



# Test Report

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

Product Name : LED lamp  
Model No. : 9290018194  
FCC ID : 2AGBW9290018194X  
IC : 20812-8194X

Applicant : Signify (China) Investment Co., Ltd.  
Address : Building no.9, Lane 888, Tianlin Road,  
Minhang District, Shanghai 200233, China

Date of Receipt : Jan. 07, 2019  
Test Date : Jan. 08, 2019 ~ Mar. 01, 2019  
Issued Date : Mar. 04, 2019  
Report No. : 1912042R-RF-US-P06V02  
Report Version : V1.0

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.

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# Test Report Certification

Issued Date: Mar. 04, 2019  
Report No. : 1912042R-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. : 9290018194  
 FCC ID : 2AGBW9290018194X  
 IC : 20812-8194X  
 EUT Voltage : 110 - 130Vac, 9W, 50-60Hz  
 Test Voltage : AC120V/60Hz  
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart C;  
 ANSI C63.10:2013;  
 KDB 558074 D01v05;  
 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

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Reviewed By : Frank He  
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Approved By : Jack Zhang  
 (Engineer Supervisor: Jack Zhang)

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### History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1912042R-RF-US-P06V02	V1.0	Initial Issued Report	Mar. 04, 2019

## 1. General Information

### 1.1. EUT Description

Product Name	LED lamp					
Model No.	9290018194					
EUT Voltage	110 - 130Vac, 9W, 50-60Hz					
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"/>	CDD		
			<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"/>	PCB		
			<input type="checkbox"/>	Ceramic Chip Antenna		
			<input type="checkbox"/>	Stamping Antenna		
			<input type="checkbox"/>	Metal plate type F antenna		
			<input type="checkbox"/>	Monopole antenna		
	Antenna Gain	3.5dBi				

### 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)

### 1.5. Tested System Details

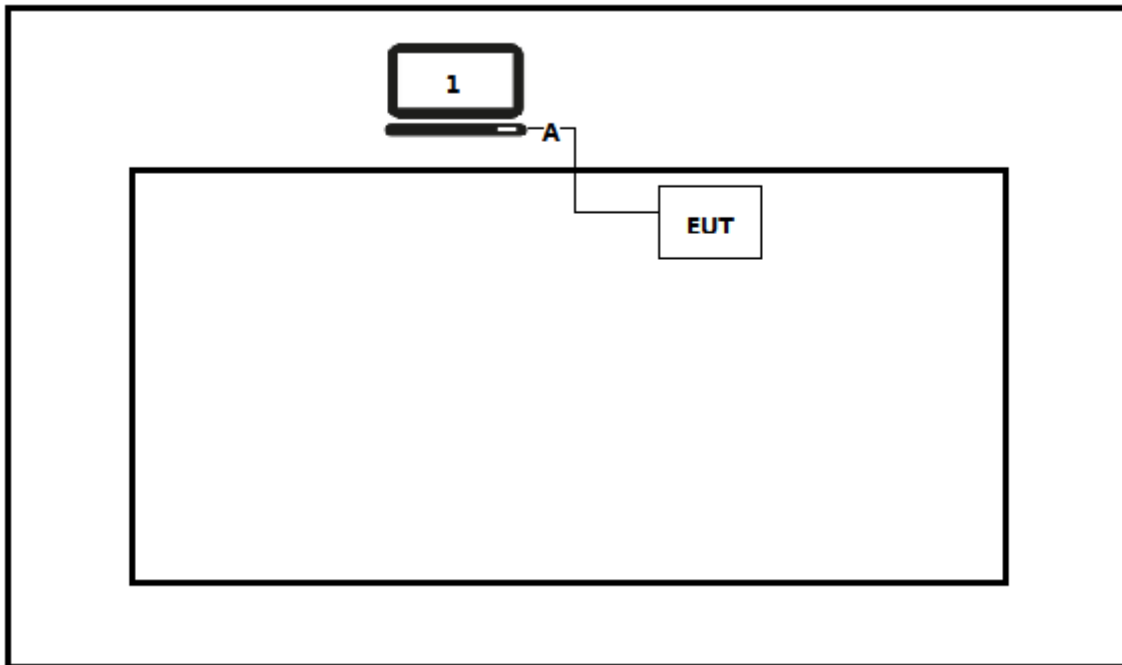
The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

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

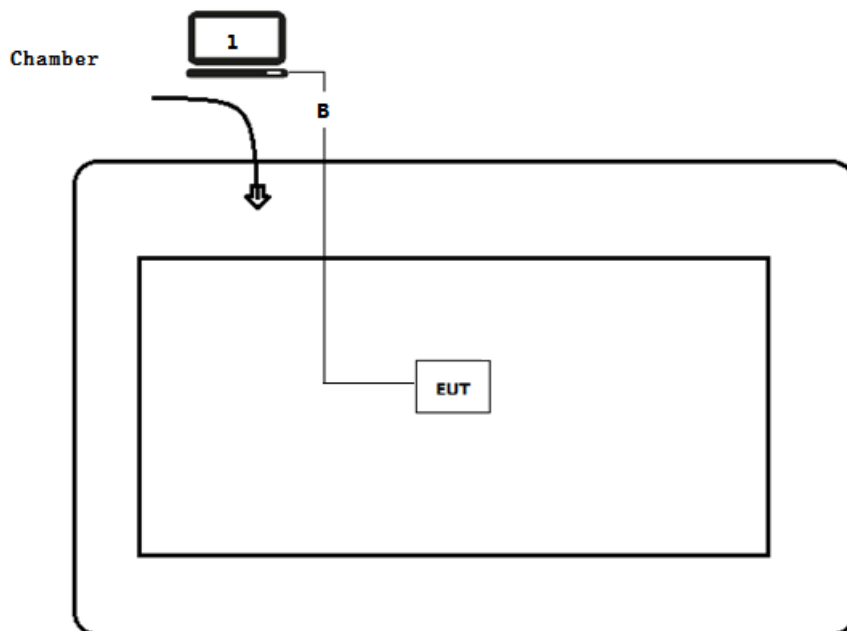


### 1.6. Configuration of Tested System

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
Mode1~3	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	$\pm 2.02\text{dB}$
Radiated Emission	Below 1GHz $\pm 3.8\text{ dB}$
	Above 1GHz $\pm 3.9\text{ dB}$
RF Antenna Port Conducted Emission	$\pm 1.27\text{dB}$
Radiated Emission Band Edge	$\pm 3.9\text{dB}$
Occupied Bandwidth	$\pm 1\text{kHz}$
Power Spectral Density	$\pm 1.27\text{dB}$

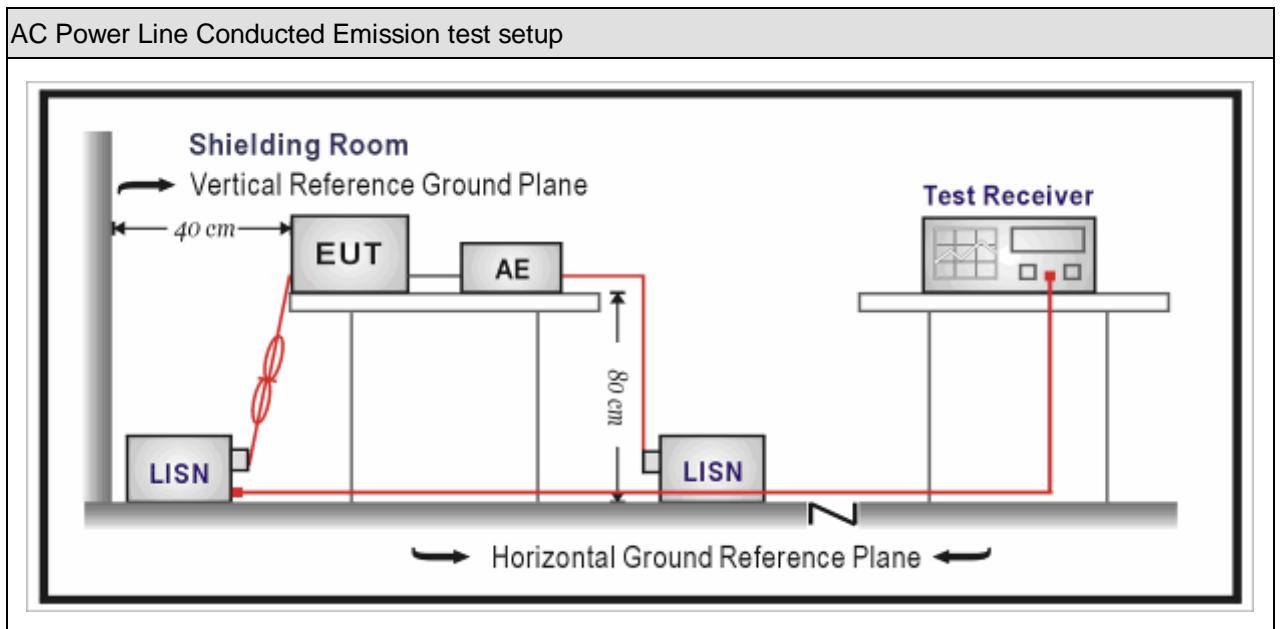
### 3. AC Power Line Conducted Emission

#### 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	2018.03.05	2019.03.04
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.

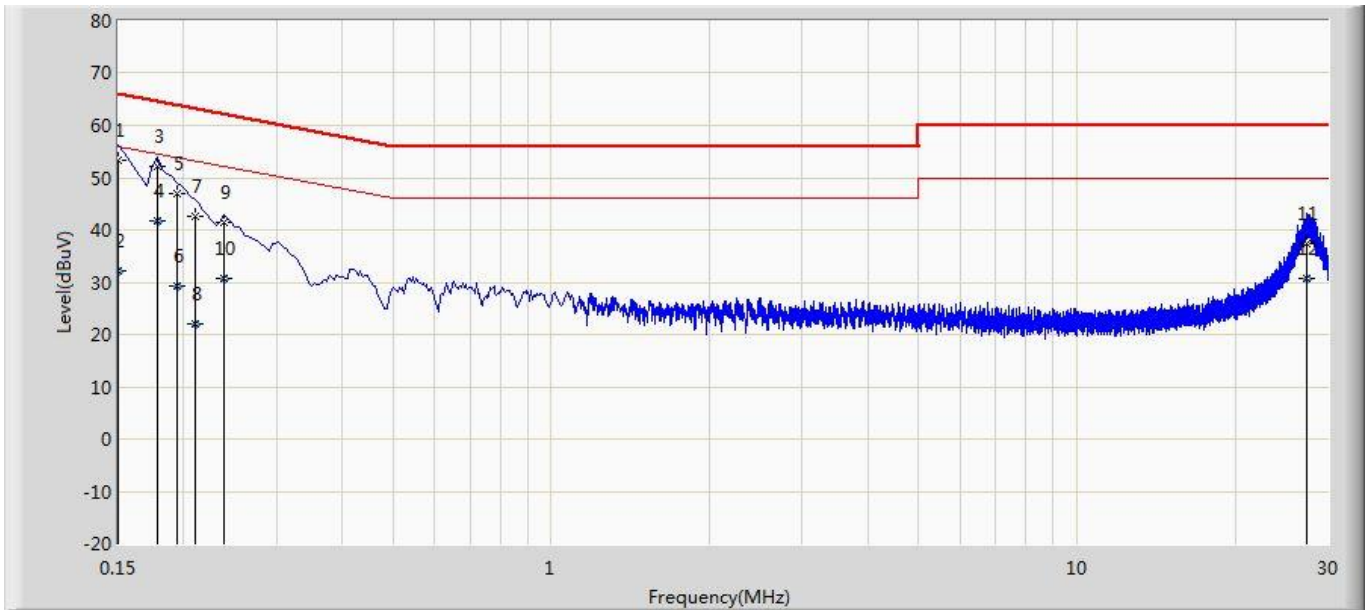
### 3.4. Test Procedure

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

Engineer: Allen	
Site: TR1	Time: 2019/02/19
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: LED lamp	Power: AC 120V/60Hz
Note: Mode 1	

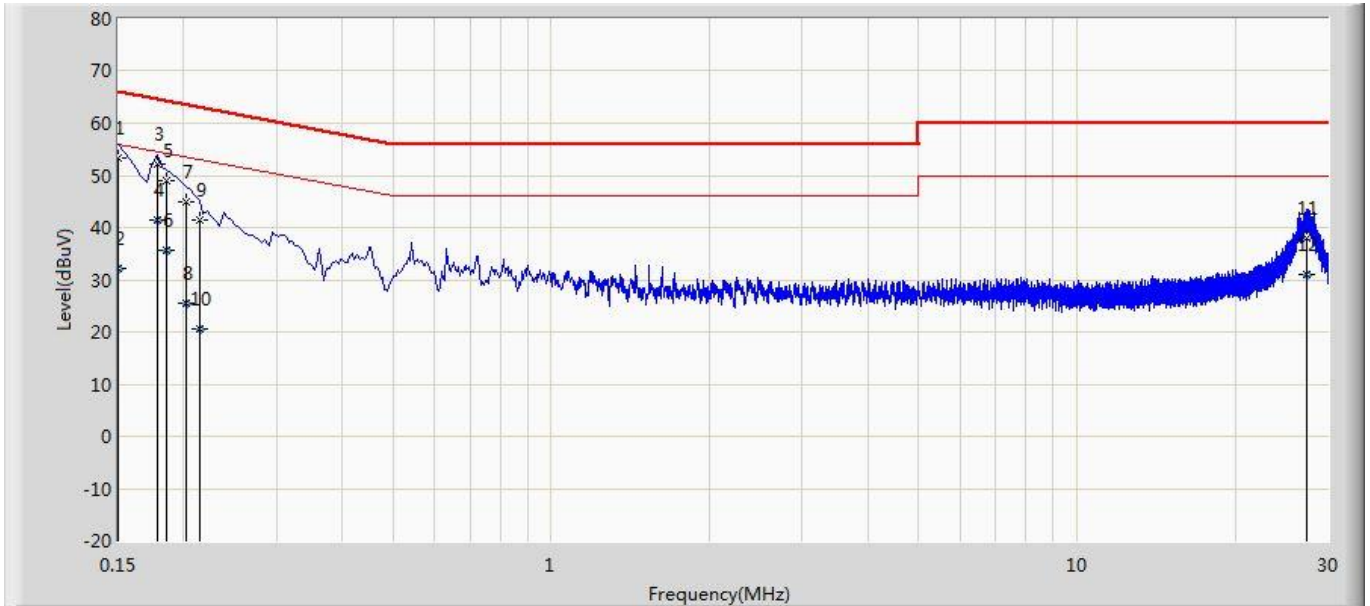


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	53.425	43.790	-12.575	66.000	9.610	0.025	0.000	QP
2		0.150	32.108	22.473	-23.892	56.000	9.610	0.025	0.000	AV
3	*	0.178	52.062	42.430	-12.517	64.578	9.604	0.028	0.000	QP
4		0.178	41.596	31.964	-12.983	54.578	9.604	0.028	0.000	AV
5		0.194	46.888	37.258	-16.975	63.864	9.602	0.028	0.000	QP
6		0.194	29.199	19.569	-24.664	53.864	9.602	0.028	0.000	AV
7		0.210	42.715	33.085	-20.491	63.205	9.601	0.029	0.000	QP
8		0.210	22.077	12.448	-31.128	53.205	9.601	0.029	0.000	AV
9		0.238	41.501	31.872	-20.664	62.166	9.600	0.030	0.000	QP
10		0.238	30.619	20.989	-21.547	52.166	9.600	0.030	0.000	AV
11		27.402	37.478	26.711	-22.522	60.000	10.427	0.340	0.000	QP
12		27.402	30.845	20.078	-19.155	50.000	10.427	0.340	0.000	AV

Note:

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

Engineer: Allen	
Site: TR1	Time: 2019/02/19
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: LED lamp	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	53.360	43.741	-12.640	66.000	9.594	0.025	0.000	QP
2		0.150	32.128	22.510	-23.872	56.000	9.594	0.025	0.000	AV
3	*	0.178	52.313	42.689	-12.266	64.578	9.596	0.028	0.000	QP
4		0.178	41.533	31.909	-13.046	54.578	9.596	0.028	0.000	AV
5		0.186	48.855	39.229	-15.358	64.213	9.597	0.028	0.000	QP
6		0.186	35.624	25.998	-18.590	54.213	9.597	0.028	0.000	AV
7		0.202	45.024	35.397	-18.504	63.528	9.598	0.029	0.000	QP
8		0.202	25.548	15.921	-27.980	53.528	9.598	0.029	0.000	AV
9		0.214	41.591	31.963	-21.458	63.049	9.599	0.029	0.000	QP
10		0.214	20.686	11.058	-32.362	53.049	9.599	0.029	0.000	AV
11		27.398	37.986	27.015	-22.014	60.000	10.631	0.340	0.000	QP
12		27.398	30.879	19.908	-19.121	50.000	10.631	0.340	0.000	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	2018.03.29	2019.03.28
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	2018.03.02	2019.03.01
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

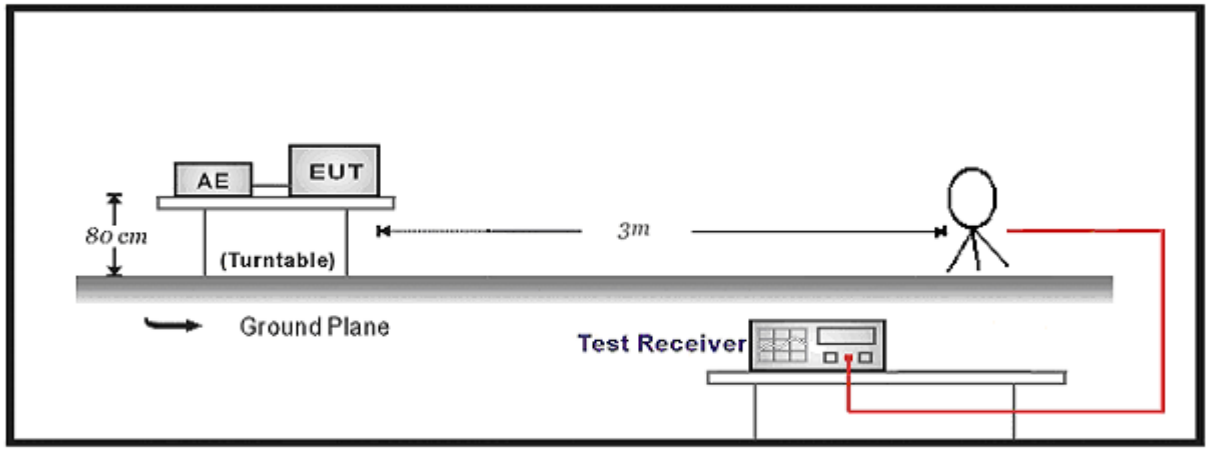
Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

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	2018.03.02	2019.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2018.03.02	2019.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2018.03.02	2019.03.01
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

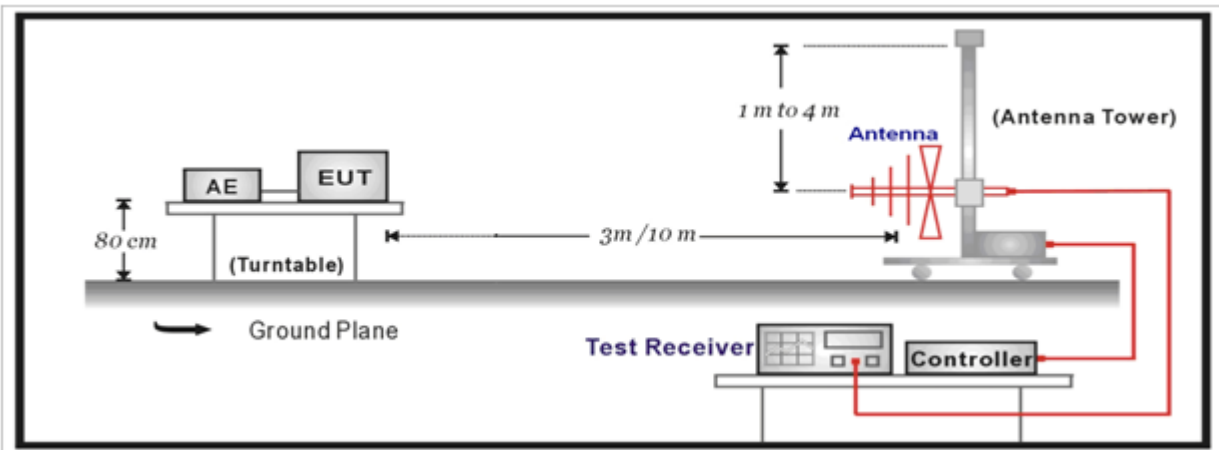
Note: All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

## 4.2. Test Setup

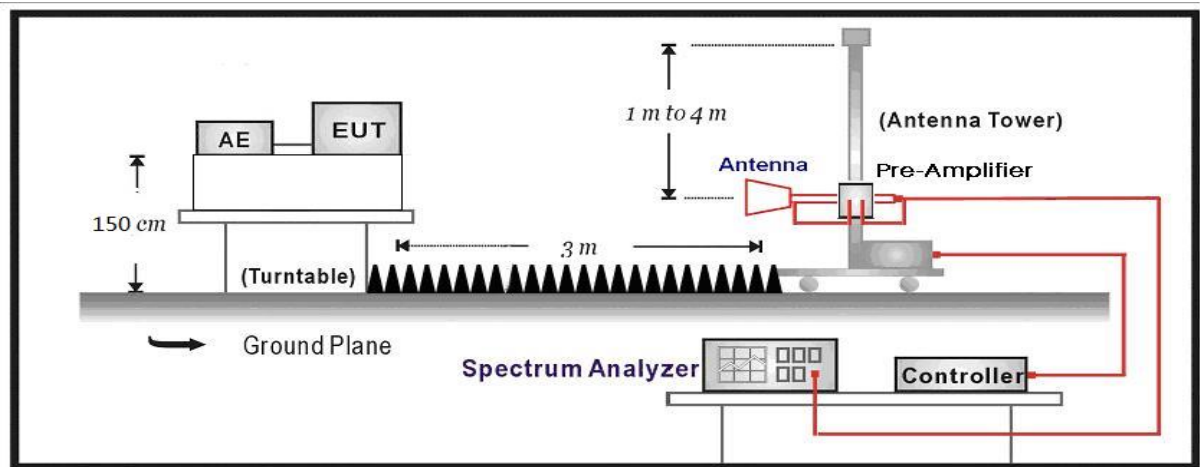
Below 30MHz Test Setup:



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).

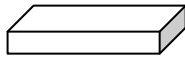
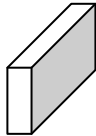
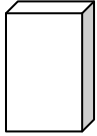

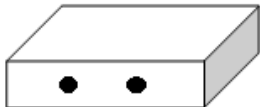

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated 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"/> 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"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
	<input checked="" type="checkbox"/> ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
	<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

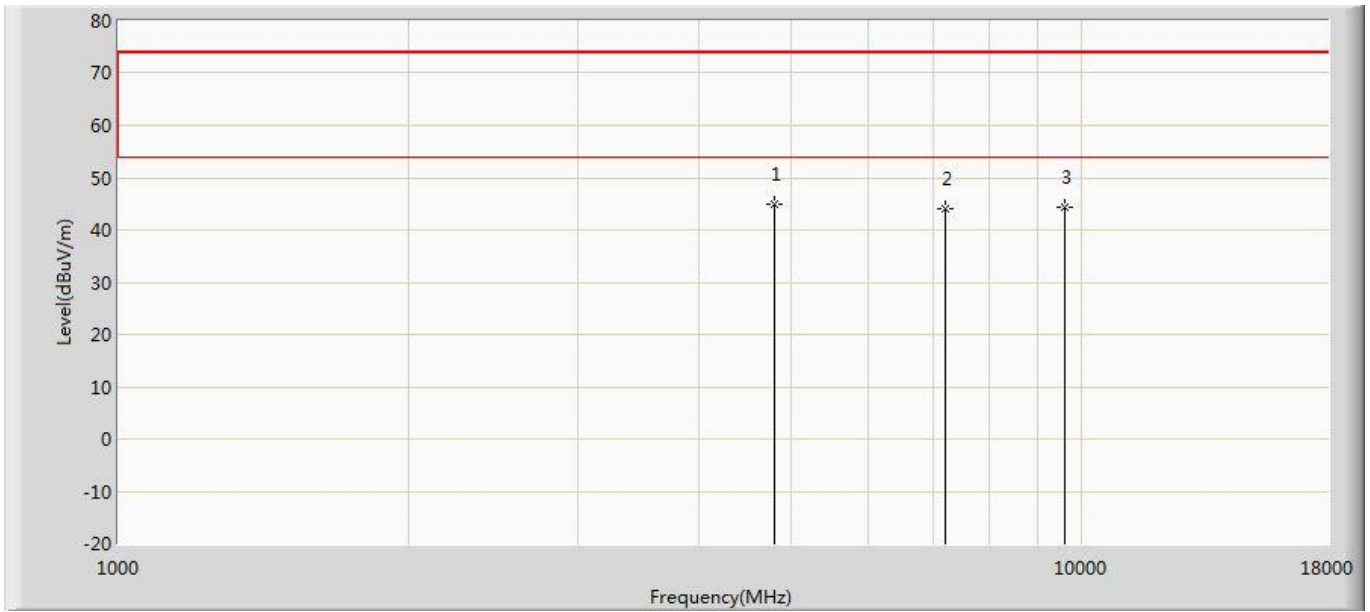


**4.5. EUT test Axis definition**

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 1~2			
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
				

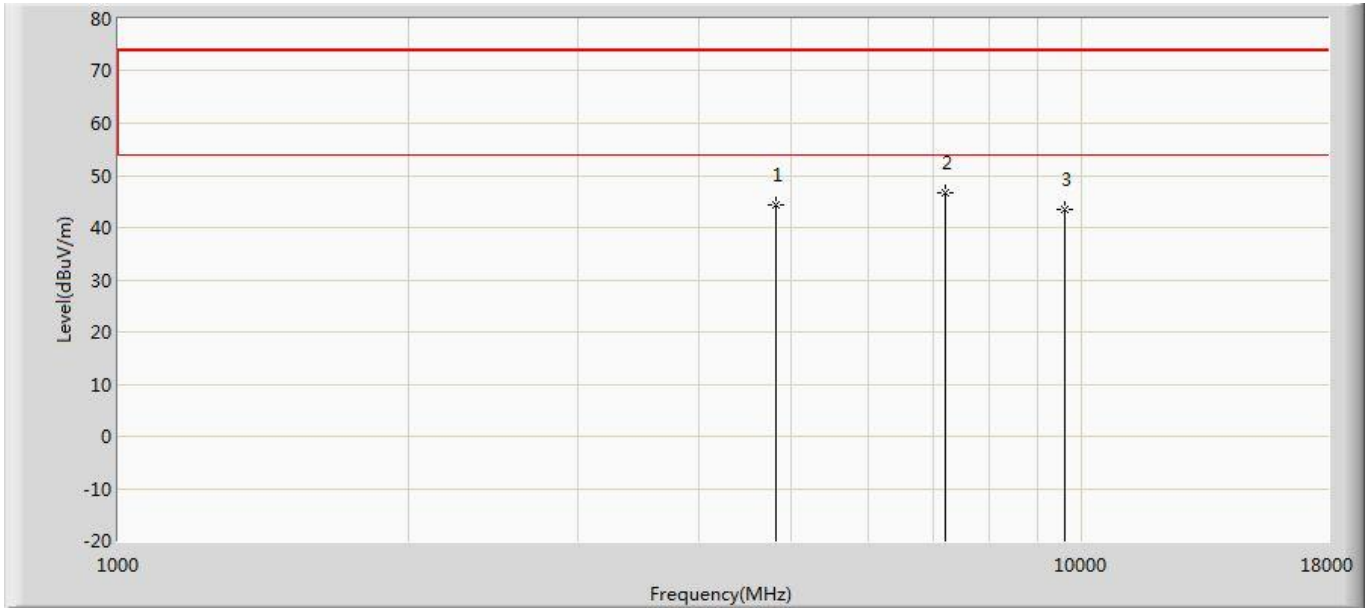
### 4.6. Test Result

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 19:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



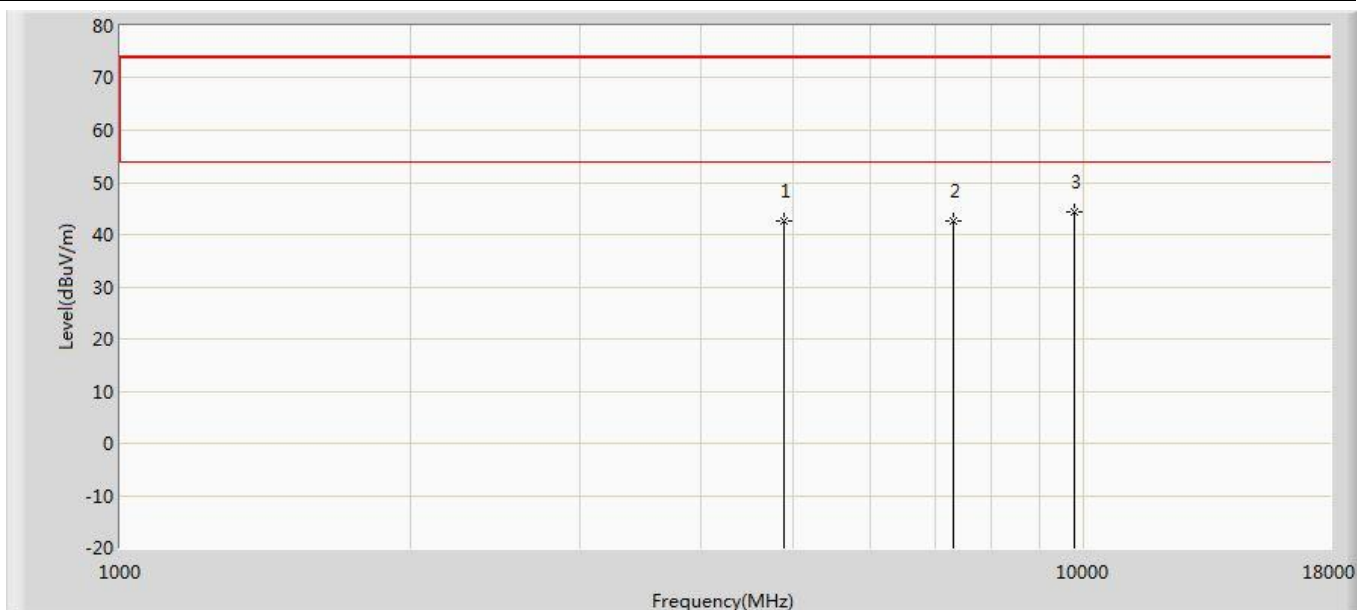
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4799.500	44.924	46.560	-29.076	74.000	-1.636	PK
2		7206.000	44.019	42.100	-29.981	74.000	1.919	PK
3		9608.000	44.241	39.342	-29.759	74.000	4.899	PK

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 19:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



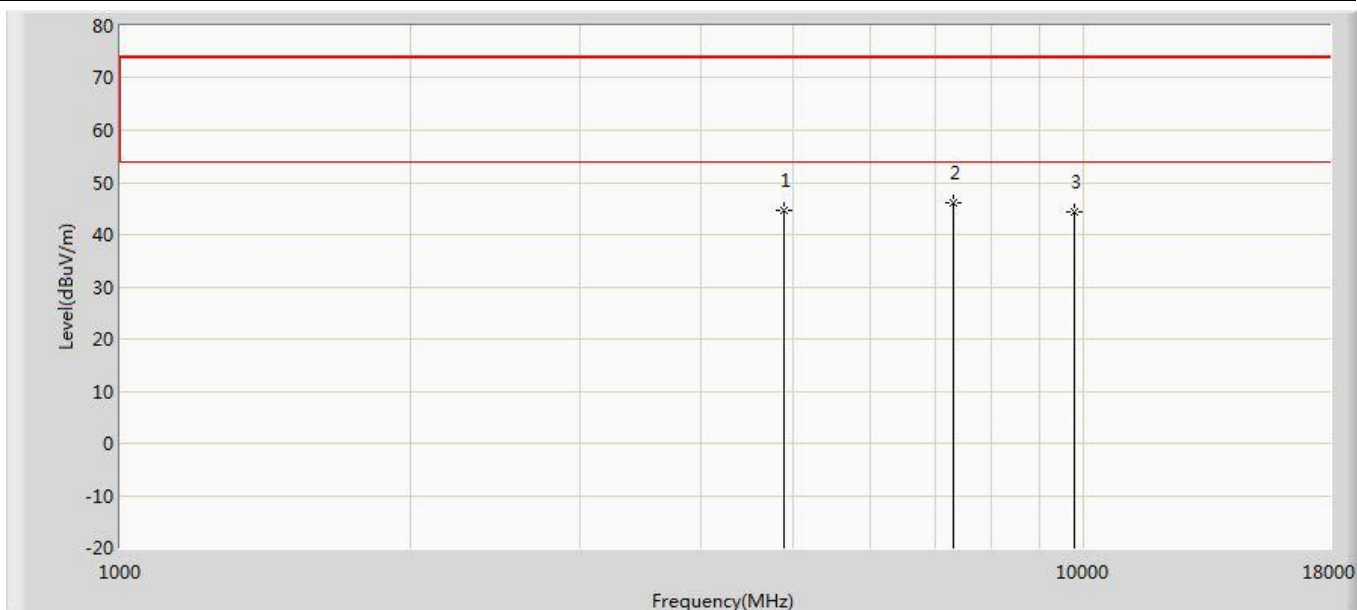
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4808.000	44.248	46.049	-29.752	74.000	-1.801	PK
2	*	7205.000	46.538	44.602	-27.462	74.000	1.936	PK
3		9608.000	43.379	38.480	-30.621	74.000	4.899	PK

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 19:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2440MHz by BLE	



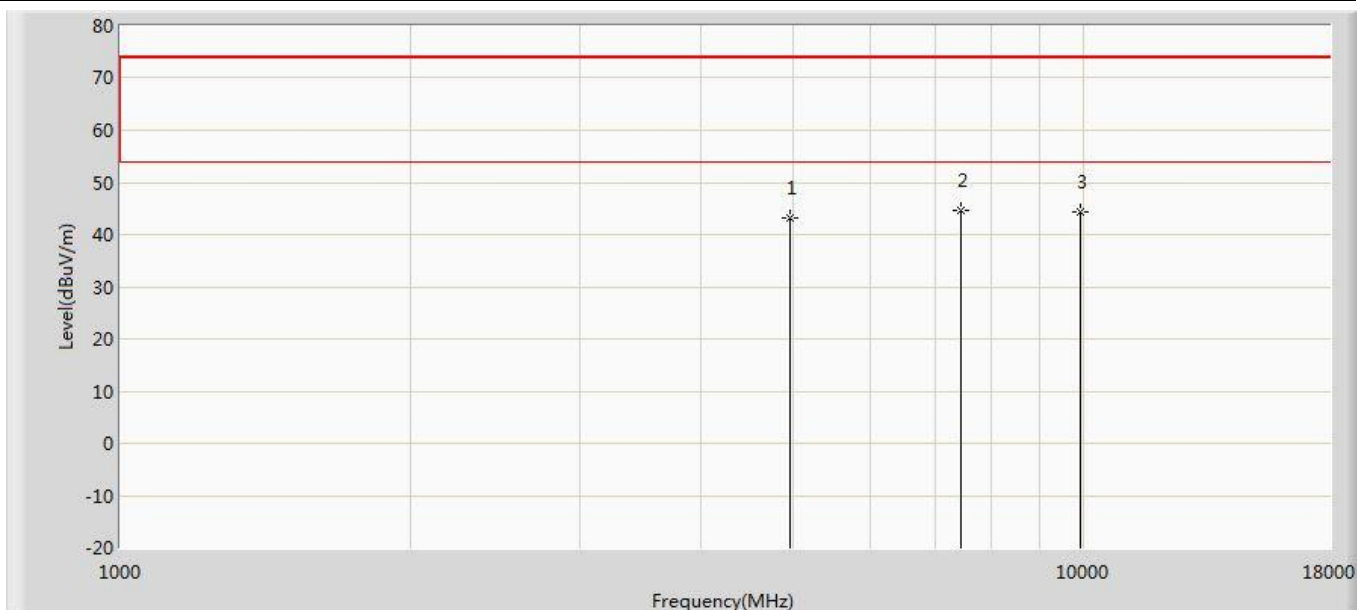
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	42.613	43.930	-31.387	74.000	-1.317	PK
2		7323.000	42.619	40.711	-31.381	74.000	1.909	PK
3	*	9764.000	44.228	38.228	-29.772	74.000	6.001	PK

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 19:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2440MHz by BLE	



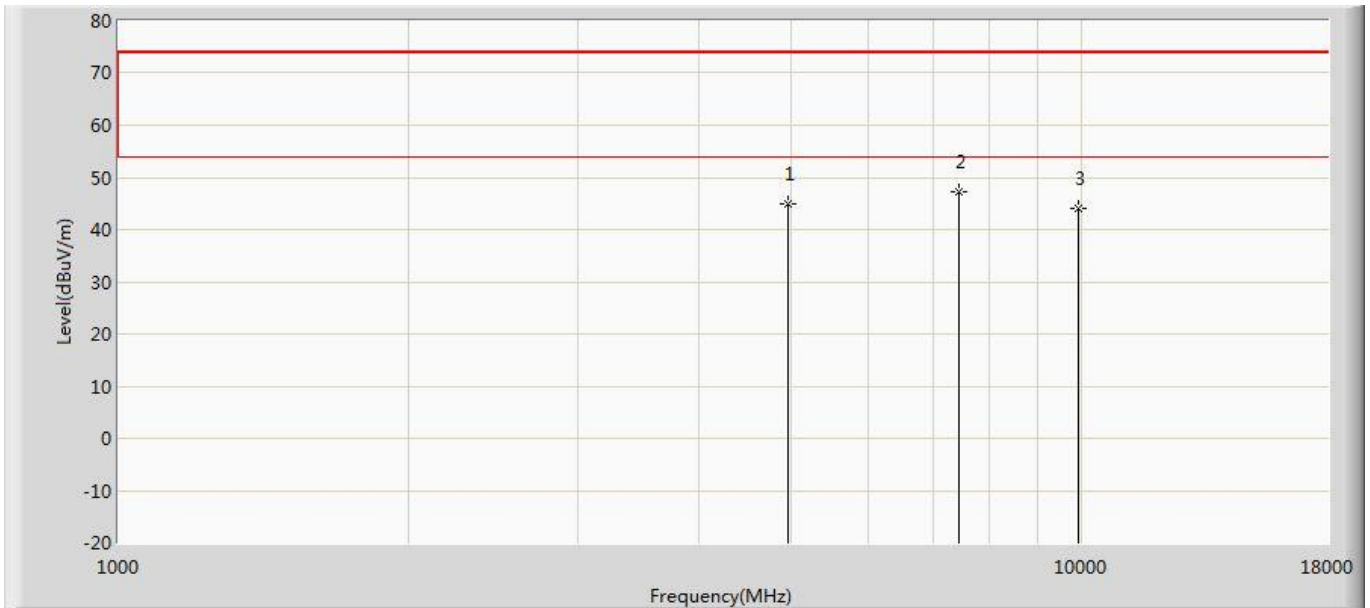
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4884.500	44.569	45.927	-29.431	74.000	-1.358	PK
2	*	7324.000	46.055	44.138	-27.945	74.000	1.917	PK
3		9764.000	44.216	38.216	-29.784	74.000	6.001	PK

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 19:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by BLE	



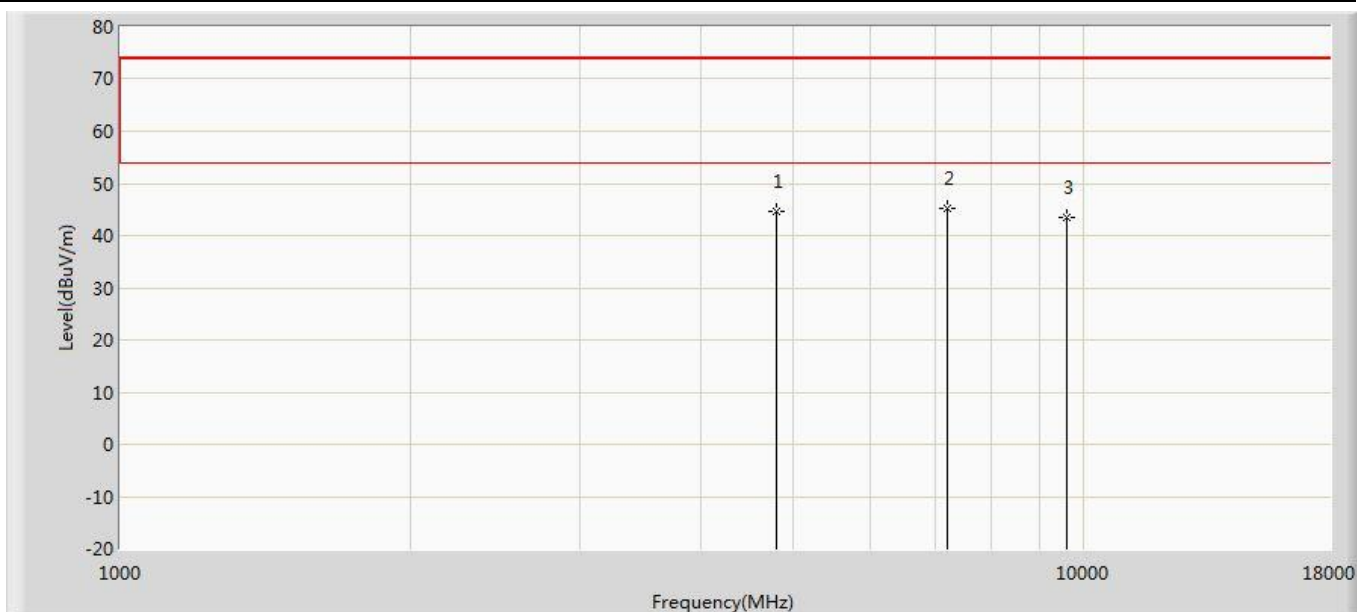
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4961.000	43.115	44.271	-30.885	74.000	-1.156	PK
2	*	7443.000	44.535	42.046	-29.465	74.000	2.489	PK
3		9920.000	44.327	39.073	-29.673	74.000	5.253	PK

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 19:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-murata	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		4961.000	44.892	46.048	-29.108	74.000	-1.156	PK
2	*	7443.000	47.177	44.688	-26.823	74.000	2.489	PK
3		9920.000	43.990	38.736	-30.010	74.000	5.253	PK

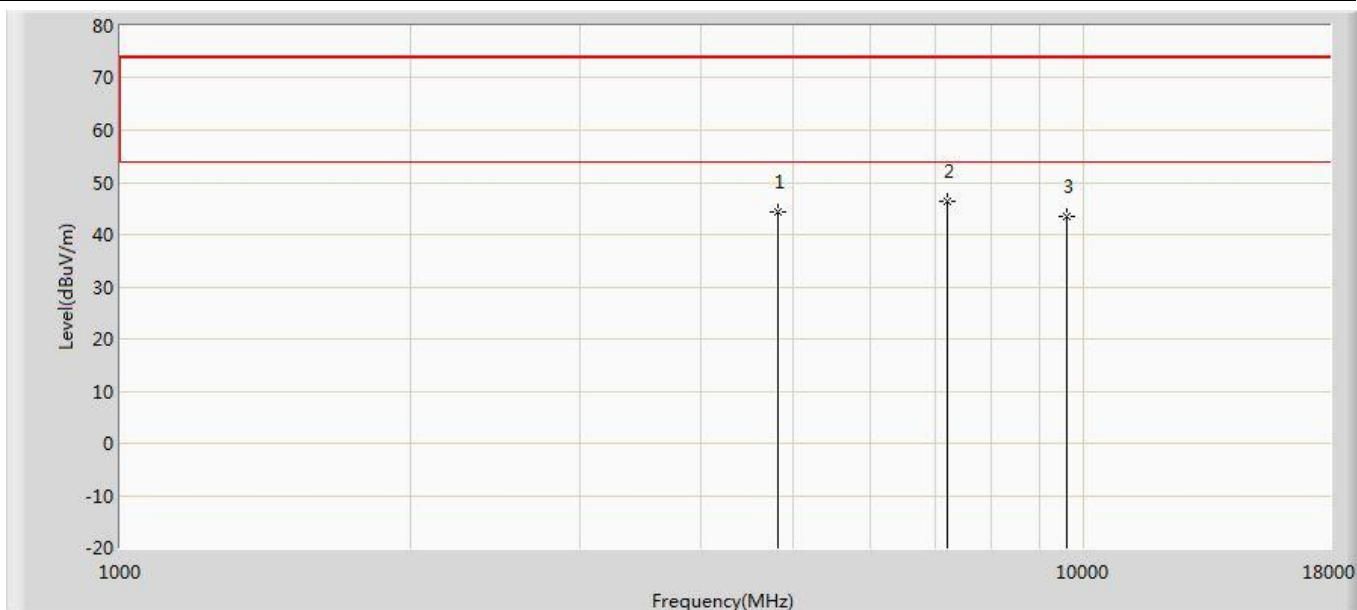
Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4799.500	44.607	46.243	-29.393	74.000	-1.636	PK
2	*	7205.000	45.175	43.239	-28.825	74.000	1.936	PK
3		9608.000	43.526	38.627	-30.474	74.000	4.899	PK

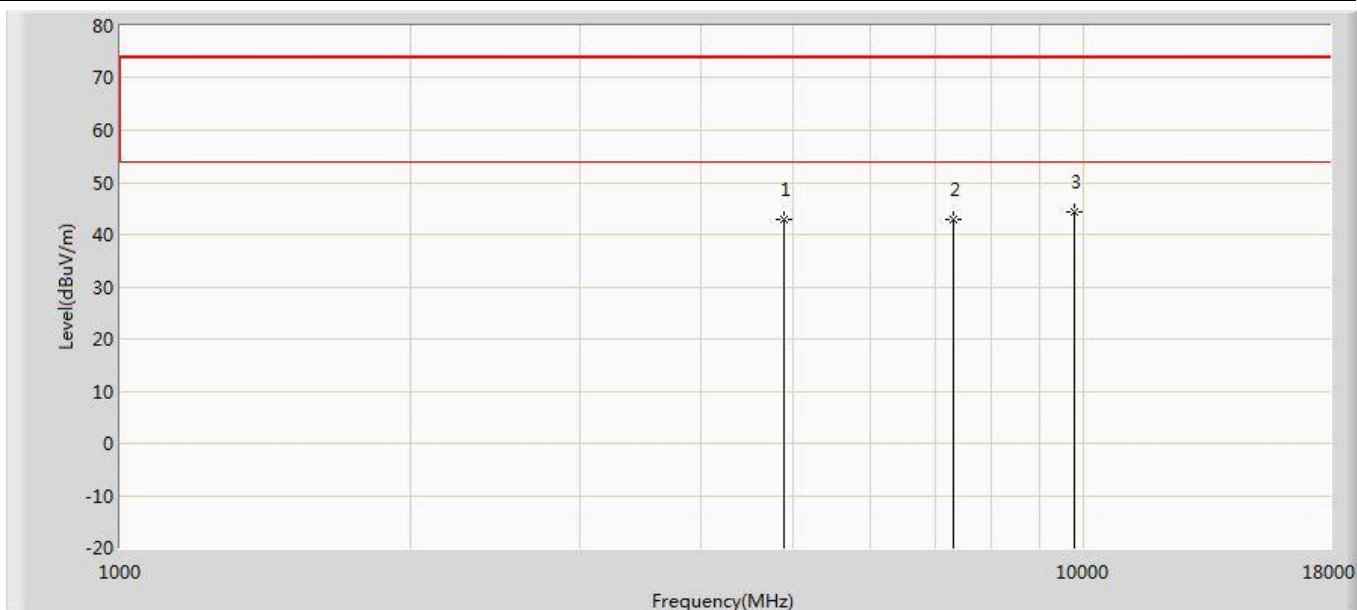


Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



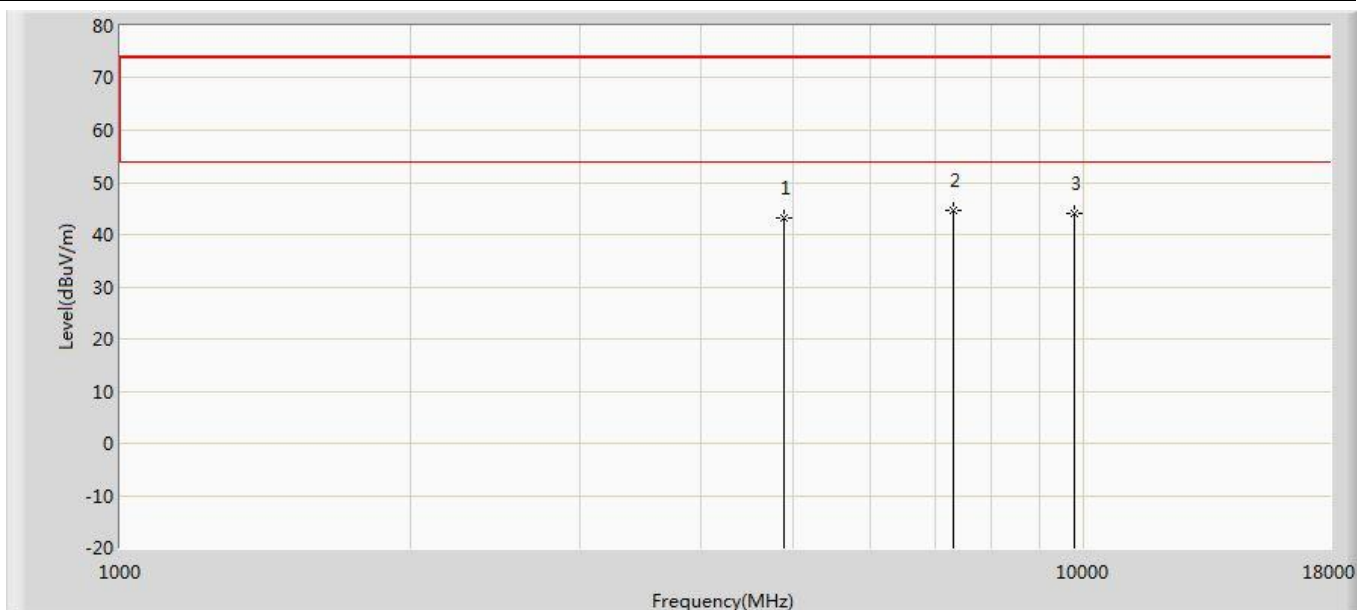
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4808.000	44.372	46.173	-29.628	74.000	-1.801	PK
2	*	7205.000	46.328	44.392	-27.672	74.000	1.936	PK
3		9608.000	43.562	38.663	-30.438	74.000	4.899	PK

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2441MHz by BLE	



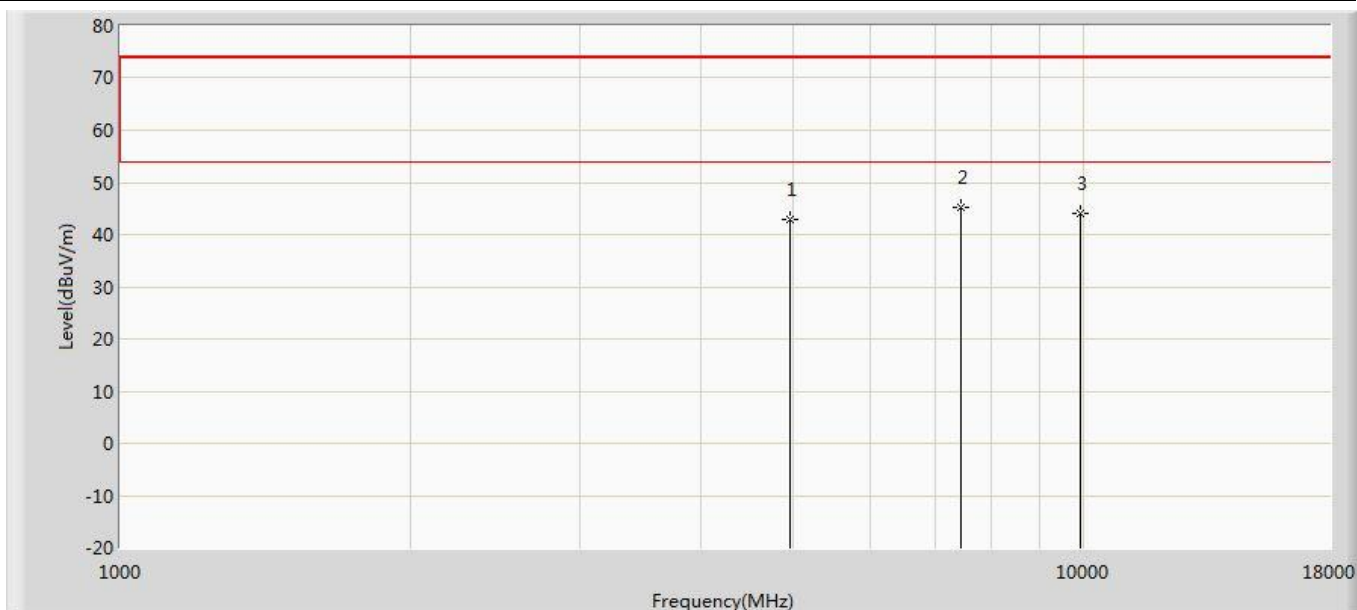
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4884.500	42.947	44.305	-31.053	74.000	-1.358	PK
2		7323.000	42.898	40.990	-31.102	74.000	1.909	PK
3	*	9764.000	44.343	38.343	-29.657	74.000	6.001	PK

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2441MHz by BLE	



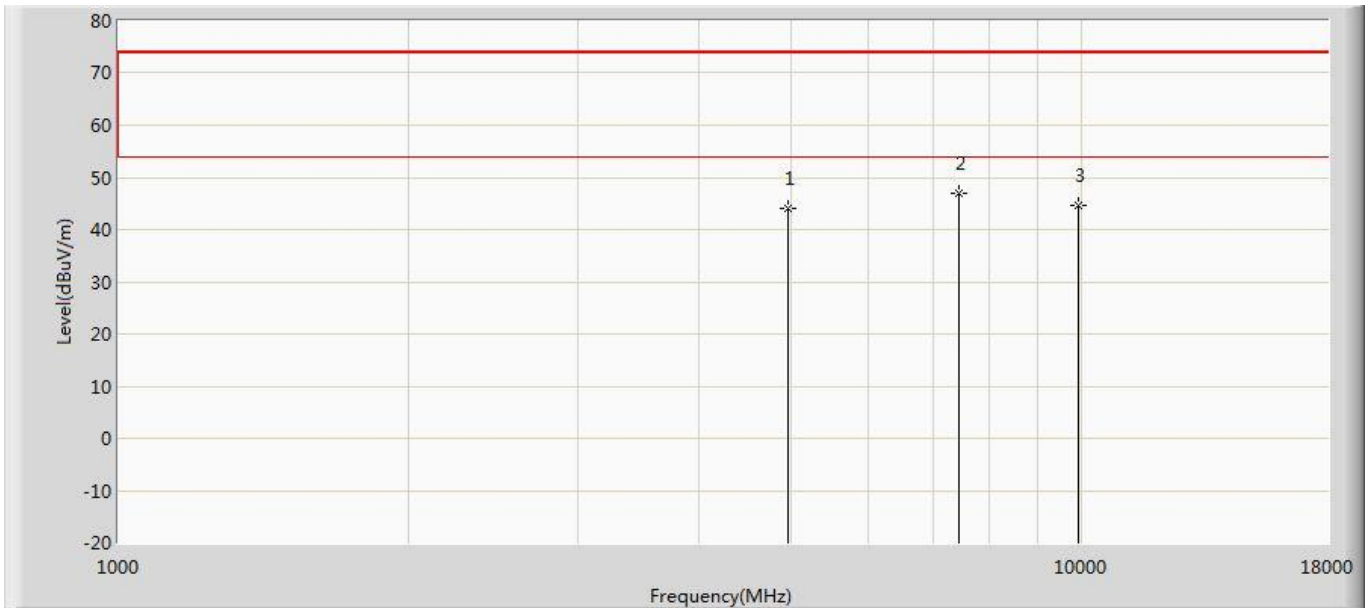
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4882.000	43.107	44.424	-30.893	74.000	-1.317	PK
2	*	7323.000	44.764	42.856	-29.236	74.000	1.909	PK
3		9764.000	44.178	38.178	-29.822	74.000	6.001	PK

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-Diodes	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	42.778	43.926	-31.222	74.000	-1.148	PK
2	*	7443.000	45.311	42.822	-28.689	74.000	2.489	PK
3		9920.000	43.997	38.743	-30.003	74.000	5.253	PK

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by BLE	



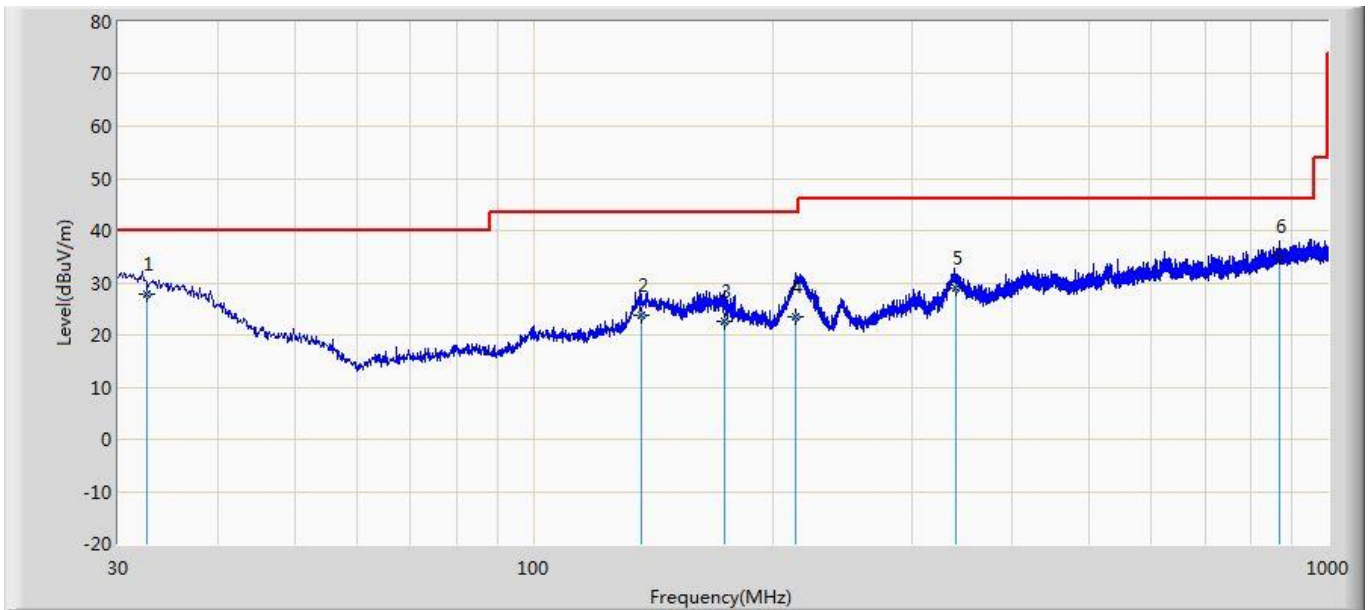
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4961.000	43.998	45.154	-30.002	74.000	-1.156	PK
2	*	7443.000	46.880	44.391	-27.120	74.000	2.489	PK
3		9920.000	44.574	39.320	-29.426	74.000	5.253	PK

**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.

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

Engineer: Allen	
Site: AC3	Time: 2019/02/19
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Horizontal
EUT: LED lamp	Power: AC 120V/60Hz
Note: Mode 1	

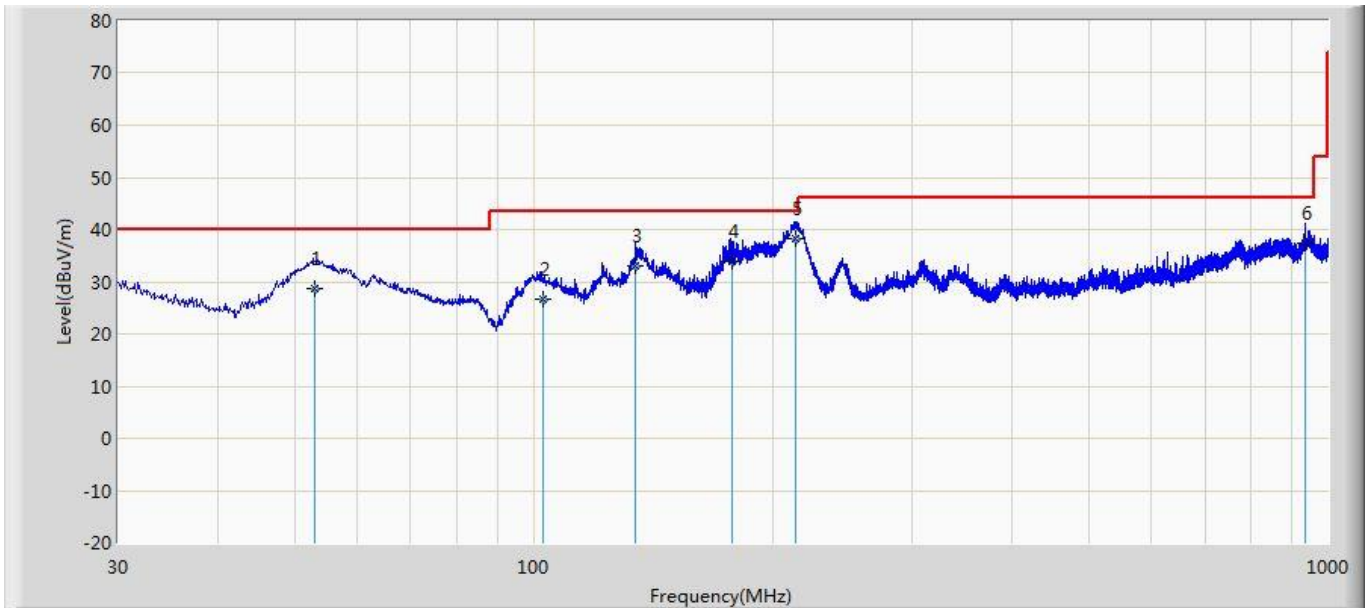


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		32.557	27.742	1.200	-12.258	40.000	20.074	6.468	0.000	100	50	QP
2		136.847	23.860	6.200	-19.640	43.500	10.637	7.023	0.000	200	308	QP
3		174.050	22.726	5.200	-20.774	43.500	10.348	7.178	0.000	100	90	QP
4		213.450	23.421	6.200	-20.079	43.500	9.890	7.331	0.000	100	300	QP
5		339.456	29.111	6.160	-16.889	46.000	15.213	7.738	0.000	100	350	QP
6	*	867.490	35.055	3.200	-10.945	46.000	22.832	9.023	0.000	200	100	QP

**Note:**

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

Engineer: Allen	
Site: AC3	Time: 2019/02/19
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Vertical
EUT: LED lamp	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		52.945	28.570	11.100	-11.430	40.000	10.861	6.609	0.000	100	20	QP
2		102.780	26.576	4.500	-16.924	43.500	15.208	6.867	0.000	200	10	QP
3		134.587	33.116	12.400	-10.384	43.500	13.706	7.010	0.000	100	69	QP
4		177.460	33.811	15.900	-9.689	43.500	10.717	7.194	0.000	100	60	QP
5	*	213.560	38.128	15.100	-5.372	43.500	15.697	7.331	0.000	200	203	QP
6		934.560	37.275	3.100	-8.725	46.000	25.006	9.169	0.000	200	22	QP

**Note:**

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

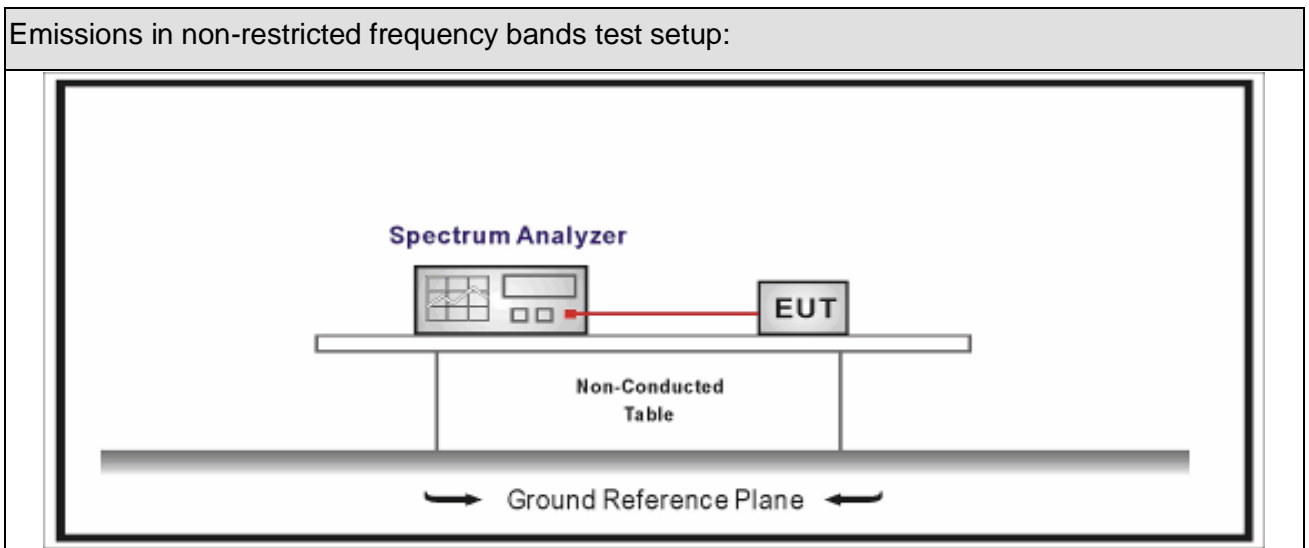
## 5. Emissions in non-restricted frequency bands

### 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	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09

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

### 5.2. Test Setup





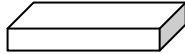
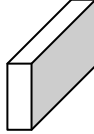
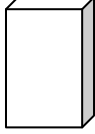



### 5.3. Limit

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 checked="" type="checkbox"/> ANSI C63.10	11.12.2	Antenna-port conducted measurements
	<input type="checkbox"/> ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.4	Peak power measurement procedure
	<input 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 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

**5.5. EUT test Axis definition**

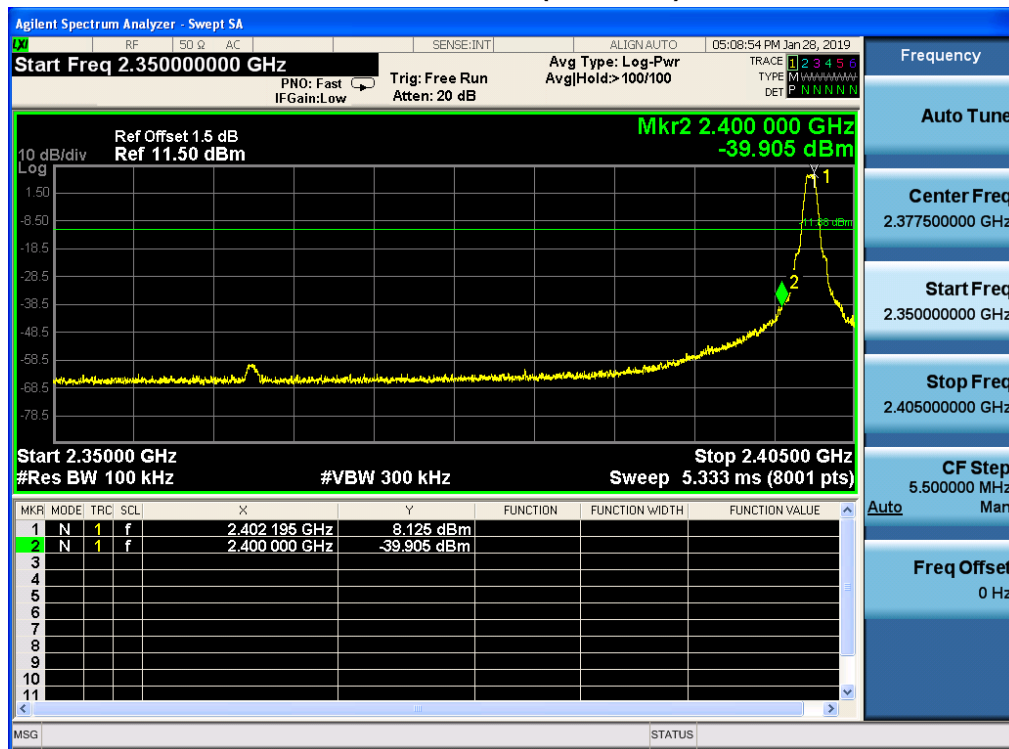
Item	Emissions in non-restricted frequency bands			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1			
Test method	<input type="checkbox"/>	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
				

### 5.6. Test Result

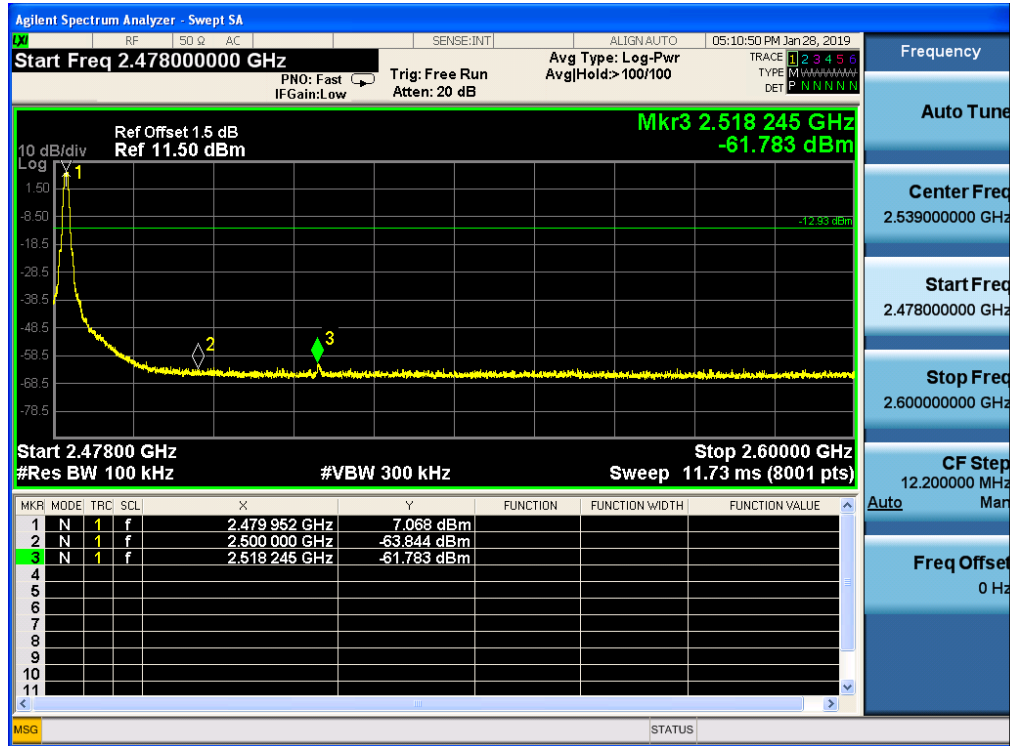
Product Name	: LED lamp	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 1	Test Site	: TR-8
Test Date	: 2019.01.30	Test Engineer	: Simon

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	8.125	2400.00	-39.905	48.030	>20	Pass
1	39	2480	7.068	2500.00	-61.783	68.851	>20	Pass

Mode 1 CH00 (2402MHz)



### Mode 1 CH39 (2480MHz)

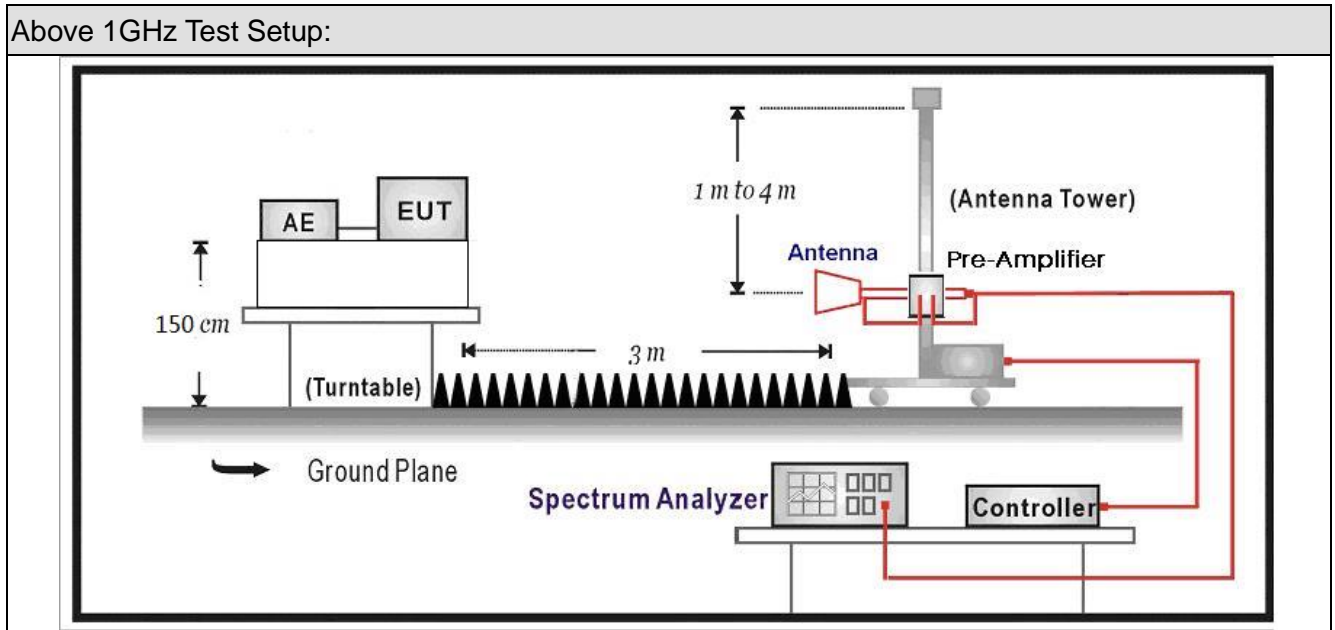


## 6. Radiated Emission Band Edge

### 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	2018.02.28	2019.02.27
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2018.02.28	2019.02.27
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
2483.5-2500	AV	54	1	3

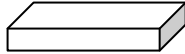
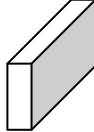
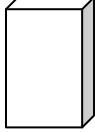



Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.

### 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

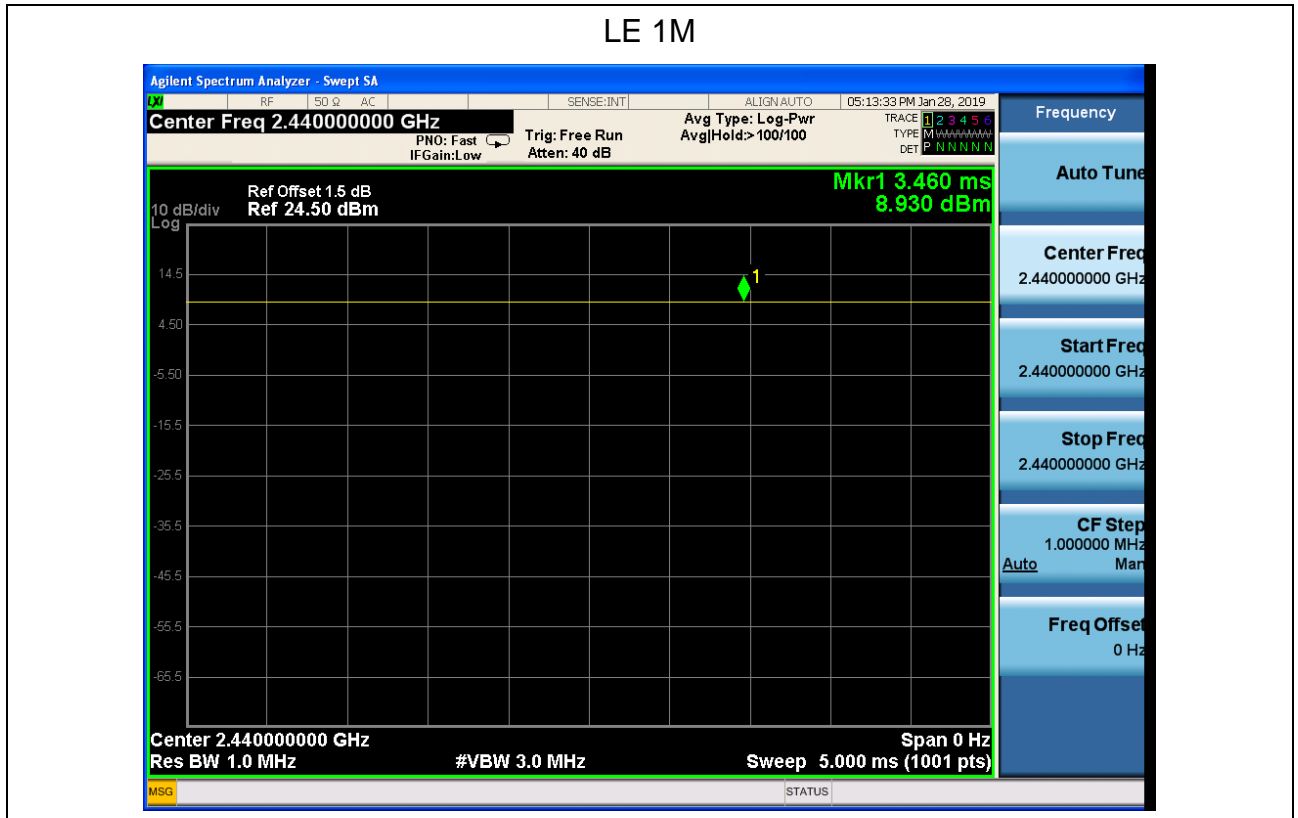


**6.5. EUT test definition**

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 1~2			
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
				

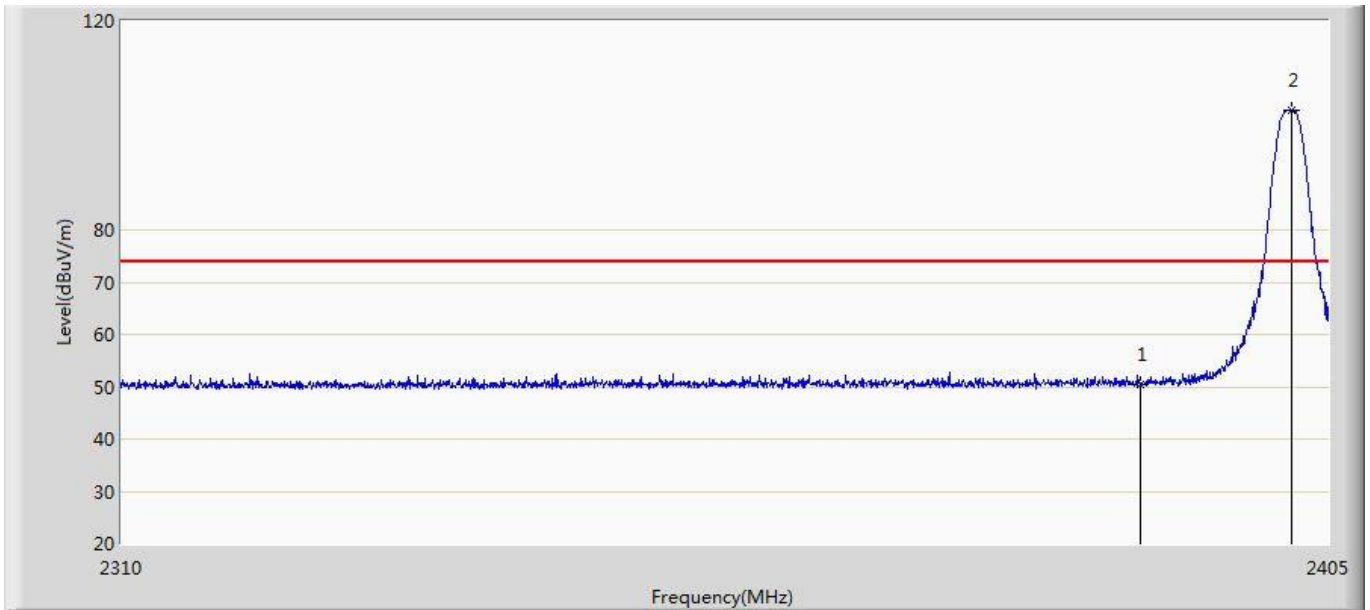
### 6.6. Duty Cycle

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



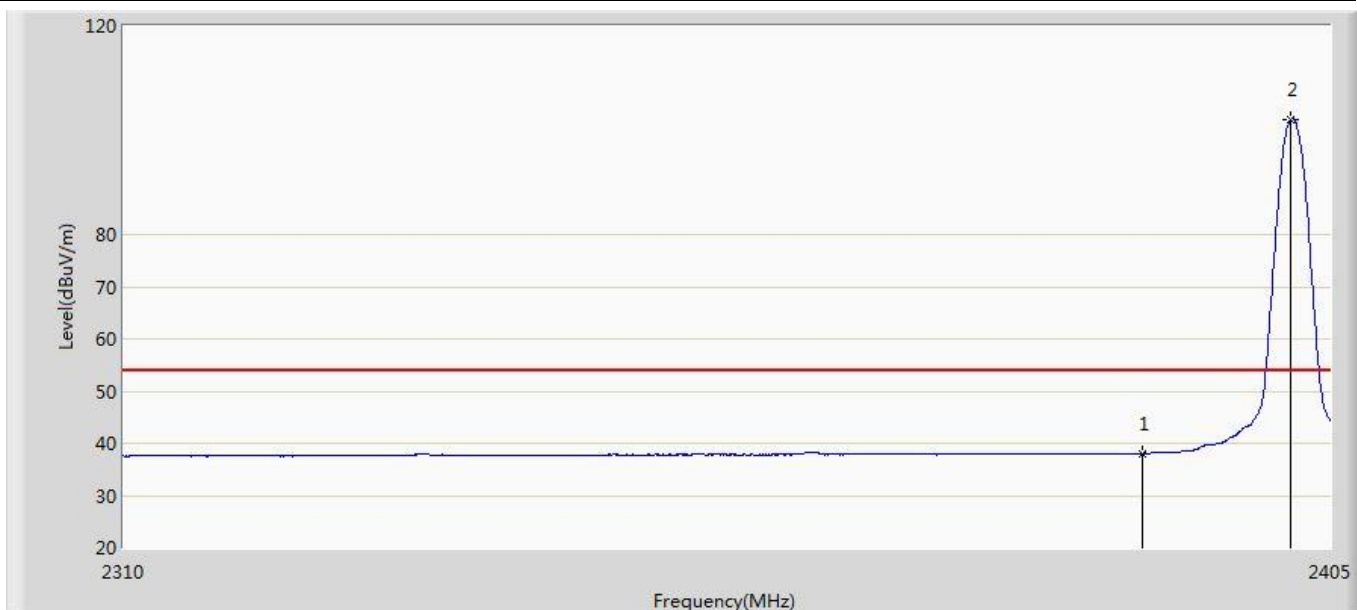
### 6.7. Test Result

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 18:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



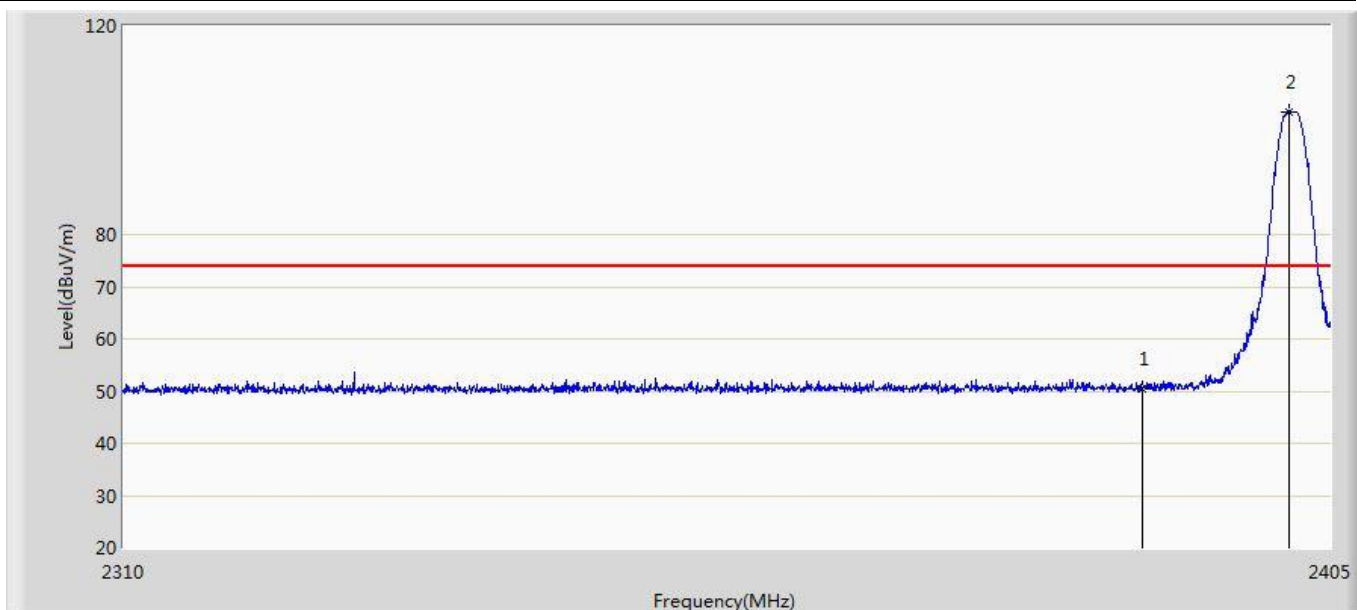
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.430	14.748	-23.570	74.000	35.682	PK
2	*	2402.055	102.881	67.168	28.881	74.000	35.712	PK

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 18:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



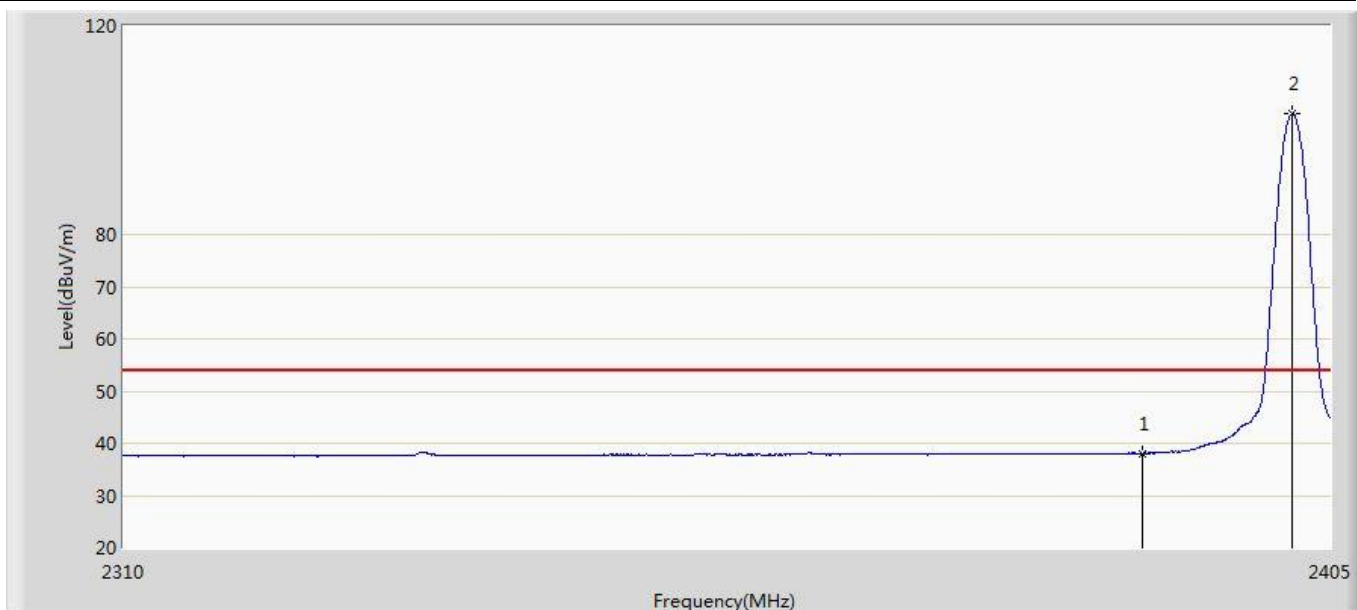
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.075	2.393	-15.925	54.000	35.682	AV
2	*	2401.865	102.143	66.431	48.143	54.000	35.712	AV

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 18:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



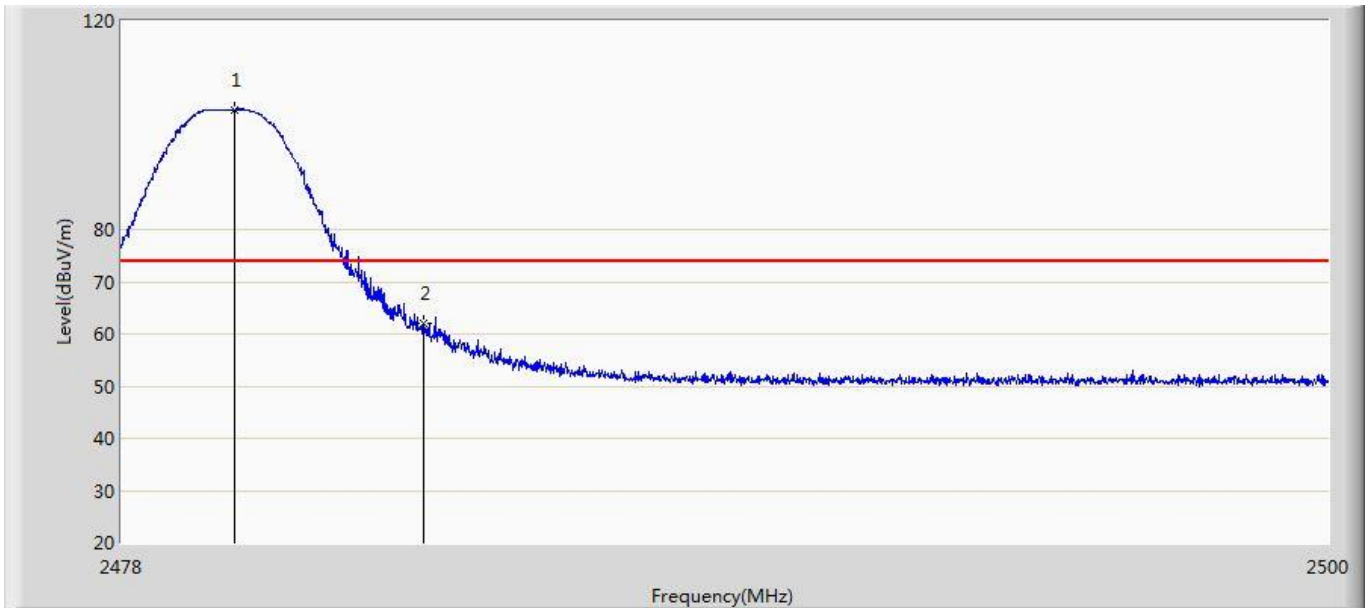
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.320	14.638	-23.680	74.000	35.682	PK
2	*	2401.770	103.593	67.881	29.593	74.000	35.712	PK

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 18:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



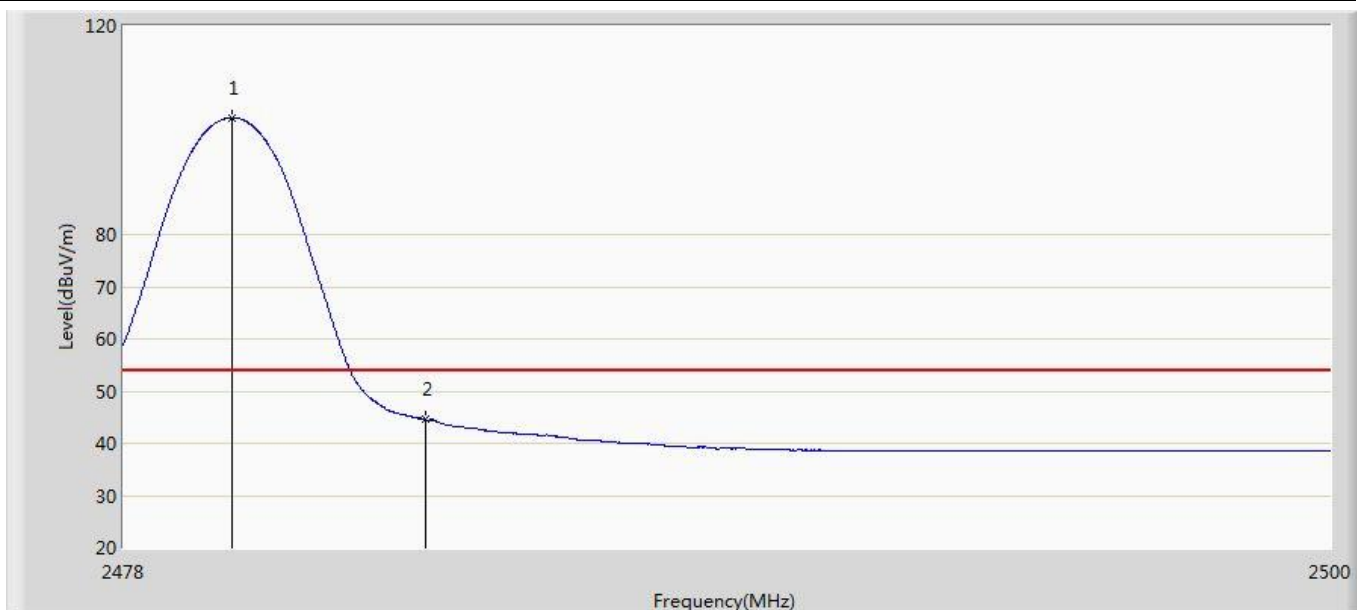
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.032	2.350	-15.968	54.000	35.682	AV
2	*	2401.960	103.085	67.372	49.085	54.000	35.712	AV

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 18:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-murata	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	*	2480.046	103.016	67.149	29.016	74.000	35.866	PK
2		2483.500	62.129	26.237	-11.871	74.000	35.891	PK

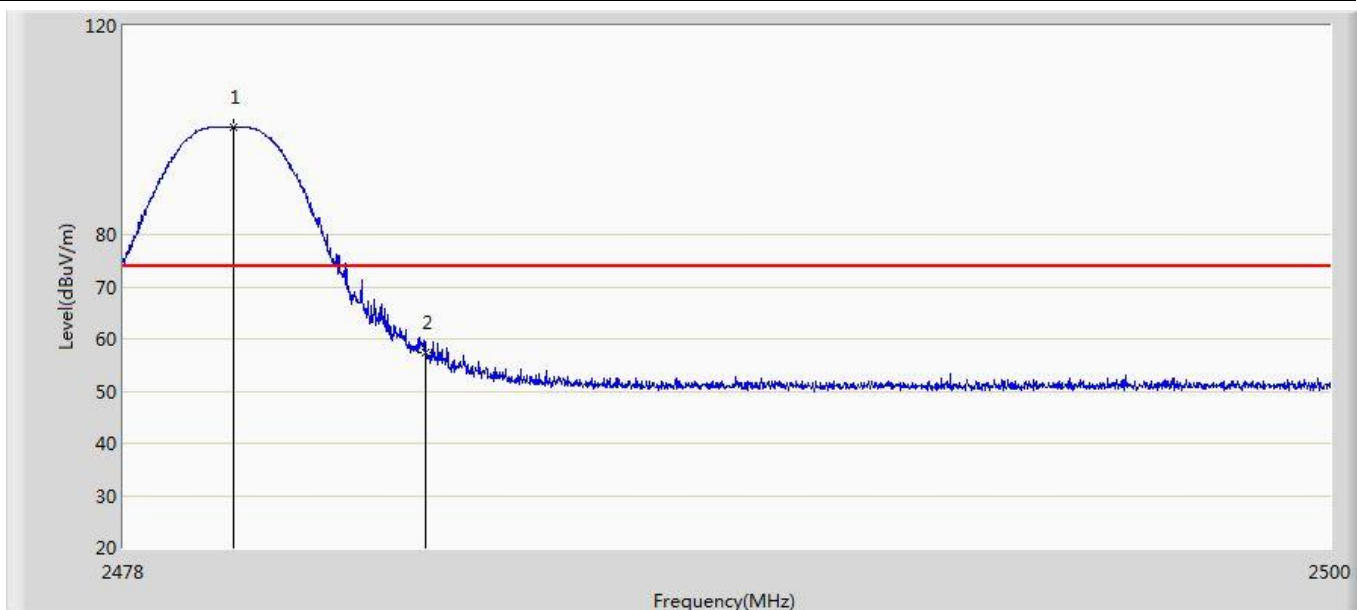
Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 18:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by BLE	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.980	102.423	66.557	48.423	54.000	35.866	AV
2		2483.500	44.509	8.617	-9.491	54.000	35.891	AV

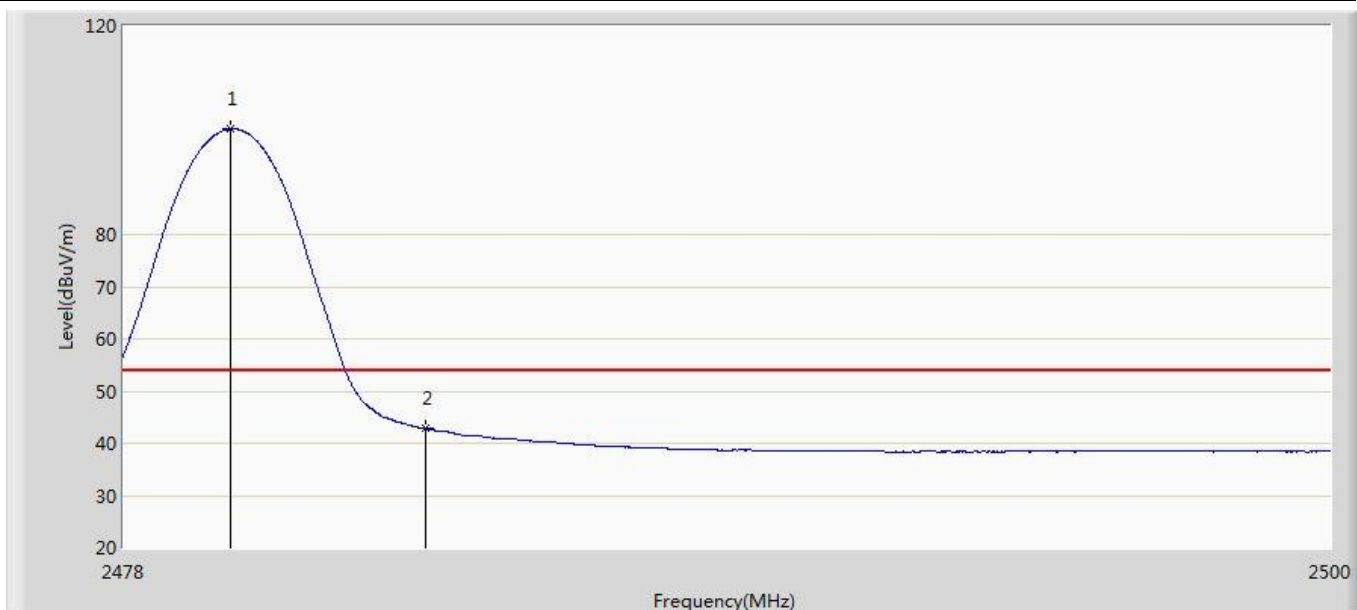


Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 18:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by BLE	



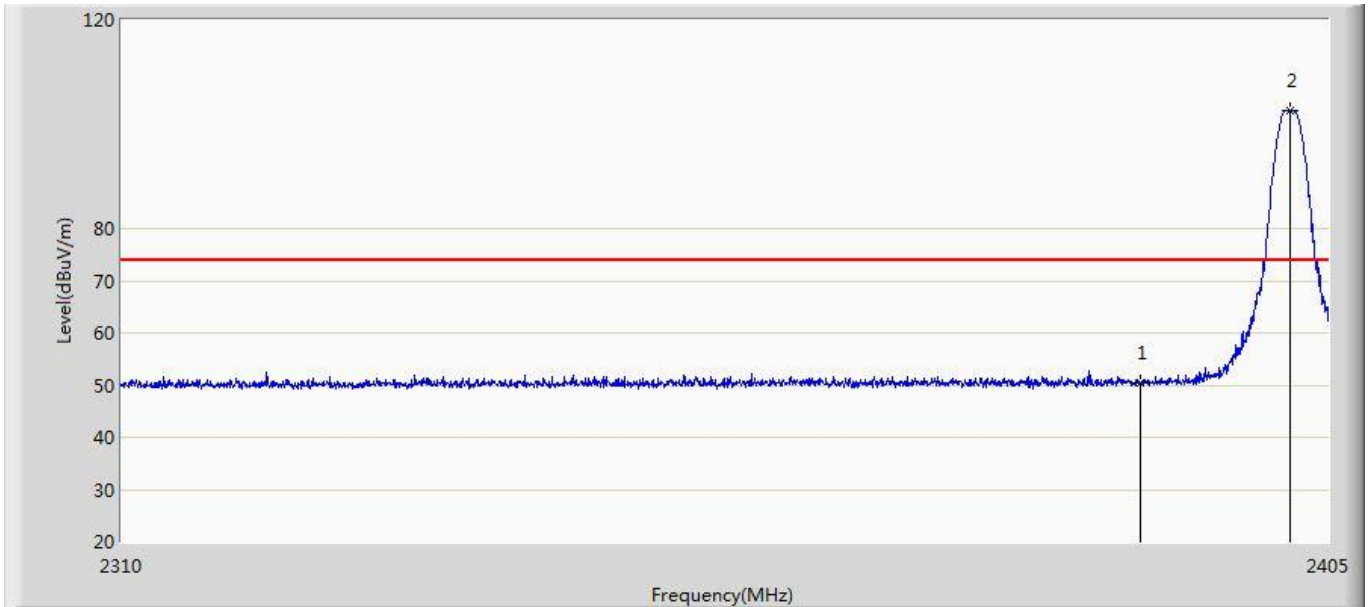
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.013	100.598	64.732	26.598	74.000	35.866	PK
2		2483.500	57.435	21.543	-16.565	74.000	35.891	PK

Engineer: Tommie	
Site: AC5	Time: 2019/01/31 - 18:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-murata	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by BLE	



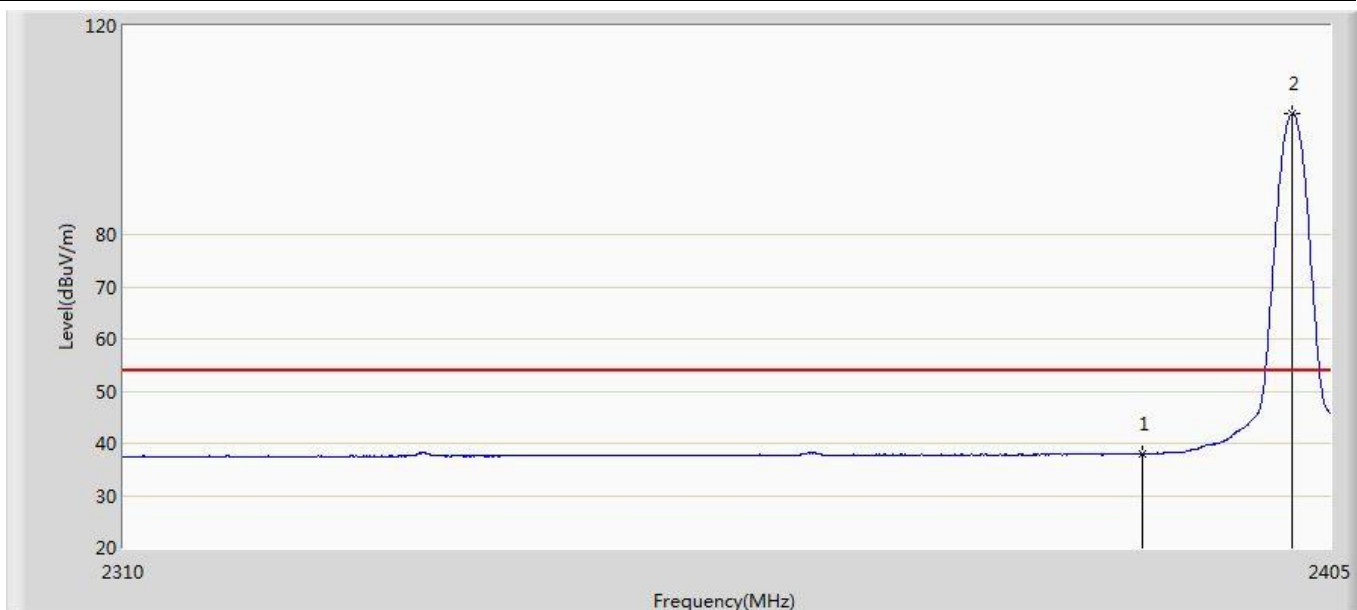
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.947	100.245	64.379	46.245	54.000	35.866	AV
2		2483.500	42.815	6.923	-11.185	54.000	35.891	AV

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 18:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



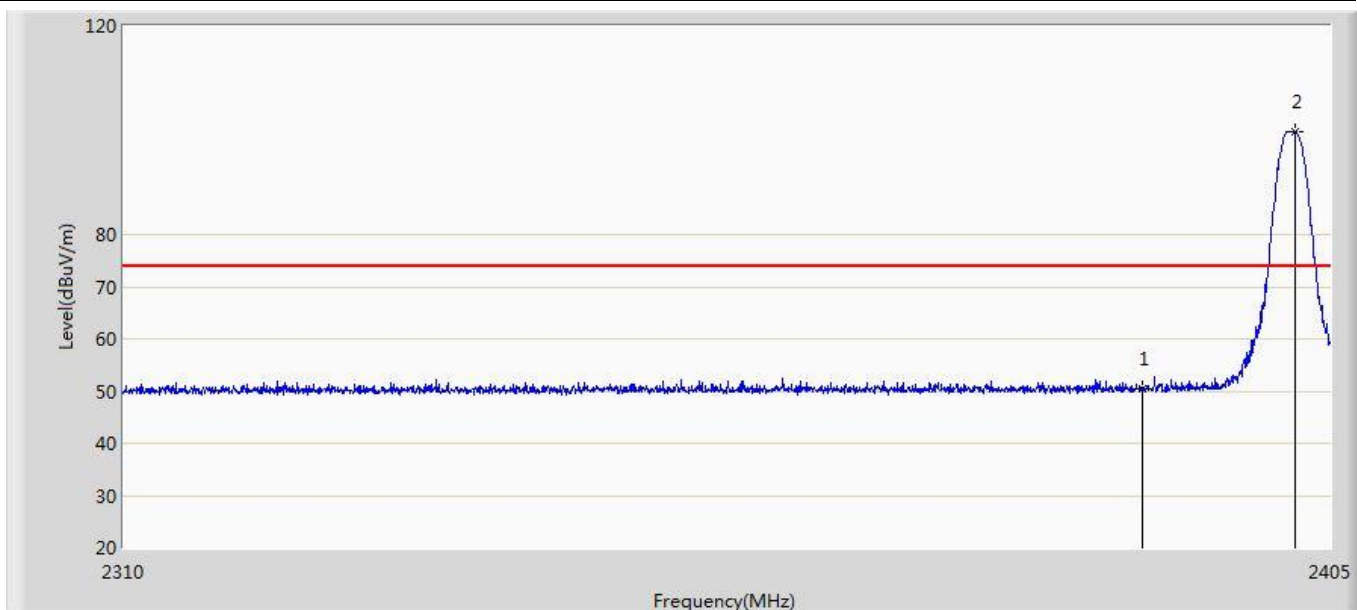
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.502	14.820	-23.498	74.000	35.682	PK
2	*	2401.913	102.660	66.948	28.660	74.000	35.712	PK

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 18:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



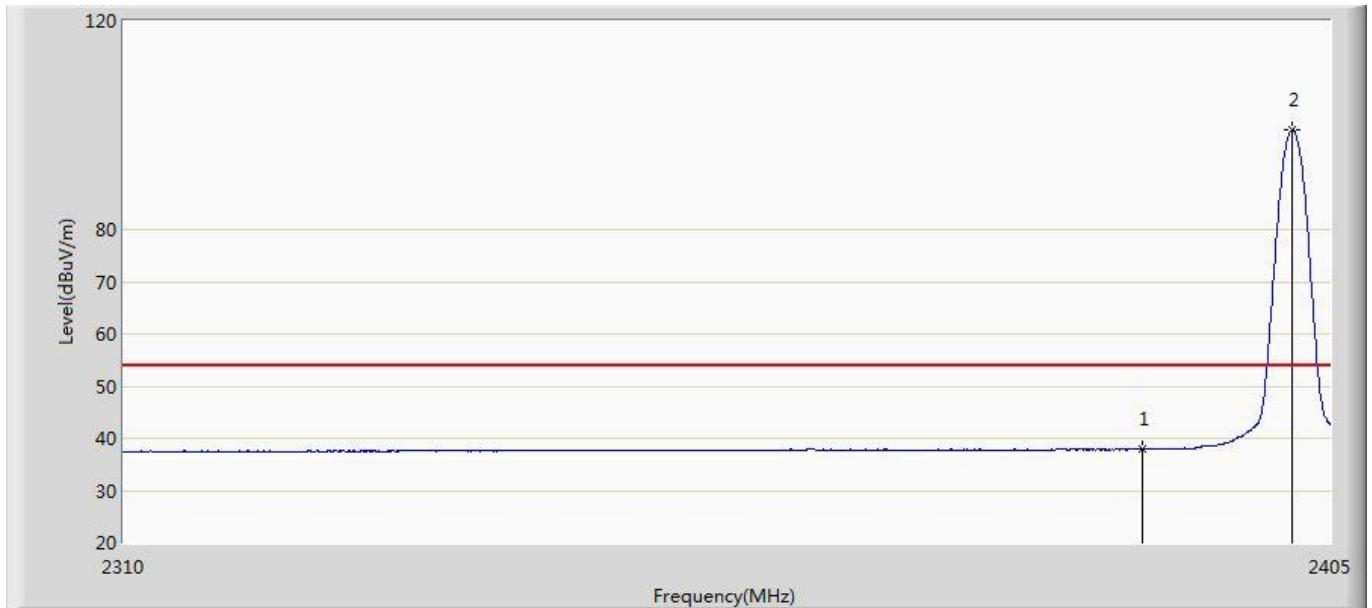
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	37.963	2.281	-16.037	54.000	35.682	AV
2	*	2401.913	103.076	67.364	49.076	54.000	35.712	AV

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 18:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



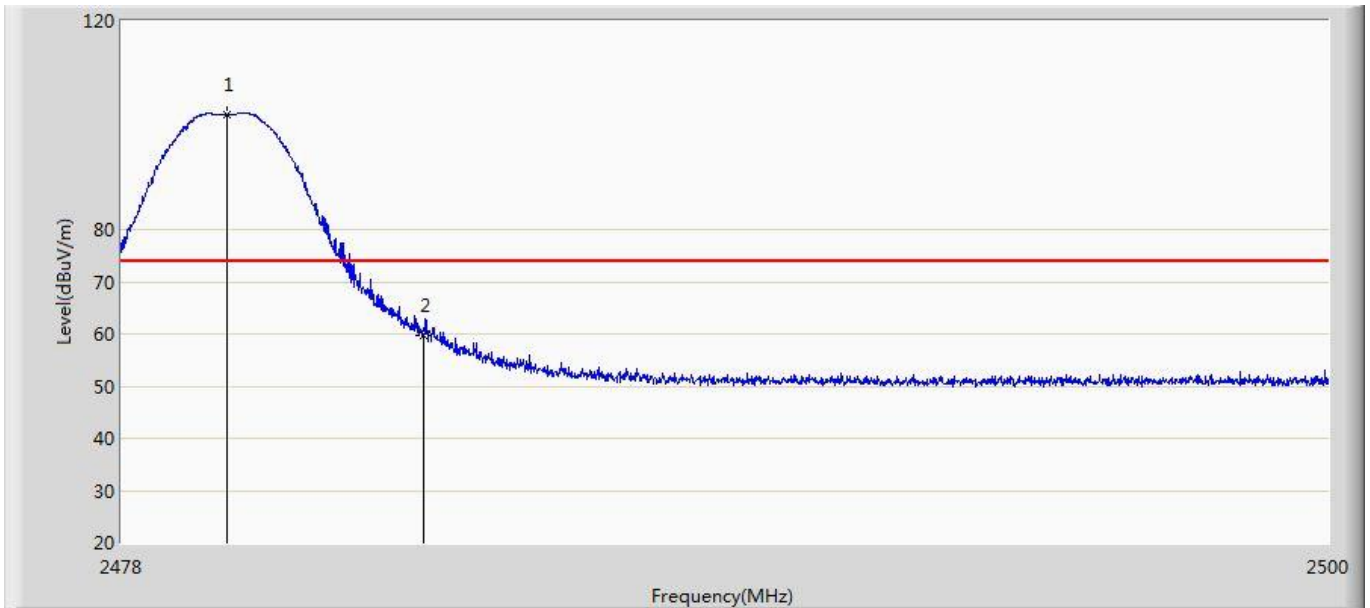
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.562	14.880	-23.438	74.000	35.682	PK
2	*	2402.150	99.671	63.958	25.671	74.000	35.713	PK

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 18:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2402MHz by BLE	



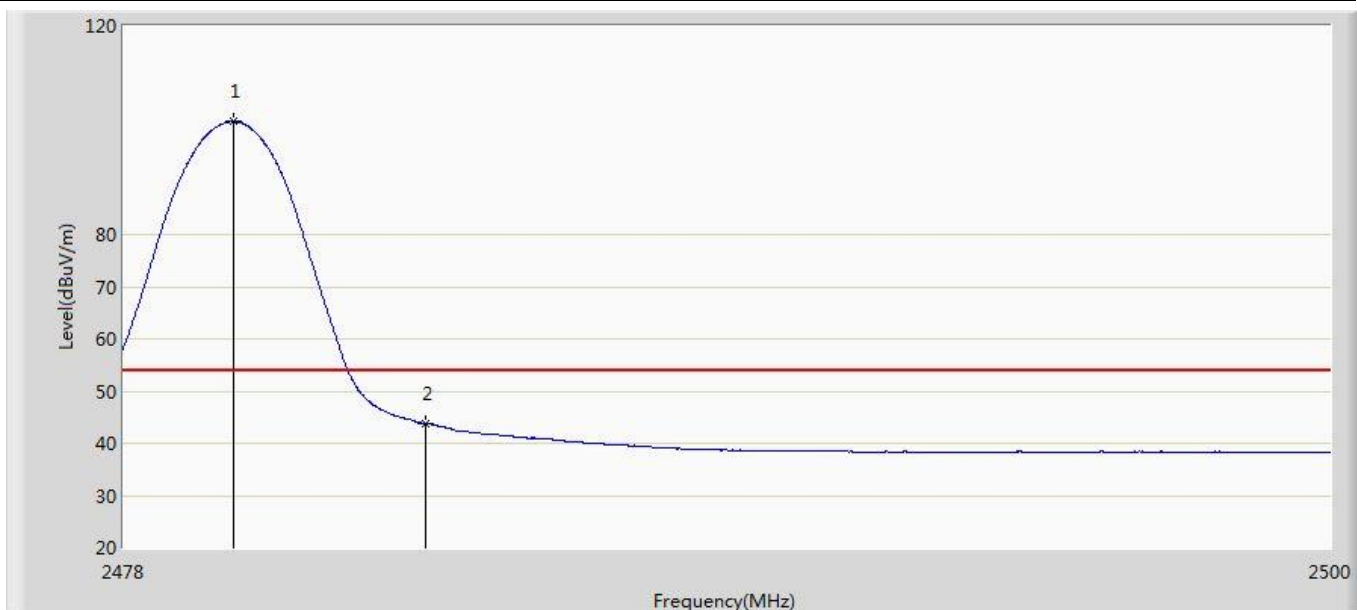
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	37.906	2.224	-16.094	54.000	35.682	AV
2	*	2401.960	99.071	63.358	45.071	54.000	35.712	AV

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-Diodes	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	102.006	66.140	28.006	74.000	35.866	PK
2		2483.500	59.781	23.889	-14.219	74.000	35.891	PK

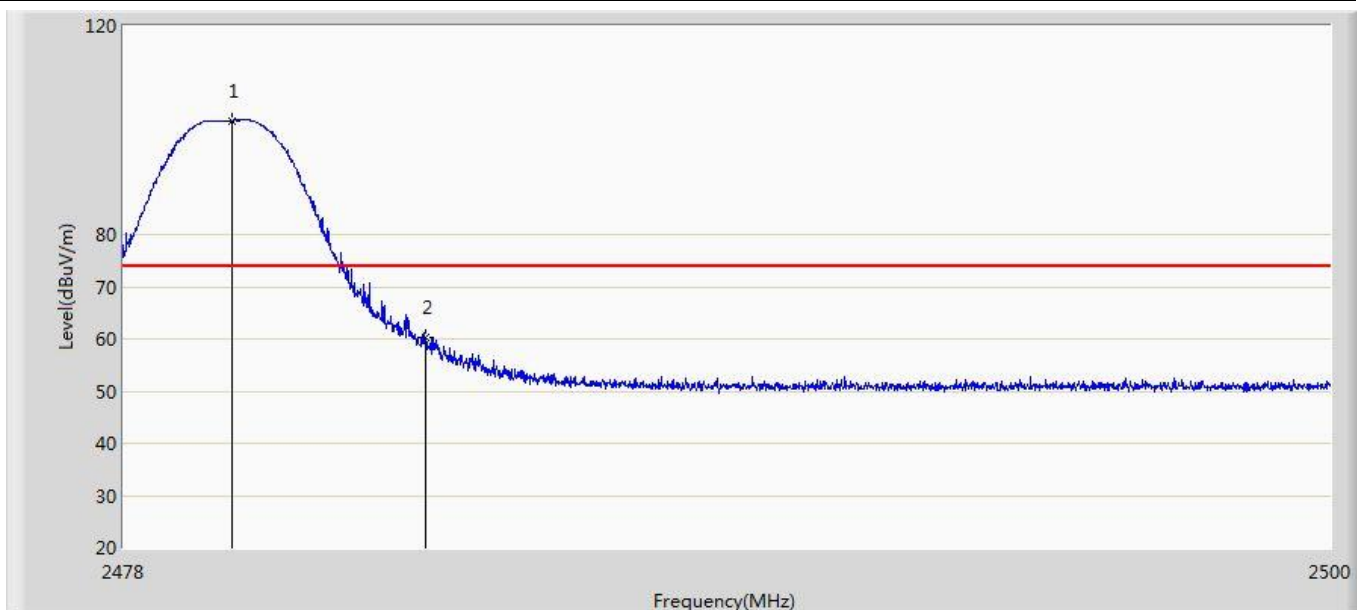
Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by BLE	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2480.013	101.664	65.798	47.664	54.000	35.866	AV
2		2483.500	43.740	7.848	-10.260	54.000	35.891	AV

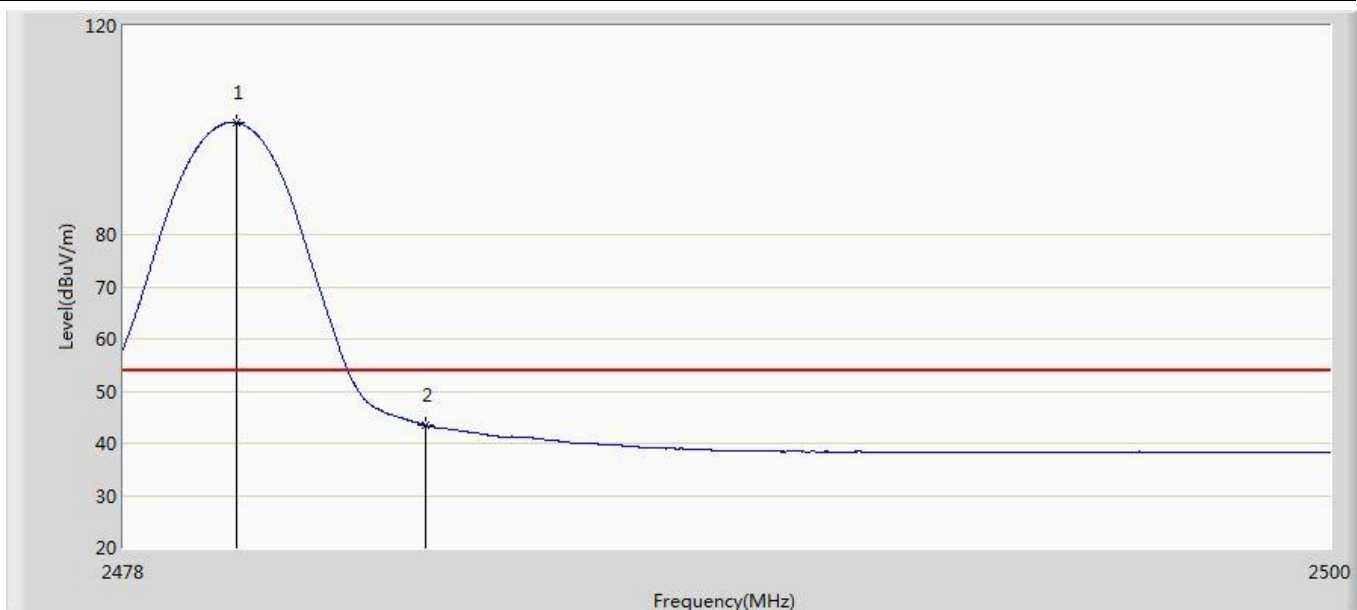


Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-Diodes	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2480MHz by BLE	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2479.980	101.881	66.015	27.881	74.000	35.866	PK
2		2483.500	60.209	24.317	-13.791	74.000	35.891	PK

Engineer: Tommie	
Site: AC5	Time: 2019/02/28 - 19:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: LED lamp-Diodes	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	*	2480.046	101.467	65.600	47.467	54.000	35.866	AV
2		2483.500	43.436	7.544	-10.564	54.000	35.891	AV

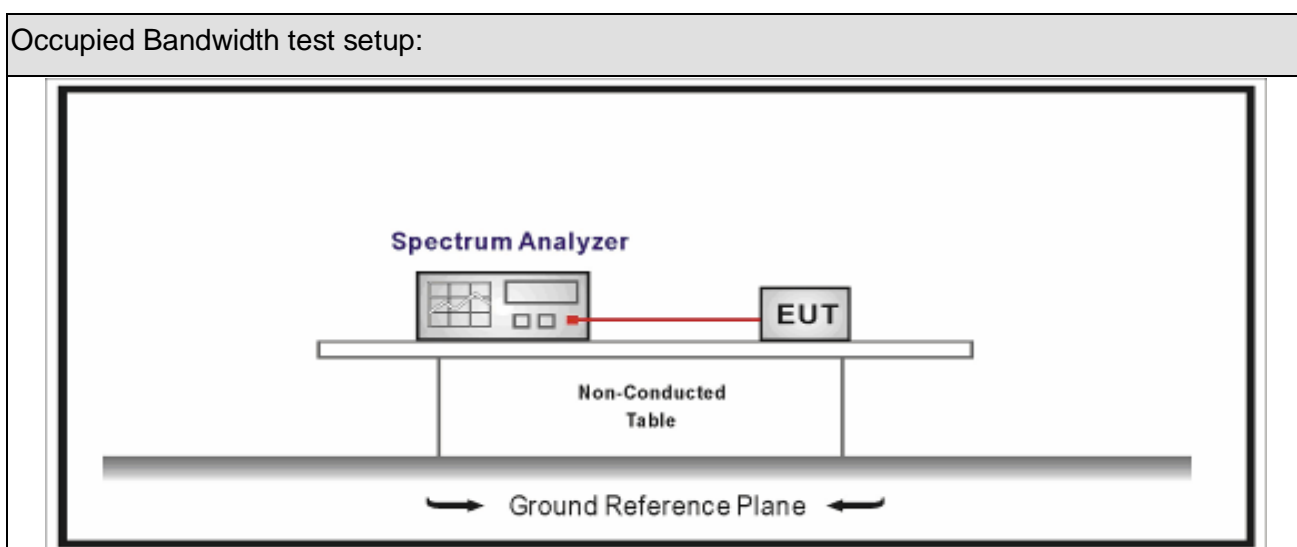
## 7. Occupied Bandwidth

### 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	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09

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

### 7.2. Test Setup



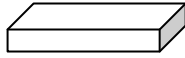
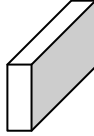
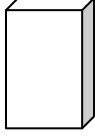
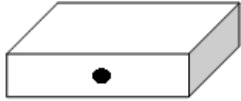
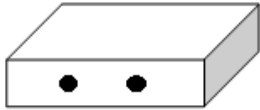

### 7.3. Limit

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"/> 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**

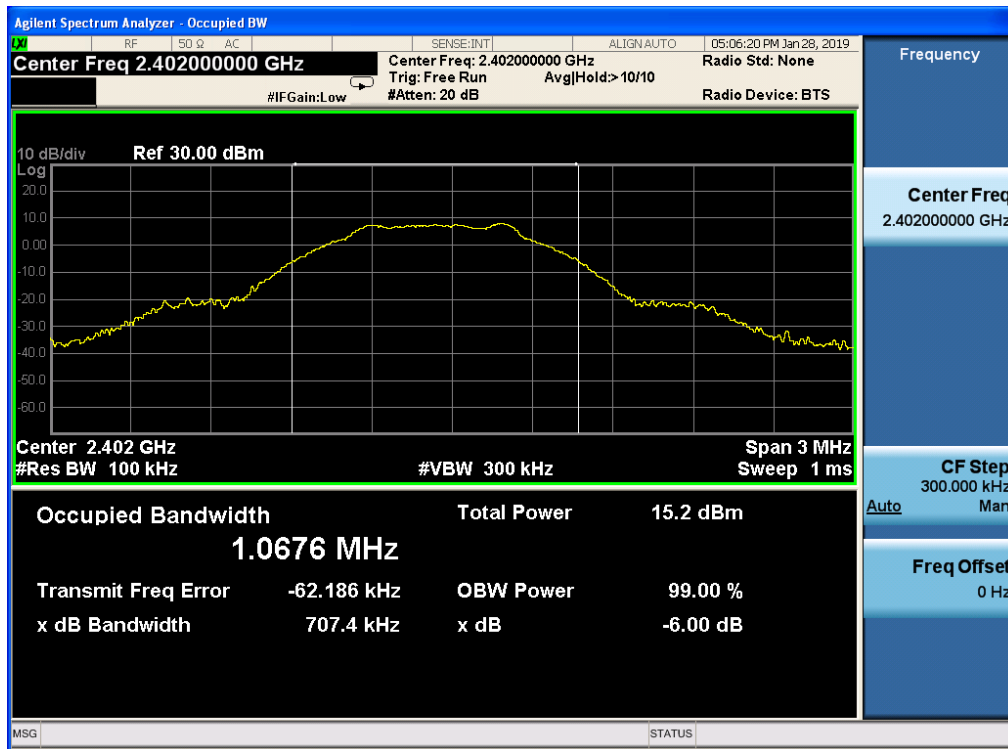
Item	Occupied Bandwidth			
Device Category	<input type="checkbox"/>	Fixed point-to-point		
	<input type="checkbox"/>	Emit multiple directional beams, simultaneously or sequentially		
	<input checked="" type="checkbox"/>	Other cases		
Test mode	Mode 1			
Test method	<input type="checkbox"/>	Radiated		
		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
				

### 7.6. Test Result

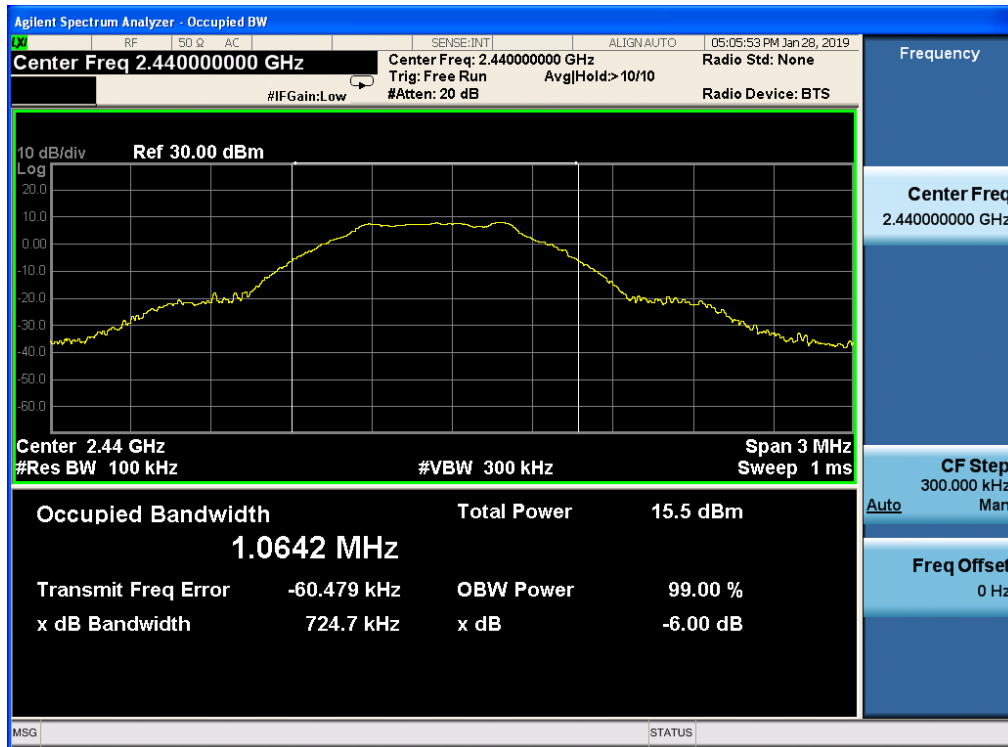
Product Name	: LED lamp	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 1	Test Site	: TR-8
Test Date	: 2019.01.30	Test Engineer	: Simon

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (kHz)	6dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
1	00	2402	1067.6	707.4	>500	Pass
1	19	2440	1064.2	724.7	>500	Pass
1	39	2480	1063.9	707.7	>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	: 2019.02.19	Test Engineer	: Simon

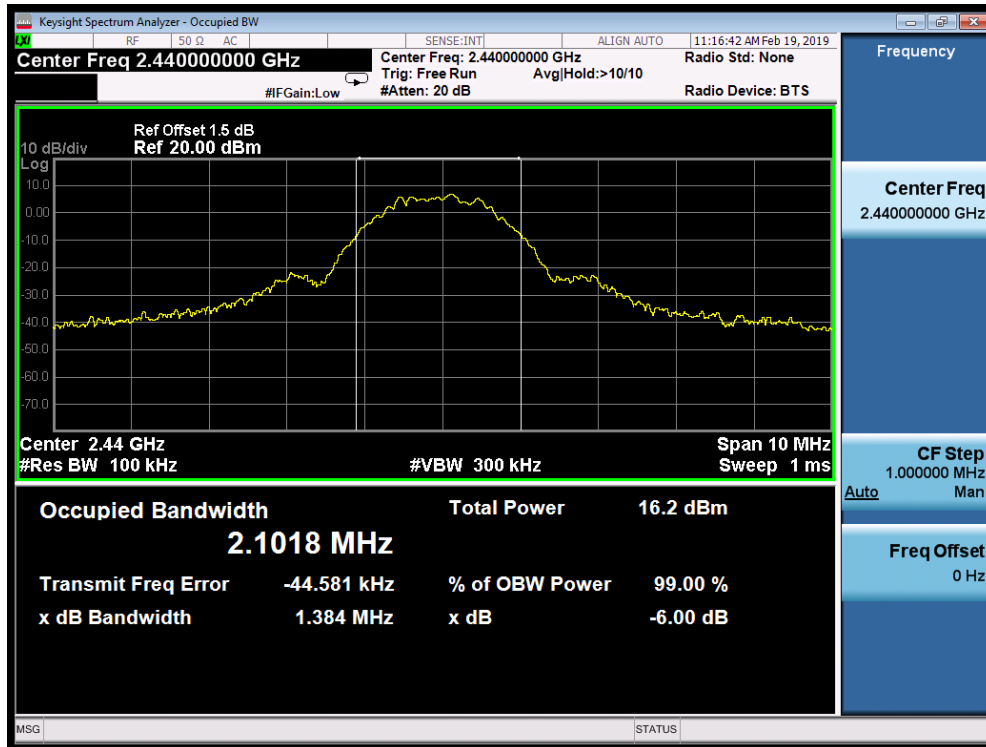
Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (kHz)	6dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
2	00	2402	2129.5	1388	>500	Pass
2	19	2440	2101.8	1384	>500	Pass
2	39	2480	2098.2	1390	>500	Pass

**Mode 2 CH00 (2402MHz)**





### Mode 2 CH19 (2440MHz)



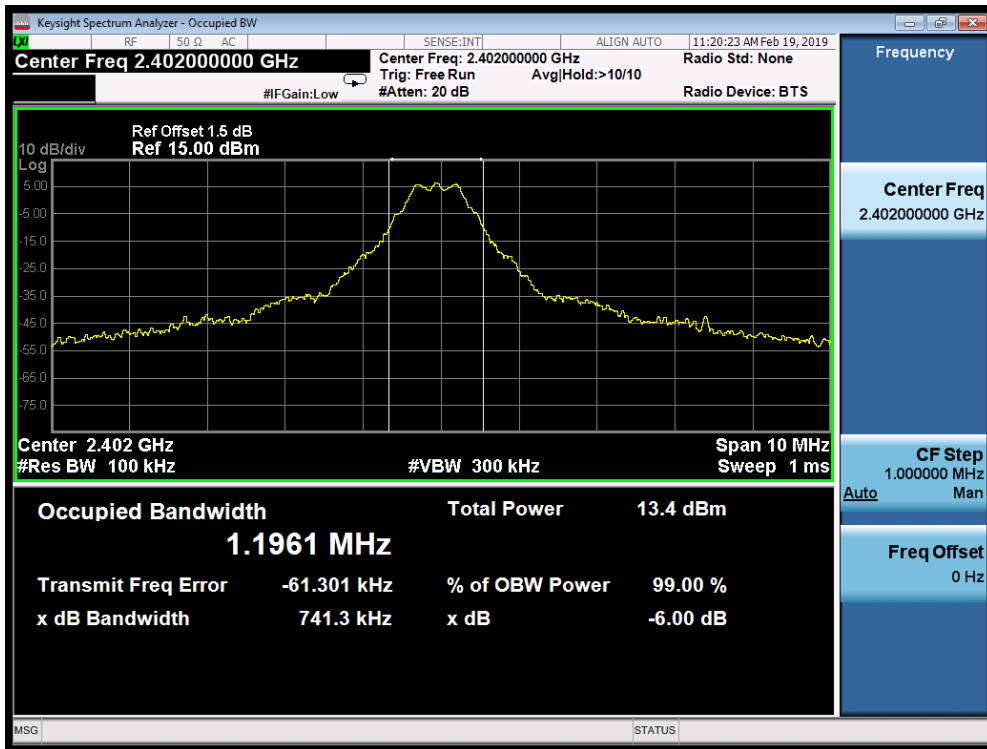
### Mode 2 CH39 (2480MHz)



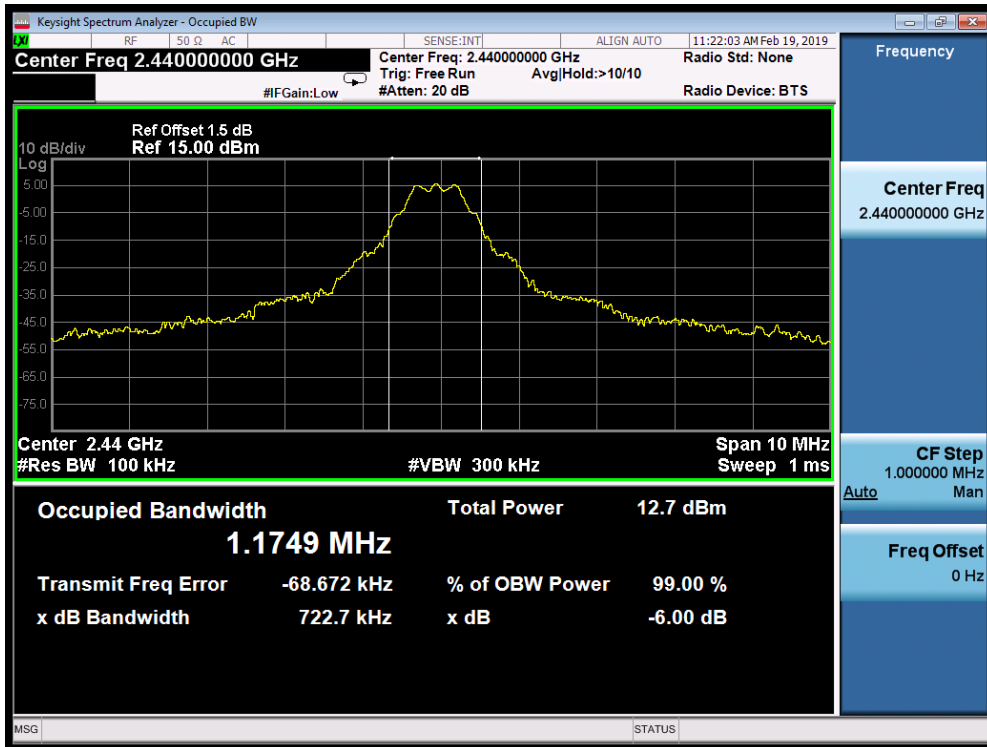
Product Name	: LED lamp	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 3	Test Site	: TR-8
Test Date	: 2019.02.19	Test Engineer	: Simon

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (kHz)	6dB Occupied Bandwidth (kHz)	Limit (kHz)	Result
2	00	2402	1196.1	741.3	>500	Pass
2	19	2440	1174.9	722.7	>500	Pass
2	39	2480	1184.8	722.9	>500	Pass

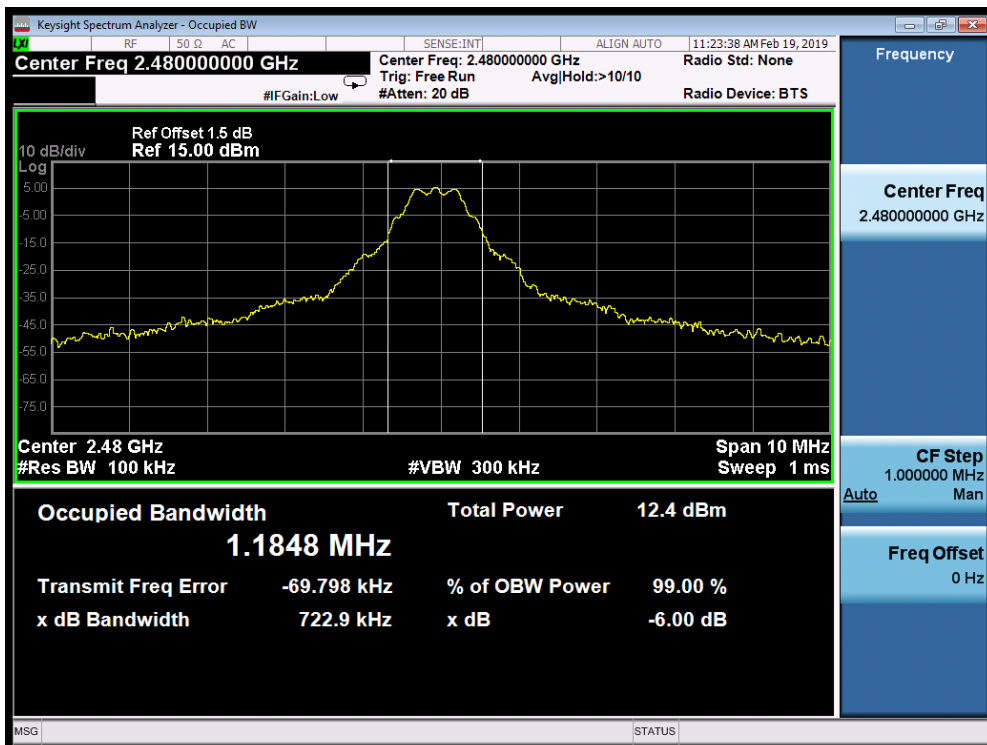
**Mode 3 CH00 (2402MHz)**



### Mode 3 CH19 (2440MHz)



### Mode 3 CH39 (2480MHz)



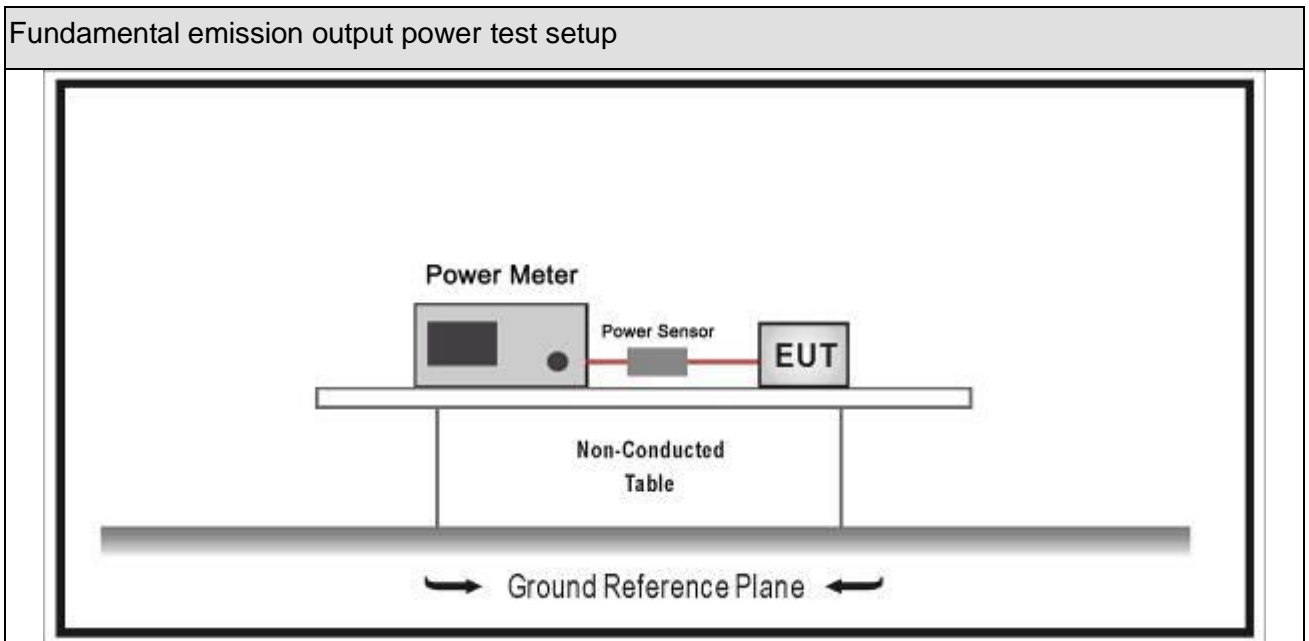
## 8. Fundamental emission output power

### 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	2019.04.09

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

### 8.2. Test Setup



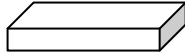
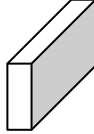
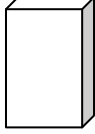



### 8.3. Limit

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"/>	Non-Fix point-point	$P_{out} \leq 30 - (G_{TX} - 6)$
<input type="checkbox"/>	Fix point-point	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
<input type="checkbox"/>	Point-to-multipoint	$P_{out} \leq 30 - (G_{TX} - 6)$
<input type="checkbox"/>	Overlap Beams	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
<input type="checkbox"/>	Aggregate power transmitted simultaneously on all beams	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
<input type="checkbox"/>	single directional beam	$P_{out} \leq 30 - [(G_{TX} - 6)]/3 + 8\text{dB}$
<p>Note 1 : <math>G_{TX}</math> directional gain of transmitting antennas.</p> <p>Note 2 : <math>P_{out}</math> is maximum peak conducted output power .</p>		

### 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 ≥ 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 ≥98%)	
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2.3	Method AVGSA-1A(Duty cycle ≥98%)	
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2.4	Method AVGSA-2(Duty cycle ≤98%)	
	<input type="checkbox"/>	ANSI C63.10	11.9.2.2.5	Method AVGSA-2A(Duty cycle ≤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 1~2			
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
				

**8.6. Test Result**

Product Name	: LED lamp (muruta)	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 1	Test Site	: TR-8
Test Date	: 2019.01.30	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
1	00	2402	10.82	30	Pass
1	19	2440	11.07	30	Pass
1	39	2480	9.86	30	Pass



Product Name	: LED lamp (muruta)	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 2	Test Site	: TR-8
Test Date	: 2019.01.30	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
2	00	2402	11.78	30	Pass
2	19	2440	12.01	30	Pass
2	39	2480	10.79	30	Pass

Product Name	: LED lamp (muruta)	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 3	Test Site	: TR-8
Test Date	: 2019.01.30	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
2	00	2402	10.82	30	Pass
2	19	2440	11.04	30	Pass
2	39	2480	9.83	30	Pass

Product Name	: LED lamp (Diodes)	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 1	Test Site	: TR-8
Test Date	: 2019.01.30	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
1	00	2402	11.12	30	Pass
1	19	2440	10.83	30	Pass
1	39	2480	10.23	30	Pass



Product Name	: LED lamp (Diodes)	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 2	Test Site	: TR-8
Test Date	: 2019.01.30	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
2	00	2402	11.73	30	Pass
2	19	2440	11.45	30	Pass
2	39	2480	10.84	30	Pass

Product Name	: LED lamp (Diodes)	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 3	Test Site	: TR-8
Test Date	: 2019.01.30	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)	Limit (dBm)	Result
2	00	2402	11.13	30	Pass
2	19	2440	10.84	30	Pass
2	39	2480	10.24	30	Pass

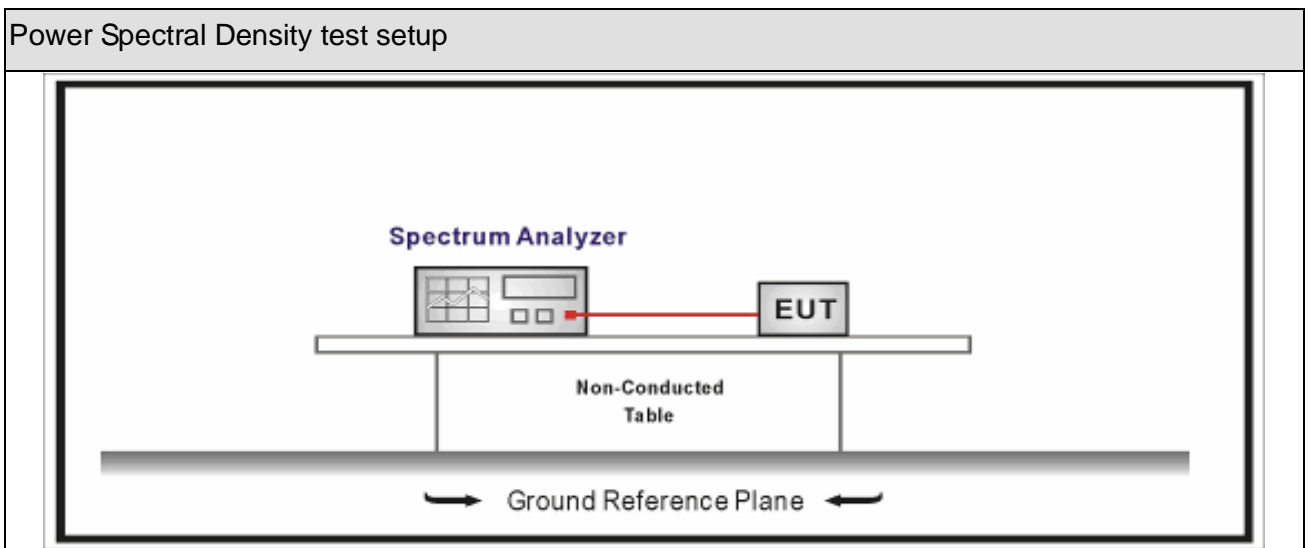
## 9. Power Spectral Density

### 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	2019.04.08
MXA Signal Analyzer	Keysight	N9020A	MY56060147	2018.04.09	2019.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2018.04.10	2019.04.09

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

### 9.2. Test Setup



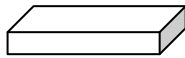
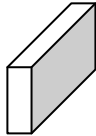
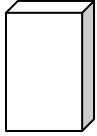
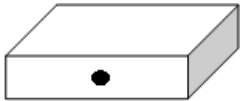
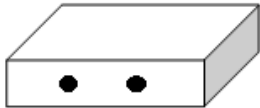
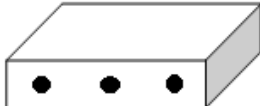
### 9.3. Limit

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			
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
				

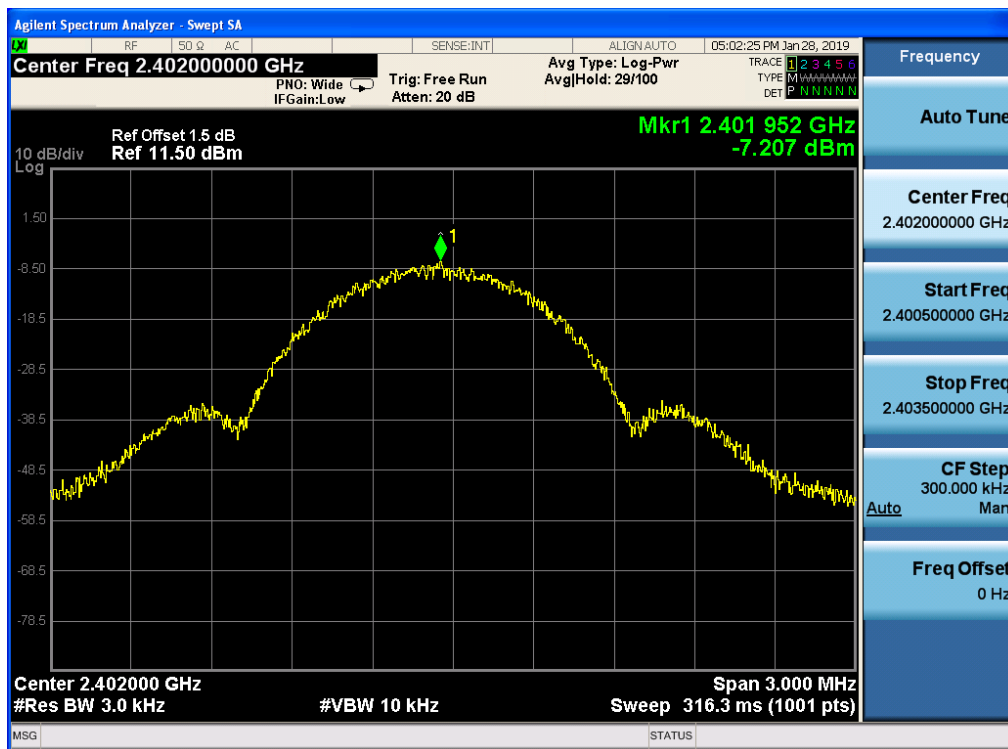


### 9.6. Test Result

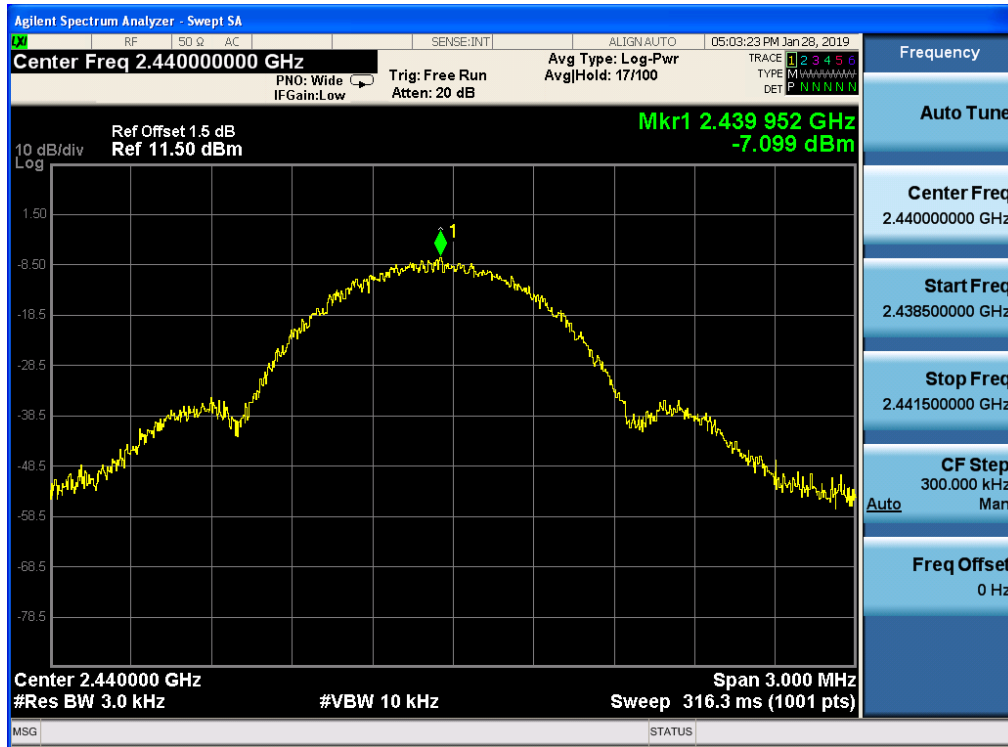
Product Name	: LED lamp	Test Voltage	: AC 120V/60Hz
Test Mode	: Mode 1	Test Site	: TR-8
Test Date	: 2019.01.30	Test Engineer	: Simon

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
1	00	2402	-7.207	-7.207	8	Pass
1	19	2440	-7.099	-7.099	8	Pass
1	39	2480	-8.292	-8.292	8	Pass

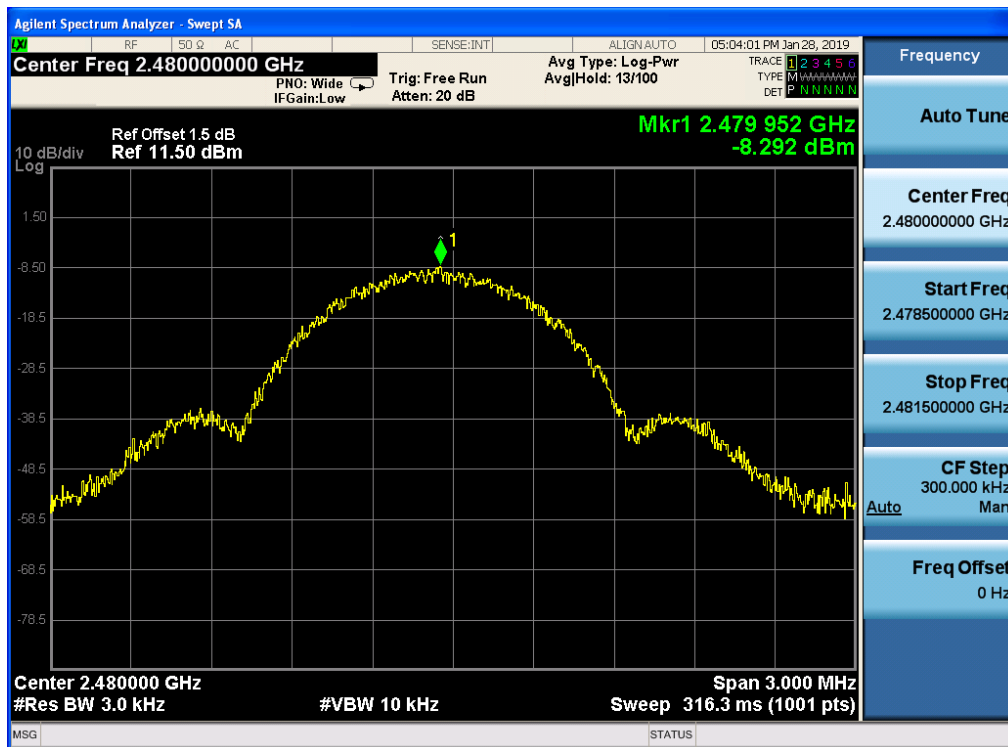
Mode 1 CH00(2402MHz)



### Mode 1 CH19(2440MHz)



### Mode 1 CH39(2480MHz)



## 10. Antenna Requirement

### 10.1. Limit

Antenna Requirement Limit
<p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.</p>

### 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 \_\_\_\_\_