

Test Report

FCC Part15 Subpart E

Product Name : AC1900 High Gain Wireless Dual Band USB
Adapter

Model No. : Archer T9UH

FCC ID : TE7T9UH

Applicant : TP-LINK TECHNOLOGIES CO., LTD.

Address : Building 24 (floors 1,3,4,5) and 28 (floors1-4)
Central Science and Technology Park,Shennan Rd,
Nanshan, Shenzhen, China

Date of Receipt : Aug. 01, 2016

Test Date : Sep. 14, 2016~ Sep. 26, 2016

Issued Date : Sep. 30, 2016

Report No. : 1682009R-RF-US-P09V01

Report Version : V1.2

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

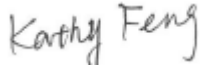
This report must not be used to claim product endorsement by CNAS,TAF any agency of the government.

The test report shall not be reproduced without the written approval of Quietek Corporation.

Test Report Certification

Issued Date : Sep. 30, 2016
Report No. : 1682009R-RF-US-P09V01



Product Name : AC1900 High Gain Wireless Dual Band USB Adapter
Applicant : TP-LINK TECHNOLOGIES CO., LTD.
Address : Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Manufacturer : TP-LINK TECHNOLOGIES CO., LTD.
Address : Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Model No. : Archer T9UH
FCC ID : TE7T9UH
EUT Voltage : DC 5V
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 v01r03
KDB 662911 D01 Multiple Transmitter Output v02r01
Test Result : Complied
Performed Location : Quietek Corporation - Suzhou EMC Laboratory
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 : 
(Adm. Specialist: Kathy Feng)
Reviewed By : 
(Senior Engineer: Jack Zhang)
Approved By : 
(Engineering Manager: Harry Zhao)

Laboratory Information

We, **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C.	:	BSMI, NCC, TAF
USA	:	FCC
Japan	:	VCCI
China	:	CNAS

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site :<http://www.quietek.com/tw/ctg/cts/accreditations.htm>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site :
<http://www.quietek.com/>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :

No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

LinKou Testing Laboratory :

No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

Suzhou Testing Laboratory :

No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,215006, Jiangsu, China
TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com

TABLE OF CONTENTS

Description	Page
1. General Information	8
1.1. EUT Description	8
1.2. Antenna information	9
1.3. Working Frequency of Each Channel:.....	9
1.4. Mode of Operation	10
1.5. Tested System Details	11
1.6. Configuration of Tested System.....	12
1.7. EUT Exercise Software.....	13
2. Technical Test	14
2.1. Summary of Test Result.....	14
2.2. Test Frequency configuration:	14
2.3. Power Parameter Value of the test software.....	15
2.4. Power vs Data Rate	17
2.5. Duty Cycle	19
2.6. Test Environment	21
2.7. Uncertainty	21
3. Conducted Emission.....	22
3.1. Test Equipment	22
3.2. Test Setup.....	22
3.3. Limit	23
3.4. Test Procedure	23
3.5. Test Result.....	24
4. Radiated Emission.....	26
4.1. Test Equipment	26
4.2. Test Setup.....	27
4.3. Limit	28
4.4. Test Procedure	31

4.5.	EUT test Axis definition	32
4.6.	Test Result.....	33
5.	Emission bandwidth and occupied bandwidth	50
5.1.	Test Equipment	50
5.2.	Test Setup.....	50
5.3.	Limit	50
5.4.	Test Procedure	51
5.5.	EUT test Axis definition	52
5.6.	Test Result.....	53
6.	6dB bandwidth	57
6.1.	Test Equipment	57
6.2.	Test Setup.....	57
6.3.	Limit	57
6.4.	Test Procedure	58
6.5.	EUT test Axis definition	59
6.6.	Test Result.....	60
7.	Power Output.....	62
7.1.	Test Equipment	62
7.2.	Test Setup.....	62
7.3.	Limit	63
7.4.	Test Procedure	64
7.5.	EUT test Axis definition	66
7.6.	Test Result.....	67
8.	Peak Power Spectral Density	71
8.1.	Test Equipment	71
8.2.	Test Setup.....	71
8.3.	Limit	72
8.4.	Test Procedure	73
8.5.	EUT test Axis definition	75

8.6.	Test Result.....	76
9.	Radiated Emission Band Edge	82
9.1.	Test Equipment	82
9.2.	Test Setup.....	82
9.3.	Limit	83
9.4.	Test Procedure	86
9.5.	EUT test Axis definition	87
9.6.	Test Result.....	88
10.	Frequency Stability	214
10.1.	Test Equipment	214
10.2.	Test Setup.....	214
10.3.	Limit	215
10.4.	Test Procedure	216
10.5.	EUT test Axis definition	217
10.6.	Test Result.....	218

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1682009R-RF-US-P09V01	V1.0	Initial Issued Report	Sep. 27, 2016
1682009R-RF-US-P09V01	V1.1	Modified the Directional gain.	Sep. 30, 2016
1682009R-RF-US-P09V01	V1.2	Modified some typos	Sep. 30, 2016

1. General Information

1.1. EUT Description

Product Name	AC1900 High Gain Wireless Dual Band USB Adapter					
Brand Name	TP-LINK					
Model No.	Archer T9UH					
EUT Voltage	DC 5V					
Type of Modulation	OFDM					
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps					
	802.11n: up to 450Mbps					
	802.11ac: up to 1.3Gbps					
Channel Control	Auto					
Transmit modes	☒	802.11a	☒	802.11n(20MHz)	☒	802.11n(40MHz)
	☒	802.11ac(20MHz)	☒	802.11ac(40MHz)	☒	802.11ac(80MHz)
Support Bands	☒	5150MHz~5250MHz	☐	Outdoor AP		
			☐	Indoor AP		
			☐	Fixed point-to-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 Manufacturer	TP-Link															
Antenna Delivery	☒ 1*TX+1*RX	☐ 2*TX+2*RX	☒ 3*TX+4*RX													
Antenna Technology	☒ SISO ☐ MIMO <table border="1" style="margin-left: 20px;"> <tr> <td>☒</td> <td>Basic methodology with NANT transmit antennas</td> </tr> <tr> <td>☐</td> <td>Sectorized antenna systems</td> </tr> <tr> <td>☐</td> <td>Cross-polarized antennas</td> </tr> <tr> <td>☐</td> <td>Unequal antenna gains, with equal transmit powers</td> </tr> <tr> <td>☐</td> <td>Spatial Multiplexing</td> </tr> <tr> <td>☐</td> <td>Cyclic Delay Diversity (CDD)</td> </tr> </table>				☒	Basic methodology with NANT transmit antennas	☐	Sectorized antenna systems	☐	Cross-polarized antennas	☐	Unequal antenna gains, with equal transmit powers	☐	Spatial Multiplexing	☐	Cyclic Delay Diversity (CDD)
☒	Basic methodology with NANT transmit antennas															
☐	Sectorized antenna systems															
☐	Cross-polarized antennas															
☐	Unequal antenna gains, with equal transmit powers															
☐	Spatial Multiplexing															
☐	Cyclic Delay Diversity (CDD)															
Antenna Type	PIFA Antenna															
Antenna Gain																
Antenna Technology	Ant Gain (dBi)		Directional Gain (dBi)													
			For Power	For PSD												
☒ Basic MIMO	Ant1: 4	Ant2: 4 Ant3: 4	4.0	4.0												

1.3. Working Frequency of Each Channel:

802.11a/n/ac(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
52	5260MHz	56	5280 MHz	60	5300 MHz	64	5320 MHz
100	5500MHz	104	5520 MHz	108	5540 MHz	112	5550 MHz
116	5580MHz	132	5660 MHz	136	5680 MHz	140	5700 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/ac(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	54	5270 MHz	62	5310 MHz
102	5510 MHz	110	5550 MHz	134	5670 MHz	151	5755 MHz
159	5795 MHz	N/A	N/A	N/A	N/A	N/A	N/A
802.11ac(80MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210 MHz	58	5290 MHz	106	5530MHz	155	5775 MHz

1.4. Mode of Operation

QuieTek 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(20MHz)
Mode 3: Transmit by 802.11n(40MHz)
Mode 4: Transmit by 802.11ac(20MHz)
Mode 5: Transmit by 802.11ac(40MHz)
Mode 6: Transmit by 802.11ac(80MHz)

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.

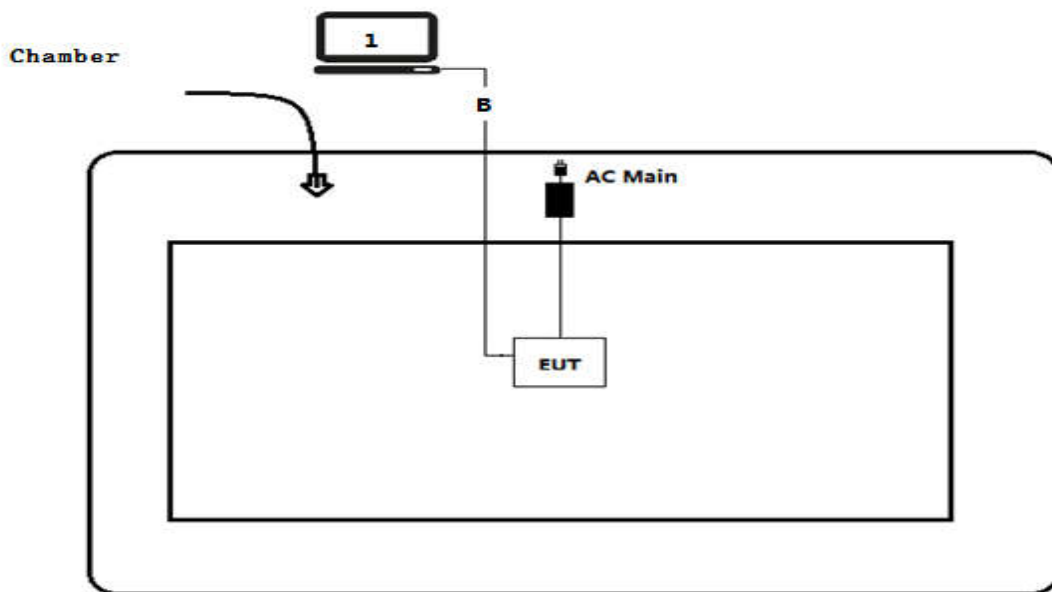
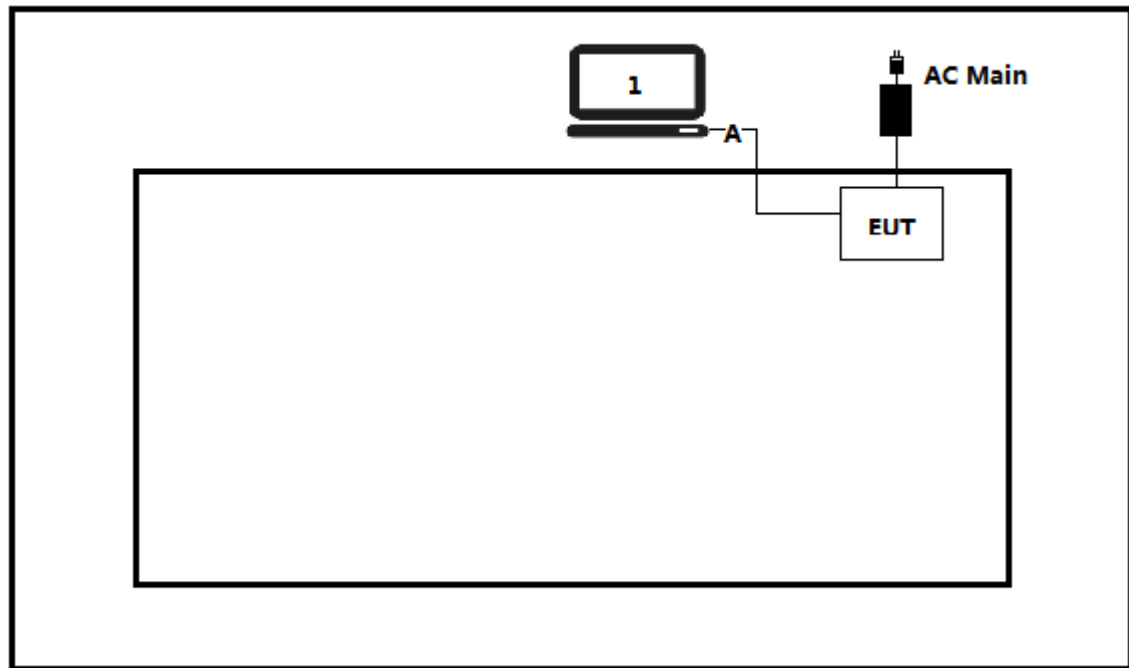
1.5. Tested System Details

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

1.6. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	USB Cable	shielded, 15m
B	USB Cable	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	Input RF commands, and set the test mode and channel, then press OK to 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	Worse case mode	Limit	Result
Conducted Emission	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.207	802.11a	FCC 15.207	PASS
Radiated Emission	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.209	802.11a	FCC 15.209	PASS
Emission bandwidth and occupied bandwidth	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	802.11n(20MHz)	FCC 15.407(e)	PASS
6dB Emission Bandwidth	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	802.11a	FCC 15.407(e)	PASS
Power Output	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	802.11ac(20MHz)	FCC 15.407(a)	PASS
Peak Power Spectral Density	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(a)	802.11ac(20MHz)	FCC 15.407(a)	PASS
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.205, 15.407(b)	802.11ac(20MHz)	FCC 15.407(b)	PASS
Frequency Stability	FCC CFR Title 47 Part 15 Subpart E: 2015 Section 15.407(g)	5220MHz	Within the band	PASS

2.2. Test Frequency configuration:

Modulation Mode	Channel	Frequency	Channel	Frequency	Channel	Frequency
802.11a/n(20MHz)/ac(20MHz)	36	5180MHz	40	5200MHz	48	5240MHz
	52	5260MHz	60	5300MHz	64	5320MHz
	100	5500MHz	116	5580MHz	132	5700MHz
	149	5745MHz	157	5785MHz	165	5825MHz
802.11n(40MHz)/ac(40MHz)	38	5190MHz	46	5230MHz	54	5270MHz
	62	5310MHz	102	5510MHz	110	5550MHz
	134	5670MHz	151	5755MHz	159	5795MHz
802.11ac(80MHz)	42	5210MHz	58	5290MHz	106	5530MHz
	155	5775MHz	N/A	N/A	N/A	N/A

2.3. Power Parameter Value of the test software

Test Mode	Frequency	Power Setting		
		Ant 1	Ant 2	Ant 3
802.11a	5180	37	35	33
	5200	37	35	33
	5240	37	35	33
	5260	37	44	37
	5300	37	44	37
	5320	37	44	37
	5500	34	26	30
	5580	34	26	30
	5700	34	26	30
	5745	40	36	40
	5785	40	36	40
	5825	40	36	40
802.11n(20MHz)	5180	34	41	31
	5200	34	41	31
	5240	34	41	31
	5260	34	38	32
	5300	34	38	32
	5320	34	38	32
	5500	31	26	30
	5580	31	26	30
	5700	31	26	30
	5745	37	40	39
	5785	37	40	39
	5825	37	40	39

802.11ac(20MHz)	5180	37	44	34
	5200	37	44	34
	5240	37	44	34
	5260	36	40	34
	5300	36	40	34
	5320	36	40	34
	5500	30	25	29
	5580	30	25	29
	5700	30	25	29
	5745	41	44	43
	5785	41	44	43
	5825	41	44	43
802.11n(40MHz)	5190	36	43	32
	5230	36	43	32
	5270	38	42	36
	5310	38	42	36
	5510	32	29	31
	5550	32	29	31
	5670	32	29	31
	5755	39	40	41
	5795	39	40	41
802.11ac(40MHz)	5190	37	44	34
	5230	37	44	34
	5270	38	42	36
	5310	38	42	36
	5510	34	31	33
	5550	34	31	33
	5670	34	31	33
	5755	40	42	41
	5795	40	42	41
802.11ac(80MHz)	5210	37	43	33
	5290	38	42	35
	5530	32	26	29
	5775	40	42	40

Note: In 802.11a mode, it is based on SISO technology, so each antenna is transmitted individually, but for other mode, they are based on MIMO technology, so each antenna is transmitted simultaneously.

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
16	3	---	---	---	19.5	21.6	40.5	45
17	3	---	---	---	39	43.2	81	90
18	3	---	---	---	58.5	65.1	121.5	135
19	3	---	---	---	78	86.7	162	180
20	3	---	---	---	117	129.9	243	270
21	3	---	---	---	156	173.4	324	360
22	3	---	---	---	175.5	195	364.5	405
23	3	---	---	---	195	216.6	405	450

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

Spatial Streams (Note1)	MCS Index	Modulation type	Coding rate	Data Rate(Mb/s)							
				20MHz		40MHz		80MHz		160MHz	
				Guard Interval		Guard Interval		Guard Interval		Guard Interval	
				800ns	400ns	800ns	400ns	800ns	400ns	800ns	400ns
1	0	BPSK	1/2	6.5	7.2	13.5	15	29.3	32.5	58.5	65
	1	QPSK	1/2	13	14.4	27	30	58.5	65	117	130
	2	QPSK	3/4	19.5	21.7	40.5	45	87.8	97.5	175.5	195
	3	16-QAM	1/2	26	28.9	54	60	117	130	234	260
	4	16-QAM	3/4	39	43.3	81	90	175.5	195	351	390
	5	64-QAM	2/3	52	57.8	108	120	234	260	468	520
	6	64-QAM	3/4	58.5	65	121.5	135	263.3	292.5	526.5	585
	7	64-QAM	5/6	65	72.2	135	150	292.5	325	585	650
	8	256-QAM	3/4	78	86.7	162	180	351	390	702	780
	9	256-QAM	5/6	N/A	N/A	180	200	390	433.3	780	866.7
2	0	BPSK	1/2	13	14.4	27	30	58.6	65	117	130
	1	QPSK	1/2	26	28.8	54	60	117	130	234	260
	2	QPSK	3/4	39	43.4	81	90	175.6	195	351	390
	3	16-QAM	1/2	52	57.8	108	120	234	260	468	520
	4	16-QAM	3/4	78	86.6	162	180	351	390	702	780
	5	64-QAM	2/3	104	115.6	216	240	468	520	936	1040
	6	64-QAM	3/4	117	130	243	270	526.6	585	1053	1170
	7	64-QAM	5/6	130	144.4	270	300	585	650	1170	1300
	8	256-QAM	3/4	156	173.4	324	360	702	780	1404	1560
	9	256-QAM	5/6	N/A	N/A	360	400	780	866.6	1560	1733.4
3	0	BPSK	1/2	19.5	21.6	40.5	45	87.9	97.5	175.5	195
	1	QPSK	1/2	39	43.2	81	90	175.5	195	351	390
	2	QPSK	3/4	58.5	65.1	121.5	135	263.4	292.5	526.5	585
	3	16-QAM	1/2	78	86.7	162	180	351	390	702	780
	4	16-QAM	3/4	117	129.9	243	270	526.5	585	1053	1170
	5	64-QAM	2/3	156	173.4	324	360	702	780	1404	1560
	6	64-QAM	3/4	175.5	195	364.5	405	789.9	877.5	1579.5	1755
	7	64-QAM	5/6	195	216.6	405	450	877.5	975	1755	1950
	8	256-QAM	3/4	234	260.1	486	540	1053	1170	2106	2340
	9	256-QAM	5/6	N/A	N/A	540	600	1170	1299.9	2340	2600.1

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

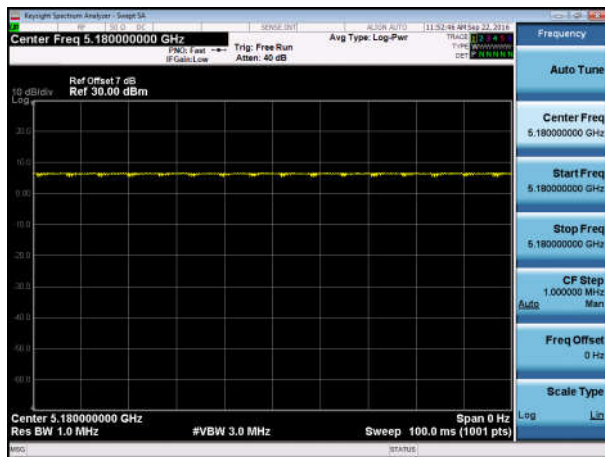
2.5. Duty Cycle

Test Mode	Tx On (ms)	T (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
802.11a	--	--	10Hz	--	100%
802.11 n(20MHz)	--	--	10Hz	--	100%
802.11ac(20MHz)	--	--	10Hz	--	100%
802.11n(40MHz)	--	--	10Hz	--	100%
802.11ac(40MHz)	--	--	10Hz	--	100%
802.11ac(80MHz)	--	--	10Hz	--	100%

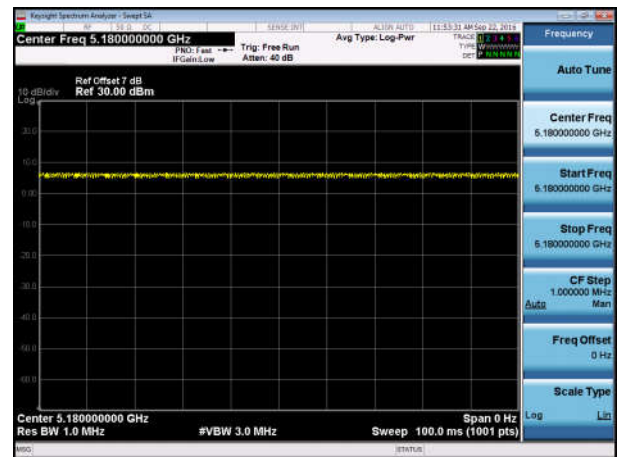
Note 1: T means the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

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

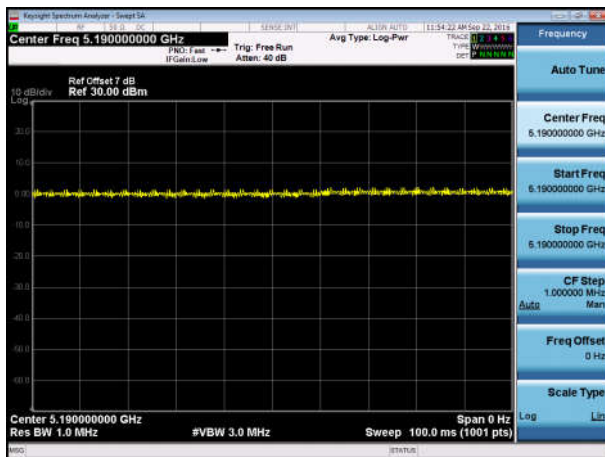
802.11a



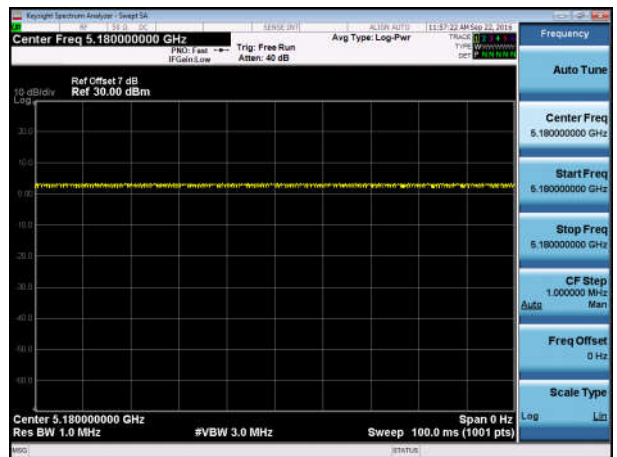
802.11n(20MHz)



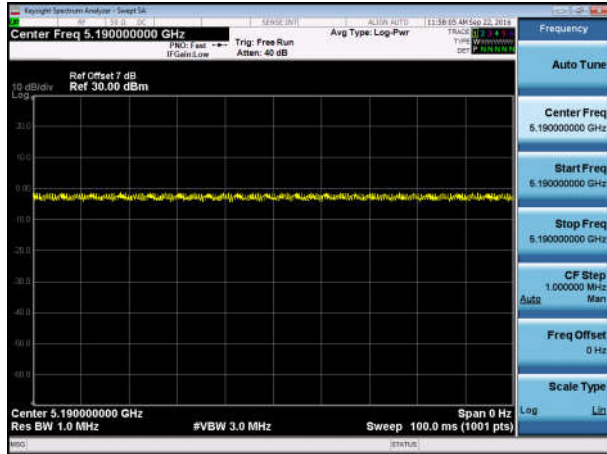
802.11n(40MHz)



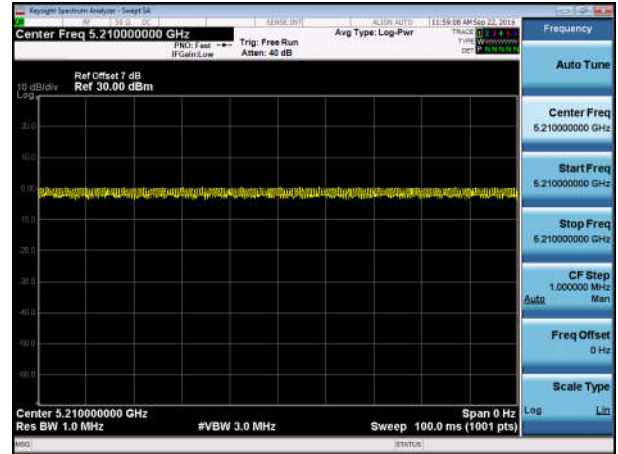
802.11ac(20MHz)



802.11ac(40MHz)



802.11ac(80MHz)



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	$\pm 2.02\text{dB}$
Radiated Emission	Below 1GHz $\pm 3.8\text{ dB}$
	Above 1GHz $\pm 3.9\text{ dB}$
RF Antenna Port Conducted Emission	$\pm 1.27\text{dB}$
Radiated Emission Band Edge	$\pm 3.9\text{dB}$
Occupied Bandwidth	$\pm 1\text{kHz}$
Power Spectral Density	$\pm 1.27\text{dB}$
Frequency Stability	$\pm 100\text{ Hz}$

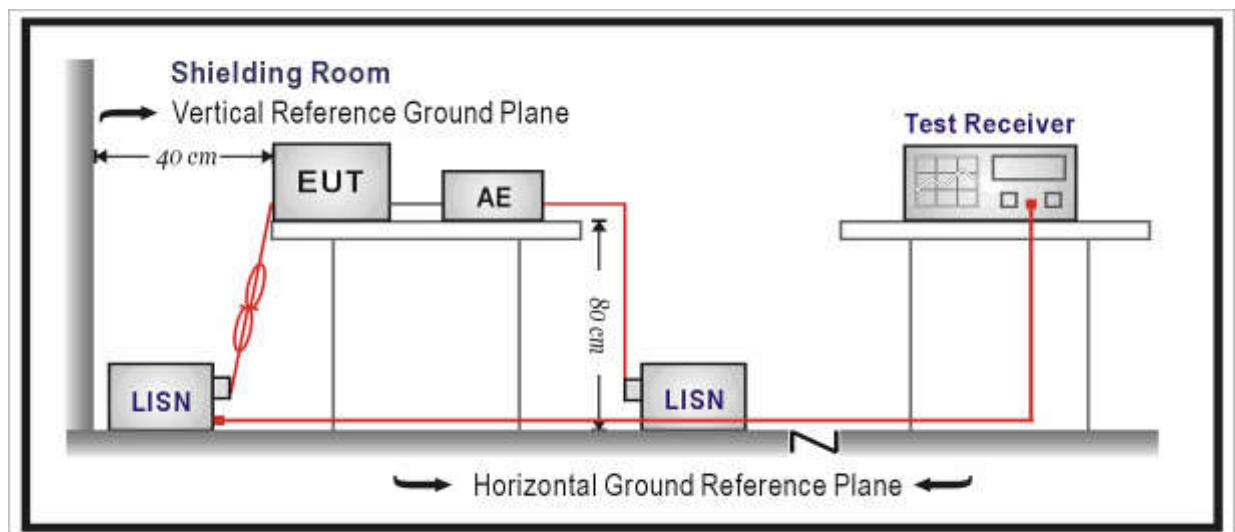
3. Conducted Emission

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	2017.03.05
Two-Line V-Network	R&S	ENV 216	101189	2016.06.16	2017.07.16
Two-Line V-Network	R&S	ENV 216	101044	2016.09.16	2017.09.16
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
50ohm Termination	SHX	TF2	07081402	2016.09.16	2017.09.16
Temperature/Humidity Meter	Zhichen	ZC1-2	TR1-TH	2016.01.05	2017.01.05

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 μ V)	AV (dB μ V)
0.15 - 0.50	66 – 56	56 – 46
0.50 - 5.0	56	46
5.0 - 30	60	50

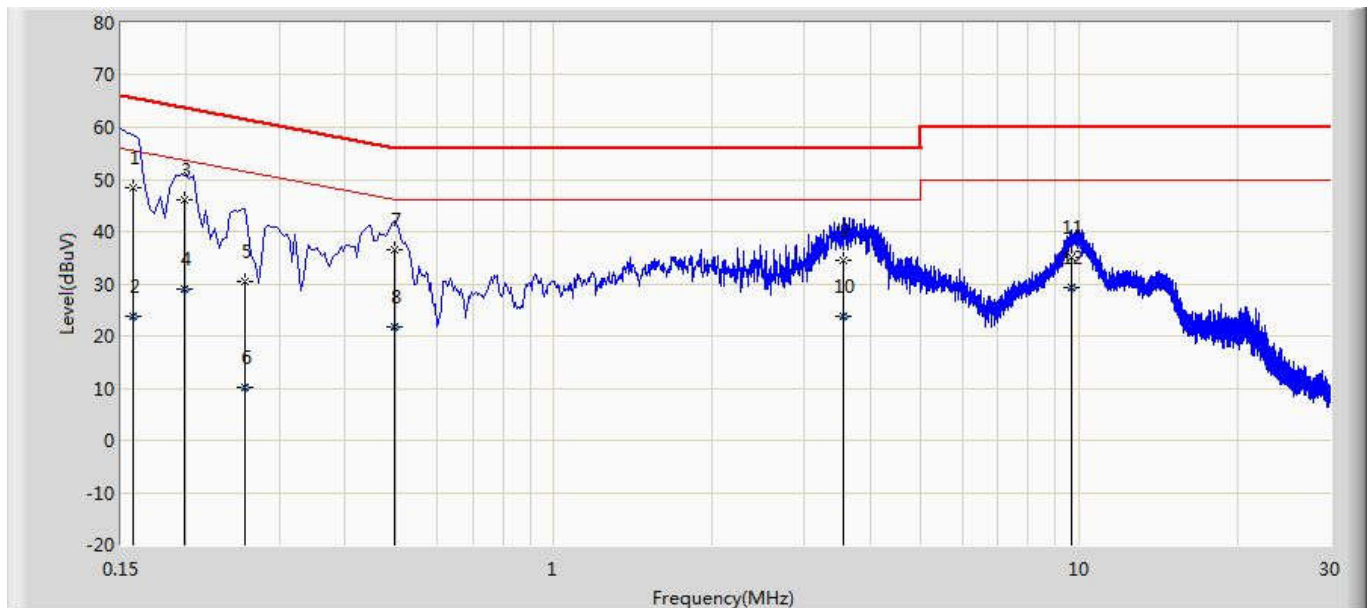
Note 1: The lower limit shall apply at the transition frequencies.
 Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

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: 2016/08/08
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216-L1	Polarity: Line
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1	

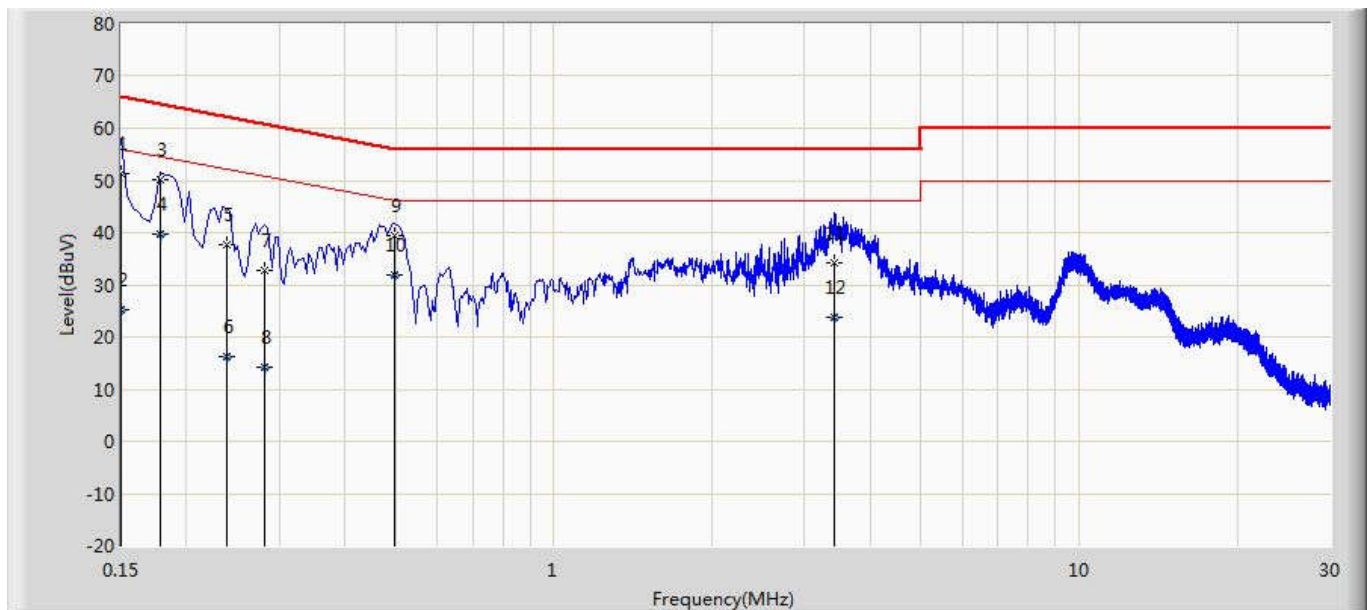


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1	*	0.158	48.442	38.711	-17.126	65.568	9.671	0.060	0.000	QP
2		0.158	23.633	13.902	-31.935	55.568	9.671	0.060	0.000	AV
3		0.198	46.221	36.511	-17.473	63.694	9.650	0.060	0.000	QP
4		0.198	28.988	19.278	-24.706	53.694	9.650	0.060	0.000	AV
5		0.258	30.421	20.714	-31.075	61.496	9.647	0.060	0.000	QP
6		0.258	10.140	0.433	-41.356	51.496	9.647	0.060	0.000	AV
7		0.498	36.454	26.754	-19.579	56.033	9.630	0.070	0.000	QP
8		0.498	21.607	11.907	-24.426	46.033	9.630	0.070	0.000	AV
9		3.554	34.468	24.678	-21.532	56.000	9.660	0.130	0.000	QP
10		3.554	23.659	13.869	-22.341	46.000	9.660	0.130	0.000	AV
11		9.682	34.968	24.978	-25.032	60.000	9.730	0.260	0.000	QP
12		9.682	29.400	19.410	-20.600	50.000	9.730	0.260	0.000	AV

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Site: TR1	Time: 2016/08/08
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216-N	Polarity: Neutral
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	51.231	41.495	-14.769	66.000	9.676	0.060	0.000	QP
2		0.150	25.079	15.343	-30.921	56.000	9.676	0.060	0.000	AV
3		0.178	50.265	40.541	-14.313	64.578	9.664	0.060	0.000	QP
4		0.178	39.570	29.846	-15.008	54.578	9.664	0.060	0.000	AV
5		0.238	37.568	27.848	-24.598	62.166	9.660	0.060	0.000	QP
6		0.238	16.256	6.536	-35.910	52.166	9.660	0.060	0.000	AV
7		0.282	32.726	23.016	-28.031	60.757	9.650	0.060	0.000	QP
8		0.282	14.244	4.534	-36.513	50.757	9.650	0.060	0.000	AV
9		0.498	39.296	29.596	-16.737	56.033	9.630	0.070	0.000	QP
10	*	0.498	31.952	22.252	-14.081	46.033	9.630	0.070	0.000	AV
11		3.418	34.296	24.516	-21.704	56.000	9.650	0.130	0.000	QP
12		3.418	23.795	14.015	-22.205	46.000	9.650	0.130	0.000	AV

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

4. Radiated Emission

4.1. Test Equipment

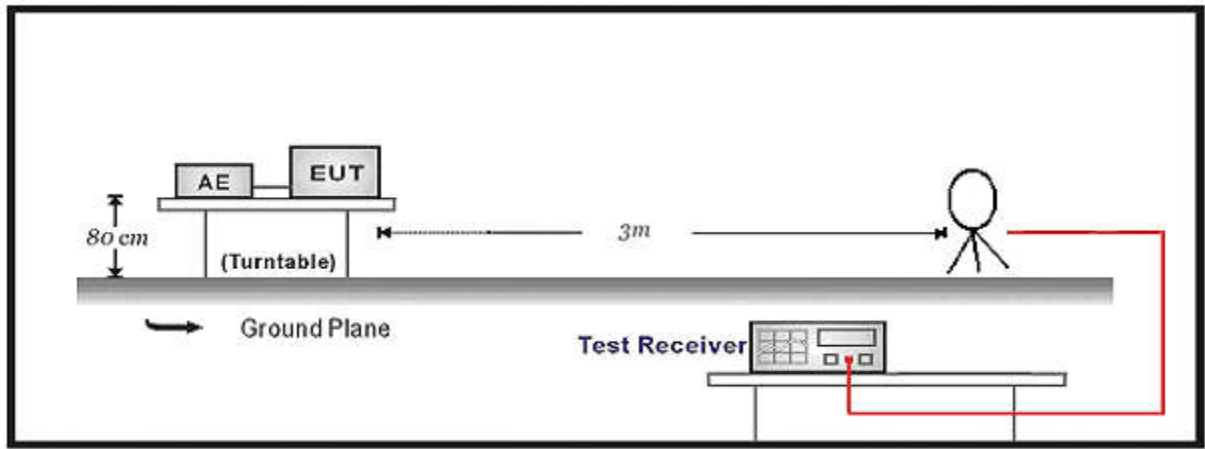
Radiated Emission / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2016.03.29	2017.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2015.11.16	2016.11.17
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2015.10.16	2016.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2016.03.02	2017.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2016.01.04	2017.01.03

Radiated Emission / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.04	2017.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2016.05.06	2017.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2016.05.06	2017.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2016.01.22	2017.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2015.11.25	2016.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2016.03.02	2017.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2016.03.02	2017.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2016.03.02	2017.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2016.06.10	2017.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2016.01.04	2017.01.03

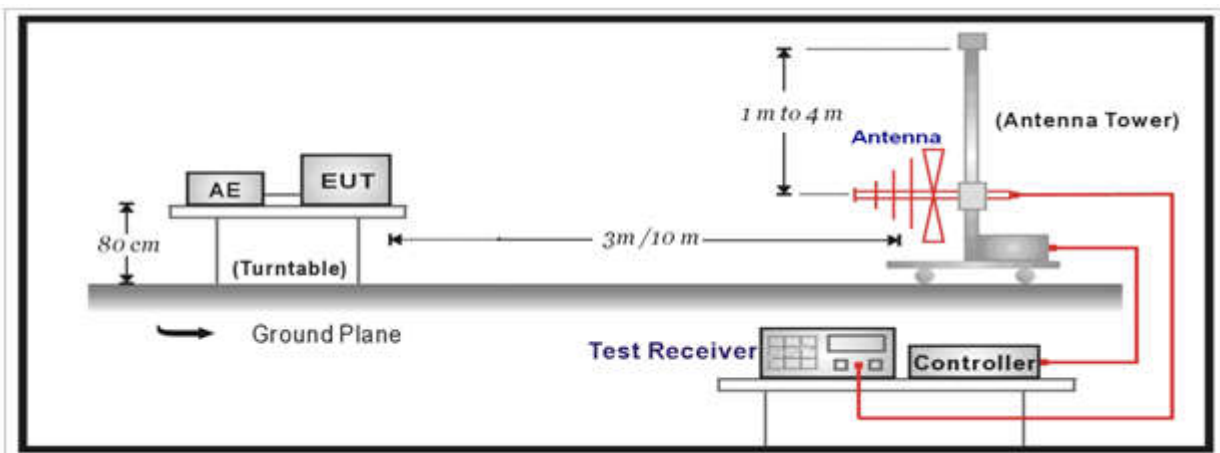
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup

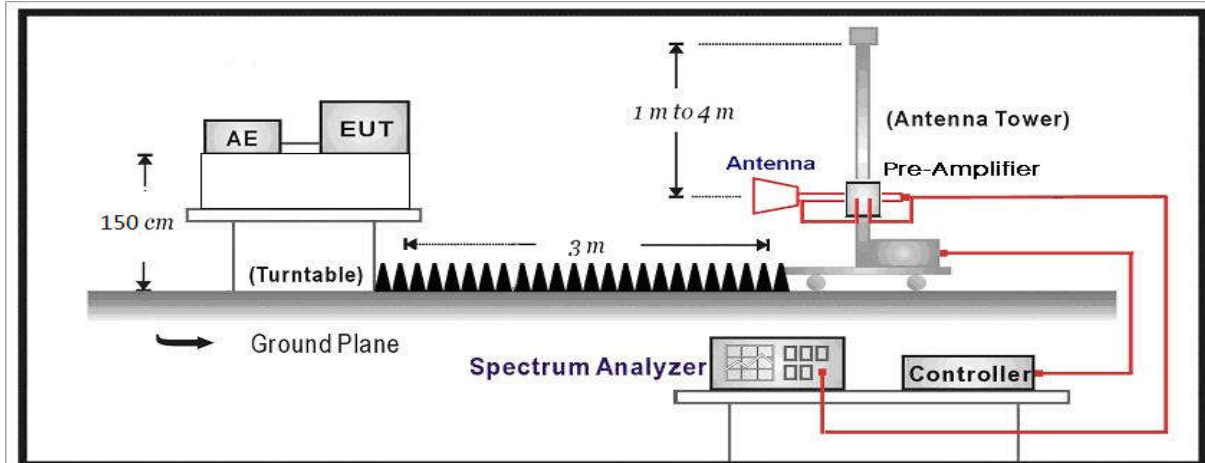
Below 30MHz Test Setup:



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 μ V/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			

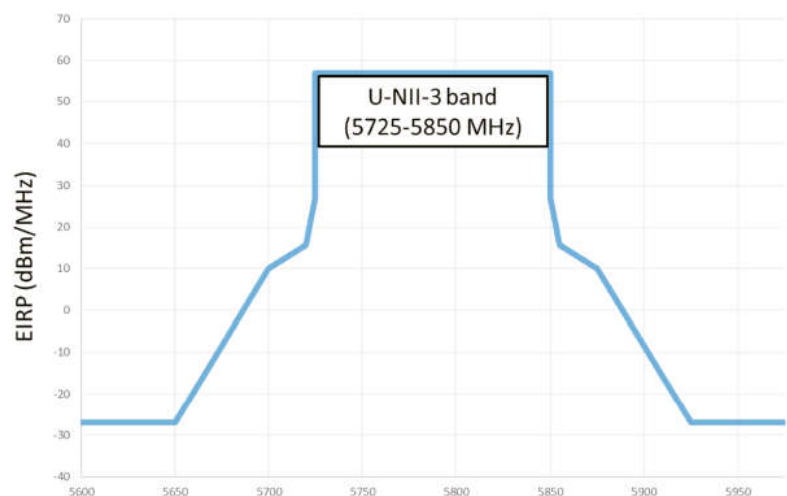
FCC Part 15 Subpart C Paragraph 15.407(5)(b) (Unrestricted Band Emissions Limit)

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

Note(1): Outside the frequency range 5715 - 5835MHz.

Note(2): Within the frequency range from the band edge to 10MHz below or above the band edge, 5715 – 5725MHz and 5825 - 5835MHz.

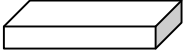
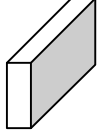
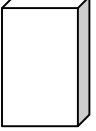
FCC 16-24-A1

Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)
5725 - 5825	 U-NII-3 band (5725-5850 MHz)

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 D02v01r02		G.2	Unwanted Emissions that fall Outside of the Restricted Bands
☐	FCC KDB 789033 D02v01r02		G.1	Unwanted Emissions in the Restricted Bands
	☐	FCC KDB 789033 D02v01r02	G.4	Procedure for Unwanted Emissions Measurements below 1000 MHz
	☐	FCC KDB 789033 D02v01r02	G.5	Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz
	☐	FCC KDB 789033 D02v01r02	G.6	Procedures for Average Unwanted Emissions Measurements above 1000 MHz
	☐	FCC KDB 789033 D02v01r02	G.6.c	Method AD (Average detection)—primary method
	☐	FCC KDB 789033 D02v01r02	G.6.d	Method VB (Averaging using reduced video bandwidth): Alternative method.

4.5. EUT test Axis definition

Item	Radiated Emission			
Device Category	☐	Indoor use		
	☐	Outdoor use		
	☐	Fix position use		
	☒	Client use		
Test mode	Mode 1-6			
Test method	☒	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☒	Worst Axis ☐
	☐	Conducted		
	☐	Chain 1		
				
	☐	Chain 1	Chain 2	
				
	☐	Chain 1	Chain 2	Chain 3
				

4.6. Test Result

Product Name	:	AC1900 High Gain Wireless Dual Band USB Adapter	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1: Transmit by 802.11a with Ant 1	Test Site	:	AC-5
Test Date	:	2016.09.18			

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measured Level (dBμV/m)	Limit (dBμV/m)	Margin Limit (dB)	Detector
Ant 1	36	H	10360	43.4	0.4	43.8	54(Note3)	10.2	PK
		H	15540	37.8	6.1	43.9	54(Note3)	10.1	PK
		V	10360	44.1	0.4	44.5	54(Note3)	9.5	PK
		V	15540	38.7	6.1	44.8	54(Note3)	9.2	PK
	40	H	10400	43.2	0.6	43.8	54(Note3)	10.2	PK
		H	15600	36.6	8.2	44.8	54(Note3)	9.2	PK
		V	10400	42.1	0.6	42.7	54(Note3)	11.3	PK
		V	15600	36.2	8.2	44.4	54(Note3)	9.6	PK
	48	H	10480	43.6	0.4	44.0	54(Note3)	10.0	PK
		H	15720	38.2	7.4	45.6	54(Note3)	8.4	PK
		V	10480	44.2	0.4	44.6	54(Note3)	9.4	PK
		V	15720	37.6	7.4	45.0	54(Note3)	9.0	PK
	52	H	10520	42.9	1.1	44.0	54(Note3)	10.0	PK
		H	15780	36.7	8.2	44.9	54(Note3)	9.1	PK
		V	10520	44.3	1.1	45.4	54(Note3)	8.6	PK
		V	15780	37.5	8.2	45.7	54(Note3)	8.3	PK
	60	H	10600	43.7	1.1	44.8	54(Note3)	9.2	PK
		H	15900	36.5	8.2	44.7	54(Note3)	9.3	PK
		V	10600	45.2	1.1	46.3	54(Note3)	7.7	PK
		V	15900	38.4	8.2	46.6	54(Note3)	7.4	PK
	64	H	10640	44.6	0.6	45.2	54(Note3)	8.8	PK
		H	15960	38.6	7.6	46.2	54(Note3)	7.8	PK
		V	10640	46.2	0.6	46.8	54(Note3)	7.2	PK
		V	15960	39.1	7.6	46.7	54(Note3)	7.3	PK
	100	H	11000	45.6	0.5	46.1	54(Note3)	7.9	PK
		H	16500	39.2	7.2	46.4	54(Note3)	7.6	PK
		V	11000	46.7	0.5	47.2	54(Note3)	6.8	PK
		V	16500	38.4	7.2	45.6	54(Note3)	8.4	PK

	116	H	11160	45.1	1.2	46.3	54(Note3)	7.7	PK
		H	16740	37.9	7.4	45.3	54(Note3)	8.7	PK
		V	11160	44.7	1.2	45.9	54(Note3)	8.1	PK
		V	16740	39.1	7.4	46.5	54(Note3)	7.5	PK
	140	H	11400	44.0	1.3	45.3	54(Note3)	8.7	PK
		H	17100	38.3	8.7	47.0	54(Note3)	7.0	PK
		V	11400	44.3	1.3	45.6	54(Note3)	8.4	PK
		V	17100	38.6	8.7	47.3	54(Note3)	6.7	PK
	149	H	11490	46.1	0.6	46.7	54(Note3)	7.3	PK
		H	17235	40.3	6.6	46.9	54(Note3)	7.1	PK
		V	11490	44.4	0.6	45.0	54(Note3)	9.0	PK
		V	17235	40.5	6.6	47.1	54(Note3)	6.9	PK
	157	H	11570	45.5	1.2	46.7	54(Note3)	7.3	PK
		H	17355	38.4	7.8	46.2	54(Note3)	7.8	PK
		V	11570	45.3	1.2	46.5	54(Note3)	7.5	PK
		V	17355	38.3	7.8	46.1	54(Note3)	7.9	PK
	165	H	11650	44.9	1.5	46.4	54(Note3)	7.6	PK
		H	17475	38.1	8.2	46.3	54(Note3)	7.7	PK
		V	11650	45.0	1.5	46.5	54(Note3)	7.5	PK
		V	17475	38.7	8.2	46.9	54(Note3)	7.1	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB 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	:	AC1900 High Gain Wireless Dual Band USB Adapter	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1: Transmit by 802.11a with Ant 2	Test Site	:	AC-5
Test Date	:	2016.09.18			

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measured Level (dBμV/m)	Limit (dBμV/m)	Margin Limit (dB)	Detector
Ant 2	36	H	10360	42.7	0.4	43.1	54(Note3)	10.9	PK
		H	15540	37.3	6.1	43.4	54(Note3)	10.6	PK
		V	10360	42.7	0.4	43.1	54(Note3)	10.9	PK
		V	15540	37.7	6.1	43.8	54(Note3)	10.2	PK
	40	H	10400	42.4	0.6	43.0	54(Note3)	11.0	PK
		H	15600	35.8	8.2	44.0	54(Note3)	10.0	PK
		V	10400	41.1	0.6	41.7	54(Note3)	12.3	PK
		V	15600	35.2	8.2	43.4	54(Note3)	10.6	PK
	48	H	10480	43.0	0.4	43.4	54(Note3)	10.6	PK
		H	15720	37.3	7.4	44.7	54(Note3)	9.3	PK
		V	10480	43.6	0.4	44.0	54(Note3)	10.0	PK
		V	15720	36.6	7.4	44.0	54(Note3)	10.0	PK
	52	H	10520	42.1	1.1	43.2	54(Note3)	10.8	PK
		H	15780	35.4	8.2	43.6	54(Note3)	10.4	PK
		V	10520	43.5	1.1	44.6	54(Note3)	9.4	PK
		V	15780	36.4	8.2	44.6	54(Note3)	9.4	PK
	60	H	10600	42.7	1.1	43.8	54(Note3)	10.2	PK
		H	15900	35.7	8.2	43.9	54(Note3)	10.1	PK
		V	10600	43.8	1.1	44.9	54(Note3)	9.1	PK
		V	15900	37.6	8.2	45.8	54(Note3)	8.2	PK
	64	H	10640	43.3	0.6	43.9	54(Note3)	10.1	PK
		H	15960	37.3	7.6	44.9	54(Note3)	9.1	PK
		V	10640	45.2	0.6	45.8	54(Note3)	8.2	PK
		V	15960	37.9	7.6	45.5	54(Note3)	8.5	PK
	100	H	11000	44.3	0.5	44.8	54(Note3)	9.2	PK
		H	16500	37.9	7.2	45.1	54(Note3)	8.9	PK
		V	11000	45.5	0.5	46.0	54(Note3)	8.0	PK
		V	16500	37.6	7.2	44.8	54(Note3)	9.2	PK
	116	H	11160	44.1	1.2	45.3	54(Note3)	8.7	PK

		H	16740	36.7	7.4	44.1	54(Note3)	9.9	PK
		V	11160	43.8	1.2	45.0	54(Note3)	9.0	PK
		V	16740	38.4	7.4	45.8	54(Note3)	8.2	PK
	140	H	11400	43.4	1.3	44.7	54(Note3)	9.3	PK
		H	17100	37.0	8.7	45.7	54(Note3)	8.3	PK
		V	11400	42.8	1.3	44.1	54(Note3)	9.9	PK
		V	17100	37.2	8.7	45.9	54(Note3)	8.1	PK
	149	H	11490	44.8	0.6	45.4	54(Note3)	8.6	PK
		H	17235	39.1	6.6	45.7	54(Note3)	8.3	PK
		V	11490	43.7	0.6	44.3	54(Note3)	9.7	PK
		V	17235	39.6	6.6	46.2	54(Note3)	7.8	PK
	157	H	11570	44.3	1.2	45.5	54(Note3)	8.5	PK
		H	17355	37.4	7.8	45.2	54(Note3)	8.8	PK
		V	11570	43.8	1.2	45.0	54(Note3)	9.0	PK
		V	17355	37.8	7.8	45.6	54(Note3)	8.4	PK
	165	H	11650	43.9	1.5	45.4	54(Note3)	8.6	PK
		H	17475	36.8	8.2	45.0	54(Note3)	9.0	PK
		V	11650	44.5	1.5	46.0	54(Note3)	8.0	PK
		V	17475	37.4	8.2	45.6	54(Note3)	8.4	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB 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	:	AC1900 High Gain Wireless Dual Band USB Adapter	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1: Transmit by 802.11a with Ant 3	Test Site	:	AC-5
Test Date	:	2016.09.18			

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measured Level (dBμV/m)	Limit (dBμV/m)	Margin Limit (dB)	Detector
Ant 3	36	H	10360	42.0	0.4	42.4	54(Note3)	11.6	PK
		H	15540	37.0	6.1	43.1	54(Note3)	10.9	PK
		V	10360	42.6	0.4	43.0	54(Note3)	11.0	PK
		V	15540	37.4	6.1	43.5	54(Note3)	10.5	PK
	40	H	10400	42.0	0.6	42.6	54(Note3)	11.4	PK
		H	15600	35.7	8.2	43.9	54(Note3)	10.1	PK
		V	10400	41.0	0.6	41.6	54(Note3)	12.4	PK
		V	15600	34.9	8.2	43.1	54(Note3)	10.9	PK
	48	H	10480	42.6	0.4	43.0	54(Note3)	11.0	PK
		H	15720	36.7	7.4	44.1	54(Note3)	9.9	PK
		V	10480	42.7	0.4	43.1	54(Note3)	10.9	PK
		V	15720	36.7	7.4	44.1	54(Note3)	9.9	PK
	52	H	10520	41.4	1.1	42.5	54(Note3)	11.5	PK
		H	15780	34.9	8.2	43.1	54(Note3)	10.9	PK
		V	10520	42.7	1.1	43.8	54(Note3)	10.2	PK
		V	15780	35.8	8.2	44.0	54(Note3)	10.0	PK
	60	H	10600	41.7	1.1	42.8	54(Note3)	11.2	PK
		H	15900	35.6	8.2	43.8	54(Note3)	10.2	PK
		V	10600	43.5	1.1	44.6	54(Note3)	9.4	PK
		V	15900	37.4	8.2	45.6	54(Note3)	8.4	PK
	64	H	10640	42.7	0.6	43.3	54(Note3)	10.7	PK
		H	15960	37.4	7.6	45.0	54(Note3)	9.0	PK
		V	10640	44.6	0.6	45.2	54(Note3)	8.8	PK
		V	15960	37.5	7.6	45.1	54(Note3)	8.9	PK
	100	H	11000	43.9	0.5	44.4	54(Note3)	9.6	PK
		H	16500	37.7	7.2	44.9	54(Note3)	9.1	PK
		V	11000	44.9	0.5	45.4	54(Note3)	8.6	PK
		V	16500	37.5	7.2	44.7	54(Note3)	9.3	PK
	116	H	11160	43.8	1.2	45.0	54(Note3)	9.0	PK

		H	16740	36.5	7.4	43.9	54(Note3)	10.1	PK
		V	11160	43.1	1.2	44.3	54(Note3)	9.7	PK
		V	16740	38.0	7.4	45.4	54(Note3)	8.6	PK
	140	H	11400	42.8	1.3	44.1	54(Note3)	9.9	PK
		H	17100	36.7	8.7	45.4	54(Note3)	8.6	PK
		V	11400	42.6	1.3	43.9	54(Note3)	10.1	PK
		V	17100	37.0	8.7	45.7	54(Note3)	8.3	PK
	149	H	11490	44.6	0.6	45.2	54(Note3)	8.8	PK
		H	17235	39.1	6.6	45.7	54(Note3)	8.3	PK
		V	11490	43.1	0.6	43.7	54(Note3)	10.3	PK
		V	17235	39.3	6.6	45.9	54(Note3)	8.1	PK
	157	H	11570	43.4	1.2	44.6	54(Note3)	9.4	PK
		H	17355	37.0	7.8	44.8	54(Note3)	9.2	PK
		V	11570	43.4	1.2	44.6	54(Note3)	9.4	PK
		V	17355	37.0	7.8	44.8	54(Note3)	9.2	PK
	165	H	11650	43.9	1.5	45.4	54(Note3)	8.6	PK
		H	17475	36.0	8.2	44.2	54(Note3)	9.8	PK
		V	11650	44.4	1.5	45.9	54(Note3)	8.1	PK
		V	17475	36.6	8.2	44.8	54(Note3)	9.2	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB 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	:	AC1900 High Gain Wireless Dual Band USB Adapter	Power	:	AC 120V/60Hz
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) with Ant 1+2+3	Test Site	:	AC-5
Test Date	:	2016.09.18			

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measured Level (dBμV/m)	Limit (dBμV/m)	Margin Limit (dB)	Detector
Ant 1+2+3	36	H	10360	42.3	0.4	42.7	54(Note3)	11.3	PK
		H	15540	37.2	6.1	43.3	54(Note3)	10.7	PK
		V	10360	42.0	0.4	42.4	54(Note3)	11.6	PK
		V	15540	37.2	6.1	43.3	54(Note3)	10.7	PK
	40	H	10400	42.1	0.6	42.7	54(Note3)	11.3	PK
		H	15600	35.6	8.2	43.8	54(Note3)	10.2	PK
		V	10400	40.4	0.6	41	54(Note3)	13.0	PK
		V	15600	34.6	8.2	42.8	54(Note3)	11.2	PK
	48	H	10480	42.8	0.4	43.2	54(Note3)	10.8	PK
		H	15720	37.0	7.4	44.4	54(Note3)	9.6	PK
		V	10480	43.0	0.4	43.4	54(Note3)	10.6	PK
		V	15720	36.2	7.4	43.6	54(Note3)	10.4	PK
	52	H	10520	41.1	1.1	42.2	54(Note3)	11.8	PK
		H	15780	35.3	8.2	43.5	54(Note3)	10.5	PK
		V	10520	42.5	1.1	43.6	54(Note3)	10.4	PK
		V	15780	35.6	8.2	43.8	54(Note3)	10.2	PK
	60	H	10600	42.6	1.1	43.7	54(Note3)	10.3	PK
		H	15900	35.7	8.2	43.9	54(Note3)	10.1	PK
		V	10600	42.8	1.1	43.9	54(Note3)	10.1	PK
		V	15900	36.9	8.2	45.1	54(Note3)	8.9	PK
	64	H	10640	43.1	0.6	43.7	54(Note3)	10.3	PK
		H	15960	37.4	7.6	45	54(Note3)	9.0	PK
		V	10640	44.1	0.6	44.7	54(Note3)	9.3	PK
		V	15960	37.2	7.6	44.8	54(Note3)	9.2	PK
	100	H	11000	43.6	0.5	44.1	54(Note3)	9.9	PK
		H	16500	37.3	7.2	44.5	54(Note3)	9.5	PK
		V	11000	44.8	0.5	45.3	54(Note3)	8.7	PK
		V	16500	37.4	7.2	44.6	54(Note3)	9.4	PK

	116	H	11160	43.9	1.2	45.1	54(Note3)	8.9	PK
		H	16740	36.4	7.4	43.8	54(Note3)	10.2	PK
		V	11160	42.8	1.2	44	54(Note3)	10.0	PK
		V	16740	37.6	7.4	45	54(Note3)	9.0	PK
	140	H	11400	42.4	1.3	43.7	54(Note3)	10.3	PK
		H	17100	36.2	8.7	44.9	54(Note3)	9.1	PK
		V	11400	41.9	1.3	43.2	54(Note3)	10.8	PK
		V	17100	37.1	8.7	45.8	54(Note3)	8.2	PK
	149	H	11490	44.1	0.6	44.7	54(Note3)	9.3	PK
		H	17235	38.4	6.6	45	54(Note3)	9.0	PK
		V	11490	43.6	0.6	44.2	54(Note3)	9.8	PK
		V	17235	38.7	6.6	45.3	54(Note3)	8.7	PK
	157	H	11570	43.7	1.2	44.9	54(Note3)	9.1	PK
		H	17355	37.4	7.8	45.2	54(Note3)	8.8	PK
		V	11570	43.6	1.2	44.8	54(Note3)	9.2	PK
		V	17355	37.5	7.8	45.3	54(Note3)	8.7	PK
	165	H	11650	39.3	1.5	40.8	54(Note3)	13.2	PK
		H	17475	34.7	8.2	42.9	54(Note3)	11.1	PK
		V	11650	40.1	1.5	41.6	54(Note3)	12.4	PK
		V	17475	35.2	8.2	43.4	54(Note3)	10.6	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB 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	:	AC1200 Wireless Dual Band Gigabit Access Point	Power	:	AC 120V/60Hz
Test Mode	:	Mode 3: Transmit by 802.11n40(MHz) with Ant 1+2+3	Test Site	:	AC-5
Test Date	:	2016.09.18			

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measured Level (dBμV/m)	Limit (dBμV/m)	Margin Limit (dB)	Detector
Ant 1+2+3	38	H	10380	45.9	0.1	46	54(Note3)	8.0	PK
		H	15570	37.7	7.5	45.2	54(Note3)	8.8	PK
		V	10380	46.8	0.1	46.9	54(Note3)	7.1	PK
		V	15570	37.6	7.5	45.1	54(Note3)	8.9	PK
	46	H	10460	45.3	0.2	45.5	54(Note3)	8.5	PK
		H	15690	37.6	8.5	46.1	54(Note3)	7.9	PK
		V	10460	46.5	0.2	46.7	54(Note3)	7.3	PK
		V	15690	37.8	8.5	46.3	54(Note3)	7.7	PK
	54	H	10540	45.8	0.3	46.1	54(Note3)	7.9	PK
		H	15810	37.9	7.3	45.2	54(Note3)	8.8	PK
		V	10540	46.6	0.3	46.9	54(Note3)	7.1	PK
		V	15810	37.8	7.3	45.1	54(Note3)	8.9	PK
	62	H	10620	46.1	0.7	46.8	54(Note3)	7.2	PK
		H	15930	37.3	8.1	45.4	54(Note3)	8.6	PK
		V	10620	46.0	0.7	46.7	54(Note3)	7.3	PK
		V	15930	38.1	8.1	46.2	54(Note3)	7.8	PK
	102	H	11020	45.4	1.1	46.5	54(Note3)	7.5	PK
		H	16530	37.4	7.8	45.2	54(Note3)	8.8	PK
		V	11020	45.8	1.1	46.9	54(Note3)	7.1	PK
		V	16530	37.3	7.8	45.1	54(Note3)	8.9	PK
	110	H	11100	45.2	1.5	46.7	54(Note3)	7.3	PK
		H	16650	37.1	8.5	45.6	54(Note3)	8.4	PK
		V	11100	45.2	1.5	46.7	54(Note3)	7.3	PK
		V	16650	36.9	8.5	45.4	54(Note3)	8.6	PK
	134	H	11340	44.2	1.4	45.6	54(Note3)	8.4	PK
		H	17010	37.6	7.4	45.0	54(Note3)	9.0	PK
		V	11340	43.0	1.4	44.4	54(Note3)	9.6	PK
		V	17010	37.4	7.4	44.8	54(Note3)	9.2	PK

	151	H	11510	44.7	1.3	46	54(Note3)	8.0	PK
		H	17265	37.1	8.3	45.4	54(Note3)	8.6	PK
		V	11510	44.6	1.3	45.9	54(Note3)	8.1	PK
		V	17265	38.0	8.3	46.3	54(Note3)	7.7	PK
	159	H	11590	42.7	2.0	44.7	54(Note3)	9.3	PK
		H	17385	36.2	8.7	44.9	54(Note3)	9.1	PK
		V	11590	44.6	2.0	46.6	54(Note3)	7.4	PK
		V	17385	36.5	8.7	45.2	54(Note3)	8.8	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB 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	:	AC1900 High Gain Wireless Dual Band USB Adapter	Power	:	AC 120V/60Hz
Test Mode	:	Mode 4: Transmit by 802.11ac(20MHz) with Ant 1+2+3	Test Site	:	AC-5
Test Date	:	2016.09.18			

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measured Level (dBμV/m)	Limit (dBμV/m)	Margin Limit (dB)	Detector
Ant 1+2+3	36	H	10360	42.9	0.4	43.3	54(Note3)	10.7	PK
		H	15540	37.4	6.1	43.5	54(Note3)	10.5	PK
		V	10360	42.7	0.4	43.1	54(Note3)	10.9	PK
		V	15540	38.1	6.1	44.2	54(Note3)	9.8	PK
	40	H	10400	43.1	0.6	43.7	54(Note3)	10.3	PK
		H	15600	36.0	8.2	44.2	54(Note3)	9.8	PK
		V	10400	41.2	0.6	41.8	54(Note3)	12.2	PK
		V	15600	35.2	8.2	43.4	54(Note3)	10.6	PK
	48	H	10480	43.9	0.4	44.3	54(Note3)	9.7	PK
		H	15720	38.3	7.4	45.7	54(Note3)	8.3	PK
		V	10480	43.6	0.4	44	54(Note3)	10.0	PK
		V	15720	37.0	7.4	44.4	54(Note3)	9.6	PK
	52	H	10520	41.8	1.1	42.9	54(Note3)	11.1	PK
		H	15780	36.4	8.2	44.6	54(Note3)	9.4	PK
		V	10520	43.1	1.1	44.2	54(Note3)	9.8	PK
		V	15780	36.2	8.2	44.4	54(Note3)	9.6	PK
	60	H	10600	42.8	1.1	43.9	54(Note3)	10.1	PK
		H	15900	36.8	8.2	45	54(Note3)	9.0	PK
		V	10600	43.6	1.1	44.7	54(Note3)	9.3	PK
		V	15900	37.5	8.2	45.7	54(Note3)	8.3	PK
	64	H	10640	44.2	0.6	44.8	54(Note3)	9.2	PK
		H	15960	37.7	7.6	45.3	54(Note3)	8.7	PK
		V	10640	44.9	0.6	45.5	54(Note3)	8.5	PK
		V	15960	38.2	7.6	45.8	54(Note3)	8.2	PK
	100	H	11000	44.3	0.5	44.8	54(Note3)	9.2	PK
		H	16500	38.2	7.2	45.4	54(Note3)	8.6	PK
		V	11000	45.1	0.5	45.6	54(Note3)	8.4	PK
		V	16500	37.8	7.2	45	54(Note3)	9.0	PK

	116	H	11160	44.2	1.2	45.4	54(Note3)	8.6	PK
		H	16740	37.4	7.4	44.8	54(Note3)	9.2	PK
		V	11160	43.7	1.2	44.9	54(Note3)	9.1	PK
		V	16740	38.6	7.4	46	54(Note3)	8.0	PK
	140	H	11400	42.8	1.3	44.1	54(Note3)	9.9	PK
		H	17100	36.9	8.7	45.6	54(Note3)	8.4	PK
		V	11400	42.1	1.3	43.4	54(Note3)	10.6	PK
		V	17100	37.7	8.7	46.4	54(Note3)	7.6	PK
	149	H	11490	44.7	0.6	45.3	54(Note3)	8.7	PK
		H	17235	39.5	6.6	46.1	54(Note3)	7.9	PK
		V	11490	44.7	0.6	45.3	54(Note3)	8.7	PK
		V	17235	39.4	6.6	46	54(Note3)	8.0	PK
	157	H	11570	44.2	1.2	45.4	54(Note3)	8.6	PK
		H	17355	38.5	7.8	46.3	54(Note3)	7.7	PK
		V	11570	44.5	1.2	45.7	54(Note3)	8.3	PK
		V	17355	38.1	7.8	45.9	54(Note3)	8.1	PK
	165	H	11650	39.9	1.5	41.4	54(Note3)	12.6	PK
		H	17475	35.1	8.2	43.3	54(Note3)	10.7	PK
		V	11650	40.5	1.5	42	54(Note3)	12.0	PK
		V	17475	36.4	8.2	44.6	54(Note3)	9.4	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB 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	:	AC1200 Wireless Dual Band Gigabit Access Point	Power	:	AC 120V/60Hz
Test Mode	:	Mode 5: Transmit by 802.11ac40(MHz) with Ant 1+2+3	Test Site	:	AC-5
Test Date	:	2016.09.18			

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measured Level (dBμV/m)	Limit (dBμV/m)	Margin Limit (dB)	Detector
Ant 1+2+3	38	H	10380	44.8	0.1	44.9	54(Note3)	9.1	PK
		H	15570	36.9	7.5	44.4	54(Note3)	9.6	PK
		V	10380	45.9	0.1	46	54(Note3)	8.0	PK
		V	15570	36.7	7.5	44.2	54(Note3)	9.8	PK
	46	H	10460	44.3	0.2	44.5	54(Note3)	9.5	PK
		H	15690	36.9	8.5	45.4	54(Note3)	8.6	PK
		V	10460	45.7	0.2	45.9	54(Note3)	8.1	PK
		V	15690	37.8	8.5	46.3	54(Note3)	7.7	PK
	54	H	10540	45.4	0.3	45.7	54(Note3)	8.3	PK
		H	15810	37.3	7.3	44.6	54(Note3)	9.4	PK
		V	10540	45.7	0.3	46	54(Note3)	8.0	PK
		V	15810	37.1	7.3	44.4	54(Note3)	9.6	PK
	62	H	10620	45.2	0.7	45.9	54(Note3)	8.1	PK
		H	15930	36.4	8.1	44.5	54(Note3)	9.5	PK
		V	10620	45.7	0.7	46.4	54(Note3)	7.6	PK
		V	15930	37.7	8.1	45.8	54(Note3)	8.2	PK
	102	H	11020	44.6	1.1	45.7	54(Note3)	8.3	PK
		H	16530	36.5	7.8	44.3	54(Note3)	9.7	PK
		V	11020	45.4	1.1	46.5	54(Note3)	7.5	PK
		V	16530	36.8	7.8	44.6	54(Note3)	9.4	PK
	110	H	11100	44.2	1.5	45.7	54(Note3)	8.3	PK
		H	16650	37.0	8.5	45.5	54(Note3)	8.5	PK
		V	11100	44.6	1.5	46.1	54(Note3)	7.9	PK
		V	16650	36.6	8.5	45.1	54(Note3)	8.9	PK
	134	H	11340	44.8	1.4	46.2	54(Note3)	7.8	PK
		H	17010	38.4	7.4	45.8	54(Note3)	8.2	PK
		V	11340	42.5	1.4	43.9	54(Note3)	10.1	PK
		V	17010	36.7	7.4	44.1	54(Note3)	9.9	PK

	151	H	11510	44.2	1.3	45.5	54(Note3)	8.5	PK
		H	17265	37.1	8.3	45.4	54(Note3)	8.6	PK
		V	11510	43.6	1.3	44.9	54(Note3)	9.1	PK
		V	17265	37.1	8.3	45.4	54(Note3)	8.6	PK
	159	H	11590	41.5	2.0	43.5	54(Note3)	10.5	PK
		H	17385	35.4	8.7	44.1	54(Note3)	9.9	PK
		V	11590	44.1	2.0	46.1	54(Note3)	7.9	PK
		V	17385	35.8	8.7	44.5	54(Note3)	9.5	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB 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.

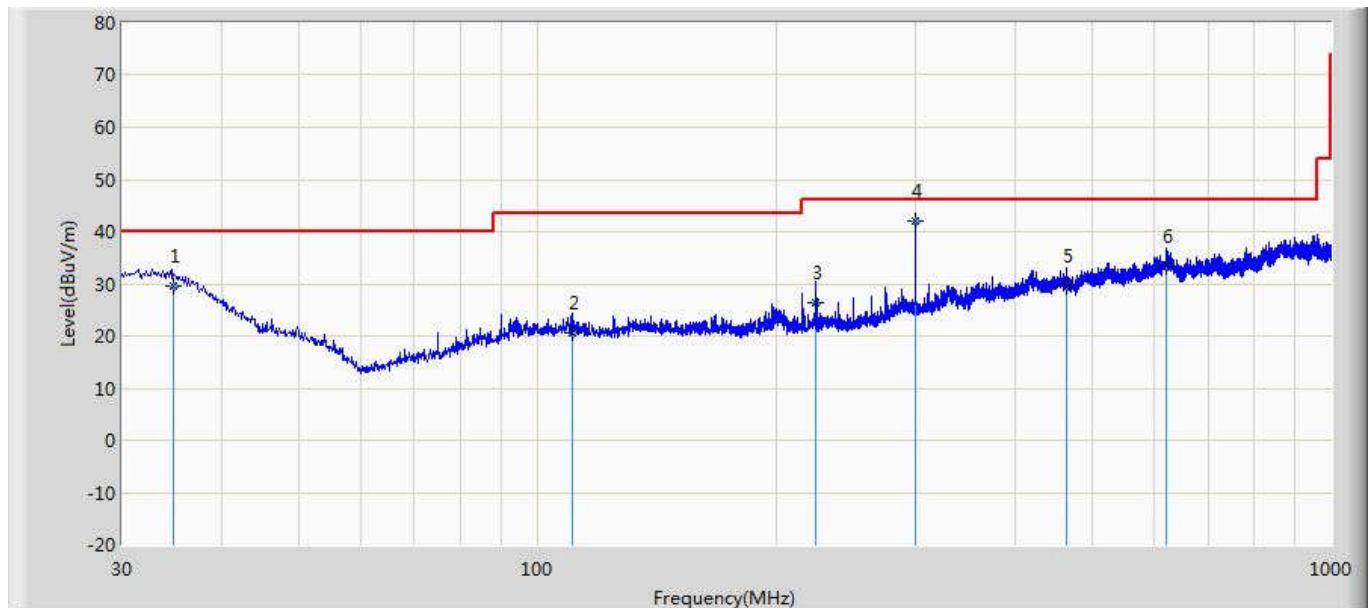
Product Name	: AC1200 Wireless Dual Band Gigabit Access Point	Power	: AC 120V/60Hz
Test Mode	: Mode 6: Transmit by 802.11ac(80MHz)	Test Site	: AC-5
Test Date	: 2016.09.18		

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measured Level (dBμV/m)	Limit (dBμV/m)	Margin Limit (dB)	Detector
Ant 0+1	42	H	10420	45.3	-0.5	44.8	54(Note3)	9.2	PK
		H	15630	38.4	7.2	45.6	54(Note3)	8.4	PK
		V	10420	46.6	-0.5	46.1	54(Note3)	7.9	PK
		V	15630	38.3	7.2	45.5	54(Note3)	8.5	PK
	58	H	10580	46.0	0.2	46.2	54(Note3)	7.8	PK
		H	15870	38.9	7.0	45.9	54(Note3)	8.1	PK
		V	10580	46.1	0.2	46.3	54(Note3)	7.7	PK
		V	15870	38.8	7.0	45.8	54(Note3)	8.2	PK
	106	H	11060	44.3	1.1	45.4	54(Note3)	8.6	PK
		H	16590	37.6	7.5	45.1	54(Note3)	8.9	PK
		V	11060	45.7	1.1	46.8	54(Note3)	7.2	PK
		V	16590	37.1	7.5	44.6	54(Note3)	9.4	PK
	155	H	11550	44.6	1.2	45.8	54(Note3)	8.2	PK
		H	17325	39.4	7.1	46.5	54(Note3)	7.5	PK
		V	11550	45.0	1.2	46.2	54(Note3)	7.8	PK
		V	17325	37.8	7.1	44.9	54(Note3)	9.1	PK

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, 18GHz~40GHz, both of the worst case are at least 6dB 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:

Site: AC3	Time: 2016/08/08
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Horizontal
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1	

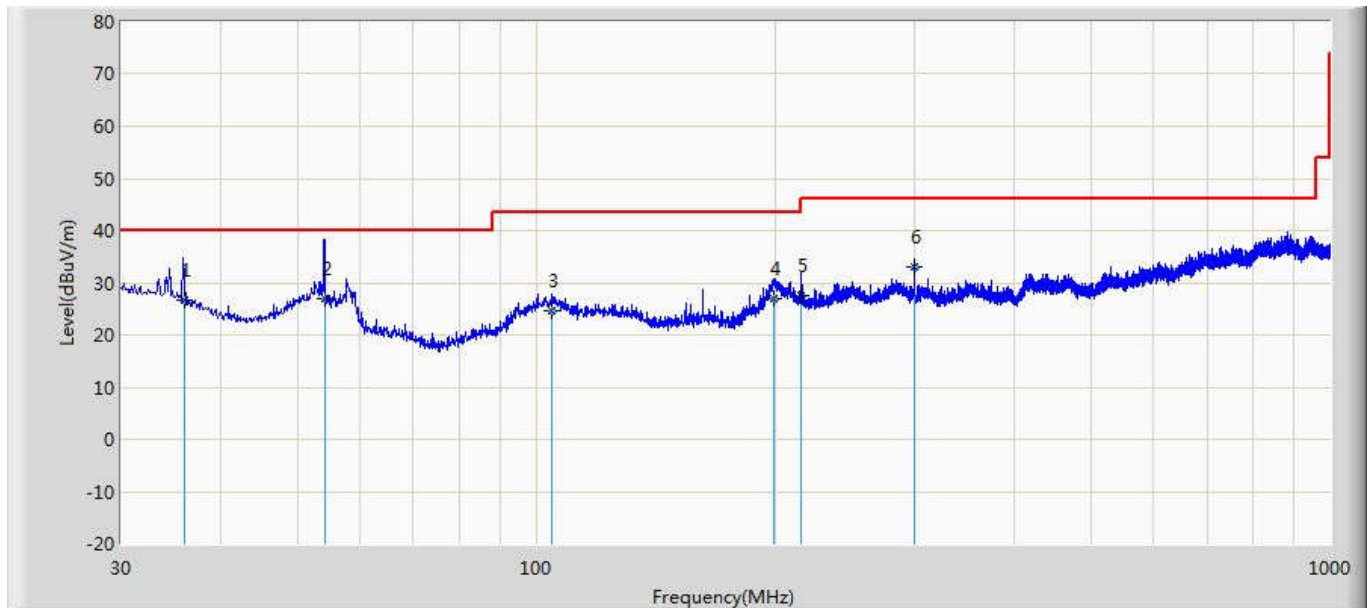


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		34.873	29.451	36.007	-10.549	40.000	15.974	0.640	23.170	100	131	QP
2		110.653	20.680	30.553	-22.820	43.500	12.126	1.140	23.139	100	260	QP
3		224.363	26.443	38.337	-19.557	46.000	9.736	1.620	23.250	200	330	QP
4	*	299.473	42.093	49.801	-3.907	46.000	13.384	1.860	22.952	100	88	QP
5		465.226	29.510	32.687	-16.490	46.000	17.243	2.350	22.770	200	280	QP
6		620.783	33.293	34.152	-12.707	46.000	19.000	2.730	22.589	100	360	QP

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Site: AC3	Time: 2016/08/08
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC3_3m (30-1000MHz)	Polarity: Vertical
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		36.013	26.807	34.027	-13.193	40.000	15.312	0.652	23.184	100	95	QP
2		54.133	26.817	41.540	-13.183	40.000	7.498	0.799	23.020	100	360	QP
3		104.626	24.524	35.012	-18.976	43.500	11.563	1.109	23.160	100	110	QP
4		198.963	26.994	39.166	-16.506	43.500	9.468	1.532	23.172	200	119	QP
5		215.986	27.641	40.019	-15.859	43.500	9.260	1.590	23.227	100	245	QP
6	*	299.687	33.070	40.769	-12.930	46.000	13.391	1.860	22.950	200	305	QP

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

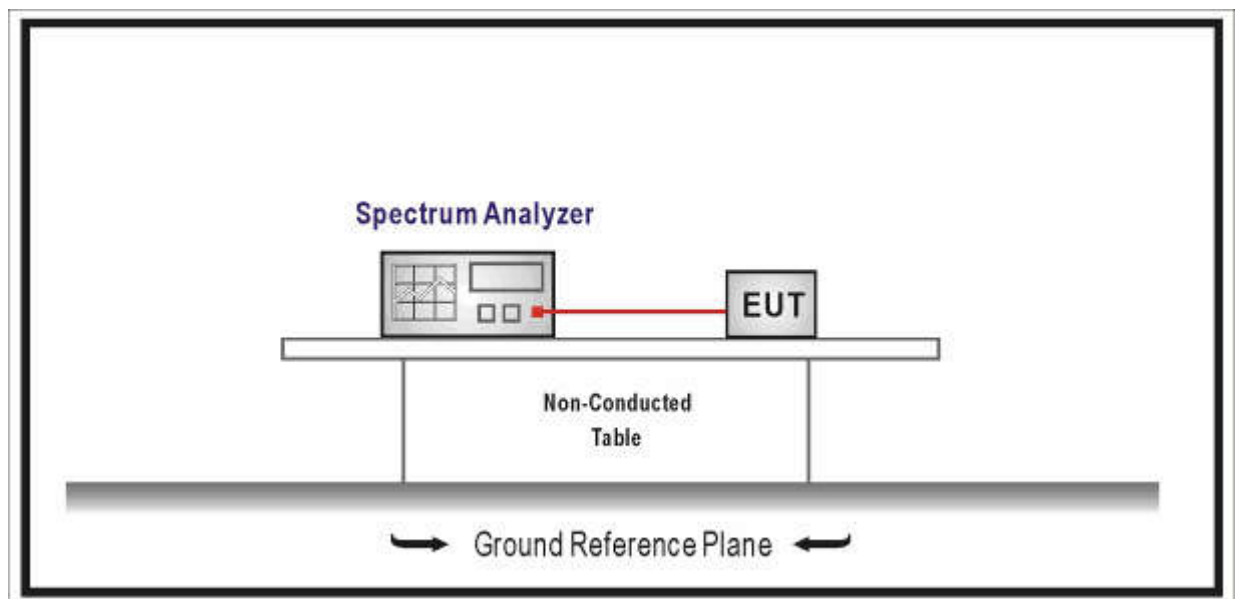
5. Emission bandwidth and occupied bandwidth

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	2016.02.04	2017.02.04
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2016.04.09	2017.04.09
MXA Signal Analyzer	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



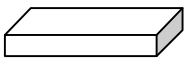
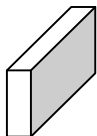
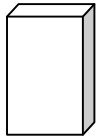
5.3. Limit

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 D02v01r02	C	Bandwidth Measurement
	☒ FCC KDB 789033 D02v01r02	C.1	Emission Bandwidth (26dB)
	☐ FCC KDB 789033 D02v01r02	C.2	Minimum Emission Bandwidth for the band 5.725-5.85 GHz (6dB)
☒	FCC KDB 789033 D02v01r02	D	99 Percent Occupied Bandwidth

5.5. EUT test Axis definition

Item	Occupied bandwidth			
Device Category	☐	Indoor use		
	☐	Outdoor use		
	☐	Fix position use		
	☒	Client use		
Test mode	Mode 1-6			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☒	Chain 1		
				
	☐	Chain 1	Chain 2	
				
	☒	Chain 1	Chain 2	Chain 3
				

5.6. Test Result

Product Name	: AC1900 High Gain Wireless Dual Band USB Adapter	Power	: AC 120V/60Hz
Test Mode	: Mode 1~6	Test Site	: TR8
Test Date	: 2016.09.21		

Mode 1: Transmit by 802.11a with Ant 1					
Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Lower/Higher Frequency (MHz)	Result
		Ant1(Worst Data)	Ant1(Worst Data)	Ant1(Worst Data)	
36	5180	25.07	16.949	5171.19	Pass
40	5200	23.53	16.807	N/A	Pass
48	5240	23.83	16.928	5248.39	Pass
52	5260	21.95	16.818	N/A	Pass
60	5300	21.67	16.826	N/A	Pass
64	5320	21.89	16.837	N/A	Pass
100	5500	23.36	16.871	N/A	Pass
116	5580	21.24	16.803	N/A	Pass
140	5700	21.73	16.861	N/A	Pass
149	5745	23.44	16.773	N/A	Pass
157	5785	26.16	16.904	N/A	Pass
165	5825	26.92	16.908	N/A	Pass

Mode 2: Transmit by 802.11n(20MHz) with Ant 1+2+3

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Lower/Higher Frequency (MHz)	Result
		Ant3(Worst Data)	Ant3(Worst Data)	Ant3(Worst Data)	
36	5180	22.09	17.936	5171.11	Pass
40	5200	22.46	17.877	N/A	Pass
48	5240	21.86	17.949	5248.41	Pass
52	5260	21.54	17.803	N/A	Pass
60	5300	21.14	17.849	N/A	Pass
64	5320	21.78	17.930	N/A	Pass
100	5500	21.95	17.875	N/A	Pass
116	5580	21.90	17.812	N/A	Pass
140	5700	22.30	17.889	N/A	Pass
149	5745	22.47	17.860	N/A	Pass
157	5785	25.20	17.921	N/A	Pass
165	5825	24.30	18.004	N/A	Pass

Mode 3: Transmit by 802.11n(40MHz) with Ant 1+2+3

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Lower/Higher Frequency (MHz)	Result
		Ant1(Worst Data)	Ant1(Worst Data)	Ant1(Worst Data)	
38	5190	46.30	36.694	5171.12	Pass
46	5230	43.84	36.423	N/A	Pass
54	5270	42.75	36.331	5248.39	Pass
62	5310	43.53	36.309	N/A	Pass
102	5510	43.75	36.533	N/A	Pass
110	5550	43.41	36.359	N/A	Pass
134	5500	42.35	36.321	N/A	Pass
151	5580	52.07	36.468	N/A	Pass
159	5700	48.50	36.330	N/A	Pass

Mode 4: Transmit by 802.11ac(20MHz) with Ant 1+2+3

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Lower/Higher Frequency (MHz)	Result
		Ant1(Worst Data)	Ant1(Worst Data)	Ant1(Worst Data)	
36	5180	22.09	17.877	5171.13	Pass
40	5200	21.42	17.815	N/A	Pass
48	5240	21.01	17.775	5248.33	Pass
52	5260	21.38	17.797	N/A	Pass
60	5300	21.58	17.758	N/A	Pass
64	5320	21.90	17.875	N/A	Pass
100	5500	22.26	17.724	N/A	Pass
116	5580	22.21	17.897	N/A	Pass
140	5700	21.29	17.869	N/A	Pass
149	5745	26.15	17.885	N/A	Pass
157	5785	22.95	17.814	N/A	Pass
165	5825	29.89	17.953	N/A	Pass

Mode 5: Transmit by 802.11ac(40MHz) with Ant 1+2+3

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Lower/Higher Frequency (MHz)	Result
		Ant1(Worst Data)	Ant1(Worst Data)	Ant1(Worst Data)	
38	5190	42.59	36.534	5171.21	Pass
46	5230	43.75	36.358	N/A	Pass
54	5270	42.69	36.314	5248.11	Pass
62	5310	42.77	36.353	N/A	Pass
102	5510	41.72	36.344	N/A	Pass
110	5550	42.22	36.373	N/A	Pass
134	5500	42.85	36.455	N/A	Pass
151	5580	56.68	36.892	N/A	Pass
159	5700	43.17	36.317	N/A	Pass

Mode 6: Transmit by 802.11ac(40MHz) with Ant 1+2+3

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Lower/Higher Frequency (MHz)	Result
		Ant1(Worst Data)	Ant1(Worst Data)	Ant1(Worst Data)	
42	5210	82.45	75.388	5171.21/5247.69	Pass
58	5290	81.45	75.478	N/A	Pass
106	5530	81.24	75.441	N/A	Pass
155	5775	81.21	75.428	N/A	Pass

The worst case of Occupied Bandwidth as below:

Mode 3: CH36 (5180MHz) Ant 3



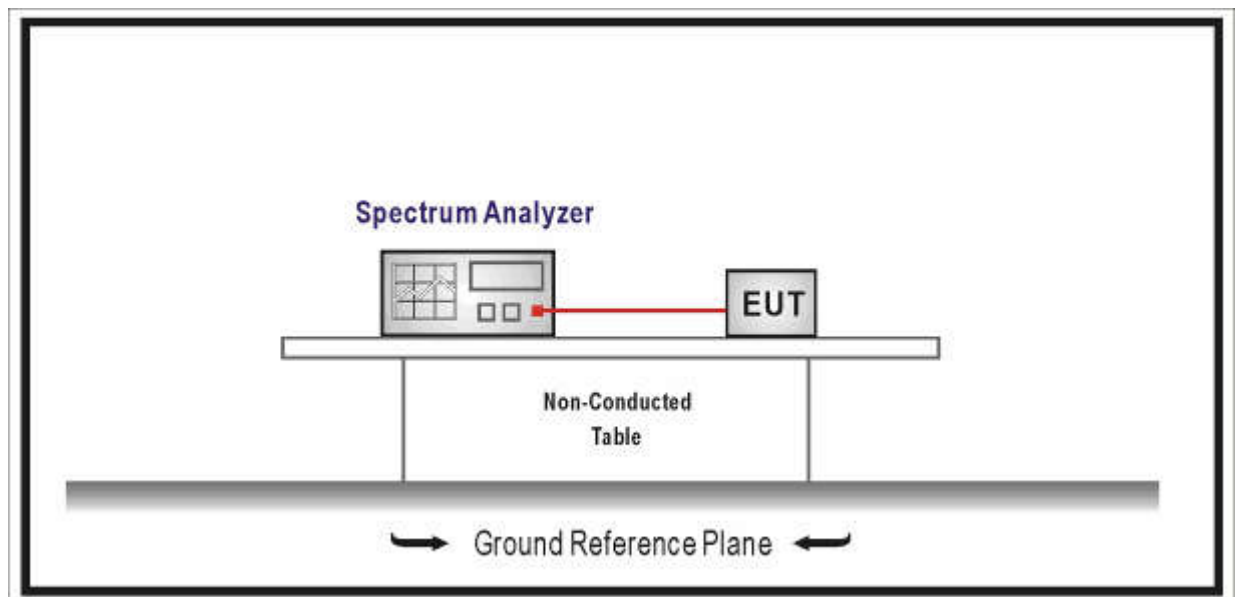
6. 6dB bandwidth

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	2016.02.04	2017.02.04
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2016.04.09	2017.04.09
MXA Signal Analyzer	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.

6.2. Test Setup



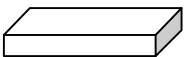
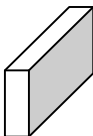
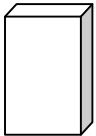
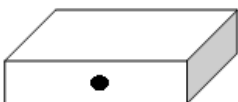
6.3. Limit

>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 D02v01r02	C	Bandwidth Measurement
	☐ FCC KDB 789033 D02v01r02	C.1	Emission Bandwidth (26dB)
	☒ FCC KDB 789033 D02v01r02	C.2	Minimum Emission Bandwidth for the band 5.725-5.85 GHz (6dB)
☐	FCC KDB 789033 D02v01r02	D	99 Percent Occupied Bandwidth

6.5. EUT test Axis definition

Item	6dB bandwidth			
Device Category	☐	Indoor use		
	☐	Outdoor use		
	☐	Fix position use		
	☒	Client use		
Test mode	Mode 1-6			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☒	Chain 1		
				
	☐	Chain 1	Chain 2	
				
	☒	Chain 1	Chain 2	Chain 3
				

6.6. Test Result

Product Name	: AC1900 High Gain Wireless Dual Band USB Adapter	Power	: AC 120V/60Hz
Test Mode	: Mode 1~6	Test Site	: TR8
Test Date	: 2016.09.21		

Mode 1: Transmit by 802.11a				
Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
		Ant0(Worst Data)		
149	5745	16.56	>500	Pass
157	5785	16.58		Pass
165	5825	16.57		Pass
Mode 2: Transmit by 802.11n(20MHz)				
Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
		Ant0(Worst Data)		
149	5745	17.71	>500	Pass
157	5785	17.68		Pass
165	5825	17.81		Pass
Mode 3: Transmit by 802.11n(40MHz)				
Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
		Ant0(Worst Data)		
151	5755	36.57	>500	Pass
159	5795	36.52		Pass
Mode 4: Transmit by 802.11ac(20MHz)				
Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
		Ant0(Worst Data)		
149	5745	17.71	>500	Pass
157	5785	17.74		Pass
165	5825	17.71		Pass

Mode 5: Transmit by 802.11ac(40MHz)

Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
		Ant0(Worst Data)		
151	5755	36.51	>500	Pass
159	5795	36.55		Pass

Mode 6: Transmit by 802.11ac(80MHz)

Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
		Ant0(Worst Data)		
155	5775	76.35	>500	Pass

The worst case of 6dB Bandwidth as below:

Mode 1: CH157 (5745MHz) Ant 1



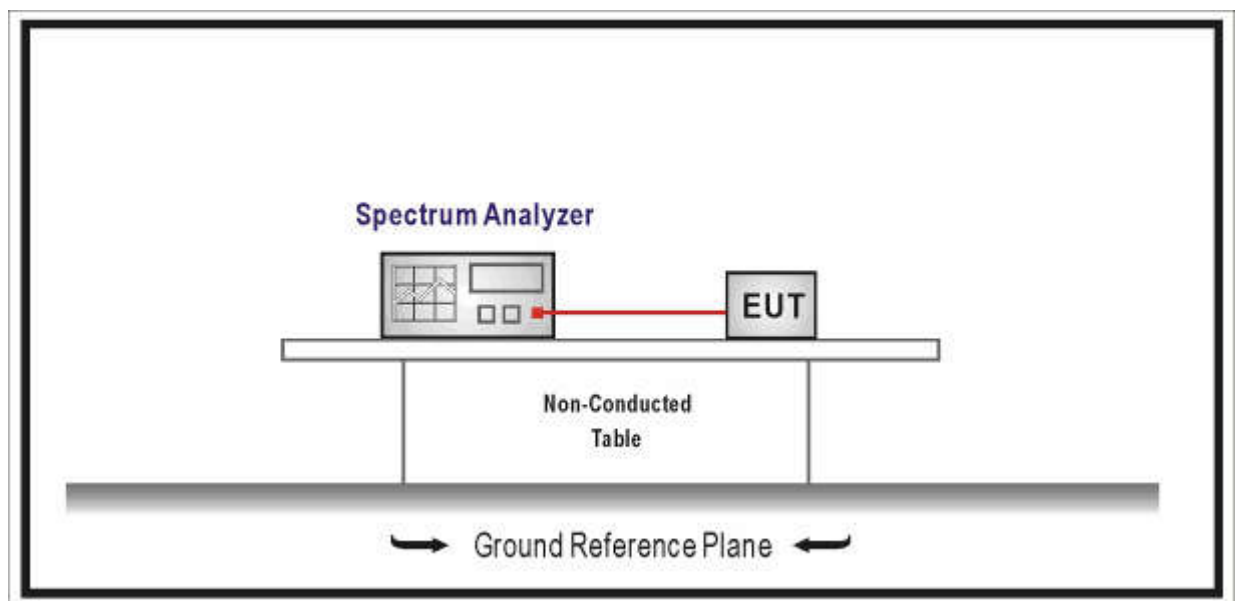
7. Power Output

7.1. Test Equipment

Power Output / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.04	2017.01.04
Spectrum Analyzer	Agilent	N9010A	MY48030494	2016.02.04	2017.02.04
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2015.10.14	2016.10.14
Power Sensor	Anritsu	MA2411B	0846014	2015.10.14	2016.10.14
Temperature/Humidity Meter	zhicheng	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.

7.2. Test Setup



7.3. Limit

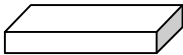
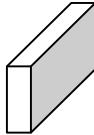
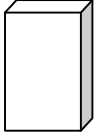
Fundamental emission output power Limit	
☒	For the band 5.15-5.25 GHz
☐	Outdoor access point: the maximum conducted output power shall not exceed 1 W. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 30 - (G_{TX} - 6)$ and $\leq 125\text{mW}$ at any angle above 30 degrees
☐	Indoor access point: the maximum conducted output power shall not exceed 1 W. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 30 - (G_{TX} - 6)$
☐	Fixed point-to-point access points: the maximum conducted output power shall not exceed 1 W. If $G_{TX} > 23\text{dBi}$, then $P_{out} \leq 30 - (G_{TX} - 23)$
☒	Mobile and portable client devices: the maximum conducted output power shall not exceed 250mW. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 24 - (G_{TX} - 6)$
☒	For the band 5.25-5.35 GHz:
☒	the maximum conducted output power shall not exceed 250mW or $11\text{dBm} + 10 \log B$, where B is the 26dB emission bandwidth in MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq (\text{The lesser of } 24 \text{ or } 11\text{dBm} + 10 \log B) - (G_{TX} - 6)$
☒	For the 5.47-5.725 GHz:
☒	the maximum conducted output power shall not exceed 250mW or $11\text{dBm} + 10 \log B$, where B is the 26dB emission bandwidth in MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq (\text{The lesser of } 24 \text{ or } 11\text{dBm} + 10 \log B) - (G_{TX} - 6)$
☒	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 $G_{TX} > 6 \text{ dBi}$, 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

Item	Power Output			
Device Category	☐	Indoor use		
	☐	Outdoor use		
	☐	Fix position use		
	☒	Client use		
Test mode	Mode 1-6			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☒	Worst Axis ☐
	☒	Conducted		
	☒	Chain 1		
				
	☐	Chain 1	Chain 2	
				
	☒	Chain 1	Chain 2	Chain 3
				

7.6. Test Result

Product Name	: AC1900 High Gain Wireless Dual Band USB Adapter	Power	: AC 120V/60Hz
Test Mode	: Mode 1~6	Test Site	: TR8
Test Date	: 2016.09.25		

Mode 1: Transmit by 802.11a						
Channel No.	Frequency (MHz)	Measurement Power			Limit (dBm)	Result
		Ant1	Ant2	Ant 3		
CH36	5180	13.67	10.12	12.47	24.0	Pass
CH40	5200	13.71	10.16	12.98	24.0	Pass
CH48	5240	13.64	10.04	12.65	24.0	Pass
CH52	5260	13.43	14.47	14.67	24.0	Pass
CH60	5300	13.59	14.51	14.72	24.0	Pass
CH64	5320	13.33	14.43	14.47	24.0	Pass
CH100	5500	12.52	12.05	12.06	24.0	Pass
CH116	5580	12.78	12.48	12.19	24.0	Pass
CH140	5700	12.45	11.82	11.95	24.0	Pass
CH149	5745	15.92	13.55	14.68	30.0	Pass
CH157	5785	16.01	13.63	14.81	30.0	Pass
CH165	5825	15.93	12.86	14.61	30.0	Pass

Mode 2: Transmit by 802.11n(20MHz)

Channel No.	Frequency (MHz)	Measurement Power (dBm)			Total Power (dBm)	Limit (dBm)	Result
		Ant1	Ant2	Ant3			
CH36	5180	11.58	11.62	11.78	16.43	24.0	Pass
CH40	5200	11.81	11.93	12.12	16.73	24.0	Pass
CH48	5240	11.42	11.86	12.01	16.54	24.0	Pass
CH52	5260	11.58	11.32	12.03	16.42	24.0	Pass
CH60	5300	12.02	11.45	12.08	16.63	24.0	Pass
CH64	5320	11.87	11.38	12.02	16.54	24.0	Pass
CH100	5500	11.48	10.97	11.77	16.19	24.0	Pass
CH116	5580	11.57	11.38	11.89	16.39	24.0	Pass
CH140	5700	11.33	11.26	11.54	16.15	24.0	Pass
CH149	5745	14.38	14.43	13.89	19.01	30.0	Pass
CH157	5785	14.53	14.61	13.96	19.15	30.0	Pass
CH165	5825	14.33	14.54	13.92	19.04	30.0	Pass

Mode 3: Transmit by 802.11n(40MHz)

Channel No.	Frequency (MHz)	Measurement Power (dBm)			Total Power (dBm)	Limit (dBm)	Result
		Ant1	Ant2	Ant3			
CH38	5190	12.44	12.59	12.17	17.17	24.0	Pass
CH46	5230	12.63	12.89	12.32	17.39	24.0	Pass
CH54	5270	12.98	12.16	13.19	17.57	24.0	Pass
CH62	5310	12.79	12.52	13.09	17.58	24.0	Pass
CH102	5510	12.45	12.43	12.21	17.14	24.0	Pass
CH110	5550	12.54	12.67	12.48	17.34	24.0	Pass
CH134	5670	12.32	12.47	12.18	17.10	24.0	Pass
CH151	5755	14.42	14.65	14.04	19.15	30.0	Pass
CH159	5795	14.53	14.23	14.08	19.06	30.0	Pass

Mode 4: Transmit by 802.11ac(20MHz)

Channel No.	Frequency (MHz)	Measurement Power (dBm)			Total Power (dBm)	Limit (dBm)	Result
		Ant1	Ant2	Ant3			
CH36	5180	13.32	13.25	13.31	18.06	24.0	Pass
CH40	5200	13.54	13.64	13.42	18.31	24.0	Pass
CH48	5240	13.31	13.54	13.29	18.15	24.0	Pass
CH52	5260	13.01	12.32	13.12	17.60	24.0	Pass
CH60	5300	13.37	12.65	13.25	17.87	24.0	Pass
CH64	5320	12.93	12.18	13.06	17.51	24.0	Pass
CH100	5500	11.23	11.22	11.68	16.15	24.0	Pass
CH116	5580	11.43	11.64	11.88	16.43	24.0	Pass
CH140	5700	11.31	11.37	11.52	16.17	24.0	Pass
CH149	5745	15.86	16.07	15.31	20.53	30.0	Pass
CH157	5785	16.03	16.32	15.57	20.76	30.0	Pass
CH165	5825	15.94	16.18	15.15	20.55	30.0	Pass

Mode 5: Transmit by 802.11ac(40MHz)

Channel No.	Frequency (MHz)	Measurement Power (dBm)			Total Power (dBm)	Limit (dBm)	Result
		Ant1	Ant2	Ant3			
CH38	5190	12.93	13.03	12.95	17.74	24.0	Pass
CH46	5230	12.85	13.22	12.88	17.76	24.0	Pass
CH54	5270	13.31	12.87	12.72	17.75	24.0	Pass
CH62	5310	13.22	12.64	12.74	17.65	24.0	Pass
CH102	5510	13.43	12.81	12.68	17.76	24.0	Pass
CH110	5550	13.51	12.86	12.87	17.86	24.0	Pass
CH134	5670	13.08	13.02	12.64	17.69	24.0	Pass
CH151	5755	15.04	15.18	14.54	19.70	30.0	Pass
CH159	5795	14.91	14.87	14.32	19.48	30.0	Pass

Mode 6: Transmit by 802.11ac(80MHz)

Channel No.	Frequency (MHz)	Measurement Power (dBm)			Total Power (dBm)	Limit (dBm)	Result
		Ant1	Ant2	Ant3			
CH42	5210	12.42	11.92	11.87	16.85	24.0	Pass
CH58	5290	13.02	12.78	12.84	17.65	24.0	Pass
CH106	5530	12.01	11.86	11.93	16.70	24.0	Pass
CH155	5775	14.12	14.85	14.43	19.25	30.0	Pass

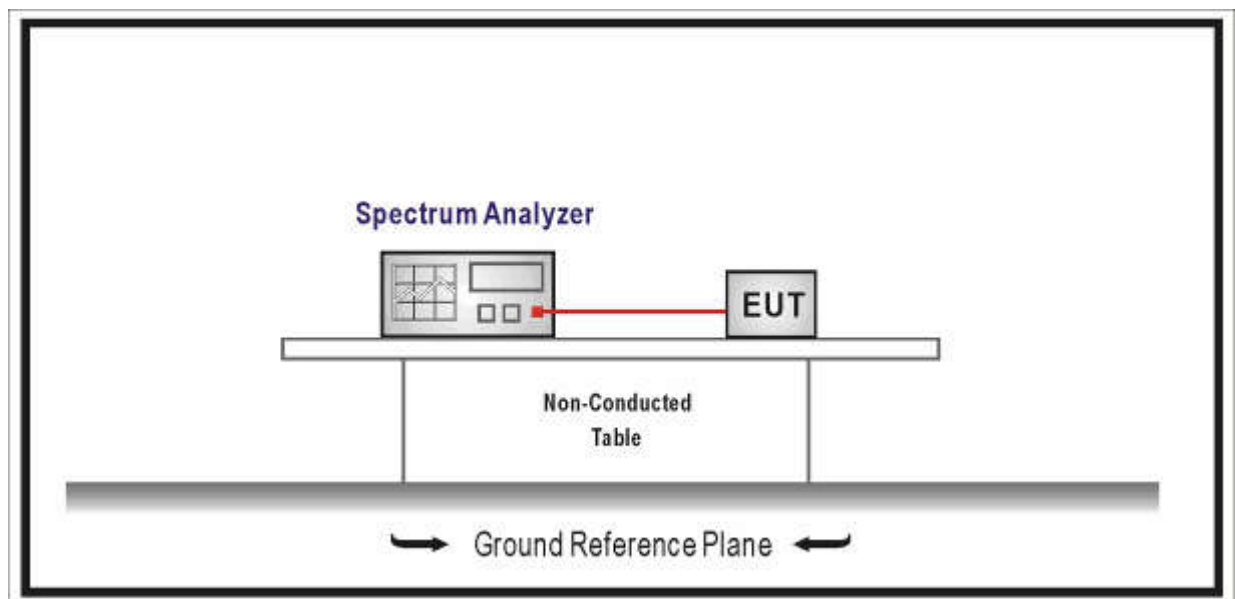
8. Peak Power Spectral Density

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	2016.02.04	2017.02.04
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2016.04.09	2017.04.09
MXA Signal Analyzer	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.

8.2. Test Setup



8.3. Limit

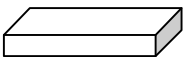
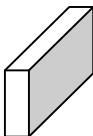
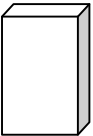
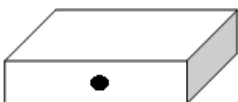
Fundamental emission output power Limit	
☒	For the band 5.15-5.25 GHz
☐	Outdoor access point: the maximum power spectral density shall not exceed 17 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 17 - (G_{TX} - 6)$
☐	Indoor access point: the maximum power spectral density shall not exceed 17 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 17 - (G_{TX} - 6)$
☐	Fixed point-to-point access points: the maximum power spectral density shall not exceed 17 dBm/MHz. If $G_{TX} > 23\text{dBi}$, then $P_{out} \leq 17 - (G_{TX} - 23)$
☒	Mobile and portable client devices: the maximum power spectral density shall not exceed 11 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 11 - (G_{TX} - 6)$
☒	For the 5.25-5.35 GHz:
☒	the maximum power spectral density shall not exceed 11 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 11 - (G_{TX} - 6)$
☒	For the 5.47-5.725 GHz:
☒	the maximum power spectral density shall not exceed 11 dBm/MHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 11 - (G_{TX} - 6)$
☒	For the band 5.725-5.85 GHz:
☒	the maximum power spectral density shall not exceed 30 dBm/500KHz. If $G_{TX} > 6\text{dBi}$, then $P_{out} \leq 30 - (G_{TX} - 6)$
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 D02v01r02	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

Item	Peak power spectral density			
Device Category	☐	Indoor use		
	☐	Outdoor use		
	☐	Fix position use		
	☒	Client use		
Test mode	Mode 1-6			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☒	Chain 1		
				
	☐	Chain 1	Chain 2	
				
	☒	Chain 1	Chain 2	Chain 3
				

8.6. Test Result

Product Name	: AC1900 High Gain Wireless Dual Band USB Adapter	Power	: AC 120V/60Hz
Test Mode	: Mode 1~6	Test Site	: TR8
Test Date	: 2016.09.22		

Mode 1: Transmit by 802.11a						
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)			Limit (dBm/MHz)	Result
		Ant1	Ant2	Ant3		
CH36	5180	-1.749	-5.585	-6.721	11.0	Pass
CH40	5200	0.207	-5.561	-0.864	11.0	Pass
CH48	5240	0.414	-5.470	-2.317	11.0	Pass
CH52	5260	2.831	-1.565	-1.783	11.0	Pass
CH60	5300	0.002	-1.801	-2.689	11.0	Pass
CH64	5320	0.991	-1.866	-0.660	11.0	Pass
CH100	5500	-3.867	-3.751	-3.164	11.0	Pass
CH116	5580	-3.994	-2.844	-2.851	11.0	Pass
CH140	5700	-3.835	-4.868	-3.197	11.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)			Limit (dBm/500KHz)	Result
		Ant1	Ant2	Ant3		
CH149	5745	-4.070	-5.228	-3.774	30.0	Pass
CH157	5785	-4.060	-7.907	1.132	30.0	Pass
CH165	5825	-4.463	-8.101	-3.708	30.0	Pass

Mode 2: Transmit by 802.11n(20MHz)

Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)			Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant1	Ant2	Ant3			
CH36	5180	-3.704	-5.473	-1.836	1.35	11.0	Pass
CH40	5200	-3.394	-4.244	-4.187	0.85	11.0	Pass
CH48	5240	-3.018	-5.290	-2.694	1.25	11.0	Pass
CH52	5260	-2.724	-5.494	-3.756	0.93	11.0	Pass
CH60	5300	-2.541	-5.359	-3.123	1.26	11.0	Pass
CH64	5320	-2.740	-4.684	-2.694	1.49	11.0	Pass
CH100	5500	-2.033	-3.974	-2.553	1.99	11.0	Pass
CH116	5580	-5.478	-6.096	-2.393	0.43	11.0	Pass
CH140	5700	-6.045	-4.874	-5.685	-0.74	11.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)			Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant1	Ant2	Ant3			
CH149	5745	-5.849	-5.905	-6.035	-1.16	30.0	Pass
CH157	5785	-5.879	-7.197	-5.670	-1.43	30.0	Pass
CH165	5825	-4.081	-1.836	-5.477	1.24	30.0	Pass

Mode 3: Transmit by 802.11n(40MHz)							
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)			Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant1	Ant2	Ant3			
CH38	5190	-5.466	-6.214	-5.539	-0.96	11.0	Pass
CH46	5230	-5.609	-6.126	-5.109	-0.82	11.0	Pass
CH54	5270	-4.516	-6.654	-4.349	-0.28	11.0	Pass
CH62	5310	-6.875	-7.078	-3.655	-0.80	11.0	Pass
CH102	5510	-8.083	-5.889	-8.058	-2.44	11.0	Pass
CH110	5550	-4.355	-5.889	-4.847	-0.21	11.0	Pass
CH134	5670	-5.109	-6.736	-8.007	-1.68	11.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)			Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant1	Ant2	Ant3			
CH151	5755	-8.701	-8.783	-8.776	-3.98	30.0	Pass
CH159	5795	-8.208	-8.843	-8.490	-3.73	30.0	Pass

Mode 4: Transmit by 802.11ac(20MHz)

Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)			Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant1	Ant2	Ant3			
CH36	5180	-1.550	-3.312	-3.743	2.01	11.0	Pass
CH40	5200	-2.654	-3.129	-2.620	1.98	11.0	Pass
CH48	5240	-1.816	-3.184	-4.020	1.86	11.0	Pass
CH52	5260	-2.827	-4.525	-2.492	1.58	11.0	Pass
CH60	5300	-1.813	-4.999	-4.064	1.36	11.0	Pass
CH64	5320	-2.980	-5.141	-2.260	1.47	11.0	Pass
CH100	5500	-4.021	-6.354	-4.313	-0.01	11.0	Pass
CH116	5580	-5.987	-4.414	-2.942	0.50	11.0	Pass
CH140	5700	-6.128	-4.715	-4.022	-0.10	11.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)			Total PPSD (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant1	Ant2	Ant3			
CH149	5745	-6.021	-1.582	-2.698	1.71	30.0	Pass
CH157	5785	-4.700	-4.098	-3.512	0.69	30.0	Pass
CH165	5825	-4.513	-4.367	-1.990	1.31	30.0	Pass

Mode 5: Transmit by 802.11ac(40MHz)

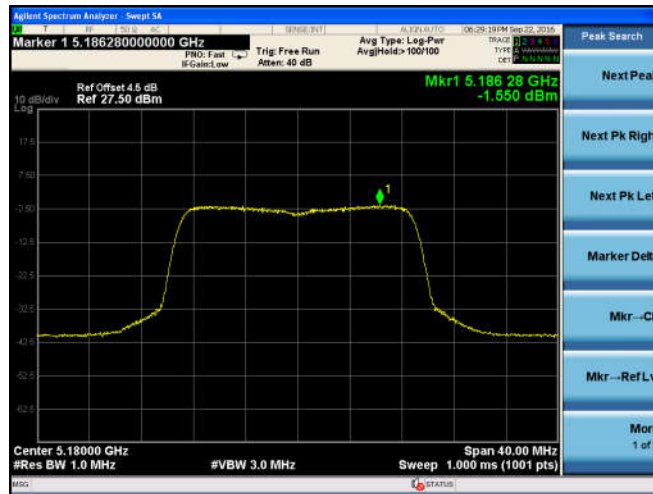
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)			Total PPSP (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant1	Ant2	Ant3			
CH38	5190	-1.734	-3.227	-3.739	1.96	11.0	Pass
CH46	5230	-5.909	-4.488	-4.025	0.04	11.0	Pass
CH54	5270	-5.043	-6.960	-4.841	-0.74	11.0	Pass
CH62	5310	-4.296	-7.807	-6.323	-1.13	11.0	Pass
CH102	5510	-7.800	-8.045	-6.028	-2.42	11.0	Pass
CH110	5550	-7.500	-6.892	-7.178	-2.41	11.0	Pass
CH134	5670	-8.742	-6.511	-5.648	-2.01	11.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)			Total PPSP (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant1	Ant2	Ant3			
CH151	5755	-9.474	-6.580	-7.373	-2.88	30.0	Pass
CH159	5795	-9.186	-6.638	0.302	1.49	30.0	Pass

Mode 6: Transmit by 802.11ac(80MHz)

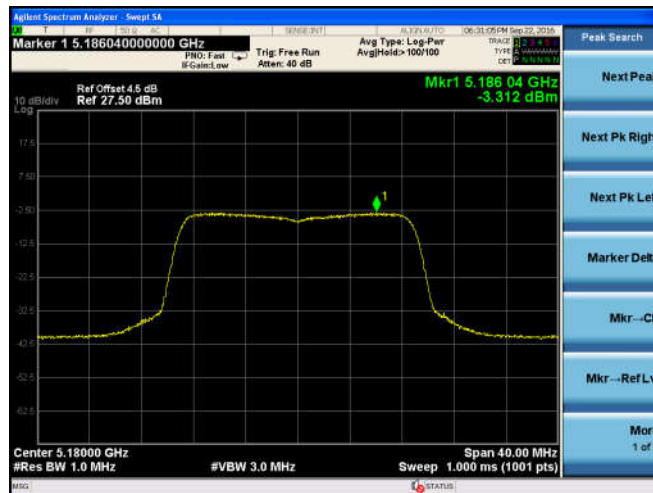
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/MHz)			Total PPSP (dBm/MHz)	Limit (dBm/MHz)	Result
		Ant1	Ant2	Ant3			
CH42	5210	-6.755	-6.962	-5.690	-1.66	11.0	Pass
CH58	5290	-6.066	-9.239	-8.459	-2.93	11.0	Pass
CH106	5530	-10.267	-11.642	-9.398	-5.57	11.0	Pass
Channel No.	Frequency (MHz)	Measurement Power Spectral Density (dBm/500KHz)			Total PPSP (dBm/500KHz)	Limit (dBm/500KHz)	Result
		Ant1	Ant2	Ant3			
CH155	5775	-11.208	-7.739	-10.904	-4.88	30.0	Pass

The worst case of 6dB Bandwidth as below:

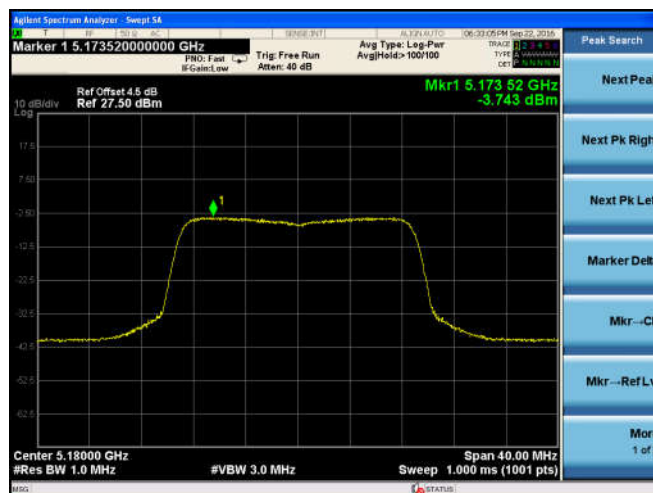
Mode 4 CH36 (5180MHz) Ant 1



Mode 1 CH36 (5180MHz) Ant 2



Mode 1 CH36 (5180MHz) Ant 2



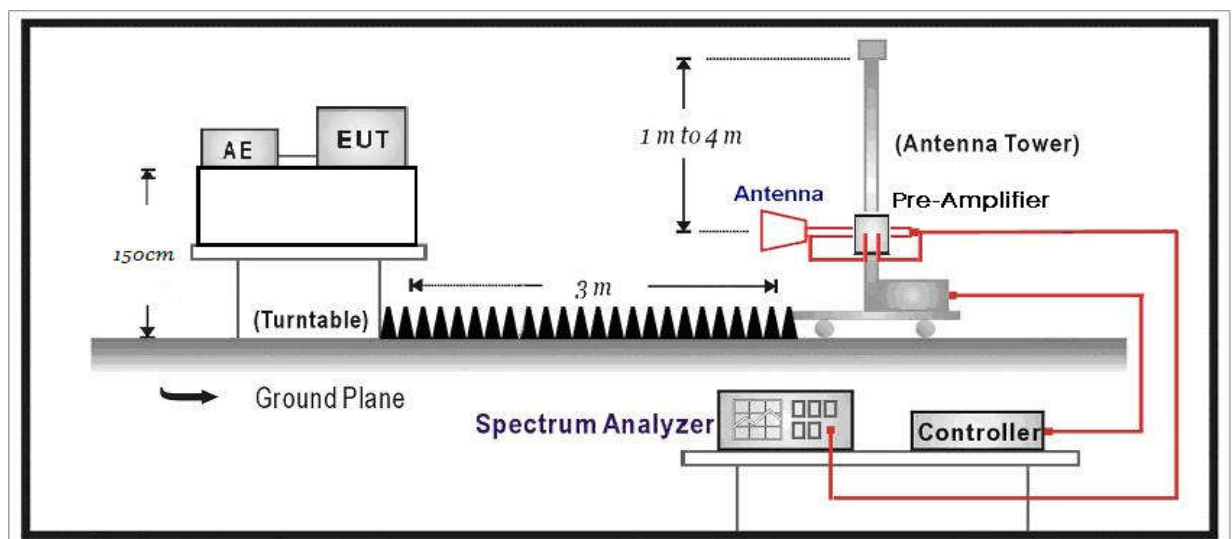
9. Radiated Emission Band Edge

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	2017.07.16
Pre-Amplifier	Miteq	NSP1800-25	1364185	2016.05.03	2017.05.03
DRG Horn Antenna	ETS-Lindgren	3117	00167055	2016.07.12	2017.07.12
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2016.09.18	2017.09.18
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2016.02.28	2017.02.28
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2016.02.28	2017.02.28
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2016.01.05	2017.01.05

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 (dB μ V/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 (MHz)
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

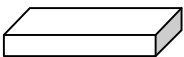
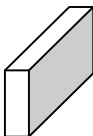
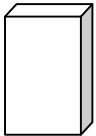
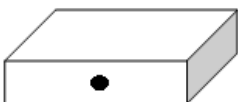
Note(1): Outside the frequency range 5715 - 5835MHz.
 Note(2): Within the frequency range from the band edge to 10MHz below or above the band edge, 5715 – 5725MHz and 5825 - 5835MHz.

FCC 16-24-A1	
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)
5725 - 5825	U-NII-3 band (5725-5850 MHz)

9.4. Test Procedure

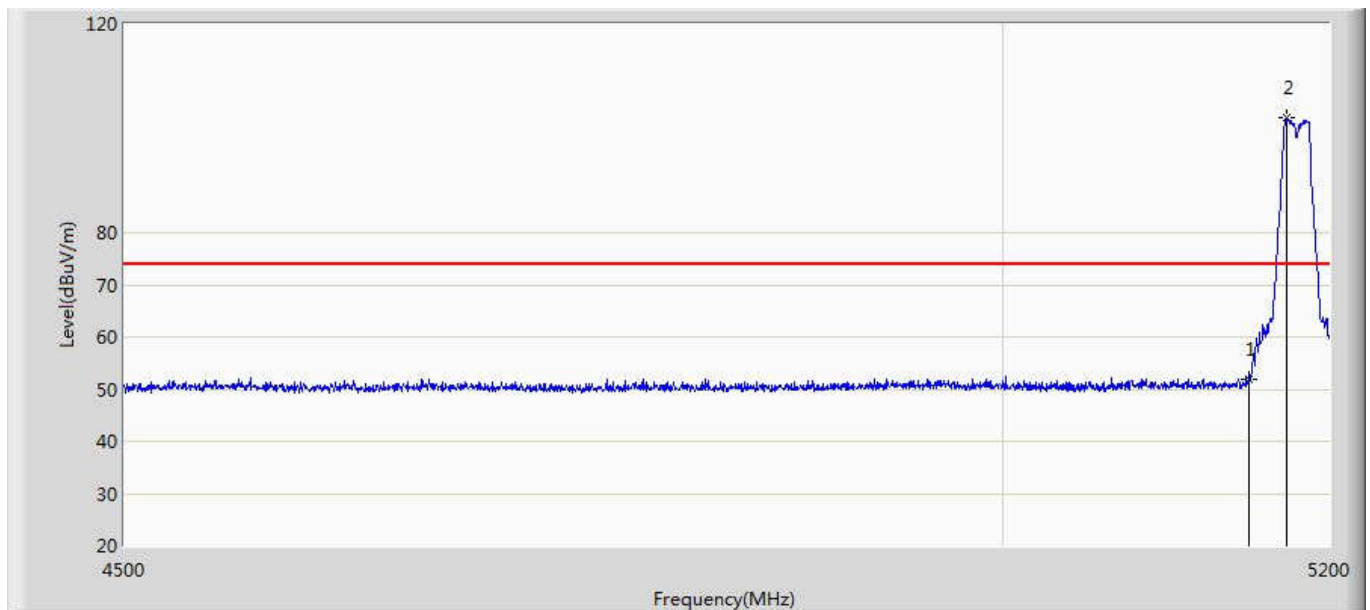
Test Method				
	References Rule		Chapter	Description
☐	ANSI C63.10		12.7.3	Emissions in non-restricted frequency bands
☒	ANSI C63.10		12.7.2	Emissions in restricted frequency bands
	☒	ANSI C63.10	12.7.5	Radiated emission measurements
	☒	ANSI C63.10	12.7.6	Procedure for peak unwanted emissions measurements 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 D02v01r02		G.2	Unwanted Emissions that fall Outside of the Restricted Bands
☐	FCC KDB 789033 D02v01r02		G.1	Unwanted Emissions in the Restricted Bands
	☐	FCC KDB 789033 D02v01r02	G.4	Procedure for Unwanted Emissions Measurements below 1000 MHz
	☐	FCC KDB 789033 D02v01r02	G.5	Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz
	☐	FCC KDB 789033 D02v01r02	G.6	Procedures for Average Unwanted Emissions Measurements above 1000 MHz
	☐	FCC KDB 789033 D02v01r02	G.6.c	Method AD (Average detection)—primary method
	☐	FCC KDB 789033 D02v01r02	G.6.d	Method VB (Averaging using reduced video bandwidth): Alternative method.

9.5. EUT test Axis definition

Item	Peak power spectral density			
Device Category	☐	Indoor use		
	☐	Outdoor use		
	☐	Fix position use		
	☒	Client use		
Test mode	Mode 1-6			
Test method	☒	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☒	Worst Axis ☐
	☐	Conducted		
	☐	Chain 1		
				
	☐	Chain 1	Chain 2	
				
	☐	Chain 1	Chain 2	Chain 3
				

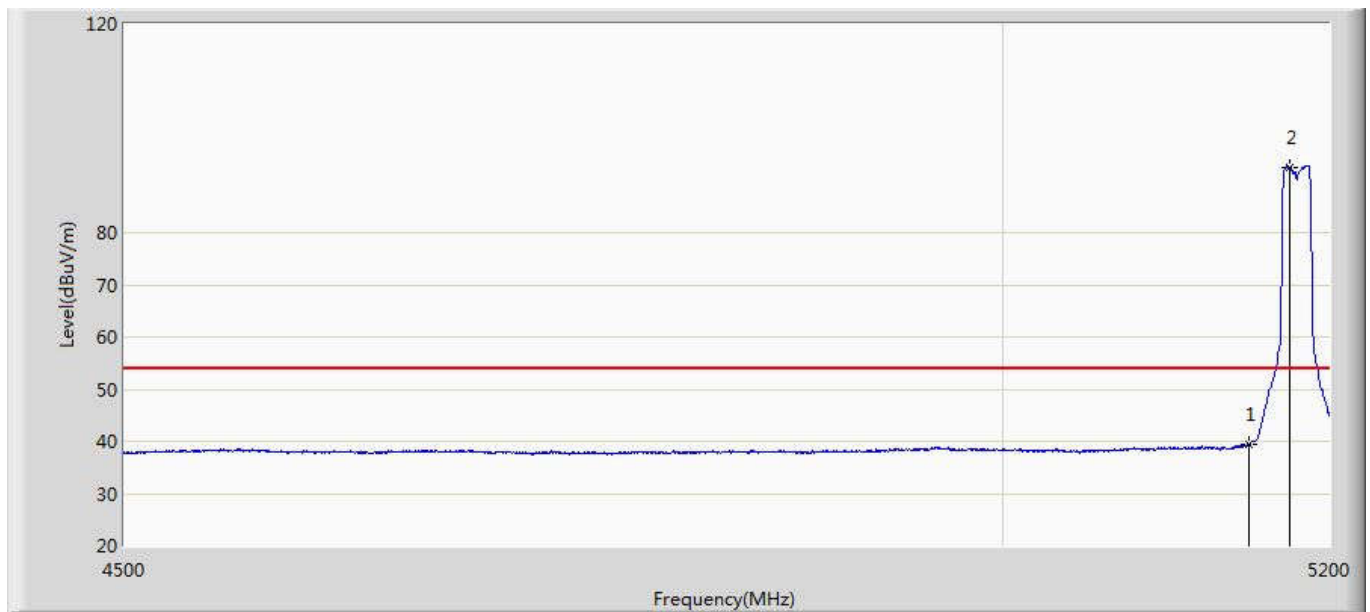
9.6. Test Result

Profile: 1682009R	Page No.: 73
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 21:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1: Transmit at CH5180Mhz by 802.11 a with antenna 1	



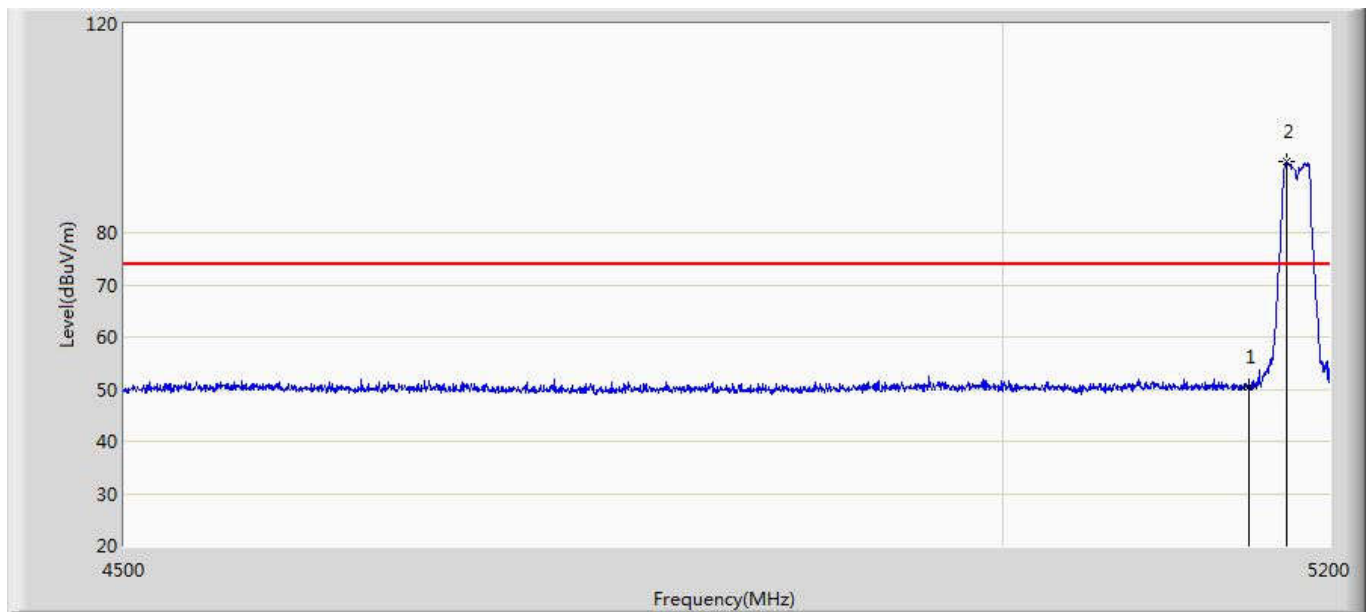
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	51.817	12.283	-22.183	74.000	39.534	PK
2	*	5173.750	101.999	62.381	27.999	74.000	39.618	PK

Profile: 1682009R	Page No.: 74
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 1	



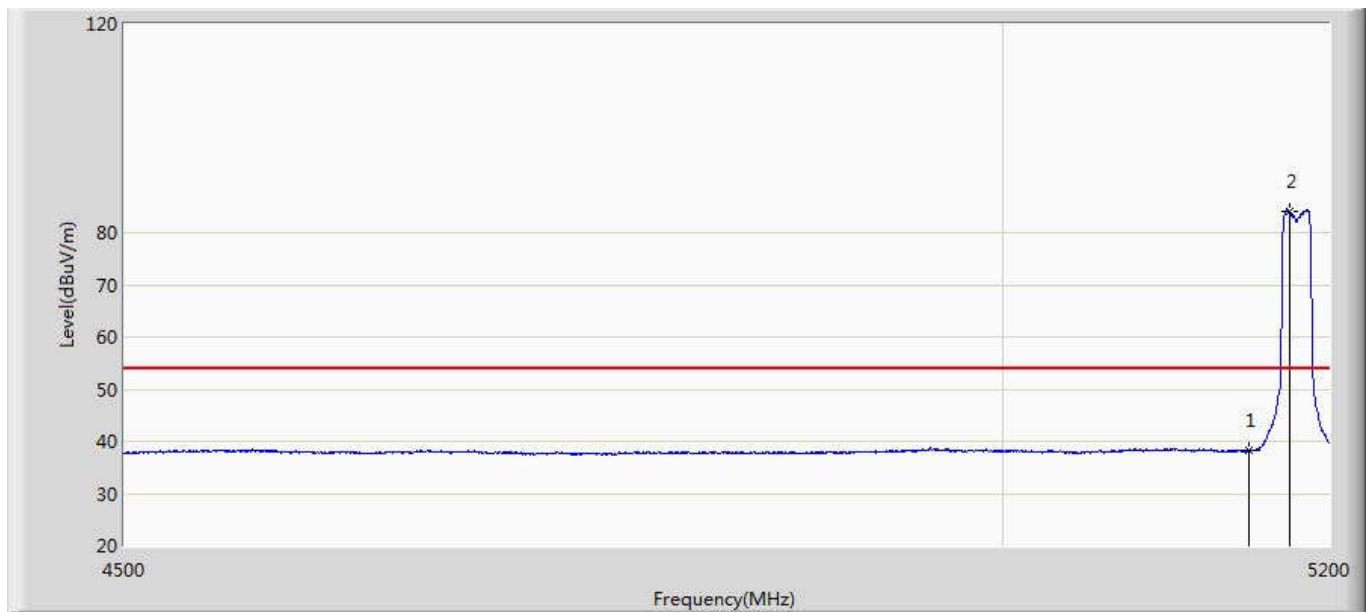
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	39.425	-0.109	-14.575	54.000	39.534	AV
2	*	5175.500	92.518	52.914	38.518	54.000	39.604	AV

Profile: 1682009R	Page No.: 75
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 1	



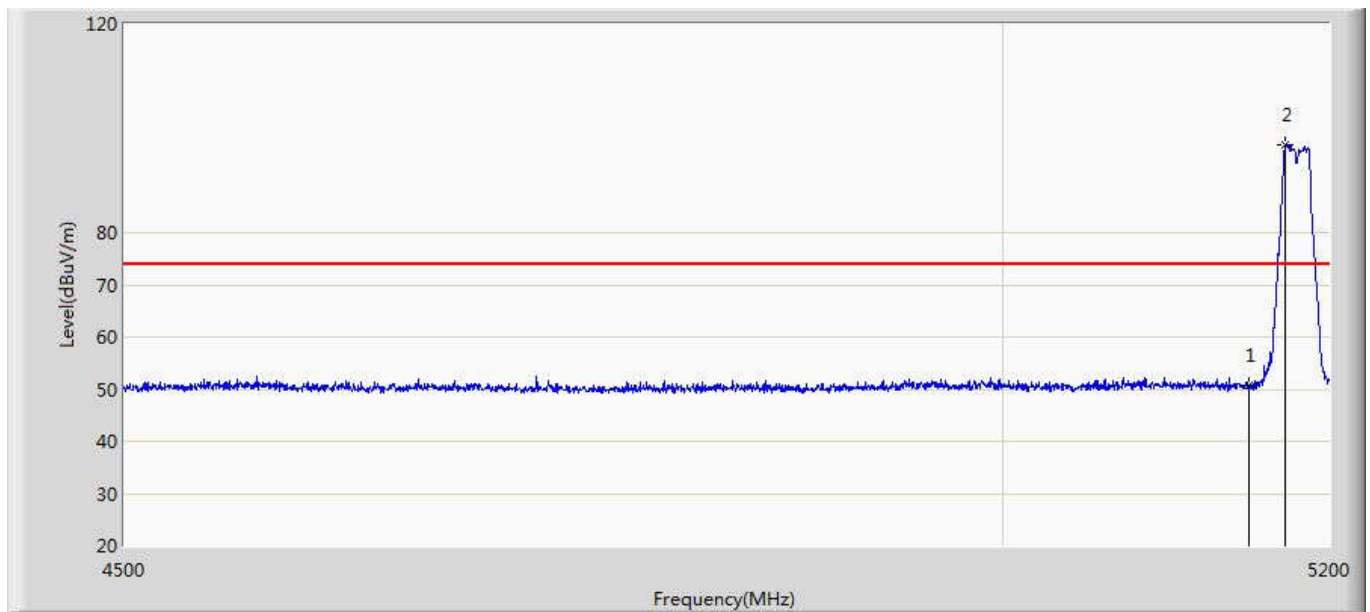
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	50.535	11.001	-23.465	74.000	39.534	PK
2	*	5174.100	93.493	53.878	19.493	74.000	39.615	PK

Profile: 1682009R	Page No.: 76
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 1	



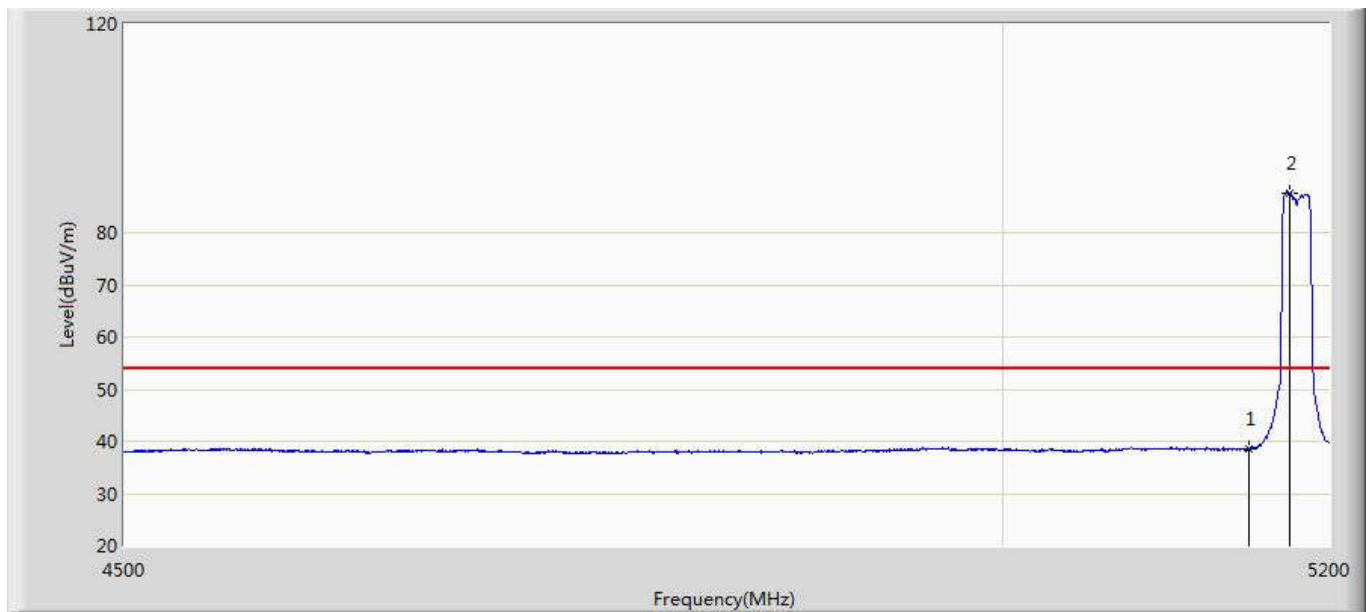
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	38.224	-1.310	-15.776	54.000	39.534	AV
2	*	5175.150	84.192	44.585	30.192	54.000	39.607	AV

Profile: 1682009R	Page No.: 77
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 2	



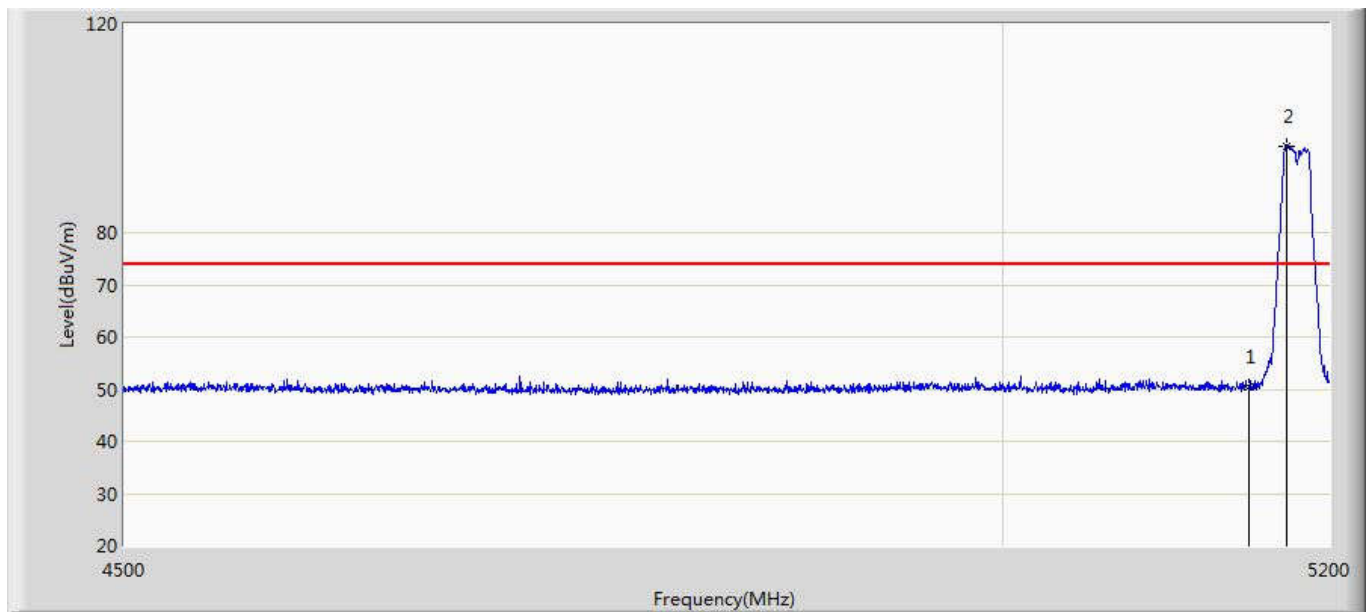
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	50.654	11.120	-23.346	74.000	39.534	PK
2	*	5172.700	96.895	57.269	22.895	74.000	39.626	PK

Profile: 1682009R	Page No.: 78
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 2	



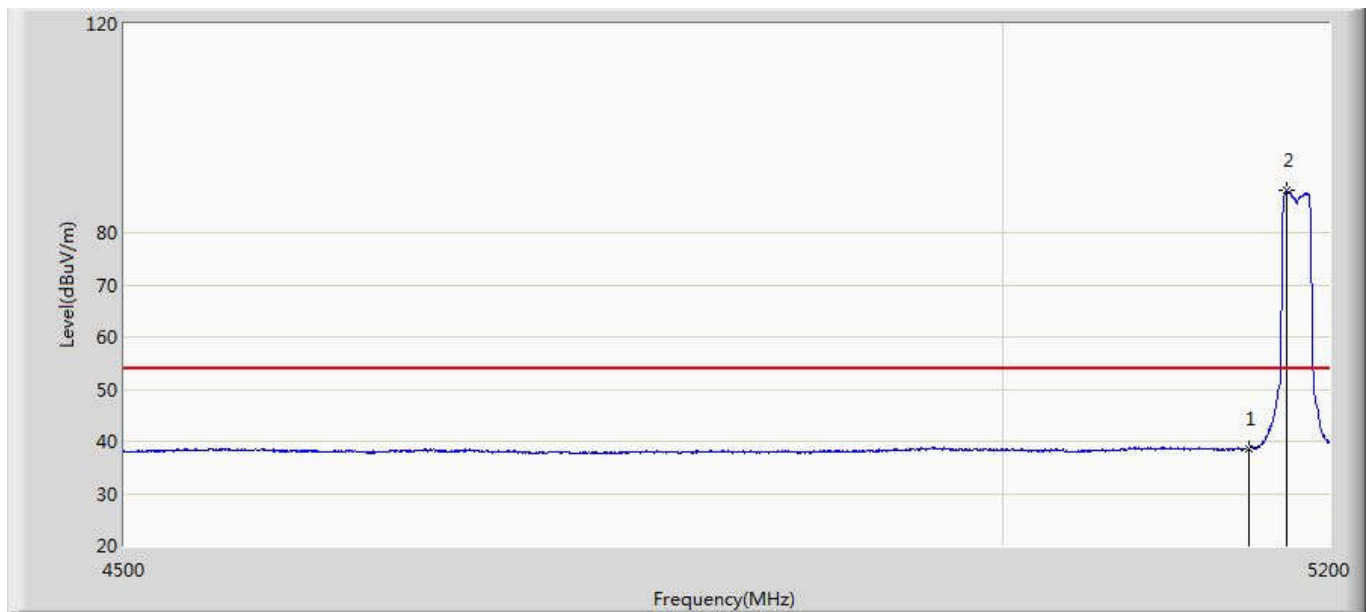
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	38.600	-0.934	-15.400	54.000	39.534	AV
2	*	5175.500	87.623	48.019	33.623	54.000	39.604	AV

Profile: 1682009R	Page No.: 79
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 2	



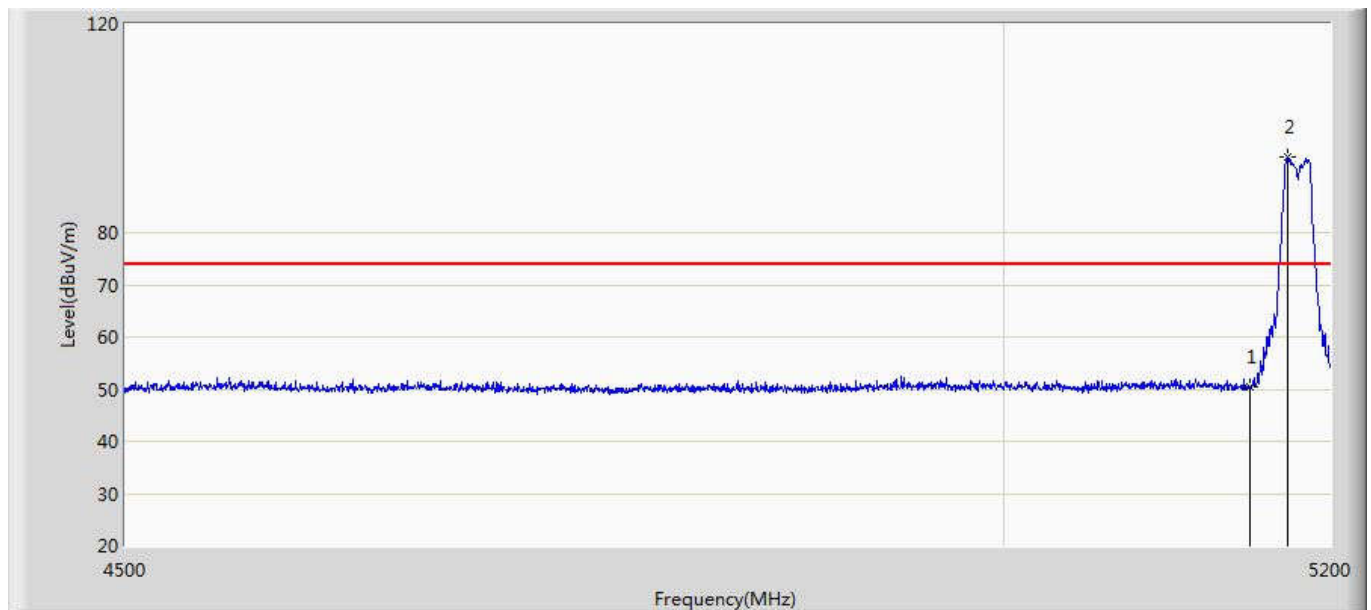
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	50.345	10.811	-23.655	74.000	39.534	PK
2	*	5173.750	96.582	56.964	22.582	74.000	39.618	PK

Profile: 1682009R	Page No.: 80
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 2	



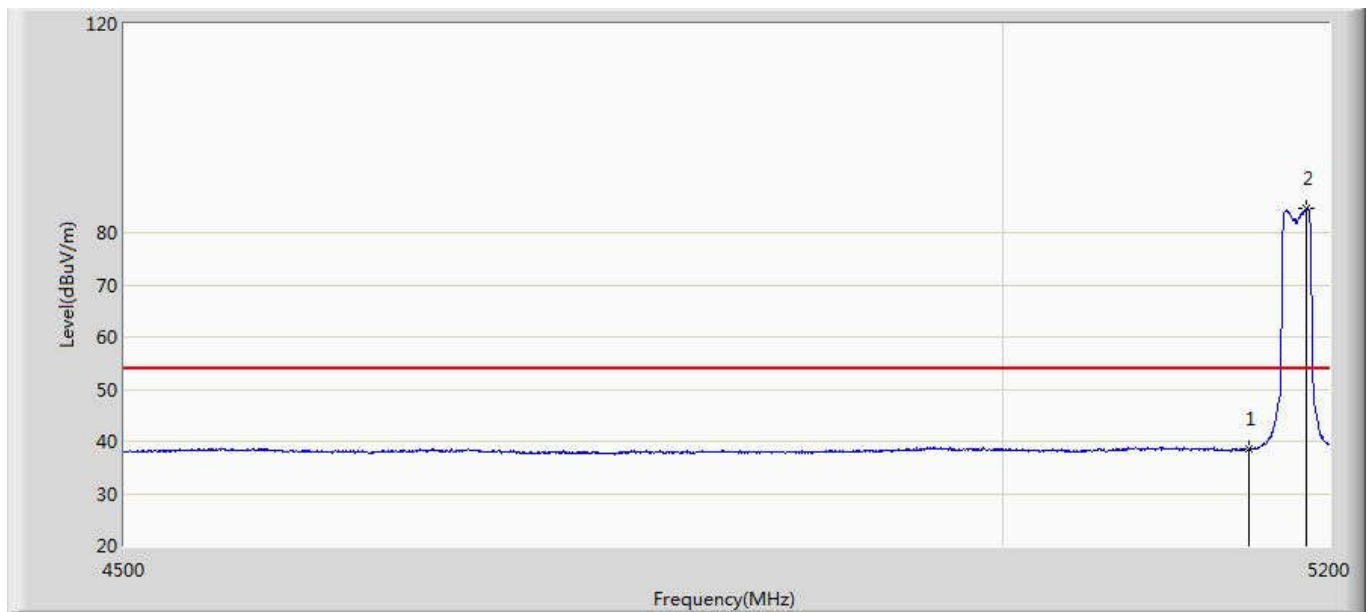
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	38.622	-0.912	-15.378	54.000	39.534	AV
2	*	5173.400	87.982	48.362	33.982	54.000	39.620	AV

Profile: 1682009R	Page No.: 81
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 3	



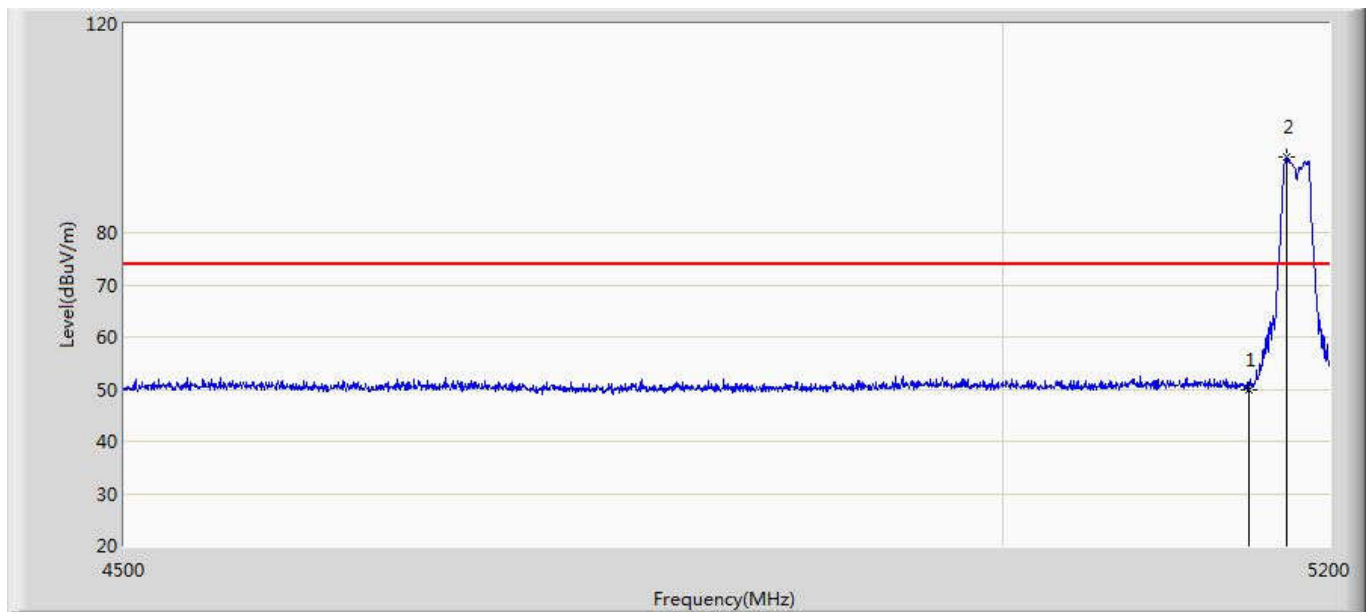
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	50.440	10.906	-23.560	74.000	39.534	PK
2	*	5173.750	94.395	54.777	20.395	74.000	39.618	PK

Profile: 1682009R	Page No.: 82
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 3	



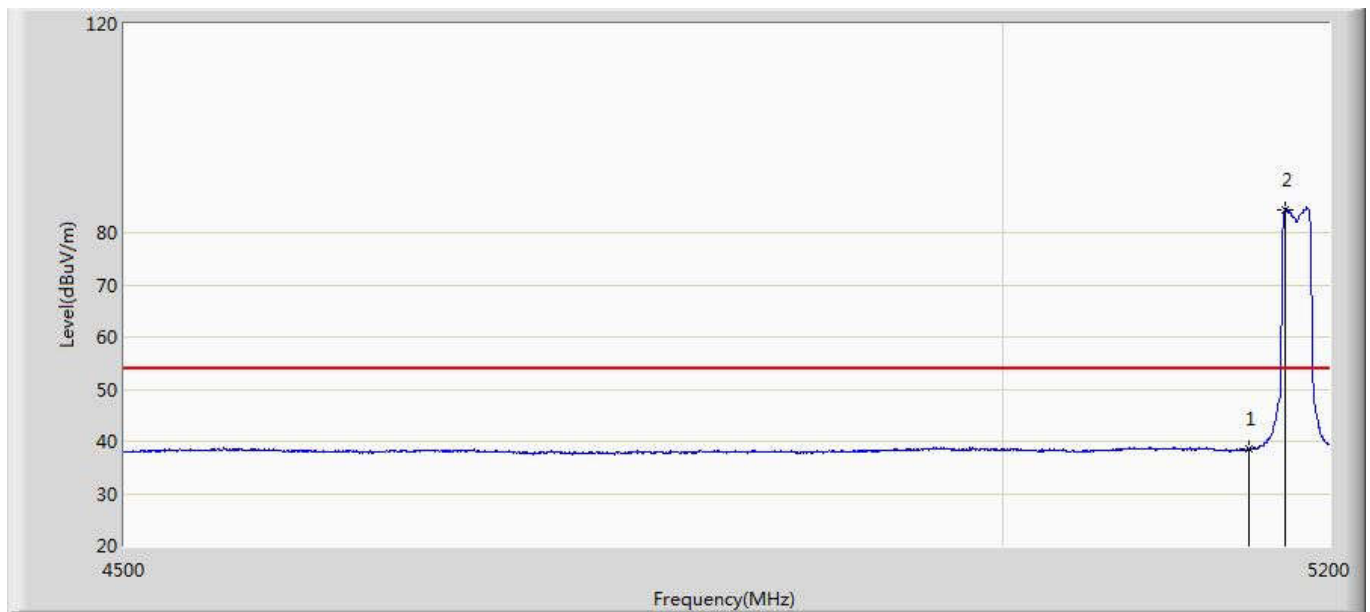
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	38.426	-1.108	-15.574	54.000	39.534	AV
2	*	5185.650	84.525	44.938	30.525	54.000	39.587	AV

Profile: 1682009R	Page No.: 83
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 3	



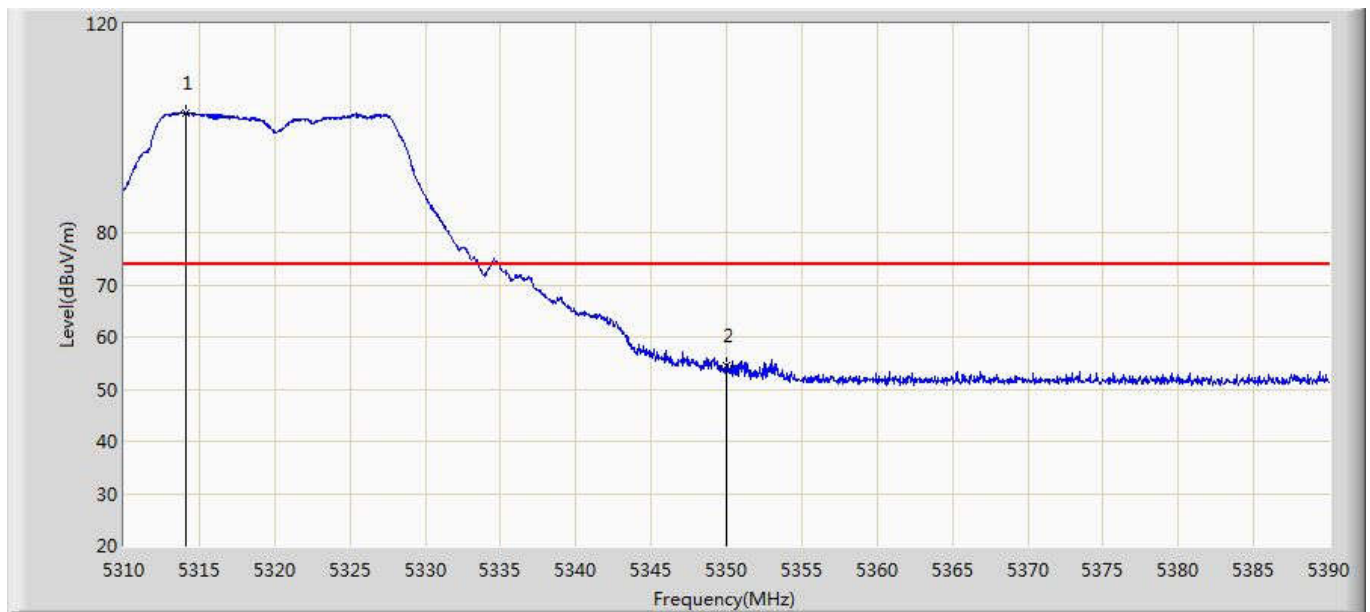
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	49.967	10.433	-24.033	74.000	39.534	PK
2	*	5173.750	94.398	54.780	20.398	74.000	39.618	PK

Profile: 1682009R	Page No.: 84
Engineer: Scott	
Site: AC5	Time: 2016/09/20 - 22:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5180Mhz by 802.11 a with antenna 3	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		5150.000	38.506	-1.028	-15.494	54.000	39.534	AV
2	*	5172.350	84.235	44.606	30.235	54.000	39.628	AV

Profile: 1682009R	Page No.: 105
Engineer: Scott	
Site: AC5	Time: 2016/09/21 - 00:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 High Gain Wireless Dual Band USB Adapter	Power: AC 120V/60Hz
Note: Mode 1:Transmit at CH5320Mhz by 802.11 a with antenna 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	5314.080	103.010	63.101	29.010	74.000	39.909	PK
2		5350.000	54.575	14.704	-19.425	74.000	39.871	PK