



# Test Report

## FCC Part15 Subpart C & RSS-247 Issue 2

Product Name : LED lamp

Model No. : 9290022167

FCC ID : 2AGBW9290022167X

IC : 20812-2167X

Applicant : Signify (China) Investment Co., Ltd.

Address : Building no.9, Lane 888, Tianlin Road,  
Minhang District, Shanghai 200233, China

Date of Receipt : Feb. 25, 2019

Test Date : Feb. 26, 2019~ Jun. 30, 2019

Issued Date : Jul. 01, 2019

Report No. : 1922076R-RF-US-P06V02

Report Version : V1.1

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by A2LA or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing & Certification (Suzhou) Co., Ltd.

## Test Report Certification

Issued Date: Jul. 01, 2019  
Report No. : 1922076R-RF-US-P06V02



Product Name : LED lamp  
Applicant : Signify (China) Investment Co., Ltd.  
Address : Building no.9, Lane 888, Tianlin Road, Minhang District, Shanghai 200233, China  
Manufacturer : Signify (China) Investment Co., Ltd.  
Address : Building no.9, Lane 888, Tianlin Road, Minhang District, Shanghai 200233, China  
Model No. : 9290022167  
FCC ID : 2AGBW9290022167X  
IC : 20812-2167X  
EUT Voltage : 110-130 Vac, 50-60 Hz, 9W  
Test Voltage : AC120V/60Hz  
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C;  
ANSI C63.10:2013;  
KDB 558074 D01v05r02;  
RSS-Gen Issue 5 / RSS-247 Issue 2  
Test Result : Complied  
Performed Location : DEKRA Testing & Certification (Suzhou) Co., Ltd.  
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China  
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098  
FCC Designation Number: CN1199; ISED Lab Code: 4075B

Documented By :



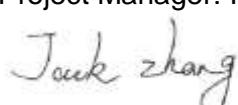
( Adm. Specialist: Kitty Li )

Reviewed By :



(Senior Project Manager: Frank He )

Approved By :



(Engineering Supervisor: Jack Zhang)

## TABLE OF CONTENTS

Description	Page
1. General Information.....	6
1.1. EUT Description .....	6
1.2. Working Frequency of Each Channel: .....	7
1.3. Antenna information .....	7
1.4. Mode of Operation.....	8
1.5. Tested System Details .....	8
1.6. Configuration of Tested System.....	9
1.7. EUT Exercise Software.....	10
2. Technical Test.....	11
2.1. Summary of Test Result.....	11
2.2. Test Frequency configuration:.....	13
2.3. Test Environment.....	14
2.4. Measurement Uncertainty.....	14
3. AC Power Line Conducted Emission.....	15
3.1. Test Equipment.....	15
3.2. Test Setup.....	15
3.3. Limit.....	16
3.4. Test Procedure .....	16
3.5. Test Result.....	17
4. Emissions in restricted frequency bands .....	19
4.1. Test Equipment.....	19
4.2. Test Setup.....	20
4.3. Limit.....	21
4.4. Test Procedure .....	24
4.5. EUT test Axis definition.....	25
4.6. Test Result.....	26
5. Emissions in non-restricted frequency bands .....	76
5.1. Test Equipment.....	76
5.2. Test Setup.....	76
5.3. Limit.....	77
5.4. Test Procedure .....	78
5.5. EUT test Axis definition.....	79
5.6. Test Result.....	80
6. Radiated Emission Band Edge .....	82
6.1. Test Equipment.....	82
6.2. Test Setup.....	83
6.3. Limit.....	83

6.4.	Test Procedure .....	84
6.5.	EUT test definition .....	85
6.6.	Duty Cycle .....	86
6.7.	Test Result.....	87
7.	Occupied Bandwidth.....	151
7.1.	Test Equipment.....	151
7.2.	Test Setup.....	151
7.3.	Limit.....	152
7.4.	Test Procedure .....	152
7.5.	EUT test definition .....	153
7.6.	Test Result.....	154
8.	Fundamental emission output power.....	170
8.1.	Test Equipment.....	170
8.2.	Test Setup.....	170
8.3.	Limit.....	171
8.4.	Test Procedure .....	172
8.5.	EUT test definition .....	173
8.6.	Test Result.....	174
9.	Power Spectral Density .....	176
9.1.	Test Equipment.....	176
9.2.	Test Setup.....	176
9.3.	Limit.....	176
9.4.	Test Procedure .....	177
9.5.	EUT test definition .....	178
9.6.	Test Result.....	179
10.	Antenna Requirement.....	181
10.1.	Limit.....	181
10.2.	Antenna Connector Construction.....	181

## History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1922076R-RF-US-P06V02	V1.0	Initial Issued Report	Apr. 19, 2019
1922076R-RF-US-P06V02	V1.1	P154-P169, added the 99% OB data.	Jul. 01, 2019

## 1. General Information

### 1.1. EUT Description

Product Name	LED lamp					
Model No.	9290022167					
EUT Voltage	110-130 Vac, 50-60 Hz, 9W					
Test Voltage	AC 120V/60Hz					
Bluetooth Specification	V5.0					
Frequency Range	2402- 2480 MHz					
Channel Number	V5.0: 40					
Channel Separation	V5.0: 2MHz					
Type of Modulation	V5.0: GFSK					
PHYs	<input checked="" type="checkbox"/>	LE 1M	<input checked="" type="checkbox"/>	LE 2M	<input checked="" type="checkbox"/>	LE Coded S=2/8
Data Rate	<input checked="" type="checkbox"/>	1Mbit/s	<input checked="" type="checkbox"/>	2Mbit/s	<input checked="" type="checkbox"/>	500/125 Kbit/s
Antenna Type	Reference to Antenna List					
Peak Antenna Gain	Reference to Antenna List					

Note 1: We have evaluated both modes of LE 1M, LE 2M and LE coded, the power of LE 1M mode is higher than other mode, the test data of both modes is showed in the report with test items power and bandwidth; the test data of worse mode is showed with other test items.

Note 2: LED lamp supports two kinds of Crystal oscillator (murata/ Diodes), there is not any change in RF design, circuitry or construction for this device, including RF parameters (antenna, software, firmware and hardware versions, power, frequency ranges, etc.), so only power, spurious emission and band-edge were tested for different crystal oscillator, the test data of worse mode is showed with other test items.

## 1.2. Working Frequency of Each Channel:

Bluetooth Working Frequency of Each Channel: (For V5.0)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2404 MHz	02	2406 MHz	03	2408 MHz
04	2410 MHz	05	2412 MHz	06	2414 MHz	07	2416 MHz
08	2418 MHz	09	2420 MHz	10	2422 MHz	11	2424 MHz
12	2426 MHz	13	2428 MHz	14	2430 MHz	15	2432 MHz
16	2434 MHz	17	2436 MHz	18	2438 MHz	19	2440 MHz
20	2442 MHz	21	2444 MHz	22	2446 MHz	23	2448 MHz
24	2450 MHz	25	2452 MHz	26	2454 MHz	27	2456 MHz
28	2458 MHz	29	2460 MHz	30	2462 MHz	31	2464 MHz
32	2466 MHz	33	2468 MHz	34	2470 MHz	35	2472 MHz
36	2474 MHz	37	2476 MHz	38	2478 MHz	39	2480 MHz

## 1.3. Antenna information

Antenna manufacturer	N/A					
Antenna Delivery	<input checked="" type="checkbox"/>	1*TX+1*RX	<input type="checkbox"/>	2*TX+2*RX	<input type="checkbox"/>	3*TX+3*RX
Antenna technology	<input checked="" type="checkbox"/>	SISO				
	<input type="checkbox"/>	MIMO	<input type="checkbox"/>	Basic		
	<input type="checkbox"/>		<input type="checkbox"/>	CDD		
	<input type="checkbox"/>		<input type="checkbox"/>	Beam-forming		
Antenna Type	<input type="checkbox"/>	External	<input type="checkbox"/>	Dipole		
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/>	PIFA		
	<input checked="" type="checkbox"/>		<input type="checkbox"/>	PCB		
	<input type="checkbox"/>		<input type="checkbox"/>	Ceramic Chip Antenna		
	<input type="checkbox"/>		<input type="checkbox"/>	Stamping Antenna		
	<input type="checkbox"/>		<input type="checkbox"/>	Metal plate type F antenna		
	<input type="checkbox"/>		<input type="checkbox"/>	Monopole antenna		
Antenna Gain	-2.08dBi					

#### 1.4. Mode of Operation

Test Mode
Mode 1: Transmit-1Mbps(GFSK_LE 1M)
Mode 2: Transmit-2Mbps(GFSK_LE 2M)
Mode 3: Transmit-125Kbps(GFSK_LE Coded)
Mode 4: Transmit-500Kbps(GFSK_LE Coded)

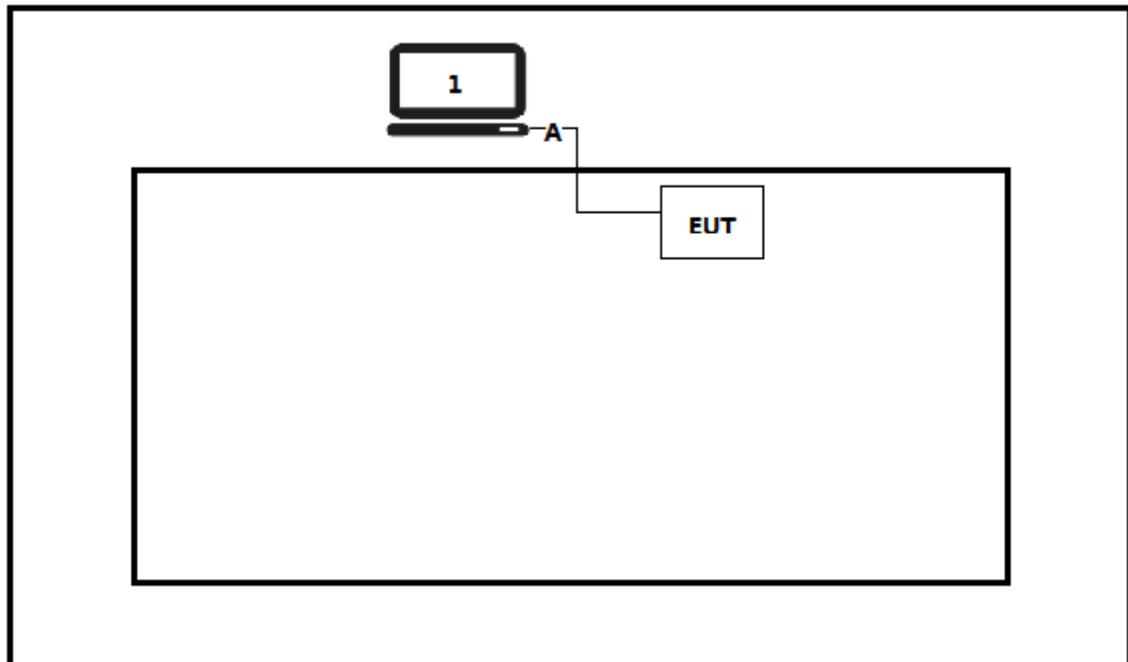
#### 1.5. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

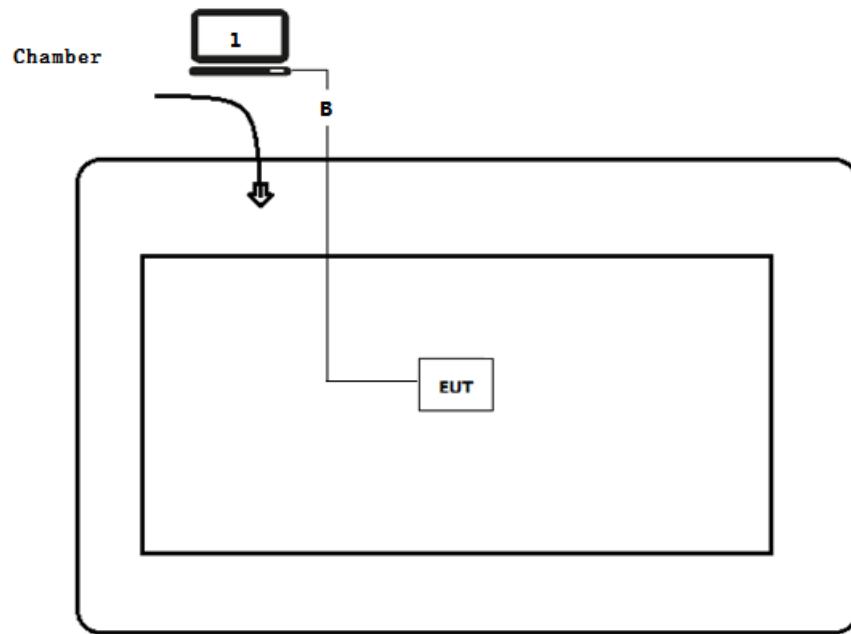
No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Think Pad	2526	LV-A3285	Power by adapter
A	Control cable	N/A	N/A	N/A	Shielded,0.5m
B	Control cable	N/A	N/A	N/A	Shielded,10m

## 1.6. Configuration of Tested System

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



## 1.7. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of all equipment.
3	Run RF software [HueApprobation Tool], and set the test mode and channel, then press OK to start to continue transmit.

## 2. Technical Test

### 2.1. Summary of Test Result

For FCC

Performed Test Item	Normative References	Limit	Result
AC Power Line Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.207	FCC 15.207	PASS
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.209	FCC 15.209	PASS
Emissions in non-restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(d)	$\geq 20\text{dBc}$	PASS
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2015 15.247(d)	FCC 15.209	PASS
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(2)	$\geq 500\text{kHz}$	PASS
Fundamental emission output power	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(b)(3)	$\leq 30\text{dBm}$	PASS
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(e)	$\leq 8\text{dBm}/3\text{kHz}$	PASS
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.203	FCC 15.203	PASS

**For ISED**

Performed Test Item	Normative References	Limit	Result
AC Power Line Conducted Emission	RSS-Gen Issue 5 Section 8.8	RSS-Gen	PASS
Emissions in restricted frequency bands	RSS-Gen Issue 5 Section 8.9	RSS-Gen	PASS
Emissions in non-restricted frequency bands	RSS-247 Issue 2 Section A5.5	$\geq 20\text{dBc}$	PASS
Radiated Emission Band Edge	RSS-247 Issue 2 Section A5.5	RSS-247	PASS
Occupied Bandwidth	RSS-Gen Issue 5 Section 6.6 RSS-247 Issue 2 Section A5.2(1)	$\geq 500\text{kHz}$	PASS
Fundamental emission output power	RSS-247 Issue 2 Section A5.4(4)	$\leq 30\text{dBm}$	PASS
Power Spectral Density	RSS-247 Issue 2 Section A5.2(2)	$\leq 8\text{dBm}/3\text{kHz}$	PASS
Antenna Requirement	RSS-Gen Issue 5 Section 8.3	RSS-Gen Issue 5	PASS

**2.2. Test Frequency configuration:**

Modulation Mode	Channel	Frequency	Channel	Frequency	Channel	Frequency
Mode1~4	00	2402 MHz	19	2440 MHz	39	2480MHz

### 2.3. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

### 2.4. Measurement Uncertainty

Test Items	Uncertainty
AC Power Line Conducted Emission	±2.02dB
Radiated Emission	Below 1GHz ±3.8 dB
	Above 1GHz ±3.9 dB
RF Antenna Port Conducted Emission	±1.27dB
Radiated Emission Band Edge	±3.9dB
Occupied Bandwidth	±1kHz
Power Spectral Density	±1.27dB

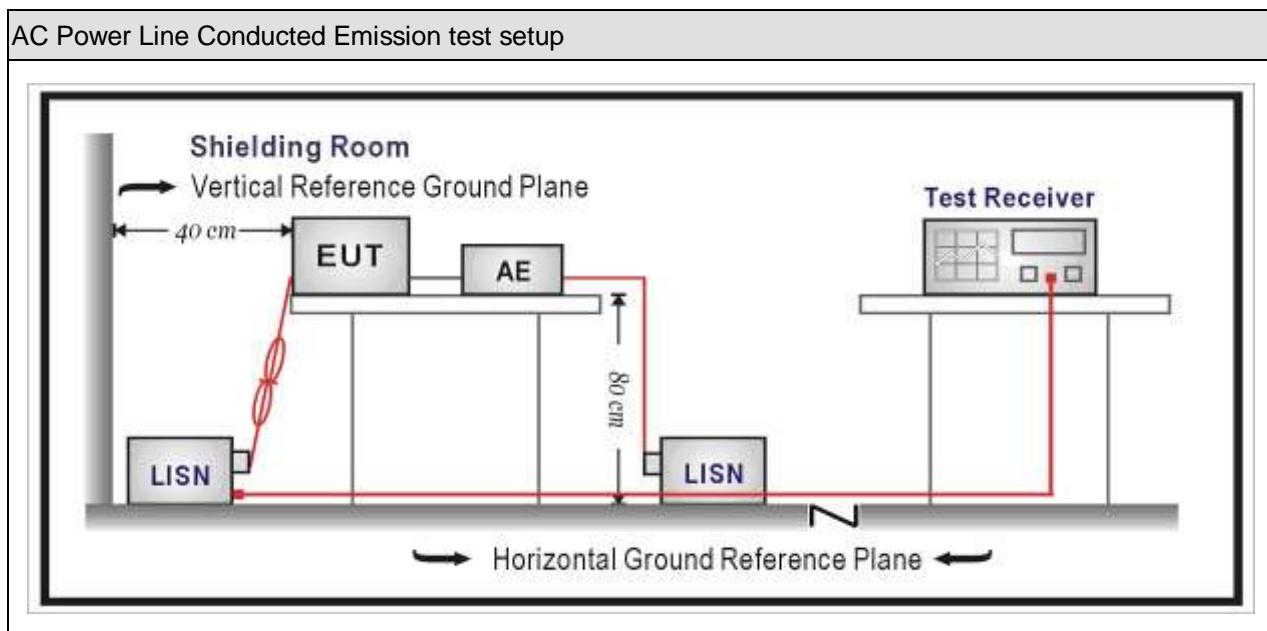
### 3. AC Power Line Conducted Emission

#### 3.1. Test Equipment

AC Power Line Conducted Emission / TR-1					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100906	2019.03.05	2020.03.04
Two-Line V-Network	R&S	ENV 216	101189	2018.07.16	2019.07.15
Two-Line V-Network	R&S	ENV 216	101044	2018.09.16	2019.09.15
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
50ohm Termination	SHX	TF2	07081402	2018.09.16	2019.09.15
Temperature/Humidity Meter	Zhichen	ZC1-2	TR1-TH	2019.01.04	2020.01.03
Quietek EMI V3(test software)	Quietek	N/A	N/A	N/A	N/A

Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

#### 3.2. Test Setup



### 3.3. Limit

Frequency of Emission (MHz)	Conducted Limit	
	Quasi-peak (dB $\mu$ V)	Average(dB $\mu$ V)
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

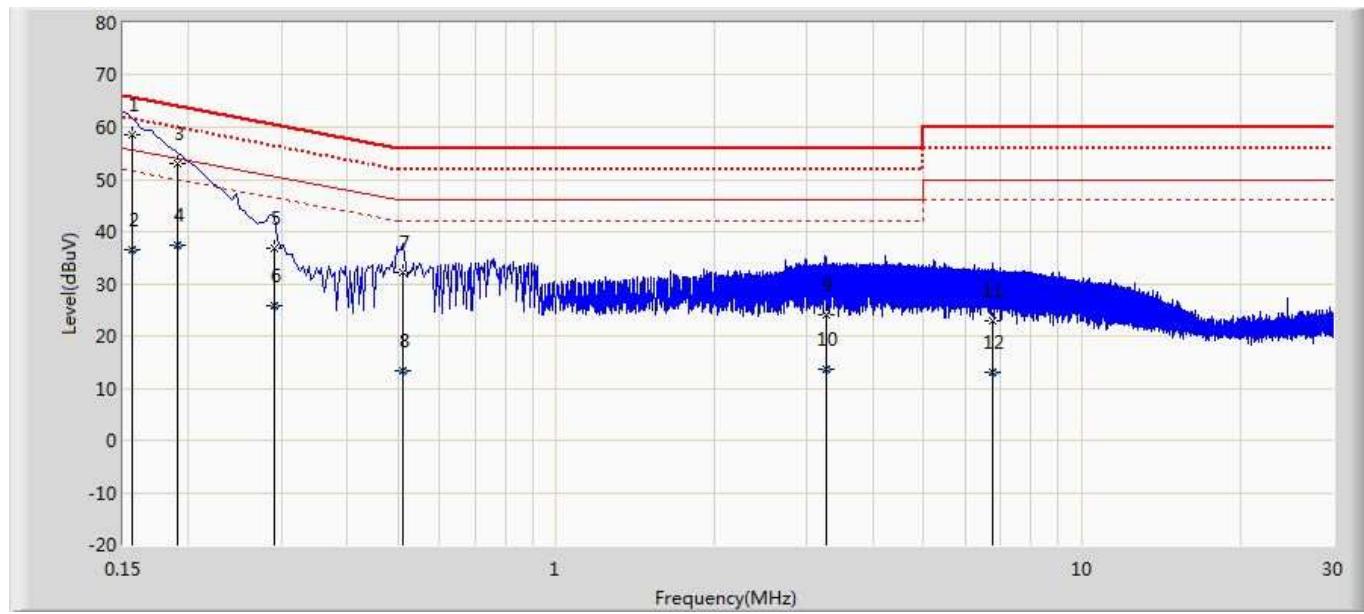
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

### 3.4. Test Procedure

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

### 3.5. Test Result

Site: TR1	Time: 2019/04/13 - 11:10
Limit: FCC_Part15.207_CE_AC Power	Margin: 4
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: LED lamp	Power: AC 120V/60Hz
Note: Mode 1	

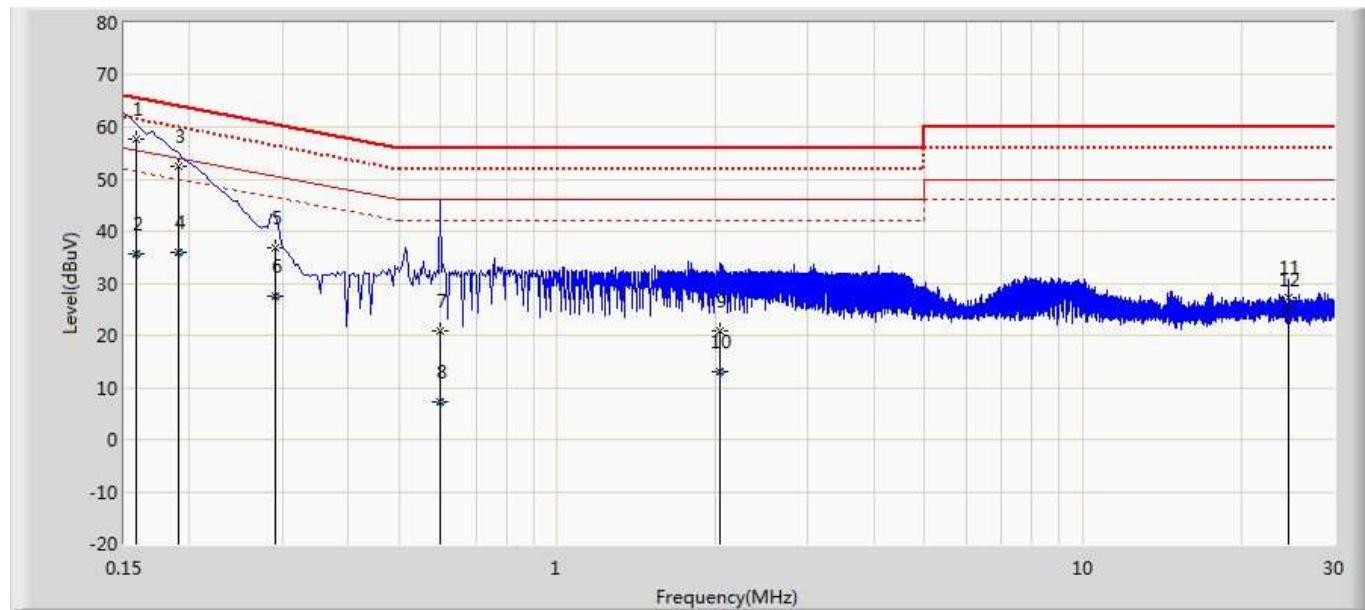


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	*	0.156	58.602	48.988	-7.053	65.656	9.615	QP
2		0.156	36.626	27.011	-19.030	55.656	9.615	AV
3		0.190	53.076	43.450	-10.961	64.037	9.626	QP
4		0.190	37.483	27.857	-16.554	54.037	9.626	AV
5		0.290	36.910	27.282	-23.614	60.524	9.629	QP
6		0.290	25.938	16.310	-24.586	50.524	9.629	AV
7		0.510	32.280	22.645	-23.720	56.000	9.634	QP
8		0.510	13.317	3.682	-32.683	46.000	9.634	AV
9		3.262	24.173	14.431	-31.827	56.000	9.741	QP
10		3.262	13.497	3.756	-32.503	46.000	9.741	AV
11		6.774	22.962	13.101	-37.038	60.000	9.862	QP
12		6.774	13.053	3.191	-36.947	50.000	9.862	AV

Note:

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

Site: TR1	Time: 2019/04/13 - 14:15
Limit: FCC_Part15.207_CE_AC Power	Margin: 4
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)	Factor (dB)	Type
1	*	0.158	57.605	47.975	-7.981	65.587	9.630	QP
2		0.158	35.642	26.012	-19.945	55.587	9.630	AV
3		0.190	52.582	42.952	-11.454	64.037	9.630	QP
4		0.190	36.014	26.384	-18.023	54.037	9.630	AV
5		0.290	36.742	27.111	-23.782	60.524	9.632	QP
6		0.290	27.515	17.883	-23.010	50.524	9.632	AV
7		0.598	20.958	11.310	-35.042	56.000	9.648	QP
8		0.598	7.146	-2.502	-38.854	46.000	9.648	AV
9		2.038	20.854	11.157	-35.146	56.000	9.697	QP
10		2.038	12.980	3.283	-33.020	46.000	9.697	AV
11		24.578	27.188	16.414	-32.812	60.000	10.774	QP
12		24.578	25.024	14.250	-24.976	50.000	10.774	AV

Note:

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

## 4. Emissions in restricted frequency bands

### 4.1. Test Equipment

Radiated Emission(Below 1GHz) / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2019.03.29	2020.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2018.11.16	2019.11.15
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2018.10.16	2019.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2019.03.02	2020.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2019.01.03	2020.01.02
Quietek EMI V3(test software)	Quietek	N/A	N/A	N/A	N/A

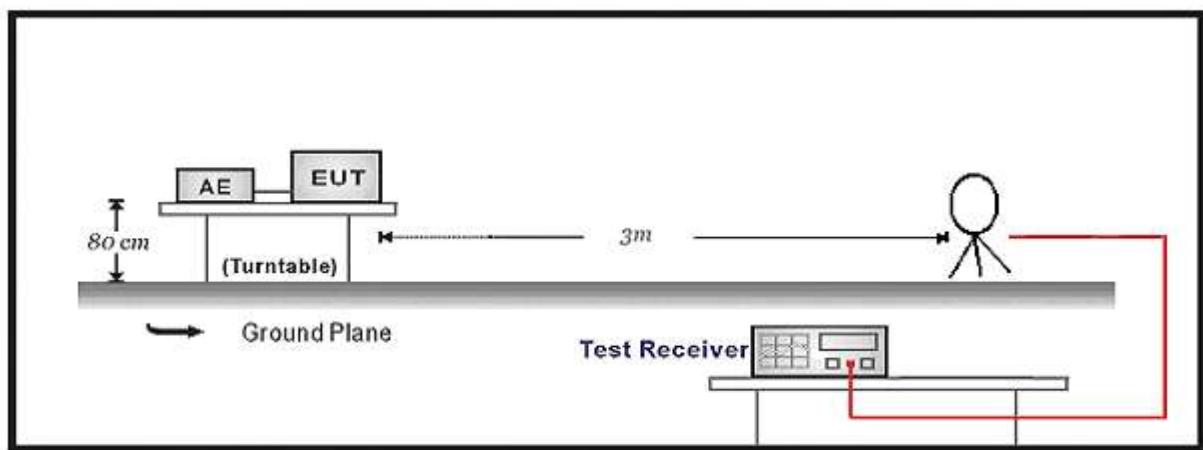
Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2019.01.04	2020.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2018.05.06	2019.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2018.05.06	2019.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2019.01.22	2020.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2018.11.25	2019.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2019.03.02	2020.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2019.03.02	2020.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2019.03.02	2020.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2018.06.10	2019.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2019.01.04	2020.01.03
Quietek EMI V3(test software)	Quietek	N/A	N/A	N/A	N/A

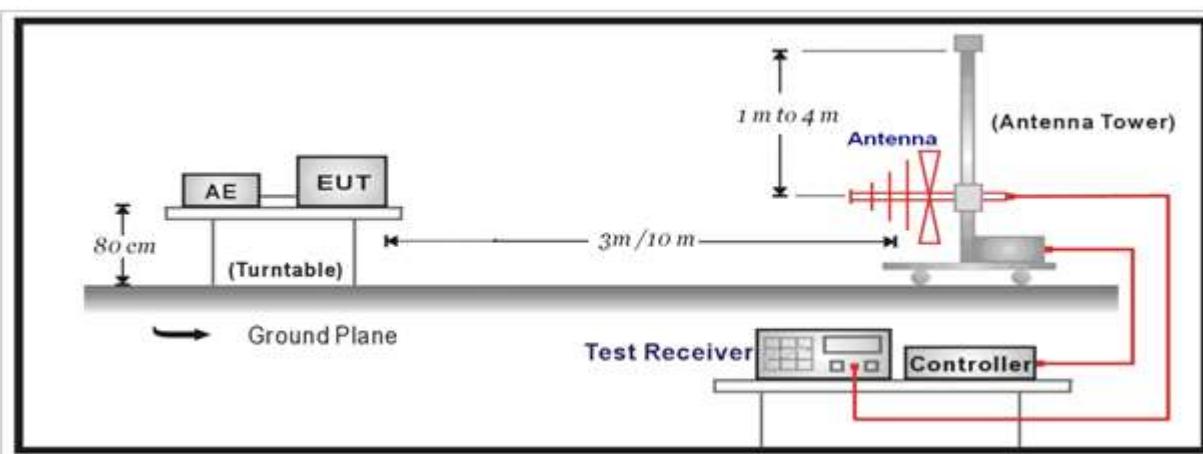
Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

#### 4.2. Test Setup

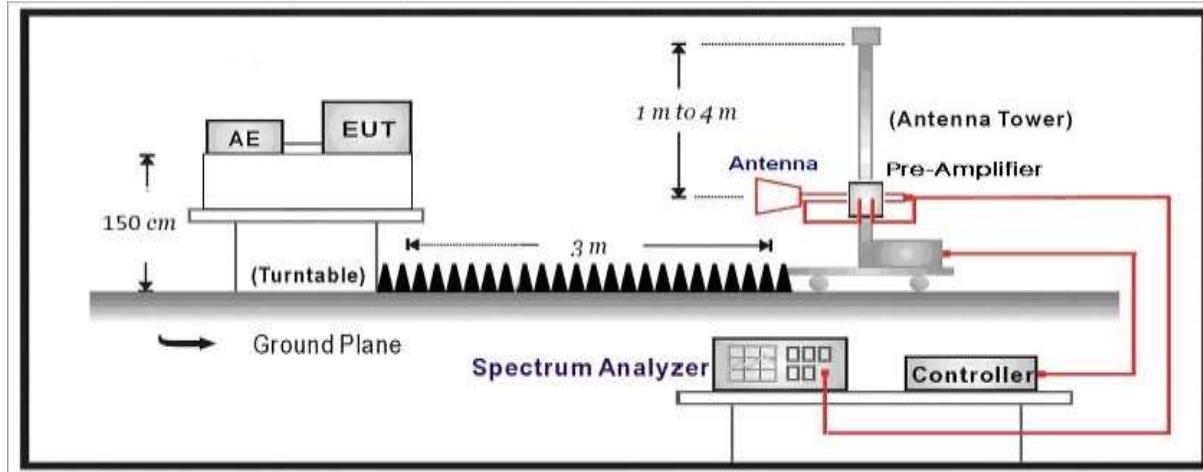
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



#### 4.3. Limit

##### For FCC

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			

**For ISED:**

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

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

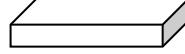
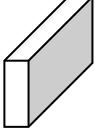
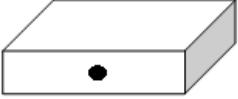
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed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

#### 4.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input type="checkbox"/>	ANSI C63.10	11.11	Emissions in non-restricted frequency bands
<input type="checkbox"/>	<input type="checkbox"/> ANSI C63.10	11.11.2	Reference level measurement
	<input type="checkbox"/> ANSI C63.10	11.11.3	Emission level measurement
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
	<input checked="" type="checkbox"/> ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
	<input type="checkbox"/> ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.4	Peak power measurement procedure
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.5	Average power measurement procedures
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
<input type="checkbox"/>	<input type="checkbox"/> ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

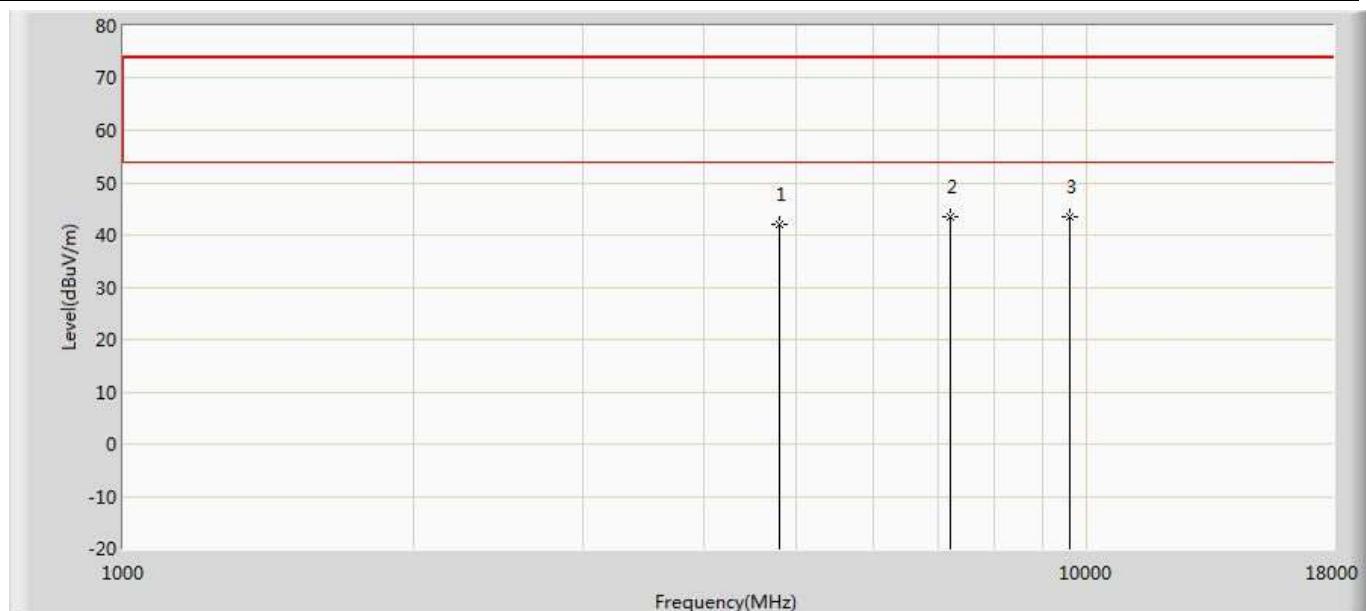
#### 4.5. EUT test Axis definition

Item	Emissions in restricted frequency bands		
Device Category	<input type="checkbox"/>	Fixed point-to-point	
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially	
	<input checked="" type="checkbox"/>	Other cases	
Test mode	Mode 1~4		
Test method	<input checked="" type="checkbox"/>	Radiated	
		X Axis	Y Axis
			
		Worst Axis <input checked="" type="checkbox"/>	Worst Axis <input type="checkbox"/>
	<input type="checkbox"/>	Conducted	
	<input type="checkbox"/>	Chain 1	
			
	<input type="checkbox"/>	Chain 1	Chain 2
			
	<input type="checkbox"/>	Chain 1	Chain 2
			Chain 3

## 4.6. Test Result

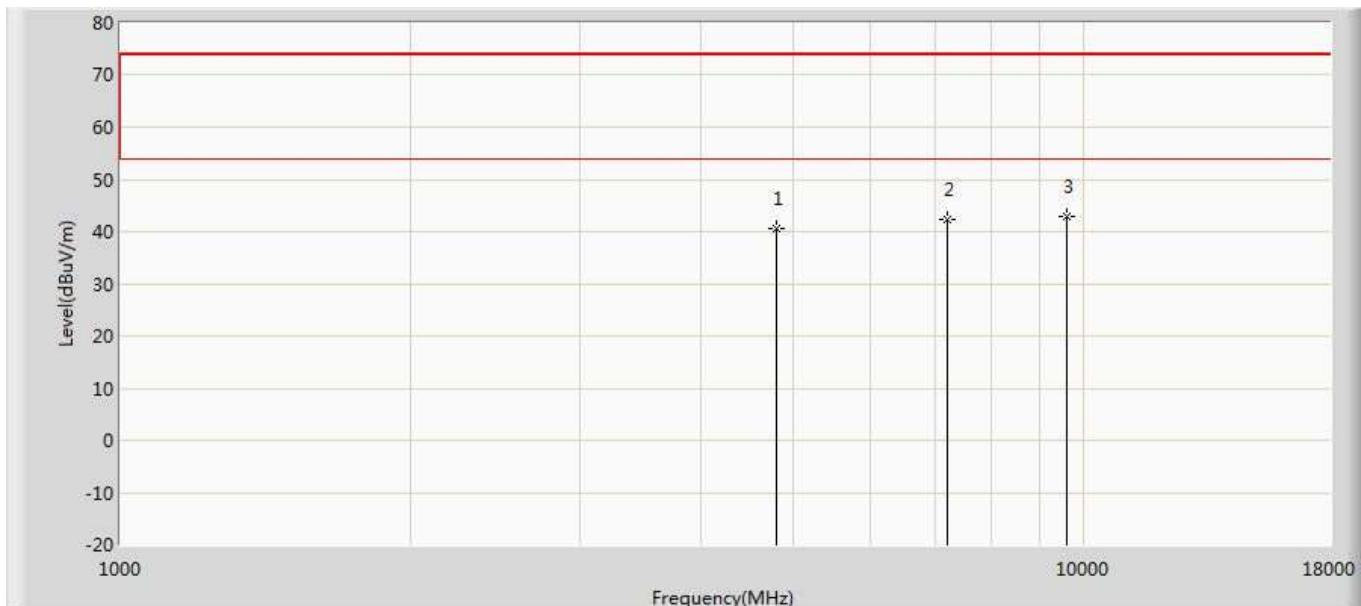
### Murata:

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:45
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 1:Transmit at 2402MHz by BLE	



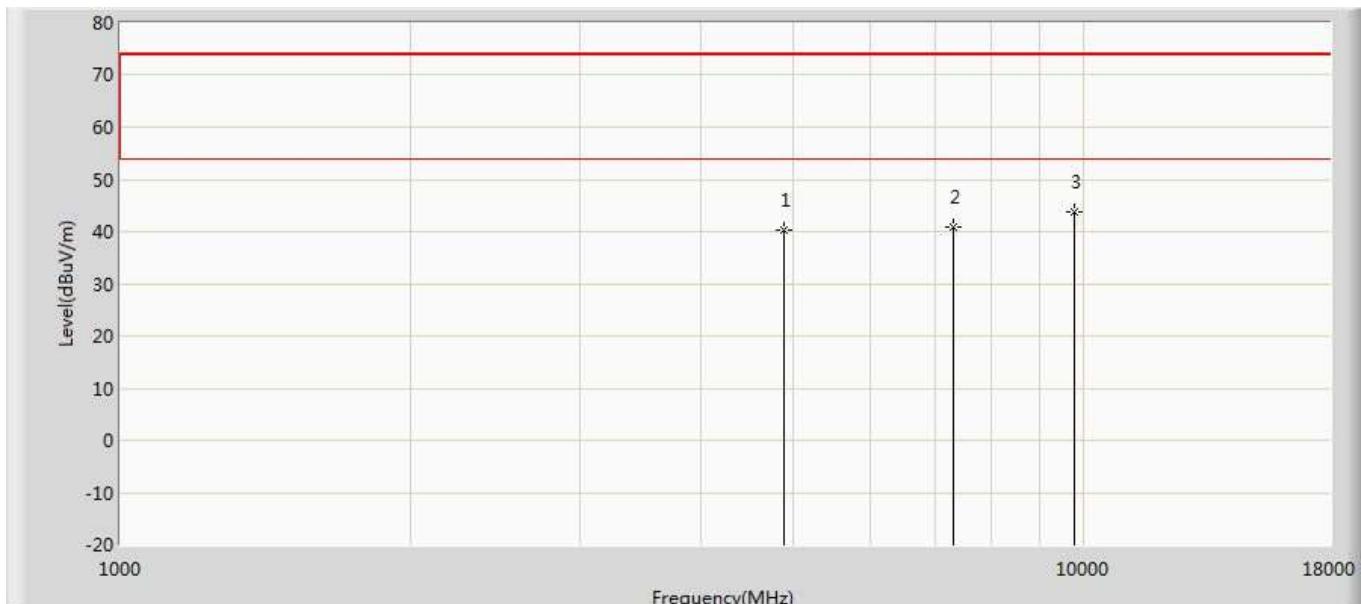
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	42.120	43.843	-31.880	74.000	-1.723	PK
2		7206.000	43.480	41.561	-30.520	74.000	1.919	PK
3	*	9608.000	43.584	38.685	-30.416	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:45
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 BLE	



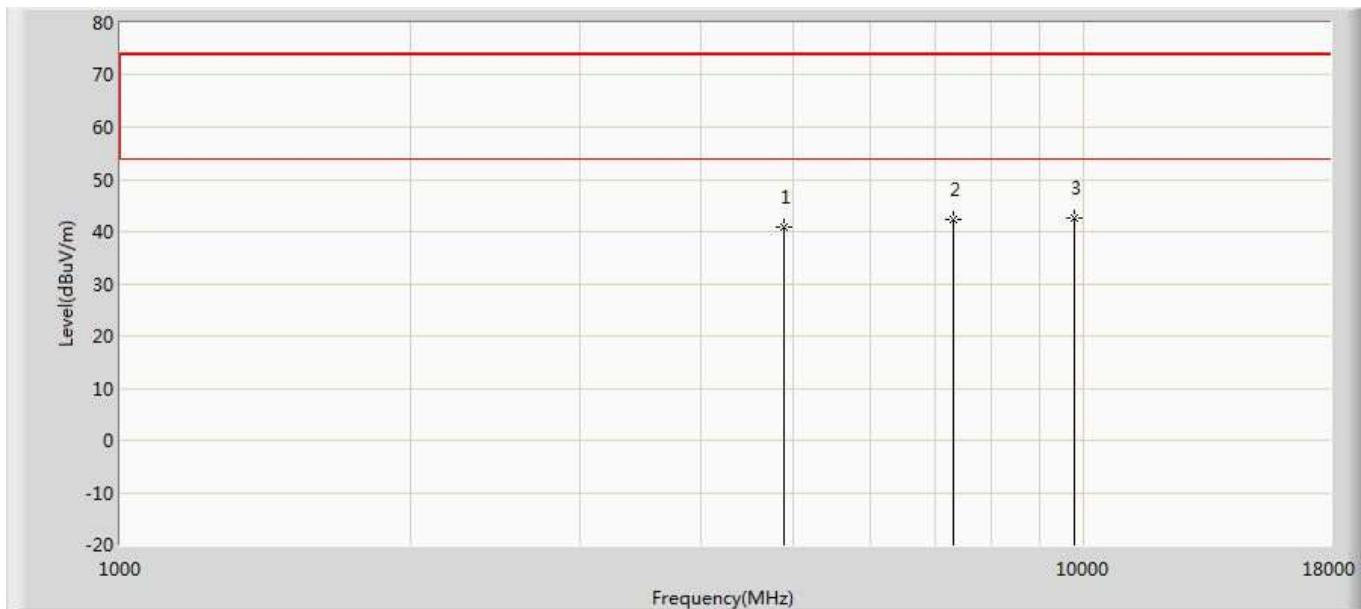
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.481	42.204	-33.519	74.000	-1.723	PK
2		7206.000	42.316	40.397	-31.684	74.000	1.919	PK
3	*	9608.000	42.766	37.867	-31.234	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:45
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 1:Transmit at 2440MHz by BLE	



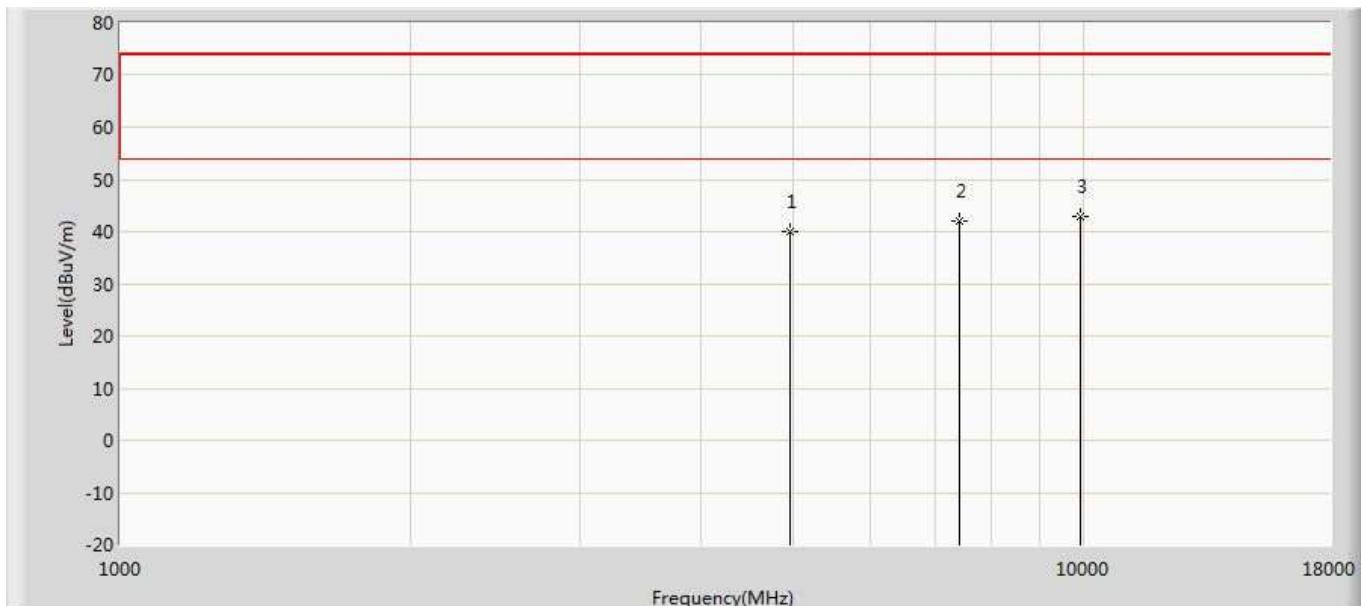
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.173	41.457	-33.827	74.000	-1.284	PK
2		7320.000	40.873	38.990	-33.127	74.000	1.884	PK
3	*	9760.000	43.874	38.062	-30.126	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:45
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 BLE	



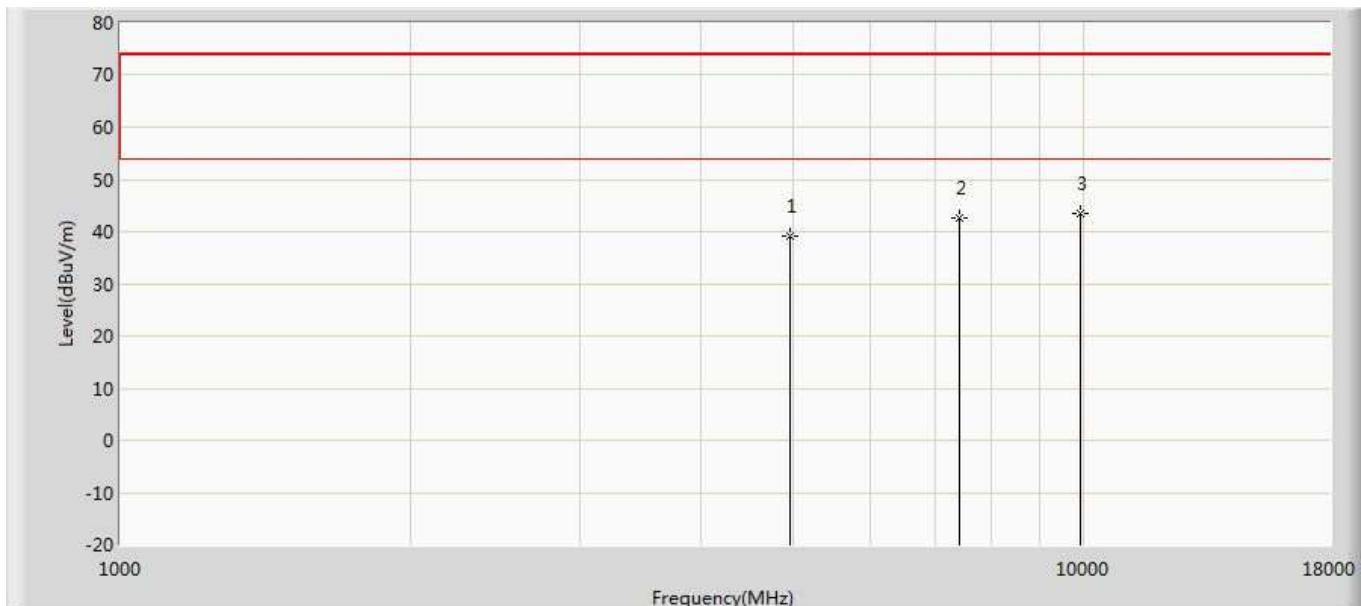
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.760	42.044	-33.240	74.000	-1.284	PK
2		7320.000	42.191	40.308	-31.809	74.000	1.884	PK
3	*	9760.000	42.508	36.696	-31.492	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:45
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 1:Transmit at 2480MHz by BLE	



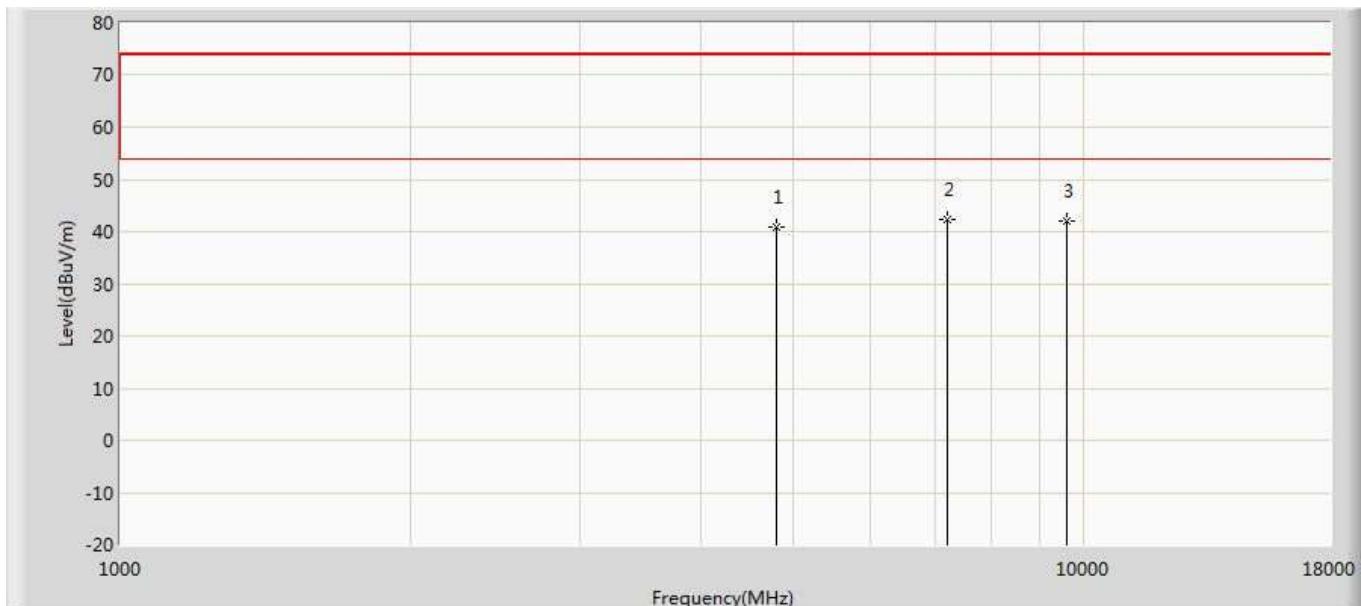
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.141	41.289	-33.859	74.000	-1.148	PK
2		7440.000	41.967	39.541	-32.033	74.000	2.426	PK
3	*	9920.000	42.794	37.540	-31.206	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 BLE	



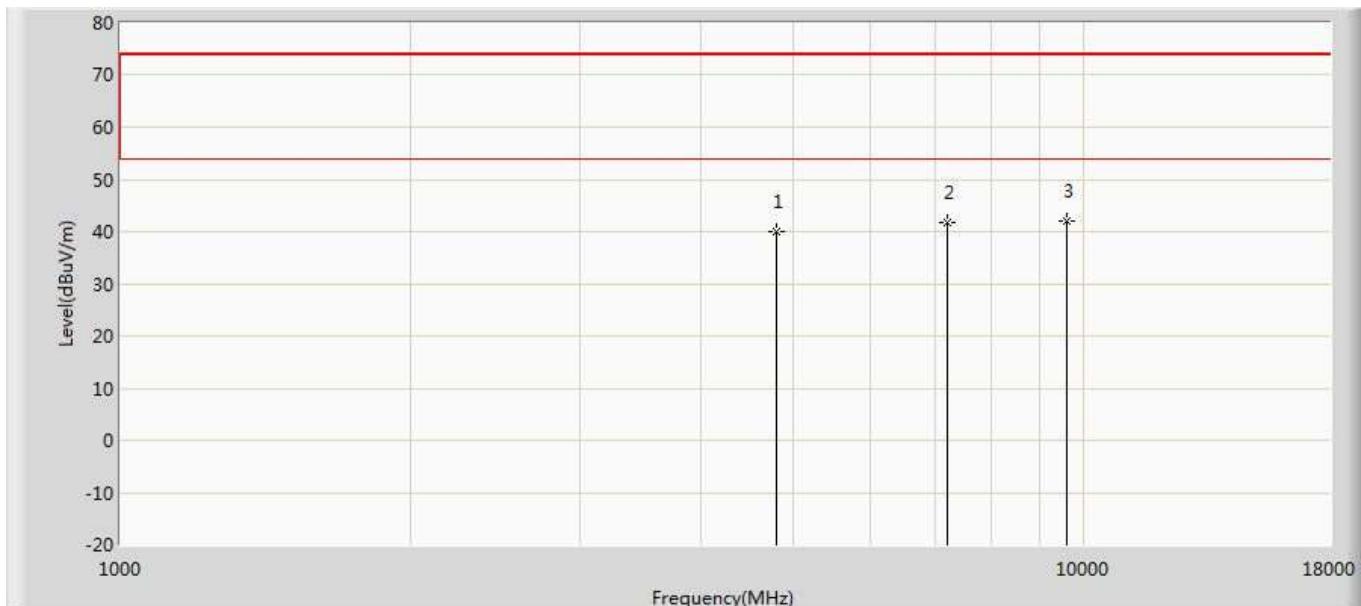
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.059	40.207	-34.941	74.000	-1.148	PK
2		7440.000	42.701	40.275	-31.299	74.000	2.426	PK
3	*	9920.000	43.429	38.175	-30.571	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 2LE	



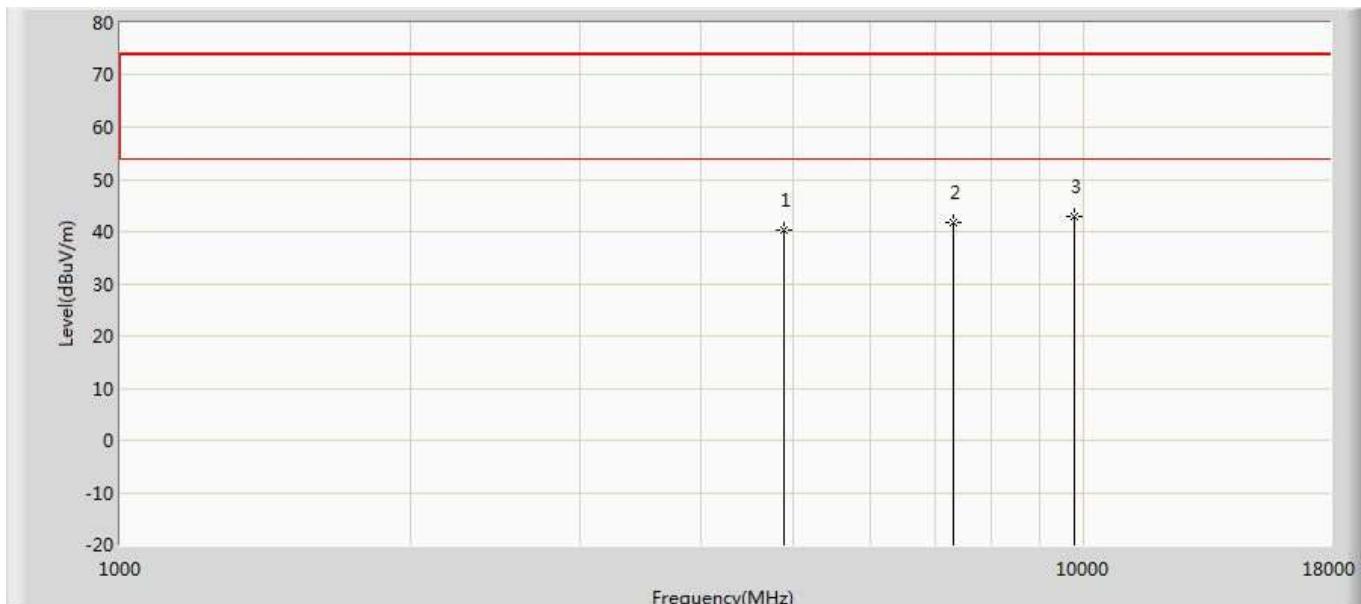
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.829	42.552	-33.171	74.000	-1.723	PK
2	*	7206.000	42.307	40.388	-31.693	74.000	1.919	PK
3		9608.000	42.064	37.165	-31.936	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 2LE	



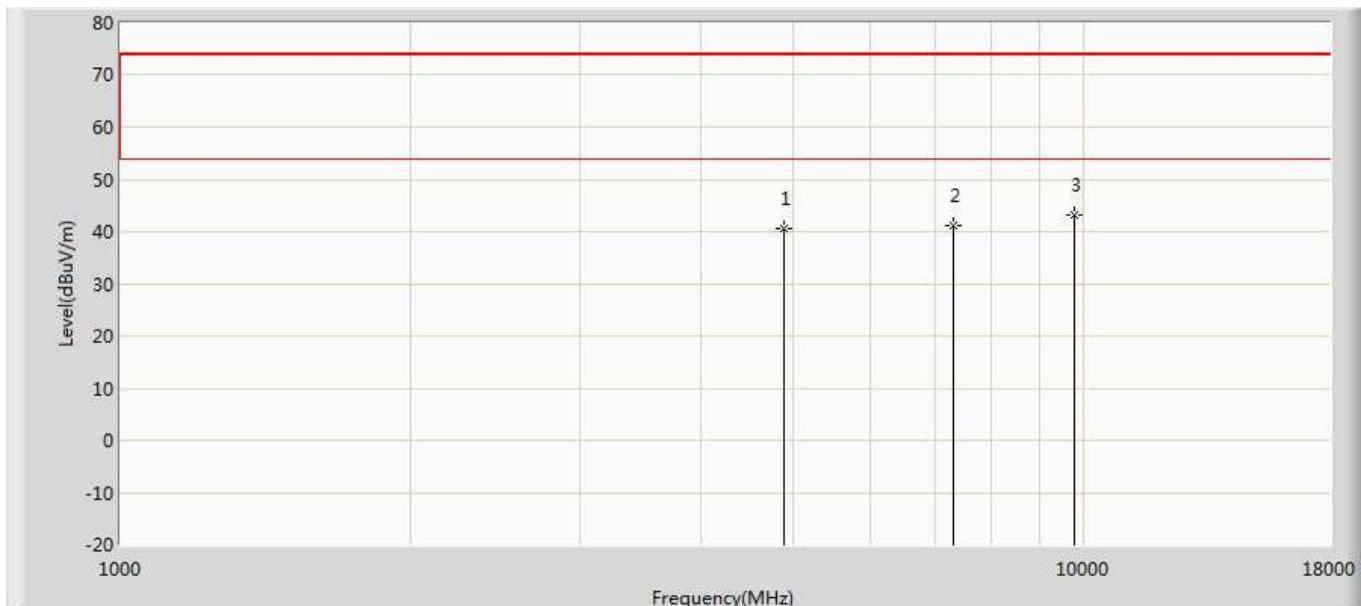
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.090	41.813	-33.910	74.000	-1.723	PK
2		7206.000	41.760	39.841	-32.240	74.000	1.919	PK
3	*	9608.000	42.096	37.197	-31.904	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 2LE	



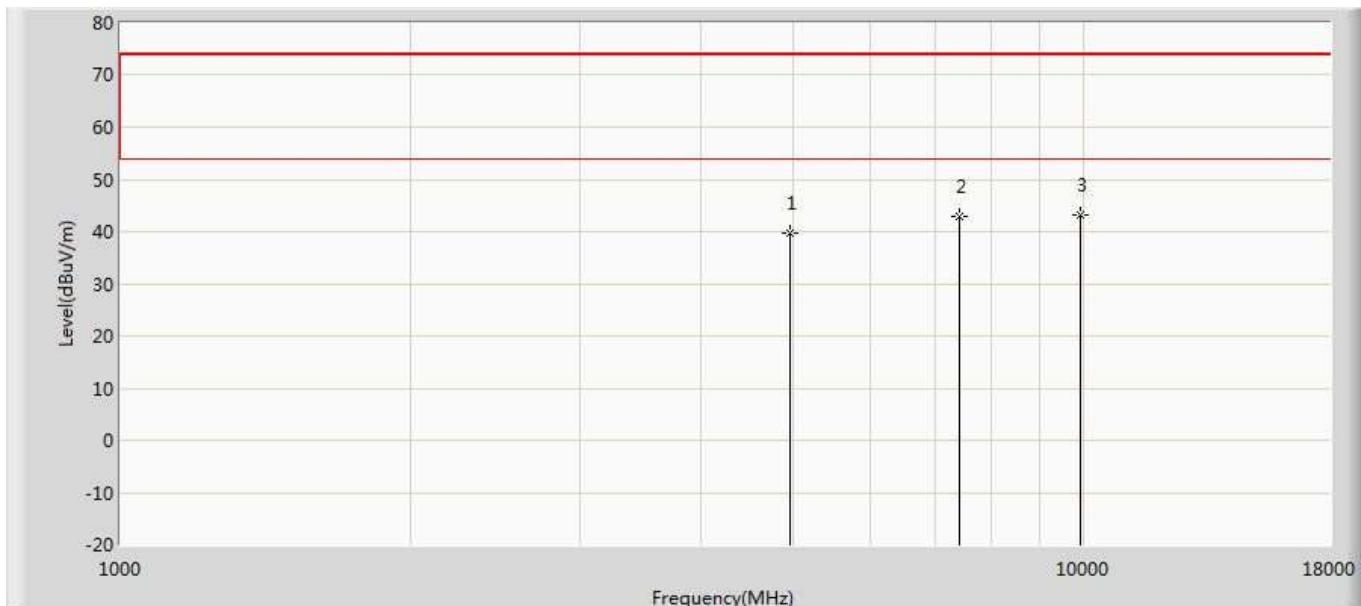
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.251	41.535	-33.749	74.000	-1.284	PK
2		7320.000	41.647	39.764	-32.353	74.000	1.884	PK
3	*	9760.000	43.042	37.230	-30.958	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 2LE	



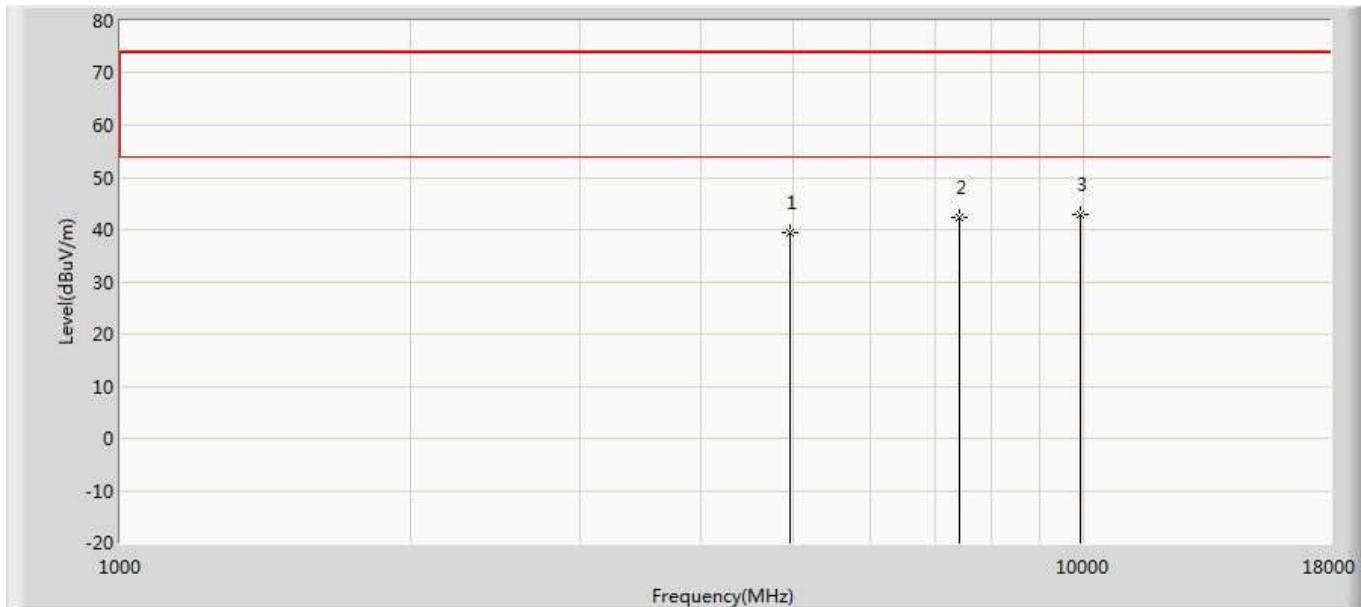
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.667	41.951	-33.333	74.000	-1.284	PK
2		7320.000	41.263	39.380	-32.737	74.000	1.884	PK
3	*	9760.000	43.180	37.368	-30.820	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 2LE	



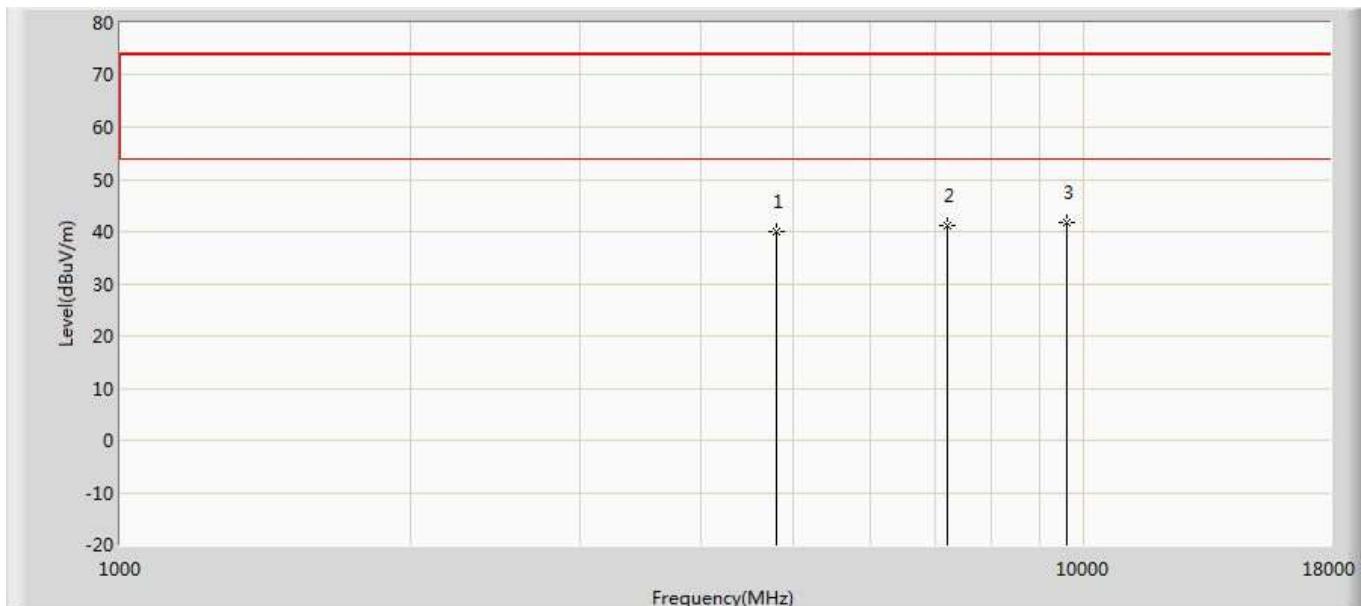
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.732	40.880	-34.268	74.000	-1.148	PK
2		7440.000	42.954	40.528	-31.046	74.000	2.426	PK
3	*	9920.000	43.223	37.969	-30.777	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 2LE	



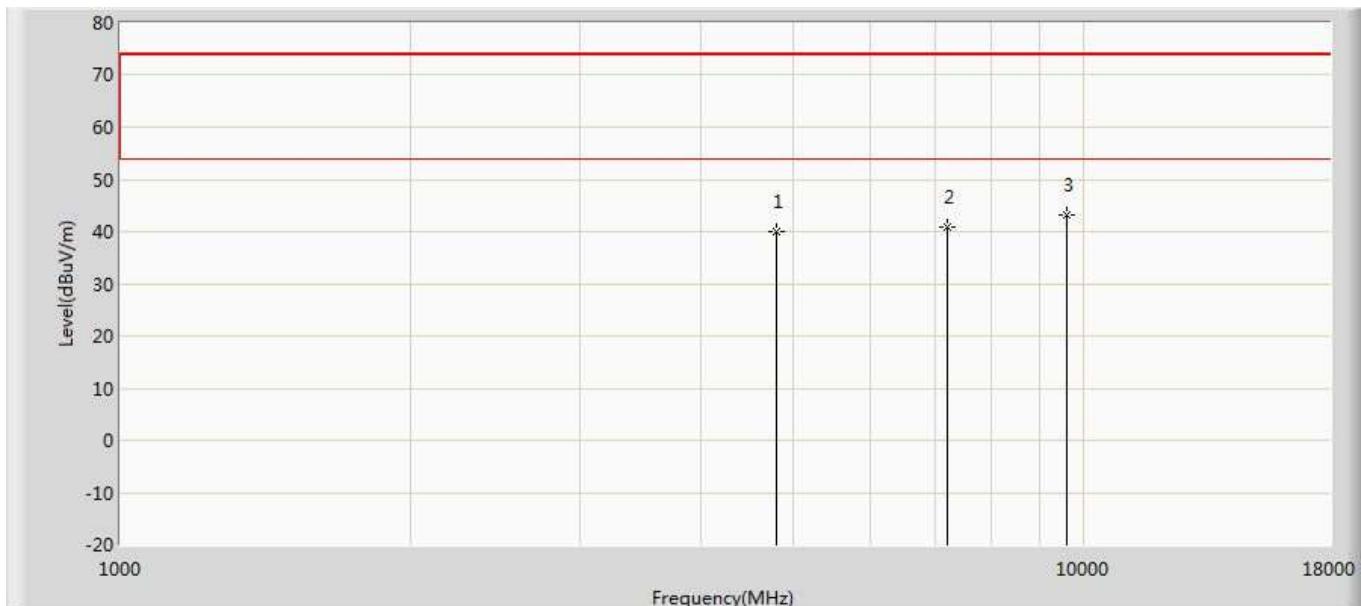
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.467	40.615	-34.533	74.000	-1.148	PK
2		7440.000	42.296	39.870	-31.704	74.000	2.426	PK
3	*	9920.000	42.879	37.625	-31.121	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 Coded125	



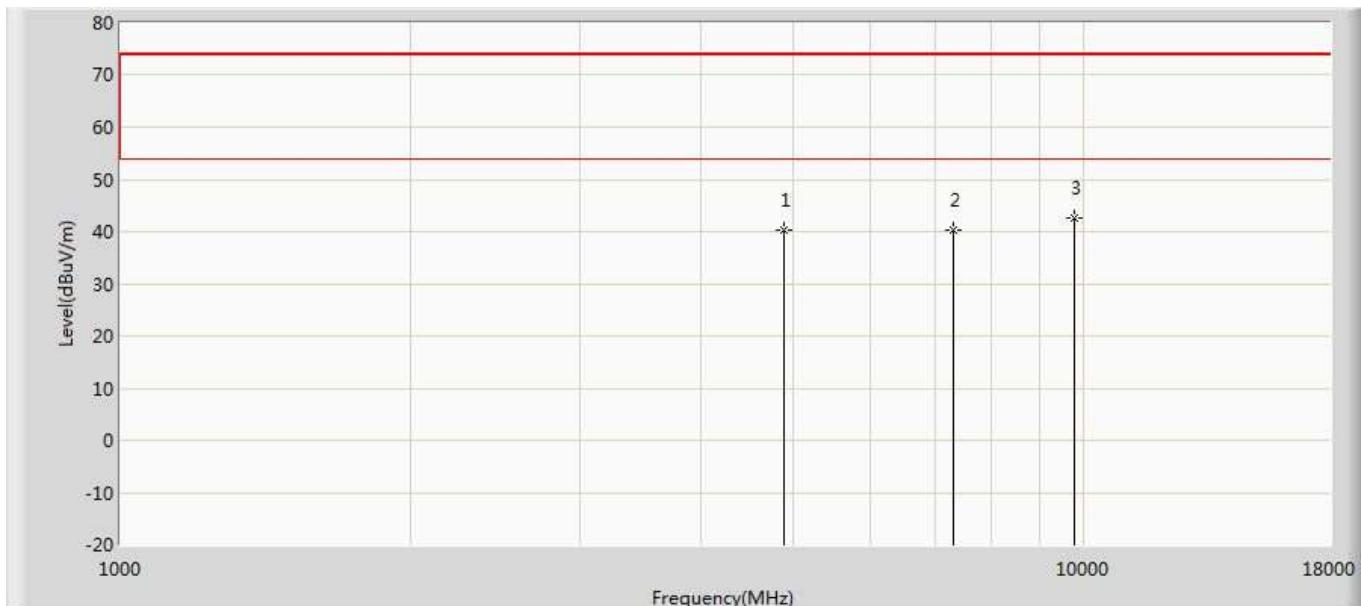
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	39.971	41.694	-34.029	74.000	-1.723	PK
2		7206.000	41.232	39.313	-32.768	74.000	1.919	PK
3	*	9608.000	41.640	36.741	-32.360	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 Coded125	



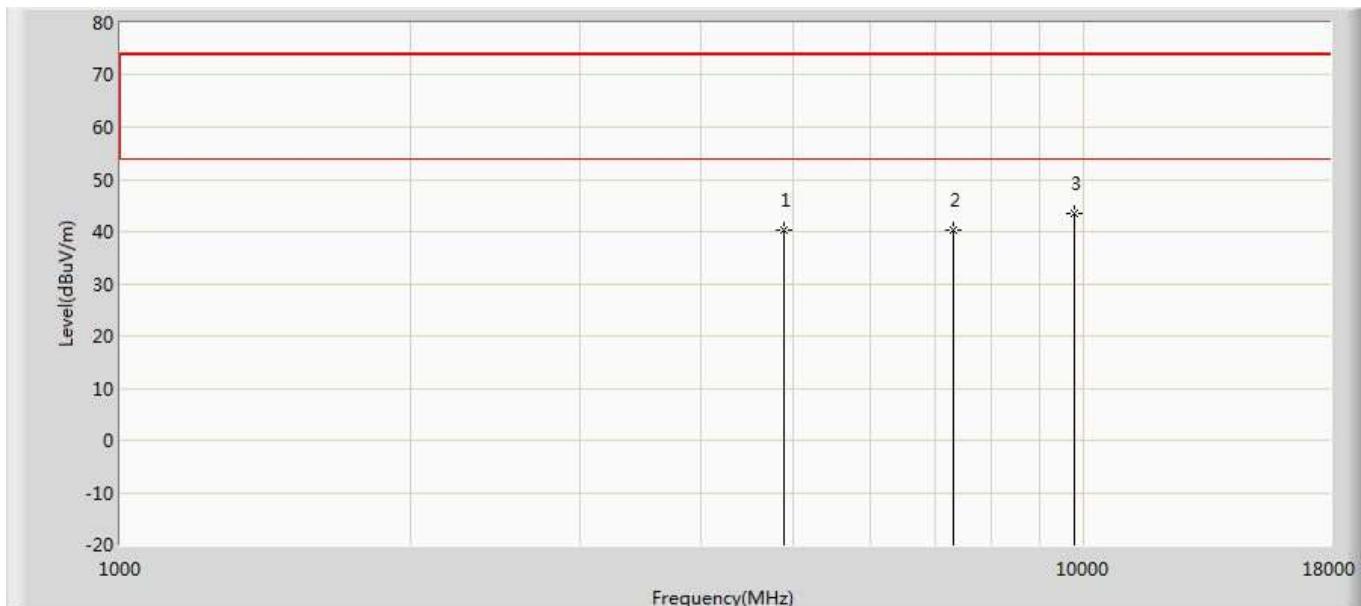
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.105	41.828	-33.895	74.000	-1.723	PK
2		7206.000	40.942	39.023	-33.058	74.000	1.919	PK
3	*	9608.000	43.114	38.215	-30.886	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 Coded125	



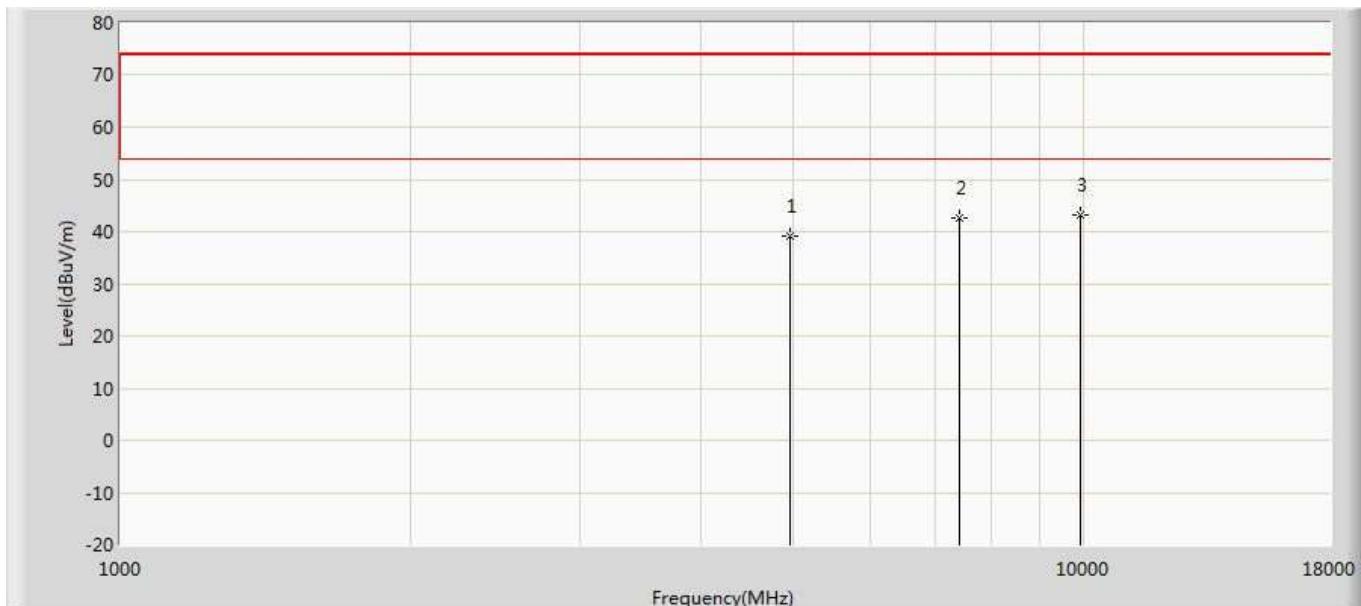
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.367	41.651	-33.633	74.000	-1.284	PK
2		7320.000	40.402	38.519	-33.598	74.000	1.884	PK
3	*	9760.000	42.530	36.718	-31.470	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:46
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 Coded125	



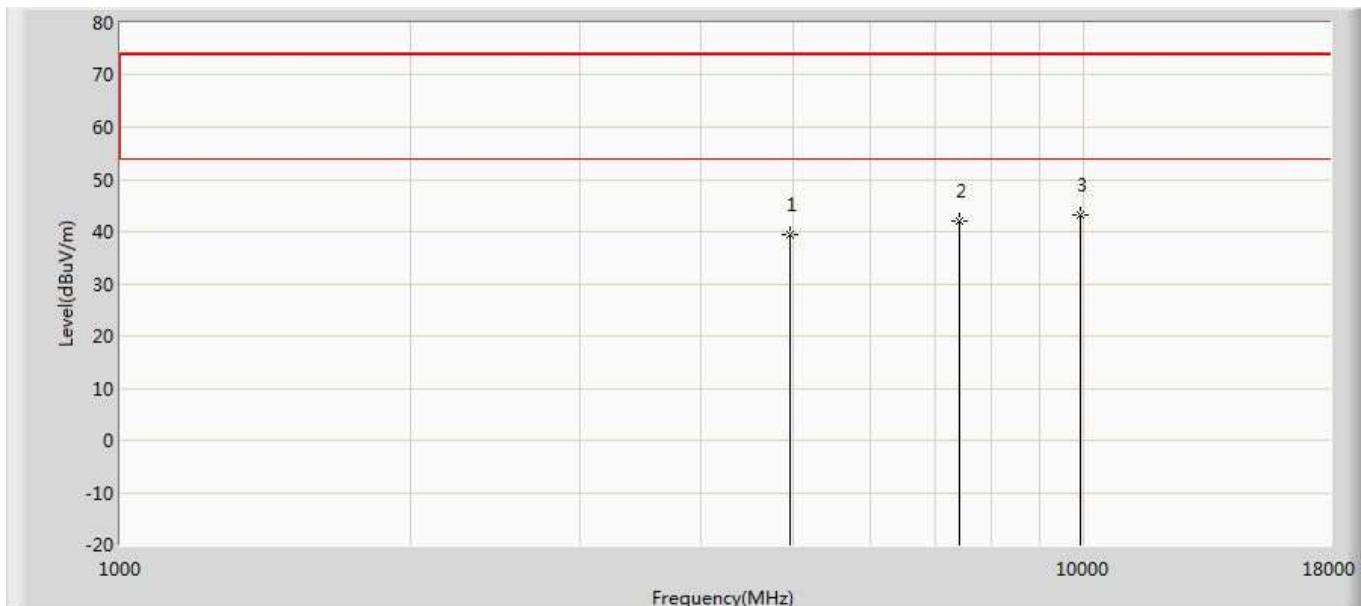
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.305	41.589	-33.695	74.000	-1.284	PK
2		7320.000	40.411	38.528	-33.589	74.000	1.884	PK
3	*	9760.000	43.505	37.693	-30.495	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:47
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 3:Transmit at 2480MHz by Coded125	



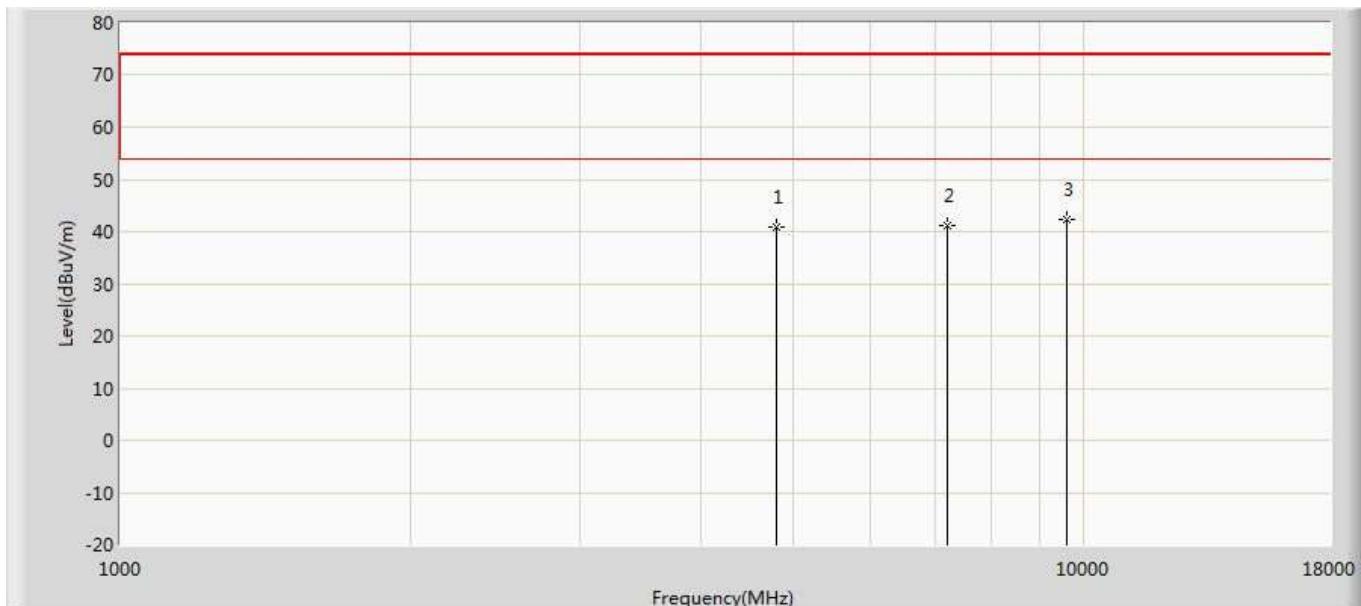
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.051	40.199	-34.949	74.000	-1.148	PK
2		7440.000	42.483	40.057	-31.517	74.000	2.426	PK
3	*	9920.000	43.292	38.038	-30.708	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:47
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 Coded125	



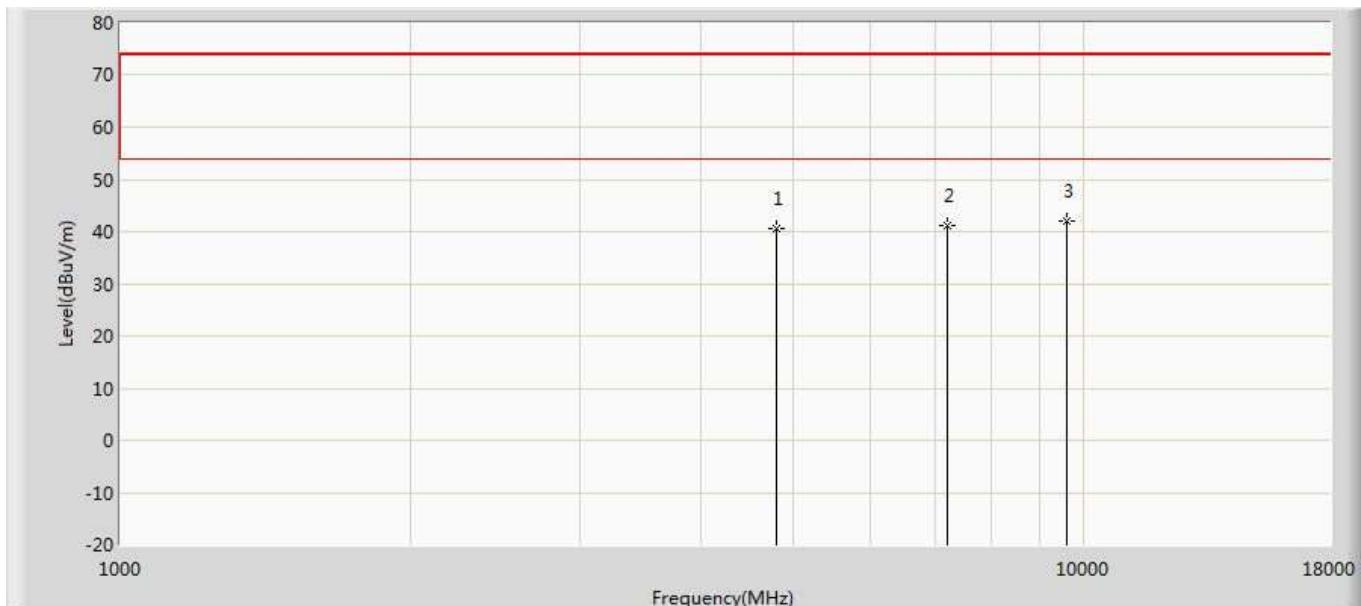
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.484	40.632	-34.516	74.000	-1.148	PK
2		7440.000	42.127	39.701	-31.873	74.000	2.426	PK
3	*	9920.000	43.071	37.817	-30.929	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:47
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 4:Transmit at 2402MHz by Coded500	



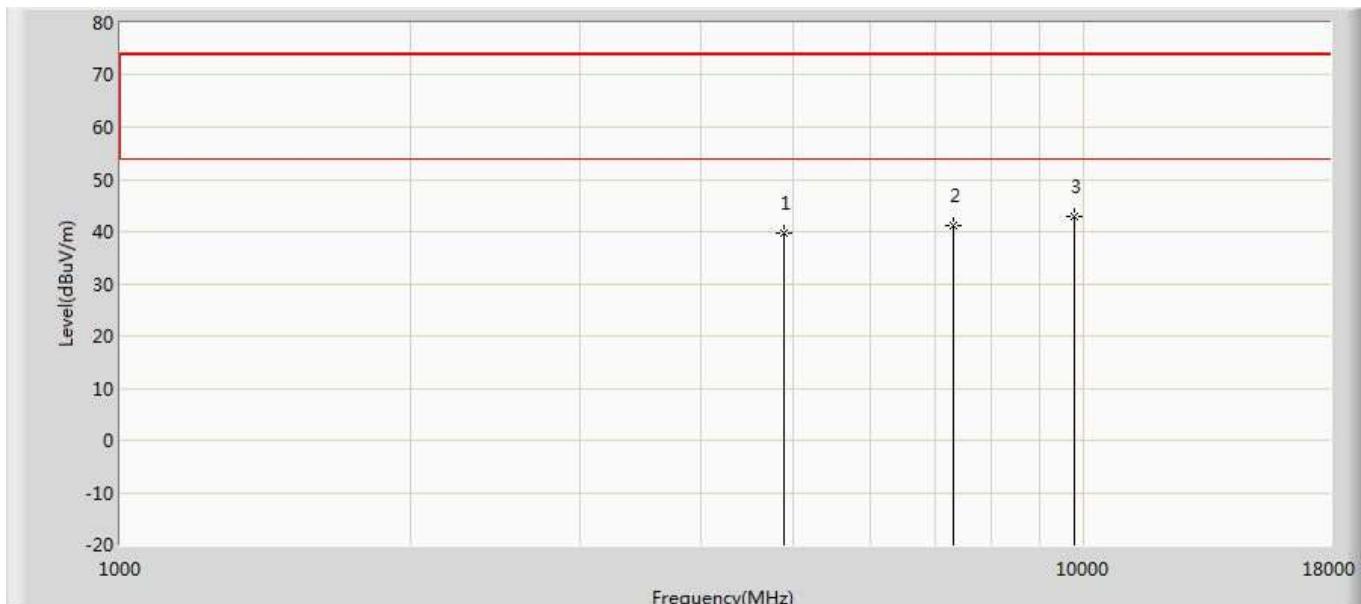
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.870	42.593	-33.130	74.000	-1.723	PK
2		7206.000	41.244	39.325	-32.756	74.000	1.919	PK
3	*	9608.000	42.301	37.402	-31.699	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:47
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 Coded500	



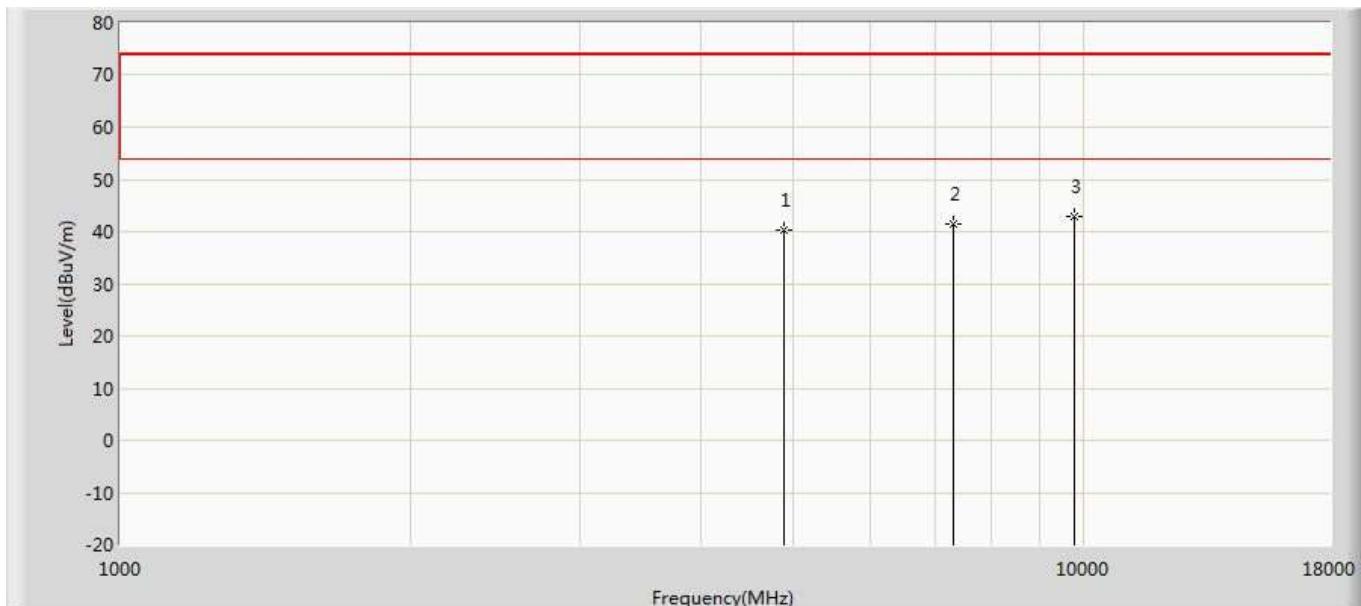
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.565	42.288	-33.435	74.000	-1.723	PK
2		7206.000	41.261	39.342	-32.739	74.000	1.919	PK
3	*	9608.000	41.984	37.085	-32.016	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:47
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 4:Transmit at 2440MHz by Coded500	



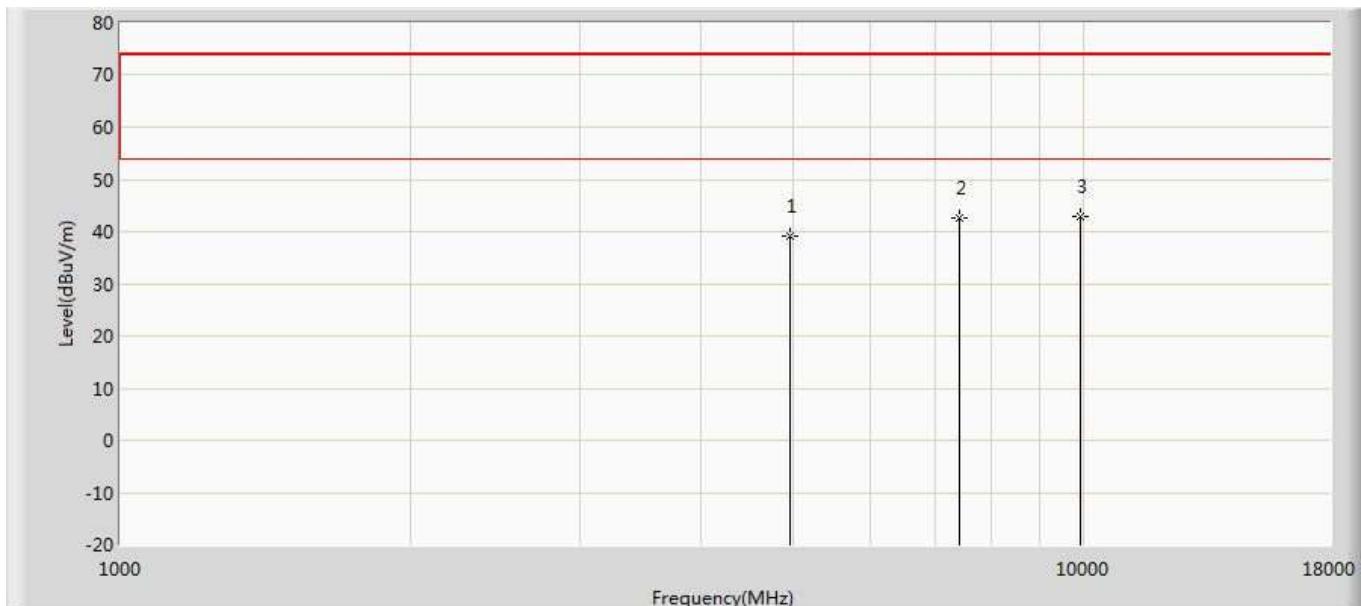
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	39.605	40.889	-34.395	74.000	-1.284	PK
2		7320.000	41.182	39.299	-32.818	74.000	1.884	PK
3	*	9760.000	42.876	37.064	-31.124	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:47
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 Coded500	



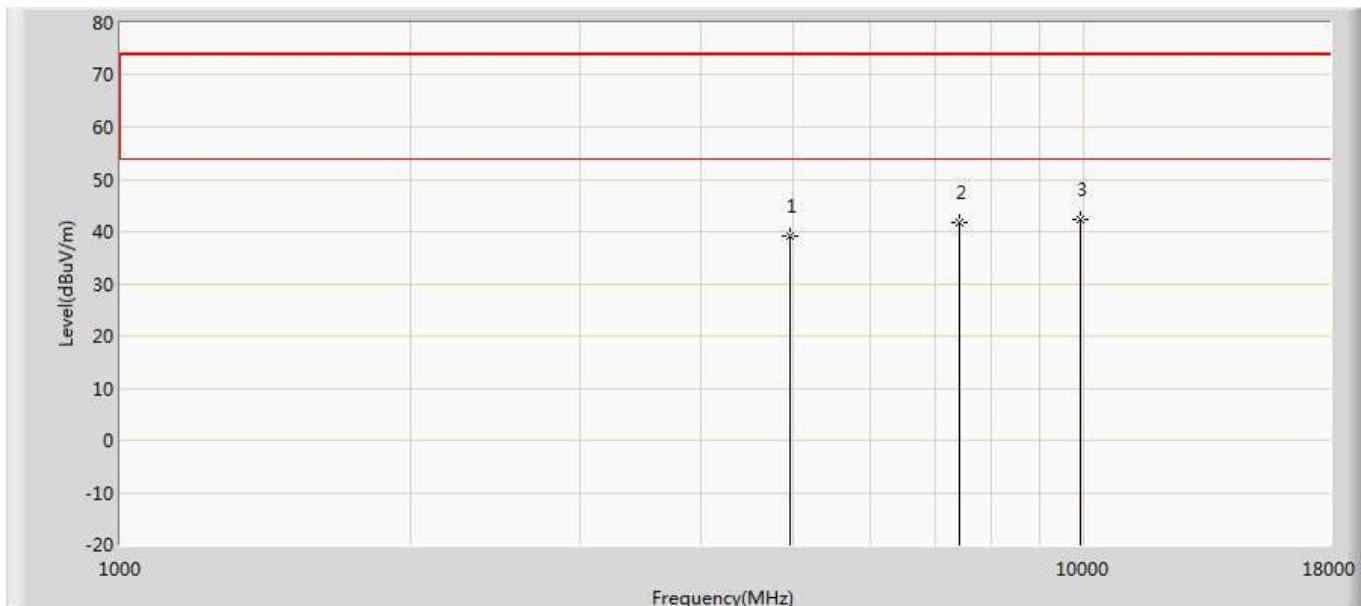
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.251	41.535	-33.749	74.000	-1.284	PK
2		7320.000	41.521	39.638	-32.479	74.000	1.884	PK
3	*	9760.000	42.853	37.041	-31.147	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:47
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 4:Transmit at 2480MHz by Coded500	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.114	40.262	-34.886	74.000	-1.148	PK
2		7440.000	42.710	40.284	-31.290	74.000	2.426	PK
3	*	9920.000	42.898	37.644	-31.102	74.000	5.253	PK

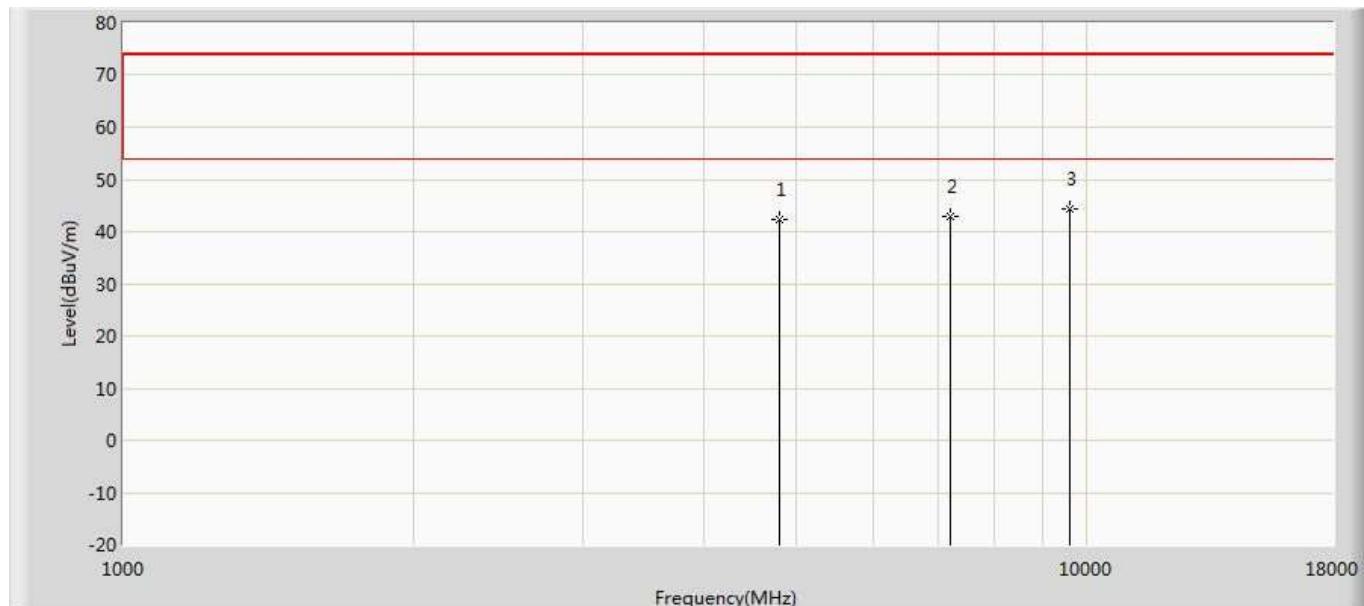
Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 10:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2480MHz by Coded500	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.181	40.329	-34.819	74.000	-1.148	PK
2		7440.000	41.795	39.369	-32.205	74.000	2.426	PK
3	*	9920.000	42.324	37.070	-31.676	74.000	5.253	PK

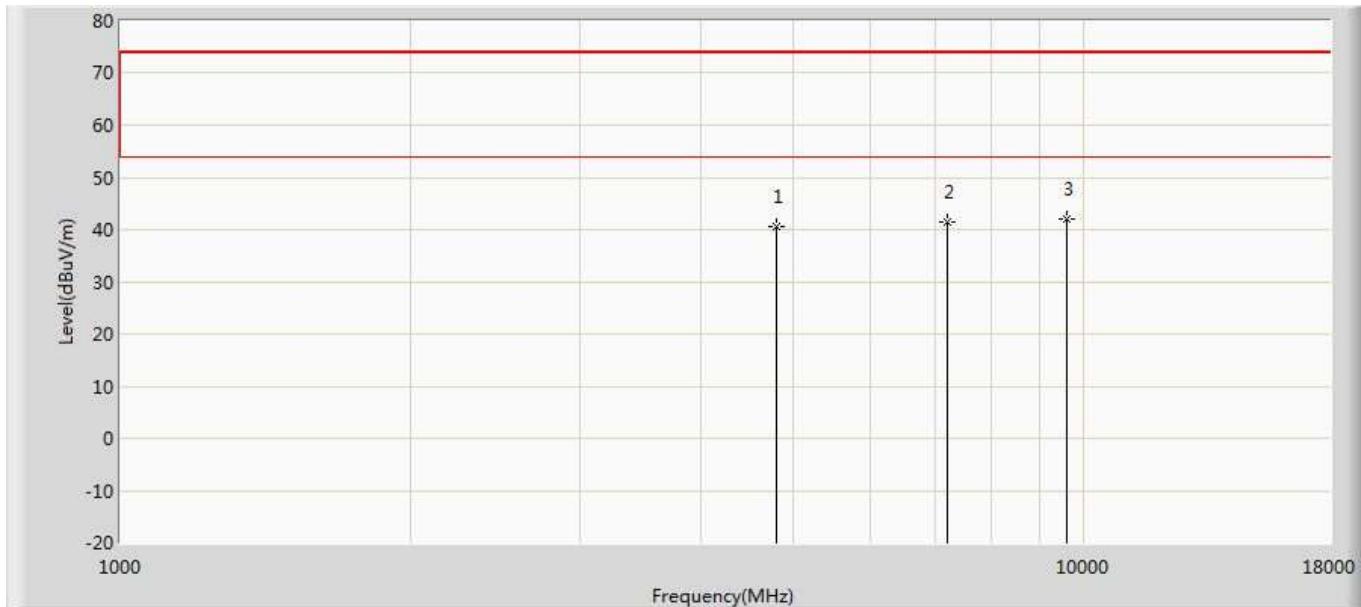
**Diodes:**

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:31
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 2402MHz by BLE	



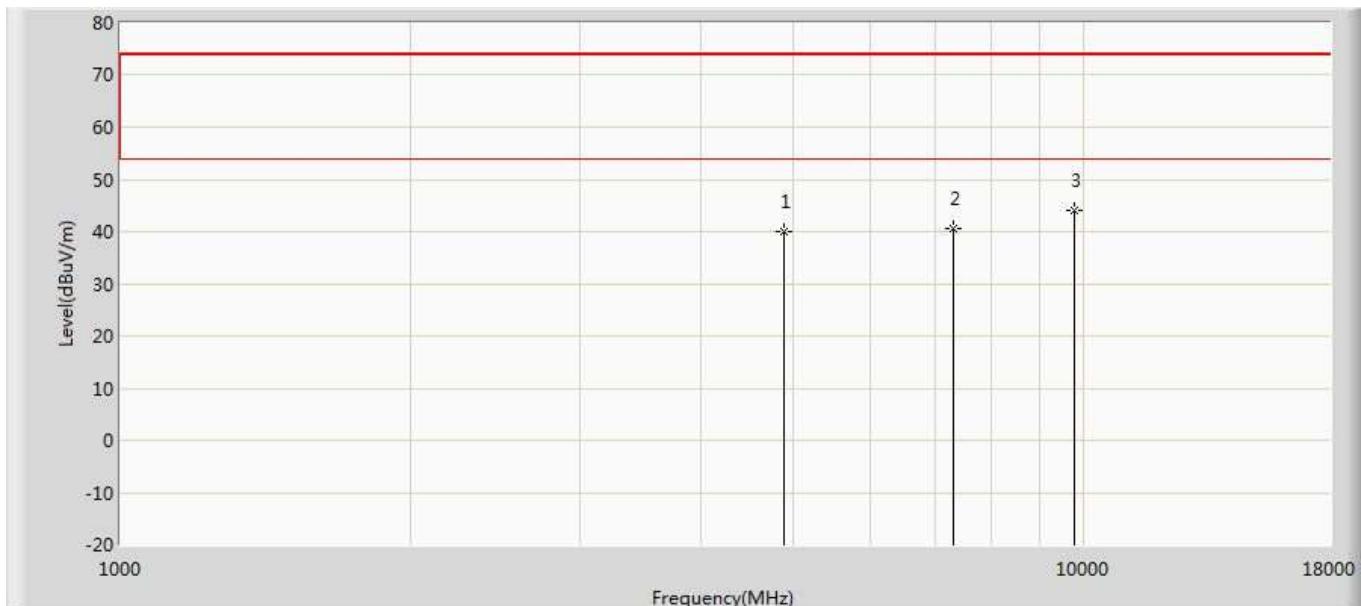
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	42.188	43.911	-31.812	74.000	-1.723	PK
2		7206.000	42.966	41.047	-31.034	74.000	1.919	PK
3	*	9608.000	44.222	39.323	-29.778	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:31
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 BLE	



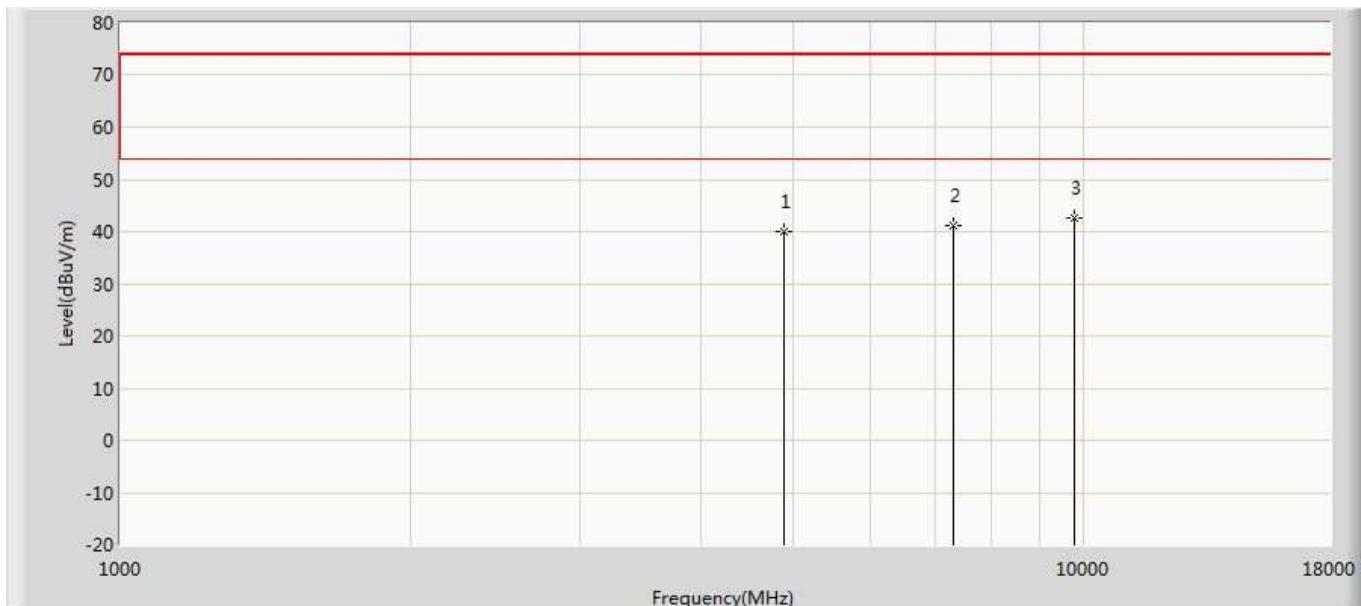
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.655	42.378	-33.345	74.000	-1.723	PK
2		7206.000	41.558	39.639	-32.442	74.000	1.919	PK
3	*	9608.000	42.143	37.244	-31.857	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:31
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 2440MHz by BLE	



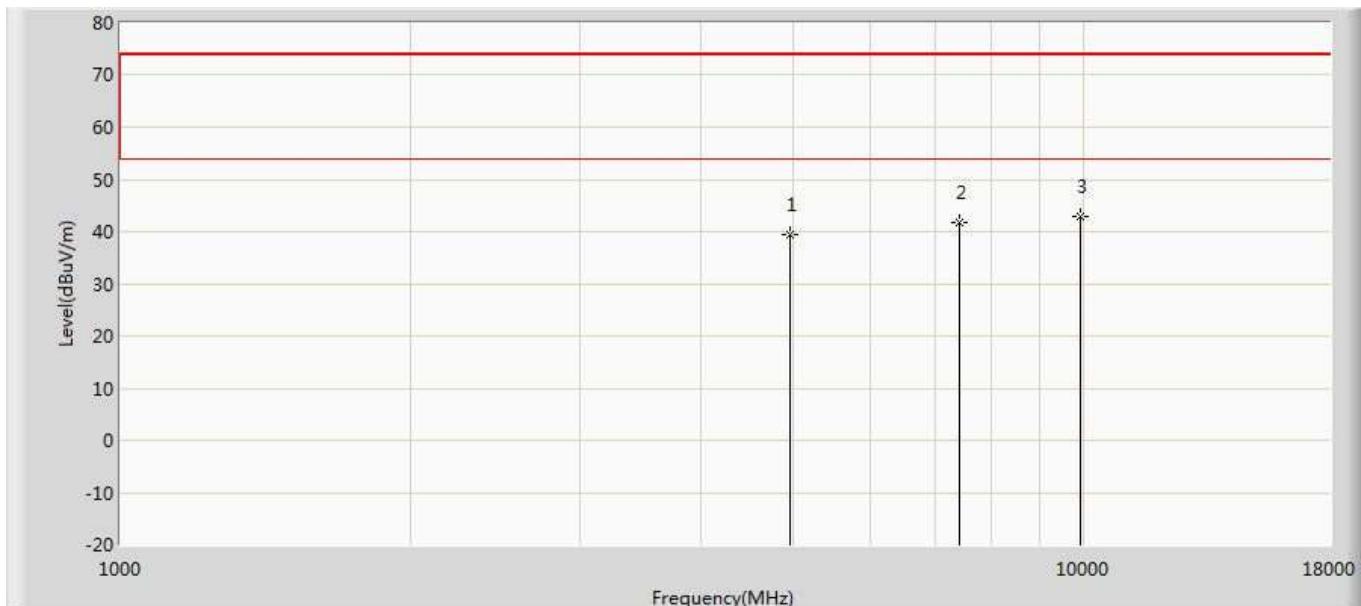
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	39.974	41.258	-34.026	74.000	-1.284	PK
2		7320.000	40.714	38.831	-33.286	74.000	1.884	PK
3	*	9760.000	43.978	38.166	-30.022	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:31
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 BLE	



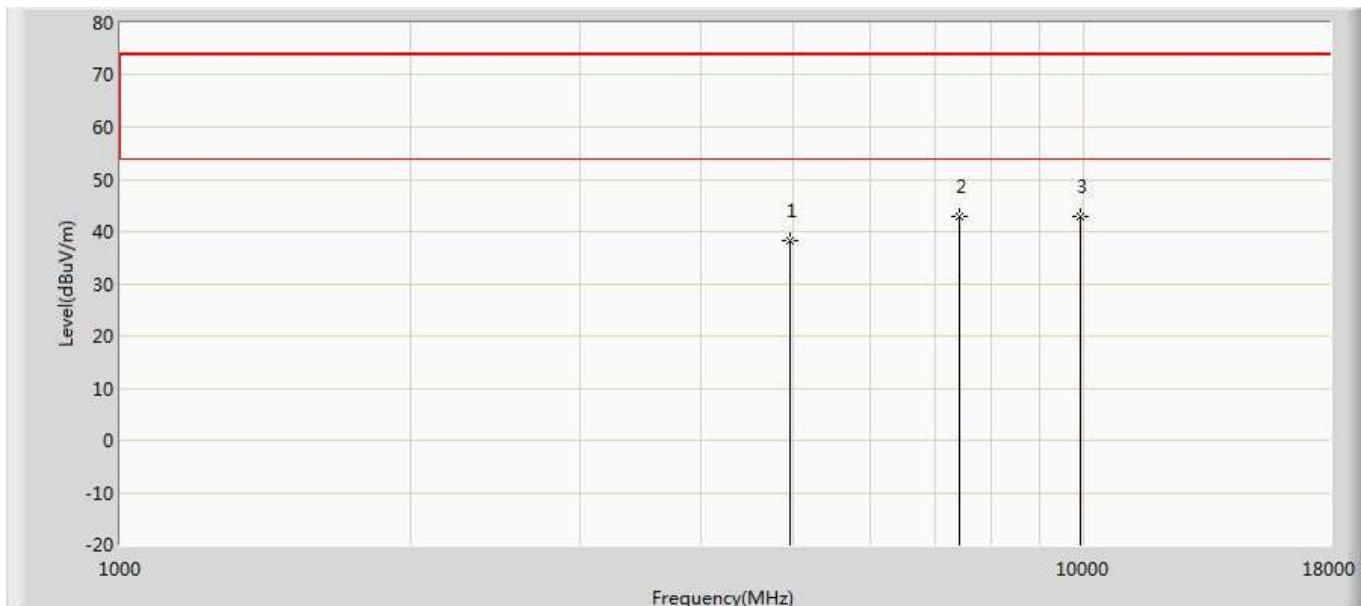
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	39.988	41.272	-34.012	74.000	-1.284	PK
2		7320.000	41.102	39.219	-32.898	74.000	1.884	PK
3	*	9760.000	42.663	36.851	-31.337	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:31
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 2480MHz by BLE	



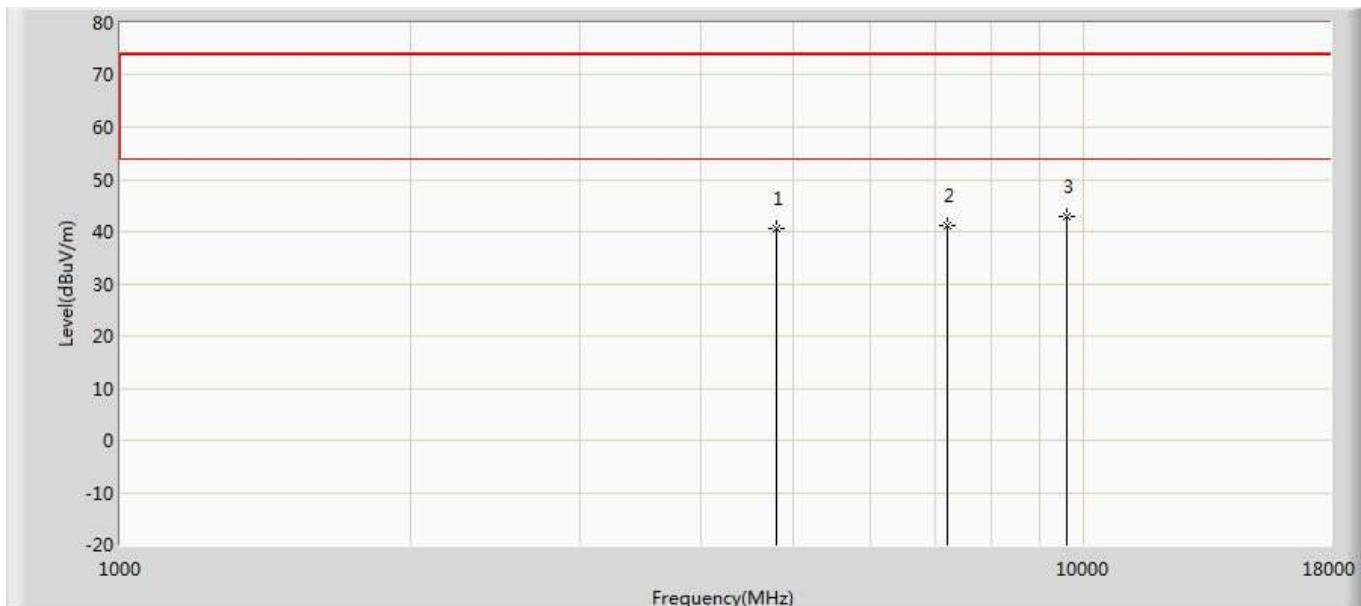
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.526	40.674	-34.474	74.000	-1.148	PK
2		7440.000	41.786	39.360	-32.214	74.000	2.426	PK
3	*	9920.000	42.899	37.645	-31.101	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 BLE	



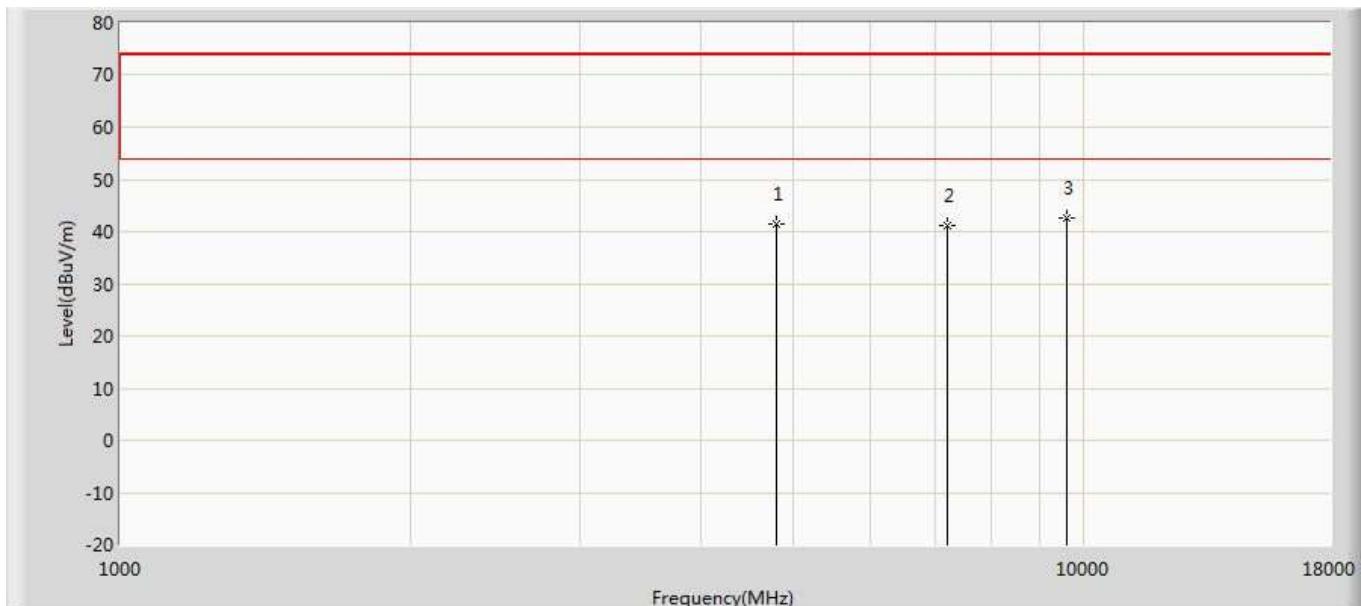
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	38.347	39.495	-35.653	74.000	-1.148	PK
2	*	7440.000	42.804	40.378	-31.196	74.000	2.426	PK
3	*	9920.000	42.904	37.650	-31.096	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 2LE	



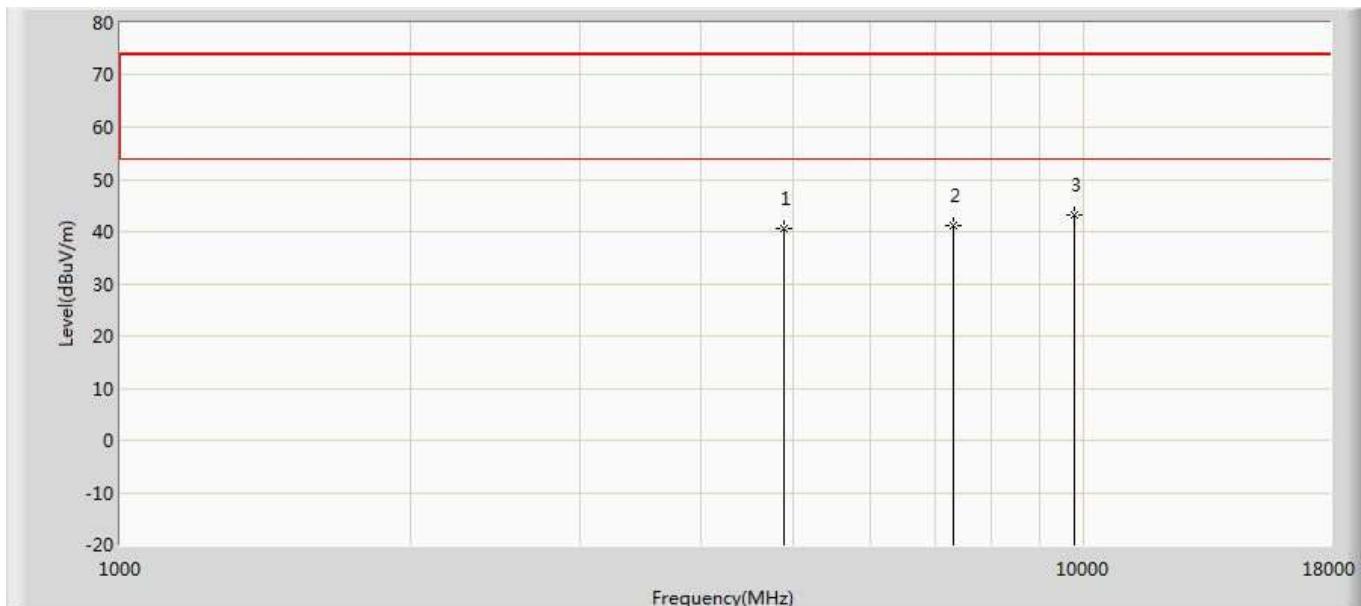
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.468	42.191	-33.532	74.000	-1.723	PK
2		7206.000	41.275	39.356	-32.725	74.000	1.919	PK
3	*	9608.000	42.814	37.915	-31.186	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 2LE	



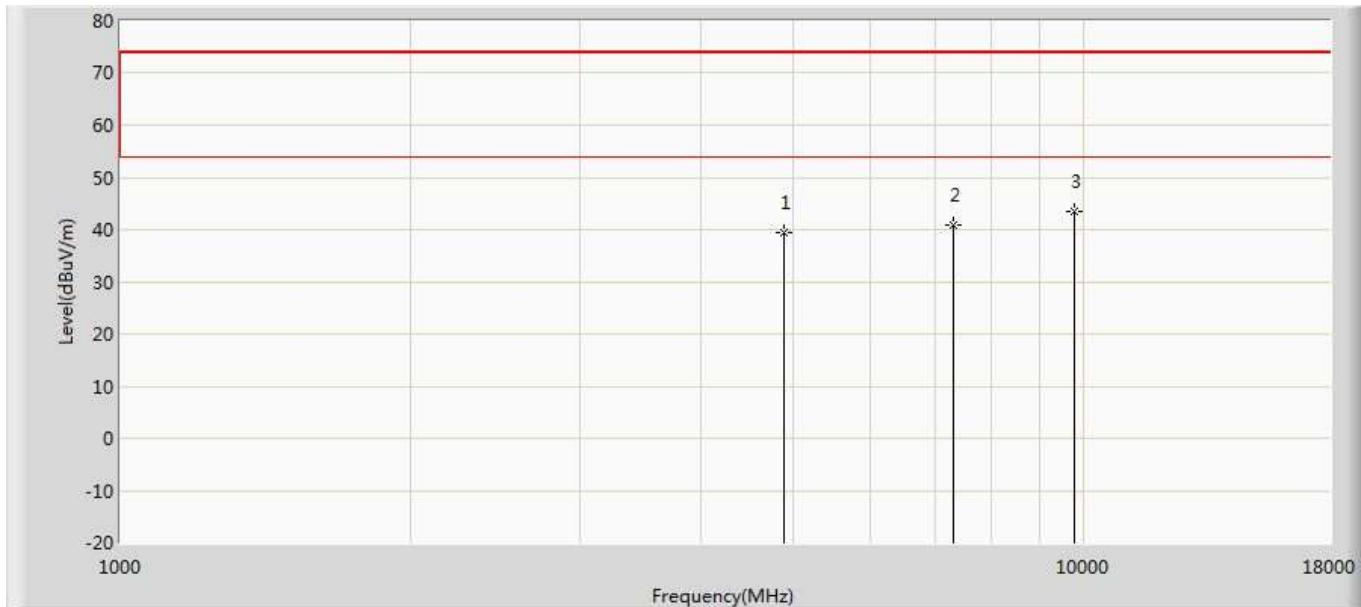
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.352	43.075	-32.648	74.000	-1.723	PK
2		7206.000	41.149	39.230	-32.851	74.000	1.919	PK
3	*	9608.000	42.522	37.623	-31.478	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 2LE	



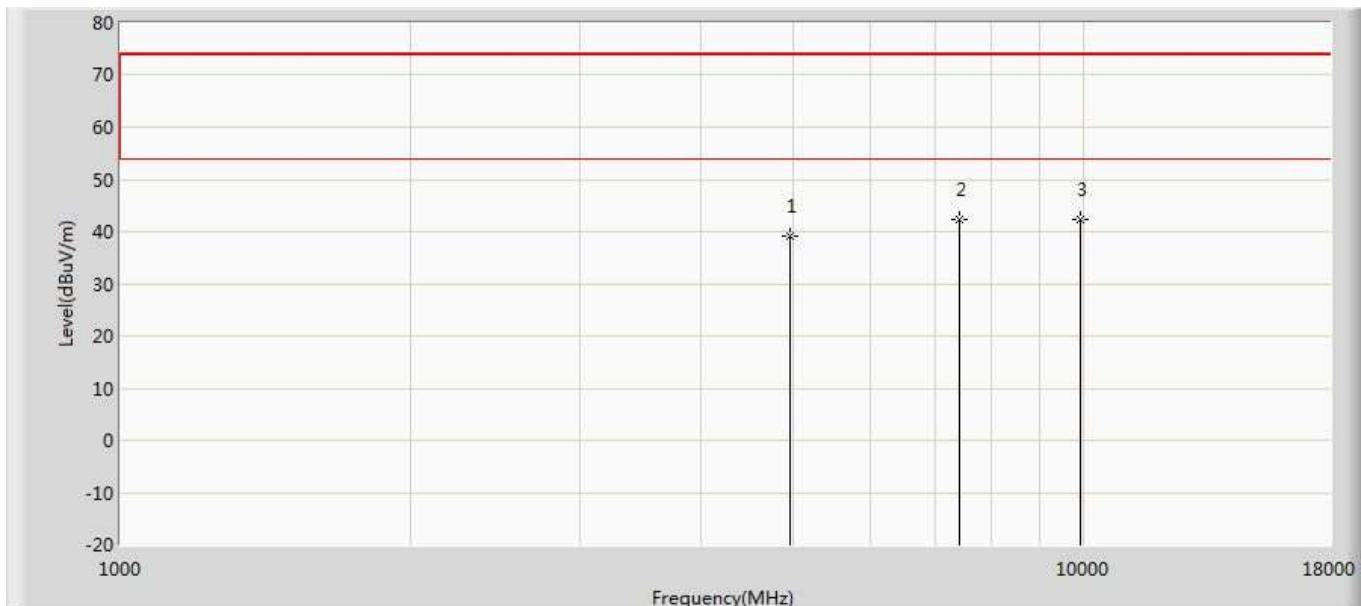
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.693	41.977	-33.307	74.000	-1.284	PK
2		7320.000	41.185	39.302	-32.815	74.000	1.884	PK
3	*	9760.000	43.066	37.254	-30.934	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 2LE	



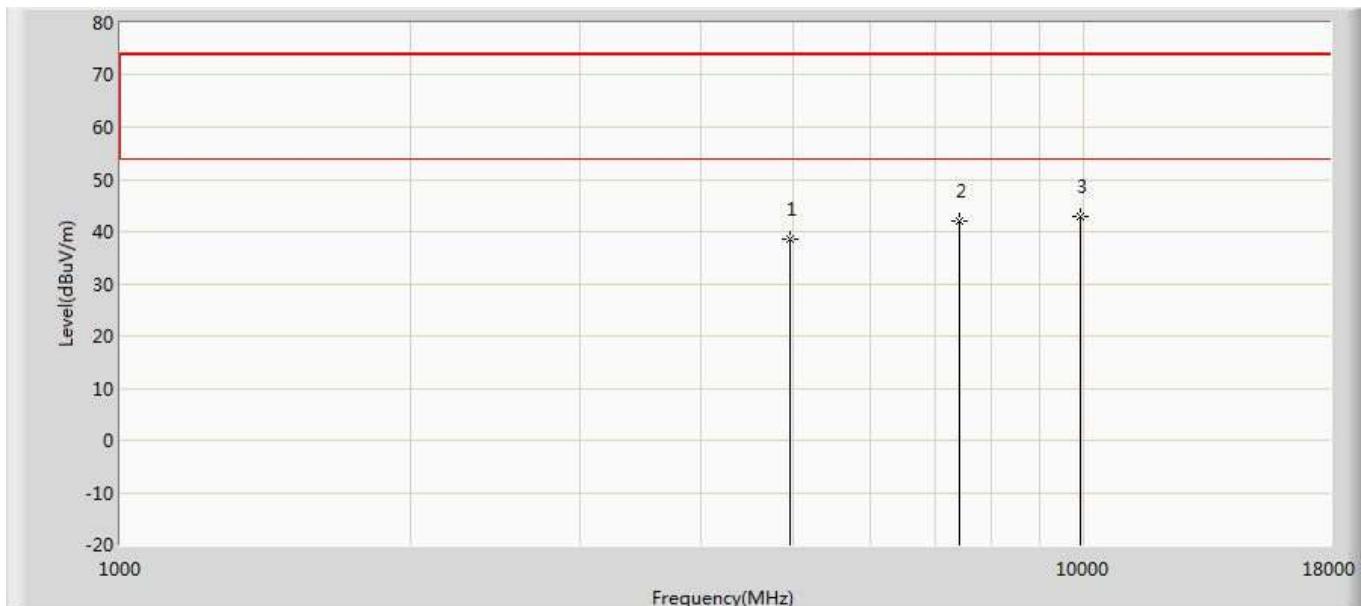
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	39.455	40.739	-34.545	74.000	-1.284	PK
2		7320.000	40.764	38.881	-33.236	74.000	1.884	PK
3	*	9760.000	43.525	37.713	-30.475	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 2LE	



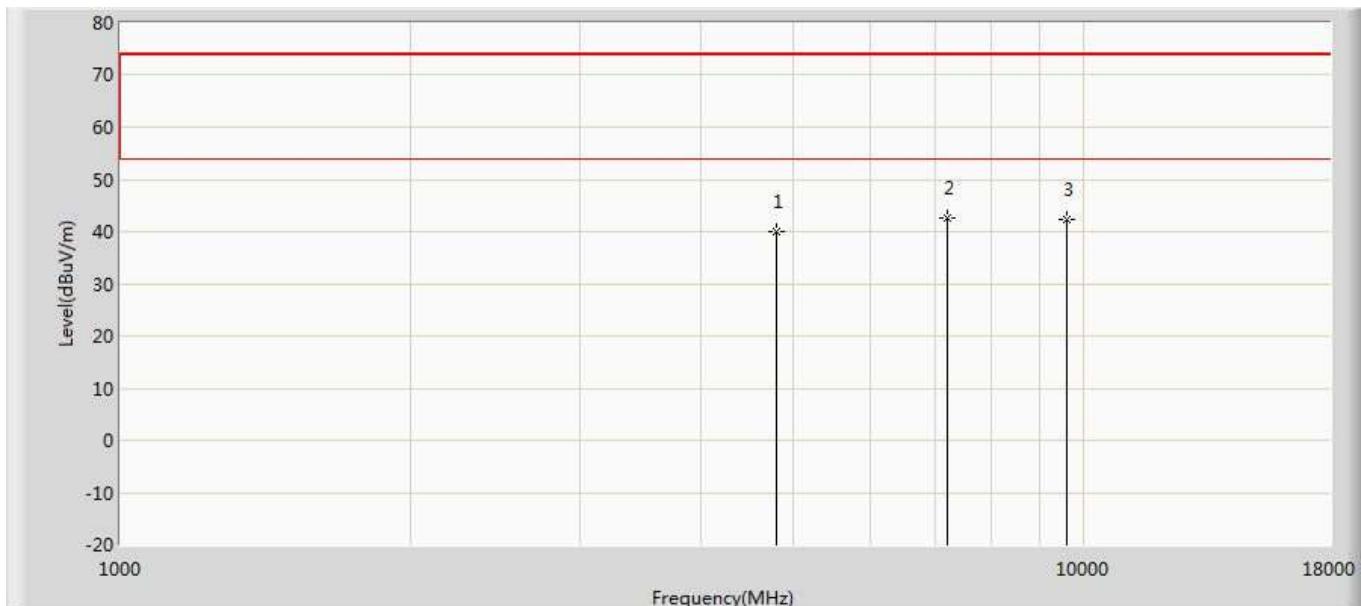
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.213	40.361	-34.787	74.000	-1.148	PK
2	*	7440.000	42.411	39.985	-31.589	74.000	2.426	PK
3		9920.000	42.378	37.124	-31.622	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 2LE	



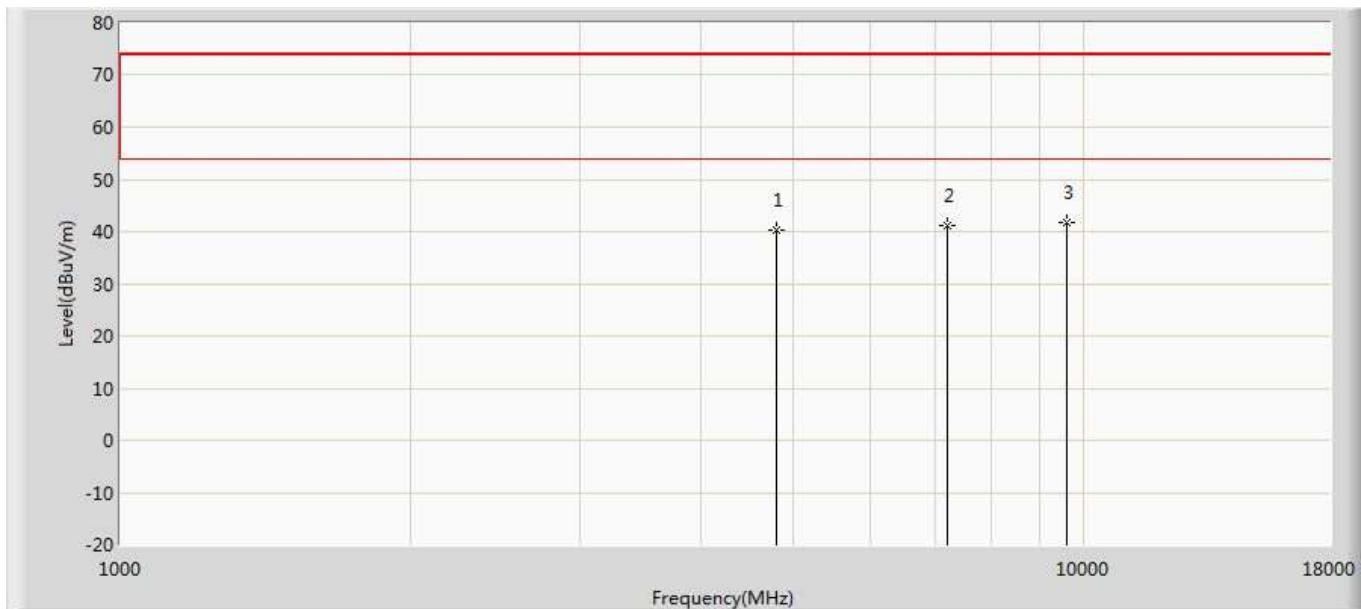
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	38.622	39.770	-35.378	74.000	-1.148	PK
2		7440.000	41.974	39.548	-32.026	74.000	2.426	PK
3	*	9920.000	42.940	37.686	-31.060	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 Coded125	



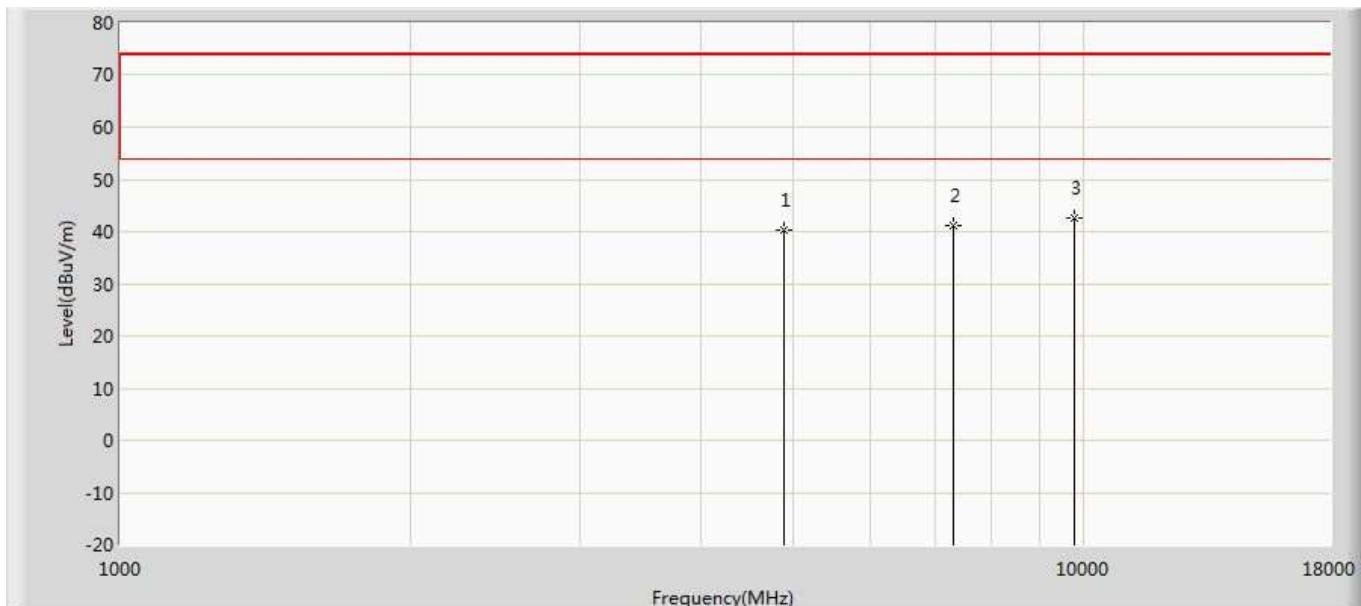
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.024	41.747	-33.976	74.000	-1.723	PK
2	*	7206.000	42.673	40.754	-31.327	74.000	1.919	PK
3		9608.000	42.226	37.327	-31.774	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 Coded125	



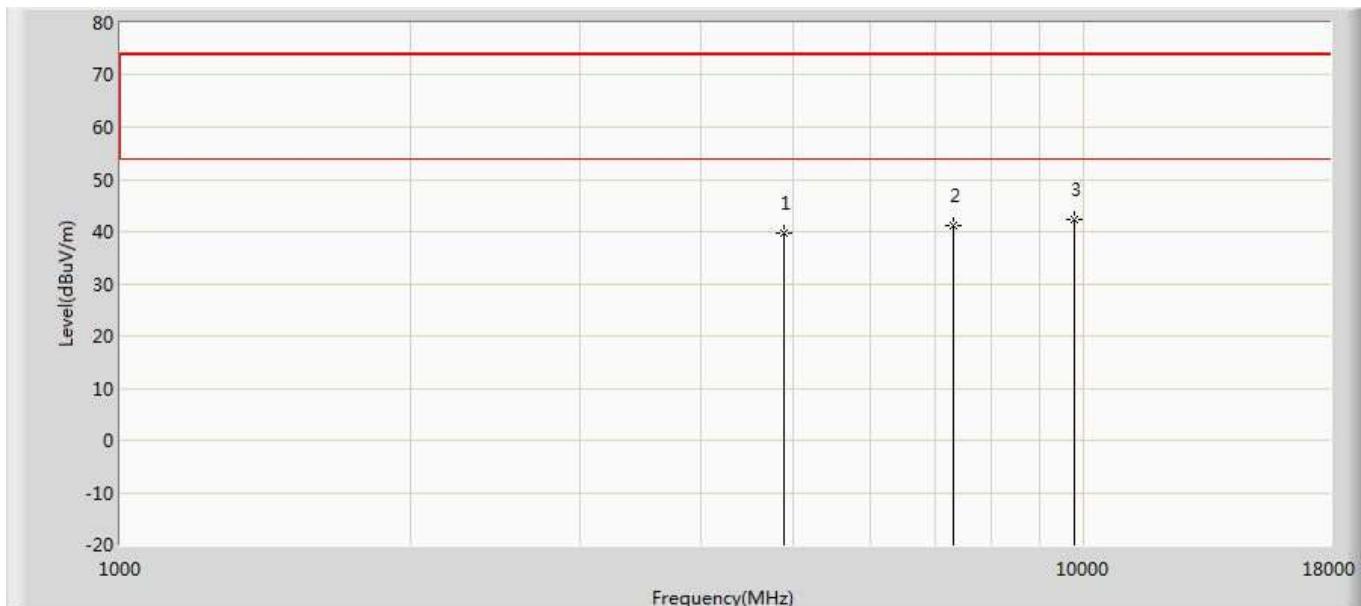
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	40.172	41.895	-33.828	74.000	-1.723	PK
2		7206.000	41.107	39.188	-32.893	74.000	1.919	PK
3	*	9608.000	41.782	36.883	-32.218	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 Coded125	



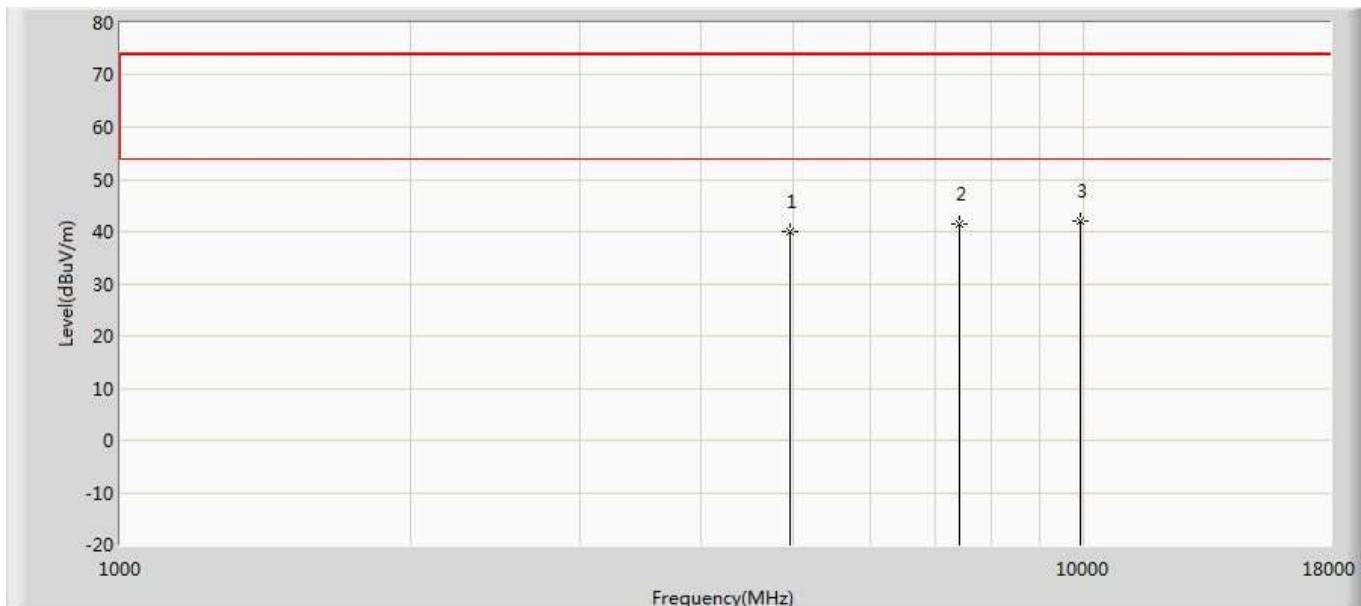
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.386	41.670	-33.614	74.000	-1.284	PK
2		7320.000	41.218	39.335	-32.782	74.000	1.884	PK
3	*	9760.000	42.546	36.734	-31.454	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 Coded125	



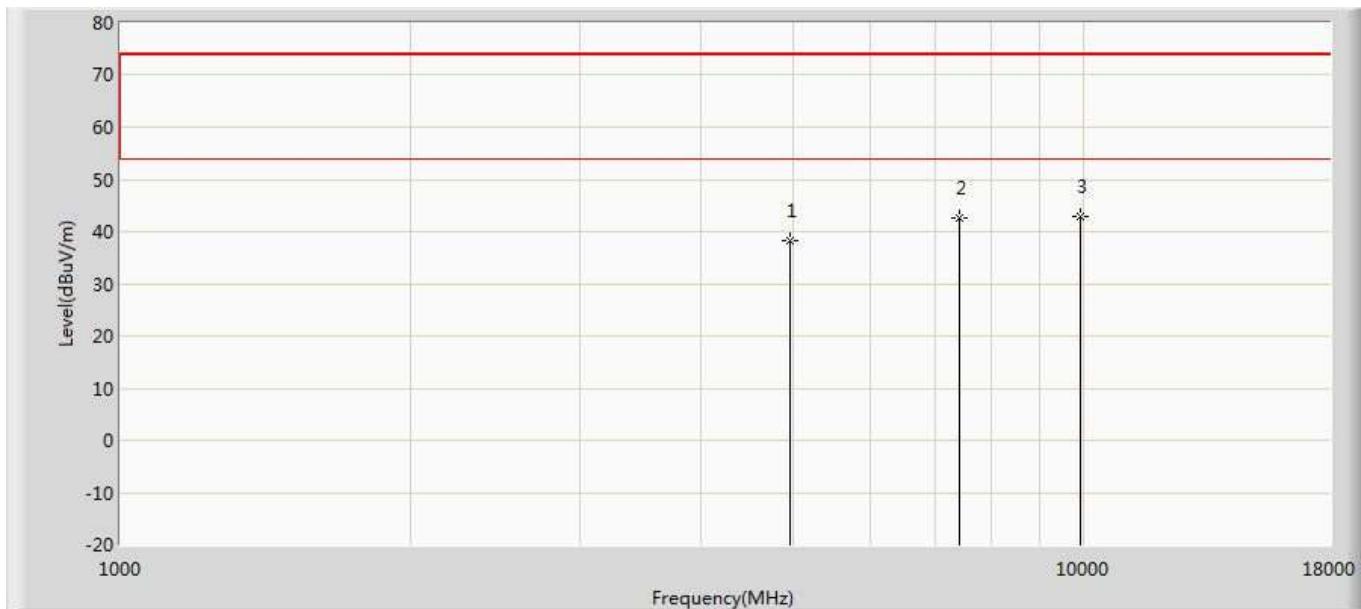
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	39.581	40.865	-34.419	74.000	-1.284	PK
2		7320.000	41.056	39.173	-32.944	74.000	1.884	PK
3	*	9760.000	42.190	36.378	-31.810	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:32
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 Coded125	



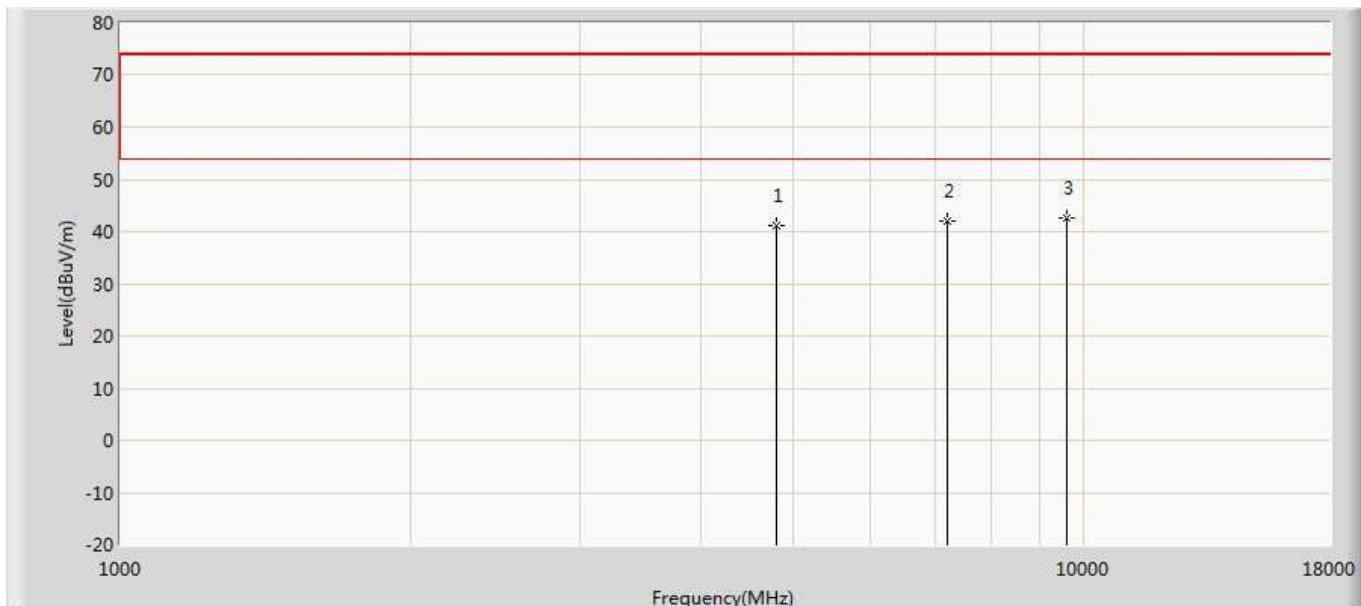
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	40.071	41.219	-33.929	74.000	-1.148	PK
2		7440.000	41.529	39.103	-32.471	74.000	2.426	PK
3	*	9920.000	42.006	36.752	-31.994	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:33
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 Coded125	



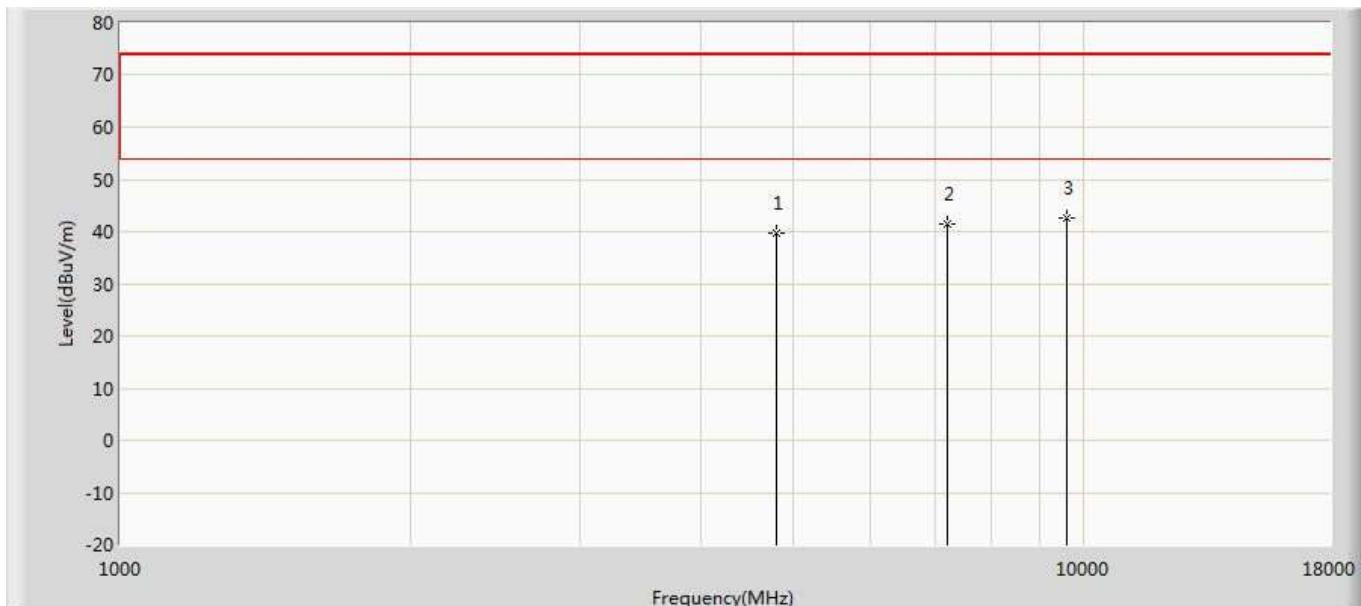
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	38.274	39.422	-35.726	74.000	-1.148	PK
2	*	7440.000	42.483	40.057	-31.517	74.000	2.426	PK
3	*	9920.000	42.925	37.671	-31.075	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:33
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 4:Transmit at 2402MHz by Coded500	



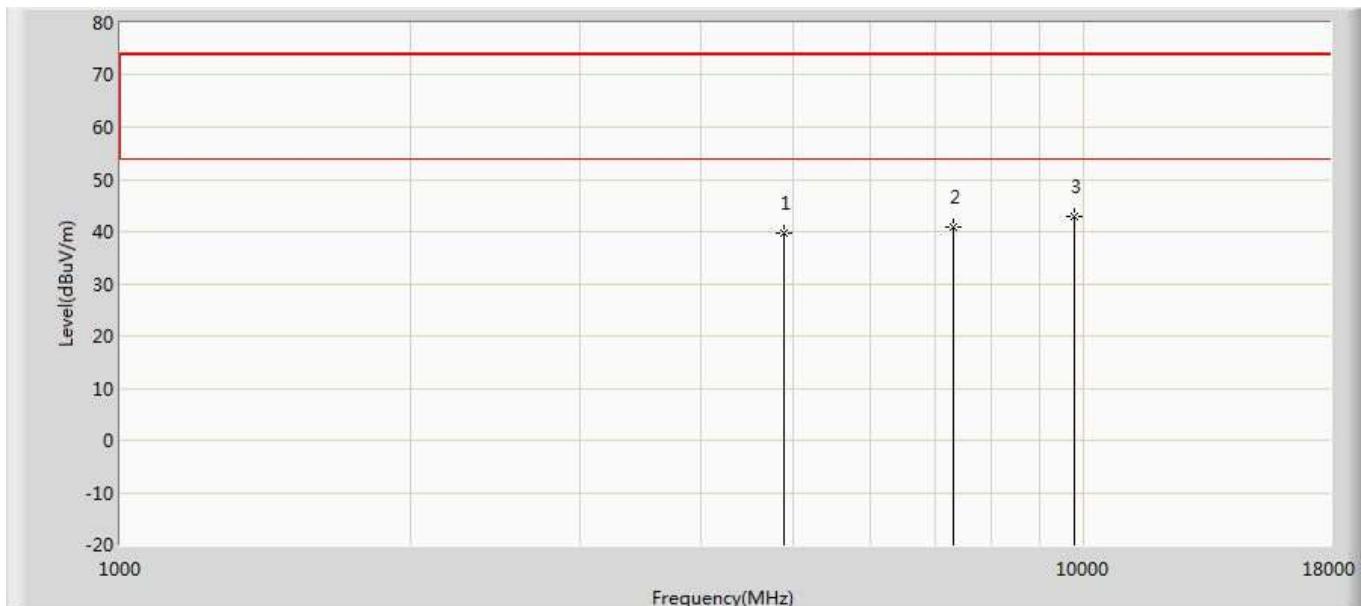
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	41.078	42.801	-32.922	74.000	-1.723	PK
2		7206.000	42.046	40.127	-31.954	74.000	1.919	PK
3	*	9608.000	42.583	37.684	-31.417	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:33
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 Coded500	



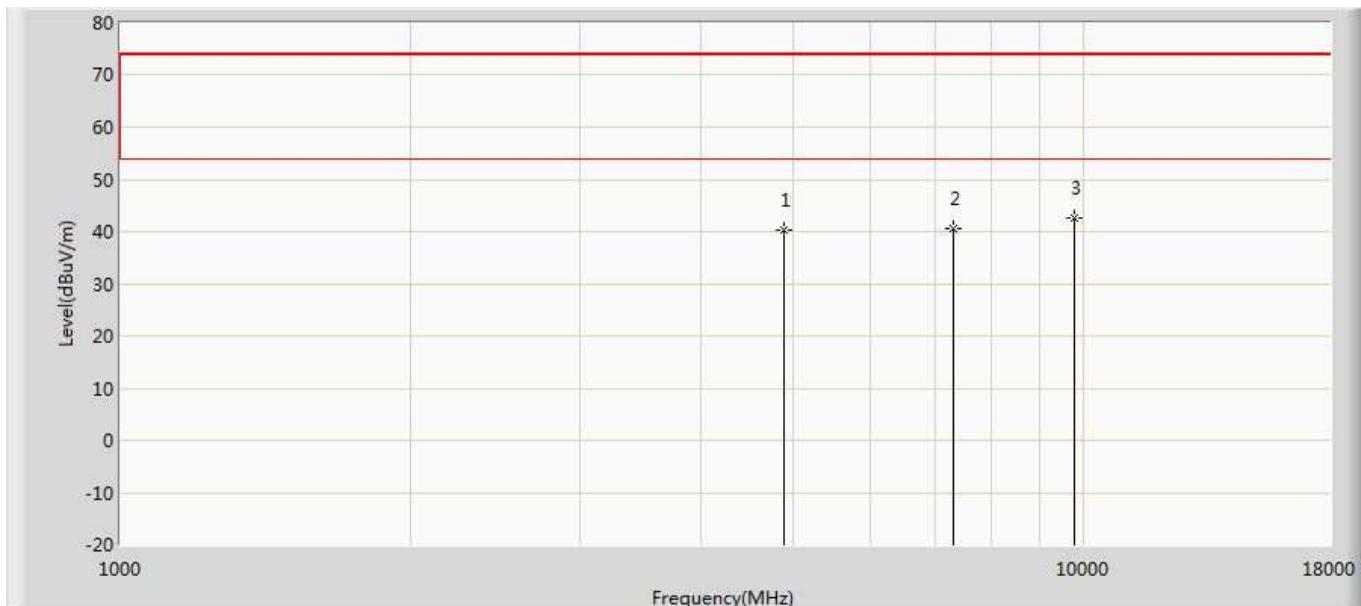
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	39.655	41.378	-34.345	74.000	-1.723	PK
2		7206.000	41.351	39.432	-32.649	74.000	1.919	PK
3	*	9608.000	42.465	37.566	-31.535	74.000	4.899	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:33
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 4:Transmit at 2440MHz by Coded500	



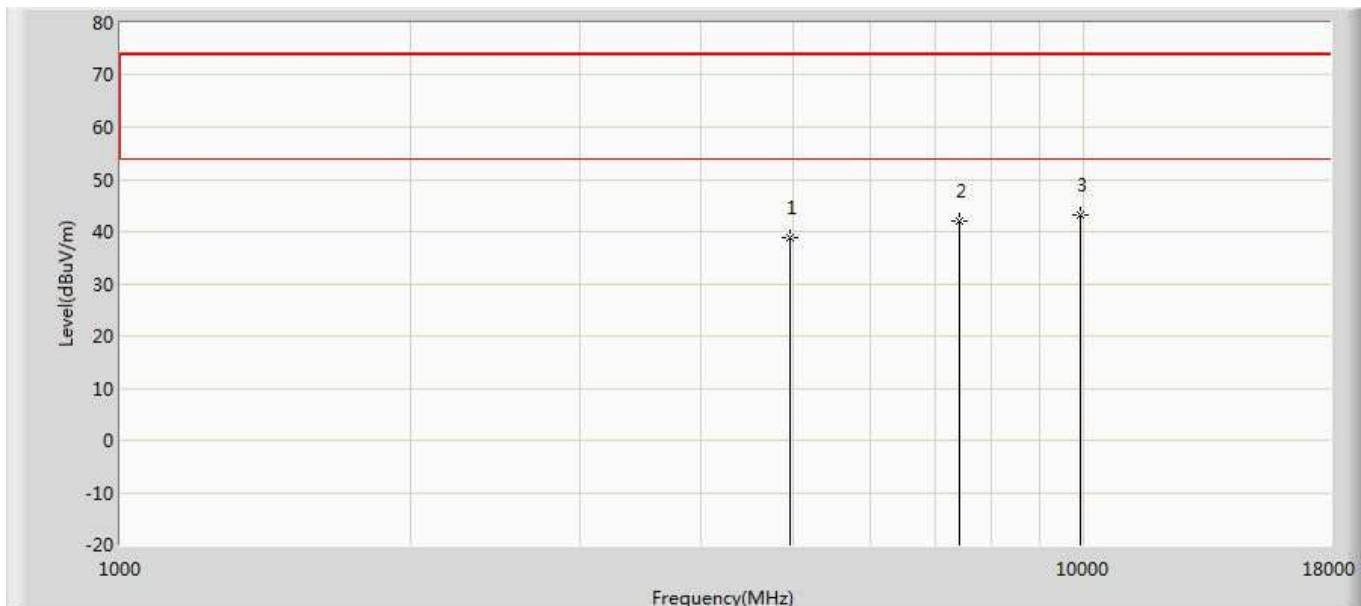
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	39.727	41.011	-34.273	74.000	-1.284	PK
2		7320.000	40.898	39.015	-33.102	74.000	1.884	PK
3	*	9760.000	42.968	37.156	-31.032	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:33
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 Coded500	



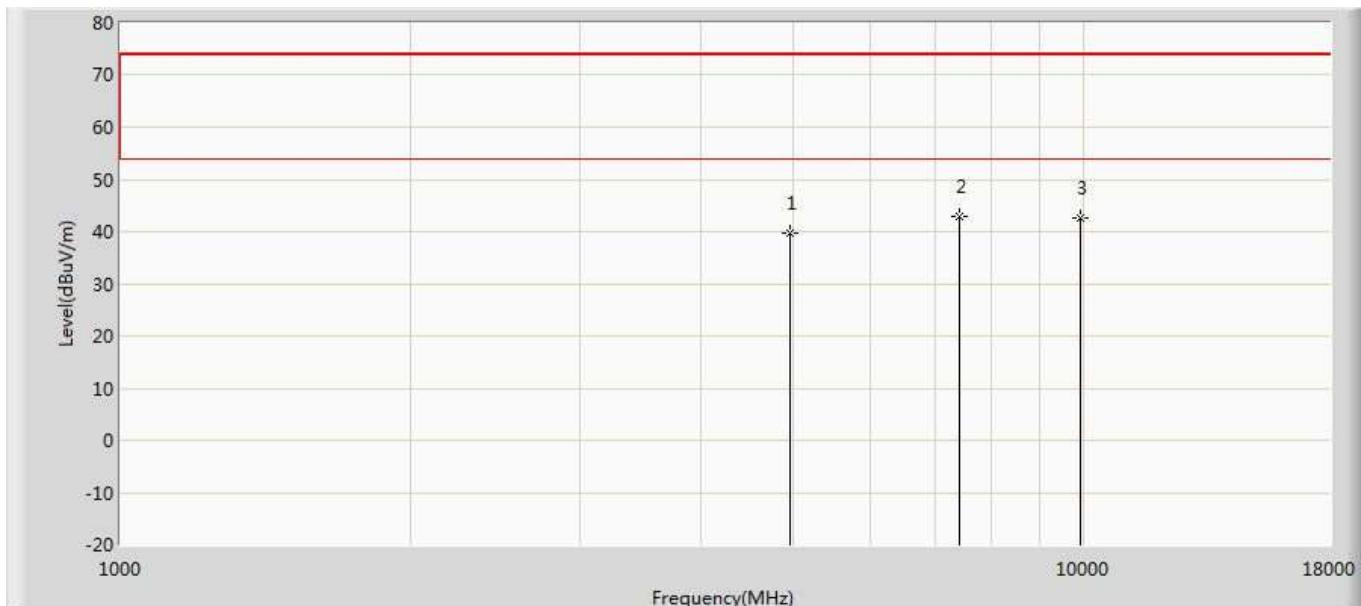
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	40.207	41.491	-33.793	74.000	-1.284	PK
2		7320.000	40.621	38.738	-33.379	74.000	1.884	PK
3	*	9760.000	42.661	36.849	-31.339	74.000	5.812	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:33
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 4:Transmit at 2480MHz by Coded500	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	38.938	40.086	-35.062	74.000	-1.148	PK
2		7440.000	42.081	39.655	-31.919	74.000	2.426	PK
3	*	9920.000	43.092	37.838	-30.908	74.000	5.253	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/15 - 11:33
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 Coded500	



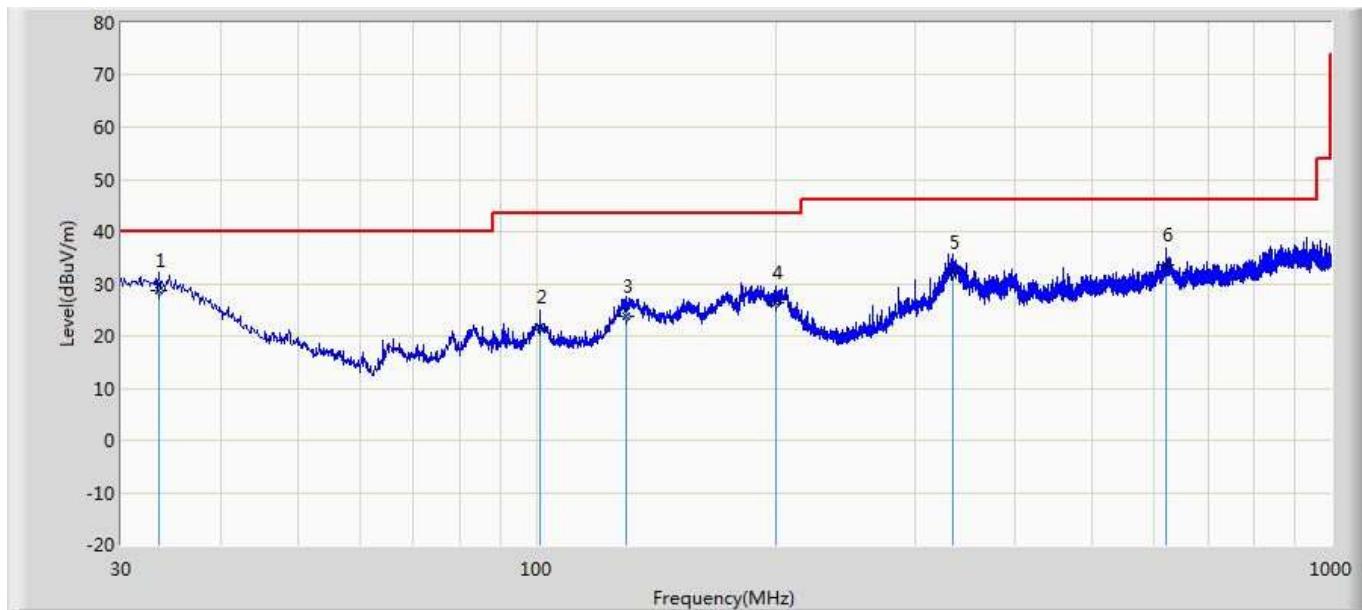
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	39.577	40.725	-34.423	74.000	-1.148	PK
2	*	7440.000	42.773	40.347	-31.227	74.000	2.426	PK
3		9920.000	42.683	37.429	-31.317	74.000	5.253	PK

#### Note:

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~26GHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. 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.
4. As the radiated emission was performed, so conducted emission was not tested.
5. We have evaluated each mode, shown in the report is BLE mode which is worst data.

**The worst case of Radiated Emission below 1GHz:**

Site: AC2	Time: 2019/04/03 - 15:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Horizontal
EUT: LED lamp	Power: AC 120V/60Hz
Note: Mode 1	

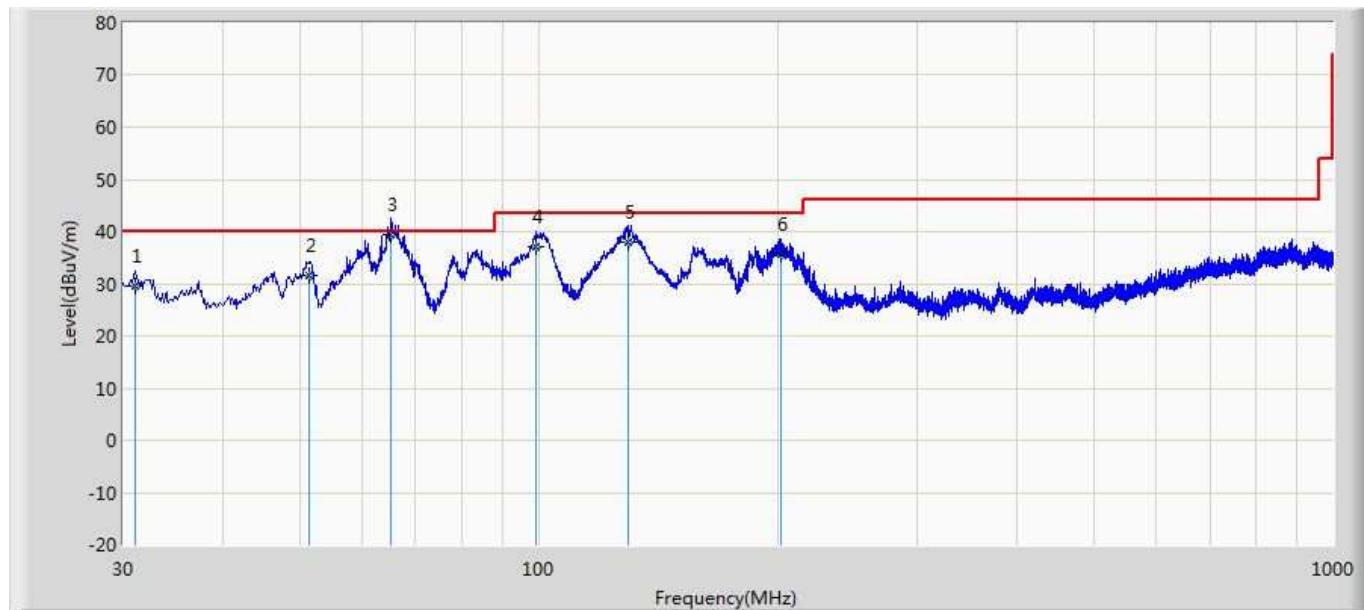


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1	*	33.516	28.660	1.296	-11.340	40.000	27.364	133	190	QP
2		101.052	21.756	4.544	-21.744	43.500	17.212	120	76	QP
3		129.910	23.819	6.217	-19.681	43.500	17.602	166	254	QP
4		200.114	26.256	8.346	-17.244	43.500	17.910	199	134	QP
5		334.216	32.080	9.147	-13.920	46.000	22.933	164	135	QP
6		619.760	33.716	2.889	-12.284	46.000	30.827	200	133	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).

Site: AC2	Time: 2019/04/03 - 20:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: AC2_3M(30-1000M)	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		31.091	29.435	5.463	-10.565	40.000	23.971	174	136	QP
2		51.461	31.598	12.549	-8.402	40.000	19.048	110	289	QP
3	*	65.284	39.462	23.446	-0.538	40.000	16.016	193	44	QP
4		99.234	37.153	15.469	-6.347	43.500	21.684	180	39	QP
5		129.546	37.828	17.339	-5.672	43.500	20.489	164	250	QP
6		201.932	35.590	11.987	-7.910	43.500	23.603	169	239	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).

## 5. Emissions in non-restricted frequency bands

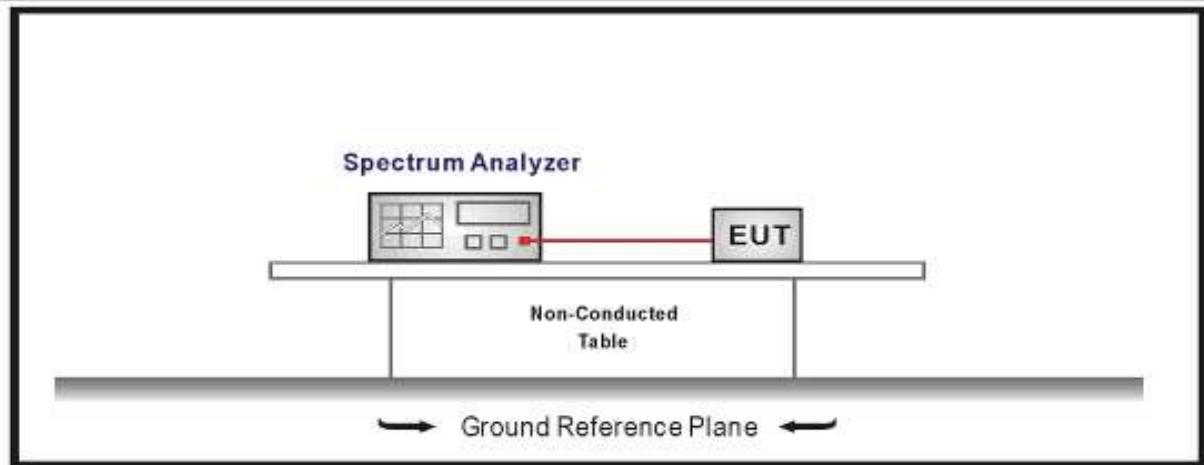
### 5.1. Test Equipment

Emissions in non-restricted frequency bands / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.02.04	2020.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2020.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2020.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2020.04.09

Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 5.2. Test Setup

Emissions in non-restricted frequency bands test setup:



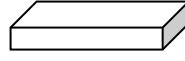
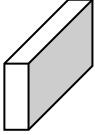
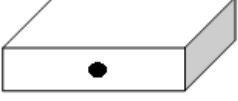
### 5.3. Limit

Un-Restricted Band Emissions Limit	
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30c(Note1)
RF Output power(PK detector)	20c(Note2)
<p>Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).</p> <p>Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).</p>	

## 5.4. Test Procedure

Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.11	Emissions in non-restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	11.11.2	Reference level measurement
	<input checked="" type="checkbox"/> ANSI C63.10	11.11.3	Emission level measurement
<input type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
	<input type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
<input type="checkbox"/>	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
<input type="checkbox"/>	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
<input type="checkbox"/>	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
	<input type="checkbox"/> ANSI C63.10	11.12.2	Antenna-port conducted measurements
	<input type="checkbox"/> ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
	<input type="checkbox"/> ANSI C63.10	11.12.2.4	Peak power measurement procedure
	<input type="checkbox"/> ANSI C63.10	11.12.2.5	Average power measurement procedures
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
		11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
		11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

## 5.5. EUT test Axis definition

Item	Emissions in non-restricted frequency bands			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1-4			
Test method	<input type="checkbox"/>	Radiated		
		X Axis	Y Axis	
				
		Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>	
	<input checked="" type="checkbox"/>	Conducted		
	<input checked="" type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

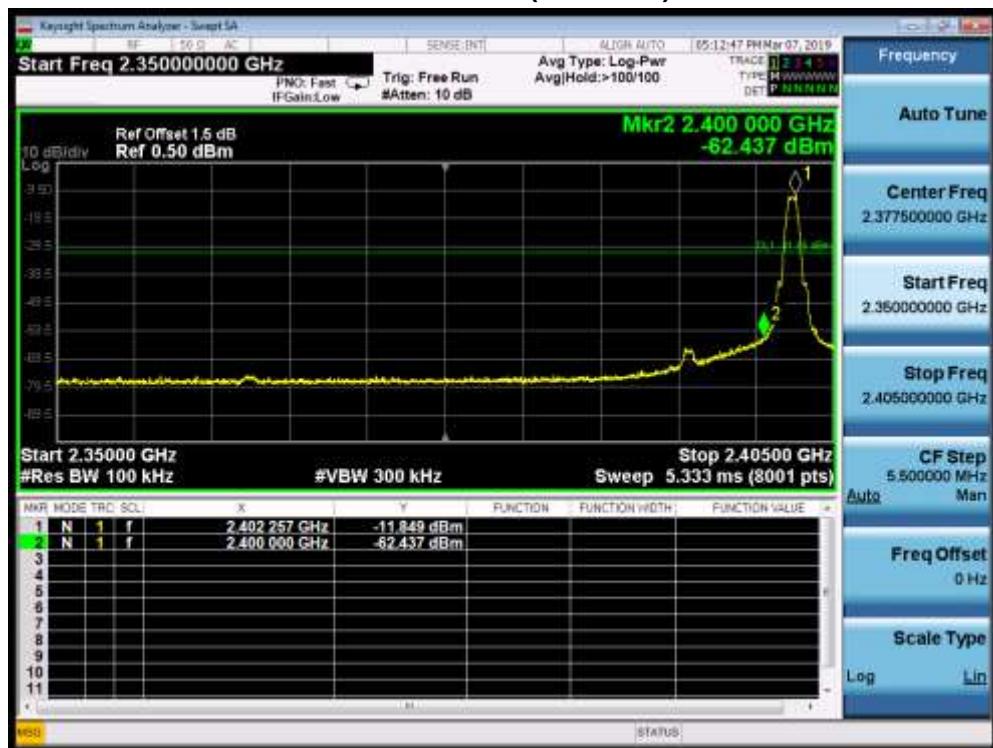
## 5.6. Test Result

Product Name	:	LED lamp	Test Voltage	:	AC 120V/60Hz
Test Mode	:	Mode 1	Test Site	:	TR-8
Test Date	:	2019.03.07	Test Engineer	:	Simon

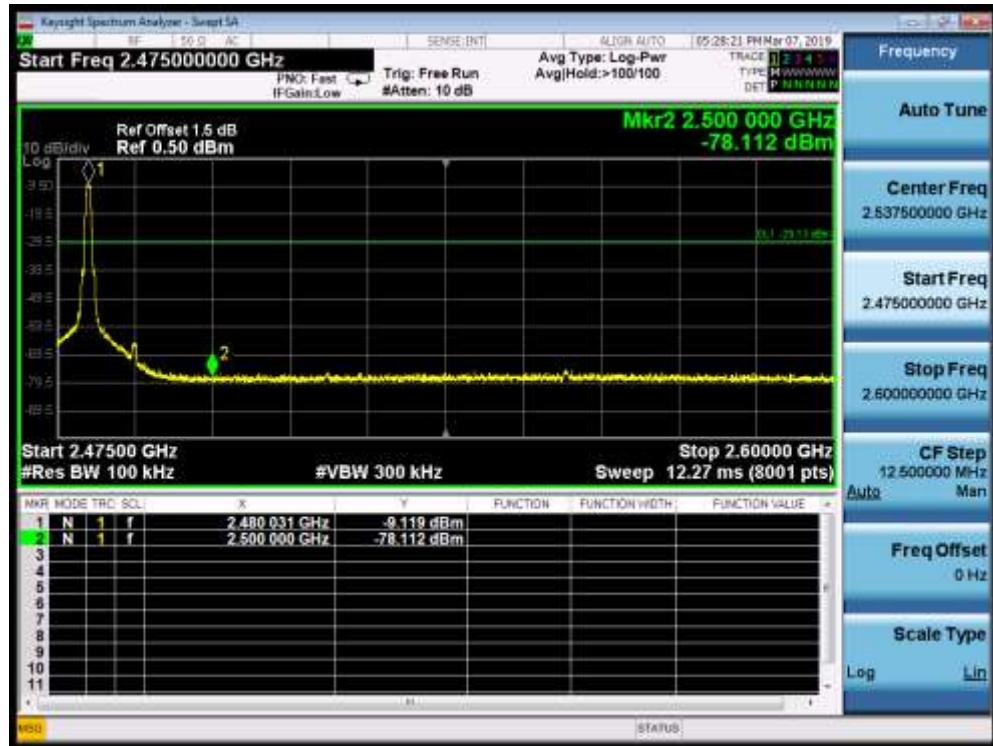
Mode	Channel	Test Frequency (MHz)	In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	00	2402	-11.849	2400.00	-62.437	50.588	>20	Pass
1	39	2480	-9.119	2500.00	-78.112	68.993	>20	Pass

Note: We have evaluated each mode, shown in the report is BLE mode which is the worst data.

**Mode 1 CH00 (2402MHz)**



## Mode 1 CH39 (2480MHz)

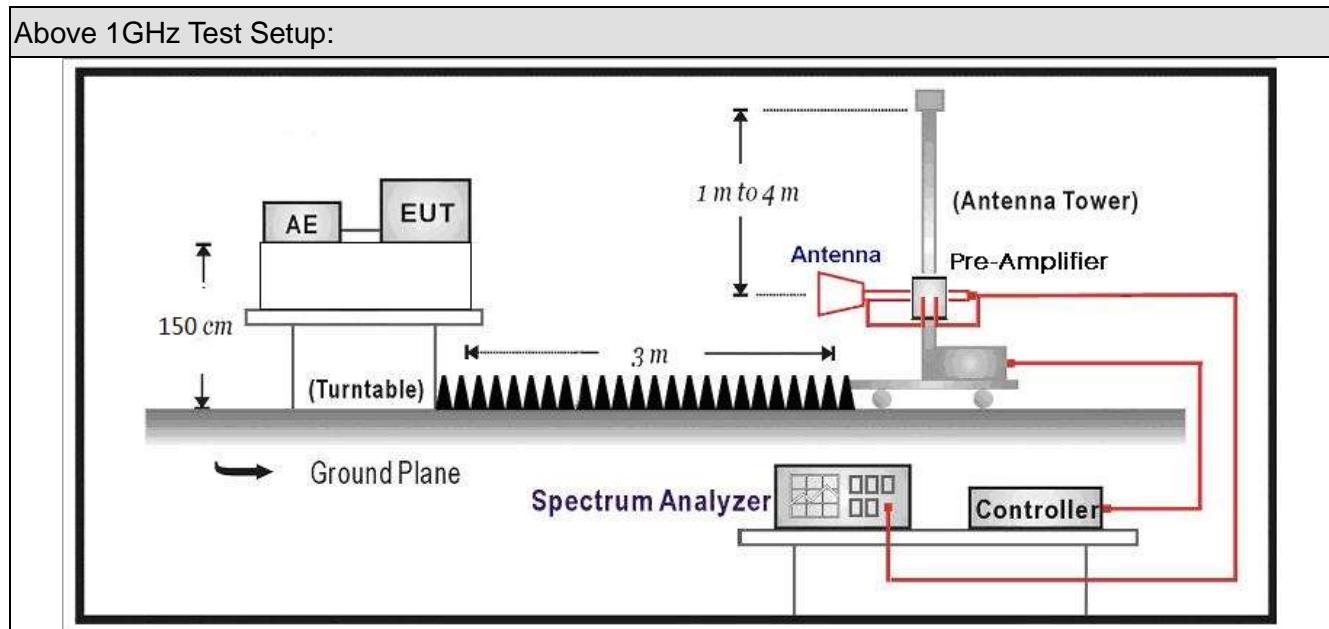


## 6. Radiated Emission Band Edge

### 6.1. Test Equipment

Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Receiver	Agilent	N9038A	MY51210196	2018.07.16	2019.07.15
Pre-Amplifier	Miteq	NSP1800-25	1364185	2018.05.03	2019.05.02
DRG Horn Antenna	ETS-Lindgren	3117	00167055	2018.07.12	2019.07.11
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2018.09.18	2019.09.17
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2019.02.28	2020.02.27
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2019.02.28	2020.02.27
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2019.01.05	2020.01.04

## 6.2. Test Setup



## 6.3. Limit

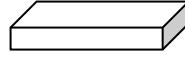
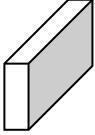
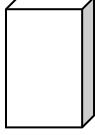
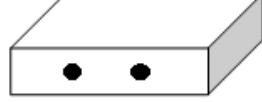
Band edge Limit				
Frequency bands (MHz)	Detector	Limit (dB $\mu$ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
	AV	54	1	3

Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.

## 6.4. Test Procedure

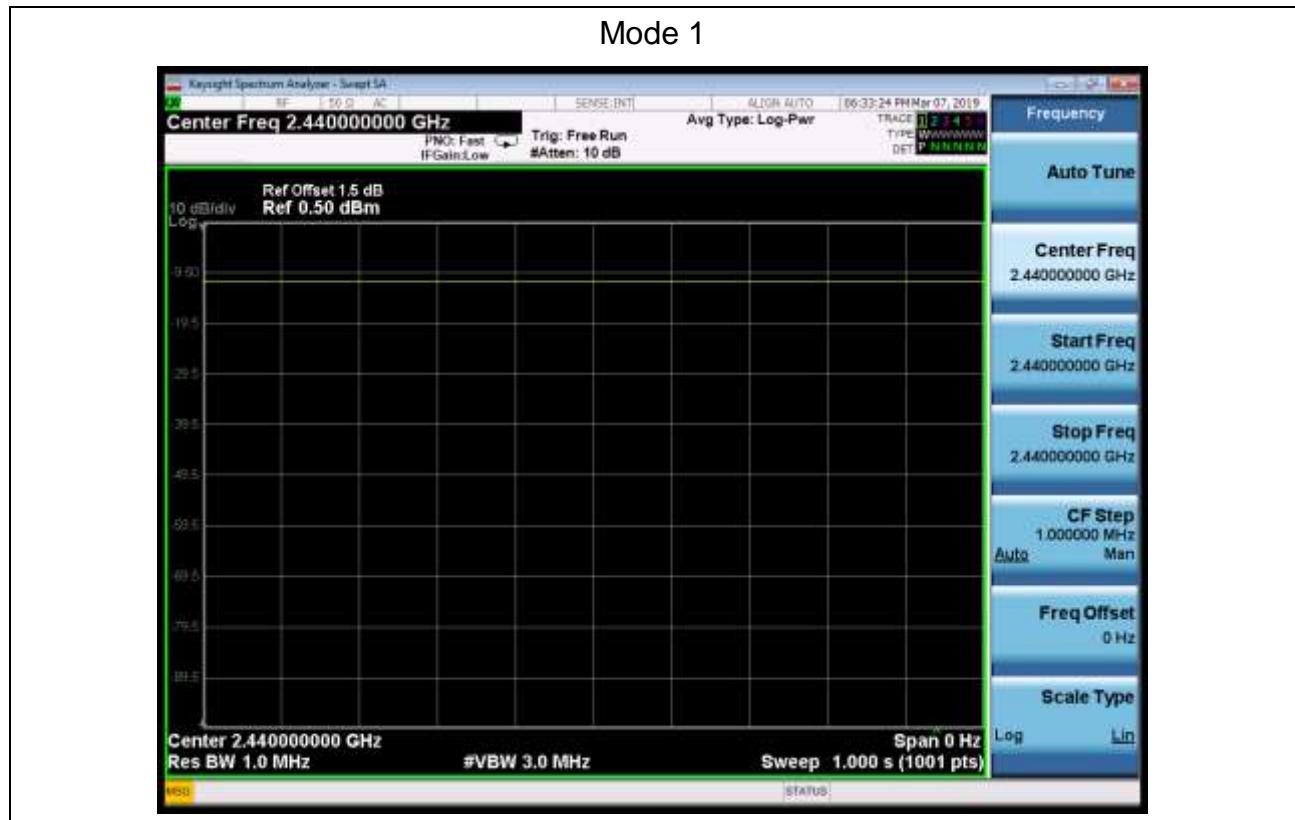
Test Method			
	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	6.10	Band-edge testing
	<input checked="" type="checkbox"/> ANSI C63.10	6.10.5	Restricted-band band-edge measurements
	<input type="checkbox"/> ANSI C63.10	6.10.6	Marker-delta method
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
<input type="checkbox"/>	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
<input type="checkbox"/>	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
<input checked="" type="checkbox"/>	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
	<input type="checkbox"/> ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.4	Peak power measurement procedure
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.5	Average power measurement procedures
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
	<input type="checkbox"/> ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

## 6.5. EUT test definition

Item	Radiated Emission Band Edge			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1~4			
Test method	<input checked="" type="checkbox"/>	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis <input checked="" type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>
	<input type="checkbox"/>	Conducted		
	<input type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

## 6.6. Duty Cycle

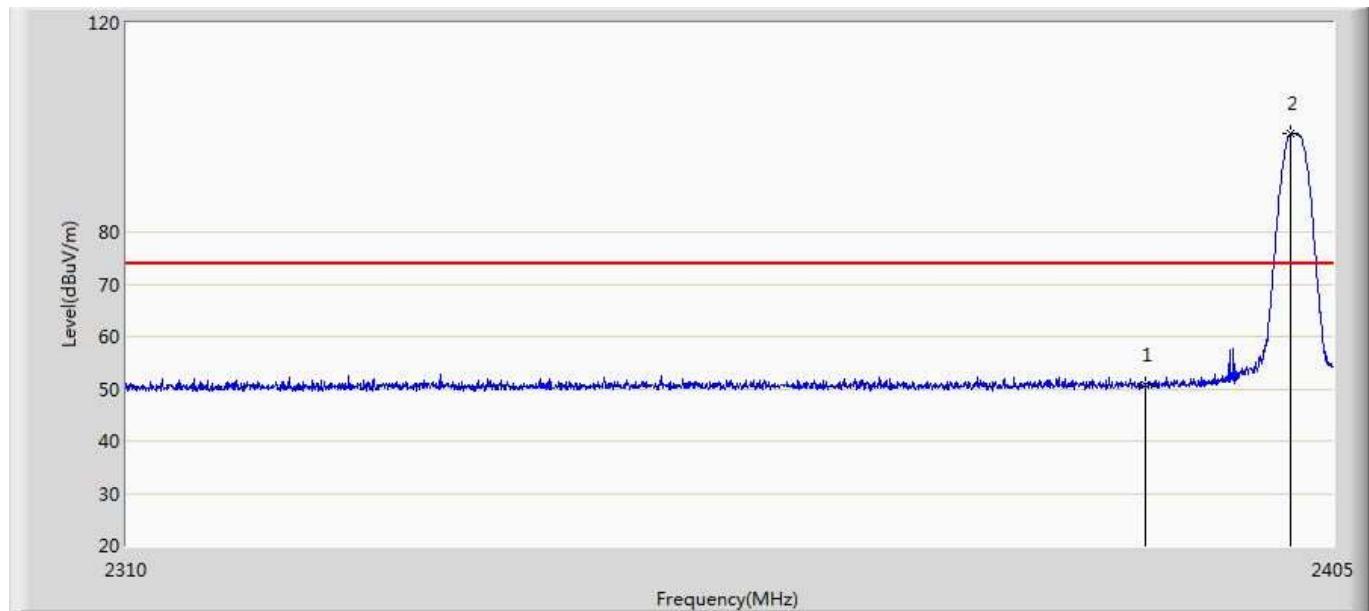
Test Mode	Tx On (ms)	Tx Off (ms)	Reduced VBW (Hz)	Tx On + Tx Off (ms)	Duty Cycle
Mode 1	N/A	N/A	10	N/A	100%



## 6.7. Test Result

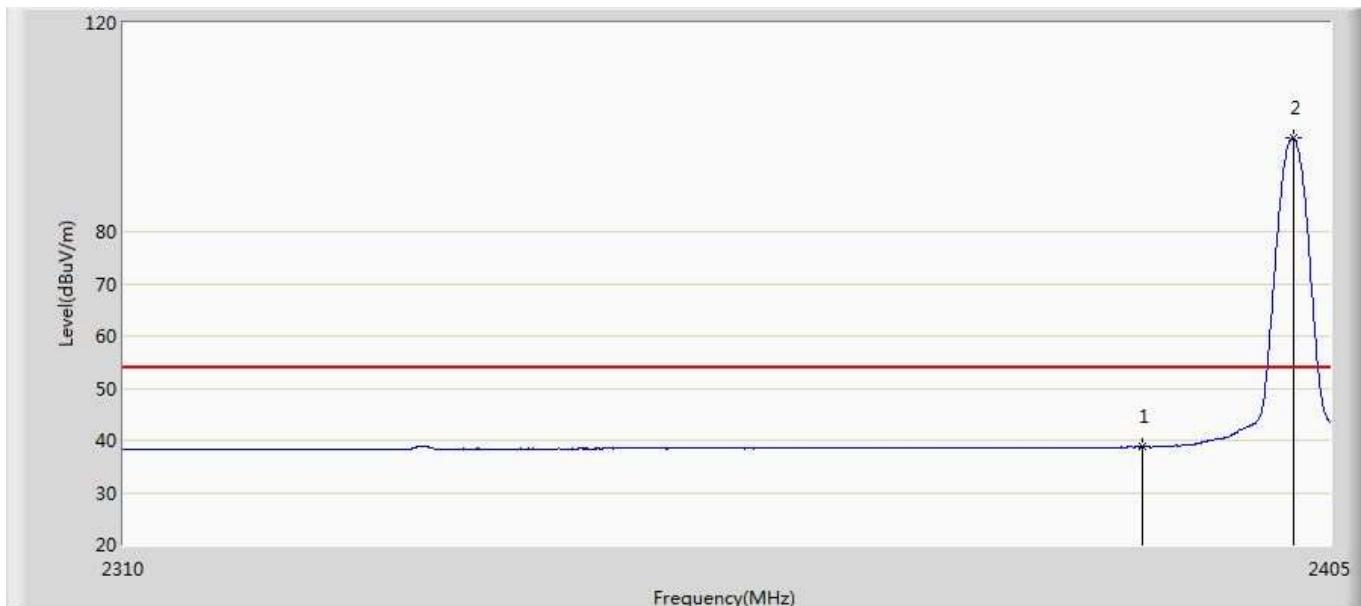
**Muruta:**

Engineer: Simon	
Site: AC5	Time: 2019/03/08 - 15:56
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 BLE	



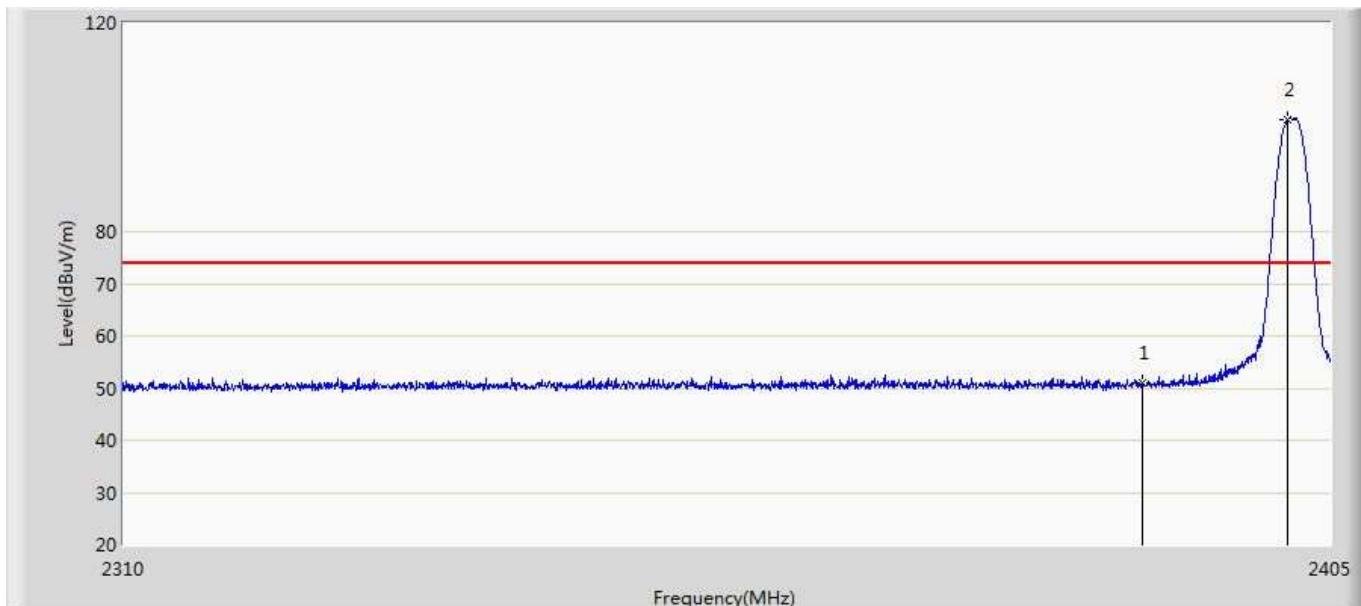
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.782	15.100	-23.218	74.000	35.682	PK
2	*	2401.627	98.858	63.146	24.858	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 19:43
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 BLE	



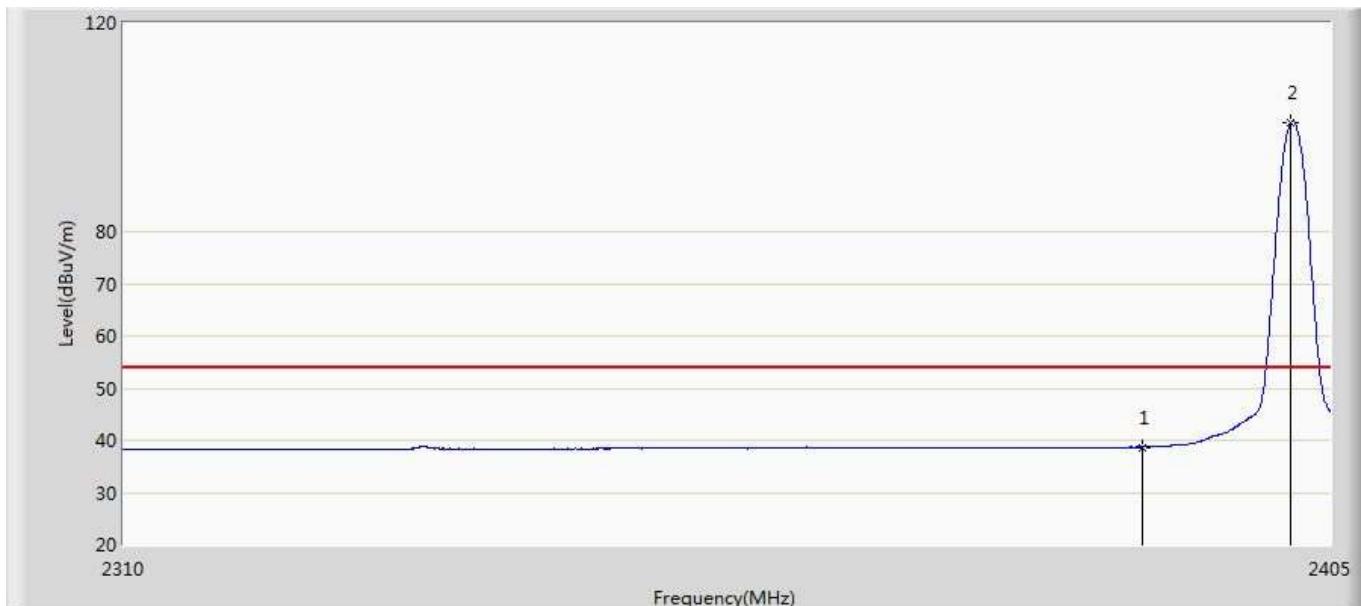
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.741	3.059	-15.259	54.000	35.682	AV
2	*	2402.055	97.969	62.256	43.969	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 19:45
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 BLE	



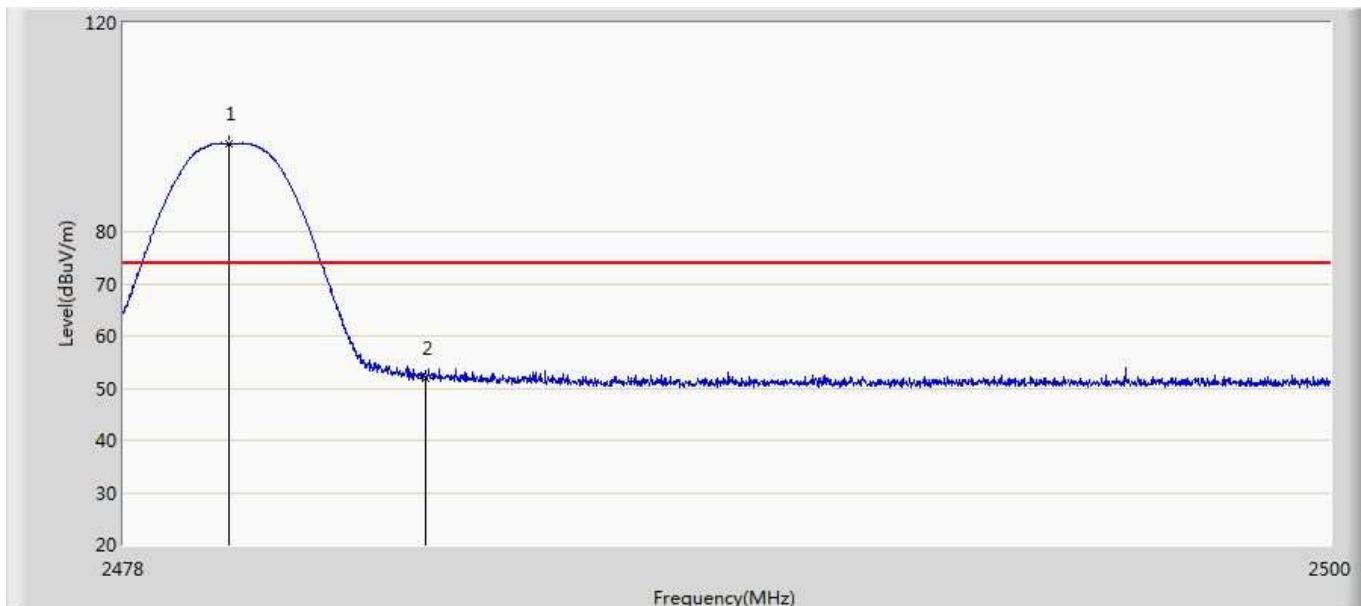
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.939	15.257	-23.061	74.000	35.682	PK
2	*	2401.627	101.593	65.881	27.593	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 19:47
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 BLE	



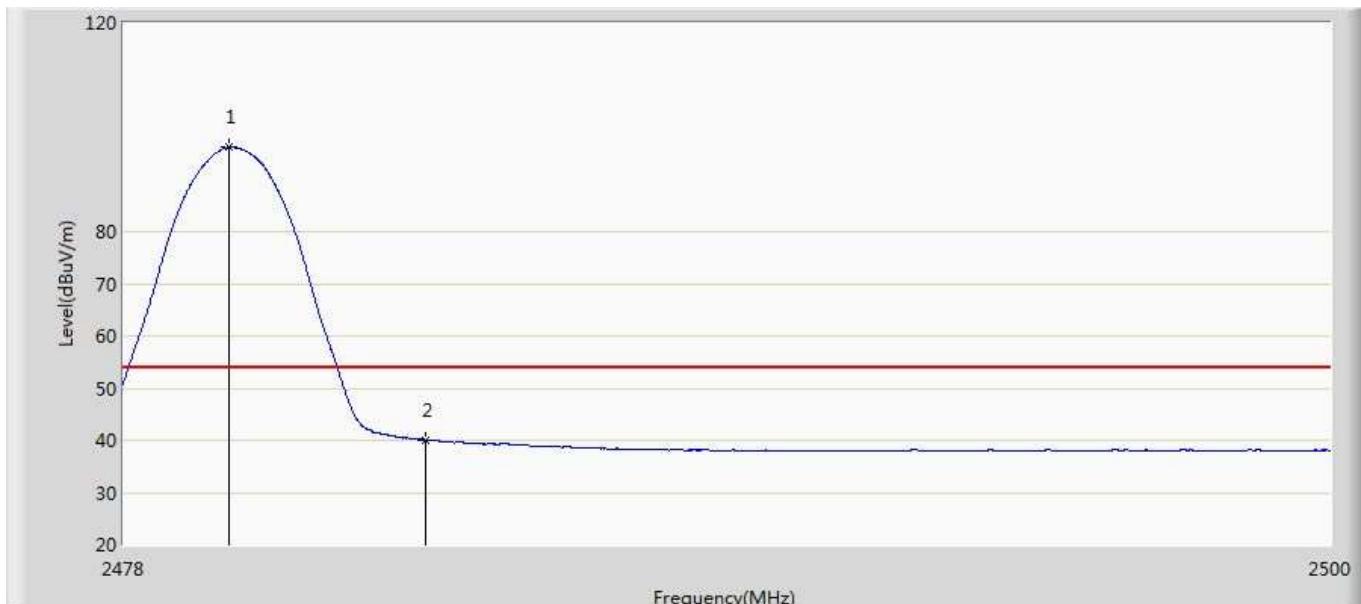
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.679	2.997	-15.321	54.000	35.682	AV
2	*	2401.865	100.934	65.222	46.934	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 19:49
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 BLE	



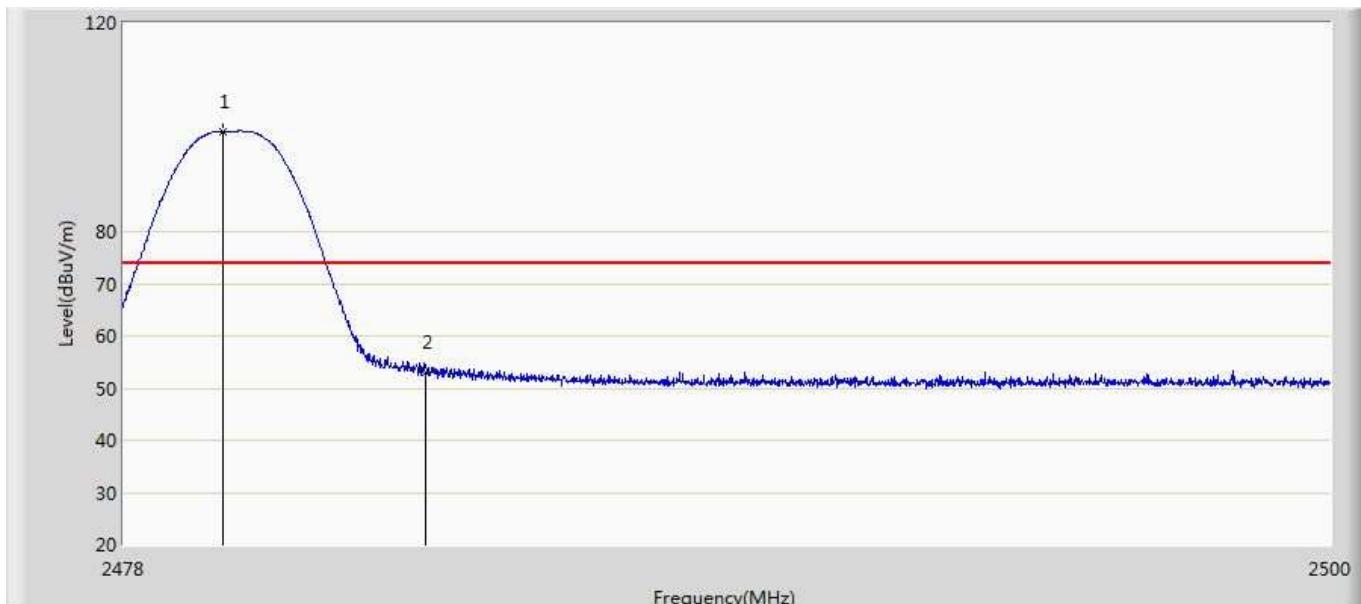
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.914	96.919	61.053	22.919	74.000	35.866	PK
2		2483.500	51.846	15.954	-22.154	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 19:52
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 1:Transmit at 2480MHz by BLE	



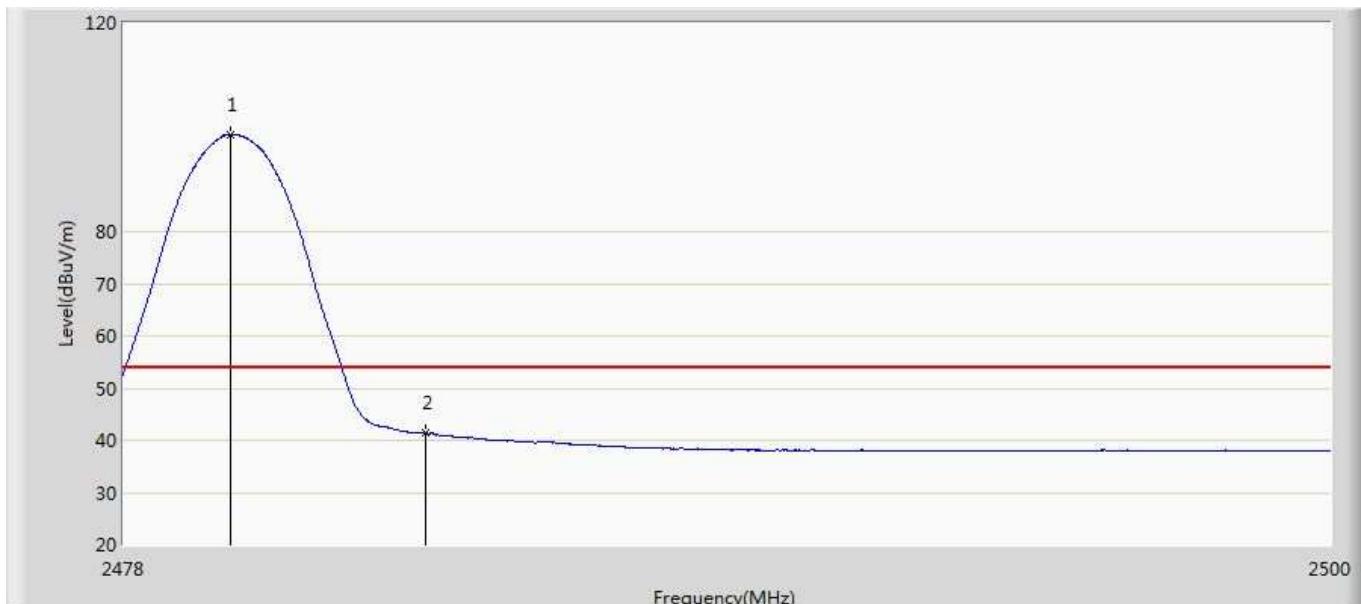
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.914	96.113	60.247	42.113	54.000	35.866	AV
2		2483.500	40.083	4.191	-13.917	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 19:54
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 BLE	



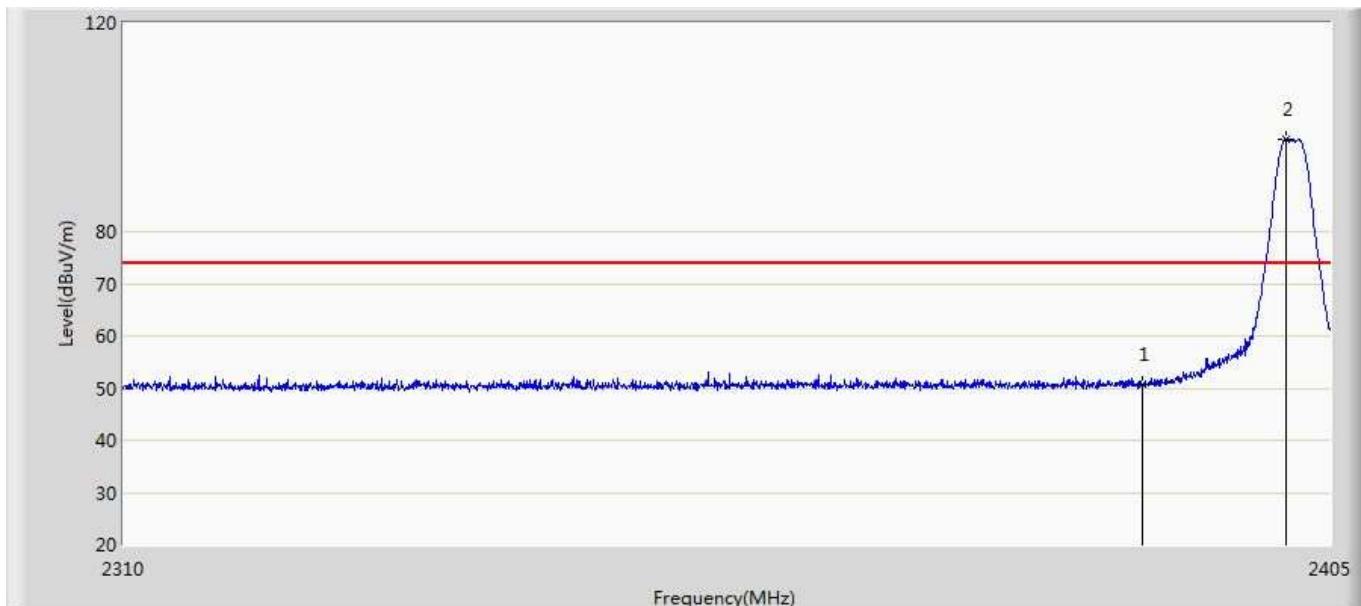
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.804	99.117	63.252	25.117	74.000	35.865	PK
2		2483.500	53.128	17.236	-20.872	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 19:56
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 BLE	



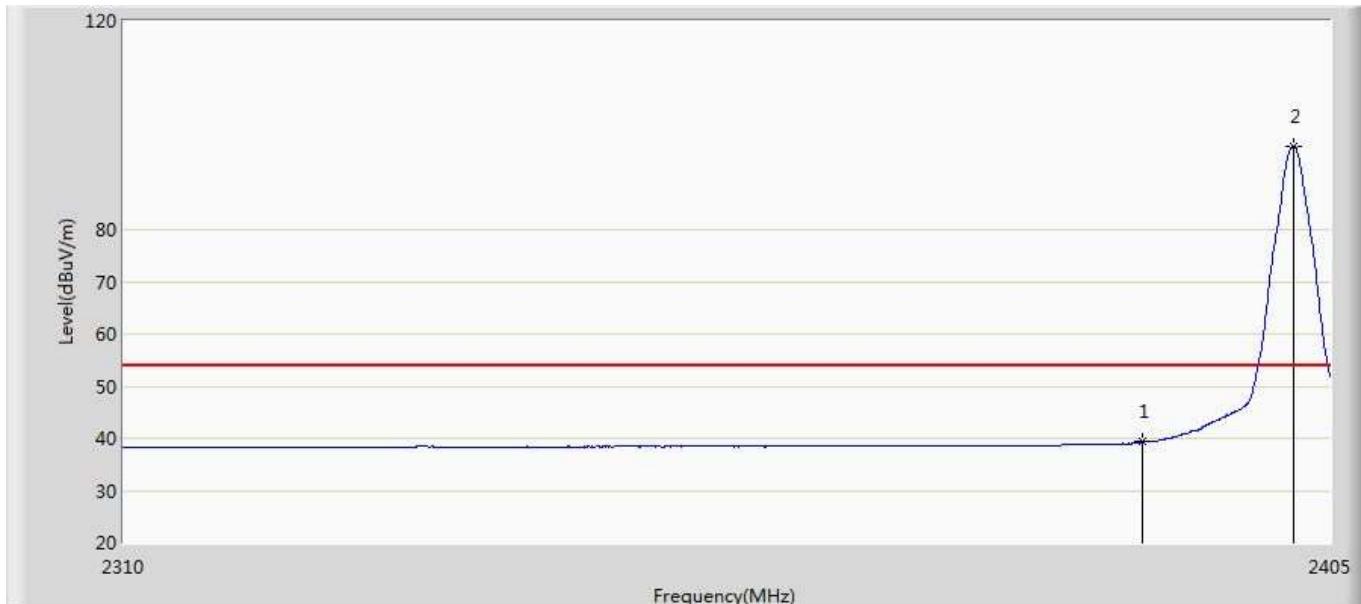
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.947	98.613	62.747	44.613	54.000	35.866	AV
2		2483.500	41.453	5.561	-12.547	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:00
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 2:Transmit at 2402MHz by 2LE	



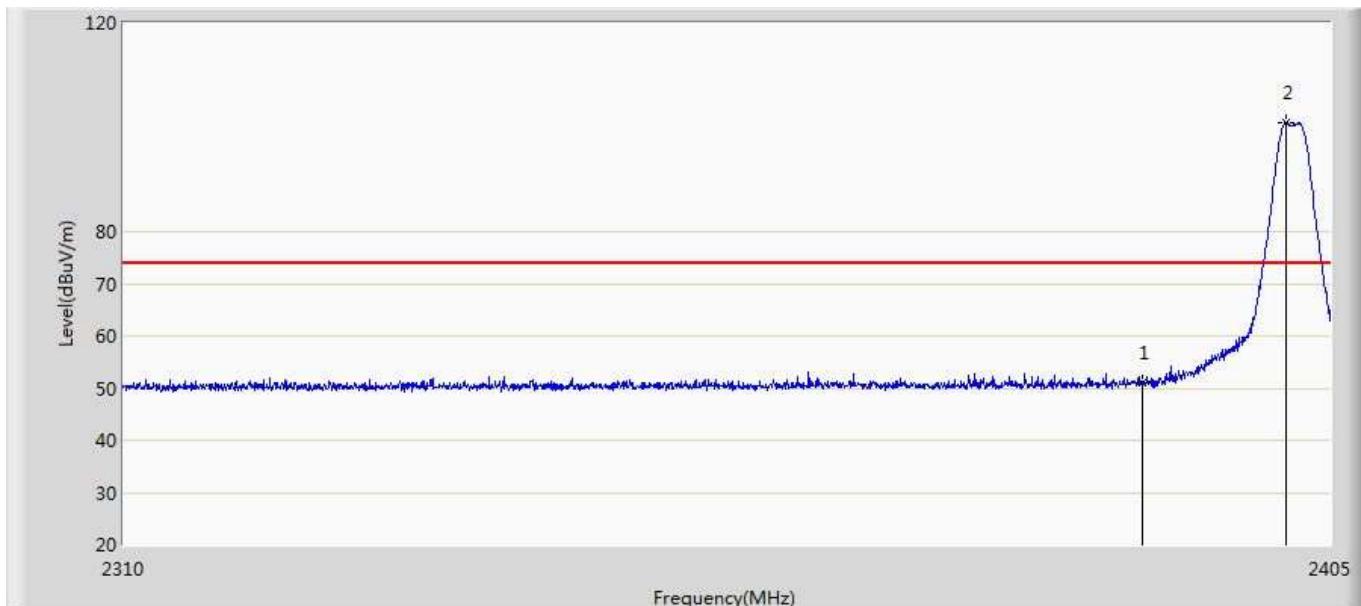
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.629	14.947	-23.371	74.000	35.682	PK
2	*	2401.485	97.739	62.028	23.739	74.000	35.711	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:02
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 2:Transmit at 2402MHz by 2LE	



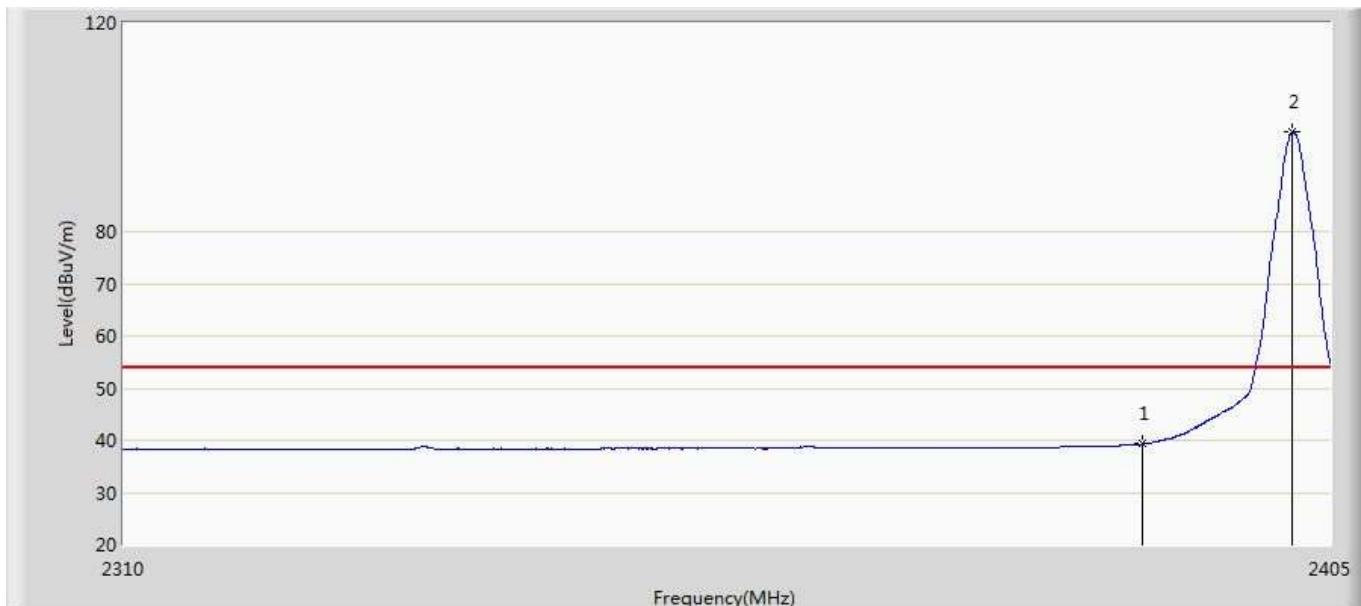
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	39.299	3.617	-14.701	54.000	35.682	AV
2	*	2402.055	95.984	60.271	41.984	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:04
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 2:Transmit at 2402MHz by 2LE	



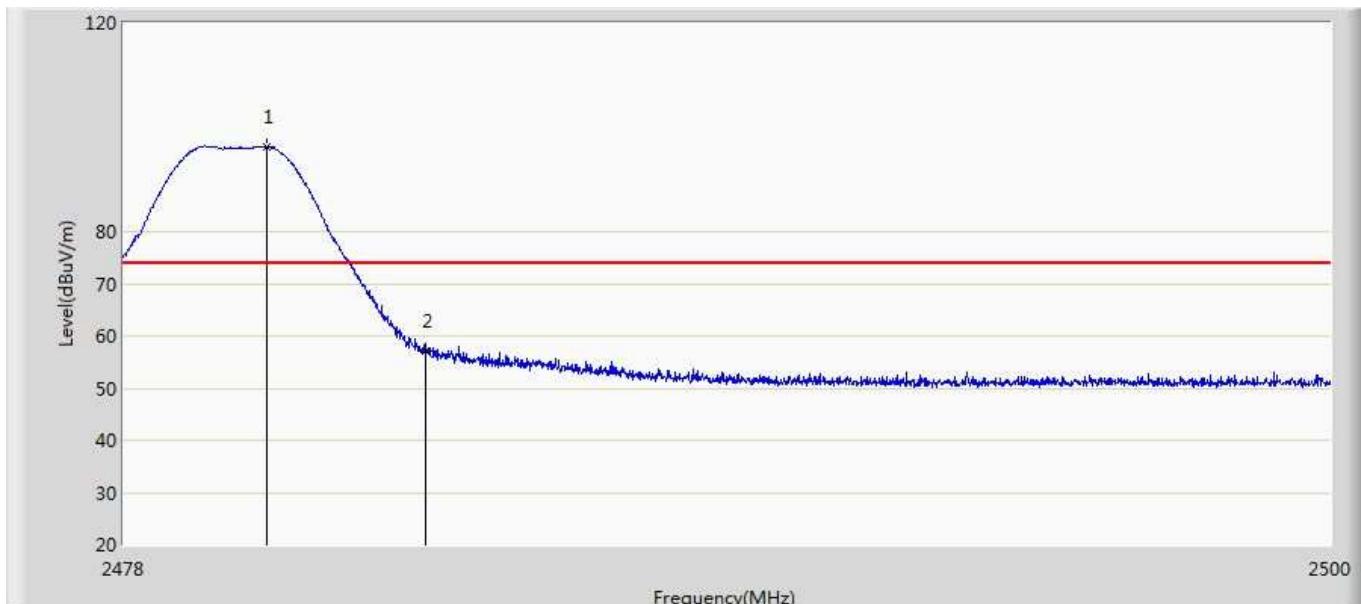
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.953	15.271	-23.047	74.000	35.682	PK
2	*	2401.532	100.912	65.201	26.912	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:06
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 2:Transmit at 2402MHz by 2LE	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	39.294	3.612	-14.706	54.000	35.682	AV
2	*	2402.008	99.107	63.394	45.107	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:08
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 2:Transmit at 2480MHz by 2LE	



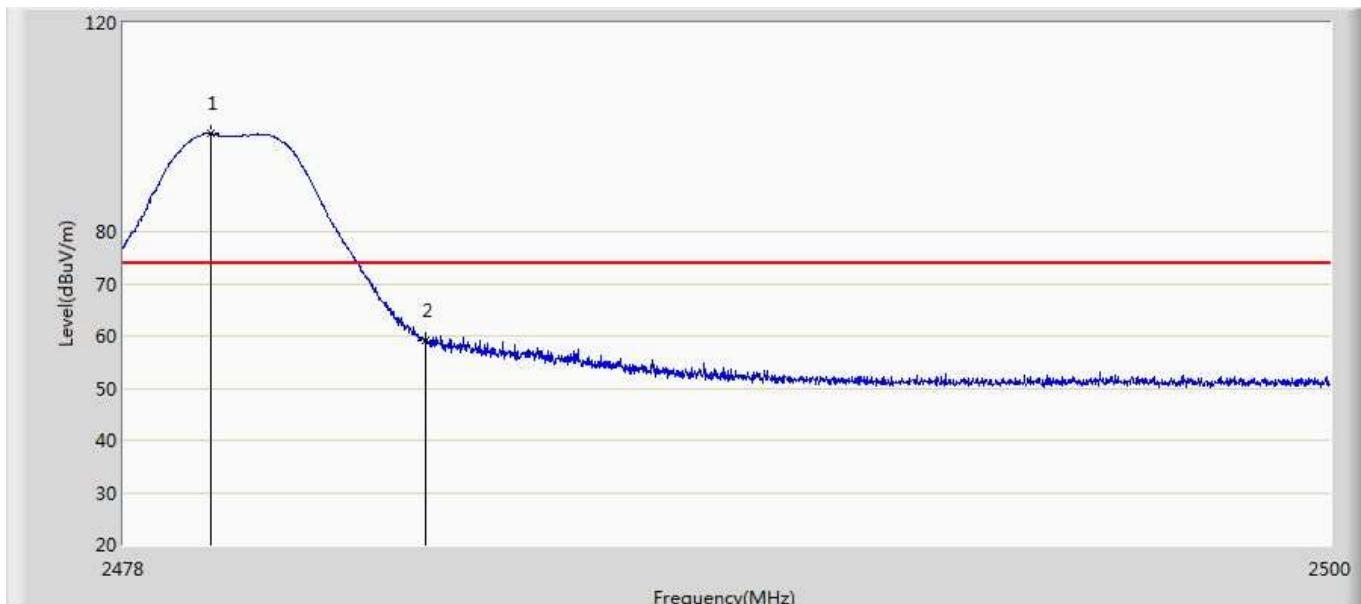
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.596	96.308	60.437	22.308	74.000	35.871	PK
2		2483.500	57.082	21.190	-16.918	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 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 2:Transmit at 2480MHz by 2LE	



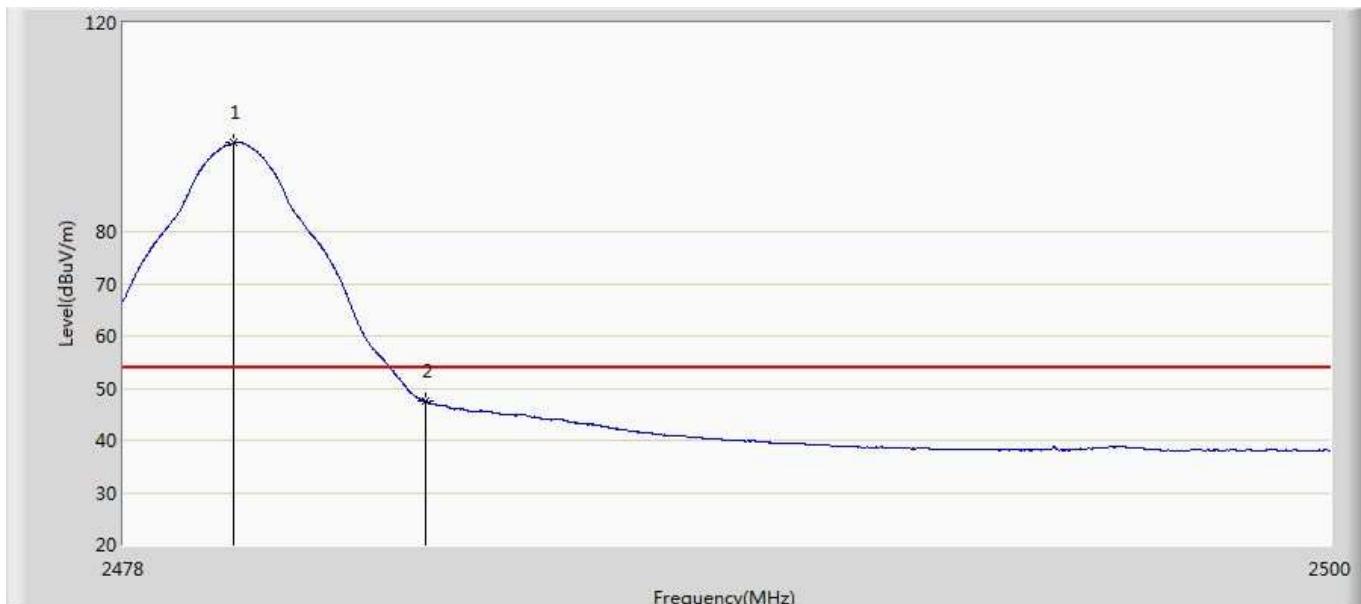
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.046	94.592	58.725	40.592	54.000	35.866	AV
2		2483.500	46.076	10.184	-7.924	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:18
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 2LE	



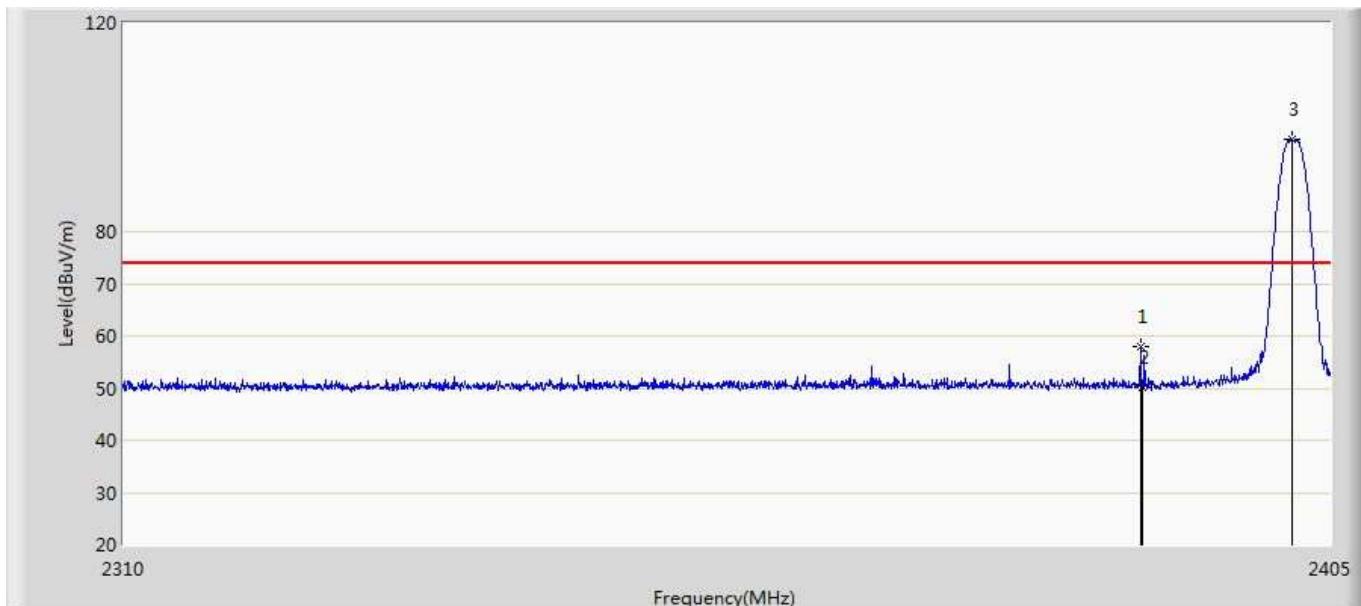
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.595	98.732	62.869	24.732	74.000	35.864	PK
2		2483.500	59.233	23.341	-14.767	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:20
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 2LE	



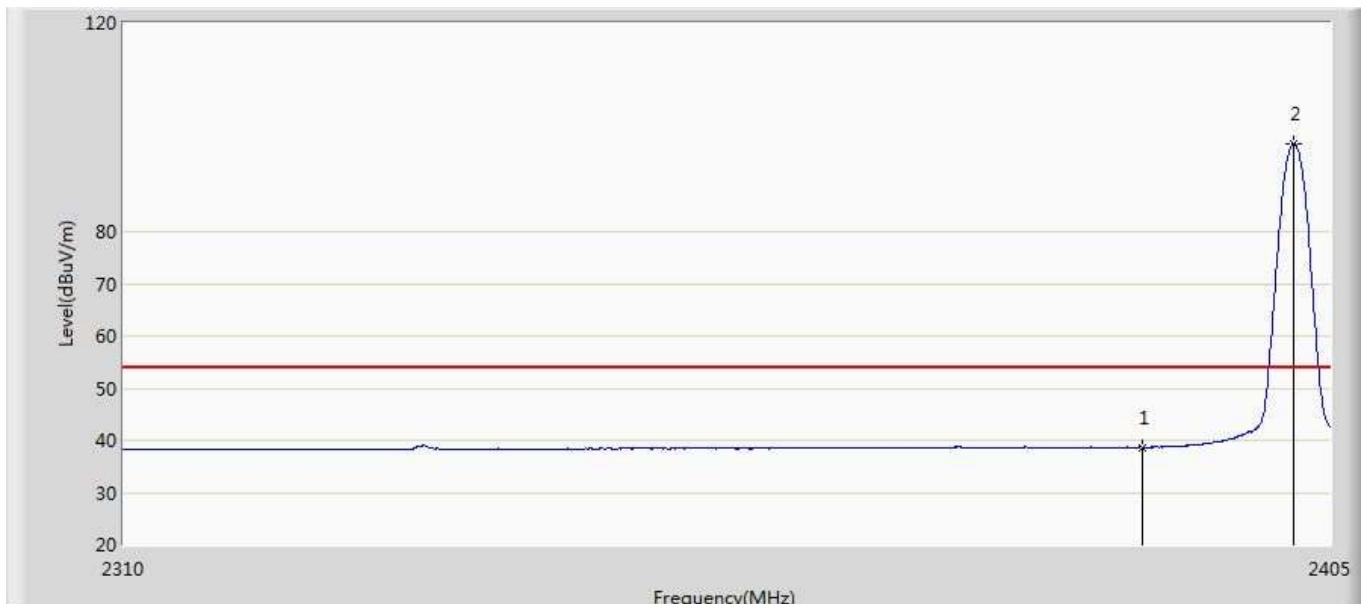
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.013	97.003	61.137	43.003	54.000	35.866	AV
2		2483.500	47.443	11.551	-6.557	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:23
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 Coded125	



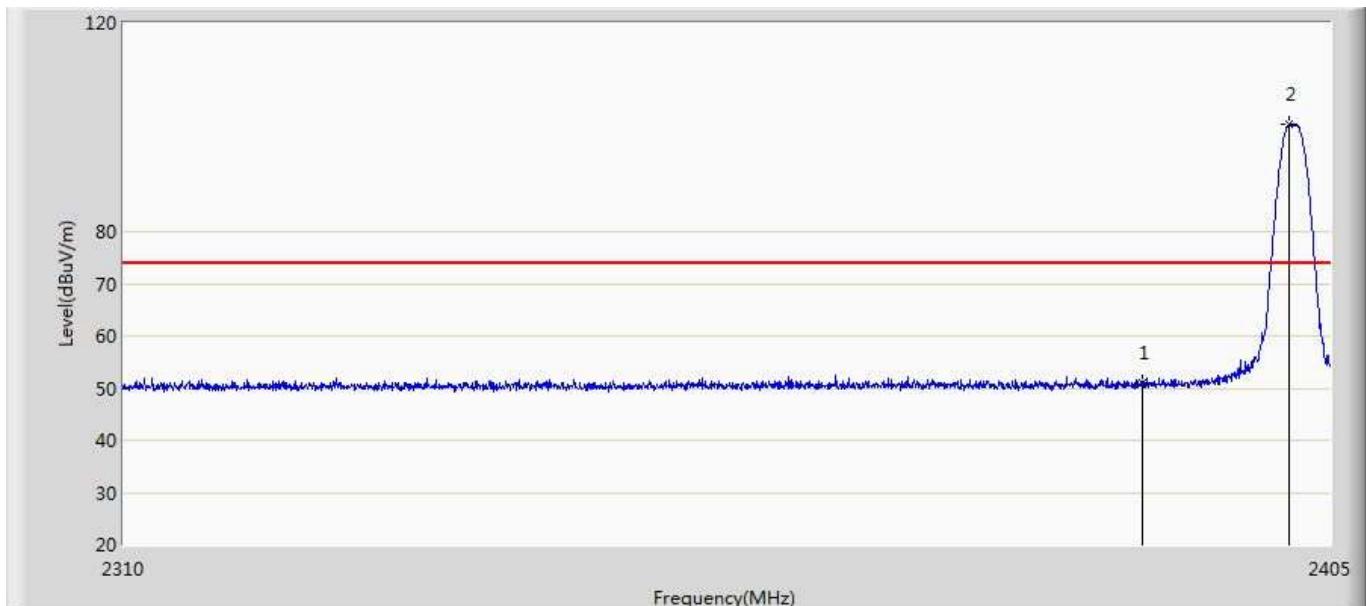
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2389.847	57.927	22.245	-16.073	74.000	35.682	PK
2		2390.000	50.286	14.604	-23.714	74.000	35.682	PK
3	*	2401.913	97.587	61.875	23.587	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:26
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 Coded125	



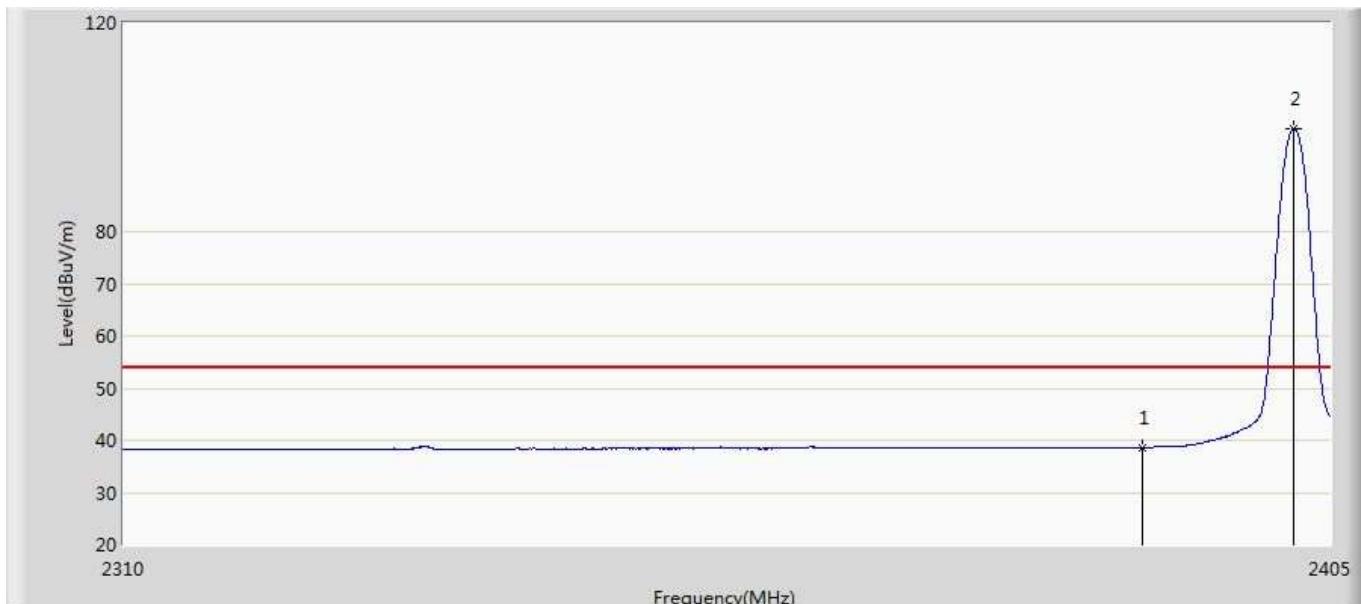
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.676	2.994	-15.324	54.000	35.682	AV
2	*	2402.103	96.881	61.168	42.881	54.000	35.713	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:28
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 Coded125	



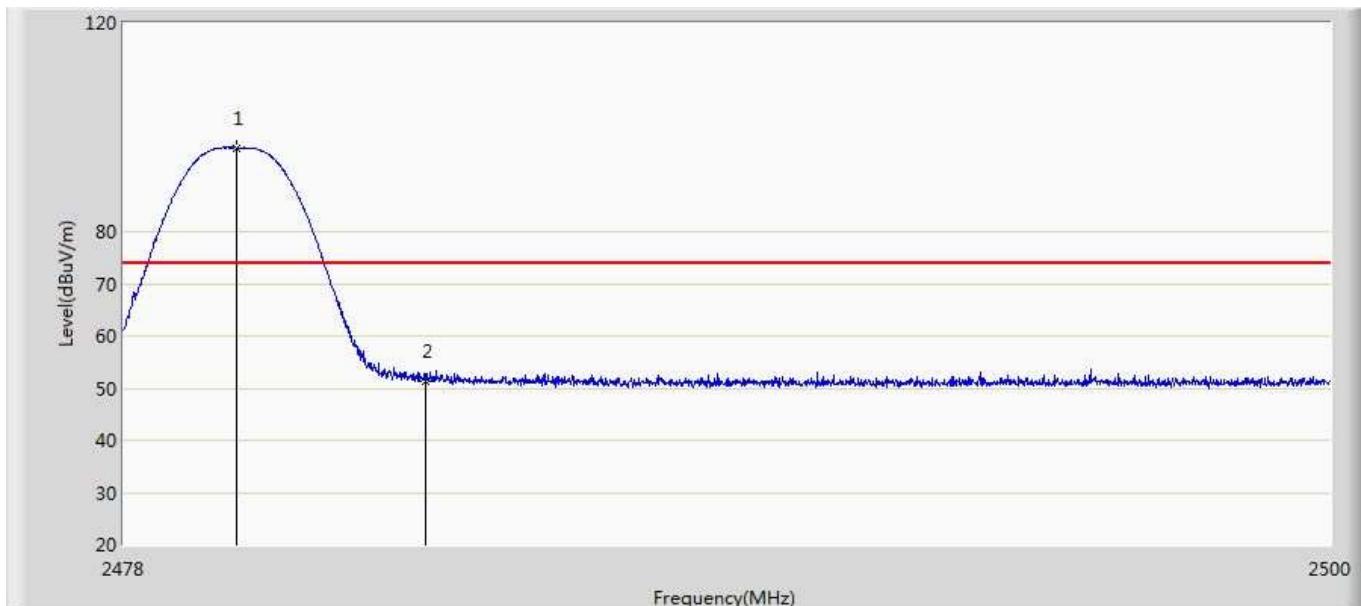
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.913	15.231	-23.087	74.000	35.682	PK
2	*	2401.770	100.480	64.768	26.480	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:30
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 Coded125	



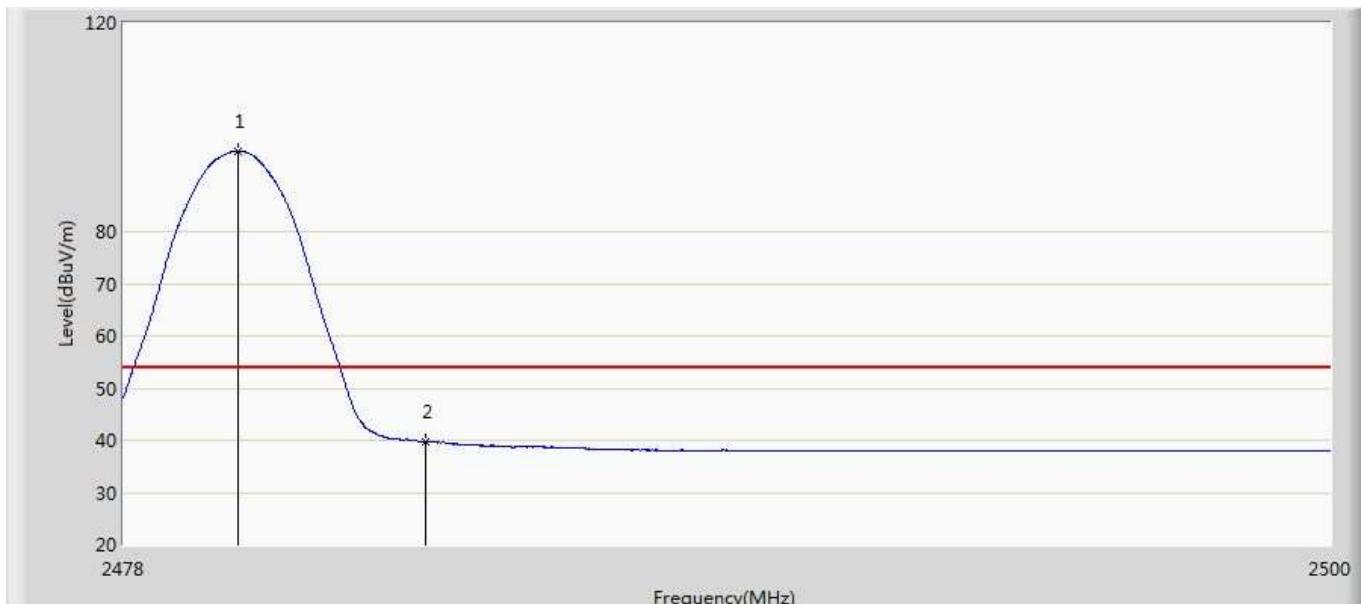
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.628	2.946	-15.372	54.000	35.682	AV
2	*	2402.055	99.787	64.074	45.787	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:31
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 3:Transmit at 2480MHz by Coded125	



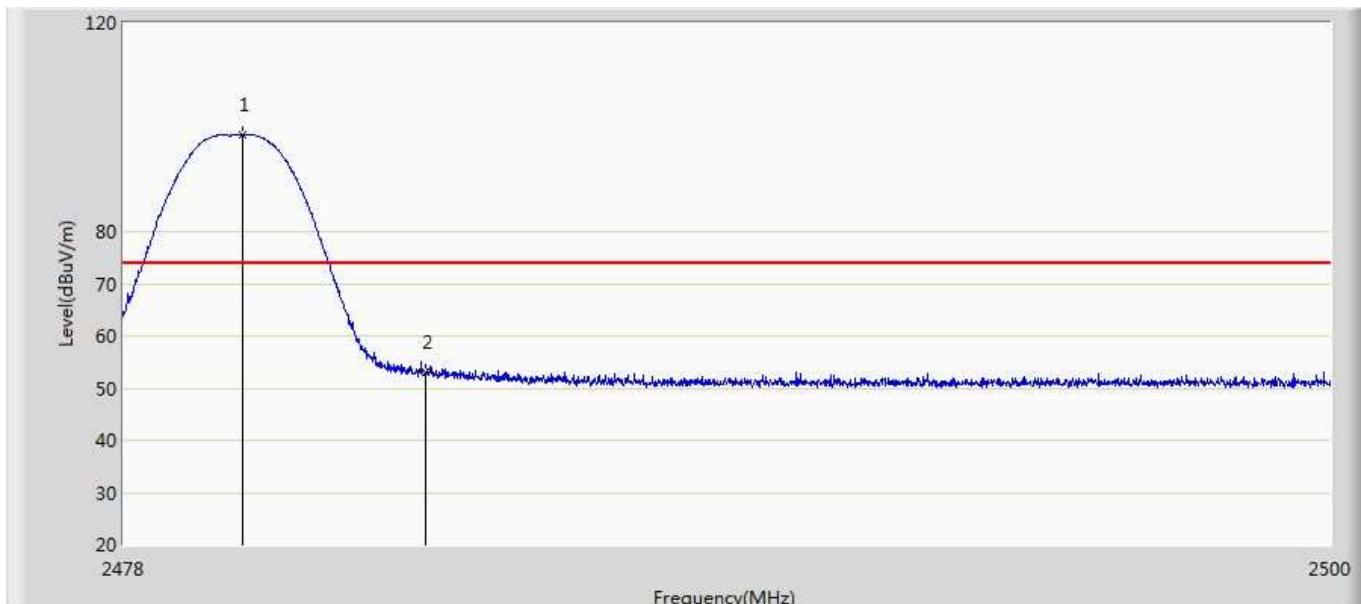
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.046	96.066	60.199	22.066	74.000	35.866	PK
2		2483.500	51.422	15.530	-22.578	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:34
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 Coded125	



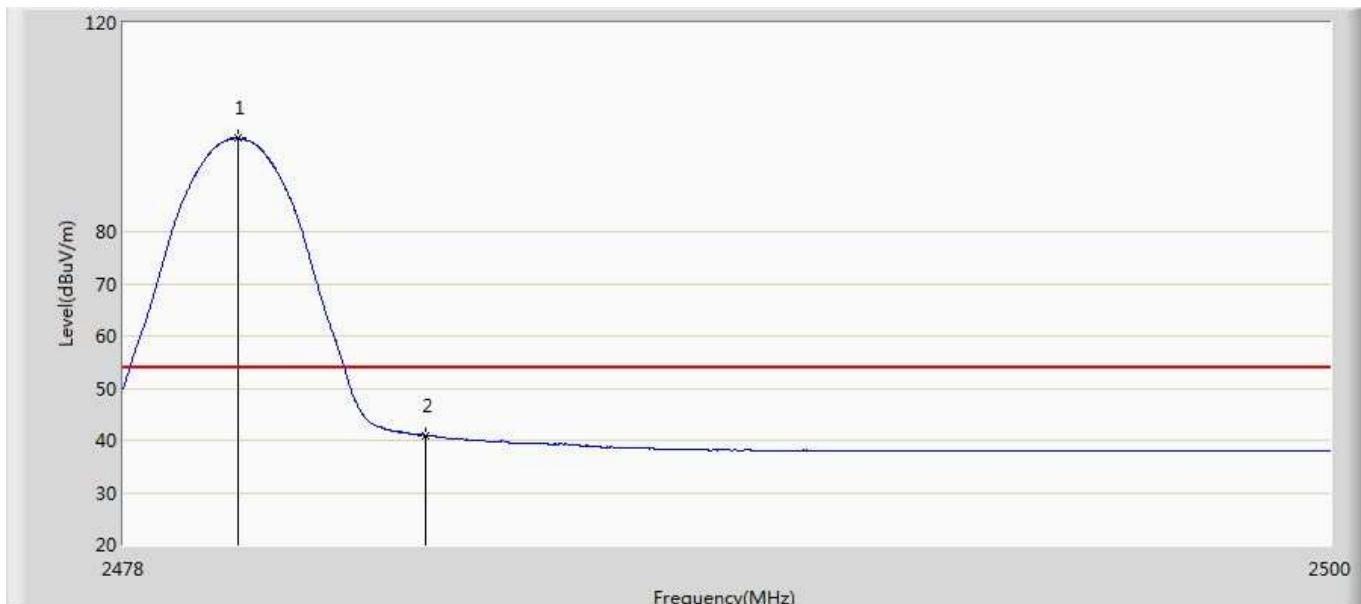
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.079	95.396	59.529	41.396	54.000	35.867	AV
2		2483.500	39.723	3.831	-14.277	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:35
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 Coded125	



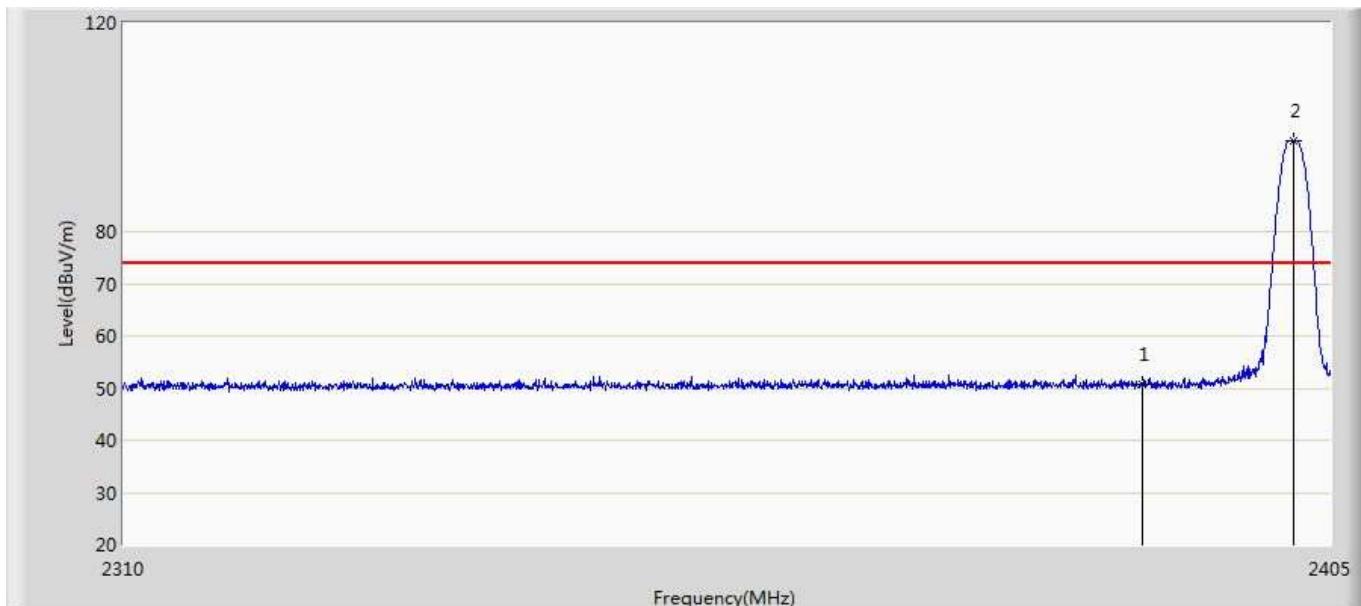
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.178	98.609	62.741	24.609	74.000	35.867	PK
2		2483.500	52.946	17.054	-21.054	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:37
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 Coded125	



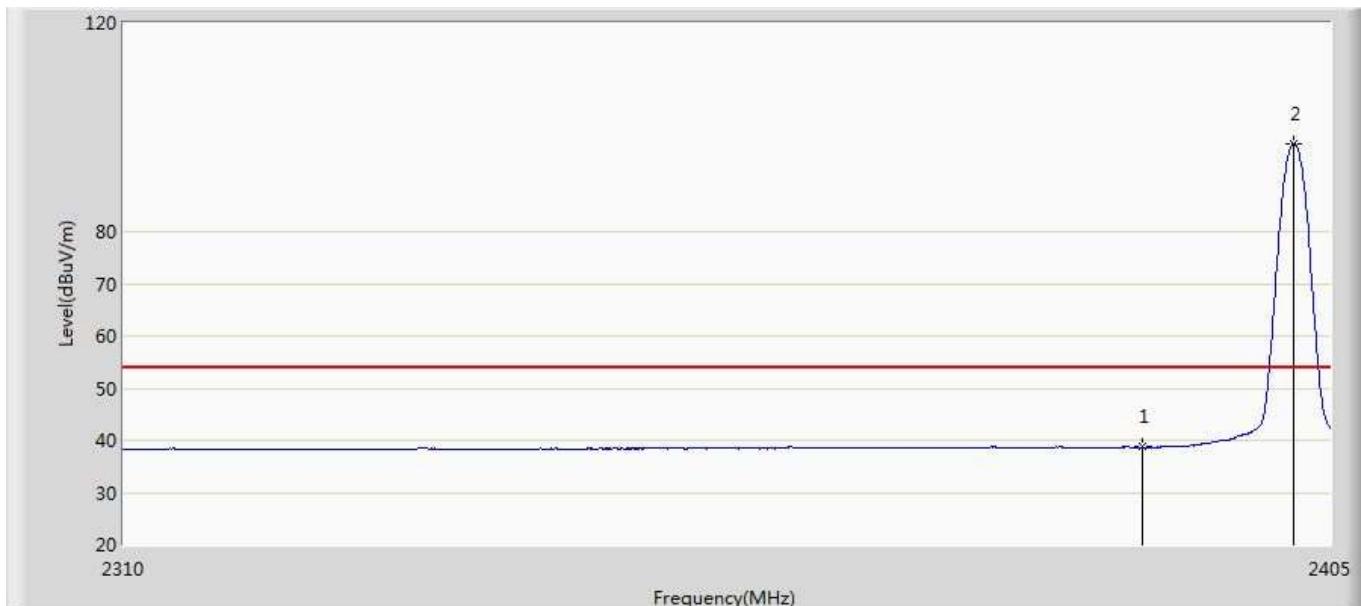
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.079	97.867	62.000	43.867	54.000	35.867	AV
2		2483.500	41.000	5.108	-13.000	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:39
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 Coded500	



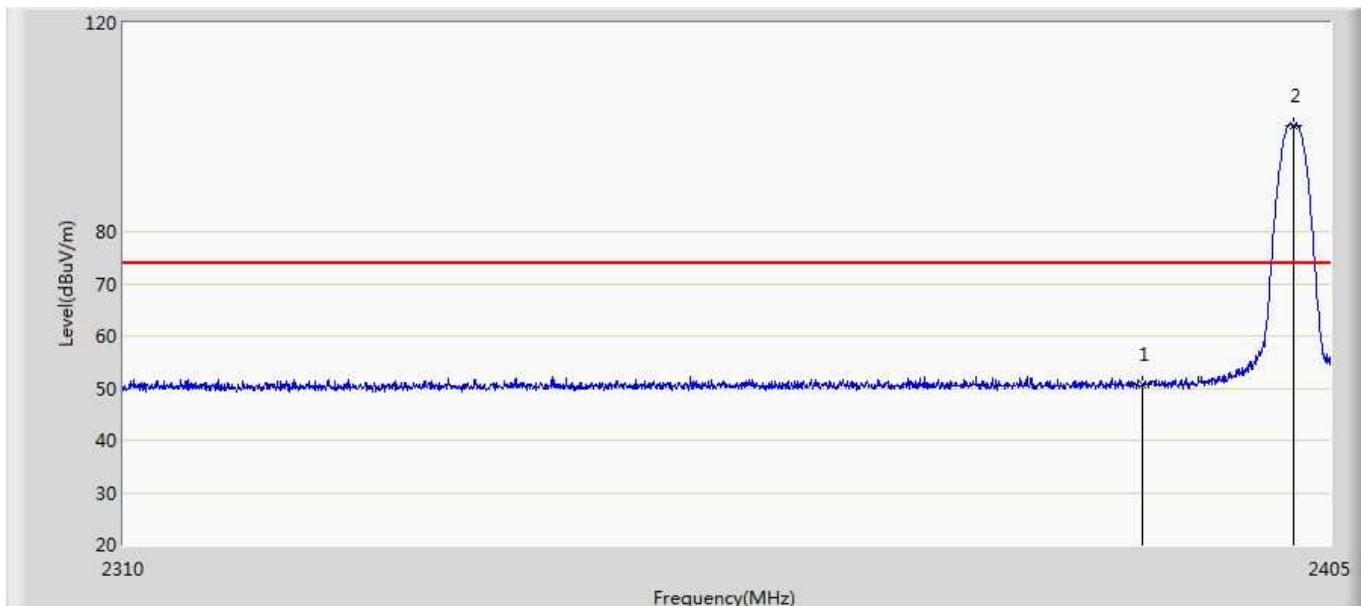
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.624	14.942	-23.376	74.000	35.682	PK
2	*	2402.055	97.294	61.581	23.294	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:42
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 Coded500	



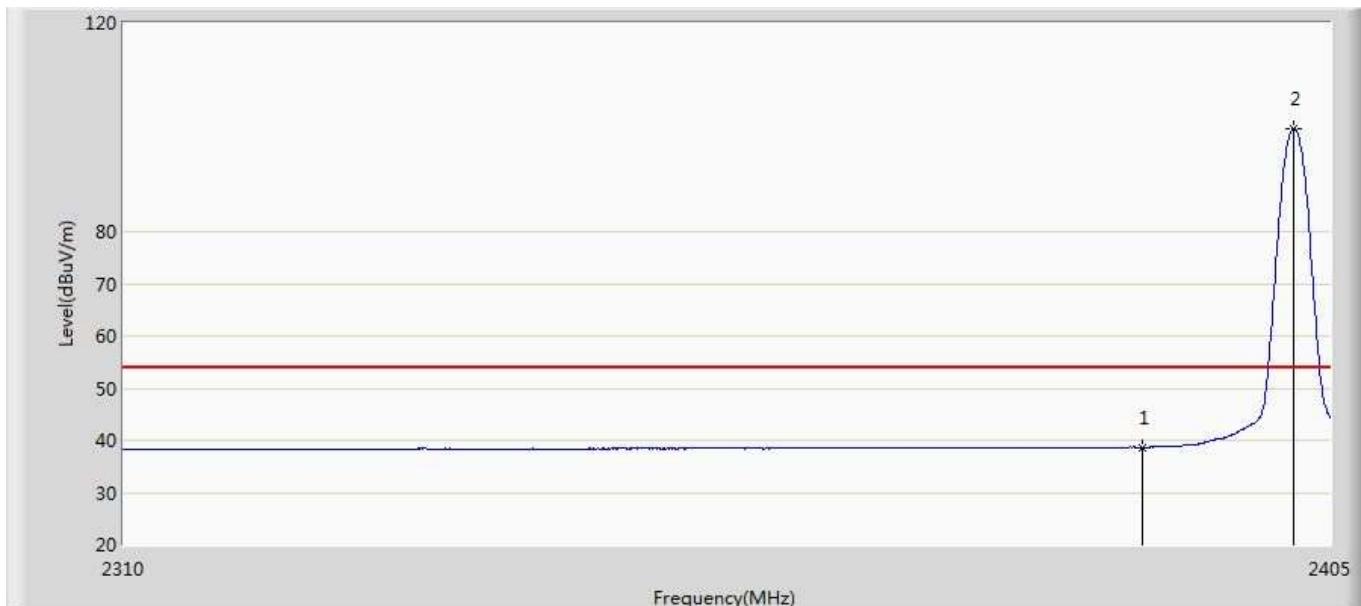
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.719	3.037	-15.281	54.000	35.682	AV
2	*	2402.055	96.892	61.179	42.892	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:43
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 4:Transmit at 2402MHz by Coded500	



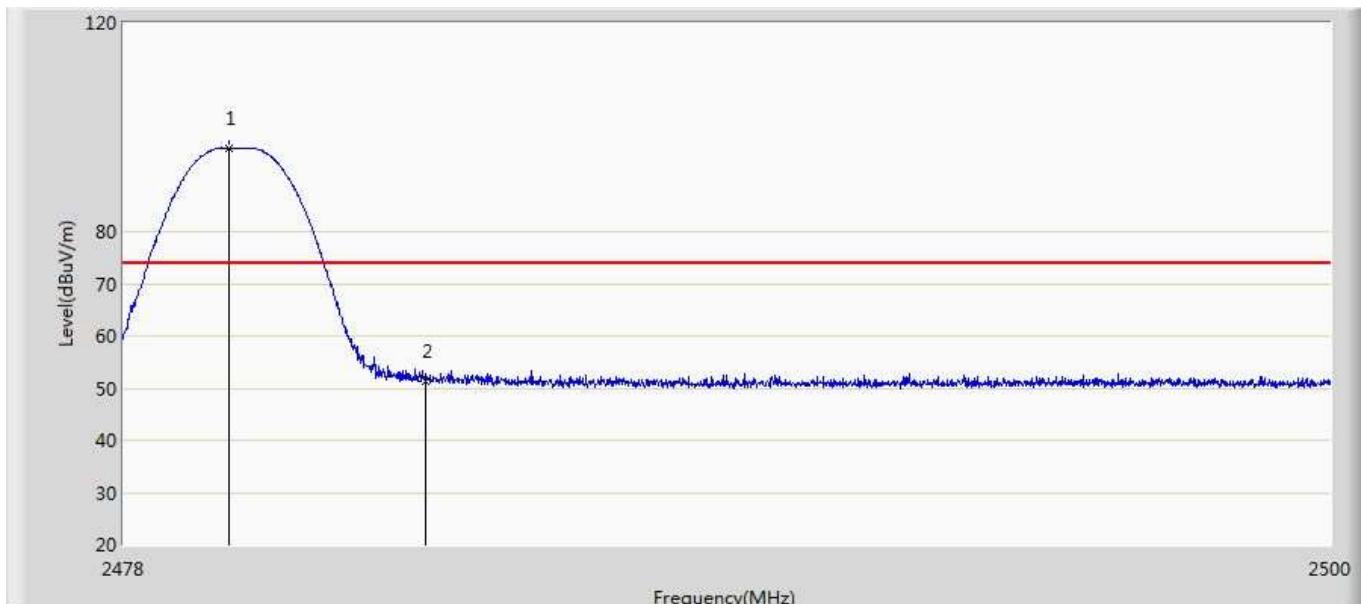
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.716	15.034	-23.284	74.000	35.682	PK
2	*	2402.055	100.327	64.614	26.327	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:45
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 Coded500	



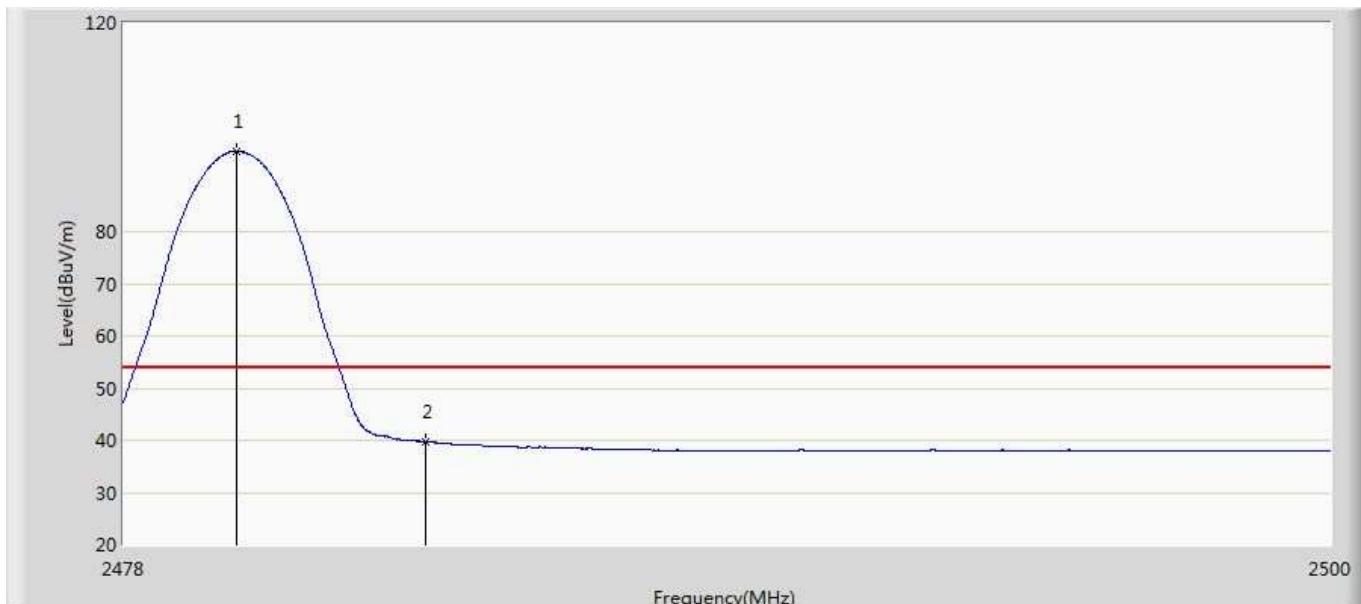
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.680	2.998	-15.320	54.000	35.682	AV
2	*	2402.055	99.837	64.124	45.837	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:47
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 4:Transmit at 2480MHz by Coded500	



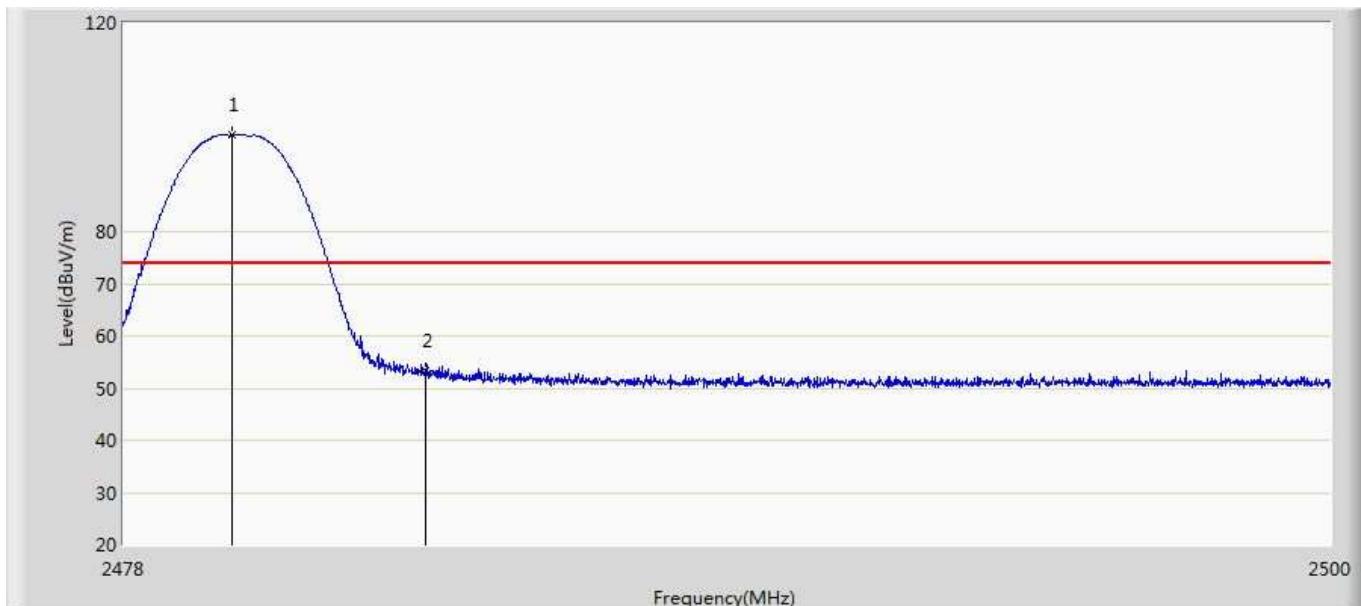
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.914	96.025	60.159	22.025	74.000	35.866	PK
2		2483.500	51.391	15.499	-22.609	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:49
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 Coded500	



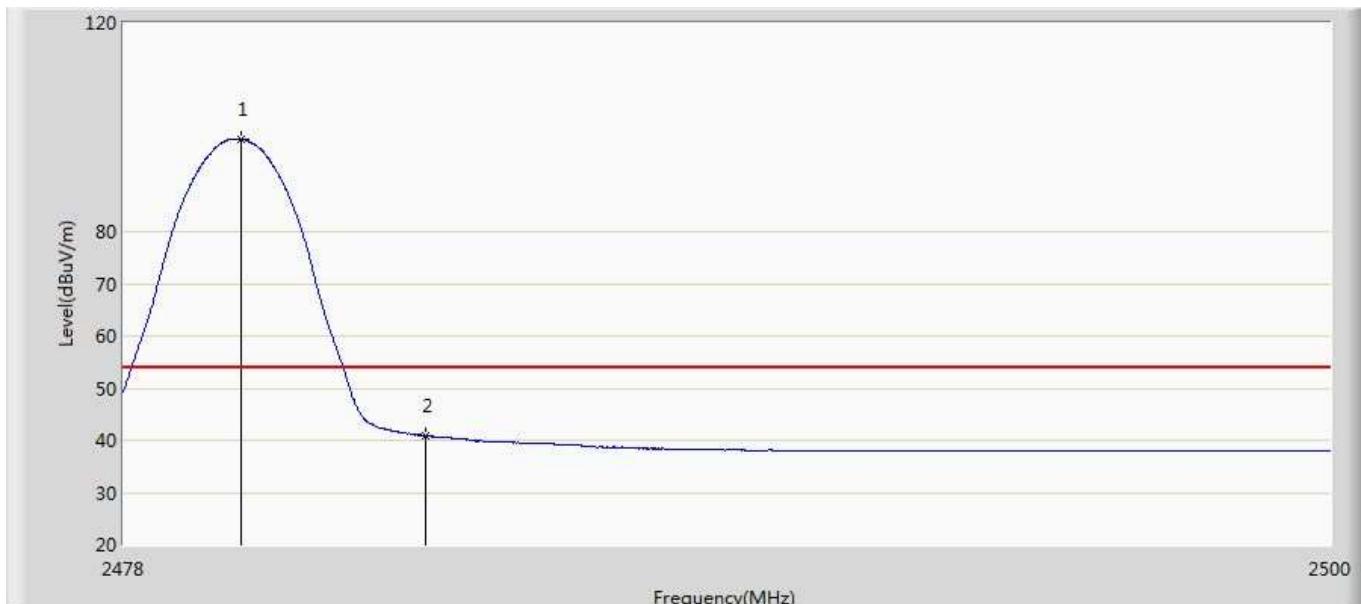
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.046	95.323	59.456	41.323	54.000	35.866	AV
2		2483.500	39.682	3.790	-14.318	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:51
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 Coded500	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.980	98.423	62.557	24.423	74.000	35.866	PK
2		2483.500	53.323	17.431	-20.677	74.000	35.891	PK

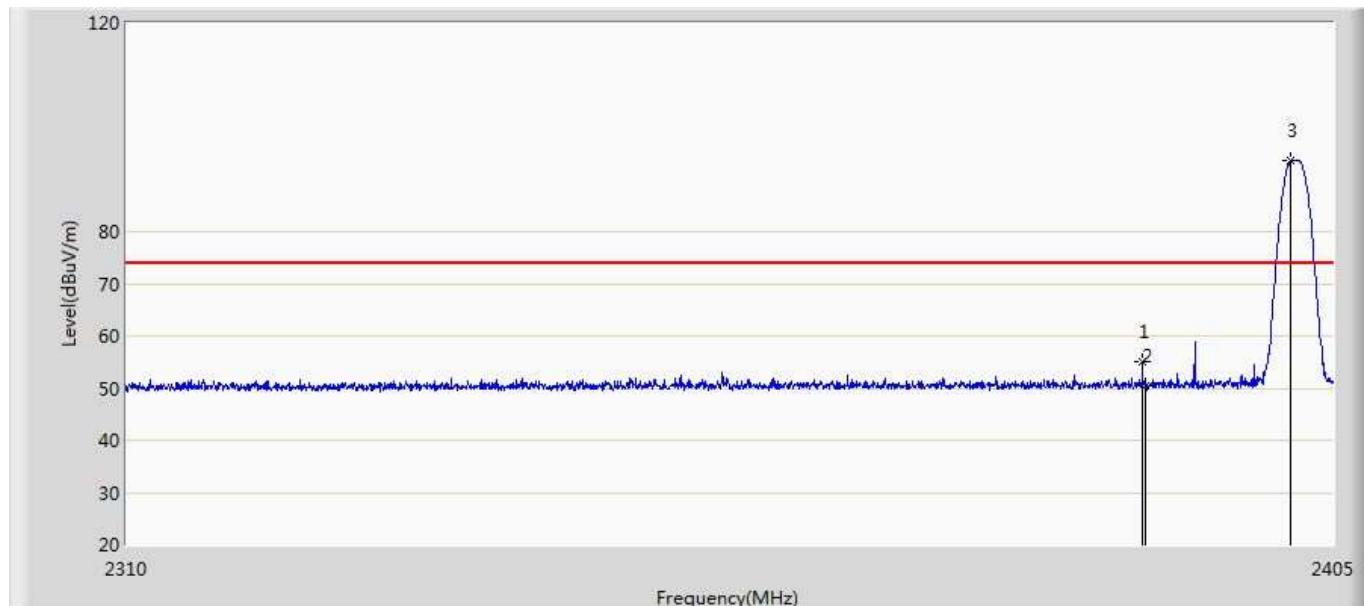
Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 20:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp	Power: AC 120V/60Hz
Note: Mode 4:Transmit at 2480MHz by Coded500	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.145	97.722	61.855	43.722	54.000	35.867	AV
2		2483.500	40.891	4.999	-13.109	54.000	35.891	AV

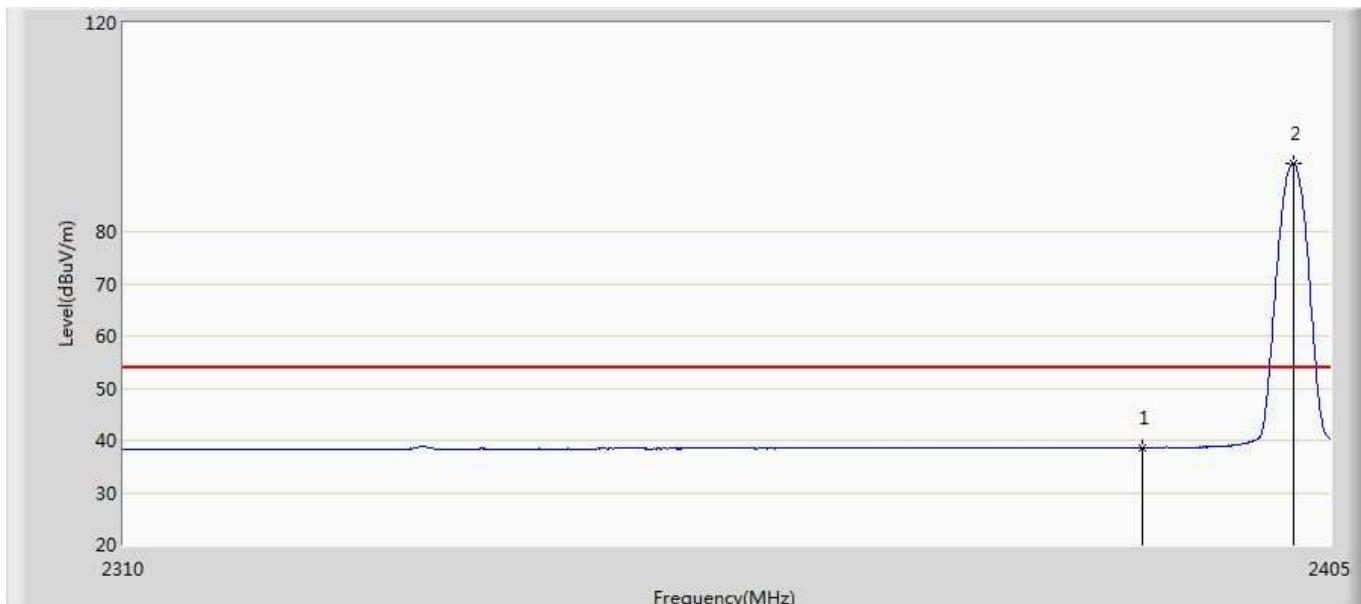
**Diodes:**

Engineer: Simon	
Site: AC5	Time: 2019/03/08 - 15:56
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 BLE	



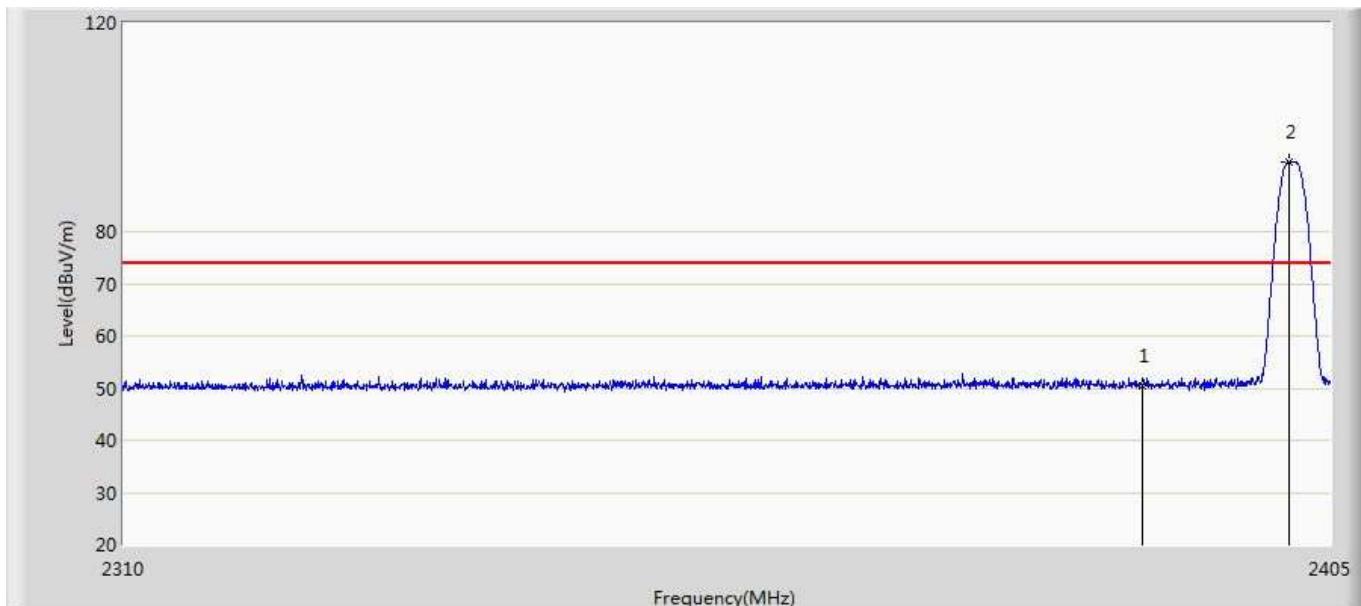
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2389.752	55.035	19.354	-18.965	74.000	35.682	PK
2		2390.000	50.355	14.673	-23.645	74.000	35.682	PK
3	*	2401.627	93.567	57.855	19.567	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:22
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 BLE	



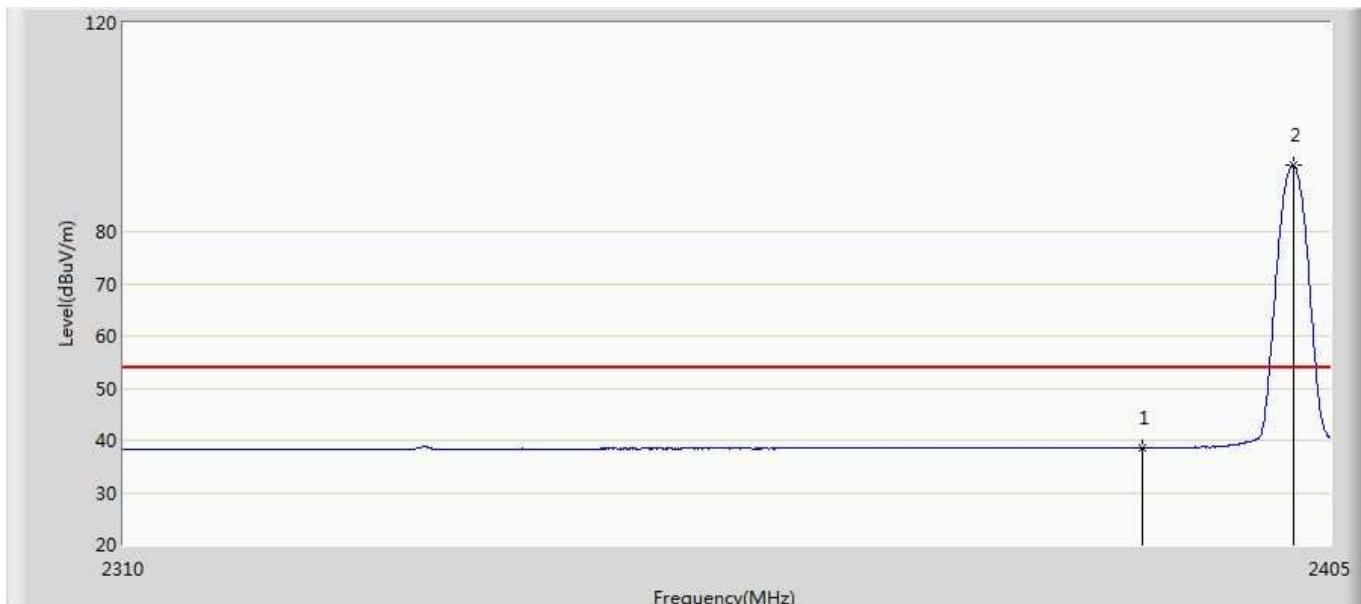
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.561	2.879	-15.439	54.000	35.682	AV
2	*	2402.055	93.033	57.320	39.033	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:24
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 BLE	



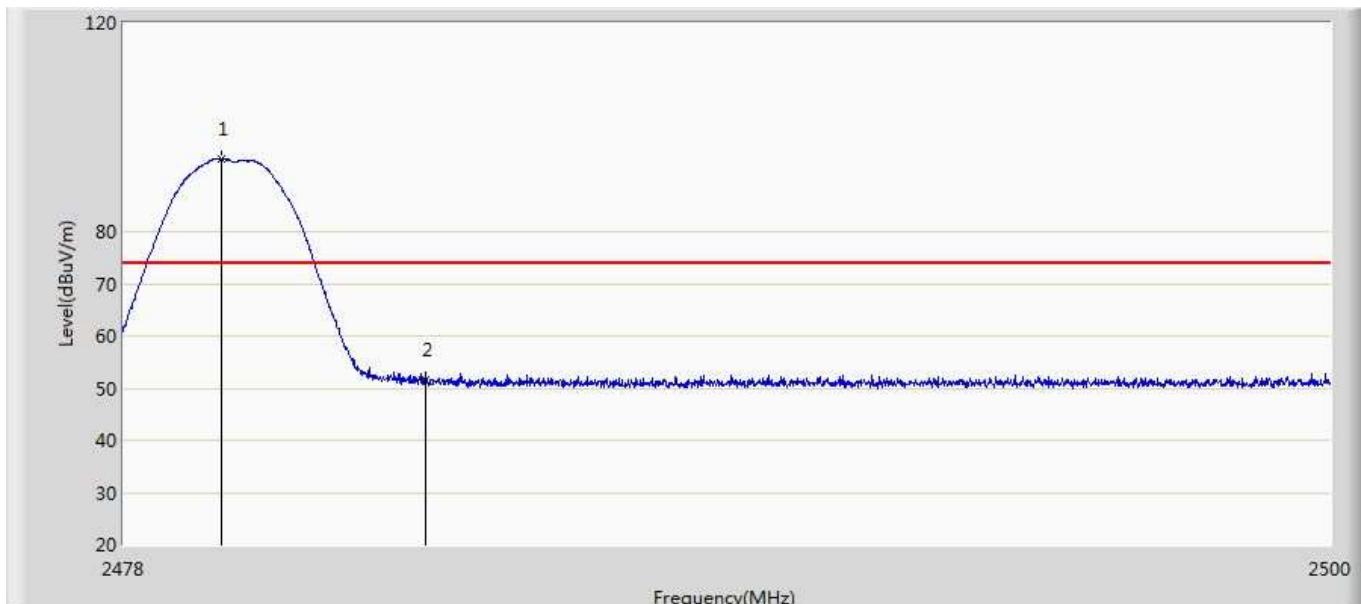
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.308	14.626	-23.692	74.000	35.682	PK
2	*	2401.770	93.414	57.702	19.414	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 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 1:Transmit at 2402MHz by BLE	



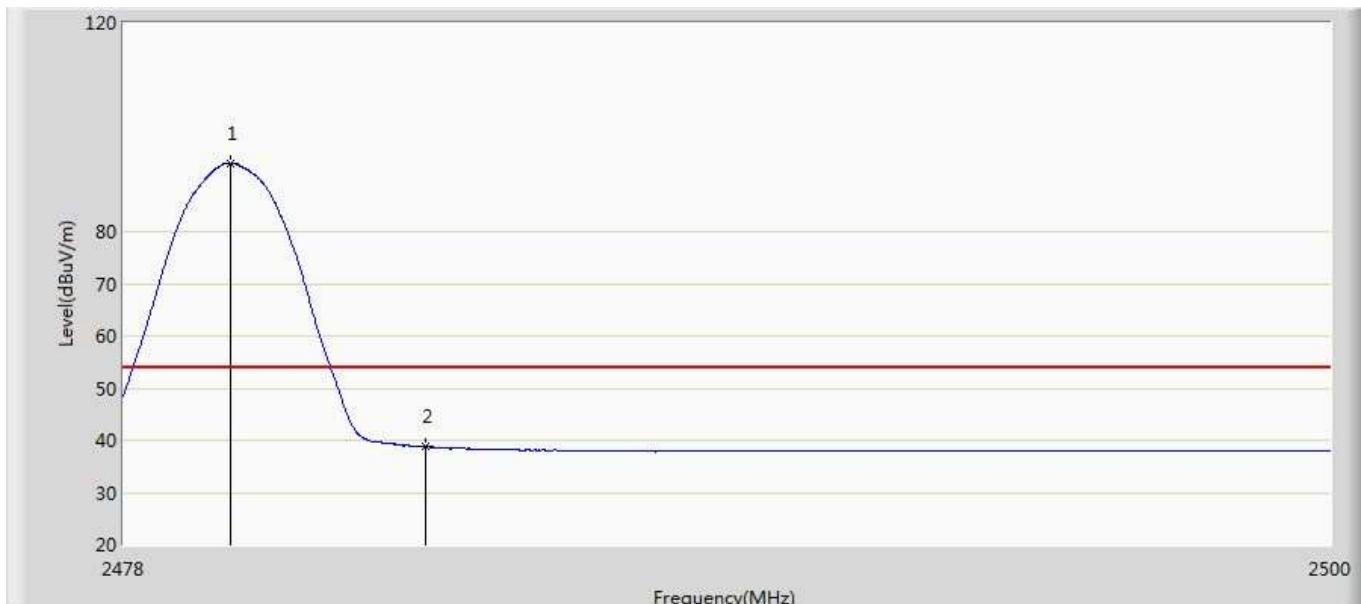
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.573	2.891	-15.427	54.000	35.682	AV
2	*	2402.055	92.634	56.921	38.634	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:27
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 BLE	



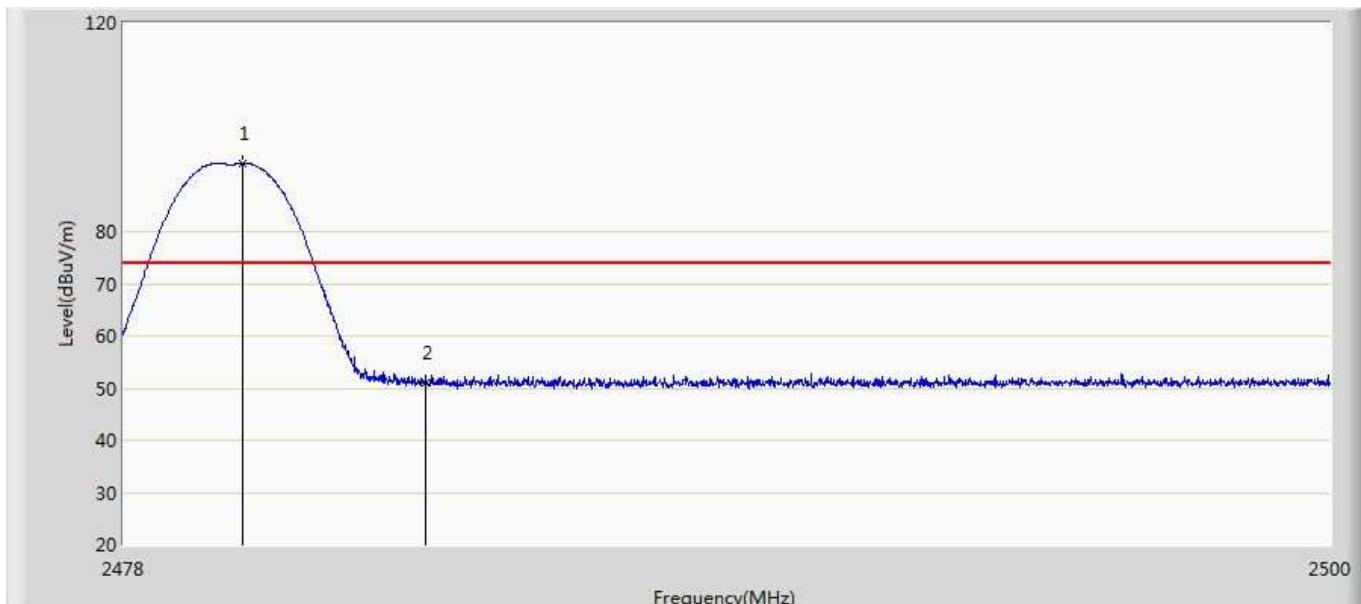
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.771	93.819	57.954	19.819	74.000	35.865	PK
2		2483.500	51.597	15.705	-22.403	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:30
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 BLE	



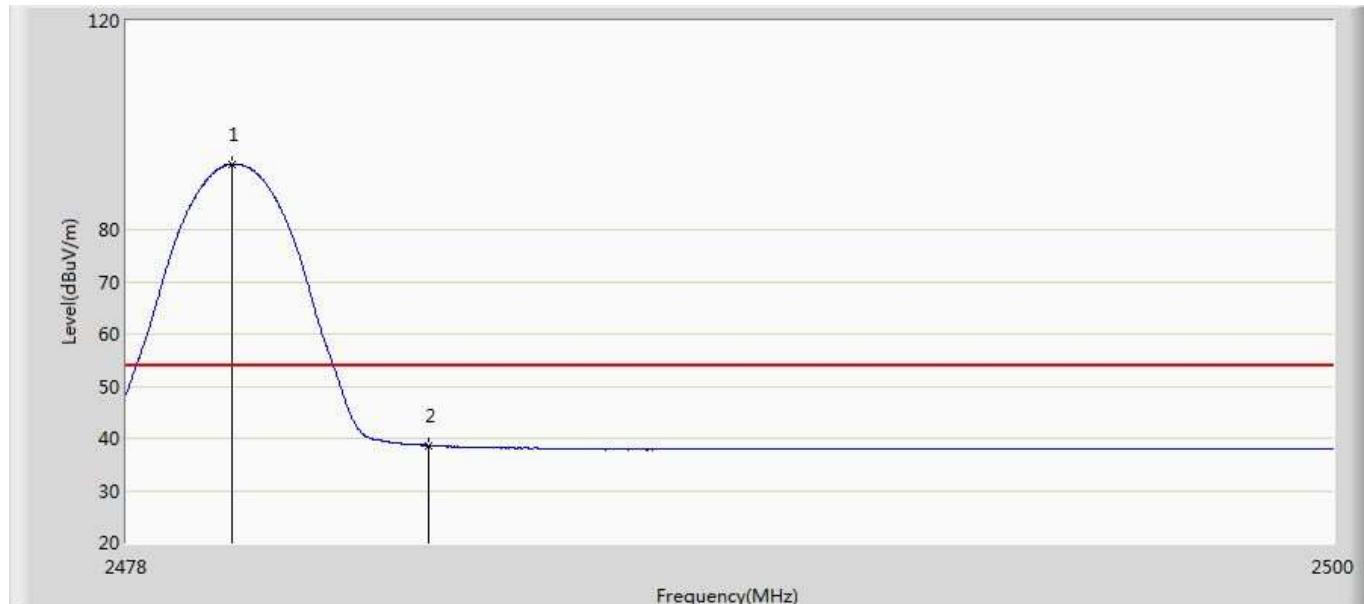
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.947	93.138	57.272	39.138	54.000	35.866	AV
2		2483.500	38.723	2.831	-15.277	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:31
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 BLE	



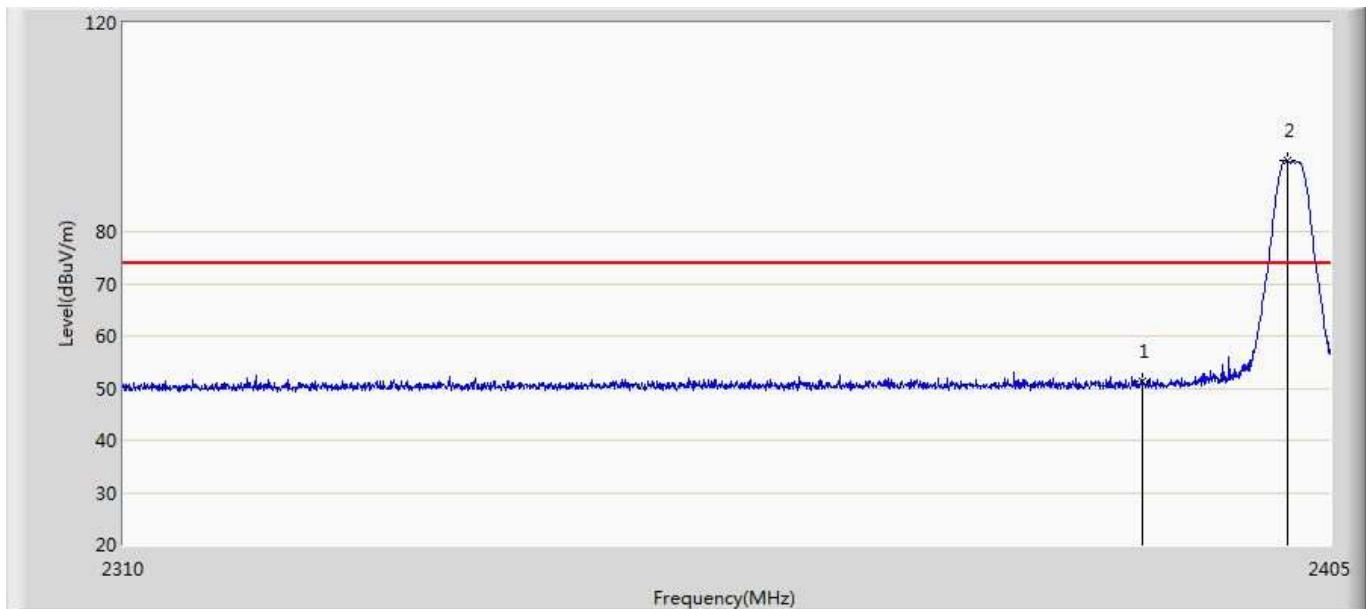
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.178	93.139	57.271	19.139	74.000	35.867	PK
2		2483.500	50.997	15.105	-23.003	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:33
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 BLE	



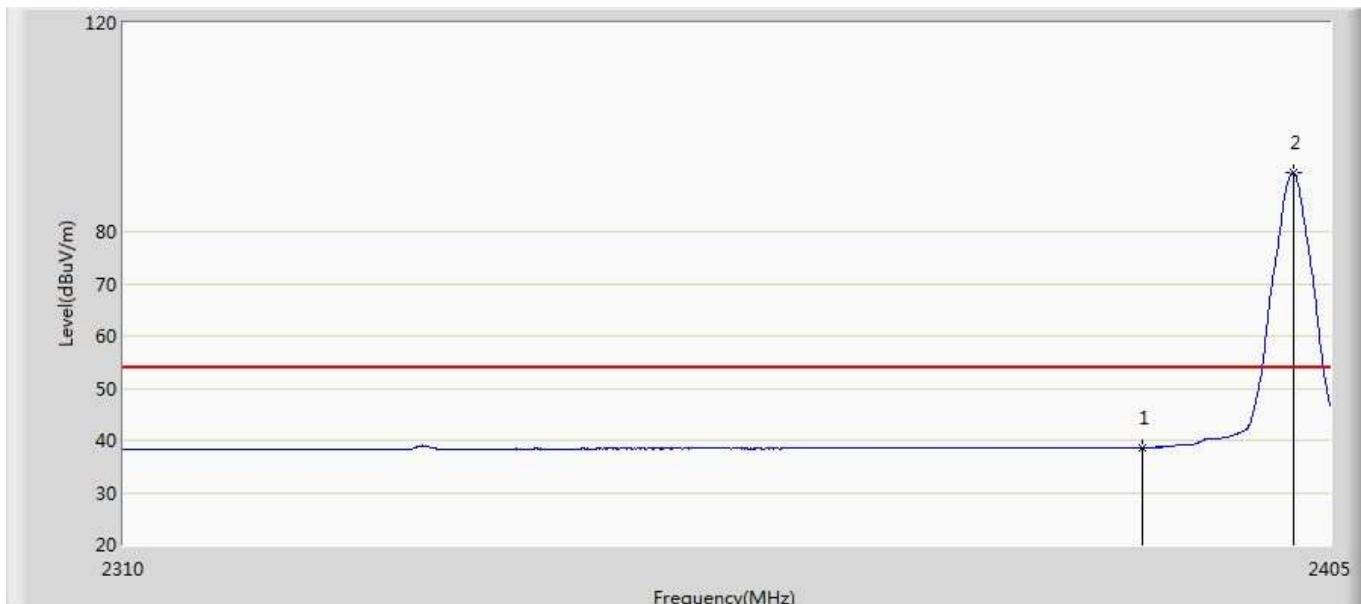
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.914	92.529	56.663	38.529	54.000	35.866	AV
2		2483.500	38.626	2.734	-15.374	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:36
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 2LE	



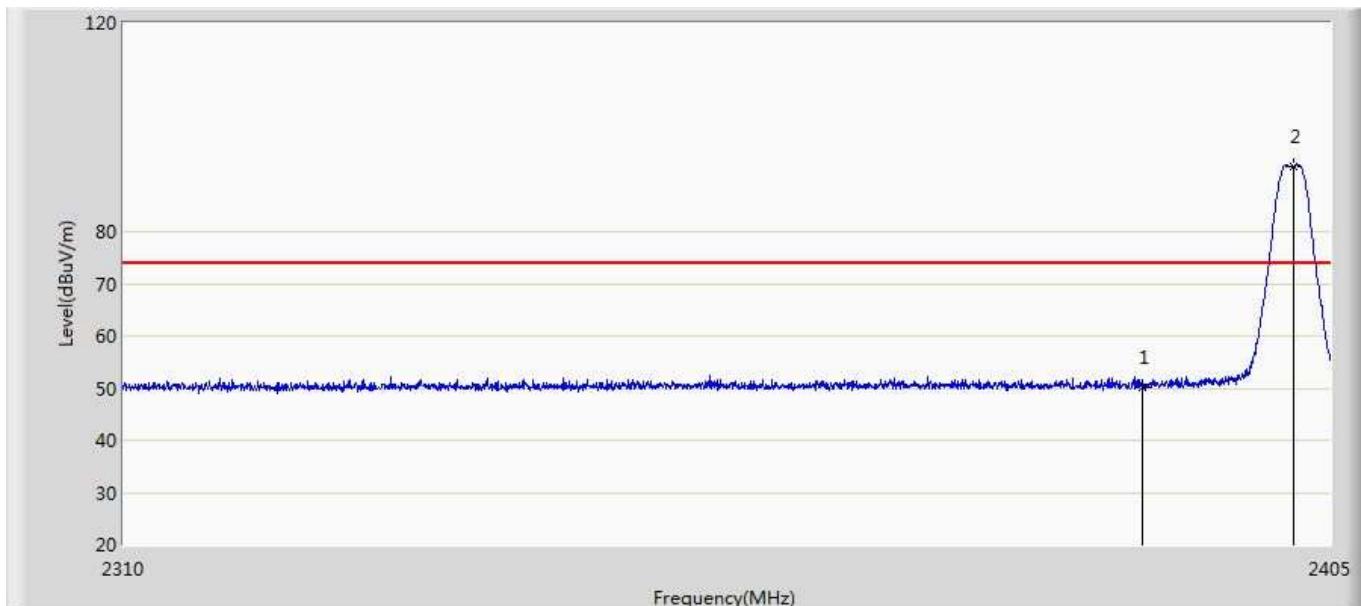
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	51.406	15.724	-22.594	74.000	35.682	PK
2	*	2401.627	93.483	57.771	19.483	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 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 2:Transmit at 2402MHz by 2LE	



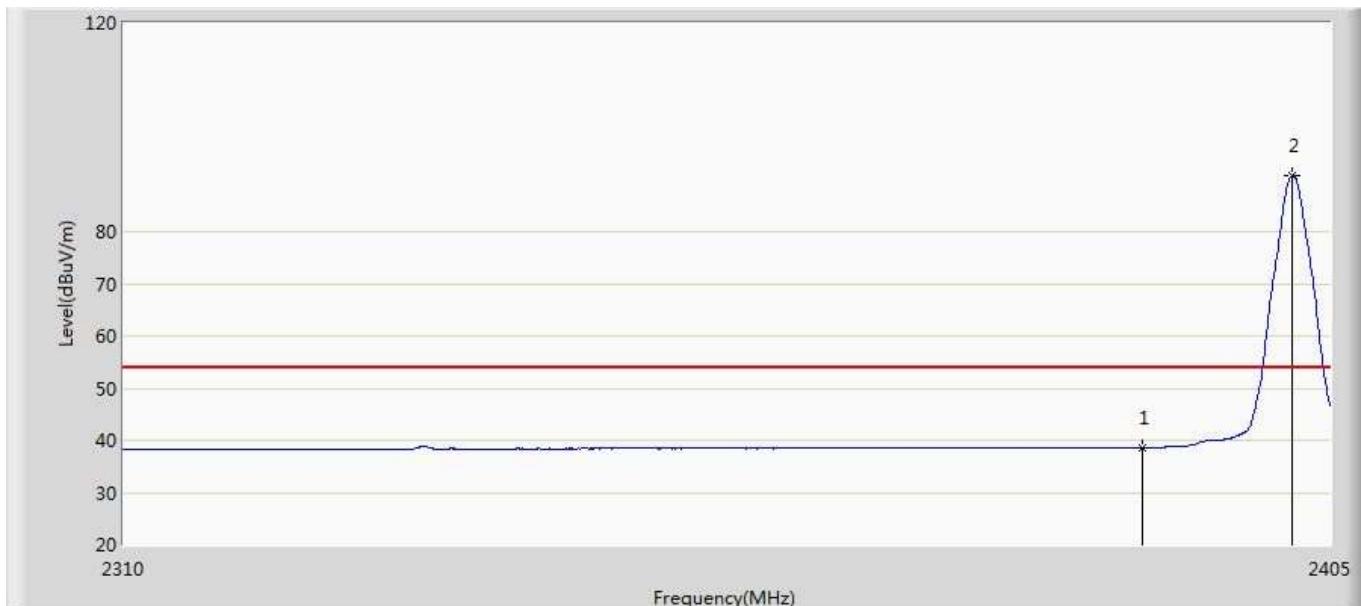
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.680	2.998	-15.320	54.000	35.682	AV
2	*	2402.055	91.186	55.473	37.186	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:40
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 2LE	



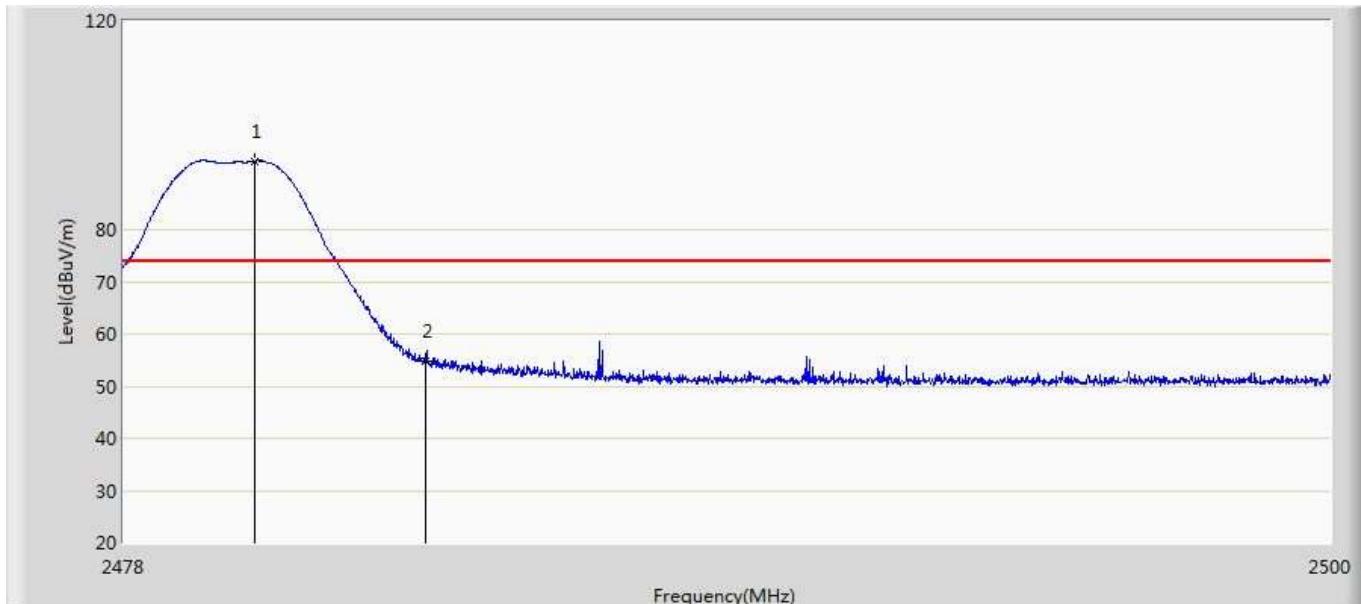
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.064	14.382	-23.936	74.000	35.682	PK
2	*	2402.055	92.534	56.821	18.534	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 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 2:Transmit at 2402MHz by 2LE	



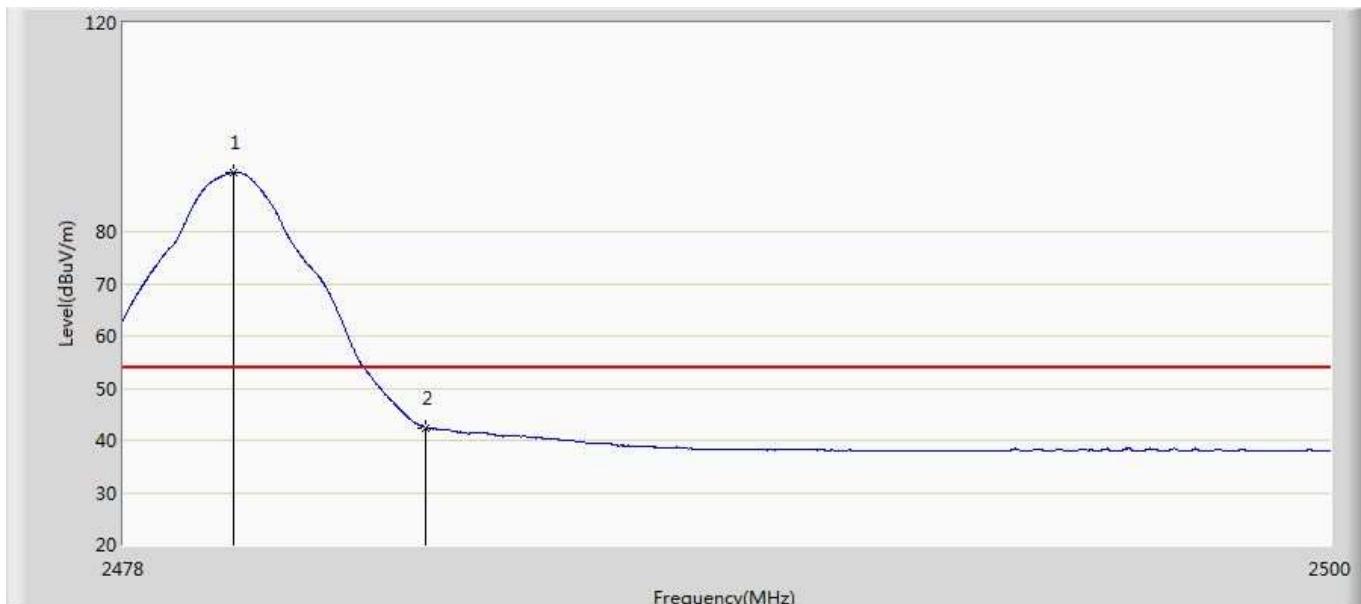
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.597	2.915	-15.403	54.000	35.682	AV
2	*	2401.913	90.684	54.972	36.684	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:44
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 2LE	



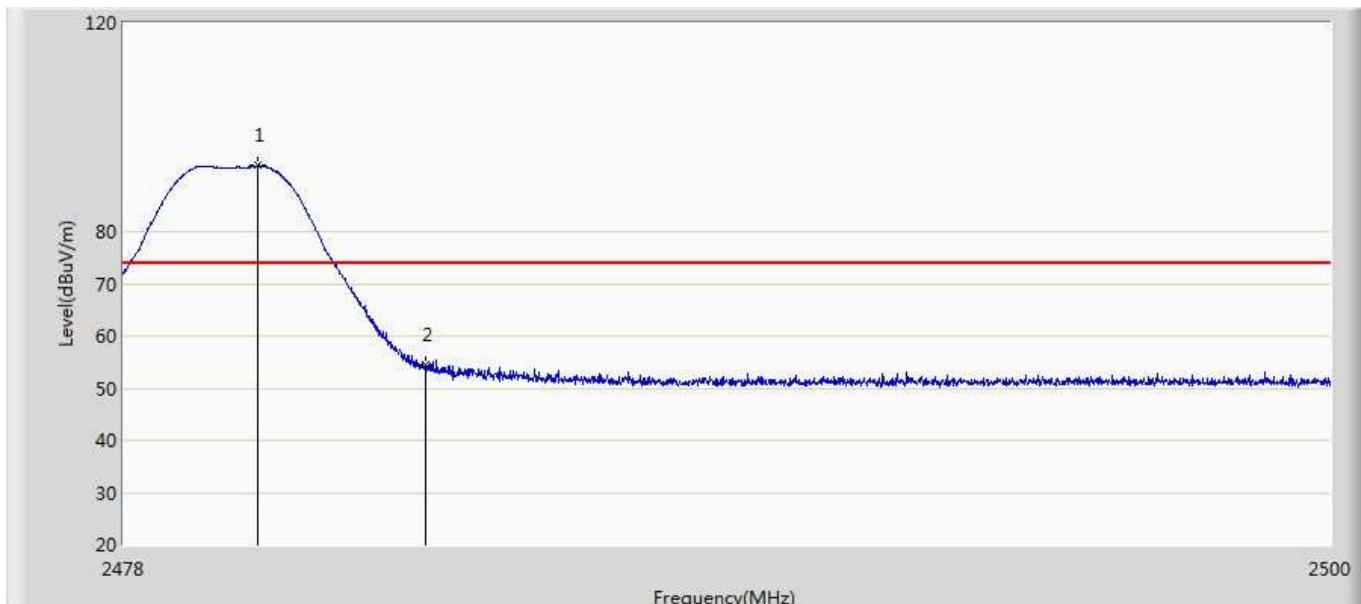
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.387	93.167	57.298	19.167	74.000	35.870	PK
2		2483.500	54.681	18.789	-19.319	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:47
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 2480MHz by 2LE	



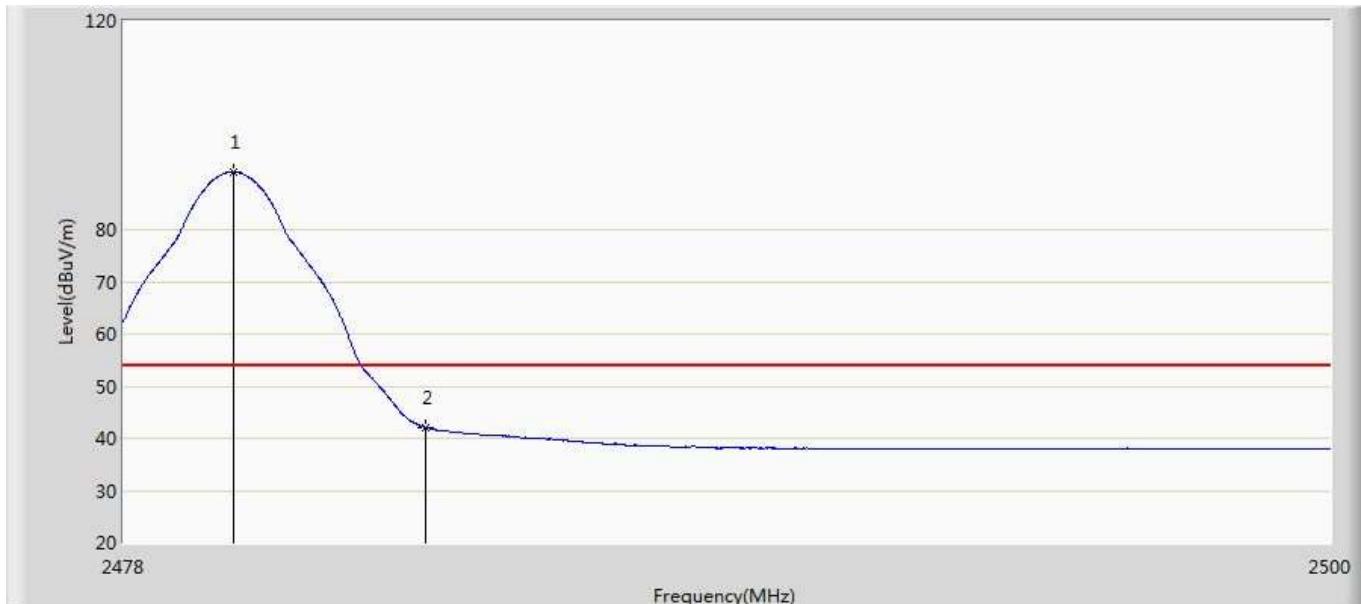
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.013	91.366	55.500	37.366	54.000	35.866	AV
2		2483.500	42.398	6.506	-11.602	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:48
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 2LE	



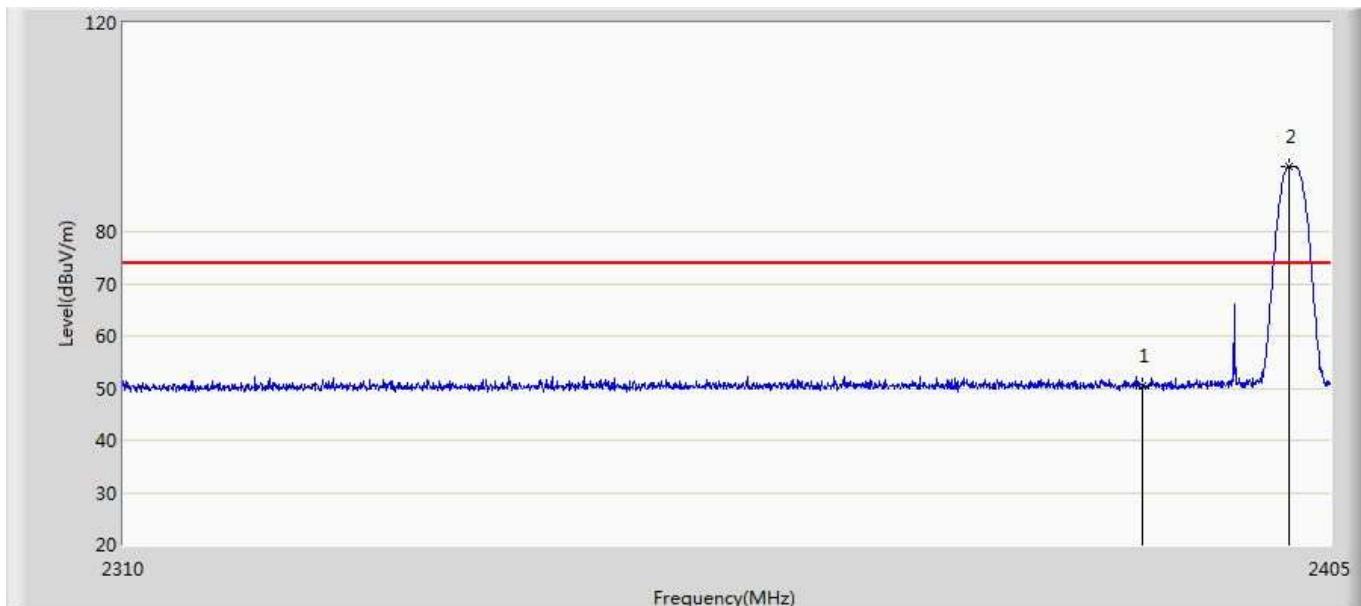
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.453	92.673	56.803	18.673	74.000	35.870	PK
2		2483.500	54.465	18.573	-19.535	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 21:51
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 2480MHz by 2LE	



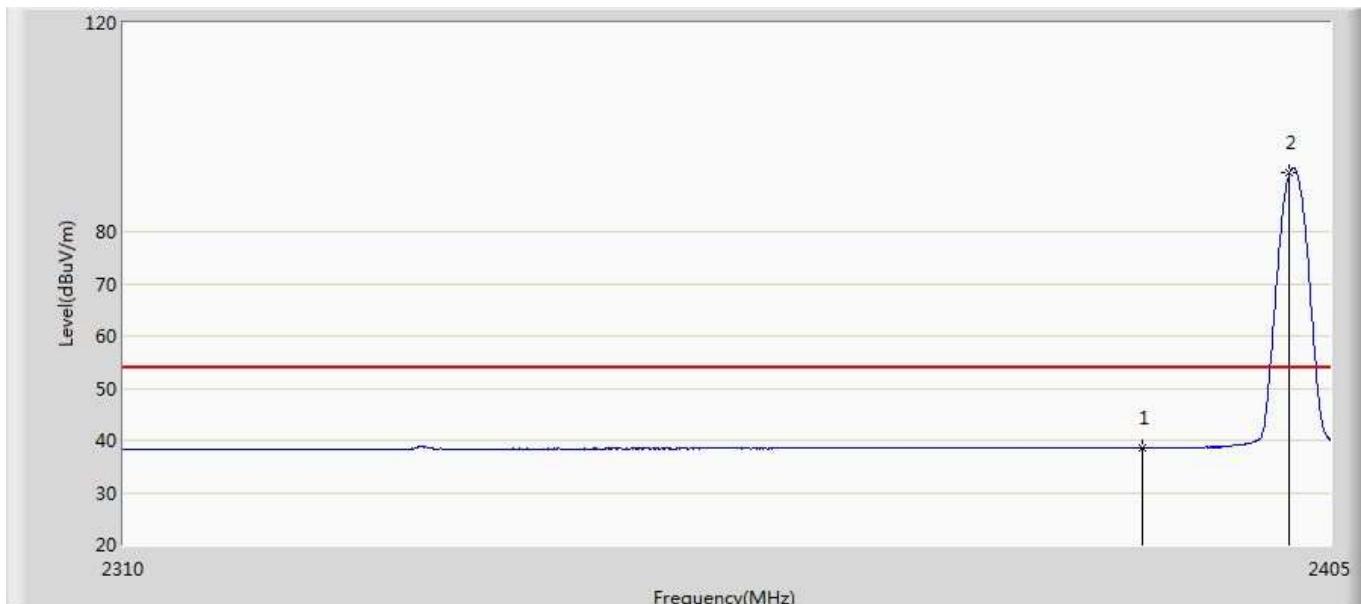
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.013	91.036	55.170	37.036	54.000	35.866	AV
2		2483.500	42.050	6.158	-11.950	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:14
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 3:Transmit at 2402MHz by Coded125	



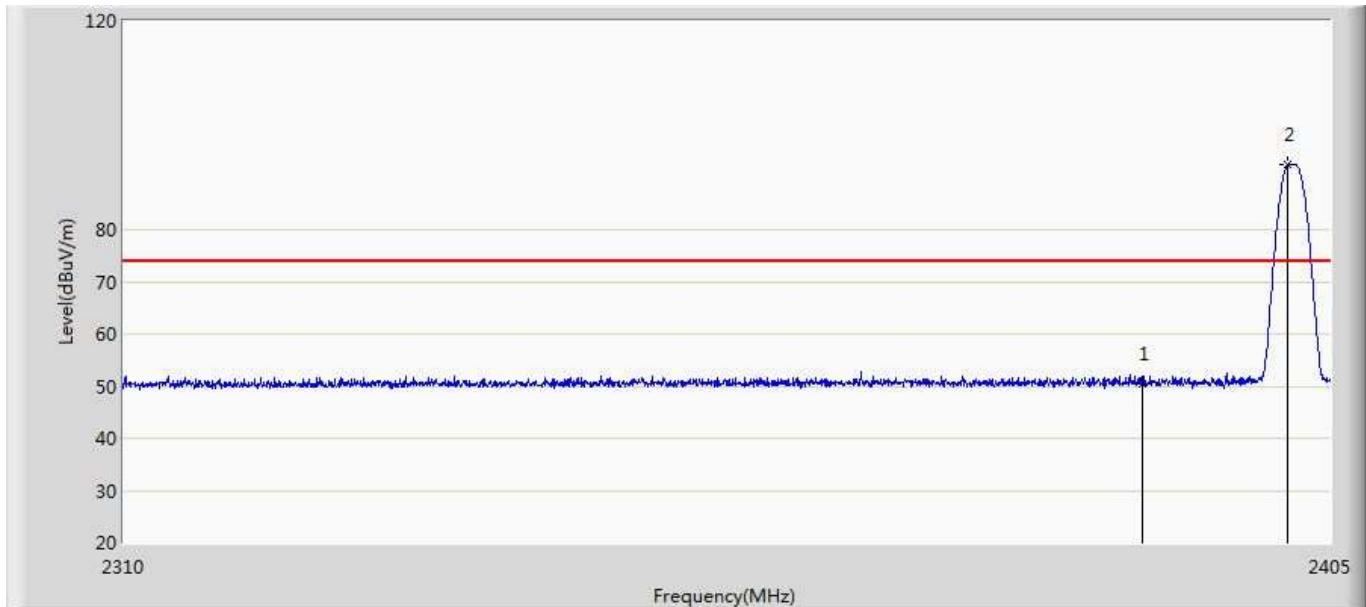
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.503	14.821	-23.497	74.000	35.682	PK
2	*	2401.770	92.489	56.777	18.489	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:17
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 Coded125	



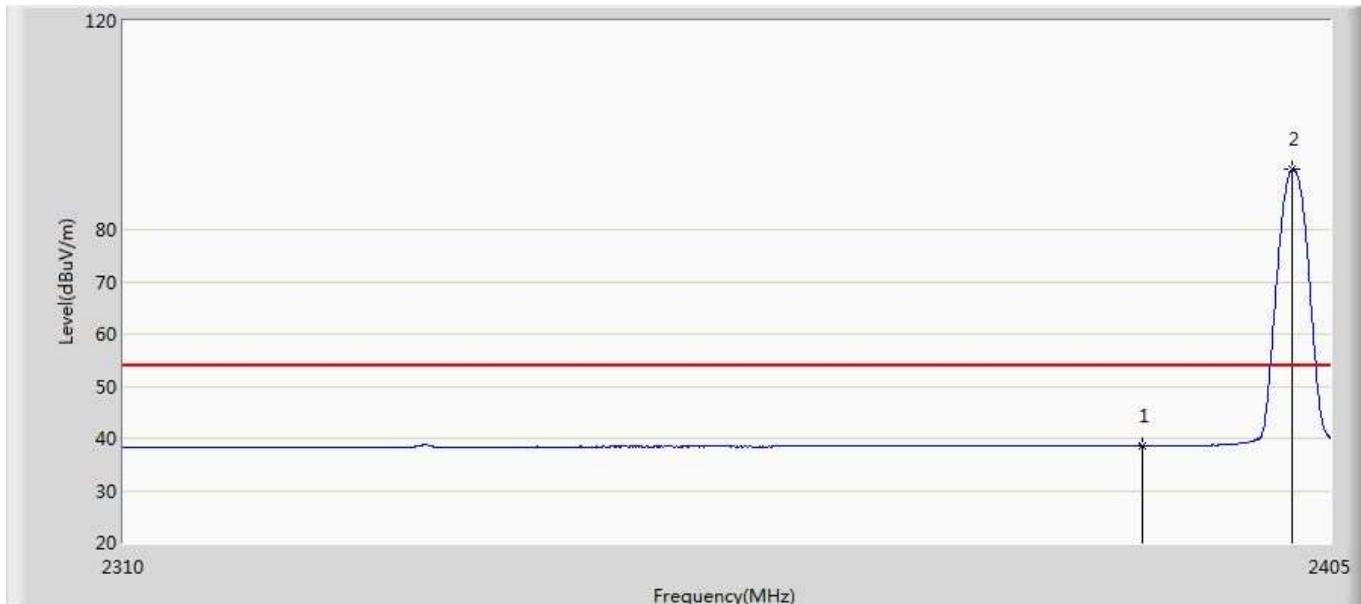
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.550	2.868	-15.450	54.000	35.682	AV
2	*	2401.770	91.249	55.537	37.249	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:19
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 Coded125	



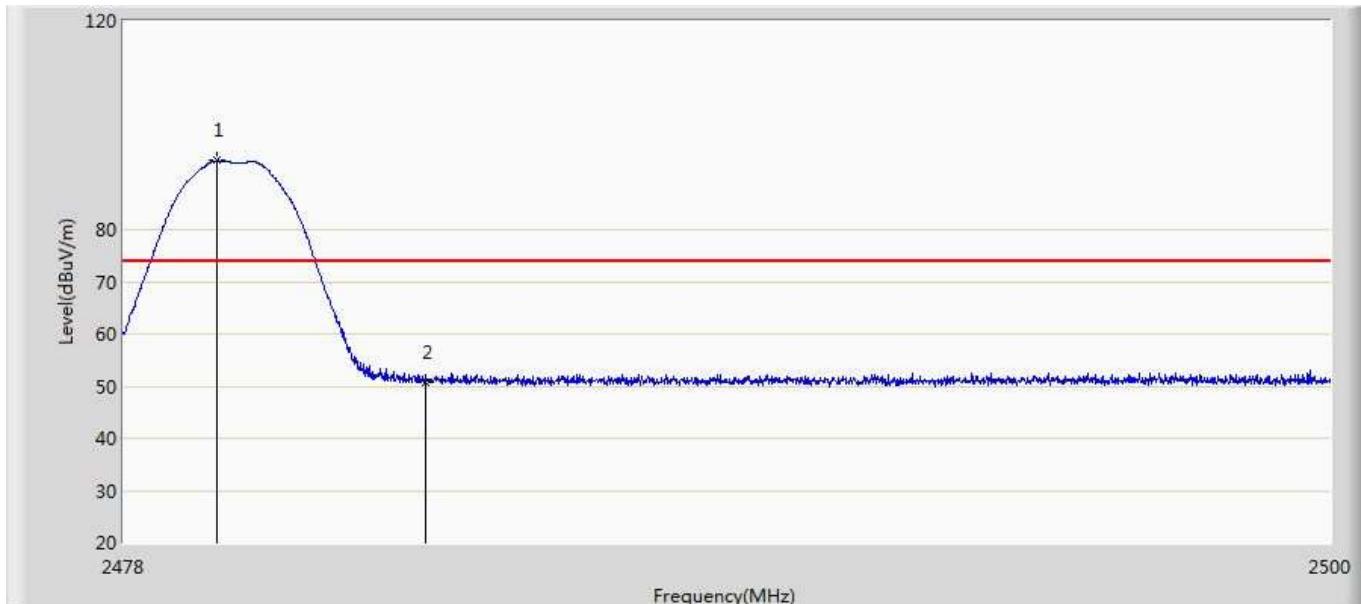
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.337	14.655	-23.663	74.000	35.682	PK
2	*	2401.627	92.361	56.649	18.361	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:22
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 3:Transmit at 2402MHz by Coded125	



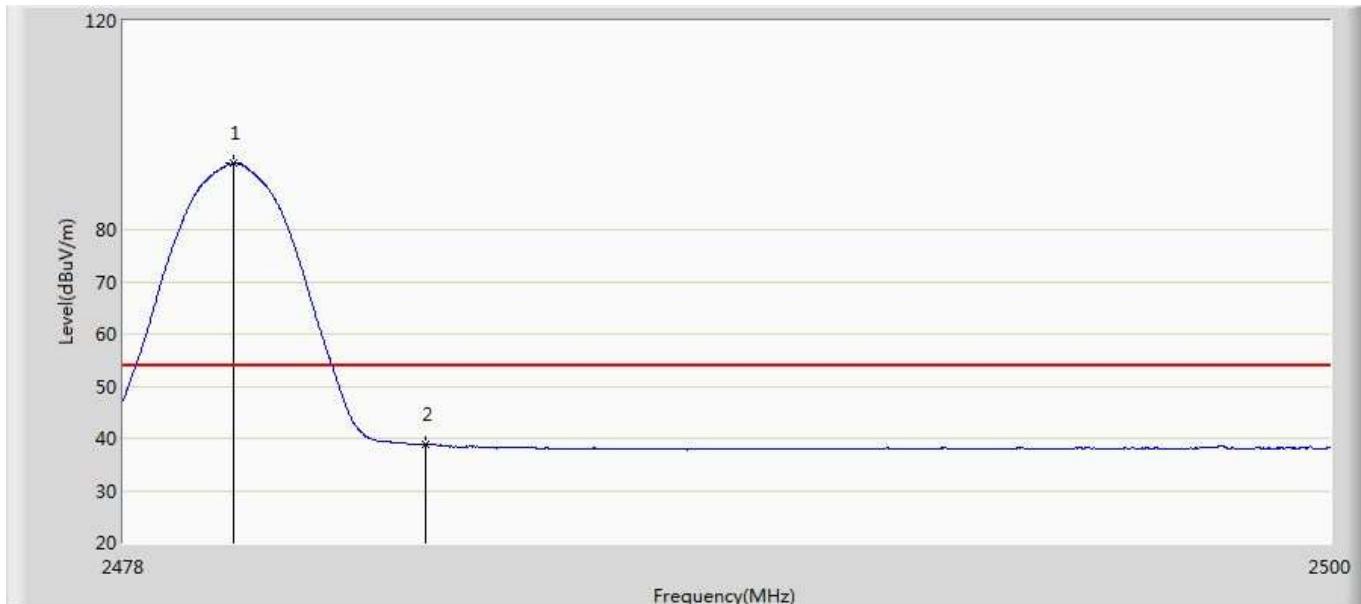
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.593	2.911	-15.407	54.000	35.682	AV
2	*	2401.960	91.624	55.911	37.624	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:26
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 Coded125	



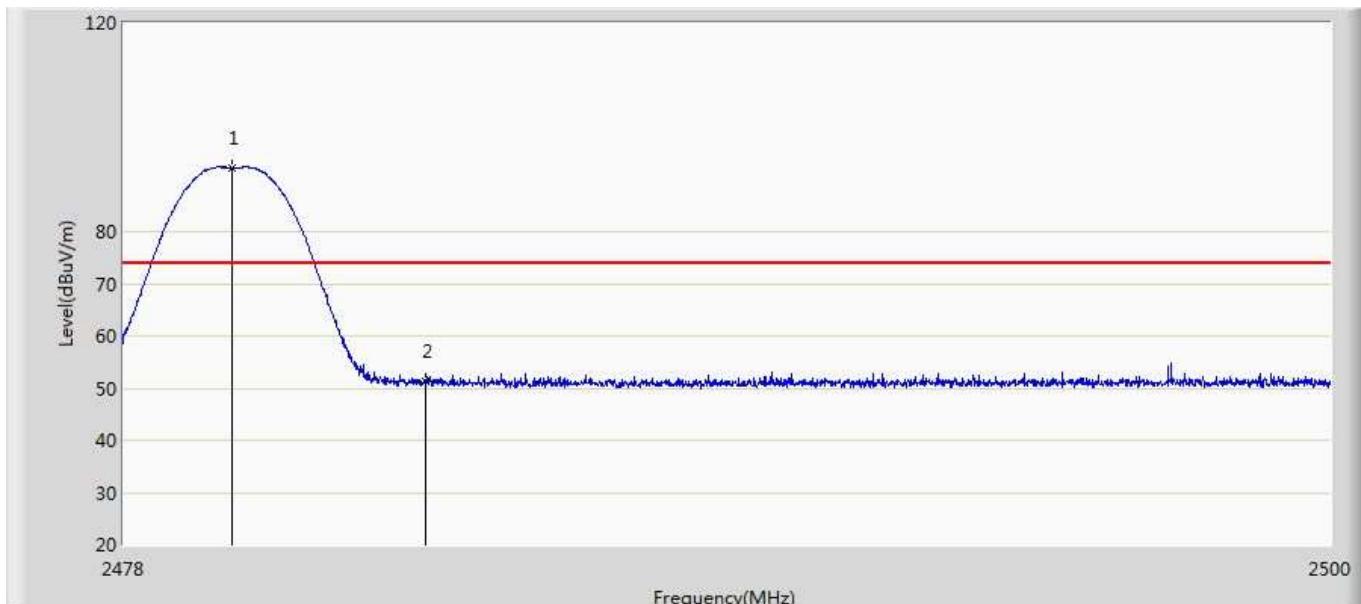
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.705	93.192	57.328	19.192	74.000	35.864	PK
2		2483.500	50.761	14.869	-23.239	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:29
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 Coded125	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.013	92.650	56.784	38.650	54.000	35.866	AV
2		2483.500	38.847	2.955	-15.153	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:30
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 Coded125	



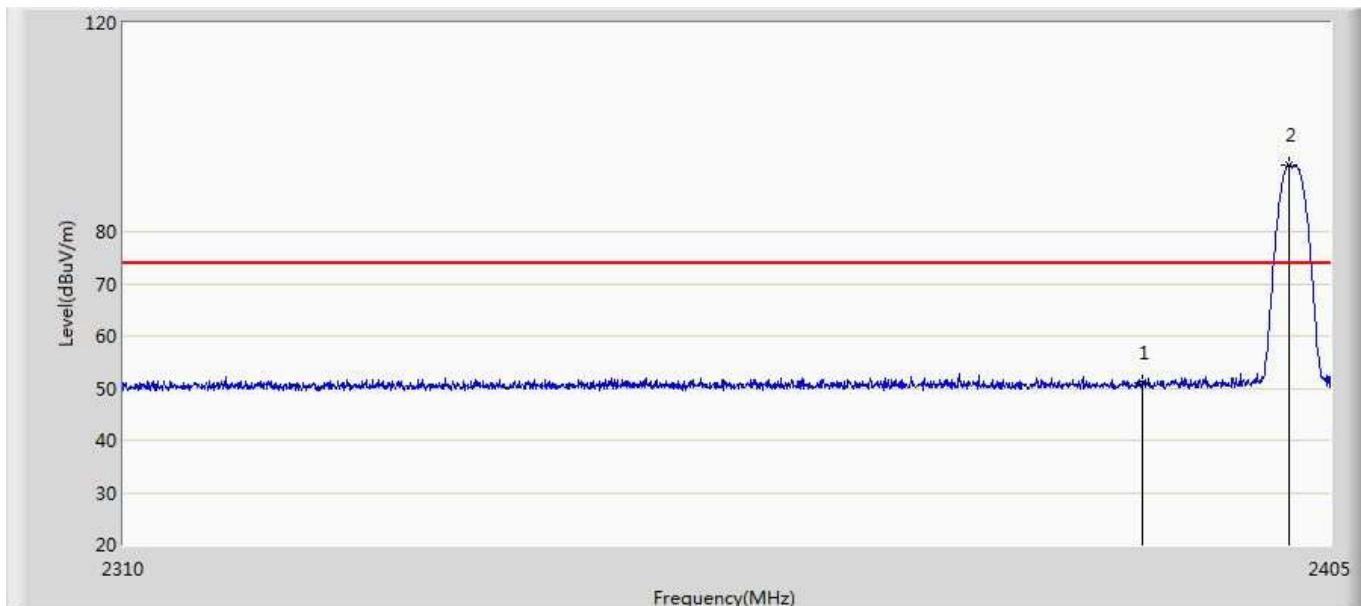
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.980	92.231	56.365	18.231	74.000	35.866	PK
2		2483.500	51.364	15.472	-22.636	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:32
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 Coded125	



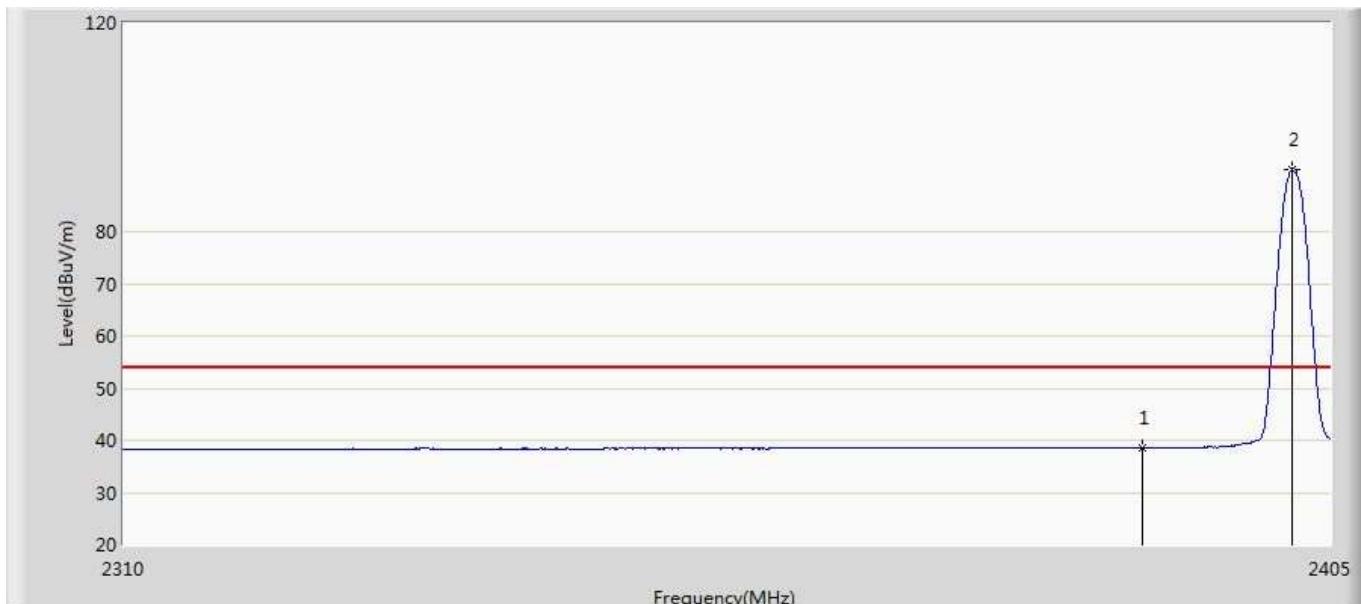
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.980	91.982	56.116	37.982	54.000	35.866	AV
2		2483.500	38.668	2.776	-15.332	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:35
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 4:Transmit at 2402MHz by Coded500	



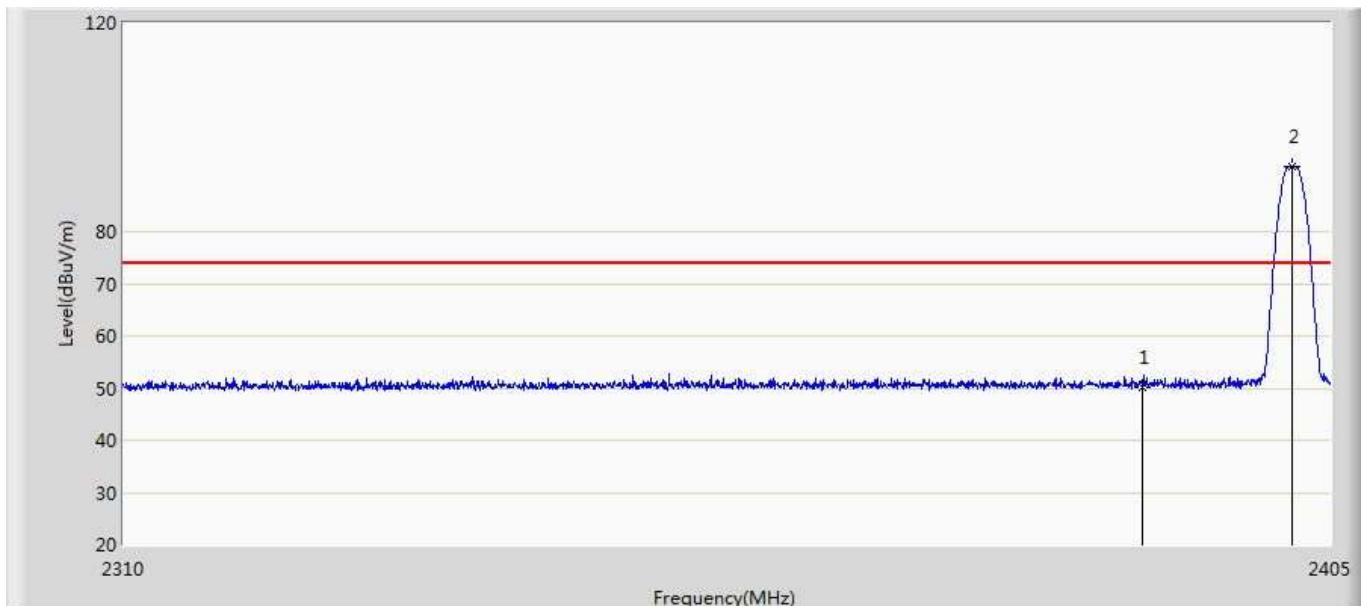
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	51.093	15.411	-22.907	74.000	35.682	PK
2	*	2401.770	92.683	56.971	18.683	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:38
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 4:Transmit at 2402MHz by Coded500	



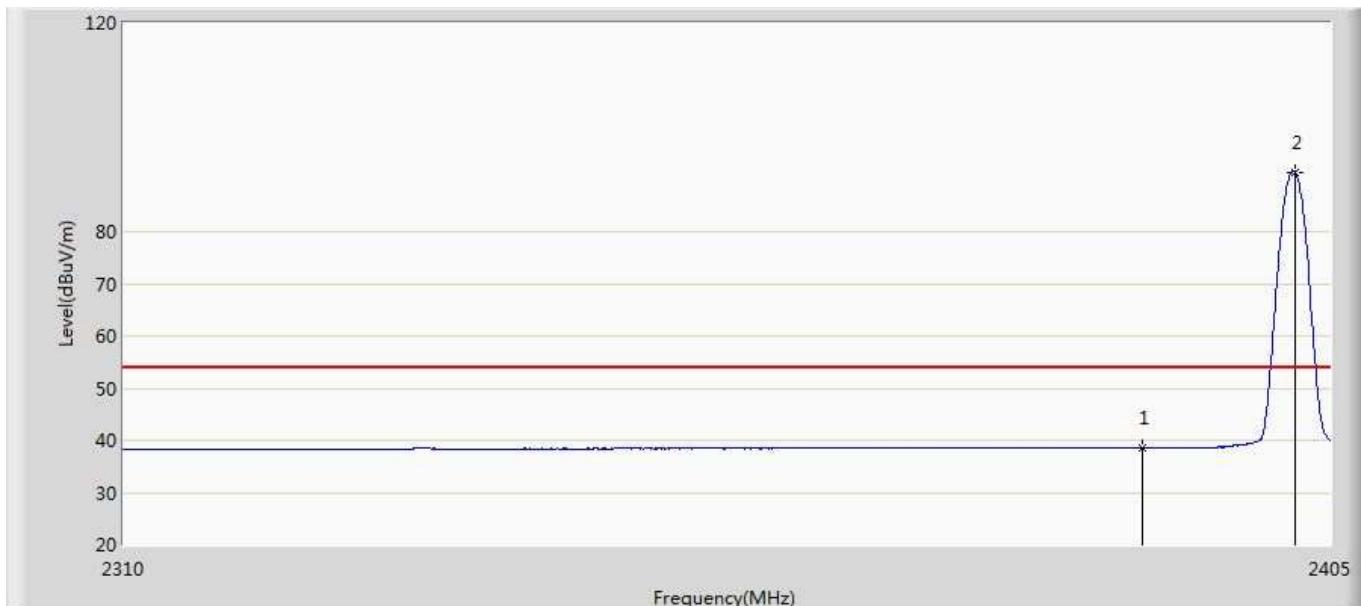
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.573	2.891	-15.427	54.000	35.682	AV
2	*	2401.960	91.992	56.279	37.992	54.000	35.712	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:40
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 Coded500	



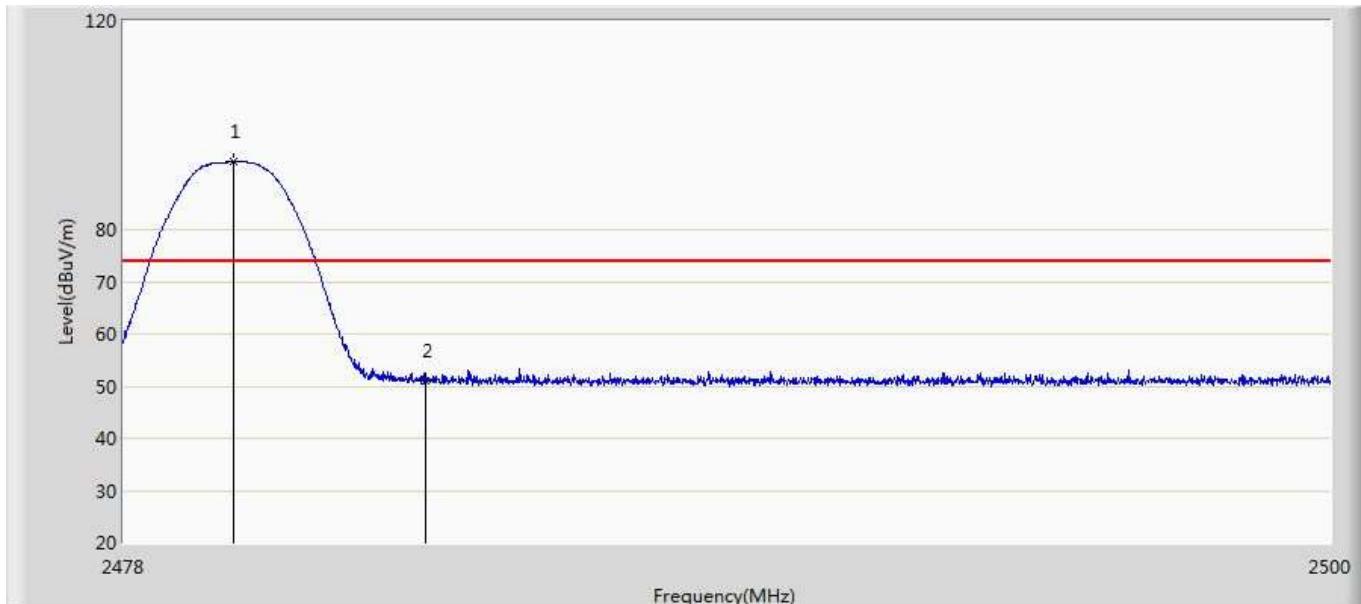
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.105	14.423	-23.895	74.000	35.682	PK
2	*	2401.913	92.398	56.686	18.398	74.000	35.712	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:42
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 4:Transmit at 2402MHz by Coded500	



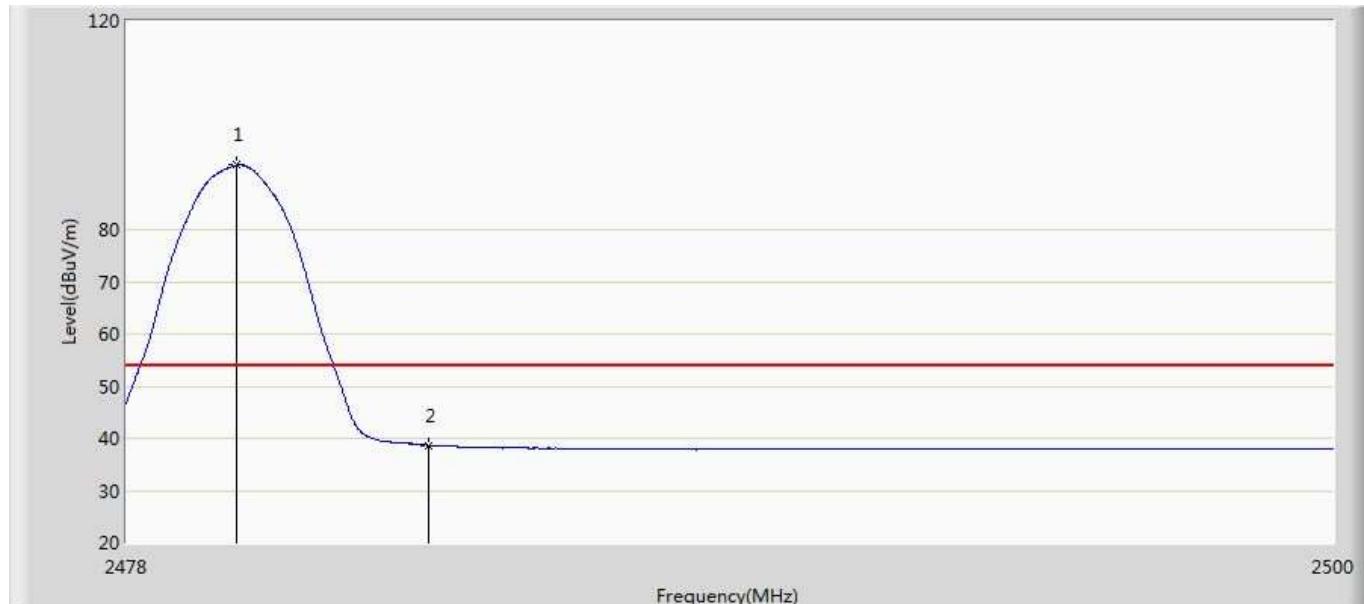
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.587	2.905	-15.413	54.000	35.682	AV
2	*	2402.198	91.394	55.681	37.394	54.000	35.714	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:44
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 Coded500	



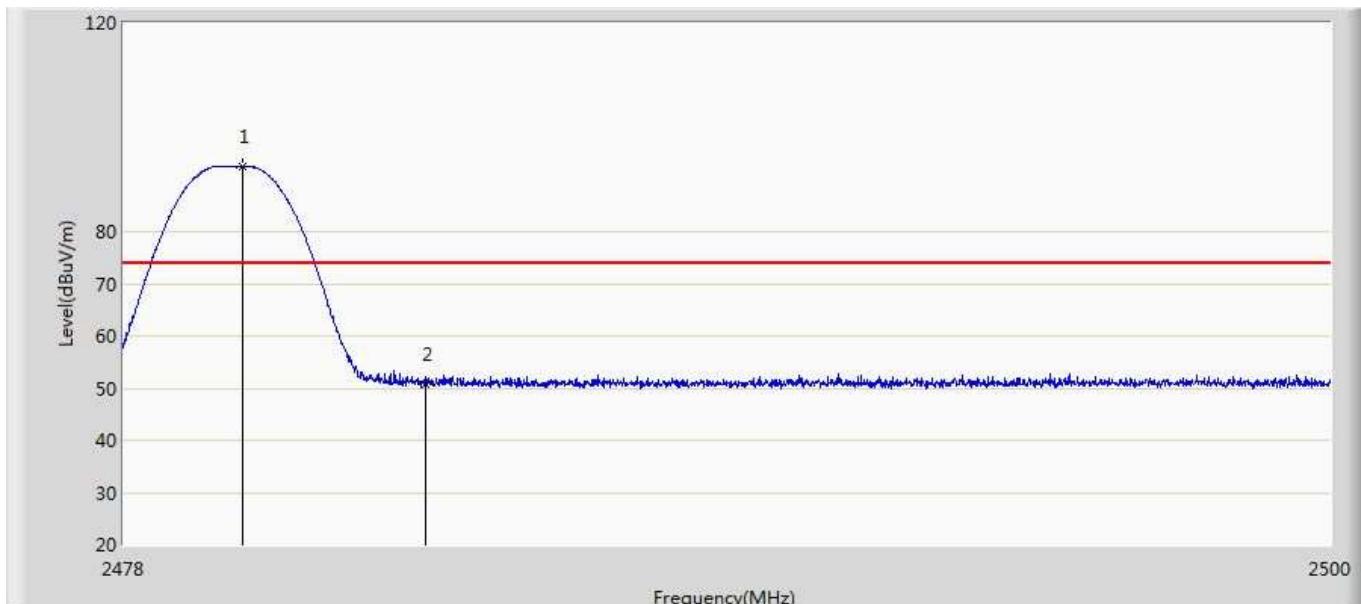
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.013	92.980	57.114	18.980	74.000	35.866	PK
2		2483.500	50.982	15.090	-23.018	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:46
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 Coded500	



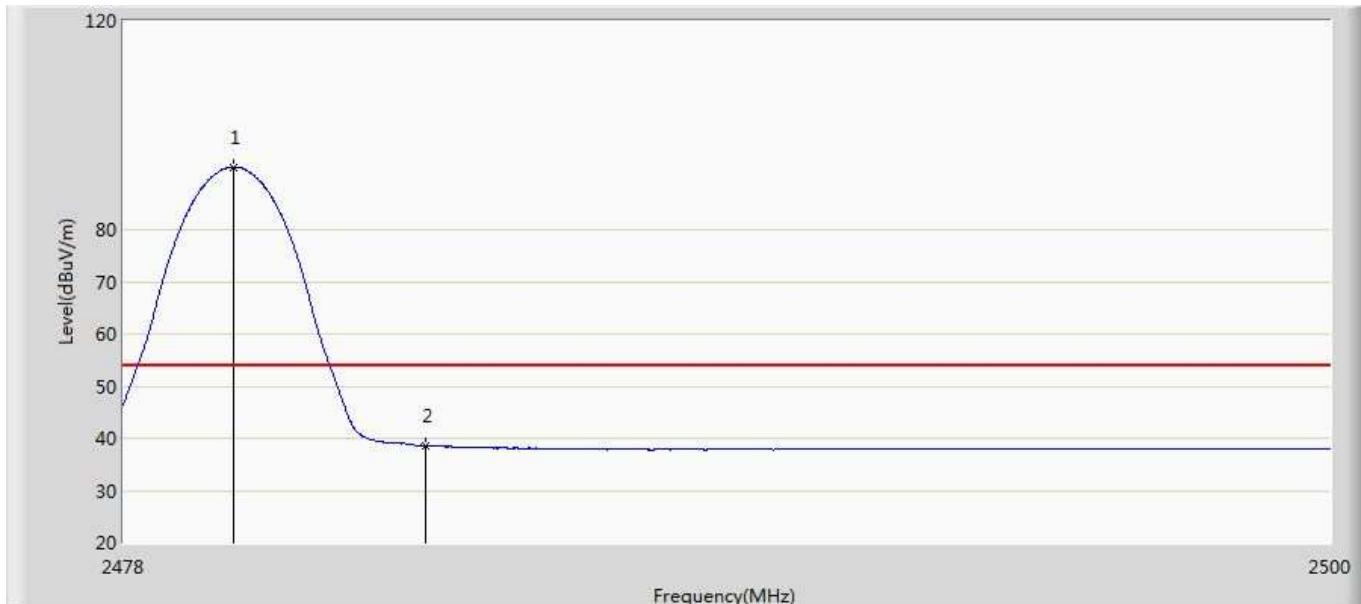
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.013	92.339	56.473	38.339	54.000	35.866	AV
2		2483.500	38.678	2.786	-15.322	54.000	35.891	AV

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:48
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 Coded500	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.178	92.528	56.660	18.528	74.000	35.867	PK
2		2483.500	50.693	14.801	-23.307	74.000	35.891	PK

Engineer: Simon	
Site: AC5	Time: 2019/04/09 - 22:49
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 4:Transmit at 2480MHz by Coded500	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.013	91.962	56.096	37.962	54.000	35.866	AV
2		2483.500	38.564	2.672	-15.436	54.000	35.891	AV

## 7. Occupied Bandwidth

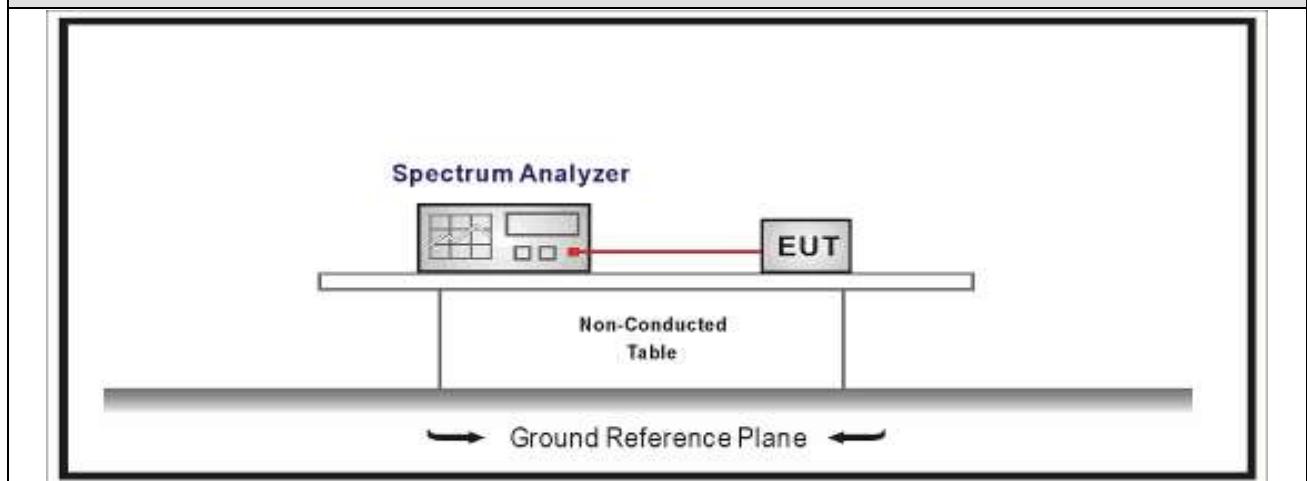
### 7.1. Test Equipment

Occupied Bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.02.04	2020.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2020.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2020.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2020.04.09

Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 7.2. Test Setup

Occupied Bandwidth test setup:



### 7.3. Limit

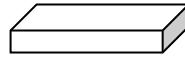
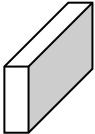
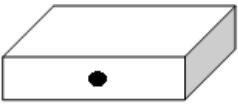
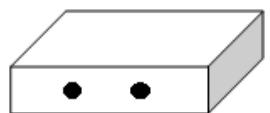
#### Occupied Bandwidth

Systems using digital modulation techniques operate in the 2400-2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz

### 7.4. Test Procedure

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

## 7.5. EUT test definition

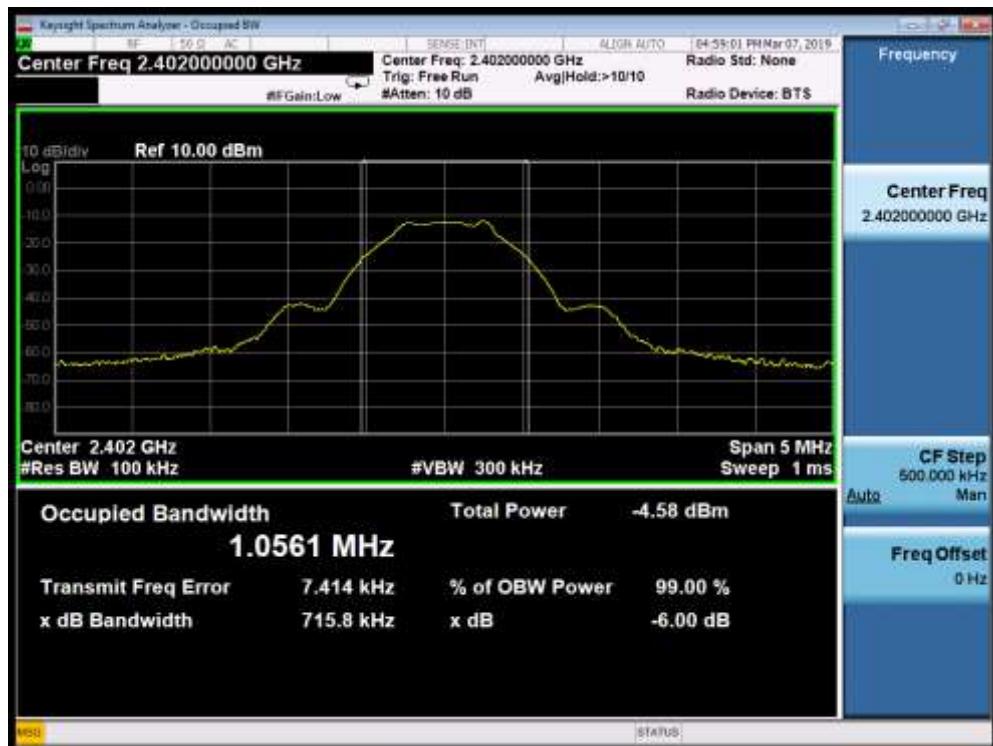
Item	Occupied Bandwidth			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1-4			
Test method	<input type="checkbox"/>	Radiated		
		X Axis	Y Axis	
				
		Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>	
	<input checked="" type="checkbox"/>	Conducted		
	<input checked="" type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

## 7.6. Test Result

Product Name	:	LED lamp	Test Voltage	:	AC 120V/60Hz
Test Mode	:	Mode 1	Test Site	:	TR-8
Test Date	:	2019.06.26	Test Engineer	:	Simon

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (kHz)	6dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
1	00	2402	1034.9	715.8	>500	Pass
1	19	2440	1033.4	722.1	>500	Pass
1	39	2480	1037.1	710.7	>500	Pass

### Mode 1 CH00 (2402MHz)





### Mode 1 CH19 (2440MHz)





### Mode 1 CH39 (2480MHz)





Product Name	:	LED lamp	Test Voltage	:	AC 120V/60Hz
Test Mode	:	Mode 2	Test Site	:	TR-8
Test Date	:	2019.06.26	Test Engineer	:	Simon

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (kHz)	6dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
2	00	2402	2072.1	1376	>500	Pass
2	19	2440	2073.0	1369	>500	Pass
2	39	2480	2082.2	1370	>500	Pass

### Mode 2 CH00 (2402MHz)





### Mode 2 CH19 (2440MHz)





### Mode 2 CH39 (2480MHz)



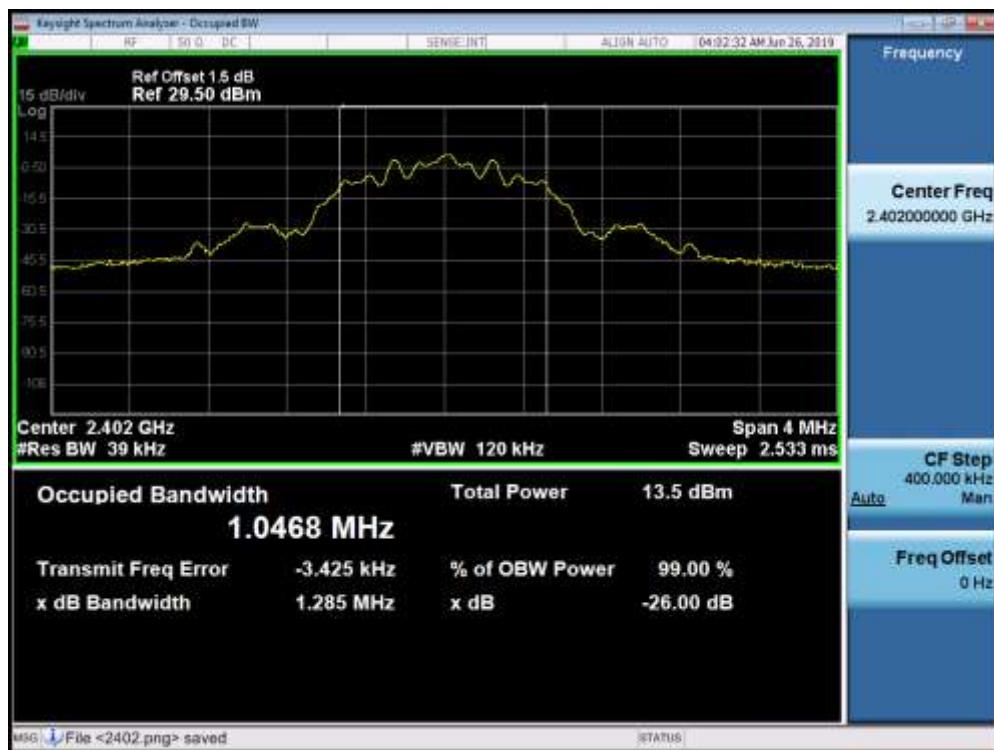


Product Name	:	LED lamp	Test Voltage	:	AC 120V/60Hz
Test Mode	:	Mode 3	Test Site	:	TR-8
Test Date	:	2019.06.26	Test Engineer	:	Simon

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (kHz)	6dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
3	00	2402	1046.8	726.5	>500	Pass
3	19	2440	1050.2	717.2	>500	Pass
3	39	2480	1047.7	715.7	>500	Pass

### Mode 3 CH00 (2402MHz)





### Mode 3 CH19 (2440MHz)





### Mode 3 CH39 (2480MHz)

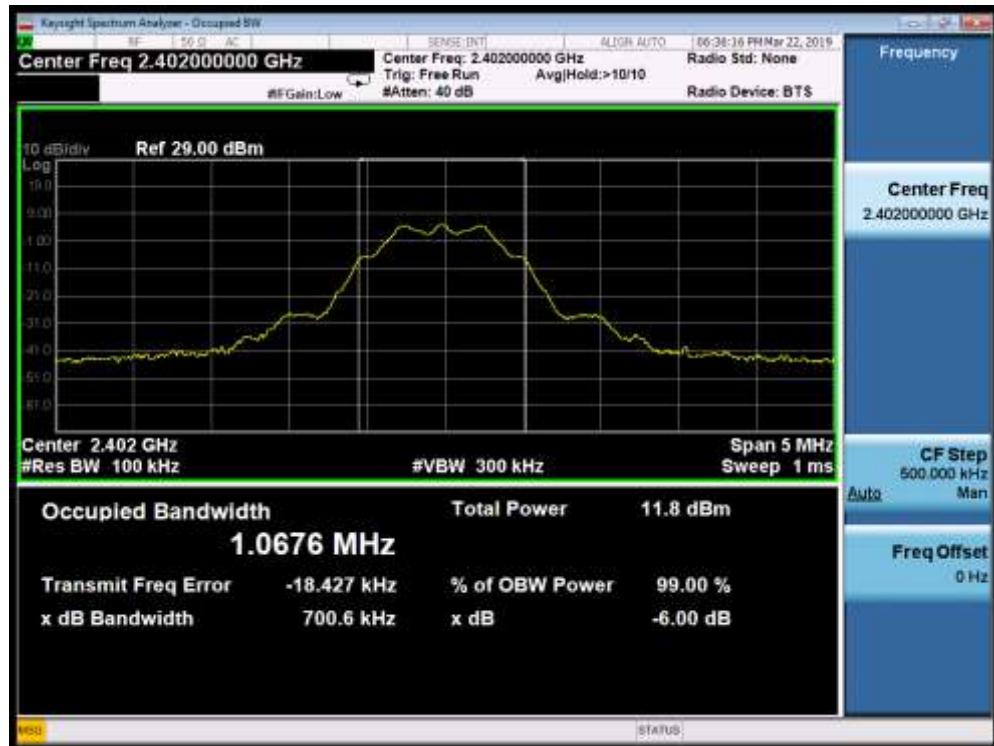


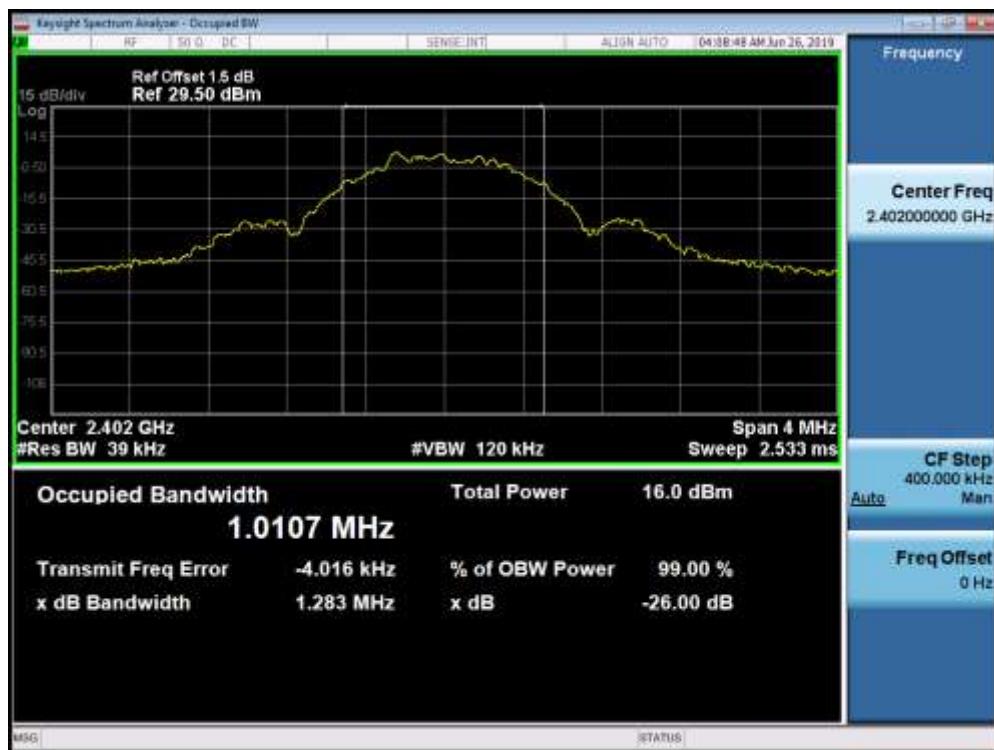


Product Name	:	LED lamp	Test Voltage	:	AC 120V/60Hz
Test Mode	:	Mode 4	Test Site	:	TR-8
Test Date	:	2019.06.26	Test Engineer	:	Simon

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (kHz)	6dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
4	00	2402	1010.7	700.6	>500	Pass
4	19	2440	1015.8	687.0	>500	Pass
4	39	2480	1012.0	690.7	>500	Pass

### Mode 4 CH00 (2402MHz)





### Mode 4 CH19 (2440MHz)





### Mode 4 CH39 (2480MHz)





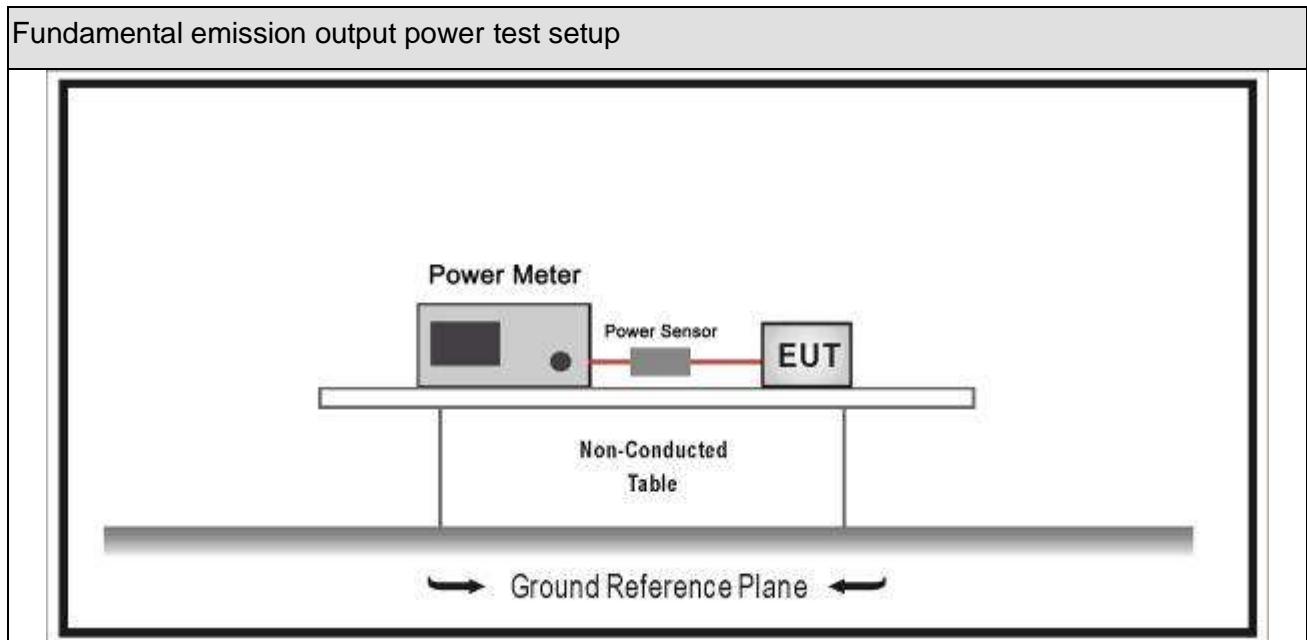
## 8. Fundamental emission output power

### 8.1. Test Equipment

Fundamental emission output power/ TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2019.01.04	2020.01.03
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.01.04	2020.01.03
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2018.10.14	2019.10.13
Power Sensor	Anritsu	MA2411B	0846014	2018.10.14	2019.10.13
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2018.04.10	2020.04.09

Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 8.2. Test Setup



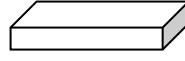
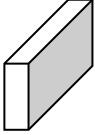
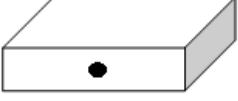
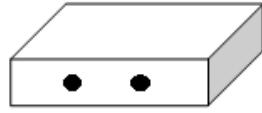
### 8.3. Limit

Fundamental emission output power Limit		
<input checked="" type="checkbox"/>	$G_{TX} < 6\text{dBi}$	$P_{out} \leq 30\text{dBm}$
<input type="checkbox"/>	$G_{TX} > 6\text{dBi}$	
	<input type="checkbox"/>	$P_{out} \leq 30 - (G_{TX} - 6)$
	<input type="checkbox"/>	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
	<input type="checkbox"/>	$P_{out} \leq 30 - (G_{TX} - 6)$
	<input type="checkbox"/>	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
	<input type="checkbox"/>	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
	<input type="checkbox"/>	$P_{out} \leq 30 - [(G_{TX} - 6)]/3 + 8\text{dB}$
Note 1 : $G_{TX}$ directional gain of transmitting antennas.		
Note 2 : $P_{out}$ is maximum peak conducted output power .		

#### 8.4. Test Procedure

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

## 8.5. EUT test definition

Item	Fundamental emission output power			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1~4			
Test method	<input type="checkbox"/>	Radiated		
		X Axis	Y Axis	
				
		Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>	
	<input checked="" type="checkbox"/>	Conducted		
	<input checked="" type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

## 8.6. Test Result

**Murata:**

Product Name	:	LED lamp	Test Voltage	:	AC 120V/60Hz
Test Mode	:	Mode 1-4	Test Site	:	TR-8
Test Date	:	2019.03.04	Test Engineer	:	Simon

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
Mode 1	00	2402	9.67	30	Pass
	19	2440	9.27	30	Pass
	39	2480	8.92	30	Pass
Mode 2	00	2402	9.53	30	Pass
	19	2440	9.08	30	Pass
	39	2480	8.81	30	Pass
Mode 3	00	2402	9.01	30	Pass
	19	2440	8.45	30	Pass
	39	2480	8.07	30	Pass
Mode 4	00	2402	8.96	30	Pass
	19	2440	8.35	30	Pass
	39	2480	8.01	30	Pass

**Diodes:**

Product Name	:	LED lamp	Test Voltage	:	AC 120V/60Hz
Test Mode	:	Mode 1-4	Test Site	:	TR-8
Test Date	:	2019.03.04	Test Engineer	:	Simon

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
Mode 1	00	2402	10.02	30	Pass
	19	2440	9.65	30	Pass
	39	2480	9.27	30	Pass
Mode 2	00	2402	9.91	30	Pass
	19	2440	9.58	30	Pass
	39	2480	9.13	30	Pass
Mode 3	00	2402	9.37	30	Pass
	19	2440	8.76	30	Pass
	39	2480	8.38	30	Pass
Mode 4	00	2402	9.26	30	Pass
	19	2440	8.64	30	Pass
	39	2480	8.27	30	Pass

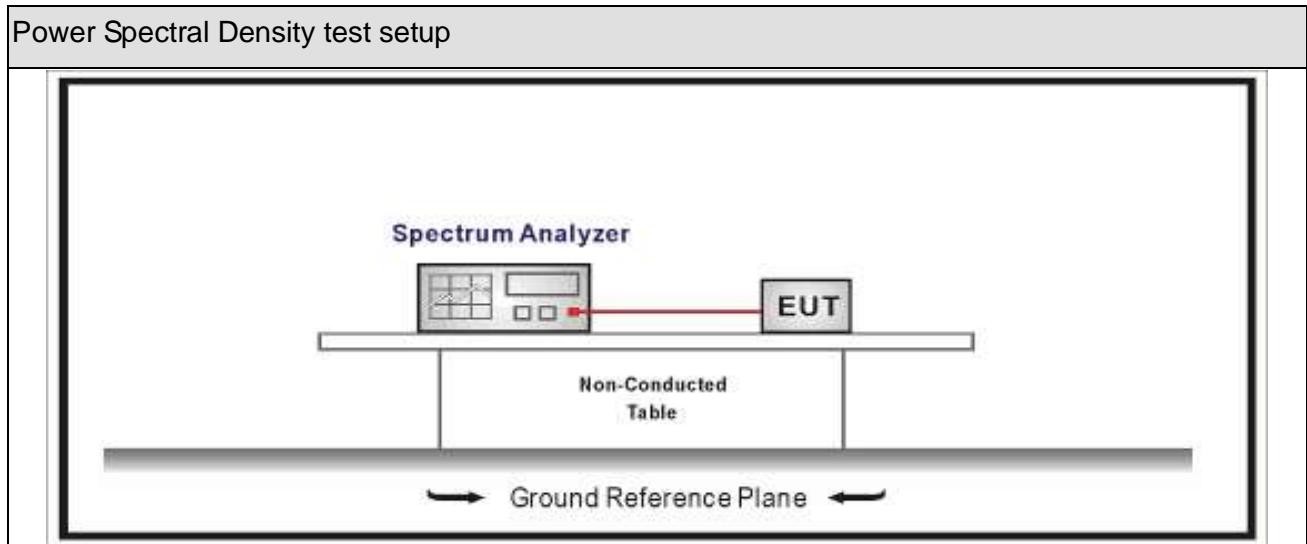
## 9. Power Spectral Density

### 9.1. Test Equipment

Power Spectral Density / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2019.02.04	2020.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2018.04.09	2020.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2020.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2020.04.09

Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

### 9.2. Test Setup



### 9.3. Limit

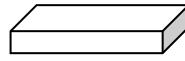
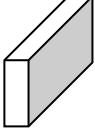
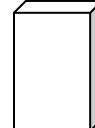
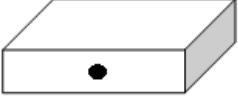
Power Spectral Density Limit

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

#### 9.4. Test Procedure

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

## 9.5. EUT test definition

Item	Power Spectral Density Test Method			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1-4			
Test method	<input type="checkbox"/>	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>
	<input checked="" type="checkbox"/>	Conducted		
	<input checked="" type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

## 9.6. Test Result

Product Name	:	LED lamp	Test Voltage	:	AC 120V/60Hz
Test Mode	:	Mode 1	Test Site	:	TR-8
Test Date	:	2019.03.07	Test Engineer	:	Simon

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	00	2402	-25.579	-25.579	8	Pass
1	19	2440	-27.569	-27.569	8	Pass
1	39	2480	-24.339	-24.339	8	Pass

Note: We have evaluated each mode, shown in the report is BLE mode which is the worst data.

Mode 1 CH00(2402MHz)



**Mode 1 CH19(2440MHz)****Mode 1 CH39(2480MHz)**

## 10. Antenna Requirement

### 10.1. Limit

#### Antenna Requirement Limit

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.

### 10.2. Antenna Connector Construction

#### Antenna Connector Construction

- |                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | The use of a permanently attached antenna                        |
| <input type="checkbox"/>            | The antenna use of a unique coupling to the intentional radiator |
| <input type="checkbox"/>            | The use of a nonstandard antenna jack or electrical connector    |

Please refer to the attached document "Internal Photograph" to show the antenna connector.

The End