

# TEST REPORT

Applicant : Shenzhen Xingmi Intelligent Products Co., LTD

Address : 5F, Building C, Xiangxing Industrial Park, Shiyan Street, Baoan District, Shenzhen, Guangdong Province, China

Manufacturer : Shenzhen Xingmi Intelligent Products Co., LTD

Address : 5F, Building C, Xiangxing Industrial Park, Shiyan Street, Baoan District, Shenzhen, Guangdong Province, China

Product Name : Video Intercom

Model Number : XM-301

Trademark : N/A

FCC ID : 2BGTL-XM-301

Test Date : Nov. 29, 2025 to Feb. 12, 2026

Date of Report : Feb. 12, 2026

Test Result : This device described above has been tested by BKC, and the test results show that the equipment under test (EUT) is in compliance with the Standard requirements. And it is applicable only to the tested sample identified in the report.

Test Procedure Used:

Standards : FCC CFR Title 47 Part 15 Subpart C Section 15.247  
ANSI C63.10:2020

Prepared by(Test Engineer):  
Carey Zheng



Reviewer(Supervisor):  
Casey Wang



Approved(Manager):  
Jerry Liao



## TABLE OF CONTENT

|                                                                 |           |
|-----------------------------------------------------------------|-----------|
| <b>1. General Information .....</b>                             | <b>5</b>  |
| 1.1. Description of Device (EUT) .....                          | 5         |
| 1.2. Channel List .....                                         | 5         |
| 1.3. Summary of test result .....                               | 5         |
| 1.4. Special Accessories and Auxiliary Equipment .....          | 6         |
| 1.5. Test mode .....                                            | 6         |
| 1.6. Block Diagram .....                                        | 6         |
| 1.7. Test Conditions .....                                      | 6         |
| 1.8. Measurement Uncertainty (95% confidence levels, k=2) ..... | 7         |
| 1.9. Test Facility .....                                        | 7         |
| 1.10. Test Equipment .....                                      | 7         |
| <b>2. Conducted emission at the mains terminals test .....</b>  | <b>9</b>  |
| 2.1. Limit .....                                                | 9         |
| 2.2. Test Setup .....                                           | 9         |
| 2.3. Test Procedure .....                                       | 9         |
| 2.4. Test Result .....                                          | 10        |
| <b>3. Radiated Spurious Emissions .....</b>                     | <b>12</b> |
| 3.1. Limit .....                                                | 12        |
| 3.2. Test Setup .....                                           | 13        |
| 3.3. Test Procedure .....                                       | 15        |
| 3.4. Test Result .....                                          | 16        |
| <b>4. Duty cycle .....</b>                                      | <b>24</b> |
| 4.1. Limit .....                                                | 24        |
| 4.2. Test Setup .....                                           | 24        |
| 4.3. Test Procedure .....                                       | 24        |
| 4.4. Test Result .....                                          | 24        |
| <b>5. Conducted Spurious Emissions .....</b>                    | <b>25</b> |
| 5.1. Limit .....                                                | 25        |
| 5.2. Test Setup .....                                           | 25        |
| 5.3. Test Procedure .....                                       | 25        |
| 5.4. Test Result .....                                          | 25        |
| <b>6. Band Edge Measurement .....</b>                           | <b>26</b> |
| 6.1. Limit .....                                                | 26        |
| 6.2. Test setup .....                                           | 26        |
| 6.3. Test Procedure .....                                       | 26        |
| 6.4. Test Result .....                                          | 26        |
| <b>7. -6 dB Bandwidth and 99% Bandwidth Measurement .....</b>   | <b>27</b> |
| 7.1. Limit .....                                                | 27        |
| 7.2. Test Setup .....                                           | 27        |
| 7.3. Test Procedure .....                                       | 27        |
| 7.4. Test Result .....                                          | 27        |
| <b>8. Maximum Output Power .....</b>                            | <b>28</b> |
| 8.1. Limit .....                                                | 28        |
| 8.2. Test Setup .....                                           | 28        |
| 8.3. Test Procedure .....                                       | 28        |
| 8.4. Test Result .....                                          | 28        |
| <b>9. Power Spectral density .....</b>                          | <b>29</b> |
| 9.1. Limit .....                                                | 29        |
| 9.2. Test Setup .....                                           | 29        |
| 9.3. Test Procedure .....                                       | 29        |

|                                                  |           |
|--------------------------------------------------|-----------|
| 9.4. Test Result .....                           | 29        |
| <b>10. Antenna Requirement .....</b>             | <b>30</b> |
| <b>11. TEST SETUP &amp; EUT PHOTOGRAPH .....</b> | <b>31</b> |





## 1. General Information

### 1.1. Description of Device (EUT)

EUT Name : Video Intercom

Model No. : XM-301

Model Difference : /

Power supply : DC 3.7V from battery; Charging input: DC 5V

Operation frequency : 2412-2462MHz for 802.11b/g/n20;  
2422-2452MHz for 802.11n40

Max. RF output power: : 8.50 dBm

Modulation : DSSS with DBPSK/DQPSK/CCK for 802.11b;  
OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;

Antenna Type : WiFi antenna, Maximum Gain is 3.92 dBi

Intend use environment : Residential, commercial and light industrial environment

### 1.2. Channel List

| Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) |
|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| 1           | 2412            | 2           | 2417            | 3           | 2422            | 4           | 2427            |
| 5           | 2432            | 6           | 2437            | 7           | 2442            | 8           | 2447            |
| 9           | 2452            | 10          | 2457            | 11          | 2462            | 12          | 2467            |
| 13          | 2472            |             |                 |             |                 |             |                 |

### 1.3. Summary of test result

| RF PART                                                                                                                             |                            |        |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------|
| Test Items                                                                                                                          | Test Requirement           | Result |
| Antenna requirement                                                                                                                 | FCC part 15.203/15.247 (c) | PASS   |
| Duty cycle                                                                                                                          | ANSI C63.10-2020           | PASS   |
| AC Power Line Conducted Emission                                                                                                    | FCC part 15.207            | PASS   |
| Conducted Peak Output Power                                                                                                         | FCC part 15.247 (b)(3)     | PASS   |
| Channel Bandwidth& 99% OCB                                                                                                          | FCC part 15.247 (a)(2)     | PASS   |
| Power Spectral Density                                                                                                              | FCC part 15.247 (e)        | PASS   |
| Band Edge                                                                                                                           | FCC part 15.247(d)         | PASS   |
| Spurious Emission                                                                                                                   | FCC part 15.205/15.209     | PASS   |
| Remark:<br>N/A is an abbreviation for Not Applicable.<br>Measurement Uncertainty is not taken into account for conformity statement |                            |        |

## 1.4.Special Accessories and Auxiliary Equipment

| Description | Manufacturer | Model No. | Hardware Version | Software Version |
|-------------|--------------|-----------|------------------|------------------|
| Adapter     | XIAOMI       | MDY-12-EF | /                | /                |

## 1.5.Test mode

The special RF test software was used to control EUT work in Continuous WIFI TX mode, and select test channel, wireless mode.

| Test mode | Low channel | Middle channel | High channel |
|-----------|-------------|----------------|--------------|
| 802.11b   | 2412MHz     | 2437MHz        | 2462MHz      |
| 802.11g   | 2412MHz     | 2437MHz        | 2462MHz      |
| 802.11n20 | 2412MHz     | 2437MHz        | 2462MHz      |
| 802.11n40 | 2422MHz     | 2437MHz        | 2452MHz      |

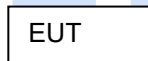
Note: Only the worst Data 1Mbps/6Mbps/6.5Mbps Record in the report

## 1.6.Block Diagram

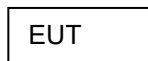
Conducted Emission



Radiated Emission



Conducted Spurious



## 1.7.Test Conditions

| Category          | Normal Conditions                           | Extreme Conditions |
|-------------------|---------------------------------------------|--------------------|
| Temperature range | 15-35°C                                     | N/A                |
| Humidity range    | 20-75%                                      | N/A                |
| Pressure range    | 86-106kPa                                   | N/A                |
| Power supply      | DC 3.7V from battery; Charging input: DC 5V | N/A                |

Note: N/A is an abbreviation for Not Applicable.

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

| Item                                                                                            | MU                                                               | Remark |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------|
| Uncertainty for radio frequency                                                                 | $\pm 7 \times 10^{-8}$                                           |        |
| Conducted Emissions (150kHz~30MHz)                                                              | $\pm 2.54\text{dB}$                                              |        |
| Radiated Emission(9KHz~30MHz)                                                                   | $\pm 1.6\text{ dB}$                                              |        |
| Radiated Emission(30MHz~1GHz)                                                                   | Vertical: $\pm 4.14\text{dB}$<br>Horizontal: $\pm 4.25\text{dB}$ |        |
| Radiated Emission(1GHz~6GHz)                                                                    | $\pm 3.9\text{dB}$                                               |        |
| Radiated Emission(6GHz~18GHz)                                                                   | $\pm 4.3\text{dB}$                                               |        |
| Radiated Emission(18GHz~40GHz)                                                                  | $\pm 3.38\text{dB}$                                              |        |
| Uncertainty for conducted RF Power                                                              | $\pm 0.20\text{dB}$                                              |        |
| Conducted spurious emissions                                                                    | $\pm 0.24\text{dB}$                                              |        |
| Uncertainty for temperature                                                                     | $0.6^{\circ}\text{C}$                                            |        |
| Uncertainty for humidity                                                                        | 1%                                                               |        |
| Bandwidth                                                                                       | $\pm 1.5 \times 10^{-6}$                                         |        |
| Time                                                                                            | $\pm 2\%$                                                        |        |
| Duty Cycle                                                                                      | $\pm 2\%$                                                        |        |
| Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95% |                                                                  |        |

### 1.9.Test Facility

| Site Description                  |                                                                                                                          |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Name of Firm                      | : Shenzhen BKC Testing Co., Ltd.                                                                                         |
| Site Location                     | : Room 103, 1/F, Huaya Building, Huaya Industrial Park, Longhua Community, Longhua District, Shenzhen, Guangdong, China. |
| ISED CAB identifier               | : CN0188                                                                                                                 |
| ISED Company Number               | : 34333                                                                                                                  |
| FCC Designation Number            | : CN1416                                                                                                                 |
| FCC Test Firm Registration Number | : 701543                                                                                                                 |

### 1.10.Test Equipment

#### Conducted Test Site

| Item | Kind of Equipment               | Manufacturer | Type No.  | Serial No. | Last calibration | Calibrated until |
|------|---------------------------------|--------------|-----------|------------|------------------|------------------|
| 1    | LISN                            | R&S          | ENV216    | 102762     | Mar. 10. 2025    | Mar. 09. 2026    |
| 2    | EMI Test Receiver               | R&S          | ESCI      | 101424     | Mar. 10. 2025    | Mar. 09. 2026    |
| 3    | Rf cables                       | HTEC         | HCE 2M-CE | N/A        | Mar. 10. 2025    | Mar. 09. 2026    |
| 4    | Coupling/<br>Decoupling Network | Diamond      | CX210     | N/A        | Mar. 10. 2025    | Mar. 09. 2026    |
| 5    | CE Testing software             | EZ           | EZ-EMC    | /          | /                | /                |

### Radiated Test Site(Below 1G and Above 1G)

| Item | Kind of Equipment                    | Manufacturer | Type No.   | Serial No. | Last calibration | Calibrated until |
|------|--------------------------------------|--------------|------------|------------|------------------|------------------|
| 1    | Antenna                              | Schwarzbeck  | VULB 9168  | 01321      | Mar. 20. 2025    | Mar. 19. 2028    |
| 2    | EMI Test Receiver                    | R&S          | ESRP       | 101478     | Mar. 10. 2025    | Mar. 09. 2026    |
| 3    | Preamplifier                         | HP           | 8447D      | 2727A05345 | Mar. 10. 2025    | Mar. 09. 2026    |
| 4    | Double Ridged Broadband              | SCHWARZBECK  | BBHA 9120D | 02621      | Mar. 10. 2025    | Mar. 19. 2028    |
| 5    | Preamplifier                         | Schwarzbeck  | BBV 9718D  | 00041      | Mar. 10. 2025    | Mar. 09. 2026    |
| 6    | Rf cables                            | HUBER+SUHNER | 8M-RE      | N/A        | Mar. 10. 2025    | Mar. 09. 2026    |
| 7    | Rf cables                            | HUBER+SUHNER | 1.5M-RE    | N/A        | Mar. 10. 2025    | Mar. 09. 2026    |
| 8    | Rf cables                            | HUBER+SUHNER | 1.5M-AP-RE | N/A        | Mar. 10. 2025    | Mar. 09. 2026    |
| 9    | Loop antenna                         | TESEQ        | HLA6121    | 58357      | Mar. 09. 2025    | Mar. 10. 2026    |
| 10   | Spectrum analyzer                    | R&S          | FSP40      | 200061     | Feb. 13. 2025    | Feb. 12. 2026    |
| 11   | Double Ridged Broadband Horn Antenna | COM-POWER    | AH-1840    | 10100009   | Mar. 10. 2025    | Mar. 09. 2026    |
| 12   | Spectrum                             | Agilent      | N9020A     | MY50510311 | Mar. 09. 2025    | Mar. 10. 2026    |
| 13   | Band Stop Filter                     | Bafang       | BSF5G      | 2024052610 | Mar. 09. 2025    | Mar. 10.2026     |
| 14   | RE Testing software                  | EZ           | EZ-EMC     | /          |                  | /                |

### RF Test Site

| Item | Kind of Equipment   | Manufacturer    | Type No.   | Serial No.    | Last calibration | Calibrated until |
|------|---------------------|-----------------|------------|---------------|------------------|------------------|
| 1    | Spectrum            | Agilent         | N9020A     | MY50510311    | Mar. 09. 2025    | Mar. 10. 2026    |
| 2    | Vector source       | Agilent         | N5182A     | MY47420223    | Mar. 09. 2025    | Mar. 10. 2026    |
| 3    | All instrument      | Rohde & Schwarz | CMW 500    | 101131        | Mar. 09. 2025    | Mar. 10. 2026    |
| 4    | control unit        | MW              | MW100-RFCB | MW200411BK-34 | Mar. 09. 2025    | Mar. 10. 2026    |
| 5    | RF Testing software | MW              | MTS 8310   | /             | Mar. 09. 2025    | /                |
| 6    | Spectrum analyzer   | R&S             | FSP40      | 200061        | Feb. 13. 2025    | Feb. 12. 2026    |
| 7    | Power Meter         | Anritsu         | MAX540     | ML2495A       | Mar. 09. 2025    | Mar. 10.2026     |

### Test software

|                  |                     |
|------------------|---------------------|
| Software name    | RF Testing software |
| Software version | 2.0.0.0             |
| Software name    | RE Testing software |
| Software version | EMEC-03A2 RE+       |
| Software name    | CE Testing software |
| Software version | EMEC-3A1+           |

## 2. Conducted emission at the mains terminals test

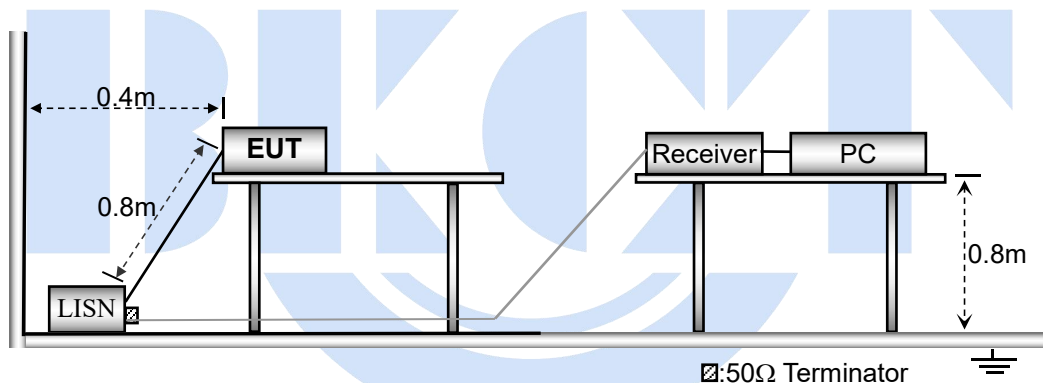
### 2.1.Limit

|                       |                                      |
|-----------------------|--------------------------------------|
| Test Requirement:     | FCC Part15 C Section 15.207          |
| Test Method:          | ANSI C63.10:2020                     |
| Test Frequency Range: | 150KHz to 30MHz                      |
| Receiver setup:       | RBW=9KHz, VBW=30KHz, Sweep time=auto |

| Frequency<br>MHz | Limits dB( $\mu$ V) |               |
|------------------|---------------------|---------------|
|                  | Quasi-peak Level    | Average Level |
| 0.15 ~ 0.50      | 66 ~ 56*            | 56 ~ 46*      |
| 0.50 ~ 5.00      | 56                  | 46            |
| 5.00 ~ 30.00     | 60                  | 50            |

Notes: 1. \*Decreasing linearly with logarithm of frequency.  
2. The lower limit shall apply at the transition frequencies.

### 2.2.Test Setup

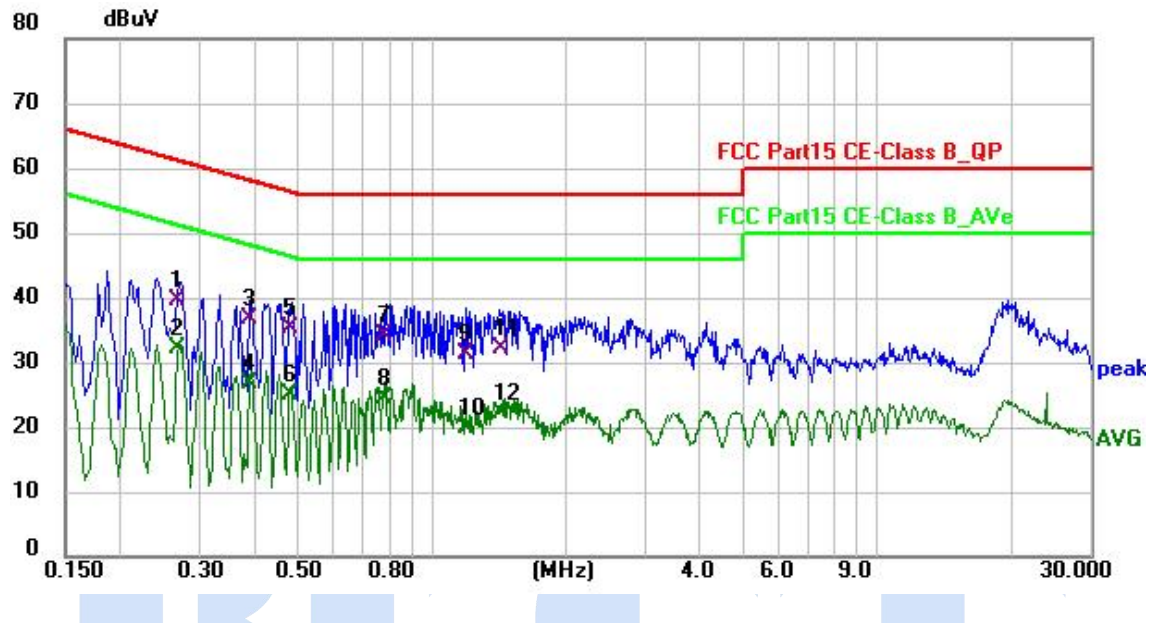


### 2.3.Test Procedure

1. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
2. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
3. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
4. LISN at least 80 cm from nearest part of EUT chassis.
5. For the actual test configuration, please refer to the related Item - EUT Test Photos.

## 2.4. Test Result

| Conducted Emission At The Mains Terminals Test Data |                                       |                    |            |
|-----------------------------------------------------|---------------------------------------|--------------------|------------|
| Temperature:                                        | 25.1°C                                | Relative Humidity: | 56%        |
| Pressure:                                           | 1008hPa                               | Phase :            | Line       |
| Test Voltage :                                      | DC 5V From Adapter Input AC 120V/60Hz | Test Mode:         | GFSK(CH00) |

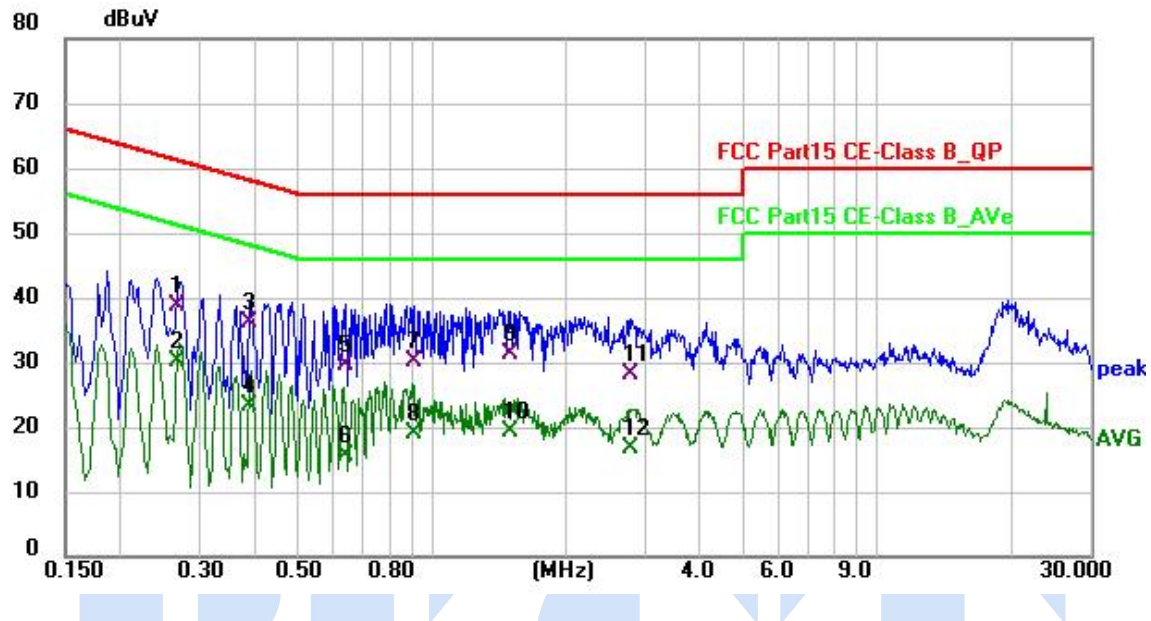


| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|
| 1   | 0.2686          | 19.93          | 19.50       | 39.43        | 61.16        | -21.73      | QP       |
| 2 * | 0.2686          | 12.54          | 19.50       | 32.04        | 51.16        | -19.12      | AVG      |
| 3   | 0.3876          | 17.34          | 19.37       | 36.71        | 58.11        | -21.40      | QP       |
| 4   | 0.3876          | 7.35           | 19.37       | 26.72        | 48.11        | -21.39      | AVG      |
| 5   | 0.4828          | 15.97          | 19.45       | 35.42        | 56.29        | -20.87      | QP       |
| 6   | 0.4828          | 5.55           | 19.45       | 25.00        | 46.29        | -21.29      | AVG      |
| 7   | 0.7861          | 14.39          | 19.63       | 34.02        | 56.00        | -21.98      | QP       |
| 8   | 0.7861          | 4.88           | 19.63       | 24.51        | 46.00        | -21.49      | AVG      |
| 9   | 1.1944          | 11.74          | 19.45       | 31.19        | 56.00        | -24.81      | QP       |
| 10  | 1.1944          | 0.35           | 19.45       | 19.80        | 46.00        | -26.20      | AVG      |
| 11  | 1.4291          | 12.58          | 19.44       | 32.02        | 56.00        | -23.98      | QP       |
| 12  | 1.4291          | 2.76           | 19.44       | 22.20        | 46.00        | -23.80      | AVG      |

Note:

1. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
2. Margin = Reading level + Correct Factor - Limit
3. All the modes have tested and recorded the worst mode(GFSK) in the report

| Conducted Emission At The Mains Terminals Test Data |                                       |                    |            |
|-----------------------------------------------------|---------------------------------------|--------------------|------------|
| Temperature:                                        | 25.1°C                                | Relative Humidity: | 56%        |
| Pressure:                                           | 1008hPa                               | Phase :            | Neutral    |
| Test Voltage :                                      | DC 5V From Adapter Input AC 120V/60Hz | Test Mode:         | GFSK(CH00) |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|
| 1   | 0.2670          | 19.31          | 19.51       | 38.82        | 61.21        | -22.39      | QP       |
| 2 * | 0.2670          | 10.57          | 19.51       | 30.08        | 51.21        | -21.13      | AVG      |
| 3   | 0.3871          | 16.78          | 19.48       | 36.26        | 58.13        | -21.87      | QP       |
| 4   | 0.3871          | 3.67           | 19.48       | 23.15        | 48.13        | -24.98      | AVG      |
| 5   | 0.6382          | 9.97           | 19.48       | 29.45        | 56.00        | -26.55      | QP       |
| 6   | 0.6382          | -3.80          | 19.48       | 15.68        | 46.00        | -30.32      | AVG      |
| 7   | 0.9136          | 10.52          | 19.54       | 30.06        | 56.00        | -25.94      | QP       |
| 8   | 0.9136          | -0.51          | 19.54       | 19.03        | 46.00        | -26.97      | AVG      |
| 9   | 1.5101          | 11.68          | 19.55       | 31.23        | 56.00        | -24.77      | QP       |
| 10  | 1.5101          | -0.28          | 19.55       | 19.27        | 46.00        | -26.73      | AVG      |
| 11  | 2.7864          | 8.57           | 19.53       | 28.10        | 56.00        | -27.90      | QP       |
| 12  | 2.7864          | -2.68          | 19.53       | 16.85        | 46.00        | -29.15      | AVG      |

Note:

1. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
2. Margin = Reading level + Correct Factor - Limit
3. All the modes have tested and recorded the worst mode(GFSK) in the report

### 3. Radiated Spurious Emissions

#### 3.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247  
Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018;  
ANSI C63.10:2020  
Test Result: PASS  
Measurement Distance: 3m

| Frequency    | Detector   | RBW    | VBW    | Value      |
|--------------|------------|--------|--------|------------|
| 9KHz-150KHz  | Quasi-peak | 200Hz  | 600Hz  | Quasi-peak |
| 150KHz-30MHz | Quasi-peak | 9KHz   | 30KHz  | Quasi-peak |
| 30MHz-1GHz   | Quasi-peak | 100KHz | 300KHz | Quasi-peak |
| Above 1GHz   | Peak       | 1MHz   | 3MHz   | Peak       |
|              | Peak       | 1MHz   | 10Hz   | Average    |

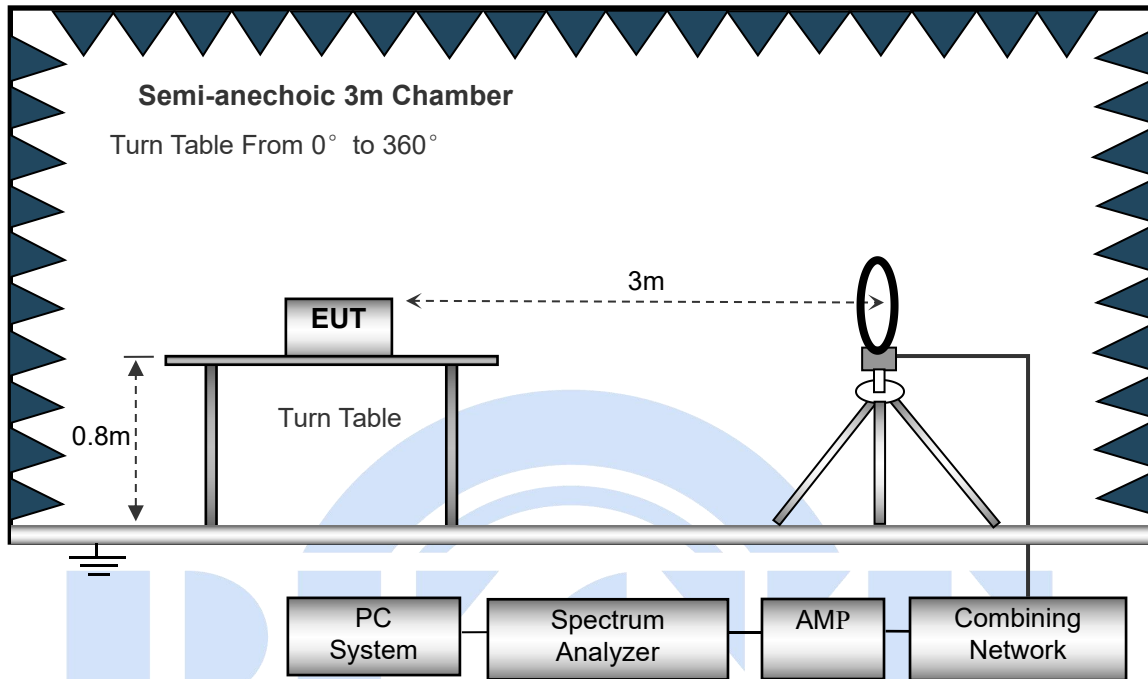
Limit:

| Frequency<br>(MHz) | Field Strength        |                 | Field Strength Limit at 3m Measurement Dist |                                    |
|--------------------|-----------------------|-----------------|---------------------------------------------|------------------------------------|
|                    | uV/m                  | Distance<br>(m) | uV/m                                        | dBuV/m                             |
| 0.009 ~ 0.490      | $2400/F(\text{kHz})$  | 300             | $10000 * 2400/F(\text{kHz})$                | $20\log(2400/F(\text{kHz})) + 80$  |
| 0.490 ~ 1.705      | $24000/F(\text{kHz})$ | 30              | $100 * 24000/F(\text{kHz})$                 | $20\log(24000/F(\text{kHz})) + 40$ |
| 1.705 ~ 30         | 30                    | 30              | $100 * 30$                                  | $20\log(30) + 40$                  |
| 30 ~ 88            | 100                   | 3               | 100                                         | $20\log(100)$                      |
| 88 ~ 216           | 150                   | 3               | 150                                         | $20\log(150)$                      |
| 216 ~ 960          | 200                   | 3               | 200                                         | $20\log(200)$                      |
| Above 960          | 500                   | 3               | 500                                         | $20\log(500)$                      |

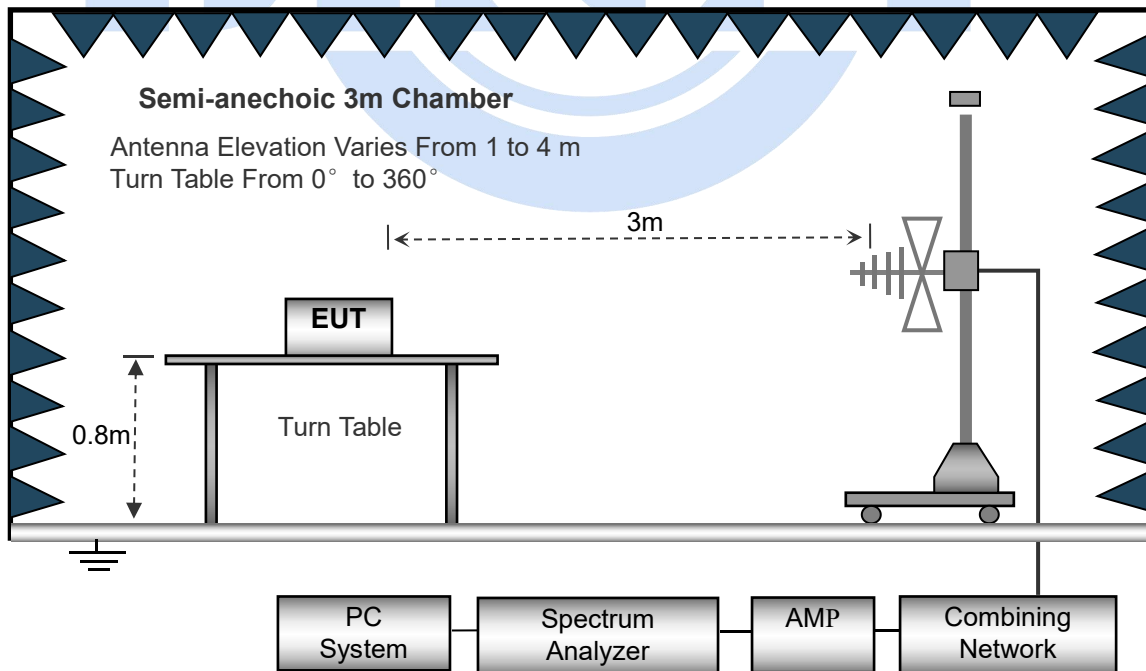
### 3.2. Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10.

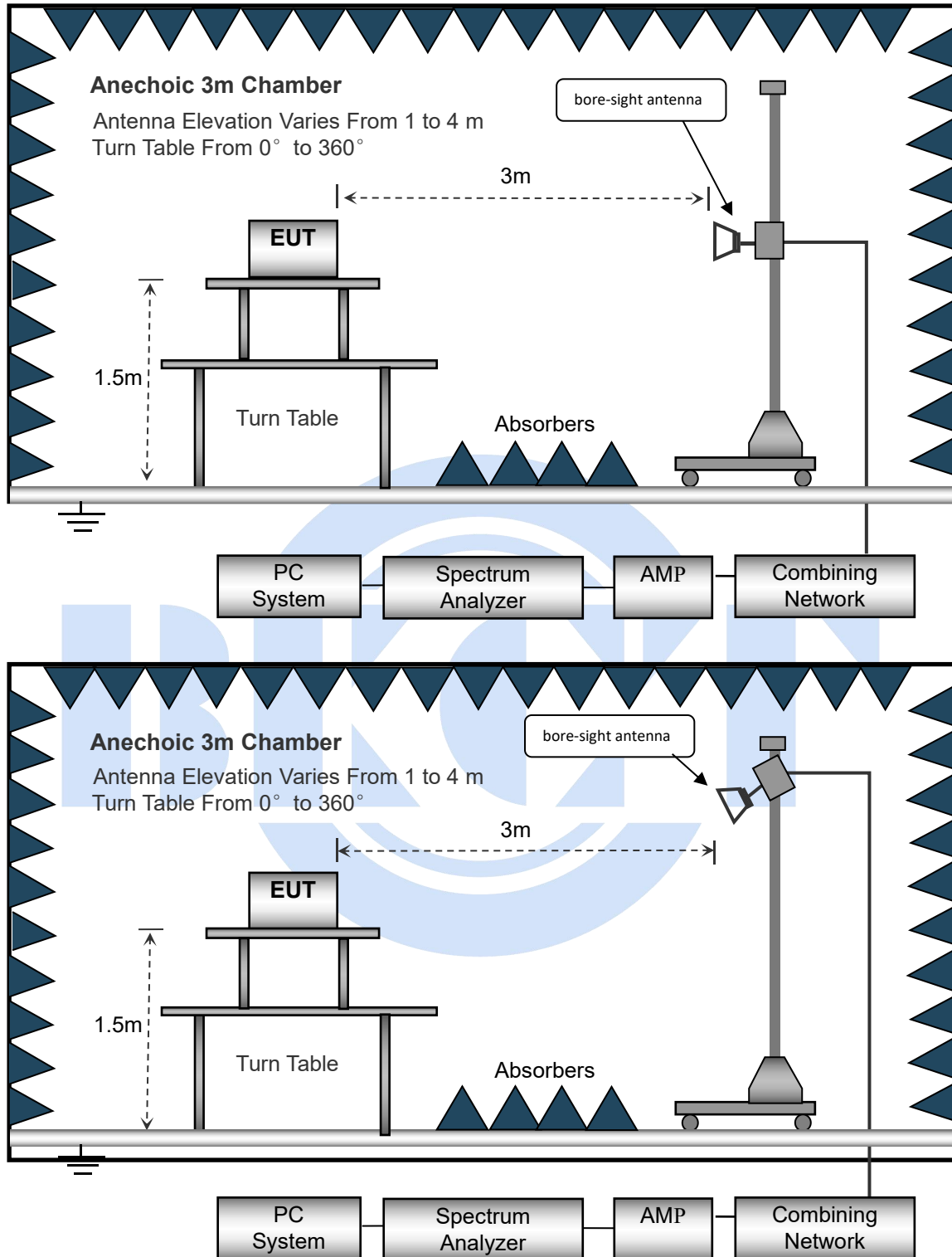
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



### 3.3. Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in Z axis,so the worst data were shown as follow.
8. A 2.4GHz high - pass filter is used during radiated emissions above 1GHz measurement.



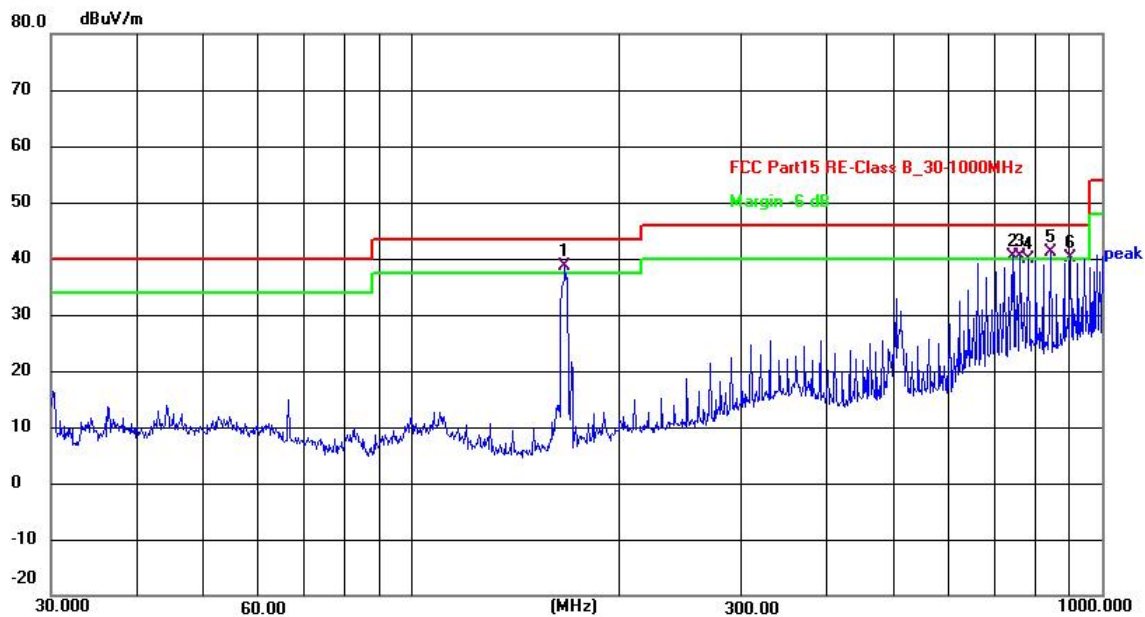
### 3.4. Test Result

Test Frequency: 9KHz~30MHz

The measurements were more than 20 dB below the limit and not reported.

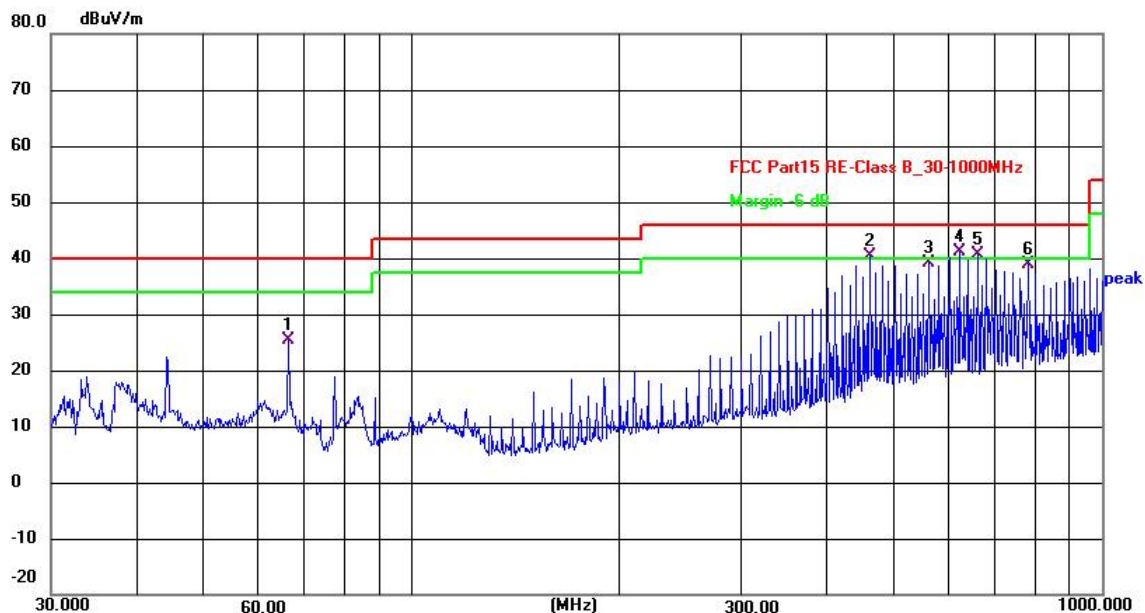
Test Frequency : 30MHz ~ 1GHz

| Radiation Emission Test Data |         |                    |            |
|------------------------------|---------|--------------------|------------|
| Temperature:                 | 25.1°C  | Relative Humidity: | 56%        |
| Pressure:                    | 1008hPa | Phase :            | Horizontal |
| Test Voltage :               | DC 3.7V | Test Mode          | Working    |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 166.6511        | 57.18          | -18.66        | 38.52          | 43.50          | -4.98       | QP       |
| 2   | 742.2586        | 45.95          | -5.55         | 40.40          | 46.00          | -5.60       | QP       |
| 3   | 760.7033        | 45.64          | -5.19         | 40.45          | 46.00          | -5.55       | QP       |
| 4   | 782.3451        | 44.57          | -4.74         | 39.83          | 46.00          | -6.17       | QP       |
| 5   | 842.1295        | 45.46          | -4.21         | 41.25          | 46.00          | -4.75       | QP       |
| 6   | 900.1472        | 43.29          | -3.08         | 40.21          | 46.00          | -5.79       | QP       |

| Radiation Emission Test Data |         |                    |          |
|------------------------------|---------|--------------------|----------|
| Temperature:                 | 25.1°C  | Relative Humidity: | 56%      |
| Pressure:                    | 1008hPa | Phase :            | Vertical |
| Test Voltage :               | DC 3.7V | Test Mode          | Working  |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 66.2661         | 42.36          | -16.95        | 25.41          | 40.00          | -14.59      | QP       |
| 2   | 460.7271        | 50.68          | -10.18        | 40.50          | 46.00          | -5.50       | QP       |
| 3   | 560.6928        | 47.91          | -8.89         | 39.02          | 46.00          | -6.98       | QP       |
| 4   | 620.7096        | 49.25          | -8.23         | 41.02          | 46.00          | -4.98       | QP       |
| 5   | 661.1504        | 47.77          | -7.11         | 40.66          | 46.00          | -5.34       | QP       |
| 6   | 782.3453        | 43.66          | -4.74         | 38.92          | 46.00          | -7.08       | QP       |

## Test Frequency 1GHz-25GHz

| Polar<br>(H/V)      | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detector<br>Type |
|---------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|------------------|
|                     | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                  |
| Low Channel:2412MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                   | 4804.00   | 47.33            | 34.12             | 5.03          | 32.39             | 50.63             | 74.00    | -23.37 | Pk               |
| V                   | 4804.00   | 38.26            | 34.12             | 5.03          | 32.39             | 41.56             | 54.00    | -12.44 | AV               |
| V                   | 7206.00   | 46.08            | 32.54             | 6.29          | 35.86             | 55.69             | 74.00    | -18.31 | Pk               |
| V                   | 7206.00   | 38.27            | 32.54             | 6.29          | 35.86             | 47.88             | 54.00    | -6.12  | AV               |
| V                   | 9608.00   | 45.55            | 32.98             | 7.55          | 38.40             | 58.52             | 74.00    | -15.48 | Pk               |
| V                   | 9608.00   | 31.78            | 32.98             | 7.55          | 38.40             | 44.75             | 54.00    | -9.25  | AV               |
| V                   | 12010.00  | 44.32            | 32.09             | 8.93          | 39.00             | 60.16             | 74.00    | -13.84 | Pk               |
| V                   | 12010.00  | 28.68            | 32.09             | 8.93          | 39.00             | 44.52             | 54.00    | -9.48  | AV               |
| H                   | 4804.00   | 47.00            | 34.12             | 5.03          | 32.39             | 50.30             | 74.00    | -23.70 | Pk               |
| H                   | 4804.00   | 38.66            | 34.12             | 5.03          | 32.39             | 41.96             | 54.00    | -12.04 | AV               |
| H                   | 7206.00   | 43.14            | 32.54             | 6.29          | 35.86             | 52.75             | 74.00    | -21.25 | Pk               |
| H                   | 7206.00   | 36.27            | 32.54             | 6.29          | 35.86             | 45.88             | 54.00    | -8.12  | AV               |
| H                   | 9608.00   | 45.61            | 32.98             | 7.55          | 38.40             | 58.58             | 74.00    | -15.42 | Pk               |
| H                   | 9608.00   | 31.53            | 32.98             | 7.55          | 38.40             | 44.50             | 54.00    | -9.50  | AV               |
| H                   | 12010.00  | 37.74            | 32.09             | 8.93          | 39.00             | 53.58             | 74.00    | -20.42 | Pk               |
| H                   | 12010.00  | 26.08            | 32.09             | 8.93          | 39.00             | 41.92             | 54.00    | -12.08 | AV               |



| Polar<br>(H/V)         | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detector<br>Type |
|------------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|------------------|
|                        | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                  |
| Middle Channel:2437MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                      | 4882.00   | 47.30            | 34.07             | 5.09          | 32.59             | 50.91             | 74.00    | -23.09 | Pk               |
| V                      | 4882.00   | 35.39            | 34.07             | 5.09          | 32.59             | 39.00             | 54.00    | -15.00 | AV               |
| V                      | 7323.00   | 44.35            | 32.63             | 6.34          | 35.96             | 54.02             | 74.00    | -19.98 | Pk               |
| V                      | 7323.00   | 35.39            | 32.63             | 6.34          | 35.96             | 45.06             | 54.00    | -8.94  | AV               |
| V                      | 9764.00   | 40.90            | 32.92             | 7.59          | 38.40             | 53.97             | 74.00    | -20.03 | Pk               |
| V                      | 9764.00   | 25.48            | 32.92             | 7.59          | 38.40             | 38.55             | 54.00    | -15.45 | AV               |
| V                      | 12205.00  | 39.76            | 31.96             | 8.88          | 39.04             | 55.72             | 74.00    | -18.28 | Pk               |
| V                      | 12205.00  | 27.67            | 31.96             | 8.88          | 39.04             | 43.63             | 54.00    | -10.37 | AV               |
| H                      | 4882.00   | 48.18            | 34.07             | 5.09          | 32.59             | 51.79             | 74.00    | -22.21 | Pk               |
| H                      | 4882.00   | 36.23            | 34.07             | 5.09          | 32.59             | 39.84             | 54.00    | -14.16 | AV               |
| H                      | 7323.00   | 42.49            | 32.63             | 6.34          | 35.96             | 52.16             | 74.00    | -21.84 | Pk               |
| H                      | 7323.00   | 33.51            | 32.63             | 6.34          | 35.96             | 43.18             | 54.00    | -10.82 | AV               |
| H                      | 9764.00   | 37.82            | 32.92             | 7.59          | 38.40             | 50.89             | 74.00    | -23.11 | Pk               |
| H                      | 9764.00   | 26.69            | 32.92             | 7.59          | 38.40             | 39.76             | 54.00    | -14.24 | AV               |
| H                      | 12205.00  | 36.96            | 31.96             | 8.88          | 39.04             | 52.92             | 74.00    | -21.08 | Pk               |
| H                      | 12205.00  | 28.88            | 31.96             | 8.88          | 39.04             | 44.84             | 54.00    | -9.16  | AV               |



| Polar<br>(H/V)       | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detector<br>Type |
|----------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|------------------|
|                      | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                  |
| High Channel:2462MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                    | 4960.00   | 47.37            | 34.02             | 5.15          | 32.80             | 51.30             | 74.00    | -22.70 | Pk               |
| V                    | 4960.00   | 37.34            | 34.02             | 5.15          | 32.80             | 41.27             | 54.00    | -12.73 | AV               |
| V                    | 7440.00   | 44.58            | 32.71             | 6.40          | 36.05             | 54.32             | 74.00    | -19.68 | Pk               |
| V                    | 7440.00   | 31.57            | 32.71             | 6.40          | 36.05             | 41.31             | 54.00    | -12.69 | AV               |
| V                    | 9920.00   | 41.28            | 32.86             | 7.62          | 38.40             | 54.44             | 74.00    | -19.56 | Pk               |
| V                    | 9920.00   | 30.75            | 32.86             | 7.62          | 38.40             | 43.91             | 54.00    | -10.09 | AV               |
| V                    | 12400.00  | 40.35            | 31.82             | 8.84          | 39.08             | 56.45             | 74.00    | -17.55 | Pk               |
| V                    | 12400.00  | 28.68            | 31.82             | 8.84          | 39.08             | 44.78             | 54.00    | -9.22  | AV               |
| H                    | 4960.00   | 50.11            | 34.02             | 5.15          | 32.80             | 54.04             | 74.00    | -19.96 | Pk               |
| H                    | 4960.00   | 40.17            | 34.02             | 5.15          | 32.80             | 44.10             | 54.00    | -9.90  | AV               |
| H                    | 7440.00   | 46.46            | 32.71             | 6.40          | 36.05             | 56.20             | 74.00    | -17.80 | Pk               |
| H                    | 7440.00   | 33.70            | 32.71             | 6.40          | 36.05             | 43.44             | 54.00    | -10.56 | AV               |
| H                    | 9920.00   | 39.71            | 32.86             | 7.62          | 38.40             | 52.87             | 74.00    | -21.13 | Pk               |
| H                    | 9920.00   | 29.02            | 32.86             | 7.62          | 38.40             | 42.18             | 54.00    | -11.82 | AV               |
| H                    | 12400.00  | 40.24            | 31.82             | 8.84          | 39.08             | 56.34             | 74.00    | -17.66 | Pk               |
| H                    | 12400.00  | 26.28            | 31.82             | 8.84          | 39.08             | 42.38             | 54.00    | -11.62 | AV               |

- Note: 1. The testing has been conformed to 10\*2480MHz=24800MHz.  
2. All other emissions more than 30dB below the limit.  
3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.  
Emission Level = Reading + Factor  
Margin=Emission Level-Limit  
4. All the modes have tested and recorded the worst mode(GFSK) in the report

### Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz

|         | Polar (H/V)          | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector Type |
|---------|----------------------|-----------------|----------------------|--------------------|-----------------|-----------------------|-------------------------|----------------|-------------|---------------|
| 802.11b | Low Channel 2412MHz  |                 |                      |                    |                 |                       |                         |                |             |               |
|         | H                    | 2390.00         | 58.40                | 35.17              | 3.48            | 27.49                 | 54.20                   | 74.00          | -19.80      | PK            |
|         | H                    | 2390.00         | 49.38                | 35.17              | 3.48            | 27.49                 | 45.18                   | 54.00          | -8.82       | AV            |
|         | H                    | 2400.00         | 59.98                | 35.16              | 3.49            | 27.52                 | 55.83                   | 74.00          | -18.17      | PK            |
|         | H                    | 2400.00         | 49.97                | 35.16              | 3.49            | 27.52                 | 45.82                   | 54.00          | -8.18       | AV            |
|         | V                    | 2390.00         | 58.20                | 35.17              | 3.48            | 27.49                 | 54.00                   | 74.00          | -20.00      | PK            |
|         | V                    | 2390.00         | 50.00                | 35.17              | 3.48            | 27.49                 | 45.80                   | 54.00          | -8.20       | AV            |
|         | V                    | 2400.00         | 59.75                | 35.16              | 3.49            | 27.52                 | 55.60                   | 74.00          | -18.40      | PK            |
|         | V                    | 2400.00         | 49.83                | 35.16              | 3.49            | 27.52                 | 45.68                   | 54.00          | -8.32       | AV            |
|         | High Channel 2462MHz |                 |                      |                    |                 |                       |                         |                |             |               |
|         | H                    | 2483.50         | 57.69                | 35.11              | 3.56            | 27.75                 | 53.89                   | 74.00          | -20.11      | PK            |
|         | H                    | 2483.50         | 49.25                | 35.11              | 3.56            | 27.75                 | 45.45                   | 54.00          | -8.55       | AV            |
|         | H                    | 2500.00         | 58.84                | 35.10              | 3.57            | 27.80                 | 55.11                   | 74.00          | -18.89      | PK            |
|         | H                    | 2500.00         | 49.90                | 35.10              | 3.57            | 27.80                 | 46.17                   | 54.00          | -7.83       | AV            |
|         | V                    | 2483.50         | 58.91                | 35.11              | 3.56            | 27.75                 | 55.11                   | 74.00          | -18.89      | PK            |
|         | V                    | 2483.50         | 49.99                | 35.11              | 3.56            | 27.75                 | 46.19                   | 54.00          | -7.81       | AV            |
|         | V                    | 2500.00         | 58.80                | 35.10              | 3.57            | 27.80                 | 55.07                   | 74.00          | -18.93      | PK            |
|         | V                    | 2500.00         | 49.32                | 35.10              | 3.57            | 27.80                 | 45.59                   | 54.00          | -8.41       | AV            |
| 802.11g | Low Channel 2412MH   |                 |                      |                    |                 |                       |                         |                |             |               |
|         | H                    | 2390.00         | 57.88                | 35.17              | 3.48            | 27.49                 | 53.45                   | 74.00          | -20.55      | PK            |
|         | H                    | 2390.00         | 49.74                | 35.17              | 3.48            | 27.49                 | 45.54                   | 54.00          | -8.46       | AV            |
|         | H                    | 2400.00         | 58.61                | 35.16              | 3.49            | 27.52                 | 54.46                   | 74.00          | -19.54      | PK            |
|         | H                    | 2400.00         | 49.73                | 35.16              | 3.49            | 27.52                 | 45.58                   | 54.00          | -8.42       | AV            |
|         | V                    | 2390.00         | 56.99                | 35.17              | 3.48            | 27.49                 | 52.79                   | 74.00          | -21.21      | PK            |
|         | V                    | 2390.00         | 48.88                | 35.17              | 3.48            | 27.49                 | 44.68                   | 54.00          | -9.32       | AV            |

|               |                      |         |       |       |      |       |       |       |        |    |
|---------------|----------------------|---------|-------|-------|------|-------|-------|-------|--------|----|
|               | V                    | 2400.00 | 58.80 | 35.16 | 3.49 | 27.52 | 54.65 | 74.00 | -19.35 | PK |
|               | V                    | 2400.00 | 48.85 | 35.16 | 3.49 | 27.52 | 44.70 | 54.00 | -9.30  | AV |
|               | High Channel 2462MHz |         |       |       |      |       |       |       |        |    |
|               | H                    | 2483.50 | 57.34 | 35.11 | 3.56 | 27.75 | 53.54 | 74.00 | -20.46 | PK |
|               | H                    | 2483.50 | 48.45 | 35.11 | 3.56 | 27.75 | 44.65 | 54.00 | -9.35  | AV |
|               | H                    | 2500.00 | 58.93 | 35.10 | 3.57 | 27.80 | 55.20 | 74.00 | -18.80 | PK |
|               | H                    | 2500.00 | 49.11 | 35.10 | 3.57 | 27.80 | 45.38 | 54.00 | -8.62  | AV |
|               | V                    | 2483.50 | 57.25 | 35.11 | 3.56 | 27.75 | 53.45 | 74.00 | -20.55 | PK |
|               | V                    | 2483.50 | 49.97 | 35.11 | 3.56 | 27.75 | 46.17 | 54.00 | -7.83  | AV |
|               | V                    | 2500.00 | 57.91 | 35.10 | 3.57 | 27.80 | 54.18 | 74.00 | -19.82 | PK |
|               | V                    | 2500.00 | 49.03 | 35.10 | 3.57 | 27.80 | 45.30 | 54.00 | -8.70  | AV |
| 802.11<br>n20 | Low Channel 2412MHz  |         |       |       |      |       |       |       |        |    |
|               | H                    | 2390.00 | 57.95 | 35.17 | 3.48 | 27.49 | 53.75 | 74.00 | -20.25 | PK |
|               | H                    | 2390.00 | 49.80 | 35.17 | 3.48 | 27.49 | 45.60 | 54.00 | -8.40  | AV |
|               | H                    | 2400.00 | 60.49 | 35.16 | 3.49 | 27.52 | 56.34 | 74.00 | -17.66 | PK |
|               | H                    | 2400.00 | 49.55 | 35.16 | 3.49 | 27.52 | 45.40 | 54.00 | -8.60  | AV |
|               | V                    | 2390.00 | 57.38 | 35.17 | 3.48 | 27.49 | 53.18 | 74.00 | -20.82 | PK |
|               | V                    | 2390.00 | 50.43 | 35.17 | 3.48 | 27.49 | 46.23 | 54.00 | -7.77  | AV |
|               | V                    | 2400.00 | 59.47 | 35.16 | 3.49 | 27.52 | 55.32 | 74.00 | -18.68 | PK |
|               | V                    | 2400.00 | 49.95 | 35.16 | 3.49 | 27.52 | 45.80 | 54.00 | -8.20  | AV |
|               | High Channel 2462MHz |         |       |       |      |       |       |       |        |    |
|               | H                    | 2483.50 | 57.70 | 35.11 | 3.56 | 27.75 | 53.90 | 74.00 | -20.10 | PK |
|               | H                    | 2483.50 | 48.73 | 35.11 | 3.56 | 27.75 | 44.93 | 54.00 | -9.07  | AV |
|               | H                    | 2500.00 | 59.61 | 35.10 | 3.57 | 27.80 | 55.88 | 74.00 | -18.12 | PK |
|               | H                    | 2500.00 | 49.76 | 35.10 | 3.57 | 27.80 | 46.03 | 54.00 | -7.97  | AV |
|               | V                    | 2483.50 | 58.61 | 35.11 | 3.56 | 27.75 | 54.81 | 74.00 | -19.19 | PK |
|               | V                    | 2483.50 | 49.54 | 35.11 | 3.56 | 27.75 | 45.74 | 54.00 | -8.26  | AV |
|               | V                    | 2500.00 | 58.31 | 35.10 | 3.57 | 27.80 | 54.58 | 74.00 | -19.42 | PK |

|               |                      |         |       |       |      |       |       |       |        |    |
|---------------|----------------------|---------|-------|-------|------|-------|-------|-------|--------|----|
|               | V                    | 2500.00 | 50.04 | 35.10 | 3.57 | 27.80 | 46.31 | 54.00 | -7.69  | AV |
| 802.11<br>n40 | Low Channel 2422MHz  |         |       |       |      |       |       |       |        |    |
|               | H                    | 2390.00 | 56.81 | 35.17 | 3.48 | 27.49 | 52.61 | 74    | -21.39 | PK |
|               | H                    | 2390.00 | 48.61 | 35.17 | 3.48 | 27.49 | 44.41 | 54    | -9.59  | AV |
|               | H                    | 2400.00 | 58.51 | 35.16 | 3.49 | 27.52 | 54.36 | 74    | -19.64 | PK |
|               | H                    | 2400.00 | 49.36 | 35.16 | 3.49 | 27.52 | 45.21 | 54    | -8.79  | AV |
|               | V                    | 2390.00 | 57.15 | 35.17 | 3.48 | 27.49 | 52.95 | 74    | -21.05 | PK |
|               | V                    | 2390.00 | 49.35 | 35.17 | 3.48 | 27.49 | 45.15 | 54    | -8.85  | AV |
|               | V                    | 2400.00 | 58.70 | 35.16 | 3.49 | 27.52 | 54.55 | 74    | -19.45 | PK |
|               | V                    | 2400.00 | 48.63 | 35.16 | 3.49 | 27.52 | 44.48 | 54    | -9.52  | AV |
|               | High Channel 2452MHz |         |       |       |      |       |       |       |        |    |
|               | H                    | 2483.50 | 57.25 | 35.11 | 3.56 | 27.75 | 53.45 | 74    | -20.55 | PK |
|               | H                    | 2483.50 | 48.01 | 35.11 | 3.56 | 27.75 | 44.21 | 54    | -9.79  | AV |
|               | H                    | 2500.00 | 58.46 | 35.10 | 3.57 | 27.80 | 54.73 | 74    | -19.27 | PK |
|               | H                    | 2500.00 | 49.07 | 35.10 | 3.57 | 27.80 | 45.34 | 54    | -8.66  | AV |
|               | V                    | 2483.50 | 57.58 | 35.11 | 3.56 | 27.75 | 53.78 | 74    | -20.22 | PK |
|               | V                    | 2483.50 | 49.62 | 35.11 | 3.56 | 27.75 | 45.82 | 54    | -8.18  | AV |
|               | V                    | 2500.00 | 57.73 | 35.10 | 3.57 | 27.80 | 54.00 | 74    | -20    | PK |
|               | V                    | 2500.00 | 49.19 | 35.10 | 3.57 | 27.80 | 45.46 | 54    | -8.54  | AV |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

## 4. Duty cycle

### 4.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247  
Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018;  
ANSI C63.10:2020  
Test Result: PASS

### 4.2.Test Setup



### 4.3.Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
  - a) Set the center frequency of the instrument to the center frequency of the transmission.
  - b) Set  $RBW \geq OBW$  if possible; otherwise, set RBW to the largest available value.
  - c) Set  $VBW \geq RBW$ . Detector = peak or average.
  - d) Sweep time = auto couple.
  - e) Trace mode = max hold.
  - f) Allow trace to fully stabilize.

### 4.4.Test Result

Please see the attachment for data.

## 5. Conducted Spurious Emissions

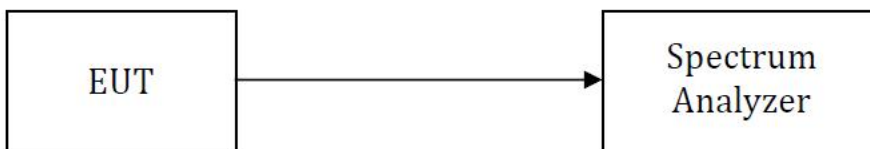
### 5.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247  
Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018;  
ANSI C63.10:2020  
Test Result: PASS

#### Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

### 5.2.Test Setup



### 5.3.Test Procedure

- Set instrument center frequency to DTS channel center frequency.
- Set the span to  $\geq 1.5$  times the DTS bandwidth.
- Set the RBW = 100 kHz.
- Set the VBW  $\geq [3 \times \text{RBW}]$ .
- Detector = peak.
- Sweep time = No faster than coupled (auto) time.
- Trace mode = max-hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level  
Establish an emission level by using the following procedure:

- Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

- Set the RBW = 100 kHz.
- Set the VBW  $\geq [3 \times \text{RBW}]$ .
- Detector = peak.
- Sweep time = No faster than coupled (auto) time.
- Trace mode = max-hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

### 5.4.Test Result

Please see the attachment for data.

## 6. Band Edge Measurement

### 6.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

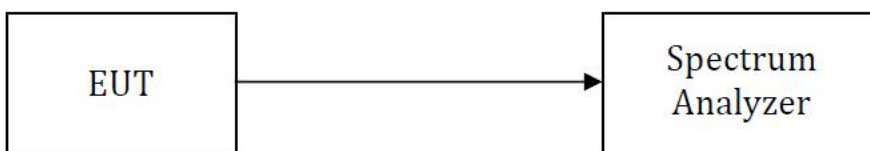
Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018;

ANSI C63.10:2020

Test Limit: Regulation 15.247 (d), In any 100 kHz bandwidth outside the frequency band which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Mode: Transmitting

### 6.2.Test setup



### 6.3.Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
3. Establish a reference level by using the following procedure
  - a) Set instrument center frequency to DTS channel center frequency.
  - b) Set the span to  $\approx 1.5$  times the DTS bandwidth.
  - c) Set the RBW = 100 kHz.
  - d) Set the VBW  $\approx [3 \times \text{RBW}]$ .
  - e) Detector = peak.
  - f) Sweep time = No faster than coupled (auto) time.
  - g) Trace mode = max hold.
  - h) Allow trace to fully stabilize.
  - i) Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

4. Establish an emission level by using the following procedure:

a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

- b) Set the RBW = 100 kHz.
- c) Set the VBW  $\geq [3 \times \text{RBW}]$ .
- d) Detector = peak.
- e) Sweep time = No faster than coupled (auto) time.
- f) Trace mode = max-hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

### 6.4.Test Result

Please see the attachment for data.

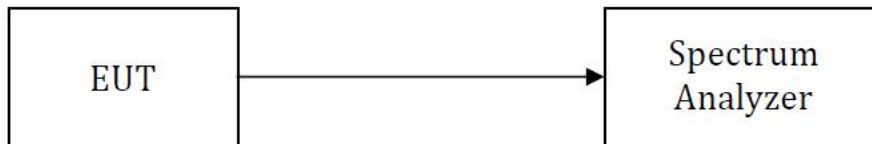
## 7. -6 dB Bandwidth and 99% Bandwidth Measurement

### 7.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018; ANSI C63.10:2020

### 7.2.Test Setup



### 7.3.Test Procedure

#### DTS Bandwidth

- a) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
- b) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- c) Set the VBW  $\geq [3 \times \text{RBW}]$ .
- d) Detector = peak.
- e) Trace mode = max-hold.
- f) Sweep = No faster than coupled (auto) time.
- g) Allow the trace to stabilize.

#### 99% Bandwidth

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement
- c) Detector = peak.
- d) Trace mode = max-hold.
- e) Sweep = No faster than coupled (auto) time.
- f) Allow the trace to stabilize.

### 7.4.Test Result

Please see the attachment for data.

## 8. Maximum Output Power

### 8.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018;ANSI C63.10:2020

| FCC Part15 (15.247) , Subpart C |              |                 |                       |        |
|---------------------------------|--------------|-----------------|-----------------------|--------|
| Section                         | Test Item    | Limit           | Frequency Range (MHz) | Result |
| 15.247(b)(3)                    | Output Power | 1 watt or 30dBm | 2400-2483.5           | PASS   |

### 8.2.Test Setup



### 8.3.Test Procedure

8.3.1 The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.

8.3.2 Set to the maximum power setting and enable the EUT transmit continuously.

8.3.3 Measure the conducted output power and record the results in the test report.

### 8.4.Test Result

Please see the attachment for data.

## 9. Power Spectral density

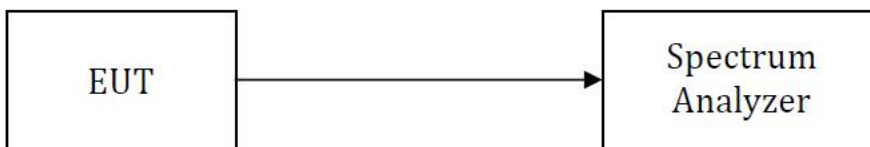
### 9.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05 August 24, 2018; ANSI C63.10:2020

| FCC Part15 (15.247) , Subpart C |                        |           |                       |        |
|---------------------------------|------------------------|-----------|-----------------------|--------|
| Section                         | Test Item              | Limit     | Frequency Range (MHz) | Result |
| 15.247                          | Power Spectral Density | 8dBm/3kHz | 2400-2483.5           | PASS   |

### 9.2.Test Setup



### 9.3.Test Procedure

KDB 558074 D01 15.247 Meas Guidance v05r02;

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set instrument center frequency to DTS channel center frequency
3. Set span to  $> 1.5$  times the OBW.
4. Set RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
5. Set VBW  $\geq [3 \times \text{RBW}]$
6. Detector = power averaging (rms) or sample detector (when rms not available).
7. Ensure that the number of measurement points in the sweep  $\geq [2 \times \text{span} / \text{RBW}]$ .
8. Sweep time = auto couple.
9. Employ trace averaging (rms) mode over a minimum of 100 traces.
10. Use the peak marker function to determine the maximum amplitude level.
11. If the measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat(note that this might require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).
12. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

### 9.4.Test Result

Please see the attachment for data.

## 10. Antenna Requirement

According to the FCC Part 15 Paragraph 15.203, 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. This product has an integrated antenna fulfill the requirement of this section.



## 11. TEST SETUP & EUT PHOTOGRAPH

Please see the attachment for details.

----- End of Report -----

