FCC 47 CFR PART 15 SUBPART C AND ANSI C63.10:2013 TEST REPORT

For

AC600 Wireless Dual Band High Power Outdoor AP Router

Model: WF2375

Trade Name: netis

Issued for

NETIS SYSTEMS CO., LTD

4F & 5F, R&D Building, Oriental Cyberport, High-Tech Industrial Park, Nanshan, Shenzhen, China

Issued by

Compliance Certification Services Inc. Hsinchu Lab.

No.989-1, Wenshan Rd., Shangshan Village, Qionglin Township, Hsinchu County 30741, Taiwan (R.O.C.)

> TEL: +886-3-5921698 FAX: +886-3-5921108

http://www.ccsrf.com E-Mail : service@ccsrf.com Issued Date: June 30, 2015



Note: This report shall not be reproduced except in full, without the written approval of Compliance Certification Services Inc. This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by TAF or any government agencies. The test results of this report relate only to the tested sample identified in this report.

Report No.: T150602D12-RP1

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	06/30/2015	Initial Issue	All Page 92	Michelle Chiu

TABLE OF CONTENTS

TITLE PAGE NO. 1. TEST REPORT CERTIFICATION4 3. DESCRIPTION OF TEST MODES6 4. TEST METHODOLOGY8 5. FACILITIES AND ACCREDITATION......8 5.2 ACCREDITATIONS....... 6. SETUP OF EQUIPMENT UNDER TEST......10 7. FCC PART 15.247 REQUIREMENTS......11 7.1 6dB BANDWIDTH11 7.3 AVERAGE POWER24 7.5 CONDUCTED SPURIOUS EMISSION38 7.7 CONDUCTED EMISSION......84 APPENDIX SETUP PHOTOS89

1. TEST REPORT CERTIFICATION

Applicant: NETIS SYSTEMS CO., LTD

Address: 4F & 5F, R&D Building, Oriental Cyberport, High-Tech

Industrial Park, Nanshan, Shenzhen, China

Equipment Under Test: AC600 Wireless Dual Band High Power Outdoor AP

Router

Model : WF2375

Trade Name : netis

Tested Date : June 02 ~ July 01, 2015

APPLICABLE STANDARD			
Standard	Test Result		
FCC Part 15 Subpart C AND ANSI C63.10:2013	PASS		

WE HEREBY CERTIFY THAT: The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:

Rex Liao

Deputy Manager

Reviewed by:

Jacky Chen

Section Manager

2. EUT DESCRIPTION

Due deset Nome	ACCOO Wireless Dual Dand Lligh Dower Outdoor AD Douter		
Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router		
Model Number	WF2375		
Identify Number	T150602D12		
Received Date	June 02, 2015		
Frequency Range	IEEE 802.11b/g, 802.11gn HT20 : 2412MHz ~ 2462MHz		
Trequency ivalige	IEEE 802.11gn HT40 : 2422MHz ~ 2452MHz		
	IEEE 802.11b : 23.64 dBm (0.2312 W)		
Transmit Power	IEEE 802.11g : 26.19 dBm (0.4159 W)		
Halisiliit FOWei	IEEE 802.11gn HT20 : 25.68 dBm (0.3698 W)		
	IEEE 802.11gn HT40 : 23.87 dBm (0.2438 W)		
Channel Spacing	IEEE 802.11b/g, 802.11gn HT20/HT40 : 5MHz		
Channel Number	IEEE 802.11b/g, 802.11gn HT20 : 11 Channels		
Channel Number	IEEE 802.11gn HT40 : 7 Channels		
	IEEE 802.11b : up to 11 Mbps		
	IEEE 802.11g : up to 54 Mbps		
Transmit Data Data	IEEE 802.11gn (HT20,800ns GI) : up to 65 Mbps		
Transmit Data Rate	IEEE 802.11gn (HT20,400ns GI) : up to 72.2 Mbps		
	IEEE 802.11gn (HT40,800ns GI) : up to 135 Mbps		
	IEEE 802.11gn (HT40,400ns GI) : up to 150 Mbps		
	IEEE 802.11b : DSSS (CCK, DQPSK, DBPSK)		
Type of Modulation	IEEE 802.11g : OFDM (64QAM, 16QAM, QPSK, BPSK)		
Type of Modulation	IEEE 802.11gn HT20/40 : OFDM (64QAM, 16QAM, QPSK,		
	BPSK)		
Antenna Type	PIFA Antenna , Antenna Gain: 8.9 dBi		
Power Rating	24Vdc		
Test Voltage	120Vac, 60Hz		
DC Power Cable Type	Non-shielded cable,1.5m × 1 (Non-detachable)		
	EUT: RJ-45 Port × 2		
I/O Port	PoE : RJ-45(LAN/WAN) Port × 1, PoE Port × 1, Power Port × 1		

Power Adapter:

No.	Manufacturer	Model No.	Power Input	Power Output
1	Shenzhen Juke Electronic Co., Ltd.	JK240050-S04USA	100-240Vac, 50/60Hz, 0.5A	24Vdc, 500mA

Remark:

- 1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
- 2. For more details, please refer to the User's manual of the EUT.
- 3 This submittal(s) (test report) is intended for FCC ID: T58WF2375R filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.

Report No.: T150602D12-RP1

3. DESCRIPTION OF TEST MODES

The EUT is an 802.11n transceiver in AC600 Wireless Dual Band High Power Outdoor AP Router form factor.

For IEEE 802.11b/g, 802.11gn HT20/HT40 mode: 1TX / 1RX.

Conducted Emission / Radiated Emission Test (Below 1 GHz)

1 The following test modes were scanned during the preliminary test:

1.	1. The following test modes were scarned during the preliminary test.				
N	lo.	Pre-Test Mode			
	1	TX Mode			

2. After the preliminary scan, the following test mode was found to produce the highest emission level.

Final Test Mode				
Emission	Radiated Emission	TX Mode		
Lillission	Conducted Emission	TX Mode		

Remark: Then, the above highest emission mode of the configuration of the EUT and cable was chosen for all final test items.

Conducted / Radiated Emission Test (Above 1 GHz)

IEEE 802.11b, 802.11g, 802.11gn HT20 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode: 1Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11g mode: 6Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11gn HT20 mode: 6.5Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11gn HT40 mode

The EUT had been tested under operating condition.

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2422
Middle	2437
High	2452

IEEE 802.11gn HT40 mode: 13.5Mbps data rate (worst case) were chosen for full testing. Remark: The field strength of spurious emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X, Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC CFR 47, 15.207, 15.209 and 15.247.

5. FACILITIES AND ACCREDITATION

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

No.989-1, Wenshan Rd., Shangshan Village, Qionglin Township, Hsinchu County 30741, Taiwan (R.O.C.)

The sites are constructed in conformance with the requirements of ANSI C63.10:2013 and CISPR 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4, CISPR 16-1-5.

5.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

Taiwan TAF

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada INDUSTRY CANADA
Japan VCCI
Taiwan BSMI
USA FCC MRA

Copies of granted accreditation certificates are available for downloading from our web site, http:///www.ccsrf.com

Remark: FCC Designation Number TW1027.

Report No.: T150602D12-RP1

.3 MEASUREMENT UNCERTAINTY

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4-2.

PARAMETER	UNCERTAINTY
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 30 to 1000 MHz	+/- 3.97
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 1 to 18GHz	+/- 3.58
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 18 to 26 GHz	+/- 3.59
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 26 to 40 GHz	+/- 3.81
Conducted Emission (Mains Terminals), 9kHz to 30MHz	+/- 2.48

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Consistent with industry standard (e.g. CISPR 22, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than U_{CISPR} which is 3.6dB and 5.2dB respectively. CCS values (called U_{Lab} in CISPR 16-4-2) is less than U_{CISPR} as shown in the table above. Therefore, MU need not be considered for compliance.

6. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

No.	Product	Manufacturer	Model No.	Serial No.
1	Notebook PC	DELL	INSPIRON 640m PP19L	CN-0MG532-70166-71G-03EC

No.	Signal Cable Description
1	Non-shielded RJ-45 cable, 12m × 1

SETUP DIAGRAM FOR TESTS

EUT & peripherals setup diagram is shown in appendix setup photos.

EUT OPERATING CONDITION

1. EUT & peripherals setup diagram is shown in appendix setup photos.

TX Mode:

⇒ **Tx Data Rate:** 1Mbps Bandwidth 20 (IEEE 802.11b mode)

6Mbps Bandwidth 20 (IEEE 802.11g mode)

6.5Mbps Bandwidth 20 (IEEE 802.11gn HT20 mode)

13.5Mbps Bandwidth 40 (IEEE 802.11gn HT40 mode)

⇒ Power control

IEEE 802.11b Channel Low (2412MHz) Power set 38

IEEE 802.11b Channel Mid (2437MHz) Power set 39

IEEE 802.11b Channel High (2462MHz) Power set 39

IEEE 802.11g Channel Low (2412MHz) Power set 31

IEEE 802.11g Channel Mid (2437MHz) Power set 31

IEEE 802.11g Channel High (2462MHz) Power set 31

IEEE 802.11n HT20 Channel Low (2412MHz) Power set 31

IEEE 802.11n HT20 Channel Mid (2437MHz) Power set 32

IEEE 802.11n HT20 Channel High (2462MHz) Power set 31

IEEE 802.11n HT40 Channel Low (2422MHz) Power set 32

IEEE 802.11n HT40 Channel Mid (2437MHz) Power set 32

IEEE 802.11n HT40 Channel High (2452MHz) Power set 31

- 2. All of the functions are under run.
- 3. Start test.

7. FCC PART 15.247 REQUIREMENTS

7.1 6dB BANDWIDTH

LIMITS

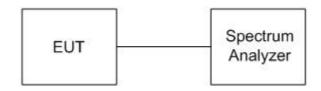
§ 15.247(a) (2) For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360132	06/04/2016

Remark: Each piece of equipment is scheduled for calibration once a year.

TEST SETUP



TEST PROCEDURE

- 1. The transmitter output was connected to a spectrum analyzer.
- 2. Set RBW = 100 kHz.
- 3. Set the video bandwidth (VBW) \geq 3 x RBW.
- 4. Detector = Peak.
- 5. Trace mode = max hold.
- 6. Sweep = auto couple.
- 7. Allow the trace to stabilize.
- 8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

TEST RESULTS

IEEE 802.11b Mode

ille out it is mous						
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Pass / Fail		
Low	2412	10.075	500	PASS		
Middle	2437	10.080	500	PASS		
High	2462	10.070	500	PASS		

Report No.: T150602D12-RP1

IEEE 802.11g Mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Pass / Fail
Low	2412	16.110	500	PASS
Middle	2437	16.350	500	PASS
High	2462	16.365	500	PASS

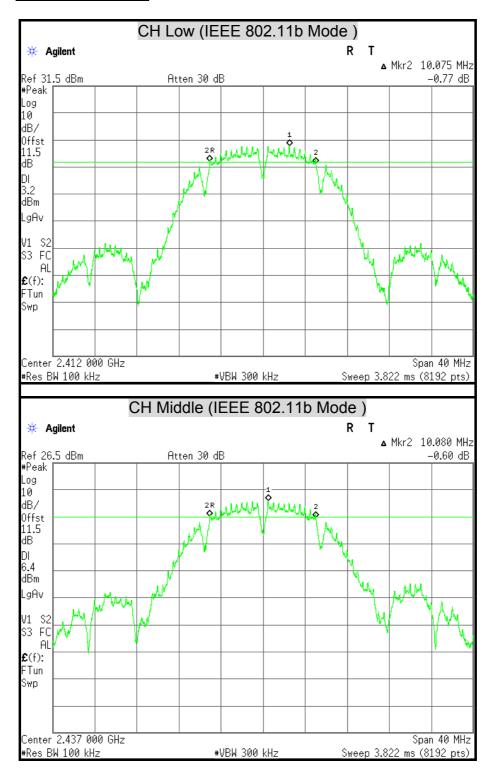
IEEE 802.11gn HT20 Mode

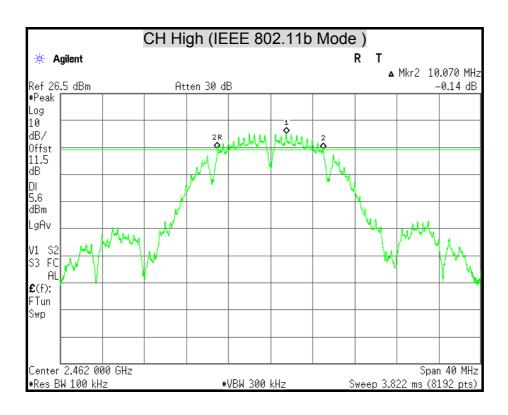
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Pass / Fail
Low	2412	17.140	500	PASS
Middle	2437	17.560	500	PASS
High	2462	17.300	500	PASS

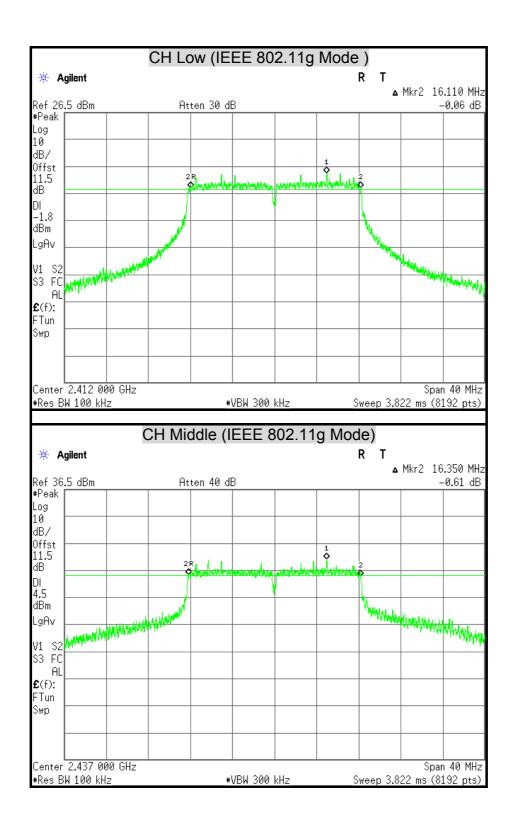
IEEE 802.11an HT40 Mode

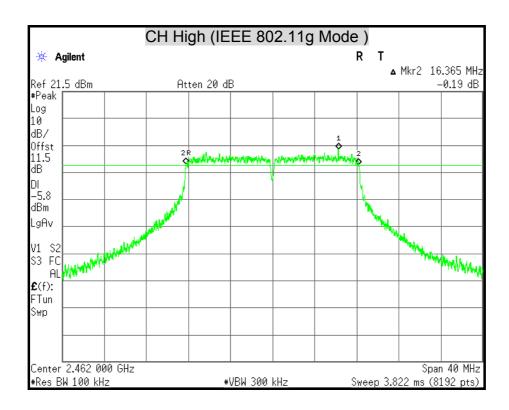
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Pass / Fail
Low	2422	36.105	500	PASS
Middle	2437	36.095	500	PASS
High	2452	36.330	500	PASS

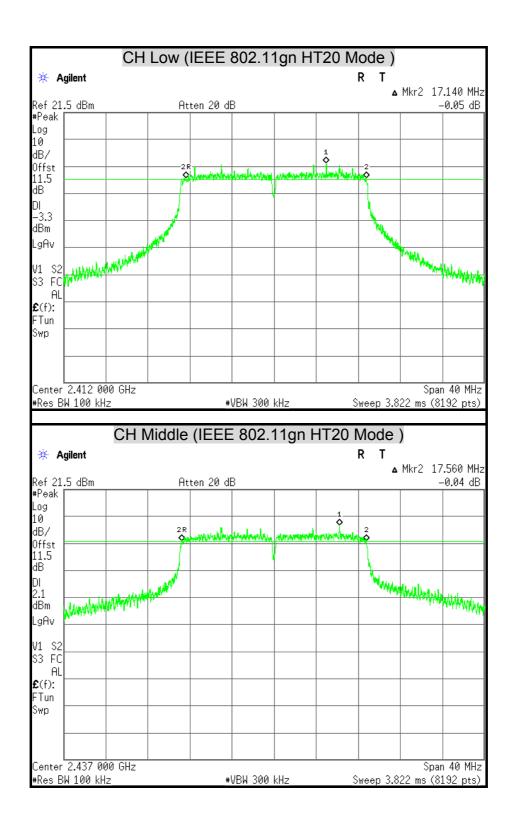
6dB BANDWIDTH

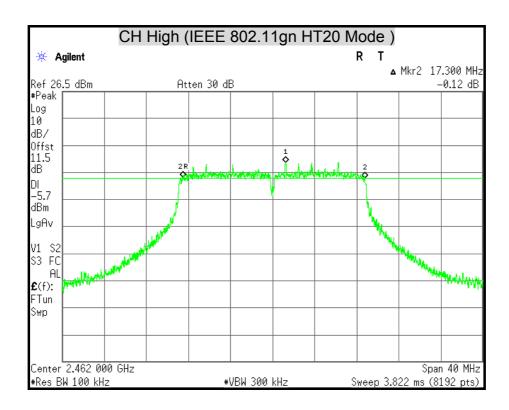


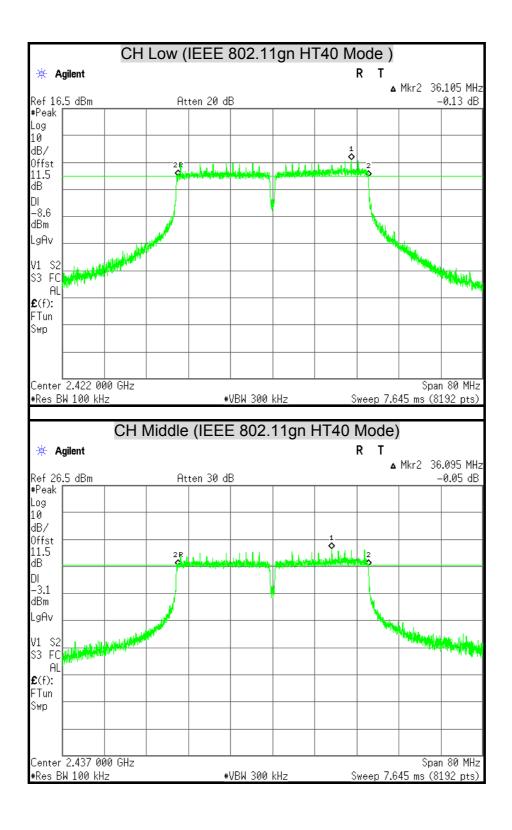


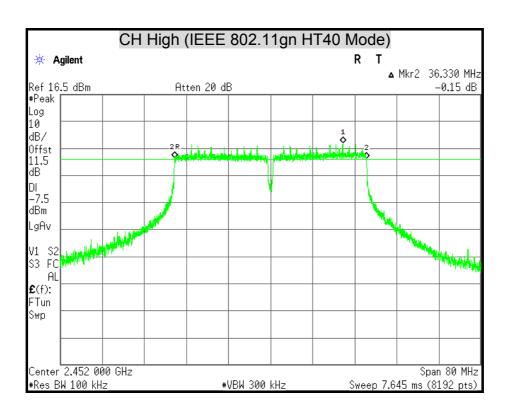












7.2 MAXIMUM PEAK OUTPUT POWER

LIMITS

§ 15.247(b) The maximum peak output power of the intentional radiator shall not exceed the following :

§ 15.247(b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands : 1 watt.

§ 15.247(b) (4) Except as shown in paragraphs (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

§ KDB 662911 : For power measurements on IEEE 802.11 devices

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \le 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

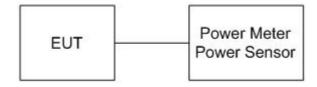
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \ge 5$.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	Anritsu	ML2495A	1149001	12/11/2015
Power Sensor	Anritsu	MA2411B	1126148	12/11/2015

Remark: Each piece of equipment is scheduled for calibration once a year.

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the power meter. The power meter is set to the peak power detection.

TEST RESULTS

IEEE 802.11b Mode

Channel	Channel Frequency	Peak Power		Peak Power Limit		Pass / Fail
	(MHz)	(dBm)	(W)	(dBm)	(W)	
Low	2412	20.53	0.1130	27.1	0.5129	PASS
Middle	2437	23.64	0.2312	27.1	0.5129	PASS
High	2462	22.66	0.1845	27.1	0.5129	PASS

Remark:

- 1. At finial test to get the worst-case emission at 1Mbps.
- 2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
- 3. The maximum antenna gain is 8.9dBi which is more than 6dBi, the limit should be 27.1dBm.

IEEE 802.11g Mode

Channel	Channel Frequency	Peak Power		Peak Power Limit		Pass / Fail
	(MHz)	(dBm)	(W)	(dBm)	(W)	
Low	2412	23.17	0.2075	27.1	0.5129	PASS
Middle	2437	26.19	0.4159	27.1	0.5129	PASS
High	2462	20.41	0.1099	27.1	0.5129	PASS

Remark:

- 1. At finial test to get the worst-case emission at 6Mbps.
- 2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
- 3. The maximum antenna gain is 8.9dBi which is more than 6dBi, the limit should be 27.1dBm.

IEEE 802.11gn HT20 Mode

Channel	Channel Frequency	Peak Power		ower Peak Power Limit		Pass / Fail
Onamici	(MHz)	(dBm)	(W)	(dBm)	(W)	1 455 / 1 411
Low	2412	22.10	0.1622	27.1	0.5129	PASS
Middle	2437	25.68	0.3698	27.1	0.5129	PASS
High	2462	19.62	0.0916	27.1	0.5129	PASS

Remark:

- 1. At finial test to get the worst-case emission at 6.5Mbps.
- 2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
- 3. The maximum antenna gain is 8.9dBi which is more than 6dBi, the limit should be 27.1dBm.

IEEE 802.11gn HT40 Mode

Channel	Channel Frequency	Peak Power		Peak Pov	Pass / Fail	
	(MHz)	(dBm)	(W)	(dBm)	(W)	
Low	2422	19.26	0.0843	27.1	0.5129	PASS
Middle	2437	23.87	0.2438	27.1	0.5129	PASS
High	2452	20.47	0.1114	27.1	0.5129	PASS

Remark:

- 1. At finial test to get the worst-case emission at 13.5Mbps.
- 2. The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.
- 3. The maximum antenna gain is 8.9dBi which is more than 6dBi, the limit should be 27.1dBm.

7.3 AVERAGE POWER

LIMITS

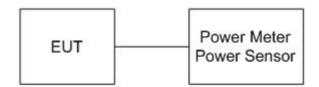
None; for reporting purposes only.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	ANRITSU	ML2495A	1149001	12/11/2015
Power Sensor	ANRITSU	MA2411B	1126148	12/11/2015

Remark: Each piece of equipment is scheduled for calibration once a year.

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the power meter. The power meter is set to the average power detection.

TEST RESULTS

IEEE 802.11b Mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2412	18.40
Middle	2437	21.71
High	2462	20.67

Remark:

- 1. At finial test to get the worst-case emission at 1Mbps.
- 2. The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

IEEE 802.11g Mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2412	15.11
Middle	2437	21.27
High	2462	11.99

Remark:

- 1. At finial test to get the worst-case emission at 6Mbps.
- 2. The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

IEEE 802.11qn HT20 Mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2412	13.80
Middle	2437	19.62
High	2462	11.40

Remark:

- 1. At finial test to get the worst-case emission at 6.5Mbps.
- 2. The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

IEEE 802.11gn HT40 Mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2422	11.09
Middle	2437	16.46
High	2452	12.34

Remark:

- 1. At finial test to get the worst-case emission at 13.5Mbps.
- 2. The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.

7.4 POWER SPECTRAL DENSITY

LIMITS

§ 15.247(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360132	06/04/2016

Remark: Each piece of equipment is scheduled for calibration once a year.

TEST SETUP



TEST PROCEDURE

- 1. The transmitter output was connected to the spectrum analyzer.
- 2. Set analyzer center frequency to DTS channel center frequency.
- 3. Set the span to 1.5 times the DTS channel bandwidth.
- 4. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- 5. Set the VBW \geq 3 x RBW.
- 6. Detector = peak.
- 7. Sweep time = auto couple.
- 8. Trace mode = max hold.
- 9. Allow trace to fully stabilize.
- 10. Use the peak marker function to determine the maximum amplitude level within the RBW.
- 11. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST RESULTS

IEEE 802.11b Mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Minimum Limit (dBm)	Pass / Fail
Low	2412	-3.83	5.1	PASS
Middle	2437	-1.98	5.1	PASS
High	2462	-3.18	5.1	PASS

Remark:

- 1. At finial test to get the worst-case emission at 1Mbps.
- 2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
- 3. The maximum antenna gain is 8.9dBi which is more than 6dBi, the limit should be 5.1dBm.

IEEE 802.11g Mode (1TX)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Minimum Limit (dBm)	Pass / Fail
Low	2412	-10.42	5.1	PASS
Middle	2437	-3.99	5.1	PASS
High	2462	-11.76	5.1	PASS

Remark:

- 1. At finial test to get the worst-case emission at 6Mbps.
- 2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
- 3. The maximum antenna gain is 8.9dBi which is more than 6dBi, the limit should be 5.1dBm.

IEEE 802.11gn HT20 Mode (1TX)

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Minimum Limit (dBm)	Pass / Fail
Low	2412	-11.50	5.1	PASS
Middle	2437	-6.45	5.1	PASS
High	2462	-13.99	5.1	PASS

Remark:

- 1. At finial test to get the worst-case emission at 6.5Mbps.
- 2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
- 3. The maximum antenna gain is 8.9dBi which is more than 6dBi, the limit should be 5.1dBm.

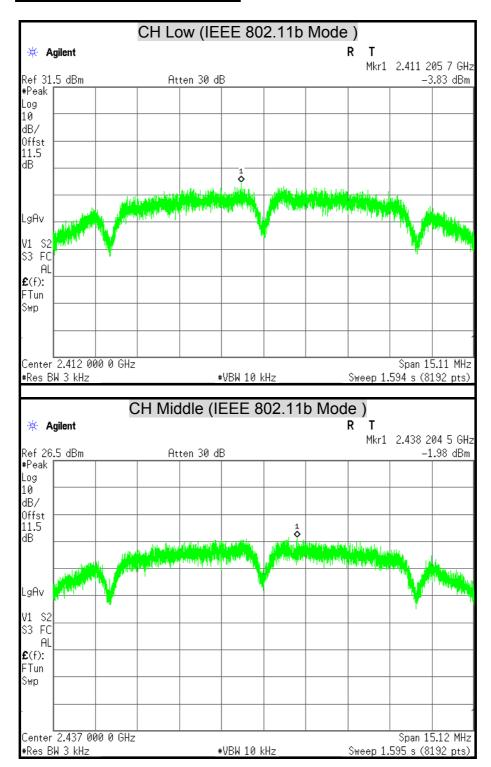
IEEE 802.11gn HT40 Mode

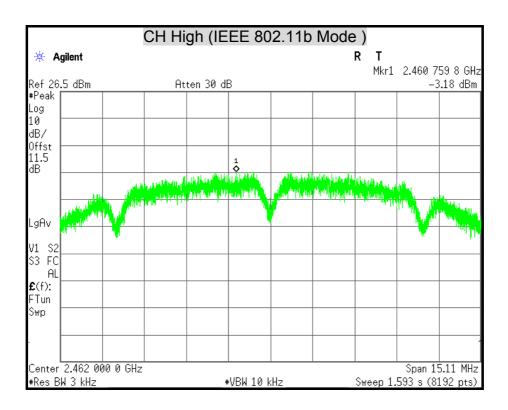
Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Minimum Limit (dBm)	Pass / Fail
Low	2422	-17.71	5.1	PASS
Middle	2437	-12.22	5.1	PASS
High	2452	-15.51	5.1	PASS

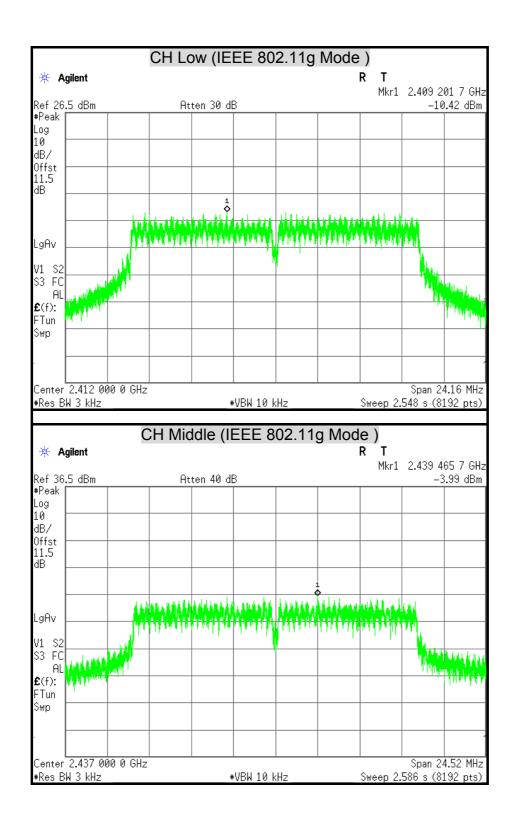
Remark:

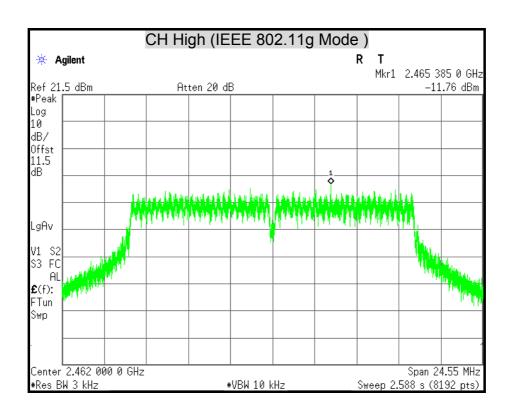
- 1. At finial test to get the worst-case emission at 13.5Mbps.
- 2. The cable assembly insertion loss of 11.5dB (including 10 dB pad and 1.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.
- 3. The maximum antenna gain is 8.9dBi which is more than 6dBi, the limit should be 5.1dBm.

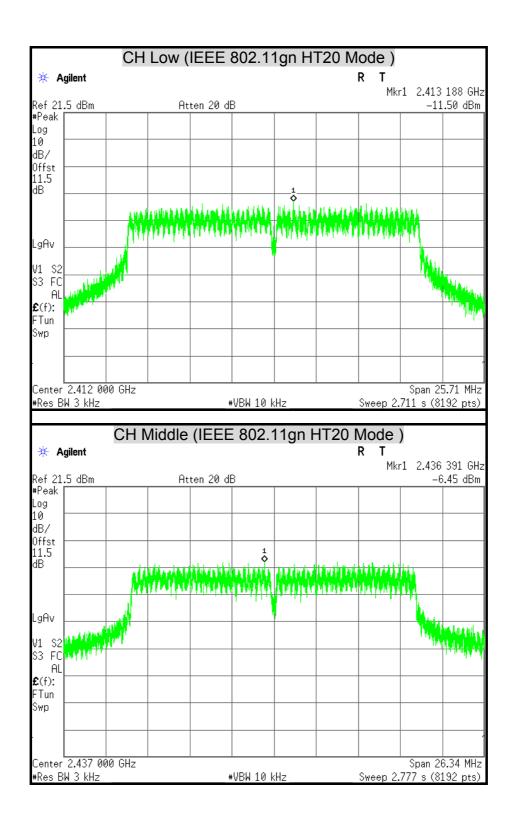
POWER SPECTRAL DENSITY

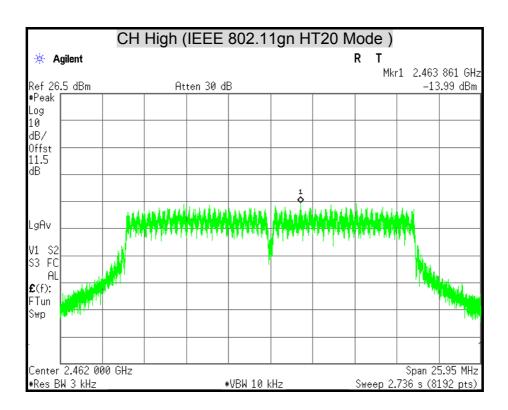


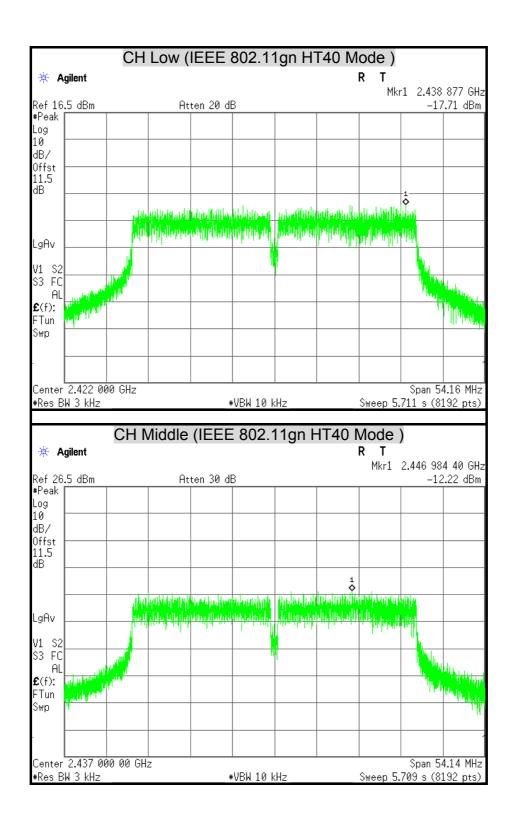


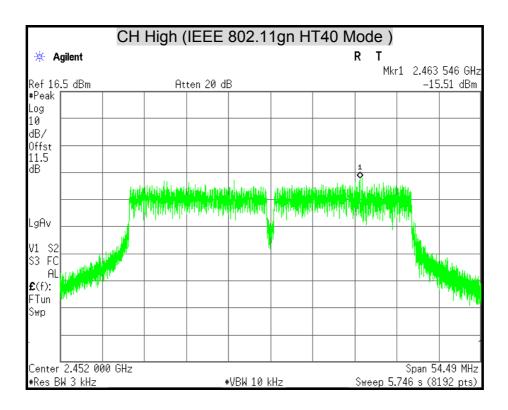












7.5 CONDUCTED SPURIOUS EMISSION

LIMITS

§ 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the and that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360132	06/04/2016

Remark: Each piece of equipment is scheduled for calibration once a year.

TEST SETUP



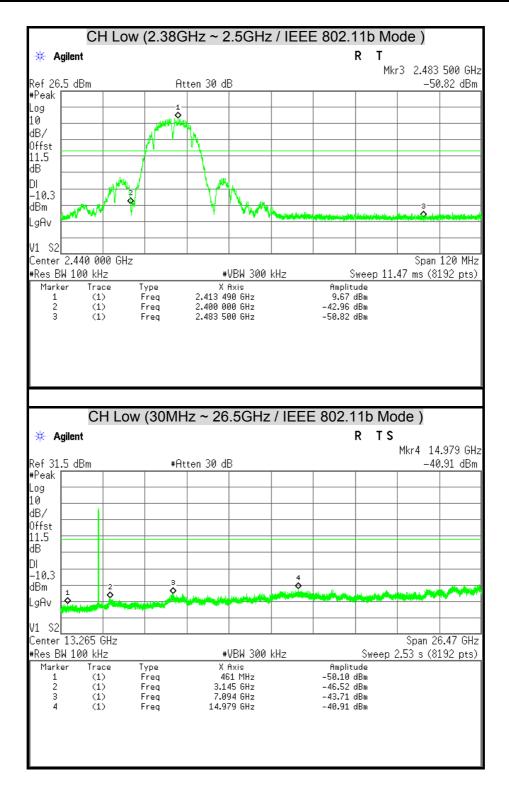
TEST PROCEDURE

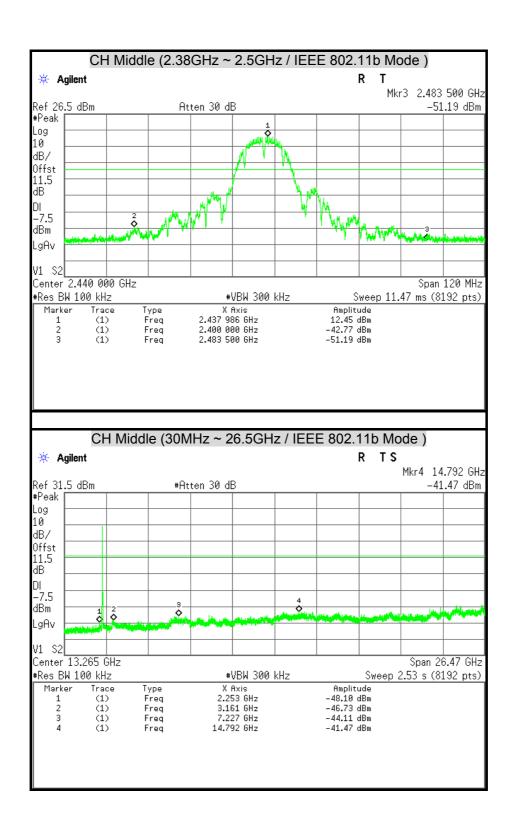
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

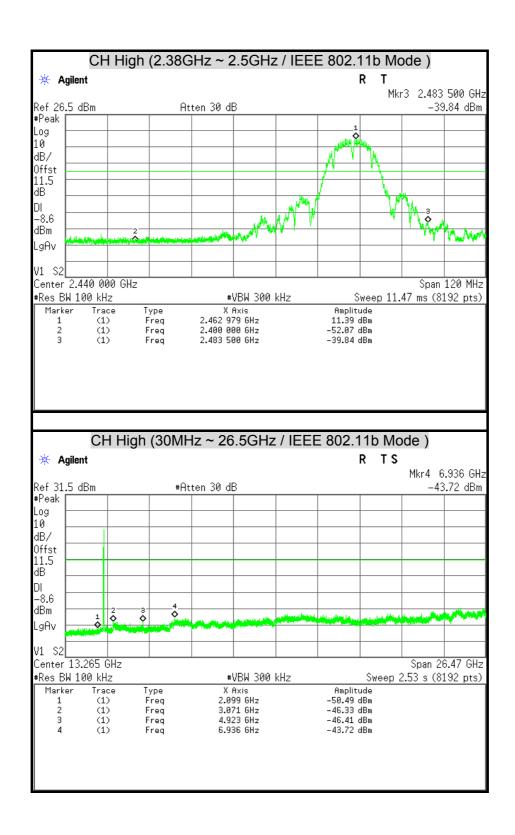
The spectrum from 30 MHz to 26.5 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

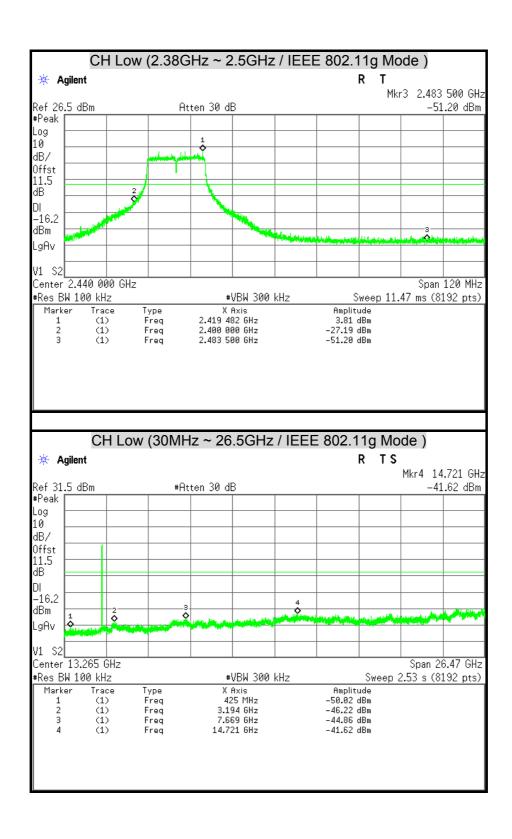
TEST RESULTS

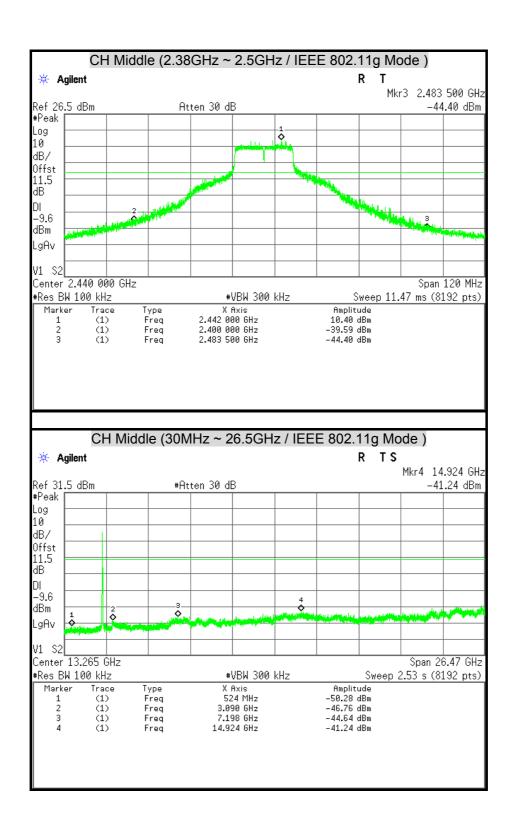
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

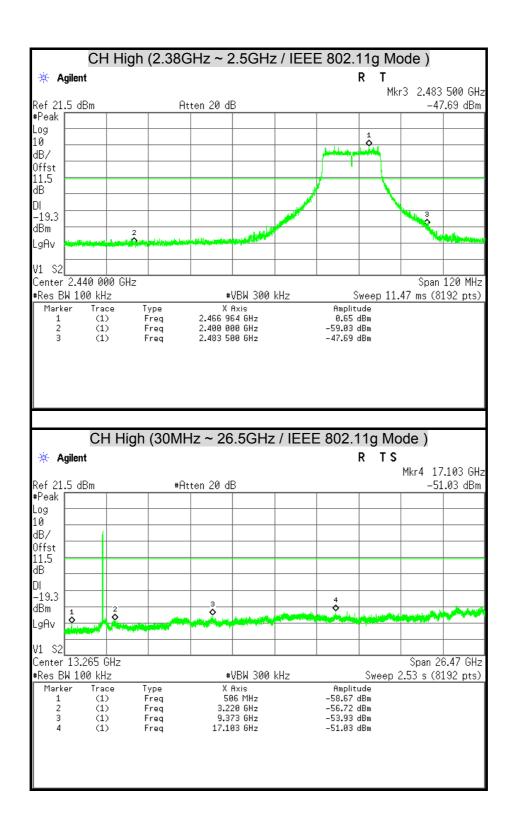


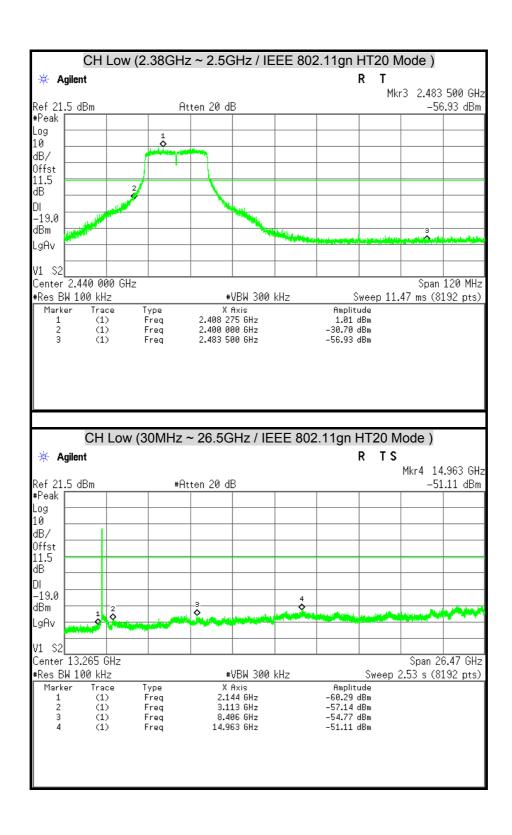


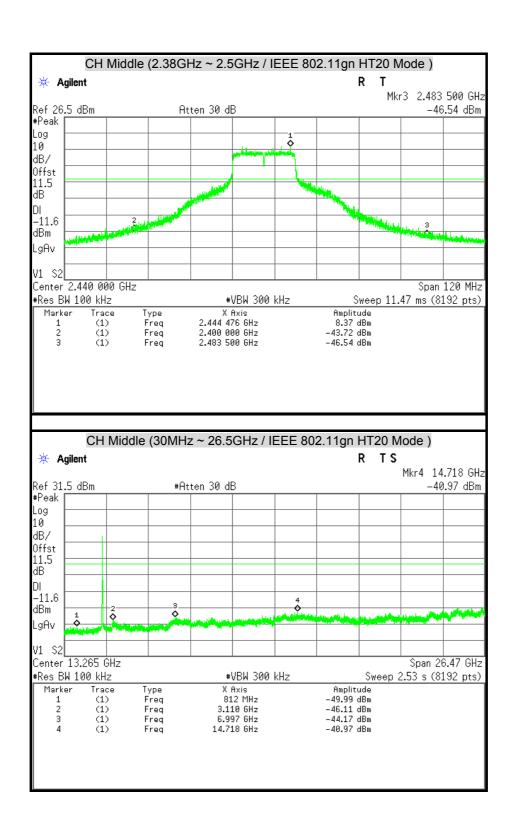


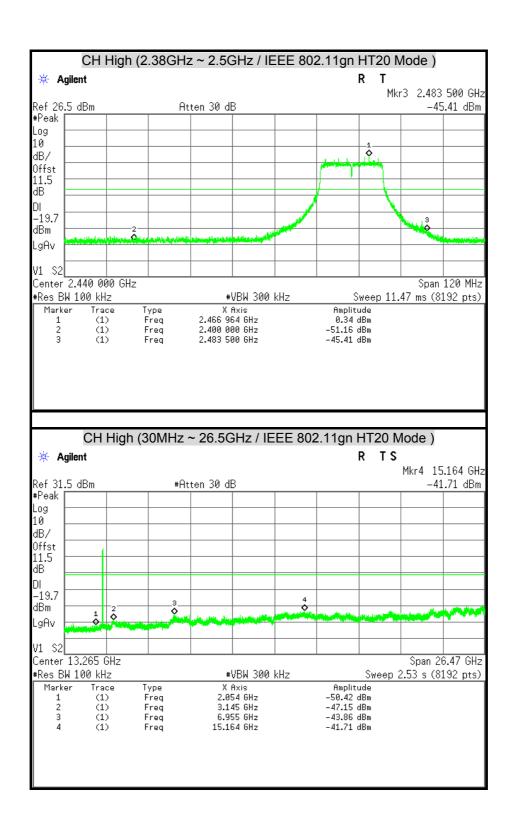


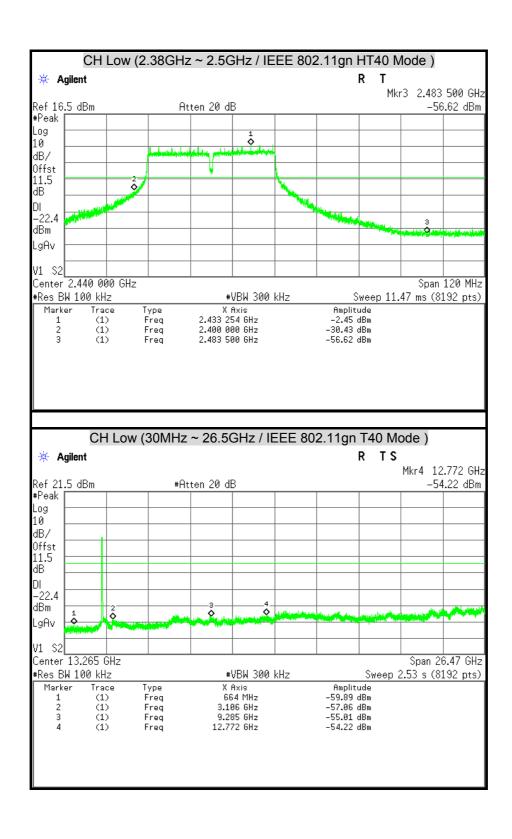


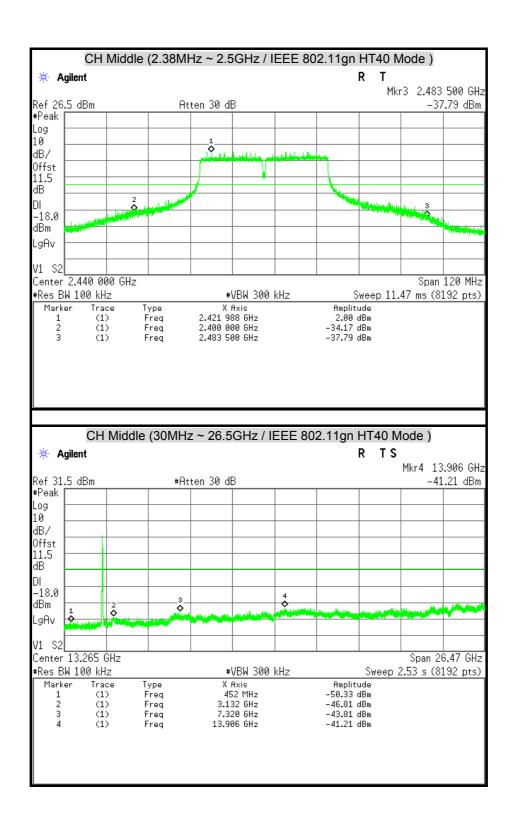


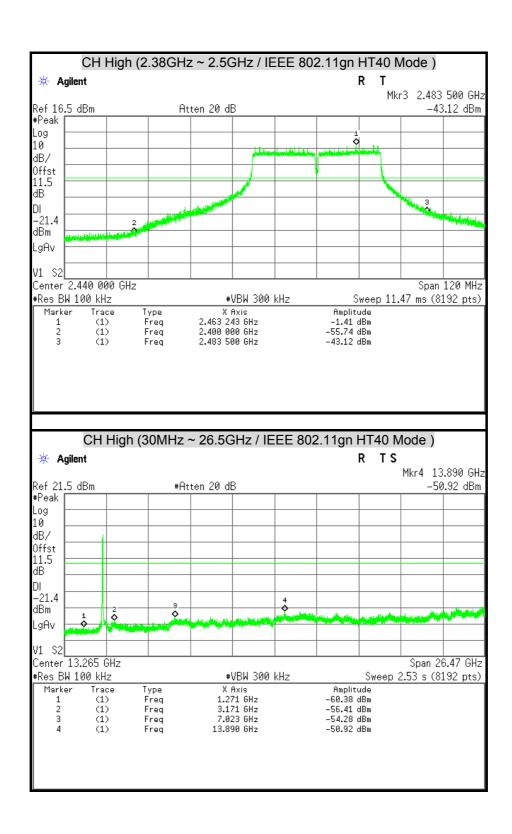












7.6 RADIATED EMISSION

LIMITS

(1) According to § 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 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	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	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 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 -335.4	3600 - 4400	(²)
13.36 - 13.41			

Remark:

(2) According to § 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown is Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

^{1. 1} Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

^{2. &}lt;sup>2</sup> Above 38.6

(3) According to § 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

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

Remark: **Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

(4) According to § 15.209 (b) In the emission table above, the tighter limit applies at the band edges.

TEST EQUIPMENT

Radiated Emission / 966Chamber_B

Name of Equipment	Manufacture	Model	Serial Number	Calibration Due	
Spectrum Analyzer	Agilent	E4446A	MY46180323	04/14/2016	
EMI Test Receiver	ROHDE & SCHWARZ	ESCS 30	835418/008	10/14/2015	
Bi-log Antenna	SCHWARZBECK	VULB 9168	9168-250	08/21/2015	
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078733	12/02/2015	
Horn Antenna	COM-POWER	AH-840	03077	12/17/2015	
Pre-Amplifier	Agilent	8447D	2944A10052	07/15/2015	
Pre-Amplifier	Agilent	8449B	3008A01916	07/15/2015	
Notch Filters Band Reject	Micro-Tronics	BRM05702-01	026	N.C.R	
LOOP Antenna	EMCO	6502	8905-2356	09/23/2015	

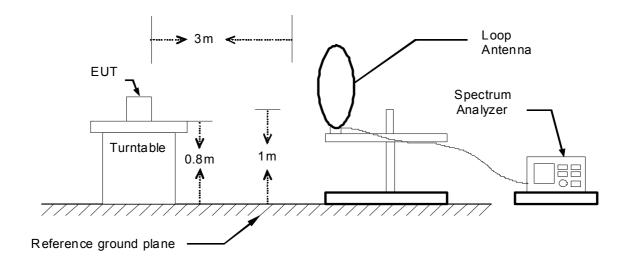
Remark: 1. Each piece of equipment is scheduled for calibration once a year.

2. N.C.R = No Calibration Request.

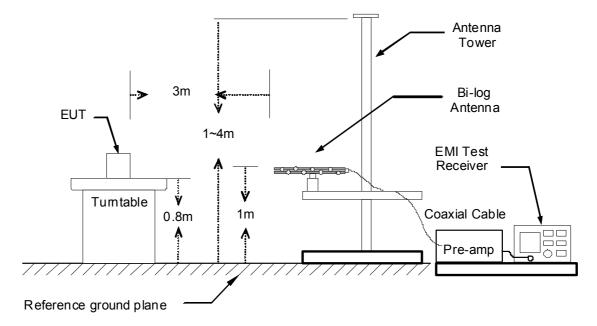
TEST SETUP

The diagram below shows the test setup that is utilized to make the measurements for emission below 1GHz.

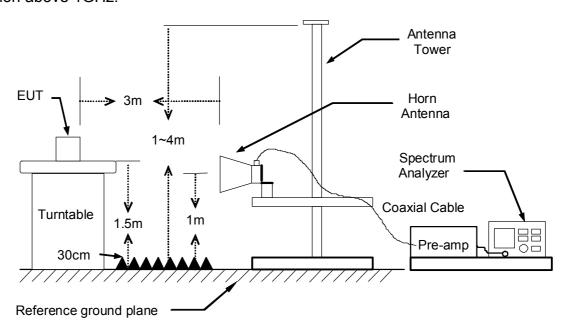
9kHz ~ 30MHz



30MHz ~ 1GHz



The diagram below shows the test setup that is utilized to make the measurements for emission above 1GHz.



TEST PROCEDURE

- 1. The EUT was placed on the top of a rotating table 0.8 and 1.5 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2. While measuring the radiated emission below 1GHz, the EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. While measuring the radiated emission above 1GHz, the EUT was set 3 meters away from the interference-receiving antenna.
- 3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarization of the antenna are set to make the measurement.
- 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Remark:

- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
- 2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1GHz.
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

TEST RESULTS

Below 1 GHz (9kHz ~ 30MHz)

No emission found between lowest internal used/generated frequency to 30MHz.

Below 1 GHz (30MHz ~ 1GHz)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng	
Test Model	WF2375	Test Date	2015/06/25	
Test Mode	TX Mode	Temp. & Humidity	25°C, 50%	

	966 Chamber_B at 3Meter / Horizontal								
Frequency (MHz)	Reading (dBµV)	S Factor		Limit (dBµV/m)	Margin (dB)	Remark			
93.05	48.24	-19.24	29.00	43.50	-14.50	Peak			
299.66	44.27	-11.45	32.82	46.00	-13.18	Peak			
500.45	53.06	-7.83	45.23	46.00	-0.77	QP			
523.73	42.04	-7.49	34.55	46.00	-11.45	Peak			
719.67	36.27	-4.00	32.27	46.00	-13.73	Peak			
889.42	889.42 37.66 -1.03		36.63 46.00		-9.37	Peak			
		966 Chambe	er_B at 3Met	ter / Vertical					
Frequency (MHz)	Reading (dBµV)	Correction Factor (dB/m)	Factor Result Limit		Margin (dB)	Remark			
51.34	42.74	-13.50	29.23	40.00	-10.77	Peak			
91.11	52.07	-19.51	32.56	43.50	-10.94	Peak			
500.45	50.70	-7.83	42.87	46.00	-3.13	Peak			
526.64	38.49	-7.45	31.04	46.00	-14.96	Peak			
900.09	41.75	-0.83	40.92	46.00	-5.08	Peak			
942.77	34.01	-0.21	33.81	46.00	-12.19	Peak			

Remark:

- 1. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit.
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) PreAmp.Gain (dB)
- 3. Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)
- 4. Margin (dB) = Remark result (dBuV/m) Quasi-peak limit (dBuV/m)

Report No.: T150602D12-RP1

54.00

74.00

-2.80

Peak

Above 1 GHz

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng	
Test Model	WF2375	Test Date	2015/06/25	
Test Mode	IEEE 802.11b TX / CH Low	Temp. & Humidity	25°C, 50%	

	966 Chamber_B at 3Meter / Horizontal								
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1500.00	52.22		-2.01	50.21		74.00	54.00	-3.79	Peak
2494.00	48.10		3.60	51.70		74.00	54.00	-2.30	Peak
2590.00	47.76		3.82	51.58		74.00	54.00	-2.42	Peak
3360.00	40.63		5.39	46.03		74.00	54.00	-7.97	Peak
4665.00	40.18		8.77	48.95		74.00	54.00	-5.05	Peak
7170.00	38.74		13.62	52.36		74.00	54.00	-1.64	Peak
					3Meter / Vo	ertical			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1100.00	48.29		-2.06	46.23		74.00	54.00	-7.77	Peak
2176.00	44.81		2.97	47.79		74.00	54.00	-6.21	Peak
2496.00	46.44		3.60	50.05		74.00	54.00	-3.95	Peak
3165.00	42.02		5.07	47.09		74.00	54.00	-6.91	Peak
4425.00	40.48		8.48	48.96		74.00	54.00	-5.04	Peak

Remark:

6300.00

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.

12.64

3. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

51.20

- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

38.56

Margin = Result - Limit

Remark Peak = Result(PK) - Limit(AV)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng	
Test Model	WF2375	Test Date	2015/06/25	
Test Mode	IEEE 802.11b TX / CH Middle	Temp. & Humidity	25°C, 50%	

	966 Chamber_B at 3Meter / Horizontal								
Frequency (MHz)	Reading- PK (dBuV)		Correction Factor (dB/m)	Result-PK (dBuV/m)		Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1132.00	48.74		-2.05	46.69		74.00	54.00	-7.31	Peak
1500.00	51.30		-2.01	49.29		74.00	54.00	-4.71	Peak
2390.00	51.96	40.95	3.39	55.36	44.34	74.00	54.00	-9.66	AVG
3660.00	41.98		5.86	47.85		74.00	54.00	-6.15	Peak
4665.00	39.54		8.77	48.31		74.00	54.00	-5.69	Peak
6030.00	38.63		12.76	51.38		74.00	54.00	-2.62	Peak
		9	66 Chaml	ber_B at 3	3Meter / V	ertical			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1100.00	48.47		-2.06	46.41		74.00	54.00	-7.59	Peak
2390.00	48.37		3.39	51.77		74.00	54.00	-2.23	Peak
2484.00	47.51		3.58	51.08		74.00	54.00	-2.92	Peak
4875.00	41.38		8.67	50.05		74.00	54.00	-3.95	Peak
5880.00	38.45		12.25	50.70		74.00	54.00	-3.30	Peak
6960.00	38.47		13.95	52.42		74.00	54.00	-1.58	Peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.
- 3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

Margin = Result - Limit

Remark Peak = Result(PK) - Limit(AV)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng	
Test Model	WF2375	Test Date	2015/06/25	
Test Mode	IEEE 802.11b TX / CH High	Temp. & Humidity	25°C, 50%	

	966 Chamber_B at 3Meter / Horizontal								
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1500.00	51.40		-2.01	49.39		74.00	54.00	-4.61	Peak
2390.00	47.48		3.39	50.88		74.00	54.00	-3.12	Peak
2646.00	47.54		3.95	51.49		74.00	54.00	-2.51	Peak
3255.00	42.52		5.22	47.74		74.00	54.00	-6.26	Peak
4950.00	39.95		8.63	48.58		74.00	54.00	-5.42	Peak
6240.00	39.44		12.66	52.10		74.00	54.00	-1.90	Peak
		9	66 Chaml	ber_B at 3	3Meter / V	ertical			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
2112.00	45.13		2.85	47.98		74.00	54.00	-6.02	Peak
2378.00	46.74		3.37	50.11		74.00	54.00	-3.89	Peak
2646.00	46.07		3.95	50.02		74.00	54.00	-3.98	Peak
3285.00	41.52		5.27	46.79		74.00	54.00	-7.21	Peak
4920.00	41.02		8.65	49.67		74.00	54.00	-4.33	Peak
6945.00	38.48		13.90	52.38		74.00	54.00	-1.62	Peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.
- 3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

Margin = Result - Limit

 $Remark\ Peak = Result(PK) - Limit(AV)$

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng	
Test Model	WF2375	Test Date	2015/06/25	
Test Mode	IEEE 802.11g TX / CH Low	Temp. & Humidity	25°C, 50%	

	966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1100.00	48.63		-2.06	46.58		74.00	54.00	-7.42	Peak		
1500.00	51.17		-2.01	49.16		74.00	54.00	-4.84	Peak		
2508.00	47.12		3.63	50.75		74.00	54.00	-3.25	Peak		
4680.00	40.01		8.76	48.78		74.00	54.00	-5.22	Peak		
5955.00	38.61		12.57	51.19		74.00	54.00	-2.81	Peak		
6915.00	38.47		13.81	52.28		74.00	54.00	-1.72	Peak		
		9	66 Chaml	per_B at 3	3Meter / V	ertical					
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1100.00	48.25		-2.06	46.19		74.00	54.00	-7.81	Peak		
2046.00	43.32		2.72	46.04		74.00	54.00	-7.96	Peak		
2508.00	45.87		3.63	49.50		74.00	54.00	-4.50	Peak		
4590.00	40.16		8.81	48.97		74.00	54.00	-5.03	Peak		
5820.00	38.30		11.99	50.29		74.00	54.00	-3.71	Peak		
6735.00	38.10		13.26	51.37		74.00	54.00	-2.63	Peak		

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.
- 3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

Margin = Result - Limit

Remark Peak = Result(PK) - Limit(AV)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng
Test Model	Test Model WF2375		2015/06/25
Test Mode	IEEE 802.11g TX / CH Middle	Temp. & Humidity	25°C, 50%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading- PK (dBuV)		Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1500.00	51.66		-2.01	49.65		74.00	54.00	-4.35	Peak
2390.00	62.27	46.45	3.39	65.66	49.84	74.00	54.00	-4.16	AVG
2486.00	60.77	40.95	3.58	64.36	44.53	74.00	54.00	-9.47	AVG
4965.00	40.10		8.63	48.73		74.00	54.00	-5.27	Peak
6075.00	38.05		12.74	50.79		74.00	54.00	-3.21	Peak
7155.00	38.79		13.66	52.45		74.00	54.00	-1.55	Peak
		9	66 Chaml	ber_B at 3	3Meter / V	ertical			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1100.00	48.89		-2.06	46.83		74.00	54.00	-7.17	Peak
2390.00	57.72	42.63	3.39	61.12	46.02	74.00	54.00	-7.98	AVG
2484.00	58.82	43.95	3.58	62.40	47.53	74.00	54.00	-6.47	AVG
4545.00	40.33		8.83	49.16		74.00	54.00	-4.84	Peak
5985.00	38.00		12.70	50.70		74.00	54.00	-3.30	Peak
6945.00	38.52		13.90	52.42		74.00	54.00	-1.58	Peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.
- 3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

Margin = Result - Limit

Remark Peak = Result(PK) - Limit(AV)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng	
Test Model	WF2375	Test Date	2015/06/25	
Test Mode	IEEE 802.11g TX / CH High	Temp. & Humidity	25°C, 50%	

		00	0.01.0001.0	- D - (0 l	Matau / 11a				
Frequency (MHz)	Reading- PK (dBuV)			Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1500.00	51.45		-2.01	49.44		74.00	54.00	-4.56	Peak
2360.00	44.99		3.34	48.32		74.00	54.00	-5.68	Peak
2544.00	46.24		3.71	49.95		74.00	54.00	-4.05	Peak
4725.00	39.96		8.74	48.70		74.00	54.00	-5.30	Peak
5700.00	40.03		11.47	51.49		74.00	54.00	-2.51	Peak
7005.00	38.31		14.06	52.36		74.00	54.00	-1.64	Peak
		9	66 Chaml	per_B at 3	3Meter / V	ertical			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1100.00	48.44		-2.06	46.39		74.00	54.00	-7.61	Peak
2352.00	43.15		3.32	46.47		74.00	54.00	-7.53	Peak
2590.00	44.59		3.82	48.41		74.00	54.00	-5.59	Peak
4800.00	39.87		8.71	48.57		74.00	54.00	-5.43	Peak
6150.00	38.50		12.70	51.21		74.00	54.00	-2.79	Peak
6945.00	38.53		13.90	52.44		74.00	54.00	-1.56	Peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.
- 3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

Margin = Result - Limit

Remark Peak = Result(PK) - Limit(AV)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng	
Test Model	WF2375	Test Date	2015/06/25	
Test Mode	IEEE 802.11gn HT20 TX / CH Low	Temp. & Humidity	25°C, 50%	

	966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1500.00	50.88		-2.01	48.87		74.00	54.00	-5.13	Peak		
2500.00	47.64		3.61	51.25		74.00	54.00	-2.75	Peak		
2642.00	47.11		3.95	51.05		74.00	54.00	-2.95	Peak		
4470.00	39.60		8.70	48.30		74.00	54.00	-5.70	Peak		
5985.00	38.11		12.70	50.82		74.00	54.00	-3.18	Peak		
7020.00	38.47		14.02	52.49		74.00	54.00	-1.51	Peak		
		9	66 Chaml	ber_B at 3	3Meter / V	ertical					
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark		
1100.00	48.02		-2.06	45.96		74.00	54.00	-8.04	Peak		
2034.00	42.99		2.70	45.68		74.00	54.00	-8.32	Peak		
2494.00	44.90		3.60	48.50		74.00	54.00	-5.50	Peak		
3210.00	41.88		5.14	47.02		74.00	54.00	-6.98	Peak		
4440.00	39.37		8.55	47.92		74.00	54.00	-6.08	Peak		
6255.00	38.31		12.66	50.97		74.00	54.00	-3.03	Peak		

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.
- 3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

Margin = Result - Limit

Remark Peak = Result(PK) - Limit(AV)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng	
Test Model	WF2375	Test Date	2015/06/25	
Test Mode	IEEE 802.11gn HT20 TX / CH Middle	Temp. & Humidity	25°C, 50%	

966 Chamber_B at 3Meter / Horizontal										
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1500.00	50.78		-2.01	48.77		74.00	54.00	-5.23	Peak	
2388.00	60.16	42.76	3.39	63.55	46.15	74.00	54.00	-7.85	AVG	
2484.00	55.91	39.00	3.58	59.49	42.58	74.00	54.00	-11.42	AVG	
4620.00	40.39		8.79	49.18		74.00	54.00	-4.82	Peak	
6165.00	38.46		12.70	51.16		74.00	54.00	-2.84	Peak	
6915.00	38.10		13.81	51.91		74.00	54.00	-2.09	Peak	
		9	66 Chaml	ber_B at 3	3Meter / V	ertical				
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark	
1100.00	49.22		-2.06	47.16		74.00	54.00	-6.84	Peak	
2386.00	60.72	42.03	3.39	64.11	45.42	74.00	54.00	-8.58	AVG	
2484.00	51.76	36.60	3.58	55.34	40.18	74.00	54.00	-13.82	AVG	
4860.00	40.44		8.68	49.12		74.00	54.00	-4.88	Peak	
6180.00	39.12		12.69	51.81		74.00	54.00	-2.19	Peak	
7110.00	38.19		13.78	51.97		74.00	54.00	-2.03	Peak	

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.
- 3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

Margin = Result - Limit

 $Remark\ Peak = Result(PK) - Limit(AV)$

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng	
Test Model	WF2375	Test Date	2015/06/25	
Test Mode	IEEE 802.11gn HT20 TX / CH High	Temp. & Humidity	25°C, 50%	

		96	6 Chambe	er_B at 3N	Meter / Ho	rizontal			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1500.00	51.85		-2.01	49.84		74.00	54.00	-4.16	Peak
2364.00	44.00		3.34	47.35		74.00	54.00	-6.65	Peak
2602.00	46.22		3.85	50.07		74.00	54.00	-3.93	Peak
3285.00	41.43		5.27	46.70		74.00	54.00	-7.30	Peak
4725.00	39.86		8.74	48.60		74.00	54.00	-5.40	Peak
6240.00	38.47		12.66	51.13		74.00	54.00	-2.87	Peak
		9	66 Chaml	ber_B at 3	3Meter / V	ertical			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)		Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1100.00	47.78		-2.06	45.73		74.00	54.00	-8.27	Peak
2362.00	44.33		3.34	47.67		74.00	54.00	-6.33	Peak
2598.00	44.91		3.84	48.75		74.00	54.00	-5.25	Peak
3675.00	41.67		5.88	47.55		74.00	54.00	-6.45	Peak
4845.00	39.85		8.68	48.54		74.00	54.00	-5.46	Peak
			·	·	l		· · · · · · · · · · · · · · · · · · ·	I	

Remark:

6225.00

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.

12.67

3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

74.00

54.00

-2.36

Peak

51.64

- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

38.97

Margin = Result - Limit

Remark Peak = Result(PK) - Limit(AV)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng
Test Model WF2375		Test Date	2015/06/25
Test Mode	IEEE 802.11gn HT40 TX / CH Low	Temp. & Humidity	25°C, 50%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1100.00	48.48		-2.06	46.42		74.00	54.00	-7.58	Peak
1500.00	50.72		-2.01	48.71		74.00	54.00	-5.29	Peak
2484.00	48.19		3.58	51.77		74.00	54.00	-2.23	Peak
3120.00	41.81	-	4.99	46.80		74.00	54.00	-7.20	Peak
4470.00	39.33	-	8.70	48.03		74.00	54.00	-5.97	Peak
6105.00	37.62	-	12.72	50.35		74.00	54.00	-3.65	Peak
		9	66 Chaml	ber_B at 3	3Meter / V	ertical			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1100.00	48.61		-2.06	46.55		74.00	54.00	-7.45	Peak
2034.00	43.70		2.70	46.40		74.00	54.00	-7.60	Peak
2560.00	44.39		3.75	48.14		74.00	54.00	-5.86	Peak
3210.00	40.78		5.14	45.93		74.00	54.00	-8.07	Peak
4740.00	39.37		8.73	48.10		74.00	54.00	-5.90	Peak

Remark:

6240.00

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.

12.66

3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

74.00

54.00

50.96

Peak

-3.04

- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

38.29

Margin = Result - Limit

Remark Peak = Result(PK) - Limit(AV)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng
Test Model	Test Model WF2375		2015/06/25
Test Mode	IEEE 802.11gn HT40 TX / CH Middle	Temp. & Humidity	25°C, 50%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1500.00	51.47		-2.01	49.46		74.00	54.00	-4.54	Peak
2390.00	63.21	48.85	3.39	66.61	52.24	74.00	54.00	-1.76	AVG
2484.00	62.56	48.36	3.58	66.14	51.94	74.00	54.00	-2.06	AVG
3210.00	41.31		5.14	46.45		74.00	54.00	-7.55	Peak
4740.00	38.91		8.73	47.64		74.00	54.00	-6.36	Peak
6150.00	38.32		12.70	51.03		74.00	54.00	-2.97	Peak
		9	66 Chaml	ber_B at 3	3Meter / V	ertical			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1100.00	49.57		-2.06	47.51		74.00	54.00	-6.49	Peak
2390.00	61.49	41.68	3.39	64.89	45.07	74.00	54.00	-8.93	AVG
2484.00	63.49	43.75	3.58	67.07	47.33	74.00	54.00	-6.67	AVG
3135.00	41.88		5.02	46.89		74.00	54.00	-7.11	Peak
4875.00	40.05		8.67	48.72		74.00	54.00	-5.28	Peak
7005.00	38.34		14.06	52.40		74.00	54.00	-1.60	Peak

Remark:

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.
- 3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

Margin = Result - Limit

Remark Peak = Result(PK) - Limit(AV)

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Davis Tseng
Test Model WF2375		Test Date	2015/06/25
Test Mode	IEEE 802.11gn HT40 TX / CH High	Temp. & Humidity	25°C, 50%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1500.00	51.93		-2.01	49.92		74.00	54.00	-4.08	Peak
2390.00	46.65		3.39	50.04		74.00	54.00	-3.96	Peak
2640.00	45.62		3.94	49.56		74.00	54.00	-4.44	Peak
3105.00	40.98		4.97	45.95		74.00	54.00	-8.05	Peak
4455.00	38.79		8.62	47.41		74.00	54.00	-6.59	Peak
7095.00	38.56		13.82	52.38		74.00	54.00	-1.62	Peak
		9	66 Chaml	ber_B at 3	3Meter / V	ertical			
Frequency (MHz)	Reading- PK (dBuV)	Reading- AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1100.00	48.58		-2.06	46.52		74.00	54.00	-7.48	Peak
2366.00	43.86		3.35	47.21		74.00	54.00	-6.79	Peak
2606.00	45.58		3.86	49.44		74.00	54.00	-4.56	Peak
3120.00	41.19		4.99	46.19		74.00	54.00	-7.81	Peak
4635.00	38.72		8.79	47.50		74.00	54.00	-6.50	Peak

Remark:

6375.00

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Average test would be performed if the peak result were greater than the average limit.

12.61

3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

74.00

54.00

-2.65

Peak

51.35

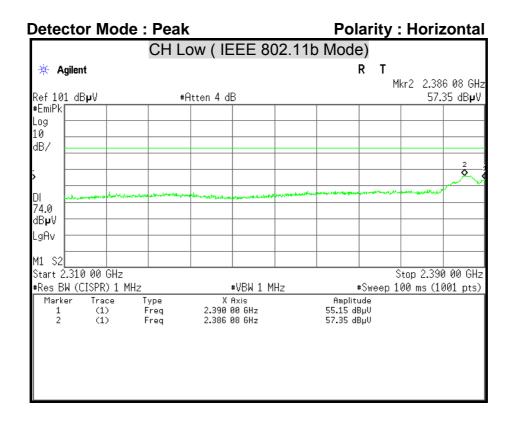
- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Result = Reading + Correction Factor

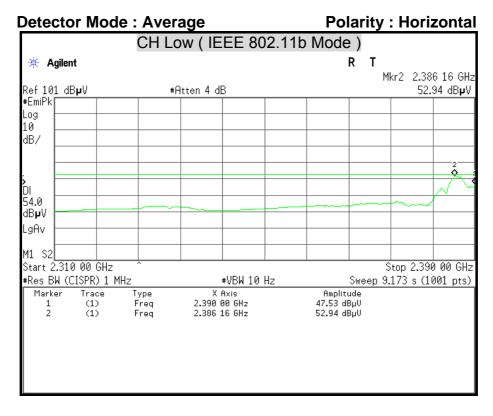
38.75

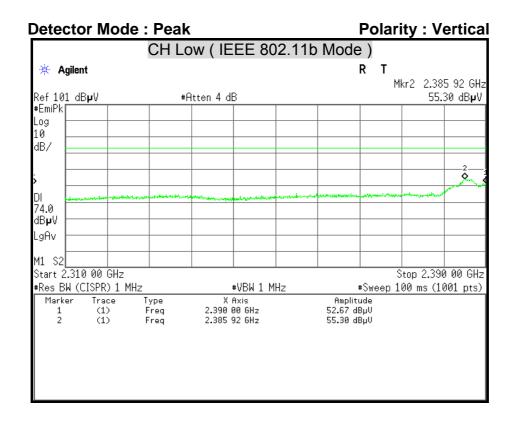
Margin = Result - Limit

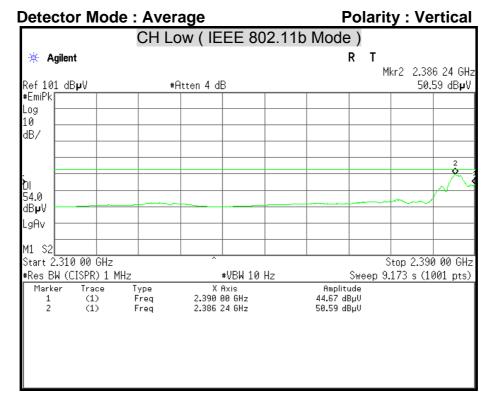
Remark Peak = Result(PK) - Limit(AV)

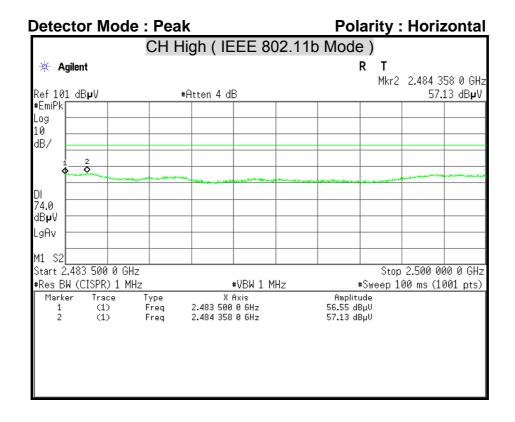
Restricted Band Edges

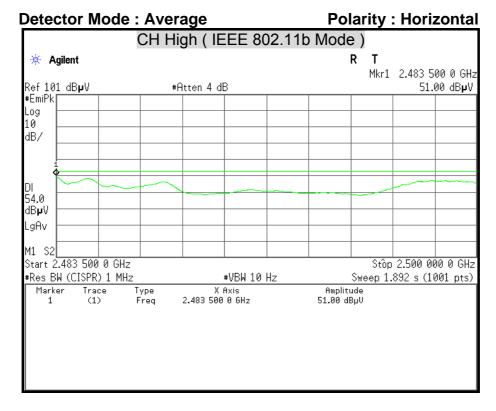


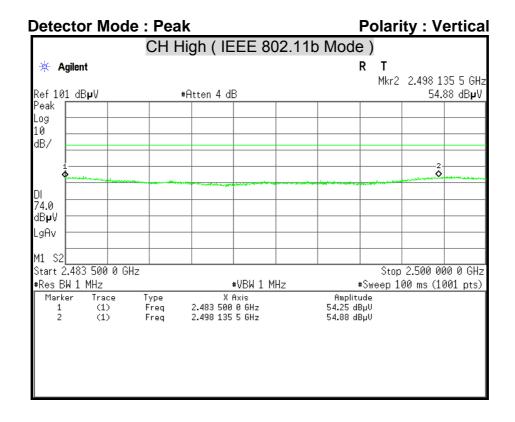


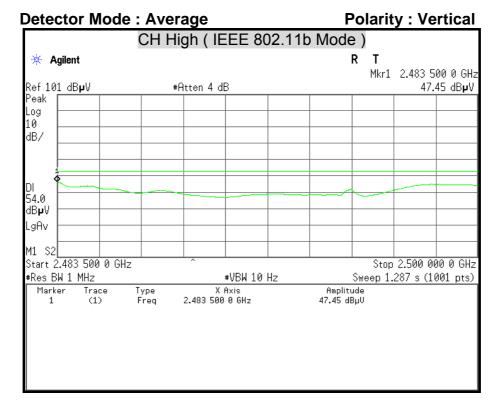


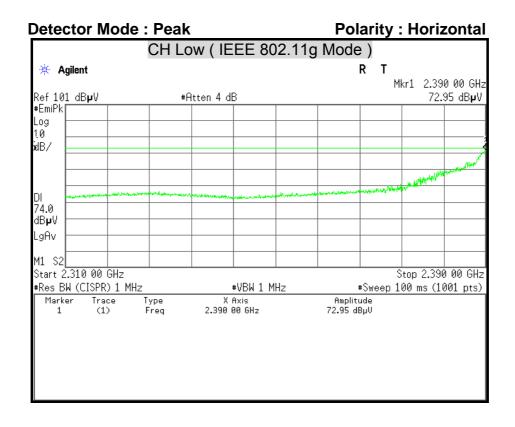


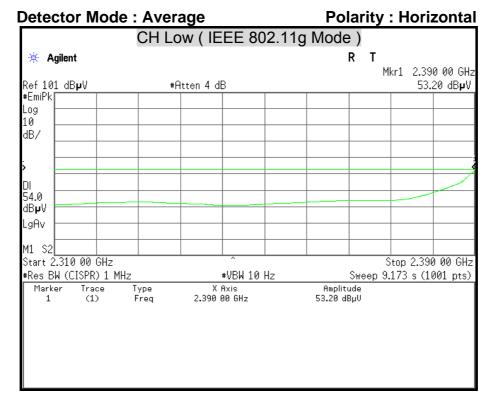


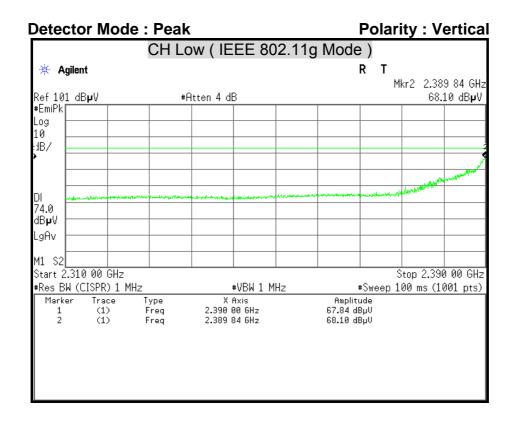


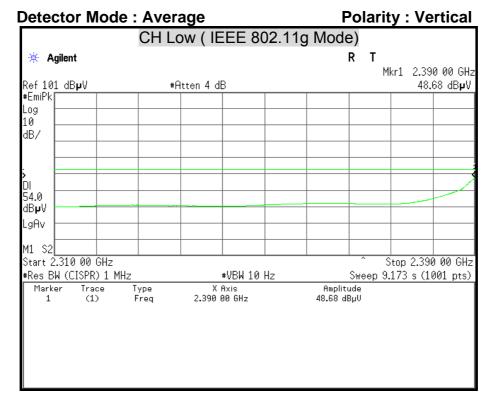


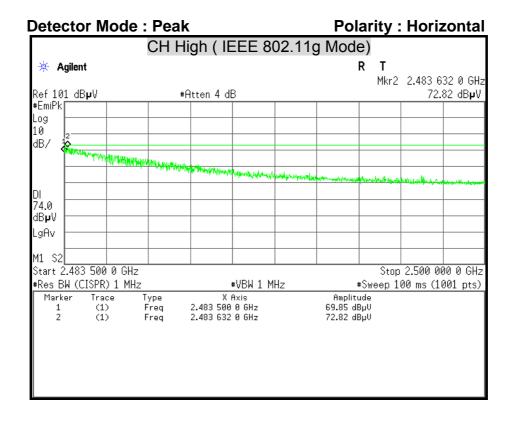


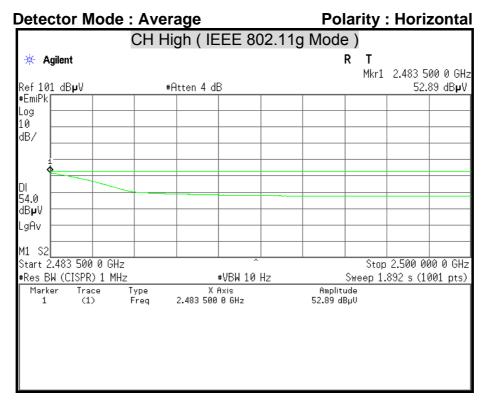


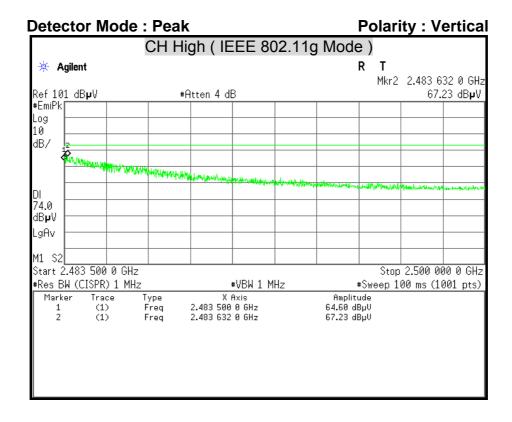


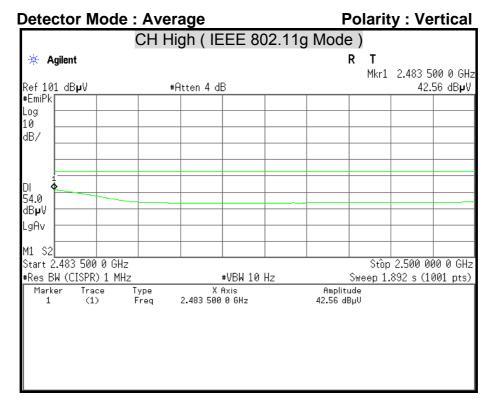


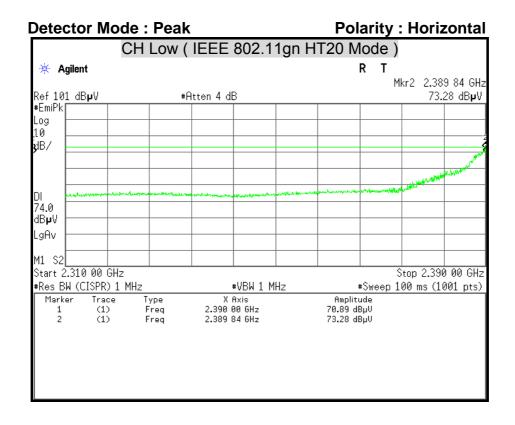


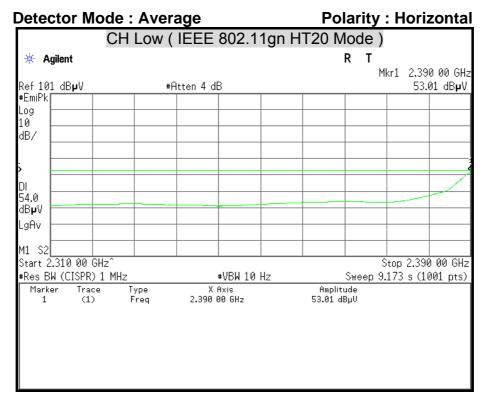


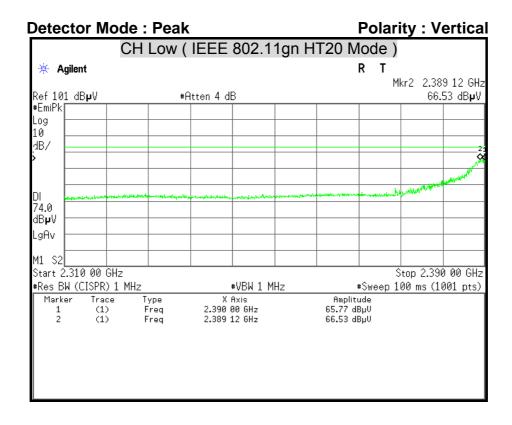


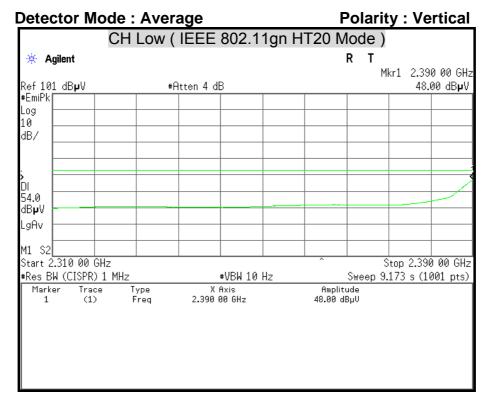


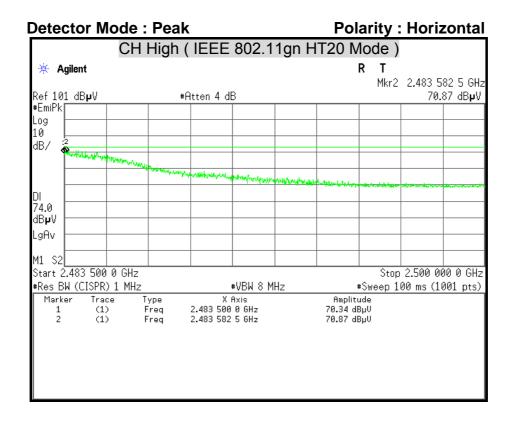


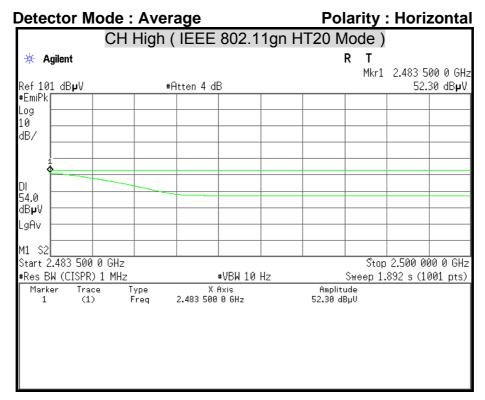


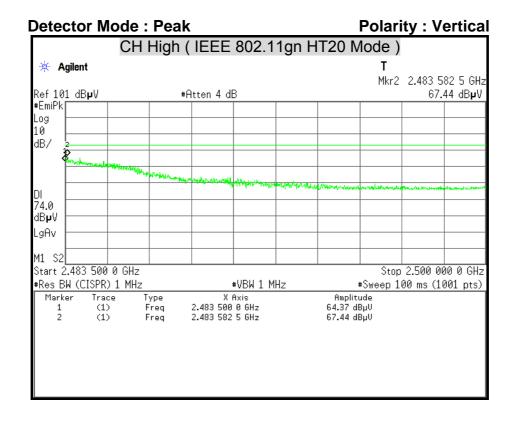


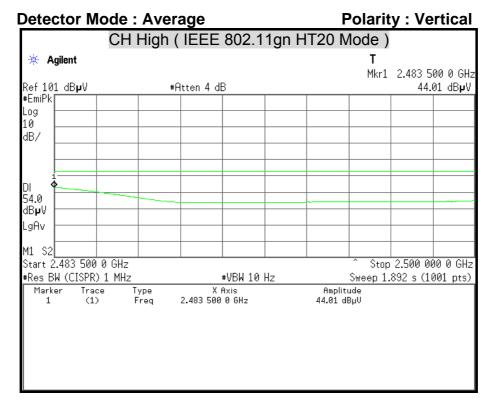


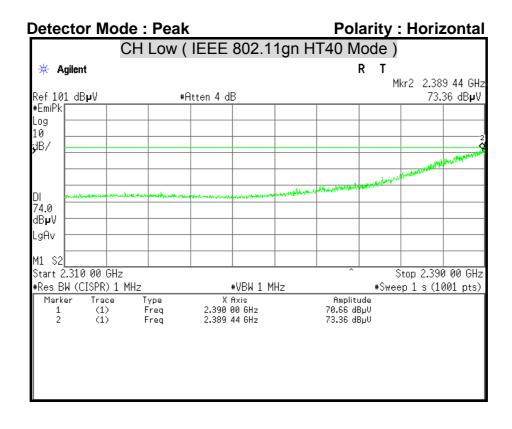


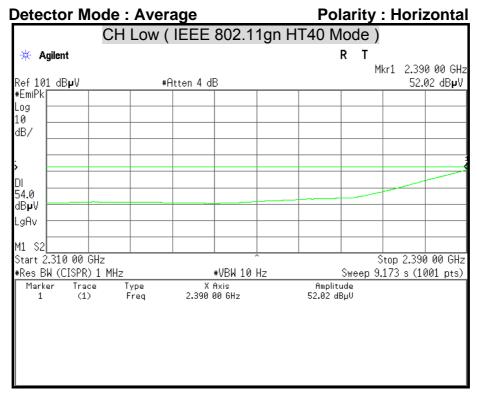


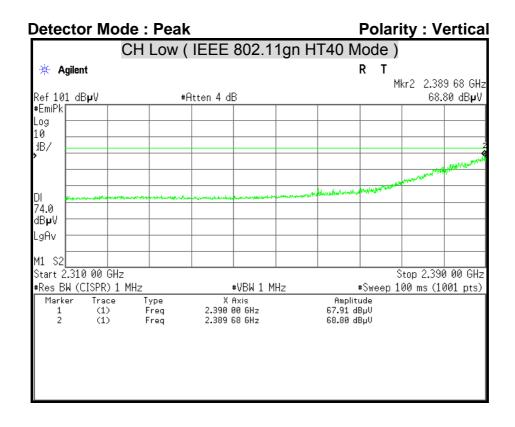


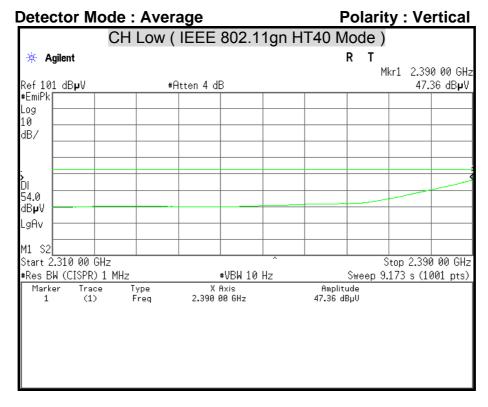


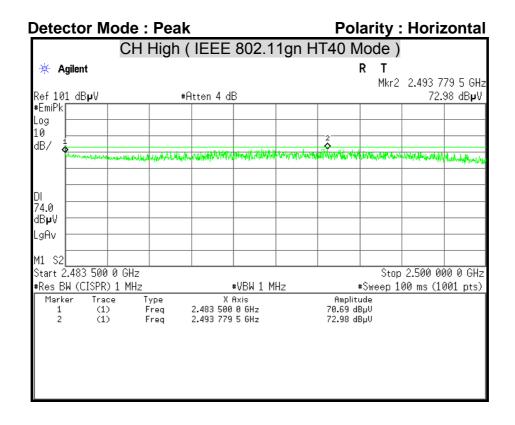


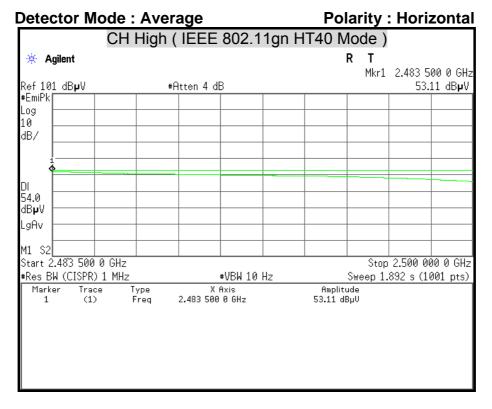


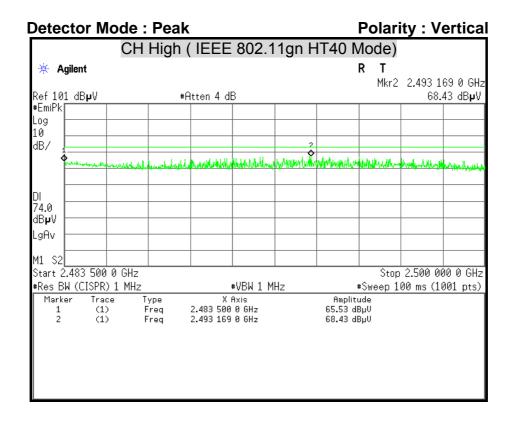


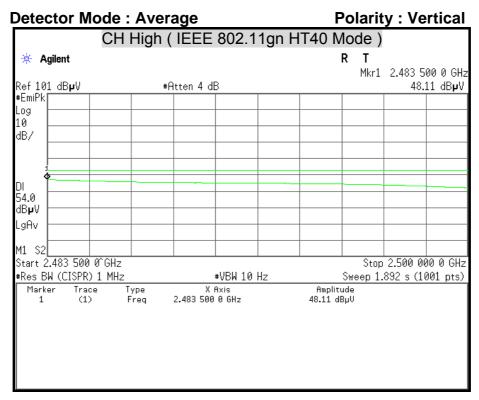












7.7 CONDUCTED EMISSION

LIMITS

§ 15.207 (a) Except as shown in paragraph (b) and (c) this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range	Conducted Limit (dBµv)		
(MHz)	Quasi-peak	Average	
0.15 - 0.50	66 to 56	56 to 46	
0.50 - 5.00	56	46	
5.00 - 30.0	60	50	

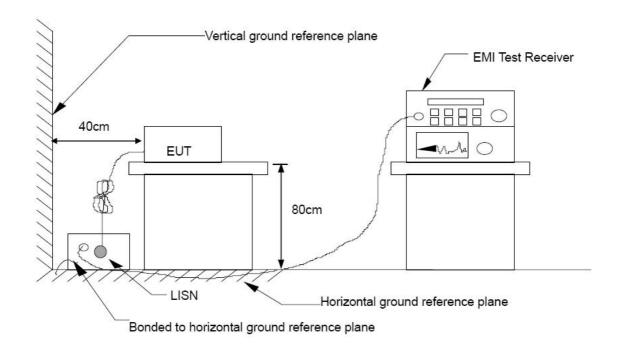
TEST EQUIPMENT

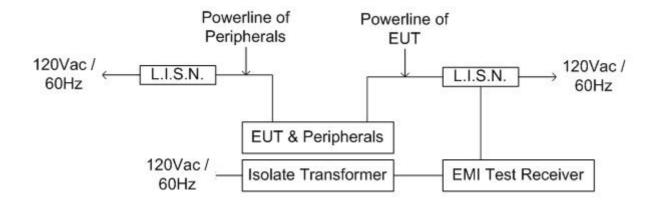
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
L.I.S.N	SCHWARZBECK	NSLK 8127	8127465	08/06/2015
L.I.S.N	SCHWARZBECK	NSLK 8127	8127473	03/09/2016
EMI Test Receiver	ROHDE & SCHWARZ	ESHS 30	838550/003	11/02/2015
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	100111	06/30/2015

Remark: Each piece of equipment is scheduled for calibration once a year.

Report No.: T150602D12-RP1

TEST SETUP





TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.10:2013.

The test procedure is performed in a 4m × 3m × 2.4m (L×W×H) shielded room.

The EUT along with its peripherals were placed on a 1.0 m (W) × 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.

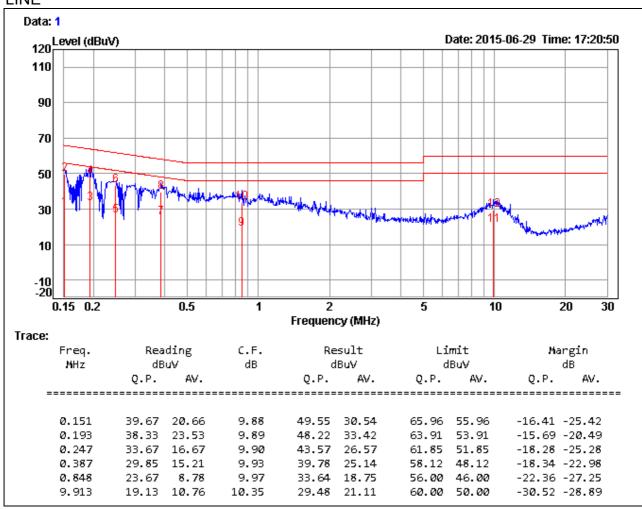
The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.

The EUT was located so that the distance between the boundary of the EUT and the closest surface of the LISN is 0.8 m. Where a mains flexible cord was provided by the manufacturer shall be 1 m long, or if in excess of 1 m, the excess cable was folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

TEST RESULTS

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Crystal Wu
Test Model	WF2375	Test Date	2015/06/29
Test Mode	Test Mode TX Mode Temp. & Humidity		27.6°C, 47%

LINE

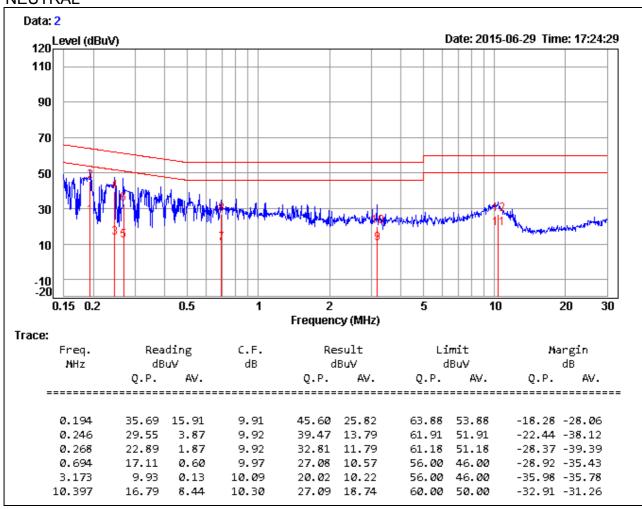


Remark:

- 1. Correction Factor = Insertion loss + Cable loss
- 2. Result level = Reading Value + Correction factor
- 3. Margin value = Result level Limit value

Product Name	AC600 Wireless Dual Band High Power Outdoor AP Router	Test By	Crystal Wu
Test Model	WF2375	Test Date	2015/06/29
Test Mode	TX Mode	Temp. & Humidity	27.6°C, 47%

NEUTRAL



Remark:

- 1. Correction Factor = Insertion loss + Cable loss
- 2. Result level = Reading Value + Correction factor
- 3. Margin value = Result level Limit value