



Test report No:
2270405R-RF-US-P06V01

FCC & ISED TEST REPORT

Product Name	LED Device
Trademark	PHILIPS
Model and /or type reference	929003535301
FCC ID	2AGBW9290035353X
IC	20812-35353X
Applicant's name / address	Signify (China) Investment Co., Ltd Building No.9, Lane 888, Tianlin Road, Minhang district, 200233, Shanghai, China
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10: 2013 KDB558074 D01 15.247 Meas Guidance v05r02 RSS-Gen Issue 5 RSS-247 Issue 2
Verdict Summary	IN COMPLIANCE
Tested by (name / position & signature)	Tim Cao/ Project Engineer <i>Tim Cao</i>
Approved by (name / position & signature)	Jack Zhang/ Manager <i>Jack Zhang</i>
Date of issue	2022-10-20
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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.

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

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GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Jul. 20, 2022
Date (start test)	Jul. 21, 2022
Date (finish test)	Jul. 28, 2022

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.
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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
2270405R-RF-US-P06V01	V1.0	Initial issue of report.	2022-08-11
2270405R-RF-US-P06V01	V2.0	The whole of report: Update product name. (The test report No.: 2270405R-RF-US-P06V01 V2.0 is to replace the test report No.: 2270405R-RF-US-P06V01 V1.0, and test report 2270405R-RF-US-P06V01 V1.0 is obsoleted.)	2022-10-20

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 Part 15 Subpart C Paragraph 15.247, RSS-Gen Issue 5, RSS-247 Issue 2.
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 Information;
 - Chapter 1.3 Channel List.

USED EQUIPMENT

AC Power Line Conducted Emission / TR1

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2021.10.30	2022.10.29
Two-Line V-Network	R&S	ENV216	101044	2022.03.12	2023.03.11
Current Probe	R&S	EZ-17	100678	2021.12.31	2022.12.30
50ohm Termination	SHX	TF2	07081403	2021.09.04	2022.09.03
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2021.07.09	2022.07.08
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2022.07.07	2023.07.06
Coaxial Cable	Suhner	RG 223	TR1-C2	2022.03.21	2023.03.20
Dekra test software	Dekra	-	-	-	-

Emissions in non-restricted frequency bands/ Occupied Bandwidth/ Fundamental emission output power/ Power Spectral Density/Band Edge/ TR8

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
MAX Signal Analyzer	Agilent	N9020A	MY49100159	2021.11.17	2022.11.16
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2021.11.18	2022.11.17
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2021.07.09	2022.07.08
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2022.07.07	2023.07.06
Tonscend test software	Tonscend	-	-	-	-

Radiated Emission(30MHz-1GHz) / AC3

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2021.10.30	2022.10.29
Loop Antenna	R&S	HFH2-Z2	833799/003	2022.04.15	2023.04.14
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2021.12.03	2022.12.02
Temperature/Humidity Meter	RTS	RTS-8S	AC3-TH	2021.07.09	2022.07.08
Temperature/Humidity Meter	RTS	RTS-8S	AC3-TH	2022.07.07	2023.07.06
Coaxial Cable	Huber+Suhner	RG 214	AC3-C	2022.03.21	2023.03.20
Dekra test software	Dekra	-	-	-	-

Radiated Emission(1GHz-40GHz) / AC5

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2021.08.12	2022.08.11
Pre-Amplifier	SKET	LNPA_0118G-45	SK2021090101	2021.12.13	2022.12.12
Preamplifier	CHENGYI	EMC184045SE	980263	2022.05.21	2023.05.20
DRG Horn	ETS-Lindgren	3117	00123988	2021.10.22	2022.10.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2022.05.19	2023.05.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2022.04.15	2023.04.14
Temperature/Humidity Meter	RTS	RTS-8S	AC5-TH	2021.07.09	2022.07.08
Temperature/Humidity Meter	RTS	RTS-8S	AC5-TH	2022.07.07	2023.07.06
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2022.03.21	2023.03.20
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2022.03.21	2023.03.20
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2022.03.21	2023.03.20
Dekra test software	Dekra	-	-	-	-

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%. The Uncertainties is comply with standard required as below.

Test item	Uncertainty
AC Power Line Conducted Emission	9kHz~150kHz: 2.80dB 150kHz~30MHz: 2.40dB
Peak Power Output	± 1.27 dB
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
RF antenna conducted test	± 1.27 dB
Radiated Emission Band Edge	± 3.9 dB
DTS Bandwidth	± 150 Hz
Occupied Bandwidth	± 1 kHz
Power Density	± 1.27 dB

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name..... :	LED Device
Model No. :	929003535301
FCC ID :	2AGBW9290035353X
IC..... :	20812-35353X
Manufacturer..... :	Signify (China) Investment Co., Ltd
Manufacturer Address..... :	Building No.9, Lane 888, Tianlin Road, Minhang district, 200233, Shanghai, China

Wireless specification..... :	Bluetooth 5.0					
Operating frequency range(s)..... :	2402~2480 MHz					
Type of Modulation..... :	GFSK					
PHYs :	<input checked="" type="checkbox"/>	LE 1M	<input checked="" type="checkbox"/>	LE 2M	<input checked="" type="checkbox"/>	LE Coded S=2/8
Data Rate :	<input checked="" type="checkbox"/>	1Mbit/s	<input checked="" type="checkbox"/>	2Mbit/s	<input checked="" type="checkbox"/>	500/125 Kbit/s
Number of channel..... :	40					

Rated power supply	Voltage and Frequency					
	<input type="checkbox"/>	AC: 220 – 240 V, 50/60 Hz				
	<input checked="" type="checkbox"/>	AC: 120 V, 50/60 Hz				
	<input type="checkbox"/>	DC:.....				
	<input type="checkbox"/>	Adapter:.....				
	<input type="checkbox"/>	Battery:.....				
Mounting position..... :	<input type="checkbox"/>	Table top equipment				
	<input checked="" type="checkbox"/>	Wall/Ceiling mounted equipment				
	<input type="checkbox"/>	Floor standing equipment				
	<input type="checkbox"/>	Head-mounted equipment				
	<input type="checkbox"/>	Other:				

1.2 Antenna Information

Antenna model / type number.....:	N/A		
Antenna serial number	N/A		
Antenna Delivery	<input checked="" type="checkbox"/>	1TX + 1RX	
	<input type="checkbox"/>	2TX + 2RX	
	<input type="checkbox"/>	Others:.....	
Antenna technology.....:	<input checked="" type="checkbox"/>	SISO	
	<input type="checkbox"/>	MIMO	<input type="checkbox"/> CDD
			<input type="checkbox"/> Beam-forming
Antenna Type.....:	<input type="checkbox"/>	External	<input type="checkbox"/> Dipole
			<input type="checkbox"/> Sectorized
			<input type="checkbox"/> PCB
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/> PIFA
			<input checked="" type="checkbox"/> PCB
			<input type="checkbox"/> Dipole
			<input type="checkbox"/> Others.....
	Antenna Gain.....:	4.6 dBi	

1.3 Channel List

Bluetooth Working Frequency of Each Channel(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(s), antenna information and channel list 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	Mode1: Transmit by LE_1Mbps
	Mode2: Transmit by LE_2Mbps
	Mode3: Transmit by LE_Coded S=2
	Mode4: Transmit by LE_Coded S=8

Note : For client device, radiated tests was verified over X, Y, Z axis, and shown the worst case Z axis on this report.

2.2 Accessories Information

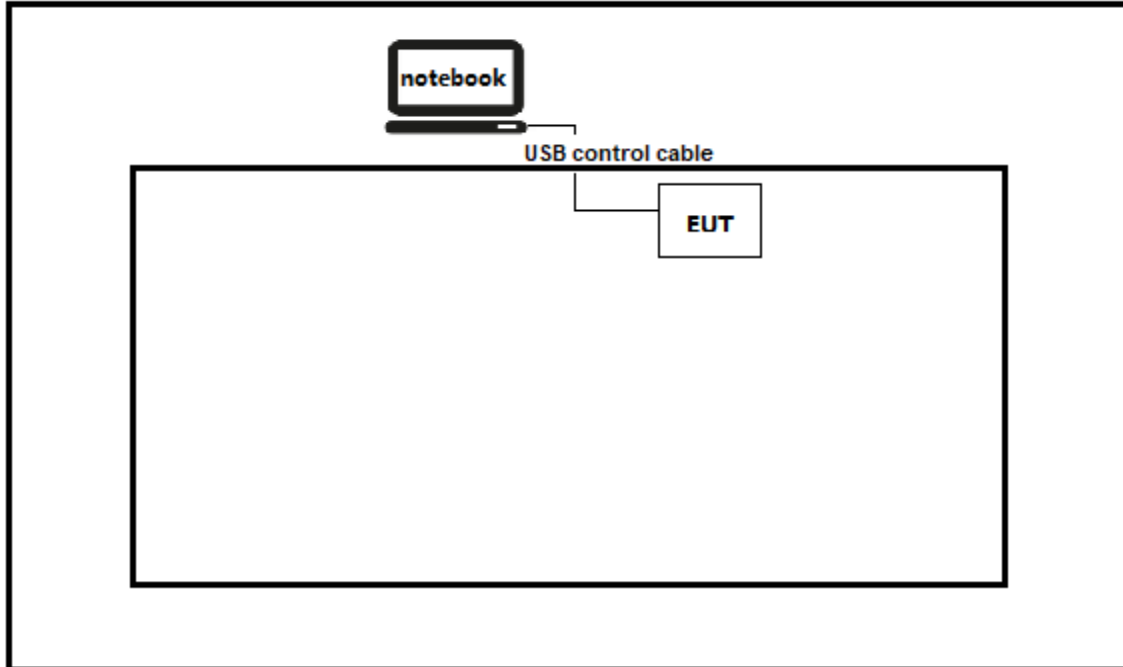
Accessories Information	Brand/model name	Cable		
		Length used during test [m]	Attached during test	Shielded
USB Cable	N/A	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USB Cable	N/A	0.5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

2.3 Auxiliary equipment / Test software for the EUT

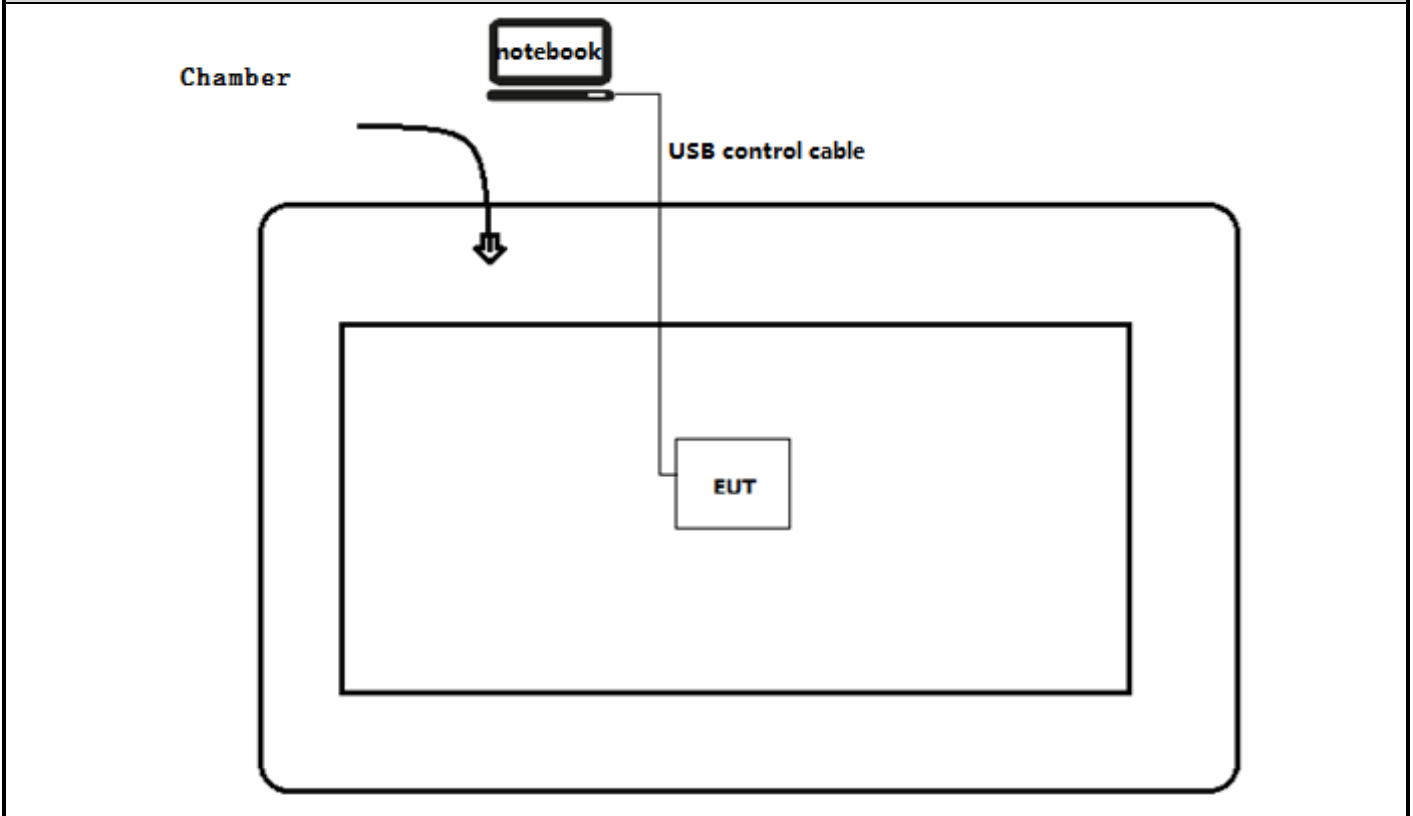
Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Notebook	Think pad x280	Lenovo	N/A
Software	Type / Version	Manufacturer	Supplied by
ApprobationTool	1.5.6	N/A	N/A

2.4 Test Configuration / Block diagram used for tests

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



2.5 Testing process

1	Setup the EUT as shown in Section 2.4.
2	Run the software "ApprobationTool" on the notebook computer.
3	Open the serial port and enter the corresponding commands to configure the test mode, test channel, test power and 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
FCC CFR Title 47 Part 15 Subpart C Section 15.247	2020	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
KDB558074 D01 v05r02	2019	Guidance for performing compliance measurements on Digital Transmission System (DTS) operating under section 15.247
RSS-Gen Issue 5 Amendment 2	2021	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 2	2017	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

For FCC

Requirement – Test case	Basic standard(s)	Verdict	Remark
AC Power Line Conducted Emission	FCC 15.207	PASS	---
Emissions in restricted frequency bands	FCC 15.247(b)(3)	PASS	---
Duty cycle	ANSI C63.10:2013	PASS	---
Emissions in non-restricted frequency bands	FCC 15.247(d), FCC 15.209	PASS	---
Band Edge	FCC 15.247(d)	PASS	---
Fundamental emission output power	FCC 15.247(d), FCC 15.209	PASS	---
DTS Bandwidth	FCC 15.247(a)(2)	PASS	---
Power Spectral Density	FCC 15.247(e)	PASS	---
Antenna Requirement	FCC 15.203	PASS	---

For ISED

Requirement – Test case	Basic standard(s)	Verdict	Remark
AC Power Line Conducted Emission	RSS-Gen Issue 5 Section 8.8	PASS	---
Emissions in restricted frequency bands	RSS-Gen Issue 5 Section 8.9	PASS	---
Duty cycle	ANSI C63.10:2013	PASS	---
Emissions in non-restricted frequency bands	RSS-247 Issue 2 Section 5.5	PASS	---
Band Edge	RSS-Gen Issue 5 Section 8.10	PASS	---
Fundamental emission output power	RSS-247 Issue 2 Section 5.4(d)	PASS	---
DTS Bandwidth	RSS-Gen Issue 5 Section 6.7	PASS	---
Power Spectral Density	RSS-247 Issue 2 Section 5.2(b)	PASS	---
Antenna Requirement	RSS-Gen Issue 5 Section 6.8	PASS	---

3.4 Test Facility

USA : FCC Designation Number: CN1199

CA : ISED CAB identifier: CN0040

4 TEST RESULTS

4.1 AC Power Line Conducted Emission

VERDICT: Pass

4.1.1 Limit

Standard FCC Part 15 Subpart C Paragraph 15.207

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

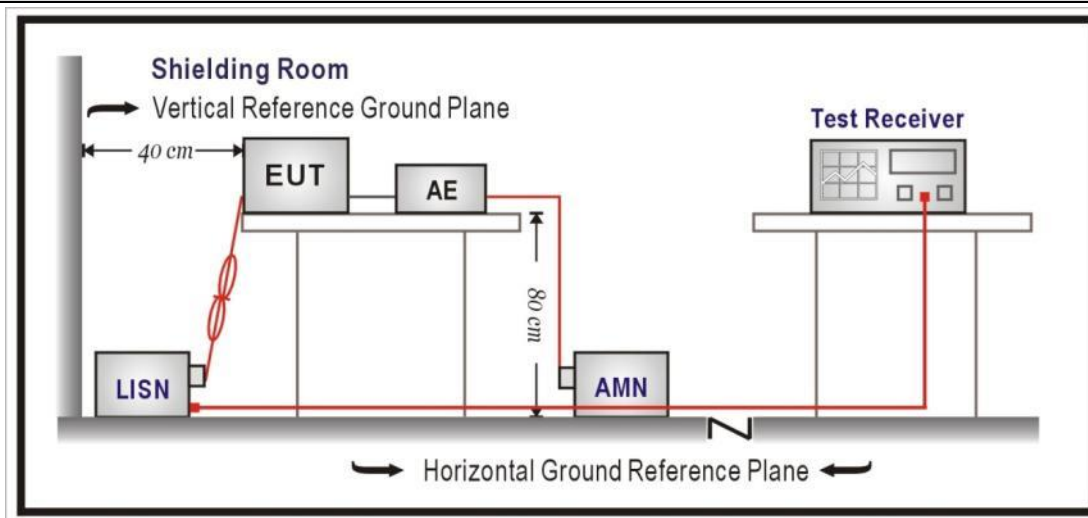
¹⁾ At the transition frequency, the lower limit applies.

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.

4.1.2 Test Setup

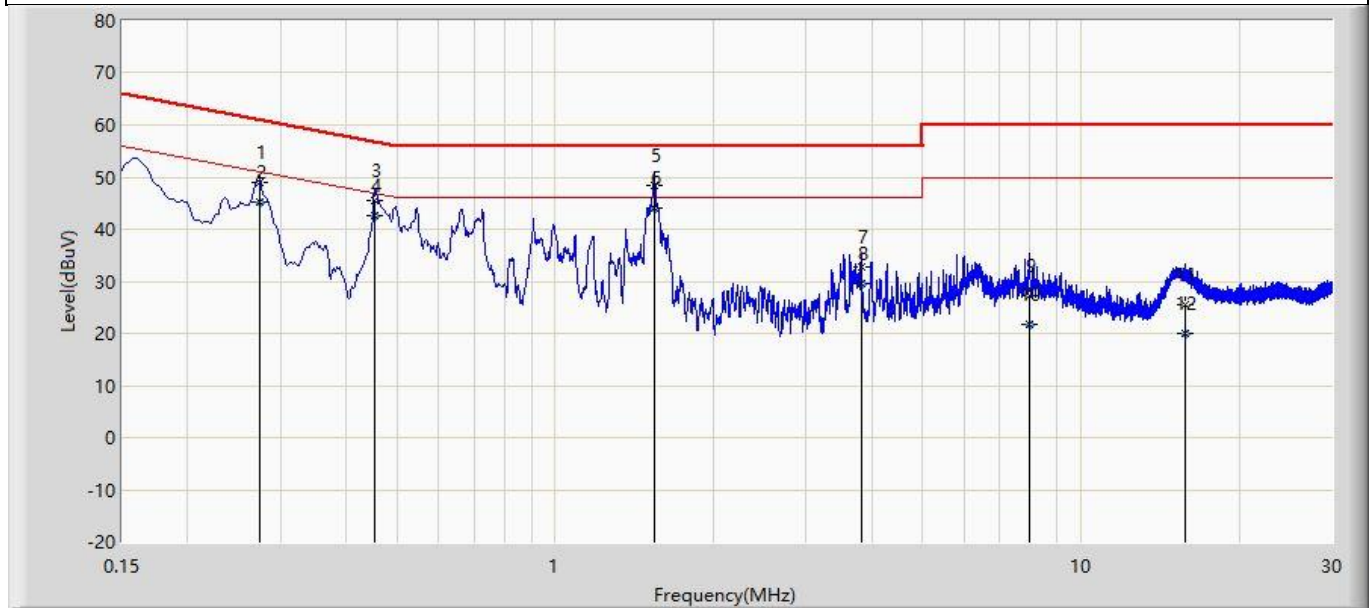


4.1.3 Test Procedure

	References Rule	Chapter	Item
<input checked="" type="checkbox"/>	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

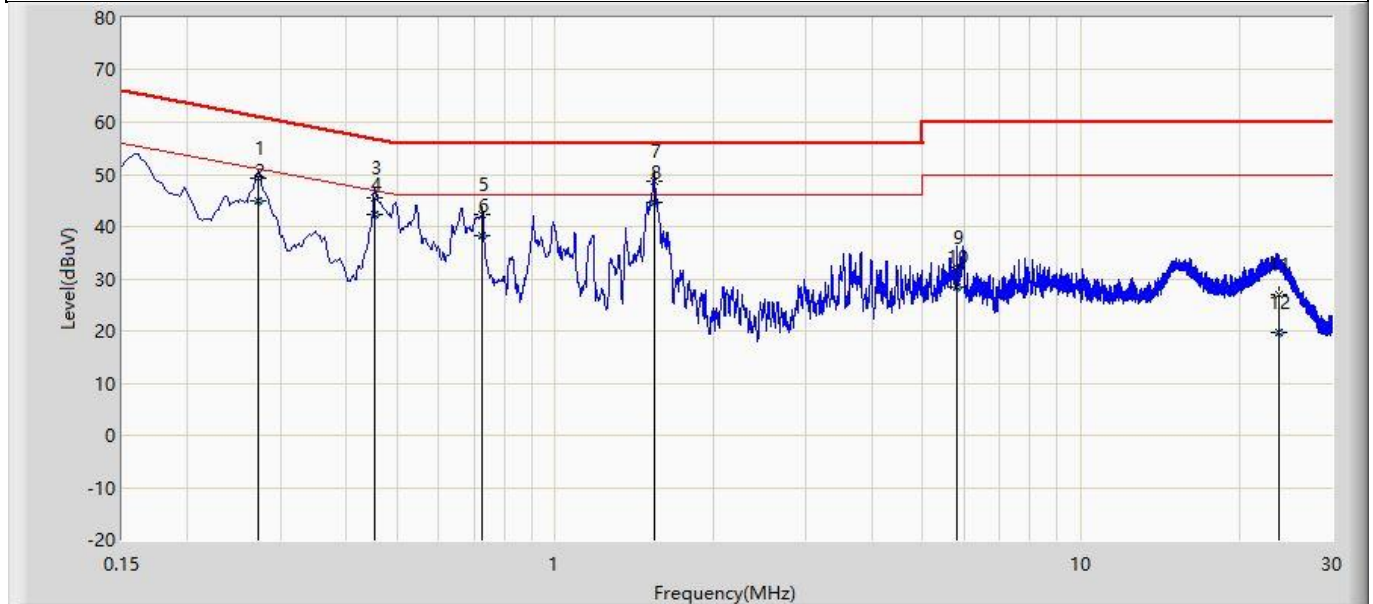
4.1.4 Test Data

Profile: 2270405R	Page No.: 81
Engineer: Pengcheng Yang	
Site: TR1	Time: 2022/07/21 - 19:54
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode: Neutral Wire	



N o	Mar k	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.274	48.909	39.318	-12.095	61.003	9.590	QP
2		0.274	45.150	35.560	-5.853	51.003	9.590	AV
3		0.454	45.564	35.950	-11.243	56.806	9.613	QP
4		0.454	42.528	32.914	-4.278	46.806	9.613	AV
5		1.545	48.292	38.630	-7.708	56.000	9.662	QP
6	*	1.545	44.148	34.486	-1.852	46.000	9.662	AV
7		3.815	32.732	22.978	-23.268	56.000	9.754	QP
8		3.815	29.632	19.878	-16.368	46.000	9.754	AV
9		7.989	27.212	17.272	-32.788	60.000	9.940	QP
10		7.989	21.729	11.789	-28.271	50.000	9.940	AV
11		15.806	25.639	15.471	-34.361	60.000	10.169	QP
12		15.806	19.927	9.758	-30.073	50.000	10.169	AV

Profile: 2270405R	Page No.: 82
Engineer: Pengcheng Yang	
Site: TR1	Time: 2022/07/21 - 19:56
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode: Live Wire	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.272	49.230	39.633	-11.841	61.072	9.598	QP
2		0.272	45.067	35.470	-6.005	51.072	9.598	AV
3		0.454	45.456	35.841	-11.350	56.806	9.615	QP
4		0.454	42.433	32.818	-4.373	46.806	9.615	AV
5		0.726	42.290	32.657	-13.710	56.000	9.633	QP
6		0.726	38.211	28.578	-7.789	46.000	9.633	AV
7		1.543	48.576	38.914	-7.424	56.000	9.661	QP
8	*	1.543	44.655	34.994	-1.345	46.000	9.661	AV
9		5.809	32.140	22.287	-27.860	60.000	9.853	QP
10		5.809	28.510	18.656	-21.490	50.000	9.853	AV
11		23.730	26.960	16.645	-33.040	60.000	10.314	QP
12		23.730	19.653	9.339	-30.347	50.000	10.314	AV

Note:

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

4.2 Emissions in restricted frequency bands	VERDICT: PASS
--	----------------------

4.2.1 Limit			
Standard		FCC Part 15 Subpart C Paragraph 15.209	
Restricted Bands of operationfor FCC			
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			
Restricted Bands of operationfor 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			
Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Field strength ($\text{dB}\mu\text{V/m}$)	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)

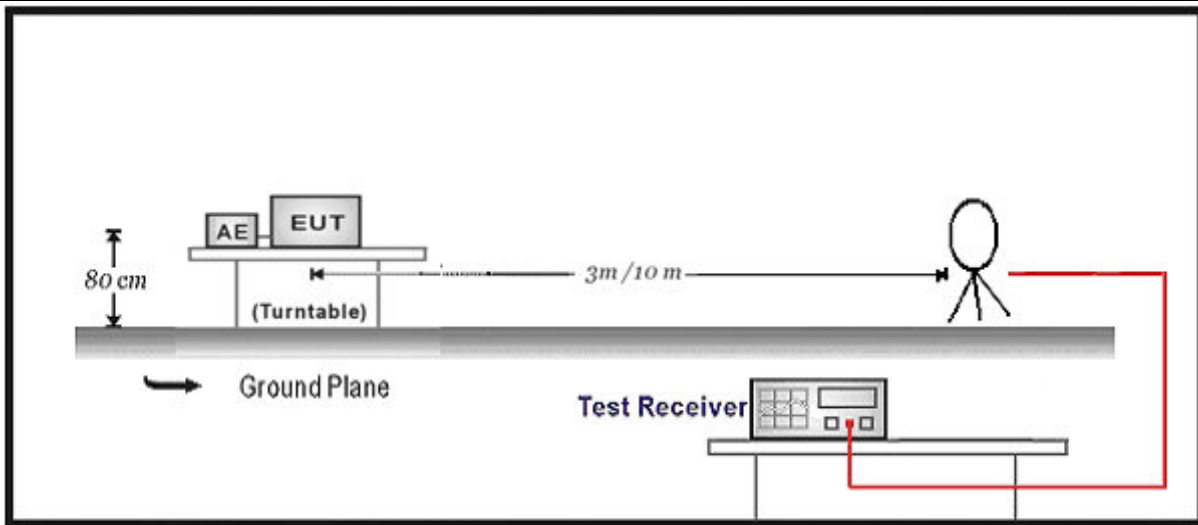
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed 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.

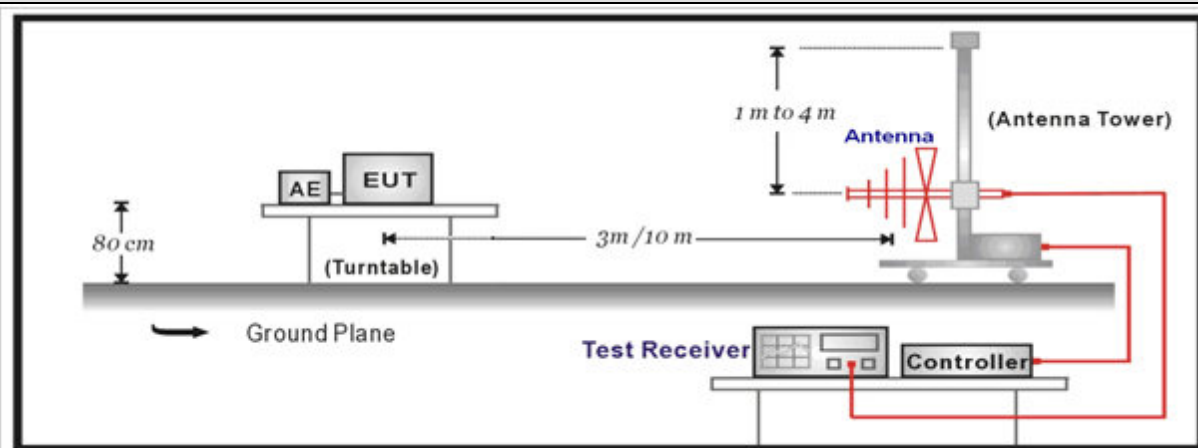
Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.2.2 Test Setup

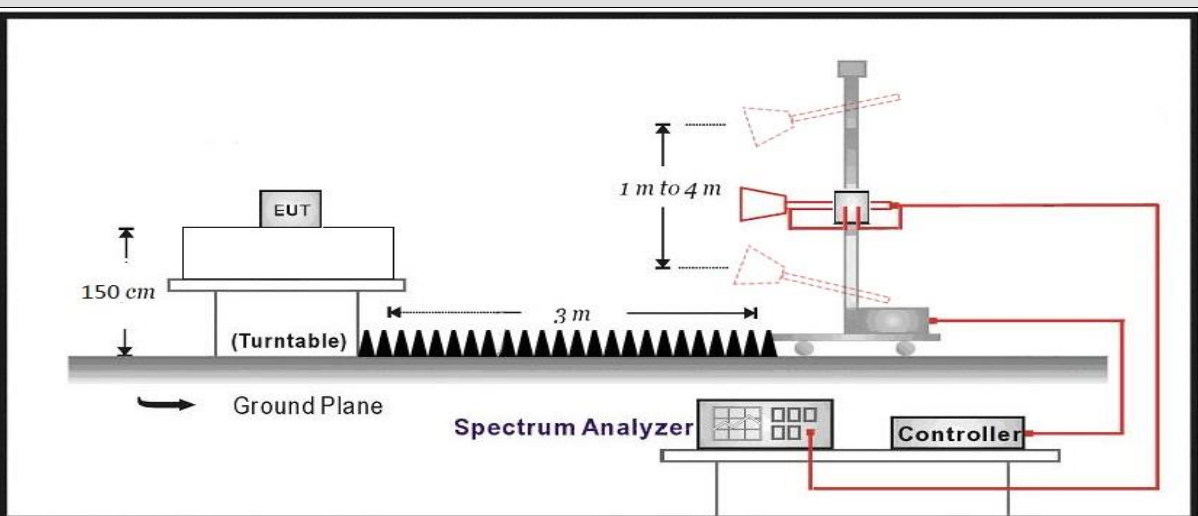
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



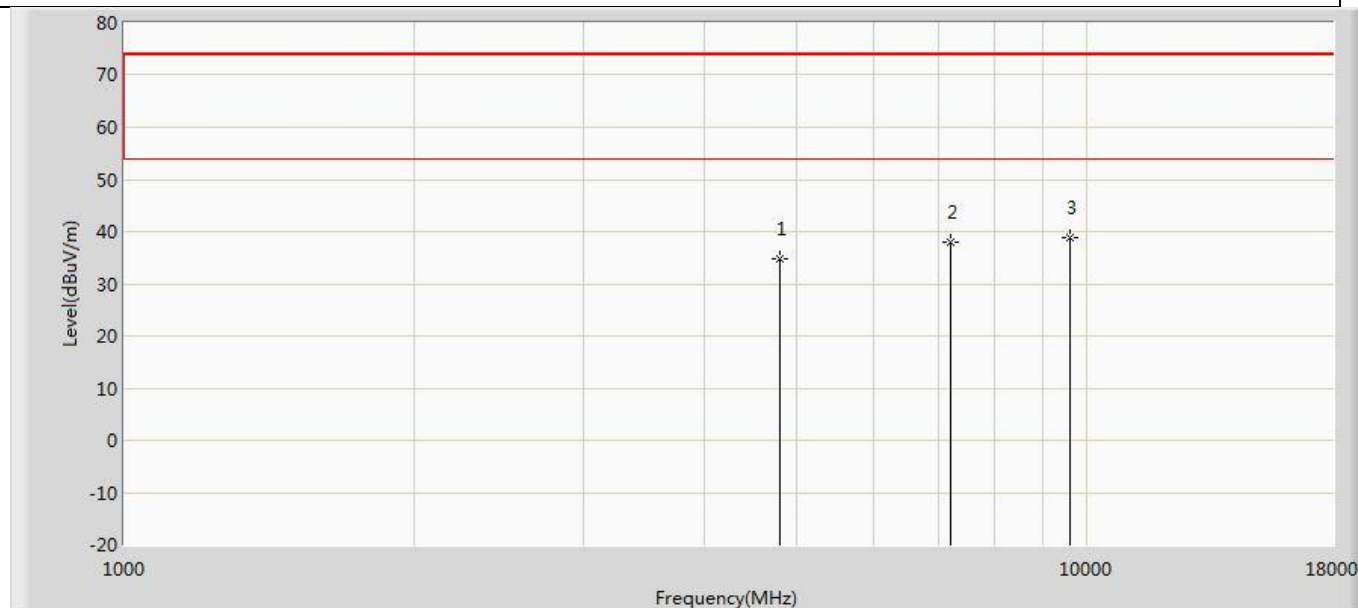
Above 1GHz Test Setup:



4.2.3 Test Procedure			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
	<input checked="" type="checkbox"/> ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

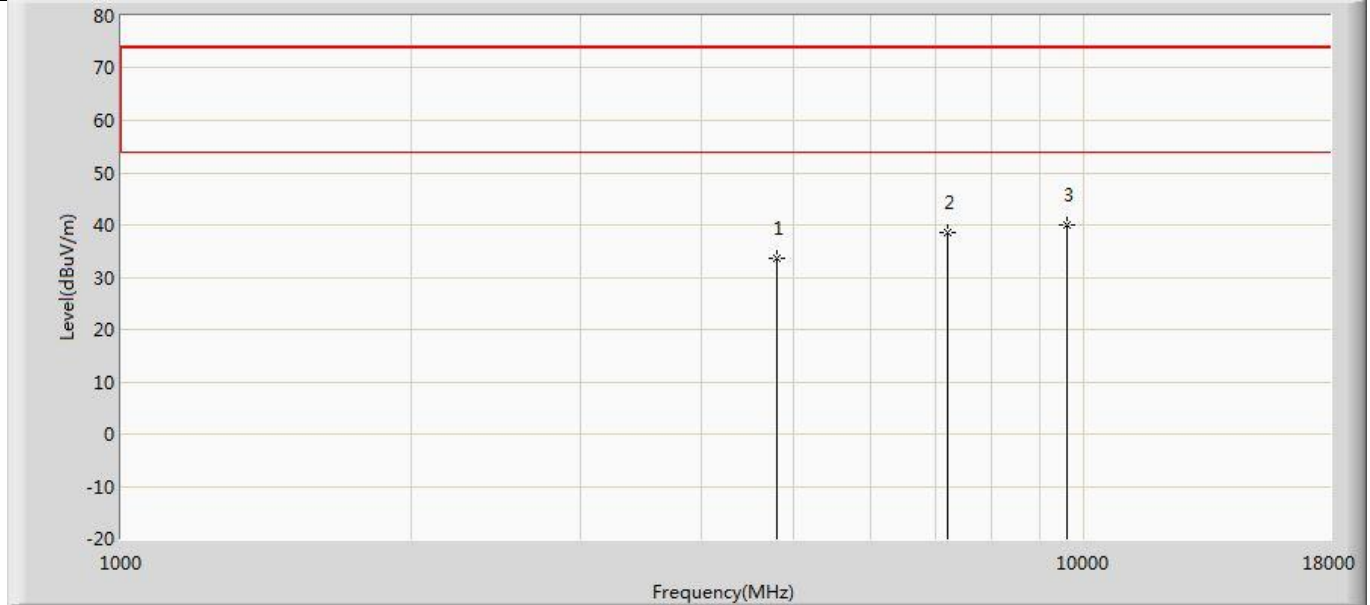
4.2.4 Test Data

Profile: 2270405R	Page No.: 31
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by LE_1Mbps	



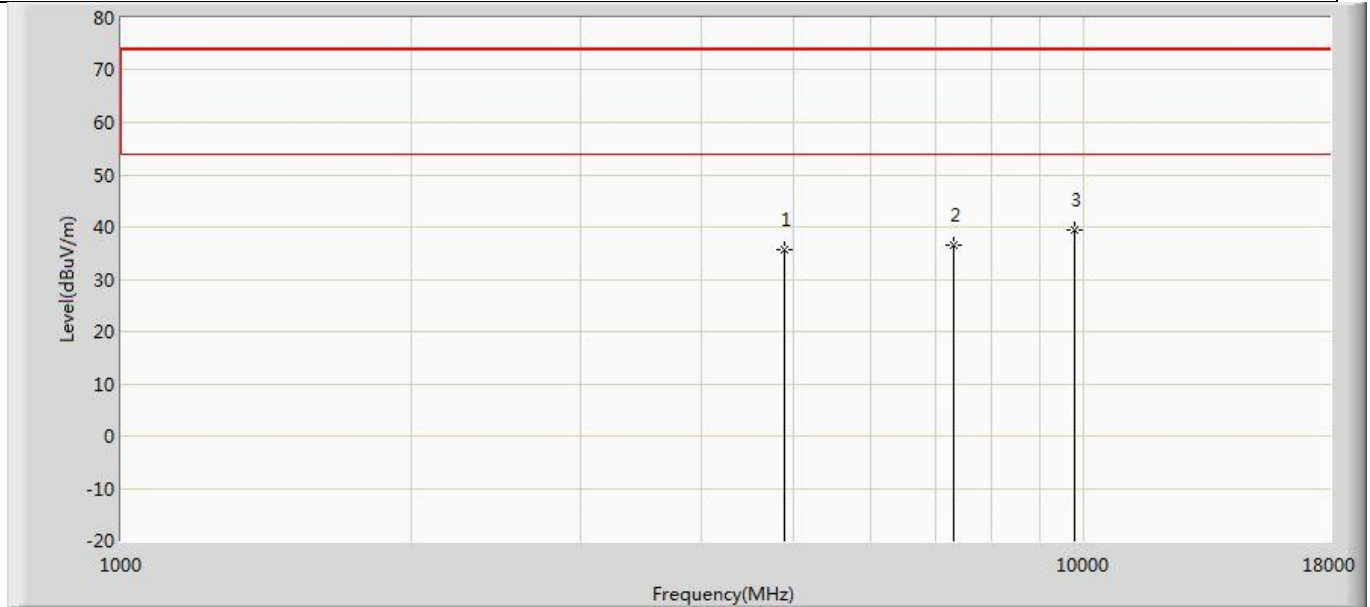
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	34.832	47.263	-39.168	74.000	-12.431	PK
2		7206.000	37.921	45.718	-36.079	74.000	-7.796	PK
3	*	9608.000	38.912	45.171	-35.088	74.000	-6.258	PK

Profile: 2270405R	Page No.: 32
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by LE_1Mbps	



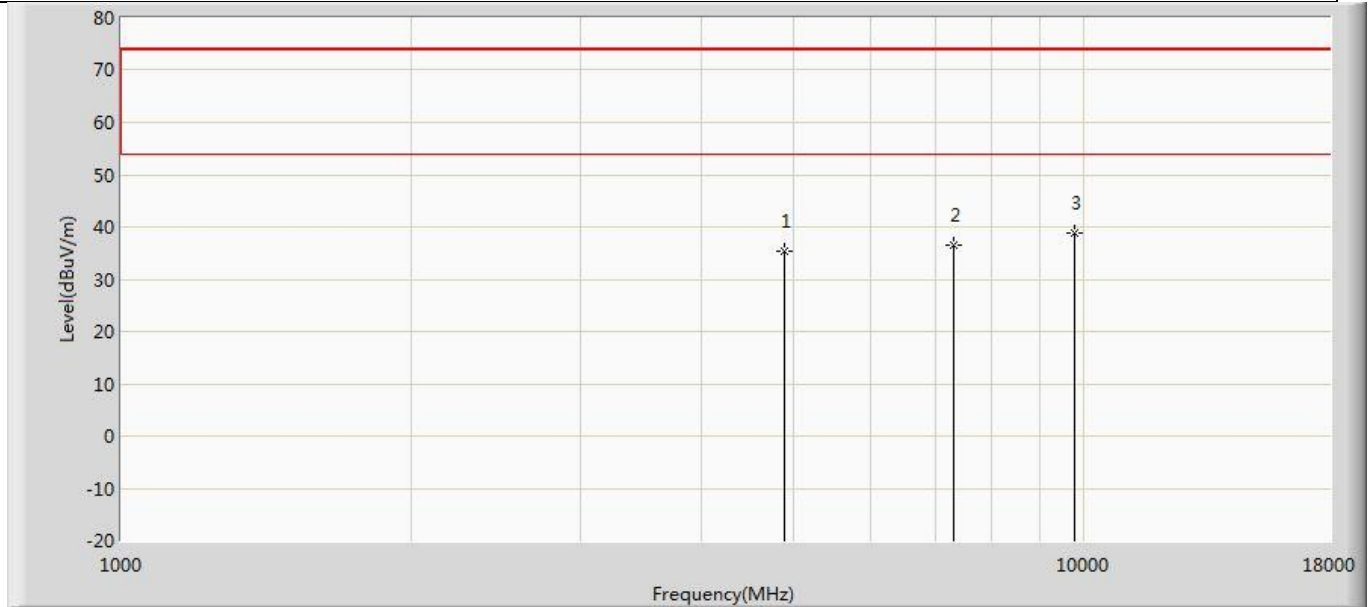
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	33.751	46.182	-40.249	74.000	-12.431	PK
2		7206.000	38.547	46.344	-35.453	74.000	-7.796	PK
3	*	9608.000	40.018	46.277	-33.982	74.000	-6.258	PK

Profile: 2270405R	Page No.: 33
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2440MHz by LE_1Mbps	



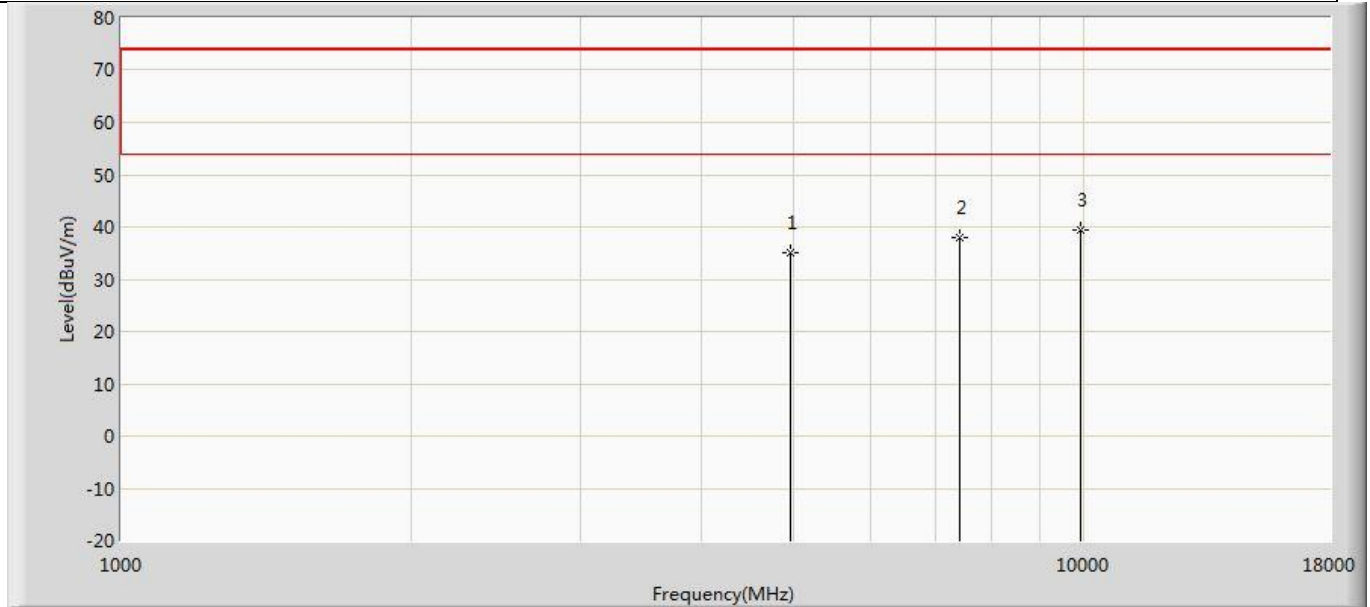
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	35.566	47.811	-38.434	74.000	-12.245	PK
2		7320.000	36.609	44.372	-37.391	74.000	-7.763	PK
3	*	9760.000	39.491	45.577	-34.509	74.000	-6.086	PK

Profile: 2270405R	Page No.: 34
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2440MHz by LE_1Mbps	



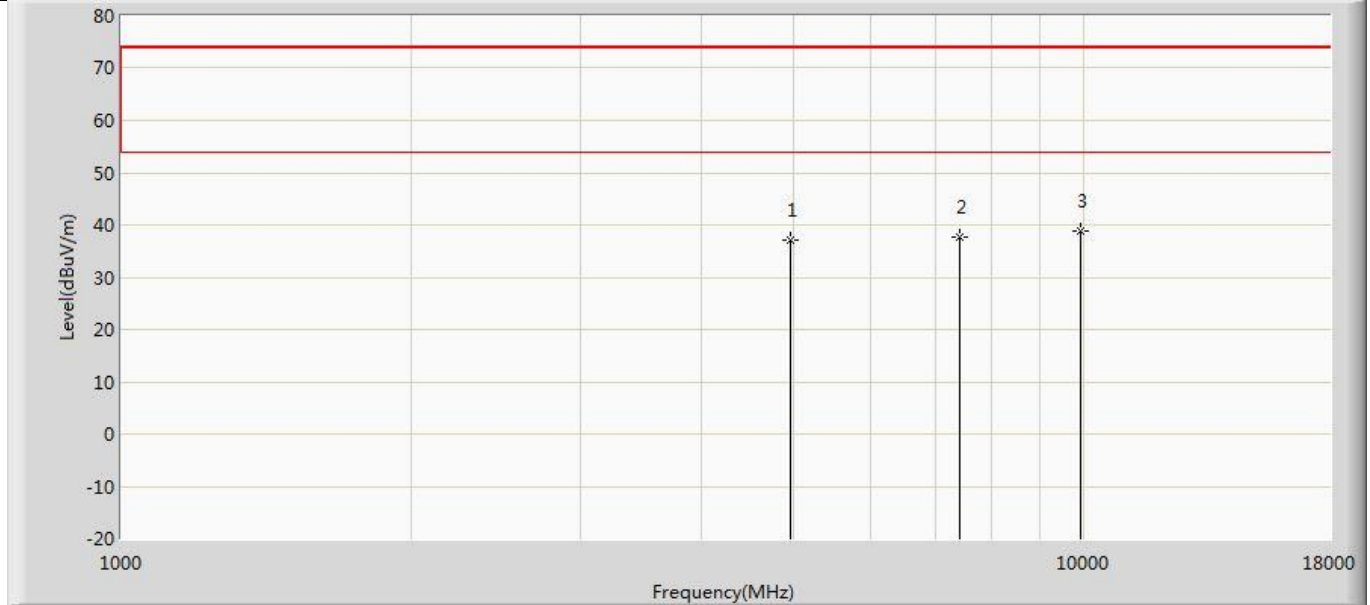
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	35.368	47.613	-38.632	74.000	-12.245	PK
2		7320.000	36.494	44.257	-37.506	74.000	-7.763	PK
3	*	9760.000	38.933	45.019	-35.067	74.000	-6.086	PK

Profile: 2270405R	Page No.: 35
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by LE_1Mbps	



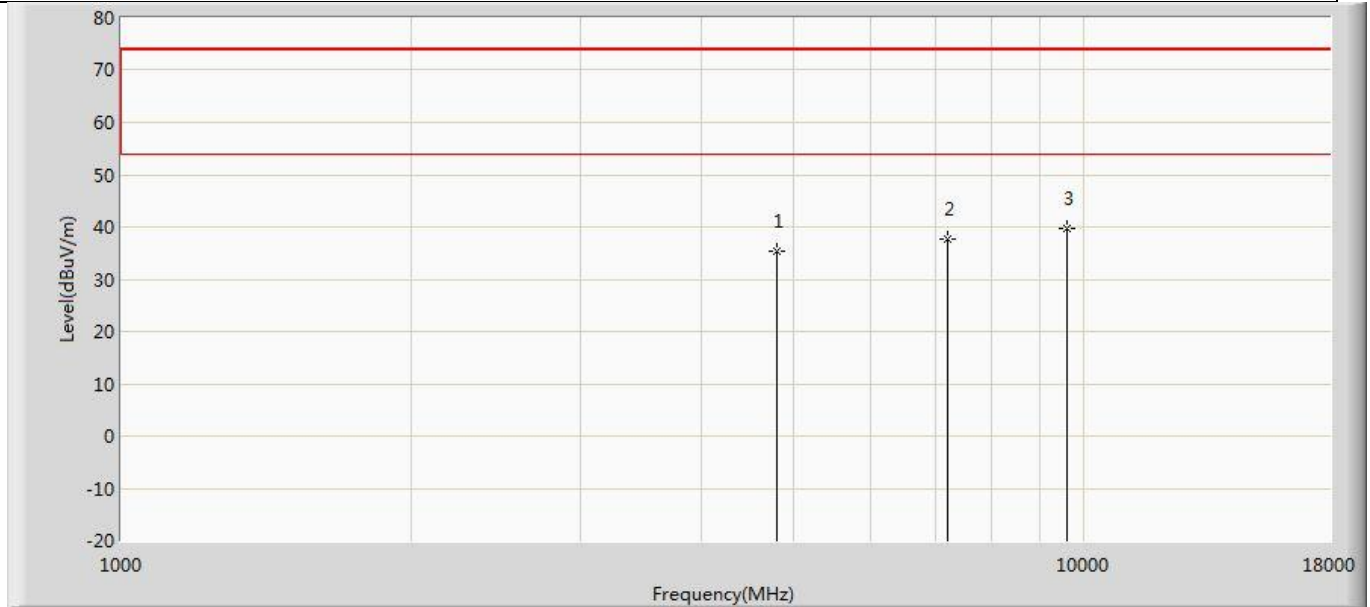
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	35.027	47.806	-38.973	74.000	-12.780	PK
2		7440.000	37.898	45.780	-36.102	74.000	-7.882	PK
3	*	9920.000	39.309	46.208	-34.691	74.000	-6.899	PK

Profile: 2270405R	Page No.: 36
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by LE_1Mbps	



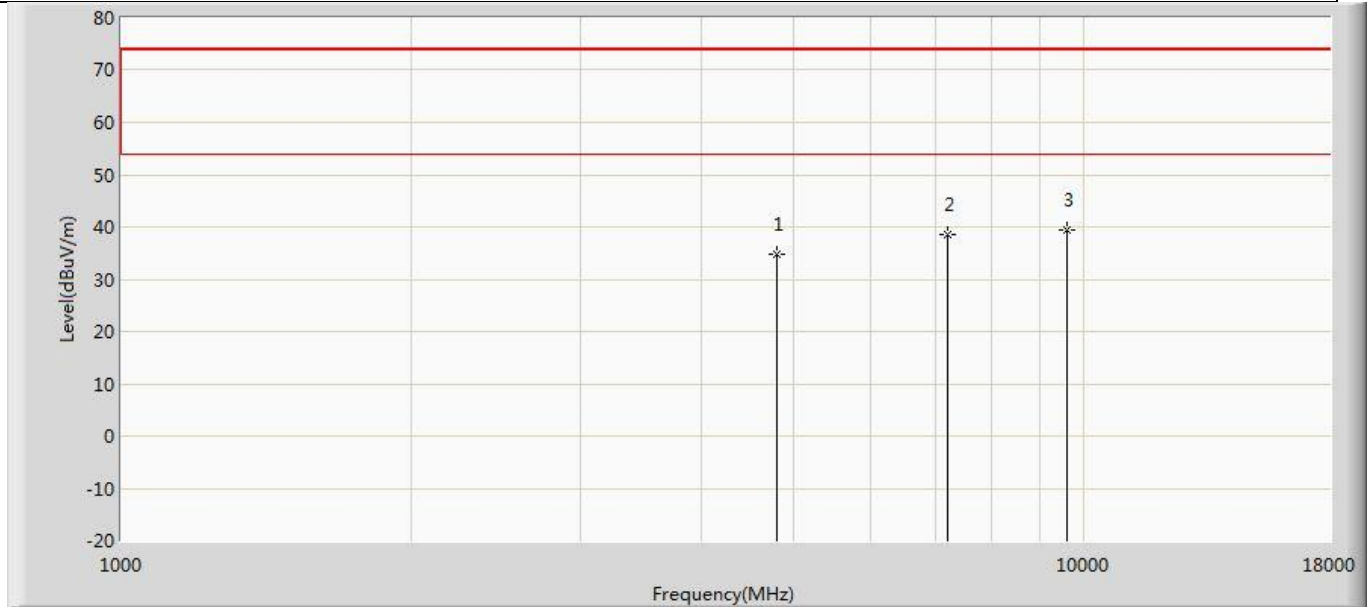
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	37.008	49.787	-36.992	74.000	-12.780	PK
2		7440.000	37.798	45.680	-36.202	74.000	-7.882	PK
3	*	9920.000	38.809	45.708	-35.191	74.000	-6.899	PK

Profile: 2270405R	Page No.: 37
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402MHz by LE_2Mbps	



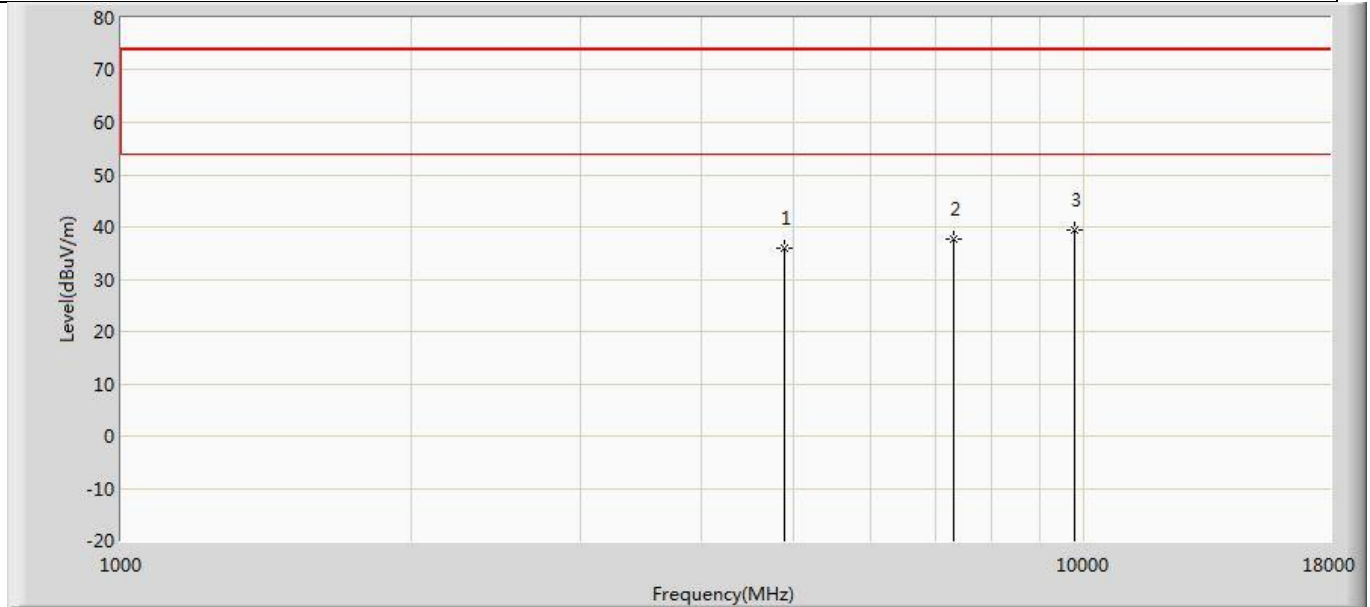
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	35.384	47.815	-38.616	74.000	-12.431	PK
2		7206.000	37.743	45.540	-36.257	74.000	-7.796	PK
3	*	9608.000	39.593	45.852	-34.407	74.000	-6.258	PK

Profile: 2270405R	Page No.: 38
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402MHz by LE_2Mbps	



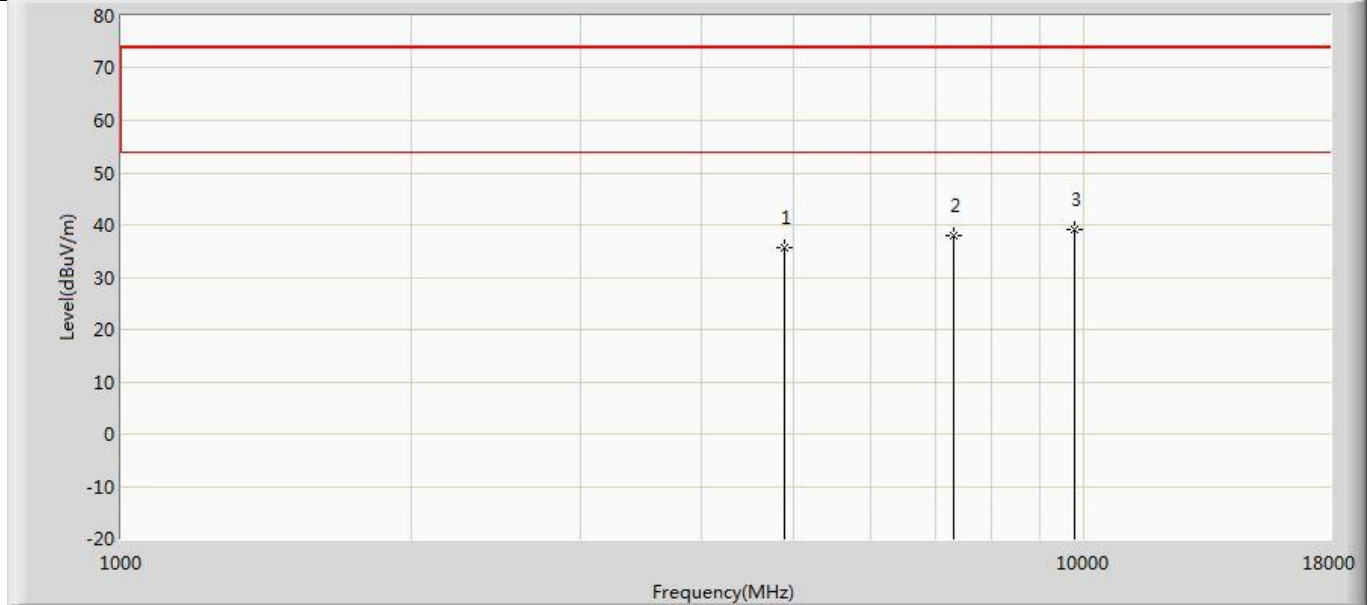
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	34.917	47.348	-39.083	74.000	-12.431	PK
2		7206.000	38.437	46.234	-35.563	74.000	-7.796	PK
3	*	9608.000	39.419	45.678	-34.581	74.000	-6.258	PK

Profile: 2270405R	Page No.: 39
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2440MHz by LE_2Mbps	



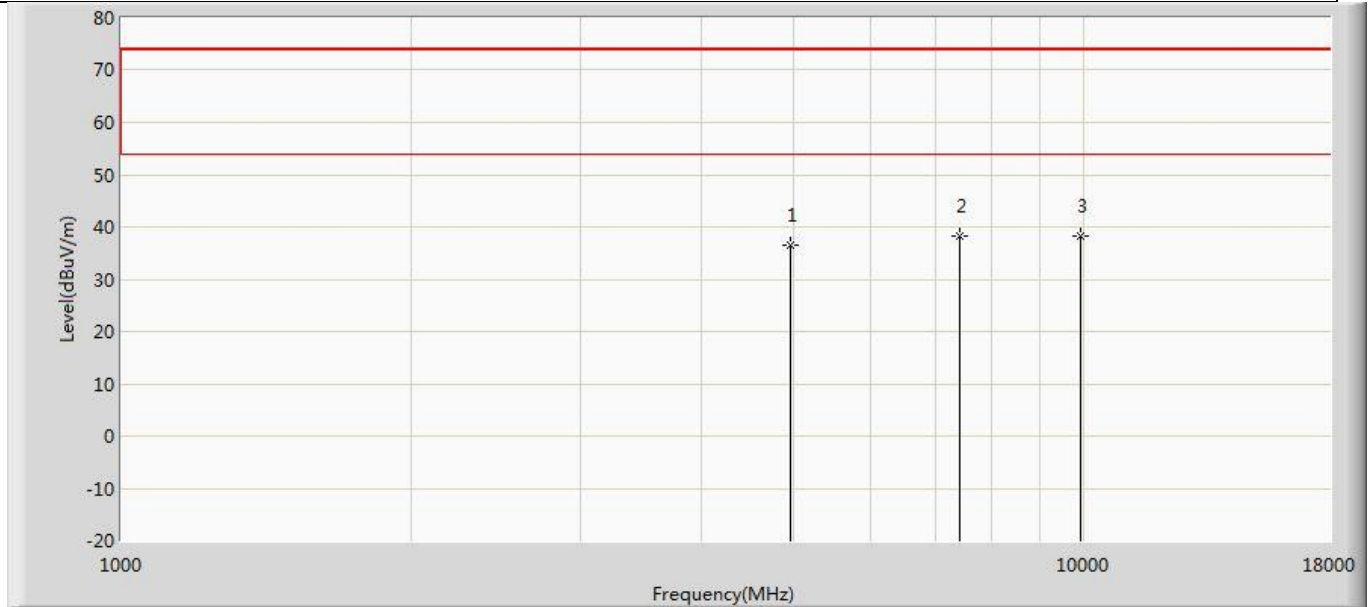
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	35.974	48.219	-38.026	74.000	-12.245	PK
2		7320.000	37.697	45.460	-36.303	74.000	-7.763	PK
3	*	9760.000	39.450	45.536	-34.550	74.000	-6.086	PK

Profile: 2270405R	Page No.: 40
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2440MHz by LE_2Mbps	



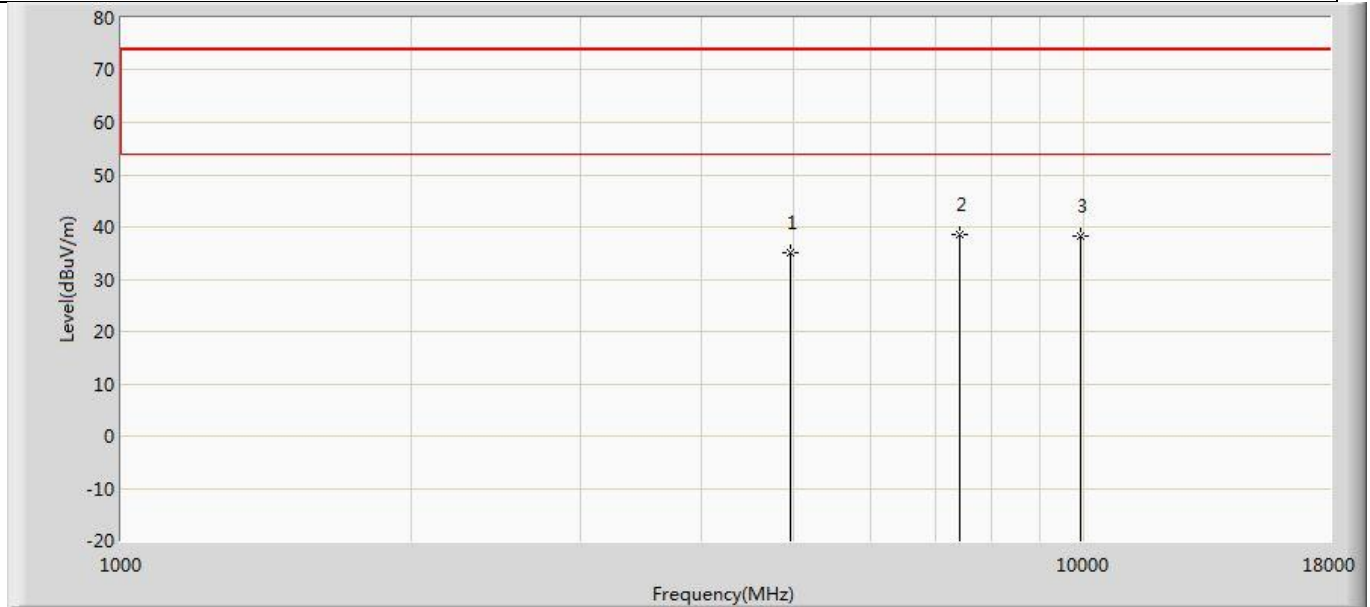
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	35.581	47.826	-38.419	74.000	-12.245	PK
2		7320.000	38.076	45.839	-35.924	74.000	-7.763	PK
3	*	9760.000	39.112	45.198	-34.888	74.000	-6.086	PK

Profile: 2270405R	Page No.: 41
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480MHz by LE_2Mbps	



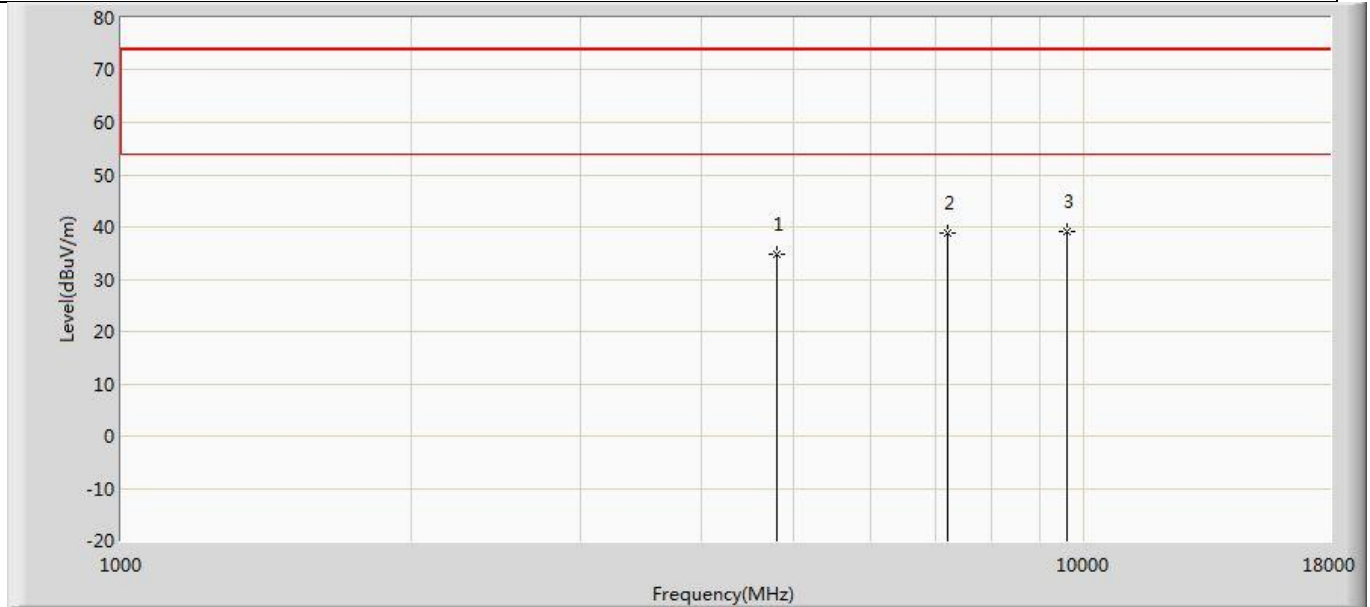
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	36.498	49.277	-37.502	74.000	-12.780	PK
2		7440.000	38.365	46.247	-35.635	74.000	-7.882	PK
3	*	9920.000	38.402	45.301	-35.598	74.000	-6.899	PK

Profile: 2270405R	Page No.: 42
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480MHz by LE_2Mbps	



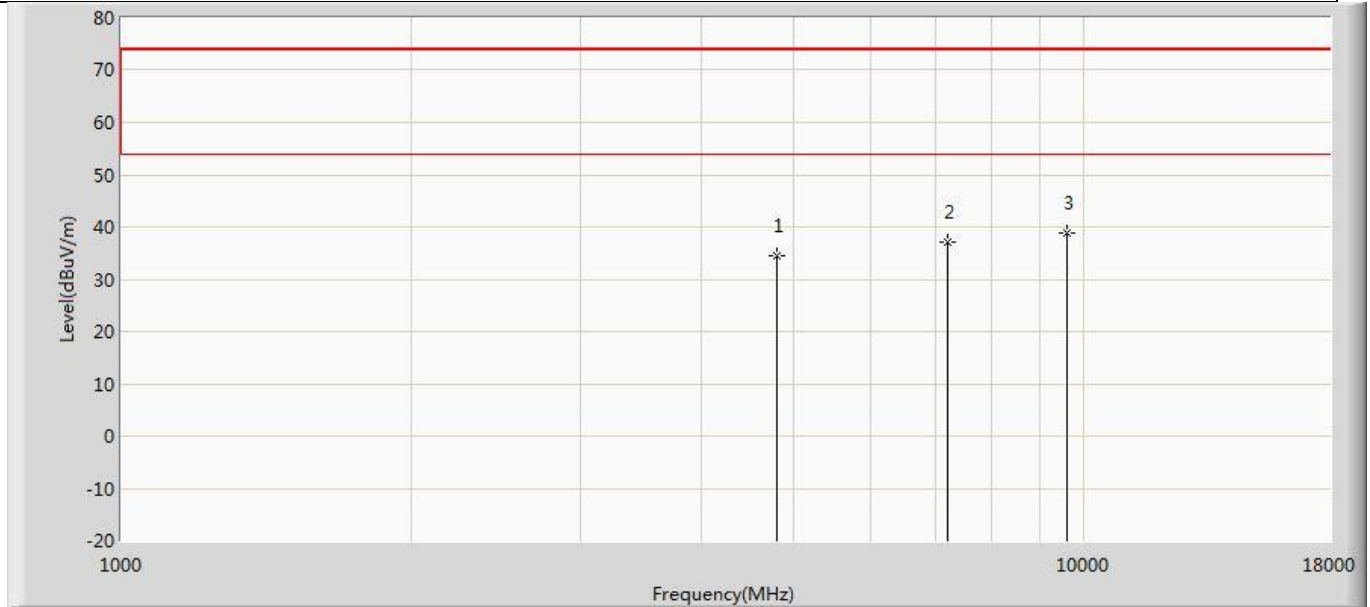
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	34.933	47.712	-39.067	74.000	-12.780	PK
2	*	7440.000	38.436	46.318	-35.564	74.000	-7.882	PK
3		9920.000	38.285	45.184	-35.715	74.000	-6.899	PK

Profile: 2270405R	Page No.: 43
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402MHz by LE_Coded S=2	



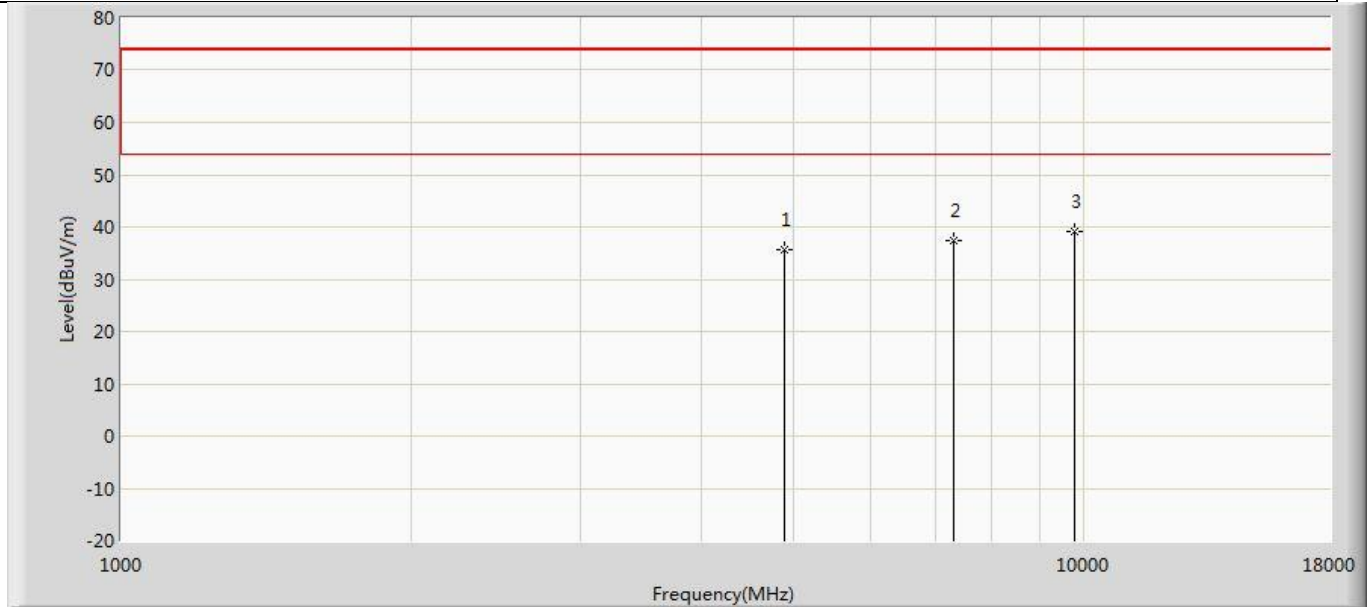
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	34.655	47.086	-39.345	74.000	-12.431	PK
2		7206.000	38.730	46.527	-35.270	74.000	-7.796	PK
3	*	9608.000	39.186	45.445	-34.814	74.000	-6.258	PK

Profile: 2270405R	Page No.: 44
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402MHz by LE_Coded S=2	



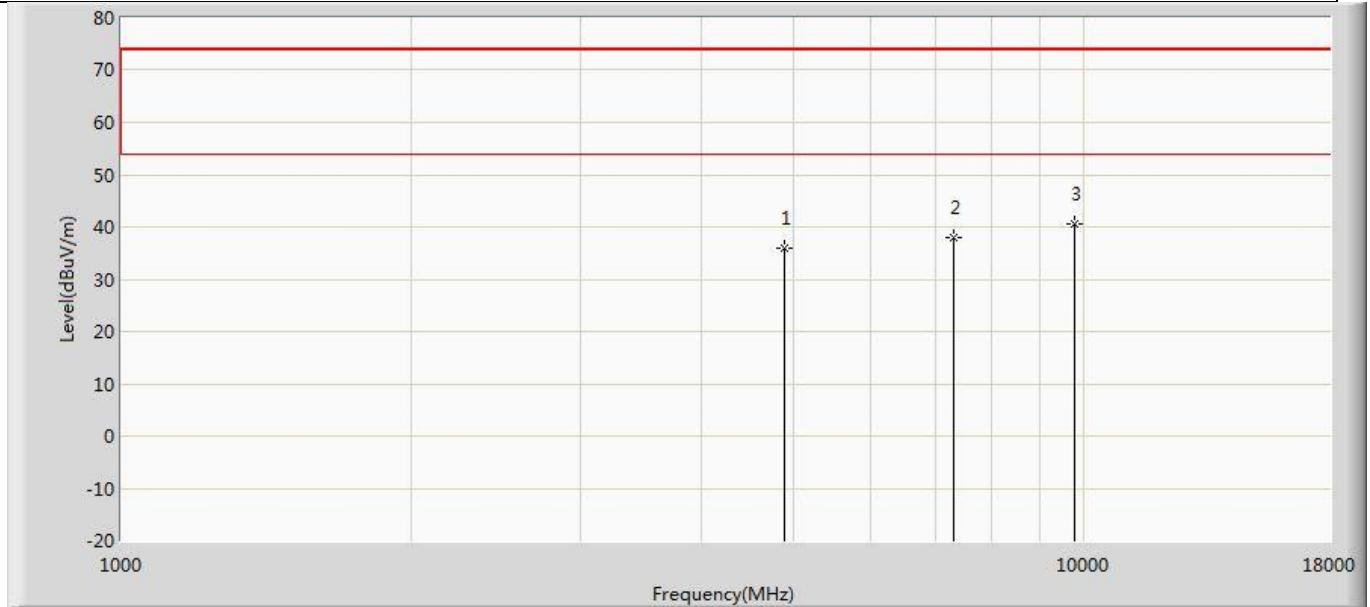
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	34.574	47.005	-39.426	74.000	-12.431	PK
2		7206.000	37.080	44.877	-36.920	74.000	-7.796	PK
3	*	9608.000	38.728	44.987	-35.272	74.000	-6.258	PK

Profile: 2270405R	Page No.: 45
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2440MHz by LE_Coded S=2	



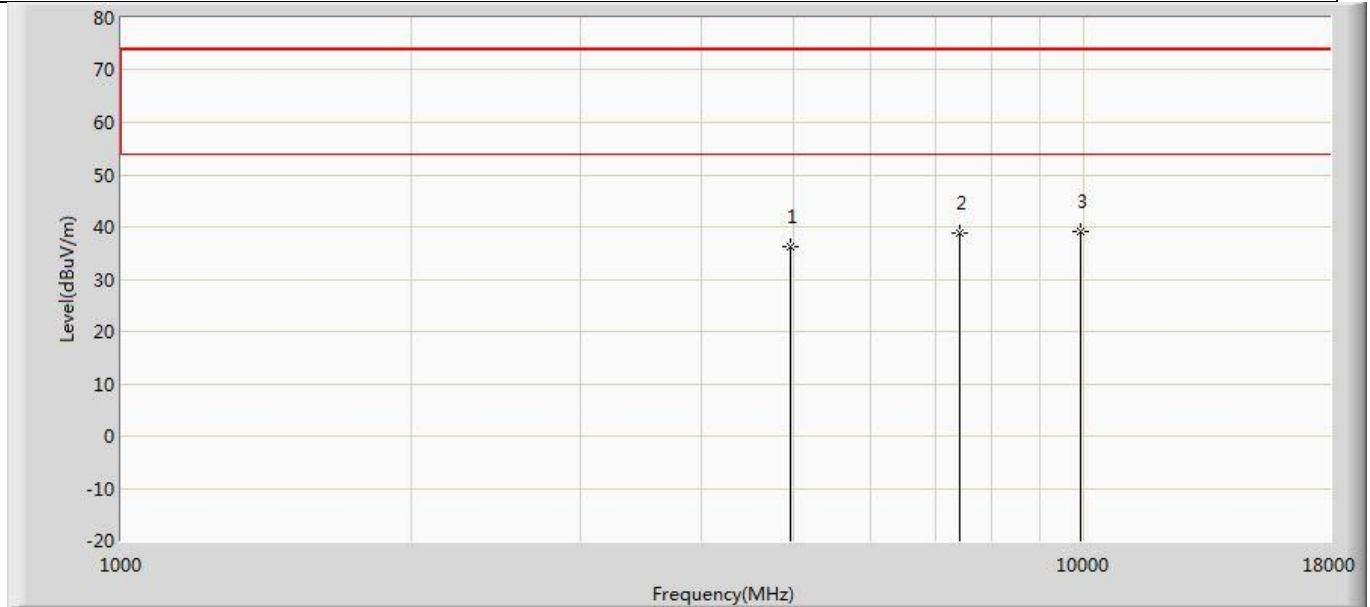
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	35.647	47.892	-38.353	74.000	-12.245	PK
2		7320.000	37.342	45.105	-36.658	74.000	-7.763	PK
3	*	9760.000	39.167	45.253	-34.833	74.000	-6.086	PK

Profile: 2270405R	Page No.: 46
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2440MHz by LE_Coded S=2	



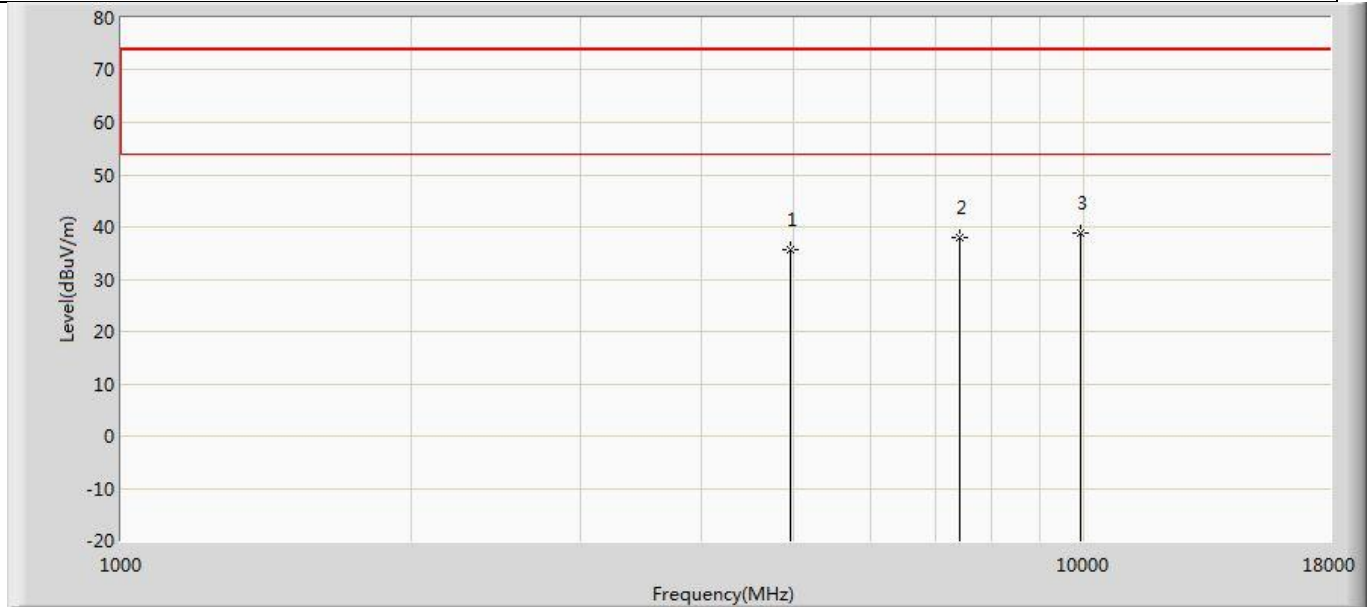
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	35.878	48.123	-38.122	74.000	-12.245	PK
2		7320.000	38.035	45.798	-35.965	74.000	-7.763	PK
3	*	9760.000	40.608	46.694	-33.392	74.000	-6.086	PK

Profile: 2270405R	Page No.: 47
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480MHz by LE_Coded S=2	



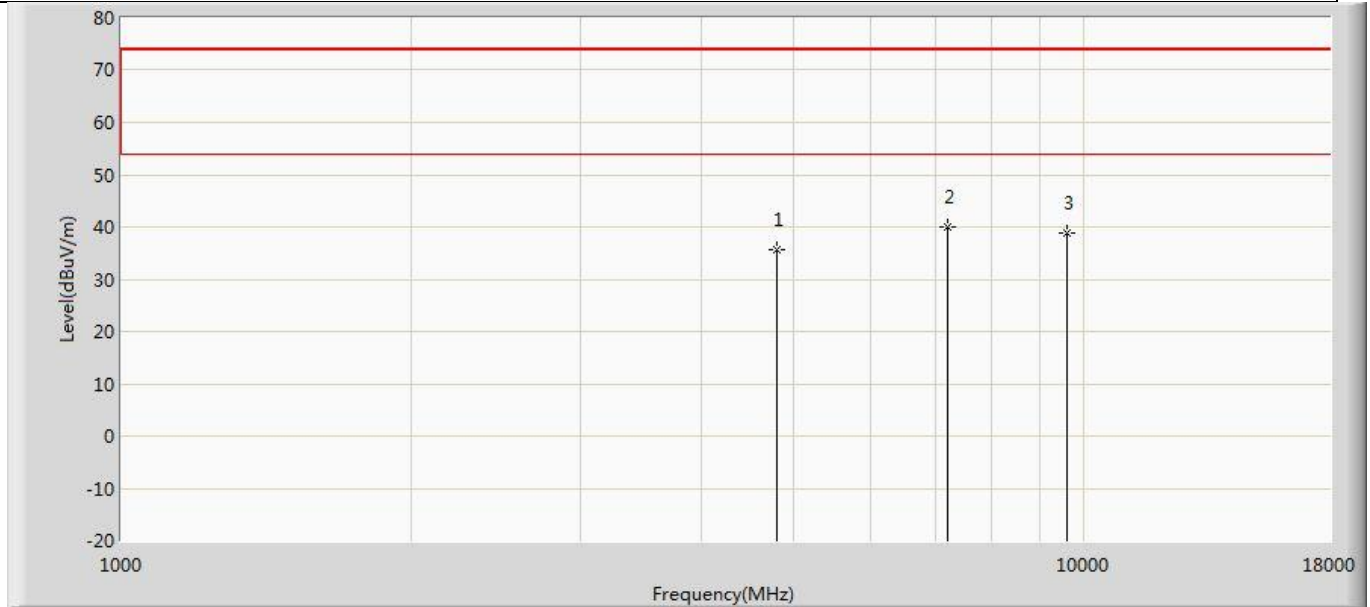
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	36.173	48.952	-37.827	74.000	-12.780	PK
2		7440.000	38.916	46.798	-35.084	74.000	-7.882	PK
3	*	9920.000	39.274	46.173	-34.726	74.000	-6.899	PK

Profile: 2270405R	Page No.: 48
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480MHz by LE_Coded S=2	



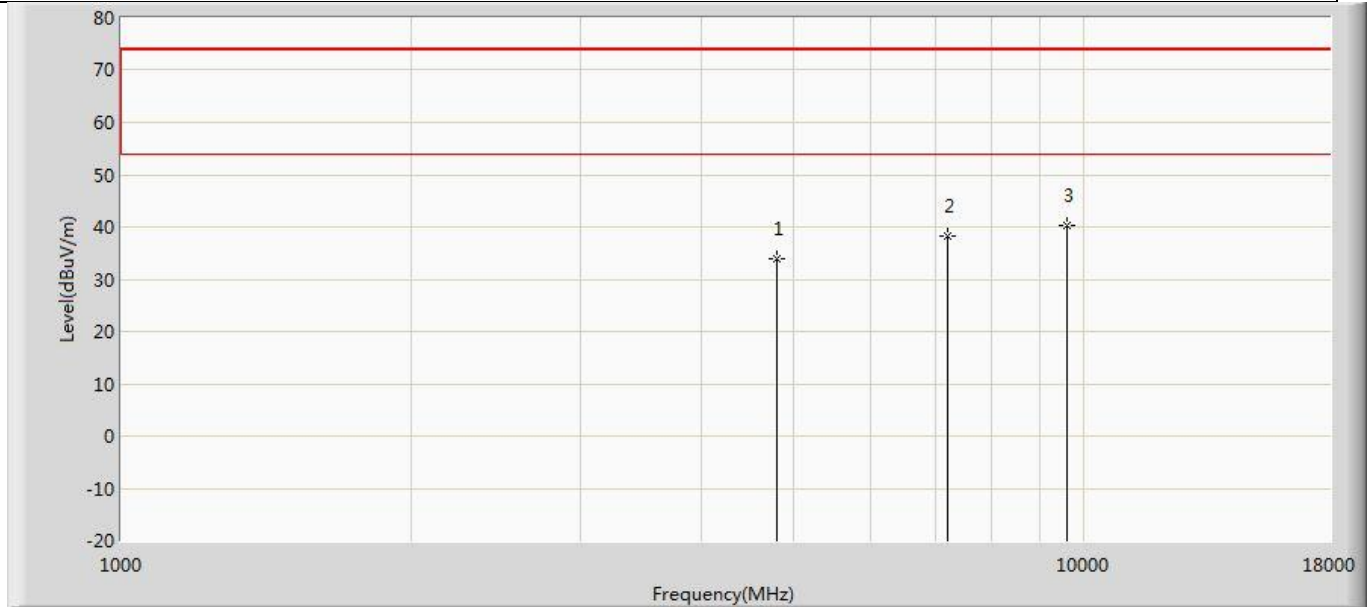
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	35.706	48.485	-38.294	74.000	-12.780	PK
2		7440.000	38.072	45.954	-35.928	74.000	-7.882	PK
3	*	9920.000	38.900	45.799	-35.100	74.000	-6.899	PK

Profile: 2270405R	Page No.: 49
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2402MHz by LE_Coded S=8	



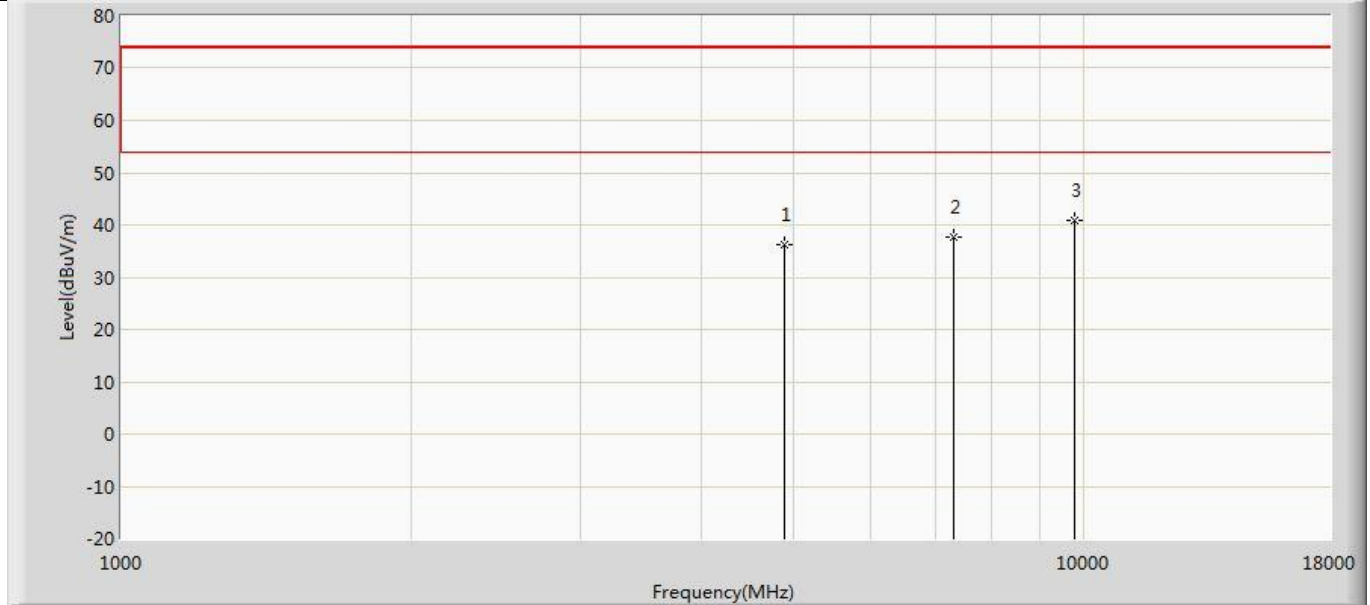
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	35.733	48.164	-38.267	74.000	-12.431	PK
2	*	7206.000	39.879	47.676	-34.121	74.000	-7.796	PK
3		9608.000	38.983	45.242	-35.017	74.000	-6.258	PK

Profile: 2270405R	Page No.: 50
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2402MHz by LE_Coded S=8	



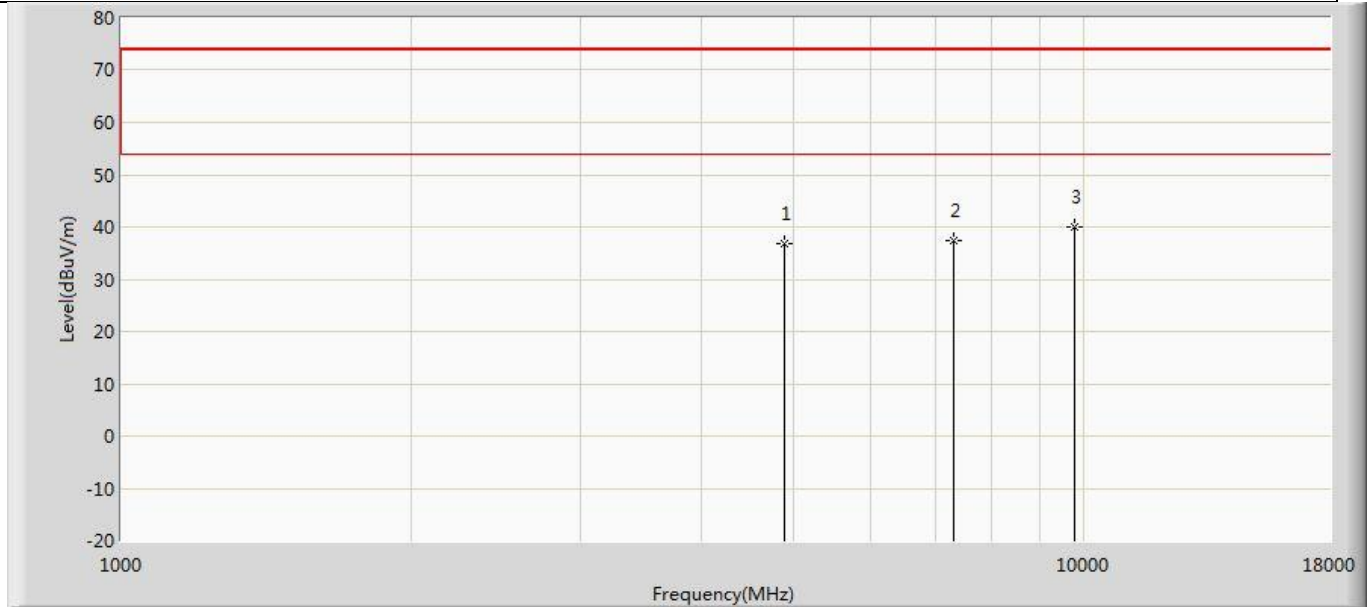
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	33.927	46.358	-40.073	74.000	-12.431	PK
2		7206.000	38.163	45.960	-35.837	74.000	-7.796	PK
3	*	9608.000	40.225	46.484	-33.775	74.000	-6.258	PK

Profile: 2270405R	Page No.: 51
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2440MHz by LE_Coded S=8	



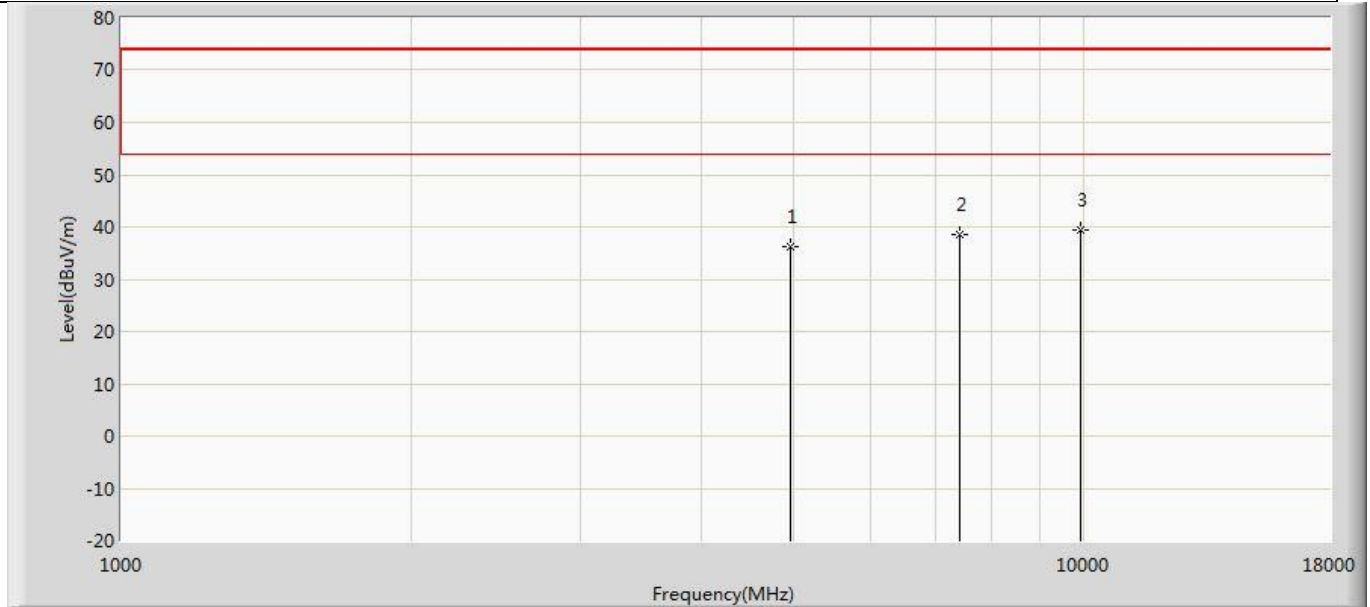
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	36.251	48.496	-37.749	74.000	-12.245	PK
2		7320.000	37.778	45.541	-36.222	74.000	-7.763	PK
3	*	9760.000	40.835	46.921	-33.165	74.000	-6.086	PK

Profile: 2270405R	Page No.: 52
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2440MHz by LE_Coded S=8	



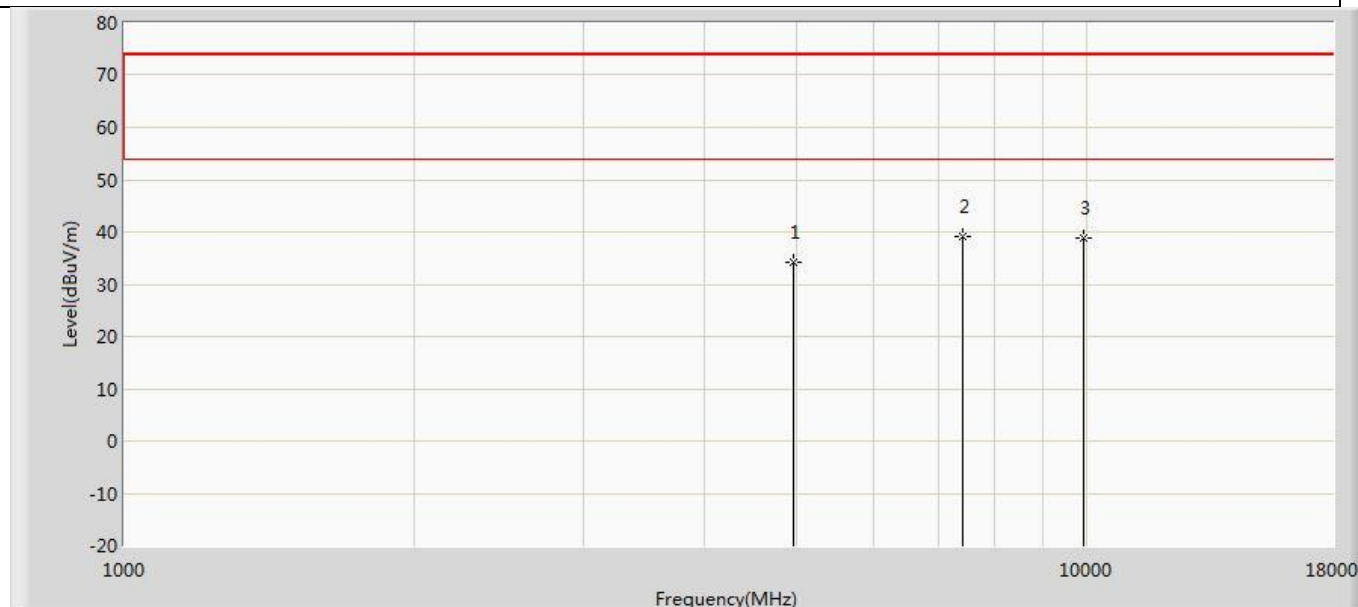
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	36.668	48.913	-37.332	74.000	-12.245	PK
2		7320.000	37.395	45.158	-36.605	74.000	-7.763	PK
3	*	9760.000	40.067	46.153	-33.933	74.000	-6.086	PK

Profile: 2270405R	Page No.: 53
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
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		4960.000	36.320	49.099	-37.680	74.000	-12.780	PK
2		7440.000	38.616	46.498	-35.384	74.000	-7.882	PK
3	*	9920.000	39.316	46.215	-34.684	74.000	-6.899	PK

Profile: 2270405R	Page No.: 54
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/21 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2480MHz by LE_Coded S=8	



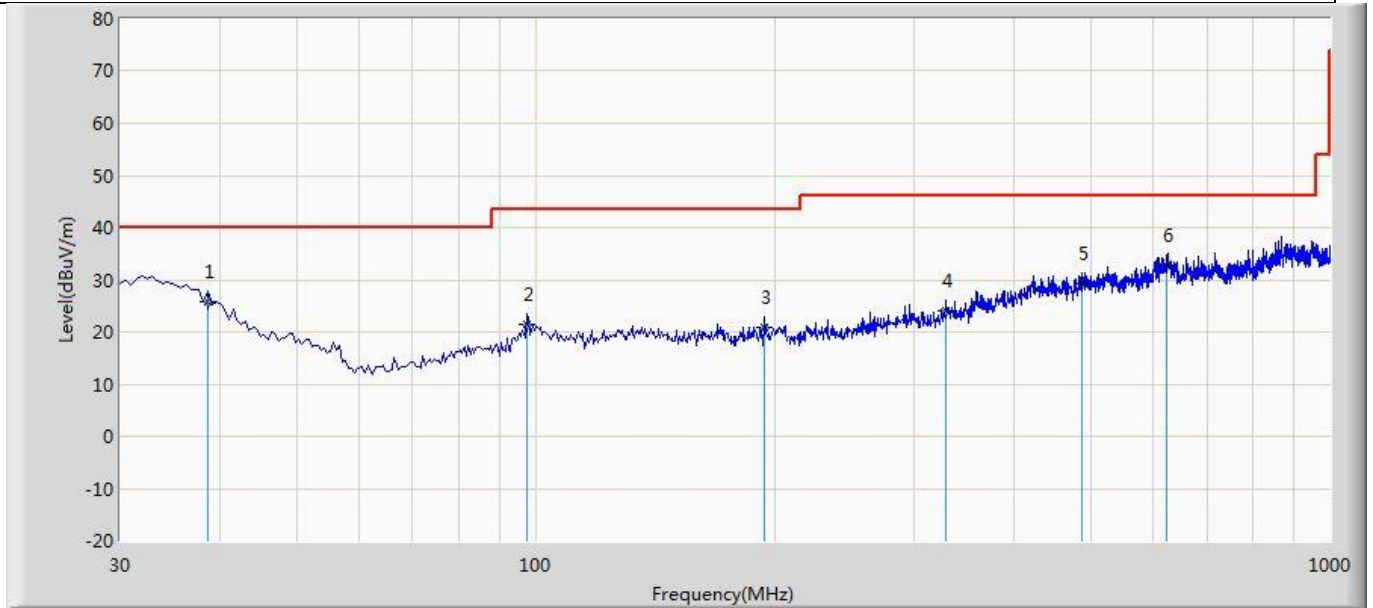
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	34.309	47.088	-39.691	74.000	-12.780	PK
2	*	7440.000	39.033	46.915	-34.967	74.000	-7.882	PK
3		9920.000	38.921	45.820	-35.079	74.000	-6.899	PK

Note:

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, worst case are at least 20dB below the limits, therefore no data appear in the report.
3. The test frequency range, 18GHz~26GHz test result on peak is lower than average limit, all is the noise base, therefore no data appear in the report.
4. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
5. As the radiated emission was performed, so conducted emission was not tested.

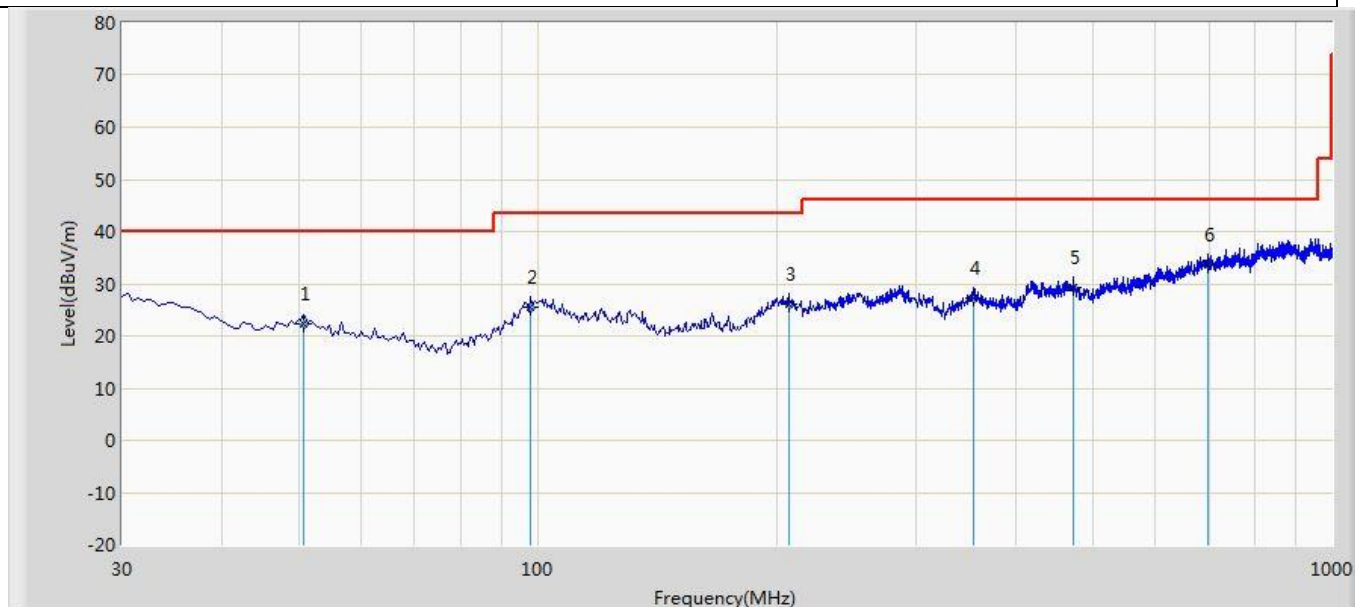
The worst case of Radiated Emission below 1GHz:

Profile: 2270405R	Page No.: 87
Engineer: Pengcheng Yang	
Site: AC2	Time: 2022/07/21 - 23:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
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		38.730	25.725	2.273	-14.275	40.000	23.452	QP
2		97.415	21.389	5.378	-22.111	43.500	16.011	QP
3		194.415	20.796	3.341	-22.704	43.500	17.455	QP
4		328.275	24.162	1.662	-21.838	46.000	22.500	QP
5		487.840	29.416	1.359	-16.584	46.000	28.057	QP
6	*	622.670	32.815	2.088	-13.185	46.000	30.727	QP

Profile: 2270405R	Page No.: 88
Engineer: Pengcheng Yang	
Site: AC2	Time: 2022/07/21 - 23:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
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		50.855	22.176	2.932	-17.824	40.000	19.244	QP
2		97.900	25.440	4.426	-18.060	43.500	21.014	QP
3		207.025	26.009	2.615	-17.491	43.500	23.394	QP
4		353.495	27.130	2.005	-18.870	46.000	25.125	QP
5		472.320	29.380	2.857	-16.620	46.000	26.523	QP
6	*	698.330	33.765	2.965	-12.235	46.000	30.800	QP

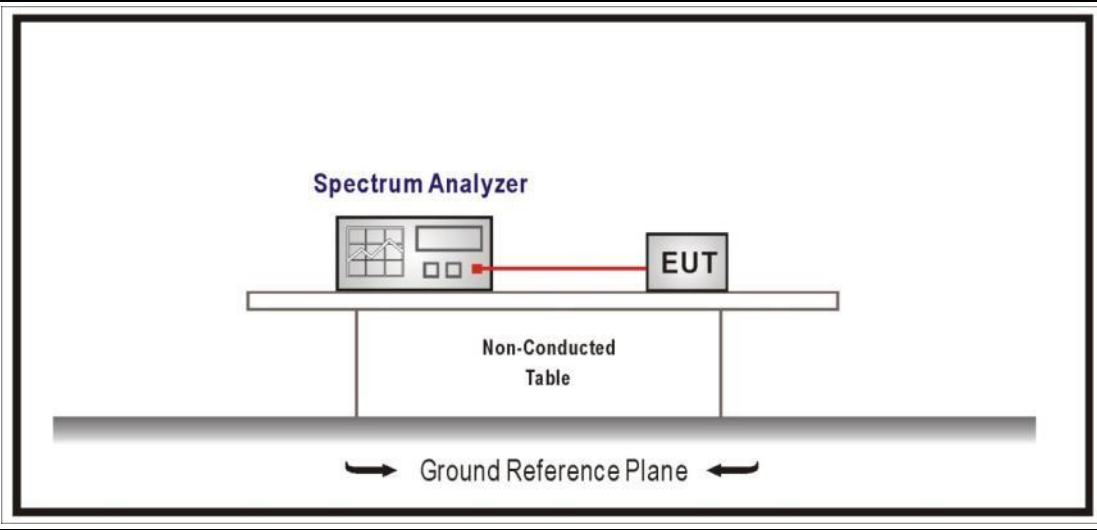
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

4.3 Emissions in non-restricted frequency band	VERDICT: PASS
---	----------------------

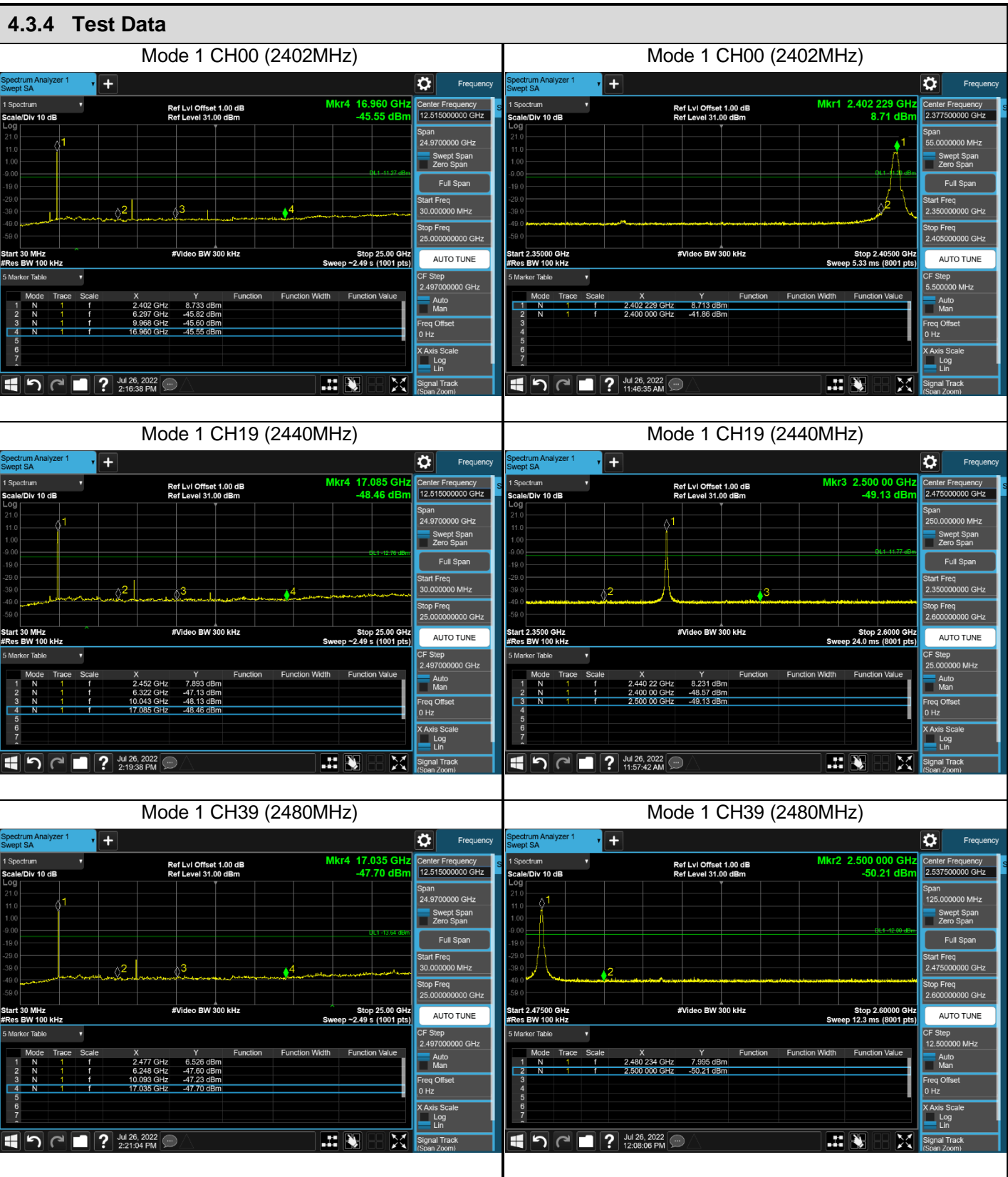
4.3.1 Limit	
Standard	FCC Part 15 Subpart C Paragraph 15.247(d)
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30dBc(Note1)
RF Output power(PK detector)	20dBc(Note2)
<p>Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described 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).</p> <p>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).</p>	

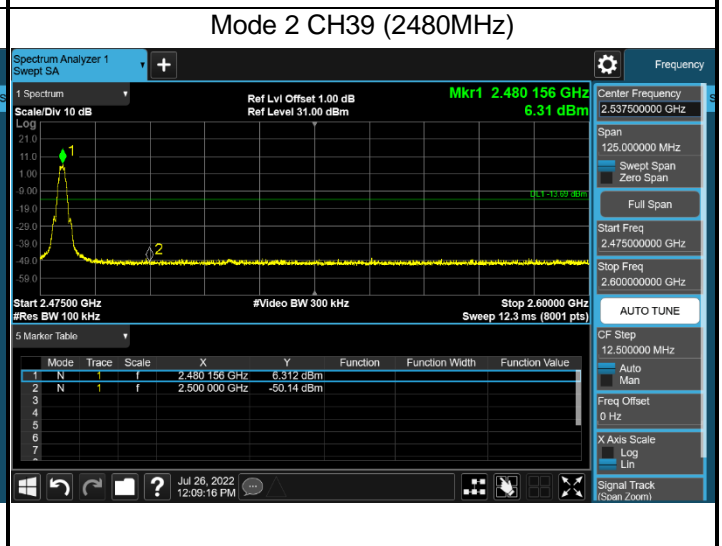
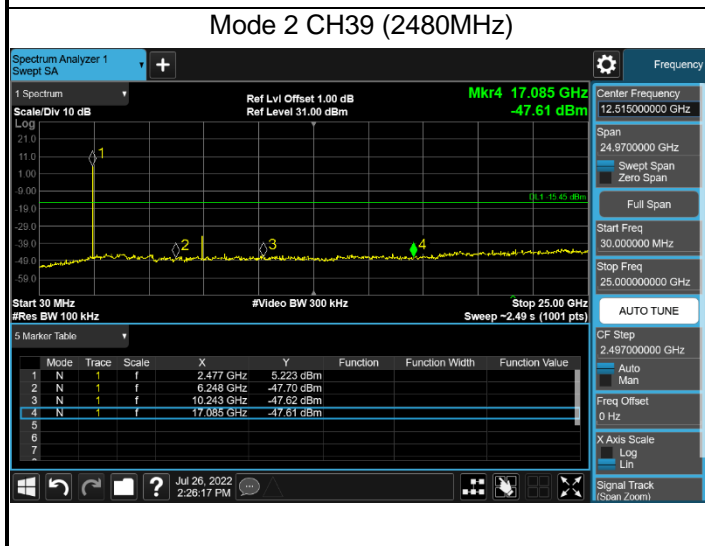
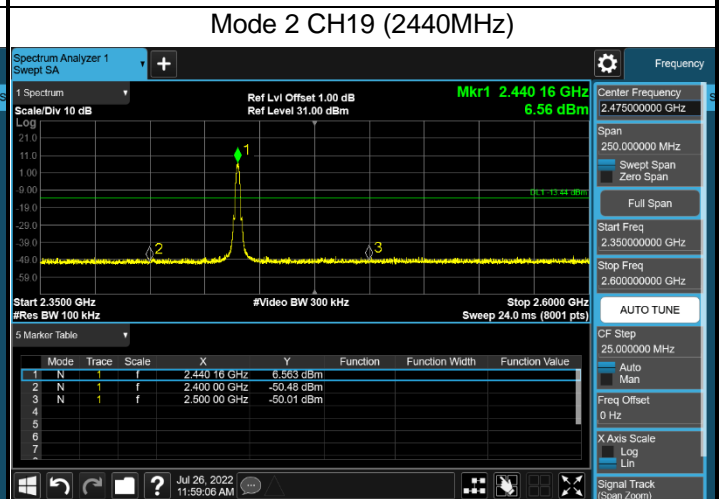
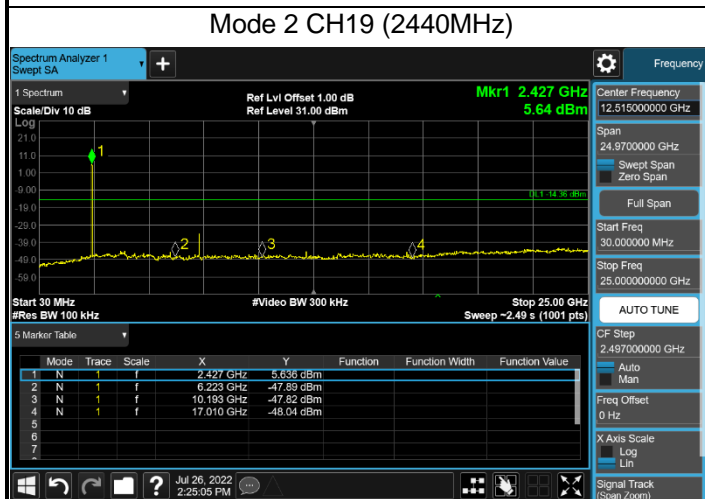
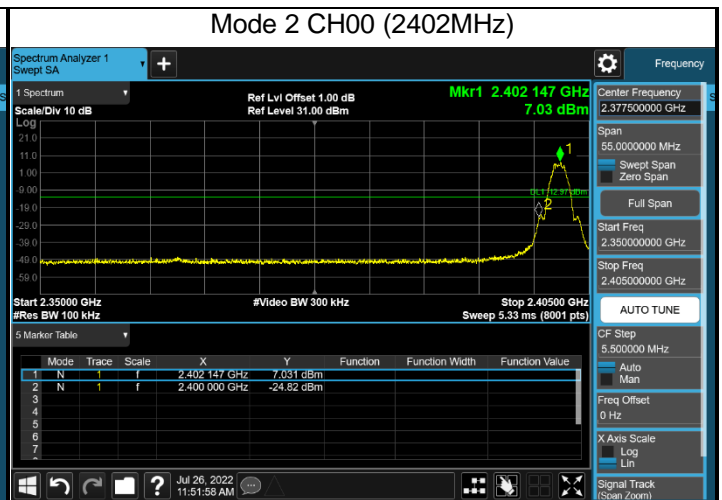
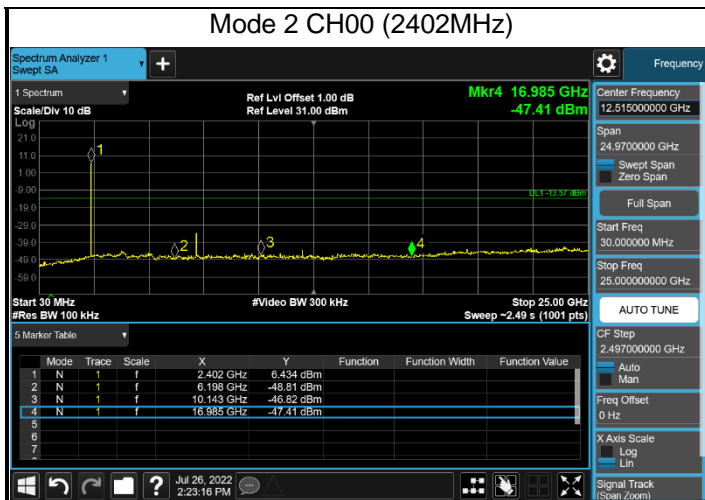
4.3.2 Test Setup

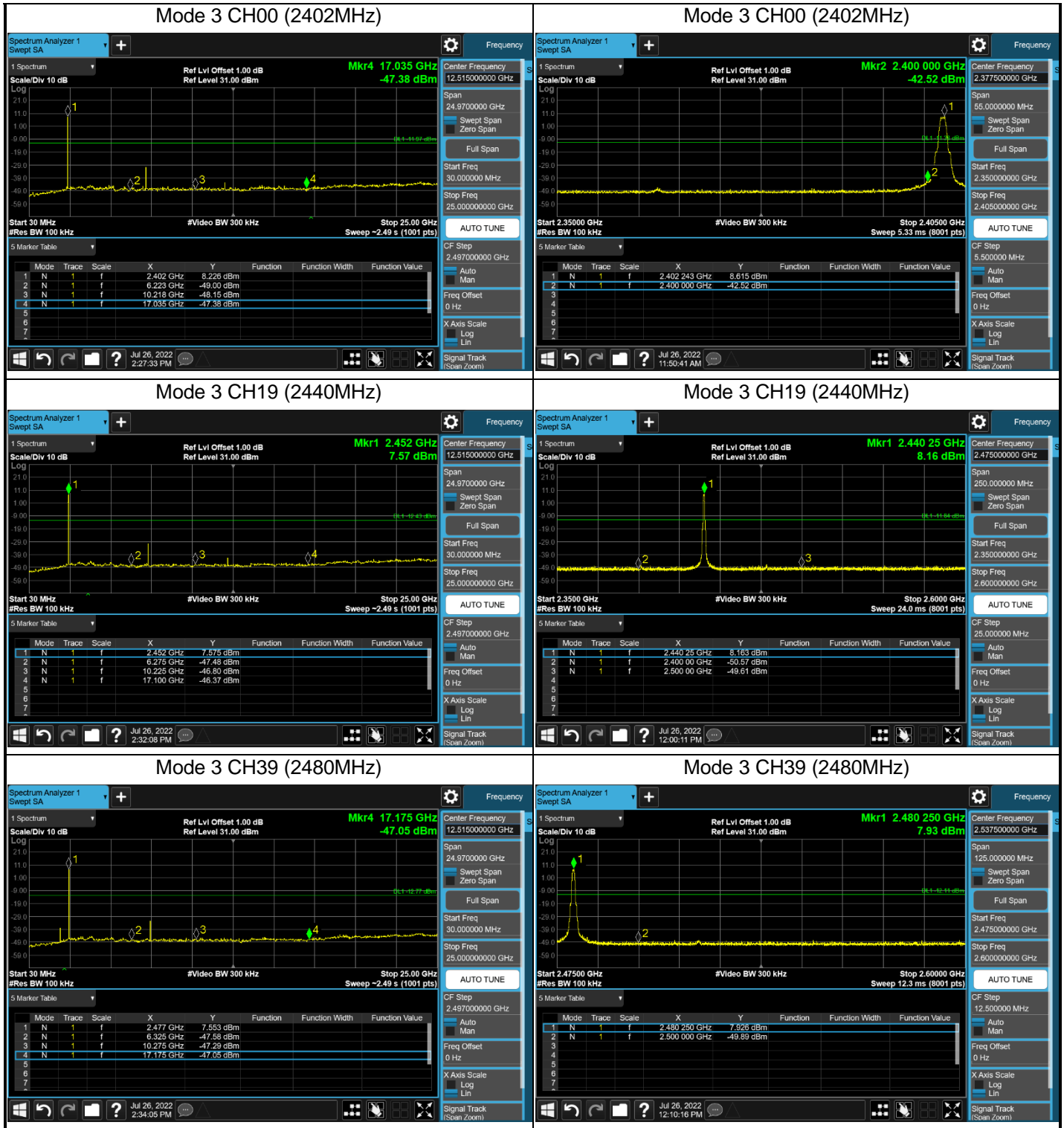


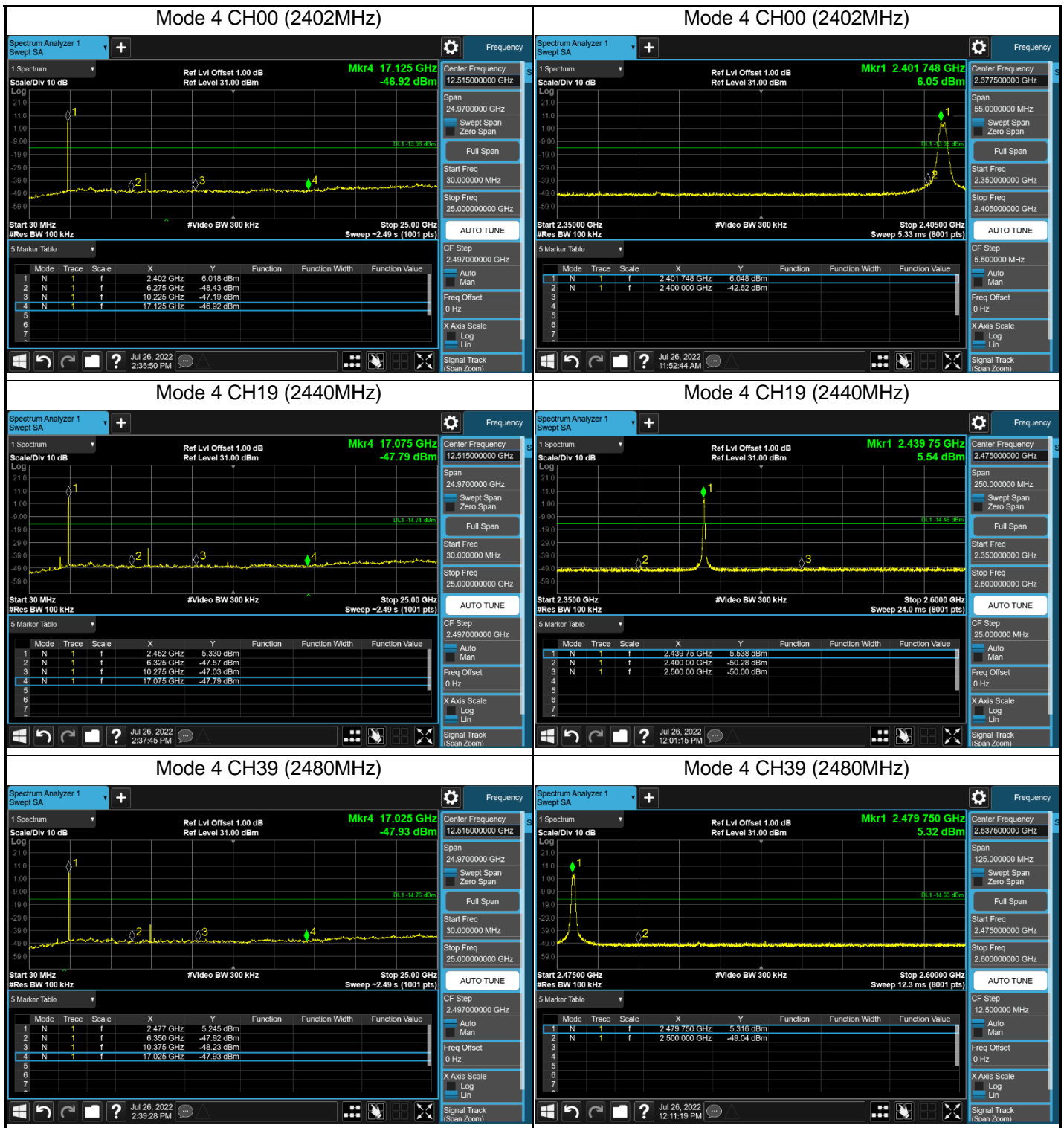
4.3.3 Test Procedure

References Rule	Chapter	Description
<input checked="" type="checkbox"/> ANSI C63.10	11.11	Emissions in non-restricted frequency bands
<input checked="" type="checkbox"/>	11.11.1	General
<input checked="" type="checkbox"/>	11.11.2	Reference level measurement
<input checked="" type="checkbox"/>	11.11.3	Emission level measurement









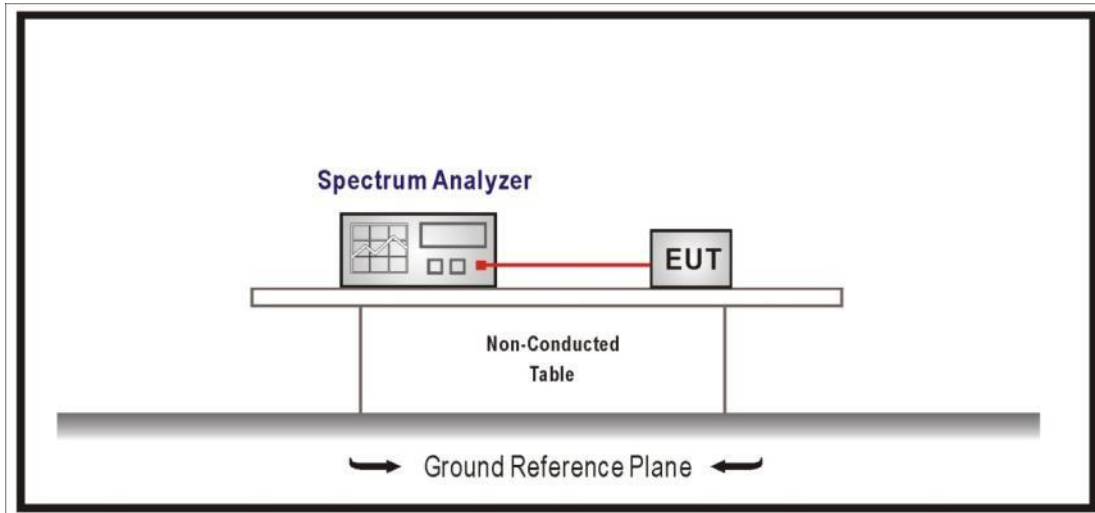
4.4 Duty cycle

VERDICT: PASS

4.4.1 Limit

N/A

4.4.2 Test Setup



4.4.3 Test Procedure

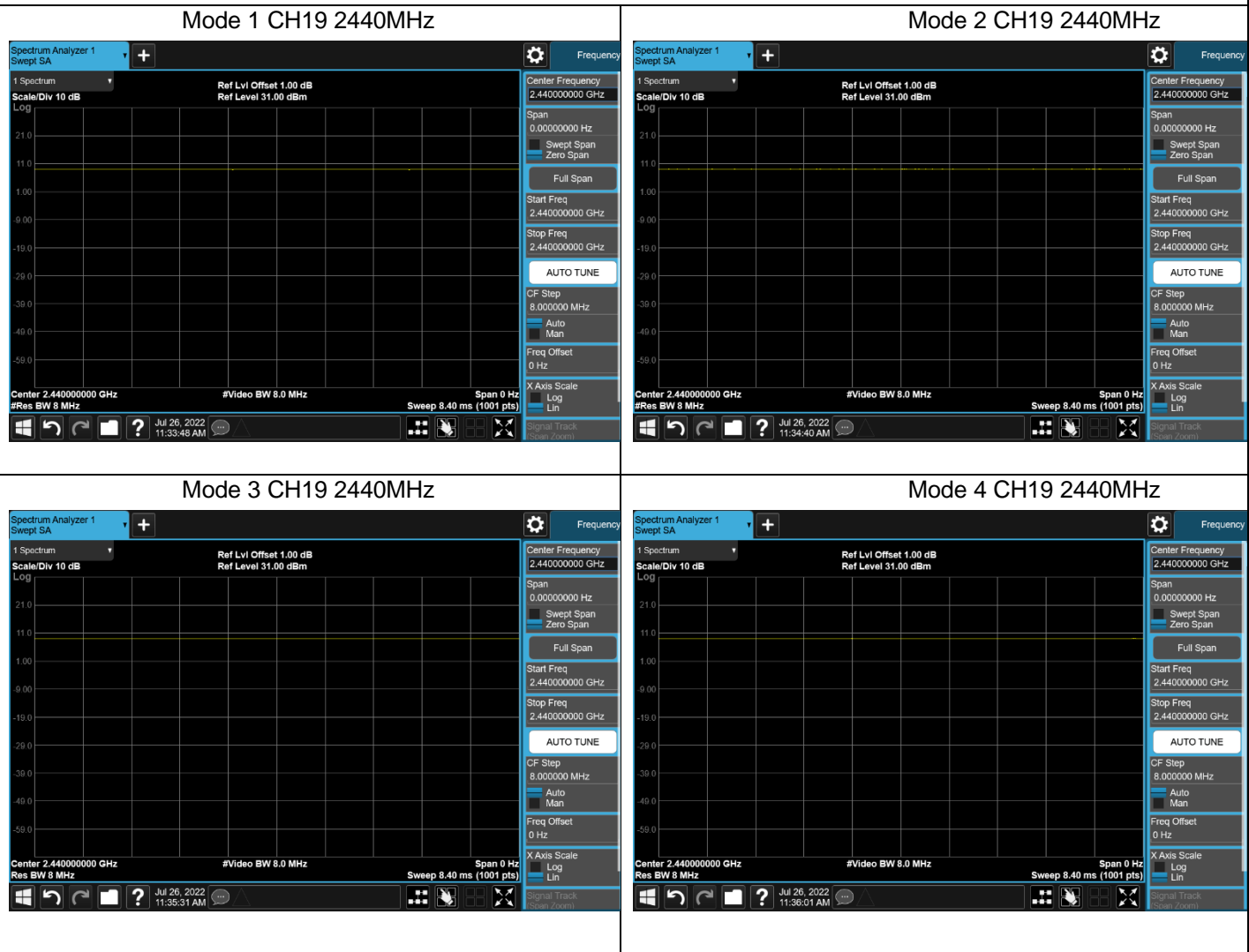
References Rule	Chapter	Description
<input checked="" type="checkbox"/> ANSI C63.10	11.6	Duty cycle (D), transmission duration (T), and maximum power control level

4.4.4 Test Data

Test Mode	Tx On (us)	Tx On + Tx Off (us)	VBW (kHz)	Duty Cycle (%)	Detector
Mode 1	--	--	3000	100	RMS
Mode 2	--	--	3000	100	RMS
Mode 3	--	--	3000	100	RMS
Mode 4	--	--	3000	100	RMS

Note 1: T means the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Note 2: According to C63.10, if continuous transmission of the EUT ($D \geq 98\%$) cannot be achieved and the duty cycle is constant (duty cycle variations are less than $\pm 2\%$), for Radiated Emission Band Edge and Radiated Emission, for average detector set: $VBW \geq 3RBW$ will be used; If continuous transmission of the EUT ($D \geq 98\%$) cannot be achieved and the duty cycle is not constant (duty cycle variations exceed $\pm 2\%$), when test for Radiated Emission Band Edge and Radiated Emission, for average detector set: $VBW \geq 1/T$ will be used.



4.5 Band Edge

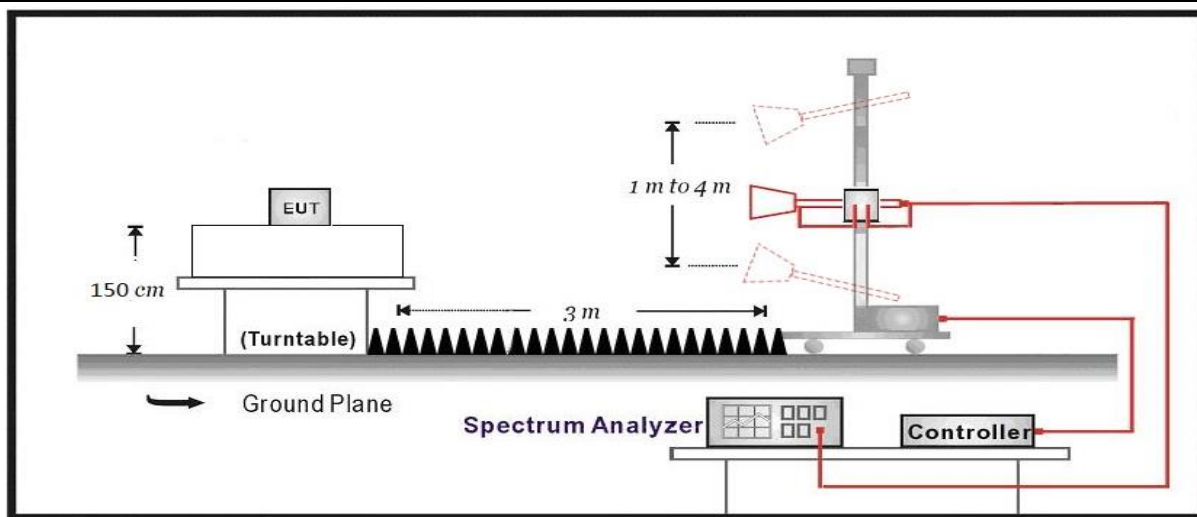
VERDICT: PASS

4.5.1 Limit

Standard		FCC Part 15 Subpart C Paragraph 15.247(d) ,15.209		
Frequency bands (MHz)	Detector	Limit (dB μ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
2483.5-2500	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

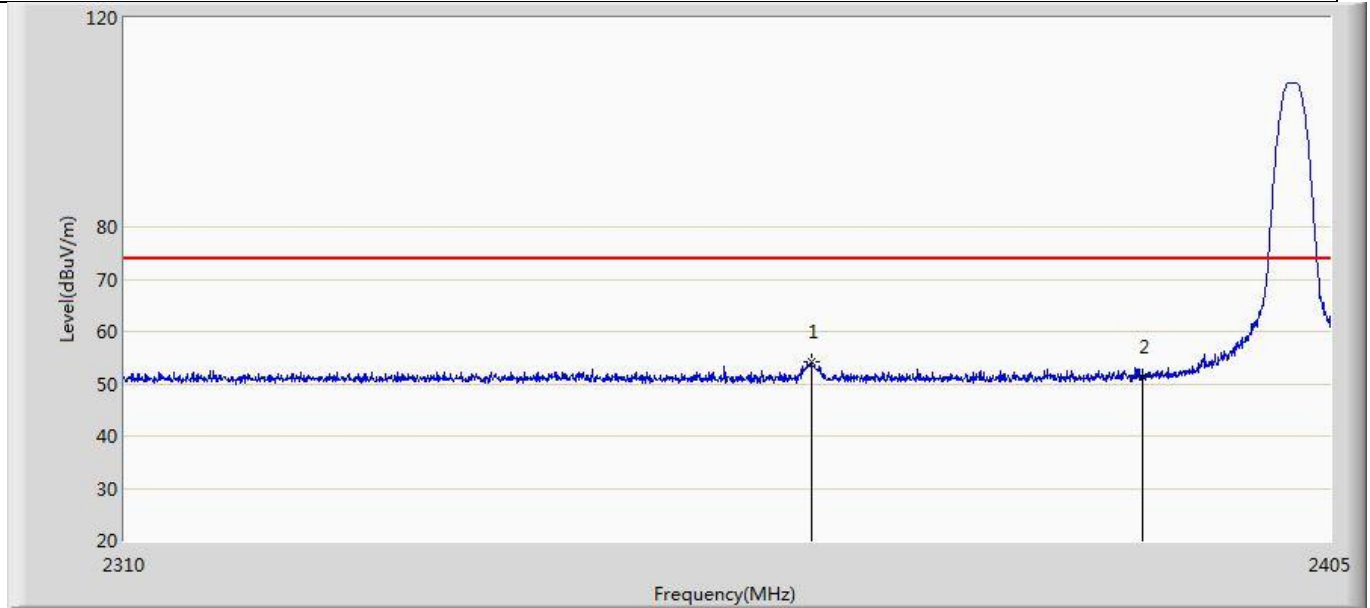


4.5.3 Test Procedure

	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	6.10	Band-edge testing
	<input checked="" type="checkbox"/> ANSI C63.10	6.10.5	Restricted-band band-edge measurements
	<input type="checkbox"/> ANSI C63.10	6.10.6	Marker-delta method
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2	Antenna-port conducted measurements
	<input type="checkbox"/> ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.4	Peak power measurement procedure
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.5	Average power measurement procedures

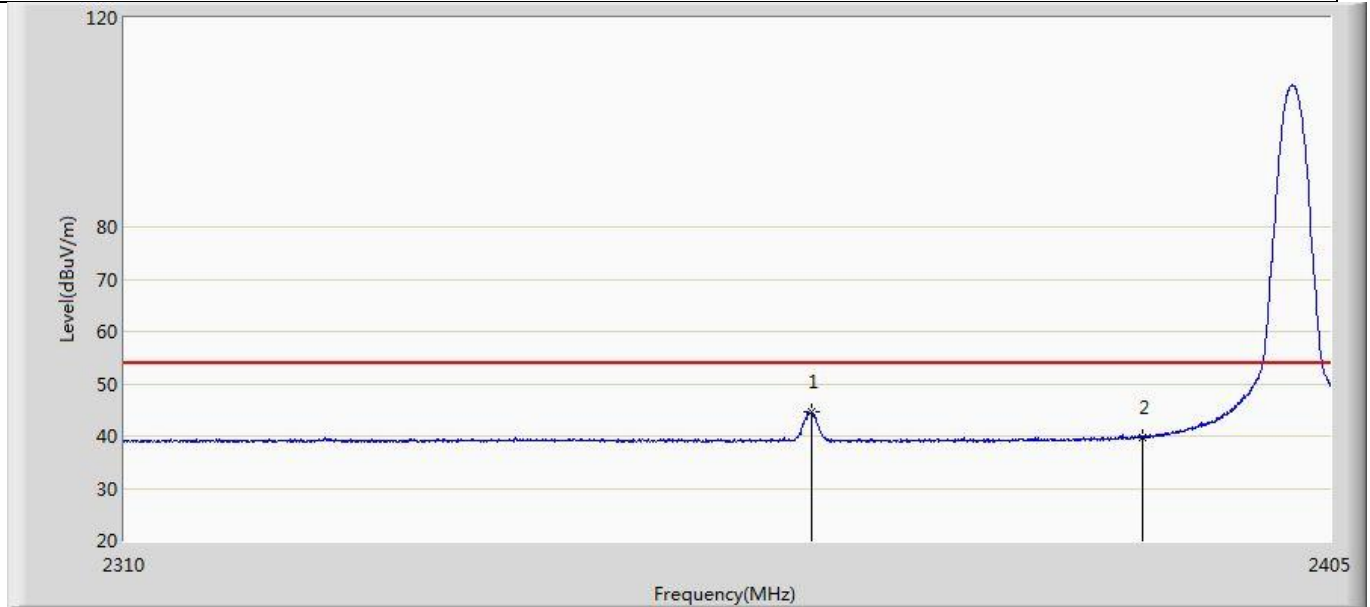
4.5.4 Test Data

Profile: 2270405R	Page No.: 2
Engineer: Pengcheng Yang	
Site: AC5	Time: 2021/12/14 - 23:02
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by LE_1Mbps	



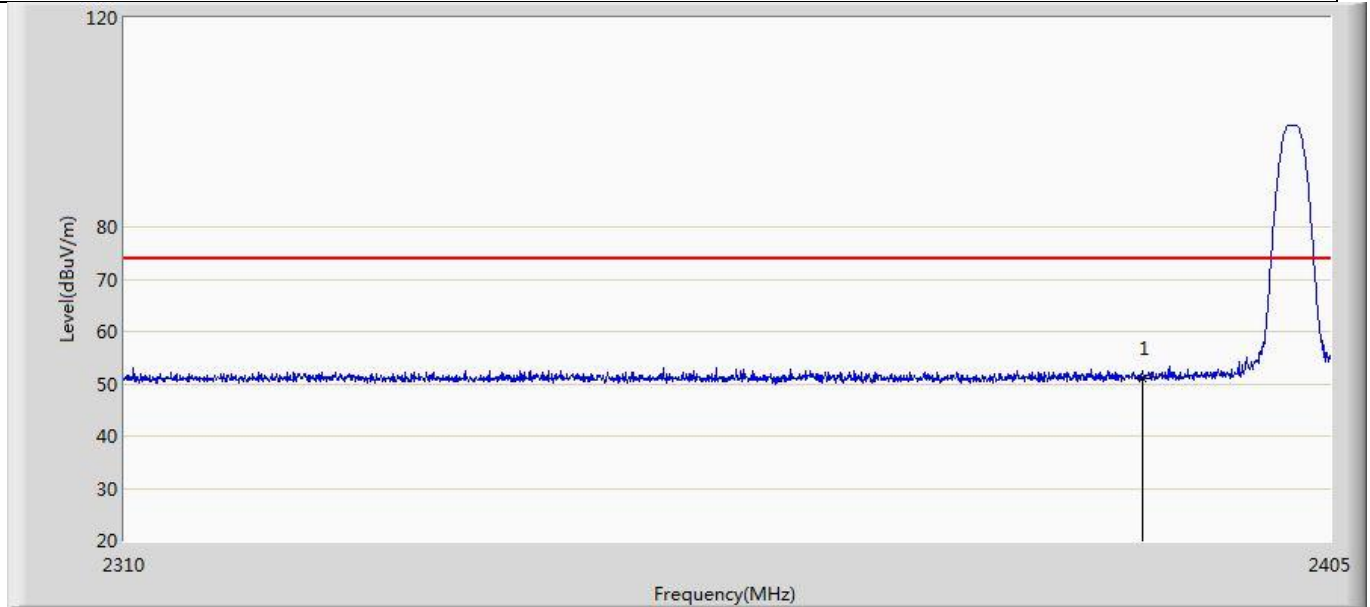
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2363.675	54.201	18.273	-19.799	74.000	35.927	PK
2		2390.000	51.439	15.341	-22.561	74.000	36.098	PK

Profile: 2270405R	Page No.: 1
Engineer: Pengcheng Yang	
Site: AC5	Time: 2021/12/14 - 22:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by LE_1Mbps	



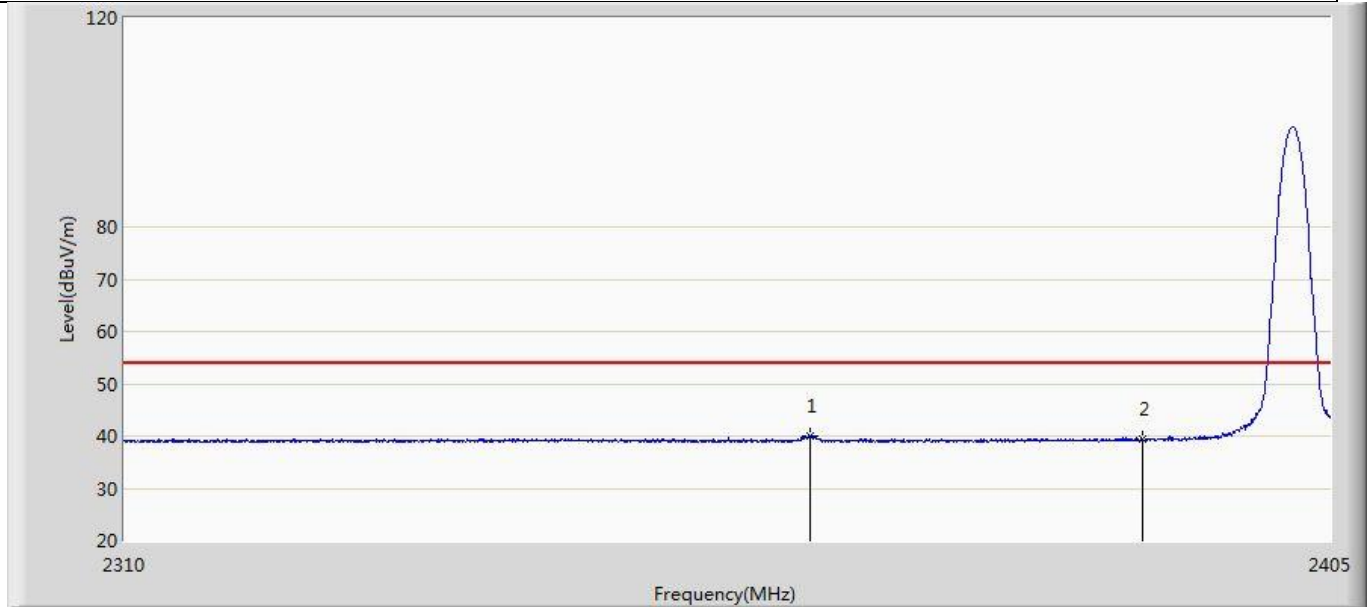
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2363.722	44.732	8.804	-9.268	54.000	35.927	AV
2		2390.000	39.830	3.732	-14.170	54.000	36.098	AV

Profile: 2270405R	Page No.: 4
Engineer: Pengcheng Yang	
Site: AC5	Time: 2021/12/14 - 23:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by LE_1Mbps	



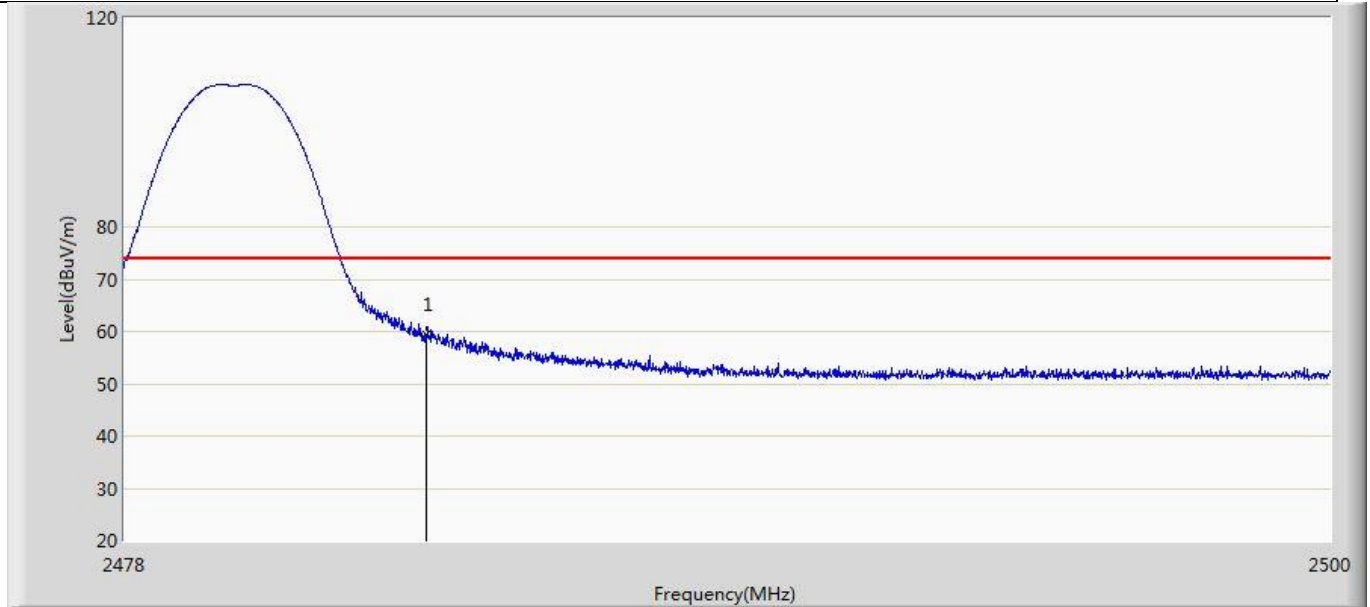
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	50.894	14.796	-23.106	74.000	36.098	PK

Profile: 2270405R	Page No.: 3
Engineer: Pengcheng Yang	
Site: AC5	Time: 2021/12/14 - 23:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by LE_1Mbps	



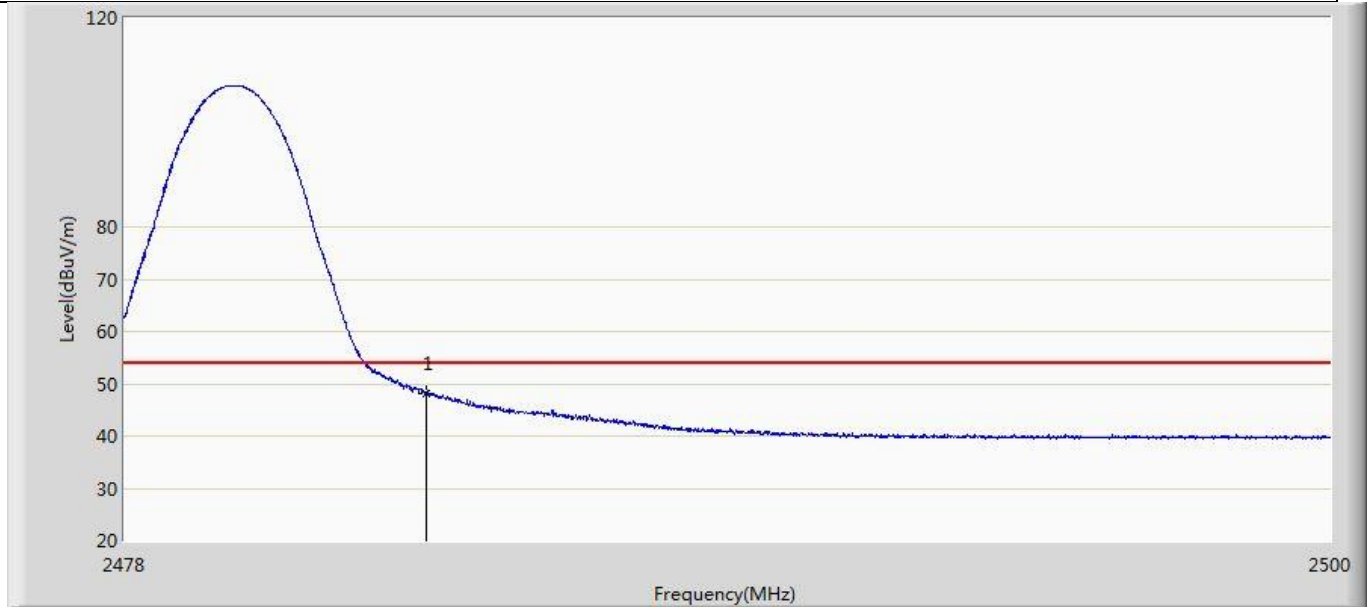
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2363.580	40.044	4.117	-13.956	54.000	35.928	AV
2		2390.000	39.434	3.336	-14.566	54.000	36.098	AV

Profile: 2270405R	Page No.: 6
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/01/24 - 20:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by LE_1Mbps	



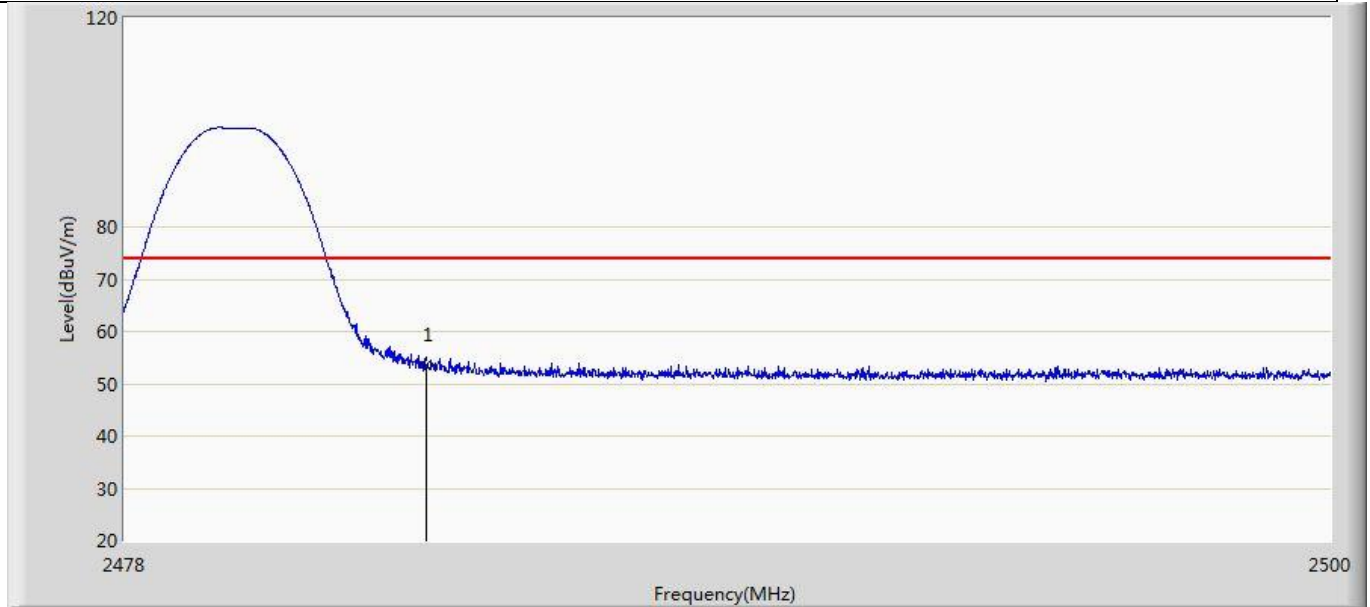
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	59.286	23.065	-14.714	74.000	36.220	PK

Profile: 2270405R	Page No.: 5
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/01/24 - 20:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by LE_1Mbps	



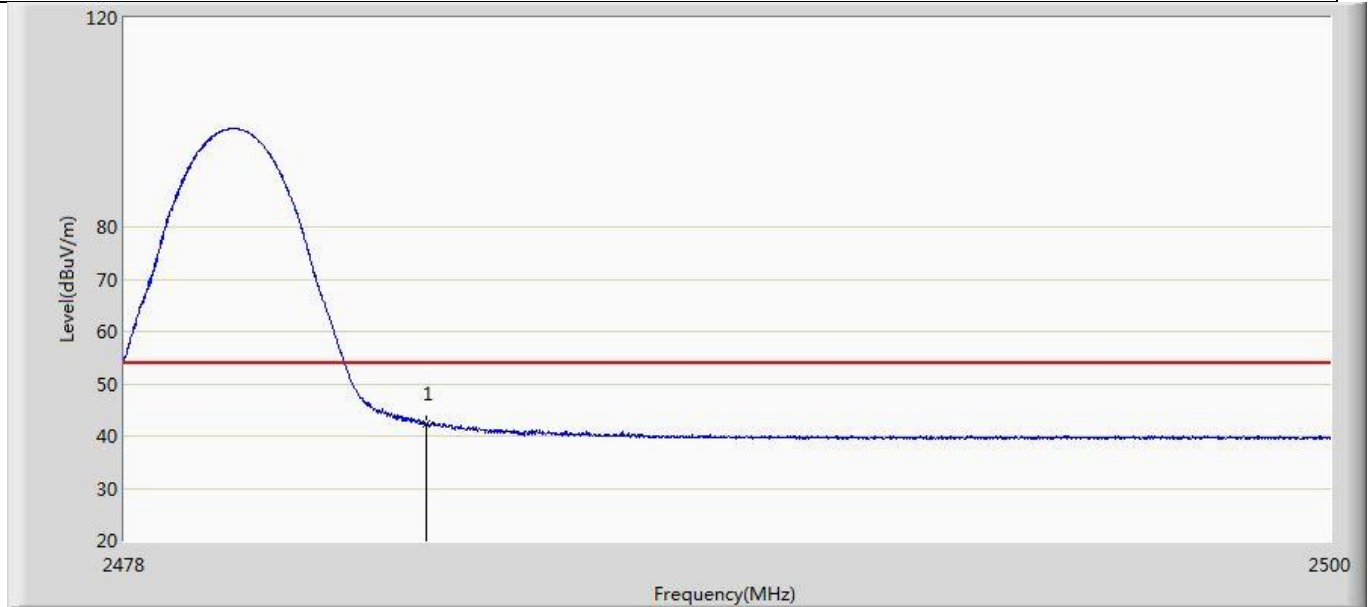
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	48.116	11.895	-5.884	54.000	36.220	AV

Profile: 2270405R	Page No.: 8
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/01/24 - 20:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by LE_1Mbps	



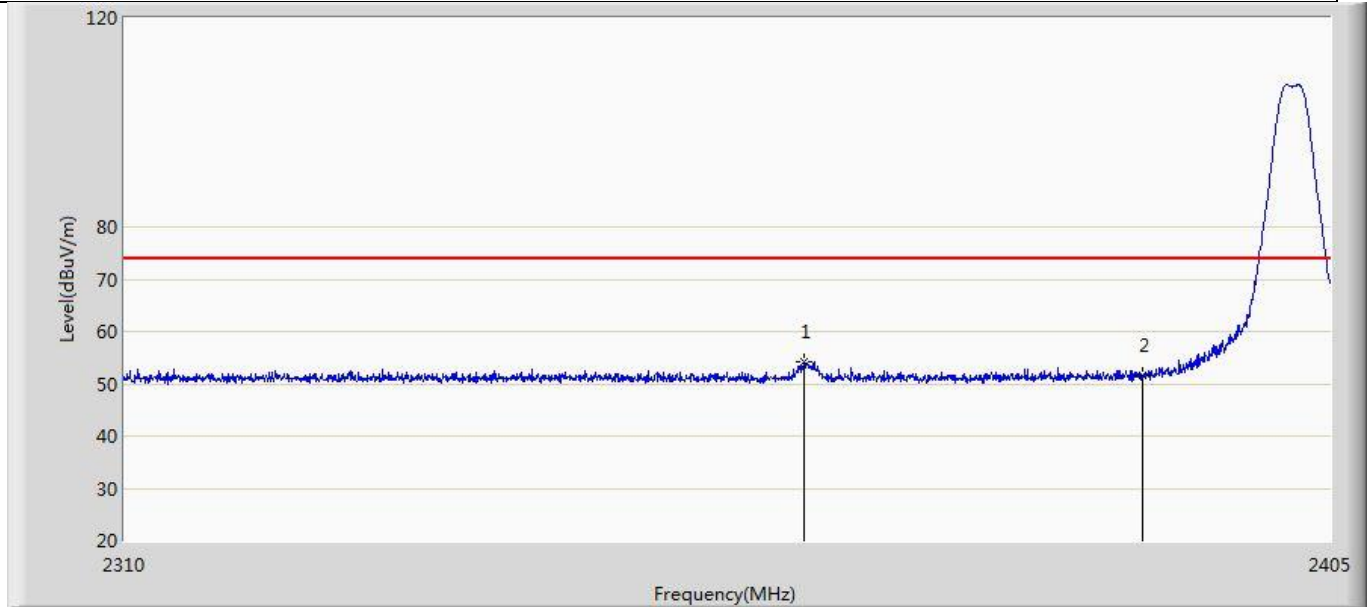
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	53.651	17.430	-20.349	74.000	36.220	PK

Profile: 2270405R	Page No.: 7
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/01/24 - 20:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by LE_1Mbps	



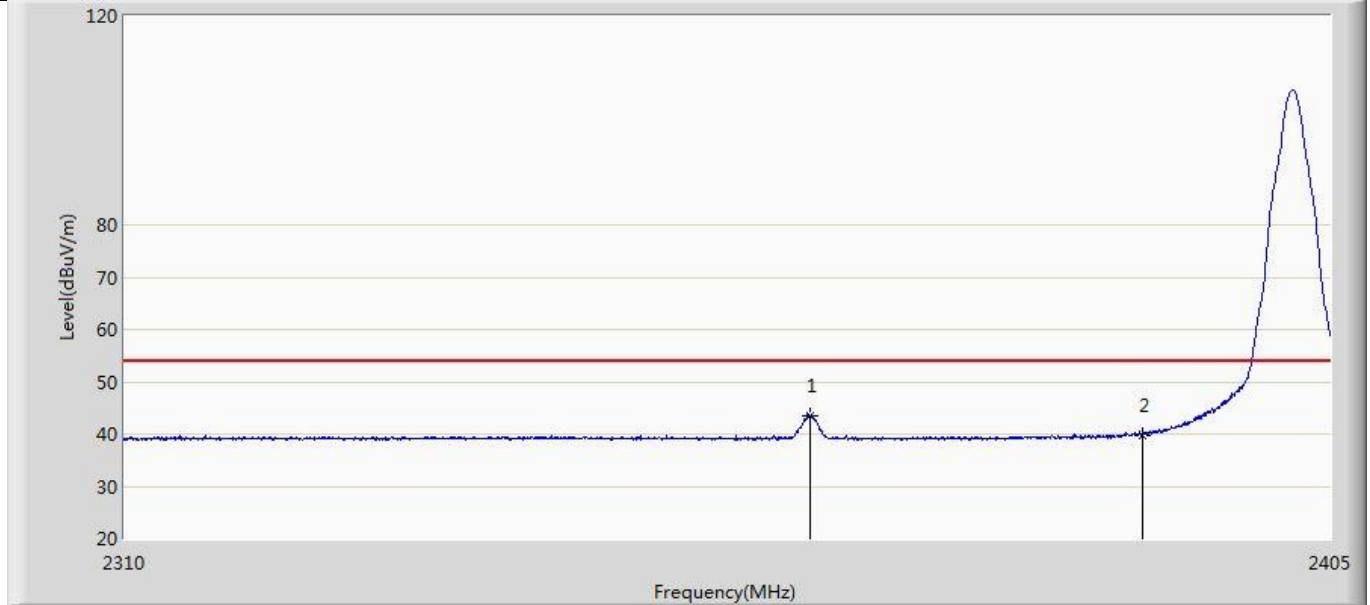
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	42.342	6.121	-11.658	54.000	36.220	AV

Profile: 2270405R	Page No.: 10
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/05/07 - 21:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402MHz by LE_2Mbps	



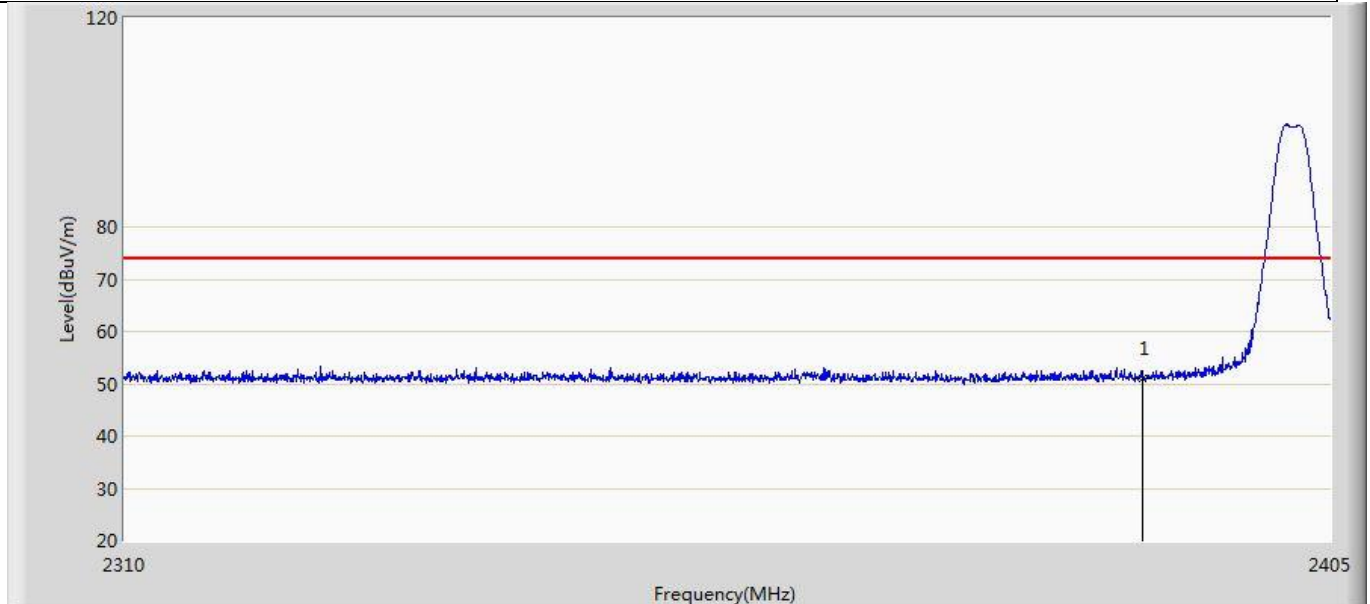
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2363.058	54.323	18.398	-19.677	74.000	35.925	PK
2		2390.000	51.576	15.478	-22.424	74.000	36.098	PK

Profile: 2270405R	Page No.: 9
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/05/07 - 21:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402MHz by LE_2Mbps	



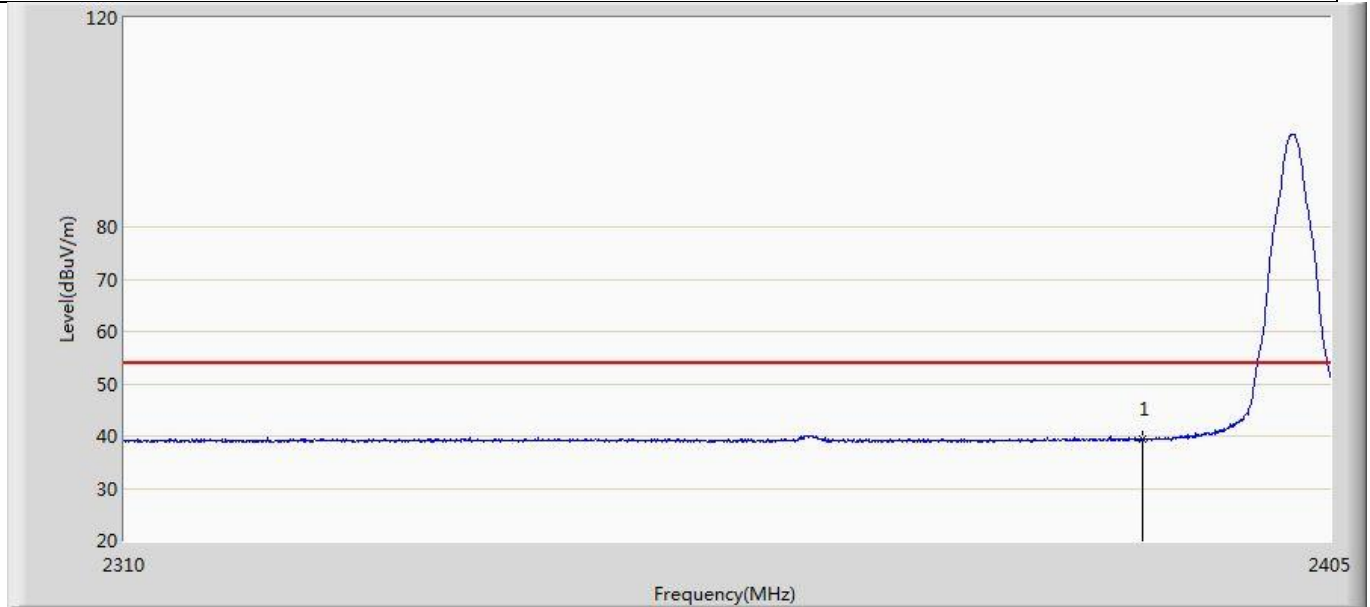
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2363.580	43.473	7.546	-10.527	54.000	35.928	AV
2		2390.000	39.817	3.719	-14.183	54.000	36.098	AV

Profile: 2270405R	Page No.: 12
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/05/07 - 21:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402MHz by LE_2Mbps	



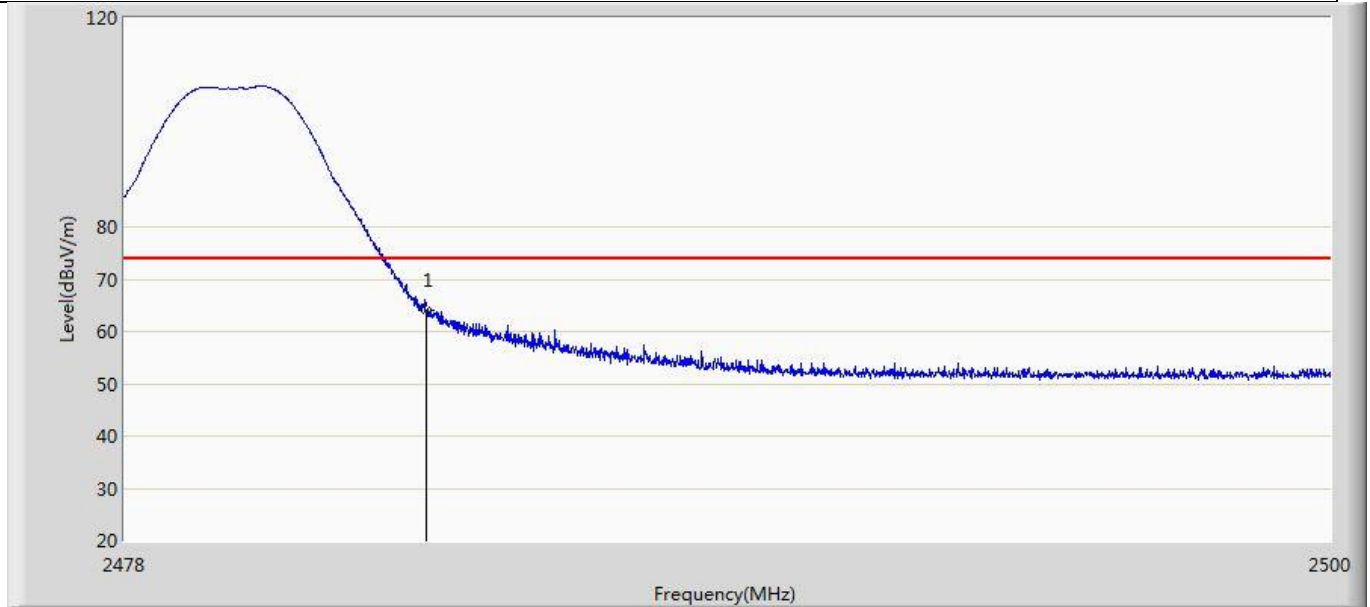
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	51.068	14.970	-22.932	74.000	36.098	PK

Profile: 2270405R	Page No.: 11
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/05/07 - 21:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2402MHz by LE_2Mbps	



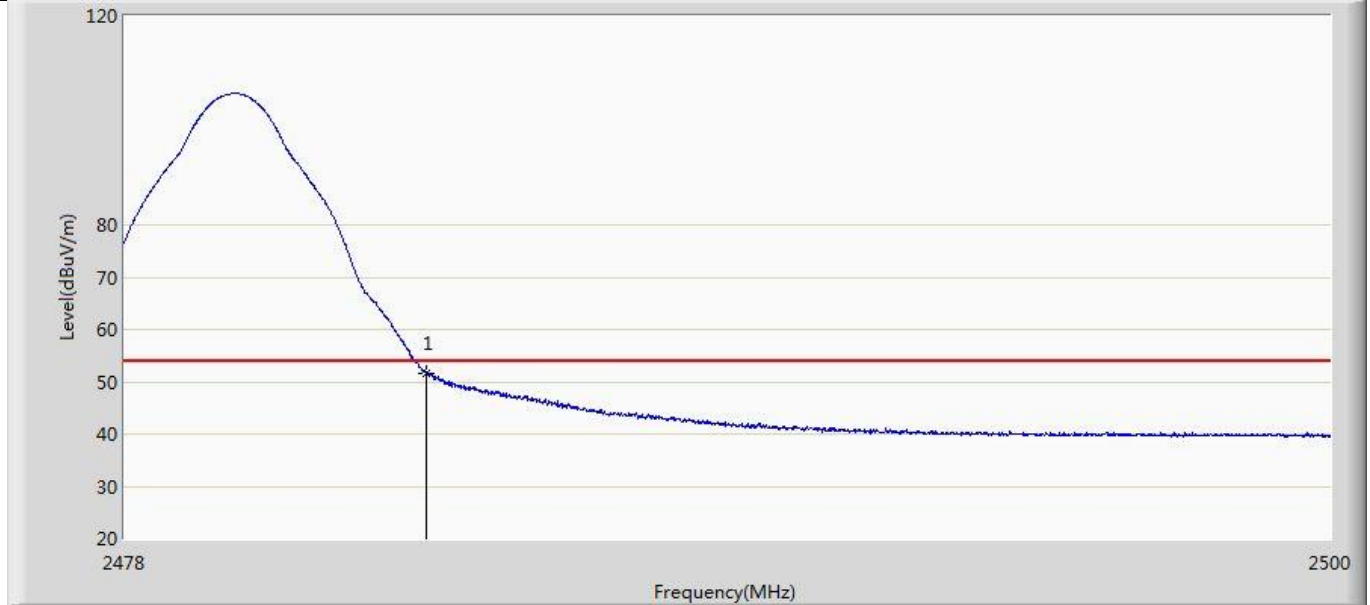
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.294	3.196	-14.706	54.000	36.098	AV

Profile: 2270405R	Page No.: 14
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/05/07 - 21:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480MHz by LE_2Mbps	



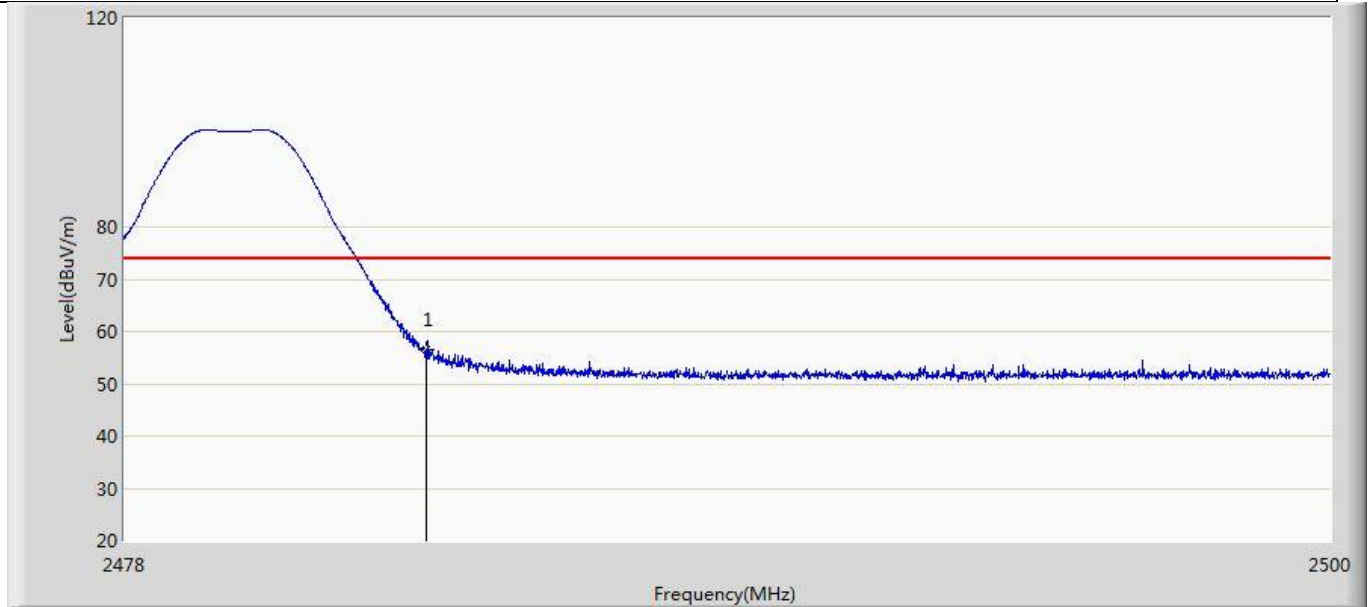
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	64.007	27.786	-9.993	74.000	36.220	PK

Profile: 2270405R	Page No.: 13
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/05/07 - 21:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480MHz by LE_2Mbps	



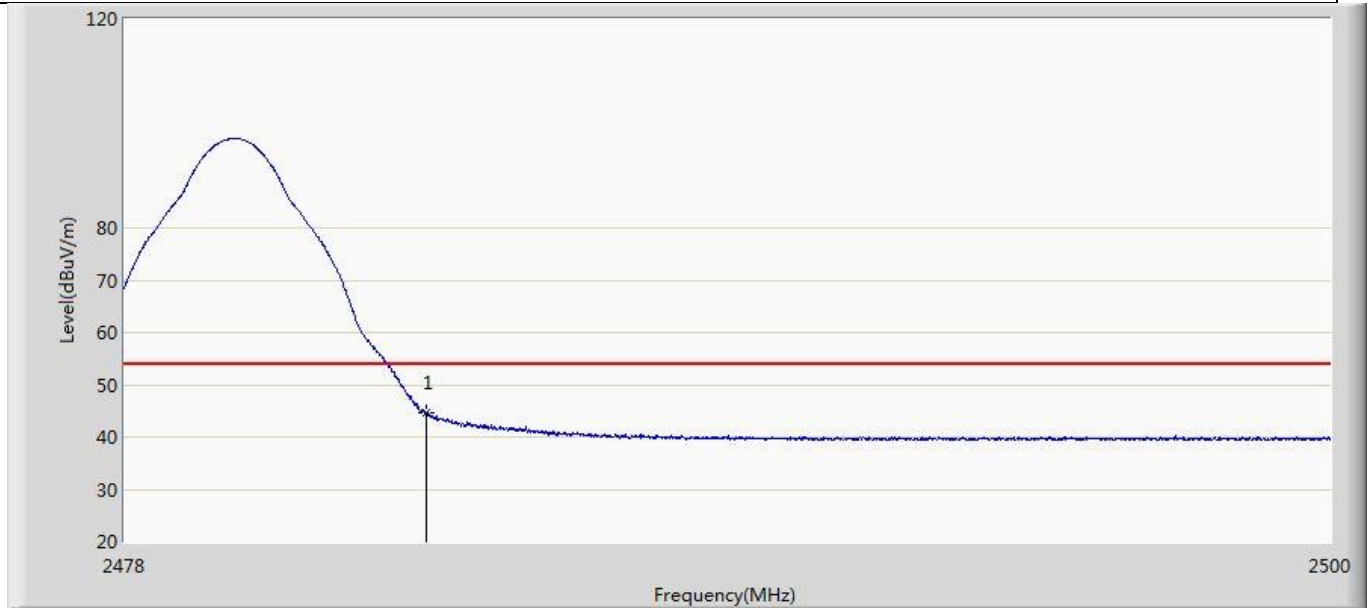
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	51.693	15.472	-2.307	54.000	36.220	AV

Profile: 2270405R	Page No.: 16
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/05/07 - 21:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480MHz by LE_2Mbps	



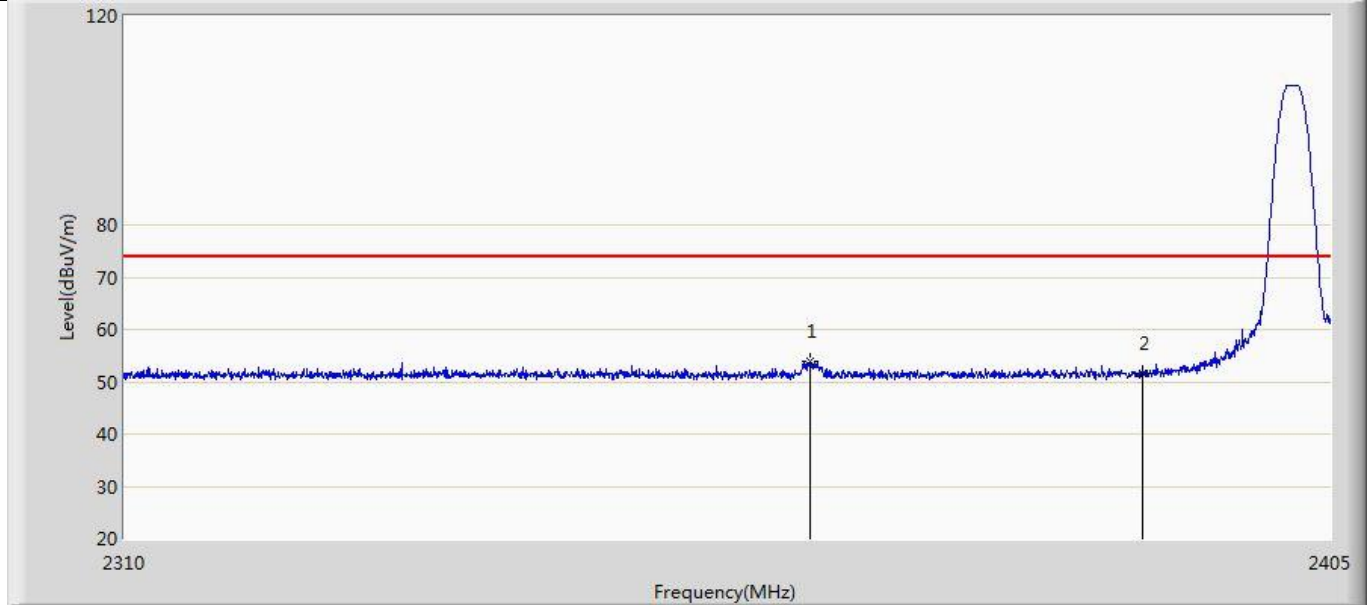
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	56.444	20.223	-17.556	74.000	36.220	PK

Profile: 2270405R	Page No.: 15
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/05/07 - 21:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2480MHz by LE_2Mbps	



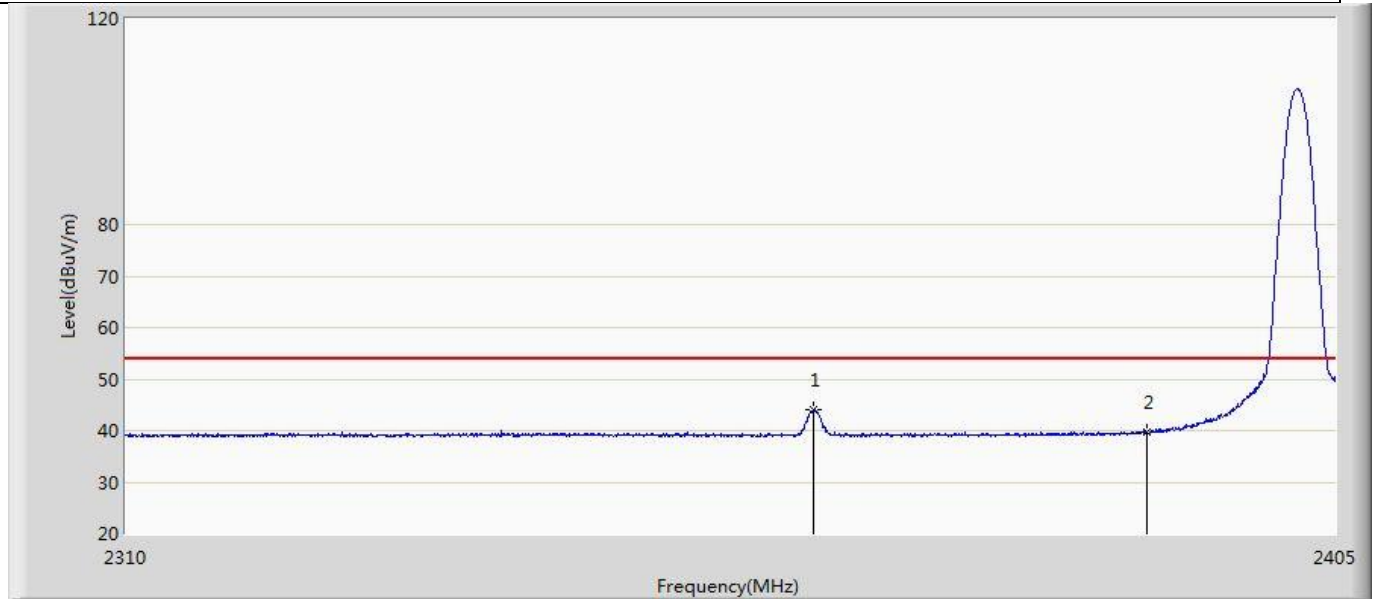
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	44.717	8.496	-9.283	54.000	36.220	AV

Profile: 2270405R	Page No.: 18
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402MHz by LE_Coded S=2	



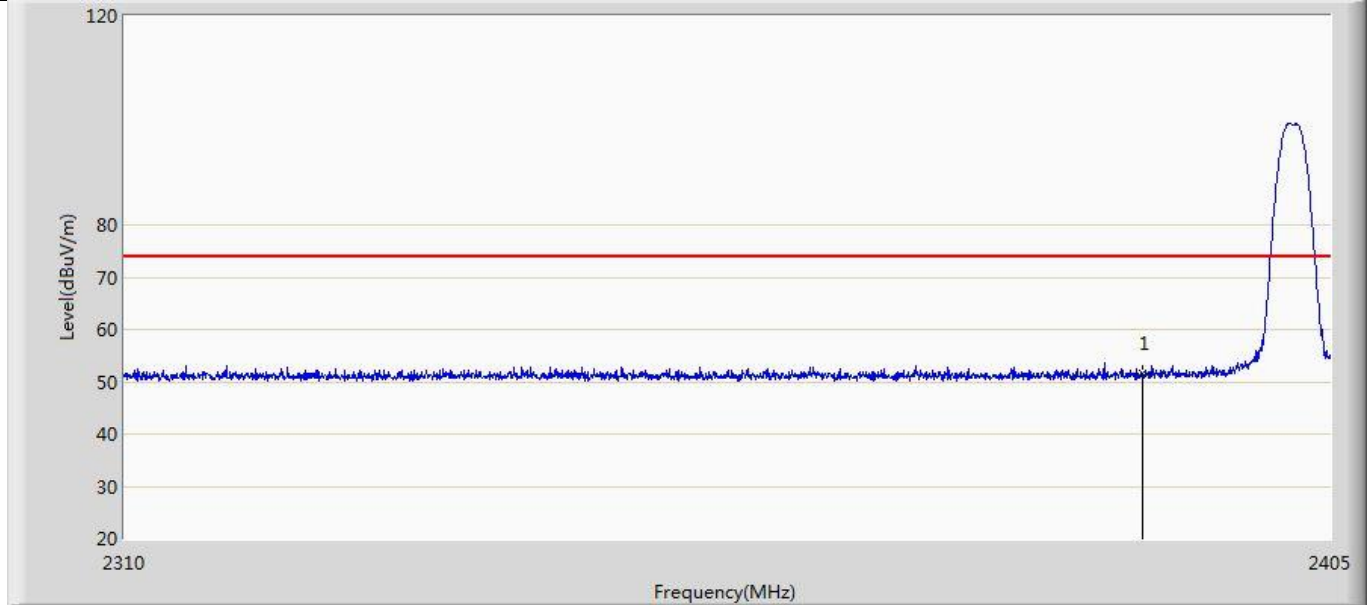
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2363.627	53.944	18.017	-20.056	74.000	35.928	PK
2		2390.000	51.656	15.558	-22.344	74.000	36.098	PK

Profile: 2270405R	Page No.: 17
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402MHz by LE_Coded S=2	



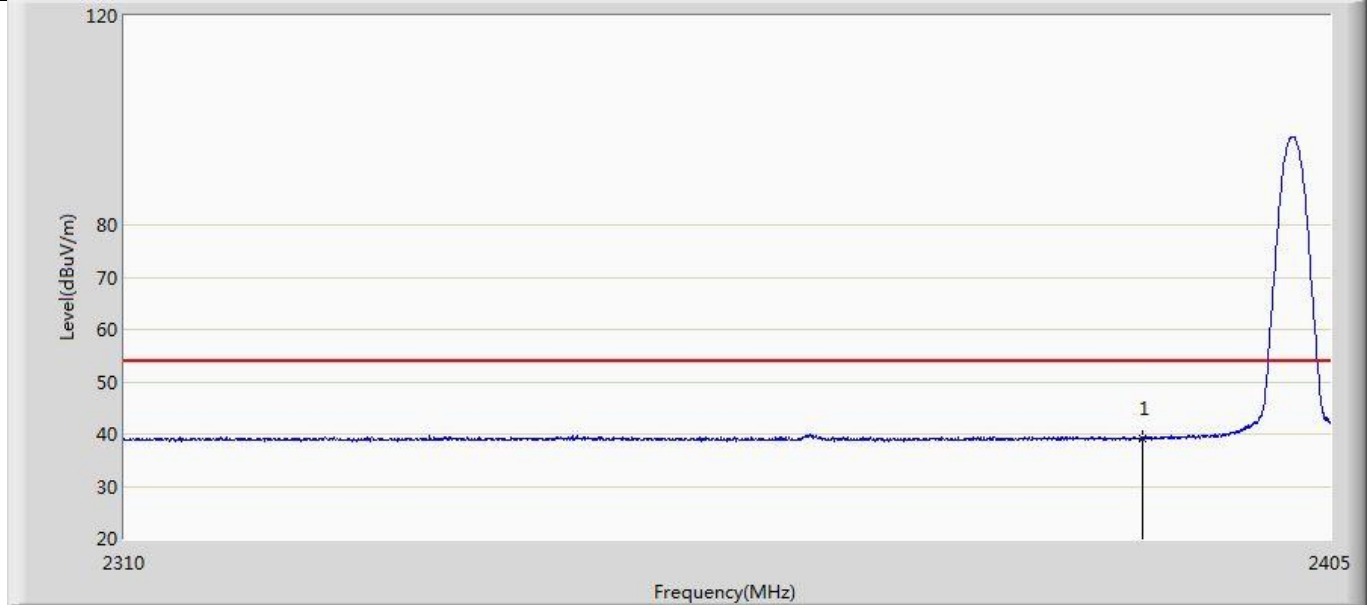
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2363.627	44.191	8.264	-9.809	54.000	35.928	AV
2		2390.000	39.640	3.542	-14.360	54.000	36.098	AV

Profile: 2270405R	Page No.: 20
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402MHz by LE_Coded S=2	



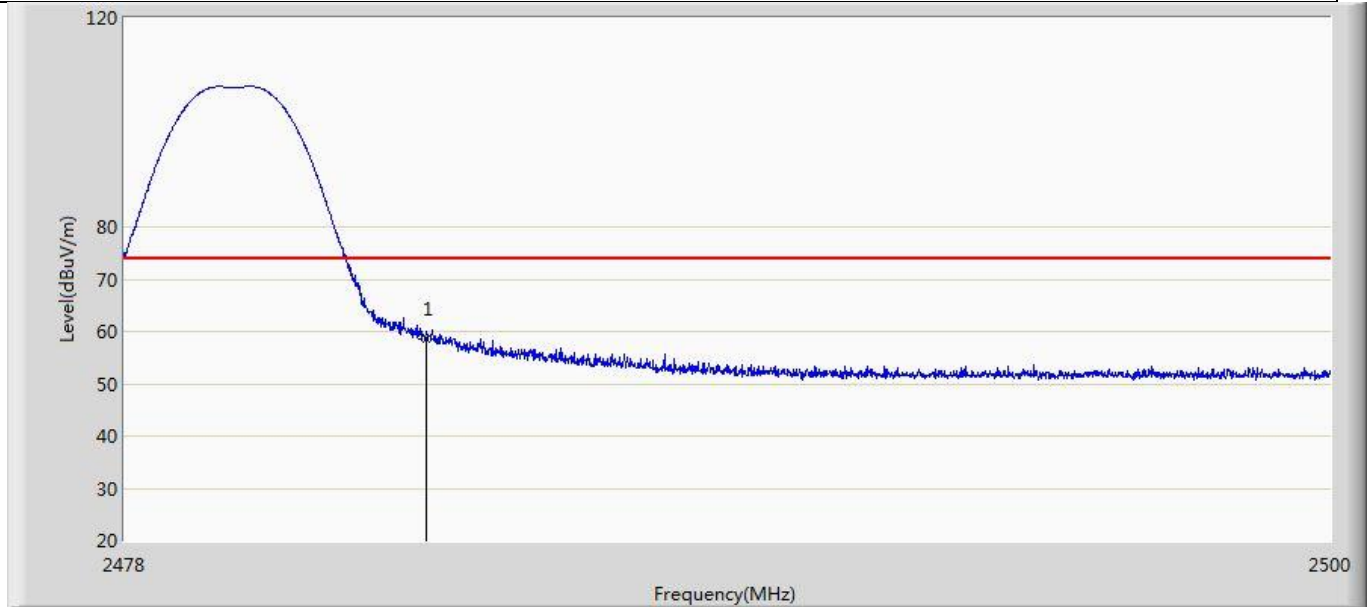
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	51.457	15.359	-22.543	74.000	36.098	PK

Profile: 2270405R	Page No.: 19
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2402MHz by LE_Coded S=2	



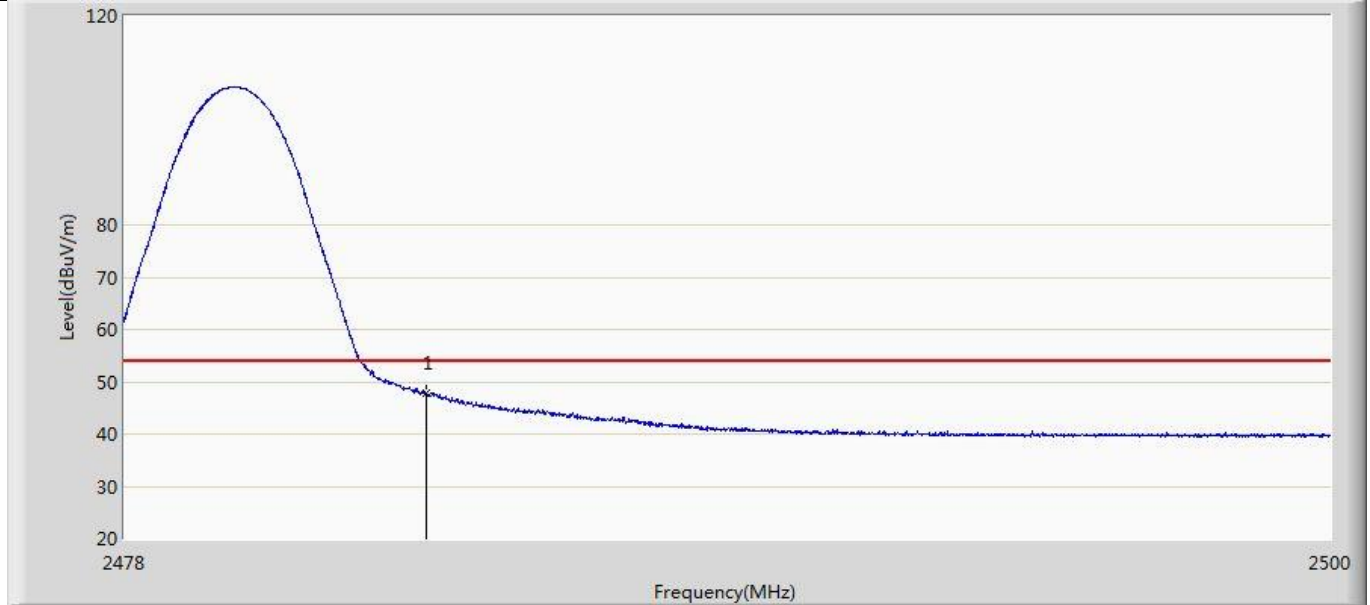
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.019	2.921	-14.981	54.000	36.098	AV

Profile: 2270405R	Page No.: 22
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480MHz by LE_Coded S=2	



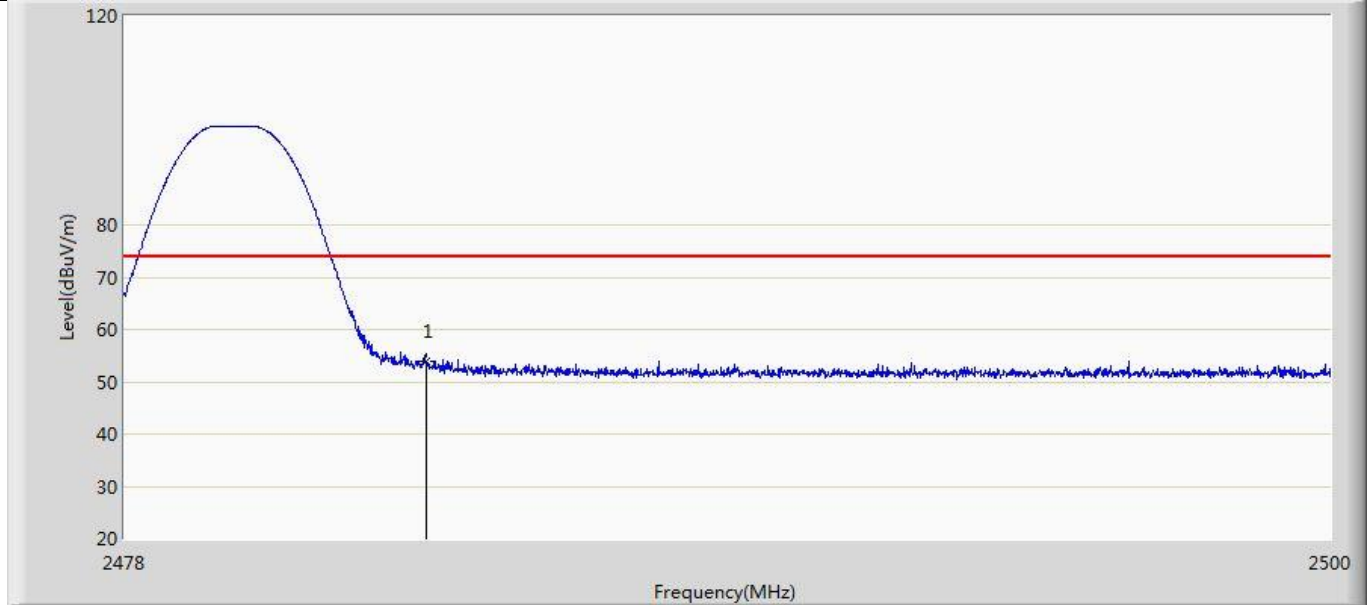
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	58.522	22.301	-15.478	74.000	36.220	PK

Profile: 2270405R	Page No.: 21
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480MHz by LE_Coded S=2	



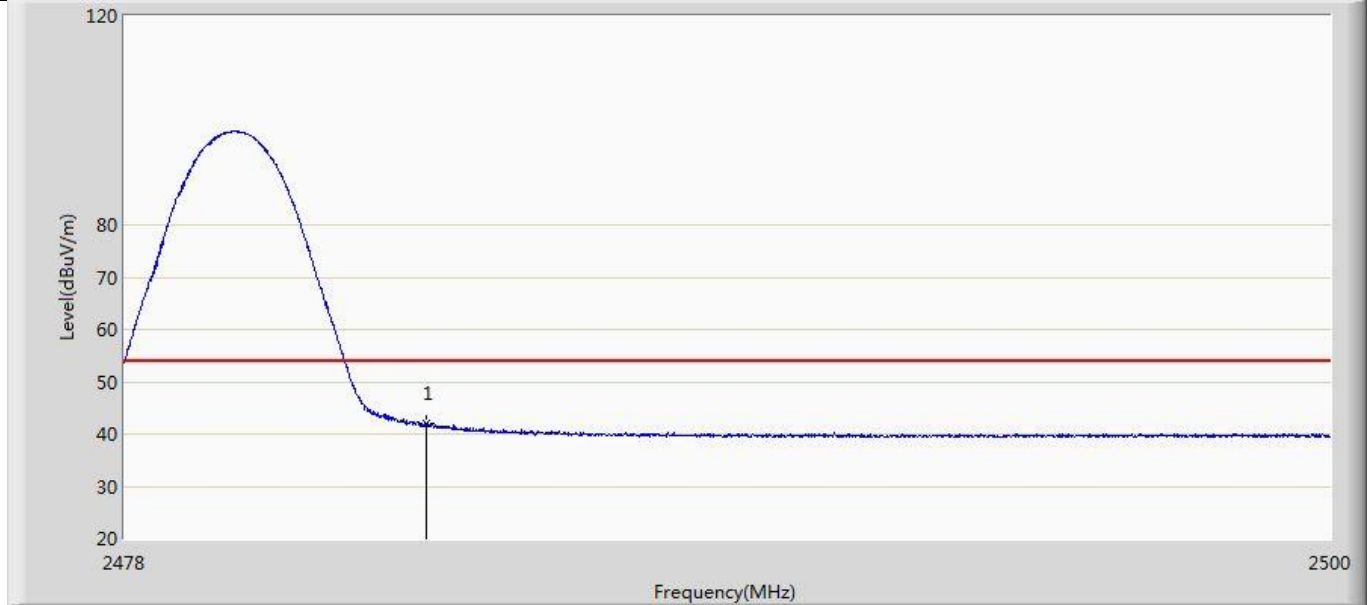
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	47.881	11.660	-6.119	54.000	36.220	AV

Profile: 2270405R	Page No.: 24
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480MHz by LE_Coded S=2	



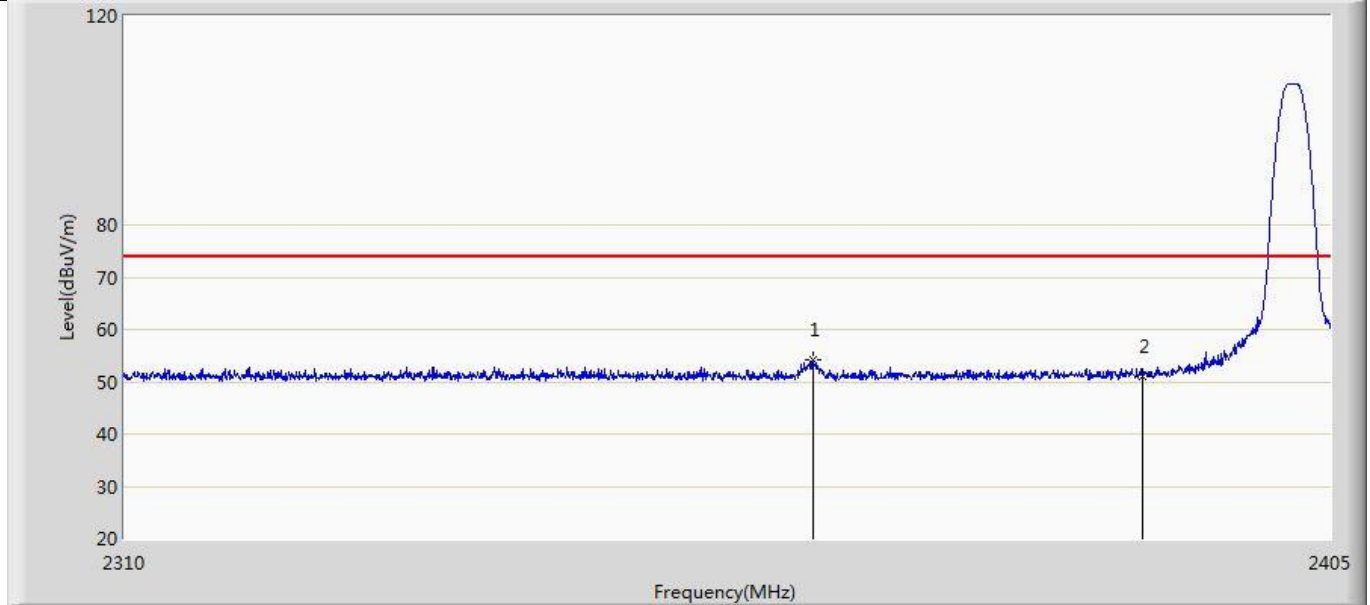
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	53.873	17.652	-20.127	74.000	36.220	PK

Profile: 2270405R	Page No.: 23
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2480MHz by LE_Coded S=2	



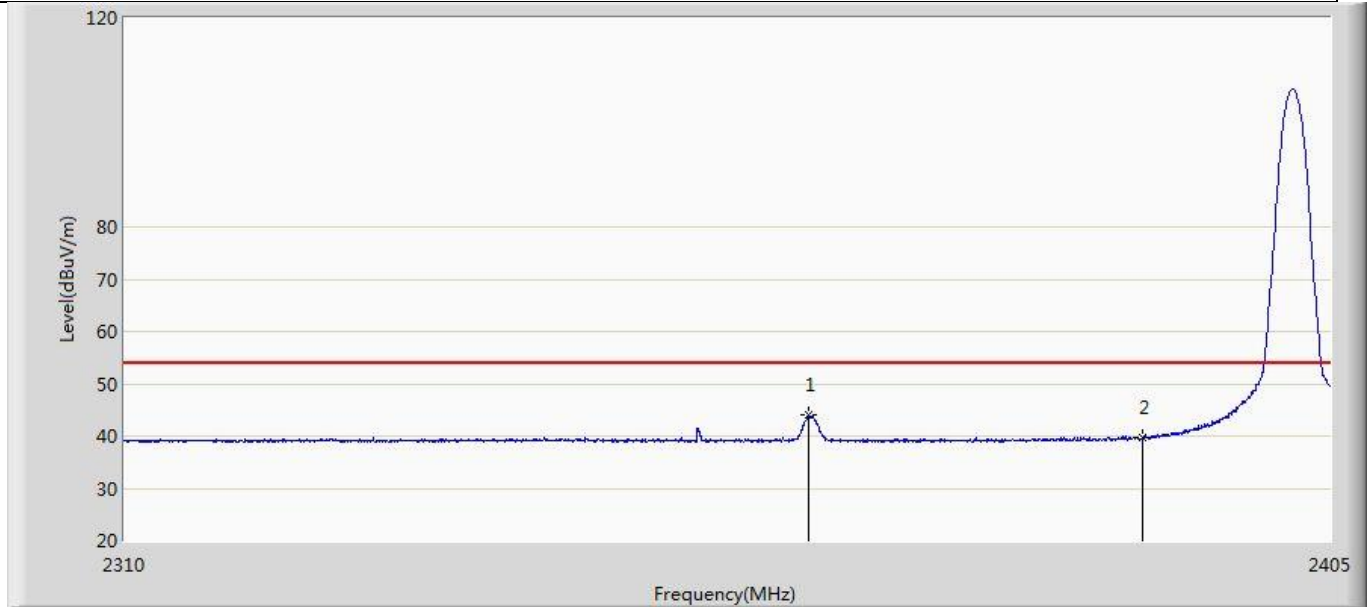
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	41.954	5.733	-12.046	54.000	36.220	AV

Profile: 2270405R	Page No.: 26
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2402MHz by LE_Coded S=8	



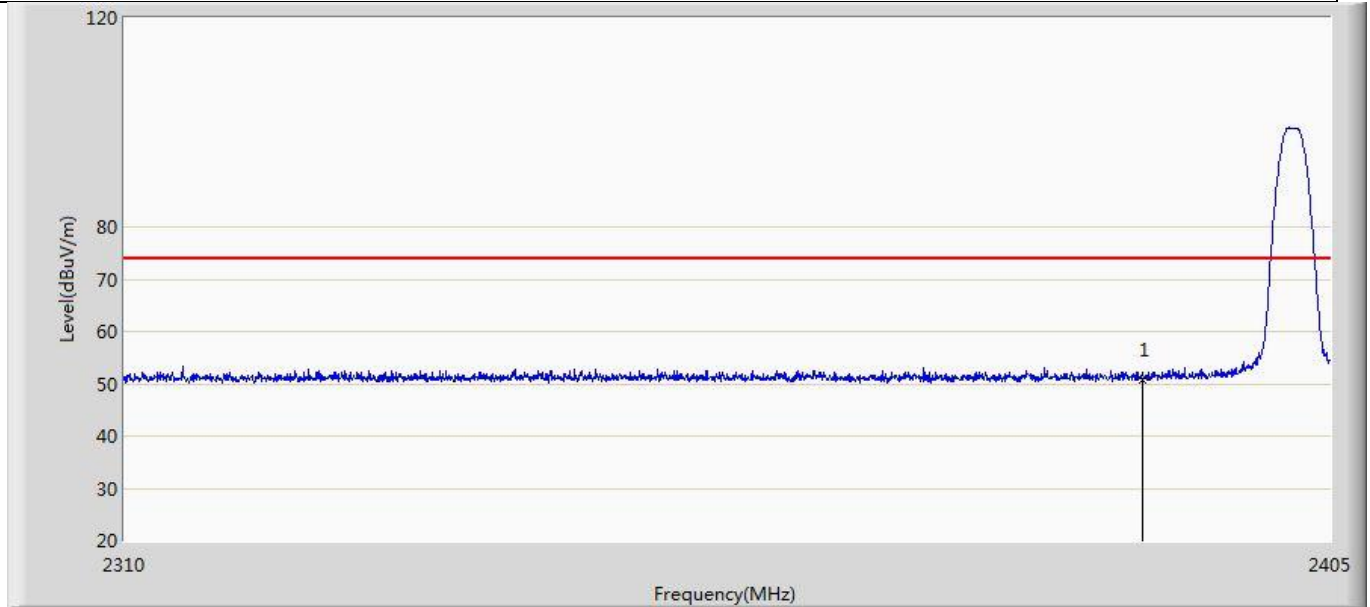
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2363.817	54.237	18.309	-19.763	74.000	35.928	PK
2		2390.000	51.137	15.039	-22.863	74.000	36.098	PK

Profile: 2270405R	Page No.: 25
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2402MHz by LE_Coded S=8	



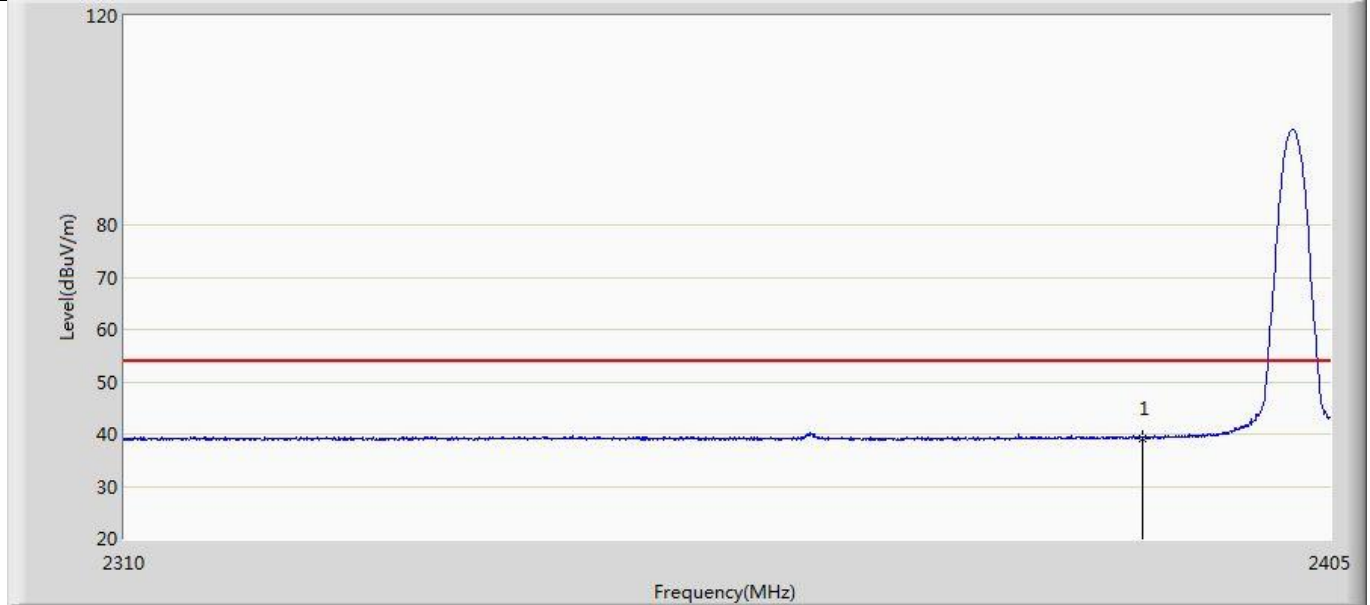
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2363.485	44.152	8.225	-9.848	54.000	35.927	AV
2		2390.000	39.717	3.619	-14.283	54.000	36.098	AV

Profile: 2270405R	Page No.: 28
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2402MHz by LE_Coded S=8	



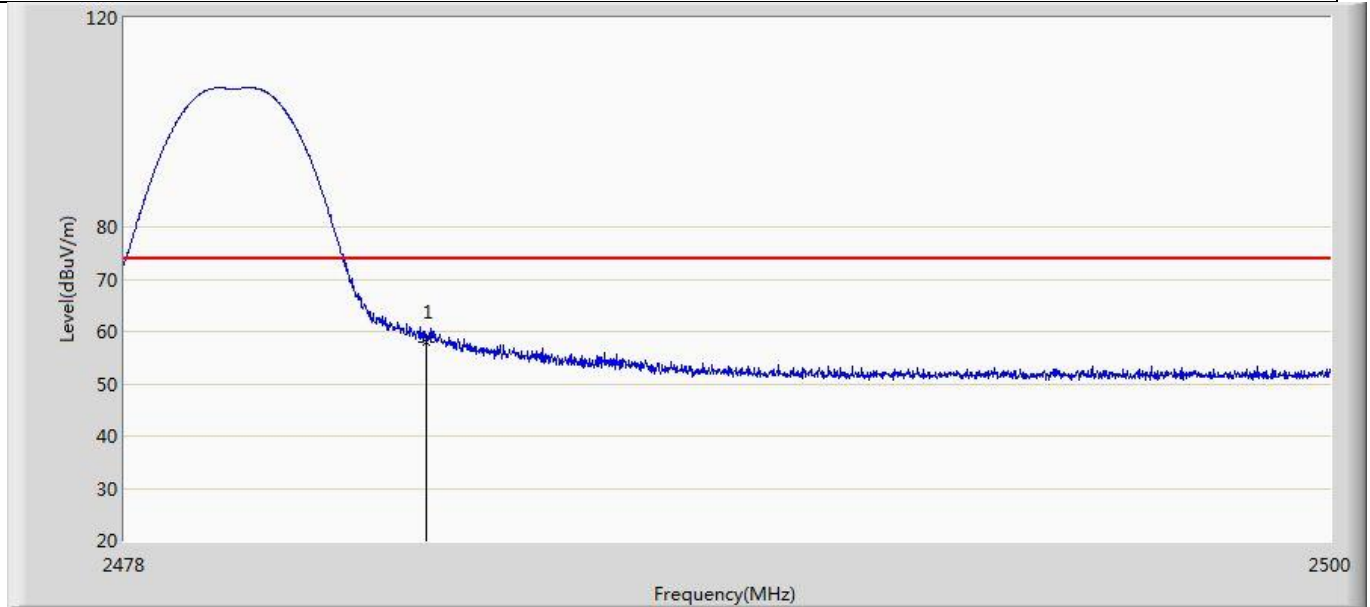
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	50.821	14.723	-23.179	74.000	36.098	PK

Profile: 2270405R	Page No.: 27
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2402MHz by LE_Coded S=8	



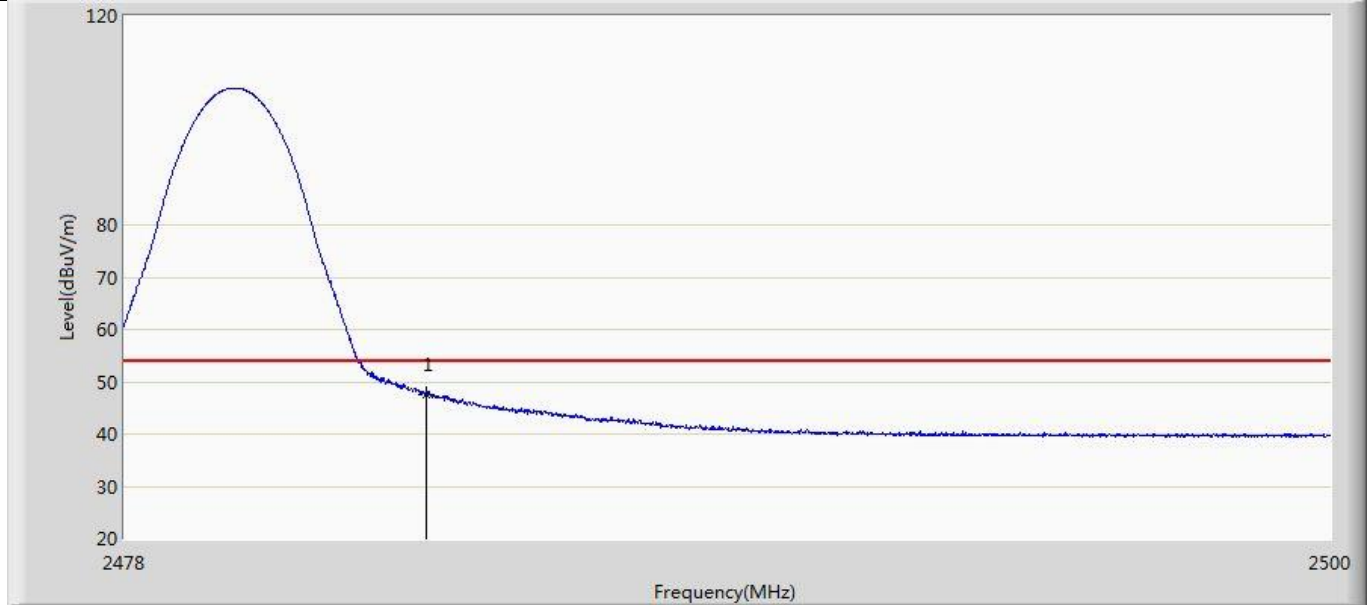
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.222	3.124	-14.778	54.000	36.098	AV

Profile: 2270405R	Page No.: 30
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2480MHz by LE_Coded S=8	



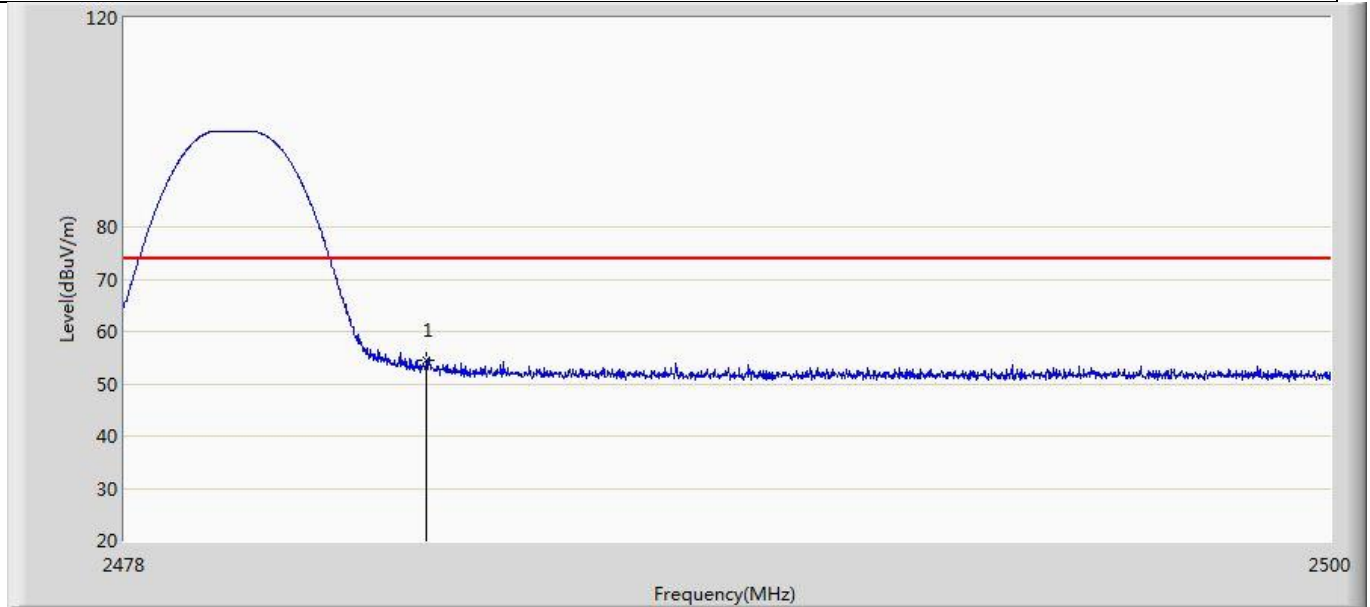
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	58.067	21.846	-15.933	74.000	36.220	PK

Profile: 2270405R	Page No.: 29
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED Device	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2480MHz by LE_Coded S=8	



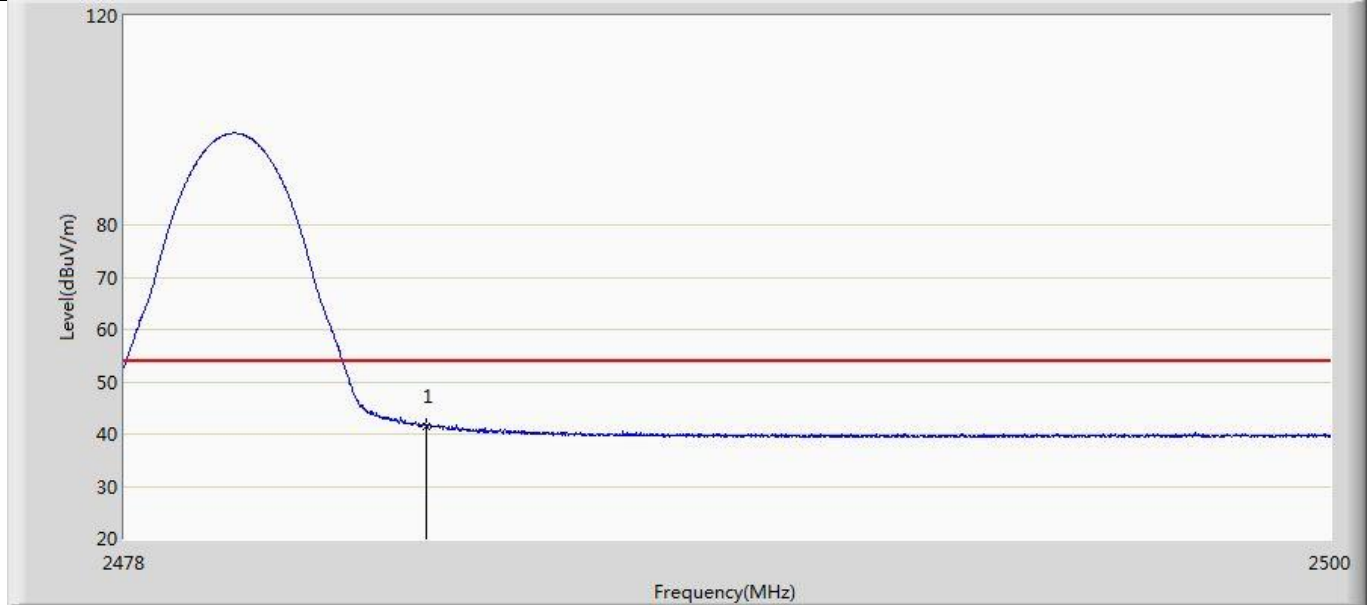
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	47.568	11.347	-6.432	54.000	36.220	AV

Profile: 2270405R	Page No.: 32
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
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	54.630	18.409	-19.370	74.000	36.220	PK

Profile: 2270405R	Page No.: 31
Engineer: Pengcheng Yang	
Site: AC5	Time: 2022/07/18 - 00:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED Device	Power: AC 120V/60Hz
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	41.553	5.332	-12.447	54.000	36.220	AV

Note:

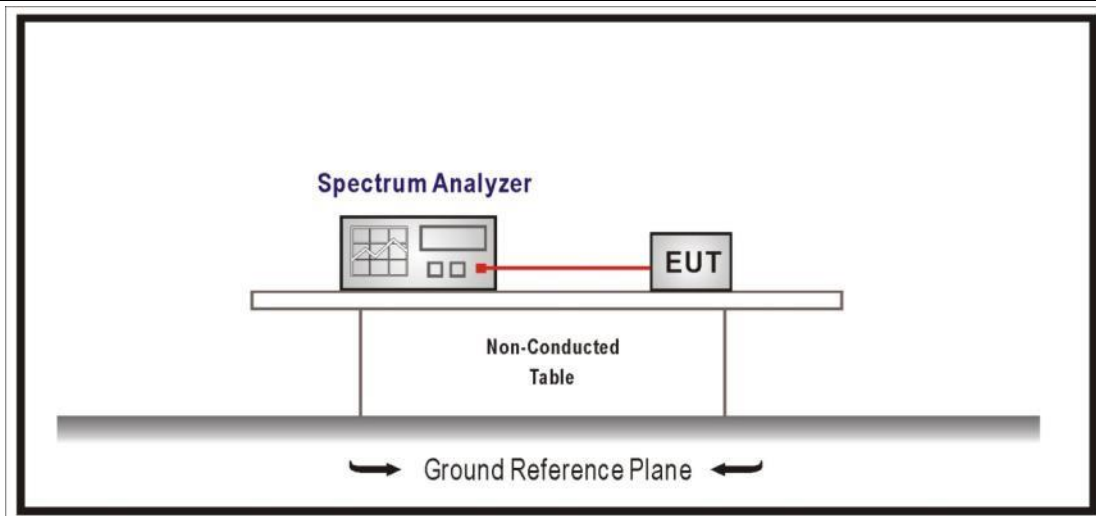
1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

4.6 DTS Bandwidth	VERDICT: PASS
--------------------------	----------------------

4.6.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(2)
Systems using digital modulation techniques operate in the 2400-2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz	

4.6.2 Test Setup



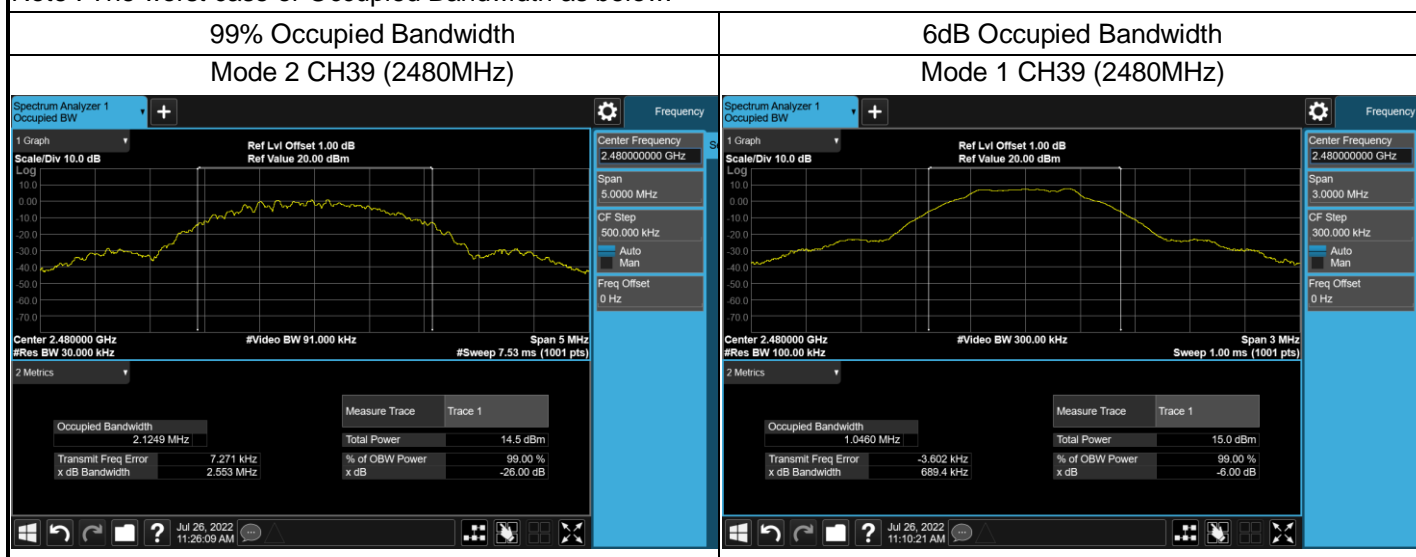
4.6.3 Test Procedure

	Reference Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.8	DTS bandwidth
<input type="checkbox"/>	ANSI C63.10	11.8.1	Option 1
<input checked="" type="checkbox"/>	ANSI C63.10	11.8.2	Option 2

4.6.4 Test Data

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (MHz)	6dB Occupied Bandwidth (kHz)	Limit of 6dB Occupied Bandwidth (kHz)	Result
1	00	2402	1044.2	700.1	>500	Pass
	19	2440	1042.9	693.8	>500	Pass
	39	2480	1042.7	689.4	>500	Pass
2	00	2402	2111.8	1353.0	>500	Pass
	19	2440	2116.9	1351.0	>500	Pass
	39	2480	2124.9	1350.0	>500	Pass
3	00	2402	1095.9	779.0	>500	Pass
	19	2440	1091.9	778.4	>500	Pass
	39	2480	1093.3	775.6	>500	Pass
4	00	2402	1131.1	745.7	>500	Pass
	19	2440	1130.4	745.3	>500	Pass
	39	2480	1125.9	743.1	>500	Pass

Note : The worst case of Occupied Bandwidth as below:



4.7 Fundamental emission output power

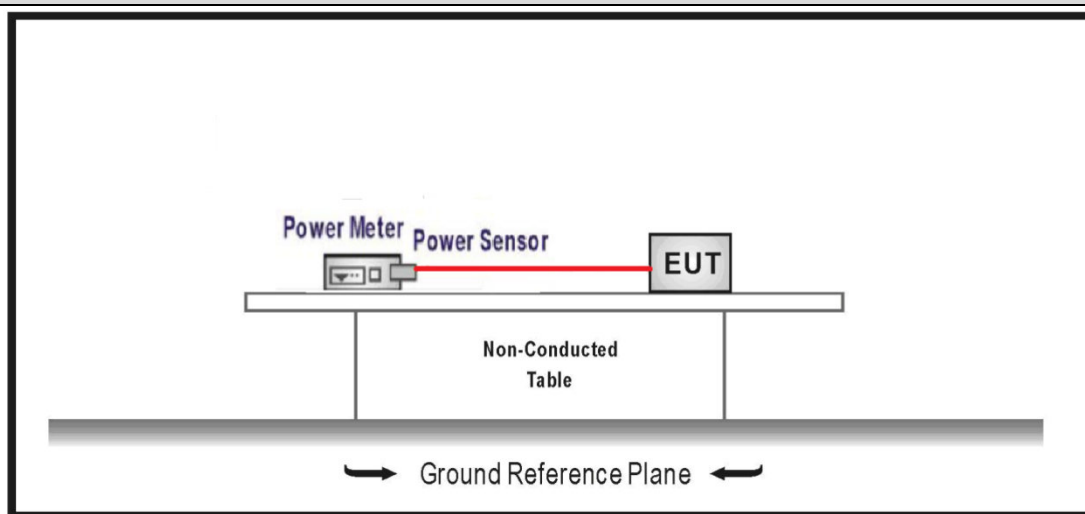
VERDICT: PASS

4.7.1 Limit

Standard		FCC Part 15 Subpart C Paragraph 15.247 (b)(3)
<input checked="" type="checkbox"/>	GTX < 6dBi	$P_{out} \leq 30\text{dBm}$
<input type="checkbox"/>	GTX > 6dBi	
<input type="checkbox"/>	Non-Fix point-point	$P_{out} \leq 30 - (GTX - 6)$
<input type="checkbox"/>	Fix point-point	$P_{out} \leq 30 - [(GTX - 6)]/3$
<input type="checkbox"/>	Point-to-multipoint	$P_{out} \leq 30 - (GTX - 6)$
<input type="checkbox"/>	Overlap Beams	$P_{out} \leq 30 - [(GTX - 6)]/3$
<input type="checkbox"/>	Aggregate power transmitted simultaneously on all beams	$P_{out} \leq 30 - [(GTX - 6)]/3$
<input type="checkbox"/>	single directional beam	$P_{out} \leq 30 - [(GTX - 6)]/3 + 8\text{dB}$

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

4.7.2 Test Setup



4.7.3 Test Procedure				
	References Rule		Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10		11.9	Fundamental emission output power
<input checked="" type="checkbox"/>	ANSI C63.10		11.9.1	Maximum peak conducted output power
	<input checked="" type="checkbox"/>	ANSI C63.10	11.9.1.1	RBW \geq DTS bandwidth
	<input type="checkbox"/>	ANSI C63.10	11.9.1.2	Integrated band power method
	<input type="checkbox"/>	ANSI C63.10	11.9.1.3	PKPM1 Peak power meter method
<input type="checkbox"/>	ANSI C63.10		11.9.2	Maximum conducted (average) output power
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2	Measurement using a spectrum analyzer (SA)
		<input type="checkbox"/> ANSI C63.10	11.9.2.2.2	Method AVGSA-1(Duty cycle \geq 98%)
		<input type="checkbox"/> ANSI C63.10	11.9.2.2.3	Method AVGSA-1A(Duty cycle \geq 98%)
		<input type="checkbox"/> ANSI C63.10	11.9.2.2.4	Method AVGSA-2(Duty cycle \leq 98%)
		<input type="checkbox"/> ANSI C63.10	11.9.2.2.5	Method AVGSA-2A(Duty cycle \leq 98%)
		<input type="checkbox"/> ANSI C63.10	11.9.2.2.4	Method AVGSA-3
		<input type="checkbox"/> ANSI C63.10	11.9.2.2.5	Method AVGSA-3A
	<input type="checkbox"/>	ANSI C63.10	11.9.2.3	Measurement using a power meter (PM)
		<input type="checkbox"/> ANSI C63.10	11.9.2.3.1	Method AVGPM
		<input type="checkbox"/> ANSI C63.10	11.9.2.3.2	Method AVGPM-G

4.7.4 Test Data

Mode	Channel	Test Frequency (MHz)	Conducted Power (dBm)	EIRP (dBm)	Conducted Power Limit (dBm)	EIRP Limit (dBm)	Result
Mode 1	00	2402	9.73	14.33	≤30	≤36	Pass
	19	2440	9.28	13.88	≤30	≤36	Pass
	39	2480	9.05	13.65	≤30	≤36	Pass
Mode 2	00	2402	9.80	14.40	≤30	≤36	Pass
	19	2440	9.35	13.95	≤30	≤36	Pass
	39	2480	9.13	13.73	≤30	≤36	Pass
Mode 3	00	2402	9.71	14.26	≤30	≤36	Pass
	19	2440	9.36	13.85	≤30	≤36	Pass
	39	2480	9.11	13.62	≤30	≤36	Pass
Mode 4	00	2402	9.66	14.19	≤30	≤36	Pass
	19	2440	9.25	13.87	≤30	≤36	Pass
	39	2480	9.02	13.66	≤30	≤36	Pass

Note 1: EIRP=Conducted power+Antenna gain

Note 2: The antenna gain please refer to clause 1.2

4.8 Power Density

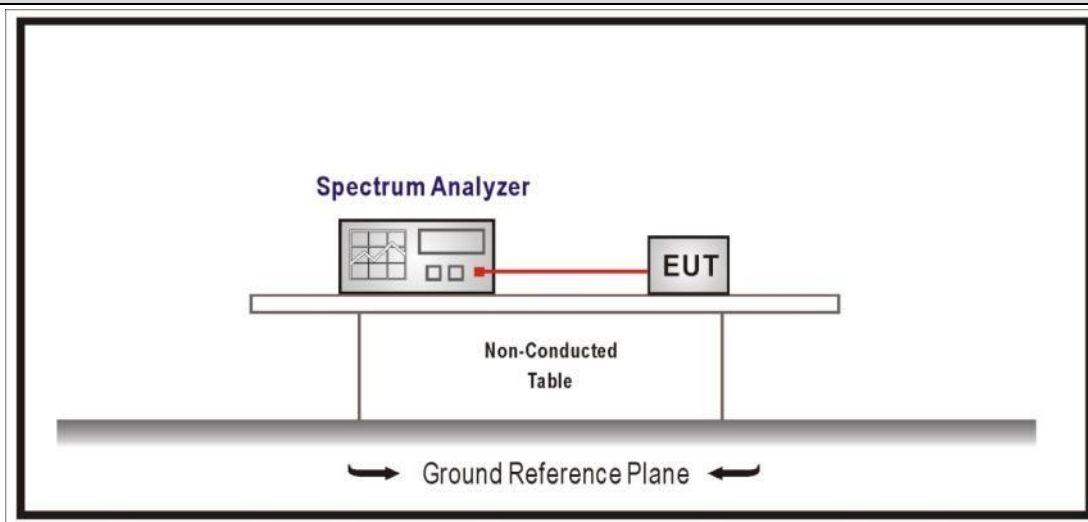
VERDICT: PASS

4.8.1 Limit:

Standard FCC Part 15 Subpart C Paragraph 15.247 (b)(3)

Power Spectral Density $\leq 8\text{dBm}/3\text{kHz}$

4.8.2 Test Setup



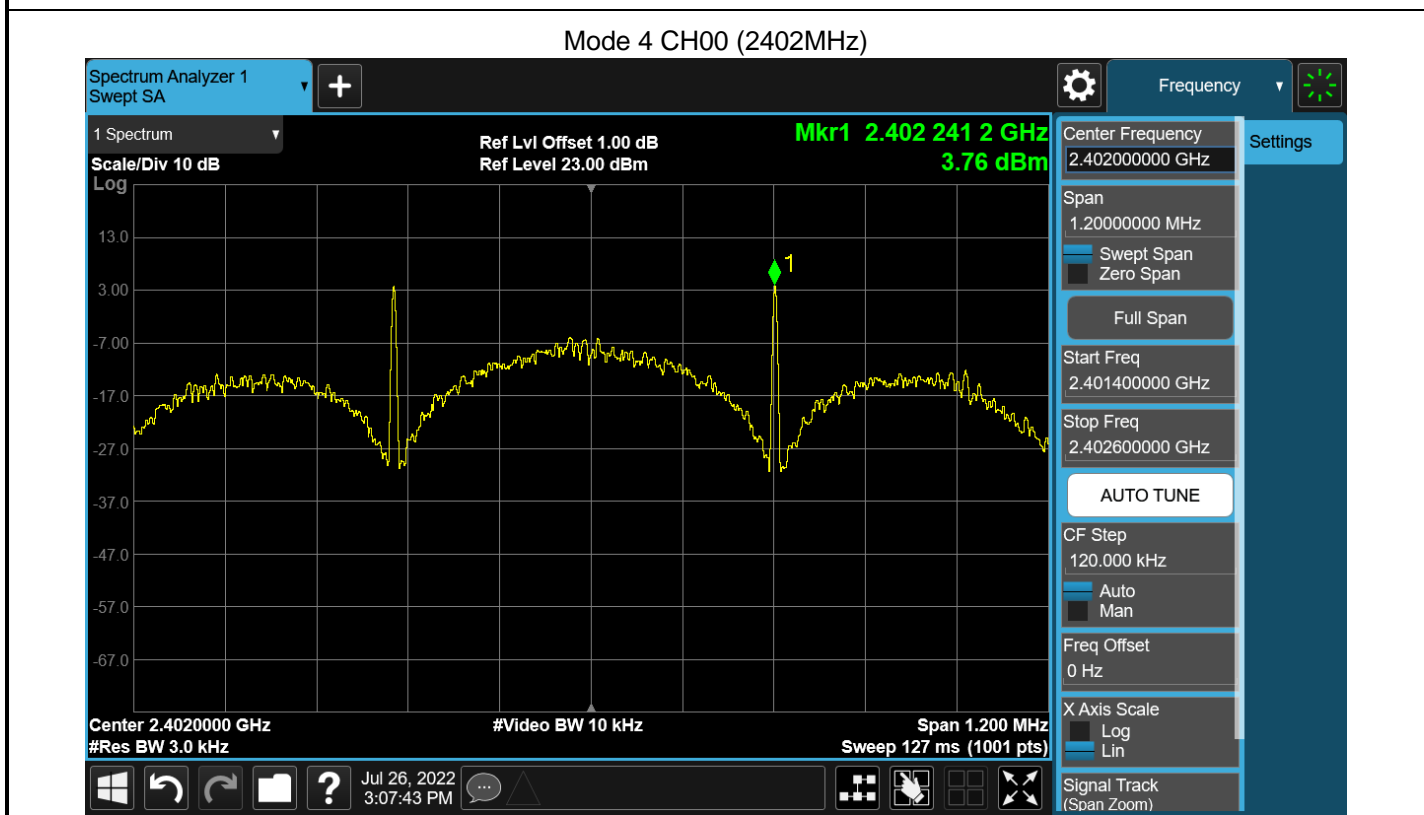
4.8.3 Test Procedure

	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.10	Maximum power spectral density level in the fundamental emission
<input checked="" type="checkbox"/>	ANSI C63.10	11.10.2	Method PKPSD (peak PSD)
<input type="checkbox"/>	ANSI C63.10	11.10.3	Method AVGPSD-1(Duty cycle $\geq 98\%$)
<input type="checkbox"/>	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle $\geq 98\%$)
<input type="checkbox"/>	ANSI C63.10	11.10.5	Method AVGPSD-2(Duty cycle $< 98\%$)
<input type="checkbox"/>	ANSI C63.10	11.10.6	Method AVGPSD-2A(Duty cycle $< 98\%$)
<input type="checkbox"/>	ANSI C63.10	11.10.7	Method AVGPSD-3
<input type="checkbox"/>	ANSI C63.10	11.10.8	Method AVGPSD-3A

4.8.4 Test Data

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Mode 1	00	2402	-5.93	≤8	Pass
	19	2440	-6.39	≤8	Pass
	39	2480	-6.60	≤8	Pass
Mode 2	00	2402	-8.41	≤8	Pass
	19	2440	-8.93	≤8	Pass
	39	2480	-9.14	≤8	Pass
Mode 3	00	2402	-8.29	≤8	Pass
	19	2440	-8.77	≤8	Pass
	39	2480	-8.97	≤8	Pass
Mode 4	00	2402	3.76	≤8	Pass
	19	2440	3.29	≤8	Pass
	39	2480	3.01	≤8	Pass

Note : The worst case of PSD as below:



4.9 Antenna Requirement	VERDICT: PASS
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4.9.1 Limit:	
Standard	FCC Part 15 Subpart C Paragraph 15.203
<p>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.</p>	

4.9.2 Antenna Connector Construction:	
<input checked="" type="checkbox"/>	The use of a permanently attached antenna
<input type="checkbox"/>	The antenna use of a unique coupling to the intentional radiator
<input type="checkbox"/>	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.

_____ The End _____