# TEST REPORT

| | |
|---|---|
| **Application No.:** | SZCR2106021875AT |
| **Applicant:** | Voxx Accessories Corp. |
| **Address of Applicant:** | 3502 Woodview Trace Suite 220, Indianapolis, Indiana, 46268 United States |
| **Manufacturer:** | Voxx Accessories Corp. |
| **Address of Manufacturer:** | 3502 Woodview Trace, Suite 220, Indianapolis, IN 46268 |
| **Factory:** | Shenzhen Great Power Innovation and Technology Enterprise Co., Ltd |
| **Address of Factory:** | No. 331, No. 335, Guiyue Road, Dafu Community, Guanlan Street, Longhua District, Shenzhen, China |
| **Equipment Under Test (EUT):** | |
| **EUT Name:** | Karaoke System with Bluetooth |
| **Model No.:** | SPKA30Q |
| **Trade Mark:** | SINGSATION |
| **FCC ID:** | VIXSPKA30Q |
| **Standard(s) :** | 47 CFR Part 15, Subpart C 15.247 |
| **Date of Receipt:** | 2021-07-01 |
| **Date of Test:** | 2021-07-03 to 2021-07-08 |
| **Date of Issue:** | 2021-07-14 |
| **Test Result:** | **Pass*** |

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

Keny Xu
EMC Laboratory Manager

| Revision Record | | | | |
|---|---|---|---|---|
| **Version** | **Chapter** | **Date** | **Modifier** | **Remark** |
| 01 | | 2021-07-14 | | Original |
| | | | | |
| | | | | |

| | | | | |
|---|---|---|---|---|
| **Authorized for issue by:** | | | | |
| | | Charlie Dai<br>**Charlie Dai/Project Engineer** | | |
| | | Eric Fu<br>**Eric Fu/Reviewer** | | |



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# 2 Test Summary

| Radio Spectrum Matter Part | | | | |
|---|---|---|---|---|
| **Item** | **Standard** | **Method** | **Requirement** | **Result** |
| Radiated Spurious Emissions Below 1GHz | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 6.4,6.5 | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass |
| Radiated Spurious Emissions Above 1GHz | | ANSI C63.10 (2013) Section 6.6 | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass |
| Conducted Peak Output Power | | ANSI C63.10 (2013) Section 7.8.5 | 47 CFR Part 15, Subpart C 15.247(b)(1) | Pass |

**Remark for report SZCR210602187502:**

Model No.: SPKA30Q

This test report (Ref. No.: SZCR210602187502) is only valid with the original test report (Ref. No.: SZEM200800850002).

Compared with the original report, this report change as follows:

Remove the TRA1402(A/D) and TRA1309 (PWM to analog). H064 DSP re-allocate the pin assignment in order to match the latest design.

Considering to the difference, pre-scan were performed on the sample in this report to find the items which can be influential to the result in the original test report for fully retest.

Therefore in this report Radiated Spurious Emissions Below 1GHz, Radiated Spurious Emissions Above 1GHz and Conducted Peak Output Power were fully retested on model SPKA30Q and shown the data in this report, other test data please refer to the original report SZEM200800850002.

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# 4 General Information

## 4.1 Details of E.U.T.

| | |
|---|---|
| Power Supply: | AC adapter:<br>Model: K15V150100U<br>Input: AC 100-240V 50/60Hz 0.45A<br>Output: DC 15.0V 1.0A |
| Cable(s): | DC cable 180cm Unshielded Non-Core<br>MIC cable 210cm Unshielded Non-Core |
| Operation Frequency: | 2402MHz to 2480MHz |
| Bluetooth Version: | V5.0 Classic |
| Modulation Type: | GFSK, pi/4DQPSK, 8DPSK |
| Number of Channels: | 79 |
| Channel Spacing: | 1MHz |
| Spectrum Spread Technology: | Frequency Hopping Spread Spectrum(FHSS) |
| Antenna Type: | PCB Antenna |
| Antenna Gain: | 0 dBi |

## 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 Spurious Emissions Below 1GHz | ± 4.5dB |
| Radiated Spurious Emissions Above 1GHz | ± 4.8dB |
| Conducted Peak Output Power | ± 0.75dB |

Remark:
The $U_{lab}$ (lab Uncertainty) is less than $U_{cispr}$ (CISPR 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:

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

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

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: 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.

## 4.6 Deviation from Standards

None

## 4.7 Abnormalities from Standard Conditions

None

# 5 Equipment List

| Radiated Spurious Emissions Below 1GHz | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEM001-01 | 2020-07-19 | 2023-07-18 |
| MXE EMI Receiver | Agilent Technologies | N9038A | SEM004-15 | 2020-11-02 | 2021-11-01 |
| BiConiLog Antenna | ETS-LINDGREN | 3142C | SEM003-02 | 2019-05-24 | 2022-05-23 |
| Pre-Amplifier | Agilent Technologies | 8447D | SEM005-01 | 2021-03-24 | 2022-03-23 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM025-01 | 2021-07-09 | 2022-07-08 |

| Radiated Spurious Emissions Above 1GHz | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| 3m Semi-Anechoic Chamber | AUDIX | N/A | SEM001-02 | 2021-03-26 | 2024-03-25 |
| EXA Signal Analyzer | Agilent Technologies Inc | N9010A | SEM004-12 | 2021-02-01 | 2022-01-31 |
| Horn Antenna | Rohde&Schwarz | HF907 | SEM003-07 | 2021-04-14 | 2024-04-13 |
| Pre-Amplifier | Compliance Directions Systems Inc. | PAP-0126 | SEM004-11 | 2020-09-23 | 2021-09-22 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM026-01 | 2021-07-09 | 2022-07-08 |

| Conducted Peak Output Power | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| Shielding Room | SAEMC | MSR433 | SEM001-11 | 2019-06-13 | 2022-06-12 |
| EXA Signal Analyzer | KEYSIGHT | N9010A | SEM004-09 | 2020-04-09 | 2021-04-08 |
| DC Power Supply | KEYSIGHT | E3642A | SEM011-07 | 2020-03-24 | 2021-03-23 |
| Manual Step Attenuator | KEYSIGHT | 8494B | SEM021-05 | 2020-04-09 | 2021-04-08 |
| Manual Step Attenuator | KEYSIGHT | 8496B | SEM021-06 | 2020-04-09 | 2021-04-08 |
| Power Sensor | KEYSIGHT | U2021XA | SEM009-13 | 2020-03-25 | 2021-03-24 |
| Power Sensor | KEYSIGHT | U2021XA | SEM009-14 | 2020-03-25 | 2021-03-24 |
| Programmable Temperature&Humidity Chamber | Votsch Industrietechnik GmbH | VT 4002 | SEM002-15 | 2020-03-24 | 2021-03-23 |
| Measurement Software | JS Tonscend | JS1120-2 BT/WIFI V2.6 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM028-01 | 2020-07-10 | 2021-07-09 |

| General used equipment | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No** | **Inventory No** | **Cal Date** | **Cal Due Date** |
| Humidity/ Temperature Indicator | Shanghai Meteorological Industry Factory | ZJ1-2B | SEM002-04 | 2020-09-15 | 2021-09-14 |
| Humidity/ Temperature Indicator | Mingle | N/A | SEM002-08 | 2020-09-15 | 2021-09-14 |
| Barometer | Changchun Meteorological Industry Factory | DYM3 | SEM002-01 | 2021-03-30 | 2022-03-29 |


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# 6 Radio Spectrum Matter Test Results

## 6.1 Radiated Spurious Emissions Below 1GHz

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

Test Method: ANSI C63.10 (2013) 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 |

### 6.1.1 E.U.T. Operation

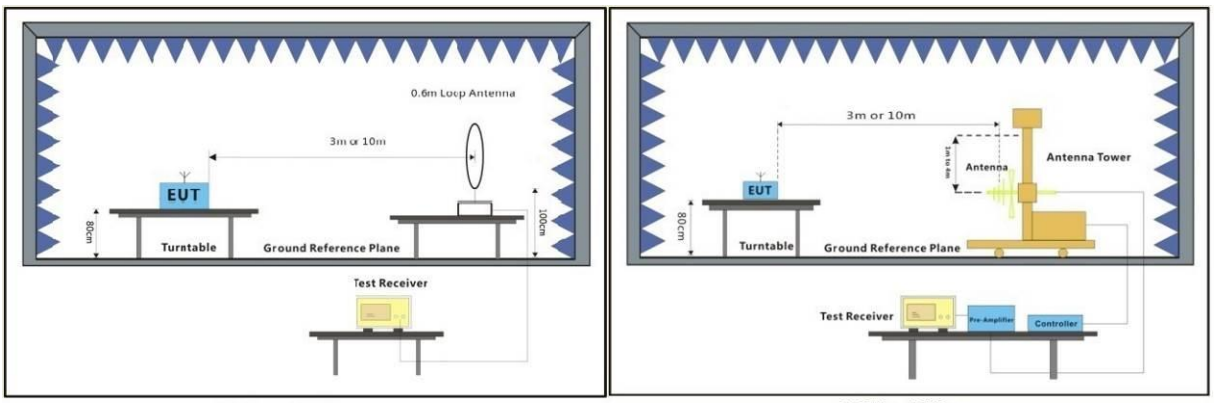
Operating Environment:

Temperature: 27.1 °C Humidity: 64.6 % RH Atmospheric Pressure: 1010 mbar

### 6.1.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX_non-Hop mode_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report. |

### 6.1.3 Test Setup Diagram




Below 30MHz　　30MHz-1GHz

### 6.1.4 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 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.

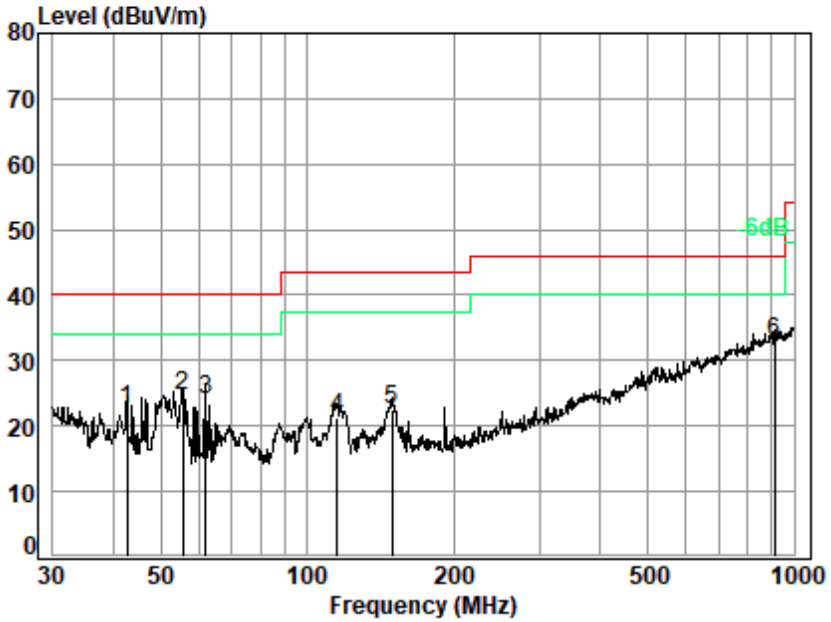
Remark:

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.

3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low




Site : chamber
Condition: 3m VERTICAL
Job No. : 21875AT
Test Mode: 00

| | Freq | Ant Factor | Cable Loss | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB/m | dB | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 42.60 | 17.03 | 0.70 | 27.47 | 32.38 | 22.64 | 40.00 | -17.36 | QP |
| 2 | 55.41 | 13.07 | 0.76 | 27.45 | 38.39 | 24.77 | 40.00 | -15.23 | QP |
| 3 | 62.00 | 13.00 | 0.80 | 27.44 | 37.70 | 24.06 | 40.00 | -15.94 | QP |
| 4 | 115.32 | 13.32 | 1.12 | 27.31 | 34.29 | 21.42 | 43.50 | -22.08 | QP |
| 5 | 149.49 | 14.64 | 1.16 | 27.14 | 33.77 | 22.43 | 43.50 | -21.07 | QP |
| 6 q | 909.67 | 29.05 | 3.51 | 26.92 | 27.16 | 32.80 | 46.00 | -13.20 | QP |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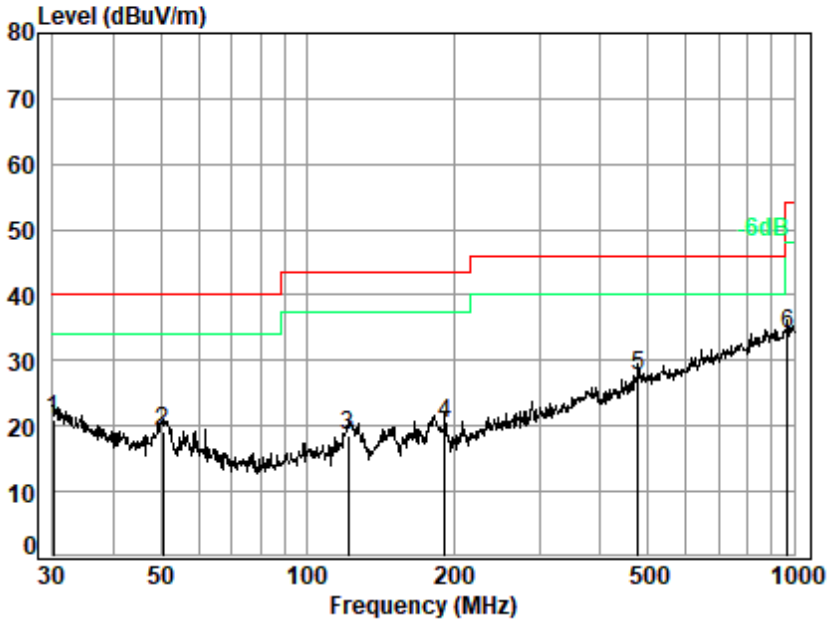
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low




Site : chamber
Condition: 3m HORIZONTAL
Job No. : 21875AT
Test Mode: 00

| | Freq | Ant Factor | Cable Loss | Preamp Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dB/m | dB | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 | 30.11 | 22.92 | 0.60 | 27.50 | 25.08 | 21.10 | 40.00 | -18.90 | QP |
| 2 | 50.41 | 13.98 | 0.70 | 27.46 | 31.81 | 19.03 | 40.00 | -20.97 | QP |
| 3 | 121.12 | 12.94 | 1.13 | 27.28 | 31.78 | 18.57 | 43.50 | -24.93 | QP |
| 4 | 191.75 | 15.55 | 1.19 | 26.99 | 30.54 | 20.29 | 43.50 | -23.21 | QP |
| 5 q | 478.85 | 24.22 | 2.46 | 27.51 | 28.36 | 27.53 | 46.00 | -18.47 | QP |
| 6 | 968.93 | 29.50 | 3.57 | 26.64 | 27.76 | 34.19 | 54.00 | -19.81 | QP |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## 6.2 Radiated Spurious Emissions Above 1GHz

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

Test Method: ANSI C63.10 (2013) Section 6.6

Measurement Distance: 3m

Limit:

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

### 6.2.1 E.U.T. Operation

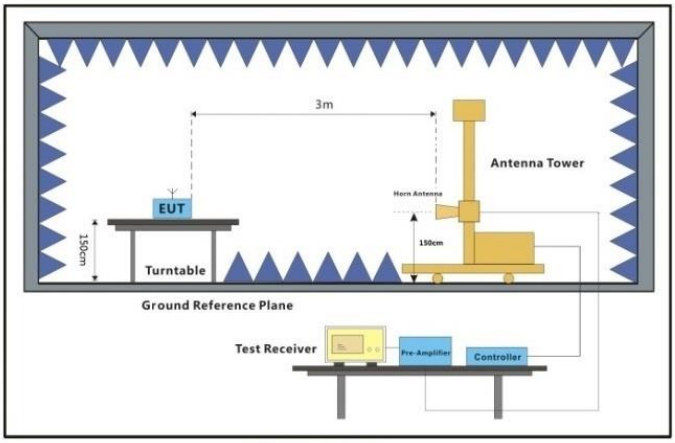
Operating Environment:

Temperature: 23.5 °C Humidity: 53.5 % RH Atmospheric Pressure: 1010 mbar

### 6.2.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX_non-Hop mode_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report. |

### 6.2.3 Test Setup Diagram




Above 1GHz

### 6.2.4 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.

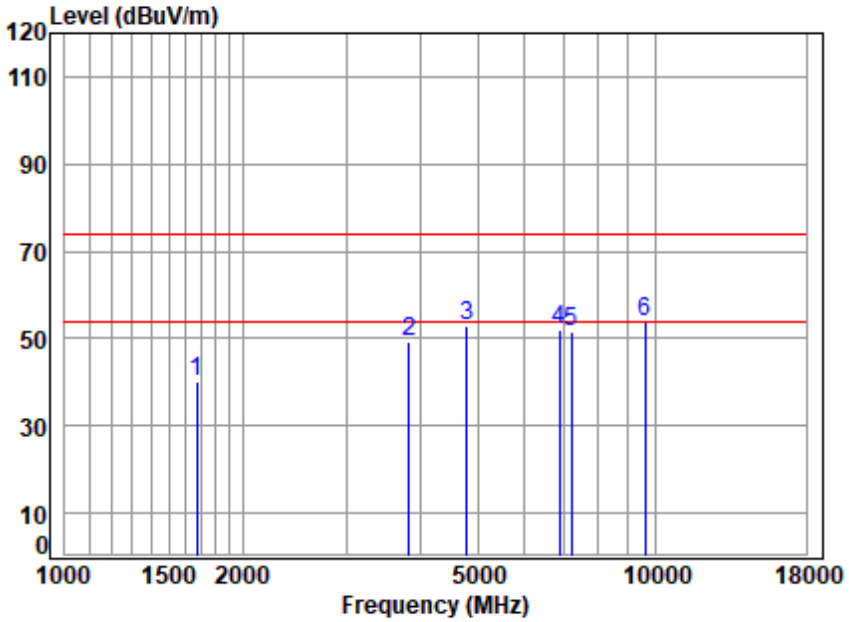
Remark:

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.

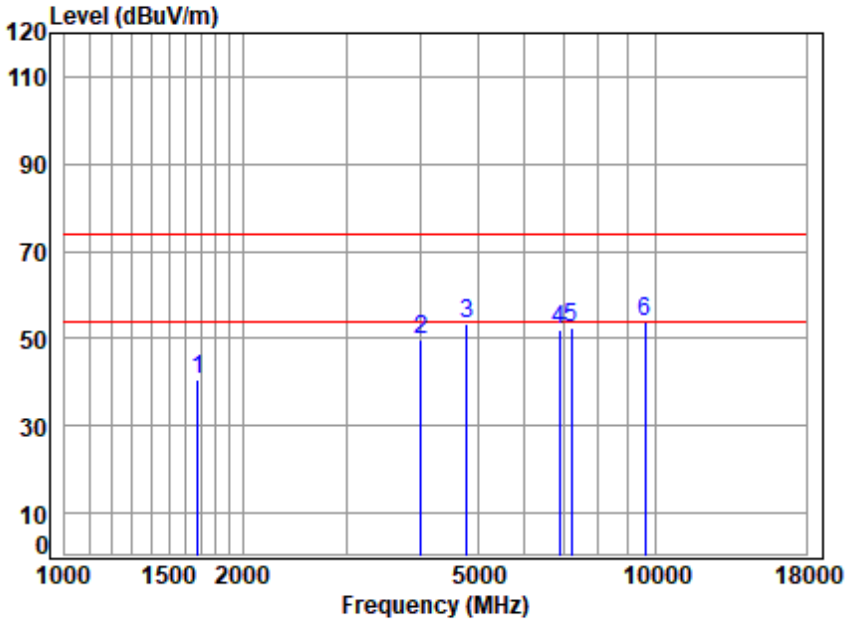
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low




Site : chamber
Condition: 3m HORIZONTAL
Job No : 21875AT/21876AT
Mode : 2402 TX SE
Note : BT DH5

| | 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 | 1672.779 | 3.41 | 26.57 | 40.05 | 50.04 | 39.97 | 74.00 | -34.03 | peak |
| 2 | 3823.371 | 6.02 | 32.30 | 41.29 | 52.17 | 49.20 | 74.00 | -24.80 | peak |
| 3 | 4804.000 | 7.10 | 33.62 | 42.14 | 54.20 | 52.78 | 74.00 | -21.22 | peak |
| 4 | 6874.906 | 8.48 | 35.28 | 41.78 | 50.15 | 52.13 | 74.00 | -21.87 | peak |
| 5 | 7206.000 | 8.74 | 35.67 | 41.50 | 48.82 | 51.73 | 74.00 | -22.27 | peak |
| 6 | 9608.000 | 10.81 | 37.34 | 37.76 | 43.31 | 53.70 | 74.00 | -20.30 | peak |

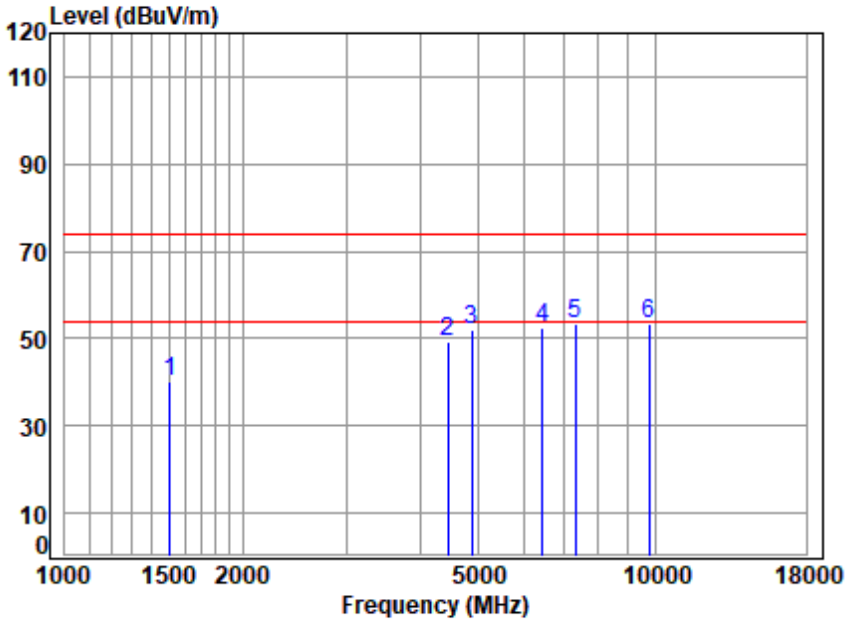
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low




Site : chamber
Condition: 3m VERTICAL
Job No : 21875AT/21876AT
Mode : 2402 TX SE
Note : BT DH5

| | 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 | 1682.477 | 3.42 | 26.62 | 40.05 | 50.54 | 40.53 | 74.00 | -33.47 | peak |
| 2 | 4004.339 | 6.28 | 32.60 | 41.40 | 52.11 | 49.59 | 74.00 | -24.41 | peak |
| 3 | 4804.000 | 7.10 | 33.62 | 42.14 | 54.72 | 53.30 | 74.00 | -20.70 | peak |
| 4 | 6874.906 | 8.48 | 35.28 | 41.78 | 50.09 | 52.07 | 74.00 | -21.93 | peak |
| 5 | 7206.000 | 8.74 | 35.67 | 41.50 | 49.43 | 52.34 | 74.00 | -21.66 | peak |
| 6 | 9608.000 | 10.81 | 37.34 | 37.76 | 43.25 | 53.64 | 74.00 | -20.36 | peak |

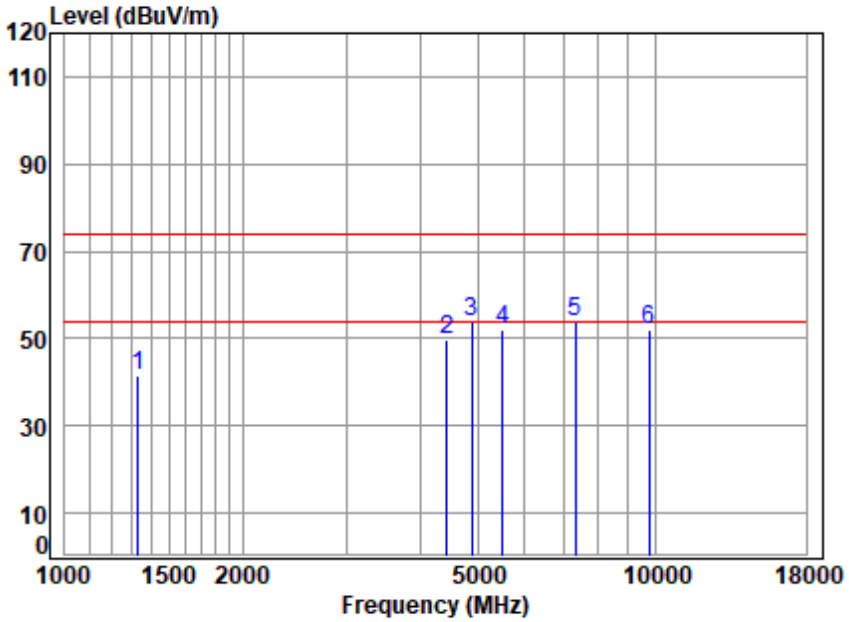
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:middle




Site : chamber
Condition: 3m HORIZONTAL
Job No : 21875AT/21876AT
Mode : 2441 TX SE
Note : BT DH5

| | 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 | 1507.470 | 3.27 | 25.74 | 39.96 | 50.91 | 39.96 | 74.00 | -34.04 | peak |
| 2 | 4456.315 | 6.72 | 32.97 | 41.84 | 51.42 | 49.27 | 74.00 | -24.73 | peak |
| 3 | 4882.000 | 7.18 | 33.77 | 42.20 | 53.06 | 51.81 | 74.00 | -22.19 | peak |
| 4 | 6432.732 | 8.28 | 34.60 | 42.08 | 51.53 | 52.33 | 74.00 | -21.67 | peak |
| 5 | 7323.000 | 8.85 | 35.76 | 41.40 | 50.25 | 53.46 | 74.00 | -20.54 | peak |
| 6 | 9764.000 | 10.76 | 37.41 | 37.50 | 42.50 | 53.17 | 74.00 | -20.83 | peak |

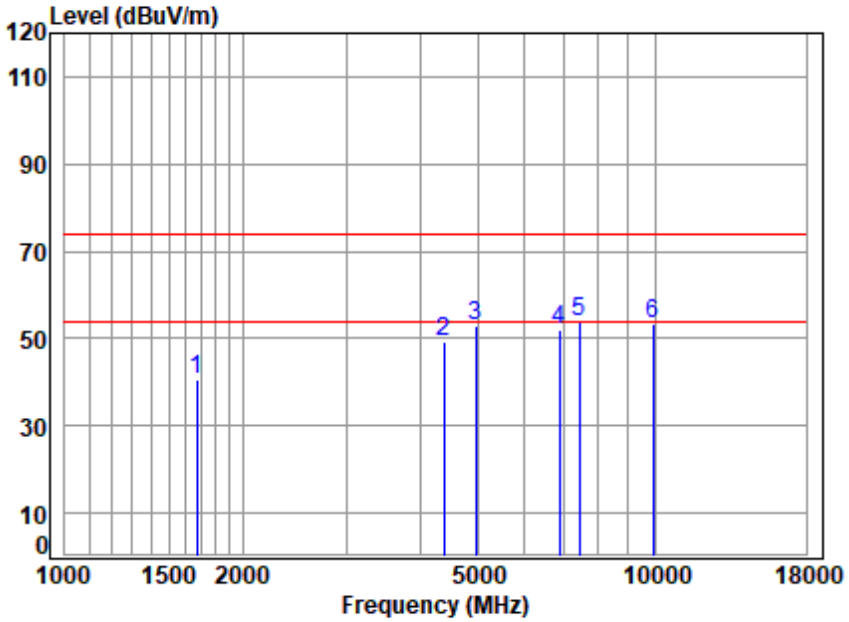
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:middle




Site : chamber
Condition: 3m VERTICAL
Job No : 21875AT/21876AT
Mode : 2441 TX SE
Note : BT DH5

| | 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 | 1331.288 | 3.00 | 25.38 | 39.85 | 52.88 | 41.41 | 74.00 | -32.59 | peak |
| 2 | 4443.453 | 6.71 | 32.96 | 41.82 | 51.72 | 49.57 | 74.00 | -24.43 | peak |
| 3 | 4882.000 | 7.18 | 33.77 | 42.20 | 54.98 | 53.73 | 74.00 | -20.27 | peak |
| 4 | 5519.072 | 8.18 | 34.22 | 42.35 | 52.14 | 52.19 | 74.00 | -21.81 | peak |
| 5 | 7323.000 | 8.85 | 35.76 | 41.40 | 50.54 | 53.75 | 74.00 | -20.25 | peak |
| 6 | 9764.000 | 10.76 | 37.41 | 37.50 | 41.49 | 52.16 | 74.00 | -21.84 | peak |

Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High




Site : chamber
Condition: 3m HORIZONTAL
Job No : 21875AT/21876AT
Mode : 2480 TX SE
Note : BT DH5

| | 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 | 1672.779 | 3.41 | 26.57 | 40.05 | 50.51 | 40.44 | 74.00 | -33.56 | peak |
| 2 | 4392.376 | 6.66 | 32.92 | 41.78 | 51.43 | 49.23 | 74.00 | -24.77 | peak |
| 3 | 4960.000 | 7.26 | 33.92 | 42.27 | 54.05 | 52.96 | 74.00 | -21.04 | peak |
| 4 | 6874.906 | 8.48 | 35.28 | 41.78 | 49.89 | 51.87 | 74.00 | -22.13 | peak |
| 5 | 7440.000 | 8.96 | 35.85 | 41.29 | 50.19 | 53.71 | 74.00 | -20.29 | peak |
| 6 | 9920.000 | 10.71 | 37.47 | 37.23 | 42.35 | 53.30 | 74.00 | -20.70 | peak |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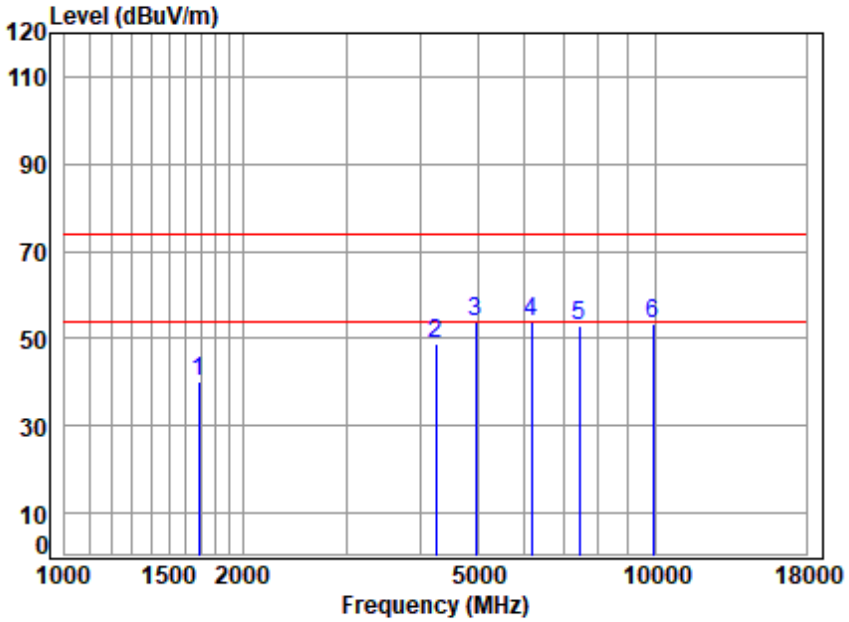
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High




Site : chamber
Condition: 3m VERTICAL
Job No : 21875AT/21876AT
Mode : 2480 TX SE
Note : BT DH5

| | 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 | 1687.347 | 3.42 | 26.64 | 40.05 | 50.15 | 40.16 | 74.00 | -33.84 | peak |
| 2 | 4242.641 | 6.52 | 32.80 | 41.64 | 51.01 | 48.69 | 74.00 | -25.31 | peak |
| 3 | 4960.000 | 7.26 | 33.92 | 42.27 | 54.73 | 53.64 | 74.00 | -20.36 | peak |
| 4 | 6159.797 | 8.27 | 34.60 | 42.28 | 53.06 | 53.65 | 74.00 | -20.35 | peak |
| 5 | 7440.000 | 8.96 | 35.85 | 41.29 | 49.54 | 53.06 | 74.00 | -20.94 | peak |
| 6 | 9920.000 | 10.71 | 37.47 | 37.23 | 42.54 | 53.49 | 74.00 | -20.51 | peak |

## 6.3 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(1)

Test Method: ANSI C63.10 (2013) Section 7.8.5

Limit:

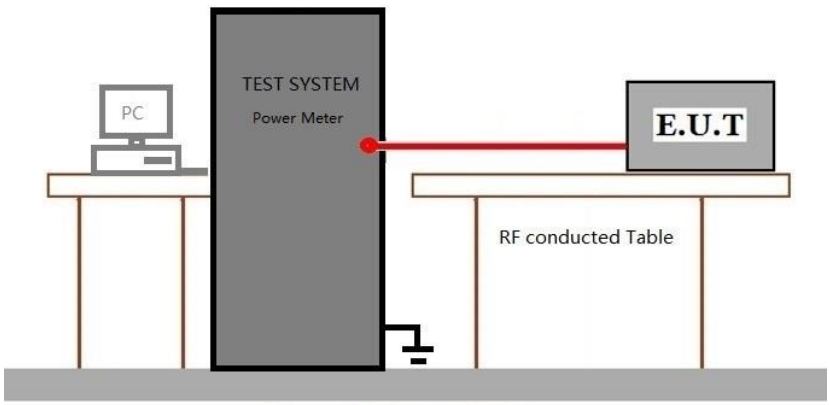
| Frequency range(MHz) | Output power of the intentional radiator(watt) |
|---|---|
| 902-928 | 1 for ≥50 hopping channels |
| | 0.25 for 25≤ hopping channels <50 |
| | 1 for digital modulation |
| 2400-2483.5 | 1 for ≥75 non-overlapping hopping channels |
| | 0.125 for all other frequency hopping systems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

### 6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 25.3 °C Humidity: 55.4 % RH Atmospheric Pressure: 1010 mbar

### 6.3.2 Test Setup Diagram




### 6.3.3 Measurement Procedure and Data

Please Refer to Appendix for Details

# 7 Test Setup Photo

Refer to Setup Photos

# 8 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for SZCR2106021875AT

# 9 Appendix

## 2. Maximum Conducted Output Power

### 2.1 Test Result

| Test Mode | Frequency (MHz) | Tx Type | Measured Peak Output Power (dBm) | Limits (dBm) | Verdict |
|---|---|---|---|---|---|
| | | | Ant 1 | | |
| GFSK | 2402 | SISO | 0.65 | 30 | PASS |
| | 2441 | SISO | 0.31 | 30 | PASS |
| | 2480 | SISO | 0.14 | 30 | PASS |
| Pi/4DQPSK | 2402 | SISO | 2.98 | 20.97 | PASS |
| | 2441 | SISO | 3.04 | 20.97 | PASS |
| | 2480 | SISO | 2.92 | 20.97 | PASS |
| 8DPSK | 2402 | SISO | 3.15 | 20.97 | PASS |
| | 2441 | SISO | 3.21 | 20.97 | PASS |
| | 2480 | SISO | 3.06 | 20.97 | PASS |

- End of the Report -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