FCC RF Test Report

(U-NII)

Applicant:	Hangzhou Roombanker Technology Co., Ltd.
Address of Applicant:	A#801 Wantong center, Hangzhou, China
Equipment Under Test (EUT)	
Product Name:	Multi Protocol Host Gateway
Model No.:	DSGW-291, DSGW-291-X (X:1~18)
FCC ID:	2AUXBDSGW-291
Applicable Standards:	FCC CFR Title 47 Part 15E (§15.407)
Date of Sample Receipt:	27 Feb., 2023
Date of Test:	28 Feb., to 26 May, 2023
Date of Report Issued:	29 May, 2023
Test Result:	PASS

Tested by:	June Li ***Test Engineer***	***Date:***	*29 May, 2023*
Reviewed by:	Janet Wu ***Project Engineer***	***Date:***	*29 May, 2023*
Approved by:	***Manager***	***Date:***	*29 May, 2023*

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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1 Version

Version No.	Date	Description
00	*29 May, 2023*	*Original*

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3 General Information

3.1 Client Information

Applicant:	Hangzhou Roombanker Technology Co., Ltd.
Address:	A#801 Wantong center, Hangzhou, China
Manufacturer:	Hangzhou Roombanker Technology Co., Ltd.
Address:	A#801 Wantong center, Hangzhou, China

3.2 General Description of E.U.T.

Product Name:	Multi Protocol Host Gateway
Model No.:	DSGW-291, DSGW-291-X (X:1~18)
Operation Frequency:	Band 1: 5150 MHz - 5250 MHz
	Band 4: 5725 MHz - 5850 MHz
Channel Numbers:	Band 1: 4 , Band 4: 5 (802.11a, n-HT20, ac-VHT20)
	Band 1, 4: 2 (802.11n-HT40, ac-VHT40)
	Band 1, 4: 1 (802.11ac-VHT80)
Modulation Technology: (IEEE 802.11a/802.11n)	OFDM-BPSK, QPSK, 16QAM, 64QAM
Modulation Technology: (IEEE 802.11ac)	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna Type:	External Antenna
Antenna Gain:	5.2G WiFi: 2.41 dBi (declare by applicant)
	5.8G WiFi: 3.64 dBi (declare by applicant)
Antenna Transmit Mode:	SISO (1TX, 1RX)
Power Supply:	DC 12V
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remark:	DSGW-291, DSGW-291-X (X:1~18) were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name.

3.3 Test Mode and Environment

Test Mode:	
Transmitting mode:	Keep the EUT in continuous transmitting with modulation

Per-scan all kind of data rate, the follow list were the worst case:

Mode	Data rate
802.11a	6.0 Mbps
802.11n-HT20	6.5 Mbps
802.11n-HT40	13.5 Mbps
802.11ac-VHT20	6.5 Mbps
802.11ac-VHT40	13.5 Mbps
802.11ac-VHT80	29.3 Mbps

Remark: *For AC power line conducted emission and radiated spurious emission (below 1GHz), pre-scan 802.11a, n, ac, modulation mode, found 802.11a modulation mode was worse case mode. The report only reflects the test data of worst mode.*

Operating Environment:	
Temperature:	15℃ ~ 35℃
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1008 mbar
Voltage:	Nominal: 12.0 Vdc, Extreme: Low 10.2 Vdc, High 13.8 Vdc

3.4 Description of Test Auxiliary Equipment

The EUT has been tested as an independent unit.

3.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Conducted Emission for LISN (9kHz ~ 10MHz)	1.9 dB
Conducted Emission for LISN (10MHz ~ 30MHz)	2.6 dB
Radiated Emission (30MHz ~ 1GHz) (3m SAC)	3.8 dB
Radiated Emission (1GHz ~ 18GHz) (3m SAC)	3.6 dB
Radiated Emission (18GHz ~ 40GHz) (3m SAC)	5.34 dB

Note: *All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.*

3.6 Additions to, Deviations, or Exclusions from the Method

No

3.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

3.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.
Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info-JYTee@lets.com, Website: http://jyt.lets.com

3.9 Test Instruments List

Radiated Emission(3m SAC):					
Test Equipment	**Manufacturer**	**Model No.**	**Manage No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
3m SAC	ETS	9m*6m*6m	WXJ001-1	04-14-2021	04-13-2024
Loop Antenna	Schwarzbeck	FMZB 1519 B	WXJ002-4	02-09-2023	02-08-2024
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	02-09-2023	02-08-2024
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-2	02-09-2023	02-08-2024
Horn Antenna	Schwarzbeck	BBHA9170	WXJ002-5	01-09-2023	01-08-2024
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXJ001-2	01-10-2023	01-09-2024
Pre-amplifier (1GHz ~ 18GHz)	SKET	LNPA_0118G-50	WXJ001-3	01-10-2023	01-09-2024
Pre-amplifier (18GHz ~ 40GHz)	RF System	TRLA-180400G45B	WXJ002-7	01-11-2023	01-10-2024
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	01-11-2023	01-10-2024
Spectrum Analyzer	Rohde & Schwarz	FSP 30	WXJ004	01-10-2023	01-09-2024
Spectrum Analyzer	KEYSIGHT	N9010B	WXJ004-2	10-17-2022	10-16-2023
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	01-18-2023	01-17-2024
Coaxial Cable (1GHz ~ 18GHz)	JYTSZ	JYT3M-18G-NN-8M	WXG001-5	01-18-2023	01-17-2024
Coaxial Cable (18GHz ~ 40GHz)	JYTSZ	JYT3M-40G-SS-8M	WXG001-7	01-18-2023	01-17-2024
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Test Software	Tonscend	TS+	Version: 3.0.0.1		

Conducted Emission:					
Test Equipment	**Manufacturer**	**Model No.**	**Manage No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
EMI Test Receiver	Rohde & Schwarz	ESR3	WXJ003-2	07-12-2022	07-11-2023
LISN	Schwarzbeck	NSLK 8127	QCJ001-13	01-10-2023	01-09-2024
LISN	Rohde & Schwarz	ESH3-Z5	WXJ005-1	01-11-2023	01-10-2024
LISN Coaxial Cable (9kHz ~ 30MHz)	JYTSZ	JYTCE-1G-NN-2M	WXG003-1	02-22-2023	02-21-2024
RF Switch	TOP PRECISION	RSU0301	WXG003	N/A	
Test Software	AUDIX	E3	Version: 6.110919b		

Conducted Method:					
Test Equipment	**Manufacturer**	**Model No.**	**Manage No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
Spectrum Analyzer	Keysight	N9010B	WXJ004-3	10-17-2022	10-16-2023
DC Power Supply	Keysight	E3642A	WXJ025-2	N/A	
Temperature Humidity Chamber	ZHONG ZHI	CZ-A-80D	WXJ032-3	01-09-2023	01-08-2025
Power Detector Box	MWRFTEST	MW100-PSB	WXJ007-4	10-17-2022	10-16-2023
RF Control Unit	MWRFTEST	MW100-RFCB	WXG006	N/A	
Test Software	MWRFTEST	MTS 8310	Version: 2.0.0.0		

4 Measurement Setup and Procedure

4.1 Test Channel

According to ANSI C63.10-2013 chapter 5.6.1 Table 4 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:

Operation frequency: 5150 MHz – 5250 MHz

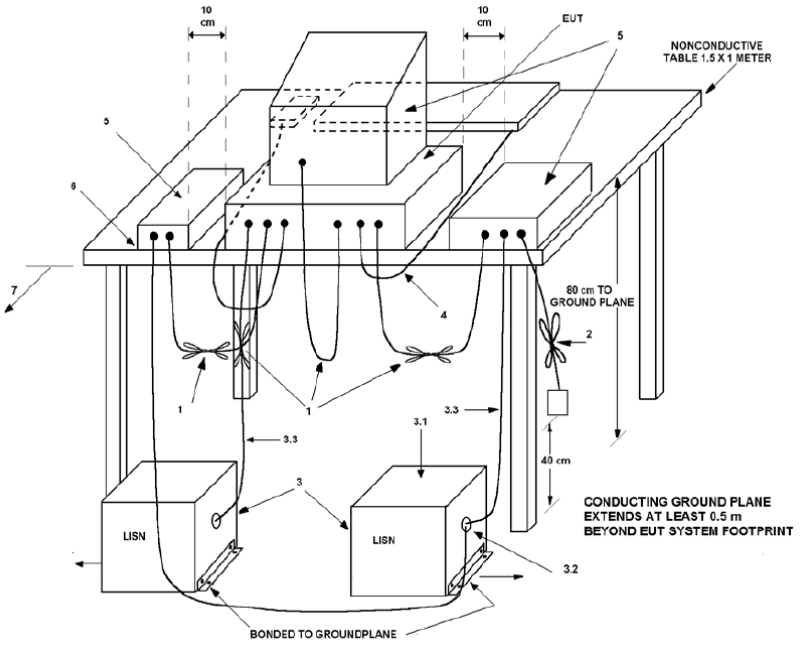
Modulation mode	Lowest channel		Middle channel		Highest channel	
	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
802.11a, n-HT20, ac-VHT20	36	5180	40	5200	48	5240
802.11n-HT40, ac-VHT40	38	5190	/	/	46	5230
802.11ac-VHT80	/	/	42	5210	/	/

Operation frequency: 5725 MHz – 5850 MHz

Modulation mode	Lowest channel		Middle channel		Highest channel	
	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
802.11a, n-HT20, ac-VHT20	149	5745	157	5785	165	5825
802.11n-HT40, ac-VHT40	151	5755	/	/	159	5795
802.11ac-VHT80	/	/	155	5775	/	/

4.2 Test Setup

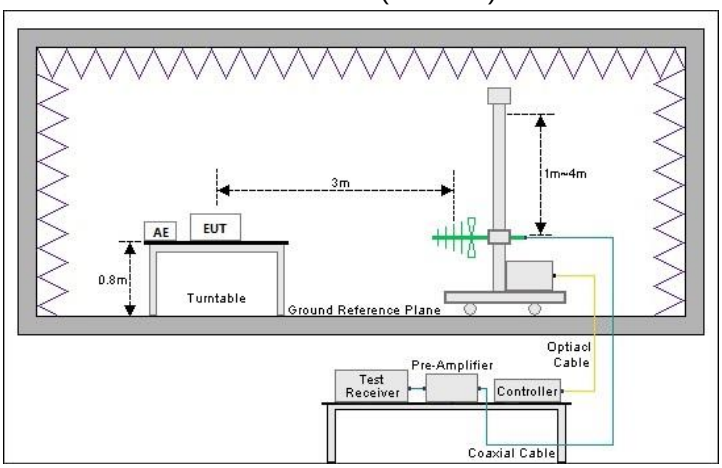
1) Conducted emission measurement:



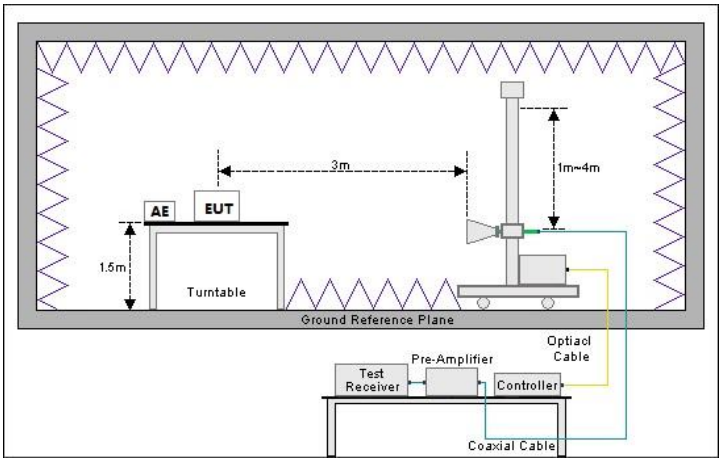
Note: The detailed descriptions please refer to Figure 8 of ANSI C63.4:2014.

2) Radiated emission measurement:

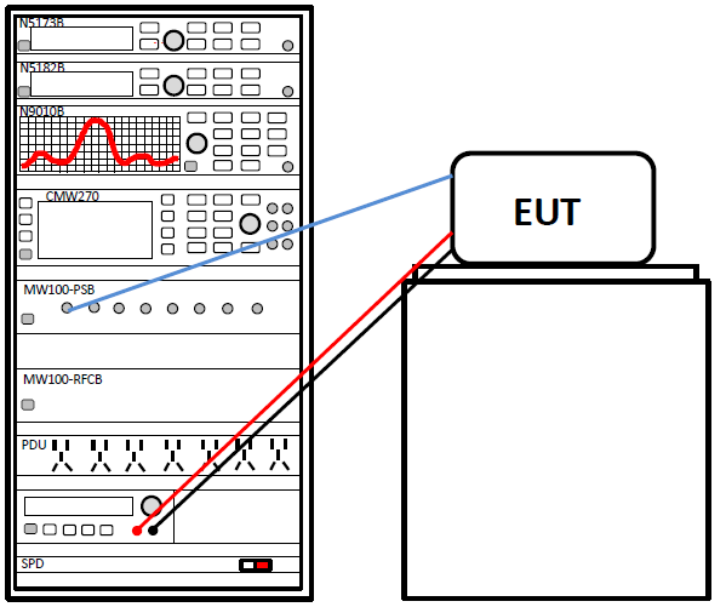
Below 1GHz (3m SAC)



Above 1GHz (3m SAC)



3) Conducted test method



4.3 Test Procedure

Test method	Test step
Conducted emission	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
Radiated emission	**For below 1GHz:** 1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested，and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. **For above 1GHz:** 1. The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested，and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
Conducted test method	1. The Wi-Fi antenna port of EUT was connected to the test port of the test system through an RF cable. 2. The EUT is keeping in continuous transmission mode and tested in all modulation modes. 3. Open the test software, prepare a test plan, and control the system through the software. After the test is completed, the test report is exported through the test software.

5 Test Results

5.1 Summary

5.1.1 Clause and Data Summary

Test items	Standard clause	Test data	Result
Antenna Requirement	15.203	See Section 5.2	Pass
AC Power Line Conducted Emission	15.207 15.407 (b)(9)	See Section 5.3	Pass
Duty Cycle	ANSI C63.10-2013	Appendix A – 5.2G Wi-Fi Appendix A – 5.8G Wi-Fi	Pass
Conducted Peak Output Power Power Spectral Density	15.407 (a)(1)(iv), (a)(3)(i)	Appendix A – 5.2G Wi-Fi Appendix A – 5.8G Wi-Fi	Pass
26dB Emission Bandwidth 99% Occupied Bandwidth	15.407 (a)(12)	Appendix A – 5.2G Wi-Fi Appendix A – 5.8G Wi-Fi	Pass
6dB Emission Bandwidth	15.407 (e)	Appendix A – 5.2G Wi-Fi Appendix A – 5.8G Wi-Fi	Pass
Unwanted Emissions	15.205 15.209 15.407 (b)(1), (4), (9), (10)	See Section 5.4	Pass
Frequency Stability	15.407 (g)	Appendix A – 5.2G Wi-Fi Appendix A – 5.8G Wi-Fi	Pass
Dynamic frequency selection	15.407 (h)(2)	N/A	N/A

Remark:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *N/A: Not Applicable.*
3. *The cable insertion loss used by "RF Output Power" and other conduction measurement items is 1.0dB (provided by the customer).*

Test Method:	*ANSI C63.10-2013* *KDB 789033 D02 General U-NII Test Procedures New Rules v02r01*

5.1.2 Test Limit

<table>
<tr><th>Test items</th><th>Limit</th></tr>
<tr><td>AC Power Line Conducted Emission</td><td>
<table>
<tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Limit (dBμV)</th></tr>
<tr><th>Quasi-Peak</th><th>Average</th></tr>
<tr><td>0.15 – 0.5</td><td>66 to 56 Note 1</td><td>56 to 46 Note 1</td></tr>
<tr><td>0.5 – 5</td><td>56</td><td>46</td></tr>
<tr><td>5 – 30</td><td>60</td><td>50</td></tr>
<tr><td colspan="3">Note 1: The limit level in dBμV decreases linearly with the logarithm of frequency.
Note 2: The more stringent limit applies at transition frequencies.</td></tr>
</table>
</td></tr>
<tr><td>Conducted Peak Output Power

Power Spectral Density</td><td>For the 5.15-5.25 GHz band:
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.895 GHz:
For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and 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. 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.</td></tr>
<tr><td>26dB Emission Bandwidth
99% Occupied Bandwidth</td><td>N/A</td></tr>
<tr><td>6dB Emission Bandwidth</td><td>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.</td></tr>
</table>

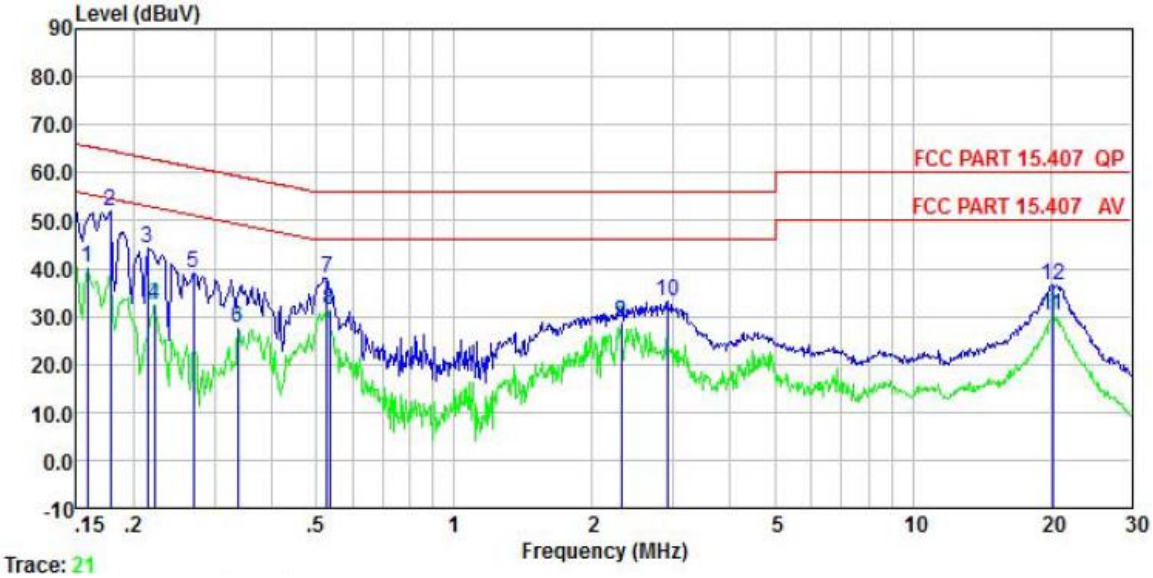
<table>
<tr>
<td>Unwanted Emissions</td>
<td>
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating solely in the 5.725-5.850 GHz band: All emissions shall be limited to a level 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.
(5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. The provisions of § 15.205 apply to intentional radiators operating under this section:
<table>
<tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Limit (dBμV/m)</th><th rowspan="2">Detector</th></tr>
<tr><th>@ 3m</th><th>@ 10m</th></tr>
<tr><td>30 – 88</td><td>40.0</td><td>30.0</td><td>Quasi-peak</td></tr>
<tr><td>88 – 216</td><td>43.5</td><td>33.5</td><td>Quasi-peak</td></tr>
<tr><td>216 – 960</td><td>46.0</td><td>36.0</td><td>Quasi-peak</td></tr>
<tr><td>960 – 1000</td><td>54.0</td><td>44.0</td><td>Quasi-peak</td></tr>
<tr><td colspan="4">Note: The more stringent limit applies at transition frequencies.</td></tr>
<tr><th rowspan="2">Frequency</th><th colspan="3">Limit (dBμV/m) @ 3m</th></tr>
<tr><th colspan="2">Average</th><th>Peake</th></tr>
<tr><td>Above 1 GHz</td><td colspan="2">54.0</td><td>74.0</td></tr>
<tr><td colspan="4">Note: The measurement bandwidth shall be 1 MHz or greater.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Frequency Stability</td>
<td>Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.</td>
</tr>
</table>

5.2 Antenna requirement

Standard requirement:	FCC Part 15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
E.U.T Antenna:	
The Wi-Fi antenna is an external antenna which cannot replace by end-user, the best case gain of the antenna is 3.64 dBi. See product internal photos for details.	

5.3 AC Power Line Conducted Emission

Product name:	Multi Protocol Host Gateway	**Product model:**	DSGW-291-X (X:1~18)
Test by:	June	**Test mode:**	5G Wi-Fi mode
Test frequency:	150 kHz ~ 30 MHz	**Phase:**	Line
Test voltage:	AC 120 V/60 Hz		

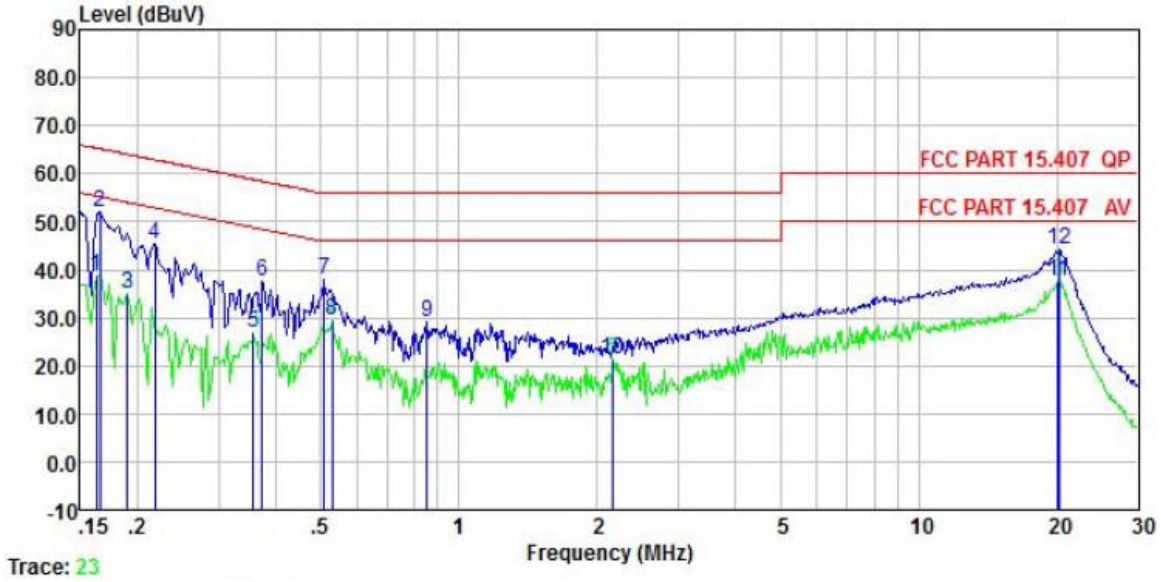


	Freq	Read Level	LISN Factor	Aux2 Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.158	29.59	0.04	10.50	0.01	40.14	55.56	-15.42	Average
2	0.178	41.48	0.05	10.50	0.01	52.04	64.59	-12.55	QP
3	0.214	33.76	0.05	10.50	0.03	44.34	63.05	-18.71	QP
4	0.222	21.79	0.05	10.50	0.03	32.37	52.74	-20.37	Average
5	0.270	28.42	0.06	10.50	0.02	39.00	61.12	-22.12	QP
6	0.337	16.95	0.06	10.50	0.02	27.53	49.27	-21.74	Average
7	0.527	27.50	0.05	10.50	0.03	38.08	56.00	-17.92	QP
8	0.535	20.72	0.05	10.50	0.03	31.30	46.00	-14.70	Average
9	2.309	17.83	0.08	10.50	0.16	28.57	46.00	-17.43	Average
10	2.915	22.55	0.09	10.50	0.08	33.22	56.00	-22.78	QP
11	20.162	19.15	0.34	10.50	0.19	30.18	50.00	-19.82	Average
12	20.270	25.53	0.34	10.50	0.19	36.56	60.00	-23.44	QP

Remark:

1. Level = Read level + LISN Factor + Cable Loss.

Product name:	Multi Protocol Host Gateway	Product model:	DSGW-291-X (X:1~18)
Test by:	June	Test mode:	5G Wi-Fi mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz		



	Freq	Read Level	LISN Factor	Aux2 Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.162	28.17	0.06	10.50	0.01	38.74	55.34	-16.60	Average
2	0.166	41.30	0.06	10.50	0.01	51.87	65.16	-13.29	QP
3	0.190	24.50	0.05	10.50	0.03	35.08	54.02	-18.94	Average
4	0.219	34.81	0.05	10.50	0.03	45.39	62.88	-17.49	QP
5	0.358	16.31	0.05	10.50	0.02	26.88	48.78	-21.90	Average
6	0.373	27.11	0.05	10.50	0.03	37.69	58.43	-20.74	QP
7	0.510	27.30	0.04	10.50	0.03	37.87	56.00	-18.13	QP
8	0.529	19.02	0.04	10.50	0.03	29.59	46.00	-16.41	Average
9	0.853	18.53	0.06	10.50	0.04	29.13	56.00	-26.87	QP
10	2.167	10.73	0.07	10.50	0.18	21.48	46.00	-24.52	Average
11	20.056	26.64	0.33	10.50	0.19	37.66	50.00	-12.34	Average
12	20.270	33.04	0.34	10.50	0.19	44.07	60.00	-15.93	QP

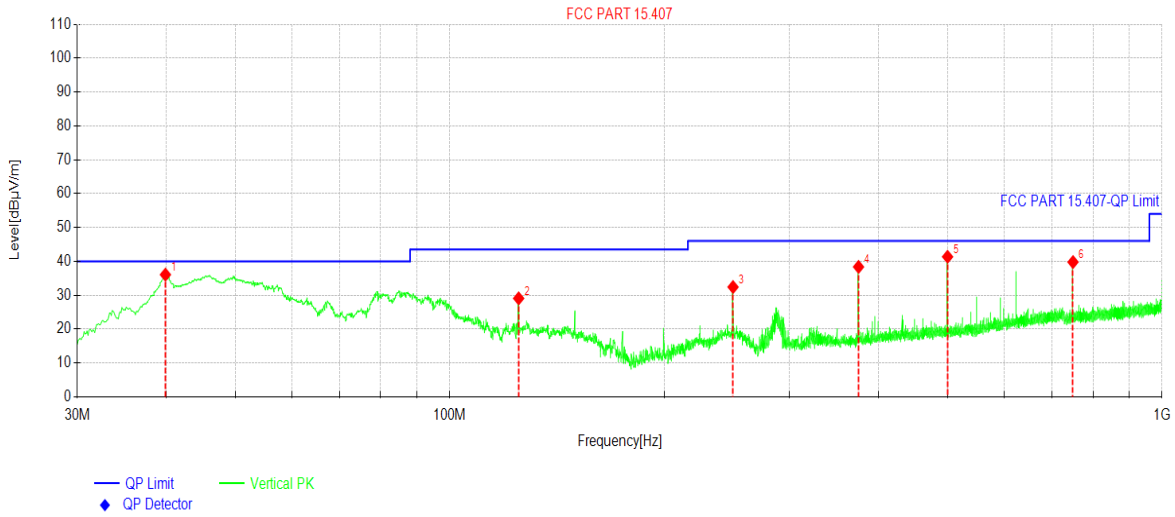
Remark:

1. Level = Read level + LISN Factor + Cable Loss.

5.4 Unwanted Emissions

Below 1GHz:

Product Name:	Multi Protocol Host Gateway	**Product Model:**	DSGW-291-X (X:1~18)
Test By:	June	**Test mode:**	5G Wi-Fi mode
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Vertical
Test Voltage:	DC 12V		

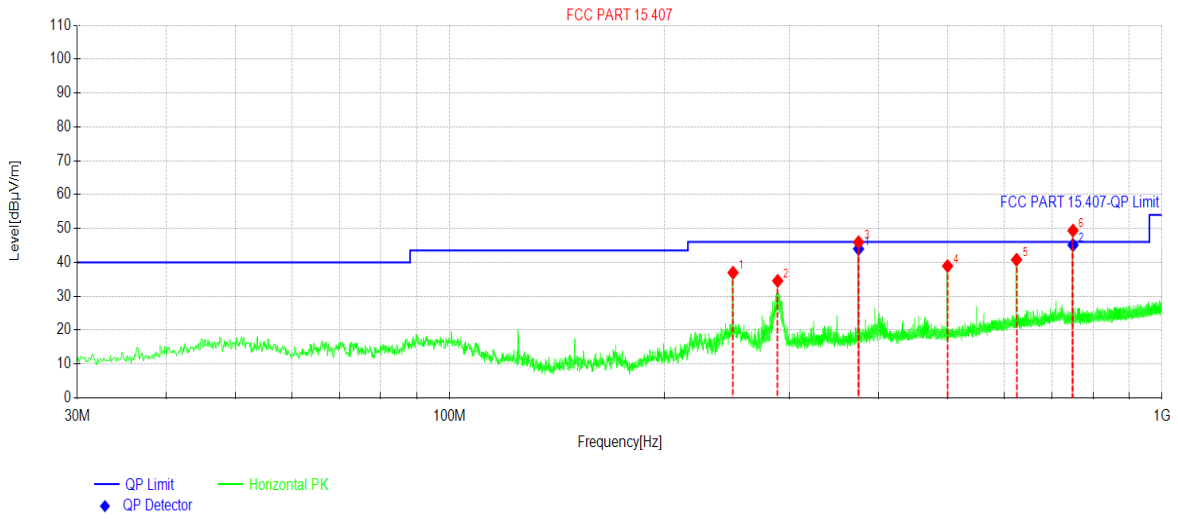


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity
1	39.8950	49.77	36.08	-13.69	40.00	3.92	PK	Vertical
2	124.972	46.63	29.07	-17.56	43.50	14.43	PK	Vertical
3	249.921	45.92	32.43	-13.49	46.00	13.57	PK	Vertical
4	374.966	49.15	38.37	-10.78	46.00	7.63	PK	Vertical
5	500.012	50.32	41.36	-8.96	46.00	4.64	PK	Vertical
6	750.006	43.73	39.79	-3.94	46.00	6.21	PK	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Multi Protocol Host Gateway	**Product Model:**	DSGW-291-X (X:1~18)
Test By:	June	**Test mode:**	5G Wi-Fi mode
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Horizontal
Test Voltage:	DC 12V		



Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity
1	249.921	50.45	36.96	-13.49	46.00	9.04	PK	Horizontal
2	288.724	47.55	34.53	-13.02	46.00	11.47	PK	Horizontal
3	374.966	56.73	45.95	-10.78	46.00	0.05	PK	Horizontal
4	500.012	47.88	38.92	-8.96	46.00	7.08	PK	Horizontal
5	624.960	47.01	40.79	-6.22	46.00	5.21	PK	Horizontal
6	750.006	53.34	49.40	-3.94	46.00	-3.40	PK	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	QP Reading [dBµV/m]	Angle [°]	Verdict
1	374.966	-10.78	43.99	46.00	2.01	54.77	43	PASS
2	750.006	-3.94	45.12	46.00	0.88	49.06	212	PASS

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Above 1GHz

Band 1: 5150 MHz - 5250 MHz, 802.11a						
Test channel: Lowest channel Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	44.15	15.74	59.89	74.00	14.11	Vertical
10360.00	58.73	4.88	63.61	68.20	4.59	Vertical
5150.00	38.26	15.74	54.00	74.00	20.00	Horizontal
10360.00	54.08	4.88	58.96	68.20	9.24	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	33.33	15.74	49.07	54.00	4.93	Vertical
5150.00	28.21	15.74	43.95	54.00	10.05	Horizontal
Test channel: Middle channel Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
10400.00	58.41	4.71	63.12	68.20	5.08	Vertical
10400.00	53.61	4.71	58.32	68.20	9.88	Horizontal
Test channel: Highest channel Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	34.94	16.49	51.43	74.00	22.57	Vertical
10480.00	58.36	5.38	63.74	68.20	4.46	Vertical
5350.00	34.04	16.49	50.53	74.00	23.47	Horizontal
10480.00	53.70	5.38	59.08	68.20	9.12	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	25.80	16.49	42.29	54.00	11.71	Vertical
5350.00	25.51	16.49	42.00	54.00	12.00	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 1: 5150 MHz - 5250 MHz, 802.11n-HT20

Test channel: Lowest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	34.60	15.74	50.34	74.00	23.66	Vertical
10360.00	58.52	4.88	63.40	68.20	4.80	Vertical
5150.00	34.88	15.74	50.62	74.00	23.38	Horizontal
10360.00	54.35	4.88	59.23	68.20	8.97	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	26.32	15.74	42.06	54.00	11.94	Vertical
5150.00	26.33	15.74	42.07	54.00	11.93	Horizontal

Test channel: Middle channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
10400.00	58.68	4.71	63.39	68.20	4.81	Vertical
10400.00	53.88	4.71	58.59	68.20	9.61	Horizontal

Test channel: Highest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	33.53	16.49	50.02	74.00	23.98	Vertical
10480.00	58.35	5.38	63.73	68.20	4.47	Vertical
5350.00	35.03	16.49	51.52	74.00	22.48	Horizontal
10480.00	54.31	5.38	59.69	68.20	8.51	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	25.36	16.49	41.85	54.00	12.15	Vertical
5350.00	26.38	16.49	42.87	54.00	11.13	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 1: 5150 MHz - 5250 MHz, 802.11n-HT40

Test channel: Lowest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	34.00	15.74	49.74	74.00	24.26	Vertical
10380.00	58.49	4.79	63.28	68.20	4.92	Vertical
5150.00	35.21	15.74	50.95	74.00	23.05	Horizontal
10380.00	54.48	4.79	59.27	68.20	8.93	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	26.35	15.74	42.09	54.00	11.91	Vertical
5150.00	25.58	15.74	41.32	54.00	12.68	Horizontal

Test channel: Highest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	34.09	16.49	50.58	74.00	23.42	Vertical
10460.00	58.43	5.21	63.64	68.20	4.56	Vertical
5350.00	34.49	16.49	50.98	74.00	23.02	Horizontal
10460.00	54.23	5.21	59.44	68.20	8.76	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	25.81	16.49	42.30	54.00	11.70	Vertical
5350.00	26.23	16.49	42.72	54.00	11.28	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 1: 5150 MHz - 5250 MHz, 802.11ac-VHT20

Test channel: Lowest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	34.78	15.74	50.52	74.00	23.48	Vertical
10360.00	58.34	4.88	63.22	68.20	4.98	Vertical
5150.00	34.48	15.74	50.22	74.00	23.78	Horizontal
10360.00	54.10	4.88	58.98	68.20	9.22	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	26.80	15.74	42.54	54.00	11.46	Vertical
5150.00	26.52	15.74	42.26	54.00	11.74	Horizontal

Test channel: Middle channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
10400.00	58.56	4.71	63.27	68.20	4.93	Vertical
10400.00	53.91	4.71	58.62	68.20	9.58	Horizontal

Test channel: Highest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	33.32	16.49	49.81	74.00	24.19	Vertical
10480.00	58.76	5.38	64.14	68.20	4.06	Vertical
5350.00	35.42	16.49	51.91	74.00	22.09	Horizontal
10480.00	54.55	5.38	59.93	68.20	8.27	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	25.85	16.49	42.34	54.00	11.66	Vertical
5350.00	26.26	16.49	42.75	54.00	11.25	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 1: 5150 MHz - 5250 MHz, 802.11ac-VHT40						
Test channel: Lowest channel Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	33.78	15.74	49.52	74.00	24.48	Vertical
10380.00	58.92	4.79	63.71	68.20	4.49	Vertical
5150.00	34.88	15.74	50.62	74.00	23.38	Horizontal
10380.00	54.08	4.79	58.87	68.20	9.33	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	26.01	15.74	41.75	54.00	12.25	Vertical
5150.00	25.09	15.74	40.83	54.00	13.17	Horizontal
Test channel: Highest channel Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	33.88	16.49	50.37	74.00	23.63	Vertical
10460.00	58.56	5.21	63.77	68.20	4.43	Vertical
5350.00	34.47	16.49	50.96	74.00	23.04	Horizontal
10460.00	53.96	5.21	59.17	68.20	9.03	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5350.00	25.75	16.49	42.24	54.00	11.76	Vertical
5350.00	26.38	16.49	42.87	54.00	11.13	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 1: 5150 MHz - 5250 MHz, 802.11ac-VHT80						
Test channel: Middle channel Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	34.83	15.74	50.57	74.00	23.43	Vertical
5350.00	34.59	16.49	51.08	74.00	22.92	Vertical
10420.00	58.77	4.88	63.65	68.20	4.55	Vertical
5150.00	35.19	15.74	50.93	74.00	23.07	Horizontal
5350.00	36.26	16.49	52.75	74.00	21.25	Horizontal
10420.00	54.76	4.88	59.64	68.20	8.56	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5150.00	26.32	15.74	42.06	54.00	11.94	Vertical
5350.00	26.36	16.49	42.85	54.00	11.15	Vertical
5150.00	26.26	15.74	42.00	54.00	12	Horizontal
5350.00	24.38	16.49	40.87	54.00	13.13	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 4: 5725 MHz - 5825 MHz, 802.11a						
Test channel: Lowest channel Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5650.00	37.16	17.16	54.32	68.20	13.88	Vertical
5700.00	36.54	17.35	53.89	105.20	51.31	Vertical
5720.00	45.30	17.46	62.76	110.80	48.04	Vertical
5725.00	51.10	17.49	68.59	122.20	53.61	Vertical
11490.00	53.33	6.61	59.94	74.00	14.06	Vertical
5650.00	36.89	17.16	54.05	68.20	14.15	Horizontal
5700.00	36.85	17.35	54.20	105.20	51.00	Horizontal
5720.00	37.50	17.46	54.96	110.80	55.84	Horizontal
5725.00	40.22	17.49	57.71	122.20	64.49	Horizontal
11490.00	52.19	6.61	58.80	74.00	15.20	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11490.00	43.74	6.61	50.35	54.00	3.65	Vertical
11490.00	44.74	6.61	51.35	54.00	2.65	Horizontal
Test channel: Middle channel Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11570.00	53.76	6.28	60.04	74.00	13.96	Vertical
11570.00	52.60	6.28	58.88	74.00	15.12	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11570.00	43.82	6.28	50.10	54.00	3.90	Vertical
11570.00	44.40	6.28	50.68	54.00	3.32	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5850.00	34.30	18.01	52.31	122.20	69.89	Vertical
5855.00	34.52	18.02	52.54	110.80	58.26	Vertical
5875.00	34.83	18.07	52.90	105.20	52.30	Vertical
5925.00	33.68	17.95	51.63	68.20	16.57	Vertical
11650.00	53.32	6.49	59.81	74.00	14.19	Vertical
5850.00	33.77	18.01	51.78	122.20	70.42	Horizontal
5855.00	33.65	18.02	51.67	110.80	59.13	Horizontal
5875.00	33.74	18.07	51.81	105.20	53.39	Horizontal
5925.00	33.84	17.95	51.79	68.20	16.41	Horizontal
11650.00	52.43	6.49	58.92	74.00	15.08	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11650.00	43.65	6.49	50.14	54.00	3.86	Vertical
11650.00	44.33	6.49	50.82	54.00	3.18	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 4: 5725 MHz - 5825 MHz, 802.11n-HT20

Test channel: Lowest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5650.00	34.43	17.16	51.59	68.20	16.61	Vertical
5700.00	34.90	17.35	52.25	105.20	52.95	Vertical
5720.00	34.39	17.46	51.85	110.80	58.95	Vertical
5725.00	35.14	17.49	52.63	122.20	69.57	Vertical
11490.00	53.47	6.61	60.08	74.00	13.92	Vertical
5650.00	35.42	17.16	52.58	68.20	15.62	Horizontal
5700.00	34.78	17.35	52.13	105.20	53.07	Horizontal
5720.00	34.83	17.46	52.29	110.80	58.51	Horizontal
5725.00	37.06	17.49	54.55	122.20	67.65	Horizontal
11490.00	51.94	6.61	58.55	74.00	15.45	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11490.00	43.64	6.61	50.25	54.00	3.75	Vertical
11490.00	44.67	6.61	51.28	54.00	2.72	Horizontal

Test channel: Middle channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11570.00	53.36	6.28	59.64	74.00	14.36	Vertical
11570.00	52.39	6.28	58.67	74.00	15.33	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11570.00	44.02	6.28	50.30	54.00	3.70	Vertical
11570.00	44.31	6.28	50.59	54.00	3.41	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5850.00	33.59	18.01	51.60	122.20	70.60	Vertical
5855.00	33.36	18.02	51.38	110.80	59.42	Vertical
5875.00	34.09	18.07	52.16	105.20	53.04	Vertical
5925.00	33.96	17.95	51.91	68.20	16.29	Vertical
11650.00	52.97	6.49	59.46	74.00	14.54	Vertical
5850.00	34.21	18.01	52.22	122.20	69.98	Horizontal
5855.00	33.96	18.02	51.98	110.80	58.82	Horizontal
5875.00	34.72	18.07	52.79	105.20	52.41	Horizontal
5925.00	34.27	17.95	52.22	68.20	15.98	Horizontal
11650.00	52.53	6.49	59.02	74.00	14.98	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11650.00	43.95	6.49	50.44	54.00	3.56	Vertical
11650.00	44.60	6.49	51.09	54.00	2.91	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 4: 5725 MHz - 5825 MHz, 802.11n-HT40

Test channel: Lowest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5650.00	34.78	17.16	51.94	68.20	16.26	Vertical
5700.00	34.72	17.35	52.07	105.20	53.13	Vertical
5720.00	36.76	17.46	54.22	110.80	56.58	Vertical
5725.00	37.13	17.49	54.62	122.20	67.58	Vertical
11510.00	53.39	6.60	59.99	74.00	14.01	Vertical
5650.00	35.04	17.16	52.20	68.20	16.00	Horizontal
5700.00	34.77	17.35	52.12	105.20	53.08	Horizontal
5720.00	35.42	17.46	52.88	110.80	57.92	Horizontal
5725.00	36.45	17.49	53.94	122.20	68.26	Horizontal
11510.00	52.57	6.60	59.17	74.00	14.83	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11510.00	43.47	6.60	50.07	54.00	3.93	Vertical
11510.00	44.39	6.60	50.99	54.00	3.01	Horizontal

Test channel: Highest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5850.00	33.62	18.01	51.63	122.20	70.57	Vertical
5855.00	34.10	18.02	52.12	110.80	58.68	Vertical
5875.00	34.25	18.07	52.32	105.20	52.88	Vertical
5925.00	34.73	17.95	52.68	68.20	15.52	Vertical
11590.00	53.82	6.17	59.99	74.00	14.01	Vertical
5850.00	33.85	18.01	51.86	122.20	70.34	Horizontal
5855.00	33.80	18.02	51.82	110.80	58.98	Horizontal
5875.00	34.08	18.07	52.15	105.20	53.05	Horizontal
5925.00	33.94	17.95	51.89	68.20	16.31	Horizontal
11590.00	51.95	6.17	58.12	74.00	15.88	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11590.00	43.63	6.17	49.80	54.00	4.20	Vertical
11590.00	44.56	6.17	50.73	54.00	3.27	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 4: 5725 MHz - 5825 MHz, 8802.11ac-VHT20

Test channel: Lowest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5650.00	36.68	17.16	53.84	68.20	14.36	Vertical
5700.00	36.84	17.35	54.19	105.20	51.01	Vertical
5720.00	45.49	17.46	62.95	110.80	47.85	Vertical
5725.00	50.84	17.49	68.33	122.20	53.87	Vertical
11490.00	53.72	6.61	60.33	74.00	13.67	Vertical
5650.00	36.81	17.16	53.97	68.20	14.23	Horizontal
5700.00	36.97	17.35	54.32	105.20	50.88	Horizontal
5720.00	37.59	17.46	55.05	110.80	55.75	Horizontal
5725.00	40.61	17.49	58.10	122.20	64.10	Horizontal
11490.00	52.07	6.61	58.68	74.00	15.32	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11490.00	43.25	6.61	49.86	54.00	4.14	Vertical
11490.00	44.27	6.61	50.88	54.00	3.12	Horizontal

Test channel: Middle channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11570.00	53.04	6.28	59.32	74.00	14.68	Vertical
11570.00	51.97	6.28	58.25	74.00	15.75	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11570.00	43.57	6.28	49.85	54.00	4.15	Vertical
11570.00	44.79	6.28	51.07	54.00	2.93	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5850.00	34.11	18.01	52.12	122.20	70.08	Vertical
5855.00	34.68	18.02	52.70	110.80	58.10	Vertical
5875.00	34.67	18.07	52.74	105.20	52.46	Vertical
5925.00	34.02	17.95	51.97	68.20	16.23	Vertical
11650.00	53.34	6.49	59.83	74.00	14.17	Vertical
5850.00	34.11	18.01	52.12	122.20	70.08	Horizontal
5855.00	33.64	18.02	51.66	110.80	59.14	Horizontal
5875.00	33.65	18.07	51.72	105.20	53.48	Horizontal
5925.00	33.83	17.95	51.78	68.20	16.42	Horizontal
11650.00	51.73	6.49	58.22	74.00	15.78	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11650.00	44.15	6.49	50.64	54.00	3.36	Vertical
11650.00	44.49	6.49	50.98	54.00	3.02	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 4: 5725 MHz - 5825 MHz, 802.11ac-VHT40

Test channel: Lowest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5650.00	34.36	17.16	51.52	68.20	16.68	Vertical
5700.00	34.53	17.35	51.88	105.20	53.32	Vertical
5720.00	36.62	17.46	54.08	110.80	56.72	Vertical
5725.00	36.91	17.49	54.40	122.20	67.80	Vertical
11510.00	53.27	6.60	59.87	74.00	14.13	Vertical
5650.00	35.21	17.16	52.37	68.20	15.83	Horizontal
5700.00	35.21	17.35	52.56	105.20	52.64	Horizontal
5720.00	35.78	17.46	53.24	110.80	57.56	Horizontal
5725.00	36.12	17.49	53.61	122.20	68.59	Horizontal
11510.00	52.14	6.60	58.74	74.00	15.26	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11510.00	43.73	6.60	50.33	54.00	3.67	Vertical
11510.00	44.41	6.60	51.01	54.00	2.99	Horizontal

Test channel: Highest channel

Detector: Peak Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5850.00	33.79	18.01	51.80	122.20	70.40	Vertical
5855.00	33.70	18.02	51.72	110.80	59.08	Vertical
5875.00	34.43	18.07	52.50	105.20	52.70	Vertical
5925.00	34.72	17.95	52.67	68.20	15.53	Vertical
11590.00	53.54	6.17	59.71	74.00	14.29	Vertical
5850.00	33.91	18.01	51.92	122.20	70.28	Horizontal
5855.00	33.38	18.02	51.40	110.80	59.40	Horizontal
5875.00	34.13	18.07	52.20	105.20	53.00	Horizontal
5925.00	33.72	17.95	51.67	68.20	16.53	Horizontal
11590.00	51.82	6.17	57.99	74.00	16.01	Horizontal

Detector: Average Value

Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11590.00	43.64	6.17	49.81	54.00	4.19	Vertical
11590.00	44.62	6.17	50.79	54.00	3.21	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

Band 4: 5725 MHz - 5825 MHz, 802.11ac-VHT80						
Test channel: Lowest channel Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
5650.00	34.89	17.16	52.05	68.20	16.15	Vertical
5700.00	35.88	17.35	53.23	105.20	51.97	Vertical
5720.00	36.88	17.46	54.34	110.80	56.46	Vertical
5725.00	40.82	17.49	58.31	122.20	63.89	Vertical
5850.00	34.88	18.01	52.89	122.20	69.31	Vertical
5855.00	34.67	18.02	52.69	110.80	58.11	Vertical
5875.00	34.6	18.07	52.67	105.20	52.53	Vertical
5925.00	33.82	17.95	51.77	68.20	16.43	Vertical
11550.00	53.82	6.39	60.21	74.00	13.79	Vertical
5650.00	34.27	17.16	51.43	68.20	16.77	Horizontal
5700.00	36.50	17.35	53.85	105.20	51.35	Horizontal
5720.00	37.98	17.46	55.44	110.80	55.36	Horizontal
5725.00	37.51	17.49	55.00	122.20	67.20	Horizontal
5850.00	35.13	18.01	53.14	122.20	69.06	Horizontal
5855.00	34.25	18.02	52.27	110.80	58.53	Horizontal
5875.00	34.40	18.07	52.47	105.20	52.73	Horizontal
5925.00	34.76	17.95	52.71	68.20	15.49	Horizontal
11550.00	52.61	6.39	59.00	74.00	15.00	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
11550.00	43.37	6.39	49.76	54.00	4.24	Vertical
11550.00	44.27	6.39	50.66	54.00	3.34	Horizontal

Remark:

1. *Level = Reading + Factor.*
2. *Test Frequency up to 40GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

------End of report------