Test Report

FCC Part15 Subpart C

(Class II Permissive Change)

Product Name	:	AC1900 Smart Wi-Fi Router
Model No.	:	K3C
FCC ID	:	YJYK3C

Applicant	:	Phicomm (Shanghai) Co., Ltd.
Address	:	NO.3666,Sixian Rd.,Songjiang District, Shanghai, P.R.China

Date of Receipt	:	Jul. 24th, 2017
Test Date	:	May. 17th, 2017~ Jul. 10th, 2017
Issued Date	:	Aug. 16th, 2017
Report No.	:	1772153R-RF-US-P06V01
Report Version	:	V1.0

Note: This report is based on Dekra report No. 1722077R-RF-US-P06V01, it added beamforming of 802.11n, so we added the data of 802.11n BF.

Test Report Certification

Issued Date : Aug. 16th, 2017
Report No. : 1772153R-RF-US-P06V01

Product Name	:	AC1900 Smart Wi-Fi Router
Applicant	:	Phicomm (Shanghai) Co., Ltd.
Address	:	NO.3666,Sixian Rd.,Songjiang District, Shanghai, P.R.China
Manufacturer	:	Phicomm (Shanghai) Co., Ltd.
Address	:	NO.3666,Sixian Rd.,Songjiang District, Shanghai, P.R.China
Factory	:	Phicomm (Shanghai) Co., Ltd.
Address	:	NO.3666,Sixian Rd.,Songjiang District, Shanghai, P.R.China
Model No.	:	K3C
FCC ID	:	YJYK3C
EUT Voltage	:	DC 12V
Test Voltage		AC 120V/60Hz
Brand Name	:	PHICOMM
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C: 2015 ANSI C63.4:2014; ANSI C63.10:2013; KDB 558074 D01v04
Test Result	:	Complied
Performed Location	:	DEKRA Testing & Certification (Suzhou) Co., Ltd. No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Registration Number: 800392

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(Engineering Manager: Harry Zhao)

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1772153R-RF-US-P06V01	V1.0	Initial Issued Report	Aug. 16th, 2017

1. General Information

1.1. EUT Description

Product Name	AC1900 Smart Wi-Fi Router
Model No.	K3C
EUT Voltage	DC 12V
Test Voltage	AC 120V / 60Hz
Frequency Range	For 2.4GHz Band 802.11b/g/n(20MHz): 2412~2462MHz 802.11n(40MHz): 2422~2452MHz
Channel Number	For 2.4GHz Band n(20MHz): 11 802.11n(40MHz): 7
Type of Modulation	802.11n: OFDM
Data Rate	802.11n: up to 600 Mbps
Channel Control	Auto

1.2. Working Frequency of Each Channel:

802.11n(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz	04	2427 MHz
05	2432 MHz	06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	10	2457 MHz	11	2462 MHz	N/A	N/A
802.11n(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
03	2422 MHz	04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz	N/A	N/A

1.3. Antenna information

Antenna manufacturer	N/A						
Antenna Delivery	☐	1*TX+1*RX		☐	2*TX+2*RX	☒	3*TX+3*RX
Antenna technology	☒	MIMO for 802.11n	☐	Basic			
			☒	CDD			
			☒	Beam-forming			
Antenna Type	☐	External	☐	Dipole			
	☒	Internal	☐	PIFA			
			☒	PCB			
			☐	Ceramic Chip Antenna			
			☐	Metal plate type F antenna			
Antenna Gain #1	4dBi						
Antenna Gain #2	4dBi						
Antenna Gain #3	4dBi						
Beam-forming Gain	Power : 8.77dBi						
	PSD : 8.77dBi						

1.4. Mode of Operation

Test Modes List
Mode 1: Transmit by 802.11n(20MHz) With Beamforming
Mode 2: Transmit by 802.11n(40MHz) With Beamforming

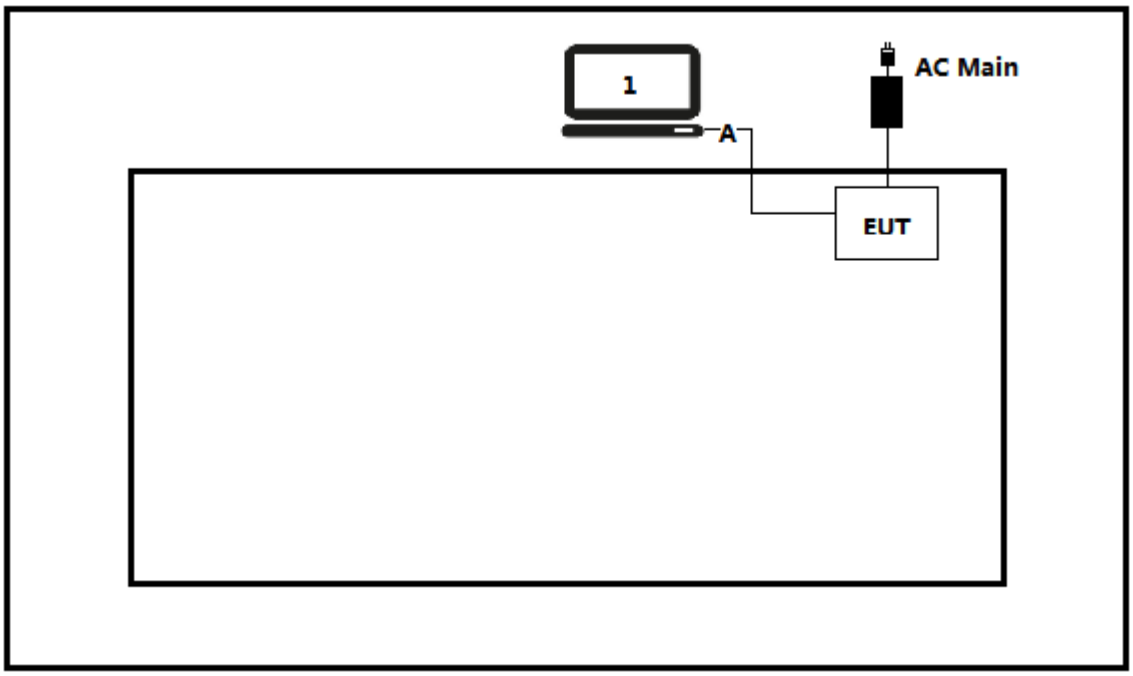
1.5. Tested System Details

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

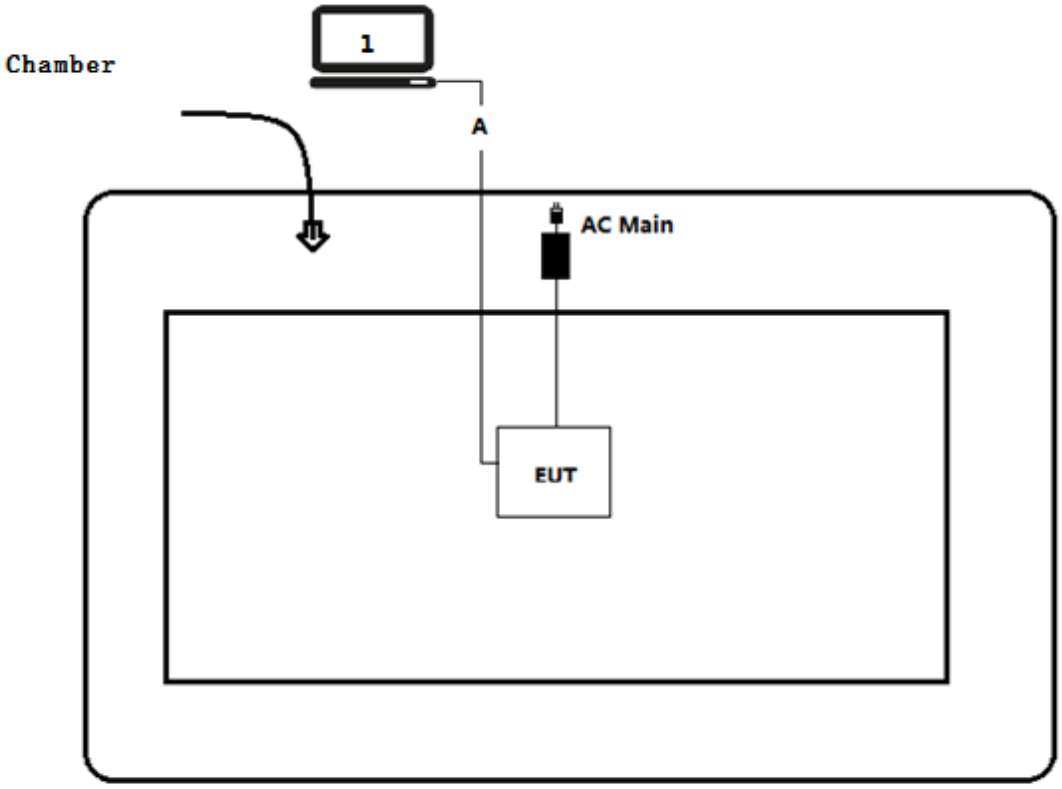
No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Lenovo	Think pad x220	SUA0600195	Non-shielded

1.6. Configuration of Tested System

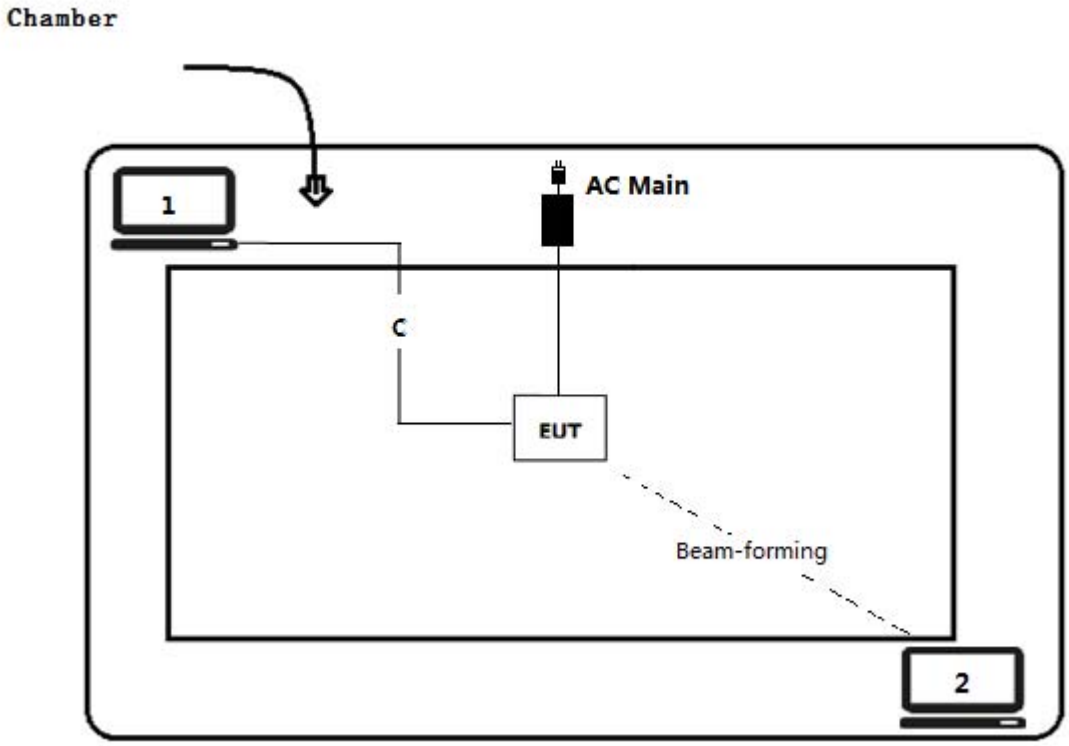
Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



Test setup Diagram- Radiated Emission



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

2. Technical Test

2.1. Summary of Test Result

Performed Test Item	Normative References	Worst case mode	Limit	Result
AC Power Line Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.207	Mode 1	FCC 15.207	PASS
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.209	Mode 1	FCC 15.209	PASS
Emissions in non-restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(d)	Mode 1	⩾20dBc	PASS
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2015 15.247(d)	Mode 1	FCC 15.209	PASS
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(2)	Mode 1	⩾500kHz	PASS
Fundamental emission output power	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(b)(3)	Mode 1	⩽30dBm	PASS
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(e)	Mode 1	⩽8dBm/3kHz	PASS
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.203	N/A	FCC 15.203	PASS

2.2. Power setting parameter

Test Software	Lantiq DUT				
Modulation Mode	Test Frequency	Ant 1	Ant 2	Ant 3	Ant 1+2+3
802.11n(20MHz) with Beamforming	2412	-	-		11
	2437	-	-		18
	2462	-	-		11
802.11n(40MHz) with Beamforming	2422	-	-		10
	2437	-	-		14
	2452	-	-		11

2.3. Transmit description

Modulation Mode	Ant 1	Ant 2	Ant 3	Ant 1+2+3
802.11n(20MHz) with Beamforming	×	×	×	√
802.11n(40MHz) with Beamforming	×	×	×	√

2.4. Test Frequency configuration:

Modulation Mode	Channel	Frequency	Channel	Frequency	Channel	Frequency
802.11n(20MHz)	01	2412 MHz	06	2437 MHz	11	2462MHz
802.11n(40MHz)	03	2422 MHz	06	2437 MHz	09	2452MHz

2.5. Power vs Data Rate

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)						
		802.11b	802.11g		20MHz Bandwidth		40MHz Bandwidth	
					800ns GI	400ns GI	800ns GI	400ns GI
0	1	1	6	---	6.5	7.2	13.5	15.0
1	1	2	9	---	13.0	14.4	27.0	30.0
2	1	5.5	12	---	19.5	21.7	40.5	45.0
3	1	11	18	---	26.0	28.9	54.0	60.0
4	1	---	24	---	39.0	43.3	81.0	90.0
5	1	---	36	---	52.0	57.8	108.0	120.0
6	1	---	48	---	58.5	65.0	121.5	135.0
7	1	---	54	---	65.0	72.2	135.0	150.0
8	1	---	---	---	78.0	86.7	162.0	180.0
9	1	---	---	---	N/A	N/A	180.0	200.0
10	2	---	---	---	13.0	14.4	27.0	30.0
11	2	---	---	---	26.0	28.8	54.0	60.0
12	2	---	---	---	39.0	43.4	81.0	90.0
13	2	---	---	---	52.0	57.8	108.0	120.0
14	2	---	---	---	78.0	86.6	162.0	180.0
15	2	---	---	---	104.0	115.6	216.0	240.0
16	2	---	---	---	117.0	130.0	243.0	270.0
17	2	---	---	---	130.0	144.4	270.0	300.0
18	2	---	---	---	156.0	173.4	324.0	360.0
19	2	---	---	---	N/A	N/A	360.0	400.0
20	3	---	---	---	19.5	21.6	40.5	45.0
21	3	---	---	---	39.0	43.2	81.0	90.0
22	3	---	---	---	58.5	65.1	121.5	135.0
23	3	---	---	---	78.0	86.7	162.0	180.0
24	3	---	---	---	117.0	129.9	243.0	270.0
25	3	---	---	---	156.0	173.4	324.0	360.0
26	3	---	---	---	175.5	195.0	364.5	405.0
27	3	---	---	---	195.0	216.6	405.0	450.0
28	3	---	---	---	234.0	260.1	486.0	540.0
29	3	---	---	---	N/A	N/A	540.0	600.0

Note 1 : The blue form is the maximum power data rate
Note 2 : The EUT has three spatial Streams

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. Measurement Uncertainty

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

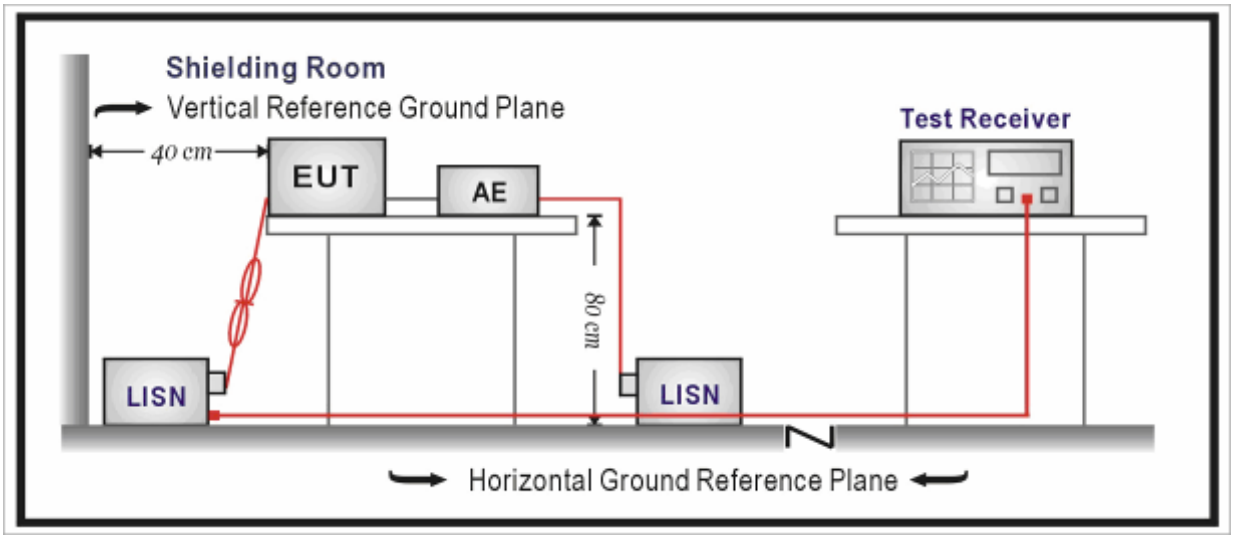
3. AC Power Line Conducted Emission

3.1. Test Equipment

AC Power Line Conducted Emission / TR-1					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100906	2017.03.05	2018.03.05
Two-Line V-Network	R&S	ENV 216	101189	2016.07.16	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	2017.01.05	2018.01.05
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

3.2. Test Setup

AC Power Line Conducted Emission test setup



3.3. Limit

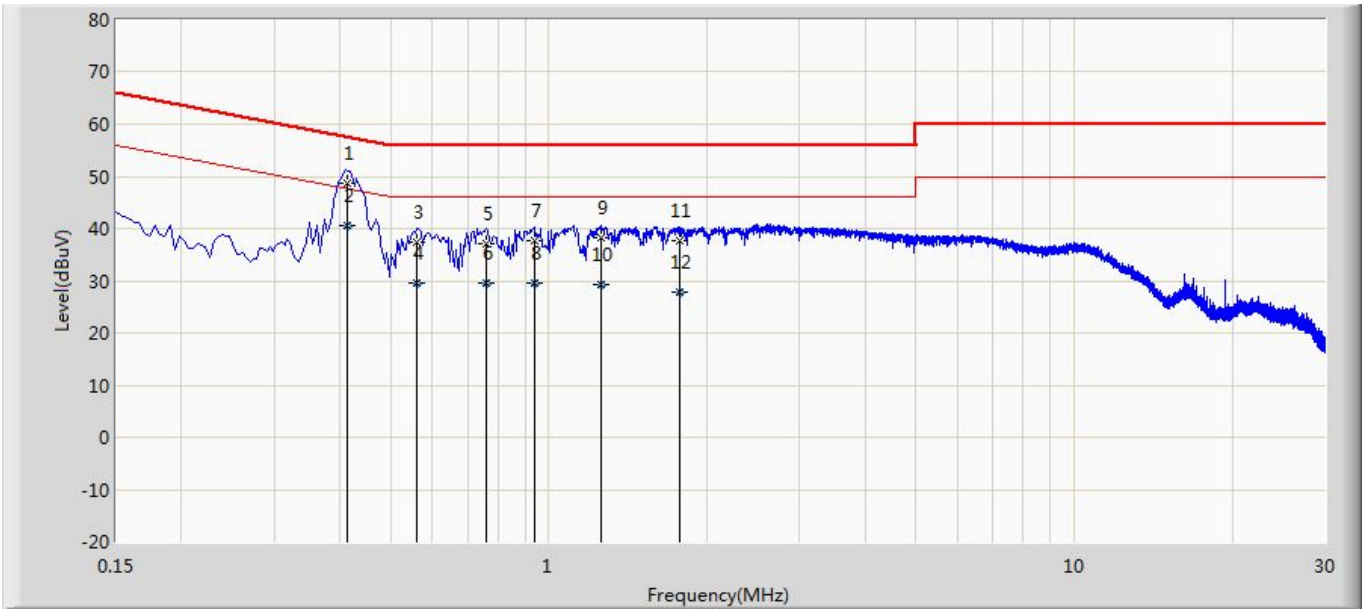
Frequency of Emission (MHz)	Conducted Limit	
	Quasi-peak (dBμV)	Average(dBμV)
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.		

3.4. Test Procedure

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

3.5. Test Result

Site: TR1	Time: 2017/05/26
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216-L1	Polarity: Line
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2412MHz by 802.11n20	

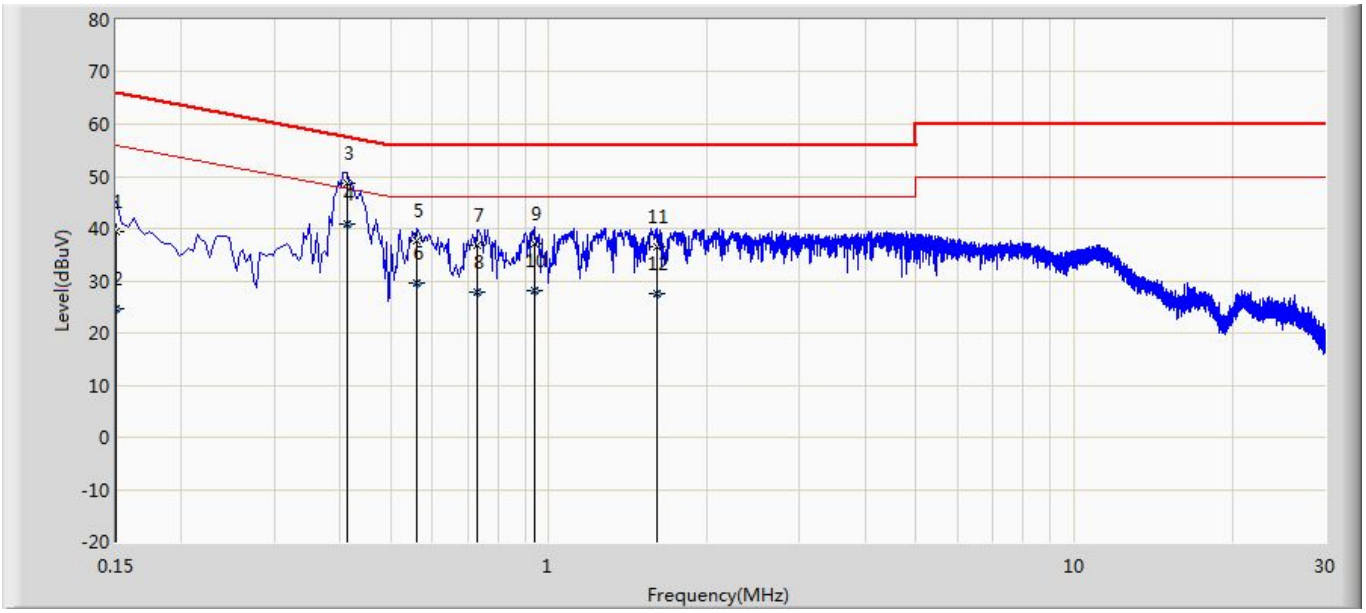


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.414	48.577	38.938	-8.991	57.568	9.600	0.039	0.000	QP
2	*	0.414	40.718	31.079	-6.850	47.568	9.600	0.039	0.000	AV
3		0.562	37.517	27.871	-18.483	56.000	9.600	0.045	0.000	QP
4		0.562	29.468	19.823	-16.532	46.000	9.600	0.045	0.000	AV
5		0.762	37.237	27.583	-18.763	56.000	9.602	0.052	0.000	QP
6		0.762	29.458	19.804	-16.542	46.000	9.602	0.052	0.000	AV
7		0.938	37.581	27.916	-18.419	56.000	9.608	0.056	0.000	QP
8		0.938	29.655	19.990	-16.345	46.000	9.608	0.056	0.000	AV
9		1.258	38.247	28.573	-17.753	56.000	9.610	0.064	0.000	QP
10		1.258	29.355	19.681	-16.645	46.000	9.610	0.064	0.000	AV
11		1.774	37.791	28.097	-18.209	56.000	9.610	0.084	0.000	QP
12		1.774	27.860	18.166	-18.140	46.000	9.610	0.084	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: 2017/05/26
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216-N	Polarity: Neutral
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2412MHz by 802.11n20	



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	39.490	29.876	-26.510	66.000	9.594	0.021	0.000	QP
2		0.150	24.749	15.135	-31.251	56.000	9.594	0.021	0.000	AV
3		0.414	48.790	39.158	-8.778	57.568	9.592	0.039	0.000	QP
4	*	0.414	40.927	31.296	-6.640	47.568	9.592	0.039	0.000	AV
5		0.562	37.629	27.994	-18.371	56.000	9.590	0.045	0.000	QP
6		0.562	29.690	20.055	-16.310	46.000	9.590	0.045	0.000	AV
7		0.730	36.777	27.135	-19.223	56.000	9.590	0.052	0.000	QP
8		0.730	27.720	18.078	-18.280	46.000	9.590	0.052	0.000	AV
9		0.942	37.229	27.581	-18.771	56.000	9.590	0.058	0.000	QP
10		0.942	28.260	18.612	-17.740	46.000	9.590	0.058	0.000	AV
11		1.602	36.525	26.842	-19.475	56.000	9.602	0.080	0.000	QP
12		1.602	27.554	17.872	-18.446	46.000	9.602	0.080	0.000	AV

Note:

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

4. Emissions in restricted frequency bands

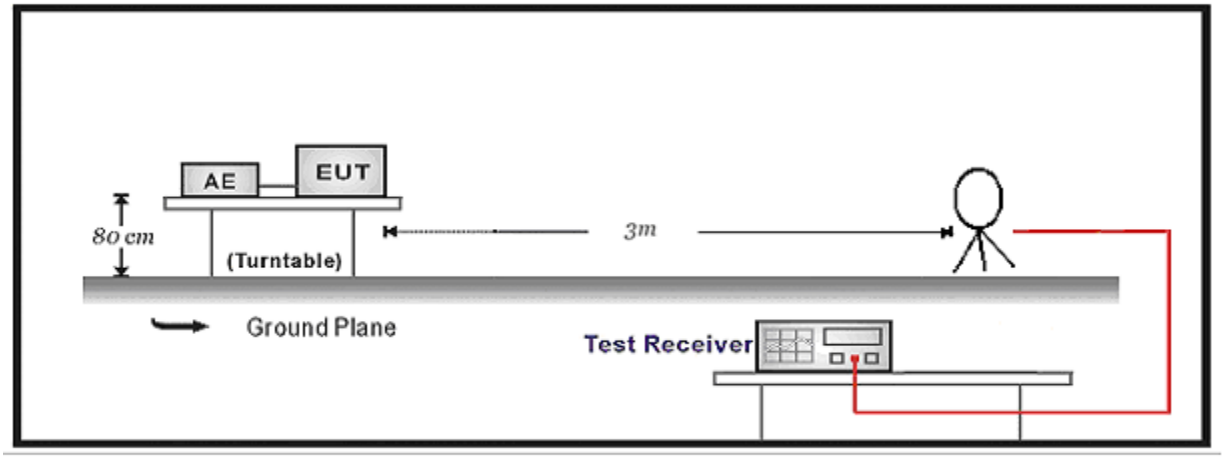
4.1. Test Equipment

Radiated Emission(Below 1GHz) / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2017.03.29	2018.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2016.11.16	2017.11.17
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2016.10.16	2017.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2017.03.02	2018.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2017.01.04	2018.01.03
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

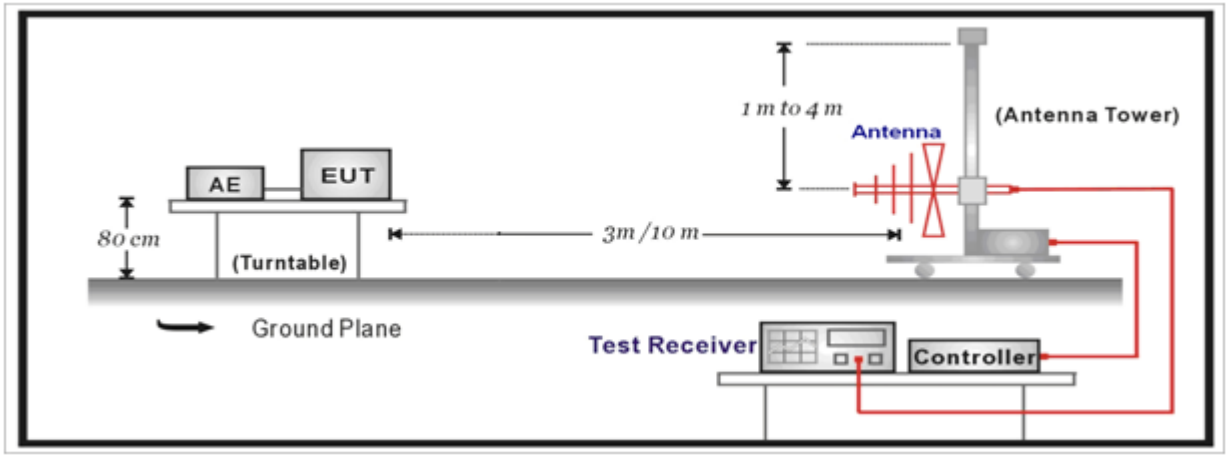
Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2017.01.04	2018.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2017.05.06	2018.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2017.05.06	2018.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2017.01.22	2018.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2016.11.25	2017.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2017.03.02	2018.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2017.03.02	2018.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2017.03.02	2018.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2017.06.10	2018.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2017.01.04	2018.01.03
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

4.2. Test Setup

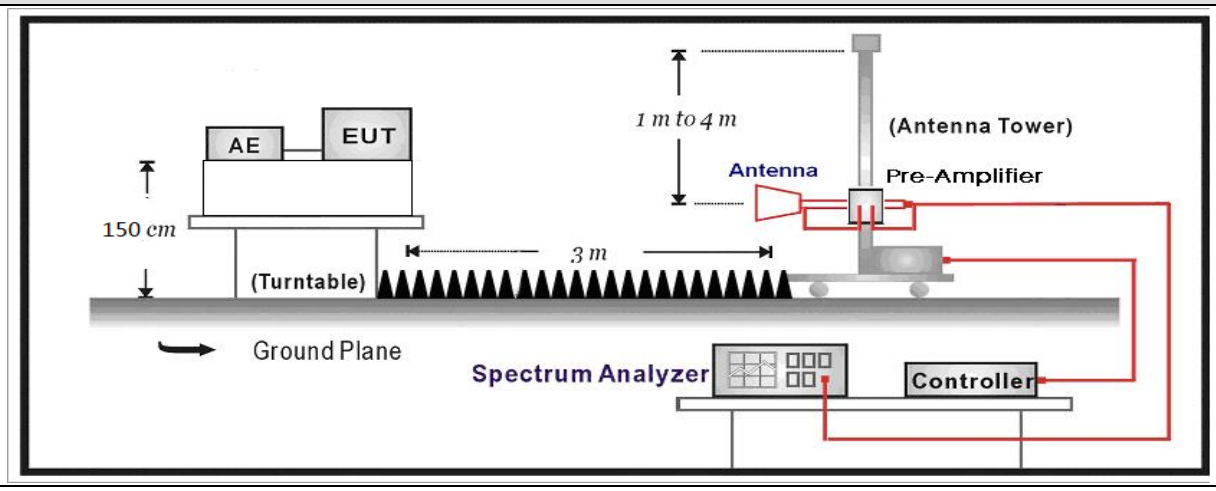
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

Restricted Bands of operation			
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			

Restricted Band Emissions Limit			
Frequency (MHz)	Field strength (μ V/m)	Field strength (dB μ V/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30(Note 1)
1.705 - 30	30	29.5	30(Note 1)
30 - 88	100	40	3(Note 2)
88 - 216	150	43.5	3(Note 2)
216 - 960	200	46	3(Note 2)
Above 960	500	54	3(Note 2)

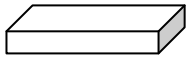
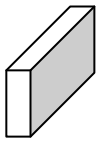
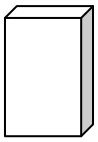
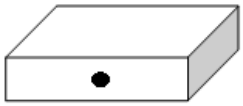
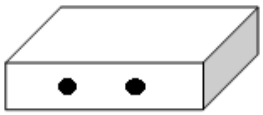
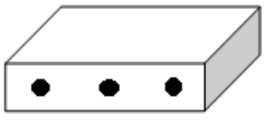
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed 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).

4.4. Test Procedure

Test Method						
	References Rule				Chapter	Description
☐	ANSI C63.10				11.11	Emissions in non-restricted frequency bands
	☐	ANSI C63.10			11.11.2	Reference level measurement
	☐	ANSI C63.10			11.11.3	Emission level measurement
☒	ANSI C63.10				11.12	Emissions in restricted frequency bands
	☒	ANSI C63.10			11.12.1	Radiated emission measurements
	☒	ANSI C63.10			11.12.2.7	Radiated spurious emission test
		☒	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
		☐	ANSI C63.10		11.12.2.3	Quasi-peak measurement procedure
		☒	ANSI C63.10		11.12.2.4	Peak power measurement procedure
		☒	ANSI C63.10		11.12.2.5	Average power measurement procedures
			☐	ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
			☐	ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
			☒	ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

4.5. EUT test Axis definition

<table>
<tr><td>Item</td><td colspan="4">Emissions in restricted frequency bands</td></tr>
<tr><td rowspan="2">Device Category</td><td>☒</td><td colspan="3">Fixed position use</td></tr>
<tr><td>☐</td><td colspan="3">Mobile position use</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1~2</td></tr>
<tr><td rowspan="11">Test method</td><td>☒</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☒</td></tr>
<tr><td>☐</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td colspan="2">Chain 2</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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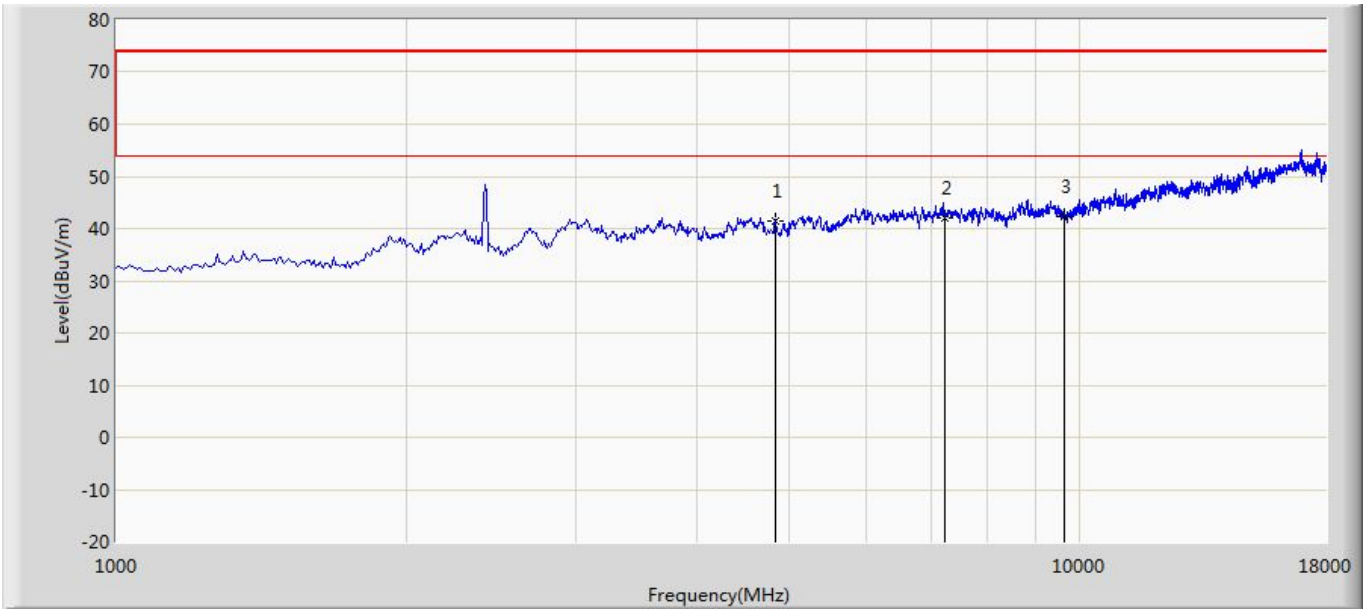
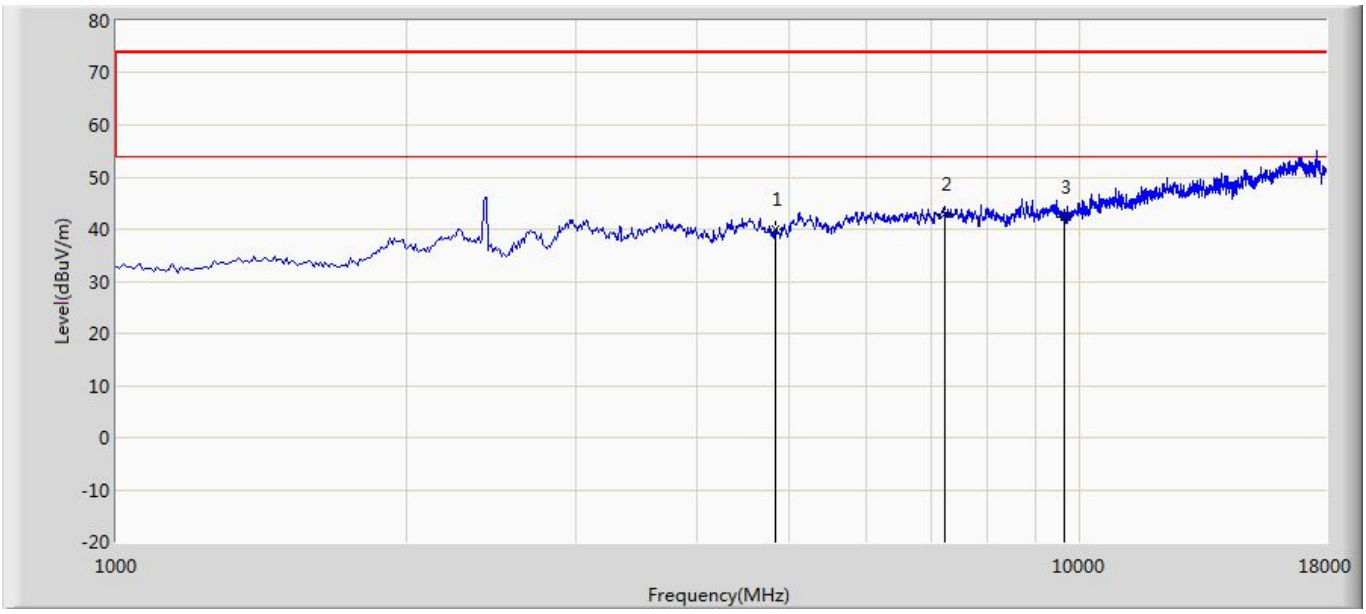
4.6. Test Result

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 15:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11n20	



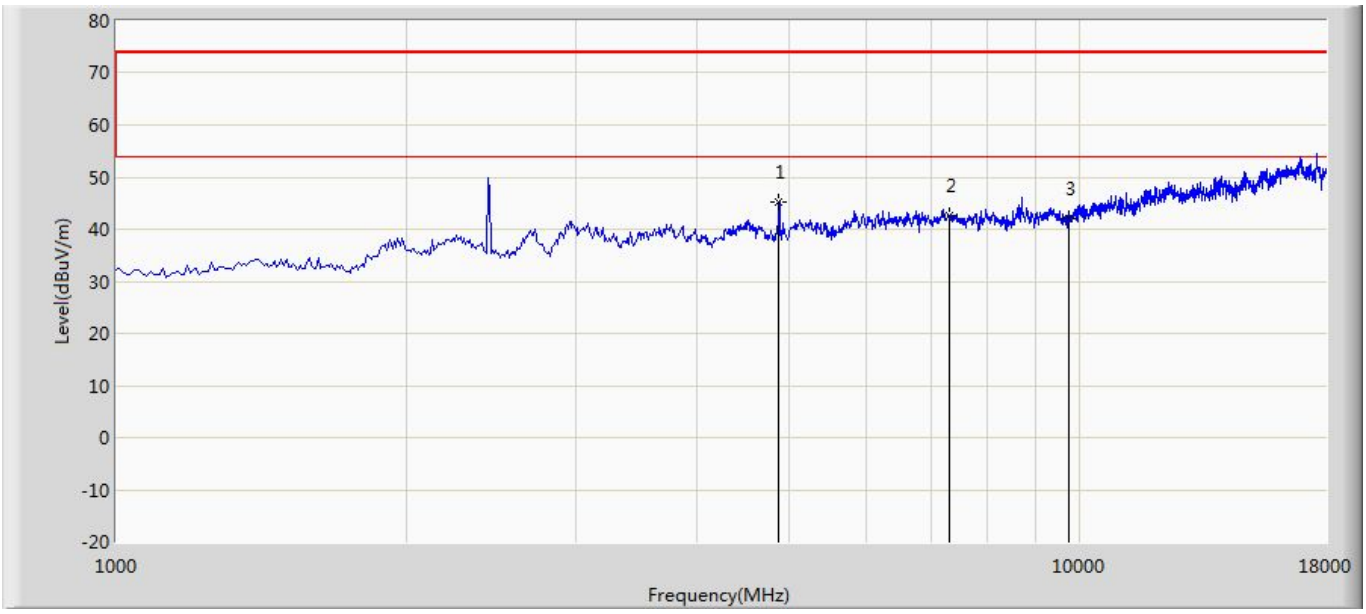
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	41.549	43.110	-32.451	74.000	-1.561	PK
2		7236.000	42.096	39.772	-31.904	74.000	2.323	PK
3	*	9648.000	42.189	38.161	-31.811	74.000	4.028	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11n20	



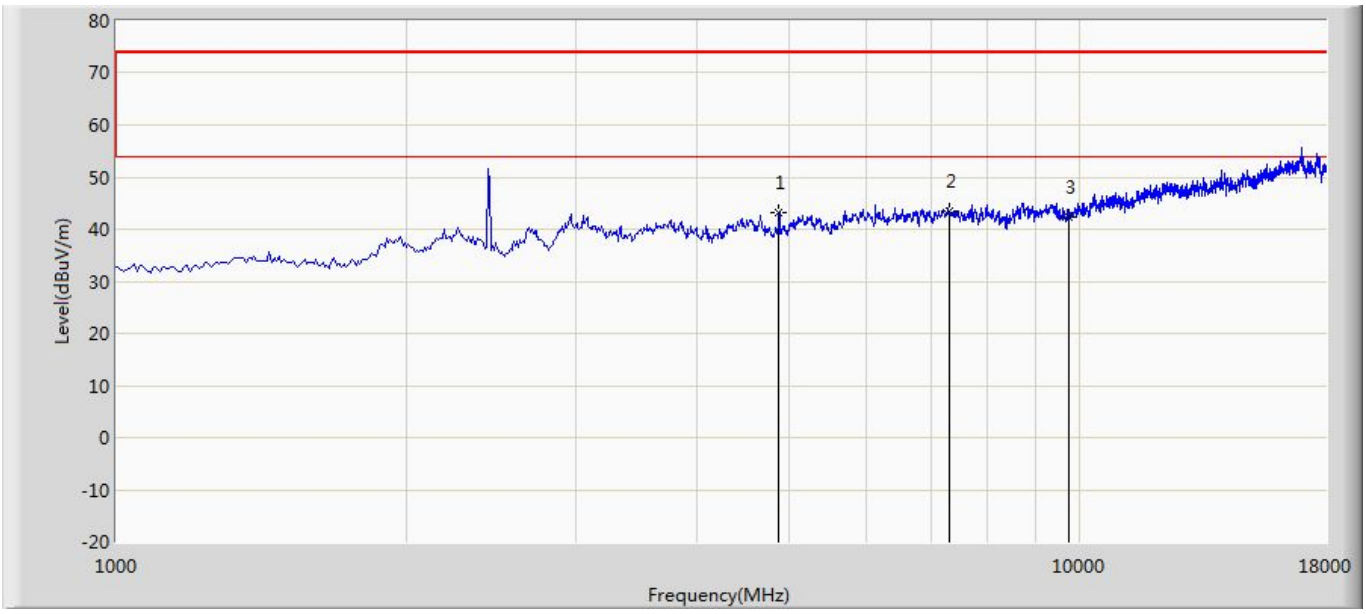
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4824.000	39.861	41.422	-34.139	74.000	-1.561	PK
2	*	7236.000	42.856	40.532	-31.144	74.000	2.323	PK
3		9648.000	42.192	38.164	-31.808	74.000	4.028	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11n20	



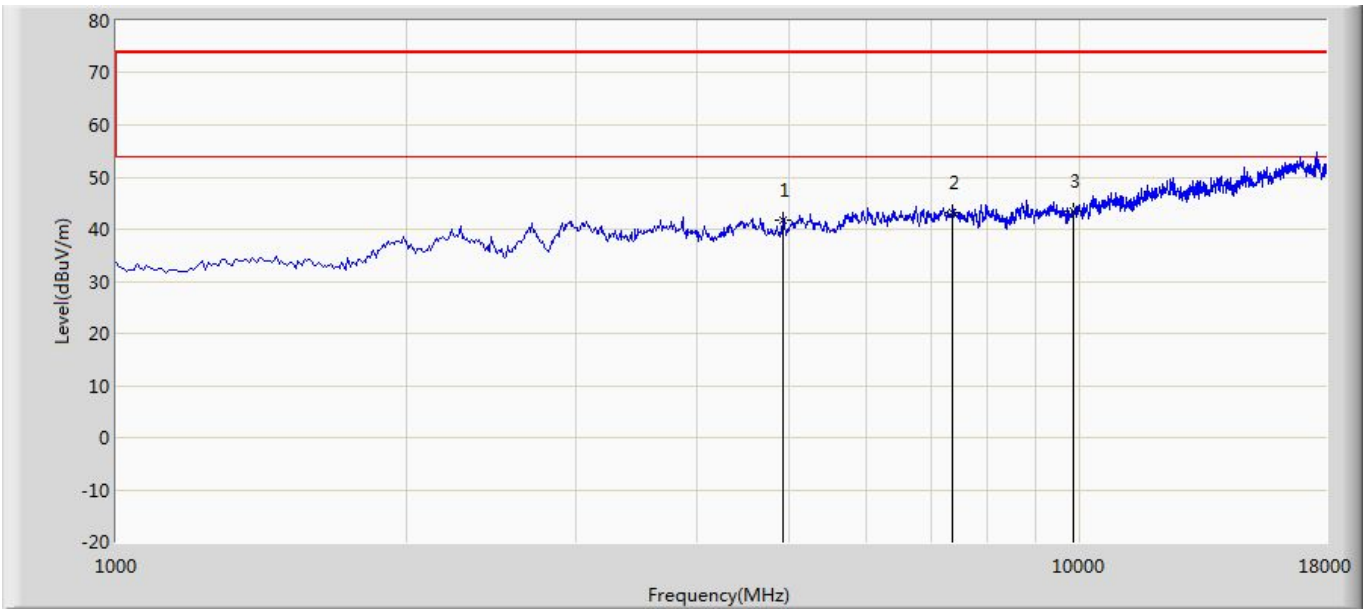
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	4874.000	45.079	46.691	-28.921	74.000	-1.612	PK
2		7311.000	42.584	39.709	-31.416	74.000	2.875	PK
3		9748.000	41.990	37.776	-32.010	74.000	4.214	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11n20	



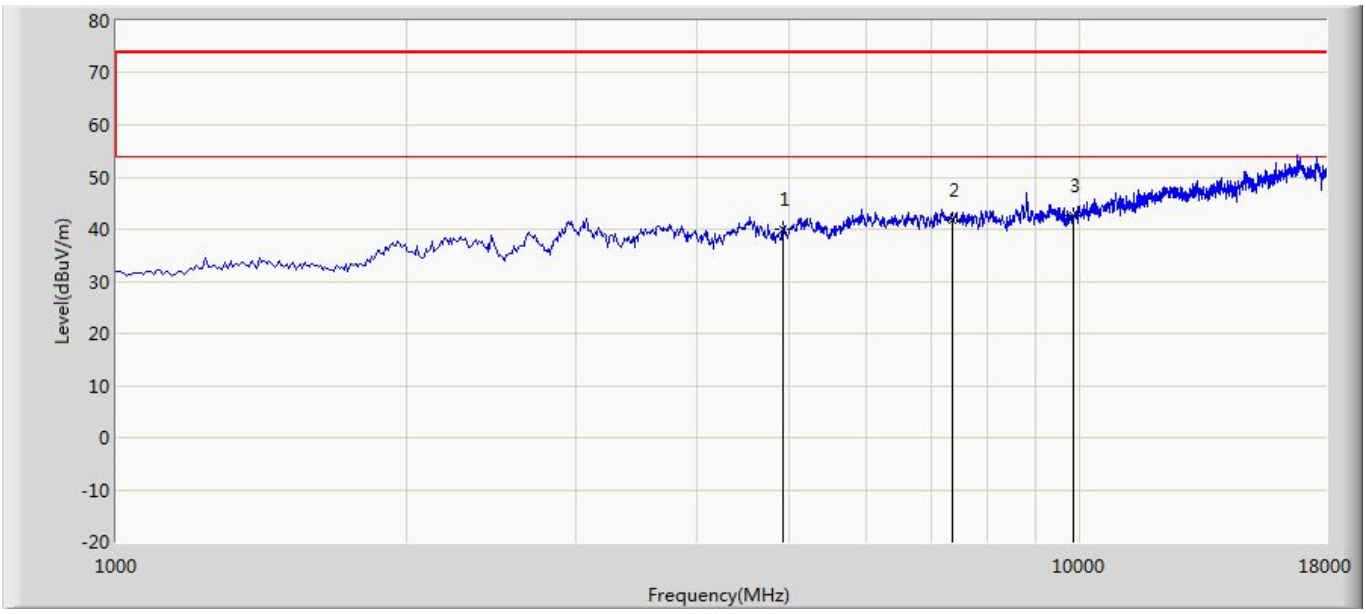
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	43.280	44.892	-30.720	74.000	-1.612	PK
2	*	7311.000	43.507	40.632	-30.493	74.000	2.875	PK
3		9748.000	42.202	37.988	-31.798	74.000	4.214	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11n20	



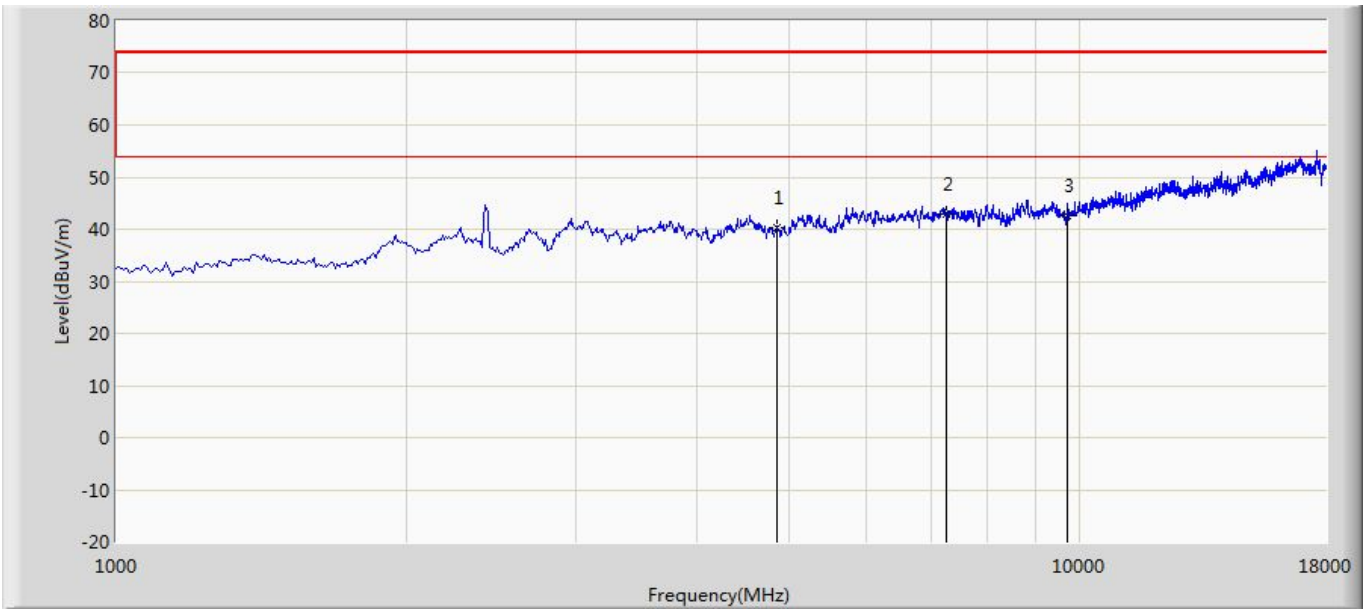
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	41.801	42.801	-32.199	74.000	-1.001	PK
2		7386.000	43.160	41.055	-30.840	74.000	2.105	PK
3	*	9848.000	43.390	38.320	-30.610	74.000	5.070	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11n20	



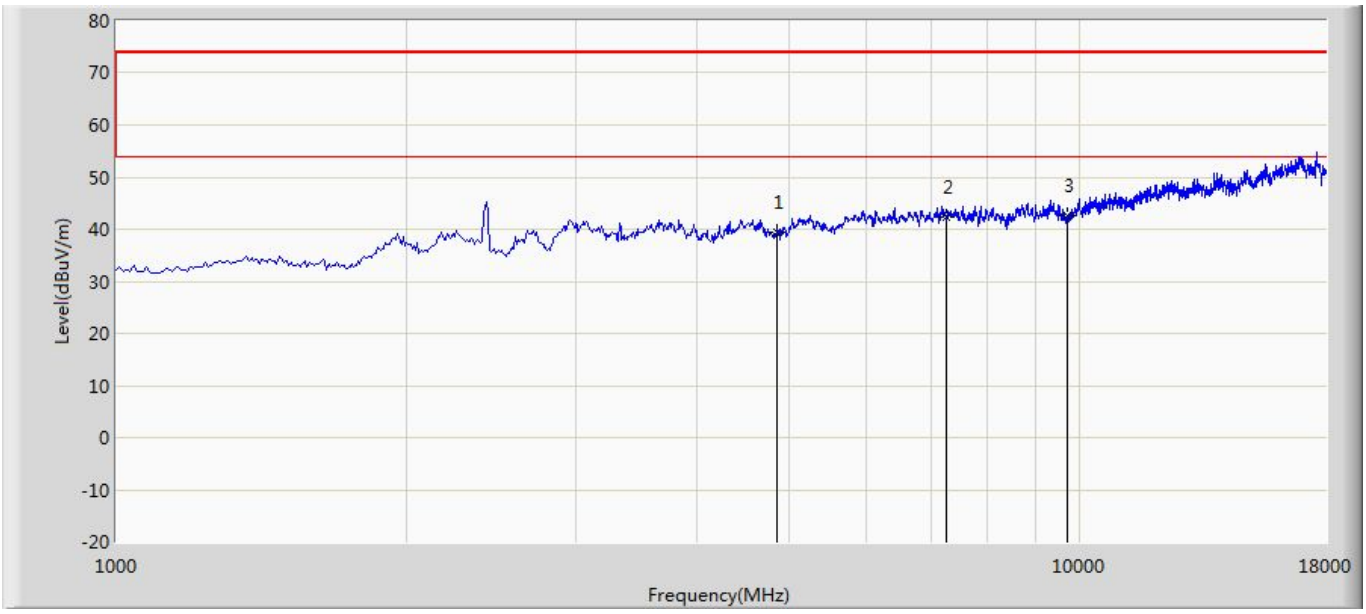
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4924.000	39.961	40.961	-34.039	74.000	-1.001	PK
2		7386.000	41.843	39.738	-32.157	74.000	2.105	PK
3	*	9848.000	42.562	37.492	-31.438	74.000	5.070	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2422MHz by 802.11n40	



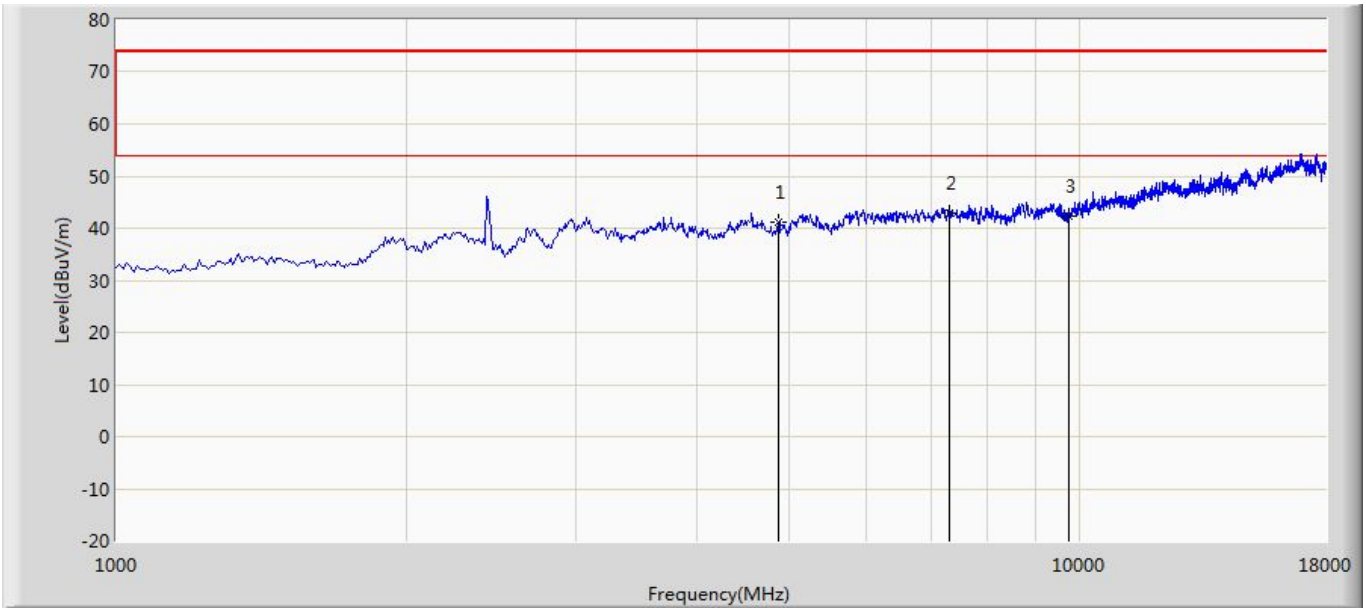
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	40.202	42.019	-33.798	74.000	-1.818	PK
2	*	7266.000	42.936	40.886	-31.064	74.000	2.050	PK
3		9688.000	42.669	37.939	-31.331	74.000	4.729	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2422MHz by 802.11n40	



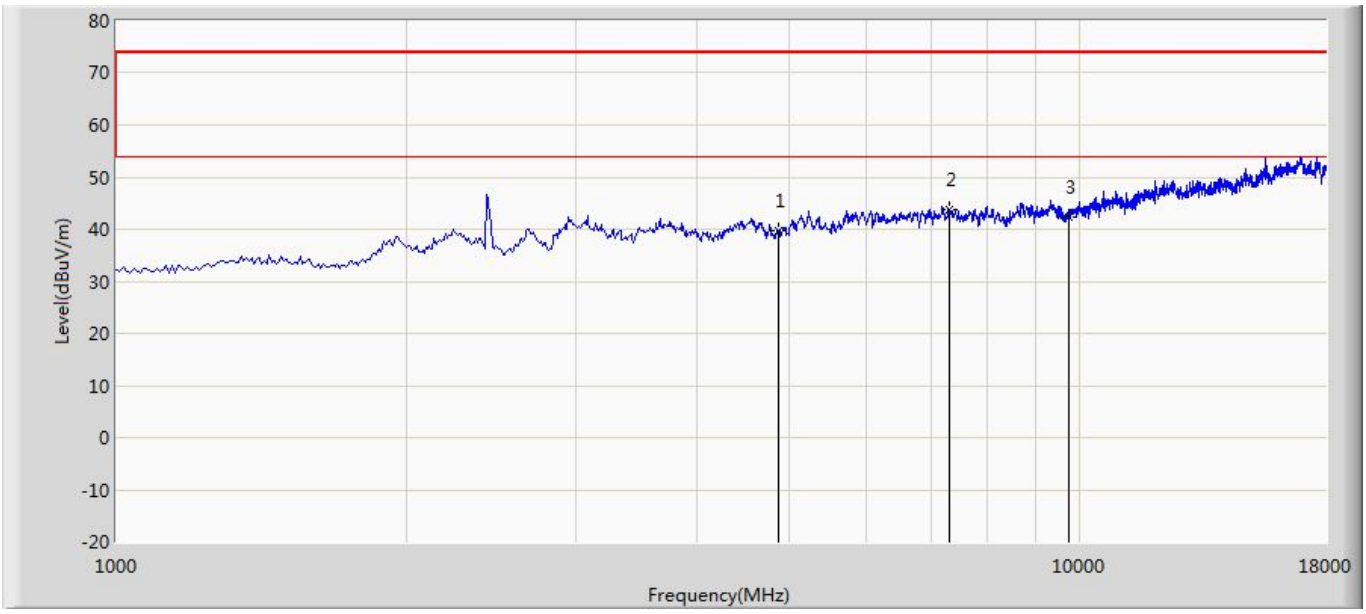
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4844.000	39.301	41.118	-34.699	74.000	-1.818	PK
2		7266.000	42.361	40.311	-31.639	74.000	2.050	PK
3	*	9688.000	42.465	37.735	-31.535	74.000	4.729	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11n40	



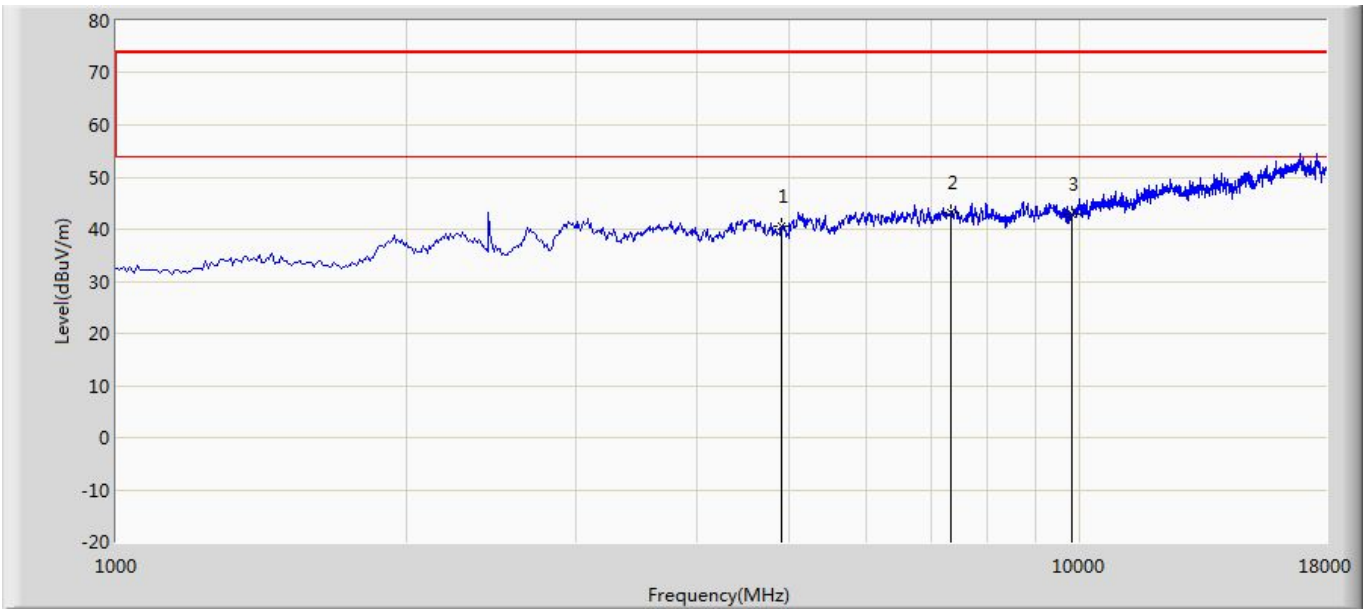
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	41.065	42.677	-32.935	74.000	-1.612	PK
2	*	7311.000	42.884	40.009	-31.116	74.000	2.875	PK
3		9748.000	42.195	37.981	-31.805	74.000	4.214	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11n40	



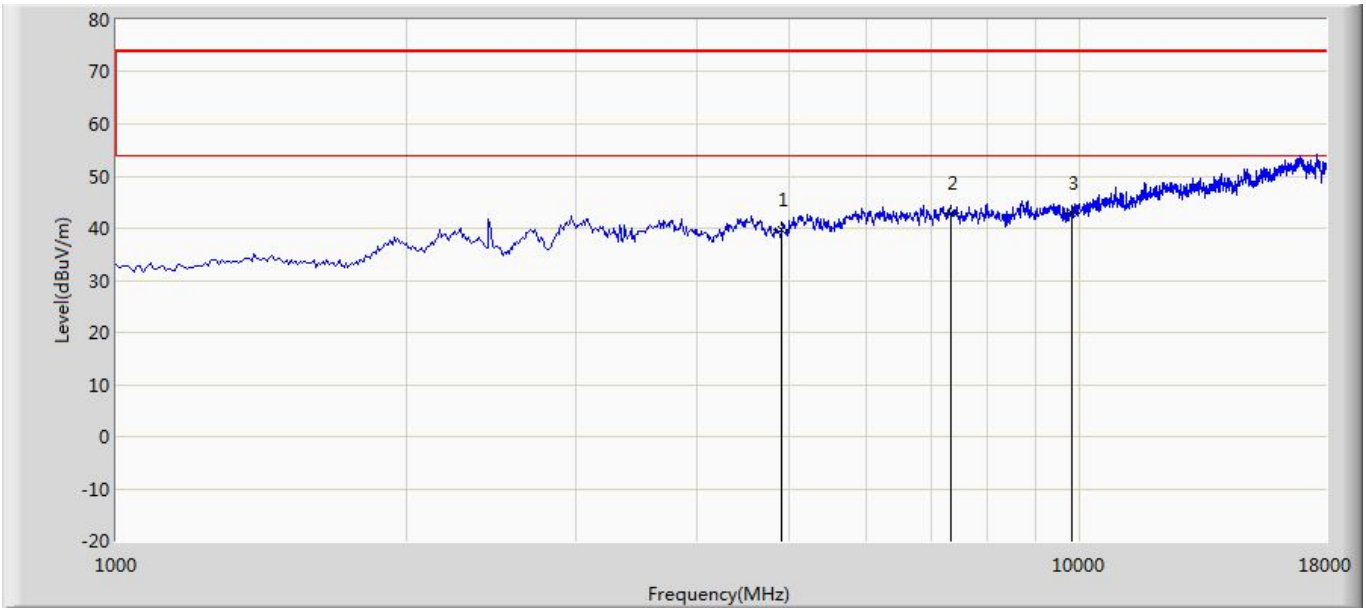
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4874.000	39.768	41.380	-34.232	74.000	-1.612	PK
2	*	7311.000	43.626	40.751	-30.374	74.000	2.875	PK
3		9748.000	42.427	38.213	-31.573	74.000	4.214	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2452MHz by 802.11n40	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	40.594	42.054	-33.406	74.000	-1.460	PK
2	*	7356.000	43.270	40.823	-30.730	74.000	2.447	PK
3		9808.000	42.927	37.999	-31.073	74.000	4.928	PK

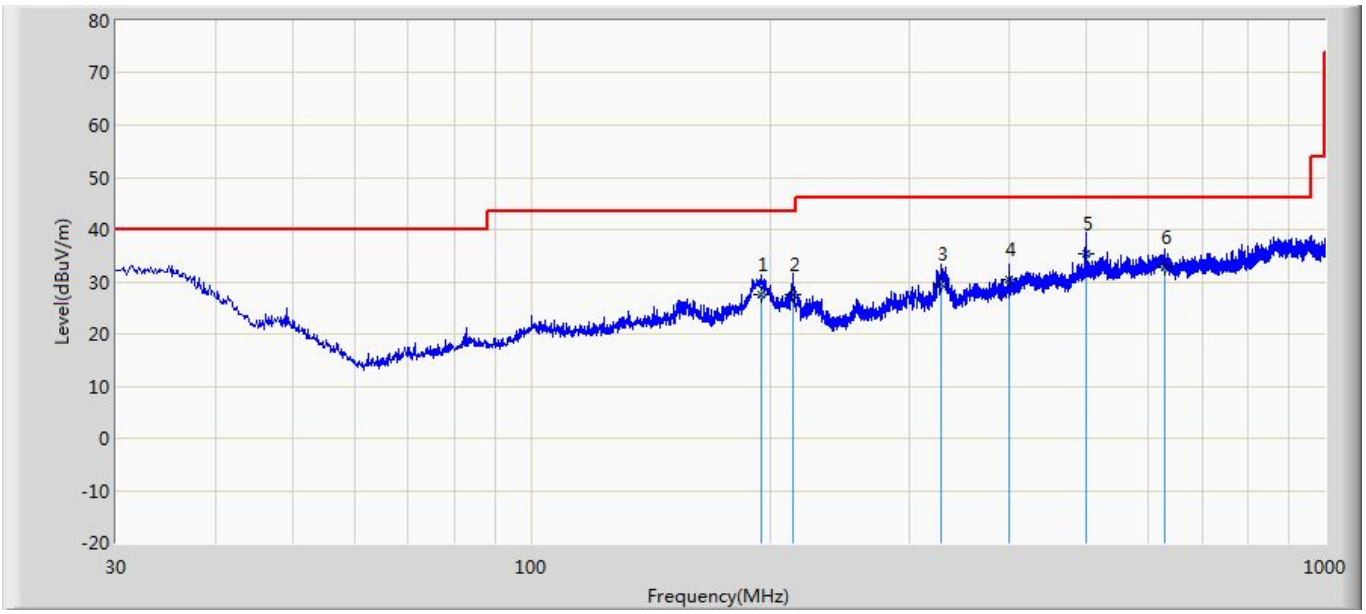
Engineer: Blank	
Site: AC5	Time: 2017/07/07 - 16:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2452MHz by 802.11n40	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4904.000	39.733	41.193	-34.267	74.000	-1.460	PK
2		7356.000	42.790	40.343	-31.210	74.000	2.447	PK
3	*	9808.000	42.905	37.977	-31.095	74.000	4.928	PK

The worst case of Radiated Emission below 1GHz:

Site: AC2	Time: 2017/05/19
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC2_CBL6112_0726	Polarity: Horizontal
EUT: AC1900 dual band gigabit wifi router	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2412MHz by 802.11n20	

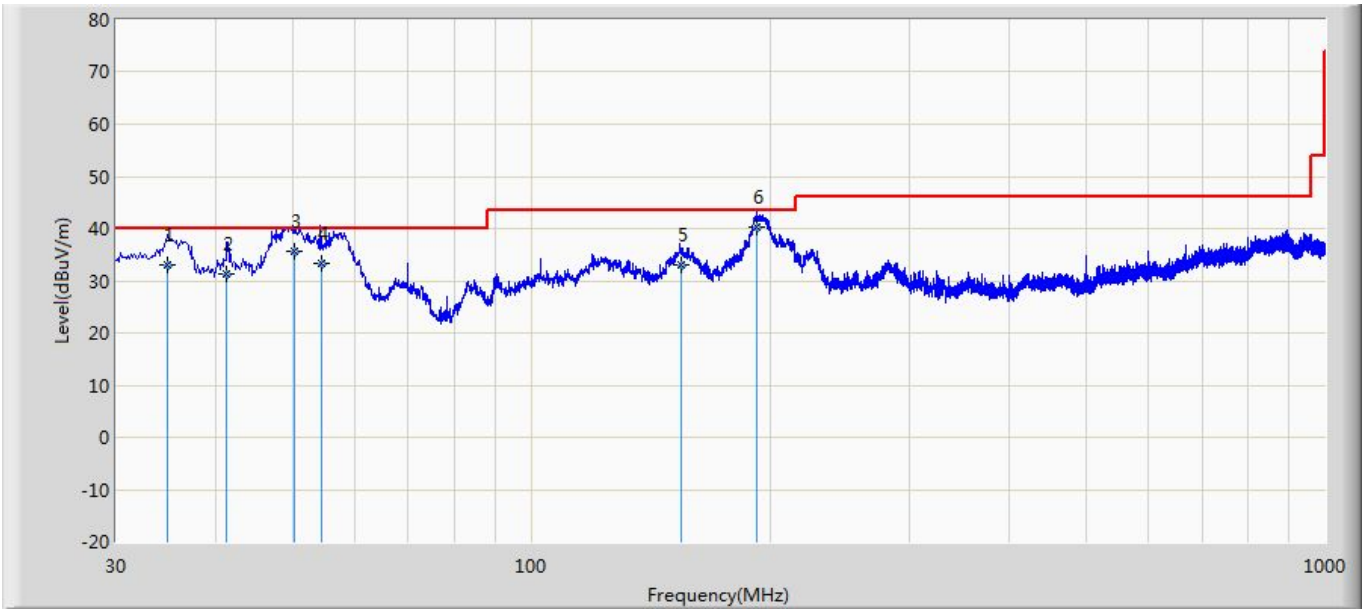


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		195.343	27.520	39.800	-15.980	43.500	9.360	1.520	23.160	100	120	QP
2		213.753	27.542	39.945	-15.958	43.500	9.237	1.580	23.220	100	210	QP
3		328.983	29.671	36.515	-16.329	46.000	14.154	1.962	22.960	200	320	QP
4		399.743	30.506	35.331	-15.494	46.000	15.993	2.212	23.030	100	331	QP
5	*	499.563	35.390	37.936	-10.610	46.000	17.794	2.420	22.760	100	166	QP
6		627.266	32.758	33.521	-13.242	46.000	19.000	2.750	22.513	100	87	QP

Note:

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

Site: AC2	Time: 2017/05/19
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC2_CBL6112_0726	Polarity: Vertical
EUT: AC1900 dual band gigabit wifi router	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2412MHz by 802.11n20	



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		34.864	33.076	39.627	-6.924	40.000	15.979	0.640	23.170	200	178	QP
2		41.388	31.316	41.673	-8.684	40.000	12.223	0.697	23.277	100	360	QP
3		50.289	35.517	49.628	-4.483	40.000	8.162	0.779	23.053	100	310	QP
4		54.354	33.330	48.089	-6.670	40.000	7.460	0.801	23.020	100	16	QP
5		154.243	33.136	44.551	-10.364	43.500	10.245	1.350	23.010	100	295	QP
6	*	192.746	40.196	52.556	-3.304	43.500	9.283	1.508	23.150	100	98	QP

Note:

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

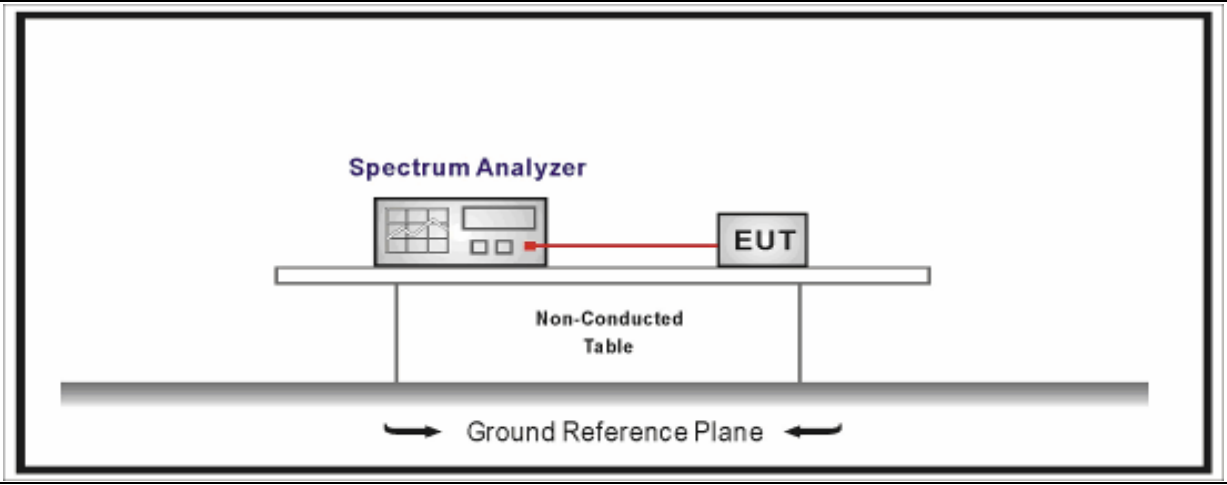
5. Emissions in non-restricted frequency bands

5.1. Test Equipment

Occupied Bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.04
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.09
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.09
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.10
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

5.2. Test Setup

Occupied Bandwidth test setup:



5.3. Limit

Un-Restricted Band Emissions Limit	
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30c(Note1)
RF Output power(PK detector)	20c(Note2)

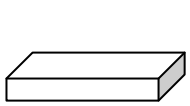
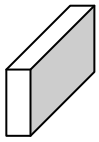
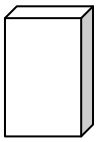
Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

5.4. Test Procedure

Test Method						
	References Rule				Chapter	Description
☒	ANSI C63.10				11.11	Emissions in non-restricted frequency bands
	☒	ANSI C63.10			11.11.2	Reference level measurement
	☒	ANSI C63.10			11.11.3	Emission level measurement
☐	ANSI C63.10				11.12	Emissions in restricted frequency bands
	☐	ANSI C63.10			11.12.1	Radiated emission measurements
	☐	ANSI C63.10			11.12.2.7	Radiated spurious emission test
☐	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
	☒	ANSI C63.10			11.12.2	Antenna-port conducted measurements
		☐	ANSI C63.10		11.12.2.3	Quasi-peak measurement procedure
		☒	ANSI C63.10		11.12.2.4	Peak power measurement procedure
		☐	ANSI C63.10		11.12.2.5	Average power measurement procedures
			☐	ANSI C63.10	11.12.2.5.1	Trace averaging with continuous EUT transmission at full power
			☐	ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
			☐	ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

5.5. EUT test Axis definition

<table>
<tr><td>Item</td><td colspan="4">Emissions in non-restricted frequency bands</td></tr>
<tr><td rowspan="2">Device Category</td><td>☒</td><td colspan="3">Fixed position use</td></tr>
<tr><td>☐</td><td colspan="3">Mobile position use</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1 ~ 2</td></tr>
<tr><td rowspan="12">Test method</td><td>☐</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☐</td></tr>
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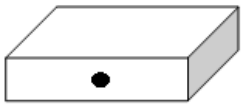
<tr><td></td><td colspan="3">  </td></tr>
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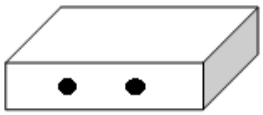
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☒</td><td>Chain 0</td><td>Chain 1</td><td>Chain 2</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
</table>

5.6. Test Result

Product Name	:	AC1900 Smart Wi-Fi Router	Power	:	AC 120V / 60Hz
Test Mode	:	Mode1~2	Test Site	:	TR8
Test Date	:	2017.07.10			

Antenna #1

Mode	Channel	Test Frequency (MHz)	In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	01	2412	5.844	2400	-28.774	34.618	>30	Pass
1	11	2462	0.819	2483.5	-50.237	51.056	>30	Pass
2	03	2422	0.876	2400	-31.507	32.383	>30	Pass
2	09	2452	-2.425	2483.5	-50.191	47.766	>30	Pass

Antenna #2

Mode	Channel	Test Frequency (MHz)	In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	01	2412	0.631	2400	-29.828	30.459	>30	Pass
1	11	2462	0.656	2483.5	-50.091	50.747	>30	Pass
2	03	2422	-3.062	2400	-33.554	30.492	>30	Pass
2	09	2452	-3.825	2483.5	-50.251	46.426	>30	Pass

Antenna #3

Mode	Channel	Test Frequency (MHz)	In-Band PSD[a] (dBm/100kHz)	Frequency (MHz)	Out-Band PSD[b] (dBm/100kHz)	[a]-[b] (dB)	Limit (dB)	Result
1	01	2412	1.598	2400	-31.207	32.805	>30	Pass
1	11	2462	0.616	2483.5	-49.780	50.396	>30	Pass
2	03	2422	-1.301	2400	-34.287	32.986	>30	Pass
2	09	2452	-3.038	2483.5	-50.519	47.481	>30	Pass

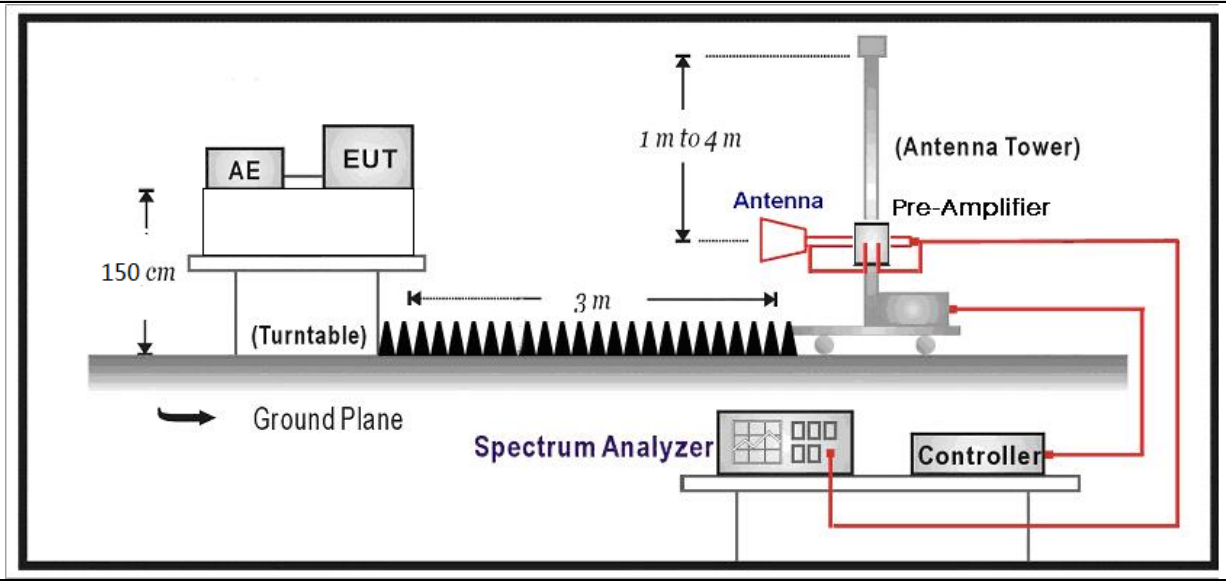
6. Radiated Emission Band Edge

6.1. Test Equipment

Radiated Emission(Above 1GHz) / 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	2017.05.03	2018.05.03
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	2017.02.28	2018.02.28
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2017.02.28	2018.02.28
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2017.01.05	2018.01.05
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

6.2. Test Setup

Above 1GHz Test Setup:



6.3. Limit

Band edge Limit				
Frequency bands (MHz)	Detector	Limit (dB μ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
2483.5-2500	AV	54	1	3
Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.				

6.4. Test Procedure

Test Method						
	References Rule				Chapter	Description
☒	ANSI C63.10				6.10	Band-edge testing
	☒	ANSI C63.10			6.10.5	Restricted-band band-edge measurements
	☐	ANSI C63.10			6.10.6	Marker-delta method
☒	ANSI C63.10				11.12	Emissions in restricted frequency bands
	☒	ANSI C63.10			11.12.1	Radiated emission measurements
	☒	ANSI C63.10			11.12.2.7	Radiated spurious emission test
☐	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
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			☐	ANSI C63.10	11.12.2.5.2	Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction
			☒	ANSI C63.10	11.12.2.5.3	Reduced VBW averaging across ON and OFF times of the EUT transmissions with max hold

6.5. EUT test definition

<table>
<tr><td>Item</td><td colspan="4">Emissions in non-restricted frequency bands</td></tr>
<tr><td rowspan="2">Device Category</td><td>☒</td><td colspan="3">Fixed position use</td></tr>
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<tr><td rowspan="11">Test method</td><td>☒</td><td colspan="3">Radiated</td></tr>
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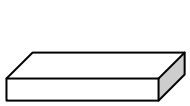
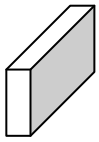
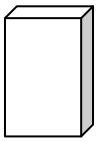
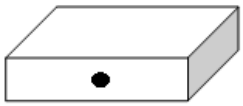
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☒</td></tr>
<tr><td>☐</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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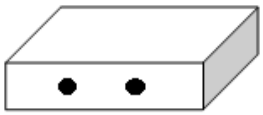
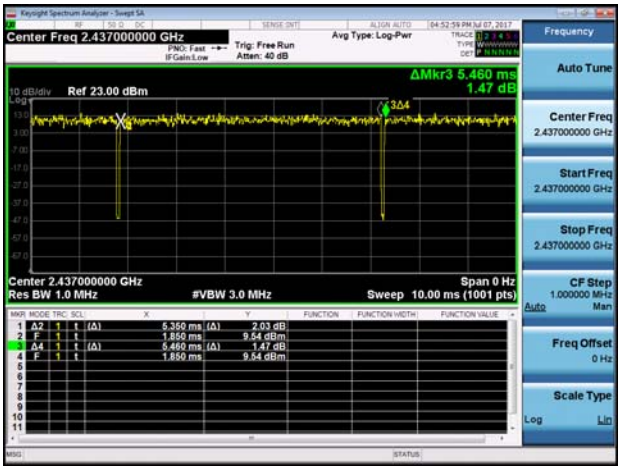
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
</table>

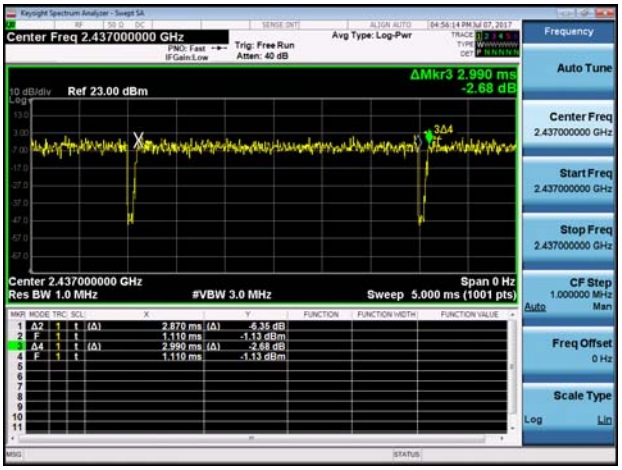
6.6. Duty Cycle

Test Mode	Tx On (ms)	Tx Off (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
802.11n(20MHz) with beamforming	5.35	0.11	510Hz	5.46	97.99%
802.11n(40MHz) with beamforming	2.87	0.12	510Hz	2.99	95.99%

802.11n(20MHz) with Beamforming

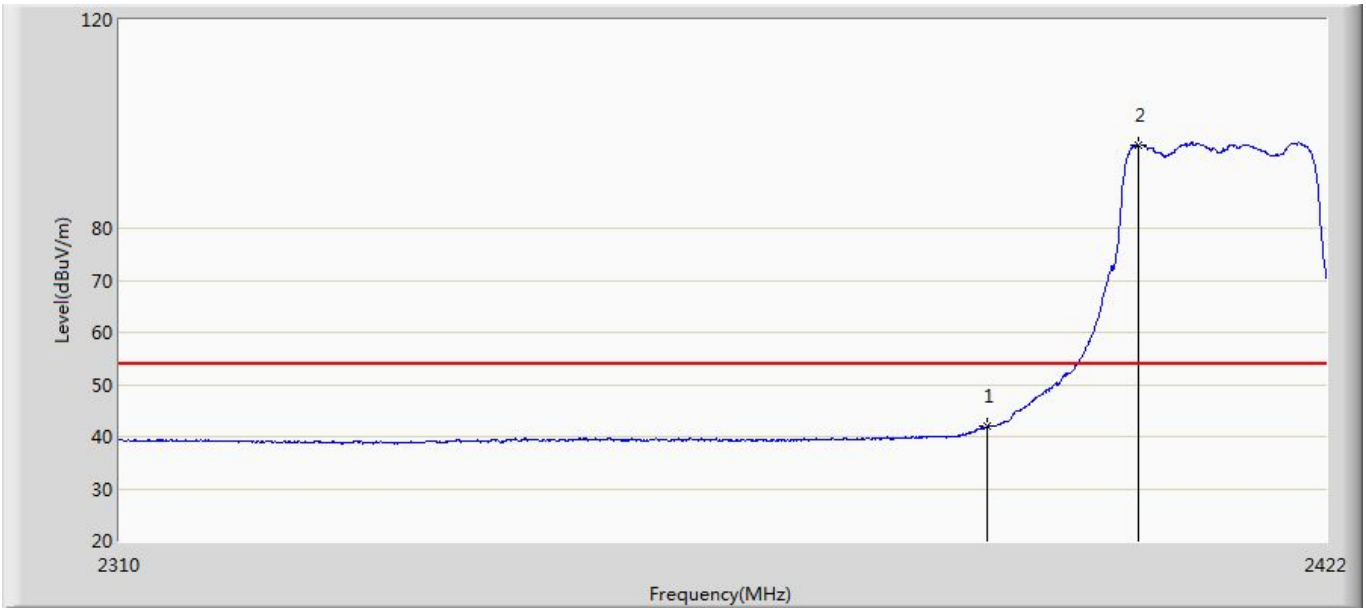


802.11n(40MHz) with Beamforming



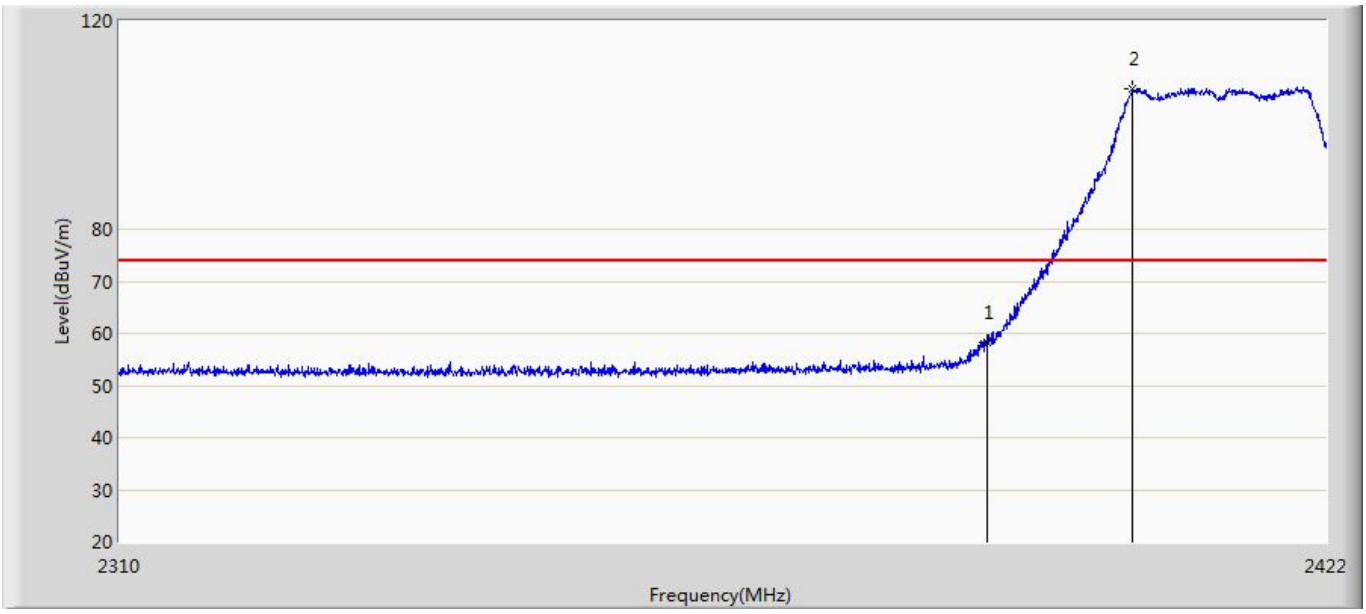
6.7. Test Result

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 13:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11n20	



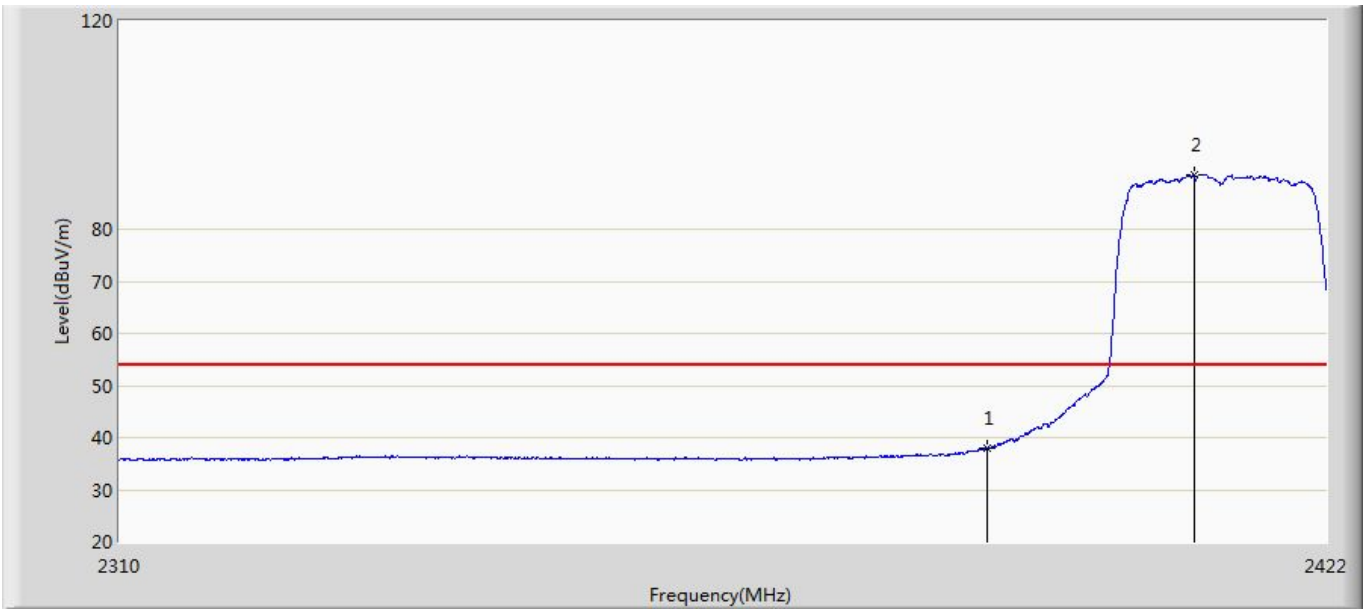
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	41.985	6.303	-12.015	54.000	35.682	AV
2	*	2404.248	96.005	60.286	N/A	N/A	35.719	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 13:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11n20	



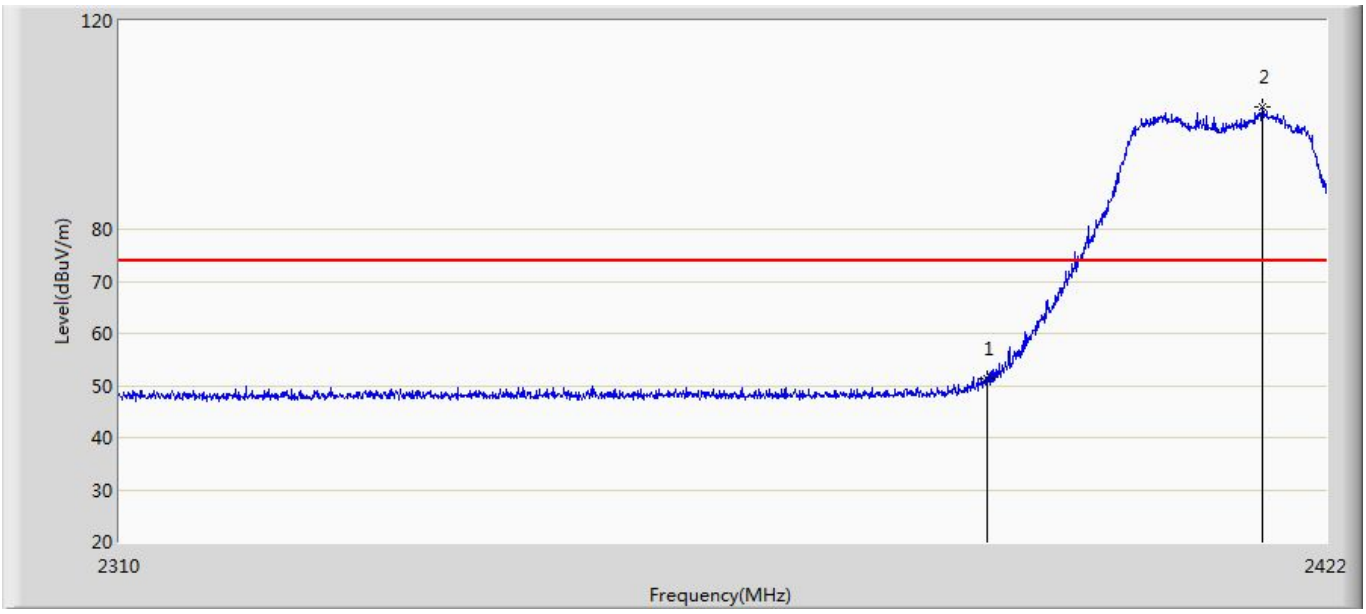
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	58.329	22.647	-15.671	74.000	35.682	PK
2	*	2403.688	106.875	71.158	N/A	N/A	35.717	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 13:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11n20	



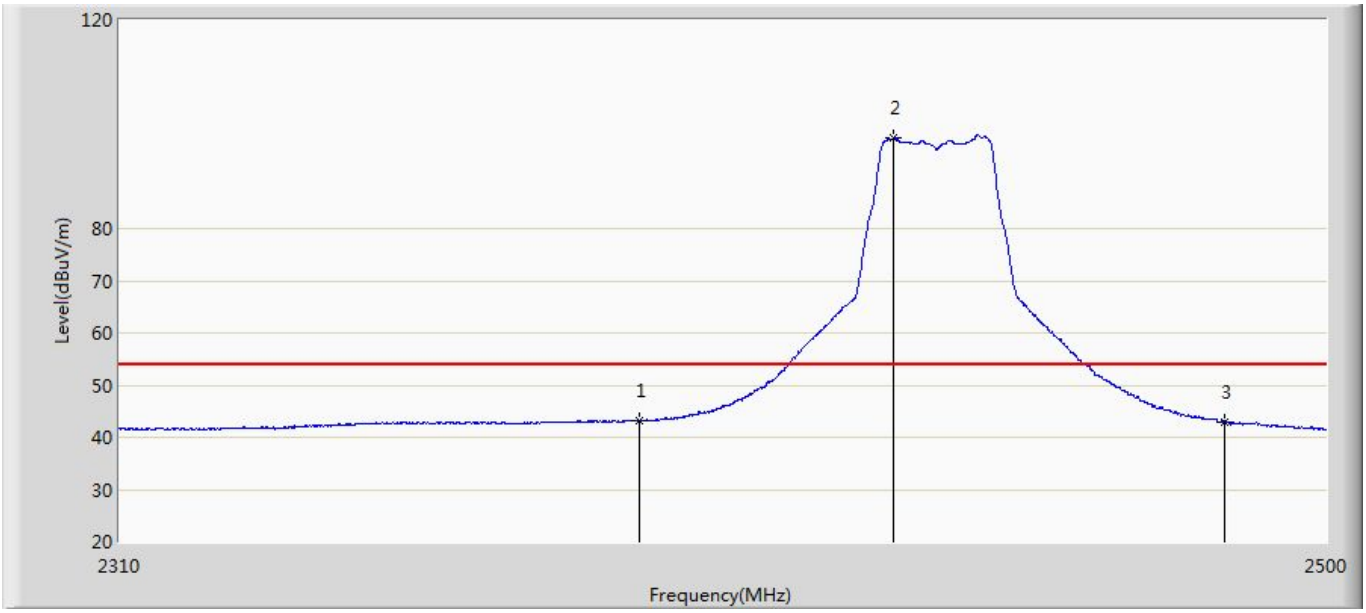
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	37.920	2.238	-16.080	54.000	35.682	AV
2	*	2409.568	90.535	54.802	N/A	N/A	35.733	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 13:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2412MHz by 802.11n20	



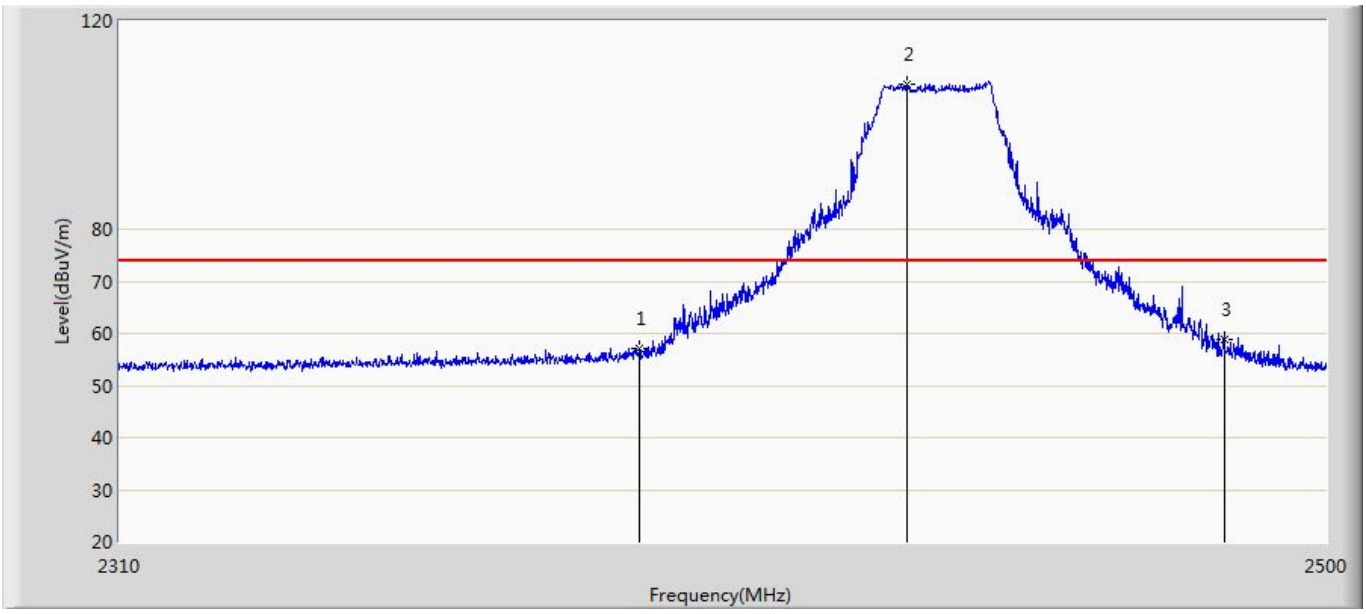
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	51.211	15.529	-22.789	74.000	35.682	PK
2	*	2415.952	103.423	67.665	N/A	N/A	35.758	PK

Site: AC5	Time: 2017/07/11 - 13:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11n20	



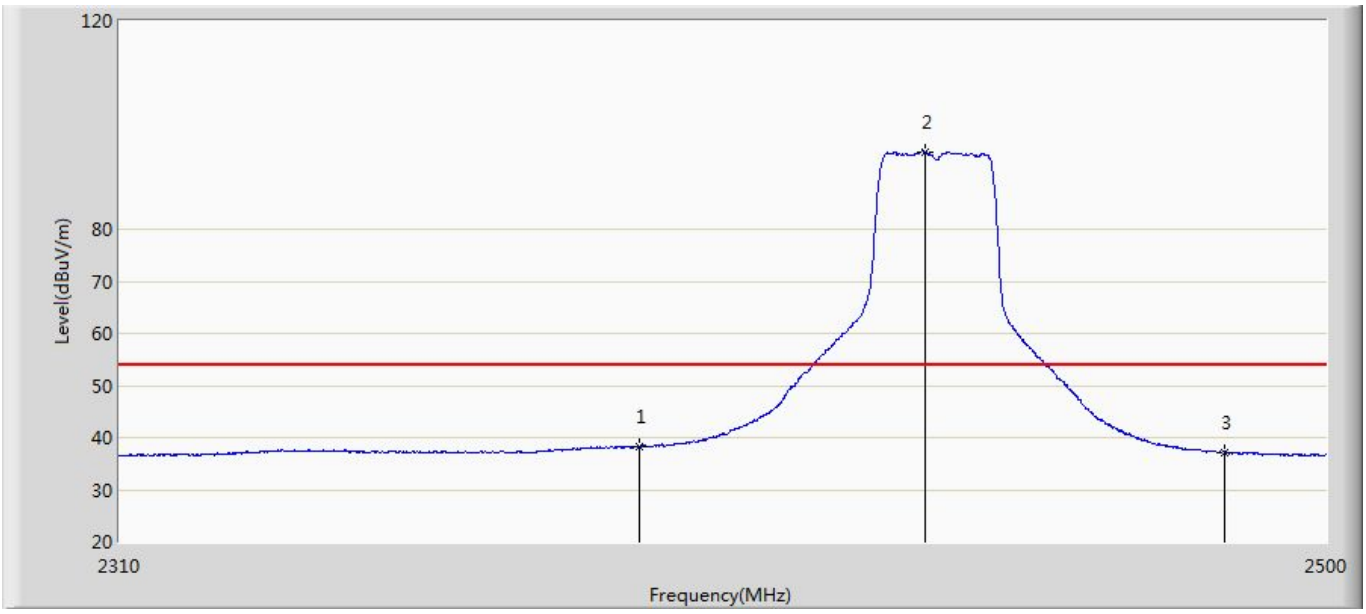
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	43.075	7.393	-10.925	54.000	35.682	AV
2	*	2430.270	97.509	61.701	N/A	N/A	35.808	AV
3		2483.500	42.960	7.068	-11.040	54.000	35.891	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11n20	



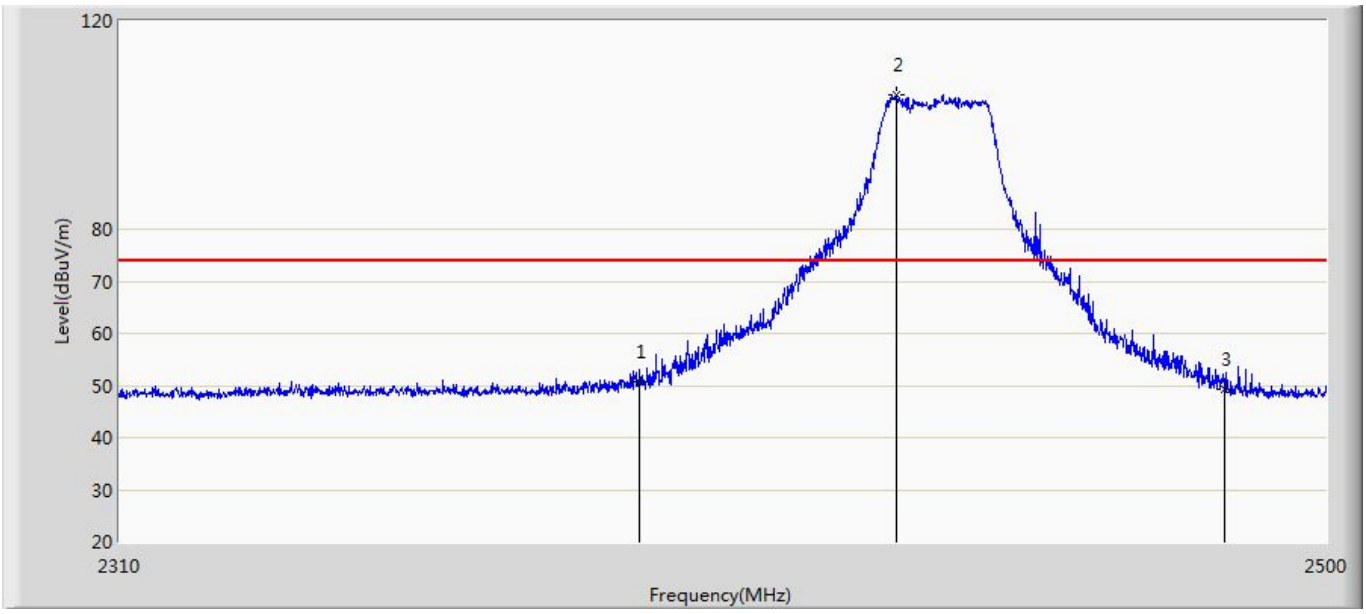
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	57.020	21.338	-16.980	74.000	35.682	PK
2	*	2432.265	107.835	72.028	N/A	N/A	35.807	PK
3		2483.500	58.846	22.954	-15.154	74.000	35.891	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 13:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11n20	



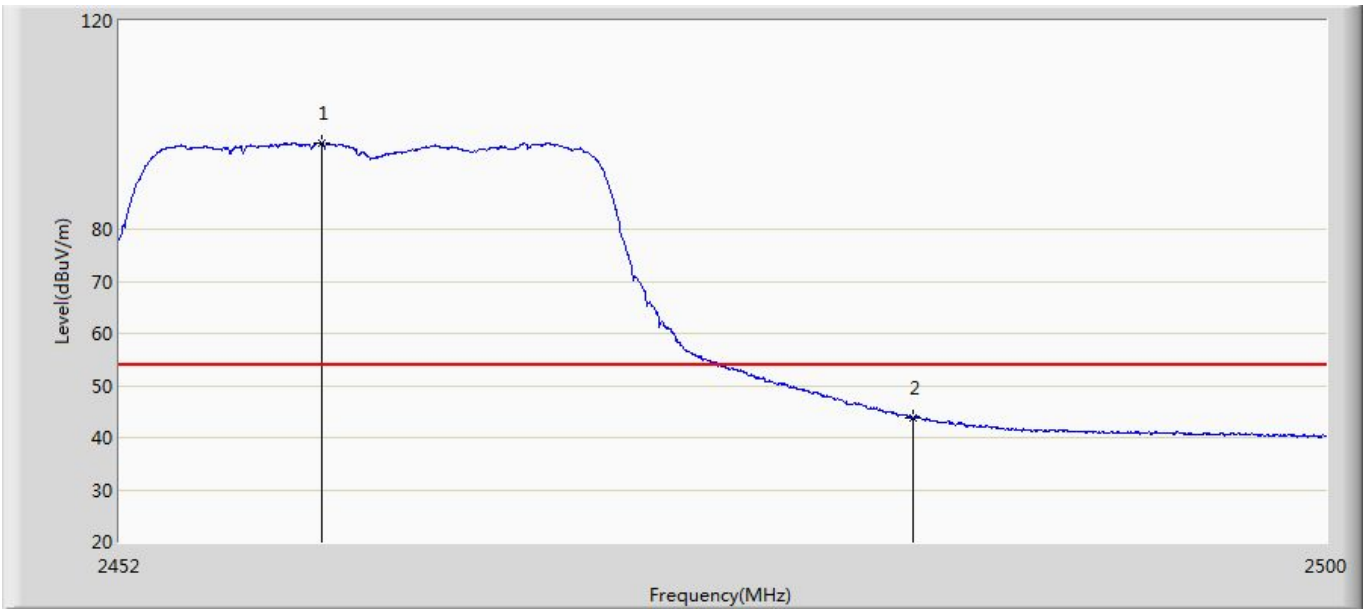
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	38.318	2.636	-15.682	54.000	35.682	AV
2	*	2435.210	94.766	58.959	N/A	N/A	35.806	AV
3		2483.500	37.073	1.181	-16.927	54.000	35.891	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 13:54
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2437MHz by 802.11n20	



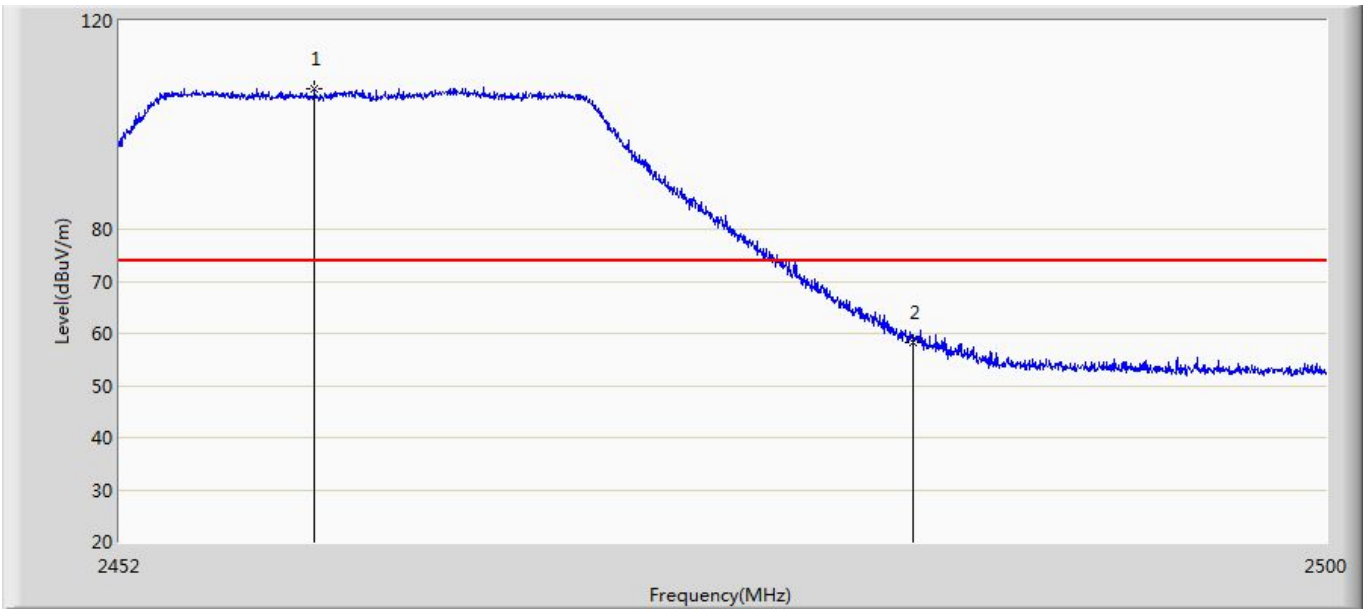
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.654	14.972	-23.346	74.000	35.682	PK
2	*	2430.555	105.847	70.039	N/A	N/A	35.808	PK
3		2483.500	49.338	13.446	-24.662	74.000	35.891	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11n20	



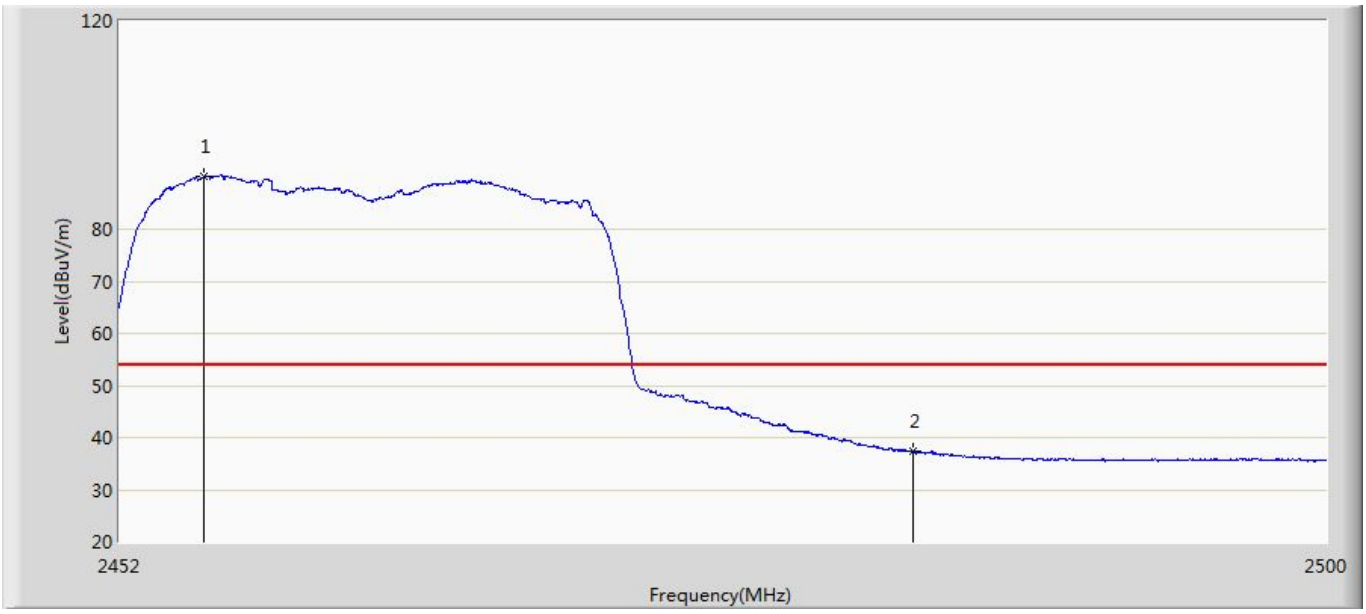
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.016	96.430	60.560	N/A	N/A	35.870	AV
2		2483.500	43.822	7.930	-10.178	54.000	35.891	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11n20	



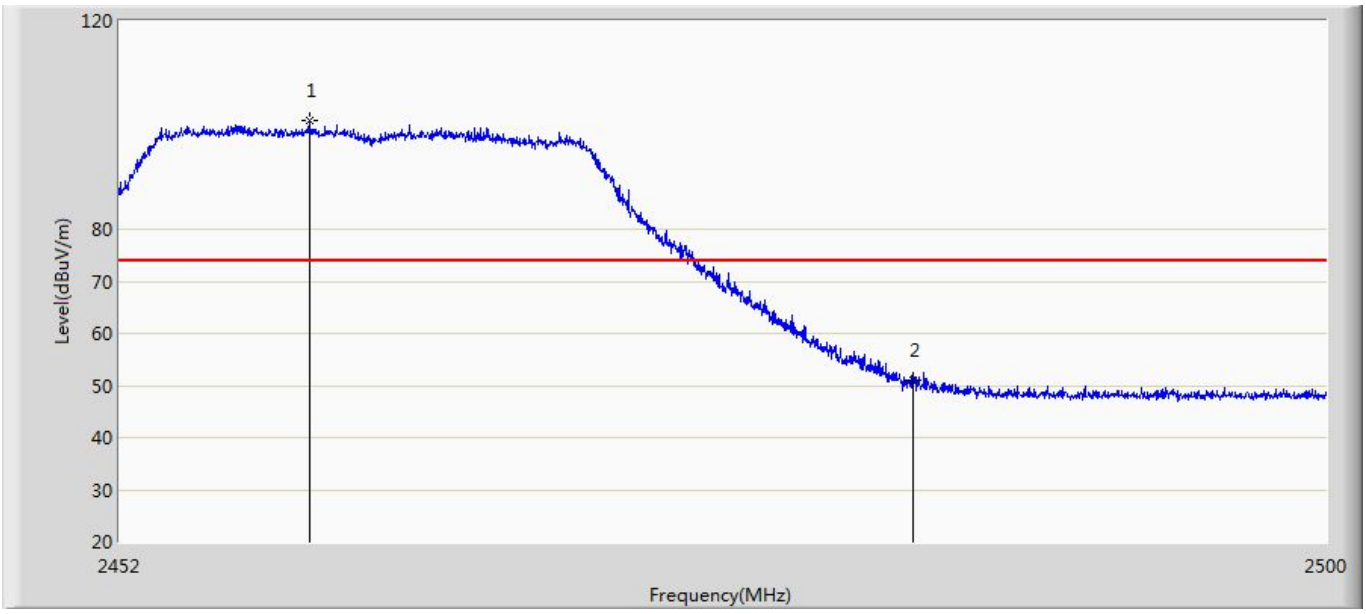
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2459.704	106.904	71.036	N/A	N/A	35.868	PK
2		2483.500	58.359	22.467	-15.641	74.000	35.891	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11n20	



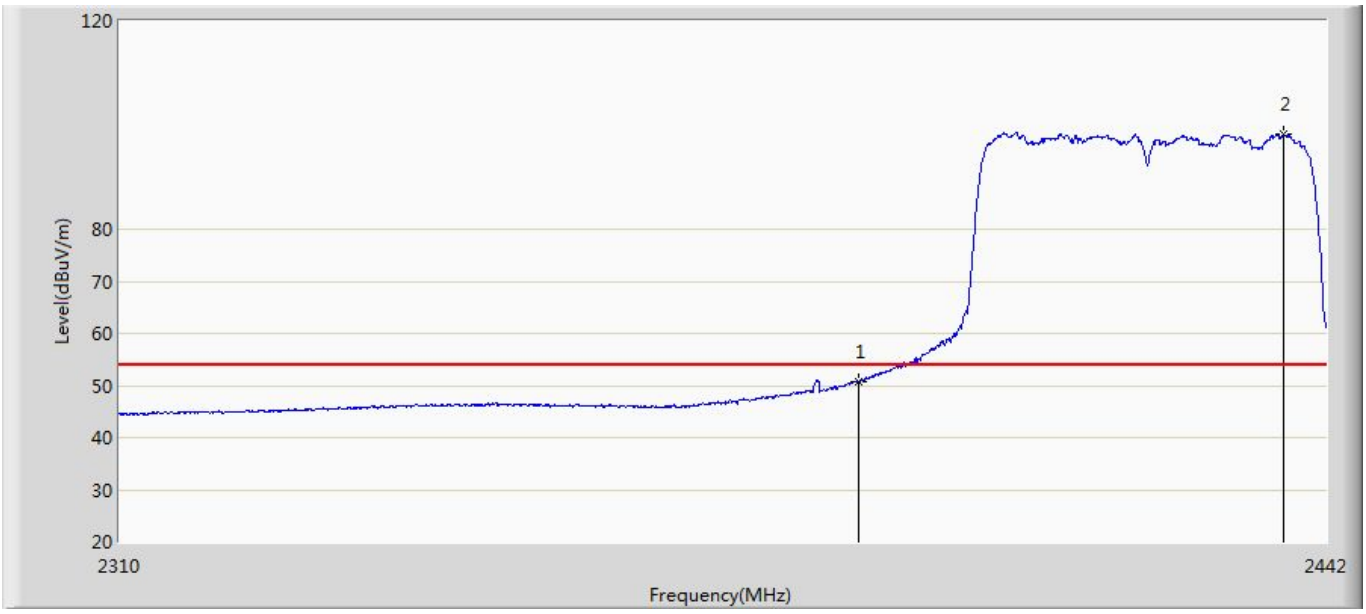
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2455.360	90.080	54.231	N/A	N/A	35.849	AV
2		2483.500	37.258	1.366	-16.742	54.000	35.891	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at 2462MHz by 802.11n20	



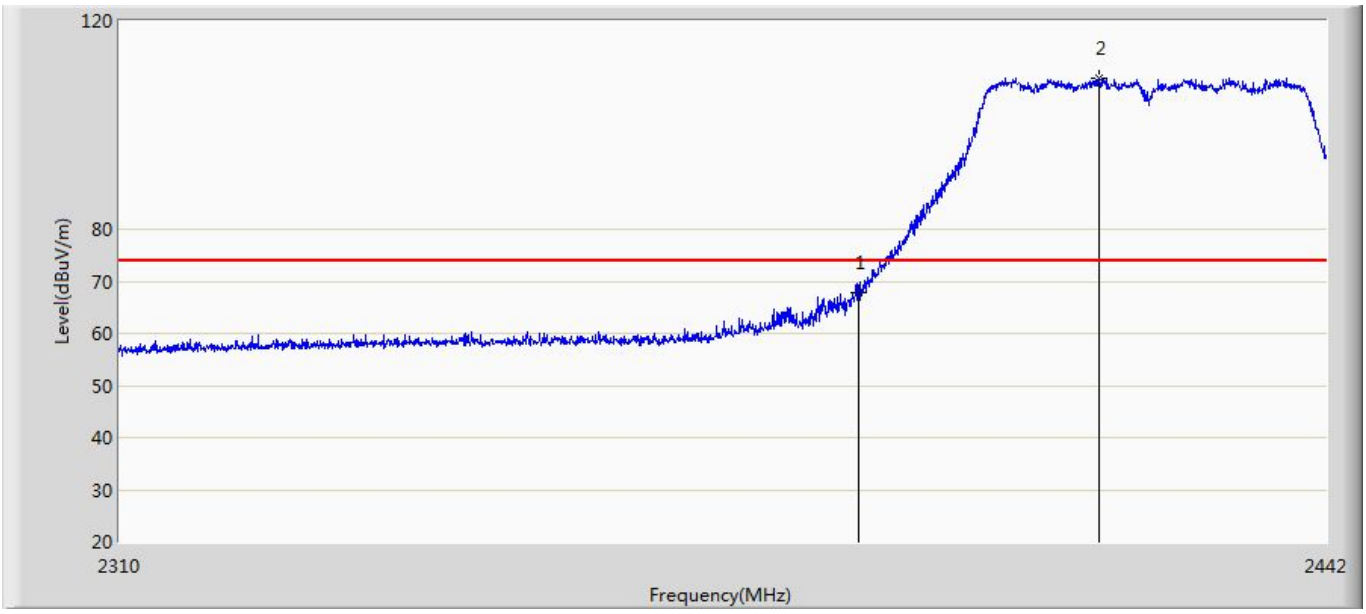
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2459.488	100.782	64.915	N/A	N/A	35.867	PK
2		2483.500	51.068	15.176	-22.932	74.000	35.891	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2422MHz by 802.11n40	



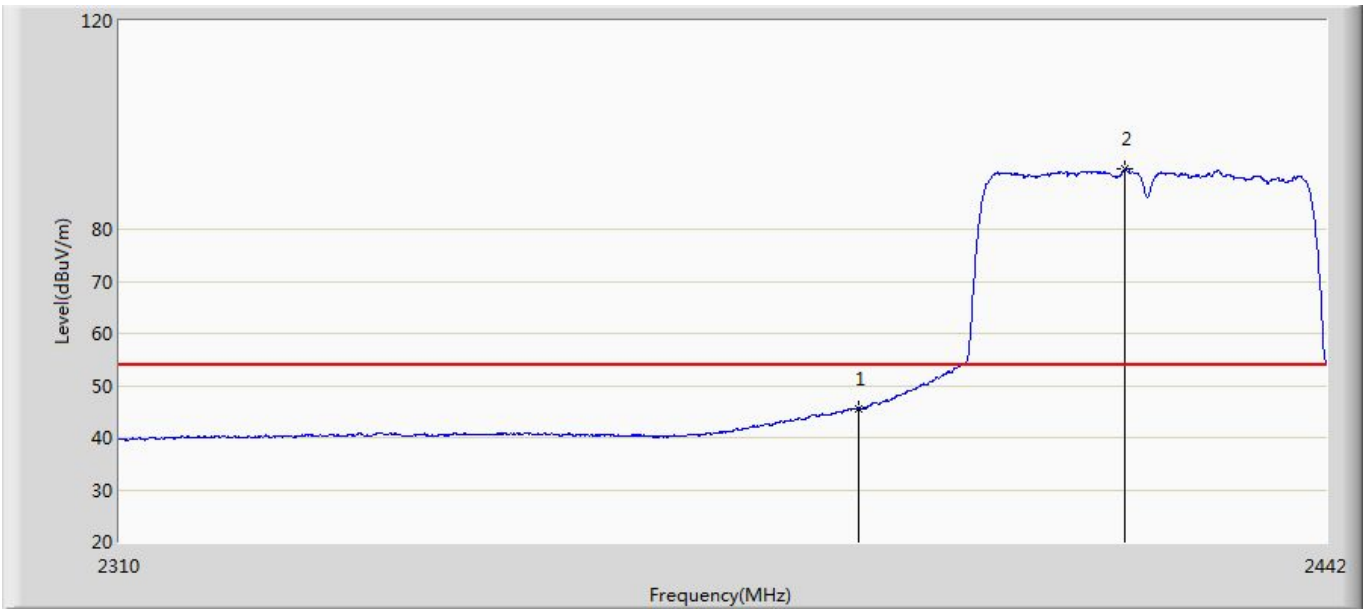
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.705	15.023	-3.295	54.000	35.682	AV
2	*	2437.248	98.126	62.320	N/A	N/A	35.806	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2422MHz by 802.11n40	



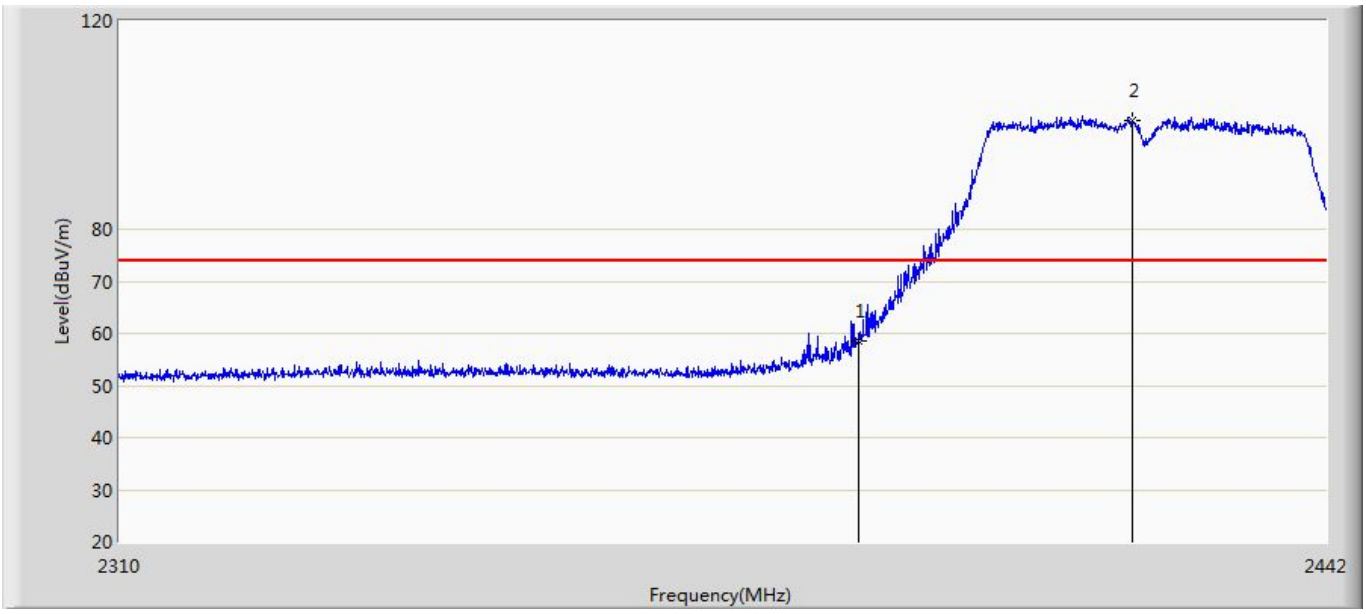
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	67.929	32.247	-6.071	74.000	35.682	PK
2	*	2416.656	109.117	73.356	N/A	N/A	35.761	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2422MHz by 802.11n40	



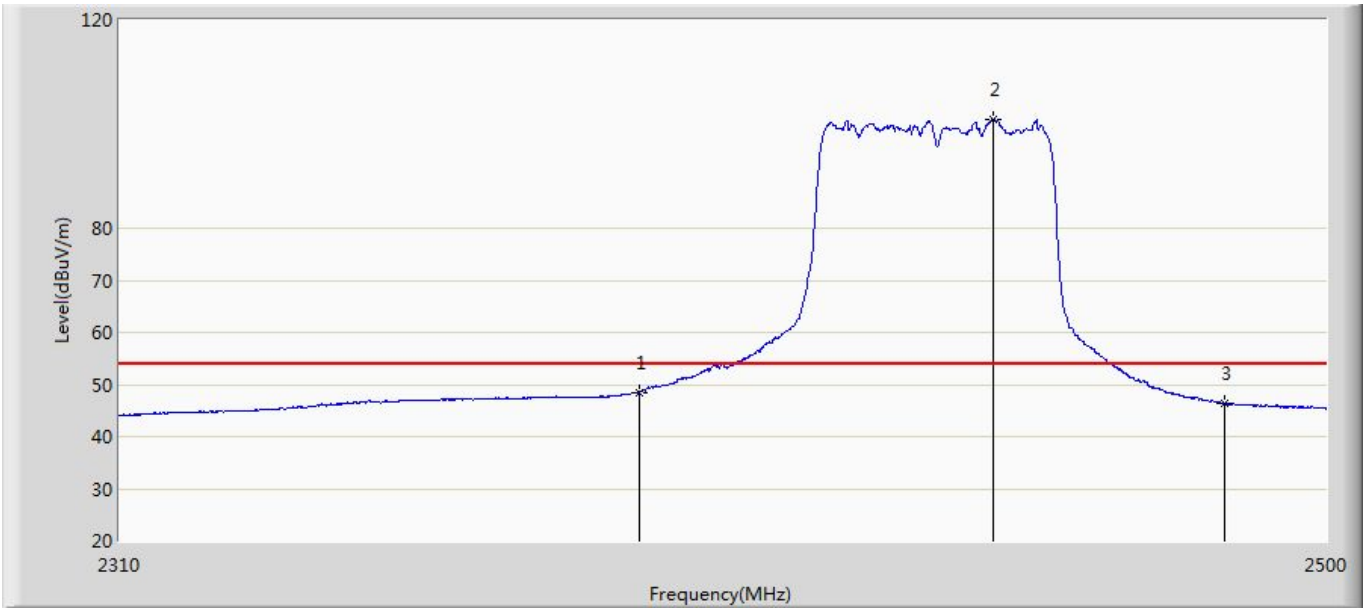
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	45.587	9.905	-8.413	54.000	35.682	AV
2	*	2419.560	91.603	55.830	N/A	N/A	35.774	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2422MHz by 802.11n40	



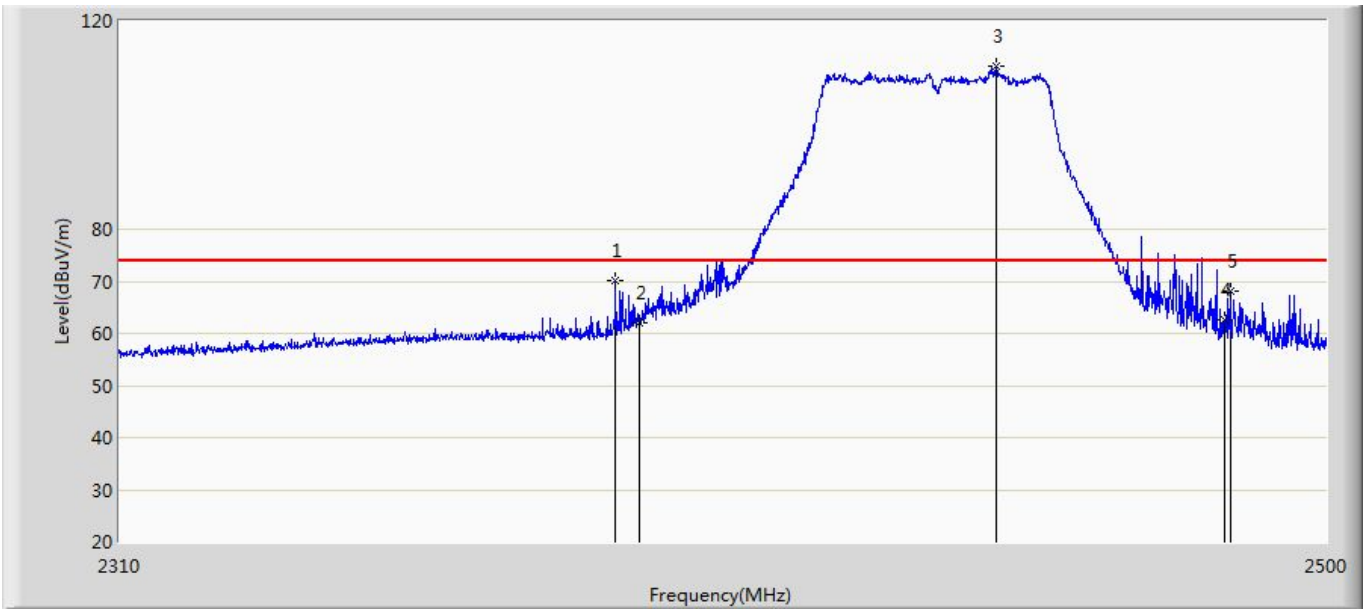
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	58.451	22.769	-15.549	74.000	35.682	PK
2	*	2420.352	100.932	65.156	N/A	N/A	35.777	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 14:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11n40	



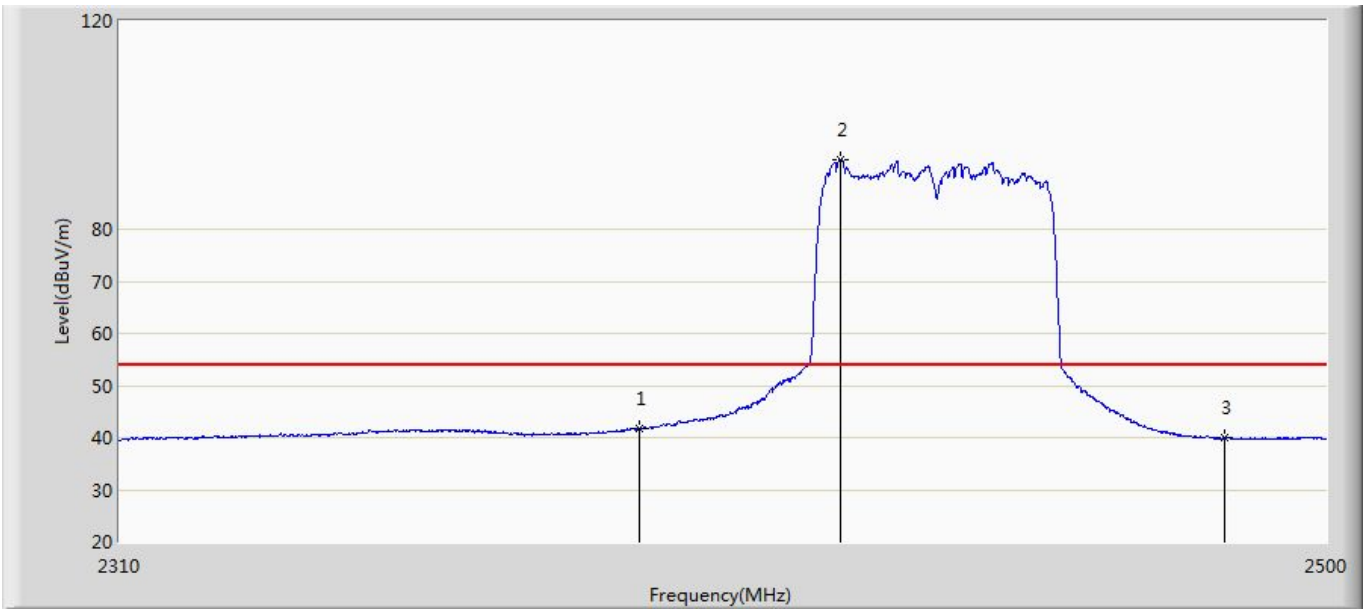
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	48.540	12.858	-5.460	54.000	35.682	AV
2	*	2446.135	100.909	65.100	N/A	N/A	35.809	AV
3		2483.500	46.281	10.389	-7.719	54.000	35.891	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 15:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11n40	



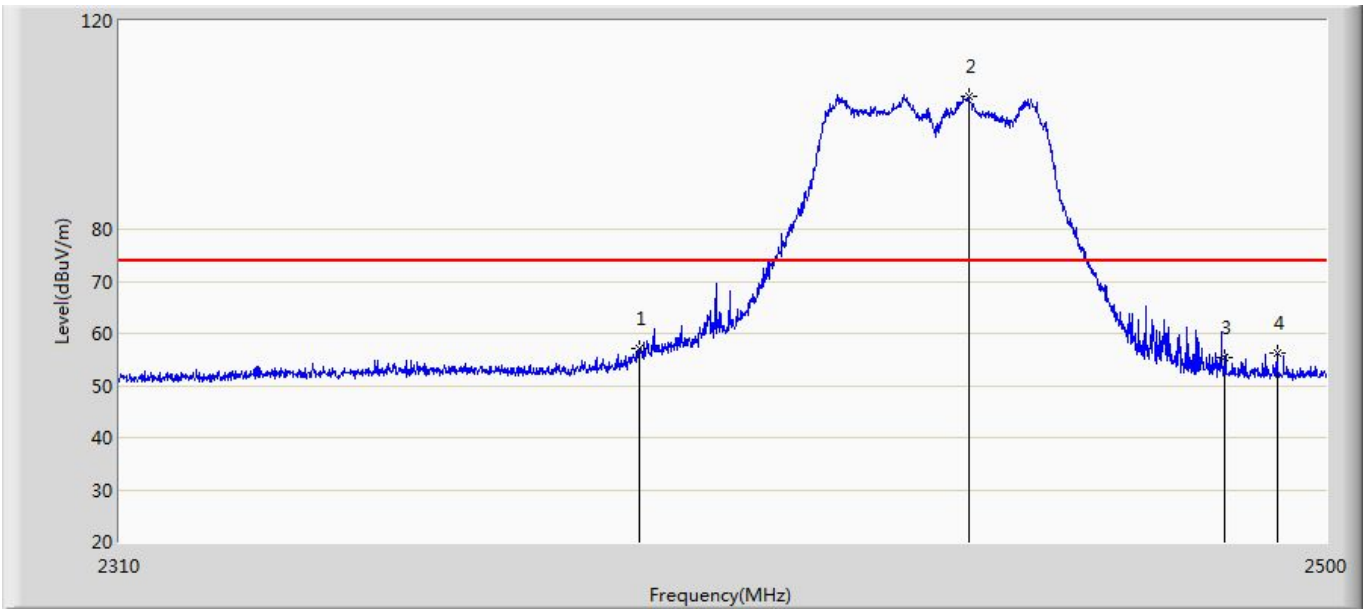
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2386.285	70.014	34.340	-3.986	74.000	35.673	PK
2		2390.000	61.978	26.296	-12.022	74.000	35.682	PK
3	*	2446.610	111.270	75.459	N/A	N/A	35.811	PK
4		2483.500	62.478	26.586	-11.522	74.000	35.891	PK
5		2484.325	68.179	32.281	-5.821	74.000	35.897	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 15:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11n40	



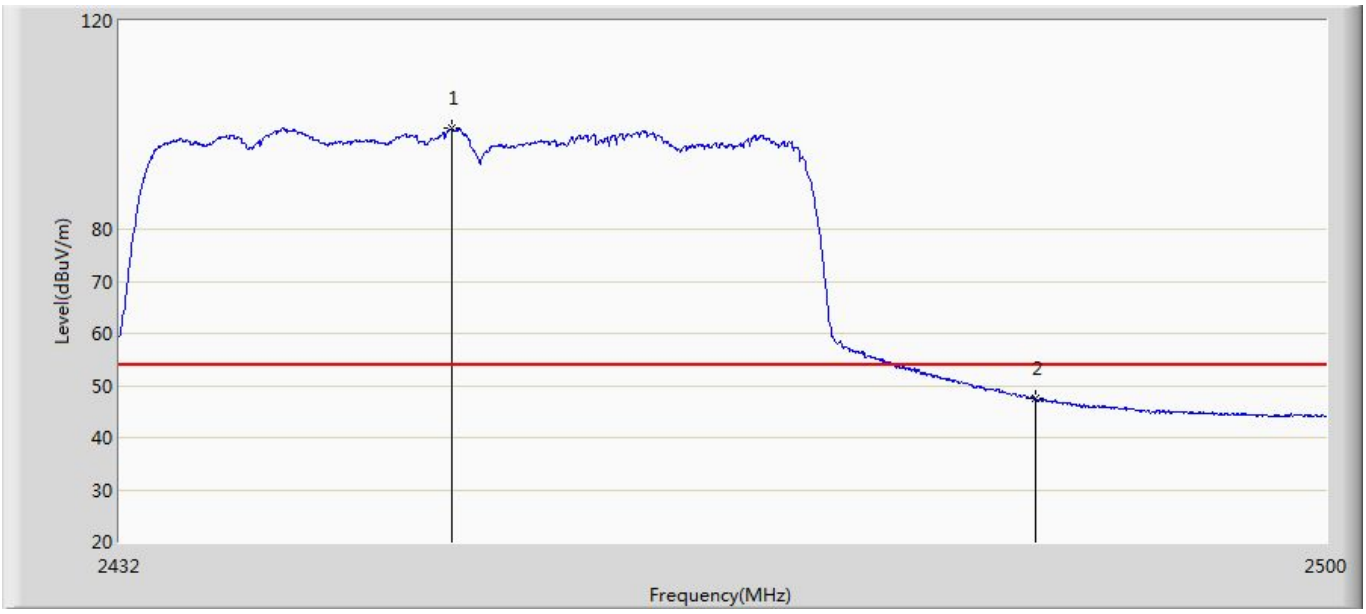
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	41.793	6.111	-12.207	54.000	35.682	AV
2	*	2421.815	93.470	57.687	N/A	N/A	35.782	AV
3		2483.500	39.925	4.033	-14.075	54.000	35.891	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 15:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2437MHz by 802.11n40	



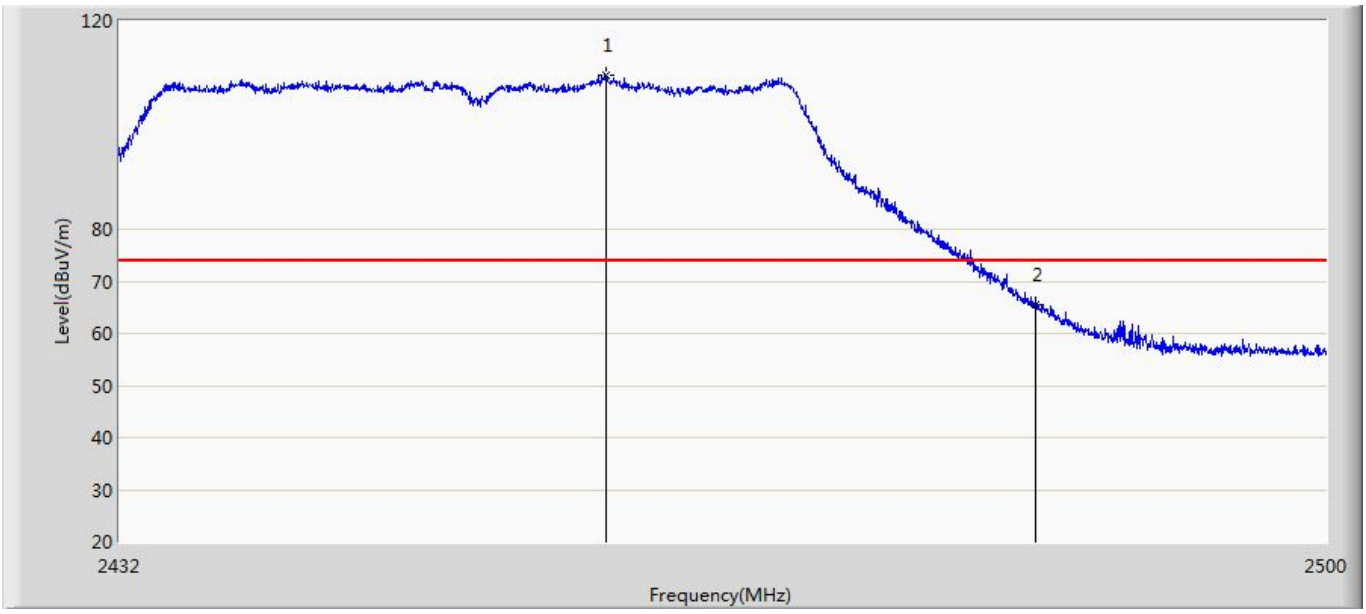
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	56.996	21.314	-17.004	74.000	35.682	PK
2	*	2442.240	105.584	69.779	N/A	N/A	35.805	PK
3		2483.500	55.485	19.593	-18.515	74.000	35.891	PK
4		2492.020	56.252	20.299	-17.748	74.000	35.953	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 15:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2452MHz by 802.11n40	



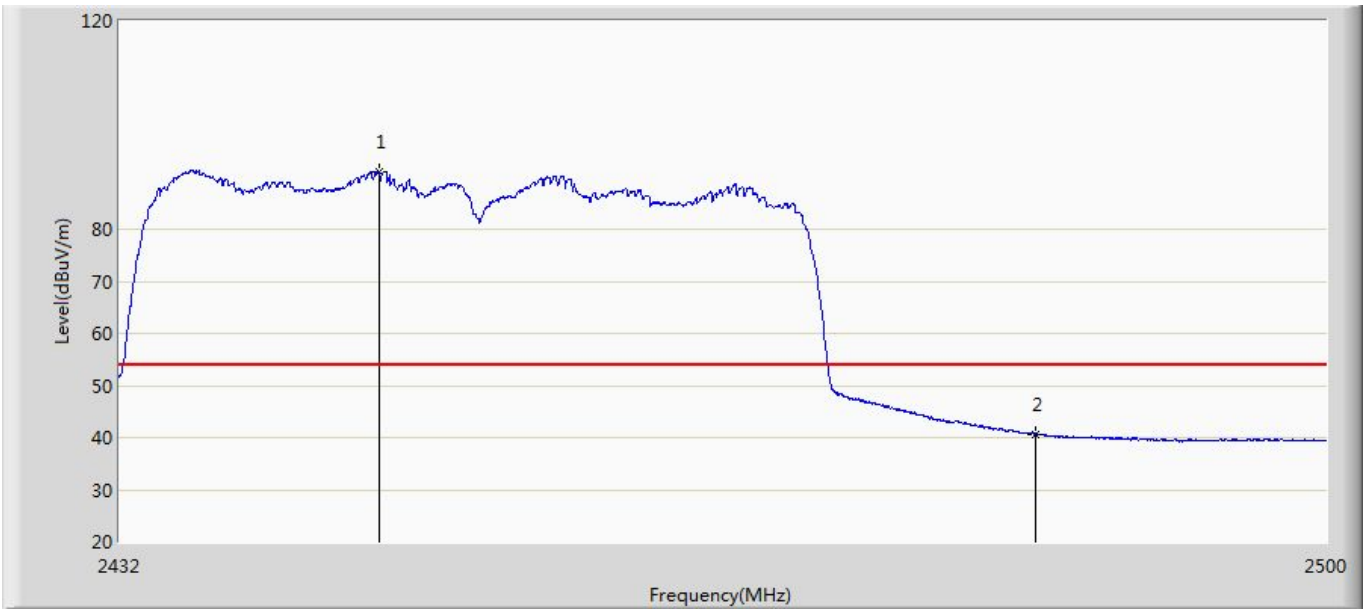
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2450.598	99.358	63.530	N/A	N/A	35.829	AV
2		2483.500	47.446	11.554	-6.554	54.000	35.891	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 15:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2452MHz by 802.11n40	



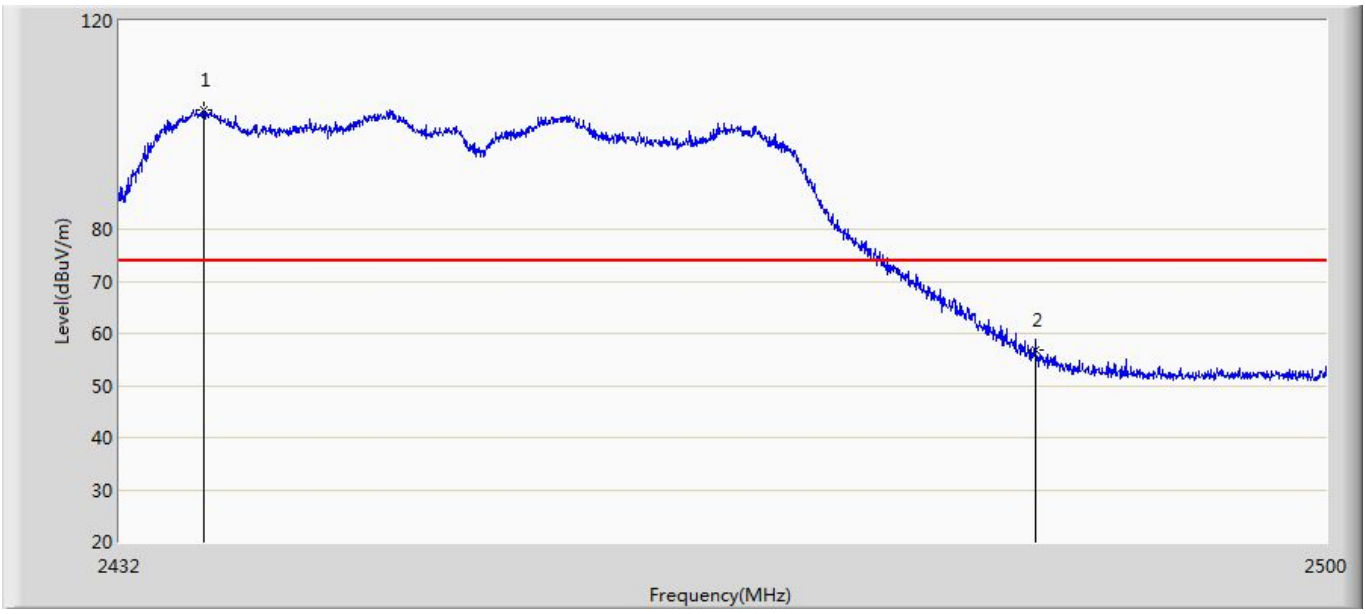
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2459.200	109.478	73.612	N/A	N/A	35.866	PK
2		2483.500	65.463	29.571	-8.537	74.000	35.891	PK

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 15:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2452MHz by 802.11n40	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2446.484	91.129	55.319	N/A	N/A	35.811	AV
2		2483.500	40.707	4.815	-13.293	54.000	35.891	AV

Engineer: Blank	
Site: AC5	Time: 2017/07/11 - 15:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: AC1900 Smart Wi-Fi Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at 2452MHz by 802.11n40	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2436.692	102.837	67.031	N/A	N/A	35.806	PK
2		2483.500	56.720	20.828	-17.280	74.000	35.891	PK

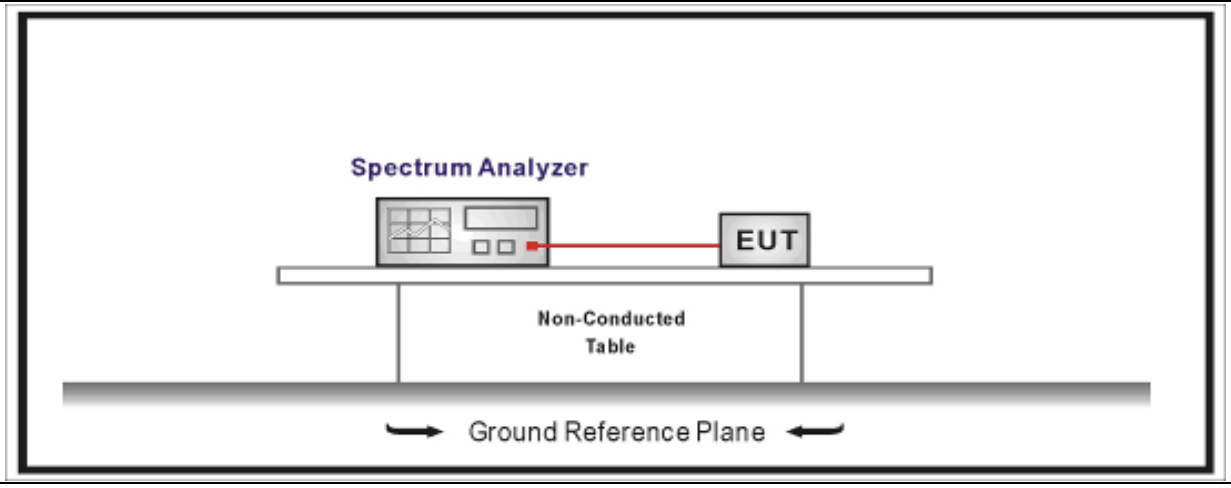
7. Occupied Bandwidth

7.1. Test Equipment

Occupied Bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.04
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.09
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.09
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.10
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

7.2. Test Setup

Occupied Bandwidth test setup:



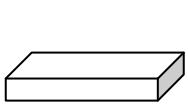
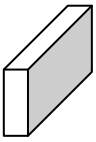
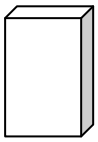
7.3. Limit

Occupied Bandwidth
Systems using digital modulation techniques operate in the2400-2483.5 MHz .The minimum 6 dB bandwidth shall be at least 500 kHz

7.4. Test Procedure

Test Method				
	Reference Rule		Chapter	Description
☒	ANSI C63.10		11.8	DTS bandwidth
	☐	ANSI C63.10	11.8.1	Option 1
	☒	ANSI C63.10	11.8.2	Option 2

7.5. EUT test definition

<table>
<tr><td>Item</td><td colspan="4">Occupied Bandwidth</td></tr>
<tr><td rowspan="2">Device Category</td><td>☒</td><td colspan="3">Fixed position use</td></tr>
<tr><td>☐</td><td colspan="3">Mobile position use</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1~2</td></tr>
<tr><td rowspan="12">Test method</td><td>☐</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
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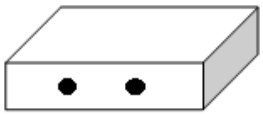
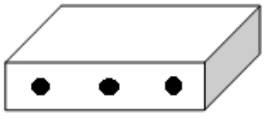
<tr><td>☒</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☐</td><td>Chain 1</td><td colspan="2">Chain 2</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
<tr><td>☒</td><td>Chain 1</td><td>Chain 2</td><td>Chain 3</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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7.6. Test Result

Product Name	:	AC1900 Smart Wi-Fi Router	Power	:	AC 120V / 60Hz
Test Mode	:	Mode1~2	Test Site	:	TR8
Test Date	:	2017.07.11			

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (MHz)	6dB Occupied Bandwidth (MHz)	Limit (kHz)	Result
			Worst Data	Worst Data		
			Ant1	Ant1		
1	01	2412	17.695	17.78	>500	Pass
1	06	2437	17.673	17.78	>500	Pass
1	11	2462	17.694	17.78	>500	Pass
2	03	2422	36.184	35.78	>500	Pass
2	06	2437	36.157	36.52	>500	Pass
2	09	2452	36.806	36.77	>500	Pass

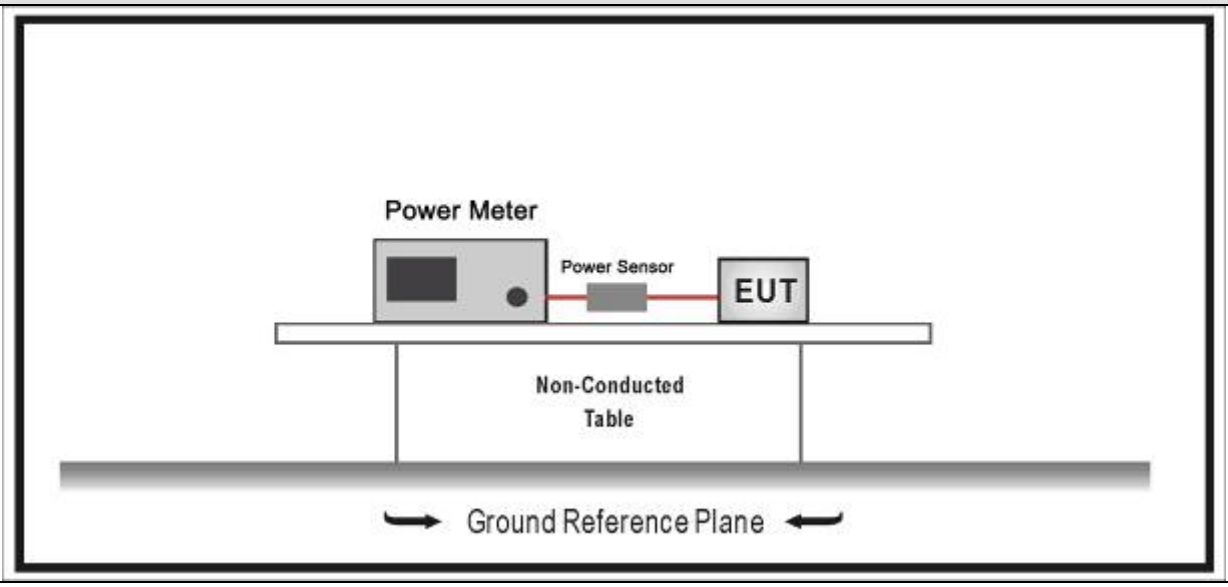
8. Fundamental emission output power

8.1. Test Equipment

Fundamental emission output power/ TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2017.01.04	2018.01.04
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.04
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2016.10.14	2017.10.14
Power Sensor	Anritsu	MA2411B	0846014	2016.10.14	2017.10.14
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2017.04.10	2018.04.10
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

8.2. Test Setup

Fundamental emission output power test setup



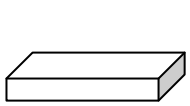
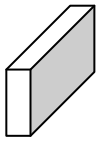
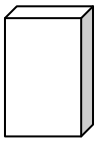
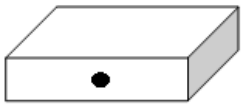
8.3. Limit

Fundamental emission output power Limit			
☐	G_{TX} ＜6dBi		P_{out}≤30dBm
☒	G_{TX} ＞6dBi		
	☒	Non-Fix point-point	P_{out}≤30-(G_{TX} -6)
	☐	Fix point-point	P_{out}≤30-[(G_{TX}-6)]/3
	☐	emits multiple directional beams but does not do emit multiple directional beams simultaneously	P_{out}≤30-[(G_{TX}-6)]/3
	☐	operates simultaneously on multiple directional beams using the same or different frequency channels	P_{out}≤30-[(G_{TX}-6)]/3+8dB
	☐	single directional beam	P_{out}≤30-[(G_{TX}-6)]/3
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				11.9	Fundamental emission output power
	☐	ANSI C63.10			11.9.1	Maximum peak conducted output power
		☐	ANSI C63.10		11.9.1.1	RBW ≥ DTS bandwidth
		☐	ANSI C63.10		11.9.1.2	Integrated band power method
		☐	ANSI C63.10		11.9.1.3	PKPM1 Peak power meter method
	☒	ANSI C63.10			11.9.2	Maximum conducted (average) output power
		☐	ANSI C63.10		11.9.2.2	Measurement using a spectrum analyzer (SA)
			☐	ANSI C63.10	11.9.2.2.2	Method AVGSA-1(Duty cycle≥98%)
			☐	ANSI C63.10	11.9.2.2.3	Method AVGSA-1A(Duty cycle≥98%)
			☐	ANSI C63.10	11.9.2.2.4	Method AVGSA-2(Duty cycle≤98%)
			☐	ANSI C63.10	11.9.2.2.5	Method AVGSA-2A(Duty cycle≤98%)
			☐	ANSI C63.10	11.9.2.2.4	Method AVGSA-3
			☐	ANSI C63.10	11.9.2.2.5	Method AVGSA-3A
		☒	ANSI C63.10		11.9.2.3	Measurement using a power meter (PM)
			☐	ANSI C63.10	11.9.2.3.1	Method AVGPM
			☒	ANSI C63.10	11.9.2.3.2	Method AVGPM-G

8.5. EUT test definition

<table>
<tr><td>Item</td><td colspan="4">Fundamental emission output power</td></tr>
<tr><td rowspan="2">Device Category</td><td>☒</td><td colspan="3">Fixed position use</td></tr>
<tr><td>☐</td><td colspan="3">Mobile position use</td></tr>
<tr><td>Test mode</td><td colspan="4">Mode 1~2</td></tr>
<tr><td rowspan="13">Test method</td><td>☐</td><td colspan="3">Radiated</td></tr>
<tr><td rowspan="3"></td><td>X Axis</td><td>Y Axis</td><td>Z Axis</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Worst Axis ☐</td><td>Worst Axis ☐</td><td>Worst Axis ☐</td></tr>
<tr><td>☒</td><td colspan="3">Conducted</td></tr>
<tr><td>☐</td><td colspan="3">Chain 1</td></tr>
<tr><td></td><td colspan="3">  </td></tr>
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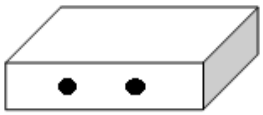
<tr><td></td><td colspan="3">  </td></tr>
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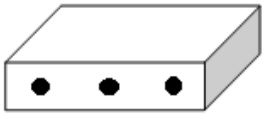
<tr><td></td><td colspan="3">  </td></tr>
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8.6. Test Result

Product Name	:	AC1900 Smart Wi-Fi Router	Power	:	AC 120V / 60Hz
Test Mode	:	Mode1~2	Test Site	:	TR8
Test Date	:	2017.7.10			

Mode	Channel	Test Frequency (MHz)	Average Power Output (dBm)			TOTAL Power Output (dBm)	Limit (dBm)	Result
			Ant 1	Ant 2	Ant 3			
1	01	2412	11.17	11.26	11.31	16.02	27.23	Pass
1	06	2437	18.22	18.34	18.47	23.12	27.23	Pass
1	11	2462	11.63	11.72	11.84	16.50	27.23	Pass
2	03	2422	10.08	10.16	10.24	14.93	27.23	Pass
2	06	2437	14.18	14.23	14.45	19.06	27.23	Pass
2	09	2452	11.12	11.24	11.32	16.00	27.23	Pass

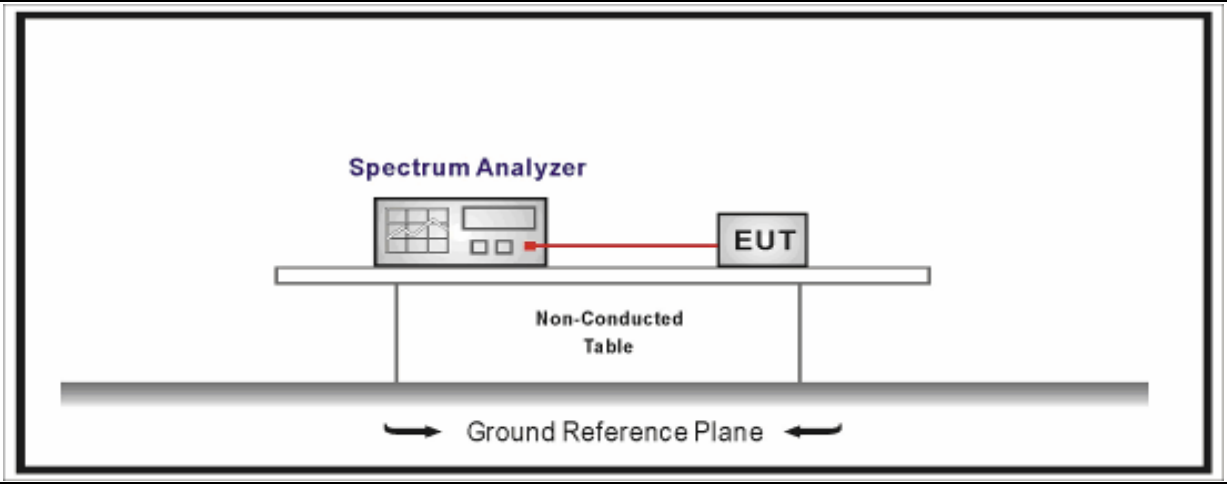
9. Power Spectral Density

9.1. Test Equipment

Power Spectral Density / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2017.02.04	2018.02.04
EXA Spectrum Analyzer	Keysight	N9010A	MY55370495	2017.04.09	2018.04.09
MXA Signal Anlyzer	Keysight	N9020A	MY56060147	2017.04.09	2018.04.09
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2017.04.10	2018.04.10
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

9.2. Test Setup

Power Spectral Density test setup



9.3. Limit

Power Spectral Density Limit
Power Spectral Density≤8dBm/3kHz

9.4. Test Procedure

Power Spectral Density Test Method				
	References Rule		Chapter	Description
☒	ANSI C63.10		11.10	Maximum power spectral density level in the fundamental emission
	☒	ANSI C63.10	11.10.2	Method PKPSD (peak PSD)
	☐	ANSI C63.10	11.10.3	Method AVGPSD-1(Duty cycle≥98%)
	☐	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle≥98%)
	☐	ANSI C63.10	11.10.5	Method AVGPSD-2(Duty cycle＜98%)
	☐	ANSI C63.10	11.10.6	Method AVGPSD-2A(Duty cycle＜98%)
	☐	ANSI C63.10	11.10.7	Method AVGPSD-3
	☐	ANSI C63.10	11.10.8	Method AVGPSD-3A

9.5. EUT test definition

<table>
<tr><td>Item</td><td colspan="4">Power Spectral Density Test Method</td></tr>
<tr><td rowspan="2">Device Category</td><td>☒</td><td colspan="3">Fixed position use</td></tr>
<tr><td>☐</td><td colspan="3">Mobile position use</td></tr>
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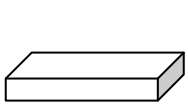
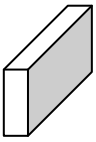
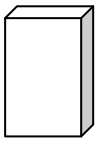
<tr><td>  </td><td>  </td><td>  </td></tr>
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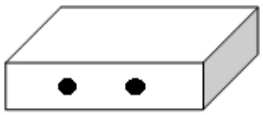
<tr><td></td><td colspan="3">  </td></tr>
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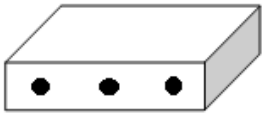
<tr><td></td><td colspan="3">  </td></tr>
</table>

9.6. Test Result

Product Name	:	AC1900 Smart Wi-Fi Router	Power	:	AC 120V / 60Hz
Test Mode	:	Mode1~2	Test Site	:	TR8
Test Date	:	2017.7.10			

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)			Total PPSD (dBm/MHz)	Limit (dBm/3kHz)	Result
			Ant1	Ant2	Ant3			
1	01	2412	-12.868	-21.562	-13.855	-10.008	5.23	Pass
1	06	2437	-11.869	-8.319	-7.329	-4.009	5.23	Pass
1	11	2462	-14.672	-17.424	-12.441	-9.618	5.23	Pass
2	03	2422	-17.092	-16.748	-14.592	-11.225	5.23	Pass
2	06	2437	-15.670	-14.212	-13.288	-9.511	5.23	Pass
2	09	2452	-16.903	-16.810	-17.255	-12.214	5.23	Pass

10. Antenna Requirement

10.1. Limit

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

10.2. Antenna Connector Construction

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

The End