



Report No.: 160302035GZU-001  
Issued: 2016-3-30

## **TEST REPORT**

Applicant Name & : Bradley Technologies Canada Inc.  
Address : 8380 River rd, Delta BC, V4G1B5 Canada

### Sample Description

Product : Smoker  
FCC ID : 2AGTD-GC730701  
Model No. : BS916  
Electrical Rating : 120V/60Hz,625W

Date Received : 02 March 2016

Date Test Conducted : 03 March 2016-10 March 2016

Test standards : 47 CFR PART 15 Subpart C: 2014 section 15.249

Test Result : Pass

Conclusion : The submitted samples complied with the above rules/standards.

Remark : None.

\*\*\*\*\*End of Page\*\*\*\*\*

**Prepared and Checked By:**

*Sky Zhu*

**Sky Zhu**  
**Project Engineer**  
**Intertek Guangzhou**

**Approved By:**

*Helen Ma* **Signature**

**Helen Ma**  
**Team Leader**  
**Intertek Guangzhou**  
**30 March 2016** **Date**

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## 1.0 Summary of Test

| TEST                                                                                                                                                                                                                                                                                                                                                                                                  | TEST REQUIREMENT                            | TEST METHOD                           | RESULT |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------|--------|
| Antenna Requirement                                                                                                                                                                                                                                                                                                                                                                                   | FCC PART 15 C<br>Section 15.203             | FCC PART 15 C<br>Section 15.203       | PASS   |
| Occupied Bandwidth                                                                                                                                                                                                                                                                                                                                                                                    | FCC PART 15 C<br>section 15.215(c)          | ANSI C63.10: Clause 6.9               | PASS   |
| Radiated Emission                                                                                                                                                                                                                                                                                                                                                                                     | FCC PART 15 C<br>section 15.249 (a),<br>(d) | ANSI C63.10: Clause 6.4,<br>6.5 & 6.6 | PASS   |
| Band Edges Measurement                                                                                                                                                                                                                                                                                                                                                                                | FCC PART 15 C<br>section 15.249 (d)         | ANSI C63.10: Clause 6.10              | PASS   |
| Conducted Emissions at<br>Mains Terminals                                                                                                                                                                                                                                                                                                                                                             | FCC PART 15 C<br>section 15.207             | ANSI C63.10: Clause 6.2               | PASS   |
| <b>Remark:</b><br>N/A: not applicable. Refer to the relative section for the details.<br>EUT: In this whole report EUT means Equipment Under Test.<br>Tx: In this whole report Tx (or tx) means Transmitter.<br>Rx: In this whole report Rx (or rx) means Receiver.<br>RF: In this whole report RF means Radio Frequency.<br>ANSI C63.10: the detail version is ANSI C63.10:2013 in the whole report. |                                             |                                       |        |

## 2.0 General Description

### 2.1 Product Description

|                                                                          |                                               |
|--------------------------------------------------------------------------|-----------------------------------------------|
| Operating Frequency                                                      | 2402 MHz to 2480 MHz                          |
| Type of Modulation:                                                      | GFSK                                          |
| Number of Channels                                                       | 40 Channels                                   |
| Channel Separation:                                                      | 2 MHz                                         |
| Antenna Type                                                             | Integral                                      |
| Antenna gain:                                                            | 2 dBi                                         |
| Speciality:                                                              | Bluetooth 4.0 with BLE (Bluetooth Low Energy) |
| Function:                                                                | Communicate with app in phone or pad          |
| Power Supply:                                                            | 120V/60Hz 560W                                |
| Power cord:                                                              | 1.1 m x 3 wires unscreened AC supply cable    |
| EUT modulation and data packet during test:                              |                                               |
| The EUT has been tested on the Modulation of GFSK with 1 Mbps data rate. |                                               |

EUT channels and frequencies list:

Test frequencies are the lowest channel 0: 2402 MHz, middle channel 19: 2440 MHz and the highest channel 39: 2480 MHz

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|
| 0       | 2402            | 14      | 2430            | 28      | 2458            |
| 1       | 2404            | 15      | 2432            | 29      | 2460            |
| 2       | 2406            | 16      | 2434            | 30      | 2462            |
| 3       | 2408            | 17      | 2436            | 31      | 2464            |
| 4       | 2410            | 18      | 2438            | 32      | 2466            |
| 5       | 2412            | 19      | 2440            | 33      | 2468            |
| 6       | 2414            | 20      | 2442            | 34      | 2470            |
| 7       | 2416            | 21      | 2444            | 35      | 2472            |
| 8       | 2418            | 22      | 2446            | 36      | 2474            |
| 9       | 2420            | 23      | 2448            | 37      | 2476            |
| 10      | 2422            | 24      | 2450            | 38      | 2478            |
| 11      | 2424            | 25      | 2452            | 39      | 2480            |
| 12      | 2426            | 26      | 2454            | /       | /               |
| 13      | 2428            | 27      | 2456            | /       | /               |



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## **2.2 Related Submittal(s) Grants**

This is an application for certification of:  
DXX - Low power communications device transmitter

Remaining portions are subject to the following procedures:

1. Receiver portion of BLE: exempt from technical requirement of this Part.

## **2.3 Test Methodology**

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10:2013. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans and final tests were performed in the semi-anechoic chamber to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise.

## **2.4 Test Facility**

All of the tests are performed at:  
Intertek Testing Services Shenzhen Ltd. Guangzhou Branch  
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City,  
GETDD Guangzhou, China.

This test facility and site measurement data have been fully placed on file with the FCC, test firm registration number is 549654.



### 3.0 System Test Configuration

#### 3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, AC power line was manipulated to produce worst case emissions. It was powered by AC 120V/60Hz supply.

The signal is maximized through rotation; the antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. The spurious emissions more than 20 dB below the permissible value are not reported.

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in the following table:

Frequency range of radiated emission measurements

| Lowest frequency generated in the device | Upper frequency range of measurement                                                                        |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 9 kHz to below 10 GHz                    | 10th harmonic of highest fundamental frequency or to 40 GHz, whichever is lower                             |
| At or above 10 GHz to below 30 GHz       | 5th harmonic of highest fundamental frequency or to 100 GHz, whichever is lower                             |
| At or above 30 GHz                       | 5th harmonic of highest fundamental frequency or to 200 GHz, whichever is lower, unless otherwise specified |

Number of fundamental frequencies to be tested in EUT transmit band

| Frequency range in which device operates | Number of frequencies | Location in frequency range of operation    |
|------------------------------------------|-----------------------|---------------------------------------------|
| 1 MHz or less                            | 1                     | Middle                                      |
| 1 MHz to 10 MHz                          | 2                     | 1 near top and 1 near bottom                |
| More than 10 MHz                         | 3                     | 1 near top, 1 near middle and 1 near bottom |



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### **3.2 EUT Exercising Software**

No special exercising software

### **3.3 Special Accessories**

No special accessories used.

### **3.4 Measurement Uncertainty**

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance – Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

### **3.5 Equipment Modification**

Any modifications installed previous to testing by Bradley Technologies Canada Inc.. will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Guangzhou Branch.

### **3.6 Support Equipment List and Description**

The client make a continuous transmit sample for test. The test sample can be adjusted different frequency channel through the key on the display board.

#### 4.0 Measurement Results

##### 4.1 Antenna Requirement:

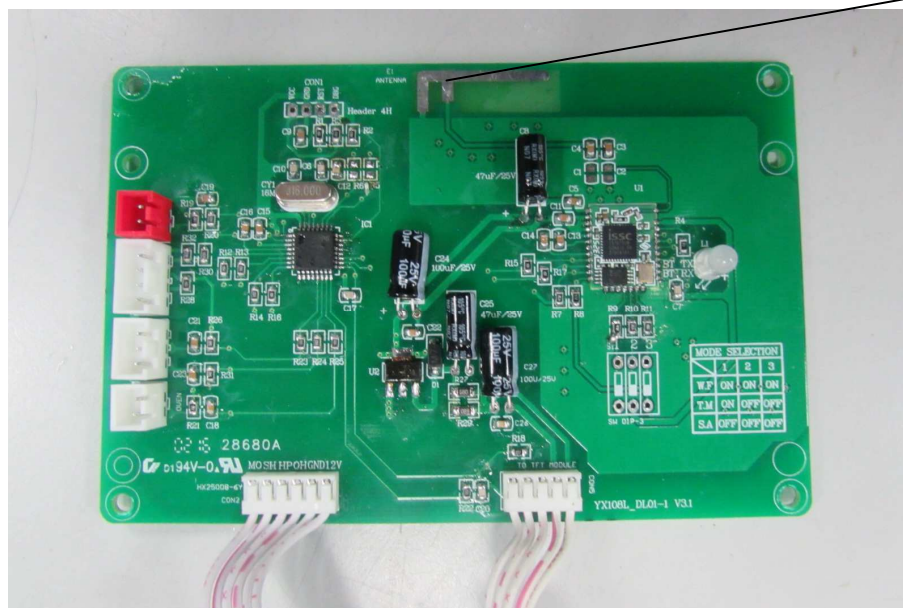
Standard requirement

15.203 requirement:

For intentional device. According to 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.

EUT Antenna

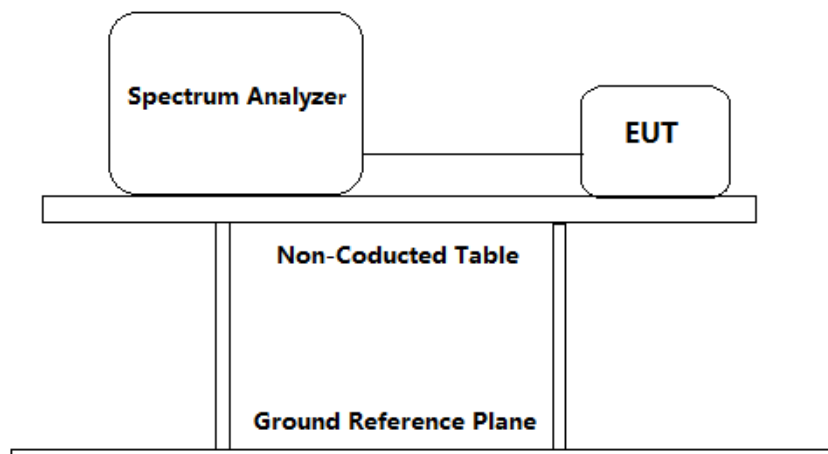
The antenna is an integral antenna and no consideration of replacement. The best case gain of the antenna is 2 dBi.



The antenna

## 4.2 Occupied Bandwidth:

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement:   | FCC PART 15 C section 15.215(c)<br>(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated |
| Test Method:        | ANSI C63.10: Clause 6.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Test Status:        | Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). The highest, middle and the lowest channels were selected for the final test as listed below.                                                                                                                                                                                                                |
| Test Configuration: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



### Test Procedure:

The transmitter was operated at its maximum carrier power measured under normal test conditions.

- The instrument center frequency was set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer was between 1.5 times and 5.0 times the OBW(20 dB Bandwidth).
- The nominal IF filter bandwidth (3 dB RBW) was set to 100kHz and VBW was approximately three times the RBW.
- Set the reference level of the instrument as required, keeping the signal from exceeding the

maximum input mixer level for linear operation. In general, the peak of the spectral envelope was more than  $[10 \log (OBW/RBW)]$  below the reference level.

- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) The dynamic range of the instrument at the selected RBW was more than 10 dB below the target “-20 dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW was at least 30 dB below the reference value.
- f) Peak detection and max hold mode (until the trace stabilizes) was used.
- g) Used the 20dB bandwidth function of the instrument and reported the measured bandwidth.
- h) The occupied bandwidth was reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division was clearly labeled. Tabular data was reported in addition to the plot(s).

#### 20 dB bandwidth:

| Channel No. | Frequency (MHz) | Measured 20 dB bandwidth (MHz) | Limit MHz            | Result |
|-------------|-----------------|--------------------------------|----------------------|--------|
| 0           | 2402            | 1.11                           | 2400<br>to<br>2483.5 | Pass   |
| 19          | 2440            | 1.09                           |                      | Pass   |
| 39          | 2480            | 1.09                           |                      | Pass   |

#### 20dB bandwidth:

Result plot as follows:

**Lowest channel (2.402 GHz):**

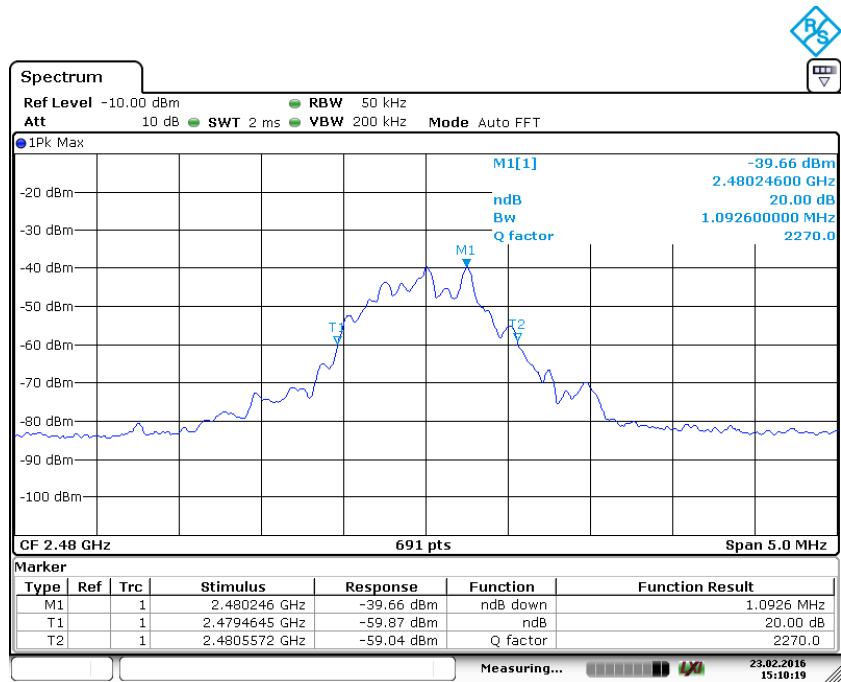


**Middle Channel (2.440 GHz):**





Highest Channel (2.480 GHz):



#### 4.7 Radiated Emission

Test Requirement:

FCC PART 15 C section 15.249 (a), (d)

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

| Fundamental Frequency (MHz) | Field Strength of Fundamental (dBμV/m @ 3m) | Field Strength of Harmonics (dBμV/m @ 3m) |
|-----------------------------|---------------------------------------------|-------------------------------------------|
| 902 to 928                  | 94.0                                        | 54.0                                      |
| 2400 to 2483.5              | 94.0                                        | 54.0                                      |
| 5725 to 5875                | 94.0                                        | 54.0                                      |

**Note:** The limits shown in the above table are based on measurements using an average detector, except for the fundamental emission in the frequency band 902-928 MHz, which is based on measurements using a CISPR quasi-peak detector.

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

Test Method:

ANSI C63.10: Clause 6.4, 6.5 and 6.6

Test Status:

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). The lowest, middle and the lowest channels were selected for the final test as listed below.

Test site:

Measurement Distance: 3m (Semi-Anechoic Chamber)

Limit:

The field strength of radiated emission outside of the specified frequency bands, except for harmonics at a distance of 3 meters shall not exceed the following values:

| Frequency (MHz) | Field Strength (dBμV/m @ 3m) |
|-----------------|------------------------------|
| 30-88           | 40.0                         |
| 88-216          | 43.5                         |
| 216-960         | 46.0                         |
| Above 960       | 54.0                         |

Detector:

For Peak and Quasi-Peak value:  
200 Hz for 9 kHz to 150 kHz  
9 kHz for 150 kHz to 30 MHz

120 kHz for 30 MHz to 1GHz

RBW = 1 MHz for  $f \geq 1$  GHz

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak for  $f \geq 1$  GHz, QP for  $f < 1$  GHz

Trace = max hold

According 15.35(c), when the field strength (or envelope power) is not constant or it is in pulses, and an average detector is specified to be used, the value of field strength or power shall be determined by averaging over one complete pulse train, including blanking intervals within the pulse train, as long as the pulse train does not exceed 0.1 seconds. In cases where the pulse train exceeds 0.1 second, the average value of field strength or output power shall be determined during a 0.1 second interval during which the field strength or power is at its maximum value.

All measurement for radiated emission within the restricted band were performed using a QP detector with 120kHz RBW, 300kHz VBW below 1GHz and PK detector with 1MHz RBW, 3MHz VBW above 1GHz. average detector with 1MHz RBW,10Hz VBW above 1GHz



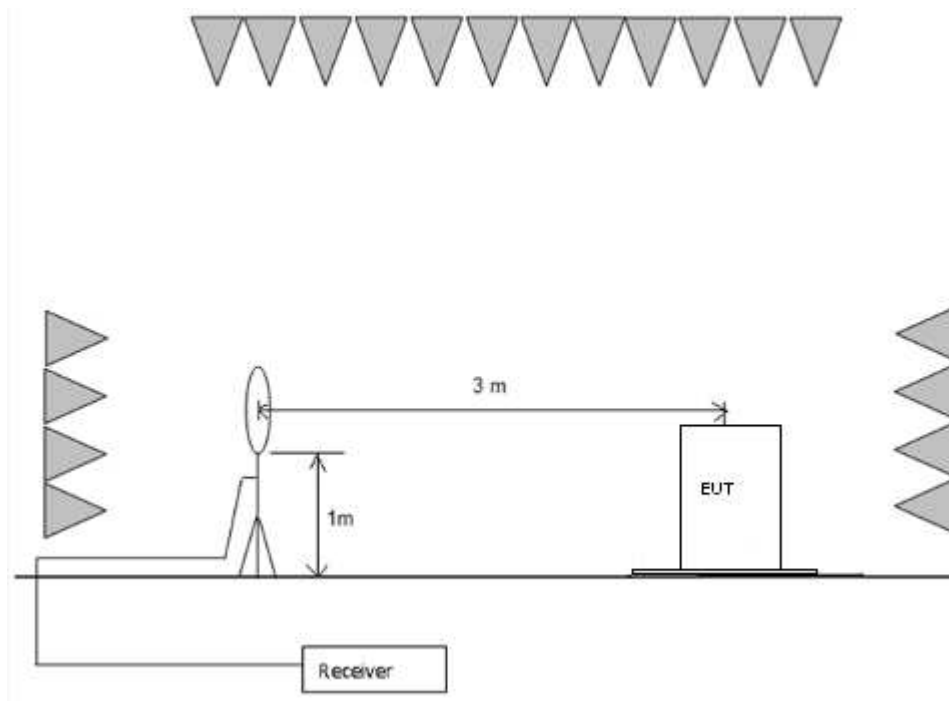
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Section 15.205 Restricted bands of operation.

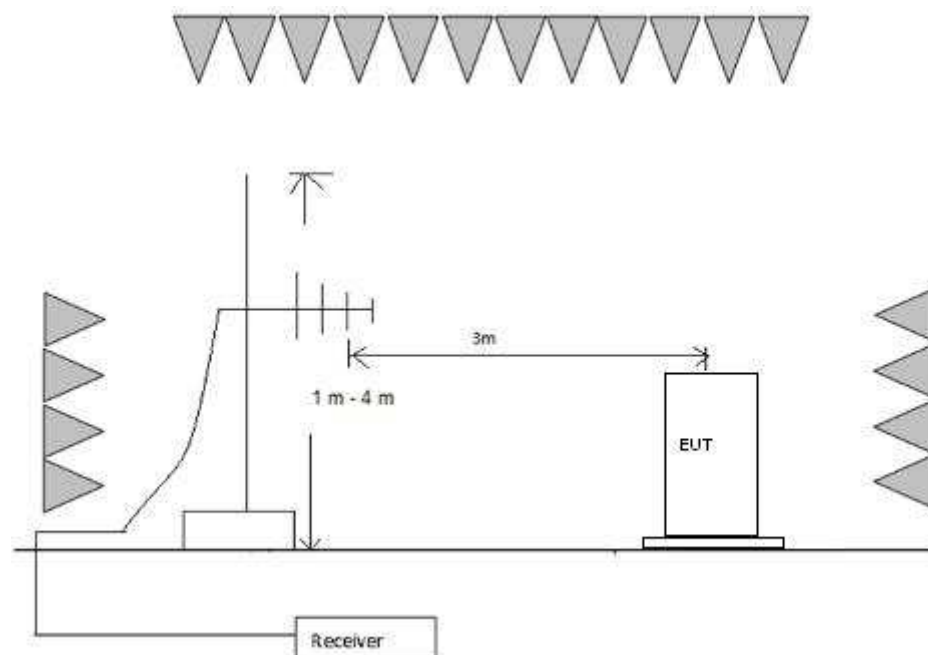
| MHz                        | MHz               | MHz             | GHz           |
|----------------------------|-------------------|-----------------|---------------|
| 0.090 - 0.110              | 16.42 - 16.423    | 399.9 - 410     | 4.5 - 5.15    |
| <sup>1</sup> 0.495 - 0.505 | 16.69475 -        | 608 - 614       | 5.35 - 5.46   |
| 2.1735 - 2.1905            | 16.69525          | 960 - 1240      | 7.25 - 7.75   |
| 4.125 - 4.128              | 16.80425 -        | 1300 - 1427     | 8.025 - 8.5   |
| 4.17725 - 4.17775          | 16.80475          | 1435 - 1626.5   | 9.0 - 9.2     |
| 4.20725 - 4.20775          | 25.5 - 25.67      | 1645.5 - 1646.5 | 9.3 - 9.5     |
| 6.215 - 6.218              | 37.5 - 38.25      | 1660 - 1710     | 10.6 - 12.7   |
| 6.26775 - 6.26825          | 73 - 74.6         | 1718.8 - 1722.2 | 13.25 - 13.4  |
| 6.31175 - 6.31225          | 74.8 - 75.2       | 2200 - 2300     | 14.47 - 14.5  |
| 8.291 - 8.294              | 108 - 121.94      | 2310 - 2390     | 15.35 - 16.2  |
| 8.362 - 8.366              | 123 - 138         | 2483.5 - 2500   | 17.7 - 21.4   |
| 8.37625 - 8.38675          | 149.9 - 150.05    | 2655 - 2900     | 22.01 - 23.12 |
| 8.41425 - 8.41475          | 156.52475 -       | 3260 - 3267     | 23.6 - 24.0   |
| 12.29 - 12.293             | 156.52525         | 3332 - 3339     | 31.2 - 31.8   |
| 12.51975 -                 | 156.7 - 156.9     | 3345.8 - 3358   | 36.43 - 36.5  |
| 12.52025                   | 162.0125 - 167.17 | 3600 - 4400     |               |
| 12.57675 -                 | 167.72 - 173.2    |                 |               |
| 12.57725                   | 240 - 285         |                 |               |
| 13.36 - 13.41              | 322 - 335.4       |                 |               |

Test Configuration:

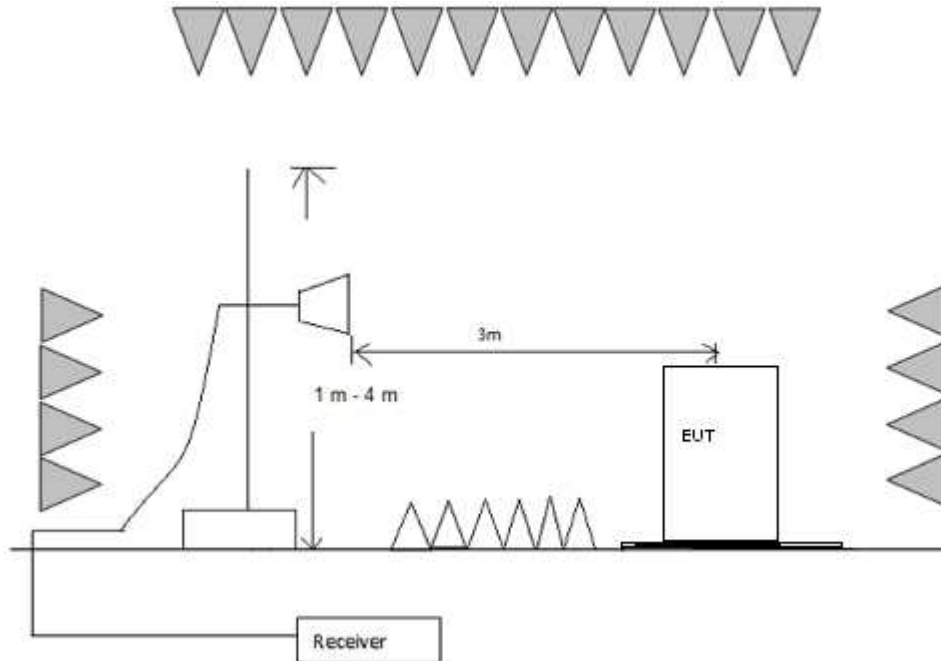
1) 9 kHz to 30 MHz emissions:



2) 30 MHz to 1 GHz emissions:



3) 1 GHz to 40 GHz emissions:



**Test Procedure:**

1) 9 kHz to 30 MHz emissions:

For testing performed with the loop antenna. The centre of the loop was positioned 1 m above the ground and positioned with its plane vertical at the special distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

2) 30 MHz to 1 GHz emissions:

For testing performed with the bi-log type antenna. The measurement is performed with the EUT rotated 360°, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

3) 1 GHz to 25 GHz emissions:

Test site with RF absorbing material covering the ground plane that met the site validation criterion called out in CISPR 16-1-4:2007 was used to perform radiated emission test above 1 GHz.

For testing performed with the horn antenna. The measurement is performed with the EUT rotated 360°, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

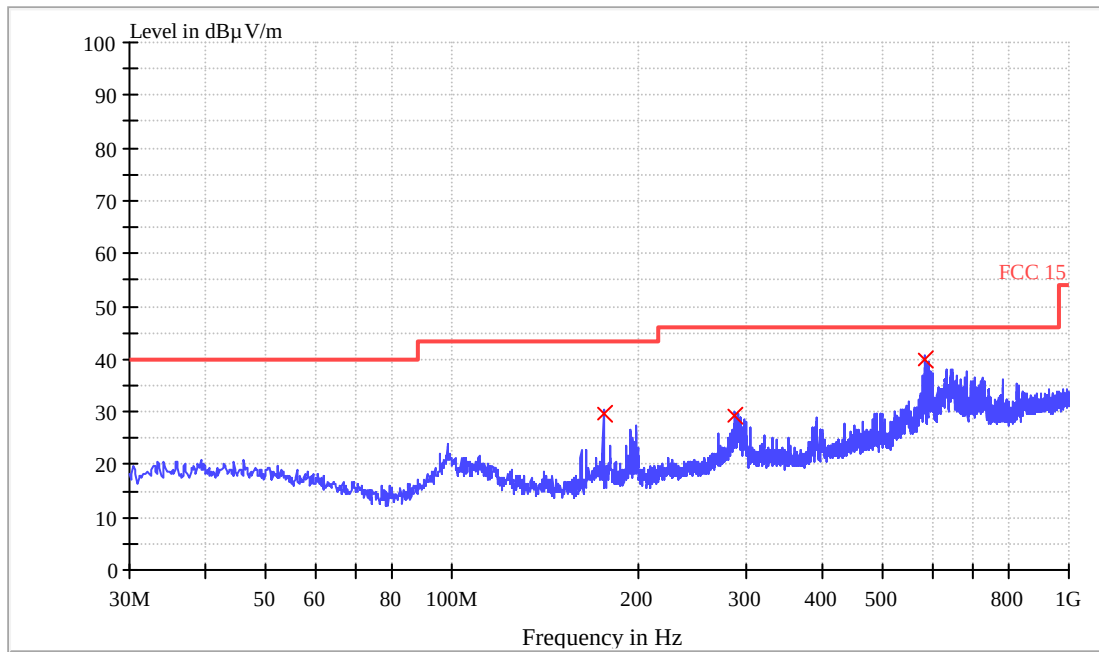
4) The receiver was scanned from 9 kHz to 25 GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

9 kHz~30 MHz Field Strength of Unwanted Emissions. Quasi-Peak Measurement

The measurements with active loop antenna were greater than 20dB below the limit, so the test data were not recorded in the test report.

**Radiated Emissions (Below 1GHz)**

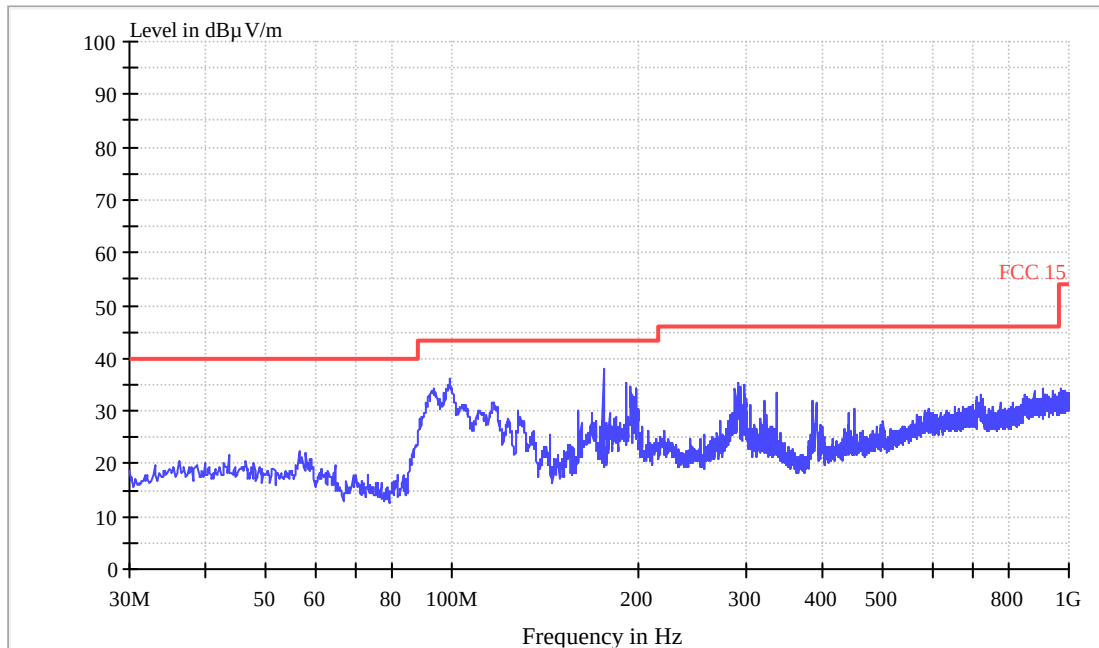
Test curve and data: Operation Frequency: 2402MHz  
Horizontal



**QP**

| Frequency (MHz) | Quasi Peak (dBμV/m) | Bandwidth (kHz) | Pol | Corr. (dB) | Margin - QPK (dB) | Limit - QPK (dBμV/m) |
|-----------------|---------------------|-----------------|-----|------------|-------------------|----------------------|
| 176.000000      | 29.8                | 120.000         | H   | 8.6        | 13.8              | 43.5                 |
| 287.920000      | 29.1                | 120.000         | H   | 14.7       | 16.9              | 46.0                 |
| 585.560000      | 40.1                | 120.000         | H   | 21.1       | 5.9               | 46.0                 |

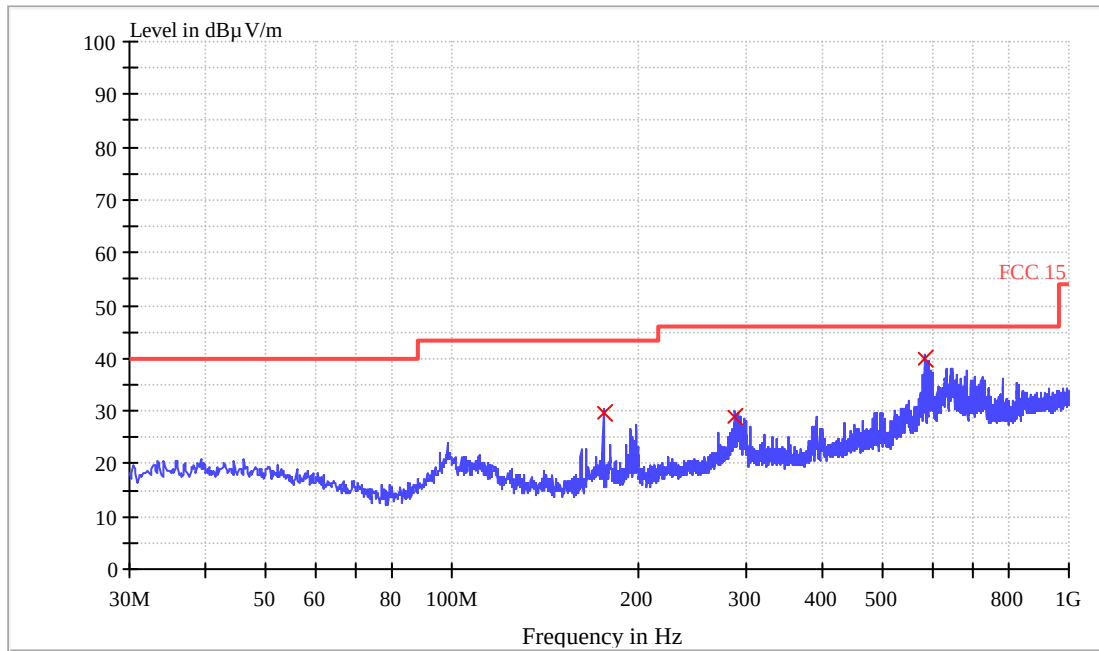
Vertical



**QP**

| Frequency (MHz) | Quasi Peak (dBμV/m) | Bandwidth (kHz) | Pol | Corr. (dB) | Margin - QPK (dB) | Limit - QPK (dBμV/m) |
|-----------------|---------------------|-----------------|-----|------------|-------------------|----------------------|
| 92.040000       | 29.9                | 120.000         | V   | 10.9       | 13.6              | 43.5                 |
| 175.960000      | 33.4                | 120.000         | V   | 8.6        | 10.1              | 43.5                 |
| 194.880000      | 31.2                | 120.000         | V   | 9.5        | 12.3              | 43.5                 |

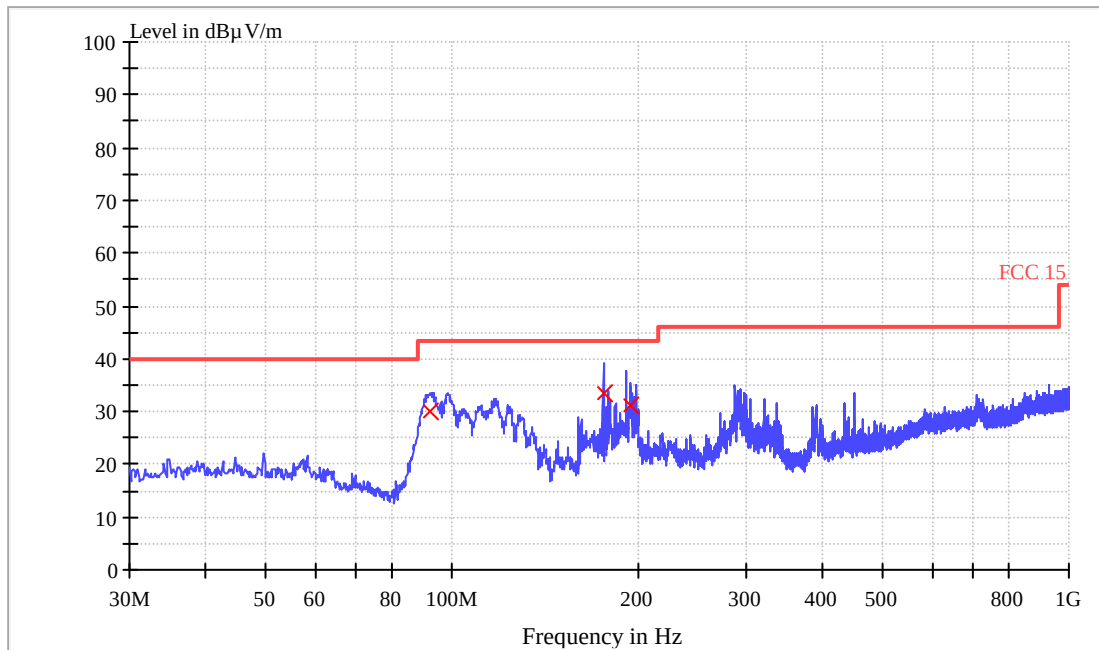
Test curve and data: Operation Frequency: 2440MHz  
Horizontal



## QP

| Frequency (MHz) | Quasi Peak (dBµV/m) | Bandwidth (kHz) | Pol | Corr. (dB) | Margin - QPK (dB) | Limit - QPK (dBµV/m) |
|-----------------|---------------------|-----------------|-----|------------|-------------------|----------------------|
| 176.000000      | 29.6                | 120.000         | H   | 8.6        | 14.0              | 43.5                 |
| 287.920000      | 29.0                | 120.000         | H   | 14.7       | 17.0              | 46.0                 |
| 585.560000      | 40.1                | 120.000         | H   | 21.1       | 5.9               | 46.0                 |

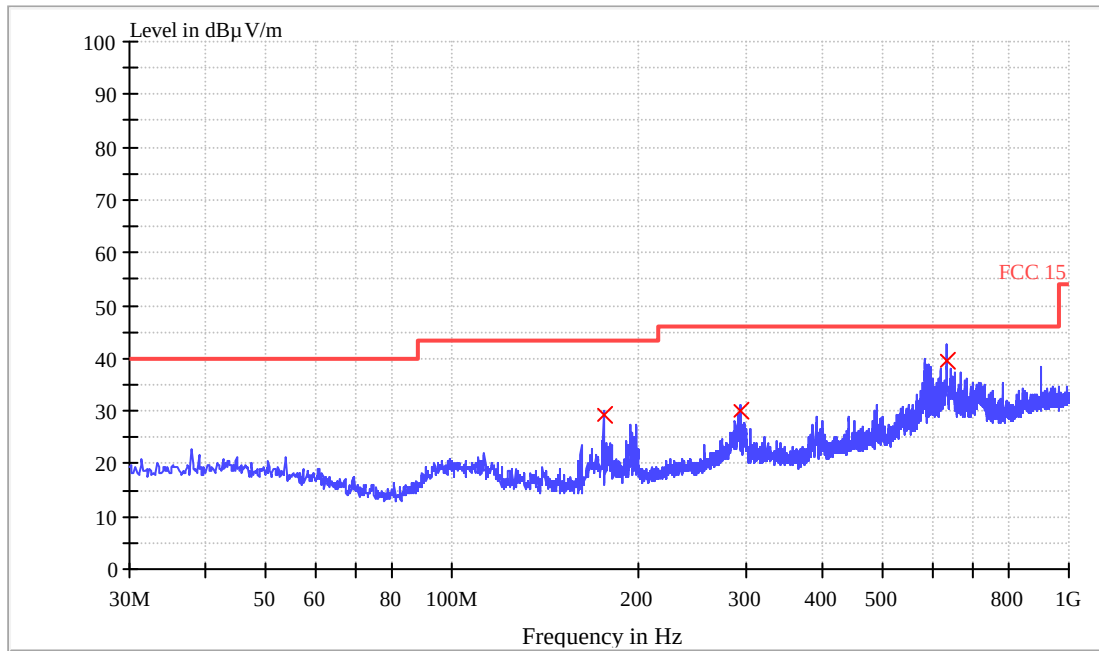
Vertical



**QP**

| Frequency (MHz) | Quasi Peak (dBμV/m) | Bandwidth (kHz) | Pol | Corr. (dB) | Margin - QPK (dB) | Limit - QPK (dBμV/m) |
|-----------------|---------------------|-----------------|-----|------------|-------------------|----------------------|
| 92.040000       | 29.9                | 120.000         | V   | 10.9       | 13.6              | 43.5                 |
| 175.960000      | 33.4                | 120.000         | V   | 8.6        | 10.1              | 43.5                 |
| 194.880000      | 31.2                | 120.000         | V   | 9.5        | 12.3              | 43.5                 |

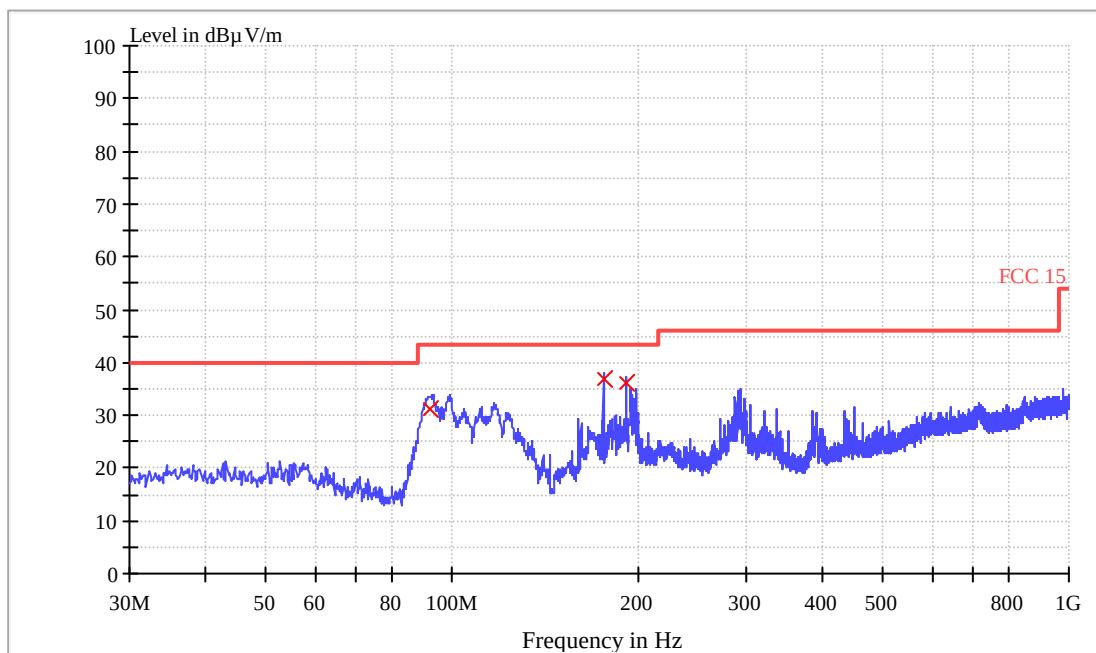
Test curve and data: Operation Frequency: 2480MHz  
Horizontal



## QP

| Frequency (MHz) | Quasi Peak (dBµV/m) | Bandwidth (kHz) | Pol | Corr. (dB) | Margin - QPK (dB) | Limit - QPK (dBµV/m) |
|-----------------|---------------------|-----------------|-----|------------|-------------------|----------------------|
| 175.960000      | 29.2                | 120.000         | H   | 8.6        | 14.3              | 43.5                 |
| 292.480000      | 30.2                | 120.000         | H   | 15.0       | 15.8              | 46.0                 |
| 634.800000      | 39.4                | 120.000         | H   | 21.7       | 6.6               | 46.0                 |

### Vertical



### QP

| Frequency (MHz) | Quasi Peak (dBμV/m) | Bandwidth (kHz) | Pol | Corr. (dB) | Margin - QPK (dB) | Limit - QPK (dBμV/m) |
|-----------------|---------------------|-----------------|-----|------------|-------------------|----------------------|
| 92.320000       | 31.1                | 120.000         | V   | 11.0       | 12.4              | 43.5                 |
| 175.960000      | 37.0                | 120.000         | V   | 8.6        | 6.5               | 43.5                 |
| 191.960000      | 36.3                | 120.000         | V   | 9.3        | 7.2               | 43.5                 |



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**Radiated Emissions (Above 1GHz)**

Operation Frequency: 2402MHz:

| Polarization | Frequency (MHz) | PK Net at 3m (dBμV/m) | AV Net at 3m (dBμV/m) | Correction Factor (dB) | PK Limit at 3m (dBμV/m) | PK Margin (dB) | AV Limit at 3m (dBμV/m) | AV Margin (dB) |
|--------------|-----------------|-----------------------|-----------------------|------------------------|-------------------------|----------------|-------------------------|----------------|
| Horizontal   | 2402.500        | 84.8                  | 80.2                  | -12.8                  | 114.0                   | -29.2          | 94.0                    | -13.8          |
| Horizontal   | 4804.200        | 51.9                  | --                    | -8.8                   | --                      | --             | 54.0                    | -2.1           |
| Horizontal   | 7206.100        | 36.4                  | --                    | -6.2                   | --                      | --             | 54.0                    | -17.6          |
| Horizontal   | 10030.700       | 36.3                  | --                    | -4.7                   | --                      | --             | 54.0                    | -17.7          |
| Vertical     | 2402.500        | 88.6                  | 80.1                  | -12.8                  | 114.0                   | -25.4          | 94.0                    | -13.9          |
| Vertical     | 4804.300        | 59.6                  | 49.2                  | -8.8                   | 74.0                    | -14.4          | 54.0                    | -4.8           |
| Vertical     | 7206.100        | 43.1                  | --                    | -6.2                   | --                      | --             | 54.0                    | -10.9          |
| Vertical     | 10030.7         | 32.3                  | --                    | -4.7                   | --                      | --             | 54.0                    | -21.7          |

Operation Frequency: 2440MHz:

| Polarization | Frequency (MHz) | PK Net at 3m (dBμV/m) | AV Net at 3m (dBμV/m) | Correction Factor (dB) | PK Limit at 3m (dBμV/m) | PK Margin (dB) | AV Limit at 3m (dBμV/m) | AV Margin (dB) |
|--------------|-----------------|-----------------------|-----------------------|------------------------|-------------------------|----------------|-------------------------|----------------|
| Horizontal   | 2440.400        | 86.3                  | 80.6                  | -12.8                  | 114.0                   | -27.7          | 94.0                    | -13.4          |
| Horizontal   | 4880.300        | 53.1                  | --                    | -8.8                   | --                      | --             | 54.0                    | -0.9           |
| Horizontal   | 7320.200        | 36.2                  | --                    | -6.2                   | --                      | --             | 54.0                    | -17.8          |
| Horizontal   | 9760.800        | 34.4                  | --                    | -4.7                   | --                      | --             | 54.0                    | -19.6          |
| Vertical     | 2439.700        | 86.7                  | 80.1                  | -12.8                  | 114.0                   | -27.3          | 94.0                    | -13.9          |
| Vertical     | 4880.250        | 54.2                  | 45.6                  | -8.8                   | 74.0                    | -19.8          | 54.0                    | -8.4           |
| Vertical     | 7320.300        | 40.1                  | --                    | -6.2                   | --                      | --             | 54.0                    | -13.9          |
| Vertical     | 9760.8          | 36.5                  | --                    | -4.7                   | --                      | --             | 54.0                    | -17.5          |

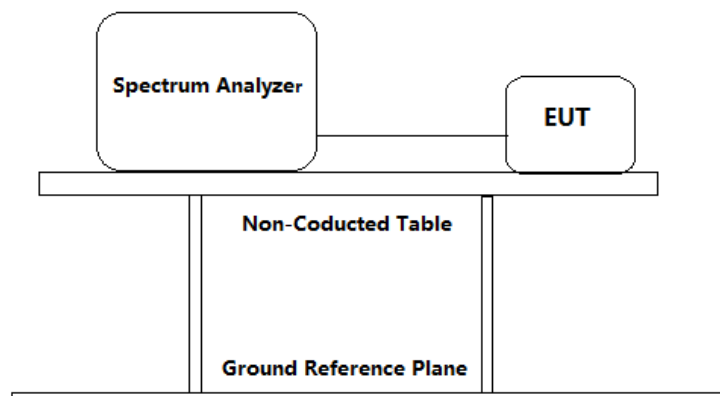
Operation Frequency: 2480MHz:

| Polarization | Frequency (MHz) | PK Net at 3m (dBμV/m) | AV Net at 3m (dBμV/m) | Correction Factor (dB) | PK Limit at 3m (dBμV/m) | PK Margin (dB) | AV Limit at 3m (dBμV/m) | AV Margin (dB) |
|--------------|-----------------|-----------------------|-----------------------|------------------------|-------------------------|----------------|-------------------------|----------------|
| Horizontal   | 2480.100        | 84.9                  | 80.6                  | -12.8                  | 114.0                   | -29.1          | 94.0                    | -13.4          |
| Horizontal   | 4959.900        | 54.3                  | 46.0                  | -8.8                   | 74.0                    | -19.7          | 54.0                    | -8.0           |
| Horizontal   | 7440.300        | 37.7                  | --                    | -6.2                   | --                      | --             | 54.0                    | -16.3          |
| Horizontal   | 10246.400       | 36.9                  | --                    | -4.7                   | --                      | --             | 54.0                    | -17.1          |
| Vertical     | 2480.400        | 89.1                  | 80.1                  | -12.8                  | 114.0                   | -24.9          | 94.0                    | -13.9          |
| Vertical     | 4960.400        | 59.4                  | 48.1                  | -8.8                   | 74.0                    | -14.6          | 54.0                    | -5.9           |
| Vertical     | 7440.300        | 42.9                  | --                    | -6.2                   | --                      | --             | 54.0                    | -11.1          |
| Vertical     | 10231.6         | 33.4                  | --                    | -4.7                   | --                      | --             | 54.0                    | -20.6          |

- Notes:
1. AT frequencies equal to or less than 1000MHz, quasi-peak detector was used, above 1000MHz, Peak detector and AV detector were used.
  2. All measurements were made at 3 meter.
  3. Negative value in the margin column shows emission below limit.
  4. Horn antenna is used for the emission over 1000MHz.
  5. When Peak emission level was below AV limit, the AV emission level did not be recorded.

#### 4.8 Band Edges Requirement

|                     |                                                                                                                                                                                                                                                                                                     |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement:   | FCC PART 15 C section 15.249 (d)<br><br>(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in§ 15.209, whichever is the lesser attenuation. |
| Frequency Band:     | 2400 MHz to 2483.5 MHz                                                                                                                                                                                                                                                                              |
| Test Method:        | ANSI C63.10: Clause 6.10                                                                                                                                                                                                                                                                            |
| Test Status:        | Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). The lowest, middle and the highest channels were selected for the final test as listed below. |
| Test Configuration: |                                                                                                                                                                                                                                                                                                     |



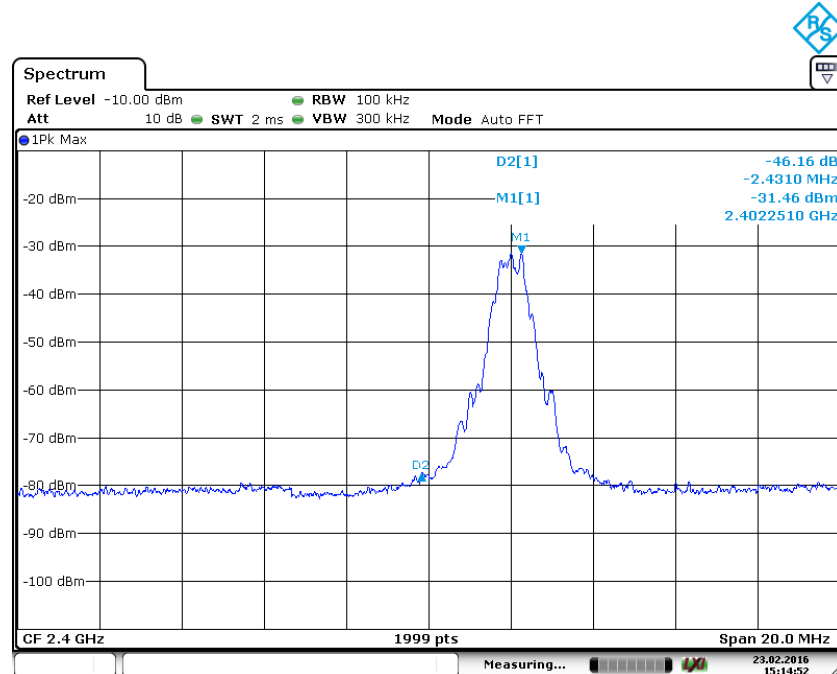
**Test result with plots as follows:**

**Result plot as follows:**

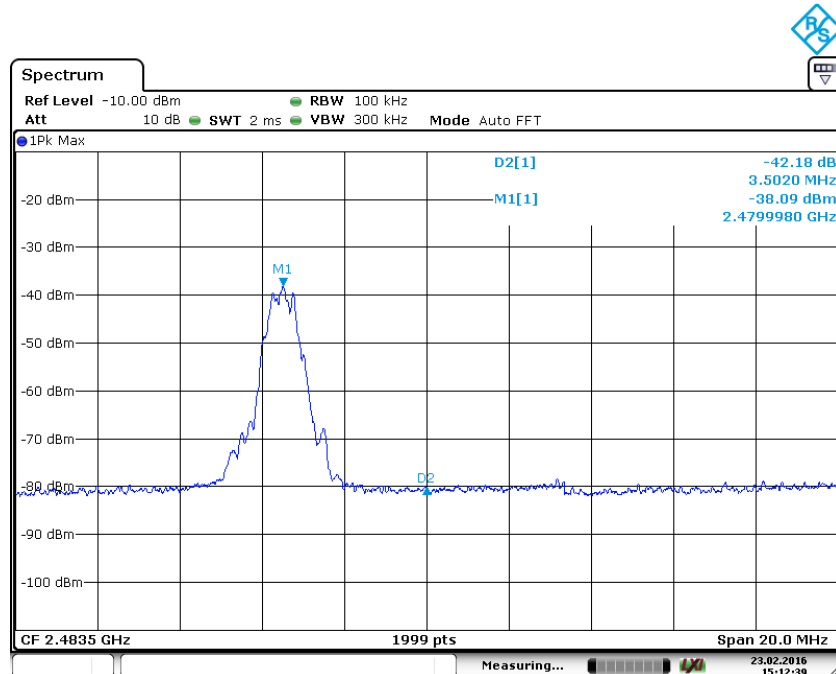


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Channel 0: 2.402 GHz



Channel 39: 2.480 GHz



#### Peak Measurement

Band-edge compliance is determined by applying marker-delta method, i.e (Band-edge Plot).

(i) Lower band-edge:

Peak Resultant field strength

= Fundamental emissions (Peak value) – delta from the band-edge plot

= 88.6dB $\mu$ v/m – 46.2dB

= 42.4dB $\mu$ v/m

(ii) Upper band-edge:

Peak Resultant field strength

= Fundamental emissions (Peak value) – delta from the band-edge plot

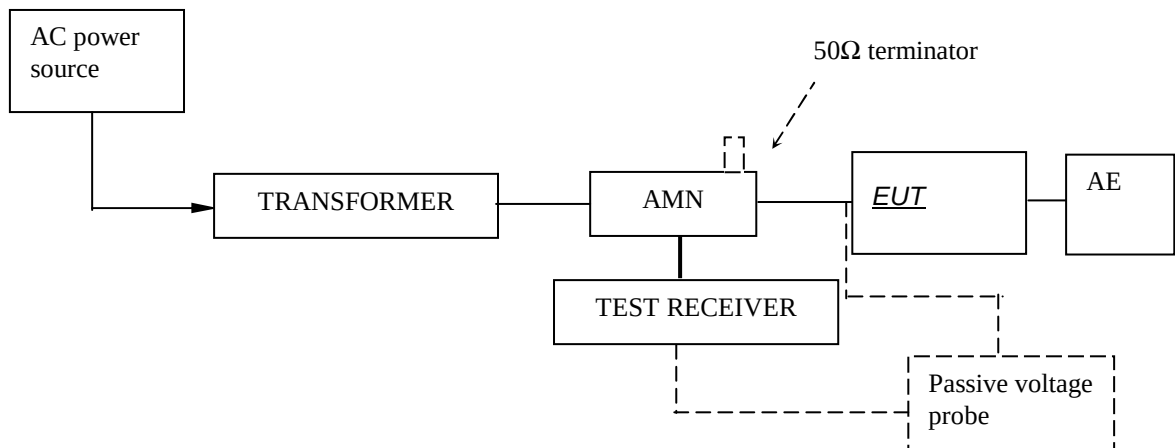
= 89.1dB $\mu$ v/m – 42.2dB

= 46.9dB $\mu$ v/m

The Peak resultant field strength meets the general radiated emission AV limit 54dB $\mu$ v/m, so it complies with the requirement.

#### 4.9 Conducted Emissions at Mains Terminals

Test Configuration:



#### Test Setup and Procedure

Test was performed according to ANSI C63.10 Clause 6.2. The EUT was set to achieve the maximum emission level. The mains terminal disturbance voltage was measured with the EUT in a shielded room. The EUT was connected to AC power source through an Artificial Mains Network which provides a 50Ω linear impedance. Artificial hand is used if appropriate (for handheld apparatus). The load/control terminal disturbance voltage was measured with passive voltage probe if appropriate.

The table-top EUT was placed on a 0.8m high non-metallic table above earthed ground plane (Ground Reference Plane). And for floor standing EUT, was placed on a 10mm high non-metallic supported on GRP. The EUT keeps a distance of at least 0.8m from any other of the metallic surface. The Artificial Mains Network is situated at a distance of 0.8m from the EUT.

During the test, mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m.

The bandwidth of test receiver was set at 9 kHz. The frequency range from 150 kHz to 30MHz was checked.

Pre-test in the three channels: 2402MHz, 2440MHz and 2480MHz and found the conducted emission on 2440MHz was the worst case, so below test data was for 2440MHz.



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Test Data

At main terminal: Pass

Tested Wire: Live

Operation Mode: Operate at 2440MHz Continues transmit

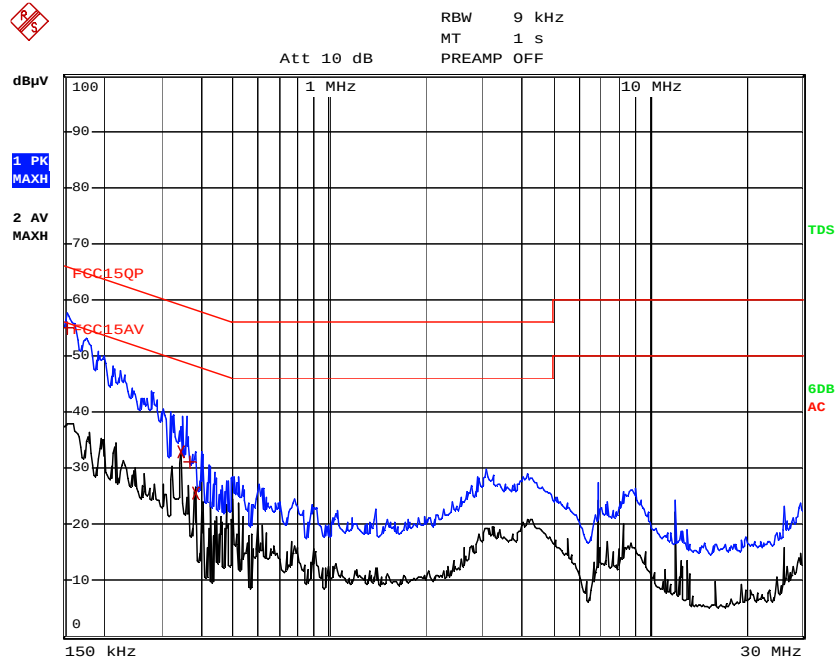
| EDIT PEAK LIST (Final Measurement Results) |           |            |    |                |
|--------------------------------------------|-----------|------------|----|----------------|
| Trace1:                                    | FCC15QP   |            |    |                |
| Trace2:                                    | FCC15AV   |            |    |                |
| Trace3:                                    | ---       |            |    |                |
| TRACE                                      | FREQUENCY | LEVEL dBμV |    | DELTA LIMIT dB |
| 1 Quasi Peak                               | 154 kHz   | 54.93      | L1 | -10.85         |
| 2 Average                                  | 342 kHz   | 32.89      | L1 | -16.26         |
| 1 Quasi Peak                               | 366 kHz   | 31.22      | L1 | -27.37         |
| 2 Average                                  | 382 kHz   | 25.67      | L1 | -22.55         |

Tested Wire: Neutral

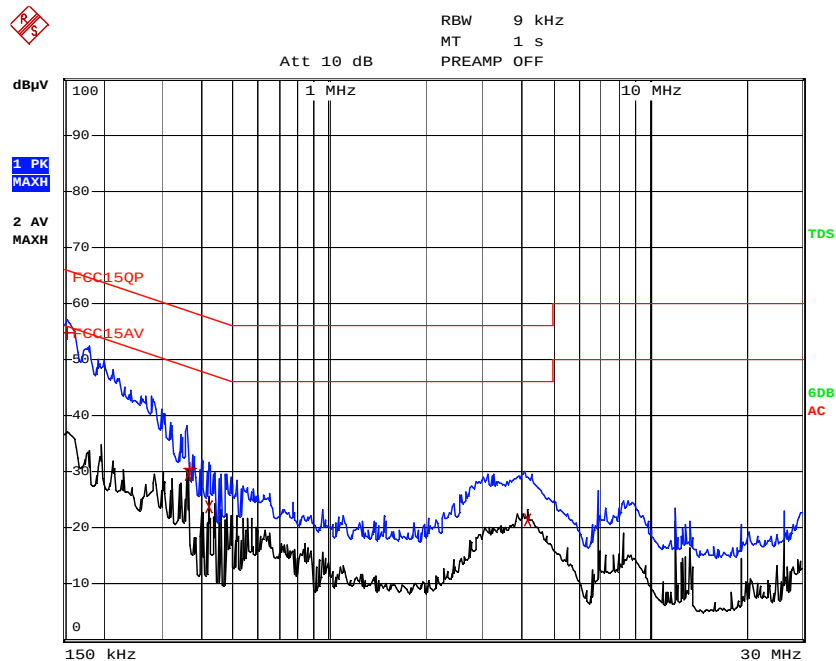
Operation Mode: Operate at 2440MHz Continues transmit

| EDIT PEAK LIST (Final Measurement Results) |           |            |    |                |
|--------------------------------------------|-----------|------------|----|----------------|
| Trace1:                                    | FCC15QP   |            |    |                |
| Trace2:                                    | FCC15AV   |            |    |                |
| Trace3:                                    | ---       |            |    |                |
| TRACE                                      | FREQUENCY | LEVEL dBμV |    | DELTA LIMIT dB |
| 1 Quasi Peak                               | 154 kHz   | 54.83      | L1 | -10.94         |
| 2 Average                                  | 362 kHz   | 29.65      | L1 | -19.02         |
| 1 Quasi Peak                               | 366 kHz   | 30.62      | L1 | -27.96         |
| 2 Average                                  | 418 kHz   | 23.78      | L1 | -23.70         |
| 2 Average                                  | 4.162 MHz | 21.30      | L1 | -24.69         |

### Emission Curve Tested Wire: Live



### Tested Wire: Neutral





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## 10.0 Test Equipment List

### Radiated Emission

| Equipment No. | Equipment                                                     | Model                | Manufacturer  | Cal. date<br>(YYYY-MM-DD) | Calibration<br>Interval |
|---------------|---------------------------------------------------------------|----------------------|---------------|---------------------------|-------------------------|
| EM030-01      | 3m Semi-Anechoic Chamber                                      | 9×6×6 m <sup>3</sup> | ETS•LINDGREN  | 2015-04-02                | 1Y                      |
| EM030-02      | Control room for 3m Semi-Anechoic Chamber                     | 4×4×3 m <sup>3</sup> | ETS•LINDGREN  |                           |                         |
| EM031-02      | EMI Test Receiver<br>(9 kHz~7 GHz)                            | R&S ESR7             | R&S           | 2015-06-03                | 1Y                      |
| EM031-03      | Signal and Spectrum Analyzer<br>(10 Hz~40 GHz)                | R&S<br>FSV40         | R&S           | 2015-06-03                | 1Y                      |
| EM011-04      | Loop antenna<br>(9 kHz-30 MHz)                                | HFH2-Z2              | R&S           | 2015-05-25                | 1Y                      |
| EM061-03      | TRILOG Super Broadband<br>test Antenna<br>(30 MHz-1.5 GHz)    | VULB 9161            | SCHWARZBECK   | 2015-05-25                | 1Y                      |
| EM033-02      | Bouble-Ridged Waveguide<br>Horn Antenna<br>(800 MHz-18 GHz)   | R&S<br>HF907         | R&S           | 2015-05-25                | 1Y                      |
| EM033-03      | High Frequency Antenna &<br>preamplifier<br>(18 GHz~26.5 GHz) | R&S SCU-<br>26       | R&S           | 2015-05-25                | 1Y                      |
| EM033-04      | High Frequency Antenna &<br>preamplifier<br>(26 GHz-40 GHz)   | R&S SCU-<br>40       | R&S           | 2015-05-25                | 1Y                      |
| EM031-02-01   | Coaxial cable(9 kHz-1 GHz)                                    | /                    | R&S           | 2015-06-03                | 1Y                      |
| EM033-02-02   | Coaxial cable(1 GHz-18 GHz)                                   | /                    | R&S           | 2015-06-09                |                         |
| EM033-04-02   | Coaxial cable (18~40) GHz                                     | /                    | R&S           | 2015-06-09                |                         |
| EM022-03      | 2.45 GHz Filter                                               | BRM<br>50702         | Micro-Tronics | 2015-05-06                | 1Y                      |

### Conducted emission at the mains terminals test

| Equipment No. | Equipment       | Model    | Manufacturer | Cal.Due date<br>(YYYY-MM-DD) | Calibration<br>Interval |
|---------------|-----------------|----------|--------------|------------------------------|-------------------------|
| EM080-05      | EMI receiver    | ESCI     | R&S          | 2015-08-04                   | 1Y                      |
| EM006-05      | LISN            | ENV216   | R&S          | 2015-09-12                   | 1Y                      |
| EM006-06      | LISN            | ENV216   | R&S          | 2015-09-12                   | 1Y                      |
| EM006-06-01   | Coaxial cable   | /        | R&S          | 2015-04-12                   | 1Y                      |
| EM004-04      | EMC shield Room | 8m×3m×3m | Zhongyu      | 2015-08-04                   | 1Y                      |