



Test Report

FCC Part15 Subpart C & RSS-247 Issue 2 (Class II permissive change)

Product Name : LED Lamp
Model No. : 9290012575A
FCC ID : 2AGBW9290012575AX
IC : 20812-2575AX

Applicant : Philips Lighting (China) Investment Co., Ltd.
Address : Building 9, Lane 888, Tianlin Road, Minhang district,
Shanghai, China

Date of Receipt : Sep. 13th, 2017
Test Date : Sep. 04th, 2017 ~ Sep. 14th, 2017
Issued Date : Sep. 22th, 2017
Report No. : 1792056R-RF- US-P06V03
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.

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


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Test Report Certification


Issued Date : Sep. 22th, 2017
Report No. : 1792056R-RF-US-P06V03




Product Name : LED Lamp
Applicant : Philips Lighting (China) Investment Co., Ltd.
Address : Building 9, Lane 888, Tianlin Road, Minhang district, Shanghai, China
Manufacturer : Philips Lighting (China) Investment Co., Ltd.
Address : Building 9, Lane 888, Tianlin Road, Minhang district, Shanghai, China
Model No. : 9290012575A
FCC ID : 2AGBW9290012575AX
IC : 20812-2575AX
EUT Voltage : AC 110-130V,50-60Hz
Test Voltage : AC 120V/60Hz
Brand Name : Philips
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C
ANSI C63.4:2014; ANSI C63.10:2013;
KDB 558074 D01v04
Industry Canada RSS-Gen Issue 4/RSS-247 Issue 2
Test Result : Complied
Performed Location : DEKRA Testing and 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; IC Lab Code: 4075B

Documented By : 

(Project Assistant Supervisor: Kery Zha)

Reviewed By : 

(Senior Project Manager: Frank He)

Approved By : 

(Engineering Manager: Harry Zhao)

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History of This Test Report

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|-----------------------|---------|-----------------------|-----------------|
| 1792056R-RF-US-P06V03 | V1.0 | Initial Issued Report | Sep. 22th, 2017 |
| | | | |
| | | | |
| | | | |

1. General Information

1.1. EUT Description

| | |
|--------------------|---------------------------|
| Product Name | LED Lamp |
| Brand Name | Philips |
| Model No. | 9290012575A |
| EUT Voltage | AC 110-130V,50-60Hz |
| Frequency Range | 2405 ~ 2480MHz |
| Channel Number | 16 |
| Type of Modulation | O-QPSK |
| Data Rate | 250kbps |
| Antenna Type | Reference to Antenna List |
| Peak Antenna Gain | Reference to Antenna List |

Note 1: This report is based on report ACWE-F1703008A.

2: Filter capacitor has been changed from 4.7uF to 2.2uF (two on the drive board and one on the RF board)

1.2. Channel List:

| Zigbee Working Frequency of Each Channel: | | | | | | | |
|---|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 11 | 2405 MHz | 12 | 2410 MHz | 13 | 2415 MHz | 14 | 2420 MHz |
| 15 | 2425 MHz | 16 | 2430 MHz | 17 | 2435 MHz | 18 | 2440 MHz |
| 19 | 2445 MHz | 20 | 2450 MHz | 21 | 2455 MHz | 22 | 2460 MHz |
| 23 | 2465 MHz | 24 | 2470 MHz | 25 | 2475 MHz | 26 | 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"/> Sectorized antenna systems | |
| | | <input type="checkbox"/> Cross-polarized antennas | |
| | | <input type="checkbox"/> Unequal antenna gains, with equal transmit powers | |
| | | <input type="checkbox"/> Spatial Multiplexing | |
| | | <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"/> Metal plate type F antenna | |
| | | <input type="checkbox"/> Cross-polarize Antenna | |
| | | | |
| Antenna Gain | 3.1dBi | | |

1.4. Mode of Operation

| |
|----------------------------|
| Test Modes List |
| Mode 1: Transmit by Zigbee |

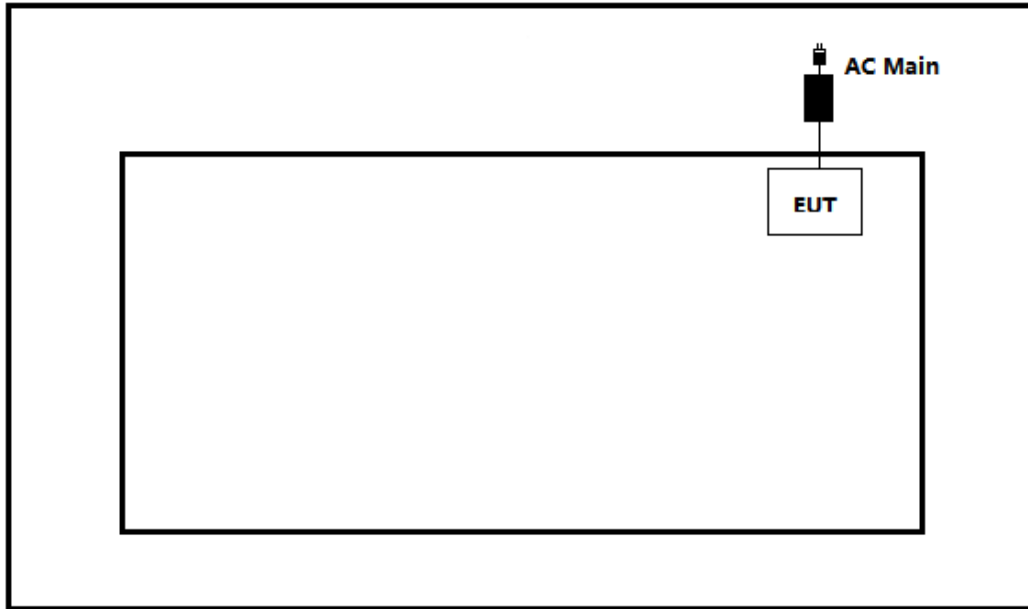
1.5. Tested System Details

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 | N/A | N/A | N/A | N/A | N/A |

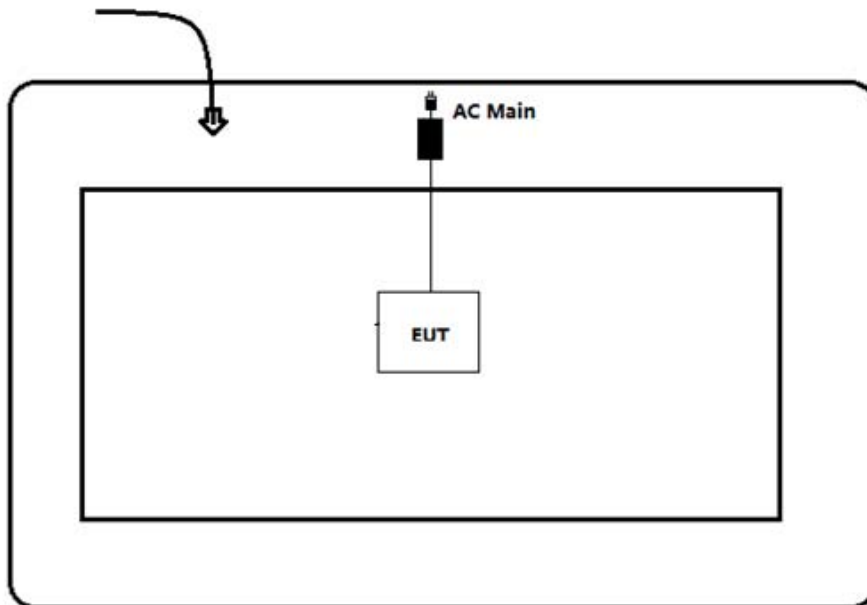
1.6. Configuration of Tested System

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission

Chamber



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 |
| Radiated Emission Band Edge | FCC CFR Title 47 Part 15 Subpart C: 2015 15.247(d) | FCC 15.209 | PASS |
| Fundamental emission output power | FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(b)(3) | ≤30dBm | PASS |

For IC:

| Performed Test Item | Normative References | Limit | Result |
|-----------------------------|------------------------------|-----------------|--------|
| Conducted Emission | RSS-Gen Issue 4 Section 8.8 | RSS-Gen Issue 4 | PASS |
| Radiated Emission | RSS-Gen Issue 4 Section 8.9 | RSS-Gen Issue 4 | PASS |
| Radiated Emission Band Edge | RSS-Gen Issue 4 Section 8.10 | RSS-Gen Issue 4 | PASS |
| Peak Output Power | RSS-247 Issue 2 Section 5.4 | ≤30dBm | PASS |

2.2. Power setting parameter

| Modulation Mode | Test Frequency | Setting value |
|-----------------|----------------|---------------|
| Zigbee | 2405 | Auto |
| | 2450 | Auto |
| | 2475 | Auto |
| | 2480 | Auto |

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 | $\pm 1.27\text{dB}$ |

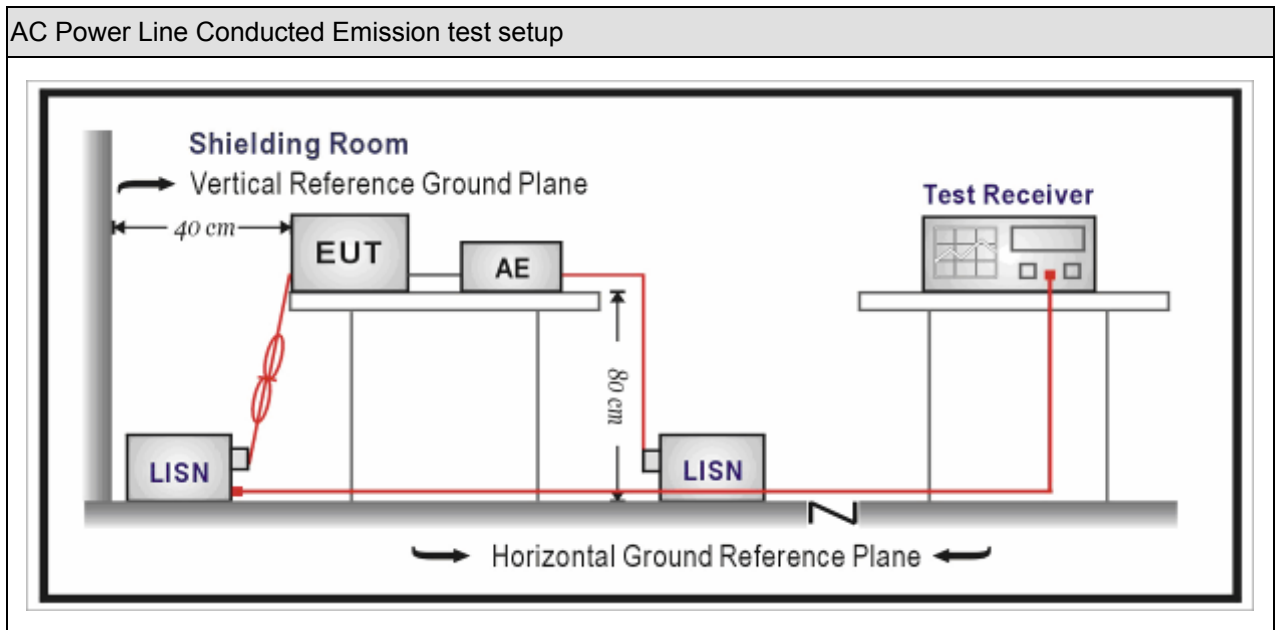
3. AC Power Line Conducted Emission

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 | 2017.03.05 | 2018.03.04 |
| Two-Line V-Network | R&S | ENV 216 | 101189 | 2017.07.16 | 2018.07.15 |
| Two-Line V-Network | R&S | ENV 216 | 101044 | 2017.09.16 | 2018.09.15 |
| 50ohm Coaxial Switch | Anritsu | MP59B | 6200464462 | N/A | N/A |
| 50ohm Termination | SHX | TF2 | 07081402 | 2017.09.03 | 2017.09.02 |
| Temperature/Humidity Meter | Zhichen | ZC1-2 | TR1-TH | 2017.01.04 | 2018.01.03 |

Note: All equipment are 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 μ V) | Average (dB μ V) |
| 0.15-0.5 | 66 to 56 | 56 to 46 |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

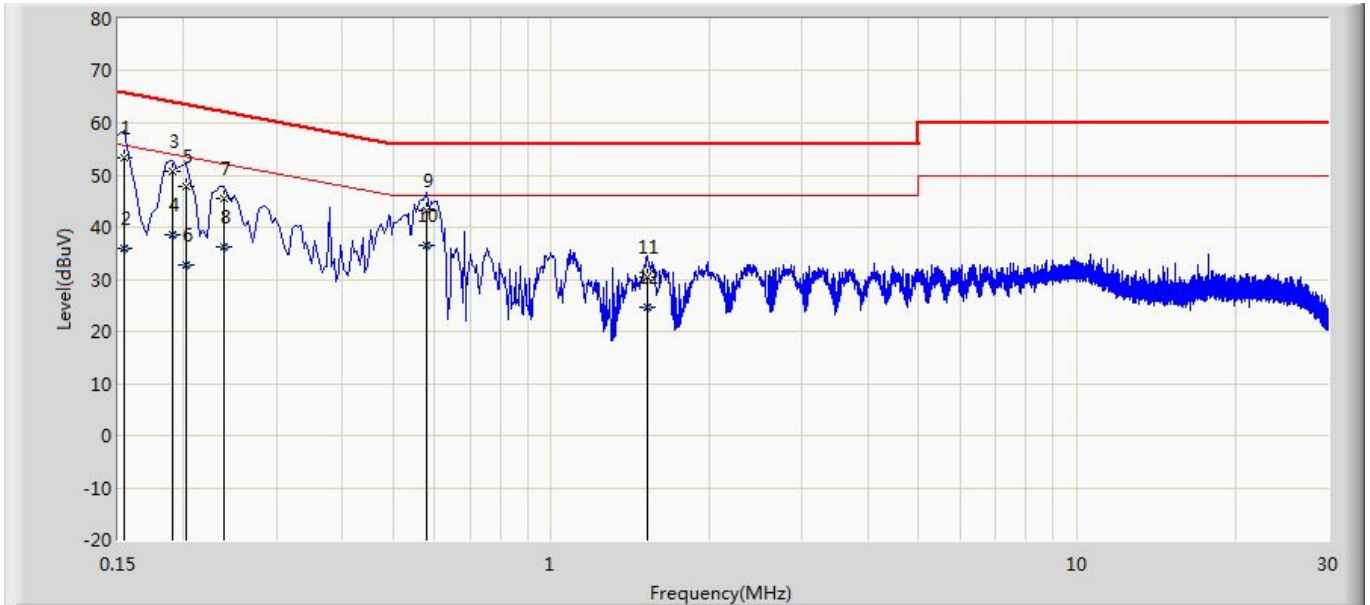
Note 1: The lower limit shall apply at the transition frequencies.
 Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

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 |
| <input checked="" type="checkbox"/> | ANSI C63.4-2014 | 7 | AC power-line conducted emission measurements |

3.5. Test Result

| | |
|--|---------------------|
| Engineer: Bob Yu | |
| Site: TR1 | Time: 2017/09/14 |
| Limit: FCC_Part15.207_CE_AC Power | Margin: 0 |
| Probe: ENV216_101190(0.009-30MHz) | Polarity: Line |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2405MHz by Zigbee | |

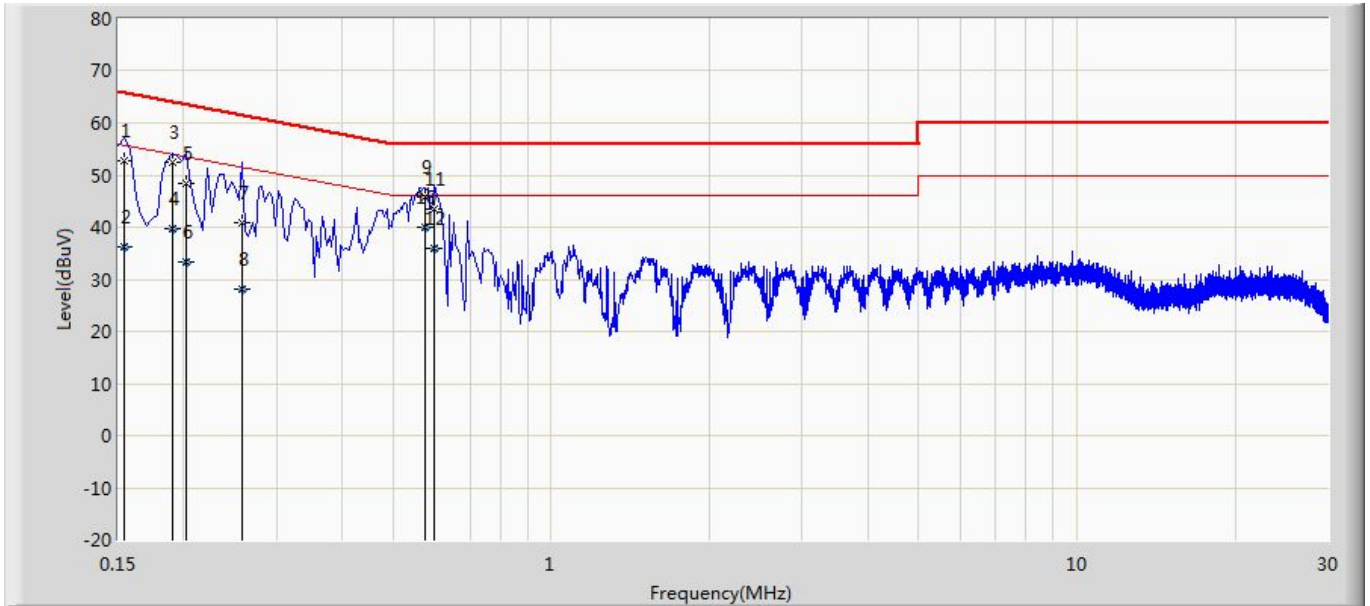


| No | Mark | Frequency (MHz) | Measure Level (dBuV) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV) | Probe (dB) | Cable (dB) | Amp (dB) | Type |
|----|------|-----------------|----------------------|----------------------|-----------------|--------------|------------|------------|----------|------|
| 1 | | 0.154 | 53.307 | 43.672 | -12.475 | 65.781 | 9.609 | 0.025 | 0.000 | QP |
| 2 | | 0.154 | 36.012 | 26.378 | -19.769 | 55.781 | 9.609 | 0.025 | 0.000 | AV |
| 3 | | 0.190 | 50.637 | 41.007 | -13.399 | 64.037 | 9.602 | 0.028 | 0.000 | QP |
| 4 | | 0.190 | 38.456 | 28.826 | -15.581 | 54.037 | 9.602 | 0.028 | 0.000 | AV |
| 5 | | 0.202 | 47.736 | 38.106 | -15.792 | 63.528 | 9.601 | 0.029 | 0.000 | QP |
| 6 | | 0.202 | 32.820 | 23.190 | -20.708 | 53.528 | 9.601 | 0.029 | 0.000 | AV |
| 7 | | 0.238 | 45.452 | 35.822 | -16.713 | 62.166 | 9.600 | 0.030 | 0.000 | QP |
| 8 | | 0.238 | 36.349 | 26.719 | -15.817 | 52.166 | 9.600 | 0.030 | 0.000 | AV |
| 9 | | 0.578 | 43.155 | 33.510 | -12.845 | 56.000 | 9.600 | 0.045 | 0.000 | QP |
| 10 | * | 0.578 | 36.584 | 26.939 | -9.416 | 46.000 | 9.600 | 0.045 | 0.000 | AV |
| 11 | | 1.526 | 30.530 | 20.845 | -25.470 | 56.000 | 9.610 | 0.075 | 0.000 | QP |
| 12 | | 1.526 | 24.680 | 14.995 | -21.320 | 46.000 | 9.610 | 0.075 | 0.000 | AV |

Note:

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

| | |
|---|---------------------|
| Engineer: Bob Yu | |
| Site: TR1 | Time: 2017/09/14 |
| Limit: FCC_Part15.207_CE_AC Power | Margin: 0 |
| Probe: ENV216_101190(0.009-30MHz) | Polarity: Neutral |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1: Transmit at 2405MHz by Zigbee | |



| No | Mark | Frequency (MHz) | Measure Level (dBuV) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV) | Probe (dB) | Cable (dB) | Amp (dB) | Type |
|----|------|-----------------|----------------------|----------------------|-----------------|--------------|------------|------------|----------|------|
| 1 | | 0.154 | 52.716 | 43.097 | -13.066 | 65.781 | 9.593 | 0.025 | 0.000 | QP |
| 2 | | 0.154 | 36.117 | 26.499 | -19.664 | 55.781 | 9.593 | 0.025 | 0.000 | AV |
| 3 | | 0.190 | 52.469 | 42.842 | -11.568 | 64.037 | 9.598 | 0.028 | 0.000 | QP |
| 4 | | 0.190 | 39.600 | 29.974 | -14.437 | 54.037 | 9.598 | 0.028 | 0.000 | AV |
| 5 | | 0.202 | 48.429 | 38.802 | -15.099 | 63.528 | 9.598 | 0.029 | 0.000 | QP |
| 6 | | 0.202 | 33.201 | 23.574 | -20.327 | 53.528 | 9.598 | 0.029 | 0.000 | AV |
| 7 | | 0.258 | 40.869 | 31.239 | -20.627 | 61.496 | 9.598 | 0.032 | 0.000 | QP |
| 8 | | 0.258 | 28.213 | 18.583 | -23.283 | 51.496 | 9.598 | 0.032 | 0.000 | AV |
| 9 | | 0.574 | 45.811 | 36.175 | -10.189 | 56.000 | 9.590 | 0.045 | 0.000 | QP |
| 10 | * | 0.574 | 40.001 | 30.365 | -5.999 | 46.000 | 9.590 | 0.045 | 0.000 | AV |
| 11 | | 0.598 | 43.501 | 33.865 | -12.499 | 56.000 | 9.590 | 0.046 | 0.000 | QP |
| 12 | | 0.598 | 36.038 | 26.402 | -9.962 | 46.000 | 9.590 | 0.046 | 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

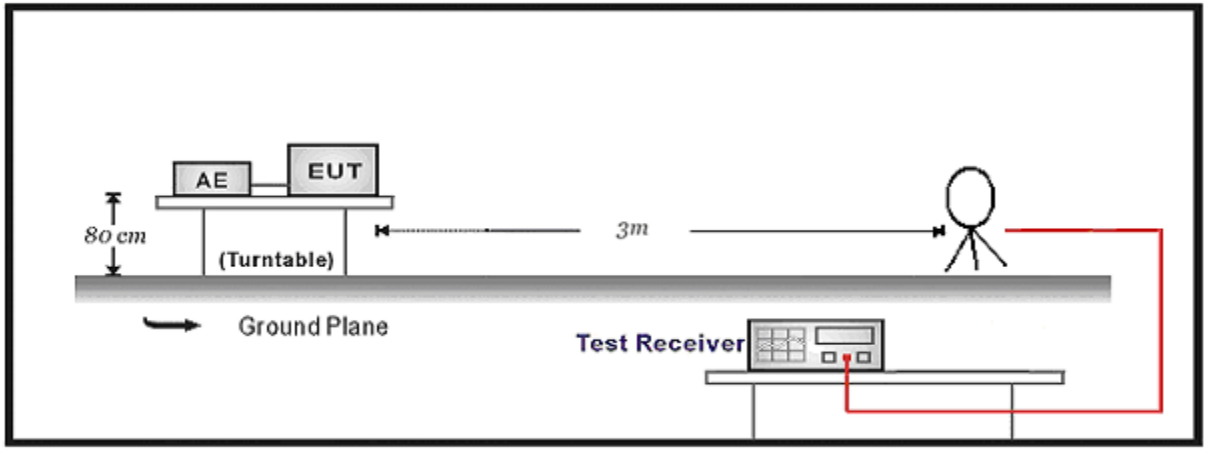
4.1. Test Equipment

| Radiated Emission(Below 1GHz) / AC-2 | | | | | |
|---|--------------|-----------------|------------|------------|---------------|
| Instrument | Manufacturer | Type No. | Serial No. | Cal. Date | Cal. Due Date |
| EMI Test Receiver | R&S | ESCI | 100573 | 2017.03.29 | 2018.03.28 |
| Loop Antenna | R&S | HFH2-Z2 | 833799/003 | 2016.11.16 | 2017.11.15 |
| Bilog Antenna | Teseq GmbH | CBL6112D | 27611 | 2016.10.16 | 2017.10.15 |
| Coaxial Cable | Huber+Suhner | SUCOFLEX 106 | AC2-C | 2017.03.02 | 2018.03.01 |
| Temperature/Humidity Meter | Zhichen | ZC1-2 | AC2-TH | 2017.01.04 | 2018.01.03 |
| Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards. | | | | | |

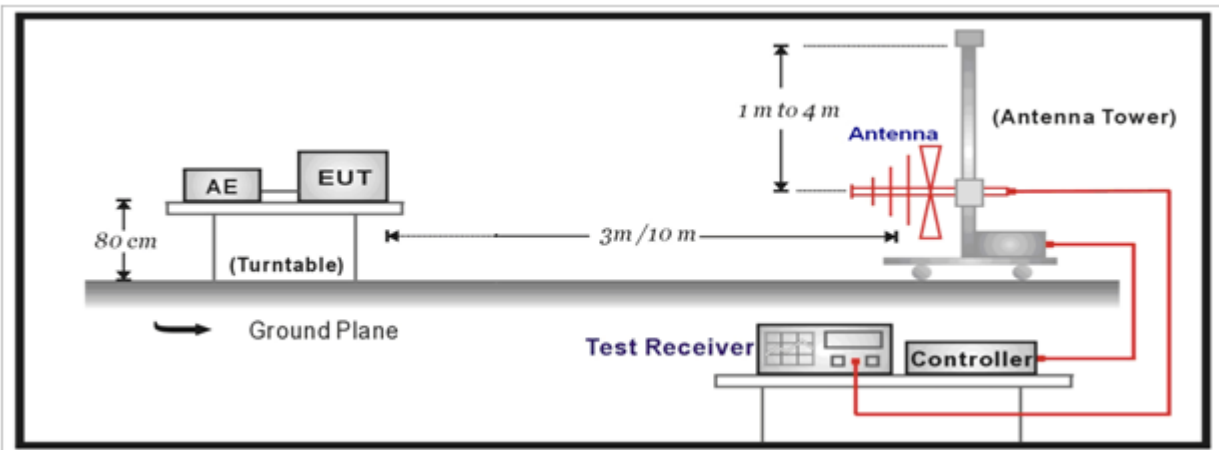
| Radiated Emission(Above 1GHz) / AC-5 | | | | | |
|---|--------------|-----------------|-------------|------------|---------------|
| Instrument | Manufacturer | Type No. | Serial No. | Cal. Date | Cal. Due Date |
| Spectrum Analyzer | Agilent | E4446A | MY45300103 | 2017.01.03 | 2018.01.02 |
| Preamplifier | Miteq | NSP1800-25 | 1364185 | 2017.05.06 | 2018.05.05 |
| Preamplifier | QTK | AP-040G | CHM-0906001 | 2017.05.06 | 2018.05.05 |
| DRG Horn | ETS-Lindgren | 3117 | 00123988 | 2017.01.22 | 2018.01.21 |
| Broad-Band Horn Antenna | Schwarzbeck | BBHA9170 | 294 | 2016.11.25 | 2017.11.24 |
| Coaxial Cable | Huber+Suhner | SUCOFLEX 106 | AC5-C1 | 2017.03.02 | 2018.03.01 |
| Coaxial Cable | Huber+Suhner | SUCOFLEX 106 | AC5-C2 | 2017.03.02 | 2018.03.01 |
| Coaxial Cable | Huber+Suhner | SUCOFLEX 102 | AC5-C3 | 2017.03.02 | 2018.03.01 |
| EMI Receiver | Agilent | N9038A | MY51210196 | 2017.06.10 | 2018.06.09 |
| Temperature/Humidity Meter | Zhichen | ZC1-2 | AC5-TH | 2017.01.04 | 2018.01.03 |
| Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards. | | | | | |

4.2. Test Setup

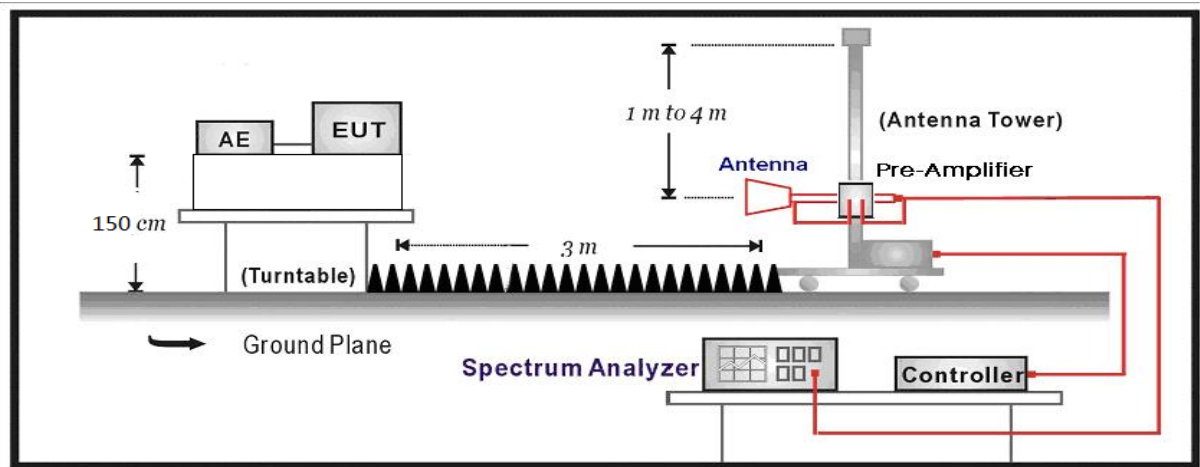
Below 30MHz Test Setup:



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 IC:

| 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 (μ V/m) | Field strength (dB μ V/m) | Measurement distance (m) |
| 0.009 - 0.49 | 2400/F(kHz) | 48.5 – 13.8 | 300 _(Note 1) |
| 0.49 - 1.705 | 24000/F(kHz) | 33.8 - 23 | 30 _(Note 1) |
| 1.705 - 30 | 30 | 29.5 | 30 _(Note 1) |
| 30 - 88 | 100 | 40 | 3 _(Note 2) |
| 88 - 216 | 150 | 43.5 | 3 _(Note 2) |
| 216 - 960 | 200 | 46 | 3 _(Note 2) |
| Above 960 | 500 | 54 | 3 _(Note 2) |

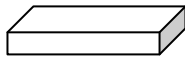
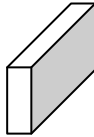
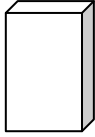
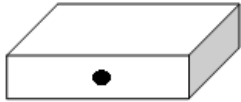


Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.4. Test Procedure

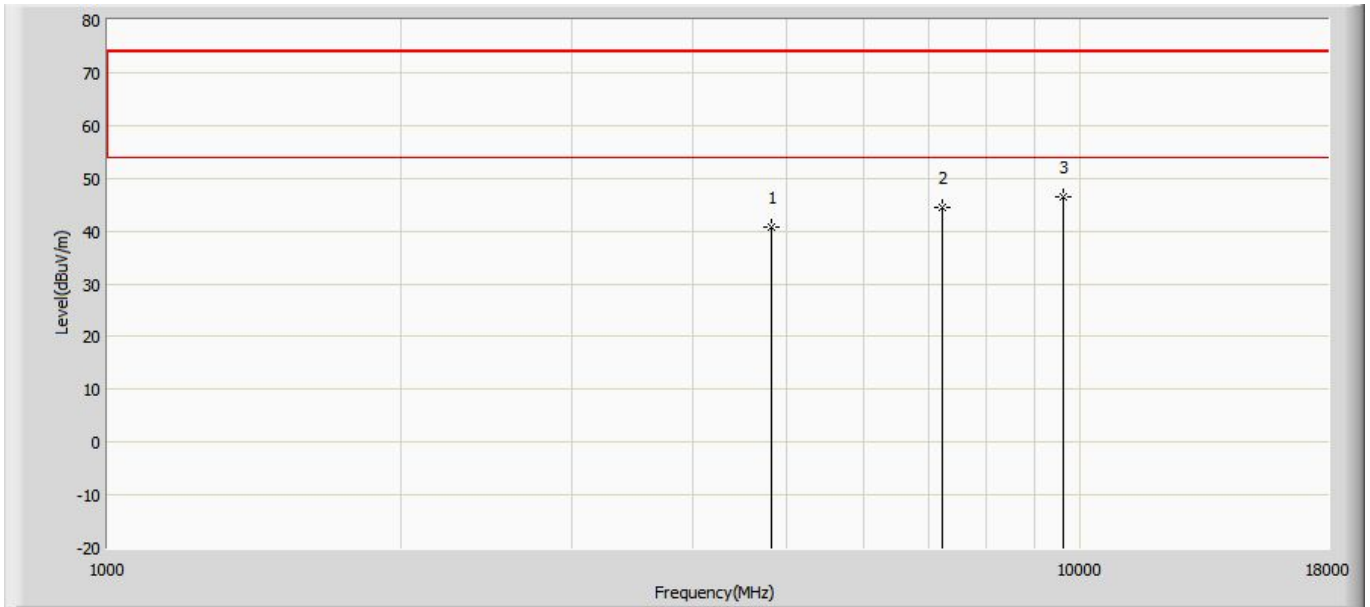
| Test Method | | | |
|-------------------------------------|---|-------------|--|
| | References Rule | Chapter | Description |
| <input type="checkbox"/> | ANSI C63.10 | 11.11 | Emissions in non-restricted frequency bands |
| | <input type="checkbox"/> ANSI C63.10 | 11.11.2 | Reference level measurement |
| | <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 checked="" type="checkbox"/> | Fixed position use | | |
| | <input type="checkbox"/> | Mobile position use | | |
| Test mode | Mode 1 | | | |
| 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 |
| |  | | | |

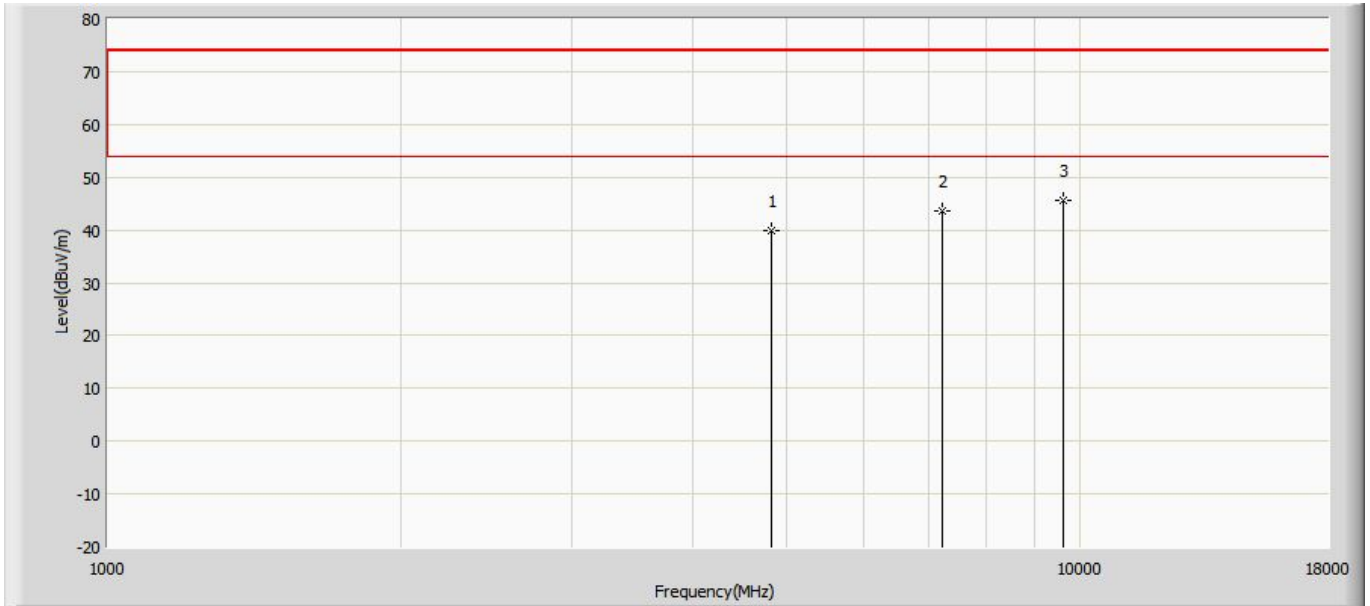
4.6. Test Result

| | |
|--|---------------------|
| Engineer: Slark | |
| Site: AC5 | Time: 2017/09/04 |
| 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 2405MHz by Zigbee | |



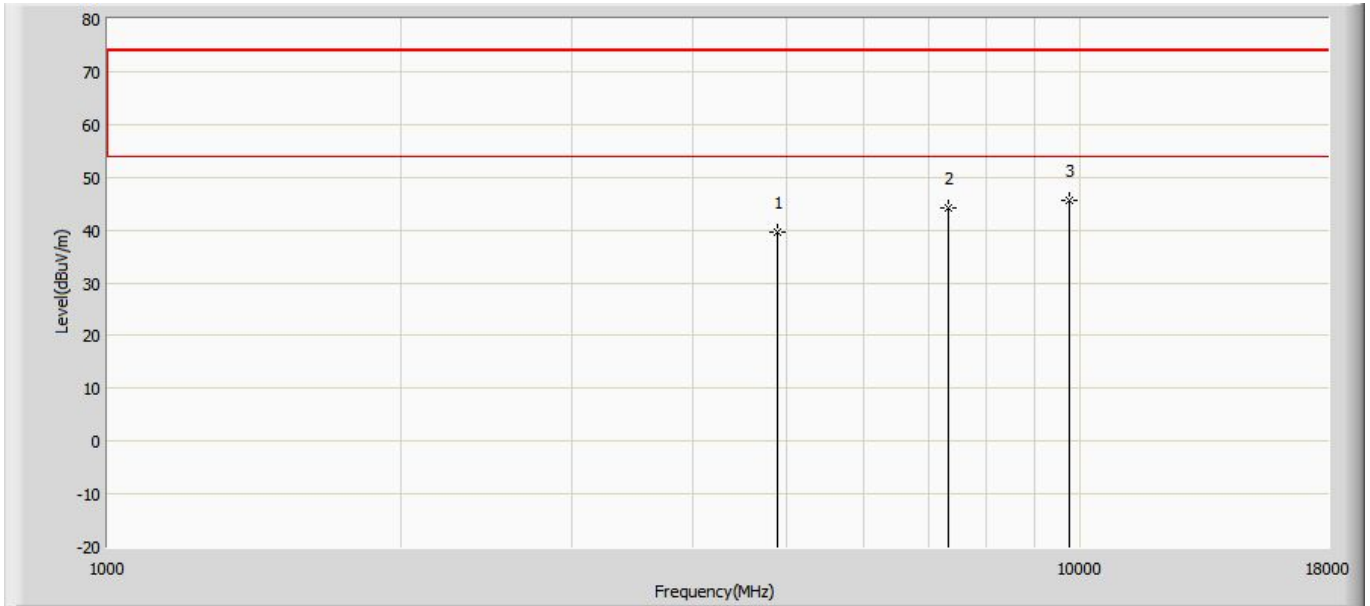
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 4810.000 | 40.714 | 53.724 | -33.286 | 74.000 | -13.010 | PK |
| 2 | | 7215.000 | 44.509 | 52.219 | -29.491 | 74.000 | -7.710 | PK |
| 3 | * | 9620.000 | 46.503 | 48.093 | -27.497 | 74.000 | -1.590 | PK |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site: AC5 | Time: 2017/09/04 |
| 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 1:Transmit at 2405MHz by Zigbee | |



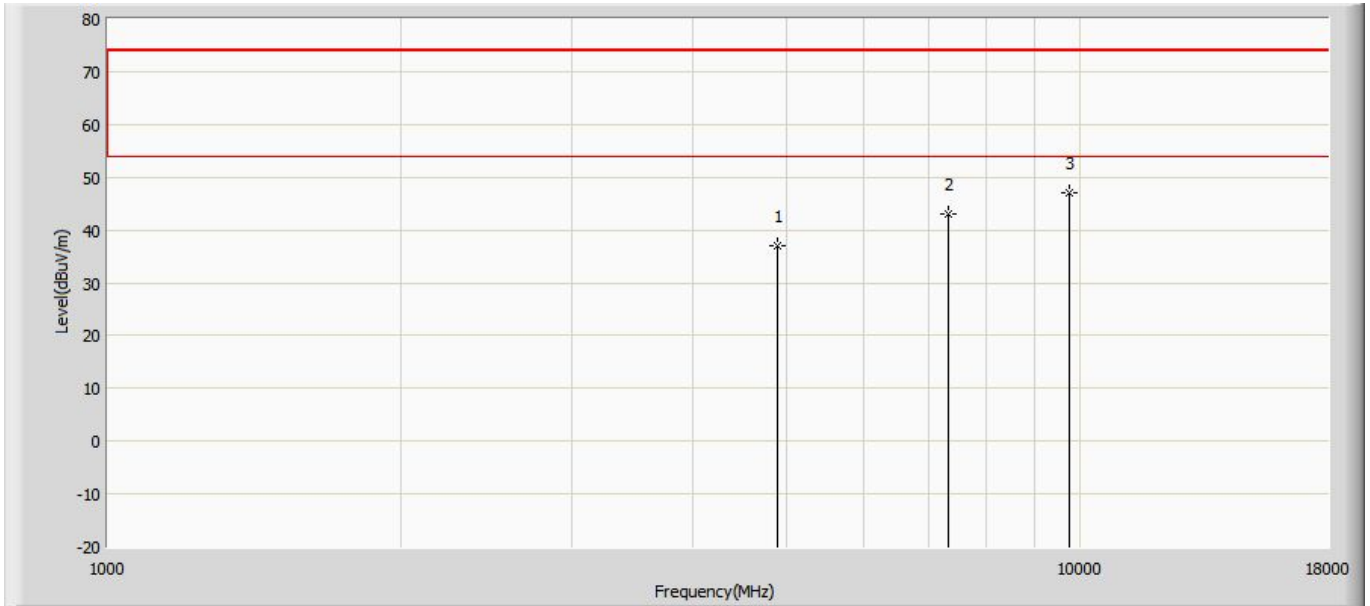
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 4810.000 | 39.832 | 52.842 | -34.168 | 74.000 | -13.010 | PK |
| 2 | | 7215.000 | 43.594 | 51.304 | -30.406 | 74.000 | -7.710 | PK |
| 3 | * | 9620.000 | 45.662 | 47.252 | -28.338 | 74.000 | -1.590 | PK |

| | |
|--|---------------------|
| Engineer: Slark | |
| Site: AC5 | Time: 2017/09/04 |
| 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 Zigbee | |



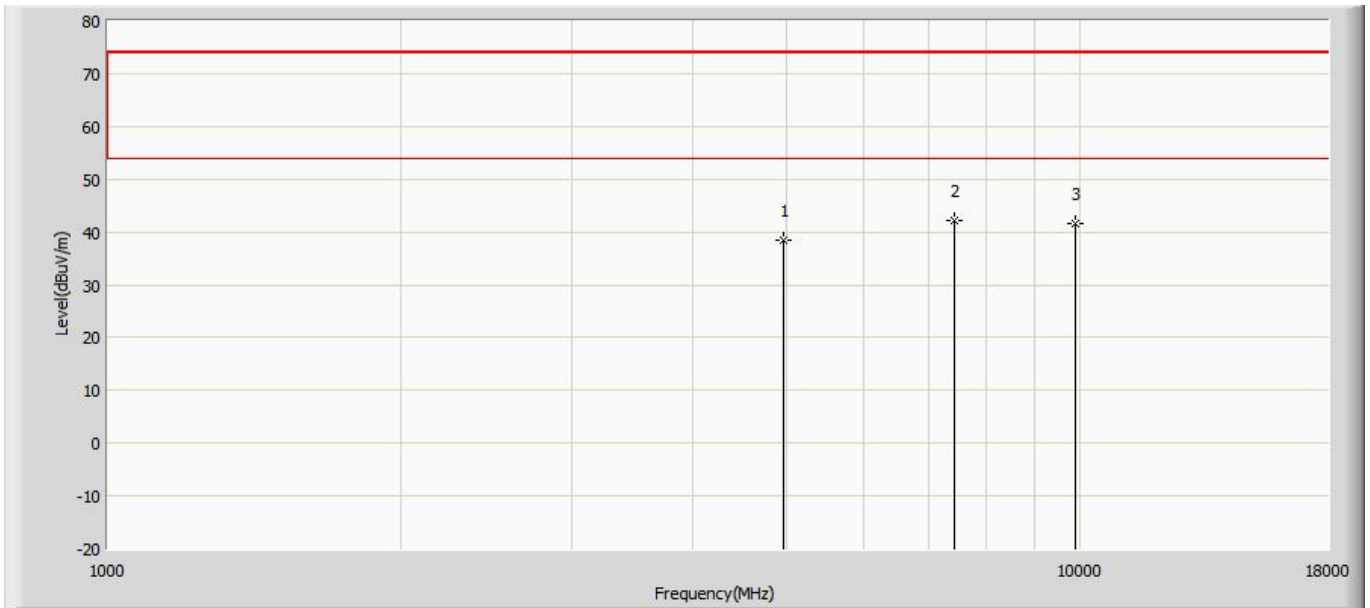
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 4880.000 | 39.489 | 52.499 | -34.511 | 74.000 | -13.010 | PK |
| 2 | | 7320.000 | 44.100 | 51.810 | -29.900 | 74.000 | -7.710 | PK |
| 3 | * | 9760.000 | 45.479 | 47.069 | -28.521 | 74.000 | -1.590 | PK |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site: AC5 | Time: 2017/09/04 |
| 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 1:Transmit at 2440MHz by Zigbee | |



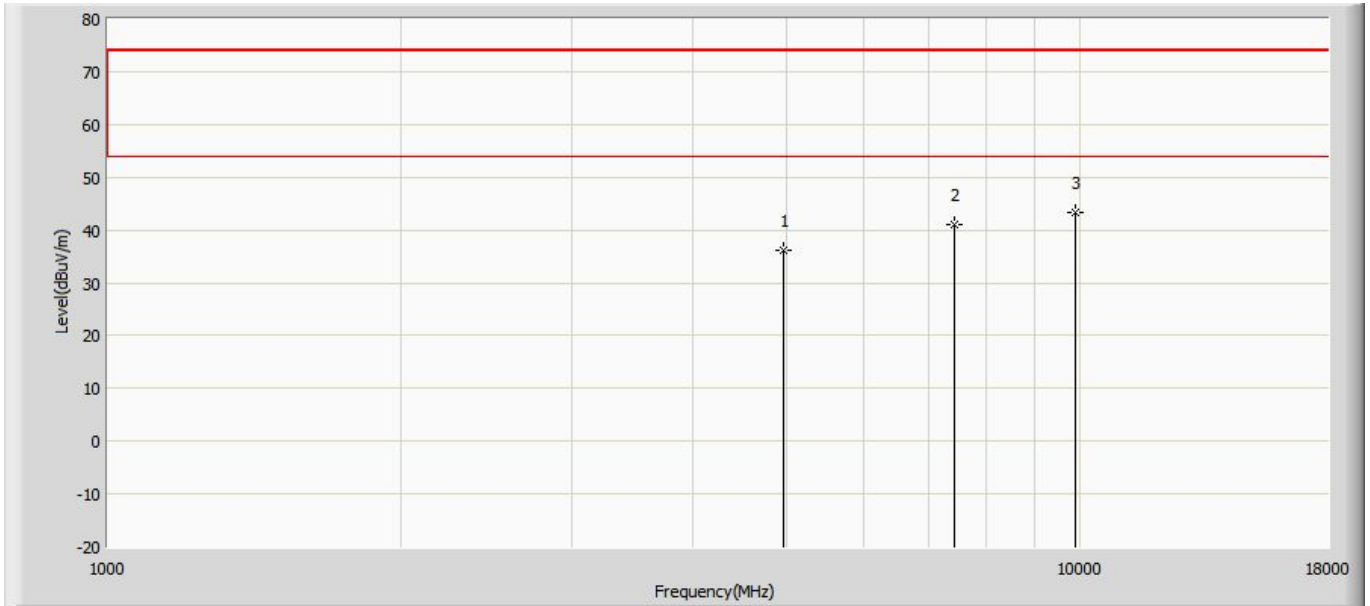
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 4880.000 | 37.140 | 50.150 | -36.860 | 74.000 | -13.010 | PK |
| 2 | | 7320.000 | 42.910 | 50.620 | -31.090 | 74.000 | -7.710 | PK |
| 3 | * | 9760.000 | 46.934 | 48.524 | -27.066 | 74.000 | -1.590 | PK |

| | |
|--|---------------------|
| Engineer: Slark | |
| Site: AC5 | Time: 2017/09/04 |
| 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 2475MHz by Zigbee | |



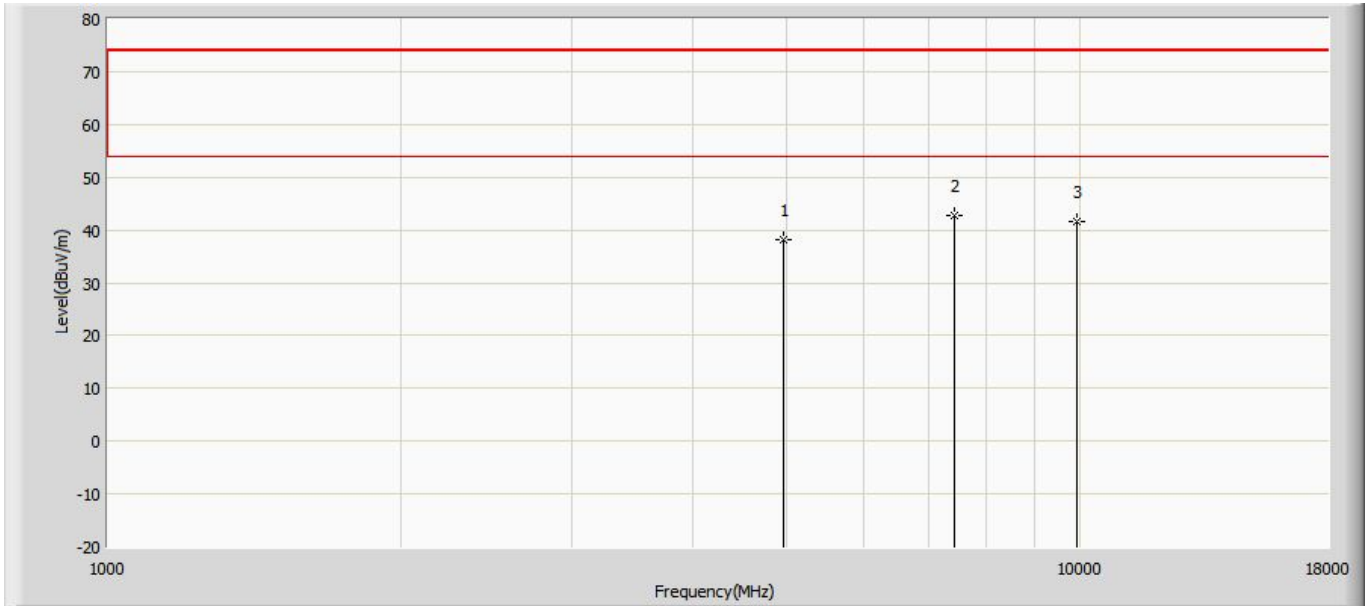
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 4950.000 | 38.487 | 50.717 | -35.513 | 74.000 | -12.230 | PK |
| 2 | * | 7425.000 | 42.039 | 48.699 | -31.961 | 74.000 | -6.660 | PK |
| 3 | | 9900.000 | 41.484 | 43.444 | -32.516 | 74.000 | -1.960 | PK |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site: AC5 | Time: 2017/09/04 |
| 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 1:Transmit at 2475MHz by Zigbee | |



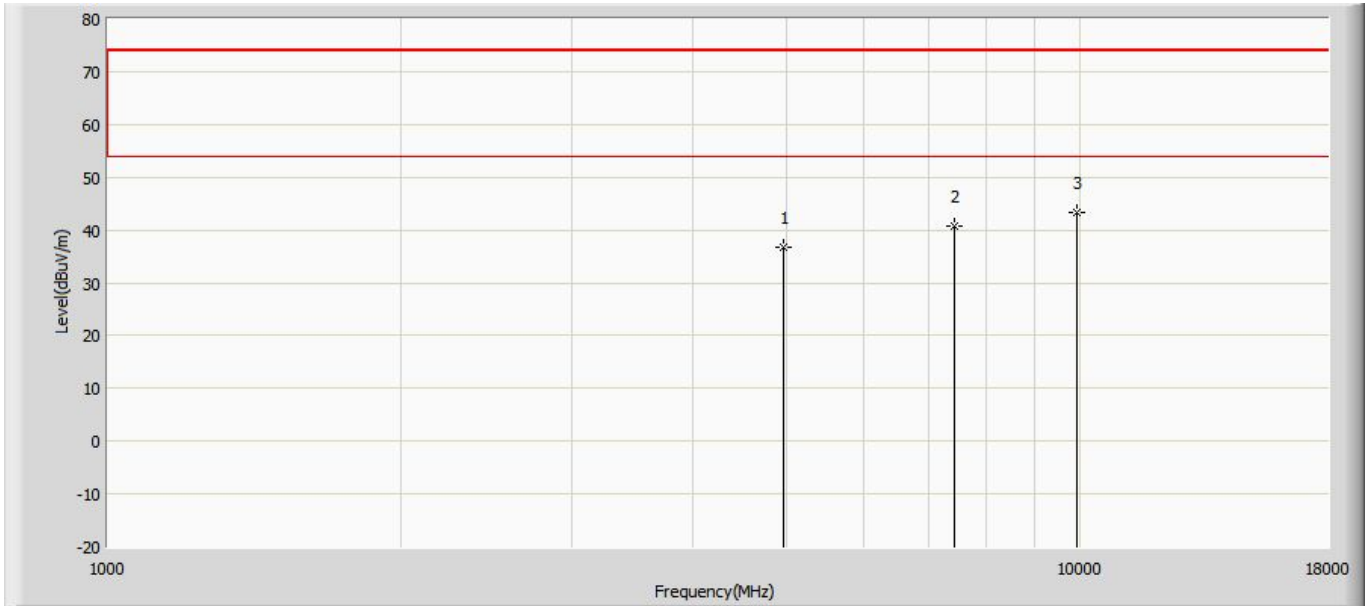
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 4950.000 | 36.063 | 48.293 | -37.937 | 74.000 | -12.230 | PK |
| 2 | | 7425.000 | 40.916 | 47.576 | -33.084 | 74.000 | -6.660 | PK |
| 3 | * | 9900.000 | 43.323 | 45.283 | -30.677 | 74.000 | -1.960 | PK |

| | |
|--|---------------------|
| Engineer: Slark | |
| Site: AC5 | Time: 2017/09/04 |
| 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 Zigbee | |



| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 4960.000 | 38.132 | 50.362 | -35.868 | 74.000 | -12.230 | PK |
| 2 | * | 7440.000 | 42.707 | 49.367 | -31.293 | 74.000 | -6.660 | PK |
| 3 | | 9920.000 | 41.705 | 43.665 | -32.295 | 74.000 | -1.960 | PK |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site: AC5 | Time: 2017/09/04 |
| 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 1:Transmit at 2480MHz by Zigbee | |



| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 4960.000 | 36.792 | 49.022 | -37.208 | 74.000 | -12.230 | PK |
| 2 | | 7440.000 | 40.743 | 47.403 | -33.257 | 74.000 | -6.660 | PK |
| 3 | * | 9920.000 | 43.297 | 45.257 | -30.703 | 74.000 | -1.960 | PK |

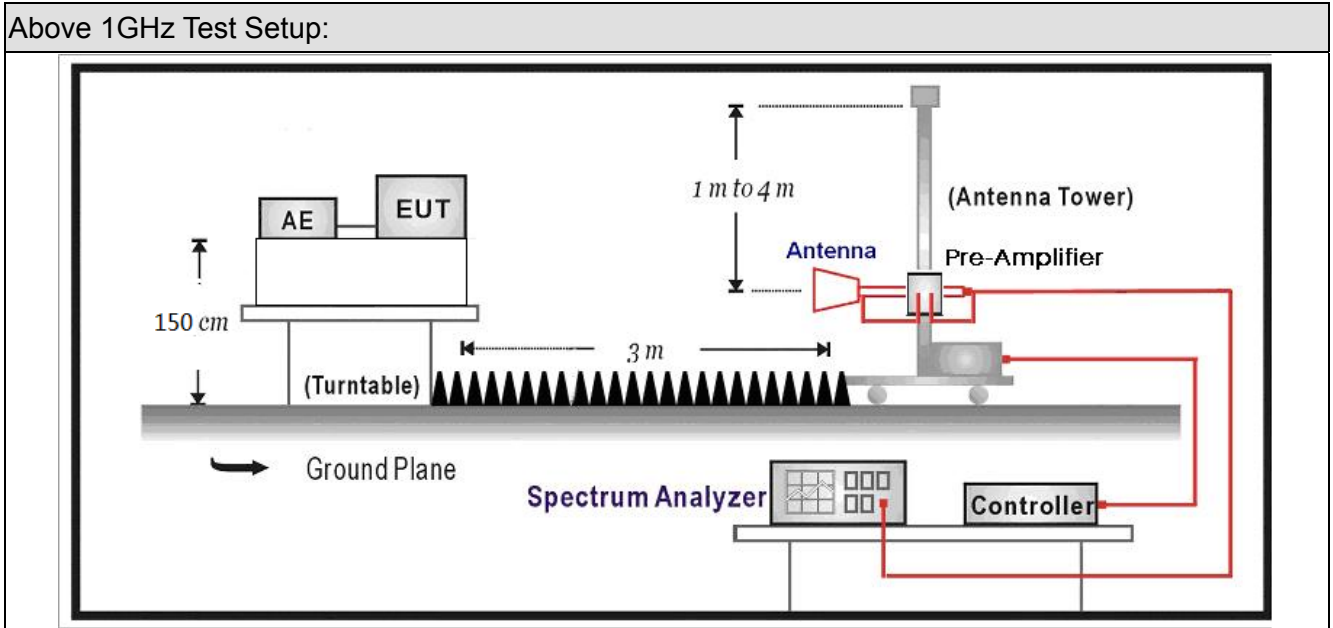
Note: All spurious emission were within 3dB of the original report.

5. Radiated Emission Band Edge

5.1. Test Equipment

| Radiated Emission Band Edge/ AC-5 | | | | | |
|---|--------------|-----------------|------------|------------|---------------|
| Instrument | Manufacturer | Type No. | Serial No. | Cal. Date | Cal. Due Date |
| EMI Receiver | Agilent | N9038A | MY51210196 | 2017.07.16 | 2018.07.15 |
| Pre-Amplifier | Miteq | NSP1800-25 | 1364185 | 2017.05.03 | 2018.05.02 |
| DRG Horn Antenna | ETS-Lindgren | 3117 | 00167055 | 2017.07.12 | 2018.07.11 |
| Broad-Band Horn Antenna | Schwarzbeck | BBHA9170 | 294 | 2017.02.23 | 2019.02.22 |
| Coaxial Cable | Huber+Suhner | SUCOFLEX 106 | AC5-C1 | 2017.02.28 | 2018.02.27 |
| Coaxial Cable | Huber+Suhner | SUCOFLEX 106 | AC5-C2 | 2017.02.28 | 2018.02.27 |
| Temperature/Humidity Meter | Zhichen | ZC1-2 | AC5-TH | 2017.01.05 | 2018.01.04 |
| Note: All equipment are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards. | | | | | |

5.2. Test Setup



5.3. Limit

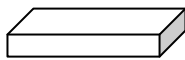
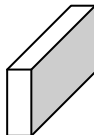
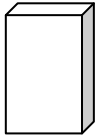
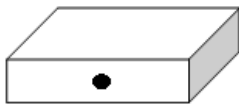

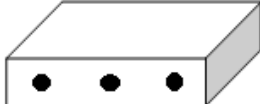
| Band edge Limit | | | | |
|-----------------------|----------|----------------------|-----------|--------------|
| Frequency bands (MHz) | Detector | Limit (dB μ V/m) | RBW (MHz) | Distance (m) |
| 2310-2390 | PK | 74 | 1 | 3 |
| 2483.5-2500 | AV | 54 | 1 | 3 |

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

5.4. Test Procedure

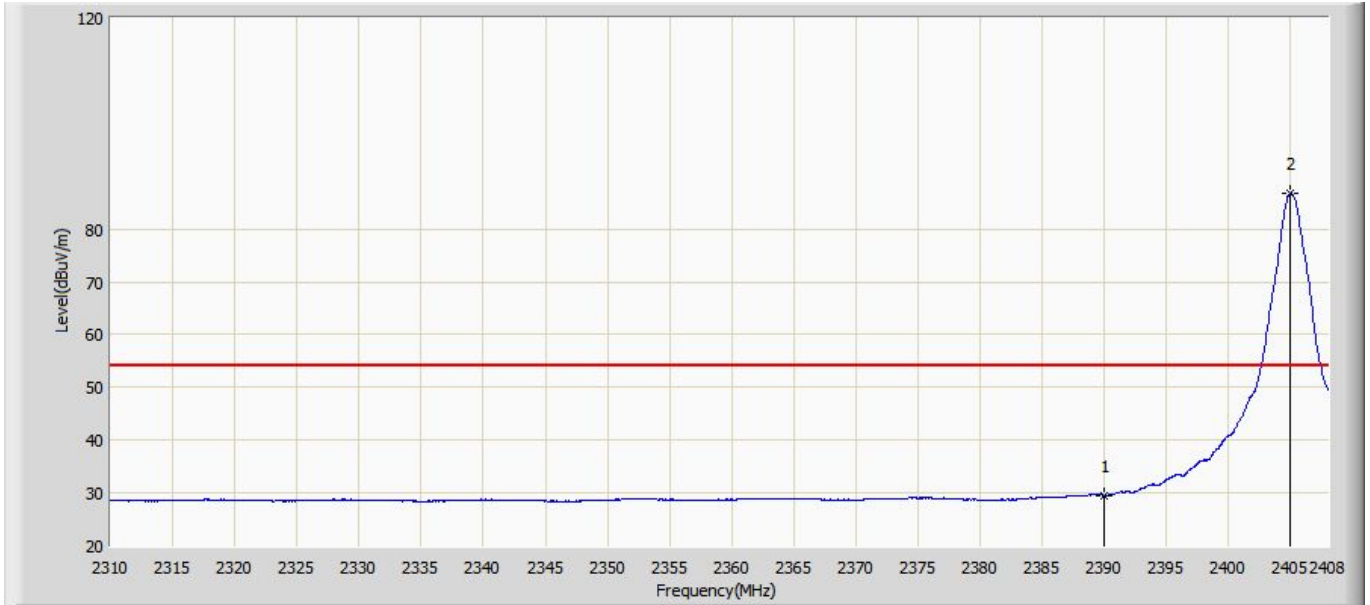
| Test Method | | | |
|-------------------------------------|---|-------------|--|
| | References Rule | Chapter | Description |
| <input checked="" type="checkbox"/> | ANSI C63.10 | 6.10 | Band-edge testing |
| | <input checked="" type="checkbox"/> ANSI C63.10 | 6.10.5 | Restricted-band band-edge measurements |
| | <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 |

5.5. EUT test definition

| Item | Radiated Emission Band Edge | | | |
|-----------------|--|--|---|---|
| Device Category | <input checked="" type="checkbox"/> | Fixed position use | | |
| | <input type="checkbox"/> | Mobile position use | | |
| Test mode | Mode 1 | | | |
| 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 |
| |  | | | |

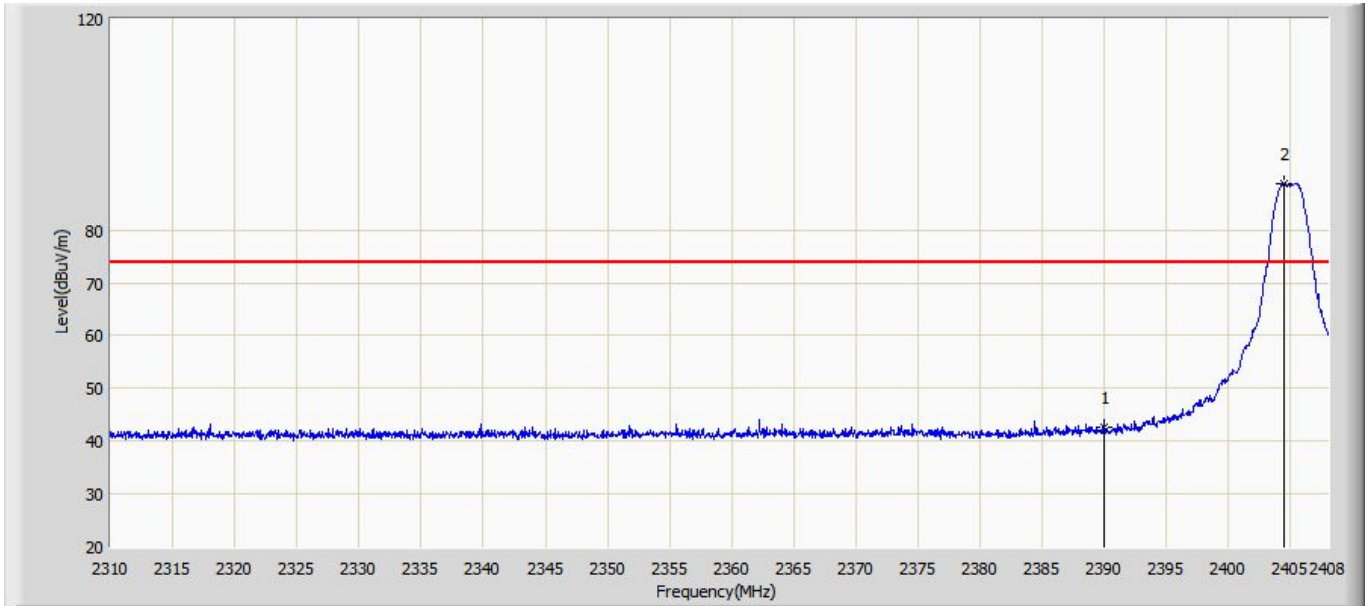
5.6. Test Result

| | |
|--|---------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Vertical |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2405MHz by Zigbee | |



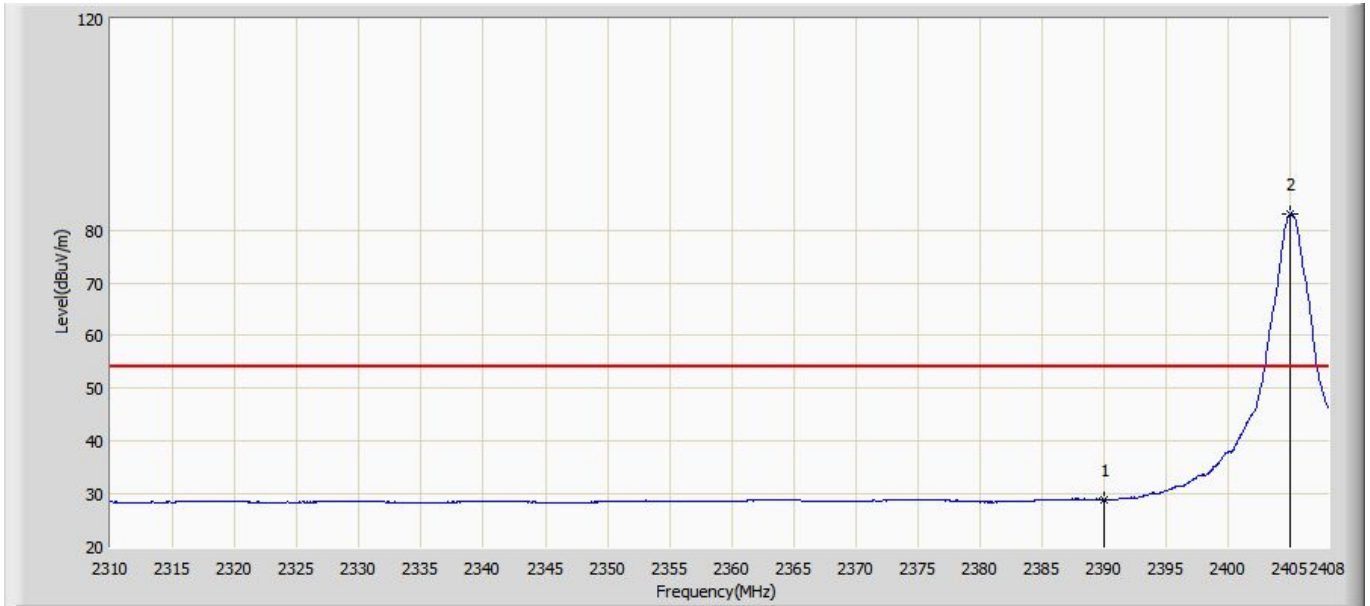
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 2390.000 | 29.580 | 0.532 | -24.420 | 54.000 | 29.048 | AV |
| 2 | * | 2405.011 | 86.656 | 57.728 | N/A | N/A | 28.928 | AV |

| | |
|--|---------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Vertical |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2405MHz by Zigbee | |



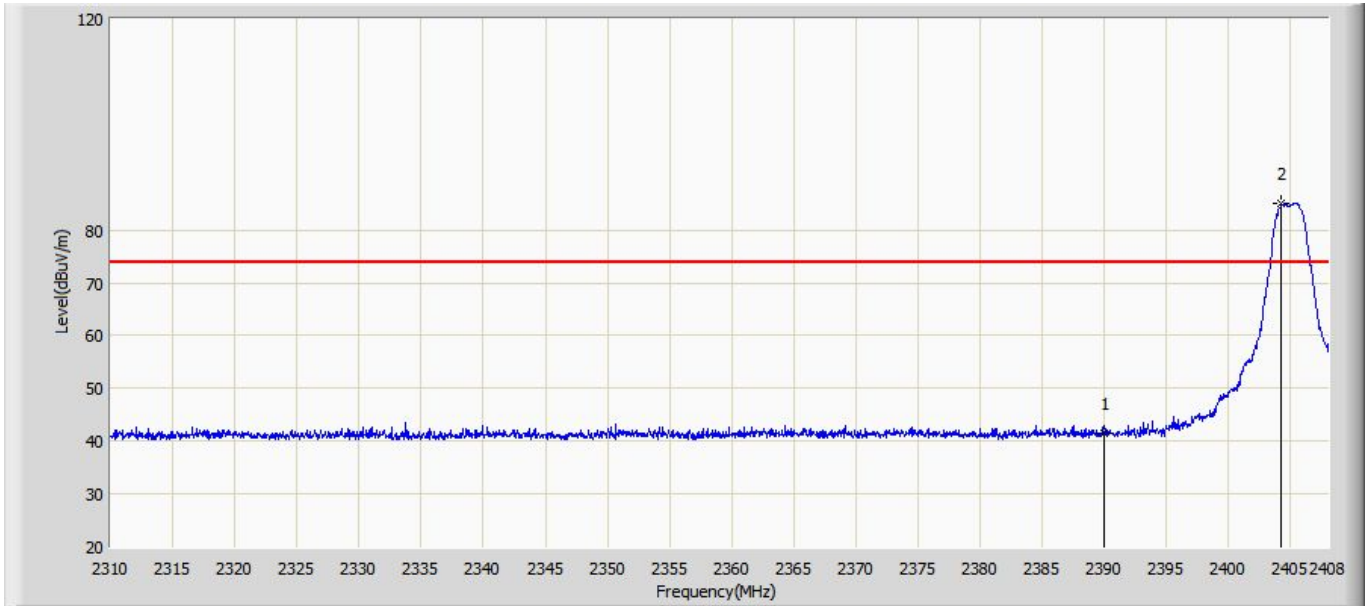
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 2390.000 | 42.517 | 13.469 | -31.483 | 74.000 | 29.048 | PK |
| 2 | * | 2404.521 | 88.800 | 59.867 | N/A | N/A | 28.933 | PK |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Horizontal |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2405MHz by Zigbee | |



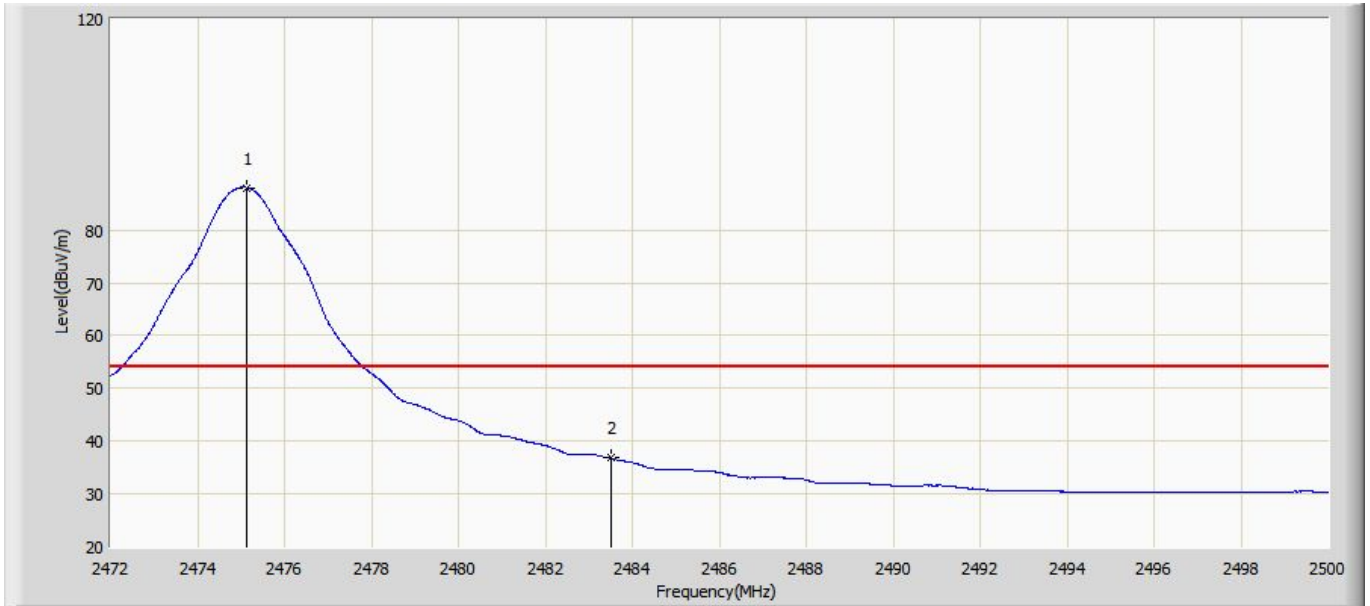
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 2390.000 | 28.914 | -0.134 | -25.086 | 54.000 | 29.048 | AV |
| 2 | * | 2404.962 | 83.016 | 54.088 | N/A | N/A | 28.928 | AV |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Horizontal |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2405MHz by Zigbee | |



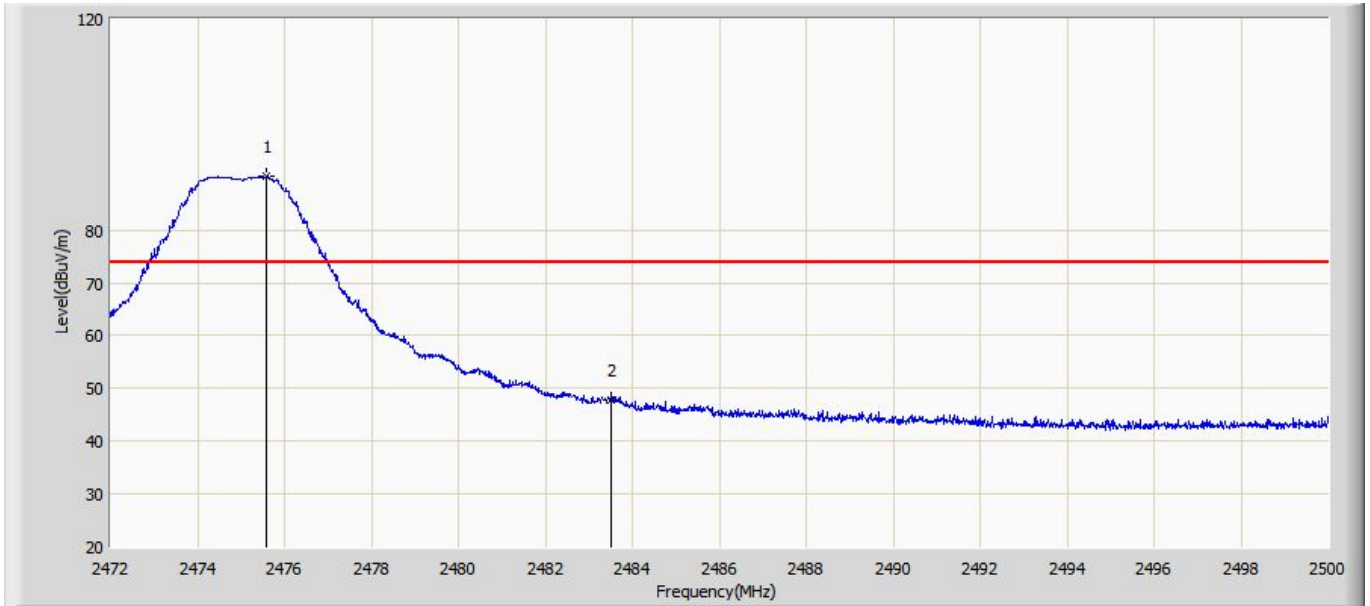
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | | 2390.000 | 41.438 | 12.390 | -32.562 | 74.000 | 29.048 | PK |
| 2 | * | 2404.276 | 84.931 | 55.995 | N/A | N/A | 28.936 | PK |

| | |
|--|---------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Vertical |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2475MHz by Zigbee | |



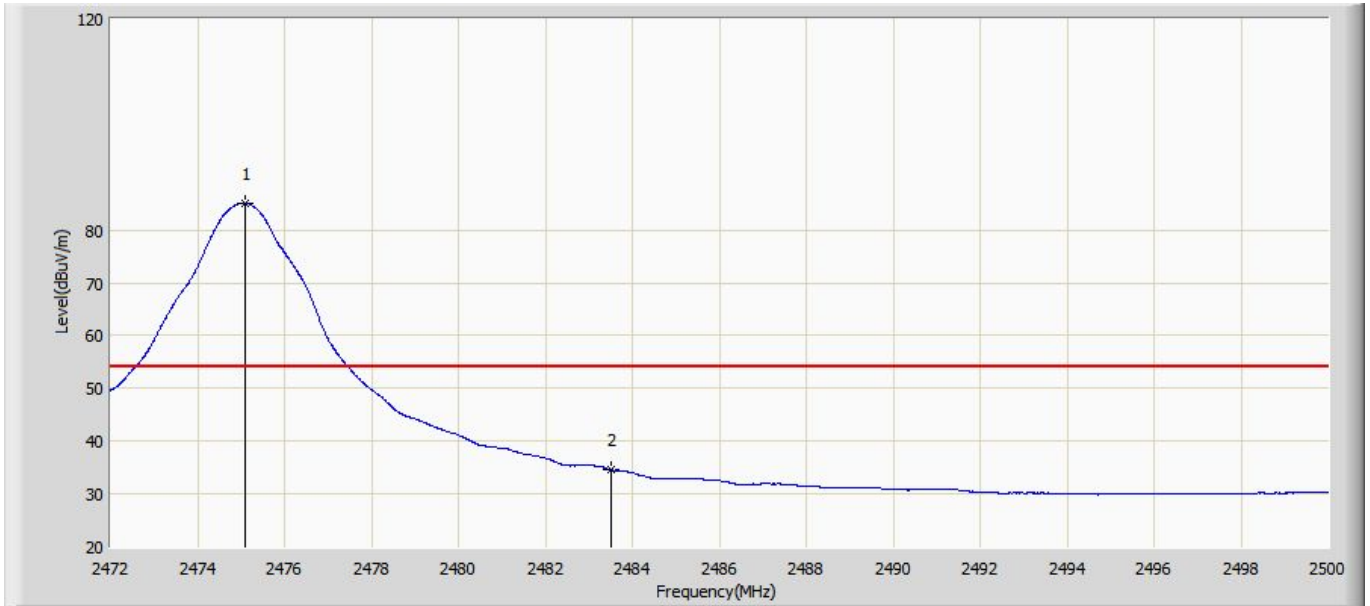
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | * | 2475.122 | 88.048 | 57.861 | N/A | N/A | 30.187 | AV |
| 2 | | 2483.500 | 36.814 | 6.330 | -17.186 | 54.000 | 30.484 | AV |

| | |
|--|---------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Vertical |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2475MHz by Zigbee | |



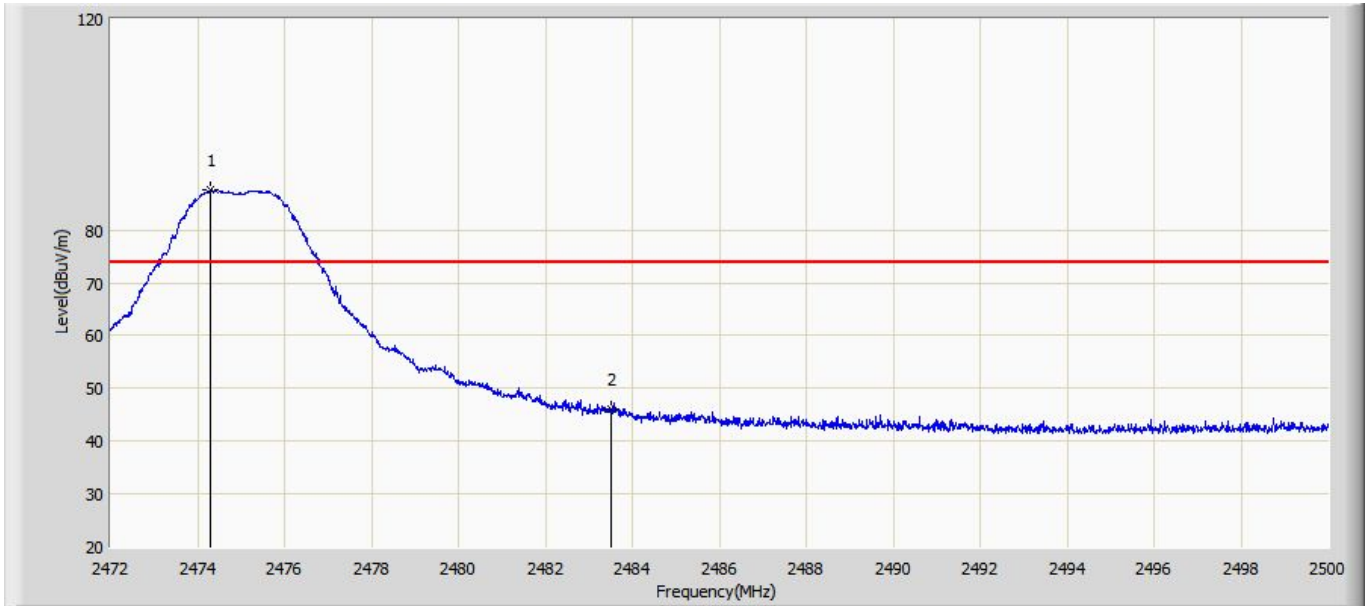
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | * | 2475.598 | 90.079 | 59.850 | N/A | N/A | 30.229 | PK |
| 2 | | 2483.500 | 47.697 | 17.213 | -26.303 | 74.000 | 30.484 | PK |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Horizontal |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2475MHz by Zigbee | |



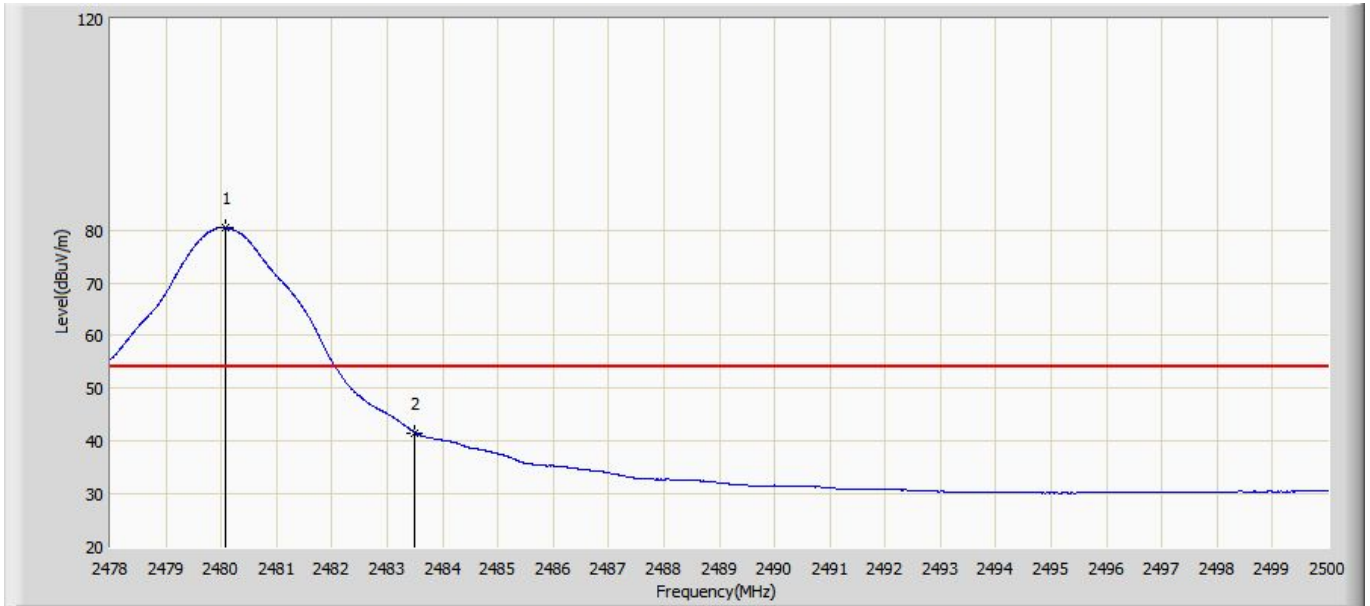
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | * | 2475.094 | 85.041 | 54.856 | N/A | N/A | 30.185 | AV |
| 2 | | 2483.500 | 34.608 | 4.124 | -19.392 | 54.000 | 30.484 | AV |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Horizontal |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2475MHz by Zigbee | |



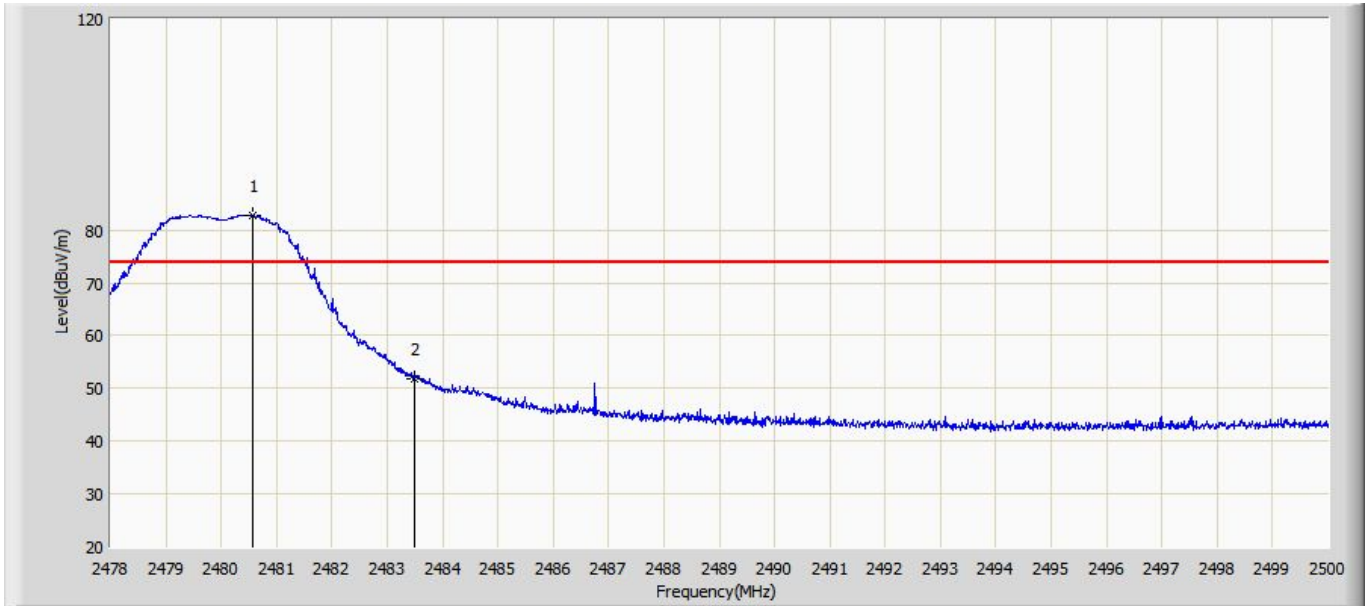
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | * | 2474.296 | 87.581 | 57.466 | N/A | N/A | 30.115 | PK |
| 2 | | 2483.500 | 45.944 | 15.459 | -28.056 | 74.000 | 30.484 | PK |

| | |
|--|---------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Vertical |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2480MHz by Zigbee | |



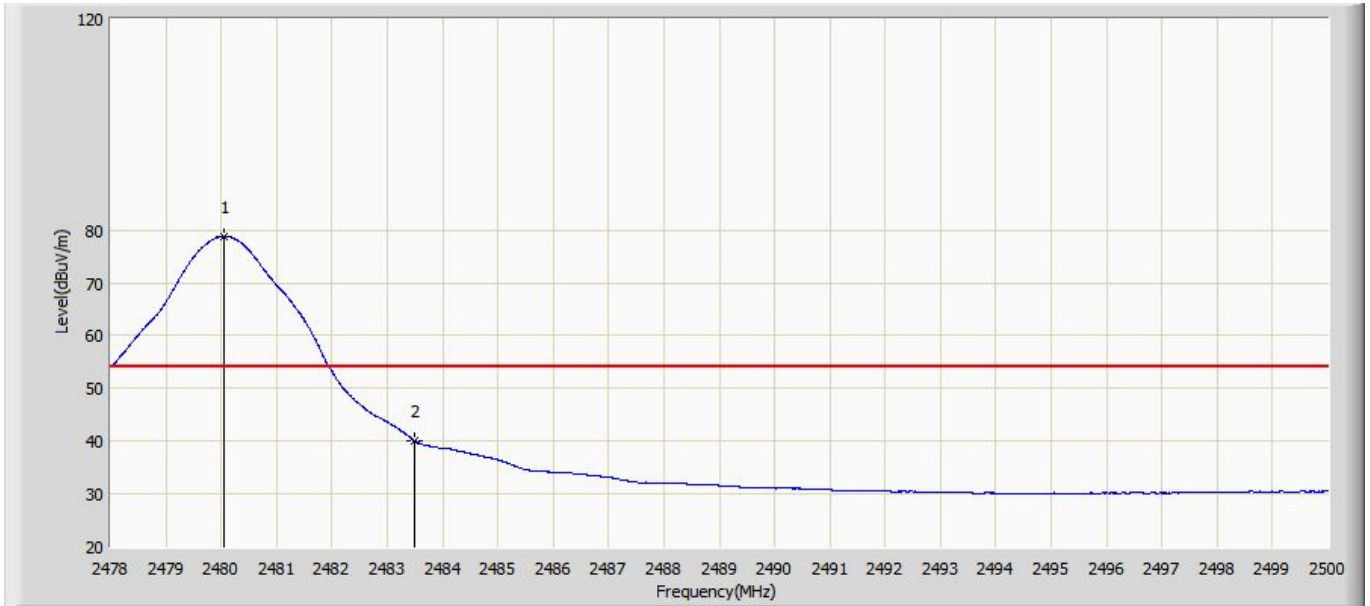
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | * | 2480.090 | 80.411 | 49.896 | N/A | N/A | 30.515 | AV |
| 2 | | 2483.500 | 41.617 | 11.133 | -12.383 | 54.000 | 30.484 | AV |

| | |
|--|---------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Vertical |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2480MHz by Zigbee | |



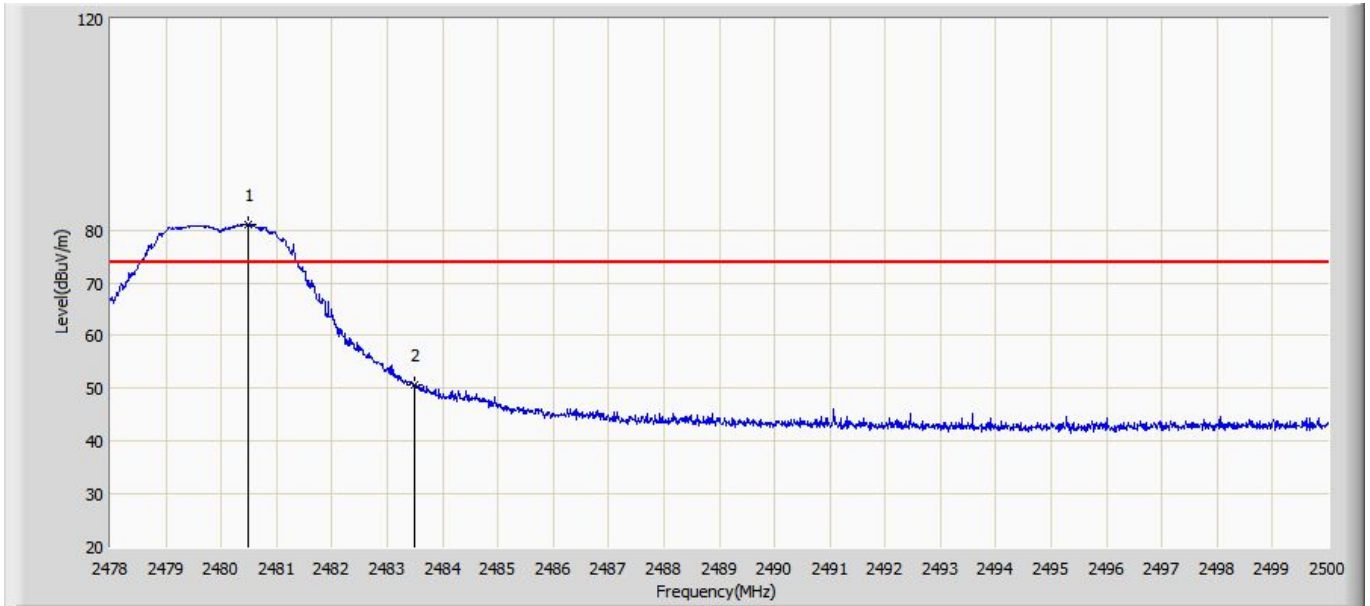
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | * | 2480.574 | 82.639 | 52.128 | N/A | N/A | 30.511 | PK |
| 2 | | 2483.500 | 51.689 | 21.205 | -22.311 | 74.000 | 30.484 | PK |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Horizontal |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2480MHz by Zigbee | |



| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | * | 2480.057 | 78.736 | 48.221 | N/A | N/A | 30.515 | AV |
| 2 | | 2483.500 | 40.024 | 9.540 | -13.976 | 54.000 | 30.484 | AV |

| | |
|--|----------------------|
| Engineer: Slark | |
| Site:AC5 | Time: 2017/09/14 |
| Limit: FCC_Part15.209_RE(3m) | Margin: 0 |
| Probe: Horn_3117_00167055(1-18GHz) | Polarity: Horizontal |
| EUT: LED Lamp | Power: AC 120V/60Hz |
| Note: Mode 1:Transmit at 2480MHz by Zigbee | |



| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1 | * | 2480.475 | 81.029 | 50.517 | N/A | N/A | 30.512 | PK |
| 2 | | 2483.500 | 50.734 | 20.250 | -23.266 | 74.000 | 30.484 | PK |

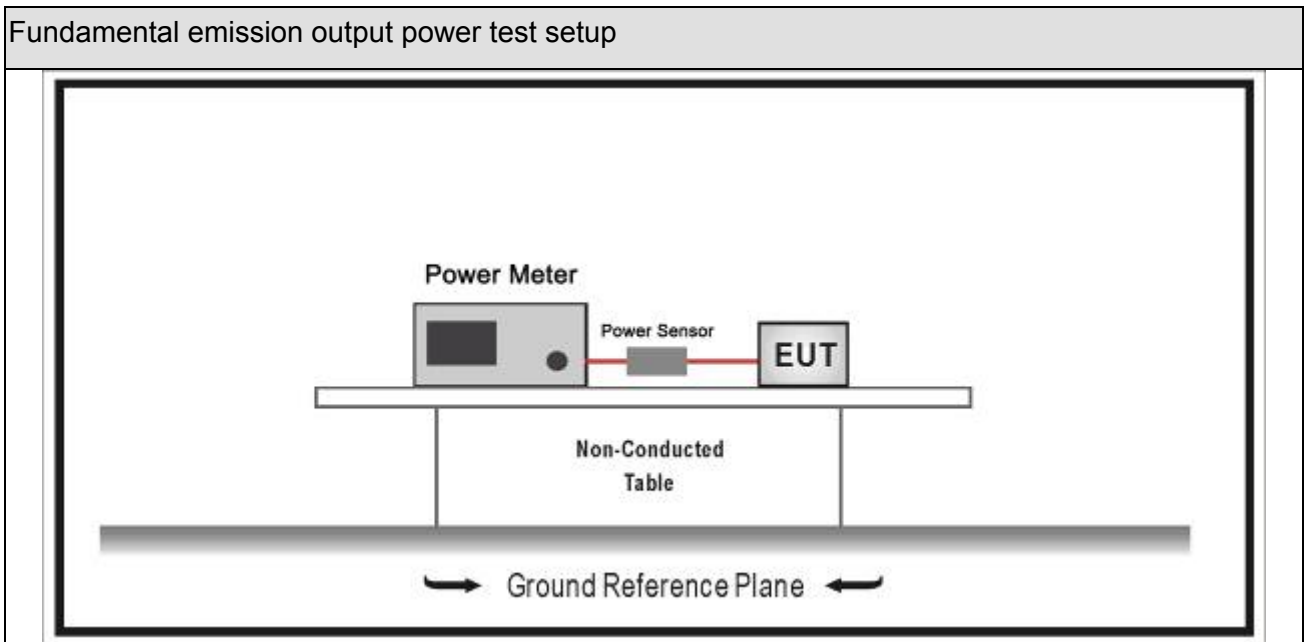
6. Fundamental emission output power

6.1. Test Equipment

| Fundamental emission output power/ TR-8 | | | | | |
|---|--------------|----------|------------|------------|---------------|
| Instrument | Manufacturer | Type No. | Serial No. | Cal. Date | Cal. Due Date |
| Spectrum Analyzer | Agilent | E4446A | MY45300103 | 2017.01.03 | 2018.01.02 |
| Spectrum Analyzer | Agilent | N9010A | MY48030494 | 2017.02.04 | 2018.02.03 |
| Wideband Peak Power Meter | Anritsu | ML2495A | 0905006 | 2016.10.14 | 2017.10.13 |
| Power Sensor | Anritsu | MA2411B | 0846014 | 2016.10.14 | 2017.10.13 |
| Temperature/Humidity Meter | zhicheng | ZC1-2 | TR8-TH | 2017.04.10 | 2018.04.09 |

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

6.2. Test Setup



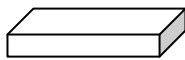
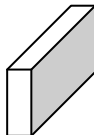
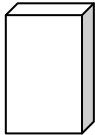
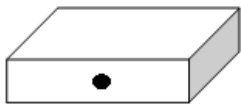
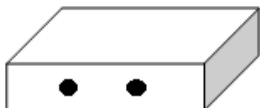

6.3. Limit

| 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"/> | emits multiple directional beams but does not do emit multiple directional beams simultaneously | $P_{out} \leq 30 - [(G_{TX} - 6)]/3$ |
| <input type="checkbox"/> | operates simultaneously on multiple directional beams using the same or different frequency channels | $P_{out} \leq 30 - [(G_{TX} - 6)]/3 + 8\text{dB}$ |
| <input type="checkbox"/> | single directional beam | $P_{out} \leq 30 - [(G_{TX} - 6)]/3$ |
| <p>Note 1 : G_{TX} directional gain of transmitting antennas.</p> <p>Note 2 : P_{out} is maximum peak conducted output power .</p> | | |

6.4. 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 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 type="checkbox"/> | ANSI C63.10 | 11.9.1.3 | PKPM1 Peak power meter method | |
| <input checked="" 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 checked="" type="checkbox"/> | ANSI C63.10 | | 11.9.2.3 | Measurement using a power meter (PM) |
| | | <input checked="" 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 |

6.5. EUT test definition

| Item | Fundamental emission output power | | | |
|-----------------|--|--|---|---|
| Device Category | <input checked="" type="checkbox"/> | Fixed position use | | |
| | <input type="checkbox"/> | Mobile position use | | |
| 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 |
| |  | | | |

6.6. Test Result

| | | | |
|--------------|---------------|-----------|----------------|
| Product Name | : LED Lamp | Power | : AC 120V/60Hz |
| Test Mode | : Mode 1 | Test Site | : TR8 |
| Mode No. | : 9290012575A | Test Date | : 2017.09.14 |

| Mode | Channel | Test Frequency (MHz) | Average Power Output (dBm) | Limit (dBm) | Result |
|------|---------|----------------------|----------------------------|-------------|--------|
| 1 | 11 | 2405 | 4.06 | 30 | Pass |
| 1 | 20 | 2450 | 4.16 | 30 | Pass |
| 1 | 25 | 2475 | 3.95 | 30 | Pass |
| 1 | 26 | 2480 | -3.64 | 30 | Pass |

————— The End —————