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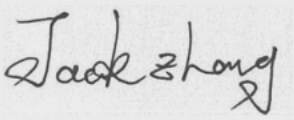
Test report No:
2140095R-RF-US-P06V01

FCC TEST REPORT & ISED TEST REPORT

Product Name	LED Lamp
Trademark	PHILIPS
Model and /or type reference	9290024717
FCC ID	2AGBW9290024717X
IC	20812-24717X
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 KD558074 D01 15.247 Meas Guidance v05r02 RSS-Gen Issue 5 / RSS-247 Issue 2
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Tim Cao/Project Engineer 
Approved by (name / position & signature)	Jack Zhang/ Supervisor 
Date of issue	2021-06-01
Report Version	V1.1
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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.

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GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Apr. 04, 2021
Date (start test)	Apr. 06, 2021
Date (finish test)	Apr. 21, 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
*T*x : Transmitter
*R*x : Receiver
N/A : Not Applicable
N/M : Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2140095R-RF-US-P06V01	V1.0	Initial issue of report.	2021-05-31
2140095R-RF-US-P06V01	V1.1	Page 1&10: Update IC ID number. Page 10: Update mounting position. (The test report No.: 2140095R-RF-US-P06V01 V1.1 is to place the test report No.: 2140095R-RF-US-P06V01 V1.0, and test report 2140095R-RF-US-P06V01 V1.0 is obsoleted.)	2021-06-01

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 Informaion;
   - 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	100906	2021.01.27	2022.01.26
Two-Line V-Network	R&S	ENV216	101190	2021.01.27	2022.01.26
Two-Line V-Network	R&S	ENV216	101044	2021.03.20	2022.03.19
Current Probe	R&S	EZ-17	100678	2021.01.27	2022.01.26
50ohm Termination	SHX	TF2	07081402	2020.09.23	2021.09.22
50ohm Termination	SHX	TF2	07081403	2020.09.23	2021.09.22
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2020.08.13	2021.08.12
Coaxial Cable	Suhner	RG 223	TR1-C1	2020.08.13	2021.08.12
Coaxial Cable	Suhner	RG 223	TR1-C2	2020.08.13	2021.08.12
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	2021.03.20	2022.03.19
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2020.08.15	2021.08.14
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2020.08.13	2021.08.12
Dekra test software	Dekra	-	-	-	-

Radiated Emission(30MHz-1GHz) / AC3

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	2020.08.19	2021.08.18
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2020.08.13	2021.08.12
Coaxial Cable	Huber+Suhner	RG 214	AC2-C	2021.03.31	2022.03.30
Dekra test software	Dekra	-	-	-	-

Radiated Emission / AC5(1GHz-40GHz)(Chamber details)

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2020.05.08	2021.05.07
Preamplifier	Miteq	NSP1800-25	1364185	2020.05.06	2021.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2020.05.06	2021.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2020.09.21	2021.09.20
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2020.08.13	2021.08.12
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2021.03.31	2022.03.30
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2021.03.31	2022.03.30
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2021.03.31	2022.03.30
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	± 1.27dB
Radiated Emission Band Edge	± 3.9 dB
DTS Bandwidth	±150Hz
Occupied Bandwidth	±1kHz
Power Density	±1.27dB

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name..... :	LED Lamp
Model No. ..... :	9290024717
Trademark ..... :	PHILIPS
FCC ID ..... :	2AGBW9290024717X
IC ..... :	20812-24717X
Manufacturer..... :	Signify (China) investment Co., Ltd
Manufacturer address ..... :	Building No.9, Lane 888, Tianlin Road, Minhang district, 200233 Shanghai, China

Wireless specifiction..... :	BLE 5.0					
Operating frequency range(s)	2402~2480MHz					
Type of Modulation..... :	GFSK					
PHYs ..... :	☒	LE 1M	☒	LE 2M	☒	LE Coded S=2/8
Data Rate ..... :	☒	1Mbit/s	☒	2Mbit/s	☒	500/125 Kbit/s
Number of channel..... :	40					

Rated power supply .....:	Voltage and Frequency	
	☐	AC: 220 – 240 V, 50/60 Hz
	☒	AC: 110 – 130 V, 50/60 Hz
	☐	DC: ……
	☐	Battery: ……
Mounting position.....:	☒	Table top equipment
	☐	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☐	Hand-held equipment
	☐	Other: ……..

1.2 Antenna Information

Antenna model / type number..... :	Slot antenna			
Antenna serial number ..... :	N/A			
Antenna Delivery ..... :	☒	1TX + 1RX		
	☐	2TX + 2RX		
	☐	Others:……		
Antenna technology..... :	☒	SISO		
	☐	MIMO	☐	CDD
			☐	Beam-forming
Antenna Type..... :	☐	External	☐	Dipole
			☐	Sectorized
	☒	Internal	☐	Ceramic Chip
			☐	PIFA
			☒	PCB
			☐	Others……..
Antenna Gain..... :	-0.32 dBi			

1.3 Channel List

Bluetooth Working Frequency of Each Channel: (For v5.0)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
37	2402 MHz	00	2404 MHz	01	2406 MHz	02	2408 MHz
03	2410 MHz	04	2412 MHz	05	2414 MHz	06	2416 MHz
07	2418 MHz	08	2420 MHz	09	2422 MHz	10	2424 MHz
38	2426 MHz	11	2428 MHz	12	2430 MHz	13	2432 MHz
14	2434 MHz	15	2436 MHz	16	2438 MHz	17	2440 MHz
18	2442 MHz	19	2444 MHz	20	2446 MHz	21	2448 MHz
22	2450 MHz	23	2452 MHz	24	2454 MHz	25	2456 MHz
26	2458 MHz	27	2460 MHz	28	2462 MHz	29	2464 MHz
30	2466 MHz	31	2468 MHz	32	2470 MHz	33	2472 MHz
34	2474 MHz	35	2476 MHz	36	2478 MHz	39	2480 MHz

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

2 DESCRIPTION OF TEST SETUP

2.1 Operating mode(s) used for tests

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

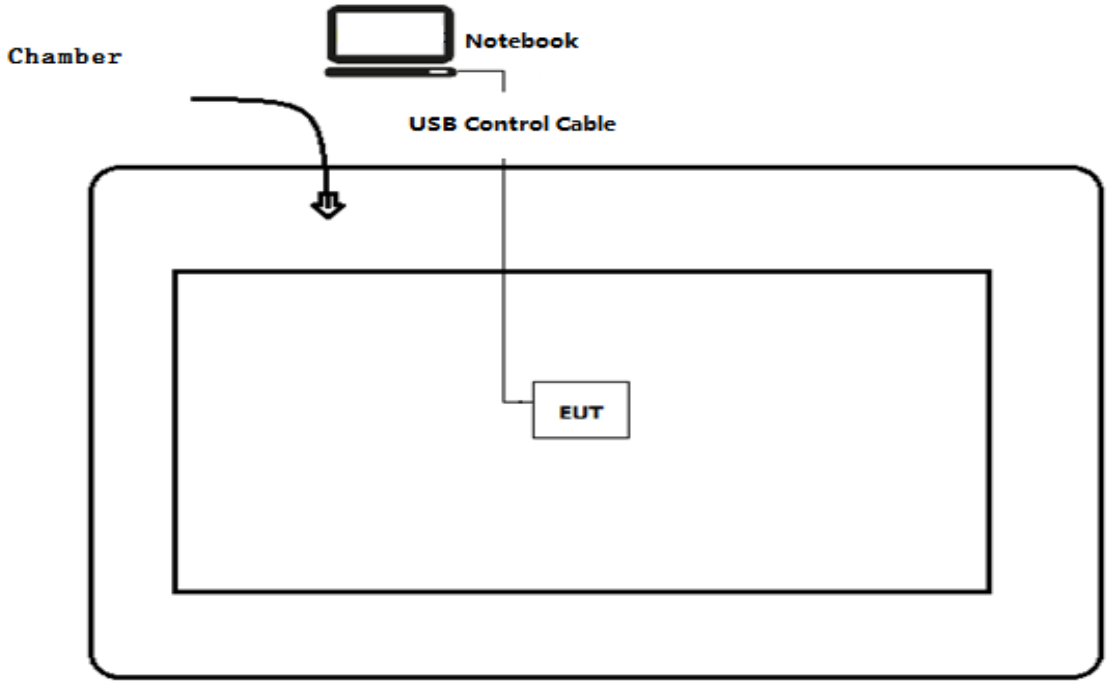
Test Mode For Bluetooth	Mode 1: Transmit by LE_1Mbps(GFSK_LE)
	Mode 2: Transmit by LE_2Mbps(GFSK_LE)
	Mode 3: Transmit by LE_Coded S=2
	Mode 4: Transmit by LE_Coded S=8

2.2 Auxiliary equipment / Test software for the EUT

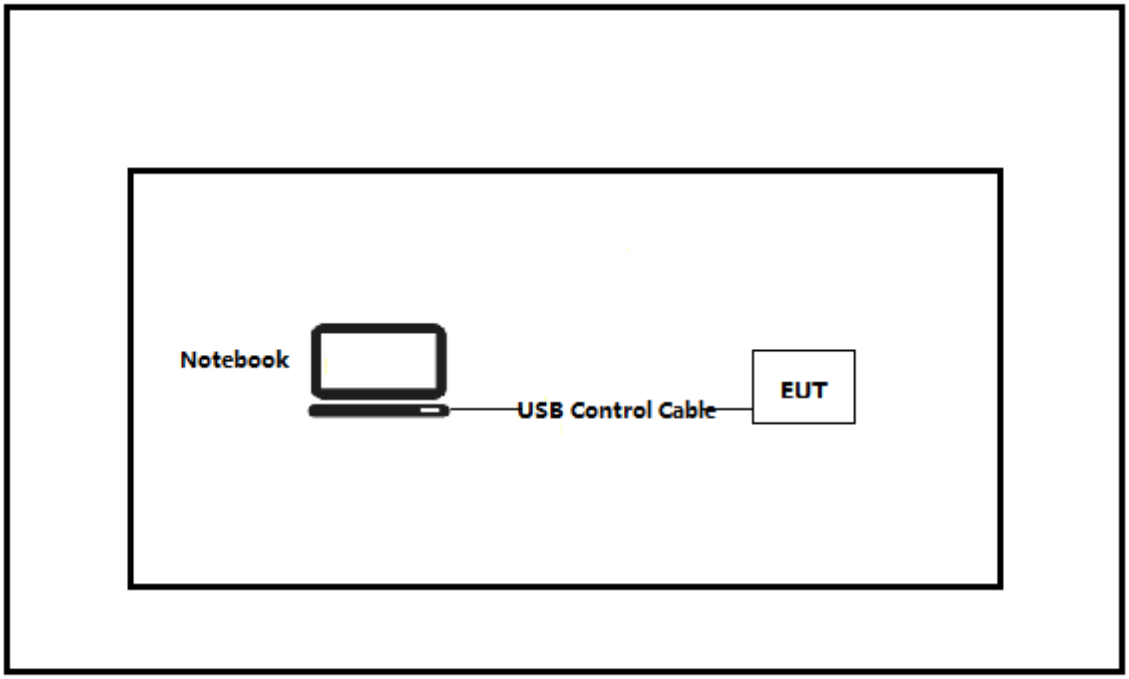
Auxiliary equipment	Type / Version	Manufacturer	Supplied by
Notebook	Think pad x220	Lenovo	Adapter
software	Type / Version	Manufacturer	Supplied by
Approbation Tool	V1.1.5.0	N/A	N/A

2.3 Test Configuration / Block diagram used for 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 [Approbation Tool] 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	2019	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 D01 v05r02	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(b)(3)	PASS	---
Duty cycle	ANSI C63.10:2013	PASS	---
Emissions in non-restricted frequency bands	FCC 15.247(d), FCC 15.209	PASS	---
Radiated Emission 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	---
Radiated Emission 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

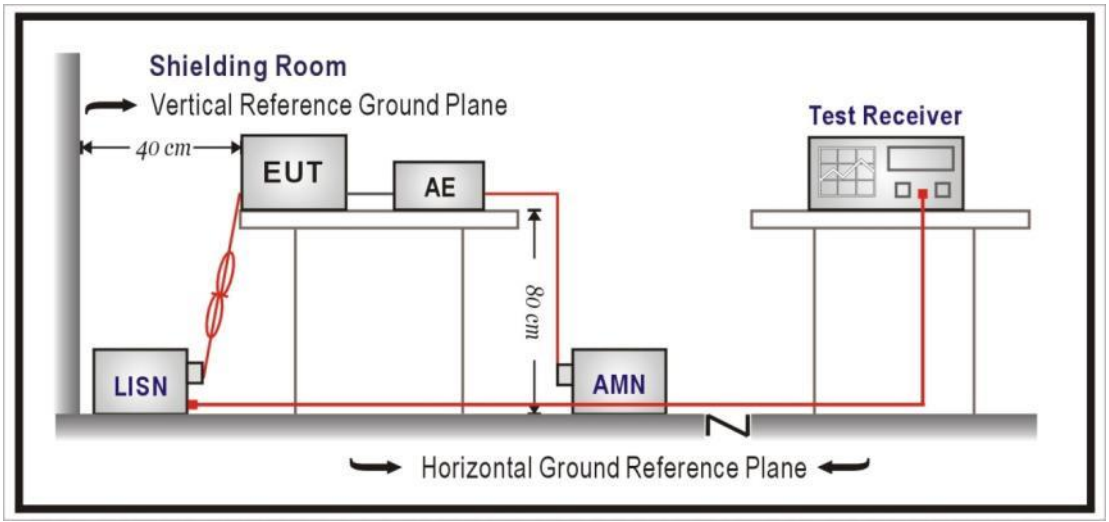
4.1 AC Power Line Conducted Emission	VERDICT: PASS

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

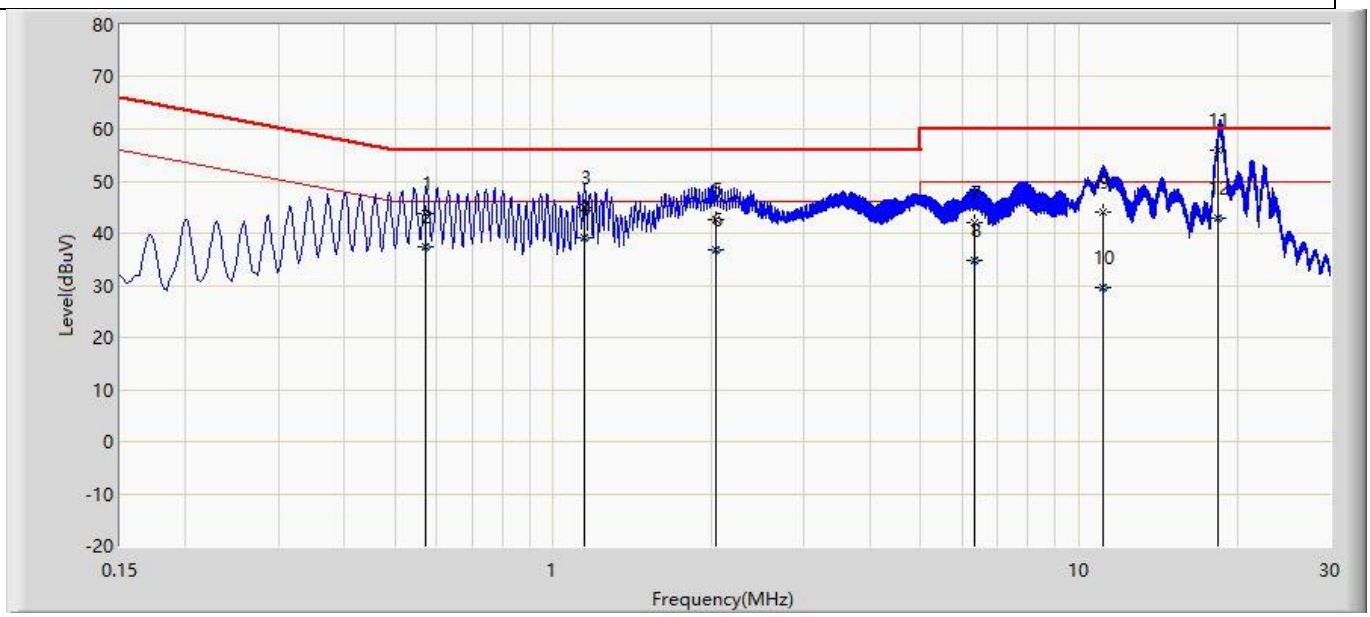


4.1.3 Test Procedure

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

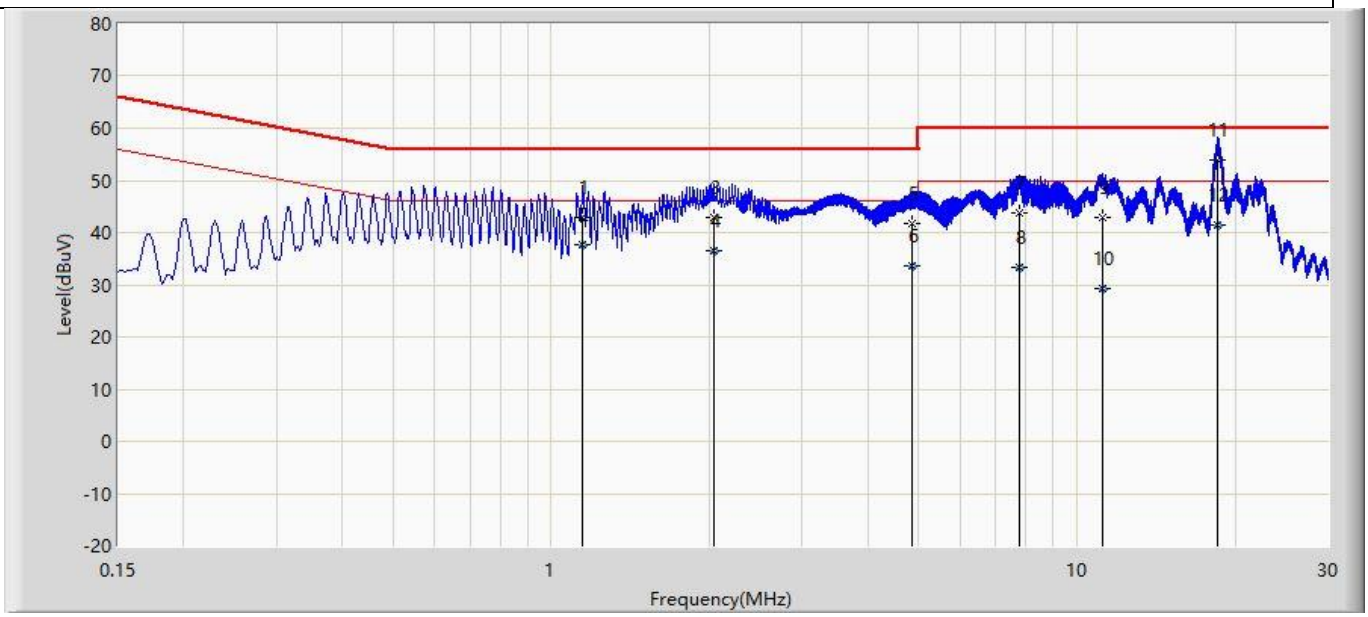
4.1.4 Test Data

Profile: 2140095R	Page No.: 11
Engineer: Yu.Liu	
Site: TR1	Time: 2021/04/19 - 19:07
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: Mode1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.571	43.630	33.773	-12.370	56.000	9.857	QP
2		0.571	37.343	27.486	-8.657	46.000	9.857	AV
3		1.147	44.994	35.015	-11.006	56.000	9.979	QP
4		1.147	39.264	29.286	-6.736	46.000	9.979	AV
5		2.033	42.742	32.705	-13.258	56.000	10.036	QP
6		2.033	36.740	26.703	-9.260	46.000	10.036	AV
7		6.333	41.903	31.704	-18.097	60.000	10.198	QP
8		6.333	34.883	24.685	-15.117	50.000	10.198	AV
9		11.130	44.152	33.770	-15.848	60.000	10.382	QP
10		11.130	29.471	19.089	-20.529	50.000	10.382	AV
11	*	18.427	55.824	45.269	-4.176	60.000	10.556	QP
12		18.427	42.932	32.376	-7.068	50.000	10.556	AV

Profile: 2140095R	Page No.: 12
Engineer: Yu.Liu	
Site: TR1	Time: 2021/04/19 - 19:08
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: Mode1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		1.145	42.905	32.957	-13.095	56.000	9.949	QP
2		1.145	37.570	27.621	-8.430	46.000	9.949	AV
3		2.035	42.851	32.904	-13.149	56.000	9.947	QP
4		2.035	36.406	26.459	-9.594	46.000	9.947	AV
5		4.843	41.651	31.604	-14.349	56.000	10.047	QP
6		4.843	33.761	23.714	-12.239	46.000	10.047	AV
7		7.764	43.769	33.604	-16.231	60.000	10.166	QP
8		7.764	33.433	23.268	-16.567	50.000	10.166	AV
9		11.159	42.892	32.605	-17.108	60.000	10.287	QP
10		11.159	29.216	18.929	-20.784	50.000	10.287	AV
11	*	18.535	53.941	43.390	-6.059	60.000	10.551	QP
12		18.535	41.432	30.882	-8.568	50.000	10.551	AV

Note:
1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp). Test Photograph.
3. We evalued both tow crystal oscillator, and shown in report is the worst data.

4.2 Emissions in restricted frequency bands — VERDICT: PASS

4.2.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207		
Restricted Bands of operation			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 –16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975–12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675–12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			
Restricted Bands of operation for IC			
0.090 - 0.110	13.36 - 13.41	960 - 1427	9.0 - 9.2
0.495 - 0.505	16.42 - 16.423	1435 - 1626.5	9.3 - 9.5
2.1735 - 2.1905	16.69475 - 16.69525	1645.5 - 1646.5	10.6 - 12.7
3.020 - 3.026	16.80425 - 16.80475	1660 - 1710	13.25 - 13.4
4.125 - 4.128	25.5 - 25.67	1718.8 - 1722.2	14.47 - 14.5
4.17725 - 4.17775	37.5 - 38.25	2200 - 2300	15.35 - 16.2
4.20725 - 4.20775	73 - 74.6	2310 - 2390	17.7 - 21.4
5.677 - 5.683	74.8 - 75.2	2483.5 - 2500	22.01 - 23.12
6.215 - 6.218	108 - 138	2655 - 2900	23.6 - 24.0
6.26775 - 6.26825	149.9 - 150.05	3260 - 3267	31.2 - 31.8
6.31175 - 6.31225	156.52475 - 156.52525	3332 - 3339	36.43 - 36.5
8.291 - 8.294	156.7 - 156.9	3345.8 - 3358	Above 38.6
8.362 - 8.366	162.0125 - 167.17	3500 - 4400	
8.37625 - 8.38675	167.72 - 173.2	4500 - 5150	
8.41425 - 8.41475	240 - 285	5350 - 5460	
12.29 - 12.293	322 - 335.4	7250 - 7750	
12.51975 - 12.52025	399.9 - 410	8025 - 8500	
12.57675 - 12.57725	608 - 614	--	

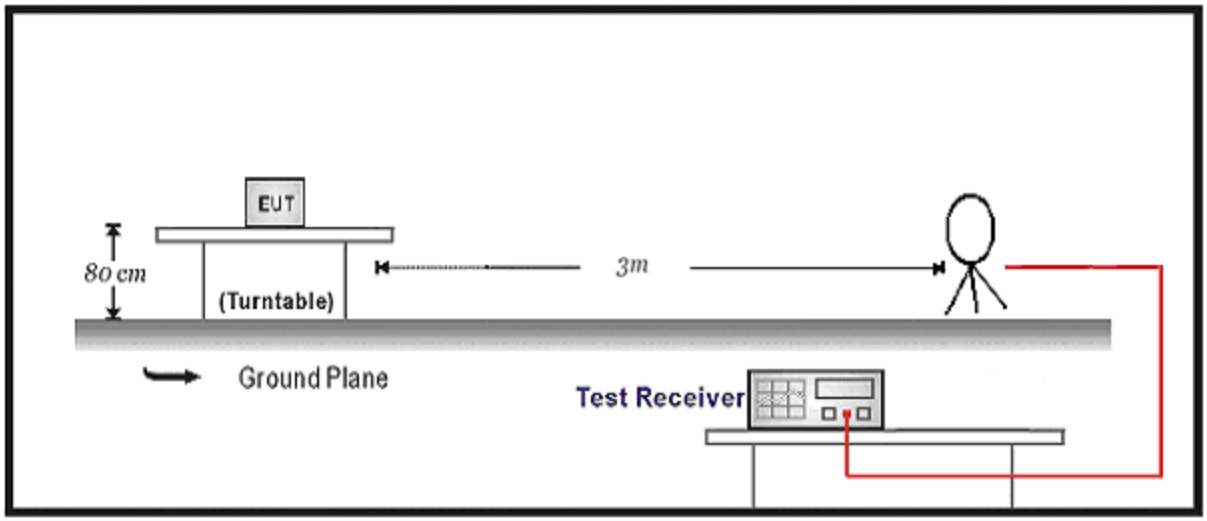
Restricted Band Emissions Limit			
Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30(Note 1)
1.705 - 30	30	29.5	30(Note 1)
30 - 88	100	40	3(Note 2)
88 - 216	150	43.5	3(Note 2)
216 - 960	200	46	3(Note 2)
Above 960	500	54	3(Note 2)

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).

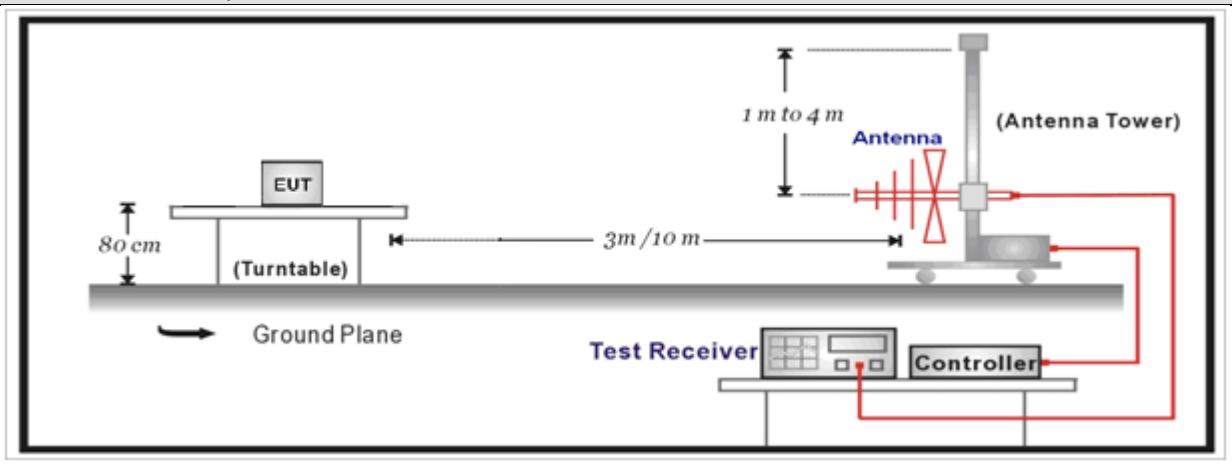
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated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

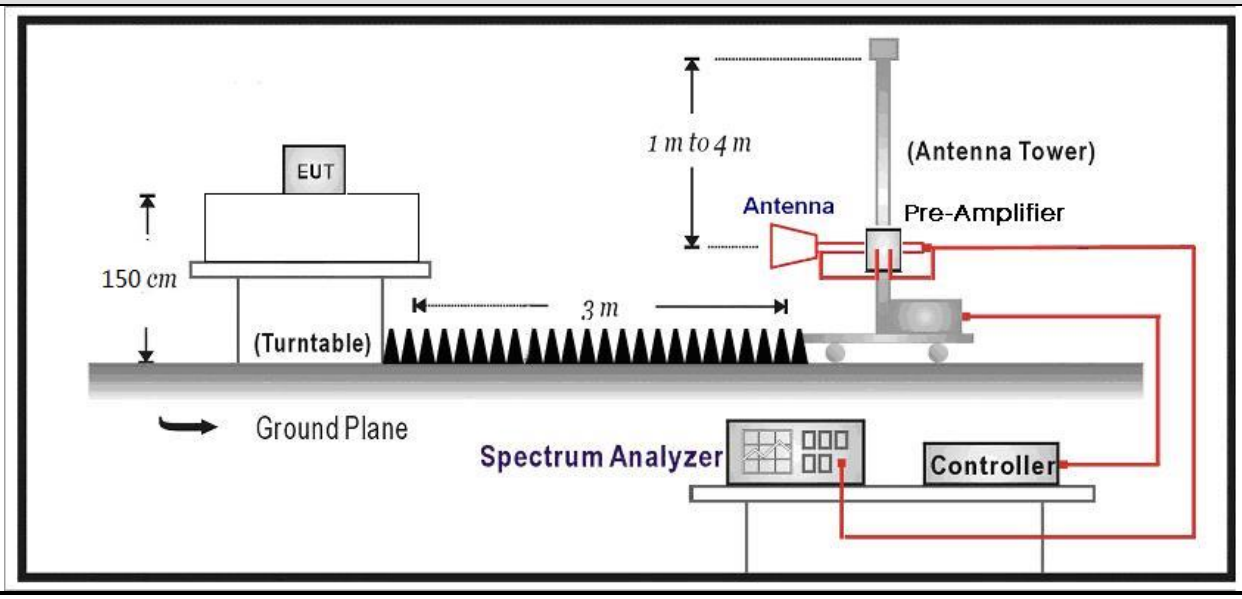
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:

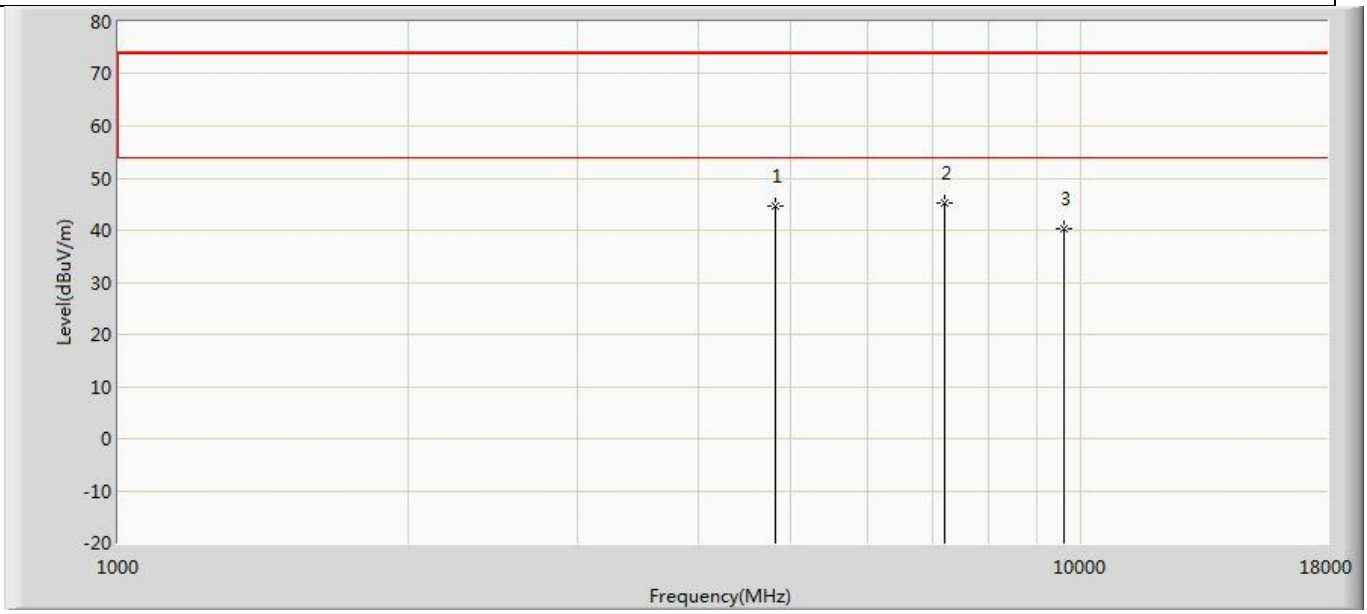


4.2.3 Test Procedure

	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		11.12.2.7	Radiated spurious emission test
		☒	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
		☒	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
		☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

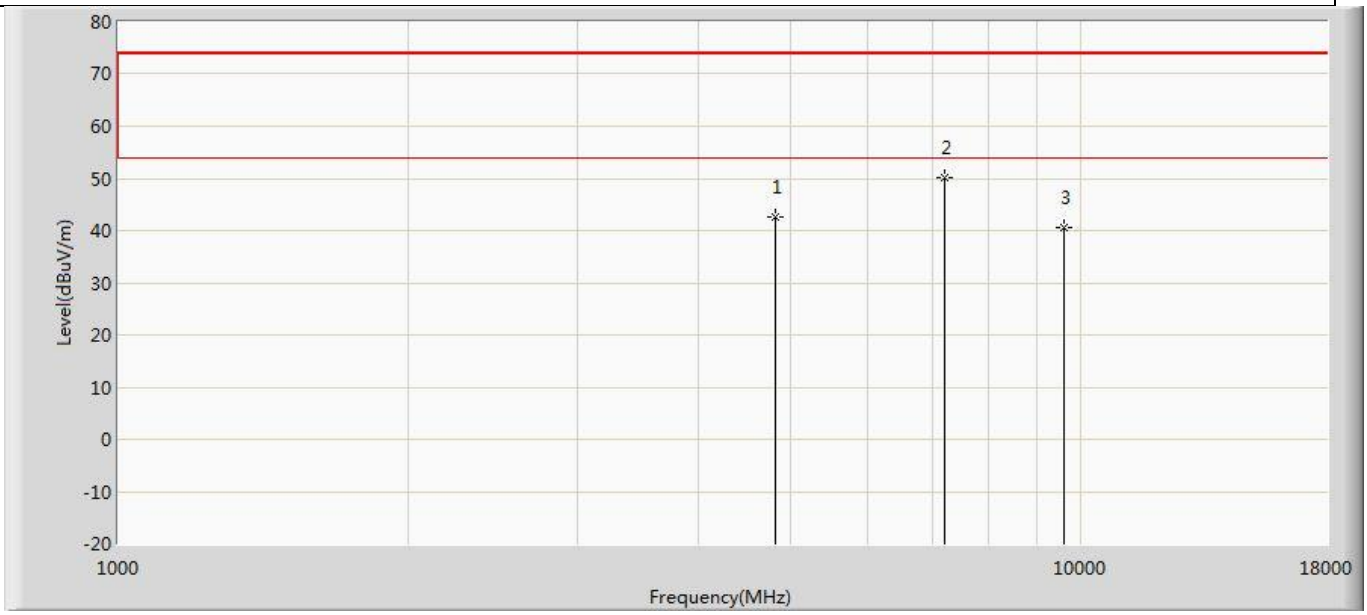
4.2.4 Test Data

Profile: 2140095R	Page No.: 31
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2402MHz by LE_1Mbps	



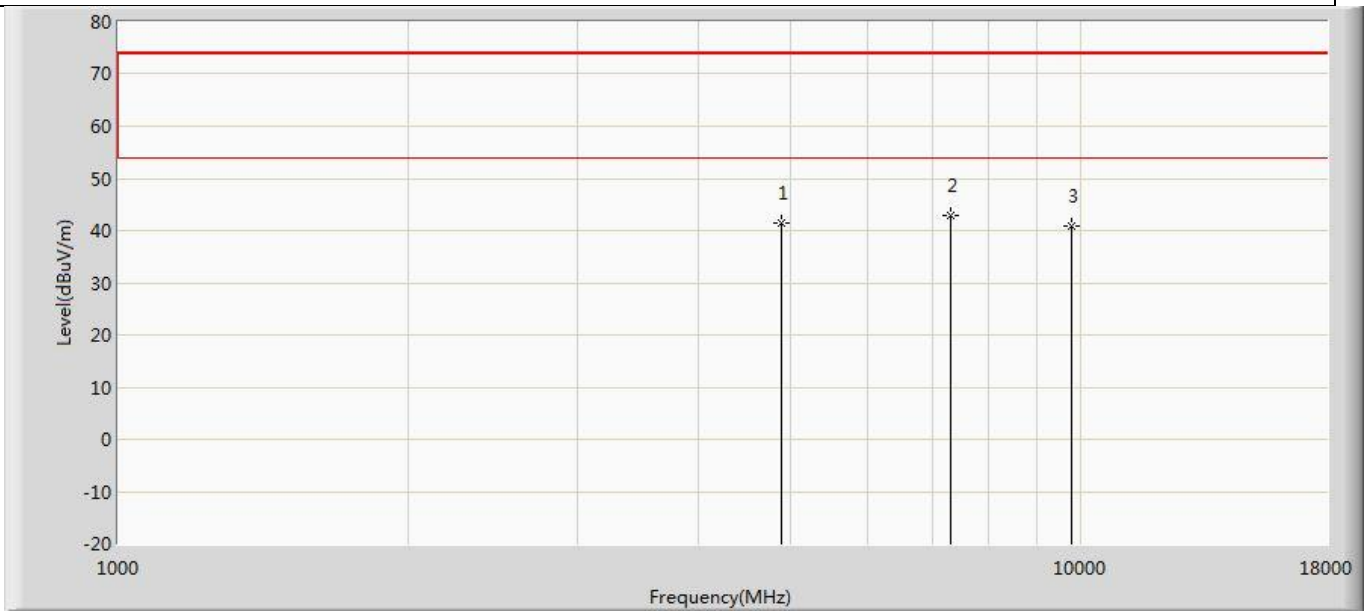
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4808.000	44.571	50.995	-29.429	74.000	-6.424	PK
2	*	7205.000	45.259	47.639	-28.741	74.000	-2.380	PK
3		9608.000	40.383	41.588	-33.617	74.000	-1.204	PK

Profile: 2140095R	Page No.: 32
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2402MHz by LE_1Mbps	



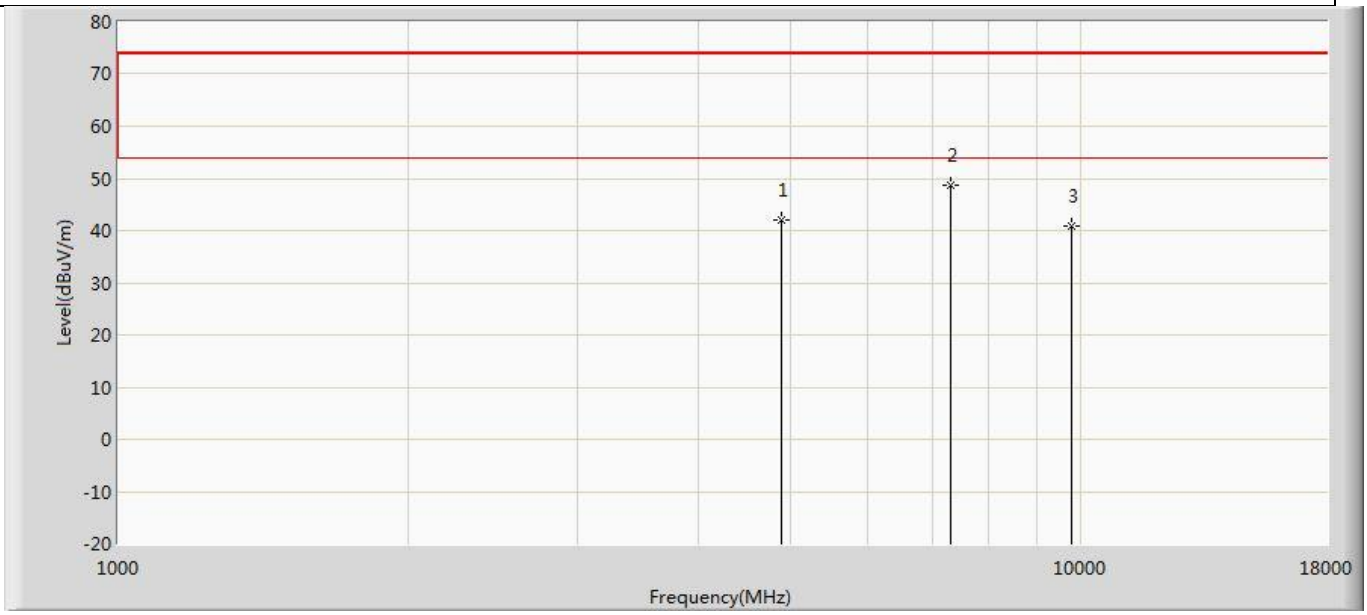
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4808.000	42.559	49.673	-31.441	74.000	-7.114	PK
2	*	7205.000	50.130	52.780	-23.870	74.000	-2.650	PK
3		9608.000	40.492	40.582	-33.508	74.000	-0.089	PK

Profile: 2140095R	Page No.: 33
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2440MHz by LE_1Mbps	



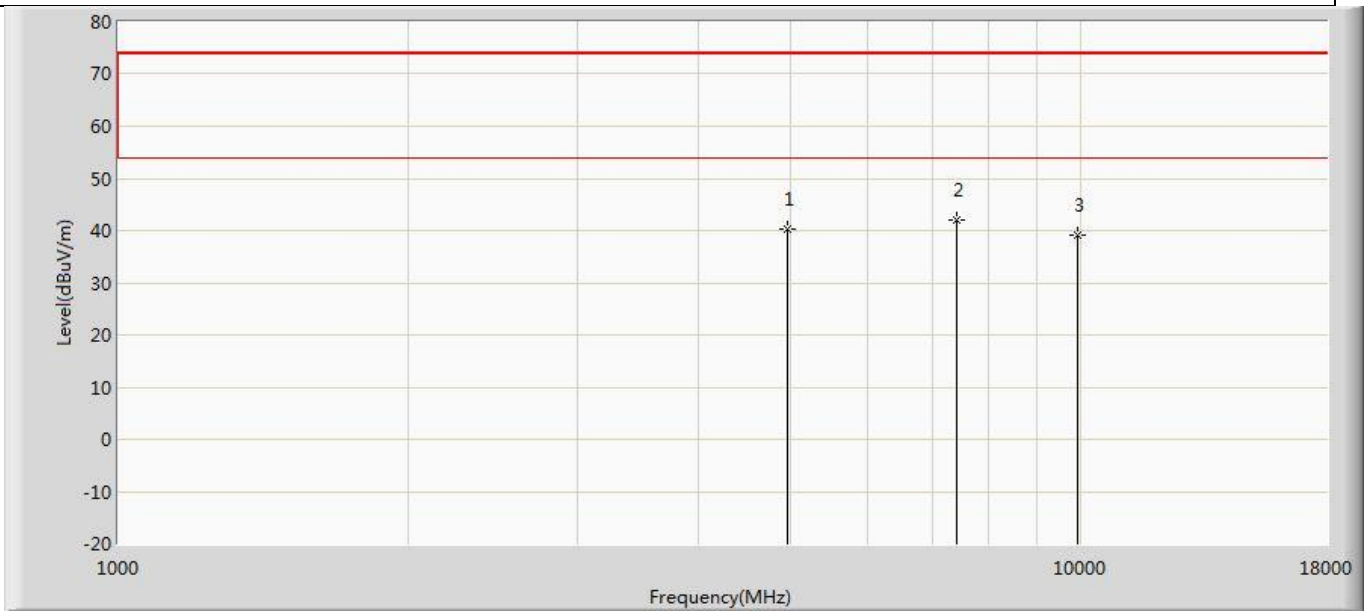
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4884.500	41.505	48.456	-32.495	74.000	-6.951	PK
2	*	7324.000	42.857	45.507	-31.143	74.000	-2.650	PK
3		9760.000	40.777	40.368	-33.223	74.000	0.409	PK

Profile: 2140095R	Page No.: 34
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2440MHz by LE_1Mbps	



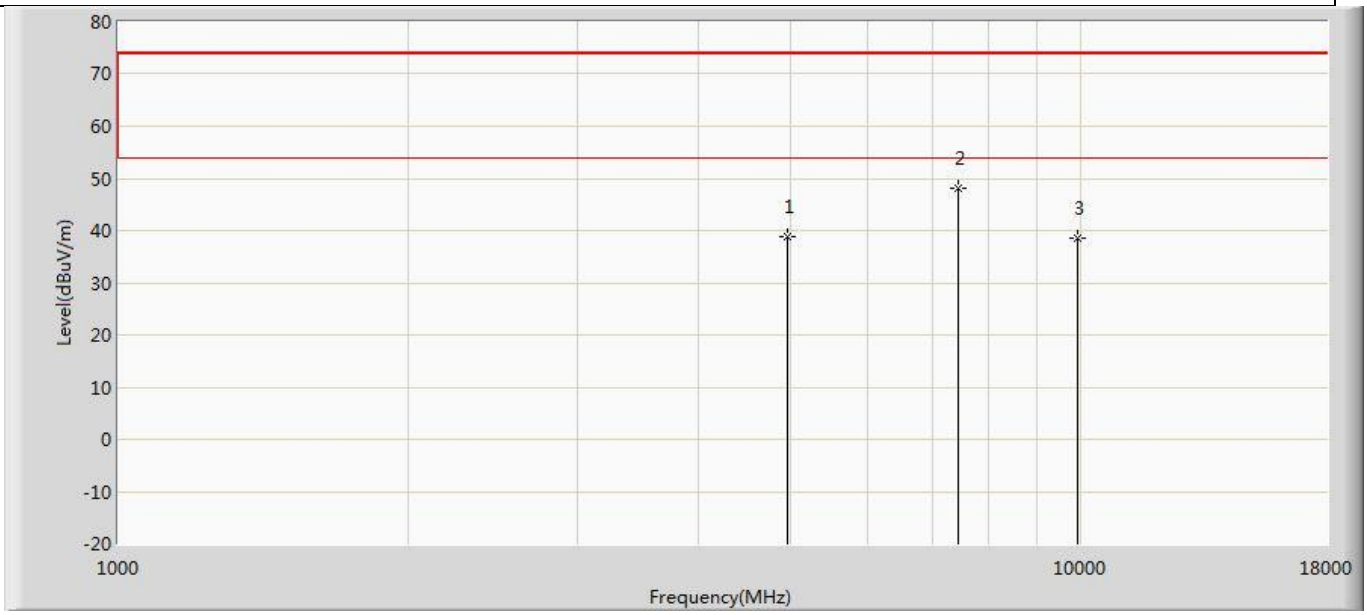
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4884.500	42.098	49.049	-31.902	74.000	-6.951	PK
2	*	7315.500	48.613	51.395	-25.387	74.000	-2.782	PK
3		9760.000	40.995	40.586	-33.005	74.000	0.409	PK

Profile: 2140095R	Page No.: 35
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2480MHz by LE_1Mbps	



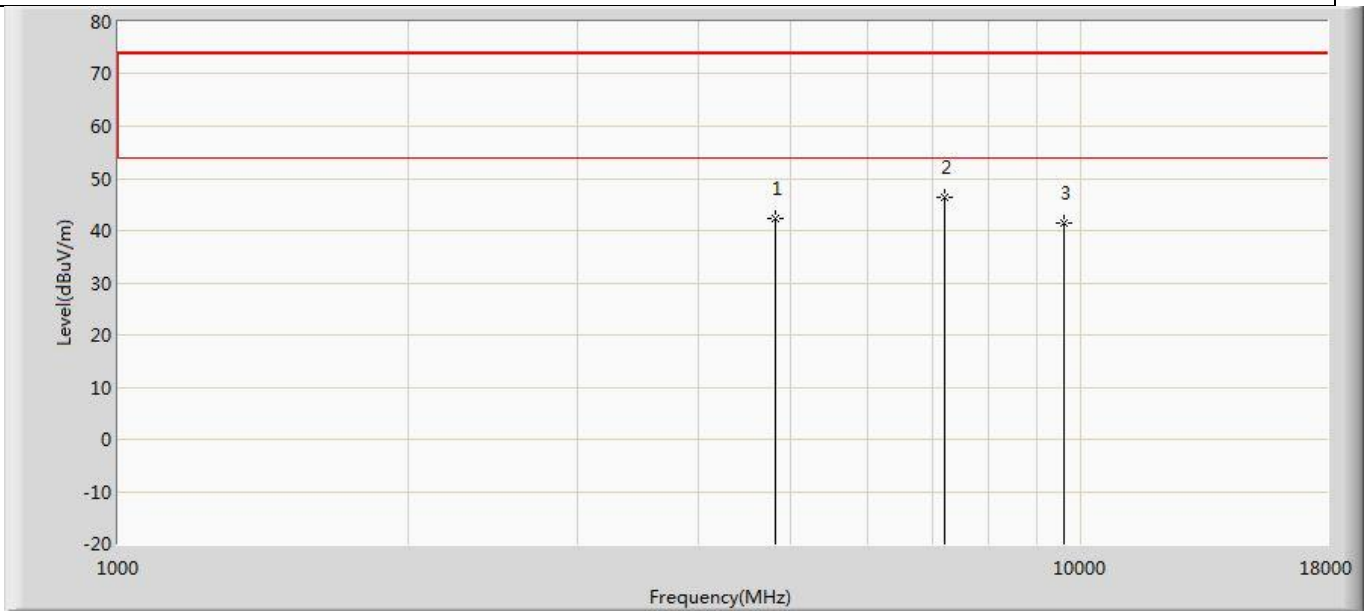
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.364	46.968	-33.636	74.000	-6.605	PK
2	*	7440.000	42.160	44.799	-31.840	74.000	-2.639	PK
3		9920.000	39.215	39.761	-34.785	74.000	-0.546	PK

Profile: 2140095R	Page No.: 36
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2480MHz by LE_1Mbps	



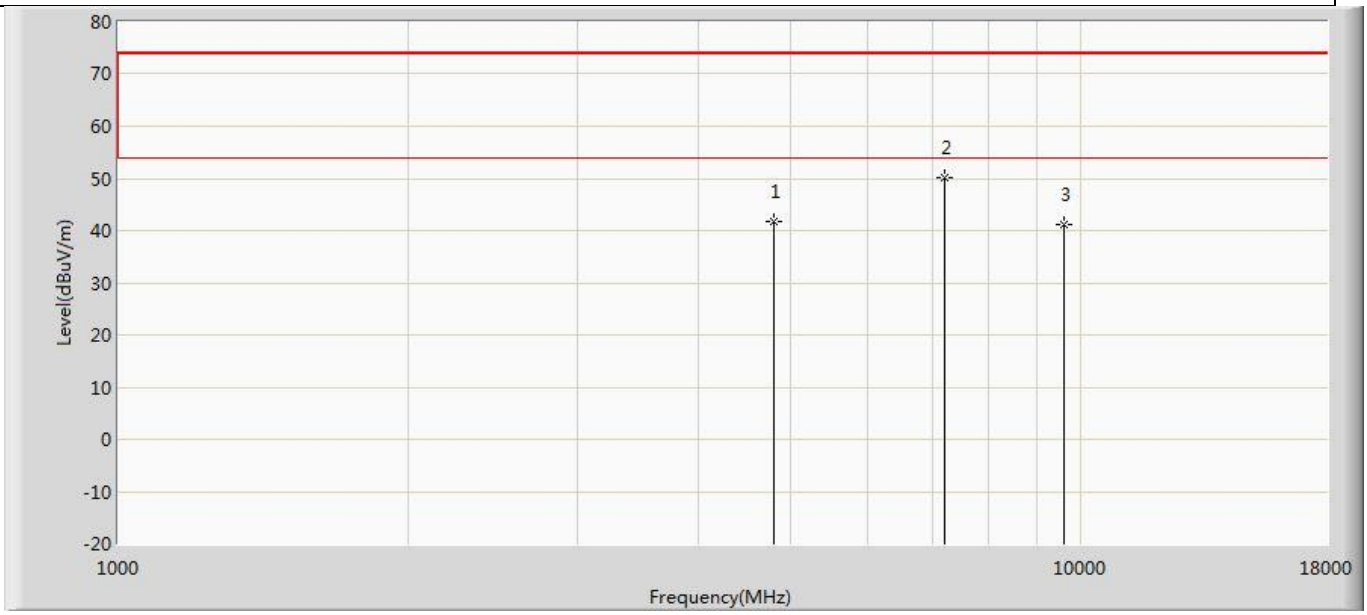
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	38.802	45.406	-35.198	74.000	-6.605	PK
2	*	7443.000	48.117	50.723	-25.883	74.000	-2.606	PK
3		9920.000	38.662	39.208	-35.338	74.000	-0.546	PK

Profile: 2140095R	Page No.: 37
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2402MHz by LE_2Mbps	



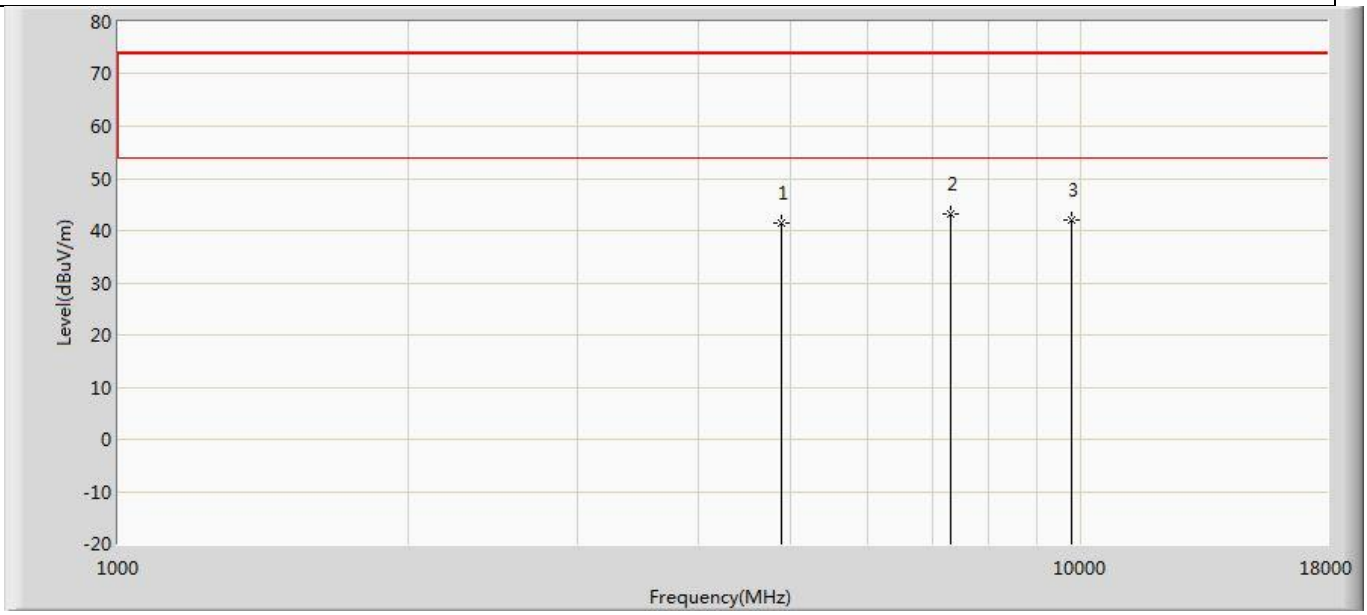
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4808.000	42.350	49.464	-31.650	74.000	-7.114	PK
2	*	7205.000	46.267	48.917	-27.733	74.000	-2.650	PK
3		9608.000	41.347	41.437	-32.653	74.000	-0.089	PK

Profile: 2140095R	Page No.: 38
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2402MHz by LE_2Mbps	



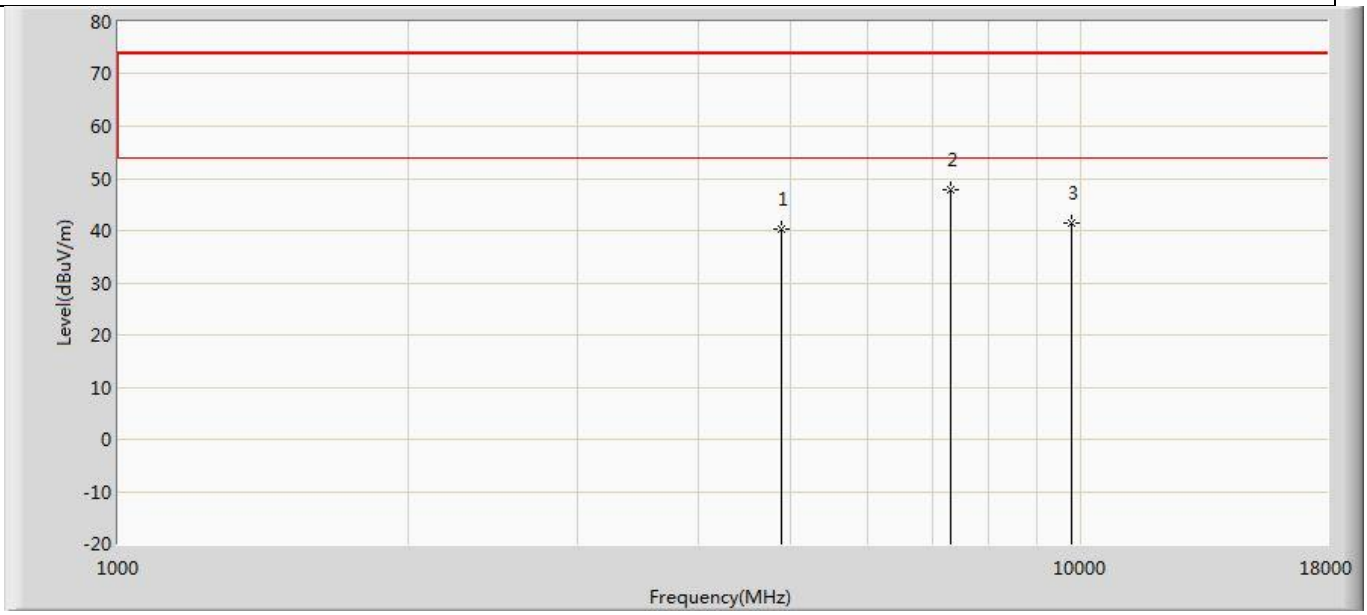
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4799.500	41.618	48.760	-32.382	74.000	-7.142	PK
2	*	7205.000	50.275	52.925	-23.725	74.000	-2.650	PK
3		9608.000	41.119	41.209	-32.881	74.000	-0.089	PK

Profile: 2140095R	Page No.: 39
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2440MHz by LE_2Mbps	



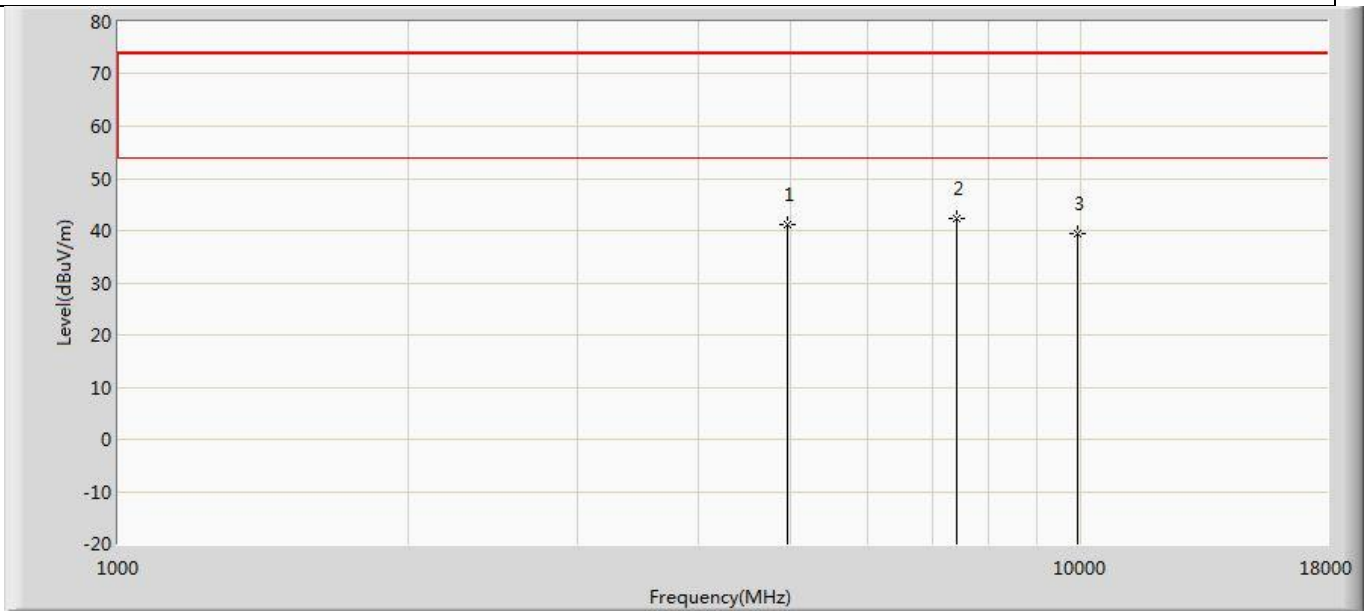
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	41.415	48.346	-32.585	74.000	-6.931	PK
2	*	7320.000	43.244	45.956	-30.756	74.000	-2.711	PK
3		9760.000	42.025	41.616	-31.975	74.000	0.409	PK

Profile: 2140095R	Page No.: 40
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2440MHz by LE_2Mbps	



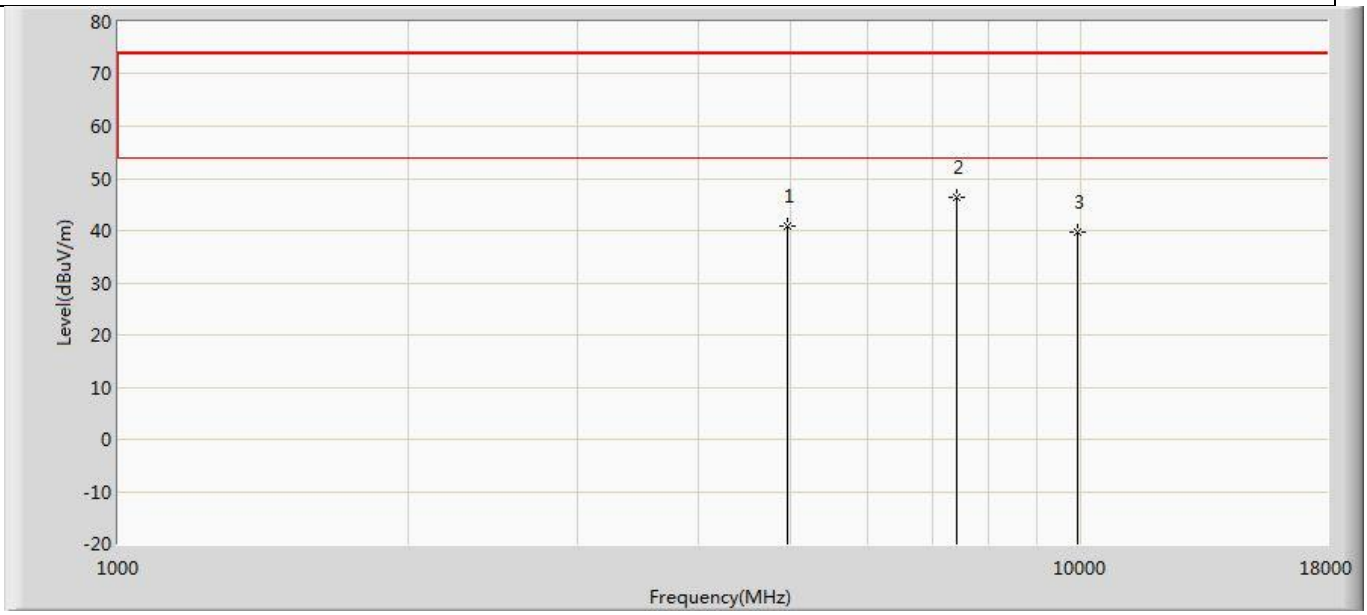
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.363	47.294	-33.637	74.000	-6.931	PK
2	*	7315.500	47.910	50.692	-26.090	74.000	-2.782	PK
3		9760.000	41.499	41.090	-32.501	74.000	0.409	PK

Profile: 2140095R	Page No.: 41
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:50
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 2480MHz by LE_2Mbps	



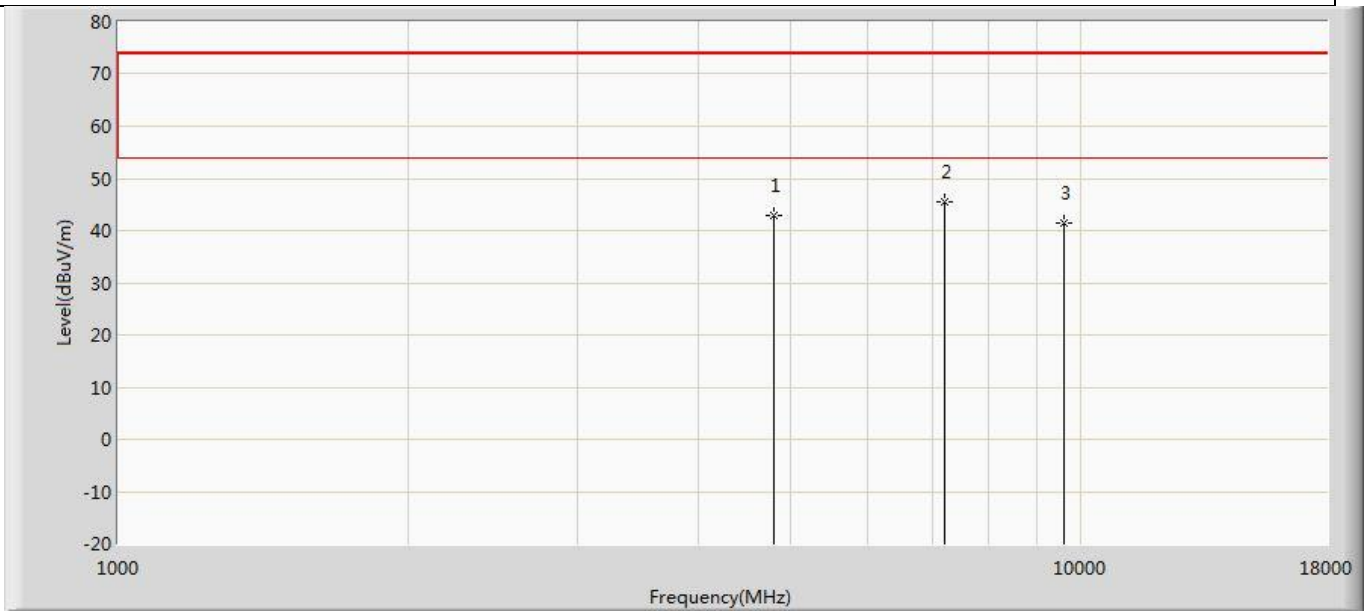
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	41.080	47.684	-32.920	74.000	-6.605	PK
2	*	7440.000	42.453	45.092	-31.547	74.000	-2.639	PK
3		9920.000	39.335	39.881	-34.665	74.000	-0.546	PK

Profile: 2140095R	Page No.: 42
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 2480MHz by LE_2Mbps	



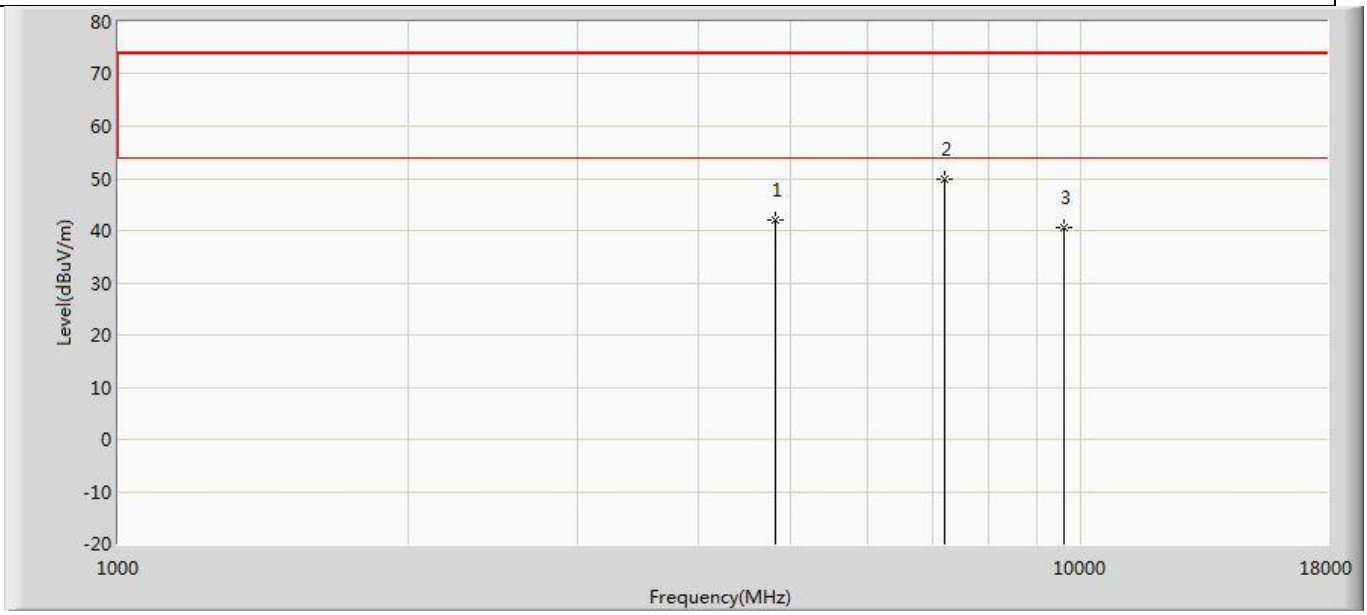
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.987	47.591	-33.013	74.000	-6.605	PK
2	*	7440.000	46.352	48.991	-27.648	74.000	-2.639	PK
3		9920.000	39.842	40.388	-34.158	74.000	-0.546	PK

Profile: 2140095R	Page No.: 43
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 3:Transmit at 2402MHz by LE_Coded S=2	



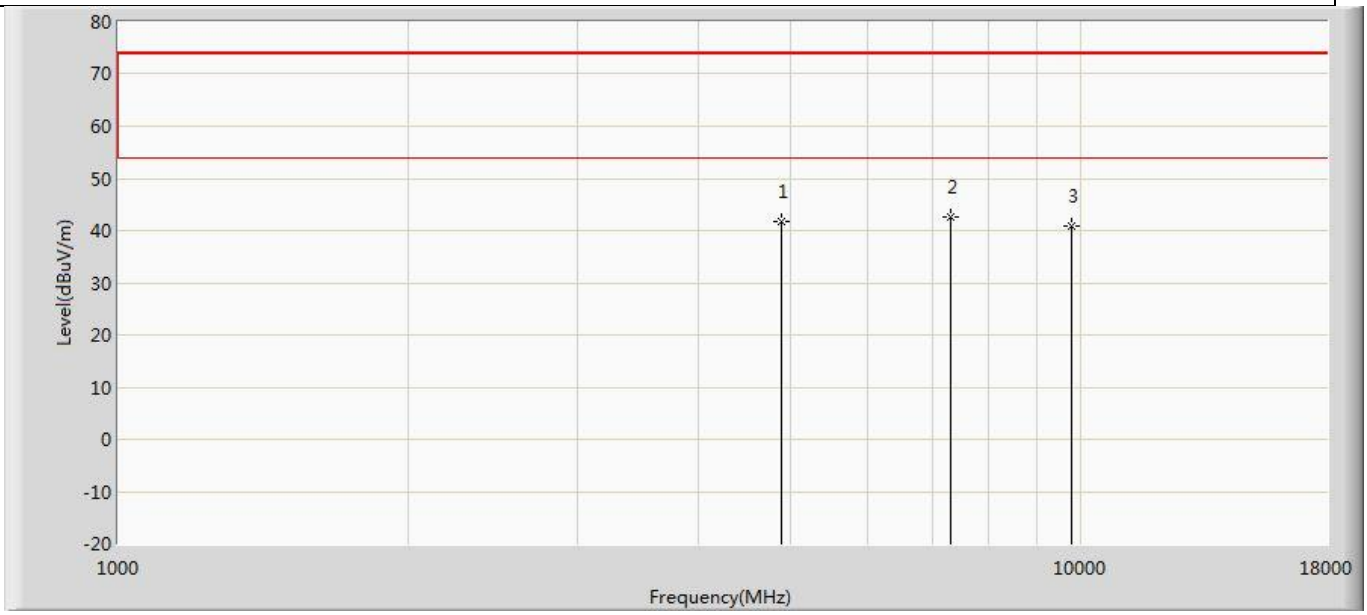
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4799.500	43.013	50.155	-30.987	74.000	-7.142	PK
2	*	7205.000	45.489	48.139	-28.511	74.000	-2.650	PK
3		9608.000	41.539	41.629	-32.461	74.000	-0.089	PK

Profile: 2140095R	Page No.: 44
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 2402MHz by LE_Coded S=2	



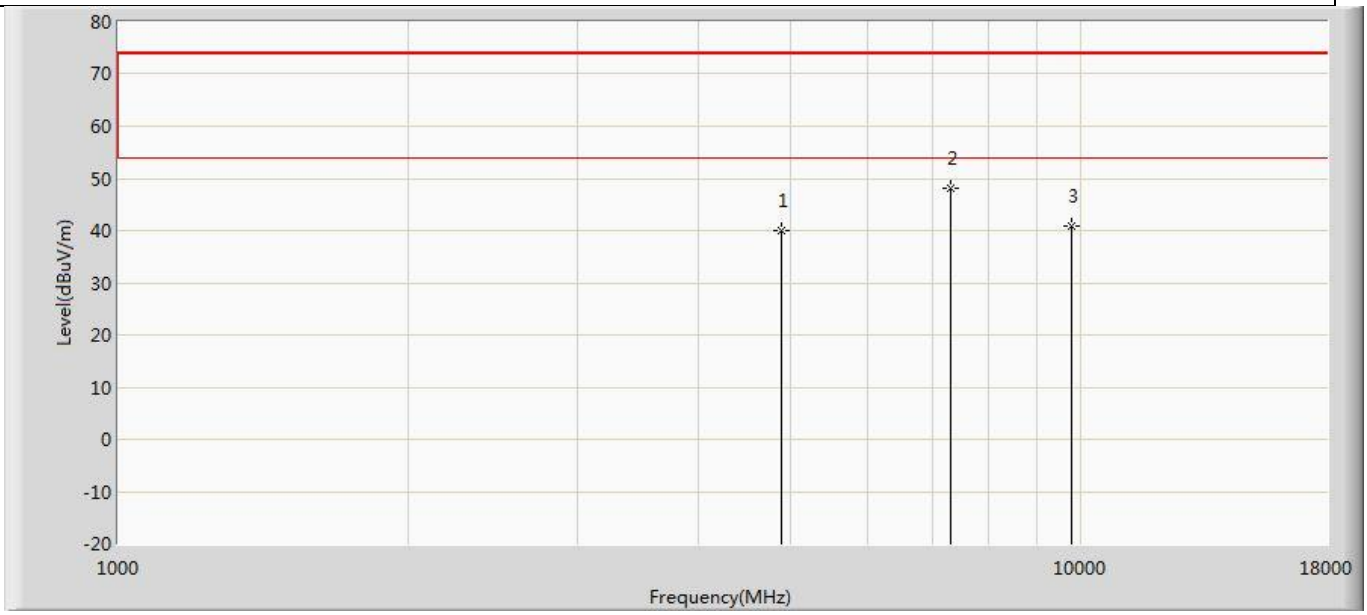
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4808.000	42.027	49.141	-31.973	74.000	-7.114	PK
2	*	7205.000	49.730	52.380	-24.270	74.000	-2.650	PK
3		9608.000	40.652	40.742	-33.348	74.000	-0.089	PK

Profile: 2140095R	Page No.: 45
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 3:Transmit at 2440MHz by LE_Coded S=2	



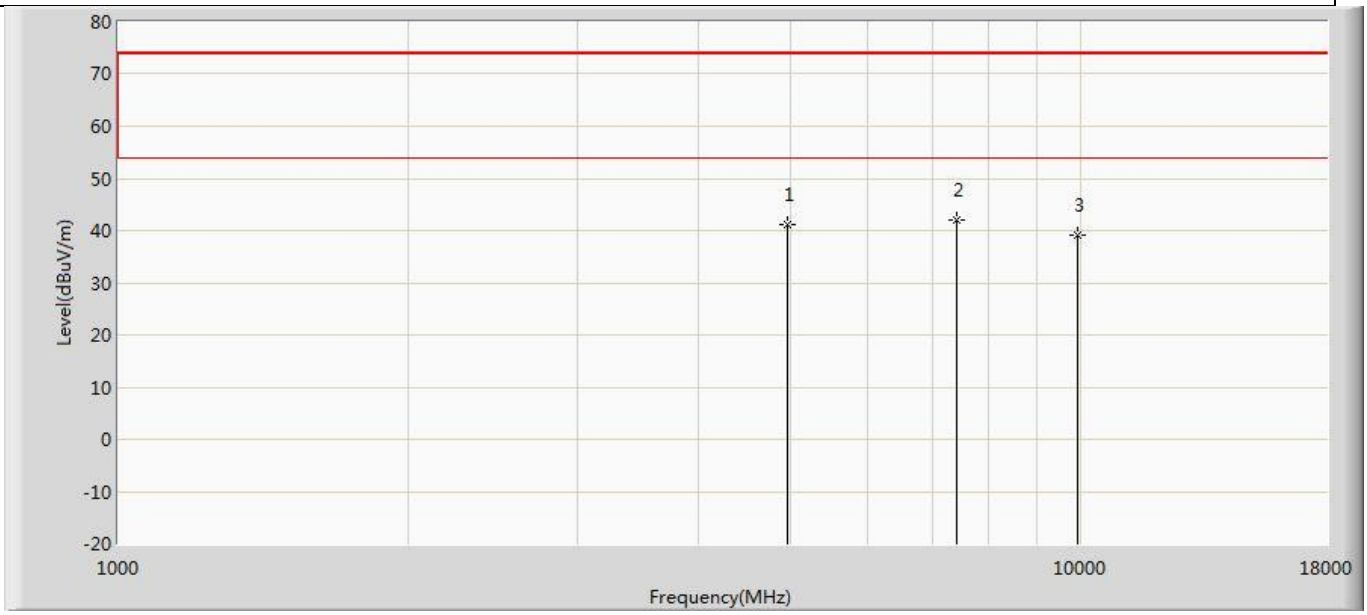
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	41.742	48.673	-32.258	74.000	-6.931	PK
2	*	7320.000	42.464	45.176	-31.536	74.000	-2.711	PK
3		9760.000	40.989	40.580	-33.011	74.000	0.409	PK

Profile: 2140095R	Page No.: 46
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 2440MHz by LE_Coded S=2	



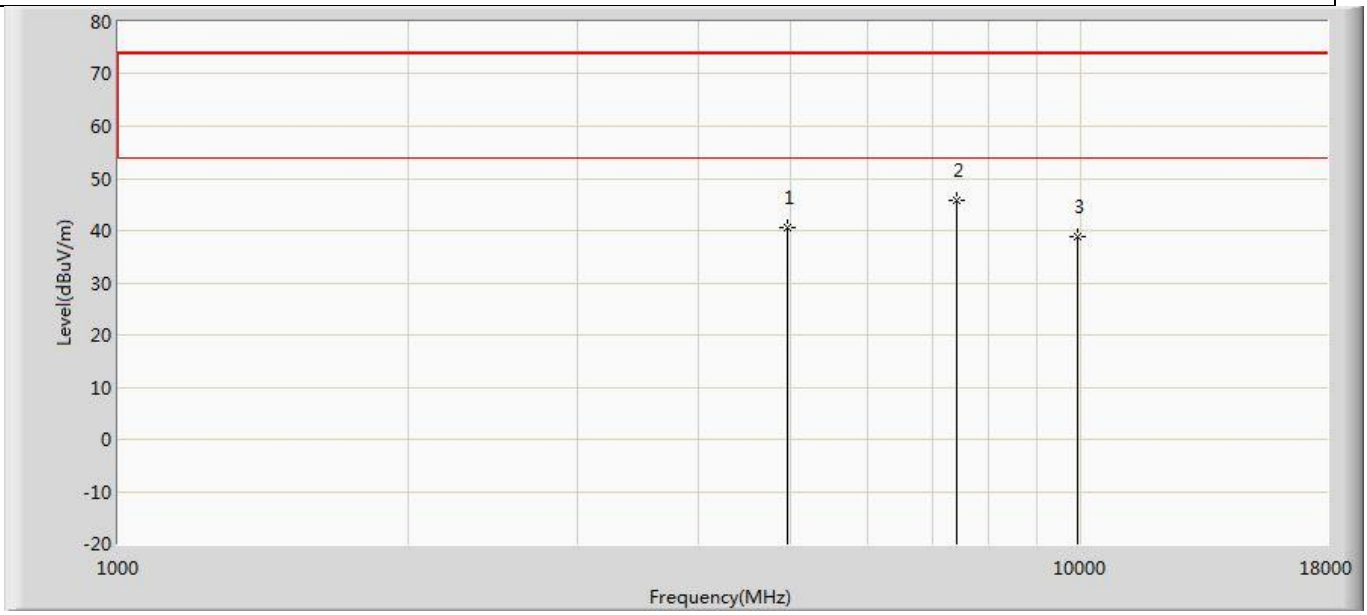
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.142	47.073	-33.858	74.000	-6.931	PK
2	*	7320.000	48.257	50.969	-25.743	74.000	-2.711	PK
3		9760.000	40.820	40.411	-33.180	74.000	0.409	PK

Profile: 2140095R	Page No.: 47
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 3:Transmit at 2480MHz by LE_Coded S=2	



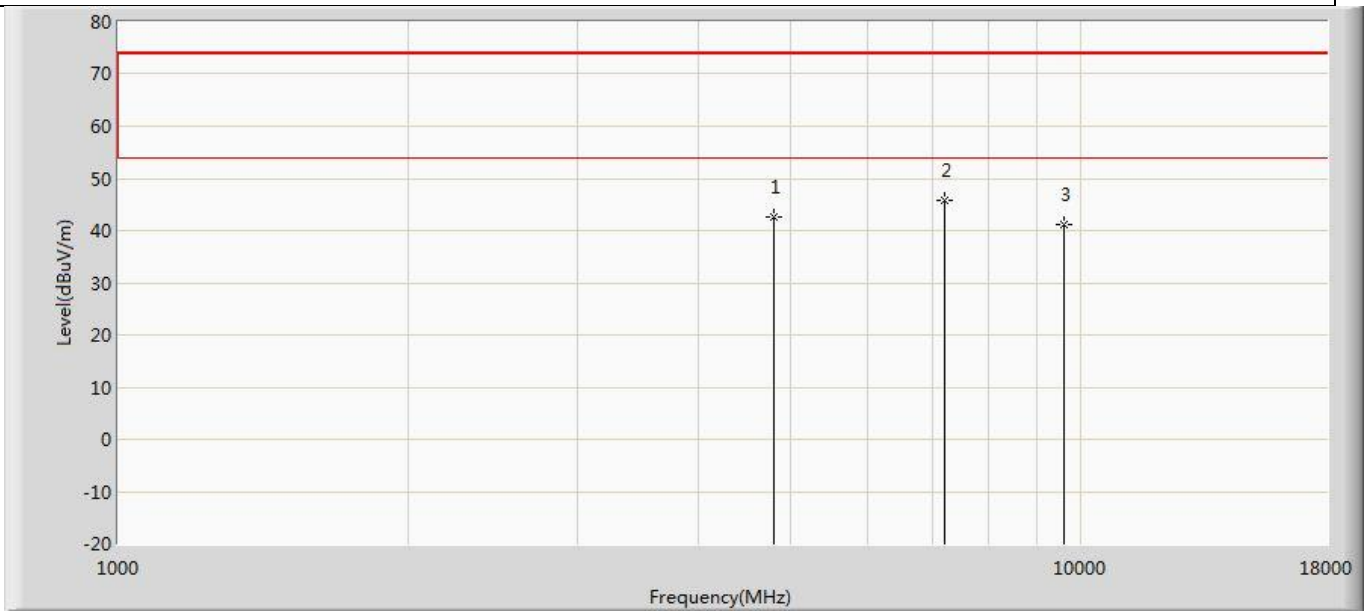
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	41.151	47.755	-32.849	74.000	-6.605	PK
2	*	7440.000	42.140	44.779	-31.860	74.000	-2.639	PK
3		9920.000	39.137	39.683	-34.863	74.000	-0.546	PK

Profile: 2140095R	Page No.: 48
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 2480MHz by LE_Coded S=2	



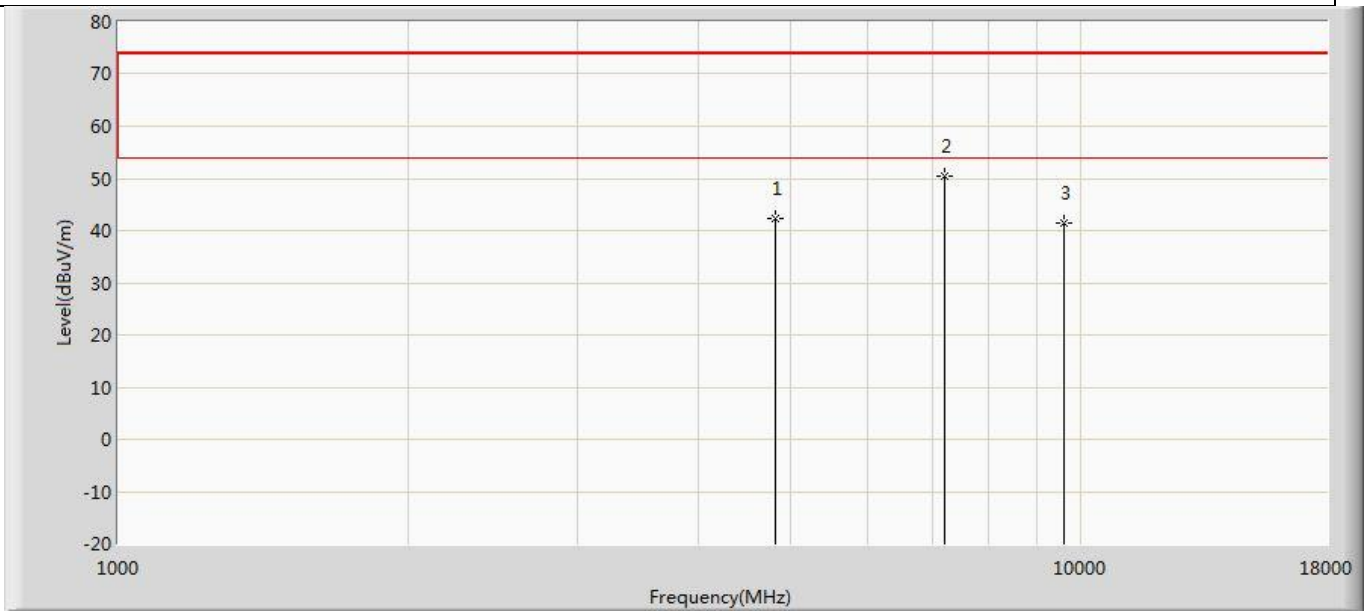
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.672	47.276	-33.328	74.000	-6.605	PK
2	*	7440.000	45.869	48.508	-28.131	74.000	-2.639	PK
3		9920.000	38.827	39.373	-35.173	74.000	-0.546	PK

Profile: 2140095R	Page No.: 49
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 4:Transmit at 2402MHz by LE_Coded S=8	



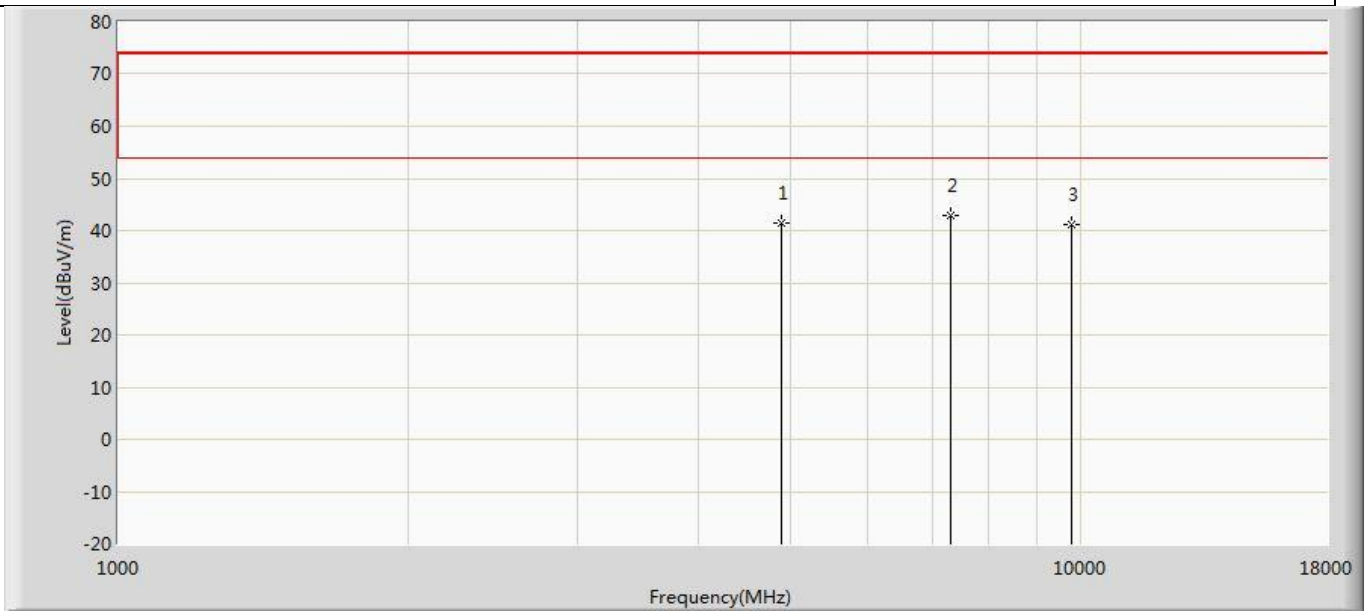
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4799.500	42.594	49.736	-31.406	74.000	-7.142	PK
2	*	7205.000	45.669	48.319	-28.331	74.000	-2.650	PK
3		9608.000	41.130	41.220	-32.870	74.000	-0.089	PK

Profile: 2140095R	Page No.: 50
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 2402MHz by LE_Coded S=8	



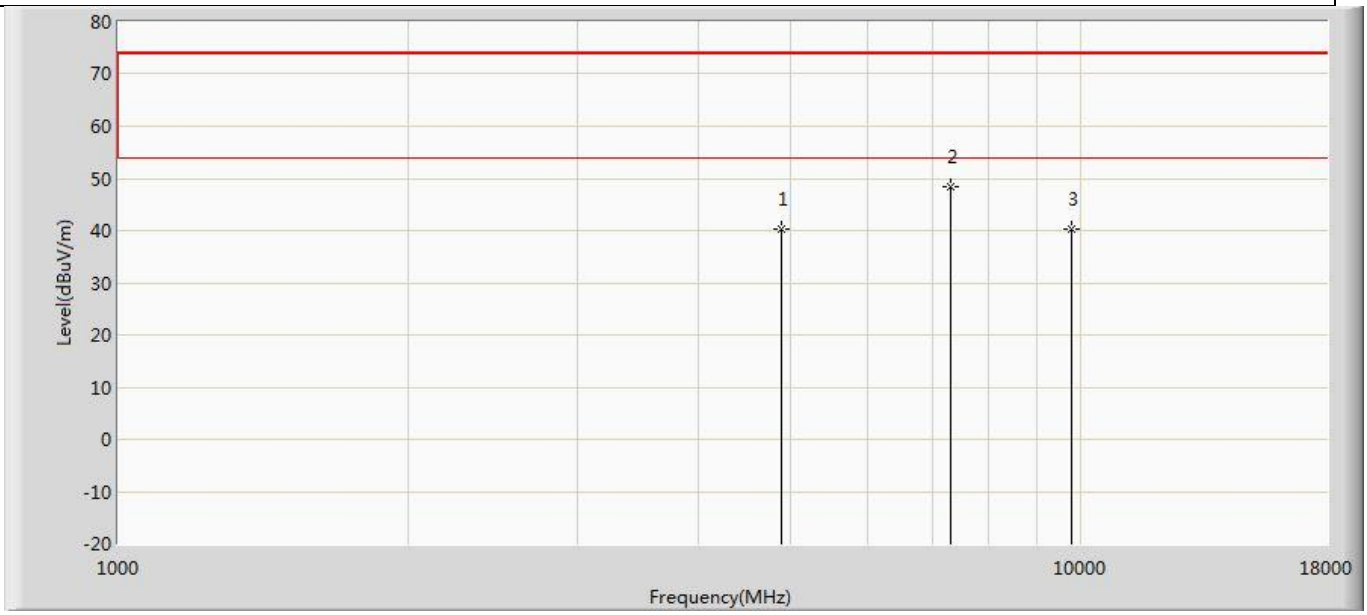
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4808.000	42.409	49.523	-31.591	74.000	-7.114	PK
2	*	7205.000	50.357	53.007	-23.643	74.000	-2.650	PK
3		9608.000	41.433	41.523	-32.567	74.000	-0.089	PK

Profile: 2140095R	Page No.: 51
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 4:Transmit at 2440MHz by LE_Coded S=8	



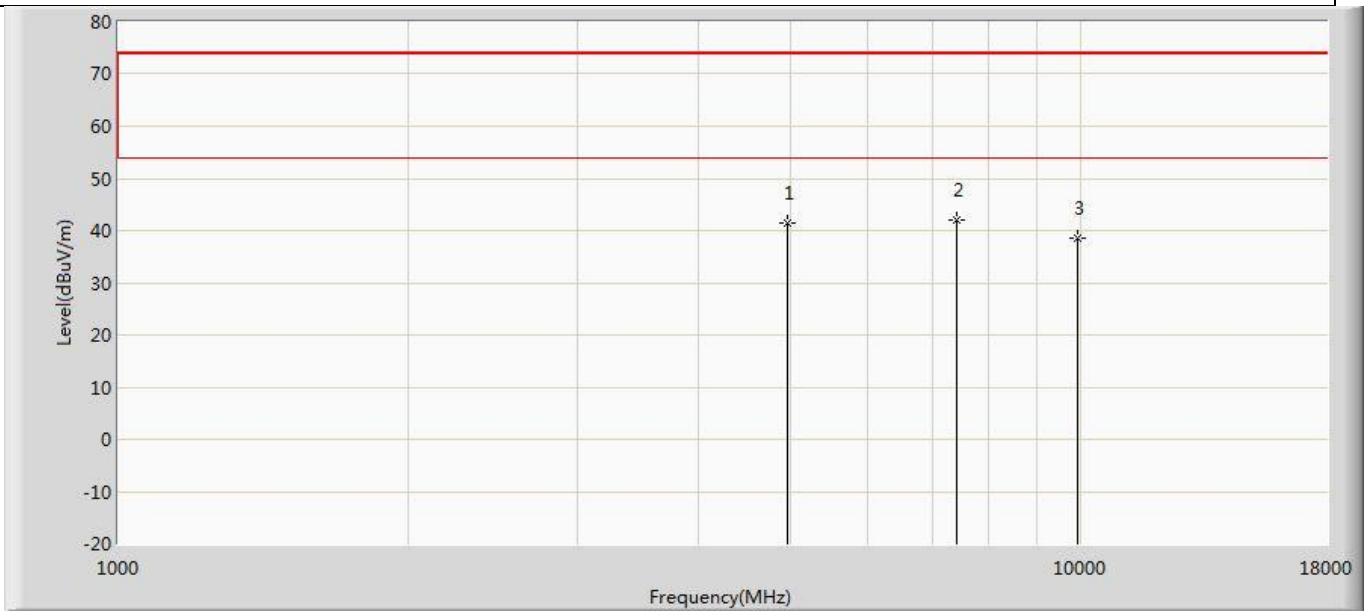
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	41.311	48.242	-32.689	74.000	-6.931	PK
2	*	7320.000	42.777	45.489	-31.223	74.000	-2.711	PK
3		9760.000	41.292	40.883	-32.708	74.000	0.409	PK

Profile: 2140095R	Page No.: 52
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 2440MHz by LE_Coded S=8	



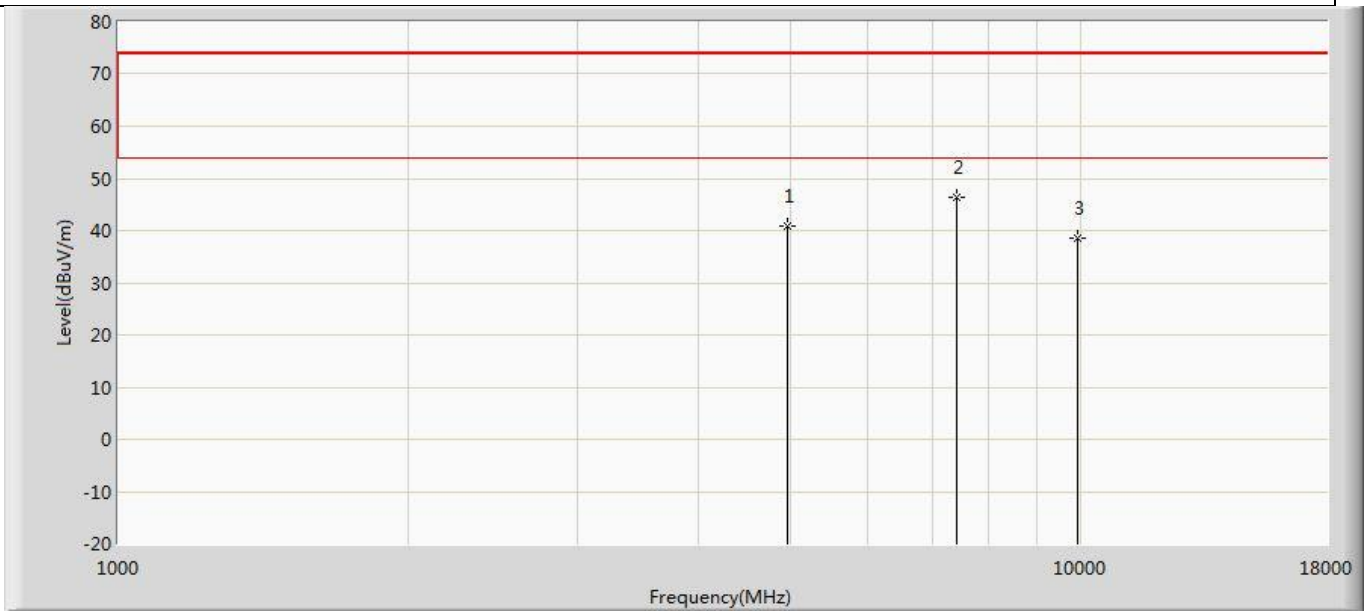
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.167	47.098	-33.833	74.000	-6.931	PK
2	*	7320.000	48.411	51.123	-25.589	74.000	-2.711	PK
3		9760.000	40.375	39.966	-33.625	74.000	0.409	PK

Profile: 2140095R	Page No.: 53
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 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	41.583	48.187	-32.417	74.000	-6.605	PK
2	*	7440.000	42.089	44.728	-31.911	74.000	-2.639	PK
3		9920.000	38.591	39.137	-35.409	74.000	-0.546	PK

Profile: 2140095R	Page No.: 54
Engineer: Tongben	
Site: AC5	Time: 2021/04/15 - 11:51
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 2480MHz by LE_Coded S=8	

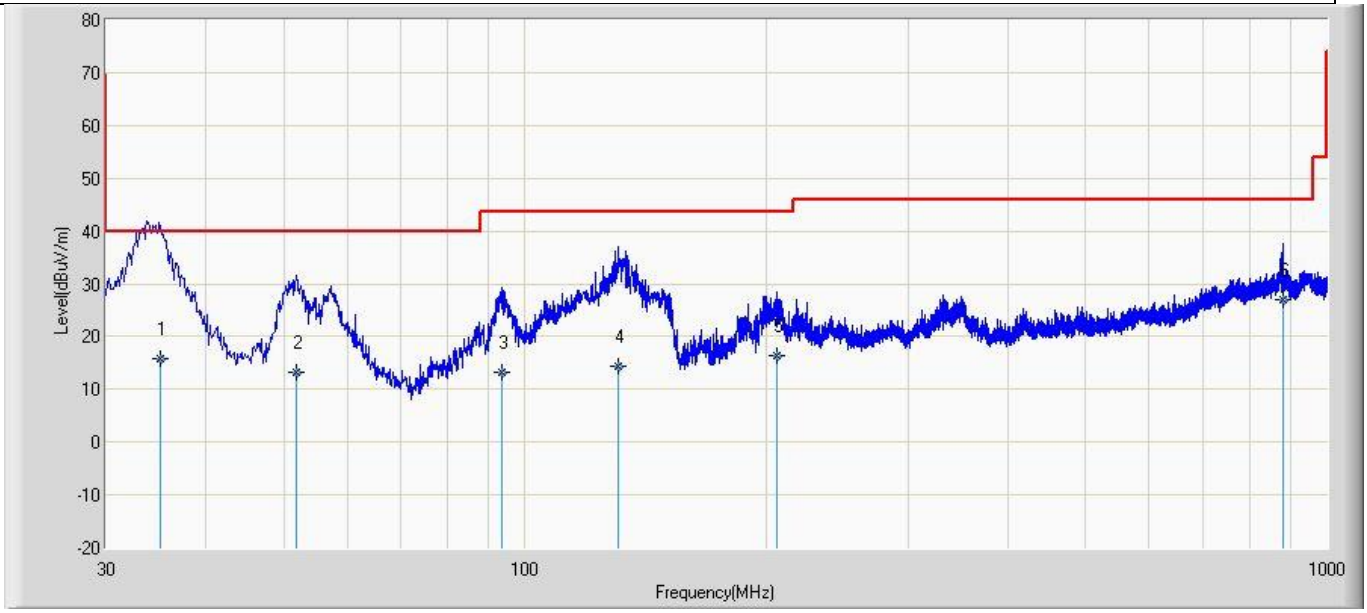


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.876	47.480	-33.124	74.000	-6.605	PK
2	*	7440.000	46.435	49.074	-27.565	74.000	-2.639	PK
3		9920.000	38.545	39.091	-35.455	74.000	-0.546	PK

Note:
1. " * ", means this data is the worst emission by LEvel.
2. Measurement By LEvel = Reading Level + Factor(Probe+Cabby LE-Amp).
3. The test frequency range, 9kHz~30MHz and Above 18GHz worst case are at by LEast 6dB below the limits, 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.

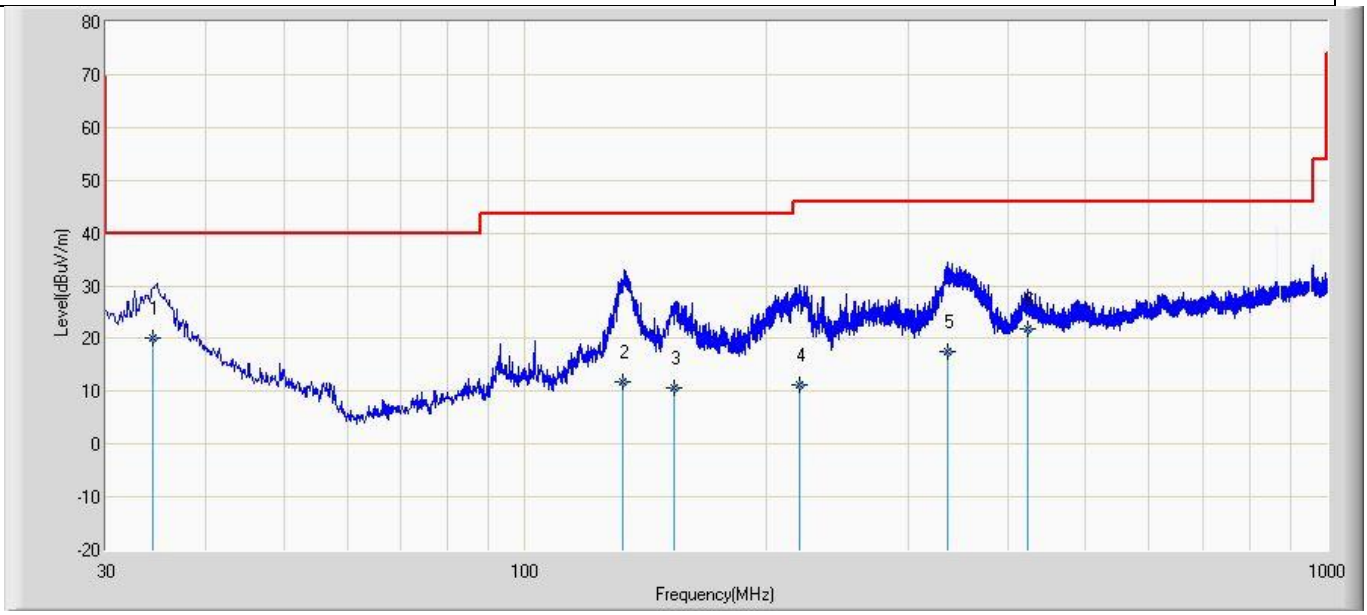
The worst case of Radiated Emission below 1GHz:

Profile: 2140095R	Page No.: 7
Engineer: Yu.Liu	
Site: AC3	Time: 2021/04/19 - 19:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC3_3m (30-1000MHz)	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)	Ant Pos (cm)	Table Pos (deg)	Type
1		34.998	15.830	-6.520	-24.170	40.000	22.350	100	42	QP
2		51.836	13.125	-4.520	-26.875	40.000	17.644	100	49	QP
3		93.444	13.322	-5.660	-30.178	43.500	18.982	100	73	QP
4		130.662	14.333	-6.520	-29.167	43.500	20.853	100	41	QP
5		206.112	16.509	-6.520	-26.991	43.500	23.028	100	321	QP
6	*	880.110	27.046	-5.600	-18.954	46.000	32.647	100	43	QP

Profile: 2140095R	Page No.: 8
Engineer: Yu.Liu	
Site: AC3	Time: 2021/04/19 - 19:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC3_3m (30-1000MHz)	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)	Ant Pos (cm)	Table Pos (deg)	Type
1	*	34.332	20.005	-5.630	-19.995	40.000	25.635	100	72	QP
2		132.522	11.930	-5.410	-31.570	43.500	17.340	100	41	QP
3		153.333	10.693	-6.520	-32.807	43.500	17.213	100	12	QP
4		219.880	11.276	-6.520	-34.724	46.000	17.796	100	41	QP
5		336.788	17.515	-5.420	-28.485	46.000	22.935	100	73	QP
6		423.650	21.828	-5.410	-24.172	46.000	27.238	100	98	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

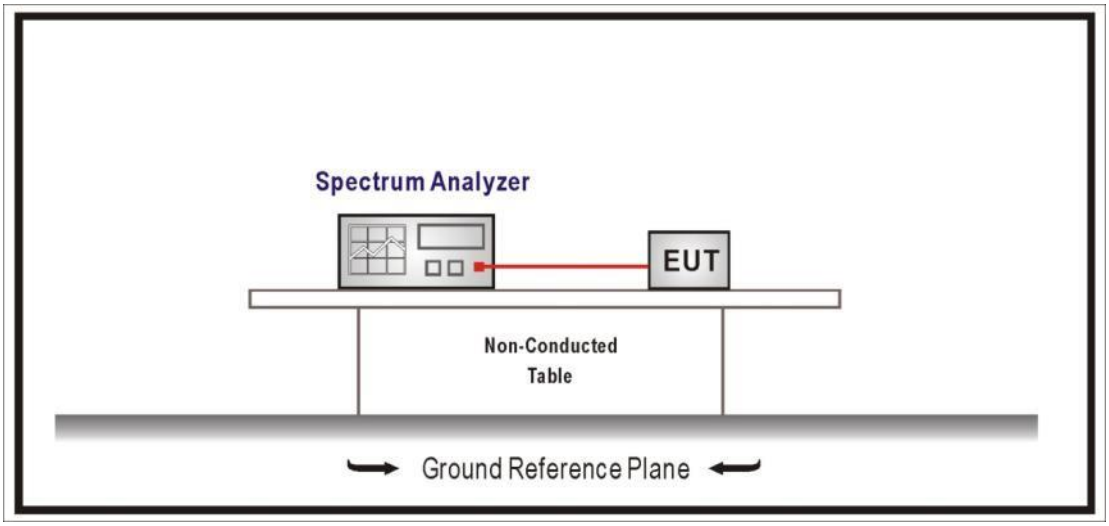
4.3.1 Limit

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)

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 by LEast 30 dB relative to the maximum in-band peak PSD by 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 by LEast 20 dB relative to the maximum in-band peak PSD by LEvel in 100 kHz (i.e., 20 dBc).

4.3.2 Test Setup

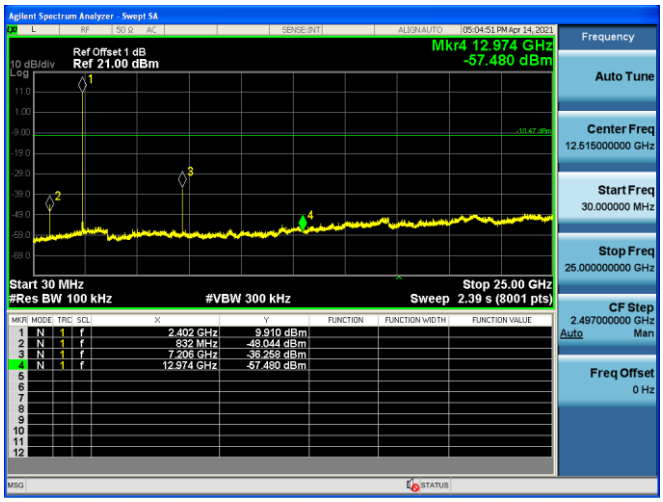


4.3.3 Test Procedure

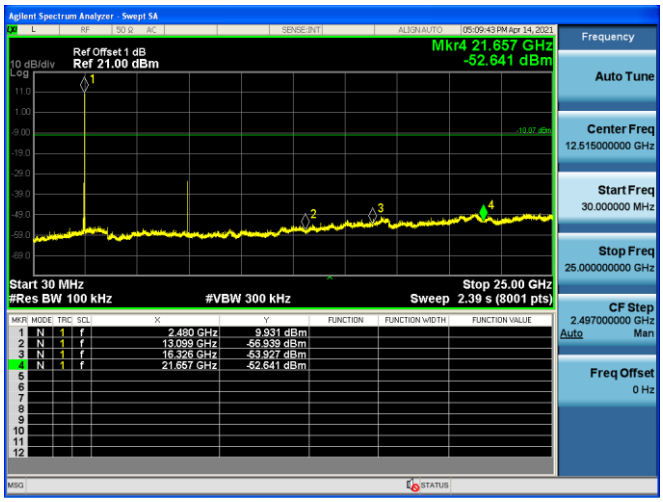
References Ruby LE			Chapter	Description
☒	ANSI C63.10		11.11	Emissions in non-restricted frequency bands
	☒	ANSI C63.10	11.11.1	General
	☒	ANSI C63.10	11.11.2	Reference by LEvel measurement
	☒	ANSI C63.10	11.11.3	Emission by LEvel measurement

4.3.4 Test Data

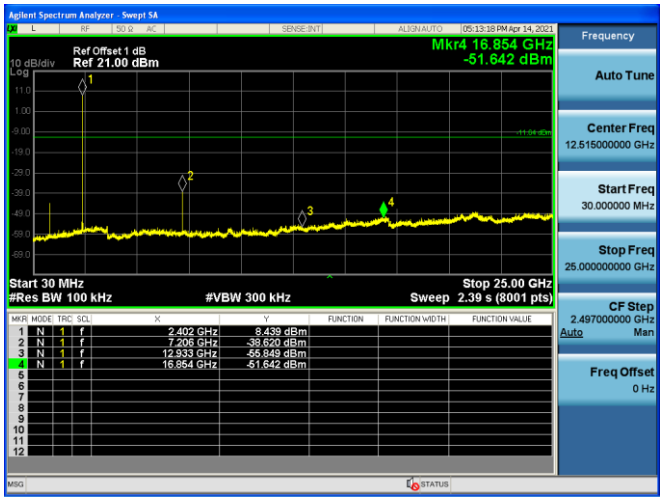
Mode 1 CH37 (2402MHz)



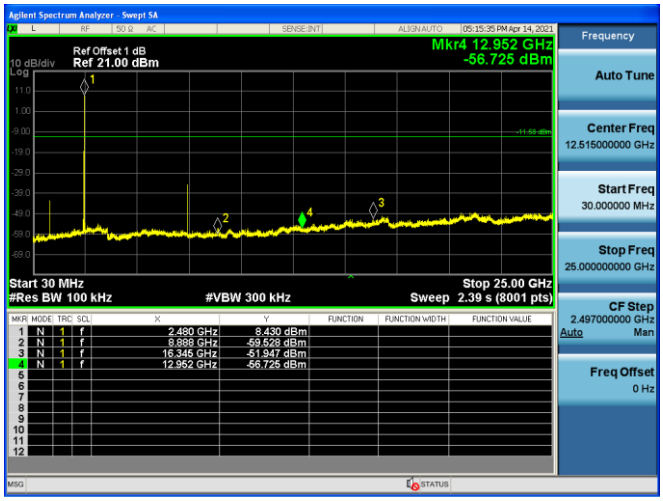
Mode 1 CH39 (2480MHz)



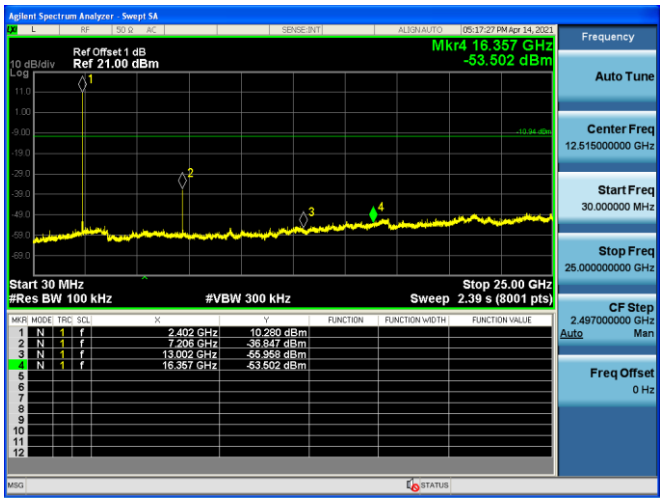
Mode 2 CH37 (2402MHz)



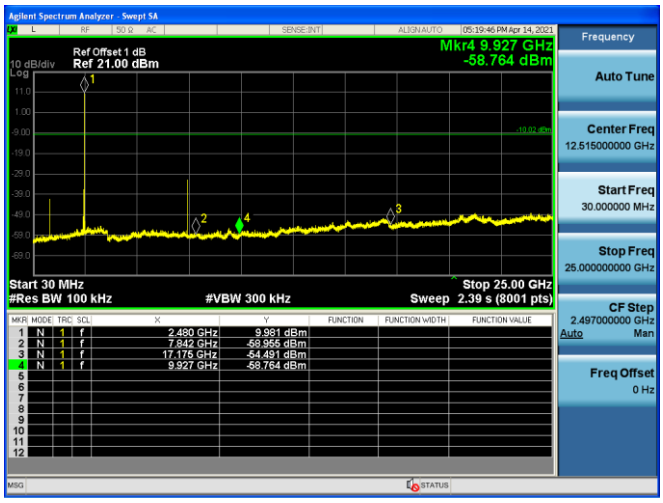
Mode 2 CH39 (2480MHz)



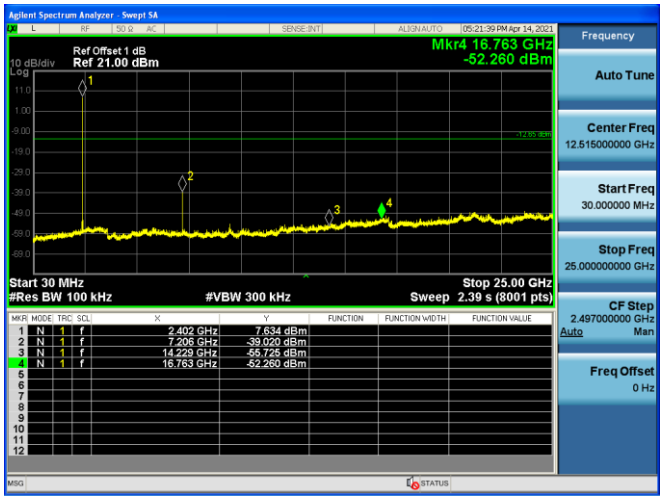
Mode 3 CH37 (2402MHz)



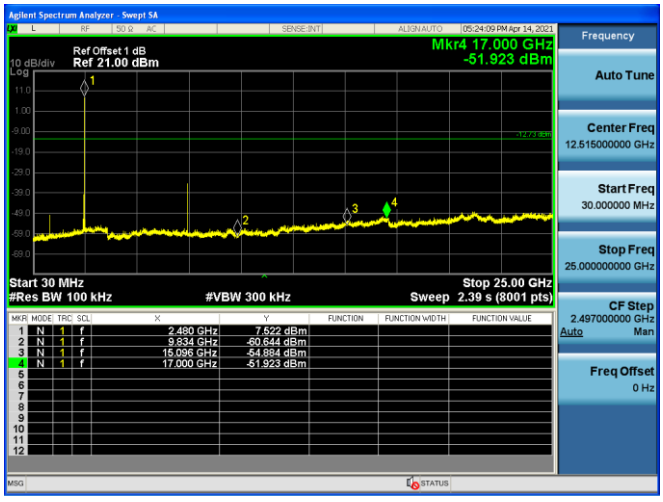
Mode 3 CH39 (2480MHz)



Mode 4 CH37 (2402MHz)



Mode 4 CH39 (2480MHz)

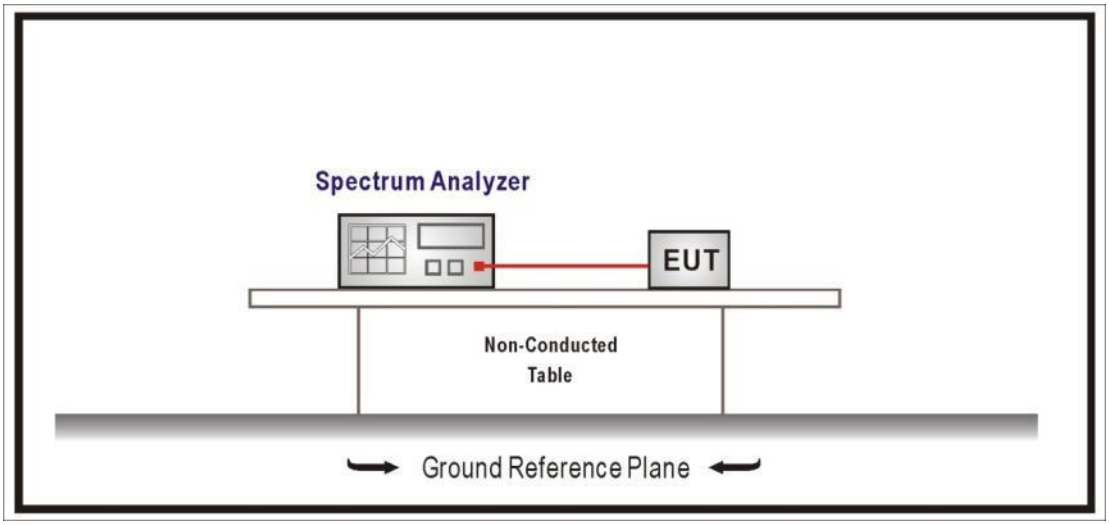


4.4 Duty cycle	VERDICT: PASS

4.4.1 Limit

N/A

4.4.2 Test Setup



4.4.3 Test Procedure

References Ruby LE		Chapter	Description
☒	ANSI C63.10	11.6	Duty cycle (D), transmission duration (T), and maximum power control by LEvel

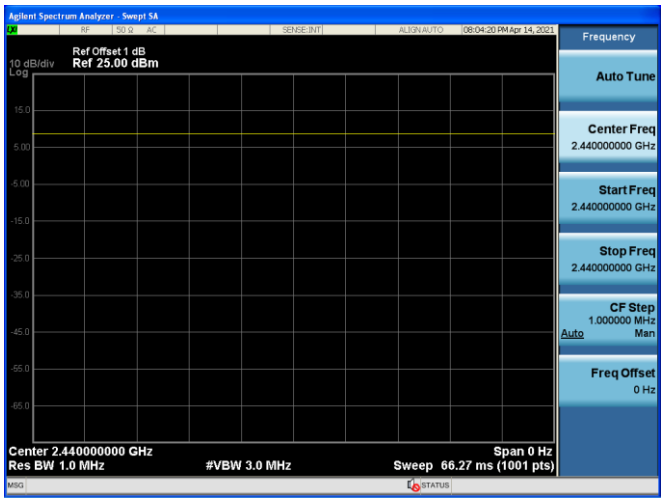
4.4.4 Test Data

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

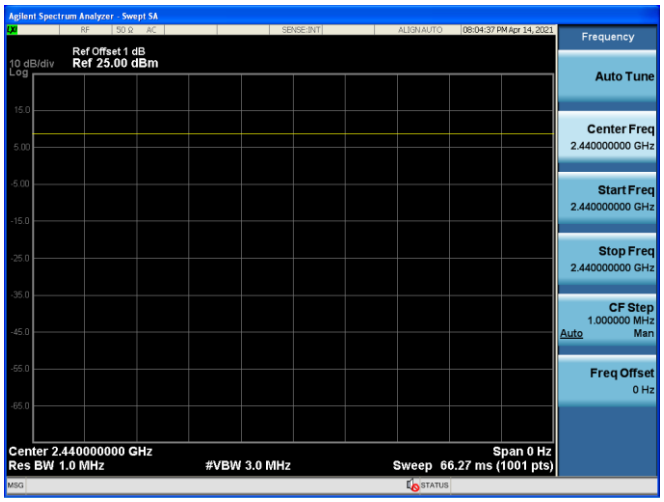
Note 1: T means the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control Level for the tested mode of operation.

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

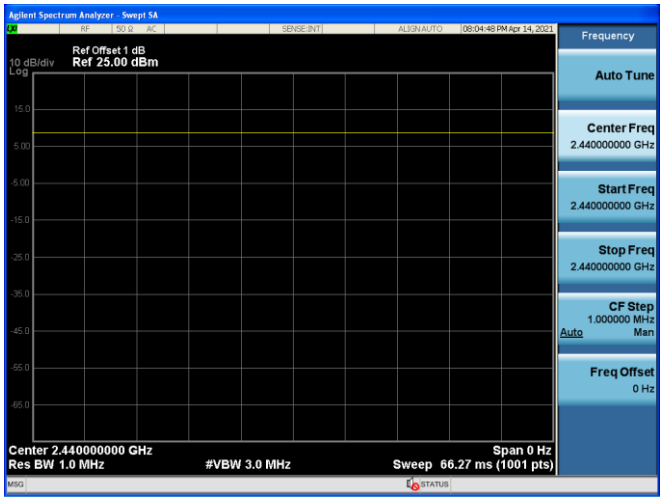
Mode 1 CH18 2440MHz



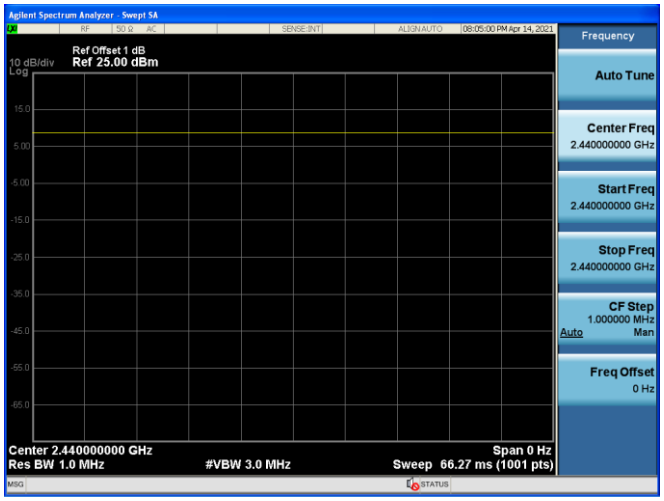
Mode 2 CH18 2440MHz



Mode 3 CH18 2440MHz



Mode 4 CH18 2440MHz



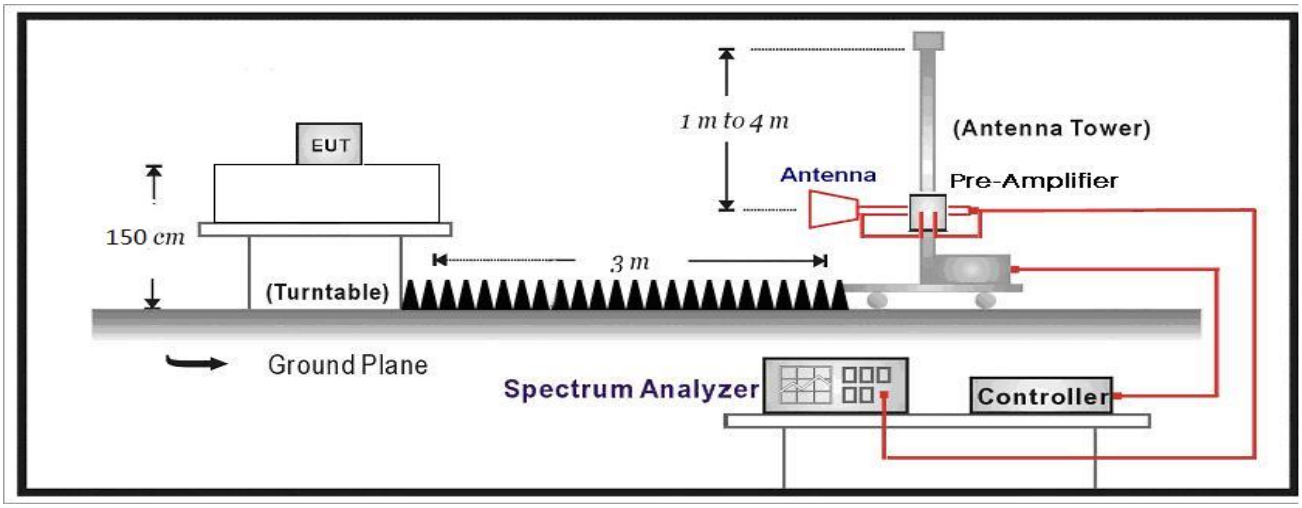
4.5 Radiated Emission Band Edge — VERDICT: PASS

4.5.1 Limit

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

4.5.2 Test Setup

Above 1GHz Test Setup:

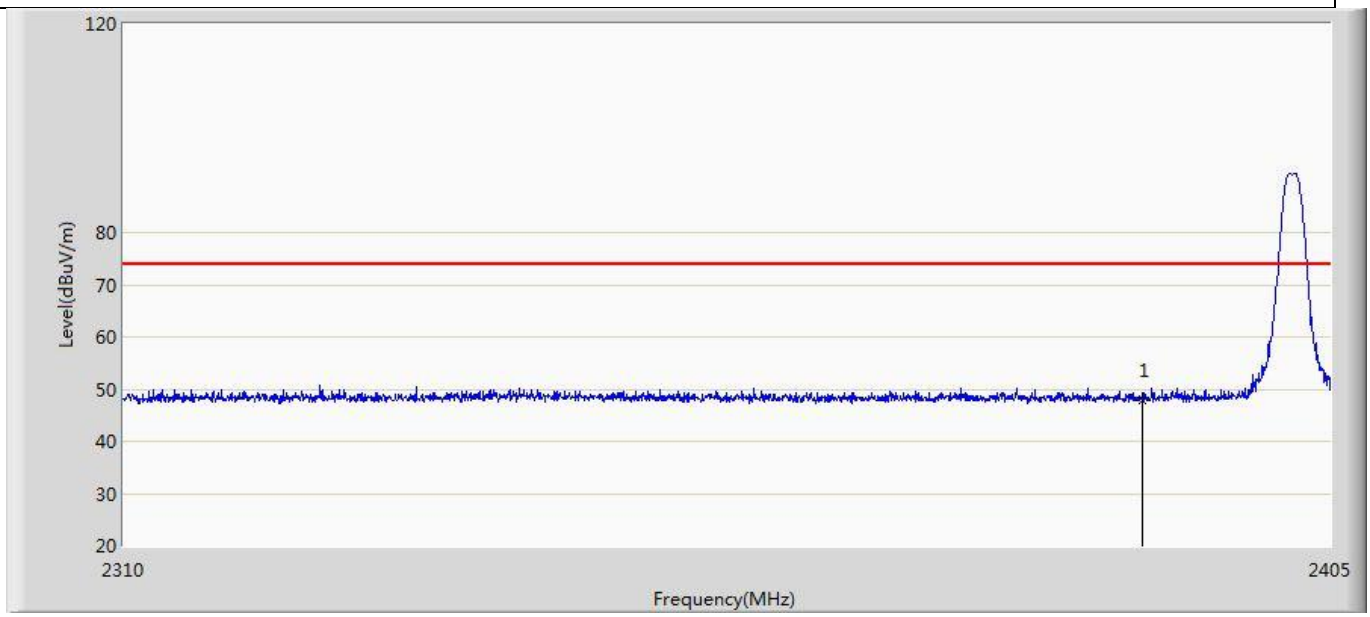


4.5.3 Test Procedure

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

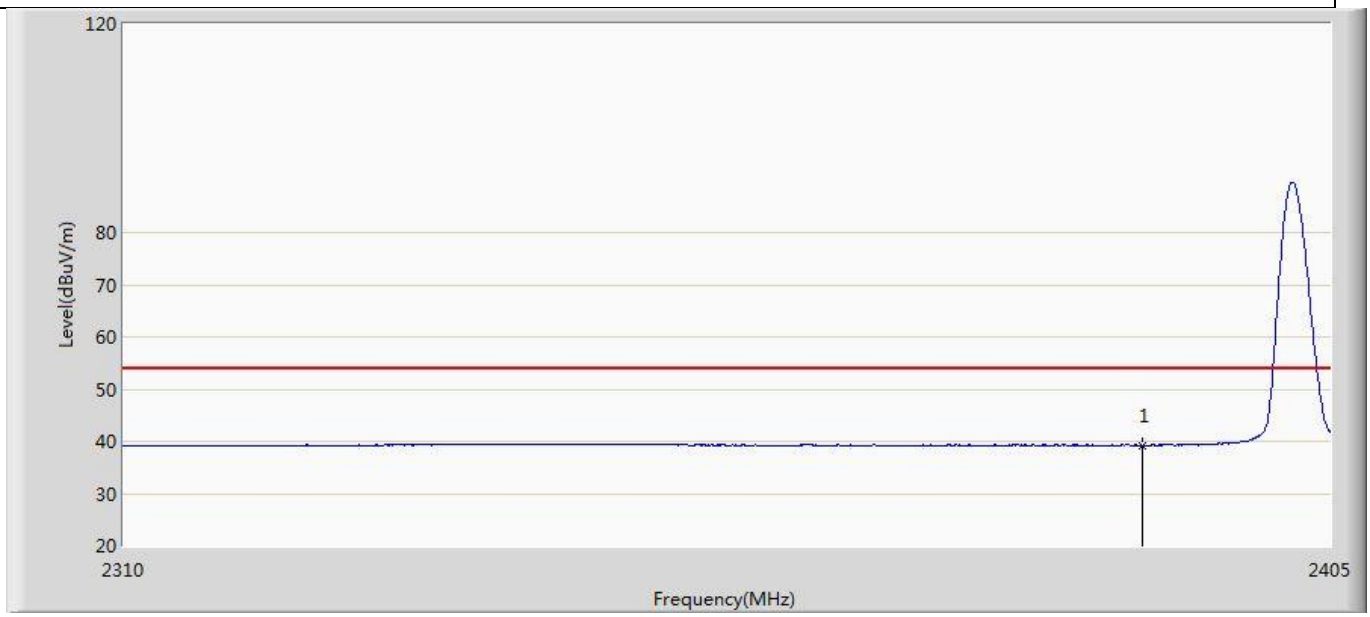
4.5.4 Test Data

Profile: 2140095R	Page No.: 2
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 20:05
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 2402MHz by LE_1Mbps	



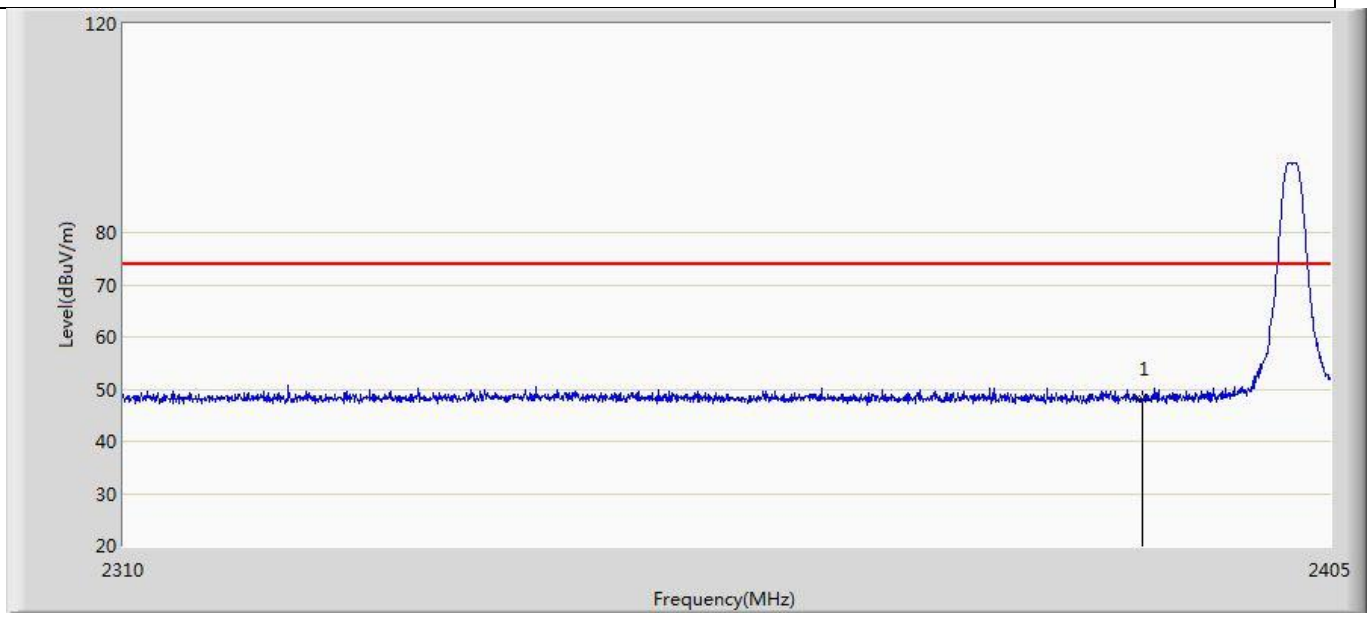
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	47.703	11.347	-26.297	74.000	36.357	PK

Profile: 2140095R	Page No.: 4
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 20:06
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 2402MHz by LE_1Mbps	



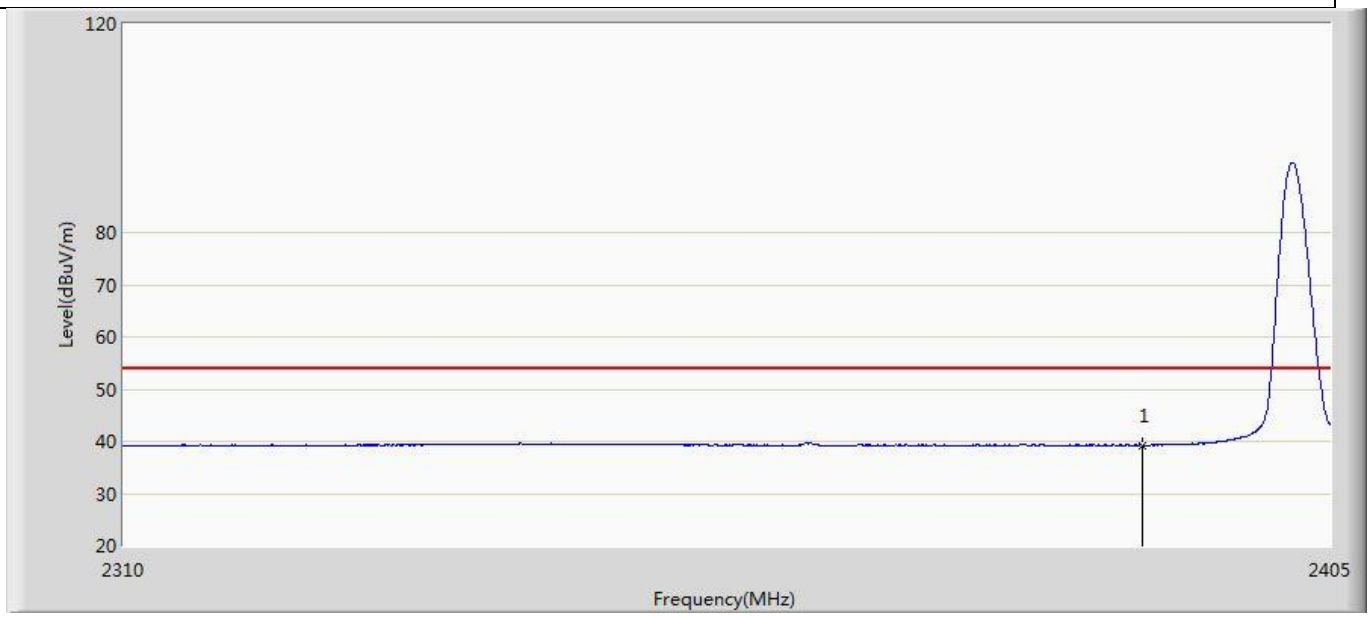
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.204	2.848	-14.796	54.000	36.357	AV

Profile: 2140095R	Page No.: 6
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 20:13
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 1:Transmit at 2402MHz by LE_1Mbps	



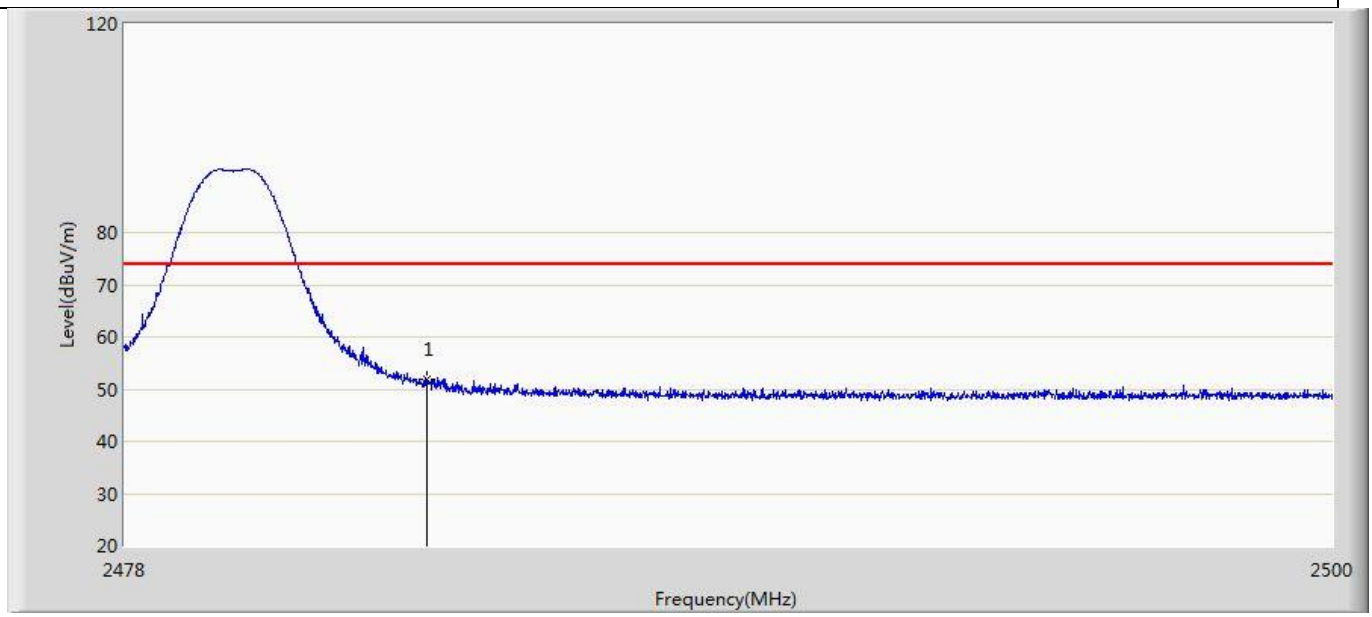
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	48.118	11.762	-25.882	74.000	36.357	PK

Profile: 2140095R	Page No.: 8
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 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 1:Transmit at 2402MHz by LE_1Mbps	



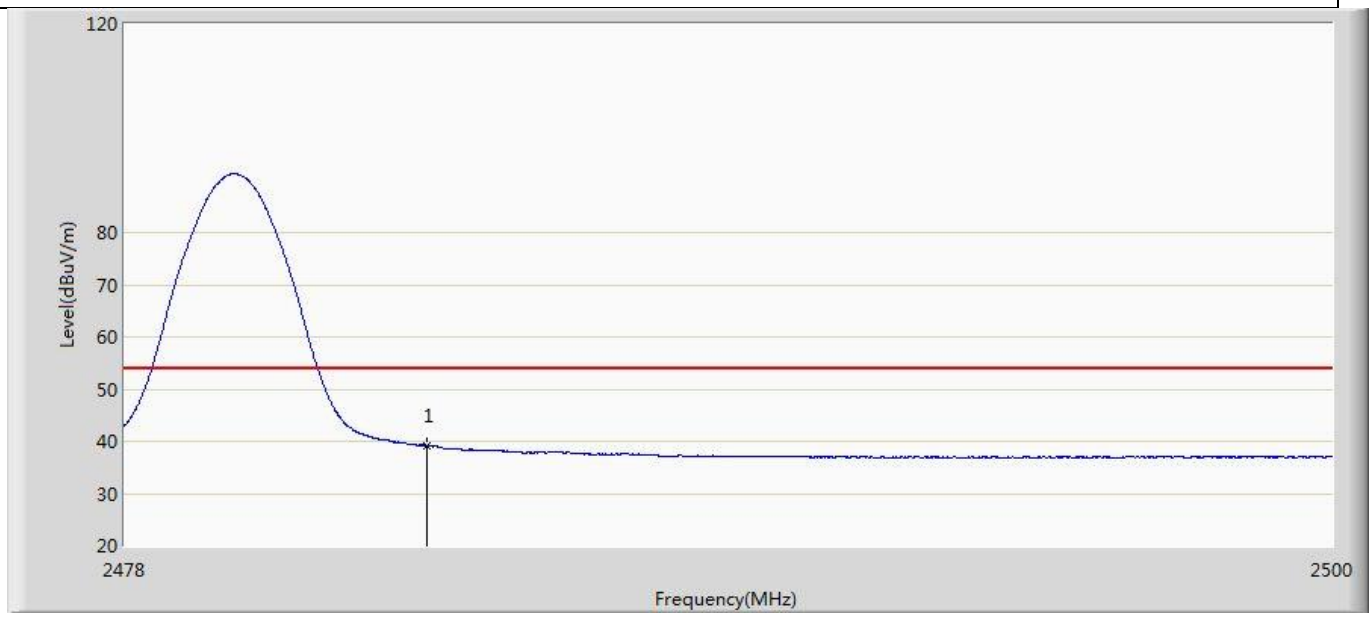
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.259	2.903	-14.741	54.000	36.357	AV

Profile: 2140095R	Page No.: 34
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:35
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 2480MHz by LE_1Mbps	



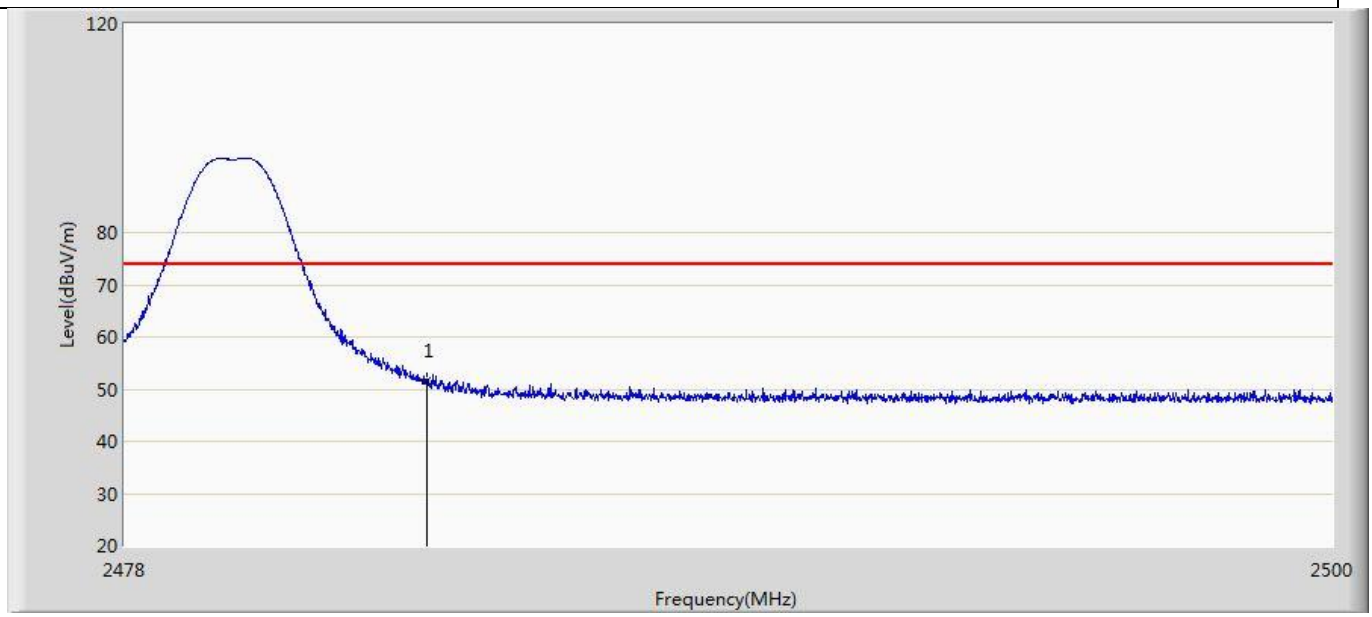
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	51.954	15.550	-22.046	74.000	36.404	PK

Profile: 2140095R	Page No.: 36
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:38
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 1:Transmit at 2480MHz by LE_1Mbps	



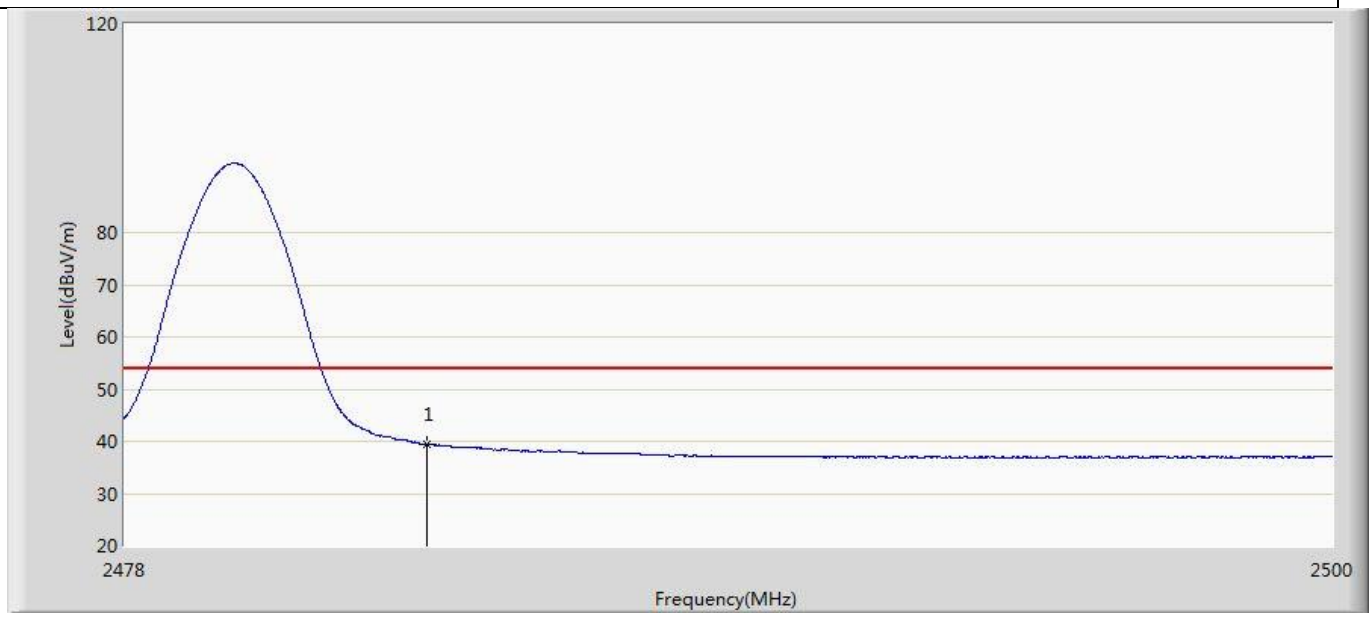
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	39.061	2.657	-14.939	54.000	36.404	AV

Profile: 2140095R	Page No.: 38
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:41
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 2480MHz by LE_1Mbps	



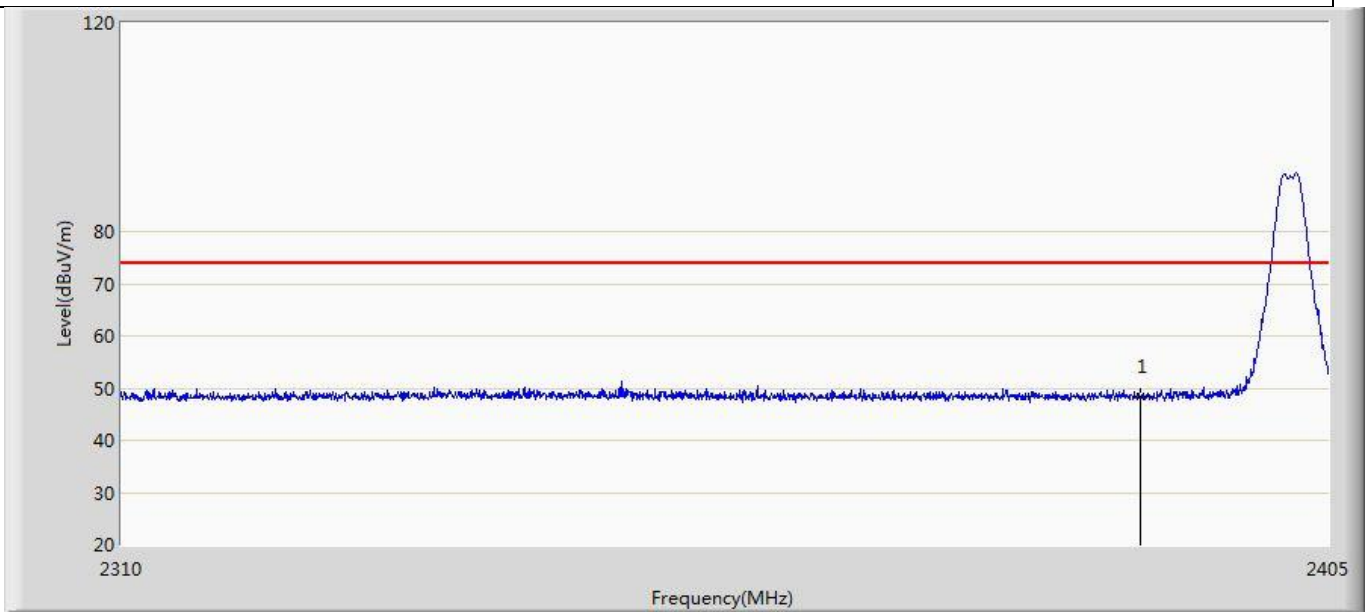
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	51.598	15.194	-22.402	74.000	36.404	PK

Profile: 2140095R	Page No.: 40
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:42
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 1:Transmit at 2480MHz by LE_1Mbps	



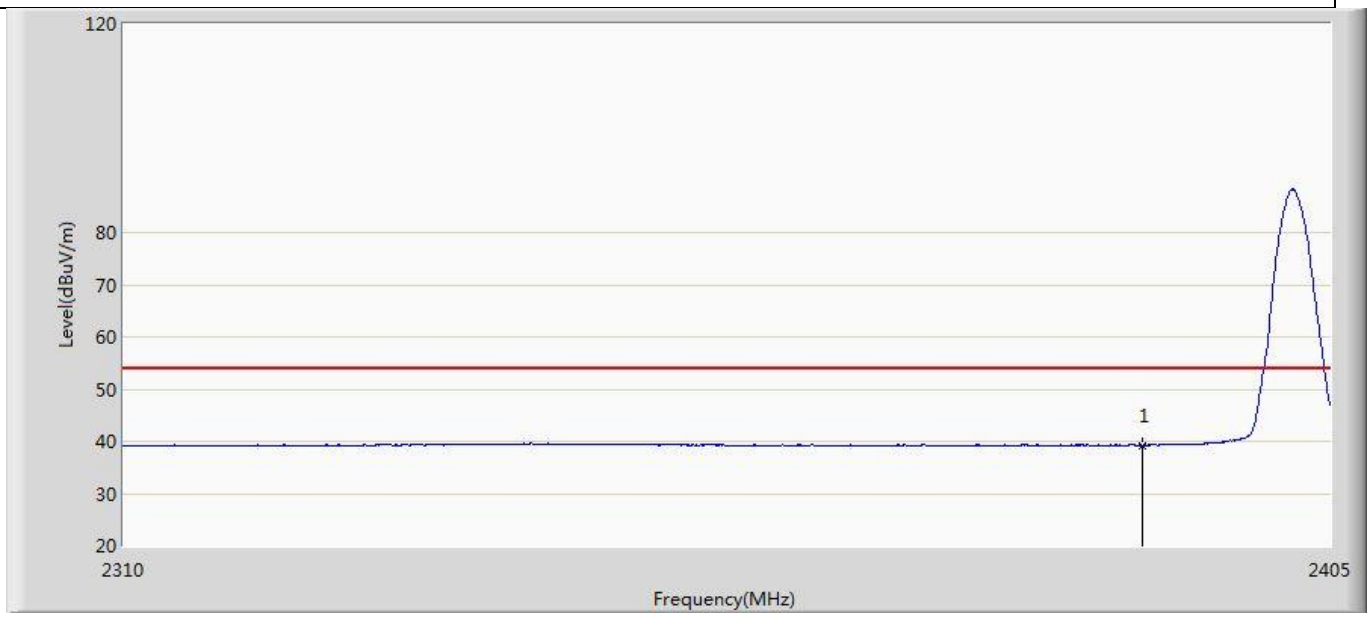
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	39.435	3.031	-14.565	54.000	36.404	AV

Profile: 2140095R	Page No.: 10
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 20:18
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 2402MHz by LE_2Mbps	



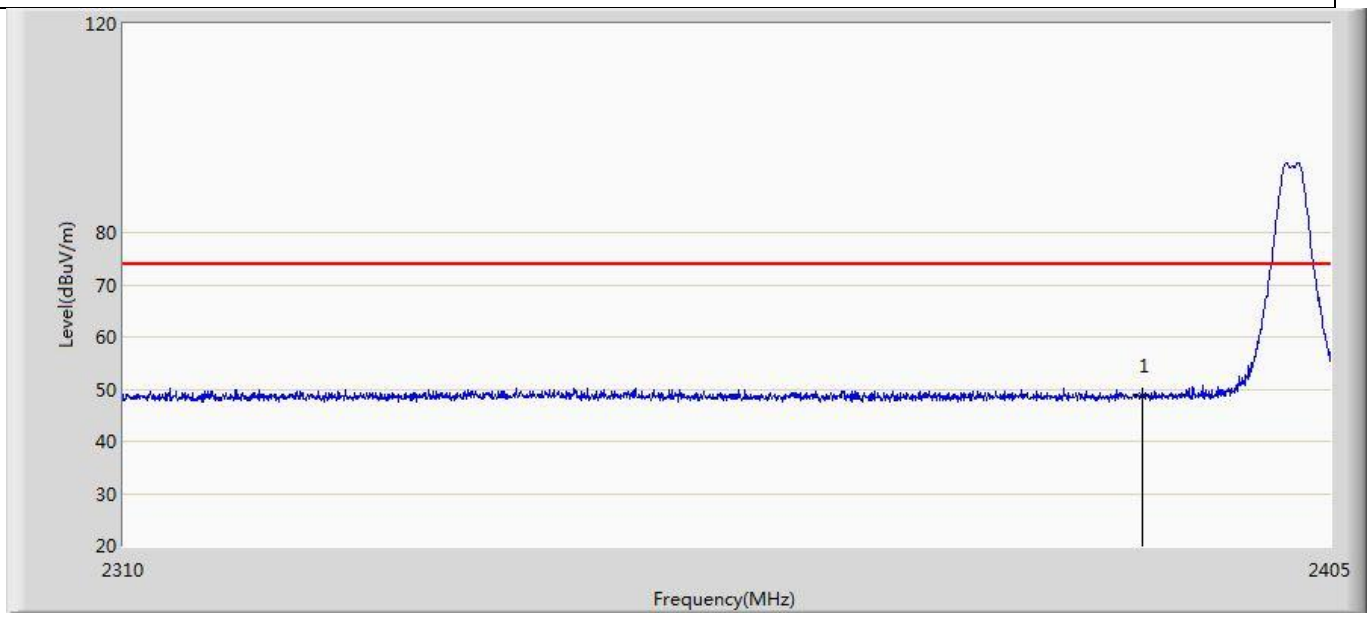
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	48.495	12.139	-25.505	74.000	36.357	PK

Profile: 2140095R	Page No.: 12
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 20:20
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 2402MHz by LE_2Mbps	



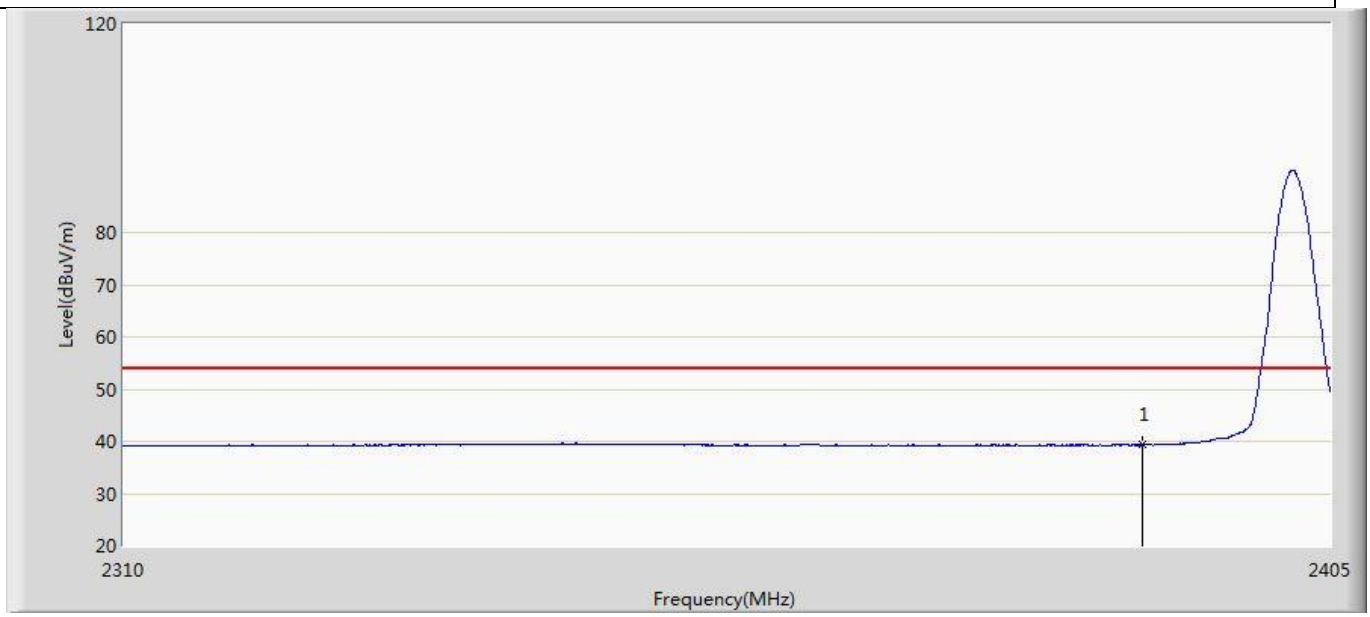
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.264	2.908	-14.736	54.000	36.357	AV

Profile: 2140095R	Page No.: 14
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 20:22
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 2402MHz by LE_2Mbps	



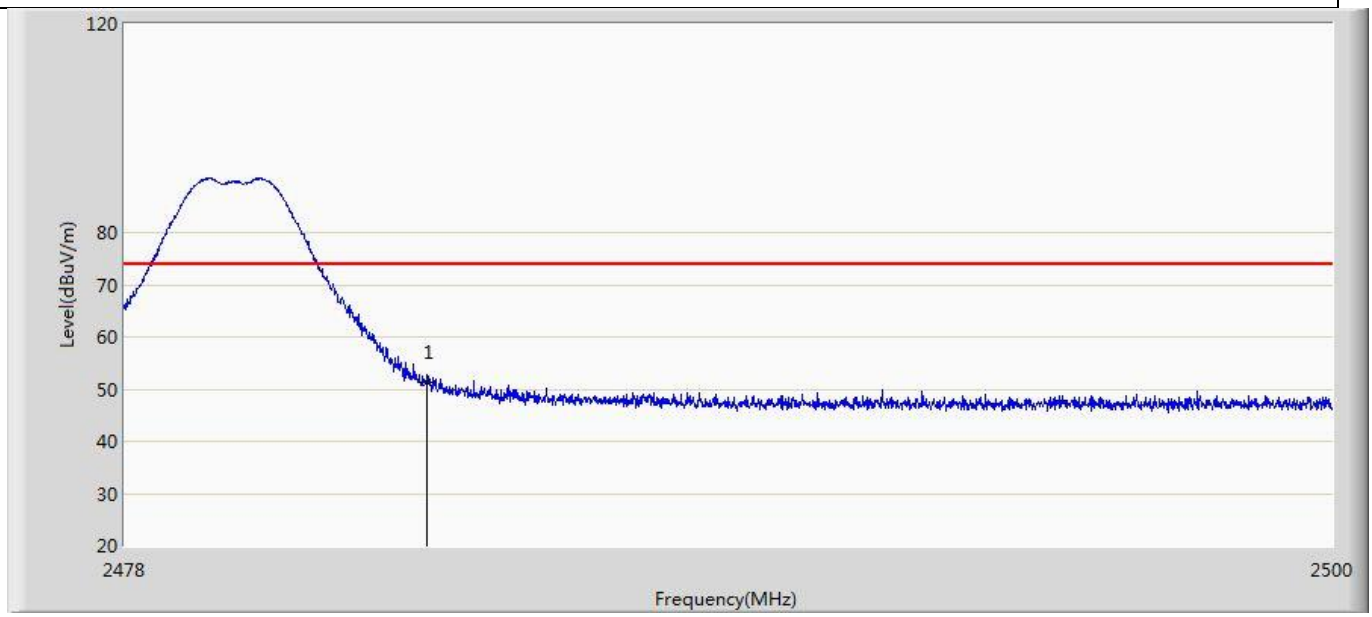
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	48.589	12.233	-25.411	74.000	36.357	PK

Profile: 2140095R	Page No.: 16
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 20:25
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 2:Transmit at 2402MHz by LE_2Mbps	



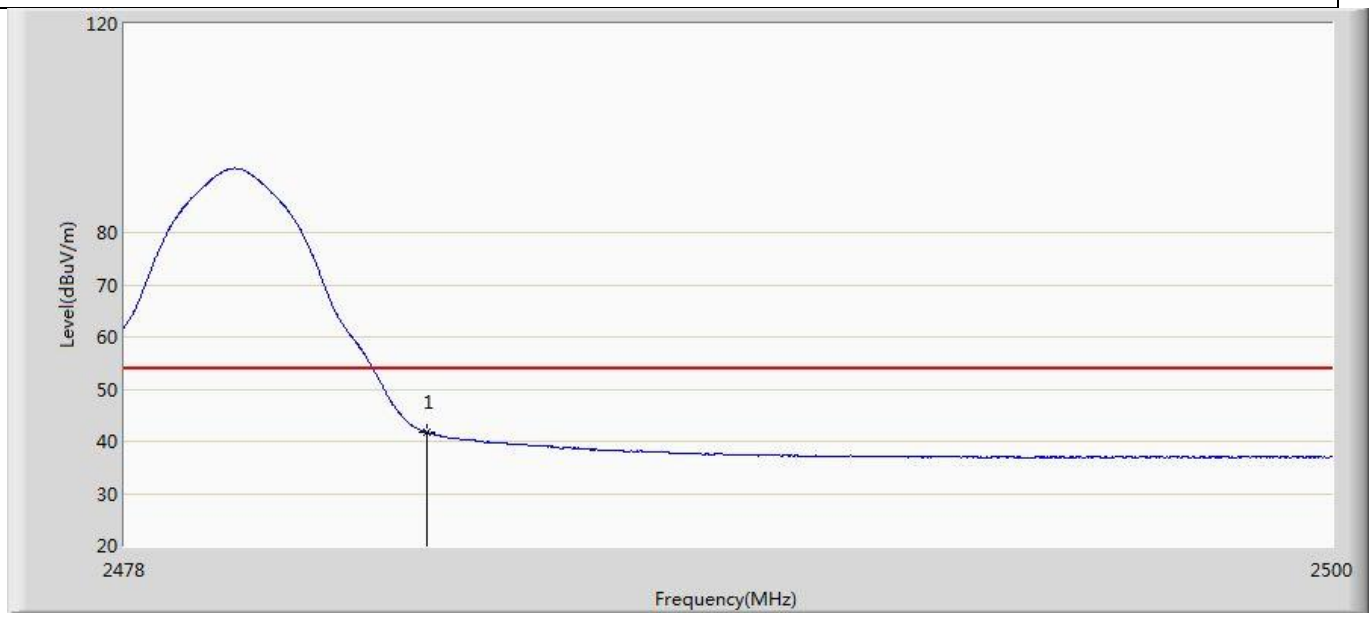
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.276	2.920	-14.724	54.000	36.357	AV

Profile: 2140095R	Page No.: 42
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 22:58
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 2480MHz by LE_2Mbps	



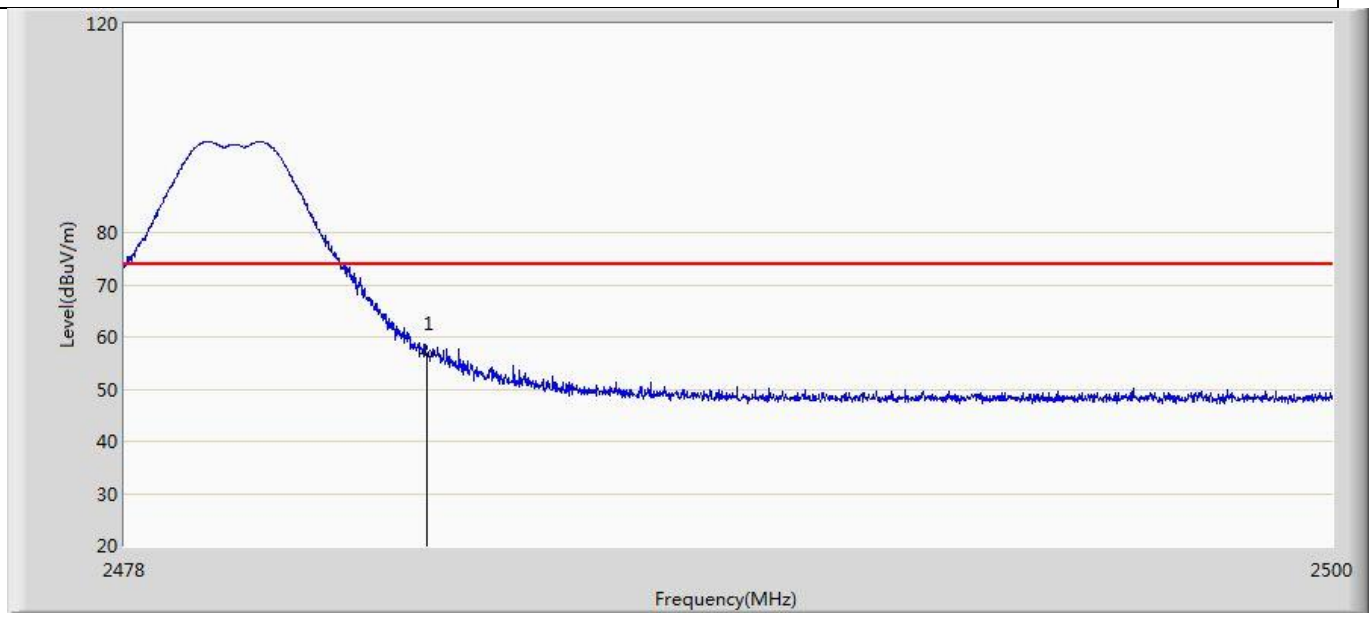
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	51.339	14.935	-22.661	74.000	36.404	PK

Profile: 2140095R	Page No.: 44
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 22:59
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 2:Transmit at 2480MHz by LE_2Mbps	



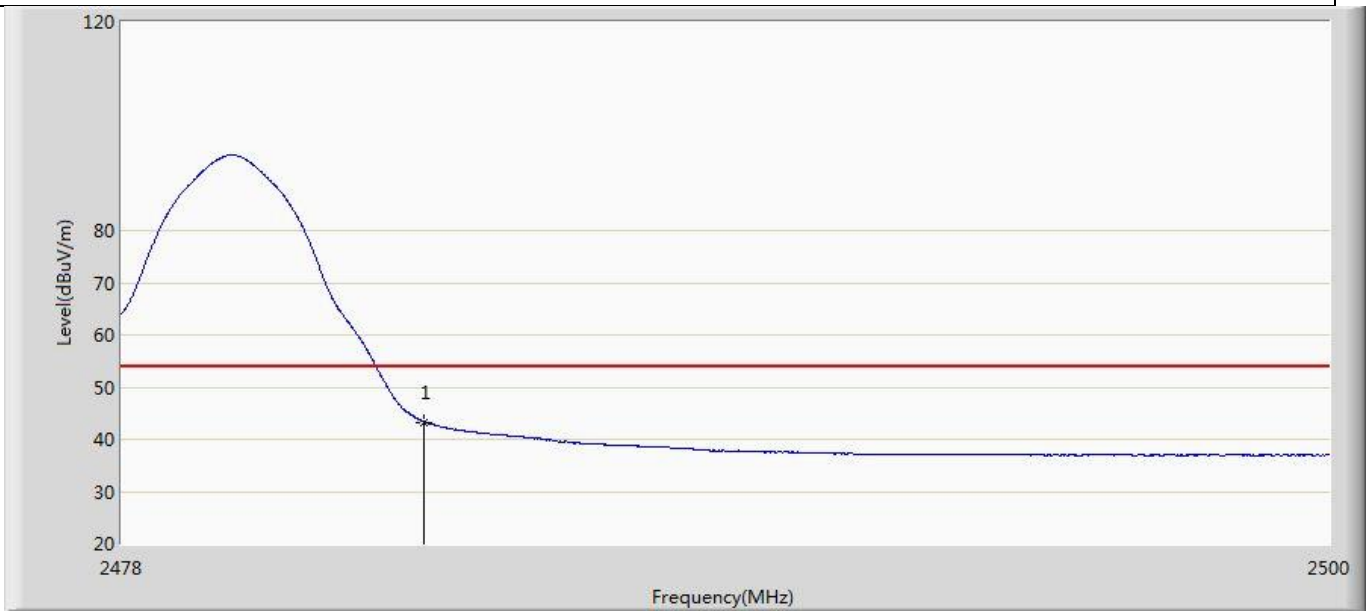
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	41.704	5.300	-12.296	54.000	36.404	AV

Profile: 2140095R	Page No.: 46
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 23:01
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 2480MHz by LE_2Mbps	



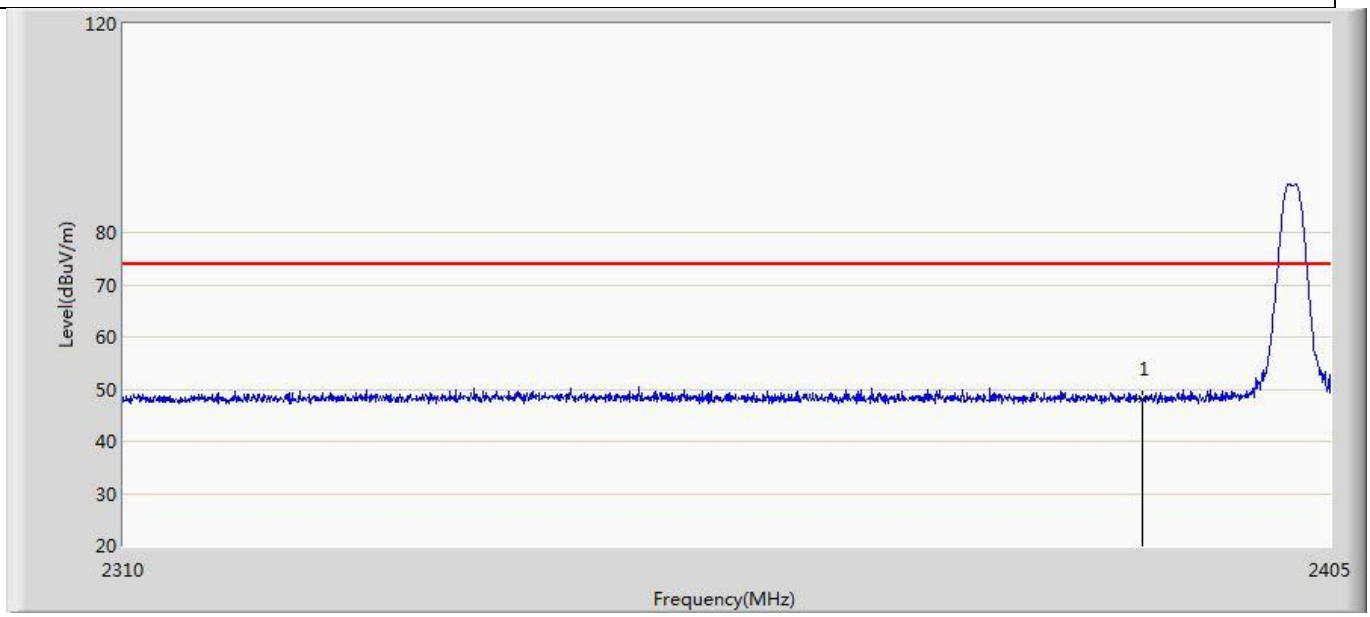
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	56.795	20.391	-17.205	74.000	36.404	PK

Profile: 2140095R	Page No.: 48
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 23:02
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 2480MHz by LE_2Mbps	



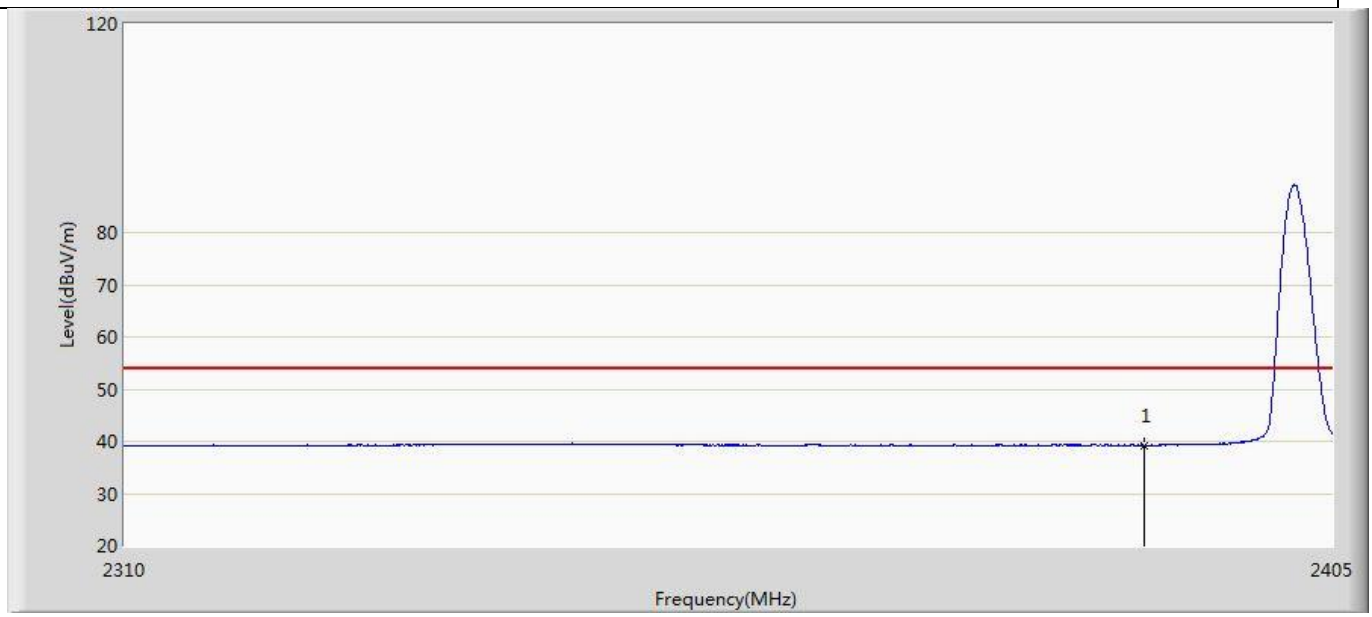
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	43.290	6.886	-10.710	54.000	36.404	AV

Profile: 2140095R	Page No.: 26
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:19
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 2402MHz by LE_Coded S=2	



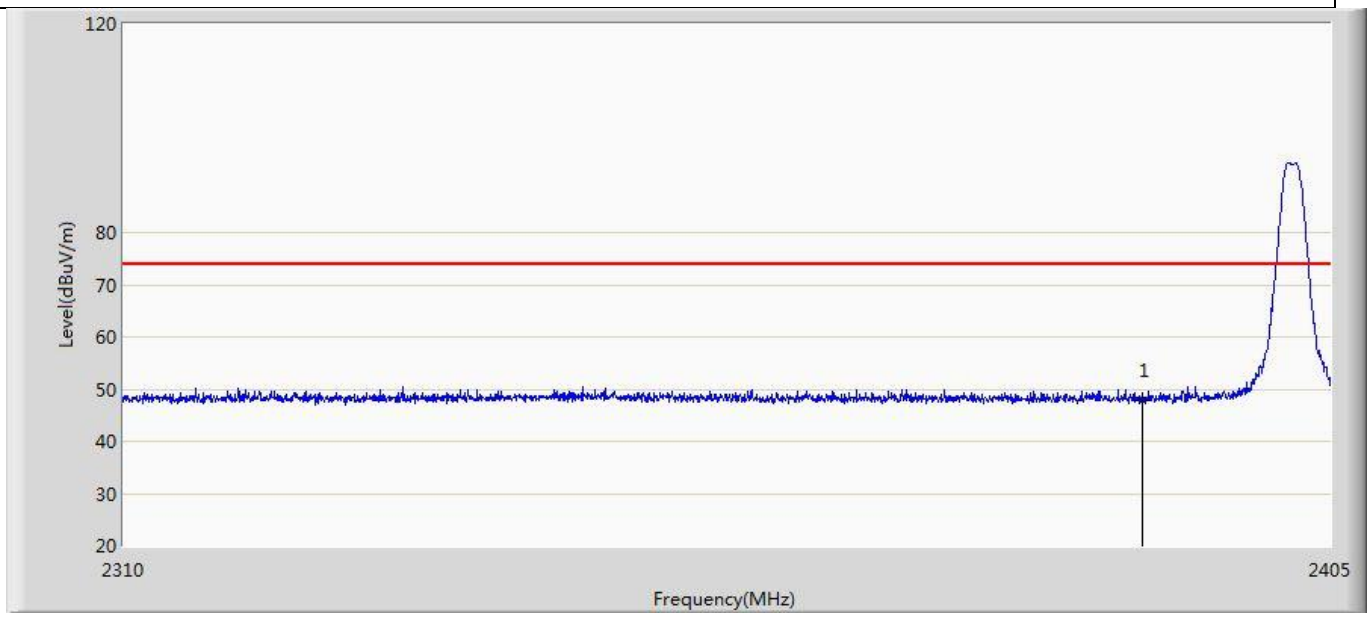
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	48.076	11.720	-25.924	74.000	36.357	PK

Profile: 2140095R	Page No.: 28
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:21
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 3:Transmit at 2402MHz by LE_Coded S=2	



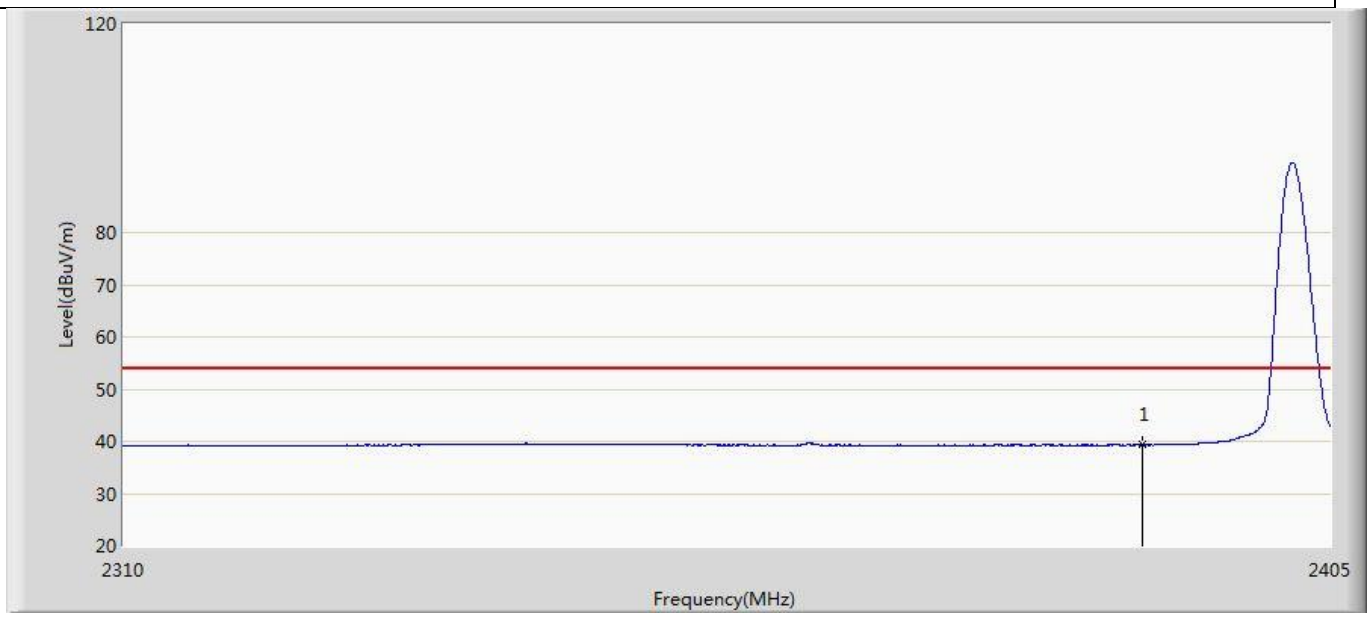
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.230	2.874	-14.770	54.000	36.357	AV

Profile: 2140095R	Page No.: 30
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:23
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 3:Transmit at 2402MHz by LE_Coded S=2	



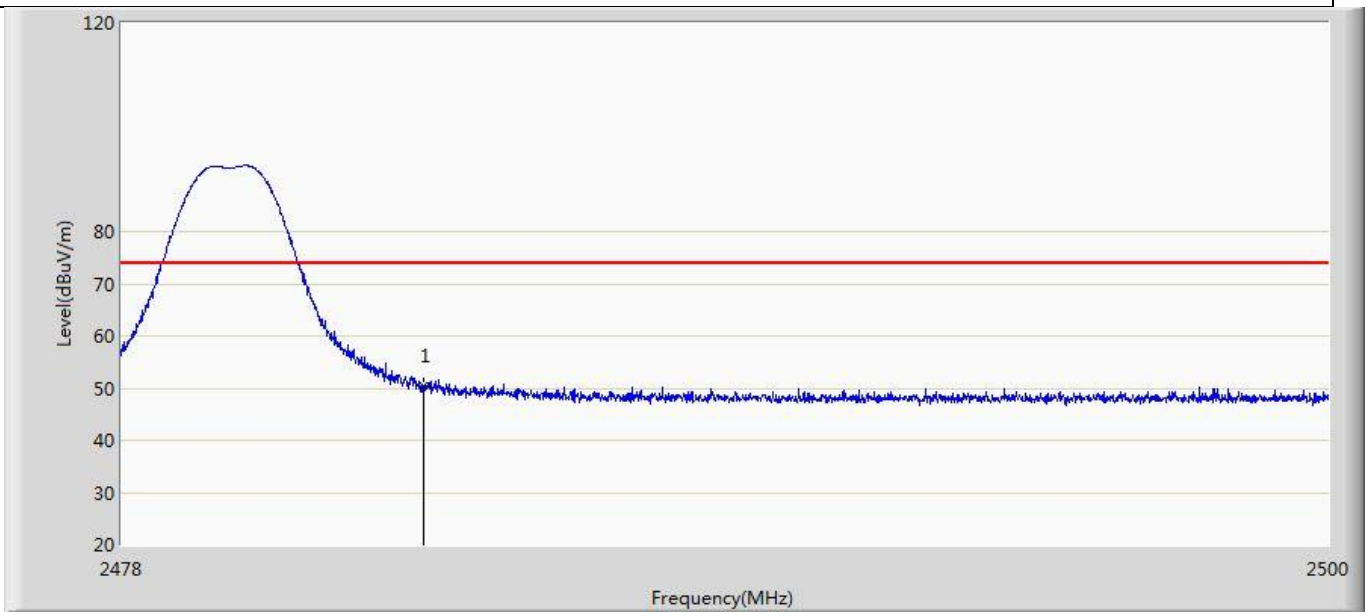
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	47.853	11.497	-26.147	74.000	36.357	PK

Profile: 2140095R	Page No.: 32
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:25
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 3:Transmit at 2402MHz by LE_Coded S=2	



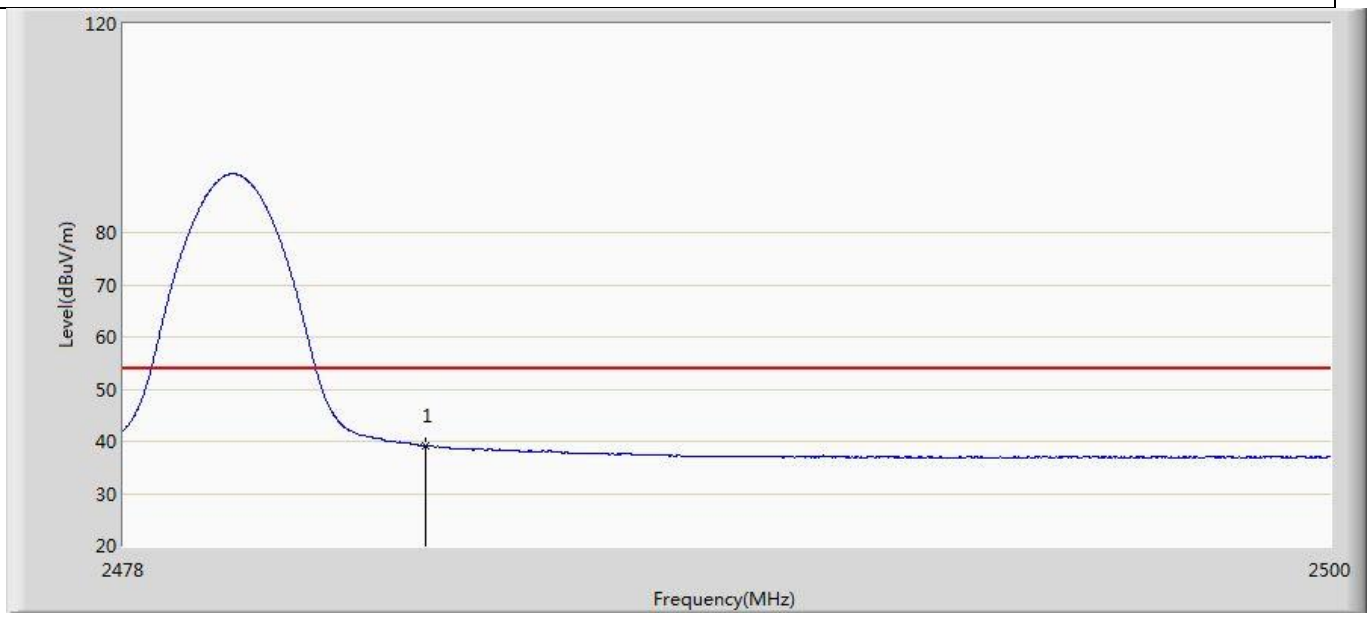
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.348	2.992	-14.652	54.000	36.357	AV

Profile: 2140095R	Page No.: 58
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 22:00
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 2480MHz by LE_Coded S=2	



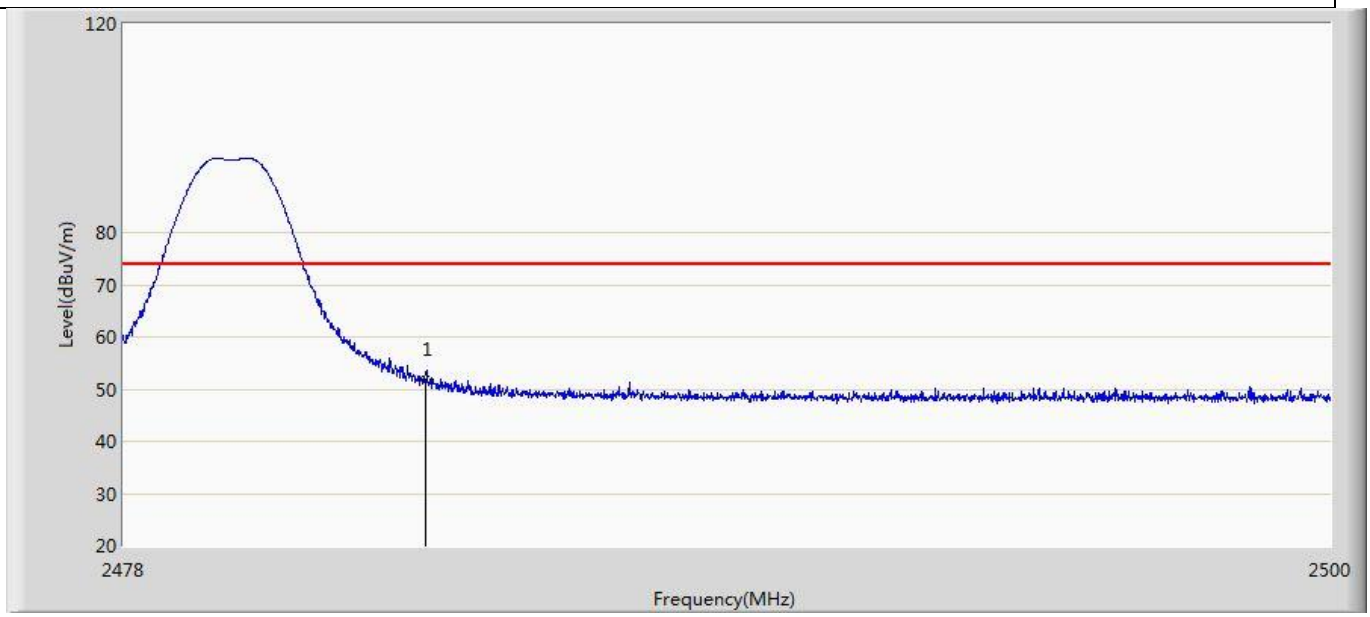
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	50.309	13.905	-23.691	74.000	36.404	PK

Profile: 2140095R	Page No.: 60
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 22:02
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 2480MHz by LE_Coded S=2	



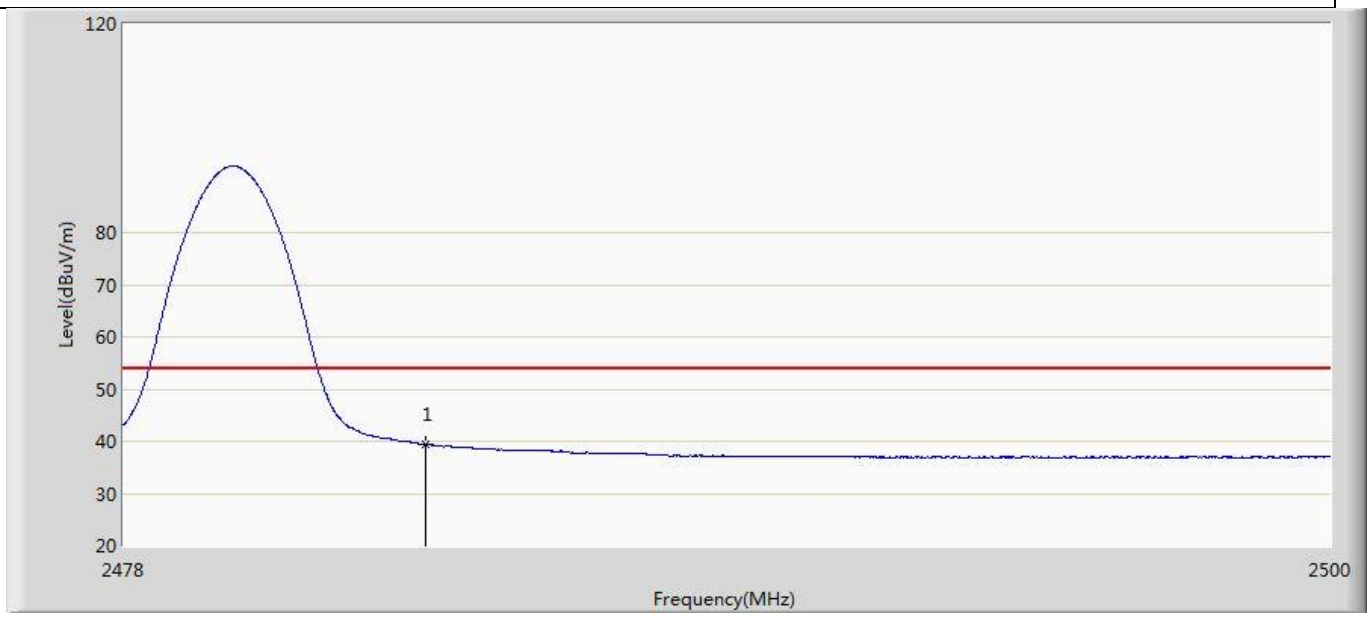
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	39.138	2.734	-14.862	54.000	36.404	AV

Profile: 2140095R	Page No.: 62
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 22:04
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 2480MHz by LE_Coded S=2	



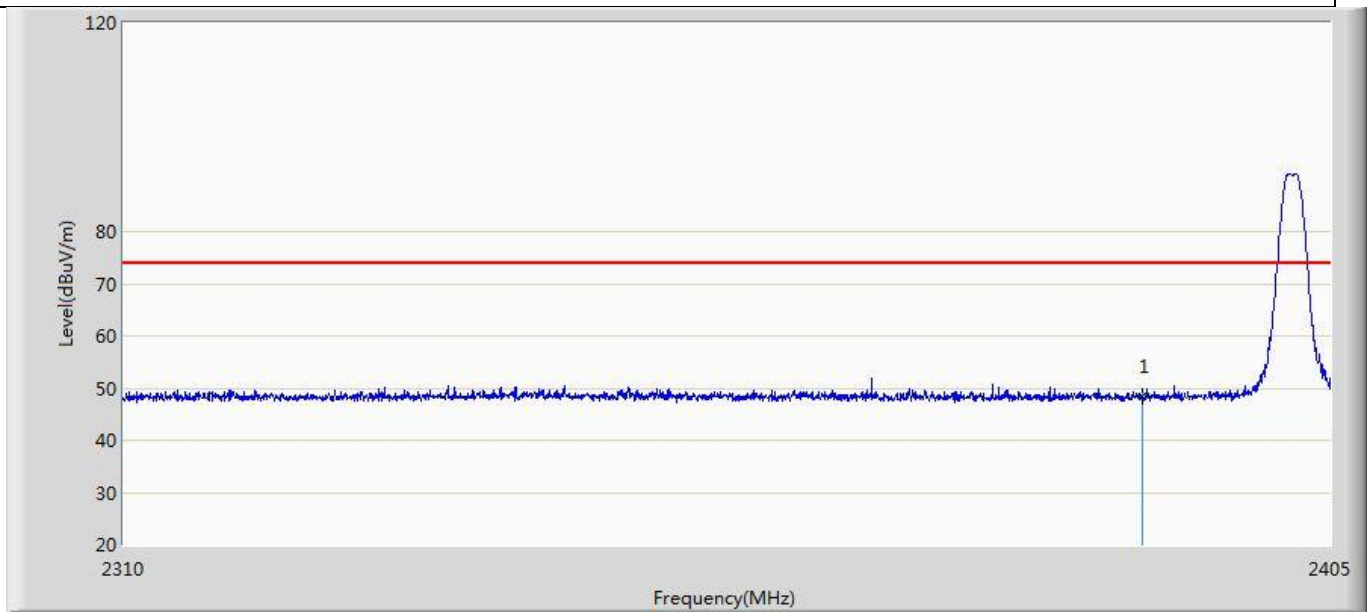
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	51.942	15.538	-22.058	74.000	36.404	PK

Profile: 2140095R	Page No.: 64
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 22:06
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 2480MHz by LE_Coded S=2	



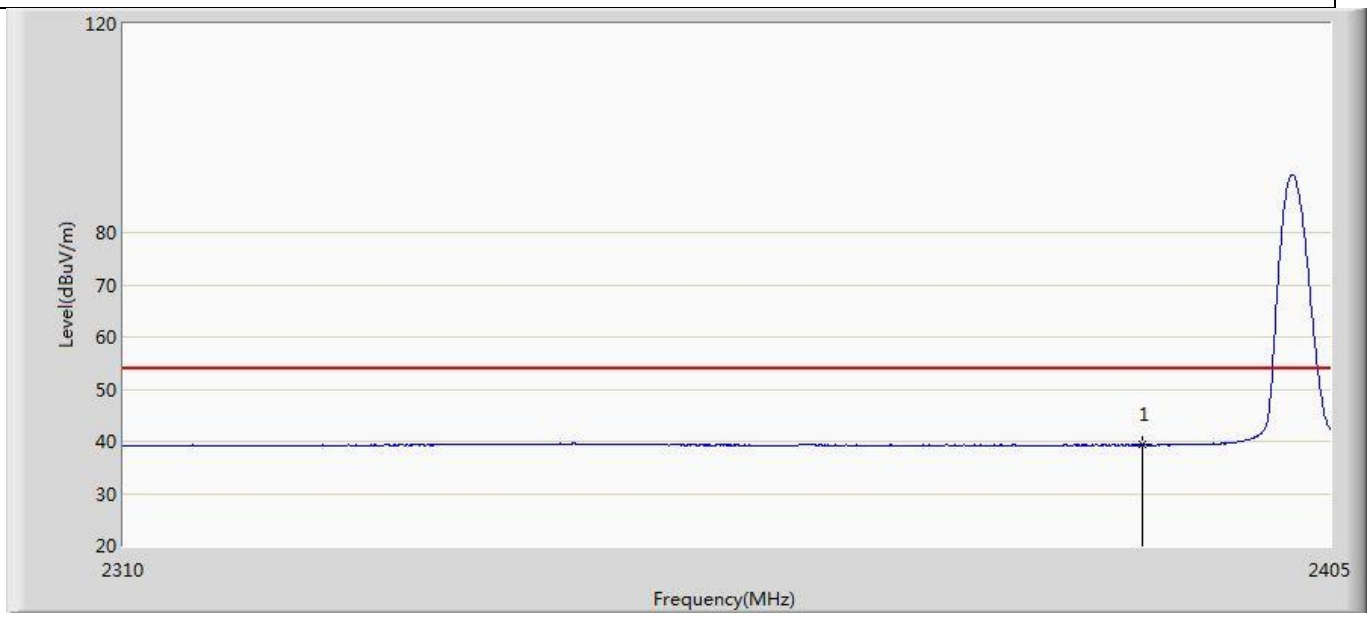
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	39.482	3.078	-14.518	54.000	36.404	AV

Profile: 2140095R	Page No.: 18
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:08
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 2402MHz by LE_Coded S=8	



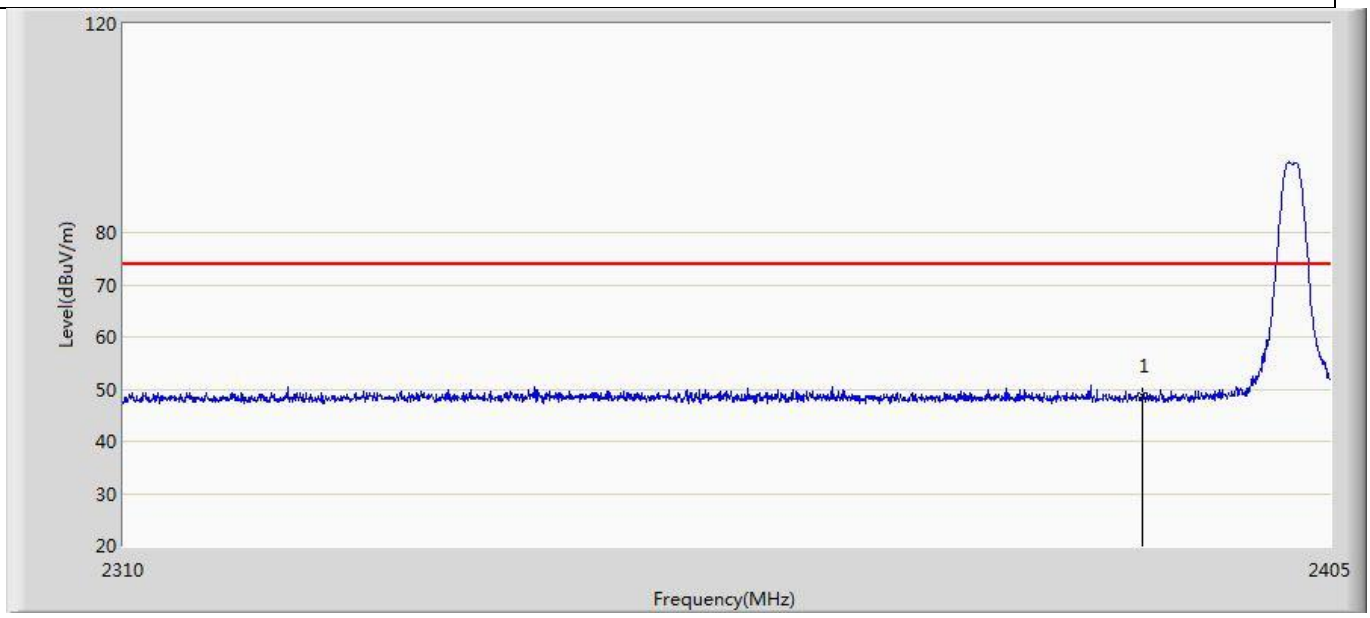
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	48.375	12.019	-5.625	54.000	36.357	AV

Profile: 2140095R	Page No.: 20
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:10
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 2402MHz by LE_Coded S=8	



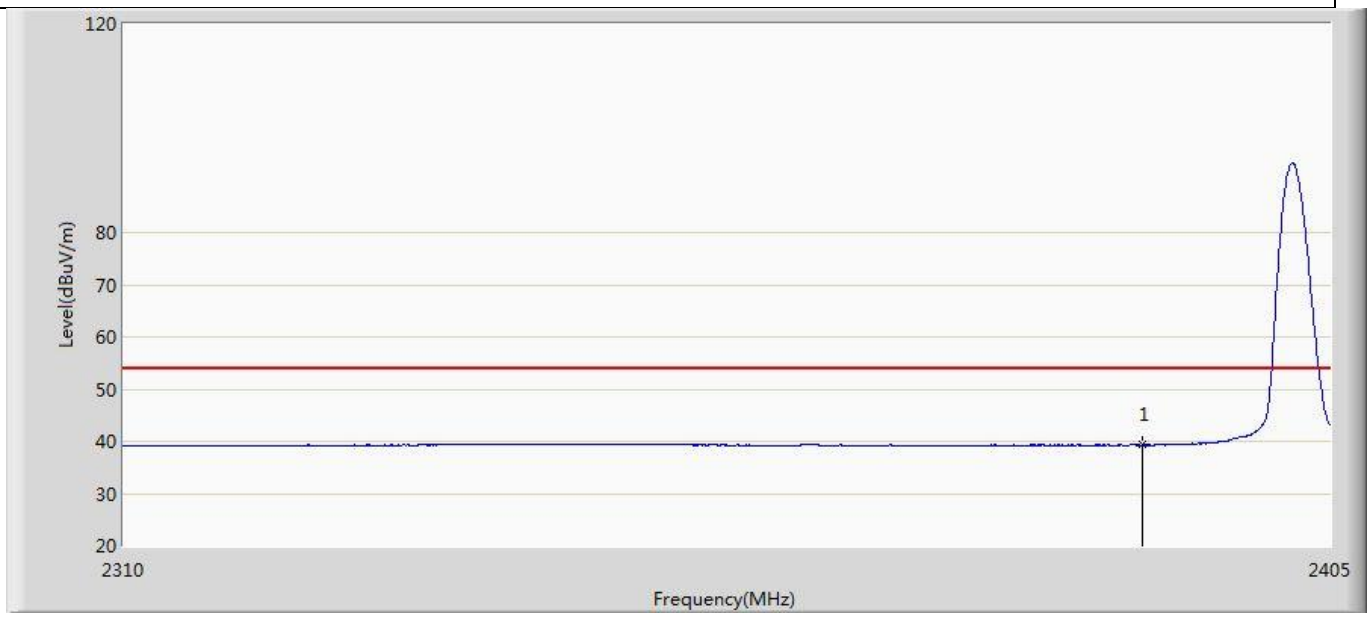
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.287	2.931	-14.713	54.000	36.357	AV

Profile: 2140095R	Page No.: 22
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:13
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 2402MHz by LE_Coded S=8	



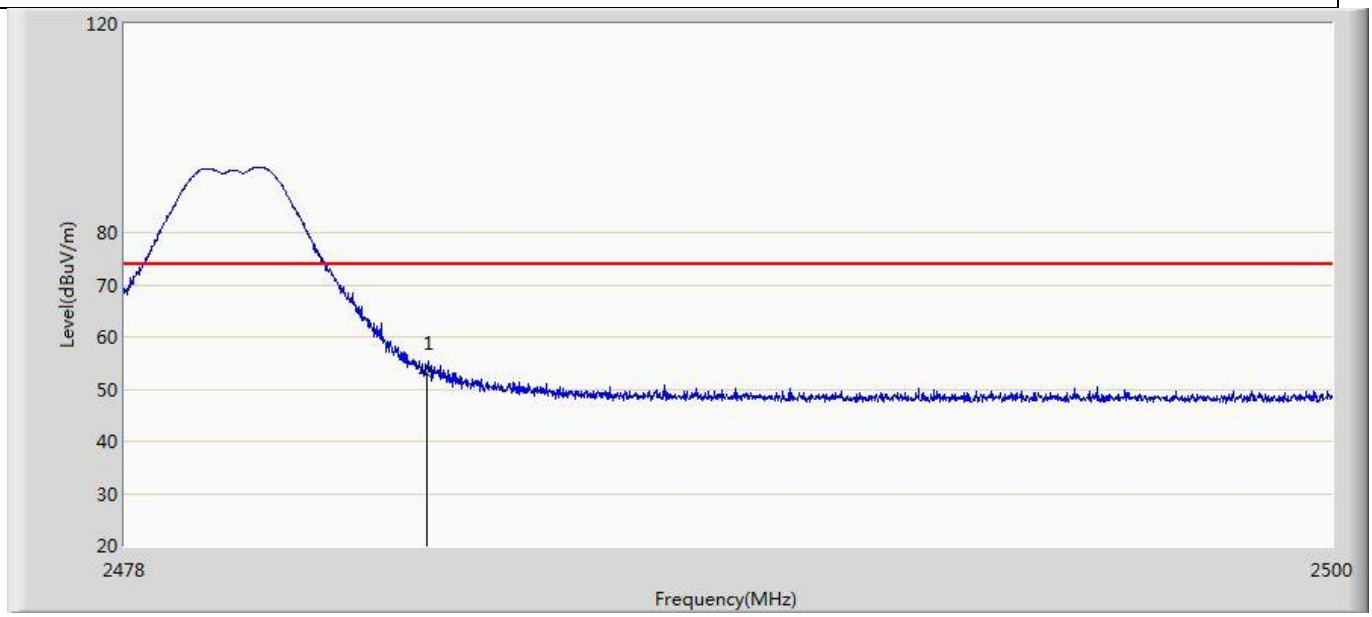
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	48.700	12.344	-25.300	74.000	36.357	PK

Profile: 2140095R	Page No.: 24
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:16
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 2402MHz by LE_Coded S=8	



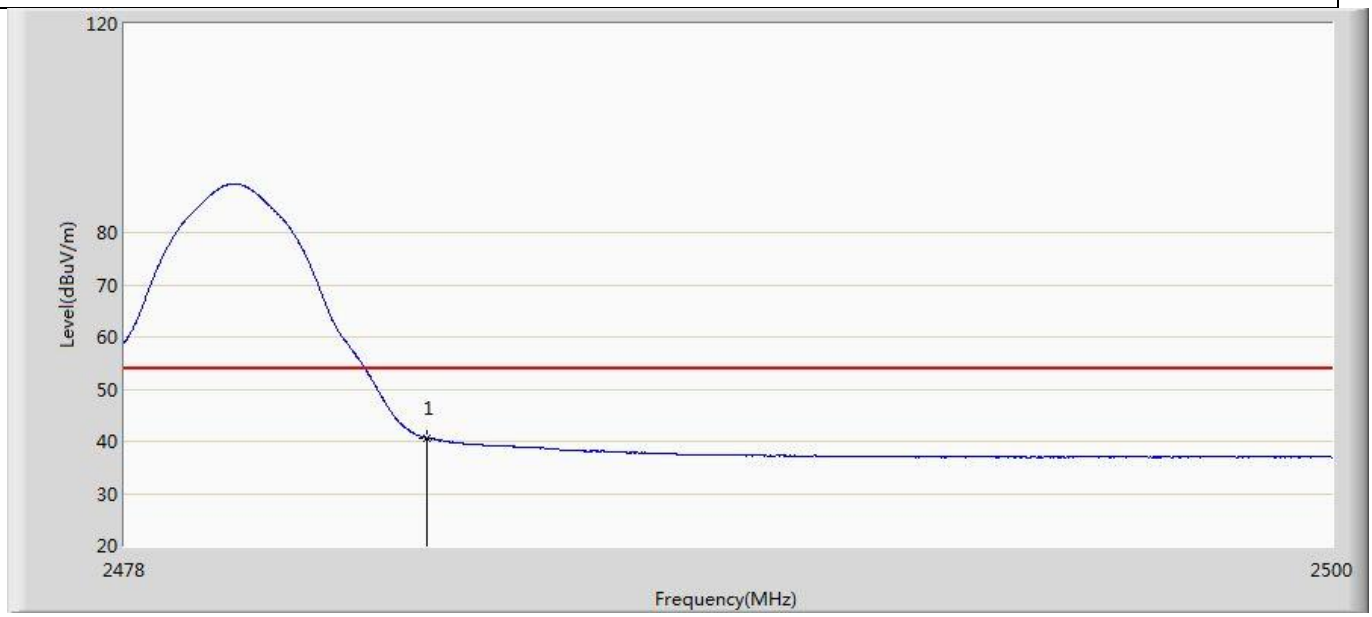
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	39.297	2.941	-14.703	54.000	36.357	AV

Profile: 2140095R	Page No.: 50
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:50
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 2480MHz by LE_Coded S=8	



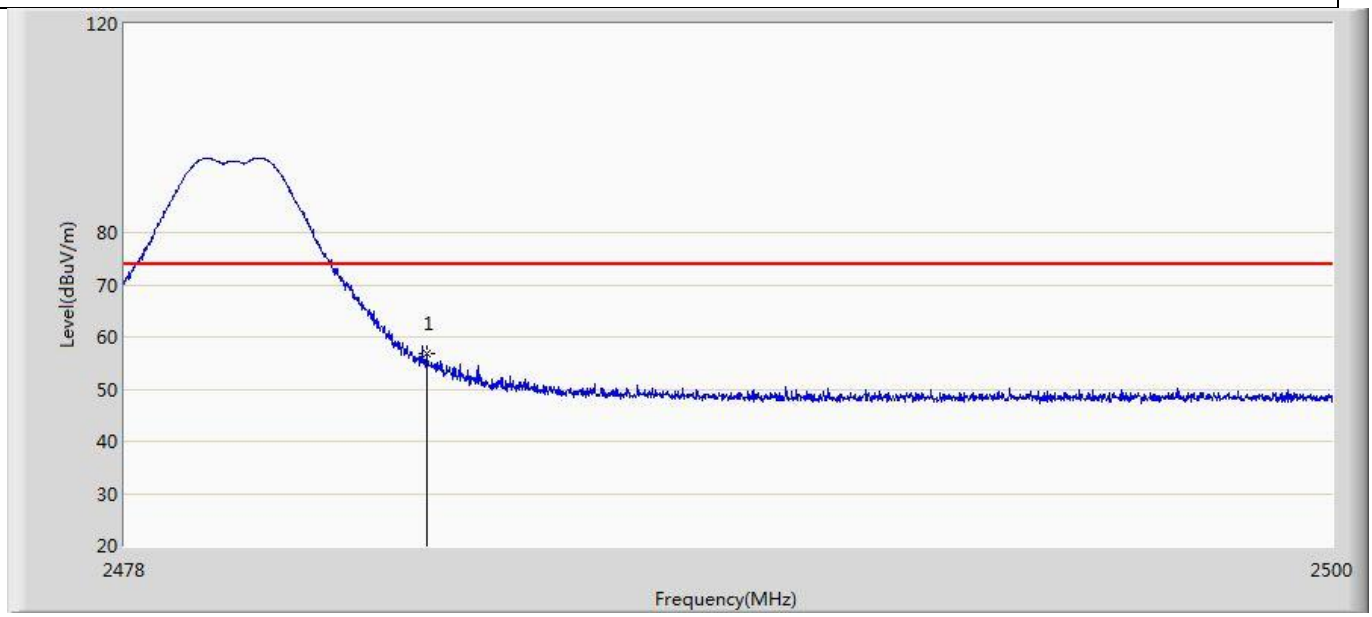
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	53.082	16.678	-20.918	74.000	36.404	PK

Profile: 2140095R	Page No.: 52
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:52
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 2480MHz by LE_Coded S=8	



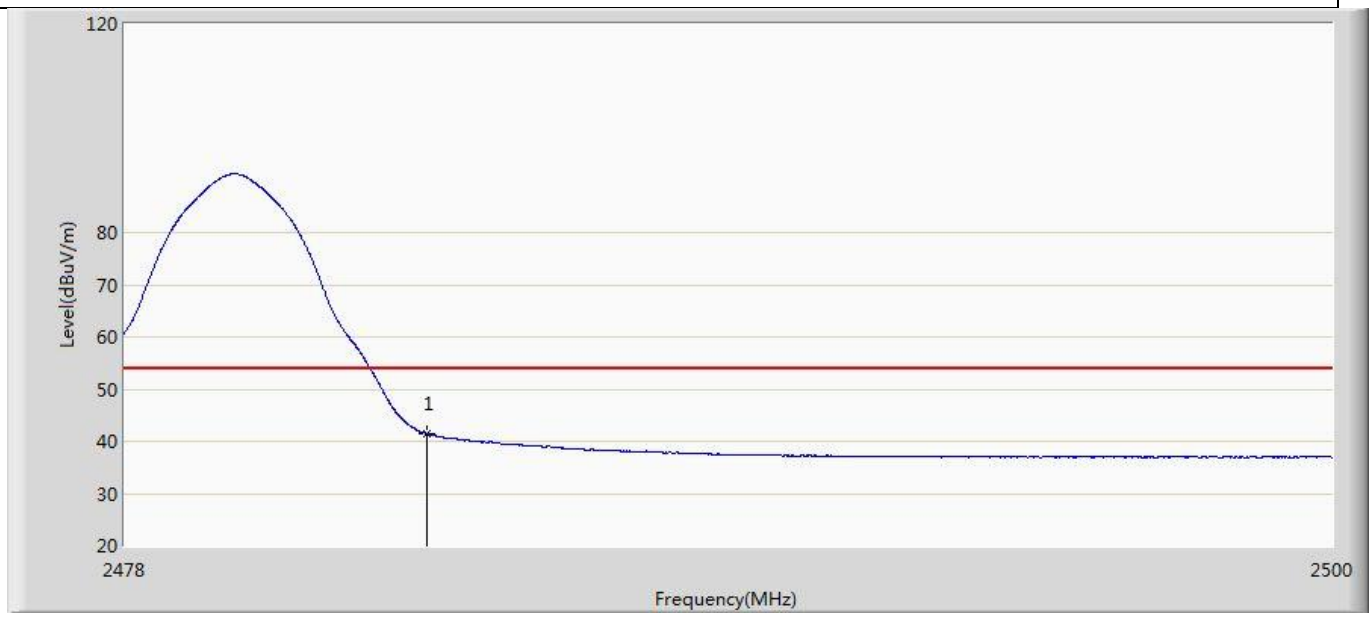
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	40.672	4.268	-13.328	54.000	36.404	AV

Profile: 2140095R	Page No.: 54
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:55
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 4:Transmit at 2480MHz by LE_Coded S=8	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	56.937	20.533	-17.063	74.000	36.404	PK

Profile: 2140095R	Page No.: 56
Engineer: Yu.Liu	
Site: AC5	Time: 2021/04/20 - 21:57
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 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	41.368	4.964	-12.632	54.000	36.404	AV

Note:
1. Measured Level = Reading Level + Factor.
2. As the radiated emission was performed, so conducted emission was not tested.

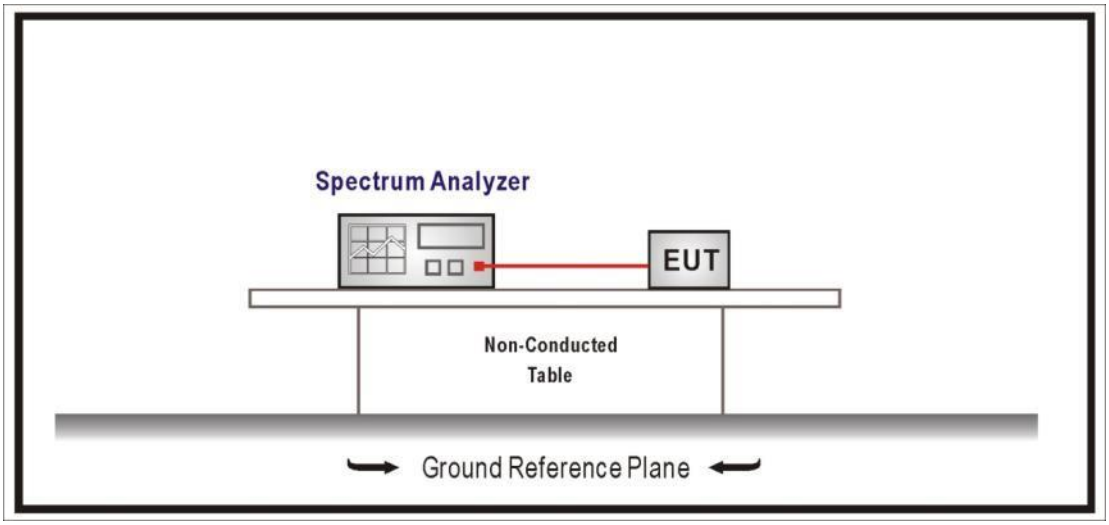
4.6 DTS Bandwidth	VERDICT: PASS

4.6.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(2)

Systems using digital modulation techniques operate in the2400-2483.5 MHz .The minimum 6 dB bandwidth shall be at by LEast 500 kHz

4.6.2 Test Setup



4.6.3 Test Procedure

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

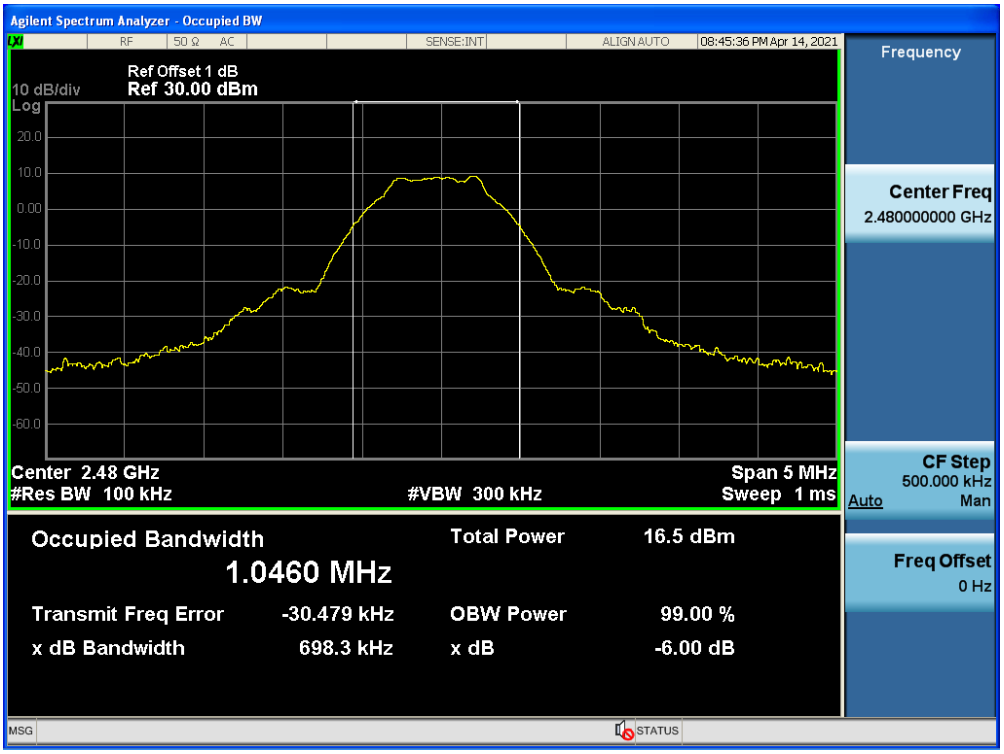
4.6.4 Test Data

Mode	CH.	Test Freq. (MHz)	6dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
1	00	2402	705.3	>500	Pass
	19	2440	700.3	>500	Pass
	39	2480	698.3	>500	Pass
2	37	2402	1352.0	>500	Pass
	18	2440	1353.0	>500	Pass
	39	2480	1350.0	>500	Pass
3	37	2402	784.3	>500	Pass
	18	2440	781.4	>500	Pass
	39	2480	781.1	>500	Pass
4	37	2402	751.1	>500	Pass
	18	2440	752.2	>500	Pass
	39	2480	750.9	>500	Pass

Note : The worst case of Occupied Bandwidth as below:

6dB Occupied Bandwidth

Mode 1 / CH39 (2480MHz)

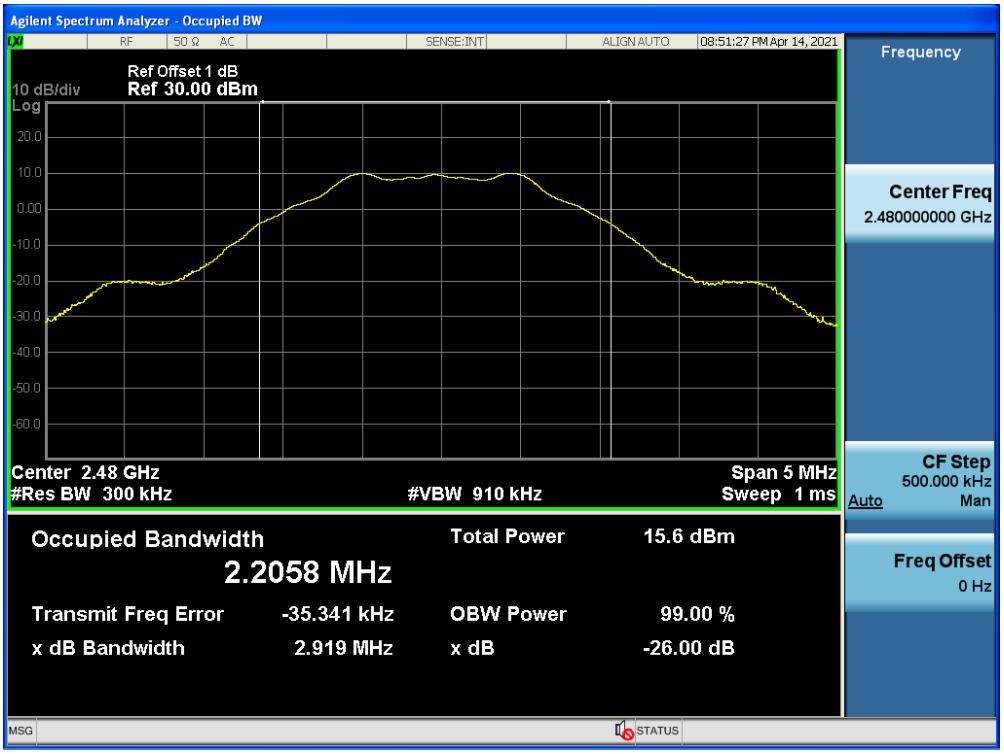


Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (kHz)	Limit	Result
1	37	2402	1255.1	Within frequency range	Pass
	17	2440	1250.3	Within frequency range	Pass
	39	2480	1248.1	Within frequency range	Pass
2	37	2402	2184.3	Within frequency range	Pass
	17	2440	2193.0	Within frequency range	Pass
	39	2480	2205.8	Within frequency range	Pass
3	37	2402	1351.4	Within frequency range	Pass
	17	2440	1350.5	Within frequency range	Pass
	39	2480	1347.0	Within frequency range	Pass
4	37	2402	1347.7	Within frequency range	Pass
	17	2440	1340.3	Within frequency range	Pass
	39	2480	1337.7	Within frequency range	Pass

Note : The worst case of Occupied Bandwidth as below:

99% Occupied Bandwidth

Mode 2 / CH39 (2480MHz)



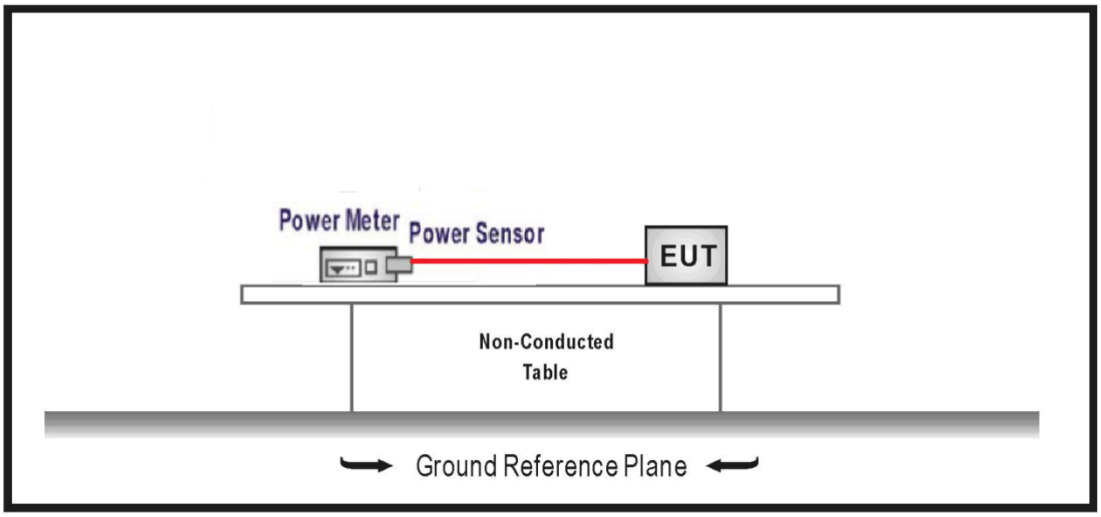
4.7 Fundamental emission output power — VERDICT: PASS

4.7.1 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
	☐	singby LE 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 .

4.7.2 Test Setup



4.7.3 Test Procedure							
	References Ruby LE					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

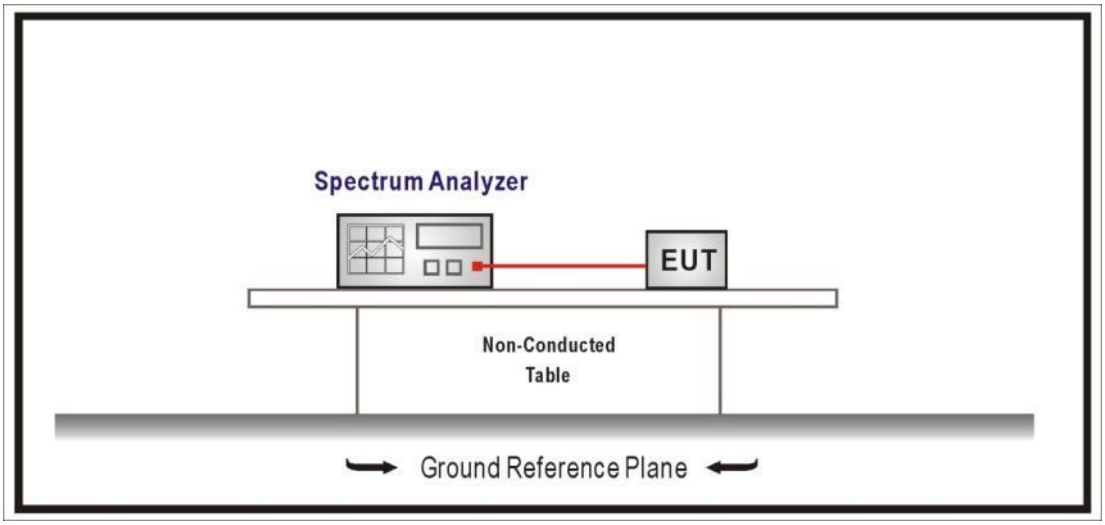
4.7.4 Test Data

Mode	Channel	Test Frequency (MHz)	Power Output (dBm)	Limit (dBm)	Result
Mode 1	37	2402	11.45	≤30	Pass
	17	2440	11.54	≤30	Pass
	39	2480	11.59	≤30	Pass
Mode 2	37	2402	11.28	≤30	Pass
	17	2440	11.31	≤30	Pass
	39	2480	11.25	≤30	Pass
Mode 3	37	2402	11.75	≤30	Pass
	17	2440	11.69	≤30	Pass
	39	2480	11.71	≤30	Pass
Mode 4	37	2402	11.72	≤30	Pass
	17	2440	11.75	≤30	Pass
	39	2480	11.64	≤30	Pass

4.8 Power Density	VERDICT: PASS

4.8.1 Limit:	
Standard	FCC Part 15 Subpart C Paragraph 15.247 (b)(3)
Power Spectral Density≤8dBm/3kHz	

4.8.2 Test Setup



4.8.3 Test Procedure

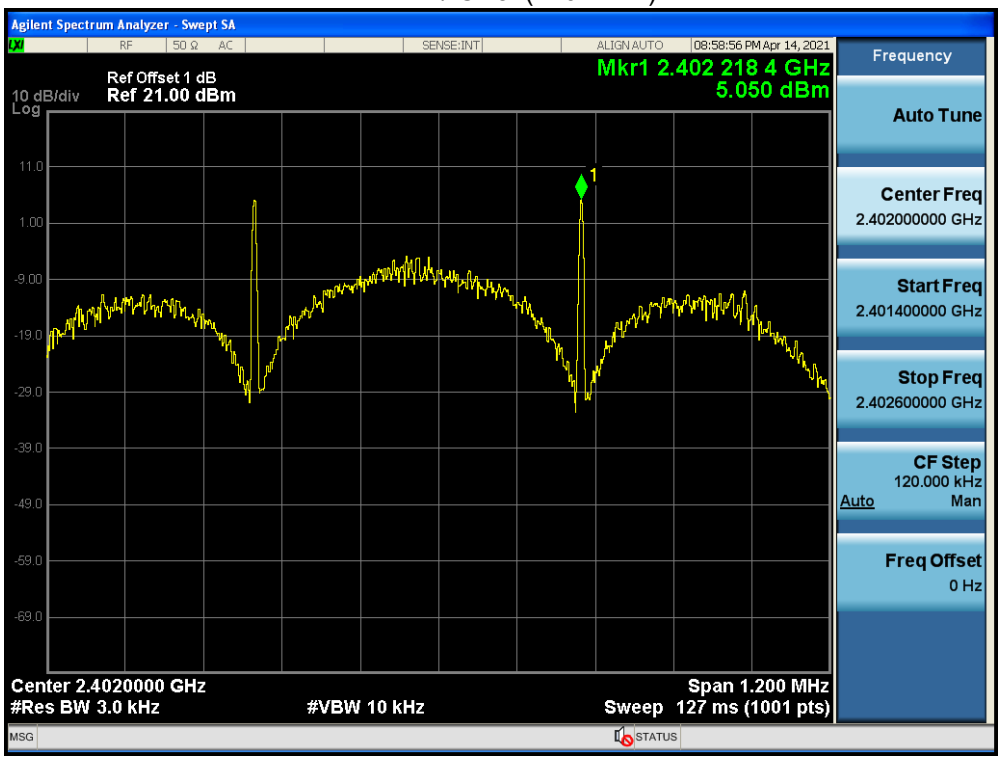
	References Ruby LE		Chapter	Description
☒	ANSI C63.10		11.10	Maximum power spectral density by LEvel in the fundamental emission
	☒	ANSI C63.10	11.10.2	Method PKPSD (peak PSD)
	☐	ANSI C63.10	11.10.3	Method AVGPSD-1(Duty cycle≥98%)
	☐	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle≥98%)
	☐	ANSI C63.10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

4.8.4 Test Data

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Mode 1	37	2402	-4.952	≤8	Pass
	17	2440	-5.174	≤8	Pass
	39	2480	-5.127	≤8	Pass
Mode 2	37	2402	-7.375	≤8	Pass
	17	2440	-7.585	≤8	Pass
	39	2480	-7.616	≤8	Pass
Mode 3	37	2402	-6.961	≤8	Pass
	17	2440	-7.198	≤8	Pass
	39	2480	-7.140	≤8	Pass
Mode 4	37	2402	5.050	≤8	Pass
	17	2440	4.687	≤8	Pass
	39	2480	4.761	≤8	Pass

Note : The worst case of PSD as below:

Mode 4 / CH37(2402MHz)



4.9 Antenna Requirement	VERDICT: PASS

4.9.1 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 responsibby LE 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 eby LEctrical 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 instalby LEd, 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 instalby LEr shall be responsibby LE for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.	

4.9.2 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 eby LEctrical connector
Pby LEase 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 pby LEase see appendix.

The End