# TEST REPORT

| | |
|---|---|
| Report No. | CISRR24122823303 |
| Project No. | CISR241228233 |
| FCC ID | 2A8OS-XS-CP01 |
| Applicant | Huizhou Xinshi Technology Co., Ltd |
| Address | 4/F,building 41,Jingu power science and Technology Park,Hechang West 2nd Road,Huicheng District,Huizhou City,Guangdong Province,China |
| Manufacturer | Huizhou Xinshi Technology Co., Ltd |
| Address | 4/F,building 41,Jingu power science and Technology Park,Hechang West 2nd Road,Huicheng District,Huizhou City,Guangdong Province,China |
| Product Name | Wireless Carplay |
| Trade Mark | N/A |
| Model/Type reference | Xs-cp01 |
| Listed Model(s) | Xs-cp02, Xs-cp03, Xs-cp04, Xs-cp05, Xs-cp06, Xs-cp07, Xs-cp08, Xs-cp09, Xs-cp10 |
| Standard | 47 CFR Part 15E |
| Test date | December 30, 2024 to January 13, 2025 |
| Issue date | January 16, 2025 |
| **Test result** | **Complied** |

Edward Wang

**Prepared by: Edward Wang**

GenryLong

**Approved by: Genry Long**

The test results relate only to the tested samples.

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# Contents

# 1. REPORT VERSION

| Version No. | Issue date | Description |
|---|---|---|
| 00 | January 16, 2025 | Original |
| | | |
| | | |

## 2. TEST DESCRIPTION

| No. | Test Item | Standard Requirement | Result |
|---|---|---|---|
| 1 | Duty Cycle | | Pass |
| 2 | Emission bandwidth and occupied bandwidth | 47 CFR Part 15.407(e) | Pass |
| 3 | Maximum conducted output power | 47 CFR Part 15.407(a)(3)(i) | Pass |
| 4 | Power spectral density | 47 CFR Part 15.407(a)(3)(i) | Pass |
| 5 | Band edge emissions (Conducted) | 47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10) | Pass |
| 6 | Band edge emissions (Radiated) | 47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10) | Pass |
| 7 | Undesirable emission limits (below 1GHz) | 47 CFR Part 15.407(b)(9) | Pass |
| 8 | Undesirable emission limits (above 1GHz) | 47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10) | Pass |

Note:

– The measurement uncertainty is not included in the test result.

# 3. SUMMARY

## 3.1. Product Description *

| Main unit information: | |
|---|---|
| Product Name: | Wireless Carplay |
| Trade Mark: | N/A |
| Model No.: | Xs-cp01 |
| Listed Model(s): | Xs-cp02, Xs-cp03, Xs-cp04, Xs-cp05, Xs-cp06, Xs-cp07, Xs-cp08, Xs-cp09, Xs-cp10 |
| Model difference: | The series model is the same product,with only different model names |
| Power supply: | DC 5V |
| Hardware version: | V1.0 |
| Software version: | V1.0 |
| Accessory unit information: | |
| Battery information: | N/A |

## 3.2. Radio Specification Description *

| | |
|---|---|
| Modulation type: | 802.11a/n: OFDM(BPSK, QPSK, 16QAM, 64QAM); |
| Operation frequency: | 802.11a/n(HT20):5745MHz to 5825MHz;<br>802.11n(HT40):5755MHz to 5795MHz; |
| Channel number: | 802.11a/n(HT20):5;<br>802.11n(HT40):2; |
| Channel separation: | 802.11a/n(HT20): 20MHz<br>802.11n(HT40): 40MHz |
| Antenna type: | PCB Antenna |
| Antenna gain: | -0.62dBi |

Note:

1) *: Since the above information is provided by the applicant relevant results or conclusions of this report are only made for these information , Bangce is not responsible for the authenticity, integrity and results of the information and/or the validity of the conclusion.

2) Operation frequency list as follow:

U-NII Band 3

| Bandwidth: | 20MHz | Bandwidth: | 40MHz |
|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 149 | 5745 | 151 | 5755 |
| 153 | 5765 | 159 | 5795 |
| 157 | 5785 | / | / |
| 161 | 5805 | / | / |
| 165 | 5825 | / | / |

## 3.3. Modification of EUT

No modifications are made to the EUT during all test items.

## 3.4. Deviation from standards

None

## 3.5. Testing Site

| | |
|---|---|
| Laboratory Name | Shenzhen Bangce Testing Technology Co., Ltd. |
| Laboratory Location | 101, building 10, Yunli Intelligent Park, Shutianpu community, Matian Street, Guangming District, Shenzhen， Guangdong, China |
| Contact information | Tel: 86-755-2319 6848, email: service@cis-cn.net<br>Website: http://www.cis-cn.net/ |
| FCC registration number | 736346 |
| FCC designation number | CN1372 |

# 4. TEST CONFIGURATION

## 4.1. Test frequency list

| | Lowest Channel (LCH) (MHz) | Middle Channel (MCH) (MHz) | Highest Channel (HCH) (MHz) |
|---|---|---|---|
| 802.11a/n(HT20) | 5745 | 5785 | 5825 |
| 802.11n(HT40) | 5755 | / | 5795 |

## 4.2. Descriptions of test mode

| No | Test mode | Description |
|---|---|---|
| TM1 | 802.11a mode | Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11a modulation type at lowest, middle and highest channel. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report. |
| TM2 | 802.11n mode | Keep the EUT connect to AC power line and works in continuously transmitting mode with 802.11n modulation type at lowest, middle and highest channel. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report. |
| TM3 | Normal Operating | Keep the EUT works in normal operating mode and connect to companion device |

## 4.3. Support unit used in test configuration

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The following peripheral devices and interface cables were connected during the measurement:

| Item | Equipment name | Trade Name | Model No. |
|---|---|---|---|
| 1 | Adapter | Guangdong Sangu Technology Co. ltd | SG-0501000AU |
| 2 | Phone | Huawei | NZONE S7 |

## 4.4. Test sample information

| Type | Sample No. |
|---|---|
| Engineer sample | CISR241228233-S01 |
| Normal sample | CISR241228233-S02 |

## 4.5. Environmental conditions

| Type | Requirement |
|---|---|
| Temperature: | 15~35°C |
| Relative Humidity: | 25~75% |
| Air Pressure: | 860~1060mbar |

## 4.6. Equipment Used during the Test

Duty Cycle
Emission bandwidth and occupied bandwidth
Maximum conducted output power
Power spectral density
Band edge emissions (Conducted)

| Item | Equipment name | Manufacturer | Model | Serial No. | Calibration date | Due date |
|---|---|---|---|---|---|---|
| 1 | MXG RF Signal Generator | Agilent | N5181A | MY50145362 | 2025-01-08 | 2026-01-07 |
| 2 | Spectrum analyzer | R&S | FSV-40N | 102130 | 2025-01-08 | 2026-01-07 |
| 3 | Vector Signal Generator | Agilent | N5182A | MY50142364 | 2025-01-08 | 2026-01-07 |
| 4 | Power Meter | WCS | WCS-PM | WCSPM230405A | 2025-01-08 | 2026-01-07 |

Band edge emissions (Radiated)
Undesirable emission limits (below 1GHz)
Undesirable emission limits (above 1GHz)

| Item | Equipment name | Manufacturer | Model | Serial No. | Calibration date | Due date |
|---|---|---|---|---|---|---|
| 1 | EMI Test Receiver | Rohde&schwarz | ESCI7 | 100853 | 2025-01-08 | 2026-01-07 |
| 2 | Amplifier | Tonscend | TAP9K3G40 | AP23A8060270 | 2025-01-08 | 2026-01-07 |
| 3 | Prime amplifier | Tonscend | TAP01018050 | AP23A8060280 | 2025-01-08 | 2026-01-07 |
| 4 | 9*6*6 anechoic chamber | SKET | 9.3*6.3*6 | N/A | 2024-09-02 | 2027-09-01 |
| 5 | Spectrum analyzer | Agilent | N9020A | MY50530263 | 2025-01-08 | 2026-01-07 |
| 6 | Spectrum analyzer | R&S | FSV-40N | 102130 | 2025-01-08 | 2026-01-07 |
| 7 | Bilog Antenna | Schwarzbeck | VULB 9163 | 1463 | 2023-01-09 | 2026-01-08 |
| 8 | Horn Antenna | SCHWARZBECK | BBHA 9120 D | 2487 | 2023-01-09 | 2026-01-08 |
| 9 | Active Loop Antenna | SCHWARZBECK | FMZB 1519B | / | 2023-01-09 | 2026-01-08 |
| 10 | RF Cable | Tonscend | Cable 1 | / | 2025-01-08 | 2026-01-07 |
| 11 | RF Cable | Tonscend | Cable 2 | / | 2025-01-08 | 2026-01-07 |
| 12 | RF Cable | SKET | Cable 3 | / | 2025-01-08 | 2026-01-07 |
| 13 | L.I.S.N.#1 | Schwarzbeck | NSLK8127 | / | 2025-01-08 | 2026-01-07 |
| 14 | L.I.S.N.#2 | ROHDE&SCHWARZ | ENV216 | / | 2025-01-08 | 2026-01-07 |
| 15 | Horn Antenna | SCHWARZBECK | BBHA9170 | 1130 | 2023-01-09 | 2026-01-08 |
| 16 | Preamplifier | Tonscend | TAP1804 | AP21C806126 | 2025-01-08 | 2026-01-07 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | 0048 | | | |
| 17 | Variable-frequency power source | Pinhong | PH1110 | / | 2025-01-08 | 2026-01-07 |
| 18 | 6dB Attenuator | SKET | DC-6G | / | 2025-01-08 | 2026-01-07 |
| 19 | Antenna tower | SKT | Bk-4AT-BS | AT2021040101-V1 | 2025-01-08 | 2026-01-07 |

# 5. TEST RESULTS

## 5.1. Radio Spectrum Matter Test Results (RF)

### 5.1.1. Duty Cycle

| | |
|---|---|
| Test Requirement: | All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation. |
| Test Limit: | No limits, only for report use. |
| Test Method: | ANSI C63.10-2020 section 12.2 (b) |
| Procedure: | i) Set the center frequency of the instrument to the center frequency of the transmission.<br>ii) Set RBW >= EBW if possible; otherwise, set RBW to the largest available value.<br>iii) Set VBW >= RBW.<br>iv) Set detector = peak.<br>v) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in item a1) of 12.2, and the number of sweep points across duration T exceeds 100. |

#### 5.1.1.1. E.U.T. Operation

| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 23.1 °C | Humidity: | 56.4 % | Atmospheric Pressure: | 102 kPa |
| Pre test mode: | TM1, TM2 | | | | |
| Final test mode: | TM1, TM2 | | | | |

#### 5.1.1.2. Test Setup Diagram


#### 5.1.1.3. Test Result

Pass

#### 5.1.1.4. Test Data

Please Refer to Appendix for Details.

## 5.1.2. Emission bandwidth and occupied bandwidth

| | |
|---|---|
| Test Requirement: | U-NII 3, U-NII 4: 47 CFR Part 15.407(e) |
| Test Limit: | U-NII 3, U-NII 4: Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz. |
| Test Method: | ANSI C63.10-2020, section 6.9 & 12.5<br>KDB 789033 D02, Clause C.2 |
| Procedure: | Occupied bandwidth:<br>a) The instrument center frequency is set to the nominal EUT channel center frequency. The<br>frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.<br>b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW,<br>and VBW shall be approximately three times the RBW, unless otherwise specified by the<br>applicable requirement.<br>c) Set the reference level of the instrument as required, keeping the signal from exceeding the<br>maximum input mixer level for linear operation. In general, the peak of the spectral envelope<br>shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given<br>in 4.1.5.2.<br>d) Step a) through step c) might require iteration to adjust within the specified range.<br>e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode<br>shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be<br>used.<br>f) Use the 99% power bandwidth function of the instrument (if available) and report the measured<br>bandwidth.<br>g) If the instrument does not have a 99% power bandwidth function, then the trace data points are<br>recovered and directly summed in linear power terms. The recovered amplitude data points,<br>beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached;<br>that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the<br>total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is<br>the difference between these two frequencies.<br>h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument<br>display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may<br>be reported in addition to the plot(s).<br><br>6 dB emission bandwidth:<br>a) Set RBW = 100 kHz.<br>b) Set the video bandwidth (VBW) ≥ 3 >= RBW.<br>c) Detector = Peak.<br>d) Trace mode = max hold.<br>e) Sweep = auto couple.<br>f) Allow the trace to stabilize.<br>g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in |

| | |
|---|---|
| | the fundamental emission. |

### 5.1.2.1. E.U.T. Operation

| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 23.1 °C | Humidity: | 56.4 % | Atmospheric Pressure: | 102 kPa |
| Pre test mode: | TM1, TM2 | | | | |
| Final test mode: | TM1, TM2 | | | | |

### 5.1.2.2. Test Setup Diagram


### 5.1.2.3. Test Result

Pass

### 5.1.2.4. Test Data

Please Refer to Appendix for Details.

### 5.1.3. Maximum conducted output power

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15.407(a)(3)(i) |
| Test Limit: | For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.<br>If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.<br>However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.<br>The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. |
| Test Method: | ANSI C63.10-2020, section 12.4 |
| Procedure: | Refer to ANSI C63.10-2020 section 12.4 |

#### 5.1.3.1. E.U.T. Operation

| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 23.1 °C | Humidity: | 56.4 % | Atmospheric Pressure: | 102 kPa |
| Pre test mode: | TM1, TM2 | | | | |
| Final test mode: | TM1, TM2 | | | | |

#### 5.1.3.2. Test Setup Diagram


#### 5.1.3.3. Test Result

Pass

#### 5.1.3.4. Test Data

Please Refer to Appendix for Details.

### 5.1.4. Power spectral density

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15.407(a)(3)(i) |
| Test Limit: | For the band 5.725-5.850 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.<br>If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.<br>Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. |
| Test Method: | ANSI C63.10-2020, section 12.6 |
| Procedure: | Refer to ANSI C63.10-2020, section 12.6 |

#### 5.1.4.1. E.U.T. Operation

| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 23.1 °C | Humidity: | 56.4 % | Atmospheric Pressure: | 102 kPa |
| Pre test mode: | TM1, TM2 | | | | |
| Final test mode: | TM1, TM2 | | | | |

#### 5.1.4.2. Test Setup Diagram


#### 5.1.4.3. Test Result

Pass

#### 5.1.4.4. Test Data

Please Refer to Appendix for Details.

## 5.1.5. Band edge emissions (Conducted)

<table>
<tr><td>Test Requirement:</td><td>47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10)</td></tr>
<tr><td>Test Limit:</td><td>For transmitters operating solely in the 5.725-5.850 GHz band:<br>All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
<table>
<tr><td>MHz</td><td>MHz</td><td>MHz</td><td>GHz</td></tr>
<tr><td>0.090-0.110</td><td>16.42-16.423</td><td>399.9-410</td><td>4.5-5.15</td></tr>
<tr><td>[1] 0.495-0.505</td><td>16.69475-16.69525</td><td>608-614</td><td>5.35-5.46</td></tr>
<tr><td>2.1735-2.1905</td><td>16.80425-16.80475</td><td>960-1240</td><td>7.25-7.75</td></tr>
<tr><td>4.125-4.128</td><td>25.5-25.67</td><td>1300-1427</td><td>8.025-8.5</td></tr>
<tr><td>4.17725-4.17775</td><td>37.5-38.25</td><td>1435-1626.5</td><td>9.0-9.2</td></tr>
<tr><td>4.20725-4.20775</td><td>73-74.6</td><td>1645.5-1646.5</td><td>9.3-9.5</td></tr>
<tr><td>6.215-6.218</td><td>74.8-75.2</td><td>1660-1710</td><td>10.6-12.7</td></tr>
<tr><td>6.26775-6.26825</td><td>108-121.94</td><td>1718.8-1722.2</td><td>13.25-13.4</td></tr>
<tr><td>6.31175-6.31225</td><td>123-138</td><td>2200-2300</td><td>14.47-14.5</td></tr>
<tr><td>8.291-8.294</td><td>149.9-150.05</td><td>2310-2390</td><td>15.35-16.2</td></tr>
<tr><td>8.362-8.366</td><td>156.52475-156.52525</td><td>2483.5-2500</td><td>17.7-21.4</td></tr>
<tr><td>8.37625-8.38675</td><td>156.7-156.9</td><td>2690-2900</td><td>22.01-23.12</td></tr>
<tr><td>8.41425-8.41475</td><td>162.0125-167.17</td><td>3260-3267</td><td>23.6-24.0</td></tr>
<tr><td>12.29-12.293</td><td>167.72-173.2</td><td>3332-3339</td><td>31.2-31.8</td></tr>
<tr><td>12.51975-12.52025</td><td>240-285</td><td>3345.8-3358</td><td>36.43-36.5</td></tr>
<tr><td>12.57675-12.57725</td><td>322-335.4</td><td>3600-4400</td><td>([2])</td></tr>
<tr><td>13.36-13.41</td><td></td><td></td><td></td></tr>
</table>
[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.<br><br>
[2] Above 38.6<br><br>
The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.<br><br>
Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:
<table>
<tr><td>Frequency (MHz)</td><td>Field strength (microvolts/meter)</td><td>Measurement distance (meters)</td></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>30</td></tr>
</table></td></tr>
</table>

| | |
|---|---|
| | <table><tr><td>30-88</td><td>100 **</td><td>3</td></tr><tr><td>88-216</td><td>150 **</td><td>3</td></tr><tr><td>216-960</td><td>200 **</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table><br>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.<br>In the emission table above, the tighter limit applies at the band edges.<br>The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. |
| Test Method: | ANSI C63.10-2020, section 12.7.4, 12.7.6, 12.7.7 |
| Procedure: | Above 1GHz:<br>a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.<br>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.<br>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.<br>i. Repeat above procedures until all frequencies measured was complete.<br>Remark:<br>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor<br>2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.<br>3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.<br>4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. |

### 5.1.5.1. E.U.T. Operation

| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 23.1 °C | Humidity: | 56.4 % | Atmospheric Pressure: | 102 kPa |

| | |
|---|---|
| Pre test mode: | TM1, TM2 |
| Final test mode: | TM1, TM2 |

### 5.1.5.2. Test Setup Diagram


### 5.1.5.3. Test Result

Pass

### 5.1.5.4. Test Data

Please Refer to Appendix for Details.

## 5.1.6. Band edge emissions (Radiated)

<table>
<tr><td>Test Requirement:</td><td>47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10)</td></tr>
<tr><td>Test Limit:</td><td>For transmitters operating solely in the 5.725-5.850 GHz band:<br>All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
<table>
<tr><th>MHz</th><th>MHz</th><th>MHz</th><th>GHz</th></tr>
<tr><td>0.090-0.110</td><td>16.42-16.423</td><td>399.9-410</td><td>4.5-5.15</td></tr>
<tr><td>[1] 0.495-0.505</td><td>16.69475-16.69525</td><td>608-614</td><td>5.35-5.46</td></tr>
<tr><td>2.1735-2.1905</td><td>16.80425-16.80475</td><td>960-1240</td><td>7.25-7.75</td></tr>
<tr><td>4.125-4.128</td><td>25.5-25.67</td><td>1300-1427</td><td>8.025-8.5</td></tr>
<tr><td>4.17725-4.17775</td><td>37.5-38.25</td><td>1435-1626.5</td><td>9.0-9.2</td></tr>
<tr><td>4.20725-4.20775</td><td>73-74.6</td><td>1645.5-1646.5</td><td>9.3-9.5</td></tr>
<tr><td>6.215-6.218</td><td>74.8-75.2</td><td>1660-1710</td><td>10.6-12.7</td></tr>
<tr><td>6.26775-6.26825</td><td>108-121.94</td><td>1718.8-1722.2</td><td>13.25-13.4</td></tr>
<tr><td>6.31175-6.31225</td><td>123-138</td><td>2200-2300</td><td>14.47-14.5</td></tr>
<tr><td>8.291-8.294</td><td>149.9-150.05</td><td>2310-2390</td><td>15.35-16.2</td></tr>
<tr><td>8.362-8.366</td><td>156.52475-156.52525</td><td>2483.5-2500</td><td>17.7-21.4</td></tr>
<tr><td>8.37625-8.38675</td><td>156.7-156.9</td><td>2690-2900</td><td>22.01-23.12</td></tr>
<tr><td>8.41425-8.41475</td><td>162.0125-167.17</td><td>3260-3267</td><td>23.6-24.0</td></tr>
<tr><td>12.29-12.293</td><td>167.72-173.2</td><td>3332-3339</td><td>31.2-31.8</td></tr>
<tr><td>12.51975-12.52025</td><td>240-285</td><td>3345.8-3358</td><td>36.43-36.5</td></tr>
<tr><td>12.57675-12.57725</td><td>322-335.4</td><td>3600-4400</td><td>([2])</td></tr>
<tr><td>13.36-13.41</td><td></td><td></td><td></td></tr>
</table>
[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.<br><br>
[2] Above 38.6<br><br>
The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.<br><br>
Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:
<table>
<tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>30</td></tr>
</table></td></tr>
</table>

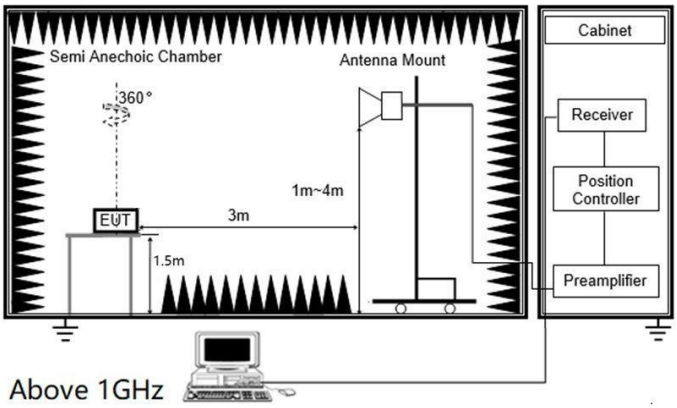
| | |
|---|---|
| | <table><tr><td>30-88</td><td>100 **</td><td>3</td></tr><tr><td>88-216</td><td>150 **</td><td>3</td></tr><tr><td>216-960</td><td>200 **</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table><br>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.<br>In the emission table above, the tighter limit applies at the band edges.<br>The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. |
| Test Method: | ANSI C63.10-2020, section 12.7.4, 12.7.6, 12.7.7 |
| Procedure: | Above 1GHz:<br>a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.<br>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.<br>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.<br>i. Repeat above procedures until all frequencies measured was complete.<br>Remark:<br>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor<br>2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.<br>3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.<br>4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. |

### 5.1.6.1. E.U.T. Operation

| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 23.1 °C | Humidity: | 56.4 % | Atmospheric Pressure: | 102 kPa |

| | |
|---|---|
| Pre test mode: | TM1, TM2 |
| Final test mode: | TM1, TM2 |

### 5.1.6.2. Test Setup Diagram




### 5.1.6.3. Test Result

Pass

### 5.1.6.4. Test Data

Have pre-scan all test channel, found 11a(6Mbps) mode which it was worst case, so only show the worst case's data on this report.

| Test channel:CH149 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Freq. (MHz) | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correction Factor (dB/m) | Level (dBuv) | Limit (dBuV/m) | Margin (dB) | Remark | Polarity |
| 5725.00 | 70.78 | 28.62 | 4.08 | 38.62 | -5.92 | 64.86 | 74 | 9.14 | Peak | Horizontal |
| 5725.00 | 51.83 | 28.62 | 4.08 | 38.62 | -5.92 | 45.91 | 54 | 8.09 | Average | Horizontal |
| 5725.00 | 69.00 | 28.62 | 4.08 | 38.62 | -5.92 | 63.08 | 74 | 10.92 | Peak | Vertical |
| 5725.00 | 50.15 | 28.62 | 4.08 | 38.62 | -5.92 | 44.23 | 54 | 9.77 | Average | Vertical |

| Test channel:CH163 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Freq. (MHz) | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correction Factor (dB/m) | Level (dBuv) | Limit (dBuV/m) | Margin (dB) | Remark | Polarity |
| 5850.00 | 70.03 | 29.45 | 3.91 | 40.17 | -6.81 | 63.22 | 74 | 10.78 | Peak | Horizontal |
| 5850.00 | 50.34 | 29.45 | 3.91 | 40.17 | -6.81 | 43.53 | 54 | 10.47 | Average | Horizontal |
| 5850.00 | 67.95 | 29.45 | 3.91 | 40.17 | -6.81 | 61.14 | 74 | 12.86 | Peak | Vertical |
| 5850.00 | 50.66 | 29.45 | 3.91 | 40.17 | -6.81 | 43.85 | 54 | 10.15 | Average | Vertical |

## 5.1.7. Undesirable emission limits (below 1GHz)

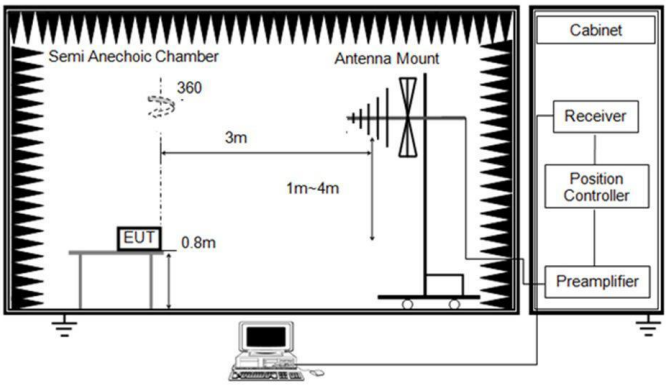
<table>
<tr><td>Test Requirement:</td><td>47 CFR Part 15.407(b)(9)</td></tr>
<tr><td>Test Limit:</td><td>Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.<br><br>Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:
<table>
<tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100 **</td><td>3</td></tr>
<tr><td>88-216</td><td>150 **</td><td>3</td></tr>
<tr><td>216-960</td><td>200 **</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.<br>In the emission table above, the tighter limit applies at the band edges.<br>The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10-2020, section 12.7.4, 12.7.5</td></tr>
<tr><td>Procedure:</td><td>Below 1GHz:<br>a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.<br>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.<br>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.<br>i. Repeat above procedures until all frequencies measured was complete.<br>Remark:<br>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor<br>2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when</td></tr>
</table>

| | |
|---|---|
| | testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.<br>3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.<br><br>Above 1GHz:<br>a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.<br>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.<br>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.<br>i. Repeat above procedures until all frequencies measured was complete.<br>Remark:<br>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor<br>2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.<br>3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.<br>4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. |

### 5.1.7.1. E.U.T. Operation

| Operating Environment: | | | | | |
|---|---|---|---|---|---|
| Temperature: | 23.1 °C | Humidity: | 56.4 % | Atmospheric Pressure: | 102 kPa |
| Pre test mode: | TM1,TM2,TM3 | | | | |
| Final test mode: | TM1,TM2,TM3 | | | | |

### 5.1.7.2. Test Setup Diagram




Below 1 GHz and above 30 MHz

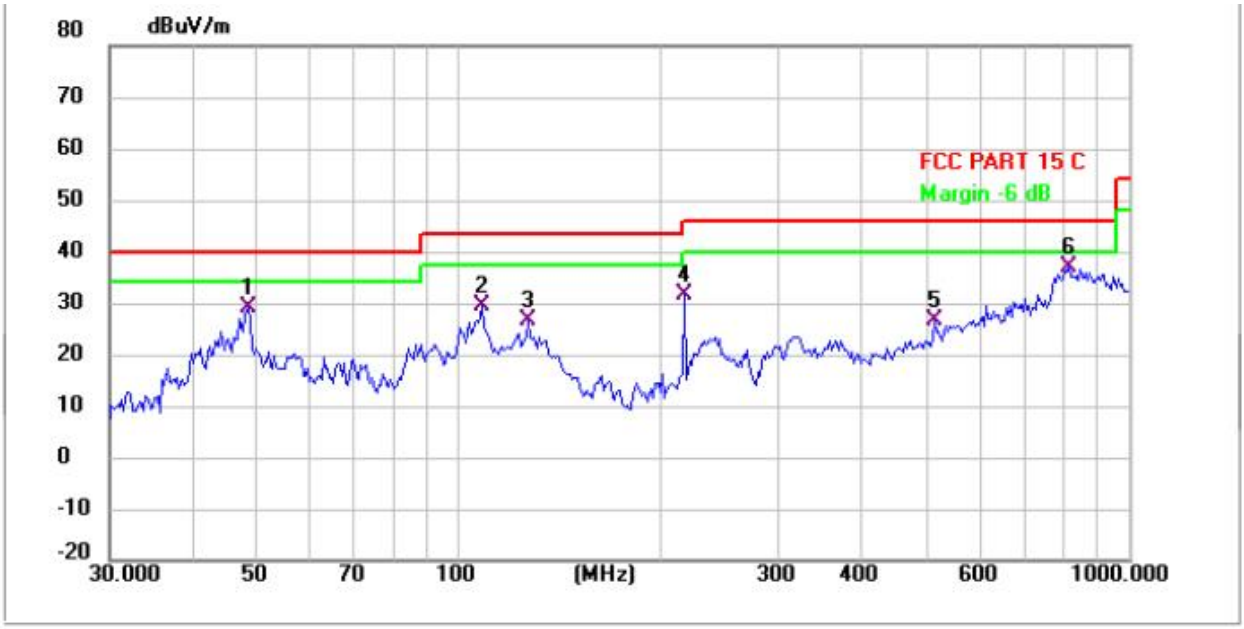
### 5.1.7.3. Test Result

Pass

### 5.1.7.4. Test Data

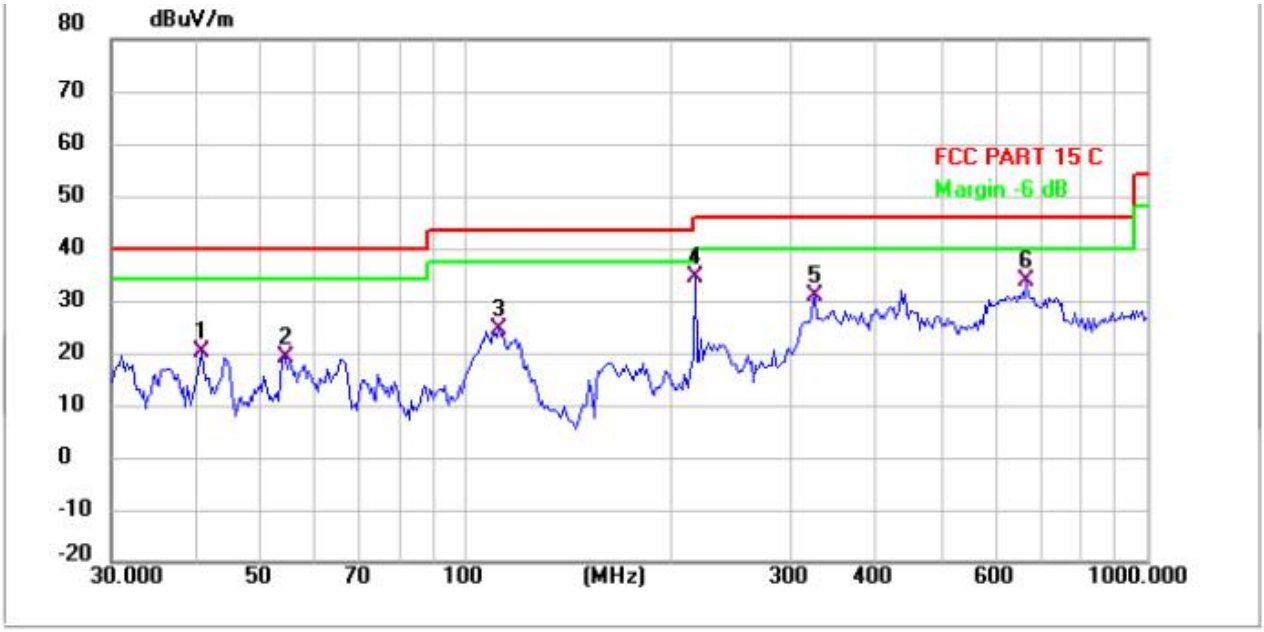
Have pre-scan all test channel, found CH149(MCS 0) which it was worst case, so only show the worst case's data on this report.

Mode1 / Polarization: Horizontal / CH: L




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 48.332 | 58.43 | -29.19 | 29.24 | 40.00 | -10.76 | QP |
| 2 | 108.267 | 59.96 | -30.58 | 29.38 | 43.50 | -14.12 | QP |
| 3 | 126.329 | 59.73 | -33.09 | 26.64 | 43.50 | -16.86 | QP |
| 4 | 216.783 | 61.19 | -29.58 | 31.61 | 46.00 | -14.39 | QP |
| 5 | 513.633 | 48.06 | -21.44 | 26.62 | 46.00 | -19.38 | QP |
| 6 * | 815.968 | 53.42 | -16.29 | 37.13 | 46.00 | -8.87 | QP |

Mode1 / Polarization: Vertical / CH: L




| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|---|---|---|---|---|---|---|---|
| 1 | 40.845 | 50.84 | -30.52 | 20.32 | 40.00 | -19.68 | QP |
| 2 | 54.071 | 49.33 | -30.06 | 19.27 | 40.00 | -20.73 | QP |
| 3 | 111.347 | 55.11 | -30.76 | 24.35 | 43.50 | -19.15 | QP |
| 4 * | 216.783 | 64.22 | -29.58 | 34.64 | 46.00 | -11.36 | QP |
| 5 | 325.596 | 57.54 | -26.56 | 30.98 | 46.00 | -15.02 | QP |
| 6 | 665.803 | 51.35 | -17.70 | 33.65 | 46.00 | -12.35 | QP |

## 5.1.8. Undesirable emission limits (above 1GHz)

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10) |
| Test Limit: | For transmitters operating solely in the 5.725-5.850 GHz band:<br>All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. |

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| [1] 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | ([2]) |
| 13.36-13.41 | | | |

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
|---|---|---|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |

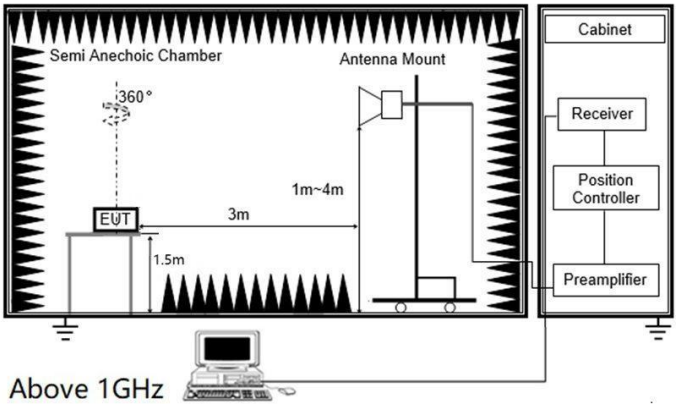
| | |
|---|---|
| | <table><tr><td>1.705-30.0</td><td>30</td><td>30</td></tr><tr><td>30-88</td><td>100 **</td><td>3</td></tr><tr><td>88-216</td><td>150 **</td><td>3</td></tr><tr><td>216-960</td><td>200 **</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table><br>** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.<br>In the emission table above, the tighter limit applies at the band edges.<br>The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. |
| Test Method: | ANSI C63.10-2020, section 12.7.4, 12.7.6, 12.7.7 |
| Procedure: | Above 1GHz:<br>a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.<br>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.<br>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.<br>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.<br>i. Repeat above procedures until all frequencies measured was complete.<br>Remark:<br>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor<br>2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.<br>3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.<br>4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. |

### 5.1.8.1. E.U.T. Operation

| |
|---|
| Operating Environment: |

| Temperature: | 23.1 °C | Humidity: | 56.4 % | Atmospheric Pressure: | 102 kPa |
|---|---|---|---|---|---|
| Pre test mode: | TM1,TM2,TM3 | | | | |
| Final test mode: | TM1,TM2,TM3 | | | | |

### 5.1.8.2. Test Setup Diagram




### 5.1.8.3. Test Result

Pass

## 5.1.8.4. Test Data

**For 1 GHz ~ 40 GHz**

Have pre-scan all test channel, found 11a(6Mbps) mode which it was worst case, so only show the worst case's data on this report.

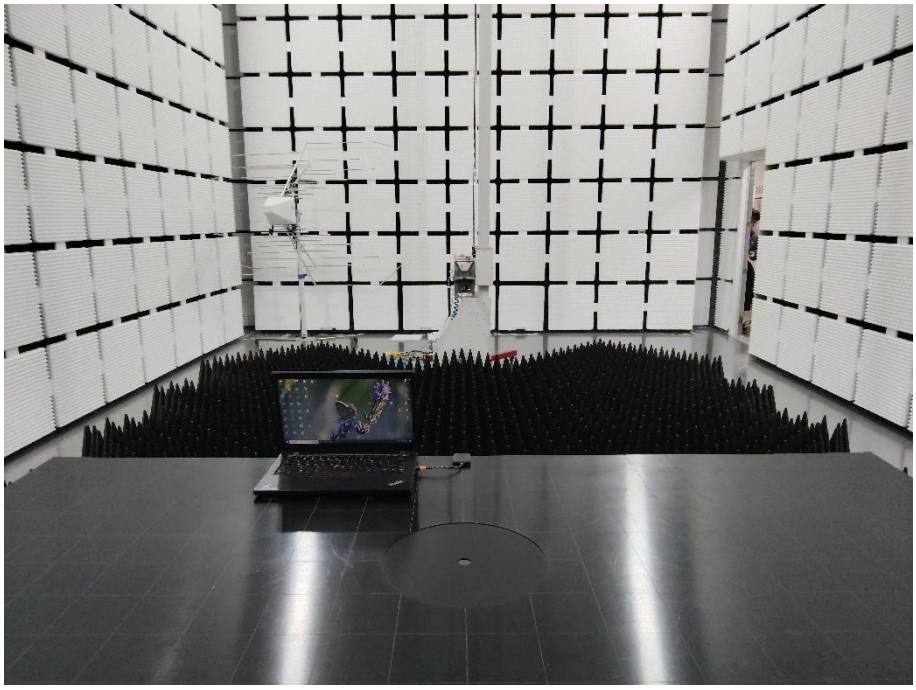
| Test channel:CH149 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Freq. (GHz) | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correction Factor (dB/m) | Level (dBuv) | Limit (dBuV/m) | Margin (dB) | Remark | Polarity |
| 11.49 | 68.94 | 31.33 | 4.23 | 38.62 | -3.06 | 65.88 | 74 | 8.12 | Peak | Horizontal |
| 11.49 | 49.35 | 31.33 | 4.23 | 38.62 | -3.06 | 46.29 | 54 | 7.71 | Average | Horizontal |
| 11.49 | 64.68 | 31.33 | 4.23 | 38.62 | -3.06 | 61.62 | 74 | 12.38 | Peak | Vertical |
| 11.49 | 50.92 | 31.33 | 4.23 | 38.62 | -3.06 | 47.86 | 54 | 6.14 | Average | Vertical |

| Test channel:CH157 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Freq. (GHz) | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correction Factor (dB/m) | Level (dBuv) | Limit (dBuV/m) | Margin (dB) | Remark | Polarity |
| 11.57 | 70.29 | 30.26 | 4.09 | 38.29 | -3.94 | 66.35 | 74 | 7.65 | Peak | Horizontal |
| 11.57 | 50.44 | 30.26 | 4.09 | 38.29 | -3.94 | 46.50 | 54 | 7.50 | Average | Horizontal |
| 11.57 | 67.69 | 30.26 | 4.09 | 38.29 | -3.94 | 63.75 | 74 | 10.25 | Peak | Vertical |
| 11.57 | 50.82 | 30.26 | 4.09 | 38.29 | -3.94 | 46.88 | 54 | 7.12 | Average | Vertical |

| Test channel:CH163 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Freq. (MHz) | Reading (dBuv) | Ant. Factor (dB/m) | Cable Factor (dB) | Pre-amplifier (dB) | Correction Factor (dB/m) | Level (dBuv) | Limit (dBuV/m) | Margin (dB) | Remark | Polarity |
| 11.65 | 64.01 | 31.97 | 4.11 | 38.47 | -2.39 | 61.62 | 74 | 12.38 | Peak | Horizontal |
| 11.65 | 49.99 | 31.97 | 4.11 | 38.47 | -2.39 | 47.60 | 54 | 6.40 | Average | Horizontal |
| 11.65 | 67.40 | 31.97 | 4.11 | 38.47 | -2.39 | 65.01 | 74 | 8.99 | Peak | Vertical |
| 11.65 | 51.02 | 31.97 | 4.11 | 38.47 | -2.39 | 48.63 | 54 | 5.37 | Average | Vertical |

# 6. TEST SETUP PHOTOS

Undesirable emission limits (below 1GHz)



Undesirable emission limits (above 1GHz)