# Test Report

**Date : 2019-09-17** 
**No. : HM19080050**

**Applicant:** Solstice Technologies Ltd.
Unit 2301-2, 23/F., Alliance Building, 133 Connaught Road Central, Sheung Wan, Hong Kong

**Manufacturer:** Solstice Electronic Technologies (Dongguan) Ltd.
F/2, 102No138, Tianzhai Group, Yisha Village, Shatin Town, Dongguan City, Guangdong Province.

**Description of Sample(s):** Submitted sample(s) said to be

| | |
|---|---|
| Product: | BLUETOOTH CANDY & OIL THERMOMETER |
| Brand Name: | Maverick industries Inc. |
| Model No.: | CT-10 |
| FCC ID: | 2AULQCT-10 |

**Date Samples Received:** 2019-08-26

**Date Tested:** 2019-09-06 to 2019-09-10

**Investigation Requested:** Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2018 and ANSI C63.10:2013 for FCC Certification.

**Conclusions:** The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

**Remarks:** Bluetooth Low Energy (BLE) only

CHEUNG Chi, Kenneth
Authorized Signatory


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# Test Report



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## 1.0 General Details

### 1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd.
EMC Laboratory
Head Office: 10 Dai Wang Street, Taipo Industrial Estate, Tai Po, N.T., Hong Kong
Telephone: 852 2666 1888
Fax: 852 2664 4353

### 1.2 Equipment Under Test [EUT]

**Description of Sample(s)**

| | |
|---|---|
| Product: | BLUETOOTH CANDY & OIL THERMOMETER |
| Manufacturer: | Solstice Electronic Technologies (Dongguan) Ltd.<br>F/2, 102No138, Tianzhai Group, Yisha Village, Shatin Town, Dongguan City, Guangdong Province. |
| Brand Name: | Maverick industries Inc. |
| Model Number: | CT-10 |
| Rating: | “CR2025” x1 = 3Vd.c |

### 1.2.1 Description of EUT Operation

The Equipment Under Test (EUT) is a 2.4GHz Bluetooth Thermometer. The tests were conducted under RF Test mode to maintain continuous transmission (>98% duty cycle) during test. The transmission signal is digital modulated with channel frequency range 2402-2480MHz. The R.F. signal was modulated by IC; the type of modulation used was GFSK.

### 1.3 Date of Order

2019-08-26

### 1.4 Submitted Sample(s):

1 Sample

### 1.5 Test Duration

2019-09-06 to 2019-09-10

### 1.6 Country of Origin

China


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## 1.7 RF Module Details

Module Model Number: MI8105
Module FCC ID: N/A
Module Transmission Type: Bluetooth Low Energy (BLE)
Modulation: GFSK
Data Rates: 1Mbps (Max)
Frequency Range: 2400-2483.5MHz
Carrier Frequencies: 2402MHz – 2480MHz

Module Specification (specification provided by manufacturer)

## 1.8 Channel List

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


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## 2.0 Technical Details

### 2.1 Investigations Requested

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2018 Regulations and ANSI C63.10:2013 for FCC Certification.
According FCC KDB 558074 DTS Measurement Guidance, Duty cycle ≧98%.
The device was realized by test software.

### 2.2 Test Standards and Results Summary Tables

| EMISSION Results Summary | | | | | | |
|---|---|---|---|---|---|---|
| Test Condition | Test Requirement | Test Method | Class / Severity | Test Result | | |
| | | | | Pass | Failed | N/A |
| Maximum Peak Output Power | FCC 47CFR 15.247(b)(3) | ANSI C63.10: 2013 | N/A | ☒ | ☐ | ☐ |
| Radiated Spurious Emissions | FCC 47CFR 15.209 | ANSI C63.10: 2013 | N/A | ☒ | ☐ | ☐ |
| AC Mains Conducted Emissions | FCC 47CFR 15.207 | ANSI C63.10: 2013 | N/A | ☒ | ☐ | ☐ |
| Power Spectral Density | FCC 47CFR 15.247(e) | ANSI C63.10: 2013 | N/A | ☒ | ☐ | ☐ |
| 6dB Bandwidth | FCC 47CFR 15.247(a)(2) | ANSI C63.10: 2013 | N/A | ☒ | ☐ | ☐ |
| Band Edge Emissions (Radiated) | FCC 47CFR 15.247(d) | ANSI C63.10: 2013 | N/A | ☒ | ☐ | ☐ |
| Antenna requirement | FCC 47CFR 15.203 | N/A | N/A | ☒ | ☐ | ☐ |
| RF Exposure | FCC 47CFR 15.247(i) | N/A | N/A | ☒ | ☐ | ☐ |

Note: N/A - Not Applicable


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## 3.0 Test Results

### 3.1 Emission

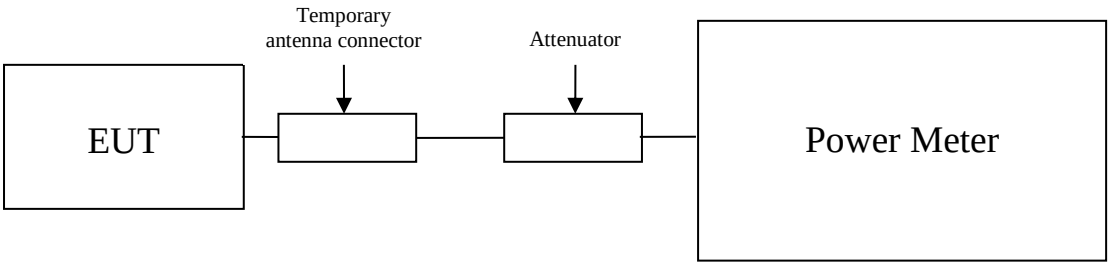
#### 3.1.1 Maximum Peak Output Power

| | |
|---|---|
| Test Requirement: | FCC 47CFR 15.247(b)(3) |
| Test Method: | ANSI C63.10: 2013 |
| Test Date: | 2019-09-06 |
| Mode of Operation: | Tx mode |

**Test Method:**

The RF output of the EUT was connected to the Power Meter. All the attenuation or cable loss will be added to the measured maximum output power.

**Test Setup:**





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**Limits for Peak Output Power of Fundamental & Harmonics Emissions [FCC 47CFR 15.247]:**

For Digital Transmission systems in 2400-2483.5 MHz Band: 1 Watt (30dBm)

**Results of Tx Mode: Pass (TX Unit)**
**Maximum conducted peak power**

| Channel | Frequency(MHz) | Output Power(Watt) |
|---|---|---|
| 0 | 2402 | 0.00000075 |
| 19 | 2440 | 0.00000143 |
| 39 | 2480 | 0.00000102 |

| | | | |
|---|---|---|---|
| Calculated measurement uncertainty | : | 30MHz to 1GHz | 4.4dB |
| | | 1GHz to 26GHz | 4.6dB |


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### 3.1.2 Radiated Emissions

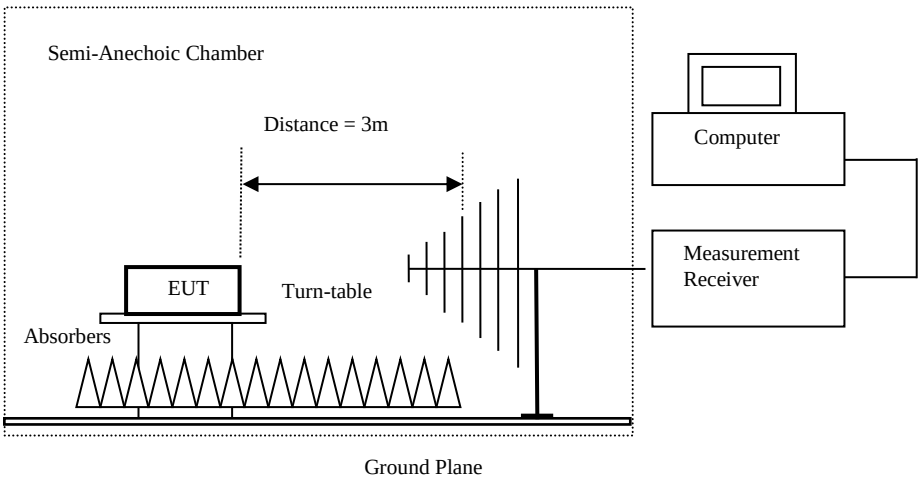
| | |
|---|---|
| Test Requirement: | FCC 47CFR 15.209 |
| Test Method: | ANSI C63.10:2013 |
| Test Date: | 2019-09-06 |
| Mode of Operation: | Tx mode |

**Test Method:**

For emission measurements at or below 1 GHz, the sample was placed 0.8m above the ground plane of semi-anechoic Chamber*. For emission measurements above 1 GHz, the sample was placed 1.5m above the ground plane of semi-anechoic Chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

Semi-anechoic chamber located at STC filed with Industry Canada File Number: 4789A

**Test Setup:**




- Absorbers placed on top of the ground plane are for measurements above 1000MHz only.
- Measurements between 30MHz to 1000MHz made with Bi-log antennas, above 1000MHz horn antennas are used, 9kHz to 30MHz loop antennas are used.
-For emissions testing at or below 1 GHz, the table height shall be 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m.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Limits for Radiated Emissions FCC 47 CFR 15.247 Class B]:

| Frequency Range | Quasi-Peak Limits |
|---|---|
| [MHz] | [μV/m] |
| 0.009-0.490 | 2400/F (kHz) |
| 0.490-1.705 | 24000/F (kHz) |
| 1.705-30 | 30 |
| 30-88 | 100 |
| 88-216 | 150 |
| 216-960 | 200 |
| Above960 | 500 |

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.


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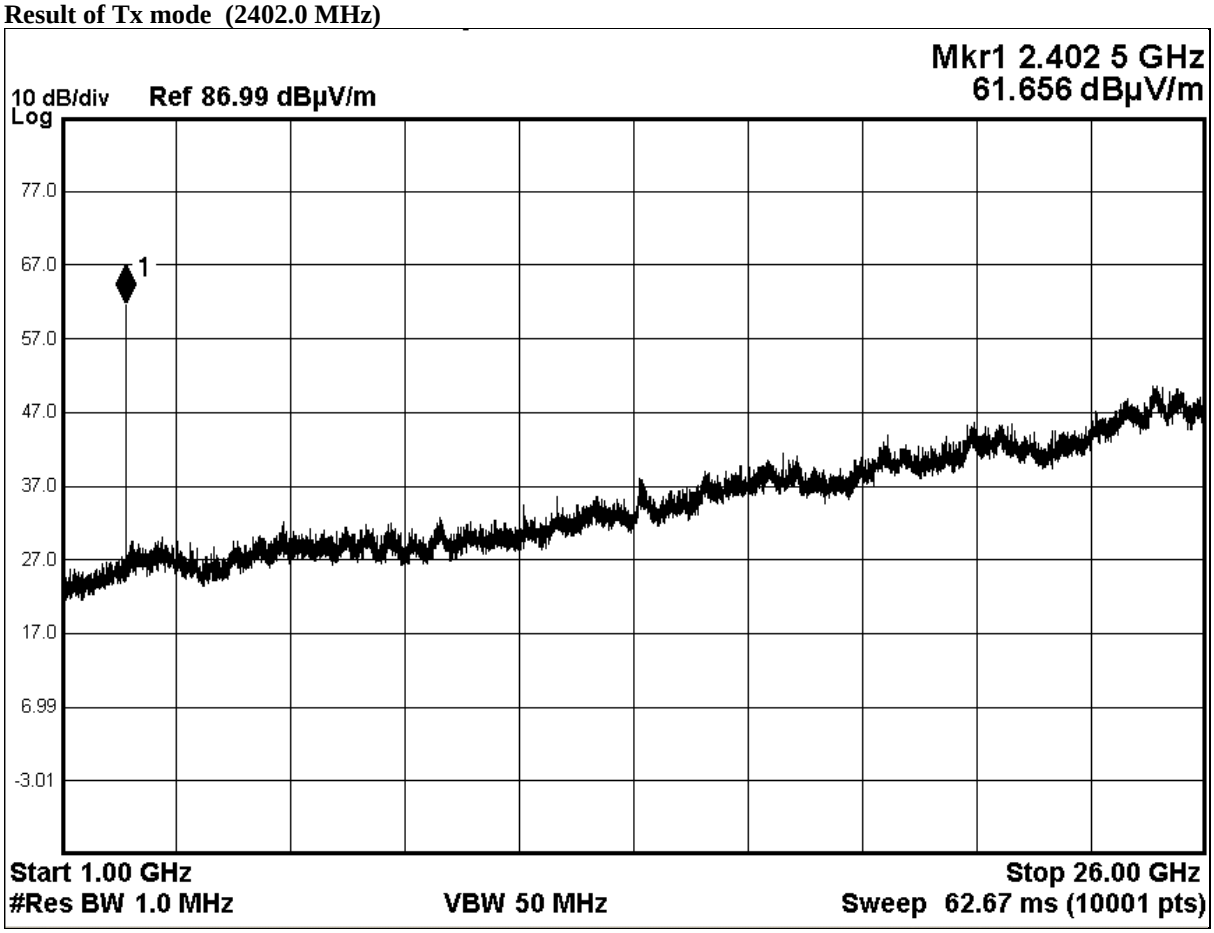
**Result of Tx mode (2402.0 MHz)**





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**Result of Tx mode (2402.0 MHz) (9kHz – 30MHz): Pass**

| Field Strength of Spurious Emissions<br>Peak Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Field Strength<br>uV/m | Limit<br>uV/m | E-Field Polarity |
| **Emissions detected are more than 20 dB below the Limits** | | | | | | |

**Result of Tx mode (2402.0 MHz) (Above 1GHz): Pass**

| Field Strength of Spurious Emissions<br>Peak Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level @3m<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Limit @3m<br>dBuV/m | Margin<br>dBuV/m | E-Field Polarity |
| 2402.0 | 33.8 | 27.9 | 61.7 | N/A | N/A | Vertical |
| 4804.0 | -3.4 | 32.1 | 28.7 | 74.0 | 45.3 | Vertical |
| 7206.0 | -4.6 | 38.6 | 34.0 | 74.0 | 40.0 | Vertical |
| 9608.0 | -4.1 | 41.3 | 37.2 | 74.0 | 36.8 | Vertical |
| 12010.0 | -3.8 | 43.5 | 39.7 | 74.0 | 34.3 | Vertical |

| Field Strength of Spurious Emissions<br>Average Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level @3m<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Limit @3m<br>dBuV/m | Margin<br>dBuV/m | E-Field Polarity |
| 2402.0 | 20.9 | 27.9 | 48.8 | N/A | N/A | Vertical |
| 4804.0 | -5.2 | 32.1 | 26.9 | 54.0 | 27.1 | Vertical |
| 7206.0 | -6.3 | 38.6 | 32.3 | 54.0 | 21.7 | Vertical |
| 9608.0 | -6.8 | 41.3 | 34.5 | 54.0 | 19.5 | Vertical |
| 12010.0 | 6.7 | 43.5 | 50.2 | 54.0 | 3.8 | Vertical |


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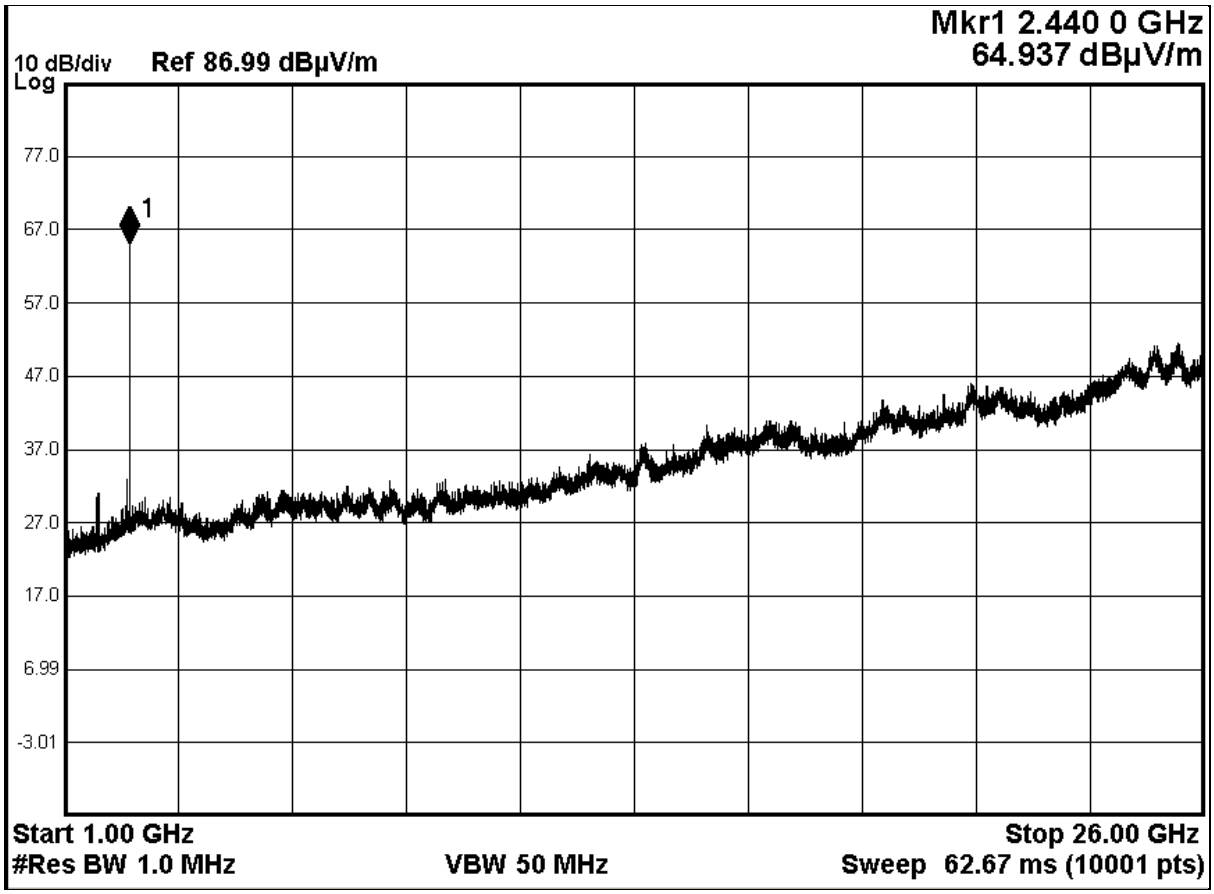
**Result of Tx mode (2440.0 MHz)**





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**Result of Tx mode (2440.0 MHz) (9kHz – 30MHz): Pass**

| Field Strength of Spurious Emissions<br>Peak Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Field Strength<br>uV/m | Limit<br>uV/m | E-Field Polarity |
| **Emissions detected are more than 20 dB below the Limits** | | | | | | |

**Result of Tx mode (2440.0 MHz) (Above 1GHz): Pass**

| Field Strength of Spurious Emissions<br>Peak Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level @3m<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Limit @3m<br>dBuV/m | Margin<br>dBuV/m | E-Field Polarity |
| 2440.0 | 37.0 | 27.9 | 64.9 | N/A | N/A | Vertical |
| 4880.0 | -3.6 | 32.1 | 28.5 | 74.0 | 45.5 | Vertical |
| 7320.0 | -3.8 | 38.6 | 34.8 | 74.0 | 39.2 | Vertical |
| 9760.0 | -4.6 | 41.3 | 36.7 | 74.0 | 37.3 | Vertical |
| 12200.0 | -4.2 | 43.5 | 39.3 | 74.0 | 34.7 | Vertical |

| Field Strength of Spurious Emissions<br>Average Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level @3m<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Limit @3m<br>dBuV/m | Margin<br>dBuV/m | E-Field Polarity |
| 2440.0 | 23.4 | 27.9 | 51.3 | N/A | N/A | Vertical |
| 4880.0 | -5.8 | 32.1 | 26.3 | 54.0 | 27.7 | Vertical |
| 7320.0 | -6.3 | 38.6 | 32.3 | 54.0 | 21.7 | Vertical |
| 9760.0 | -5.7 | 41.3 | 35.6 | 54.0 | 18.4 | Vertical |
| 12200.0 | -6.8 | 43.5 | 36.7 | 54.0 | 17.3 | Vertical |


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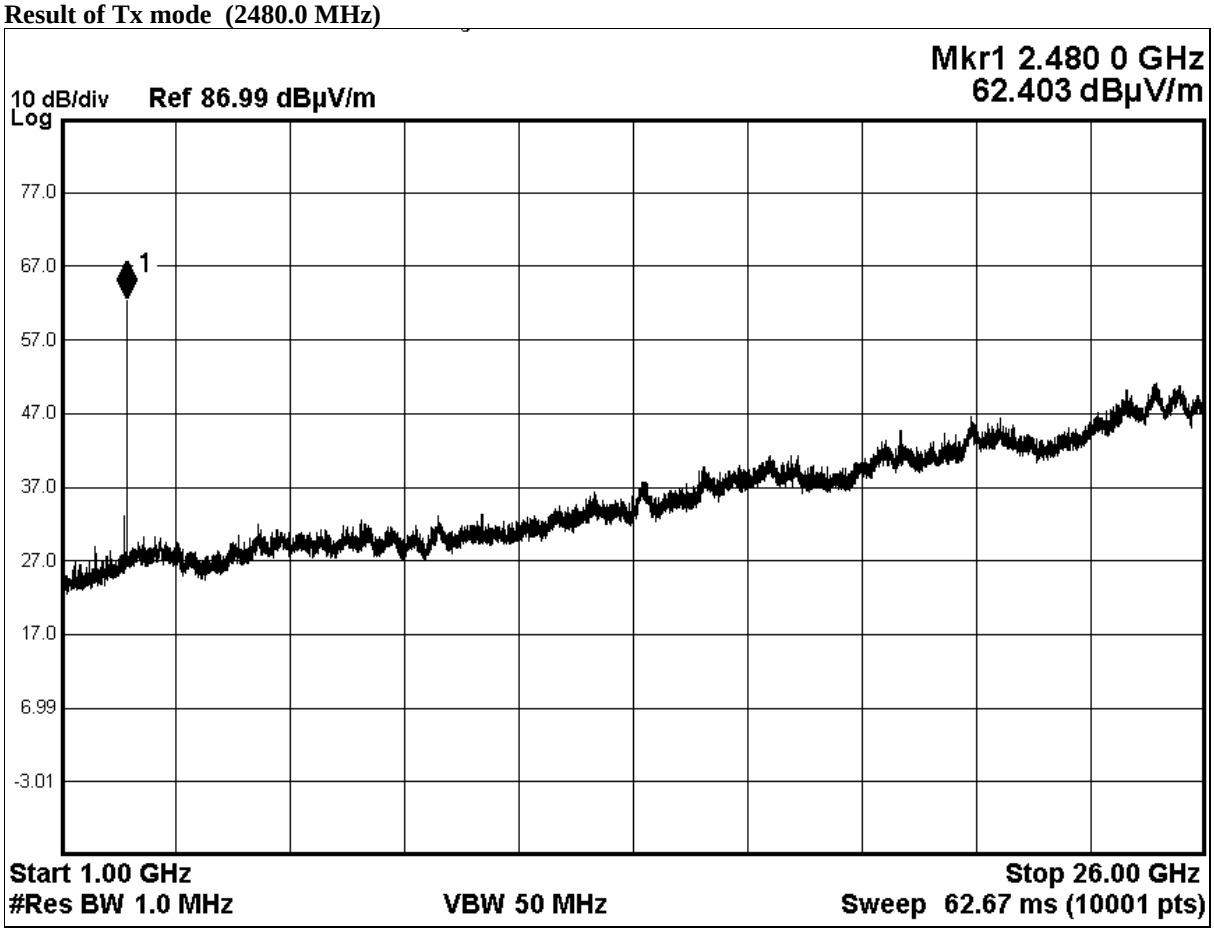
**Result of Tx mode (2480.0 MHz)**





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**Result of Tx mode (2480.0 MHz) (9kHz – 30MHz): Pass**

| Field Strength of Spurious Emissions<br>Peak Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Field Strength<br>uV/m | Limit<br>uV/m | E-Field Polarity |
| **Emissions detected are more than 20 dB below the Limits** | | | | | | |

**Result of Tx mode (2480.0 MHz) (Above 1GHz): Pass**

| Field Strength of Spurious Emissions<br>Peak Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level @3m<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Limit @3m<br>dBuV/m | Margin<br>dBuV/m | E-Field Polarity |
| 2480.0 | 34.5 | 27.9 | 62.4 | N/A | N/A | Vertical |
| 4960.0 | -3.4 | 32.2 | 28.8 | 74.0 | 45.2 | Vertical |
| 7440.0 | -4.9 | 38.6 | 33.7 | 74.0 | 40.3 | Vertical |
| 9920.0 | -5.1 | 42.1 | 37.0 | 74.0 | 37.0 | Vertical |
| 12400.0 | -5.6 | 44.1 | 38.5 | 74.0 | 35.5 | Vertical |

| Field Strength of Spurious Emissions<br>Average Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level @3m<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Limit @3m<br>dBuV/m | Margin<br>dBuV/m | E-Field Polarity |
| 2480.0 | 22.4 | 27.9 | 50.3 | N/A | N/A | Vertical |
| 4960.0 | -5.3 | 32.2 | 26.9 | 54.0 | 27.1 | Vertical |
| 7440.0 | -6.7 | 38.6 | 31.9 | 54.0 | 22.1 | Vertical |
| 9920.0 | -6.1 | 42.1 | 36.0 | 54.0 | 18.0 | Vertical |
| 12400.0 | -6.3 | 44.1 | 37.8 | 54.0 | 16.2 | Vertical |


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Remarks:
No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz
* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

| | | | |
|---|---|---|---|
| Calculated measurement uncertainty | : | 9kHz-30MHz | 3.3dB |
| | | 30MHz -1GHz | 4.6dB |
| | | 1GHz -26GHz | 4.4dB |

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.


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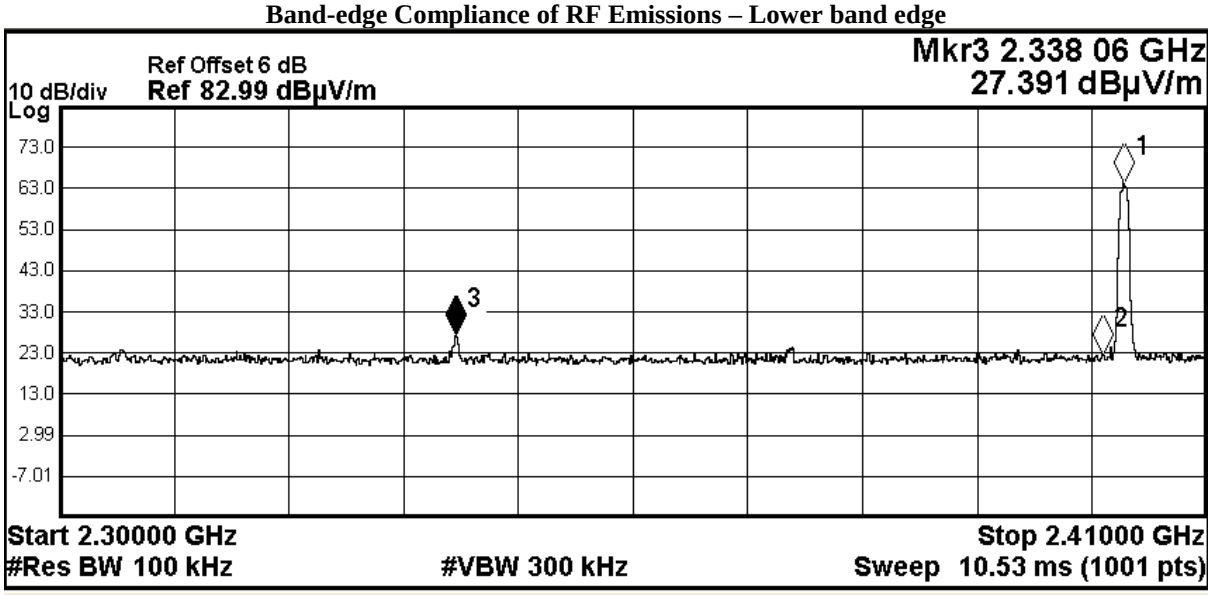
**Band Edge Measurement:**
**Limit：**
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).

| Frequency Range [MHz] | Emission Attenuated below the Fundamental [dB] |
|---|---|
| 2400 – Lowest Fundamental (2402) | 41.6 |

**Band-edge Compliance of RF Emissions – Lower band edge**




| MKR | MODE | TRC | SCL | X | Y | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |
|---|---|---|---|---|---|---|---|---|
| 1 | N | 1 | f | 2.402 08 GHz | 64.264 dBµV/m | | | |
| 2 | N | 1 | f | 2.400 00 GHz | 22.676 dBµV/m | | | |
| 3 | N | 1 | f | 2.338 06 GHz | 27.391 dBµV/m | | | |
| 4 | | | | | | | | |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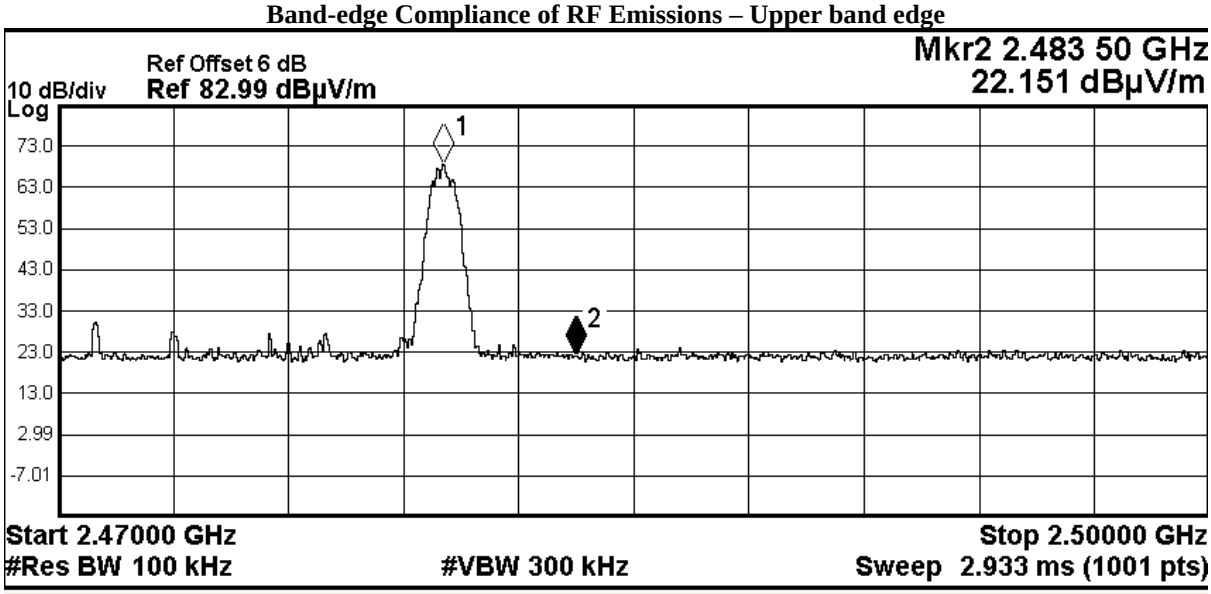
**Band-edge Compliance of RF Emissions Measurement:**

| Frequency Range [MHz] | Emission Attenuated below the Fundamental [dB] |
|---|---|
| 2483.5 - Highest Fundamental (2480) | 34.8 |

**Band-edge Compliance of RF Emissions – Upper band edge**




| MKR | MODE | TRC | SCL | X | Y | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |
|---|---|---|---|---|---|---|---|---|
| 1 | N | 1 | f | 2.480 05 GHz | 68.662 dBµV/m | | | |
| 2 | N | 1 | f | 2.483 50 GHz | 22.151 dBµV/m | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |



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**Radiated Emissions Band-edge and Restricted Band Result:**

| Field Strength of Band-edge Compliance<br>Peak Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level @3m<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Limit @3m<br>dBuV/m | Margin<br>dBuV/m | E-Field Polarity |
| 2338.1 | -0.5 | 27.9 | 27.4 | 74.0 | 46.6 | Vertical |
| 2490.3 | 11.3 | 27.9 | 39.2 | 74.0 | 34.8 | Vertical |

| Field Strength of Band-edge Compliance<br>Average Value | | | | | | |
|---|---|---|---|---|---|---|
| Frequency<br>MHz | Measured Level @3m<br>dBuV | Correction Factor<br>dB/m | Field Strength<br>dBuV/m | Limit @3m<br>dBuV/m | Margin<br>dBuV/m | E-Field Polarity |
| 2338.1 | -2.9 | 27.9 | 25.0 | 54.0 | 29.0 | Vertical |
| 2490.3 | 0.3 | 27.9 | 28.2 | 54.0 | 25.8 | Vertical |


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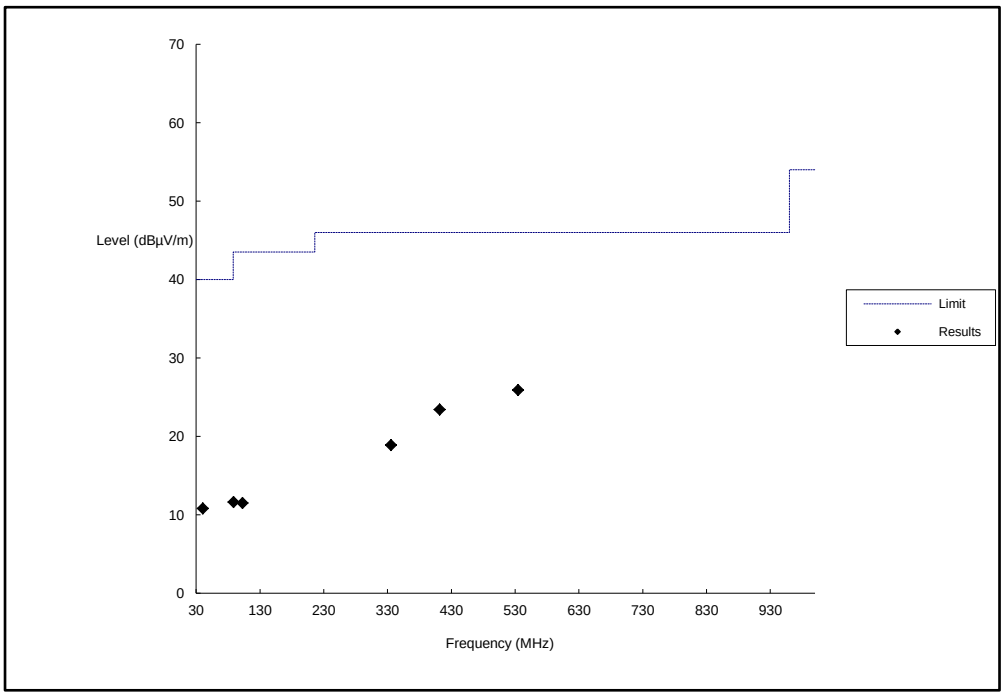
Limits for Radiated Emissions FCC 47 CFR 15.247 Class B]:

| Frequency Range | Quasi-Peak Limits |
|---|---|
| [MHz] | [μV/m] |
| 0.009-0.490 | 2400/F (kHz) |
| 0.490-1.705 | 24000/F (kHz) |
| 1.705-30 | 30 |
| 30-88 | 100 |
| 88-216 | 150 |
| 216-960 | 200 |
| Above960 | 500 |

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

**Results of Tx mode (30MHz – 1GHz): Pass**
Please refer to the following table for result details(The data is the worst cases)





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| **Radiated Emissions Quasi-Peak** | | | | | |
|---|---|---|---|---|---|
| Emission Frequency MHz | E-Field Polarity | Level @3m dBμV/m | Limit @3m dBμV/m | Level @3m μV/m | Limit @3m μV/m |
| 40.8 | Vertical | 10.8 | 40.0 | 3.5 | 200 |
| 88.9 | Vertical | 11.6 | 43.5 | 3.8 | 200 |
| 102.6 | Vertical | 11.5 | 43.5 | 3.8 | 200 |
| 335.8 | Horizontal | 18.9 | 46.0 | 8.8 | 200 |
| 411.8 | Horizontal | 23.4 | 46.0 | 14.8 | 200 |
| 534.9 | Horizontal | 25.9 | 46.0 | 19.7 | 200 |

Remarks:
Calculated measurement uncertainty (30MHz – 1GHz): 4.6dB
Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.


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### 3.1.4 Power Spectral Density

| | |
|---|---|
| Test Requirement: | FCC 47CFR 15.247(e) |
| Test Method: | ANSI C63.10:2013 |
| Test Date: | 2019-09-09 |
| Mode of Operation: | Tx mode (802.11 b/g/n) |

**Test Method:**

The RF output of the EUT was connected to the spectrum analyzer. Set the fundamental frequency as the center frequency of the spectral analyzer. Use RBW=3kHz , VBW= 10kHz , Set the span to 1.5 times the DTS channel bandwidth. Detector = peak, Sweep time = auto couple , Trace mode = max hold.

**Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

**Test Limit:**
The maximum power spectral density (PSD) shall not exceeded 8dBm in any 3kHz band.

**Results of Tx mode : Pass**
**Maximum power spectral density**

| Transmitter Frequency (MHz) | Maximum Power spectral density level / 3kHz band (dBm) | Maximum Power spectral density / 3kHz band limit |
|---|---|---|
| **2402.0** | -57.0 | **8dBm** |
| **2440.0** | -55.2 | **8dBm** |
| **2480.0** | -54.2 | **8dBm** |


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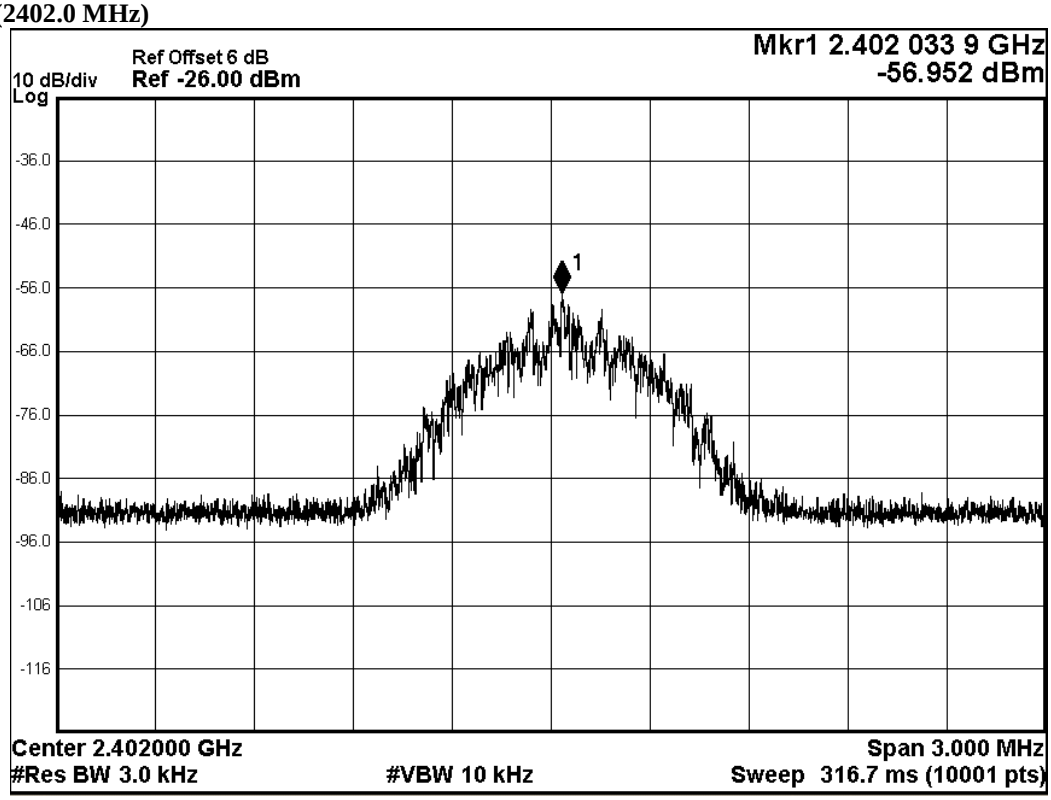
**Tx mode**
**CH 1 (2402.0 MHz)**





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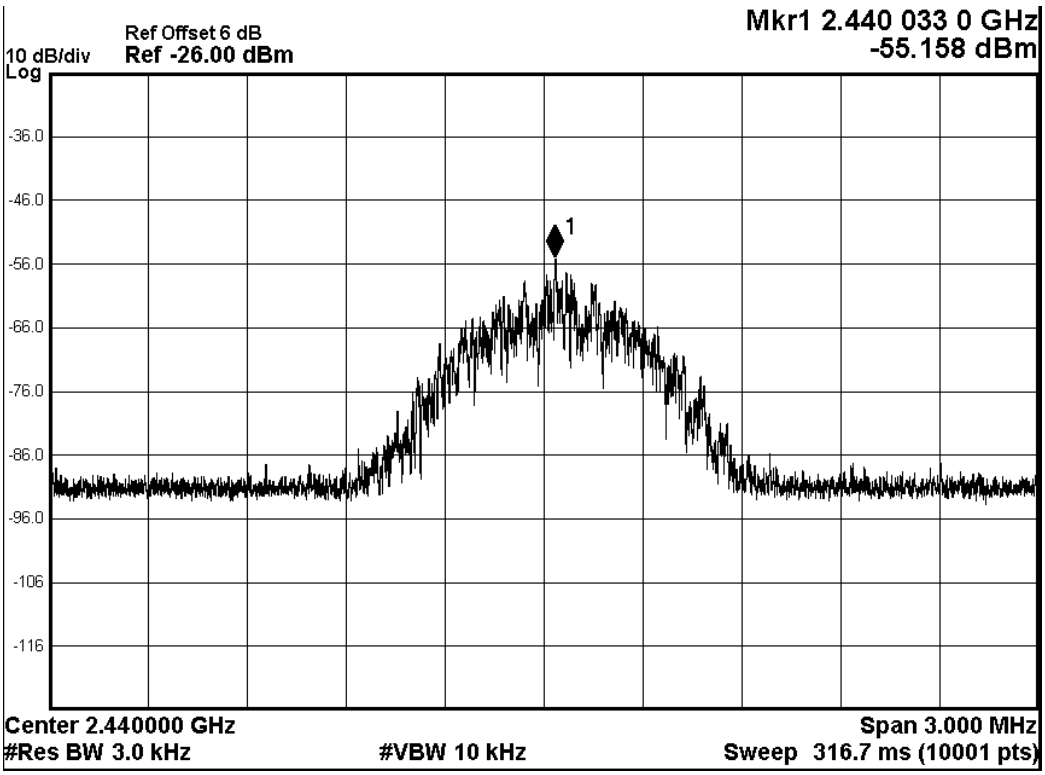
**Tx mode**
**CH 7 (2440.0 MHz)**





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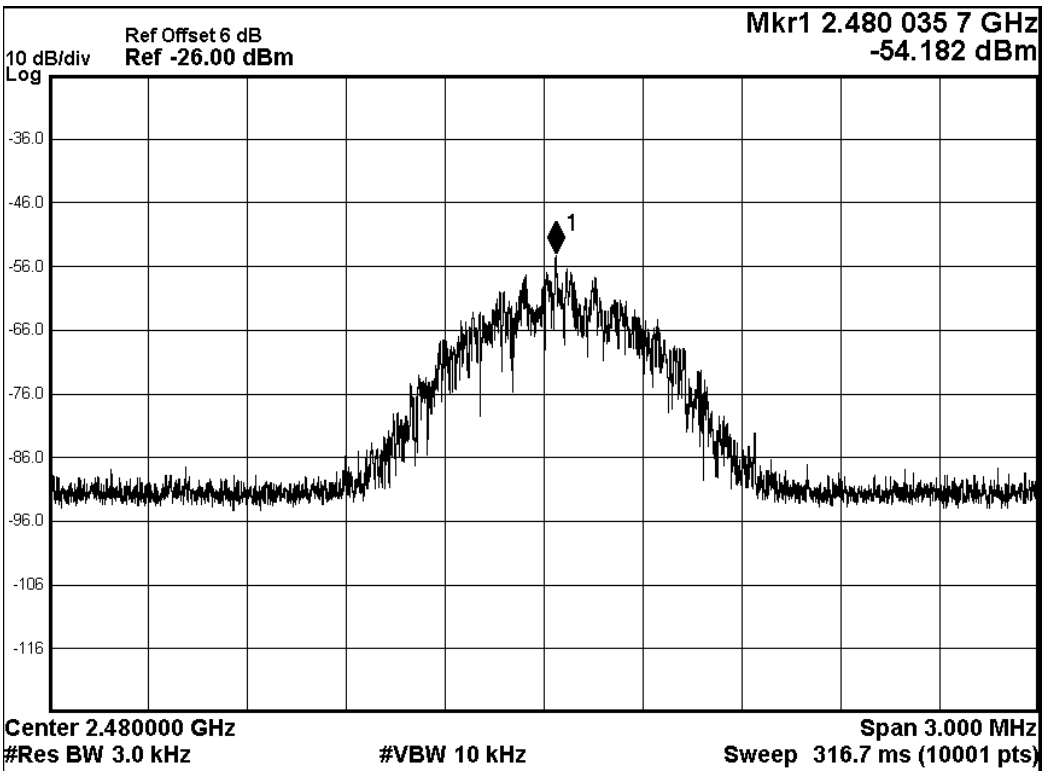
**Tx mode**
**CH 13 (2480.0 MHz)**





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### 3.1.5 6dB Spectrum Bandwidth Measurement

| | |
|---|---|
| Test Requirement: | FCC 47CFR 15.247(a)(2) |
| Test Method: | ANSI C63.10:2013 |
| Test Date: | 2019-09-09 |
| Mode of Operation: | Tx mode (802.11 b/g/n) |

**Test Method:**

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

**Test Setup:**

As Test Setup of clause 3.1.1 in this test report.


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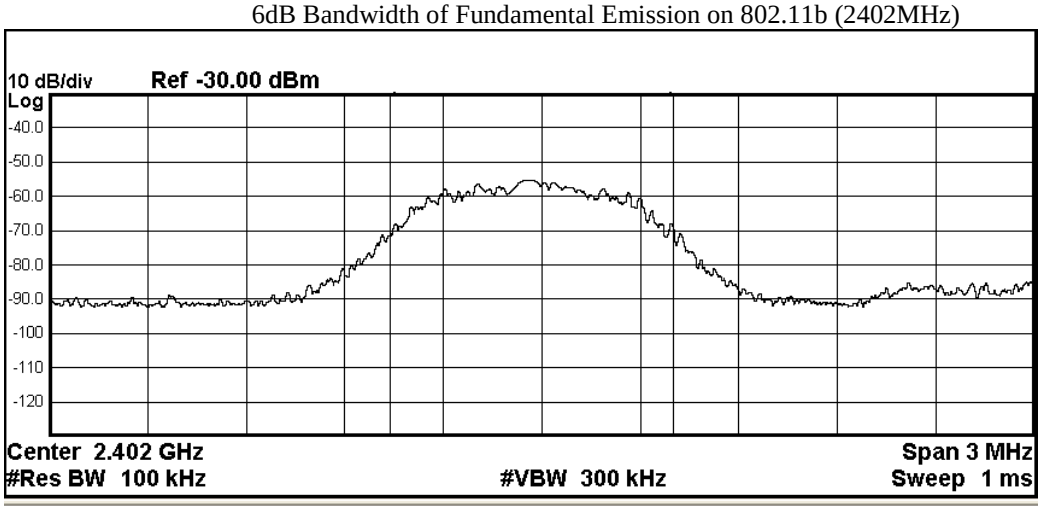
**Limits for 6dB Spectrum Bandwidth Measurement:**

| Center Frequency [MHz] | 6dB Bandwidth [kHz] | FCC Limits [kHz] |
|---|---|---|
| 2402.0 | 653.1 | > 500 |

6dB Bandwidth of Fundamental Emission on 802.11b (2402MHz)




| | | | |
|---|---|---|---|
| Occupied Bandwidth | 855.77 kHz | Total Power | -50.1 dBm |
| Transmit Freq Error | -27.754 kHz | OBW Power | 99.00 % |
| x dB Bandwidth | 653.1 kHz | x dB | -6.00 dB |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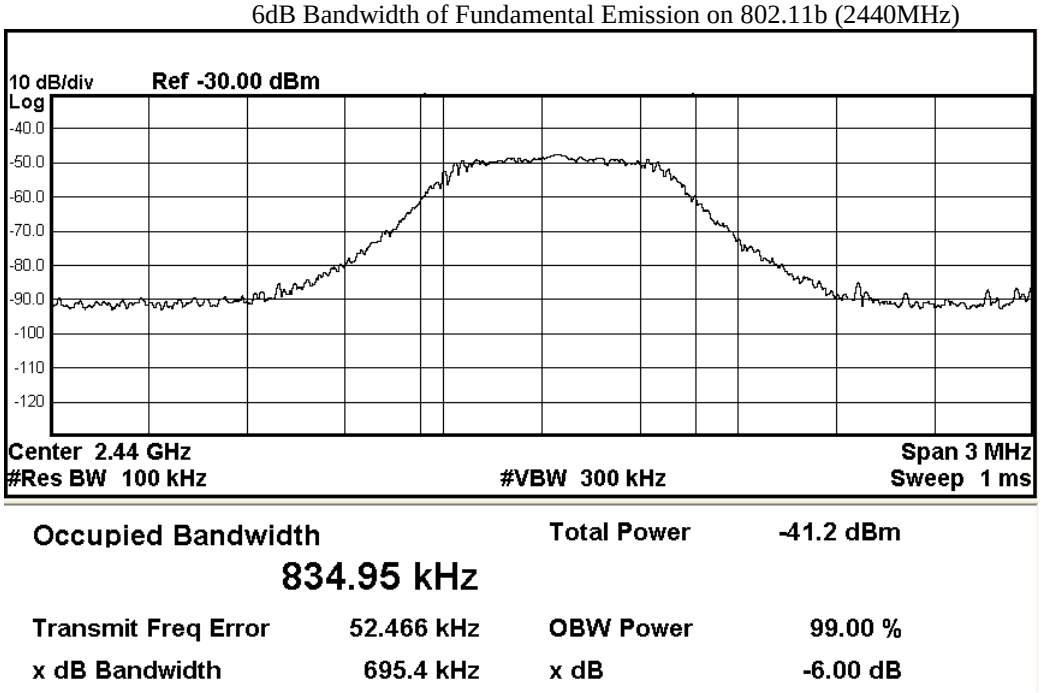
**Limits for 6dB Spectrum Bandwidth Measurement:**

| Frequency Range [MHz] | 6dB Bandwidth [kHz] | FCC Limits [kHz] |
|---|---|---|
| 2440.0 | 695.4 | > 500 |

6dB Bandwidth of Fundamental Emission on 802.11b (2440MHz)





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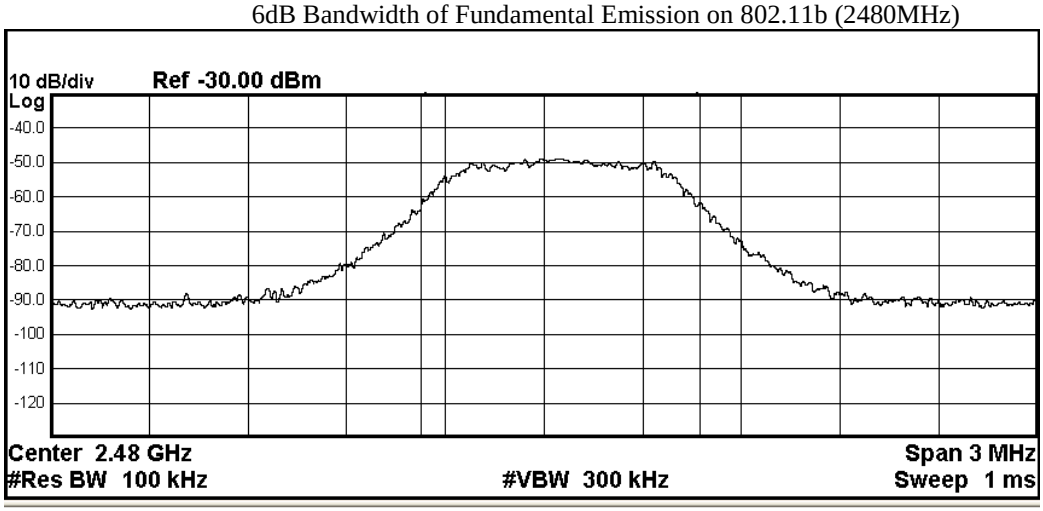
**Limits for 6dB Spectrum Bandwidth Measurement:**

| Frequency Range [MHz] | 6dB Bandwidth [kHz] | FCC Limits [kHz] |
|---|---|---|
| 2480.0 | 710.3 | > 500 |

6dB Bandwidth of Fundamental Emission on 802.11b (2480MHz)




| | | | |
|---|---|---|---|
| Occupied Bandwidth | 840.76 kHz | Total Power | -42.4 dBm |
| Transmit Freq Error | 51.959 kHz | OBW Power | 99.00 % |
| x dB Bandwidth | 710.3 kHz | x dB | -6.00 dB |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### 3.1.6 RF Exposure

**RF Exposure**

| | |
|---|---|
| Test Requirement: | FCC 47CFR 15.247(i) |
| Test Date: | 2019-09-10 |
| Mode of Operation: | Tx mode |

**Requirements:**

In 15.247(i), an equipment shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the limits in §§ 1.1310 and 2.1093 of this chapter.
Applications to the Commission for construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities must contain a statement confirming compliance with the limits unless the facility, operation, or transmitter is categorically excluded, as discussed below. Technical information showing the basis for this statement must be submitted to the Commission upon request.

According to KDB447498 D01 General RF Exposure Guidance v06, unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition.

**Test Results:**

**RF Exposure Evaluation**

N/A, the RF output of the EUT << SAR Exclusion Threshold.


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**Appendix A**

**List of Measurement Equipment**

**Radiated Emission**

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL | DUE CAL |
|---|---|---|---|---|---|---|
| EM215 | MULTIDEVICE CONTROLLER | EMCO | 2090 | 00024676 | N/A | N/A |
| EM217 | ELECTRIC POWERED TURNTABLE | EMCO | 2088 | 00029144 | N/A | N/A |
| EM218 | ANECHOIC CHAMBER | ETS-LINDGREN | FACT-3 | -- | 2019/01/24 | 2020/01/24 |
| EM356 | ANTENNA POSITIONING TOWER | ETS-LINDGREN | 2171B | 00150346 | N/A | N/A |
| EM354 | BICONILOG ANTENNA | ETS-LINDGREN | 3143B | 00142073 | 2018/03/29 | 2020/03/29 |
| EM229 | EMI TEST RECEIVER | R&S | ESIB40 | 100248 | 2019/06/11 | 2020/06/11 |
| EM276 | BROADBAND HORN ANTENNA | A-INFOMW | JXTXLB-10180-SF | J2031090903007 | 2018/04/27 | 2020/04/27 |
| EM318 | USB WIDEBAND POWER SENSOR | AGILENT | U2022XA | MY53470001 | 2019/03/23 | 2021/03/23 |
| EM353 | LOOP ANTENNA | ETS_LINDGREN | 6502 | 00206533 | 2018/04/16 | 2020/04/16 |
| EM318 | USB WIDEBAND POWER SENSOR | AGILENT | U2022XA | MY53470001 | 2019/03/23 | 2021/03/23 |

Remarks:-

CM Corrective Maintenance
N/A Not Applicable
TBD To Be Determined


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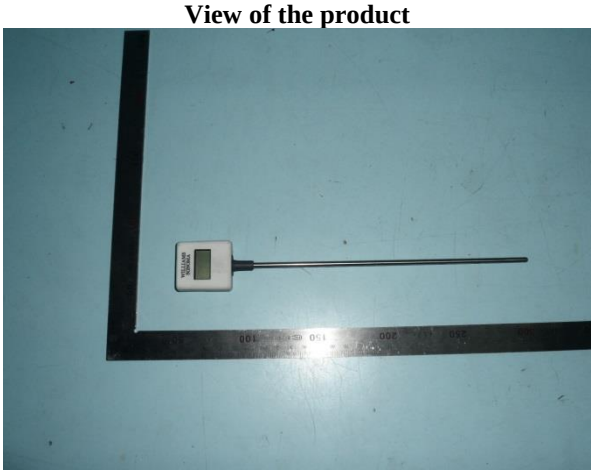
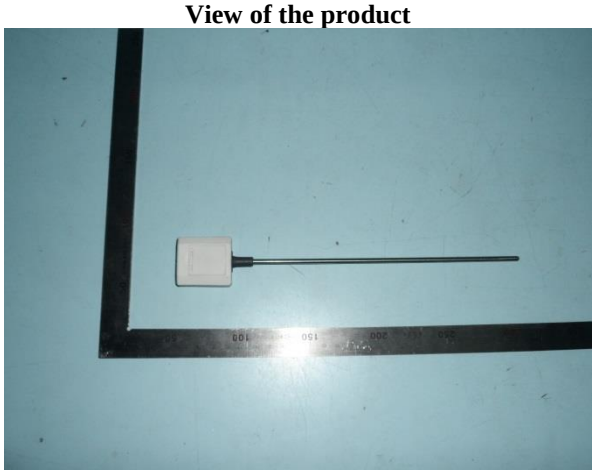
**Appendix B**

**Photographs of EUT**

**View of the product**

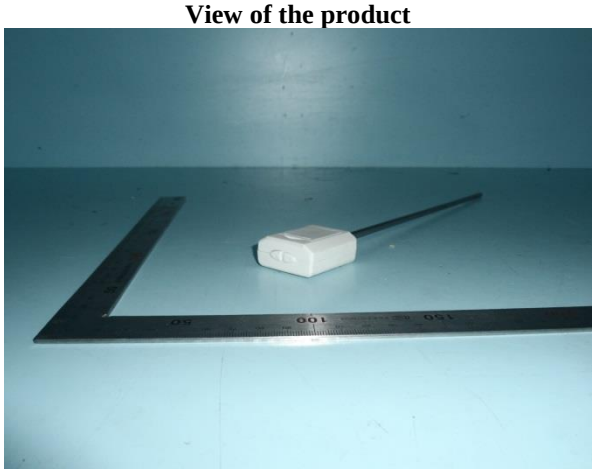


**View of the product**



**View of the product**

**View of the product**



**Inside of the product**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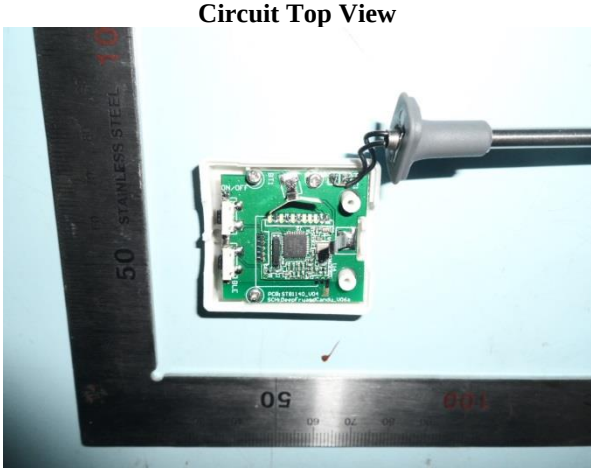
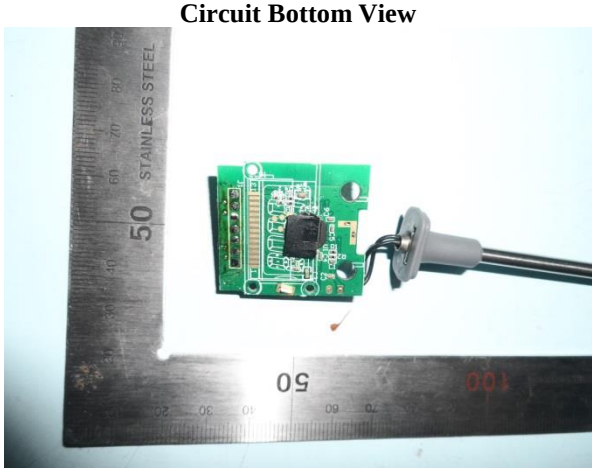
**Photographs of EUT**

**Circuit Top View**



**Circuit Bottom View**

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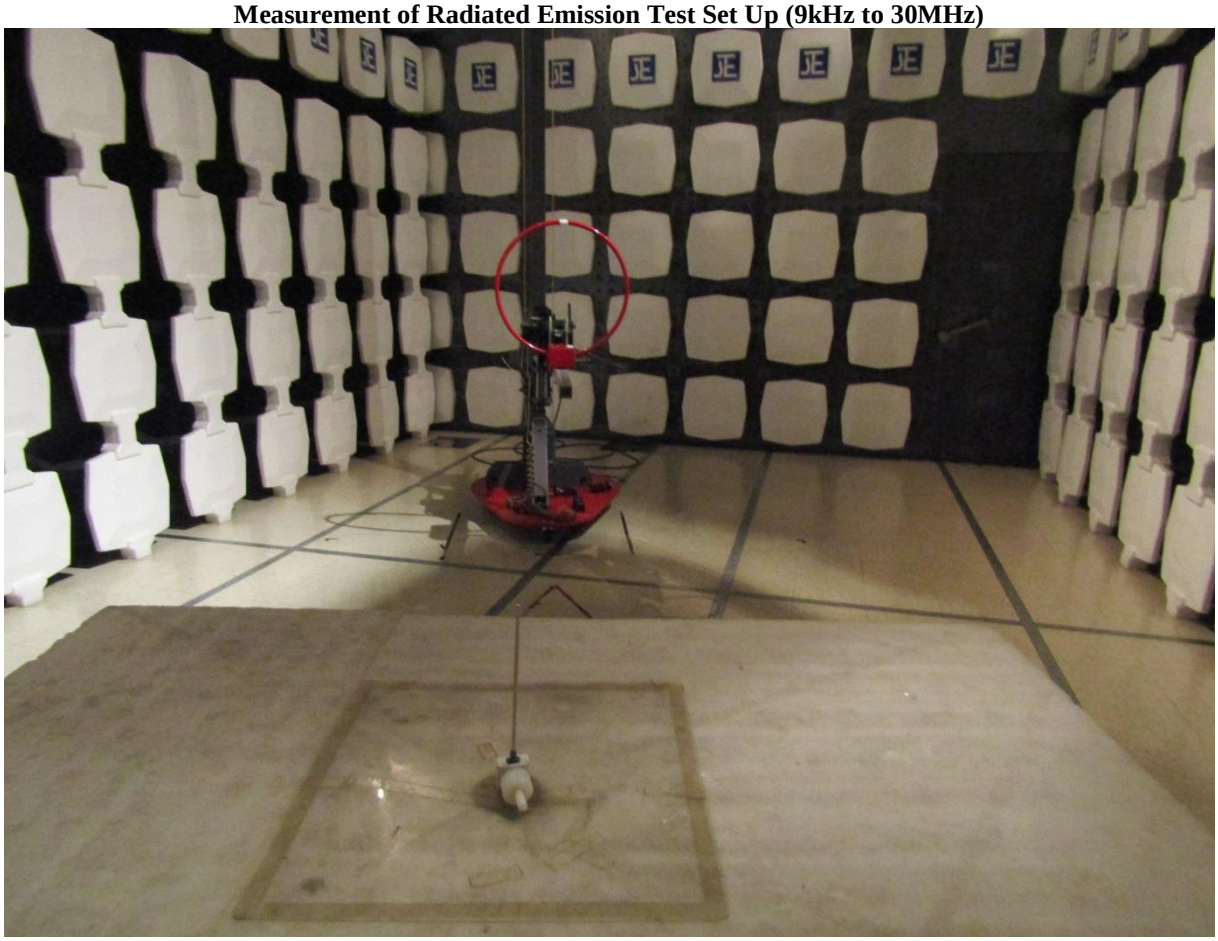
**Photographs of EUT**

**Measurement of Radiated Emission Test Set Up (9kHz to 30MHz)**

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**Measurement of Radiated Emission Test Set Up (30MHz to 1000MHz)**

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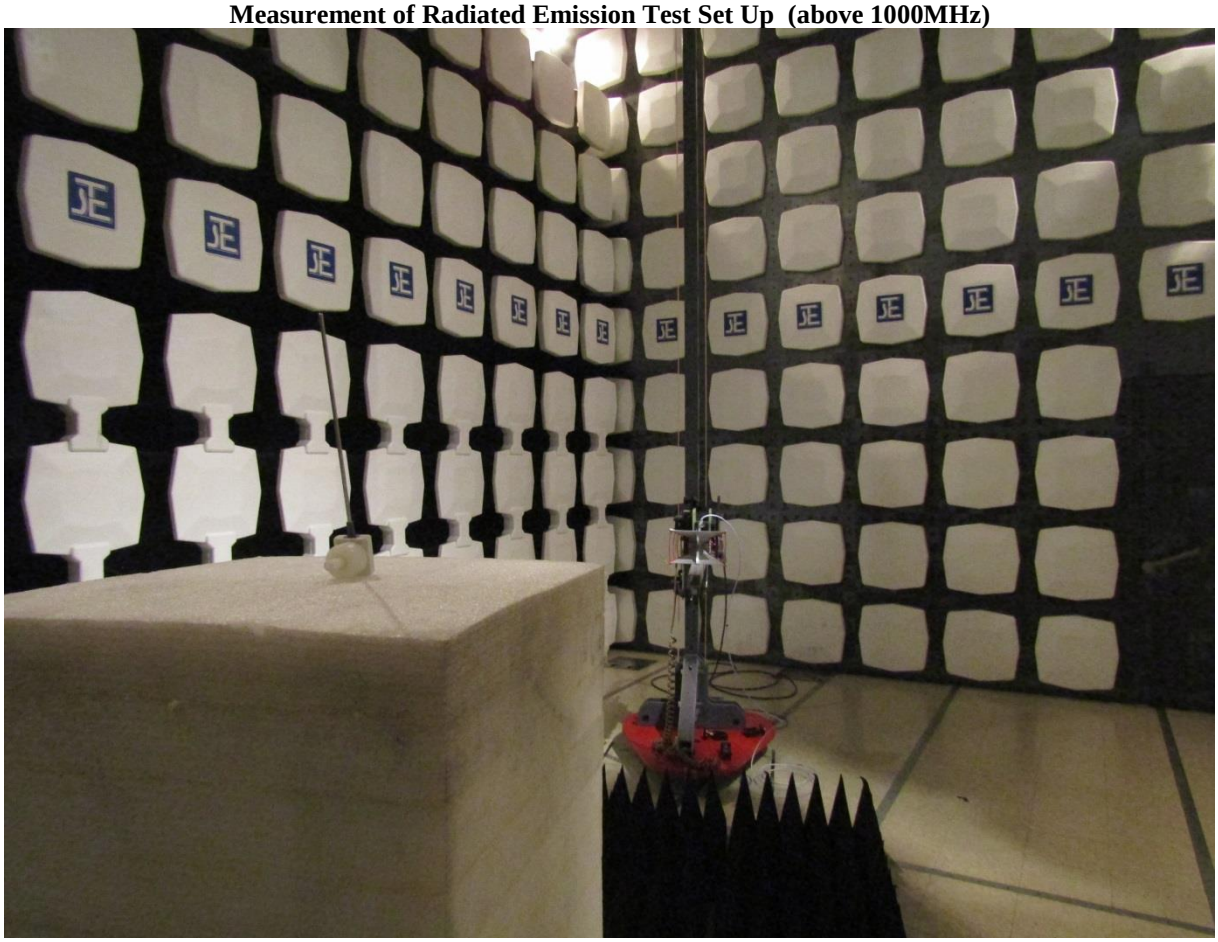
**Measurement of Radiated Emission Test Set Up (above 1000MHz)**



******* End of Test Report *******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