



# FCC TEST REPORT

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**LAB LOCATION:**  
**DATE IN:**

**DONG GUAN, CHINA**  
**July 19, 2016**

**REPORT NUMBER:**  
**DATE OUT:**

**65316-050906**  
**July 30, 2016**

Product Description : NetBright High Performance Security Light

Style No. : MBN3000

P.O/Order No. : /

FCC ID : W7DMBN3000

Applicant's name : Wireless Environment LLC  
Address : 57E Washington Street, Chagrin Falls, Ohio, United States

Manufacturer : Bestek Electronics Co., Ltd  
Address : Xueyuan Road, 3<sup>rd</sup> Ind. Zone, Longxi, Longgang Town,  
Shenzhen, China Bestek Electronics Co., Ltd

Laboratory Name : Modern Testing Services (Dongguan) Limited  
Address : No.76, Liang Ping Road, Xin Jiu Wei Village, Liaobu,  
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Fax: (86)769-81120815

Report No. : 63116-050906

## TEST RESULT CERTIFICATION

**Applicant's name** ..... : Wireless Environment LLC  
**Address** ..... : 57E Washington Street, Chagrin Falls, Ohio, United States

**Manufacture's Name** ..... : Bestek Electronics Co., Ltd  
**Address** ..... : Xueyuan Road, 3rd Ind. Zone, Longxi, Longgang Town,  
 Shenzhen, China Bestek Electronics Co., Ltd

### Product description

**Trade Mark:** /  
**Product name** ..... : NetBright High Performance Security Light  
**Style No.** ..... :

**Standards** ..... : FCC Rules and Regulations Part 15 Subpart C Section 15.231  
 ANSI C63.10: 2013

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**Date of Test** ..... :  
**Date (s) of performance of tests** ..... : July 19, 2016 ~ July 30, 2016  
**Date of Issue** ..... : July 30, 2016  
**Test Result** ..... : Pass

Prepared by:



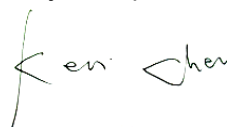
JANG Ping, Loken  
Project Engineer

Reviewed by:



WANG Yang, Oscar  
Project Supervisor

Approved by:



CHEN Chu Peng, Ken  
EMC Manager

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## 1. TEST SUMMARY

### 1.1 Description of Test

| FCC Rules         | Description of Test                             | Result    |
|-------------------|-------------------------------------------------|-----------|
| Section 15.231(a) | Electric Field Strength of Fundamental Emission | Compliant |
| Section 15.231(a) | Electric Field Strength of Spurious Emission    | Compliant |
| Section 15.231(b) | Duty Cycle                                      | Compliant |
| Section 15.231(c) | 20dB bandwidth & 99% bandwidth                  | Compliant |
| FCC §15.231(a)    | Deactivation Time                               | Compliant |
| Section 15.207    | AC Power Line Conducted Emission Test           | Compliant |
| Section 15.203    | Antenna Requirement                             | Compliant |

### 1.2 Test Location

Test Firm : Dongguan Dongdian Testing Service Co., Ltd  
 Address : No.17 Zongbu road 2, Songshan Lake Sci&Tech, DongGuan  
 City, Guangdong province, 523808 China  
 FCC Registration Number: 270092

### 1.3 Measurement Uncertainty

#### Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2  
 Radiated emission expanded uncertainty(9kHz-30MHz) = 3.08dB, k=2  
 Radiated emission expanded uncertainty(30MHz-1000MHz) = 4.42dB, k=2  
 Radiated emission expanded uncertainty(Above 1GHz) = 4.06dB, k=2

## 2. GENERAL INFORMATION

### 2.1 General description of EUT

|                     |                                           |
|---------------------|-------------------------------------------|
| Equipment           | NetBright High Performance Security Light |
| Model Name          | MBN3000                                   |
| Serial No           | /                                         |
| FCC ID              | W7DMBN3000                                |
| Model Difference    | /                                         |
| Modulation Type     | ASK                                       |
| Antenna Type        | Internal Antenna                          |
| Operation frequency | 433.92MHz                                 |
| Number of Channels  | 1                                         |
| Power Source        | DC 6V                                     |
| Power Rating        | /                                         |
| Adapter Model       | /                                         |

## 2.2 Carrier frequency of channels

CH1: 433.92MHz

## 2.3 Operation of EUT during testing

Operating Mode

The mode is used: **Transmitting mode**

Channel 1: 433.92MHz

## 2.4 Description of test setup

EUT

## 2.5 Measurement instruments list

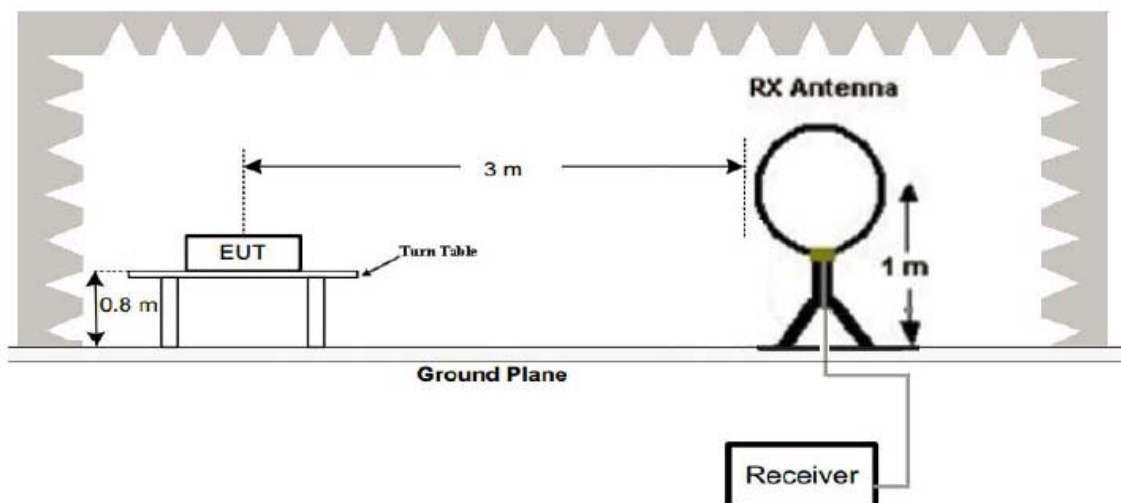
| Item | Equipment                                   | Manufacturer         | Model No. | Serial No.    | Last Cal.    | Cal. Interval |
|------|---------------------------------------------|----------------------|-----------|---------------|--------------|---------------|
| 1.   | EMI Receiver                                | Rohde & Schwarz      | ESCI      | 100627        | May 10, 2016 | 1 Year        |
| 2.   | LISN                                        | SchwarzBeck          | NSLK 8126 | 8126377       | May 10, 2016 | 1 Year        |
| 3.   | RF Switching Unit                           | Compliance Direction | RSU-M2    | 38303         | May 10, 2016 | 1 Year        |
| 4.   | EMI Test Software ES-K1                     | Rohde & Schwarz      | N/A       | N/A           | N/A          | N/A           |
| 5.   | EMI Test Receiver                           | Rohde & Schwarz      | ESCI      | 100627        | May 10, 2016 | 1 Year        |
| 6.   | Trilog Broadband Antenna                    | Schwarzbeck          | VULB9163  | VULB 9163-289 | May 12, 2016 | 1 Year        |
| 7.   | Pre-amplifier                               | Compliance Direction | PAP-0203  | 22008         | May 10, 2016 | 1 Year        |
| 8.   | EMI Test Software EZ-EMC                    | SHURPLE              | N/A       | N/A           | N/A          | N/A           |
| 9.   | EMI Receiver                                | Rohde & Schwarz      | ESCI      | 100627        | May 10, 2016 | 1 Year        |
| 10.  | LISN                                        | SchwarzBeck          | NSLK 8126 | 8126377       | May 10, 2016 | 1 Year        |
| 11.  | RF Switching Unit                           | Compliance Direction | RSU-M2    | 38303         | May 10, 2016 | 1 Year        |
| 12.  | EMI Test Software ES-K1                     | Rohde & Schwarz      | N/A       | N/A           | N/A          | N/A           |
| 13.  | EMI Receiver                                | Rohde & Schwarz      | ESCI      | 100627        | May 10, 2016 | 1 Year        |
| 14.  | EMI Receiver                                | Rohde & Schwarz      | ESCI      | 100627        | May 10, 2016 | 1 Year        |
| 15.  | LISN                                        | SchwarzBeck          | NSLK 8126 | 8126377       | May 10, 2016 | 1 Year        |
| 16.  | RF Switching Unit                           | Compliance Direction | RSU-M2    | 38303         | May 10, 2016 | 1 Year        |
| 17.  | EMI Test Software ES-K1                     | Rohde & Schwarz      | N/A       | N/A           | N/A          | N/A           |
| 18.  | Programmable AC Power source                | SOPH POWER           | PAG-1050  | 630250        | May 10, 2016 | 1 Year        |
| 19.  | Harmonic and Flicker Analyzer               | LAPLACE              | AC2000A   | 272629        | May 10, 2016 | 1 Year        |
| 20.  | Harmonic and Flicker Test Software AC 2000A | LAPLACE              | N/A       | N/A           | N/A          | N/A           |
| 21.  | ESD Simulators                              | KIKUSUI              | KES4021   | LJ003477      | May 10, 2016 | 1 Year        |
| 22.  | EFT Generator                               | EMPEK                | EFT-4040B | 0430928N      | May 10, 2016 | 1 Year        |
| 23.  | Shielding Room                              | ChangZhou ZhongYu    | JB88      | SEL0166       | May 10, 2016 | 1 Year        |
| 24.  | Signal Generator 9KHz~2.2GHz                | R&S                  | SML02     | SEL0143       | May 10, 2016 | 1 Year        |
| 25.  | Signal Generator 9KHz~1.1GHz                | R&S                  | SML01     | SEL0135       | May 10, 2016 | 1 Year        |
| 26.  | Power Meter                                 | R&S                  | NRVS      | SEL0144       | May 10, 2016 | 1 Year        |
| 27.  | RF Level Meter                              |                      | URV35     | SEL0137       | May 10, 2016 | 1 Year        |

|     |                                         |                        |                          |         |               |        |
|-----|-----------------------------------------|------------------------|--------------------------|---------|---------------|--------|
| 28. | Audio Analyzer                          | R&S                    | UPL                      | SEL0136 | May 10, 2016  | 1 Year |
| 29. | RF-Amplifier<br>150KHz~150MHz           | BONN Elektronik        | BSA1515-25               | SEL0157 | May 10, 2016  | 1 Year |
| 30. | Stripline Test Cell                     | Erika Fiedler          | VDE0872                  | SEL0167 | May 10, 2016  | N/A    |
| 31. | TV Test Transmitter                     | R&S                    | SFM                      | SEL0159 | May 10, 2016  | 1 Year |
| 32. | TV Generator PAL                        | R&S                    | SGPF                     | SEL0138 | May 10, 2016  | 1 Year |
| 33. | TV Generator Ntsc                       | R&S                    | SGMF                     | SEL0140 | May 10, 2016  | 1 Year |
| 34. | TV Generator Secam                      | R&S                    | SGSF                     | SEL0139 | May 10, 2016  | 1 Year |
| 35. | TV Test Transmitter<br>0.3MHz~3300MHz   | R&S                    | SFQ                      | SEL0142 | May 10, 2016  | 1 Year |
| 36. | MPEG2<br>Measurement<br>Generator       | R&S                    | DVG                      | SEL0141 | May 10, 2016  | 1 Year |
| 37. | Spectrum Analyzer                       | R&S                    | FSP                      | SEL0177 | May 10, 2016  | 1 Year |
| 38. | Matching                                | R&S                    | RAM                      | SEL0146 | N/A           | N/A    |
| 39. | Matching                                | R&S                    | RAM                      | SEL0148 | N/A           | N/A    |
| 40. | Absorbing Clamp                         | R&S                    | MDS21                    | SEL0158 | May 10, 2016  | 1 Year |
| 41. | Coupling Set                            | Erika Fiedler          | Rco, Rci,<br>MC, AC, LC  | SEL0149 | N/A           | N/A    |
| 42. | Filters                                 | Erika Fiedler          | Sr, LBS                  | SEL0150 | N/A           | N/A    |
| 43. | Matching Network                        | Erika Fiedler          | MN,<br>SLT-SYT100-<br>1M | SEL0151 | N/A           | N/A    |
| 44. | Fully Anechoic<br>Room                  | ChangZhou<br>ZhongYu   | 854                      | SEL0169 | May 10, 2016  | 1 Year |
| 45. | Signal Generator                        | R&S                    | SML03                    | SEL0068 | May 10, 2016  | 1 Year |
| 46. | RF-Amplifier<br>30M~1GHz                | Amplifier<br>Reasearch | 250W1000A                | SEL0066 | Oct. 24, 2015 | 1 Year |
| 47. | RF-Amplifier<br>0.8~3.0GHz              | Amplifier<br>Reasearch | 60S1G3                   | SEL0065 | Oct. 24, 2015 | 1 Year |
| 48. | Power Meter                             | R&S                    | NRVD                     | SEL0069 | May 10, 2016  | 1 Year |
| 49. | Power Sensor                            | R&S                    | URV5-Z2                  | SEL0071 | May 10, 2016  | 1 Year |
| 50. | Power Sensor                            | R&S                    | URV5-Z2                  | SEL0072 | May 10, 2016  | 1 Year |
| 51. | Software<br>EMC32                       | R&S                    | EMC32-S                  | SEL0082 | May 10, 2016  | N/A    |
| 52. | Log-periodic<br>Antenna                 | Amplifier<br>Reasearch | ASLT-SYT10<br>0-1M080    | SEL0073 | May 10, 2016  | N/A    |
| 53. | Antenna Tripod                          | Amplifier<br>Reasearch | TP1000A                  | SEL0074 | May 10, 2016  | N/A    |
| 54. | High Gain Horn<br>Antenna(0.8-5G<br>Hz) | Amplifier<br>Reasearch | AT4002A                  | SEL0075 | May 10, 2016  | N/A    |

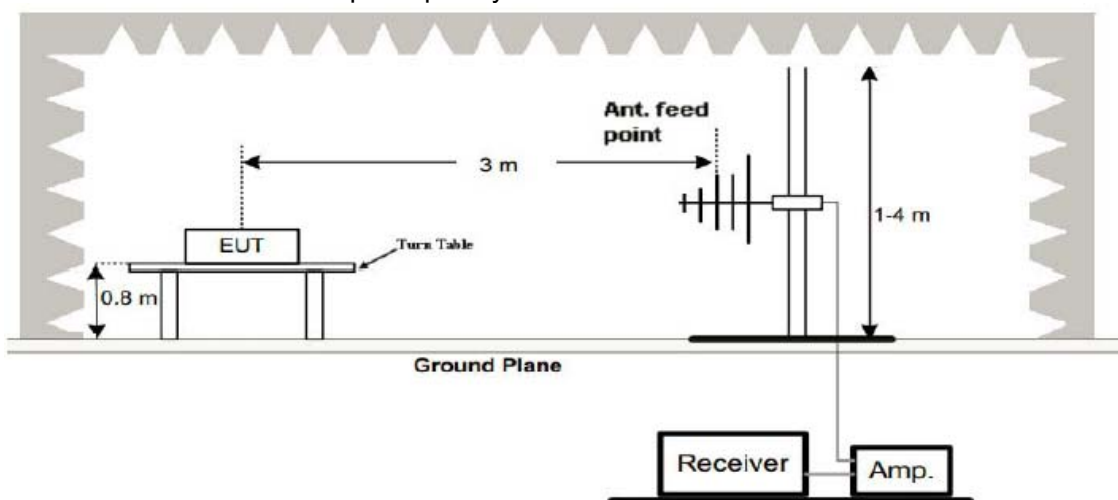
## 3. RADIATED EMISSION TEST

### 3.1 Block diagram of test setup

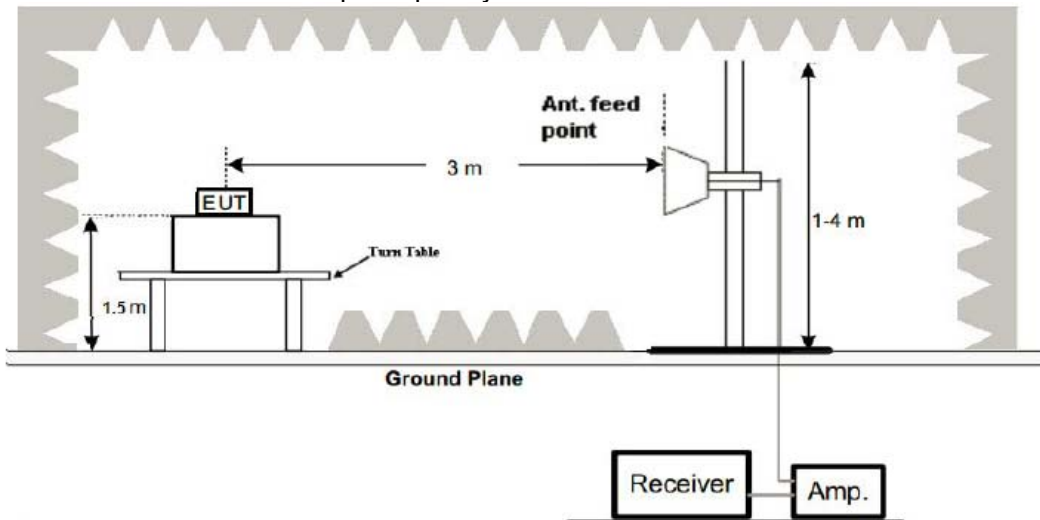
#### (1) Radiated Emission Test-Up Frequency Below 30MHz



#### (2) Radiated Emission Test-Up Frequency 30MHz~1GHz



#### (3) Radiated Emission Test-Up Frequency Above 1GHz



## 3.2 Limits

For intentional device, according to 15.209(a), the general requirement of field strength of radiated emission from intentional radiators at a distance of 3 meters shall not exceed the following table.

| Frequency (MHz) | Distance (Meters) | Radiated (dBμV/m)                   | Radiated (μV/m) |
|-----------------|-------------------|-------------------------------------|-----------------|
| 0.009-0.49      | 3                 | $20\log(2400/F(KHz))+40\log(300/3)$ | $2400/F(KHz)$   |
| 0.49-1.705      | 3                 | $20\log(24000/F(KHz))+40\log(30/3)$ | $24000/F(KHz)$  |
| 1.705-30        | 3                 | $20\log(30)+40\log(30/3)$           | 30              |
| 30-88           | 3                 | 40.0                                | 100             |
| 88-216          | 3                 | 43.5                                | 150             |
| 216-960         | 3                 | 46.0                                | 200             |
| Above 960       | 3                 | 54.0                                | 500             |

In addition to the provisions of 15.231(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

| Funda-<br>mental fre-<br>quency<br>(MHz) | Field strength of funda-<br>mental (microvolts/<br>meter) | Field strength of<br>spurious emissions<br>(microvolts/meter) |
|------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------|
| 40.66-<br>40.70                          | 2,250 .....                                               | 225                                                           |
| 70-130 .....                             | 1,250 .....                                               | 125                                                           |
| 130-174 ....                             | <sup>1</sup> 1,250 to 3,750 .....                         | <sup>1</sup> 125 to 375                                       |
| 174-260 ....                             | 3,750 .....                                               | 375                                                           |
| 260-470 ....                             | <sup>1</sup> 3,750 to 12,500 .....                        | <sup>1</sup> 375 to 1,250                                     |
| Above 470                                | 12,500 .....                                              | 1,250                                                         |

<sup>1</sup> Linear interpolations.

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 260-470 MHz, μV/m at 3 meters =  $41.6667(F) - 7083.3333$ . The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

## 3.3 Test procedure

- 1, Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane. And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
- 2, Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0°C to 360°C to acquire the highest emissions from EUT
- 3, And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 4, Repeat above procedures until all frequency measurements have been completed.

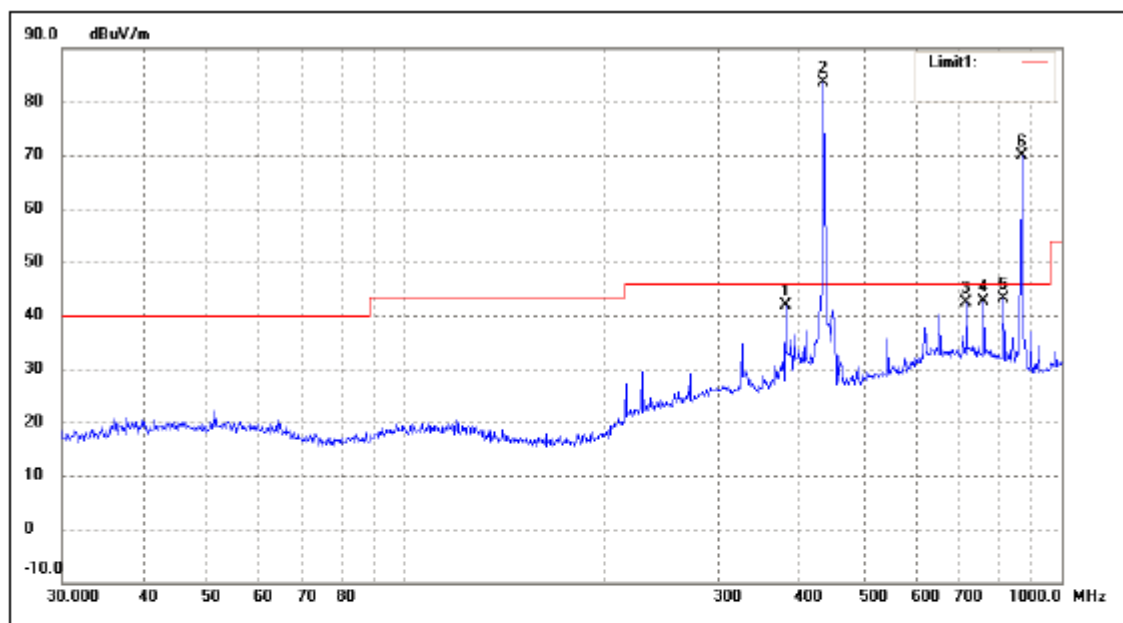
Note:

For battery operated equipment, the equipment tests shall be performed using a new battery.

## 3.4 Test result

Pass

Antenna: Horizontal

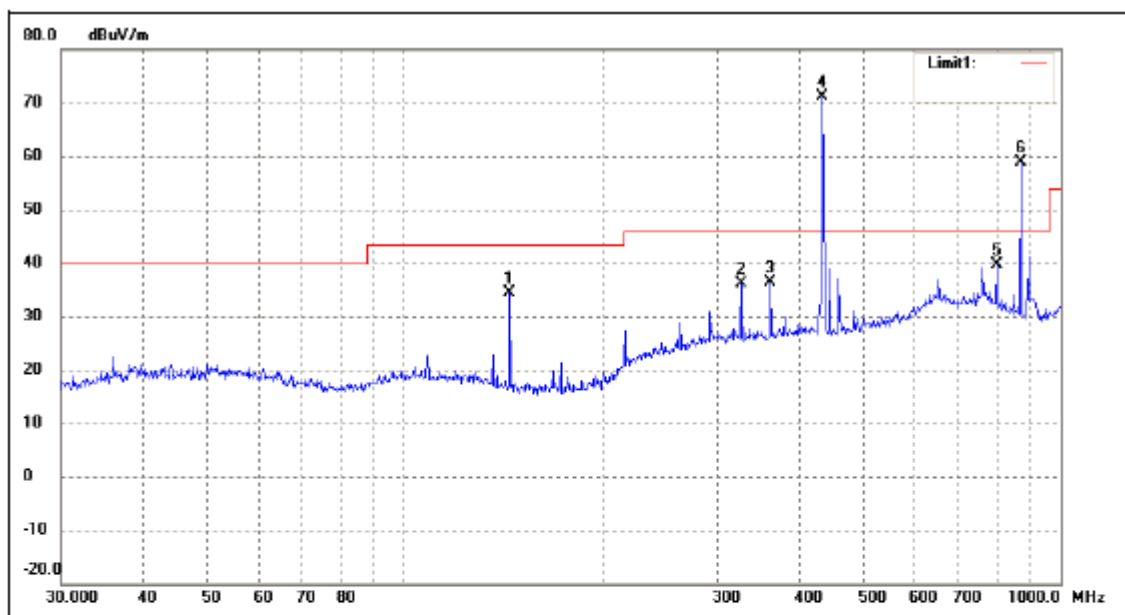


| No. | Frequency<br>MHz | Reading<br>dBuV/m | Corr.<br>(dB) | Dutycycle<br>Factor<br>(dB) | Result<br>dBuV/m | Limit<br>dBuV/m | Margin<br>(dB) | Deg.<br>(°) | Height<br>(cm) | Remark |
|-----|------------------|-------------------|---------------|-----------------------------|------------------|-----------------|----------------|-------------|----------------|--------|
| 1   | 379.9141         | 29.98             | 11.79         | N/A                         | 41.77            | 46.00           | -4.23          | 175         | 100            | peak   |
| 4   | 433.9200         | 73.83             | -3.09         | N/A                         | 83.74            | 100.83          | -17.09         | 145         | 100            | peak   |
|     | 433.9200         | /                 | /             | -12.18                      | 71.56            | 80.83           | -9.37          | 300         | 100            | Ave    |
| 3   | 716.6820         | 24.77             | 17.70         | N/A                         | 42.47            | 46.00           | -3.53          | 200         | 100            | peak   |
| 4   | 760.7036         | 24.47             | 18.10         | N/A                         | 42.57            | 46.00           | -3.43          | 310         | 100            | peak   |
| 5   | 815.9678         | 27.42             | 15.80         | N/A                         | 43.22            | 46.00           | -2.78          | 205         | 100            | peak   |
| 6   | 867.8400         | 53.97             | 15.94         | N/A                         | 69.91            | 80.83           | -8.08          | 212         | 100            | peak   |
|     | 867.8400         | /                 | /             | -12.18                      | 57.73            | 60.83           | -3.10          | 227         | 100            | Ave    |

Above 1GHz

| No. | Frequency<br>MHz | Reading<br>dBuV/m | Corr.<br>Factor<br>(dB) | Dutycycle<br>Factor<br>(dB) | Result<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Deg.<br>(°) | Height<br>(cm) | Remark |
|-----|------------------|-------------------|-------------------------|-----------------------------|------------------|-----------------|--------------|-------------|----------------|--------|
| 1   | 1301.7600        | 71.49             | -13.14                  | N/A                         | 58.35            | 80.83           | -22.48       | 210         | 150            | Peak   |
| 2   | 1735.6800        | 65.25             | -9.34                   | N/A                         | 52.66            | 80.83           | -28.17       | 180         | 150            | Peak   |
| 3   | 2169.6000        | 64.16             | -2.86                   | N/A                         | 61.30            | 80.83           | -19.53       | 210         | 150            | Peak   |
|     | 1301.7600        | /                 | /                       | -12.18                      | 46.17            | 60.83           | -14.66       | 123         | 150            | Ave    |
|     | 1735.6800        | /                 | /                       | -12.18                      | 40.48            | 60.83           | -20.35       | 228         | 150            | Ave    |
|     | 2169.6000        | /                 | /                       | -12.18                      | 49.12            | 60.83           | -11.71       | 159         | 150            | Ave    |

Antenna: Vertical



| No. | Frequency<br>MHz | Reading<br>dBuV/m | Corr.<br>(dB) | Dutycycle<br>Factor<br>(dB) | Result<br>dBuV/m | Limit<br>dBuV/m | Margin<br>(dB) | Deg.<br>(°) | Height<br>(cm) | Remark |
|-----|------------------|-------------------|---------------|-----------------------------|------------------|-----------------|----------------|-------------|----------------|--------|
| 1   | 144.8418         | 31.40             | 2.96          | N/A                         | 34.36            | 43.50           | -9.14          | 310         | 100            | peak   |
| 2   | 325.5958         | 24.42             | 11.77         | N/A                         | 36.19            | 46.00           | -9.81          | 172         | 100            | peak   |
| 3   | 361.7139         | 24.37             | 11.90         | N/A                         | 36.27            | 46.00           | -9.73          | 190         | 100            | peak   |
| 4   | 434.0651         | 58.83             | 12.31         | N/A                         | 71.14            | 100.83          | -29.69         | 256         | 100            | peak   |
|     | 433.9200         | /                 | /             | -12.18                      | 58.96            | 80.83           | -21.93         | 321         | 100            | Ave    |
| 5   | 798.9796         | 23.22             | 16.34         | N/A                         | 39.56            | 46.00           | -6.44          | 241         | 100            | peak   |
| 6   | 867.8400         | 43.03             | 15.94         | N/A                         | 58.97            | 80.83           | -21.94         | 89          | 100            | peak   |
|     | 867.8400         | /                 | /             | -12.18                      | 46.79            | 60.83           | -14.04         | 178         | 100            | Ave    |

Above 1GHz

| No. | Frequency<br>MHz | Reading<br>dBuV/m | Corr.<br>(dB) | Dutycycle<br>Factor<br>(dB) | Result<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Deg.<br>(°) | Height<br>(cm) | Remark |
|-----|------------------|-------------------|---------------|-----------------------------|------------------|-----------------|--------------|-------------|----------------|--------|
| 1   | 1301.7600        | 71.53             | -13.14        | N/A                         | 58.39            | 80.83           | -22.44       | 211         | 150            | Peak   |
| 2   | 1735.6800        | 62.01             | -9.35         | N/A                         | 52.66            | 80.83           | -28.17       | 123         | 150            | Peak   |
| 3   | 2169.6000        | 61.34             | -2.79         | N/A                         | 58.55            | 80.83           | -22.28       | 256         | 150            | Peak   |
|     | 1301.7600        | /                 | /             | -12.18                      | 46.21            | 60.83           | -14.62       | 143         | 150            | Ave    |
|     | 1735.6800        | /                 | /             | -12.18                      | 40.48            | 60.83           | -20.35       | 258         | 150            | Ave    |
|     | 2169.6000        | /                 | /             | -12.18                      | 46.37            | 60.83           | -14.46       | 149         | 150            | Ave    |

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

The fundamental frequency is 433.92MHz, so the fundamental and spurious emissions radiated limit base on the the operating frequency 433.92MHz.

## 4. DUTY CYCLE

### 4.1 Limits

According to FCC Part 15.231 (b)(2) and 15.35 (c), For pulse operation transmitter, the averaging pulsed emissions are calculated by peak value of measured emission plus duty cycle factor.

### 4.2 Test procedure

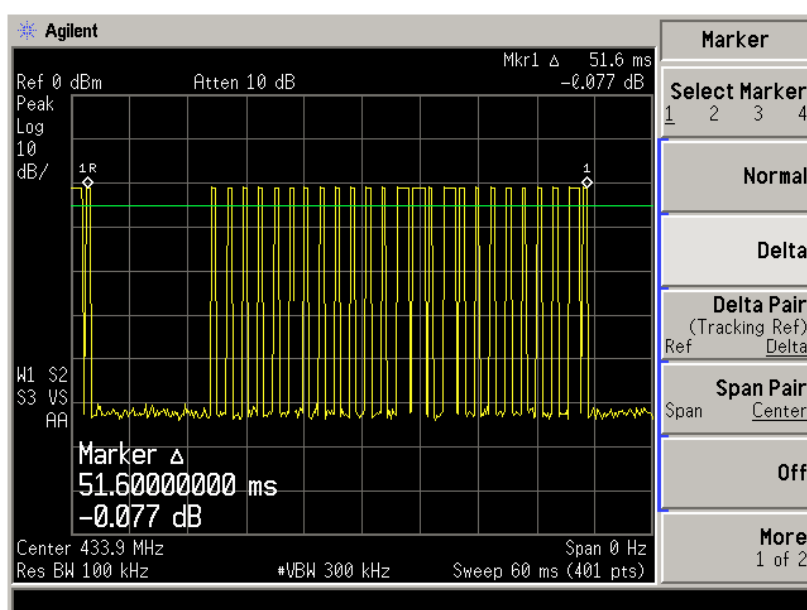
- a. With the EUT's antenna attached, the EUT's output signal was received by the test antenna, which was connected to the spectrum analyzer. Set the center frequency to 433.92MHz, then set the spectrum analyzer to Zero Span for the release time reading. During the testing, the switch was released then the EUT automatically deactivated.

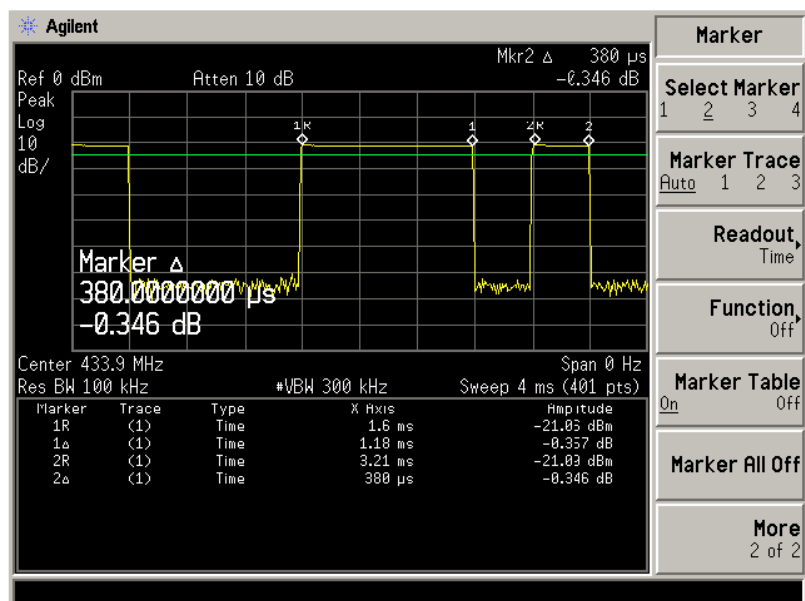
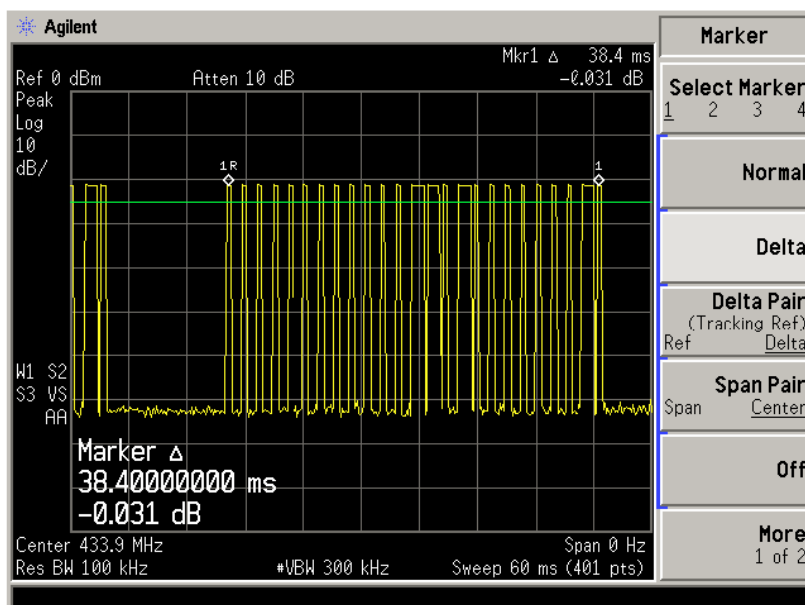
### 4.3 Test Result

| Type of Pulse    | Width of Pulse<br>ms | Quantity of Pulse | Transmission Time<br>ms | Total Time (T <sub>on</sub> )<br>ms |
|------------------|----------------------|-------------------|-------------------------|-------------------------------------|
| Pulse 1 (Wide)   | 1.18                 | 4                 | 4.72                    | 12.70                               |
| Pulse 2 (Narrow) | 0.38                 | 21                | 7.98                    |                                     |

| Test Period (T <sub>p</sub> )<br>ms | Total Time (T <sub>on</sub> )<br>ms | Duty Cycle<br>% | Duty Cycle Factor<br>dB |
|-------------------------------------|-------------------------------------|-----------------|-------------------------|
| 51.60                               | 12.70                               | 24.61           | -12.18                  |

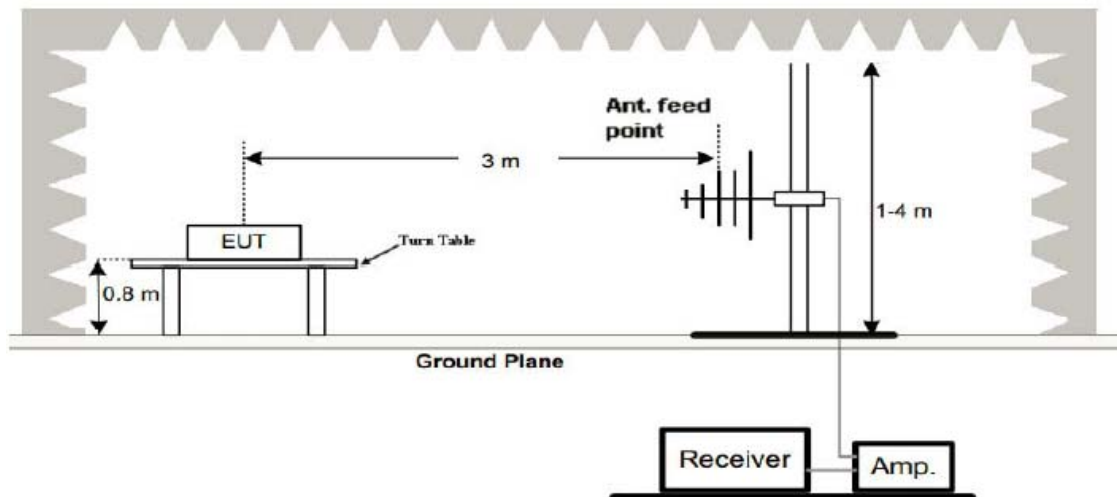
The spectrum analyzer plots are attached as below.





## 5. OCCUPIED BANDWIDTH MEASUREMENT

### 5.1 Block diagram of test setup



### 5.2 Limits

According to 47 CFR 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the centre frequency for devices operating above 70MHz and below 900MHz. Bandwidth is determined at the points 20dB down from the modulated carrier.

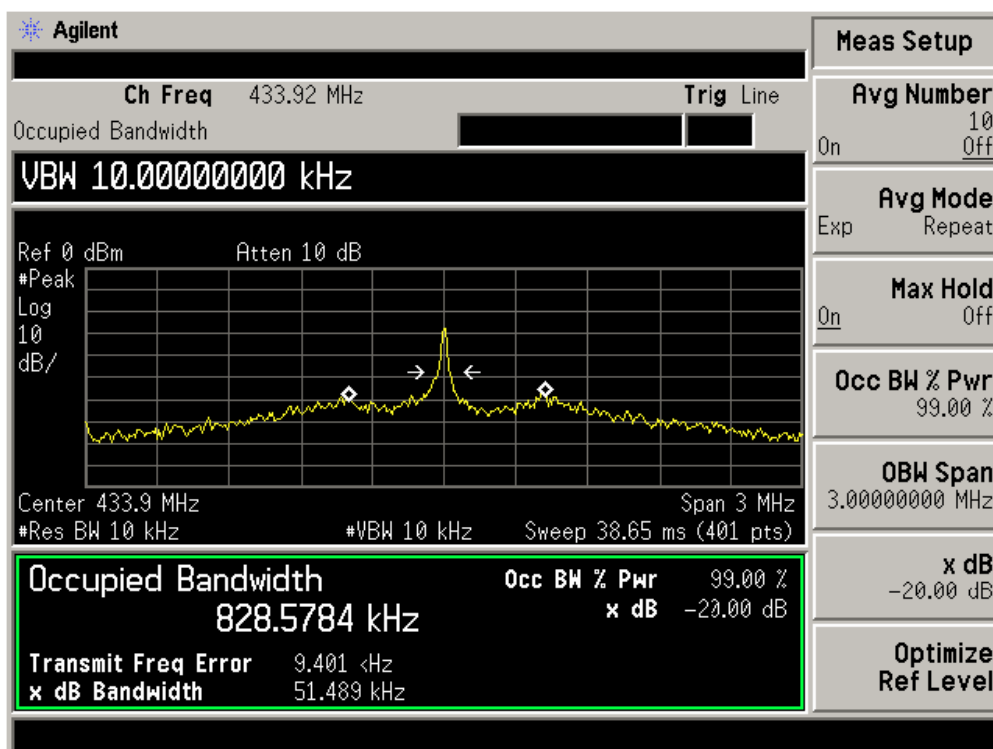
### 5.3 Test procedure

- The 20dB bandwidth and 99% bandwidth is measured with a spectrum analyzer connected via a receive antenna placed near the EUT while the EUT is operating in transmission mode
- The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

### 5.4 Test Result

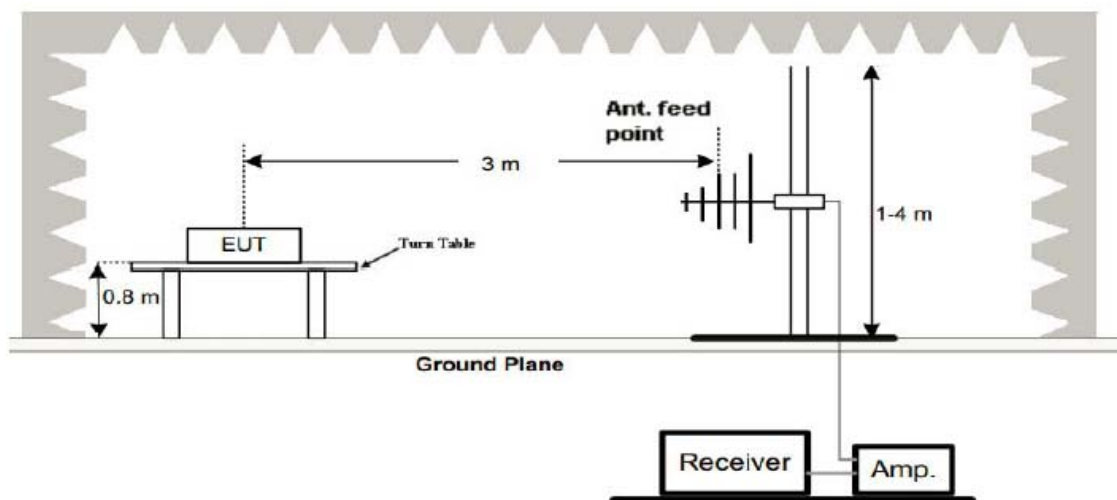
| Channel Frequency(MHz) | Modulation | 20dB bandwidth (KHz) | Limit (KHz)                     | Result |
|------------------------|------------|----------------------|---------------------------------|--------|
| 433.92MHz              | ASK        | 51.489               | $433.92 \times 0.25\% = 1084.8$ | Pass   |

The spectrum analyzer plots are attached as below.



## 6. DEACTIVATION TIME

### 6.1 Block diagram of test setup



### 6.2 Limits

According to FCC §15.231(a)(1), A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released

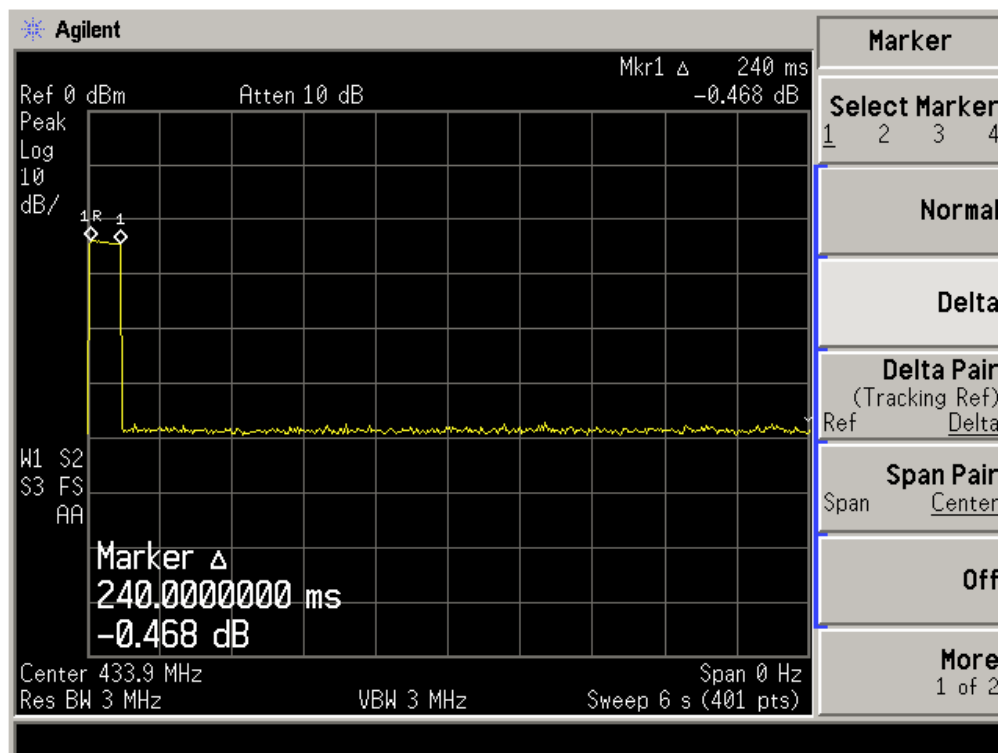
### 6.3 Test procedure

- The EUT was placed on a wooded table which is 0.8m height and close to receiver antenna of spectrum analyzer
- The spectrum analyzer resolution bandwidth was set to 1 MHz and video bandwidth was set to 1 MHz to encompass all significant spectral components during the test. The spectrum analyzer was operated in linear scale and zero span mode after tuning to the transmitter carrier frequency.

### 6.4 Test Result

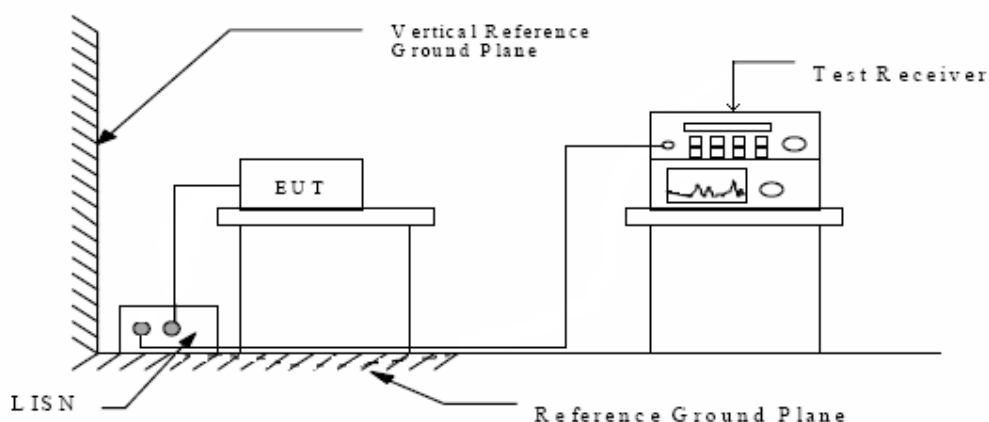
Pass

| Transmission Type | Test Frequency<br>MHz | Transmission Time<br>seconds | Limit<br>s | Result |
|-------------------|-----------------------|------------------------------|------------|--------|
| Manually          | 433.92                | 0.240                        | 5          | Pass   |



## 7. AC POWER LINE CONDUCTED EMISSION

### 7.1 Block diagram of test setup



### 7.2 Limits

Conducted Emission Measurement Limits According to Section 15.207(a)

| Frequency<br>MHz | Limits (dB $\mu$ V) |               |
|------------------|---------------------|---------------|
|                  | Quasi-peak Level    | Average Level |
| 0.15 ~ 0.50      | 66 ~ 56*            | 56 ~ 46*      |
| 0.50 ~ 5.00      | 56                  | 46            |
| 5.00 ~ 30.00     | 60                  | 50            |

\* Decreases with the logarithm of the frequency.

### 7.3 Test procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESPI) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

### 7.4 Test Result

N/A

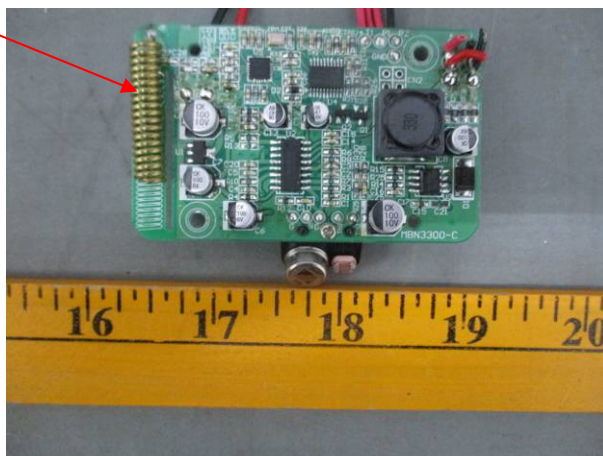
No measurement is required as the EUT is a battery operated product.

## 8. ANTENNA REQUIREMENT

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna is fixed by enclosure, can not be changed except take apart the product.

Antenna



## 9. POTOGRAPH OF TEST

### 9.1 Radiated Emission

