# TEST REPORT

| | |
|---|---|
| **Application No.:** | SZCR2407002573ET |
| **Applicant:** | YIDAFENG CRAFTS & TOYS FACTORY |
| **Address of Applicant:** | Feng Xin One Road, Xin Ning Industrial District, Chenghai District, Shantou China |
| **Manufacturer:** | YIDAFENG CRAFTS & TOYS FACTORY |
| **Address of Manufacturer:** | Feng Xin One Road, Xin Ning Industrial District, Chenghai District, Shantou China |
| **Factory:** | YIDAFENG CRAFTS & TOYS FACTORY |
| **Address of Factory:** | Feng Xin One Road, Xin Ning Industrial District, Chenghai District, Shantou China |
| **Equipment Under Test (EUT):** | |
| **EUT Name:** | RC CARS |
| **Model No.:** | Please refer to section 2 ♣ |
| ♣ | Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical. |
| **FCC ID:** | 2AOFC-YDF02 |
| **Standard(s) :** | 47 CFR Part 15, Subpart C 15.227 |
| **Date of Receipt:** | 2024-07-02 |
| **Date of Test:** | 2024-07-04 to 2024-07-12 |
| **Date of Issue:** | 2024-07-16 |
| **Test Result:** | **Pass*** |

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

Keny Xu
EMC Laboratory Manager


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| Revision Record | | | | |
|---|---|---|---|---|
| **Version** | **Chapter** | **Date** | **Modifier** | **Remark** |
| 01 | | 2024-07-16 | | Original |
| | | | | |
| | | | | |

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

# 2 Test Summary

| Radio Spectrum Technical Requirement | | | | |
|---|---|---|---|---|
| **Item** | **Standard** | **Method** | **Requirement** | **Result** |
| Antenna Requirement | 47 CFR Part 15, Subpart C 15.227 | N/A | 47 CFR Part 15, Subpart C 15.203 | Pass |

| Radio Spectrum Matter Part | | | | |
|---|---|---|---|---|
| **Item** | **Standard** | **Method** | **Requirement** | **Result** |
| 20dB Bandwidth | 47 CFR Part 15, Subpart C 15.227 | ANSI C63.10 (2013) Section 6.9 | 47 CFR Part 15, Subpart C 15.227 | Pass |
| Field Strength of the Fundamental Signal (15.227(a)) | | ANSI C63.10 (2013) Section 6.4 | 47 CFR Part 15, Subpart C 15.227(a) | Pass |
| Radiated Emissions | | ANSI C63.10 (2013) Section 6.4&6.5 | 47 CFR Part 15, Subpart C 15.227(b) & C 15.209 | Pass |

**Declaration of EUT Family Grouping:**

Model No.: YDF6603R, YDF6604R, YDF9801R, YDF9802R, YDF9015R, YDF9005R, YDF6608R, YDF9006R, YDF6607R, YDF6606R, YDF6605R, YDF6602R, YDF6601R, YDF9007R, YDF9008R, YDF9004R, YDF9013R, YDF9003R, YDF9000R, YDF9001R, YDF9011R, YDF9002R, YDF838A, YDF688A, YDF968, YDF929, YDF989R, YDF262, YDF262R, YDF232, YDF212R, YDF999R, YDF925, YDF959, YDF989, YDF969R, YDF242R, YDF955, YDF965R, YDF945, YDF6838, YDF6688, YDF6808, YDF6848, YDF6858, YDF7262, YDF7232, YDF7968, YDF6968, YDF6925R, YDF7960R, YDF7925, YDF7960, YDF7959, YDF7939, YDF7989R, YDF7969R, YDF7212R, YDF7242R, YDF7999R, YDF909R, YDF908R, YDF7909R , YDF7908R, T/7234, T/7235

Only the model YDF908R was tested, since according to the declaration from the applicant, the electrical circuit design, PCB layout, components used and internal wiring and functions were identical for the above models, with only difference being of product appearance color, shape, packaging and model No.

# 3 Contents

# 4 General Information

## 4.1 Details of E.U.T.

| | |
|---|---|
| Power supply: | 3V DC (1.5V x 2 "AA" Size Batteries) |
| Operation Frequency | 27.145MHz |
| Modulation Type: | AM |
| Antenna Type: | Wire Antenna |
| Antenna Gain: | 0dBi |

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. |
|---|---|---|---|
| RF cable | supplied by SGS | N/A(cable loss:0.6dB) | REF. No.SEL000089 |

## 4.3 Measurement Uncertainty

| Test Item | Measurement Uncertainty |
|---|---|
| 20dB Bandwidth | 3% |
| Field Strength of the Fundamental Signal (15.227(a)) | ± 3.6dB |
| Radiated Emissions | ± 6.0dB for 3m; ± 5.0dB for 10m |

Remark:
The $U_{lab}$ (lab Uncertainty) is less than $U_{cispr/ETSI}$ (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.

## 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, Nanshan District, 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: 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

# 5 Equipment List

| 20dB Bandwidth | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal Date** | **Cal Due Date** |
| DC Power Supply | Chroma | 62012P-80-60 | SEM011-11 | 2023-10-19 | 2024-10-18 |
| MXA Signal Analyzer | KEYSIGHT | N9020A | SEM004-19 | 2024-03-14 | 2025-03-13 |
| Measurement Software | TST PASS | TST PASS V2.0 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM031-01 | 2023-07-07 | 2024-07-06 |
| Attenuator | Huber+Suhner | 6620_SMA-50-1 | SEM021-09 | 2024-03-27 | 2025-03-26 |

| Field Strength of the Fundamental Signal (15.227(a)) | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal Date** | **Cal Due Date** |
| 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEM001-01 | 2023-06-19 | 2026-06-18 |
| MXE EMI Receiver | Agilent Technologies | N9038A | SEM004-15 | 2023-10-19 | 2024-10-18 |
| BiConiLog Antenna | ETS-LINDGREN | 3142C | SEM003-01 | 2023-09-16 | 2025-09-15 |
| Pre-Amplifier | Agilent Technologies | 8447D | SEM005-01 | 2024-03-14 | 2025-03-13 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM025-01 | 2024-07-06 | 2025-07-05 |
| Loop Antenna | ETS-Lindgren | 6502 | SEM003-08 | 2023-11-20 | 2025-11-19 |

| Radiated Emissions | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal Date** | **Cal Due Date** |
| 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEM001-01 | 2023-06-19 | 2026-06-18 |
| MXE EMI Receiver | Agilent Technologies | N9038A | SEM004-15 | 2023-10-19 | 2024-10-18 |
| BiConiLog Antenna | ETS-LINDGREN | 3142C | SEM003-01 | 2023-09-16 | 2025-09-15 |
| Pre-Amplifier | Agilent Technologies | 8447D | SEM005-01 | 2024-03-14 | 2025-03-13 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM025-01 | 2024-07-06 | 2025-07-05 |
| Loop Antenna | ETS-Lindgren | 6502 | SEM003-08 | 2023-11-20 | 2025-11-19 |

| General used equipment | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal Date** | **Cal Due Date** |
| Humidity/ Temperature Indicator | deli | 8838 | SEM002-32 | 2023-07-28 | 2024-07-27 |
| Humidity/ Temperature Indicator | deli | 8838 | SEM002-33 | 2023-07-28 | 2024-07-27 |
| Barometer | Changchun Meteorological Industry Factory | DYM3 | SEM002-01 | 2024-03-18 | 2025-03-17 |

# 6 Radio Spectrum Technical Requirement

## 6.1 Antenna Requirement

### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

### 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 0dBi.

Antenna location: Refer to external photos

# 7 Radio Spectrum Matter Test Results

## 7.1 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.227
Test Method: ANSI C63.10 (2013) Section 6.9

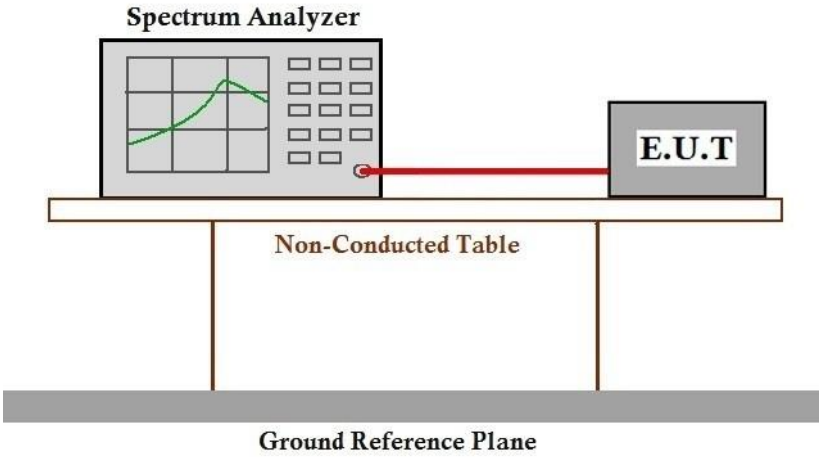
### 7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 25.1 °C Humidity: 41.9 % RH Atmospheric Pressure: 1020 mbar

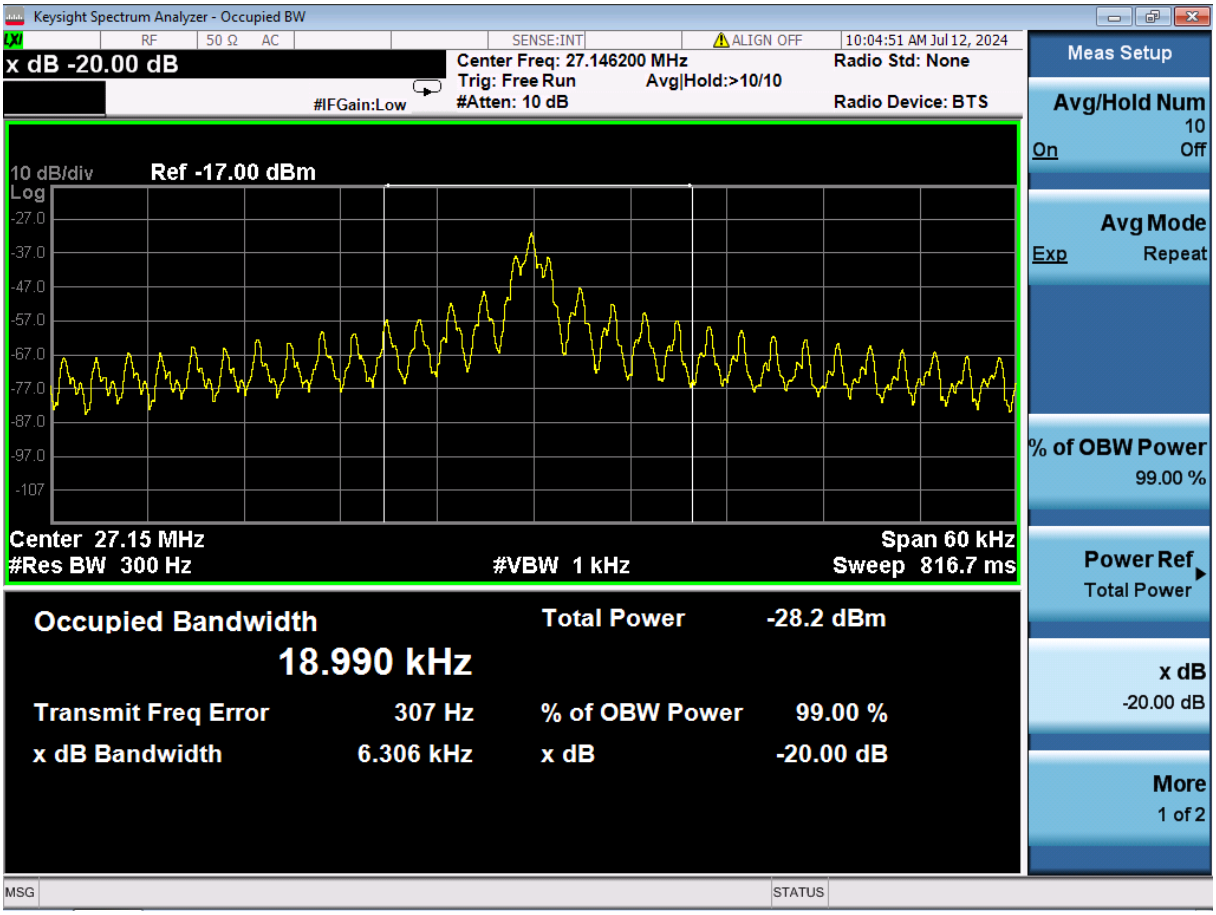
### 7.1.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode_Keep the EUT in transmitting with modulation mode |

### 7.1.3 Test Setup Diagram




### 7.1.4 Measurement Procedure and Data



## 7.2 Field Strength of the Fundamental Signal (15.227(a))

Test Requirement 47 CFR Part 15, Subpart C 15.227(a)
Test Method: ANSI C63.10 (2013) Section 6.4
Measurement Distance: 3m

Limit:

Limit: ⩽ 10000 microvolts/meter at 3 meters, the emission limit is based on measurement instrumentation employing an average Detector:. The provisions in § 15.35 for limiting peak emissions apply.

### 7.2.1 E.U.T. Operation

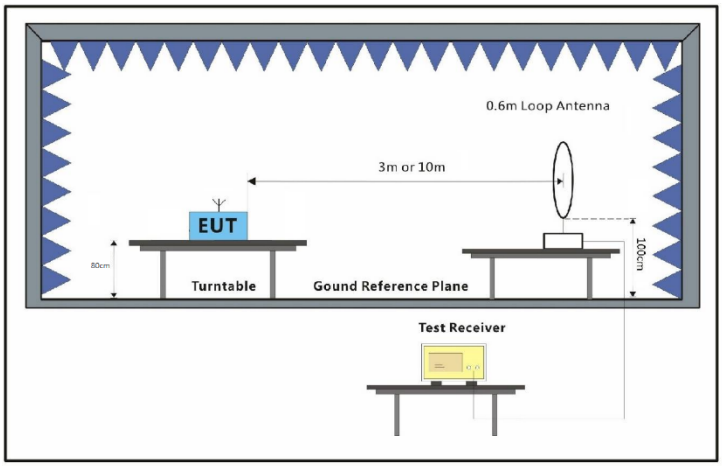
Operating Environment:

Temperature: 24.6 °C Humidity: 53.9 % RH Atmospheric Pressure: 1020 mbar

### 7.2.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode_Keep the EUT in transmitting with modulation mode |

### 7.2.3 Test Setup Diagram



### 7.2.4 Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1Ghz 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 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, quasi-peak or average method as specified and then reported in a data sheet.

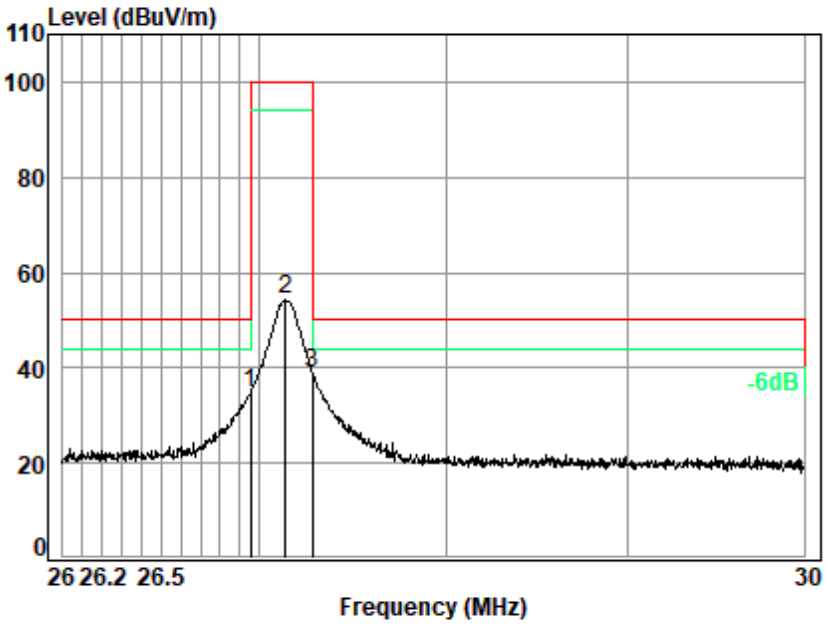
g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

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

Remark:

As shown in this section, for Field Strength of the Fundamental Signal limits are based on average limits. However, the peak field strength of the Fundamental Signal was not exceed the average limits specified under any condition of modulation. So, only peak field strength data of the Fundamental Signal was shown in the report.

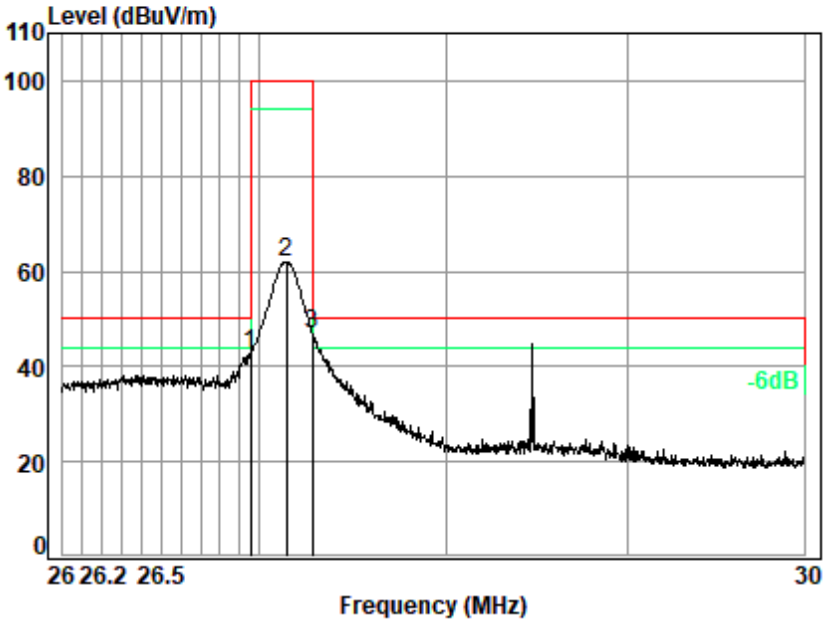
Test Mode: 00; Polarity: Horizontal




Site : chamber
Condition: 3m HORIZONTAL
Job No. : 02573ET
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 | 26.96 | 22.42 | 0.61 | 27.80 | 39.43 | 34.66 | 50.00 | -15.34 | Peak |
| 2 | 27.14 | 22.33 | 0.61 | 27.80 | 59.05 | 54.19 | 100.00 | -45.81 | Peak |
| 3 p | 27.28 | 22.26 | 0.61 | 27.80 | 43.75 | 38.82 | 50.00 | -11.18 | Peak |

Test Mode: 00; Polarity: Vertical




Site : chamber
Condition: 3m VERTICAL
Job No. : 02573ET
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 | 26.96 | 22.42 | 0.61 | 27.80 | 47.48 | 42.71 | 50.00 | -7.29 | Peak |
| 2 | 27.15 | 22.33 | 0.61 | 27.80 | 66.96 | 62.10 | 100.00 | -37.90 | Peak |
| 3 p | 27.28 | 22.26 | 0.61 | 27.80 | 51.86 | 46.93 | 50.00 | -3.07 | Peak |

## 7.3 Radiated Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.227(b) & C 15.209
Test Method: ANSI C63.10 (2013) Section 6.4&6.5

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 |
| 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 and 110-490kHz. Radiated emission limits in these two bands are based on measurements employing an average detector. | | |
| **Frequency(MHz)** | **Field strength(microvolts/meter)** | **Measurement distance(meters)** |
| 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 above 1000MHz. Radiated emission limits above 1000MHz is based on measurements employing an average detector. | | |

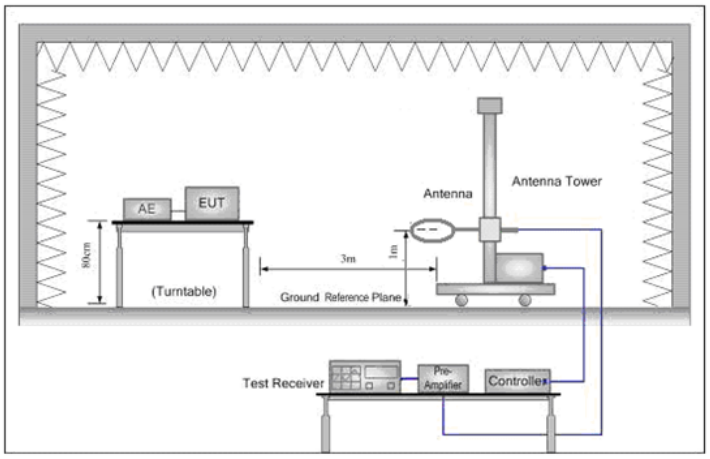
### 7.3.1 E.U.T. Operation

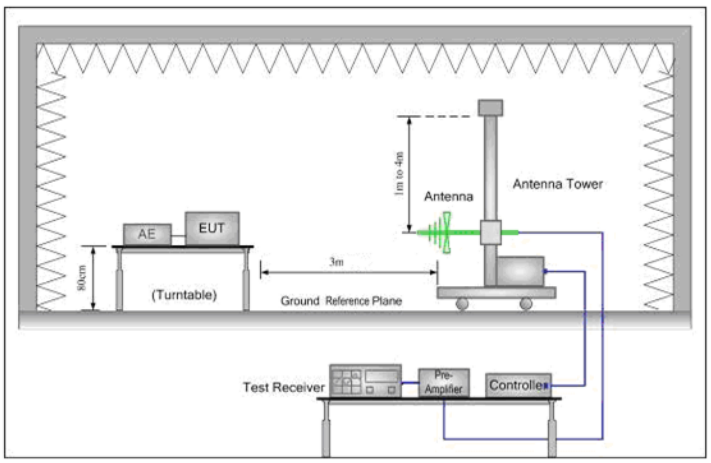
Operating Environment:
Temperature: 24.3 °C Humidity: 53.9 % RH Atmospheric Pressure: 1020 mbar

### 7.3.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | TX mode_Keep the EUT in transmitting with modulation mode |

### 7.3.3 Test Setup Diagram



### 7.3.4 Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz 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 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.

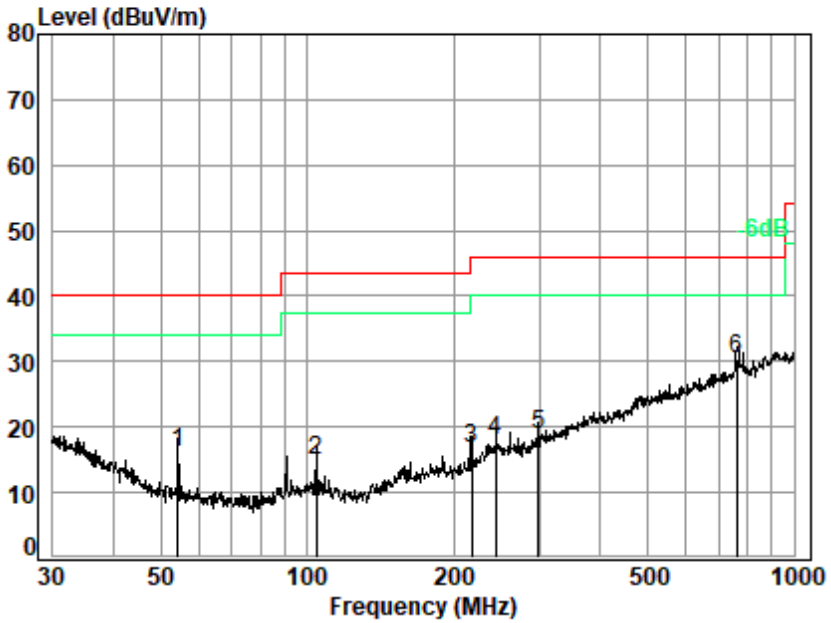
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark2:Scan from 9kHz to 1 GHz, 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.

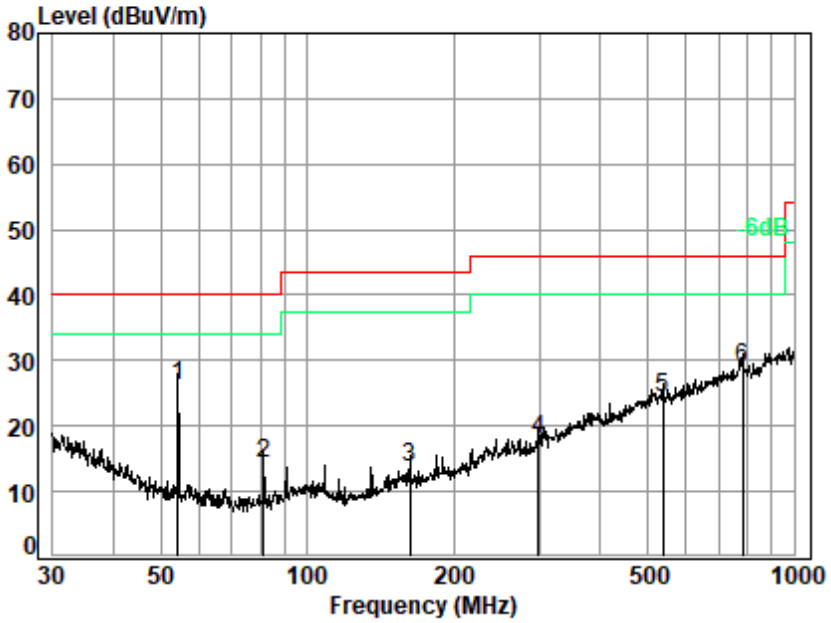
Test Mode: 00; Polarity: Horizontal




Site : chamber
Condition: 3m HORIZONTAL
Job No. : 02573ET
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 | 54.26 | 12.09 | 0.87 | 27.72 | 30.88 | 16.12 | 40.00 | -23.88 | QP |
| 2 | 104.17 | 12.22 | 1.21 | 27.57 | 29.16 | 15.02 | 43.50 | -28.48 | QP |
| 3 | 217.54 | 14.98 | 1.81 | 27.10 | 26.99 | 16.68 | 46.00 | -29.32 | QP |
| 4 | 244.23 | 17.10 | 1.92 | 26.98 | 25.87 | 17.91 | 46.00 | -28.09 | QP |
| 5 | 298.27 | 17.82 | 2.16 | 26.76 | 25.56 | 18.78 | 46.00 | -27.22 | QP |
| 6 q | 760.70 | 26.47 | 3.70 | 27.58 | 27.77 | 30.36 | 46.00 | -15.64 | QP |

Test Mode: 00; Polarity: Vertical




Site : chamber
Condition: 3m VERTICAL
Job No. : 02573ET
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 q | 54.26 | 12.09 | 0.87 | 27.72 | 40.79 | 26.03 | 40.00 | -13.97 | QP |
| 2 | 81.50 | 10.57 | 1.07 | 27.64 | 30.27 | 14.27 | 40.00 | -25.73 | QP |
| 3 | 162.61 | 13.38 | 1.53 | 27.33 | 26.00 | 13.58 | 43.50 | -29.92 | QP |
| 4 | 298.27 | 17.82 | 2.16 | 26.76 | 24.68 | 17.90 | 46.00 | -28.10 | QP |
| 5 | 537.59 | 23.53 | 3.01 | 27.72 | 25.64 | 24.46 | 46.00 | -21.54 | QP |
| 6 | 782.35 | 27.08 | 3.77 | 27.52 | 25.55 | 28.88 | 46.00 | -17.12 | QP |

# 8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2407002573ET

# 9 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photos for SZCR2407002573ET

- End of the Report -