Test Report

FCC Part15 Subpart E

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE
Model No.	:	CPE510
FCC ID	:	TE7CPE510V2

Applicant	:	TP-Link Technologies Co., Ltd.
Address	:	Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China

Date of Receipt	:	Feb. 06th, 2017
Test Date	:	Feb. 06th, 2017~ Jun. 24th, 2017
Issued Date	:	Jul. 10th, 2017
Report No.	:	1722006R-RF-US-P09V02
Report Version	:	V1.2

Test Report Certification

Issued Date : Jul. 10th, 2017
Report No. : 1722006R-RF-US-P09V02

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE
Applicant	:	TP-Link Technologies Co., Ltd.
Address	:	Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Manufacturer	:	TP-Link Technologies Co., Ltd.
Address	:	Building 24(floors1,3,4,5) and 28(floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Model No.	:	CPE510
FCC ID	:	TE7CPE510V2
EUT Voltage	:	DC 24V
Test Voltage		AC 120V/60Hz
Brand Name	:	TP-Link
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart E ANSI C63.4:2014; ANSI C63.10:2013; 789033 D02 General UNII Test Procedures New Rules v01r04 KDB 662911 D01 Multiple Transmitter Output v02r01
Test Result	:	Complied
Performed Location	:	DEKRA Testing and Certification (Suzhou) Co., Ltd. No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,215006, Jiangsu, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Registration Number: 800392;

Documented By : Kitty Li

(Adm. Specialist: Kitty li)

Reviewed By : Jack zhang

(Senior Engineer: Jack Zhang)

Approved By : Harry Zhao

(Engineering Manager: Harry Zhao)

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1722006R-RF-US-P09V02	V1.0	Initial Issued Report	Mar. 28th, 2017
1722006R-RF-US-P09V02	V1.1	1. Updated conducted emission data. 2. Modified the PSD limit	Jun. 28th, 2017
1722006R-RF-US-P09V02	V1.2	Added the bandedge test for 5230MHz of 802.11n(40MHz) at P120.	Jul. 10th, 2017

1. General Information

1.1. EUT Description

Product Name	5GHz 300Mbps 13dBi Outdoor CPE						
Brand Name	TP-Link						
Model No.	CPE510						
EUT Voltage	DC 24V						
Test Voltage	AC 120V/60Hz						
Type of Modulation	OFDM						
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps						
	802.11n: up to 300Mbps						
Channel Control	Auto						
Transmit modes	☒	802.11a	☒	802.11n(20MHz)	☒	802.11n(40MHz)	
	☐	802.11ac(20MHz)	☐	802.11ac(40MHz)	☐	802.11ac(80MHz)	
	☒	802.11n(5MHz)	☒	802.11n(10MHz)			
Support Bands	☒	5150MHz~5250MHz	☒	Outdoor AP			
			☐	Indoor AP			
			☒	Fixed point-to-point AP			
			☐	Fixed point-to-Multi point AP			
			☐	Mobile and Portable Client			
	☐	5250MHz~5350MHz					
	☐	5470MHz~5725MHz	☐	With TDWR Channels			
			☐	Without TDWR Channels			
	☒	5725MHz~5850MHz					

1.2. Antenna information

Antenna Model No.	N/A					
Antenna Delivery	☐	1*TX+1*RX	☒	2*TX+2*RX	☐	3*TX+3*RX
Antenna technology	☐	SISO				
	☒	MIMO	☐	Basic		
			☐	Sectorized antenna systems		
			☐	Cross-polarized antennas		
			☐	Unequal antenna gains, with equal transmit powers		
			☐	Spatial Multiplexing		
			☒	CDD		
			☐	Beam-forming		
Antenna Type	☐	External	☐	Dipole		
	☒	Internal	☐	PIFA		
			☐	PCB		
			☐	Ceramic Chip Antenna		
			☐	Metal plate type F antenna		
			☒	Cross-polarize Antenna		
Antenna Gain #0	13dBi					
Antenna Gain #1	13dBi					

1.3. Working Frequency of Each Channel:

802.11a(20MHz)/n(5MHz/10MHz/20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz	48	5240 MHz
149	5745 MHz	153	5765 MHz	157	5785 MHz	161	5805 MHz
165	5825MHz	N/A	N/A	N/A	N/A	N/A	N/A
802.11n(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	151	5755 MHz	159	5795 MHz

1.4. Mode of Operation

DEKRA Testing and Certification (Suzhou) Co., Ltd. has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmit by 802.11a
Mode 2: Transmit by 802.11n(5MHz)
Mode 3: Transmit by 802.11n(10MHz)
Mode 4: Transmit by 802.11n(20MHz)
Mode 5: Transmit by 802.11n(40MHz)

Note 1: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

Note 2: For portable device, radiated tests was verified over X, Y, Z axis, and shown the worst case on this report.

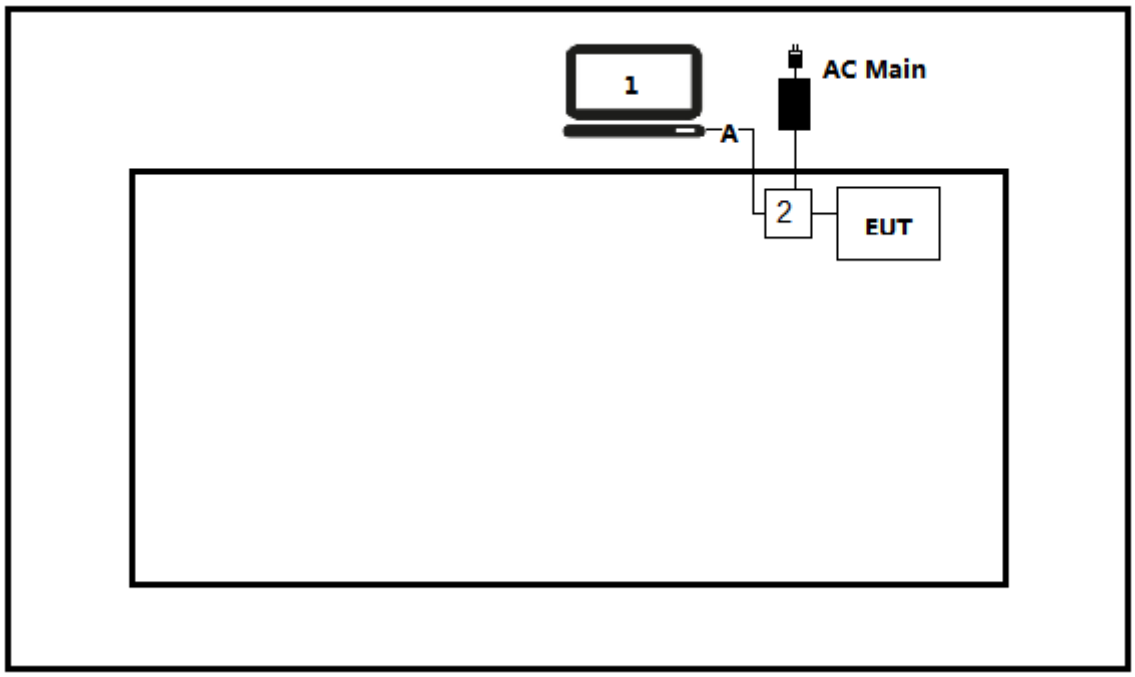
1.5. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

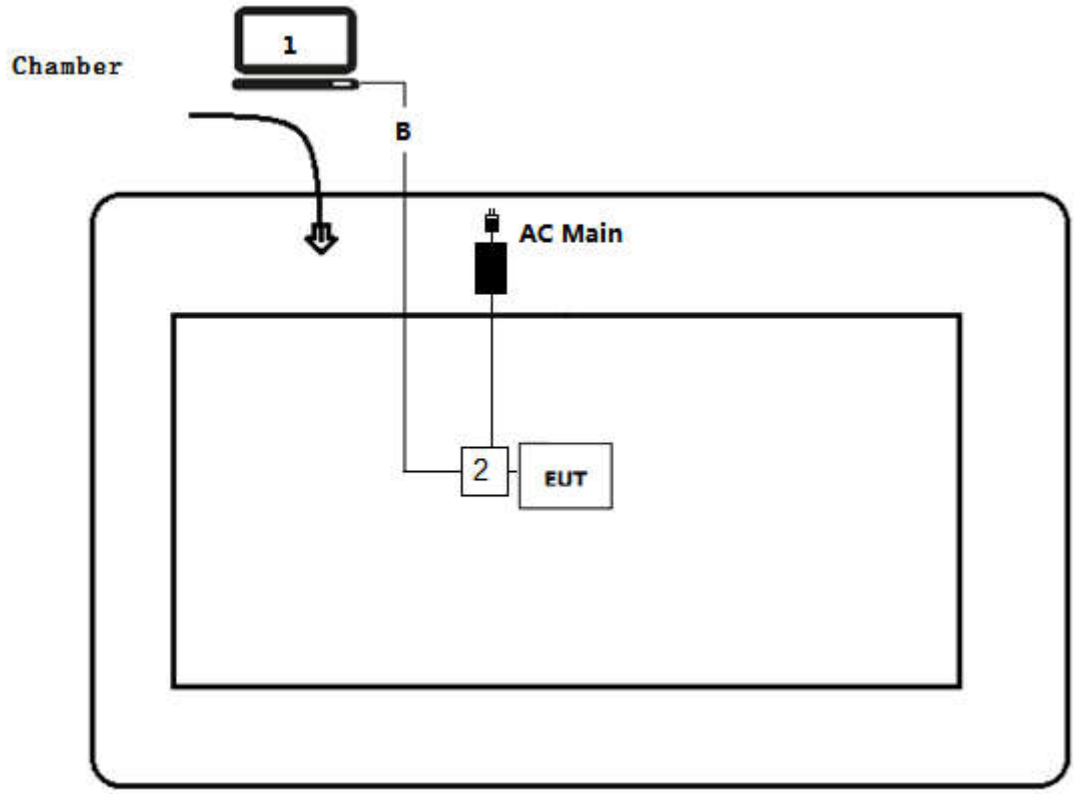
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Lenovo	Think pad x220	SUA0600195	Non-shielded
3	Notebook	Asus	N80V	8BN0AS226971468	Non-shielded
2	POE	N/A	N/A	N/A	Power by adapter

1.6. Configuration of Tested System

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



Signal Cable Type		Signal cable Description
A	LAN Cable	Non-shielded, 1.5m
B	LAN Cable	Non-shielded, 15m

1.7. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Run the software（CART）, and set the test mode and channel, then start to continue transmit or receive.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

Performed Test Item	Normative References	Limit	Result
Conducted Emission	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.207	FCC 15.207	PASS
Radiated Emission	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.209	FCC 15.209	PASS
Emission bandwidth and occupied bandwidth	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	FCC 15.407(e)	PASS
6dB Emission Bandwidth	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	FCC 15.407(e)	PASS
Power Output	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	FCC 15.407(a)	PASS
Peak Power Spectral Density	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	FCC 15.407(a)	PASS
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.205, 15.407(b)	FCC 15.407(b)	PASS
Frequency Stability	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(g)	Within the band	PASS
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.203	FCC 15.203	PASS

2.2. Test Frequency configuration:

Modulation Mode	Channel	Frequency	Channel	Frequency	Channel	Frequency
802.11a(20MHz)/n(5MHz,10MHz,20MHz)	36	5180MHz	44	5220MHz	48	5240MHz
	149	5745MHz	157	5785MHz	165	5825MHz
802.11n(40MHz)	38	5190MHz	46	5230MHz	N/A	N/A
	151	5755MHz	159	5795MHz	N/A	N/A

2.3. Power Parameter Value of the test software

Test Mode	Frequency	Power Setting		
		Ant 0	Ant 1	Ant 0+1
802.11a	5180	-	-	19.5
	5220	-	-	19.5
	5240	-	-	19.5
	5745	-	-	19.5
	5785	-	-	19.5
	5825	-	-	19.5
802.11n(5MHz)	5180	-	-	19.0
	5220	-	-	19.0
	5240	-	-	19.0
	5745	-	-	19.0
	5785	-	-	19.0
	5825	-	-	19.0
802.11n(10MHz)	5180	-	-	19.5
	5220	-	-	19.5
	5240	-	-	19.5
	5745	-	-	19.5
	5785			19.5
	5825			19.5
802.11n(20MHz)	5180	-	-	19.5
	5220	-	-	19.5
	5240	-	-	19.5
	5745	-	-	19.5
	5785	-	-	19.5
	5825	-	-	19.5
802.11n(40MHz)	5190	-	-	17.0
	5230	-	-	19.5
	5755	-	-	19.5
	5795	-	-	19.5

2.4. Power vs Data Rate

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)						
		802.11b	802.11g	802.11a	20MHz Bandwidth		40MHz Bandwidth	
					800ns GI	400ns GI	800ns GI	400ns GI
0	1	1	6	6	6.5	7.2	13.5	15.0
1	1	2	9	9	13.0	14.4	27.0	30.0
2	1	5.5	12	12	19.5	21.7	40.5	45.0
3	1	11	18	18	26.0	28.9	54.0	60.0
4	1	---	24	24	39.0	43.3	81.0	90.0
5	1	---	36	36	52.0	57.8	108.0	120.0
6	1	---	48	48	58.5	65.0	121.5	135.0
7	1	---	54	54	65.0	72.2	135.0	150.0
8	2	---	---	---	13.0	14.4	27.0	30.0
9	2	---	---	---	26.0	28.9	54.0	60.0
10	2	---	---	---	39.0	43.3	81.0	90.0
11	2	---	---	---	52.0	57.8	108.0	120.0
12	2	---	---	---	78.0	86.7	162.0	180.0
13	2	---	---	---	104.0	115.6	216.0	240.0
14	2	---	---	---	117.0	130.0	243.0	270.0
15	2	---	---	---	130.0	144.0	270.0	300.0

Note 1 : The blue form is the maximum power data rate.

Note 2: The rate of 5MHz&10MHz bandwidth of 802.11n is same as 802.11n (20MHz).

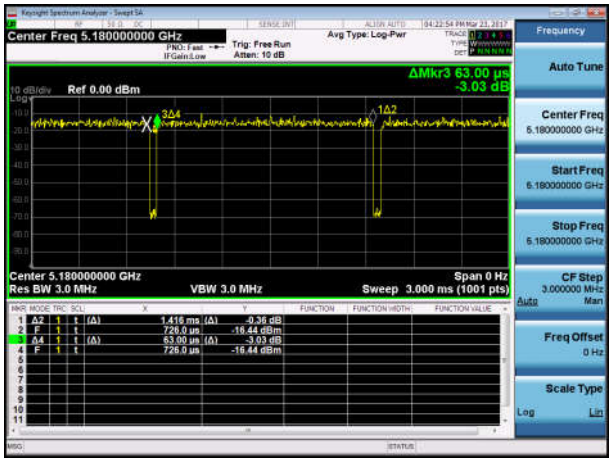
2.5. Duty Cycle

Test Mode	Tx On (ms)	Tx Off (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
802.11a	1.353	0.063	750Hz	1.416	95.55%
802.11n(5MHz)	N/A	N/A	10Hz	N/A	100.00%
802.11n(10MHz)	N/A	N/A	10Hz	N/A	100.00%
802.11n(20MHz)	1.266	0.066	820Hz	1.332	95.05%
802.11n(40MHz)	0.629	0.037	1.6KHz	0.666	94.44%

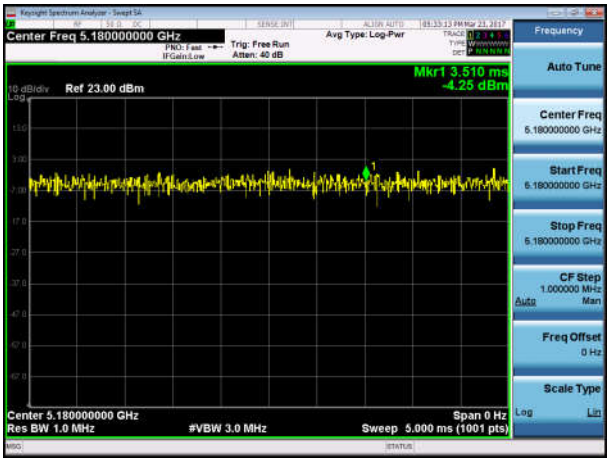
Note 1: T means the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Note 2: According to KDB 789033，when test for Radiated Emission Band Edge and Radiated Emission, VBW ≥ 1/T will be used.

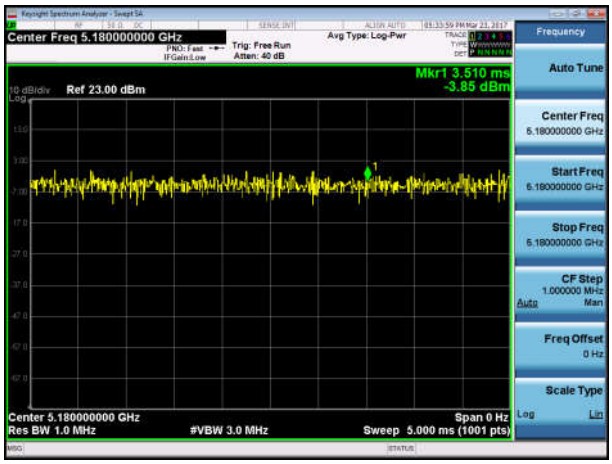
802.11a



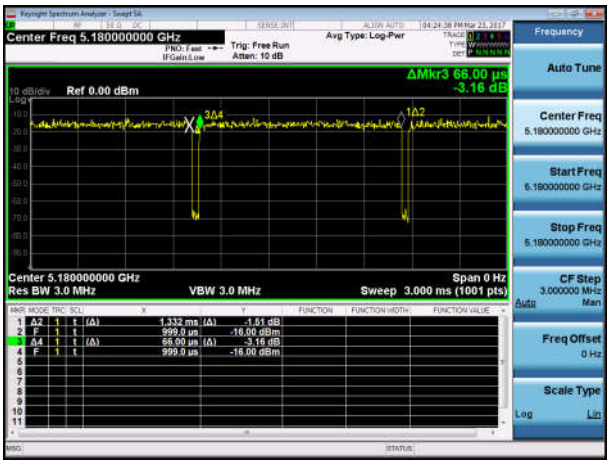
802.11n(5MHz)



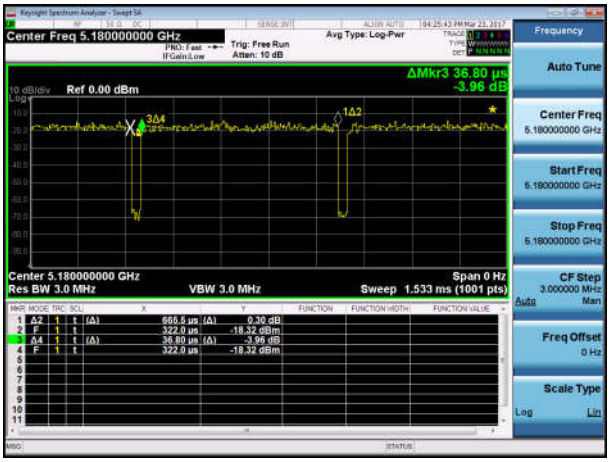
802.11n(10MHz)



802.11n(20MHz)



802.11n(40MHz)



2.6. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

2.7. Uncertainty

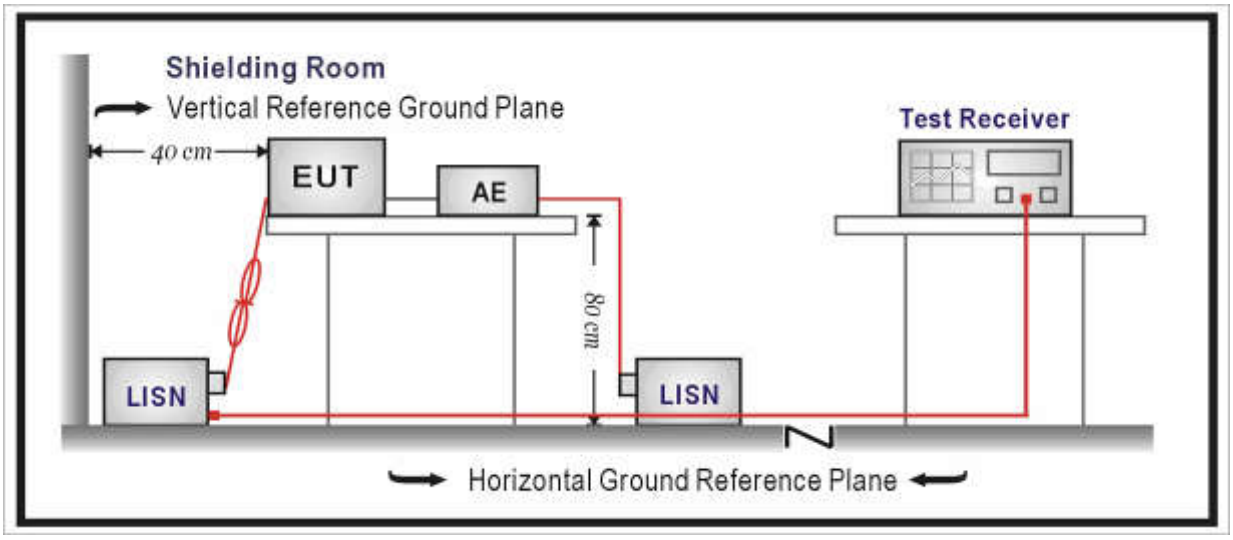
Test Items	Uncertainty
AC Power Line Conducted Emission	±2.02dB
Radiated Emission	Below 1GHz ±3.8 dB
	Above 1GHz ±3.9 dB
RF Antenna Port Conducted Emission	±1.27dB
Radiated Emission Band Edge	±3.9dB
Occupied Bandwidth	±1kHz
Power Spectral Density	±1.27dB
Frequency Stability	±100 Hz

3. Conducted Emission

3.1. Test Equipment

Conducted Emission / TR-1					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100906	2016.03.05	2018.03.04
Two-Line V-Network	R&S	ENV 216	101189	2016.06.16	2017.07.15
Two-Line V-Network	R&S	ENV 216	101044	2016.09.16	2017.09.15
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
50ohm Termination	SHX	TF2	07081402	2016.09.16	2017.09.15
Temperature/Humidity Meter	Zhichen	ZC1-2	TR1-TH	2017.01.04	2018.01.03
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

3.2. Test Setup



3.3. Limit

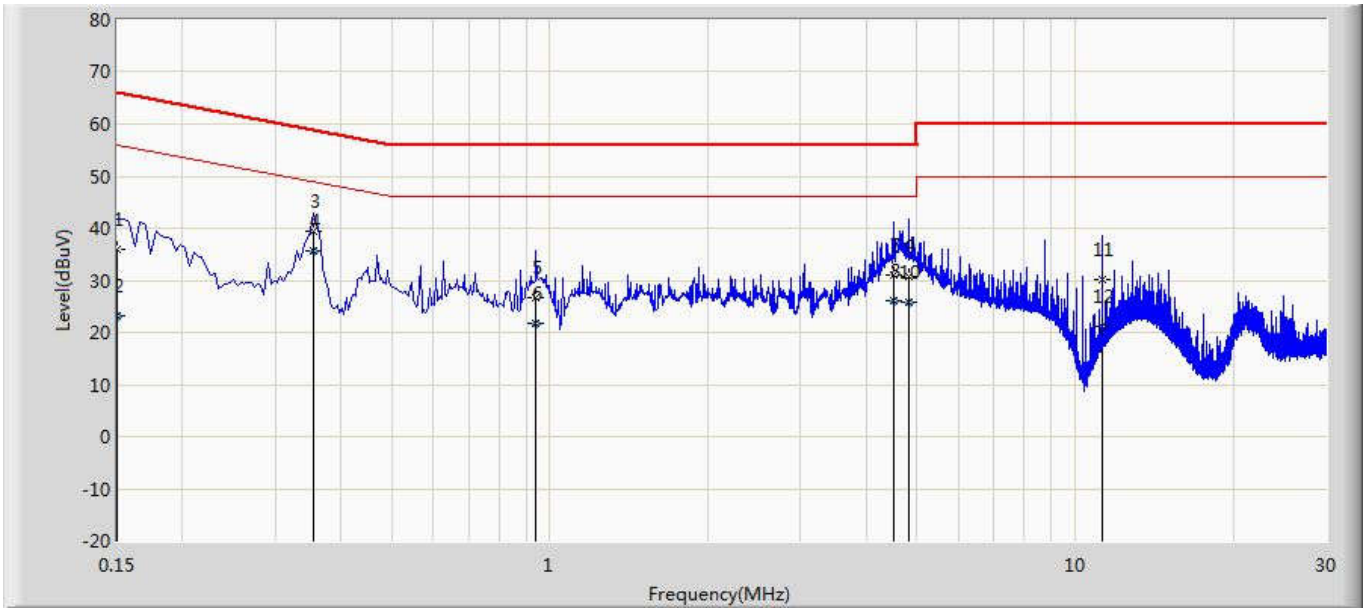
Frequency (MHz)	QP (dB μV)	AV (dB μV)
0.15 - 0.50	66 – 56	56 – 46
0.50 - 5.0	56	46
5.0 - 30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.		

3.4. Test Procedure

Test Method			
	References Rule	Chapter	Item
☒	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices
☒	ANSI C63.4-2014	7	AC power-line conducted emission measurements

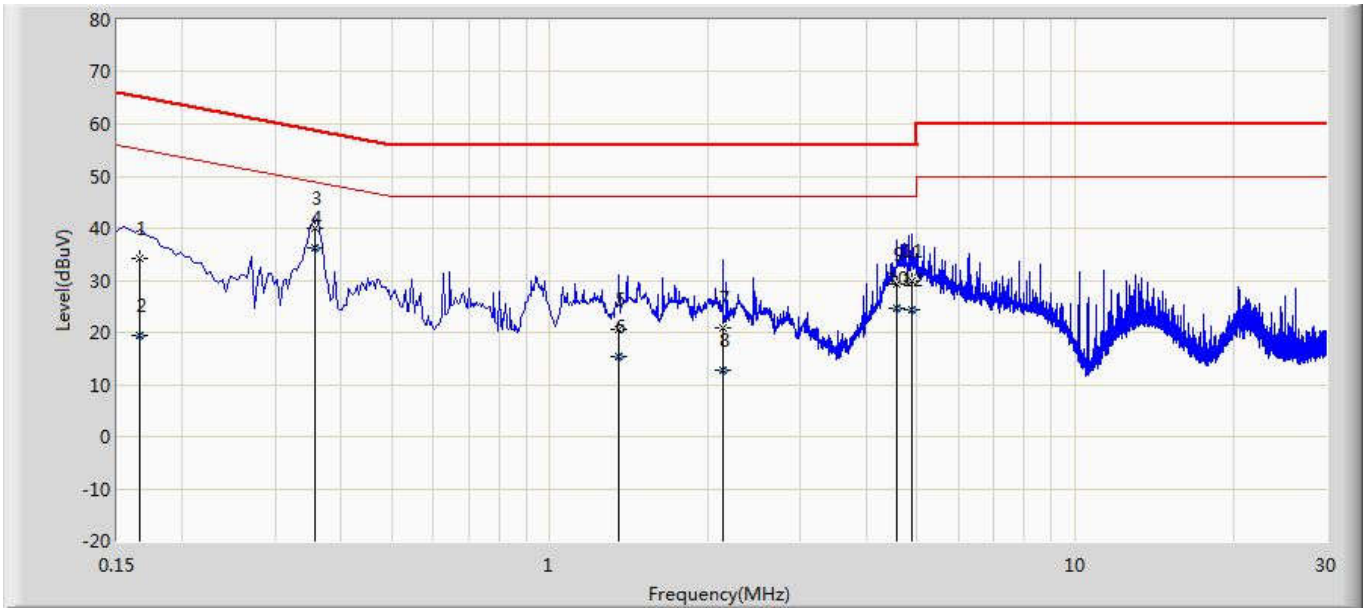
3.5. Test Result

Site: TR1	Time: 2017/02/08 - 17:48
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Line
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 5180 by 802.11a	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.150	35.989	26.369	-30.011	66.000	9.621	QP
2		0.150	23.073	13.452	-32.927	56.000	9.621	AV
3		0.354	39.379	29.754	-19.489	58.868	9.626	QP
4	*	0.354	35.634	26.008	-13.234	48.868	9.626	AV
5		0.942	26.746	17.090	-29.254	56.000	9.656	QP
6		0.942	21.868	12.212	-24.132	46.000	9.656	AV
7		4.514	31.030	21.282	-24.970	56.000	9.748	QP
8		4.514	26.147	16.399	-19.853	46.000	9.748	AV
9		4.818	30.782	21.024	-25.218	56.000	9.758	QP
10		4.818	25.858	16.100	-20.142	46.000	9.758	AV
11		11.250	30.041	20.180	-29.959	60.000	9.862	QP
12		11.250	21.121	11.260	-28.879	50.000	9.862	AV

Site: TR1	Time: 2017/02/08 - 17:52
Limit: FCC_Part15.207_CE_AC Power	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Neutral
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 5180 by 802.11a	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.166	34.271	24.672	-30.887	65.158	9.600	QP
2		0.166	19.485	9.885	-35.673	55.158	9.600	AV
3		0.358	40.131	30.520	-18.644	58.775	9.612	QP
4	*	0.358	36.258	26.646	-12.517	48.775	9.612	AV
5		1.354	20.576	10.925	-35.424	56.000	9.652	QP
6		1.354	15.365	5.714	-30.635	46.000	9.652	AV
7		2.134	20.836	11.153	-35.164	56.000	9.682	QP
8		2.134	12.759	3.077	-33.241	46.000	9.682	AV
9		4.570	29.153	19.405	-26.847	56.000	9.748	QP
10		4.570	24.575	14.828	-21.425	46.000	9.748	AV
11		4.874	29.927	20.174	-26.073	56.000	9.754	QP
12		4.874	24.429	14.676	-21.571	46.000	9.754	AV

4. Radiated Emission

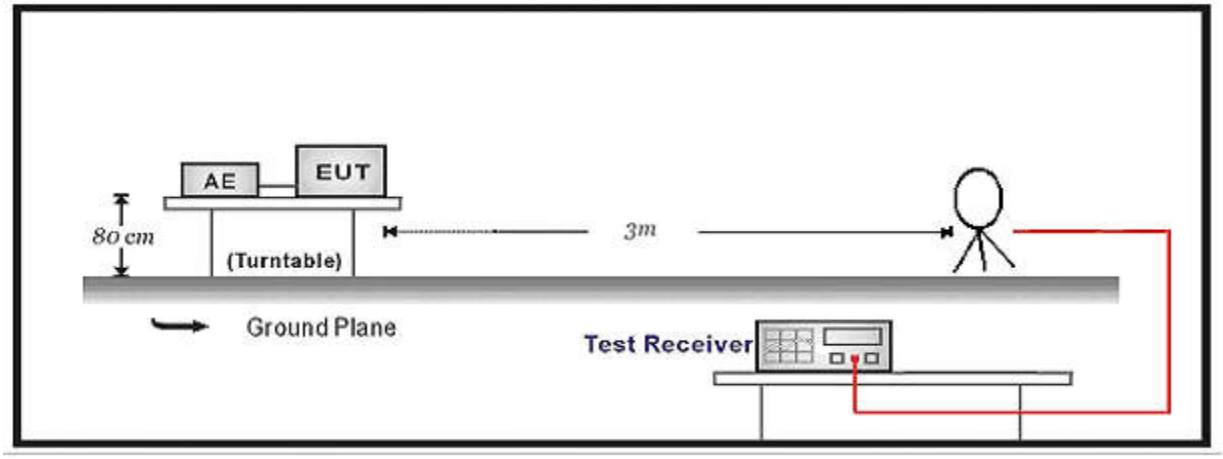
4.1. Test Equipment

Radiated Emission / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2016.03.29	2017.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2016.11.16	2017.11.15
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2016.10.16	2017.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2017.03.02	2018.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2017.01.03	2018.01.02

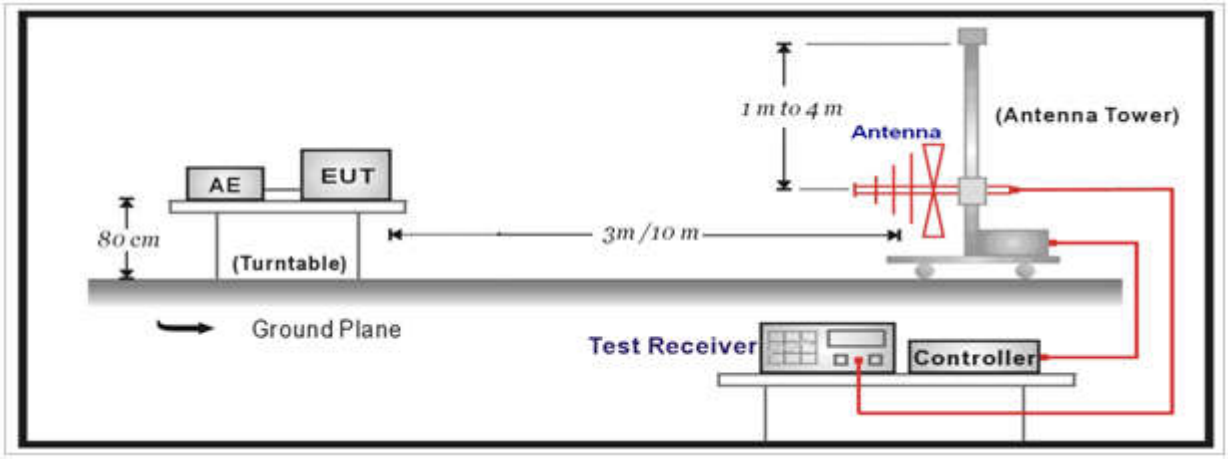
Radiated Emission / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Preamplifier	Miteq	NSP1800-25	1364185	2016.05.06	2017.05.05
Preamplifier	DEKRA Testing and Certification (Suzhou) Co., Ltd.	AP-040G	CHM-0906001	2016.05.06	2017.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2017.01.22	2018.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2016.11.25	2017.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2017.03.02	2018.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2017.03.02	2018.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2017.03.02	2018.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2016.06.10	2017.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2017.01.03	2018.01.02
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

4.2. Test Setup

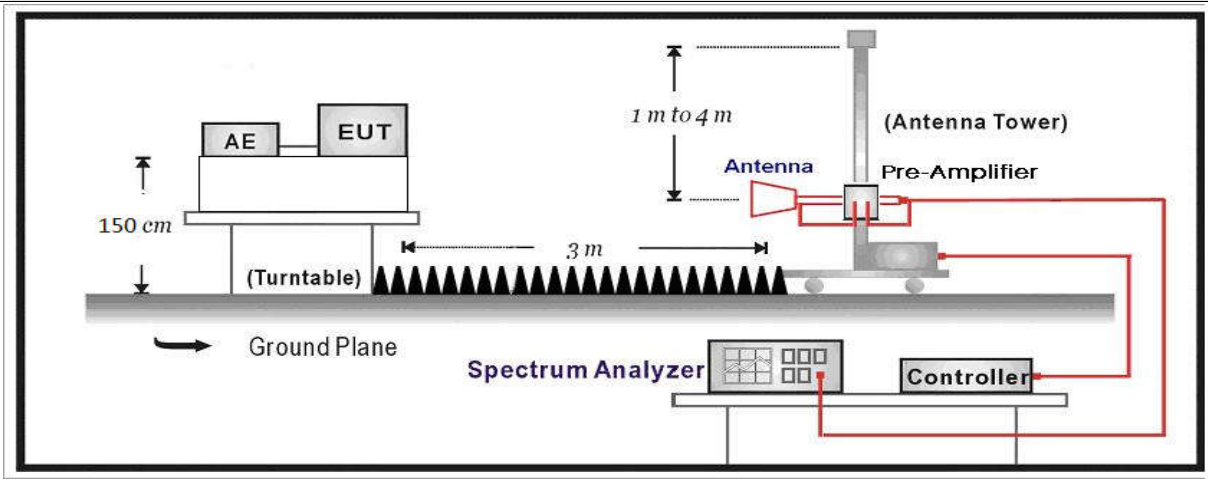
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



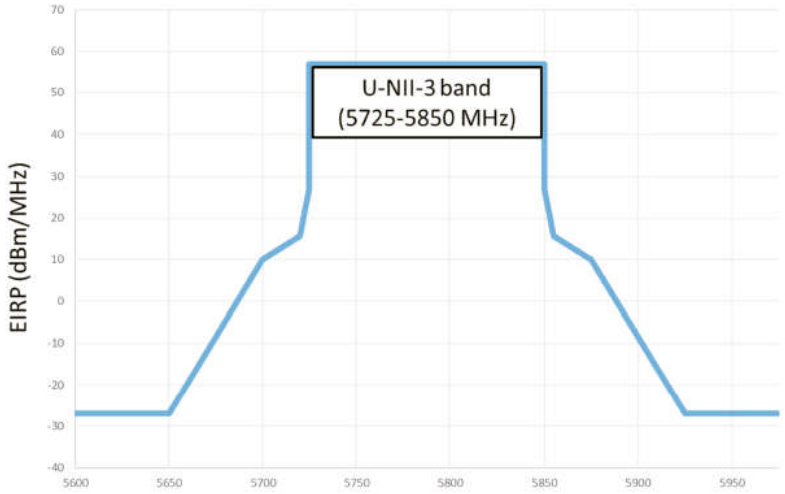
4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209 (Restricted Band Emissions Limit)		
Frequency (MHz)	Distance (m)	Level (dB μV/m)
0.009-0.490	300	2400/F(kHz)
0.490-1.705	30	24000/F(kHz)
1.705-30.0	30	30
30-88	3	100**
88-216	3	150**
216-960	3	200**
Above 960	3	500

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

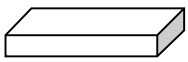
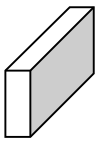
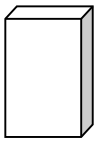
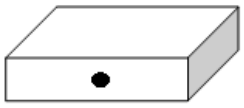
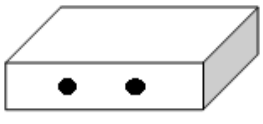
FCC Part 15 Subpart C Paragraph 15.205 (Restricted Band)			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 –16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975–12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675–12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			

FCC Part 15 Subpart C Paragraph 15.407(5)(b) (Unrestricted Band Emissions Limit)		
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dB μV/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3
5725 - 5850		
Note: 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.		

4.4. Test Procedure

Test Method					
	References Rule			Chapter	Description
☐	ANSI C63.10			12.7.3	Emissions in non-restricted frequency bands
☒	ANSI C63.10			12.7.2	Emissions in restricted frequency bands
	☒	ANSI C63.10		12.7.5	Radiated emission measurements
	☒	ANSI C63.10		12.7.6	Procedure for peak unwanted emissions measurements above 1000 MHz
	☒	ANSI C63.10		12.7.7	Procedures for average unwanted emissions measurements above 1000 MHz
		☐	ANSI C63.10	12.7.7.2	Method AD (average detection)—primary method
		☒	ANSI C63.10	12.7.7.3	Method VB-A (Alternative)
	☒	ANSI C63.10		6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	☒	ANSI C63.10		6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	☒	ANSI C63.10		6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
☐	FCC KDB 789033 D02v01r04			G.2	Unwanted Emissions that fall Outside of the Restricted Bands
☐	FCC KDB 789033 D02v01r04			G.1	Unwanted Emissions in the Restricted Bands
	☐	FCC KDB 789033 D02v01r04		G.4	Procedure for Unwanted Emissions Measurements below 1000 MHz
	☐	FCC KDB 789033 D02v01r04		G.5	Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz
	☐	FCC KDB 789033 D02v01r04		G.6	Procedures for Average Unwanted Emissions Measurements above 1000 MHz
		☐	FCC KDB 789033 D02v01r04	G.6.c	Method AD (Average detection)—primary method
		☐	FCC KDB 789033 D02v01r04	G.6.d	Method VB (Averaging using reduced video bandwidth): Alternative method.

4.5. EUT test Axis definition

<table>
<tr><td>Item</td><td colspan="4">Radiated Emission</td></tr>
<tr><td rowspan="5">Device Category</td><td>☒</td><td colspan="3">Outdoor AP</td></tr>
<tr><td>☐</td><td colspan="3">Indoor AP</td></tr>
<tr><td>☒</td><td colspan="3">Fixed point-to-point AP</td></tr>
<tr><td>☐</td><td colspan="3">Outdoor fixed point-to-multipoint AP</td></tr>
<tr><td>☐</td><td colspan="3">Client</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1-9</td></tr>
<tr><td rowspan="11">Test method</td><td>☒</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☒</td></tr>
<tr><td>☐</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td colspan="2">Chain 2</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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4.6. Test Result

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	AC-5	Test Date	:	2017.03.12
Test Mode	:	Mode 1: Transmit by 802.11a			

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector
Ant 0+1	36	H	10360.0	36.6	13.3	49.9	54（Note3）	-4.1	PK
		H	15540.0	31.8	18.5	50.3	54（Note3）	-3.7	PK
		V	10360.0	36.2	13.3	49.6	54（Note3）	-4.4	PK
		V	15540.0	32	18.5	50.5	54（Note3）	-3.5	PK
	40	H	10440.0	34.6	13.8	48.3	54（Note3）	-5.7	PK
		H	15660.0	31.9	18.6	50.5	54（Note3）	-3.5	PK
		V	10440.0	39.4	13.8	53.2	54（Note3）	-0.8	PK
		V	15660.0	31.2	18.6	49.8	54（Note3）	-4.2	PK
	48	H	10480.0	34.7	13.6	48.3	54（Note3）	-5.7	PK
		H	15720.0	30.9	20.3	51.2	54（Note3）	-2.8	PK
		V	10480.0	39.8	13.6	53.4	54（Note3）	-0.6	PK
		V	15720.0	31.8	20.3	52.1	54（Note3）	-1.9	PK
	149	H	11480.0	41.0	15.0	56.0	74.0	-18	PK
		H	11489.0	34.5	15.0	49.6	54.0	-4.4	AV
		H	17235.0	31.0	19.5	50.5	54（Note3）	-3.5	PK
		V	11489.0	48.6	15.0	63.7	74.0	-10.3	PK
		V	11490.0	38.5	15.1	53.6	54.0	-0.4	AV
		V	17235.0	31.9	19.5	51.4	54（Note3）	-2.6	PK
	157	H	11566.0	40.8	16.3	57.1	74.0	-16.9	PK
		H	11570.0	35.2	16.2	51.4	54.0	-2.6	AV
		H	17355.0	30.9	20.6	51.4	54（Note3）	-2.6	PK
		V	11570.0	37.3	16.2	53.4	54.0	-0.6	AV
		V	11574.0	52.1	16.0	68.1	74.0	-5.9	PK
		V	17355.0	32.8	20.6	53.4	54（Note3）	-0.6	PK
	165	H	11650.0	32.2	16.5	48.7	54.0	-5.3	AV
		H	11651.0	42.2	16.5	58.7	74.0	-15.3	PK
		H	17475.0	31.7	20.2	51.9	54（Note3）	-2.1	PK
		V	11642.0	51.6	16.7	68.3	74.0	-5.7	PK
		V	11650.0	37.3	16.5	53.8	54.0	-0.2	AV

		V	17475.0	34.4	20.2	54.6	74.0	-19.4	PK
		V	17475.0	34.4	20.2	54.6	54.0	0.6	AV

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. As the radiated emission was performed, so conducted emission was not tested.

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	AC-5	Test Date	:	2017.03.12
Test Mode	:	Mode 2: Transmit by 802.11n(5MHz)			

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector
Ant 0+1	36	H	10360	34.2	13.3	47.5	54（Note3）	-6.5	PK
		H	15540	31.3	18.5	49.8	54（Note3）	-4.2	PK
		V	10360	38.1	13.3	51.4	54（Note3）	-2.6	PK
		V	15540	31.3	18.5	49.8	54（Note3）	-4.2	PK
	40	H	10440	34.5	13.8	48.3	54（Note3）	-5.7	PK
		H	15660	30.7	18.6	49.3	54（Note3）	-4.7	PK
		V	10440	38.1	13.8	51.9	54（Note3）	-2.1	PK
		V	15660	30.5	18.6	49.1	54（Note3）	-4.9	PK
	48	H	10480	36.7	13.6	50.3	54（Note3）	-3.7	PK
		H	15720	30.4	20.3	50.7	54（Note3）	-3.3	PK
		V	10480	37	13.6	50.6	54（Note3）	-3.4	PK
		V	15720	29.7	20.3	50.0	54（Note3）	-4	PK
	149	H	11489	41.5	15.0	56.6	74.0	-17.4	PK
		H	11489	34.7	15.0	49.7	54.0	-4.3	AV
		H	17235	31.4	19.5	50.9	54（Note3）	-3.1	PK
		V	11490	42.3	15.1	57.3	74.0	-16.7	PK
		V	11490	38.3	15.1	53.4	54.0	-0.6	AV
		V	17235	30.5	19.5	50.0	54（Note3）	-4	PK
	157	H	11566	39.2	16.3	55.5	74.0	-18.5	PK
		H	11570	31.5	16.2	47.6	54.0	-6.4	AV
		H	17355	30.1	20.6	50.7	54（Note3）	-3.3	PK
		V	11566	46.9	16.3	63.3	74.0	-10.7	PK
		V	11570	37.3	16.2	53.5	54.0	-0.5	AV
		V	17355	30.2	20.6	50.7	54（Note3）	-3.3	PK
	165	H	11642	39.9	16.7	56.6	74.0	-17.4	PK
		H	11650	33.7	16.5	50.2	54.0	-3.8	AV
		H	17475	30.1	20.2	50.3	54（Note3）	-3.7	PK
		V	11650	36.6	16.5	53.1	54.0	-0.9	AV
		V	11651	48.2	16.5	64.7	74.0	-9.3	PK
		V	17475	32.0	20.2	52.2	54（Note3）	-1.8	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. As the radiated emission was performed, so conducted emission was not tested.

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	AC-5	Test Date	:	2017.03.12
Test Mode	:	Mode 3: Transmit by 802.11n(10MHz)			

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector
Ant 0+1	36	H	10360.0	33.9	13.3	47.2	54（Note3）	-6.8	PK
		H	15540.0	31.1	18.5	49.6	54（Note3）	-4.4	PK
		V	10360.0	37.3	13.3	50.6	54（Note3）	-3.4	PK
		V	15540.0	30.4	18.5	48.9	54（Note3）	-5.1	PK
	40	H	10440.0	34.5	13.8	48.3	54（Note3）	-5.7	PK
		H	15660.0	30.1	18.6	48.7	54（Note3）	-5.3	PK
		V	10440.0	37.7	13.8	51.5	54（Note3）	-2.5	PK
		V	15660.0	30.4	18.6	49.0	54（Note3）	-5.0	PK
	48	H	10480.0	36.4	13.6	50.0	54（Note3）	-4.0	PK
		H	15720.0	30.1	20.3	50.4	54（Note3）	-3.6	PK
		V	10480.0	36.2	13.6	49.8	54（Note3）	-4.2	PK
		V	15720.0	29.1	20.3	49.4	54（Note3）	-4.6	PK
	149	H	11489.0	41.0	15.0	56.1	74.0	-17.9	PK
		H	11489.0	34.4	15.0	49.4	54.0	-4.6	AV
		H	17235.0	31.0	19.5	50.4	54（Note3）	-3.6	PK
		V	11490.0	42.0	15.1	57.1	74.0	-16.9	PK
		V	11490.0	37.8	15.1	52.9	54.0	-1.1	AV
		V	17235.0	30.2	19.5	49.7	54（Note3）	-4.3	PK
	157	H	11566.0	39.0	16.3	55.3	74.0	-18.7	PK
		H	11570.0	30.7	16.2	46.9	54.0	-7.1	AV
		H	17355.0	29.5	20.6	50.1	54（Note3）	-3.9	PK
		V	11566.0	46.7	16.3	63.0	74.0	-11.0	PK
		V	11570.0	37.0	16.2	53.2	54.0	-0.8	AV
		V	17355.0	29.7	20.6	50.3	54（Note3）	-3.7	PK
	165	H	11642.0	39.8	16.7	56.6	74.0	-17.4	PK
		H	11650.0	32.7	16.5	49.2	54.0	-4.8	AV
		H	17475.0	29.9	20.2	50.1	54（Note3）	-3.9	PK
		V	11650.0	36.1	16.5	52.6	54.0	-1.4	AV
		V	11651.0	48.0	16.5	64.5	74.0	-9.5	PK
		V	17475.0	31.1	20.2	51.3	54（Note3）	-2.7	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. As the radiated emission was performed, so conducted emission was not tested.

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	AC-5	Test Date	:	2017.03.12
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz)			

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector
Ant 0+1	36	H	10360.0	35.1	13.3	48.5	54（Note3）	-5.5	PK
		H	15540.0	31.7	18.5	50.2	54（Note3）	-3.8	PK
		V	10360.0	38.6	13.3	51.9	54（Note3）	-2.1	PK
		V	15540.0	32.2	18.5	50.7	54（Note3）	-3.3	PK
	40	H	10440.0	34.7	13.8	48.5	54（Note3）	-5.5	PK
		H	15660.0	30.8	18.6	49.4	54（Note3）	-4.6	PK
		V	10440.0	39.1	13.8	52.9	54（Note3）	-1.1	PK
		V	15660.0	31.5	18.6	50.0	54（Note3）	-4.0	PK
	48	H	10480.0	37.1	13.6	50.6	54（Note3）	-3.4	PK
		H	15720.0	30.7	20.3	50.9	54（Note3）	-3.1	PK
		V	10480.0	37.9	13.6	51.5	54（Note3）	-2.5	PK
		V	15720.0	30.2	20.3	50.5	54（Note3）	-3.5	PK
	149	H	11489.0	42.0	15.0	57.0	74.0	-17.0	PK
		H	11489.0	35.5	15.0	50.6	54.0	-3.4	AV
		H	17235.0	32.0	19.5	51.5	54（Note3）	-2.5	PK
		V	11490.0	43.0	15.1	58.0	74.0	-16.0	PK
		V	11490.0	38.8	15.1	53.9	54.0	-0.1	AV
		V	17235.0	30.5	19.5	50.0	54（Note3）	-4.0	PK
	157	H	11566.0	39.2	16.3	55.6	74.0	-18.4	PK
		H	11570.0	32.2	16.2	48.4	54.0	-5.6	AV
		H	17355.0	30.8	20.6	51.4	54（Note3）	-2.6	PK
		V	11566.0	47.7	16.3	64.0	74.0	-10	PK
		V	11570.0	37.5	16.2	53.6	54.0	-0.4	AV
		V	17355.0	30.7	20.6	51.3	54（Note3）	-2.7	PK
	165	H	11642.0	40.3	16.7	57.1	74.0	-16.9	PK
		H	11650.0	34.2	16.5	50.7	54.0	-3.3	AV
		H	17475.0	30.8	20.2	51.0	54（Note3）	-3.0	PK
		V	11650.0	37.1	16.5	53.6	54.0	-0.4	AV
		V	11651.0	48.5	16.5	64.9	74.0	-9.1	PK
		V	17475.0	32.8	20.2	53.0	54（Note3）	-1.0	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. As the radiated emission was performed, so conducted emission was not tested.

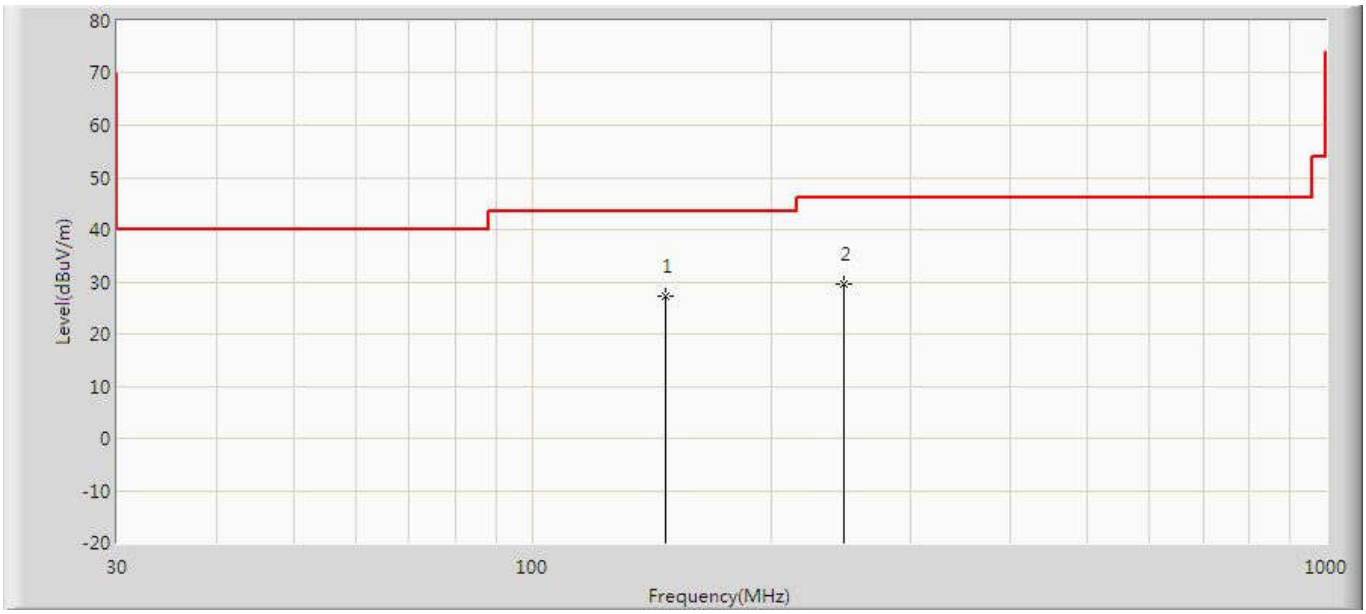
Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	AC-5	Test Date	:	2017.03.12
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz)			

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector
Ant 0+1	38	H	10380.0	33.1	13.2	46.3	54（Note3）	-7.7	PK
		H	15570.0	31.9	19.5	51.4	54（Note3）	-2.6	PK
		V	10380.0	33.2	13.2	46.3	54（Note3）	-7.7	PK
		V	15570.0	31.7	19.5	51.2	54（Note3）	-2.8	PK
	46	H	10460.0	34.2	13.4	47.6	54（Note3）	-6.4	PK
		H	15690.0	30.1	20.3	50.4	54（Note3）	-3.6	PK
		V	10460.0	34.3	13.4	47.8	54（Note3）	-6.2	PK
		V	15690.0	30.6	20.3	51.0	54（Note3）	-3.0	PK
	151	H	11506.0	40.7	15.7	56.4	74.0	-17.6	PK
		H	11510.0	35.2	15.7	50.9	54.0	-3.1	AV
		H	17265.0	30.5	20.6	51.1	54（Note3）	-2.9	PK
		V	11506.0	47.6	15.7	63.3	74.0	-10.7	PK
		V	11510.0	37.8	15.7	53.4	54.0	-0.6	AV
		V	17265.0	30.9	20.6	51.5	54（Note3）	-2.5	PK
	159	H	11591.0	38.5	16.4	54.9	74.0	-19.1	PK
		H	11590.0	34.2	16.4	50.6	54.0	-3.4	AV
		H	17385.0	30.5	20.6	51.1	54（Note3）	-2.9	PK
		V	11591.0	45.7	16.4	62.1	74.0	-11.9	PK
		V	11590.0	37.2	16.4	53.6	54.0	-0.4	AV
		V	17385.0	30.6	20.6	51.2	54（Note3）	-2.8	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 20dB below the limits, therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. As the radiated emission was performed, so conducted emission was not tested.

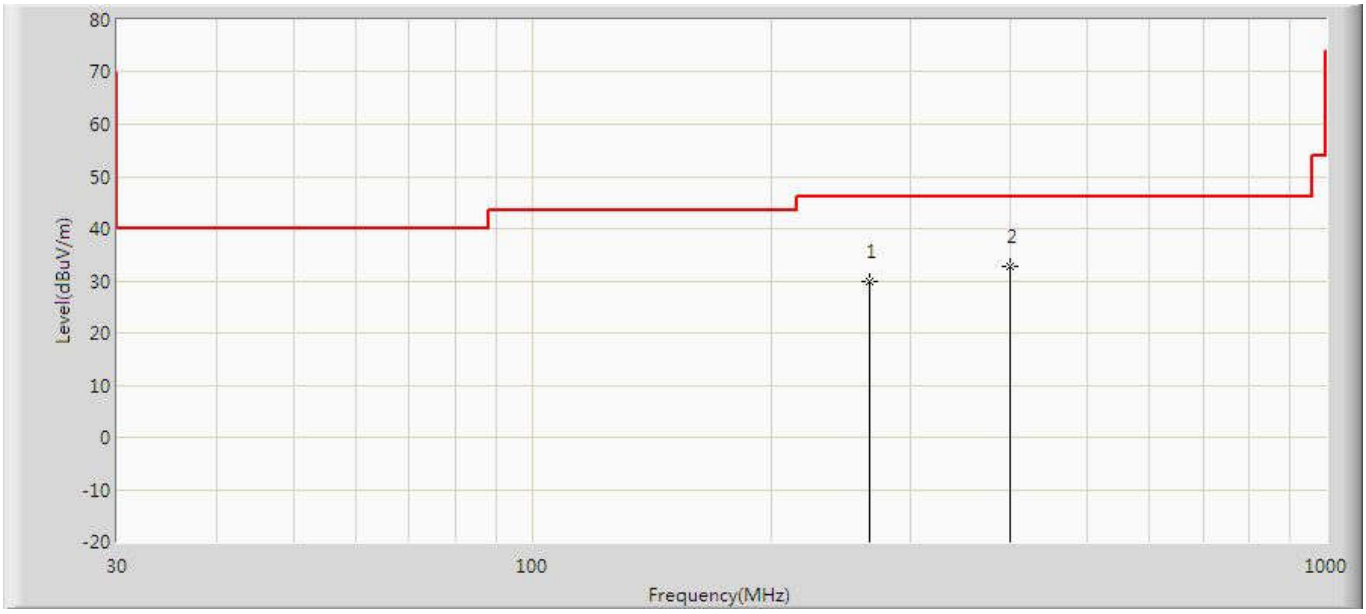
The worst case of Radiated Emission below 1GHz:

Engineer: Scott	
Site: AC2	Time: 2017/06/02 - 09:56
Limit: FCC_Part15.209_RE(3m)_ClassB	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Horizontal
EUT: 5GHz 300Mbps Outdoor Wireless Base Station	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 5180 by 802.11a	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	147.491	27.186	9.485	-16.314	43.500	17.701	QP
2		246.553	29.426	9.683	-16.574	46.000	19.743	QP

Engineer: Scott	
Site: AC2	Time: 2017/06/02 - 09:57
Limit: FCC_Part15.209_RE(3m)_ClassB	Margin: 0
Probe: AC2_3M(30-1000M)	Polarity: Vertical
EUT: 5GHz 300Mbps Outdoor Wireless Base Station	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 5180 by 802.11a	



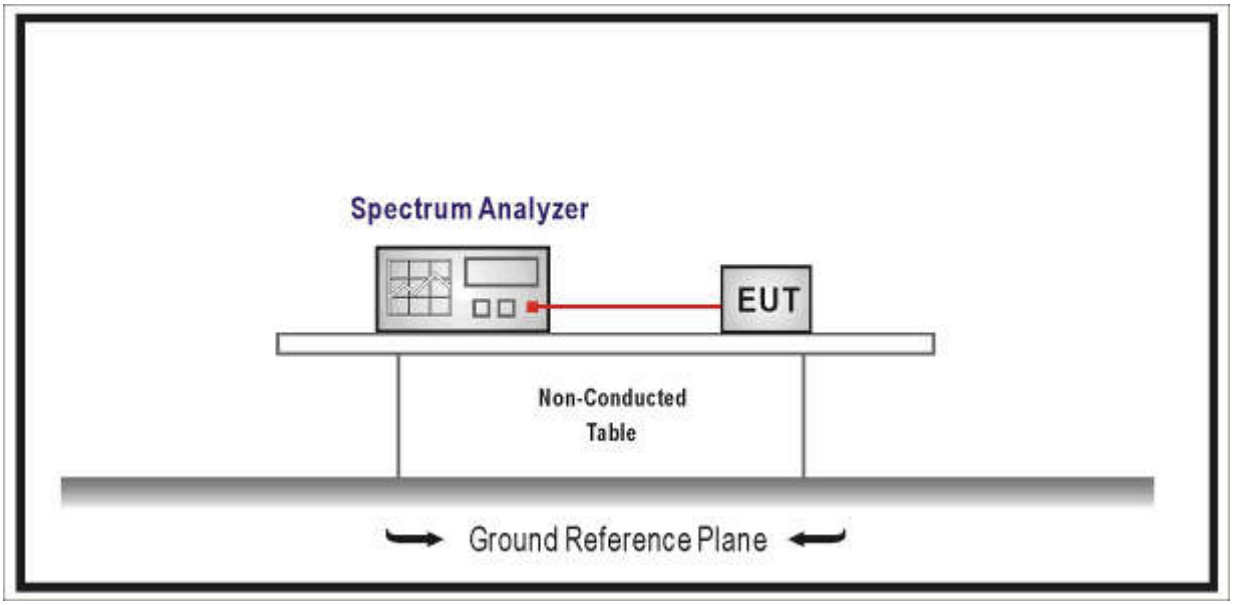
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		266.680	29.965	9.285	-16.035	46.000	20.680	QP
2	*	400.055	32.795	8.856	-13.205	46.000	23.939	QP

5. Emission bandwidth and occupied bandwidth

5.1. Test Equipment

Emission bandwidth and occupied bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2016.04.09	2017.04.09
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2016.04.09	2017.04.09
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2016.04.10	2017.04.10
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

5.2. Test Setup



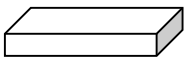
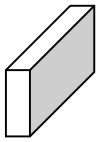
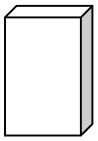
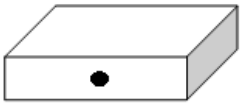
5.3. Limit

N/A

5.4. Test Procedure

Test Method				
	References Rule		Chapter	Description
☐	ANSI C63.10		12.4	Emission bandwidth and occupied bandwidth
	☐	ANSI C63.10	12.4.1	Emission bandwidth (26dB)
	☐	ANSI C63.10	12.4.2	Occupied bandwidth (99%)
☒	FCC KDB 789033 D02v01r04		C	Bandwidth Measurement
	☒	FCC KDB 789033 D02v01r04	C.1	Emission Bandwidth (26dB)
	☐	FCC KDB 789033 D02v01r04	C.2	Minimum Emission Bandwidth for the band 5.725-5.85 GHz (6dB)
☒	FCC KDB 789033 D02v01r04		D	99 Percent Occupied Bandwidth

5.5. EUT test Axis definition

<table>
<tr><td>Item</td><td colspan="4">Occupied bandwidth</td></tr>
<tr><td rowspan="5">Device Category</td><td>☒</td><td colspan="3">Outdoor AP</td></tr>
<tr><td>☐</td><td colspan="3">Indoor AP</td></tr>
<tr><td>☒</td><td colspan="3">Fixed point-to-point AP</td></tr>
<tr><td>☐</td><td colspan="3">Outdoor fixed point-to-multipoint AP</td></tr>
<tr><td>☐</td><td colspan="3">Client</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1-9</td></tr>
<tr><td rowspan="12">Test method</td><td>☐</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☐</td></tr>
<tr><td>☒</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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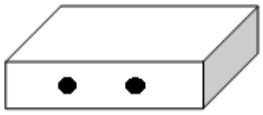
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
</table>

5.6. Test Result

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	TR8	Test Date	:	2017.03.12
Test Mode	:	Mode 1~5			

Mode 1: Transmit by 802.11a

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Lower/Higher Frequency (MHz)		Result
		Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
36	5180	21.600	22.760	16.608	16.720	5171.696	5171.640	Pass
44	5220	22.220	21.630	16.709	16.595	N/A	N/A	Pass
48	5240	21.040	20.690	16.577	16.567	5248.289	5248.284	Pass

Mode 2: Transmit by 802.11n(5MHz)

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Lower/Higher Frequency (MHz)		Result
		Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
36	5180	5.134	5.059	4.482	4.472	5177.759	5177.764	Pass
44	5220	5.158	5.176	4.473	4.482	N/A	N/A	Pass
48	5240	5.111	5.177	4.491	4.471	5242.246	5242.236	Pass

Mode 3: Transmit by 802.11n(10MHz)

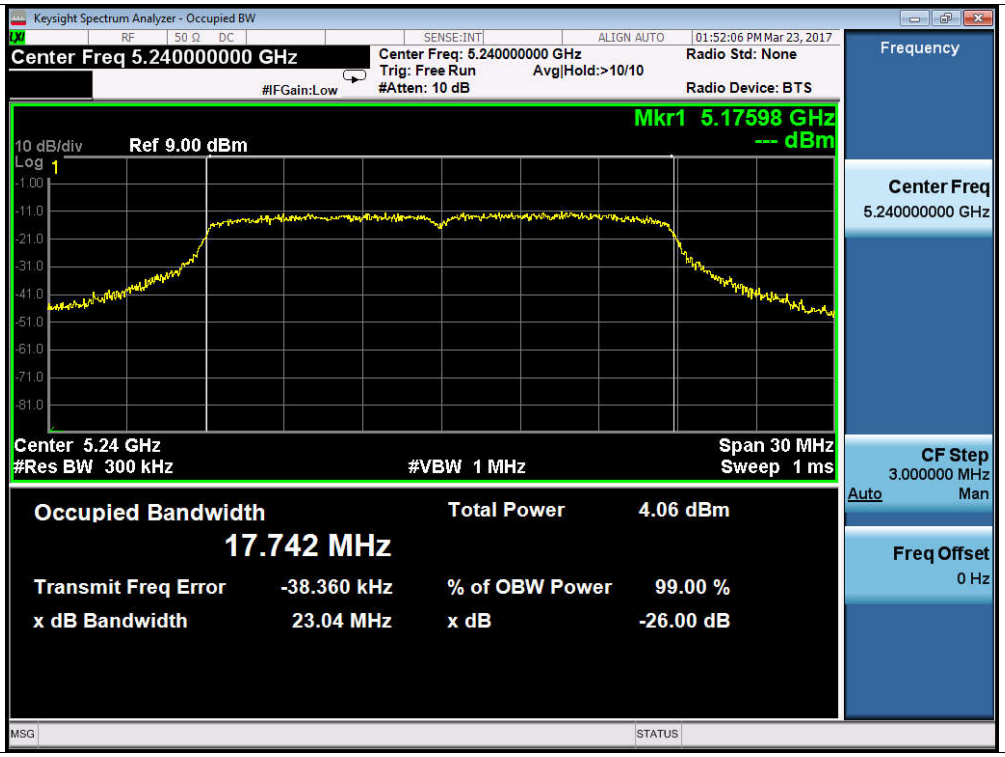
Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Lower/Higher Frequency (MHz)		Result
		Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
36	5180	9.888	9.969	8.816	8.837	5175.592	5175.582	Pass
44	5220	9.879	9.898	8.842	8.823	N/A	N/A	Pass
48	5240	10.030	9.738	8.838	8.805	5244.419	5244.403	Pass

Mode 4: Transmit by 802.11n(20MHz)

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Lower/Higher Frequency (MHz)		Result
		Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
36	5180	22.980	22.960	17.695	17.729	5171.153	5171.136	Pass
44	5220	22.010	23.210	17.711	17.765	N/A	N/A	Pass
48	5240	21.860	23.040	17.666	17.742	5248.833	5248.871	Pass

Mode 5: Transmit by 802.11n(40MHz)								
Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Lower/Higher Frequency (MHz)		Result
		Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
38	5190	45.910	47.960	36.469	36.805	5171.766	5171.598	Pass
46	5230	45.730	44.920	36.448	36.449	5248.224	5248.225	Pass

Mode 4: CH48 (5240MHz) Ant 1

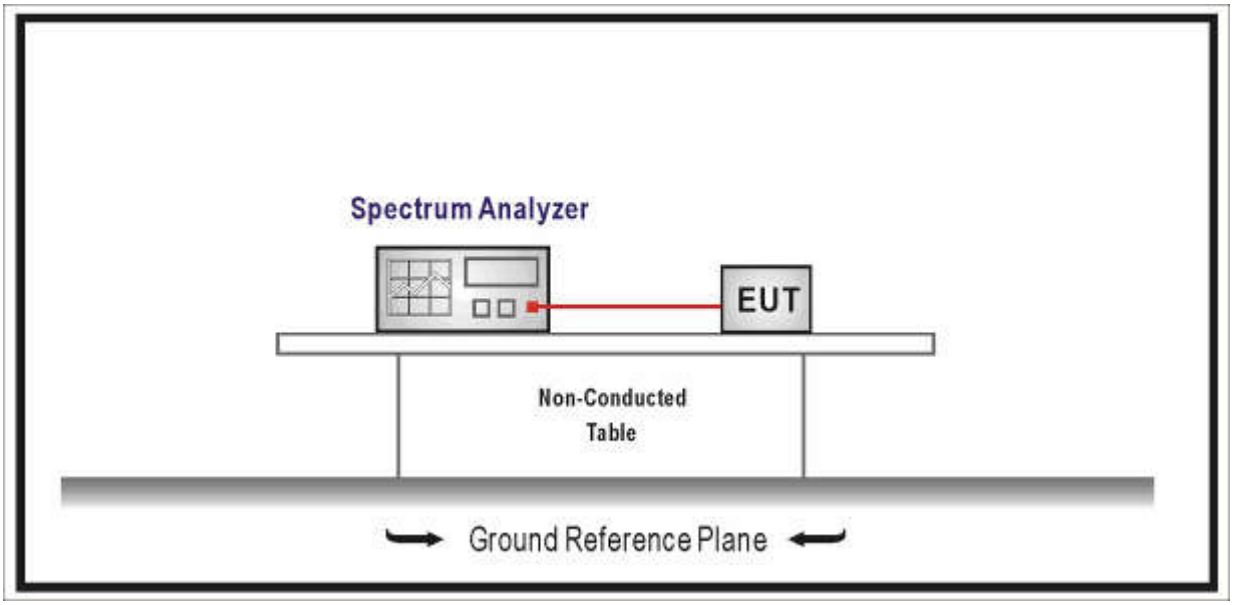


6. 6dB bandwidth

6.1. Test Equipment

Emission bandwidth and occupied bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2016.04.09	2017.04.08
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2016.04.09	2017.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2016.04.10	2017.04.09
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

6.2. Test Setup



6.3. Limit

>500kHz

6.4. Test Procedure

Test Method				
	References Rule		Chapter	Description
☐	ANSI C63.10		12.4	Emission bandwidth and occupied bandwidth
	☐	ANSI C63.10	12.4.1	Emission bandwidth (26dB)
	☐	ANSI C63.10	12.4.2	Occupied bandwidth (99%)
☒	FCC KDB 789033 D02v01r04		C	Bandwidth Measurement
	☐	FCC KDB 789033 D02v01r04	C.1	Emission Bandwidth (26dB)
	☒	FCC KDB 789033 D02v01r04	C.2	Minimum Emission Bandwidth for the band 5.725-5.85 GHz (6dB)
☐	FCC KDB 789033 D02v01r04		D	99 Percent Occupied Bandwidth

6.5. EUT test Axis definition

<table>
<tr><td>Item</td><td colspan="4">6dB bandwidth</td></tr>
<tr><td rowspan="5">Device Category</td><td>☒</td><td colspan="3">Outdoor AP</td></tr>
<tr><td>☐</td><td colspan="3">Indoor AP</td></tr>
<tr><td>☒</td><td colspan="3">Fixed point-to-point AP</td></tr>
<tr><td>☐</td><td colspan="3">Outdoor fixed point-to-multipoint AP</td></tr>
<tr><td>☐</td><td colspan="3">Client</td></tr>
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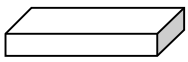
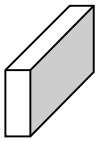
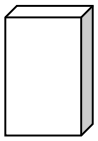
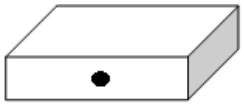
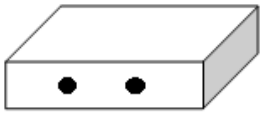
<tr><td rowspan="12">Test method</td><td>☐</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☐</td></tr>
<tr><td>☒</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☒</td><td colspan="2">Chain 1</td><td>Chain 2</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
</table>

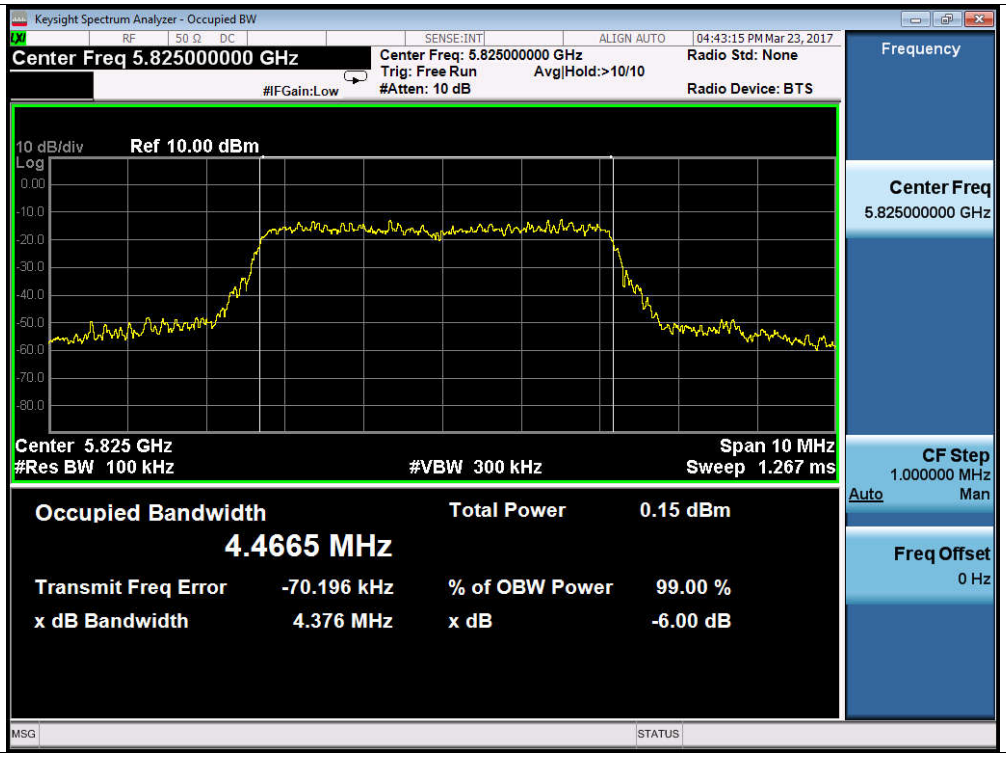
6.6. Test Result

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	TR8	Test Date	:	2017.03.12
Test Mode	:	Mode 1~5			

Mode 1: Transmit by 802.11a					
Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (kHz)	Result
		Ant0	Ant1		
149	5745	16.33	16.35	>500	Pass
157	5785	16.39	16.35		Pass
165	5825	16.34	16.35		Pass
Mode 2: Transmit by 802.11n(5MHz)					
Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (kHz)	Result
		Ant0	Ant1		
149	5745	4.44	4.44	>500	Pass
157	5785	4.41	4.44		Pass
165	5825	4.43	4.38		Pass
Mode 3: Transmit by 802.11n(10MHz)					
Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (kHz)	Result
		Ant0	Ant1		
149	5745	8.80	8.81	>500	Pass
157	5785	8.81	8.81		Pass
165	5825	8.80	8.81		Pass
Mode 4: Transmit by 802.11n(20MHz)					
Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (kHz)	Result
		Ant0	Ant1		
149	5745	17.58	17.32	>500	Pass
157	5785	17.57	17.13		Pass
165	5825	17.29	17.31		Pass

Mode 5: Transmit by 802.11n(40MHz)					
Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (kHz)	Result
		Ant0	Ant1		
151	5755	36.11	36.28	>500	Pass
159	5795	36.34	36.02		Pass

Mode 2: CH165 (5825MHz) Ant 1

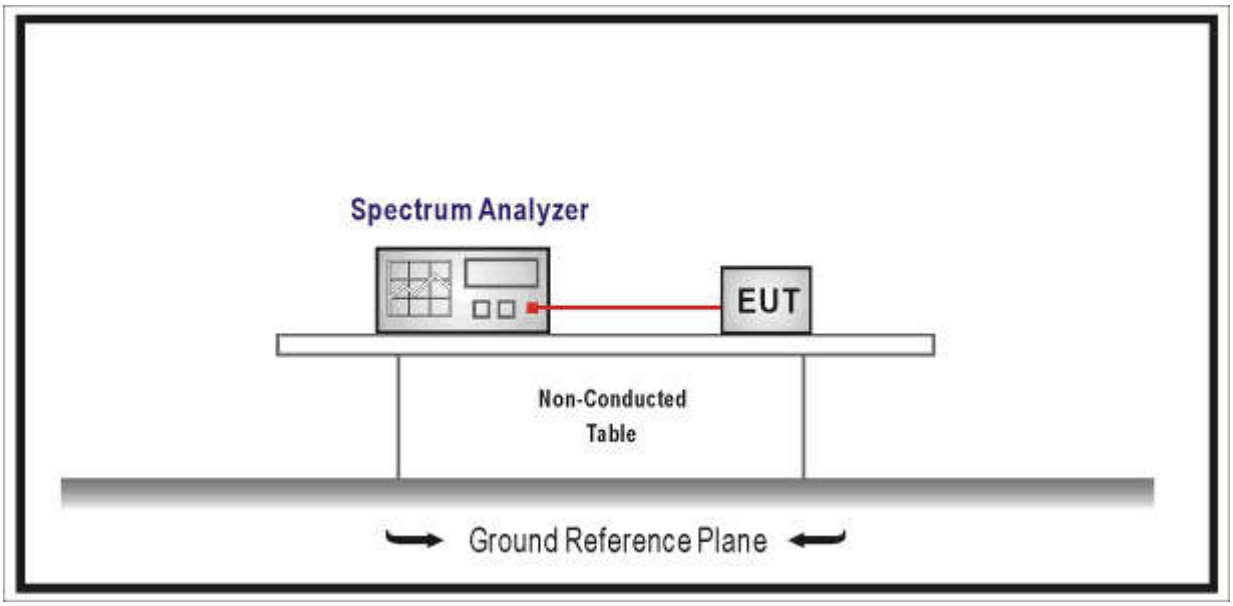


7. Power Output

7.1. Test Equipment

Power Output / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2017.01.03	2018.01.02
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2016.10.14	2017.10.13
Power Sensor	Anritsu	MA2411B	0846014	2016.10.14	2017.10.13
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2016.04.10	2017.04.09
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

7.2. Test Setup



7.3. Limit

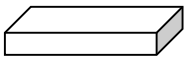
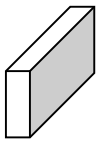
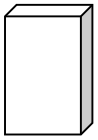
Fundamental emission output power Limit		
☒	For the band 5.15-5.25 GHz	
	☐	Outdoor access point: the maximum conducted output power shall not exceed 1 W. If G_{TX} ＞6dBi, then Pout≤30 - (G_{TX} - 6) and ≤125mW at any angle above 30 degrees
	☐	Indoor access point: the maximum conducted output power shall not exceed 1 W. If G_{TX} ＞6dBi, then Pout≤30 - (G_{TX} - 6)
	☒	Fixed point-to-point access points: the maximum conducted output power shall not exceed 1 W. If G_{TX}＞23dBi, then Pout≤30 - (G_{TX} - 23)
	☐	Mobile and portable client devices: the maximum conducted output power shall not exceed 250mW. If G_{TX}＞6dBi, then Pout≤24 - (G_{TX} - 6)
☐	For the band 5.25-5.35 GHz:	
	☐	the maximum conducted output power shall not exceed 250mW or 11dBm+10 Log B, where B is the 26dB emission bandwidth in MHz. If G_{TX} ＞ 6dBi, then Pout ≤ (The lesser of 24 or 11dBm+10 Log B) - (GTX - 6)
☐	For the 5.47-5.725 GHz:	
	☐	the maximum conducted output power shall not exceed 250mW or 11dBm+10 Log B, where B is the 26dB emission bandwidth in MHz. If G_{TX}＞6dBi, then Pout ≤ (The lesser of 24 or 11dBm+10 Log B) - (G_{TX} - 6)
☒	For the band 5.725-5.85 GHz:	
	☐	Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6)
	☒	Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W
Note 1 : G_{TX} directional gain of transmitting antennas. Note 2 : P_{out} is maximum peak conducted output power .		

7.4. Test Procedure

Fundamental emission output power Test Method					
	References Rule			Chapter	Description
☒	ANSI C63.10			12.3	Maximum conducted output power
	☒	ANSI C63.10		12.3.2	Maximum conducted output power measurement using a spectrum analyzer (SA) or EMI receiver
		☐	ANSI C63.10	12.3.2.2	Method SA-1
		☐	ANSI C63.10	12.3.2.3	Method SA-1A (alternative)
		☒	ANSI C63.10	12.3.2.4	Method SA-2
		☐	ANSI C63.10	12.3.2.5	Method SA-2A (alternative)
		☐	ANSI C63.10	12.3.2.6	Method SA-3
		☐	ANSI C63.10	12.3.2.7	Method SA-3A (alternative)
	☒	ANSI C63.10		12.3.3	Maximum conducted output power using a power meter
		☐	ANSI C63.10	12.3.3.1	Method PM
		☒	ANSI C63.10	12.3.3.2	Method PM-G

Directional Gain Calculations for In-Band test method				
	References Rule		Chapter	Description
☐	KDB 662911		F2)a)	Basic methodology with NANT transmit antennas
	☐	KDB 662911	F2)a) (i)	transmit signals are correlated
	☐	KDB 662911	F2)a) (ii)	transmit signals are uncorrelated
☐	KDB 662911		F2)b)	Sectorized antenna systems.
☐	KDB 662911		F2)c)	Cross-polarized antennas
	☐	ANSI C63.10	F2)c) (i)	Cross-polarized antennas with NANT = 2.
	☐	ANSI C63.10	F2)c) (ii)	Multiple antennas
☐	KDB 662911		F2)d)	Sectorized antenna systems.
	☐	KDB 662911	F2)d) (i)	transmit signals are correlated
	☐	KDB 662911	F2)d) (ii)	transmit signals are uncorrelated
☐	KDB 662911		F2)e)	Spatial Multiplexing
	☐	KDB 662911	F2)e) (i)	Antennas have the same gain
	☐	KDB 662911	F2)e) (ii)	Antenna have the different gain with one spatial stream
	☐	KDB 662911	F2)e) (iii)	Antenna have the different gain with more than one spatial stream
☒	KDB 662911		F2)f)	Cyclic Delay Diversity (CDD)
	☒	KDB 662911	F2)f) (i)	Antennas have the same gain
	☐	KDB 662911	F2)f) (ii)	Antenna have the different gain with one spatial stream
	☐	KDB 662911	F2)f) (ii)	Antenna have the different gain with more than one spatial stream

7.5. EUT test Axis definition

<table>
<tr><td>Item</td><td colspan="4">Power Output</td></tr>
<tr><td rowspan="5">Device Category</td><td>☒</td><td colspan="3">Outdoor AP</td></tr>
<tr><td>☐</td><td colspan="3">Indoor AP</td></tr>
<tr><td>☒</td><td colspan="3">Fixed point-to-point AP</td></tr>
<tr><td>☐</td><td colspan="3">Outdoor fixed point-to-multipoint AP</td></tr>
<tr><td>☐</td><td colspan="3">Client</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1-9</td></tr>
<tr><td rowspan="12">Test method</td><td>☐</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☐</td></tr>
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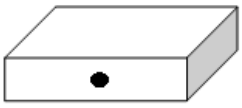
<tr><td></td><td colspan="3">  </td></tr>
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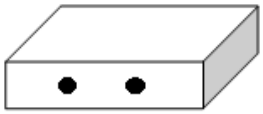
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
</table>

7.6. Test Result

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	TR8	Test Date	:	2017.03.12
Test Mode	:	Mode 1~5			

Mode 1: Transmit by 802.11a						
Channel No.	Frequency (MHz)	Measurement Power		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
CH36	5180	20.01	20.11	23.07	30.0	Pass
CH42	5220	20.04	20.41	23.24	30.0	Pass
CH48	5240	20.02	20.31	23.18	30.0	Pass
Channel No.	Frequency (MHz)	Measurement Power		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
CH149	5745	19.98	20.15	23.08	30.0	Pass
CH157	5785	20.05	20.27	23.17	30.0	Pass
CH165	5825	20.05	20.18	23.13	30.0	Pass
Mode 2: Transmit by 802.11n(5MHz)						
Channel No.	Frequency (MHz)	Measurement Power		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
CH36	5180	19.92	20.09	23.02	30.0	Pass
CH42	5220	19.91	20.08	23.01	30.0	Pass
CH48	5240	19.86	20.05	22.97	30.0	Pass
Channel No.	Frequency (MHz)	Measurement Power		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
CH149	5745	19.94	20.02	22.99	30.0	Pass
CH157	5785	19.91	20.06	23.00	30.0	Pass
CH165	5825	19.89	20.11	23.01	30.0	Pass

Mode 3: Transmit by 802.11n(10MHz)						
Channel No.	Frequency (MHz)	Measurement Power		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
CH36	5180	19.96	20.13	23.06	30.0	Pass
CH42	5220	19.89	20.09	23.00	30.0	Pass
CH48	5240	19.91	20.14	23.04	30.0	Pass
Channel No.	Frequency (MHz)	Measurement Power		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
CH149	5745	19.94	20.06	23.01	30.0	Pass
CH157	5785	19.93	20.1	23.03	30.0	Pass
CH165	5825	19.95	20.11	23.04	30.0	Pass

Mode 4: Transmit by 802.11n(20MHz)						
Channel No.	Frequency (MHz)	Measurement Power		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
CH36	5180	19.94	20.16	23.06	30.0	Pass
CH42	5220	20.03	20.22	23.14	30.0	Pass
CH48	5240	19.97	20.14	23.07	30.0	Pass
Channel No.	Frequency (MHz)	Measurement Power		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
CH149	5745	20.07	20.18	23.14	30.0	Pass
CH157	5785	20.01	20.11	23.07	30.0	Pass
CH165	5825	19.92	20.07	23.01	30.0	Pass

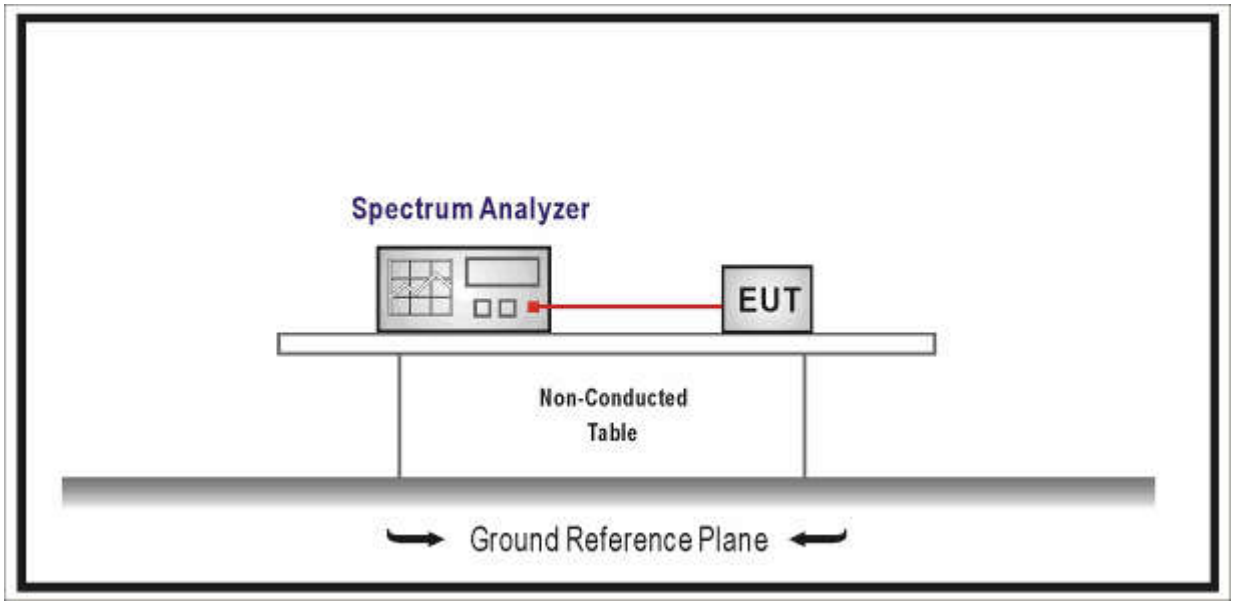
Mode 5: Transmit by 802.11n(40MHz)						
Channel No.	Frequency (MHz)	Measurement Power (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
38	5190	17.82	18.56	21.22	30.0	Pass
46	5230	19.91	20.17	23.05	30.0	Pass
Channel No.	Frequency (MHz)	Measurement Power (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Ant0	Ant1			
151	5755	19.96	20.15	23.07	30.0	Pass
159	5795	19.94	20.08	23.02	30.0	Pass

8. Peak Power Spectral Density

8.1. Test Equipment

Peak Power Spectral Density / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2016.04.09	2017.04.08
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2016.04.09	2017.04.08
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2016.04.10	2017.04.09
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

8.2. Test Setup



8.3. Limit

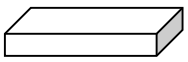
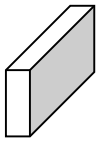
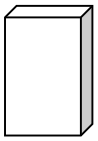
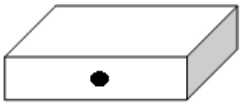
Fundamental emission output power Limit		
☒	For the band 5.15-5.25 GHz	
	☐	Outdoor access point: the maximum power spectral density shall not exceed 17 dBm/MHz. If G_{TX}＞6dBi, then Pout≤17 - (G_{TX} - 6)
	☐	Indoor access point: the maximum power spectral density shall not exceed 17 dBm/MHz. If G_{TX}＞6dBi, then Pout≤17 - (G_{TX} - 6)
	☒	Fixed point-to-point access points: the maximum power spectral density shall not exceed 17 dBm/MHz. If G_{TX}＞23dBi, then Pout≤17 - (G_{TX} - 23)
	☐	Mobile and portable client devices: the maximum power spectral density shall not exceed 11 dBm/MHz. If G_{TX}＞6dBi, then Pout≤11 - (G_{TX} - 6)
☐	For the 5.25-5.35 GHz:	
	☐	the maximum power spectral density shall not exceed 11 dBm/MHz. If G_{TX}＞6dBi, then Pout≤11 - (G_{TX} - 6)
☐	For the 5.47-5.725 GHz:	
	☐	the maximum power spectral density shall not exceed 11 dBm/MHz.If G_{TX}＞6dBi, then Pout≤11 - (G_{TX} - 6)
☒	For the band 5.725-5.85 GHz:	
	☒	the maximum power spectral density shall not exceed 30 dBm/500KHz. If G_{TX}＞6dBi, then Pout≤30 - (G_{TX} - 6)
Note 1 : G_{TX} directional gain of transmitting antennas. Note 2 : P_{out} is maximum peak conducted output power .		

8.4. Test Procedure

Fundamental emission output power Test Method			
	References Rule	Chapter	Description
☒	ANSI C63.10	12.5	Peak power spectral density
☒	FCC KDB 789033 D02v01r04	F	Maximum Power Spectral Density (PSD)

Directional Gain Calculations for In-Band test method				
	References Rule		Chapter	Description
☐	KDB 662911		F2)a)	Basic methodology with NANT transmit antennas
	☐	KDB 662911	F2)a) (i)	transmit signals are correlated
	☐	KDB 662911	F2)a) (ii)	transmit signals are uncorrelated
☐	KDB 662911		F2)b)	Sectorized antenna systems.
☐	KDB 662911		F2)c)	Cross-polarized antennas
	☐	ANSI C63.10	F2)c) (i)	Cross-polarized antennas with NANT = 2.
	☐	ANSI C63.10	F2)c) (ii)	Multiple antennas
☐	KDB 662911		F2)d)	Sectorized antenna systems.
	☐	KDB 662911	F2)d) (i)	transmit signals are correlated
	☐	KDB 662911	F2)d) (ii)	transmit signals are uncorrelated
☐	KDB 662911		F2)e)	Spatial Multiplexing
	☐	KDB 662911	F2)e) (i)	Antennas have the same gain
	☐	KDB 662911	F2)e) (ii)	Antenna have the different gain with one spatial stream
	☐	KDB 662911	F2)e) (iii)	Antenna have the different gain with more than one spatial stream
☒	KDB 662911		F2)f)	Cyclic Delay Diversity (CDD)
	☒	KDB 662911	F2)f) (i)	Antennas have the same gain
	☐	KDB 662911	F2)f) (ii)	Antenna have the different gain with one spatial stream
	☐	KDB 662911	F2)f) (ii)	Antenna have the different gain with more than one spatial stream

8.5. EUT test Axis definition

<table>
<tr><td>Item</td><td colspan="4">Peak power spectral density</td></tr>
<tr><td rowspan="5">Device Category</td><td>☒</td><td colspan="3">Outdoor AP</td></tr>
<tr><td>☐</td><td colspan="3">Indoor AP</td></tr>
<tr><td>☒</td><td colspan="3">Fixed point-to-point AP</td></tr>
<tr><td>☐</td><td colspan="3">Outdoor fixed point-to-multipoint AP</td></tr>
<tr><td>☐</td><td colspan="3">Client</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1-9</td></tr>
<tr><td rowspan="12">Test method</td><td>☐</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☐</td></tr>
<tr><td>☒</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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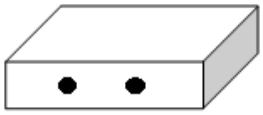
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
</table>

8.6. Test Result

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	TR8	Test Date	:	2017.03.12
Test Mode	:	Mode 1~5			

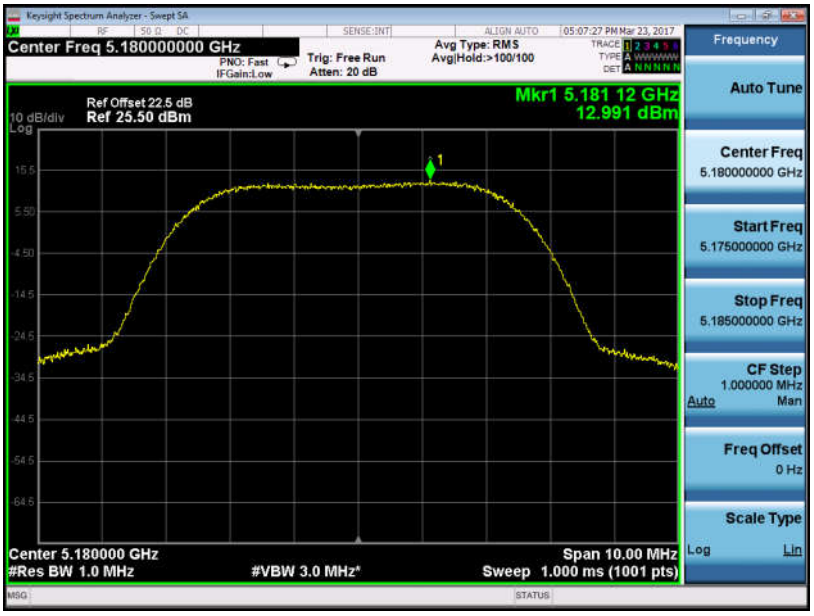
Mode 1: Transmit by 802.11a						
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant0	Ant1			
CH36	5180	9.122	8.219	11.70	17.0	Pass
CH44	5220	9.581	9.354	12.48	17.0	Pass
CH48	5240	9.222	9.518	12.38	17.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)		Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant0	Ant1			
CH149	5745	6.339	6.432	9.40	23.0	Pass
CH157	5785	6.371	6.374	9.38	23.0	Pass
CH165	5825	5.887	6.442	9.18	23.0	Pass
Mode 2: Transmit by 802.11n(5MHz)						
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant0	Ant1			
CH36	5180	12.991	12.530	15.78	17.0	Pass
CH44	5220	12.202	12.179	15.20	17.0	Pass
CH48	5240	11.361	12.484	14.97	17.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)		Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant0	Ant1			
CH149	5745	8.082	9.108	11.64	23.0	Pass
CH157	5785	9.121	9.643	12.40	23.0	Pass
CH165	5825	8.950	8.347	11.67	23.0	Pass

Mode 3: Transmit by 802.11n(10MHz)						
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant0	Ant1			
CH36	5180	9.770	9.486	12.64	17.0	Pass
CH44	5220	9.573	9.123	12.36	17.0	Pass
CH48	5240	8.687	9.800	12.29	17.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)		Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant0	Ant1			
CH149	5745	5.704	6.077	8.90	23.0	Pass
CH157	5785	6.007	5.866	8.95	23.0	Pass
CH165	5825	5.752	6.180	8.98	23.0	Pass
Mode 4: Transmit by 802.11n(20MHz)						
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant0	Ant1			
CH36	5180	9.230	9.561	12.41	17.0	Pass
CH44	5220	9.076	9.375	12.24	17.0	Pass
CH48	5240	9.475	9.197	12.35	17.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)		Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant0	Ant1			
CH149	5745	6.005	5.582	8.81	23.0	Pass
CH157	5785	6.291	6.033	9.17	23.0	Pass
CH165	5825	5.966	6.440	9.22	23.0	Pass
Mode 5: Transmit by 802.11n(40MHz)						
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant0	Ant1			
CH38	5190	5.027	3.943	7.53	17.0	Pass
CH46	5230	6.953	7.263	10.12	17.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)		Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant0	Ant1			

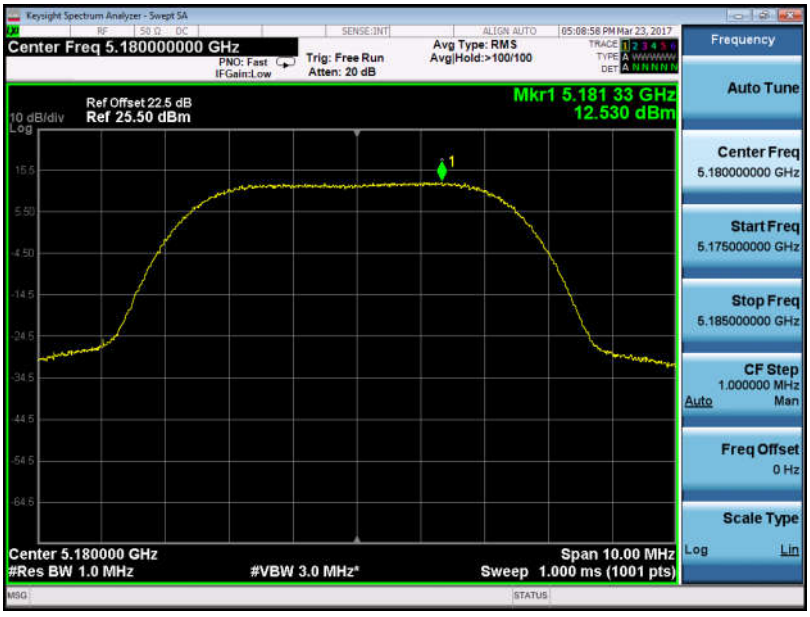
CH151	5755	3.830	2.561	6.25	23.0	Pass
CH159	5795	3.117	3.215	6.18	23.0	Pass

The worst case of 6dB Bandwidth as below:

Mode 2 CH36 (5180MHz) Ant 0



Mode 2 CH36 (5180MHz) Ant 1

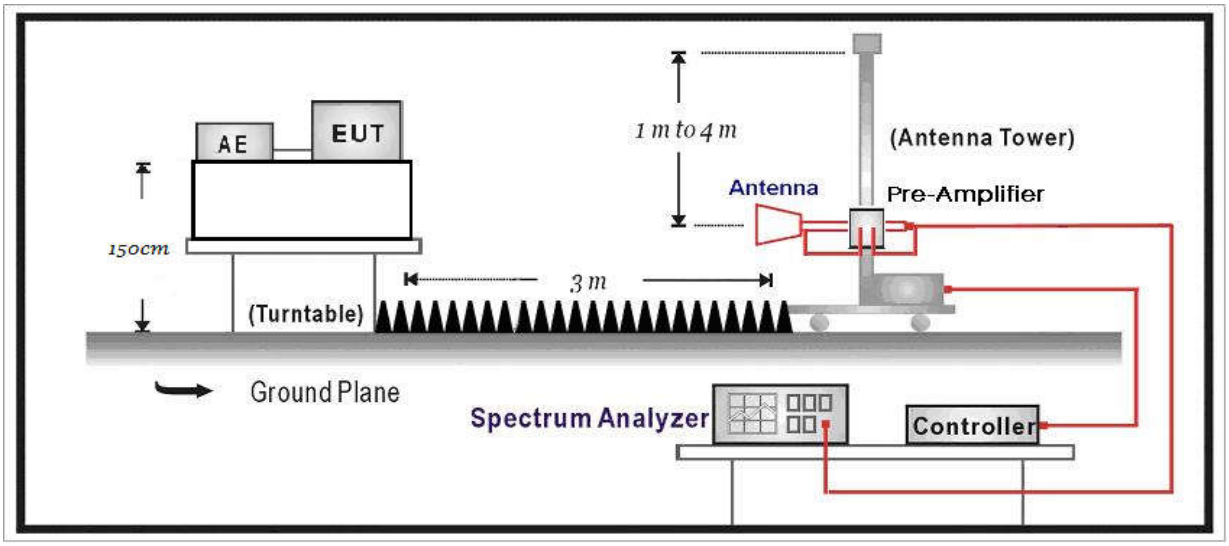


9. Radiated Emission Band Edge

9.1. Test Equipment

Radiated Emission Band Edge / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Receiver	Agilent	N9038A	MY51210196	2016.07.16	2017.07.15
Pre-Amplifier	Miteq	NSP1800-25	1364185	2016.05.03	2017.05.02
DRG Horn Antenna	ETS-Lindgren	3117	00167055	2016.07.12	2017.07.11
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2016.12.12	2017.09.17
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2017.02.28	2018.02.27
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2017.02.28	2018.02.27
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2017.01.04	2018.01.03
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

9.2. Test Setup



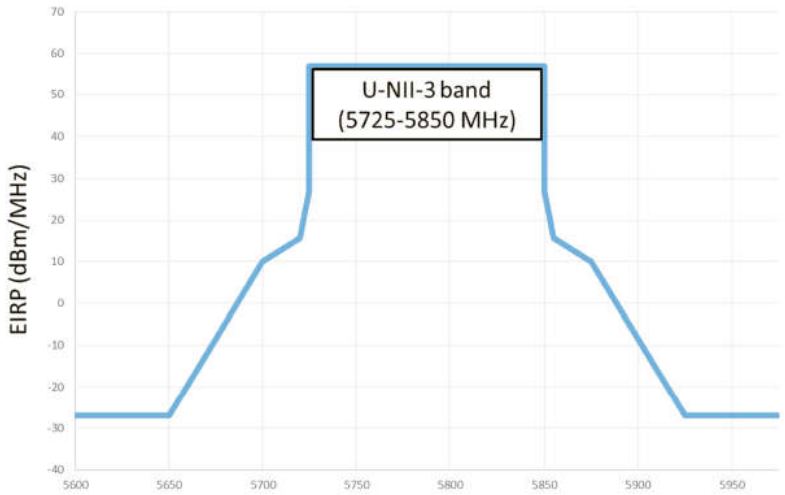
9.3. Limit

FCC Part 15 Subpart C Paragraph 15.209 (Restricted Band Emissions Limit)		
Frequency (MHz)	Distance (m)	Level (dBµV/m)
0.009-0.490	300	2400/F(kHz)
0.490-1.705	30	24000/F(kHz)
1.705-30.0	30	30
30-88	3	100**
88-216	3	150**
216-960	3	200**
Above 960	3	500

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

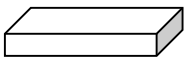
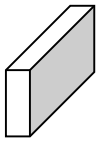
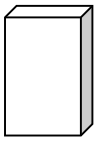
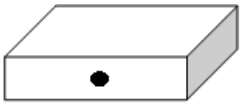
FCC Part 15 Subpart C Paragraph 15.205 (Restricted Band)			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 –16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975–12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675–12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			

FCC Part 15 Subpart C Paragraph 15.407(5)(b) (Unrestricted Band Emissions Limit)		
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dB μ V/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3
5725 - 5850		
Note: 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.		

9.4. Test Procedure

Test Method					
	References Rule			Chapter	Description
☐	ANSI C63.10			12.7.3	Emissions in non-restricted frequency bands
☒	ANSI C63.10			12.7.2	Emissions in restricted frequency bands
	☒	ANSI C63.10		12.7.5	Radiated emission measurements
	☒	ANSI C63.10		12.7.6	Procedure for peak unwanted emissions measurements above 1000 MHz
	☒	ANSI C63.10		12.7.7	Procedures for average unwanted emissions measurements above 1000 MHz
		☐	ANSI C63.10	12.7.7.2	Method AD (average detection)—primary method
		☒	ANSI C63.10	12.7.7.3	Method VB-A (Alternative)
	☒	ANSI C63.10		6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	☒	ANSI C63.10		6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	☒	ANSI C63.10		6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
☐	FCC KDB 789033 D02v01r04			G.2	Unwanted Emissions that fall Outside of the Restricted Bands
☐	FCC KDB 789033 D02v01r04			G.1	Unwanted Emissions in the Restricted Bands
	☐	FCC KDB 789033 D02v01r04		G.4	Procedure for Unwanted Emissions Measurements below 1000 MHz
	☐	FCC KDB 789033 D02v01r04		G.5	Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz
	☐	FCC KDB 789033 D02v01r04		G.6	Procedures for Average Unwanted Emissions Measurements above 1000 MHz
		☐	FCC KDB 789033 D02v01r04	G.6.c	Method AD (Average detection)—primary method
		☐	FCC KDB 789033 D02v01r04	G.6.d	Method VB (Averaging using reduced video bandwidth): Alternative method.

9.5. EUT test Axis definition

<table>
<tr><td>Item</td><td colspan="4">Peak power spectral density</td></tr>
<tr><td rowspan="5">Device Category</td><td>☒</td><td colspan="3">Outdoor AP</td></tr>
<tr><td>☐</td><td colspan="3">Indoor AP</td></tr>
<tr><td>☒</td><td colspan="3">Fixed point-to-point AP</td></tr>
<tr><td>☐</td><td colspan="3">Outdoor fixed point-to-multipoint AP</td></tr>
<tr><td>☐</td><td colspan="3">Client</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1-9</td></tr>
<tr><td rowspan="11">Test method</td><td>☒</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☒</td></tr>
<tr><td>☐</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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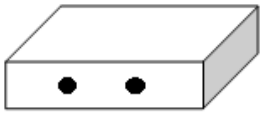
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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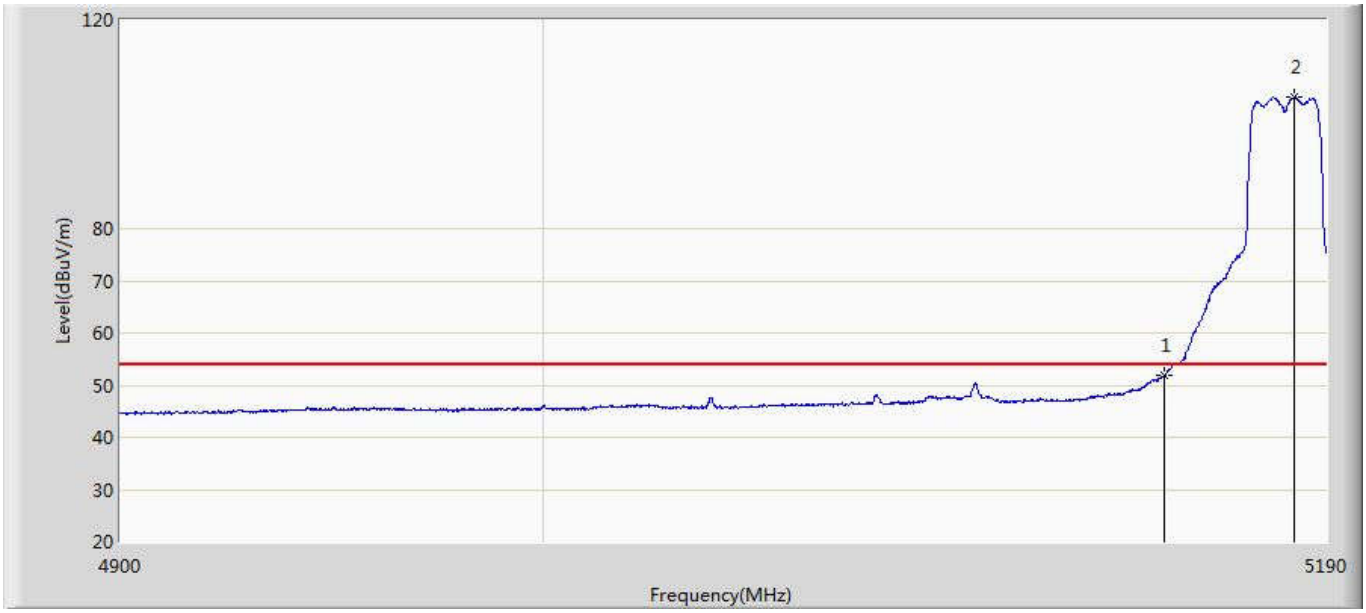
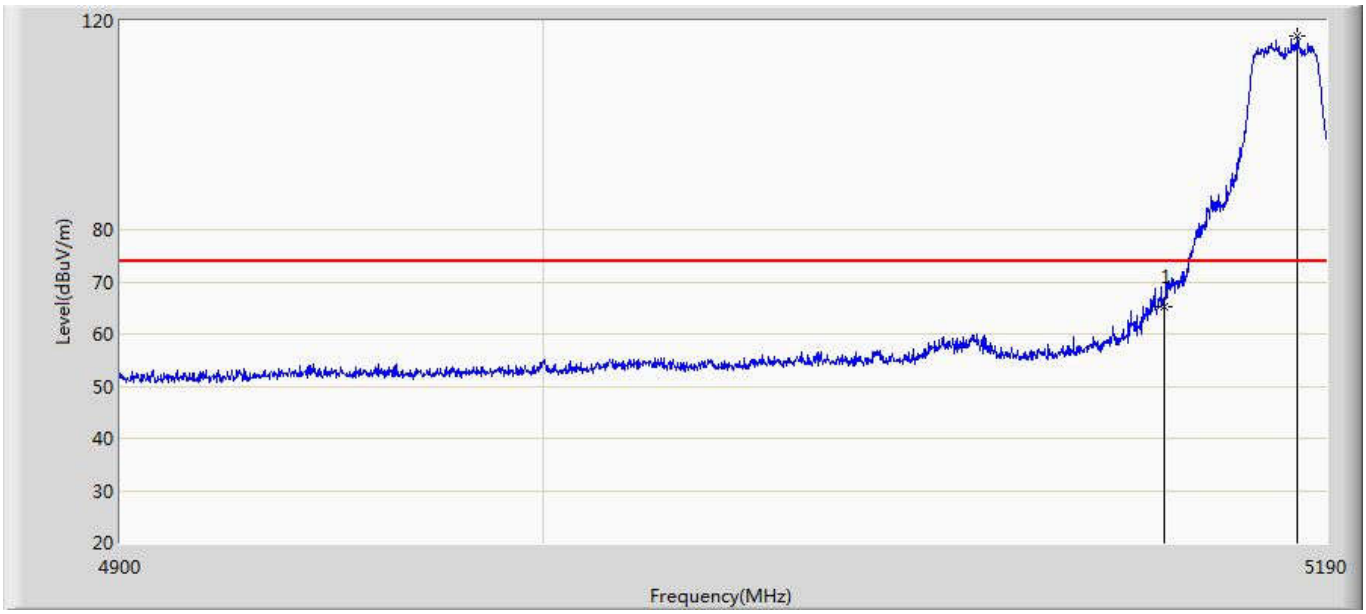
9.6. Test Result

Site: AC5	Time: 2017/02/20 - 15:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5180MHz by 802.11a	



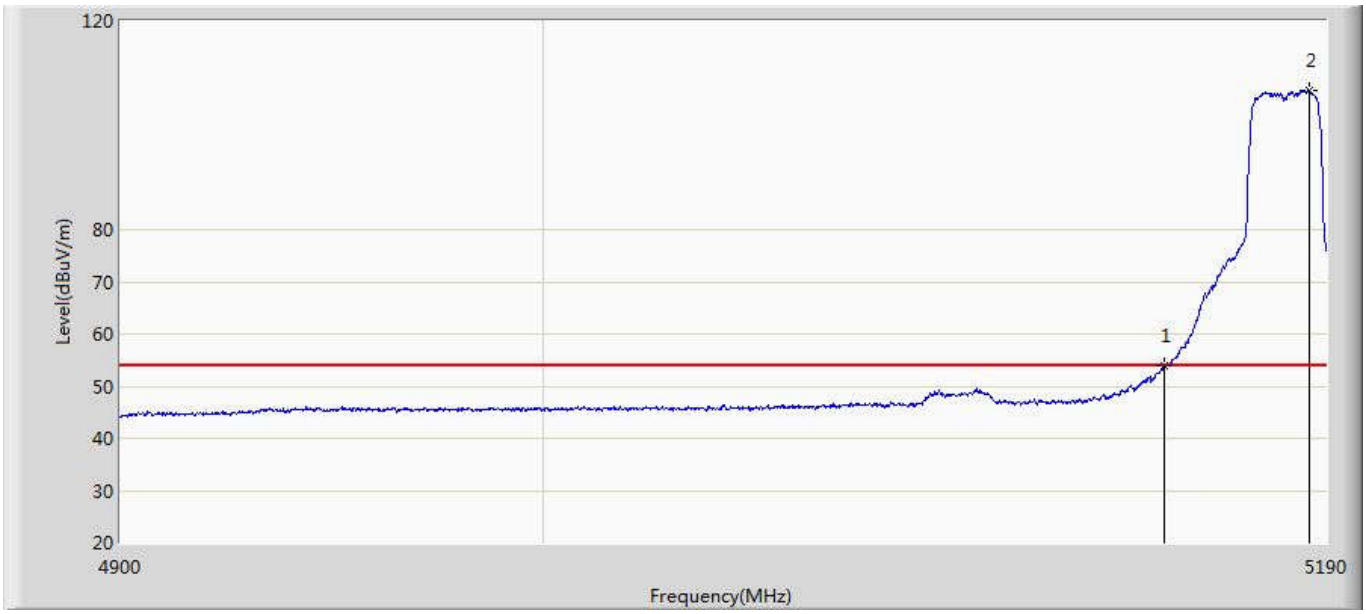
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	51.829	12.295	-2.171	54.000	39.534	AV
2	*	5182.315	105.109	65.552	51.109	54.000	39.556	AV

Site: AC5	Time: 2017/02/20 - 16:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5180MHz by 802.11a	



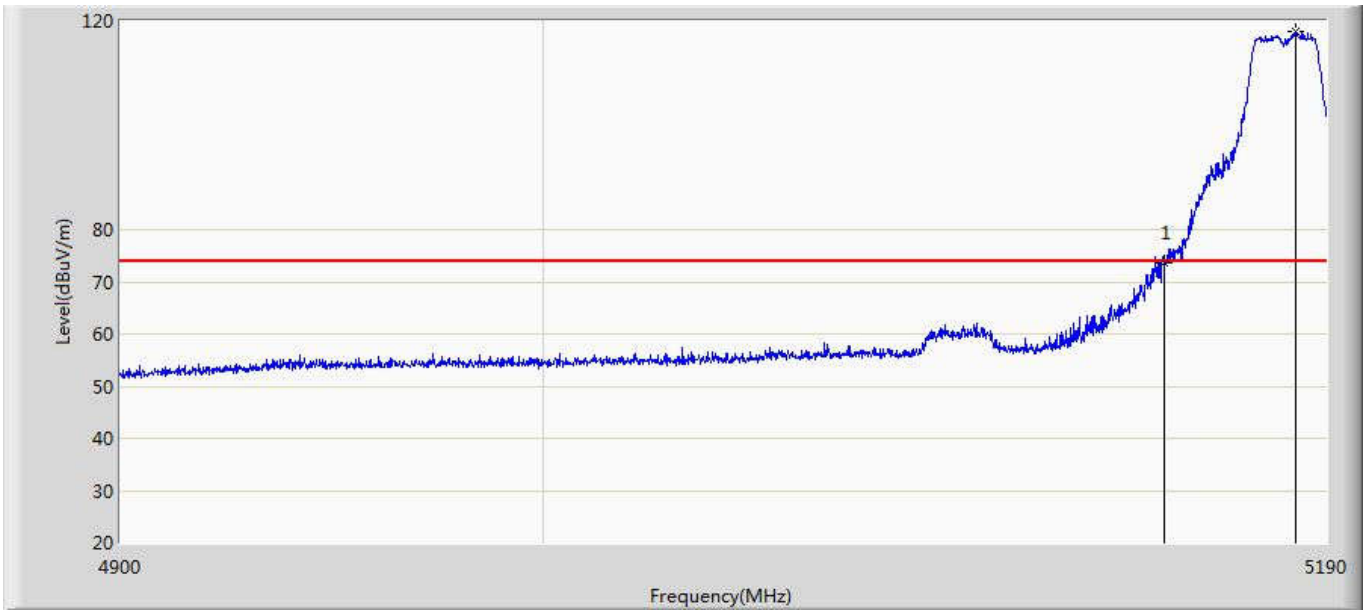
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	65.227	25.693	-8.773	74.000	39.534	PK
2	*	5182.750	117.169	77.608	43.169	74.000	39.561	PK

Site: AC5	Time: 2017/02/20 - 16:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5180MHz by 802.11a	



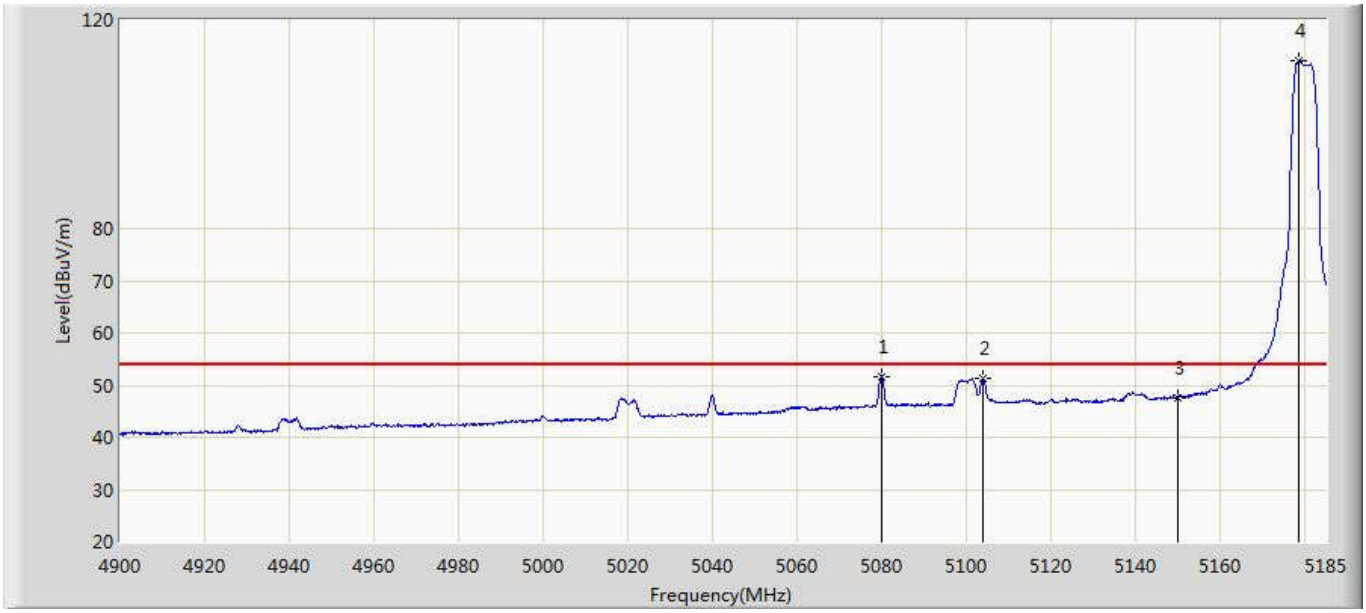
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	53.780	14.246	-0.220	54.000	39.534	AV
2	*	5185.795	106.605	67.017	52.605	54.000	39.589	AV

Site: AC5	Time: 2017/02/20 - 16:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5180MHz by 802.11a	



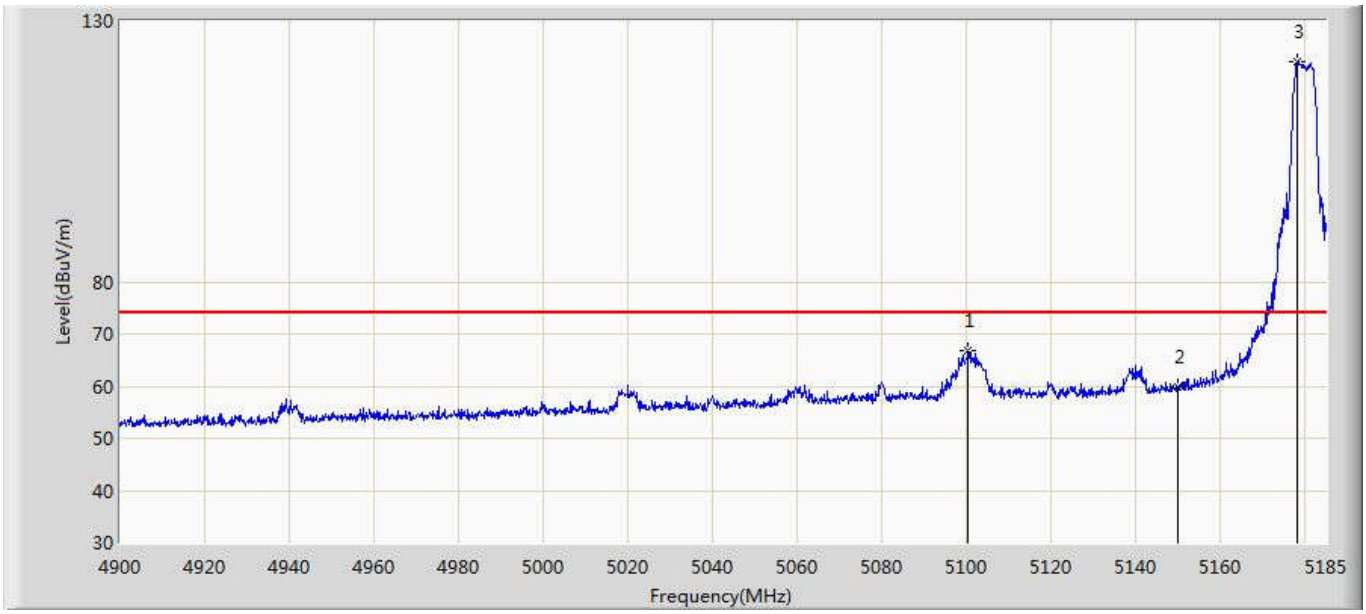
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	73.614	34.080	-0.386	74.000	39.534	PK
2	*	5182.605	117.832	78.273	43.832	74.000	39.560	PK

Site: AC5	Time: 2017/03/12 - 11:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5180MHz by 802.11n（5M）	



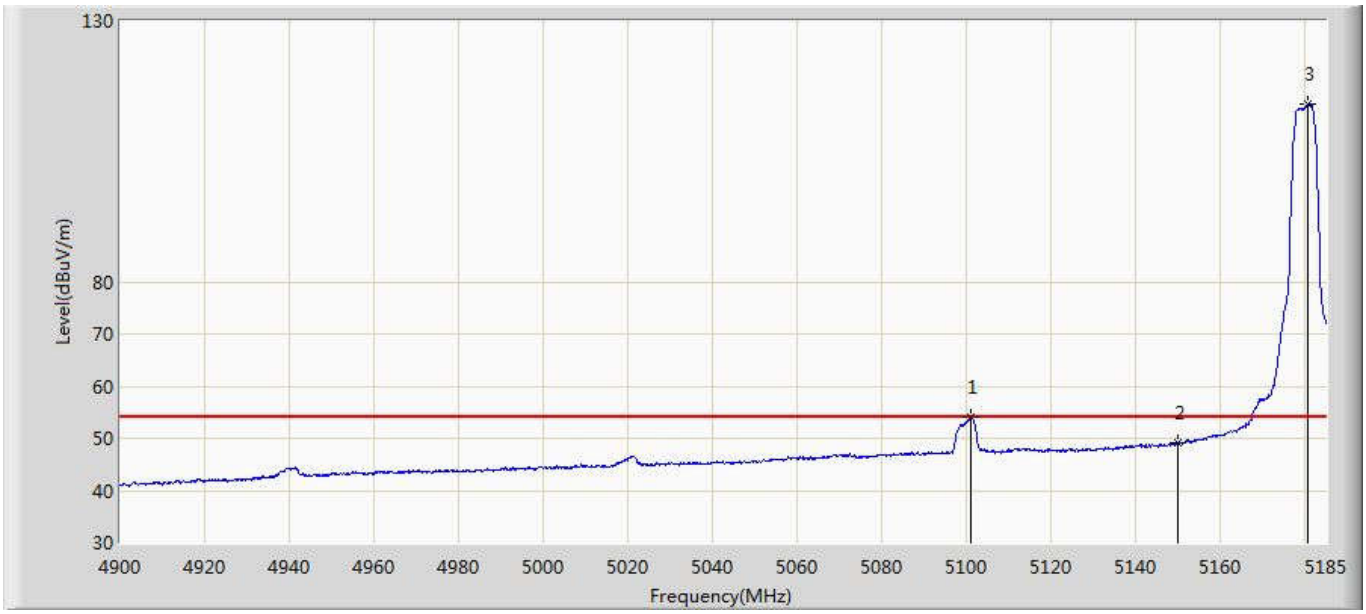
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5079.835	51.719	12.214	-2.281	54.000	39.505	AV
2		5103.917	51.356	11.860	-2.644	54.000	39.496	AV
3		5150.000	47.661	8.127	-6.339	54.000	39.534	AV
4	*	5178.445	112.130	72.549	58.130	54.000	39.581	AV

Site: AC5	Time: 2017/03/12 - 11:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5180MHz by 802.11n（5M）	



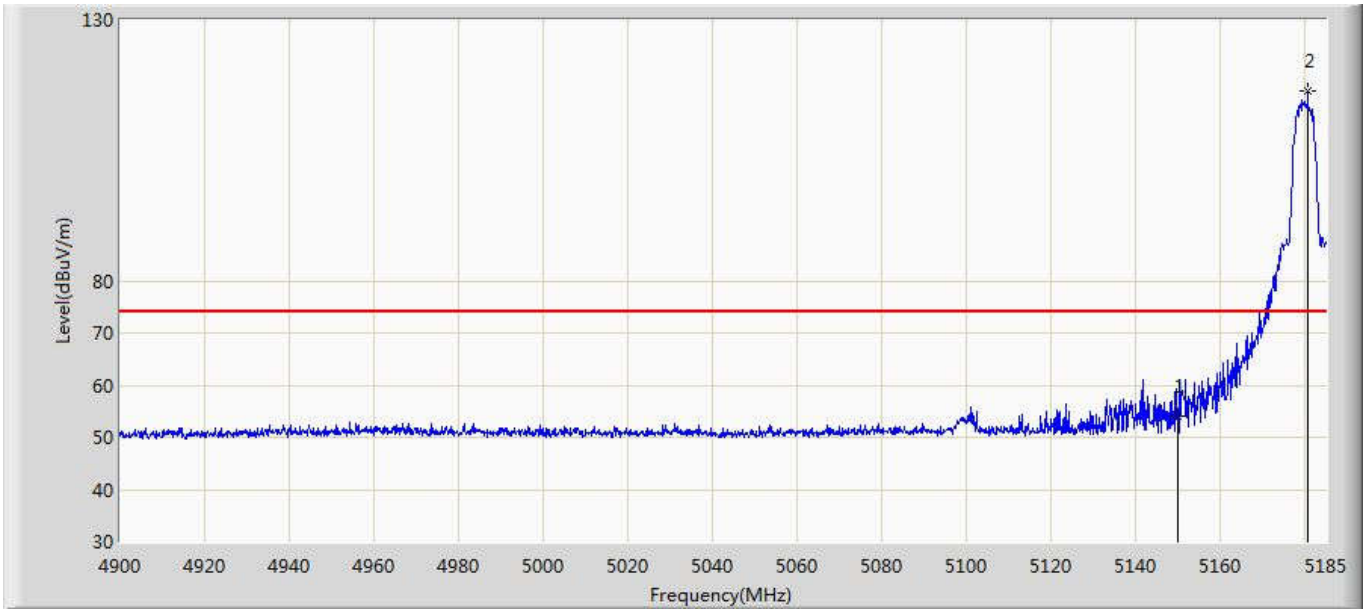
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5100.355	66.862	27.383	-7.138	74.000	39.479	PK
2		5150.000	59.769	20.235	-14.231	74.000	39.534	PK
3	*	5178.160	122.233	82.649	48.233	74.000	39.583	PK

Site: AC5	Time: 2017/03/12 - 11:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5180MHz by 802.11n（5M）	



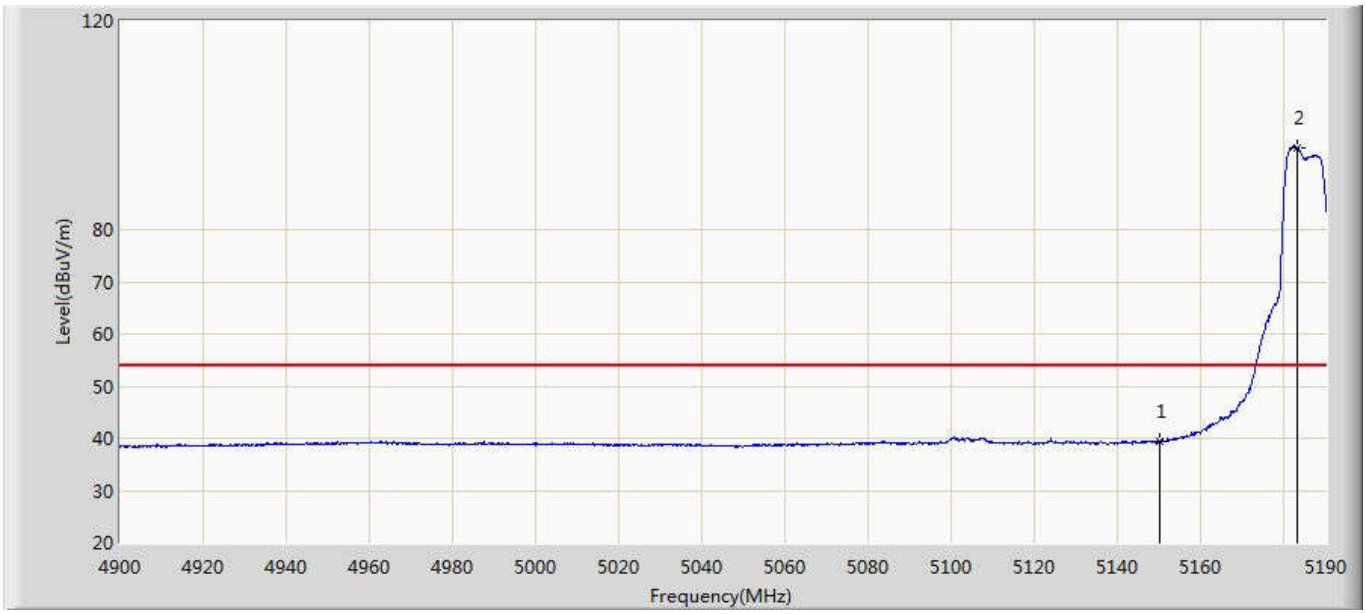
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5101.067	53.924	14.442	-0.076	54.000	39.482	AV
2		5150.000	49.026	9.492	-4.974	54.000	39.534	AV
3	*	5180.868	114.113	74.550	60.113	54.000	39.563	AV

Site: AC5	Time: 2017/03/12 - 14:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5180MHz by 802.11n（5M）	



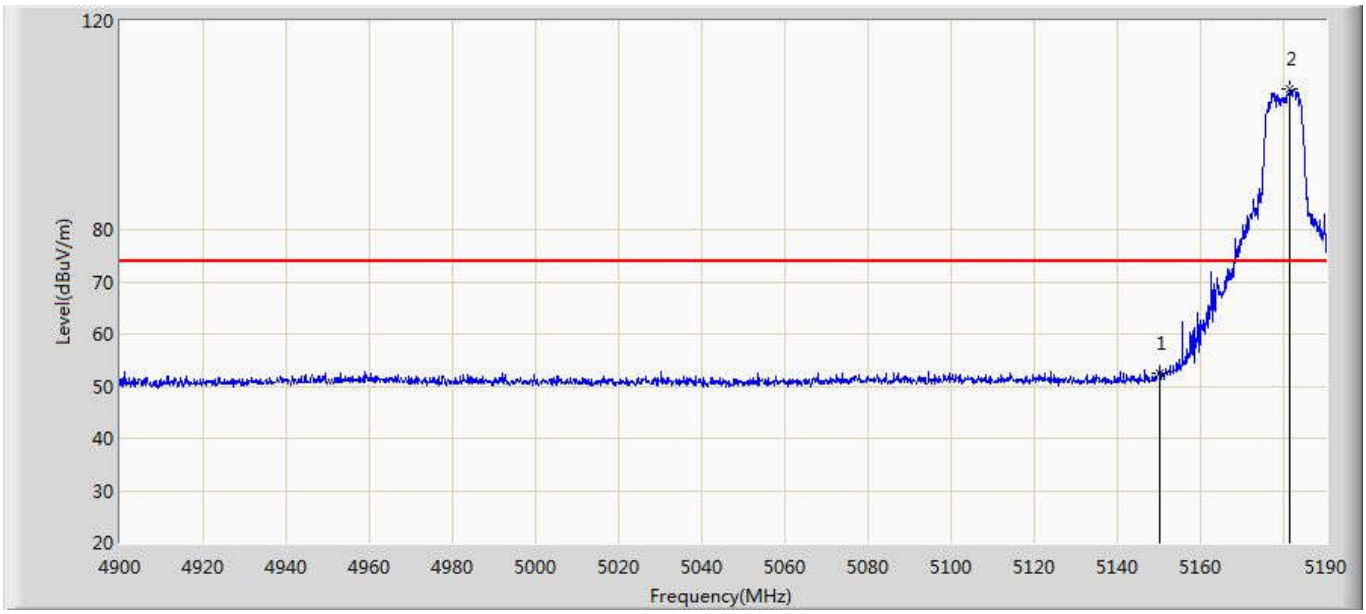
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	53.945	14.411	-20.055	74.000	39.534	PK
2	*	5180.725	116.263	76.699	42.263	74.000	39.564	PK

Site: AC5	Time: 2017/03/12 - 14:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5180MHz by 802.11n（10M）	



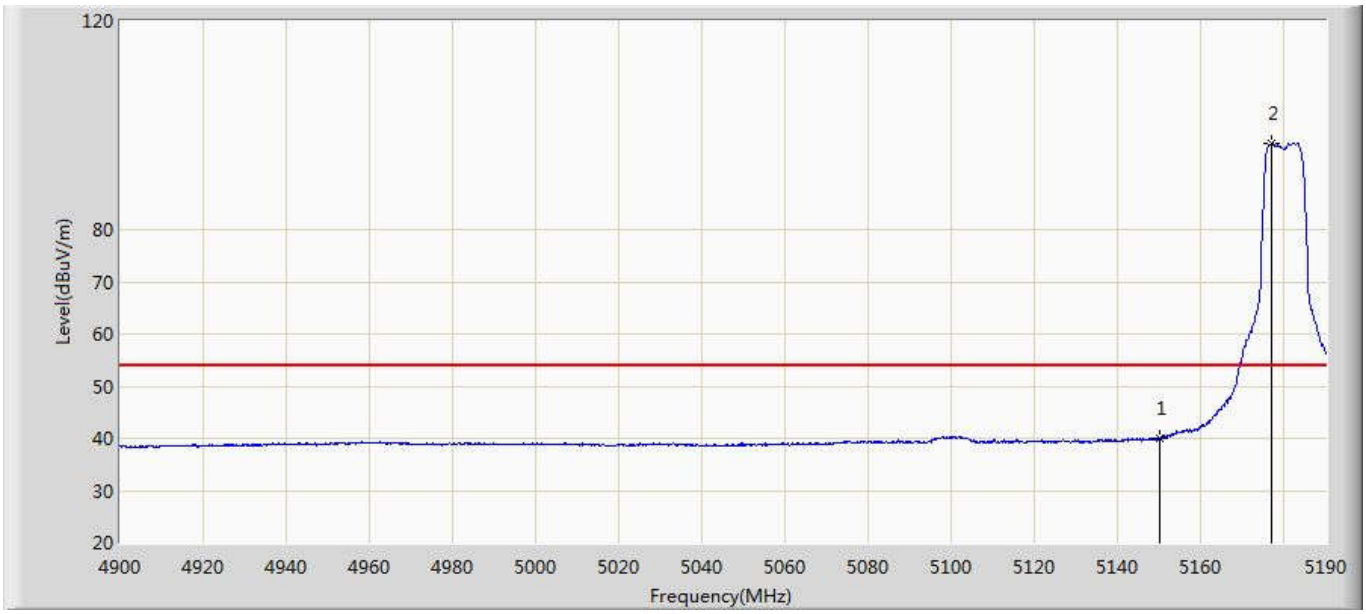
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	39.398	-0.136	-14.602	54.000	39.534	AV
2	*	5183.185	95.637	56.072	41.637	54.000	39.564	AV

Site: AC5	Time: 2017/03/12 - 14:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5180MHz by 802.11n（10M）	



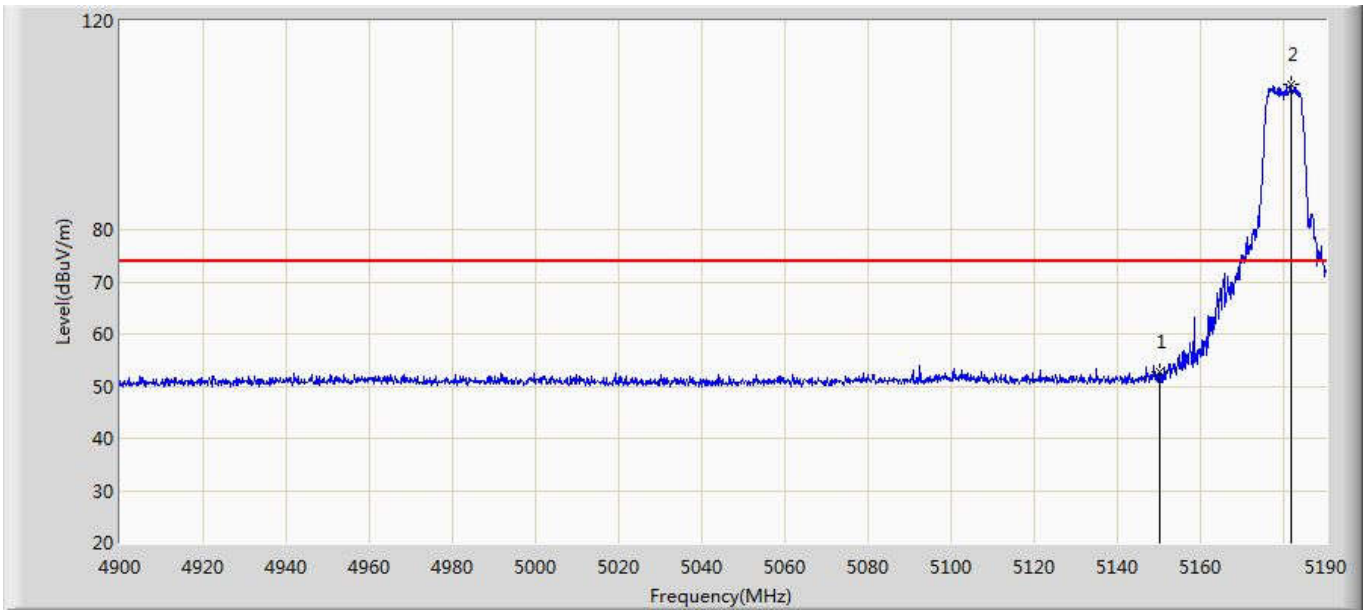
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	52.373	12.839	-21.627	74.000	39.534	PK
2	*	5181.445	106.849	67.291	32.849	74.000	39.558	PK

Site: AC5	Time: 2017/03/12 - 14:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5180MHz by 802.11n（10M）	



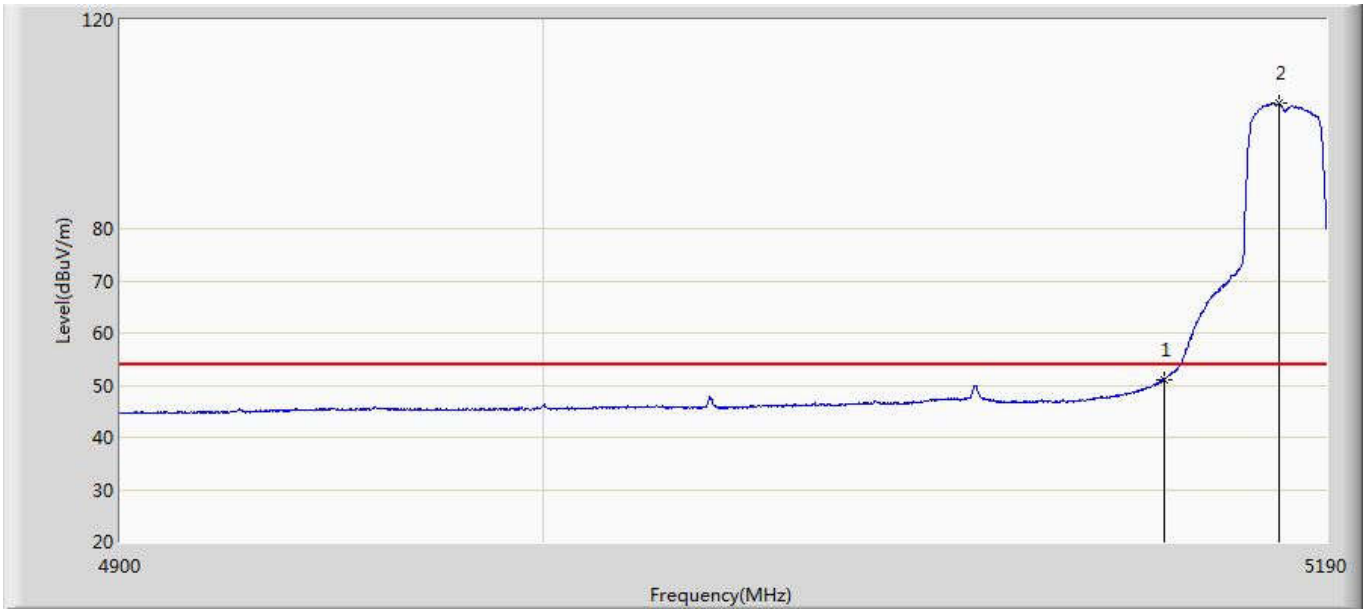
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	40.038	0.504	-13.962	54.000	39.534	AV
2	*	5177.095	96.595	57.003	42.595	54.000	39.592	AV

Site: AC5	Time: 2017/03/12 - 14:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5180MHz by 802.11n（10M）	



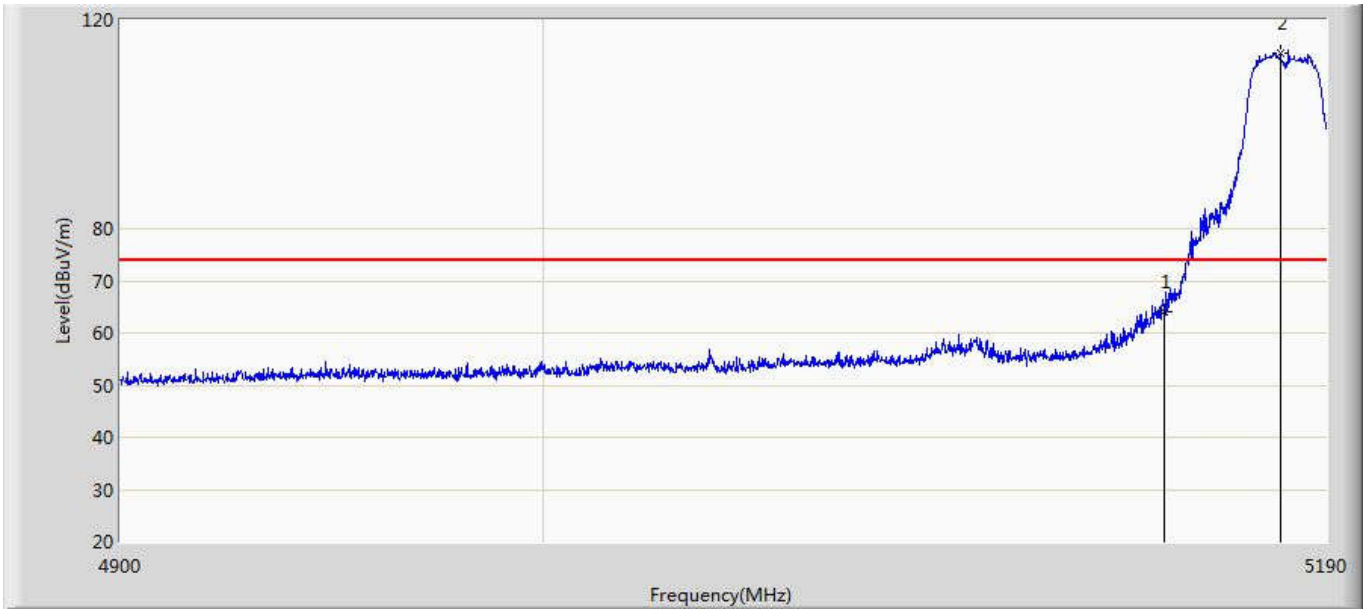
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	52.659	13.125	-21.341	74.000	39.534	PK
2	*	5181.590	107.799	68.242	33.799	74.000	39.557	PK

Site: AC5	Time: 2017/02/20 - 16:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5180MHz by 802.11n20	



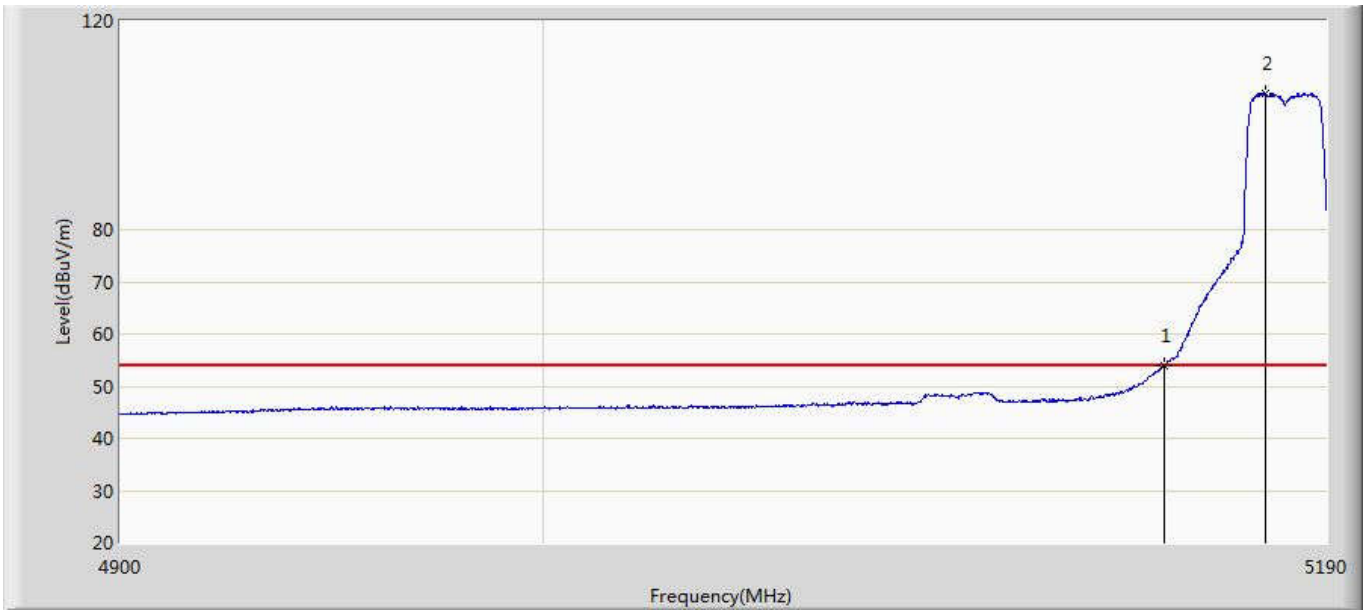
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	50.982	11.448	-3.018	54.000	39.534	AV
2	*	5178.400	104.012	64.430	50.012	54.000	39.581	AV

Site: AC5	Time: 2017/02/20 - 16:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5180MHz by 802.11n20	



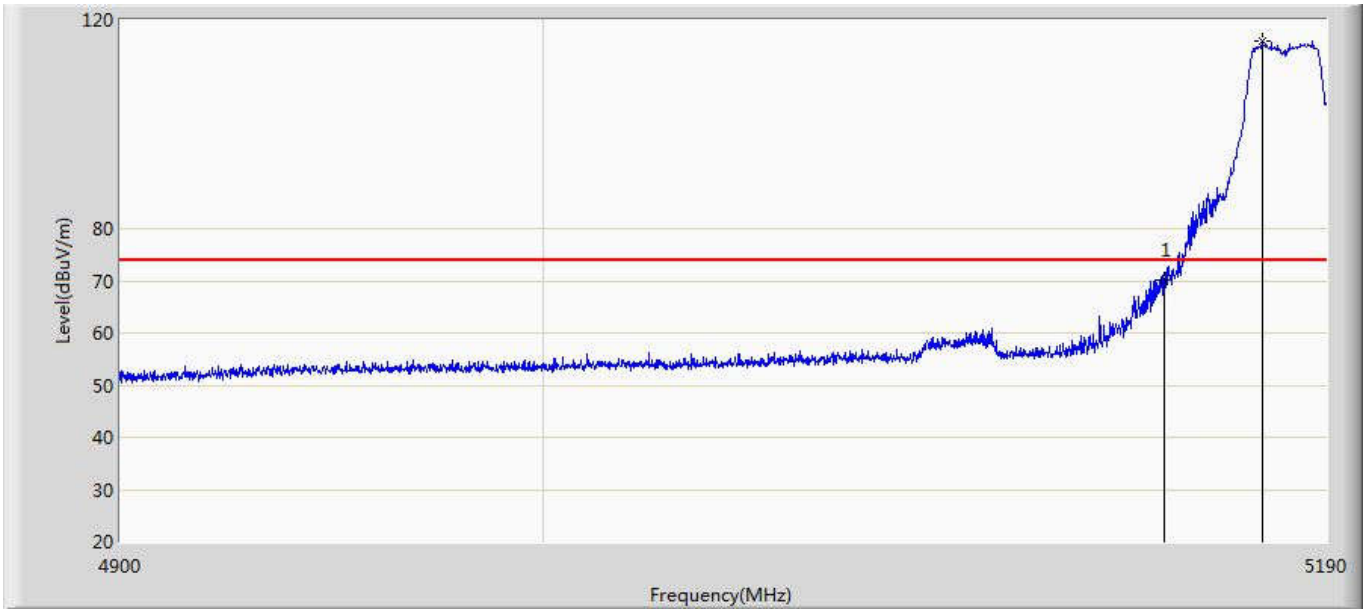
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	64.002	24.468	-9.998	74.000	39.534	PK
2	*	5178.835	113.648	74.070	39.648	74.000	39.579	PK

Site: AC5	Time: 2017/02/20 - 16:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5180MHz by 802.11n20	



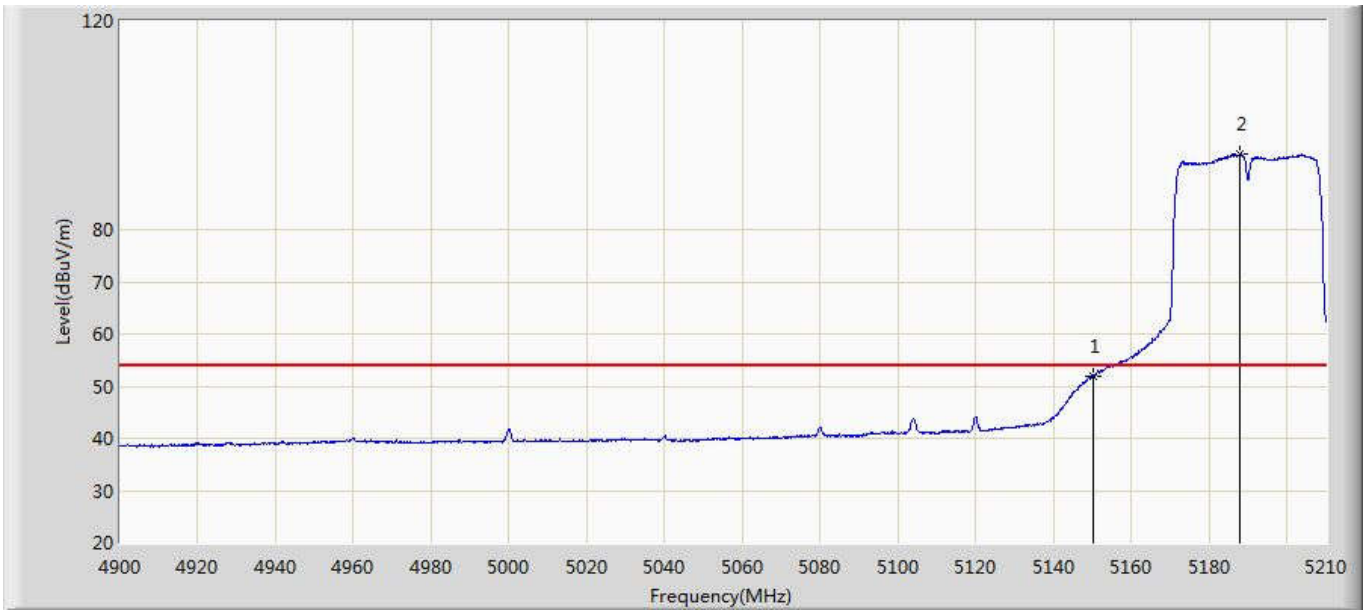
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	53.917	14.383	-0.083	54.000	39.534	AV
2	*	5174.920	106.055	66.446	52.055	54.000	39.609	AV

Site: AC5	Time: 2017/02/20 - 16:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5180MHz by 802.11n20	



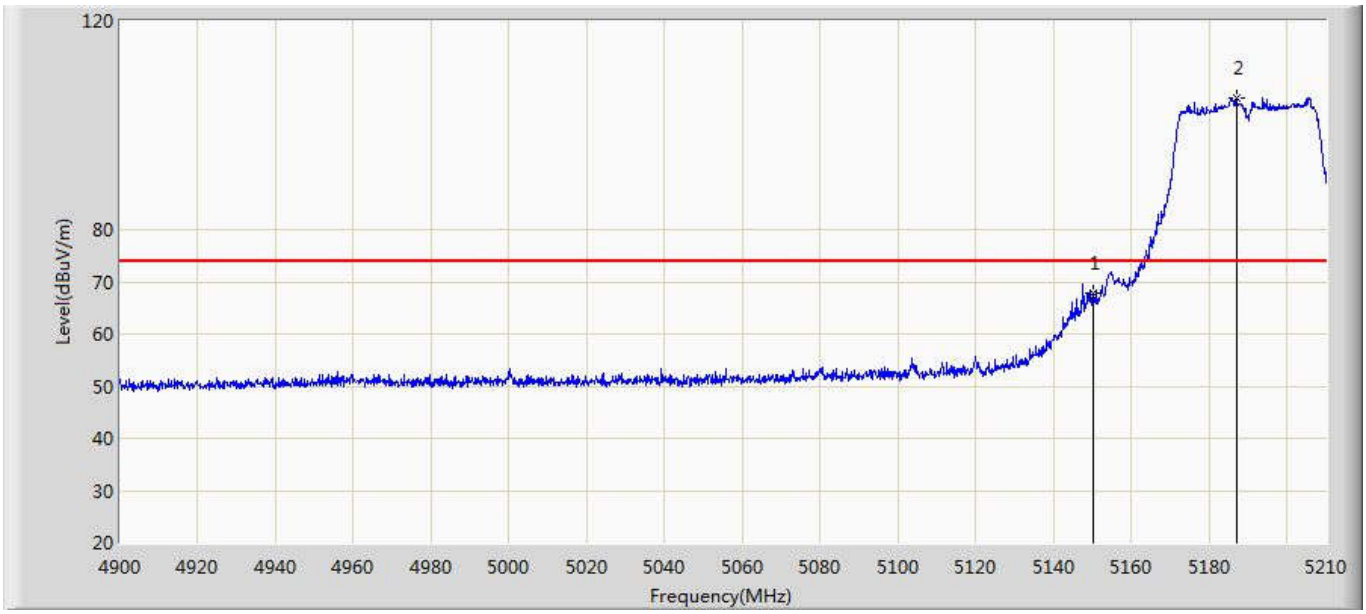
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	70.141	30.607	-3.859	74.000	39.534	PK
2	*	5174.195	115.930	76.316	41.930	74.000	39.614	PK

Site: AC5	Time: 2017/02/20 - 16:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 5:Transmit at 5190MHz by 802.11n40	



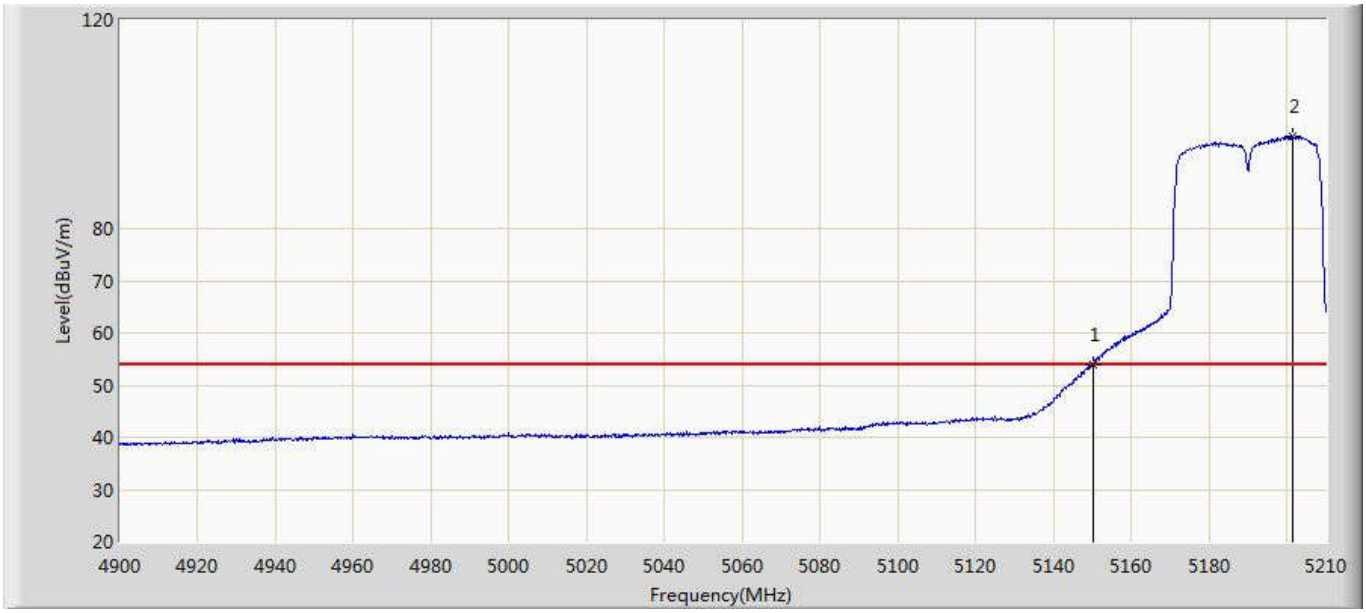
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	51.885	12.351	-2.115	54.000	39.534	AV
2	*	5187.990	94.473	54.865	40.473	54.000	39.608	AV

Site: AC5	Time: 2017/02/20 - 16:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 5:Transmit at 5190MHz by 802.11n40	



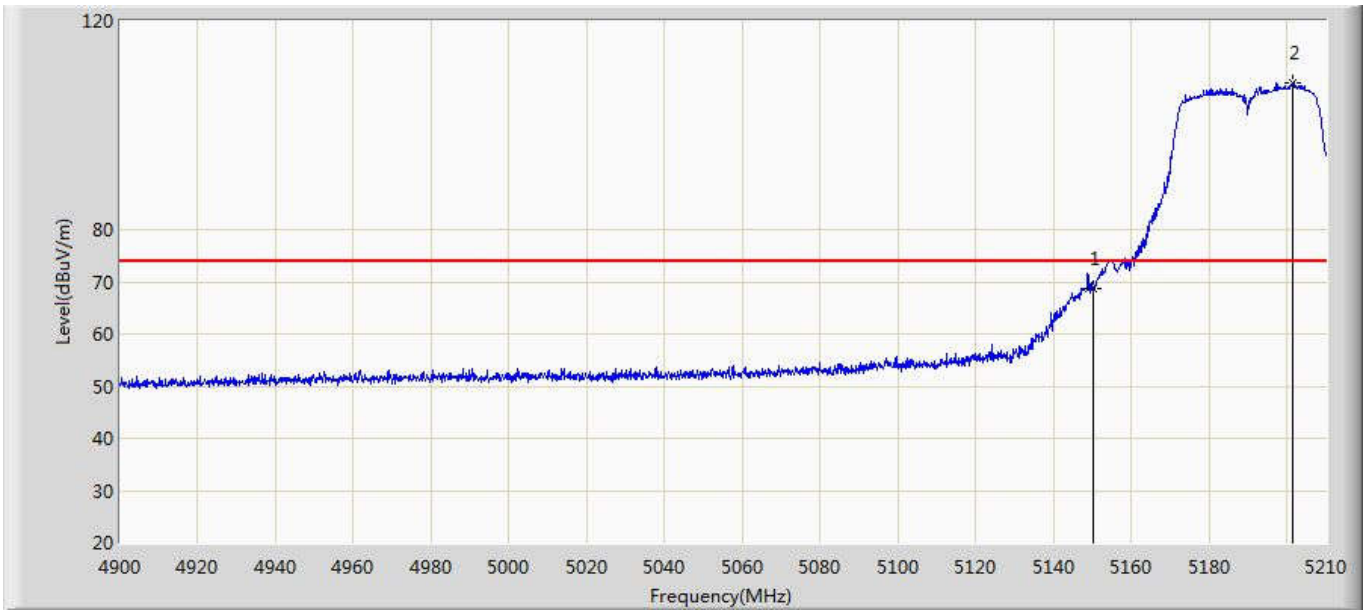
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	67.775	28.241	-6.225	74.000	39.534	PK
2	*	5186.905	105.334	65.736	31.334	74.000	39.598	PK

Site: AC5	Time: 2017/02/20 - 16:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 5:Transmit at 5190MHz by 802.11n40	



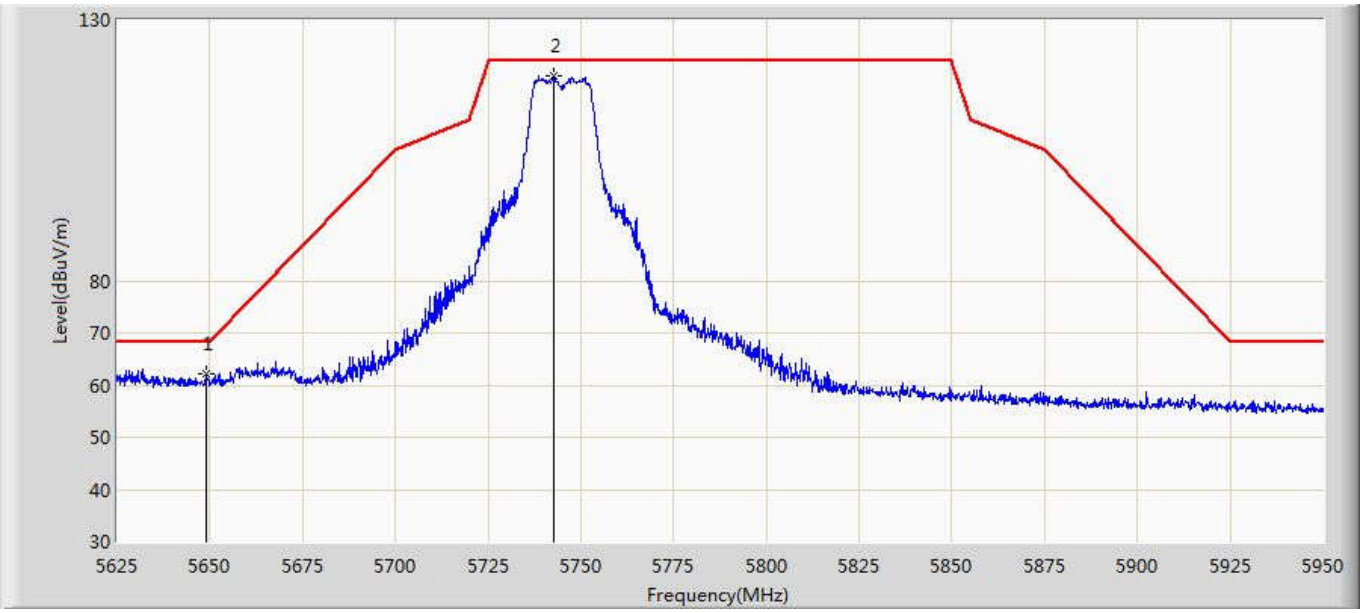
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	53.942	14.408	-0.058	54.000	39.534	AV
2	*	5201.475	97.719	58.010	43.719	54.000	39.708	AV

Site: AC5	Time: 2017/02/20 - 16:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 5:Transmit at 5190MHz by 802.11n40	



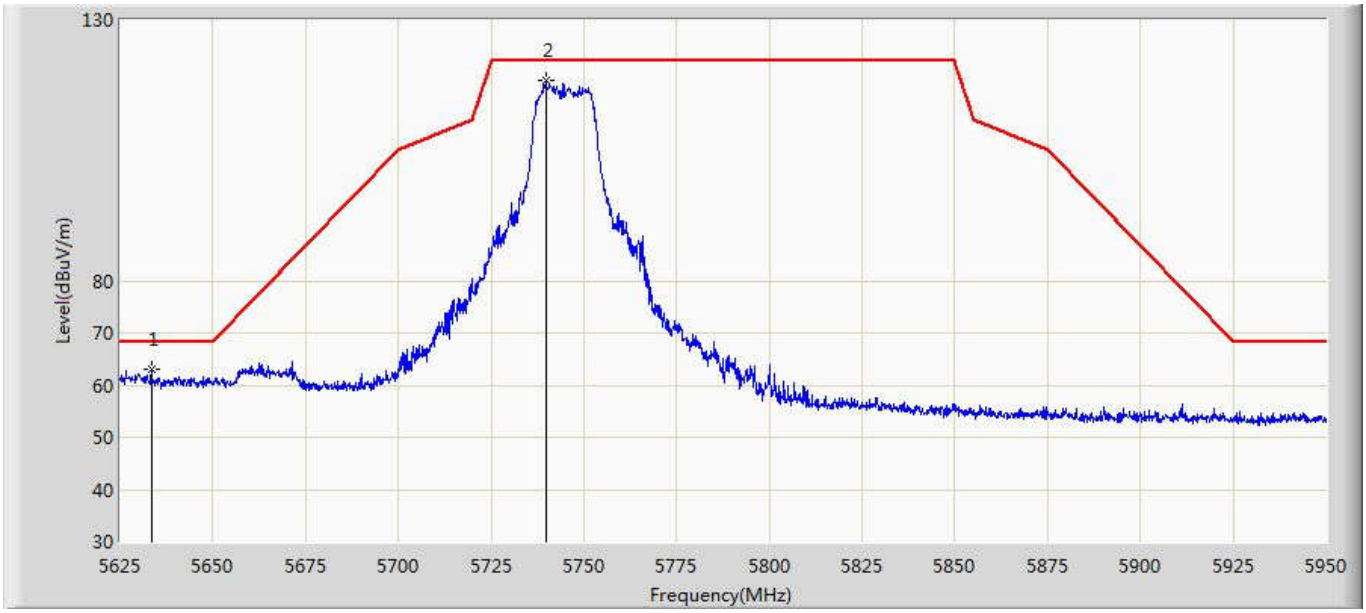
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	68.783	29.249	-5.217	74.000	39.534	PK
2	*	5201.630	108.096	68.387	34.096	74.000	39.709	PK

Site: AC5	Time: 2017/02/20 - 17:03
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5745MHz by 802.11a	



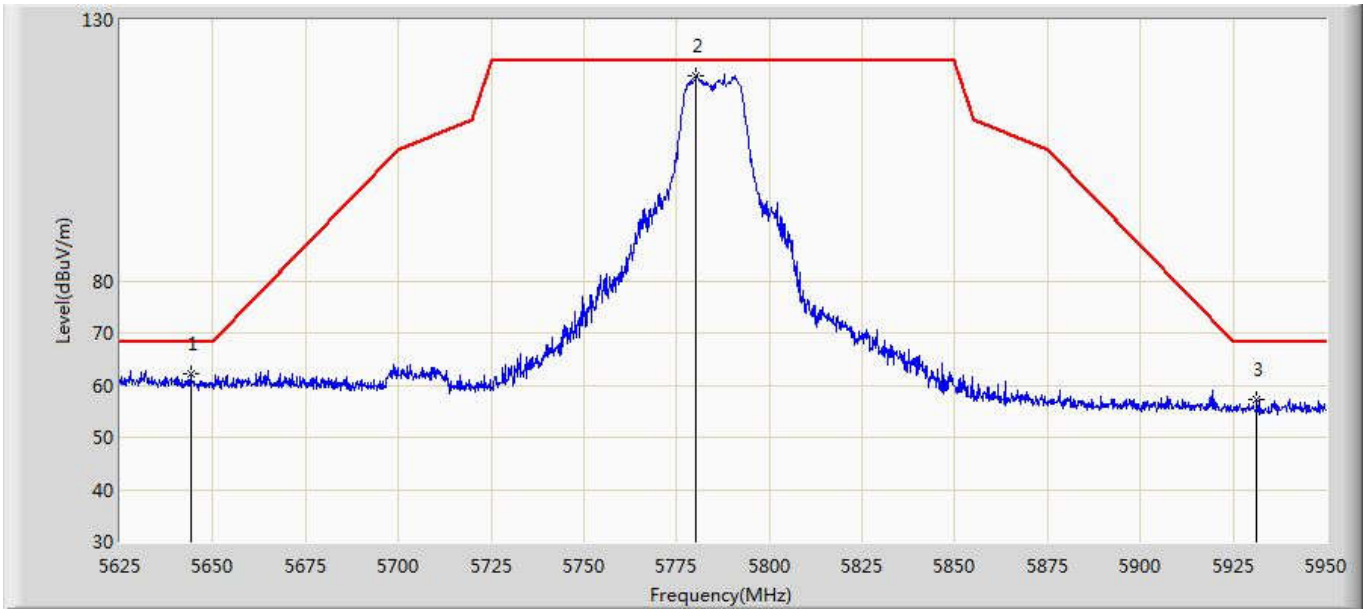
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5648.888	62.242	21.827	-5.958	68.200	40.415	PK
2	*	5742.650	119.290	78.710	-2.910	122.200	40.581	PK

Site: AC5	Time: 2017/02/20 - 17:28
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5745MHz by 802.11a	



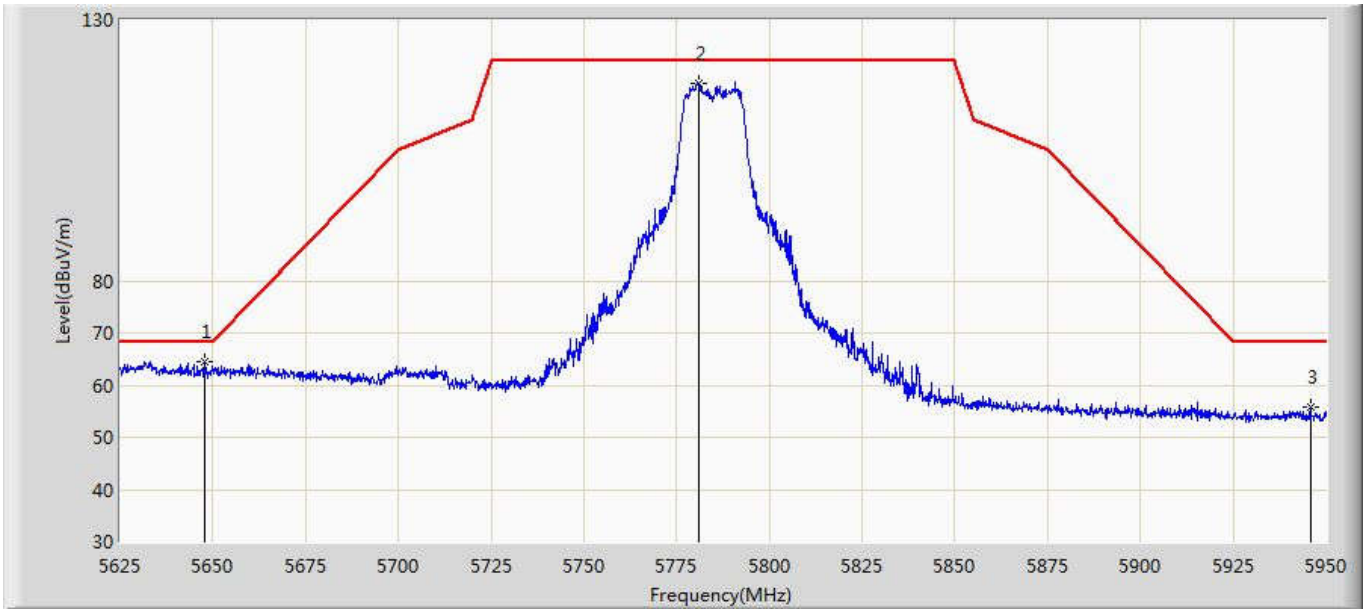
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5633.450	62.924	22.480	-5.276	68.200	40.444	PK
2	*	5739.725	118.263	77.696	-3.937	122.200	40.567	PK

Site: AC5	Time: 2017/02/20 - 17:29
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5785MHz by 802.11a	



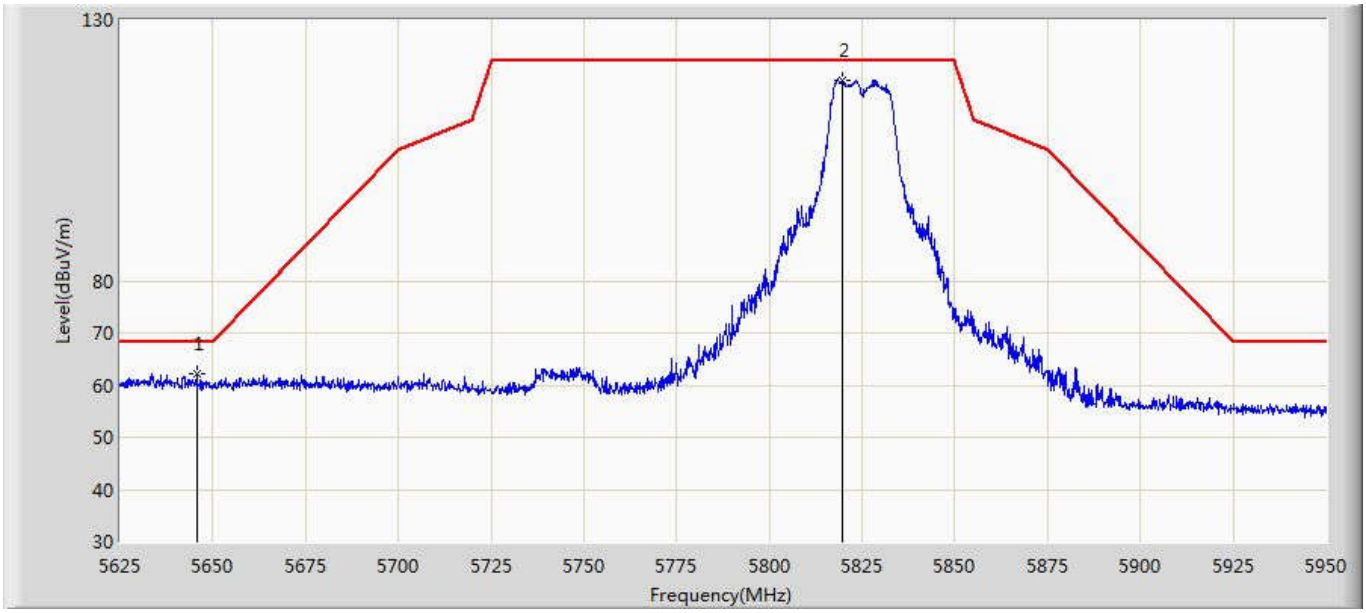
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5644.013	62.169	21.795	-6.031	68.200	40.374	PK
2	*	5780.187	119.393	78.719	-2.807	122.200	40.673	PK
3		5931.312	57.213	16.312	-10.987	68.200	40.901	PK

Site: AC5	Time: 2017/02/20 - 17:32
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5785MHz by 802.11a	



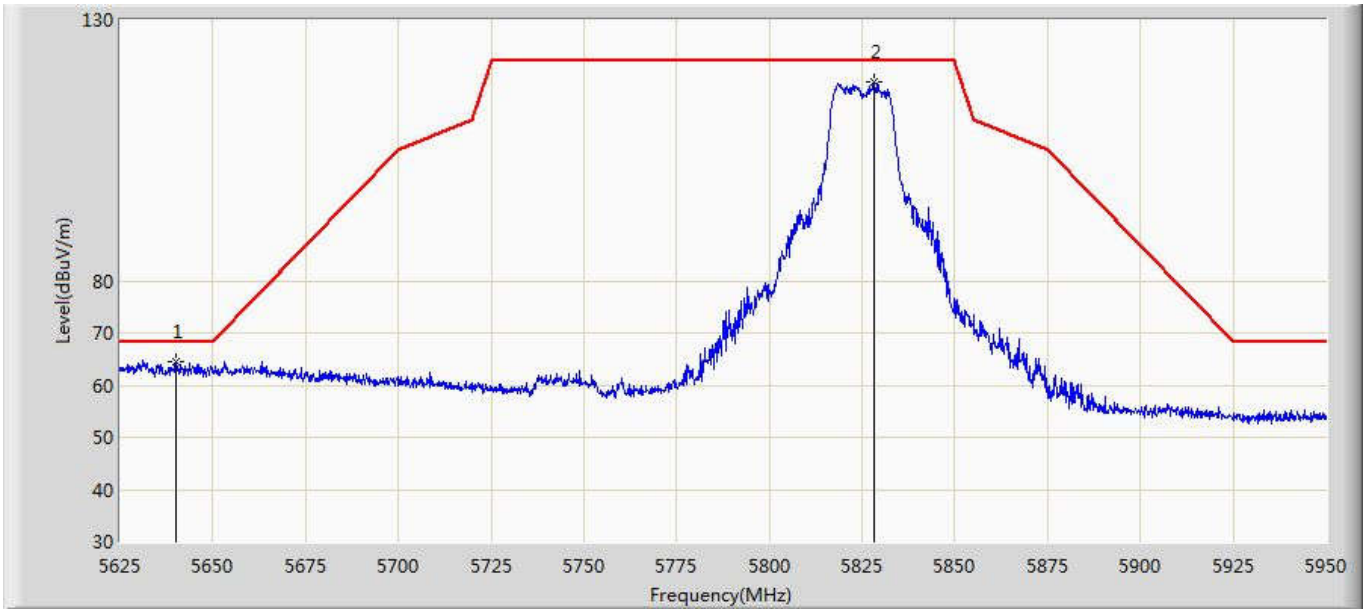
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5647.913	64.438	24.031	-3.762	68.200	40.407	PK
2		5781.163	117.839	77.159	-4.361	122.200	40.680	PK
3		5945.775	55.715	14.680	-12.485	68.200	41.035	PK

Site: AC5	Time: 2017/02/20 - 17:34
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5825MHz by 802.11a	



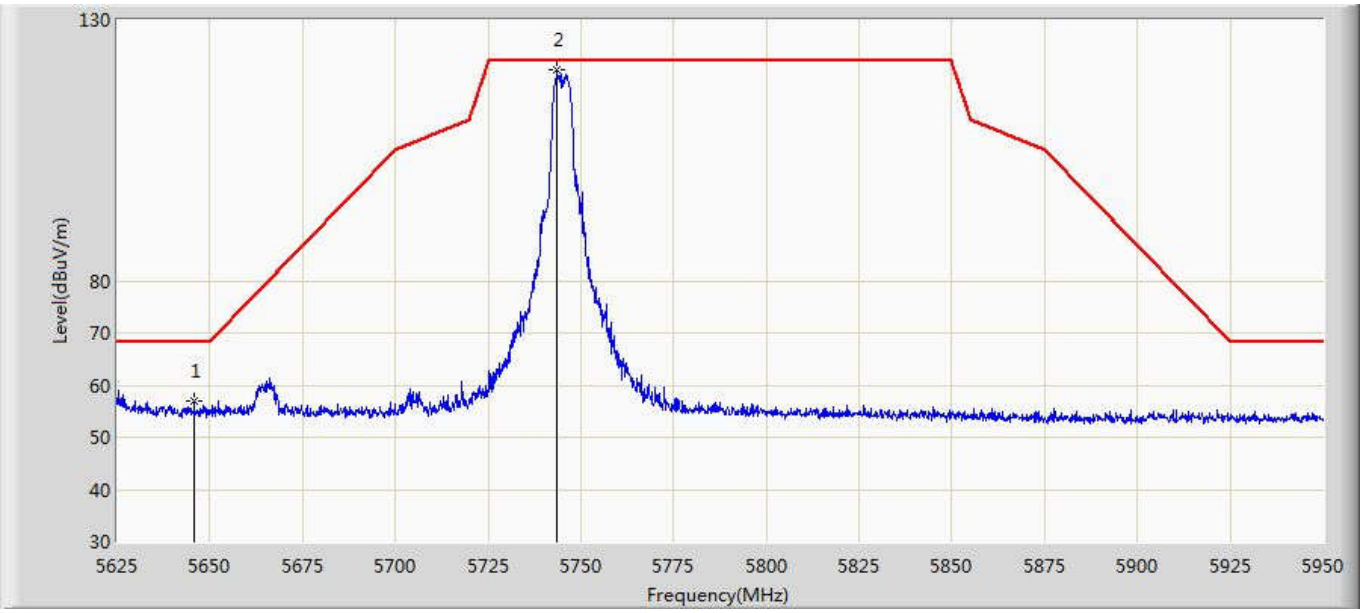
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5645.638	62.133	21.745	-6.067	68.200	40.388	PK
2	*	5819.513	118.395	77.651	-3.805	122.200	40.744	PK

Site: AC5	Time: 2017/02/20 - 17:35
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 1:Transmit at 5825MHz by 802.11a	



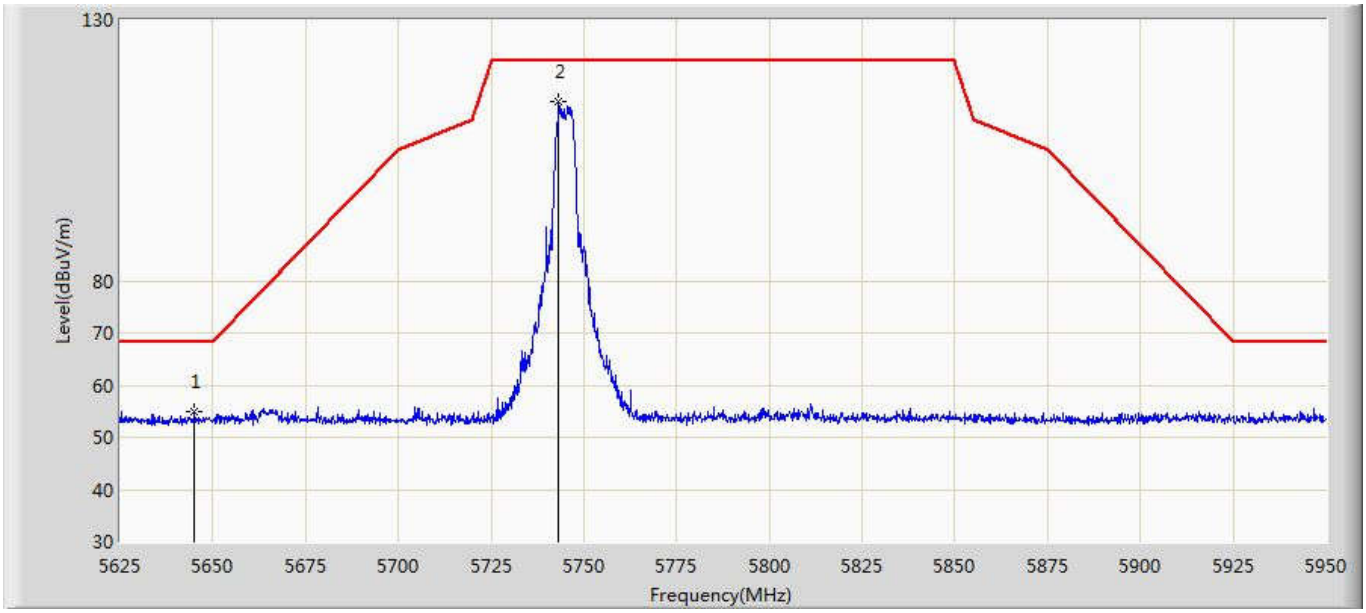
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5639.950	64.429	24.067	-3.771	68.200	40.363	PK
2		5828.288	118.166	77.450	-4.034	122.200	40.715	PK

Site: AC5	Time: 2017/03/12 - 15:13
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5745MHz by 802.11n(5M)	



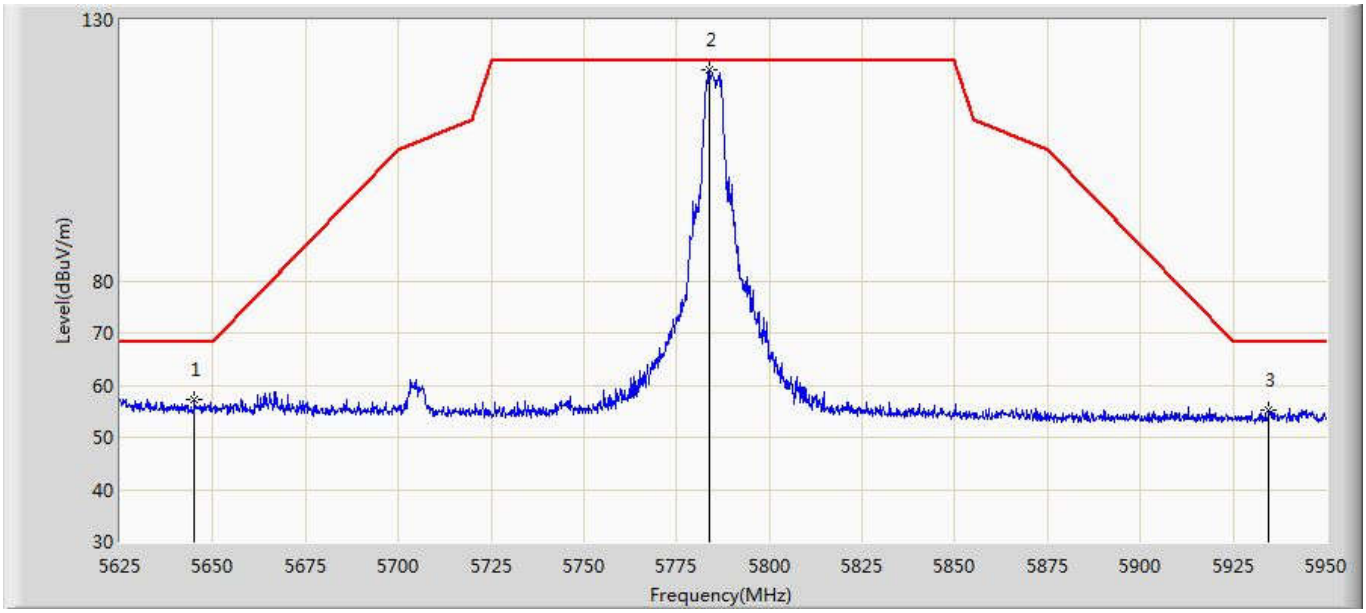
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5645.800	57.018	16.629	-11.182	68.200	40.389	PK
2	*	5743.625	120.300	79.717	-1.900	122.200	40.584	PK

Site: AC5	Time: 2017/03/12 - 15:14
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5745MHz by 802.11n(5M)	



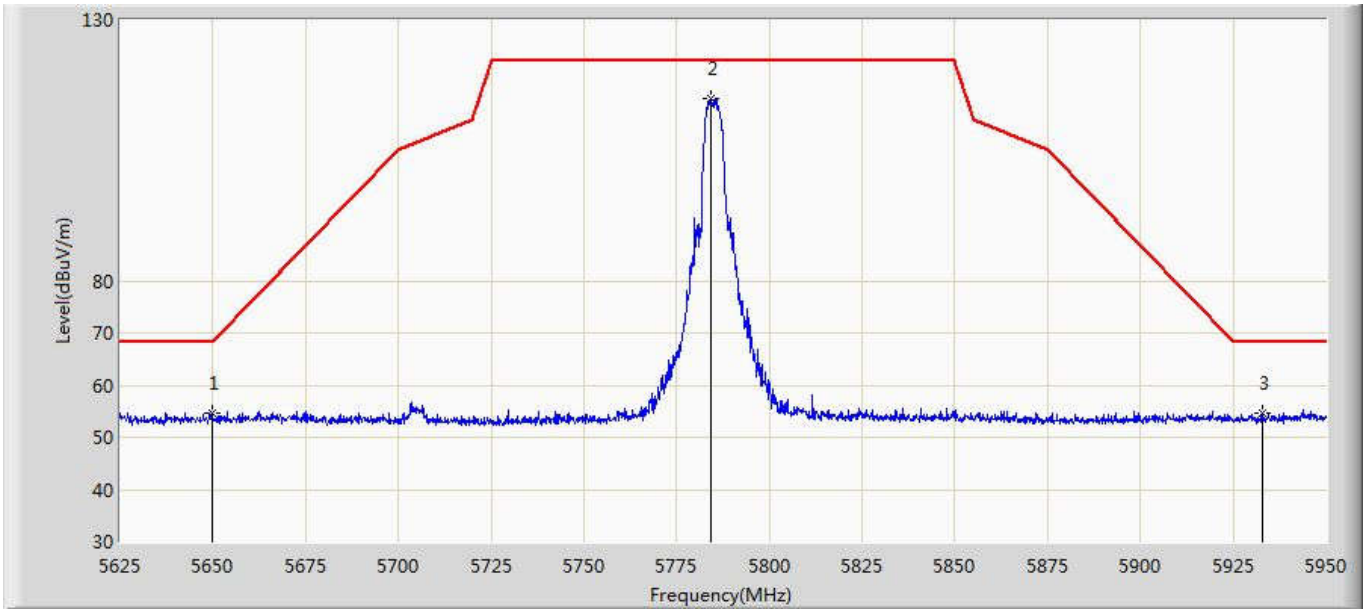
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5645.150	54.982	14.598	-13.218	68.200	40.384	PK
2	*	5743.300	114.308	73.725	-7.892	122.200	40.582	PK

Site: AC5	Time: 2017/03/12 - 15:16
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5785MHz by 802.11n(5M)	



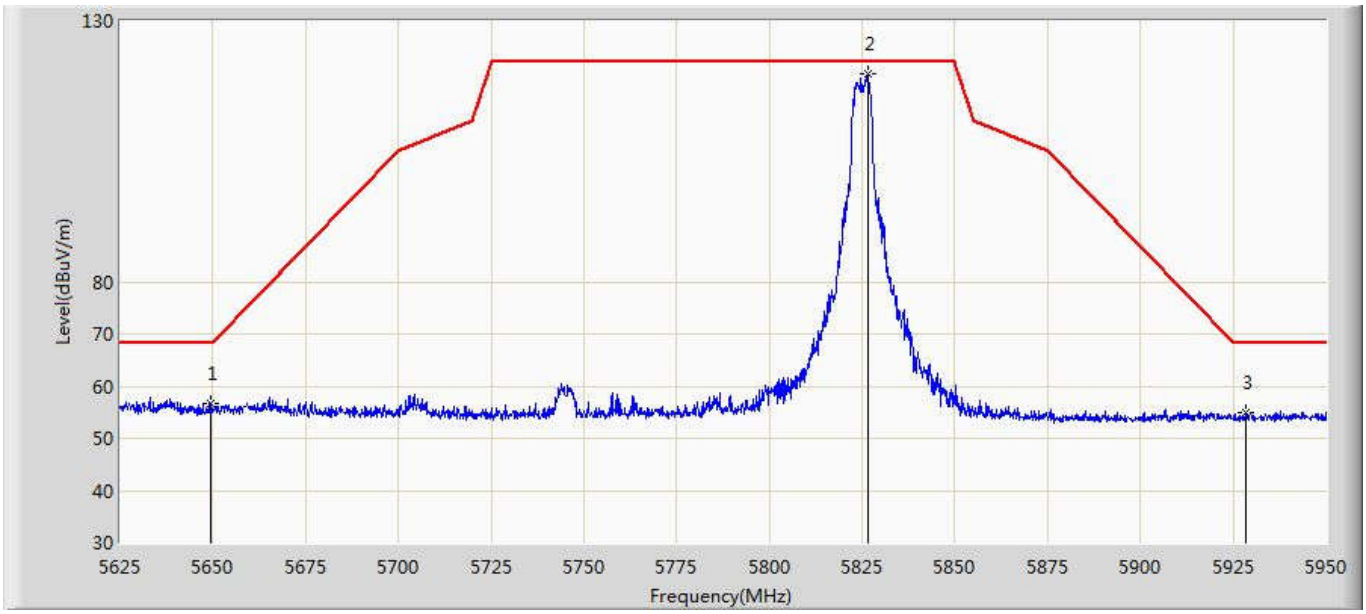
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5645.150	57.299	16.915	-10.901	68.200	40.384	PK
2	*	5783.925	120.437	79.738	-1.763	122.200	40.699	PK
3		5934.562	55.125	14.194	-13.075	68.200	40.931	PK

Site: AC5	Time: 2017/03/12 - 15:18
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5785MHz by 802.11n(5M)	



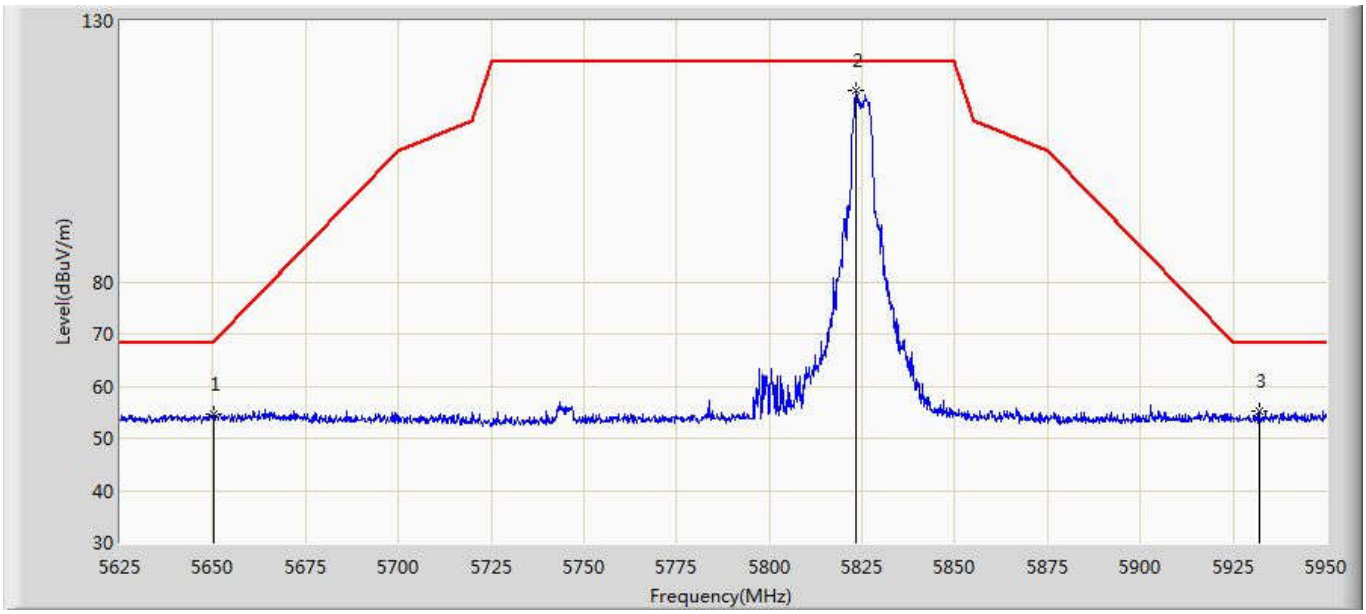
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5649.700	54.782	14.360	-13.418	68.200	40.421	PK
2	*	5784.087	115.043	74.343	-7.157	122.200	40.700	PK
3		5932.937	54.594	13.678	-13.606	68.200	40.916	PK

Site: AC5	Time: 2017/03/12 - 15:20
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5825MHz by 802.11n(5M)	



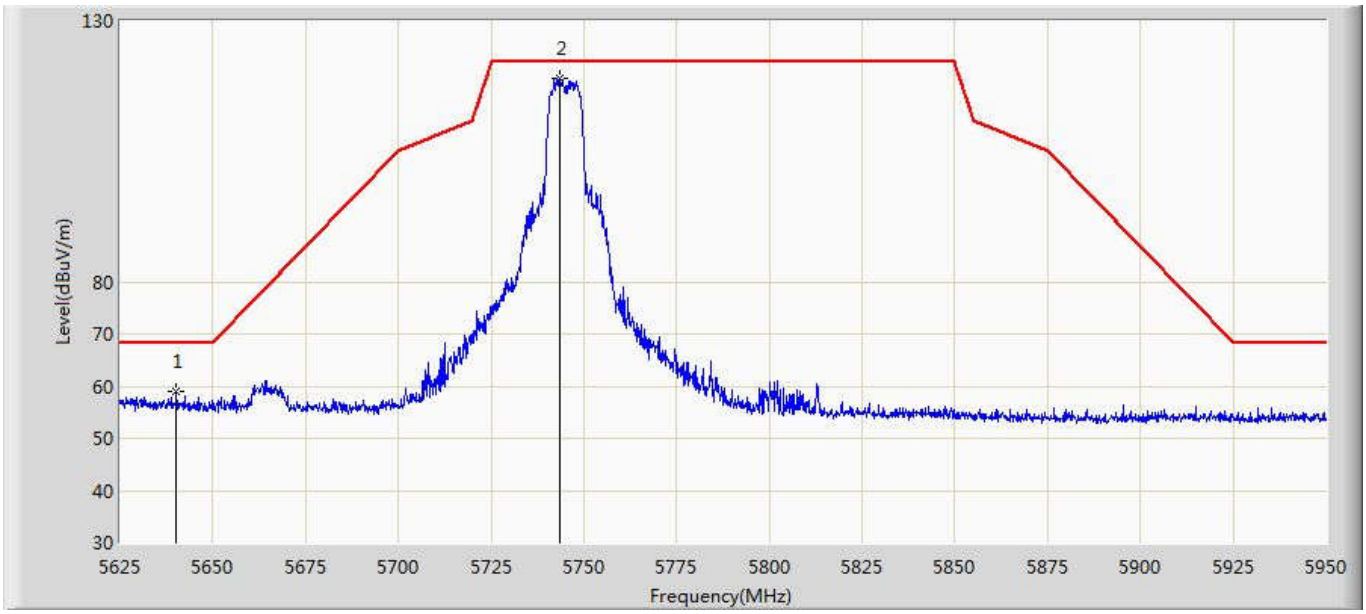
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5649.538	56.563	16.143	-11.637	68.200	40.420	PK
2	*	5826.500	119.782	79.063	-2.418	122.200	40.719	PK
3		5928.550	55.011	14.108	-13.189	68.200	40.903	PK

Site: AC5	Time: 2017/03/12 - 15:27
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 2:Transmit at 5825MHz by 802.11n(5M)	



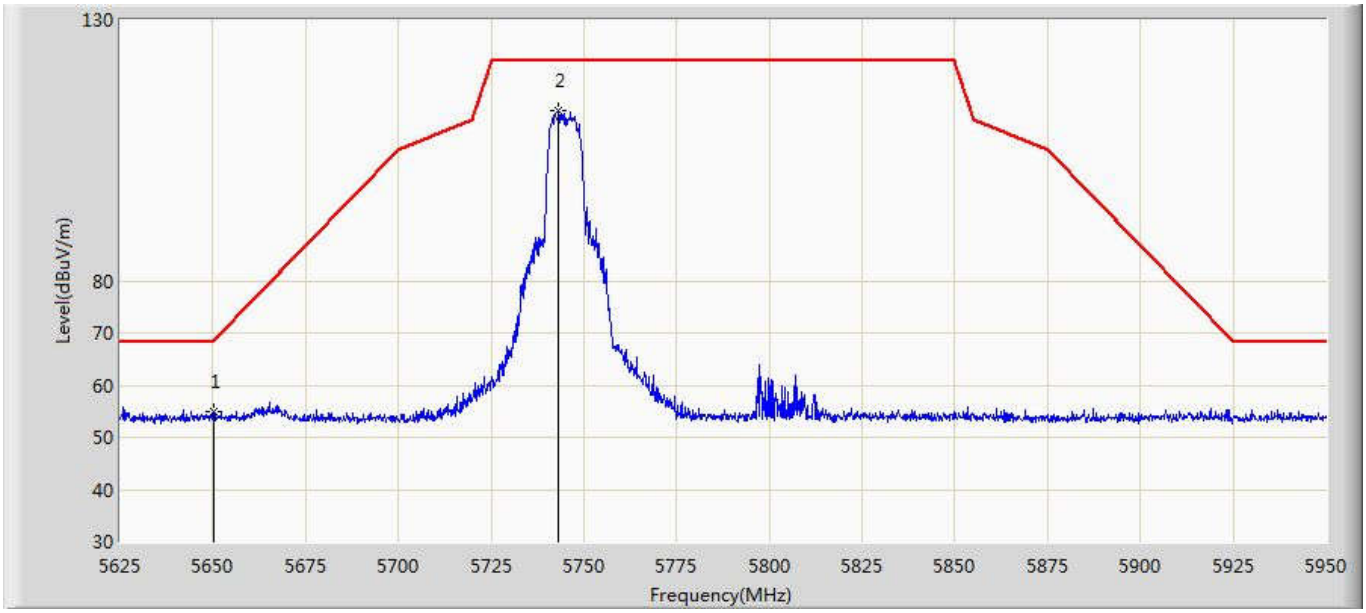
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5650.187	54.543	14.117	-13.796	68.338	40.426	PK
2	*	5823.250	116.535	75.805	-5.665	122.200	40.730	PK
3		5931.962	55.087	14.180	-13.113	68.200	40.908	PK

Site: AC5	Time: 2017/03/12 - 15:38
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5745MHz by 802.11n(10M)	



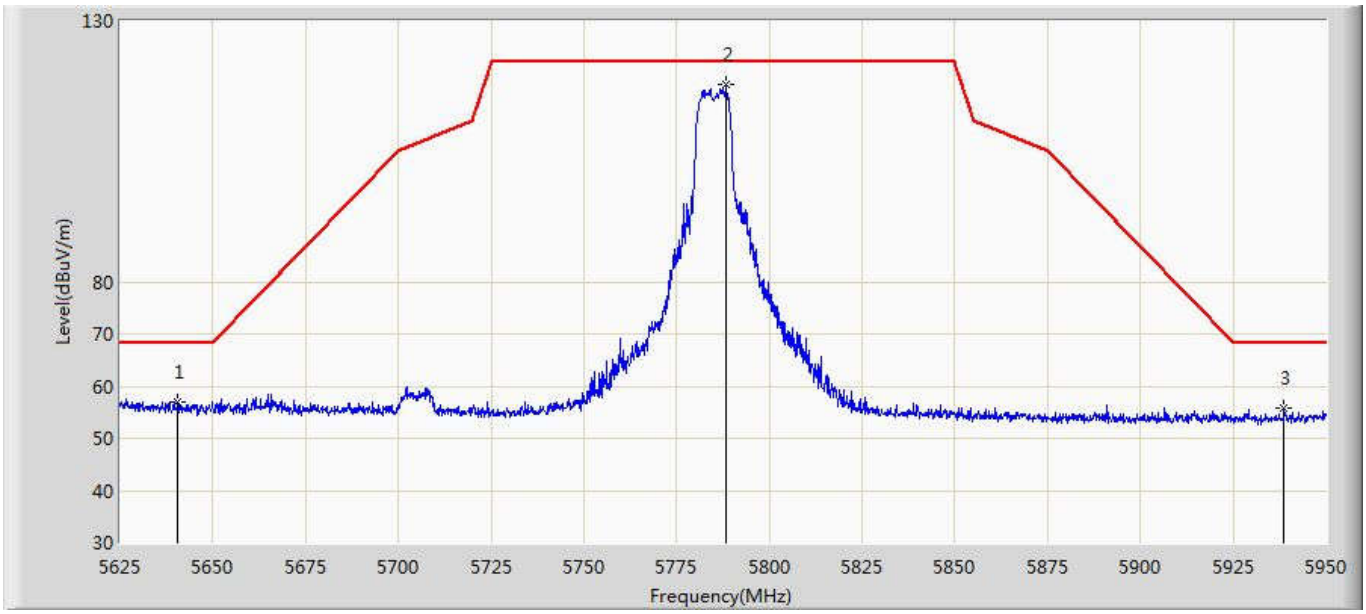
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5640.112	59.060	18.700	-9.140	68.200	40.361	PK
2	*	5743.462	119.033	78.450	-3.167	122.200	40.583	PK

Site: AC5	Time: 2017/03/12 - 15:41
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5745MHz by 802.11n(10M)	



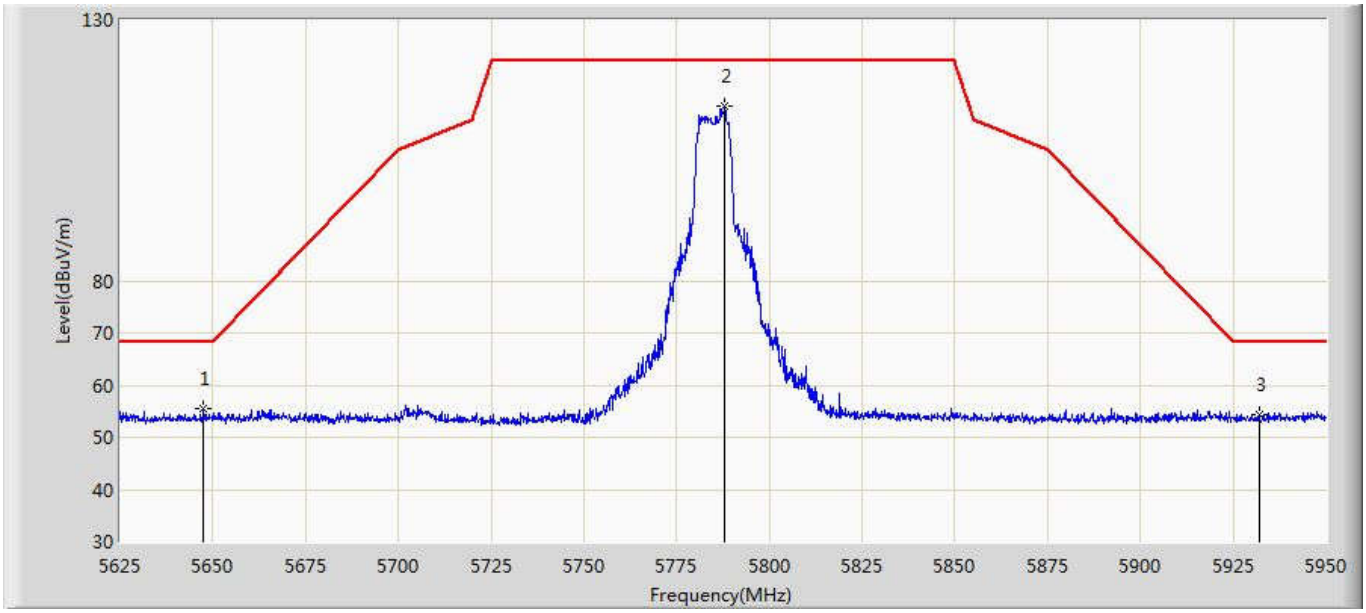
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5650.350	55.053	14.626	-13.406	68.459	40.427	PK
2	*	5743.300	112.666	72.083	-9.534	122.200	40.582	PK

Site: AC5	Time: 2017/03/12 - 15:43
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5785MHz by 802.11n(10M)	



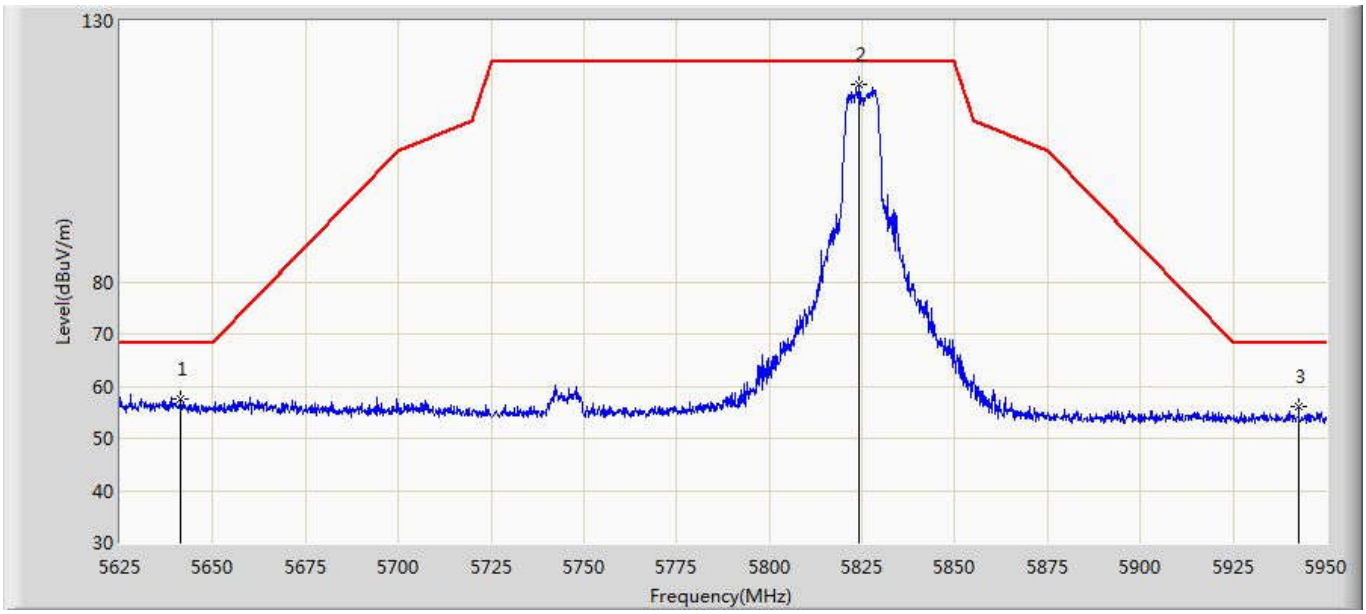
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5640.437	57.023	16.667	-11.177	68.200	40.356	PK
2	*	5788.312	117.853	77.125	-4.347	122.200	40.728	PK
3		5938.788	55.858	14.888	-12.342	68.200	40.970	PK

Site: AC5	Time: 2017/03/12 - 15:45
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5785MHz by 802.11n(10M)	



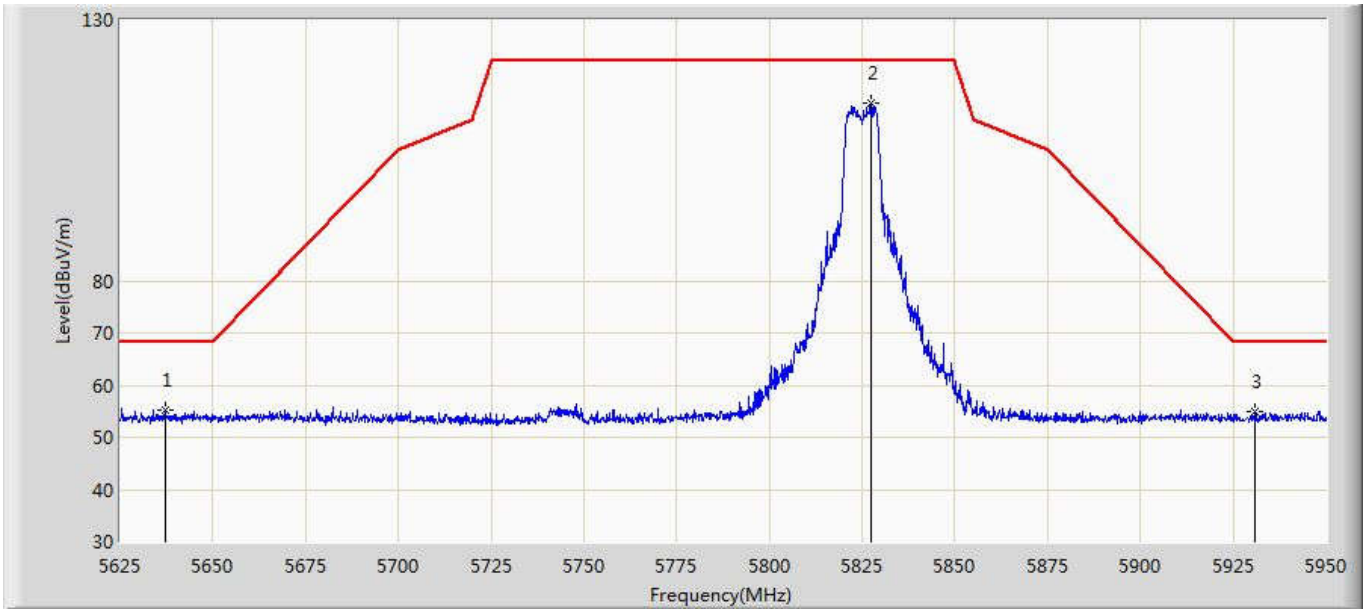
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5647.587	55.413	15.009	-12.787	68.200	40.404	PK
2	*	5787.987	113.512	72.786	-8.688	122.200	40.727	PK
3		5931.962	54.389	13.482	-13.811	68.200	40.908	PK

Site: AC5	Time: 2017/03/12 - 15:51
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5825MHz by 802.11n(10M)	



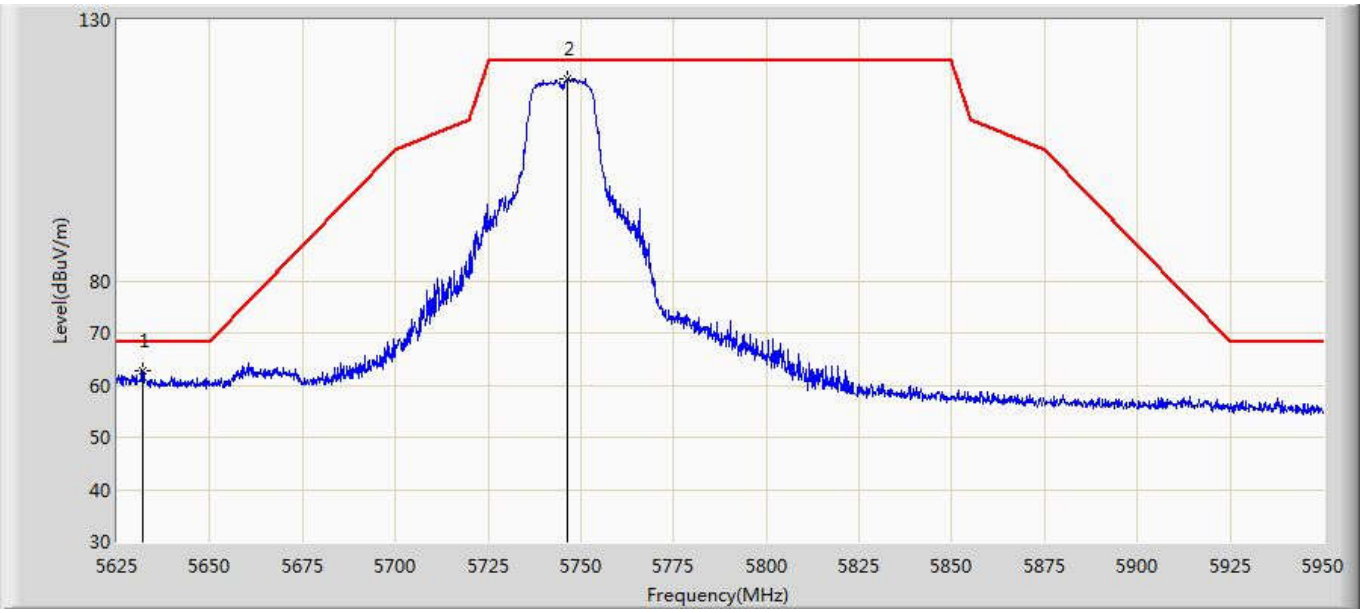
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5641.413	57.661	17.308	-10.539	68.200	40.353	PK
2	*	5824.062	117.683	76.955	-4.517	122.200	40.727	PK
3		5942.687	56.189	15.183	-12.011	68.200	41.007	PK

Site: AC5	Time: 2017/03/12 - 15:53
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 3:Transmit at 5825MHz by 802.11n(10M)	



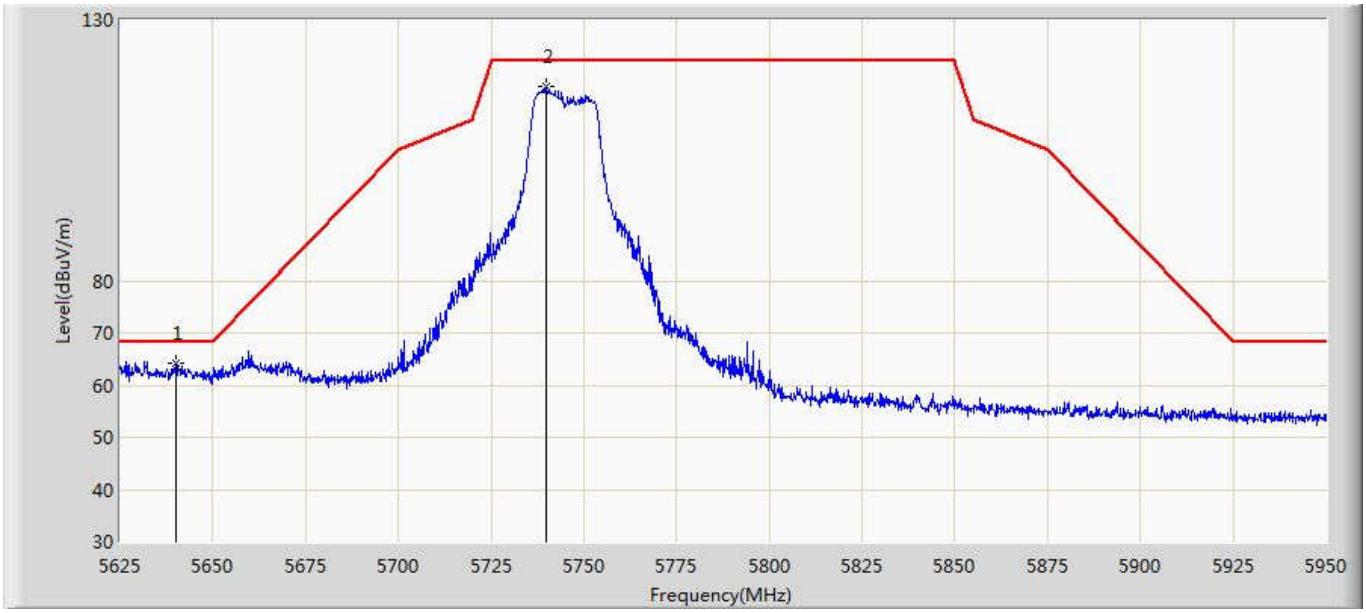
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5637.025	55.341	14.942	-12.859	68.200	40.399	PK
2	*	5827.312	114.086	73.370	-8.114	122.200	40.716	PK
3		5930.663	55.011	14.116	-13.189	68.200	40.895	PK

Site: AC5	Time: 2017/02/20 - 17:38
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5745MHz by 802.11n20	



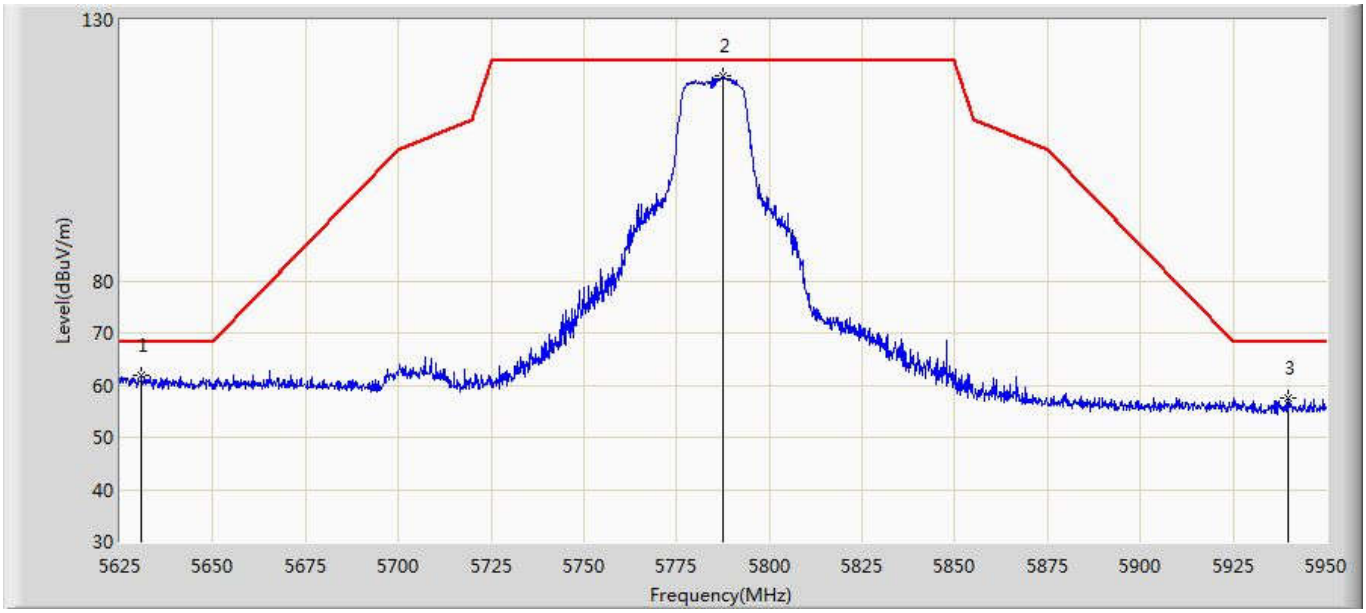
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5631.987	62.885	22.423	-5.315	68.200	40.462	PK
2	*	5746.388	118.651	78.061	-3.549	122.200	40.590	PK

Site: AC5	Time: 2017/02/20 - 17:39
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5745MHz by 802.11n20	



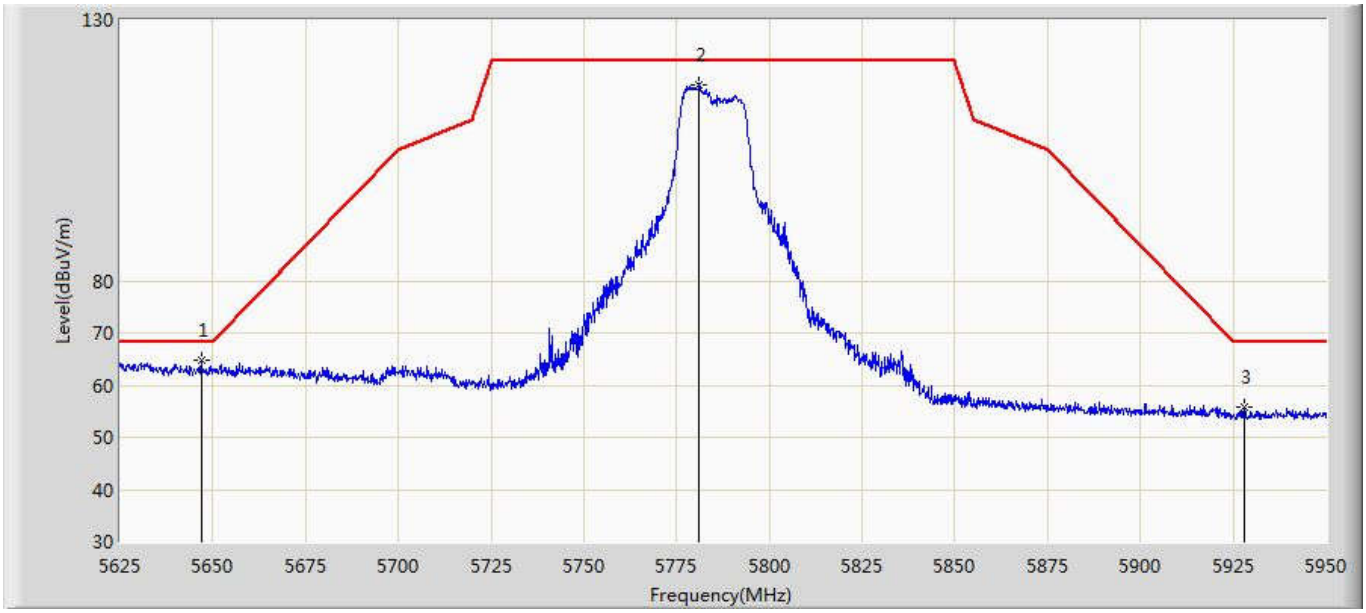
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5640.112	64.272	23.912	-3.928	68.200	40.361	PK
2		5739.888	117.123	76.555	-5.077	122.200	40.568	PK

Site: AC5	Time: 2017/02/20 - 17:40
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5785MHz by 802.11n20	



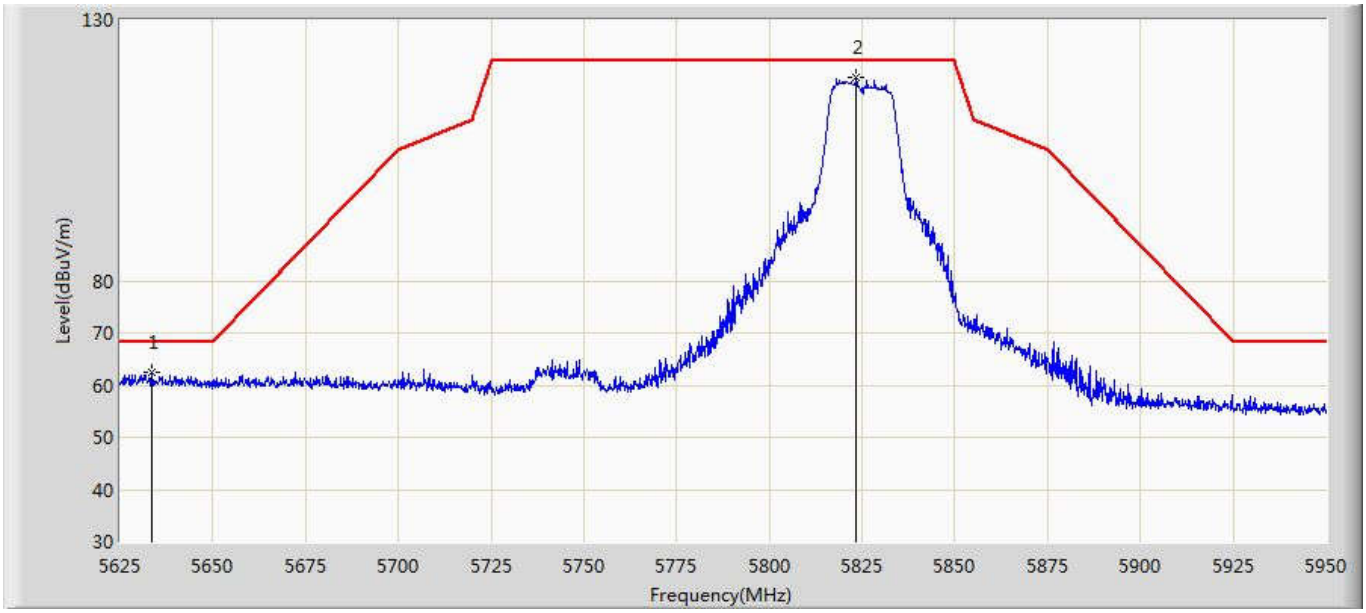
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5630.850	61.767	21.291	-6.433	68.200	40.476	PK
2	*	5787.500	119.194	78.471	-3.006	122.200	40.723	PK
3		5939.763	57.614	16.635	-10.586	68.200	40.980	PK

Site: AC5	Time: 2017/02/20 - 17:41
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5785MHz by 802.11n20	



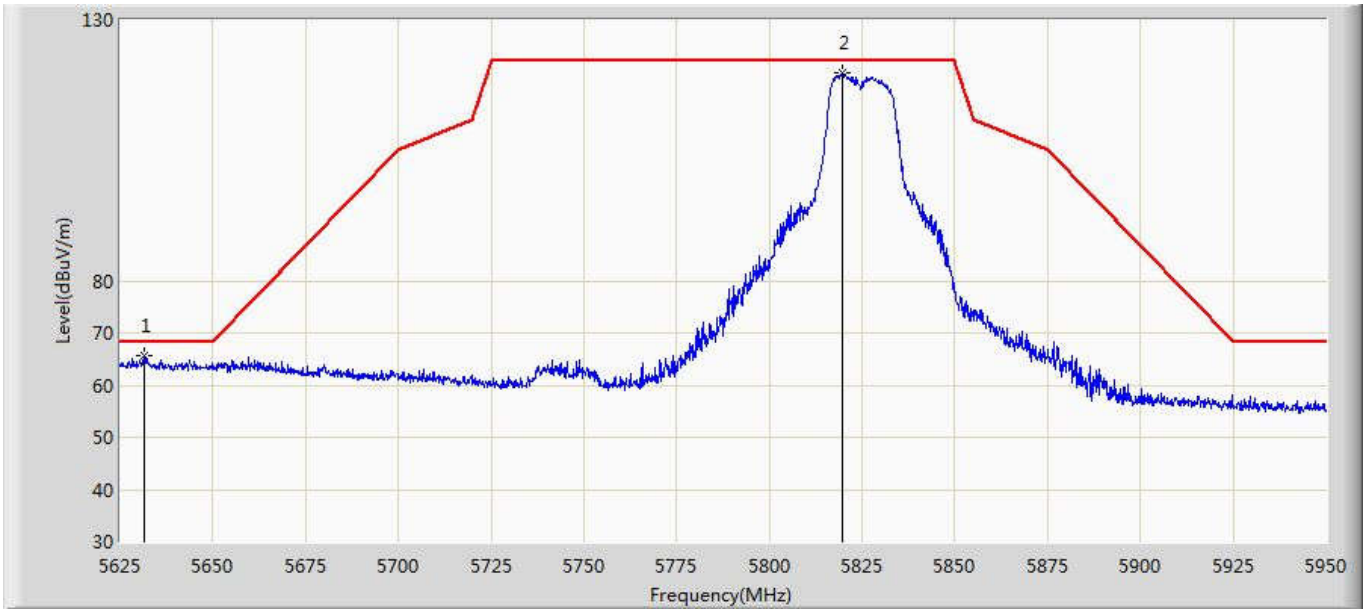
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5646.937	64.926	24.527	-3.274	68.200	40.398	PK
2		5781.000	117.462	76.783	-4.738	122.200	40.680	PK
3		5928.062	55.925	15.017	-12.275	68.200	40.908	PK

Site: AC5	Time: 2017/02/20 - 17:43
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5825MHz by 802.11n20	



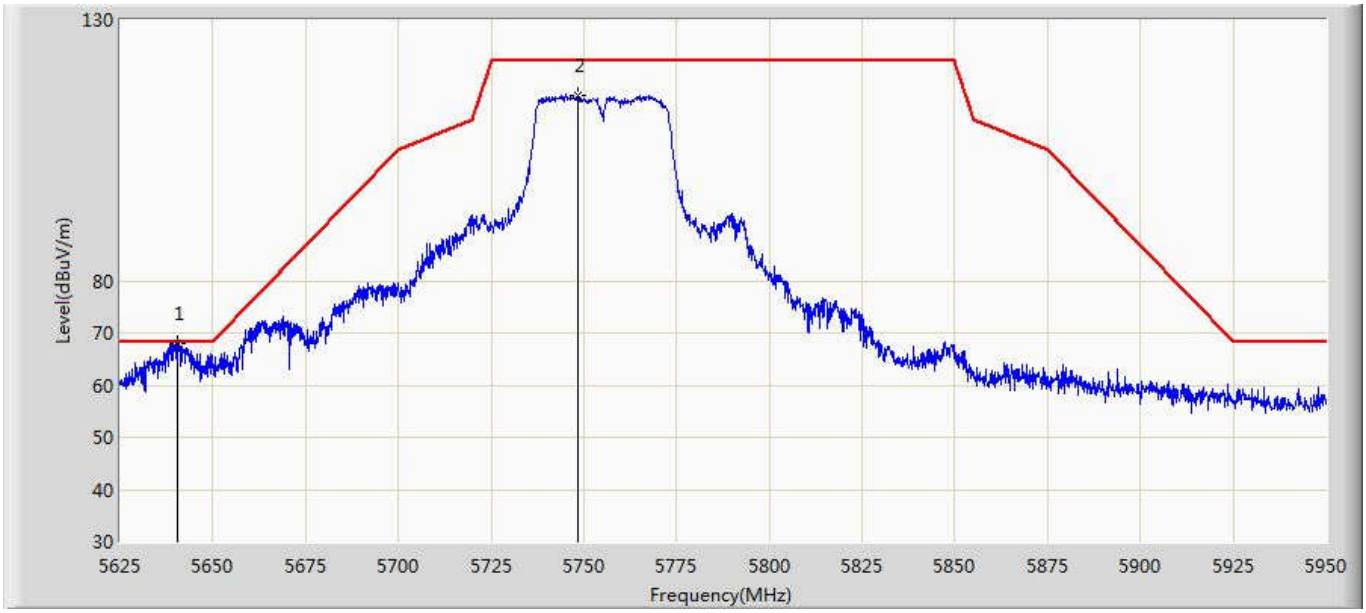
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5633.612	62.464	22.022	-5.736	68.200	40.442	PK
2	*	5823.413	118.928	78.198	-3.272	122.200	40.730	PK

Site: AC5	Time: 2017/02/20 - 17:45
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 4:Transmit at 5825MHz by 802.11n20	



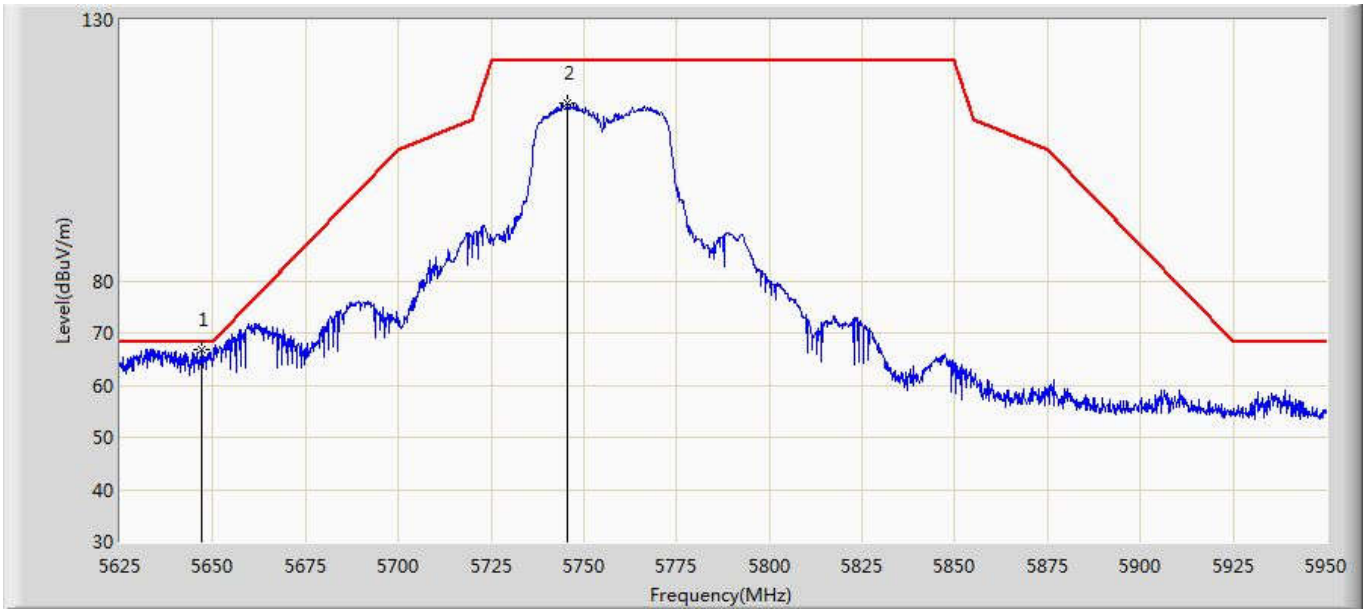
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5631.337	65.763	25.293	-2.437	68.200	40.470	PK
2		5819.513	119.732	78.988	-2.468	122.200	40.744	PK

Site: AC5	Time: 2017/02/20 - 17:54
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 5:Transmit at 5755MHz by 802.11n40	



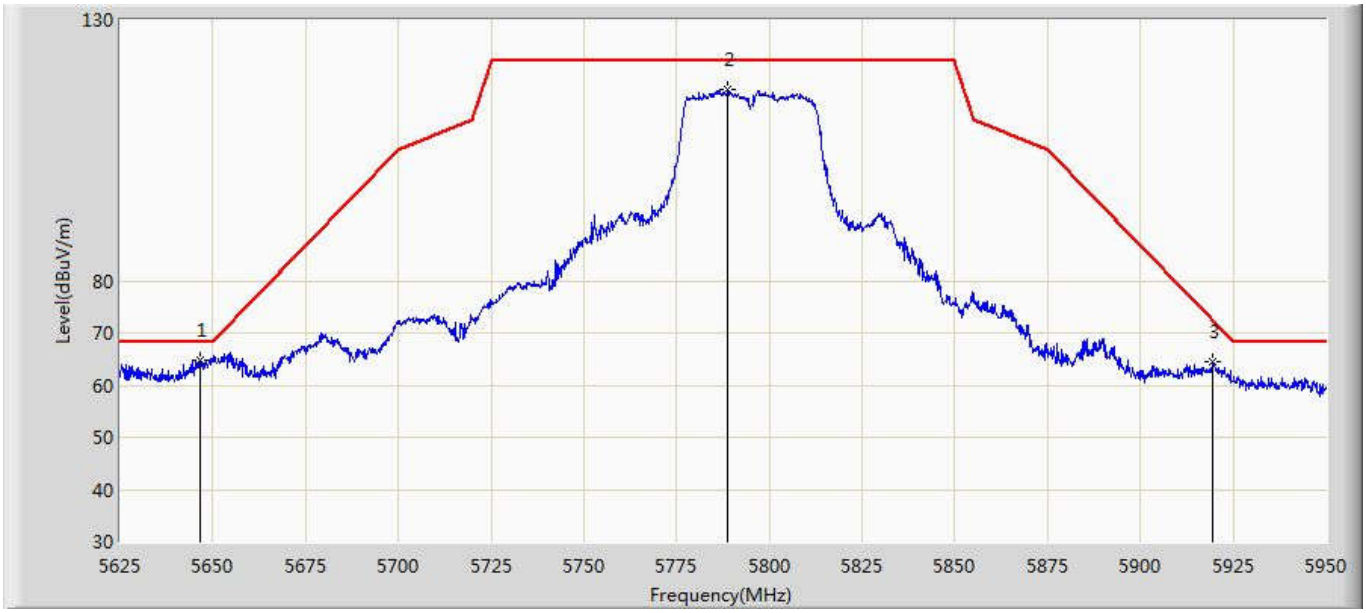
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5640.600	68.009	27.655	-0.191	68.200	40.354	PK
2		5748.337	115.595	75.001	-6.605	122.200	40.595	PK

Site: AC5	Time: 2017/02/20 - 17:55
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 5:Transmit at 5755MHz by 802.11n40	



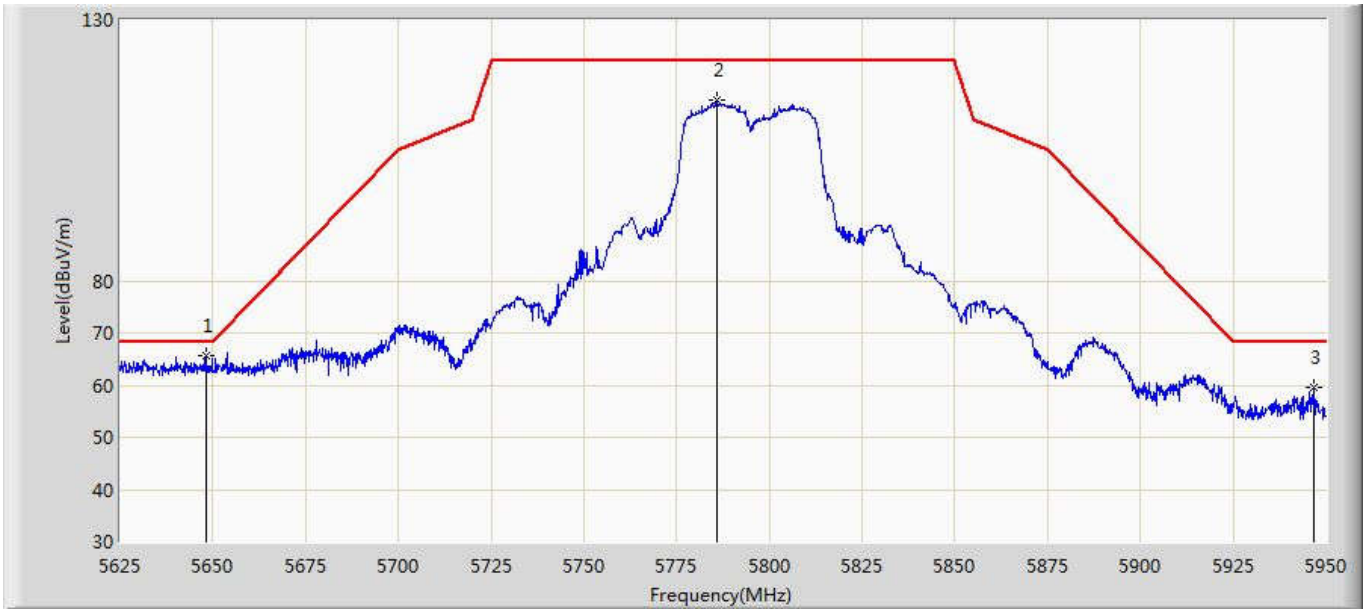
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5646.937	66.935	26.536	-1.265	68.200	40.398	PK
2		5745.575	114.135	73.547	-8.065	122.200	40.588	PK

Site: AC5	Time: 2017/02/20 - 17:56
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 5:Transmit at 5795MHz by 802.11n40	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5646.450	64.755	24.360	-3.445	68.200	40.395	PK
2		5788.800	116.608	75.876	-5.592	122.200	40.732	PK
3		5919.612	64.451	23.460	-7.736	72.187	40.991	PK

Site: AC5	Time: 2017/02/20 - 17:59
Limit: FCC-15.407 new new	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 5GHz 300Mbps 13dBi Outdoor CPE	Power: AC 120V/50Hz
Note: Mode 5:Transmit at 5795MHz by 802.11n40	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5648.237	65.513	25.104	-2.687	68.200	40.409	PK
2		5785.712	114.569	73.858	-7.631	122.200	40.711	PK
3		5946.587	59.536	18.493	-8.664	68.200	41.042	PK

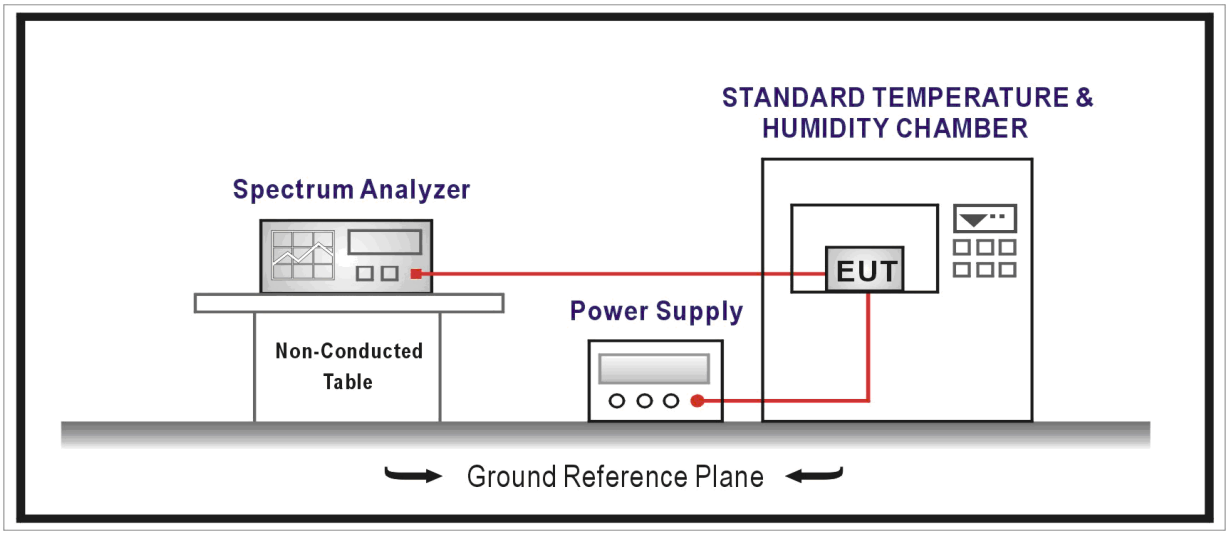
Note: The bandedge of 5230MHz for 802.11n(40MHz) had been tested for compliance, which emission level was less than 5190MHz for 802.11n(40MHz).

10. Frequency Stability

10.1. Test Equipment

Frequency Stability / TR-7					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.03
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2016.04.09	2017.04.09
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2016.04.09	2017.04.09
AC Power Supply	IDRC	CF-500TP	979422	2016.09.16	2017.09.16
DC Power Supply	IDRC	CD-035-020PR	977272	2016.09.16	2017.09.16
Programmable Temperature & Humidity Chamber	Gaoyu	TH-1P-B	WIT-05121302	2017.01.04	2018.01.03
Temperature/Humidity Meter	zhichen	ZC1-2	TR7-TH	2016.04.10	2017.04.10
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

10.2. Test Setup



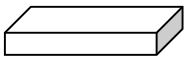
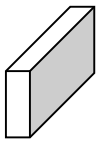
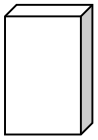
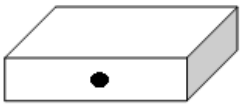
10.3. Limit

Frequency Stability Limit	
UNII Devices	
☒	In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
IEEE Std. 802.11n-2009	
☒	The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band and ± 25ppm maximum for the 2.4 GHz band.

10.4. Test Procedure

Frequency Stability Test Method				
	References Rule		Chapter	Description
☒	ANSI C63.10		6.8	Frequency stability tests
	☒	ANSI C63.10	6.8.1	Frequency stability with respect to ambient temperature
	☒	ANSI C63.10	6.8.2	Frequency stability when varying supply voltage

10.5. EUT test Axis definition

<table>
<tr><td>Item</td><td colspan="4">Frequency Stability</td></tr>
<tr><td rowspan="5">Device Category</td><td>☒</td><td colspan="3">Outdoor AP</td></tr>
<tr><td>☐</td><td colspan="3">Indoor AP</td></tr>
<tr><td>☒</td><td colspan="3">Fixed point-to-point AP</td></tr>
<tr><td>☐</td><td colspan="3">Outdoor fixed point-to-multipoint AP</td></tr>
<tr><td>☐</td><td colspan="3">Client</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1-9</td></tr>
<tr><td rowspan="13">Test method</td><td>☐</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☐</td></tr>
<tr><td>☒</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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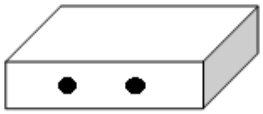
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
</table>

10.6. Test Result

Product Name	:	5GHz 300Mbps 13dBi Outdoor CPE	Power	:	AC 120V/60Hz
Test Site	:	TR8	Test Date	:	2017.03.12
Test Mode	:	Mode 1~5			

Frequency Stability under Temperature

Temperature Interval (℃)	Test Frequency (MHz)	Deviation (Hz)	Deviation (ppm)
-30	5180.000	121	0.0234
-20	5180.000	-111	-0.0214
-10	5180.000	-152	-0.0293
0	5180.000	116	0.0224
10	5180.000	-96	-0.0185
20	5180.000	-89	-0.0172
30	5180.000	108	0.0208
40	5180.000	101	0.0195
50	5180.000	-125	-0.0241
-30	5785.000	118	0.0204
-20	5785.000	156	0.0270
-10	5785.000	121	0.0209
0	5785.000	126	0.0218
10	5785.000	-86	-0.0149
20	5785.000	-98	-0.0169
30	5785.000	256	0.0443
40	5785.000	182	0.0315
50	5785.000	162	0.0280

Frequency Stability under Voltage

AC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Deviation (ppm)
102	5180.000	121	0.0234
120	5180.000	101	0.0195
138	5180.000	112	0.0216
102	5785.000	115	0.0199
120	5785.000	119	0.0206
138	5785.000	-156	-0.0270

11. Antenna Requirement

11.1. Limit

Antenna Requirement Limit
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

11.2. Antenna Connector Construction

Antenna Connector Construction	
☒	The use of a permanently attached antenna
☐	The antenna use of a unique coupling to the intentional radiator
☐	The use of a nonstandard antenna jack or electrical connector
Please refer to the attached document “Internal Photograph” to show the antenna connector.	

The End