

## FCC 47 CFR PART 15 SUBPART C

### RF Test Report

Applicant : Netgear Inc.  
Applicant Address : 350 East Plumeria Drive, San Jose, CA 95134  
Product Type : Mobile Hotspot  
Trade Name : NETGEAR  
Model Number : AC810S-300  
Applicable Standard : FCC 47 CFR PART 15 SUBPART C  
ANSI C63.10:2013  
Receive Date : Jul. 13, 2015  
Test Period : Aug. 10 ~ Sep. 23, 2015  
Issue Date : Nov. 24, 2015

#### Issue by

A Test Lab Techno Corp.  
No. 140-1, Changan Street, Bade City,  
Taoyuan County 334, Taiwan R.O.C.  
Tel : +886-3-2710188 / Fax : +886-3-2710190



Taiwan Accreditation Foundation accreditation number: 1330

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**Revision History**

Rev.	Issue Date	Revisions	Revised By
00	Nov. 02, 2015	Initial Issue	
01	Nov. 24, 2015	Revised report information.	Joyce Liao

## Verification of Compliance

Issued Date: 11/24/2015

Applicant : Netgear Inc.  
Address Applicant : 350 East Plumeria Drive, San Jose, CA 95134  
Product Type : Mobile Hotspot  
Trade Name : NETGEAR  
Model Number : AC810S-300  
FCC ID : PY3AC810S  
EUT Rated Voltage : DC 5V, 1A  
Test Voltage : 120 Vac / 60 Hz  
Applicable Standard : FCC 47 CFR PART 15 SUBPART C  
ANSI C63.10:2013  
Test Result : Complied  
Performing Lab. : A Test Lab Techno Corp.

No. 140-1, Changan Street, Bade City,  
Taoyuan County 334, Taiwan R.O.C.  
Tel : +886-3-2710188 / Fax : +886-3-2710190



Taiwan Accreditation Foundation accreditation number: 1330  
<http://www.atl-lab.com.tw/e-index.htm>

A Test Lab Techno Corp. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by A Test Lab Techno Corp. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved By : Fly Lu (Fly Lu) (Manager)  
Reviewed By : Eric Ou Yang (Eric Ou Yang) (Testing Engineer)

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## 1 General Information

### 1.1 Summary of Test Result

Standard	Item	Result	Remark
15.247			
15.207	AC Power Conducted Emission	PASS	-----
Standard	Item	Result	Remark
15.247			
15.247(d)	Transmitter Radiated Emissions	PASS	-----
15.247(b)(3)	Max. Output Power	PASS	-----
15.247(a)(2)	6dB RF Bandwidth	PASS	-----
15.247(e)	Power Spectral Density	PASS	-----
15.247(d)	Out of Band Conducted Spurious Emission	PASS	-----
15.247(d)	Band Edge Measurement	PASS	-----
15.203	Antenna Requirement	PASS	-----

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

### 1.2 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)	
Conducted Emission	9kHz ~ 30MHz	± 2.02	
Radiated Emission	30MHz ~ 1000MHz	Horizontal	± 3.98
		Vertical	± 3.62
	1000MHz ~ 18000MHz	Horizontal	± 3.11
		Vertical	± 3.07
	18000MHz ~ 40000MHz	Horizontal	± 3.66
		Vertical	± 3.54

## 2 EUT Description

Applicant	Netgear Inc.			
Applicant Address	350 East Plumeria Drive, San Jose, CA 95134			
Manufacturer	Netgear Inc.			
Manufacturer Address	350 East Plumeria Drive, San Jose, CA 95134			
Product Type	Mobile Hotspot			
Trade Name	NETGEAR			
Model Number	AC810S-300			
IMEI No.	351639070006457			
Hardware Version	DV3.2			
Software Version	11.02.00.00			
FCC ID	PY3AC810S			
Operate Freq. Band	Frequency Range (MHz)	Modulation	Channel Bandwidth	Data Rate 400GI (ns)
IEEE 802.11b	2412 ~ 2462	DSSS	20MHz	Up to 11Mbps
IEEE 802.11g	2412 ~ 2462	DSSS+OFDM	20MHz	Up to 54Mbps
IEEE 802.11n 2.4GHz 20MHz	2412 ~ 2462	OFDM	20MHz	Up to 144.4Mbps
IEEE 802.11n 2.4GHz 40MHz	2422 ~ 2452	OFDM	40MHz	Up to 300Mbps
Antenna Delivery	IEEE 802.11b: 1TX + 1RX IEEE 802.11g / IEEE 802.11n 20MHz / 40MHz: 2TX + 2RX			
Antenna Type	chip antennas			
Antenna Gain	1.2 dBi			
Power adapter List				
Power adapter (1)	Trade Name	NETGEAR	Model Number	MU05BT050100-A1
	I/P: 100-240VAC, 50/60Hz, 0.15A O/P: 5VDC, 1A			
Power adapter (2)	Trade Name	NETGEAR	Model Number	AD2038F20
	I/P: 100-240VAC, 50/60Hz, 0.13A O/P: 5.0VDC, 1.0A			

Frequency Band	Max. RF Output Power (W)
IEEE 802.11b	0.014
IEEE 802.11g	0.065
IEEE 802.11n 2.4GHz 20MHz	0.061
IEEE 802.11n 2.4GHz 40MHz	0.073

### 3 Test Methodology

#### 3.1. Mode of Operation

Decision of Test ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Normal operation mode
Mode 2: IEEE 802.11b link mode
Mode 3: IEEE 802.11g link mode
Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode
Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode

Software used to control the EUT for staying in continuous transmitting mode was programmed.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

The device used two models of adapter, adapter number: AD2038F20 is worst case to perform testing.

Test Mode	ANT-0	ANT-1	ANT-0+1
Mode 2: IEEE 802.11b link mode	V	V	
Mode 3: IEEE 802.11g link mode	V	V	V
Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode	V	V	V
Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode	V	V	V

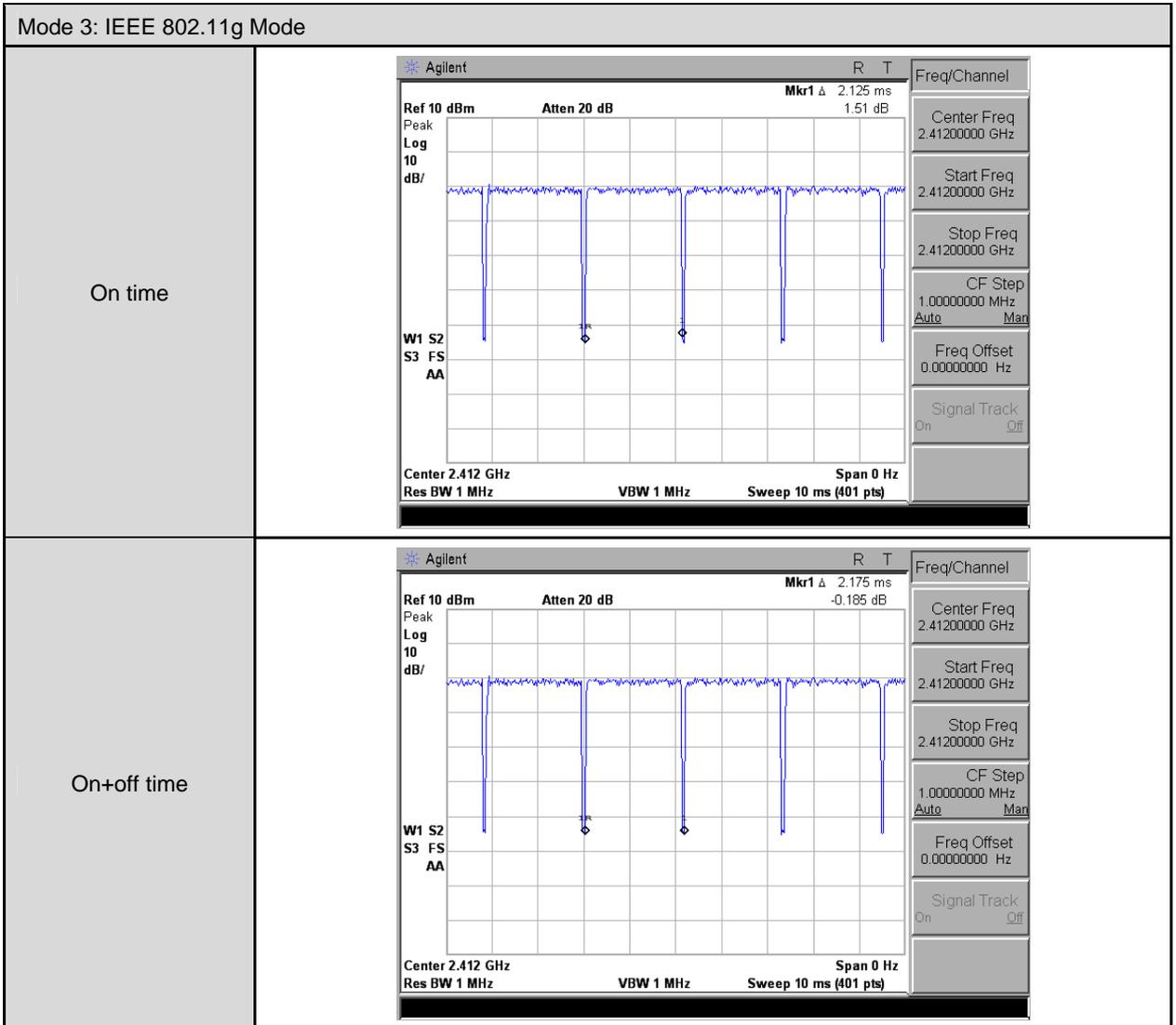
Test Mode	Antenna Delivery	Test Channel	Data Rate 800GI (ns)
Mode 2: IEEE 802.11b link mode	1TX / 1RX	1, 6, 11	1
Mode 3: IEEE 802.11g link mode	2TX / 2RX	1, 6, 11	6
Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode	2TX / 2RX	1, 6, 11	13
Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode	2TX / 2RX	3, 6, 9	27

#### Duty cycle

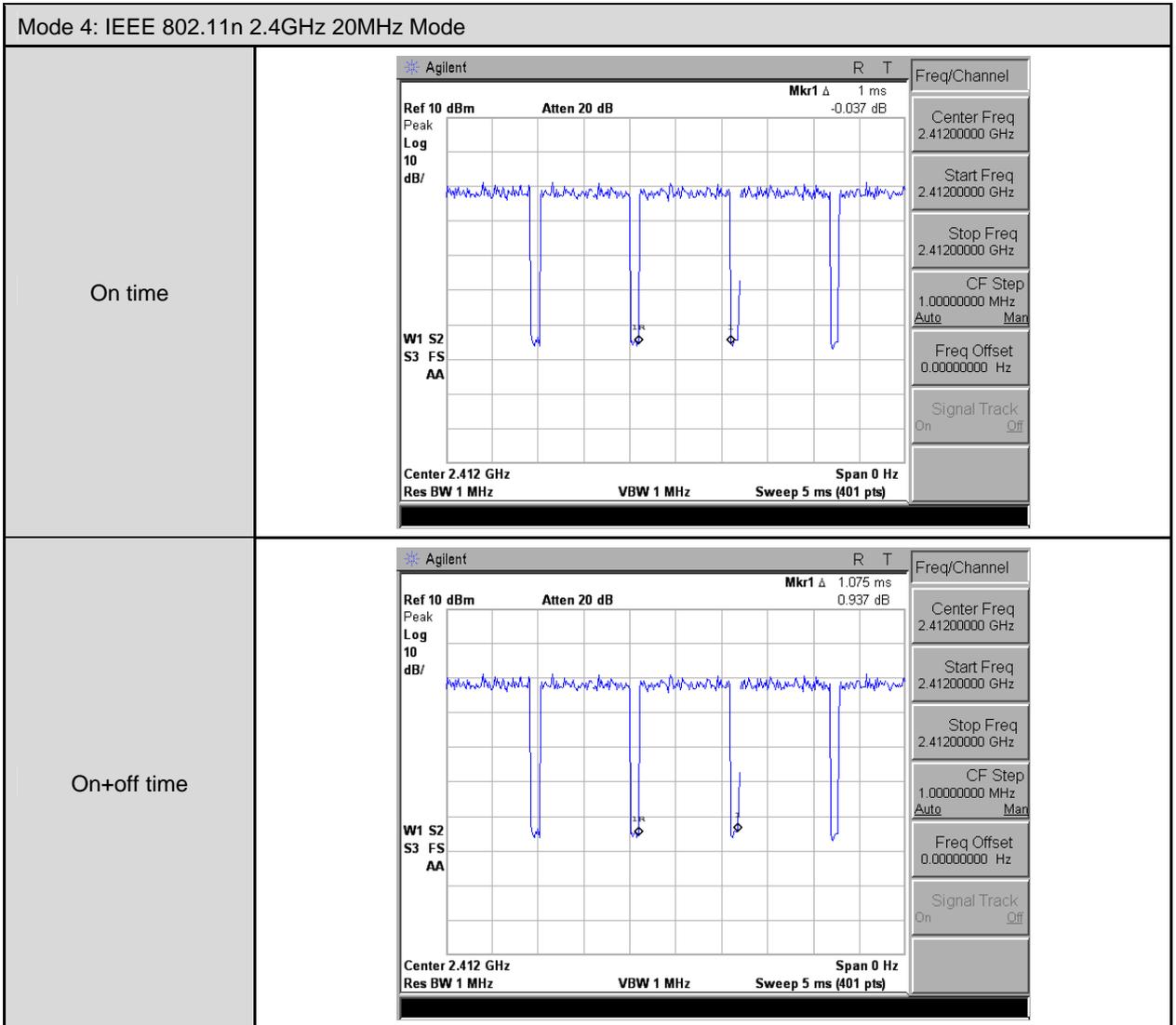
Test Mode	Frequency (MHz)	on time (ms)	on+off time (ms)	Duty cycle	Duty Factor (dB)	1/T Minimum VBW (kHz)
Mode 2: IEEE 802.11b link mode	2412.0	12.490	12.530	0.997	0.014	0.010
Mode 3: IEEE 802.11g link mode	2412.0	2.125	2.175	0.977	0.101	0.471
Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode	2412.0	1.000	1.075	0.930	0.314	1.000
Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode	2422.0	0.510	0.600	0.850	0.706	1.961

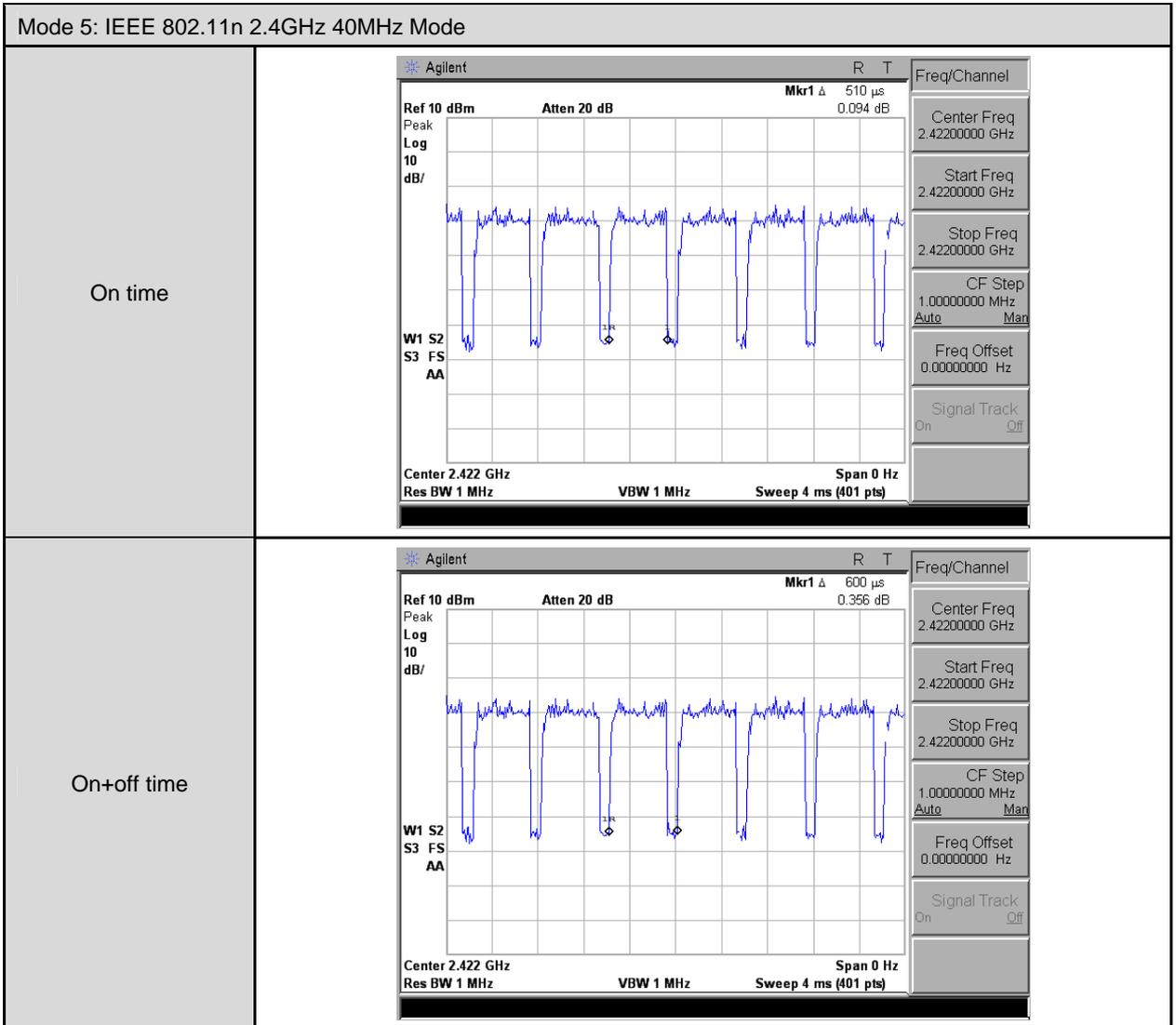
**Duty Cycle Graphs**





Mode 4: IEEE 802.11n 2.4GHz 20MHz Mode



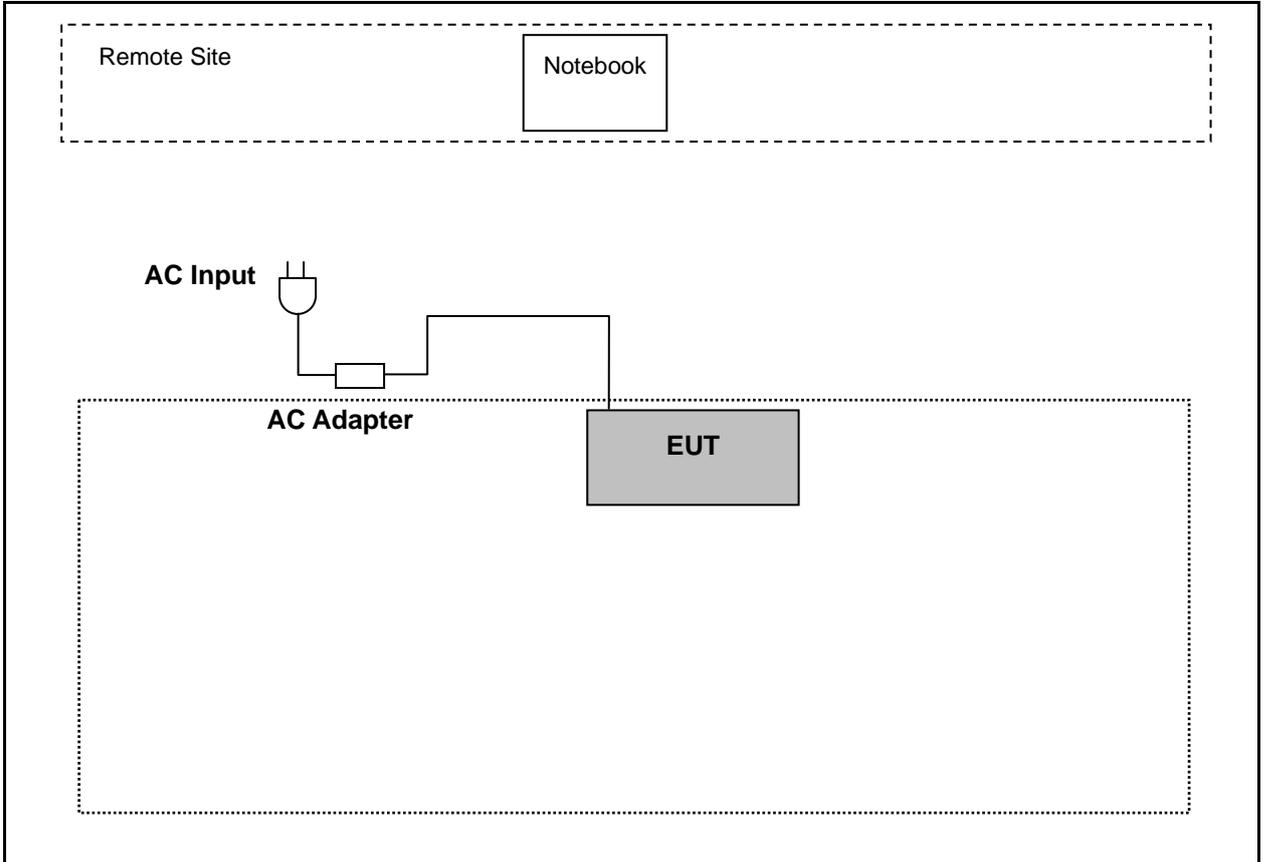


### 3.2. EUT Exercise Software

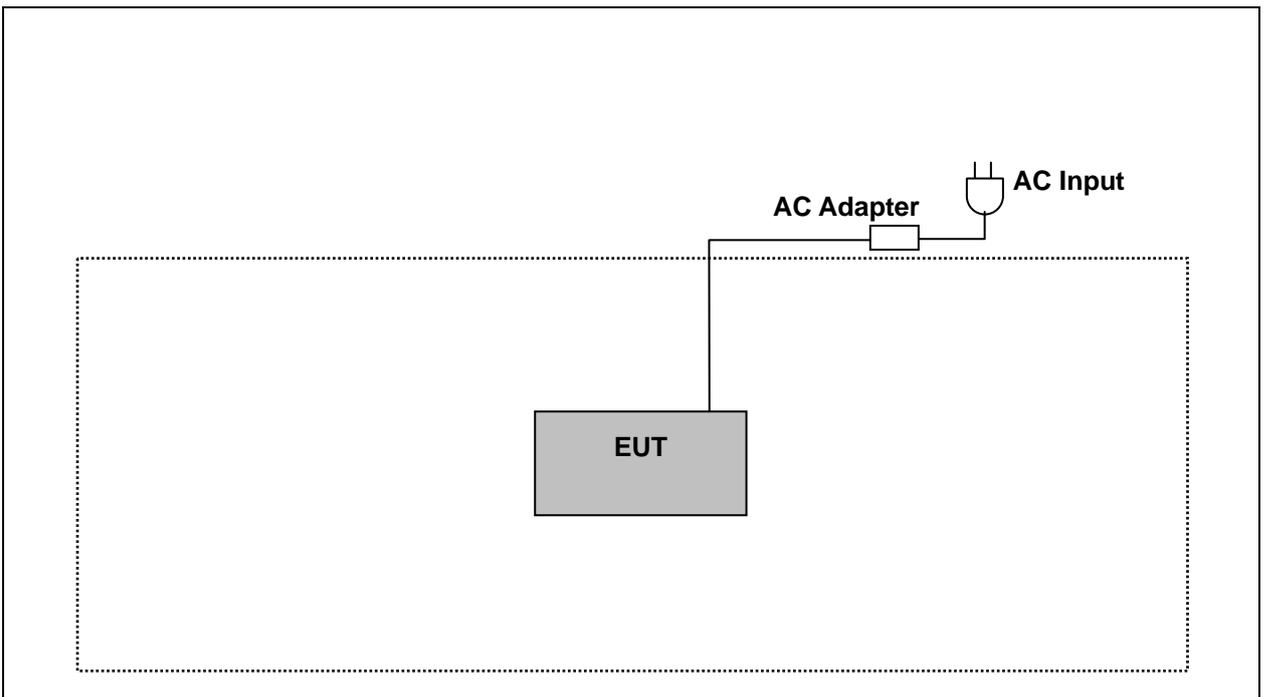
- |  |
|--|
| 1. Setup the EUT shown on 3.3.         |
| 2. Turn on the power of all equipment. |
| 3. Turn on Wi-Fi function.             |
| 4. EUT run test program.               |

### 3.3. Configuration of Test System Details

#### Conducted Emissions



#### Radiated Emissions



**3.4. Test Site Environment**

Items	Required (IEC 60068-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950

## 4 Conducted Emission Measurement

### 4.1. Limit

Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

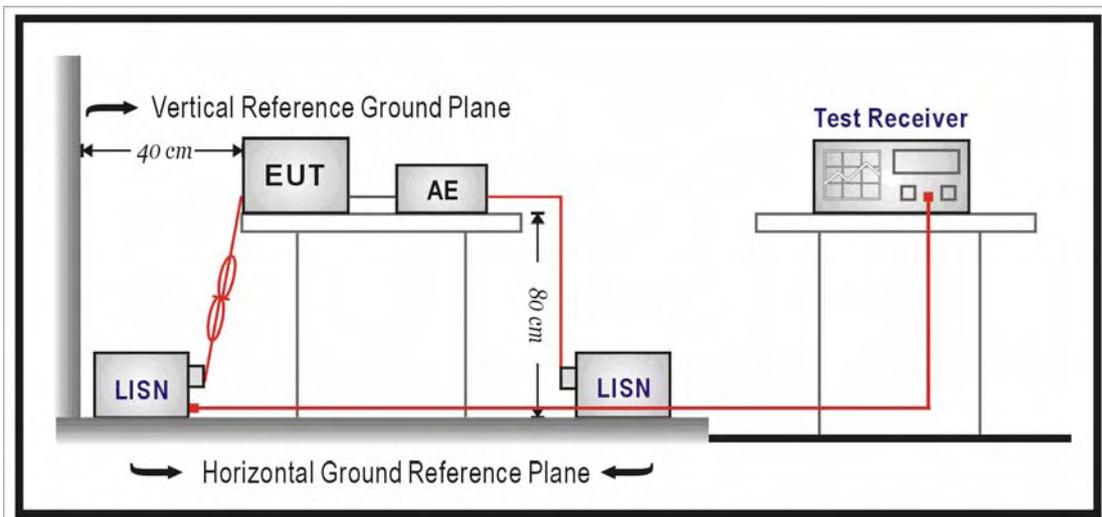
### 4.2. Test Instruments

Describe	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	06/25/2015	(1)
LISN	R&S	ENV216	101040	03/10/2015	(1)
LISN	R&S	ENV216	101041	03/06/2015	(1)
RF Cable	Woken	00100D1380194M	TE-02-02	06/26/2015	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

Note: N.C.R. = No Calibration Request.

### 4.3. Test Setup



#### 4.4. Test Procedure

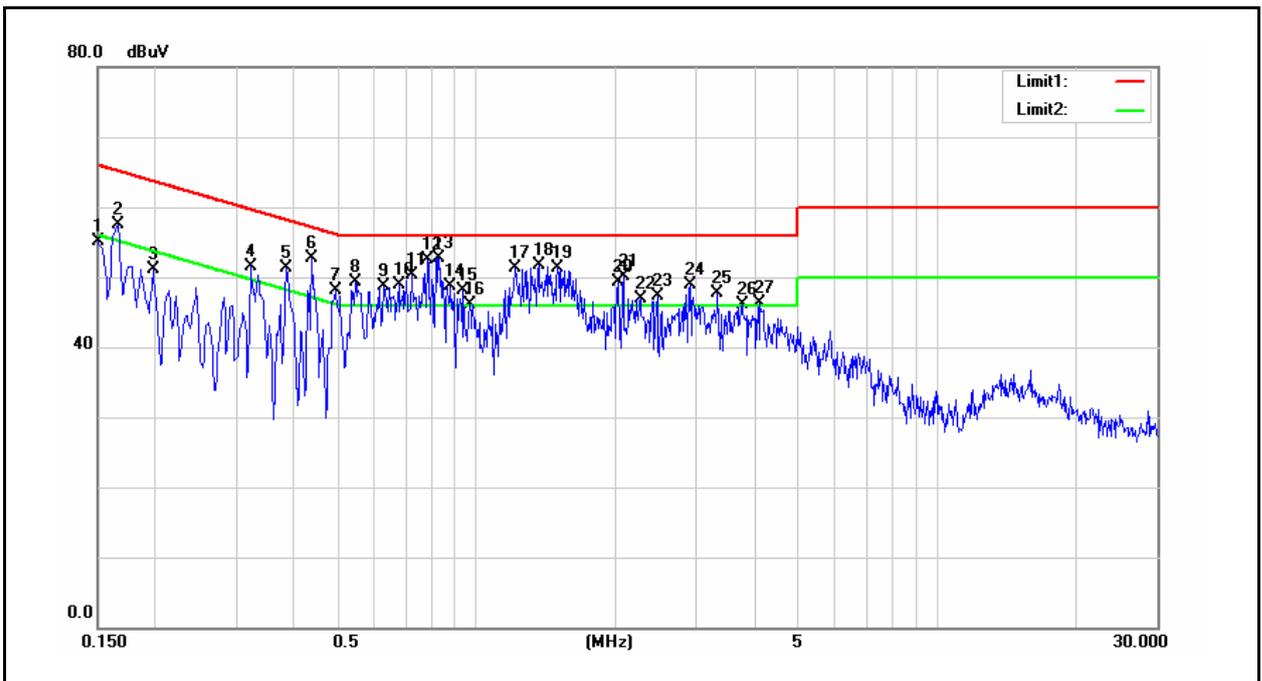
The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back wall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and EMCO Model 3162/2 SH Line Impedance Stabilization Networks (LISN). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 4.1.

#### 4.5. Test Result

Standard:	FCC Part 15C	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	AC810S-300	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	09/23/2015
Description:	AD2038F20	Test By:	Eric Ou Yang



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1500	45.04	35.05	9.58	54.62	44.63	66.00	56.00	-11.38	-11.37	Pass
2	0.1660	44.11	35.04	9.58	53.69	44.62	65.16	55.16	-11.47	-10.54	Pass
3	0.1980	39.05	30.25	9.58	48.63	39.83	63.69	53.69	-15.06	-13.86	Pass
4	0.3220	35.77	26.72	9.59	45.36	36.31	59.66	49.66	-14.30	-13.35	Pass
5	0.3860	39.19	32.69	9.59	48.78	42.28	58.15	48.15	-9.37	-5.87	Pass
6	0.4380	41.76	35.50	9.59	51.35	45.09	57.10	47.10	-5.75	-2.01	Pass
7	0.4940	35.91	31.36	9.60	45.51	40.96	56.10	46.10	-10.59	-5.14	Pass
8	0.5460	35.50	29.15	9.60	45.10	38.75	56.00	46.00	-10.90	-7.25	Pass
9	0.6300	36.94	29.86	9.60	46.54	39.46	56.00	46.00	-9.46	-6.54	Pass
10	0.6780	36.67	31.58	9.61	46.28	41.19	56.00	46.00	-9.72	-4.81	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

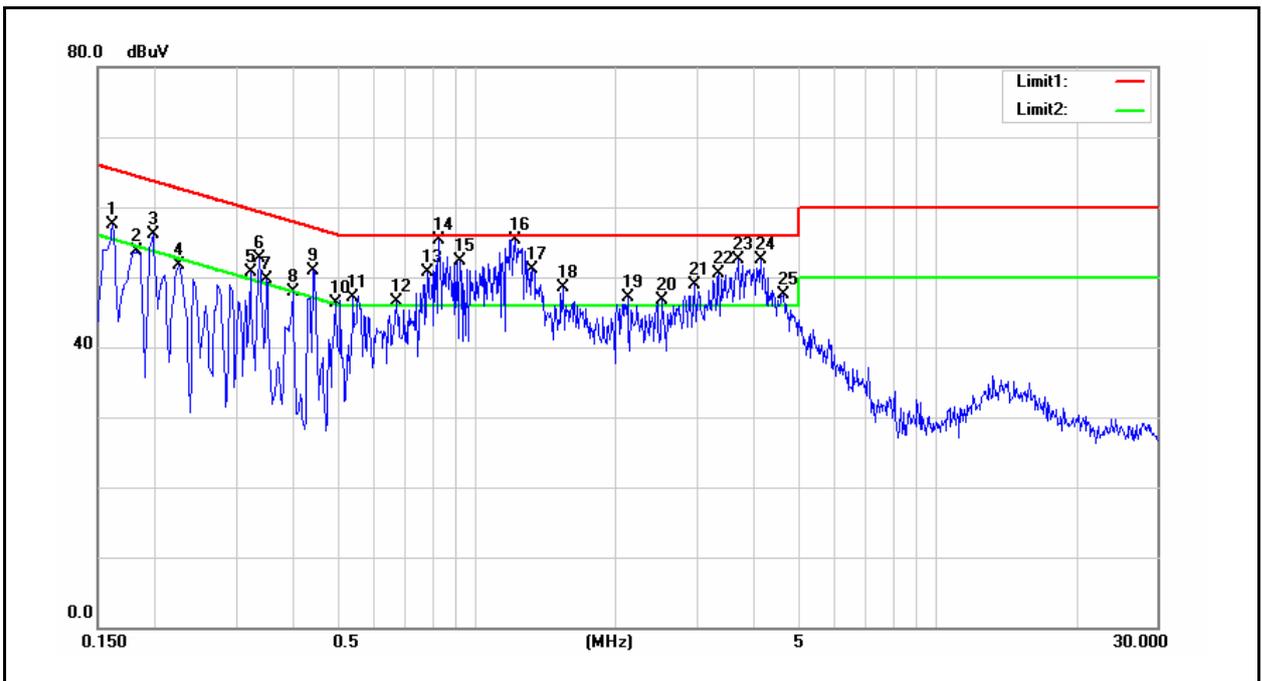
Standard:	FCC Part 15C	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	AC810S-300	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	09/23/2015
Description:	AD2038F20	Test By:	Eric Ou Yang

No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
11	0.7220	37.37	32.74	9.61	46.98	42.35	56.00	46.00	-9.02	-3.65	Pass
12	0.7820	39.19	32.92	9.61	48.80	42.53	56.00	46.00	-7.20	-3.47	Pass
13	0.8300	43.49	34.66	9.61	53.10	44.27	56.00	46.00	-2.90	-1.73	Pass
14	0.8780	36.03	29.33	9.61	45.64	38.94	56.00	46.00	-10.36	-7.06	Pass
15	0.9340	33.14	27.92	9.61	42.75	37.53	56.00	46.00	-13.25	-8.47	Pass
16	0.9660	33.35	26.26	9.62	42.97	35.88	56.00	46.00	-13.03	-10.12	Pass
17	1.2140	38.57	31.31	9.63	48.20	40.94	56.00	46.00	-7.80	-5.06	Pass
18	1.3620	35.86	29.04	9.63	45.49	38.67	56.00	46.00	-10.51	-7.33	Pass
19	1.4980	34.35	29.49	9.64	43.99	39.13	56.00	46.00	-12.01	-6.87	Pass
20	2.0300	36.68	25.80	9.66	46.34	35.46	56.00	46.00	-9.66	-10.54	Pass
21	2.0780	38.05	26.24	9.66	47.71	35.90	56.00	46.00	-8.29	-10.10	Pass
22	2.2700	33.22	26.11	9.67	42.89	35.78	56.00	46.00	-13.11	-10.22	Pass
23	2.4620	35.68	26.52	9.67	45.35	36.19	56.00	46.00	-10.65	-9.81	Pass
24	2.9020	37.36	26.20	9.69	47.05	35.89	56.00	46.00	-8.95	-10.11	Pass
25	3.3300	34.39	23.51	9.71	44.10	33.22	56.00	46.00	-11.90	-12.78	Pass
26	3.7700	34.22	23.10	9.72	43.94	32.82	56.00	46.00	-12.06	-13.18	Pass
27	4.1300	31.19	18.16	9.72	40.91	27.88	56.00	46.00	-15.09	-18.12	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

Standard:	FCC Part 15C	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	AC810S-300	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	09/23/2015
Description:	AD2038F20	Test By:	Eric Ou Yang



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1620	45.08	32.84	9.58	54.66	42.42	65.36	55.36	-10.70	-12.94	Pass
2	0.1820	40.28	26.04	9.58	49.86	35.62	64.39	54.39	-14.53	-18.77	Pass
3	0.1980	41.40	28.10	9.58	50.98	37.68	63.69	53.69	-12.71	-16.01	Pass
4	0.2260	37.57	24.52	9.58	47.15	34.10	62.60	52.60	-15.45	-18.50	Pass
5	0.3220	33.34	22.08	9.59	42.93	31.67	59.66	49.66	-16.73	-17.99	Pass
6	0.3380	39.83	28.81	9.59	49.42	38.40	59.25	49.25	-9.83	-10.85	Pass
7	0.3500	34.93	22.25	9.59	44.52	31.84	58.96	48.96	-14.44	-17.12	Pass
8	0.3980	31.55	22.82	9.59	41.14	32.41	57.90	47.90	-16.76	-15.49	Pass
9	0.4420	38.50	28.63	9.59	48.09	38.22	57.02	47.02	-8.93	-8.80	Pass
10	0.4940	31.82	24.81	9.60	41.42	34.41	56.10	46.10	-14.68	-11.69	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

Standard:	FCC Part 15C	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	AC810S-300	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	09/23/2015
Description:	AD2038F20	Test By:	Eric Ou Yang

No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
11	0.5380	31.28	24.88	9.60	40.88	34.48	56.00	46.00	-15.12	-11.52	Pass
12	0.6700	29.57	24.37	9.61	39.18	33.98	56.00	46.00	-16.82	-12.02	Pass
13	0.7820	38.01	32.59	9.61	47.62	42.20	56.00	46.00	-8.38	-3.80	Pass
14	0.8300	42.21	34.62	9.61	51.82	44.23	56.00	46.00	-4.18	-1.77	Pass
15	0.9220	39.93	31.65	9.61	49.54	41.26	56.00	46.00	-6.46	-4.74	Pass
16	1.2140	41.91	34.57	9.63	51.54	44.20	56.00	46.00	-4.46	-1.80	Pass
17	1.3220	37.16	30.83	9.63	46.79	40.46	56.00	46.00	-9.21	-5.54	Pass
18	1.5380	30.41	24.58	9.65	40.06	34.23	56.00	46.00	-15.94	-11.77	Pass
19	2.1220	31.99	21.17	9.67	41.66	30.84	56.00	46.00	-14.34	-15.16	Pass
20	2.5180	34.70	20.26	9.70	44.40	29.96	56.00	46.00	-11.60	-16.04	Pass
21	2.9620	36.49	22.22	9.71	46.20	31.93	56.00	46.00	-9.80	-14.07	Pass
22	3.3460	36.74	19.22	9.73	46.47	28.95	56.00	46.00	-9.53	-17.05	Pass
23	3.7140	38.24	20.87	9.74	47.98	30.61	56.00	46.00	-8.02	-15.39	Pass
24	4.1380	38.20	20.73	9.75	47.95	30.48	56.00	46.00	-8.05	-15.52	Pass
25	4.6380	34.24	18.60	9.77	44.01	28.37	56.00	46.00	-11.99	-17.63	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

## 5 Radiated Emission Measurement

### 5.1. Limit

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 ( $\mu\text{V}/\text{m}$ at 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

\*\* 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.

### 5.2. Test Instruments

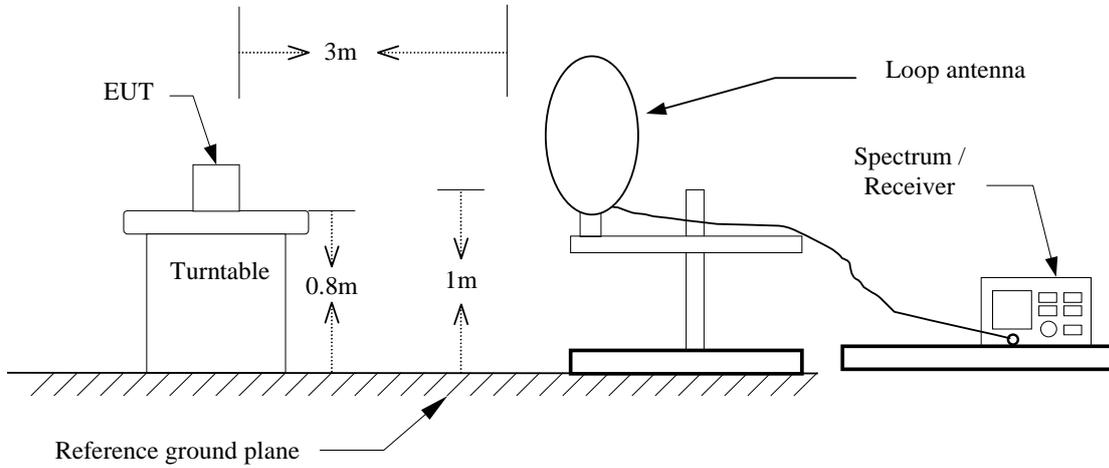
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2015	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2015	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	07/15/2015	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/12/2015	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	07/06/2015	(1)
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	02/02/2015	(1)
Microwave Cable	EMCI	EMC-104-SM-S M-14000	140202	02/24/2015	(1)
Microwave Cable	EMCI	EMC104-SM-S M-600	140301	02/24/2015	(1)
Test Site	ATL	TE01	888001	08/28/2014	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

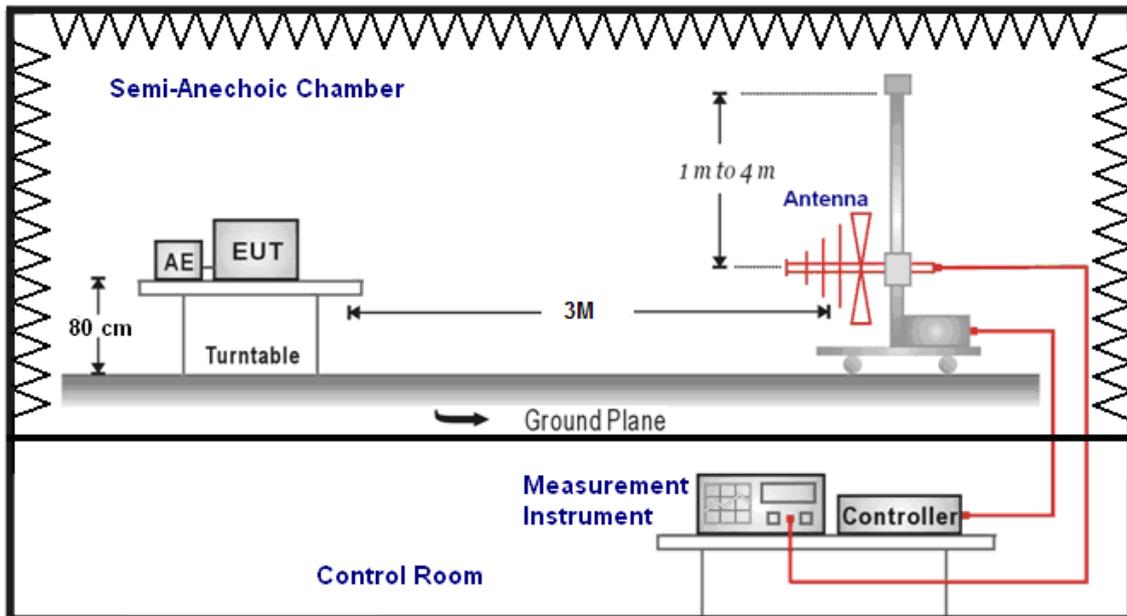
Note: N.C.R. = No Calibration Request.

### 5.3. Setup

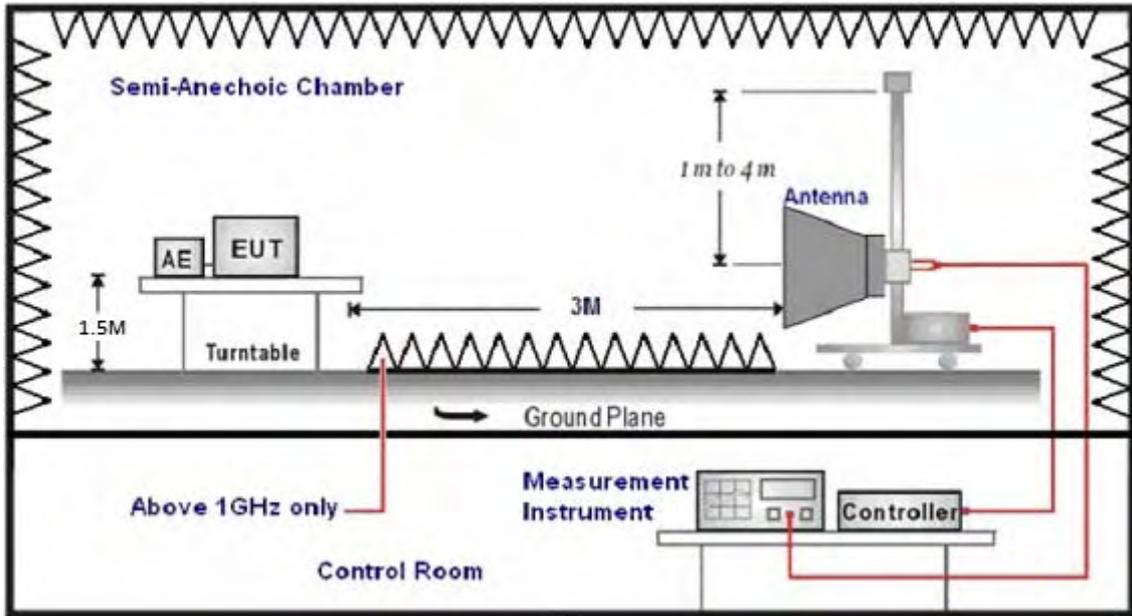
9kHz ~ 30MHz



Below 1GHz



Above 1GHz



## 5.4. Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 or 1.5 meters height (below 1GHz use 0.8m turntable / above 1GHz use 1.5m turntable), top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 9 kHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements when Duty cycle >0.98 / 1/T for average measurements when Duty cycle <0.98. A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna (mode VULB9163) at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna (model BBHA9120D&9170) was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts pre meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

The actual field intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

(1)  $\text{Amplitude (dBuV/m)} = \text{FI (dBuV)} + \text{AF (dBuV)} + \text{CL (dBuV)} - \text{Gain (dB)}$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

(2)  $\text{Actual Amplitude (dBuV/m)} = \text{Amplitude (dBuV)} - \text{Dis(dB)}$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

Data of measurement within this frequency range without mark 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.

## 5.5. Test Result

### Below 1GHz

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC810S-300	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	08/26/2015
		Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
132.5000	27.63	-13.28	14.35	43.50	-29.15	QP	H
288.0000	29.82	-10.87	18.95	46.00	-27.05	QP	H
326.5000	29.75	-10.02	19.73	46.00	-26.27	QP	H
514.0000	29.48	-6.29	23.19	46.00	-22.81	QP	H
638.5000	29.10	-3.67	25.43	46.00	-20.57	QP	H
818.5000	26.56	-0.15	26.41	46.00	-19.59	QP	H
128.0000	32.41	-13.78	18.63	43.50	-24.87	QP	V
363.5000	28.27	-9.28	18.99	46.00	-27.01	QP	V
522.0000	29.38	-6.15	23.23	46.00	-22.77	QP	V
641.0000	28.30	-3.63	24.67	46.00	-21.33	QP	V
774.0000	28.77	-0.97	27.80	46.00	-18.20	QP	V
919.5000	25.74	2.03	27.77	46.00	-18.23	QP	V

Note: No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

**Above 1GHz**

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 2			Date:	08/23/2015		
Frequency:	2412MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3107.000	38.61	2.19	40.80	74.00	-33.20	peak	H
4619.000	35.41	6.83	42.24	74.00	-31.76	peak	H
6859.000	34.38	12.42	46.80	74.00	-27.20	peak	H
3072.000	39.13	2.03	41.16	74.00	-32.84	peak	V
4626.000	35.42	6.85	42.27	74.00	-31.73	peak	V
6768.000	34.25	12.20	46.45	74.00	-27.55	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 2			Date:	08/23/2015		
Frequency:	2437MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3135.000	38.91	2.31	41.22	74.00	-32.78	peak	H
4689.000	34.54	7.05	41.59	74.00	-32.41	peak	H
6733.000	35.05	12.11	47.16	74.00	-26.84	peak	H
3037.000	38.78	1.87	40.65	74.00	-33.35	peak	V
4682.000	34.32	7.02	41.34	74.00	-32.66	peak	V
6761.000	34.62	12.18	46.80	74.00	-27.20	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC810S-300	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	08/23/2015
Frequency:	2462MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3072.000	39.25	2.03	41.28	74.00	-32.72	peak	H
4591.000	35.02	6.74	41.76	74.00	-32.24	peak	H
6684.000	33.94	11.99	45.93	74.00	-28.07	peak	H
3121.000	39.52	2.25	41.77	74.00	-32.23	peak	V
4787.000	35.12	7.36	42.48	74.00	-31.52	peak	V
6733.000	35.24	12.11	47.35	74.00	-26.65	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC810S-300	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	08/23/2015
Frequency:	2412MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3184.000	38.34	2.52	40.86	74.00	-33.14	peak	H
4535.000	34.45	6.57	41.02	74.00	-32.98	peak	H
6747.000	33.70	12.15	45.85	74.00	-28.15	peak	H
3107.000	39.33	2.19	41.52	74.00	-32.48	peak	V
4787.000	35.07	7.36	42.43	74.00	-31.57	peak	V
6838.000	33.90	12.37	46.27	74.00	-27.73	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 3			Date:	08/23/2015		
Frequency:	2437MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3142.000	39.01	2.34	41.35	74.00	-32.65	peak	H
4542.000	35.08	6.59	41.67	74.00	-32.33	peak	H
6740.000	33.79	12.13	45.92	74.00	-28.08	peak	H
3198.000	38.80	2.59	41.39	74.00	-32.61	peak	V
4591.000	34.60	6.74	41.34	74.00	-32.66	peak	V
6733.000	35.27	12.11	47.38	74.00	-26.62	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 3			Date:	08/23/2015		
Frequency:	2462MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3107.000	38.74	2.19	40.93	74.00	-33.07	peak	H
4598.000	34.05	6.77	40.82	74.00	-33.18	peak	H
6726.000	34.30	12.10	46.40	74.00	-27.60	peak	H
3065.000	38.96	2.00	40.96	74.00	-33.04	peak	V
4626.000	34.49	6.85	41.34	74.00	-32.66	peak	V
6789.000	34.45	12.25	46.70	74.00	-27.30	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 4			Date:	08/23/2015		
Frequency:	2412MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2995.000	39.77	1.70	41.47	74.00	-32.53	peak	H
4633.000	33.85	6.88	40.73	74.00	-33.27	peak	H
6733.000	34.46	12.11	46.57	74.00	-27.43	peak	H
3093.000	38.31	2.12	40.43	74.00	-33.57	peak	V
4612.000	34.98	6.80	41.78	74.00	-32.22	peak	V
6740.000	34.53	12.13	46.66	74.00	-27.34	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 4			Date:	08/23/2015		
Frequency:	2437MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3100.000	38.39	2.16	40.55	74.00	-33.45	peak	H
4633.000	33.83	6.88	40.71	74.00	-33.29	peak	H
6733.000	34.94	12.11	47.05	74.00	-26.95	peak	H
3142.000	38.58	2.34	40.92	74.00	-33.08	peak	V
4724.000	33.81	7.16	40.97	74.00	-33.03	peak	V
6726.000	33.81	12.10	45.91	74.00	-28.09	peak	V

Standard:	FCC Part 15C		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	AC810S-300		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Mode:	Mode 4		Date:	08/23/2015			
Frequency:	2462MHz		Test By:	Eric Ou Yang			
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3086.000	38.84	2.09	40.93	74.00	-33.07	peak	H
4612.000	34.71	6.80	41.51	74.00	-32.49	peak	H
6901.000	33.60	12.51	46.11	74.00	-27.89	peak	H
3107.000	39.44	2.19	41.63	74.00	-32.37	peak	V
4731.000	34.45	7.17	41.62	74.00	-32.38	peak	V
6810.000	34.08	12.30	46.38	74.00	-27.62	peak	V

Standard:	FCC Part 15C		Test Distance:	3m			
Test item:	Radiated Emission		Power:	AC 120V/60Hz			
Model Number:	AC810S-300		Temp.(°C)/Hum.(%RH):	26(°C)/60%RH			
Mode:	Mode 5		Date:	08/23/2015			
Frequency:	2422MHz		Test By:	Eric Ou Yang			
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3100.000	39.00	2.16	41.16	74.00	-32.84	peak	H
4682.000	34.06	7.02	41.08	74.00	-32.92	peak	H
6726.000	34.23	12.10	46.33	74.00	-27.67	peak	H
3121.000	38.31	2.25	40.56	74.00	-33.44	peak	V
4584.000	34.48	6.72	41.20	74.00	-32.80	peak	V
6649.000	35.70	11.91	47.61	74.00	-26.39	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	08/23/2015		
Frequency:	2437MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3002.000	41.07	1.72	42.79	74.00	-31.21	peak	H
4605.000	34.88	6.79	41.67	74.00	-32.33	peak	H
6740.000	34.08	12.13	46.21	74.00	-27.79	peak	H
3107.000	38.62	2.19	40.81	74.00	-33.19	peak	V
4731.000	34.95	7.17	42.12	74.00	-31.88	peak	V
6831.000	33.98	12.35	46.33	74.00	-27.67	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	08/23/2015		
Frequency:	2452MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3072.000	40.59	2.03	42.62	74.00	-31.38	peak	H
4633.000	34.60	6.88	41.48	74.00	-32.52	peak	H
6789.000	35.21	12.25	47.46	74.00	-26.54	peak	H
3114.000	39.34	2.22	41.56	74.00	-32.44	peak	V
4780.000	34.57	7.34	41.91	74.00	-32.09	peak	V
6670.000	34.24	11.96	46.20	74.00	-27.80	peak	V

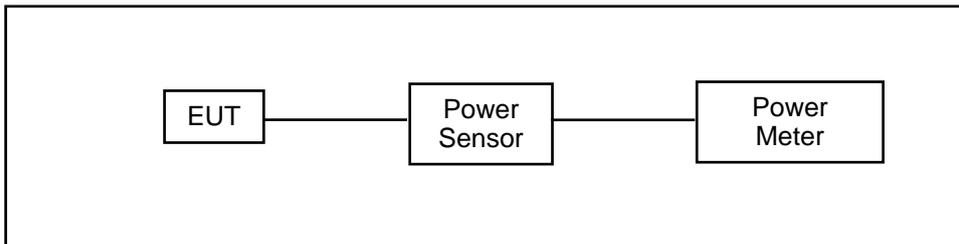
Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	2.4GHz+5GHz			Date:	08/29/2015		
	Simultaneous Transmitting			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2813.000	35.63	1.07	36.70	74.00	-37.30	peak	H
4689.000	31.05	7.05	38.10	74.00	-35.90	peak	H
7601.000	32.60	14.18	46.78	74.00	-27.22	peak	H
2750.000	34.93	0.86	35.79	74.00	-38.21	peak	V
4570.000	32.09	6.68	38.77	74.00	-35.23	peak	V
7678.000	32.57	14.31	46.88	74.00	-27.12	peak	V

## 6 Maximum Conducted Output Power Measurement

### 6.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for maximum output power is 30dBm.

### 6.2. Test Setup



### 6.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Power Sensor	Anritsu	MA2411B	1126022	08/21/2014	(1)
Power Meter	Anritsu	ML2495A	1135009	08/21/2014	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

Note: N.C.R. = No Calibration Request.

### 6.4. Test Procedure

The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor. The maximum output power shall not exceed 1 watt.

Use a direct connection between the antenna port of transmitter and the power sensor, for prevent the power sensor input attenuation 40-50 dB. Set the RBW Bandwidth of the emission or use a channel power meter mode.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to (GAIN - 6)/3 dBm.

The antenna port of the EUT was connected to the input of a power sensor. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

**6.5. Test Result**

Model Number	AC810S-300										
Test Item	Maximum Conducted Output Power										
Test Mode	Mode 2: IEEE 802.11b link mode										
Date of Test	08/10/2015							Test Site		TE05	
Frequency (MHz)	Data Rate	Average Power				Peak Power				Limit (dBm)	
		ANT-0		ANT-1		ANT-0		ANT-1			
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)		
2412	1M	8.47	0.0070	8.56	0.0072	11.28	0.0134	<b>11.41</b>	<b>0.0138</b>	< 30	
2437		8.14	0.0065	8.33	0.0068	10.89	0.0123	11.13	0.0130	< 30	
2462		8.35	0.0068	8.42	0.0070	11.17	0.0131	11.21	0.0132	< 30	
2437	2M	8.12	0.0065	8.31	0.0068	10.86	0.0122	11.10	0.0129	< 30	
2437	5.5M	8.07	0.0064	8.27	0.0067	10.79	0.0120	11.04	0.0127	< 30	
2437	11M	8.10	0.0065	8.25	0.0067	10.82	0.0121	11.01	0.0126	< 30	

Model Number	AC810S-300									
Test Item	Maximum Conducted Output Power									
Test Mode	Mode 3: IEEE 802.11g link mode									
Date of Test	08/10/2015							Test Site	TE05	
Frequency (MHz)	Data Rate	Average Power				Peak Power				Limit (dBm)
		ANT-0		ANT-1		ANT-0		ANT-1		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
2412	6M	8.16	0.0065	8.28	0.0067	14.91	0.0310	15.29	0.0338	< 30
2437		7.76	0.0060	8.12	0.0065	14.46	0.0279	14.89	0.0308	< 30
2462		8.10	0.0065	8.15	0.0065	14.80	0.0302	14.91	0.0310	< 30
2437	9M	7.74	0.0059	8.11	0.0065	14.45	0.0279	14.88	0.0308	< 30
2437	12M	7.61	0.0058	8.01	0.0063	14.25	0.0266	14.78	0.0301	< 30
2437	18M	7.69	0.0059	8.09	0.0064	14.36	0.0273	14.84	0.0305	< 30
2437	24M	7.57	0.0057	8.10	0.0065	14.20	0.0263	14.85	0.0305	< 30
2437	36M	7.45	0.0056	7.97	0.0063	14.05	0.0254	14.73	0.0297	< 30
2437	48M	7.52	0.0056	7.89	0.0062	14.12	0.0258	14.62	0.0290	< 30
2437	54M	7.71	0.0059	8.03	0.0064	14.40	0.0275	14.80	0.0302	< 30
Frequency (MHz)	Data Rate	Average Power				Peak Power				Limit (dBm)
		ANT-0+1				ANT-0+1				
		(dBm)		(W)		(dBm)		(W)		
2412	6M	11.23		0.0133		<b>18.11</b>		<b>0.0648</b>		< 30
2437		10.95		0.0125		17.69		0.0588		< 30
2462		11.14		0.0130		17.87		0.0612		< 30
2437	9M	10.94		0.0124		17.68		0.0586		< 30
2437	12M	10.82		0.0121		17.53		0.0567		< 30
2437	18M	10.90		0.0123		17.62		0.0578		< 30
2437	24M	10.85		0.0122		17.55		0.0569		< 30
2437	36M	10.73		0.0118		17.41		0.0551		< 30
2437	48M	10.72		0.0118		17.39		0.0548		< 30
2437	54M	10.88		0.0123		17.61		0.0577		< 30

Model Number	AC810S-300										
Test Item	Maximum Conducted Output Power										
Test Mode	Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode										
Date of Test	08/10/2015							Test Site	TE05		
Frequency (MHz)	Data Rate	Average Power				Peak Power				Limit (dBm)	
		ANT-0		ANT-1		ANT-0		ANT-1			
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)		
2412	13M	8.01	0.0063	8.22	0.0066	14.70	0.0295	15.01	0.0317	< 30	
2437		7.70	0.0059	8.04	0.0064	14.37	0.0274	14.80	0.0302	< 30	
2462		7.92	0.0062	7.97	0.0063	14.62	0.0290	14.74	0.0298	< 30	
2437	26M	7.68	0.0059	7.97	0.0063	14.34	0.0272	14.73	0.0297	< 30	
2437	39M	7.52	0.0056	7.90	0.0062	14.13	0.0259	14.64	0.0291	< 30	
2437	52M	7.61	0.0058	7.83	0.0061	14.26	0.0267	14.52	0.0283	< 30	
2437	78M	7.55	0.0057	8.01	0.0063	14.17	0.0261	14.78	0.0301	< 30	
2437	104M	7.47	0.0056	8.00	0.0063	14.07	0.0255	14.76	0.0299	< 30	
2437	117M	7.30	0.0054	7.96	0.0063	13.87	0.0244	14.71	0.0296	< 30	
2437	130M	7.35	0.0054	7.87	0.0061	13.94	0.0248	14.59	0.0288	< 30	
Frequency (MHz)	Data Rate	Average Power				Peak Power				Limit (dBm)	
		ANT-0+1				ANT-0+1					
		(dBm)		(W)		(dBm)		(W)			
2412	13M	11.13		0.0130		<b>17.87</b>		<b>0.0612</b>		< 30	
2437		10.88		0.0123		17.60		0.0576		< 30	
2462		10.96		0.0125		17.69		0.0588		< 30	
2437	26M	10.84		0.0121		17.55		0.0569		< 30	
2437	39M	10.72		0.0118		17.40		0.0550		< 30	
2437	52M	10.73		0.0118		17.40		0.0550		< 30	
2437	78M	10.80		0.0120		17.50		0.0562		< 30	
2437	104M	10.75		0.0119		17.44		0.0554		< 30	
2437	117M	10.65		0.0116		17.32		0.0540		< 30	
2437	130M	10.63		0.0116		17.29		0.0535		< 30	

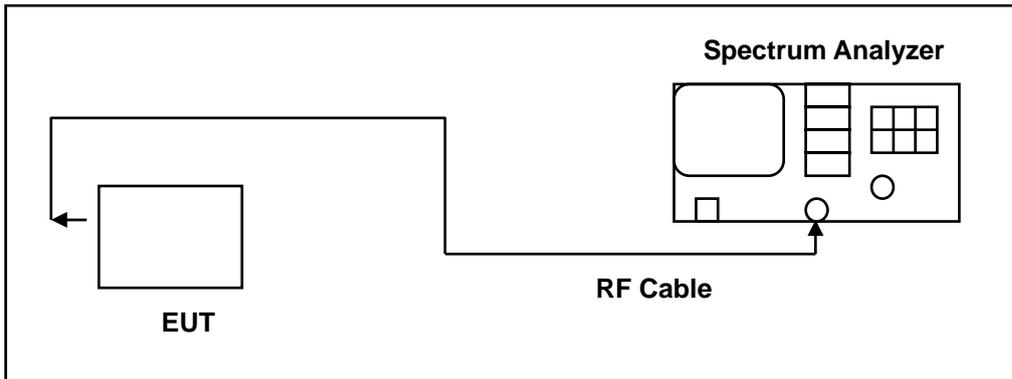
Model Number	AC810S-300										
Test Item	Maximum Conducted Output Power										
Test Mode	Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode										
Date of Test	08/10/2015							Test Site		TE05	
Frequency (MHz)	Data Rate	Average Power				Peak Power				Limit (dBm)	
		ANT-0		ANT-1		ANT-0		ANT-1			
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)		
2422	27M	8.10	0.0065	8.51	0.0071	14.82	0.0303	15.59	0.0362	< 30	
2437		7.88	0.0061	8.40	0.0069	14.57	0.0286	15.48	0.0353	< 30	
2452		8.61	0.0073	8.65	0.0073	15.51	0.0356	15.78	0.0378	< 30	
2437	54M	7.82	0.0061	8.39	0.0069	14.50	0.0282	15.47	0.0352	< 30	
2437	81M	7.86	0.0061	8.27	0.0067	14.55	0.0285	15.26	0.0336	< 30	
2437	108M	7.72	0.0059	8.23	0.0067	14.43	0.0277	15.18	0.0330	< 30	
2437	162M	7.69	0.0059	8.36	0.0069	14.37	0.0274	15.42	0.0348	< 30	
2437	216M	7.63	0.0058	8.31	0.0068	14.28	0.0268	15.37	0.0344	< 30	
2437	243M	7.58	0.0057	8.33	0.0068	14.22	0.0264	15.38	0.0345	< 30	
2437	270M	7.65	0.0058	8.25	0.0067	14.31	0.0270	15.22	0.0333	< 30	
Frequency (MHz)	Data Rate	Average Power		Peak Power		Limit (dBm)					
		ANT-0+1		ANT-0+1							
		(dBm)	(W)	(dBm)	(W)						
2422	27M	11.32	0.0136	18.23	0.0666	< 30					
2437		11.16	0.0131	18.06	0.0640	< 30					
2452		11.64	0.0146	<b>18.66</b>	<b>0.0734</b>	< 30					
2437	54M	11.12	0.0130	18.02	0.0634	< 30					
2437	81M	11.08	0.0128	17.93	0.0621	< 30					
2437	108M	10.99	0.0126	17.83	0.0607	< 30					
2437	162M	11.05	0.0127	17.94	0.0622	< 30					
2437	216M	10.99	0.0126	17.87	0.0612	< 30					
2437	243M	10.98	0.0125	17.85	0.0609	< 30					
2437	270M	10.97	0.0125	17.80	0.0602	< 30					

## 7 6dB RF Bandwidth Measurement

### 7.1. Limit

6dB RF Bandwidth: Systems using digital modulation techniques may operate in the 2400–2483.5 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

### 7.2. Test Setup



### 7.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/16/2014	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

dRemark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

Note: N.C.R. = No Calibration Request.

### 7.4. Test Procedure

The EUT tested to DTS test procedure of KDB558074D01 for compliance to FCC 47CFR 15.247 requirements.

6dB RF Bandwidth: The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES RBW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A peak output reading was taken, a DISPLAY line was drawn 6 dB lower than peak level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line.

The test was performed at 3 channels (Channel low, middle, high)

99 % Occupied Bandwidth: The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual.

The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.

**7.5. Test Result**

Model Number	AC810S-300			
Test Item	6dB RF Bandwidth			
Test Mode	Mode 2: IEEE 802.11b link mode Mode 3: IEEE 802.11g link mode Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode			
Date of Test	08/17/2015		Test Site	TE05
Test Mode	Frequency (MHz)	Measurement (MHz)		Limit (MHz)
		ANT-0	ANT-1	
Mode 2	2412	---	7.556	> 0.500
	2437	---	8.135	> 0.500
	2462	---	7.256	> 0.500
Mode 3	2412	16.128	16.094	> 0.500
	2437	16.046	15.271	> 0.500
	2462	15.738	15.771	> 0.500
Mode 4	2412	15.738	16.366	> 0.500
	2437	16.544	17.278	> 0.500
	2462	16.045	16.599	> 0.500
Mode 5	2422	35.436	35.721	> 0.500
	2437	35.730	34.386	> 0.500
	2452	35.158	33.882	> 0.500

**7.6. Test Graphs**

Mode 3: IEEE 802.11g link mode_ANT-0	
2412	<p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.412 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth 16.2859 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -43.612 kHz</p> <p>x dB Bandwidth 16.128 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.42700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
2437	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.437 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth 16.3711 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 22.492 kHz</p> <p>x dB Bandwidth 16.046 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42200000 GHz</p> <p>Stop Freq 2.45200000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
2462	<p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.462 GHz Span 30 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth 16.3019 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -48.776 kHz</p> <p>x dB Bandwidth 15.738 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-0

<p>2412</p>	<p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.412 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth 17.4501 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -42.699 kHz x dB Bandwidth 15.738 MHz</p> <p>Freq/Channel: Center Freq 2.41200000 GHz, Start Freq 2.39700000 GHz, Stop Freq 2.42700000 GHz, CF Step 3.00000000 MHz, Freq Offset 0.00000000 Hz, Signal Track On</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.437 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth 17.5243 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 27.578 kHz x dB Bandwidth 16.544 MHz</p> <p>Freq/Channel: Center Freq 2.43700000 GHz, Start Freq 2.42200000 GHz, Stop Freq 2.45200000 GHz, CF Step 3.00000000 MHz, Freq Offset 0.00000000 Hz, Signal Track On</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.462 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth 17.4379 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -69.261 kHz x dB Bandwidth 16.045 MHz</p> <p>Freq/Channel: Center Freq 2.46200000 GHz, Start Freq 2.44700000 GHz, Stop Freq 2.47700000 GHz, CF Step 3.00000000 MHz, Freq Offset 0.00000000 Hz, Signal Track On</p>

Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-0

<p>2422</p>	<p>Agilent R T</p> <p>Ch Freq 2.422 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.422 GHz Span 50 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 5.18 ms (401 pts)</p> <p><b>Occupied Bandwidth 35.9885 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -62.910 kHz</p> <p>x dB Bandwidth 35.436 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.42200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.44700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.437 GHz Span 50 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 5.18 ms (401 pts)</p> <p><b>Occupied Bandwidth 36.0080 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 70.771 kHz</p> <p>x dB Bandwidth 35.730 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.41200000 GHz</p> <p>Stop Freq 2.46200000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2452</p>	<p>Agilent R T</p> <p>Ch Freq 2.452 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.452 GHz Span 50 MHz</p> <p>#Res BW 100 kHz #VBW 300 kHz Sweep 5.18 ms (401 pts)</p> <p><b>Occupied Bandwidth 35.5735 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -8.242 kHz</p> <p>x dB Bandwidth 35.158 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.45200000 GHz</p> <p>Start Freq 2.42700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 2: IEEE 802.11b link mode\_ANT-1

<p>2412</p>	<p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.412 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth</b> 12.6725 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -167.700 kHz x dB Bandwidth 7.556 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.42700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.437 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth</b> 13.1896 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 129.243 kHz x dB Bandwidth 8.135 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42200000 GHz</p> <p>Stop Freq 2.45200000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.462 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth</b> 12.7251 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -167.090 kHz x dB Bandwidth 7.256 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 3: IEEE 802.11g link mode\_ANT-1

<p>2412</p>	<p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.412 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth 16.2916 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -27.331 kHz x dB Bandwidth 16.094 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.42700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.437 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth 16.3613 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 19.060 kHz x dB Bandwidth 15.271 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42200000 GHz</p> <p>Stop Freq 2.45200000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.462 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth 16.2859 MHz</b></p> <p>Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -40.417 kHz x dB Bandwidth 15.771 MHz</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 3.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-1

2412	<p>Agilent R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.412 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth</b> 17.4195 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -42.979 kHz x dB Bandwidth 16.366 MHz</p> <p>Freq/Channel: Center Freq 2.41200000 GHz, Start Freq 2.39700000 GHz, Stop Freq 2.42700000 GHz, CF Step 3.00000000 MHz, Freq Offset 0.00000000 Hz, Signal Track On</p>
2437	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.437 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth</b> 17.5391 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error 13.622 kHz x dB Bandwidth 17.278 MHz</p> <p>Freq/Channel: Center Freq 2.43700000 GHz, Start Freq 2.42200000 GHz, Stop Freq 2.45200000 GHz, CF Step 3.00000000 MHz, Freq Offset 0.00000000 Hz, Signal Track On</p>
2462	<p>Agilent R T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.462 GHz Span 30 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p><b>Occupied Bandwidth</b> 17.4244 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB</p> <p>Transmit Freq Error -54.807 kHz x dB Bandwidth 16.599 MHz</p> <p>Freq/Channel: Center Freq 2.46200000 GHz, Start Freq 2.44700000 GHz, Stop Freq 2.47700000 GHz, CF Step 3.00000000 MHz, Freq Offset 0.00000000 Hz, Signal Track On</p>

Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-1

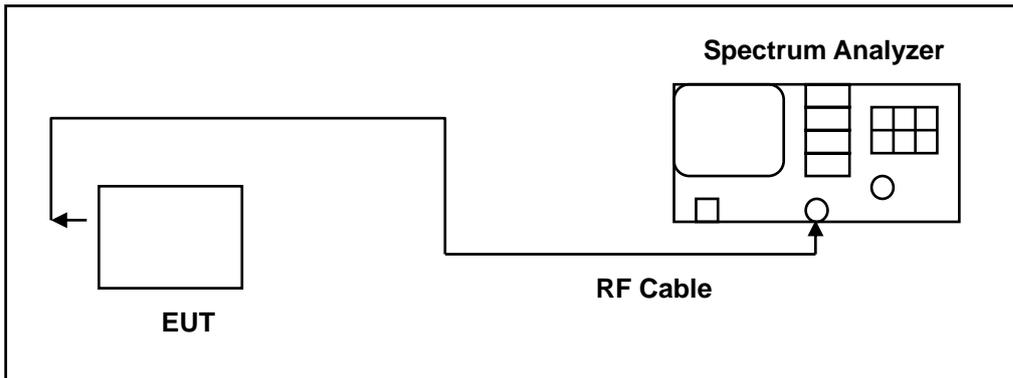
<p>2422</p>	<p>Agilent R T</p> <p>Ch Freq 2.422 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.422 GHz Span 50 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.18 ms (401 pts)</p> <table border="1"> <tr> <td><b>Occupied Bandwidth</b></td> <td>Occ BW % Pwr</td> <td>99.00 %</td> </tr> <tr> <td>35.9256 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>Transmit Freq Error</td> <td colspan="2">-102.081 kHz</td> </tr> <tr> <td>x dB Bandwidth</td> <td colspan="2">35.721 MHz</td> </tr> </table> <p>Freq/Channel</p> <p>Center Freq 2.42200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.44700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>	<b>Occupied Bandwidth</b>	Occ BW % Pwr	99.00 %	35.9256 MHz	x dB	-6.00 dB	Transmit Freq Error	-102.081 kHz		x dB Bandwidth	35.721 MHz	
<b>Occupied Bandwidth</b>	Occ BW % Pwr	99.00 %											
35.9256 MHz	x dB	-6.00 dB											
Transmit Freq Error	-102.081 kHz												
x dB Bandwidth	35.721 MHz												
<p>2437</p>	<p>Agilent R T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.437 GHz Span 50 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.18 ms (401 pts)</p> <table border="1"> <tr> <td><b>Occupied Bandwidth</b></td> <td>Occ BW % Pwr</td> <td>99.00 %</td> </tr> <tr> <td>36.1104 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>Transmit Freq Error</td> <td colspan="2">43.292 kHz</td> </tr> <tr> <td>x dB Bandwidth</td> <td colspan="2">34.386 MHz</td> </tr> </table> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.41200000 GHz</p> <p>Stop Freq 2.46200000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>	<b>Occupied Bandwidth</b>	Occ BW % Pwr	99.00 %	36.1104 MHz	x dB	-6.00 dB	Transmit Freq Error	43.292 kHz		x dB Bandwidth	34.386 MHz	
<b>Occupied Bandwidth</b>	Occ BW % Pwr	99.00 %											
36.1104 MHz	x dB	-6.00 dB											
Transmit Freq Error	43.292 kHz												
x dB Bandwidth	34.386 MHz												
<p>2452</p>	<p>Agilent R T</p> <p>Ch Freq 2.452 GHz Trig Free</p> <p>Occupied Bandwidth</p> <p>Ref 10 dBm Atten 10 dB</p> <p>#Peak Log 10 dB/Offset 10.8 dB</p> <p>Center 2.452 GHz Span 50 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 5.18 ms (401 pts)</p> <table border="1"> <tr> <td><b>Occupied Bandwidth</b></td> <td>Occ BW % Pwr</td> <td>99.00 %</td> </tr> <tr> <td>35.6112 MHz</td> <td>x dB</td> <td>-6.00 dB</td> </tr> <tr> <td>Transmit Freq Error</td> <td colspan="2">40.430 kHz</td> </tr> <tr> <td>x dB Bandwidth</td> <td colspan="2">33.862 MHz</td> </tr> </table> <p>Freq/Channel</p> <p>Center Freq 2.45200000 GHz</p> <p>Start Freq 2.42700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>	<b>Occupied Bandwidth</b>	Occ BW % Pwr	99.00 %	35.6112 MHz	x dB	-6.00 dB	Transmit Freq Error	40.430 kHz		x dB Bandwidth	33.862 MHz	
<b>Occupied Bandwidth</b>	Occ BW % Pwr	99.00 %											
35.6112 MHz	x dB	-6.00 dB											
Transmit Freq Error	40.430 kHz												
x dB Bandwidth	33.862 MHz												

## 8 Maximum Power Density Measurement

### 8.1. Limit

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

### 8.2. Test Setup



### 8.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/16/2014	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

Note: N.C.R. = No Calibration Request.

### 8.4. Test Procedure

The EUT tested to DTS test procedure of KDB558074D01 for compliance to FCC 47CFR 15.247 requirements.

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

**8.5. Test Result**

Model Number	AC810S-300				
Test Item	Maximum Power Density				
Test Mode	Mode 2: IEEE 802.11b link mode Mode 3: IEEE 802.11g link mode Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode				
Date of Test	08/17/2015			Test Site	TE05
Test Mode	Frequency (MHz)	Measurement (dBm/3KHz)			Limit (dBm/3KHz)
		ANT-0	ANT-1	ANT-0+1	
Mode 2	2412	---	-1.571	---	< 8
	2437	---	-0.182	---	< 8
	2462	---	-0.141	---	< 8
Mode 3	2412	-17.92	-16.22	-13.98	< 8
	2437	-18.99	-19.42	-16.19	< 8
	2462	-18.42	-18.28	-15.34	< 8
Mode 4	2412	-18.89	-17.71	-15.25	< 8
	2437	-18.08	-18.61	-15.33	< 8
	2462	-19.06	-17.92	-15.44	< 8
Mode 5	2422	-20.06	-20.6	-17.31	< 8
	2437	-21.39	-19.49	-17.33	< 8
	2452	-19.93	-18.95	-16.40	< 8

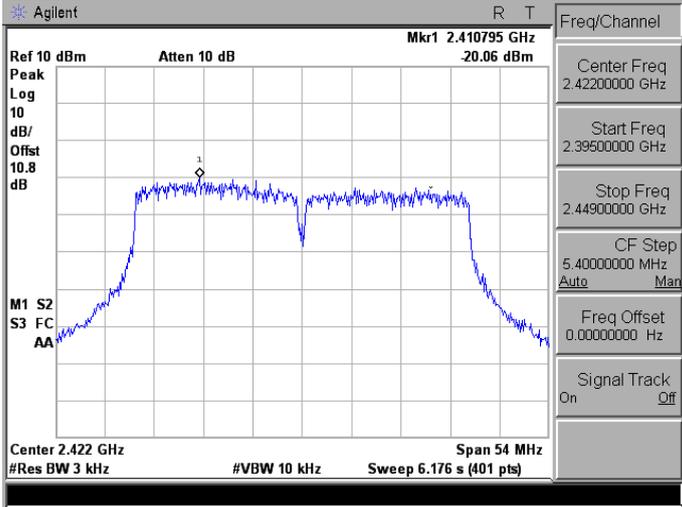
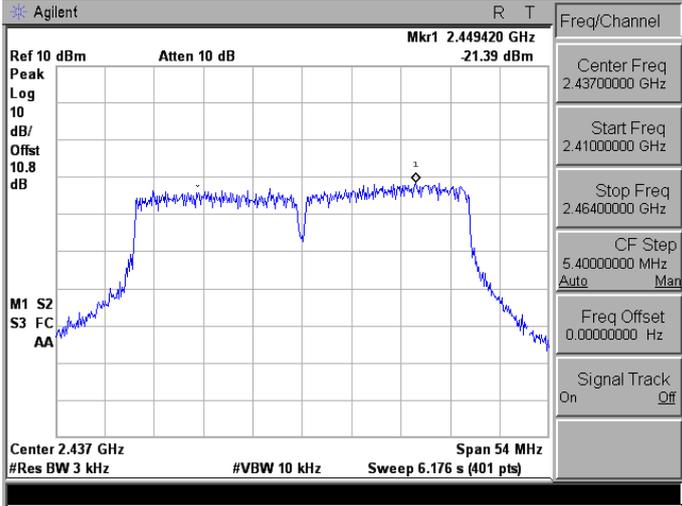
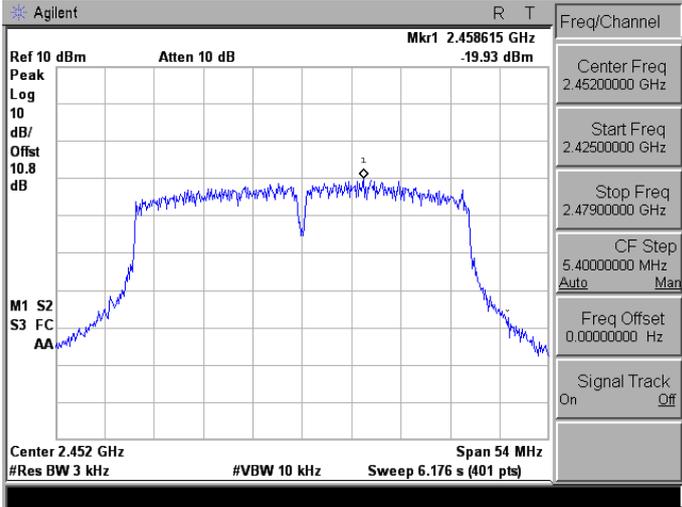
**8.6. Test Graphs**

Mode 3: IEEE 802.11g link mode_ANT-0	
2412	
2437	
2462	

Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-0

<p>2412</p>	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.406930 GHz -18.89 dBm</p> <p>Peak Log 10 dB/Offset 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.412 GHz Span 26 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 2.973 s (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39900000 GHz</p> <p>Stop Freq 2.42500000 GHz</p> <p>CF Step 2.60000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.442330 GHz -18.08 dBm</p> <p>Peak Log 10 dB/Offset 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.437 GHz Span 26 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 2.973 s (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42400000 GHz</p> <p>Stop Freq 2.45000000 GHz</p> <p>CF Step 2.60000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.454525 GHz -19.06 dBm</p> <p>Peak Log 10 dB/Offset 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.462 GHz Span 26 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 2.973 s (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44900000 GHz</p> <p>Stop Freq 2.47500000 GHz</p> <p>CF Step 2.60000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-0

<p>2422</p>	
<p>2437</p>	
<p>2452</p>	

Mode 2: IEEE 802.11b link mode\_ANT-1

<p>2412</p>	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.4139825 GHz          Peak Log 10 dB/Offset 10.8 dB          M1 S2 S3 FC AA          Center 2.412 GHz Span 13 MHz          #Res BW 3 kHz #VBW 10 kHz Sweep 1.487 s (401 pts)</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.41200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.40550000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.41850000 GHz</td></tr> <tr><td>CF Step</td><td>1.30000000 MHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.41200000 GHz	Start Freq	2.40550000 GHz	Stop Freq	2.41850000 GHz	CF Step	1.30000000 MHz	Auto	Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
Freq/Channel																	
Center Freq	2.41200000 GHz																
Start Freq	2.40550000 GHz																
Stop Freq	2.41850000 GHz																
CF Step	1.30000000 MHz																
Auto	Man																
Freq Offset	0.00000000 Hz																
Signal Track	On Off																
<p>2437</p>	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.4380075 GHz          Peak Log 10 dB/Offset 10.8 dB          M1 S2 S3 FC AA          Center 2.437 GHz Span 13 MHz          #Res BW 3 kHz #VBW 10 kHz Sweep 1.487 s (401 pts)</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.43700000 GHz</td></tr> <tr><td>Start Freq</td><td>2.43050000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.44350000 GHz</td></tr> <tr><td>CF Step</td><td>1.30000000 MHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.43700000 GHz	Start Freq	2.43050000 GHz	Stop Freq	2.44350000 GHz	CF Step	1.30000000 MHz	Auto	Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
Freq/Channel																	
Center Freq	2.43700000 GHz																
Start Freq	2.43050000 GHz																
Stop Freq	2.44350000 GHz																
CF Step	1.30000000 MHz																
Auto	Man																
Freq Offset	0.00000000 Hz																
Signal Track	On Off																
<p>2462</p>	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.4609925 GHz          Peak Log 10 dB/Offset 10.8 dB          M1 S2 S3 FC AA          Center 2.462 GHz Span 13 MHz          #Res BW 3 kHz #VBW 10 kHz Sweep 1.487 s (401 pts)</p> <table border="1"> <tr><th colspan="2">Freq/Channel</th></tr> <tr><td>Center Freq</td><td>2.46200000 GHz</td></tr> <tr><td>Start Freq</td><td>2.45550000 GHz</td></tr> <tr><td>Stop Freq</td><td>2.46850000 GHz</td></tr> <tr><td>CF Step</td><td>1.30000000 MHz</td></tr> <tr><td>Auto</td><td>Man</td></tr> <tr><td>Freq Offset</td><td>0.00000000 Hz</td></tr> <tr><td>Signal Track</td><td>On Off</td></tr> </table>	Freq/Channel		Center Freq	2.46200000 GHz	Start Freq	2.45550000 GHz	Stop Freq	2.46850000 GHz	CF Step	1.30000000 MHz	Auto	Man	Freq Offset	0.00000000 Hz	Signal Track	On Off
Freq/Channel																	
Center Freq	2.46200000 GHz																
Start Freq	2.45550000 GHz																
Stop Freq	2.46850000 GHz																
CF Step	1.30000000 MHz																
Auto	Man																
Freq Offset	0.00000000 Hz																
Signal Track	On Off																

Mode 3: IEEE 802.11g link mode\_ANT-1

2412	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.4178750 GHz -16.22 dBm</p> <p>Peak Log 10 dB/Offset 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.412 GHz Span 25 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 2.859 s (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39950000 GHz</p> <p>Stop Freq 2.42450000 GHz</p> <p>CF Step 2.50000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
2437	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.4428750 GHz -19.42 dBm</p> <p>Peak Log 10 dB/Offset 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.437 GHz Span 25 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 2.859 s (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42450000 GHz</p> <p>Stop Freq 2.44950000 GHz</p> <p>CF Step 2.50000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
2462	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.4595000 GHz -18.28 dBm</p> <p>Peak Log 10 dB/Offset 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.462 GHz Span 25 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 2.859 s (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44950000 GHz</p> <p>Stop Freq 2.47450000 GHz</p> <p>CF Step 2.50000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-1

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-1

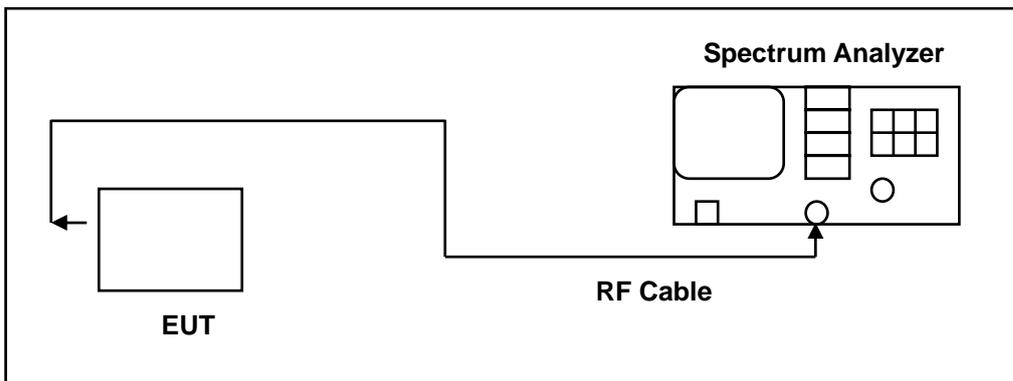
<p>2422</p>	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.414440 GHz -20.6 dBm</p> <p>Peak Log 10 dB/Offset 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.422 GHz Span 54 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 6.176 s (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.42200000 GHz</p> <p>Start Freq 2.39500000 GHz</p> <p>Stop Freq 2.44900000 GHz</p> <p>CF Step 5.40000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.451985 GHz -19.49 dBm</p> <p>Peak Log 10 dB/Offset 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.437 GHz Span 54 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 6.176 s (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.41000000 GHz</p> <p>Stop Freq 2.46400000 GHz</p> <p>CF Step 5.40000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2452</p>	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.456995 GHz -18.95 dBm</p> <p>Peak Log 10 dB/Offset 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.452 GHz Span 54 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 6.176 s (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.45200000 GHz</p> <p>Start Freq 2.42500000 GHz</p> <p>Stop Freq 2.47900000 GHz</p> <p>CF Step 5.40000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

## 9 Out of Band Conducted Emissions Measurement

### 9.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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 band that contains the highest level of the desired power

### 9.2. Test Setup



### 9.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY45300744	12/16/2014	(1)
Spectrum Analyzer	Agilent	E4408B	MY45107753	07/27/2015	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

Note: N.C.R. = No Calibration Request.

### 9.4. Test Procedure

In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band.

The test was performed at 3 channels.

### 9.5. Test Graphs

#### Reference level

Mode 3: IEEE 802.11g link mode_ANT-0	
2412	
2437	
2462	

Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-0

<p>2412</p>	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.406995 GHz -3.075 dBm</p> <p>Peak Log 10 dB/Offst 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.412 GHz Span 26 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.39900000 GHz</p> <p>Stop Freq 2.42500000 GHz</p> <p>CF Step 2.60000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2437</p>	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.442005 GHz -3.928 dBm</p> <p>Peak Log 10 dB/Offst 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.437 GHz Span 26 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.42400000 GHz</p> <p>Stop Freq 2.45000000 GHz</p> <p>CF Step 2.60000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>
<p>2462</p>	<p>Agilent R T</p> <p>Ref 10 dBm Atten 10 dB Mkr1 2.455695 GHz -3.496 dBm</p> <p>Peak Log 10 dB/Offst 10.8 dB</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.462 GHz Span 26 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 4 ms (401 pts)</p> <p>Freq/Channel</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.44900000 GHz</p> <p>Stop Freq 2.47500000 GHz</p> <p>CF Step 2.60000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p>

Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-0

<p>2422</p>	
<p>2437</p>	
<p>2452</p>	

Mode 2: IEEE 802.11b link mode\_ANT-1

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 3: IEEE 802.11g link mode\_ANT-1

2412	
2437	
2462	

Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-1

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-1

<p>2422</p>	
<p>2437</p>	
<p>2452</p>	

**Out of Band Conducted Emissions**

Mode 3: IEEE 802.11g link mode\_ANT-0

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-0

<p>2412</p>	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.41 GHz          Peak 10.8 dB/Offset 10.8 dB DI 23.1 dBm          Amplitude: -6.834 dBm          Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)          Marker 1 Trace (1) Type Freq X Axis 2.41 GHz Amplitude -6.834 dBm</p>
<p>2437</p>	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.44 GHz          Peak 10.8 dB/Offset 10.8 dB DI 23.9 dBm          Amplitude: -4.459 dBm          Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)          Marker 1 Trace (1) Type Freq X Axis 2.44 GHz Amplitude -4.459 dBm</p>
<p>2462</p>	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.46 GHz          Peak 10.8 dB/Offset 10.8 dB DI 23.5 dBm          Amplitude: -4.732 dBm          Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)          Marker 1 Trace (1) Type Freq X Axis 2.46 GHz Amplitude -4.732 dBm</p>

Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-0

2422	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.42 GHz          Peak Log 10          dB/Offst 10.8 dB          DI -25.6 dBm          Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)  <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.42 GHz</td> <td>-7.514 dBm</td> </tr> </tbody> </table> </p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.42 GHz	-7.514 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.42 GHz	-7.514 dBm							
2437	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.44 GHz          Peak Log 10          dB/Offst 10.8 dB          DI -25.9 dBm          Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)  <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.44 GHz</td> <td>-9.218 dBm</td> </tr> </tbody> </table> </p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.44 GHz	-9.218 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.44 GHz	-9.218 dBm							
2452	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.45 GHz          Peak Log 10          dB/Offst 10.8 dB          DI -25.5 dBm          Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)  <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.45 GHz</td> <td>-6.974 dBm</td> </tr> </tbody> </table> </p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.45 GHz	-6.974 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.45 GHz	-6.974 dBm							

Mode 2: IEEE 802.11b link mode\_ANT-1

<p>2412</p>	
<p>2437</p>	
<p>2462</p>	

Mode 3: IEEE 802.11g link mode\_ANT-1

<p>2412</p>	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.41 GHz          Peak 10 dB/Offst 10.8 dB DI -24.0 dBm          Amplitude: -4.086 dBm          Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.41 GHz</td> <td>-4.086 dBm</td> </tr> </tbody> </table> <p>Freq/Channel          Center Freq 13.2650000 GHz          Start Freq 30.0000000 MHz          Stop Freq 26.5000000 GHz          CF Step 2.64700000 GHz Auto Man          Freq Offset 0.00000000 Hz          Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.41 GHz	-4.086 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.41 GHz	-4.086 dBm							
<p>2437</p>	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.44 GHz          Peak 10 dB/Offst 10.8 dB DI -24.0 dBm          Amplitude: -5.684 dBm          Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.44 GHz</td> <td>-5.684 dBm</td> </tr> </tbody> </table> <p>Freq/Channel          Center Freq 13.2650000 GHz          Start Freq 30.0000000 MHz          Stop Freq 26.5000000 GHz          CF Step 2.64700000 GHz Auto Man          Freq Offset 0.00000000 Hz          Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.44 GHz	-5.684 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.44 GHz	-5.684 dBm							
<p>2462</p>	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.46 GHz          Peak 10 dB/Offst 10.8 dB DI -23.8 dBm          Amplitude: -6.603 dBm          Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.46 GHz</td> <td>-6.603 dBm</td> </tr> </tbody> </table> <p>Freq/Channel          Center Freq 13.2650000 GHz          Start Freq 30.0000000 MHz          Stop Freq 26.5000000 GHz          CF Step 2.64700000 GHz Auto Man          Freq Offset 0.00000000 Hz          Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.46 GHz	-6.603 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.46 GHz	-6.603 dBm							

Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-1

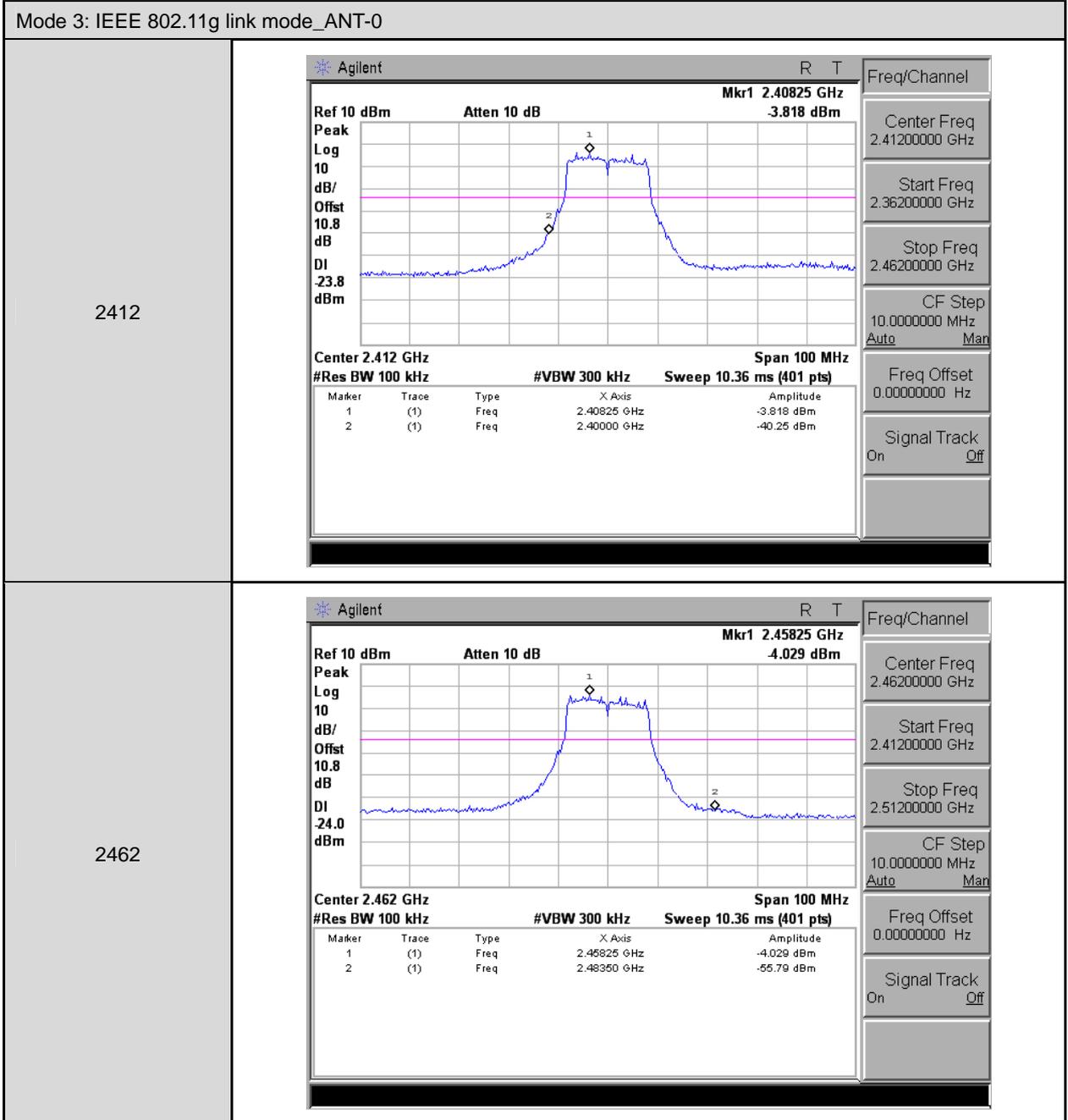
2412	
2437	
2462	

Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-1

2422	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.42 GHz          Peak 6.167 dBm          Log          10          dB/          Offset          10.8          dB          DI          -25.3          dBm</p> <p>Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.42 GHz</td> <td>-6.167 dBm</td> </tr> </tbody> </table> <p>Freq/Channel          Center Freq 13.2650000 GHz          Start Freq 30.0000000 MHz          Stop Freq 26.5000000 GHz          CF Step 2.64700000 GHz Auto Man          Freq Offset 0.00000000 Hz          Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.42 GHz	-6.167 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.42 GHz	-6.167 dBm							
2437	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.44 GHz          Peak 8.416 dBm          Log          10          dB/          Offset          10.8          dB          DI          -24.9          dBm</p> <p>Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.44 GHz</td> <td>-8.416 dBm</td> </tr> </tbody> </table> <p>Freq/Channel          Center Freq 13.2650000 GHz          Start Freq 30.0000000 MHz          Stop Freq 26.5000000 GHz          CF Step 2.64700000 GHz Auto Man          Freq Offset 0.00000000 Hz          Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.44 GHz	-8.416 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.44 GHz	-8.416 dBm							
2452	<p>Agilent R T          Ref 10 dBm Atten 10 dB Mkr1 2.45 GHz          Peak 6.526 dBm          Log          10          dB/          Offset          10.8          dB          DI          -25.5          dBm</p> <p>Start 30 MHz Stop 26.5 GHz          #Res BW 100 kHz #VBW 300 kHz Sweep 2.742 s (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.45 GHz</td> <td>-6.526 dBm</td> </tr> </tbody> </table> <p>Freq/Channel          Center Freq 13.2650000 GHz          Start Freq 30.0000000 MHz          Stop Freq 26.5000000 GHz          CF Step 2.64700000 GHz Auto Man          Freq Offset 0.00000000 Hz          Signal Track On Off</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.45 GHz	-6.526 dBm
Marker	Trace	Type	X Axis	Amplitude							
1	(1)	Freq	2.45 GHz	-6.526 dBm							

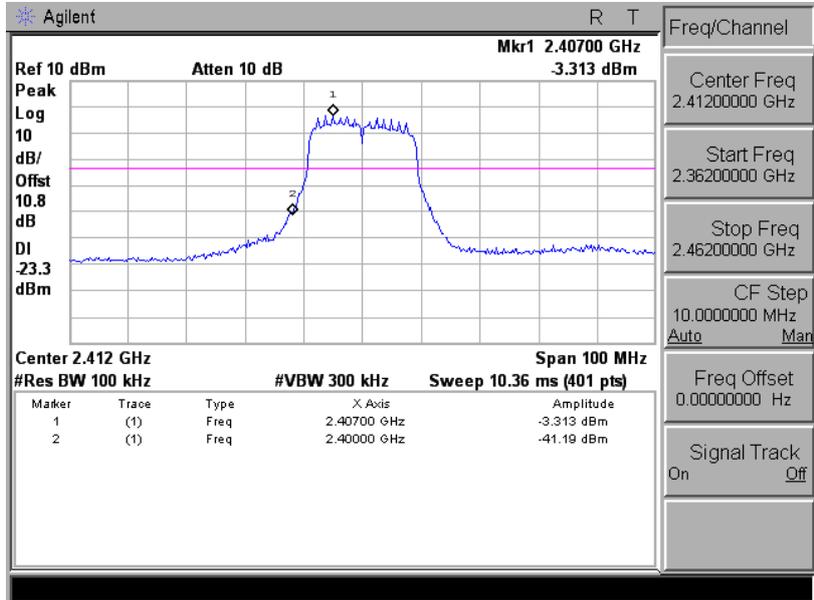
**Conducted Band Edge**

Mode 3: IEEE 802.11g link mode\_ANT-0

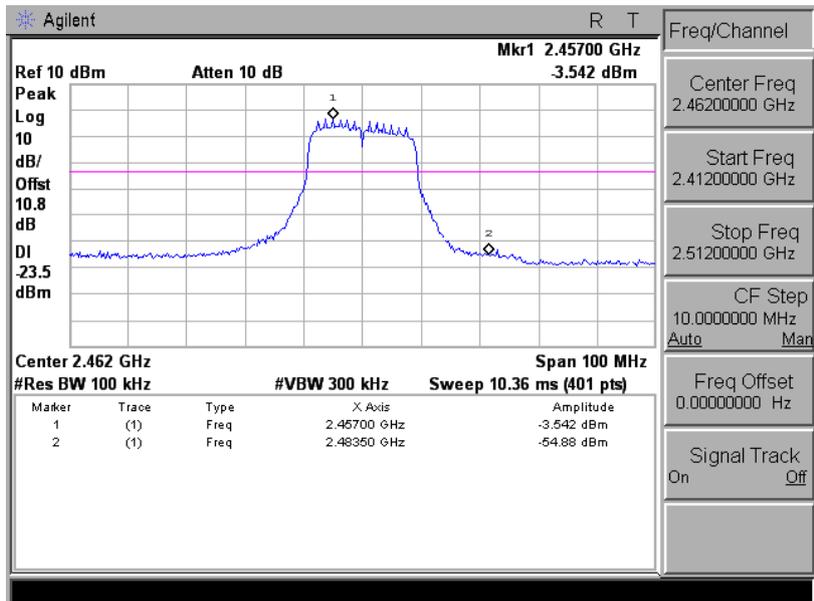


Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-0

2412

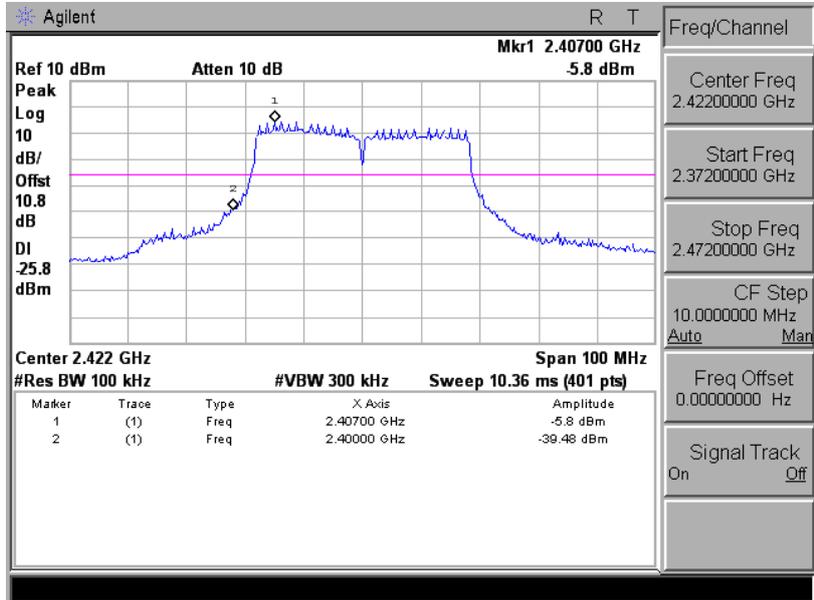


2462

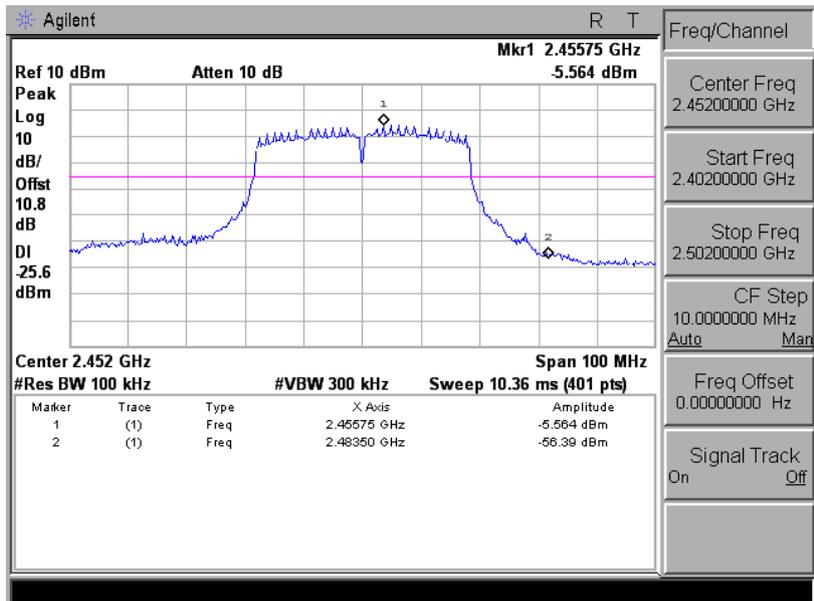


Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-0

2422

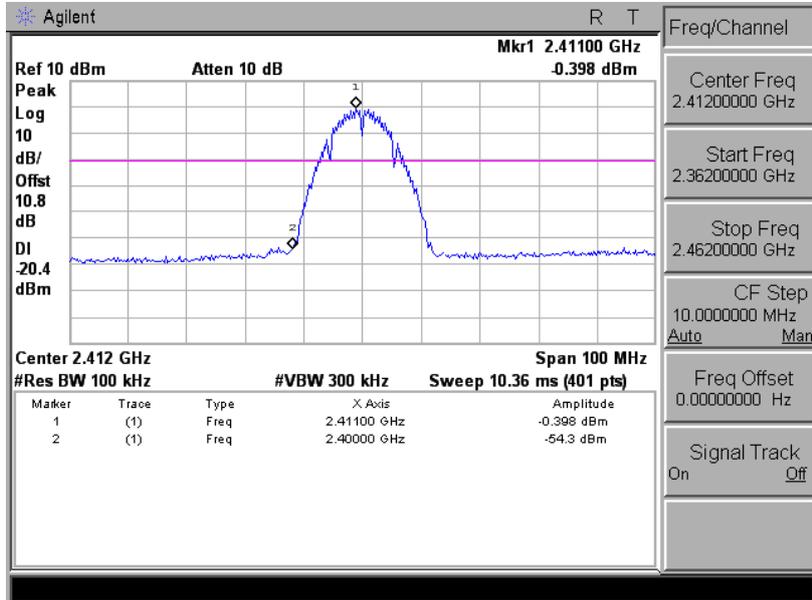


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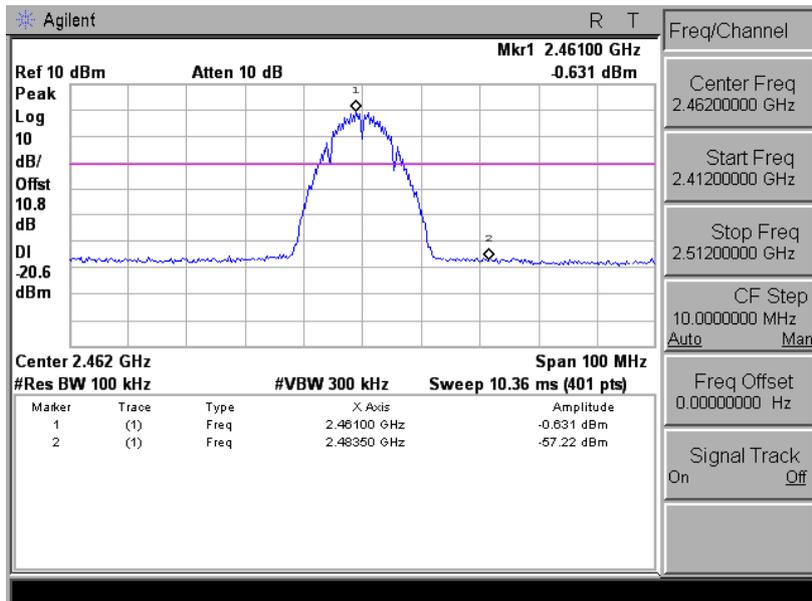


Mode 2: IEEE 802.11b link mode\_ANT-1

2412

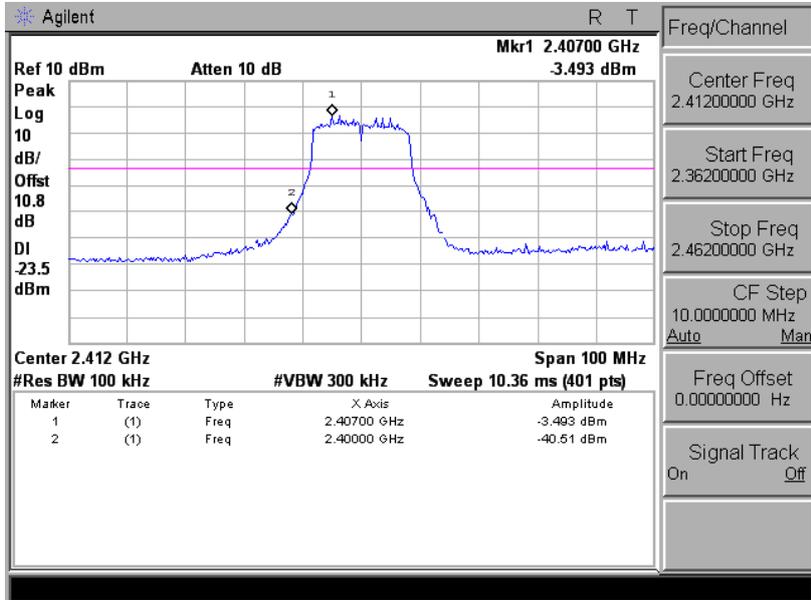


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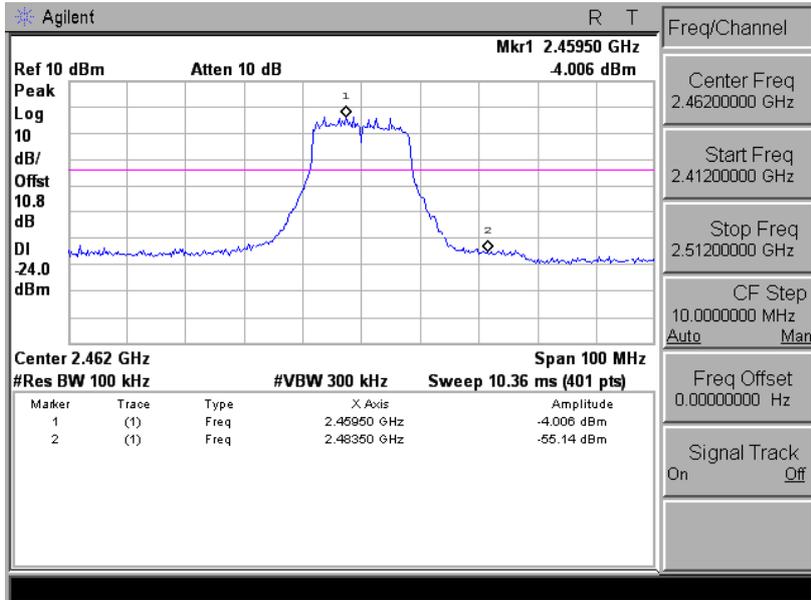


Mode 3: IEEE 802.11g link mode\_ANT-1

2412

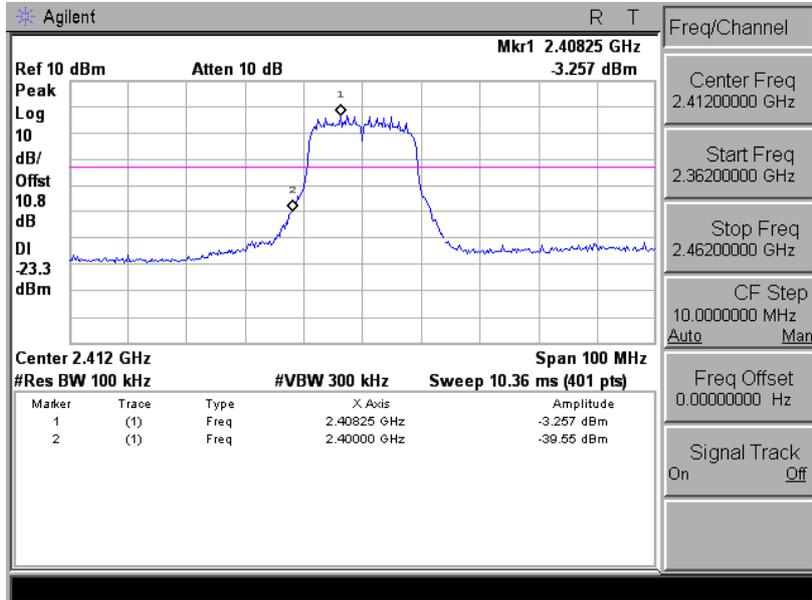


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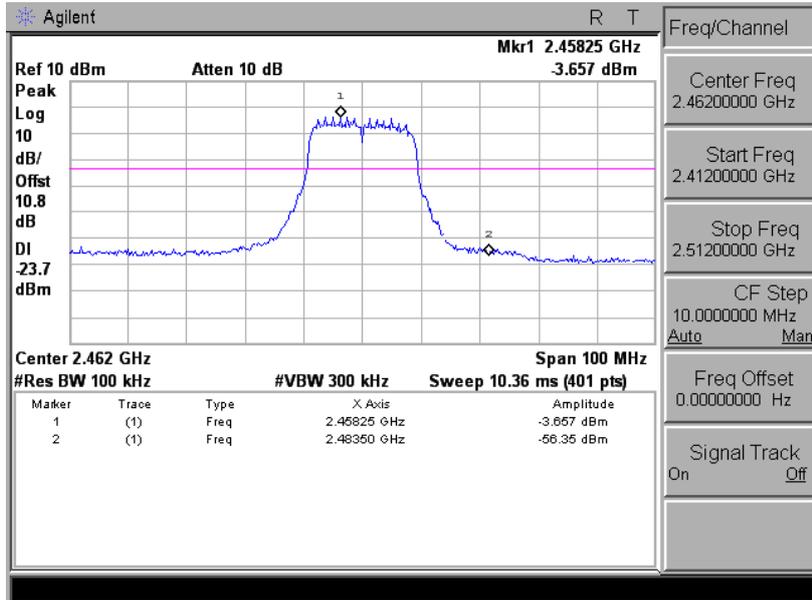


Mode 4: IEEE 802.11n 2.4GHz 20MHz link mode\_ANT-1

2412

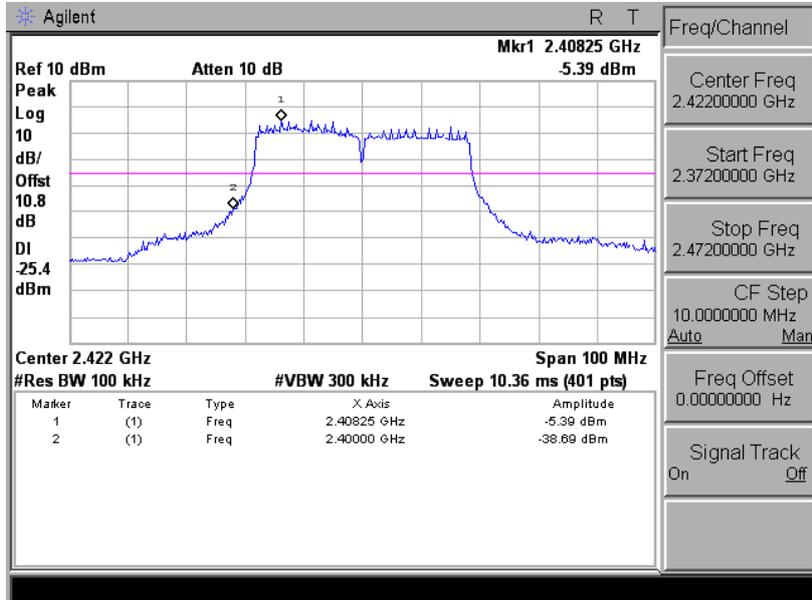


2462

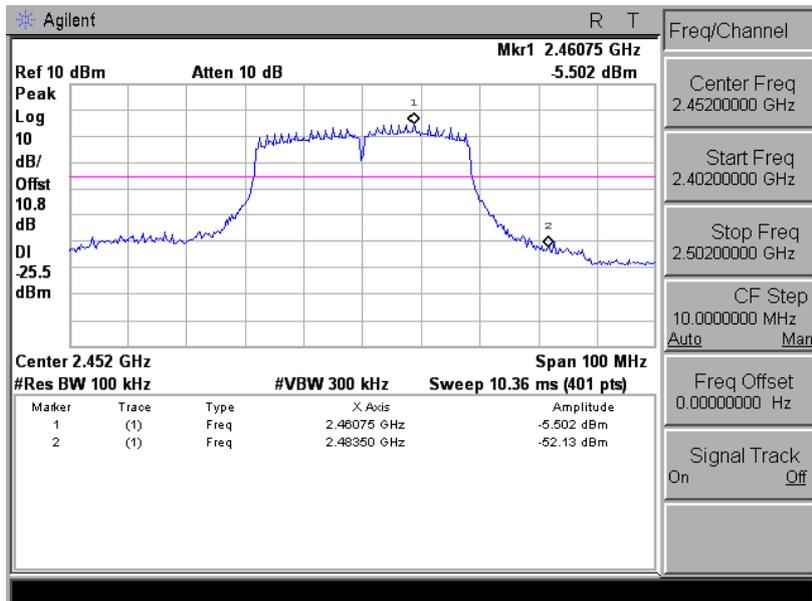


Mode 5: IEEE 802.11n 2.4GHz 40MHz link mode\_ANT-1

2422



2452

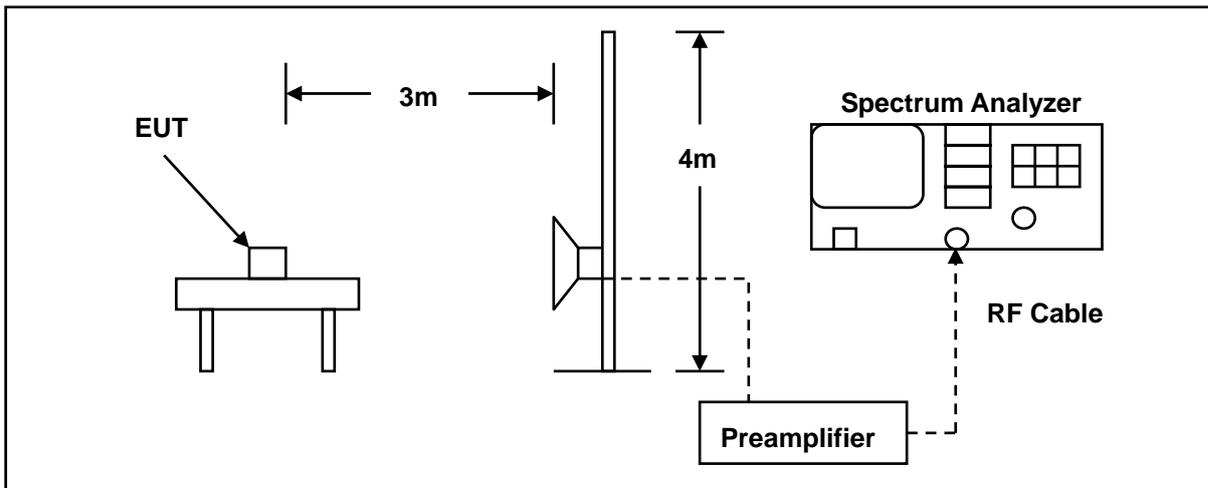


## 10 Band Edges Measurement

### 10.1.Limit

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

### 10.2.Test Setup



### 10.3.Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2015	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2015	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/12/2015	(1)
Microwave Cable	EMCI	EMC-104-SM-S M-14000	140202	02/24/2015	(1)
Microwave Cable	EMCI	EMC104-SM-S M-600	140301	02/24/2015	(1)
Test Site	ATL	TE01	888001	08/28/2014	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.

Note: N.C.R. = No Calibration Request.

## 10.4. Test Procedure

The EUT tested to DTS test procedure of KDB558074D01 for compliance to FCC 47CFR 15.247 requirements.

The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz and at 2390.0 MHz.

The transmitter was configured with the worst case antenna and setup to transmit at the highest channel. Then the field strength was measured at 2483.5 MHz.

The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel. Then the field strength was measured at 2390.0 MHz. These tests were performed at 4 different bit rates.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements when Duty cycle  $>0.98 / 1/T$  for average measurements when Duty cycle  $<0.98$ .

**10.5. Test Result**

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 2			Date:	08/23/2015		
Frequency:	2412 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2379.630	51.00	-0.51	50.49	74.00	-23.51	peak	H
2390.000	49.89	-0.46	49.43	74.00	-24.57	peak	H
2388.210	51.81	-0.47	51.34	74.00	-22.66	peak	V
2390.000	51.95	-0.46	51.49	74.00	-22.51	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 2			Date:	08/23/2015		
Frequency:	2462 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2483.500	48.53	-0.06	48.47	74.00	-25.53	peak	H
2489.400	50.87	-0.04	50.83	74.00	-23.17	peak	H
2483.500	48.33	-0.06	48.27	74.00	-25.73	peak	V
2485.800	51.42	-0.05	51.37	74.00	-22.63	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 3			Date:	08/23/2015		
Frequency:	2412 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2387.550	53.30	-0.47	52.83	74.00	-21.17	peak	H
2387.550	41.17	-0.47	40.70	54.00	-13.30	AVG	H
2390.000	52.88	-0.46	52.42	74.00	-21.58	peak	H
2390.000	41.94	-0.46	41.48	54.00	-12.52	AVG	H
2387.770	53.95	-0.47	53.48	74.00	-20.52	peak	V
2387.770	42.98	-0.47	42.51	54.00	-11.49	AVG	V
2390.000	53.05	-0.46	52.59	74.00	-21.41	peak	V
2390.000	43.74	-0.46	43.28	54.00	-10.72	AVG	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 3			Date:	08/23/2015		
Frequency:	2462 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2483.500	50.85	-0.06	50.79	74.00	-23.21	peak	H
2486.520	51.78	-0.05	51.73	74.00	-22.27	peak	H
2483.500	49.11	-0.06	49.05	74.00	-24.95	peak	V
2493.160	51.57	-0.02	51.55	74.00	-22.45	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 4			Date:	08/23/2015		
Frequency:	2412 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2389.200	53.41	-0.47	52.94	74.00	-21.06	peak	H
2389.200	42.21	-0.47	41.74	54.00	-12.26	AVG	H
2390.000	54.65	-0.46	54.19	74.00	-19.81	peak	H
2390.000	42.56	-0.46	42.10	54.00	-11.90	AVG	H
2389.090	53.76	-0.47	53.29	74.00	-20.71	peak	V
2389.090	43.32	-0.47	42.85	54.00	-11.15	AVG	V
2390.000	53.97	-0.46	53.51	74.00	-20.49	peak	V
2390.000	43.50	-0.46	43.04	54.00	-10.96	AVG	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 4			Date:	08/23/2015		
Frequency:	2462 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2483.500	50.58	-0.06	50.52	74.00	-23.48	peak	H
2484.040	52.04	-0.06	51.98	74.00	-22.02	peak	H
2483.500	48.65	-0.06	48.59	74.00	-25.41	peak	V
2486.720	51.40	-0.05	51.35	74.00	-22.65	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	08/23/2015		
Frequency:	2422 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2387.280	61.30	-0.47	60.83	74.00	-13.17	peak	H
2387.280	44.32	-0.47	43.85	54.00	-10.15	AVG	H
2390.000	55.77	-0.46	55.31	74.00	-18.69	peak	H
2390.000	44.42	-0.46	43.96	54.00	-10.04	AVG	H
2387.400	60.99	-0.47	60.52	74.00	-13.48	peak	V
2387.400	44.91	-0.47	44.44	54.00	-9.56	AVG	V
2390.000	56.93	-0.46	56.47	74.00	-17.53	peak	V
2390.000	45.13	-0.46	44.67	54.00	-9.33	AVG	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AC810S-300			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	08/23/2015		
Frequency:	2452 MHz			Test By:	Eric Ou Yang		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2483.500	49.98	-0.06	49.92	74.00	-24.08	peak	H
2485.650	51.77	-0.05	51.72	74.00	-22.28	peak	H
2483.500	50.31	-0.06	50.25	74.00	-23.75	peak	V
2487.550	51.47	-0.05	51.42	74.00	-22.58	peak	V

## **11 Antenna Measurement**

### **11.1.Limit**

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### **11.2.Antenna Connector Construction**

The antenna used in this product is chip antennas. And the maximum Gain of this antenna is only 1.2 dBi.