 24B0863R	Page No.: 28
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 4：Transmit at 2402MHz by LE_Coded S=8	



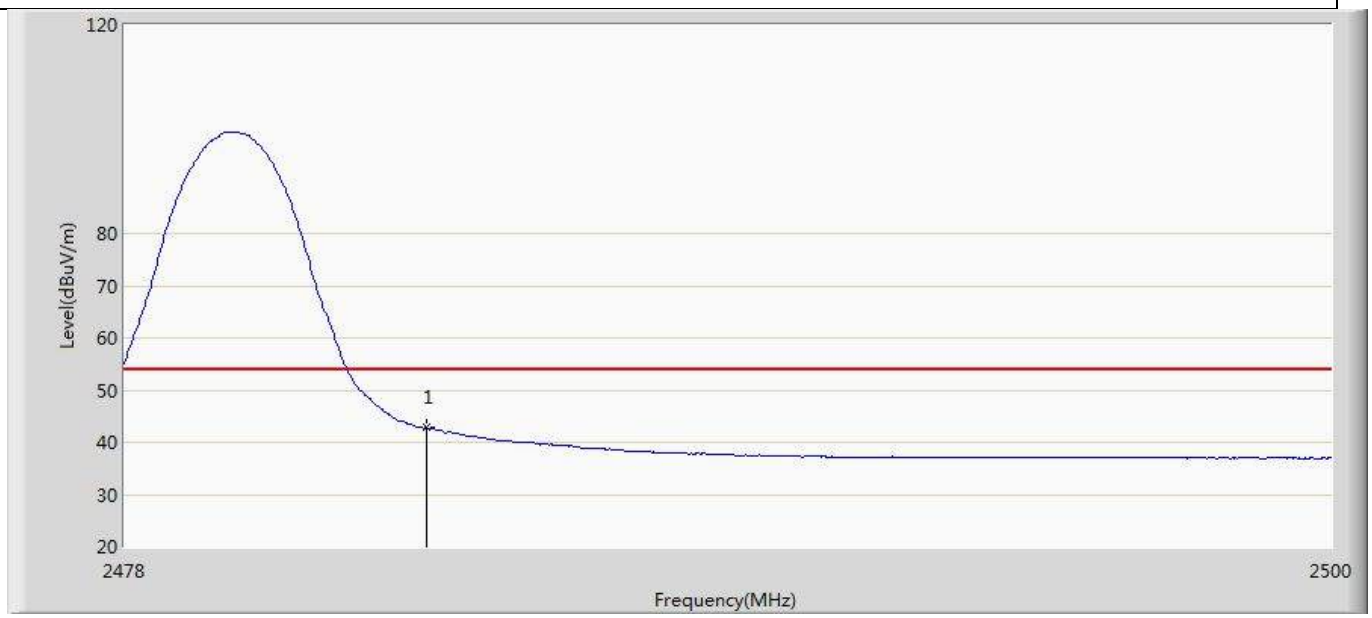
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	37.971	3.870	-16.029	54.000	34.102	AV

Profile: 24B0863R	Page No.: 29
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 4：Transmit at 2480MHz by LE_Coded S=8	



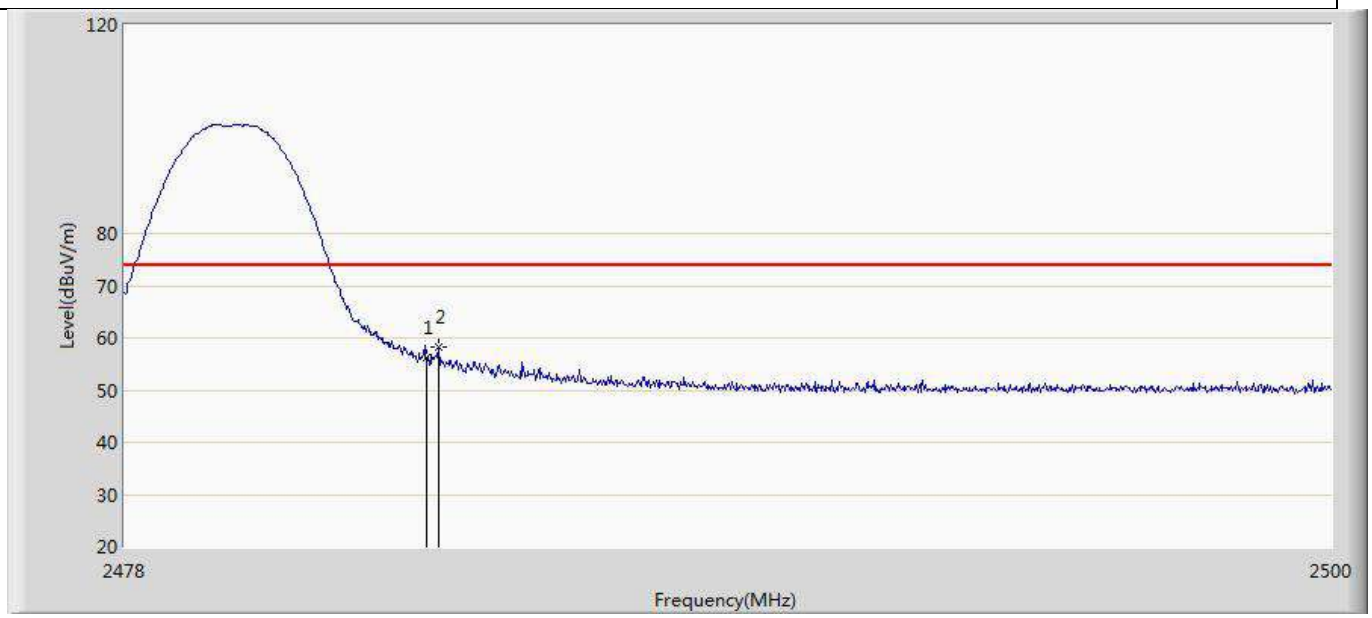
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	57.081	22.968	-16.919	74.000	34.114	PK

Profile: 24B0863R	Page No.: 30
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 4：Transmit at 2480MHz by LE_Coded S=8	



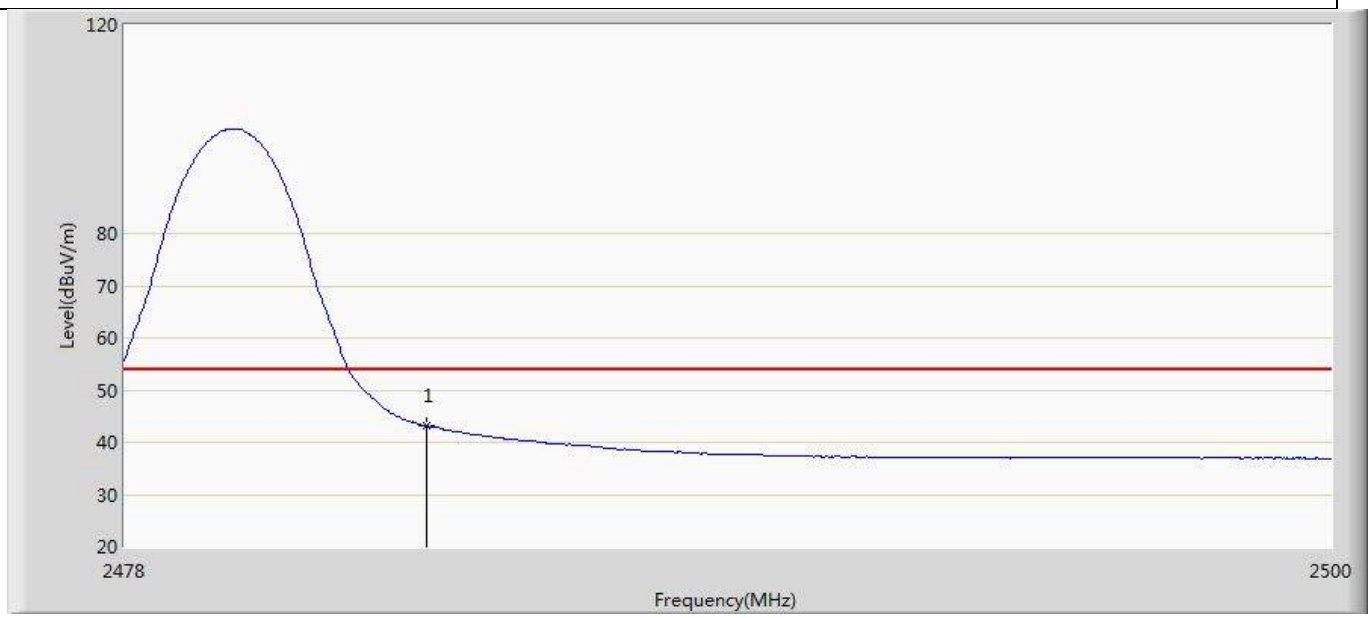
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	42.765	8.652	-11.235	54.000	34.114	AV

Profile: 24B0863R	Page No.: 31
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 4：Transmit at 2480MHz by LE_Coded S=8	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2483.500	56.308	22.195	-17.692	74.000	34.114	PK
2	*	2483.720	58.117	24.002	-15.883	74.000	34.115	PK

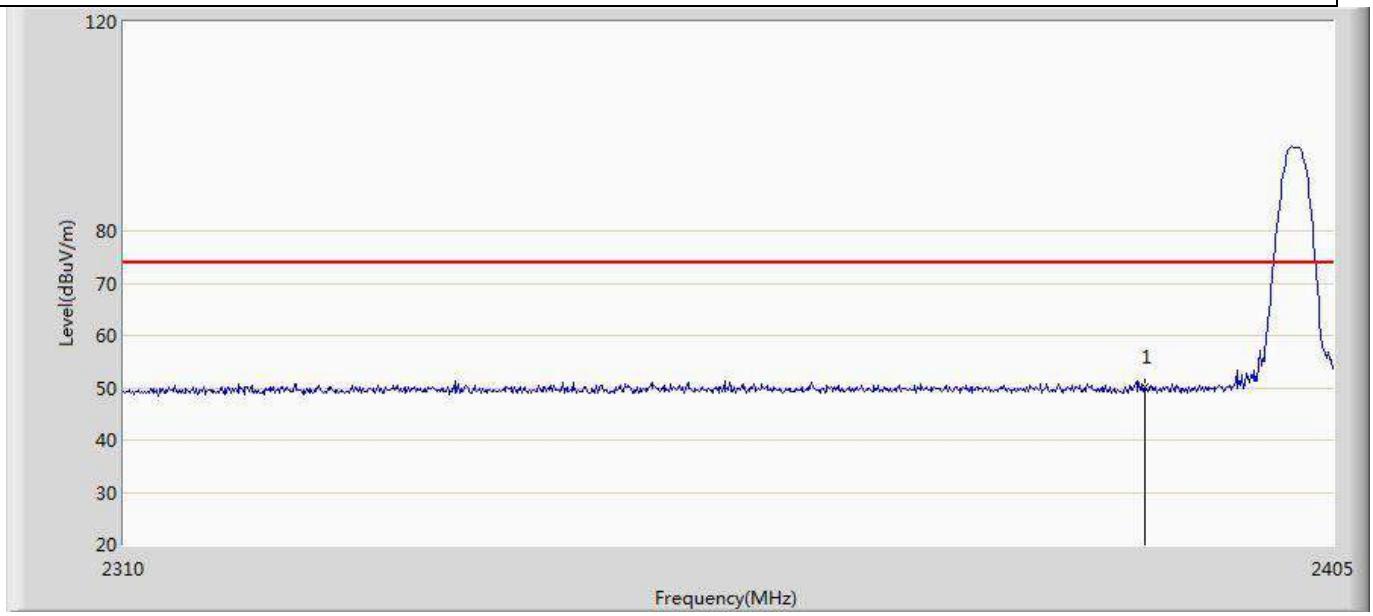
Profile: 24B0863R	Page No.: 32
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 01:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 4：Transmit at 2480MHz by LE_Coded S=8	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	43.076	8.963	-10.924	54.000	34.114	AV

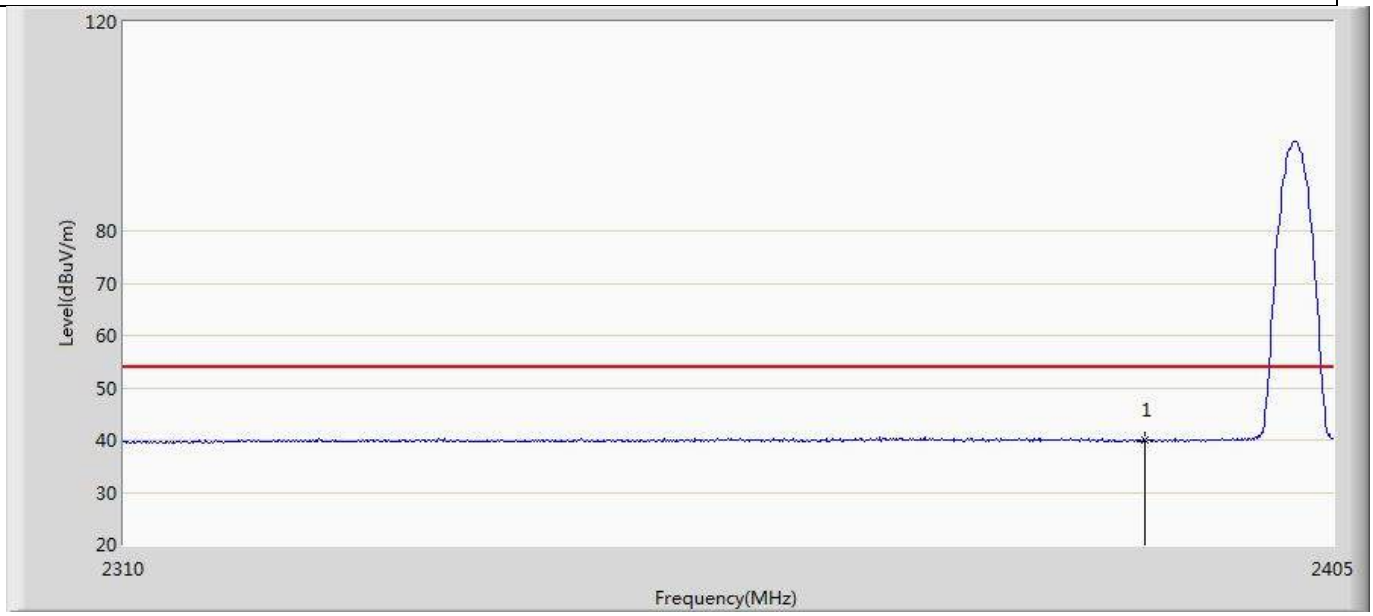
Alternative Capacitor:

Profile: 24B0863R	Page No.: 1
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 19:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2402MHz by LE_1Mbps	



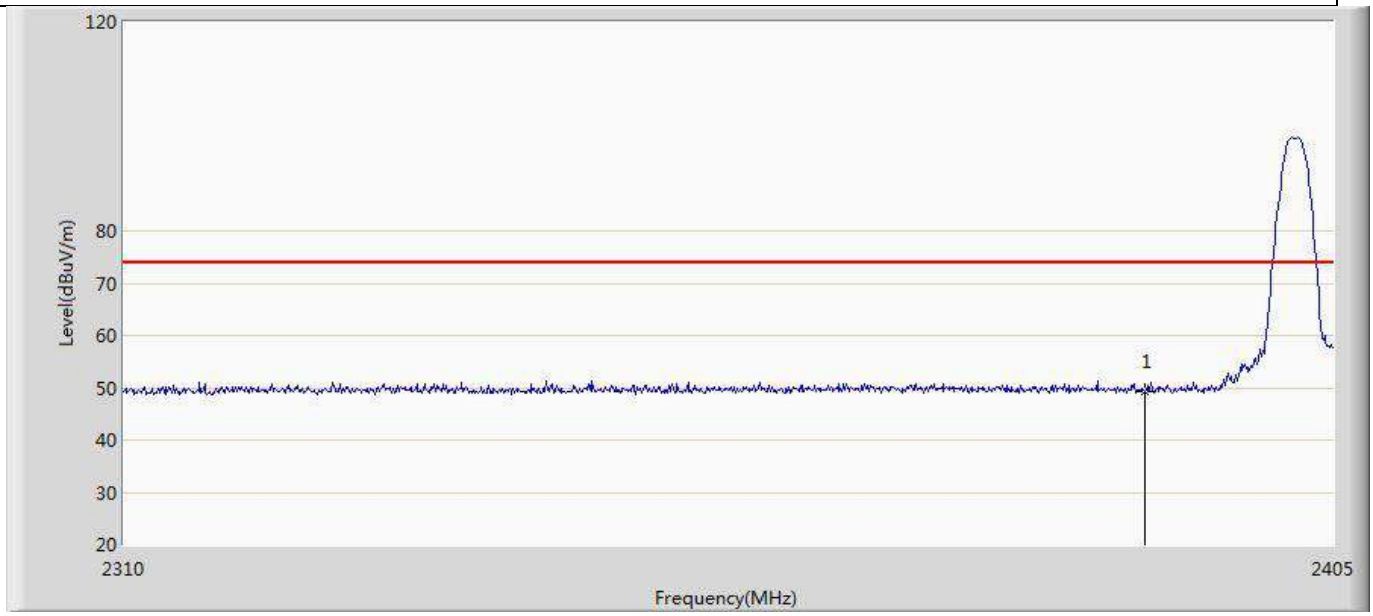
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	50.130	16.029	-23.870	74.000	34.102	PK

Profile: 24B0863R	Page No.: 2
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 19:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2402MHz by LE_1Mbps	



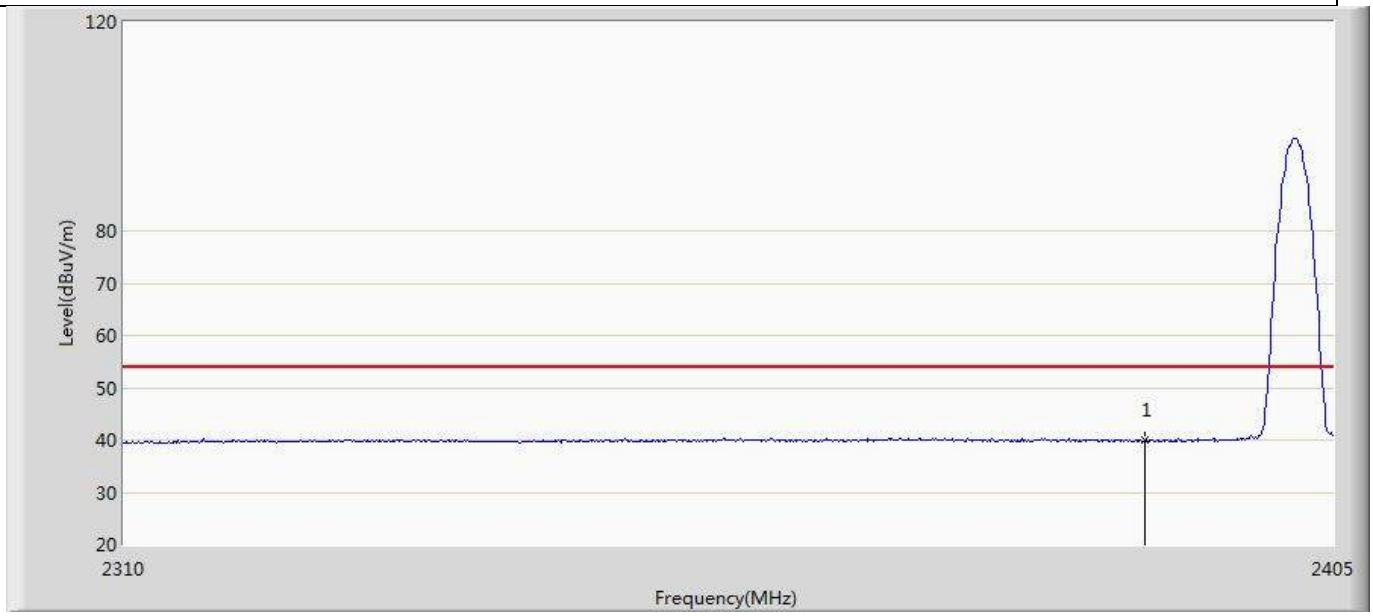
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.857	5.756	-14.143	54.000	34.102	AV

Profile: 24B0863R	Page No.: 3
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 19:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2402MHz by LE_1Mbps	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	49.164	15.063	-24.836	74.000	34.102	PK

Profile: 24B0863R	Page No.: 4
Engineer: Yuliu	
Site: AC5	Time: 2024/12/10 - 19:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: LED Lamp	Power: 120 Vac / 60 Hz
Note: Mode 1：Transmit at 2402MHz by LE_1Mbps	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.912	5.811	-14.088	54.000	34.102	AV

Note:
1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp)

Appendix F: Conducted Spurious Emission

Reference level measurement :

TestMode	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	2402	2402.34	10.18
	2440	2440.35	9.92
	2480	2480.35	9.30
BLE_2M	2402	2402.26	8.02
	2440	2440.27	7.74
	2480	2480.27	7.10
BLE_125K	2402	2402.11	7.55
	2440	2440.11	7.34
	2480	2480.11	6.77
BLE_500K	2402	2402.35	10.20
	2440	2440.35	9.92
	2480	2480.35	9.31

Band edge measurements :

TestMode	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Low	2402	10.18	-42.15	≤-9.82	PASS
	High	2480	9.30	-44.3	≤-10.7	PASS
BLE_2M	Low	2402	8.02	-27.37	≤-11.98	PASS
	High	2480	7.10	-43.05	≤-12.9	PASS
BLE_125K	Low	2402	7.55	-38.91	≤-12.45	PASS
	High	2480	6.77	-43.45	≤-13.23	PASS
BLE_500K	Low	2402	10.20	-40.98	≤-9.8	PASS
	High	2480	9.31	-42.3	≤-10.69	PASS

Conducted Spurious Emission :

TestMode	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	2402	30~1000	10.18	-53.42	≤-9.82	PASS
		1000~3000	10.18	-51.12	≤-9.82	PASS
		3000~5000	10.18	-45.93	≤-9.82	PASS
		5000~7000	10.18	-50.69	≤-9.82	PASS
		7000~9000	10.18	-51.26	≤-9.82	PASS
		9000~11000	10.18	-50.86	≤-9.82	PASS
		11000~13000	10.18	-47.43	≤-9.82	PASS
		13000~15000	10.18	-47.09	≤-9.82	PASS
		15000~17000	10.18	-45.46	≤-9.82	PASS
		17000~19000	10.18	-44.76	≤-9.82	PASS
		19000~21000	10.18	-43.11	≤-9.82	PASS
		21000~23000	10.18	-42.77	≤-9.82	PASS
		23000~25000	10.18	-41.74	≤-9.82	PASS
	2440	30~1000	9.92	-52.67	≤-10.08	PASS

		1000~3000	9.92	-51.21	≤-10.08	PASS
		3000~5000	9.92	-44.18	≤-10.08	PASS
		5000~7000	9.92	-50.39	≤-10.08	PASS
		7000~9000	9.92	-52.48	≤-10.08	PASS
		9000~11000	9.92	-51.12	≤-10.08	PASS
		11000~13000	9.92	-46.67	≤-10.08	PASS
		13000~15000	9.92	-46.57	≤-10.08	PASS
		15000~17000	9.92	-45.08	≤-10.08	PASS
		17000~19000	9.92	-45.07	≤-10.08	PASS
		19000~21000	9.92	-44.01	≤-10.08	PASS
		21000~23000	9.92	-42.45	≤-10.08	PASS
		23000~25000	9.92	-41.26	≤-10.08	PASS
	2480	30~1000	9.30	-52.73	≤-10.7	PASS
		1000~3000	9.30	-51.54	≤-10.7	PASS
		3000~5000	9.30	-47.27	≤-10.7	PASS
		5000~7000	9.30	-51.31	≤-10.7	PASS
		7000~9000	9.30	-51.74	≤-10.7	PASS
		9000~11000	9.30	-51.61	≤-10.7	PASS
		11000~13000	9.30	-48.42	≤-10.7	PASS
		13000~15000	9.30	-47.14	≤-10.7	PASS
		15000~17000	9.30	-45.47	≤-10.7	PASS
		17000~19000	9.30	-45.06	≤-10.7	PASS
		19000~21000	9.30	-44.16	≤-10.7	PASS
		21000~23000	9.30	-43.38	≤-10.7	PASS
		23000~25000	9.30	-41.65	≤-10.7	PASS
BLE_2M	2402	30~1000	8.02	-52.49	≤-11.98	PASS
		1000~3000	8.02	-51.43	≤-11.98	PASS
		3000~5000	8.02	-46.3	≤-11.98	PASS
		5000~7000	8.02	-51.09	≤-11.98	PASS
		7000~9000	8.02	-51.63	≤-11.98	PASS
		9000~11000	8.02	-50.82	≤-11.98	PASS
		11000~13000	8.02	-49.67	≤-11.98	PASS
		13000~15000	8.02	-46.85	≤-11.98	PASS
		15000~17000	8.02	-44.89	≤-11.98	PASS
		17000~19000	8.02	-44.74	≤-11.98	PASS
		19000~21000	8.02	-42.82	≤-11.98	PASS
		21000~23000	8.02	-43.04	≤-11.98	PASS
		23000~25000	8.02	-41.6	≤-11.98	PASS
	2440	30~1000	7.74	-53.68	≤-12.26	PASS
		1000~3000	7.74	-51.86	≤-12.26	PASS
		3000~5000	7.74	-43.81	≤-12.26	PASS
		5000~7000	7.74	-50.95	≤-12.26	PASS
		7000~9000	7.74	-51.92	≤-12.26	PASS
		9000~11000	7.74	-51.75	≤-12.26	PASS
		11000~13000	7.74	-47.69	≤-12.26	PASS
		13000~15000	7.74	-46.92	≤-12.26	PASS
		15000~17000	7.74	-44.77	≤-12.26	PASS
		17000~19000	7.74	-44.51	≤-12.26	PASS
		19000~21000	7.74	-42.96	≤-12.26	PASS
		21000~23000	7.74	-42.53	≤-12.26	PASS
		23000~25000	7.74	-41.92	≤-12.26	PASS

	2480	30~1000	7.10	-53.51	≤-12.9	PASS
		1000~3000	7.10	-52.15	≤-12.9	PASS
		3000~5000	7.10	-47.23	≤-12.9	PASS
		5000~7000	7.10	-51.05	≤-12.9	PASS
		7000~9000	7.10	-52.49	≤-12.9	PASS
		9000~11000	7.10	-51.21	≤-12.9	PASS
		11000~13000	7.10	-48.9	≤-12.9	PASS
		13000~15000	7.10	-47.23	≤-12.9	PASS
		15000~17000	7.10	-45.7	≤-12.9	PASS
		17000~19000	7.10	-45.24	≤-12.9	PASS
		19000~21000	7.10	-42.99	≤-12.9	PASS
		21000~23000	7.10	-42.87	≤-12.9	PASS
		23000~25000	7.10	-41.7	≤-12.9	PASS
BLE_125K	2402	30~1000	7.55	-53.34	≤-12.45	PASS
		1000~3000	7.55	-51.61	≤-12.45	PASS
		3000~5000	7.55	-45.73	≤-12.45	PASS
		5000~7000	7.55	-50.07	≤-12.45	PASS
		7000~9000	7.55	-51.73	≤-12.45	PASS
		9000~11000	7.55	-51.44	≤-12.45	PASS
		11000~13000	7.55	-48.86	≤-12.45	PASS
		13000~15000	7.55	-46.33	≤-12.45	PASS
		15000~17000	7.55	-44.3	≤-12.45	PASS
		17000~19000	7.55	-44.53	≤-12.45	PASS
		19000~21000	7.55	-43.4	≤-12.45	PASS
		21000~23000	7.55	-42.41	≤-12.45	PASS
		23000~25000	7.55	-41.86	≤-12.45	PASS
	2440	30~1000	7.34	-53.24	≤-12.66	PASS
		1000~3000	7.34	-51.43	≤-12.66	PASS
		3000~5000	7.34	-45.95	≤-12.66	PASS
		5000~7000	7.34	-50.78	≤-12.66	PASS
		7000~9000	7.34	-51.32	≤-12.66	PASS
		9000~11000	7.34	-51.32	≤-12.66	PASS
		11000~13000	7.34	-48.21	≤-12.66	PASS
		13000~15000	7.34	-47.16	≤-12.66	PASS
		15000~17000	7.34	-45.41	≤-12.66	PASS
		17000~19000	7.34	-45.21	≤-12.66	PASS
		19000~21000	7.34	-43.41	≤-12.66	PASS
		21000~23000	7.34	-42.94	≤-12.66	PASS
		23000~25000	7.34	-40.85	≤-12.66	PASS
	2480	30~1000	6.77	-53.83	≤-13.23	PASS
		1000~3000	6.77	-51.08	≤-13.23	PASS
		3000~5000	6.77	-47	≤-13.23	PASS
		5000~7000	6.77	-50.5	≤-13.23	PASS
		7000~9000	6.77	-52.29	≤-13.23	PASS
		9000~11000	6.77	-51.14	≤-13.23	PASS
		11000~13000	6.77	-49.18	≤-13.23	PASS
		13000~15000	6.77	-47.08	≤-13.23	PASS
		15000~17000	6.77	-44.94	≤-13.23	PASS
		17000~19000	6.77	-45.67	≤-13.23	PASS
		19000~21000	6.77	-43.63	≤-13.23	PASS
		21000~23000	6.77	-43.37	≤-13.23	PASS

		23000~25000	6.77	-41.16	≤-13.23	PASS
BLE_500K	2402	30~1000	10.20	-52.74	≤-9.8	PASS
		1000~3000	10.20	-50.07	≤-9.8	PASS
		3000~5000	10.20	-45.37	≤-9.8	PASS
		5000~7000	10.20	-50.85	≤-9.8	PASS
		7000~9000	10.20	-51.78	≤-9.8	PASS
		9000~11000	10.20	-50.46	≤-9.8	PASS
		11000~13000	10.20	-48.25	≤-9.8	PASS
		13000~15000	10.20	-47.29	≤-9.8	PASS
		15000~17000	10.20	-45.89	≤-9.8	PASS
		17000~19000	10.20	-44.88	≤-9.8	PASS
		19000~21000	10.20	-43.02	≤-9.8	PASS
		21000~23000	10.20	-42.89	≤-9.8	PASS
		23000~25000	10.20	-41.73	≤-9.8	PASS
	2440	30~1000	9.92	-53.63	≤-10.08	PASS
		1000~3000	9.92	-52.03	≤-10.08	PASS
		3000~5000	9.92	-44.89	≤-10.08	PASS
		5000~7000	9.92	-51.29	≤-10.08	PASS
		7000~9000	9.92	-51.93	≤-10.08	PASS
		9000~11000	9.92	-51.24	≤-10.08	PASS
		11000~13000	9.92	-47.28	≤-10.08	PASS
		13000~15000	9.92	-47.27	≤-10.08	PASS
		15000~17000	9.92	-45.81	≤-10.08	PASS
		17000~19000	9.92	-44.3	≤-10.08	PASS
		19000~21000	9.92	-43.71	≤-10.08	PASS
		21000~23000	9.92	-42.62	≤-10.08	PASS
		23000~25000	9.92	-40.41	≤-10.08	PASS
	2480	30~1000	9.31	-53.93	≤-10.69	PASS
		1000~3000	9.31	-51.88	≤-10.69	PASS
		3000~5000	9.31	-46.89	≤-10.69	PASS
		5000~7000	9.31	-51.14	≤-10.69	PASS
		7000~9000	9.31	-52.45	≤-10.69	PASS
		9000~11000	9.31	-51.04	≤-10.69	PASS
		11000~13000	9.31	-46.93	≤-10.69	PASS
		13000~15000	9.31	-47.52	≤-10.69	PASS
		15000~17000	9.31	-45.36	≤-10.69	PASS
		17000~19000	9.31	-45.37	≤-10.69	PASS
		19000~21000	9.31	-43.37	≤-10.69	PASS
		21000~23000	9.31	-43.58	≤-10.69	PASS
		23000~25000	9.31	-41.66	≤-10.69	PASS

Test Graphs Reference level measurement :

BLE_1M_Ant1_2402

BLE_1M_Ant1_2440

BLE_1M_Ant1_2480

BLE_2M_Ant1_2402

BLE_2M_Ant1_2440

BLE_2M_Ant1_2480

BLE_125K_Ant1_2402

BLE_125K_Ant1_2440

BLE_125K_Ant1_2480

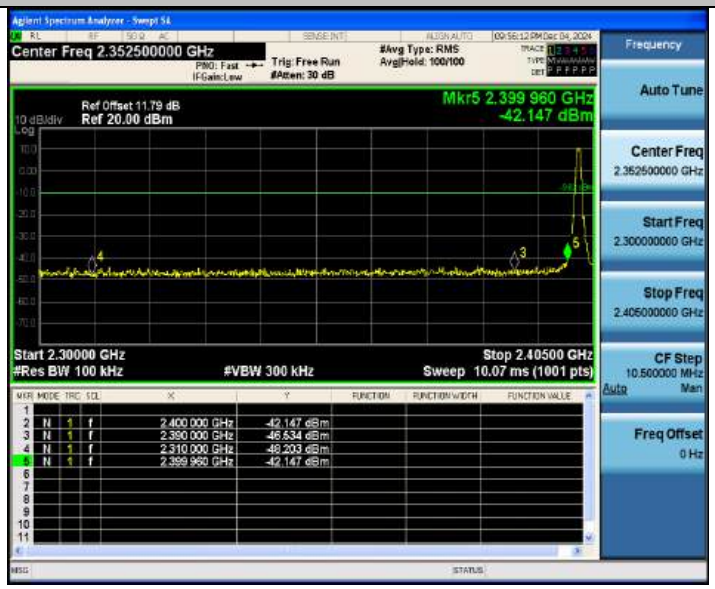
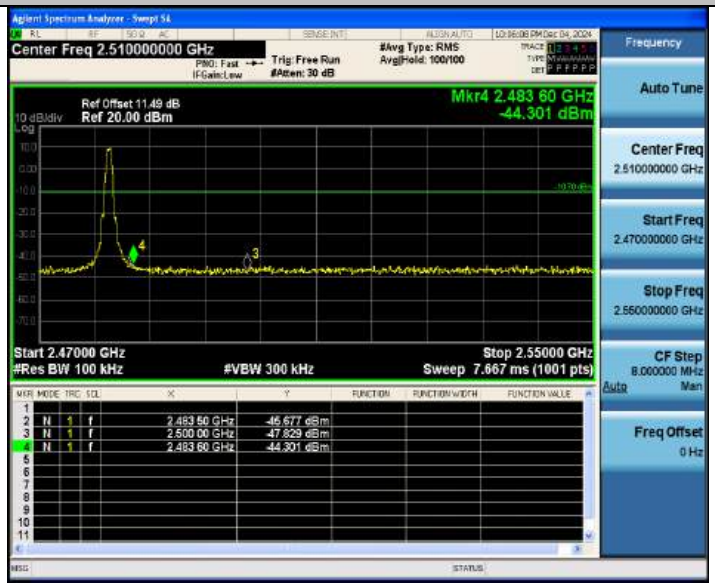
BLE_500K_Ant1_2402

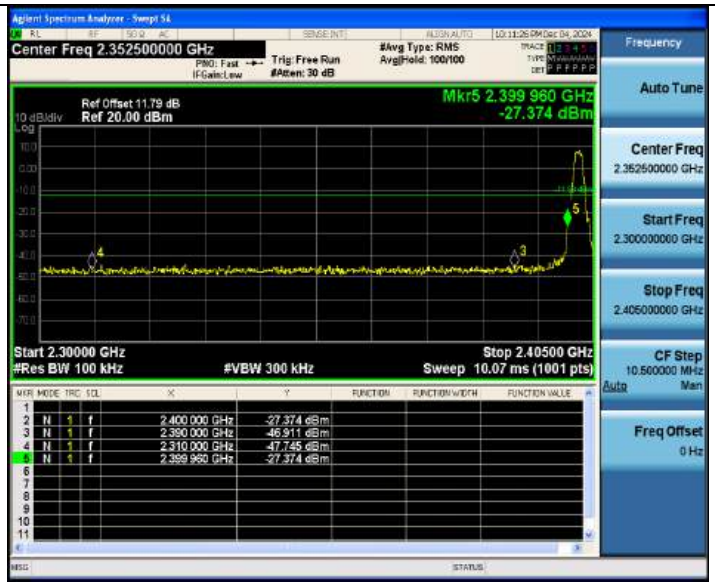
BLE_500K_Ant1_2440

BLE_500K_Ant1_2480

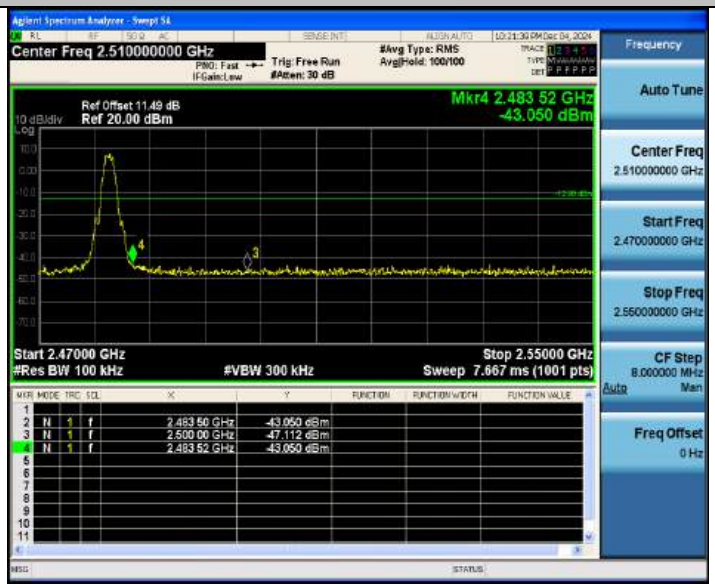

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 11.49 dB
10 dB/div
Ref 30.00 dBm
Mkr1 2.480 347 3 GHz
9.307 dBm
Center 2.4800000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 1.092 MHz
Sweep (#Swp) 1.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.479454000 GHz
Stop Freq
2.480546000 GHz
CF Step
109.200 kHz
Auto
Man
Freq Offset
0 Hz

Test Graphs Band edge measurements：

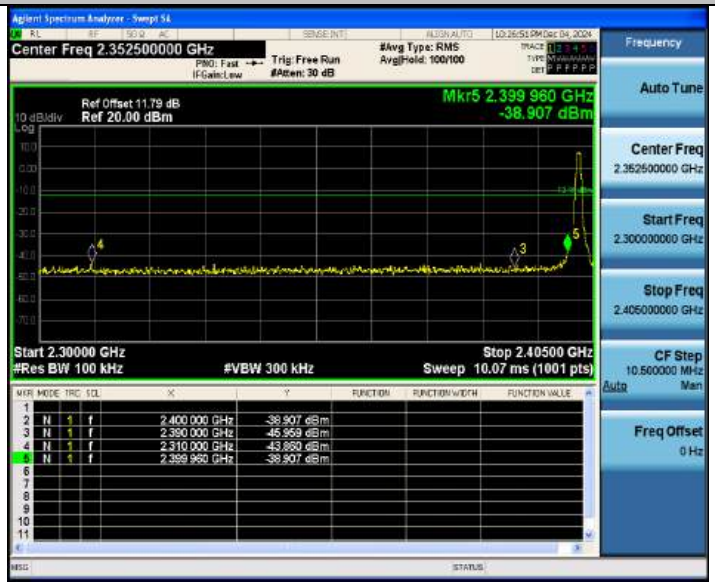
BLE_1M_Ant1_Low_2402

BLE_1M_Ant1_High_2480

BLE_2M_Ant1_Low_2402



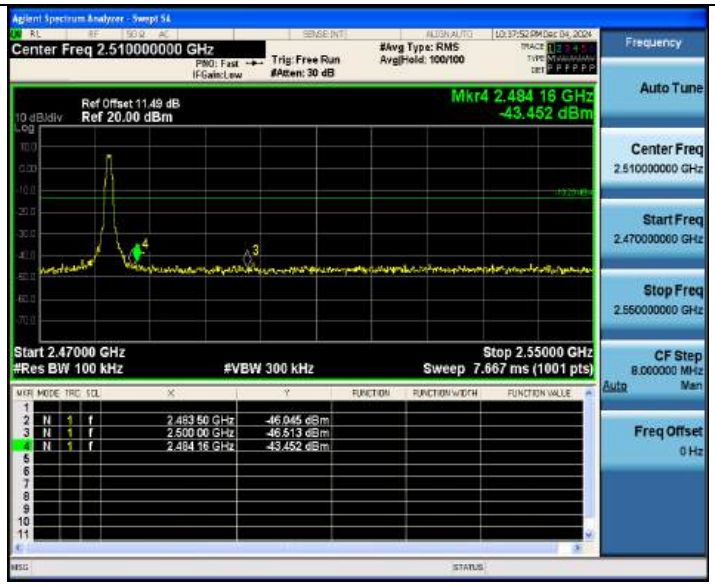
BLE_2M_Ant1_High_2480



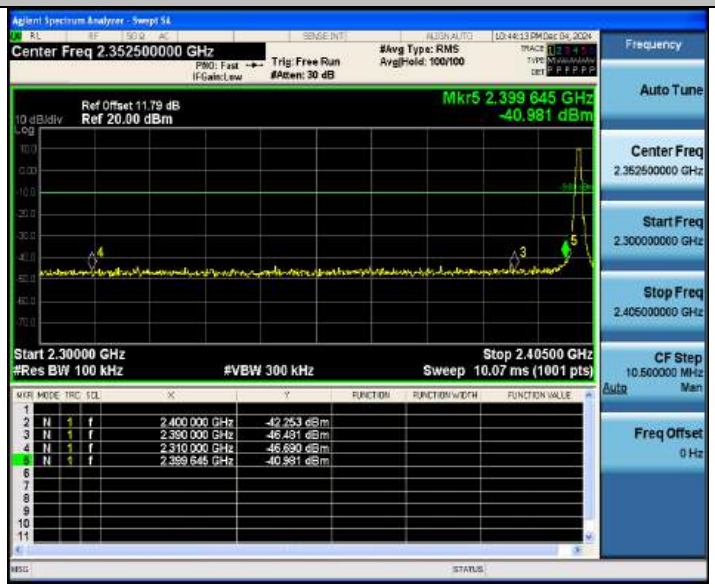
BLE_125K_Ant1_Low_2402



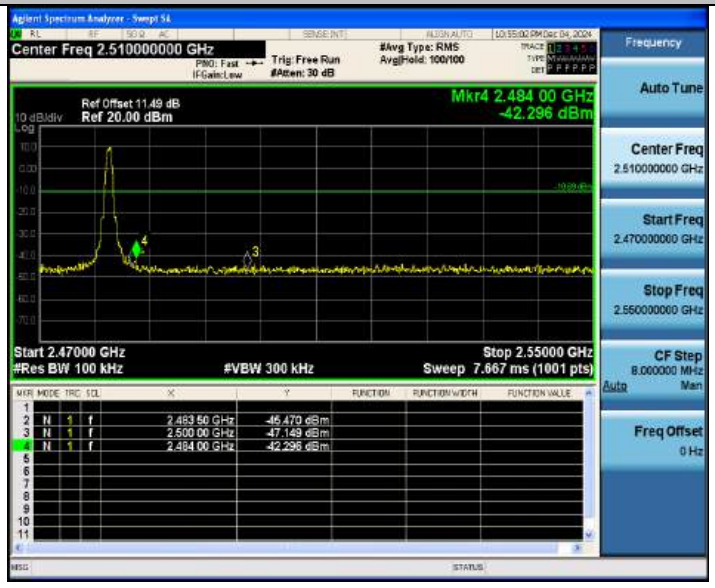
BLE_125K_Ant1_High_2480



BLE_500K_Ant1_Low_2402

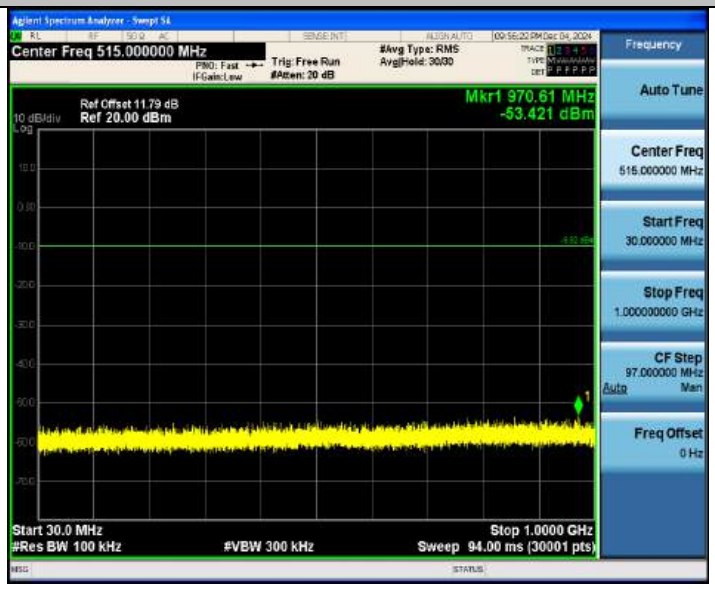


BLE_500K_Ant1_High_2480

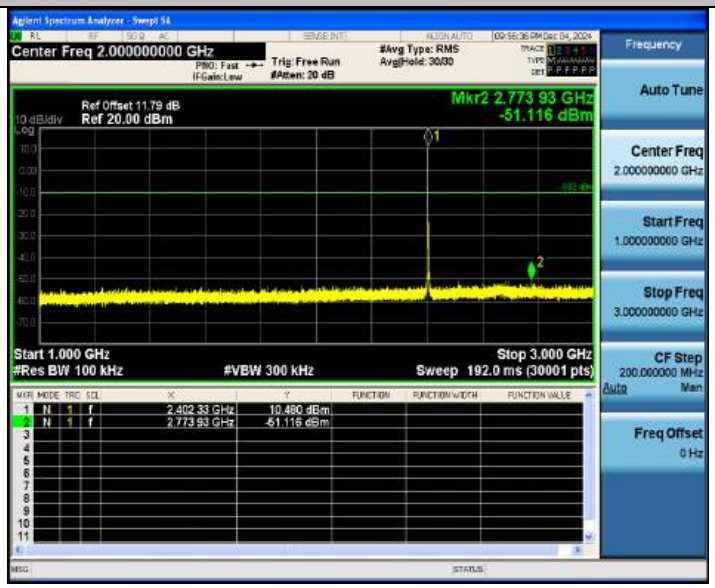


Test Graphs Conducted Spurious Emission :

BLE_1M_Ant1_2402_30~1000

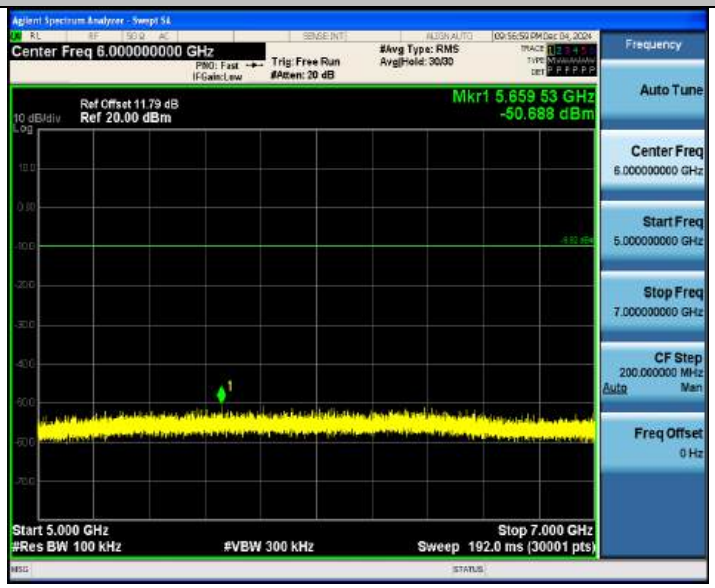


BLE_1M_Ant1_2402_1000~3000

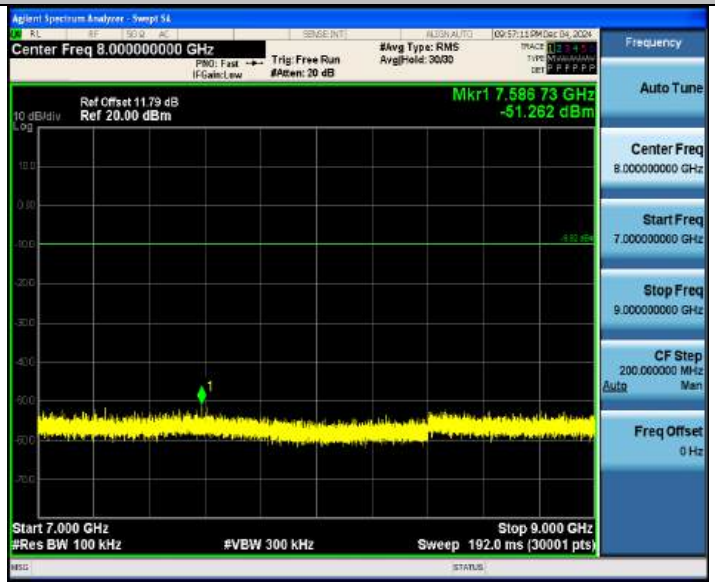


BLE_1M_Ant1_2402_3000~5000

BLE_1M_Ant1_2402_5000~7000

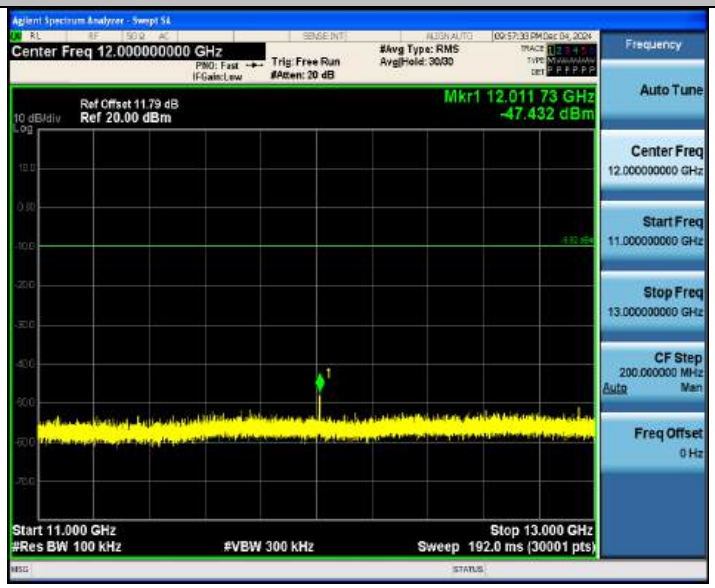


BLE_1M_Ant1_2402_7000~9000



BLE_1M_Ant1_2402_9000~11000

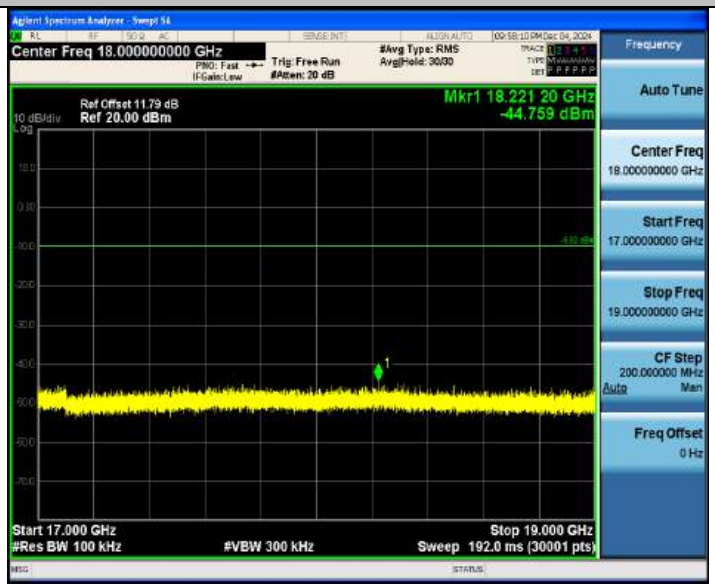
BLE_1M_Ant1_2402_11000~13000



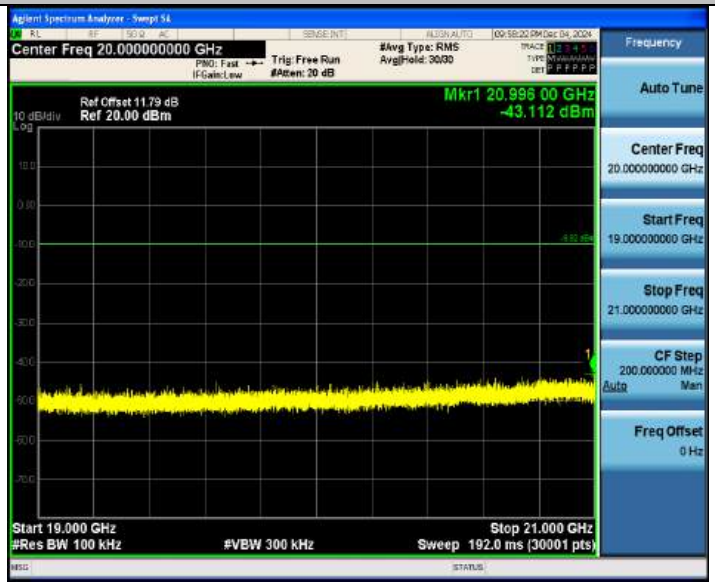
BLE_1M_Ant1_2402_13000~15000

BLE_1M_Ant1_2402_15000~17000

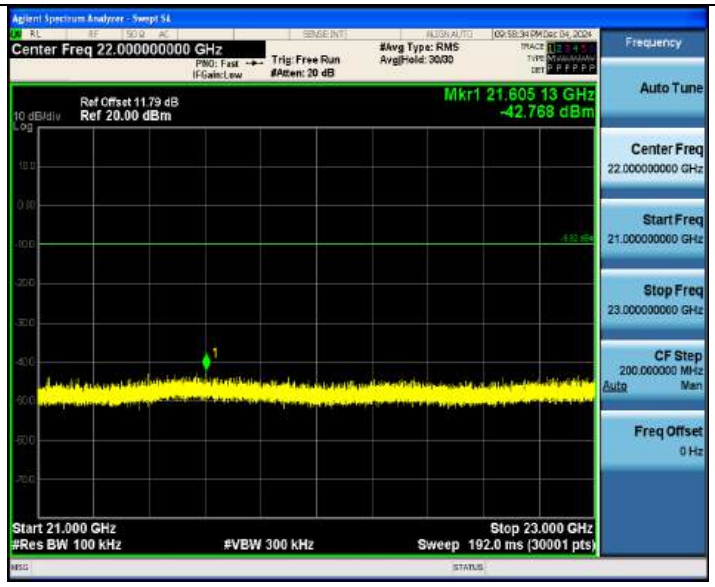
BLE_1M_Ant1_2402_17000~19000



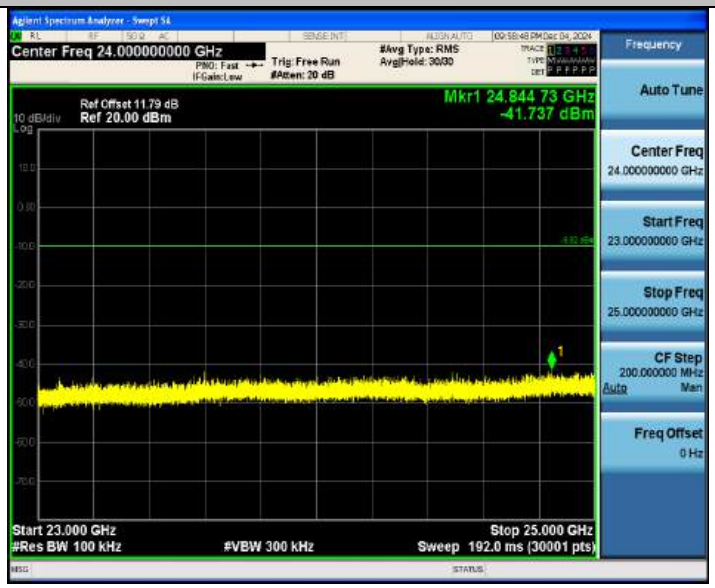
BLE_1M_Ant1_2402_19000~21000



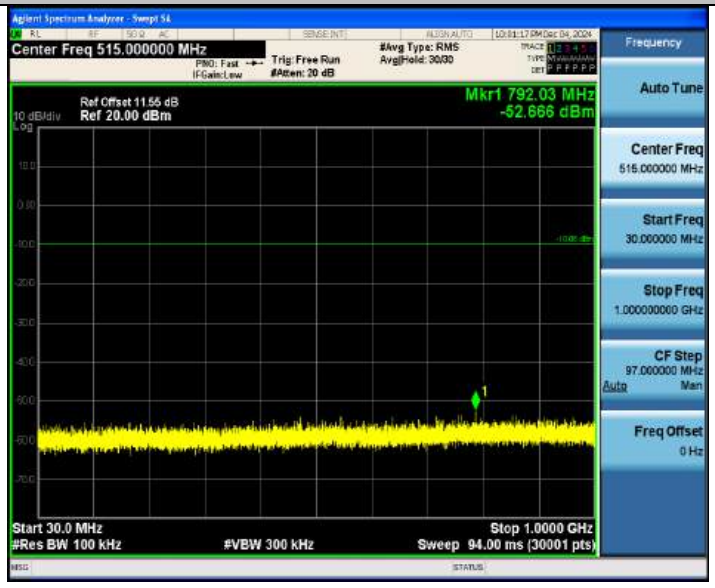
BLE_1M_Ant1_2402_21000~23000



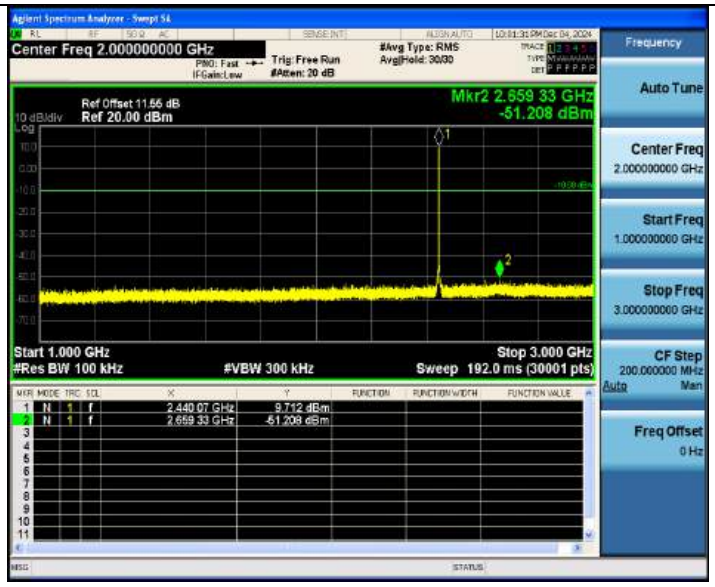
BLE_1M_Ant1_2402_23000~25000



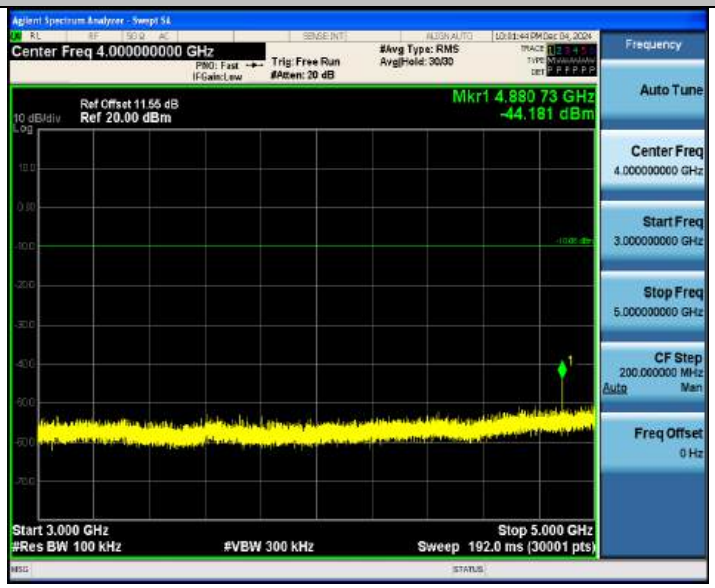
BLE_1M_Ant1_2440_30~1000



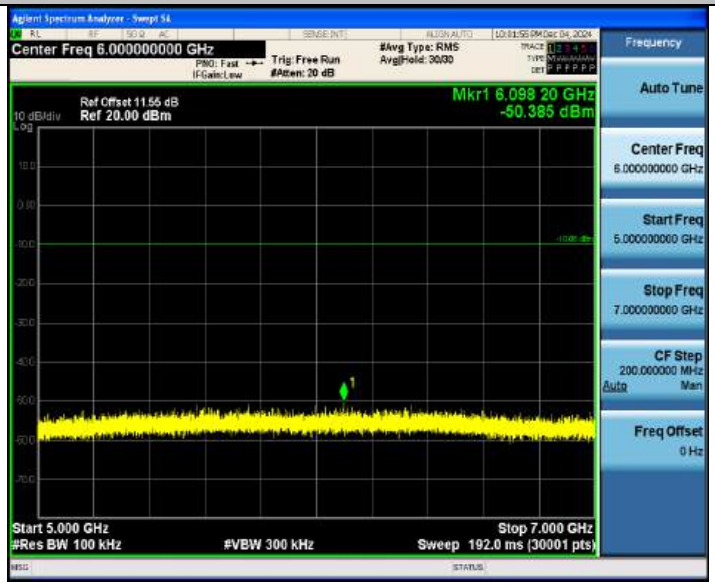
BLE_1M_Ant1_2440_1000~3000



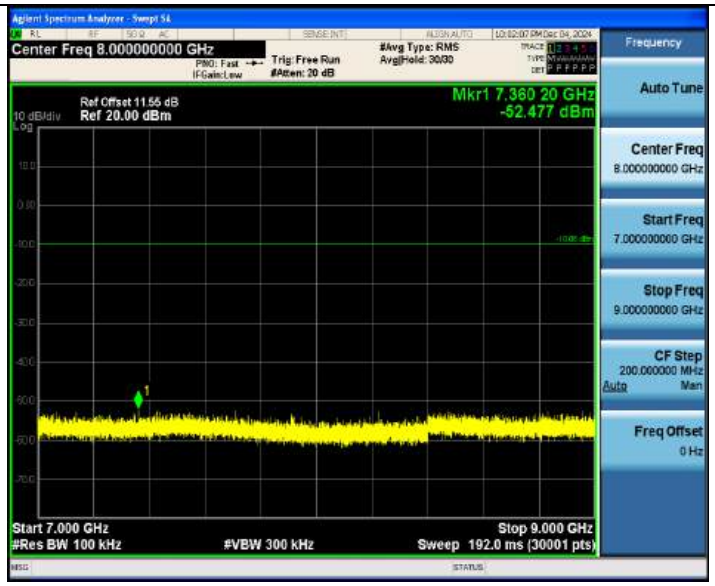
BLE_1M_Ant1_2440_3000~5000



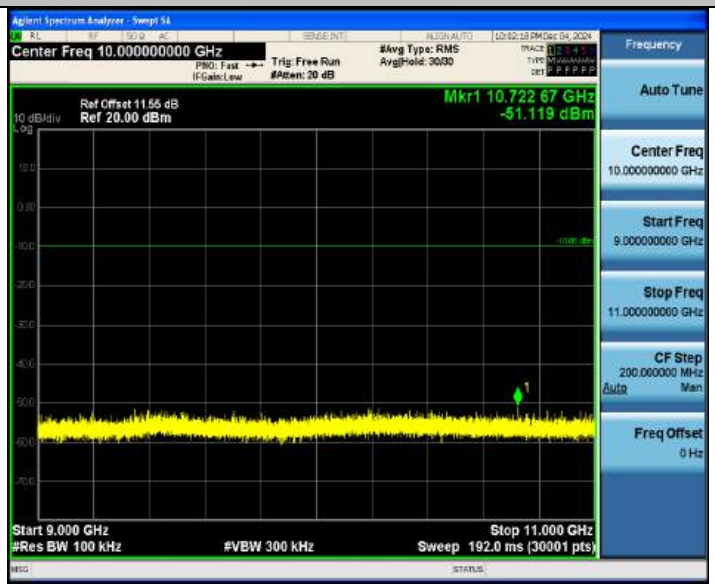
BLE_1M_Ant1_2440_5000~7000



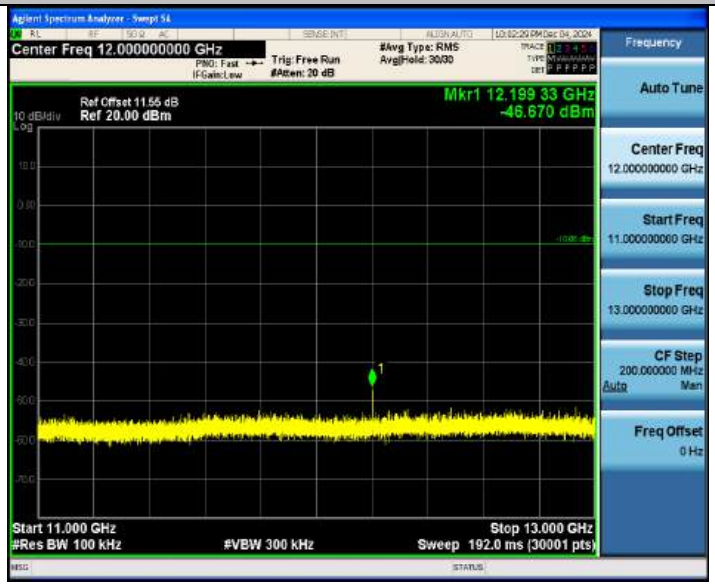
BLE_1M_Ant1_2440_7000~9000



BLE_1M_Ant1_2440_9000~11000

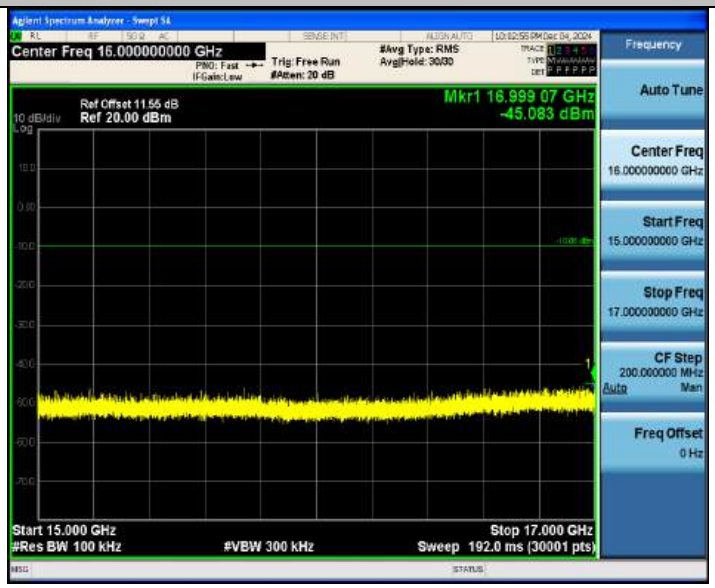


BLE_1M_Ant1_2440_11000~13000

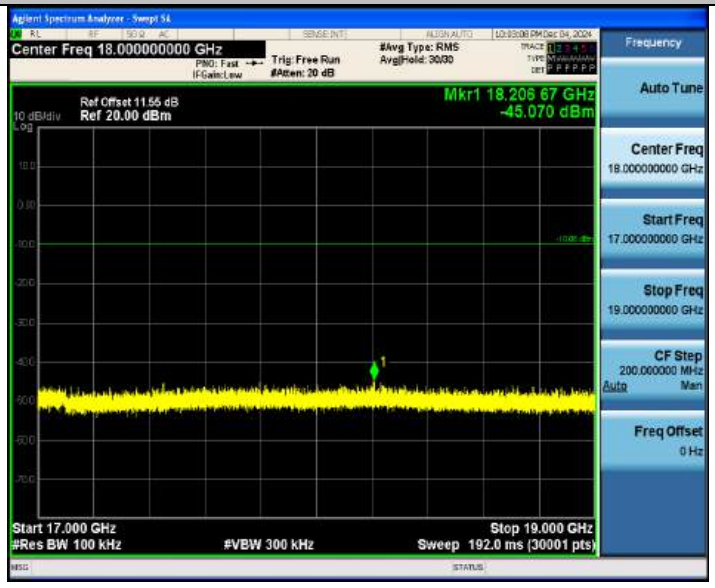


BLE_1M_Ant1_2440_13000~15000

BLE_1M_Ant1_2440_15000~17000

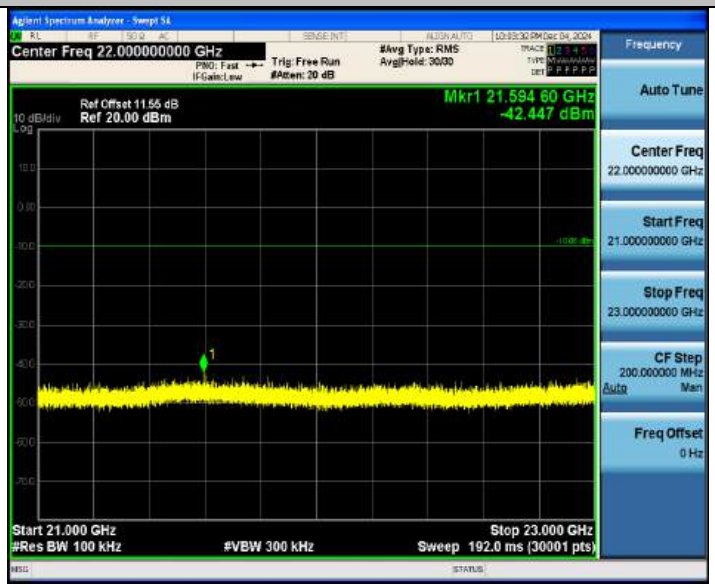


BLE_1M_Ant1_2440_17000~19000



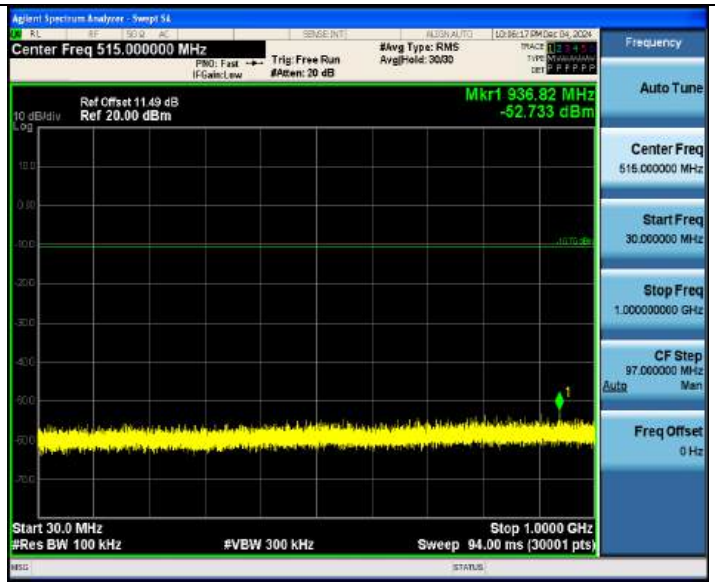
BLE_1M_Ant1_2440_19000~21000

BLE_1M_Ant1_2440_21000~23000

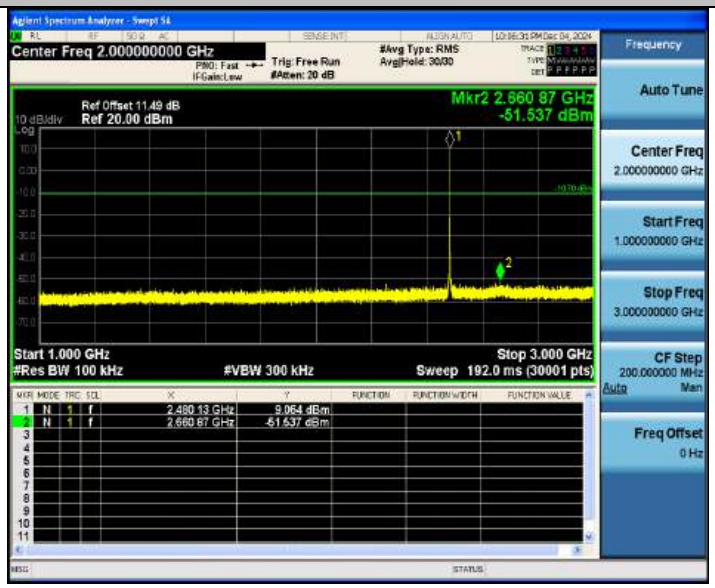


BLE_1M_Ant1_2440_23000~25000

BLE_1M_Ant1_2480_30~1000



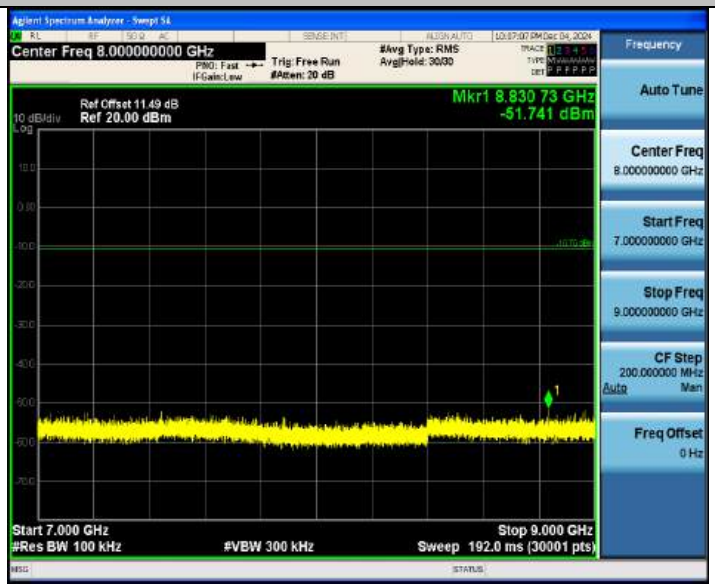
BLE_1M_Ant1_2480_1000~3000



BLE_1M_Ant1_2480_3000~5000

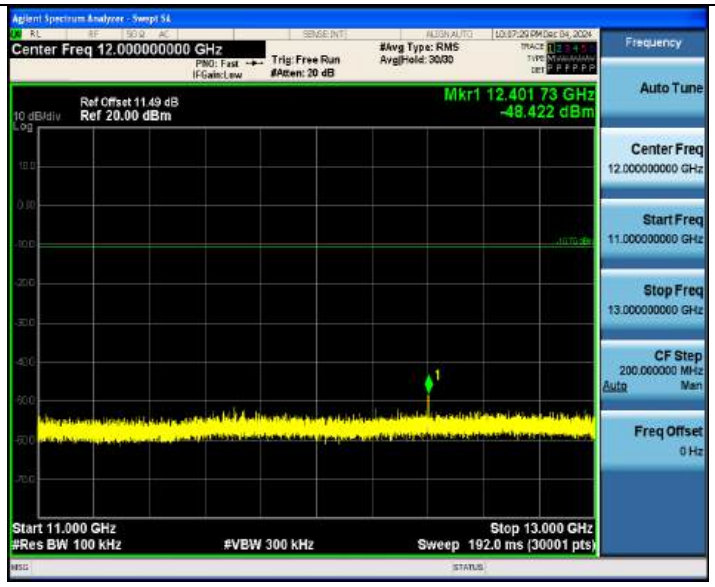
BLE_1M_Ant1_2480_5000~7000

BLE_1M_Ant1_2480_7000~9000



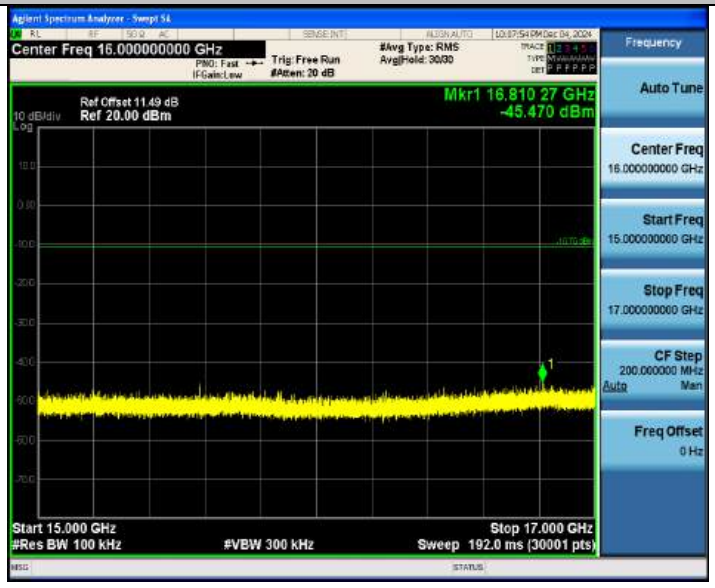
BLE_1M_Ant1_2480_9000~11000

BLE_1M_Ant1_2480_11000~13000

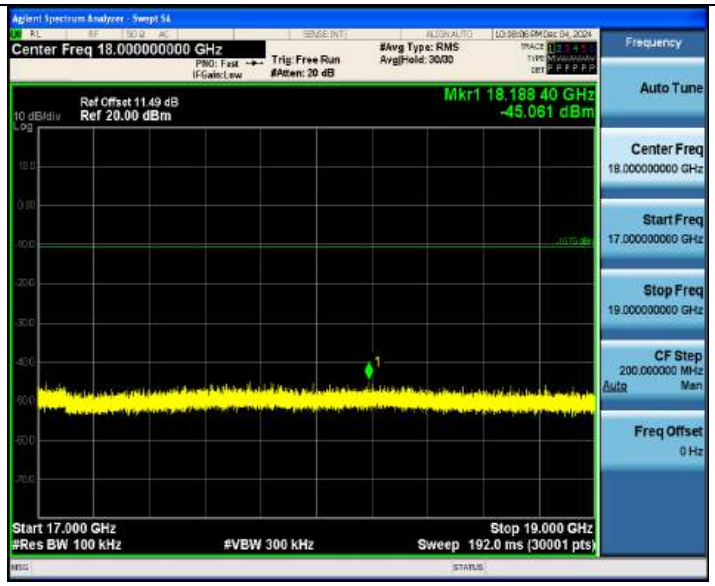


BLE_1M_Ant1_2480_13000~15000

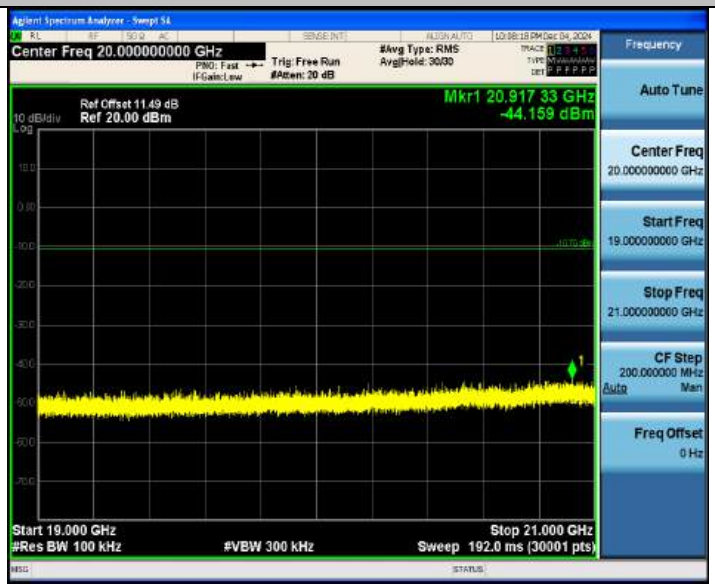
BLE_1M_Ant1_2480_15000~17000



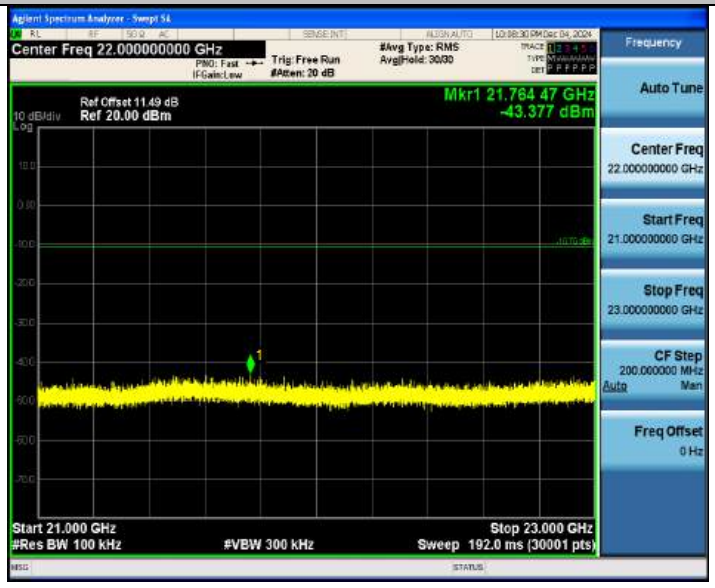
BLE_1M_Ant1_2480_17000~19000



BLE_1M_Ant1_2480_19000~21000

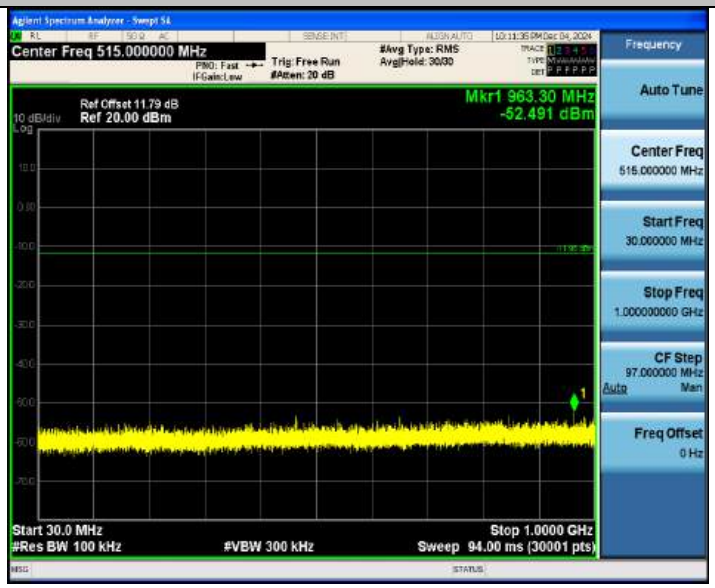


BLE_1M_Ant1_2480_21000~23000

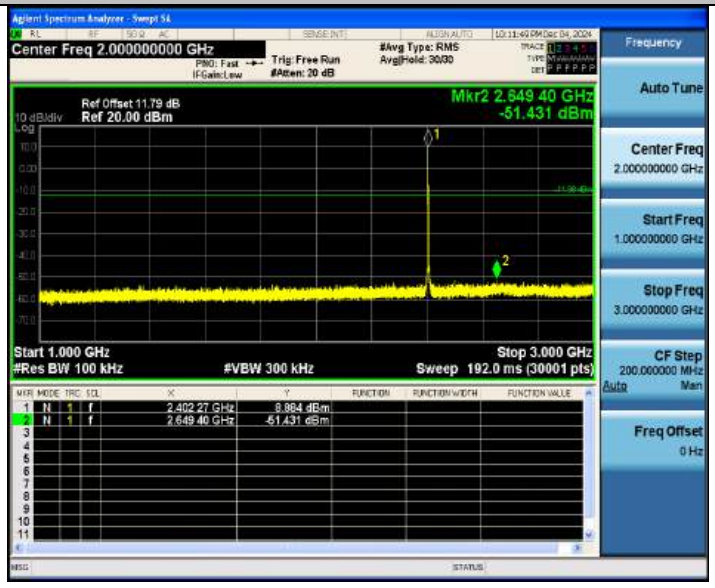


BLE_1M_Ant1_2480_23000~25000

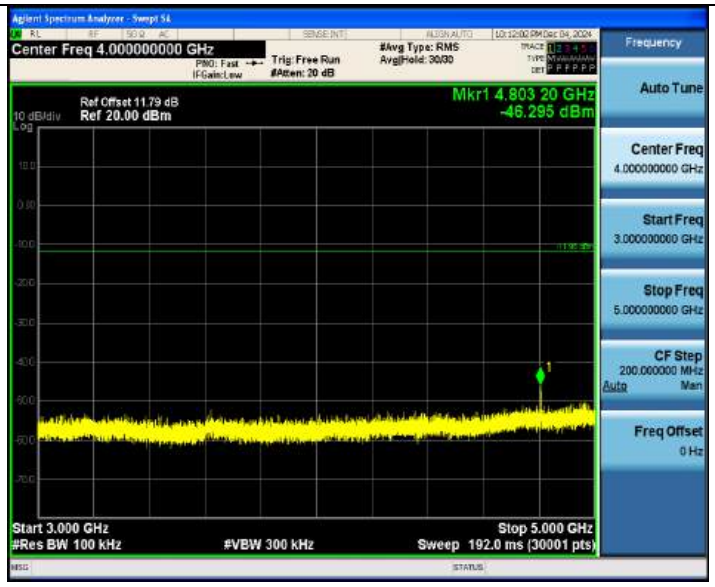
BLE_2M_Ant1_2402_30~1000



BLE_2M_Ant1_2402_1000~3000

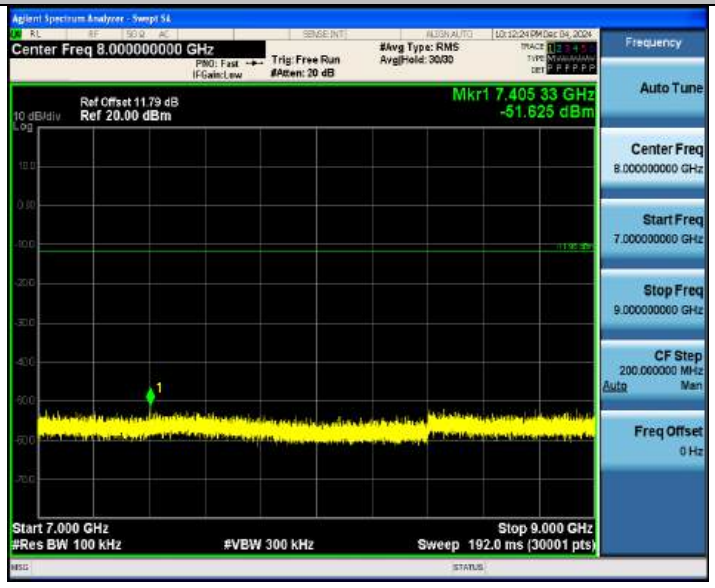


BLE_2M_Ant1_2402_3000~5000



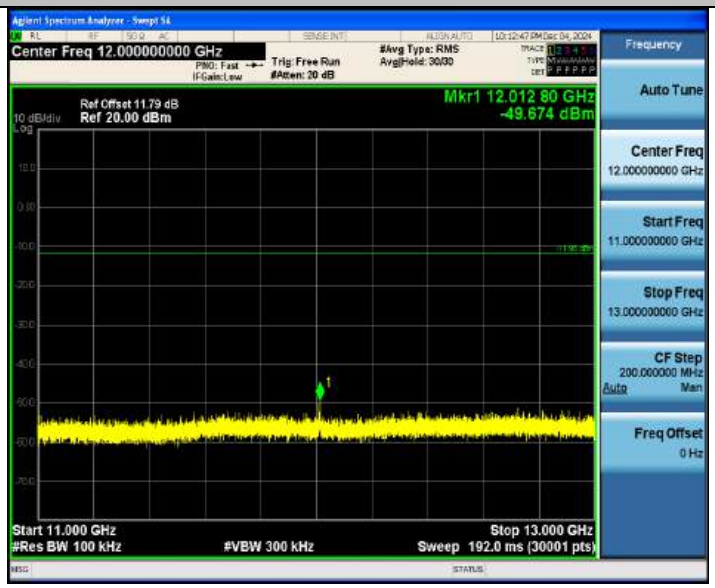
BLE_2M_Ant1_2402_5000~7000

BLE_2M_Ant1_2402_7000~9000



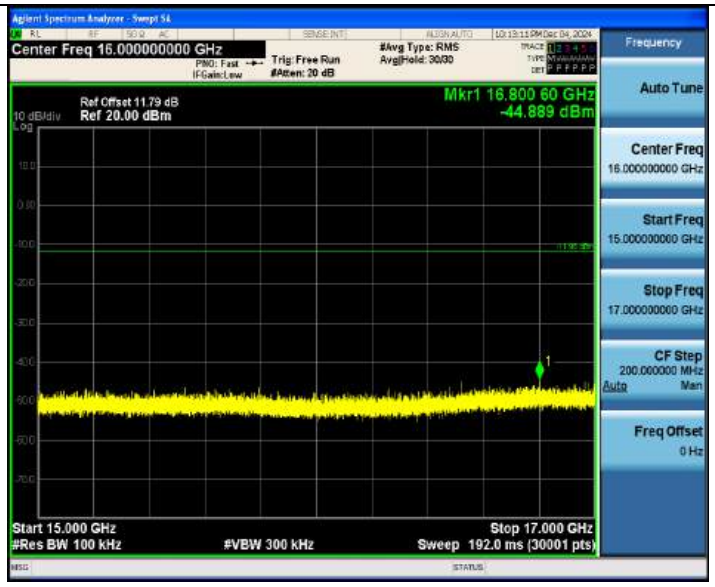
BLE_2M_Ant1_2402_9000~11000

BLE_2M_Ant1_2402_11000~13000

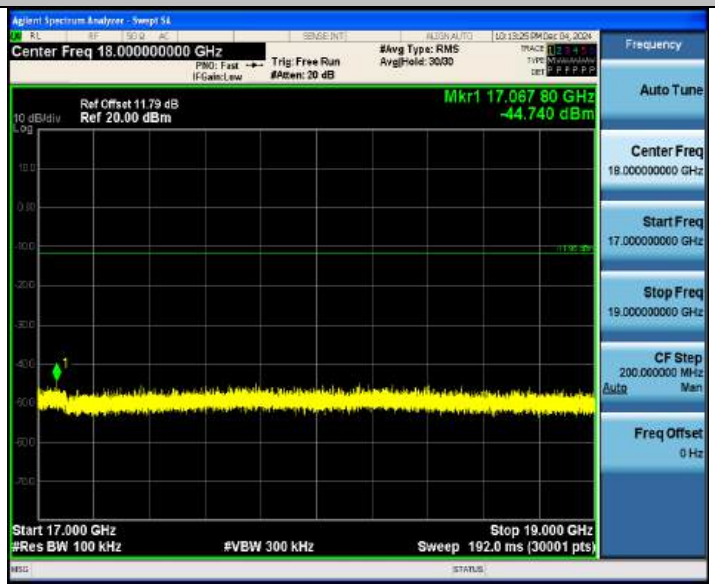


BLE_2M_Ant1_2402_13000~15000

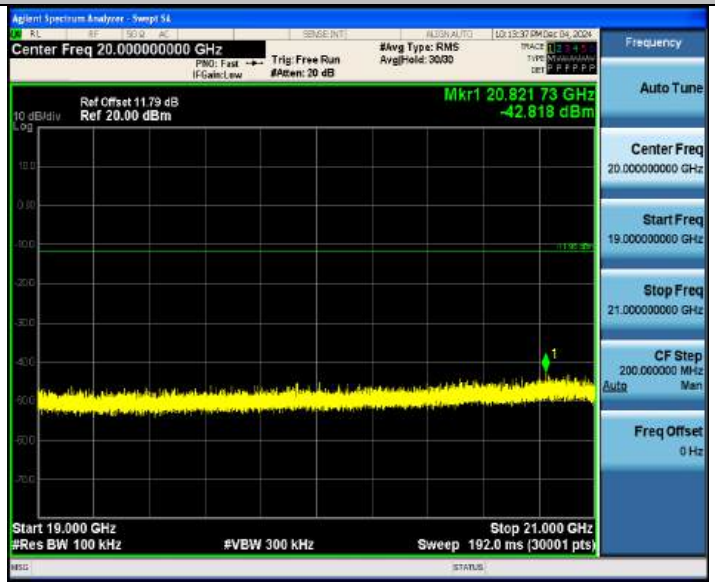
BLE_2M_Ant1_2402_15000~17000



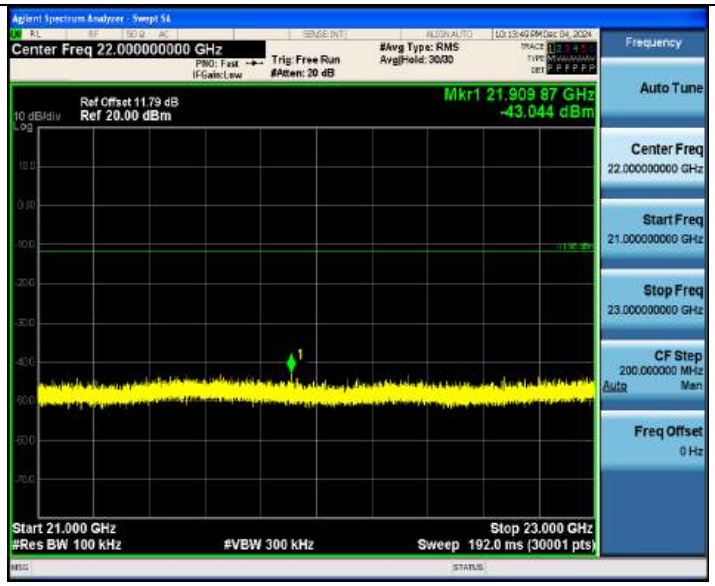
BLE_2M_Ant1_2402_17000~19000



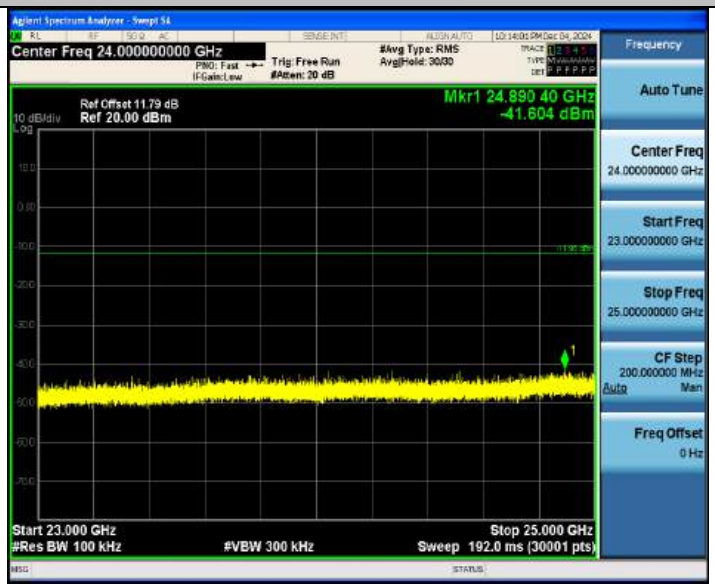
BLE_2M_Ant1_2402_19000~21000



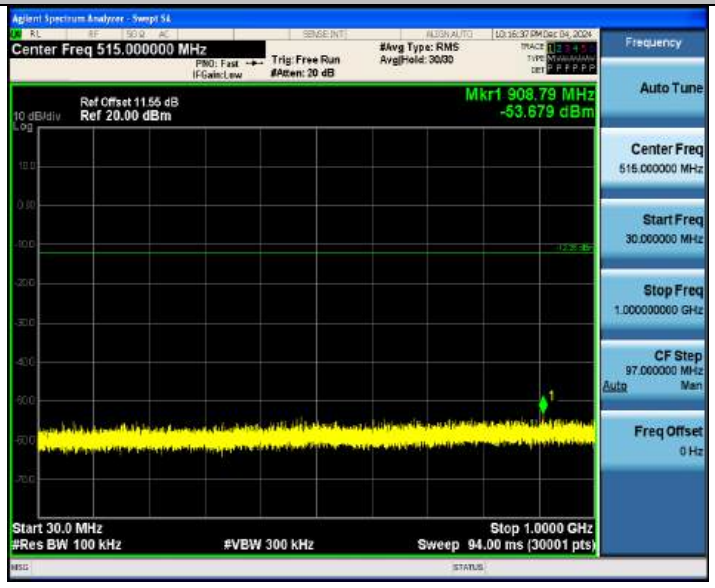
BLE_2M_Ant1_2402_21000~23000



BLE_2M_Ant1_2402_23000~25000



BLE_2M_Ant1_2440_30~1000



BLE_2M_Ant1_2440_1000~3000