# FCC TEST REPORT

| | |
|---|---|
| **Application No:** | ZR/2020/20031 |
| **Applicant:** | Fibocom Wireless Inc. |
| **Address of Applicant** | 5/F,Tower A,Technology Building Ⅱ,1057# Nanhai Blvd,Shenzhen,China |
| **Manufacturer:** | Fibocom Wireless Inc. |
| **Address of Manufacturer** | 5/F,Tower A,Technology Building Ⅱ,1057# Nanhai Blvd,Shenzhen,China |
| **Factory:** | BYD Precision Manufacture Co.,Ltd |
| **Address of Factory** | No. 3001, Baohe Road, Baolong Industrial City, Longgang street, Longgang District, Shenzhen |
| **EUT Description:** | LTE Module |
| **Model No.:** | SS808-NA |
| **Trade Mark:** | Fibocom |
| **FCC ID:** | ZMOSS808NA |
| **Standards:** | 47 CFR FCC Part 2, Subpart J<br>47 CFR Part 15, Subpart C |
| **Test Method** | KDB558074 D01 15.247 Meas Guidance v05r02<br>ANSI C63.10 (2013) |
| **Date of Receipt:** | 2020/2/26 |
| **Date of Test:** | 2020/2/27 to 2020/3/26 |
| **Date of Issue:** | 2021/4/19 |
| **Test Result:** | **PASS *** |

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Derek Yang
Wireless Laboratory Manager



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# 1 Version

| Revision Record | | | | |
|---|---|---|---|---|
| **Version** | **Chapter** | **Date** | **Modifier** | **Remark** |
| 00 | | 2020/3/26 | | Original |
| 01 | | 2021/4/19 | Stephen liang | 1.Add test site Information<br>2.Modify data conversion error of antenna height<br>3.Update equipment list |
| | | | | |

| | | |
|---|---|---|
| **Authorized for issue by:** | | |
| **Prepared By** | | Stephen liang<br>**(Stephen liang) / Engineer** |
| **Checked By** | | David Chen<br>**(David Chen) /Reviewer** |

# 2 Test Summary

| Test Item | Test Requirement | Test method | Test Result | Result | Test Lab* |
|---|---|---|---|---|---|
| **AC Power Line Conducted Emission** | 15.207 | ANSI C63.10 2013 | Clause 4.2 | PASS | B |
| **Conducted Output Power** | 15.247 (b)(3) | ANSI C63.10 2013 | Clause 4.3 | PASS | A |
| **DTS (6 dB) Bandwidth & 99% Occupied Bandwidth** | 15.247 (a)(2) | ANSI C63.10 2013 | Clause 4.4 | PASS | A |
| **Power Spectral Density** | 15.247 (e) | ANSI C63.10 2013 | Clause 4.5 | PASS | A |
| **Band-edge for RF Conducted Emissions** | 15.247(d) | ANSI C63.10 2013 | Clause 4.6 | PASS | A |
| **RF Conducted Spurious Emissions** | 15.247(d) | ANSI C63.10 2013 | Clause 4.7 | PASS | A |
| **Radiated Spurious Emissions** | 15.205/15.209 | ANSI C63.10 2013 | Clause 4.8 | PASS | B |
| **Restricted bands around fundamental frequency (Radiated Emission)** | 15.205/15.209 | ANSI C63.10 2013 | Clause 4.9 | PASS | B |

Remark:
All test were performed by Lab A and B.
Parts of test items above were subcontracted to Lab B.
Lab A SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Lab B SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD.


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# 3 General Information

## 3.1 Client Information

| | |
|---|---|
| Applicant: | Fibocom Wireless Inc. |
| Address of Applicant: | 5/F,Tower A,Technology Building Ⅱ,1057# Nanhai Blvd,Shenzhen,China |
| Manufacturer: | Fibocom Wireless Inc. |
| Address of Manufacturer: | 5/F,Tower A,Technology Building Ⅱ,1057# Nanhai Blvd,Shenzhen,China |
| Factory: | BYD Precision Manufacture Co.,Ltd |
| Address of Factory: | No. 3001, Baohe Road, Baolong Industrial City, Longgang street, Longgang District, Shenzhen |

## 3.2 Test Location

**Lab A:**

| | |
|---|---|
| Company: | SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch |
| Address: | No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China |
| Post code: | 518057 |
| Test engineer: | Adam Liang, Mike Hu |

**Lab B:**

| | |
|---|---|
| Company: | SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD. |
| Address: | 1/F, Unit D, Building 1, Kanghong Orange Technology Park, No.137, Keyuan 3rd Road, Fengdong New City, Xi'an, Shaanxi China |
| Post code: | 710086 |
| Test engineer: | Ben Huang |

## 3.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

**Lab A:**

**• A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

**• VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

**• FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

**• Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

**Lab B:**

**A2LA (Certificate No. 4854.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

**• FCC –Designation Number: CN1271**



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## 3.4 General Description of EUT

| | |
|---|---|
| EUT Description: | LTE Module |
| Model No.: | SS808-NA |
| Trade Mark: | Fibocom |
| Hardware Version: | V1.0.1 |
| Software Version: | SS808_NA_00_00-20200102-1 |
| Operation Frequency: | 2400MHz~2483.5MHz<br>fc = 2402 MHz + N * 2 MHz, where:<br>-fc = “Operating Frequency” in MHz,<br>-N = “Channel Number” with the range from 0 to 39. |
| Bluetooth Version: | Bluetooth V4.2 LE |
| Modulation Type: | GFSK |
| Number of Channel: | 40 |
| Sample Type: | ☐ Portable Device, ☒Module |
| Antenna Type: | ☒ External, ☐ Integrated |
| Antenna Gain: | 2.3dBi |
| Power Supply: | ☒ AC/DC Adapter; ☐ Battery;☐ PoE:; ☐ Other: |

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

Remark:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| Channel | Frequency |
|---|---|
| The lowest channel (CH0) | 2402MHz |
| The middle channel (CH19) | 2440MHz |
| The highest channel (CH39) | 2480MHz |

## 3.5 Test Environment

| Operating Environment | |
|---|---|
| Temperature: | 25.0 °C |
| Humidity: | 50 % RH |
| Atmospheric Pressure: | 101.32 KPa |

## 3.6 Description of Support Units

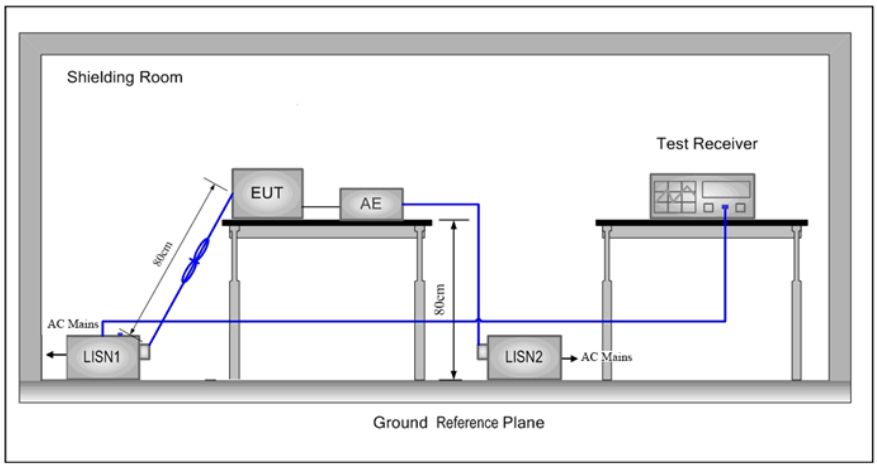
The EUT has been tested independent unit.

# 4 Test results and Measurement Data

## 4.1 Antenna Requirement

| **Standard requirement:** | 47 CFR Part 15C Section 15.203 /247(c) |
|---|---|
| 15.203 requirement:<br>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.<br>15.247(b) (4) requirement:<br>The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi. | |
| The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.3dBi. | |

## 4.2 AC Power Line Conducted Emissions

| | | | |
|---|---|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.207 | | |
| Test Method: | ANSI C63.10: 2013 | | |
| Test Frequency Range: | 150kHz to 30MHz | | |
| Limit: | Frequency range (MHz) | Limit (dBuV) | |
| | | Quasi-peak | Average |
| | 0.15-0.5 | 66 to 56* | 56 to 46* |
| | 0.5-5 | 56 | 46 |
| | 5-30 | 60 | 50 |
| | * Decreases with the logarithm of the frequency. | | |
| Test Procedure: | 1) The mains terminal disturbance voltage test was conducted in a shielded room.<br>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.<br>3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.<br>4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.<br>5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to<br>ANSI C63.10: 2013 on conducted measurement. | | |
| Test Setup: |  | | |

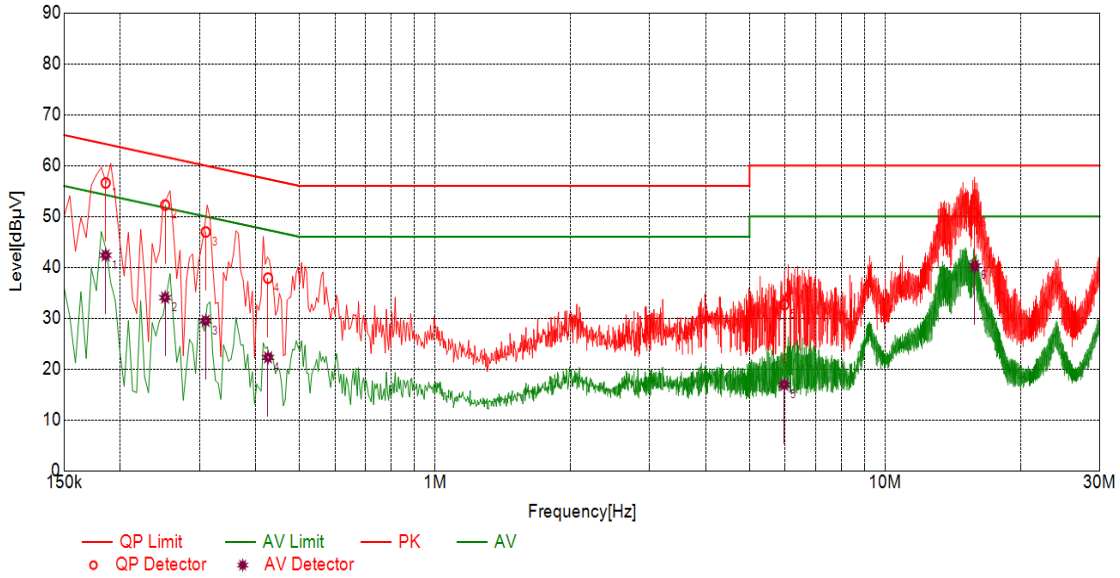
| | |
|---|---|
| Test Mode: | Transmitting with GFSK modulation.<br>Charge +Transmitting mode. |
| Instruments Used: | Refer to section 5.10 for details. |
| Test Results: | Pass |

**Measurement Data**

**An initial pre-scan was performed on the live and neutral lines with peak detector.**

**Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.**

Live line:




Final Data List

| NO. | Freq. [MHz] | Factor [dB] | QP Value [dBµV] | QP Limit [dBµV] | QP Margin [dB] | AV Value [dBµV] | AV Limit [dBµV] | AV Margin [dB] | Type |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.1856 | 10.10 | 56.58 | 64.23 | 7.65 | 42.36 | 54.23 | 11.87 | L |
| 2 | 0.2516 | 10.10 | 52.23 | 61.71 | 9.48 | 34.05 | 51.71 | 17.66 | L |
| 3 | 0.3096 | 10.10 | 46.95 | 59.98 | 13.03 | 29.47 | 49.98 | 20.51 | L |
| 4 | 0.4258 | 10.10 | 37.88 | 57.33 | 19.45 | 22.29 | 47.33 | 25.04 | L |
| 5 | 5.9745 | 10.10 | 32.67 | 60.00 | 27.33 | 16.91 | 50.00 | 33.09 | L |
| 6 | 15.8290 | 10.11 | 50.68 | 60.00 | 9.32 | 40.29 | 50.00 | 9.71 | L |



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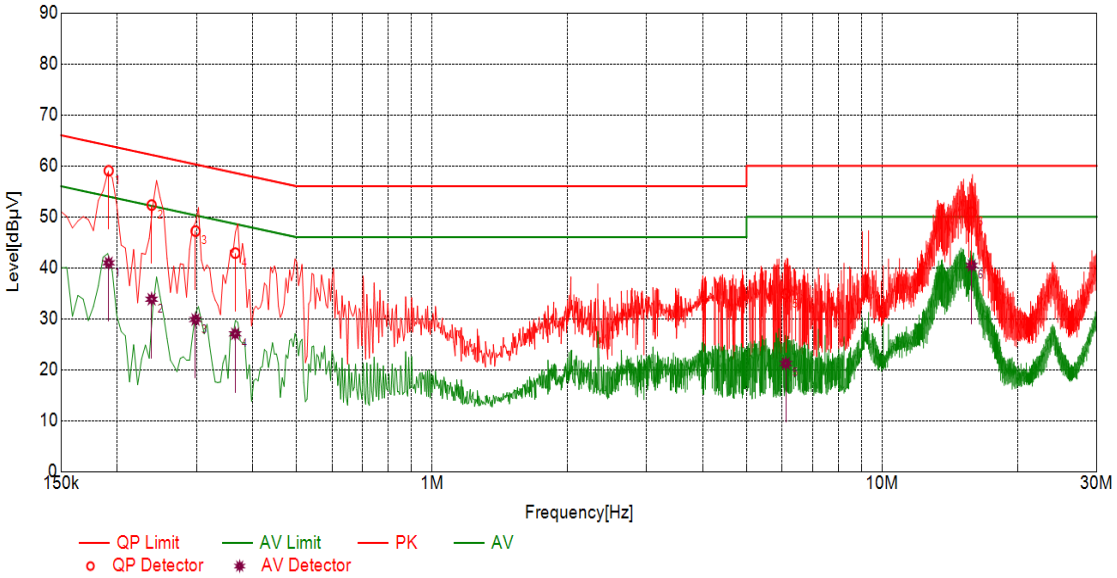
Neutral line:




| Final Data List | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Factor [dB] | QP Value [dBµV] | QP Limit [dBµV] | QP Margin [dB] | AV Value [dBµV] | AV Limit [dBµV] | AV Margin [dB] | Type |
| 1 | 0.1914 | 10.10 | 59.04 | 63.98 | 4.94 | 40.97 | 53.98 | 13.01 | N |
| 2 | 0.2384 | 10.10 | 52.31 | 62.15 | 9.84 | 33.83 | 52.15 | 18.32 | N |
| 3 | 0.2984 | 10.10 | 47.19 | 60.29 | 13.10 | 29.85 | 50.29 | 20.44 | N |
| 4 | 0.3656 | 10.10 | 42.89 | 58.60 | 15.71 | 27.04 | 48.60 | 21.56 | N |
| 5 | 6.1111 | 10.10 | 34.85 | 60.00 | 25.15 | 21.22 | 50.00 | 28.78 | N |
| 6 | 15.8152 | 10.11 | 50.91 | 60.00 | 9.09 | 40.46 | 50.00 | 9.54 | N |

Remarks:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.



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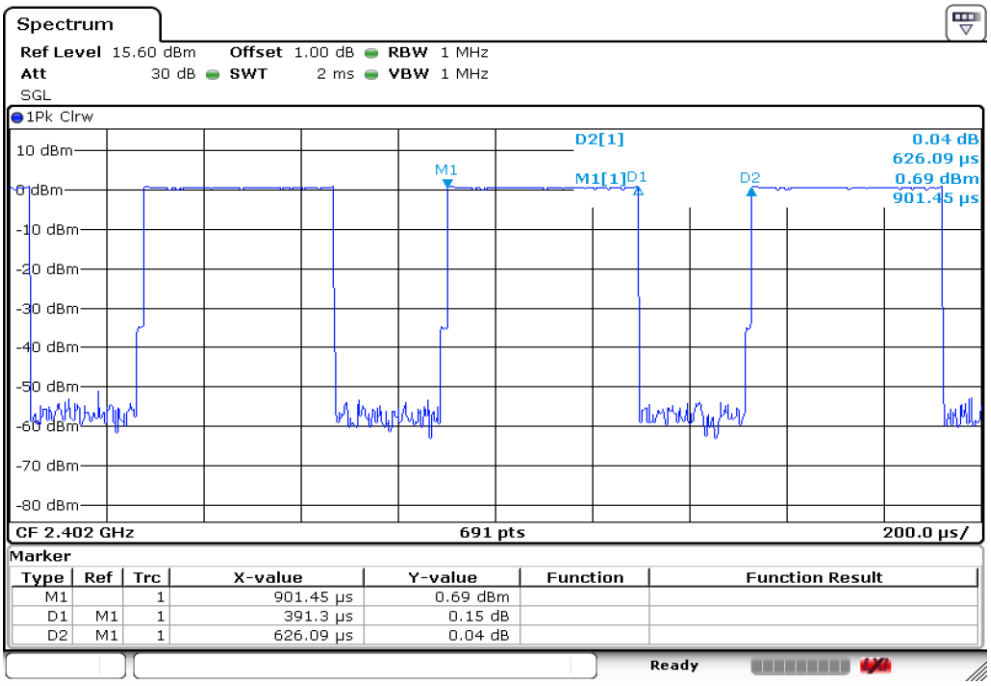
## 4.3 Duty Cycle

### 4.3.1 Test Results

| Test Mode | TX Freq. [MHz] | Duty cycle [%] |
|---|---|---|
| BLE | CH0, CH19, CH39 | 62.50 |

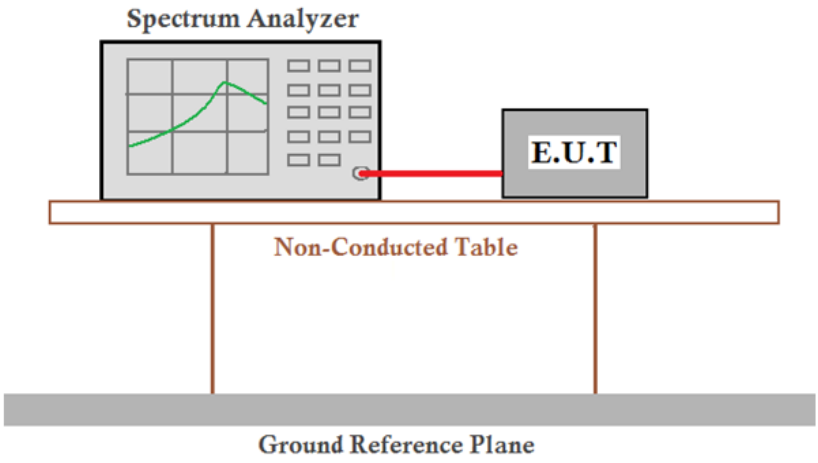
### 4.3.1 Test Plots

#### 4.3.1.1 BLE




Date: 17.MAR.2020 14:03:02

## 4.4 Conducted Output Power

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (b)(3) |
| Test Method: | ANSI C63.10 :2013 Section 11.9.1.1 |
| Test Setup: |  |
| Limit: | 30dBm |
| Test Mode: | Transmitting with GFSK modulation. |
| Instruments Used: | Refer to section 5.10 for details. |
| Test Results: | Pass |

### 4.4.1 Test Results

**Measurement Data of Average Power**

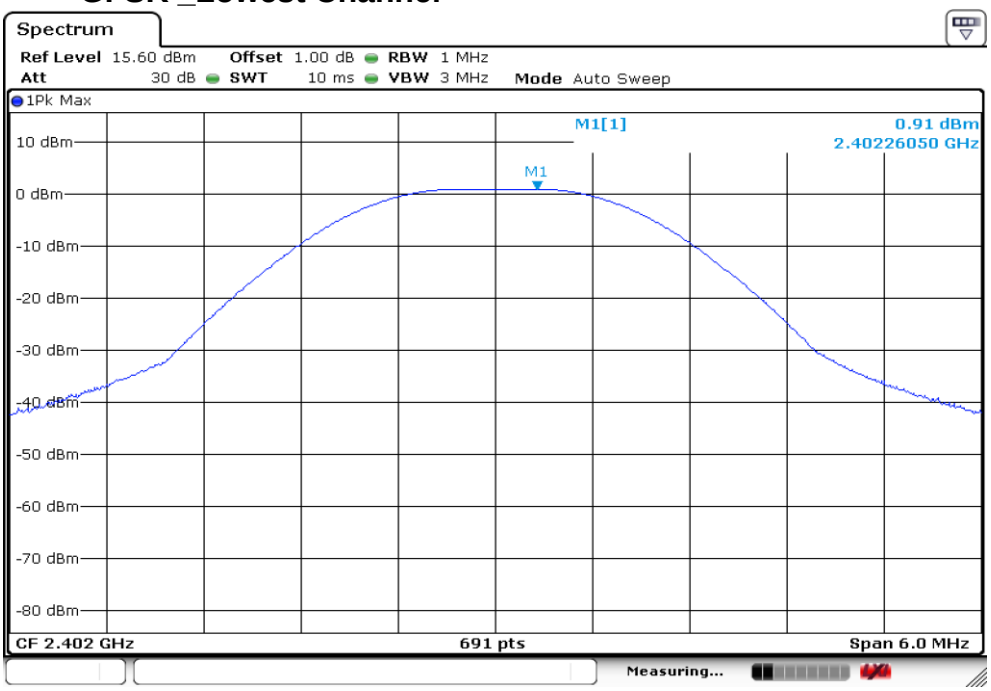
| GFSK mode | | |
|---|---|---|
| Test channel | Average Output Power (dBm) | Result |
| Lowest | -0.65 | Report purpose only |
| Middle | -0.89 | Report purpose only |
| Highest | -0.28 | Report purpose only |

**Measurement Data of Peak Power:**

| GFSK mode | | | |
|---|---|---|---|
| Test channel | Peak Output Power (dBm) | Limit (dBm) | Result |
| Lowest | 0.91 | 30.00 | Pass |
| Middle | 0.60 | 30.00 | Pass |
| Highest | 1.01 | 30.00 | Pass |

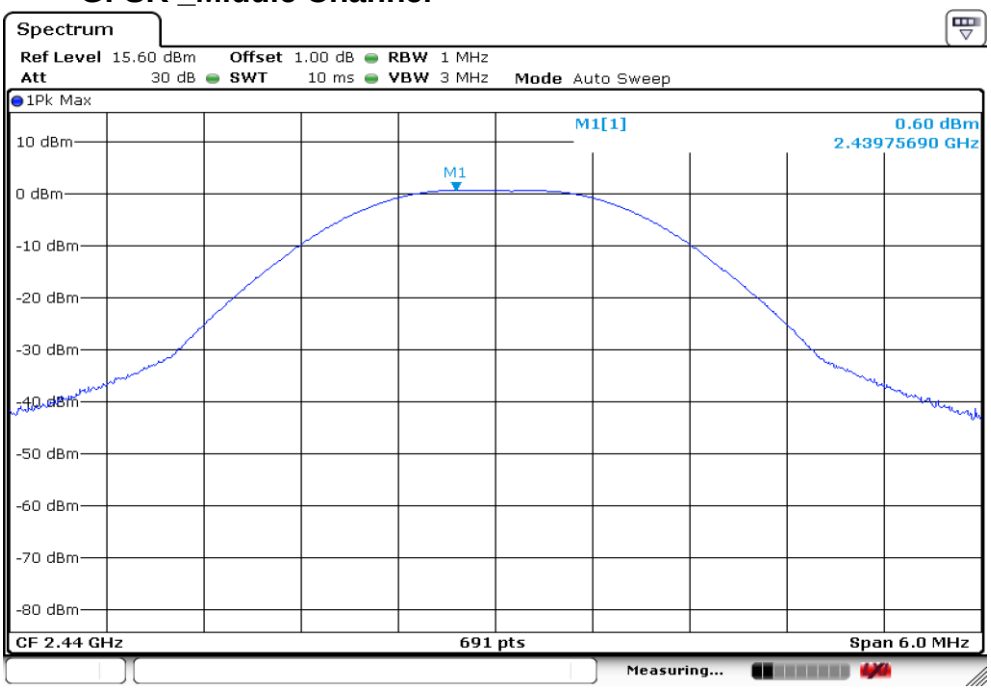
### 4.4.2 Test plots:

#### 4.4.2.1 GFSK _Lowest Channel



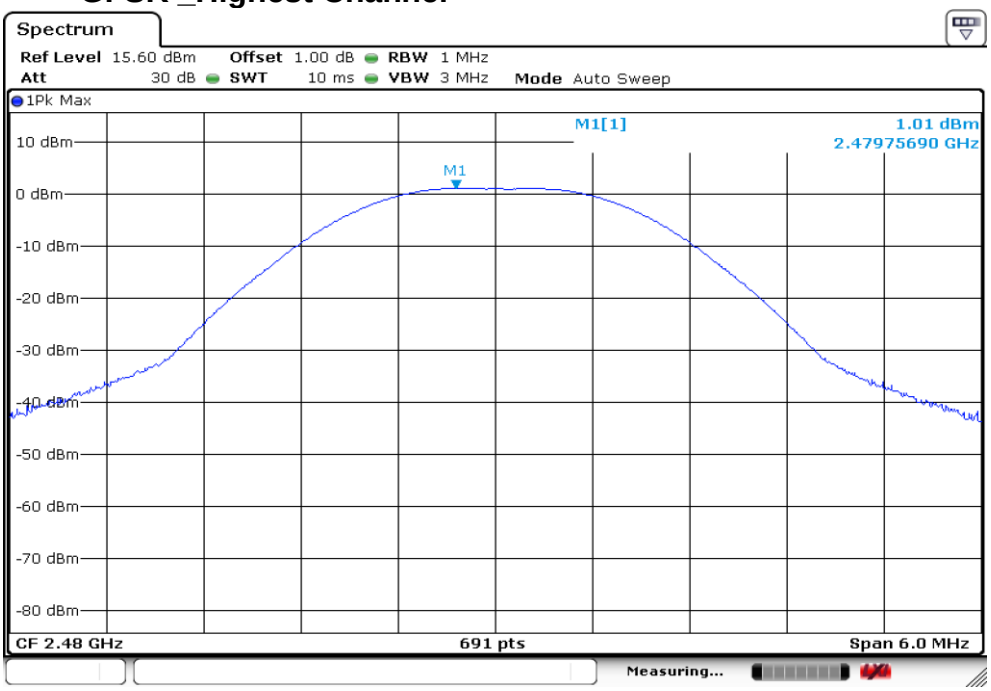

Date: 17.MAR.2020 13:50:56

#### 4.4.2.2 GFSK _Middle Channel



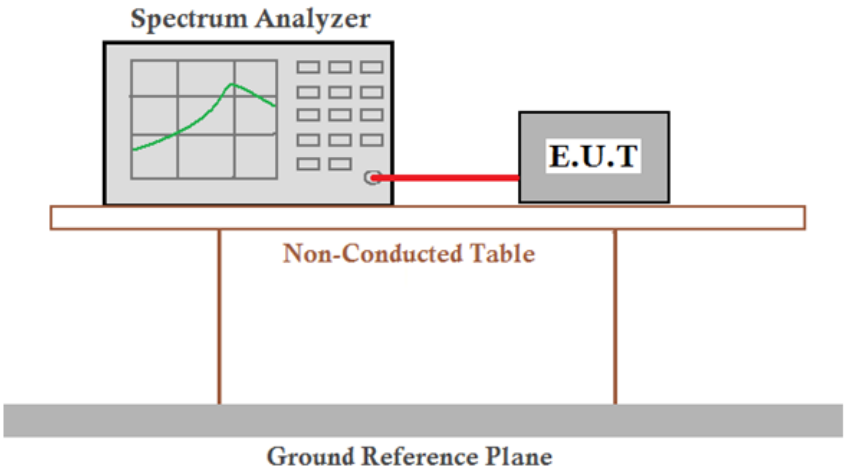

Date: 17.MAR.2020 13:51:23

### 4.4.2.3 GFSK _Highest Channel




Date: 17.MAR.2020 13:51:44

## 4.5 DTS (6 dB) Bandwidth & 99% Occupied Bandwidth

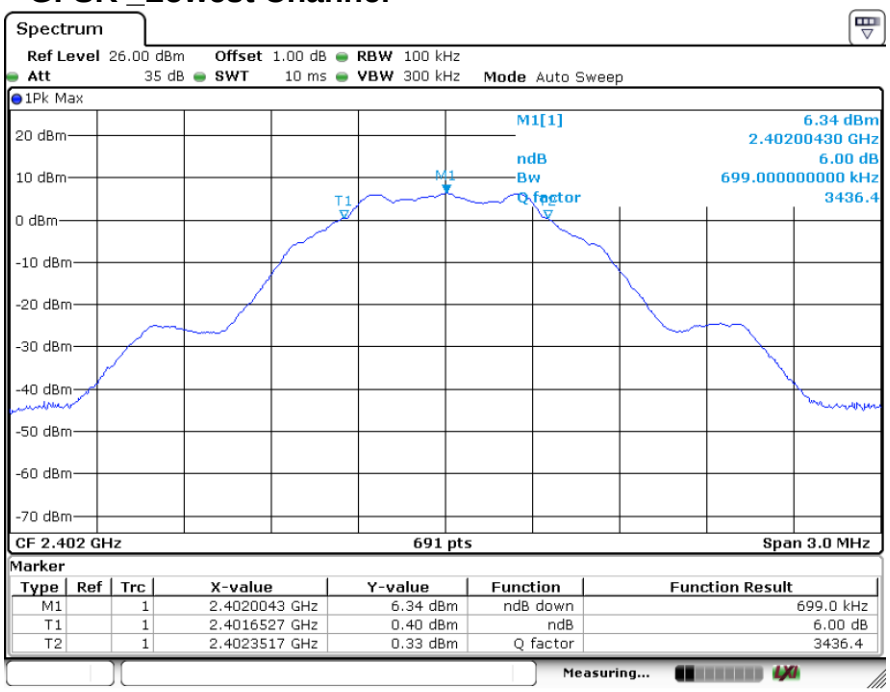
| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (a)(2) |
| Test Method: | ANSI C63.10: 2013 Section 11.8 Option 2 |
| Test Setup: |  |
| Limit: | ≥ 500 kHz |
| Test Mode: | Transmitting with GFSK modulation. |
| Instruments Used: | Refer to section 5.10 for details. |
| Test Results: | Pass |

### 4.5.1 Test Results

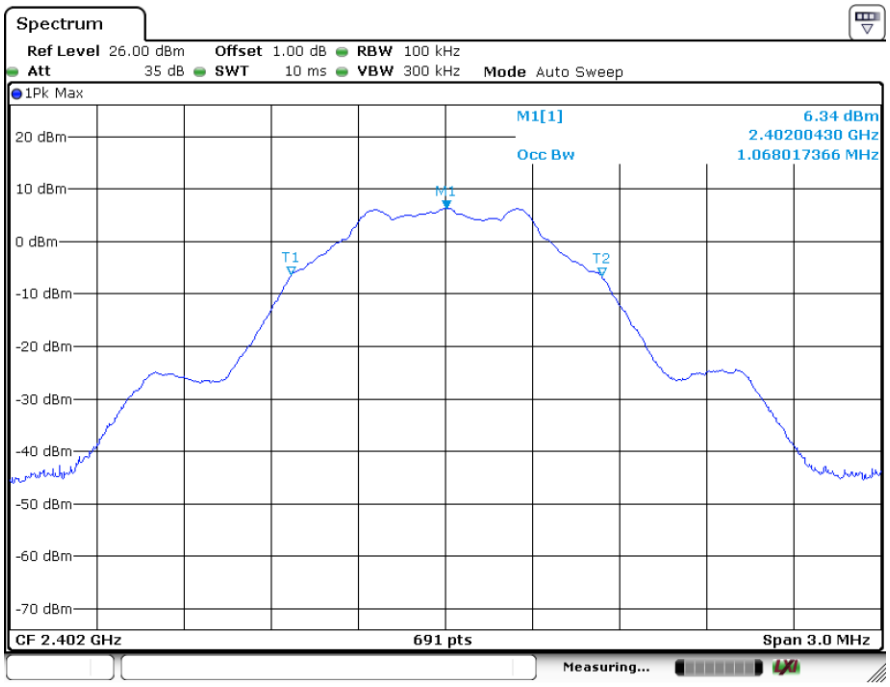
| Mode | Test Channel | 99% Occupied Bandwidth (MHz) | 6dB Emission Bandwidth (MHz) | Limit (kHz) | Result |
|---|---|---|---|---|---|
| GFSK | Lowest | 1.07 | 0.669 | ≥500 | Pass |
| | Middle | 1.06 | 0.669 | ≥500 | Pass |
| | Highest | 1.06 | 0.703 | ≥500 | Pass |

## 4.5.2 Test plots

### 4.5.2.1 GFSK _Lowest Channel

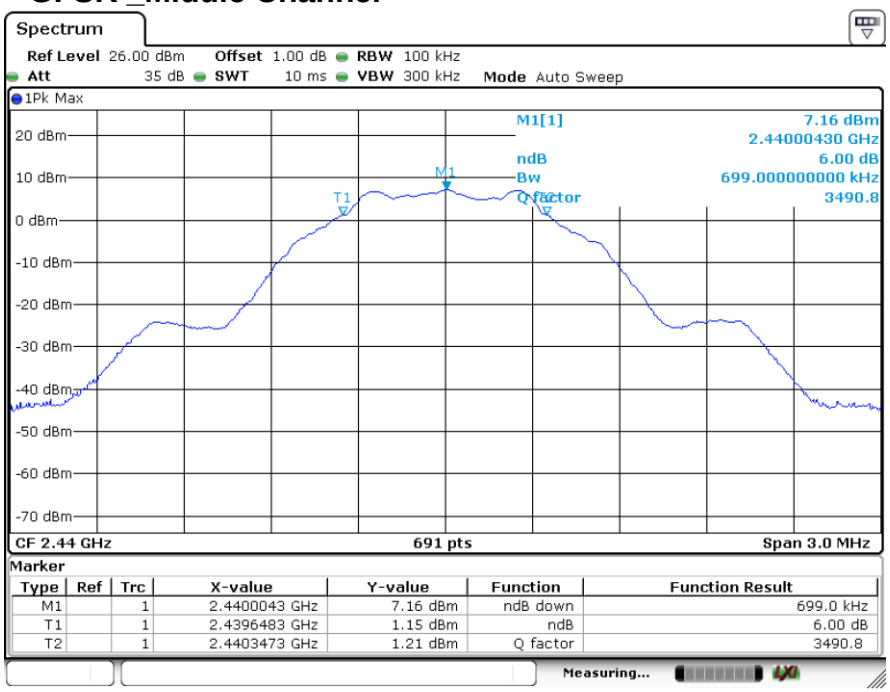



Date: 26.MAR.2020 10:21:09

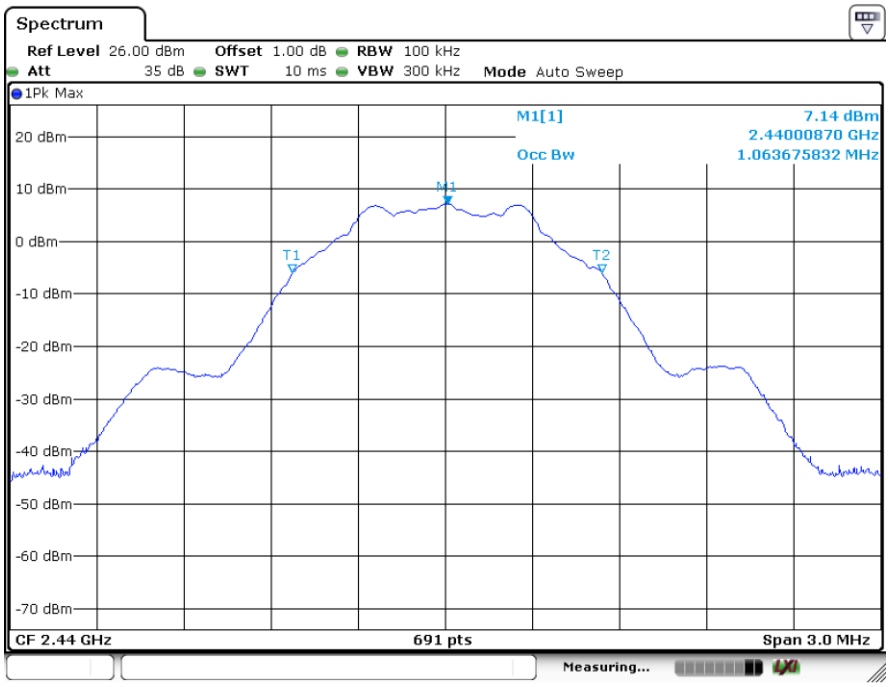



Date: 26.MAR.2020 10:20:29

### 4.5.2.2 GFSK _Middle Channel

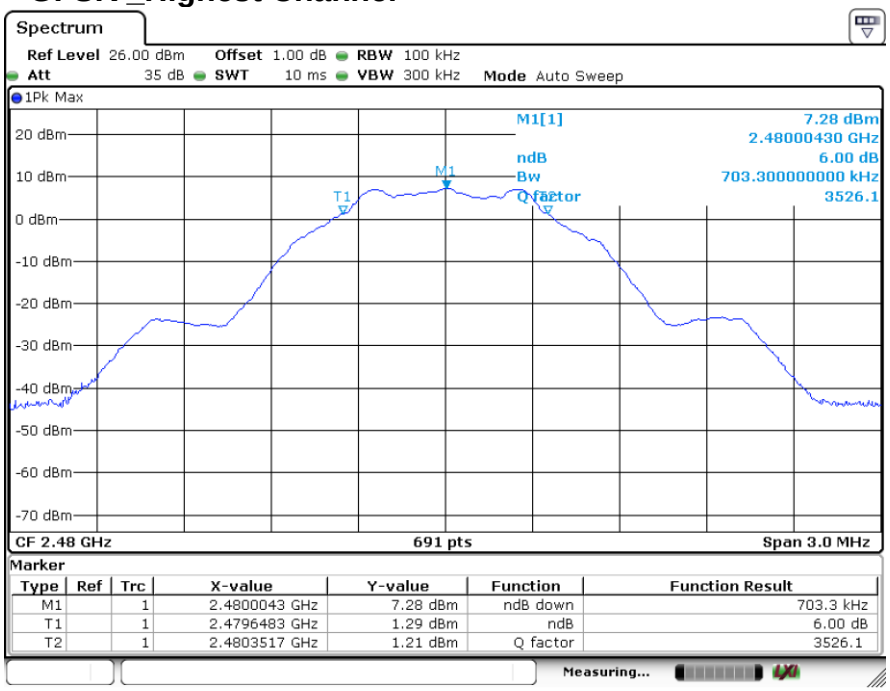



Date: 26.MAR.2020 10:21:43

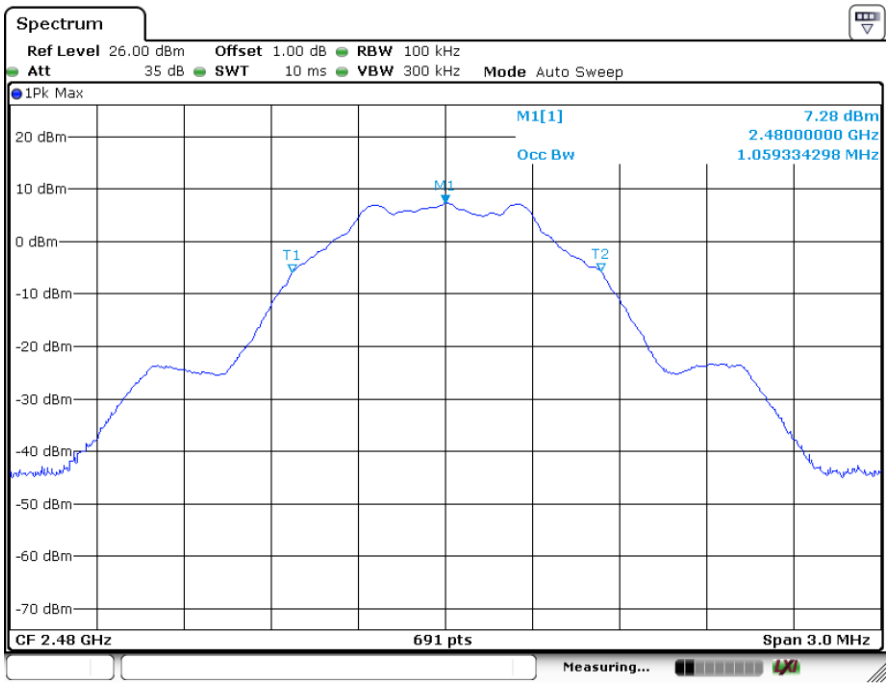



Date: 26.MAR.2020 10:21:58

### 4.5.2.3 GFSK _Highest Channel

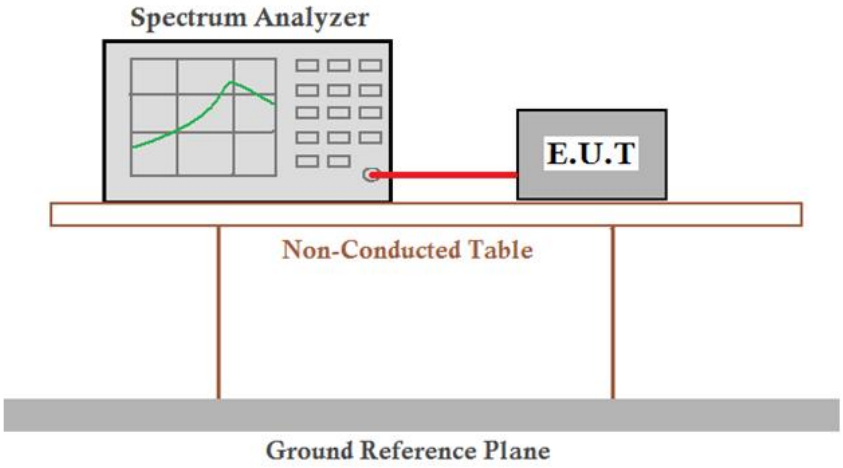



Date: 26.MAR.2020 10:22:40




Date: 26.MAR.2020 10:22:24

## 4.6 Power Spectral Density

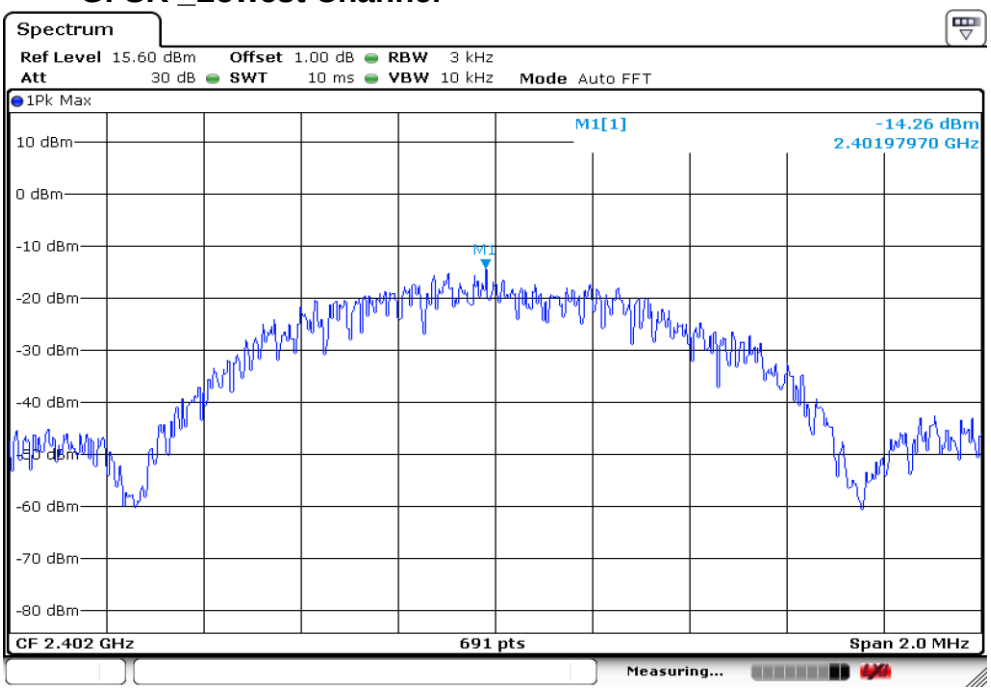
| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (e) |
| Test Method: | ANSI C63.10 :2013 Section 11.10.2 |
| Test Setup: |  |
| Limit: | ≤8.00dBm/3kHz |
| Test Mode: | Transmitting with GFSK modulation. |
| Instruments Used: | Refer to section 5.10 for details. |
| Test Results: | Pass |

### 4.6.1 Test Results

| Mode | Test Channel | Power Spectral Density (dBm/3kHz) | Limit (dBm/3kHz) | Result |
|---|---|---|---|---|
| GFSK | Lowest | -14.26 | ≤8.00 | Pass |
| | Middle | -14.53 | ≤8.00 | Pass |
| | Highest | -14.16 | ≤8.00 | Pass |

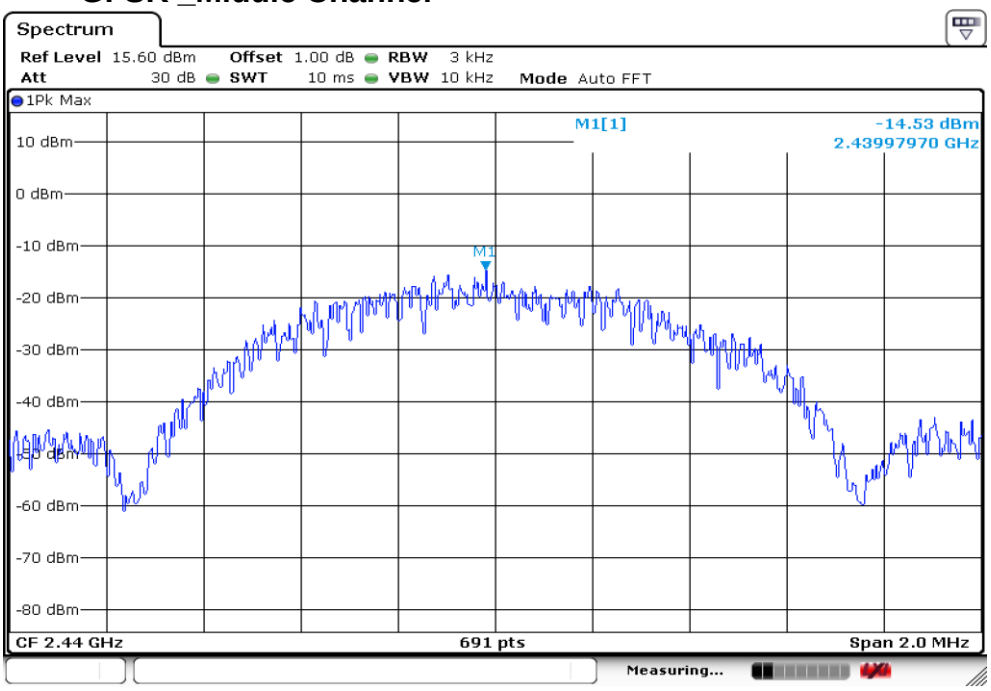
### 4.6.2 Test plots

#### 4.6.2.1 GFSK _Lowest Channel



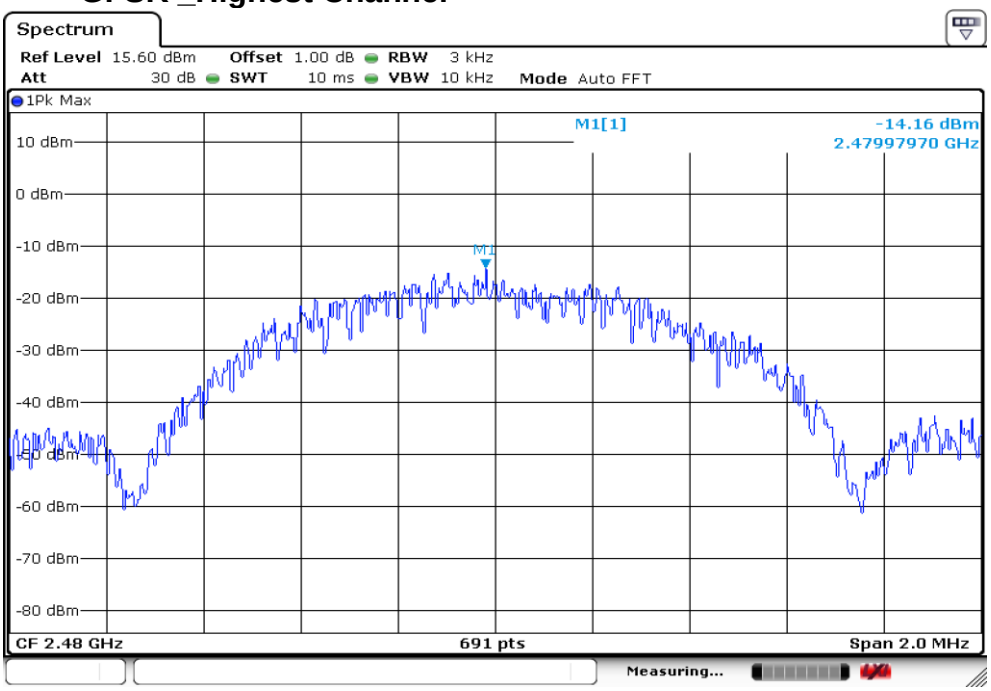

Date: 17.MAR.2020 13:53:42

#### 4.6.2.2 GFSK _Middle Channel



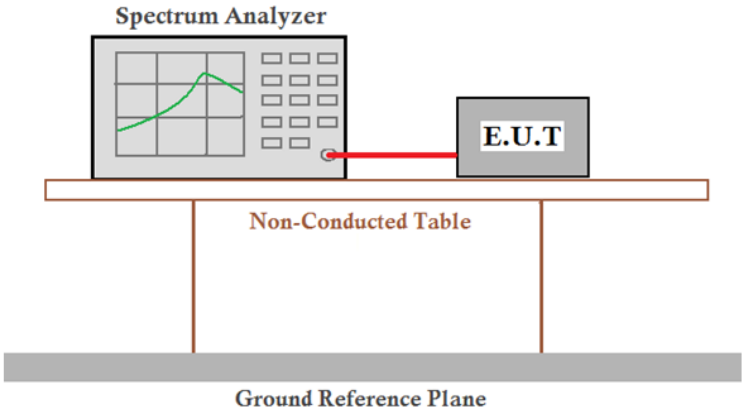

Date: 17.MAR.2020 13:54:07

### 4.6.2.3 GFSK _Highest Channel



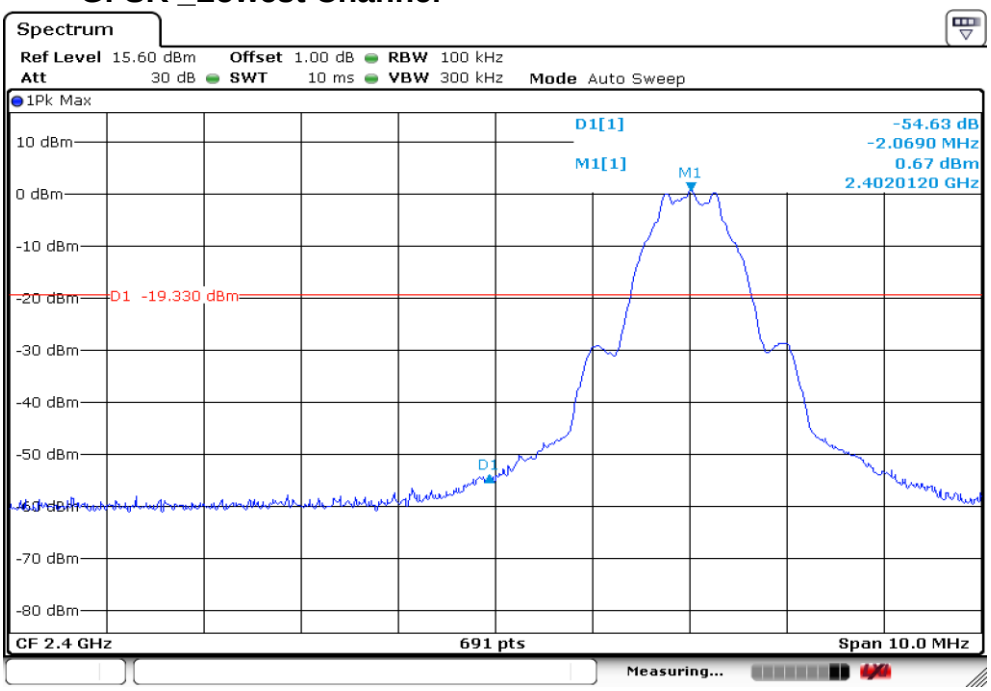

Date: 17.MAR.2020 13:54:27

## 4.7 Band-edge for RF Conducted Emissions

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (d) |
| Test Method: | ANSI C63.10: 2013 Section 11.13 |
| Test Setup: |  |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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. |
| Test Mode: | Transmitting with GFSK modulation. |
| Instruments Used: | Refer to section 5.10 for details. |
| Test Results: | Pass |

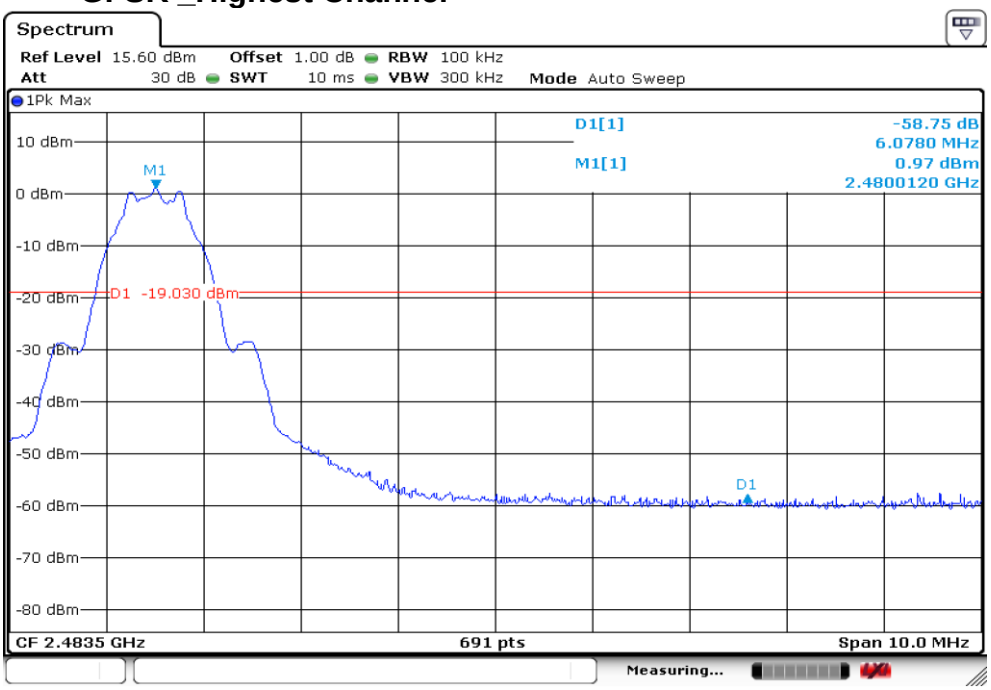
## 4.7.1 Test plots

### 4.7.1.1 GFSK _Lowest Channel



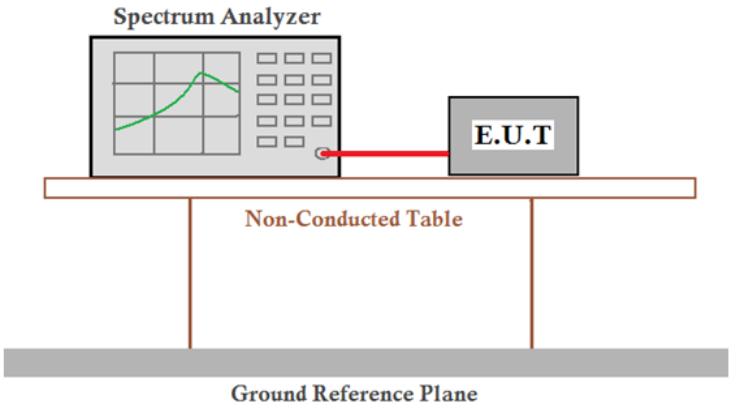

Date: 17.MAR.2020 13:58:13

### 4.7.1.2 GFSK _Highest Channel



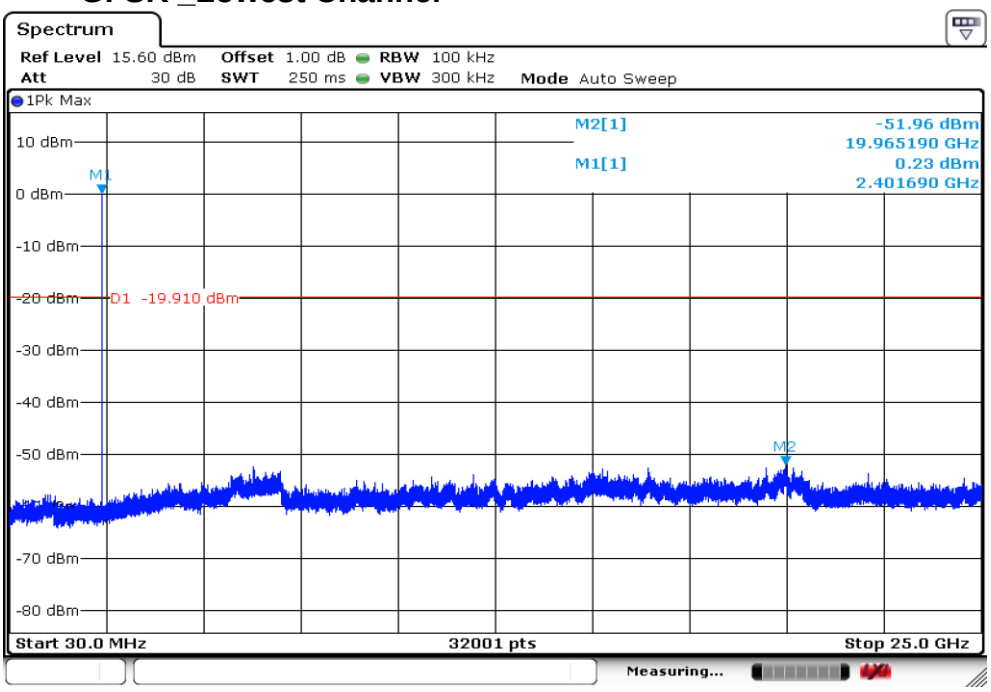

Date: 17.MAR.2020 13:57:10

## 4.8 Spurious RF Conducted Emissions

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (d) |
| Test Method: | ANSI C63.10: 2013 Section 11.11 |
| Test Setup: |  |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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. |
| Test Mode: | Transmitting with GFSK modulation. |
| Instruments Used: | Refer to section 5.10 for details. |
| Test Results: | Pass |

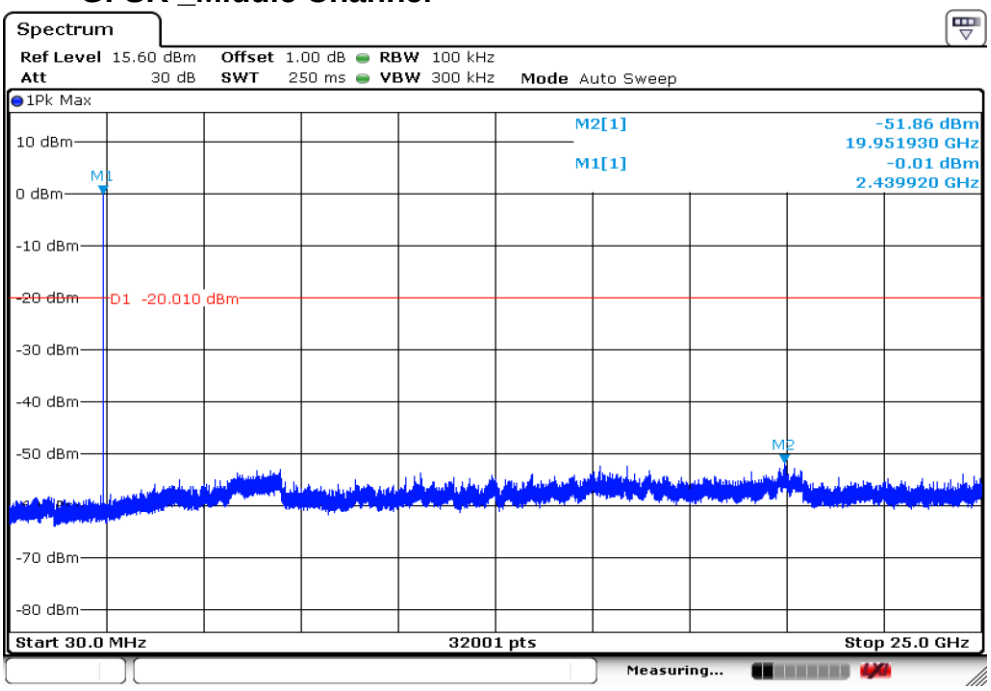
### 4.8.1 Test plots:

#### 4.8.1.1 GFSK _Lowest Channel



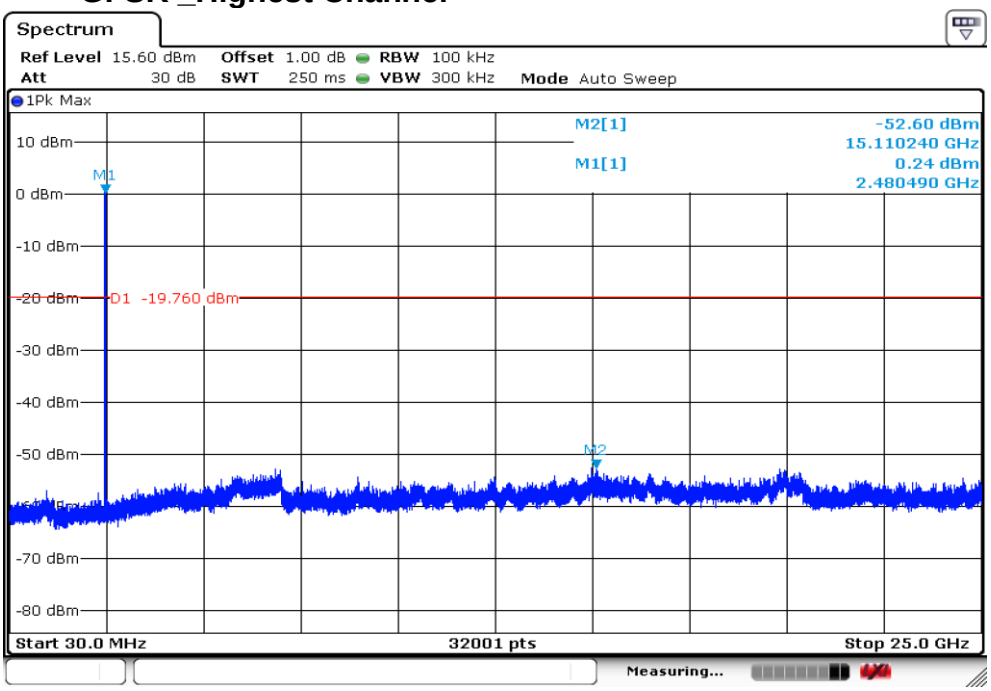

Date: 17.MAR.2020 13:59:44

#### 4.8.1.2 GFSK _Middle Channel




Date: 17.MAR.2020 14:00:52

### 4.8.1.3 GFSK _Highest Channel




Remark:
Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

## 4.9 Radiated Spurious Emission

| | | | | | |
|---|---|---|---|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.209 and 15.205 | | | | |
| Test Method: | ANSI C63.10 :2013 Section 11.12 | | | | |
| Test Site: | Measurement Distance: 3m (Semi-Anechoic Chamber) | | | | |
| Receiver Setup: | Frequency | Detector | RBW | VBW | Remark |
| | 0.009MHz-0.090MHz | Peak | 10kHz | 30kHz | Peak |
| | 0.009MHz-0.090MHz | Average | 10kHz | 30kHz | Average |
| | 0.090MHz-0.110MHz | Quasi-peak | 10kHz | 30kHz | Quasi-peak |
| | 0.110MHz-0.490MHz | Peak | 10kHz | 30kHz | Peak |
| | 0.110MHz-0.490MHz | Average | 10kHz | 30kHz | Average |
| | 0.490MHz -30MHz | Quasi-peak | 10kHz | 30kHz | Quasi-peak |
| | 30MHz-1GHz | Quasi-peak | 100 kHz | 300kHz | Quasi-peak |
| | Above 1GHz | Peak | 1MHz | 3MHz | Peak |
| | | Peak | 1MHz | 10Hz | Average |
| Limit: | Frequency | Field strength (microvolt/meter) | Limit (dBuV/m) | Remark | Measurement distance (m) |
| | 0.009MHz-0.490MHz | 2400/F(kHz) | - | - | 300 |
| | 0.490MHz-1.705MHz | 24000/F(kHz) | - | - | 30 |
| | 1.705MHz-30MHz | 30 | - | - | 30 |
| | 30MHz-88MHz | 100 | 40.0 | Quasi-peak | 3 |
| | 88MHz-216MHz | 150 | 43.5 | Quasi-peak | 3 |
| | 216MHz-960MHz | 200 | 46.0 | Quasi-peak | 3 |
| | 960MHz-1GHz | 500 | 54.0 | Quasi-peak | 3 |
| | Above 1GHz | 500 | 54.0 | Average | 3 |
| | Remark: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device. | | | | |

| Test Setup: | |
|---|---|

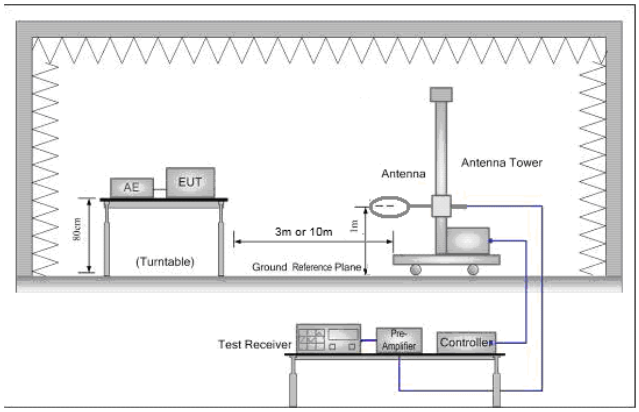



Figure 1. Below 30MHz

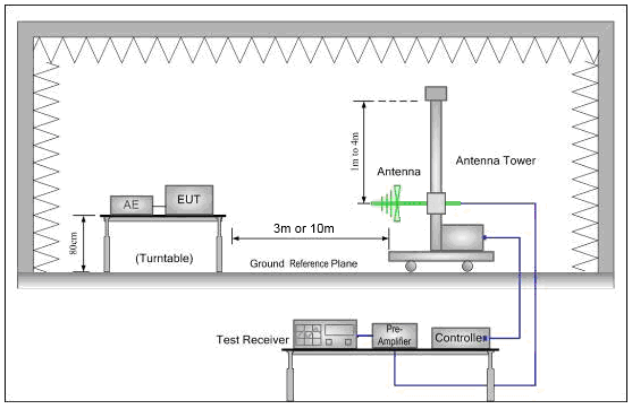



Figure 2. 30MHz to 1GHz

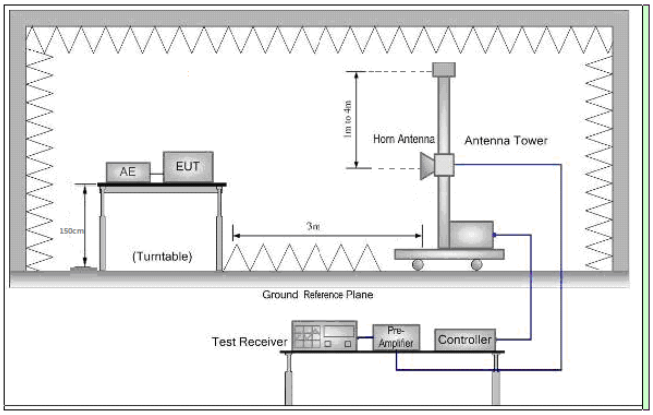


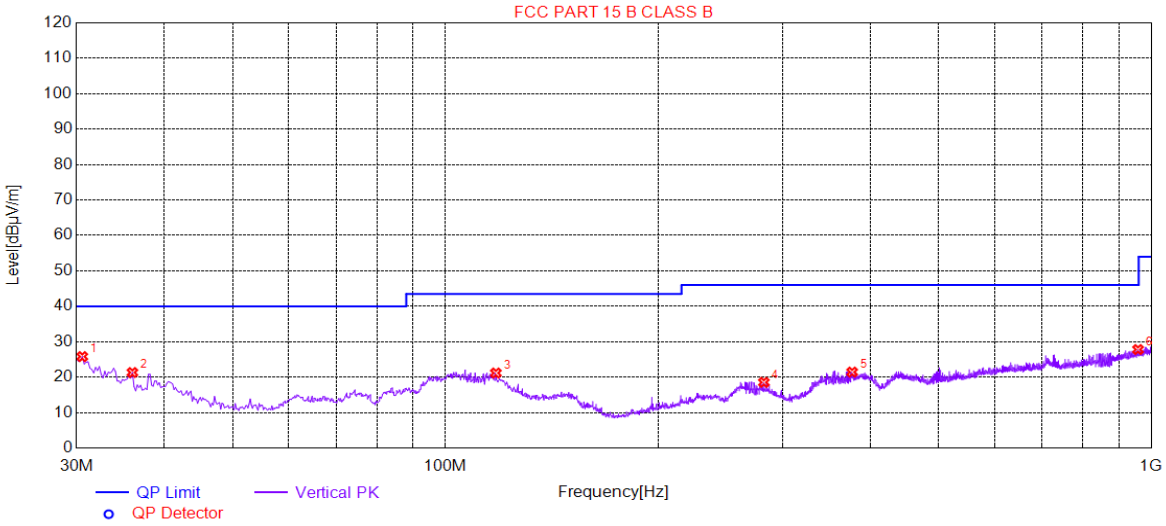

Figure 3. Above 1 GHz

| Test Procedure: | a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>e. Use the following spectrum analyzer settings:<br>(1) Span shall wide enough to fully capture the emission being measured;<br>(2) Set RBW=100 kHz for f < 1 GHz, RBW=1MHz for f>1GHz ;<br>VBW≥ RBW; Sweep = auto;<br>Detector function = peak; Trace = max hold for peak |
|---|---|

| | |
|---|---|
| | (3) For average measurement: use duty cycle correction factor method per 15.35(c).<br>Duty cycle = On time/100 milliseconds<br>On time = N 1 *L 1 +N 2 *L 2 +...+N n-1 *LN n-1 +N n *L n<br>Where N 1 is number of type 1 pulses, L 1 is length of type 1 pulses, etc.<br>Average Emission Level = Peak Emission Level + 20*log(Duty cycle)<br>f. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>g. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>h. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.<br>i. Test the EUT in the lowest channel (2402MHz),the middle channel (2440MHz),the Highest channel (2480MHz)<br>j. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.<br>k. Repeat above procedures until all frequencies measured was complete. |
| Exploratory Test Mode: | Transmitting with GFSK modulation.<br>Charge + Transmitting mode. |
| Final Test Mode: | Transmitting with GFSK modulation.<br>Pretest the EUT at Charge + Transmitting mode,<br>For below 1GHz part, through pre-scan, the worst case is the lowest channel. Only the worst case is recorded in the report. |
| Instruments Used: | Refer to section 5.10 for details. |
| Test Results: | Pass |

## 4.9.1 Radiated Emission below 1GHz

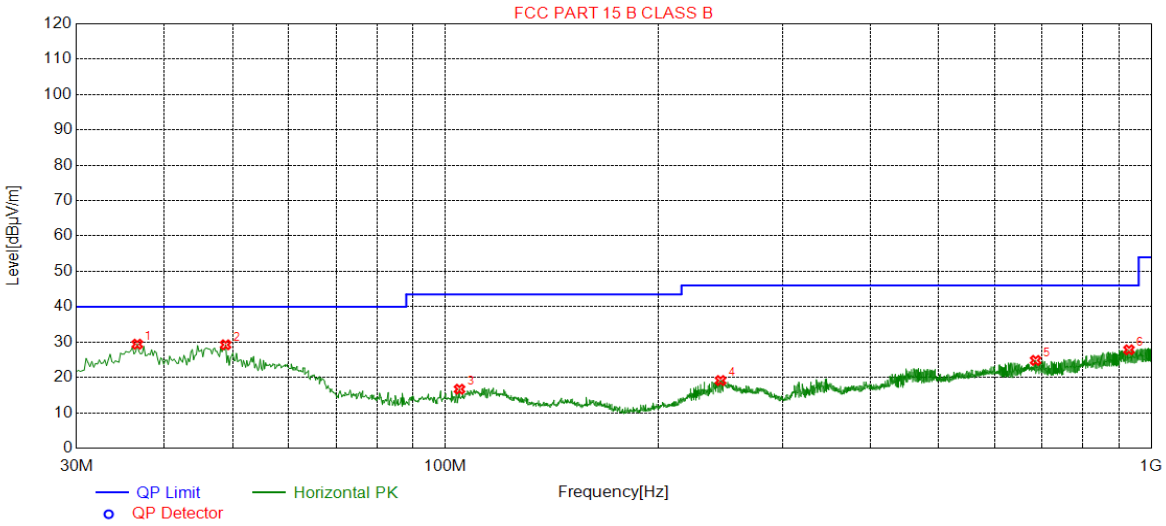
### 4.9.1.1 Charge + Transmitting, Vertical




**Suspected List**

| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|---|---|---|---|---|---|---|---|---|
| 1 | 30.5821 | 25.80 | -30.07 | 40.00 | 14.20 | 197 | 332 | Vertical |
| 2 | 36.0152 | 21.31 | -29.63 | 40.00 | 18.69 | 174 | 332 | Vertical |
| 3 | 117.8996 | 21.17 | -33.24 | 43.50 | 22.33 | 193 | 226 | Vertical |
| 4 | 282.6385 | 18.53 | -28.90 | 46.00 | 27.47 | 173 | 346 | Vertical |
| 5 | 376.9414 | 21.43 | -26.15 | 46.00 | 24.57 | 281 | 247 | Vertical |
| 6 | 957.8936 | 27.80 | -15.37 | 46.00 | 18.20 | 252 | 346 | Vertical |

### 4.9.1.2 Charge + Transmitting, Horizontal

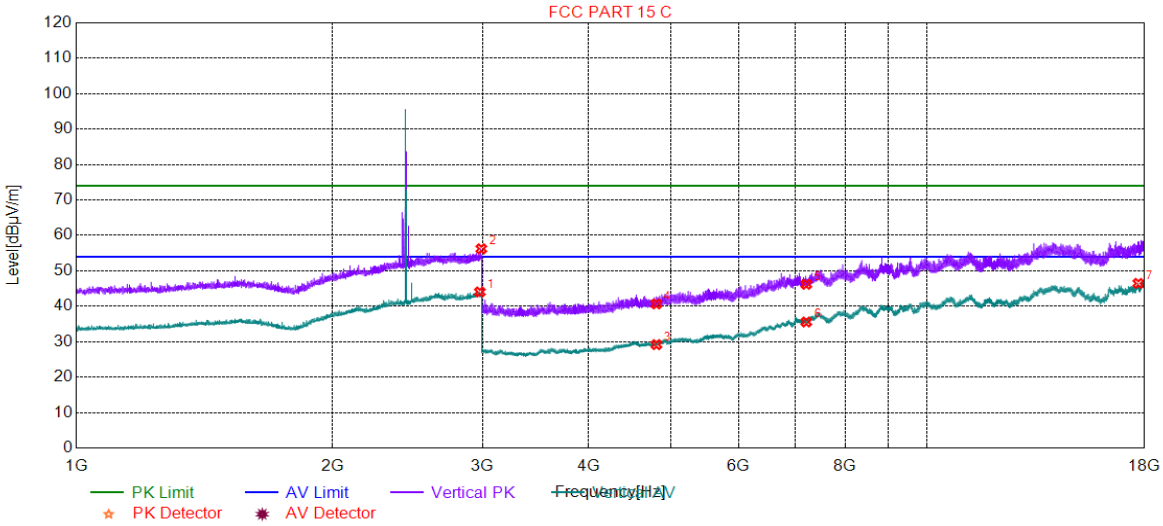



**Suspected List**

| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|---|---|---|---|---|---|---|---|---|
| 1 | 36.5973 | 29.41 | -29.44 | 40.00 | 10.59 | 172 | 244 | Horizontal |
| 2 | 48.8218 | 29.24 | -30.38 | 40.00 | 10.76 | 106 | 12 | Horizontal |
| 3 | 104.7049 | 16.68 | -32.00 | 43.50 | 26.82 | 234 | 14 | Horizontal |
| 4 | 245.3831 | 19.13 | -29.85 | 46.00 | 26.87 | 125 | 77 | Horizontal |
| 5 | 685.8512 | 24.82 | -19.66 | 46.00 | 21.18 | 101 | 59 | Horizontal |
| 6 | 930.1460 | 27.82 | -15.70 | 46.00 | 18.18 | 124 | 286 | Horizontal |

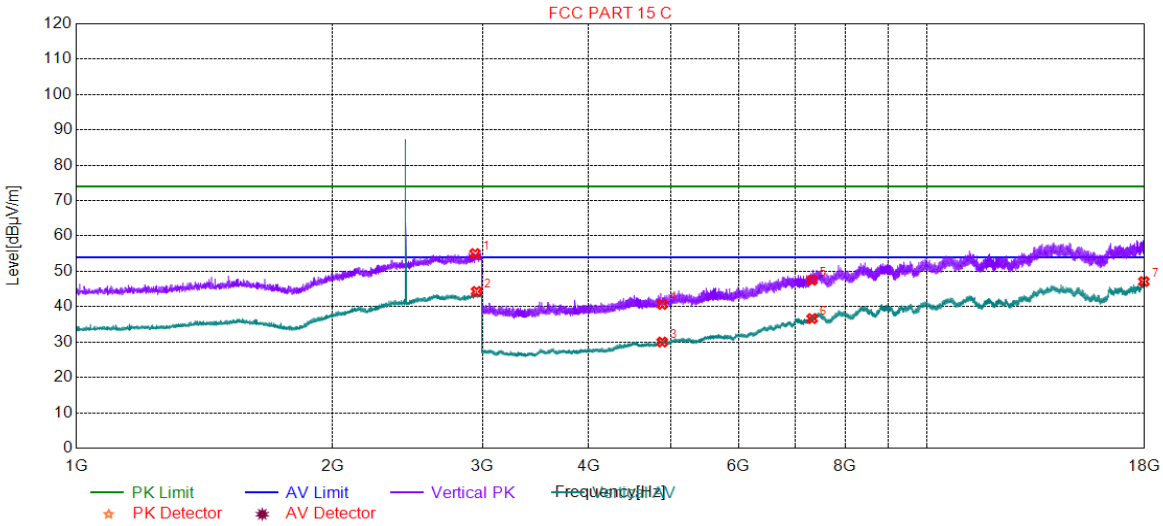
### 4.9.2 Transmitter Emission above 1GHz

#### 4.9.2.1 GFSK _Lowest Channel_ Vertical



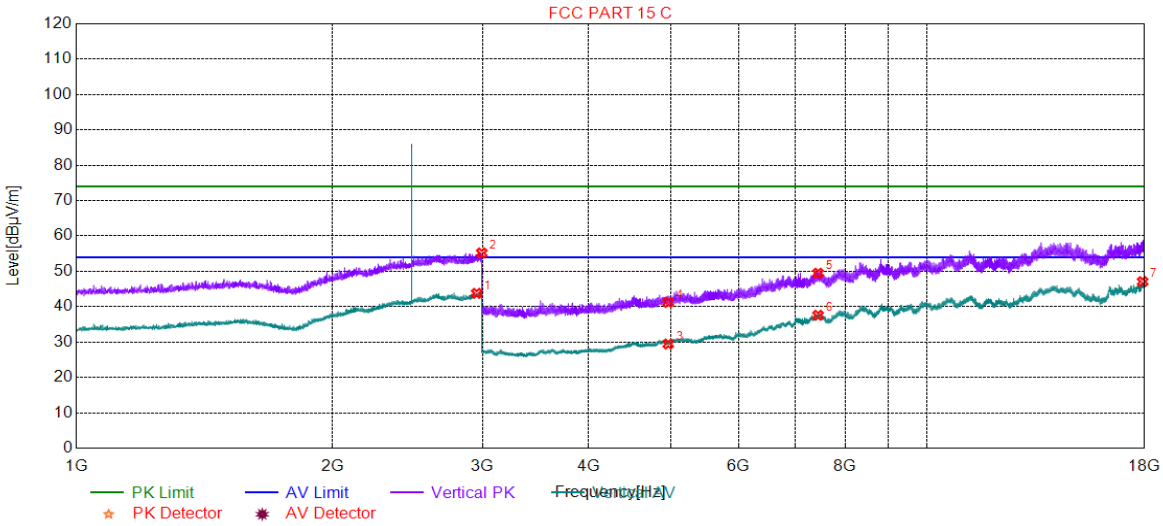

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2979.4949 | 44.05 | 9.54 | 54.00 | 9.95 | 201 | 10 | Vertical |
| 2 | 2990.9977 | 56.23 | 9.49 | 74.00 | 17.77 | 163 | 10 | Vertical |
| 3 | 4804.0000 | 29.19 | -18.30 | 54.00 | 24.81 | 258 | 177 | Vertical |
| 4 | 4804.0000 | 40.67 | -18.30 | 74.00 | 33.33 | 298 | 95 | Vertical |
| 5 | 7206.0000 | 46.21 | -10.09 | 74.00 | 27.79 | 168 | 360 | Vertical |
| 6 | 7206.0000 | 35.57 | -10.09 | 54.00 | 18.43 | 170 | 218 | Vertical |
| 7 | 17695.284 | 46.47 | 1.36 | 54.00 | 7.53 | 185 | 119 | Vertical |

### 4.9.2.2 GFSK _Middle Channel_ Vertical



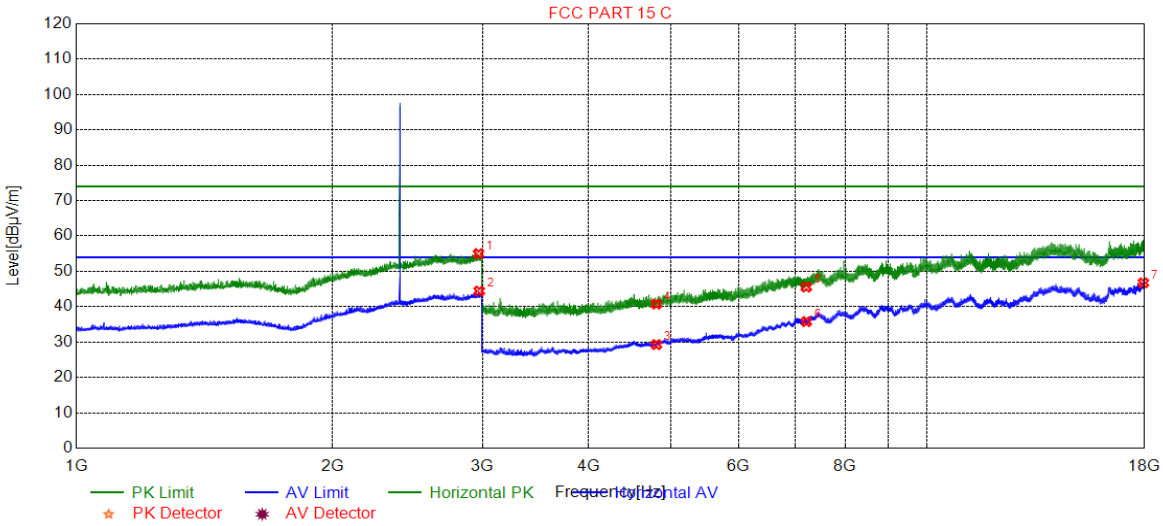

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2940.9852 | 55.03 | 9.58 | 74.00 | 18.97 | 169 | 58 | Vertical |
| 2 | 2952.9882 | 44.32 | 9.67 | 54.00 | 9.68 | 164 | 223 | Vertical |
| 3 | 4880.0000 | 30.01 | -17.97 | 54.00 | 23.99 | 177 | 116 | Vertical |
| 4 | 4880.0000 | 40.67 | -17.97 | 74.00 | 33.33 | 278 | 33 | Vertical |
| 5 | 7320.0000 | 47.49 | -9.72 | 74.00 | 26.51 | 174 | 319 | Vertical |
| 6 | 7320.0000 | 36.65 | -9.72 | 54.00 | 17.35 | 179 | 218 | Vertical |
| 7 | 17966.998 | 47.12 | 0.71 | 54.00 | 6.88 | 173 | 360 | Vertical |

### 4.9.2.3 GFSK _High Channel_ Vertical



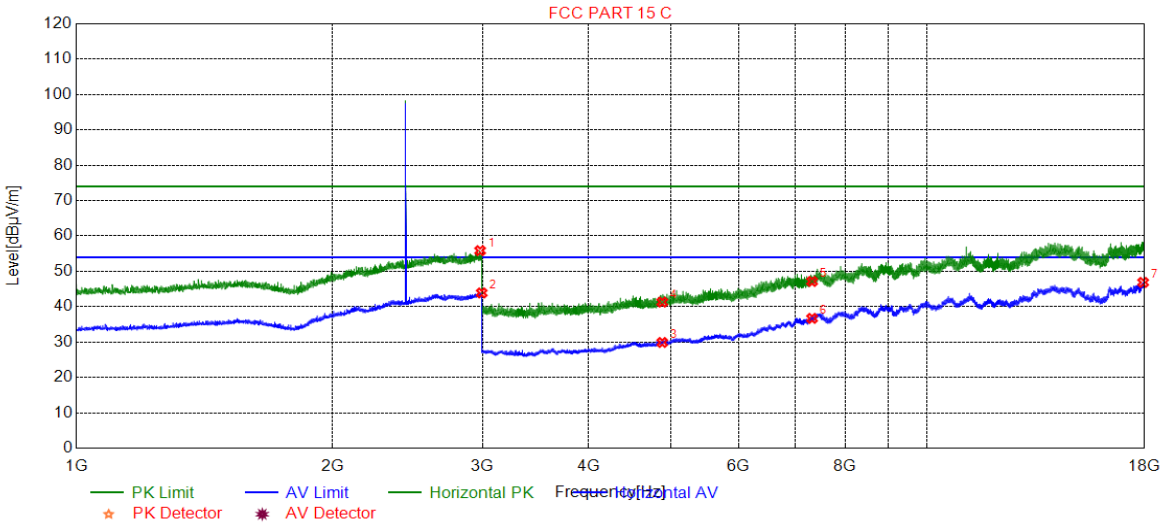

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2953.4884 | 43.79 | 9.66 | 54.00 | 10.21 | 269 | 79 | Vertical |
| 2 | 2994.9988 | 55.21 | 9.47 | 74.00 | 18.79 | 287 | 217 | Vertical |
| 3 | 4960.0000 | 29.46 | -17.47 | 54.00 | 24.54 | 180 | 13 | Vertical |
| 4 | 4960.0000 | 41.20 | -17.47 | 74.00 | 32.80 | 262 | 177 | Vertical |
| 5 | 7440.0000 | 49.48 | -9.35 | 74.00 | 24.52 | 253 | 224 | Vertical |
| 6 | 7440.0000 | 37.59 | -9.35 | 54.00 | 16.41 | 282 | 169 | Vertical |
| 7 | 17903.195 | 47.10 | 0.69 | 54.00 | 6.90 | 278 | 119 | Vertical |

### 4.9.2.4 GFSK _Lowest Channel_ Horizontal



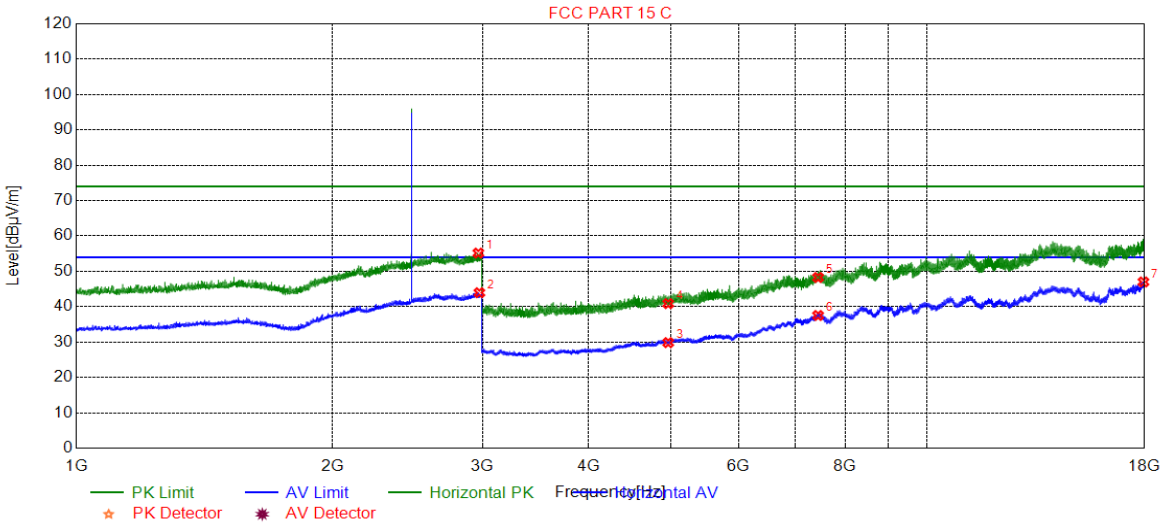

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2968.4921 | 54.99 | 9.59 | 74.00 | 19.01 | 129 | 225 | Horizontal |
| 2 | 2974.4936 | 44.43 | 9.57 | 54.00 | 9.57 | 156 | 32 | Horizontal |
| 3 | 4804.0000 | 29.29 | -18.30 | 54.00 | 24.71 | 142 | 96 | Horizontal |
| 4 | 4804.0000 | 40.75 | -18.30 | 74.00 | 33.25 | 164 | 314 | Horizontal |
| 5 | 7206.0000 | 45.56 | -10.09 | 74.00 | 28.44 | 150 | 118 | Horizontal |
| 6 | 7206.0000 | 35.78 | -10.09 | 54.00 | 18.22 | 206 | 168 | Horizontal |
| 7 | 17939.497 | 46.74 | 0.70 | 54.00 | 7.26 | 113 | 319 | Horizontal |

### 4.9.2.5 GFSK _Middle Channel_ Horizontal




| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2981.4954 | 55.85 | 9.54 | 74.00 | 18.15 | 142 | 14 | Horizontal |
| 2 | 2994.4986 | 43.89 | 9.48 | 54.00 | 10.11 | 148 | 152 | Horizontal |
| 3 | 4880.0000 | 29.89 | -17.97 | 54.00 | 24.11 | 213 | 315 | Horizontal |
| 4 | 4880.0000 | 41.31 | -17.97 | 74.00 | 32.69 | 148 | 68 | Horizontal |
| 5 | 7320.0000 | 47.15 | -9.72 | 74.00 | 26.85 | 120 | 334 | Horizontal |
| 6 | 7320.0000 | 36.70 | -9.72 | 54.00 | 17.30 | 151 | 18 | Horizontal |
| 7 | 17927.946 | 46.87 | 0.70 | 54.00 | 7.13 | 150 | 124 | Horizontal |

### 4.9.2.6 GFSK _High Channel_ Horizontal




| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2966.9917 | 55.17 | 9.60 | 74.00 | 18.83 | 172 | 127 | Horizontal |
| 2 | 2975.4939 | 43.96 | 9.56 | 54.00 | 10.04 | 154 | 251 | Horizontal |
| 3 | 4960.0000 | 29.85 | -17.47 | 54.00 | 24.15 | 217 | 0 | Horizontal |
| 4 | 4960.0000 | 40.88 | -17.47 | 74.00 | 33.12 | 235 | 80 | Horizontal |
| 5 | 7440.0000 | 48.26 | -9.35 | 74.00 | 25.74 | 141 | 123 | Horizontal |
| 6 | 7440.0000 | 37.52 | -9.35 | 54.00 | 16.48 | 188 | 69 | Horizontal |
| 7 | 17942.247 | 47.01 | 0.70 | 54.00 | 6.99 | 217 | 324 | Horizontal |

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

   Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

2) Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

## 4.10 Restricted bands around fundamental frequency

| | | | |
|---|---|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.209 and 15.205 | | |
| Test Method: | ANSI C63.10: 2013 Section 11.12 | | |
| Test Site: | Measurement Distance: 3m or 10m (Semi-Anechoic Chamber) | | |
| Limit: | Frequency | Limit (dBuV/m @3m) | Remark |
| | 30MHz-88MHz | 40.0 | Quasi-peak Value |
| | 88MHz-216MHz | 43.5 | Quasi-peak Value |
| | 216MHz-960MHz | 46.0 | Quasi-peak Value |
| | 960MHz-1GHz | 54.0 | Quasi-peak Value |
| | Above 1GHz | 54.0 | Average Value |
| | | 74.0 | Peak Value |
| Test Setup: | | | |

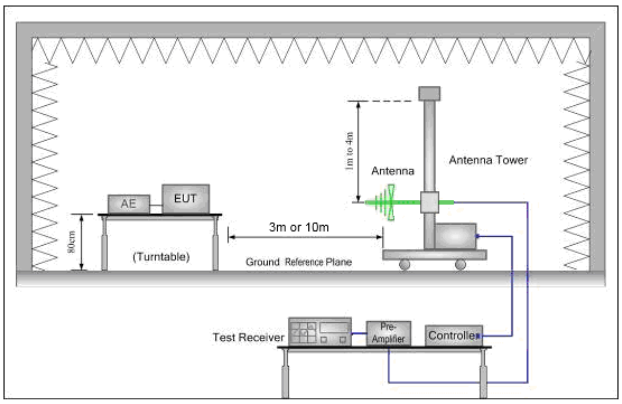



Figure 1. 30MHz to 1GHz

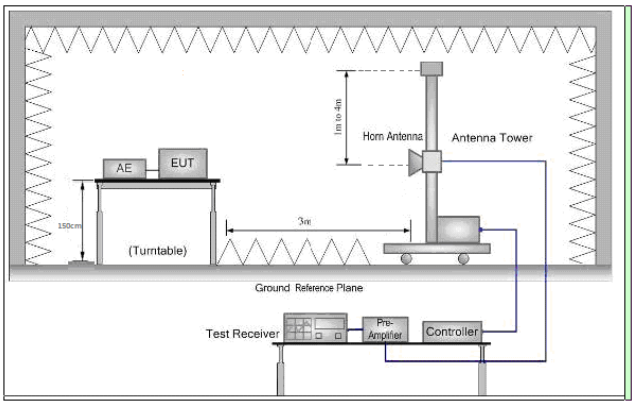


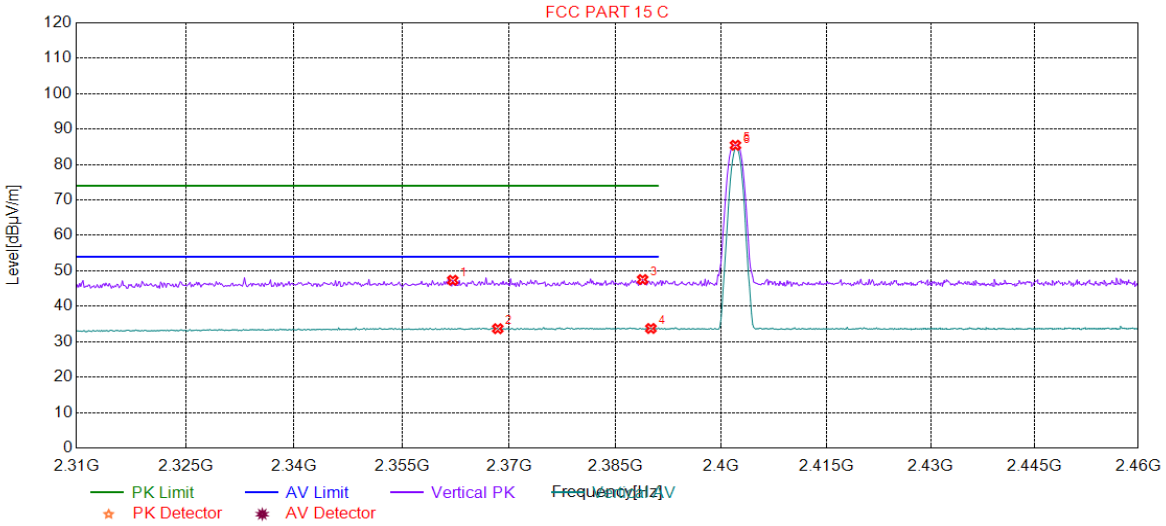

Figure 2. Above 1 GHz

| | |
|---|---|
| Test Procedure: | a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>g. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel<br>h. Test the EUT in the lowest channel, the Highest channel |

| | |
|---|---|
| | i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.<br>j. Repeat above procedures until all frequencies measured was complete. |
| Exploratory Test Mode: | Transmitting with GFSK modulation.<br>Charge + Transmitting mode. |
| Final Test Mode: | Transmitting with GFSK modulation.<br>Pretest the EUT at Charge + Transmitting mode.<br>Only the worst case is recorded in the report. |
| Instruments Used: | Refer to section 5.10 for details. |
| Test Results: | Pass |

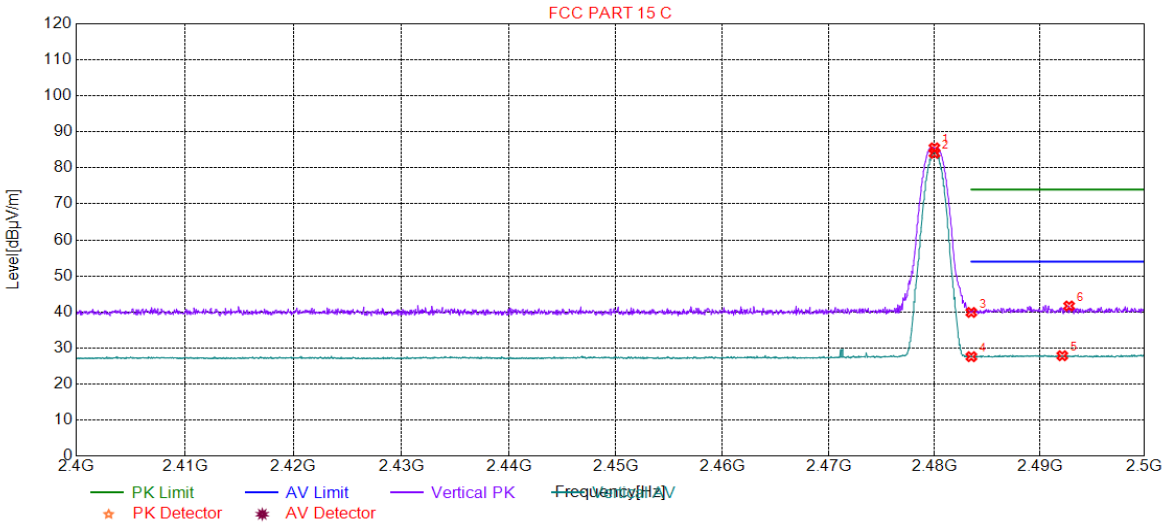
## 4.10.1 Test plots

### 4.10.1.1 Worst Case Mode (GFSK) Lowest Channel_ Vertical



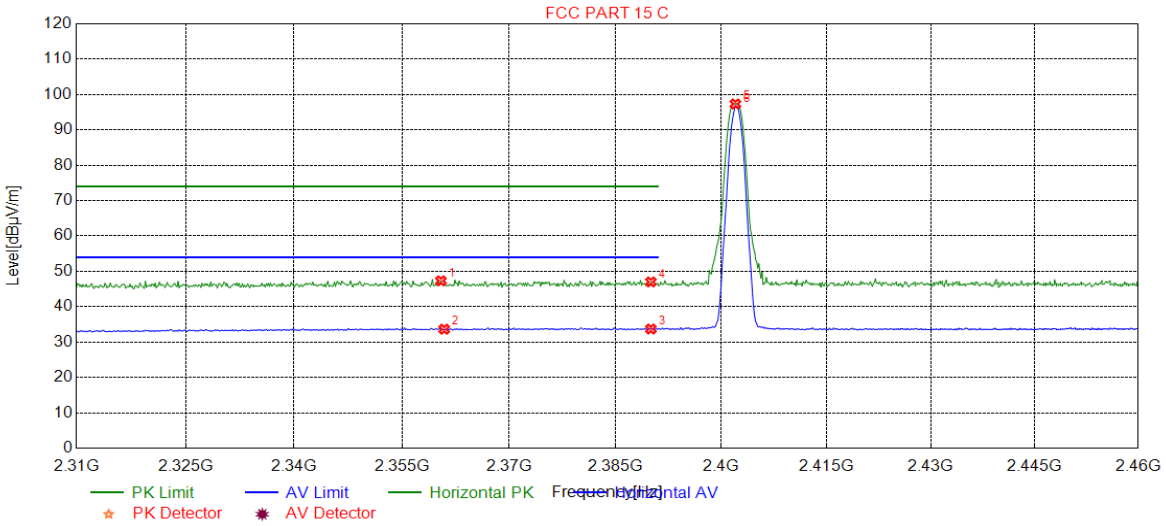

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2362.1021 | 47.34 | 7.80 | 74.00 | 26.66 | 166 | 46 | Vertical |
| 2 | 2368.4084 | 33.69 | 7.79 | 54.00 | 20.31 | 162 | 151 | Vertical |
| 3 | 2388.8288 | 47.55 | 7.77 | 74.00 | 26.45 | 205 | 109 | Vertical |
| 4 | 2390.0000 | 33.75 | 7.77 | 54.00 | 20.25 | 151 | 346 | Vertical |
| 5 | 2402.0000 | 85.45 | 7.77 | 0.00 | -85.45 | 216 | 213 | Vertical |
| 6 | 2402.0000 | 84.75 | 7.77 | 0.00 | -84.75 | 282 | 213 | Vertical |

### 4.10.1.2 Worst Case Mode (GFSK) Highest Channel_ Vertical



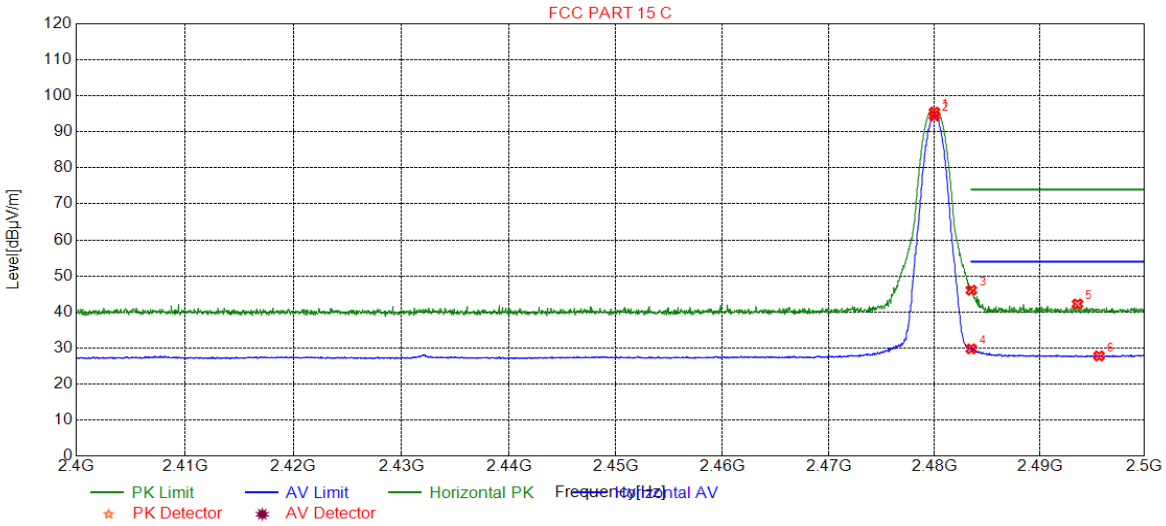

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2480.0000 | 85.55 | 8.01 | 0.00 | -85.55 | 223 | 220 | Vertical |
| 2 | 2480.0000 | 84.04 | 8.01 | 0.00 | -84.04 | 279 | 215 | Vertical |
| 3 | 2483.5000 | 39.88 | 8.01 | 74.00 | 34.12 | 286 | 220 | Vertical |
| 4 | 2483.5000 | 27.59 | 8.01 | 54.00 | 26.41 | 261 | 209 | Vertical |
| 5 | 2492.1461 | 27.86 | 8.02 | 54.00 | 26.14 | 255 | 160 | Vertical |
| 6 | 2492.7964 | 41.68 | 8.02 | 74.00 | 32.32 | 214 | 248 | Vertical |

### 4.10.1.3 Worst Case Mode (GFSK) Lowest Channel_ Horizontal




| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2360.4505 | 47.32 | 7.80 | 74.00 | 26.68 | 186 | 226 | Horizontal |
| 2 | 2360.9009 | 33.65 | 7.80 | 54.00 | 20.35 | 201 | 192 | Horizontal |
| 3 | 2390.0000 | 33.70 | 7.77 | 54.00 | 20.30 | 175 | 342 | Horizontal |
| 4 | 2390.0000 | 47.02 | 7.77 | 74.00 | 26.98 | 128 | 67 | Horizontal |
| 5 | 2402.0000 | 97.34 | 7.77 | 0.00 | -97.34 | 126 | 80 | Horizontal |
| 6 | 2402.0000 | 96.61 | 7.77 | 0.00 | -96.61 | 163 | 76 | Horizontal |

### 4.10.1.4 Worst Case Mode (GFSK) Highest Channel_ Horizontal




| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2480.0000 | 95.49 | 8.01 | 0.00 | -95.49 | 195 | 79 | Horizontal |
| 2 | 2480.0000 | 94.48 | 8.01 | 0.00 | -94.48 | 191 | 316 | Horizontal |
| 3 | 2483.5000 | 46.06 | 8.01 | 74.00 | 27.94 | 149 | 79 | Horizontal |
| 4 | 2483.5000 | 29.77 | 8.01 | 54.00 | 24.23 | 238 | 178 | Horizontal |
| 5 | 2493.5968 | 42.23 | 8.02 | 74.00 | 31.77 | 188 | 167 | Horizontal |
| 6 | 2495.6478 | 27.81 | 8.02 | 54.00 | 26.19 | 105 | 73 | Horizontal |

*Remark:*
*The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:*
*Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor*
All Modes have been tested, but only the worst case data displayed in this report.

# 5 Measurement Uncertainty (95% confidence levels, k=2)

Lab A:

| No. | Item | Measurement Uncertainty |
|---|---|---|
| 1 | Total RF power, conducted | ±0.75dB |
| 2 | RF power density, conducted | ±2.84dB |
| 3 | Spurious emissions, conducted | ±0.75dB |
| 4 | Temperature test | ±1°C |
| 5 | Humidity test | ±3% |
| 6 | DC and low frequency voltages | ±0.5% |

Lab B:

| No. | Item | Measurement Uncertainty |
|---|---|---|
| 1 | Conduction Emission | ± 3.0dB (150kHz to 30MHz) |
| 2 | Radiated Emission | ± 4.8dB (Below 1GHz) |
| | | ± 4.8dB (1GHz to 6GHz) |
| | | ± 4.5dB (6GHz to 18GHz) |
| | | ± 5.02dB (Above 18GHz) |

# 6 Equipment List

| RF conducted test | | | | | |
|---|---|---|---|---|---|
| Test Equipment | Manufacturer | Model No. | Inventory No. | Cal. date (yyyy-mm-dd) | Cal.Duedate (yyyy-mm-dd) |
| DC Power Supply | Agilent Technologies Inc | 66311B | W009-09 | 2019/7/15 | 2020/7/15 |
| Signal Analyzer | Rohde & Schwarz | FSV | W025-05 | 2020/1/3 | 2021/1/2 |
| Coaxial Cable | SGS | N/A | SEM031-01 | 2019/6/12 | 2020/6/11 |
| Attenuator | Weinschel Associates | WA41 | SEM021-09 | N/A | N/A |
| Signal Generator | KEYSIGHT | N5173B | SEM006-05 | 2019/7/14 | 2020/7/14 |
| Temperature Chamber | GIANT FORCE | ICT-150-40-CP-AR | W027-03 | 2019/10/27 | 2020/10/27 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2019/7/14 | 2020/7/14 |

| CE Test System | | | | | |
|---|---|---|---|---|---|
| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date |
| Shielding Room | Brilliant-emc | N/A | XAW03-35-01 | 2019-09-11 | 2022-09-10 |
| Test receiver | ROHDE&SCHWARZ | ESR | XAW01-08-01 | 2019-09-07 | 2020-09-06 |
| Artificial network | ROHDE&SCHWARZ | ENV216 | XAW01-04-01 | 2019-07-16 | 2020-07-15 |
| Temperature and humidity meter | MingGao | TH101B | XAW01-01-01 | 2019-12-06 | 2020-12-05 |
| Measurement Software | Tonscend | TS+ CE V2.5 | XAW02-05-02 | NCR | NCR |

| RSE Test System |
|---|



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| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date |
|---|---|---|---|---|---|
| Semi-Anechoic Chamber | Brilliant-emc | N/A | XAW03-35-01 | 2019-09-11 | 2022-09-10 |
| MXA signal analyzer | Keysight | N9020A | XAW01-06-01 | 2019-06-27 | 2020-06-26 |
| Test receiver | ROHDE&SCHWARZ | ESR | XAW01-08-01 | 2019-09-07 | 2020-09-06 |
| Receiving antenna (30MHz-3GHz) | Schwarzbeck | VULB 9163 | XAW01-09-01 | 2019-10-13 | 2021-10-12 |
| Receiving antenna (1GHz~18GHz) | Schwarzbeck | BBHA 9120D | XAW01-09-02 | 2019-10-13 | 2021-10-12 |
| Receiving antenna (15GHz~40GHz) | Schwarzbeck | BBHA 9170 | XAW01-09-03 | 2019-10-13 | 2021-10-12 |
| Directional antenna rack controller | Max-Full | MF-7802BS | XAW03-03-01 | NCR | NCR |
| High-speed antenna rack controller | Max-Full | MF-7802 | XAW03-04-01 | NCR | NCR |
| Filter bank | Tonscend | JS0806-F | XAW03-05-01 | NCR | NCR |
| Filter bank | Tonscend | JS0806s | XAW03-05-02 | NCR | NCR |
| Amplifier | Tonscend | TAP00903040 | XAW01-41-01 | 2019-11-18 | 2020-11-17 |
| Amplifier | Tonscend | TAP01018048 | XAW01-41-02 | 2019-11-18 | 2020-11-17 |
| Amplifier | Tonscend | TAP18040048 | XAW01-41-03 | 2019-12-03 | 2020-12-02 |
| Amplifier | Shanghai Steed | YX28980930 | XAW01-41-06 | 2019-11-18 | 2020-11-17 |
| Temperature and humidity meter | MingGao | TH101B | XAW01-01-01 | 2019-12-06 | 2020-12-05 |
| Measurement Software | Tonscend | TS+ RSE V3.0.0.2 | XAW02-05-01 | NCR | NCR |

# 7 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of Set-Up for ZR/2020/20031.

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The End



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