

## SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250800366303

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**TEST REPORT**

**Application No.:** SZCR2508003663AT  
**Applicant:** PAX Technology Limited  
**Address of Applicant:** FLAT/RM 2504, 25/F, SUN HUNG KAI CENTRE, 30 HARBOUR ROAD, WANCHAI, HK, China  
**Manufacturer:** PAX Computer Technology(Shenzhen) Co., Ltd.  
**Address of Manufacturer:** Room 701, PAX Technology Building, Shanxia Community, Pinghu Sub district, Longgang District, Shenzhen, China  
**Equipment Under Test (EUT):**  
**EUT Name:** Smart Payment Terminal  
**Model No.:** A800  
**Trade Mark:** PAX  
**FCC ID:** V5PA800  
**Standard(s) :** 47 CFR Part 15, Subpart C 15.247  
**Date of Receipt:** 2025-08-20  
**Date of Test:** 2025-08-21 to 2025-08-29  
**Date of Issue:** 2025-09-01

|                     |              |
|---------------------|--------------|
| <b>Test Result:</b> | <b>Pass*</b> |
|---------------------|--------------|

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

Kenx. Xu

Keny Xu  
EMC Laboratory Manager



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Shenzhen Branch EMC Laboratory

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| Revision Record |         |            |          |          |
|-----------------|---------|------------|----------|----------|
| Version         | Chapter | Date       | Modifier | Remark   |
| 01              |         | 2025-09-01 |          | Original |
|                 |         |            |          |          |
|                 |         |            |          |          |

|                          |  |                              |  |  |
|--------------------------|--|------------------------------|--|--|
| Authorized for issue by: |  |                              |  |  |
|                          |  | Calvin Weng                  |  |  |
|                          |  | Calvin Weng/Project Engineer |  |  |
|                          |  | Eric Fu                      |  |  |
|                          |  | Eric Fu/Reviewer             |  |  |



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## 2 Test Summary

| Radio Spectrum Technical Requirement |                                  |        |                                                 |        |
|--------------------------------------|----------------------------------|--------|-------------------------------------------------|--------|
| Item                                 | Standard                         | Method | Requirement                                     | Result |
| Antenna Requirement                  | 47 CFR Part 15, Subpart C 15.247 | N/A    | 47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4) | Pass   |

| Radio Spectrum Matter Part                            |                                  |                                    |                                           |        |
|-------------------------------------------------------|----------------------------------|------------------------------------|-------------------------------------------|--------|
| Item                                                  | Standard                         | Method                             | Requirement                               | Result |
| Radiated Emissions which fall in the restricted bands | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2020) Section 6.10.5  | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass   |
| Radiated Spurious Emissions Below 1GHz                |                                  | ANSI C63.10 (2020) Section 6.4,6.5 | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass   |
| Radiated Spurious Emissions Above 1GHz                |                                  | ANSI C63.10 (2020) Section 6.6     | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass   |
| Conducted Peak Output Power                           |                                  | ANSI C63.10 (2020) Section 11.9.1  | 47 CFR Part 15, Subpart C 15.247(b)(3)    | Pass   |

Remark: This report is based on SZCR210502109903, to modify configuration as below:

- 1.The BOT surface RF PA chip model has been changed, but it's pin to pin compatible and remains the same function.
- 2.The CPU on the TOP side has been upgraded, with a new model and the same packaging.
- 3.New incell screen added.
- 4.Screen FPC flat cable changed.
- 5.Update antenna gain.

Therefore in this report the section 2 items were fully retested on model and shown the data in this report, other tests please refer to original report SZCR210502109903.



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## 4 General Information

### 4.1 Details of E.U.T.

|                                     |                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply:                       | DC7.2V by li-ion battery(2300mAh)<br>Battery M/N:IS1099G<br>Battery Manufacturer:ICON ENERGY SYSTEM(SHENZHEN) CO.,LTD.<br>Recharged by AC/DC power adapter<br>Adapter M/N: GLH-PD18W-U<br>Adapter input: AC100-240V, 50/60Hz, 0.5A<br>Adapter output: DC5V/3A, 9V/2A, 12V/1.5A<br>Adapter Manufacturer: Shenzhen Sorghum red Electronic Technology Co.,Ltd. |
| Cable(s):                           | USB cable:1m unshielded cable without ferrite core                                                                                                                                                                                                                                                                                                          |
| Cable Loss (for RF conducted test): | 0.7dB                                                                                                                                                                                                                                                                                                                                                       |
| Operation Frequency:                | 2402MHz to 2480MHz                                                                                                                                                                                                                                                                                                                                          |
| Modulation Type:                    | GFSK                                                                                                                                                                                                                                                                                                                                                        |
| Data Rate:                          | 1M/2M                                                                                                                                                                                                                                                                                                                                                       |
| Number of Channels:                 | 40                                                                                                                                                                                                                                                                                                                                                          |
| Channel Spacing:                    | 2MHz                                                                                                                                                                                                                                                                                                                                                        |
| Antenna Type:                       | PIFA Antenna                                                                                                                                                                                                                                                                                                                                                |
| Antenna Gain:                       | -1.26dBi                                                                                                                                                                                                                                                                                                                                                    |

Remark:The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

### 4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|-------------|--------------|-----------|------------|
| --          | --           | --        | --         |

The EUT has been tested as an independent unit.

## 4.3 Measurement Uncertainty

| Test Item                                             | Measurement Uncertainty                                          |
|-------------------------------------------------------|------------------------------------------------------------------|
| Radiated Emissions which fall in the restricted bands | $\pm 6.0\text{dB}$ (Below 1GHz); $\pm 4.6\text{dB}$ (Above 1GHz) |
| Radiated Spurious Emissions Below 1GHz                | $\pm 6.0\text{dB}$ for 3m; $\pm 5.0\text{dB}$ for 10m            |
| Radiated Spurious Emissions Above 1GHz                | $\pm 4.6\text{dB}$ (1-18GHz); $\pm 4.8\text{dB}$ (18-40GHz)      |
| Conducted Peak Output Power                           | $\pm 0.75\text{dB}$                                              |

Remark:  
The  $U_{\text{lab}}$  (lab Uncertainty) is less than  $U_{\text{CISPR/ETSI}}$  (CISPR/ETSI Uncertainty), so the test results  
– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;  
– non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



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## 4.4 Test Location

All tests were performed at:

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Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

## 4.5 Test Facility

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

### • 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 (Member No. 1937)

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. Shenzhen EMC laboratory 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: CN1336

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

Designation Number: CN1336. Test Firm Registration Number: 787754.

### • 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.

## 4.6 Deviation from Standards

None

## 4.7 Abnormalities from Standard Conditions

None



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## 5 Equipment List

| Radiated Emissions which fall in the restricted bands |                 |                 |               |            |              |
|-------------------------------------------------------|-----------------|-----------------|---------------|------------|--------------|
| Equipment                                             | Manufacturer    | Model No.       | Inventory No. | Cal Date   | Cal Due Date |
| Signal & Spectrum Analyzer                            | Rohde & Schwarz | FSV             | SZ-WRG-M-048  | 2025-01-07 | 2026-01-06   |
| Low Noise Amplifier 30M-8GHz                          | Tonscend        | TAP30M8G30      | SZ-WRG-M-050  | 2025-01-07 | 2026-01-06   |
| Double Ridge Horn Antenna 1GHz-18GHz                  | SCHWARZBECK     | BBHA 9120 D     | SZ-WRG-M-055  | 2023-12-21 | 2025-12-20   |
| RSE Test Software                                     | AUDIX           | e3 V8.2014-6-27 | N/A           | N/A        | N/A          |
| Chamber                                               | CRTSGSSAC966    | N/A             | SZ-WRG-C-063  | 2025-01-06 | 2028-01-05   |
| Humidity and Temperature Indicator                    | deli            | 8838            | SEM002-46     | 2025-07-23 | 2026-07-22   |

| Radiated Spurious Emissions Below 1GHz |                      |                 |               |            |              |
|----------------------------------------|----------------------|-----------------|---------------|------------|--------------|
| Equipment                              | Manufacturer         | Model No.       | Inventory No. | Cal Date   | Cal Due Date |
| Loop Antenna                           | ETS-Lindgren         | 6502            | SEM003-08     | 2023-11-20 | 2025-11-19   |
| 3m Semi-Anechoic Chamber               | ETS-LINDGREN         | N/A             | SEM001-01     | 2023-06-19 | 2026-06-18   |
| MXE EMI Receiver                       | Agilent Technologies | N9038A          | SEM004-15     | 2025-07-25 | 2026-07-24   |
| BiConiLog Antenna                      | ETS-LINDGREN         | 3142C           | SEM003-01     | 2023-09-16 | 2025-09-15   |
| Pre-Amplifier                          | Agilent Technologies | 8447D           | SEM005-01     | 2025-03-04 | 2026-03-03   |
| Measurement Software                   | AUDIX                | e3 V8.2014-6-27 | N/A           | N/A        | N/A          |
| Coaxial Cable                          | SGS                  | N/A             | SEM025-01     | 2025-07-05 | 2026-07-04   |



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| Radiated Spurious Emissions Above 1GHz |                 |                 |               |            |              |
|----------------------------------------|-----------------|-----------------|---------------|------------|--------------|
| Equipment                              | Manufacturer    | Model No.       | Inventory No. | Cal Date   | Cal Due Date |
| Signal & Spectrum Analyzer             | Rohde & Schwarz | FSV             | SZ-WRG-M-048  | 2025-01-07 | 2026-01-06   |
| Low Noise Amplifier 1G-18GHz           | Tonscend        | TAP01018050     | SZ-WRG-M-051  | 2025-01-07 | 2026-01-06   |
| Low Noise Amplifier 18G-40GHz          | Tonscend        | TAP18040048     | SZ-WRG-M-052  | 2025-01-08 | 2026-01-07   |
| Double Ridge Horn Antenna 1GHz-18GHz   | SCHWARZBECK     | BBHA 9120 D     | SZ-WRG-M-055  | 2023-12-21 | 2025-12-20   |
| SHF-EHF Horn 15GHz-40GHz               | SCHWARZBECK     | BBHA 9170       | SZ-WRG-M-056  | 2023-12-25 | 2025-12-24   |
| RSE Test Software                      | AUDIX           | e3 V8.2014-6-27 | N/A           | N/A        | N/A          |
| Chamber                                | CRTSGSSAC966    | N/A             | SZ-WRG-C-063  | 2025-01-06 | 2028-01-05   |
| Humidity and Temperature Indicator     | deli            | 8838            | SEM002-46     | 2025-07-23 | 2026-07-22   |

| RF Conducted Test    |              |               |               |            |              |
|----------------------|--------------|---------------|---------------|------------|--------------|
| Equipment            | Manufacturer | Model No.     | Inventory No. | Cal Date   | Cal Due Date |
| Power Sensor         | TST PASS     | TSPS2023R     | SEM009-26     | 2025-03-04 | 2026-03-03   |
| Power Sensor         | KEYSIGHT     | U2021XA       | SEM009-16     | 2025-03-04 | 2026-03-03   |
| DC Power Supply      | Chroma       | 62012P-80-60  | SEM011-11     | 2025-07-24 | 2026-07-23   |
| MXA Signal Analyzer  | KEYSIGHT     | N9020A        | SEM004-19     | 2025-03-04 | 2026-03-03   |
| Measurement Software | TST PASS     | TST PASS V2.0 | N/A           | N/A        | N/A          |
| Coaxial Cable        | SGS          | N/A           | SEM031-01     | 2025-07-05 | 2026-07-04   |
| Attenuator           | Huber+Suhner | 6620_SMA-50-1 | SEM021-09     | 2025-03-03 | 2026-03-02   |

| General used equipment          |                                           |           |               |            |              |
|---------------------------------|-------------------------------------------|-----------|---------------|------------|--------------|
| Equipment                       | Manufacturer                              | Model No. | Inventory No. | Cal Date   | Cal Due Date |
| Humidity/ Temperature Indicator | deli                                      | 8838      | SEM002-32     | 2025-07-23 | 2026-07-22   |
| Humidity/ Temperature Indicator | deli                                      | 8838      | SEM002-33     | 2025-07-23 | 2026-07-22   |
| Barometer                       | Changchun Meteorological Industry Factory | DYM3      | SEM002-01     | 2025-03-03 | 2026-03-02   |



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## 6 Radio Spectrum Technical Requirement

### 6.1 Antenna Requirement

#### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

#### 6.1.2 Conclusion

15.203 requirement:

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.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is -1.26dBi.

Antenna location: Refer to internal photos



## 7 Radio Spectrum Matter Test Results

### 7.1 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2020) Section 6.10.5

Measurement Distance: 3m

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|----------------|----------------------------------|------------------------------|
| 0.009-0.490    | 2400/F(kHz)                      | 300                          |
| 0.490-1.705    | 24000/F(kHz)                     | 30                           |
| 1.705-30.0     | 30                               | 30                           |
| 30-88          | 100                              | 3                            |
| 88-216         | 150                              | 3                            |
| 216-960        | 200                              | 3                            |
| Above 960      | 500                              | 3                            |

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, 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.

#### 7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 21.1 °C

Humidity: 51.2 % RH

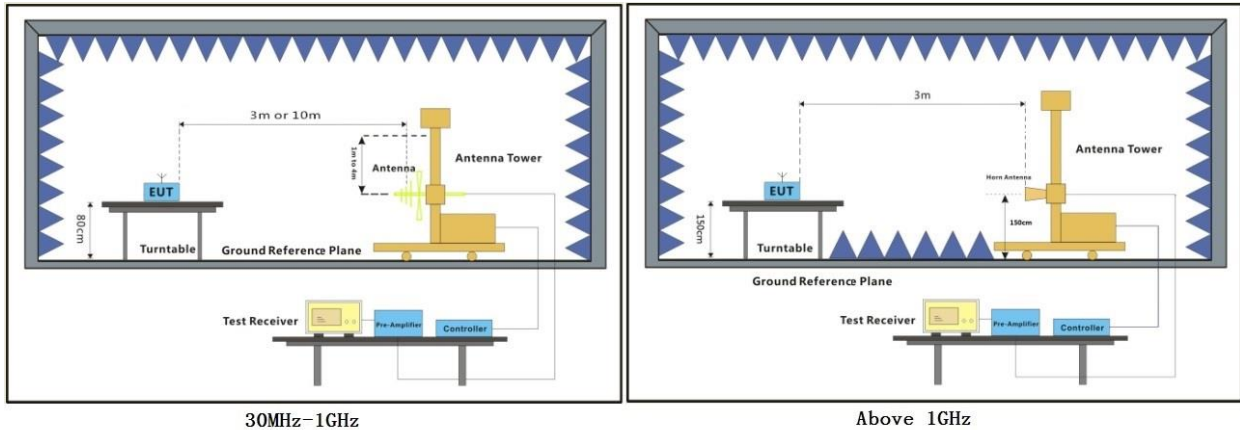
Atmospheric Pressure: 1020 mbar

#### 7.1.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description                                                                   |
|-----------------------|-----------|-------------------------------------------------------------------------------|
| Final test            | 02        | TX mode_ Keep the EUT in continuously transmitting mode with GFSK modulation. |



### 7.1.3 Test Setup Diagram



## 7.1.4 Measurement Procedure and Data

- 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 chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- 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 fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- 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.
- 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.
- 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 (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.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.
- h. Test the EUT in the lowest channel, the middle 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.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

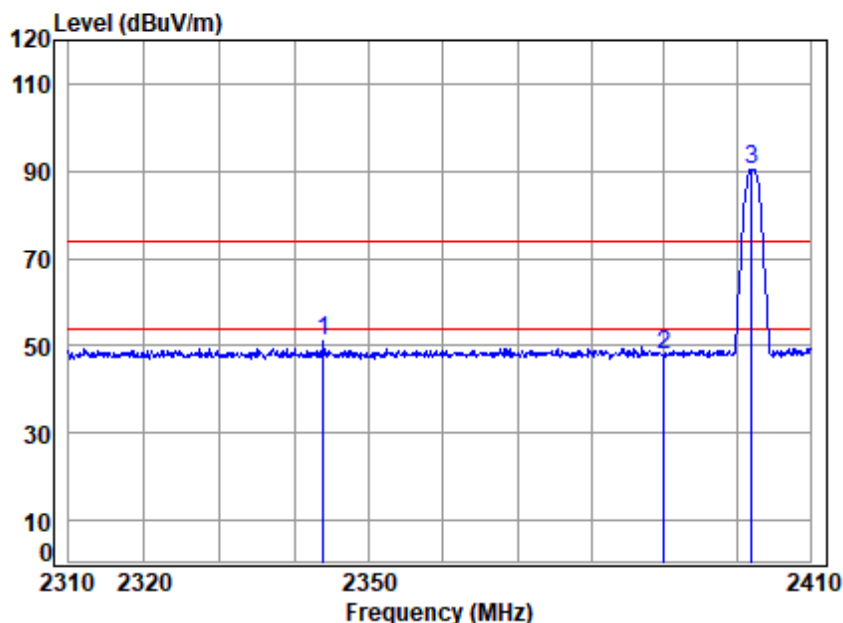
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Remark 3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

Remark 4: For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

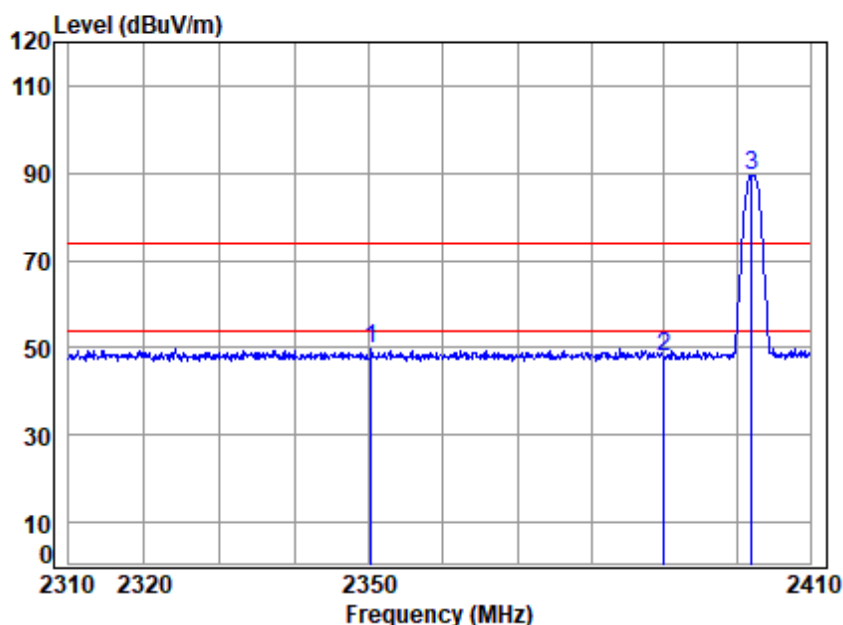
Mode : 2402 Band edge

: BLE 1M

|      |          | Cable | Ant    | Preamp | Read  |        | Limit  | Over   |        |
|------|----------|-------|--------|--------|-------|--------|--------|--------|--------|
|      | Freq     | Loss  | Factor | Factor | Level | Level  | Line   | Limit  | Remark |
|      | MHz      | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1    | 2343.923 | 6.80  | 27.29  | 31.53  | 48.40 | 50.96  | 74.00  | -23.04 | peak   |
| 2    | 2390.000 | 6.83  | 27.46  | 31.54  | 45.07 | 47.82  | 74.00  | -26.18 | peak   |
| 3 pp | 2402.000 | 6.84  | 27.50  | 31.54  | 87.57 | 90.37  | 74.00  | 16.37  | peak   |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

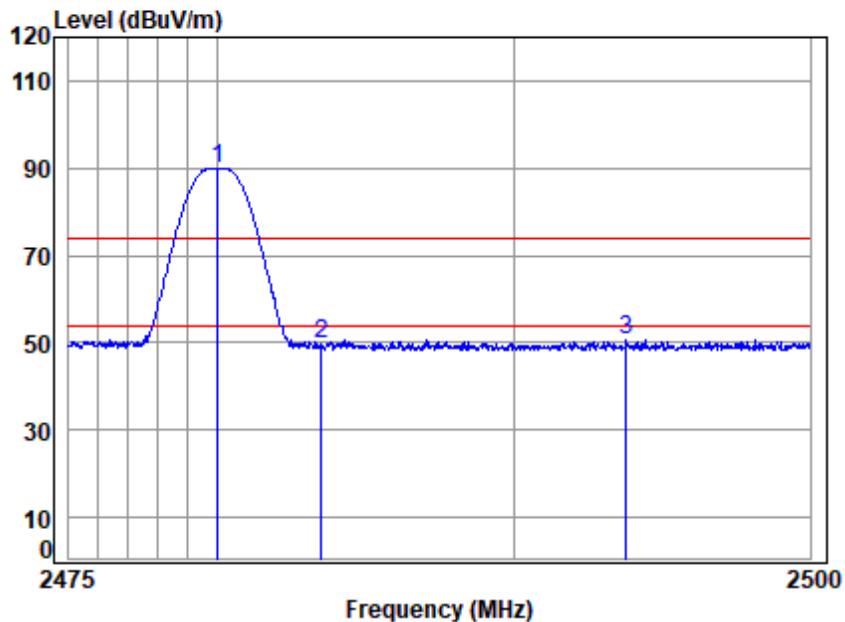
Mode : 2402 Band edge

: BLE 1M

|               | Cable | Ant    | Preamp | Read  |        | Limit  | Over   |        |
|---------------|-------|--------|--------|-------|--------|--------|--------|--------|
| Freq          | Loss  | Factor | Factor | Level | Level  | Line   | Limit  | Remark |
| MHz           | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1 2350.289    | 6.81  | 27.30  | 31.54  | 47.13 | 49.70  | 74.00  | -24.30 | peak   |
| 2 2390.000    | 6.83  | 27.46  | 31.54  | 45.26 | 48.01  | 74.00  | -25.99 | peak   |
| 3 pp 2402.000 | 6.84  | 27.50  | 31.54  | 86.55 | 89.35  | 74.00  | 15.35  | peak   |



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

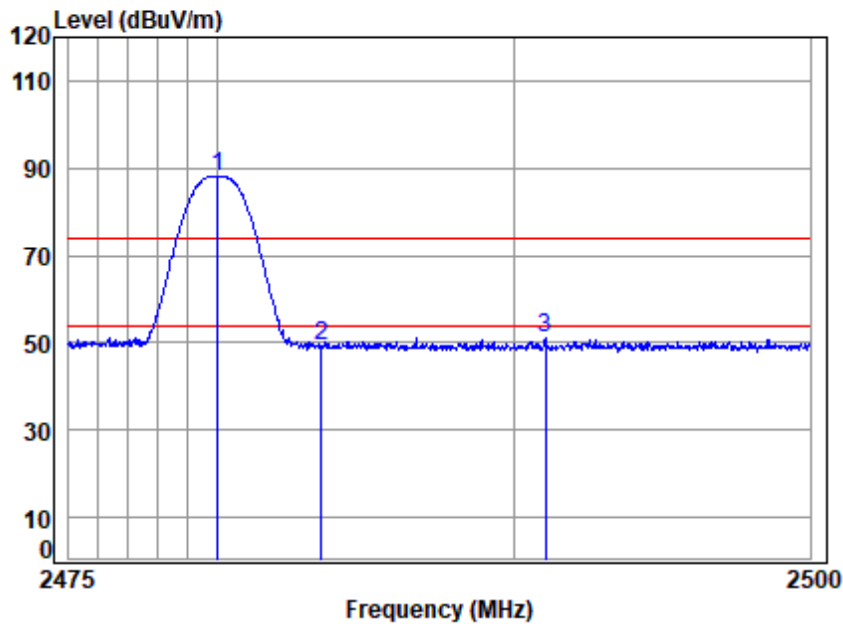
Mode : 2480 Band edge

: BLE 1M

|      |          | Cable | Ant    | Preamp | Read  |        | Limit  | Over   |        |
|------|----------|-------|--------|--------|-------|--------|--------|--------|--------|
|      | Freq     | Loss  | Factor | Factor | Level | Level  | Line   | Limit  | Remark |
|      | MHz      | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1 pp | 2480.000 | 7.38  | 27.78  | 31.55  | 86.38 | 89.99  | 74.00  | 15.99  | peak   |
| 2    | 2483.500 | 7.40  | 27.80  | 31.55  | 46.10 | 49.75  | 74.00  | -24.25 | peak   |
| 3    | 2493.777 | 7.47  | 27.86  | 31.55  | 46.86 | 50.64  | 74.00  | -23.36 | peak   |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

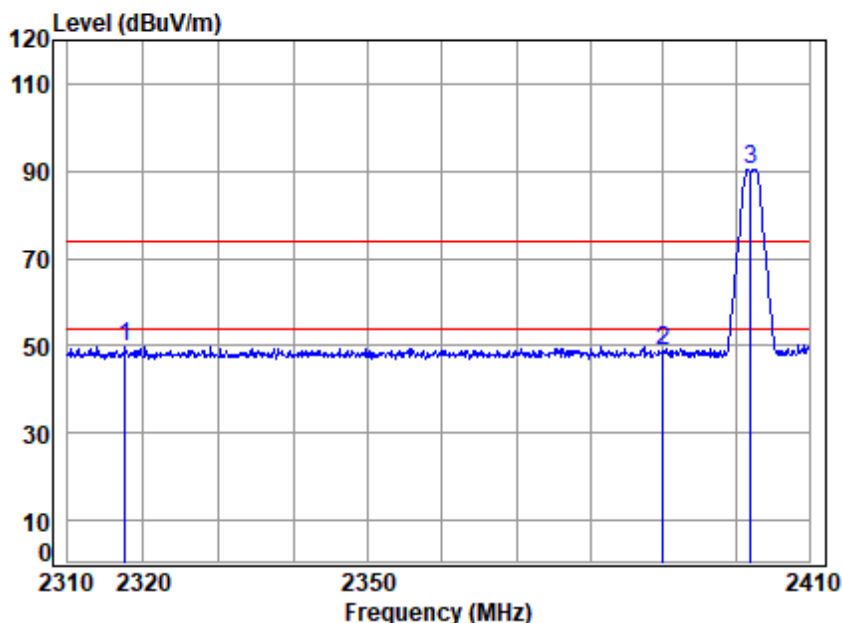
Mode : 2480 Band edge

: BLE 1M

|      |          | Cable | Ant    | Preamp | Read  |        | Limit  | Over   |        |
|------|----------|-------|--------|--------|-------|--------|--------|--------|--------|
|      | Freq     | Loss  | Factor | Factor | Level | Level  | Line   | Limit  | Remark |
|      | MHz      | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1 pp | 2480.000 | 7.38  | 27.78  | 31.55  | 84.38 | 87.99  | 74.00  | 13.99  | peak   |
| 2    | 2483.500 | 7.40  | 27.80  | 31.55  | 45.42 | 49.07  | 74.00  | -24.93 | peak   |
| 3    | 2491.046 | 7.45  | 27.85  | 31.55  | 47.41 | 51.16  | 74.00  | -22.84 | peak   |



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

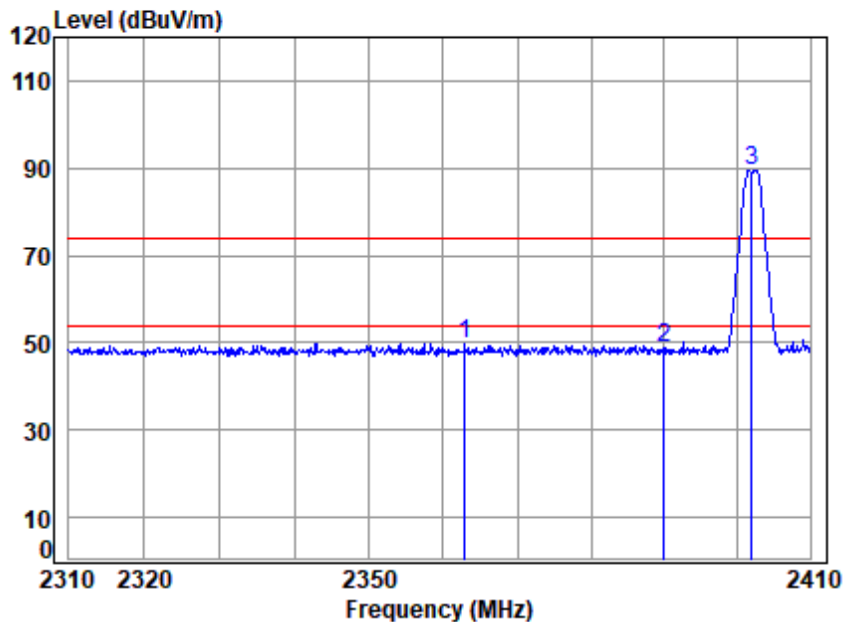
Mode : 2402 Band edge

: BLE 2M

|               | Cable | Ant    | Preamp | Read  |        | Limit  | Over   |        |
|---------------|-------|--------|--------|-------|--------|--------|--------|--------|
| Freq          | Loss  | Factor | Factor | Level | Level  | Line   | Limit  | Remark |
| MHz           | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1 2317.648    | 6.79  | 27.24  | 31.53  | 47.42 | 49.92  | 74.00  | -24.08 | peak   |
| 2 2390.000    | 6.83  | 27.46  | 31.54  | 46.05 | 48.80  | 74.00  | -25.20 | peak   |
| 3 pp 2402.000 | 6.84  | 27.50  | 31.54  | 87.65 | 90.45  | 74.00  | 16.45  | peak   |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

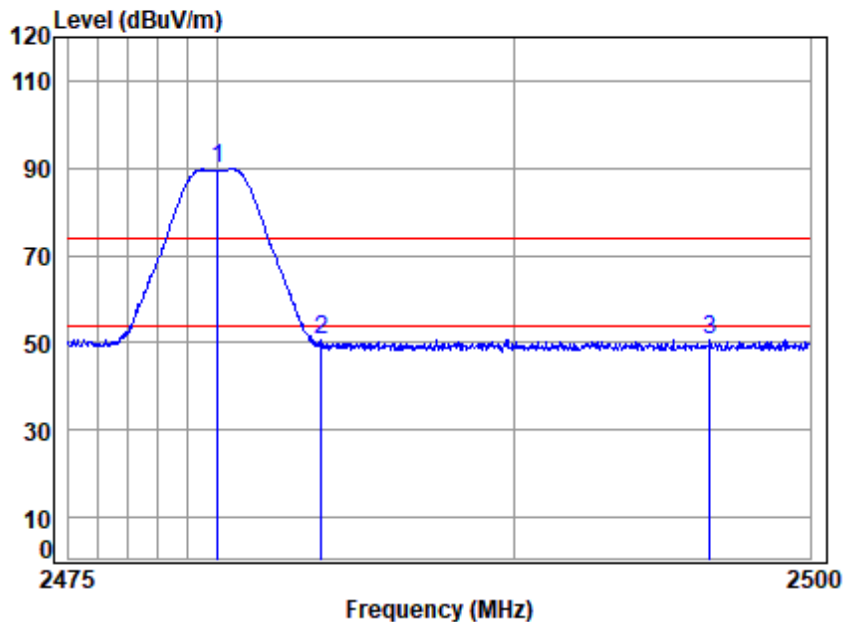
Mode : 2402 Band edge

: BLE 2M

|               | Cable | Ant    | Preamp | Read  | Limit  | Over   |              |
|---------------|-------|--------|--------|-------|--------|--------|--------------|
| Freq          | Loss  | Factor | Factor | Level | Level  | Line   | Limit Remark |
| MHz           | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB           |
| 1 2362.873    | 6.81  | 27.35  | 31.54  | 47.16 | 49.78  | 74.00  | -24.22 peak  |
| 2 2390.000    | 6.83  | 27.46  | 31.54  | 46.13 | 48.88  | 74.00  | -25.12 peak  |
| 3 pp 2402.000 | 6.84  | 27.50  | 31.54  | 86.75 | 89.55  | 74.00  | 15.55 peak   |



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

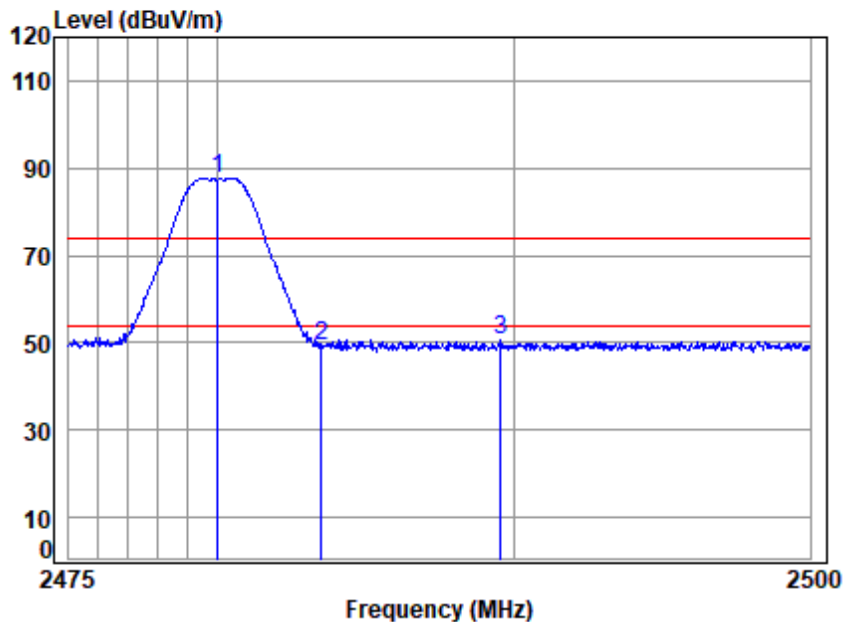
Mode : 2480 Band edge

: BLE 2M

|      |          | Cable | Ant    | Preamp | Read  |        | Limit  | Over   |        |
|------|----------|-------|--------|--------|-------|--------|--------|--------|--------|
|      | Freq     | Loss  | Factor | Factor | Level | Level  | Line   | Limit  | Remark |
|      | MHz      | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1 pp | 2480.000 | 7.38  | 27.78  | 31.55  | 86.20 | 89.81  | 74.00  | 15.81  | peak   |
| 2    | 2483.500 | 7.40  | 27.80  | 31.55  | 47.09 | 50.74  | 74.00  | -23.26 | peak   |
| 3    | 2496.610 | 7.49  | 27.88  | 31.55  | 46.96 | 50.78  | 74.00  | -23.22 | peak   |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

Mode : 2480 Band edge

: BLE 2M

|      |          | Cable | Ant    | Preamp | Read  |        | Limit  | Over   |        |
|------|----------|-------|--------|--------|-------|--------|--------|--------|--------|
|      | Freq     | Loss  | Factor | Factor | Level | Level  | Line   | Limit  | Remark |
|      | MHz      | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1 pp | 2480.000 | 7.38  | 27.78  | 31.55  | 84.10 | 87.71  | 74.00  | 13.71  | peak   |
| 2    | 2483.500 | 7.40  | 27.80  | 31.55  | 45.72 | 49.37  | 74.00  | -24.63 | peak   |
| 3    | 2489.520 | 7.44  | 27.84  | 31.55  | 47.11 | 50.84  | 74.00  | -23.16 | peak   |



### 7.2 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2020) Section 6.4,6.5

Measurement Distance: 3m

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|----------------|----------------------------------|------------------------------|
| 0.009-0.490    | 2400/F(kHz)                      | 300                          |
| 0.490-1.705    | 24000/F(kHz)                     | 30                           |
| 1.705-30.0     | 30                               | 30                           |
| 30-88          | 100                              | 3                            |
| 88-216         | 150                              | 3                            |
| 216-960        | 200                              | 3                            |
| 960-1000       | 500                              | 3                            |

#### 7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.4 °C

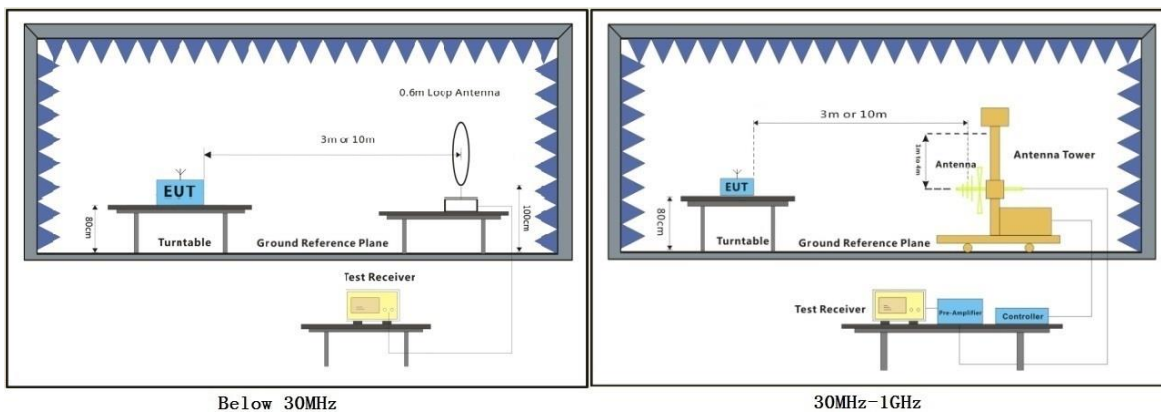
Humidity: 42.5 % RH

Atmospheric Pressure: 1020 mbar

#### 7.2.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description                                                                  |
|-----------------------|-----------|------------------------------------------------------------------------------|
| Final test            | 02        | TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation. |

#### 7.2.3 Test Setup Diagram



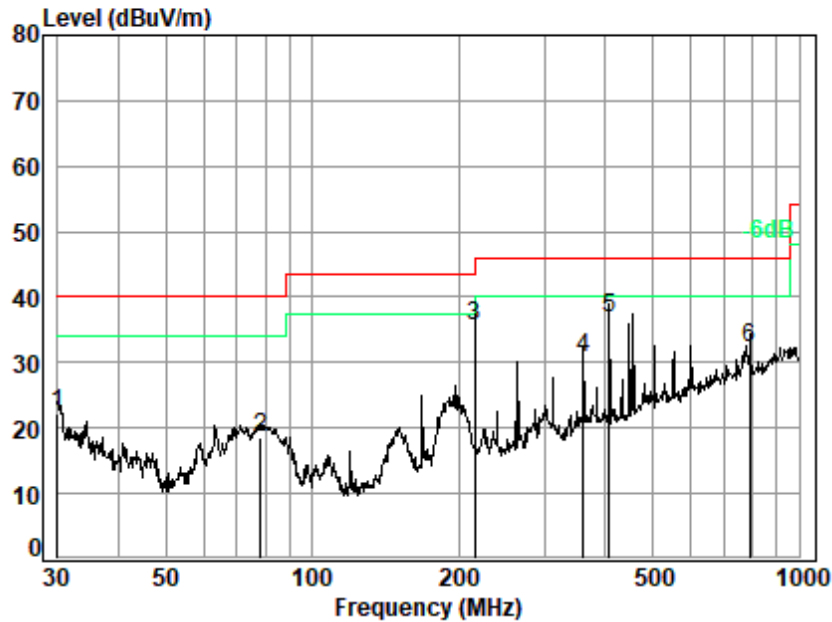
## 7.2.4 Measurement Procedure and Data

- 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 chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. 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.
- c. 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.
- d. 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.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. 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 quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. 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.
- i. Repeat above procedures until all frequencies measured was complete.

### Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

Test Mode: 02; Polarity: Horizontal

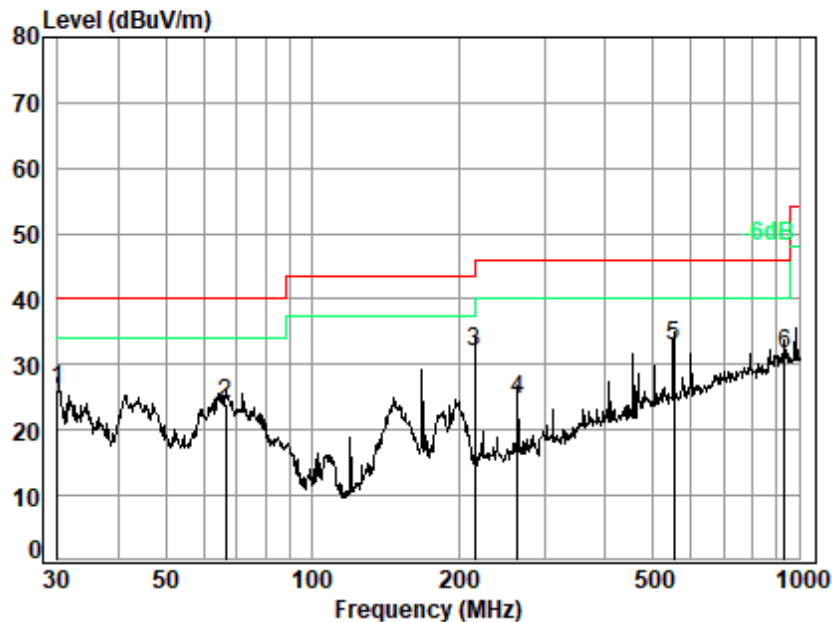


Site : chamber  
Condition: 3m HORIZONTAL  
Job No. : 03663AT/03664AT  
Test Mode: 02

|     | Ant     | Cable  | Preamp | Read   |       | Limit  | Over   |              |
|-----|---------|--------|--------|--------|-------|--------|--------|--------------|
|     | Freq    | Factor | Loss   | Factor | Level | Level  | Line   | Limit Remark |
|     | MHz     | dB/m   | dB     | dB     | dBuV  | dBuV/m | dBuV/m | dB           |
| 1   | 30.000  | 21.20  | 0.74   | 27.65  | 27.77 | 22.06  | 40.00  | -17.94 QP    |
| 2   | 78.413  | 10.40  | 1.08   | 27.61  | 34.81 | 18.68  | 40.00  | -21.32 QP    |
| 3   | 216.024 | 14.87  | 1.78   | 27.74  | 46.61 | 35.52  | 46.00  | -10.48 QP    |
| 4   | 360.448 | 20.23  | 2.35   | 27.66  | 35.75 | 30.67  | 46.00  | -15.33 QP    |
| 5 q | 407.515 | 20.52  | 2.52   | 27.77  | 41.58 | 36.85  | 46.00  | -9.15 QP     |
| 6   | 793.396 | 27.06  | 3.67   | 27.61  | 29.21 | 32.33  | 46.00  | -13.67 QP    |



Test Mode: 02; Polarity: Vertical



Site : chamber

Condition: 3m VERTICAL

Job No. : 03663AT/03664AT

Test Mode: 02

|     | Ant     | Cable  | Preamp | Read   |       | Limit  | Over   |              |
|-----|---------|--------|--------|--------|-------|--------|--------|--------------|
|     | Freq    | Factor | Loss   | Factor | Level | Level  | Line   | Limit Remark |
|     | MHz     | dB/m   | dB     | dB     | dBuV  | dBuV/m | dBuV/m | dB           |
| 1   | 30.000  | 21.20  | 0.74   | 27.65  | 31.75 | 26.04  | 40.00  | -13.96 QP    |
| 2   | 66.499  | 10.87  | 0.96   | 27.62  | 39.86 | 24.07  | 40.00  | -15.93 QP    |
| 3   | 216.024 | 14.87  | 1.78   | 27.74  | 43.02 | 31.93  | 46.00  | -14.07 QP    |
| 4   | 263.819 | 17.11  | 1.98   | 27.60  | 33.24 | 24.73  | 46.00  | -21.27 QP    |
| 5 q | 552.883 | 23.71  | 2.97   | 28.03  | 34.31 | 32.96  | 46.00  | -13.04 QP    |
| 6   | 935.546 | 28.18  | 4.05   | 26.76  | 26.26 | 31.73  | 46.00  | -14.27 QP    |



### 7.3 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2020) Section 6.6

Measurement Distance: 3m

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) |
|----------------|----------------------------------|------------------------------|
| Above 1000     | 500                              | 3                            |

#### 7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C

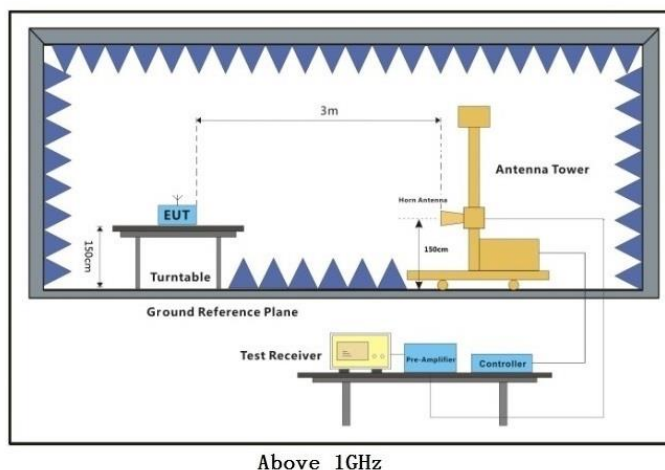
Humidity: 51.5 % RH

Atmospheric Pressure: 1020 mbar

#### 7.3.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description                                                                  |
|-----------------------|-----------|------------------------------------------------------------------------------|
| Final test            | 02        | TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation. |

#### 7.3.3 Test Setup Diagram



## 7.3.4 Measurement Procedure and Data

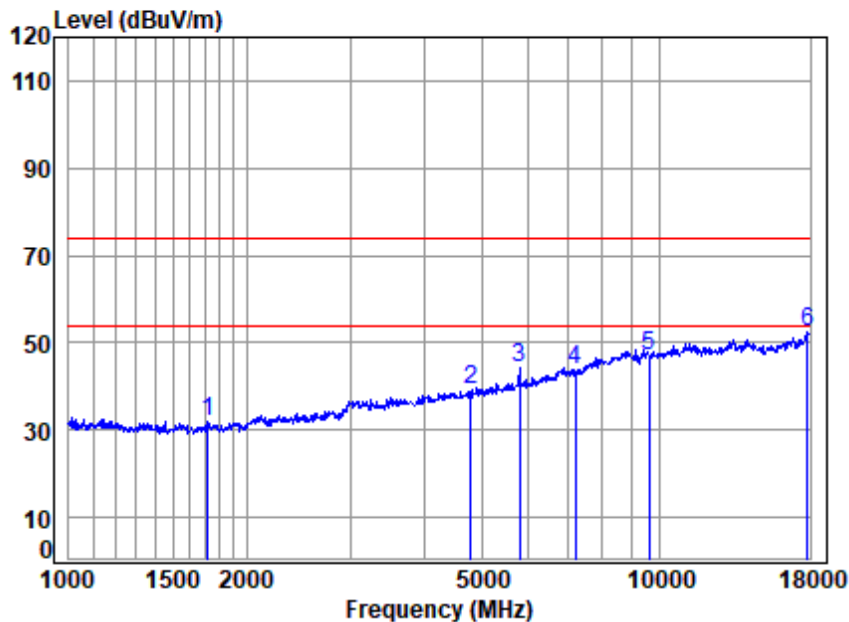
- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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.
- d. 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.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. 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 or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. 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.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 1GHz to 25GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. 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. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.
- 4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.
- 5:For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle<98%) or 10Hz (Duty cycle $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

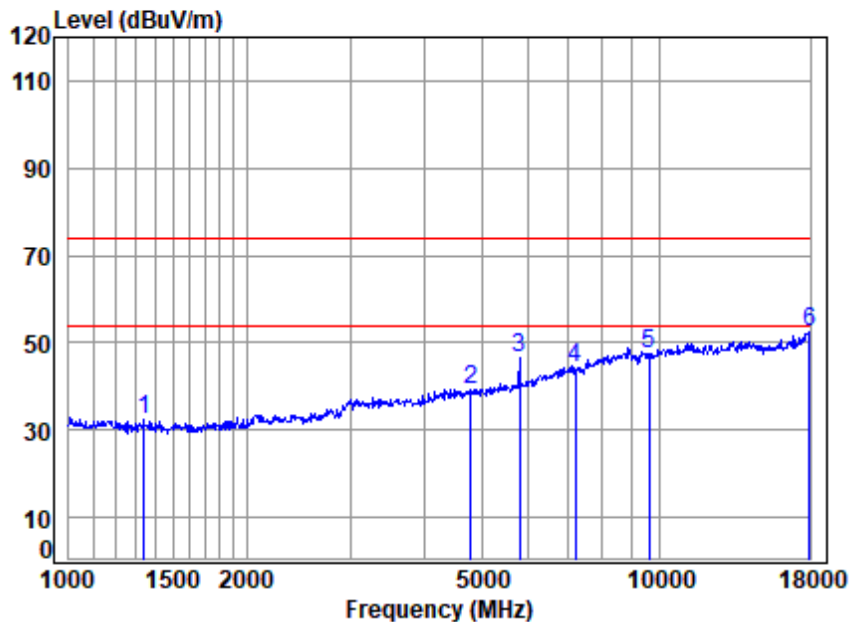
Mode : 2402 TX RSE

: BLE 1M

|      | Cable       | Ant    | Preamp | Read  |        | Limit  | Over  |             |
|------|-------------|--------|--------|-------|--------|--------|-------|-------------|
| Freq | Loss        | Factor | Factor | Level | Level  | Line   | Limit | Remark      |
| MHz  | dB          | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB    |             |
| 1    | 1721.834    | 7.21   | 25.19  | 54.70 | 54.07  | 31.77  | 74.00 | -42.23 Peak |
| 2    | 4804.000    | 8.90   | 31.92  | 56.16 | 54.48  | 39.14  | 74.00 | -34.86 peak |
| 3    | 5797.032    | 10.07  | 33.39  | 56.78 | 57.35  | 44.03  | 74.00 | -29.97 Peak |
| 4    | 7206.000    | 11.10  | 36.60  | 56.54 | 52.74  | 43.90  | 74.00 | -30.10 peak |
| 5    | 9608.000    | 12.38  | 38.78  | 54.45 | 50.42  | 47.13  | 74.00 | -26.87 peak |
| 6    | pp17844.590 | 19.02  | 42.77  | 54.47 | 45.01  | 52.33  | 74.00 | -21.67 Peak |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

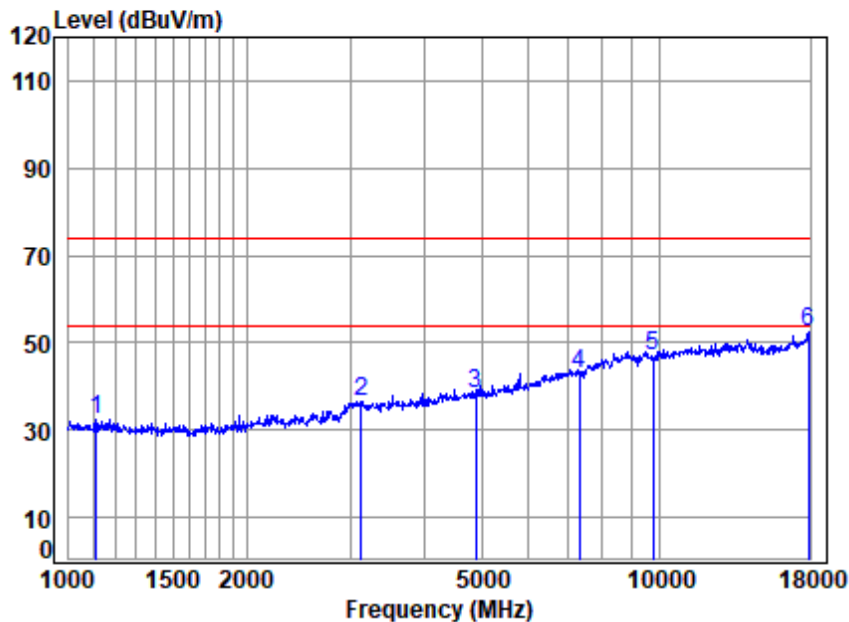
Mode : 2402 TX RSE

: BLE 1M

|      | Cable | Ant    | Preamp | Read  |        | Limit  | Over   |        |
|------|-------|--------|--------|-------|--------|--------|--------|--------|
| Freq | Loss  | Factor | Factor | Level | Level  | Line   | Limit  | Remark |
| MHz  | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1    | 7.17  | 25.12  | 54.70  | 54.87 | 32.46  | 74.00  | -41.54 | peak   |
| 2    | 8.90  | 31.92  | 56.16  | 54.53 | 39.19  | 74.00  | -34.81 | peak   |
| 3    | 10.07 | 33.39  | 56.78  | 59.98 | 46.66  | 74.00  | -27.34 | Peak   |
| 4    | 11.10 | 36.60  | 56.54  | 52.95 | 44.11  | 74.00  | -29.89 | peak   |
| 5    | 12.38 | 38.78  | 54.45  | 50.62 | 47.33  | 74.00  | -26.67 | peak   |
| 6    | 18.75 | 43.44  | 54.49  | 44.72 | 52.42  | 74.00  | -21.58 | Peak   |



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

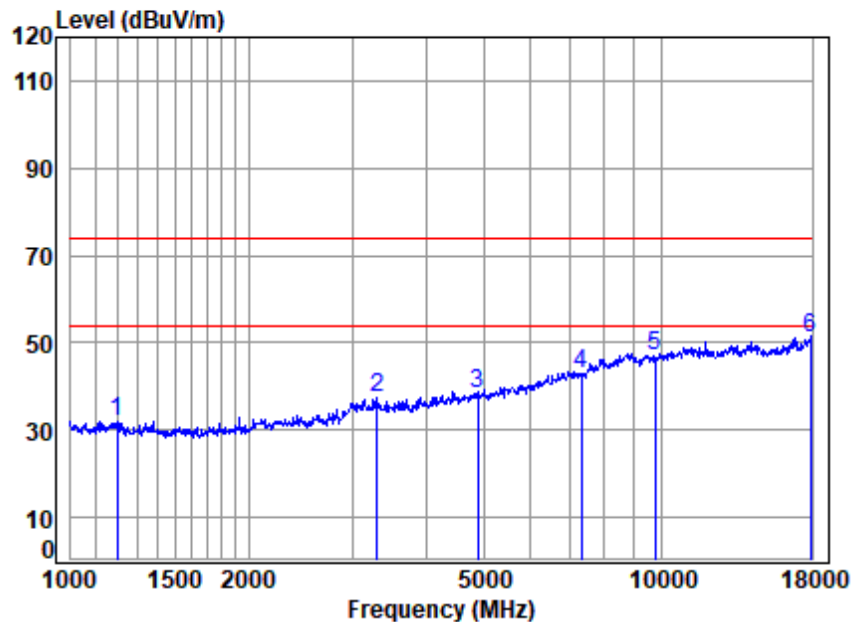
Mode : 2440 TX RSE

: BLE 1M

|      | Cable       | Ant    | Preamp | Read  | Limit  | Over   |                   |
|------|-------------|--------|--------|-------|--------|--------|-------------------|
| Freq | Loss        | Factor | Factor | Level | Level  | Line   | Limit Remark      |
| MHz  | dB          | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB                |
| 1    | 1112.872    | 7.11   | 25.55  | 54.70 | 54.48  | 32.44  | 74.00 -41.56 peak |
| 2    | 3132.079    | 7.71   | 29.16  | 55.08 | 54.66  | 36.45  | 74.00 -37.55 Peak |
| 3    | 4880.000    | 8.98   | 32.16  | 56.22 | 53.57  | 38.49  | 74.00 -35.51 peak |
| 4    | 7320.000    | 11.12  | 36.74  | 56.44 | 51.42  | 42.84  | 74.00 -31.16 peak |
| 5    | 9760.000    | 12.84  | 38.60  | 54.32 | 49.67  | 46.79  | 74.00 -27.21 peak |
| 6    | pp17896.250 | 18.87  | 43.08  | 54.48 | 45.00  | 52.47  | 74.00 -21.53 Peak |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:middle



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

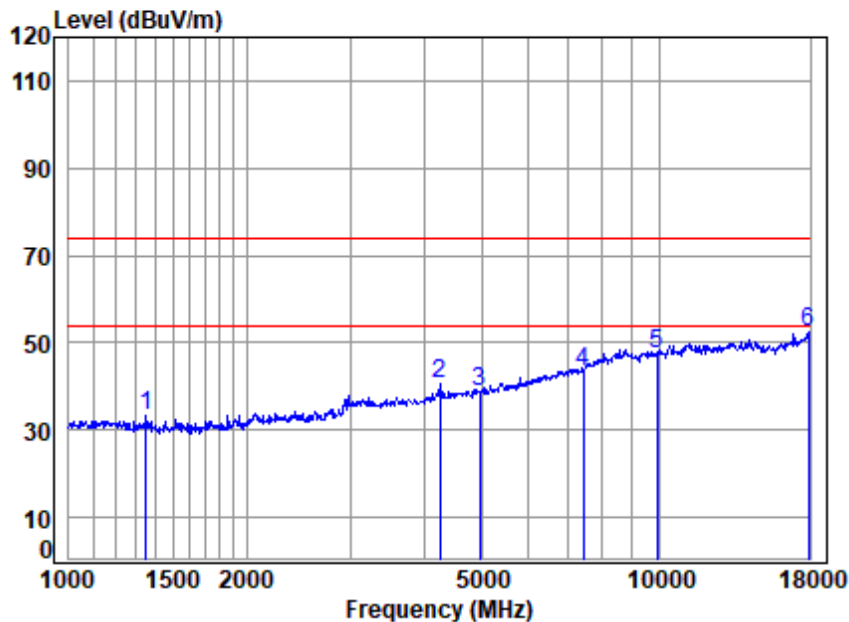
Mode : 2440 TX RSE

: BLE 1M

|      | Cable       | Ant    | Preamp | Read  |        | Limit  | Over  |             |
|------|-------------|--------|--------|-------|--------|--------|-------|-------------|
| Freq | Loss        | Factor | Factor | Level | Level  | Line   | Limit | Remark      |
| MHz  | dB          | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB    |             |
| 1    | 1199.726    | 7.19   | 25.30  | 54.70 | 54.31  | 32.10  | 74.00 | -41.90 peak |
| 2    | 3308.894    | 7.59   | 29.20  | 55.19 | 55.81  | 37.41  | 74.00 | -36.59 Peak |
| 3    | 4880.000    | 8.98   | 32.16  | 56.22 | 53.30  | 38.22  | 74.00 | -35.78 peak |
| 4    | 7320.000    | 11.12  | 36.74  | 56.44 | 51.36  | 42.78  | 74.00 | -31.22 peak |
| 5    | 9760.000    | 12.84  | 38.60  | 54.32 | 49.96  | 47.08  | 74.00 | -26.92 peak |
| 6    | pp17896.250 | 18.87  | 43.08  | 54.48 | 43.85  | 51.32  | 74.00 | -22.68 Peak |



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

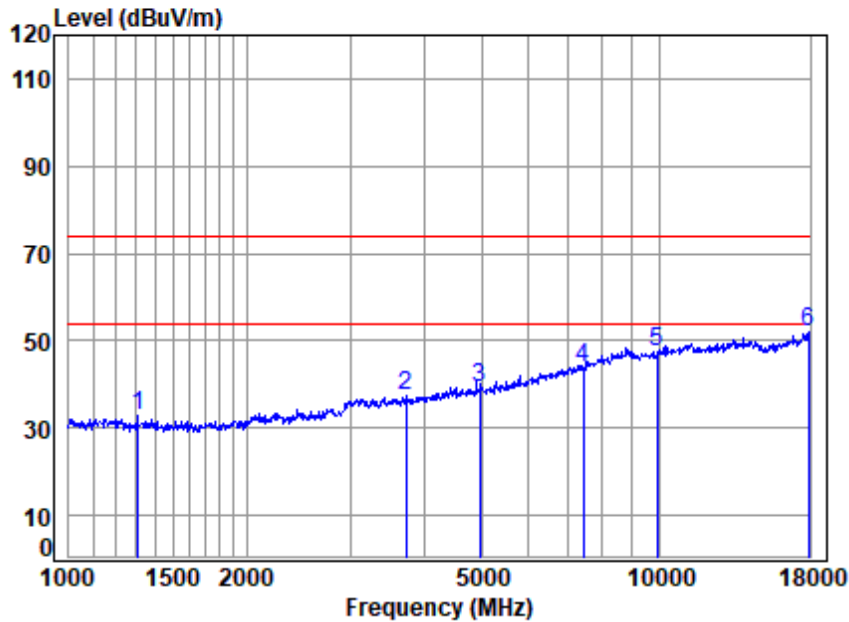
Mode : 2480 TX RSE

: BLE 1M

|   | Freq        | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level  | Limit  | Over Limit | Remark |
|---|-------------|------------|------------|---------------|------------|--------|--------|------------|--------|
|   | MHz         | dB         | dB/m       | dB            | dBuV       | dBuV/m | dBuV/m | dB         |        |
| 1 | 1350.667    | 7.18       | 25.10      | 54.70         | 55.52      | 33.10  | 74.00  | -40.90     | peak   |
| 2 | 4254.921    | 8.48       | 31.12      | 55.78         | 56.75      | 40.57  | 74.00  | -33.43     | peak   |
| 3 | 4960.000    | 9.07       | 32.20      | 56.27         | 53.94      | 38.94  | 74.00  | -35.06     | peak   |
| 4 | 7440.000    | 11.08      | 36.78      | 56.35         | 51.96      | 43.47  | 74.00  | -30.53     | peak   |
| 5 | 9920.000    | 12.73      | 38.90      | 54.17         | 49.95      | 47.41  | 74.00  | -26.59     | peak   |
| 6 | pp17896.250 | 18.87      | 43.08      | 54.48         | 45.07      | 52.54  | 74.00  | -21.46     | Peak   |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

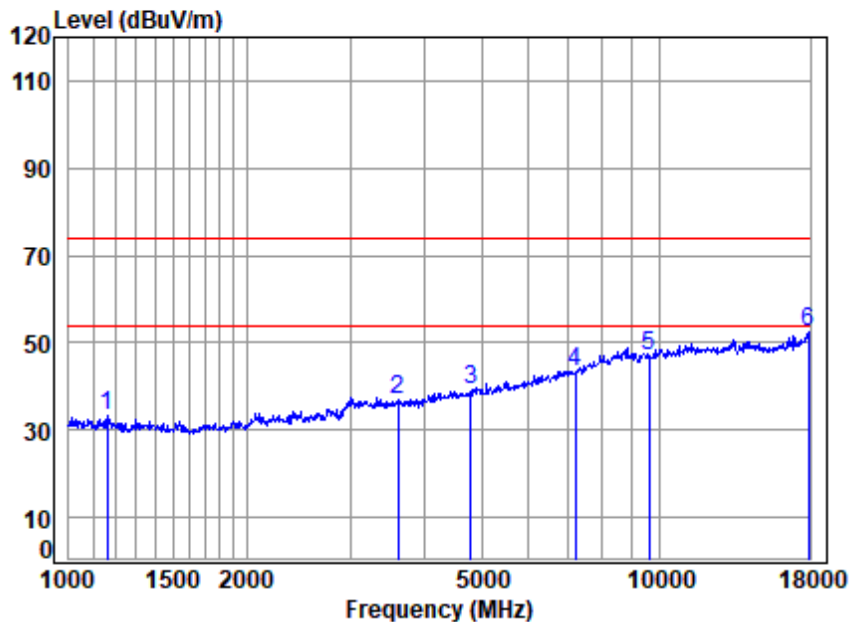
Mode : 2480 TX RSE

: BLE 1M

|      | Cable       | Ant    | Preamp | Read  | Limit  | Over   |                   |
|------|-------------|--------|--------|-------|--------|--------|-------------------|
| Freq | Loss        | Factor | Factor | Level | Level  | Line   | Limit Remark      |
| MHz  | dB          | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB                |
| 1    | 1308.399    | 7.16   | 25.18  | 54.70 | 55.02  | 32.66  | 74.00 -41.34 peak |
| 2    | 3725.195    | 7.92   | 29.85  | 55.44 | 54.97  | 37.30  | 74.00 -36.70 Peak |
| 3    | 4960.000    | 9.07   | 32.20  | 56.27 | 54.24  | 39.24  | 74.00 -34.76 peak |
| 4    | 7440.000    | 11.08  | 36.78  | 56.35 | 52.51  | 44.02  | 74.00 -29.98 peak |
| 5    | 9920.000    | 12.73  | 38.90  | 54.17 | 50.02  | 47.48  | 74.00 -26.52 peak |
| 6    | pp17896.250 | 18.87  | 43.08  | 54.48 | 44.52  | 51.99  | 74.00 -22.01 Peak |



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

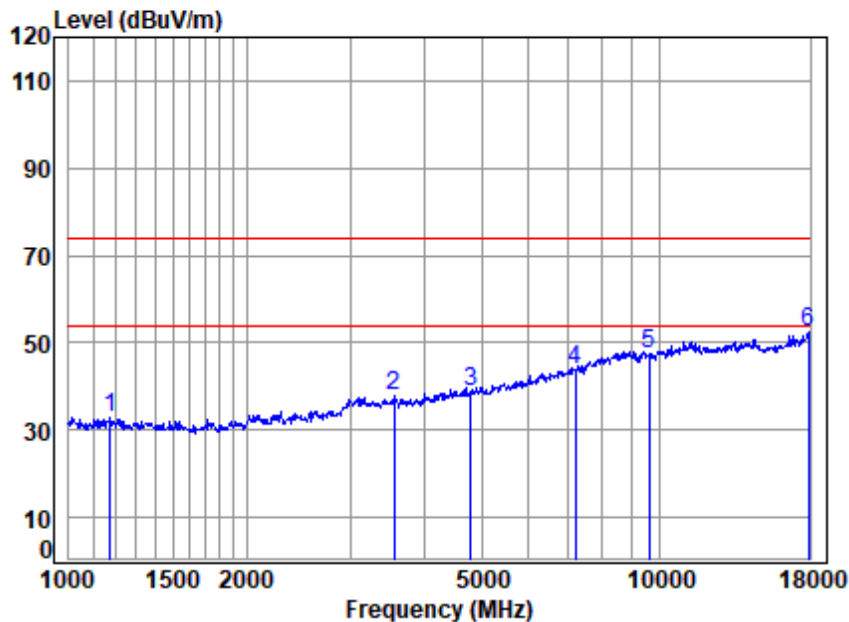
Mode : 2402 TX RSE

: BLE 2M

|      | Cable       | Ant    | Preamp | Read  |        | Limit  | Over  |             |
|------|-------------|--------|--------|-------|--------|--------|-------|-------------|
| Freq | Loss        | Factor | Factor | Level | Level  | Line   | Limit | Remark      |
| MHz  | dB          | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB    |             |
| 1    | 1162.182    | 7.16   | 25.38  | 54.70 | 55.41  | 33.25  | 74.00 | -40.75 peak |
| 2    | 3608.619    | 7.77   | 29.88  | 55.37 | 54.77  | 37.05  | 74.00 | -36.95 Peak |
| 3    | 4804.000    | 8.90   | 31.92  | 56.16 | 54.76  | 39.42  | 74.00 | -34.58 peak |
| 4    | 7206.000    | 11.10  | 36.60  | 56.54 | 52.14  | 43.30  | 74.00 | -30.70 peak |
| 5    | 9608.000    | 12.38  | 38.78  | 54.45 | 50.23  | 46.94  | 74.00 | -27.06 peak |
| 6    | pp17896.250 | 18.87  | 43.08  | 54.48 | 44.85  | 52.32  | 74.00 | -21.68 Peak |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

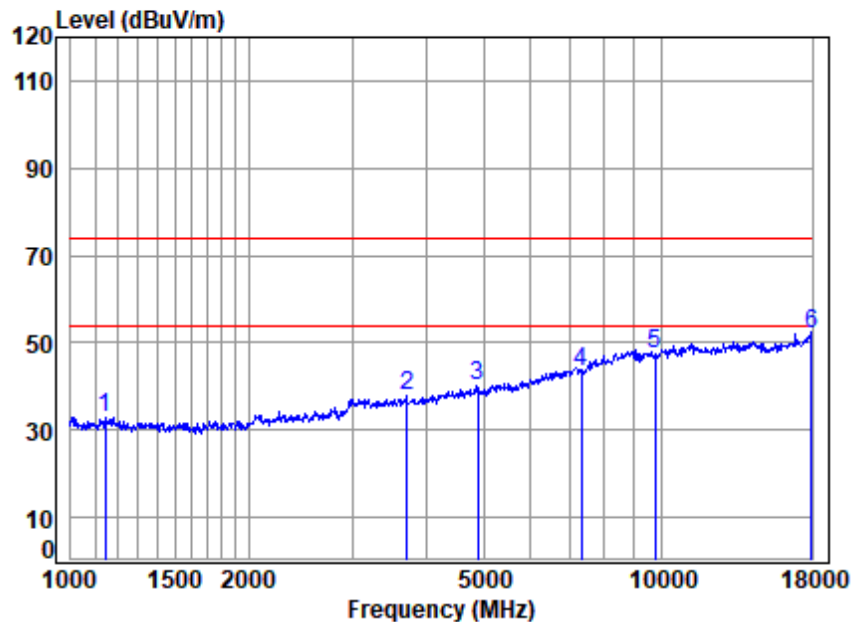
Mode : 2402 TX RSE

: BLE 2M

|      | Cable       | Ant    | Preamp | Read  |        | Limit  | Over  |             |
|------|-------------|--------|--------|-------|--------|--------|-------|-------------|
| Freq | Loss        | Factor | Factor | Level | Level  | Line   | Limit | Remark      |
| MHz  | dB          | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB    |             |
| 1    | 1175.697    | 7.17   | 25.35  | 54.70 | 54.93  | 32.75  | 74.00 | -41.25 peak |
| 2    | 3556.843    | 7.75   | 29.81  | 55.33 | 55.55  | 37.78  | 74.00 | -36.22 Peak |
| 3    | 4804.000    | 8.90   | 31.92  | 56.16 | 54.00  | 38.66  | 74.00 | -35.34 peak |
| 4    | 7206.000    | 11.10  | 36.60  | 56.54 | 52.83  | 43.99  | 74.00 | -30.01 peak |
| 5    | 9608.000    | 12.38  | 38.78  | 54.45 | 50.95  | 47.66  | 74.00 | -26.34 peak |
| 6    | pp17896.250 | 18.87  | 43.08  | 54.48 | 44.91  | 52.38  | 74.00 | -21.62 Peak |



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

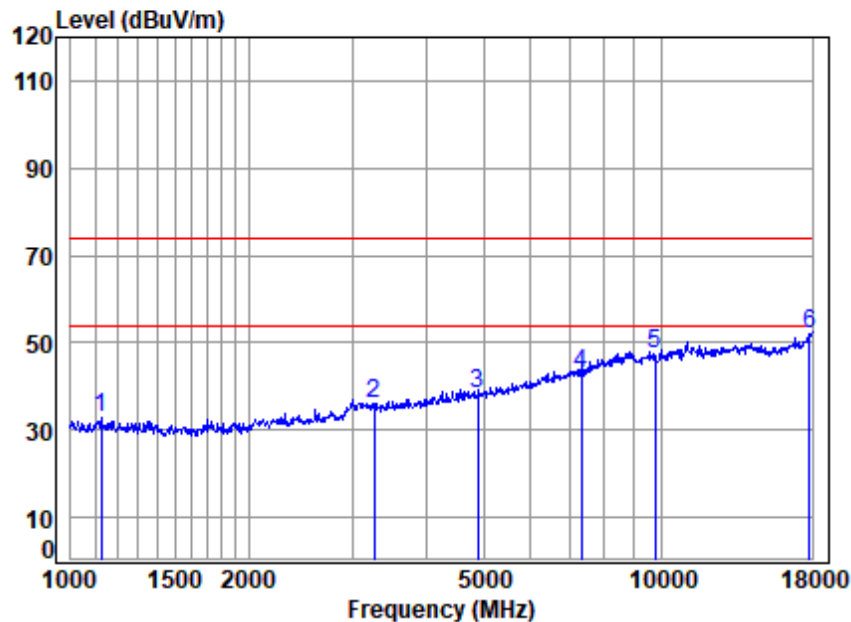
Mode : 2440 TX RSE

: BLE 2M

|   | Freq        | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level  | Limit  | Over   | Remark |
|---|-------------|------------|------------|---------------|------------|--------|--------|--------|--------|
|   | MHz         | dB         | dB/m       | dB            | dBuV       | dBuV/m | dBuV/m | dB     |        |
| 1 | 1145.507    | 7.14       | 25.42      | 54.70         | 55.02      | 32.88  | 74.00  | -41.12 | peak   |
| 2 | 3703.723    | 7.89       | 29.81      | 55.42         | 55.70      | 37.98  | 74.00  | -36.02 | Peak   |
| 3 | 4880.000    | 8.98       | 32.16      | 56.22         | 55.10      | 40.02  | 74.00  | -33.98 | peak   |
| 4 | 7320.000    | 11.12      | 36.74      | 56.44         | 51.86      | 43.28  | 74.00  | -30.72 | peak   |
| 5 | 9760.000    | 12.84      | 38.60      | 54.32         | 50.52      | 47.64  | 74.00  | -26.36 | peak   |
| 6 | pp17948.050 | 18.75      | 43.44      | 54.49         | 44.10      | 51.80  | 74.00  | -22.20 | Peak   |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:middle



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

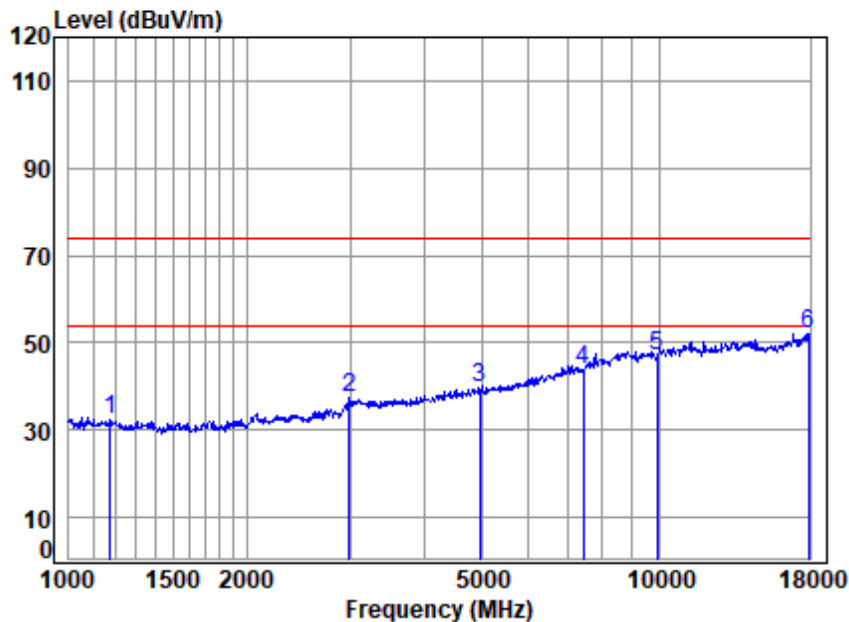
Mode : 2440 TX RSE

: BLE 2M

|      | Cable       | Ant    | Preamp | Read  |        | Limit  | Over  |             |
|------|-------------|--------|--------|-------|--------|--------|-------|-------------|
| Freq | Loss        | Factor | Factor | Level | Level  | Line   | Limit | Remark      |
| MHz  | dB          | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB    |             |
| 1    | 1125.813    | 7.12   | 25.50  | 54.70 | 55.06  | 32.98  | 74.00 | -41.02 peak |
| 2    | 3261.418    | 7.63   | 29.28  | 55.16 | 54.36  | 36.11  | 74.00 | -37.89 Peak |
| 3    | 4880.000    | 8.98   | 32.16  | 56.22 | 53.51  | 38.43  | 74.00 | -35.57 peak |
| 4    | 7320.000    | 11.12  | 36.74  | 56.44 | 51.47  | 42.89  | 74.00 | -31.11 peak |
| 5    | 9760.000    | 12.84  | 38.60  | 54.32 | 50.20  | 47.32  | 74.00 | -26.68 peak |
| 6    | pp17844.590 | 19.02  | 42.77  | 54.47 | 44.51  | 51.83  | 74.00 | -22.17 Peak |



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Condition: 3m HORIZONTAL

Job No : 03663AT/03664AT

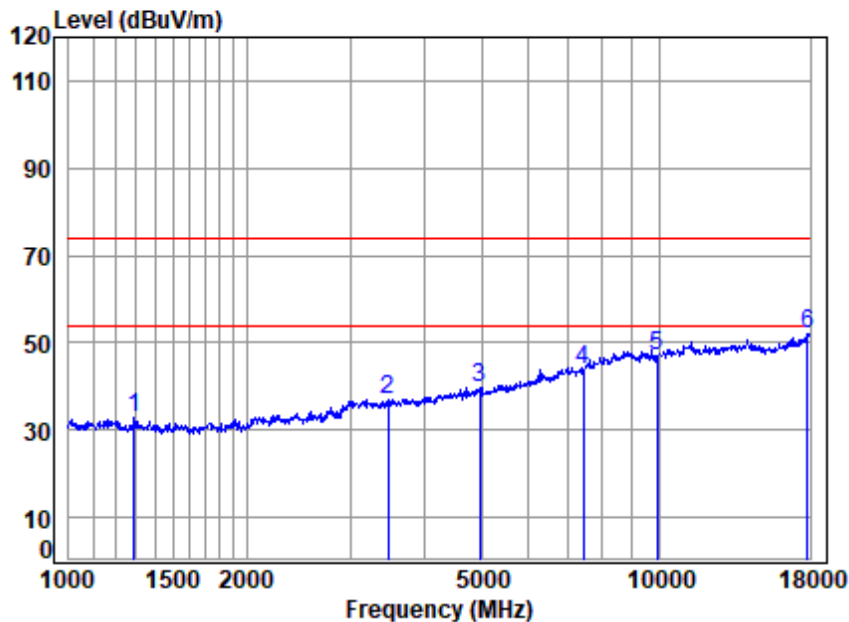
Mode : 2480 TX RSE

: BLE 2M

|   | Freq        | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level  | Limit Line | Over Limit | Remark |
|---|-------------|------------|------------|---------------|------------|--------|------------|------------|--------|
|   | MHz         | dB         | dB/m       | dB            | dBuV       | dBuV/m | dBuV/m     | dB         |        |
| 1 | 1175.697    | 7.17       | 25.35      | 54.70         | 54.73      | 32.55  | 74.00      | -41.45     | peak   |
| 2 | 2990.531    | 8.11       | 28.98      | 55.00         | 55.24      | 37.33  | 74.00      | -36.67     | Peak   |
| 3 | 4960.000    | 9.07       | 32.20      | 56.27         | 54.62      | 39.62  | 74.00      | -34.38     | peak   |
| 4 | 7440.000    | 11.08      | 36.78      | 56.35         | 52.25      | 43.76  | 74.00      | -30.24     | peak   |
| 5 | 9920.000    | 12.73      | 38.90      | 54.17         | 49.58      | 47.04  | 74.00      | -26.96     | peak   |
| 6 | pp17896.250 | 18.87      | 43.08      | 54.48         | 44.76      | 52.23  | 74.00      | -21.77     | Peak   |



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Condition: 3m VERTICAL

Job No : 03663AT/03664AT

Mode : 2480 TX RSE

: BLE 2M

|   |             | Cable | Ant    | Preamp | Read  |        | Limit  | Over   |        |
|---|-------------|-------|--------|--------|-------|--------|--------|--------|--------|
|   | Freq        | Loss  | Factor | Factor | Level | Level  | Line   | Limit  | Remark |
|   | MHz         | dB    | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB     |        |
| 1 | 1289.627    | 7.15  | 25.22  | 54.70  | 55.40 | 33.07  | 74.00  | -40.93 | peak   |
| 2 | 3475.541    | 7.71  | 29.50  | 55.29  | 55.02 | 36.94  | 74.00  | -37.06 | Peak   |
| 3 | 4960.000    | 9.07  | 32.20  | 56.27  | 54.54 | 39.54  | 74.00  | -34.46 | peak   |
| 4 | 7440.000    | 11.08 | 36.78  | 56.35  | 52.27 | 43.78  | 74.00  | -30.22 | peak   |
| 5 | 9920.000    | 12.73 | 38.90  | 54.17  | 49.60 | 47.06  | 74.00  | -26.94 | peak   |
| 6 | pp17793.090 | 19.13 | 42.45  | 54.46  | 44.73 | 51.85  | 74.00  | -22.15 | Peak   |



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### 7.4 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)

Test Method: ANSI C63.10 (2020) Section 11.9.1

Limit:

| Frequency range(MHz) | Output power of the intentional radiator(watt)         |
|----------------------|--------------------------------------------------------|
| 902-928              | 1 for $\geq 50$ hopping channels                       |
|                      | 0.25 for $25 \leq$ hopping channels $< 50$             |
|                      | 1 for digital modulation                               |
| 2400-2483.5          | 1 for $\geq 75$ non-overlapping hopping channels       |
|                      | 0.125 for all other frequency hopping systems          |
|                      | 1 for digital modulation                               |
| 5725-5850            | 1 for frequency hopping systems and digital modulation |

#### 7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 23.4 °C

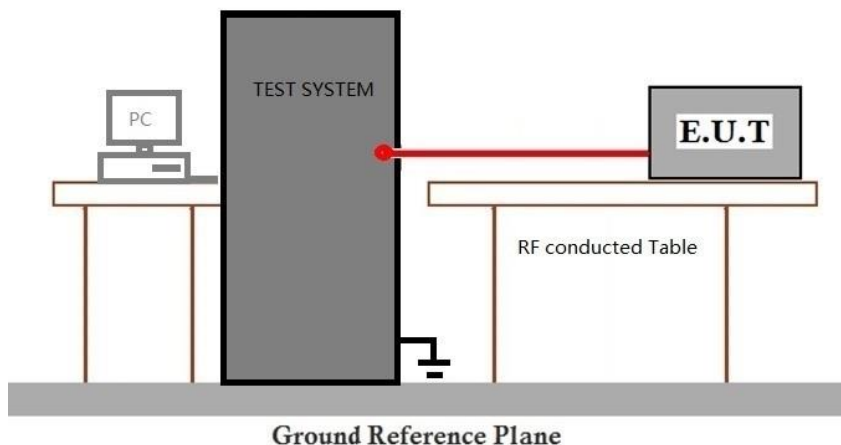
Humidity: 48.6 % RH

Atmospheric Pressure: 1020 mbar

#### 7.4.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description                                                                   |
|-----------------------|-----------|-------------------------------------------------------------------------------|
| Final test            | 02        | TX mode_ Keep the EUT in continuously transmitting mode with GFSK modulation. |

#### 7.4.3 Test Setup Diagram





## SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

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### 7.4.4 Measurement Procedure and Data

Please Refer to Appendix for Details



SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch Testing & Calibration Laboratory

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## 8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2508003663AT

## 9 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photos for SZCR2508003663AT



## 10 Appendix

### 1. Duty Cycle

#### 1.1 Test Result

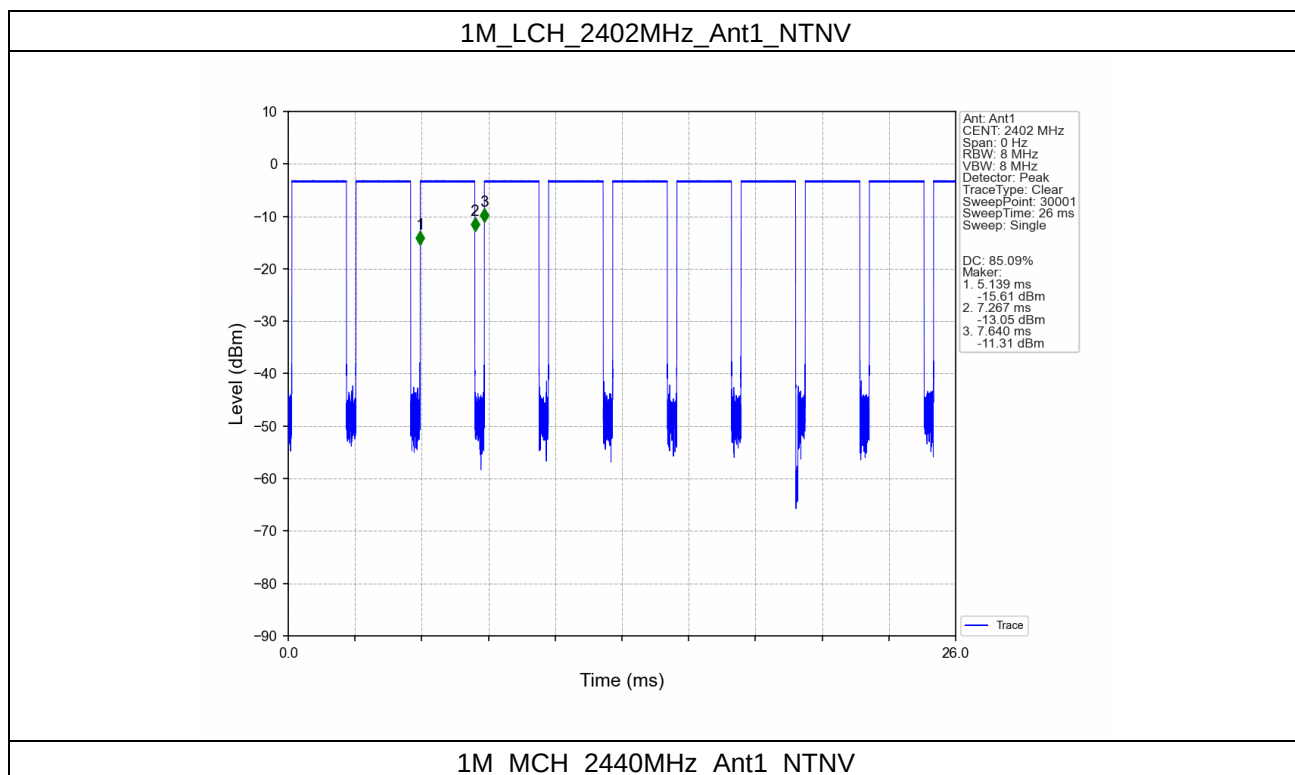
##### 1.1.1 Ant1

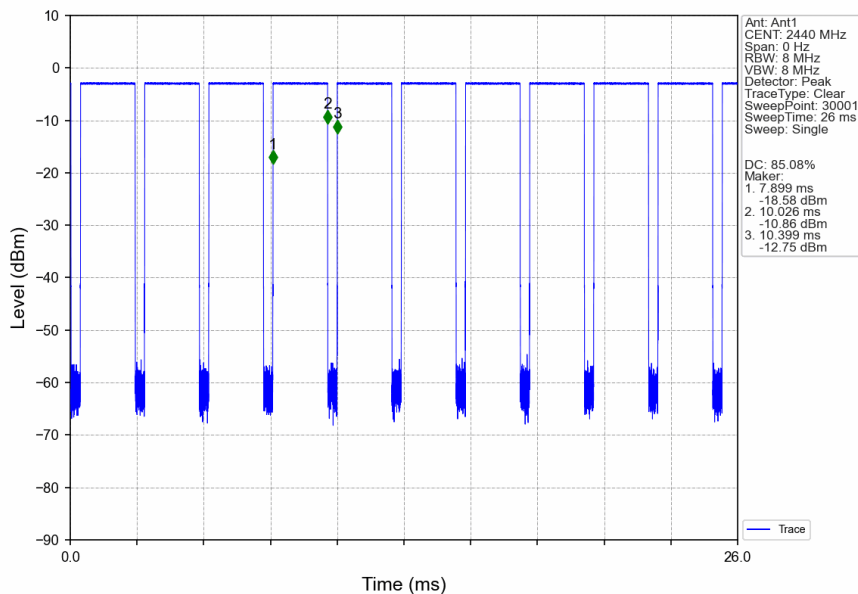
| Ant1 |         |                 |           |             |                |                                   |                       |
|------|---------|-----------------|-----------|-------------|----------------|-----------------------------------|-----------------------|
| Mode | TX Type | Frequency (MHz) | T_on (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | Max. DC Variation (%) |
| 1M   | SISO    | 2402            | 2.128     | 2.501       | 85.09          | 0.70                              | 0.03                  |
|      |         | 2440            | 2.127     | 2.500       | 85.08          | 0.70                              | 0.03                  |
|      |         | 2480            | 2.127     | 2.500       | 85.08          | 0.70                              | 0.03                  |
| 2M   | SISO    | 2402            | 1.071     | 1.875       | 57.12          | 2.43                              | 0.03                  |
|      |         | 2440            | 1.072     | 1.876       | 57.14          | 2.43                              | 0.03                  |
|      |         | 2480            | 1.072     | 1.876       | 57.14          | 2.43                              | 0.03                  |



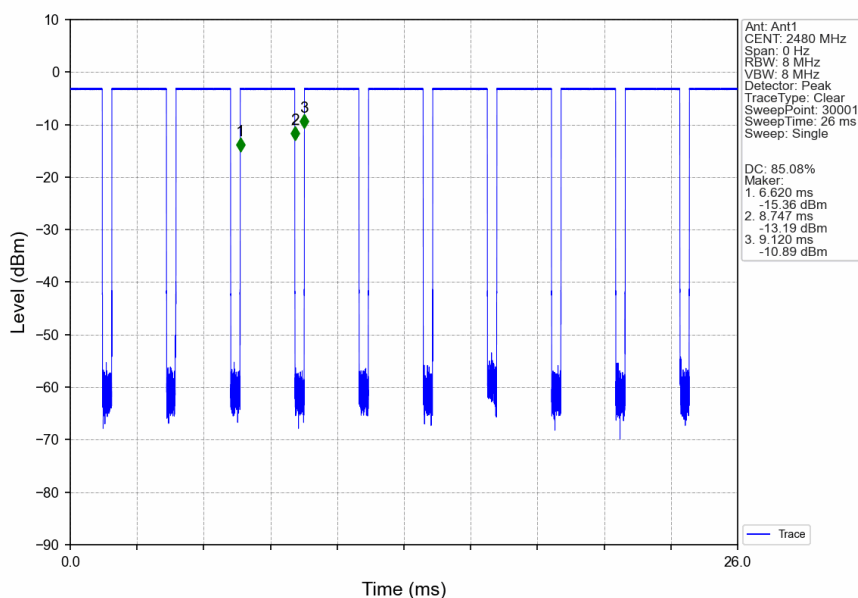
### 1.2 Test Graph

#### 1.2.1 Ant1

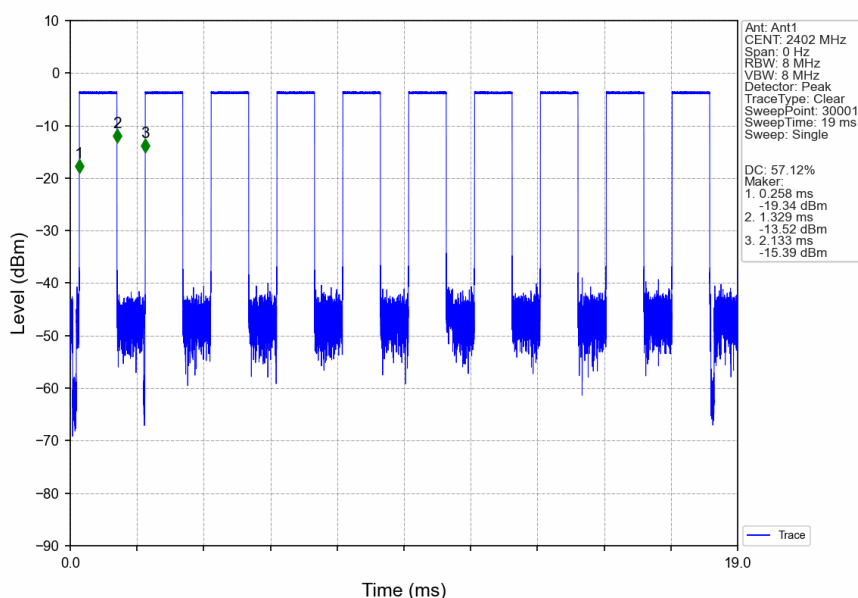




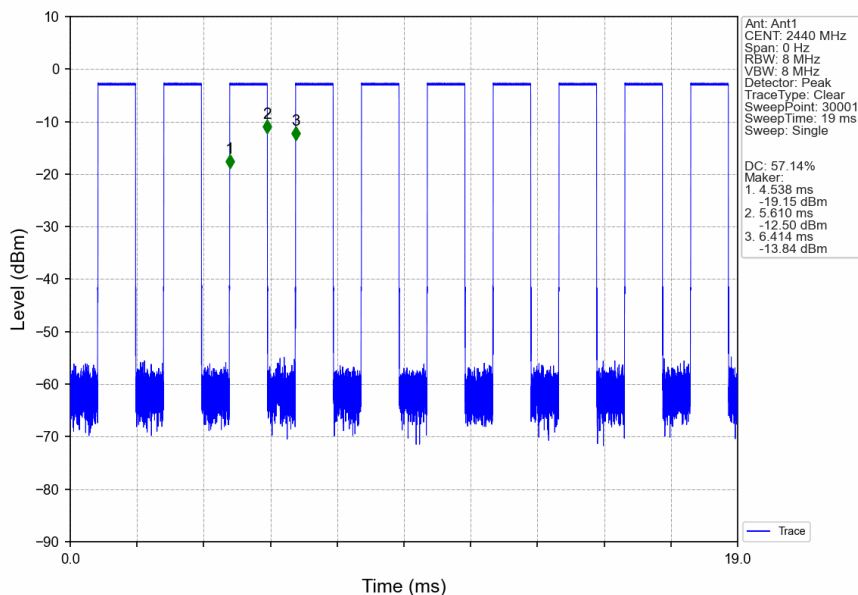
### 1M\_HCH\_2480MHz\_Ant1\_NTNV



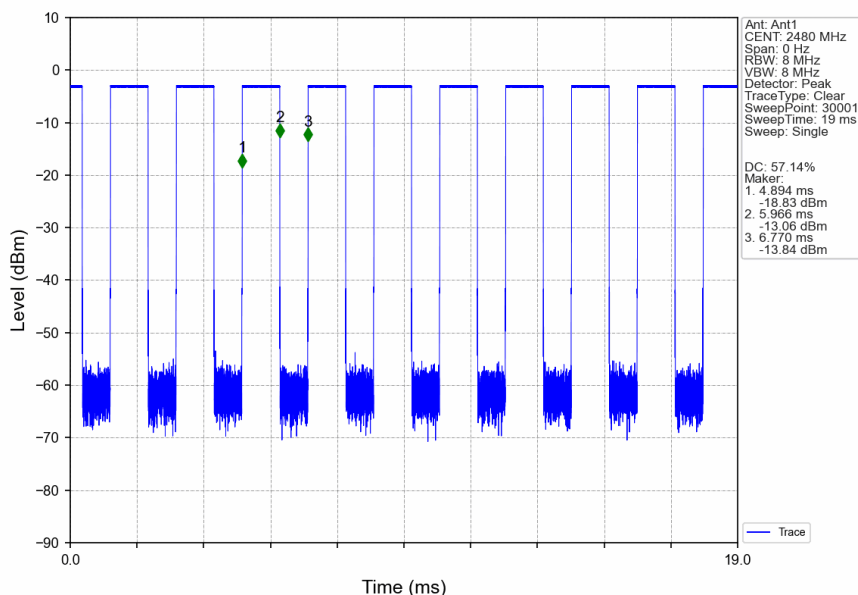
### 2M\_LCH\_2402MHz\_Ant1\_NTNV



### 2M\_MCH\_2440MHz\_Ant1\_NTNV



### 2M\_HCH\_2480MHz\_Ant1\_NTNV



## 2. Maximum Conducted Output Power

### 2.1 Test Result

#### 2.1.1 Power

| Mode | TX Type | Frequency (MHz) | Maximum Peak Conducted Output Power (dBm) |       | Verdict |
|------|---------|-----------------|-------------------------------------------|-------|---------|
|      |         |                 | ANT1                                      | Limit |         |
| 1M   | SISO    | 2402            | -4.35                                     | <=30  | Pass    |
|      |         | 2440            | -3.97                                     | <=30  | Pass    |
|      |         | 2480            | -4.22                                     | <=30  | Pass    |
| 2M   | SISO    | 2402            | -4.75                                     | <=30  | Pass    |
|      |         | 2440            | -3.89                                     | <=30  | Pass    |
|      |         | 2480            | -4.11                                     | <=30  | Pass    |

Note1: Antenna Gain: Ant1: -1.26dBi;

- End of the Report -