

**Xiamen Rongji Precision Technology Co., Ltd**

# **RF TEST REPORT**

**Report Type:**

FCC Part 15.249&RSS 210 RF report

**Model:**

TC012/TC512/TC012A/CSTE01

**REPORT NUMBER:**

2411B2506SHA-001

**ISSUE DATE:**

July 7, 2025

**DOCUMENT CONTROL NUMBER:**

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**Applicant:** Xiamen Rongji Precision Technology Co., Ltd  
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**Manufacturer:** Xiamen Rongji Precision Technology Co., Ltd  
76 Zhaihou North Road, Haicang District, Xiamen

**Manufacturer Site:** Xiamen Rongji Precision Technology Co., Ltd  
76 Zhaihou North Road, Haicang District, Xiamen

**Product Name:** Smart Toilet

**Type/Model:** TC012/TC512/TC012A/CSTE01

**FCC ID:** 2AZ8KRJTC012

**IC:** 27355-TC012

**SUMMARY:**

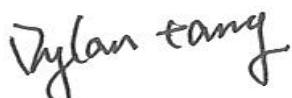
The equipment complies with the requirements according to the following standard(s) or Specification:

**47CFR Part 15 (2024):** Radio Frequency Devices (Subpart C)

**ANSI C63.10 (2020):** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

**RSS-210 Issue 11 (June 2024):** Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

**RSS-Gen Issue 5 (February 2021) Amendment 2:** General Requirements for Compliance of Radio Apparatus

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**TEST REPORT****Content**

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**TEST REPORT****Revision History**

| <b>Report No.</b> | <b>Version</b> | <b>Description</b>                    | <b>Issued Date</b> |
|-------------------|----------------|---------------------------------------|--------------------|
| 2411B2506SHA-001  | Rev. 01        | Initial issue of report               | June 27, 2025      |
| 2411B2506SHA-001  | Rev. 02        | The frequency range has been modified | July 7, 2025       |
|                   |                |                                       |                    |

**TEST REPORT****Measurement result summary**

| TEST ITEM                                | FCC REFERENCE    | IC REFERENCE   | RESULT |
|--|------------------|--|--------|
| Radiated Emissions                       | 15.249(b)&15.209 | RSS-210 Issue 11<br>B.10<br>RSS-Gen Issue 5<br>Clause 8.9&8.10 | Pass   |
| Power line conducted emission            | 15.207(a)        | RSS-Gen Issue 5<br>Clause 8.8                                  | Pass   |
| 20 dB Bandwidth & 99% Occupied Bandwidth | 15.215(c)        | RSS-Gen Issue 5<br>Clause 6.7                                  | Pass   |
| Antenna requirement                      | 15.203           | -  | Pass   |

Notes: 1: NA =Not Applicable

**TEST REPORT****1 GENERAL INFORMATION****1.1 Description of Equipment Under Test (EUT)**

|                         |   |
|-------------------------|---|
| Product name:           | Smart Toilet  |
| Type/Model:             | TC012/TC512/TC012A/CSTE01   |
| Description of EUT:     | The EUT is a Smart Toilet that supports 24G function, the four models are the same, except for the different pump flushing system and flush. So choose TC512 to test as representative. |
| Rating:                 | AC 120V, 60Hz, 1050W MAX  |
| Category of EUT:        | Class B   |
| EUT type:               | <input type="checkbox"/> Table top <input checked="" type="checkbox"/> Floor standing   |
| Product Marketing Name: | TC012/TC512/TC012A/CSTE01   |
| HVIN:                   | TC012/TC512/TC012A/CSTE01   |
| Software Version:       | V1.0  |
| Hardware Version:       | MA03L   |
| Sample received date:   | December 10, 2024   |
| Date of test:           | December 10, 2024 ~ March 09, 2025  |

**1.2 Technical Specification**

|                      |                      |
|----------------------|----------------------|
| Frequency Range:     | 24030MHz ~ 24230MHz  |
| Type of Modulation:  | GFSK                 |
| Channel Number:      | 1                    |
| Antenna Information: | Patch Antenna Arrays |

**TEST REPORT****1.3 Description of Test Facility**

|            |  |
|------------|--|
| Name:      | Intertek Testing Services (Shanghai FTZ) Co., Ltd.                     |
| Address:   | Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China |
| Telephone: | 86 21 61278200   |
| Telefax:   | 86 21 54262353   |

|   |  |
|---|--|
| The test facility is recognized, certified, or accredited by these organizations: | CNAS Accreditation Lab<br>Registration No. CNAS L21189                   |
|   | FCC Accredited Lab<br>Designation Number: CN0175                         |
|   | IC Registration Lab<br>CAB identifier.: CN0014                           |
|   | VCCI Registration Lab<br>Registration No.: R-4243, G-845, C-4723, T-2252 |
|   | NVLAP Accreditation Lab<br>NVLAP LAB CODE: 200849-0                      |
|   | A2LA Accreditation Lab<br>Certificate Number: 3309.02                    |

**TEST REPORT**

## 2 TEST SPECIFICATIONS

### 2.1 Standards or specification

47CFR Part 15 (2024)

ANSI C63.10 (2020)

RSS-210 Issue 11 (2024)

RSS-Gen Issue 5 (2021)

### 2.2 Mode of operation during the test

The channel was tested as representatives.

| Frequency Band (MHz) |                 |         |                 | 24000 ~ 24250 |                 |         |                 |
|----------------------|-----------------|---------|-----------------|---------------|-----------------|---------|-----------------|
| Channel              | Frequency (MHz) | Channel | Frequency (MHz) | Channel       | Frequency (MHz) | Channel | Frequency (MHz) |
| 1                    | 24120           | -       | -               | -             | -               | -       | -               |

### 2.3 Test software list

| Test Items         | Software | Manufacturer | Version |
|--------------------|----------|--------------|---------|
| Conducted emission | ESxS-K1  | R&S          | V2.1.0  |
| Radiated emission  | ES-K1    | R&S          | V1.71   |

### 2.4 Test peripherals list

| Item No. | Name | Band and Model | Description |
|----------|------|----------------|-------------|
| -        | -    | -              | -           |

### 2.5 Test environment condition:

| Test items                               | Temperature | Humidity |
|--|-------------|----------|
| 20 dB Bandwidth & 99% Occupied Bandwidth | 22°C        | 55% RH   |
| Radiated Emissions                       |             |          |
| Power line conducted emission            | 21°C        | 52% RH   |

**TEST REPORT**
**2.6 Instrument list**

| Conducted Emission                  |                           |                   |                        |              |            |
|-------------------------------------|---------------------------|-------------------|------------------------|--------------|------------|
| Used                                | Equipment                 | Manufacturer      | Type                   | Internal no. | Due date   |
| <input checked="" type="checkbox"/> | Test Receiver             | R&S               | ESR7                   | EC 6194      | 2026-02-17 |
| <input checked="" type="checkbox"/> | A.M.N.                    | R&S               | ESH2-Z5                | EC 3119      | 2025-07-23 |
| <input type="checkbox"/>            | A.M.N.                    | R&S               | ENV4200                | EC 3558      | 2025-06-05 |
| <input checked="" type="checkbox"/> | Attenuator                | Hua Xiang         | Ts5-10db-6g            | EC 6194-1    | 2025-12-06 |
| <input checked="" type="checkbox"/> | Shielded room             | Zhongyu           | -                      | EC 2838      | 2026-01-09 |
| Radiated Emission                   |                           |                   |                        |              |            |
| Used                                | Equipment                 | Manufacturer      | Type                   | Internal no. | Due date   |
| <input checked="" type="checkbox"/> | Test Receiver             | R&S               | ESIB 26                | EC 3045      | 2025-08-18 |
| <input checked="" type="checkbox"/> | PXA Signal Analyzer       | Keysight          | N9030B                 | EC 6078      | 2025-03-18 |
| <input checked="" type="checkbox"/> | Bilog Antenna             | TESEQ             | CBL 6112B              | EC 6411      | 2025-09-11 |
| <input type="checkbox"/>            | Pre-amplifier             | R&S               | AFS42-00101800-25-S-42 | EC 5262      | 2025-11-06 |
| <input checked="" type="checkbox"/> | Pre-amplifier             | Tonscend          | tap01018050            | EC 6432-1    | 2025-12-03 |
| <input checked="" type="checkbox"/> | Horn antenna              | Tonscend          | bha9120d               | EC 6432-2    | 2025-03-20 |
| <input checked="" type="checkbox"/> | Horn antenna              | ETS               | 3116c                  | EC 5955      | 2025-08-14 |
| <input checked="" type="checkbox"/> | WW wave antenna (40-60G)  | VDi               | HD-500SGAH25           | EC 6529-1    | 2026-03-09 |
| <input checked="" type="checkbox"/> | Mixer (40-60G)            |                   | M19RH                  | EC 6529      | 2026-03-24 |
| <input checked="" type="checkbox"/> | WW wave antenna (60-90G)  | VDi               | HD-620SGAH25           | EC 6382-1    | 2026-03-12 |
| <input checked="" type="checkbox"/> | Mixer (60-90G)            |                   | M12RH                  | EC 6382      | 2026-03-24 |
| <input checked="" type="checkbox"/> | WW wave antenna (90-140G) | VDi               | HD-900SGAH25           | EC 6383-1    | 2026-03-12 |
| <input checked="" type="checkbox"/> | Mixer (90-140G)           |                   | M15RH                  | EC 6383      | 2026-03-24 |
| <input checked="" type="checkbox"/> | Semi-anechoic chamber     | Albatross project | -                      | EC 3048      | 2026-07-11 |
| Additional instrument               |                           |                   |                        |              |            |
| Used                                | Equipment                 | Manufacturer      | Type                   | Internal no. | Due date   |
| <input checked="" type="checkbox"/> | Therom-Hygrograph         | Testo             | 175h1                  | EC 6640      | 2025-08-29 |
| <input checked="" type="checkbox"/> | Pressure meter            | YM3               | Shanghai Mengde        | EC 3320      | 2025-08-16 |

**TEST REPORT****2.7 Measurement uncertainty**

The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

| Test item   | Measurement uncertainty |
|---|-------------------------|
| Radiated Emissions in restricted frequency bands below 1GHz | ± 4.90dB                |
| Radiated Emissions in restricted frequency bands above 1GHz | ± 5.02dB                |
| Emission outside the frequency band                         | ± 2.89dB                |

**TEST REPORT**

### 3 Radiated Emissions

 Test result: **Pass**

#### 3.1 Limit

| Fundamental Frequency (MHz) | Field strength of fundamental (millivolts/meter) | Field strength of harmonics (millivolts/meter) |
|-----------------------------|--|--|
| 902 - 928                   | 94   | 54   |
| 2400 - 2483.5               | 94   | 54   |
| 5725 - 5875                 | 94   | 54   |
| 24000 - 24250               | 108  | 68   |

The radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified showed as below:

| Frequencies (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                             |

#### 3.2 Measurement Procedure

##### For Radiated emission below 30MHz:

- The EUT was placed on the top of a rotating table 0.1 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Both X and Y axes of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

**TEST REPORT****NOTE:**

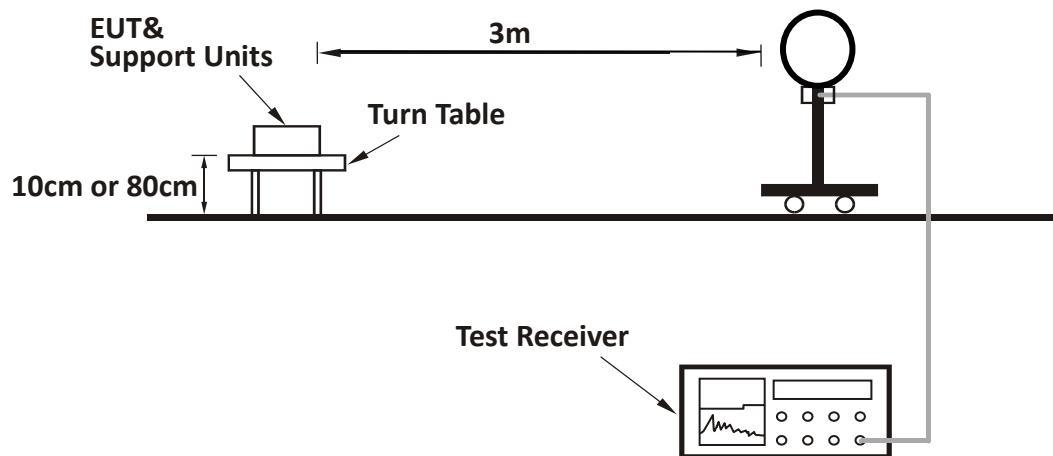
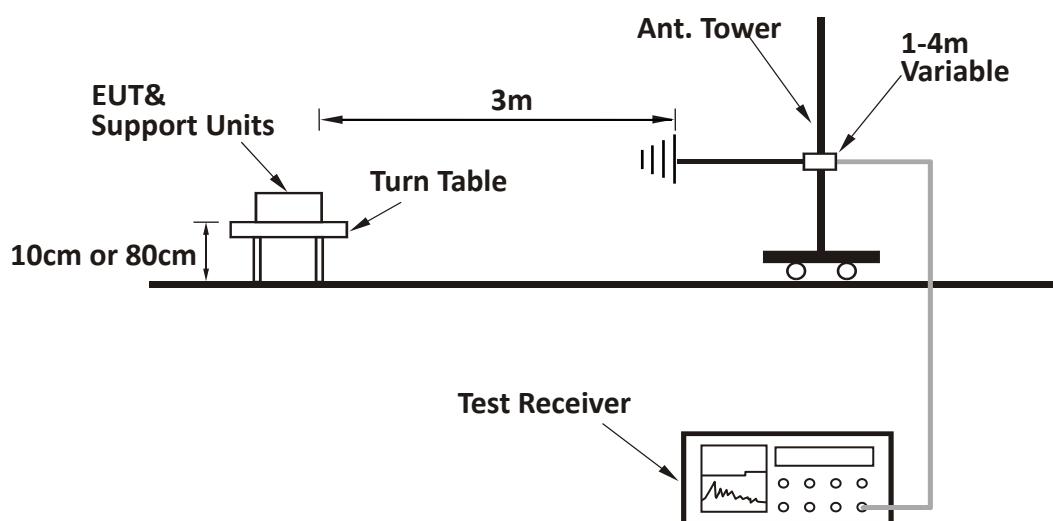
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

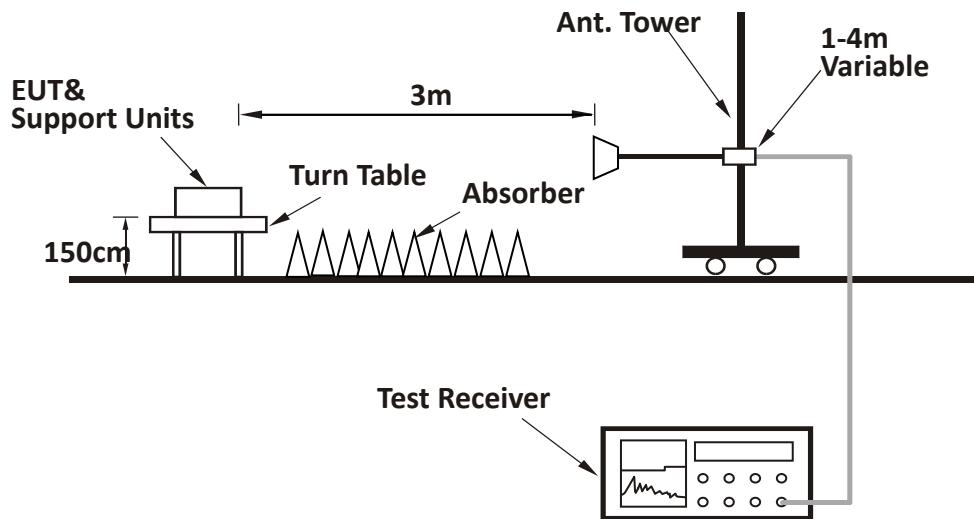
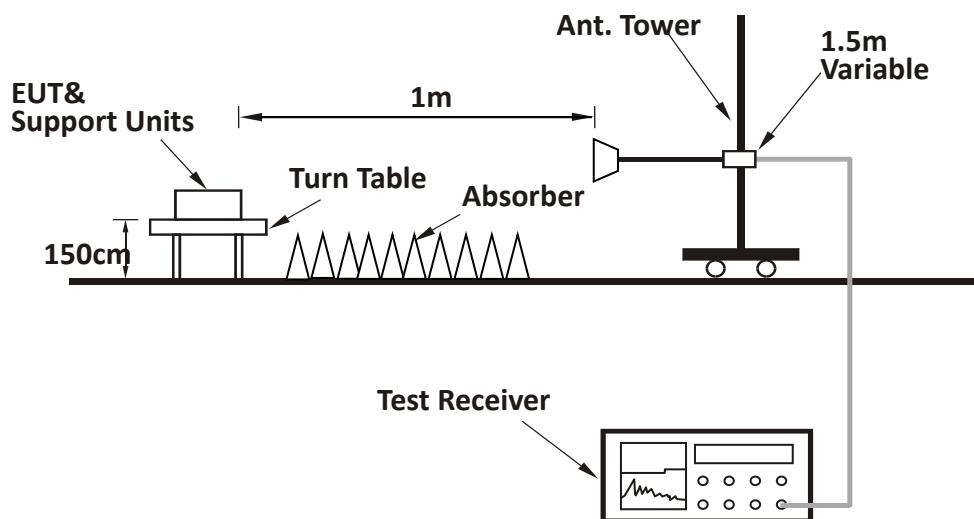
**For Radiated emission above 30MHz:**

- a) The EUT was placed on the top of a rotating table 0.1 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b) The EUT was set 3 or 1 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c) The height of antenna 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 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f) The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

**Note:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle  $< 98\%$ ) or  $3 \times RBW$  (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported

**TEST REPORT****3.3 Test Configuration****For Radiated emission below 30MHz:****For Radiated emission 30MHz to 1GHz:**

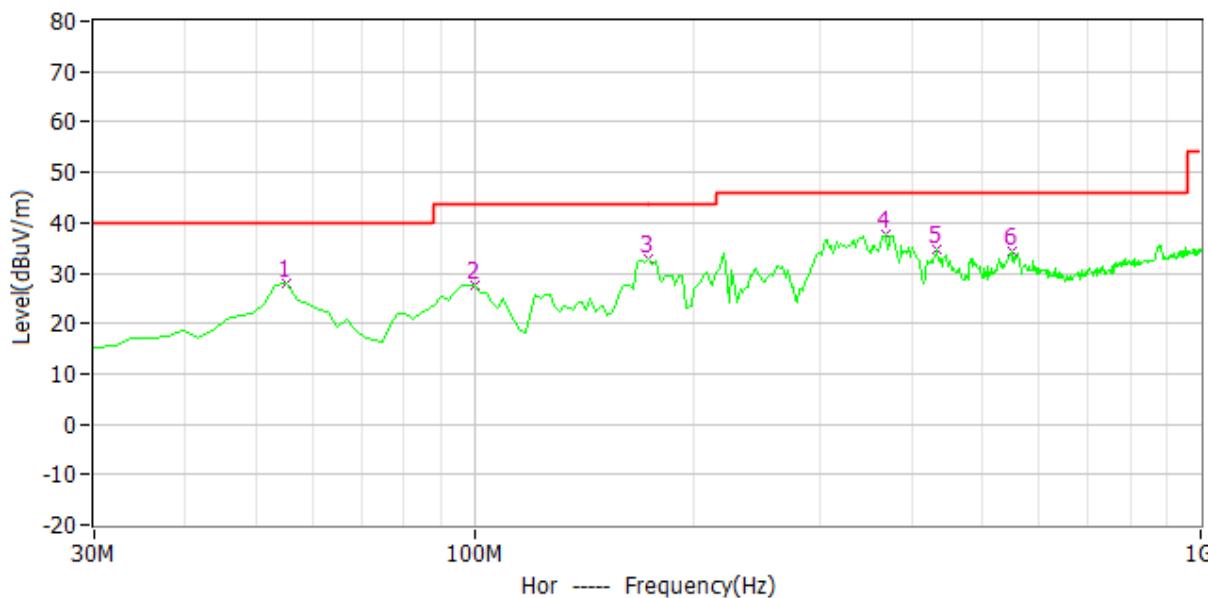
**TEST REPORT****For Radiated emission 1GHz to 40GHz:****For Radiated emission above 40GHz:**

**TEST REPORT****3.4 Test Results of Radiated Emissions**

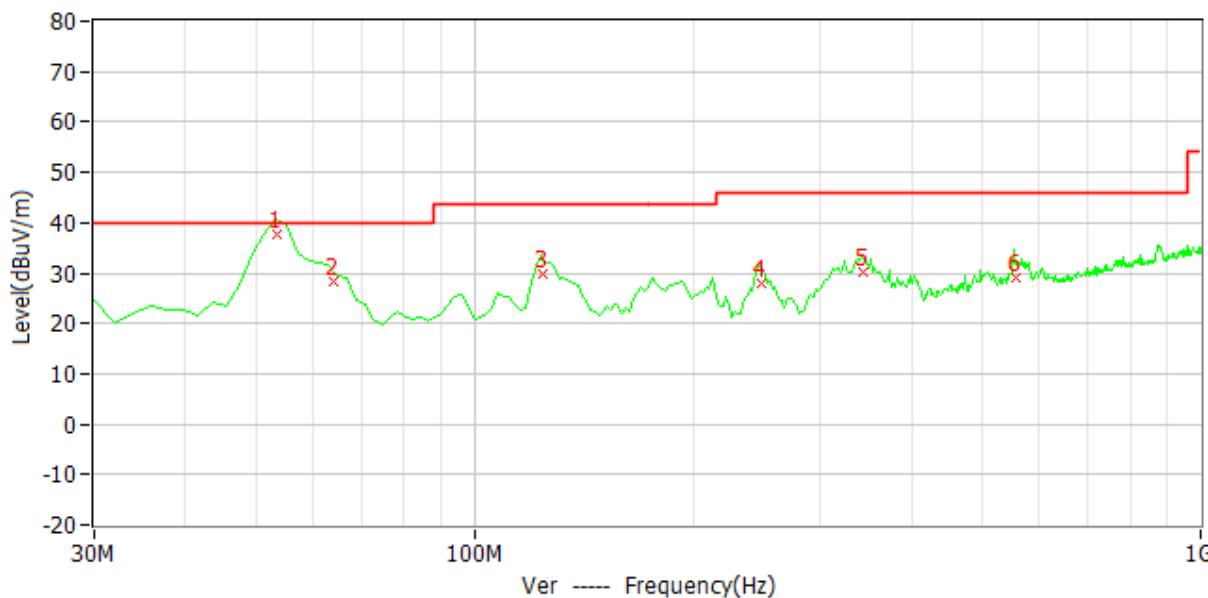
The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

The worst waveform from 30MHz to 1000MHz is listed as below:

Horizontal



Vertical

**Test data below 1GHz**

**TEST REPORT**

| Antenna | Frequency (MHz) | Corrected Reading (dBuV/m) | Correct Factor (dB/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---------|-----------------|----------------------------|-----------------------|----------------|-------------|----------|
| H       | 55.271          | 28.0                       | 14.2                  | 40.0           | 12.0        | QP       |
| H       | 99.980          | 27.7                       | 10.0                  | 43.5           | 15.8        | QP       |
| H       | 173.848         | 32.7                       | 13.8                  | 43.5           | 10.8        | QP       |
| H       | 368.237         | 37.6                       | 17.1                  | 46.0           | 8.4         | QP       |
| H       | 434.329         | 34.6                       | 18.8                  | 46.0           | 11.4        | QP       |
| H       | 549.018         | 34.4                       | 21.6                  | 46.0           | 11.6        | QP       |
| V       | 53.666          | 37.6                       | 14.3                  | 40.0           | 2.4         | QP       |
| V       | 64.250          | 28.2                       | 13.3                  | 40.0           | 11.8        | QP       |
| V       | 124.565         | 29.9                       | 12.7                  | 43.5           | 13.6        | QP       |
| V       | 248.206         | 28.1                       | 13.5                  | 46.0           | 17.9        | QP       |
| V       | 342.308         | 30.2                       | 16.4                  | 46.0           | 15.8        | QP       |
| V       | 555.255         | 28.9                       | 21.7                  | 46.0           | 17.1        | QP       |

**Test result above 1GHz:**

| Antenna | Frequency Band (GHz) | Corrected Reading (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---------|----------------------|----------------------------|----------------|-------------|----------|
| H       | 24.00 ~ 24.25        | 94.24                      | 128.00         | 33.76       | PK       |
| H       |                      | 87.98                      | 108.00         | 20.02       | AV       |
| V       |                      | 86.61                      | 128.00         | 41.39       | PK       |
| V       |                      | 79.62                      | 108.00         | 28.38       | AV       |

| Antenna | Frequency (MHz) | Corrected Reading (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---------|-----------------|----------------------------|----------------|-------------|----------|
| H       | 23363           | 59.55                      | 74.00          | 14.45       | PK       |
| H       | 24000           | 56.68                      | 74.00          | 17.32       | PK       |
| H       | 24250           | 55.38                      | 74.00          | 18.62       | PK       |
| H       | 24316           | 60.89                      | 74.00          | 13.11       | PK       |
| V       | 23350           | 60.53                      | 74.00          | 13.47       | PK       |
| V       | 24000           | 55.77                      | 74.00          | 18.23       | PK       |
| V       | 24250           | 56.25                      | 74.00          | 17.75       | PK       |
| V       | 24452           | 59.99                      | 74.00          | 14.01       | PK       |

The emission was conducted from 1GHz to 40GHz

**TEST REPORT**

| Antenna | Frequency (MHz) | Corrected Reading (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---------|-----------------|----------------------------|----------------|-------------|----------|
| H       | 2192            | 41.09                      | 74.00          | 32.91       | PK       |
| H       | 2192            | 18.85                      | 54.00          | 35.15       | AV       |
| H       | 18000           | 45.09                      | 74.00          | 28.91       | PK       |
| H       | 18000           | 31.95                      | 54.00          | 22.05       | AV       |
| H       | 18684           | 57.01                      | 74.00          | 16.99       | PK       |
| H       | 18684           | 46.24                      | 54.00          | 7.76        | AV       |
| H       | 31236           | 58.36                      | 74.00          | 15.64       | PK       |
| H       | 31236           | 47.85                      | 54.00          | 6.15        | AV       |
| V       | 2192            | 39.53                      | 74.00          | 34.47       | PK       |
| V       | 2192            | 18.19                      | 54.00          | 35.81       | AV       |
| V       | 18000           | 43.12                      | 74.00          | 30.88       | PK       |
| V       | 18000           | 31.26                      | 54.00          | 22.74       | AV       |
| V       | 20541           | 57.23                      | 74.00          | 16.77       | PK       |
| V       | 20541           | 46.01                      | 54.00          | 7.99        | AV       |
| V       | 31266           | 58.99                      | 74.00          | 15.01       | PK       |
| V       | 31266           | 47.22                      | 54.00          | 6.78        | AV       |

Remark: 1. Correct Factor = Antenna Factor + Cable Loss (- Amplifier, for higher than 1GHz), the value was added to Original Receiver Reading by the software automatically.  
 2. Corrected Reading = Original Receiver Reading + Correct Factor  
 3. Margin = Limit - Corrected Reading  
 4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB,  
 Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV,  
 Limit = 40.00dBuV/m.  
 Then Correct Factor =  $30.20 + 2.00 - 32.00 = 0.20$ dB/m;  
 Corrected Reading =  $10\text{dBuV} + 0.20\text{dB/m} = 10.20\text{dBuV/m}$ ;  
 Margin =  $40.00\text{dBuV/m} - 10.20\text{dBuV/m} = 29.80\text{dB}$ .

The emission was conducted from 40GHz to 100GHz

| Antenna | Frequency (MHz) | Measured Level (dBm) | Antenna Gain (dBi) | Level@1m (dBuV/m) | Level@3m (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---------|-----------------|----------------------|--------------------|-------------------|-------------------|----------------|-------------|----------|
| H       | 40860           | -70.60               | 22.76              | 76.124            | 66.581            | 74.0           | 7.419       | PK       |
| H       | 40860           | -90.95               | 22.76              | 55.774            | 46.231            | 54.0           | 7.769       | AV       |
| H       | 68160           | -70.28               | 23.06              | 80.588            | 71.046            | 74.0           | 2.954       | PK       |
| H       | 68160           | -91.25               | 23.06              | 59.618            | 50.076            | 54.0           | 3.924       | AV       |
| H       | 93500           | -70.86               | 22.84              | 82.974            | 73.431            | 74.0           | 0.569       | PK       |
| H       | 93500           | -91.87               | 22.84              | 61.964            | 52.421            | 54.0           | 1.579       | AV       |
| V       | 41060           | -70.30               | 22.76              | 76.466            | 66.924            | 74.0           | 7.076       | PK       |

## TEST REPORT

|   |       |        |       |        |        |      |       |    |
|---|-------|--------|-------|--------|--------|------|-------|----|
| V | 41060 | -90.76 | 22.76 | 56.006 | 46.464 | 54.0 | 7.536 | AV |
| V | 68100 | -70.77 | 23.06 | 80.091 | 70.548 | 74.0 | 3.452 | PK |
| V | 68100 | -90.12 | 23.06 | 60.741 | 51.198 | 54.0 | 2.802 | AV |
| V | 93650 | -72.11 | 22.84 | 81.738 | 72.195 | 74.0 | 1.805 | PK |
| V | 93650 | -90.65 | 22.84 | 63.198 | 53.655 | 54.0 | 0.345 | AV |

Remark: 1. Correct Factor = Antenna Factor + Cable Loss + Mixer Conversion Loss, the value was added to Original Receiver Reading by the software automatically.

2. Level@1m =  $126.8 - 20\log(\lambda) + P - G$   
where (According to ANSI 63.10 section 9.4):

E is the field strength of the emission at the measurement distance, in dB $\mu$ V/m

P is the power measured at the output of the test antenna, in dBm

$\lambda$  is the wavelength of the emission under investigation [300/fMHz], in m

G is the gain of the test antenna, in dBi

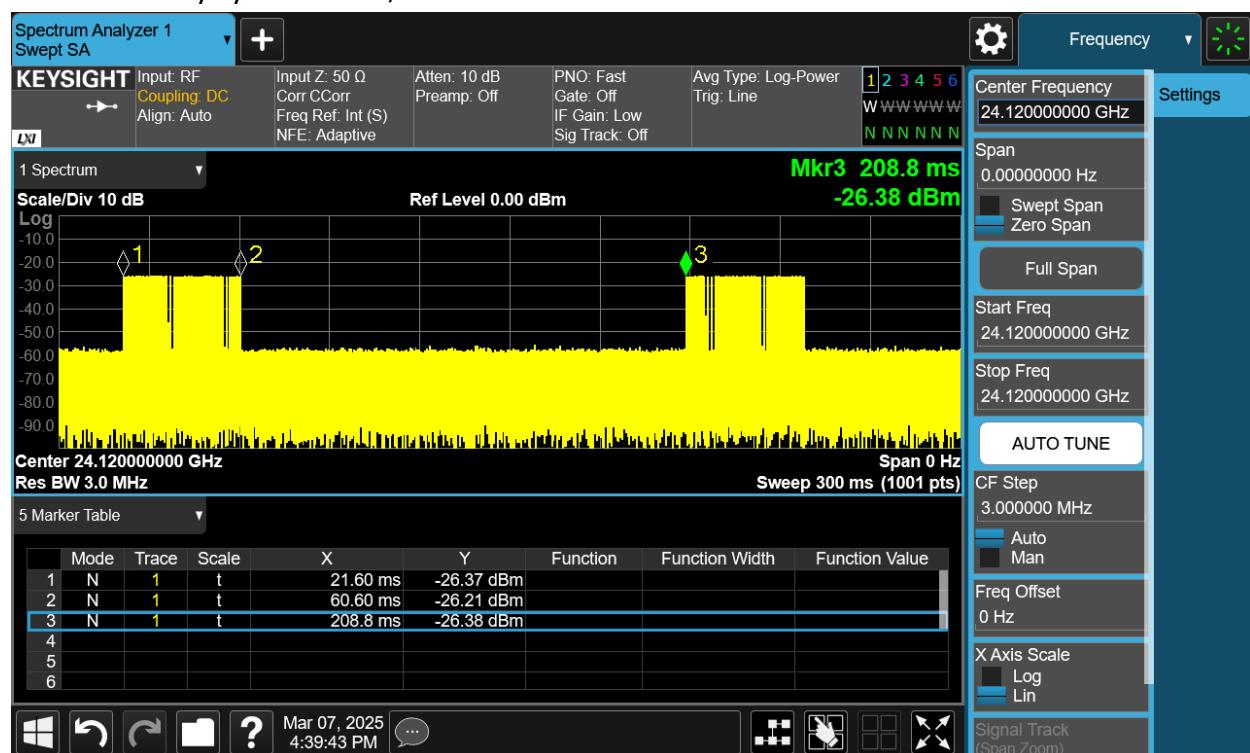
3. Margin = Limit - Level@1m

4. Level@3m= Level@1m +  $20\log(1m/3m)$ .

### 3.5 Duty Cycle:

The test data with maximum duty cycle was listed below.

The worst Duty cycle= 18.7%, Factor =7.28dB.

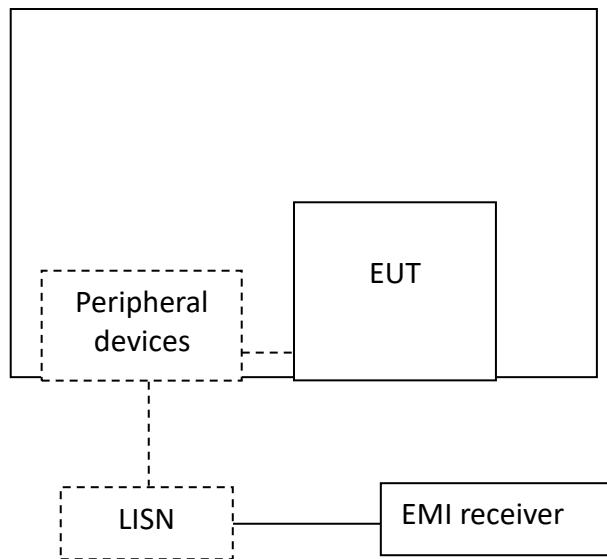


### 4 Power line conducted emission

**TEST REPORT****Test result:** Pass**4.1 Limit**

| Frequency of Emission (MHz) | Conducted Limit (dBuV) |            |
|-----------------------------|------------------------|------------|
|                             | QP                     | AV         |
| 0.15-0.5                    | 66 to 56*              | 56 to 46 * |
| 0.5-5                       | 56                     | 46         |
| 5-30                        | 60                     | 50         |

\* Decreases with the logarithm of the frequency.

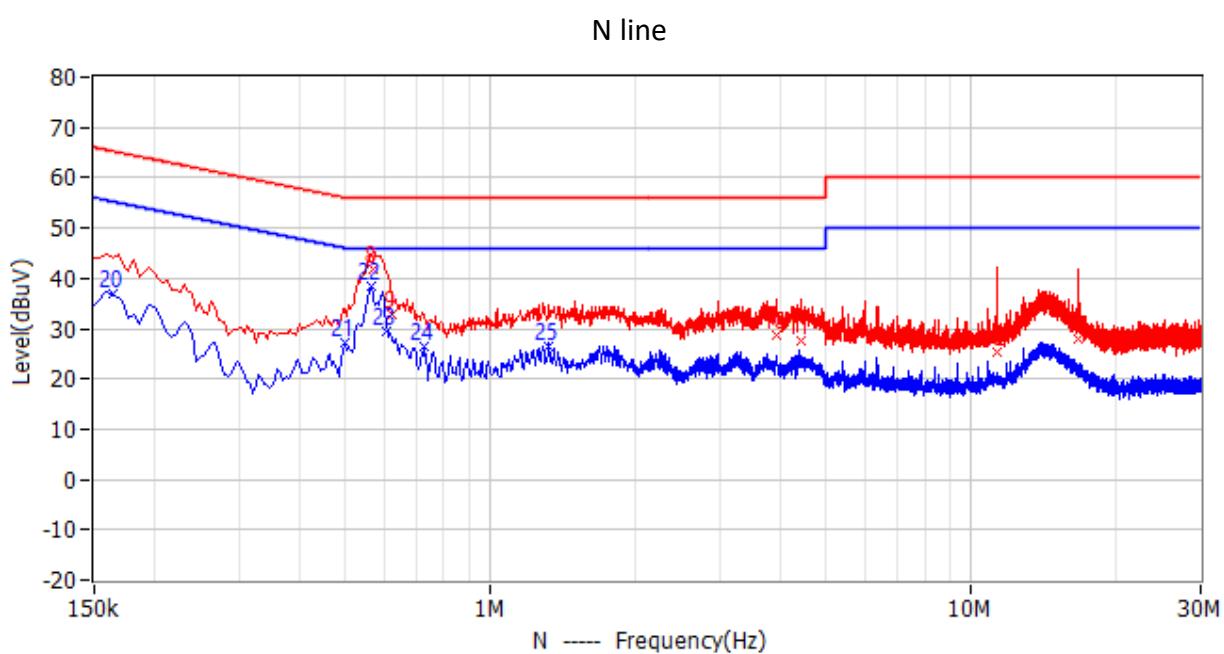
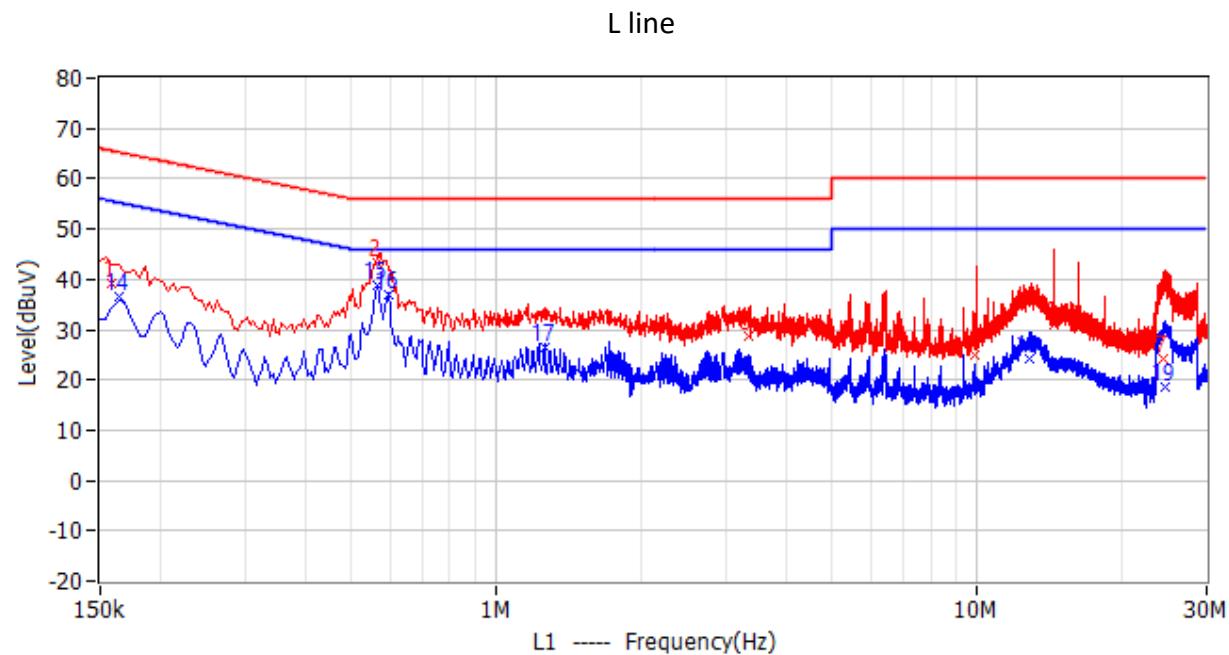
**4.2 Test Configuration**

**TEST REPORT****4.3 Measurement Procedure**

Measured levels of ac power-line conducted emission shall be the emission voltages from the voltage probe, where permitted, or across the 50 Ω LISN port (to which the EUT is connected), where permitted, terminated into a 50 Ω measuring instrument. All emission voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord by the use of mating plugs and receptacles on the LISN, if used. Equipment shall be tested with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended by the manufacturer. For those measurements using a LISN, the 50 Ω measuring port is terminated by a measuring instrument having 50 Ω input impedance. All other ports are terminated in 50 Ω loads.

Tabletop devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other surfaces of tabletop or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

The bandwidth of the test receiver is set at 9 kHz.

**TEST REPORT****4.4 Test Results of Power line conducted emission**

**TEST REPORT**
**Test Data:**

| No. | Frequency  | Limit<br>dBuV | Level<br>dBuV | Margin<br>dB | Reading<br>dBuV | Factor<br>dB | Detector | Phase |
|-----|------------|---------------|---------------|--------------|-----------------|--------------|----------|-------|
| 1   | 159.000kHz | 65.52         | 39.30         | 26.22        | 33.10           | 6.20         | QP       | L1    |
| 2   | 564.000kHz | 56.00         | 43.40         | 12.60        | 37.20           | 6.20         | QP       | L1    |
| 3   | 3.341MHz   | 56.00         | 28.68         | 27.32        | 22.38           | 6.30         | QP       | L1    |
| 4   | 9.884MHz   | 60.00         | 25.11         | 34.89        | 18.51           | 6.60         | QP       | L1    |
| 5   | 14.460MHz  | 60.00         | 30.91         | 29.09        | 24.01           | 6.90         | QP       | L1    |
| 6   | 16.296MHz  | 60.00         | 30.22         | 29.78        | 23.22           | 7.00         | QP       | L1    |
| 7   | 24.392MHz  | 60.00         | 24.03         | 35.97        | 16.53           | 7.50         | QP       | L1    |
| 8   | 573.000kHz | 56.00         | 41.88         | 14.12        | 35.68           | 6.20         | QP       | N     |
| 9   | 627.000kHz | 56.00         | 32.80         | 23.20        | 26.60           | 6.20         | QP       | N     |
| 10  | 3.953MHz   | 56.00         | 28.86         | 27.14        | 22.56           | 6.30         | QP       | N     |
| 11  | 4.443MHz   | 56.00         | 27.62         | 28.38        | 21.32           | 6.30         | QP       | N     |
| 12  | 11.283MHz  | 60.00         | 25.47         | 34.53        | 18.77           | 6.70         | QP       | N     |
| 13  | 16.652MHz  | 60.00         | 27.92         | 32.08        | 20.92           | 7.00         | QP       | N     |
| 14  | 163.500kHz | 55.28         | 36.63         | 18.65        | 30.43           | 6.20         | CAV      | L1    |
| 15  | 564.000kHz | 46.00         | 38.84         | 7.16         | 32.64           | 6.20         | CAV      | L1    |
| 16  | 595.500kHz | 46.00         | 36.81         | 9.19         | 30.61           | 6.20         | CAV      | L1    |
| 17  | 1.257MHz   | 46.00         | 26.55         | 19.45        | 20.35           | 6.20         | CAV      | L1    |
| 18  | 12.840MHz  | 50.00         | 24.03         | 25.97        | 17.23           | 6.80         | CAV      | L1    |
| 19  | 24.590MHz  | 50.00         | 18.49         | 31.51        | 10.99           | 7.50         | CAV      | L1    |
| 20  | 163.500kHz | 55.28         | 37.00         | 18.28        | 30.90           | 6.10         | CAV      | N     |
| 21  | 496.500kHz | 46.06         | 27.03         | 19.03        | 20.83           | 6.20         | CAV      | N     |
| 22  | 564.000kHz | 46.00         | 38.31         | 7.69         | 32.11           | 6.20         | CAV      | N     |
| 23  | 609.000kHz | 46.00         | 29.54         | 16.46        | 23.34           | 6.20         | CAV      | N     |
| 24  | 730.500kHz | 46.00         | 26.39         | 19.61        | 20.19           | 6.20         | CAV      | N     |
| 25  | 1.325MHz   | 46.00         | 26.58         | 19.42        | 20.38           | 6.20         | CAV      | N     |

*Remark:*

1. Factor = LISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.
2. Level = Reading + Factor
3. Margin = Limit - Level
4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

**TEST REPORT**

## 5 20 dB Bandwidth & 99% Occupied Bandwidth

**Test result:** Pass

### 5.1 Limit

Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emission is contained within the allocated frequency band.

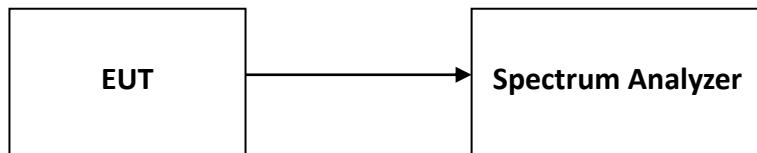
### 5.2 Measurement Procedure

The 20dB Bandwidth is measured using the Spectrum Analyzer.

Set Span = 2 to 3 times the 20 dB bandwidth, RBW = approximately 1% of the 20 dB bandwidth, VBW>RBW, Sweep = auto, Detector = peak, Trace = max hold.

The test was performed at 2 channels (lowest and highest channel).

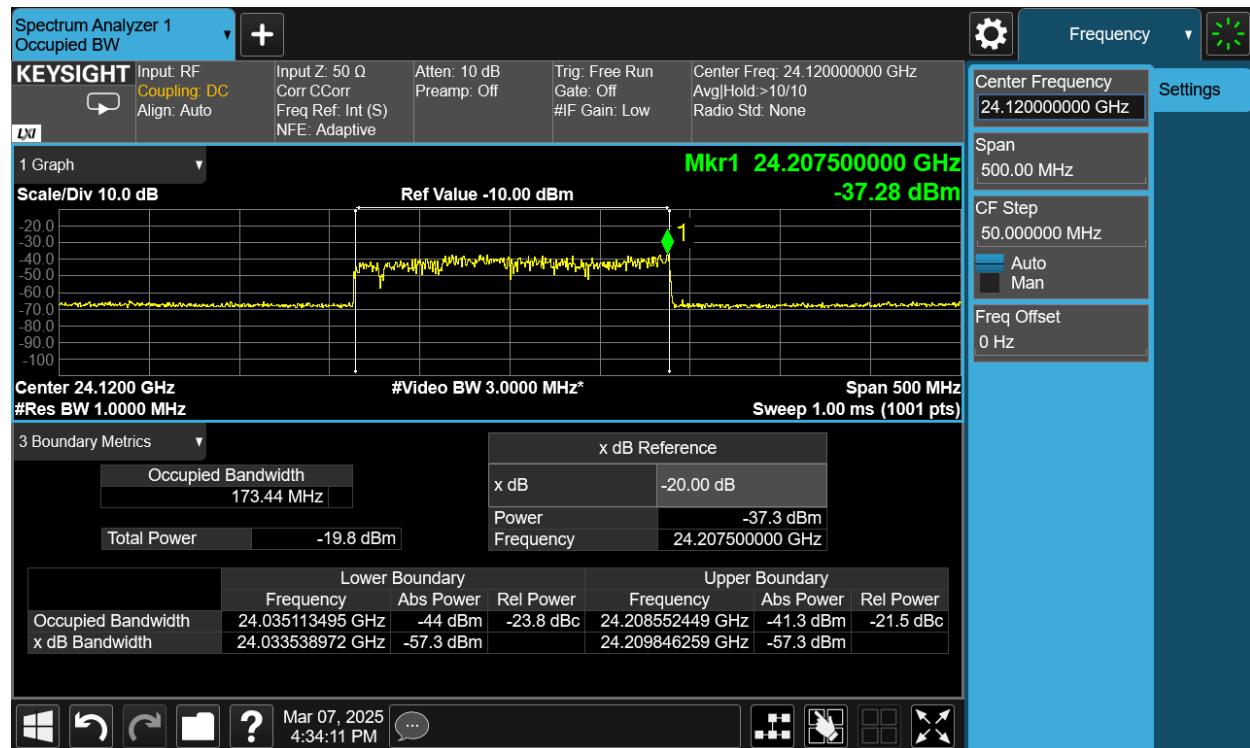
### 5.3 Test Configuration



## TEST REPORT

## 5.4 The results

| Frequency band (MHz) | F <sub>L</sub> at 20dB BW (MHz) | F <sub>H</sub> at 20dB BW (MHz) | F <sub>L</sub> at 99% BW (MHz) | F <sub>H</sub> at 20dB BW (MHz) | 20dB BW (MHz) | 99% BW (MHz) |
|----------------------|---------------------------------|---------------------------------|--------------------------------|---------------------------------|---------------|--------------|
| 24000 ~ 24250        | 24033.54                        | 24209.84                        | 24035.11                       | 24208.55                        | 176.30        | 173.44       |
| Limit                | F <sub>L</sub> >24000           | F <sub>H</sub> <24250           | F <sub>L</sub> >24000          | F <sub>H</sub> <24250           | /             | /            |
| Result               | Complied                        |                                 |                                |                                 |               |              |



**TEST REPORT**

## 6 Antenna requirement

**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 shall be considered sufficient to comply with the provisions of this section.

**Result:**

EUT uses permanently attached antenna to the intentional radiator, so it can comply with the provisions of this section.

\*\*\*\*\* END \*\*\*\*\*