




TEST REPORT

FCC ID. :	2AC23-DCT2B	
Test Report No..... :	TCT220105E050	
Date of issue..... :	Feb. 15, 2022	
Testing laboratory	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	TCT Testing Industrial Park Fuqiao 5th Industrial Zone, Fuhai Street, Bao'an District Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	Hui Zhou Gaoshengda Technology Co., LTD	
Address..... :	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China	
Manufacturer's name ... :	Hui Zhou Gaoshengda Technology Co., LTD	
Address..... :	NO.75 Zhongkai Development Area, Huizhou, Guangdong, China	
Standard(s)	FCC CFR Title 47 Part 15 Subpart E Section 15.407 KDB 662911 D01 Multiple Transmitter Output v02r01 KDB 789033 D02 General U-NII Test Procedures New Rules v02r01	
Test item description	WIFI+BT Module	
Trade Mark	N/A	
Model/Type reference..... :	DCT2BM2501	
Rating(s)..... :	DC 3.3V	
Date of receipt of test item	Jan. 05, 2022	
Date (s) of performance of test..... :	Jan. 05, 2022 ~ Feb. 15, 2022	
Tested by (+signature) ... :	Brews XU	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	

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Appendix A: Test Result of Conducted Test

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1. General Product Information

1.1. EUT description

Test item description	WIFI+BT Module
Model/Type reference.....	DCT2BM2501
Sample Number.....	TCT220105E022-0101
Operation Frequency	Band 1: 5180 MHz~5240 MHz Band 2A: 5260 MHz~5320 MHz Band 2C: 5500 MHz~5700 MHz Band 3: 5745 MHz~5825 MHz
Channel Bandwidth.....	802.11a: 20MHz 802.11n: 20MHz, 40MHz 802.11ac: 20MHz, 40MHz, 80MHz
Modulation Technology	Orthogonal Frequency Division Multiplexing(OFDM)
Modulation Type	256QAM, 64QAM, 16QAM, BPSK, QPSK
Antenna Type.....	PCB Antenna
Antenna Gain.....	Band 1: Antenna 0: 3.51dBi, Antenna 1: 3.13dBi Band 2A: Antenna 0: 3.84dBi, Antenna 1: 3.40dBi Band 2C: Antenna 0: 3.83dBi, Antenna 1: 3.97dBi Band 3: Antenna 0: 3.97dBi, Antenna 1: 3.95dBi
Rating(s).....	DC 3.3V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

1.3. Test Frequency

Band 1

20MHz		40MHz		80MHz	
Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180	38	5190	42	5210
40	5200	46	5230		
48	5240				

Band 2A

20MHz		40MHz		80MHz	
Channel	Frequency	Channel	Frequency	Channel	Frequency
52	5260	54	5270	58	5290
60	5300	62	5310		
64	5320				

Band 2C

20MHz		40MHz		80MHz	
Channel	Frequency	Channel	Frequency	Channel	Frequency
100	5500	102	5510	106	5530
120	5600	118	5590	122	5610
140	5700	134	5670		

Band 3

20MHz		40MHz		80MHz	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745	151	5755	155	5775
157	5785	159	5795		
165	5825				

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Maximum Conducted Output Power	§15.407(a)	PASS
6dB Emission Bandwidth	§15.407(a)	PASS
26dB Emission Bandwidth& 99% Occupied Bandwidth	§15.407(a)	PASS
Power Spectral Density	§15.407(a)	PASS
Restricted Bands around fundamental frequency	§15.407(b)	PASS
Radiated Emission	§15.407(b)	PASS
Frequency Stability	§15.407(g)	PASS

Note:

1. PASS: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.
5. For the band 5.15-5.25GHz, EUT meet the requirements of 15.407(a)(ii).

3. General Information

3.1. Test environment and mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar
Test Software:	
Software Information:	QATool_Dbg
Power Level:	1D
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations with max. duty cycle.
<p>The sample was placed 0.8m/1.5m for blow/above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.</p>	

<p>We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:</p>	
Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.	
Mode	Data rate
802.11a(SISO)	6 Mbps
802.11n(HT20) (MIMO)	6.5 Mbps
802.11n(HT40) (MIMO)	13.5 Mbps
802.11ac(VHT20) (MIMO)	6.5 Mbps
802.11ac(VHT40) (MIMO)	13.5 Mbps
802.11ac(VHT80) (MIMO)	29.3 Mbps
Final Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation

3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
Notebook Computer	G3 3500	00342-36088-9983 2-AAOEM	/	DELL

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

4. Facilities and Accreditations

4.1. Facilities

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

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: TCT Testing Industrial Park Fuqiao 5th Industrial Zone, Fuhai Street, Bao'an District Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

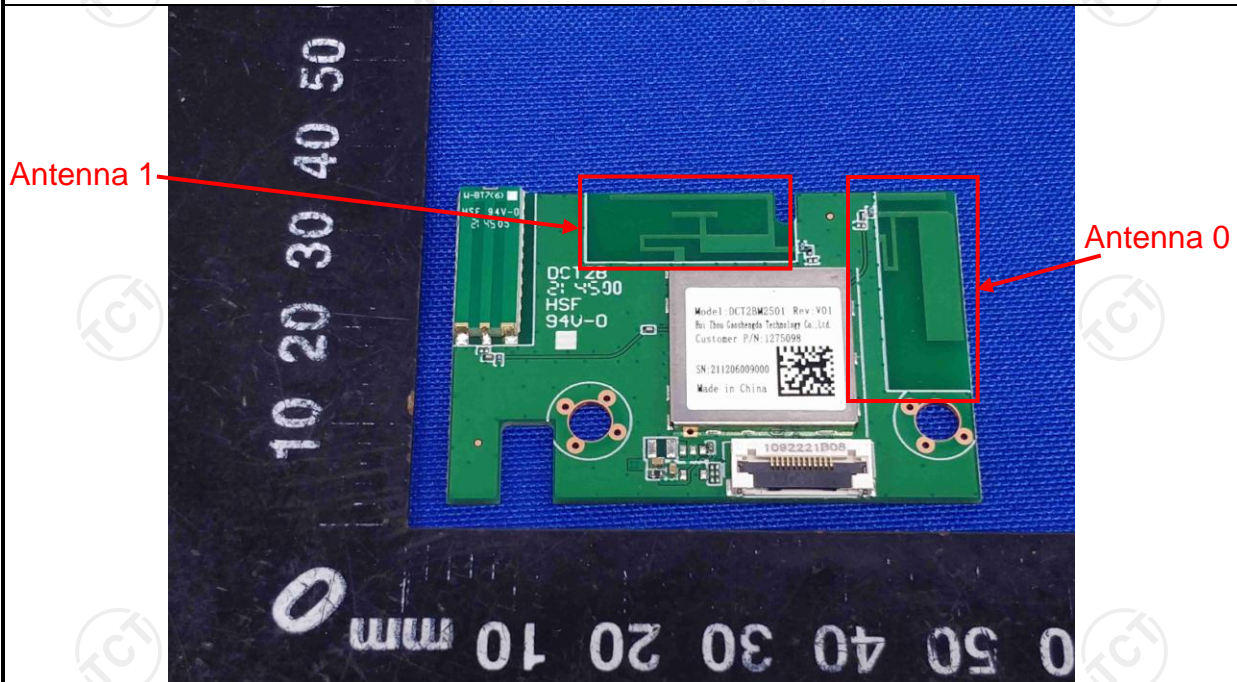
4.3. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB

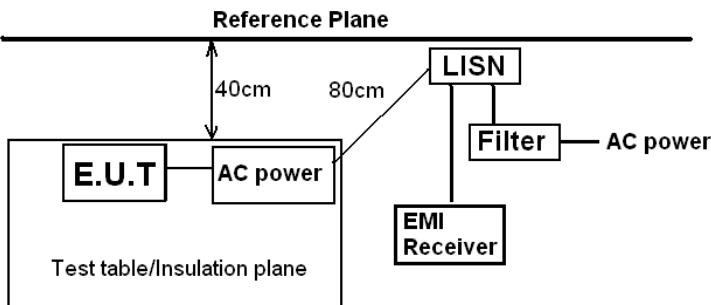
5. Test Results and Measurement Data

5.1. Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
<p>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.</p>	
E.U.T Antenna:	
<p>The EUT has two PCB antennas which permanently attached and unique coupling to the intentional radiator.</p>	
	
<p>Refer to KDB 662911 D01 Multiple Transmitter Output v02r01: Unequal antenna gains, with equal transmit powers, if transmit signals are correlated, then Directional gain of B1= $10\log[(10^{3.51/20} + 10^{3.13/20})^2/2] = 6.33\text{dBi}$; Directional gain of B2A = $10\log[(10^{3.84/20} + 10^{3.40/20})^2/2] = 6.63\text{dBi}$; Directional gain of B2C = $10\log[(10^{3.83/20} + 10^{3.97/20})^2/2] = 6.91\text{dBi}$; Directional gain of B3 = $10\log[(10^{3.97/20} + 10^{3.95/20})^2/2] = 6.97\text{dBi}$.</p>	
<p>Note: Above directional gain not applicable to power measurements.</p>	

5.2. Conducted Emission

5.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10:2013														
Frequency Range:	150 kHz to 30 MHz														
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
Limits:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</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></table>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test Setup:	<div><p>Reference Plane</p><p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p></div>														
Test Mode:	Transmitting Mode														
Test Procedure:	<div><div>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.</div><div>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).</div><div>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: 2013 on conducted measurement.</div></div>														
Test Result:	PASS														

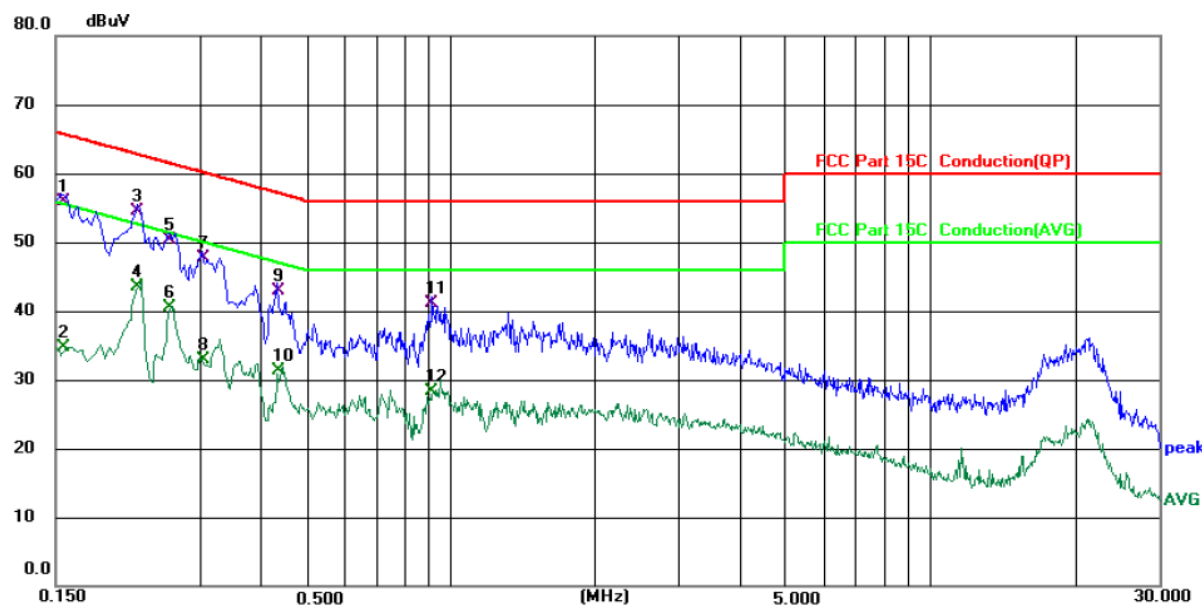
5.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCI3	100898	Jul. 07, 2022
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	Mar. 11, 2022
Line-5	TCT	CE-05	N/A	Jul. 07, 2022
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

5.2.3. Test data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room

Phase: L1

Temperature: 25 (°C)

Humidity: 55 %

Limit: FCC Part 15C Conduction(QP)

Power: DC 5 V(Notebook Computer Input AC 120 V/60 Hz)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1556	46.28	9.60	55.88	65.70	-9.82	QP	
2		0.1556	25.07	9.60	34.67	55.70	-21.03	AVG	
3	*	0.2220	45.05	9.37	54.42	62.74	-8.32	QP	
4		0.2220	34.18	9.37	43.55	52.74	-9.19	AVG	
5		0.2580	41.04	9.35	50.39	61.50	-11.11	QP	
6		0.2580	31.24	9.35	40.59	51.50	-10.91	AVG	
7		0.3020	38.37	9.32	47.69	60.19	-12.50	QP	
8		0.3020	23.58	9.32	32.90	50.19	-17.29	AVG	
9		0.4340	33.71	9.22	42.93	57.18	-14.25	QP	
10		0.4340	22.16	9.22	31.38	47.18	-15.80	AVG	
11		0.9180	31.82	9.28	41.10	56.00	-14.90	QP	
12		0.9180	19.00	9.28	28.28	46.00	-17.72	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level (dBuV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBuV) = Reading level (dBuV) + Corr. Factor (dB)

Limit (dBuV) = Limit stated in standard

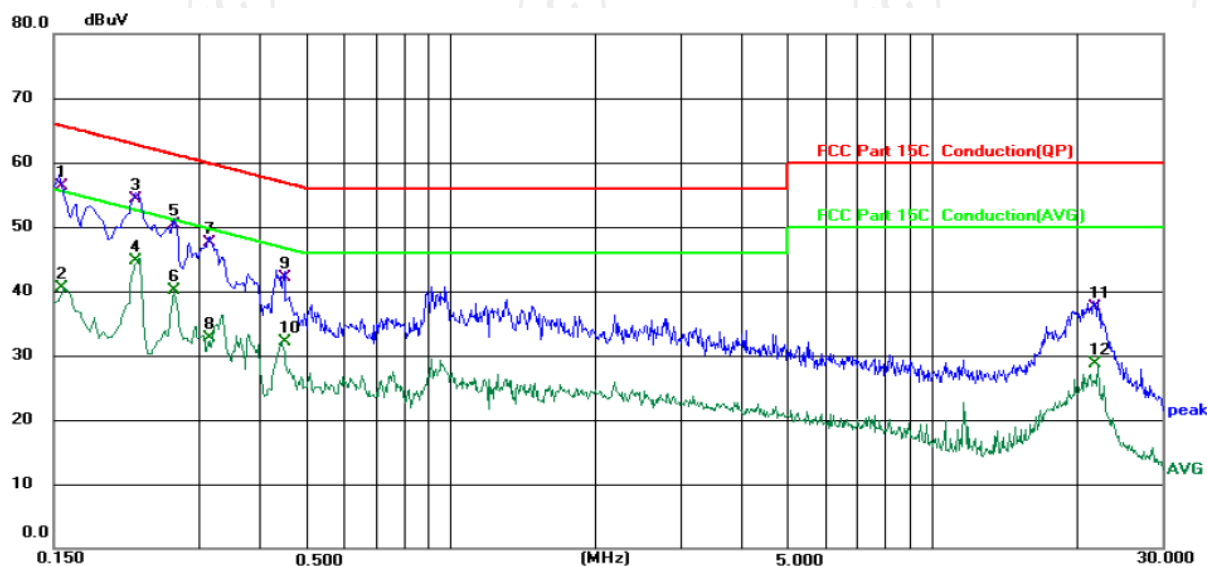
Margin (dB) = Measurement (dBuV) – Limits (dBuV)

Q.P. =Quasi-Peak

AVG =average

* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room

Phase: N

Temperature: 25 (°C)

Humidity: 55 %

Limit: FCC Part 15C Conduction(QP)

Power: DC 5 V(Notebook Computer Input AC 120 V/60 Hz)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1548	46.69	9.59	56.28	65.74	-9.46	QP	
2		0.1548	30.93	9.59	40.52	55.74	-15.22	AVG	
3		0.2220	45.06	9.31	54.37	62.74	-8.37	QP	
4	*	0.2220	35.45	9.31	44.76	52.74	-7.98	AVG	
5		0.2660	41.04	9.34	50.38	61.24	-10.86	QP	
6		0.2660	30.72	9.34	40.06	51.24	-11.18	AVG	
7		0.3140	38.22	9.34	47.56	59.86	-12.30	QP	
8		0.3140	23.46	9.34	32.80	49.86	-17.06	AVG	
9		0.4500	32.79	9.24	42.03	56.88	-14.85	QP	
10		0.4500	22.95	9.24	32.19	46.88	-14.69	AVG	
11		21.6940	27.80	9.79	37.59	60.00	-22.41	QP	
12		21.6940	18.97	9.79	28.76	50.00	-21.24	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level (dBuV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBuV) = Reading level (dBuV) + Corr. Factor (dB)

Limit (dBuV) = Limit stated in standard

Margin (dB) = Measurement (dBuV) – Limits (dBuV)

Q.P. =Quasi-Peak

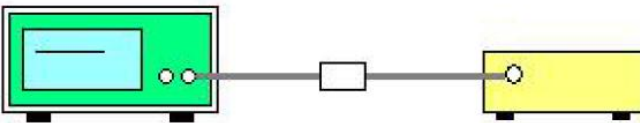
AVG =average

* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

Measurements were conducted in all three channels (high, middle, low) and all modulation (802.11a, 802.11n(HT20), 802.11n(HT40), 802.11ac(VHT20), 802.11ac(VHT40), 802.11ac(VHT80) and the worst case Mode (Lowest channel and 802.11a transmit with antenna 0) was submitted only.

5.3. Maximum Conducted Output Power

5.3.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407(a)& Part 2 J Section 2.1046										
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section E										
Limit:	<table border="1"> <thead> <tr> <th>Frequency Band (MHz)</th><th>Limit</th></tr> </thead> <tbody> <tr> <td>5180 - 5240</td><td>24dBm(250mW) for client device</td></tr> <tr> <td>5260 - 5320</td><td>24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz</td></tr> <tr> <td>5470 - 5725</td><td>24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz</td></tr> <tr> <td>5745 - 5825</td><td>30dBm(1W)</td></tr> </tbody> </table>	Frequency Band (MHz)	Limit	5180 - 5240	24dBm(250mW) for client device	5260 - 5320	24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz	5470 - 5725	24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz	5745 - 5825	30dBm(1W)
Frequency Band (MHz)	Limit										
5180 - 5240	24dBm(250mW) for client device										
5260 - 5320	24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz										
5470 - 5725	24dBm(250mW) or 11 dBm + 10 log B, B is the 26 dB emission bandwidth in megahertz										
5745 - 5825	30dBm(1W)										
Test Setup:	 <p style="text-align: center;">Power meter EUT</p>										
Test Mode:	Transmitting mode with modulation										
Test Procedure:	<ol style="list-style-type: none"> 1. The testing follows the Measurement Procedure of KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section E, 3, a 2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 5. Measure the conducted output power and record the results in the test report. 										
Test Result:	PASS										
Remark:	<p>Conducted output power= measurement power +10log(1/x), X is duty cycle=1, so 10log(1/1)=0</p> <p>Conducted output power= measurement power</p>										

5.3.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Power Meter	Agilent	E4418B	GB43312526	Jul. 07, 2022
Power Sensor	Agilent	E9301A	MY41497725	Jul. 07, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022

5.3.3. Test Data

Configuration Band 1 (5180 - 5240 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			Limit (dBm)	Result
		Ant0	Ant1	Total		
11a	CH36	14.06	14.63	/	24	PASS
11a	CH40	13.55	14.26	/	24	PASS
11a	CH48	14.36	14.50	/	24	PASS
11n(HT20)	CH36	11.37	12.12	14.77	24	PASS
11n(HT20)	CH40	11.05	10.75	13.91	24	PASS
11n(HT20)	CH48	11.63	10.87	14.28	24	PASS
11n(HT40)	CH38	12.13	13.51	15.88	24	PASS
11n(HT40)	CH46	12.85	13.47	16.18	24	PASS
11ac(VHT20)	CH36	11.41	12.27	14.87	24	PASS
11ac(VHT20)	CH40	10.91	12.15	14.58	24	PASS
11ac(VHT20)	CH48	11.50	12.08	14.81	24	PASS
11ac(VHT40)	CH38	12.37	13.47	15.97	24	PASS
11ac(VHT40)	CH46	12.99	13.21	16.11	24	PASS
11ac(VHT80)	CH42	11.37	12.14	14.78	24	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

Because $N_{ANT}=2$, so Array Gain = 0, Directional gain = $G_{ANT} + \text{Array Gain} < 6\text{dBi}$, power limit = 24dBm.

Configuration Band 2A (5260 - 5320 MHz) / Antenna 0+Antenna 1

Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			26 dB Bandwidth (MHz)	11dBm+ 10logB (dBm)	Limit (dBm)	Result
		Ant0	Ant1	Total				
11a	CH52	13.33	14.57	/	25.61	25.08	24	PASS
11a	CH60	13.15	14.33	/	20.77	24.17	24	PASS
11a	CH64	13.72	14.17	/	20.27	24.07	24	PASS
11n(HT20)	CH52	12.33	13.35	15.88	23.83	24.77	24	PASS
11n(HT20)	CH60	12.06	13.11	15.63	20.58	24.13	24	PASS
11n(HT20)	CH64	12.57	13.02	15.81	20.46	24.11	24	PASS
11n(HT40)	CH54	12.11	14.09	16.22	41.27	27.16	24	PASS
11n(HT40)	CH62	12.64	14.15	16.47	40.32	27.06	24	PASS
11ac(VHT20)	CH52	12.32	13.26	15.83	24.53	24.90	24	PASS
11ac(VHT20)	CH60	12.03	13.10	15.61	20.74	24.17	24	PASS
11ac(VHT20)	CH64	12.56	12.82	15.70	20.48	24.11	24	PASS
11ac(VHT40)	CH54	12.15	14.34	16.39	41.89	27.22	24	PASS
11ac(VHT40)	CH62	12.59	14.17	16.46	40.72	27.10	24	PASS
11ac(VHT80)	CH58	11.25	13.16	15.32	79.69	30.01	24	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

Because $N_{ANT}=2$, so Array Gain = 0, Directional gain = $G_{ANT} + \text{Array Gain} < 6\text{dBi}$, power limit = 24dBm.

Note : The maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz

Configuration Band 2C (5500 - 5720 MHz) / Antenna 0+Antenna 1

Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			26 dB Bandwidth (MHz)	11dBm+10logB (dBm)	Limit (dBm)	Result
		Ant0	Ant1	Total				
11a	CH100	14.78	14.25	/	20.56	24.13	24	PASS
11a	CH120	14.37	14.07	/	20.17	24.05	24	PASS
11a	CH140	14.46	14.16	/	20.23	24.06	24	PASS
11n(HT20)	CH100	13.56	13.28	16.43	20.55	24.13	24	PASS
11n(HT20)	CH120	13.18	13.03	16.12	20.57	24.13	24	PASS
11n(HT20)	CH140	13.34	13.09	16.23	20.50	24.12	24	PASS
11n(HT40)	CH102	13.91	13.48	16.71	40.67	27.09	24	PASS
11n(HT40)	CH118	13.33	13.30	16.33	40.63	27.09	24	PASS
11n(HT40)	CH134	13.19	13.21	16.21	40.44	27.07	24	PASS
11ac(VHT20)	CH100	13.60	13.11	16.37	20.53	24.12	24	PASS
11ac(VHT20)	CH120	13.11	13.09	16.11	20.58	24.13	24	PASS
11ac(VHT20)	CH140	13.32	13.00	16.17	20.51	24.12	24	PASS
11ac(VHT40)	CH102	13.86	12.80	16.37	40.69	27.09	24	PASS
11ac(VHT40)	CH118	13.39	12.63	16.04	40.53	27.08	24	PASS
11ac(VHT40)	CH134	13.27	12.55	15.94	40.43	27.07	24	PASS
11ac(VHT80)	CH106	12.83	11.78	15.35	79.95	30.03	24	PASS
11ac(VHT80)	CH122	12.06	11.36	14.73	80.01	30.03	24	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

Because $N_{ANT}=2$, so Array Gain = 0, Directional gain = $G_{ANT} + \text{Array Gain} < 6\text{dBi}$, power limit = 24dBm.

Note : The maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz

Configuration Band 3 (5745 - 5825 MHz) / Antenna 0+Antenna 1

Mode	Test channel	Maximum Conducted (Average) Output Power (dBm)			Limit (dBm)	Result
		Ant0	Ant1	Total		
11a	CH149	14.61	14.04	/	30	PASS
11a	CH157	14.68	14.29	/	30	PASS
11a	CH165	14.16	14.17	/	30	PASS
11n(HT20)	CH149	13.54	13.56	16.56	30	PASS
11n(HT20)	CH157	13.53	13.53	16.54	30	PASS
11n(HT20)	CH165	13.16	12.97	16.08	30	PASS
11n(HT40)	CH151	13.65	13.64	16.66	30	PASS
11n(HT40)	CH159	13.76	13.79	16.79	30	PASS
11ac(VHT20)	CH149	13.49	13.48	16.50	30	PASS
11ac(VHT20)	CH157	13.41	13.64	16.54	30	PASS
11ac(VHT20)	CH165	13.03	13.16	16.11	30	PASS
11ac(VHT40)	CH151	13.39	13.64	16.53	30	PASS
11ac(VHT40)	CH159	13.33	13.85	16.61	30	PASS
11ac(VHT80)	CH155	12.30	12.69	15.51	30	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;


Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

Because $N_{ANT}=2$, so Array Gain = 0, Directional gain = $G_{ANT} + \text{Array Gain} < 6\text{dBi}$, power limit = 30dBm.

5.4. 6dB Emission Bandwidth

5.4.1. Test Specification


Test Requirement:	FCC CFR47 Part 15 Section 15.407(e)& Part 2 J Section 2.1049
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C
Limit:	>500kHz
Test Setup:	 <p style="text-align: center;">Spectrum Analyzer EUT</p>
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol style="list-style-type: none"> 1. KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section C 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz. 4. Measure and record the results in the test report.
Test Result:	PASS

5.4.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022

5.5. 26dB Bandwidth and 99% Occupied Bandwidth

5.5.1. Test Specification

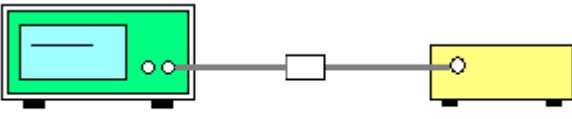
Test Requirement:	47 CFR Part 15C Section 15.407 (a)& Part 2 J Section 2.1049
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section D
Limit:	No restriction limits
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol style="list-style-type: none">1. KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section D2. Set to the maximum power setting and enable the EUT transmit continuously.3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 1% to 5% of the OBW. Set the Video bandwidth (VBW) = 3 *RBW. In order to make an accurate measurement.4. Measure and record the results in the test report.
Test Result:	PASS

5.5.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022

5.6. Power Spectral Density

5.6.1. Test Specification

Test Requirement:	FCC Part15 E Section 15.407 (a)
Test Method:	KDB662911 D01 Multiple Transmitter Output v02r01 KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section F
Limit:	$\leq 11.00\text{dBm/MHz}$ for Band 1 5150MHz-5250MHz(client device) $\leq 11.00\text{dBm/MHz}$ for Band 2A&2C 5250-5350&5470-5725 $\leq 30.00\text{dBm/500KHz}$ for Band 3 5725MHz-5850MHz The e.i.r.p spectral density for Band 1 5150MHz – 5250 MHz should not exceed 10dBm/MHz
Test Setup:	 <p style="text-align: center;">Spectrum Analyzer EUT</p>
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth. 1. Set RBW = 510 kHz/1 MHz, VBW $\geq 3 \times$ RBW, Sweep time = Auto, Detector = RMS. 2. Allow the sweeps to continue until the trace stabilizes. 3. Use the peak marker function to determine the maximum amplitude level. 4. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.
Test Result:	PASS

5.6.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022

5.6.3. Test data

Configuration Band 1 (5180 - 5240 MHz) / Antenna 0+Antenna 1						
Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11a	CH36	3.44	4.07	/	11	PASS
11a	CH40	3.08	3.70	/	11	PASS
11a	CH48	3.74	3.90	/	11	PASS
11n(HT20)	CH36	0.40	0.76	3.59	10.67	PASS
11n(HT20)	CH40	0.37	0.21	3.30	10.67	PASS
11n(HT20)	CH48	0.58	0.19	3.40	10.67	PASS
11n(HT40)	CH38	-1.66	-0.13	2.18	10.67	PASS
11n(HT40)	CH46	-0.80	-0.17	2.54	10.67	PASS
11ac(VHT20)	CH36	0.32	0.81	3.58	10.67	PASS
11ac(VHT20)	CH40	0.26	0.82	3.56	10.67	PASS
11ac(VHT20)	CH48	0.38	0.77	3.59	10.67	PASS
11ac(VHT40)	CH38	-1.50	-0.21	2.20	10.67	PASS
11ac(VHT40)	CH46	-0.76	-0.45	2.41	10.67	PASS
11ac(VHT80)	CH42	-5.22	-4.52	-1.85	10.67	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power spectral density (PSD) measurements when antenna gains are not equal,

Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}]$ dBi = 6.33 > 6,

So limit = 11 - (6.33 - 6) = 10.67

Configuration Band 2A (5260-5320MHz) /Antenna 0+Antenna 1

Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11a	CH52	3.10	4.02	/	11	PASS
11a	CH60	2.66	3.86	/	11	PASS
11a	CH64	3.23	3.71	/	11	PASS
11n(HT20)	CH52	1.63	2.63	5.17	10.37	PASS
11n(HT20)	CH60	1.35	2.52	4.98	10.37	PASS
11n(HT20)	CH64	1.96	2.32	5.15	10.37	PASS
11n(HT40)	CH54	-1.52	0.43	2.57	10.37	PASS
11n(HT40)	CH62	-1.04	0.41	2.76	10.37	PASS
11ac(VHT20)	CH52	1.69	2.58	5.17	10.37	PASS
11ac(VHT20)	CH60	1.44	2.38	4.95	10.37	PASS
11ac(VHT20)	CH64	1.86	2.21	5.05	10.37	PASS
11ac(VHT40)	CH54	-1.48	0.62	2.71	10.37	PASS
11ac(VHT40)	CH62	-1.07	0.52	2.81	10.37	PASS
11ac(VHT80)	CH58	-5.34	-3.44	-1.28	10.37	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power spectral density (PSD) measurements when antenna gains are not equal,

Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}]$ dBi = 6.63 > 6,

So limit = 11 - (6.63 - 6) = 10.37

Configuration Band 2C (5500-5720 MHz) /Antenna 0+Antenna 1

Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11a	CH100	4.21	3.84	/	11	PASS
11a	CH120	3.89	3.64	/	11	PASS
11a	CH140	3.93	3.49	/	11	PASS
11n(HT20)	CH100	2.98	2.55	5.78	10.09	PASS
11n(HT20)	CH120	2.48	2.32	5.41	10.09	PASS
11n(HT20)	CH140	2.63	2.38	5.52	10.09	PASS
11n(HT40)	CH102	0.19	-0.10	3.06	10.09	PASS
11n(HT40)	CH118	-0.28	-0.32	2.71	10.09	PASS
11n(HT40)	CH134	-0.59	-0.44	2.50	10.09	PASS
11ac(VHT20)	CH100	2.96	2.46	5.73	10.09	PASS
11ac(VHT20)	CH120	2.46	2.33	5.41	10.09	PASS
11ac(VHT20)	CH140	2.49	2.27	5.39	10.09	PASS
11ac(VHT40)	CH102	0.20	-0.83	2.73	10.09	PASS
11ac(VHT40)	CH118	-0.20	-0.95	2.45	10.09	PASS
11ac(VHT40)	CH134	-0.45	-1.13	2.23	10.09	PASS
11ac(VHT80)	CH106	-3.94	-4.99	-1.42	10.09	PASS
11ac(VHT80)	CH122	-4.66	-5.41	-2.01	10.09	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

For power spectral density (PSD) measurements when antenna gains are not equal,

Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}]$ dBi = 6.91 > 6,

So limit = 11 - (6.91 - 6) = 10.09

Configuration Band 3(5745-5825MHz) / Antenna 0+Antenna 1

Mode	Test channel	Power Spectral Density			Limit (dBm/MHz)	Result
		Ant0	Ant1	Total		
11a	CH149	1.40	0.87	/	30	PASS
11a	CH157	1.48	1.08	/	30	PASS
11a	CH165	0.94	0.87	/	30	PASS
11n(HT20)	CH149	0.12	0.14	3.14	29.03	PASS
11n(HT20)	CH157	0.18	0.31	3.26	29.03	PASS
11n(HT20)	CH165	-0.35	-0.33	2.67	29.03	PASS
11n(HT40)	CH151	-2.70	-2.71	0.31	29.03	PASS
11n(HT40)	CH159	-2.70	-2.49	0.42	29.03	PASS
11ac(VHT20)	CH149	0.02	0.10	3.07	29.03	PASS
11ac(VHT20)	CH157	0.01	0.39	3.21	29.03	PASS
11ac(VHT20)	CH165	-0.29	-0.20	2.77	29.03	PASS
11ac(VHT40)	CH151	-3.00	-2.72	0.15	29.03	PASS
11ac(VHT40)	CH159	-2.99	-2.62	0.21	29.03	PASS
11ac(VHT80)	CH155	-7.31	-6.84	-4.06	29.03	PASS

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:

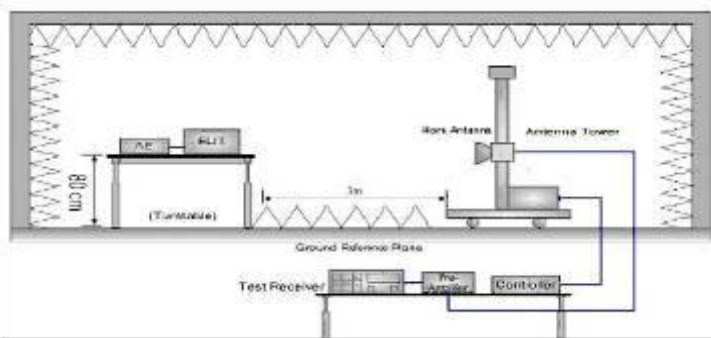
For power spectral density (PSD) measurements when antenna gains are not equal,

Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}]$ dBi=6.97 >6,

So limit=30 - (6.97-6) = 29.03

5.7. Band edge

5.7.1. Test Specification

Test Requirement:	FCC CFR47 Part 15E Section 15.407																				
Test Method:	ANSI C63.10 2013																				
Limit:	In un-restricted band: For Band 1&2A&2C: -27dBm/MHz For Band 3:																				
	<table><tr><td>Frequency (MHz)</td><td>Limit (dBm/MHz)</td><td>Frequency (MHz)</td><td>Limit (dBm/MHz)</td></tr><tr><td>< 5650</td><td>-27</td><td>5850~5855</td><td>27~15.6</td></tr><tr><td>5650~5700</td><td>-27~10</td><td>5855~5875</td><td>15.6~10</td></tr><tr><td>5700~5720</td><td>10~15.6</td><td>5875~5925</td><td>10~-27</td></tr><tr><td>5720~5725</td><td>15.6~27</td><td>> 5925</td><td>-27</td></tr></table>	Frequency (MHz)	Limit (dBm/MHz)	Frequency (MHz)	Limit (dBm/MHz)	< 5650	-27	5850~5855	27~15.6	5650~5700	-27~10	5855~5875	15.6~10	5700~5720	10~15.6	5875~5925	10~-27	5720~5725	15.6~27	> 5925	-27
	Frequency (MHz)	Limit (dBm/MHz)	Frequency (MHz)	Limit (dBm/MHz)																	
	< 5650	-27	5850~5855	27~15.6																	
	5650~5700	-27~10	5855~5875	15.6~10																	
	5700~5720	10~15.6	5875~5925	10~-27																	
5720~5725	15.6~27	> 5925	-27																		
E[dBμV/m] = EIRP[dBm] + 95.2 @3m																					
In restricted band:																					
<table><tr><td>Detector</td><td>Limit@3m</td></tr><tr><td>Peak</td><td>74dBμV/m</td></tr><tr><td>AVG</td><td>54dBμV/m</td></tr></table>	Detector	Limit@3m	Peak	74dBμV/m	AVG	54dBμV/m															
Detector	Limit@3m																				
Peak	74dBμV/m																				
AVG	54dBμV/m																				
Test Setup:																					
Test Mode:	Transmitting mode with modulation																				
Test Procedure:	<p>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>3. 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.</p> <p>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold</p>																				

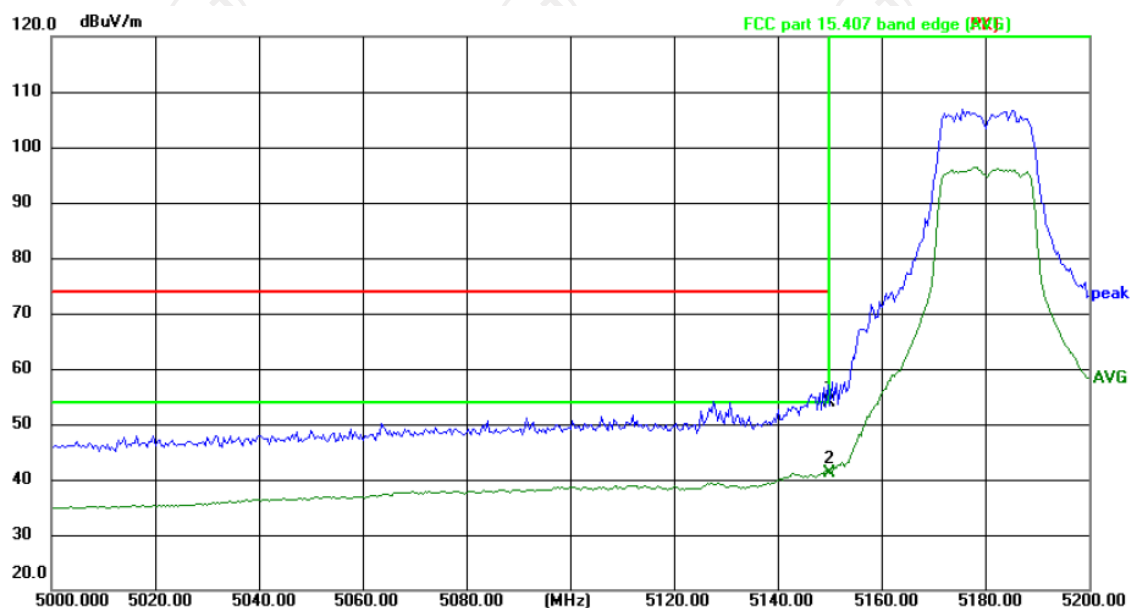
	<p>Mode.</p> <p>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet.</p>
Test Result:	PASS

5.7.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESIB7	100197	Jul. 07, 2022
Spectrum Analyzer	R&S	FSQ40	200061	Jul. 07, 2022
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Pre-amplifier	SKET	LNPA_0118G-45	SK2021012102	Mar. 11, 2022
Pre-amplifier	SKET	LNPA_1840G-50	SK202109203500	Apr. 08, 2022
Pre-amplifier	HP	8447D	2727A05017	Jul. 07, 2022
Loop antenna	ZHINAN	ZN30900A	12024	Sep. 05, 2022
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 04, 2022
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 04, 2022
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Apr. 10, 2023
Coaxial cable	SKET	RC_DC18G-N	N/A	Apr. 08, 2022
Coaxial cable	SKET	RC-DC18G-N	N/A	Apr. 08, 2022
Coaxial cable	SKET	RC-DC40G-N	N/A	Jul. 07, 2022
Antenna Mast	Keleto	CC-A-4M	N/A	N/A
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

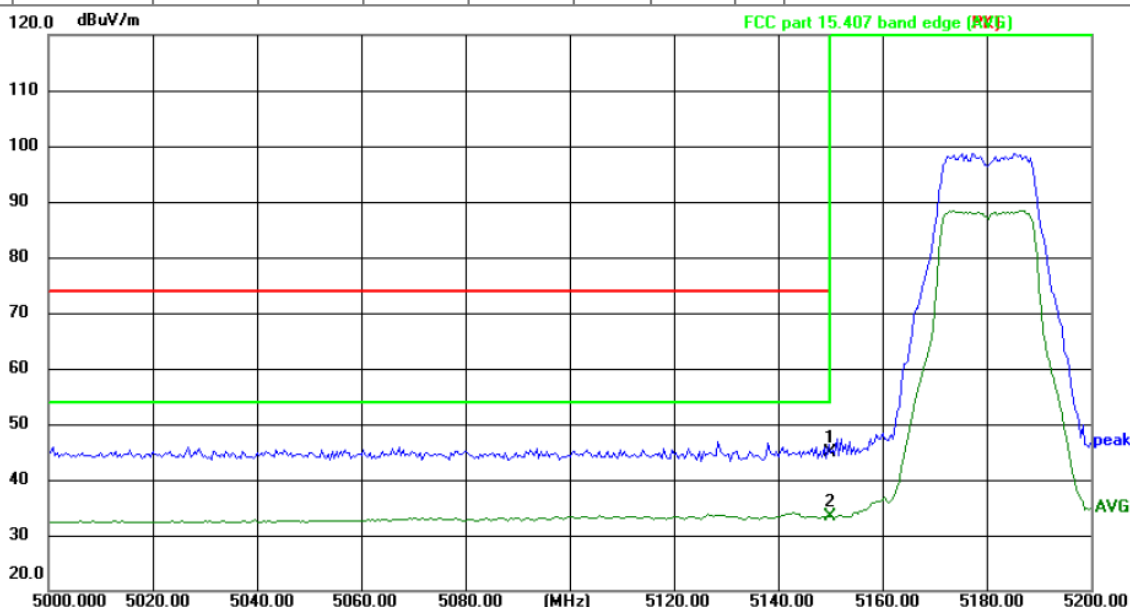
5.7.3. Test Data

AC-5180



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

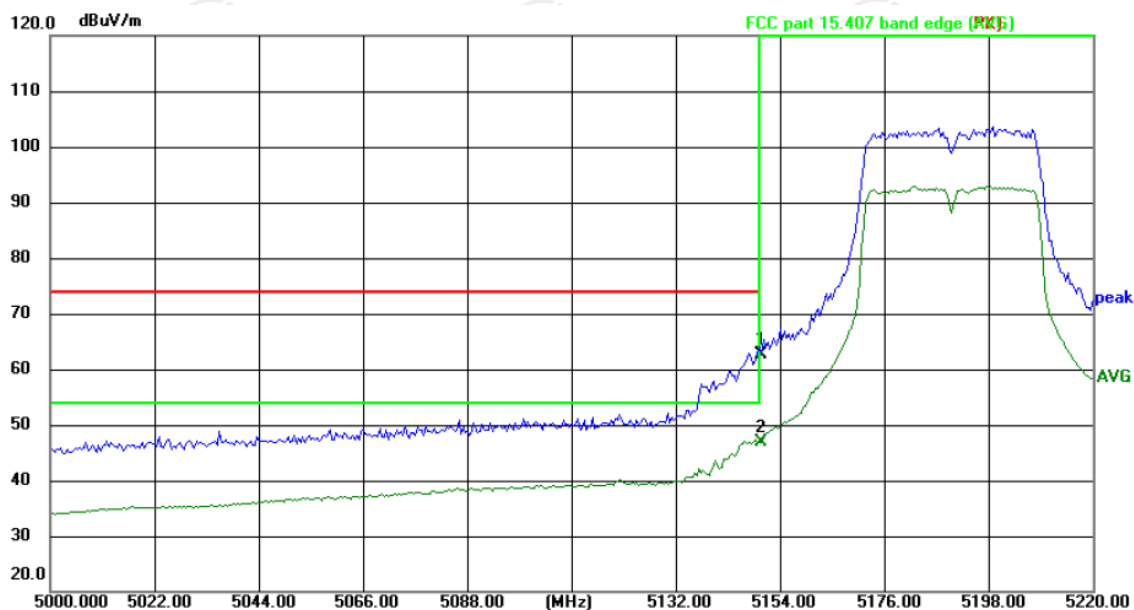
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5150.000	61.99	-8.04	53.95	74.00	-20.05	peak	P	
2 *	5150.000	49.15	-8.04	41.11	54.00	-12.89	AVG	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

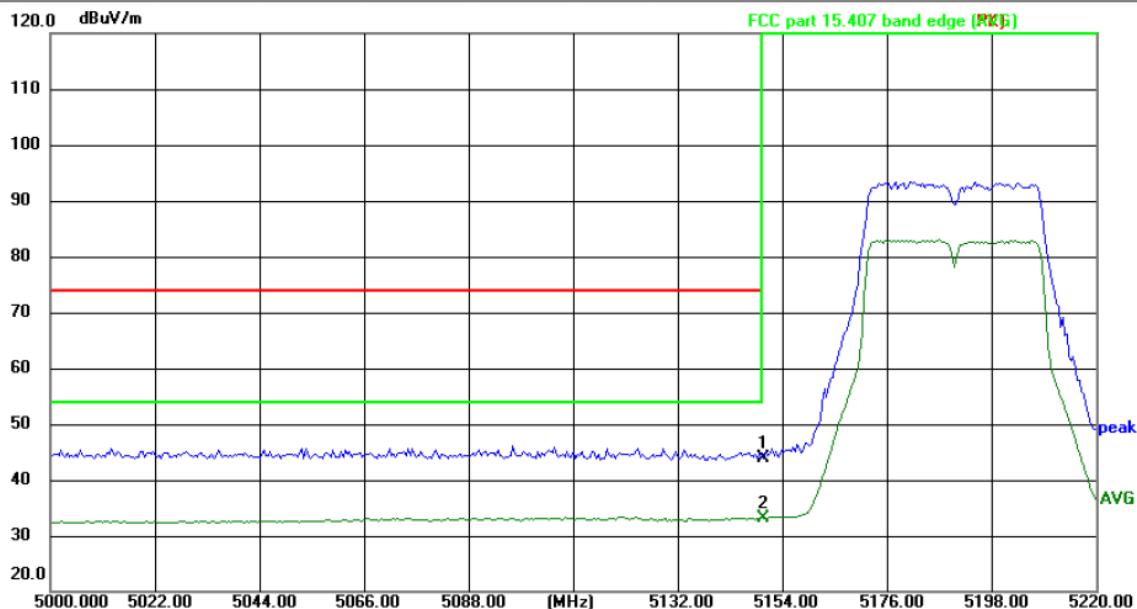
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5150.000	52.98	-8.04	44.94	74.00	-29.06	peak	P	
2 *	5150.000	41.36	-8.04	33.32	54.00	-20.68	AVG	P	

AC40-5190



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

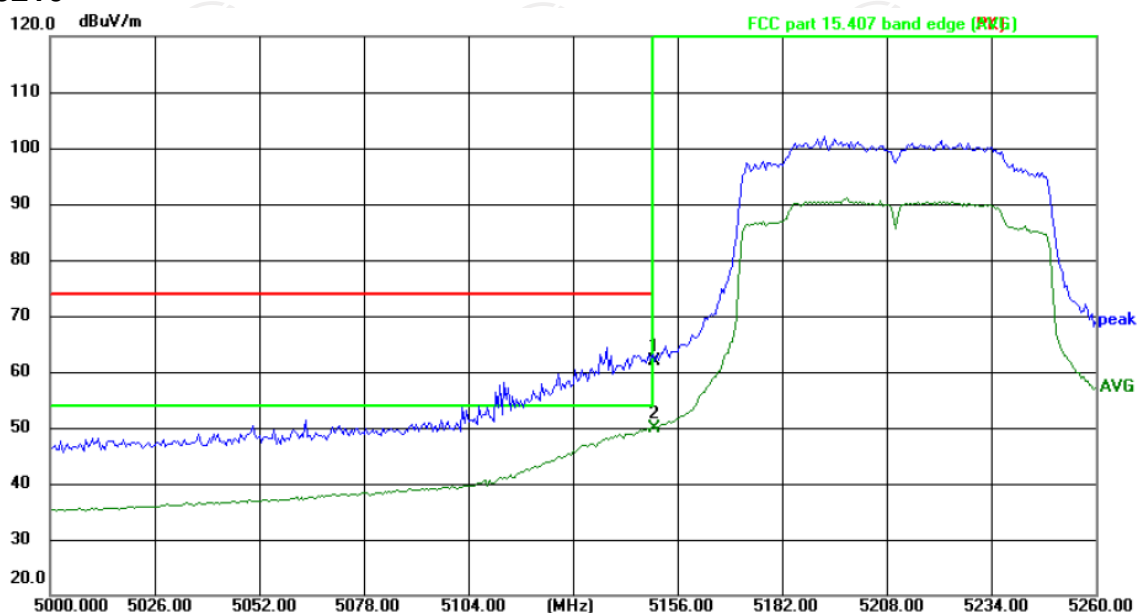
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5150.000	70.64	-8.04	62.60	74.00	-11.40	peak	P	
2 *	5150.000	54.85	-8.04	46.81	54.00	-7.19	AVG	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

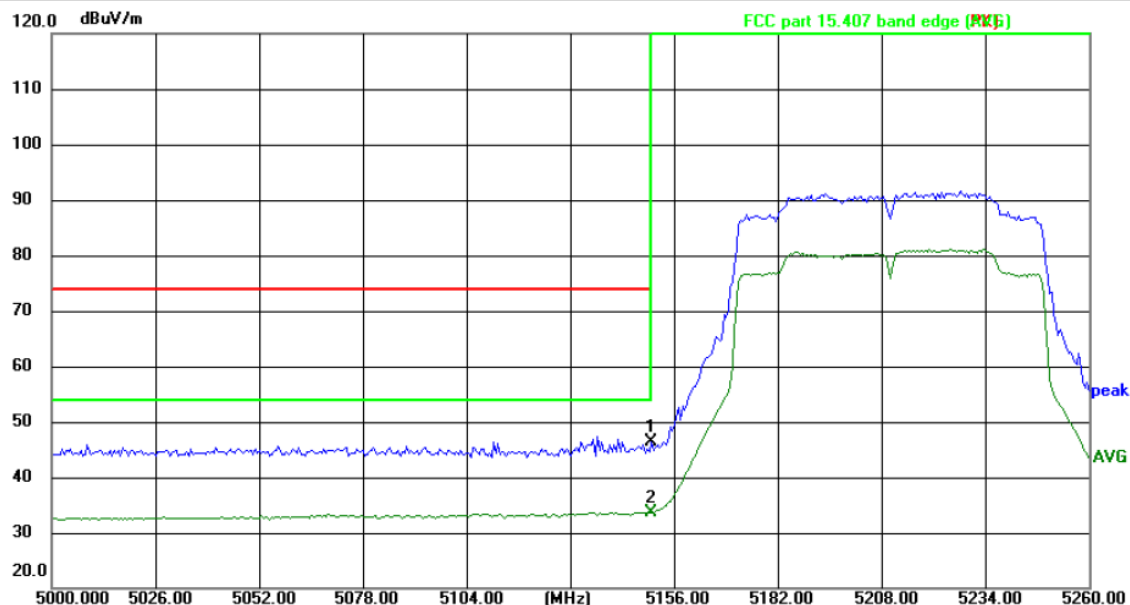
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5150.000	52.01	-8.04	43.97	74.00	-30.03	peak	P	
2 *	5150.000	41.09	-8.04	33.05	54.00	-20.95	AVG	P	

AC80-5210



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

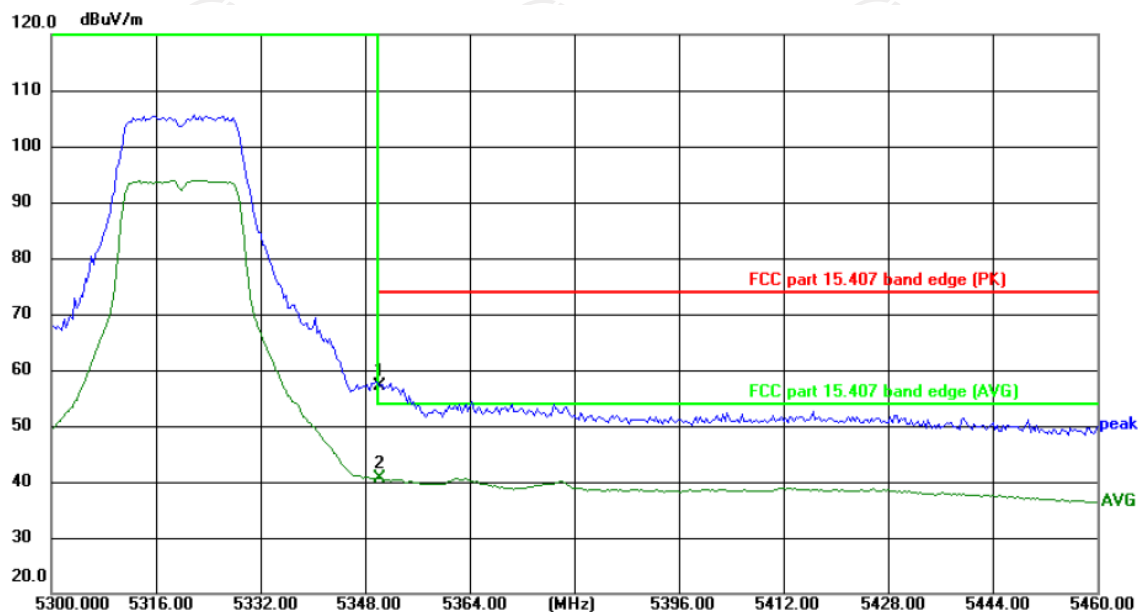
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5150.000	69.85	-8.04	61.81	74.00	-12.19	peak	P	
2 *	5150.000	57.98	-8.04	49.94	54.00	-4.06	AVG	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

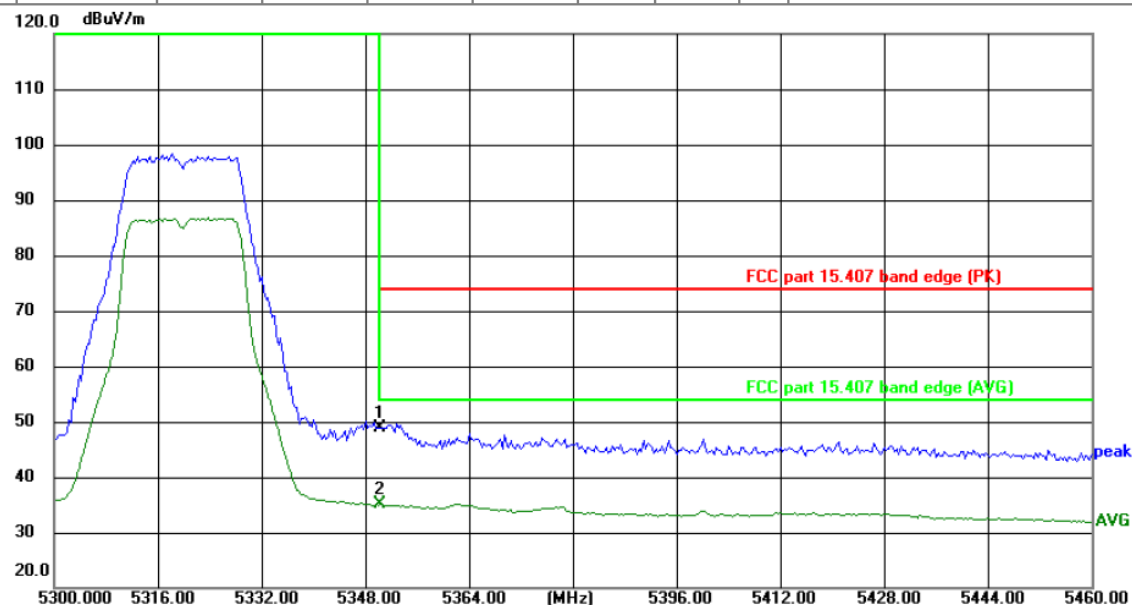
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5150.000	54.53	-8.04	46.49	74.00	-27.51	peak	P	
2 *	5150.000	41.66	-8.04	33.62	54.00	-20.38	AVG	P	

AC20-5320



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

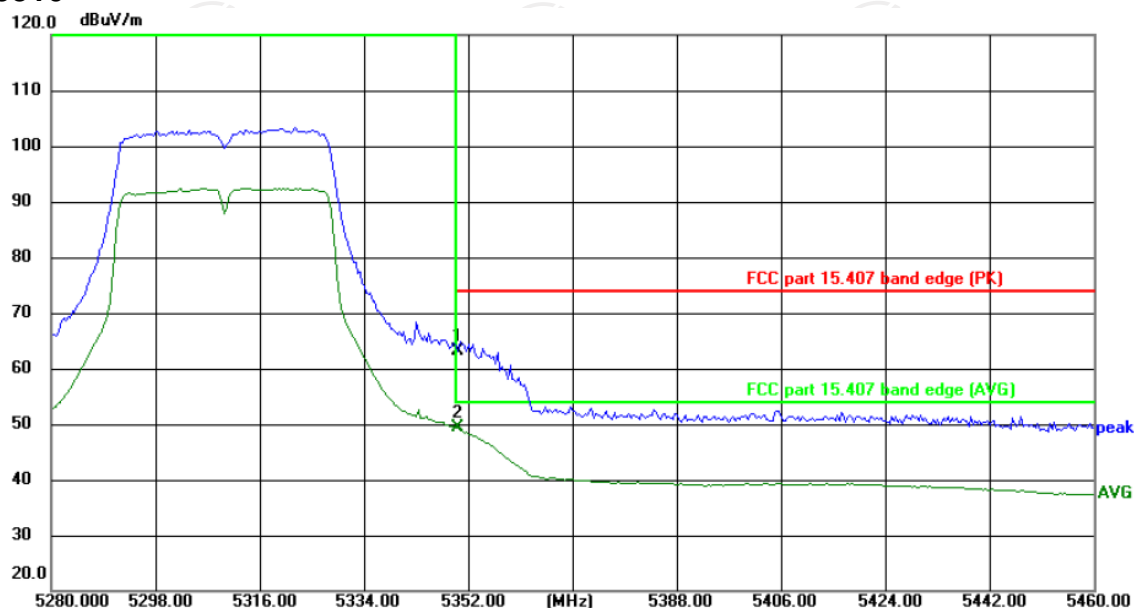
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5350.000	65.20	-8.09	57.11	74.00	-16.89	peak	P	
2 *	5350.000	48.67	-8.09	40.58	54.00	-13.42	AVG	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

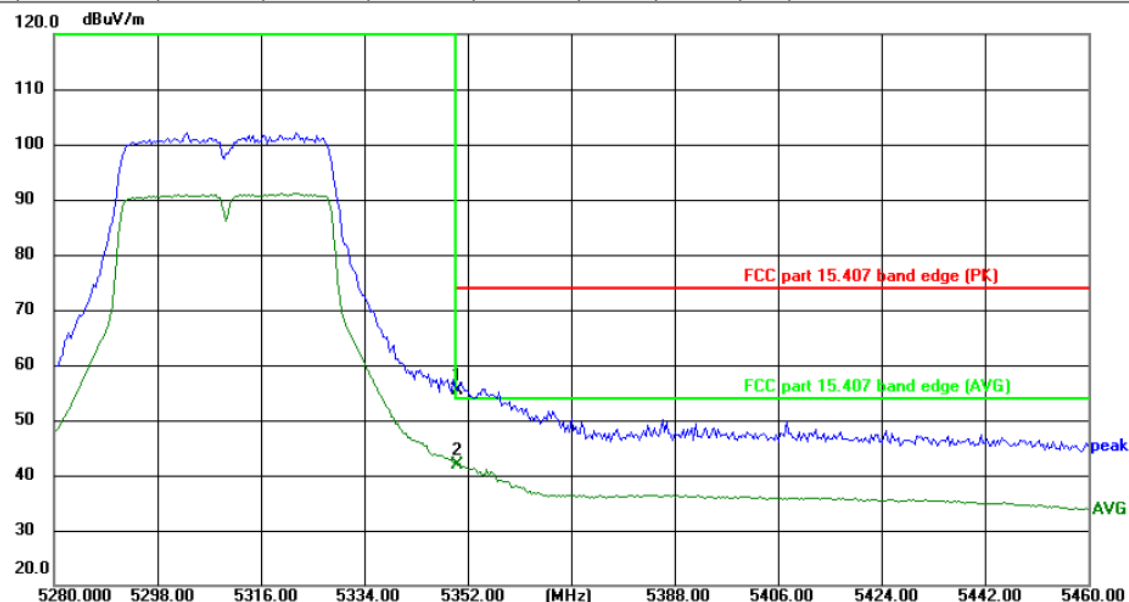
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5350.000	57.04	-8.09	48.95	74.00	-25.05	peak	P	
2 *	5350.000	43.19	-8.09	35.10	54.00	-18.90	AVG	P	

AC40-5310



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

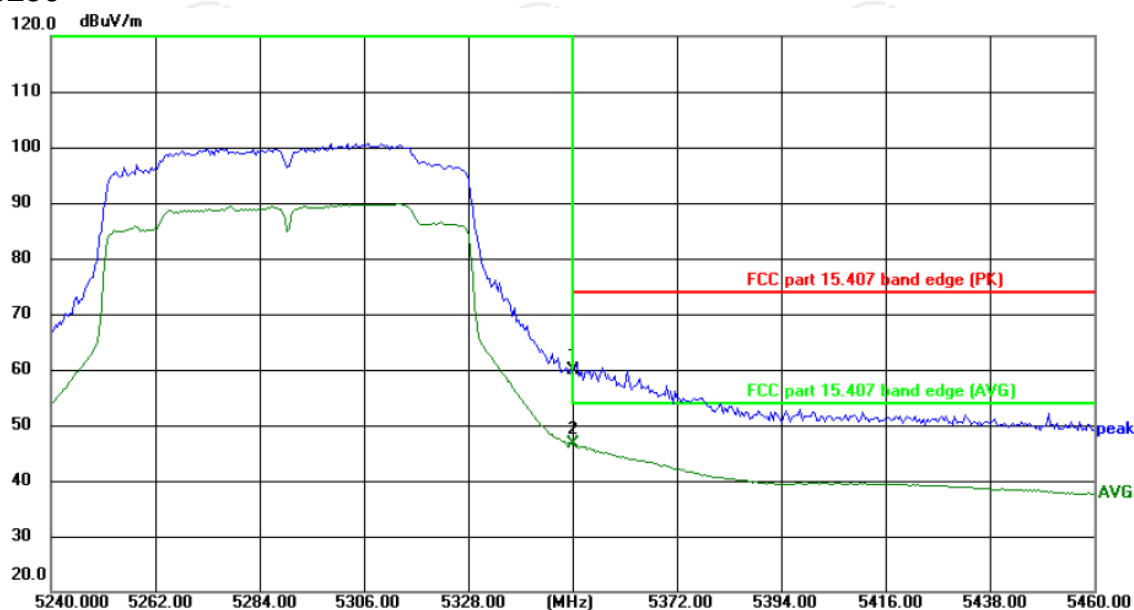
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5350.000	71.19	-8.09	63.10	74.00	-10.90	peak	P	
2 *	5350.000	57.46	-8.09	49.37	54.00	-4.63	AVG	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

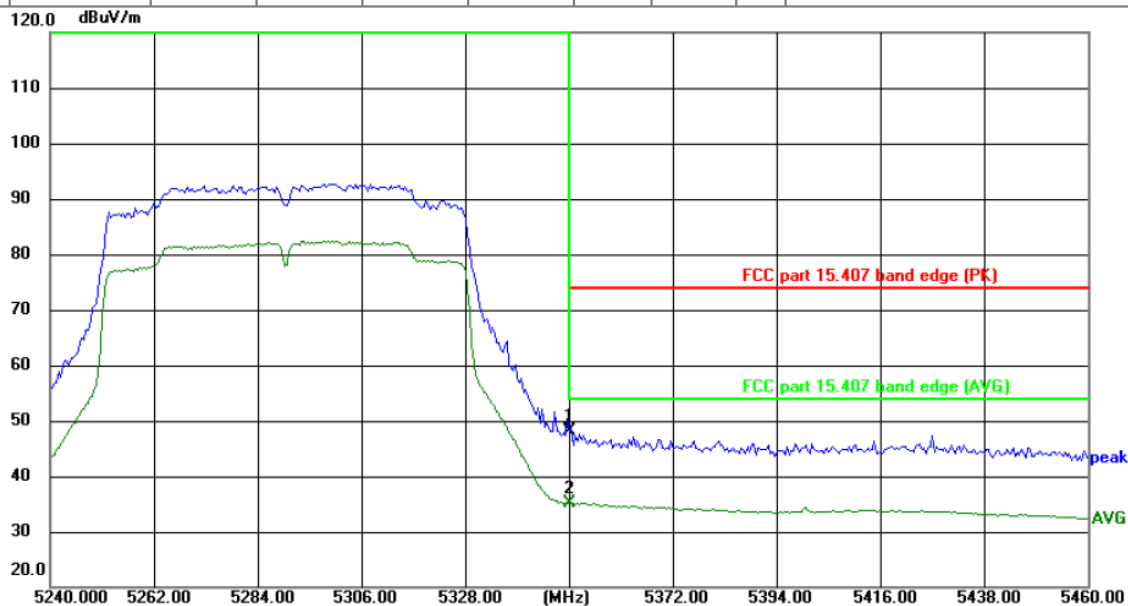
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5350.000	63.36	-8.09	55.27	74.00	-18.73	peak	P	
2 *	5350.000	50.09	-8.09	42.00	54.00	-12.00	AVG	P	

AC80-5290



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

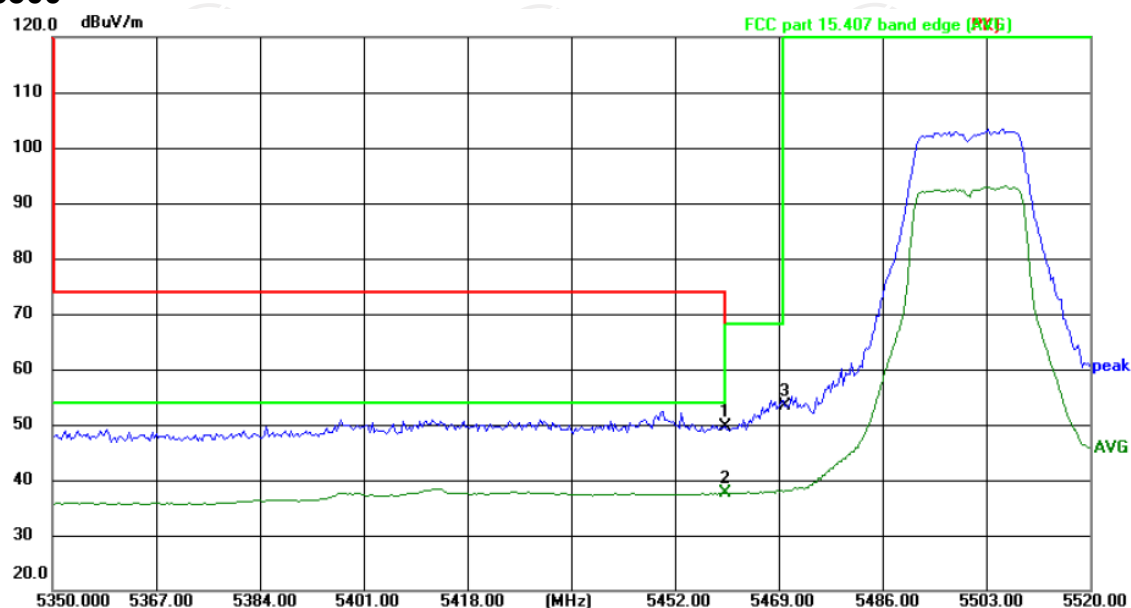
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5350.000	67.95	-8.09	59.86	74.00	-14.14	peak	P	
2 *	5350.000	54.72	-8.09	46.63	54.00	-7.37	AVG	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

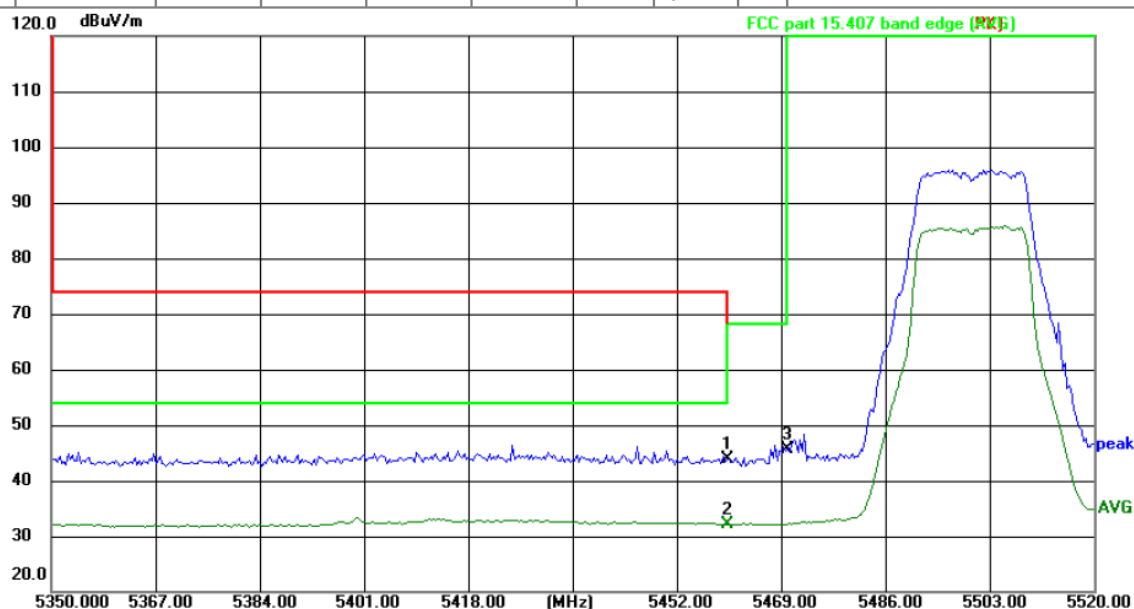
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5350.000	56.18	-8.09	48.09	74.00	-25.91	peak	P	
2 *	5350.000	43.19	-8.09	35.10	54.00	-18.90	AVG	P	

AC20-5500



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

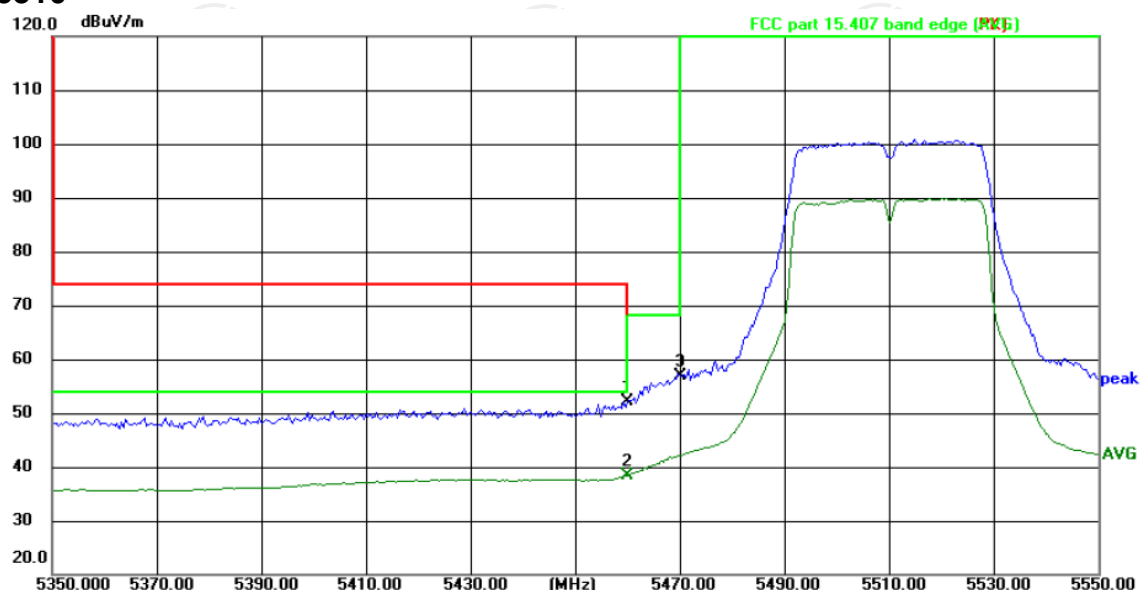
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5460.000	57.71	-8.11	49.60	68.20	-18.60	peak	P	
2	5460.000	45.63	-8.11	37.52	54.00	-16.48	AVG	P	
3 *	5470.000	61.60	-8.11	53.49	68.20	-14.71	peak	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

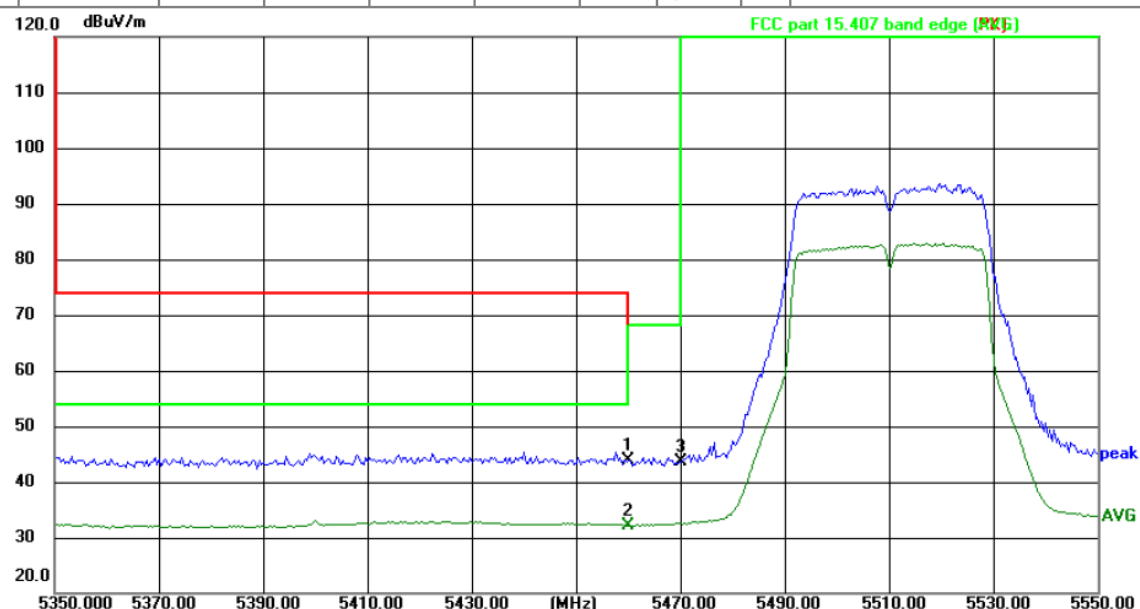
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5460.000	52.04	-8.11	43.93	68.20	-24.27	peak	P	
2 *	5460.000	40.25	-8.11	32.14	54.00	-21.86	AVG	P	
3	5470.000	53.84	-8.11	45.73	68.20	-22.47	peak	P	

AC40-5510



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

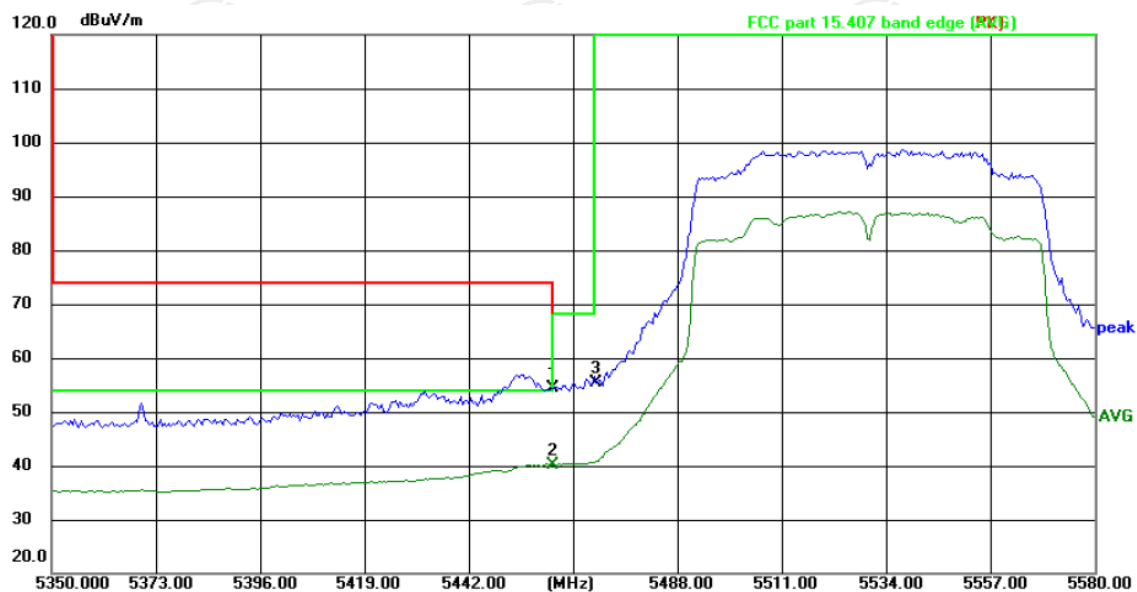
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5460.000	60.20	-8.11	52.09	68.20	-16.11	peak	P	
2	5460.000	46.61	-8.11	38.50	54.00	-15.50	AVG	P	
3 *	5470.000	64.93	-8.11	56.82	68.20	-11.38	peak	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

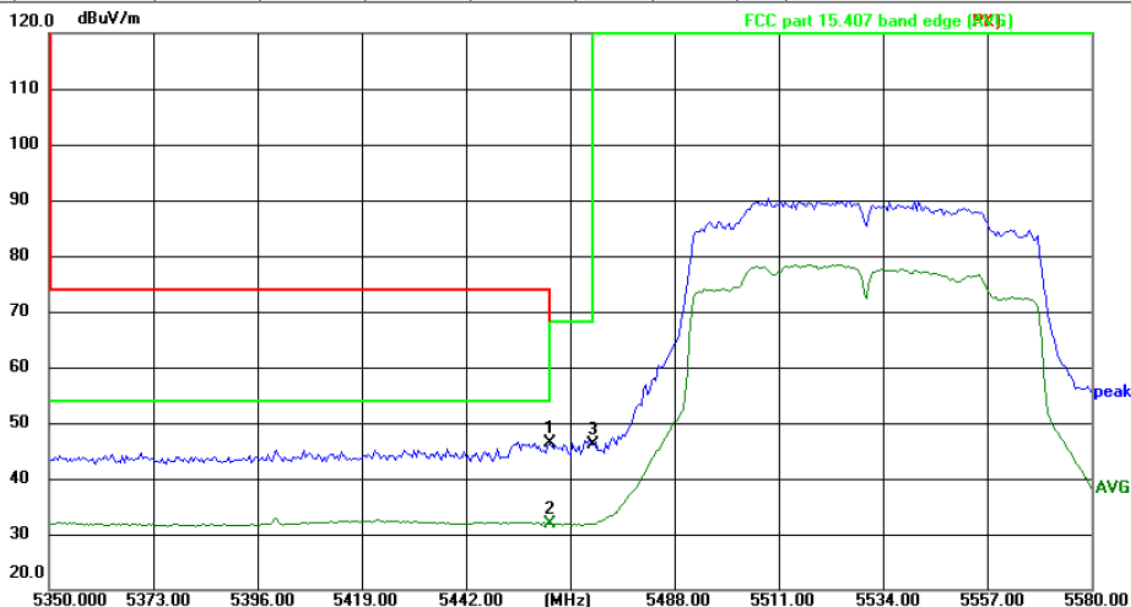
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5460.000	51.87	-8.11	43.76	68.20	-24.44	peak	P	
2 *	5460.000	40.29	-8.11	32.18	54.00	-21.82	AVG	P	
3	5470.000	51.76	-8.11	43.65	68.20	-24.55	peak	P	

AC80-5530



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

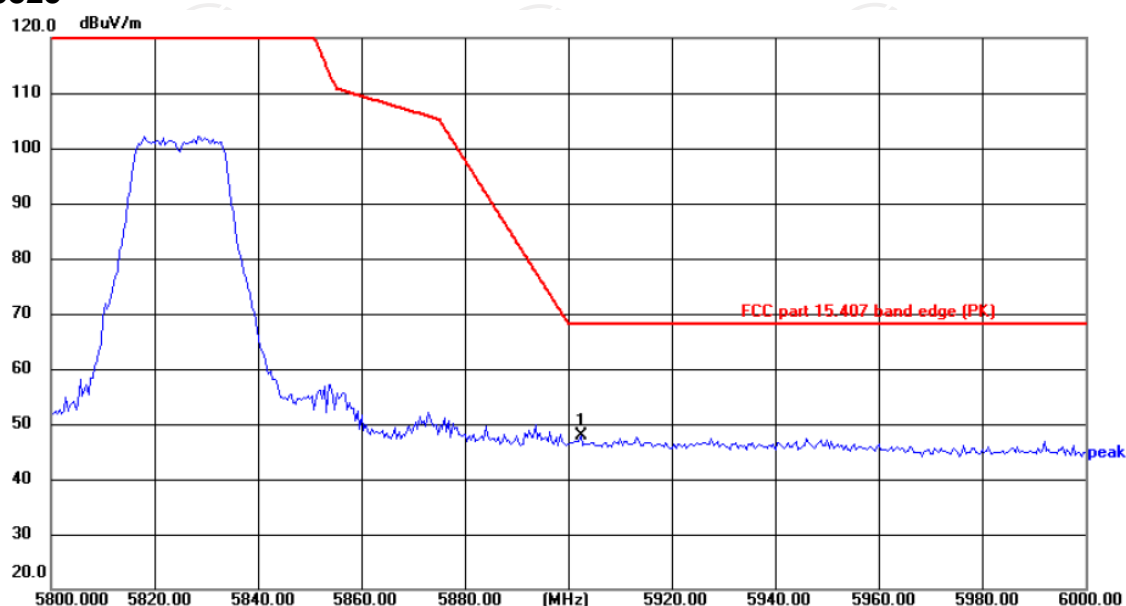
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	5460.000	62.42	-8.11	54.31	68.20	-13.89	peak	P	
2	5460.000	48.24	-8.11	40.13	54.00	-13.87	AVG	P	
3 *	5470.000	63.43	-8.11	55.32	68.20	-12.88	peak	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

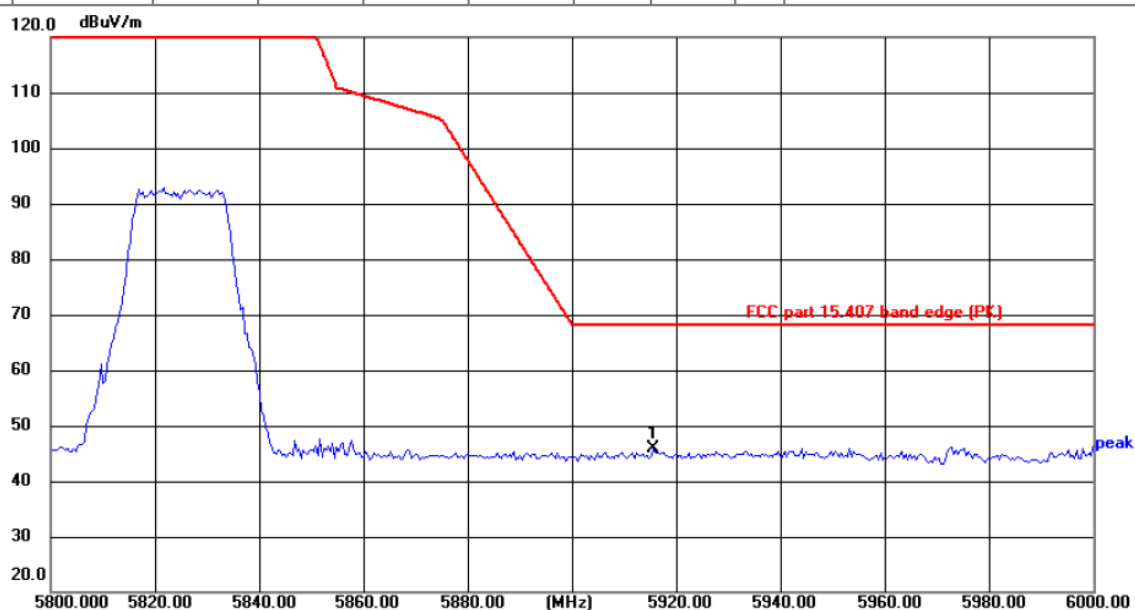
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	5460.000	54.56	-8.11	46.45	68.20	-21.75	peak	P	
2	5460.000	39.89	-8.11	31.78	54.00	-22.22	AVG	P	
3	5470.000	54.30	-8.11	46.19	68.20	-22.01	peak	P	

AC20-5825



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

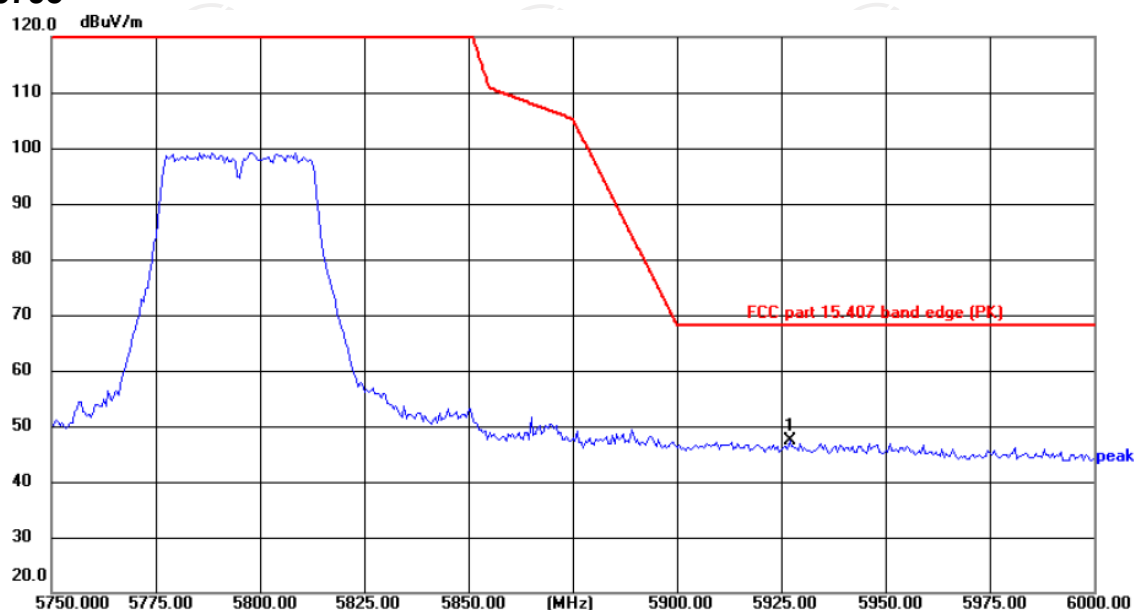
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	5902.400	55.05	-7.08	47.97	68.20	-20.23	peak	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

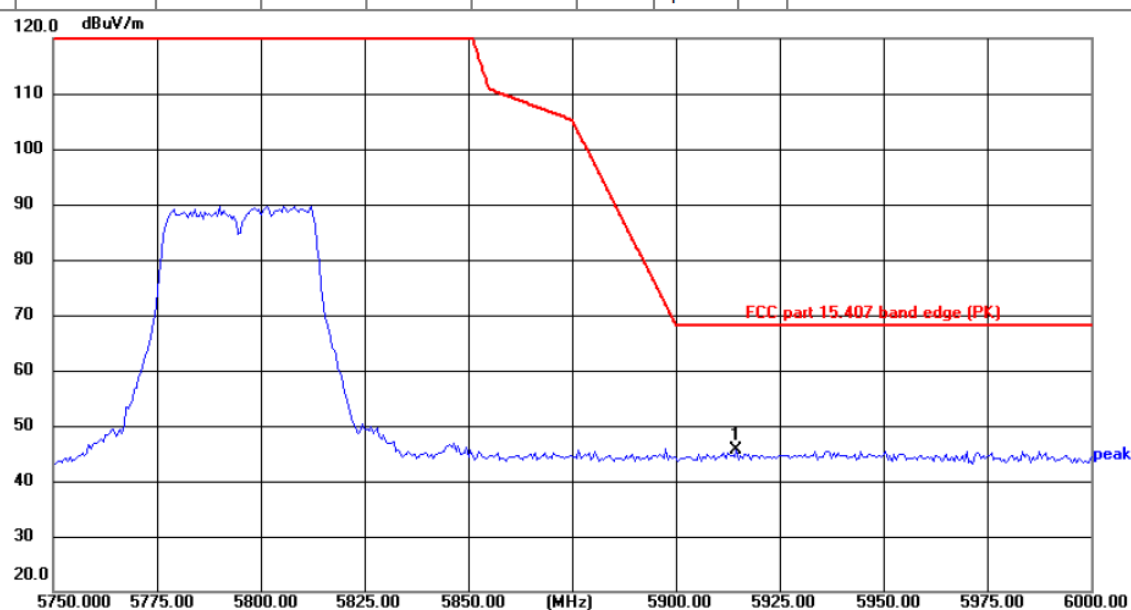
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	5915.600	52.86	-7.05	45.81	68.20	-22.39	peak	P	

AC40-5795



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

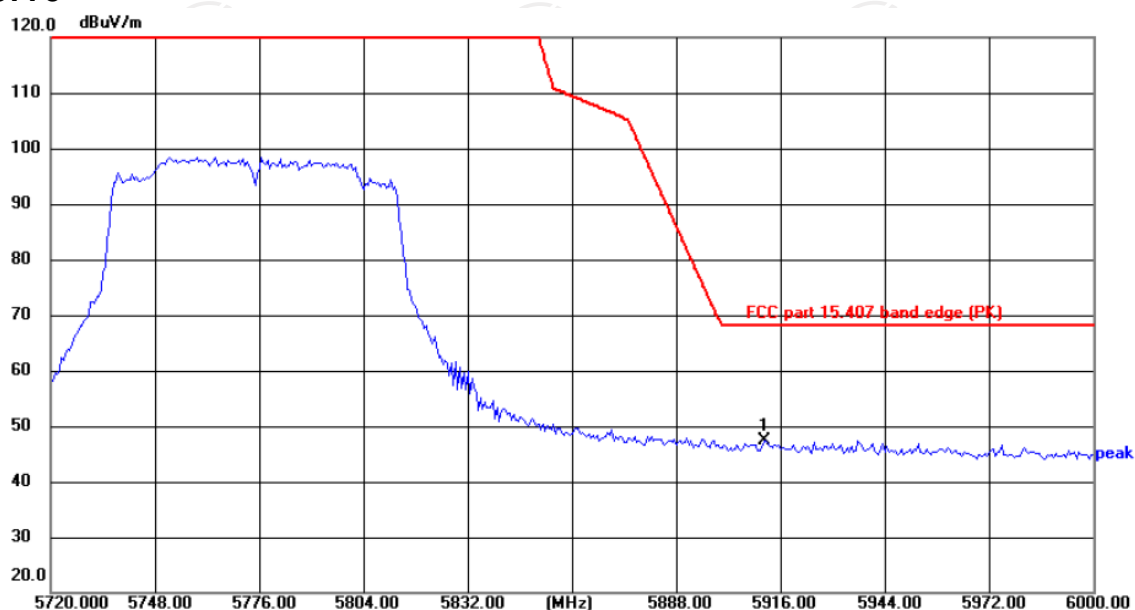
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	5927.000	54.44	-7.02	47.42	68.20	-20.78	peak	P	



Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

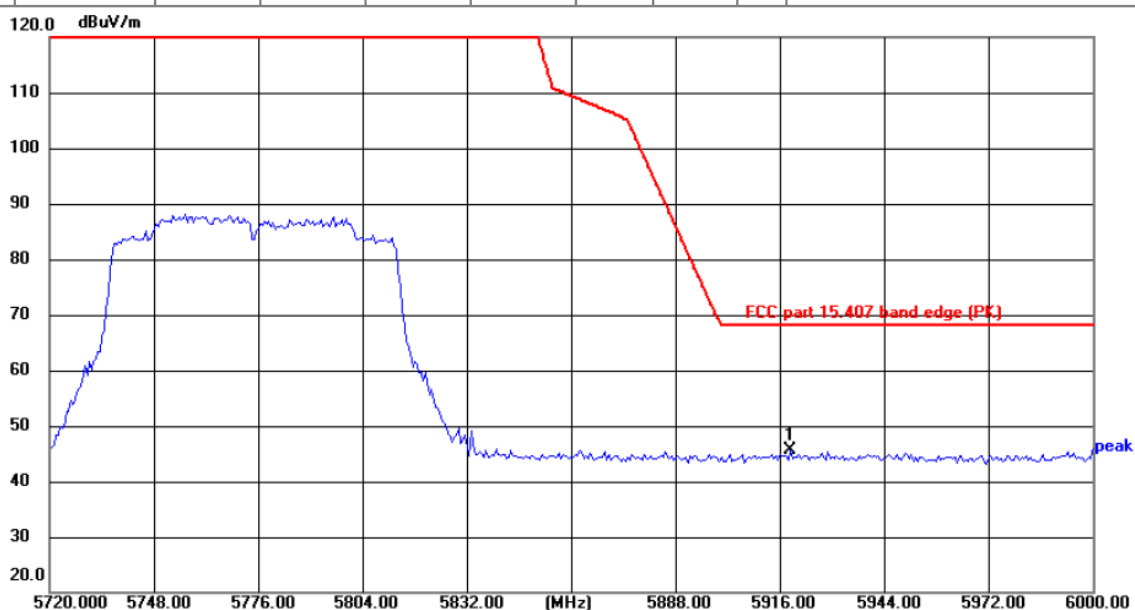
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	5914.500	52.57	-7.05	45.52	68.20	-22.68	peak	P	

AC80-5775



Site: Polarization: **Horizontal** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	5911.520	54.52	-7.06	47.46	68.20	-20.74	peak	P	



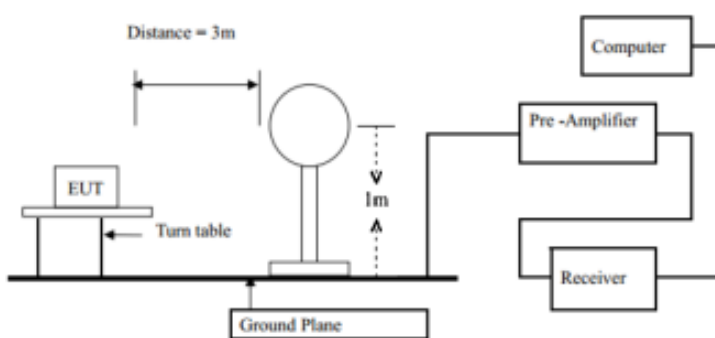
Site: Polarization: **Vertical** Temperature: 24(°C)
 Limit: FCC part 15.407 band edge (PK) Power: AC 120 V/60 Hz Humidity: 52 %

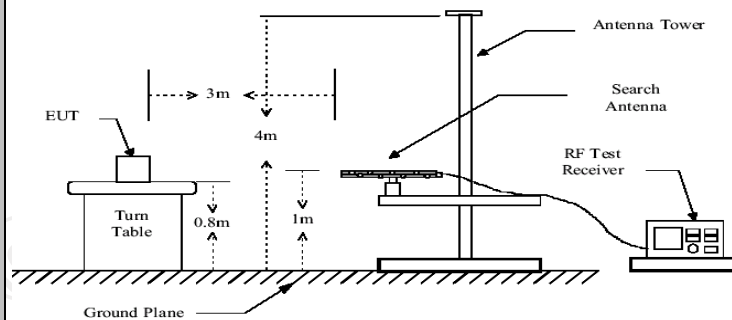
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	5918.800	52.59	-7.04	45.55	68.20	-22.65	peak	P	

Note: All modulation (802.11a, 802.11n, 802.11ac) have been tested, only the worst case in 802.11ac be reported.

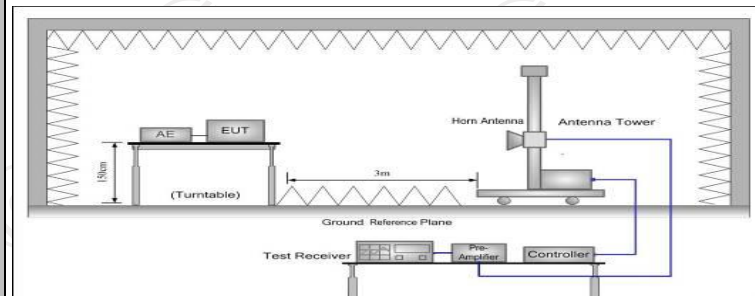
5.8. Unwanted Emissions

5.8.1. Test Specification

Test Requirement:	FCC CFR47 Part 15 Section 15.407 & 15.209 & 15.205				
Test Method:	KDB 789033 D02 v02r01				
Frequency Range:	9kHz to 40GHz				
Measurement Distance:	3 m				
Antenna Polarization:	Horizontal & Vertical				
Operation mode:	Transmitting mode with modulation				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table, In restricted bands:				
	Frequency	Detector	Limit@3m		
	Above 1G	Peak	74dBµV/m		
		AVG	54dBµV/m		
	Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)		
	0.009-0.490	2400/F(KHz)	300		
	0.490-1.705	24000/F(KHz)	3		
	1.705-30	30	30		
	30-88	100	3		
	88-216	150	3		
216-960	200	3			
Above 960	500	3			
	In un-restricted bands: 68.2dBuV/m				
Test setup:	For radiated emissions below 30MHz				
					
	30MHz to 1GHz				



Above 1GHz



Test Procedure:

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. 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.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotating table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

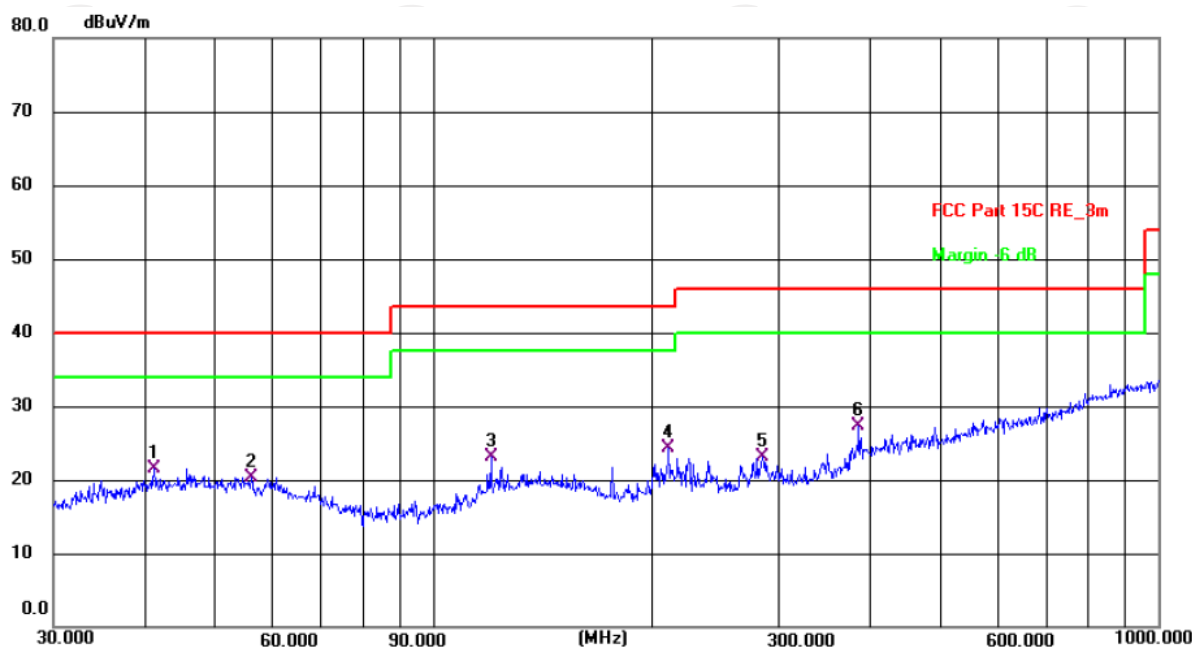
Test results:

PASS

5.8.2. Test Data

Please refer to following diagram for individual
Below 1GHz

Horizontal:



Site #2 3m Anechoic Chamber

Polarization: **Horizontal**

Temperature: 23.8(C) Humidity: 47 %

Limit: FCC Part 15C RE_3m

Power: DC 5 V(Notebook Computer Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	41.2764	7.61	13.98	21.59	40.00	-18.41	QP	P	
2	56.1974	7.02	13.38	20.40	40.00	-19.60	QP	P	
3	120.2766	11.07	11.98	23.05	43.50	-20.45	QP	P	
4	211.5261	13.28	10.94	24.22	43.50	-19.28	QP	P	
5	284.9766	8.98	14.08	23.06	46.00	-22.94	QP	P	
6	386.6338	10.52	16.79	27.31	46.00	-18.69	QP	P	

Vertical:



Site #2 3m Anechoic Chamber

Polarization: **Vertical**

Temperature: 23.8(C) Humidity: 47 %

Limit: FCC Part 15C RE_3m

Power: DC 5 V(Notebook Computer Input AC 120 V/60 Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	42.3021	6.93	13.95	20.88	40.00	-19.12	QP	P	
2 *	54.4515	7.84	13.49	21.33	40.00	-18.67	QP	P	
3	129.4677	7.85	12.57	20.42	43.50	-23.08	QP	P	
4	145.8608	10.17	13.29	23.46	43.50	-20.04	QP	P	
5	210.0481	11.25	10.86	22.11	43.50	-21.39	QP	P	
6	383.9318	7.90	16.69	24.59	46.00	-21.41	QP	P	

Note: 1. The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported

2. Measurements were conducted in all three channels (high, middle, low) and all modulation (802.11a, 802.11n(HT20), 802.11n(HT40), 802.11ac(VHT20), 802.11ac(VHT40), 802.11ac(VHT80) and the worst case Mode (Lowest channel and 802.11a) was submitted only.

3. Measurement (dBuV) = Reading level + Correction Factor, correction Factor= Antenna Factor + Cable loss – Pre-amplifier.

Modulation Type: Band 1									
11a CH36: 5180MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10360	H	38.55	---	8.02	46.57	---	68.2	---	-21.63
15540	H	39.38	---	9.87	49.25	---	74	54	-4.75
---	H	---	---	---	---	---	---	---	---
10360	V	37.34	---	8.02	45.36	---	68.2	---	-22.84
15540	V	39.77	---	9.87	49.64	---	74	54	-4.36
---	V	---	---	---	---	---	---	---	---
11a CH40: 5200MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10400	H	40.89	---	7.97	48.86	---	68.2	---	-19.34
15600	H	38.50	---	9.83	48.33	---	74	54	-5.67
---	H	---	---	---	---	---	---	---	---
10400	V	40.78	---	7.97	48.75	---	68.2	---	-19.45
15600	V	38.16	---	9.83	47.99	---	74	54	-6.01
---	V	---	---	---	---	---	---	---	---
11a CH48: 5240MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10480	H	38.45	---	7.97	46.42	---	68.2	---	-21.78
15720	H	38.73	---	9.83	48.56	---	74	54	-5.44
---	H	---	---	---	---	---	---	---	---
10480	V	39.68	---	7.97	47.65	---	68.2	---	-20.55
15720	V	36.90	---	9.83	46.73	---	74	54	-7.27
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH36: 5180MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10360	H	41.76	---	8.02	49.78	---	68.2	---	-18.42
15540	H	38.35	---	9.87	48.22	---	74	54	-5.78
---	H	---	---	---	---	---	---	---	---
10360	V	42.02	---	8.02	50.04	---	68.2	---	-18.16
15540	V	38.96	---	9.87	48.83	---	74	54	-5.17
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH40: 5200MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10400	H	41.60	---	7.97	49.57	---	68.2	---	-18.63
15600	H	38.55	---	9.83	48.38	---	74	54	-5.62
---	H	---	---	---	---	---	---	---	---
10400	V	41.42	---	7.97	49.39	---	68.2	---	-18.81
15600	V	38.81	---	9.83	48.64	---	74	54	-5.36
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH48: 5240MHz									

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10480	H	41.51	---	7.97	49.48	---	68.2	---	-18.72
15720	H	39.33	---	9.83	49.16	---	74	54	-4.84
---	H	---	---	---	---	---	---	---	---
10480	V	41.20	---	7.97	49.17	---	68.2	---	-19.03
15720	V	39.79	---	9.83	49.62	---	74	54	-4.38
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH38: 5190MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10380	H	40.54	---	7.75	48.29	---	68.2	---	-19.91
15570	H	37.86	---	9.87	47.73	---	74	54	-6.27
---	H	---	---	---	---	---	---	---	---
10380	V	40.81	---	7.75	48.56	---	68.2	---	-19.64
15570	V	38.72	---	9.87	48.59	---	74	54	-5.41
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH46: 5230MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10460	H	41.51	---	7.97	49.48	---	68.2	---	-18.72
15690	H	37.80	---	9.83	47.63	---	74	54	-6.37
---	H	---	---	---	---	---	---	---	---
10460	V	41.44	---	7.97	49.41	---	68.2	---	-18.79
15690	V	38.36	---	9.83	48.19	---	74	54	-5.81
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH36: 5180MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10360	H	41.51	---	8.02	49.53	---	68.2	---	-18.67
15540	H	38.42	---	9.87	48.29	---	74	54	-5.71
---	H	---	---	---	---	---	---	---	---
10360	V	39.15	---	8.02	47.17	---	68.2	---	-21.03
15540	V	39.36	---	9.87	49.23	---	74	54	-4.77
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH40: 5200MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10400	H	40.26	---	7.97	48.23	---	68.2	---	-19.97
15600	H	39.39	---	9.83	49.22	---	74	54	-4.78
---	H	---	---	---	---	---	---	---	---
10400	V	39.15	---	7.97	47.12	---	68.2	---	-21.08
15600	V	38.23	---	9.83	48.06	---	74	54	-5.94
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH48: 5240MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10480	H	37.41	---	7.97	45.38	---	68.2	---	-22.82
15720	H	38.26	---	9.83	48.09	---	74	54	-5.91
---	H	---	---	---	---	---	---	---	---
10480	V	39.29	---	7.97	47.26	---	68.2	---	-20.94
15720	V	38.75	---	9.83	48.58	---	74	54	-5.42
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH38: 5190MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10380	H	40.99	---	7.75	48.74	---	68.2	---	-19.46
15570	H	39.18	---	9.87	49.05	---	74	54	-4.95
---	H	---	---	---	---	---	---	---	---
10380	V	39.09	---	7.75	46.84	---	68.2	---	-21.36
15570	V	38.84	---	9.87	48.71	---	74	54	-5.29
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH46: 5230MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10460	H	39.35	---	7.97	47.32	---	68.2	---	-20.88
15690	H	39.12	---	9.83	48.95	---	74	54	-5.05
---	H	---	---	---	---	---	---	---	---
10460	V	39.58	---	7.97	47.55	---	68.2	---	-20.65
15690	V	38.39	---	9.83	48.22	---	74	54	-5.78
---	V	---	---	---	---	---	---	---	---
11ac(VHT80) CH42:5210									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10420	H	41.91	---	7.96	49.87	---	68.2	---	-18.33
15630	H	40.48	---	9.84	50.32	---	74	54	-3.68
---	H	---	---	---	---	---	---	---	---
10420	V	41.65	---	7.96	49.61	---	68.2	---	-18.59
15630	V	39.39	---	9.84	49.23	---	74	54	-4.77
---	V	---	---	---	---	---	---	---	---

Note:

- Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
- Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
- The emission levels of other frequencies are very lower than the limit and not show in test report.
- Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.
- Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

Modulation Type: Band 2A									
11a CH52: 5260MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10520	H	38.08	---	7.97	46.05	---	68.2	---	-22.15
15780	H	36.73	---	9.83	46.56	---	74	54	-7.44
---	H	---	---	---	---	---	---	---	---
10520	V	42.15	---	7.97	50.12	---	68.2	---	-18.08
15780	V	38.82	---	9.83	48.65	---	74	54	-5.35
---	V	---	---	---	---	---	---	---	---
11a CH60: 5300MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10560	H	38.94	---	7.98	46.92	---	74	54	-7.08
15840	H	38.68	---	9.85	48.53	---	74	54	-5.47
---	H	---	---	---	---	---	---	---	---
10560	V	39.66	---	7.98	47.64	---	74	54	-6.36
15840	V	38.28	---	9.85	48.13	---	74	54	-5.87
---	V	---	---	---	---	---	---	---	---
11a CH64: 5320MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10640	H	40.49	---	7.98	48.47	---	74	54	-5.53
15960	H	37.12	---	9.85	46.97	---	74	54	-7.03
---	H	---	---	---	---	---	---	---	---
10640	V	39.71	---	7.98	47.69	---	74	54	-6.31
15960	V	35.53	---	9.85	45.38	---	74	54	-8.62
---	V	---	---	---	---	---	---	---	---
11n(HT20) C52: 5260MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10520	H	41.59	---	7.97	49.56	---	68.2	---	-18.64
15780	H	38.66	---	9.83	48.49	---	74	54	-5.51
---	H	---	---	---	---	---	---	---	---
10520	V	38.18	---	7.97	46.15	---	68.2	---	-22.05
15780	V	36.50	---	9.83	46.33	---	74	54	-7.67
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH60: 5300MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10560	H	39.65	---	7.98	47.63	---	74	54	-6.37
15840	H	38.71	---	9.85	48.56	---	74	54	-5.44
---	H	---	---	---	---	---	---	---	---
10560	V	40.29	---	7.98	48.27	---	74	54	-5.73
15840	V	39.73	---	9.85	49.58	---	74	54	-4.42
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH64: 5320MHz									

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10640	H	38.55	---	7.98	46.53	---	74	54	-7.47
15960	H	35.90	---	9.85	45.75	---	74	54	-8.25
---	H	---	---	---	---	---	---	---	---
10640	V	39.99	---	7.98	47.97	---	74	54	-6.03
15960	V	39.26	---	9.85	49.11	---	74	54	-4.89
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH54: 5270MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10540	H	41.58	---	7.97	49.55	---	68.2	---	-18.65
15810	H	37.73	---	9.83	47.56	---	74	54	-6.44
---	H	---	---	---	---	---	---	---	---
10540	V	37.96	---	7.97	45.93	---	68.2	---	-22.27
15810	V	36.78	---	9.83	46.61	---	74	54	-7.39
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH62: 5310MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10620	H	40.89	---	7.98	48.87	---	74	54	-5.13
15930	H	38.73	---	9.85	48.58	---	74	54	-5.42
---	H	---	---	---	---	---	---	---	---
10620	V	38.21	---	7.98	46.19	---	74	54	-7.81
15930	V	36.86	---	9.85	46.71	---	74	54	-7.29
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) C52: 5260MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10520	H	40.35	---	7.97	48.32	---	68.2	---	-19.88
15780	H	39.80	---	9.83	49.63	---	74	54	-4.37
---	H	---	---	---	---	---	---	---	---
10520	V	40.61	---	7.97	48.58	---	68.2	---	-19.62
15780	V	36.83	---	9.83	46.66	---	74	54	-7.34
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH60: 5300MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10560	H	39.46	---	7.98	47.44	---	74	54	-6.56
15840	H	37.51	---	9.85	47.36	---	74	54	-6.64
---	H	---	---	---	---	---	---	---	---
10560	V	37.51	---	7.98	45.49	---	74	54	-8.51
15840	V	36.68	---	9.85	46.53	---	74	54	-7.47
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH64: 5320MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10640	H	40.73	---	7.98	48.71	---	74	54	-5.29
15960	H	39.51	---	9.85	49.36	---	74	54	-4.64
---	H	---	---	---	---	---	---	---	---
10640	V	40.38	---	7.98	48.36	---	74	54	-5.64
15960	V	36.99	---	9.85	46.84	---	74	54	-7.16
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH54: 5270MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10540	H	40.54	---	7.97	48.51	---	68.2	---	-19.69
15810	H	37.67	---	9.83	47.50	---	74	54	-6.50
---	H	---	---	---	---	---	---	---	---
10540	V	39.70	---	7.97	47.67	---	68.2	---	-20.53
15810	V	37.98	---	9.83	47.81	---	74	54	-6.19
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH60: 5310MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10620	H	38.59	---	7.98	46.57	---	74	54	-7.43
15930	H	37.64	---	9.85	47.49	---	74	54	-6.51
---	H	---	---	---	---	---	---	---	---
10620	V	38.63	---	7.98	46.61	---	74	54	-7.39
15930	V	37.87	---	9.85	47.72	---	74	54	-6.28
---	V	---	---	---	---	---	---	---	---
11ac(VHT80) C58:5290MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
10580	H	41.85	---	7.98	49.83	---	74	54	-4.17
15870	H	39.12	---	9.85	48.97	---	74	54	-5.03
---	H	---	---	---	---	---	---	---	---
10580	V	40.37	---	7.98	48.35	---	74	54	-5.65
15870	V	38.20	---	9.85	48.05	---	74	54	-5.95
---	V	---	---	---	---	---	---	---	---

Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.
5. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

Modulation Type: Band 2C									
11a CH100: 5500MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11000	H	39.34	---	8.03	47.37	---	74	54	-6.63
16500	H	39.91	---	9.76	49.67	---	68.2	---	-18.53
---	H	---	---	---	---	---	---	---	---
11000	V	40.56	---	8.03	48.59	---	74	54	-5.41
16500	V	40.33	---	9.76	50.09	---	68.2	---	-18.11
---	V	---	---	---	---	---	---	---	---
11a CH120: 5600MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11200	H	40.07	---	8.04	48.11	---	74	54	-5.89
16800	H	40.35	---	9.74	50.09	---	68.2	---	-18.11
---	H	---	---	---	---	---	---	---	---
11200	V	38.21	---	8.04	46.25	---	74	54	-7.75
16800	V	39.59	---	9.74	49.33	---	68.2	---	-18.87
---	V	---	---	---	---	---	---	---	---
11a CH140: 5700MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11400	H	38.67	---	8.05	46.72	---	74	54	-7.28
17100	H	40.45	---	9.72	50.17	---	68.2	---	-18.03
---	H	---	---	---	---	---	---	---	---
11400	V	38.50	---	8.05	46.55	---	74	54	-7.45
17100	V	40.97	---	9.72	50.69	---	68.2	---	-17.51
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH100: 5500MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11000	H	40.79	---	8.03	48.82	---	74	54	-5.18
16500	H	39.16	---	9.76	48.92	---	68.2	---	-19.28
---	H	---	---	---	---	---	---	---	---
11000	V	38.33	---	8.03	46.36	---	74	54	-7.64
16500	V	41.46	---	9.76	51.22	---	68.2	---	-16.98
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH120: 5600MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11200	H	39.87	---	8.04	47.91	---	74	54	-6.09
16800	H	40.33	---	9.74	50.07	---	68.2	---	-18.13
---	H	---	---	---	---	---	---	---	---
11200	V	38.75	---	8.04	46.79	---	74	54	-7.21
16800	V	39.19	---	9.74	48.93	---	68.2	---	-19.27
---	V	---	---	---	---	---	---	---	---
11n(HT20) CH140: 5700MHz									

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11400	H	39.61	---	8.05	47.66	---	74	54	-6.34
17100	H	40.74	---	9.72	50.46	---	68.2	---	-17.74
---	H	---	---	---	---	---	---	---	---
11400	V	38.74	---	8.05	46.79	---	74	54	-7.21
17100	V	39.93	---	9.72	49.65	---	68.2	---	-18.55
---	V	---	---	---	---	---	---	---	---

11n(HT40)CH102: 5510MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11020	H	39.25	---	8.03	47.28	---	74	54	-6.72
16530	H	39.40	---	9.76	49.16	---	68.2	---	-19.04
---	H	---	---	---	---	---	---	---	---
11020	V	39.43	---	8.03	47.46	---	74	54	-6.54
16530	V	37.97	---	9.76	47.73	---	68.2	---	-20.47
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH118: 5590MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11180	H	39.32	---	8.04	47.36	---	74	54	-6.64
16770	H	39.11	---	9.74	48.85	---	68.2	---	-19.35
---	H	---	---	---	---	---	---	---	---
11180	V	37.89	---	8.04	45.93	---	74	54	-8.07
16770	V	41.05	---	9.74	50.79	---	68.2	---	-17.41
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH134: 5670MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11340	H	40.74	---	8.05	48.79	---	74	54	-5.21
17010	H	41.95	---	9.72	51.67	---	68.2	---	-16.53
---	H	---	---	---	---	---	---	---	---
11340	V	39.07	---	8.05	47.12	---	74	54	-6.88
17010	V	38.38	---	9.72	48.10	---	68.2	---	-20.10
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH100: 5500MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11000	H	37.90	---	8.03	45.93	---	74	54	-8.07
16500	H	39.73	---	9.76	49.49	---	68.2	---	-18.71
---	H	---	---	---	---	---	---	---	---
11000	V	39.01	---	8.03	47.04	---	74	54	-6.96
16500	V	39.47	---	9.76	49.23	---	68.2	---	-18.97
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH120: 5600MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11200	H	40.29	---	8.04	48.33	---	74	54	-5.67
16800	H	39.60	---	9.74	49.34	---	68.2	---	-18.86
---	H	---	---	---	---	---	---	---	---
11200	V	39.52	---	8.04	47.56	---	74	54	-6.44
16800	V	39.70	---	9.74	49.44	---	68.2	---	-18.76
---	V	---	---	---	---	---	---	---	---
11ac(VHT20) CH140: 5700MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11400	H	39.81	---	8.05	47.86	---	74	54	-6.14
17100	H	38.72	---	9.72	48.44	---	68.2	---	-19.76
---	H	---	---	---	---	---	---	---	---
11400	V	40.82	---	8.05	48.87	---	74	54	-5.13
17100	V	39.36	---	9.72	49.08	---	68.2	---	-19.12
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH102: 5510MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11020	H	38.15	---	8.03	46.18	---	74	54	-7.82
16530	H	39.28	---	9.76	49.04	---	68.2	---	-19.16
---	H	---	---	---	---	---	---	---	---
11020	V	41.09	---	8.03	49.12	---	74	54	-4.88
16530	V	38.30	---	9.76	48.06	---	68.2	---	-20.14
---	V	---	---	---	---	---	---	---	---
11ac(VHT40) CH118:5590									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11180	H	38.62	---	8.04	46.66	---	74	54	-7.34
16770	H	36.74	---	9.74	46.48	---	68.2	---	-21.72
---	H	---	---	---	---	---	---	---	---
11180	V	38.80	---	8.04	46.84	---	74	54	-7.16
16770	V	37.45	---	9.74	47.19	---	68.2	---	-21.01
---	V	---	---	---	---	---	---	---	---

11ac(VHT40) CH134: 5670MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11340	H	37.73	---	8.05	45.78	---	74	54	-8.22
17010	H	36.01	---	9.72	45.73	---	68.2	---	-22.47
---	H	---	---	---	---	---	---	---	---
11340	V	37.82	---	8.05	45.87	---	74	54	-8.13
17010	V	39.37	---	9.72	49.09	---	68.2	---	-19.11
---	V	---	---	---	---	---	---	---	---
11ac(VHT80) CH106: 5530MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11060	H	39.45	---	8.03	47.48	---	74	54	-6.52
16590	H	40.78	---	9.75	50.53	---	68.2	---	-17.67
---	H	---	---	---	---	---	---	---	---
11060	V	40.01	---	8.03	48.04	---	74	54	-5.96
16590	V	41.77	---	9.75	51.52	---	68.2	---	-16.68
---	V	---	---	---	---	---	---	---	---
11a(HT80) CH122: 5610MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11220	H	41.40	---	8.05	49.45	---	74	54	-4.55
16830	H	38.57	---	9.72	48.29	---	68.2	---	-19.91
---	H	---	---	---	---	---	---	---	---
11220	V	39.28	---	8.05	47.33	---	74	54	-6.67
16830	V	39.99	---	9.72	49.71	---	68.2	---	-18.49
---	V	---	---	---	---	---	---	---	---

Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.
5. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

Modulation Type: Band 3									
11a(HT20) CH149: 5745MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11490	H	38.09	---	8.09	46.18	---	74	54	-7.82
17235	H	37.55	---	9.67	47.22	---	68.2	---	-20.98
---	H	---	---	---	---	---	---	---	---
11490	V	40.94	---	8.09	49.03	---	74	54	-4.97
17235	V	41.07	---	9.67	50.74	---	68.2	---	-17.46
---	V	---	---	---	---	---	---	---	---

11a(HT20) CH157: 5785MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11570	H	39.35	---	8.10	47.45	---	74	54	-6.55
17355	H	39.47	---	9.65	49.12	---	68.2	---	-19.08
---	H	---	---	---	---	---	---	---	---
11570	V	39.08	---	8.10	47.18	---	74	54	-6.82
17355	V	39.74	---	9.65	49.39	---	68.2	---	-18.81
---	V	---	---	---	---	---	---	---	---

11a(HT20) CH161: 5825MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11650	H	38.43	---	8.12	46.55	---	74	54	-7.45
17475	H	36.65	---	9.62	46.27	---	68.2	---	-21.93
---	H	---	---	---	---	---	---	---	---
11650	V	39.24	---	8.12	47.36	---	74	54	-6.64
17475	V	38.83	---	9.62	48.45	---	68.2	---	-19.75
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH151: 5745MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11510	H	39.44	---	8.09	47.53	---	74	54	-6.47
17265	H	38.59	---	9.67	48.26	---	68.2	---	-19.94
---	H	---	---	---	---	---	---	---	---
11510	V	39.49	---	8.09	47.58	---	74	54	-6.42
17265	V	38.07	---	9.67	47.74	---	68.2	---	-20.46
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH157: 5785MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11570	H	38.66	---	8.10	46.76	---	74	54	-7.24
17355	H	40.08	---	9.65	49.73	---	68.2	---	-18.47
---	H	---	---	---	---	---	---	---	---
11570	V	38.61	---	8.10	46.71	---	74	54	-7.29
17355	V	39.82	---	9.65	49.47	---	68.2	---	-18.73
---	V	---	---	---	---	---	---	---	---

11n(HT20) CH165: 5825MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11650	H	38.94	---	8.12	47.06	---	74	54	-6.94
17475	H	37.65	---	9.62	47.27	---	68.2	---	-20.93
---	H	---	---	---	---	---	---	---	---
11650	V	36.25	---	8.12	44.37	---	74	54	-9.63
17475	V	39.83	---	9.62	49.45	---	68.2	---	-18.75
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH151: 5755MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11510	H	40.73	---	8.09	48.82	---	74	54	-5.18
17265	H	41.18	---	9.67	50.85	---	68.2	---	-17.35
---	H	---	---	---	---	---	---	---	---
11510	V	40.45	---	8.09	48.54	---	74	54	-5.46
17265	V	38.86	---	9.67	48.53	---	68.2	---	-19.67
---	V	---	---	---	---	---	---	---	---

11n(HT40) CH159: 5795MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11590	H	39.14	---	8.10	47.24	---	74	54	-6.76
17385	H	38.06	---	9.65	47.71	---	68.2	---	-20.49
---	H	---	---	---	---	---	---	---	---
11590	V	37.96	---	8.10	46.06	---	74	54	-7.94
17385	V	38.20	---	9.65	47.85	---	68.2	---	-20.35
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH149: 5745MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11490	H	40.69	---	8.09	48.78	---	74	54	-5.22
17235	H	41.75	---	9.67	51.42	---	68.2	---	-16.78
---	H	---	---	---	---	---	---	---	---
11490	V	40.24	---	8.09	48.33	---	74	54	-5.67
17235	V	42.16	---	9.67	51.83	---	68.2	---	-16.37
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH157: 5785MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11570	H	38.47	---	8.10	46.57	---	74	54	-7.43
17355	H	37.09	---	9.65	46.74	---	68.2	---	-21.46
---	H	---	---	---	---	---	---	---	---
11570	V	37.82	---	8.10	45.92	---	74	54	-8.08
17355	V	39.01	---	9.65	48.66	---	68.2	---	-19.54
---	V	---	---	---	---	---	---	---	---

11ac(VHT20) CH165: 5825MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11650	H	40.13	---	8.12	48.25	---	74	54	-5.75
17475	H	38.85	---	9.62	48.47	---	68.2	---	-19.73
---	H	---	---	---	---	---	---	---	---
11650	V	39.76	---	8.12	47.88	---	74	54	-6.12
17475	V	41.32	---	9.62	50.94	---	68.2	---	-17.26
---	V	---	---	---	---	---	---	---	---

11ac(VHT40) CH151: 5755MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11510	H	40.17	---	8.09	48.26	---	74	54	-5.74
17265	H	38.28	---	9.67	47.95	---	68.2	---	-20.25
---	H	---	---	---	---	---	---	---	---
11510	V	40.80	---	8.09	48.89	---	74	54	-5.11
17265	V	36.45	---	9.67	46.12	---	68.2	---	-22.08
---	V	---	---	---	---	---	---	---	---

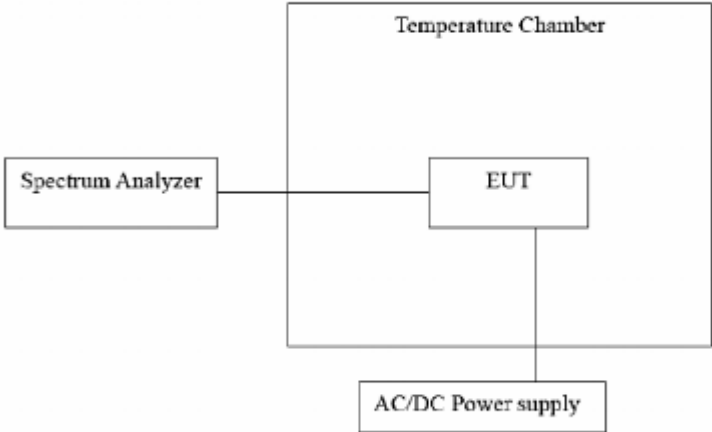
11ac(VHT40) CH159: 5795MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11590	H	40.34	---	8.10	48.44	---	74	54	-5.56
17385	H	37.58	---	9.65	47.23	---	68.2	---	-20.97
---	H	---	---	---	---	---	---	---	---
11590	V	40.36	---	8.10	48.46	---	74	54	-5.54
17385	V	39.27	---	9.65	48.92	---	68.2	---	-19.28
---	V	---	---	---	---	---	---	---	---
11ac(VHT80) CH155: 5775MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
11550	H	40.66	---	8.09	48.75	---	74	54	-5.25
17325	H	42.13	---	9.66	51.79	---	68.2	---	-16.41
---	H	---	---	---	---	---	---	---	---
11550	V	41.69	---	8.09	49.78	---	74	54	-4.22
17325	V	39.72	---	9.66	49.38	---	68.2	---	-18.82
---	V	---	---	---	---	---	---	---	---

Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor=Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. The highest test frequency is 40GHz.
5. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

5.9. Frequency Stability Measurement

5.9.1. Test Specification

Test Requirement:	FCC Part15 Section 15.407(g) &Part2 J Section 2.1055
Test Method:	ANSI C63.10: 2013
Limit:	The frequency tolerance shall be maintained within the band of operation frequency over a temperature variation of 0 degrees to 45 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.
Test Setup:	 <pre> graph LR SA[Spectrum Analyzer] --- EUT[EUT] subgraph TC [Temperature Chamber] EUT end EUT --- P[AC/DC Power supply] </pre>
Test Procedure:	The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage. b. Turn the EUT on and couple its output to a spectrum analyzer. c. Turn the EUT off and set the chamber to the highest temperature specified. d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature. f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
Test Result:	PASS
Remark:	Pre-scan was performed at Antenna 0 and Antenna 1, the worst case was found. Only the test data of Antenna 0 was shown in this report.

Test plots as follows:

Test mode:		802.11ac(HT20)	Frequency(MHz):	5180
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5180.0095	9500	PASS
35		5180.0061	6100	PASS
25		5179.9874	-12600	PASS
15		5179.9982	-1800	PASS
5		5180.0037	3700	PASS
0		5180.0046	4600	PASS
20	2.97V	5179.9833	-16700	PASS
	3.3V	5180.0030	3000	PASS
	3.63V	5179.9828	-17200	PASS

Test mode:		802.11ac(HT20)	Frequency(MHz):	5200
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5200.0096	9600	PASS
35		5200.0084	8400	PASS
25		5200.0071	7100	PASS
15		5200.0045	4500	PASS
5		5199.9980	-2000	PASS
0		5199.9879	-12100	PASS
20	2.97V	5199.9952	-4800	PASS
	3.3V	5200.0033	3300	PASS
	3.63V	5200.0057	5700	PASS

Test mode:		802.11ac(HT20)	Frequency(MHz):	5240
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5240.0047	4700	PASS
35		5240.0022	2200	PASS
25		5240.0025	2500	PASS
15		5239.9991	-900	PASS
5		5239.9986	-1400	PASS
0		5239.9977	-2300	PASS
20	2.97V	5240.0034	3400	PASS
	3.3V	5240.0013	1300	PASS
	3.63V	5239.9980	-2000	PASS

Test mode:		802.11ac(HT20)	Frequency(MHz):	5745
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5745.0015	1500	PASS
35		5745.0011	1100	PASS
25		5744.9960	-4000	PASS
15		5744.9958	-4200	PASS
5		5745.0033	3300	PASS
0		5745.0047	4700	PASS
20	2.97V	5745.0079	7900	PASS
	3.3V	5745.0072	7200	PASS
	3.63V	5745.0026	2600	PASS

Test mode:		802.11ac(HT20)	Frequency(MHz):	5785
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5785.0085	8500	PASS
35		5785.0036	3600	PASS
25		5785.0021	2100	PASS
15		5784.9980	-2000	PASS
5		5785.0029	2900	PASS
0		5784.9977	-2300	PASS
20	2.97V	5785.0056	5600	PASS
	3.3V	5785.0024	2400	PASS
	3.63V	5784.9973	-2700	PASS

Test mode:		802.11ac(HT20)	Frequency(MHz):	5825
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5824.9805	-19500	PASS
35		5825.0081	8100	PASS
25		5824.9952	-4800	PASS
15		5824.9987	-1300	PASS
5		5825.0019	1900	PASS
0		5825.0043	4300	PASS
20	2.97V	5825.0048	4800	PASS
	3.3V	5824.9984	-1600	PASS
	3.63V	5825.0026	2600	PASS

Test mode:		802.11ac(HT40)	Frequency(MHz):	5190
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5190.0122	12200	PASS
35		5190.0116	11600	PASS
25		5190.0103	10300	PASS
15		5190.0037	3700	PASS
5		5190.0060	6000	PASS
0		5190.0078	7800	PASS
20	2.97V	5189.9911	-8900	PASS
	3.3V	5189.9975	-2500	PASS
	3.63V	5190.0049	4900	PASS

Test mode:		802.11ac(HT40)	Frequency(MHz):	5230
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5230.0118	11800	PASS
35		5230.0123	12300	PASS
25		5230.0091	9100	PASS
15		5229.9980	-2000	PASS
5		5229.9989	-1100	PASS
0		5230.0056	5600	PASS
20	2.97V	5230.0047	4700	PASS
	3.3V	5230.0024	2400	PASS
	3.63V	5229.9972	-2800	PASS

Test mode:		802.11ac(HT40)	Frequency(MHz):	5755
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5755.0107	10700	PASS
35		5755.0021	2100	PASS
25		5755.0115	11500	PASS
15		5755.0099	9900	PASS
5		5755.0032	3200	PASS
0		5755.0074	7400	PASS
20	2.97V	5755.0046	4600	PASS
	3.3V	5755.0038	3800	PASS
	3.63V	5755.0069	6900	PASS

Test mode:		802.11ac(HT40)	Frequency(MHz):	5795
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5794.9804	-19600	PASS
35		5794.9845	-15500	PASS
25		5795.0041	4100	PASS
15		5795.0036	3600	PASS
5		5795.0022	2200	PASS
0		5795.0067	6700	PASS
20	2.97V	5795.0053	5300	PASS
	3.3V	5794.9989	-1100	PASS
	3.63V	5795.0080	8000	PASS

Test mode:		802.11ac(VHT80)	Frequency(MHz):	5210
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5209.9805	-19500	PASS
35		5209.9841	-15900	PASS
25		5210.0047	4700	PASS
15		5210.0034	3400	PASS
5		5210.0028	2800	PASS
0		5210.0060	6000	PASS
20	2.97V	5210.0052	5200	PASS
	3.3V	5209.9989	-1100	PASS
	3.63V	5210.0086	8600	PASS

Test mode:		802.11ac(VHT80)	Frequency(MHz):	5775
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Delta Frequency(Hz)	Result
45	3.3V	5775.0042	4200	PASS
35		5774.9977	-2300	PASS
25		5775.0046	4600	PASS
15		5775.0035	3500	PASS
5		5774.9968	-3200	PASS
0		5775.0061	6100	PASS
20	2.97V	5775.0059	5900	PASS
	3.3V	5774.9984	-1600	PASS
	3.63V	5775.0080	8000	PASS

Appendix A: Test Result of Conducted Test

Antenna 0

Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)
NVNT	a	5180	Ant0	99.42
NVNT	a	5200	Ant0	99.43
NVNT	a	5240	Ant0	99.43
NVNT	n20	5180	Ant0	99.38
NVNT	n20	5200	Ant0	99.34
NVNT	n20	5240	Ant0	99.39
NVNT	n40	5190	Ant0	99.40
NVNT	n40	5230	Ant0	99.20
NVNT	ac20	5180	Ant0	98.79
NVNT	ac20	5200	Ant0	98.80
NVNT	ac20	5240	Ant0	98.80
NVNT	ac40	5190	Ant0	98.80
NVNT	ac40	5230	Ant0	98.40
NVNT	ac80	5210	Ant0	98.64
NVNT	a	5260	Ant0	99.39
NVNT	a	5300	Ant0	99.40
NVNT	a	5320	Ant0	99.40
NVNT	n20	5260	Ant0	99.33
NVNT	n20	5300	Ant0	99.36
NVNT	n20	5320	Ant0	99.31
NVNT	n40	5270	Ant0	99.40
NVNT	n40	5310	Ant0	99.16
NVNT	ac20	5260	Ant0	98.69
NVNT	ac20	5300	Ant0	98.72
NVNT	ac20	5320	Ant0	98.72
NVNT	ac40	5270	Ant0	98.80
NVNT	ac40	5310	Ant0	98.83
NVNT	ac80	5290	Ant0	98.59
NVNT	a	5500	Ant0	99.39
NVNT	a	5600	Ant0	99.39
NVNT	a	5700	Ant0	99.40
NVNT	n20	5500	Ant0	99.38
NVNT	n20	5600	Ant0	99.32
NVNT	n20	5700	Ant0	99.35
NVNT	n40	5510	Ant0	98.69
NVNT	n40	5590	Ant0	98.64
NVNT	n40	5670	Ant0	98.70
NVNT	ac20	5500	Ant0	98.74
NVNT	ac20	5600	Ant0	98.72
NVNT	ac20	5700	Ant0	98.72
NVNT	ac40	5510	Ant0	98.83

NVNT	ac40	5590	Ant0	98.40
NVNT	ac40	5670	Ant0	98.83
NVNT	ac80	5530	Ant0	98.58
NVNT	ac80	5610	Ant0	98.62
NVNT	a	5745	Ant0	99.39
NVNT	a	5785	Ant0	99.39
NVNT	a	5825	Ant0	99.34
NVNT	n20	5745	Ant0	99.31
NVNT	n20	5785	Ant0	99.37
NVNT	n20	5825	Ant0	99.30
NVNT	n40	5755	Ant0	99.20
NVNT	n40	5795	Ant0	99.20
NVNT	ac20	5745	Ant0	98.71
NVNT	ac20	5785	Ant0	98.72
NVNT	ac20	5825	Ant0	98.71
NVNT	ac40	5755	Ant0	98.80
NVNT	ac40	5795	Ant0	98.83
NVNT	ac80	5775	Ant0	98.58

