FCC Radio Test Report

FCC ID: 2AMHM-AD00A10055

Report No.	:	BTL-FCCP-4-1911T165
Equipment	:	iTraMS Gen2A
Model Name	:	CU-303-0403
Brand Name	:	Bosch
Applicant	:	Robert Bosch Engineering & Business Solution Pvt. Ltd.
Address	:	123, Industrial Layout, Hosur Road, Koramangala, Bengaluru, 560095 Bengaluru India
Radio Function	:	RLAN 5 GHz (U-NII 1, U-NII 2A, U-NII 2C, U-NII 3)
FCC Rule Part(s)	:	FCC Part15, Subpart E (15.407)
Measurement Procedure(s)	:	ANSI C63.10-2013
Date of Receipt	:	2019/11/27
Date of Test	:	2019/11/27 ~ 2020/1/21
Issued Date	:	2020/3/16

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

Prepared by : Peter Chen, Engineer

Approved by : Scott Hsu , Manager

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	2020/3/3
R01	Revised report to address TCB's comments.	2020/3/16

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

FCC Part 15, Subpart E (15.407)				
Standard(s) Section	**Description**	**Test Result**	**Judgement**	**Remark**
15.207	AC Power Line Conducted Emissions	------	N/A	Note(1)
15.205 15.209 15.407(b)	Radiated Emissions	APPENDIX A APPENDIX B	Pass	------
15.407(a)	Bandwidth	APPENDIX C	Pass	------
15.407(a)	Output Power	APPENDIX D	Pass	------
15.407(a)	Power Spectral Density	APPENDIX E	Pass	------
15.203	Antenna Requirement	------	Pass	------
15.407(c)	Automatically Discontinue Transmission	------	Pass	**NOTE (3)**

NOTE:
(1) ”N/A” denotes test is not applicable in this Test Report.
(2) The report format version is TP.1.1.1.
(3) The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

1.1 TEST FACILITY

The test facilities used to collect the test data in this report:

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
The test sites and facilities are covered under FCC RN: 355421 and DN: TW1099.

☐ C05 ☐ CB08 ☐ CB11 ☐ CB15 ☐ CB16
☒ SR06

No.18, Ln. 171, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan
The test sites and facilities are covered under FCC RN: 325517 and DN: TW1115.

☐ C03 ☒ CB18 ☐ CB19

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**, where expanded uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k = 2**, providing a level of confidence of approximately **95 %**. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

A. Radiated emissions test :

Test Site	Measurement Frequency Range	U,(dB)
CB18	0.03 GHz ~ 0.2 GHz	4.17
	0.2 GHz ~ 1 GHz	4.72
	1 GHz ~ 6 GHz	5.21
	6 GHz ~ 18 GHz	5.51
	18 GHz ~ 26 GHz	3.69
	26 GHz ~ 40 GHz	4.23

B. Conducted test :

Test Item	U,(dB)
Bandwidth	1.13
Output power	1.07
Power Spectral Density	1.20
Conducted Band edges	1.13
Frequency Stability	1.13

NOTE:
Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Tested by
Radiated emissions below 1 GHz	23 °C, 65 %	Hunter Chiang
Radiated emissions above 1 GHz	23 °C, 65 %	Hunter Chiang
Bandwidth	24.5 °C, 53.2 %	Jay Kao
Output Power	24.5 °C, 53.2 %	Jay Kao
Power Spectral Density	24.5 °C, 53.2 %	Jay Kao

1.4 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

UNII-1			
Test Software	DutApi_w8887_BrdigeEth		
Mode	5180 MHz	5200 MHz	5240 MHz
IEEE 802.11a	16	20	20
IEEE 802.11n (HT20)	15	20	20
Mode	5190 MHz	5230 MHz	
IEEE 802.11n (HT40)	11	20	

UNII-2A			
Test Software	DutApi_w8887_BrdigeEth		
Mode	5260 MHz	5300 MHz	5320 MHz
IEEE 802.11a	20	20	16
IEEE 802.11n (HT20)	20	20	15
Mode	5270 MHz	5310 MHz	
IEEE 802.11n (HT40)	20	13	

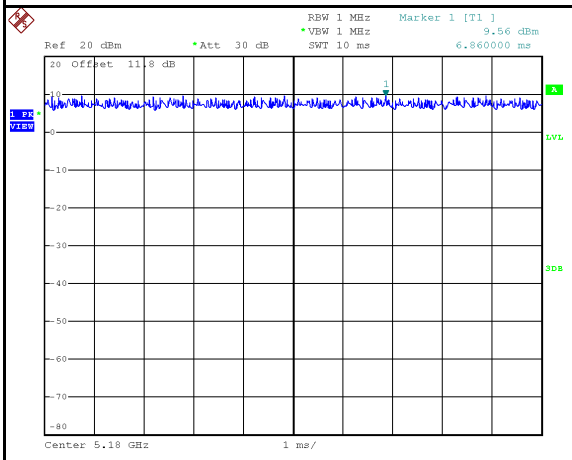
UNII-2C			
Test Software	DutApi_w8887_BrdigeEth		
Mode	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	15	20	15
IEEE 802.11n (HT20)	15	20	15
Mode	5510 MHz	5550 MHz	5670 MHz
IEEE 802.11n (HT40)	13	20	13

UNII-3			
Test Software	DutApi_w8887_BrdigeEth		
Mode	5745 MHz	5785 MHz	5825 MHz
IEEE 802.11a	15	20	15
IEEE 802.11n (HT20)	17	20	17
Mode	5755 MHz	5795 MHz	
IEEE 802.11n (HT40)	17	17	

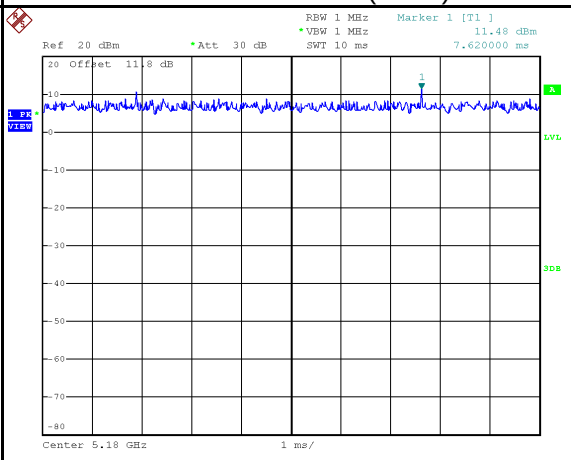
1.5 DUTY CYCLE

If duty cycle is ≥ 98 %, duty factor is not required.
If duty cycle is < 98 %, duty factor shall be considered.

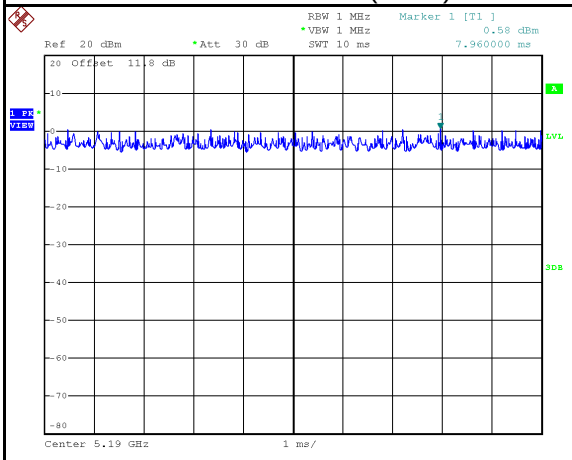
IEEE 802.11a



IEEE 802.11n (HT20)



IEEE 802.11n (HT40)



Remark	Delta 1			Delta 2	On Time/Period	10 log(1/Duty Cycle)
Mode	ON (ms)	Numbers (ON)	On Time (B) (ms)	Period (ON+OFF) (ms)	Duty Cycle (%)	Duty Factor (dB)
IEEE 802.11a	6.860	1	6.860	6.860	100.00%	0.00
IEEE 802.11n (HT20)	7.620	1	7.620	7.620	100.00%	0.00
IEEE 802.11n (HT40)	7.960	1	7.960	7.960	100.00%	0.00

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	iTraMS Gen2A
Model Name	CU-303-0403
Brand Name	Bosch
Model Difference	N/A
Power Source	Supplied from Battery.
Power Rating	DC 9-32V
Products Covered	N/A
Hardware Version	B2
Software Version	MS8
Frequency Range	UNII-1: 5150 MHz to 5250 MHz UNII-2A: 5250 MHz to 5350 MHz UNII-2C: 5470 MHz to 5725 MHz UNII-3: 5725 MHz to 5850 MHz
Operation Frequency	UNII-1: 5180 MHz to 5240 MHz UNII-2A: 5260 MHz to 5320 MHz UNII-2C: 5500 MHz to 5700 MHz UNII-3: 5745 MHz to 5825 MHz
Modulation Technology	OFDM
Transfer Rate	up to 150 Mbps
Output Power Max. for UNII-1	IEEE 802.11a: 17.30 dBm (0.0537 W) IEEE 802.11n (HT20): 17.35 dBm (0.0543 W) IEEE 802.11n (HT40): 16.81 dBm (0.0480 W)
Output Power Max. for UNII-2A	IEEE 802.11a: 17.13 dBm (0.0516 W) IEEE 802.11n (HT20): 17.28 dBm (0.0535 W) IEEE 802.11n (HT40): 16.64 dBm (0.0461 W)
Output Power Max. for UNII-2C	IEEE 802.11a: 15.91 dBm (0.0390 W) IEEE 802.11n (HT20): 15.94 dBm (0.0393 W) IEEE 802.11n (HT40): 15.64 dBm (0.0366 W)
Output Power Max. for UNII-3	IEEE 802.11a: 13.23 dBm (0.0210 W) IEEE 802.11n (HT20): 13.41 dBm (0.0219 W) IEEE 802.11n (HT40): 12.05 dBm (0.0160 W)
Test Model	CU-303-0403
Sample Status	Engineering Sample
EUT Modification(s)	N/A

NOTE:
(1) For a more detailed features description, please refer to the manufacturer’s specifications or the user's manual.

(2) Channel List:

UNII-1			
IEEE 802.11a IEEE 802.11n (HT20)		IEEE 802.11n (HT40)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190
40	5200	46	5230
44	5220		
48	5240		

UNII-2A			
IEEE 802.11a IEEE 802.11n (HT20)		IEEE 802.11n (HT40)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	54	5270
56	5280	62	5310
60	5300		
64	5320		

UNII-2C			
IEEE 802.11a IEEE 802.11n (HT20)		IEEE 802.11n (HT40)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	102	5510
104	5520	110	5550
108	5540	118	5590
112	5560	126	5630
116	5580	134	5670
120	5600		
124	5620		
128	5640		
132	5660		
136	5680		
140	5700		

UNII-3			
IEEE 802.11a IEEE 802.11n (HT20)		IEEE 802.11n (HT40)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755
153	5765	159	5795
157	5785		
161	5805		
165	5825		

(3) Table for Filed Antenna:

Ant.	Brand	S/N	Antenna Type	Connector	Gain (dBi)
CH0	molex®	146153	Internal	N/A	4.1

2.2 TEST MODES

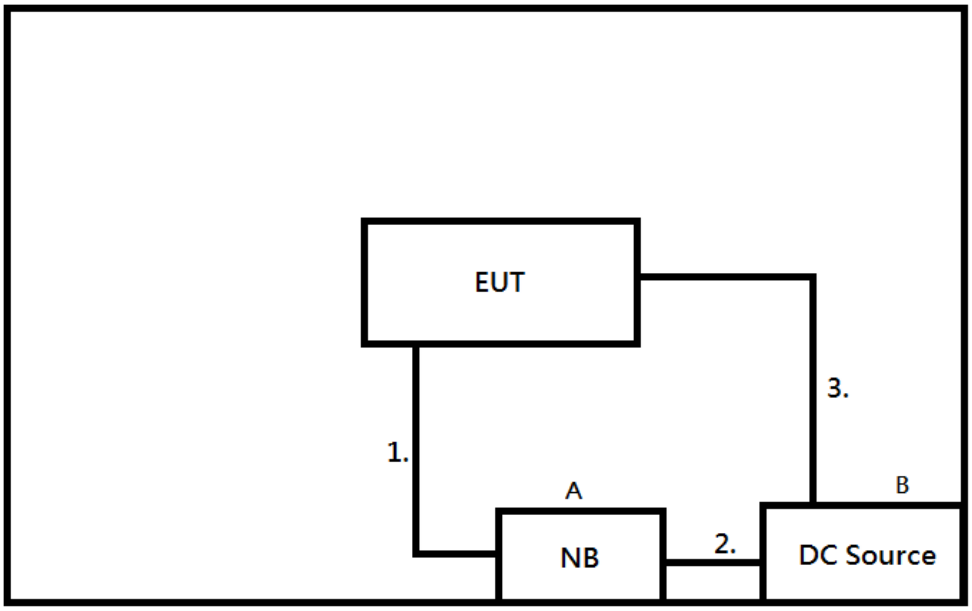
Test Items	Test mode	Channel	Note
Transmitter Radiated Emissions (below 1GHz)	TX Mode_IEEE 802.11a	48	-
Transmitter Radiated Emissions (above 1GHz)	TX Mode_IEEE 802.11a	36/40/48 52/60/64 100/116/140 149/157/165	-
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11n (HT40)	38/46/54/62 102/110/134 151/159	-
Bandwidth	TX Mode_IEEE 802.11a	36/40/48 52/60/64 100/116/140 149/157/165	-
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11n (HT40)	38/46/54/62 102/110/134 151/159	
Output Power	TX Mode_IEEE 802.11a	36/40/48 52/60/64 100/116/140 149/157/165	-
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11n (HT40)	38/46/54/62 102/110/134 151/159	
Power Spectral Density	TX Mode_IEEE 802.11a	36/40/48 52/60/64 100/116/140 149/157/165	-
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11n (HT40)	38/46/54/62 102/110/134 151/159	

NOTE:
(1) The Radiated emissions test was verified based on the worst conducted power and Bandwidth test results reported in the original report.
(2) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Horizontal) is recorded.
(3) All X, Y and Z axes are evaluated, but only the worst case (Y axis) is recorded.
(4) There were no emissions found below 30 MHz within 20 dB of the limit.

2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4.

Radiated Emissions



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	notebook	hp	TPN-1119	NA	-
B	DC Source	twintex	TP-6010	1616AP051502100	-

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	NO	NO	1m	Lan to USB	-
2	YES	NO	0.5m	RS232 to USB	-
3	NO	NO	1.5m	Power cable	-

3 RADIATED EMISSIONS TEST

3.1 LIMIT

In case the emission fall within the restricted band specified on 15.205, then the 15.209 limit in the table below has to be followed.

LIMITS OF RADIATED EMISSIONS MEASUREMENT (9 kHz to 1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dBμV/m)
5150-5250	-27	68.3
5250-5350	-27	68.3
5470-5725	-27	68.3
5725-5850	-27 (NOTE 2)	68.3
	10 (NOTE 2)	105.3
	15.6 (NOTE 2)	110.9
	27 (NOTE 2)	122.3

NOTE:

(1) The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts)

(2) According to FCC 16-24,All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value
Calculation example:

Reading Level		Correct Factor		Measurement Value
36.23	+	-11.97	=	24.26

Measurement Value		Limit Value		Margin Level
24.26	-	40	=	-15.74

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average

Spectrum Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

3.2 TEST PROCEDURE

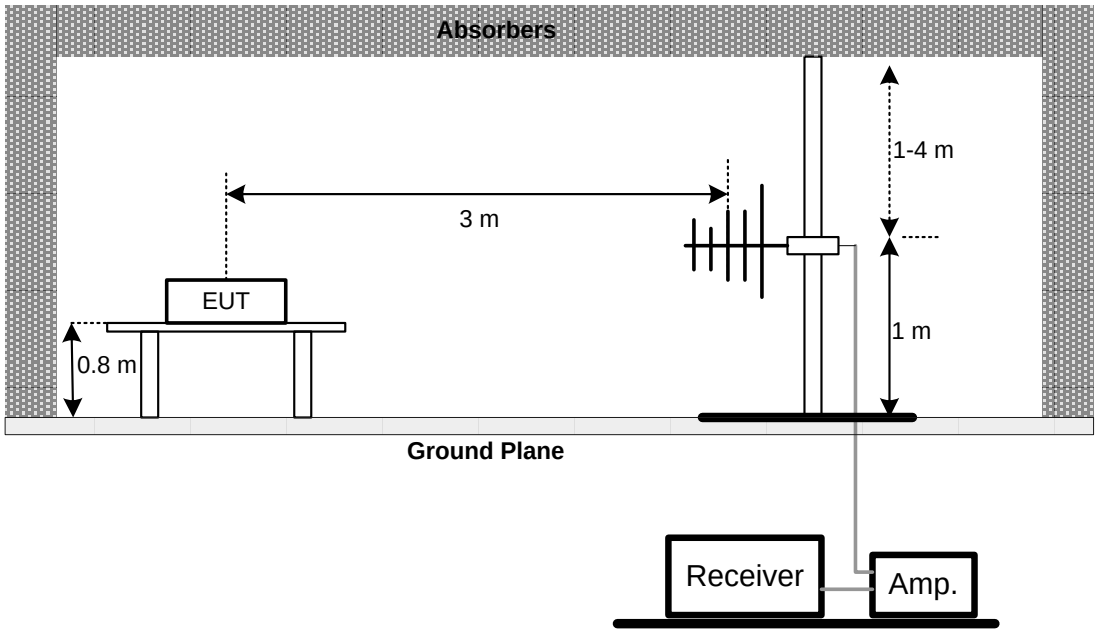
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
i. For the actual test configuration, please refer to the related Item – EUT TEST PHOTO.

3.3 DEVIATION FROM TEST STANDARD

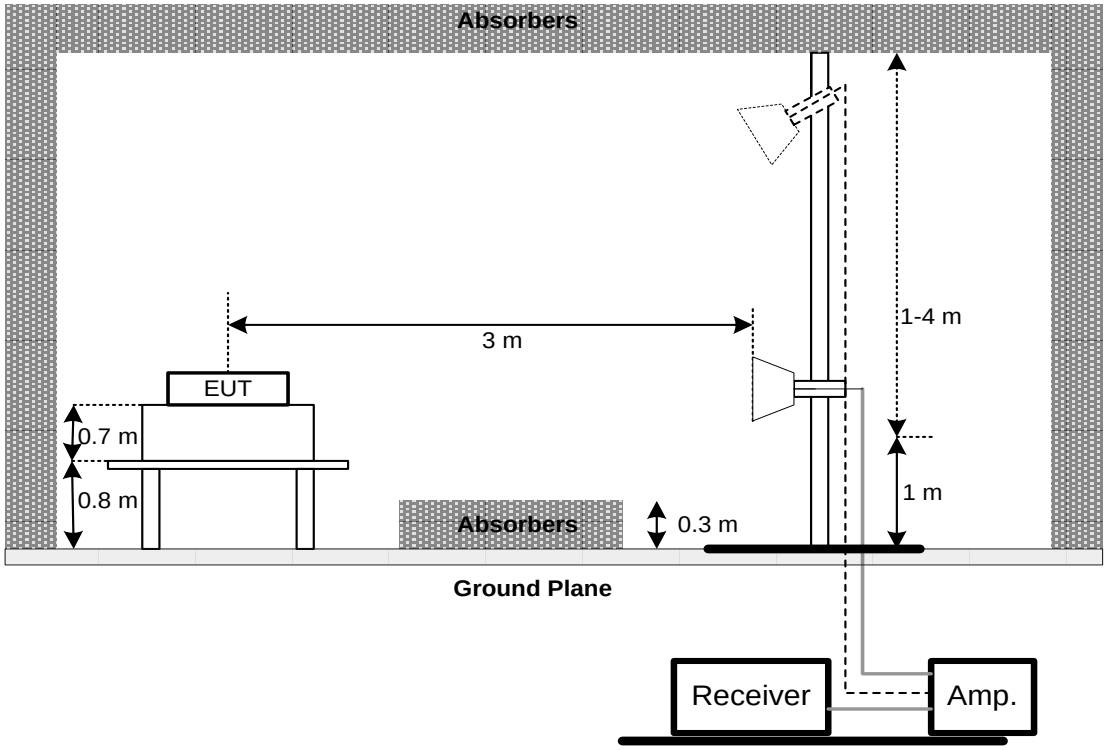
No deviation.

3.4 TEST SETUP

30 MHz to 1 GHz



Above 1 GHz



3.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

3.6 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX A.

3.7 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX B.

NOTE:

(1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

4 BANDWIDTH TEST

4.1 LIMIT

FCC Part15, Subpart E (15.407)		
Section	Test Item	Frequency Range (MHz)
15.407(a)	26 dB Bandwidth	5150-5250
		5250-5350
		5470-5725
	Minimum 500 kHz 6 dB Bandwidth	5725-5850

4.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting:

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> 26 dB Bandwidth
RBW	300 kHz(Bandwidth 20 MHz) 1 MHz(Bandwidth 40 MHz and 80 MHz)
VBW	1 MHz(Bandwidth 20 MHz) 3 MHz(Bandwidth 40 MHz and 80 MHz)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP

4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT

Please refer to the APPENDIX C.

5 OUTPUT POWER TEST

5.1 LIMIT

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Maximum Output Power	Fixed:1 Watt (30 dBm) Mobile and portable: 250 mW (24 dBm)	5150-5250
		250 mW (24 dBm)	5250-5350
			5470-5725
		1 Watt (30dBm)	5725-5850
Note: The maximum e.i.r.p at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW(21 dBm).			

5.2 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
b. Spectrum Setting:

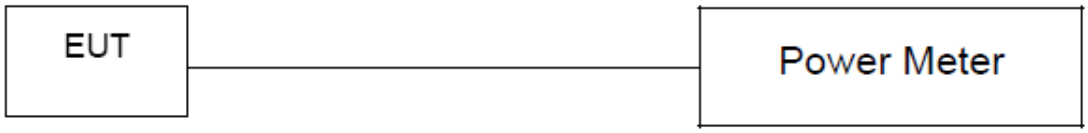
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	= 1 MHz
VBW	≥ 3 MHz
Detector	RMS
Trace	Max Hold
Sweep Time	auto

c. The maximum peak conducted output power was performed in accordance with method of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

5.3 DEVIATION FROM TEST STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT

Please refer to the APPENDIX D.

6 POWER SPECTRAL DENSITY

6.1 LIMIT

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Power Spectral Density	Other than Mobile and portable: 17 dBm/MHz Mobile and portable: 11 dBm/MHz	5150-5250
		11 dBm/MHz	5250-5350
			5470-5725
		30 dBm/500 kHz	5725-5850

6.2 TEST PROCEDURE

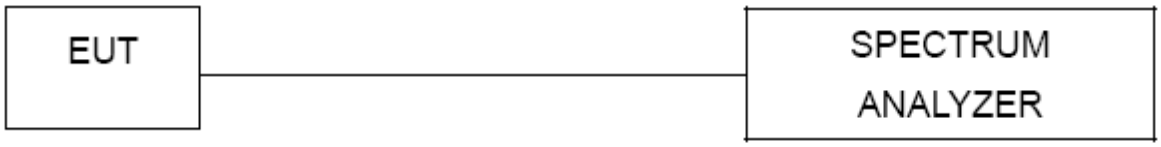
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting:

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	= 1 MHz
VBW	≥ 3 MHz
Detector	RMS
Trace	Max Hold
Sweep Time	Auto

6.3 DEVIATION FROM TEST STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULT

Please refer to the APPENDIX E.

7 LIST OF MEASURING EQUIPMENTS

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC02325B	980217	2019/4/12	2020/4/11
2	Preamplifier	EMCI	EMC012645B	980267	2019/4/12	2020/4/11
3	Preamplifier	EMCI	EMC2654045	980030	2019/2/2	2020/2/1
4	Test Cable	EMCI	EMC104-SM-SM-800	150207	2019/4/12	2020/4/11
5	Test Cable	EMCI	EMC104-SM-SM-3000	151205	2019/4/12	2020/4/11
6	Test Cable	EMCI	EMC-SM-SM-7000	180408	2019/4/12	2020/4/11
7	MXE EMI Receiver	Agilent	N9038A	MY55420127	2019/3/26	2020/3/25
8	Signal Analyzer	Agilent	N9010A	MY56480554	2019/6/6	2020/6/5
9	Horm Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	2019/6/10	2020/6/9
10	Horm Ant	Schwarzbeck	BBHA 9170	187	2018/12/22	2019/12/21
11	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	000992	2019/5/29	2020/5/28
12	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0508	2019/5/29	2020/5/28

Bandwidth						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP40	100129	2019/5/23	2020/5/22

Output Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Power Meter	Anritsu	ML2495A	1128008	2019/12/6	2020/12/4
2	Power Sensor	Anritsu	MA2411B	1126001	2019/12/6	2020/12/4

Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP40	100129	2019/5/23	2020/5/22

Remark: “N/A” denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

8 EUT TEST PHOTO

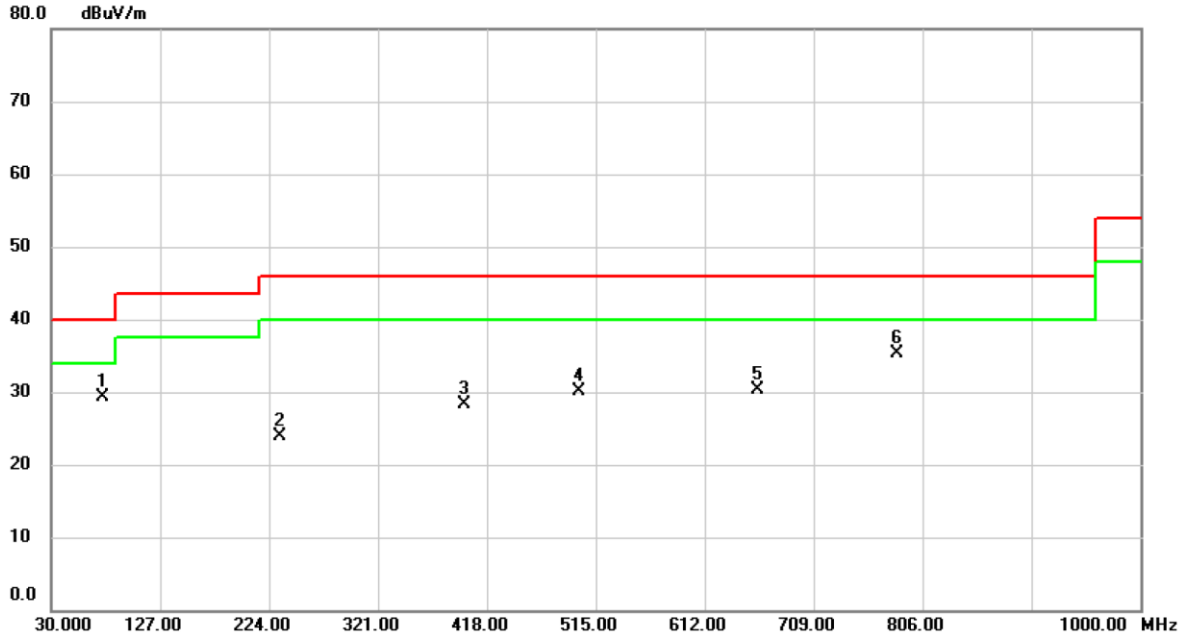
Please refer to document Appendix No.: TP-1911T165-FCCP-1 (APPENDIX-TEST PHOTOS).

9 EUT PHOTOS

Please refer to document Appendix No.: EP-1911T165-1 (APPENDIX-EUT PHOTOS).

APPENDIX A RADIATED EMISSIONS - 30 MHZ TO 1 GHZ

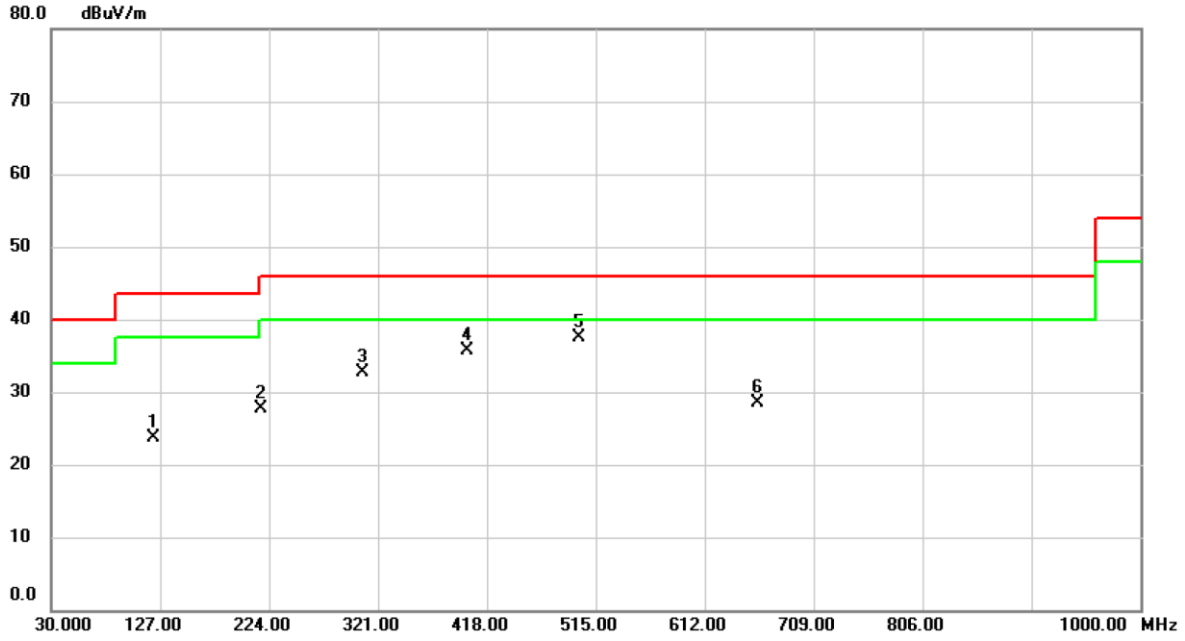
Test Mode	IEEE 802.11a	Test Date	2019/12/29
Test Frequency	CH36: 5180 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	75.5900	44.19	-14.86	29.33	40.00	-10.67	peak	
2		233.7000	37.86	-13.90	23.96	46.00	-22.04	peak	
3		397.6300	36.69	-8.41	28.28	46.00	-17.72	peak	
4		499.4800	36.30	-6.15	30.15	46.00	-15.85	peak	
5		659.5300	33.33	-3.12	30.21	46.00	-15.79	peak	
6		783.6900	36.35	-1.02	35.33	46.00	-10.67	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11a	Test Date	2019/12/29
Test Frequency	CH36: 5180 MHz	Polarization	Horizontal

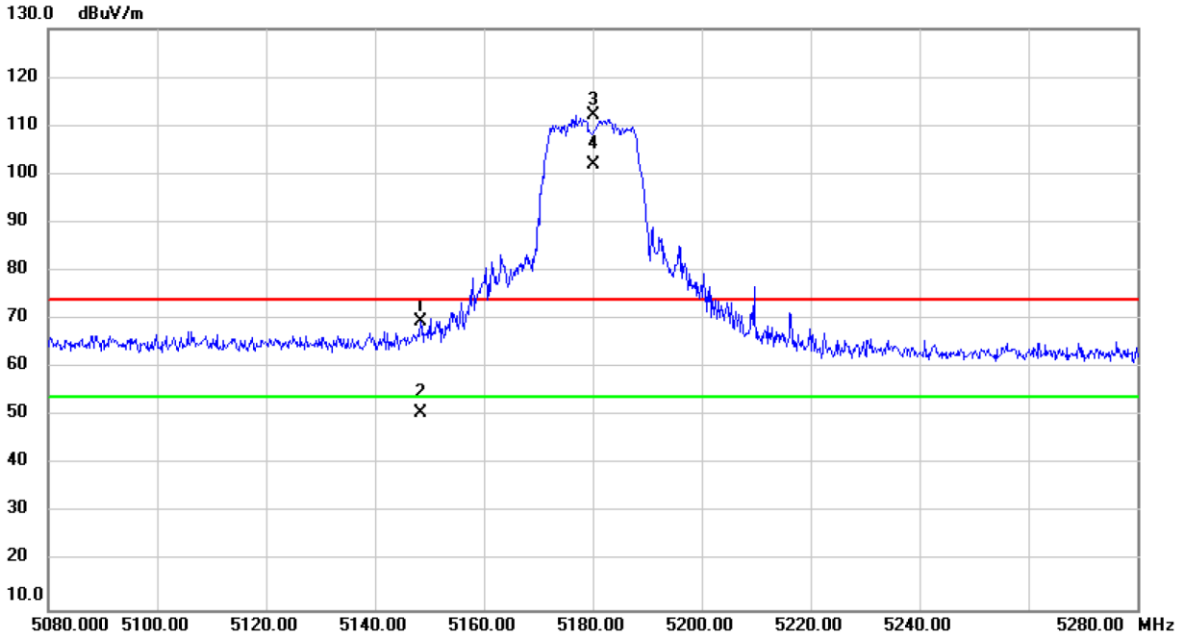


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		121.1800	37.17	-13.38	23.79	43.50	-19.71	peak	
2		217.2100	42.40	-14.64	27.76	46.00	-18.24	peak	
3		307.4200	42.88	-10.22	32.66	46.00	-13.34	peak	
4		400.5400	43.99	-8.35	35.64	46.00	-10.36	peak	
5	*	500.4500	43.53	-6.12	37.41	46.00	-8.59	peak	
6		659.5300	31.72	-3.12	28.60	46.00	-17.40	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX B RADIATED EMISSIONS - ABOVE 1 GHZ

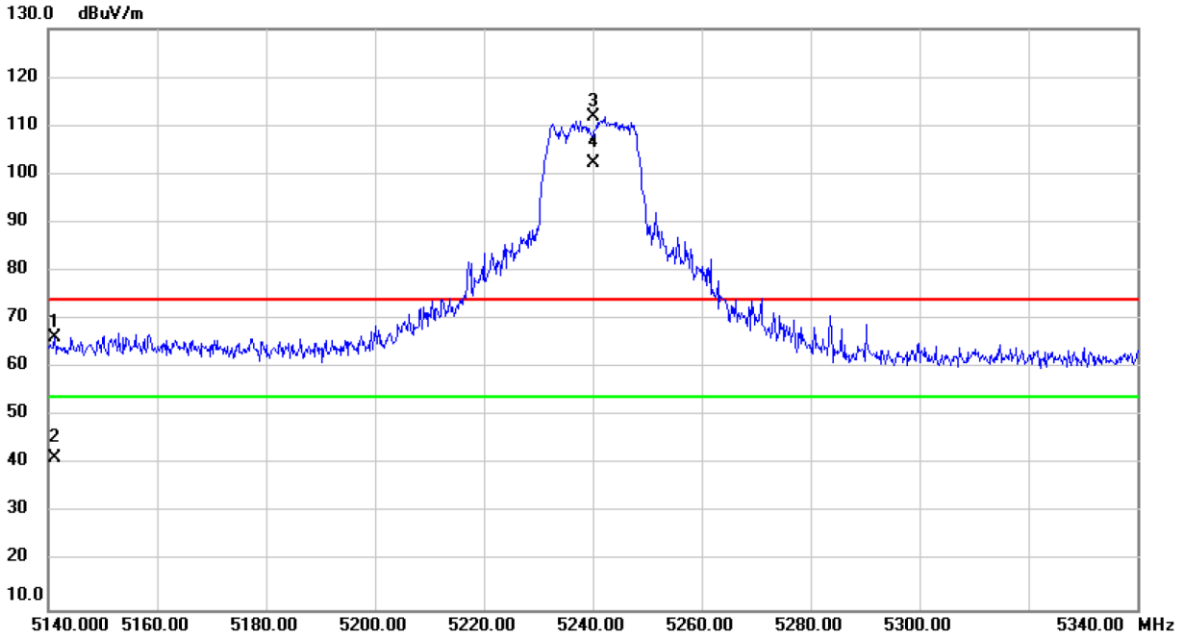
Test Mode	IEEE 802.11a	Test Date	2019/12/27
Test Frequency	CH36: 5180 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5148.400	31.64	37.80	69.44	74.00	-4.56	peak	
2		5148.400	12.75	37.80	50.55	54.00	-3.45	AVG	
3	X	5180.000	74.24	37.83	112.07	74.00	38.07	peak	No Limit
4	*	5180.000	64.04	37.83	101.87	54.00	47.87	AVG	No Limit

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

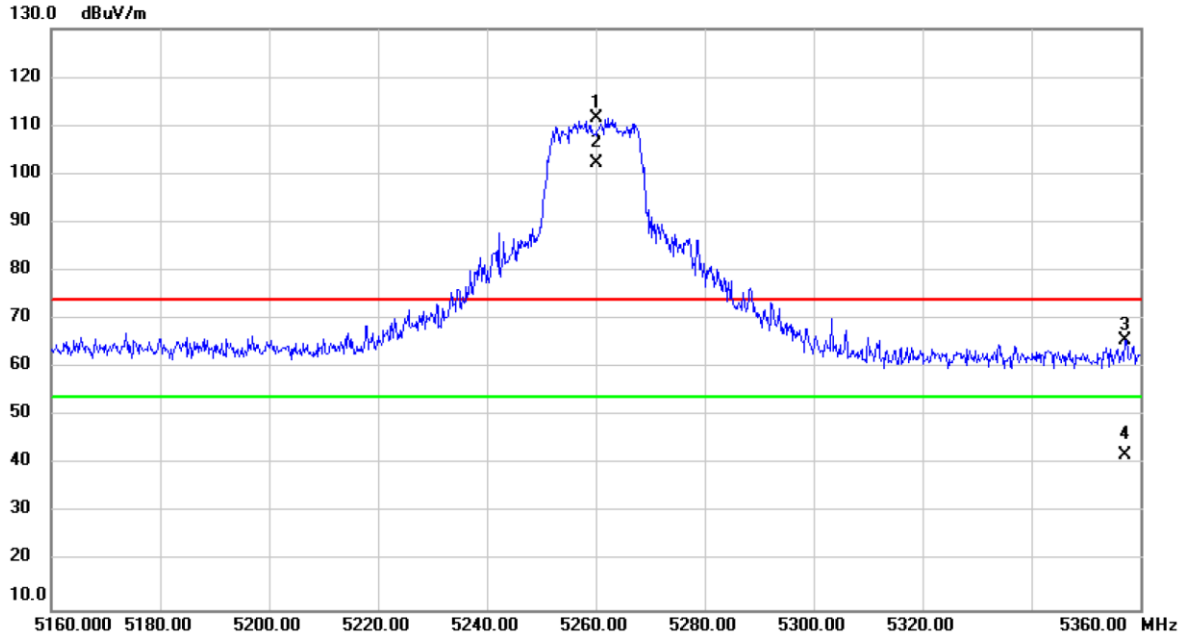
Test Mode	IEEE 802.11a	Test Date	2019/12/27
Test Frequency	CH48: 5240 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5141.200	28.37	37.78	66.15	74.00	-7.85	peak	
2		5141.200	3.57	37.78	41.35	54.00	-12.65	AVG	
3	X	5240.000	73.85	37.90	111.75	74.00	37.75	peak	No Limit
4	*	5240.000	64.46	37.90	102.36	54.00	48.36	AVG	No Limit

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

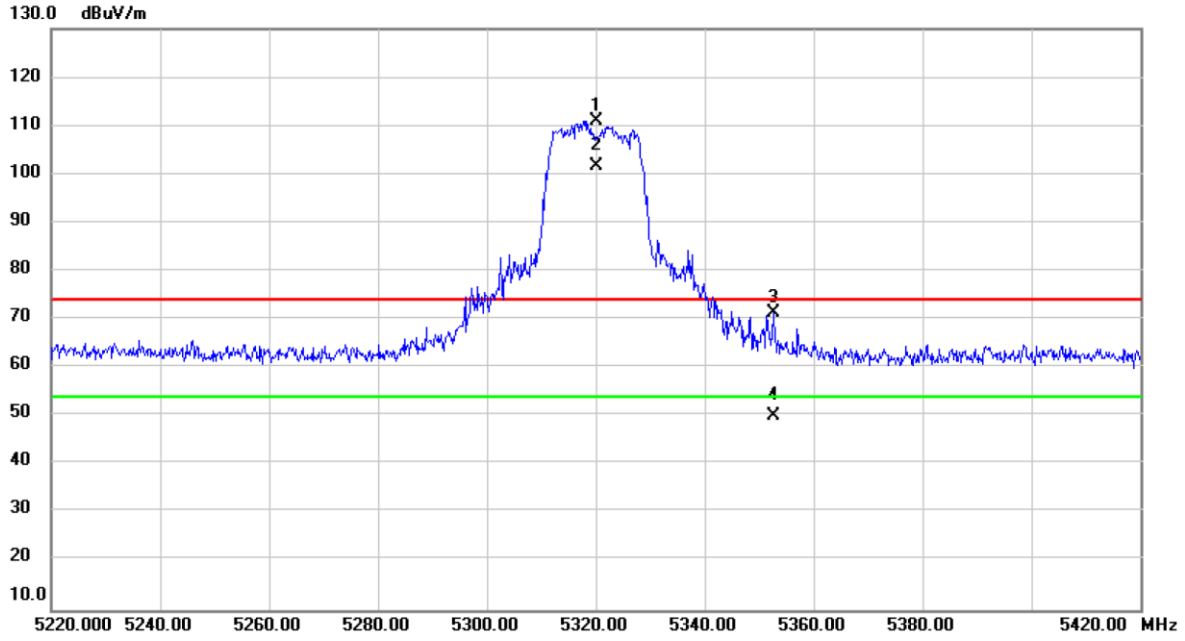
Test Mode	IEEE 802.11a	Test Date	2019/12/27
Test Frequency	CH52: 5260 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5260.000	73.71	37.93	111.64	74.00	37.64	peak	No Limit
2	*	5260.000	64.23	37.93	102.16	54.00	48.16	AVG	No Limit
3		5357.200	27.68	38.04	65.72	74.00	-8.28	peak	
4		5357.200	4.05	38.04	42.09	54.00	-11.91	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

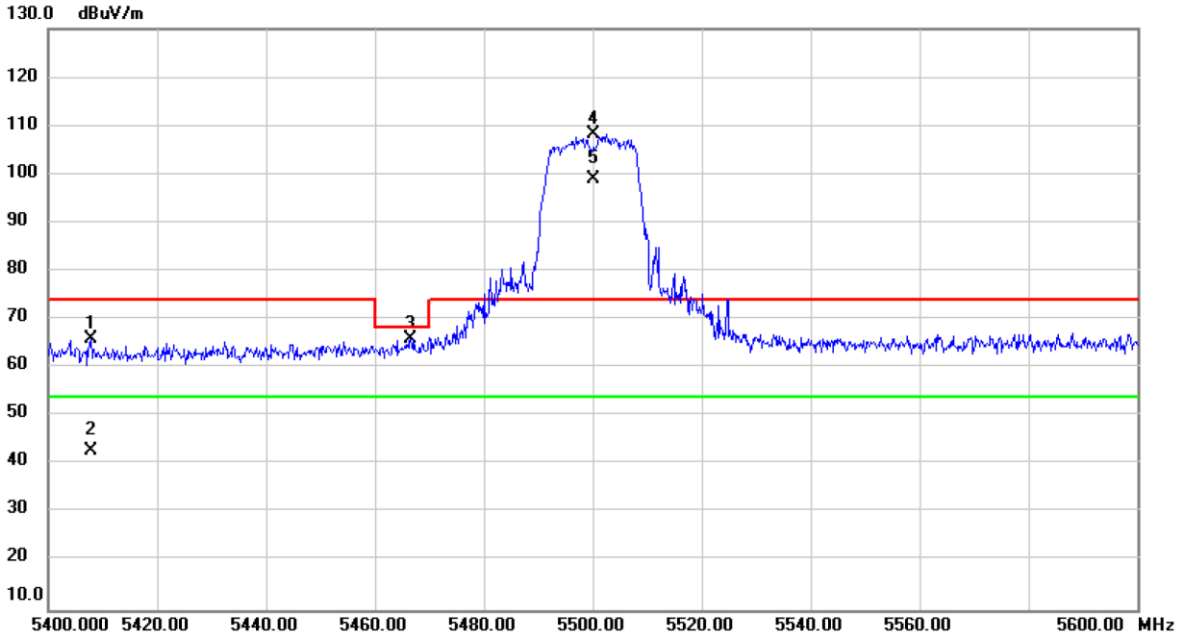
Test Mode	IEEE 802.11a	Test Date	2019/12/27
Test Frequency	CH64: 5320 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5320.000	72.99	38.00	110.99	74.00	36.99	peak	No Limit
2	*	5320.000	63.68	38.00	101.68	54.00	47.68	AVG	No Limit
3		5352.600	33.27	38.03	71.30	74.00	-2.70	peak	
4		5352.600	11.98	38.03	50.01	54.00	-3.99	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

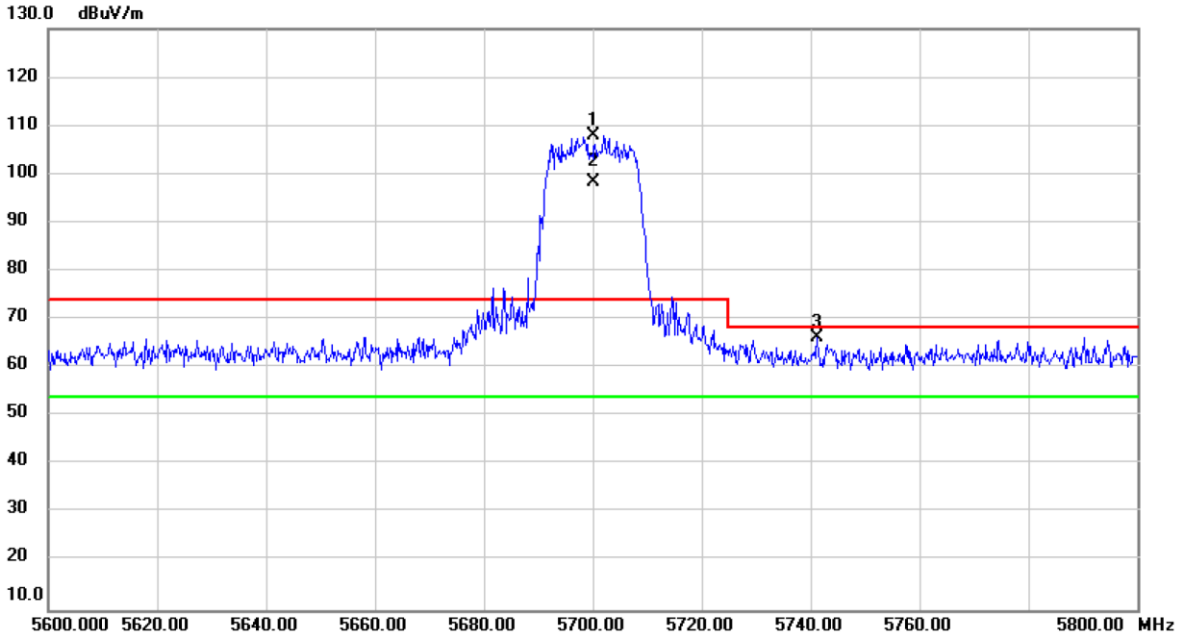
Test Mode	IEEE 802.11a	Test Date	2019/12/27
Test Frequency	CH100: 5500 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5407.800	27.79	38.10	65.89	74.00	-8.11	peak	
2		5407.800	4.85	38.10	42.95	54.00	-11.05	AVG	
3		5466.600	27.87	38.17	66.04	68.20	-2.16	peak	
4	X	5500.000	70.11	38.21	108.32	74.00	34.32	peak	No Limit
5	*	5500.000	60.81	38.21	99.02	54.00	45.02	AVG	No Limit

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

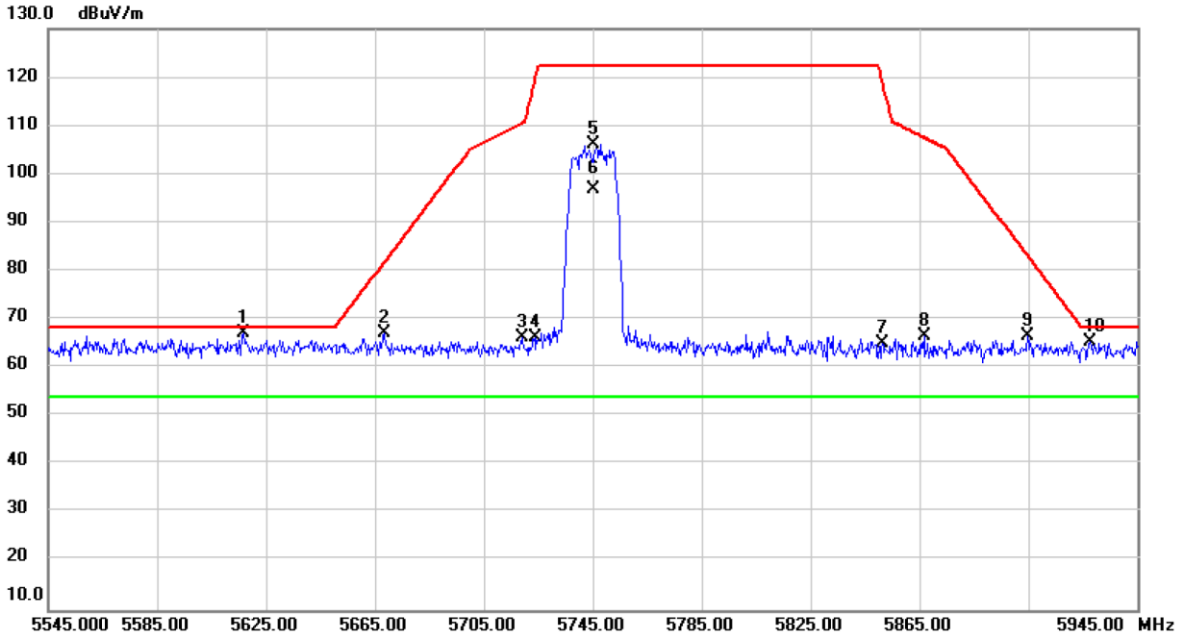
Test Mode	IEEE 802.11a	Test Date	2019/12/27
Test Frequency	CH140: 5700 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5700.000	69.58	38.36	107.94	74.00	33.94	peak	No Limit
2	*	5700.000	59.98	38.36	98.34	54.00	44.34	AVG	No Limit
3		5741.200	27.80	38.39	66.19	68.20	-2.01	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

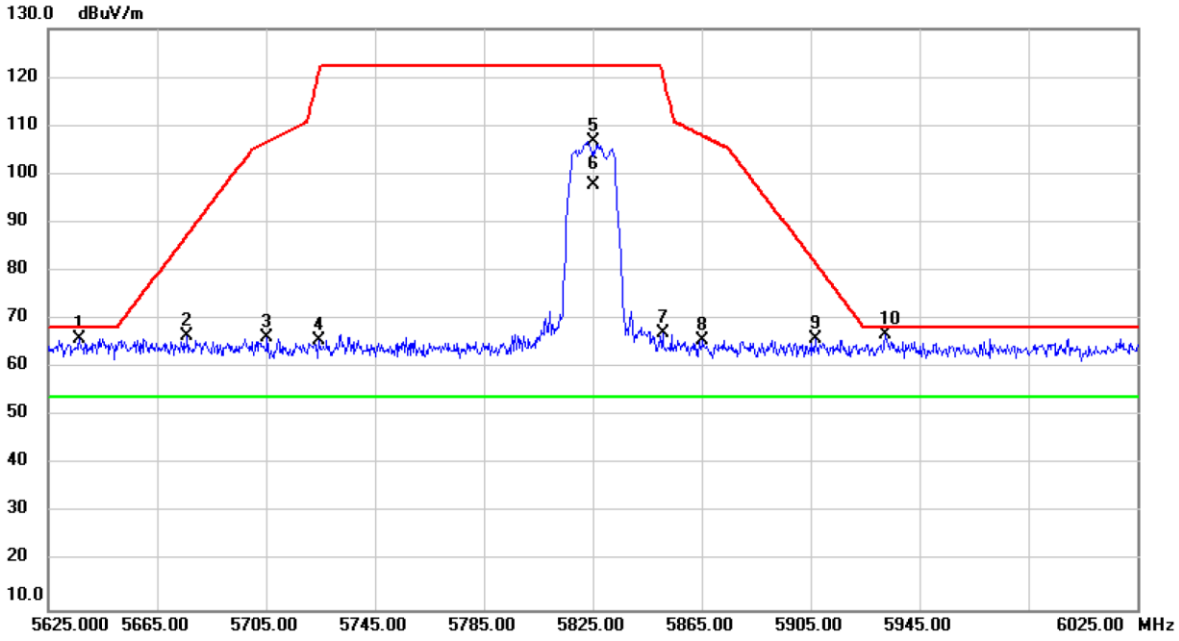
Test Mode	IEEE 802.11a	Test Date	2019/12/27
Test Frequency	CH149: 5745 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5616.600	28.90	38.29	67.19	68.20	-1.01	peak	
2		5668.600	28.95	38.34	67.29	81.96	-14.67	peak	
3		5719.000	27.88	38.38	66.26	110.52	-44.26	peak	
4		5723.800	27.77	38.37	66.14	119.46	-53.32	peak	
5		5745.000	67.63	38.39	106.02	122.20	-16.18	peak	No Limit
6	*	5745.000	58.49	38.39	96.88	54.00	42.88	AVG	No Limit
7		5851.400	26.63	38.47	65.10	119.01	-53.91	peak	
8		5866.600	28.01	38.48	66.49	107.55	-41.06	peak	
9		5904.600	28.08	38.51	66.59	83.30	-16.71	peak	
10		5927.800	26.94	38.53	65.47	68.20	-2.73	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

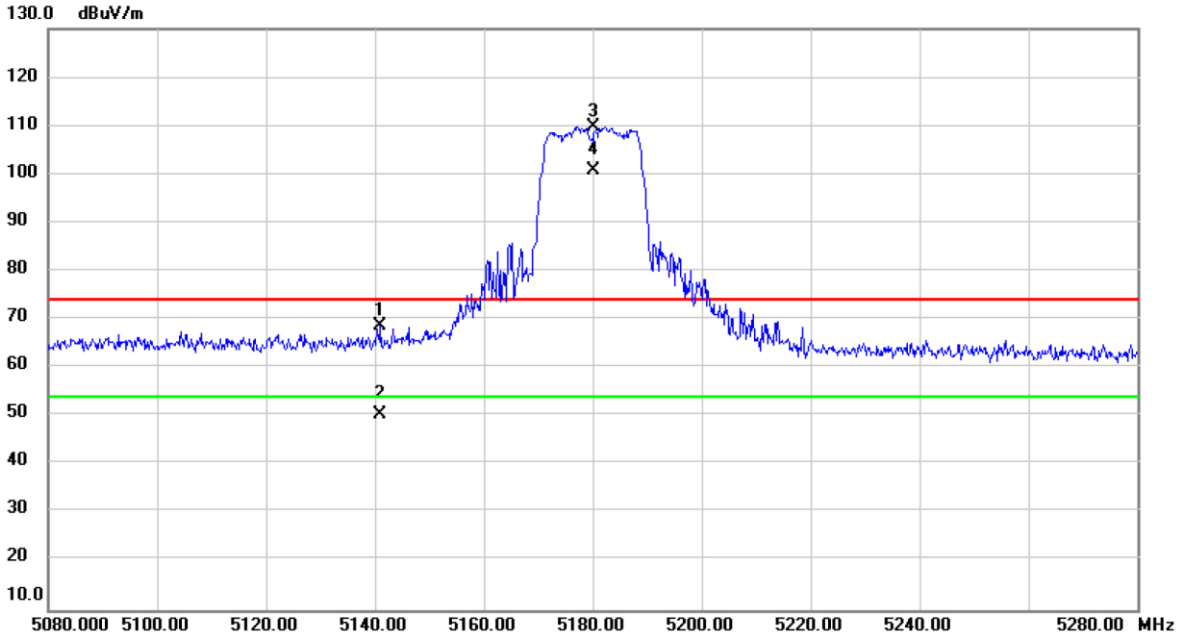
Test Mode	IEEE 802.11a	Test Date	2019/12/27
Test Frequency	CH165: 5825 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5636.600	27.79	38.31	66.10	68.20	-2.10	peak	
2		5676.200	28.19	38.34	66.53	87.59	-21.06	peak	
3		5705.400	27.82	38.36	66.18	106.71	-40.53	peak	
4		5724.600	27.35	38.37	65.72	121.29	-55.57	peak	
5		5825.000	68.38	38.46	106.84	122.20	-15.36	peak	No Limit
6	*	5825.000	59.41	38.46	97.87	54.00	43.87	AVG	No Limit
7		5850.600	28.75	38.47	67.22	120.83	-53.61	peak	
8		5865.400	27.19	38.48	65.67	107.89	-42.22	peak	
9		5906.600	27.34	38.51	65.85	81.82	-15.97	peak	
10		5932.600	28.26	38.53	66.79	68.20	-1.41	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

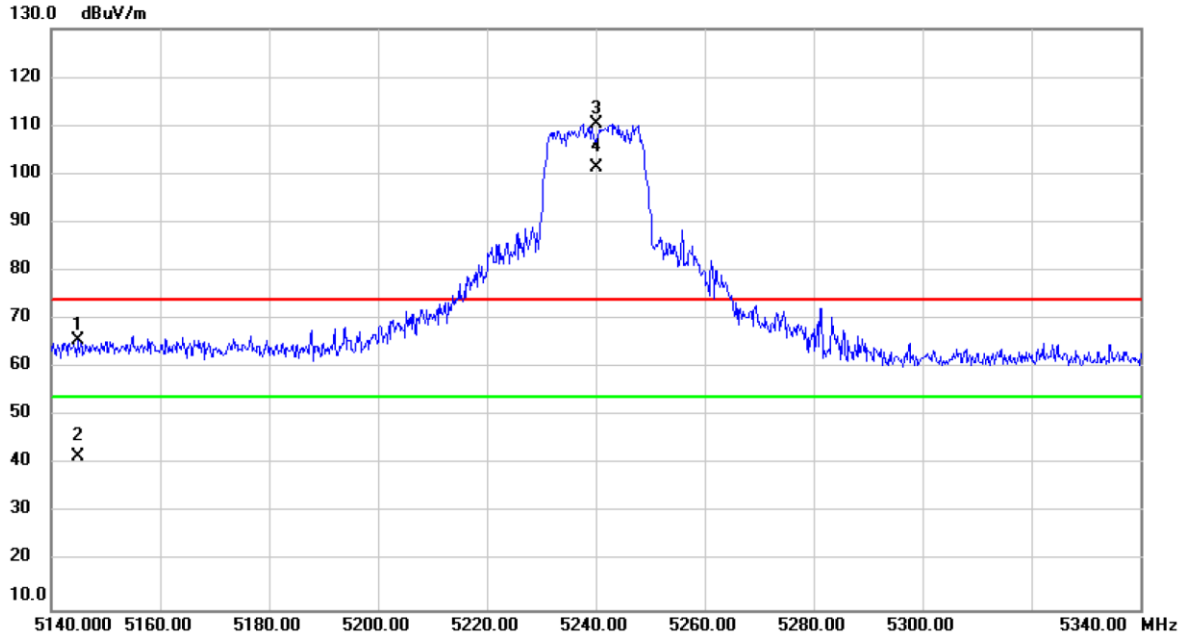
Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/27
Test Frequency	CH36: 5180 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5141.000	30.96	37.78	68.74	74.00	-5.26	peak	
2		5141.000	12.47	37.78	50.25	54.00	-3.75	AVG	
3	X	5180.000	71.98	37.83	109.81	74.00	35.81	peak	No Limit
4	*	5180.000	62.92	37.83	100.75	54.00	46.75	AVG	No Limit

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

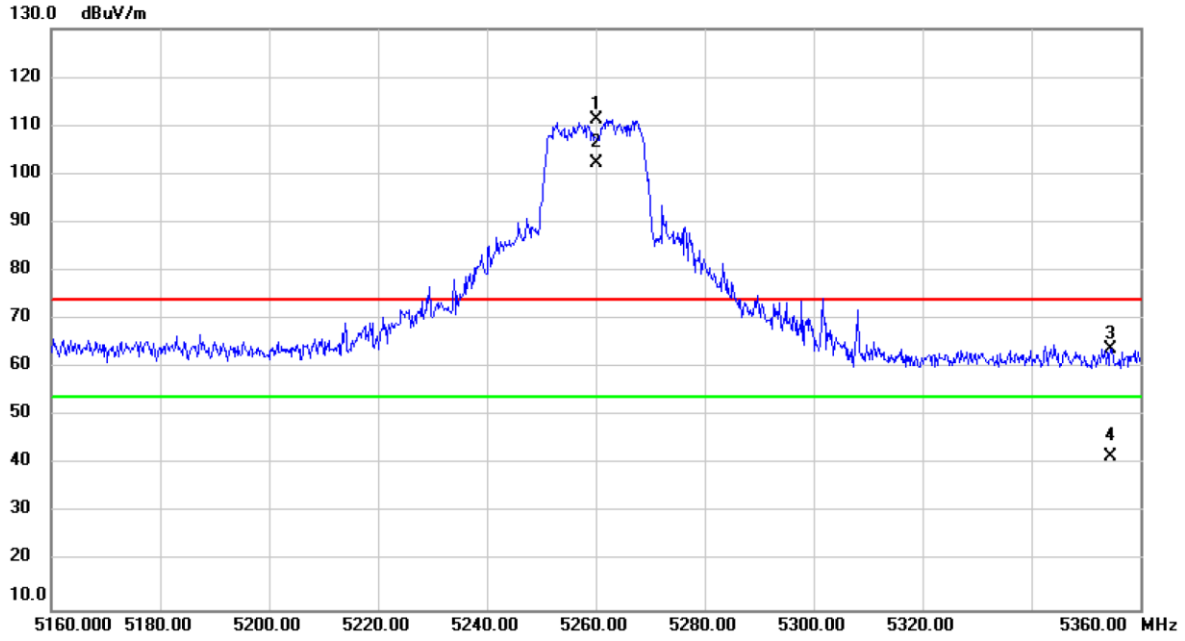
Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/27
Test Frequency	CH48: 5240 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5144.800	27.96	37.79	65.75	74.00	-8.25	peak	
2		5144.800	3.76	37.79	41.55	54.00	-12.45	AVG	
3	X	5240.000	72.45	37.90	110.35	74.00	36.35	peak	No Limit
4	*	5240.000	63.60	37.90	101.50	54.00	47.50	AVG	No Limit

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

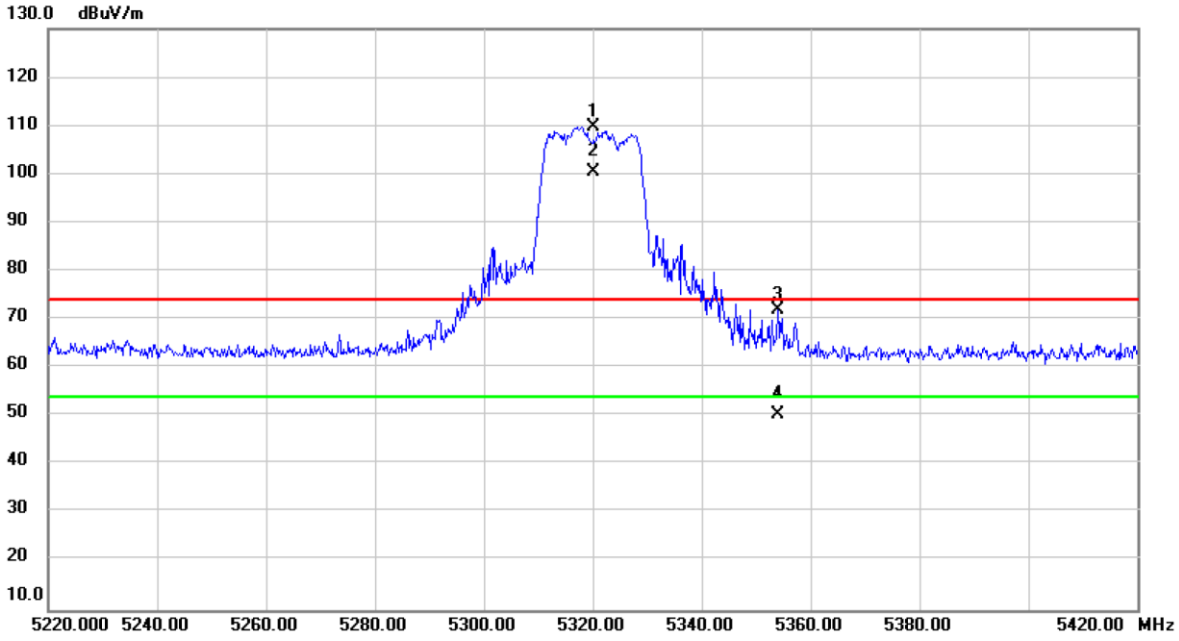
Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/27
Test Frequency	CH52: 5260 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5260.000	73.28	37.93	111.21	74.00	37.21	peak	No Limit
2	*	5260.000	64.26	37.93	102.19	54.00	48.19	AVG	No Limit
3		5354.600	25.81	38.04	63.85	74.00	-10.15	peak	
4		5354.600	3.56	38.04	41.60	54.00	-12.40	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

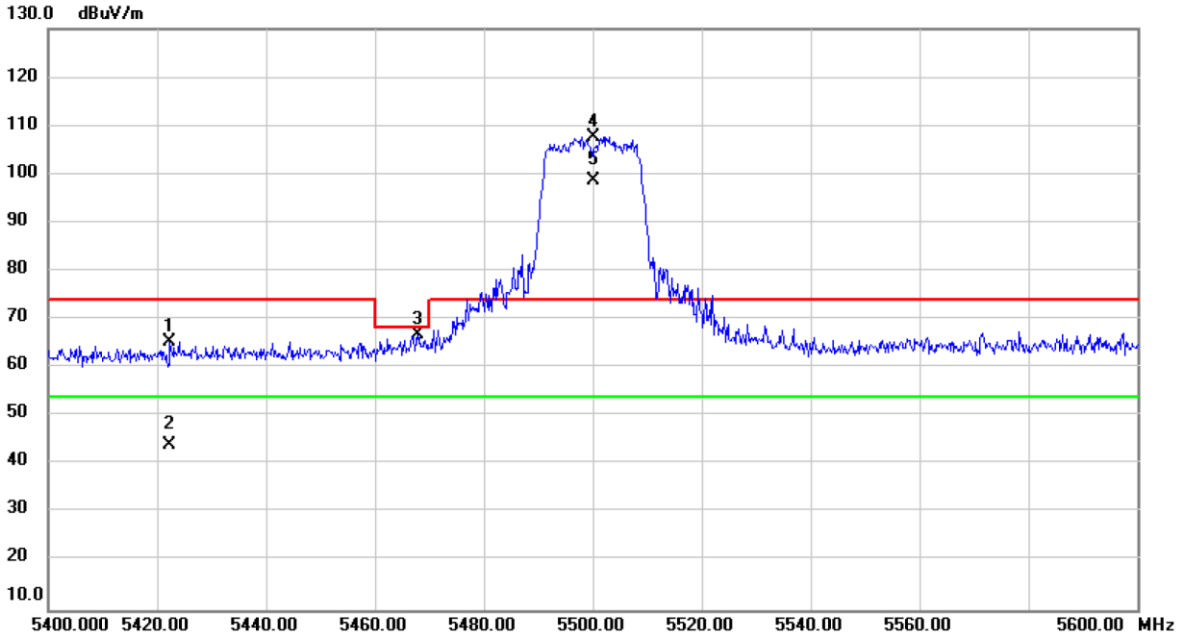
Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/27
Test Frequency	CH64: 5320 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5320.000	71.72	38.00	109.72	74.00	35.72	peak	No Limit
2	*	5320.000	62.41	38.00	100.41	54.00	46.41	AVG	No Limit
3		5354.000	33.91	38.04	71.95	74.00	-2.05	peak	
4		5354.000	12.32	38.04	50.36	54.00	-3.64	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

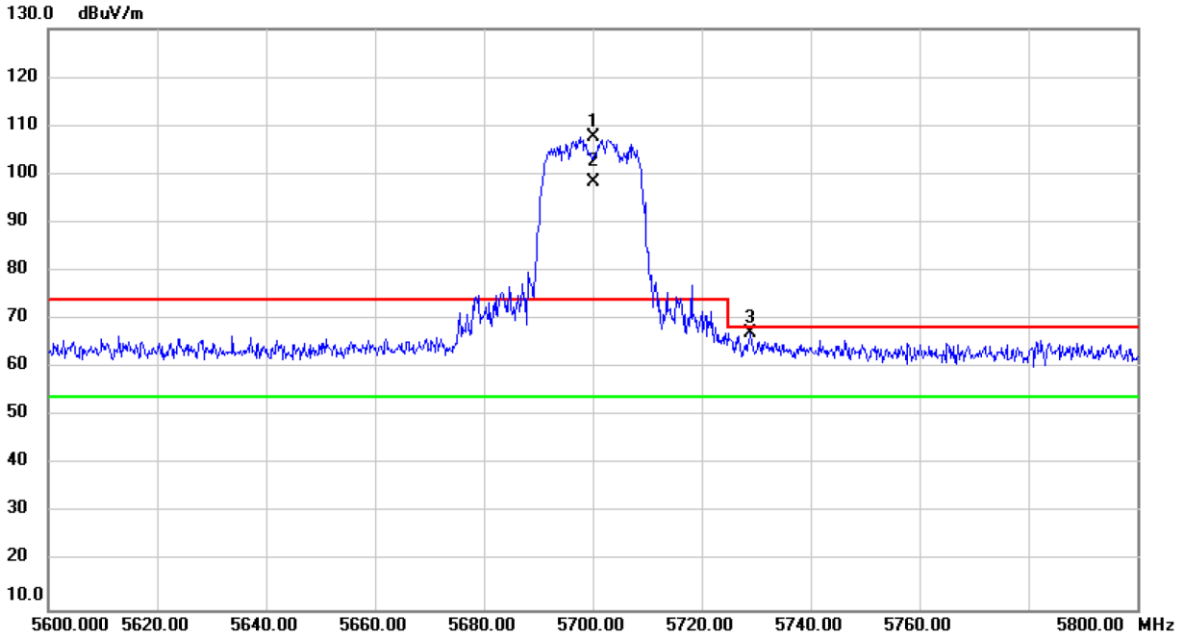
Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/27
Test Frequency	CH100: 5500 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5422.400	27.25	38.11	65.36	74.00	-8.64	peak	
2		5422.400	5.93	38.11	44.04	54.00	-9.96	AVG	
3		5467.800	28.54	38.17	66.71	68.20	-1.49	peak	
4	X	5500.000	69.50	38.21	107.71	74.00	33.71	peak	No Limit
5	*	5500.000	60.46	38.21	98.67	54.00	44.67	AVG	No Limit

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

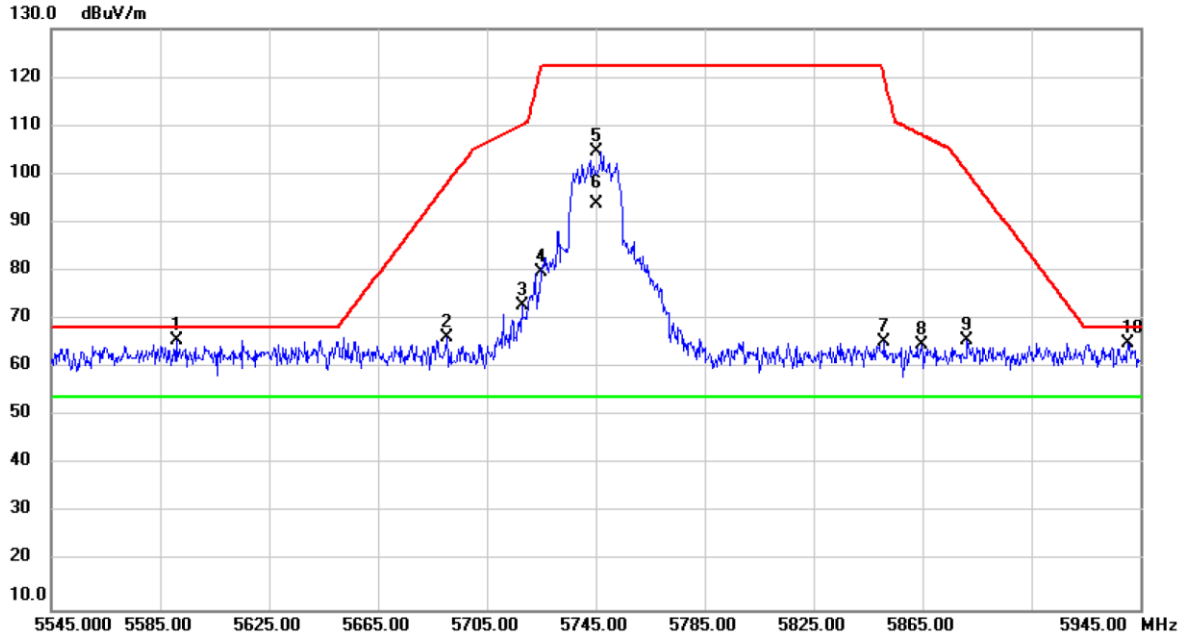
Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/27
Test Frequency	CH140: 5700 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5700.000	69.33	38.36	107.69	74.00	33.69	peak	No Limit
2	*	5700.000	59.88	38.36	98.24	54.00	44.24	AVG	No Limit
3		5729.000	28.67	38.38	67.05	68.20	-1.15	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

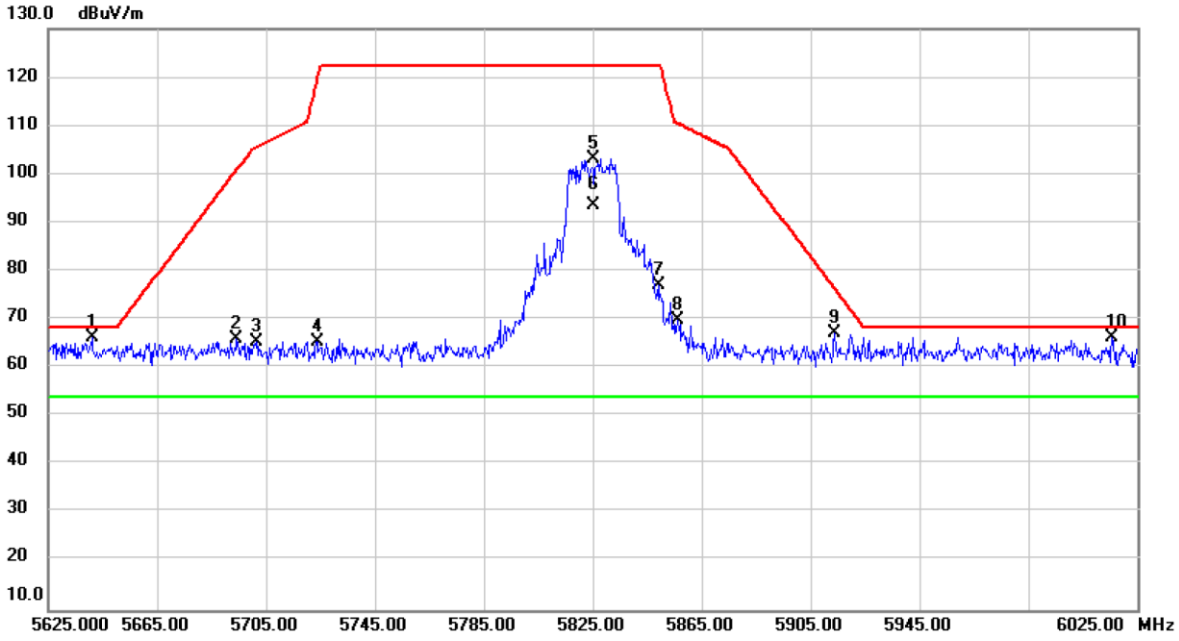
Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/27
Test Frequency	CH149: 5745 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5591.000	27.48	38.28	65.76	68.20	-2.44	peak	
2		5690.200	27.85	38.35	66.20	97.95	-31.75	peak	
3		5717.800	34.58	38.37	72.95	110.18	-37.23	peak	
4		5725.000	41.46	38.38	79.84	122.20	-42.36	peak	
5		5745.000	66.24	38.39	104.63	122.20	-17.57	peak	
6	*	5745.000	55.55	38.39	93.94	54.00	39.94	AVG	
7		5851.000	26.86	38.47	65.33	119.92	-54.59	peak	
8		5864.600	26.31	38.48	64.79	108.11	-43.32	peak	
9		5881.400	27.15	38.49	65.64	100.46	-34.82	peak	
10		5940.600	26.47	38.54	65.01	68.20	-3.19	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

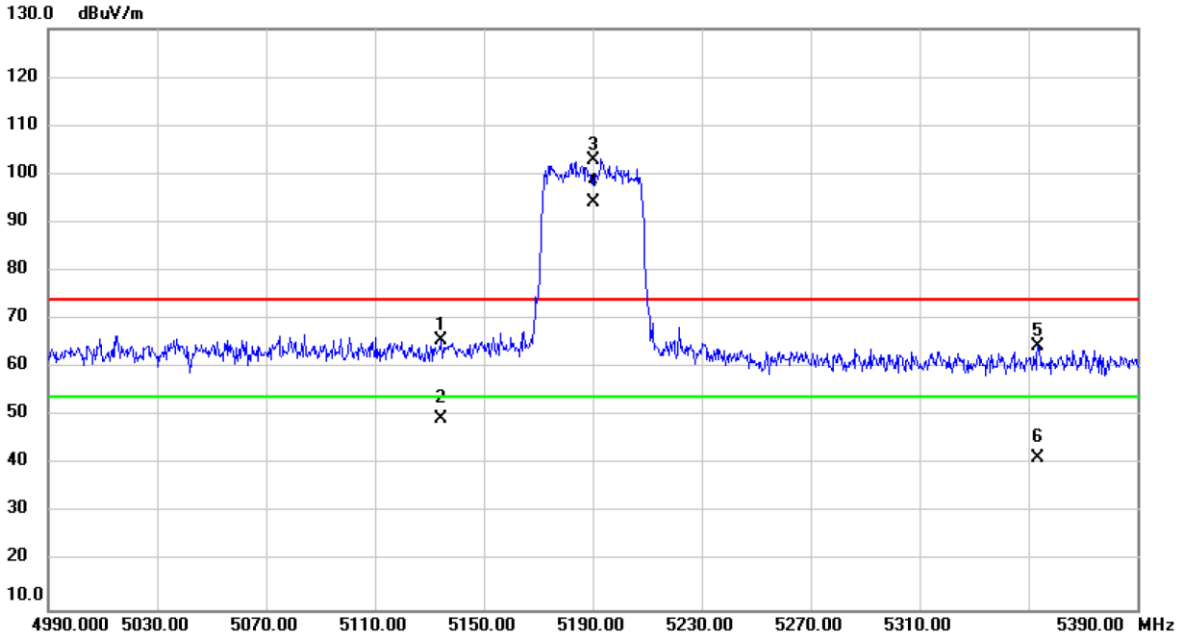
Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/27
Test Frequency	CH165: 5825 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5641.000	28.07	38.32	66.39	68.20	-1.81	peak	
2		5694.200	27.62	38.35	65.97	100.91	-34.94	peak	
3		5701.400	27.03	38.36	65.39	105.59	-40.20	peak	
4		5723.800	27.03	38.37	65.40	119.46	-54.06	peak	
5		5825.000	64.77	38.46	103.23	122.20	-18.97	peak	
6	*	5825.000	55.22	38.46	93.68	54.00	39.68	AVG	
7		5849.000	38.59	38.47	77.06	122.20	-45.14	peak	
8		5856.200	31.33	38.47	69.80	110.46	-40.66	peak	
9		5913.800	28.51	38.52	67.03	76.49	-9.46	peak	
10		6015.800	27.68	38.65	66.33	68.20	-1.87	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

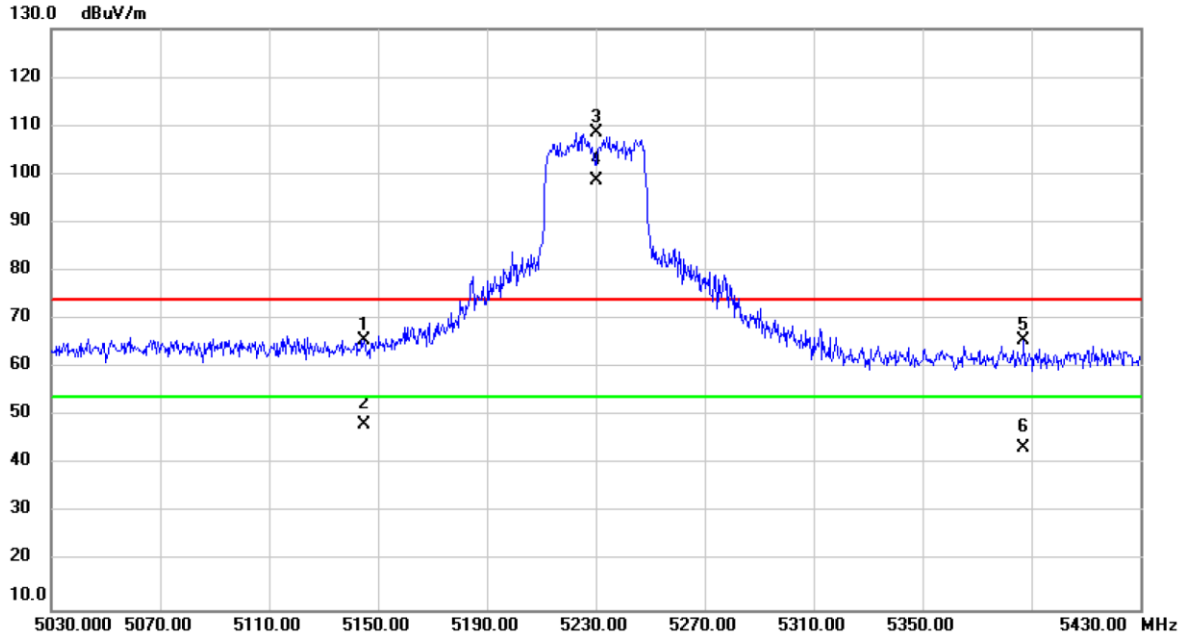
Test Mode	IEEE 802.11n (HT40)	Test Date	2019/12/27
Test Frequency	CH38: 5190 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5134.400	27.74	37.78	65.52	74.00	-8.48	peak	
2		5134.400	11.58	37.78	49.36	54.00	-4.64	AVG	
3	X	5190.000	65.16	37.84	103.00	74.00	29.00	peak	No Limit
4	*	5190.000	56.23	37.84	94.07	54.00	40.07	AVG	No Limit
5		5353.600	26.35	38.04	64.39	74.00	-9.61	peak	
6		5353.600	3.27	38.04	41.31	54.00	-12.69	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

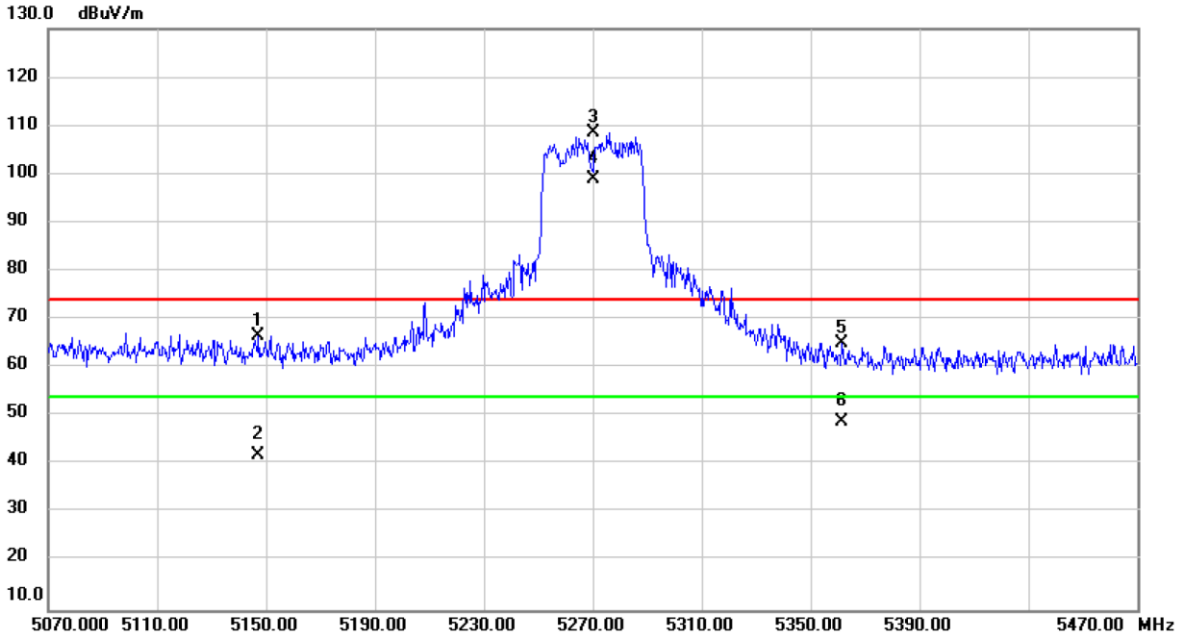
Test Mode	IEEE 802.11n (HT40)	Test Date	2019/12/27
Test Frequency	CH46: 5230 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5144.800	27.97	37.79	65.76	74.00	-8.24	peak	
2		5144.800	10.43	37.79	48.22	54.00	-5.78	AVG	
3	X	5230.000	70.72	37.89	108.61	74.00	34.61	peak	No Limit
4	*	5230.000	60.91	37.89	98.80	54.00	44.80	AVG	No Limit
5		5387.200	27.59	38.07	65.66	74.00	-8.34	peak	
6		5387.200	5.40	38.07	43.47	54.00	-10.53	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

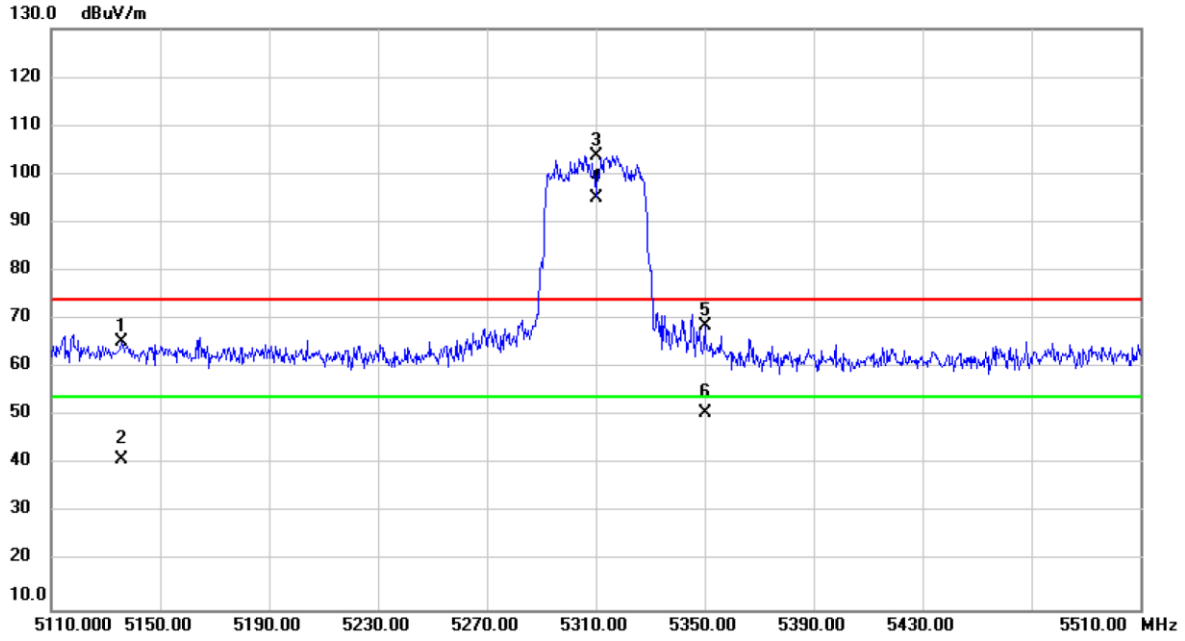
Test Mode	IEEE 802.11n (HT40)	Test Date	2019/12/27
Test Frequency	CH54: 5270 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5147.200	28.63	37.80	66.43	74.00	-7.57	peak	
2		5147.200	4.29	37.80	42.09	54.00	-11.91	AVG	
3	X	5270.000	70.57	37.94	108.51	74.00	34.51	peak	No Limit
4	*	5270.000	61.10	37.94	99.04	54.00	45.04	AVG	No Limit
5		5361.600	27.10	38.05	65.15	74.00	-8.85	peak	
6		5361.600	10.67	38.05	48.72	54.00	-5.28	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

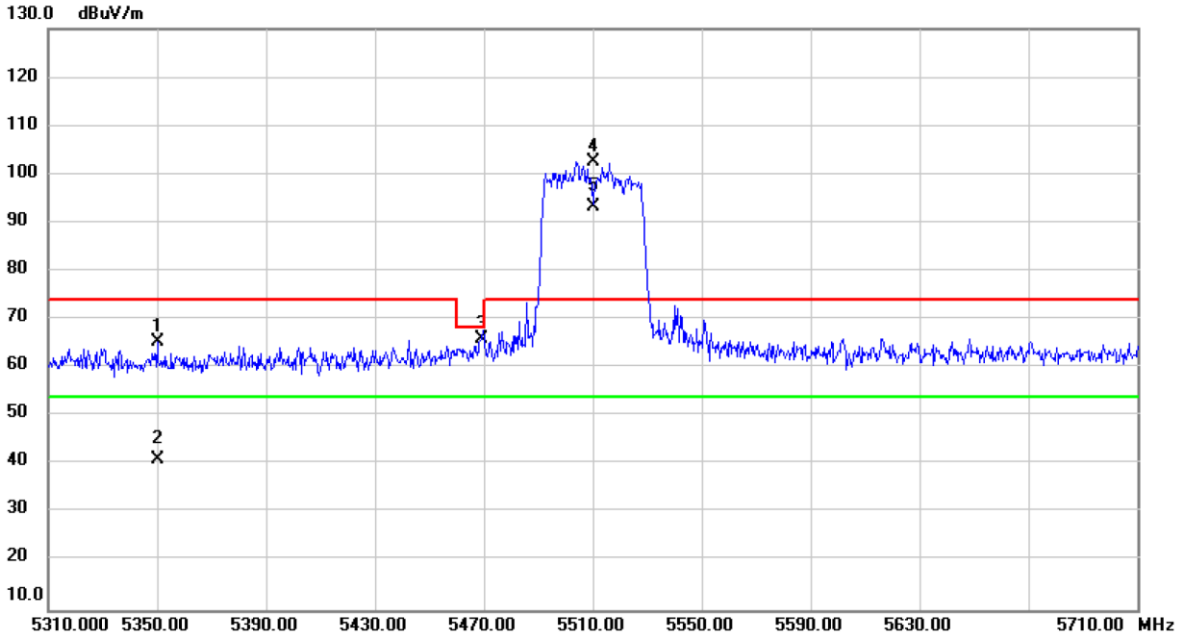
Test Mode	IEEE 802.11n (HT40)	Test Date	2019/12/27
Test Frequency	CH62: 5310 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5136.000	27.43	37.78	65.21	74.00	-8.79	peak	
2		5136.000	3.22	37.78	41.00	54.00	-13.00	AVG	
3	X	5310.000	65.89	37.99	103.88	74.00	29.88	peak	No Limit
4	*	5310.000	56.92	37.99	94.91	54.00	40.91	AVG	No Limit
5		5350.000	30.65	38.03	68.68	74.00	-5.32	peak	
6		5350.000	12.52	38.03	50.55	54.00	-3.45	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

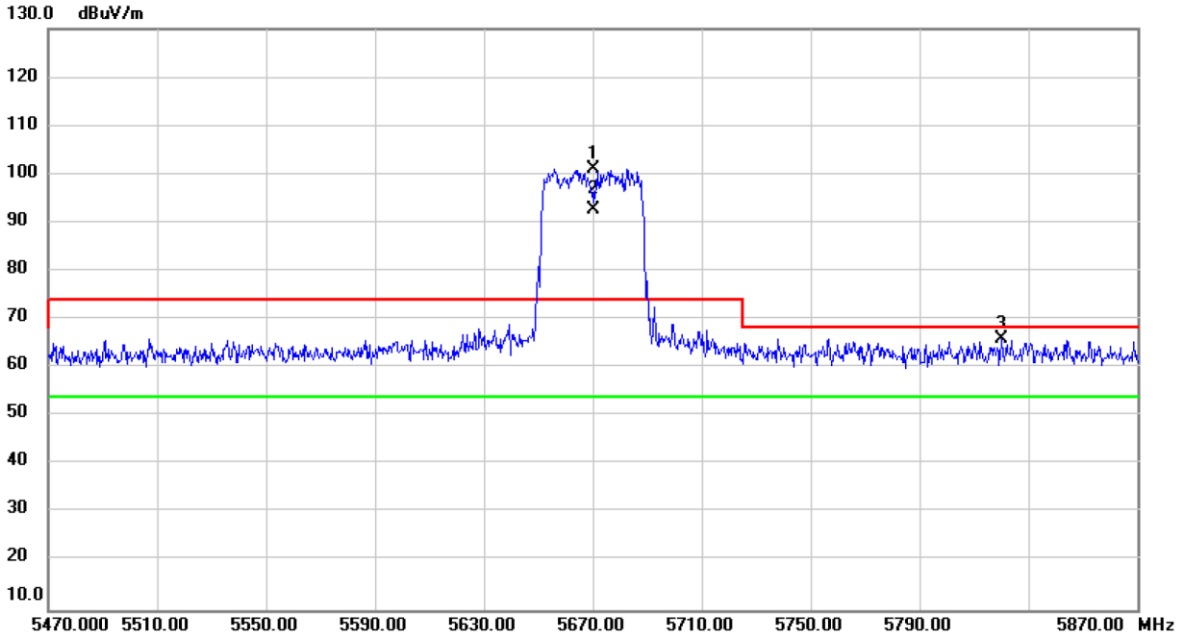
Test Mode	IEEE 802.11n (HT40)	Test Date	2019/12/27
Test Frequency	CH102: 5510 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5350.000	27.45	38.03	65.48	74.00	-8.52	peak	
2		5350.000	2.91	38.03	40.94	54.00	-13.06	AVG	
3		5469.200	27.71	38.17	65.88	68.20	-2.32	peak	
4	X	5510.000	64.42	38.21	102.63	74.00	28.63	peak	No Limit
5	*	5510.000	55.12	38.21	93.33	54.00	39.33	AVG	No Limit

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

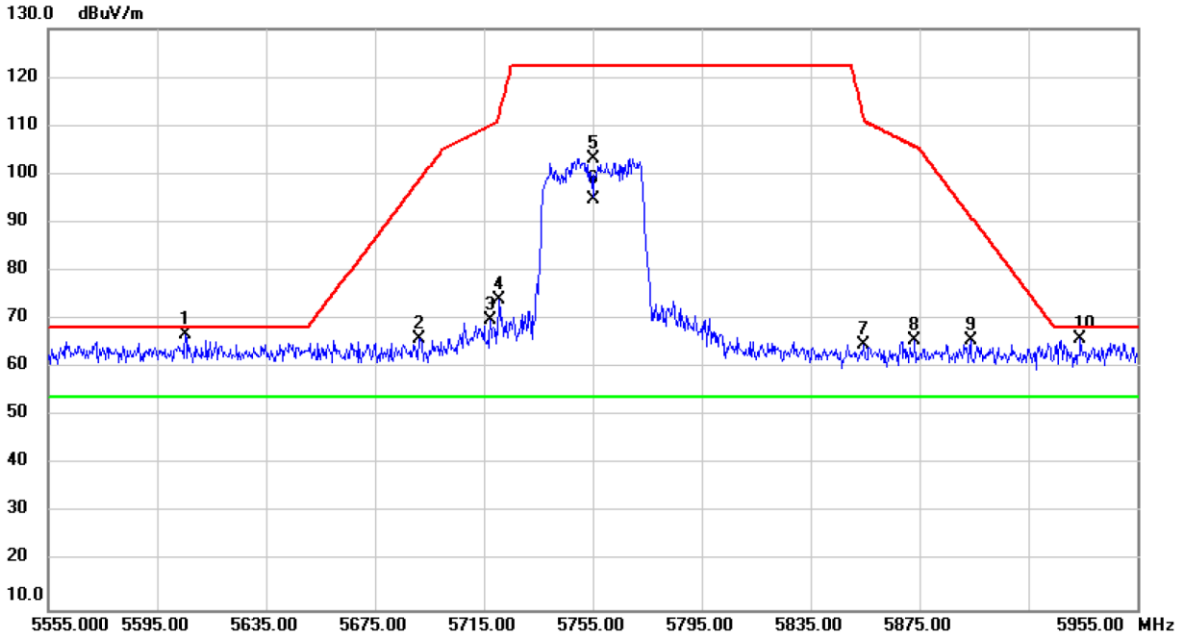
Test Mode	IEEE 802.11n (HT40)	Test Date	2019/12/27
Test Frequency	CH134: 5670 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	5670.000	62.73	38.34	101.07	74.00	27.07	peak	No Limit
2	*	5670.000	54.42	38.34	92.76	54.00	38.76	AVG	No Limit
3		5820.400	27.63	38.45	66.08	68.20	-2.12	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

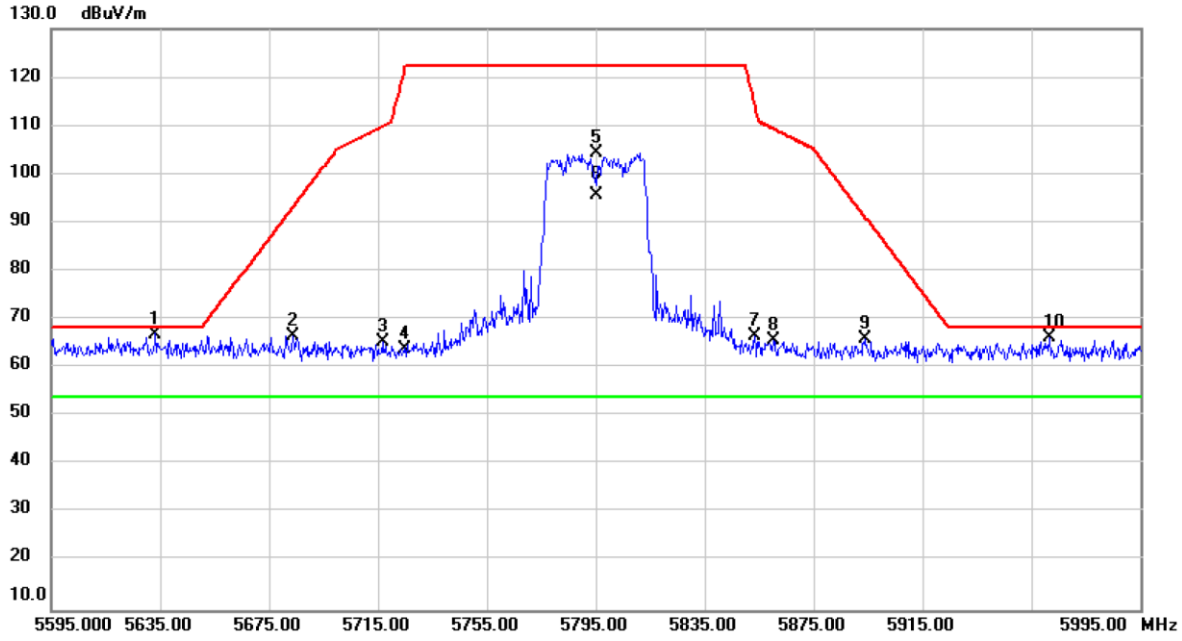
Test Mode	IEEE 802.11n (HT40)	Test Date	2019/12/28
Test Frequency	CH151: 5755 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5605.400	28.63	38.29	66.92	68.20	-1.28	peak	
2		5691.000	27.67	38.35	66.02	98.54	-32.52	peak	
3		5717.400	31.45	38.37	69.82	110.07	-40.25	peak	
4		5720.600	35.60	38.37	73.97	112.17	-38.20	peak	
5		5755.000	64.77	38.40	103.17	122.20	-19.03	peak	No Limit
6	*	5755.000	56.44	38.40	94.84	54.00	40.84	AVG	No Limit
7		5854.600	26.30	38.48	64.78	111.71	-46.93	peak	
8		5873.400	27.20	38.48	65.68	105.65	-39.97	peak	
9		5893.800	27.07	38.50	65.57	91.29	-25.72	peak	
10		5934.200	27.46	38.53	65.99	68.20	-2.21	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

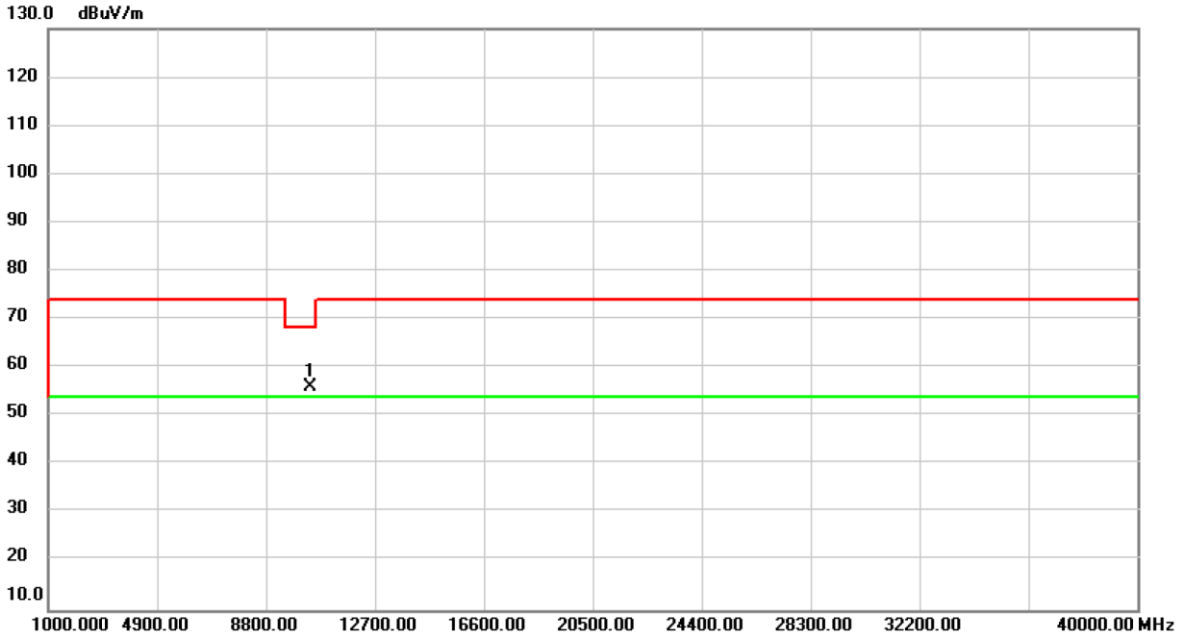
Test Mode	IEEE 802.11n (HT40)	Test Date	2019/12/28
Test Frequency	CH159: 5795 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		5633.400	28.69	38.31	67.00	68.20	-1.20	peak	
2		5683.800	28.26	38.35	66.61	93.21	-26.60	peak	
3		5716.600	26.93	38.37	65.30	109.85	-44.55	peak	
4		5724.600	25.61	38.37	63.98	121.29	-57.31	peak	
5		5795.000	65.89	38.43	104.32	122.20	-17.88	peak	No Limit
6	*	5795.000	57.13	38.43	95.56	54.00	41.56	AVG	No Limit
7		5853.400	27.98	38.47	66.45	114.45	-48.00	peak	
8		5860.200	27.30	38.47	65.77	109.34	-43.57	peak	
9		5893.800	27.33	38.50	65.83	91.29	-25.46	peak	
10		5961.800	27.75	38.56	66.31	68.20	-1.89	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

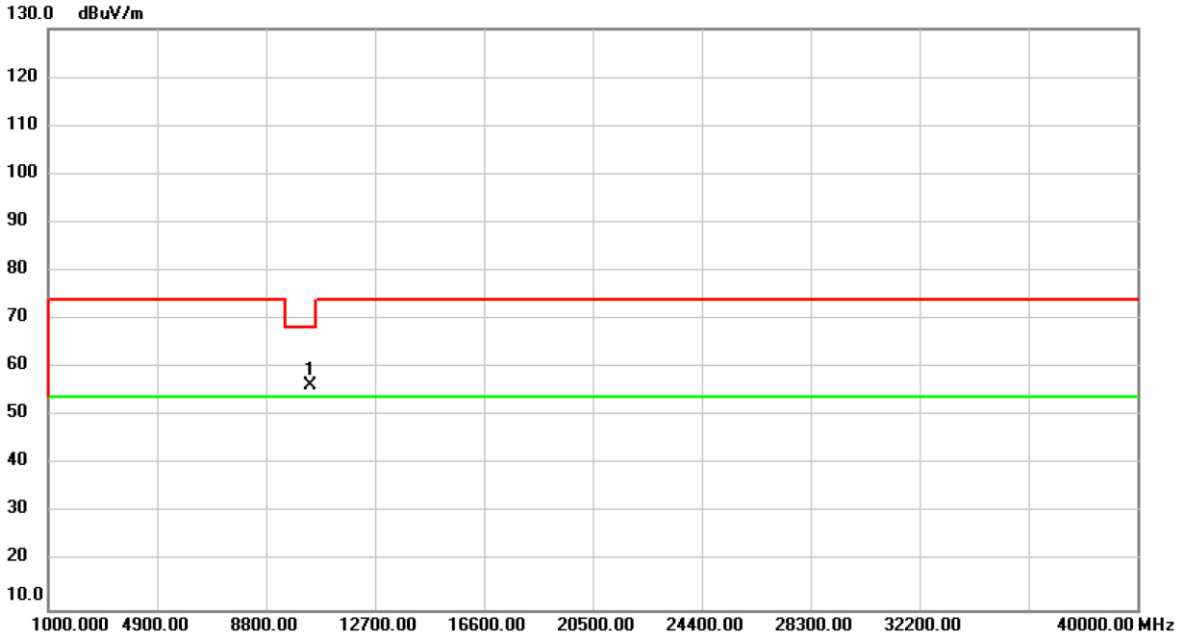
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH36: 5180 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10360.00	53.11	2.83	55.94	68.20	-12.26	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

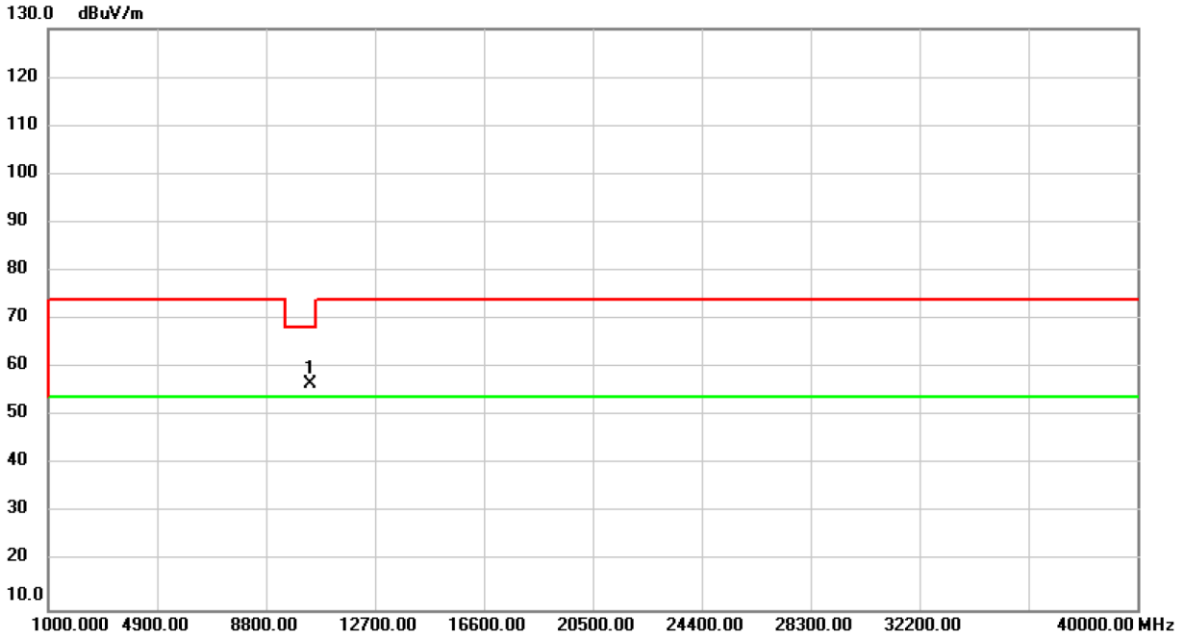
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH36: 5180 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10360.00	53.41	2.83	56.24	68.20	-11.96	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

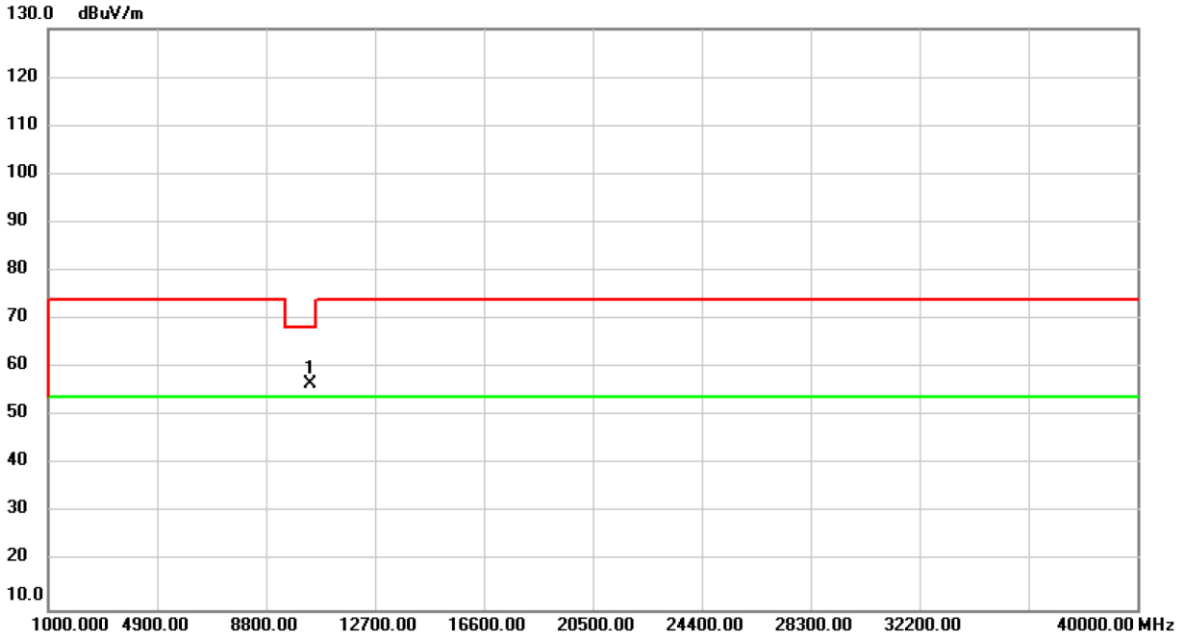
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH40: 5200 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10400.00	53.70	2.89	56.59	68.20	-11.61	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

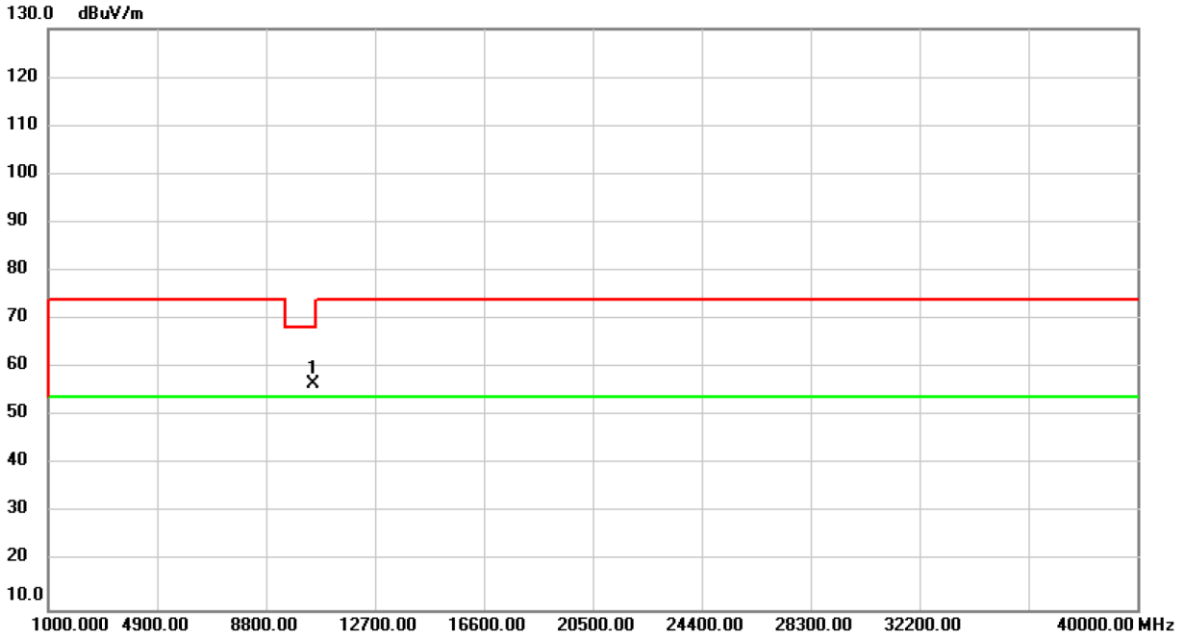
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH40: 5200 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10400.00	53.86	2.89	56.75	68.20	-11.45	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

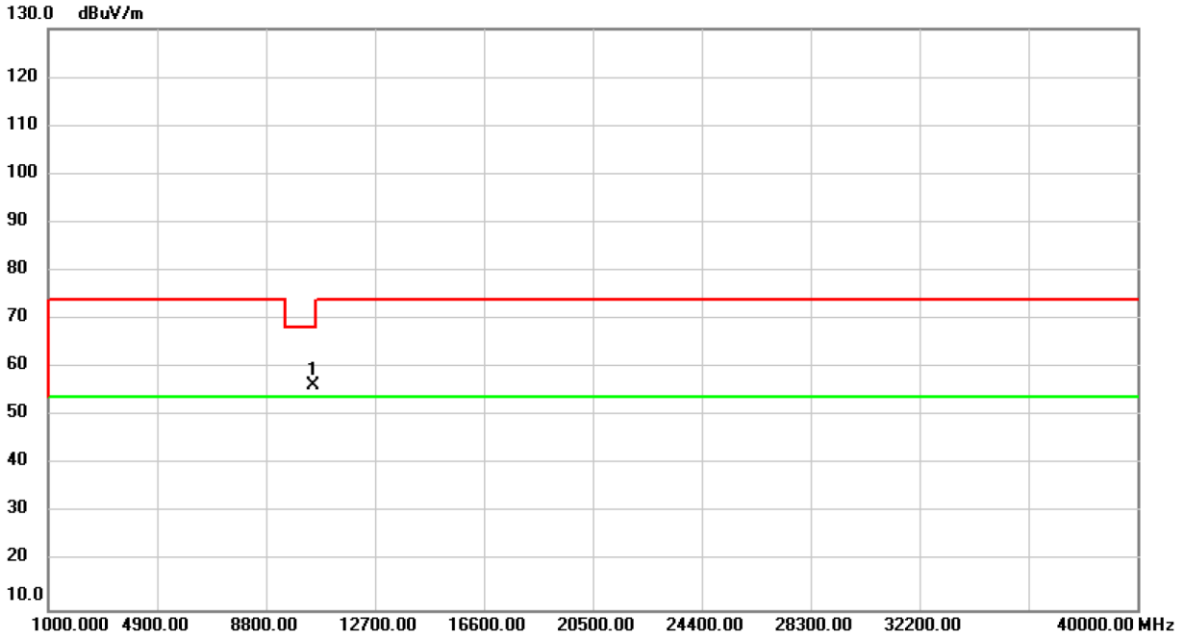
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH48: 5240 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10480.00	53.64	3.00	56.64	68.20	-11.56	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

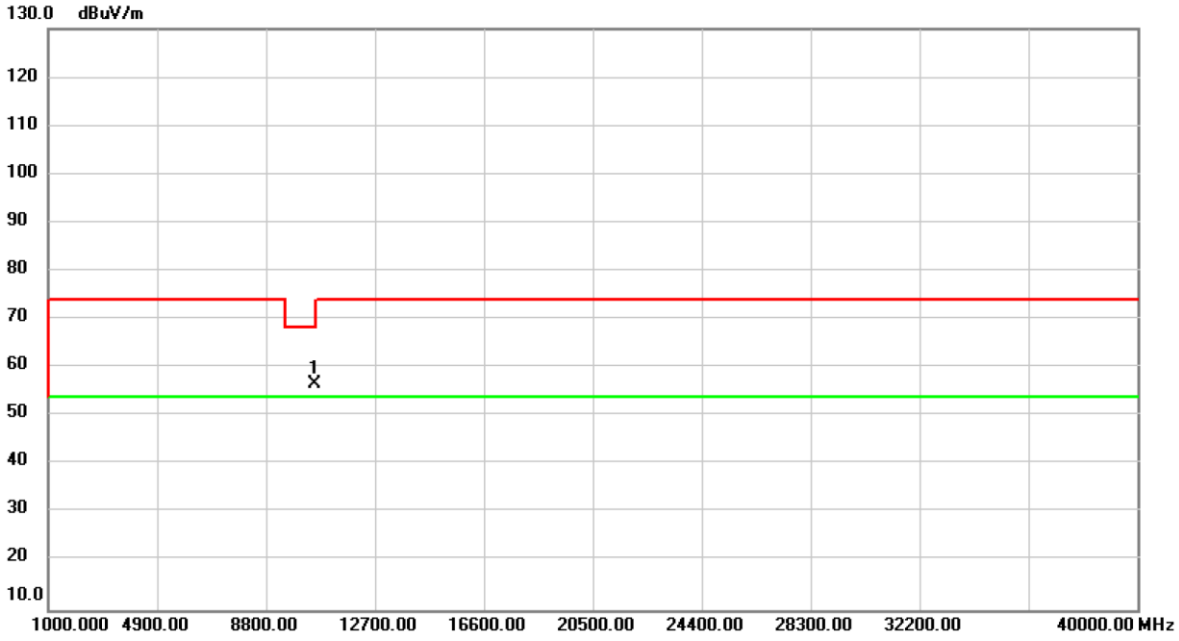
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH48: 5240 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10480.00	53.47	3.00	56.47	68.20	-11.73	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

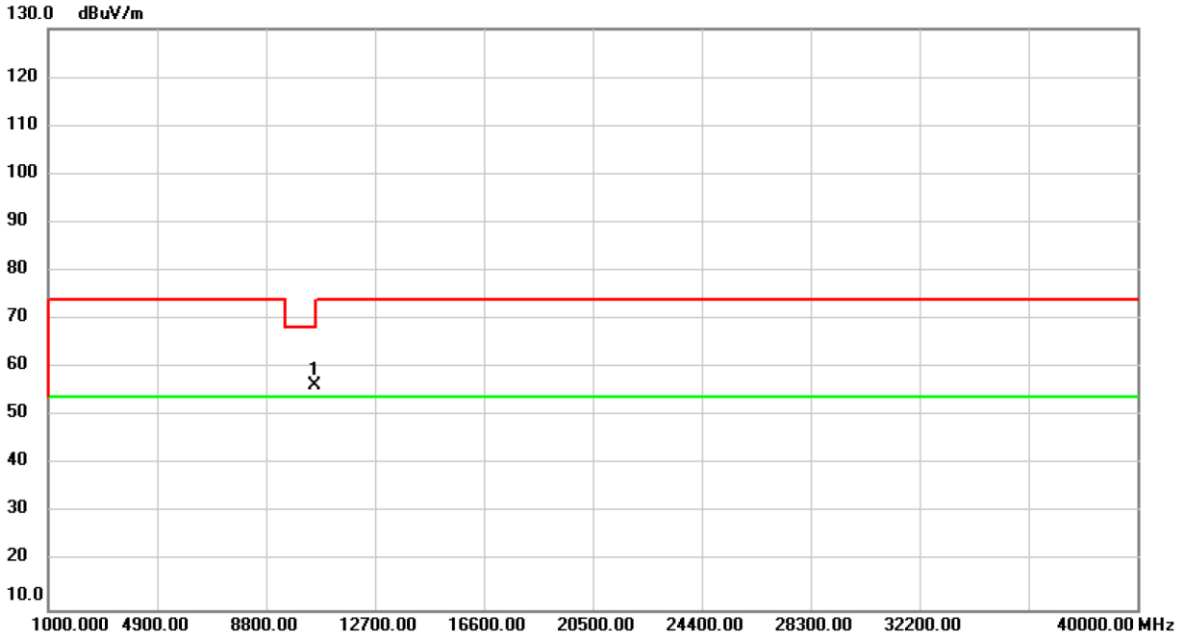
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH52: 5260 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10520.00	53.66	3.02	56.68	68.20	-11.52	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

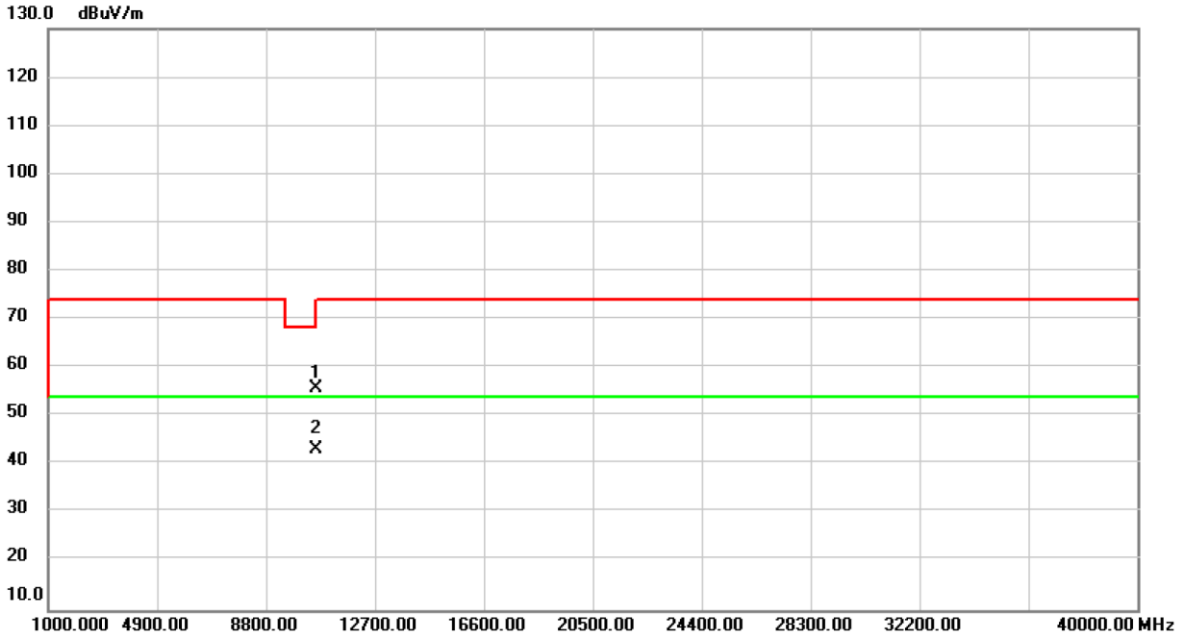
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH52: 5260 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10520.00	53.48	3.02	56.50	68.20	-11.70	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

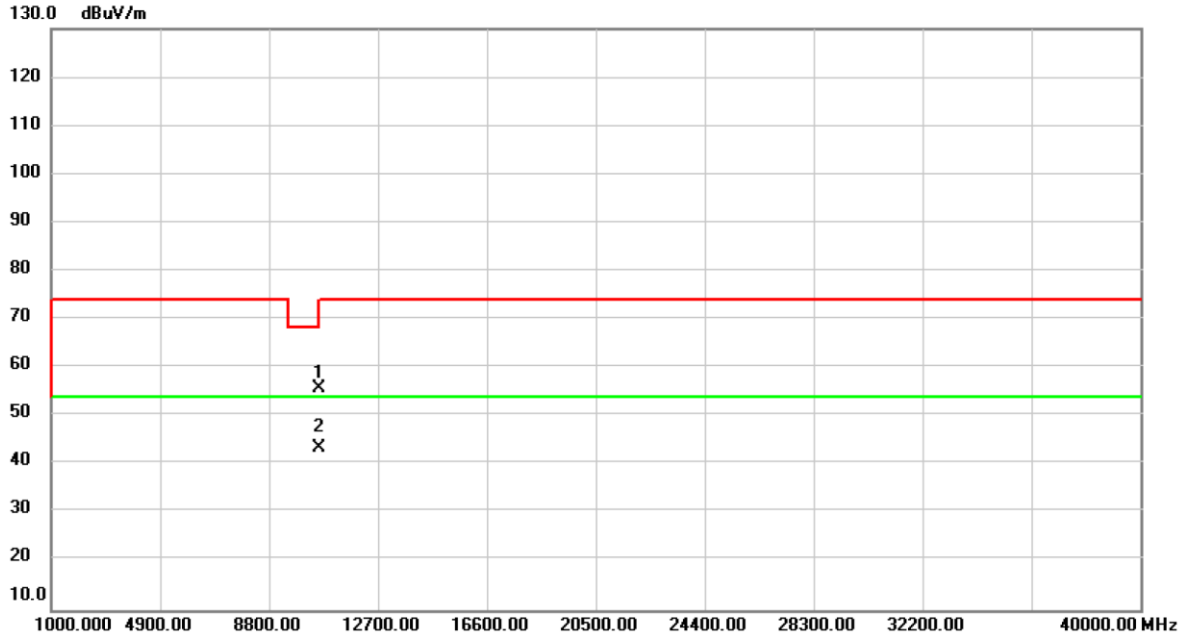
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH60: 5300 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10600.00	52.83	2.96	55.79	68.20	-12.41	peak	
2	*	10600.00	40.34	2.96	43.30	54.00	-10.70	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

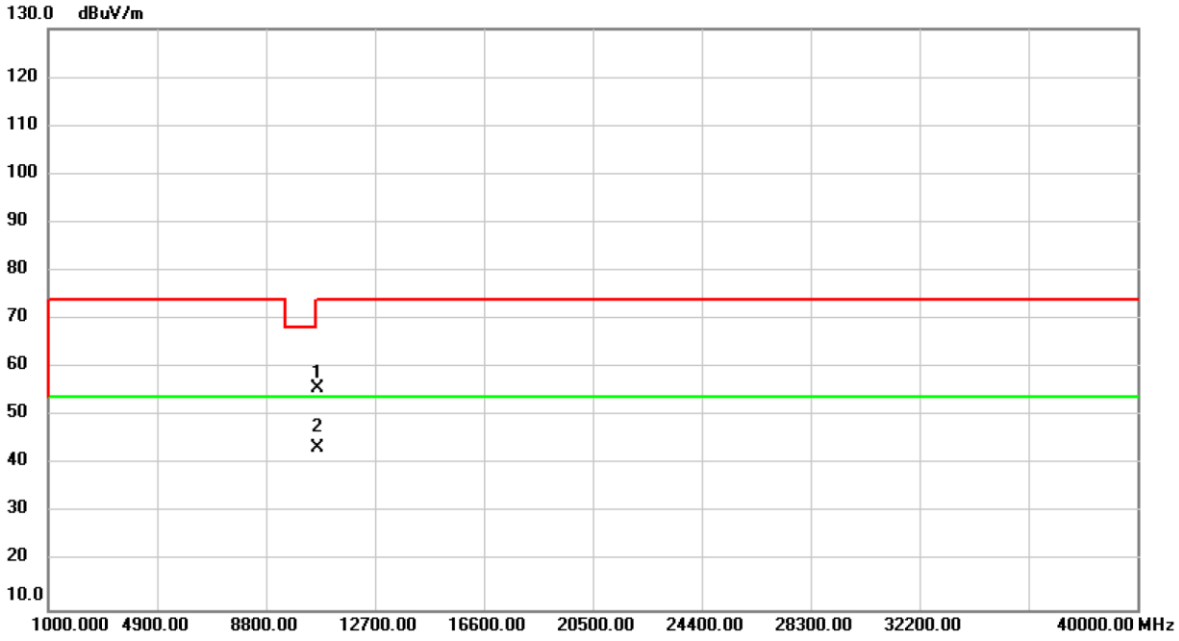
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH60: 5300 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10600.00	52.86	2.96	55.82	68.20	-12.38	peak	
2	*	10600.00	40.38	2.96	43.34	54.00	-10.66	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

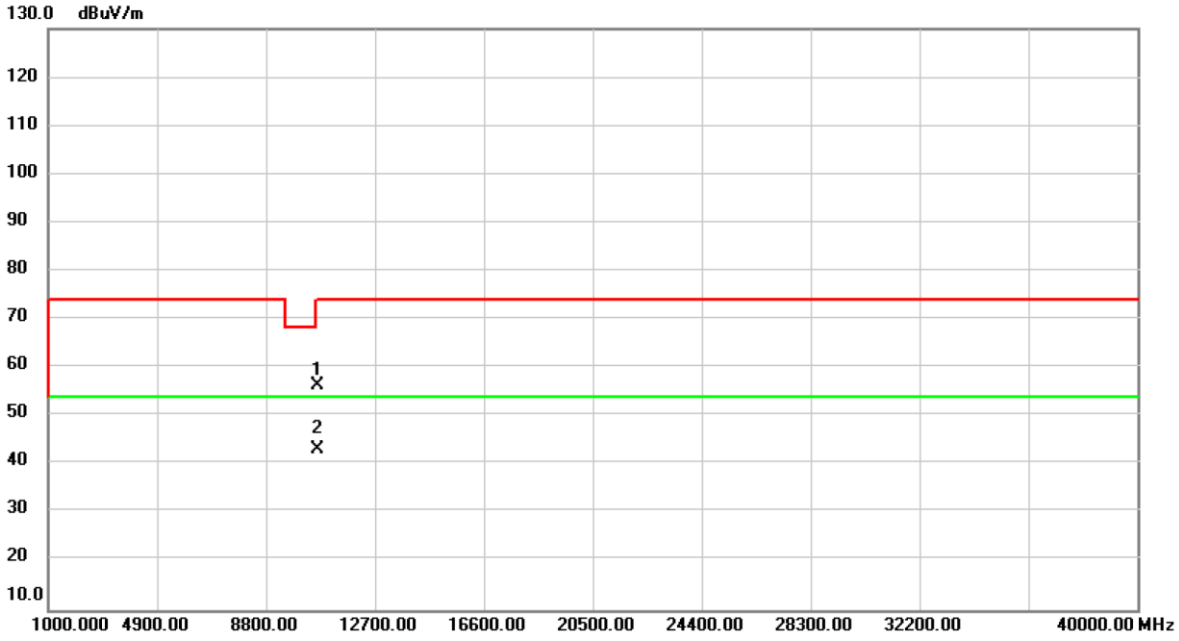
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH64: 5320 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10640.00	52.83	2.93	55.76	74.00	-18.24	peak	
2	*	10640.00	40.39	2.93	43.32	54.00	-10.68	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

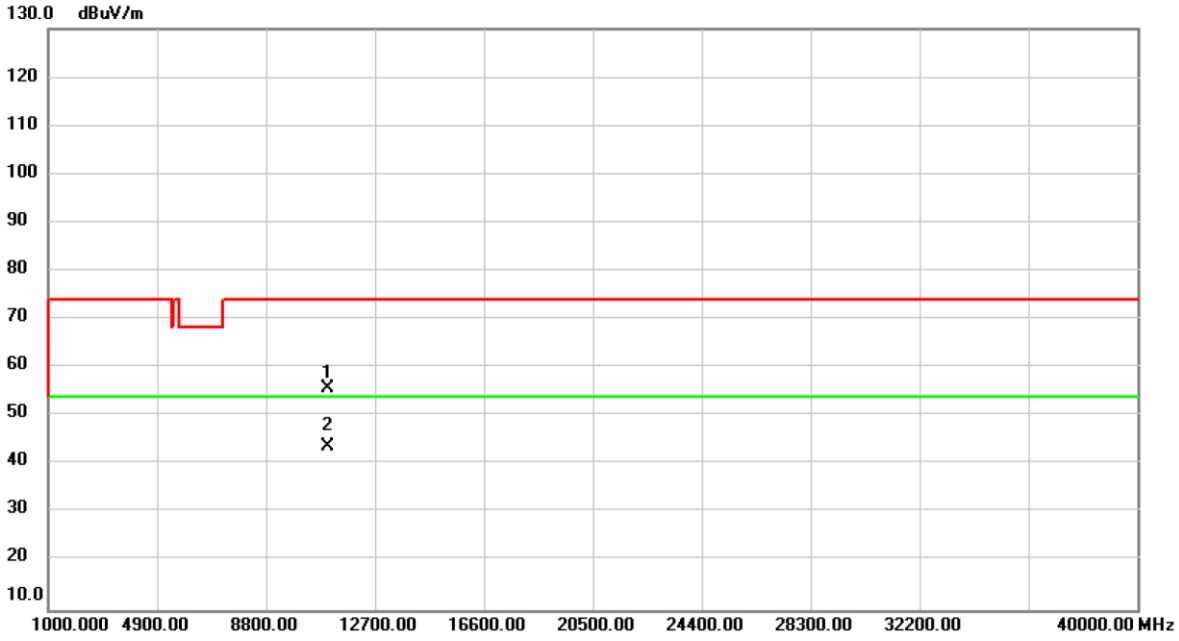
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH64: 5320 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		10640.00	53.52	2.93	56.45	74.00	-17.55	peak	
2	*	10640.00	40.36	2.93	43.29	54.00	-10.71	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

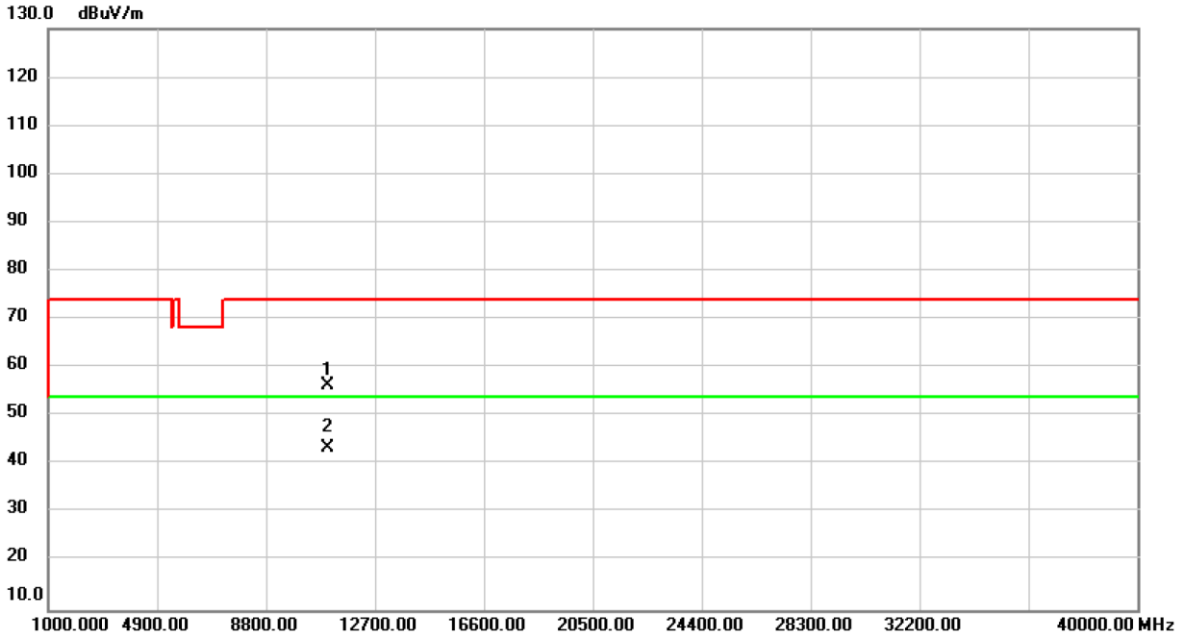
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH100: 5500 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11000.00	53.16	2.62	55.78	74.00	-18.22	peak	
2	*	11000.00	41.07	2.62	43.69	54.00	-10.31	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

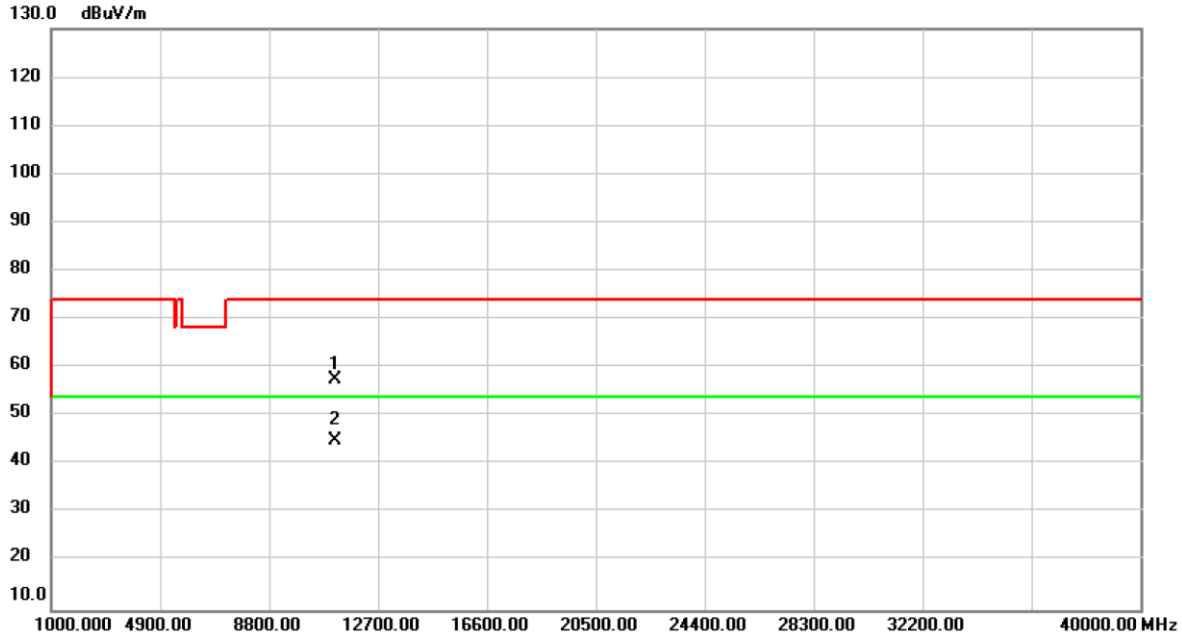
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH100: 5500 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11000.00	53.74	2.62	56.36	74.00	-17.64	peak	
2	*	11000.00	40.83	2.62	43.45	54.00	-10.55	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

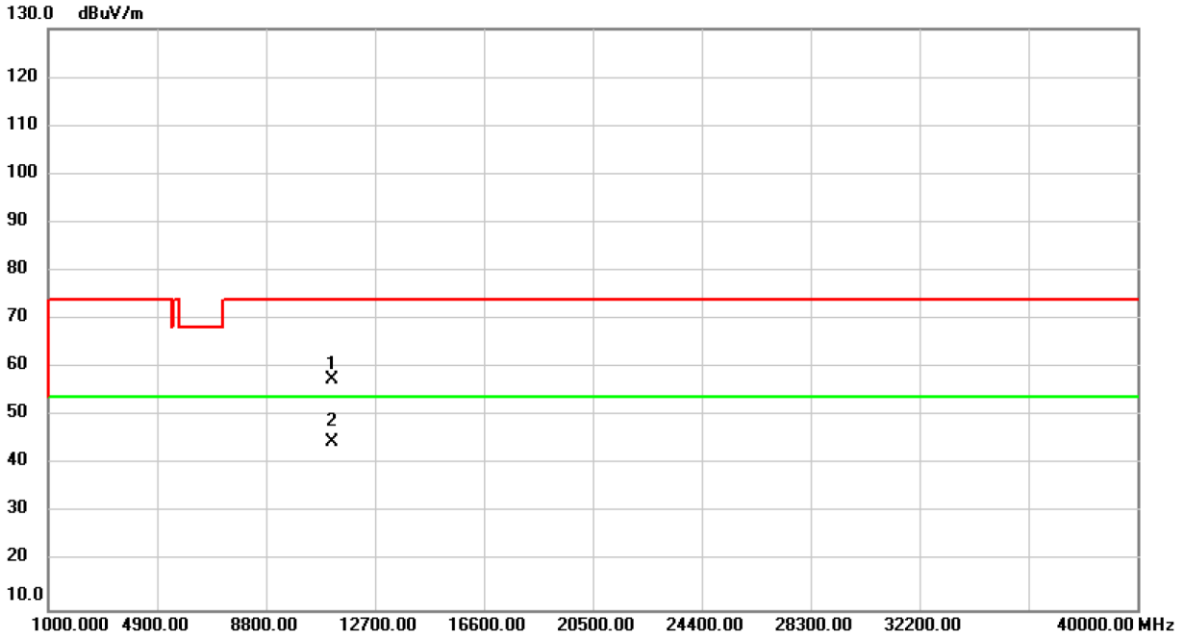
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH116: 5580 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11160.00	54.53	3.03	57.56	74.00	-16.44	peak	
2	*	11160.00	41.84	3.03	44.87	54.00	-9.13	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

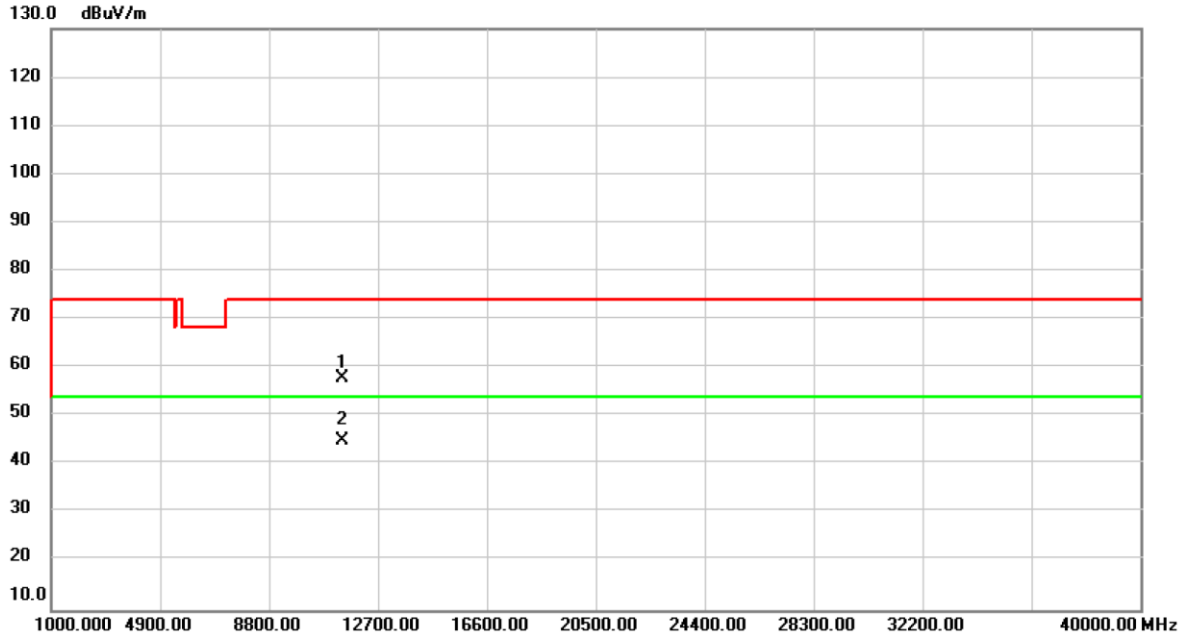
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH116: 5580 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11160.00	54.42	3.03	57.45	74.00	-16.55	peak	
2	*	11160.00	41.55	3.03	44.58	54.00	-9.42	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

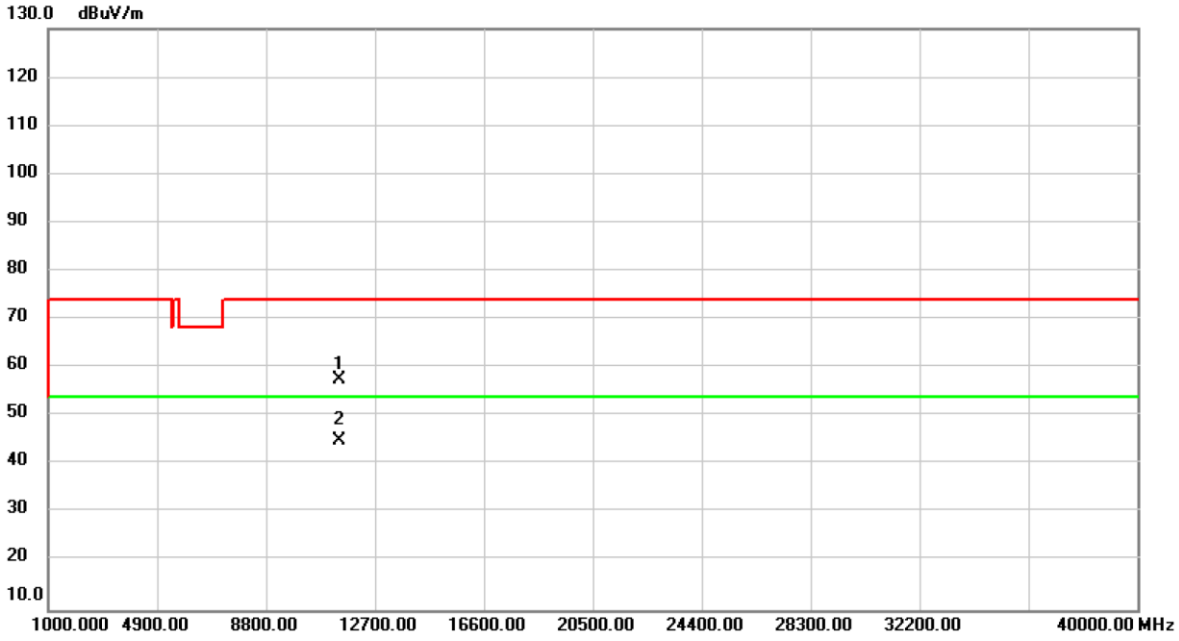
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH140: 5700 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11400.00	54.10	3.65	57.75	74.00	-16.25	peak	
2	*	11400.00	41.19	3.65	44.84	54.00	-9.16	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

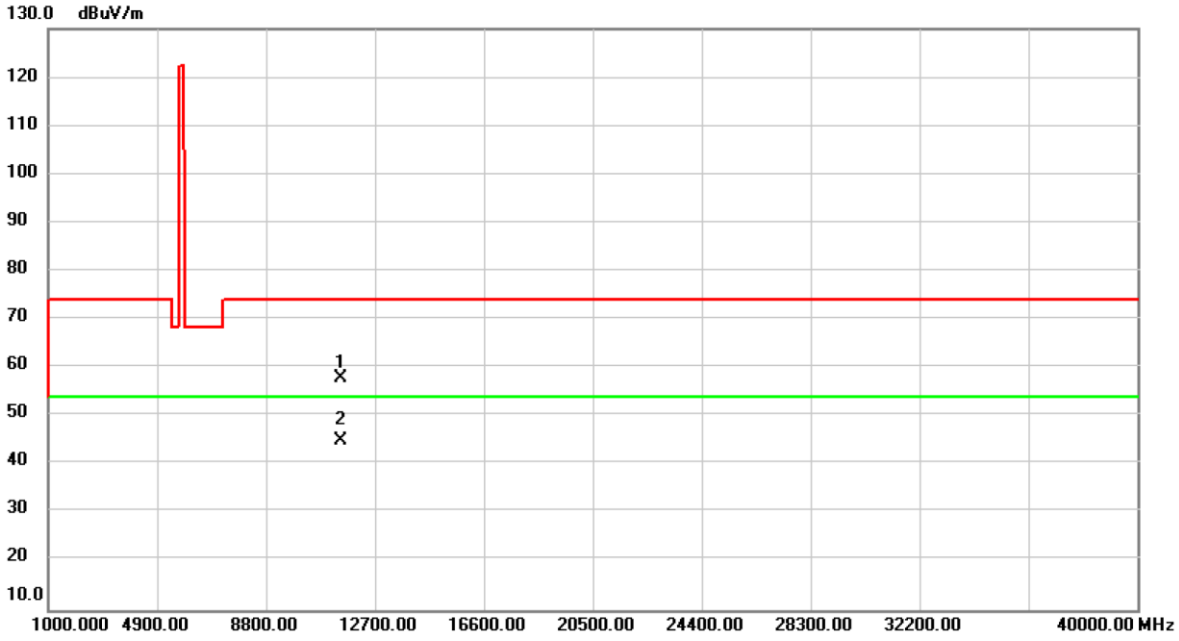
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH140: 5700 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11400.00	53.97	3.65	57.62	74.00	-16.38	peak	
2	*	11400.00	41.23	3.65	44.88	54.00	-9.12	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

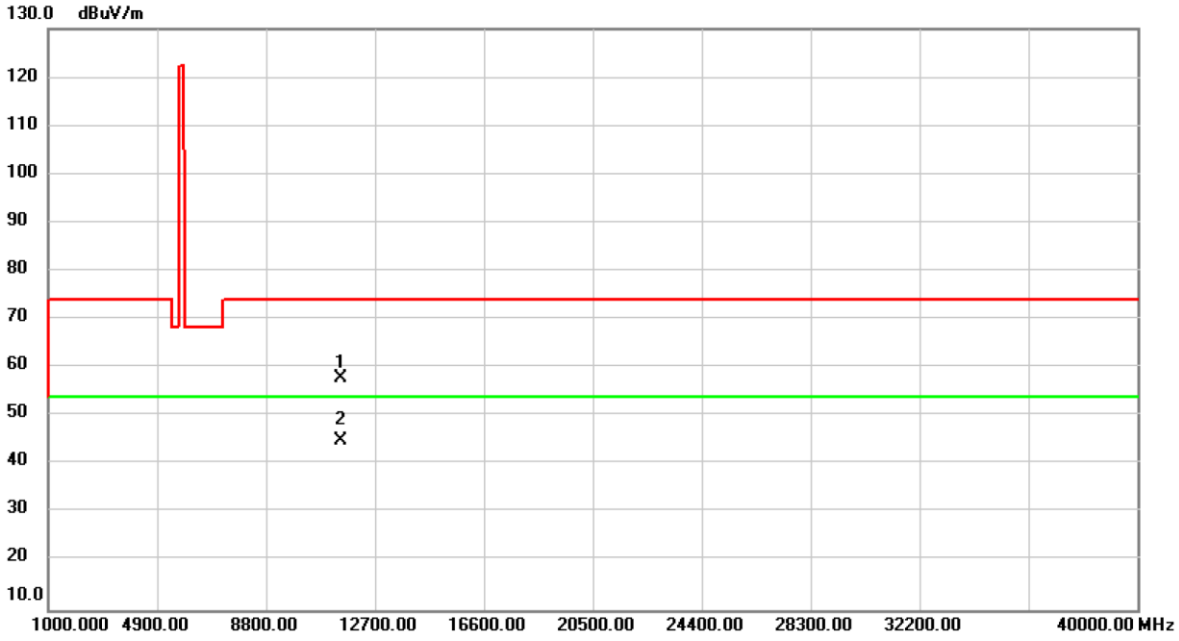
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH149: 5745 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	53.84	3.89	57.73	74.00	-16.27	peak	
2	*	11490.00	41.18	3.89	45.07	54.00	-8.93	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

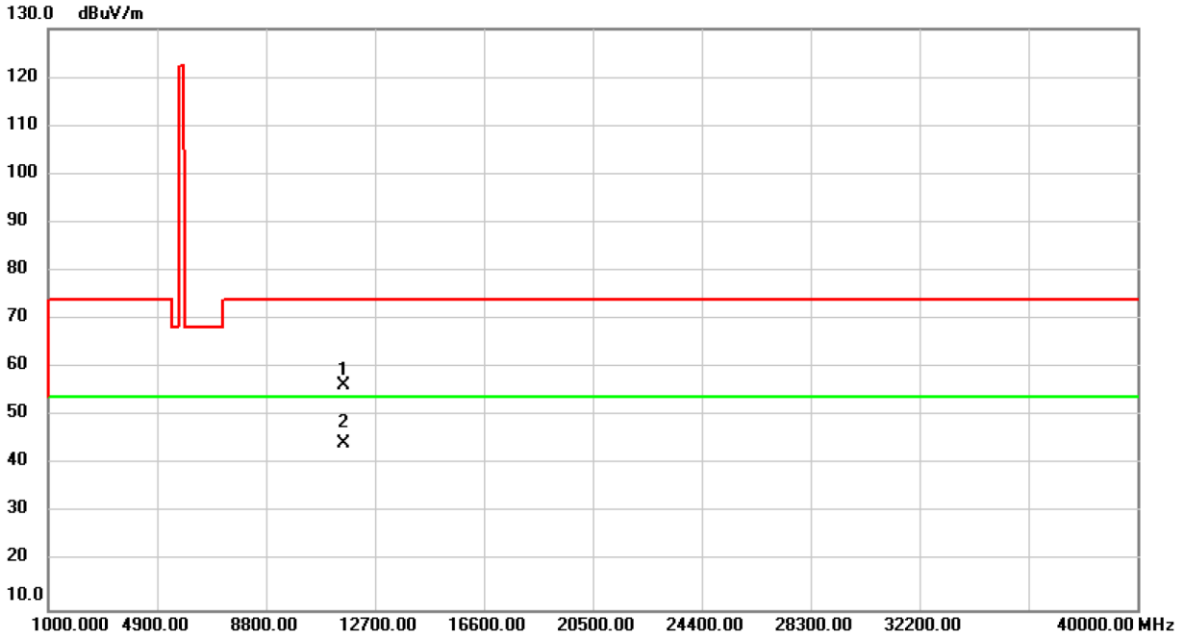
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH149: 5745 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11490.00	53.99	3.89	57.88	74.00	-16.12	peak	
2	*	11490.00	41.18	3.89	45.07	54.00	-8.93	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

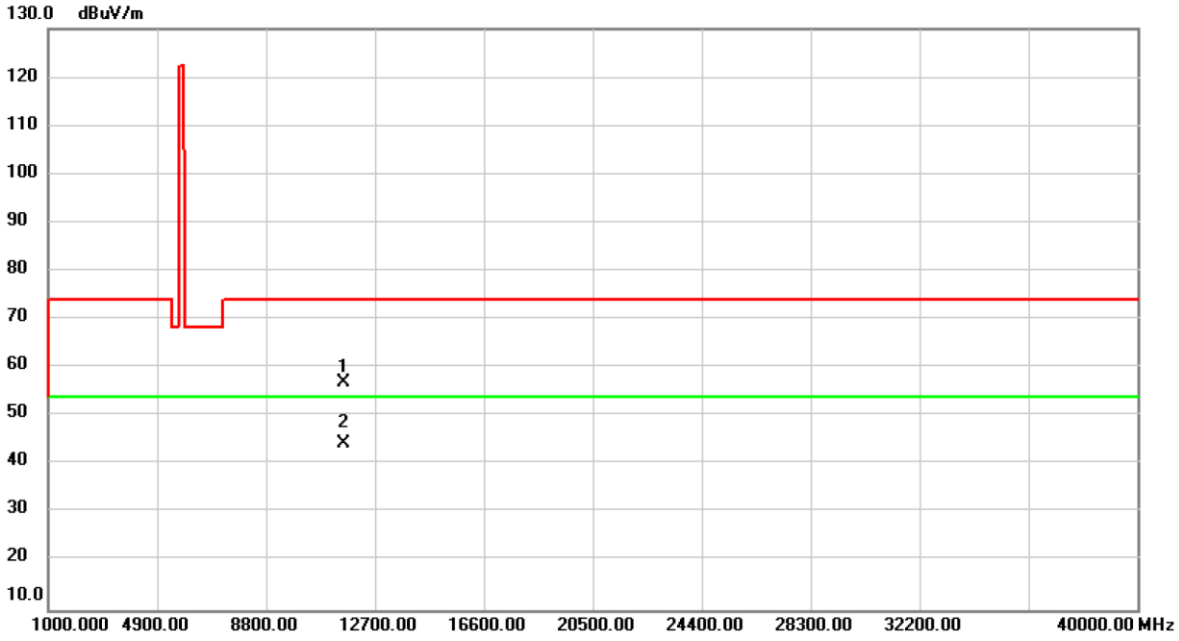
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH157: 5785 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	52.69	3.57	56.26	74.00	-17.74	peak	
2	*	11570.00	40.79	3.57	44.36	54.00	-9.64	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

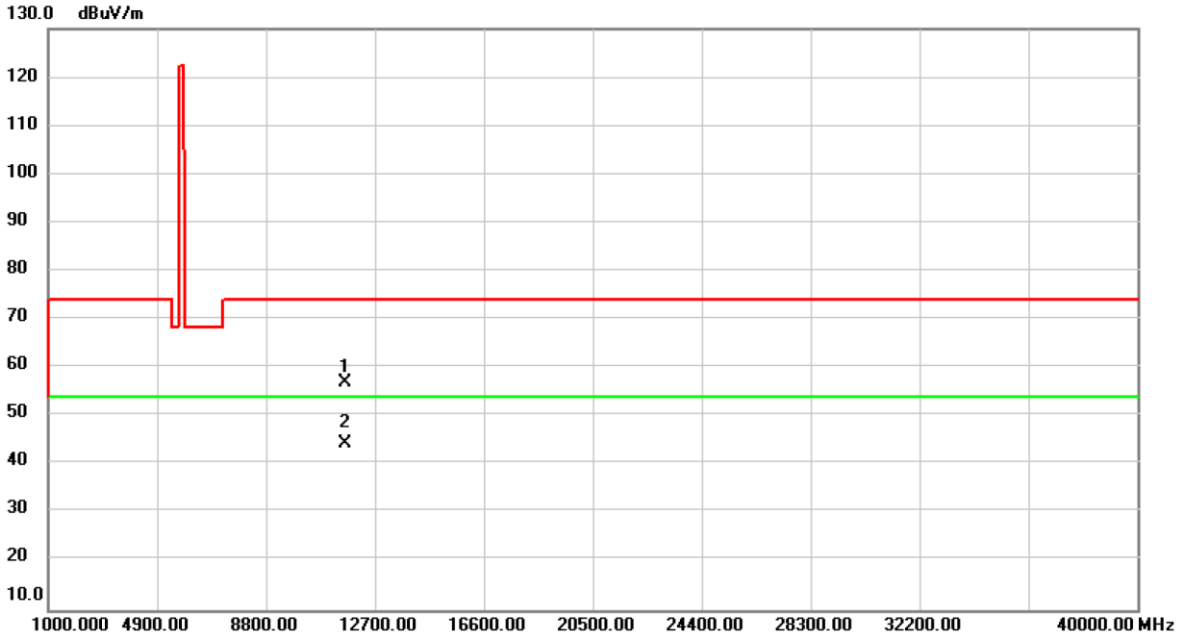
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH157: 5785 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11570.00	53.26	3.57	56.83	74.00	-17.17	peak	
2	*	11570.00	40.78	3.57	44.35	54.00	-9.65	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

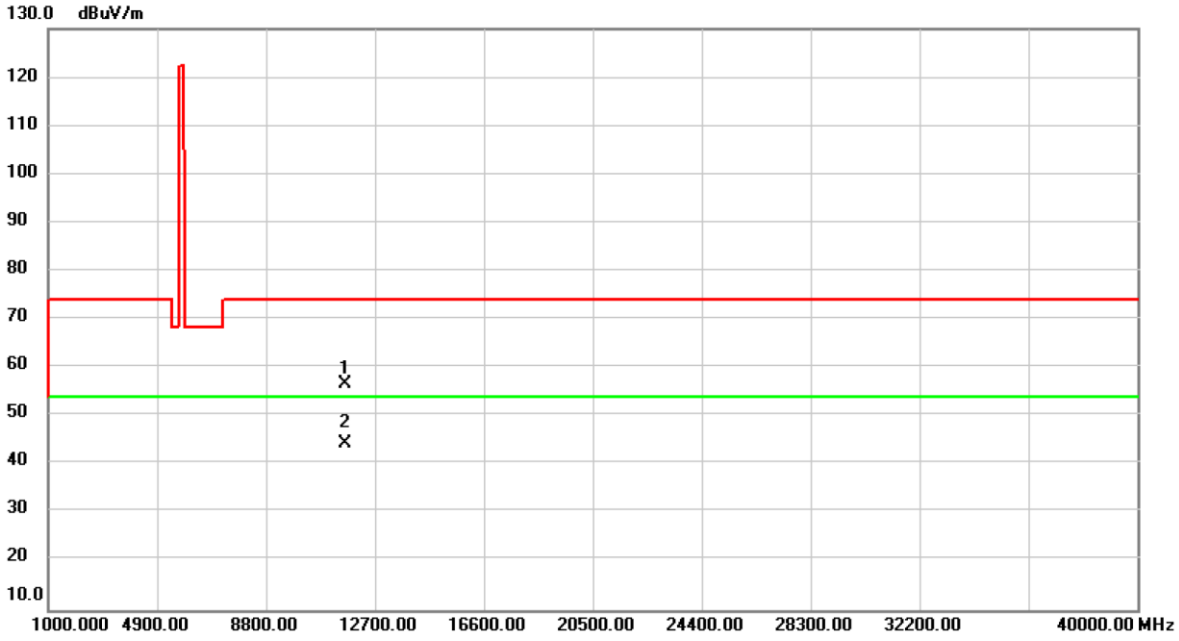
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH165: 5825 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.00	53.79	3.18	56.97	74.00	-17.03	peak	
2	*	11650.00	41.16	3.18	44.34	54.00	-9.66	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

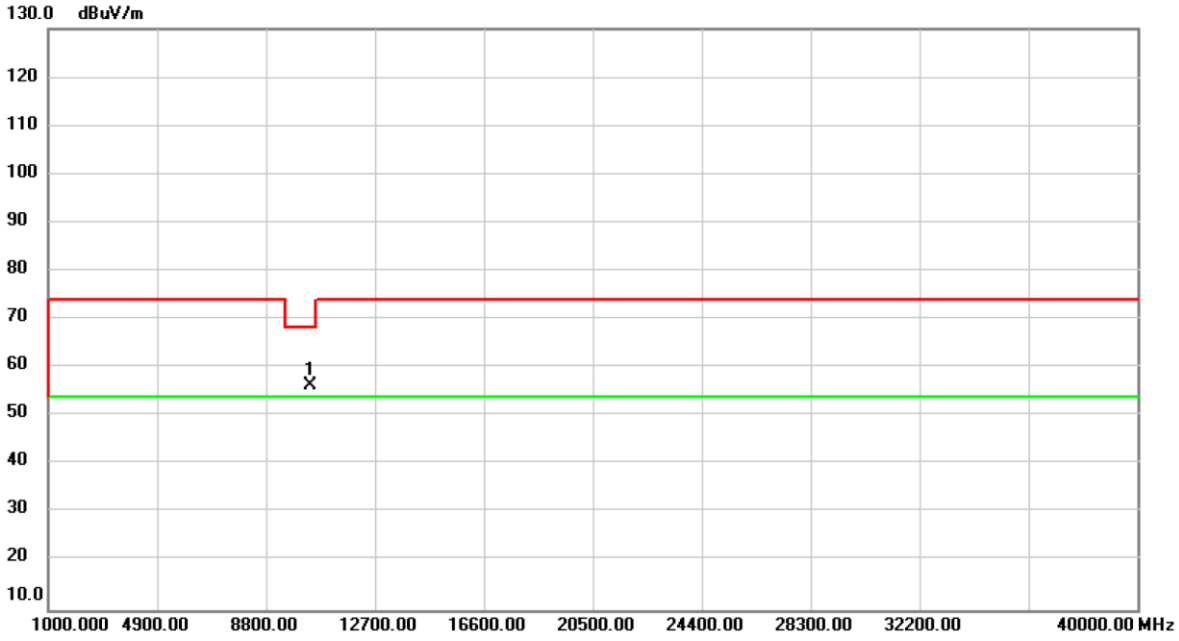
Test Mode	IEEE 802.11a	Test Date	2019/12/28
Test Frequency	CH165: 5825 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		11650.00	53.37	3.18	56.55	74.00	-17.45	peak	
2	*	11650.00	41.30	3.18	44.48	54.00	-9.52	AVG	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

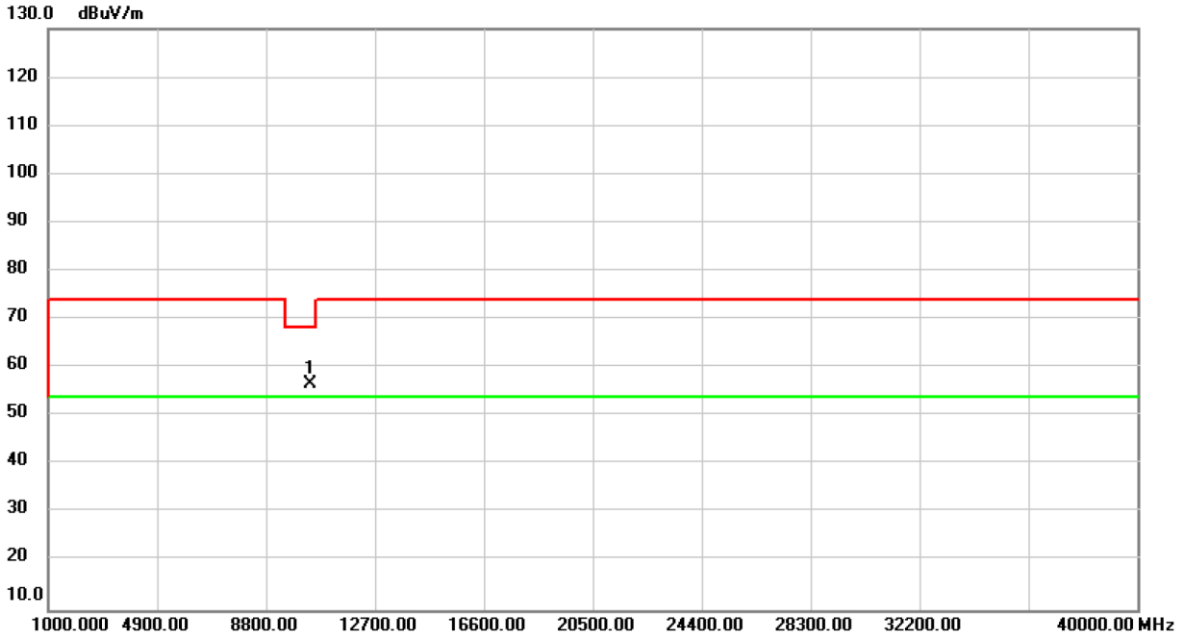
Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/28
Test Frequency	CH36: 5180 MHz	Polarization	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10360.00	53.38	2.83	56.21	68.20	-11.99	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11n (HT20)	Test Date	2019/12/28
Test Frequency	CH36: 5180 MHz	Polarization	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	10360.00	53.79	2.83	56.62	68.20	-11.58	peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.