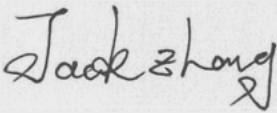




Test report No:
20A0601R-RF-US-P06V02

FCC&ISED TEST REPORT

Product Name	LED LAMP
Trademark	GE
Model and /or type reference	CLEDA199LD1@
FCC ID	PUU-A19-DMSWIII
IC	10798A-DMSWA19III
Applicant's name / address	Savant Technologies LLC, dba GE Lighting, a Savant Company 1975 Noble Road Cleveland, OH 44112 United States Of America
Test method requested, standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247 ANSI C63.10: 2013 KDB558074 D01v05r02 RSS-Gen Issue 5 / RSS-247 Issue 2
Verdict Summary	IN COMPLIANCE
Documented By (name / position & signature)	Scott Shen/Project Engineer 
Approved by (name / position & signature)	Jack Zhang/ Supervisor 
Date of issue	2021-04-14
Report Version	V1.1
Report template No	Template_FCC Part 15C-RF-V1.0

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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.

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)	Oct. 22, 2020
Date (start test)	Oct. 28, 2020
Date (finish test)	Apr. 14, 2021

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
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
20A0601R-RF-US-P06V02	V1.0	Initial issue of report.	2021-03-19
20A0601R-RF-US-P06V02	V1.1	P57-58, modified the test data of Emissions in non-restricted frequency band.	2021-04-14

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 Data Rate;
 - Chapter 1.4 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	100906	2020.04.18	2021.04.17
Two-Line V-Network	R&S	ENV216	101044	2020.04.18	2021.04.17
50ohm Termination	SHX	TF2	7081402	2020.09.23	2021.09.22
50ohm Termination	SHX	TF2	7081403	2020.09.23	2021.09.22
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2020.08.23	2021.08.22
Dekra test software	Dekra	-	-	-	-

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

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2020.08.15	2021.08.14
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2020.04.17	2021.04.16
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2020.08.15	2021.08.14
4TX MIMO Power Sensor	Keysight	X8750A	MY59400102	2021.02.11	2022.02.10
Coaxial Cable	Woken	SFL402	F02-150410-044	2021.01.01	2021.12.31
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2020.08.13	2021.08.12

Radiated Emission(30MHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2020.12.06	2021.12.05
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2020.09.22	2021.09.21
Coaxial Cable	Huber+Suhner	RG 214	AC2-C	2021.04.05	2022.04.04
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2020.08.13	2021.08.12
Dekra test software	Dekra	-	-	-	-

Radiated Emission / AC5(1GHz-40GHz)

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2020.04.17	2021.04.16
Amplifier	Keleto	LNPA	SK20190225	2020.09.25	2021.09.24
Preamplifier	EMCI	EMC184045SE	980263	2020.05.24	2021.05.23
DRG Horn Antenna	ETS-Lindgren	3117	00167055	2020.08.06	2021.08.05
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2021.03.23	2023.03.22
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2021.04.05	2022.04.04
Coaxial Cable	ROSENBERGER	LA1-C011- 2000/3000	AC5-40G	2020.04.18	2021.04.17
Temperature/Humidity Meter	RTS	RTS-8S	AC5-TH	2020.08.13	2021.08.12
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%.

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 LAMP
Model No.....	CLEDA199LD1@
Trademark.....	GE
FCC ID	PUU-A19-DMSWIII
IC	10798A-DMSWA19III
Manufacturer.....	Xiamen Topstar lighting Co.,Ltd.
Manufacturer address.....	676 Meixi Avenue,Tong'an District,Xiamen,China

Wireless specification	WIFI
Operating frequency range(s).....	2400~2483.5MHz
Type of modulation	DSSS: BPSK,QPSK,CCK OFDM: BPSK, QPSK, 16QAM, 64QAM
Number of channel	802.11b/g/n(20MHz): 11 802.11n(40MHz): 7
Device category	☐ Fixed point-to-point
	☐ Emit multiple directional beams, simultaneously or sequentially
	☒ Other cases

Rated power supply	Voltage and Frequency	
	☐	AC: 220 - 240 V, 50/60 Hz
	☒	AC: 100 - 240 V, 50/60 Hz
	☐	DC: 12 - 24 Vdc
	☐	Battery:
	☐	Battery: 3.7 V
Mounting position.....	☐	Table top equipment
	☒	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☐	Hand-held equipment
	☐	Other:

1.2 Antenna Information

Antenna model / type number.....:	N/A		
Antenna serial number.....:	N/A		
Antenna Delivery	☒	1TX + 1RX	
	☐	2TX + 2RX	
	☐	Others:.....	
Antenna technology	☒	SISO	
	☐	MIMO	☐ Basic
			☐ CDD
			☐ Sectorized
			☐ Beam-forming
Antenna Type	☐	External	☐ Dipole
			☐ Sectorized
	☒	Internal	☐ PIFA
			☒ Monopole
			☐ Metal Antenna
Antenna Gain	0 dBi		

1.3 Data Rate

IEEE 802.11b

Modulation	Data Rate(Mb/s)
DSSS	1
DSSS	2
CCK	5.5
CCK	11

Table 1 –TX Antenna number = 1

IEEE 802.11g

Modulation	Coding rate	Data Rate(Mb/s)
BPSK	1/2	6
BPSK	3/4	9
QPSK	1/2	12
QPSK	3/4	18
16-QAM	1/2	24
16-QAM	3/4	36
64-QAM	2/3	48
64-QAM	3/4	54

Table 1 – MCS parameters for TX Antenna number = 1

IEEE 802.11n

Spatial streames	MCS Index	Modulation	Coding rate	Data Rate(Mb/s)			
				20MHz		40MHz	
				800ns GI	400ns GI	800ns GI	400ns GI
1	0	BPSK	1/2	6.5	7.2	13.5	15.0
1	1	QPSK	1/2	13.0	14.4	27.0	30.0
1	2	QPSK	3/4	19.5	21.7	40.5	45.0
1	3	16-QAM	1/2	26.0	28.9	54.0	60.0
1	4	16-QAM	3/4	39.0	43.3	81.0	90.0
1	5	64-QAM	2/3	52.0	57.8	108.0	120.0
1	6	64-QAM	3/4	58.5	65.0	121.5	135.0
1	7	64-QAM	5/6	65.0	72.2	135.0	150.0

Note 1: Support of 400ns GI is optional on transmit and receive.

Table 1 – MCS parameters for TX Antenna number = 1

1.4 Channel List

IEEE 802.11b/g & IEEE 802.11n(20MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
001	2412 MHz	002	2417 MHz	003	2422 MHz	004	2427 MHz
005	2432 MHz	006	2437 MHz	007	2442 MHz	008	2447 MHz
009	2452 MHz	010	2457 MHz	011	2462 MHz	-	-

IEEE 802.11n(40MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
003	2422 MHz	004	2427 MHz	005	2432 MHz	006	2437 MHz
007	2442 MHz	008	2447 MHz	009	2452 MHz	-	-

Note: The General Description of the Item(s), antenna information, Data Rate 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	Mode 1: Transmit by 802.11b
	Mode 2: Transmit by 802.11g
	Mode 3: Transmit by 802.11n(20MHz)
	Mode 4: Transmit by 802.11n(40MHz)
	Mode 5: Simultaneous transmit

2.2 Support / Auxiliary equipment / unit / Test software for the EUT

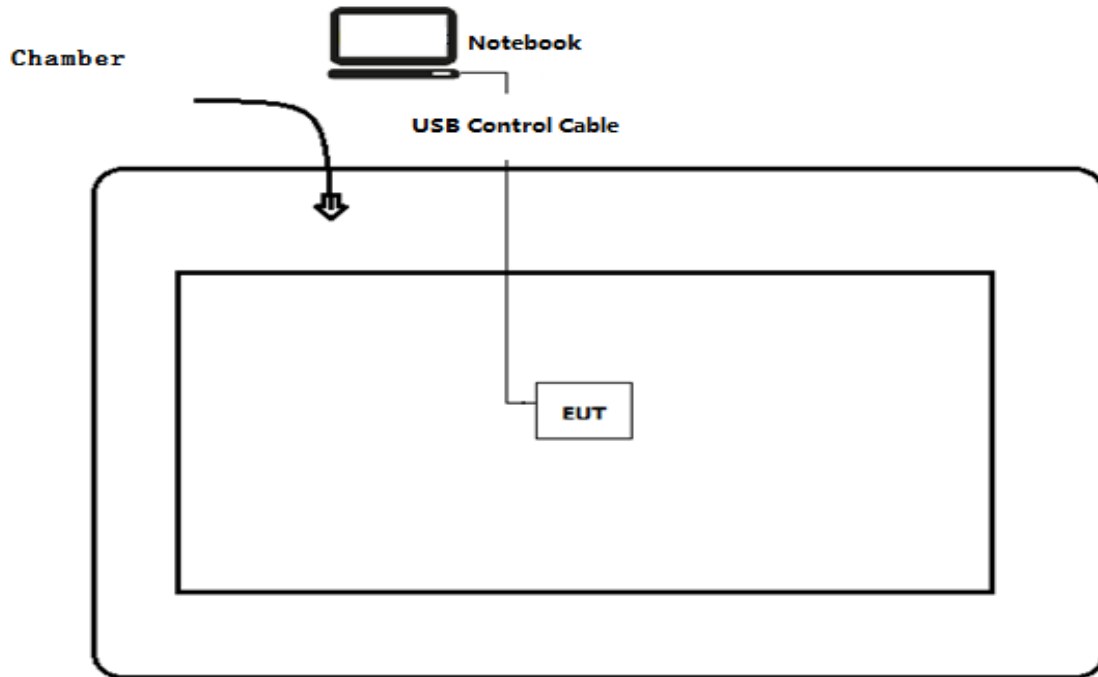
The EUT has been tested with the following auxiliary equipment / unit / software:

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Notebook	Think pad x220	Lenovo	Adapter
software	Type / Version	Manufacturer	Supplied by
Ameba series mptool	N/A	N/A	N/A

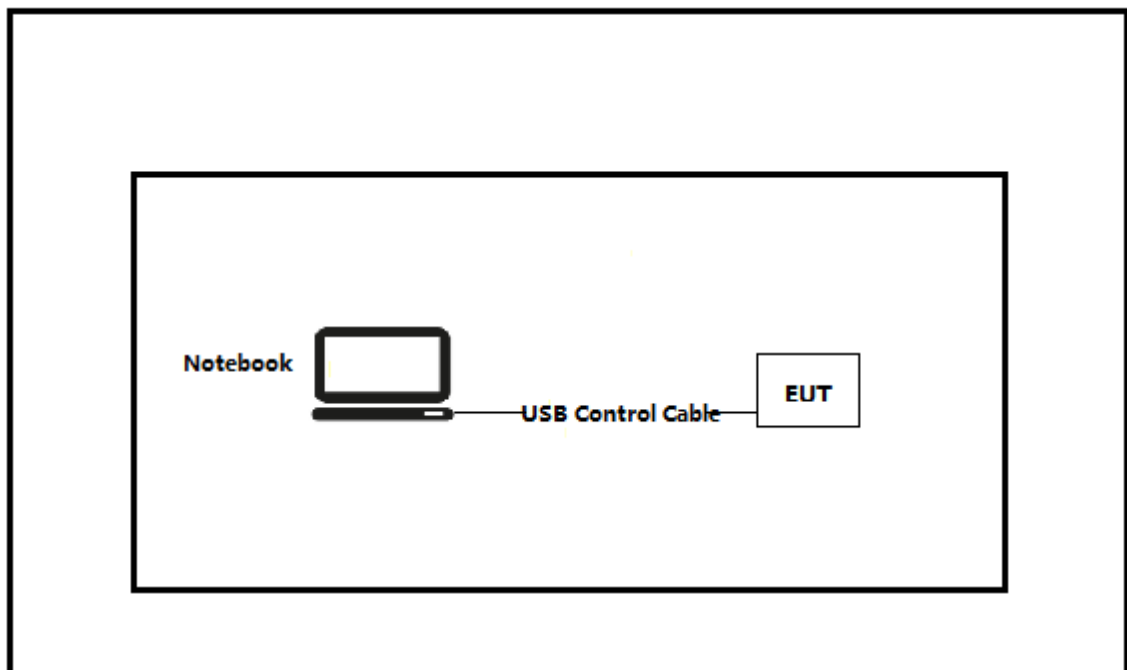
2.3 Test Configuration / Block diagram used for tests

The following test setup / configuration / block diagram has been used during the tests:

Test setup Diagram- Radiated Test



Test setup Diagram- Conducted test



2.4 Testing process

1	Setup the EUT as shown in Section 2.3.
2	Execute the Ameba series mptool 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
FCC CFR Title 47 Part 15 Subpart C Section 15.247	2021	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
KDB 558074 D01V05r02	2019	Guidance for performing compliance measurements on Digital Transmission System (DTS) operating under section 15.247
RSS-Gen Issue 5 Amendment 1	2019	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(d), 15.209	PASS	---
Emissions in non-restricted frequency bands	FCC 15.247(d)	PASS	---
Radiated Emission Band Edge	FCC 15.247(d), 15.209	PASS	---
Fundamental emission output power	FCC 15.247(b)(3)	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	---
Emissions in non-restricted frequency bands	RSS-247 Issue 2 Section A5.5	PASS	---
Radiated Emission Band Edge	RSS-247 Issue 2 Section A5.5	PASS	---
Occupied Bandwidth	RSS-Gen Issue 5 Section 6.6 RSS-247 Issue 2 Section A5.2(1)	PASS	---
Fundamental emission output power	RSS-247 Issue 2 Section A5.4(4)	PASS	---
Power Spectral Density	RSS-247 Issue 2 Section A5.2(2)	PASS	---
Antenna Requirement	RSS-Gen Issue 5 Section 8.3	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
---	----------------------

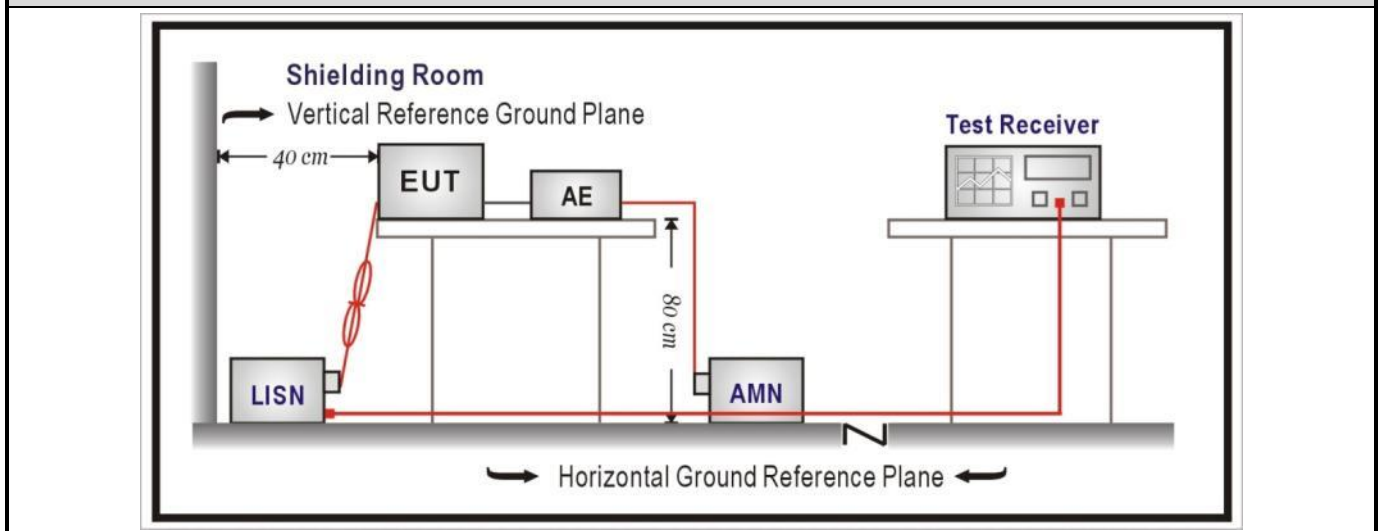
4.1.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207	
Frequency range [MHz]	Limit: QP [dB(μ V) ¹⁾]	Limit: AV [dB(μ V) 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.

4.1.2 Test Setup

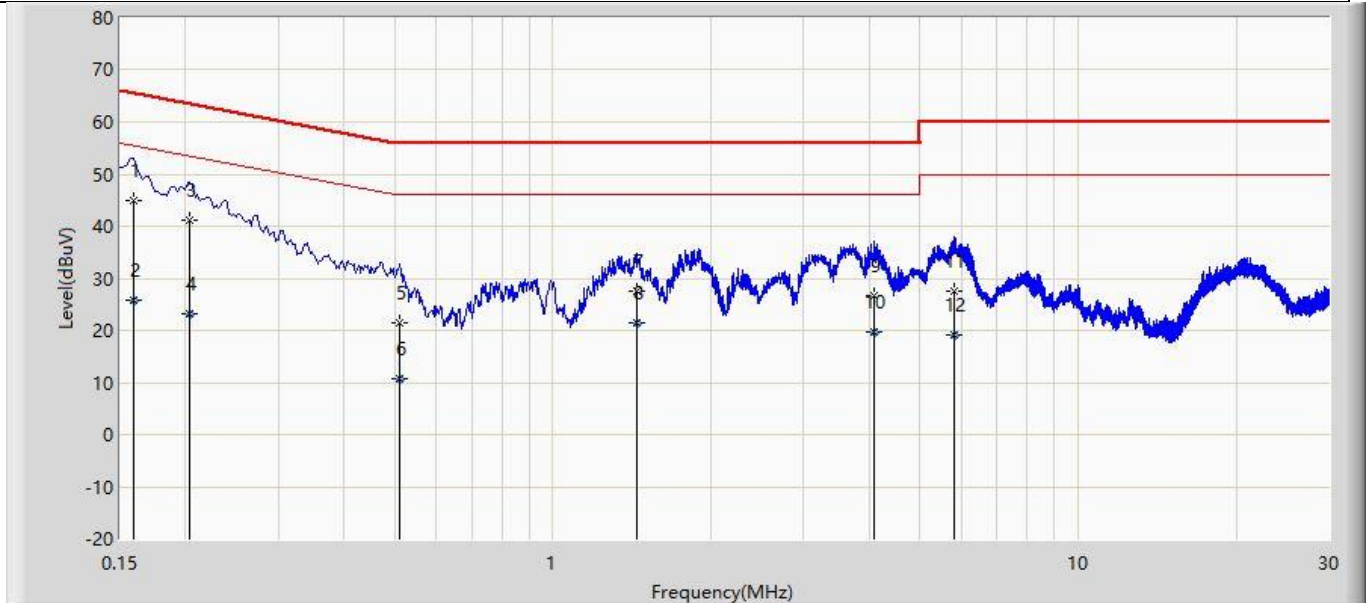


4.1.3 Test Procedure

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

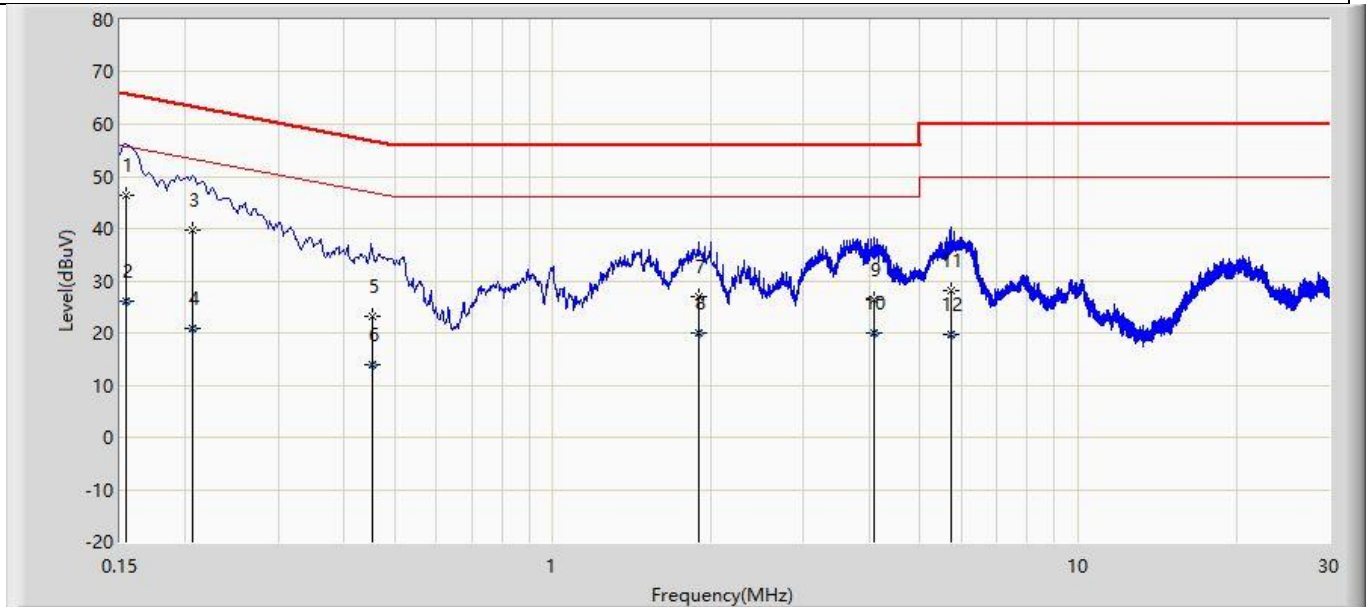
4.1.4 Test Data

Profile: 20A0601R	Page No.: 3
Engineer: YULIU	
Site: TR1	Time: 2021/03/15 - 18:18
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1	*	0.159	44.853	35.193	-20.663	65.516	9.635	0.025	0.000	QP
2		0.159	25.676	16.016	-29.840	55.516	9.635	0.025	0.000	AV
3		0.204	41.151	31.461	-22.295	63.446	9.661	0.029	0.000	QP
4		0.204	23.127	13.438	-30.319	53.446	9.661	0.029	0.000	AV
5		0.512	21.446	11.610	-34.554	56.000	9.794	0.042	0.000	QP
6		0.512	10.627	0.790	-35.373	46.000	9.794	0.042	0.000	AV
7		1.442	27.570	17.572	-28.430	56.000	9.928	0.071	0.000	QP
8		1.442	21.342	11.344	-24.658	46.000	9.928	0.071	0.000	AV
9		4.083	26.674	16.559	-29.326	56.000	9.985	0.130	0.000	QP
10		4.083	19.606	9.492	-26.394	46.000	9.985	0.130	0.000	AV
11		5.800	27.526	17.349	-32.474	60.000	10.024	0.153	0.000	QP
12		5.800	19.183	9.006	-30.817	50.000	10.024	0.153	0.000	AV

Profile: 20A0601R	Page No.: 4
Engineer: YULIU	
Site: TR1	Time: 2021/03/15 - 18:40
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1	*	0.154	46.285	36.547	-19.470	65.754	9.712	0.025	0.000	QP
2		0.154	26.125	16.388	-29.629	55.754	9.712	0.025	0.000	AV
3		0.206	39.591	29.823	-23.764	63.355	9.739	0.029	0.000	QP
4		0.206	20.805	11.036	-32.550	53.355	9.739	0.029	0.000	AV
5		0.452	23.151	13.321	-33.696	56.847	9.791	0.040	0.000	QP
6		0.452	13.777	3.947	-33.070	46.847	9.791	0.040	0.000	AV
7		1.894	27.013	17.068	-28.987	56.000	9.863	0.082	0.000	QP
8		1.894	20.102	10.157	-25.898	46.000	9.863	0.082	0.000	AV
9		4.085	26.401	16.376	-29.599	56.000	9.895	0.130	0.000	QP
10		4.085	19.863	9.839	-26.137	46.000	9.895	0.130	0.000	AV
11		5.737	28.027	17.943	-31.973	60.000	9.932	0.152	0.000	QP
12		5.737	19.622	9.538	-30.378	50.000	9.932	0.152	0.000	AV

4.2 Emissions in restricted frequency bands**VERDICT: PASS****4.2.1 Limit**

Standard		FCC Part 15 Subpart C Paragraph 15.205; 15.209	
Restricted Bands of operation for 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	Above 38.6
13.36 – 13.41	--	--	--
Restricted Bands of operation for ISED			
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

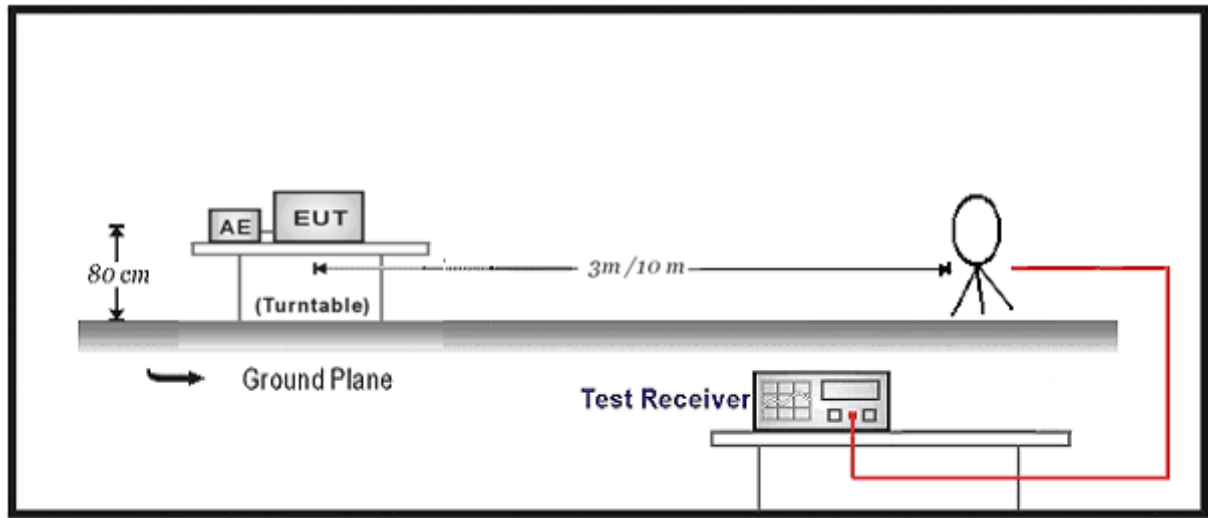
Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Field strength ($\text{dB}\mu\text{V/m}$)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 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).

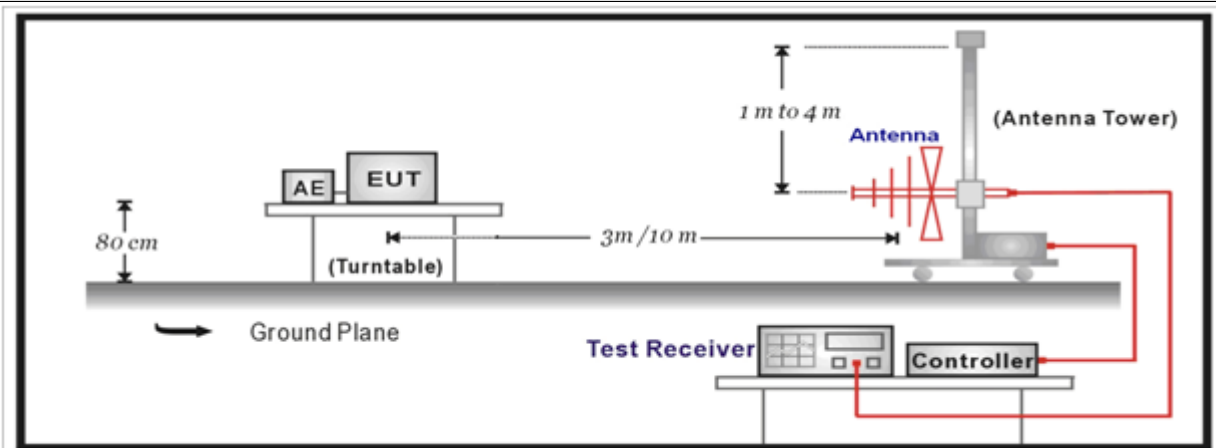
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated 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

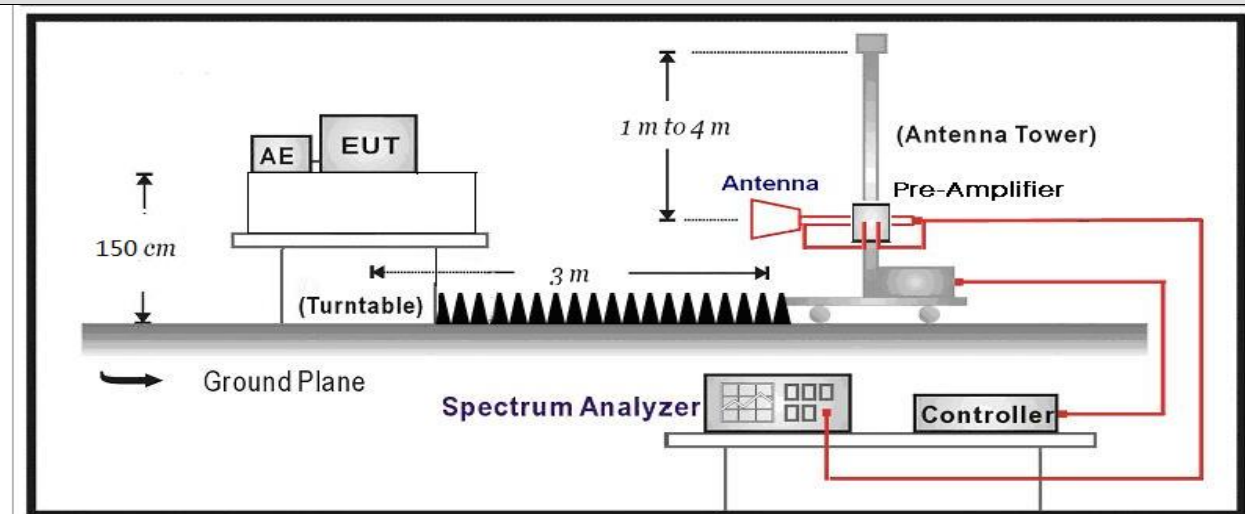
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:

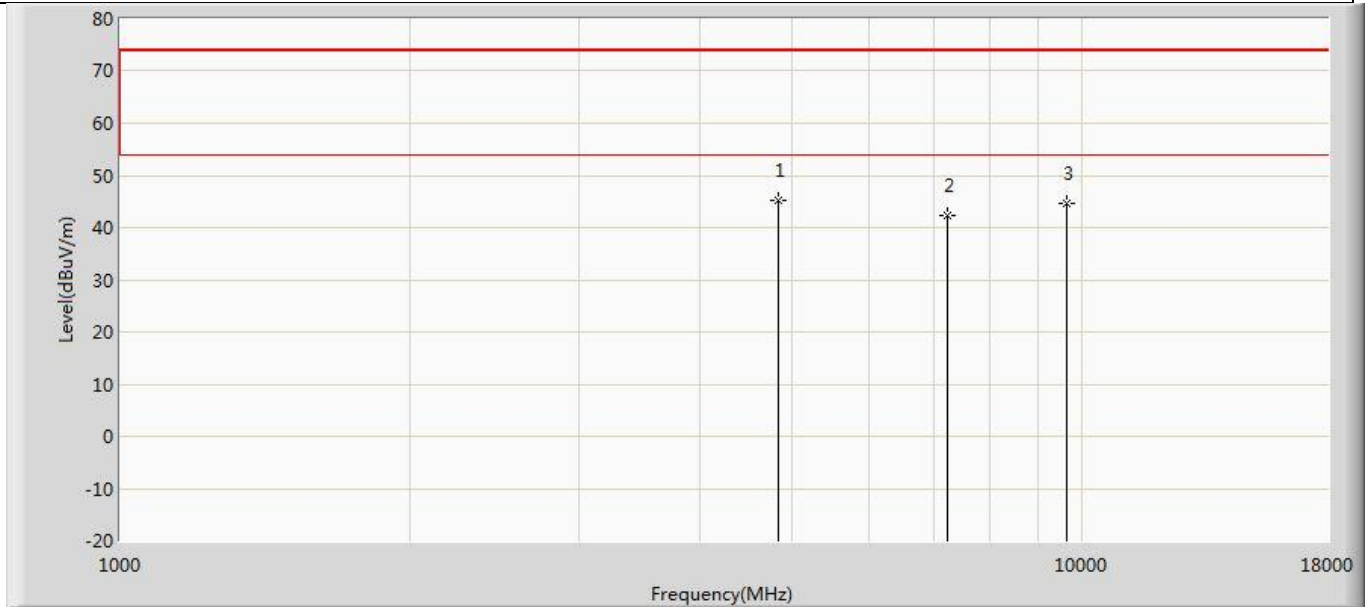


4.2.3 Test Procedure

	References Rule		Chapter	Description
☒	ANSI C63.10		11.12	Emissions in restricted frequency bands
	☒	ANSI C63.10	11.12.1	Radiated emission measurements
	☒	ANSI C63.10	6.3	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
	☐	ANSI C63.10	11.12.2	Antenna-port conducted measurements
	☐	ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
	☐	ANSI C63.10	11.12.2.4	Peak power measurement procedure
	☐	ANSI C63.10	11.12.2.5	Average power measurement procedures
	☐	ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
	☐	ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
	☐	ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

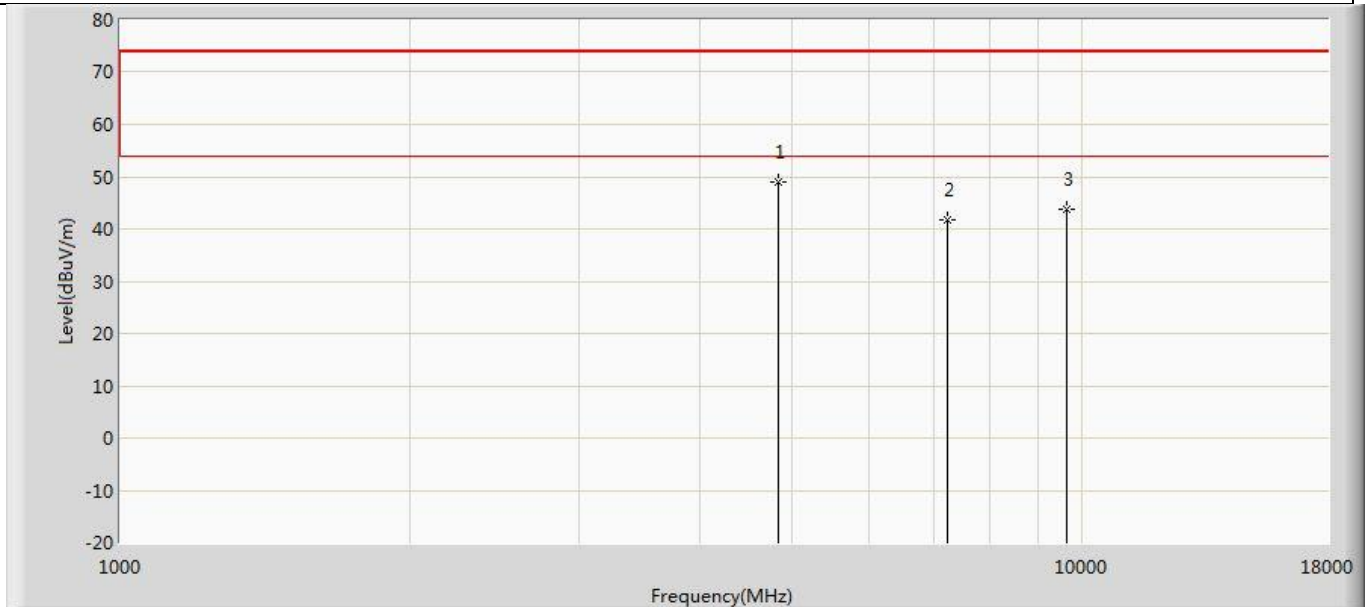
4.2.4 Test Data

Profile: 20A0601R	Page No.: 25
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



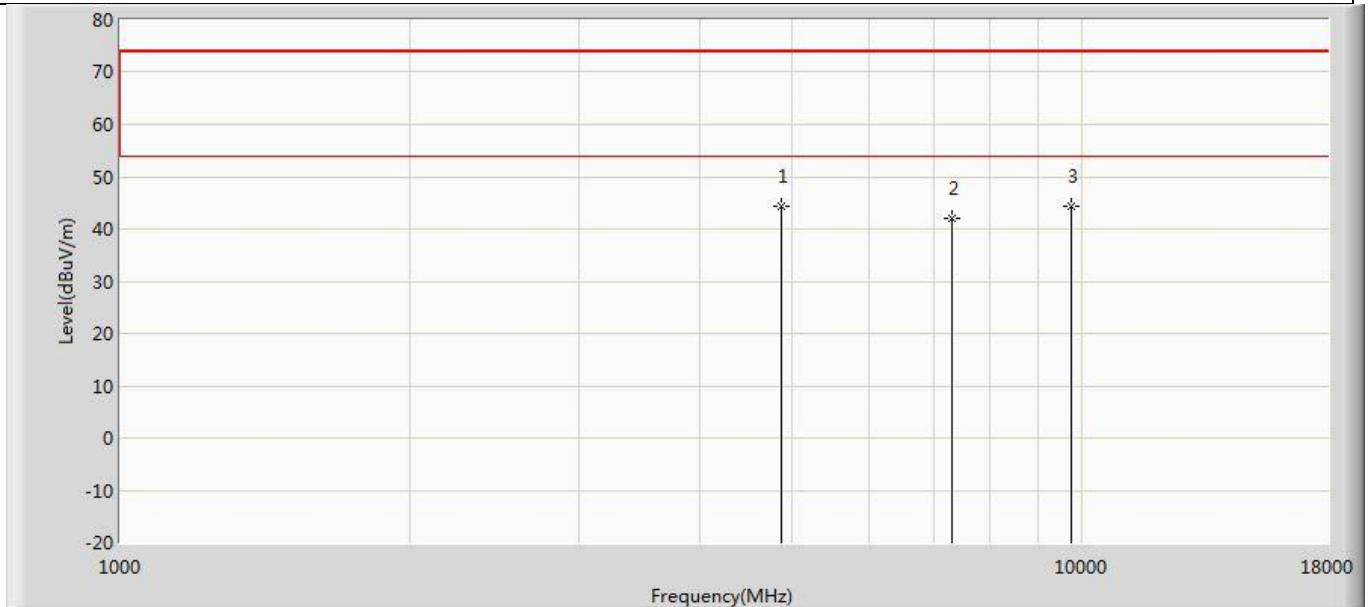
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4824.000	45.124	52.228	-28.876	74.000	-7.104	PK
2		7236.000	42.388	45.212	-31.612	74.000	-2.824	PK
3		9648.000	44.701	44.758	-29.299	74.000	-0.057	PK

Profile: 20A0601R	Page No.: 26
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



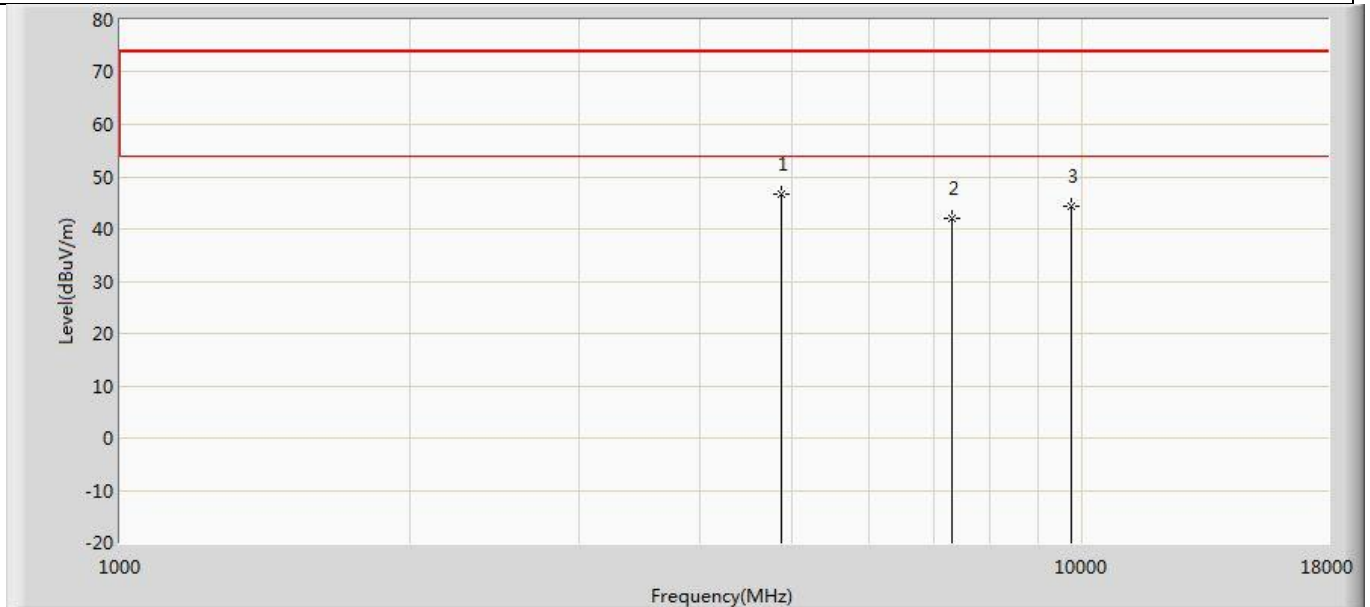
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4824.000	48.883	55.987	-25.117	74.000	-7.104	PK
2		7236.000	41.841	44.665	-32.159	74.000	-2.824	PK
3		9648.000	43.729	43.786	-30.271	74.000	-0.057	PK

Profile: 20A0601R	Page No.: 27
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11b	



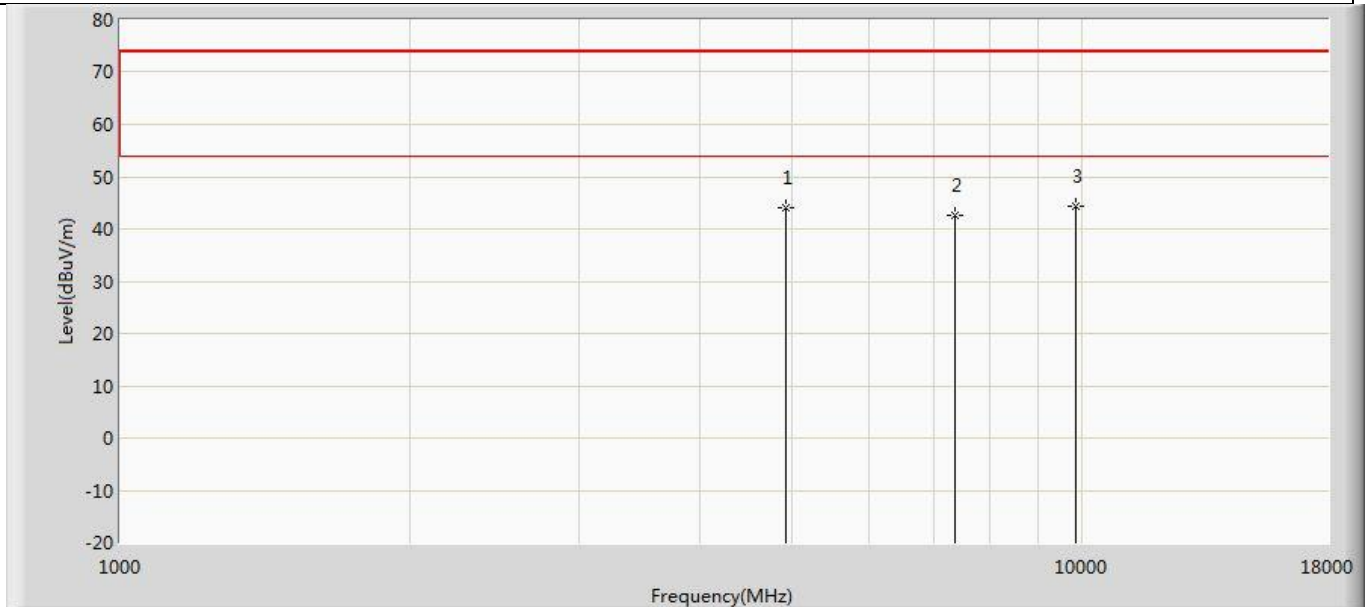
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4874.000	44.309	51.240	-29.691	74.000	-6.931	PK
2		7311.000	41.911	44.763	-32.089	74.000	-2.853	PK
3		9748.000	44.226	44.037	-29.774	74.000	0.189	PK

Profile: 20A0601R	Page No.: 28
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11b	



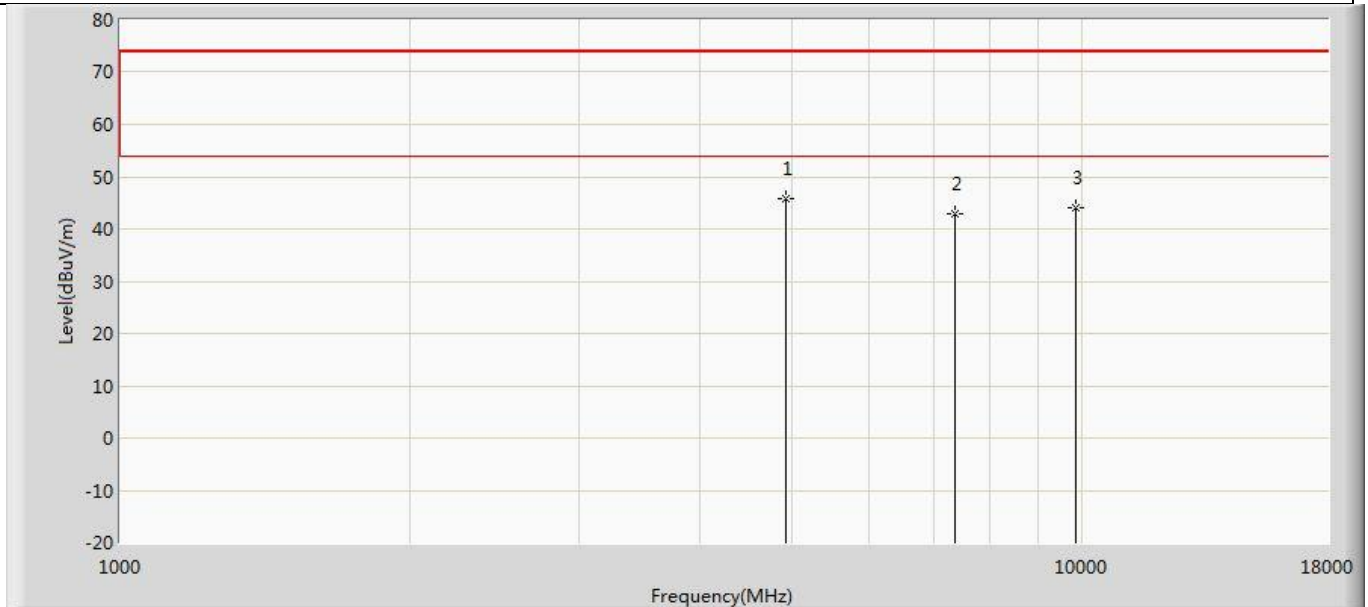
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4874.000	46.734	53.665	-27.266	74.000	-6.931	PK
2		7311.000	42.142	44.994	-31.858	74.000	-2.853	PK
3		9748.000	44.332	44.143	-29.668	74.000	0.189	PK

Profile: 20A0601R	Page No.: 29
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



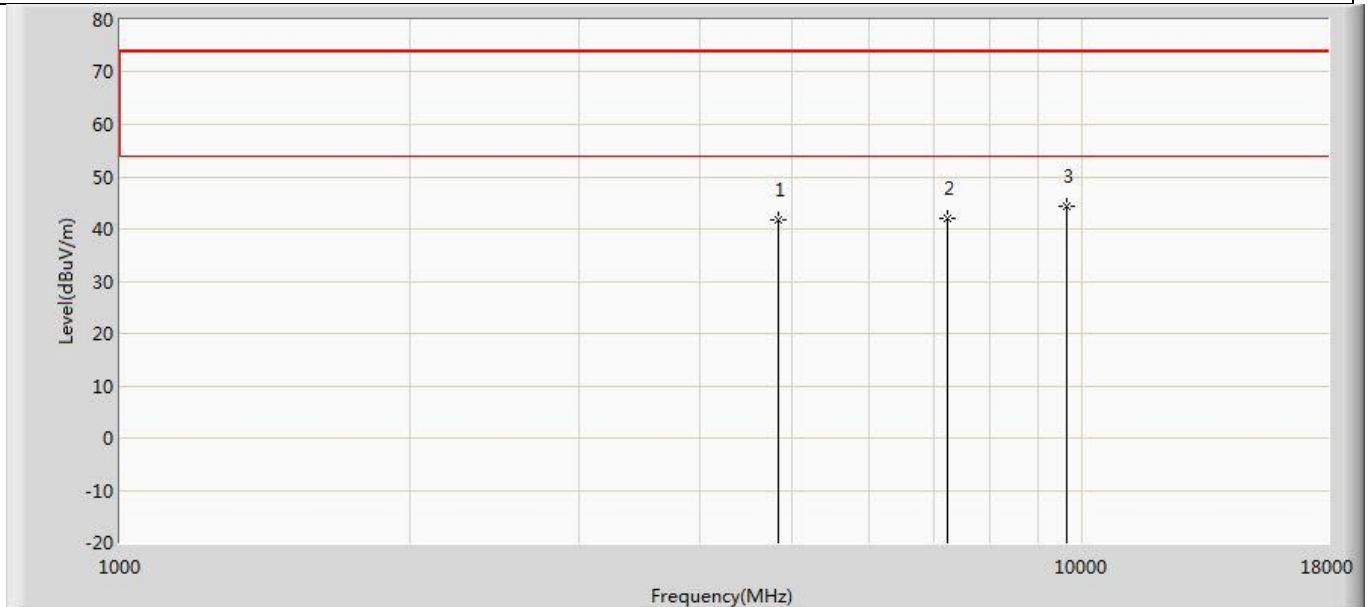
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	43.995	50.875	-30.005	74.000	-6.881	PK
2		7386.000	42.503	45.239	-31.497	74.000	-2.737	PK
3	*	9848.000	44.364	44.745	-29.636	74.000	-0.380	PK

Profile: 20A0601R	Page No.: 30
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



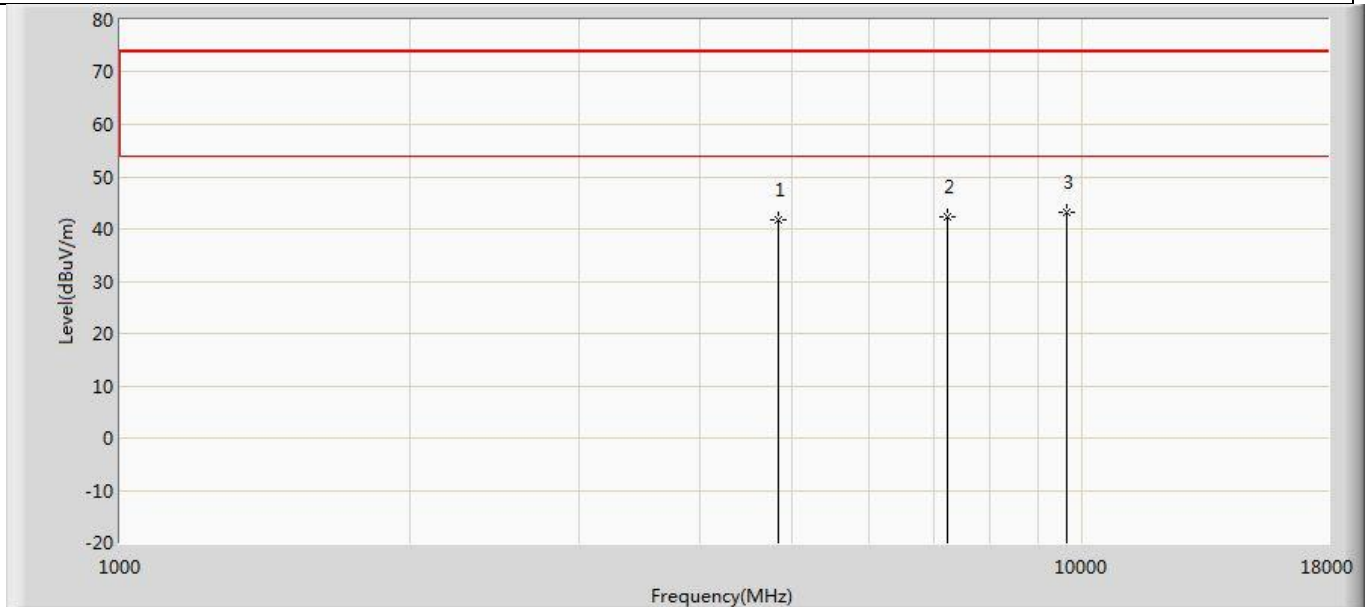
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4924.000	45.912	52.792	-28.088	74.000	-6.881	PK
2		7386.000	42.936	45.672	-31.064	74.000	-2.737	PK
3		9848.000	44.105	44.486	-29.895	74.000	-0.380	PK

Profile: 20A0601R	Page No.: 31
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



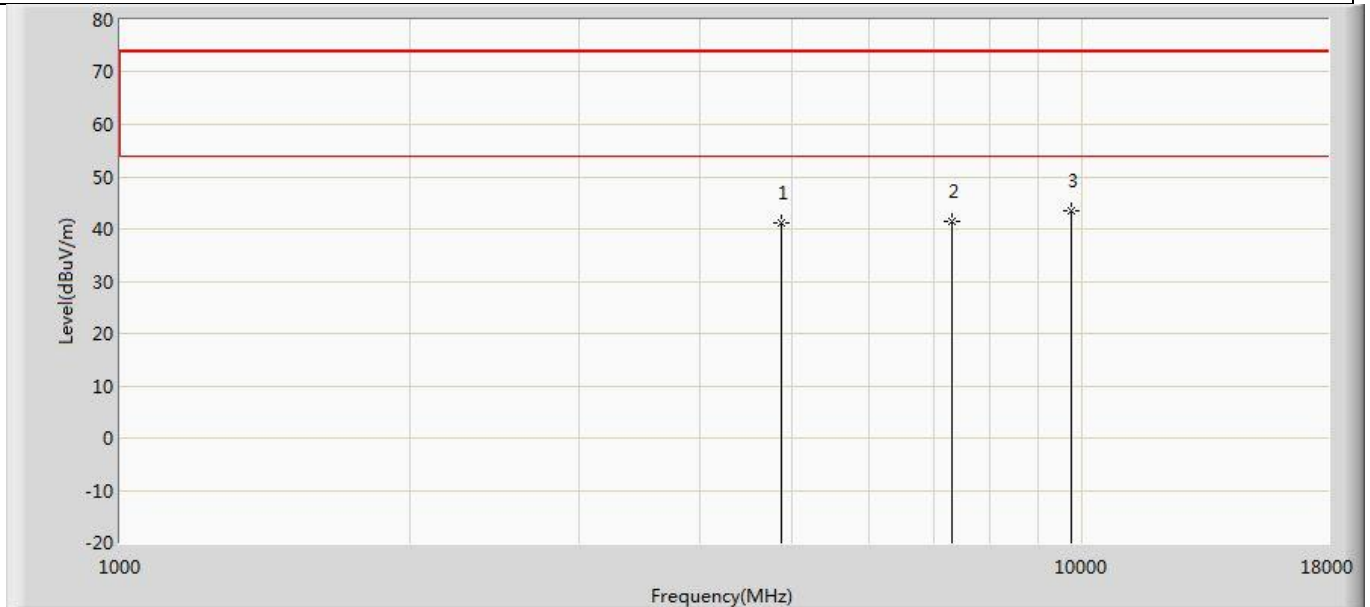
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	41.638	48.742	-32.362	74.000	-7.104	PK
2		7236.000	42.103	44.927	-31.897	74.000	-2.824	PK
3	*	9648.000	44.336	44.393	-29.664	74.000	-0.057	PK

Profile: 20A0601R	Page No.: 32
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



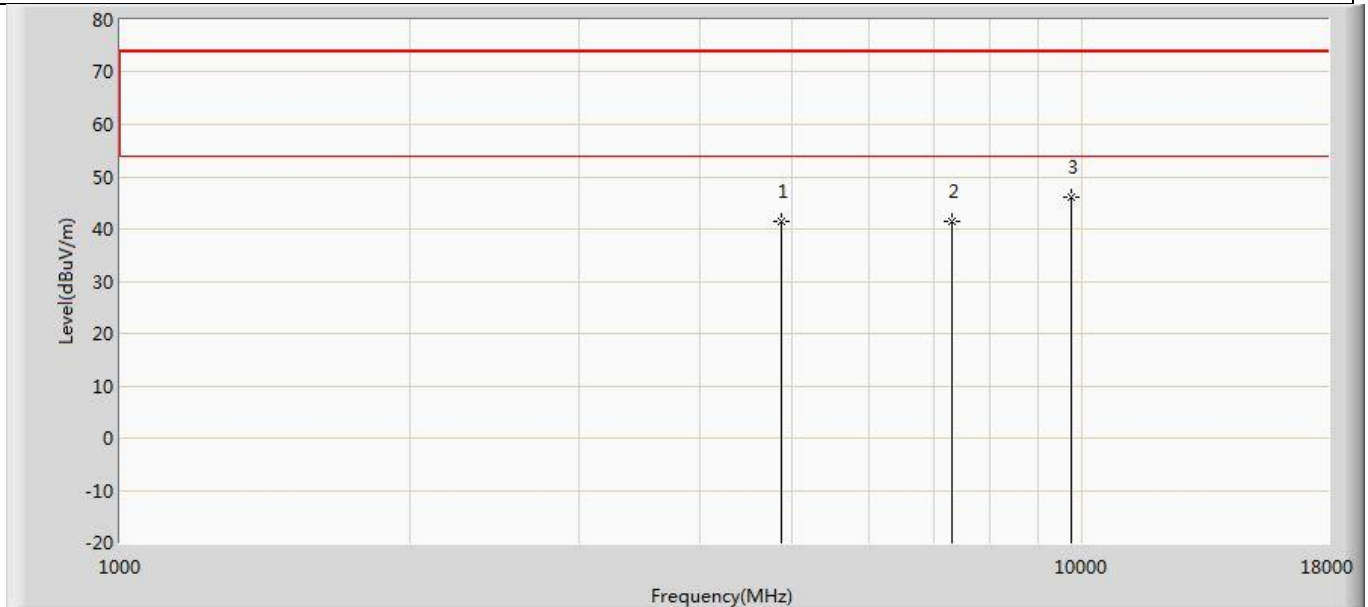
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	41.762	48.866	-32.238	74.000	-7.104	PK
2		7236.000	42.422	45.246	-31.578	74.000	-2.824	PK
3	*	9648.000	43.244	43.301	-30.756	74.000	-0.057	PK

Profile: 20A0601R	Page No.: 33
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11g	



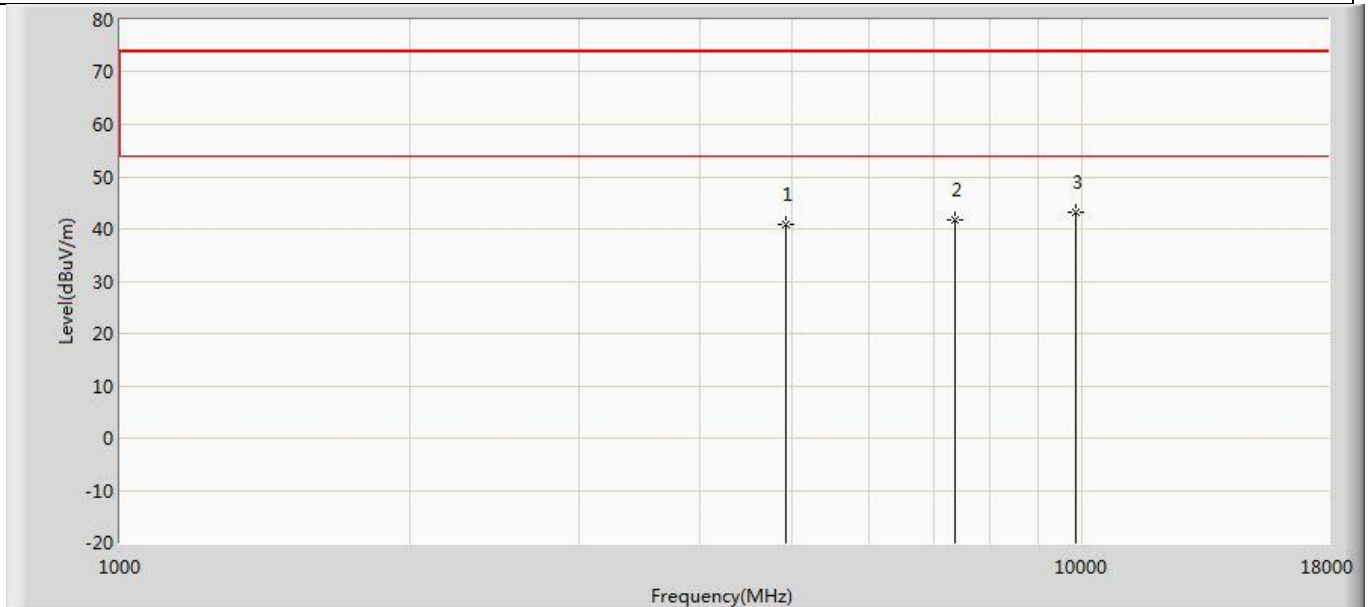
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	41.217	48.148	-32.783	74.000	-6.931	PK
2		7311.000	41.498	44.350	-32.502	74.000	-2.853	PK
3	*	9748.000	43.587	43.398	-30.413	74.000	0.189	PK

Profile: 20A0601R	Page No.: 34
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11g	



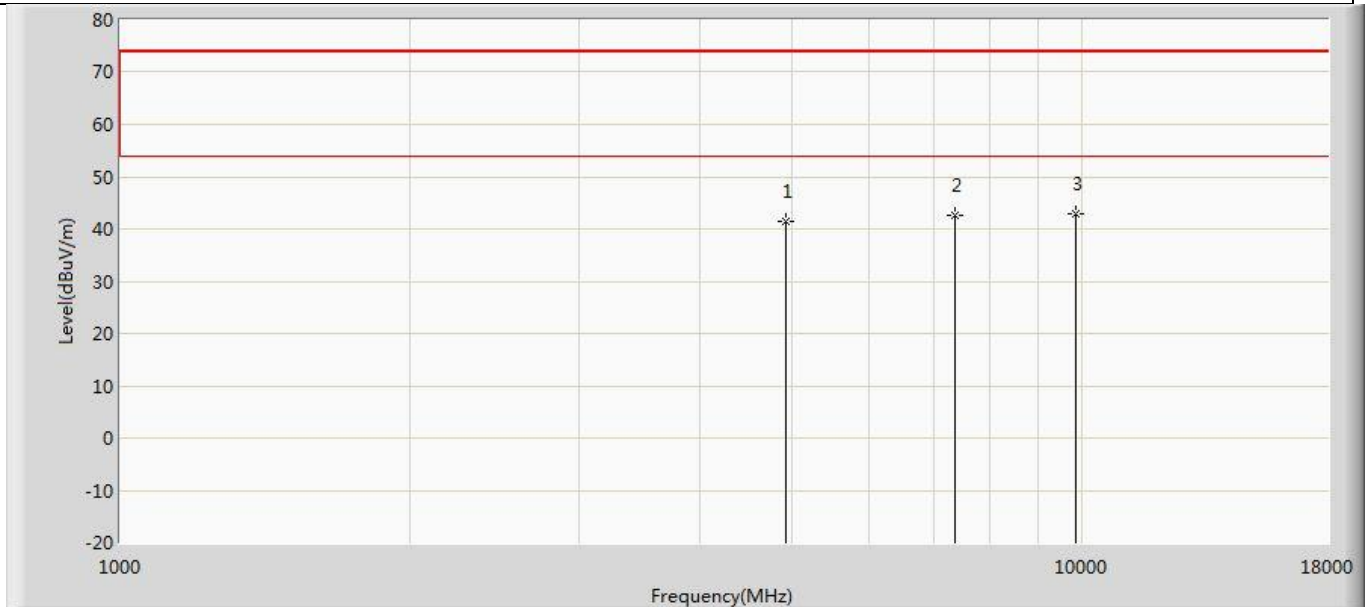
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	41.553	48.484	-32.447	74.000	-6.931	PK
2		7311.000	41.498	44.350	-32.502	74.000	-2.853	PK
3	*	9748.000	45.955	45.766	-28.045	74.000	0.189	PK

Profile: 20A0601R	Page No.: 35
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



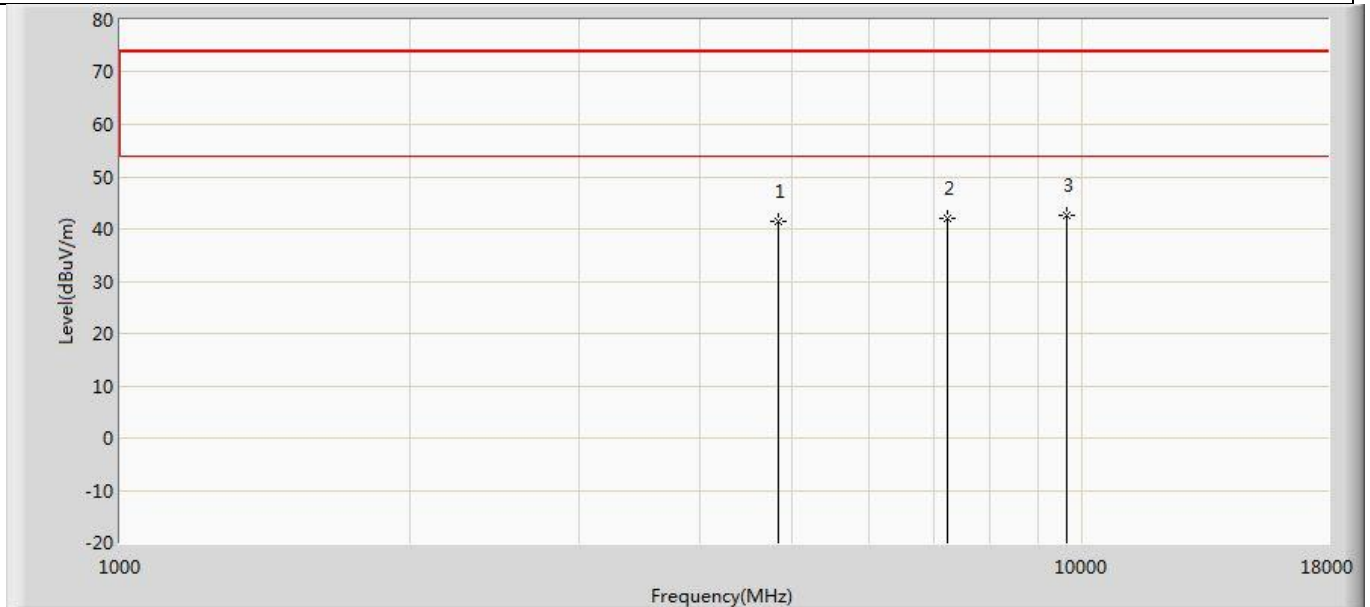
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	40.797	47.677	-33.203	74.000	-6.881	PK
2		7386.000	41.737	44.473	-32.263	74.000	-2.737	PK
3	*	9848.000	43.250	43.631	-30.750	74.000	-0.380	PK

Profile: 20A0601R	Page No.: 36
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



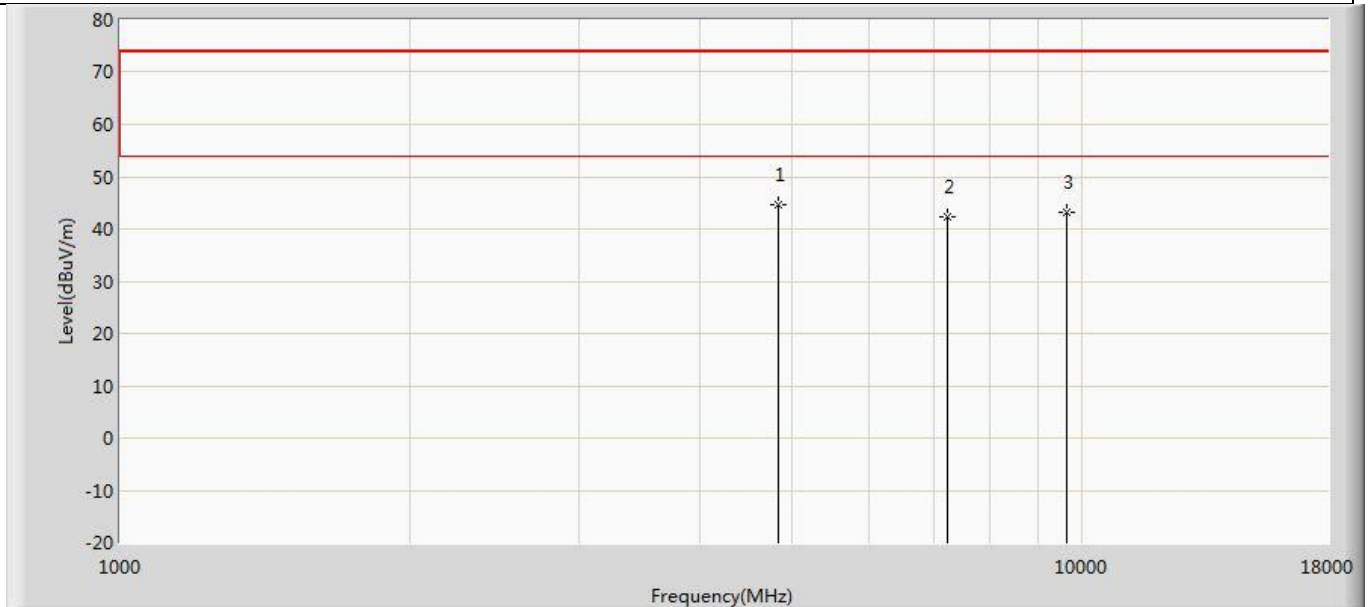
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	41.348	48.228	-32.652	74.000	-6.881	PK
2		7386.000	42.632	45.368	-31.368	74.000	-2.737	PK
3	*	9848.000	42.969	43.350	-31.031	74.000	-0.380	PK

Profile: 20A0601R	Page No.: 37
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



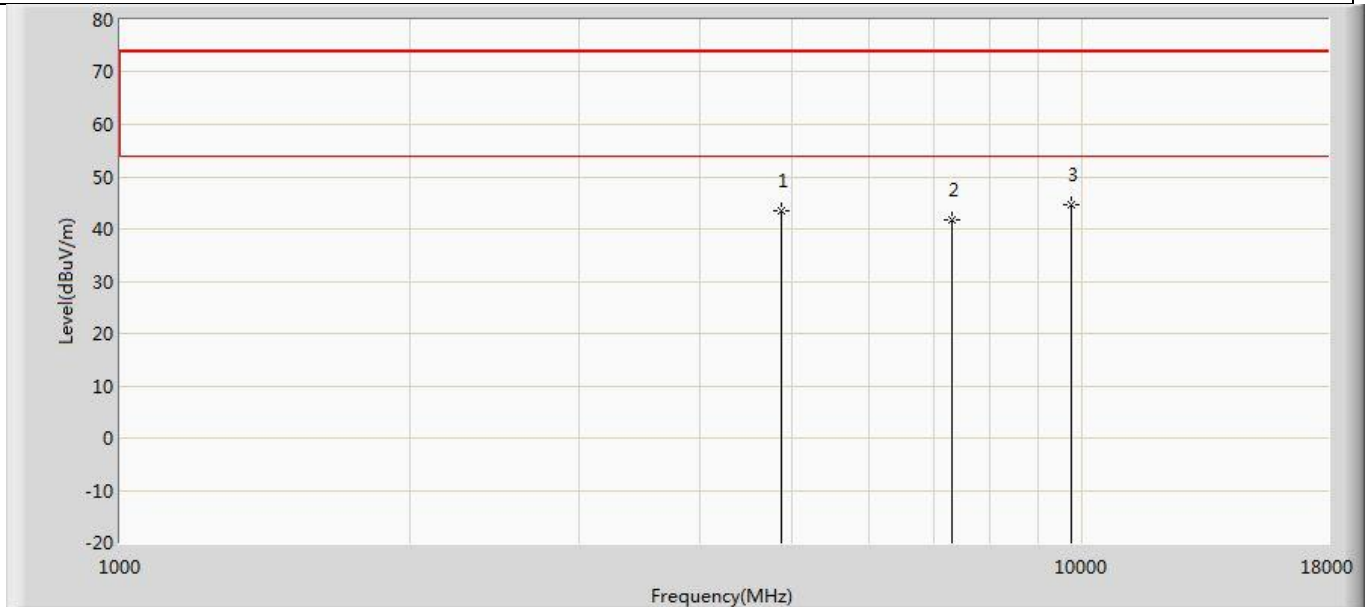
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	41.493	48.597	-32.507	74.000	-7.104	PK
2		7236.000	42.089	44.913	-31.911	74.000	-2.824	PK
3	*	9648.000	42.752	42.809	-31.248	74.000	-0.057	PK

Profile: 20A0601R	Page No.: 38
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



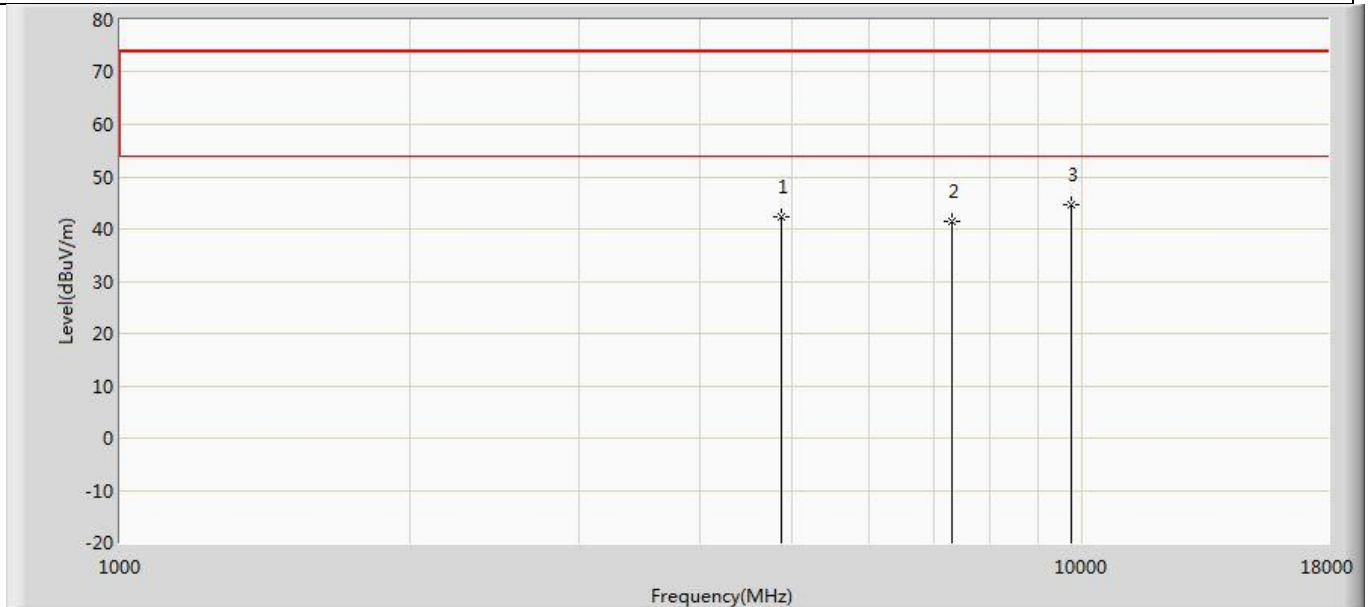
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4824.000	44.556	51.660	-29.444	74.000	-7.104	PK
2		7236.000	42.188	45.012	-31.812	74.000	-2.824	PK
3		9648.000	43.115	43.172	-30.885	74.000	-0.057	PK

Profile: 20A0601R	Page No.: 39
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2437MHz by 802.11n(20MHz)	



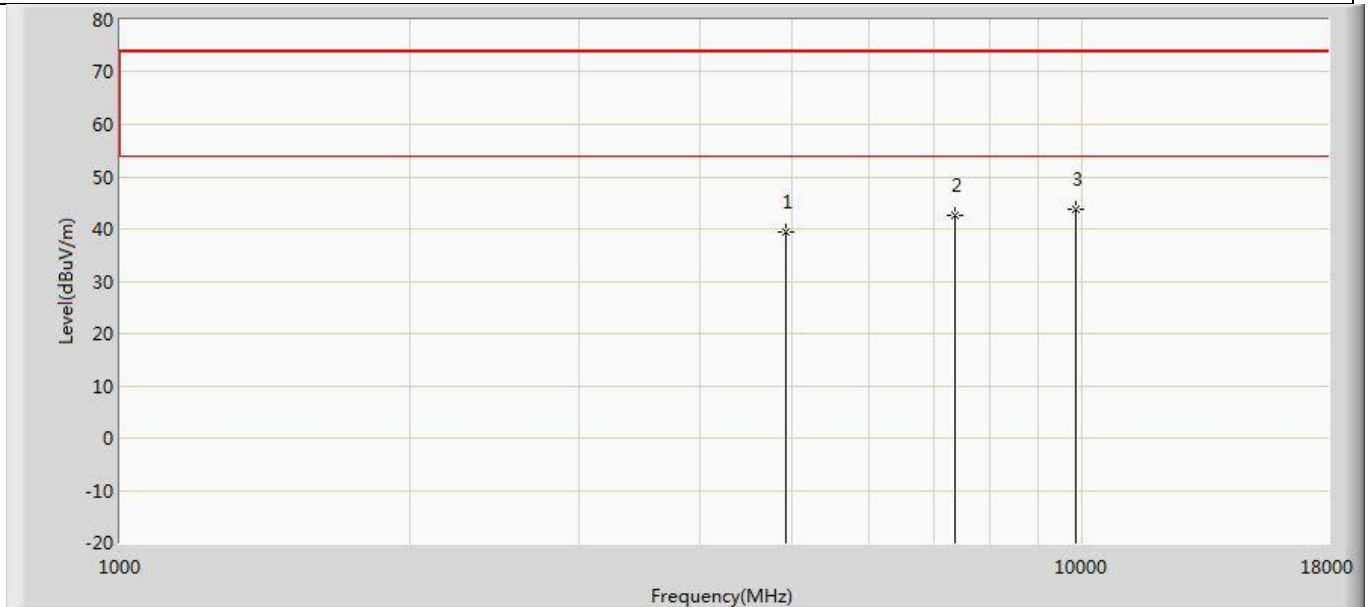
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.339	50.270	-30.661	74.000	-6.931	PK
2		7311.000	41.835	44.687	-32.165	74.000	-2.853	PK
3	*	9748.000	44.524	44.335	-29.476	74.000	0.189	PK

Profile: 20A0601R	Page No.: 40
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2437MHz by 802.11n(20MHz)	



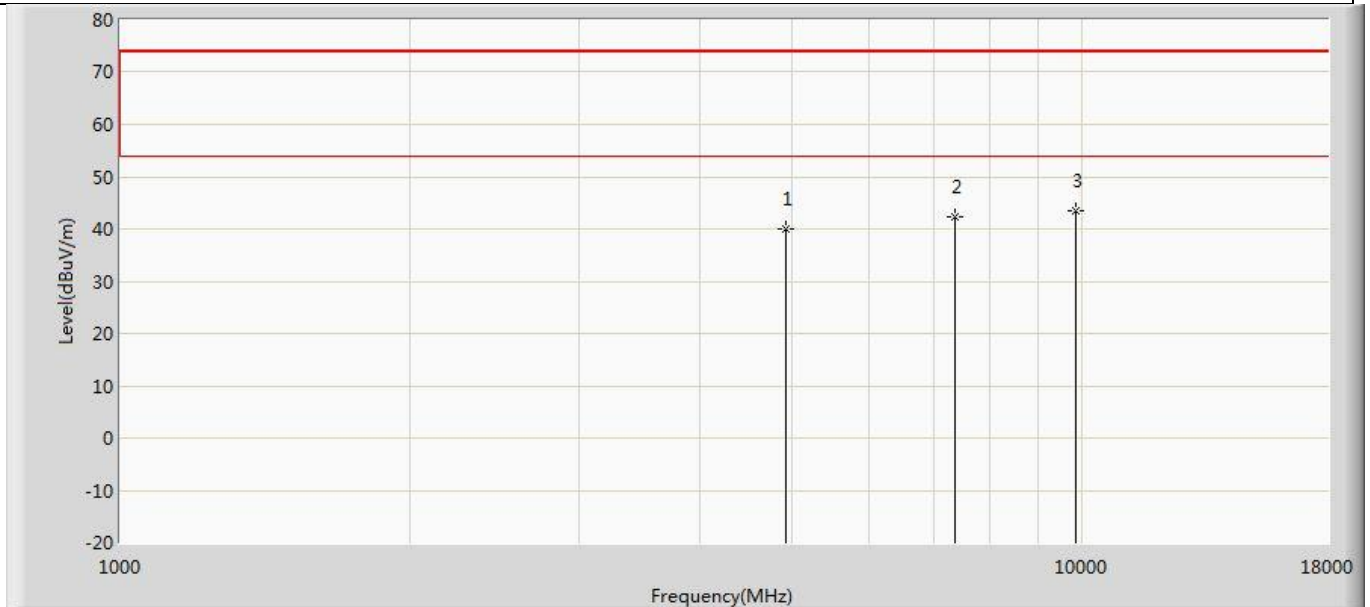
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	42.387	49.318	-31.613	74.000	-6.931	PK
2		7311.000	41.587	44.439	-32.413	74.000	-2.853	PK
3	*	9748.000	44.524	44.335	-29.476	74.000	0.189	PK

Profile: 20A0601R	Page No.: 41
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



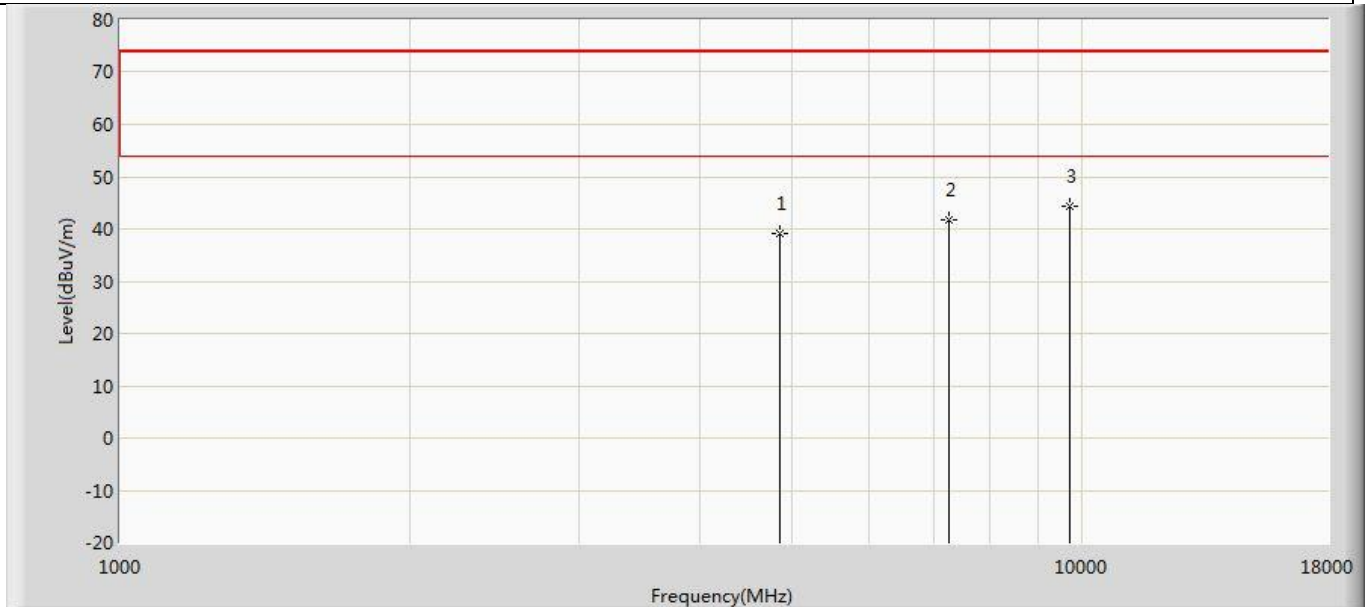
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	39.499	46.379	-34.501	74.000	-6.881	PK
2		7386.000	42.532	45.268	-31.468	74.000	-2.737	PK
3	*	9848.000	43.742	44.123	-30.258	74.000	-0.380	PK

Profile: 20A0601R	Page No.: 42
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



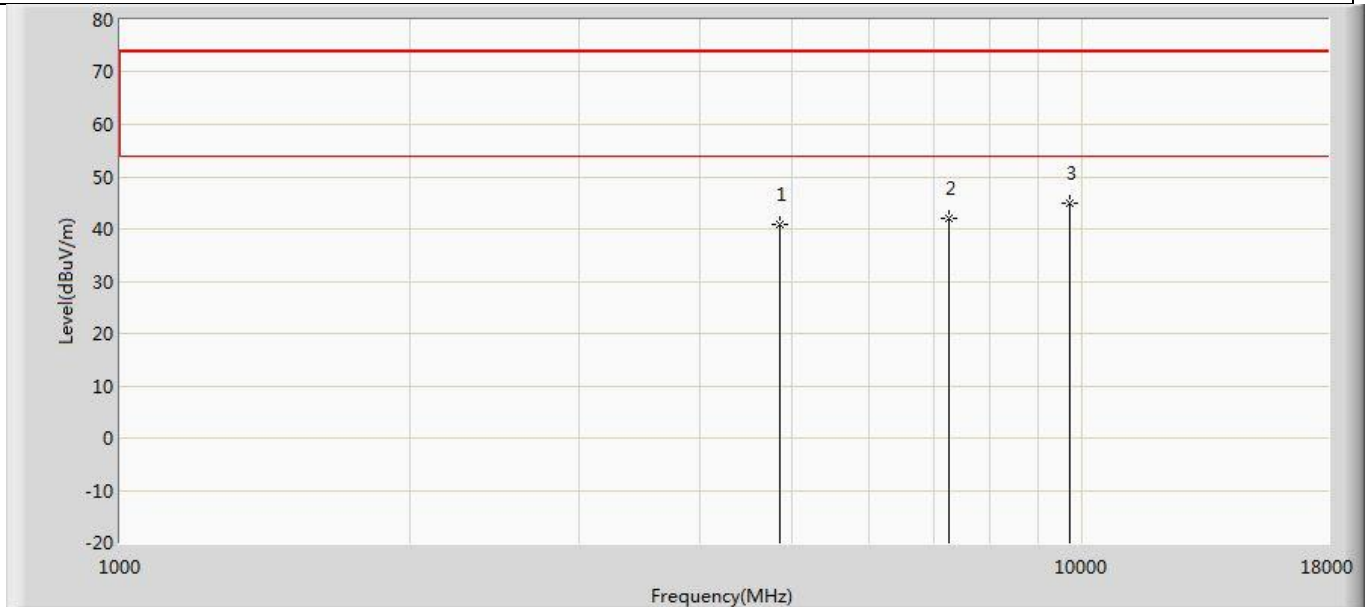
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	39.980	46.860	-34.020	74.000	-6.881	PK
2		7386.000	42.423	45.159	-31.577	74.000	-2.737	PK
3	*	9848.000	43.399	43.780	-30.601	74.000	-0.380	PK

Profile: 20A0601R	Page No.: 43
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



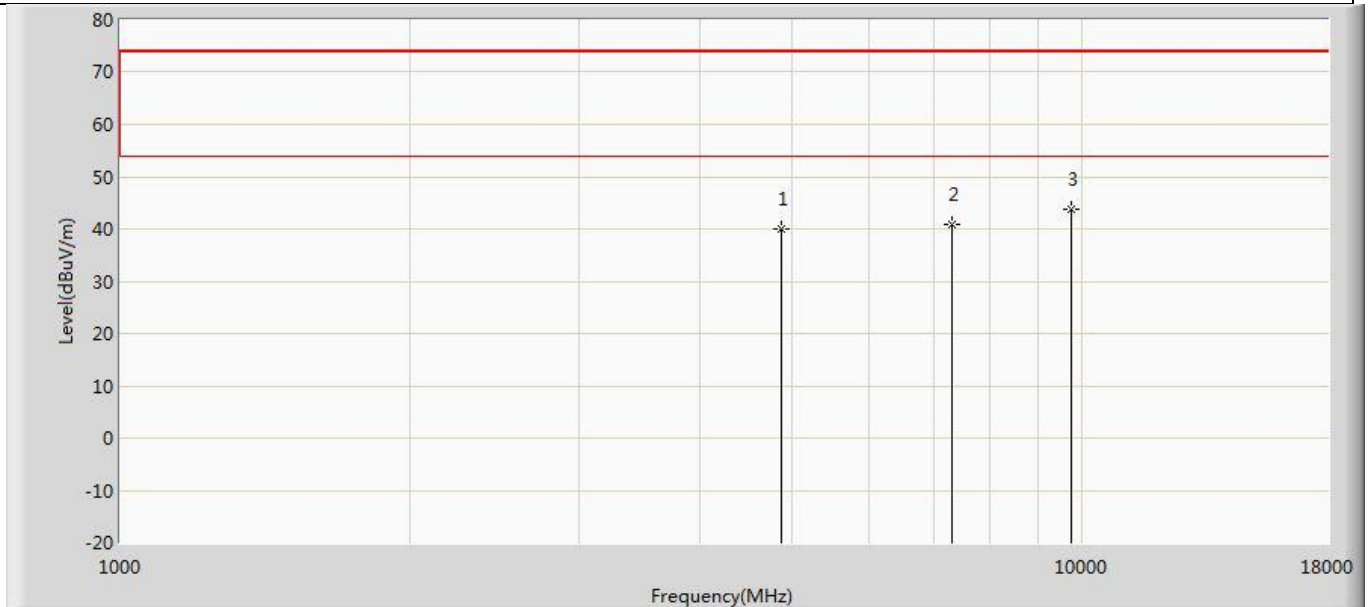
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	39.223	46.347	-34.777	74.000	-7.124	PK
2		7266.000	41.625	44.505	-32.375	74.000	-2.879	PK
3	*	9688.000	44.385	43.686	-29.615	74.000	0.700	PK

Profile: 20A0601R	Page No.: 44
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



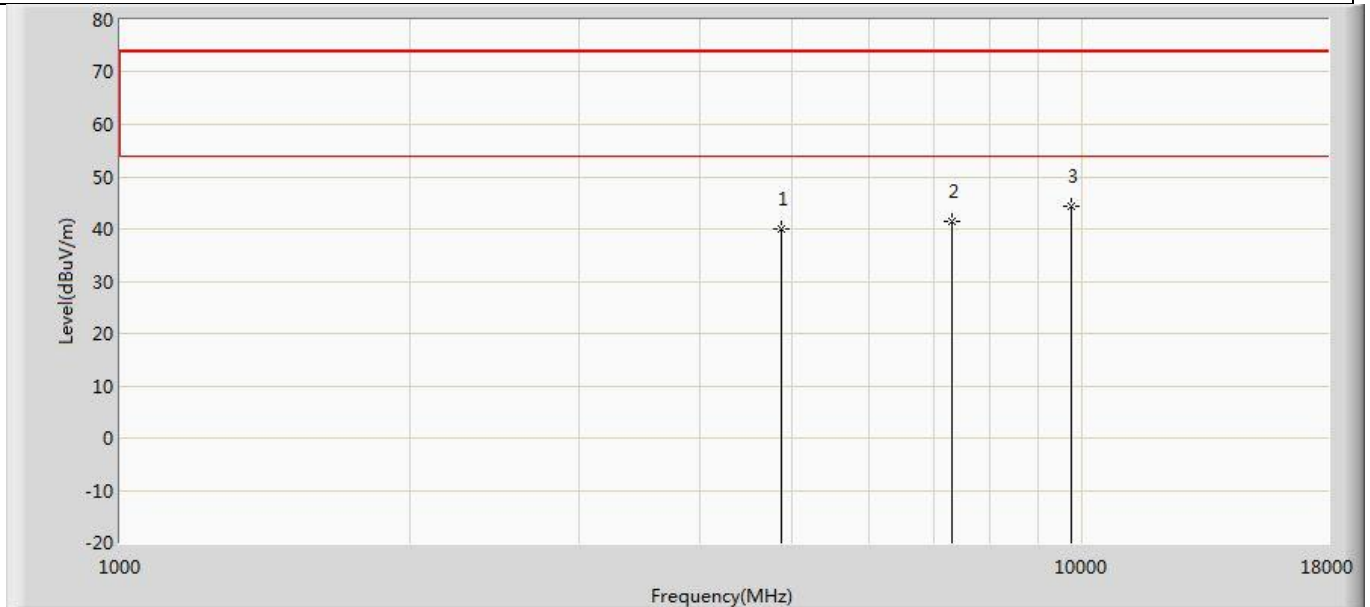
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	41.007	48.131	-32.993	74.000	-7.124	PK
2		7266.000	42.042	44.922	-31.958	74.000	-2.879	PK
3	*	9688.000	44.993	44.294	-29.007	74.000	0.700	PK

Profile: 20A0601R	Page No.: 45
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2437MHz by 802.11n(40MHz)	



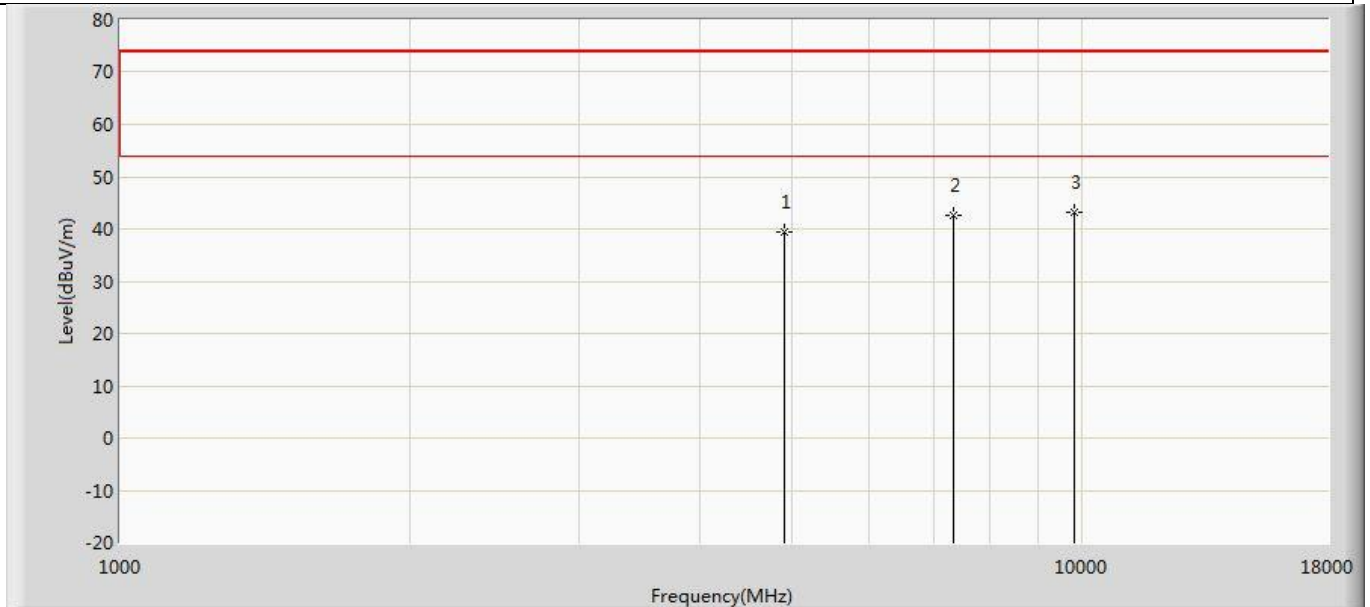
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	40.059	46.990	-33.941	74.000	-6.931	PK
2		7311.000	40.852	43.704	-33.148	74.000	-2.853	PK
3	*	9748.000	43.851	43.662	-30.149	74.000	0.189	PK

Profile: 20A0601R	Page No.: 46
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2437MHz by 802.11n(40MHz)	



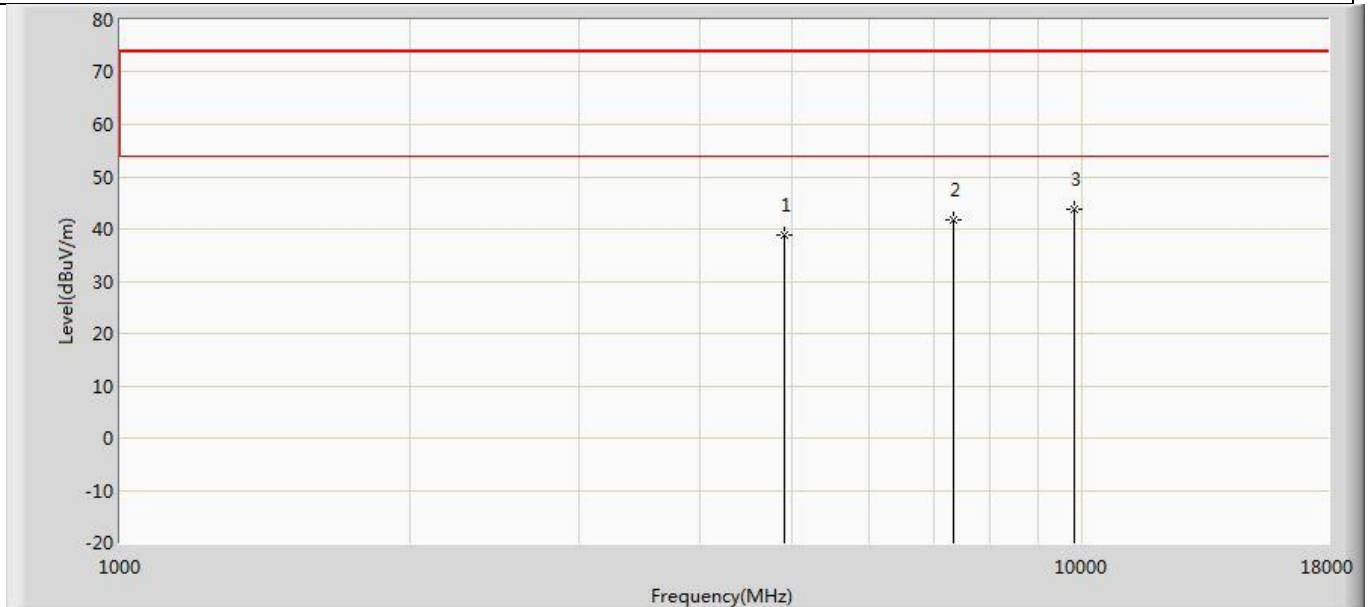
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	39.986	46.917	-34.014	74.000	-6.931	PK
2		7311.000	41.441	44.293	-32.559	74.000	-2.853	PK
3	*	9748.000	44.287	44.098	-29.713	74.000	0.189	PK

Profile: 20A0601R	Page No.: 47
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	39.385	46.197	-34.615	74.000	-6.812	PK
2		7356.000	42.585	45.559	-31.415	74.000	-2.974	PK
3	*	9808.000	43.314	43.103	-30.686	74.000	0.211	PK

Profile: 20A0601R	Page No.: 48
Engineer: YULIU	
Site: AC5	Time: 2021/03/09 - 20:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



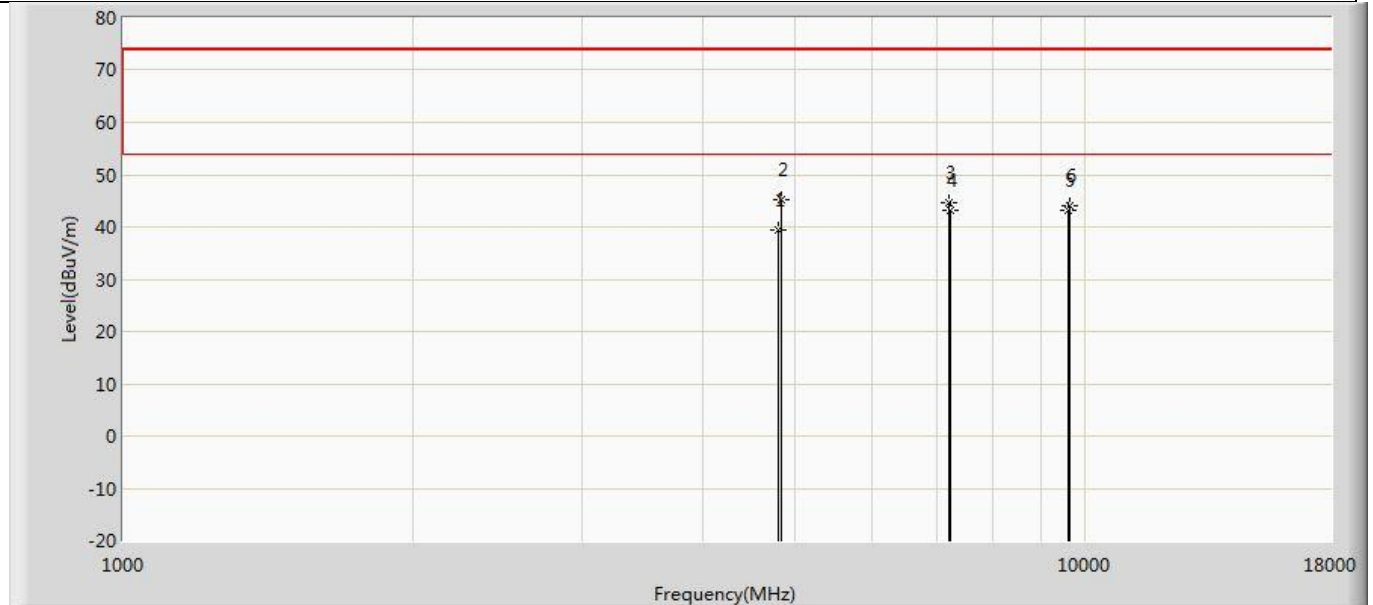
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	38.920	45.732	-35.080	74.000	-6.812	PK
2		7356.000	41.816	44.790	-32.184	74.000	-2.974	PK
3	*	9808.000	43.762	43.551	-30.238	74.000	0.211	PK

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).
3. The test frequency range, 9kHz~30MHz and Above 18GHz worst case are at least 6dB below the limits, therefore no data appear in the report.
4. This limit applies for using average detector, if the test result of peak is lower than average limit, then average measurement needn't be performed.

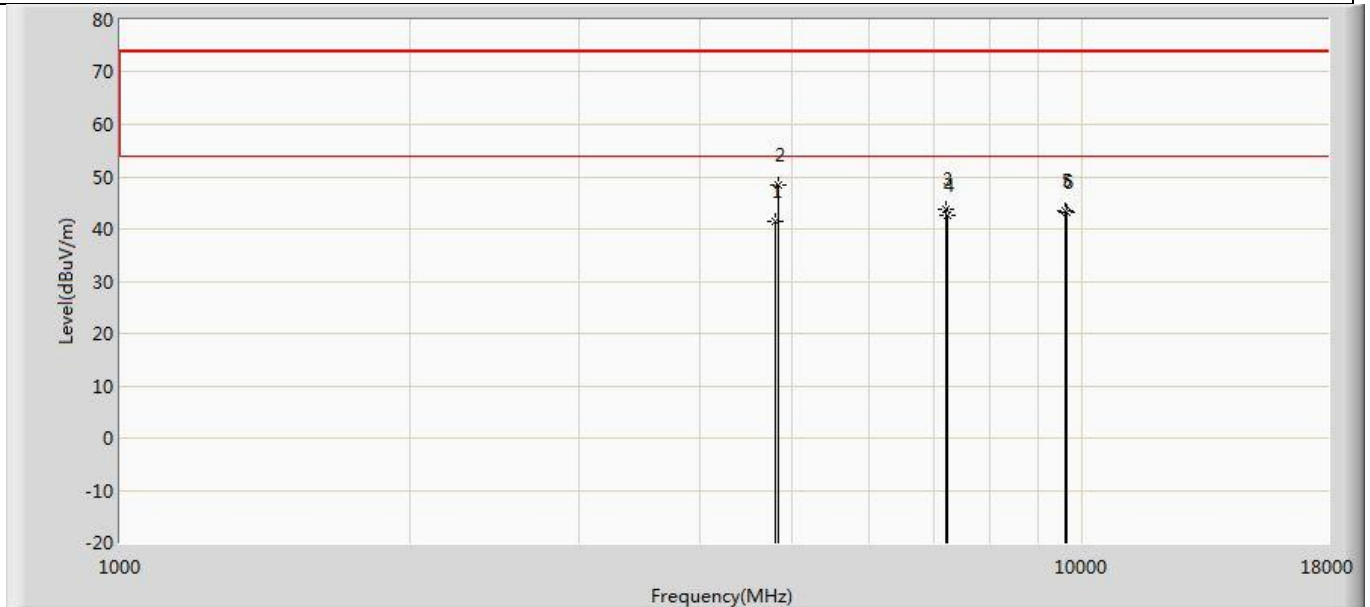
The worst case of simultaneous transmit:

Profile: 20A0601R	Page No.: 73
Engineer: YULIU	
Site: AC5	Time: 2021/03/16 - 14:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 5: Simultaneous transmit at 2412MHz by 802.11b & 2402 MHz by LE_1Mbps(GFSK_LE)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	39.491	46.618	-34.509	74.000	-7.127	PK
2	*	4824.000	45.115	52.219	-28.885	74.000	-7.104	PK
3		7206.000	44.532	47.207	-29.468	74.000	-2.675	PK
4		7236.000	43.231	46.055	-30.769	74.000	-2.824	PK
5		9608.000	43.230	43.320	-30.770	74.000	-0.089	PK
6		9648.000	44.197	44.254	-29.803	74.000	-0.057	PK

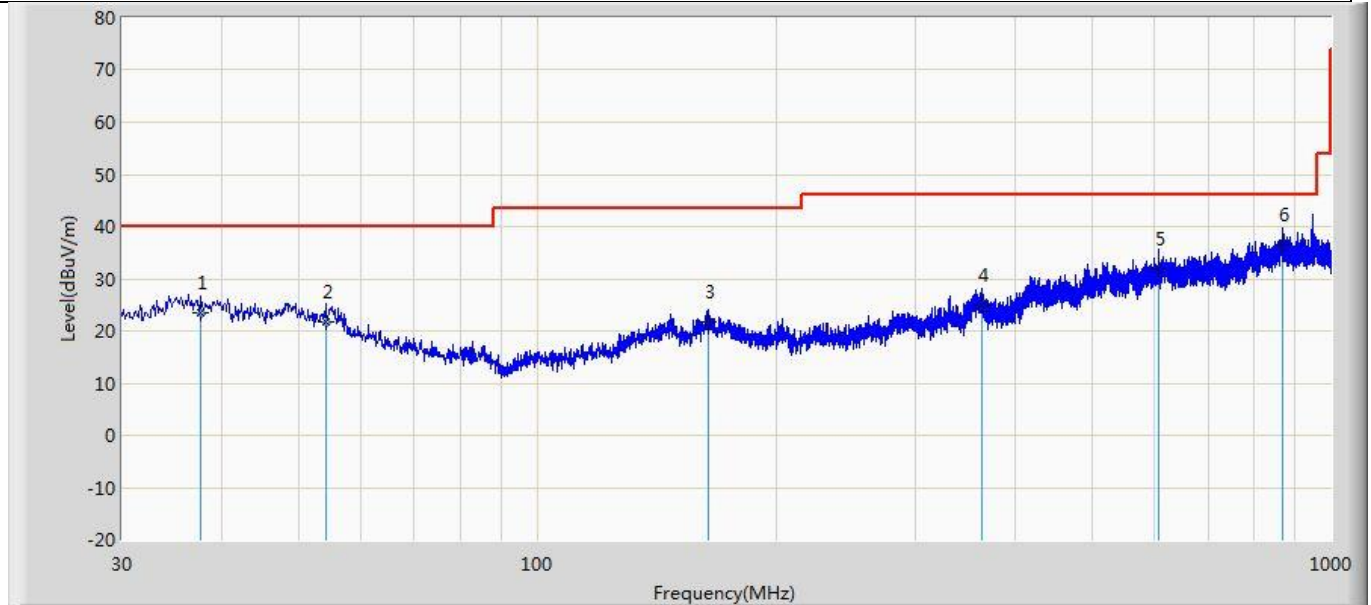
Profile: 20A0601R	Page No.: 74
Engineer: YULIU	
Site: AC5	Time: 2021/03/16 - 14:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 5: Simultaneous transmit at 2412MHz by 802.11b & 2402 MHz by LE_1Mbps(GFSK_LE)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.467	48.594	-32.533	74.000	-7.127	PK
2	*	4824.000	48.467	55.571	-25.533	74.000	-7.104	PK
3		7206.000	43.881	46.556	-30.119	74.000	-2.675	PK
4		7236.000	42.476	45.300	-31.524	74.000	-2.824	PK
5		9608.000	43.422	43.512	-30.578	74.000	-0.089	PK
6		9648.000	43.167	43.224	-30.833	74.000	-0.057	PK

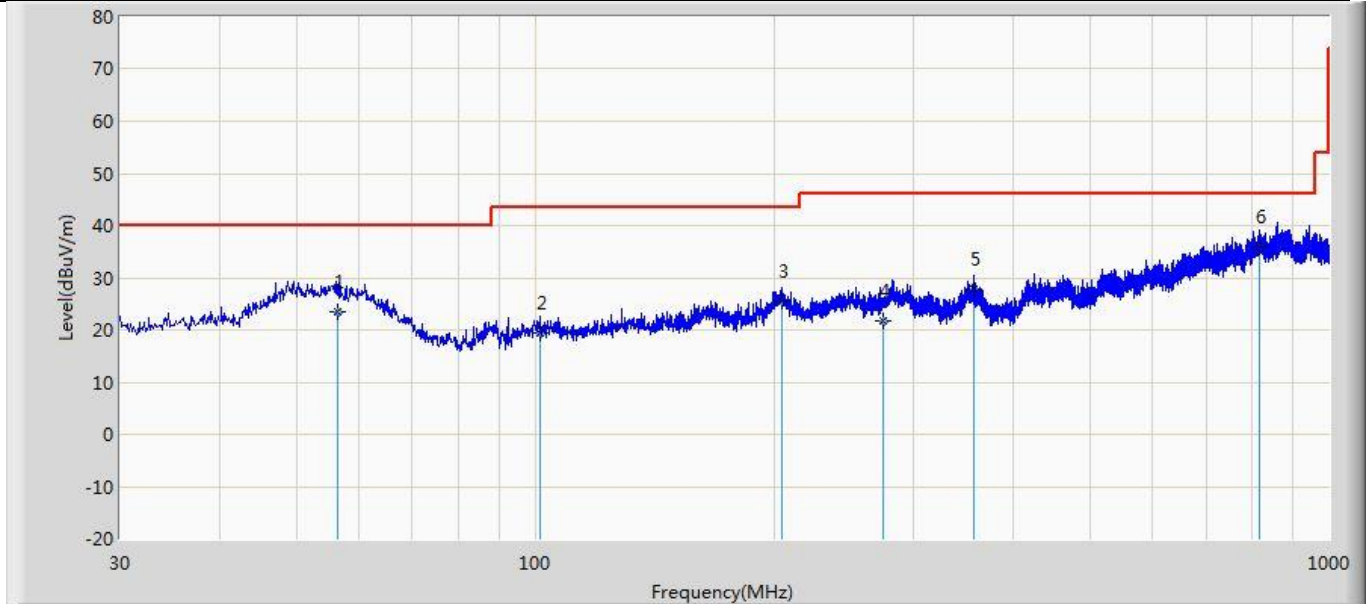
The worst case of Radiated Emission below 1GHz:

Profile: 20A0601R	Page No.: 1
Engineer: YULIU	
Site: AC2	Time: 2021/03/18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: SuZ-2141	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		37.760	23.474	0.897	-16.526	40.000	22.577	QP
2		54.129	21.745	0.779	-18.255	40.000	20.966	QP
3		164.587	21.749	1.807	-21.751	43.500	19.942	QP
4		363.437	24.948	0.382	-21.052	46.000	24.566	QP
5		606.059	31.749	1.777	-14.251	46.000	29.972	QP
6	*	867.838	36.497	1.414	-9.503	46.000	35.083	QP

Profile: 20A0601R	Page No.: 2
Engineer: YULIU	
Site: AC2	Time: 2021/03/18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: SuZ-2141	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1	



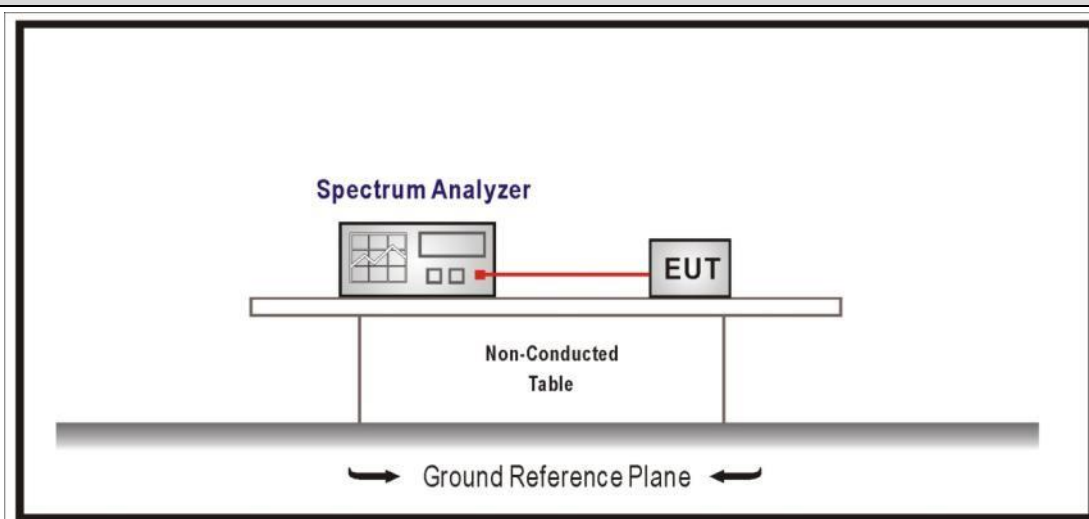
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		56.311	23.458	-1.411	-16.542	40.000	24.869	QP
2		101.537	19.474	1.055	-24.026	43.500	18.419	QP
3		204.236	25.474	0.948	-18.026	43.500	24.526	QP
4		274.682	21.746	-1.355	-24.254	46.000	23.101	QP
5		357.133	27.846	2.286	-18.154	46.000	25.560	QP
6	*	818.125	35.874	0.557	-10.126	46.000	35.317	QP

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)	

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).

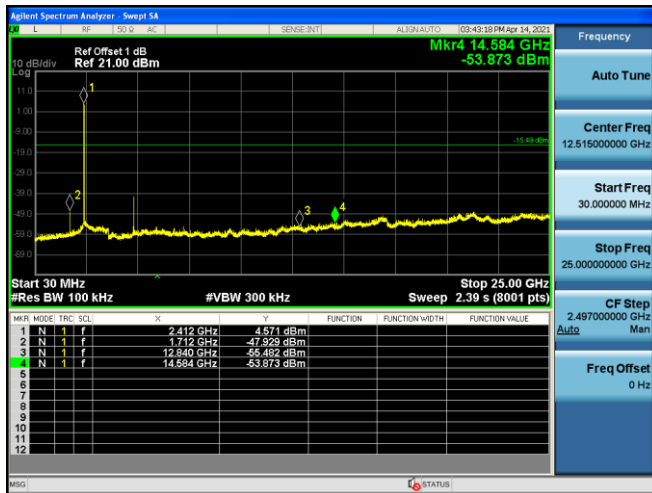
Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

4.3.2 Test Setup**4.3.3 Test Procedure**

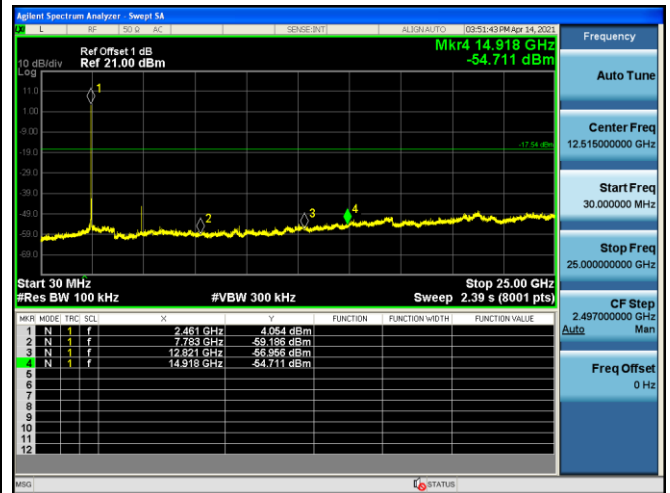
References Rule		Chapter	Description
☒	ANSI C63.10	11.11	Emissions in non-restricted frequency bands
☒	ANSI C63.10	11.11.1	General
☒	ANSI C63.10	11.11.2	Reference level measurement
☒	ANSI C63.10	11.11.3	Emission level measurement

4.3.4 Test Data

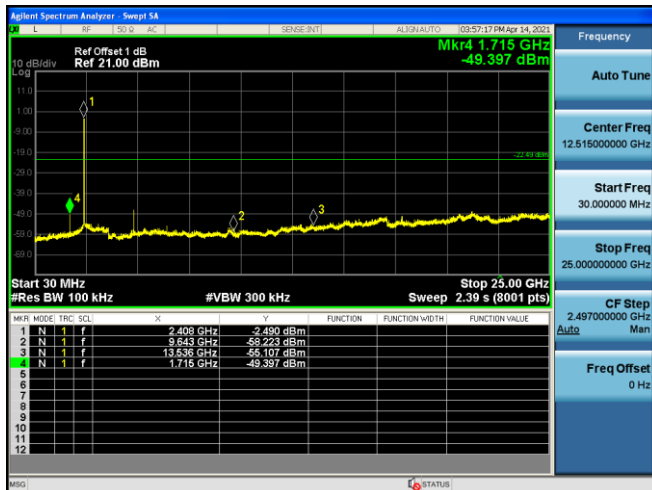
Mode 1 CH01(2412MHz)



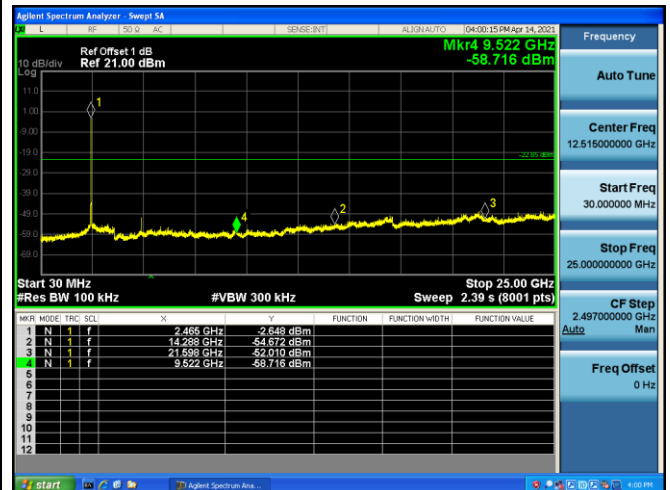
Mode 1 CH11(2462MHz)



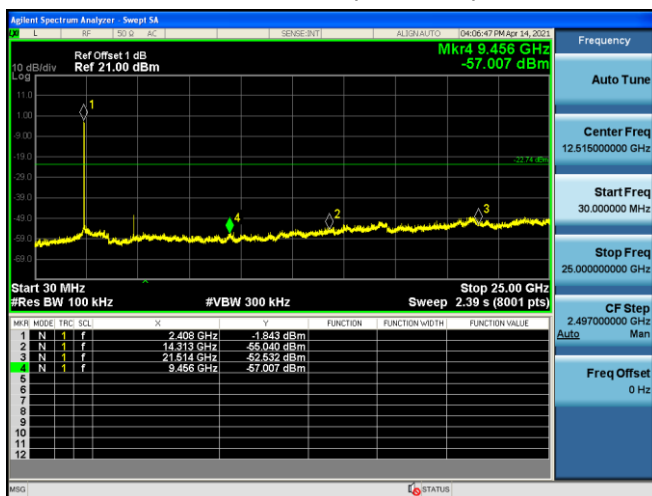
Mode 2 CH01(2412MHz)



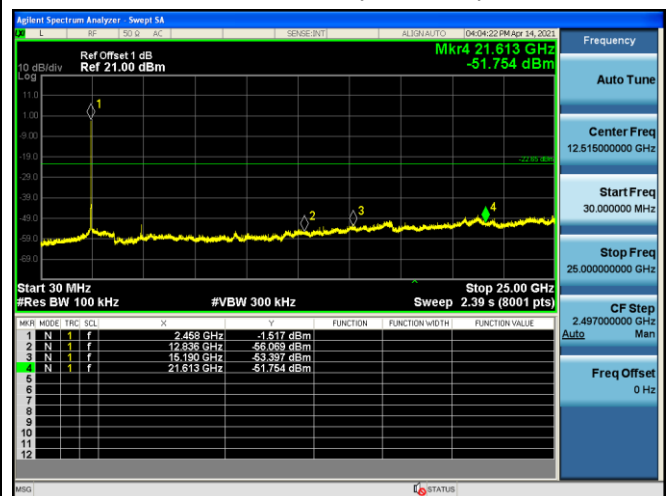
Mode 2 CH11(2462MHz)

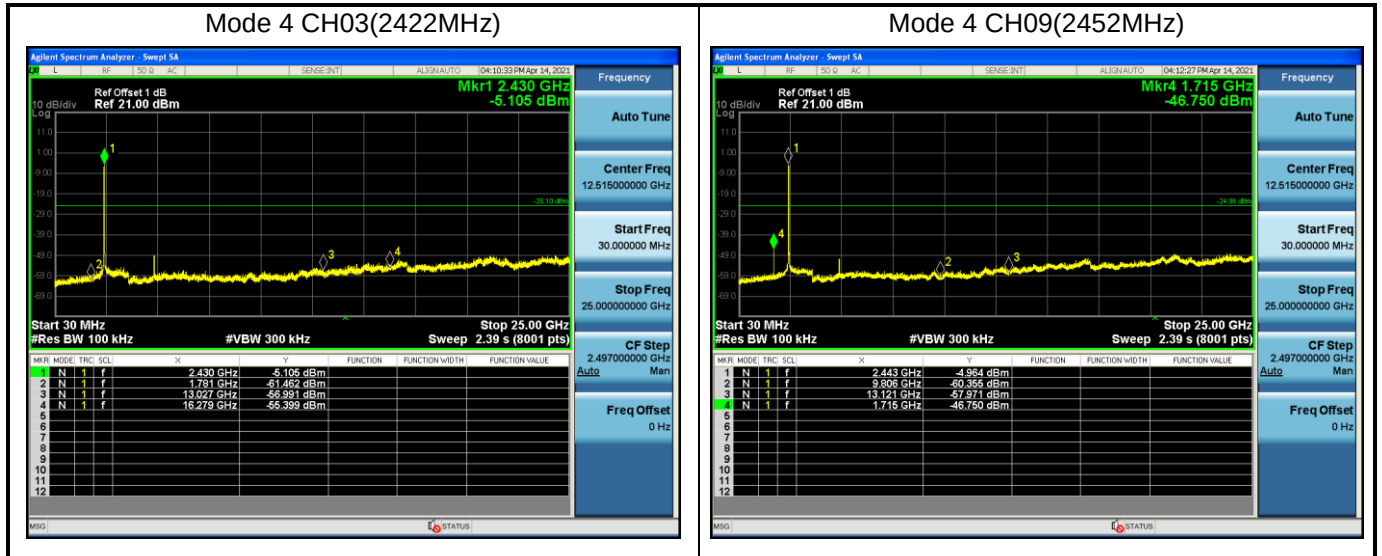


Mode 3 CH01(2412MHz)



Mode 3 CH11(2462MHz)





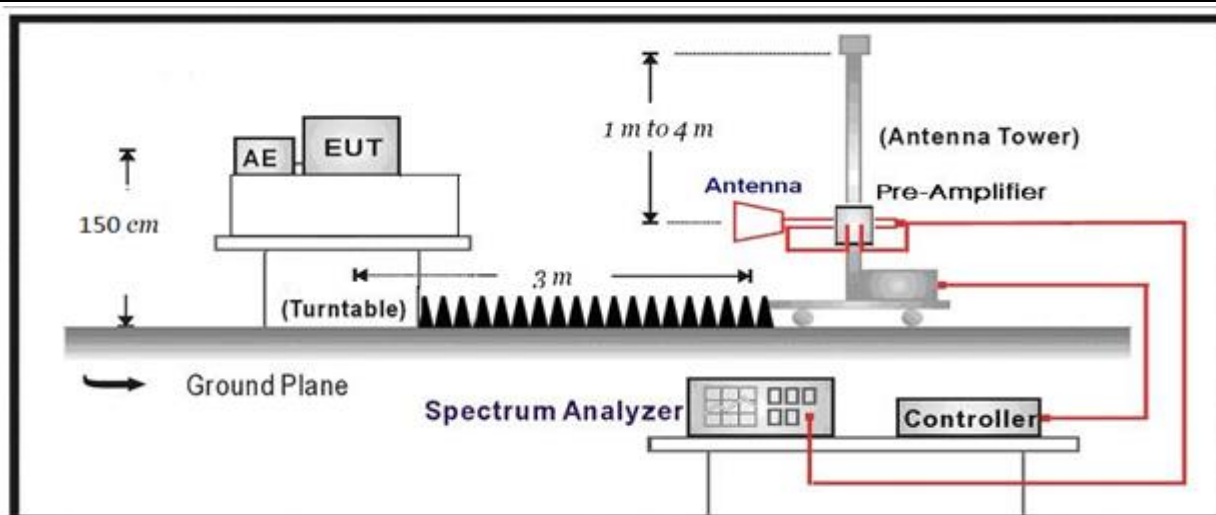
4.4 Radiated Emission Band Edge**VERDICT: PASS****4.4.1 Limit**

Standard		FCC Part 15 Subpart C Paragraph 15.247(d) , 15.205, 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.

4.4.2 Test Setup

Above 1GHz Test Setup:



4.4.3 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		6.3	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
	☐	ANSI C63.10		11.12.2	Antenna-port conducted measurements
		☐	ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
		☐	ANSI C63.10	11.12.2.4	Peak power measurement procedure
		☐	ANSI C63.10	11.12.2.5	Average power measurement procedures
		☐	ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
		☐	ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
		☐	ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

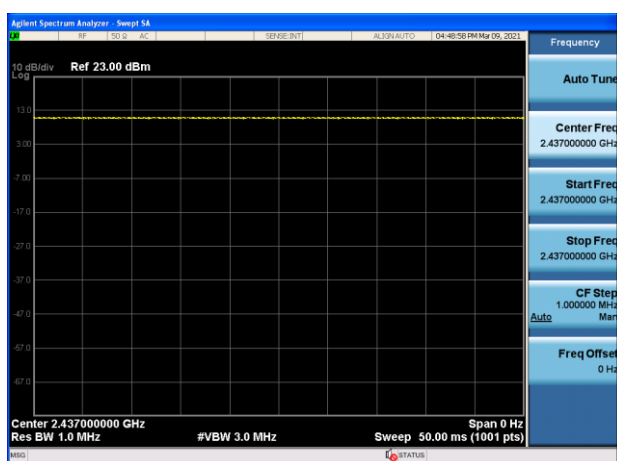
4.4.4 Test Data

Test Mode	Tx On (ms)	VBW (kHz)	Tx On + Tx Off (ms)	Duty Cycle
1	--	0.01	--	100%
2	--	0.01	--	100%
3	--	0.01	--	100%
4	--	0.01	--	100%

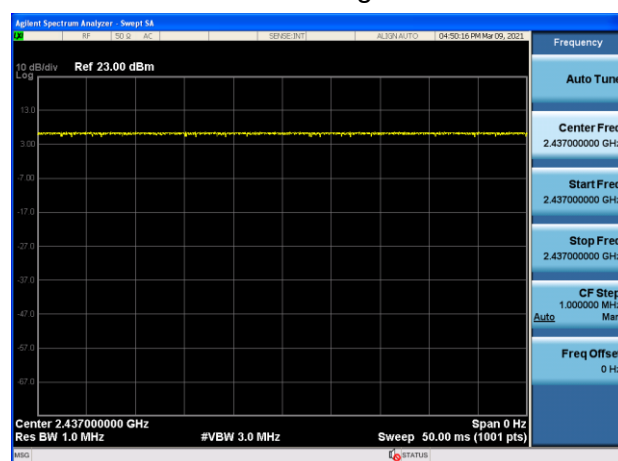
Note 1: T means the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Note 2: According to KDB 558074, when test for Radiated Emission Band Edge and Radiated Emission, for average detector set: $VBW \geq 1/T$ will be used.

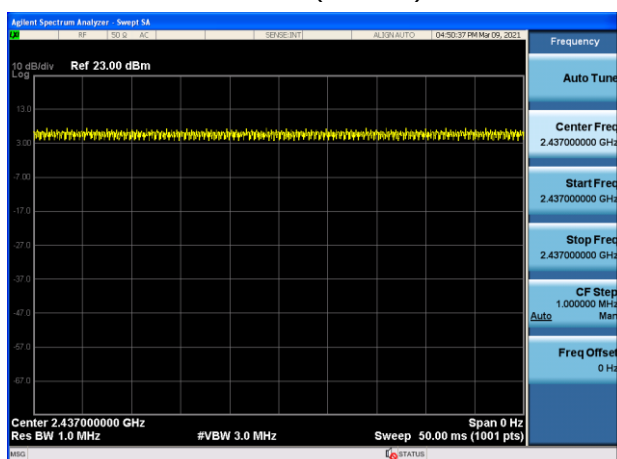
802.11b



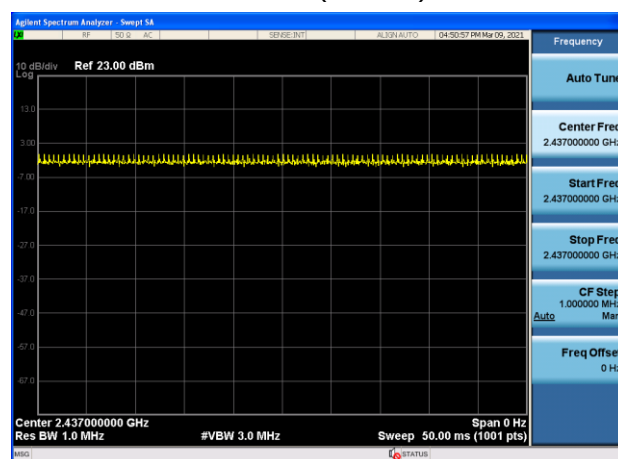
802.11g



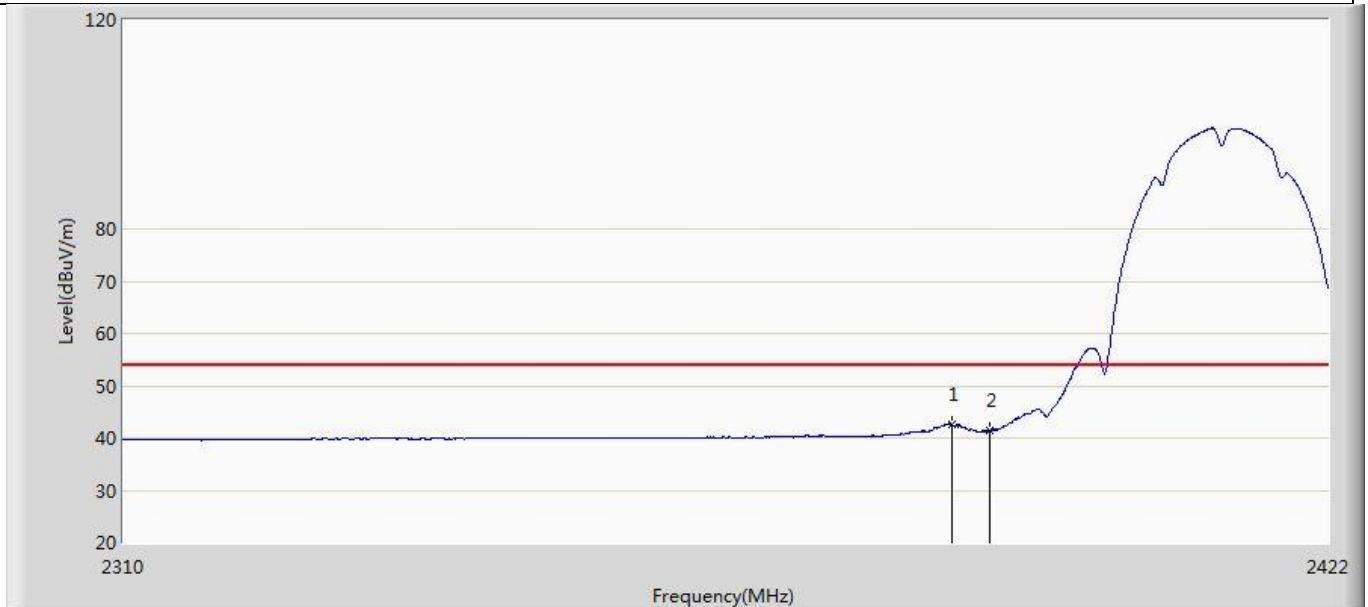
802.11n(20MHz)



802.11n(40MHz)

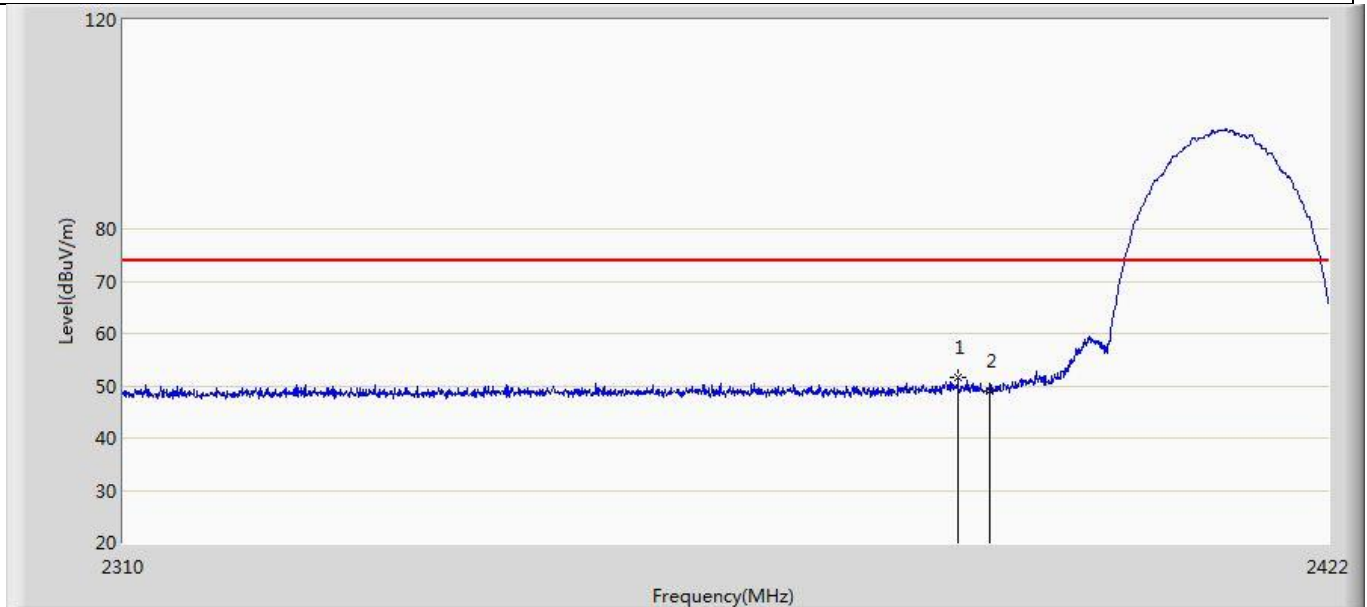


Profile: 20A0601R	Page No.: 1
Engineer: YULIU	
Site: AC5	Time: 2021/03/16 - 18:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



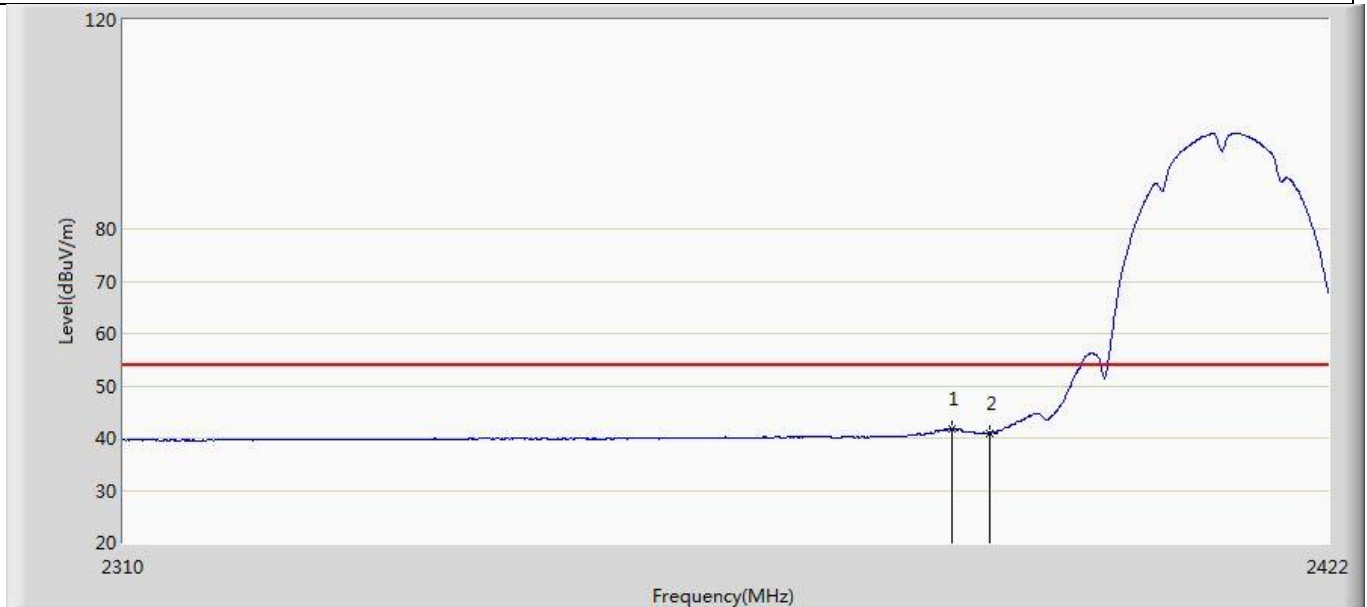
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2386.496	42.561	7.106	-11.439	54.000	35.455	AV
2		2390.000	41.341	5.884	-12.659	54.000	35.458	AV

Profile: 20A0601R	Page No.: 2
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



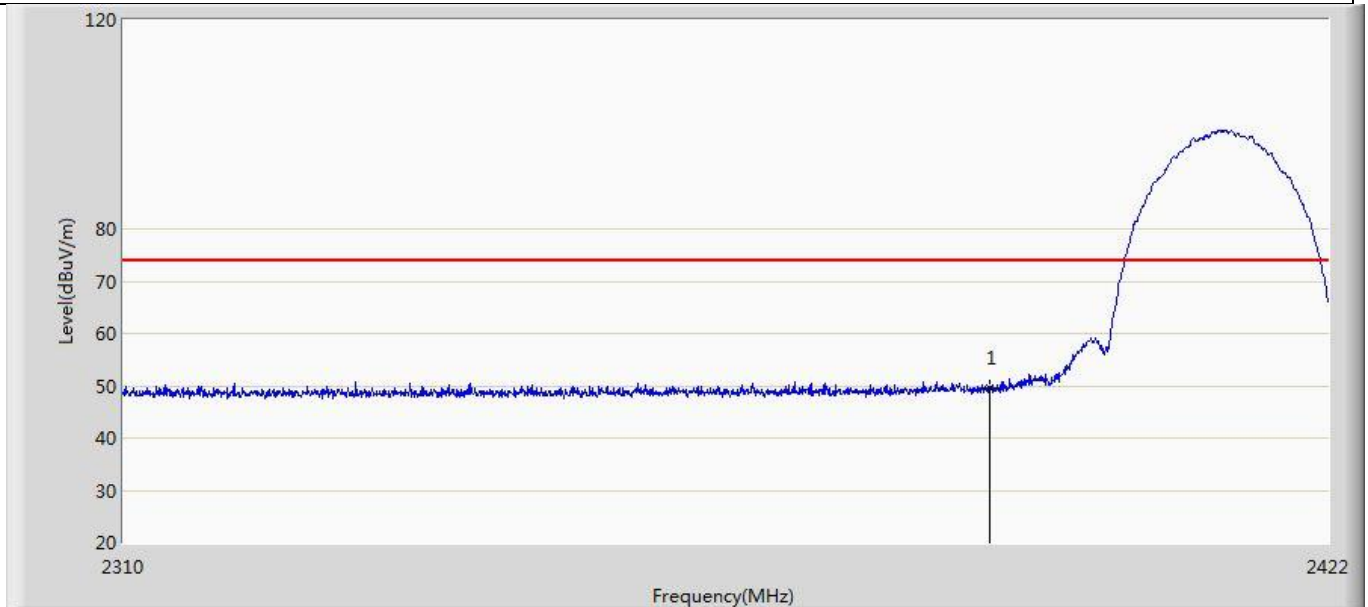
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2387.056	51.629	16.173	-22.371	74.000	35.456	PK
2		2390.000	49.013	13.556	-24.987	74.000	35.458	PK

Profile: 20A0601R	Page No.: 3
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



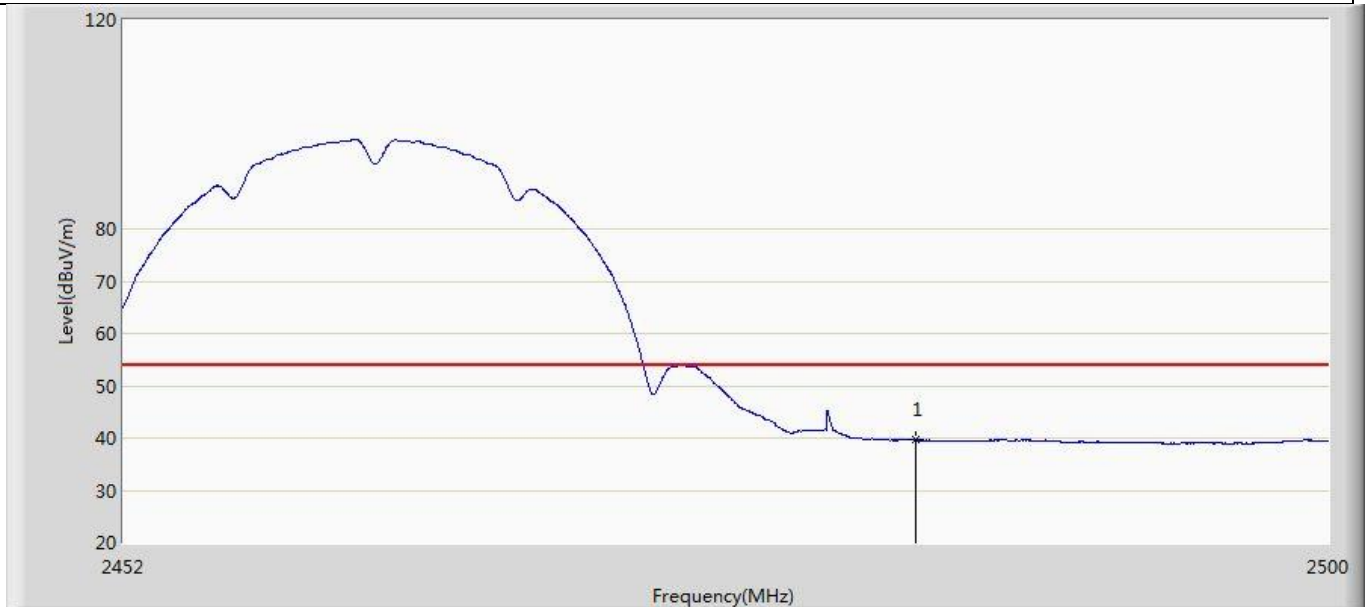
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2386.496	41.634	6.179	-12.366	54.000	35.455	AV
2		2390.000	41.007	5.550	-12.993	54.000	35.458	AV

Profile: 20A0601R	Page No.: 4
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11b	



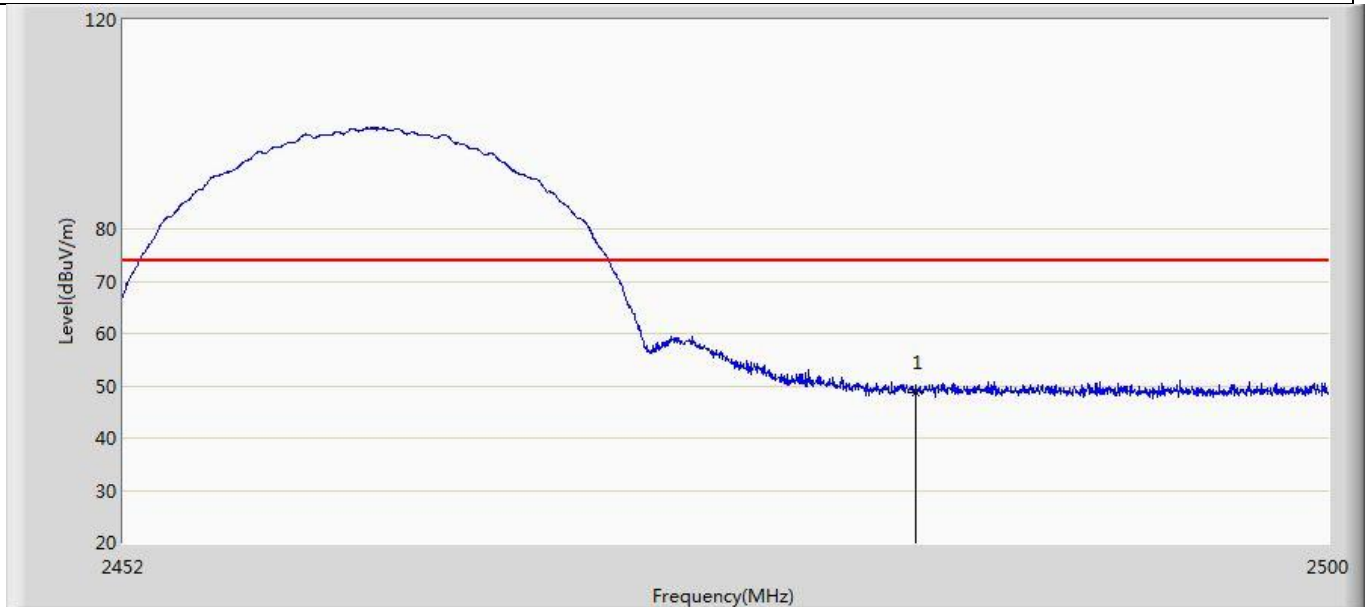
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	49.577	14.120	-24.423	74.000	35.458	PK

Profile: 20A0601R	Page No.: 5
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



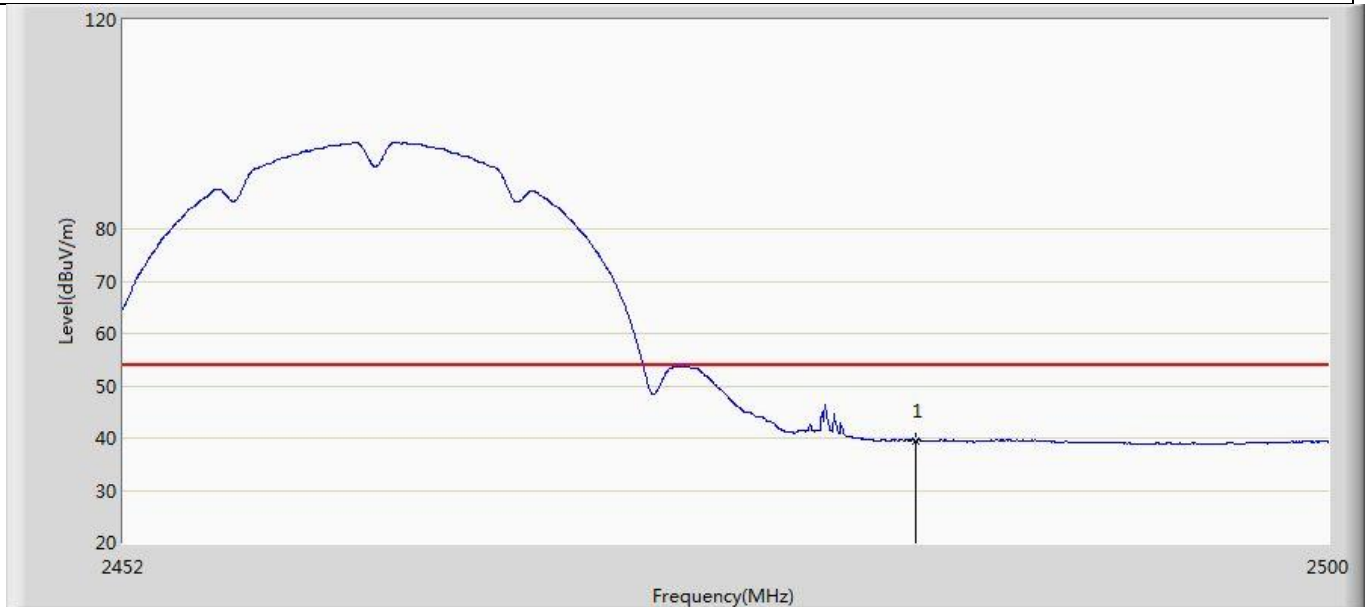
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	39.579	4.061	-14.421	54.000	35.517	AV

Profile: 20A0601R	Page No.: 6
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



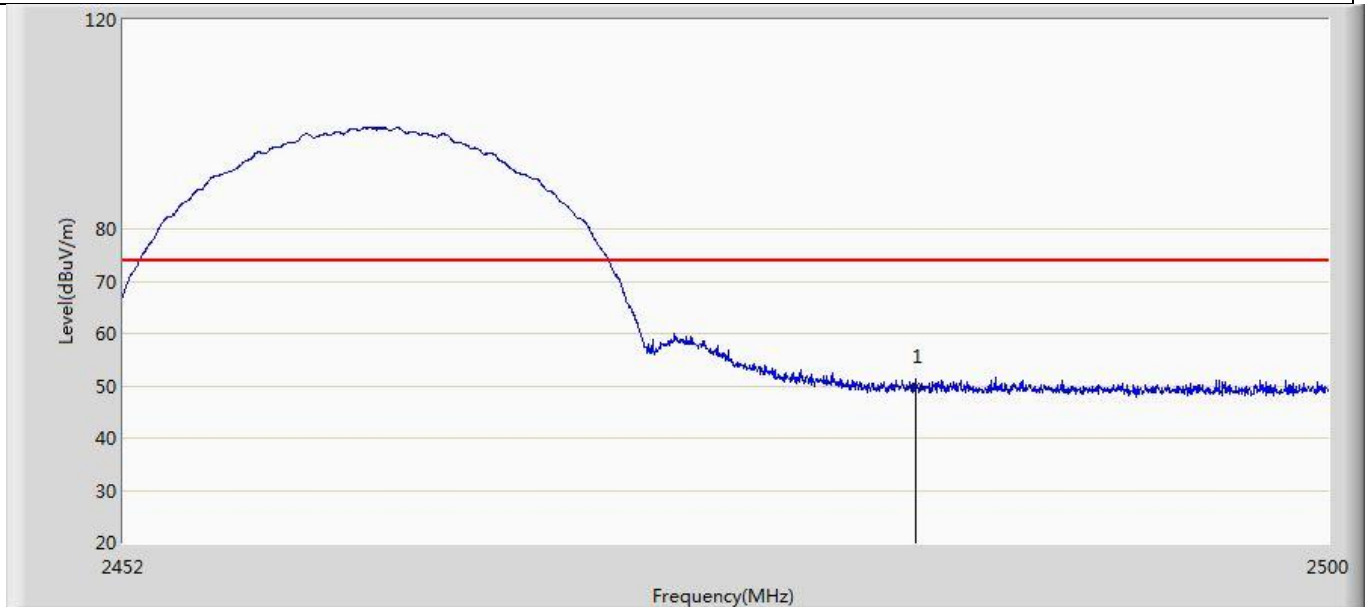
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	48.753	13.235	-25.247	74.000	35.517	PK

Profile: 20A0601R	Page No.: 7
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



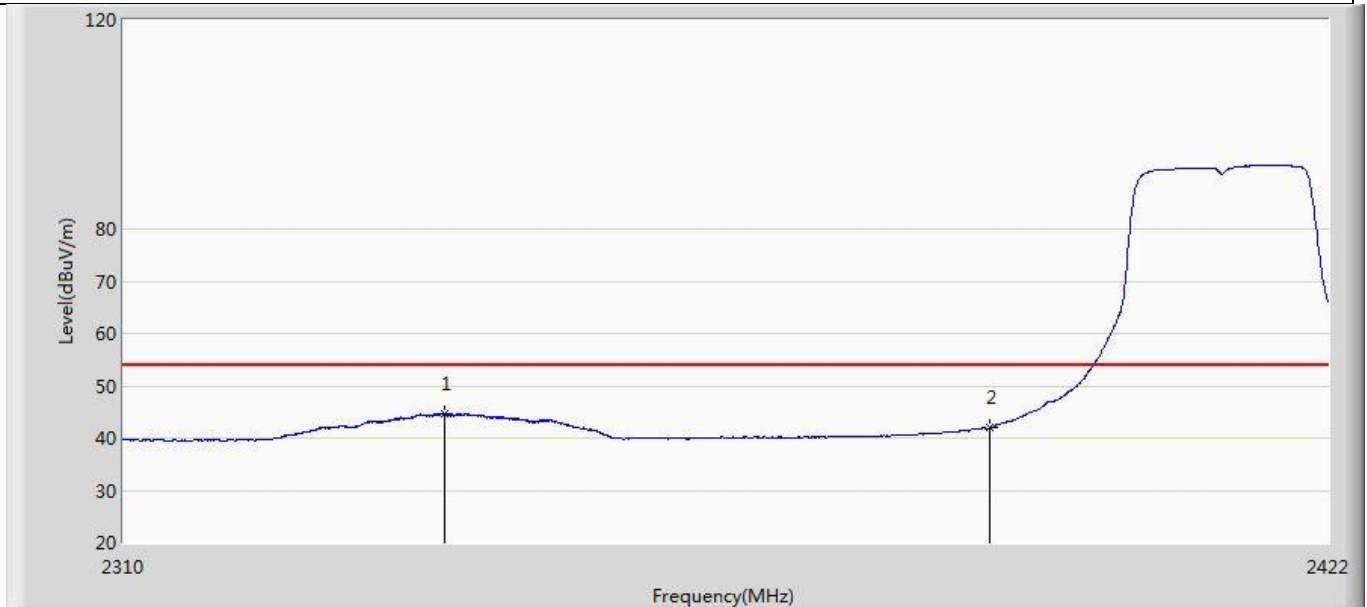
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	39.466	3.948	-14.534	54.000	35.517	AV

Profile: 20A0601R	Page No.: 8
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11b	



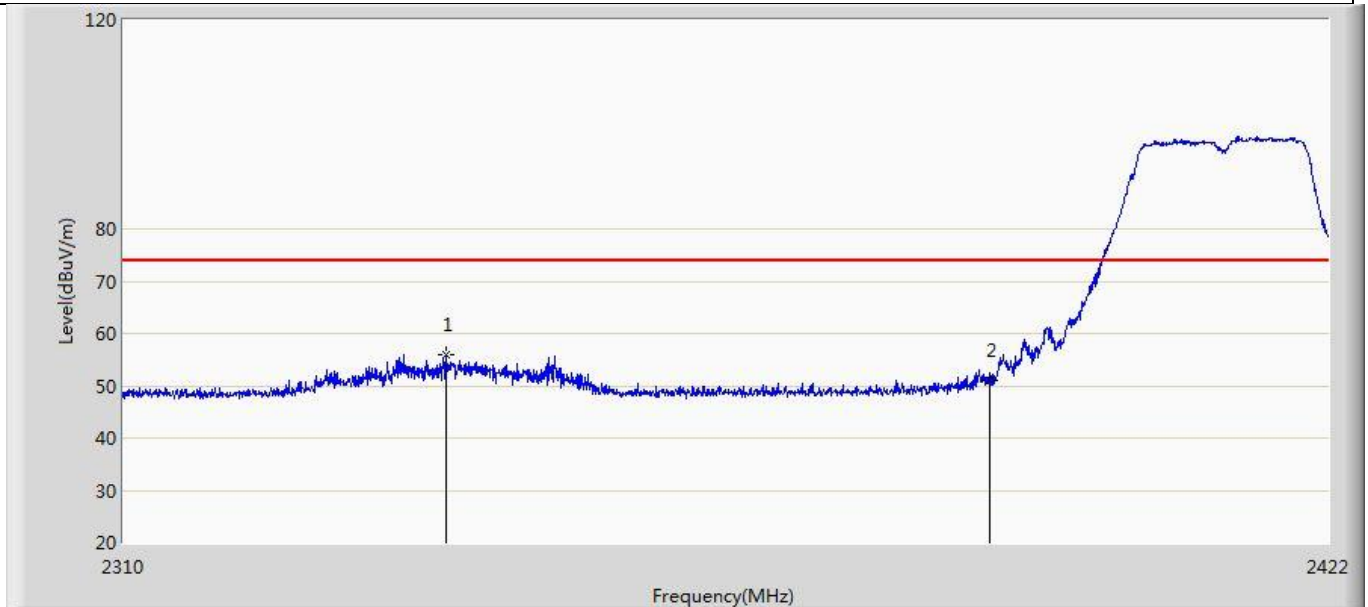
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	49.771	14.253	-24.229	74.000	35.517	PK

Profile: 20A0601R	Page No.: 9
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



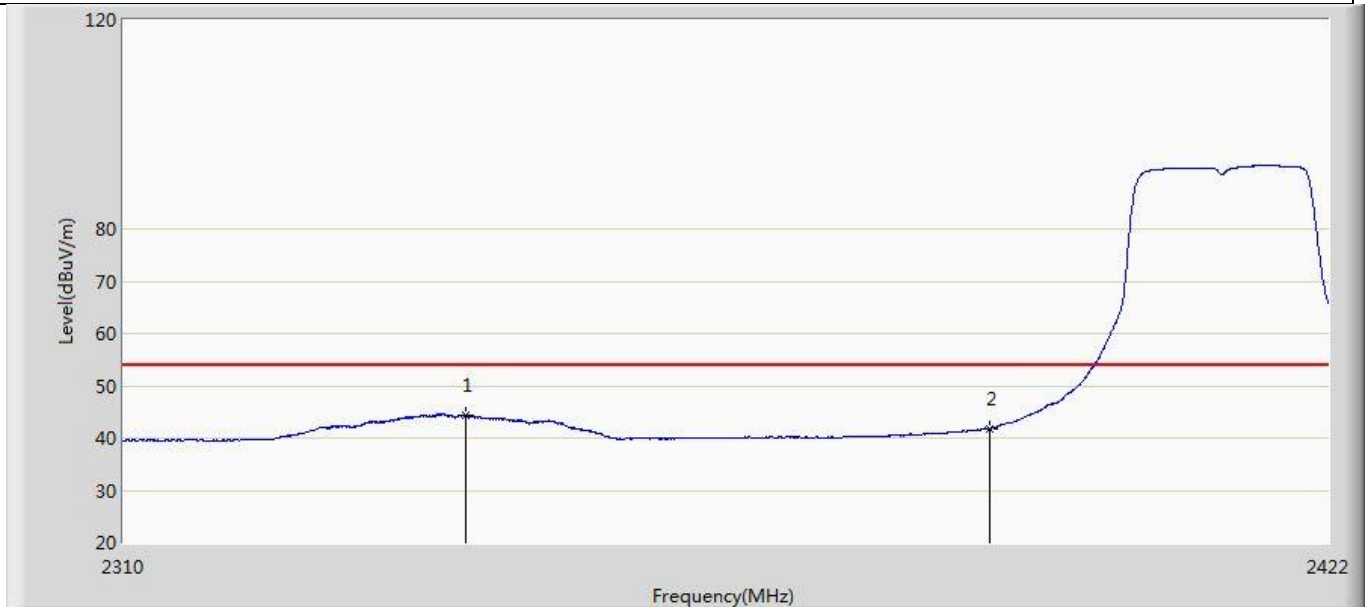
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2339.400	44.754	9.312	-9.246	54.000	35.441	AV
2		2390.000	41.969	6.512	-12.031	54.000	35.458	AV

Profile: 20A0601R	Page No.: 10
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



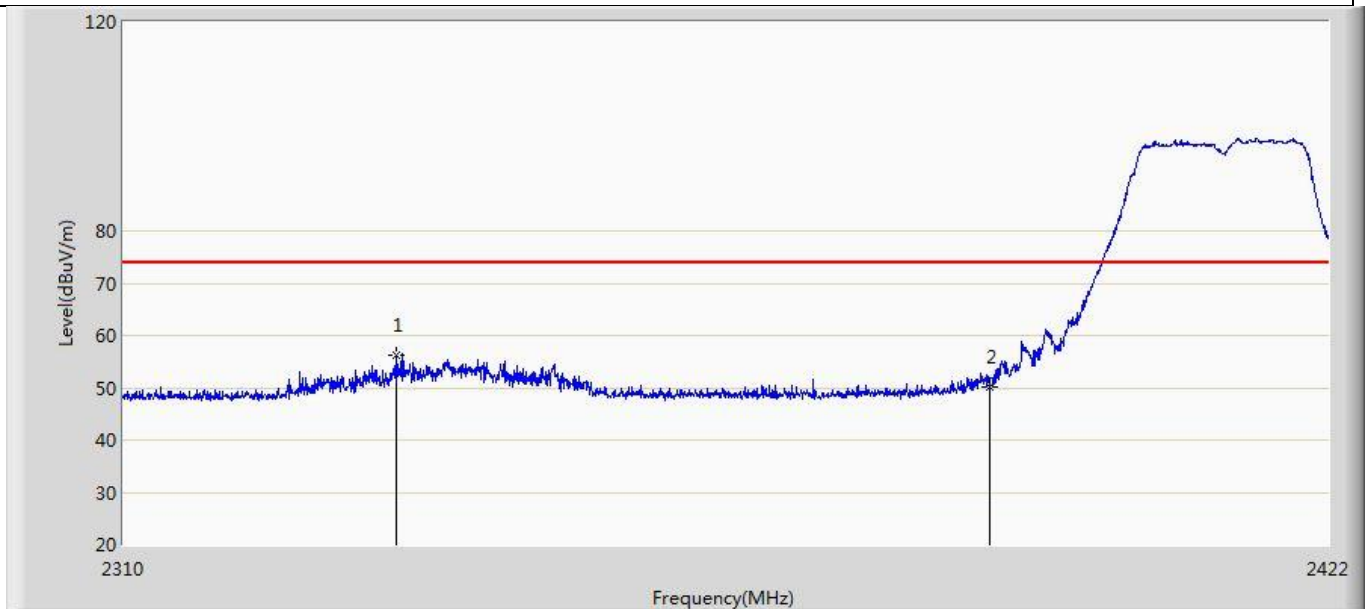
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2339.456	55.987	20.545	-18.013	74.000	35.441	PK
2		2390.000	51.060	15.603	-22.940	74.000	35.458	PK

Profile: 20A0601R	Page No.: 11
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



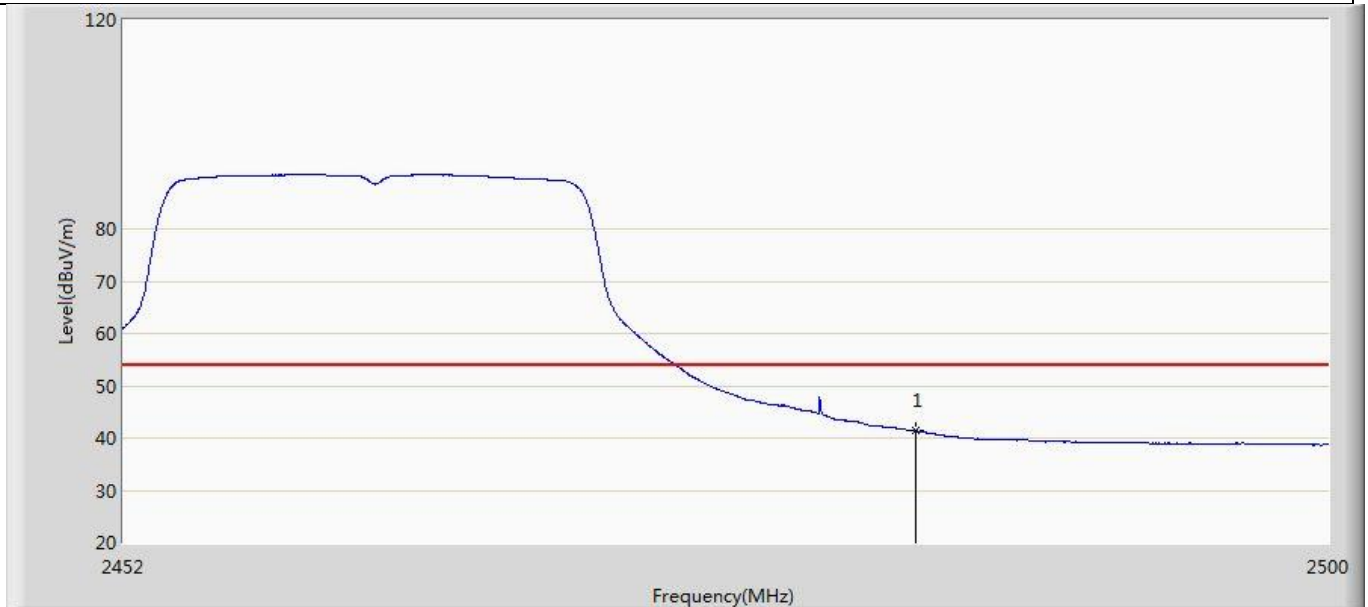
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2341.304	44.434	8.990	-9.566	54.000	35.445	AV
2		2390.000	41.846	6.389	-12.154	54.000	35.458	AV

Profile: 20A0601R	Page No.: 12
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2412MHz by 802.11g	



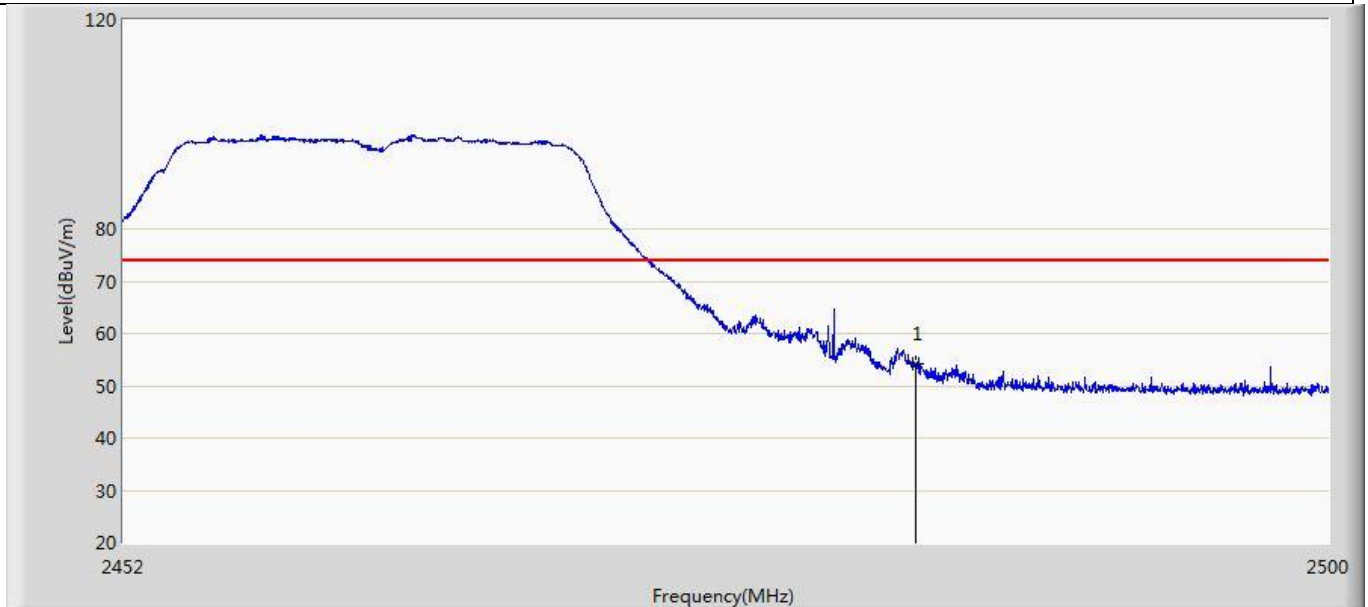
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2334.920	56.312	20.877	-17.688	74.000	35.435	PK
2		2390.000	50.233	14.776	-23.767	74.000	35.458	PK

Profile: 20A0601R	Page No.: 13
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



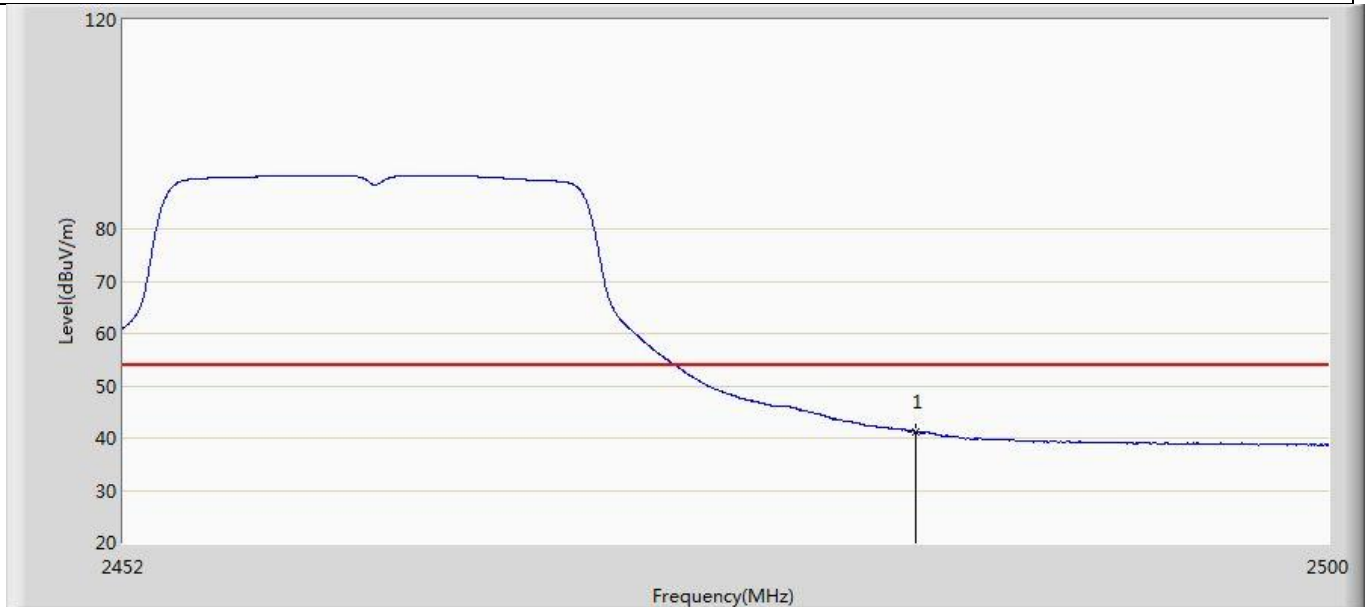
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	41.323	5.805	-12.677	54.000	35.517	AV

Profile: 20A0601R	Page No.: 14
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



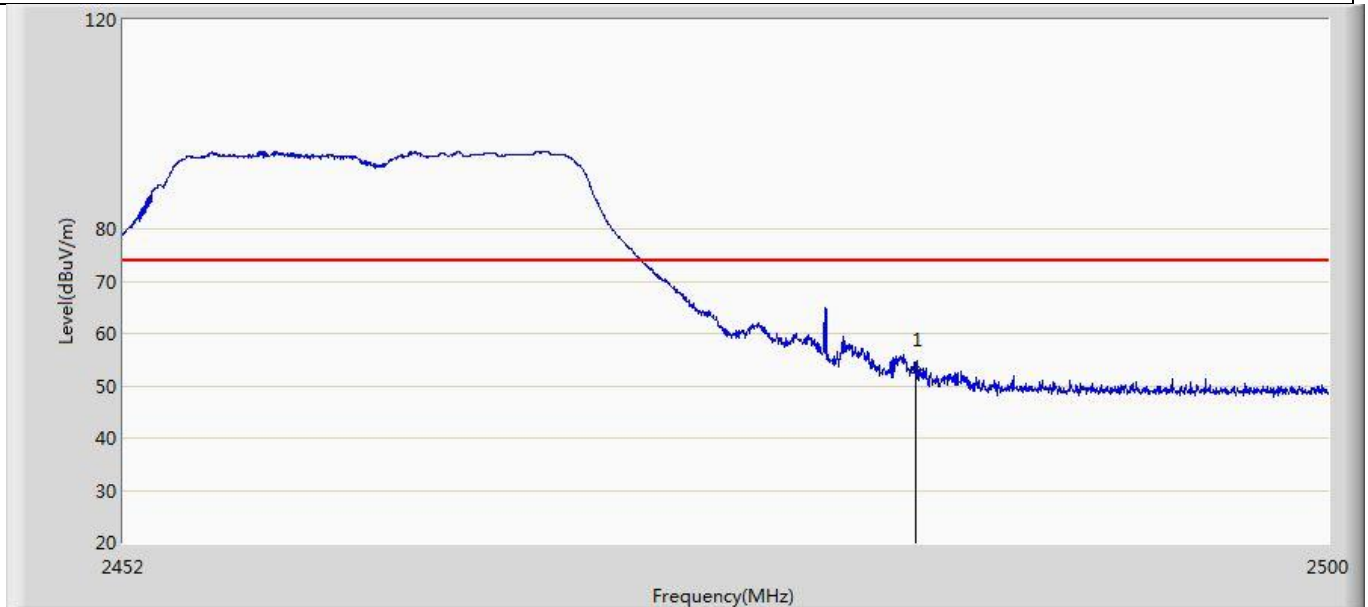
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	54.332	18.814	-19.668	74.000	35.517	PK

Profile: 20A0601R	Page No.: 15
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



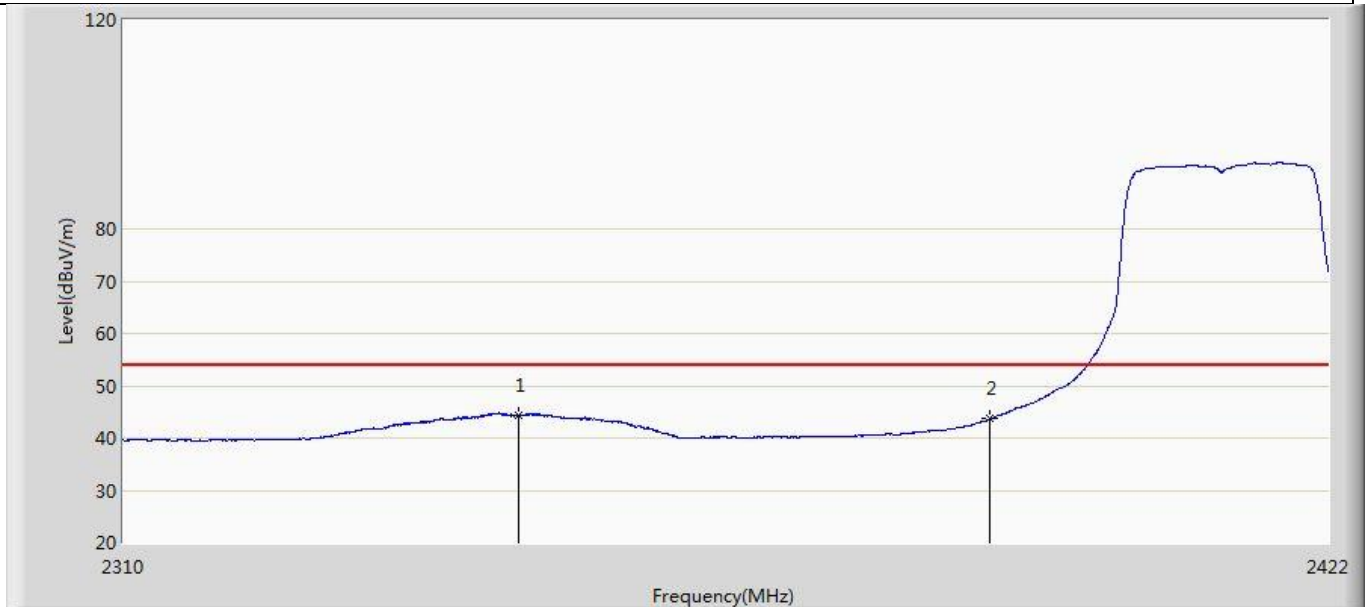
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	41.120	5.602	-12.880	54.000	35.517	AV

Profile: 20A0601R	Page No.: 16
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2462MHz by 802.11g	



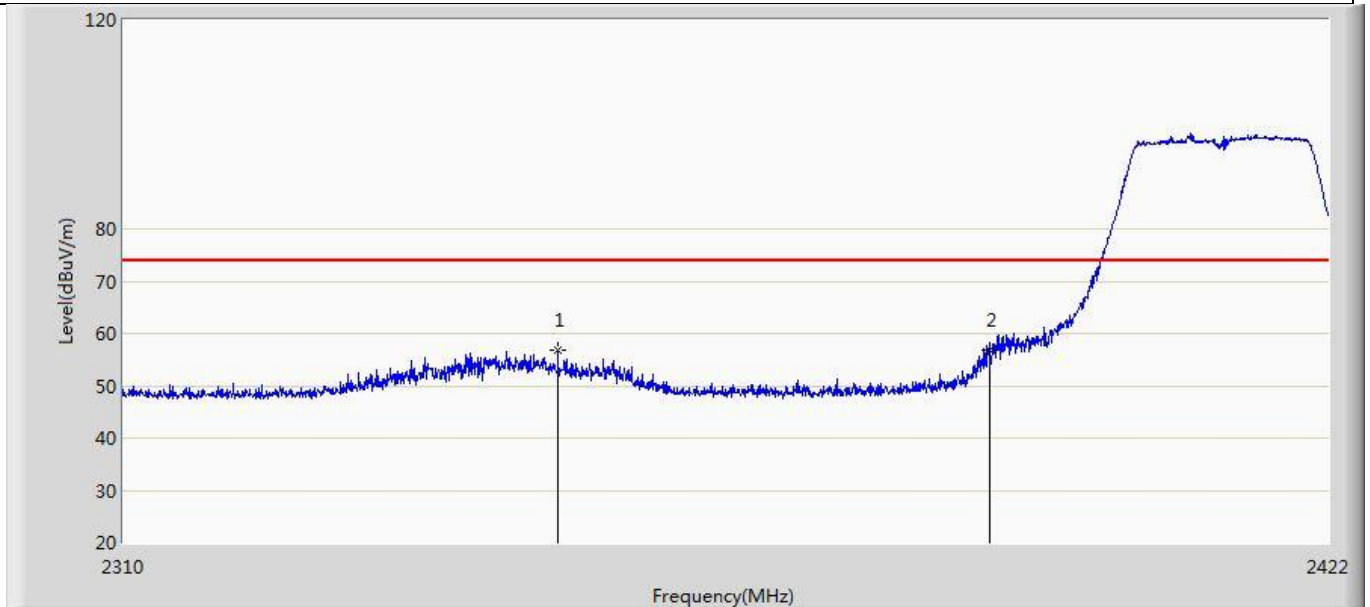
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	53.136	17.618	-20.864	74.000	35.517	PK

Profile: 20A0601R	Page No.: 17
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



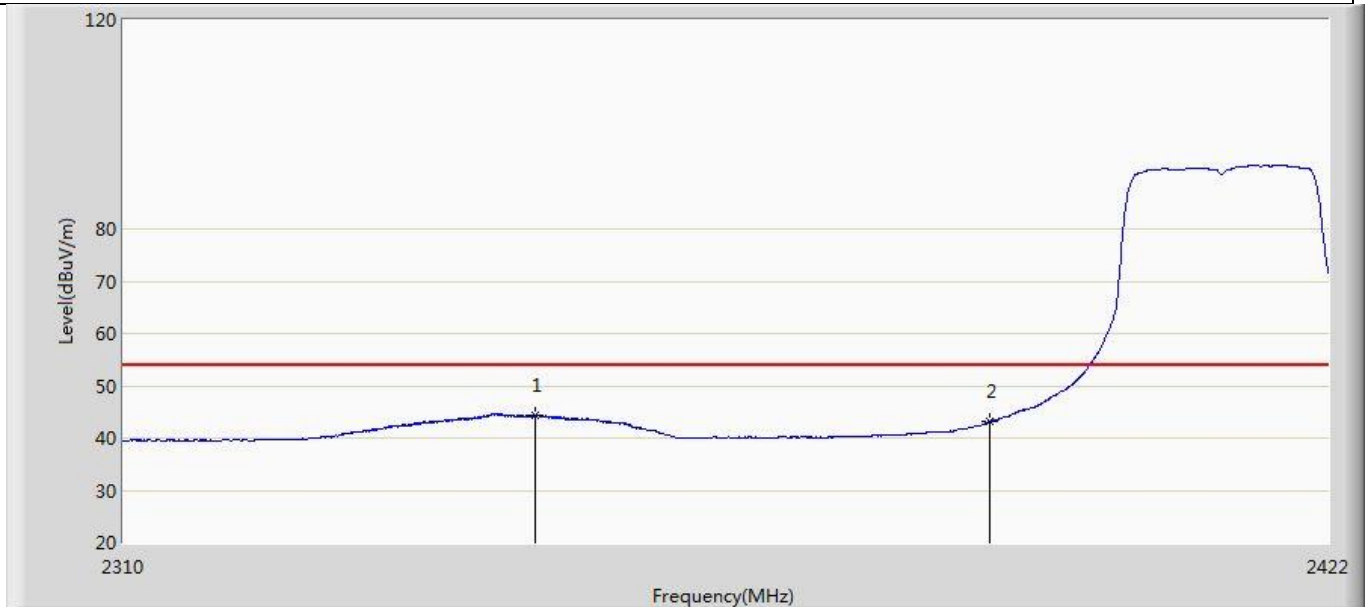
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2346.176	44.406	8.961	-9.594	54.000	35.445	AV
2		2390.000	43.627	8.170	-10.373	54.000	35.458	AV

Profile: 20A0601R	Page No.: 18
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



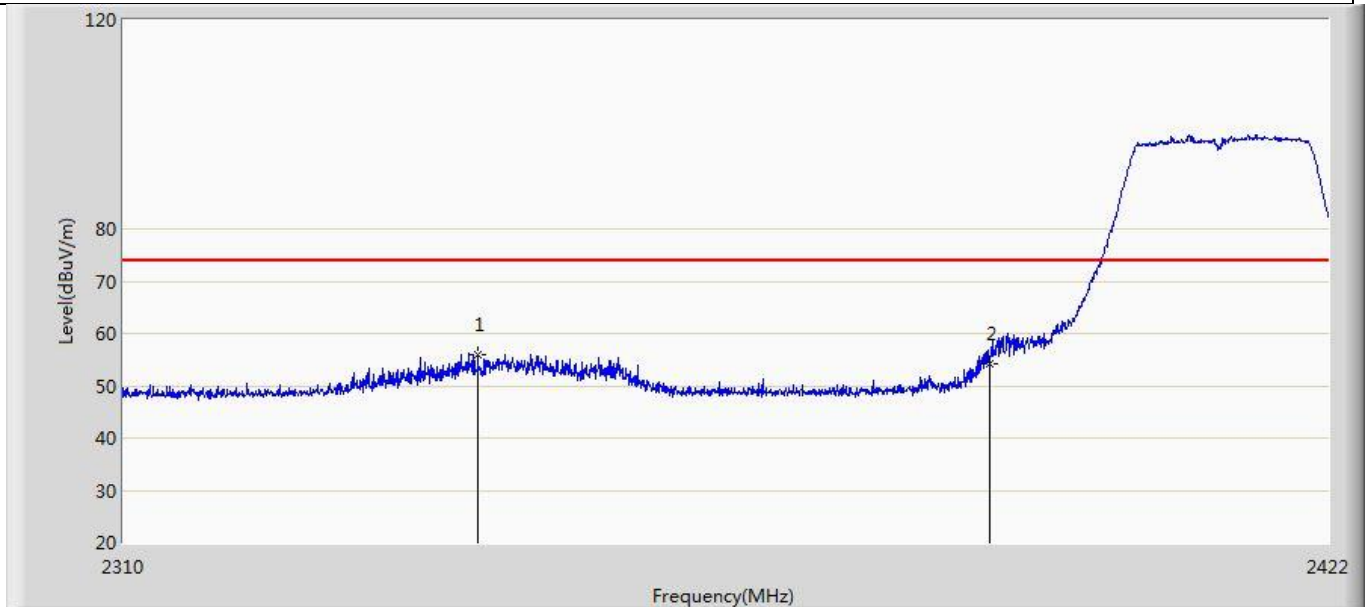
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2349.816	56.777	21.334	-17.223	74.000	35.443	PK
2		2390.000	56.744	21.287	-17.256	74.000	35.458	PK

Profile: 20A0601R	Page No.: 19
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



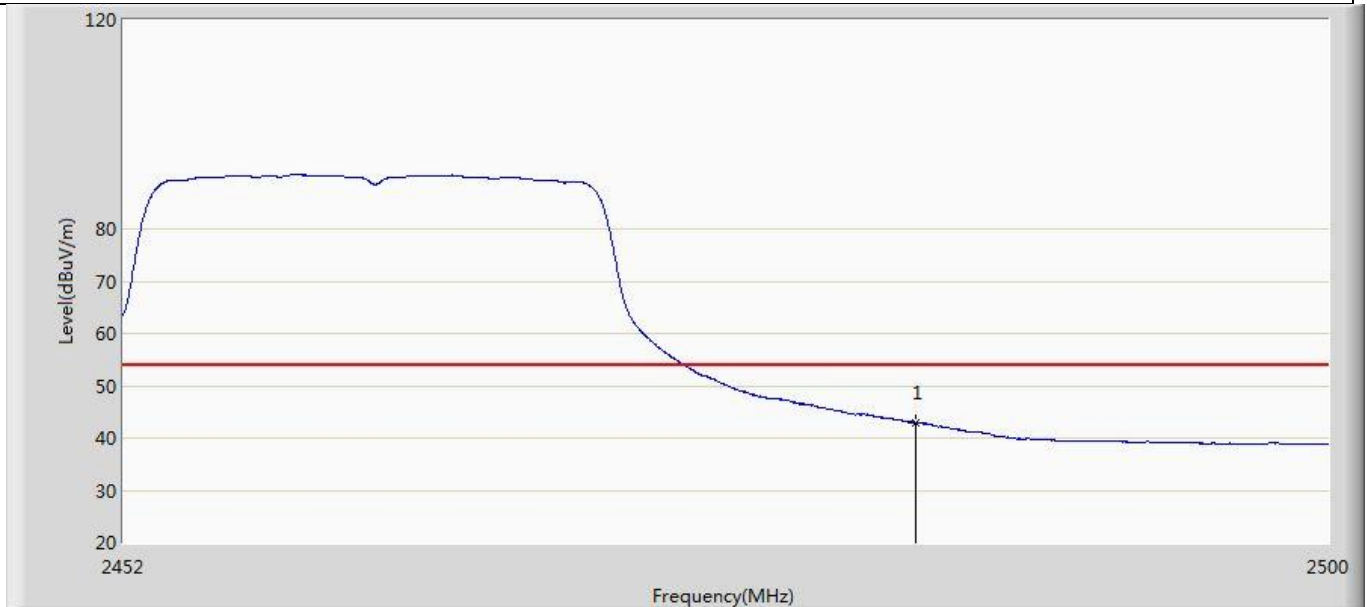
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2347.744	44.403	8.959	-9.597	54.000	35.444	AV
2		2390.000	43.089	7.632	-10.911	54.000	35.458	AV

Profile: 20A0601R	Page No.: 20
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2412MHz by 802.11n(20MHz)	



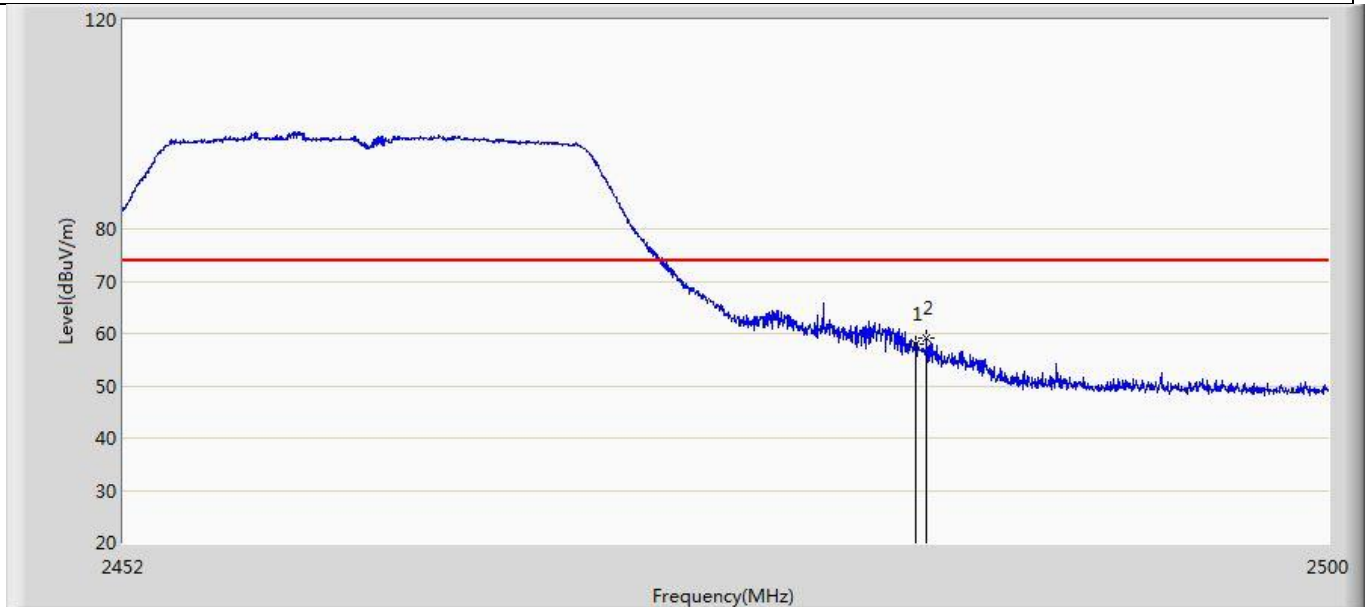
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2342.424	55.971	20.525	-18.029	74.000	35.446	PK
2		2390.000	54.234	18.777	-19.766	74.000	35.458	PK

Profile: 20A0601R	Page No.: 21
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 18:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



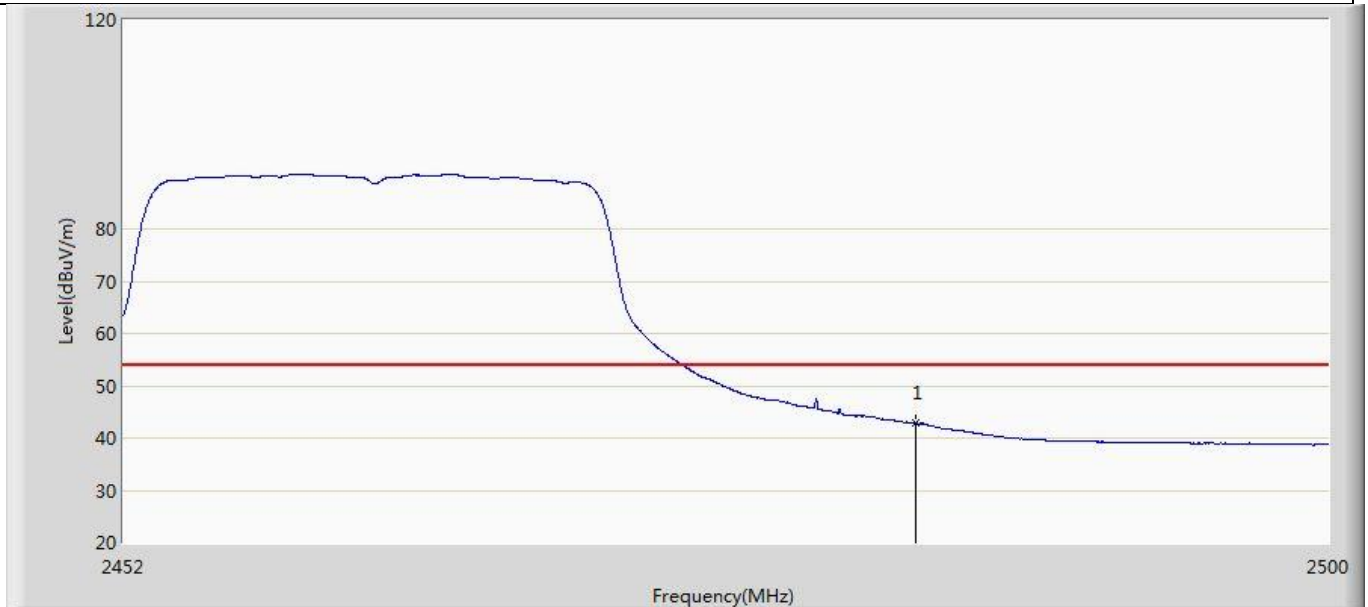
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	42.982	7.464	-11.018	54.000	35.517	AV

Profile: 20A0601R	Page No.: 22
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:02
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



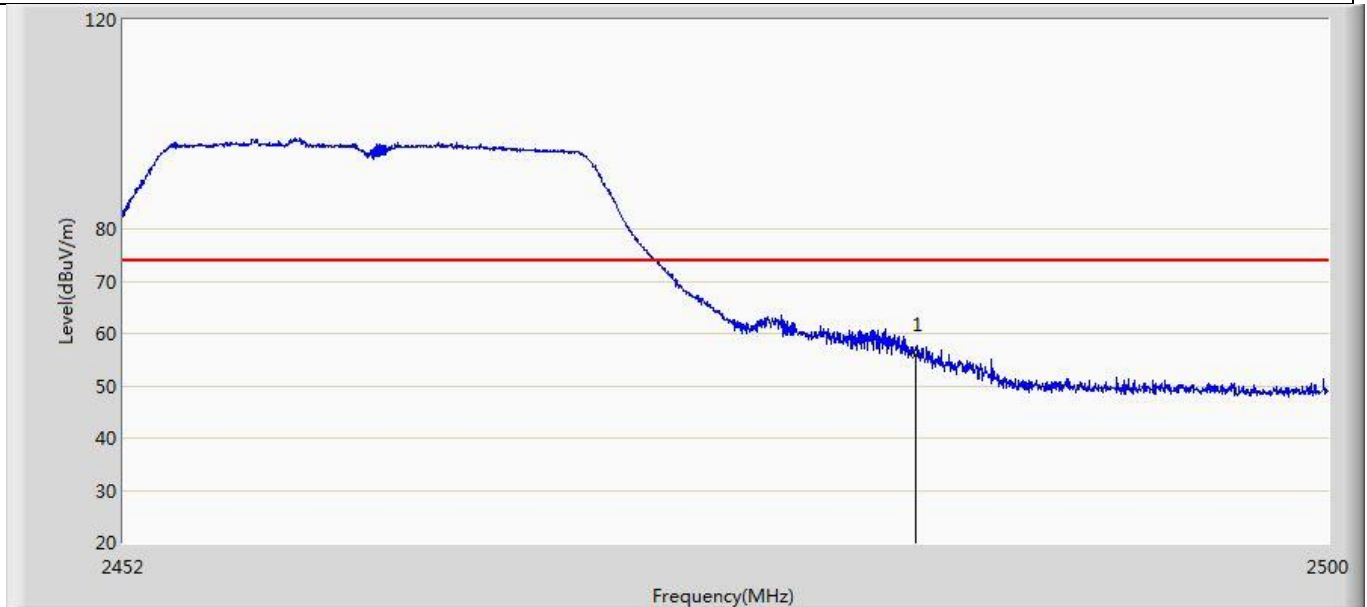
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2483.500	57.976	22.458	-16.024	74.000	35.517	PK
2	*	2483.920	59.210	23.690	-14.790	74.000	35.520	PK

Profile: 20A0601R	Page No.: 23
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



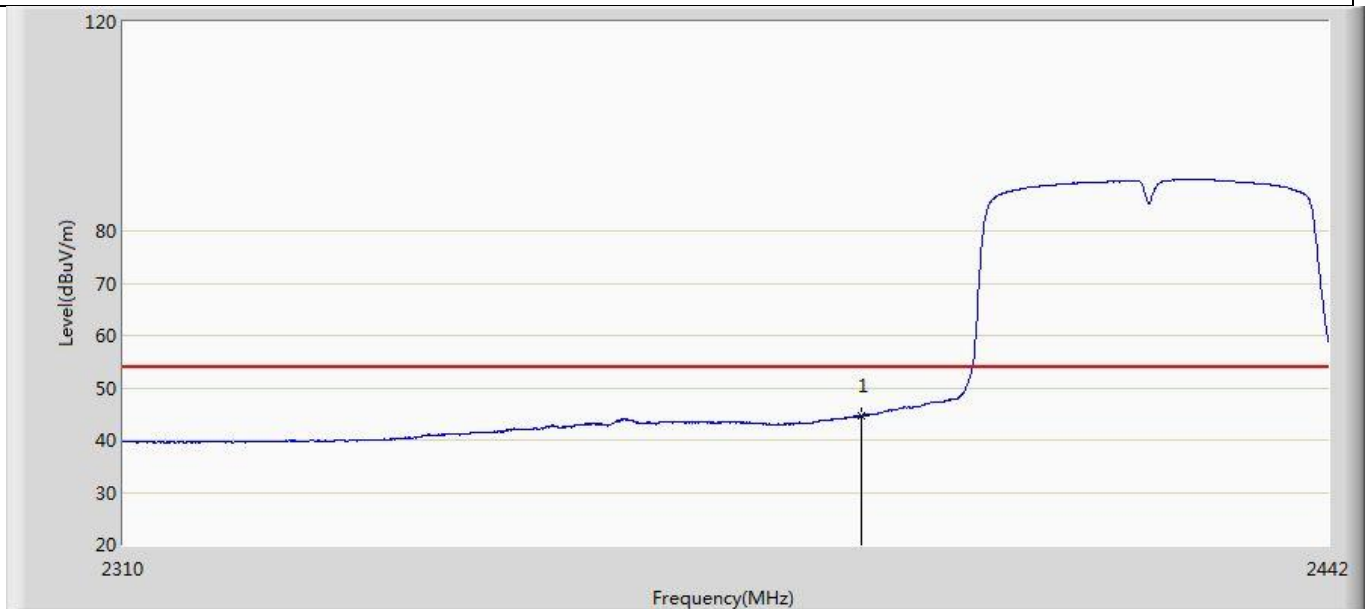
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	42.842	7.324	-11.158	54.000	35.517	AV

Profile: 20A0601R	Page No.: 24
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 3:Transmit at 2462MHz by 802.11n(20MHz)	



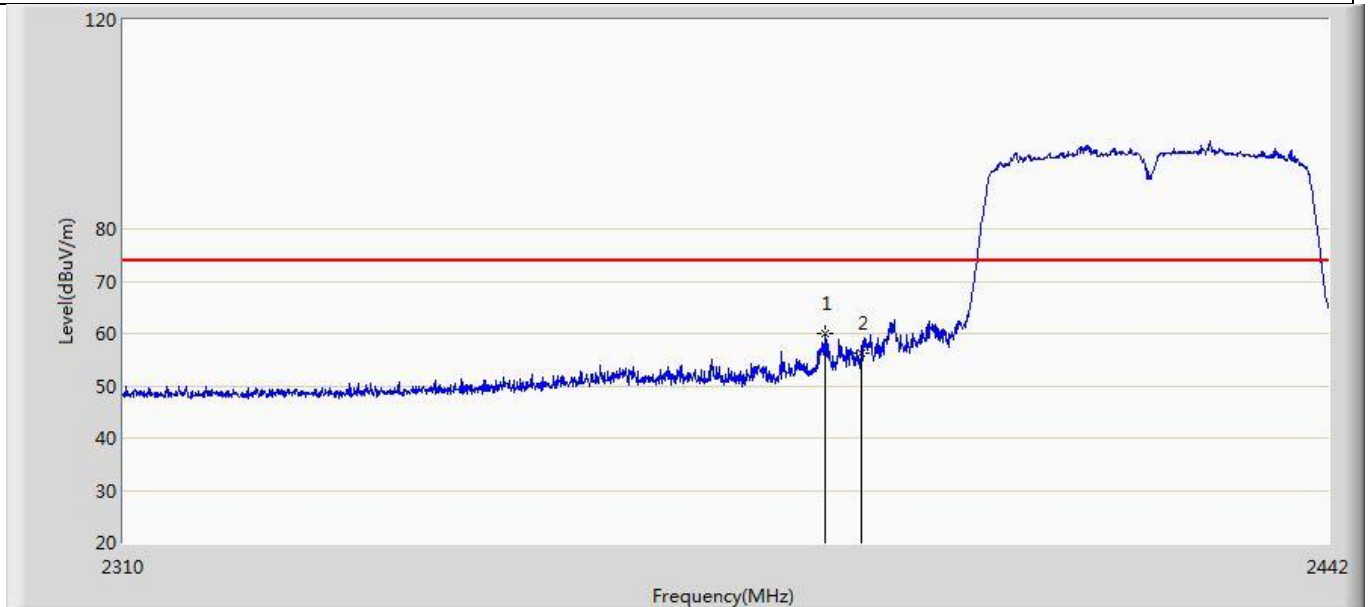
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	55.916	20.398	-18.084	74.000	35.517	PK

Profile: 20A0601R	Page No.: 25
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



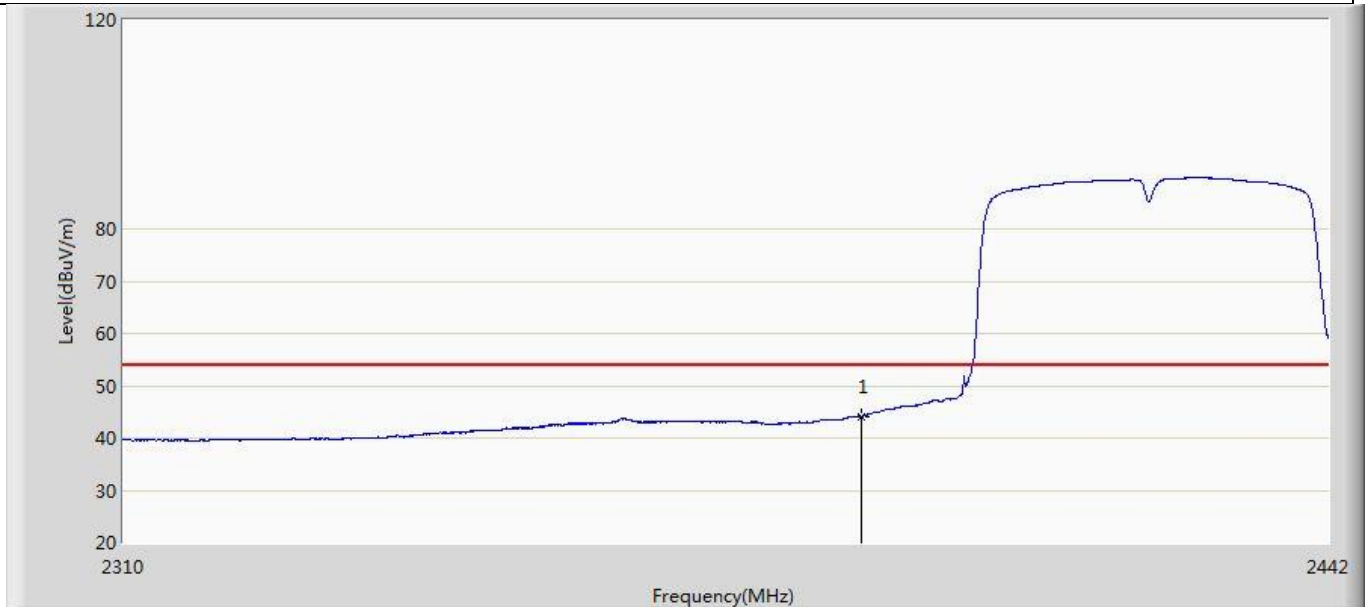
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	44.562	9.105	-9.438	54.000	35.458	AV

Profile: 20A0601R	Page No.: 26
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



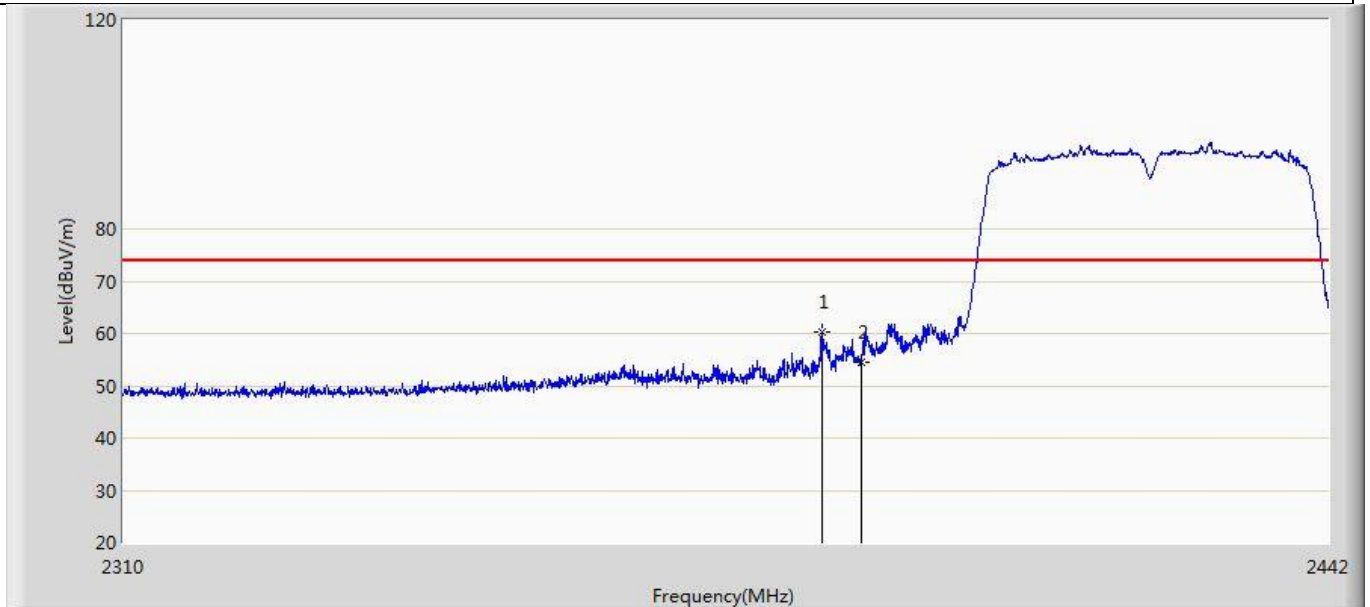
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2386.098	59.903	24.448	-14.097	74.000	35.455	PK
2		2390.000	56.103	20.646	-17.897	74.000	35.458	PK

Profile: 20A0601R	Page No.: 27
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



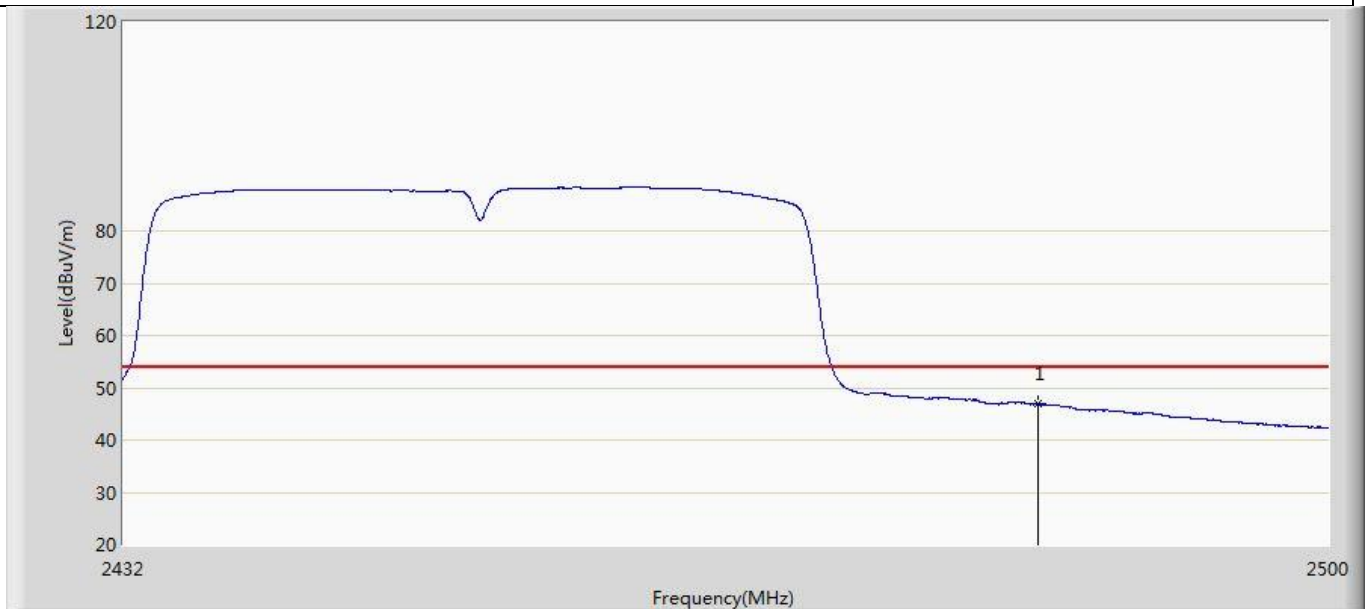
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	44.196	8.739	-9.804	54.000	35.458	AV

Profile: 20A0601R	Page No.: 28
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2422MHz by 802.11n(40MHz)	



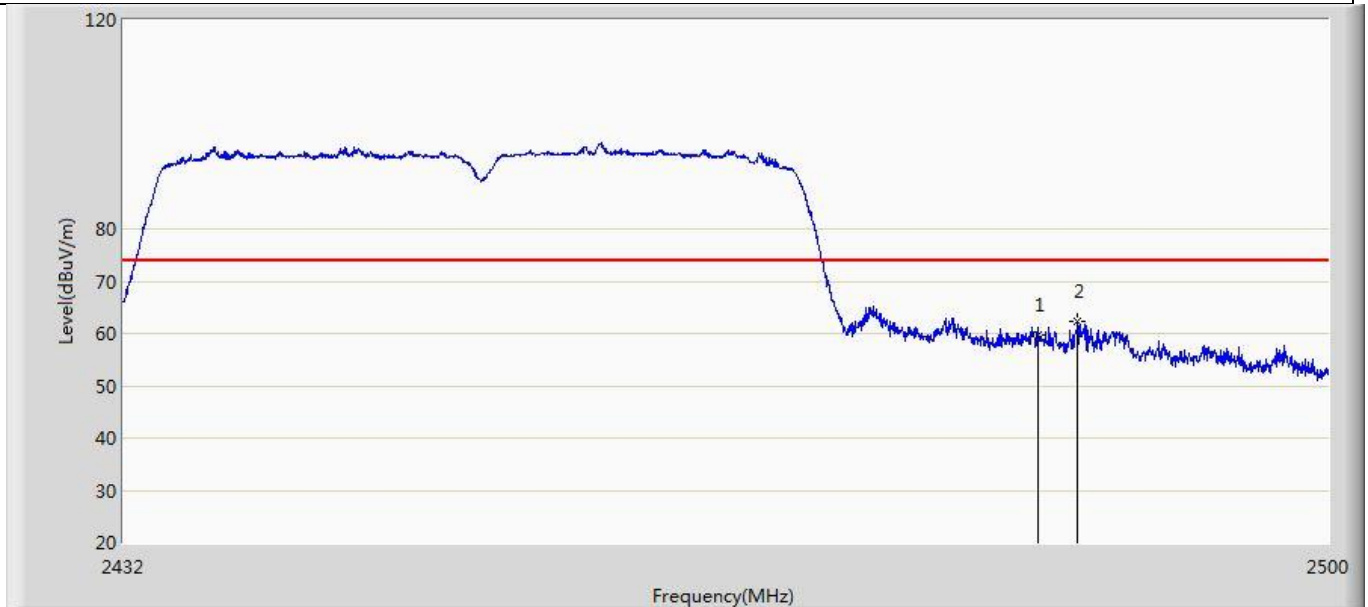
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2385.768	60.221	24.766	-13.779	74.000	35.455	PK
2		2390.000	54.634	19.177	-19.366	74.000	35.458	PK

Profile: 20A0601R	Page No.: 29
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



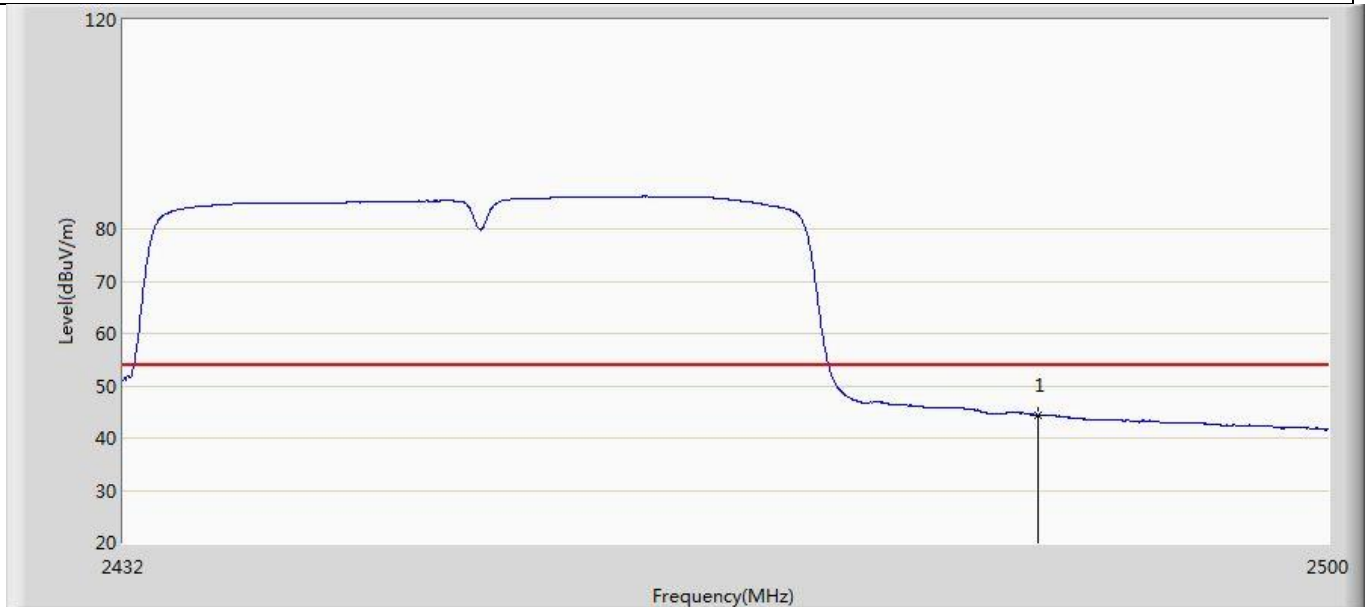
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	46.884	11.366	-7.116	54.000	35.517	AV

Profile: 20A0601R	Page No.: 30
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



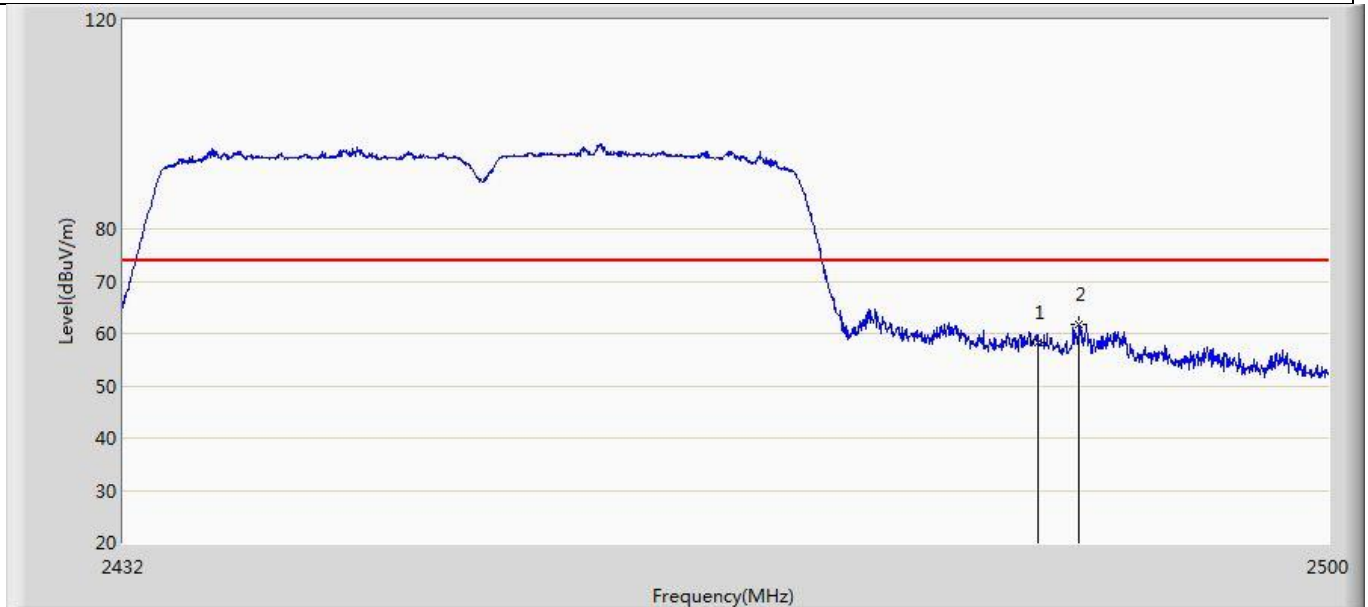
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2483.500	59.789	24.271	-14.211	74.000	35.517	PK
2	*	2485.720	62.398	26.868	-11.602	74.000	35.531	PK

Profile: 20A0601R	Page No.: 31
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	44.468	8.950	-9.532	54.000	35.517	AV

Profile: 20A0601R	Page No.: 32
Engineer: YULIU	
Site: AC5	Time: 2021/03/16- 19:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED LAMP	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2483.500	58.232	22.714	-15.768	74.000	35.517	PK
2	*	2485.822	61.616	26.085	-12.384	74.000	35.531	PK

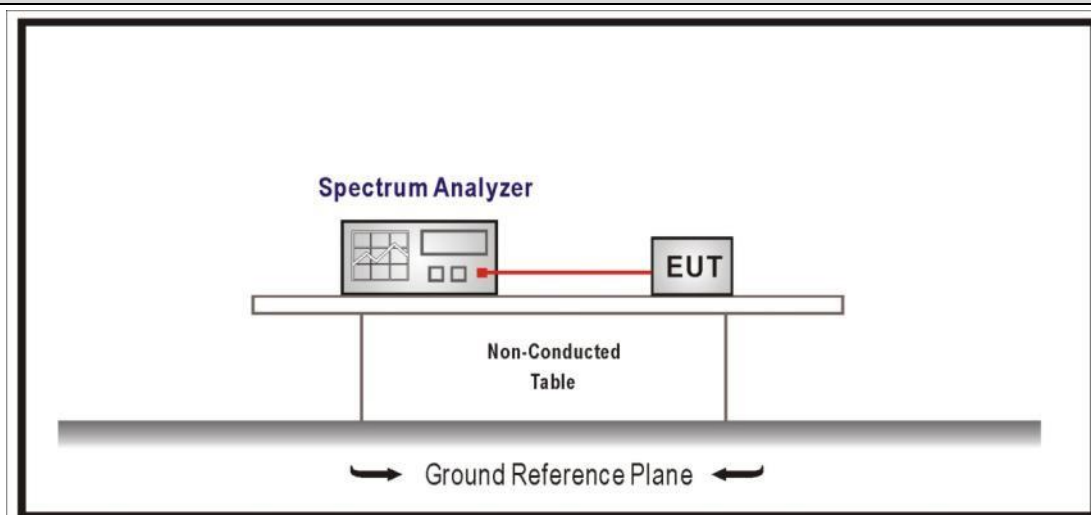
4.5 DTS Bandwidth**VERDICT: PASS****4.5.1 Limit**

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

Standard	ANSI C63.10 Paragraph 6.7
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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. The occupied bandwidth should be within the required frequency range.

4.5.2 Test Setup**4.5.3 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
☒	ANSI C63.10	6.9	Occupied bandwidth
	☐ ANSI C63.10	6.9.2	relative measurement procedure
	☒ ANSI C63.10	6.9.3	power bandwidth (99%) measurement procedure

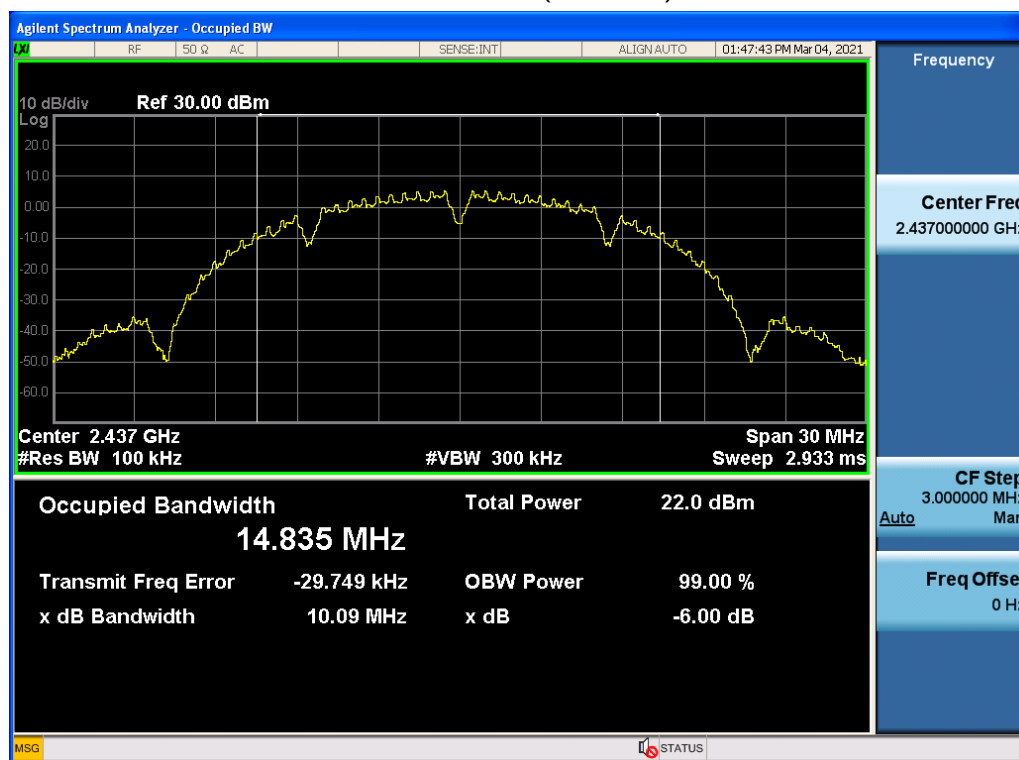
4.5.4 Test Data

Mode	CH.	Test Freq. (MHz)	6dB Occupied Bandwidth (MHz)	Limit (kHz)	Result
1	1	2412	10.10	≥500	Pass
	6	2437	10.09	≥500	Pass
	11	2462	10.10	≥500	Pass
2	1	2412	16.58	≥500	Pass
	6	2437	16.57	≥500	Pass
	11	2462	16.57	≥500	Pass
3	1	2412	17.76	≥500	Pass
	6	2437	17.79	≥500	Pass
	11	2462	17.78	≥500	Pass
4	3	2422	36.39	≥500	Pass
	6	2437	36.39	≥500	Pass
	9	2452	36.36	≥500	Pass

Note: The worst case of Occupied Bandwidth as below:

6dB Occupied Bandwidth

Mode 1 CH06 (2437MHz)

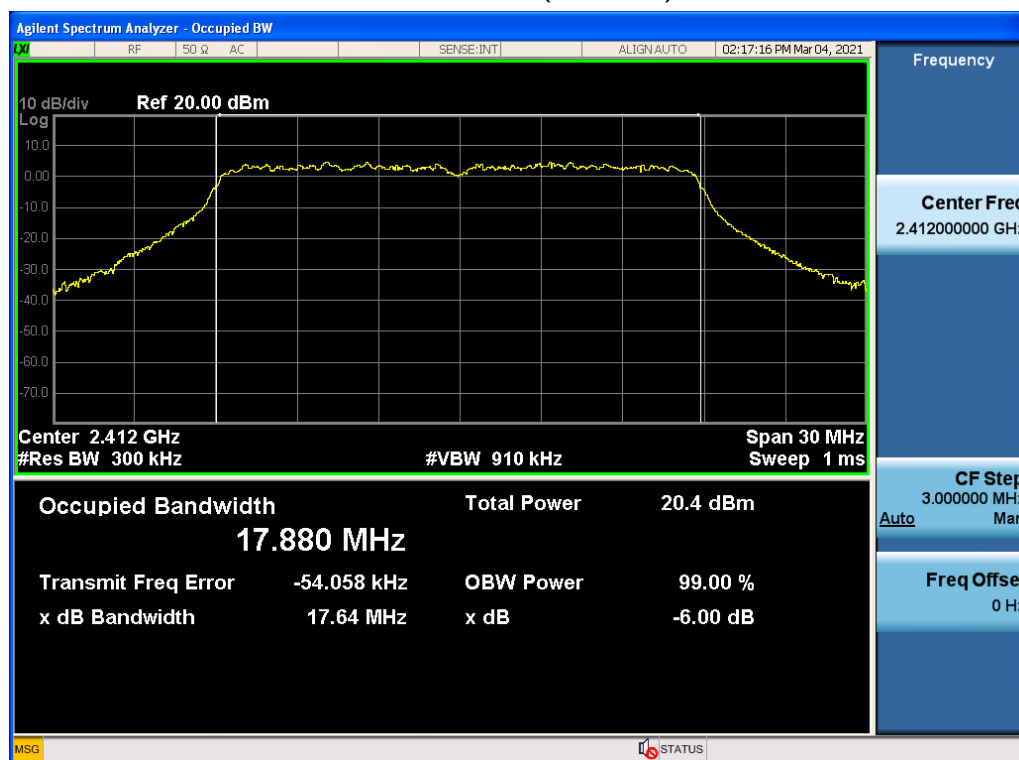


Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (MHz)	Limit	Result
1	1	2412	14.829	Within frequency range	Pass
	6	2437	14.840	Within frequency range	Pass
	11	2462	14.847	Within frequency range	Pass
2	1	2412	16.782	Within frequency range	Pass
	6	2437	16.782	Within frequency range	Pass
	11	2462	16.825	Within frequency range	Pass
3	1	2412	17.880	Within frequency range	Pass
	6	2437	17.885	Within frequency range	Pass
	11	2462	17.895	Within frequency range	Pass
4	3	2422	35.791	Within frequency range	Pass
	6	2437	35.772	Within frequency range	Pass
	9	2452	35.767	Within frequency range	Pass

Note: The worst case of Occupied Bandwidth as below:

99% Occupied Bandwidth

Mode 3 CH01 (2412MHz)



4.6 Fundamental emission output power

VERDICT: PASS

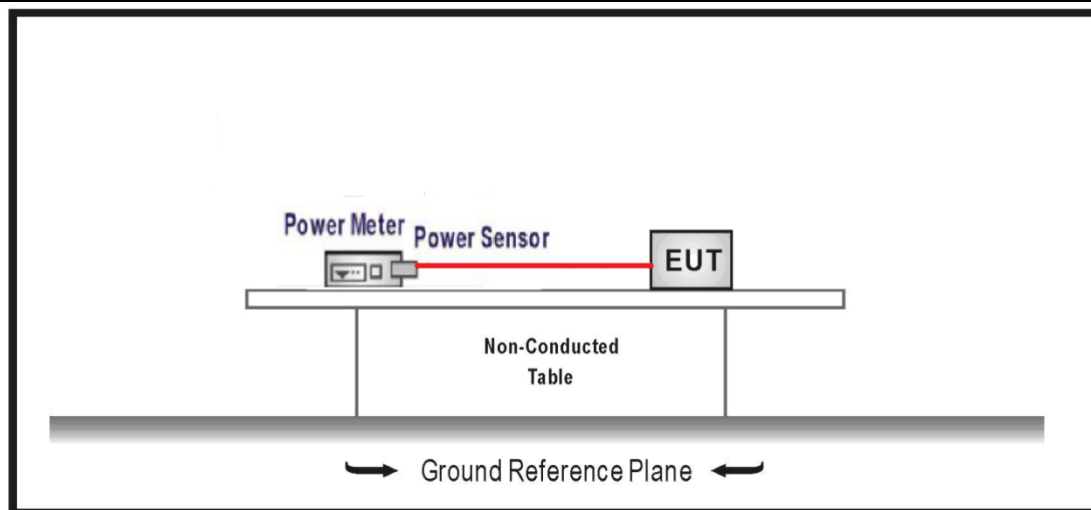
4.6.1 Limit

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

4.6.2 Test Setup



4.6.3 Test Procedure

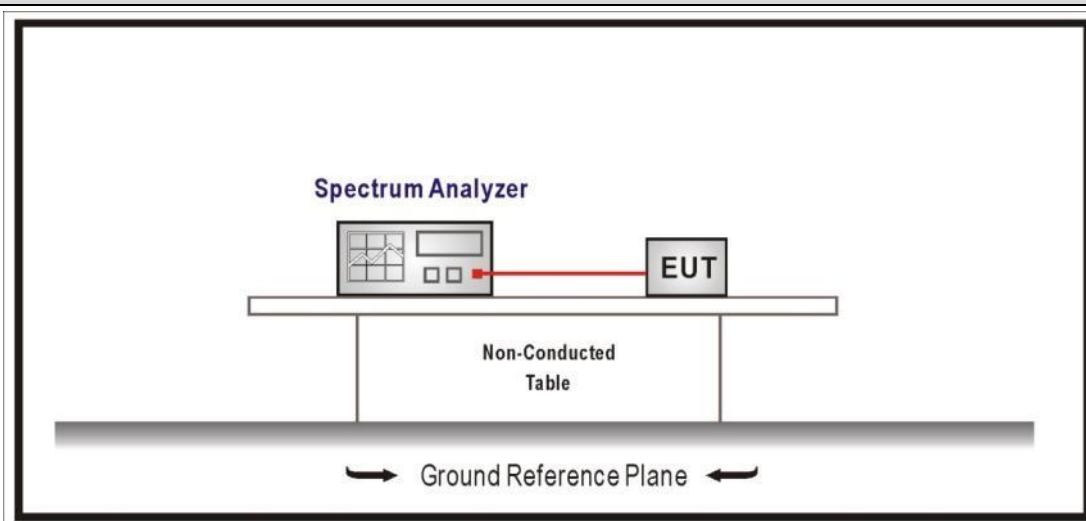
	References Rule			Chapter	Description		
☒	ANSI C63.10			11.9	Fundamental emission output power		
	☐	ANSI C63.10			11.9.1	Maximum peak conducted output power	
		☐	ANSI C63.10	11.9.1.1	RBW ≥ DTS bandwidth		
		☐	ANSI C63.10	11.9.1.2	Integrated band power method		
		☐	ANSI C63.10	11.9.1.3	PKPM1 Peak power 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	

4.6.4 Test Data

Mode	Channel	Test Frequency (MHz)	Conducted Power (dBm)	EIRP (dBm)	Conducted Power Limit (dBm)	EIRP Limit (dBm)	Result
Mode 1	1	2412	15.63	15.63	≤30	≤36	Pass
	6	2437	15.87	15.87	≤30	≤36	Pass
	11	2462	15.89	15.89	≤30	≤36	Pass
Mode 2	1	2412	13.56	13.56	≤30	≤36	Pass
	6	2437	13.62	13.62	≤30	≤36	Pass
	11	2462	13.59	13.59	≤30	≤36	Pass
Mode 3	1	2412	13.95	13.95	≤30	≤36	Pass
	6	2437	13.89	13.89	≤30	≤36	Pass
	11	2462	13.92	13.92	≤30	≤36	Pass
Mode 4	3	2422	13.83	13.83	≤30	≤36	Pass
	6	2437	13.85	13.85	≤30	≤36	Pass
	9	2452	13.79	13.79	≤30	≤36	Pass

4.7 Power Density**VERDICT: PASS****4.7.1 Limit:****Standard**

FCC Part 15 Subpart C Paragraph 15.247 (e)

Power Spectral Density $\leq 8\text{dBm}/3\text{kHz}$ **4.7.2 Test Setup****4.7.3 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 $\geq 98\%$)
☐	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle $\geq 98\%$)
☒	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

4.7.4 Test Data

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	1	2412	-13.282	≤8	Pass
	6	2437	-13.633	≤8	Pass
	11	2462	-14.207	≤8	Pass
2	1	2412	-16.952	≤8	Pass
	6	2437	-16.694	≤8	Pass
	11	2462	-16.690	≤8	Pass
3	1	2412	-15.538	≤8	Pass
	6	2437	-15.545	≤8	Pass
	11	2462	-15.499	≤8	Pass
4	3	2422	-16.15	≤8	Pass
	6	2437	-16.07	≤8	Pass
	9	2452	-15.819	≤8	Pass

Note: The worst case of PSD as below:

Mode 1 / CH01 / 2412MHz



4.8 Antenna Requirement**VERDICT: PASS****4.8.1 Limit:****Standard**

FCC Part 15 Subpart C Paragraph 15.203

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.

4.8.2 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.

_____ The End _____