

Test Report

FCC Part15 Subpart C

Product Name : AC1200 Wireless Dual Band Gigabit
Access Point
Model No. : EAP320
FCC ID : TE7EAP320

Applicant : TP-LINK TECHNOLOGIES CO., LTD.
Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central
Science and Technology Park, Shennan Rd, Nanshan,
Shenzhen, China

Date of Receipt : Feb. 22, 2016
Test Date : Feb. 29, 2016~Apr. 27, 2016
Issued Date : Apr. 28, 2016
Report No. : 1622053R-RF-US-P06V01
Report Version : V1.0

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 TAF or any agency of the government.

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

Test Report Certification

Issued Date : Apr. 28, 2016

Report No. : 1622053R-RF-US-P06V01



Product Name : AC1200 Wireless Dual Band Gigabit Access Point
Applicant : TP-LINK TECHNOLOGIES CO., LTD.
Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central Science
and Technology Park, Shennan Rd, Nanshan, Shenzhen,
China
Manufacturer : TP-LINK TECHNOLOGIES CO., LTD.
Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central Science
and Technology Park, Shennan Rd, Nanshan, Shenzhen,
China
Model No. : EAP320
FCC ID : TE7EAP320
EUT Voltage : AC 100-240V, 50/60Hz
Brand Name : TP-LINK
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2014
ANSI C63.4:2014;
ANSI C63.10:2013;
KDB 558074 D01v03r05
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 : Alice Ni
(Senior Adm. Specialist: Alice Ni)

Reviewed By : Jack Zhang
(Senior Engineer: Jack Zhang)

Approved By : Harry Zhao
(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/english/about/certificates.aspx?bval=5>
The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/index_en.aspx

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	7
1.1. EUT Description	7
1.2. Working Frequency of Each Channel:	7
1.3. Antenna information	8
1.4. Mode of Operation	8
1.5. Tested System Details	8
1.6. Configuration of Tested System	10
2. Technical Test	12
2.1. Summary of Test Result	12
2.2. Test Frequency configuration:	13
2.3. Power setting parameter	13
2.4. Power vs Data Rate	14
2.5. Test Environment	15
2.6. Measurement Uncertainty	15
3. AC Power Line Conducted Emission	16
3.1. Test Equipment	16
3.2. Test Setup	16
3.3. Limit	17
3.4. Test Procedure	17
3.5. Test Result	18
4. Emissions in restricted frequency bands	20
4.1. Test Equipment	20
4.2. Test Setup	21
4.3. Limit	22
4.4. Test Procedure	24
4.5. EUT test Axis definition	25
4.6. Test Result	26
5. Emissions in non-restricted frequency bands	35
5.1. Test Equipment	35
5.2. Test Setup	36
5.3. Limit	37
5.4. Test Procedure	38
5.5. EUT test Axis definition	39
5.6. Test Result	40
6. Radiated Emission Band Edge	42
6.1. Test Equipment	42
6.2. Test Setup	43

6.3.	Limit.....	43
6.4.	Test Procedure	44
6.5.	EUT test definition	45
6.6.	Duty Cycle	46
6.7.	Test Result.....	48
7.	Occupied Bandwidth.....	76
7.1.	Test Equipment.....	76
7.2.	Test Setup.....	76
7.3.	Limit.....	77
7.4.	Test Procedure	77
7.5.	EUT test definition	78
7.6.	Test Result.....	79
8.	Fundamental emission output power	81
8.1.	Test Equipment.....	81
8.2.	Test Setup.....	81
8.3.	Limit.....	82
8.4.	Test Procedure	83
8.5.	EUT test definition	85
8.6.	Test Result.....	86
9.	Power Spectral Density	88
9.1.	Test Equipment.....	88
9.2.	Test Setup.....	88
9.3.	Limit.....	88
9.4.	Test Procedure	89
9.5.	EUT test definition	91
9.6.	Test Result.....	92

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1622053R-RF-US-P06V01	V1.0	Initial Issued Report	Apr. 28, 2016

1. General Information

1.1. EUT Description

Product Name	AC1200 Wireless Dual Band Gigabit Access Point
Brand Name	TP-LINK
Model No.	EAP320
EUT Voltage	AC 100-240V, 50/60Hz
Frequency Range	For 2.4GHz Band 802.11b/g/n(20MHz): 2412~2462MHz 802.11n(40MHz): 2422~2452MHz
Channel Number	For 2.4GHz Band 802.11b/g/n(20MHz): 11 802.11n(40MHz): 7
Type of Modulation	802.11b: DSSS 802.11g: OFDM
Data Rate	802.11g: 6/9/12/18/24/36/48/54 Mbps 802.11b: 1/2/5.5/11 Mbps 802.11n: up to 300 Mbps
Channel Control	Auto

1.2. Working Frequency of Each Channel:

802.11b/g/n(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

Model No.	N/A							
Antenna manufacturer	TP-LINK							
Antenna Delivery	☐ 1*TX+1*RX	☒ 2*TX+2*RX	☐ 3*TX+3*RX					
Antenna technology	☐ SISO ☒ MIMO <table border="1" style="margin-left: 20px;"> <tr> <td>☐ Basic</td> </tr> <tr> <td>☒ CDD</td> </tr> <tr> <td>☒ Beam-forming</td> </tr> </table>				☐ Basic	☒ CDD	☒ Beam-forming	
☐ Basic								
☒ CDD								
☒ Beam-forming								
Antenna Type	☐ External ☐ Dipole ☒ Internal <table border="1" style="margin-left: 20px;"> <tr> <td>☒ PIFA</td> </tr> <tr> <td>☐ PCB</td> </tr> <tr> <td>☐ Ceramic Chip Antenna</td> </tr> <tr> <td>☐ Metal plate type F antenna</td> </tr> </table>				☒ PIFA	☐ PCB	☐ Ceramic Chip Antenna	☐ Metal plate type F antenna
☒ PIFA								
☐ PCB								
☐ Ceramic Chip Antenna								
☐ Metal plate type F antenna								
Antenna Technology	Ant Gain (dBi)		Directional Gain (dBi)					
			For Power	For PSD				
☒ CDD	Ant0: 4.49 Ant1: 4.96		4.73	7.74				
☒ Beam-forming	Ant0: 4.49 Ant1: 4.96		7.74	7.74				

1.4. Mode of Operation

Test Modes List
Mode 1: Transmit by 802.11b with CDD
Mode 2: Transmit by 802.11g with CDD
Mode 3: Transmit by 802.11n(20MHz) with CDD
Mode 4: Transmit by 802.11n(40MHz) with CDD
Mode 5: Transmit by 802.11g with Beam-forming
Mode 6: Transmit by 802.11n(20MHz) with Beam-forming
Mode 7: Transmit by 802.11n(40MHz) with Beam-forming

1.5. Tested System Details

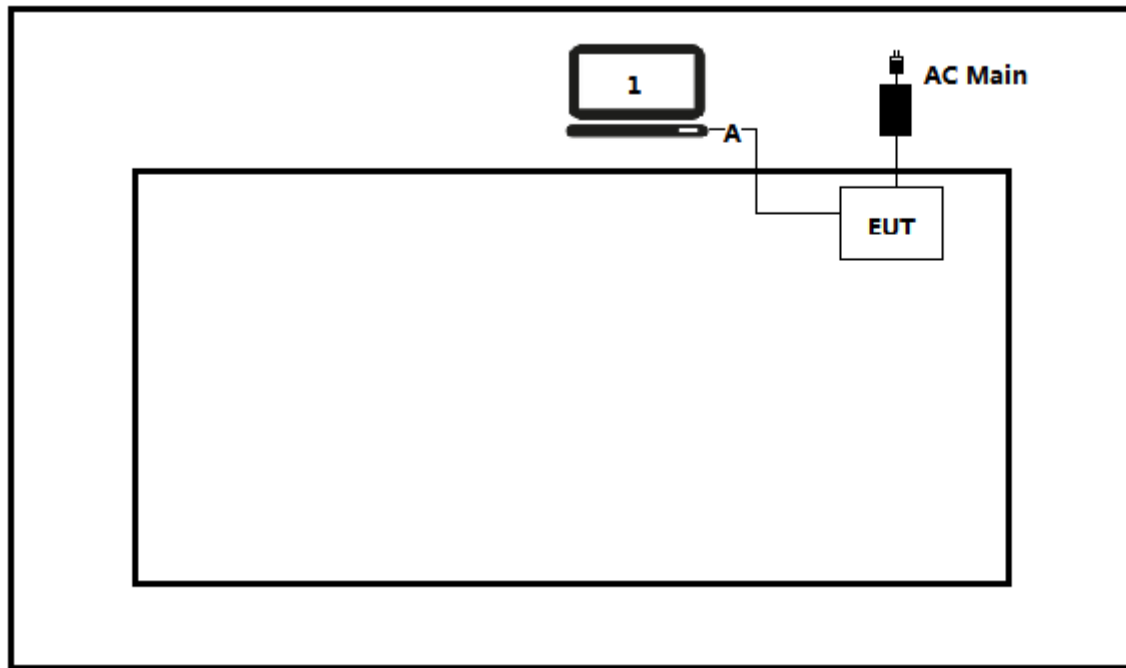
The types for all equipments, plus descriptions of all cables used in the tested system (including

inserted cards) are:

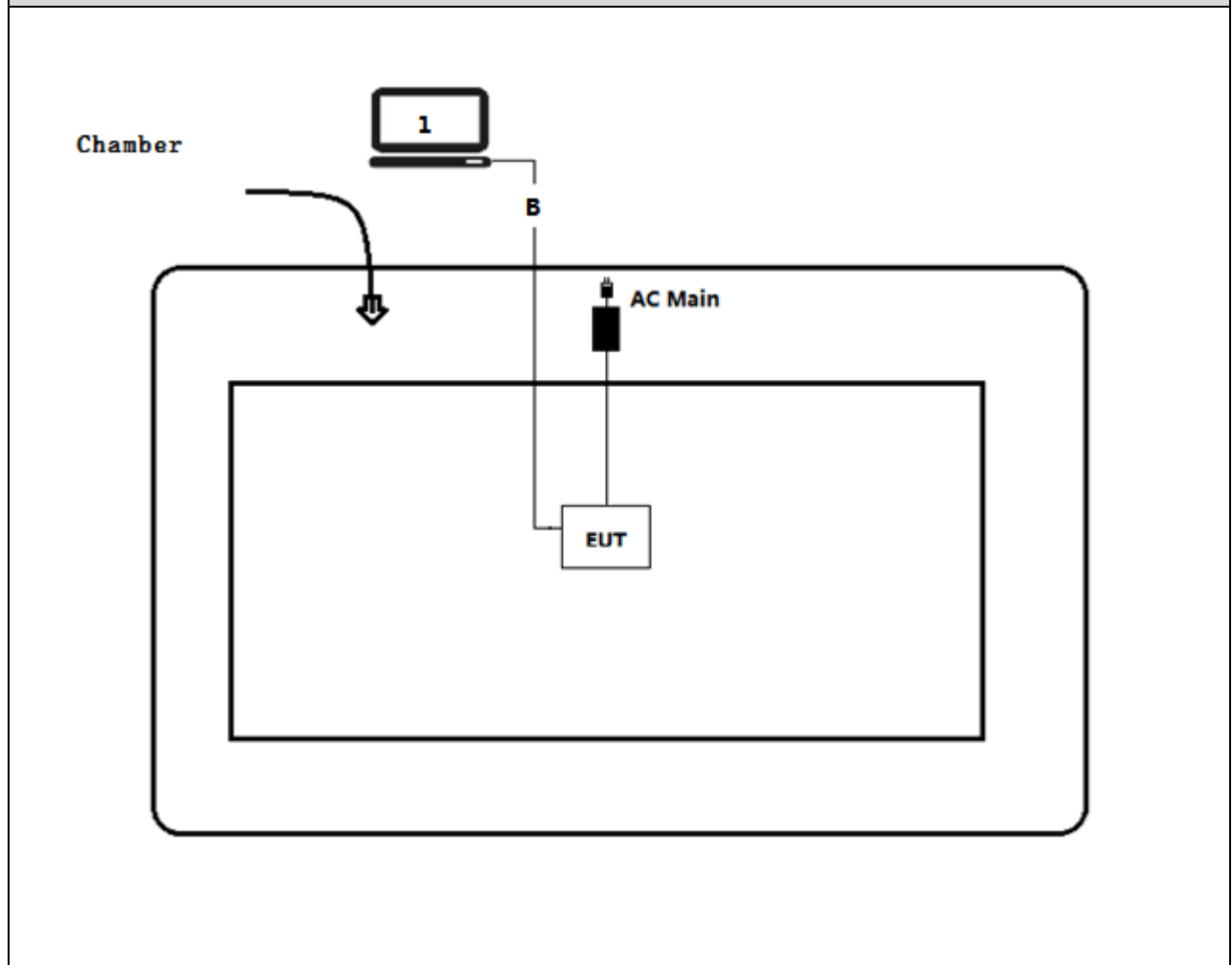
No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	Lenovo	Think pad x220	SUA0600195	Non-shielded
A	LAN cable	N/A	N/A	N/A	Non-shielded, 1.5m
B	LAN cable	N/A	N/A	N/A	Non-shielded, 10m

1.6. Configuration of Tested System

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



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	802.11b	FCC 15.207	PASS
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.209	802.11b	FCC 15.209	PASS
Emissions in non-restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(d)	802.11b	$\geq 30\text{dBc}$	PASS
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2015 15.247(d)	802.11g	FCC 15.209	PASS
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(2)	802.11b	$\geq 500\text{kHz}$	PASS
Fundamental emission output power	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(b)(3)	802.11n(20MHz)	$\leq 30\text{dBm}$	PASS
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(e)	802.11b	$\leq 8\text{dBm}/3\text{kHz}$	PASS

2.2. Test Frequency configuration:

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

2.3. Power setting parameter

CDD Mode:

Test Software	ART 2			
Modulation Mode	Test Frequency	Ant 0	Ant 1	Ant 2
802.11b	2412	95	95	×
	2437	95	95	×
	2462	95	95	×
802.11g	2412	78	78	×
	2437	100	100	×
	2462	84	84	×
802.11n(20MHz)	2412	75	75	×
	2437	100	100	×
	2462	78	78	×
802.11n(40MHz)	2422	68	68	×
	2437	80	80	×
	2452	76	76	×

Beam-forming Mode:

Test Software	ART 2			
Modulation Mode	Test Frequency	Ant 0	Ant 1	Ant 2
802.11g	2412	80	80	×
	2437	100	100	×
	2462	86	86	×
802.11n(20MHz)	2412	76	76	×
	2437	100	100	×
	2462	79	79	×
802.11n(40MHz)	2422	70	70	×
	2437	81	81	×
	2452	78	78	×

2.4. Power vs Data Rate

MCS Index	Spatial Streams	Data Rate (Mbps)						
		802.11b	802.11g		20MHz Bandwidth		40MHz Bandwidth	
					800ns GI	400ns GI	800ns GI	400ns GI
1	2	1	6	---	13.0	14.4	27.0	30.0
2	2	2	9	---	26.0	28.9	54.0	60.0
3	2	5.5	12	---	39.0	43.3	81.0	90.0
4	2	11	18	---	52.0	57.8	108.0	120.0
5	2	---	24	---	78.0	86.7	162.0	180.0
6	2	---	36	---	104.0	115.6	216.0	240.0
7	2	---	48	---	117.0	130.0	243.0	270.0
8	2	---	54	---	130.0	144.0	270.0	300.0

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

Note 2 : The EUT has two spatial Streams

2.5. 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

2.6. Measurement 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	$\pm 1.27\text{dB}$

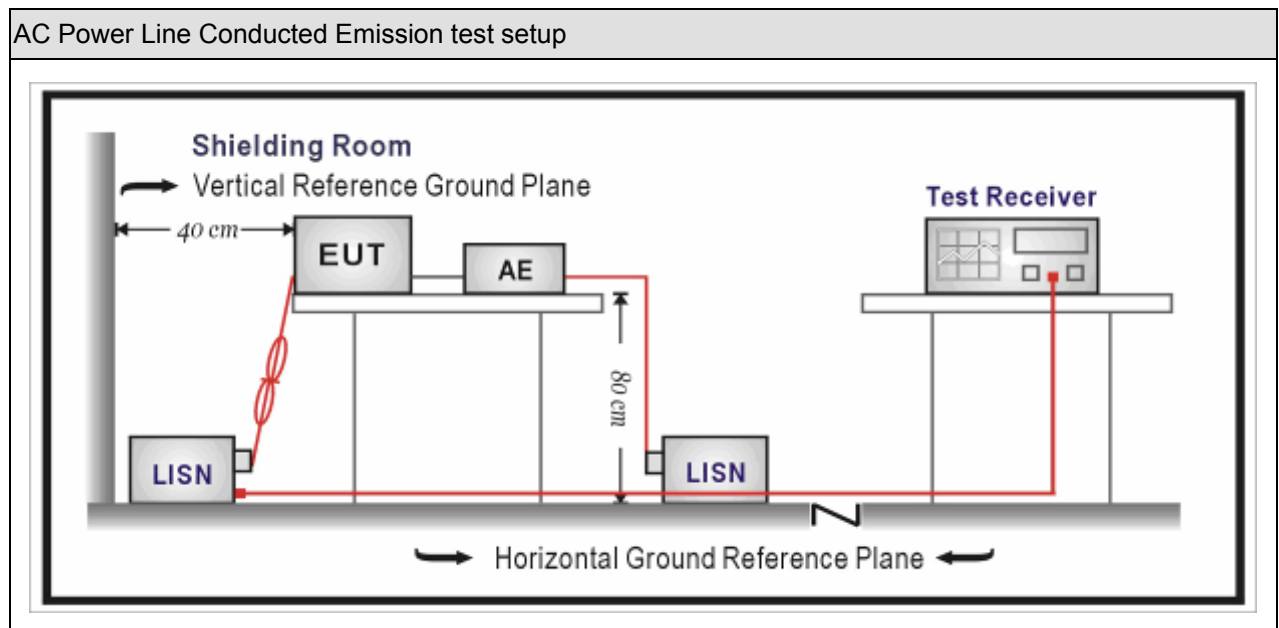
3. AC Power Line Conducted Emission

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	100726	2015.03.29	2016.03.28
Two-Line V-Network	R&S	ENV216	100043	2015.03.29	2016.03.28
Two-Line V-Network	R&S	ENV216	100044	2015.09.17	2016.09.16
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2016.03.02	2017.03.01
50ohm Termination	SHX	TF2	07081401	2015.09.17	2016.09.16
Temperature/Humidity Meter	zhichen	ZC1-2	TR1-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.

3.2. Test Setup



3.3. Limit

Frequency of Emission (MHz)	Conducted Limit	
	Quasi-peak (dB μ V)	Average (dB μ V)
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

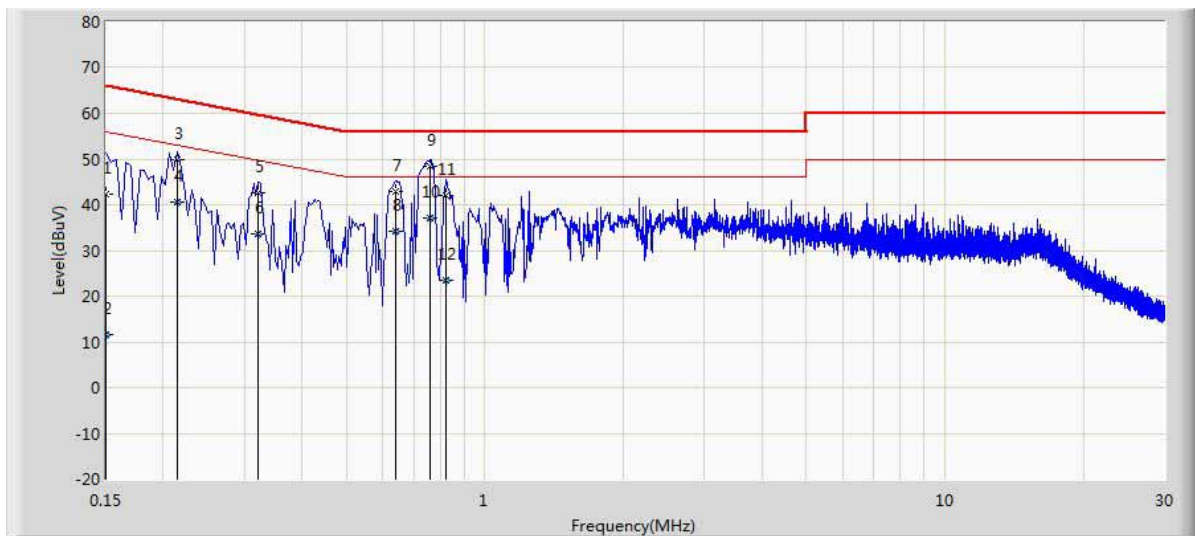
Test Method			
	References Rule	Chapter	Item
☒	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices
☒	ANSI C63.4-2014	7	AC power-line conducted emission measurements

3.5. Test Result

Product Name	: AC1200 Wireless Dual Band Gigabit Access Point	Polarity	: Line
Test Item	: AC Power Line Conducted Emission	Power	: AC 120V/60Hz
Test Site	: TR1	Test Mode	: Mode 1

No	Frequency (MHz)	Measure Level (dB μ V)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V)	Probe (dB)	Cable (dB)	Type
1	0.150	42.447	32.711	-23.553	66.000	9.676	0.060	QP
2	0.150	11.502	1.766	-44.498	56.000	9.676	0.060	AV
3	0.214	49.847	40.137	-13.202	63.049	9.650	0.060	QP
4	0.214	40.443	30.733	-12.606	53.049	9.650	0.060	AV
5	0.322	42.705	33.005	-16.950	59.655	9.640	0.060	QP
6	0.322	33.567	23.867	-16.088	49.655	9.640	0.060	AV
7	0.638	42.960	33.270	-13.040	56.000	9.620	0.070	QP
8	0.638	34.109	24.419	-11.891	46.000	9.620	0.070	AV
9	0.758	48.303	38.613	-7.697	56.000	9.620	0.070	QP
10	0.758	37.231	27.541	-8.769	46.000	9.620	0.070	AV
11	0.822	41.966	32.276	-14.034	56.000	9.620	0.070	QP
12	0.822	23.494	13.804	-22.506	46.000	9.620	0.070	AV

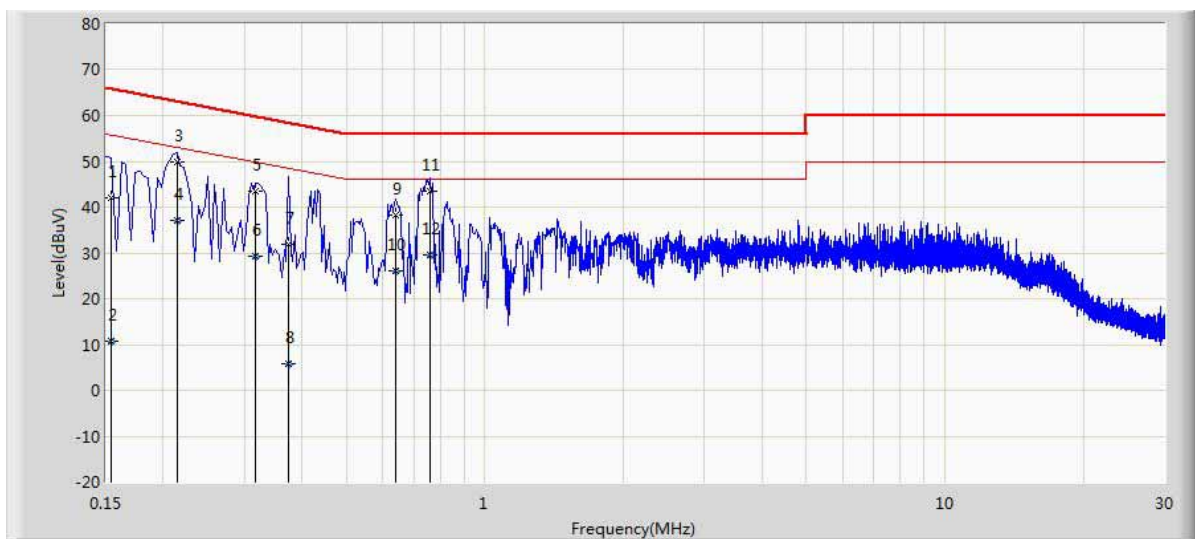
Polarity: Line



Product Name	: AC1200 Wireless Dual Band Gigabit Access Point	Polarity	: Neutral
Test Item	: AC Power Line Conducted Emission	Power	: AC 120V/60Hz
Test Site	: TR1	Test Mode	: Mode 1

No	Frequency (MHz)	Measure Level (dB μ V)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V)	Probe (dB)	Cable (dB)	Type
1	0.154	42.034	32.301	-23.747	65.781	9.673	0.060	QP
2	0.154	10.697	0.964	-45.084	55.781	9.673	0.060	AV
3	0.214	49.975	40.255	-13.074	63.049	9.660	0.060	QP
4	0.214	37.012	27.292	-16.037	53.049	9.660	0.060	AV
5	0.318	43.334	33.624	-16.425	59.759	9.650	0.060	QP
6	0.318	29.380	19.670	-20.379	49.759	9.650	0.060	AV
7	0.374	31.780	22.080	-26.632	58.412	9.640	0.060	QP
8	0.374	5.877	-3.823	-42.535	48.412	9.640	0.060	AV
9	0.638	38.296	28.586	-17.704	56.000	9.640	0.070	QP
10	0.638	25.948	16.238	-20.052	46.000	9.640	0.070	AV
11	0.758	43.622	33.912	-12.378	56.000	9.640	0.070	QP
12	0.758	29.605	19.895	-16.395	46.000	9.640	0.070	AV

Polarity: Neutral



4. Emissions in restricted frequency bands

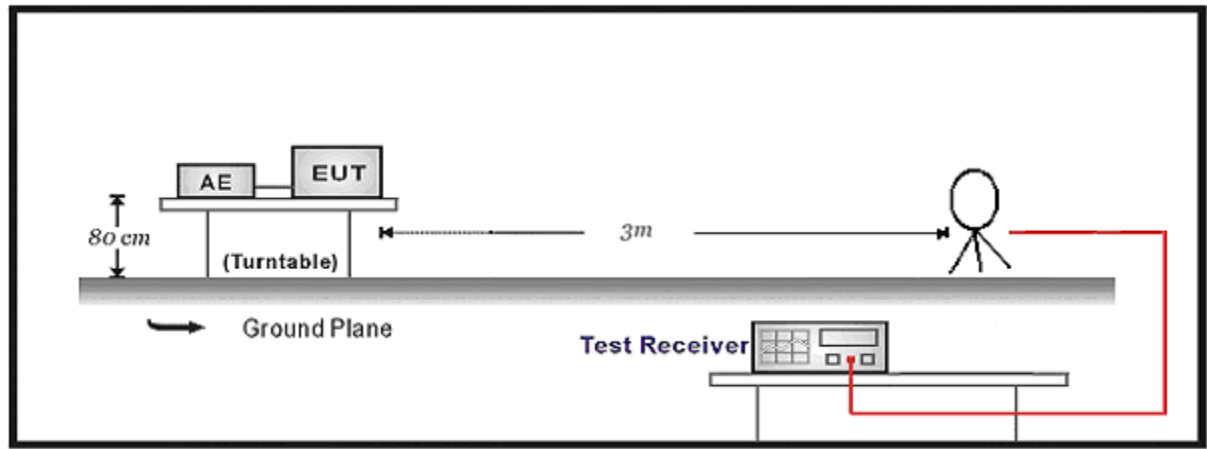
4.1. Test Equipment

Radiated Emission(Below 1GHz) / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2015.03.29	2016.03.28
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
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

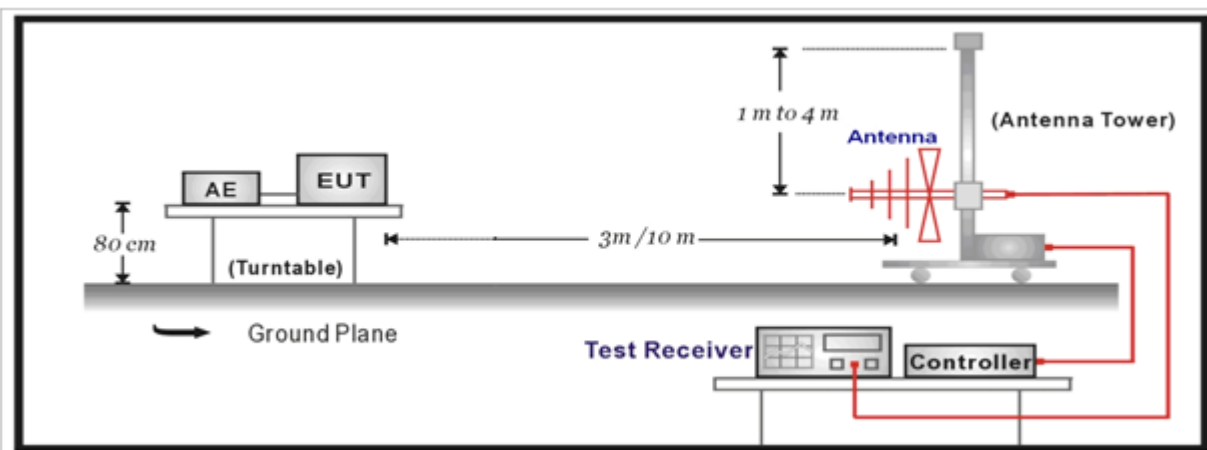
Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.04	2017.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2015.05.06	2016.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2015.05.06	2016.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2016.01.22	2017.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2014.11.25	2015.11.24
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	2015.06.10	2016.06.09
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

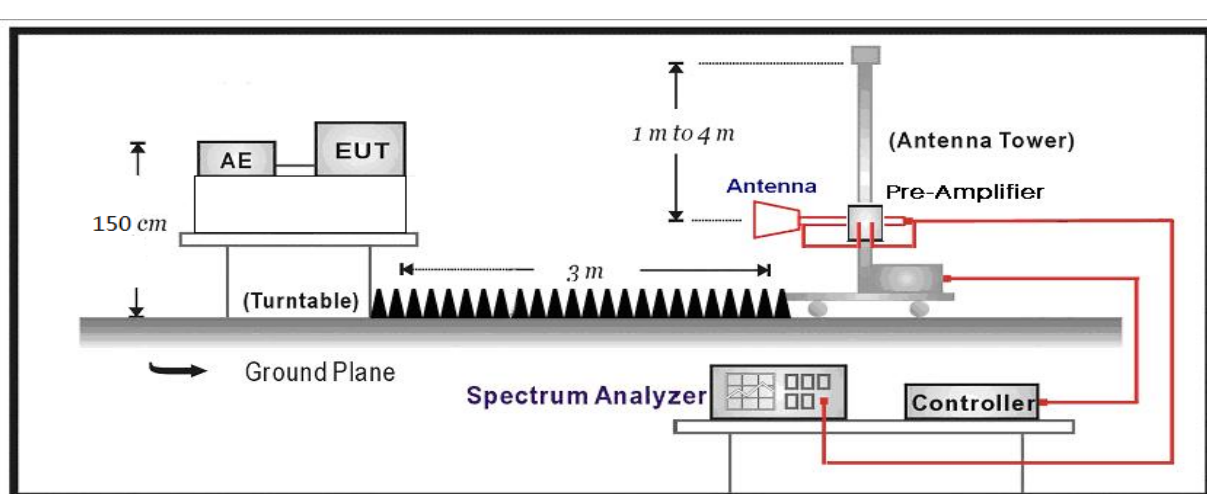
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

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)

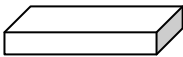
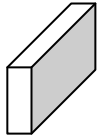
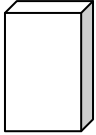
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed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

4.5. EUT test Axis definition

Item	Emissions in restricted frequency bands			
Device Category	☒	Fixed position use		
	☐	Mobile position use		
Test mode	Mode 1~7			
Test method	☒	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☒
	☐	Conducted		
	☐	Chain 1		
				
	☐	Chain 1	Chain 2	
				
		Worst Chain ☐	Worst Chain ☐	
	☐	Chain 1	Chain 2	Chain 3
				
	Worst Chain ☐	Worst Chain ☐	Worst Chain ☐	

4.6. Test Result

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Power	:	AC 120V/60Hz
Test Mode	:	Mode 1	Test Site	:	AC-5

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measured Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant 0+1	1	H	4824.0	34.5	8.0	42.5	54(note3)	11.5	PK
		H	7236.0	33.4	12.9	46.3	54(note3)	7.7	PK
		H	9648.0	31.9	16.2	48.1	54(note3)	5.9	PK
		V	4824.0	34.3	8.0	42.3	54(note3)	11.7	PK
		V	7236.0	33.7	12.9	46.6	54(note3)	7.4	PK
		V	9648.0	31.2	16.2	47.4	54(note3)	6.6	PK
	6	H	4874.0	35.2	8.1	43.3	54(note3)	10.7	PK
		H	7312.0	33.4	12.6	46.0	54(note3)	8.0	PK
		H	9748.0	31.4	16.1	47.5	54(note3)	6.5	PK
		V	4874.0	35.1	8.1	43.2	54(note3)	10.8	PK
		V	7312.0	34.4	12.6	47.0	54(note3)	7.0	PK
		V	9748.0	30.1	16.1	46.2	54(note3)	7.8	PK
	11	H	4924.0	35.2	8.2	43.4	54(note3)	10.6	PK
		H	7386.0	34.6	12.6	47.2	54(note3)	6.8	PK
		H	9848.0	30.5	16.5	47.0	54(note3)	7.0	PK
		V	4924.0	35.8	8.2	44.0	54(note3)	10.0	PK
		V	7386.0	36.8	12.6	49.4	54(note3)	4.6	PK
		V	9848.0	30.0	16.5	46.5	54(note3)	7.5	PK

Note: 1. Measure Level = Reading Level + Factor.

Note: 2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.

Note: 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.

Note: 4. The RBW setting, see Clause 6.6.

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Power	:	AC 120V/60Hz
Test Site	:	Mode 2	Test Site	:	AC-5

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measured Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant 0+1	1	H	4824.0	34.0	8.0	42.0	54(note3)	12.0	PK
		H	7236.0	32.4	12.9	45.3	54(note3)	8.7	PK
		H	9648.0	30.2	16.2	46.4	54(note3)	7.6	PK
		V	4824.0	33.2	8.0	41.2	54(note3)	12.8	PK
		V	7236.0	32.2	12.9	45.1	54(note3)	8.9	PK
		V	9648.0	29.6	16.2	45.8	54(note3)	8.2	PK
	6	H	4874.0	34.0	8.1	42.1	54(note3)	11.9	PK
		H	7312.0	31.8	12.6	44.4	54(note3)	9.6	PK
		H	9748.0	30.8	16.1	46.9	54(note3)	7.1	PK
		V	4874.0	34.2	8.1	42.3	54(note3)	11.7	PK
		V	7312.0	31.4	12.6	44.0	54(note3)	10.0	PK
		V	9748.0	30.3	16.1	46.4	54(note3)	7.6	PK
	11	H	4924.0	34.6	8.2	42.8	54(note3)	11.2	PK
		H	7386.0	32.2	12.6	44.8	54(note3)	9.2	PK
		H	9848.0	29.9	16.5	46.4	54(note3)	7.6	PK
		V	4924.0	35.1	8.2	43.3	54(note3)	10.7	PK
		V	7386.0	33.6	12.6	46.2	54(note3)	7.8	PK
		V	9848.0	29.8	16.5	46.3	54(note3)	7.7	PK

Note: 1. Measure Level = Reading Level + Factor.

Note: 2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.

Note: 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.

Note: 4. The RBW setting, see Clause 6.6.

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Power	:	AC 120V/60Hz
Test Site	:	Mode 3	Test Site	:	AC-5

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measured Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant 0+1	1	H	4824.0	33.2	8.0	41.2	54(note3)	12.8	PK
		H	7236.0	32.4	12.9	45.3	54(note3)	8.7	PK
		H	9648.0	29.9	16.2	46.1	54(note3)	7.9	PK
		V	4824.0	34.5	8.0	42.5	54(note3)	11.5	PK
		V	7236.0	31.6	12.9	44.5	54(note3)	9.5	PK
		V	9648.0	29.9	16.2	46.1	54(note3)	7.9	PK
	6	H	4874.0	33.9	8.1	42.0	54(note3)	12.0	PK
		H	7312.0	32.1	12.6	44.7	54(note3)	9.3	PK
		H	9748.0	30.7	16.1	46.8	54(note3)	7.2	PK
		V	4874.0	34.7	8.1	42.8	54(note3)	11.2	PK
		V	7312.0	33.3	12.6	45.9	54(note3)	8.1	PK
		V	9748.0	30.8	16.1	46.9	54(note3)	7.1	PK
	11	H	4924.0	33.9	8.2	42.1	54(note3)	11.9	PK
		H	7386.0	32.1	12.6	44.7	54(note3)	9.3	PK
		H	9848.0	30.1	16.5	46.6	54(note3)	7.4	PK
		V	4924.0	34.8	8.2	43.0	54(note3)	11.0	PK
		V	7386.0	32.1	12.6	44.7	54(note3)	9.3	PK
		V	9848.0	30.1	16.5	46.6	54(note3)	7.4	PK

Note: 1. Measure Level = Reading Level + Factor.

Note: 2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.

Note: 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.

Note: 4. The RBW setting, see Clause 6.6.

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Power	:	AC 120V/60Hz
Test Site	:	Mode 4	Test Site	:	AC-5

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measured Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant 0	3	H	4844.0	33.7	8.3	42.0	54(note3)	12.0	PK
		H	7266.0	32.7	12.7	45.4	54(note3)	8.6	PK
		H	9688.0	29.9	15.9	45.8	54(note3)	8.2	PK
		V	4844.0	34.1	8.3	42.4	54(note3)	11.6	PK
		V	7266.0	32.9	12.7	45.6	54(note3)	8.4	PK
		V	9688.0	30.6	15.9	46.5	54(note3)	7.5	PK
	6	H	4874.0	33.1	8.1	41.2	54(note3)	12.8	PK
		H	7311.0	32.1	12.6	44.7	54(note3)	9.3	PK
		H	9748.0	31.2	16.1	47.3	54(note3)	6.7	PK
		V	4874.0	34.0	8.1	42.1	54(note3)	11.9	PK
		V	7311.0	31.8	12.6	44.4	54(note3)	9.6	PK
		V	9748.0	30.9	16.1	47.0	54(note3)	7.0	PK
	9	H	4904.0	34.0	8.2	42.2	54(note3)	11.8	PK
		H	7356.0	32.3	13.2	45.5	54(note3)	8.5	PK
		H	9808.0	30.0	16.1	46.1	54(note3)	7.9	PK
		V	4904.0	33.6	8.2	41.8	54(note3)	12.2	PK
		V	7356.0	32.1	13.2	45.3	54(note3)	8.7	PK
		V	9808.0	29.5	16.1	45.6	54(note3)	8.4	PK

Note: 1. Measure Level = Reading Level + Factor.

Note: 2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.

Note: 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.

Note: 4. The RBW setting, see Clause 6.6.

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Power	:	AC 120V/60Hz
Test Site	:	Mode 5	Test Site	:	AC-5

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measured Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant 0+1	1	H	4824.0	34.4	8.0	42.4	54(note3)	11.6	PK
		H	7236.0	33.8	12.9	46.7	54(note3)	7.3	PK
		H	9648.0	30.4	16.2	46.6	54(note3)	7.4	PK
		V	4824.0	33.9	8.0	41.9	54(note3)	12.1	PK
		V	7236.0	31.4	12.9	44.3	54(note3)	9.7	PK
		V	9648.0	30.5	16.2	46.7	54(note3)	7.3	PK
	6	H	4874.0	34.4	8.1	42.5	54(note3)	11.5	PK
		H	7312.0	32.0	12.6	44.6	54(note3)	9.4	PK
		H	9748.0	30.3	16.1	46.4	54(note3)	7.6	PK
		V	4874.0	33.6	8.1	41.7	54(note3)	12.3	PK
		V	7312.0	30.8	12.6	43.4	54(note3)	10.6	PK
		V	9748.0	30.6	16.1	46.7	54(note3)	7.3	PK
	11	H	4924.0	35.1	8.2	43.3	54(note3)	10.7	PK
		H	7386.0	33.5	12.6	46.1	54(note3)	7.9	PK
		H	9848.0	30.3	16.5	46.8	54(note3)	7.2	PK
		V	4924.0	34.8	8.2	43.0	54(note3)	11.0	PK
		V	7386.0	35.1	12.6	47.7	54(note3)	6.3	PK
		V	9848.0	30.5	16.5	47.0	54(note3)	7.0	PK

Note: 1. Measure Level = Reading Level + Factor.

Note: 2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.

Note: 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.

Note: 4. The RBW setting, see Clause 6.6.

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Power	:	AC 120V/60Hz
Test Site	:	Mode 6	Test Site	:	AC-5

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measured Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant 0+1	1	H	4824.0	33.4	8.0	41.4	54(note3)	12.6	PK
		H	7236.0	31.5	12.9	44.4	54(note3)	9.6	PK
		H	9648.0	30.5	16.2	46.7	54(note3)	7.3	PK
		V	4824.0	35.6	8.0	43.6	54(note3)	10.4	PK
		V	7236.0	32.4	12.9	45.3	54(note3)	8.7	PK
		V	9648.0	30.7	16.2	46.9	54(note3)	7.1	PK
	6	H	4874.0	35.6	8.1	43.7	54(note3)	10.3	PK
		H	7312.0	34.9	12.6	47.5	54(note3)	6.5	PK
		H	9748.0	33.2	16.1	49.3	54(note3)	4.7	PK
		V	4874.0	35.1	8.1	43.2	54(note3)	10.8	PK
		V	7312.0	34.7	12.6	47.3	54(note3)	6.7	PK
		V	9748.0	32.3	16.1	48.4	54(note3)	5.6	PK
	11	H	4924.0	34.8	8.2	43.0	54(note3)	11.0	PK
		H	7386.0	31.8	12.6	44.4	54(note3)	9.6	PK
		H	9848.0	30.4	16.5	46.9	54(note3)	7.1	PK
		V	4924.0	36.1	8.2	44.3	54(note3)	9.7	PK
		V	7386.0	35.3	12.6	47.9	54(note3)	6.1	PK
		V	9848.0	34.1	16.5	50.6	54(note3)	3.4	PK

Note: 1. Measure Level = Reading Level + Factor.

Note: 2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.

Note: 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.

Note: 4. The RBW setting, see Clause 6.6.

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Power	:	AC 120V/60Hz
Test Site	:	Mode 7	Test Site	:	AC-5

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measured Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant 0	3	H	4844.0	34.1	8.3	42.4	54(note3)	11.6	PK
		H	7266.0	32.7	12.7	45.4	54(note3)	8.6	PK
		H	9688.0	31.1	15.9	47.0	54(note3)	7.0	PK
		V	4844.0	35.3	8.3	43.6	54(note3)	10.4	PK
		V	7266.0	33.9	12.7	46.6	54(note3)	7.4	PK
		V	9688.0	31.4	15.9	47.3	54(note3)	6.7	PK
	6	H	4874.0	34.5	8.1	42.6	54(note3)	11.4	PK
		H	7311.0	34.6	12.6	47.2	54(note3)	6.8	PK
		H	9748.0	32.7	16.1	48.8	54(note3)	5.2	PK
		V	4874.0	36.5	8.1	44.6	54(note3)	9.4	PK
		V	7311.0	33.2	12.6	45.8	54(note3)	8.2	PK
		V	9748.0	32.0	16.1	48.1	54(note3)	5.9	PK
	9	H	4904.0	35.1	8.2	43.3	54(note3)	10.7	PK
		H	7356.0	31.8	13.2	45.0	54(note3)	9.0	PK
		H	9808.0	29.5	16.1	45.6	54(note3)	8.4	PK
		V	4904.0	34.7	8.2	42.9	54(note3)	11.1	PK
		V	7356.0	31.8	13.2	45.0	54(note3)	9.0	PK
		V	9808.0	30.1	16.1	46.2	54(note3)	7.8	PK

Note: 1. Measure Level = Reading Level + Factor.

Note: 2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.

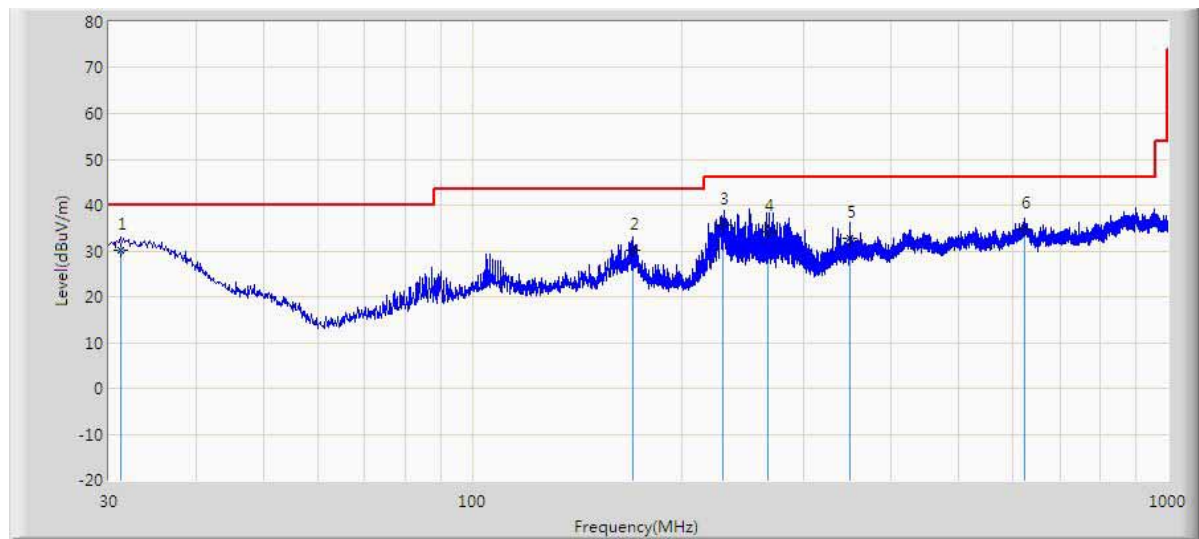
Note: 3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

Note: 4. The RBW setting, see Clause 6.6.

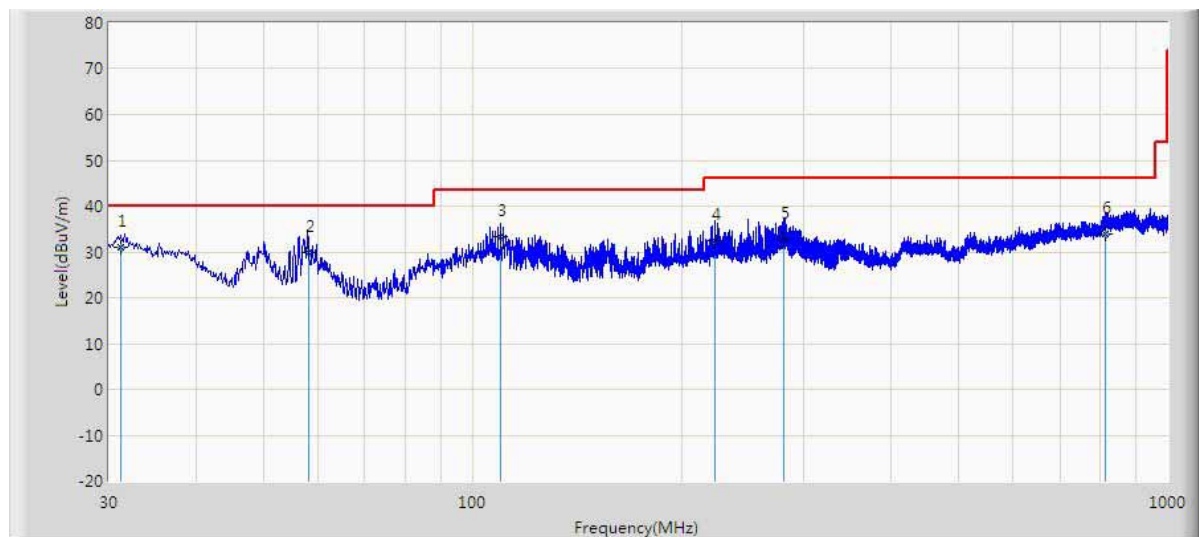
The worst case of Radiated Emission below 1GHz:

Chain	CH	Antenna Polarity	Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measured Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
Ant 0+1	1	H	31.218	34.523	-4.399	30.124	40.000	9.876	QP
		H	170.155	42.223	-12.059	30.164	43.500	13.336	QP
		H	229.222	47.041	-11.412	35.629	46.000	10.371	QP
		H	266.330	42.288	-8.183	34.105	46.000	11.895	QP
		H	349.155	38.881	-6.262	32.619	46.000	13.381	QP
		H	622.222	35.606	-0.834	34.772	46.000	11.228	QP
		V	30.970	35.328	-4.358	30.970	40.000	9.03	QP
		V	29.876	45.282	-15.406	29.876	40.000	10.124	QP
		V	33.248	43.198	-9.95	33.248	43.500	10.252	QP
		V	32.329	44.346	-12.017	32.329	46.000	13.671	QP
		V	32.807	41.195	-8.388	32.807	46.000	13.193	QP
		V	33.773	32.888	0.885	33.773	46.000	12.227	QP

Polarity: Horizontal



Polarity: Vertical



5. Emissions in non-restricted frequency bands

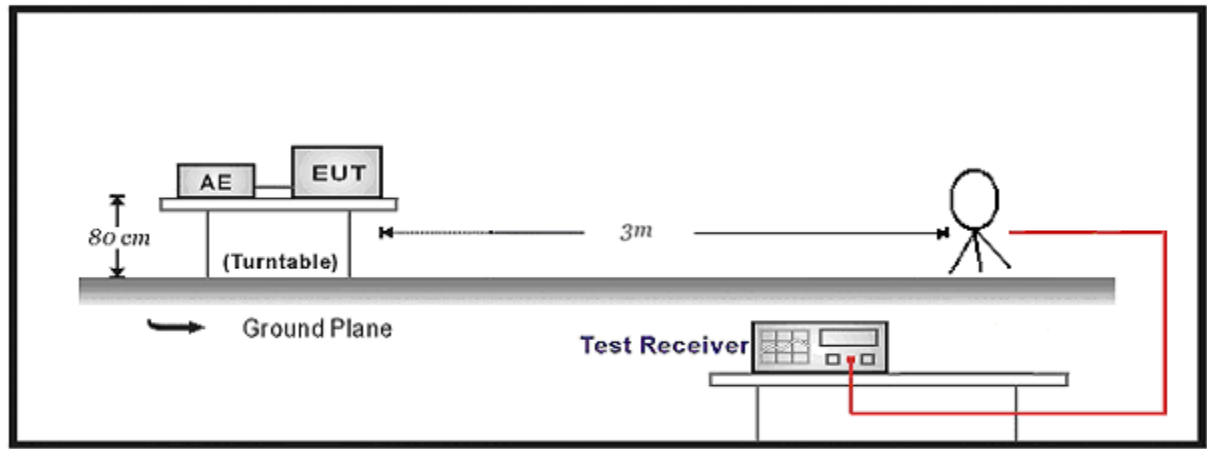
5.1. Test Equipment

Radiated Emission(Below 1GHz) / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2016.03.29	2017.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2015.11.16	2016.11.17
Bilog Chainenna	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
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

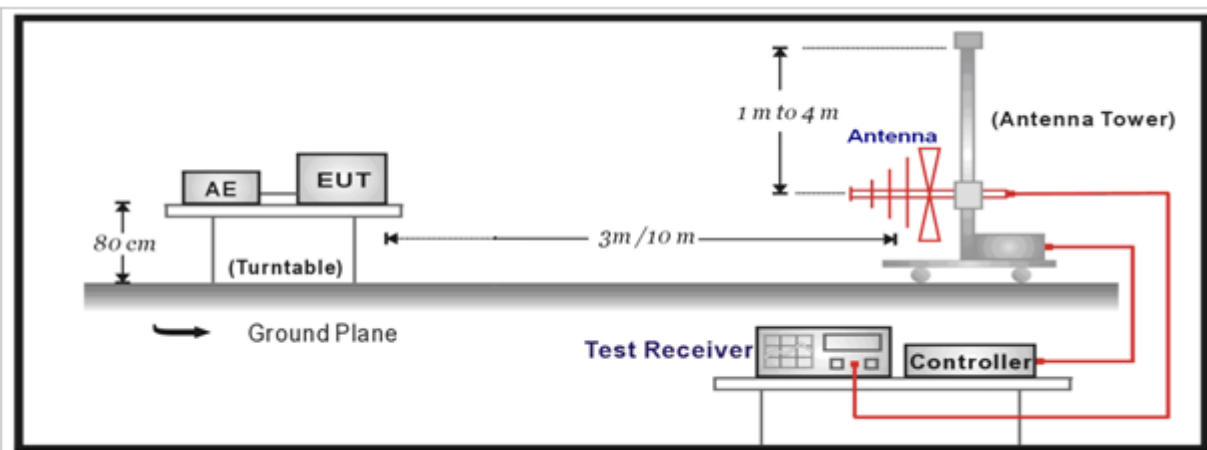
Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100159	2016.03.29	2017.03.28
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.04	2017.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2015.05.06	2016.05.05
Preamplifier	Quietek	AP-040G	CHM-0906001	2015.05.06	2016.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2016.01.22	2017.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2014.11.25	2015.11.24
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	2015.06.10	2016.06.09
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.					

5.2. Test Setup

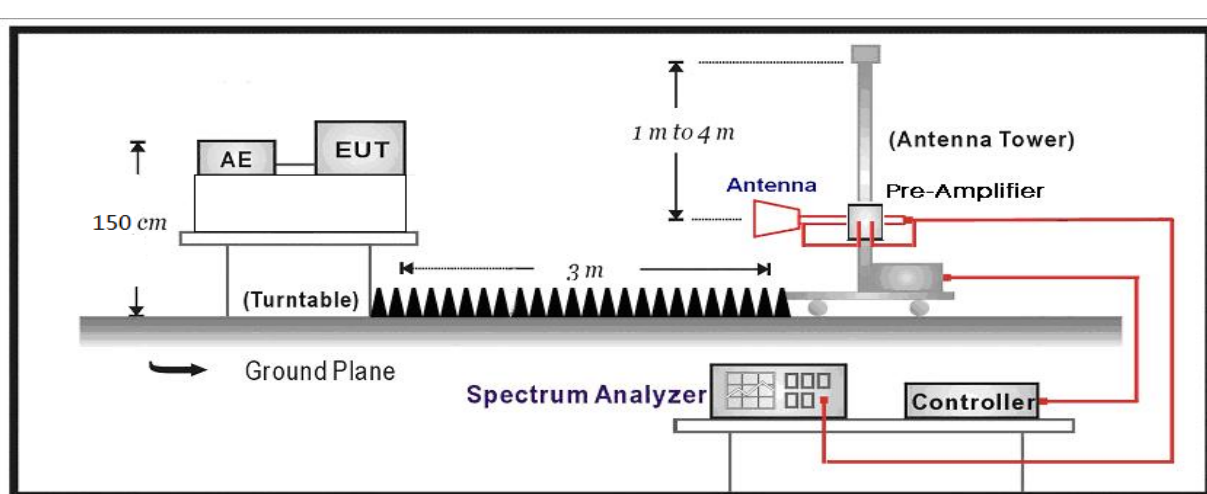
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



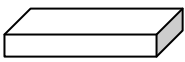
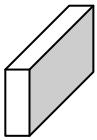
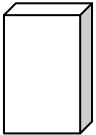
5.3. Limit

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

Item	Emissions in non-restricted frequency bands			
Device Category	☒	Fixed position use		
	☐	Mobile position use		
Test mode	Mode 1 ~ Mode 7			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☐	Chain 0		
				
	☒	Chain 0	Chain 1	
				
		Worst Chain ☐	Worst Chain ☐	
	☐	Chain 0	Chain 1	Chain 2
				
	Worst Chain ☐	Worst Chain ☐	Worst Chain ☐	

5.6. Test Result

Product Name	: AC1200 Wireless Dual Band Gigabit Access Point	Test Power	: AC 120V/60Hz
Test Site	: TR8		

Chain 0

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	15.39	2400.00	-27.21	42.60	>30	Pass
1	11	2462	15.80	2483.50	-38.10	53.90	>30	Pass
2	01	2412	8.10	2400.00	-30.89	38.99	>30	Pass
2	11	2462	9.11	2483.50	-33.54	42.65	>30	Pass
3	01	2412	7.39	2400.00	-31.20	38.59	>30	Pass
3	11	2462	8.03	2483.50	-36.27	44.30	>30	Pass
4	03	2422	2.99	2400.00	-38.07	41.06	>30	Pass
4	09	2452	5.13	2483.50	-32.60	37.73	>30	Pass

Note: The worst case of emissions in non-restricted frequency bands as below:

Mode 4 CH09(2452MHz)

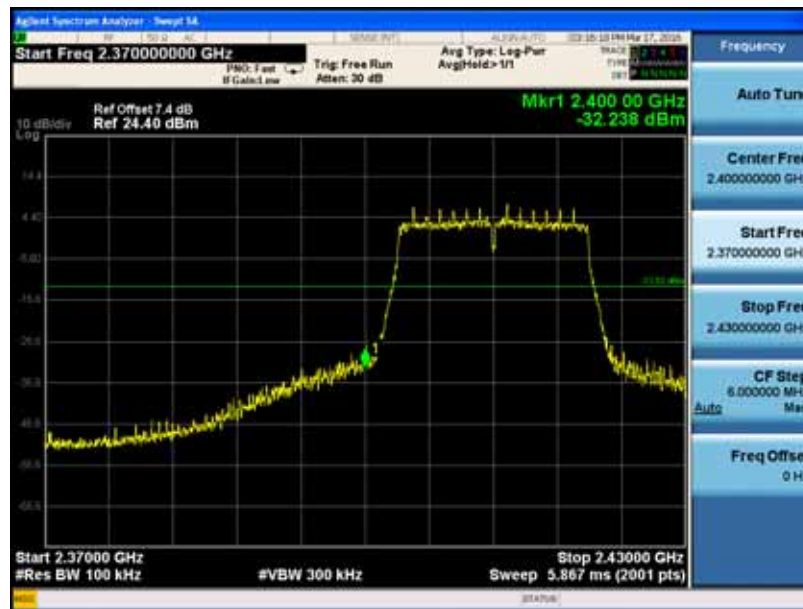


Chain 1

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	15.78	2400.00	-27.13	42.91	>30	Pass
1	11	2462	15.76	2483.50	-37.31	53.07	>30	Pass
2	01	2412	8.17	2400.00	-31.31	39.48	>30	Pass
2	11	2462	10.03	2483.50	-36.49	46.52	>30	Pass
3	01	2412	7.47	2400.00	-32.24	39.71	>30	Pass
3	11	2462	7.74	2483.50	-33.56	41.30	>30	Pass
4	03	2422	2.59	2400.00	-39.53	42.12	>30	Pass
4	09	2452	5.07	2483.50	-36.09	41.16	>30	Pass

Note: The worst case of emissions in non-restricted frequency bands as below:

Mode 3 CH01(2412MHz)



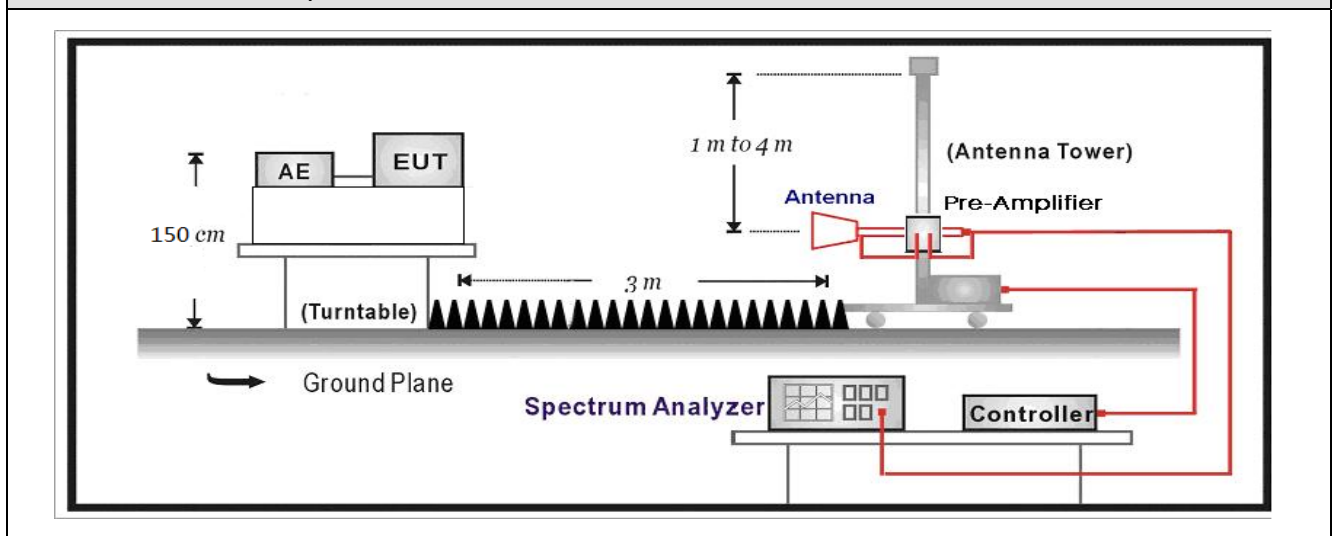
6. Radiated Emission Band Edge

6.1. Test Equipment

Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.04	2017.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2015.05.06	2016.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2015.05.06	2016.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2016.01.22	2017.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2014.11.25	2015.11.24
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	2015.06.10	2016.06.09
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.					

6.2. Test Setup

Above 1GHz Test Setup:



6.3. Limit

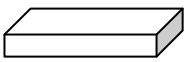
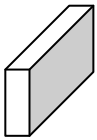
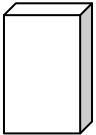
Band edge Limit				
Frequency bands (MHz)	Detector	Limit (dB μ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
2483.5-2500	AV	54	1	3

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	
☒	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

6.5. EUT test definition

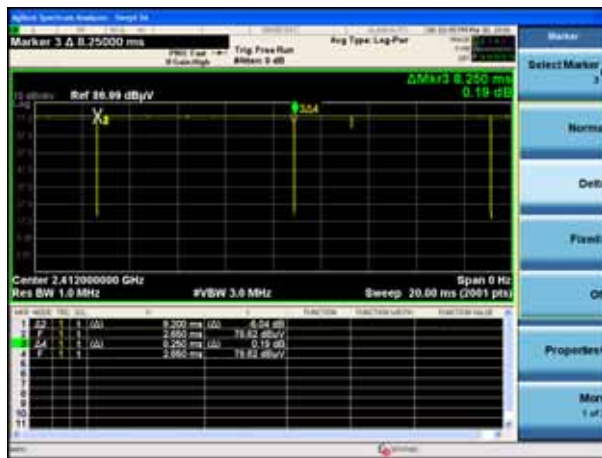
Item	Emissions in non-restricted frequency bands			
Device Category	☒	Fixed position use		
	☐	Mobile position use		
Test mode	Mode 1~7			
Test method	☒	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☒
	☐	Conducted		
	☐	Chain 0		
				
	☒	Chain 0	Chain 1	
				
		Worst Chain ☐	Worst Chain ☐	
	☐	Chain 0	Chain 1	Chain 2
				
	Worst Chain ☐	Worst Chain ☐	Worst Chain ☐	

6.6. Duty Cycle

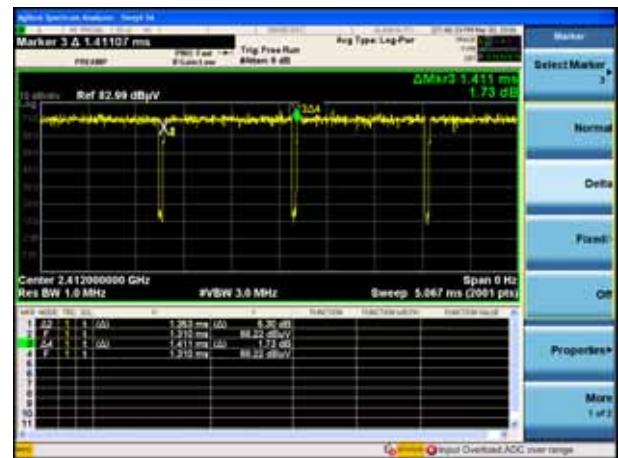
CDD mode:

Test Mode	Tx On (ms)	Tx Off (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
802.11b	8.200	0.050	122Hz	8.250	99.39%
802.11g	1.353	0.058	739Hz	1.411	95.89%
802.11n(20MHz)	1.264	0.058	791Hz	1.322	95.61%
802.11n(40MHz)	0.9324	0.1096	1.073kHz	1.042	89.48%

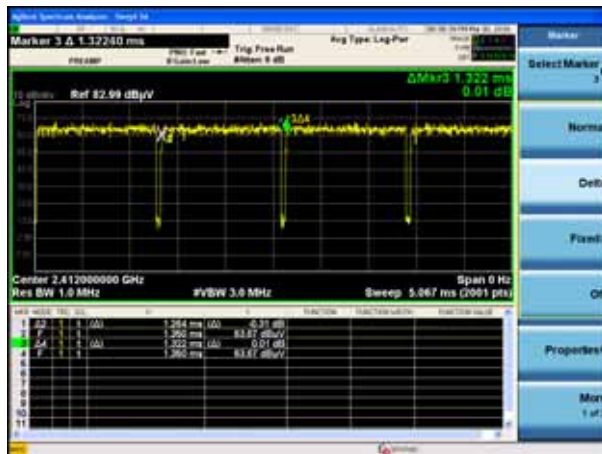
802.11b



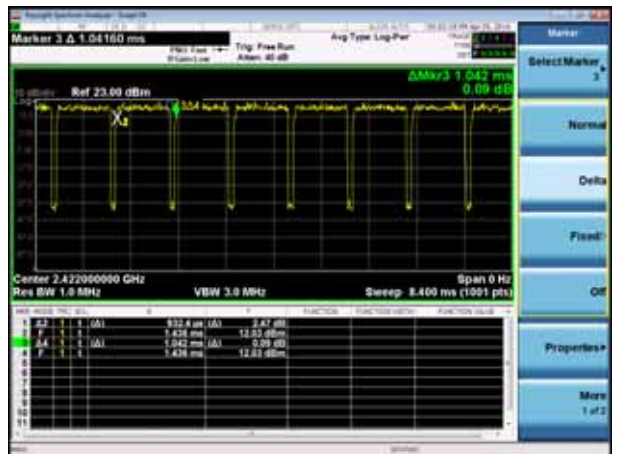
802.11g



802.11n(20MHz)



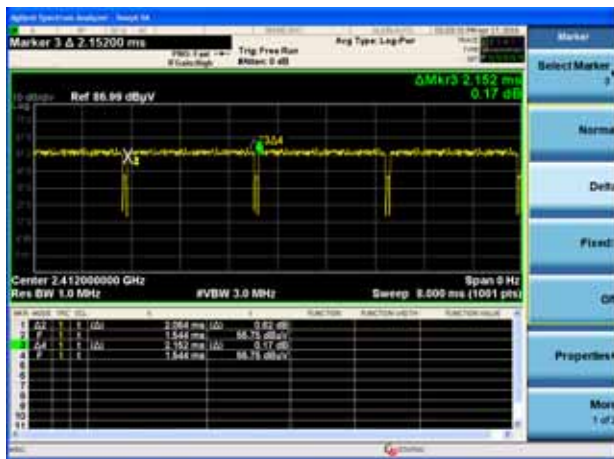
802.11n(40MHz)



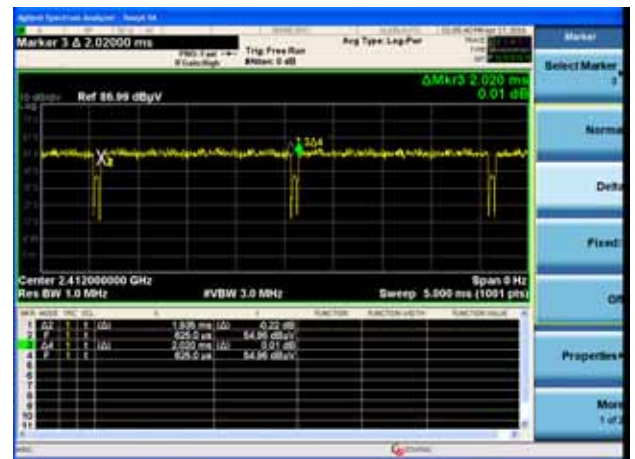
Beam-forming mode:

Test Mode	Tx On (ms)	Tx Off (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
802.11g	2.064	0.088	484Hz	2.152	95.91%
802.11n(20MHz)	1.935	0.085	517Hz	2.020	95.79%
802.11n(40MHz)	0.924	0.092	1.082kHz	1.016	90.94%

802.11g



802.11n(20MHz)



802.11n(40MHz)



6.7. Test Result

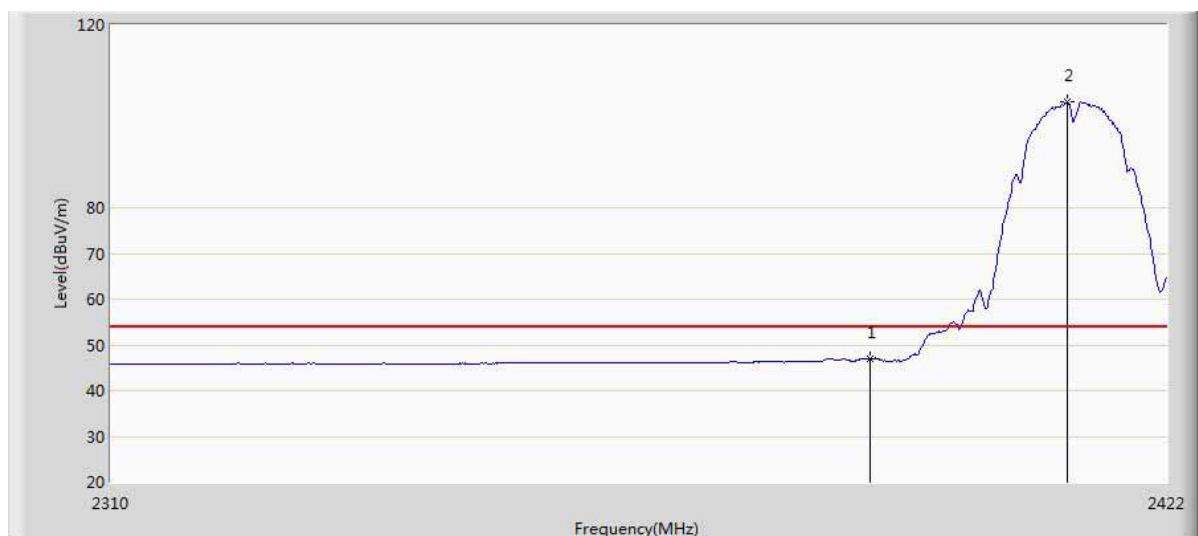
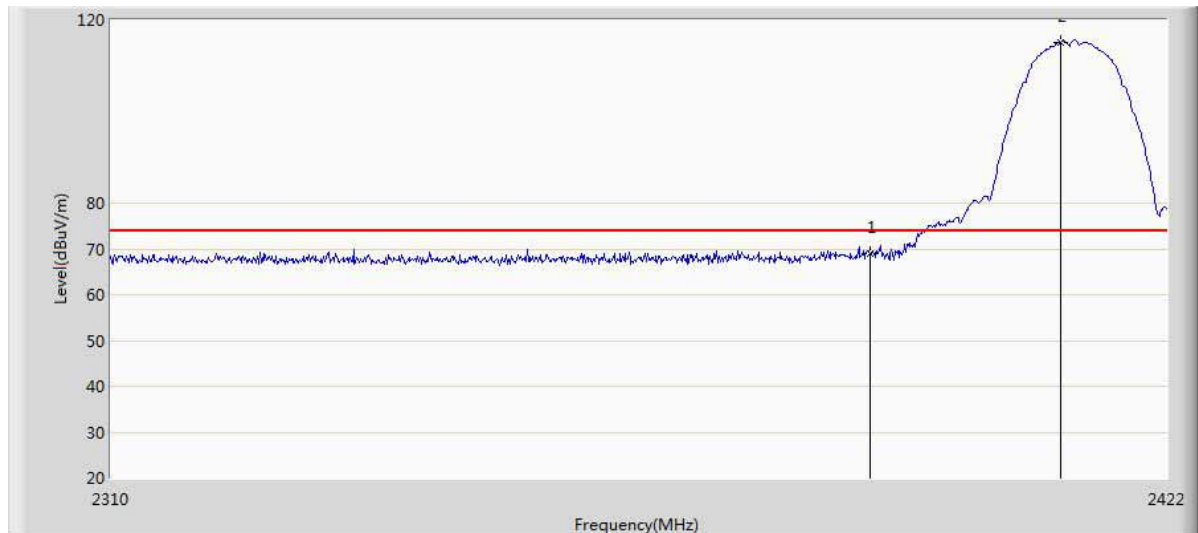
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 1	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	63.631	26.286	-10.369	74.000	37.345	PK
2	2411.808	114.920	77.575	N/A	N/A	37.339	PK
1	2390.000	52.722	15.377	-1.278	54.000	37.345	AV
2	2411.136	109.468	72.128	N/A	N/A	37.339	AV



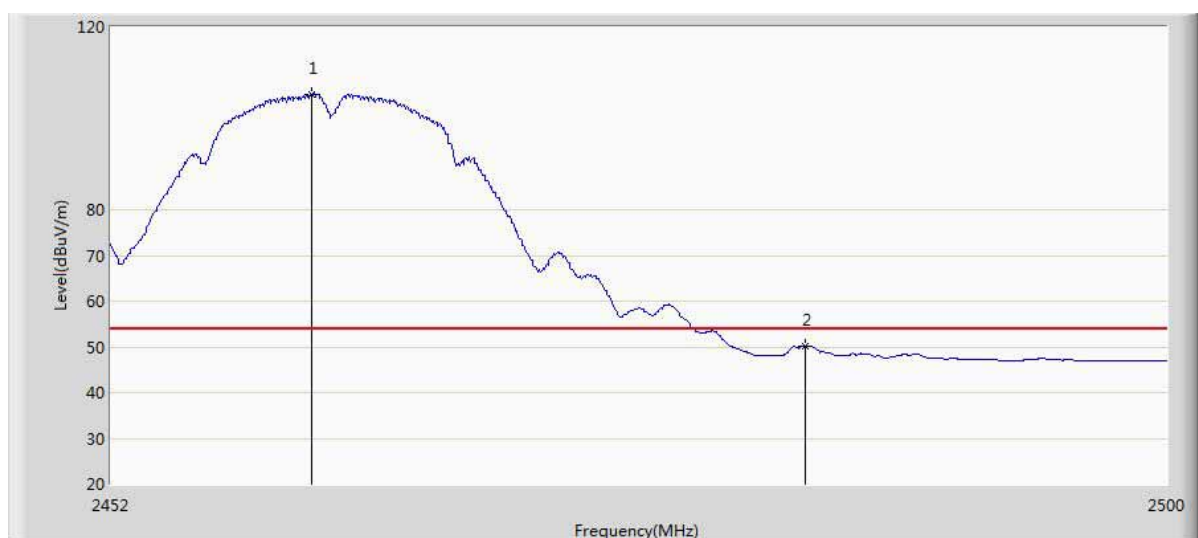
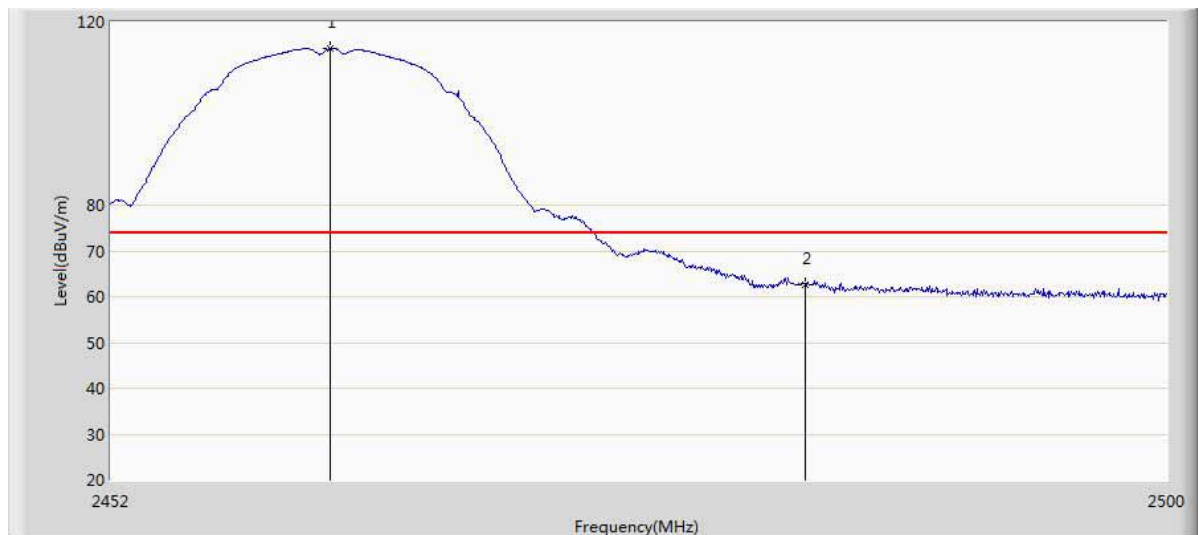
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 1	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	68.928	31.583	-5.072	74.000	37.345	PK
2	2410.576	115.205	77.866	N/A	N/A	37.339	PK
1	2390.000	47.042	9.697	-6.958	54.000	37.345	AV
2	2411.248	103.218	65.878	N/A	N/A	37.341	AV



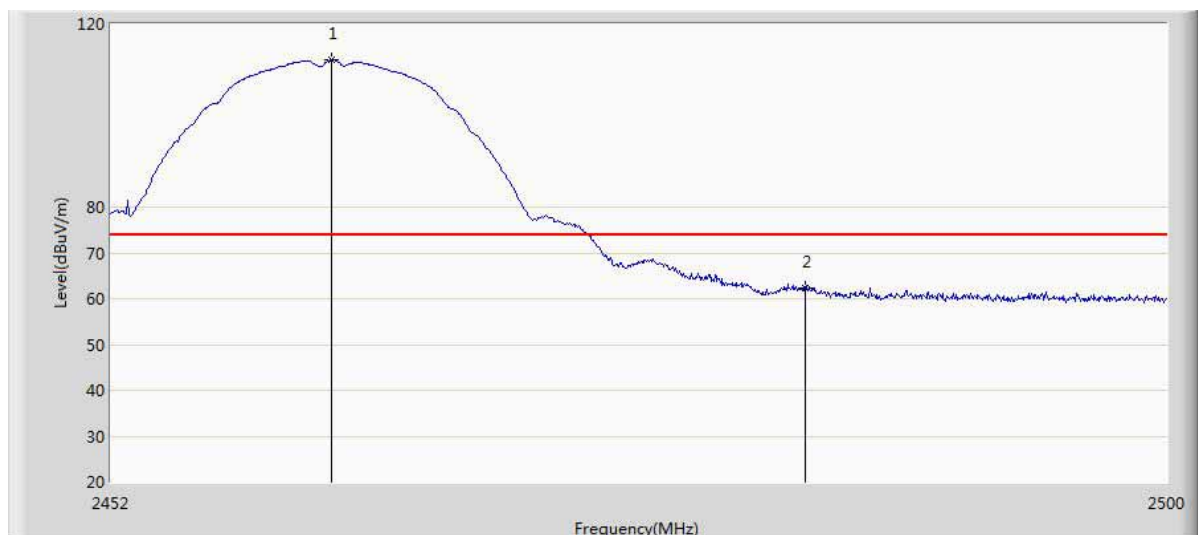
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 1	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2461.936	114.268	76.786	N/A	N/A	37.483	PK
2	2483.500	62.747	25.152	-11.253	74.000	37.595	PK
1	2461.072	105.338	67.856	N/A	N/A	37.482	AV
2	2483.500	50.086	12.491	-3.914	54.000	37.595	AV



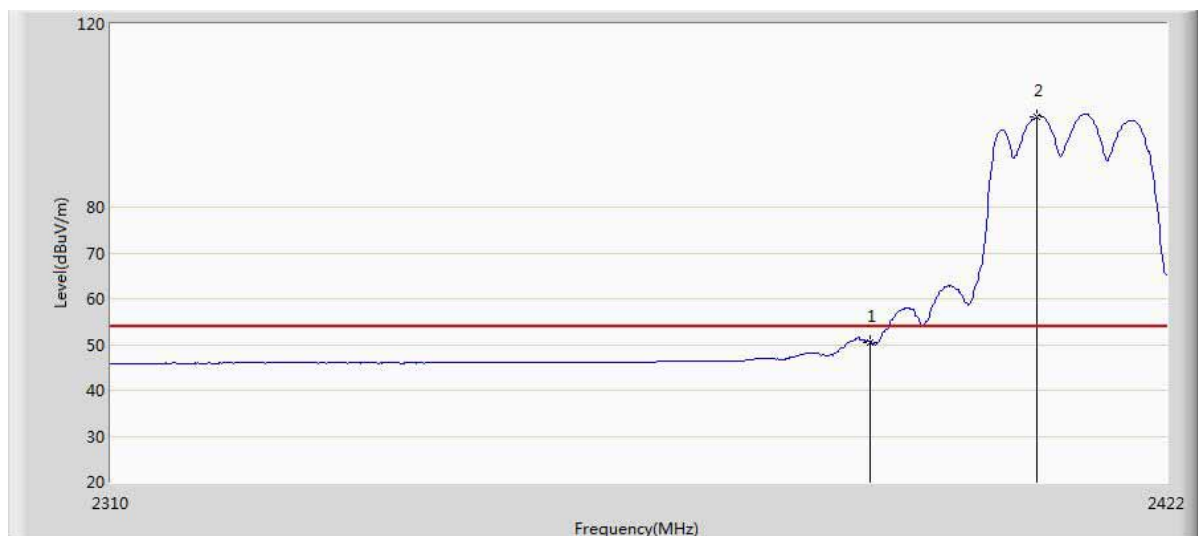
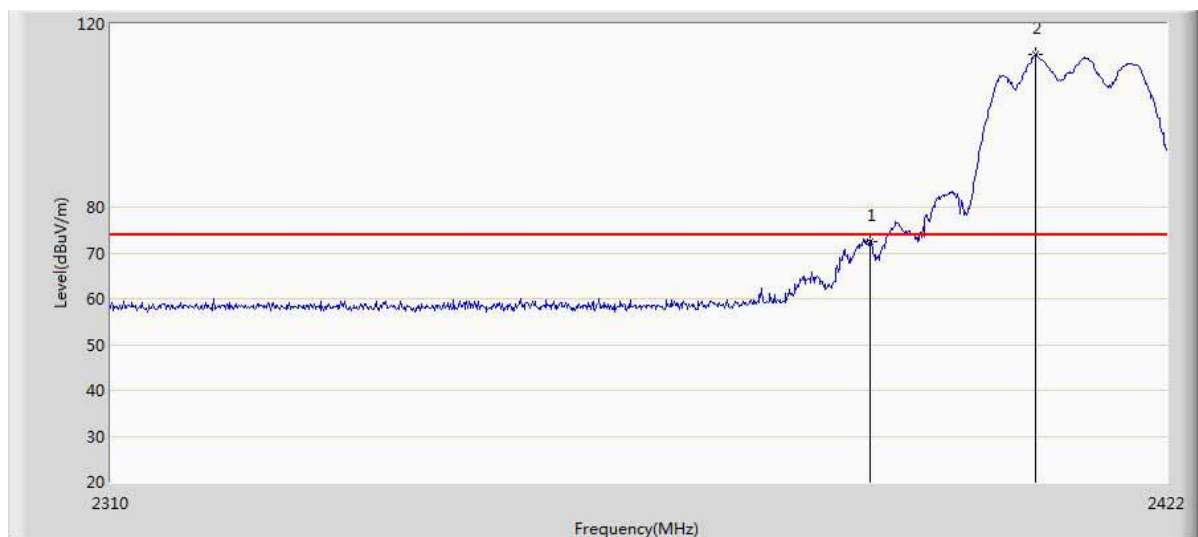
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 1	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2461.984	112.082	74.600	N/A	N/A	37.482	PK
2	2483.500	62.455	24.860	-11.545	74.000	37.595	PK
1	2461.120	100.330	62.848	N/A	N/A	37.482	AV
2	2483.500	48.777	11.182	-5.223	54.000	37.595	AV



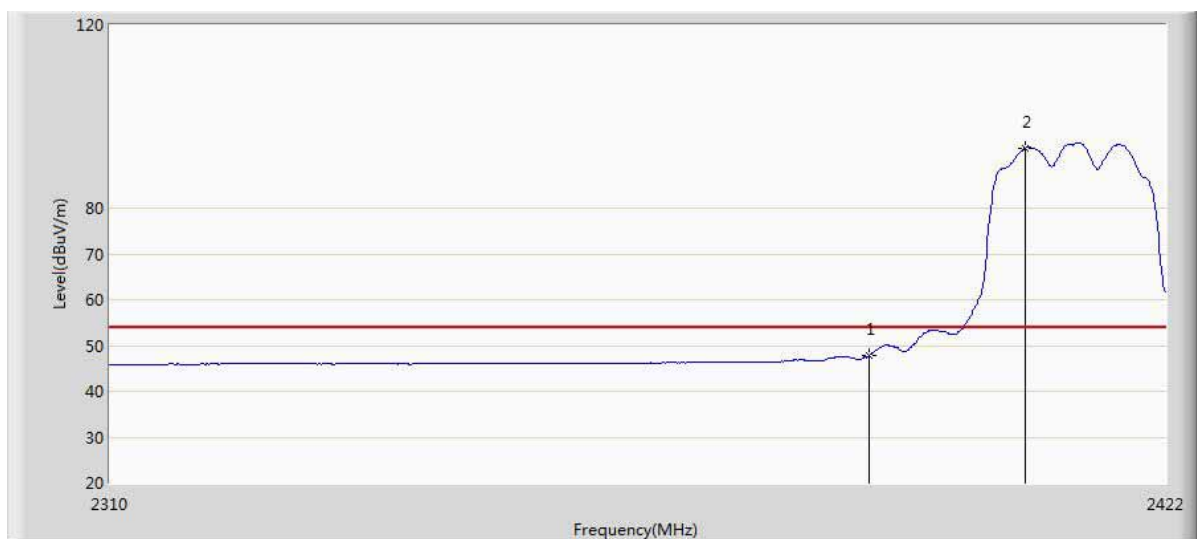
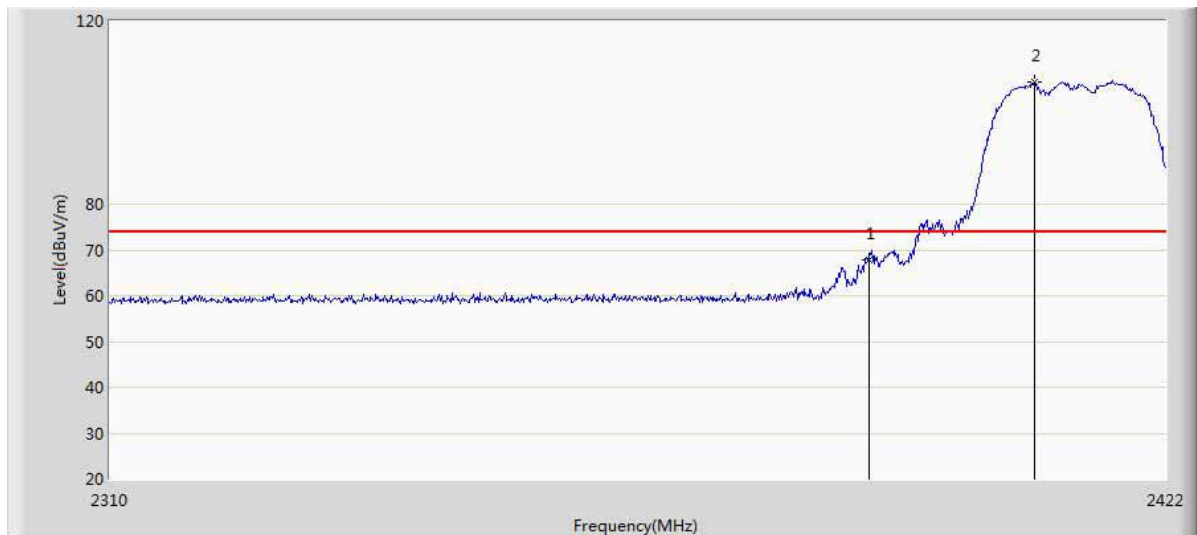
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 2	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	72.471	35.126	-1.529	74.000	37.345	PK
2	2407.776	113.272	75.932	N/A	N/A	37.340	PK
1	2390.000	50.533	13.188	-3.467	54.000	37.345	AV
2	2408.000	99.853	62.513	N/A	N/A	37.340	AV



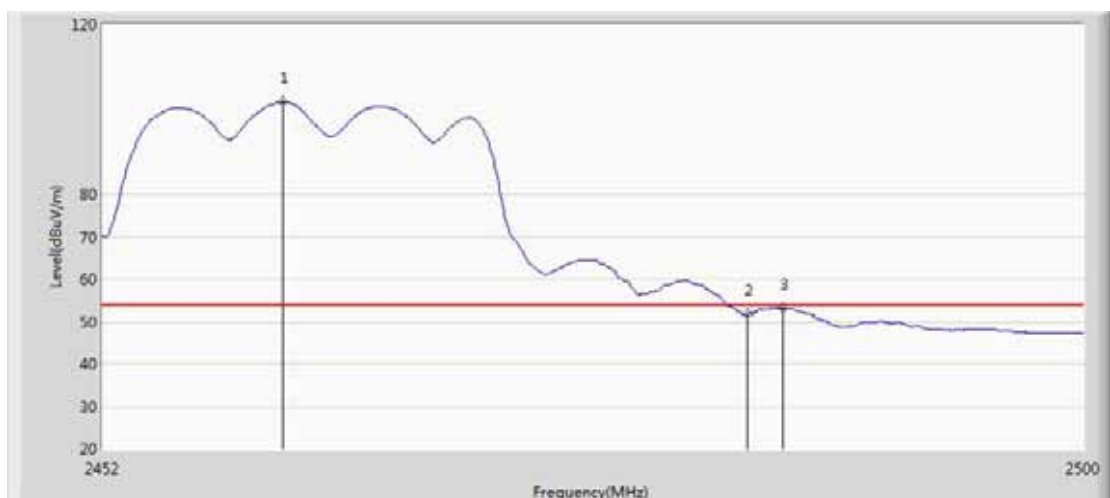
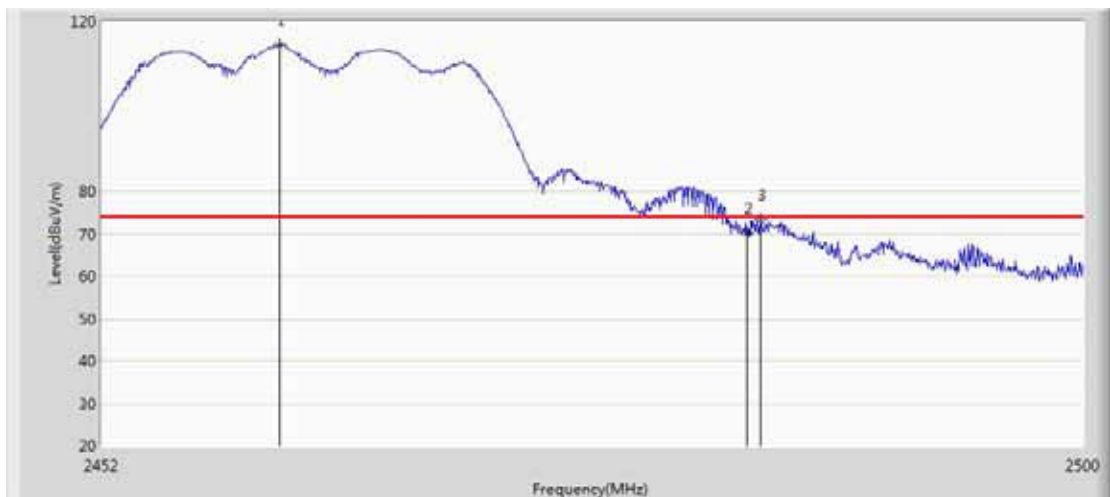
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 2	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	67.862	30.517	-6.138	74.000	37.345	PK
2	2407.776	106.647	69.307	N/A	N/A	37.340	PK
1	2390.000	47.693	10.348	-6.307	54.000	37.345	AV
2	2406.880	93.147	55.806	N/A	N/A	37.341	AV



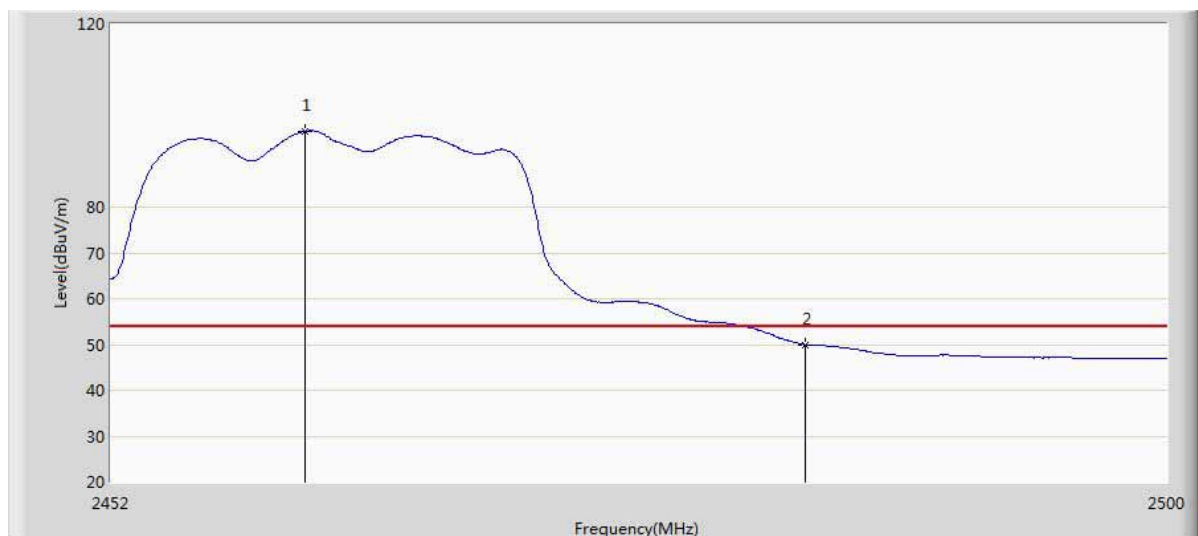
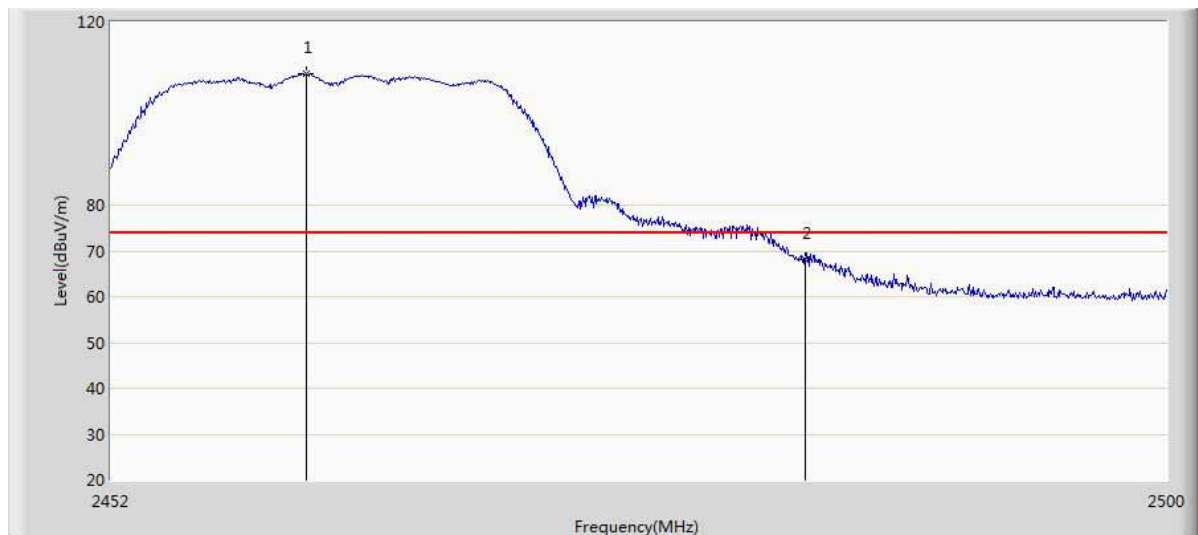
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 2	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2460.640	114.620	77.138	N/A	N/A	37.482	PK
2	2483.500	70.257	32.662	-3.743	74.000	37.595	PK
3	2484.112	73.414	35.814	-0.586	74.000	37.600	PK
1	2460.784	101.617	64.135	N/A	N/A	37.482	AV
2	2483.500	51.670	14.075	-2.330	54.000	37.595	AV
3	2485.216	53.110	15.501	-0.890	54.000	37.609	AV



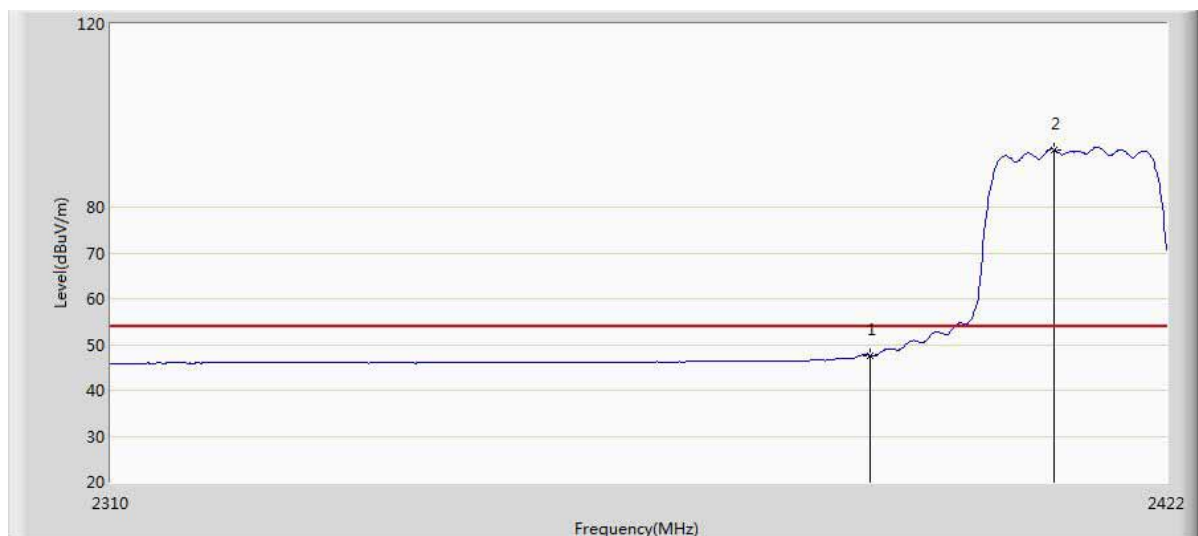
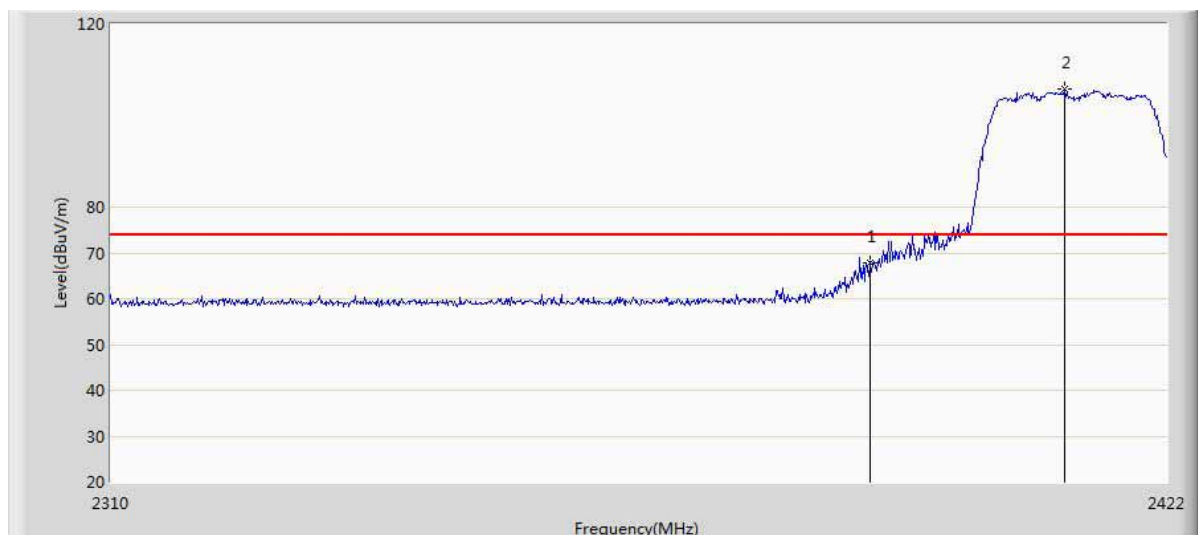
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 2	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2460.832	108.796	71.314	N/A	N/A	37.482	PK
2	2483.500	67.974	30.379	-6.026	74.000	37.595	PK
1	2460.784	96.577	59.095	N/A	N/A	37.482	AV
2	2483.500	49.929	12.334	-4.071	54.000	37.595	AV



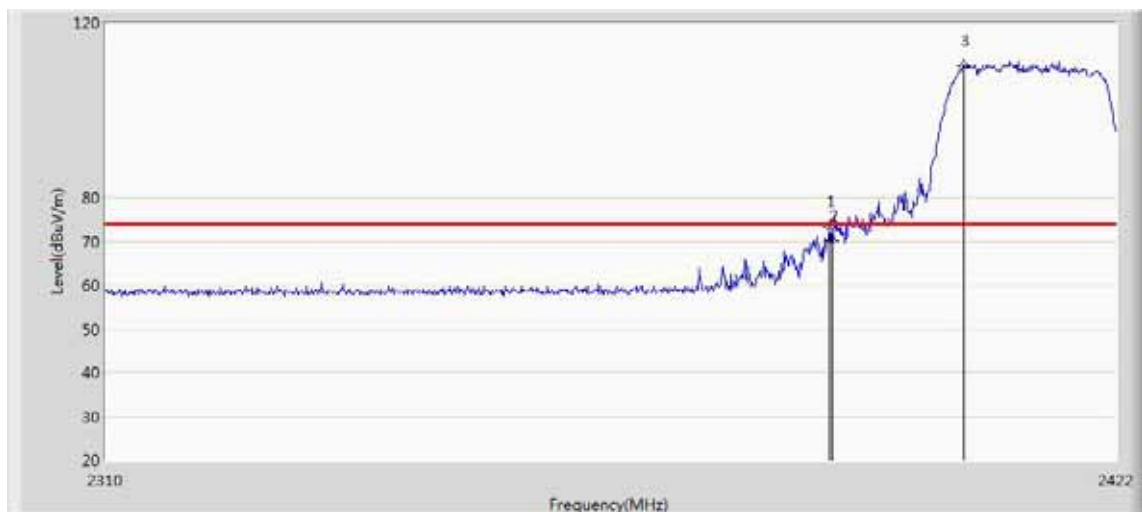
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 3	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	67.739	30.394	-6.261	74.000	37.345	PK
2	2411.024	105.847	68.508	N/A	N/A	37.339	PK
1	2390.000	47.641	10.296	-6.359	54.000	37.345	AV
2	2409.792	92.564	55.225	N/A	N/A	37.339	AV



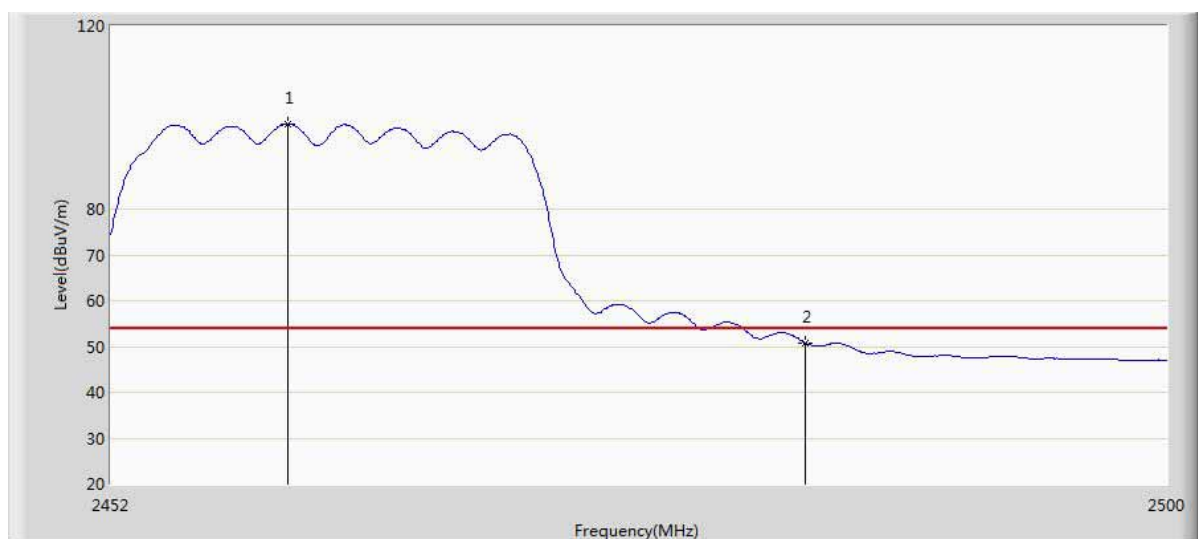
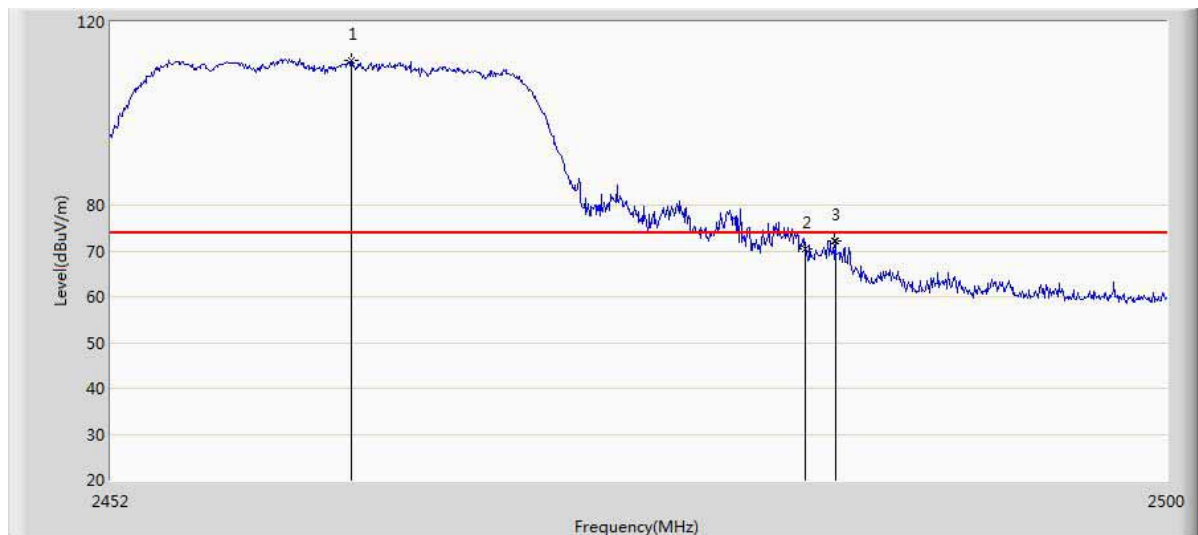
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 3	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2389.744	73.281	35.936	-0.719	74.000	37.345	PK
2	2390.000	70.170	32.825	-3.830	74.000	37.345	PK
3	2404.864	110.270	72.928	N/A	N/A	37.342	PK
1	2390.000	52.997	15.652	-1.003	54.000	37.345	AV
2	2409.904	97.847	60.508	N/A	N/A	37.340	AV



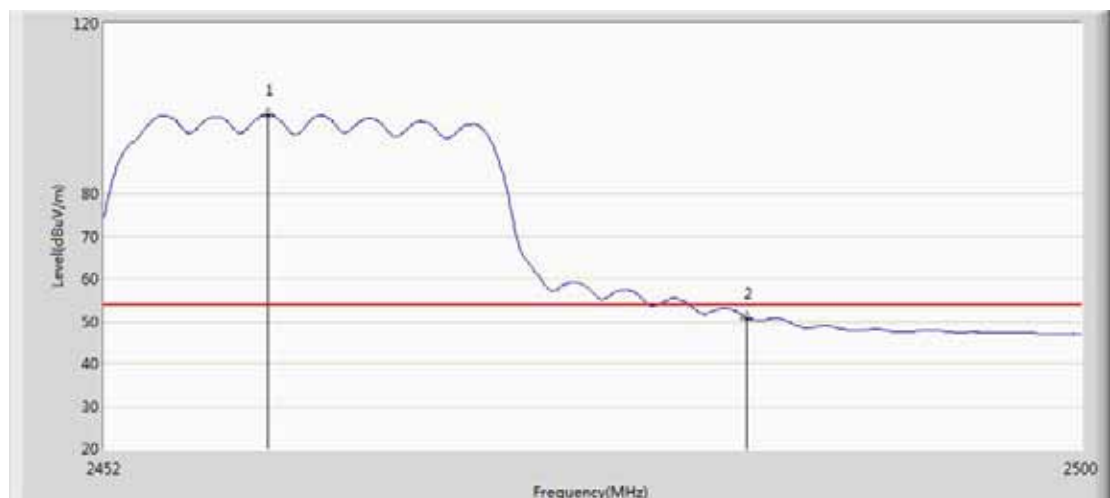
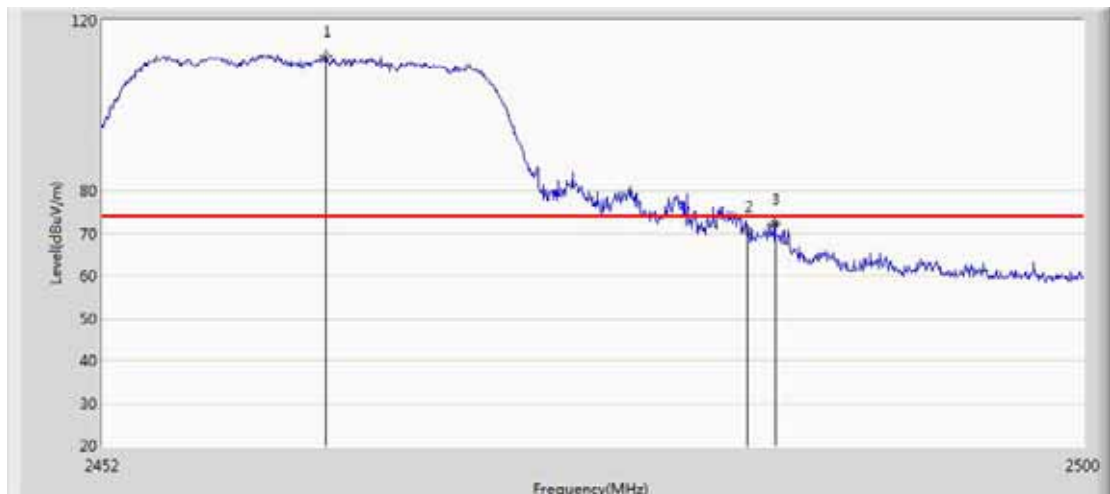
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 3	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2462.848	111.481	73.995	N/A	N/A	37.486	PK
2	2483.500	70.421	32.826	-3.579	74.000	37.595	PK
3	2484.832	72.254	34.648	-1.746	74.000	37.606	PK
1	2460.016	98.593	61.111	N/A	N/A	37.482	AV
2	2483.500	50.687	13.092	-3.313	54.000	37.595	AV



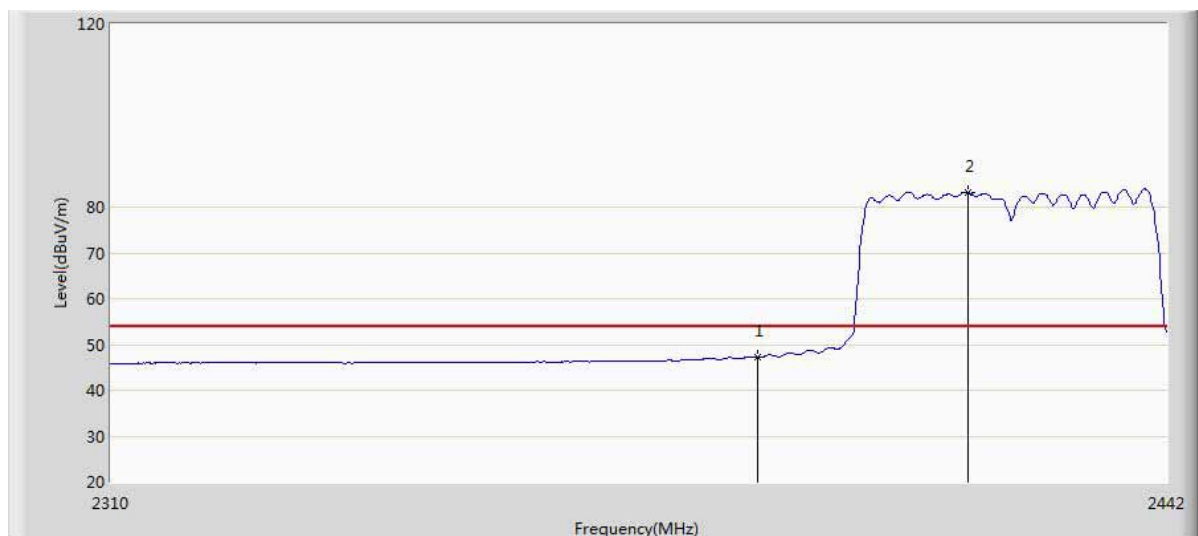
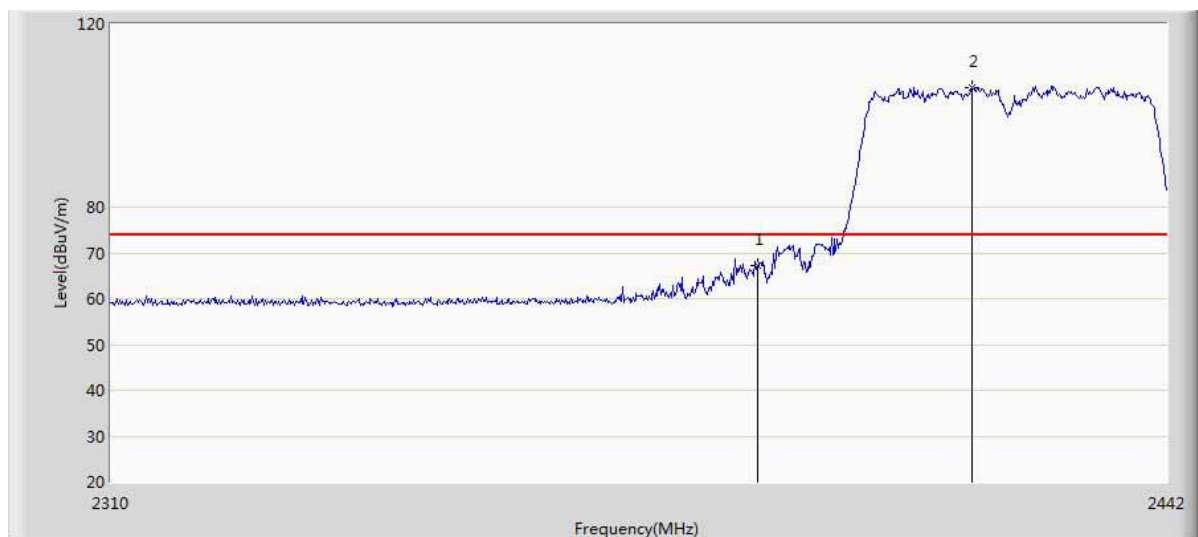
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 3	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2462.848	111.481	73.995	N/A	N/A	37.486	PK
2	2483.500	70.421	32.826	-3.579	74.000	37.595	PK
3	2484.832	72.254	34.648	-1.746	74.000	37.606	PK
1	2460.016	98.593	61.111	N/A	N/A	37.482	AV
2	2483.500	50.687	13.092	-3.313	54.000	37.595	AV



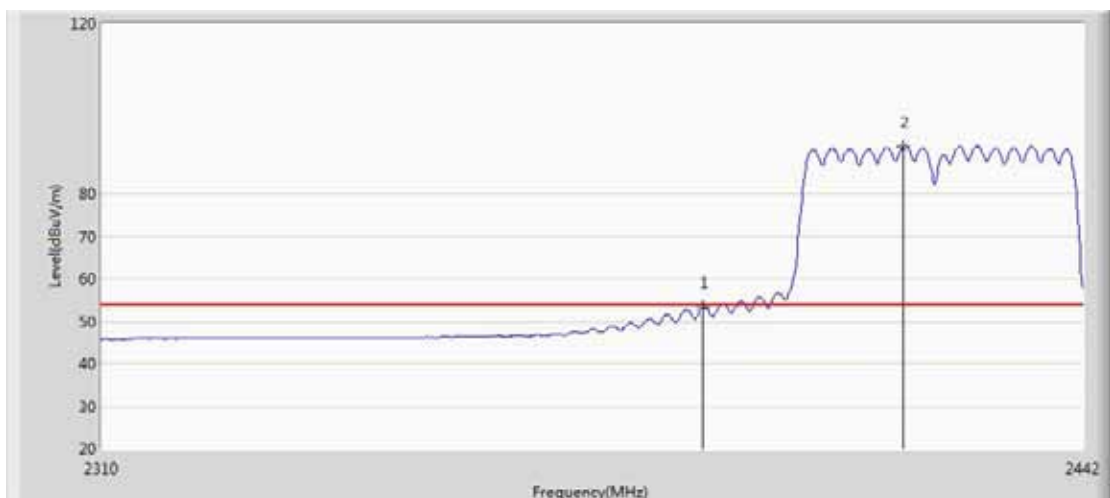
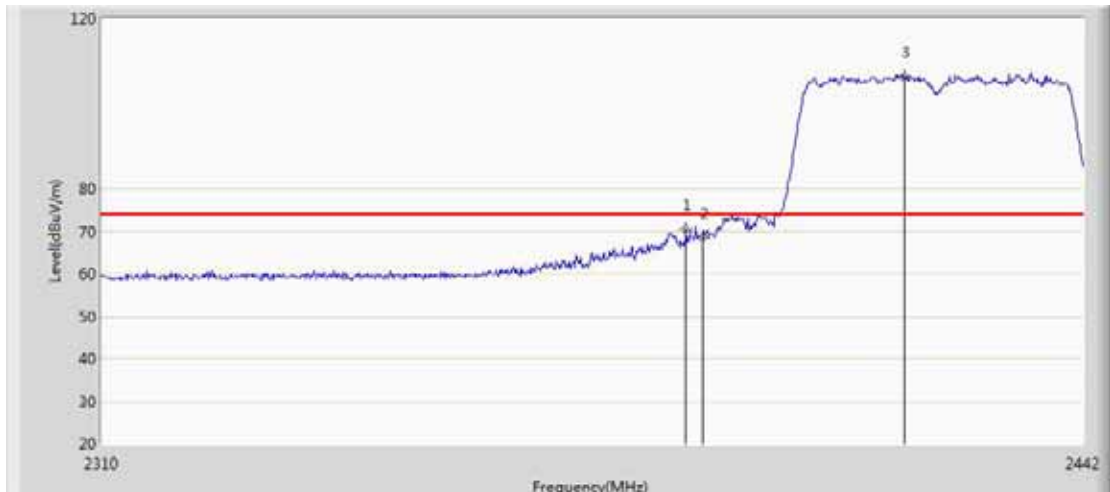
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 4	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH03/2422MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dB μ V/m)	Reading Level (dB μ V)	Over Limit (dB)	Limit (dB μ V/m)	Factor (dB)	Type
1	2390.000	67.205	29.860	-6.795	74.000	37.345	PK
2	2417.184	105.953	68.567	N/A	N/A	37.387	PK
1	2390.000	47.107	9.762	-6.893	54.000	37.345	AV
2	2416.656	83.226	45.844	N/A	N/A	37.383	AV



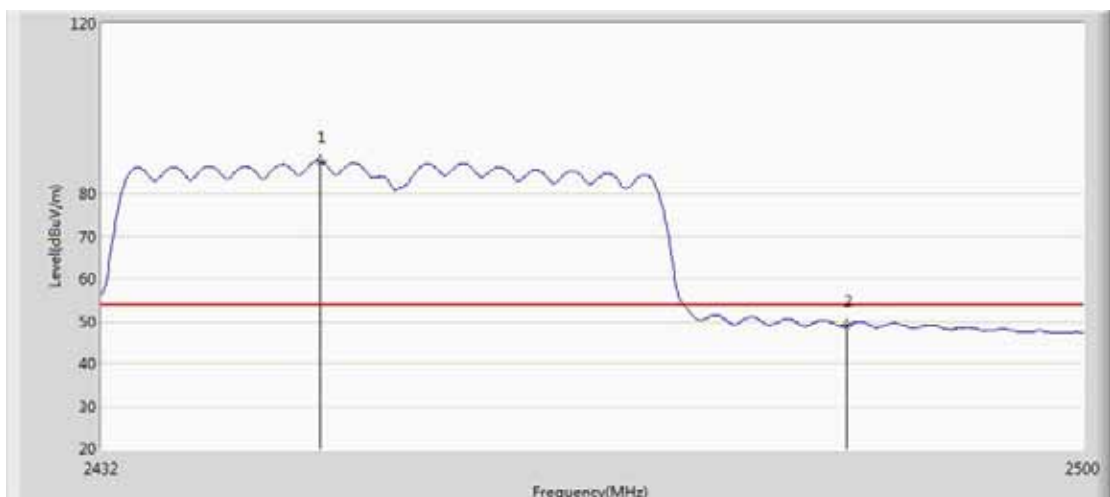
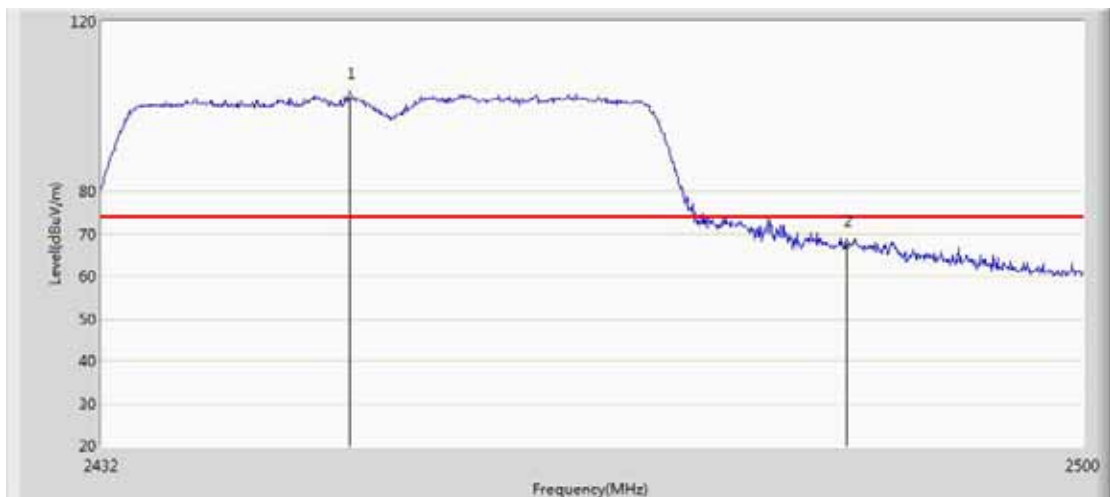
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 4	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH03/2422MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2387.748	70.465	33.121	-3.535	74.000	37.344	PK
2	2390.000	68.347	31.002	-5.653	74.000	37.345	PK
3	2417.448	106.502	69.114	N/A	N/A	37.388	PK
1	2390.000	53.192	15.847	-0.808	54.000	37.345	AV
2	2417.316	91.130	53.743	N/A	N/A	37.387	AV



Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 4	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH09/2452MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2449.000	102.145	64.666	N/A	N/A	37.480	PK
2	2483.500	67.244	29.649	-6.756	74.000	37.595	PK
1	2447.028	87.597	50.118	N/A	N/A	37.479	AV
2	2483.500	49.026	11.431	-4.974	54.000	37.595	AV



Product Name	:	AC1200 Wireless Dual Band	Polarity	:	Vertical
--------------	---	---------------------------	----------	---	----------

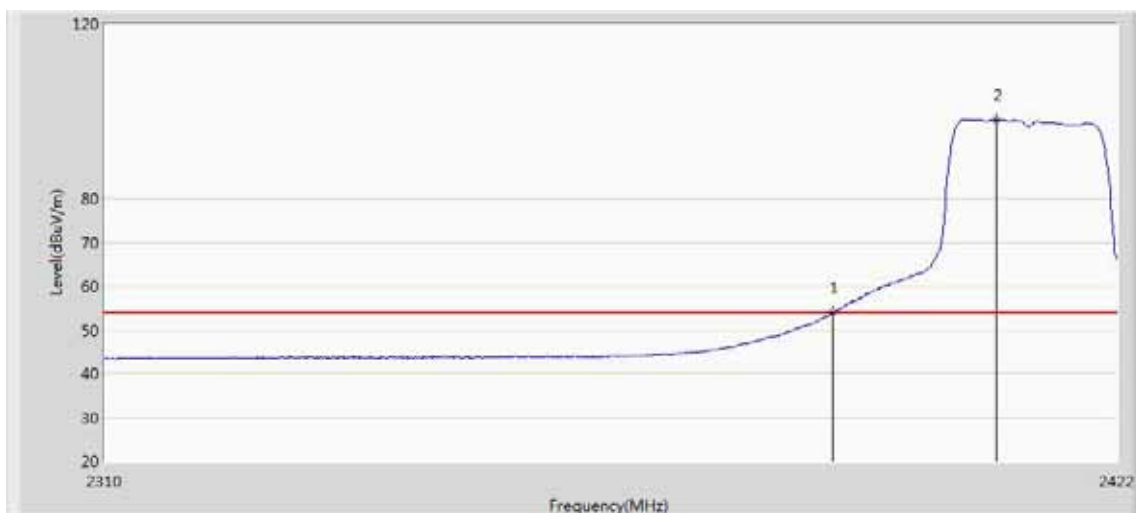
		Gigabit Access Point		
Test Mode	:	Mode 4	Power	: AC 120V/60Hz
Test CH/Freq	:	CH09/2452MHz	Test Site	: AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2447.096	108.393	70.914	N/A	N/A	37.479	PK
2	2483.500	71.193	33.598	-2.807	74.000	37.595	PK
3	2484.972	71.106	33.499	-2.894	74.000	37.607	PK
1	2447.368	93.036	55.557	N/A	N/A	37.479	AV
2	2483.500	51.249	13.654	-2.751	54.000	37.595	AV
3	2484.836	52.669	15.063	-1.331	54.000	37.606	AV



Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 5	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	71.682	33.819	-2.318	74.000	37.863	PK
2	2419.088	106.564	68.686	N/A	N/A	37.878	PK
1	2390.000	53.880	16.017	-0.120	54.000	37.863	AV
2	2408.336	97.868	60.034	N/A	N/A	37.834	AV



Product Name	:	AC1200 Wireless Dual Band	Polarity	:	Vertical
--------------	---	---------------------------	----------	---	----------

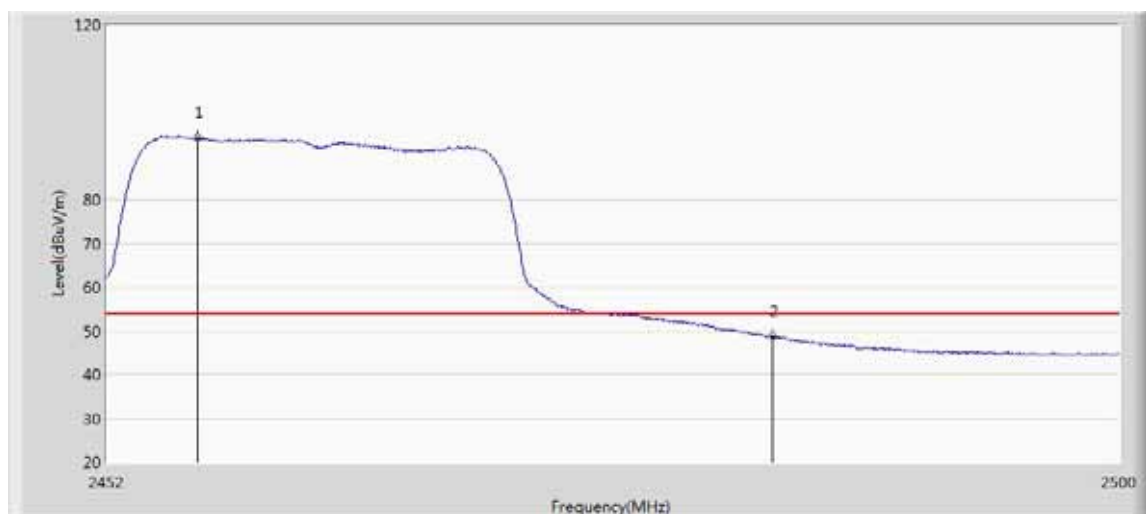
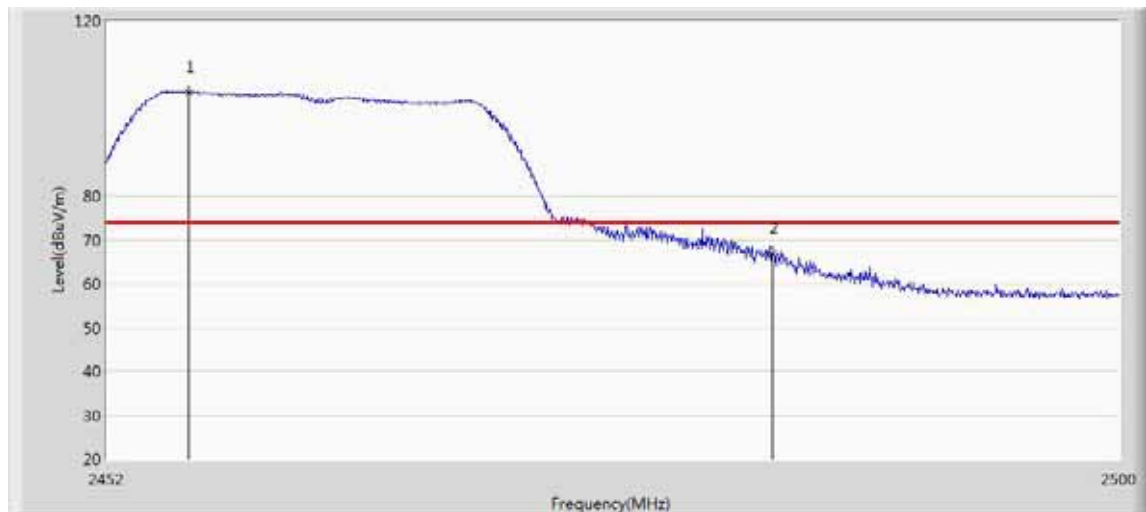
		Gigabit Access Point		
Test Mode	:	Mode 5	Power	: AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	: AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	72.419	34.556	-1.581	74.000	37.863	PK
2	2411.024	112.103	74.272	N/A	N/A	37.831	PK
1	2390.000	53.880	16.017	-0.120	54.000	37.863	AV
2	2408.336	97.868	60.034	N/A	N/A	37.834	AV



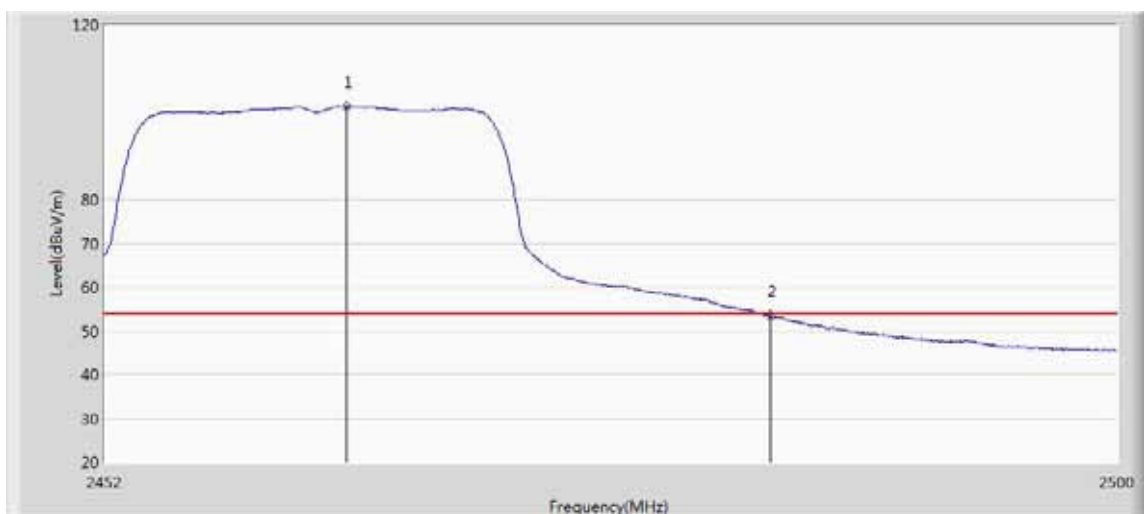
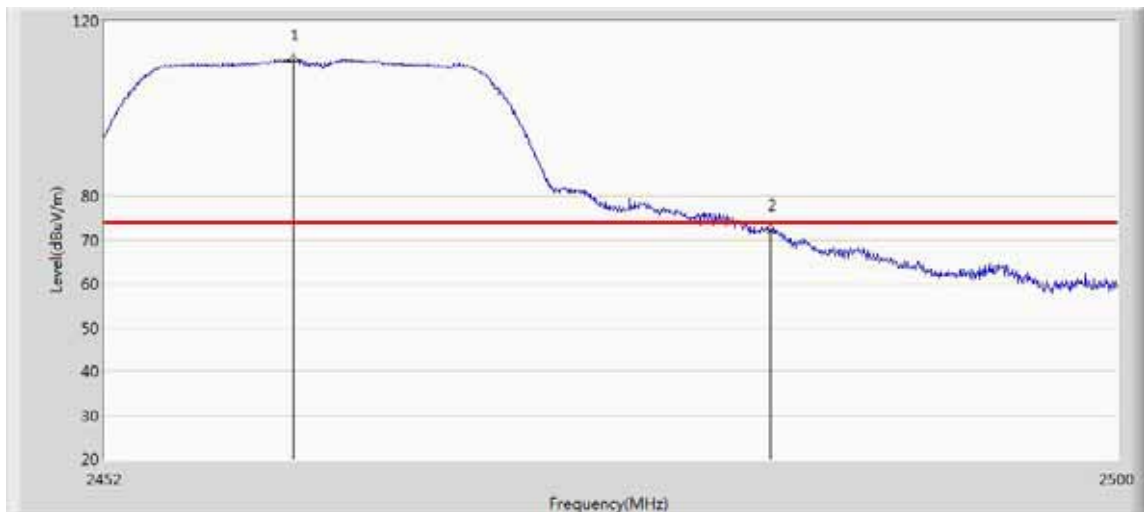
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 5	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2455.888	103.731	65.748	N/A	N/A	37.983	PK
2	2483.500	66.995	28.957	-7.005	74.000	38.038	PK
1	2456.320	94.090	56.105	N/A	N/A	37.985	AV
2	2483.500	48.659	10.621	-5.341	54.000	38.038	AV



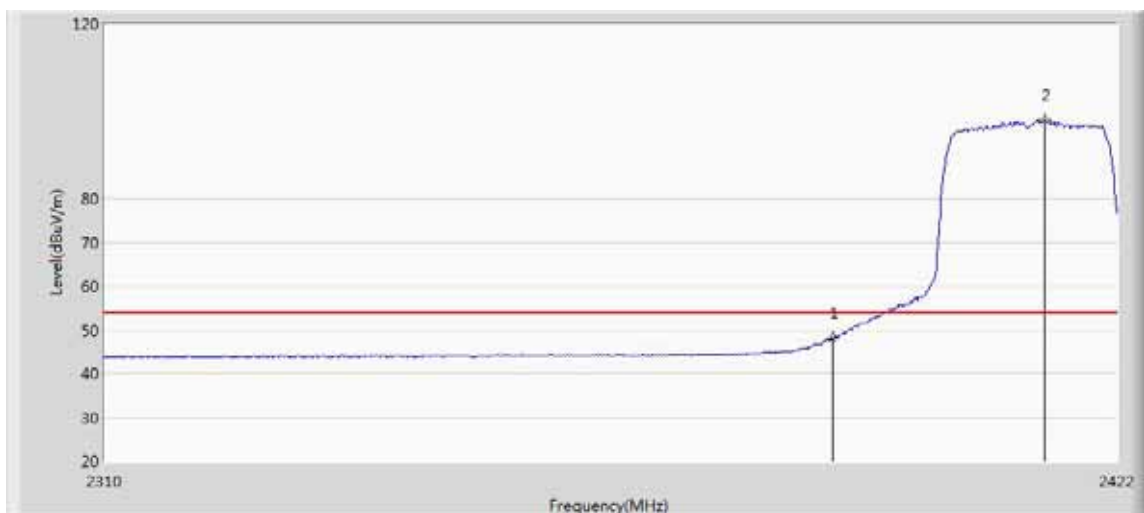
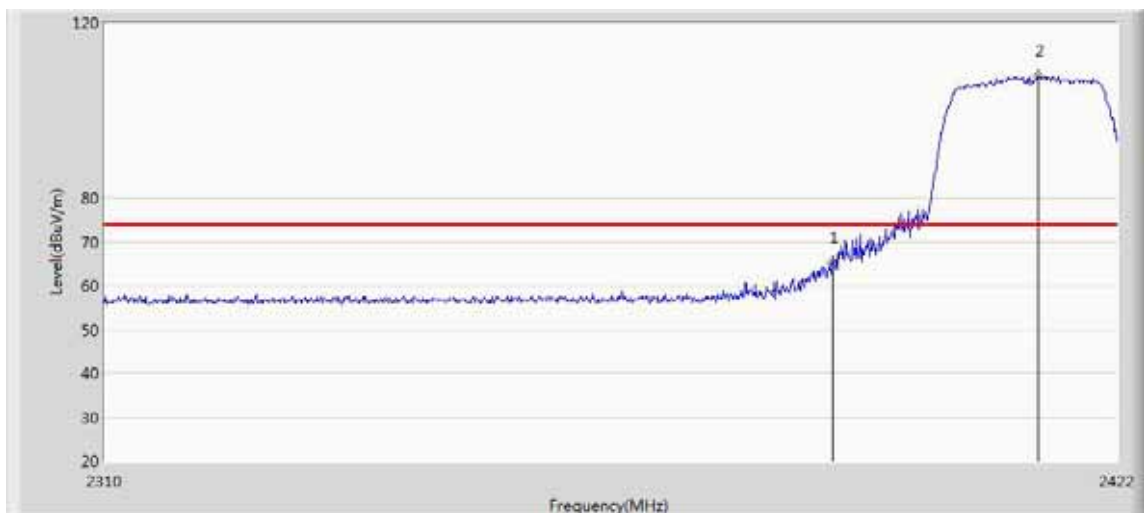
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 5	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2460.880	111.023	73.020	N/A	N/A	38.003	PK
2	2483.500	72.142	34.104	-1.858	74.000	38.038	PK
1	2463.376	101.227	63.220	N/A	N/A	38.008	AV
2	2483.500	53.436	15.398	-0.564	54.000	38.038	AV



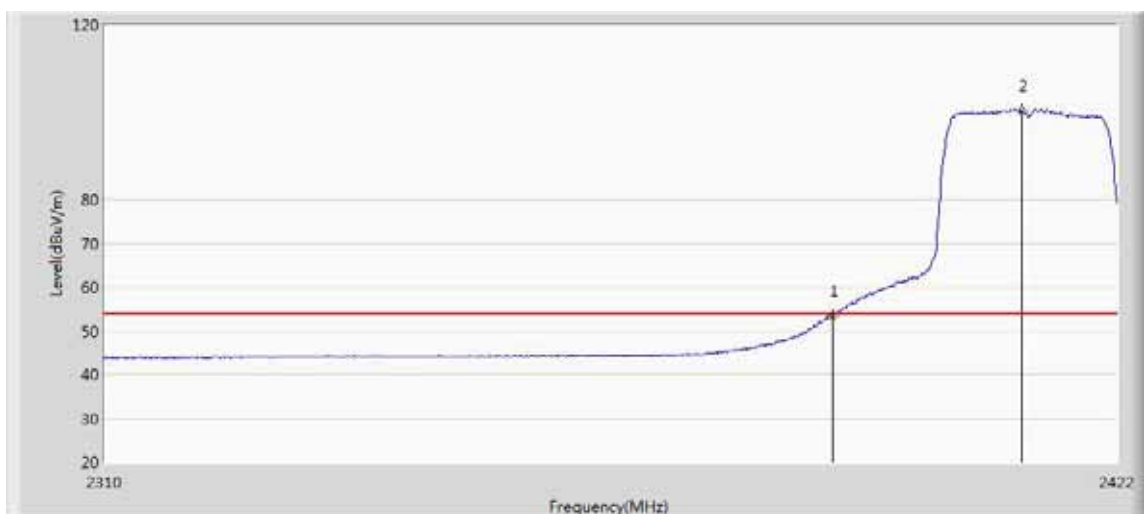
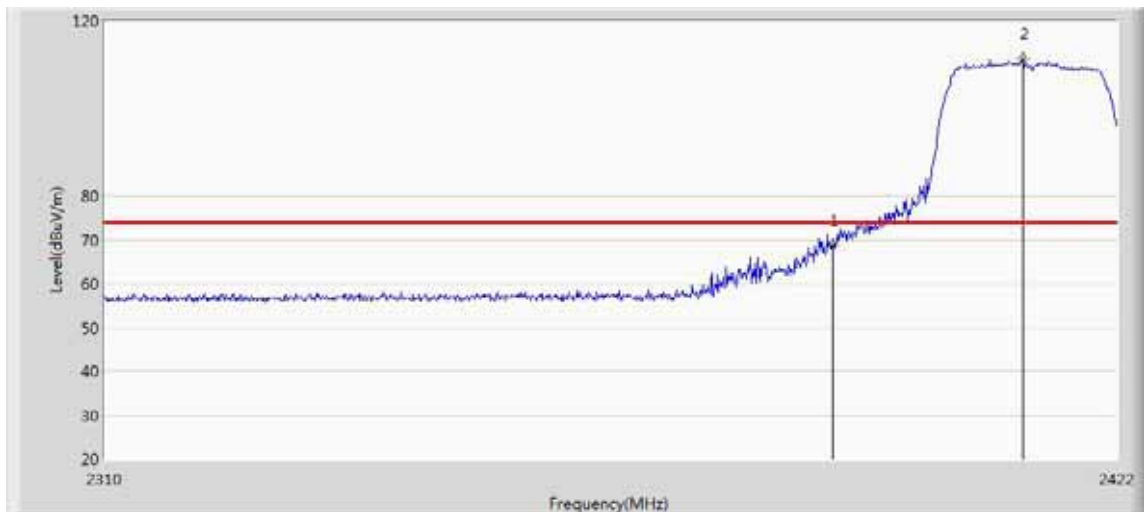
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 6	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	65.230	27.367	-8.770	74.000	37.863	PK
2	2413.040	107.794	69.951	N/A	N/A	37.844	PK
1	2390.000	48.170	10.307	-5.830	54.000	37.863	AV
2	2413.824	97.923	60.075	N/A	N/A	37.847	AV



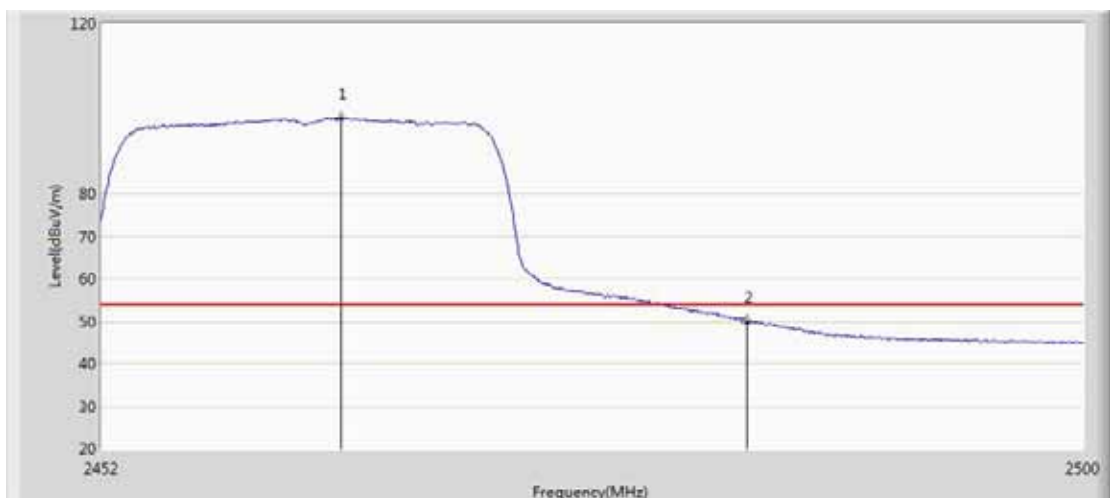
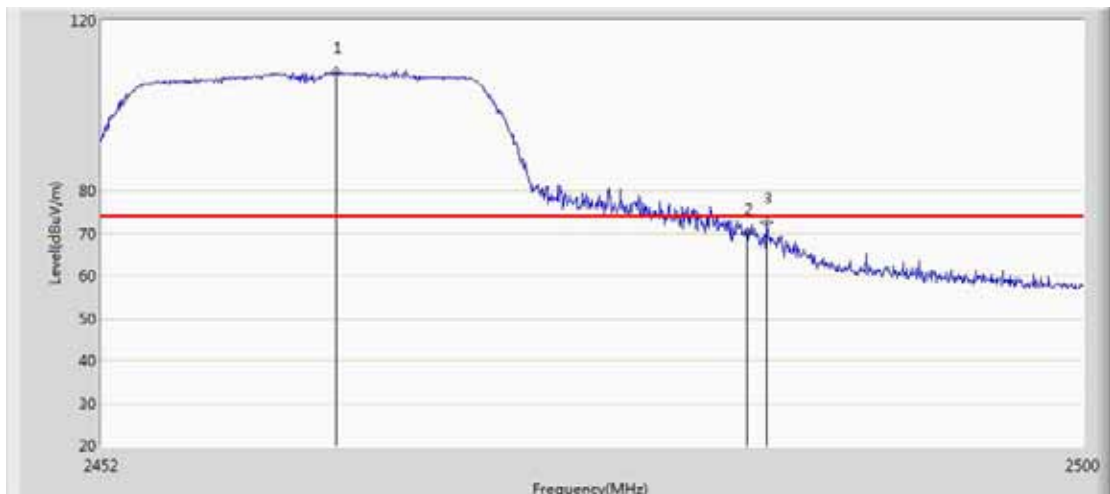
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 6	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH01/2412MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	68.623	30.760	-5.377	74.000	37.863	PK
2	2411.360	111.192	73.359	37.192	74.000	37.833	PK
1	2390.000	53.316	15.453	-0.684	54.000	37.863	AV
2	2411.248	100.329	62.496	46.329	54.000	37.832	AV



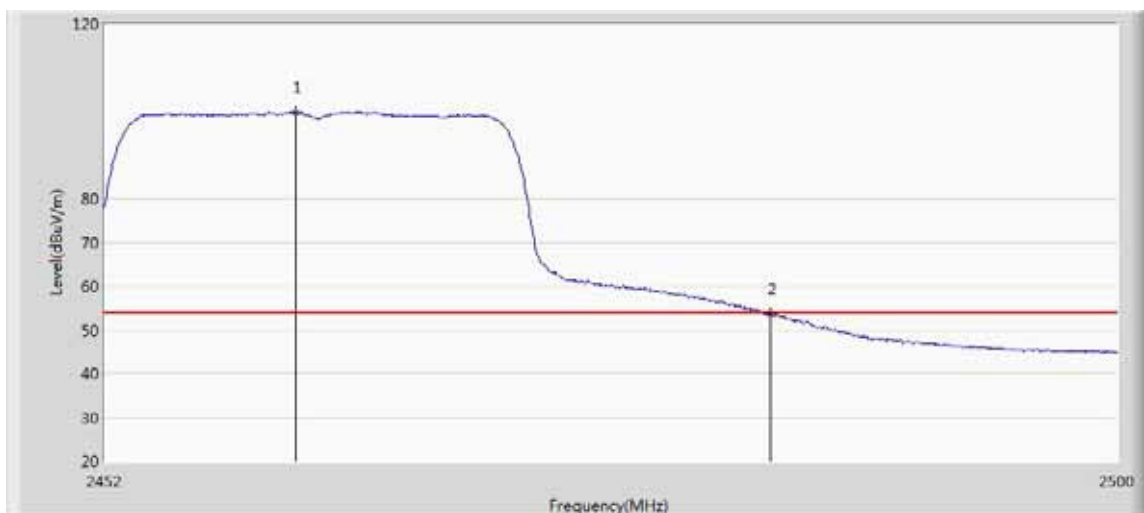
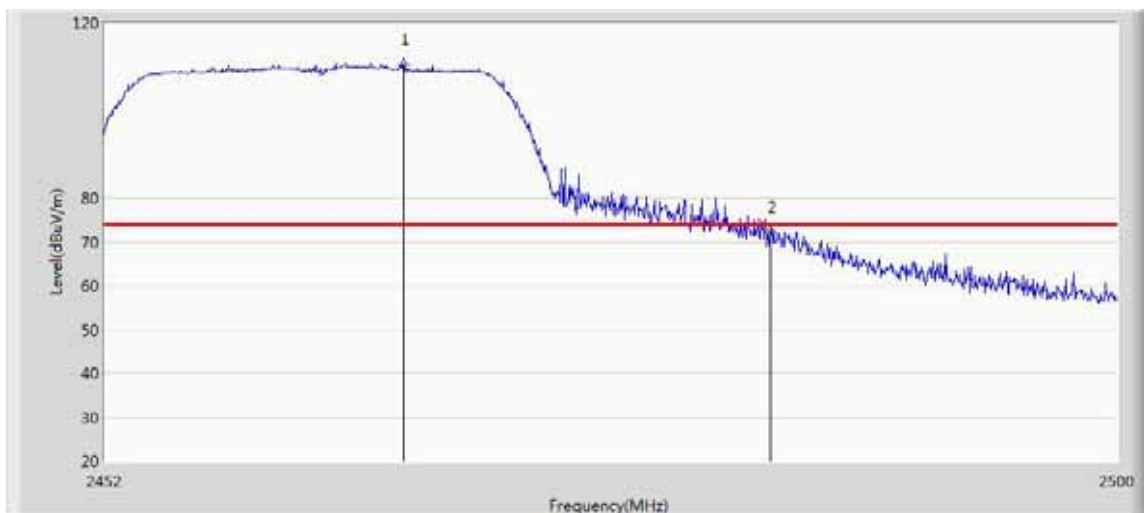
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 6	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2463.424	107.752	69.745	N/A	N/A	38.008	PK
2	2483.500	69.822	31.784	-4.178	74.000	38.038	PK
3	2484.448	72.504	34.460	-1.496	74.000	38.044	PK
1	2463.616	97.826	59.819	N/A	N/A	38.007	AV
2	2483.500	49.951	11.913	-4.049	54.000	38.038	AV



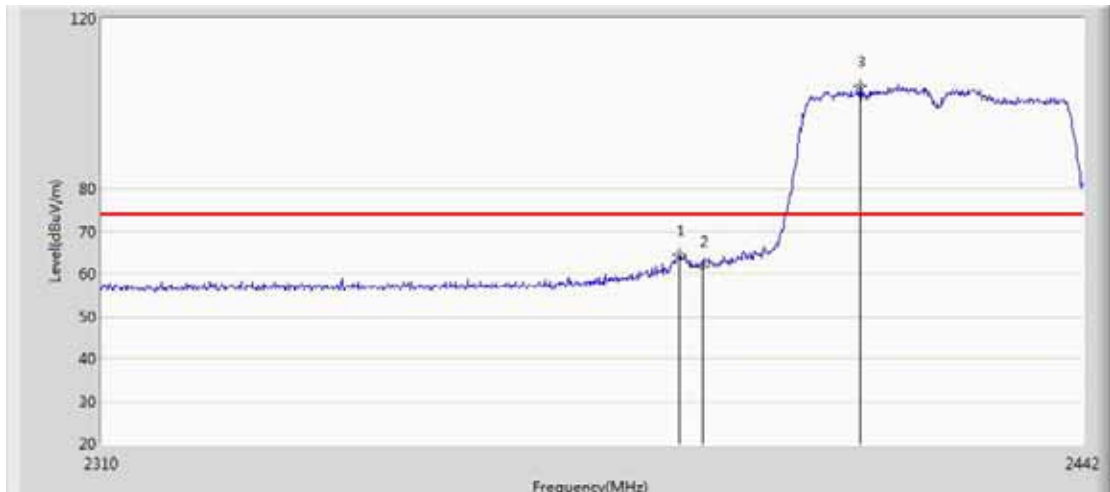
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 6	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH11/2462MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2466.112	110.560	72.553	N/A	N/A	38.007	PK
2	2483.500	72.046	34.008	-1.954	74.000	38.038	PK
1	2461.024	99.664	61.660	N/A	N/A	38.004	AV
2	2483.500	53.696	15.658	-0.304	54.000	38.038	AV



Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 7	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH03/2422MHz	Test Site	:	AC5

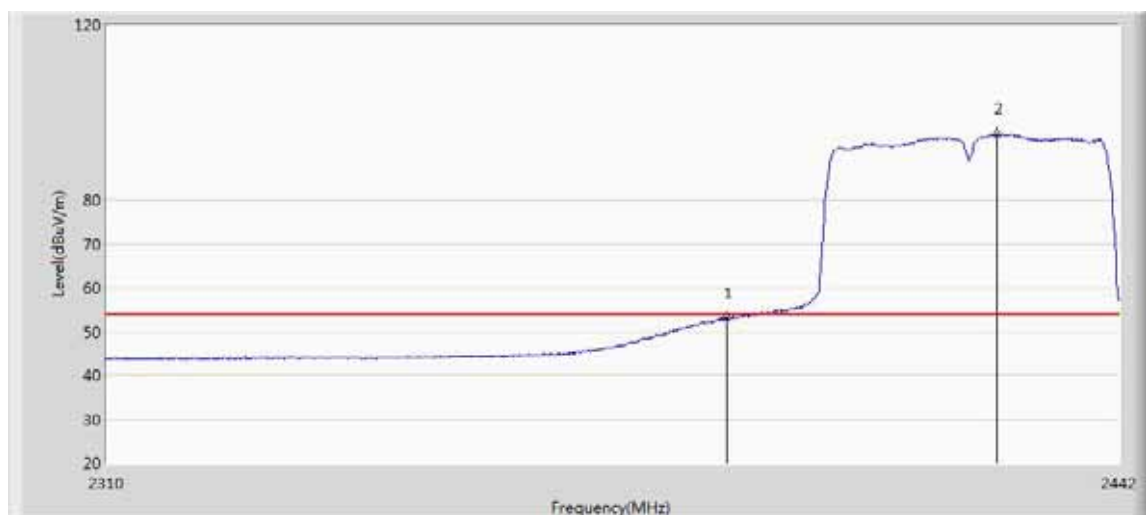
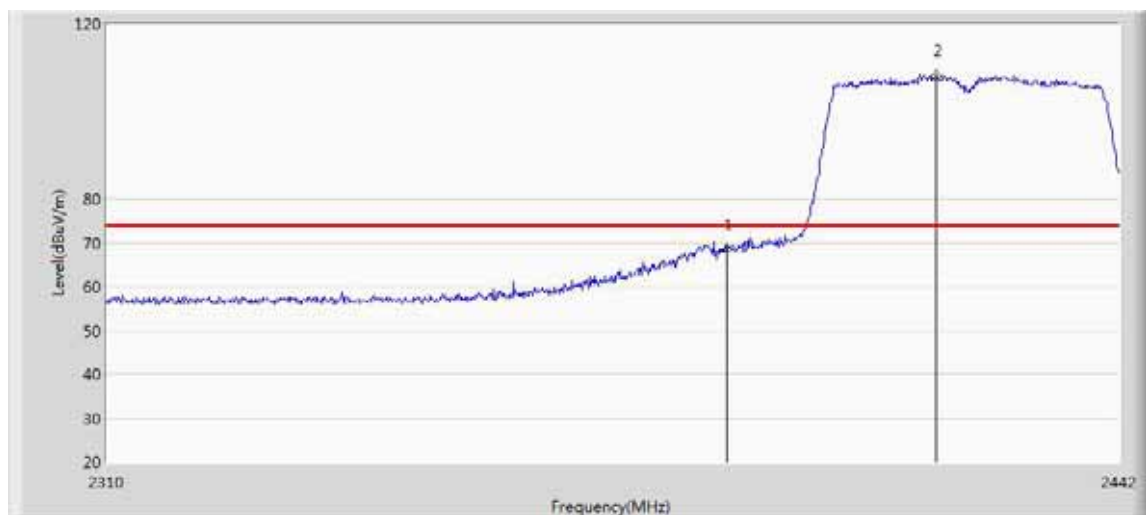
No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2386.824	64.380	26.505	-9.620	74.000	37.875	PK
2	2390.000	61.686	23.823	-12.314	74.000	37.863	PK
3	2411.376	104.100	66.266	N/A	N/A	37.833	PK
1	2390.000	48.842	10.979	-5.158	54.000	37.863	AV
2	2419.164	92.049	54.171	N/A	N/A	37.878	AV



Product Name	:	AC1200 Wireless Dual Band	Polarity	:	Vertical
--------------	---	---------------------------	----------	---	----------

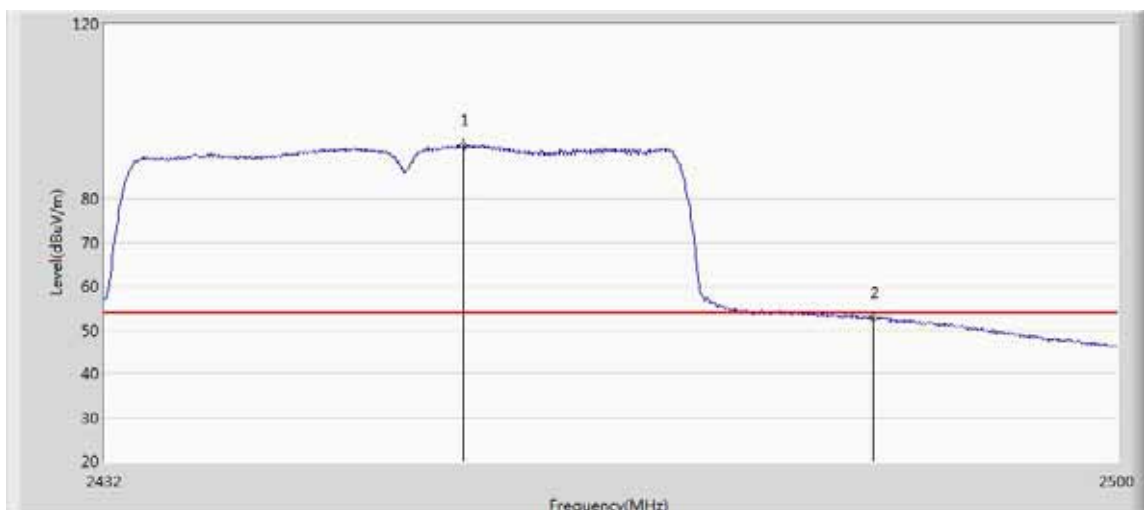
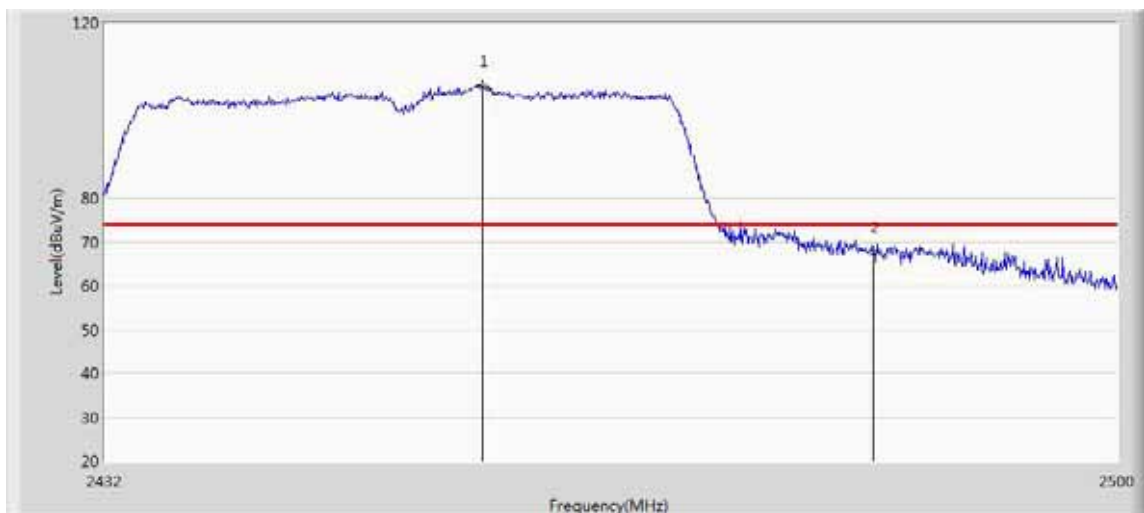
		Gigabit Access Point			
Test Mode	:	Mode 7	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH03/2422MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2390.000	68.481	30.618	-5.519	74.000	37.863	PK
2	2417.712	108.246	70.376	N/A	N/A	37.870	PK
1	2390.000	53.064	15.201	-0.936	54.000	37.863	AV
2	2425.764	95.020	57.104	N/A	N/A	37.916	AV



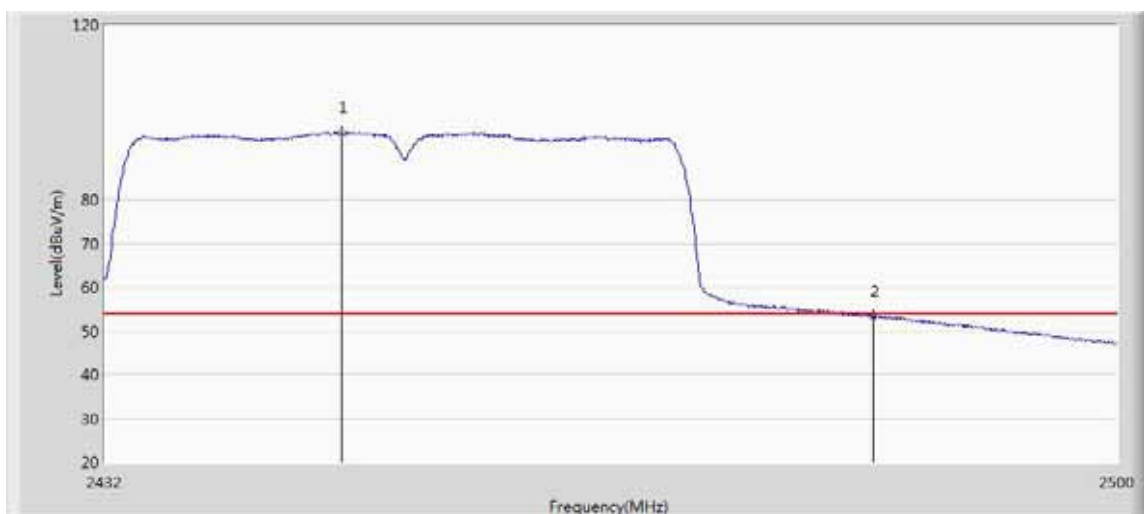
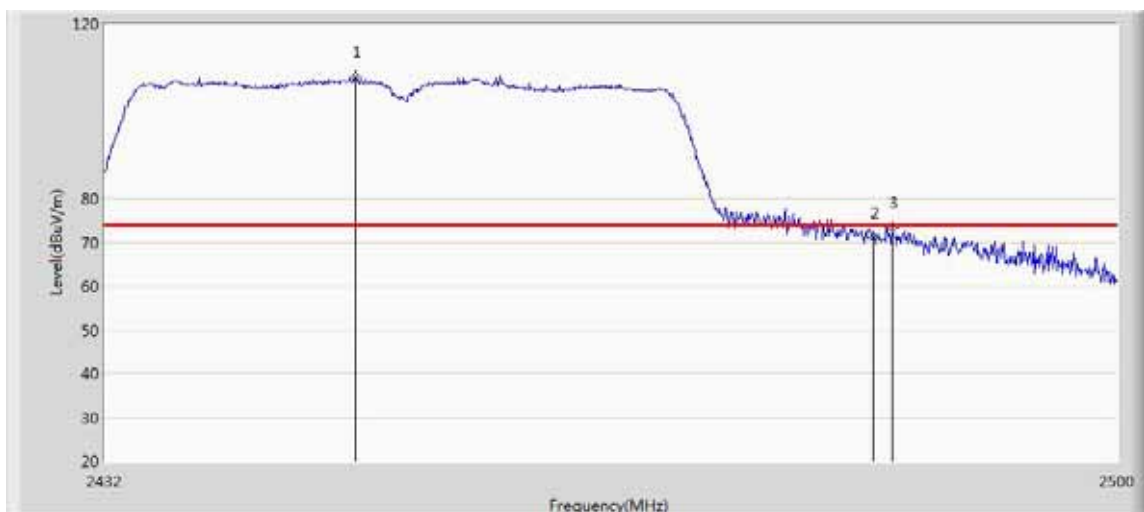
Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Horizontal
Test Mode	:	Mode 7	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH09/2452MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2457.160	105.621	67.633	N/A	N/A	37.988	PK
2	2483.500	67.412	29.374	-6.588	74.000	38.038	PK
1	2455.868	92.268	54.285	N/A	N/A	37.983	AV
2	2483.500	52.698	14.660	-1.302	54.000	38.038	AV



Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Polarity	:	Vertical
Test Mode	:	Mode 7	Power	:	AC 120V/60Hz
Test CH/Freq	:	CH09/2452MHz	Test Site	:	AC5

No	Frequency (MHz)	Measured Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB)	Type
1	2448.728	107.906	69.951	N/A	N/A	37.955	PK
2	2483.500	70.992	32.954	-3.008	74.000	38.038	PK
3	2484.768	73.449	35.402	-0.551	74.000	38.047	PK
1	2447.776	95.401	57.450	N/A	N/A	37.951	AV
2	2483.500	53.230	15.192	-0.770	54.000	38.038	AV

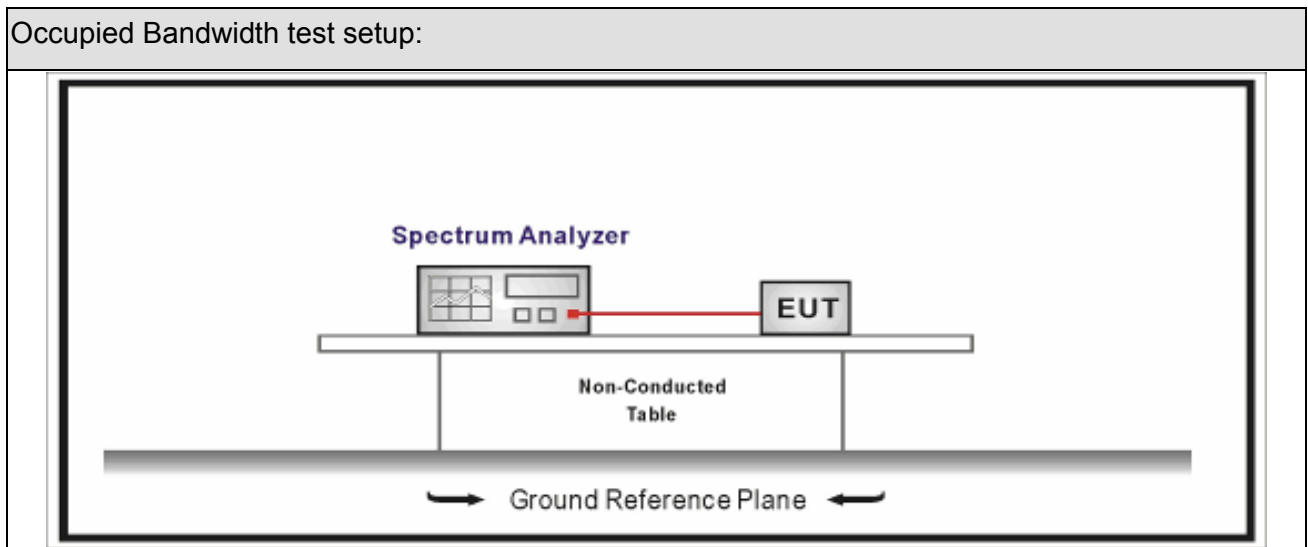


7. Occupied Bandwidth

7.1. Test Equipment

Occupied Bandwidth / TR-8					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.04	2017.01.03
Spectrum Analyzer	Agilent	N9010A	MY48030494	2016.03.11	2017.03.10
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2015.04.10	2016.04.09
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

7.2. Test Setup



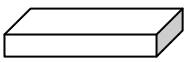
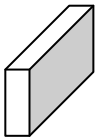
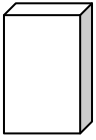
7.3. Limit

Occupied Bandwidth
Systems using digital modulation techniques operate in the 2400-2483.5 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

Item	Occupied Bandwidth			
Device Category	☒	Fixed position use		
	☐	Mobile position use		
Test mode	Mode 1~7			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☐	Chain 0		
				
	☒	Chain 0	Chain 1	
				
		Worst Chain ☐	Worst Chain ☐	
	☐	Chain 0	Chain 1	Chain 2
				
	Worst Chain ☐	Worst Chain ☐	Worst Chain ☐	

7.6. Test Result

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Test Power	:	AC 120V/60Hz
Test Site	:	TR-8			

Mode	CH.	Test Freq. (MHz)	99% Occupied Bandwidth (MHz)		6dB Occupied Bandwidth (MHz)		Limit (kHz)	Result
			Ant 0	Ant 1	Ant 0	Ant 1		
1	01	2412	12.076	12.060	9.616	10.040	>500	Pass
1	06	2437	12.121	12.153	10.070	9.808	>500	Pass
1	11	2462	12.099	12.063	9.594	9.594	>500	Pass
2	01	2412	16.492	16.479	16.390	16.360	>500	Pass
2	06	2437	16.519	16.512	16.390	16.400	>500	Pass
2	11	2462	16.471	16.466	16.390	16.400	>500	Pass
3	01	2412	17.642	17.655	17.620	17.680	>500	Pass
3	06	2437	17.682	17.692	17.630	17.660	>500	Pass
3	11	2462	17.644	17.645	17.630	17.560	>500	Pass
4	03	2422	36.129	36.139	36.350	36.320	>500	Pass
4	06	2437	36.233	36.233	36.380	36.410	>500	Pass
4	09	2452	36.144	36.103	36.080	35.490	>500	Pass
5	01	2412	16.512	16.502	16.380	16.340	>500	Pass
5	06	2437	16.532	16.524	16.380	16.390	>500	Pass
5	11	2462	16.514	16.506	16.340	16.340	>500	Pass
6	01	2412	17.701	17.688	17.580	17.590	>500	Pass
6	06	2437	17.726	17.705	17.620	17.610	>500	Pass
6	11	2462	17.681	17.681	17.570	17.590	>500	Pass
7	03	2422	36.166	36.166	36.080	36.220	>500	Pass
7	06	2437	36.219	36.222	36.400	36.330	>500	Pass
7	09	2452	36.148	36.153	36.110	35.820	>500	Pass

Note : The worst case of Occupied Bandwidth as below in next page:

Mode 1 CH11 (2462MHz) Ant 0



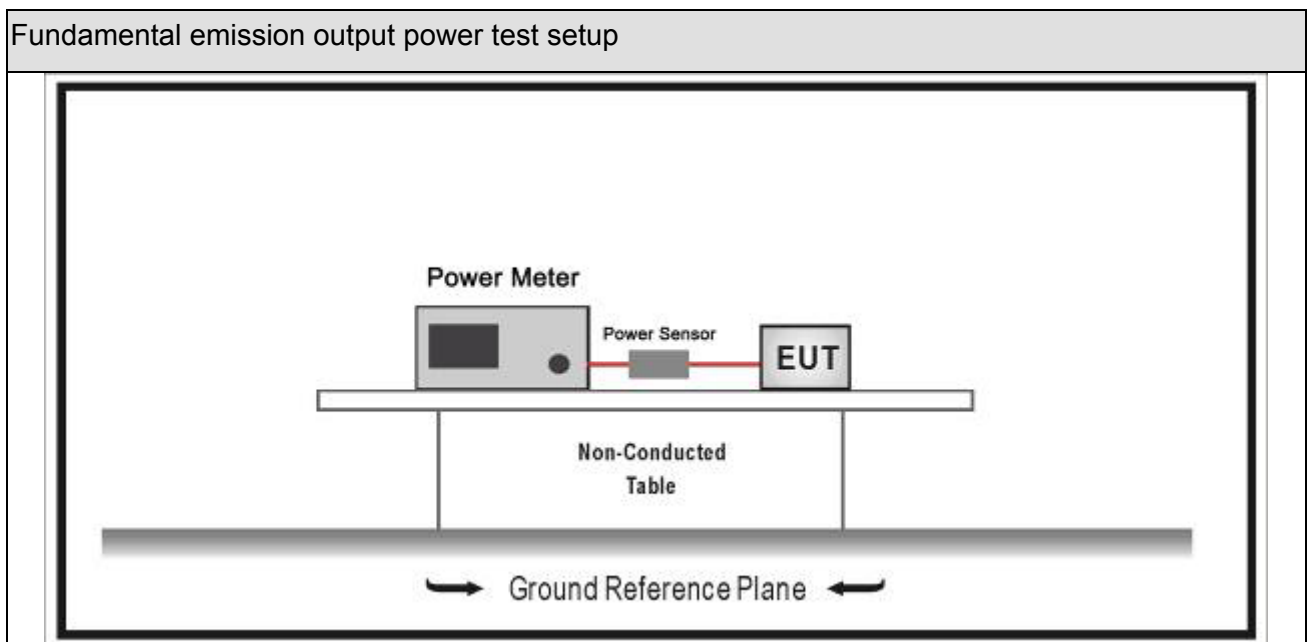
8. Fundamental emission output power

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	2016.01.04	2017.01.03
Spectrum Analyzer	Agilent	N9010A	MY48030494	2016.03.11	2017.03.10
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2015.11.11	2016.11.10
Power Sensor	Anritsu	MA2411B	0846014	2015.11.11	2016.11.10
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2016.04.10	2017.04.09

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

8.2. Test Setup



8.3. Limit

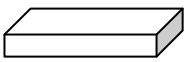
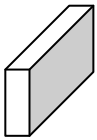
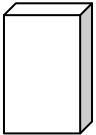
Fundamental emission output power Limit			
☒	$G_{TX} < 6\text{dBi}$		$P_{out} \leq 30\text{dBm}$
☒	$G_{TX} > 6\text{dBi}$		
	☒	Non-Fix point-point	$P_{out} \leq 30 - (G_{TX} - 6)$
	☐	Fix point-point	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
	☐	Point-to-multipoint	$P_{out} \leq 30 - (G_{TX} - 6)$
	☐	Overlap Beams	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
	☐	Aggregate power transmitted simultaneously on all beams	$P_{out} \leq 30 - [(G_{TX} - 6)]/3$
	☐	single directional beam	$P_{out} \leq 30 - [(G_{TX} - 6)]/3 + 8\text{dB}$
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

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 stream
	☐	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 definition

Item	Fundamental emission output power			
Device Category	☒	Fixed position use		
	☐	Mobile position use		
Test mode	Mode 1~7			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☐	Chain 0		
				
	☒	Chain 0	Chain 1	
				
	☐	Chain 0	Chain 1	Chain 2
				

8.6. Test Result

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Test Power	:	AC 120V/60Hz
Test Site	:	TR8			

CDD mode:

Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Directional Gain (dBi)	Limit (dBm)	Result
			Ant 0	Ant 1				
1	01	2412	24.02	24.09	27.07	4.73	30	Pass
1	06	2437	24.08	24.21	27.16	4.73	30	Pass
1	11	2462	24.01	24.03	27.03	4.73	30	Pass
2	01	2412	19.04	18.93	22.00	4.73	30	Pass
2	06	2437	24.65	24.84	27.76	4.73	30	Pass
2	11	2462	20.53	20.32	23.44	4.73	30	Pass
3	01	2412	18.28	18.36	21.33	4.73	30	Pass
3	06	2437	24.76	24.85	27.82	4.73	30	Pass
3	11	2462	19.13	19.06	22.11	4.73	30	Pass
4	03	2422	16.45	16.38	19.43	4.73	30	Pass
4	06	2437	19.28	19.56	22.43	4.73	30	Pass
4	09	2452	18.55	18.05	21.32	4.73	30	Pass

Beam-forming mode:

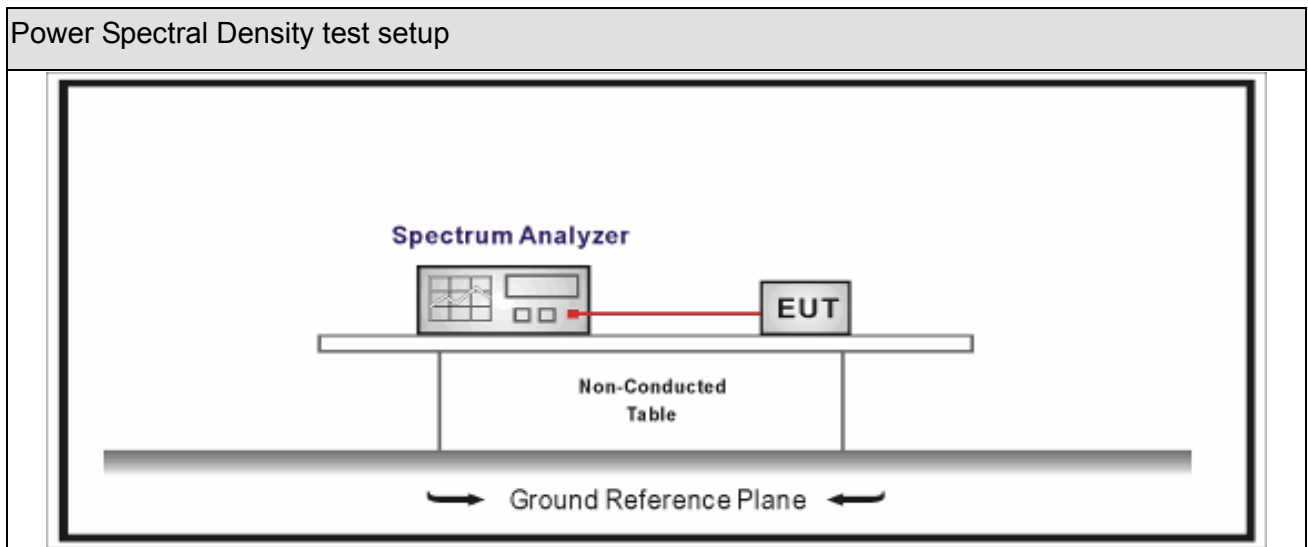
Mode	Channel	Test Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Directional Gain (dBi)	Limit (dBm)	Result
			Ant 0	Ant 1				
5	01	2412	19.28	19.19	22.25	7.74	28.26	Pass
5	06	2437	24.22	24.55	27.40	7.74	28.26	Pass
5	11	2462	20.67	20.57	23.63	7.74	28.26	Pass
6	01	2412	18.14	18.03	21.10	7.74	28.26	Pass
6	06	2437	24.14	24.48	27.32	7.74	28.26	Pass
6	11	2462	18.79	18.54	21.68	7.74	28.26	Pass
7	03	2422	16.53	16.17	19.36	7.74	28.26	Pass
7	06	2437	19.12	19.04	22.09	7.74	28.26	Pass
7	09	2452	18.38	18.23	21.32	7.74	28.26	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	E4446A	MY45300103	2016.01.04	2017.01.03
Spectrum Analyzer	Agilent	N9010A	MY48030494	2015.03.11	2016.03.10
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2015.04.10	2016.04.09
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

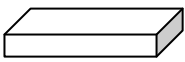
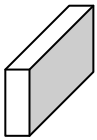
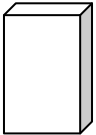
Power Spectral Density Limit
Power Spectral Density $\leq 8\text{dBm}/3\text{kHz}$

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 $\geq$ 98%)
	☐	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle $\geq$ 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

Directional Gain Calculations for In-Band test method				
	Referred 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 stream
	☐	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

9.5. EUT test definition

Item	Power Spectral Density Test Method			
Device Category	☒	Fixed position use		
	☐	Mobile position use		
Test mode	Mode 1~7			
Test method	☐	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis ☐	Worst Axis ☐	Worst Axis ☐
	☒	Conducted		
	☐	Chain 0		
				
	☒	Chain 0	Chain 1	
				
	☐	Chain 0	Chain 1	Chain 2
				

9.6. Test Result

Product Name	:	AC1200 Wireless Dual Band Gigabit Access Point	Test Power	:	AC 120V/60Hz
Test Site	:	TR8			

Mode	Channel	Test Frequency (MHz)	Measurement PSD (dBm/3kHz)		Total PSD (dBm/3kHz)	Directional Gain (dBi)	Limit (dBm/3kHz)	Result
			Ant 0	Ant 1				
1	01	2412	1.79	1.49	4.65	7.74	6.26	Pass
1	06	2437	2.58	1.75	5.19	7.74	6.26	Pass
1	11	2462	1.39	2.89	5.21	7.74	6.26	Pass
2	01	2412	-5.62	-6.31	-2.94	7.74	6.26	Pass
2	06	2437	-5.84	-4.83	-2.30	7.74	6.26	Pass
2	11	2462	-3.85	-4.02	-0.92	7.74	6.26	Pass
3	01	2412	-7.42	-5.42	-3.29	7.74	6.26	Pass
3	06	2437	-6.79	-7.73	-4.22	7.74	6.26	Pass
3	11	2462	-6.38	-4.91	-2.57	7.74	6.26	Pass
4	03	2422	-12.75	-12.38	-9.55	7.74	6.26	Pass
4	06	2437	-11.18	-12.02	-8.57	7.74	6.26	Pass
4	09	2452	-9.69	-9.86	-6.76	7.74	6.26	Pass
5	01	2412	-5.221	-4.905	-2.05	7.74	6.26	Pass
5	06	2437	-4.050	0.319	1.67	7.74	6.26	Pass
5	11	2462	-4.333	-4.474	-1.39	7.74	6.26	Pass
6	01	2412	-7.257	-7.698	-4.46	7.74	6.26	Pass
6	06	2437	-0.060	-0.859	2.57	7.74	6.26	Pass
6	11	2462	-6.454	-3.546	-1.75	7.74	6.26	Pass
7	03	2422	-9.534	-11.565	-7.42	7.74	6.26	Pass
7	06	2437	-9.205	-7.541	-5.28	7.74	6.26	Pass
7	09	2452	-8.292	-8.461	-5.37	7.74	6.26	Pass

Mode 1 CH11(2462MHz)

Ant 0



Ant 1



The End