FCC RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART E

Test Standard	**FCC Part 15.407**
Brand name	**CC&C**
Product name	**IOT BLE Mini Gateway**
Model No.	**WG-1000DB**
Test Result	**Pass**
Statements of Conformity	**Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.**

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.
The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc.(Wugu Laboratory)

Approved by:

Kevin Tsai
Deputy Manager

Tested by:

Dally Hong
Engineer

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	October 18, 2019	Initial Issue	ALL	May Lin
01	October 31, 2019	See the following Note Rev. (01)	P.13, P.17, P.27, P.31-32, P.69-70, P.79-80, P.85-90, P.93-96, P.102	May Lin

Rev (01):

1. Revised the section 3.3、section 4.2.2、section 4.3.2、section 4.4.4、section 4.5.4、section 4.6.4.

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APPENDIX 1 - PHOTOGRAPHS OF EUT

1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	CC&C Technologies, Inc. 8F, No. 150, Jian Yi Road, Zhonghe District, New Taipei City, 235 Taiwan
Manufacturer	Kunshan CC&C Technologies, Co., Ltd No.9 building,3rd Main Street, Kunshan Free Trade Zone, Jiangsu Province, P.R.China
Equipment	IOT BLE Mini Gateway
Trade Name	CC&C
Model Name	WG-1000DB
Model Discrepancy	N/A
Received Date	April 1, 2019
Date of Test	May 7 ~ October 09, 2019
Power Supply	Powered from host device via USB Cable
Output Power(W)	

Band	Mode	Frequency Range (MHz)	Output Power (W)
U-NII-1	IEEE 802.11a	5180 ~ 5240	0.0511
	IEEE 802.11n HT 20 MHz	5180 ~ 5240	0.0313
	IEEE 802.11n HT 40 MHz	5190 ~ 5230	0.0321
U-NII-3	IEEE 802.11a	5745 ~ 5825	0.0491
	IEEE 802.11n HT 20 MHz	5745 ~ 5825	0.0322
	IEEE 802.11n HT 40 MHz	5755 ~ 5795	0.0321

1.2 EUT CHANNEL INFORMATION

Frequency Range	**UNII-1** IEEE 802.11a: 5180 ~ 5240 MHz IEEE 802.11n HT 20 MHz: 5180 ~ 5240 MHz IEEE 802.11n HT 40 MHz: 5190 ~ 5230 MHz **UNII-3** IEEE 802.11a: 5745 ~ 5825 MHz IEEE 802.11n HT 20 MHz: 5745 ~ 5825 MHz IEEE 802.11n HT 40 MHz: 5755 ~ 5795 MHz
Modulation Type	1. IEEE 802.11a mode: OFDM 2. IEEE 802.11n HT 20 MHz mode: OFDM 3. IEEE 802.11n HT 40 MHz mode: OFDM

Remark:
Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested

Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☐ PIFA ☒ PCB ☐ Dipole ☐ Coils
Antenna Gain	Gain: -2.5116dBi
Antenna Connector	N/A

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 0.0014
RF output power, conducted	+/- 1.14
Power density, conducted	+/- 1.40
3M Semi Anechoic Chamber / 30M~200M	+/- 4.12
3M Semi Anechoic Chamber / 200M~1000M	+/- 4.68
3M Semi Anechoic Chamber / 1G~8G	+/- 5.18
3M Semi Anechoic Chamber / 8G~18G	+/- 5.47
3M Semi Anechoic Chamber / 18G~26G	+/- 3.81
3M Semi Anechoic Chamber / 26G~40G	+/- 3.87

***Remark**:*
1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room	Dally Hong	-
Radiation	Dally Hong	-
RF Conducted	Dally Hong	-

Remark: *The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.*

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Coaxial Cable	Woken	WC12	CC001	06/28/2019	06/27/2020
EXA Signal Analyzer	KEYSIGHT	N9010B	MY55460167	07/31/2019	07/30/2020
Thermostatic/ Humidity Chamber	GWINSTEK	GTC-288MH-CC	TH160402	05/16/2019	05/15/2020
Software	N/A				

For Section 3.3: EUT Duty Cycle

RF Conducted Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Coaxial Cable	Woken	WC12	CC001	06/29/2018	06/28/2019
EXA Signal Analyzer	KEYSIGHT	N9010B	MY55460167	08/01/2019	07/31/2019
Thermostatic/Humidity Chamber	GWINSTEK	GTC-288MH-CC	TH160402	05/17/2018	05/16/2019
Software	N/A				

Remark: *Each piece of equipment is scheduled for calibration once a year.*

3M 966 Chamber Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Bilog Antenna	Sunol Sciences	JB3	A030105	07/26/2019	07/25/2020
Coaxial Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	02/26/2019	02/25/2020
Coaxial Cable	EMCI	EMC105	190914+25111	09/20/2019	09/19/2020
Digital Thermo-Hygro Meter	WISEWIND	1206	D07	01/30/2019	01/29/2020
High Pass Filters	MICRO TRONICS	HPM13195	003	02/26/2019	02/25/2020
Horn Antenna	ETS LINDGREN	3116	00026370	12/26/2018	12/25/2019
Horn Antenna	ETS LINDGREN	3117	00143280	07/16/2019	07/15/2020
Loop Ant	COM-POWER	AL-130	121051	03/22/2019	03/21/2020
Pre-Amplifier	EMEC	EM330	060609	02/26/2019	02/25/2020
Pre-Amplifier	HP	8449B	3008A00965	02/26/2019	02/25/2020
Pre-Amplifier	MITEQ	AMF-6F-260400-40-8P	985646	02/26/2019	02/25/2020
PSA Series Spectrum Analyzer	Agilent	E4446A	MY46180323	05/29/2019	05/28/2020
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Software	e3 6.11-20180413				

AC Conducted Emissions Test Site					
Equipment	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
CABLE	EMCI	CFD300-NL	CERF	06/27/2019	06/26/2020
EMI Test Receiver	R&S	ESCI	100064	07/26/2019	07/25/2020
LISN	SCHWARZBECK	NSLK 8127	8127-541	01/31/2019	01/30/2020
LISN	SCHAFFNER	NNB 41	03/10013	02/13/2019	02/12/2020
Software	EZ-EMC(CCS-3A1-CE)				

Remark: *Each piece of equipment is scheduled for calibration once a year.*

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
	N/A				

Support Equipment					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
1	NB(J)	TOSHIBA	PT345T-00L002	N/A	PD97260H

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.407, KDB 789033 D02.

2. TEST SUMMERY

FCC Standard Sec.	Chapter	Test Item	Result
15.203	1.4	Antenna Requirement	Pass
15.207	4.1	AC Conducted Emission	Pass
15.403(i)	4.2	26dB Bandwidth	Pass
15.403(i)	4.2	6dB Bandwidth	Pass
15.403(i)	4.2	Occupied Bandwidth (99%)	Pass
15.407(a)	4.3	Output Power Measurement	Pass
15.407(a)	4.4	Power Spectral Density	Pass
15.407(b)	4.5	Radiation Band Edge	Pass
15.407(b)	4.5	Radiation Spurious Emission	Pass
15.407(g)	4.6	Frequency Stability	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

<table>
<tr><td>Operation mode</td><td>1. IEEE 802.11a mode: 6Mbps
2. IEEE 802.11n HT 20 MHz mode: MCS0
3. IEEE 802.11n HT 40 MHz mode: MCS0</td></tr>
<tr><td>Operating Frequency Range &
Number of Channels</td><td>
<table>
<tr><th></th><th>Mode</th><th>Frequency Range (MHz)</th><th>Number of Channels</th></tr>
<tr><td rowspan="3">U-NII-1</td><td>IEEE 802.11a</td><td>5180 ~ 5240</td><td>4 Channels</td></tr>
<tr><td>IEEE 802.11n HT 20 MHz</td><td>5180 ~ 5240</td><td>4 Channels</td></tr>
<tr><td>IEEE 802.11n HT 40 MHz</td><td>5190 ~ 5230</td><td>2 Channels</td></tr>
<tr><td rowspan="3">U-NII-3</td><td>IEEE 802.11a</td><td>5745 ~ 5825</td><td>5 Channels</td></tr>
<tr><td>IEEE 802.11n HT 20 MHz</td><td>5745 ~ 5825</td><td>5 Channels</td></tr>
<tr><td>IEEE 802.11n HT 40 MHz</td><td>5755 ~ 5795</td><td>2 Channels</td></tr>
</table>
</td></tr>
</table>

Remark:
1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.
2. Covered modes are test reduction modes. The output powers on the covered modes are equal to or less than the mode referenced and use the same module

3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Band edge, Emission for Unwanted and Fundamental
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☒ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane)

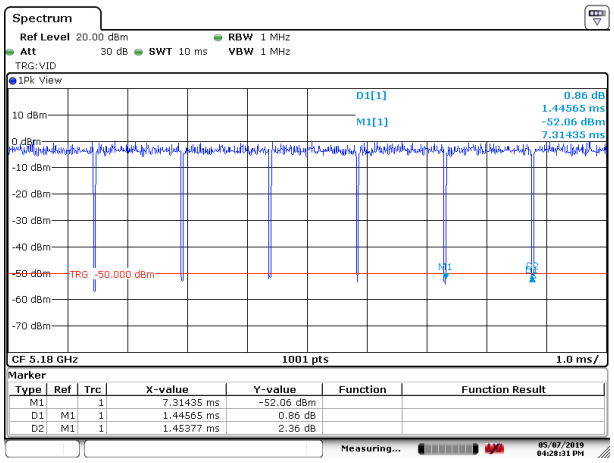
Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by host system
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:
1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z for radiated measurement. The worst case (X-Plane) were recorded in this report
3. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.

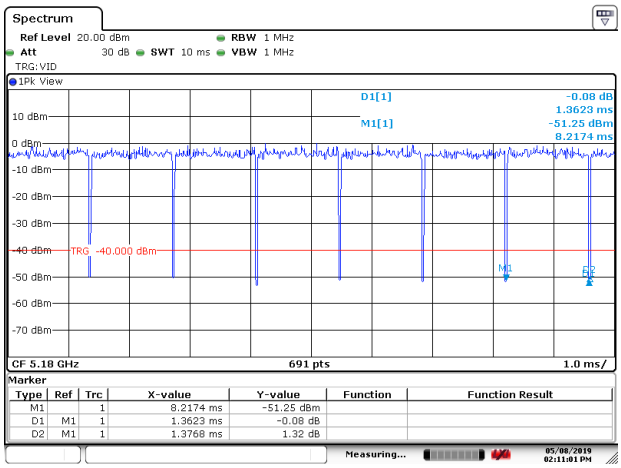
3.3 EUT DUTY CYCLE

Duty Cycle				
Configuration	Duty Cycle (%)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11a	99.44	0.02	0.69	1.00
802.11n HT20	98.95	0.05	0.73	1.00
802.11n HT40	97.92	0.09	1.47	2.00

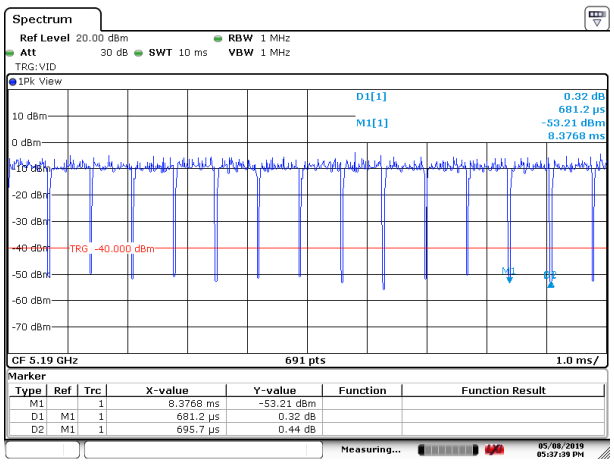
802.11a



802.11n HT20



802.11n HT40



4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a) and RSS-GEN section 8.8,

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

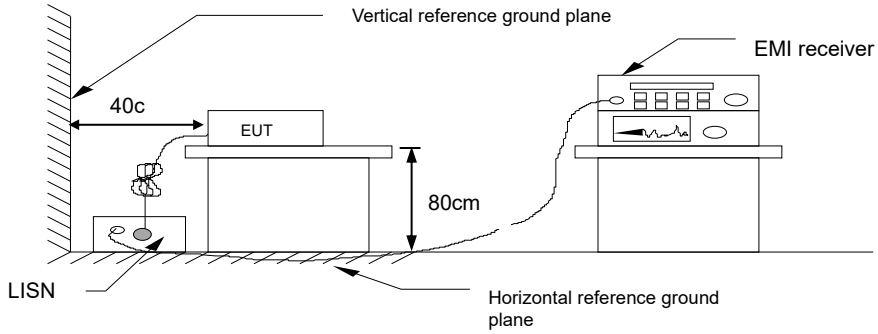
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup

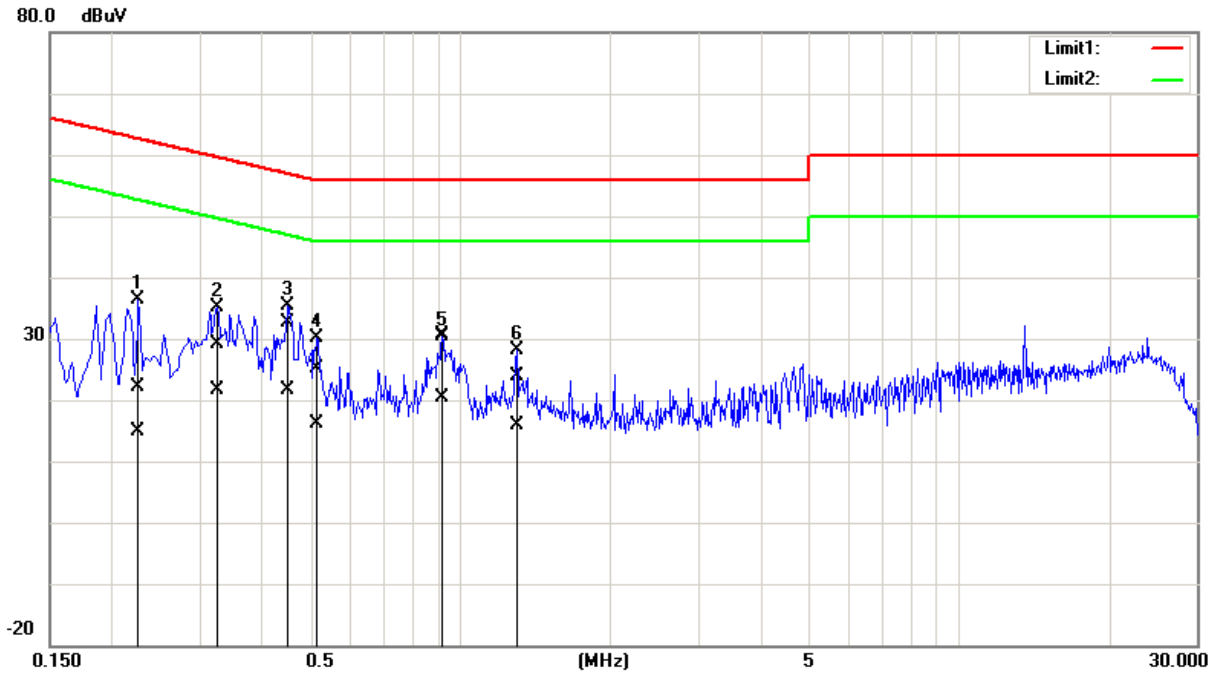


4.1.4 Test Result

Pass.

Test Data

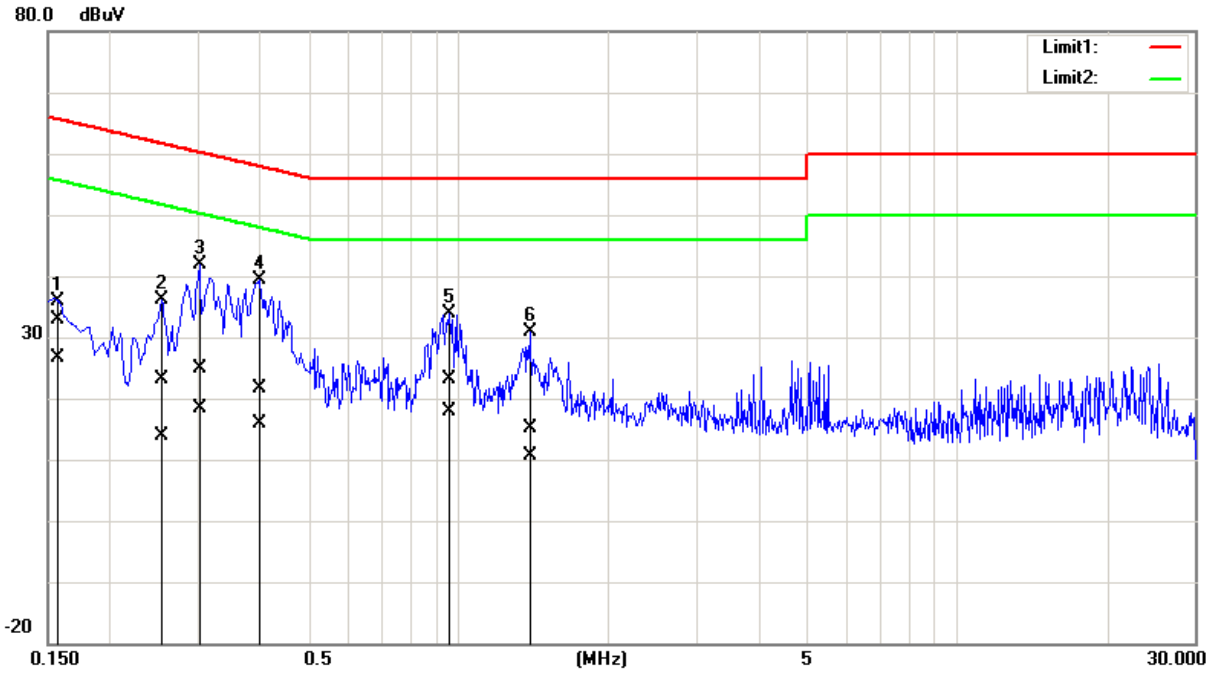
Test Mode	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase	Line	Test Date	October 09, 2019
		Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.2260	11.92	4.69	10.13	22.05	14.82	62.60	52.60	-40.55	-37.78	Pass
0.3260	18.91	11.57	10.14	29.05	21.71	59.55	49.55	-30.50	-27.84	Pass
0.4500	22.43	11.60	10.14	32.57	21.74	56.88	46.88	-24.31	-25.14	Pass
0.5180	15.01	6.02	10.14	25.15	16.16	56.00	46.00	-30.85	-29.84	Pass
0.9220	20.43	10.12	10.17	30.60	20.29	56.00	46.00	-25.40	-25.71	Pass
1.2980	13.74	5.65	10.17	23.91	15.82	56.00	46.00	-32.09	-30.18	Pass

Note: *Correction factor = LISN loss + Cable loss*

Test Mode	Mode 1	Temp/Hum	24(℃)/ 50%RH
Phase	Neutral	Test Date	October 09, 2019
		Test Engineer	Dally Hong



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.1590	22.89	16.49	10.02	32.91	26.51	65.52	55.52	-32.61	-29.01	Pass
0.2540	13.03	3.88	10.02	23.05	13.90	61.63	51.63	-38.58	-37.73	Pass
0.3020	14.91	8.36	10.03	24.94	18.39	60.19	50.19	-35.25	-31.80	Pass
0.3980	11.50	5.84	10.03	21.53	15.87	57.90	47.90	-36.37	-32.03	Pass
0.9620	12.98	7.78	10.04	23.02	17.82	56.00	46.00	-32.98	-28.18	Pass
1.3900	5.08	0.52	10.04	15.12	10.56	56.00	46.00	-40.88	-35.44	Pass

Note: *Correction factor = LISN loss + Cable loss*

4.2 26dB BANDWIDTH, 6dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

4.2.1 Test Limit

26 dB Bandwidth ：For reporting purposes only.

6 dB Bandwidth ：Least 500kHz.

Occupied Bandwidth(99%) ： For reporting purposes only.

4.2.2 Test Procedure

26dB

1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

2. Set RBW: approximately 1% of the emission bandwidth.

3. Set the VBW>RBW.

4. Detoctor = Peak.

5. Trace mode = max hold.

6. Measure the maximum width of the emission that is 26dB down from the peak of the emission. Compare this with the RBW setting of the analyser. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

99%

1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

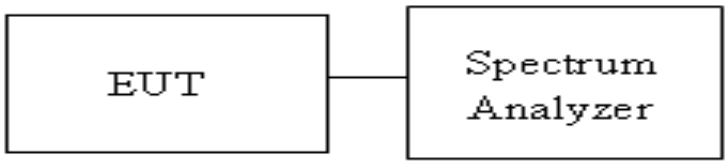
2. Set center frequency to the nominal EUT channel center frequency.

3. Set span = 1.5 times to 5.0 times the OBW.

4. Set RBW = 1 % to 5% of the OBW.

5. Set VBW ≧ 3 xRBW

4.2.3 Test Setup

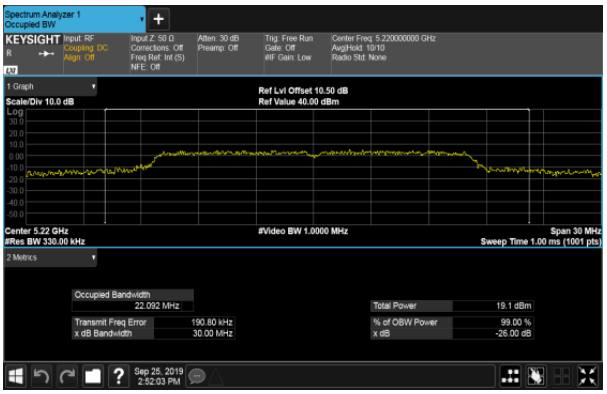


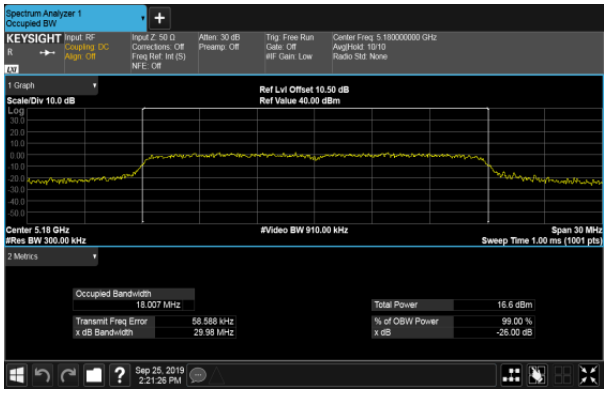
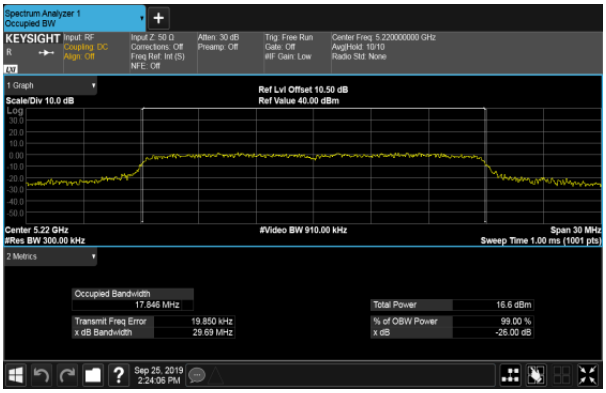
4.2.4 Test Result

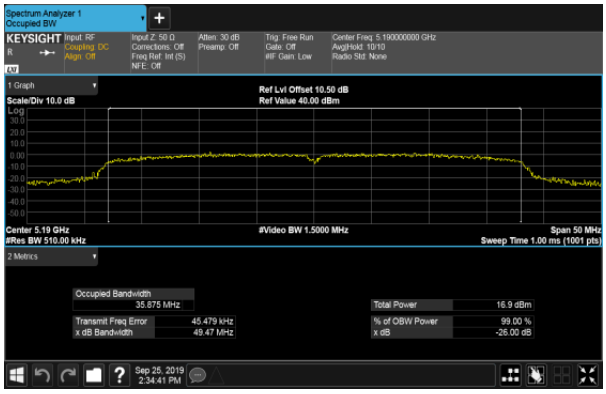
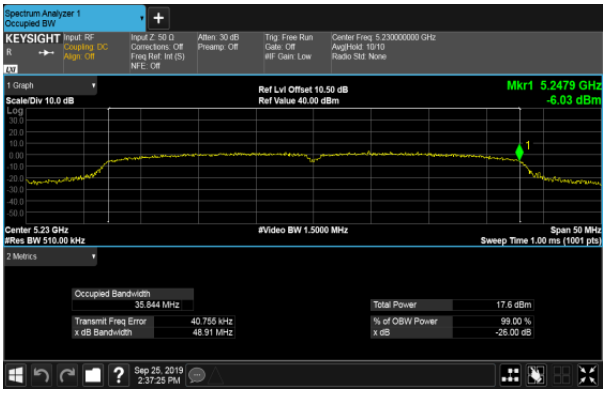
UNII-1			
Test mode: IEEE 802.11a mode			
Channel	**Frequency (MHz)**	**OBW (99%) (MHz)**	**26dB BW (MHz)**
Low	5180	23.089	30
Mid	5220	22.092	30
High	5240	19.574	30
Test mode: IEEE 802.11n HT20 mode			
Channel	**Frequency (MHz)**	**OBW (99%) (MHz)**	**26dB BW (MHz)**
Low	5180	18.007	29.98
Mid	5220	17.846	29.69
High	5240	17.929	29.71
Test mode: IEEE 802.11n HT40 mode			
Channel	**Frequency (MHz)**	**OBW (99%) (MHz)**	**26dB BW (MHz)**
Low	5190	35.875	49.47
High	5230	35.844	48.91

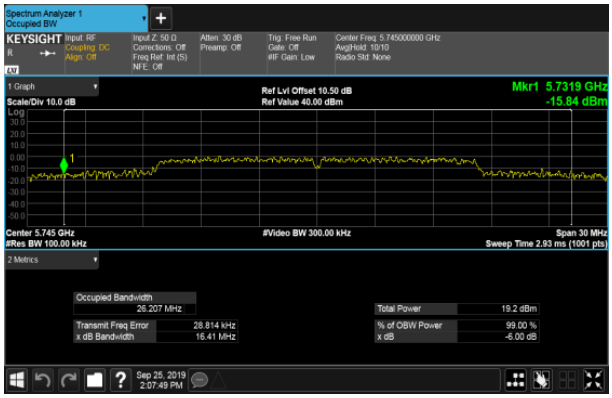
UNII-3			
Test mode: IEEE 802.11a mode			
Channel	**Frequency (MHz)**	**OBW (99%) (MHz)**	**6dB BW (MHz)**
Low	5745	26.207	16.41
Mid	5785	26.128	15.55
High	5825	25.800	15.4
Test mode: IEEE 802.11n HT20 mode			
Channel	**Frequency (MHz)**	**OBW (99%) (MHz)**	**6dB BW (MHz)**
Low	5745	20.236	17.31
Mid	5785	23.370	17.61
High	5825	23.053	17.58
Test mode: IEEE 802.11n HT40 mode			
Channel	**Frequency (MHz)**	**OBW (99%) (MHz)**	**6dB BW (MHz)**
Low	5755	36.564	32.59
High	5795	36.446	31.67

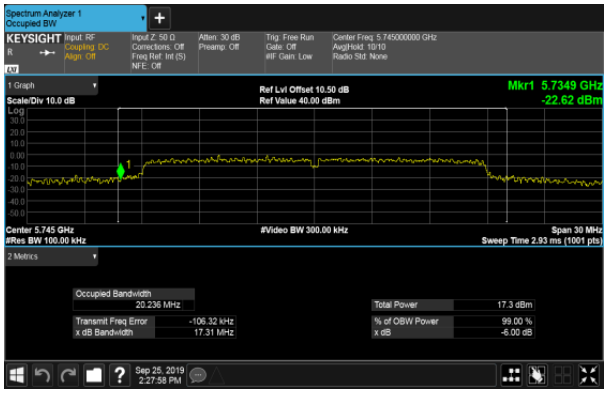
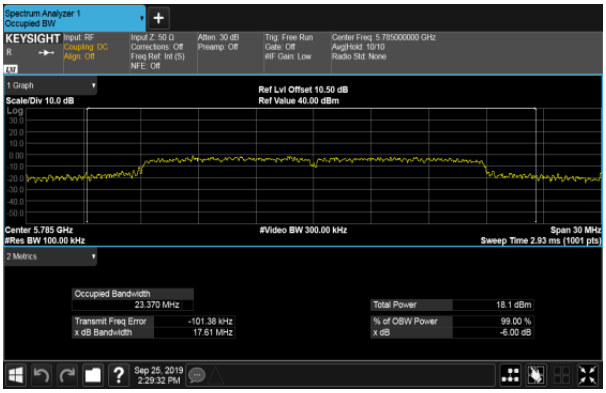
Test Data

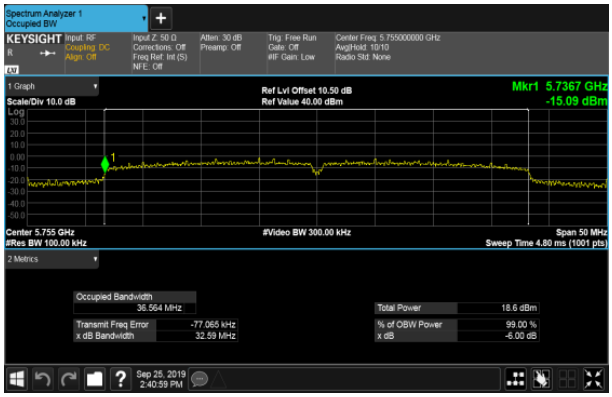
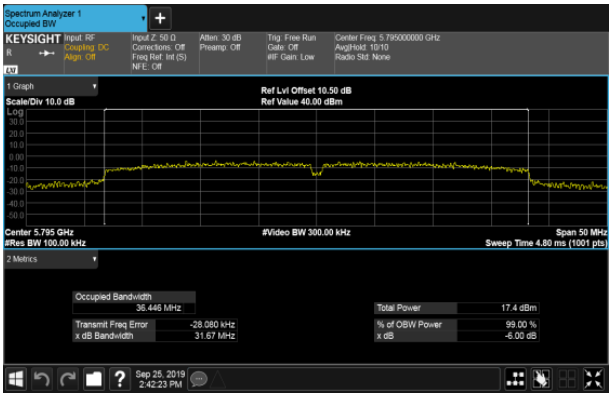
UNII-1 IEEE 802.11a mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-1 IEEE 802.11n HT20 mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-1 IEEE 802.11n HT40 mode	
Low CH	**High CH**
	

UNII-3 IEEE 802.11a mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n HT20 mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n HT40 mode	
Low CH	**High CH**
	

4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.407 (a)(1) and 15.407(a)(3)

UNII-1 :

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW(24 dBm), whichever power is less. B is the 99% emission bandwidth in megahertz, provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

UNII-3:

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

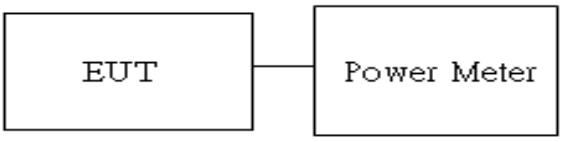
UNII-1 Limit	☒ Antenna not exceed 6 dBi：24dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 24 – (DG – 6)]
UNII-3 Limit	☒ Antenna not exceed 6 dBi：30dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 24 – (DG – 6)]

4.3.2 Test Procedure

Test method Refer as KDB 789033 D02.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Average output power. in the test report.
5. D.F is added when not 100% continuous transmission condition met

4.3.3 Test Setup



4.3.4 Test Result

Conducted output power：

UNII-1						
Config	CH	Freq. (MHz)	Power Set	AV Total Power (dBm)	AV Total Power (W)	Limit (dBm)
IEEE 802.11a Data rate: 6Mbps	36	5180	24	17.05	0.0507	24
	44	5220	23	17.08	0.0511	
	48	5240	22	16.62	0.0459	
IEEE 802.11n HT20 Data rate: MCS 0	36	5180	21	14.90	0.0309	
	44	5220	20	14.83	0.0304	
	48	5240	20	14.96	0.0313	
IEEE 802.11n HT40 Data rate: MCS 0	38	5190	20	15.06	0.0321	
	46	5230	19	14.47	0.0280	

UNII-3						
Config	CH	Freq. (MHz)	Power Set	AV Total Power (dBm)	AV Total Power (W)	Limit (dBm)
IEEE 802.11a Data rate: 6Mbps	149	5745	23	16.91	0.0491	30
	157	5785	24	16.68	0.0466	
	165	5825	23	16.43	0.0440	
IEEE 802.11n HT20 Data rate: MCS0	149	5745	18	14.88	0.0308	
	157	5785	20	15.08	0.0322	
	165	5825	19	14.89	0.0308	
IEEE 802.11n HT40 Data rate: MCS0	151	5755	18	15.05	0.0320	
	159	5795	18	15.06	0.0321	

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.407 (a)(1) and 15.407(a)(3)

UNII-1 :

The maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

UNII-3:

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.i.

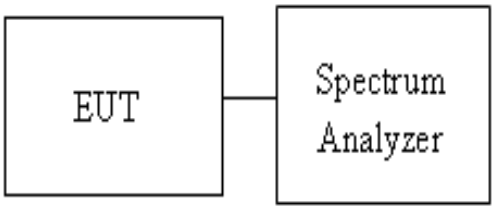
UNII-1 Limit	☒ Antenna not exceed 6 dBi：11 dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 11 – (DG – 6)]
UNII-3 Limit	☒ Antenna not exceed 6 dBi：30 dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 30 – (DG – 6)]

4.4.2 Test Procedure

Test method Refer as KDB 789033 D02

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. UNII-1, UNII-2a and UNII-2c, SA set RBW = 1MHz, VBW = 3MHz and Detector = RMS, to measurement Power Density.
4. UNII-3, SA set RBW = 500kHz, VBW = 2MHz and Detector = RMS, to measurement Power Density
5. The path loss and Duty Factor were compensated to the results for each measurement by SA.
6. Mark the maximum level.
7. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup

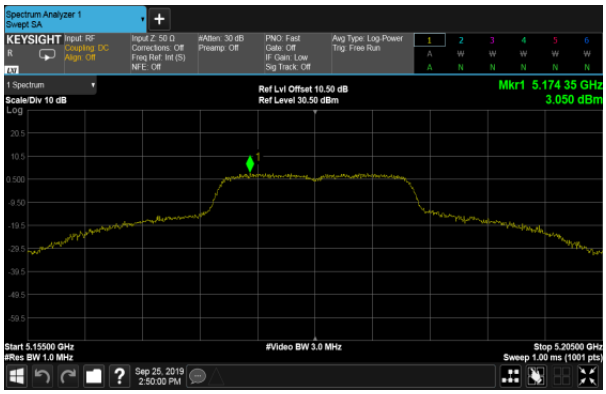
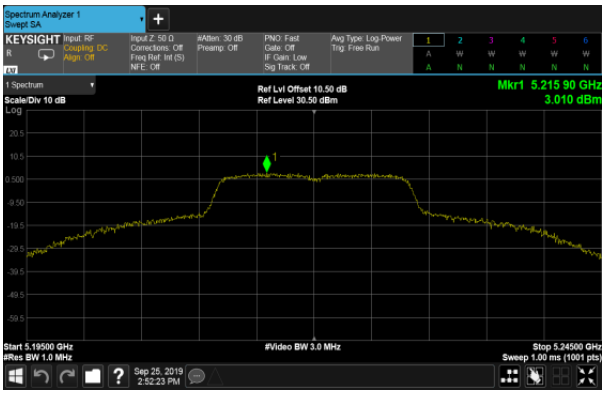
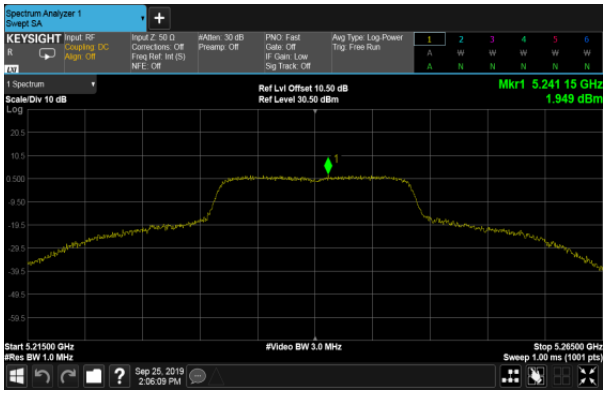


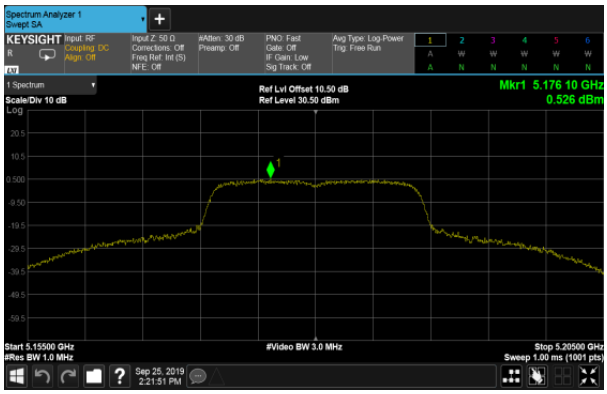
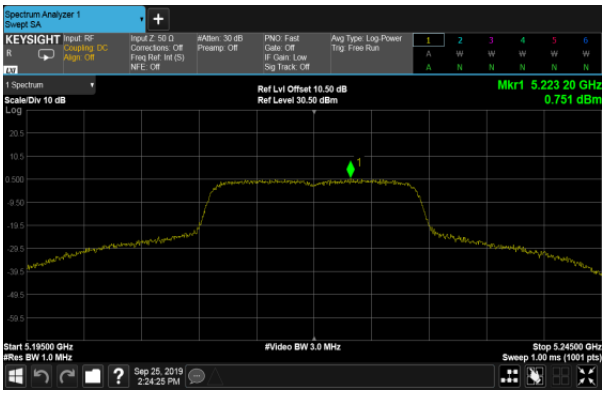
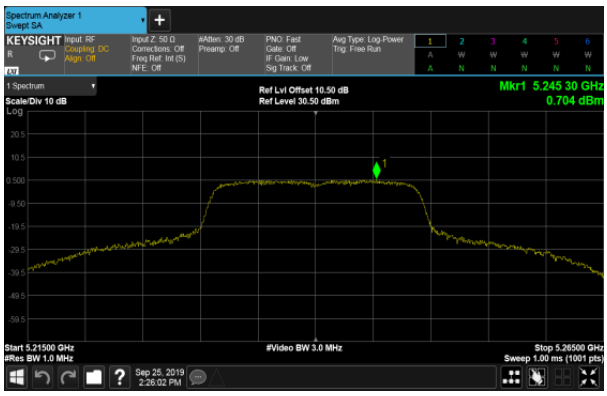
4.4.4 Test Result

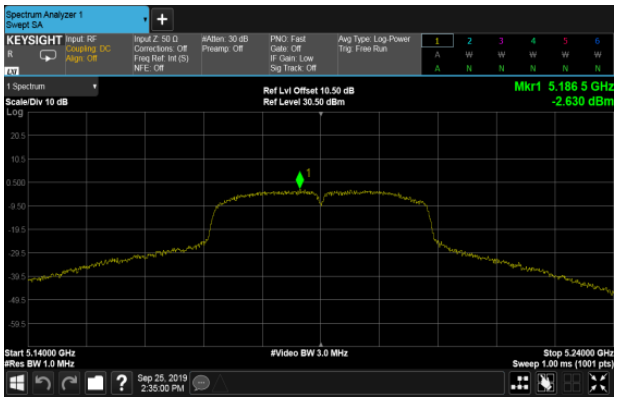
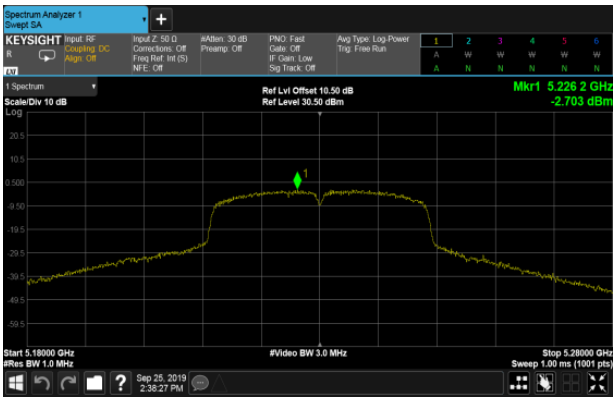
UNII-1					
Test mode: IEEE 802.11a mode					
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Duty Factor**	**PSD With Duty Factor (dBm)**	**Limit (dBm)**
Low	5180	3.05	0.02	3.07	11
Mid	5220	3.01	0.02	3.03	
High	5240	1.95	0.02	1.97	
Test mode: IEEE 802.11n HT20 mode					
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Duty Factor**	**PSD With Duty Factor (dBm)**	**Limit (dBm)**
Low	5180	0.53	0.05	0.58	11
Mid	5220	0.75	0.05	0.80	
High	5240	0.70	0.05	0.75	
Test mode: IEEE 802.11n HT40 mode					
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Duty Factor**	**PSD With Duty Factor (dBm)**	**Limit (dBm)**
Low	5190	-2.63	0.09	-2.54	11
High	5230	-2.7	0.09	-2.61	

UNII-3					
Test mode: IEEE 802.11a mode					
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Duty Factor**	**PSD With Duty Factor (dBm)**	**Limit (dBm)**
Low	5745	-0.23	0.02	-0.21	30
Mid	5785	-0.21	0.02	-0.19	
High	5825	-1.18	0.02	-1.16	
Test mode: IEEE 802.11n HT20 mode					
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Duty Factor**	**PSD With Duty Factor (dBm)**	**Limit (dBm)**
Low	5745	-2.40	0.05	-2.35	30
Mid	5785	-1.56	0.05	-1.51	
High	5825	-1.83	0.05	-1.78	
Test mode: IEEE 802.11n HT40 mode					
Channel	**Frequency (MHz)**	**PPSD (dBm)**	**Duty Factor**	**PSD With Duty Factor (dBm)**	**Limit (dBm)**
Low	5755	-4.51	0.09	-4.42	30
High	5795	-4.14	0.09	-4.05	

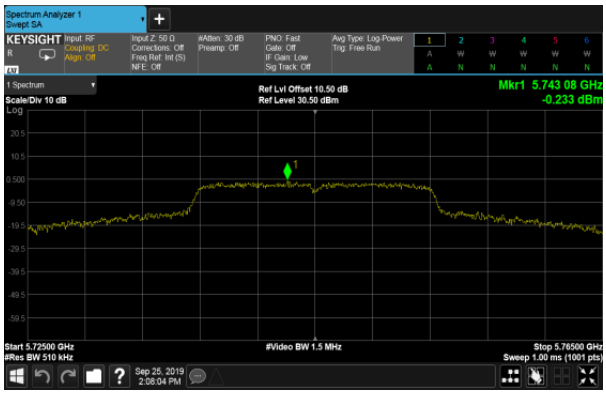
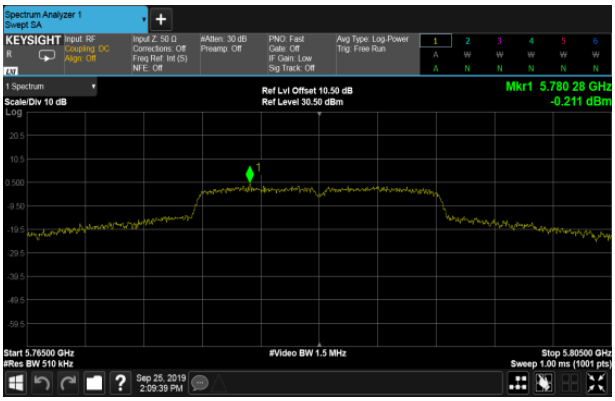
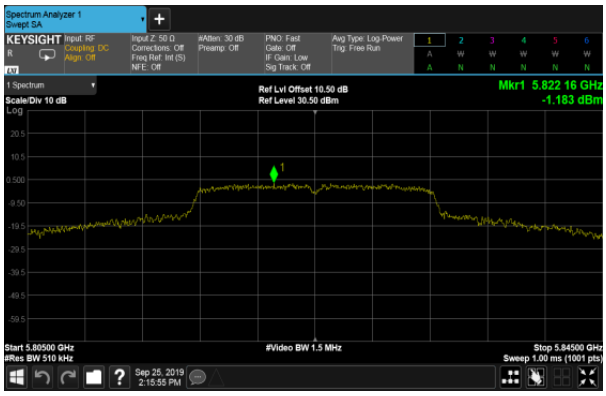
Test Data

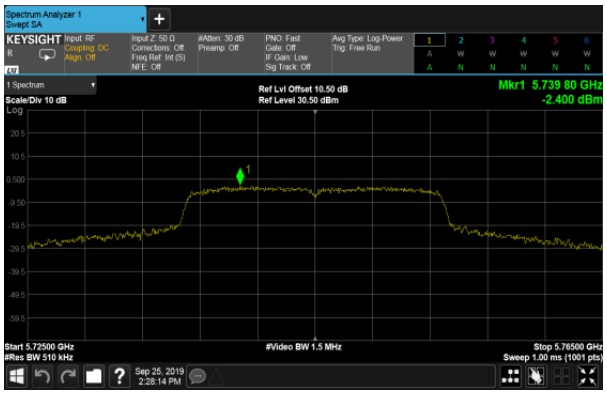
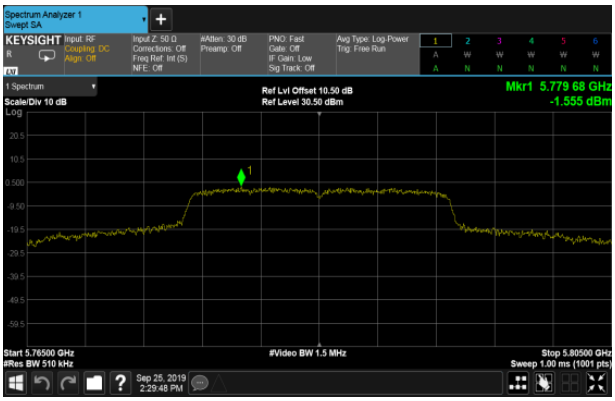
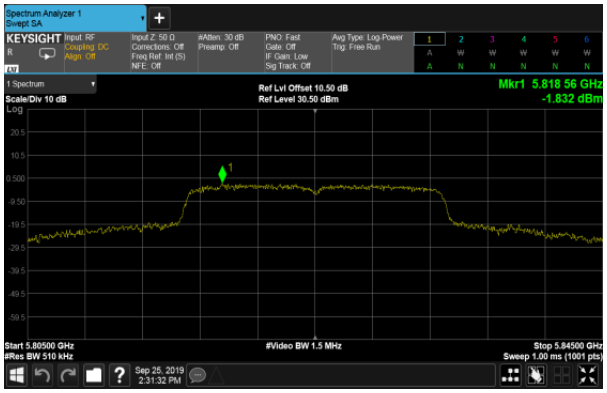
UNII-1 IEEE 802.11a mode	
Low CH	**Mid CH**
	
High CH	
	

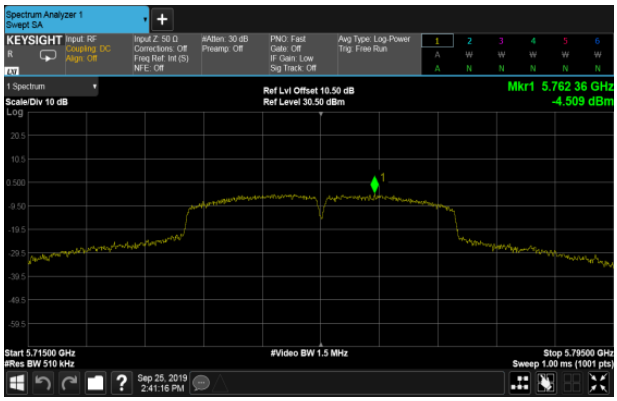
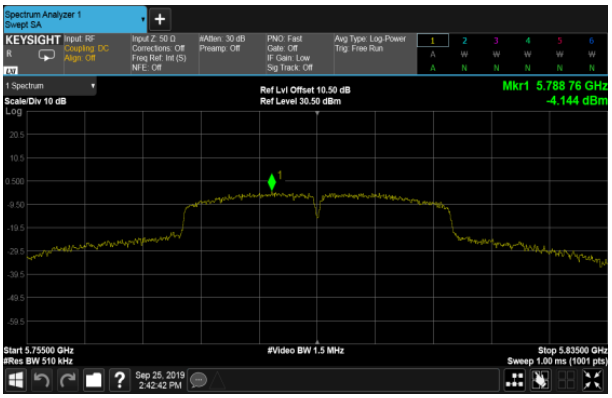
UNII-1 IEEE 802.11n HT20 mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-1 IEEE 802.11n HT40 mode	
Low CH	**High CH**
	

Test Data

UNII-3 IEEE 802.11a mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n HT20 mode	
Low CH	**Mid CH**
	
High CH	
	

UNII-3 IEEE 802.11n HT40 mode- chain 0	
Low CH	**High CH**
	

4.5 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

FCC according to §15.407, §15.209 and §15.205,

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

UNII-1 :

For transmitters operating in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. However, any unwanted emissions that fall into the band 5250-5350 MHz must be 26 dBc, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth, above 5.25 GHz. Otherwise, the transmission is considered as intentional and the devices shall implement dynamic frequency selection (DFS) and transmitter power control (TPC) as per the requirements for the band 5250-5350 MHz

UNII-3:

For the band 5725-5850 MHz, emissions at frequencies from the band edges to 10 MHz above or below the band edges shall not exceed -17 dBm/MHz e.i.r.p.
For emissions at frequencies more than 10 MHz above or below the band edges, the emissions power shall not exceed -27 dBm/MHz

4.5.2 Test Procedure

Test method Refer as KDB 789033 D02.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 30MHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Remark:

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

4. The SA setting following：

(1) Below 1G：RBW = 100kHz, VBW ≥ 3*RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2) Above 1G：

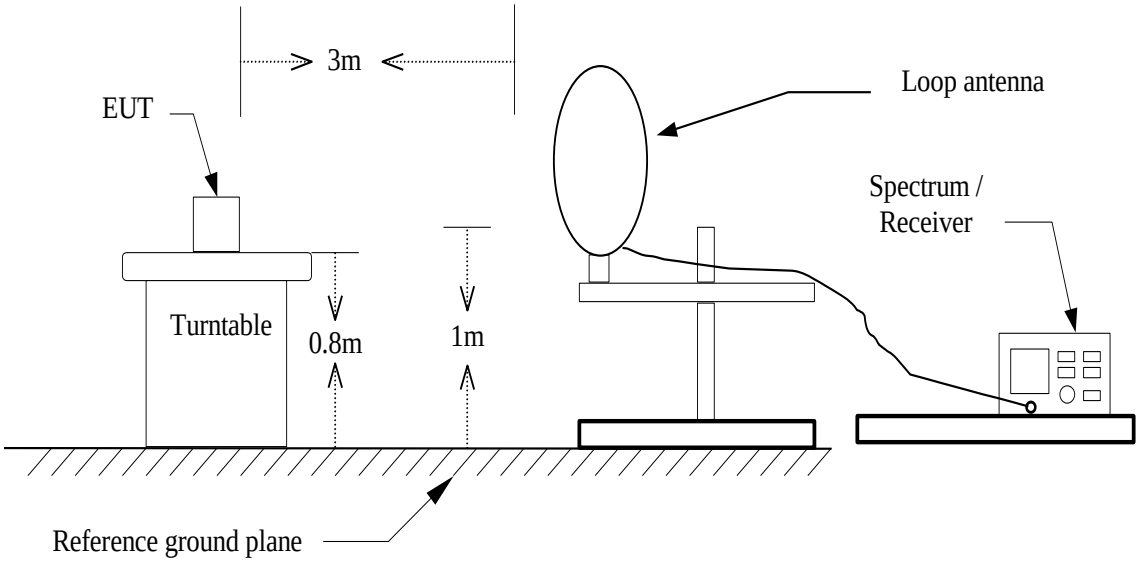
(2.1) For Peak measurement：RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2.2) For Average measurement：RBW = 1MHz, VBW

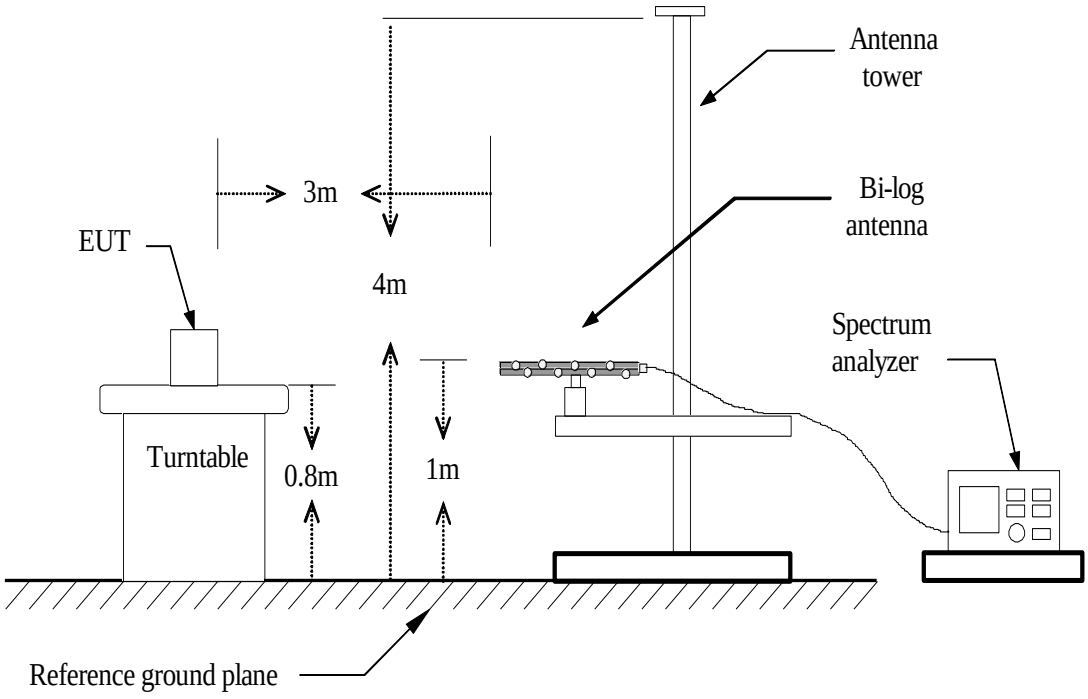
- If Duty Cycle ≥ 98%, VBW=10Hz.
- If Duty Cycle < 98%, VBW=1/T.

4.5.3 Test Setup

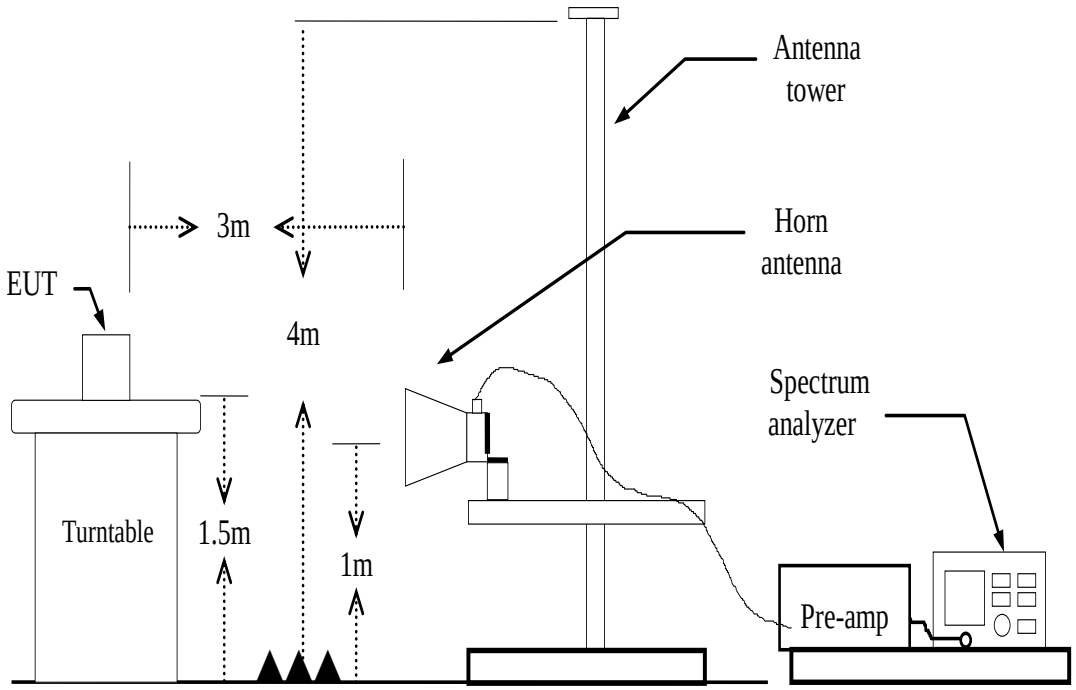
9kHz ~ 30MHz



30MHz ~ 1GHz



Above 1 GHz

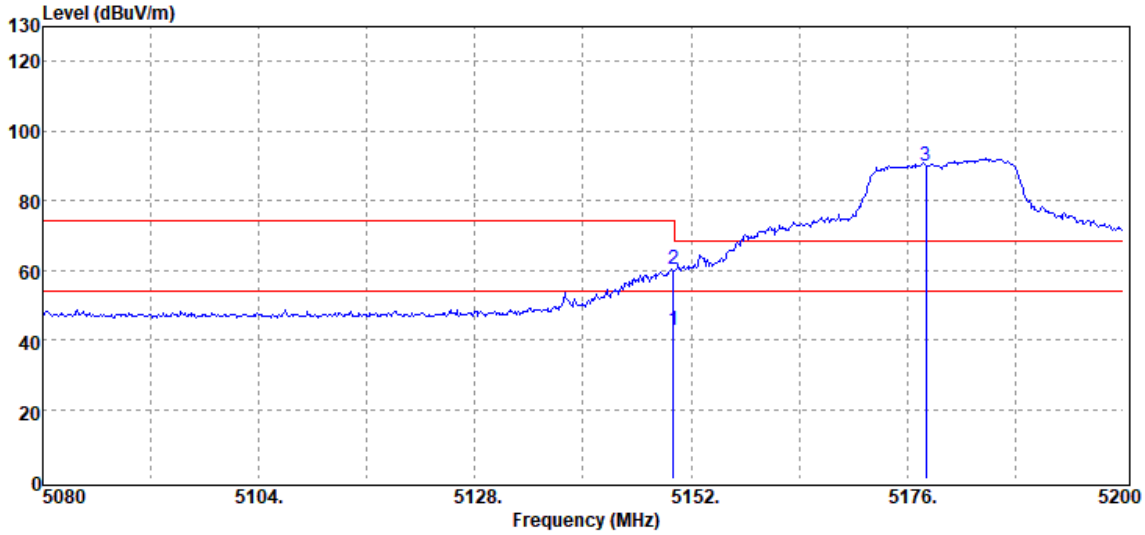


4.5.4 Test Result

Test Data

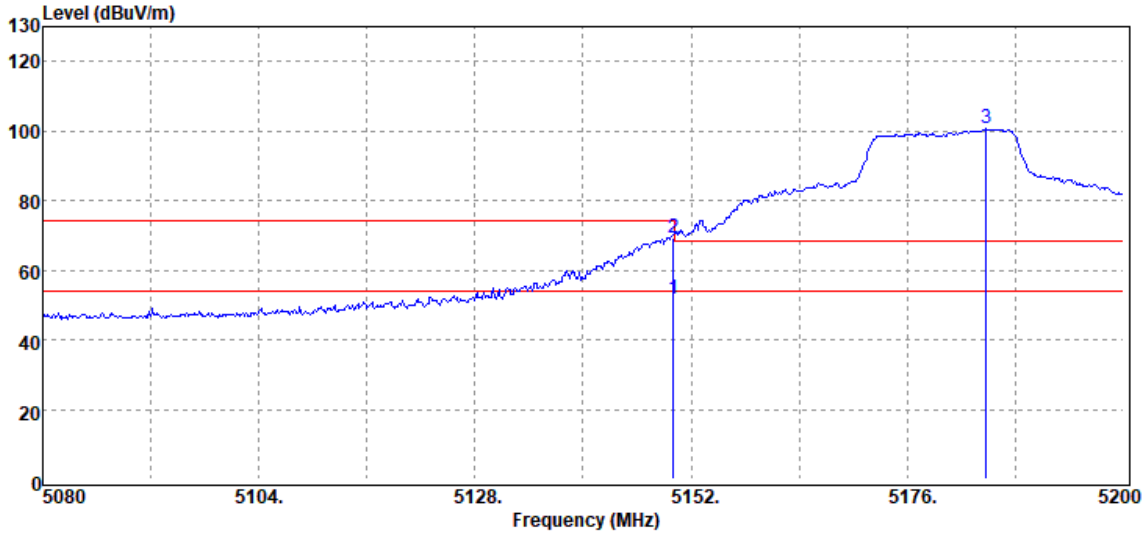
Band Edge Test Data for UNII-1

Test Mode	IEEE 802.11a Low CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak / Average		



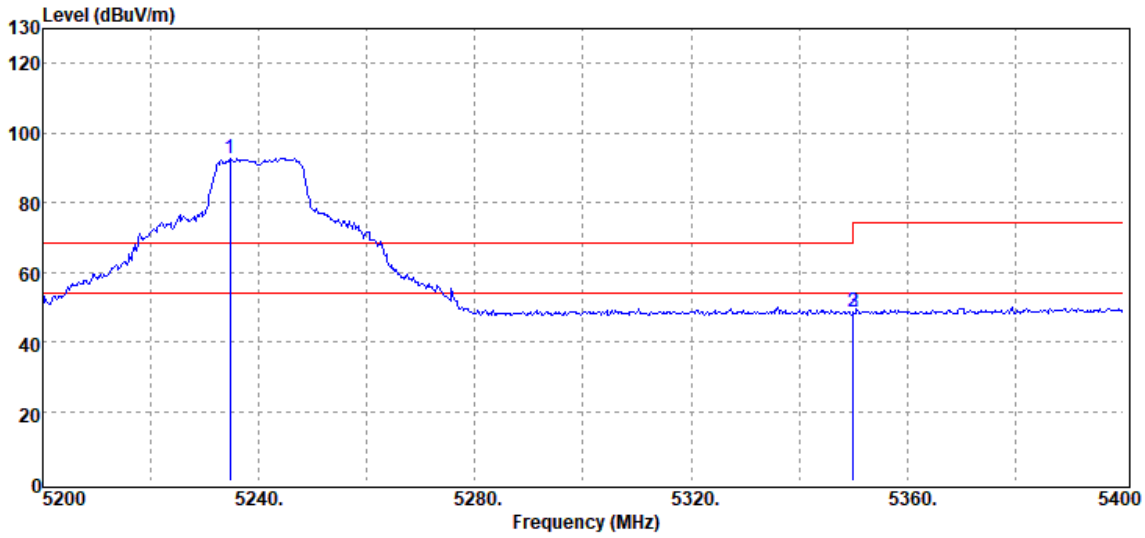
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.00	35.13	7.42	42.55	54.00	-11.45	Average
5150.00	53.00	7.42	60.42	74.00	-13.58	Peak
5178.04	82.58	7.59	90.17	68.20	-	-

Test Mode	IEEE 802.11a Low CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak / Average		



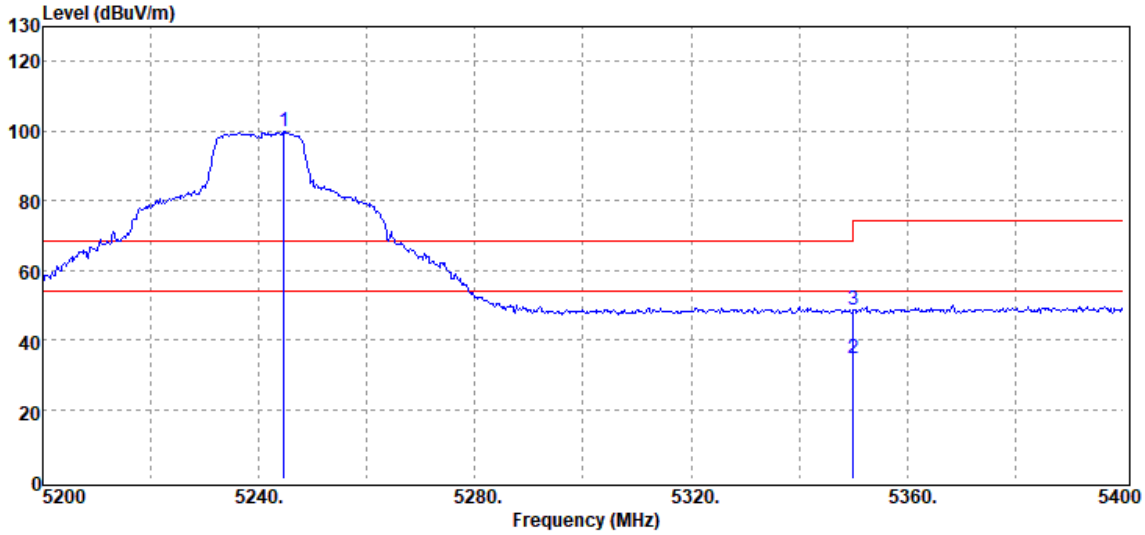
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.00	44.25	7.42	51.67	54.00	-2.33	Average
5150.00	61.75	7.42	69.17	74.00	-4.83	Peak
5184.76	92.91	7.64	100.55	68.20	-	-

Test Mode	IEEE 802.11a High CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak / Average		



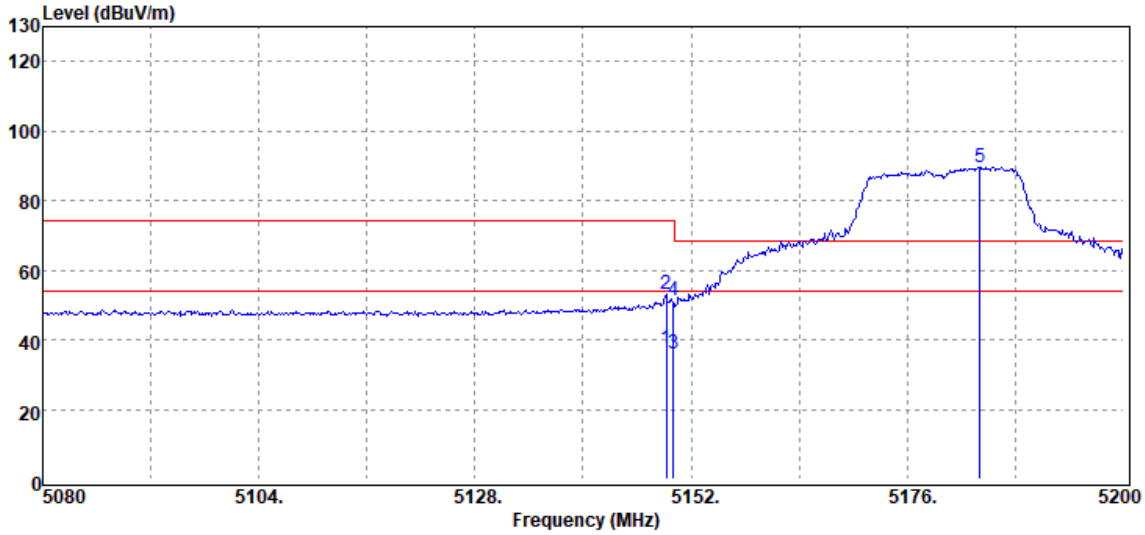
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5234.60	85.10	7.77	92.87	68.20	-	-
5350.00	40.26	8.41	48.67	54.00	-5.33	Average
5350.00	40.26	8.41	48.67	74.00	-25.33	Peak

Test Mode	IEEE 802.11a High CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak / Average		



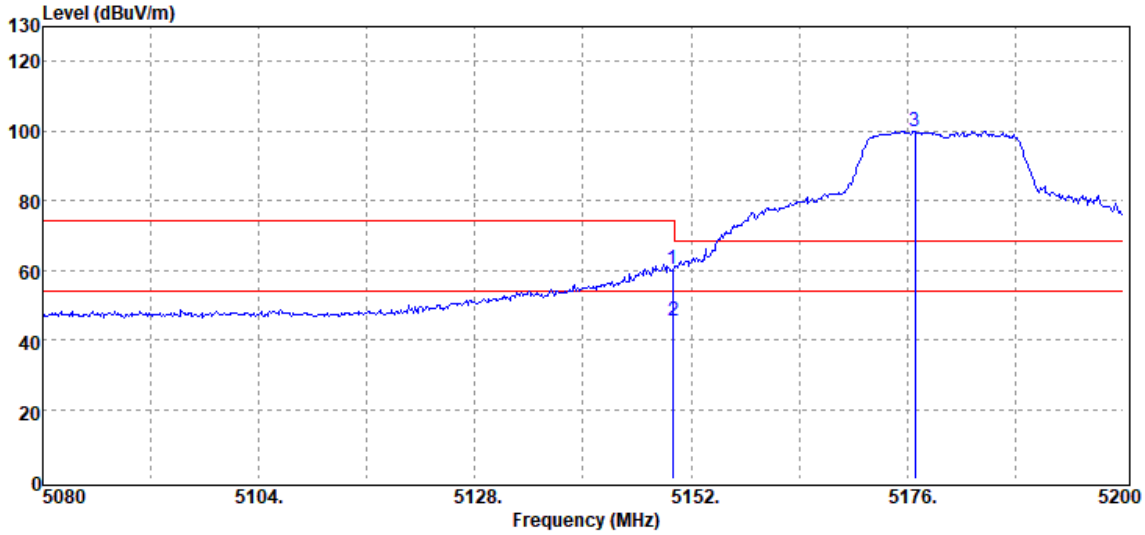
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5244.60	91.95	7.78	99.73	68.20	-	-
5350.00	26.31	8.41	34.72	54.00	-19.28	Average
5350.00	40.15	8.41	48.56	74.00	-25.44	Peak

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak / Average		



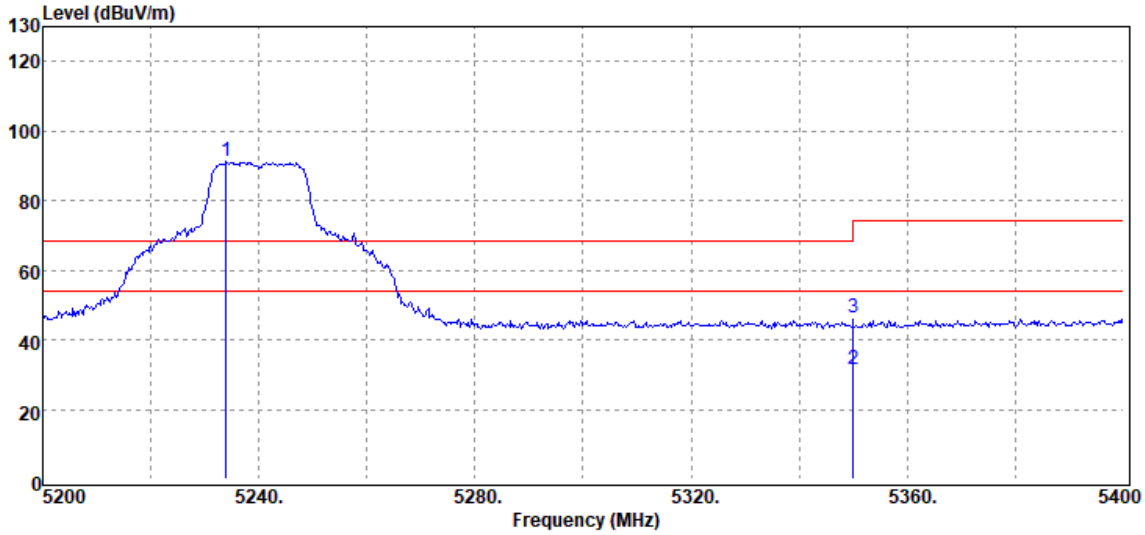
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.24	29.79	7.41	37.20	54.00	-16.80	Average
5149.24	45.74	7.41	53.15	74.00	-20.85	Peak
5150.00	28.75	7.42	36.17	54.00	-17.83	Average
5150.00	43.85	7.42	51.27	74.00	-22.73	Peak
5184.04	82.06	7.63	89.69	68.20	-	-

Test Mode	IEEE 802.11n HT20 Low CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak / Average		



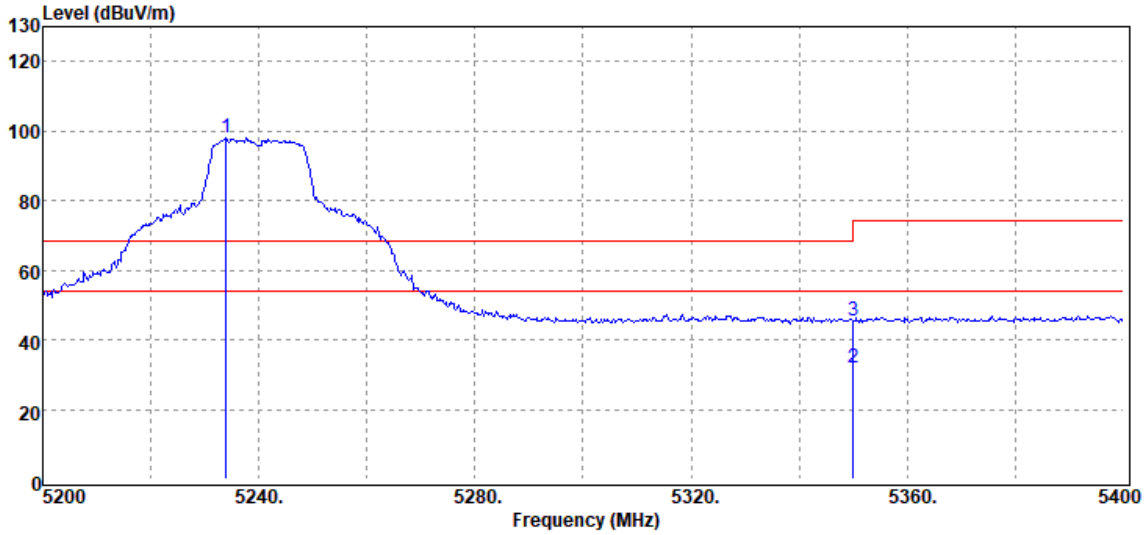
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5149.96	53.00	7.42	60.42	74.00	-13.58	Peak
5150.00	38.24	7.42	45.66	54.00	-8.34	Average
5176.84	92.46	7.58	100.04	68.20	-	-

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak / Average		



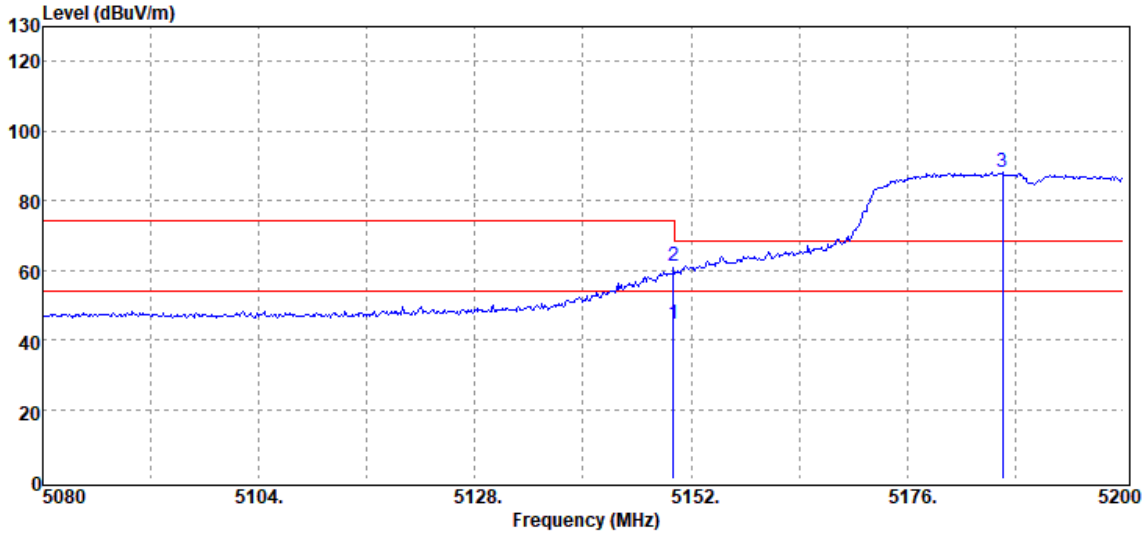
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5234.00	83.37	7.77	91.14	68.20	-	-
5350.00	23.28	8.41	31.69	54.00	-22.31	Average
5350.00	38.01	8.41	46.42	74.00	-27.58	Peak

Test Mode	IEEE 802.11n HT20 High CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak / Average		



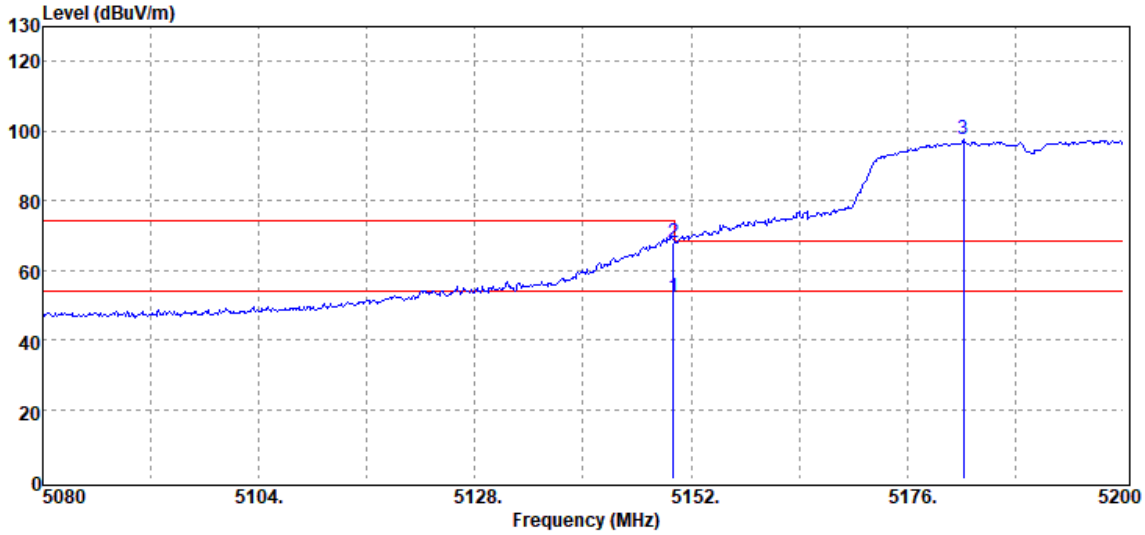
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5234.00	90.09	7.77	97.86	68.20	-	-
5350.00	23.54	8.41	31.95	54.00	-22.05	Average
5350.00	36.86	8.41	45.27	74.00	-28.73	Peak

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak / Average		



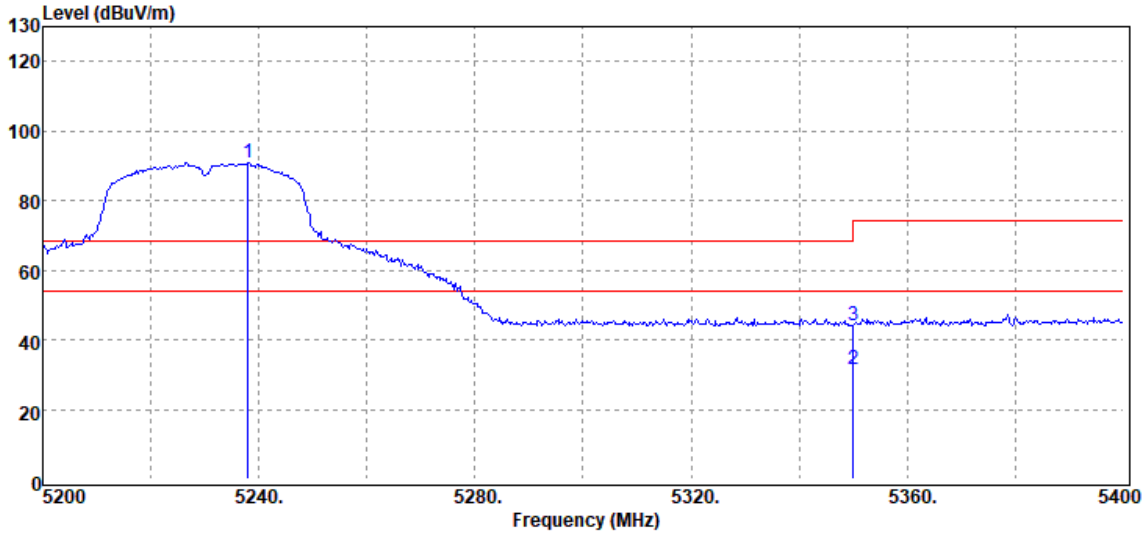
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.00	37.31	7.42	44.73	54.00	-9.27	Average
5150.00	53.68	7.42	61.10	74.00	-12.90	Peak
5186.56	80.35	7.65	88.00	68.20	-	-

Test Mode	IEEE 802.11n HT40 Low CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak / Average		



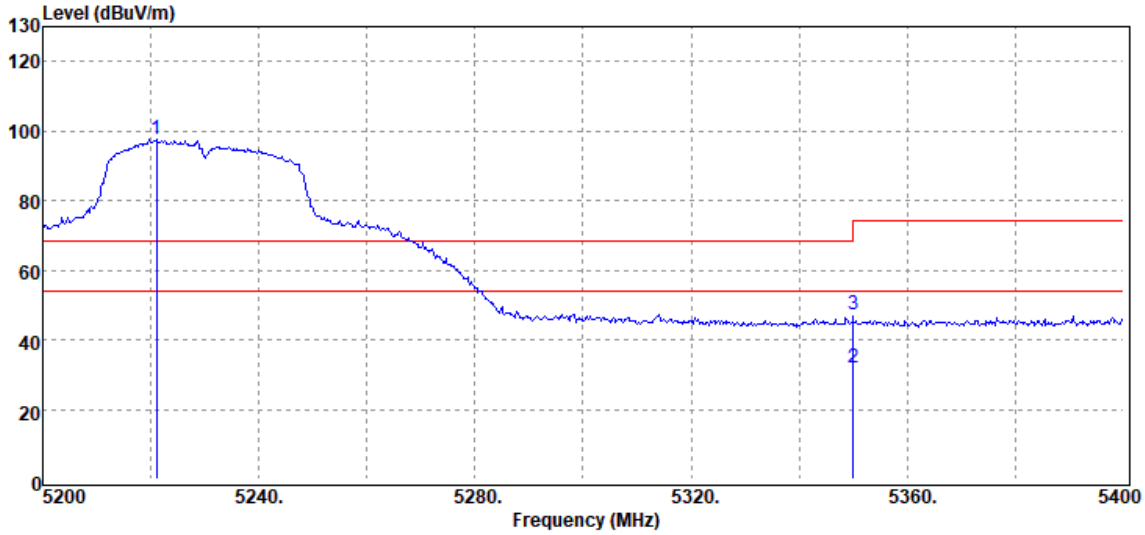
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5150.00	44.54	7.42	51.96	54.00	-2.04	Average
5150.00	60.70	7.42	68.12	74.00	-5.88	Peak
5182.24	89.88	7.62	97.50	68.20	-	-

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak / Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5238.00	83.23	7.78	91.01	68.20	-	-
5350.00	23.27	8.41	31.68	54.00	-22.32	Average
5350.00	35.87	8.41	44.28	74.00	-29.72	Peak

Test Mode	IEEE 802.11n HT40 High CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak / Average		

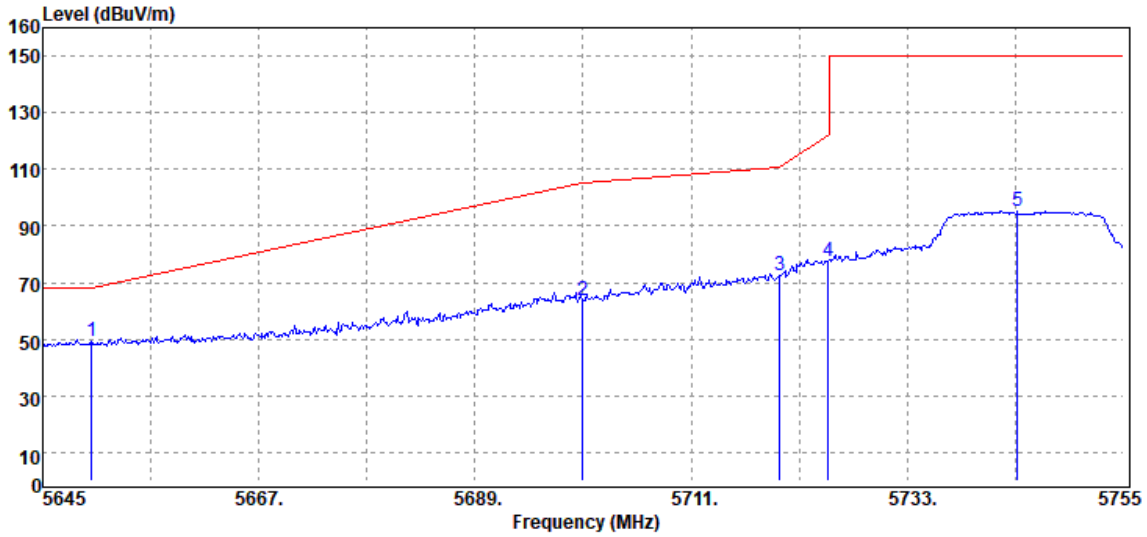


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5221.00	89.69	7.75	97.44	68.20	-	-
5350.00	23.47	8.41	31.88	54.00	-22.12	Average
5350.00	39.04	8.41	47.45	74.00	-26.55	Peak

Test Data

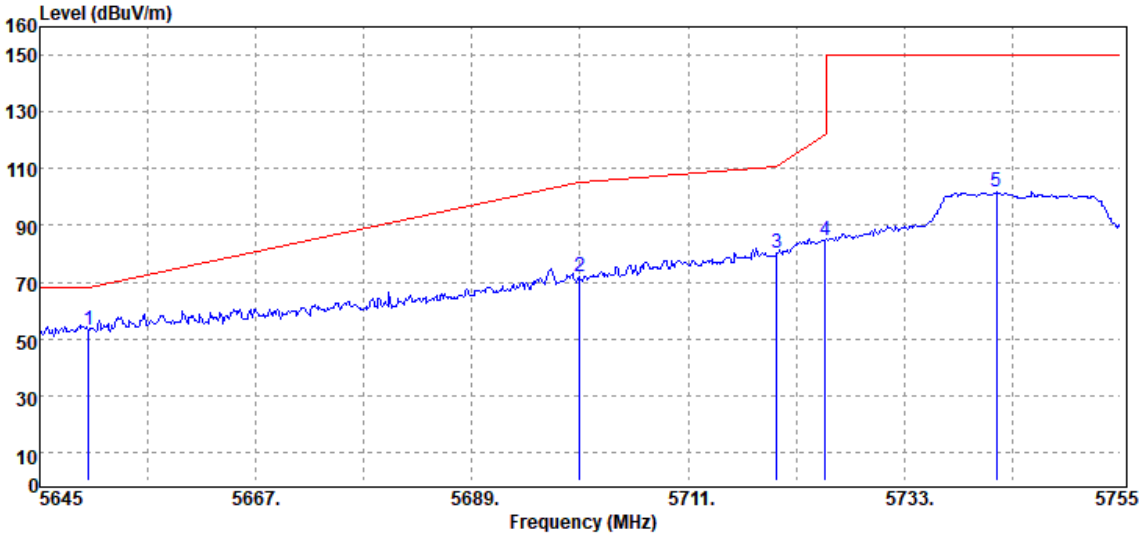
Band Edge Test Data for UNII-3

Test Mode	IEEE 802.11a Low CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		



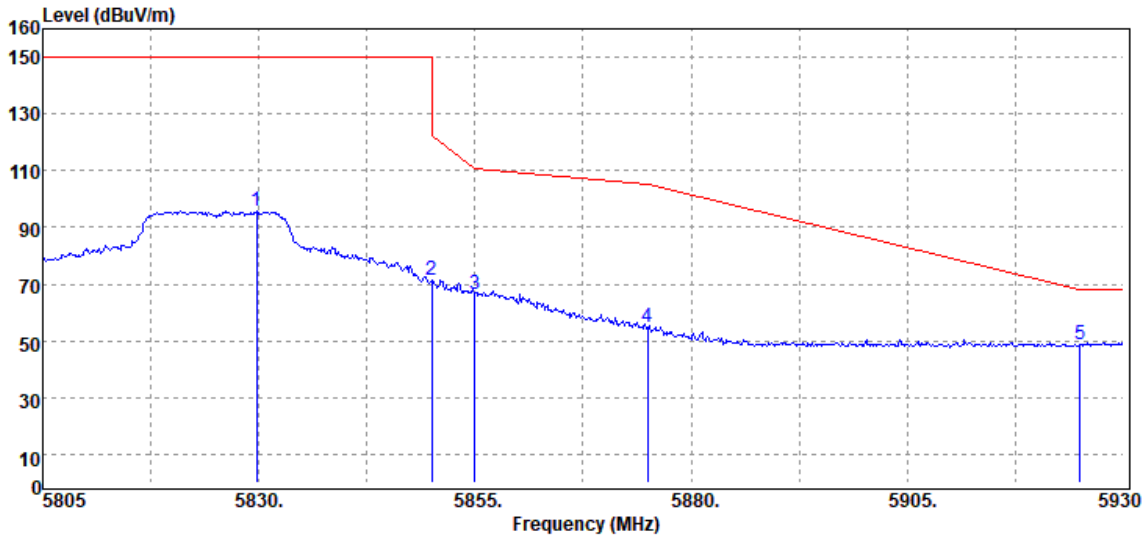
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5649.95	40.94	8.22	49.16	68.20	-19.04	Peak
5700.00	54.82	8.75	63.57	105.20	-41.63	Peak
5720.02	63.98	8.66	72.64	110.85	-38.21	Peak
5724.97	68.86	8.64	77.50	122.13	-44.63	Peak
5744.22	86.80	8.52	95.32	150.00	-54.68	Peak

Test Mode	IEEE 802.11a Low CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		



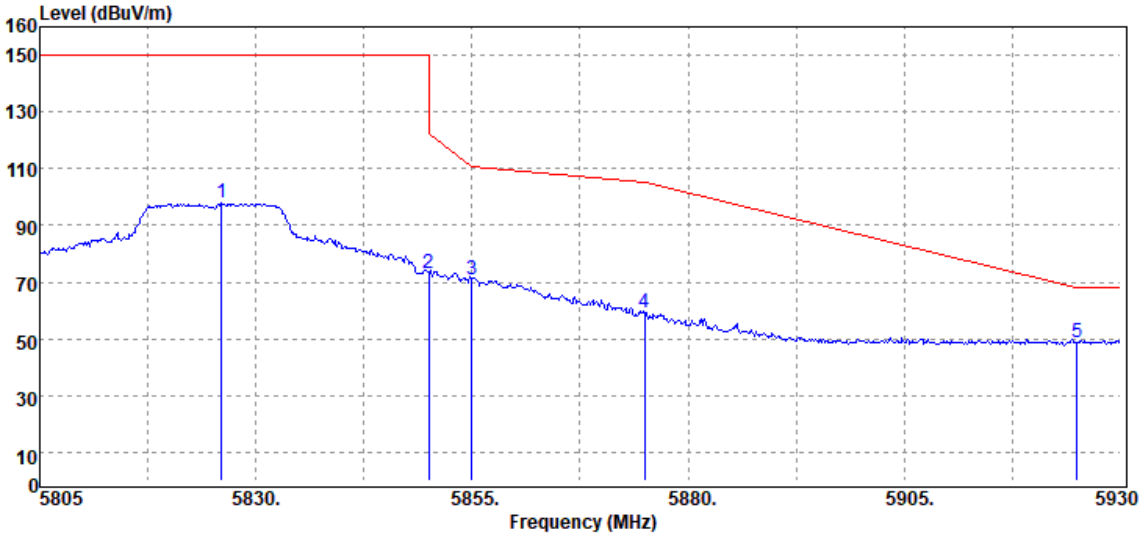
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5649.95	44.85	8.22	53.07	68.20	-15.13	Peak
5700.00	62.98	8.75	71.73	105.20	-33.47	Peak
5720.02	71.54	8.66	80.20	110.85	-30.65	Peak
5724.97	76.19	8.64	84.83	122.13	-37.30	Peak
5742.35	93.30	8.53	101.83	150.00	-48.17	Peak

Test Mode	IEEE 802.11a High CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		



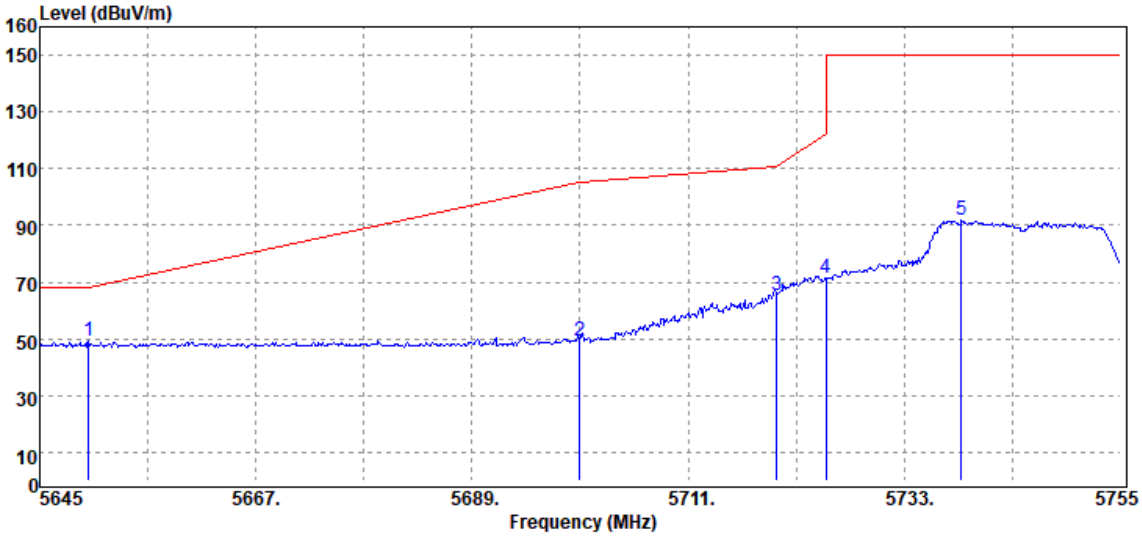
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5829.75	87.29	8.53	95.82	150.00	-54.18	Peak
5850.00	63.10	8.58	71.68	122.20	-50.52	Peak
5855.00	57.91	8.61	66.52	110.80	-44.28	Peak
5875.00	46.25	8.74	54.99	105.20	-50.21	Peak
5925.00	39.84	8.88	48.72	68.20	-19.48	Peak

Test Mode	IEEE 802.11a High CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		



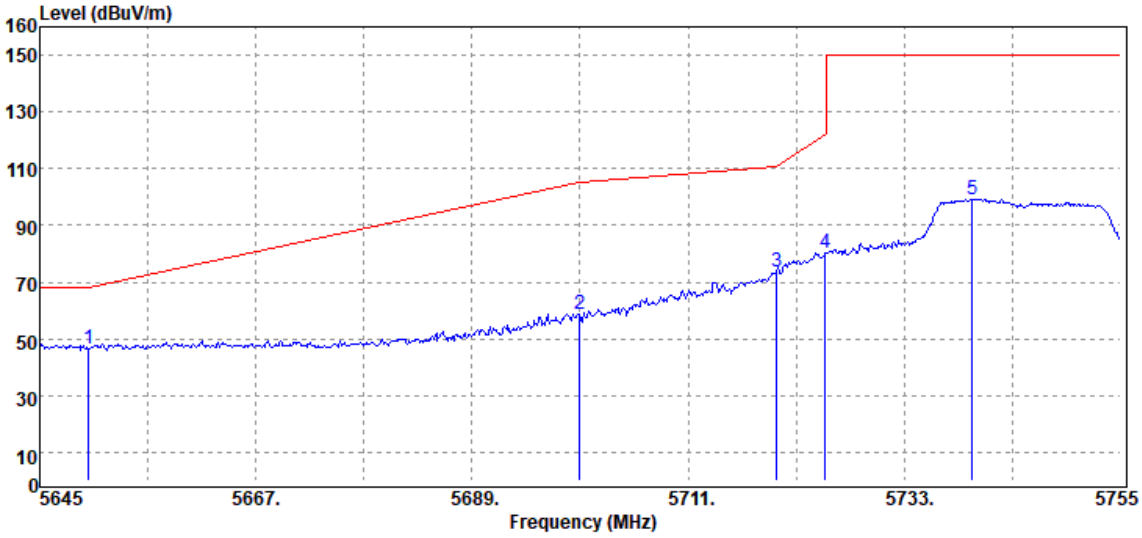
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5826.00	89.32	8.53	97.85	150.00	-52.15	Peak
5850.00	64.52	8.58	73.10	122.20	-49.10	Peak
5855.00	62.42	8.61	71.03	110.80	-39.77	Peak
5875.00	50.60	8.74	59.34	105.20	-45.86	Peak
5925.00	39.73	8.88	48.61	68.20	-19.59	Peak

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		



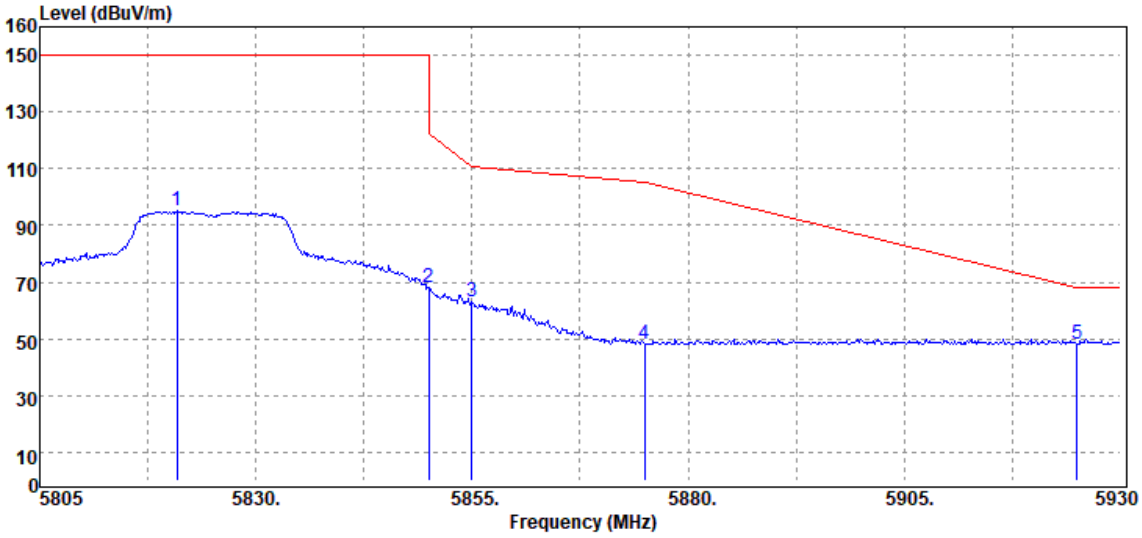
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5650.00	40.89	8.22	49.11	68.20	-19.09	Peak
5700.00	40.42	8.75	49.17	105.20	-56.03	Peak
5720.02	56.48	8.66	65.14	110.85	-45.71	Peak
5725.00	62.74	8.63	71.37	122.20	-50.83	Peak
5738.83	83.41	8.56	91.97	150.00	-58.03	Peak

Test Mode	IEEE 802.11n HT20 Low CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		



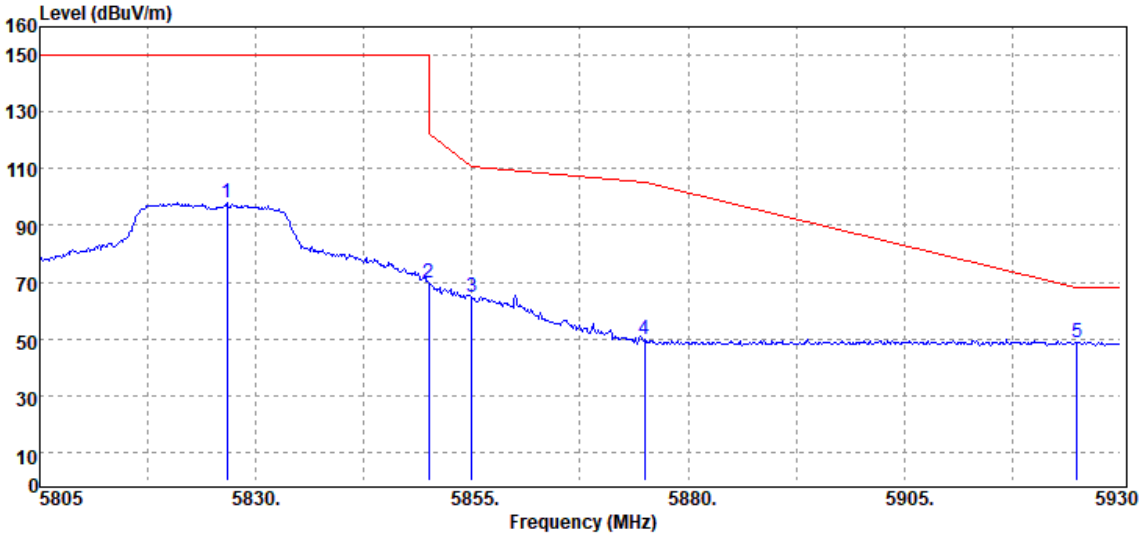
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5649.95	38.16	8.22	46.38	68.20	-21.82	Peak
5700.00	49.85	8.75	58.60	105.20	-46.60	Peak
5720.02	64.72	8.66	73.38	110.85	-37.47	Peak
5724.97	71.57	8.64	80.21	122.13	-41.92	Peak
5739.93	90.72	8.56	99.28	150.00	-50.72	Peak

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		



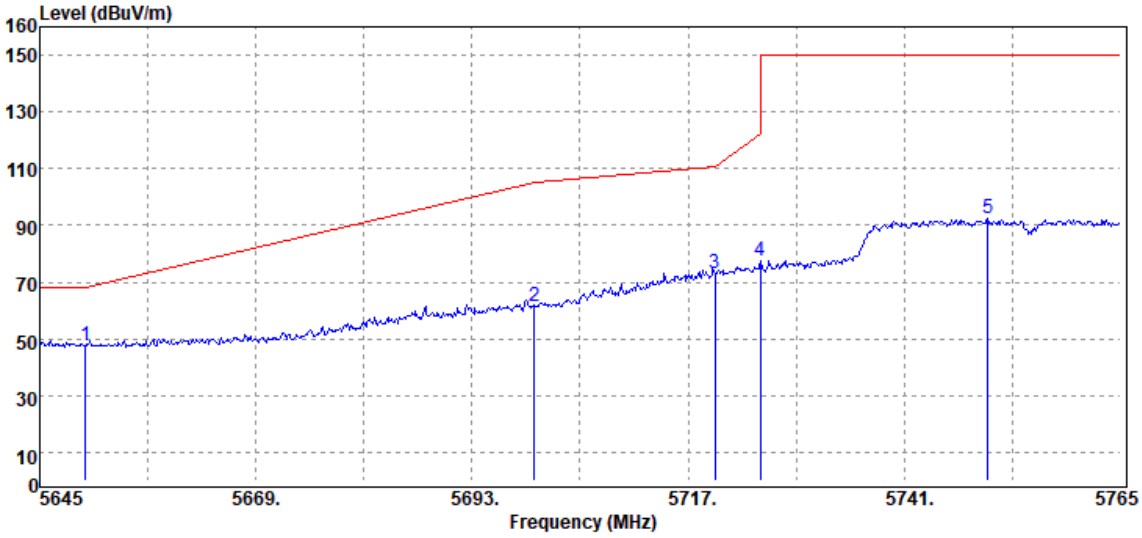
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5820.88	86.45	8.52	94.97	150.00	-55.03	Peak
5850.00	59.52	8.58	68.10	122.20	-54.10	Peak
5855.00	54.77	8.61	63.38	110.80	-47.42	Peak
5875.00	39.44	8.74	48.18	105.20	-57.02	Peak
5925.00	39.26	8.88	48.14	68.20	-20.06	Peak

Test Mode	IEEE 802.11n HT20 High CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		



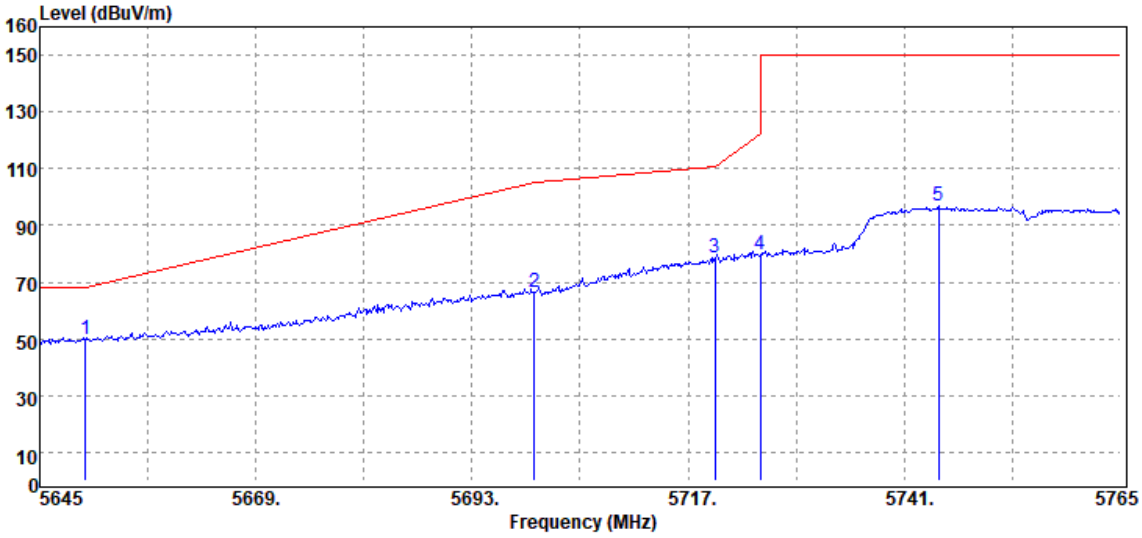
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5826.63	89.53	8.53	98.06	150.00	-51.94	Peak
5850.00	61.30	8.58	69.88	122.20	-52.32	Peak
5855.00	56.01	8.61	64.62	110.80	-46.18	Peak
5875.00	40.91	8.74	49.65	105.20	-55.55	Peak
5925.00	39.66	8.88	48.54	68.20	-19.66	Peak

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		



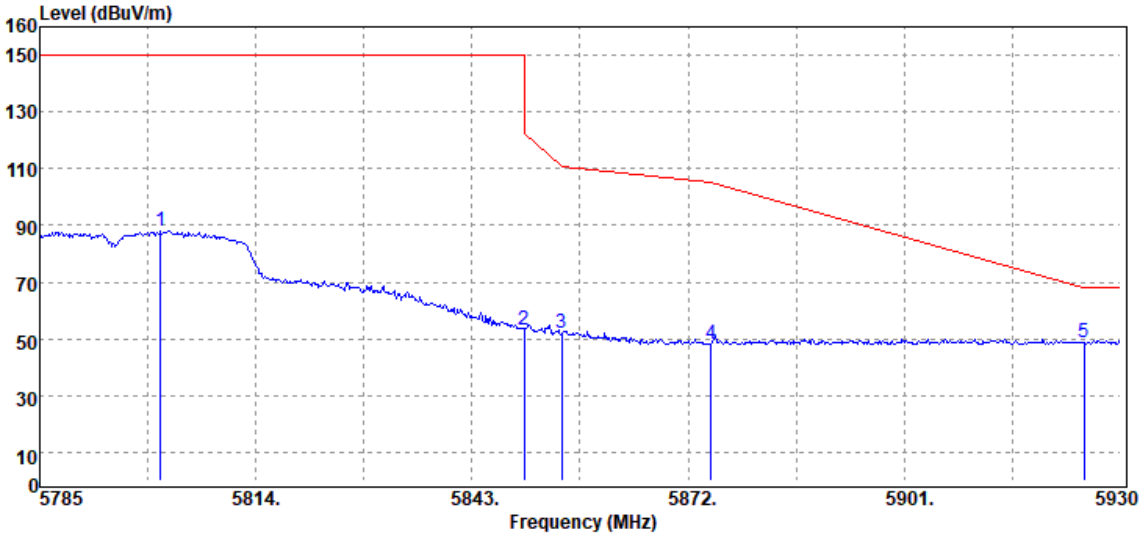
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5650.04	39.38	8.21	47.59	68.23	-20.64	Peak
5699.96	52.91	8.75	61.66	105.17	-43.51	Peak
5720.00	64.51	8.66	73.17	110.80	-37.63	Peak
5725.04	68.68	8.62	77.30	150.00	-72.70	Peak
5750.24	83.78	8.47	92.25	150.00	-57.75	Peak

Test Mode	IEEE 802.11n HT40 Low CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		



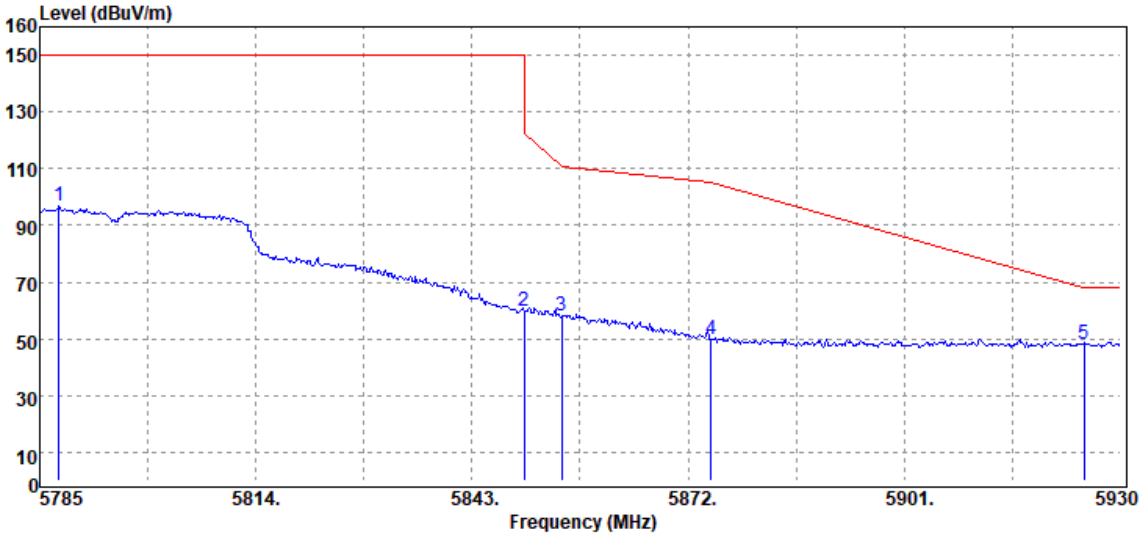
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5650.04	41.39	8.21	49.60	68.23	-18.63	Peak
5699.96	57.47	8.75	66.22	105.17	-38.95	Peak
5720.00	69.82	8.66	78.48	110.80	-32.32	Peak
5725.04	70.96	8.62	79.58	150.00	-70.42	Peak
5744.84	88.29	8.51	96.80	150.00	-53.20	Peak

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5801.24	79.79	8.48	88.27	150.00	-61.73	Peak
5849.96	44.52	8.58	53.10	150.00	-96.90	Peak
5855.04	43.46	8.61	52.07	110.79	-58.72	Peak
5875.05	39.61	8.75	48.36	105.17	-56.81	Peak
5925.07	39.61	8.89	48.50	68.20	-19.70	Peak

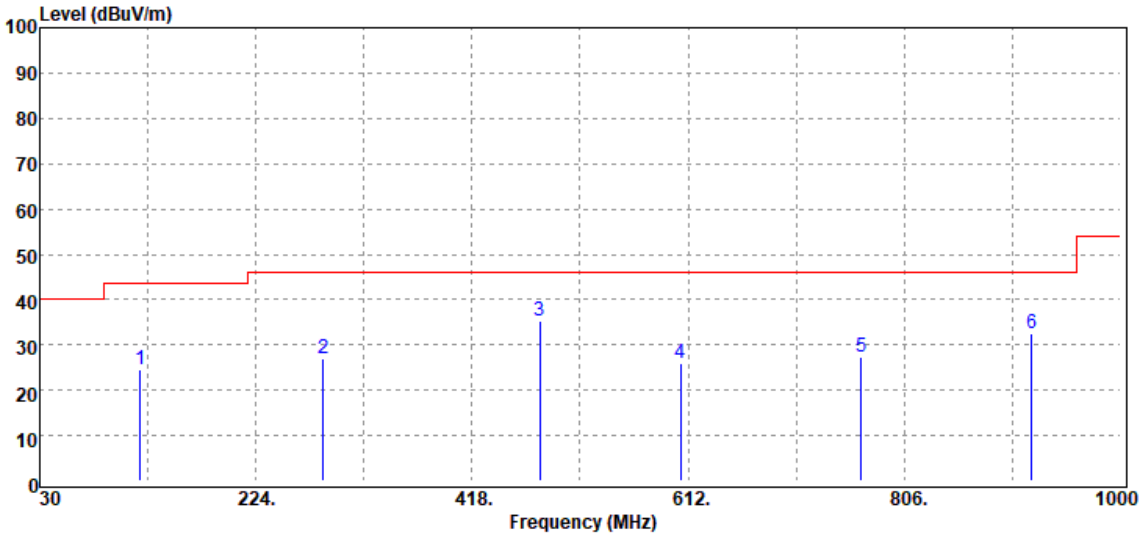
Test Mode	IEEE 802.11n HT40 High CH	Temperature	27.3(℃)/ 51.4%RH
Test Item	Band Edge	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
5787.61	88.45	8.47	96.92	150.00	-53.08	Peak
5849.96	51.41	8.58	59.99	150.00	-90.01	Peak
5855.04	49.56	8.61	58.17	110.79	-52.62	Peak
5875.05	41.22	8.75	49.97	105.17	-55.20	Peak
5925.07	39.41	8.89	48.30	68.20	-19.90	Peak

Below 1G Test Data

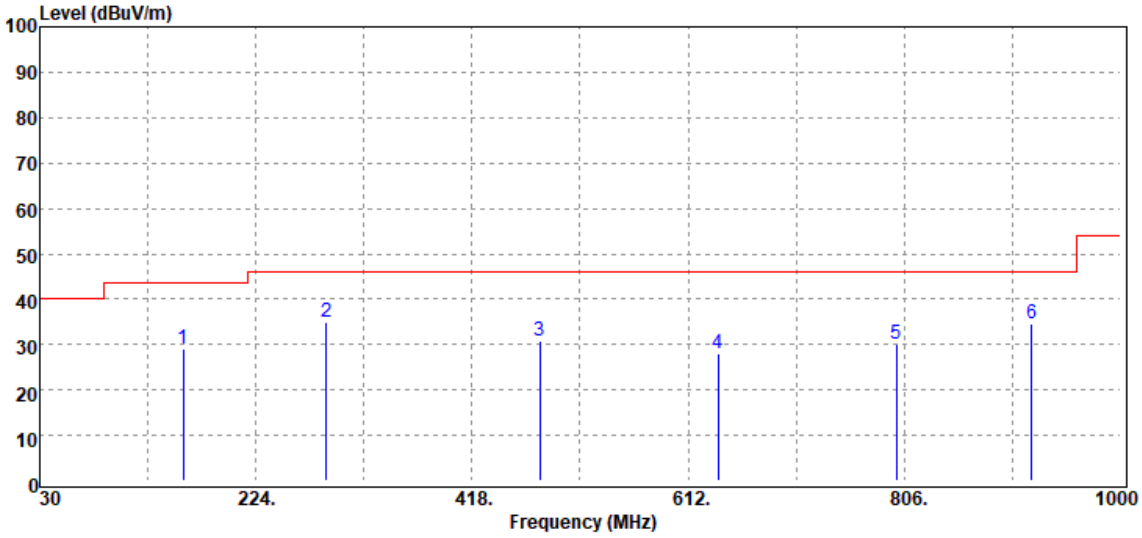
Test Mode	Mode 1	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	30MHz-1GHz	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
120.21	33.39	-8.88	24.51	43.50	-18.99	Peak
284.14	35.33	-8.44	26.89	46.00	-19.11	Peak
479.11	38.32	-2.98	35.34	46.00	-10.66	Peak
605.21	27.31	-1.43	25.88	46.00	-20.12	Peak
767.20	25.73	1.74	27.47	46.00	-18.53	Peak
920.46	28.76	3.93	32.69	46.00	-13.31	Peak

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

Test Mode	Mode 1	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	30MHz-1GHz	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		

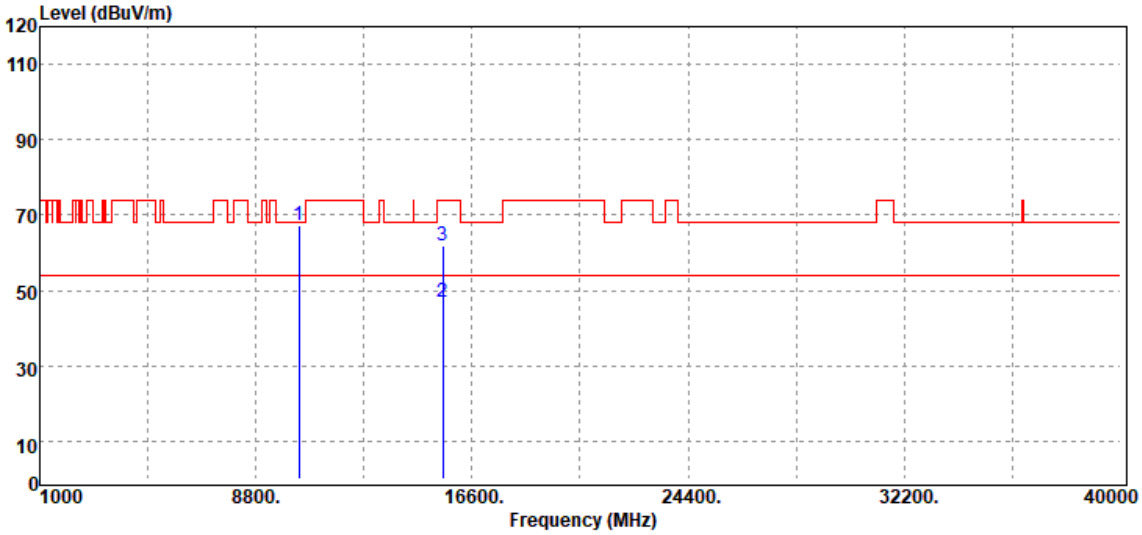


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB	Remark
159.01	39.09	-9.95	29.14	43.50	-14.36	Peak
287.05	43.24	-8.41	34.83	46.00	-11.17	Peak
479.11	33.74	-2.98	30.76	46.00	-15.24	Peak
639.16	28.15	-0.28	27.87	46.00	-18.13	Peak
799.21	28.67	1.52	30.19	46.00	-15.81	Peak
920.46	30.50	3.93	34.43	46.00	-11.57	Peak

Note: No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)

Above 1G Test Data for UNII-1

Test Mode	IEEE 802.11a Low CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Harmonic	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

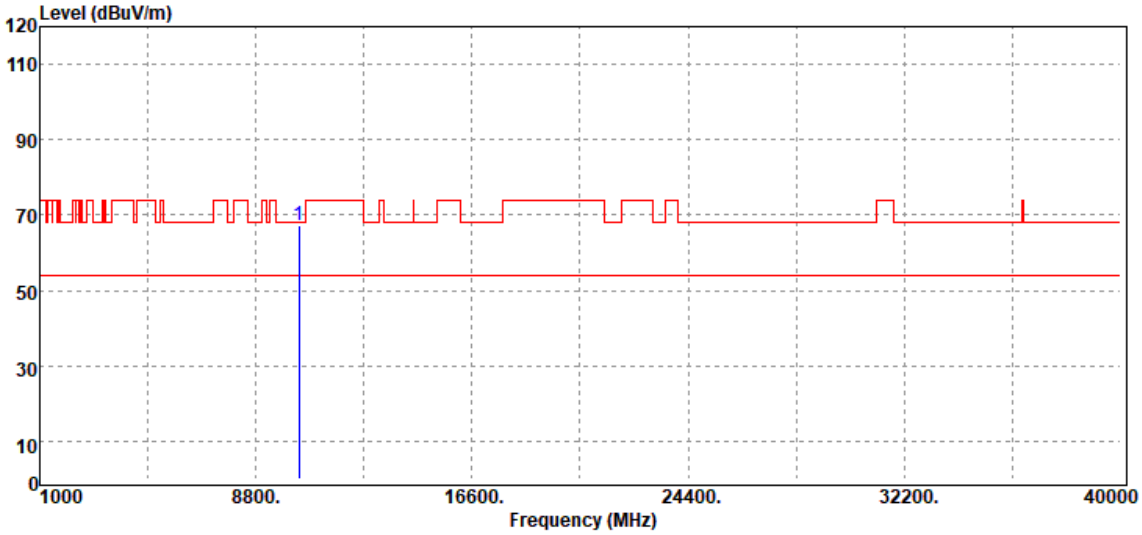


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.00	53.20	13.98	67.18	68.20	-1.02	Peak
15540.00	26.56	20.46	47.02	54.00	-6.98	Average
15540.00	41.29	20.46	61.75	74.00	-12.25	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11a Low CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Harmonic	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		

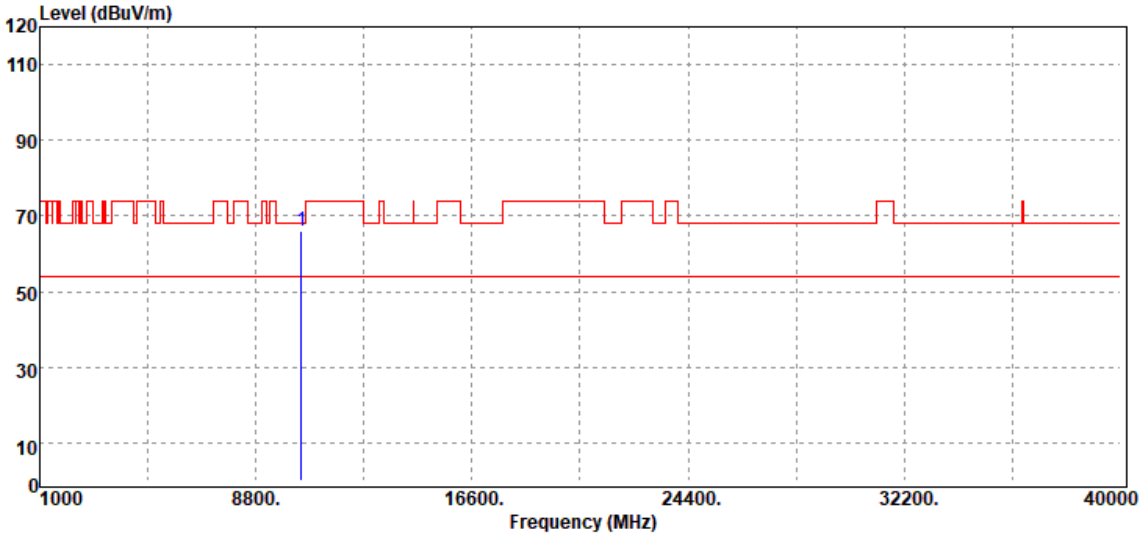


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.00	53.10	13.98	67.08	68.20	-1.12	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a Mid CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Harmonic	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		

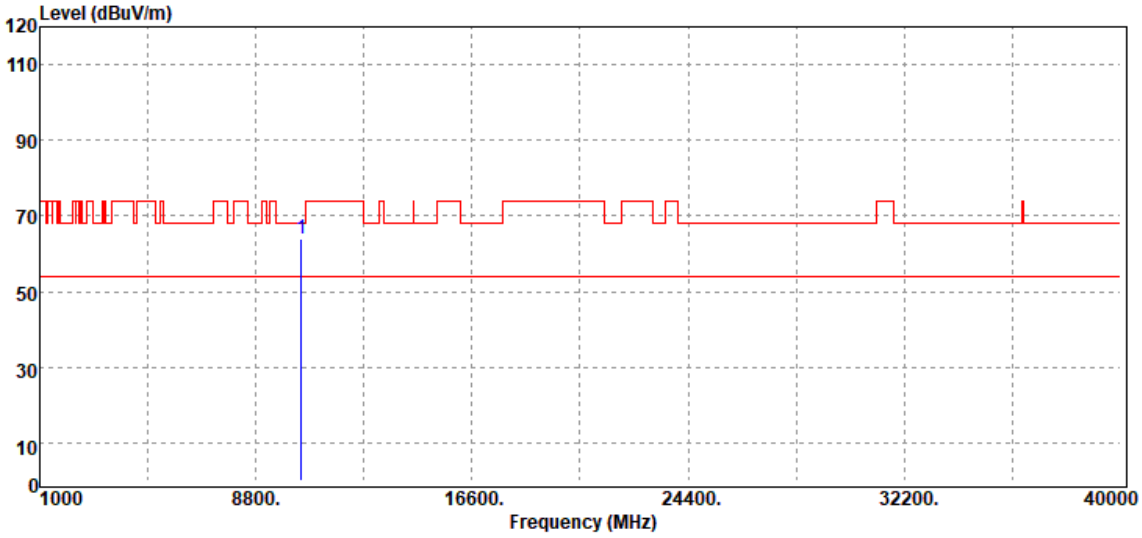


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.00	51.20	14.69	65.89	68.20	-2.31	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a Mid CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Harmonic	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		

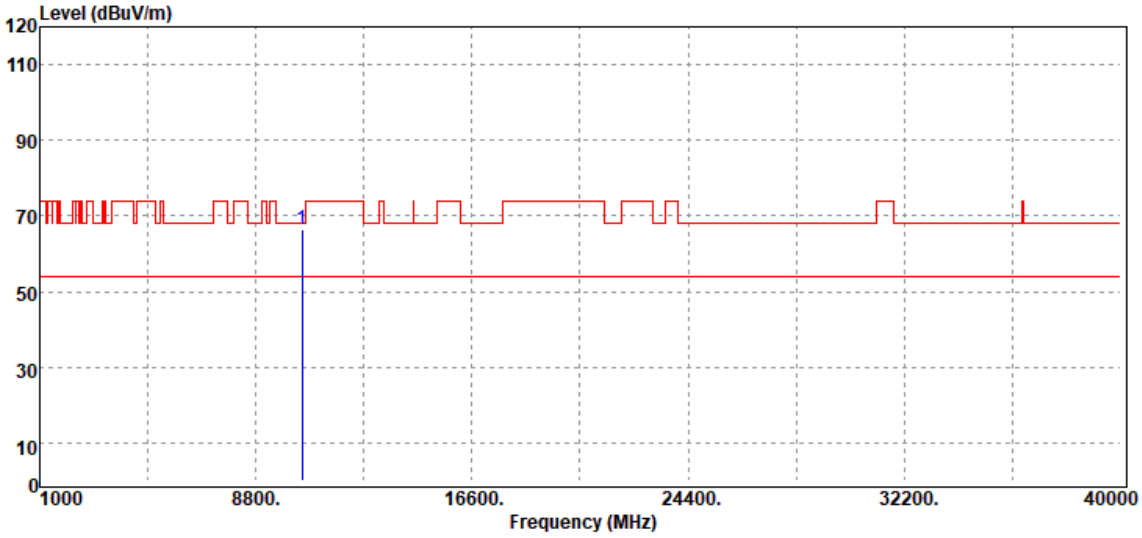


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.00	49.30	14.69	63.99	68.20	-4.21	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a High CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Harmonic	Test Date	September 27, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		

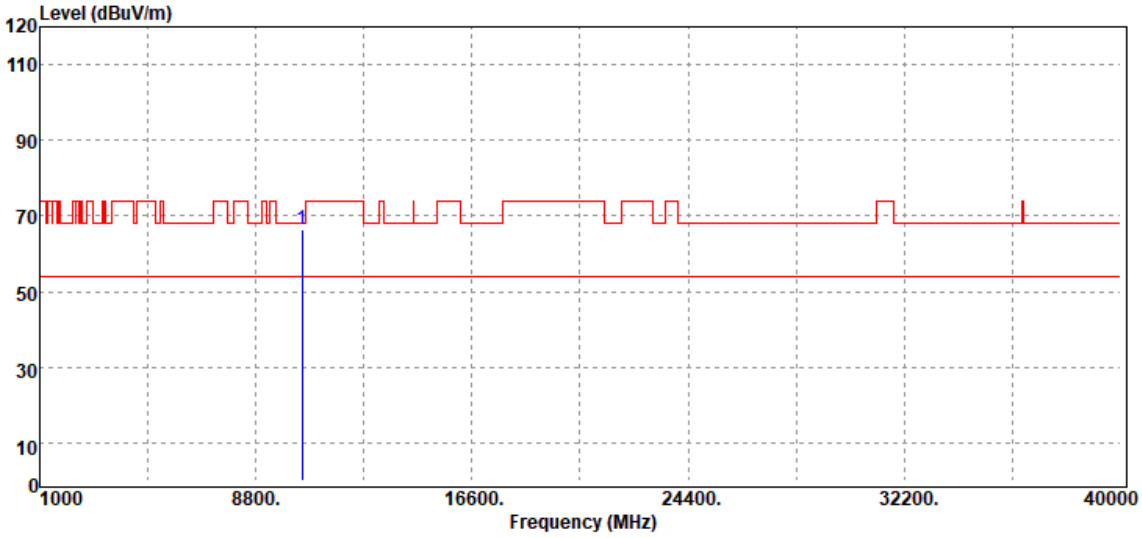


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.00	51.19	15.23	66.42	68.20	-1.78	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11a High CH	Temp/Hum	27.3(℃)/ 51.4%RH
Test Item	Harmonic	Test Date	September 27, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		

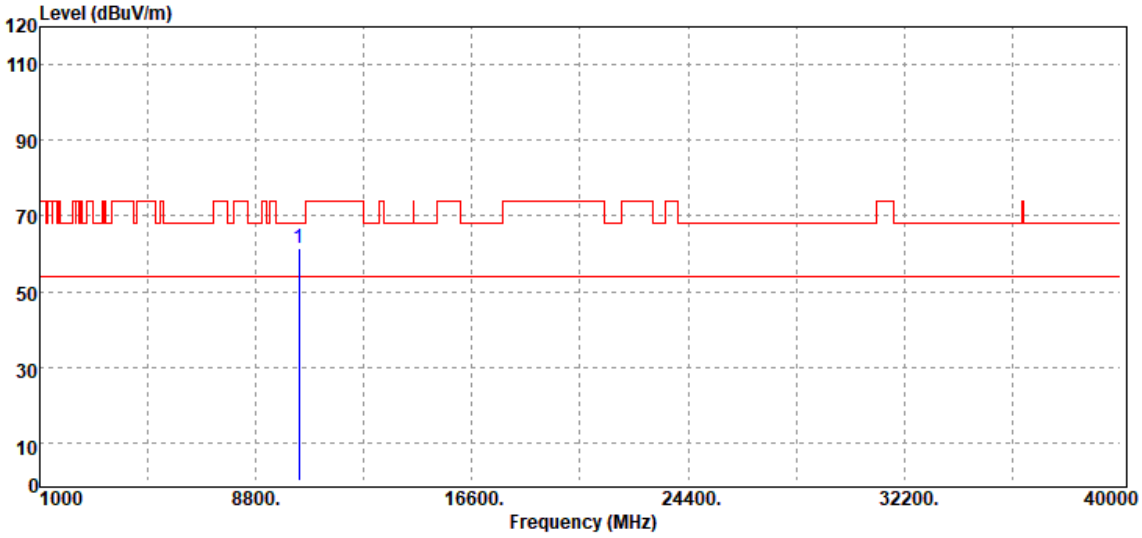


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.00	51.09	15.23	66.32	68.20	-1.88	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		

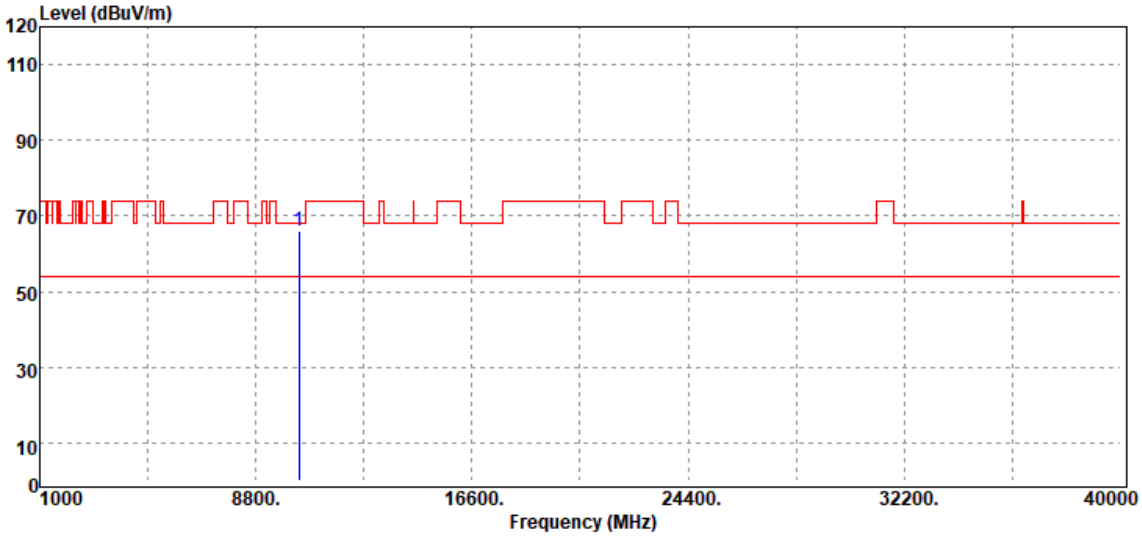


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.00	47.55	13.98	61.53	68.20	-6.67	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		

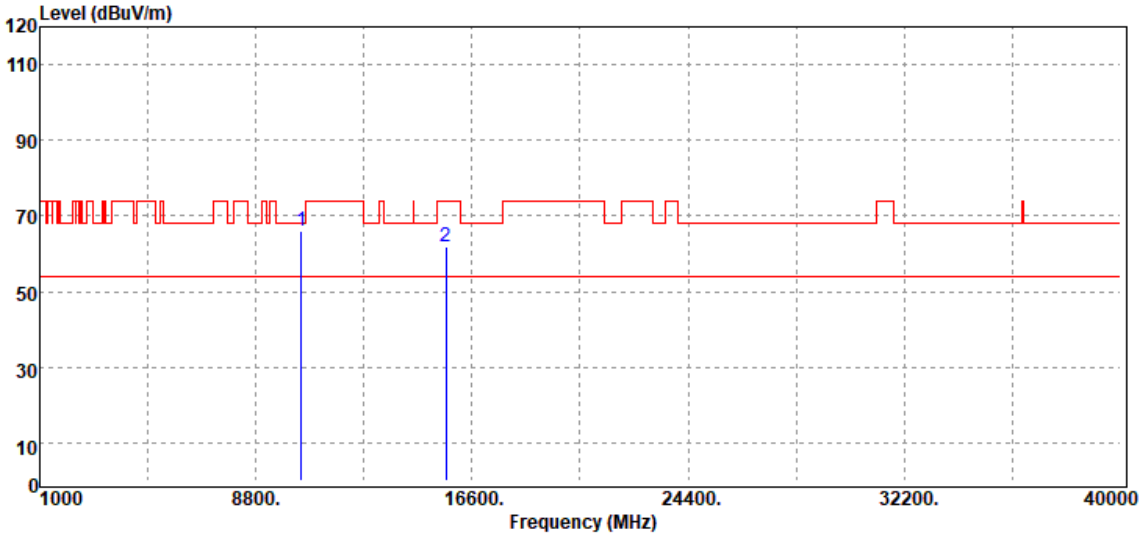


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10360.00	51.96	13.98	65.94	68.20	-2.26	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak		

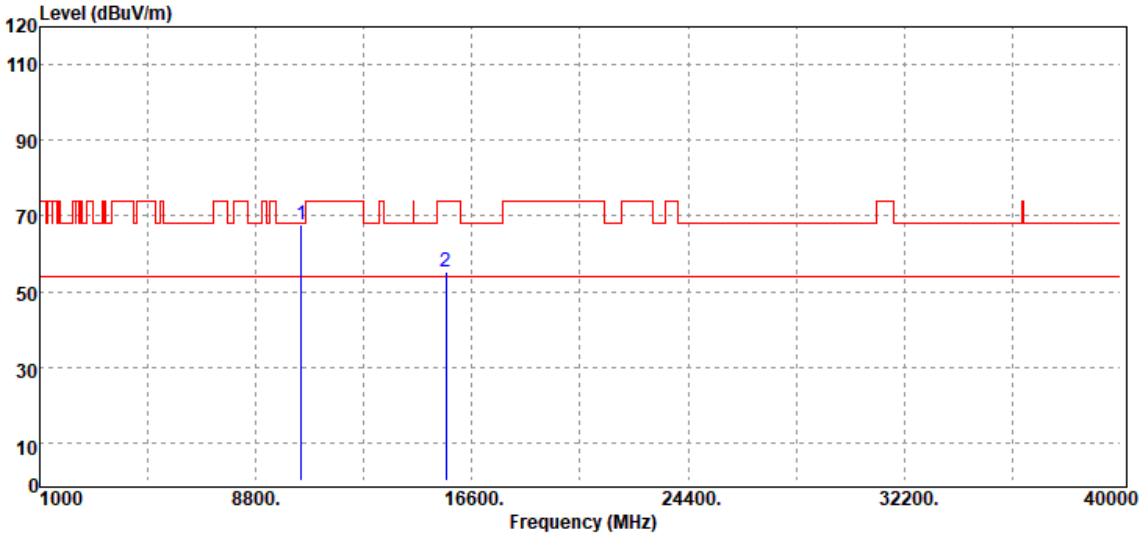


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.00	51.14	14.69	65.83	68.20	-2.37	Peak
15660.00	41.33	20.73	62.06	74.00	-11.94	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		

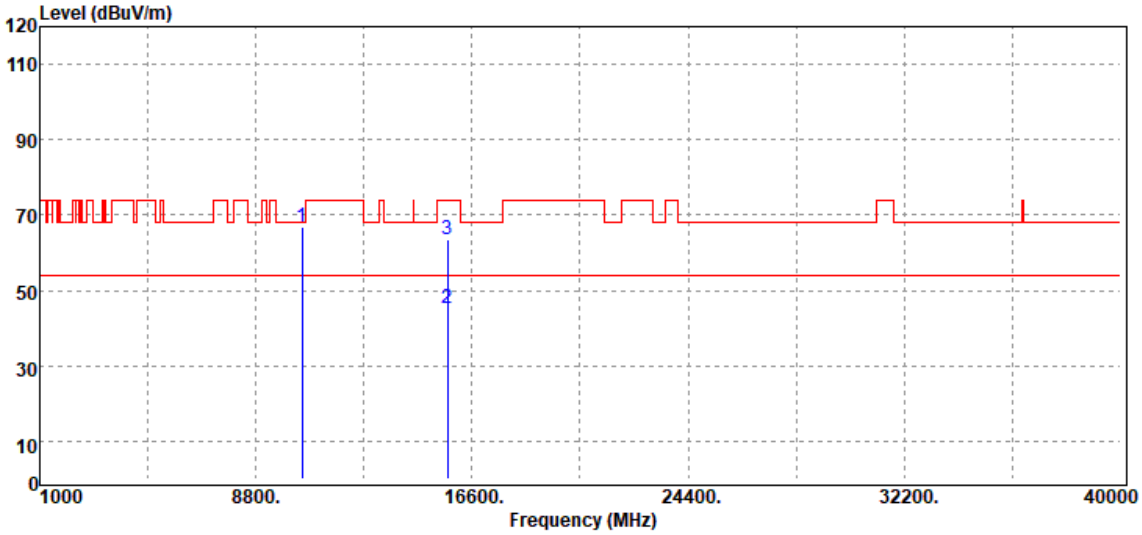


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10440.00	52.88	14.69	67.57	68.20	-0.63	Peak
15660.00	34.65	20.73	55.38	74.00	-18.62	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

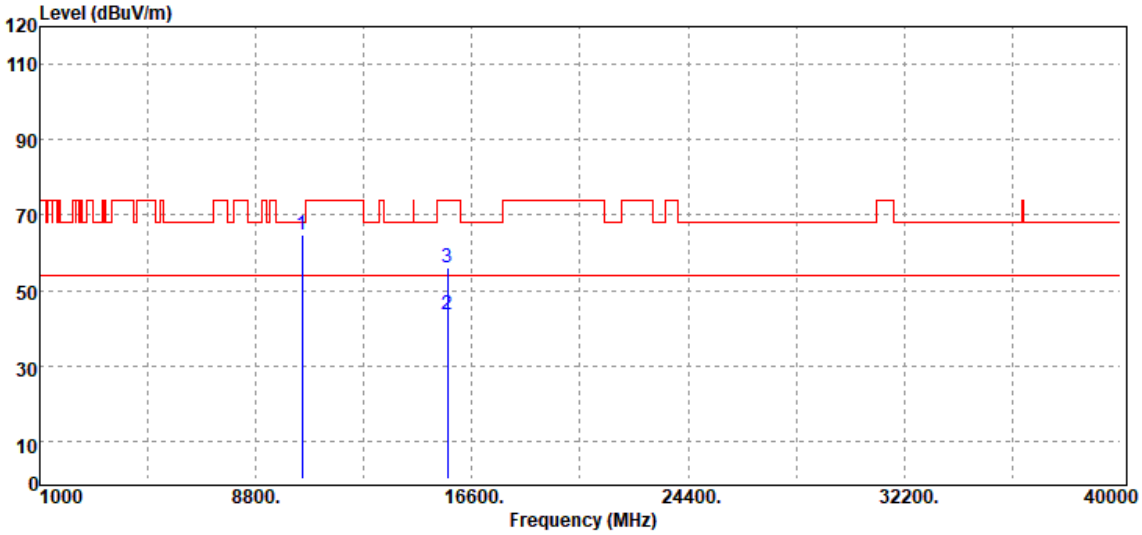


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.00	51.55	15.23	66.78	68.20	-1.42	Peak
15720.00	24.22	20.96	45.18	54.00	-8.82	Average
15720.00	42.48	20.96	63.44	74.00	-10.56	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak and Average		

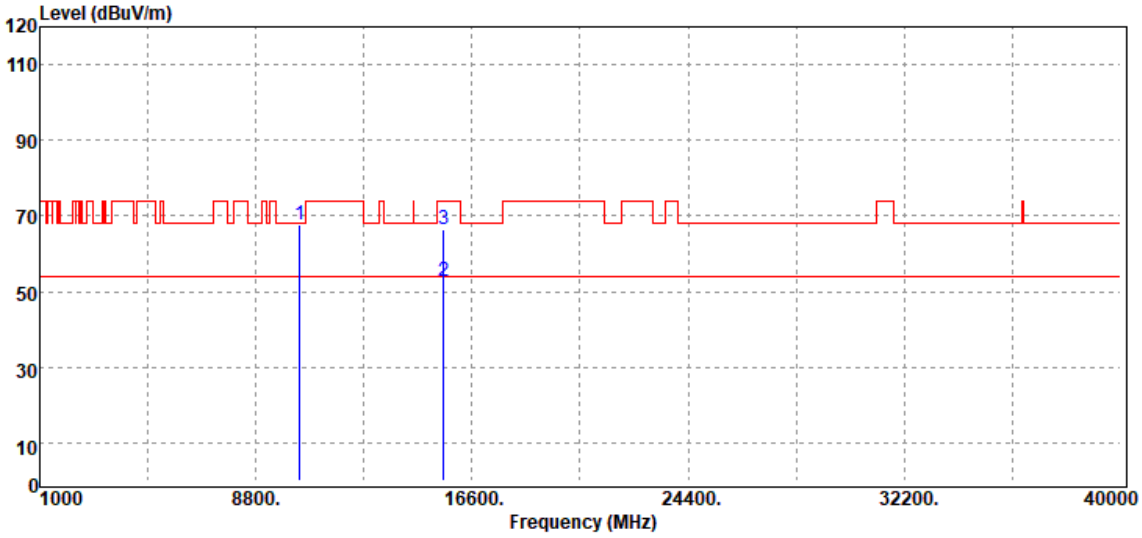


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10480.00	49.63	15.23	64.86	68.20	-3.34	Peak
15720.00	22.83	20.96	43.79	54.00	-10.21	Average
15720.00	35.14	20.96	56.10	74.00	-17.90	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

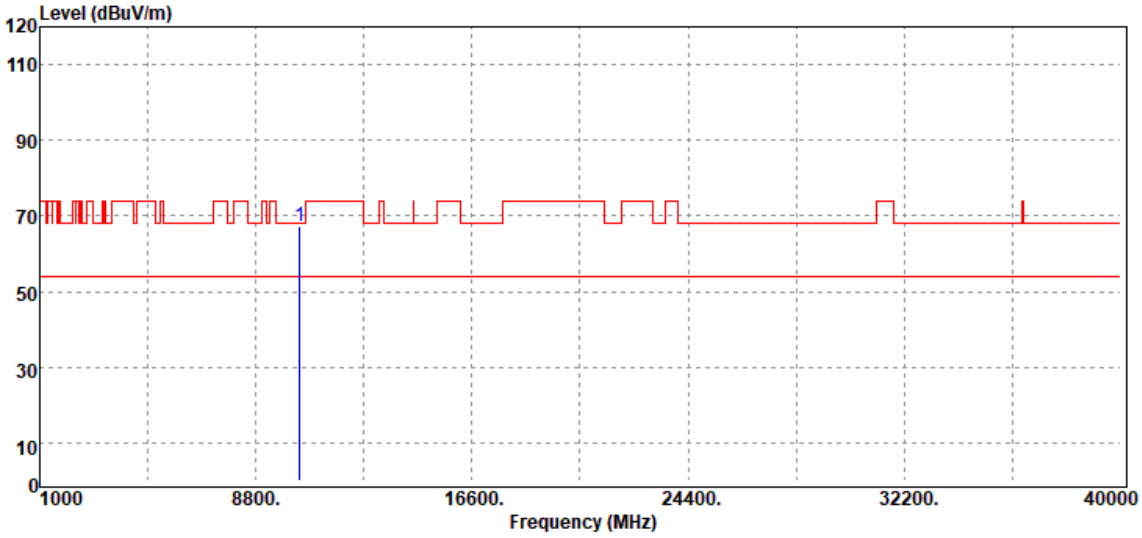


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10380.00	53.50	14.09	67.59	68.20	-0.61	Peak
15570.00	32.27	20.27	52.54	54.00	-1.46	Average
15570.00	46.24	20.27	66.51	74.00	-7.49	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		

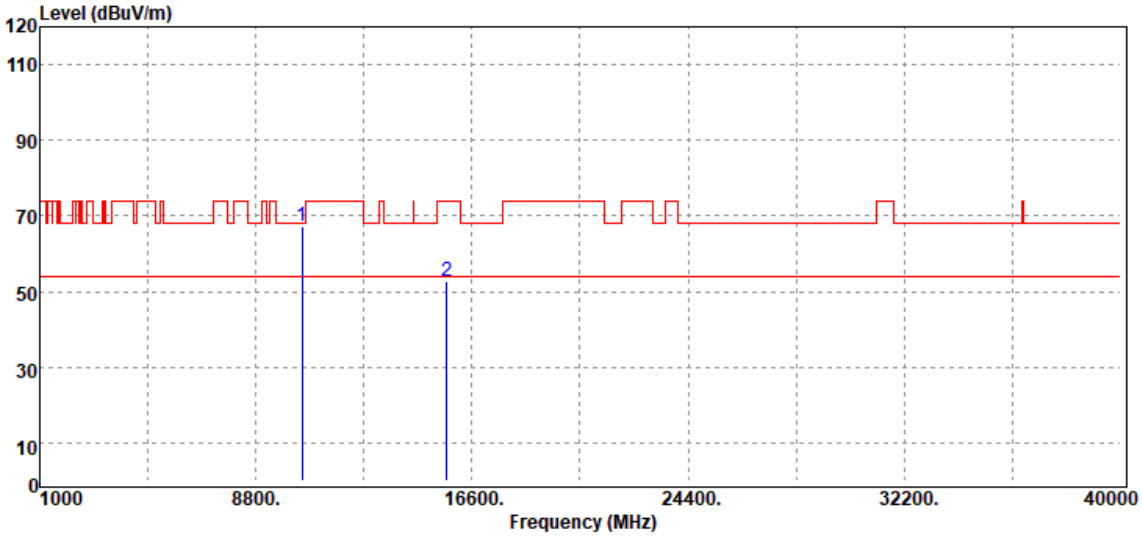


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10380.00	53.38	14.09	67.47	68.20	-0.73	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

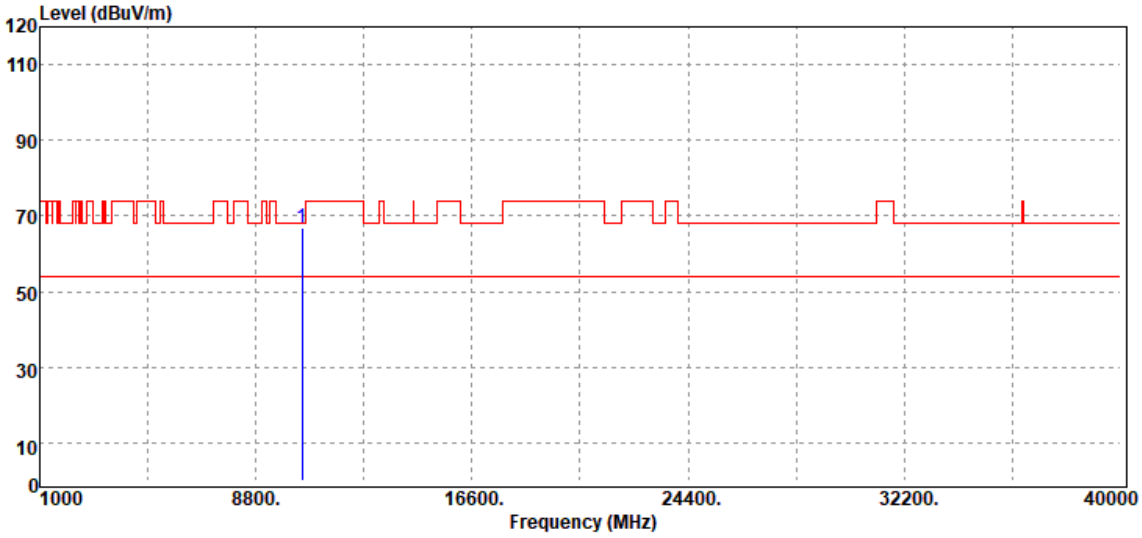


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10460.00	52.26	14.98	67.24	68.20	-0.96	Peak
15690.00	31.77	20.90	52.67	54.00	-1.33	Average
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak		



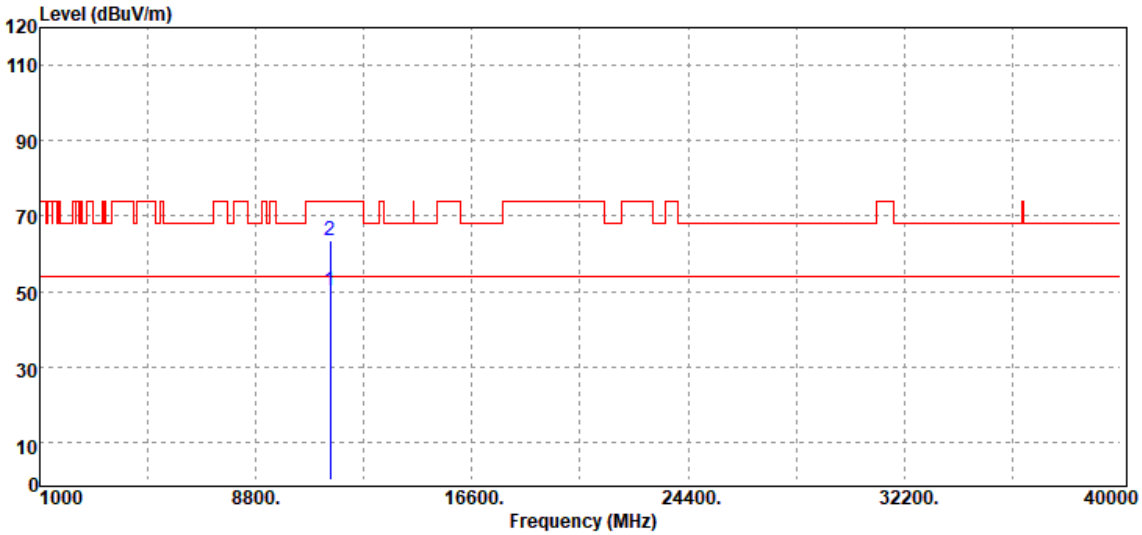
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
10460.00	52.05	14.98	67.03	68.20	-1.17	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit*

Above 1G Test Data for UNII-3

Test Mode	IEEE 802.11a Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

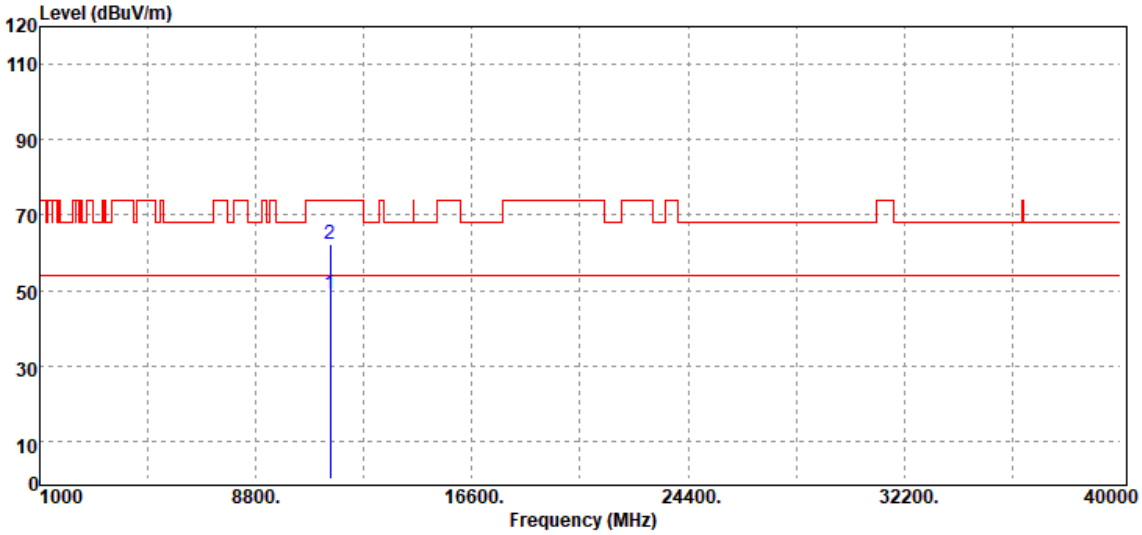


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.00	34.72	15.57	50.29	54.00	-3.71	Average
11490.00	47.98	15.57	63.55	74.00	-10.45	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11a Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak and Average		

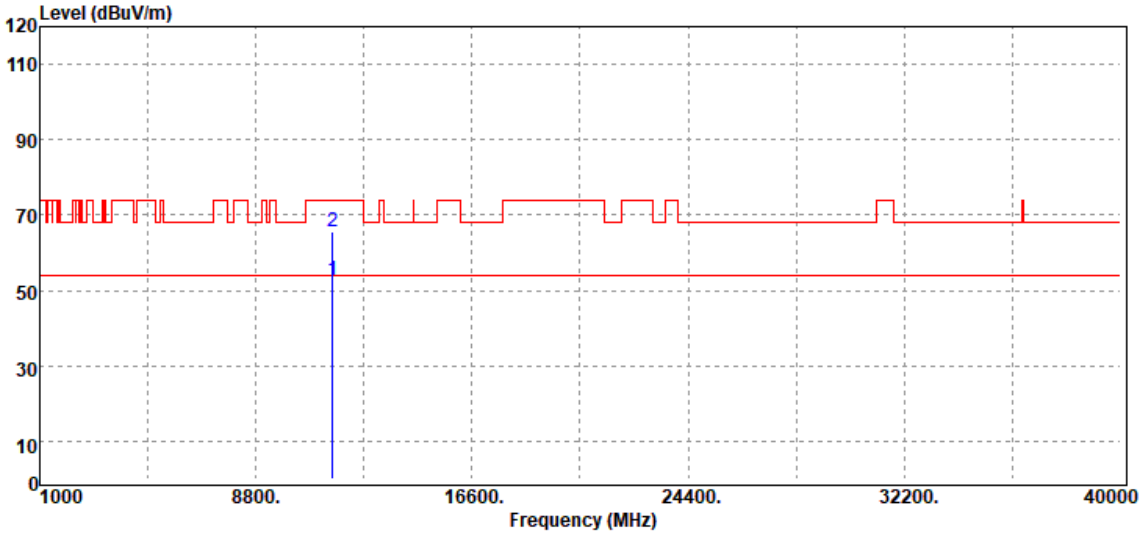


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.00	33.55	15.57	49.12	54.00	-4.88	Average
11490.00	46.63	15.57	62.20	74.00	-11.80	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11a Mid CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

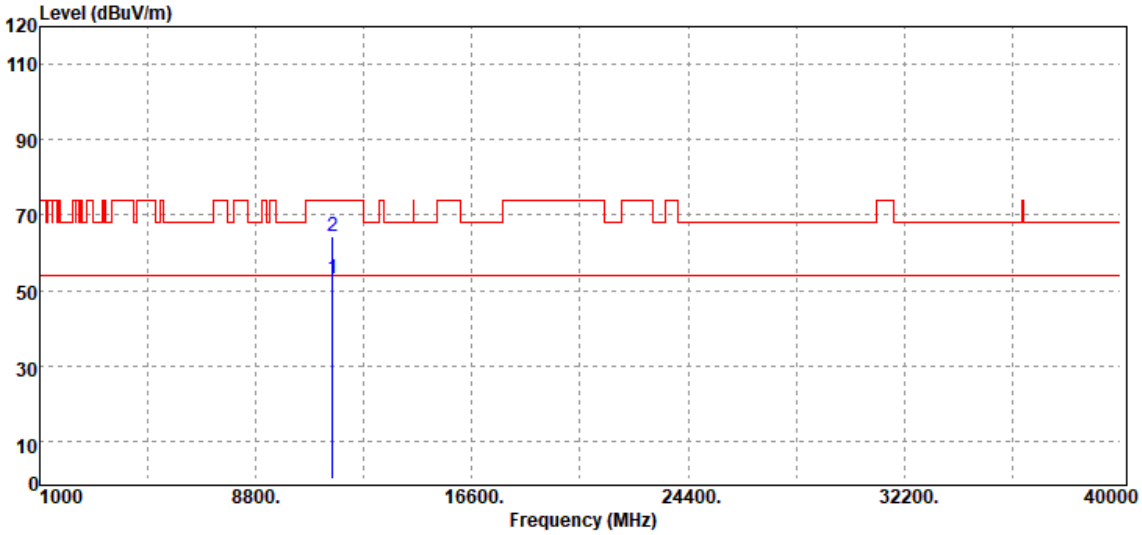


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.00	36.50	16.28	52.78	54.00	-1.22	Average
11570.00	49.45	16.28	65.73	74.00	-8.27	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11a Mid CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak and Average		

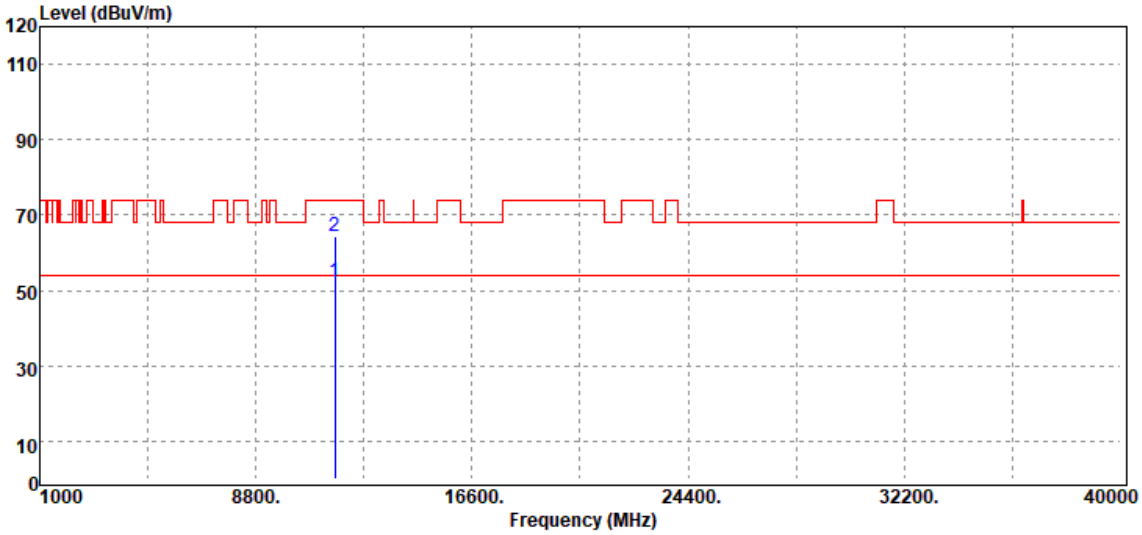


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.00	37.00	16.28	53.28	54.00	-0.72	Average
11570.00	47.88	16.28	64.16	74.00	-9.84	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11a High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

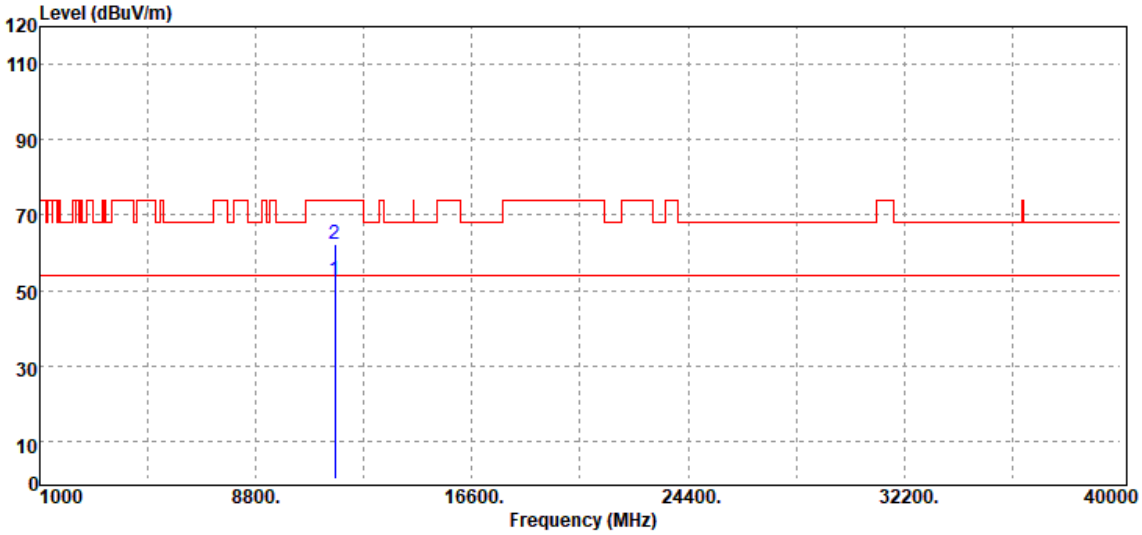


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.00	35.78	16.57	52.35	54.00	-1.65	Average
11650.00	47.85	16.57	64.42	74.00	-9.58	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11a High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak and Average		

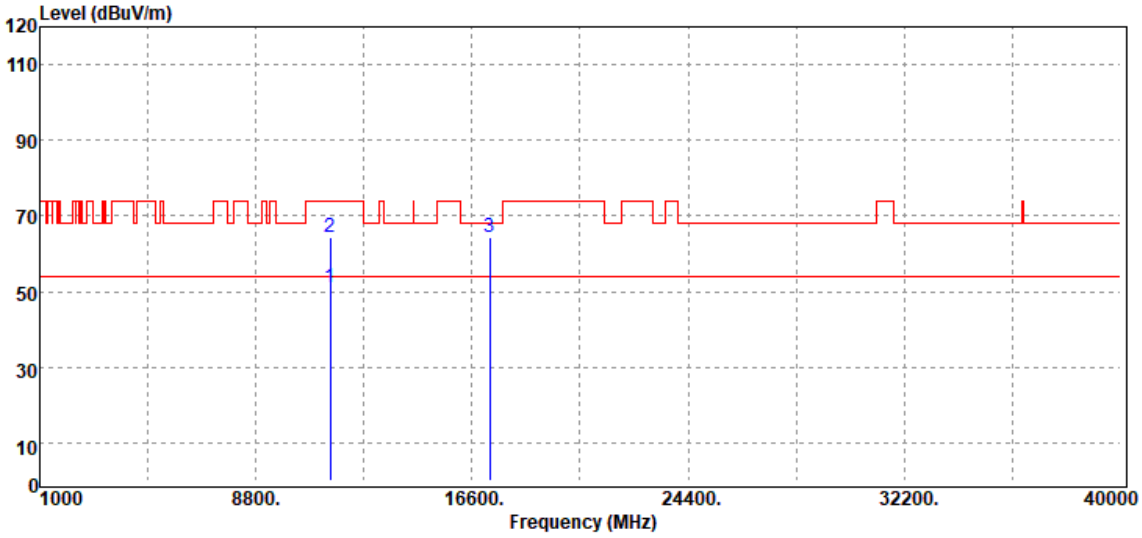


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.00	36.14	16.57	52.71	54.00	-1.29	Average
11650.00	45.56	16.57	62.13	74.00	-11.87	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

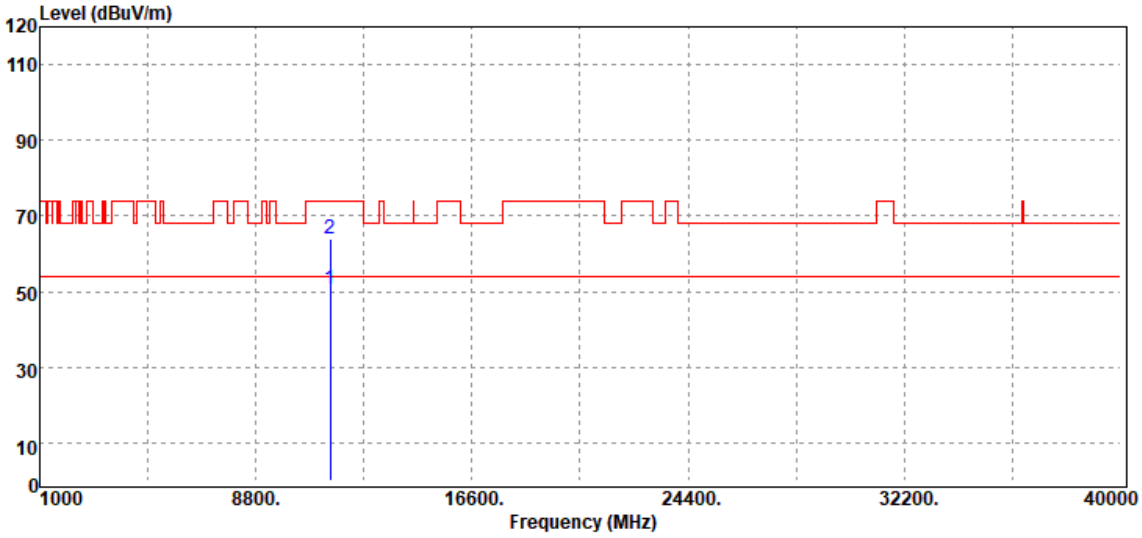


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.00	35.42	15.57	50.99	54.00	-3.01	Average
11490.00	48.66	15.57	64.23	74.00	-9.77	Peak
17235.00	39.43	24.84	64.27	68.20	-3.93	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT20 Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak and Average		

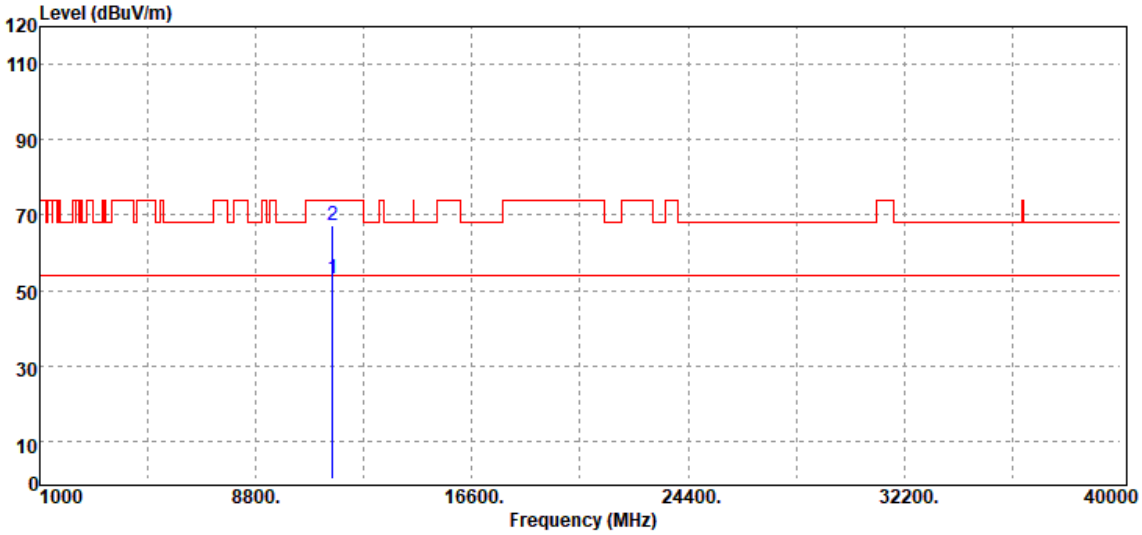


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11490.00	35.11	15.57	50.68	54.00	-3.32	Average
11490.00	48.25	15.57	63.82	74.00	-10.18	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

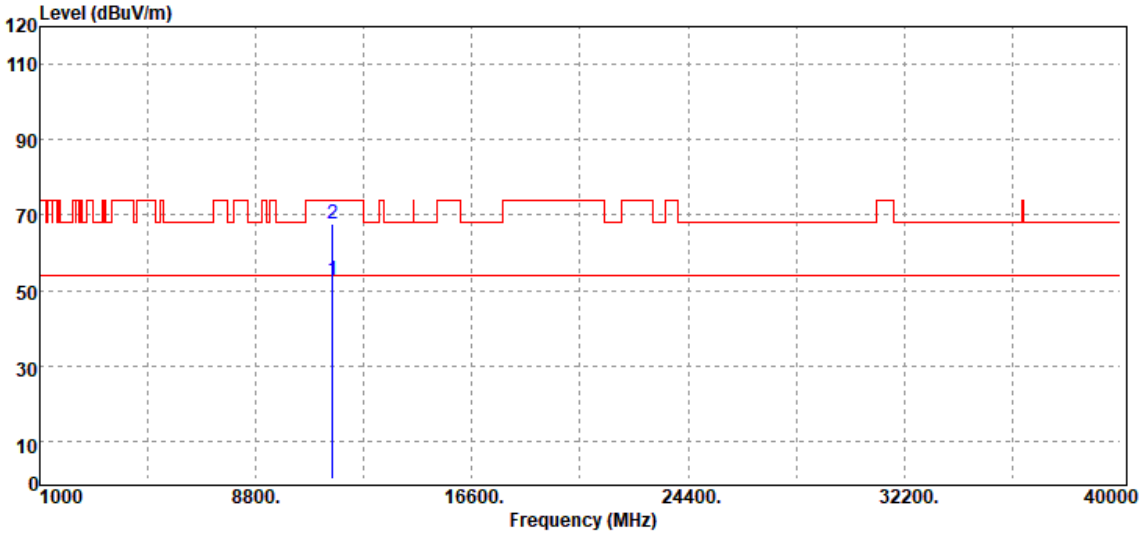


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.00	37.06	16.28	53.34	54.00	-0.66	Average
11570.00	51.02	16.28	67.30	74.00	-6.70	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT20 Mid CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak and Average		

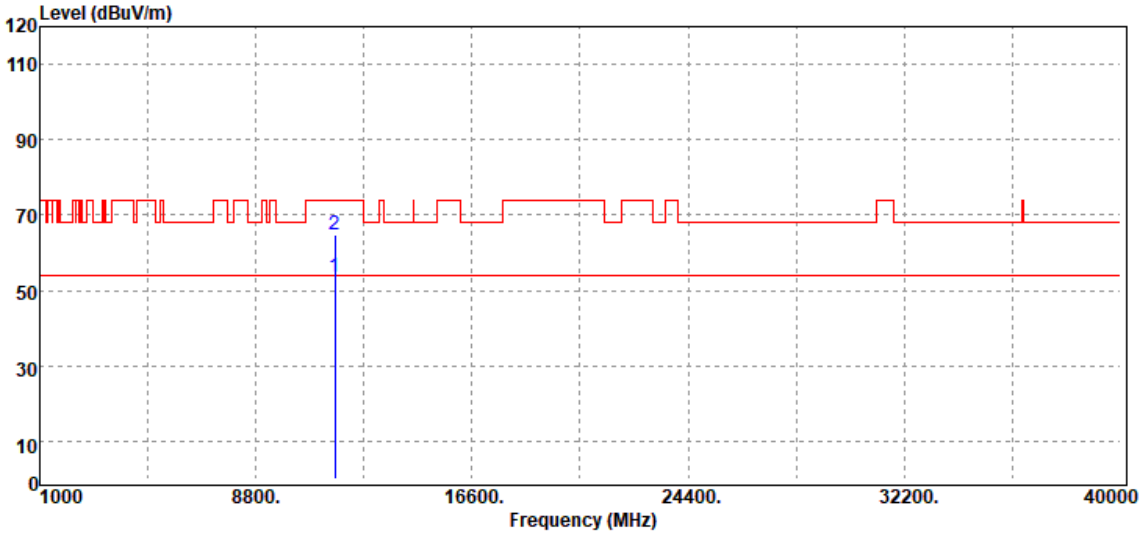


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11570.00	36.33	16.28	52.61	54.00	-1.39	Average
11570.00	51.33	16.28	67.61	74.00	-6.39	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

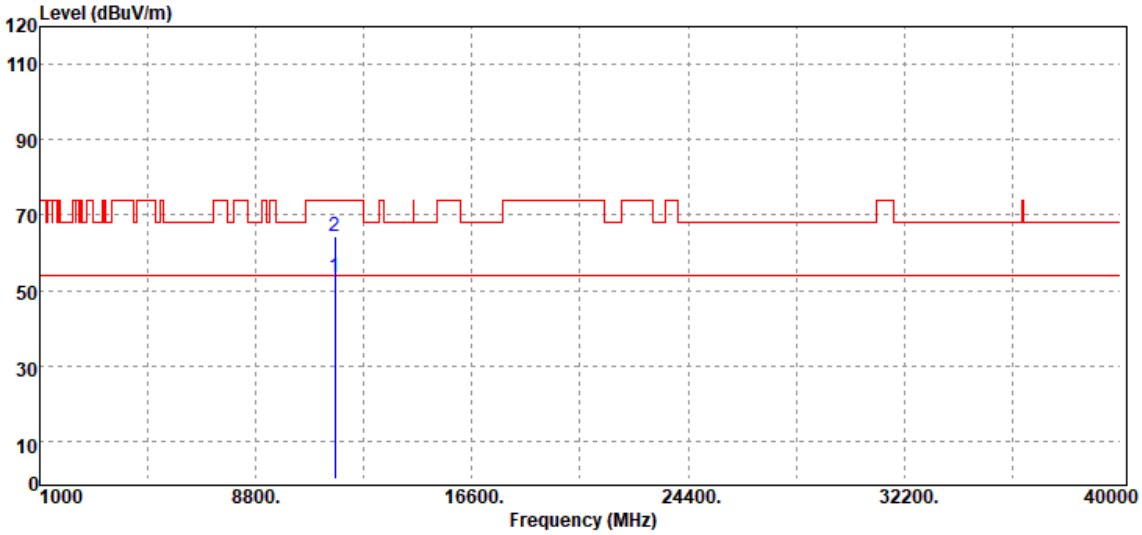


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.00	36.92	16.57	53.49	54.00	-0.51	Average
11650.00	48.00	16.57	64.57	74.00	-9.43	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT20 High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak and Average		

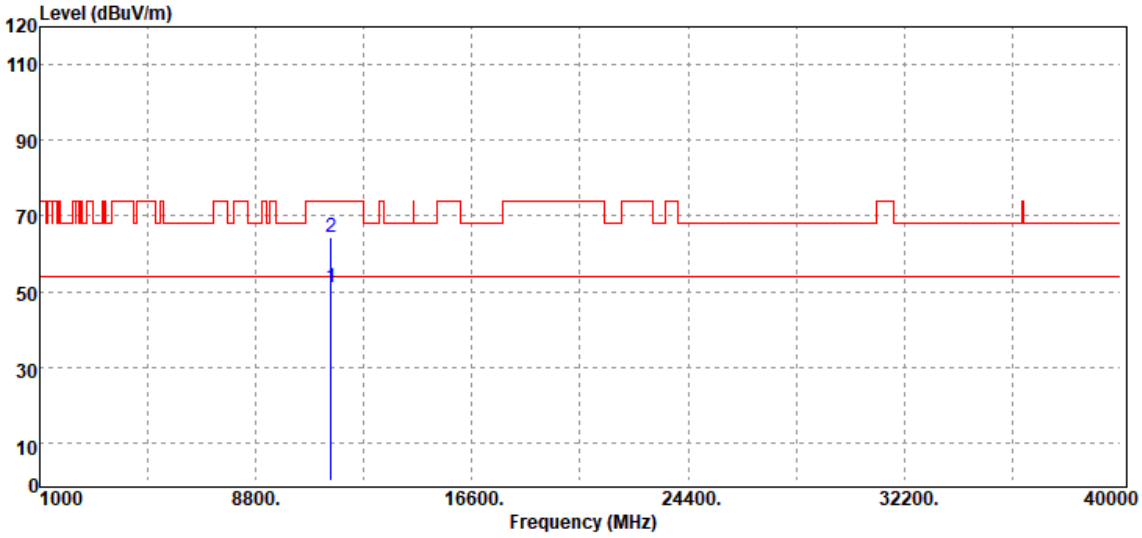


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11650.00	37.05	16.57	53.62	54.00	-0.38	Average
11650.00	47.77	16.57	64.34	74.00	-9.66	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

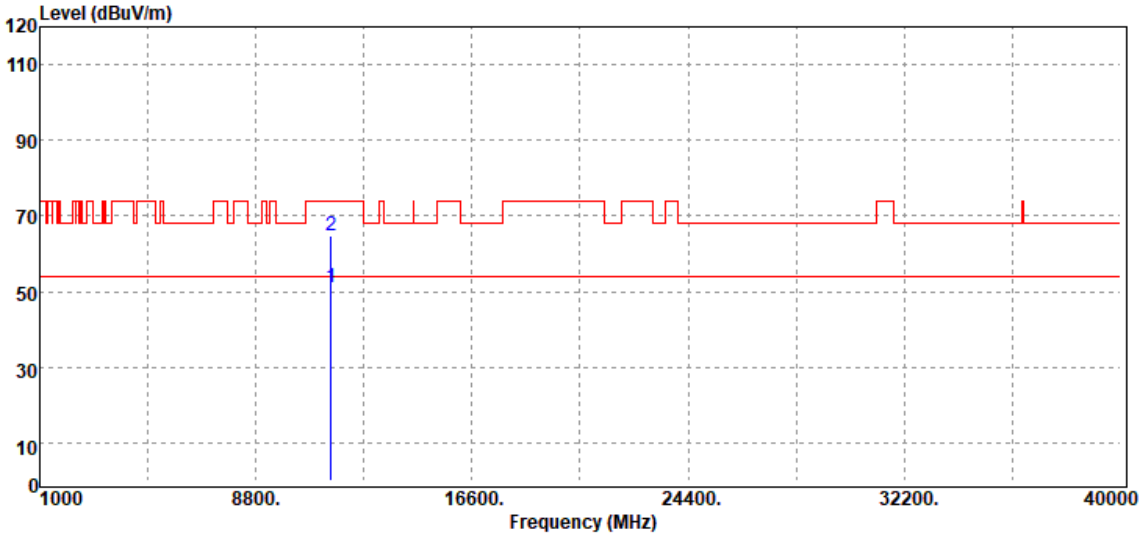


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11510.00	35.47	15.60	51.07	54.00	-2.93	Average
11510.00	48.84	15.60	64.44	74.00	-9.56	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT40 Low CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak and Average		

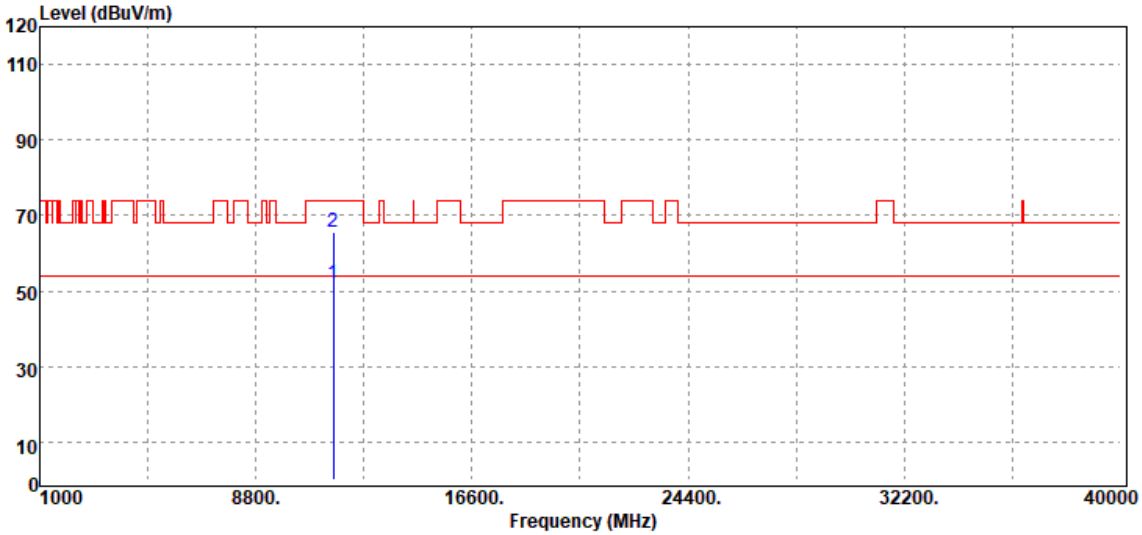


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11510.00	35.35	15.60	50.95	54.00	-3.05	Average
11510.00	49.14	15.60	64.74	74.00	-9.26	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Vertical	Test Engineer	Dally Hong
Detector	Peak and Average		

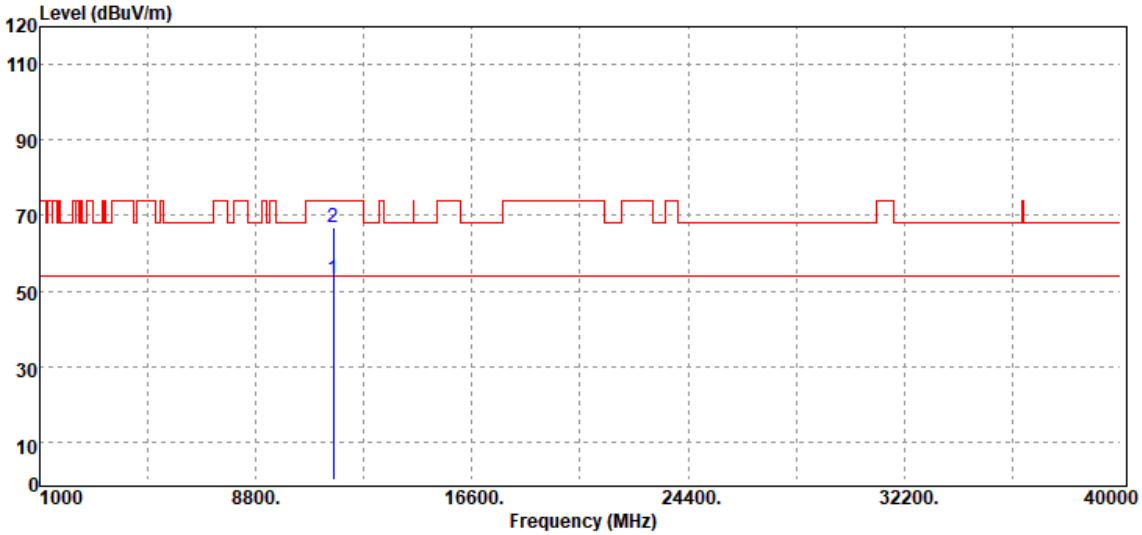


Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11590.00	35.70	16.36	52.06	54.00	-1.94	Average
11590.00	49.43	16.36	65.79	74.00	-8.21	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

Test Mode	IEEE 802.11n HT40 High CH	Temp/Hum	28(℃)/ 52%RH
Test Item	Harmonic	Test Date	September 28, 2019
Polarize	Horizontal	Test Engineer	Dally Hong
Detector	Peak and Average		



Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
11590.00	36.75	16.36	53.11	54.00	-0.89	Average
11590.00	50.30	16.36	66.66	74.00	-7.34	Peak
N/A						

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*

4.6 FREQUENCY STABILITY

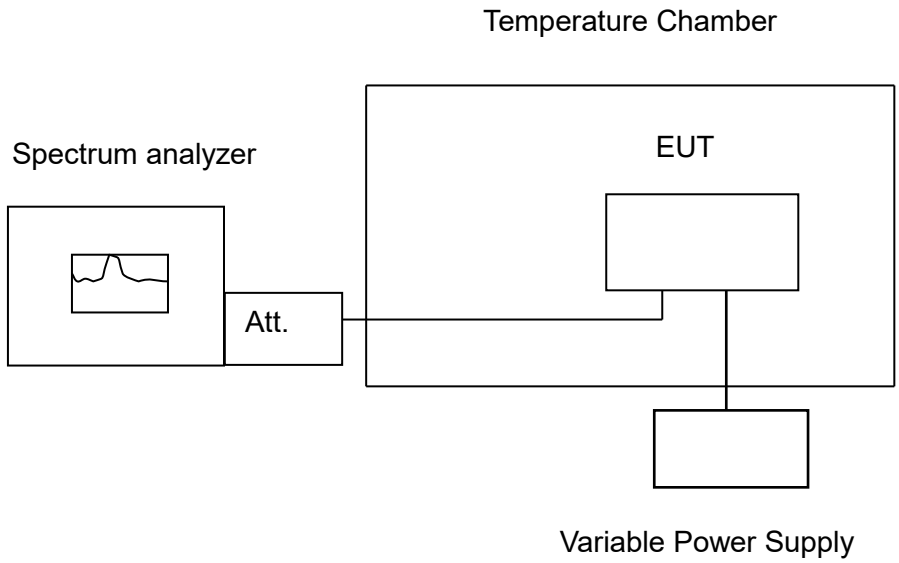
4.6.1 Test Limit

According to §15.407(g) manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the operational description.

4.6.2 Test Procedure

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20ºC operating frequency as reference frequency. Turn EUT off and set the chamber temperature to 0ºC. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10ºC increased per stage until the highest temperature of +70ºC reached.

4.6.3 Test Setup



4.6.4 Test Result

Temp. (ºC)	Voltage (V)	Measured Frequency	5180		(MHz)	Limit				Result
		Time (min)				20ppm				
Operating Frequency:		0 min	2 min	5 min	10 min	0 min	2 min	5 min	10 min	
70	5	5179.96223	5179.96353	5179.96266	5179.96397	-7.2915	-7.0405	-7.2085	-6.9556	Pass
60	5	5179.95441	5179.95311	5179.95268	5179.95398	-8.8012	-9.0521	-9.1351	-8.8842	Pass
50	5	5179.95702	5179.95658	5179.95485	5179.95355	-8.2973	-8.3822	-8.7162	-8.9672	Pass
40	5	5179.96310	5179.96266	5179.96353	5179.96440	-7.1236	-7.2085	-7.0405	-6.8726	Pass
30	5	5179.97742	5179.97699	5179.97656	5179.97569	-4.3591	-4.4421	-4.5251	-4.6931	Pass
20	5	5179.98524	5179.98567	5179.98741	5179.98828	-2.8494	-2.7664	-2.4305	-2.2625	Pass
10	5	5179.99305	5179.99522	5179.99696	5180.00087	-1.3417	-0.9228	-0.5869	0.1680	Pass
0	5	5180.00521	5180.00565	5180.00608	5180.00651	1.0058	1.0915	1.1737	1.2568	Pass
Temp. (ºC)	Voltage (V)	Measured Frequency	5180		(MHz)	Limit				Result
		Time (min)				20ppm				
Operating Frequency:		0 min	2 min	5 min	10 min	0 min	2 min	5 min	10 min	
25	4.5	5179.973950	5179.97352	5179.97308	5179.97625	-5.0290	-5.1120	-5.1969	-4.5849	Pass
25	5	5179.98524	5179.98567	5179.98741	5179.98828	-2.8494	-2.7664	-2.4305	-2.2625	Pass
25	5.5	5179.972210	5179.97178	5179.97625	5179.97221	-5.3649	-5.4479	-4.5849	-5.3649	Pass

Temp. (ºC)	Voltage (V)	Measured Frequency	5745		(MHz)	Limit				Result
		Time (min)				20ppm				
Operating Frequency:		0 min	2 min	5 min	10 min	0 min	2 min	5 min	10 min	
70	5	5744.95919	5744.96049	5744.95962	5744.96136	-7.1036	-6.8773	-7.0287	-6.7258	Pass
60	5	5744.94660	5744.94703	5744.94834	5744.97790	-9.2950	-9.2202	-8.9922	-3.8468	Pass
50	5	5744.94877	5744.94834	5744.94790	5744.94747	-8.9173	-8.9922	-9.0688	-9.1436	Pass
40	5	5744.95658	5744.95615	5744.95572	5744.95702	-7.5579	-7.6327	-7.7076	-7.4813	Pass
30	5	5744.97308	5744.97265	5744.97221	5744.97178	-4.6858	-4.7607	-4.8372	-4.9121	Pass
20	5	5744.99305	5744.99132	5744.98958	5744.98784	-1.2097	-1.5109	-1.8138	-2.1166	Pass
10	5	5745.00651	5745.00217	5744.99826	5744.99653	1.1332	0.3777	-0.3029	-0.6040	Pass
0	5	5745.00912	5745.00868	5745.00999	5745.01129	1.5875	1.5109	1.7389	1.9652	Pass
Temp. (ºC)	Voltage (V)	Measured Frequency	5745		(MHz)	Limit				Result
		Time (min)				20ppm				
Operating Frequency:		0 min	2 min	5 min	10 min	0 min	2 min	5 min	10 min	
25	4.5	5744.97625	5744.97352	5744.97395	5744.97438	-4.1340	-4.6092	-4.5344	-4.4595	Pass
25	5	5744.99305	5744.99132	5744.98958	5744.98784	-1.2097	-1.5109	-1.8138	-2.1166	Pass
25	5.5	5744.97482	5744.97525	5744.97569	5744.97612	-4.3829	-4.3081	-4.2315	-4.1567	Pass

--End of Report--