FCC 47 CFR PART 15 SUBPART C

Product Type	:	airGateway PRO
Applicant	:	Ubiquiti Networks,Inc
Address	:	2580 Orchard Parkway, San Jose CA95131,USA
Trade Name	:	UBIQUITI
Model Number	:	AMG-PRO, AMG-PRO-INS
Test Specification	:	FCC 47 CFR PART 15 SUBPART C: Oct., 2014 ANSI C63.10-2013
Receive Date	:	Jan. 28, 2015
Test Period	:	Feb. 01 ~ Feb. 04, 2015
Issue Date	:	Apr. 29, 2015

Issue by

A Test Lab Techno Corp.
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Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Feb. 17, 2015	Initial Issue	
01	Apr. 08, 2015	Revised report information.	Peggy Chang
02	Apr. 13, 2015	Revised report information.	Snow Wang
03	Apr. 29, 2015	Revised report information.	Snow Wang

Verification of Compliance

Issued Date: 04/29/2015

Product Type	:	airGateway PRO
Applicant	:	Ubiquiti Networks,Inc
Address	:	2580 Orchard Parkway, San Jose CA95131,USA
Trade Name	:	UBIQUITI
Model Number	:	AMG-PRO, AMG-PRO-INS
EUT Rated Voltage	:	DC 24V, 0.5A
Test Voltage	:	120 Vac / 60 Hz
Applicable Standard	:	FCC 47 CFR PART 15 SUBPART C: Oct., 2014 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		Reviewed By	: Eric Ou Yang	
(Manager)		(Fly Lu)	(Testing Engineer)		(Eric Ou Yang)

TABLE OF CONTENTS

1 General Information

1.1 Summary of Test Result

Standard		Item	Result	Remark
15.247	RSS-GEN			
15.207	8.8	AC Power Conducted Emission	PASS	-----
-----	7.1	Receiver Radiated Emissions	PASS	-----
-----	6.6	99 % Occupied Bandwidth	PASS	-----
Standard		Item	Result	Remark
15.247	RSS-210			
15.247(d)	A8.5	Transmitter Radiated Emissions	PASS	-----
15.247(b)(3)	A8.4	Max. Output Power	PASS	-----
15.247(a)(2)	A8.2 (a)	6dB RF Bandwidth	PASS	-----
15.247(e)	A8.2 (b)	Power Spectral Density	PASS	-----
15.247(d)	A8.5	Out of Band Conducted Spurious Emission	PASS	-----
15.247(d)	A8.5	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

Product Type	airGateway PRO
Trade Name	UBIQUITI
Model No.	AMG-PRO, AMG-PRO-INS
Different Description	These model numbers differ from each other in selling region.
Applicant	Ubiquiti Networks,Inc 2580 Orchard Parkway, San Jose CA95131,USA
Manufacturer	Ubiquiti Networks,Inc 2580 Orchard Parkway, San Jose CA95131,USA
Hardware Version	02024
Software Version	V1.1
Radio Hardware Version	DC3A
Radio Software Version	V1.1
FCC ID	SWX-AMGPRO
Frequency Range	IEEE 802.11b / 802.11g / 802.11n 2.4GHz 20MHz: 2412 ~ 2462 MHz IEEE 802.11n 2.4GHz 40MHz: 2422 ~ 2452 MHz
Modulation Type	IEEE 802.11b:DSSS IEEE 802.11g:DSSS + OFDM IEEE 802.11n 2.4GHz 20MHz: OFDM IEEE 802.11n 2.4GHz 40MHz: OFDM
Antenna Type	PIFA Antenna
Antenna Gain	1 dBi
Antenna Delivery	2TX + 2RX
RF Output Power	IEEE 802.11b: 0.252 W / 24.01 dBm IEEE 802.11g: 0.562 W / 27.50 dBm IEEE 802.11n 2.4GHz 20MHz: 0.474 W / 26.76 dBm IEEE 802.11n 2.4GHz 40MHz: 0.313 W / 24.95 dBm
99 % Occupied Bandwidth	IEEE 802.11b: 13.89 MHz IEEE 802.11g: 16.82 MHz IEEE 802.11n 2.4GHz 20MHz: 17.92 MHz IEEE 802.11n 2.4GHz 40MHz: 36.90 MHz
Emission Designator	IEEE 802.11b: 13M9G7D IEEE 802.11g: 16M8D7D IEEE 802.11n 2.4GHz 20MHz: 17M9D7D IEEE 802.11n 2.4GHz 40MHz: 36M9D7D

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
Mode 6: Receiver 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.
By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “X axis” position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

Test Mode	ANT-1	ANT-2	ANT-1+2
IEEE 802.11b Link Mode	V	V	V
IEEE 802.11g Link Mode	V	V	V
IEEE 802.11n 20MHz Link Mode	V	V	V
IEEE 802.11n 40MHz Link Mode	V	V	V

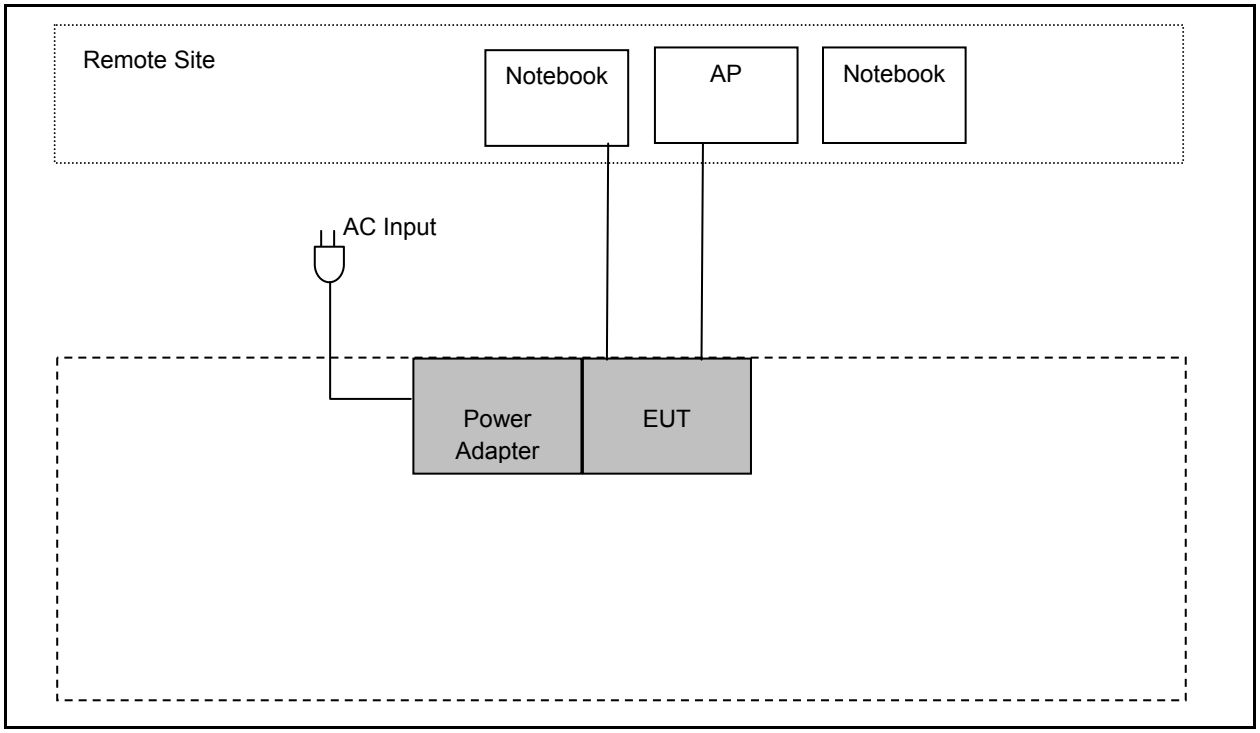
Test Mode	TX/RX Function	Test Channel	Data Rate
Mode 1: IEEE 802.11b Mode	2TX / 2RX	1, 6, 11	1
Mode 2: IEEE 802.11g Mode	2TX / 2RX	1, 6, 11	6
Mode 3: IEEE 802.11n 2.4GHz 20MHz Mode	2TX / 2RX	1, 6, 11	13
Mode 4: IEEE 802.11n 2.4GHz 40MHz Mode	2TX / 2RX	3, 6, 9	27

3.2. EUT Exercise Software

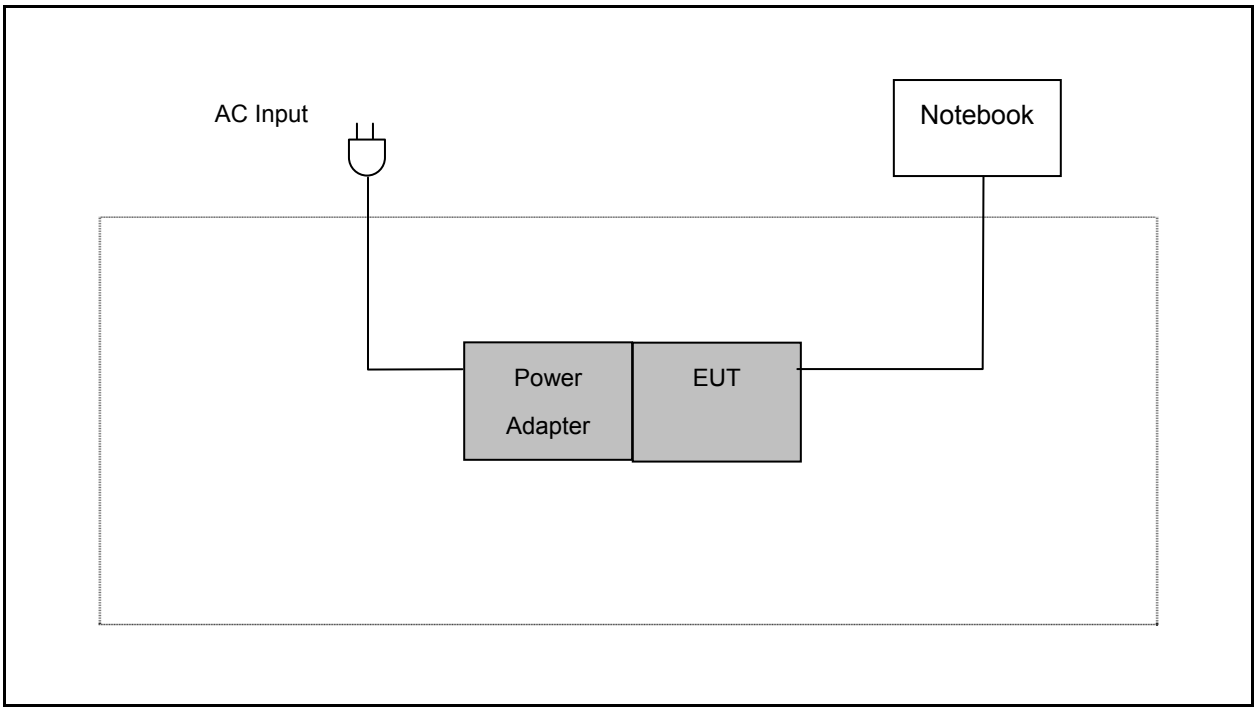
1. Setup the EUT shown on 3.3.
2. Turn on the power of all equipment.
3. Turn on Wi-Fi function link to AP.
4. EUT run test program.

3.3. Configuration of Test System Details

Conducted Emission



Radiated Emission



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

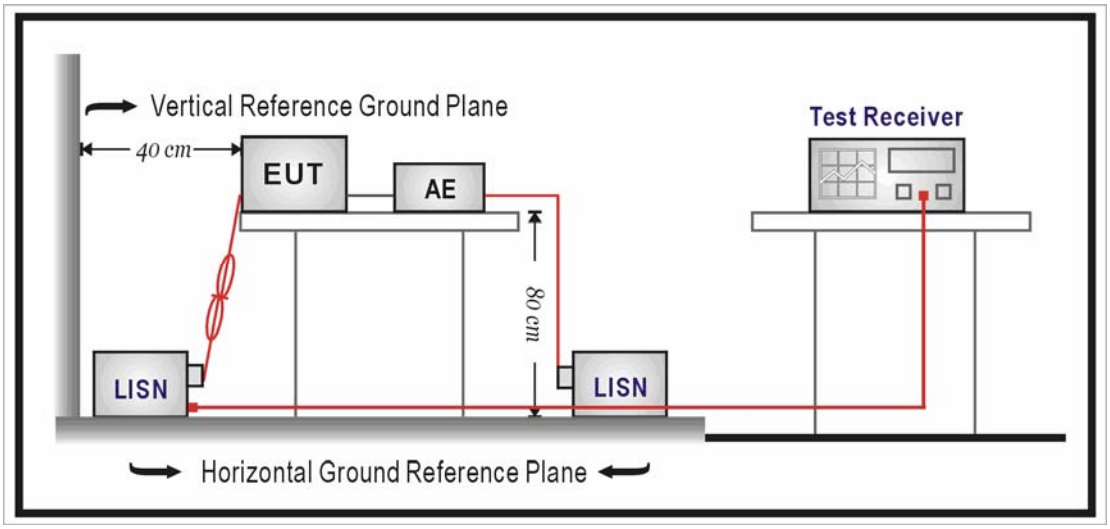
Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

4.2. Test Instruments

Describe	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	06/12/2014	(1)
LISN	R&S	ENV216	101040	03/07/2014	(1)
LISN	R&S	ENV216	101041	03/07/2014	(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

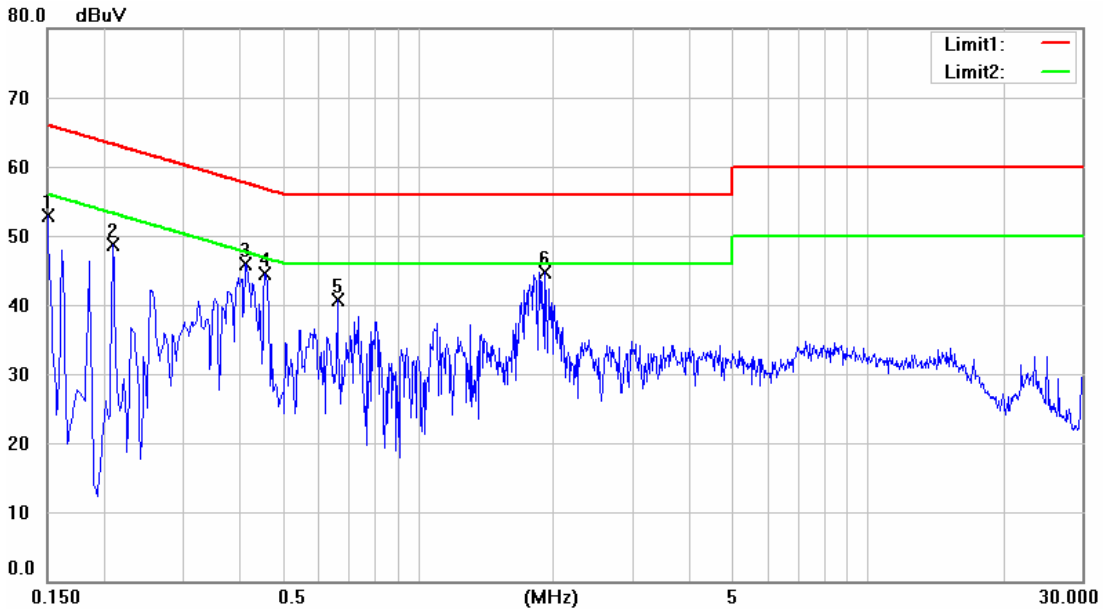
The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back wall and at least 1 meter from the sidewall.

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:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	02/03/2015
		Test By:	Eric Ou Yang
Description:			

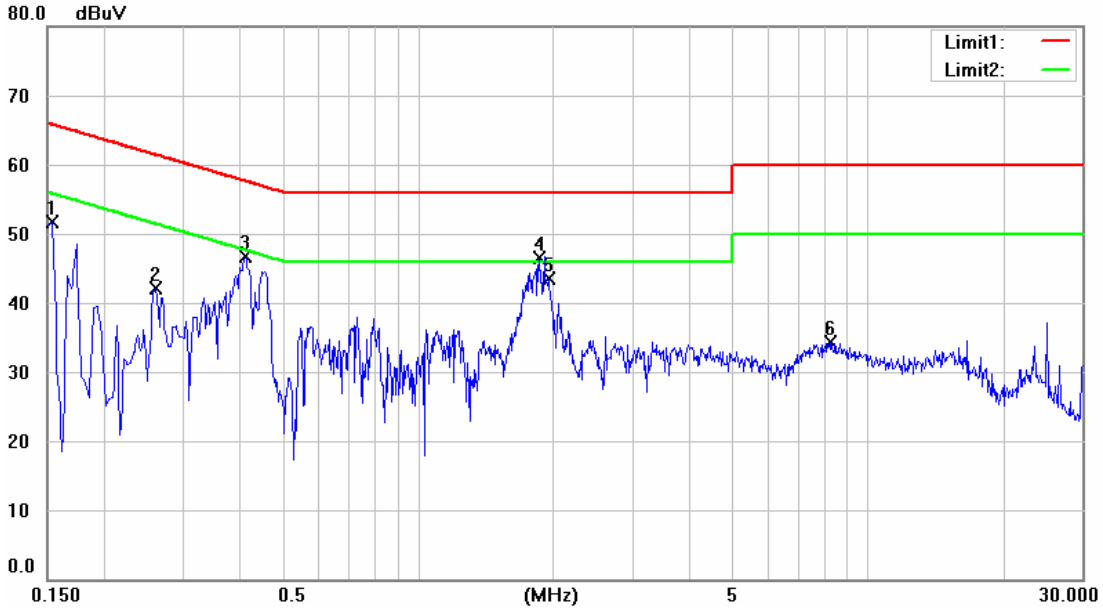


No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1500	41.52	26.61	9.59	51.11	36.20	66.00	56.00	-14.89	-19.80	Pass
2	0.2100	32.23	15.62	9.60	41.83	25.22	63.21	53.21	-21.38	-27.99	Pass
3	0.4140	35.44	27.76	9.61	45.05	37.37	57.57	47.57	-12.52	-10.20	Pass
4	0.4588	33.48	27.33	9.62	43.10	36.95	56.71	46.71	-13.61	-9.76	Pass
5	0.6620	24.01	15.44	9.61	33.62	25.05	56.00	46.00	-22.38	-20.95	Pass
6	1.9100	28.66	22.53	9.69	38.35	32.22	56.00	46.00	-17.65	-13.78	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:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	02/03/2015
		Test By:	Eric Ou Yang
Description:			



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	0.1540	39.34	23.14	9.60	48.94	32.74	65.78	55.78	-16.84	-23.04	Pass
2	0.2620	28.56	20.38	9.61	38.17	29.99	61.37	51.37	-23.20	-21.38	Pass
3	0.4140	35.42	28.50	9.61	45.03	38.11	57.57	47.57	-12.54	-9.46	Pass
4	1.8660	33.74	23.76	9.69	43.43	33.45	56.00	46.00	-12.57	-12.55	Pass
5	1.9580	32.56	21.61	9.70	42.26	31.31	56.00	46.00	-13.74	-14.69	Pass
6	8.3220	20.00	13.22	9.92	29.92	23.14	60.00	50.00	-30.08	-26.86	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 (μV/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

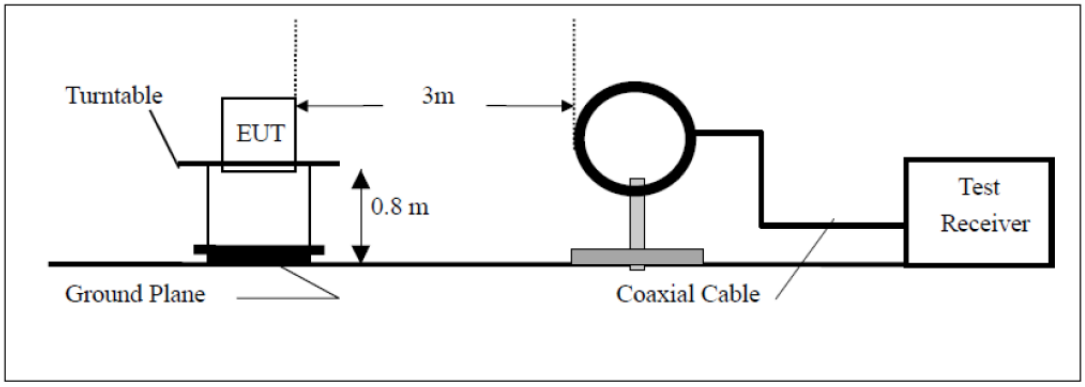
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this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

5.2. Test Instruments

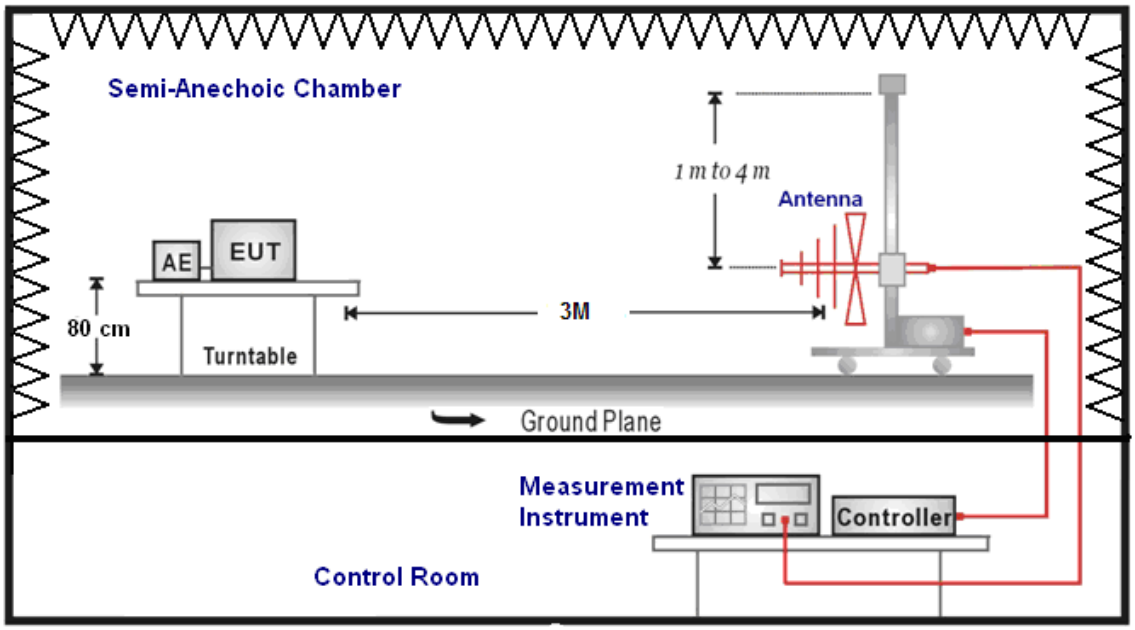
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2014	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/21/2014	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	07/22/2014	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/11/2014	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	07/02/2014	(1)
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	02/02/2015	(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.

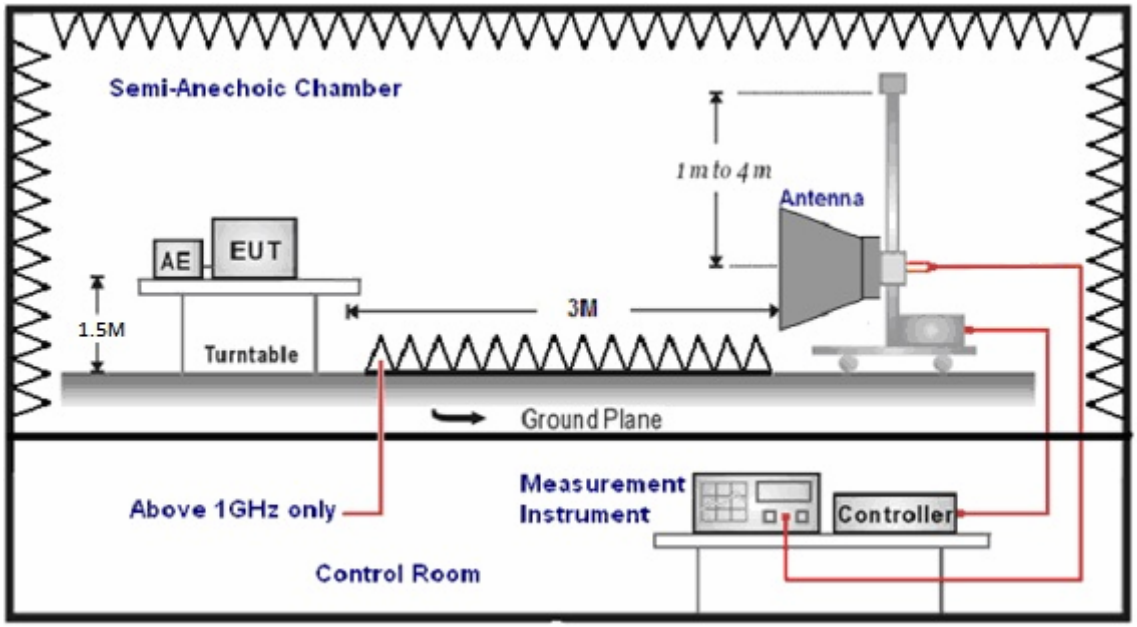
5.3. Setup



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). 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.

A nonconductive material surrounded the EUT to supporting the EUT for standing on tree 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 colts per meter (dBuV/m).
The actual field is 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) Amplitude (dBuV/m) = FI (dBuV) +AF (dBuV) +CL (dBuV)-Gain (dB)
FI= Reading of the field intensity.
AF= Antenna factor.
CL= Cable loss.
P.S Amplitude is auto calculate in spectrum analyzer.

(2) Actual Amplitude (dBuV/m) = Amplitude (dBuV)-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:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	02/01/2015
		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
171.0000	48.22	-12.43	35.79	43.50	-7.71	QP	H
349.0000	47.09	-9.61	37.48	46.00	-8.52	QP	H
382.5000	47.65	-8.86	38.79	46.00	-7.21	QP	H
500.0000	33.59	-6.55	27.04	46.00	-18.96	QP	H
871.0000	34.21	0.79	35.00	46.00	-11.00	QP	H
944.5000	35.16	2.46	37.62	46.00	-8.38	QP	H
97.0000	45.49	-17.56	27.93	43.50	-15.57	QP	V
250.0000	46.85	-12.39	34.46	46.00	-11.54	QP	V
374.5000	46.32	-9.03	37.29	46.00	-8.71	QP	V
461.0000	42.06	-7.26	34.80	46.00	-11.20	QP	V
682.5000	25.94	-2.94	23.00	46.00	-23.00	QP	V
944.5000	35.35	2.46	37.81	46.00	-8.19	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:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	02/01/2015
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
3030.000	37.02	-0.45	36.57	74.00	-37.43	peak	H
4824.000	41.37	4.61	45.98	74.00	-28.02	peak	H
6663.000	34.13	9.43	43.56	74.00	-30.44	peak	H
2995.000	36.36	-0.55	35.81	74.00	-38.19	peak	V
4824.000	44.95	4.61	49.56	74.00	-24.44	peak	V
6677.000	33.63	9.46	43.09	74.00	-30.91	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	02/01/2015
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
3030.000	36.78	-0.45	36.33	74.00	-37.67	peak	H
4570.000	33.49	3.97	37.46	74.00	-36.54	peak	H
6691.000	33.96	9.50	43.46	74.00	-30.54	peak	H
3023.000	37.56	-0.48	37.08	74.00	-36.92	peak	V
4874.000	44.74	4.74	49.48	74.00	-24.52	peak	V
6698.000	32.57	9.53	42.10	74.00	-31.90	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	02/01/2015
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
3023.000	36.90	-0.48	36.42	74.00	-37.58	peak	H
4591.000	33.68	4.01	37.69	74.00	-36.31	peak	H
6726.000	33.77	9.60	43.37	74.00	-30.63	peak	H
3030.000	38.03	-0.45	37.58	74.00	-36.42	peak	V
4924.000	44.69	4.86	49.55	74.00	-24.45	peak	V
6649.000	32.99	9.39	42.38	74.00	-31.62	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	3	Date:	02/01/2015
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
3030.000	36.43	-0.45	35.98	74.00	-38.02	peak	H
4542.000	33.82	3.89	37.71	74.00	-36.29	peak	H
6677.000	33.12	9.46	42.58	74.00	-31.42	peak	H
3037.000	38.20	-0.44	37.76	74.00	-36.24	peak	V
4514.000	35.18	3.83	39.01	74.00	-34.99	peak	V
6698.000	34.10	9.53	43.63	74.00	-30.37	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	3	Date:	02/01/2015
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
3037.000	36.94	-0.44	36.50	74.00	-37.50	peak	H
4619.000	33.63	4.10	37.73	74.00	-36.27	peak	H
6677.000	34.57	9.46	44.03	74.00	-29.97	peak	H
3037.000	36.94	-0.44	36.50	74.00	-37.50	peak	V
4591.000	34.11	4.01	38.12	74.00	-35.88	peak	V
6691.000	34.10	9.50	43.60	74.00	-30.40	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	3	Date:	02/01/2015
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
3009.000	36.75	-0.51	36.24	74.00	-37.76	peak	H
4563.000	34.24	3.95	38.19	74.00	-35.81	peak	H
6642.000	34.41	9.37	43.78	74.00	-30.22	peak	H
3030.000	38.66	-0.45	38.21	74.00	-35.79	peak	V
4605.000	34.78	4.05	38.83	74.00	-35.17	peak	V
6677.000	34.37	9.46	43.83	74.00	-30.17	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	4	Date:	02/01/2015
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
3037.000	36.93	-0.44	36.49	74.00	-37.51	peak	H
4535.000	33.71	3.88	37.59	74.00	-36.41	peak	H
6677.000	34.16	9.46	43.62	74.00	-30.38	peak	H
3030.000	37.29	-0.45	36.84	74.00	-37.16	peak	V
4591.000	34.09	4.01	38.10	74.00	-35.90	peak	V
6726.000	33.47	9.60	43.07	74.00	-30.93	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	4	Date:	02/01/2015
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
3051.000	36.32	-0.40	35.92	74.00	-38.08	peak	H
4570.000	33.16	3.97	37.13	74.00	-36.87	peak	H
6649.000	33.41	9.39	42.80	74.00	-31.20	peak	H
3037.000	37.56	-0.44	37.12	74.00	-36.88	peak	V
4570.000	34.97	3.97	38.94	74.00	-35.06	peak	V
6642.000	33.11	9.37	42.48	74.00	-31.52	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	4	Date:	02/01/2015
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
3051.000	37.81	-0.40	37.41	74.00	-36.59	peak	H
4605.000	35.28	4.05	39.33	74.00	-34.67	peak	H
6670.000	34.22	9.45	43.67	74.00	-30.33	peak	H
3030.000	36.82	-0.45	36.37	74.00	-37.63	peak	V
4605.000	34.50	4.05	38.55	74.00	-35.45	peak	V
6649.000	33.79	9.39	43.18	74.00	-30.82	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	5	Date:	02/01/2015
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
3037.000	36.34	-0.44	35.90	74.00	-38.10	peak	H
4577.000	33.38	3.98	37.36	74.00	-36.64	peak	H
6705.000	33.85	9.54	43.39	74.00	-30.61	peak	H
3037.000	37.67	-0.44	37.23	74.00	-36.77	peak	V
4570.000	33.55	3.97	37.52	74.00	-36.48	peak	V
6670.000	32.81	9.45	42.26	74.00	-31.74	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	5	Date:	02/01/2015
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
3023.000	36.89	-0.48	36.41	74.00	-37.59	peak	H
4570.000	33.93	3.97	37.90	74.00	-36.10	peak	H
6642.000	34.01	9.37	43.38	74.00	-30.62	peak	H
3058.000	36.85	-0.38	36.47	74.00	-37.53	peak	V
4591.000	33.57	4.01	37.58	74.00	-36.42	peak	V
6691.000	33.86	9.50	43.36	74.00	-30.64	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	5	Date:	02/01/2015
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
3051.000	36.85	-0.40	36.45	74.00	-37.55	peak	H
4591.000	34.30	4.01	38.31	74.00	-35.69	peak	H
6733.000	33.21	9.62	42.83	74.00	-31.17	peak	H
3030.000	36.95	-0.45	36.50	74.00	-37.50	peak	V
4598.000	33.98	4.04	38.02	74.00	-35.98	peak	V
6698.000	33.65	9.53	43.18	74.00	-30.82	peak	V

Standard:	RSS-Gen	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	6	Date:	02/01/2015
Modulation:	IEEE 802.11b	Test By:	Eric Ou Yang
Frequency:	2437MHz		

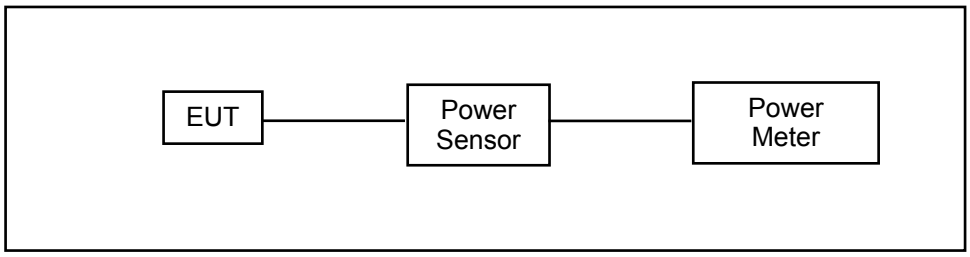
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Peak Limit (dBuV/m)	AVG. Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3037.000	36.98	-0.44	36.54	74.00	54.00	-37.46	peak	H
4577.000	33.71	3.98	37.69	74.00	54.00	-36.31	peak	H
6677.000	32.96	9.46	42.42	74.00	54.00	-31.58	peak	H
2995.000	36.99	-0.55	36.44	74.00	54.00	-37.56	peak	V
4619.000	34.10	4.10	38.20	74.00	54.00	-35.80	peak	V
6691.000	33.45	9.50	42.95	74.00	54.00	-31.05	peak	V

6 Maximum Conducted Output Power Measurement

6.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak 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 peak 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

Band	Data Rate	CH	Frequency (MHz)	RF Power setting in Test Software	Test Software Version
IEEE 802.11b	1M	1	2412.0	17.00	Atheros Radio Test 2 ART2-GUI Version:2.2 CART Version:2.54
		6	2437.0	17.00	
		11	2462.0	17.00	
IEEE 802.11g	6M	1	2412.0	13.50	
		6	2437.0	13.50	
		11	2462.0	13.50	
IEEE 802.11n 20MHz	19.5M	1	2412.0	12.50	
		6	2437.0	12.50	
		11	2462.0	12.50	
IEEE 802.11n 40MHz	40.5M	3	2422.0	10.00	
		6	2437.0	10.00	
		9	2452.0	10.00	

Model Number	AMG-PRO						
Test Item	Maximum Conducted Output Power						
Test Mode	Mode 2: IEEE 802.11b Link Mode						
Date of Test	02/01/2015			Test Site	TE05		
Frequency (MHz)	Data Rate	Peak Power						Limit (dBm)
		ANT-1		ANT-2		ANT-1+2		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
2412	1M	21.43	0.139	20.53	0.113	**24.01**	**0.252**	< 30
2437		20.84	0.121	20.47	0.111	23.67	0.233	< 30
2462		21.18	0.131	20.07	0.102	23.67	0.233	< 30
2437	2M	20.71	0.118	20.34	0.108	23.54	0.226	< 30
2437	5.5M	20.68	0.117	20.31	0.107	23.51	0.224	< 30
2437	11M	20.75	0.119	20.38	0.109	23.58	0.228	< 30

Model Number	AMG-PRO						
Test Item	Maximum Conducted Output Power						
Test Mode	Mode 3: IEEE 802.11g Link Mode						
Date of Test	02/01/2015			Test Site	TE05		
Frequency (MHz)	Data Rate	Peak Power						Limit (dBm)
		ANT-1		ANT-2		ANT-1+2		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
2412	6M	24.89	0.308	24.05	0.254	**27.50**	**0.562**	< 30
2437		24.44	0.278	23.79	0.239	27.14	0.517	< 30
2462		24.79	0.301	23.39	0.218	27.16	0.520	< 30
2437	9M	24.18	0.262	23.53	0.225	26.88	0.487	< 30
2437	12M	24.26	0.267	23.61	0.230	26.96	0.496	< 30
2437	18M	24.23	0.265	23.58	0.228	26.93	0.493	< 30
2437	24M	24.12	0.258	23.47	0.222	26.82	0.481	< 30
2437	36M	24.07	0.255	23.42	0.220	26.77	0.475	< 30
2437	48M	24.15	0.260	23.50	0.224	26.85	0.484	< 30
2437	54M	24.29	0.269	23.64	0.231	26.99	0.500	< 30

Model Number	AMG-PRO						
Test Item	Maximum Conducted Output Power						
Test Mode	Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode						
Date of Test	02/01/2015			Test Site	TE05		
Frequency (MHz)	Data Rate	Peak Power						Limit (dBm)
		ANT-1		ANT-2		ANT-1+2		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
2412	13M	23.85	0.243	23.64	0.231	**26.76**	**0.474**	< 30
2437		23.45	0.221	23.45	0.221	26.46	0.443	< 30
2462		23.62	0.230	23.09	0.204	26.37	0.434	< 30
2437	26M	23.20	0.209	23.20	0.209	26.21	0.418	< 30
2437	39M	23.24	0.211	23.24	0.211	26.25	0.422	< 30
2437	52M	23.13	0.206	23.13	0.206	26.14	0.411	< 30
2437	78M	23.18	0.208	23.18	0.208	26.19	0.416	< 30
2437	104M	23.34	0.216	23.34	0.216	26.35	0.432	< 30
2437	117M	23.06	0.202	23.06	0.202	26.07	0.405	< 30
2437	130M	23.32	0.215	23.32	0.215	26.33	0.430	< 30

Model Number	AMG-PRO						
Test Item	Maximum Conducted Output Power						
Test Mode	Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode						
Date of Test	02/01/2015			Test Site	TE05		

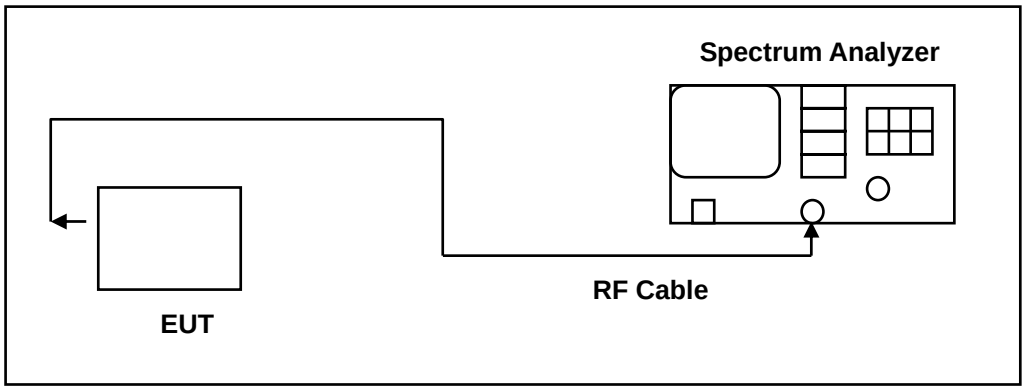
Frequency (MHz)	Data Rate	Peak Power						Limit (dBm)
		ANT-1		ANT-2		ANT-1+2		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
2422	27M	22.60	0.182	21.16	0.131	**24.95**	**0.313**	< 30
2437		22.39	0.173	21.11	0.129	24.81	0.303	< 30
2452		22.09	0.162	20.86	0.122	24.53	0.284	< 30
2422	54M	21.91	0.155	20.63	0.116	24.33	0.271	< 30
2437	81M	21.82	0.152	20.54	0.113	24.24	0.265	< 30
2437	108M	22.01	0.159	20.73	0.118	24.43	0.277	< 30
2437	162M	22.08	0.161	20.80	0.120	24.50	0.282	< 30
2437	216M	21.95	0.157	20.67	0.117	24.37	0.273	< 30
2437	243M	22.06	0.161	20.78	0.120	24.48	0.280	< 30
2437	270M	21.88	0.154	20.60	0.115	24.30	0.269	< 30

7 6dB RF Bandwidth and 99 % Occupied 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.
99 % Occupied Bandwidth: N/A

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 BW 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	AMG-PRO					
Test Item	6dB RF Bandwidth and 99 % Occupied Bandwidth					
Test Mode	Mode 2: IEEE 802.11b Link Mode					
Date of Test	02/04/2015				Test Site	TE05
Frequency (MHz)	6dB RF Bandwidth (MHz)		99 % Occupied Bandwidth (MHz)		6dB RF Bandwidth Limit (MHz)	
	ANT-1	ANT-2	ANT-1	ANT-2		
2412	10.149	10.072	13.8817	13.8907	> 0.500	
2437	10.100	10.092	13.8553	13.8714	> 0.500	
2462	10.126	10.101	13.8528	13.8453	> 0.500	

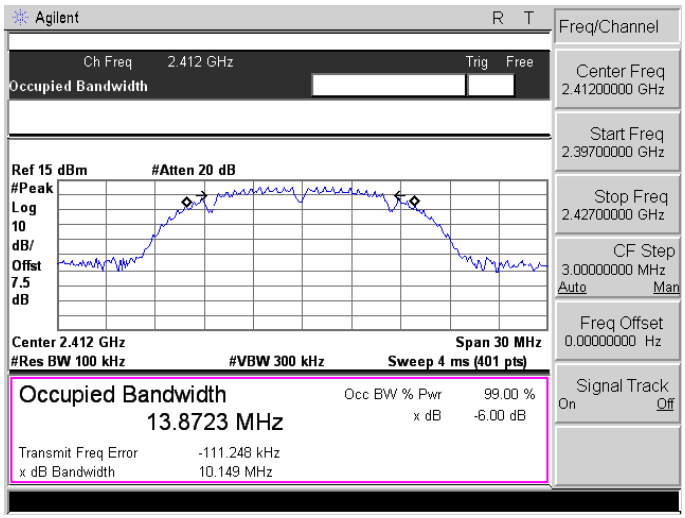
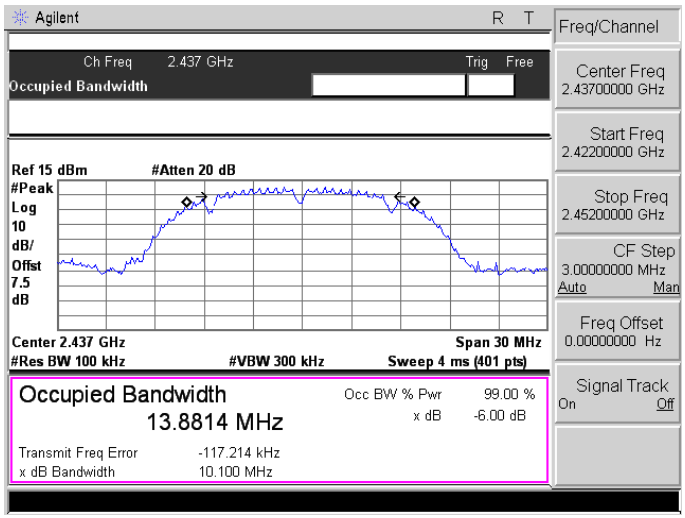
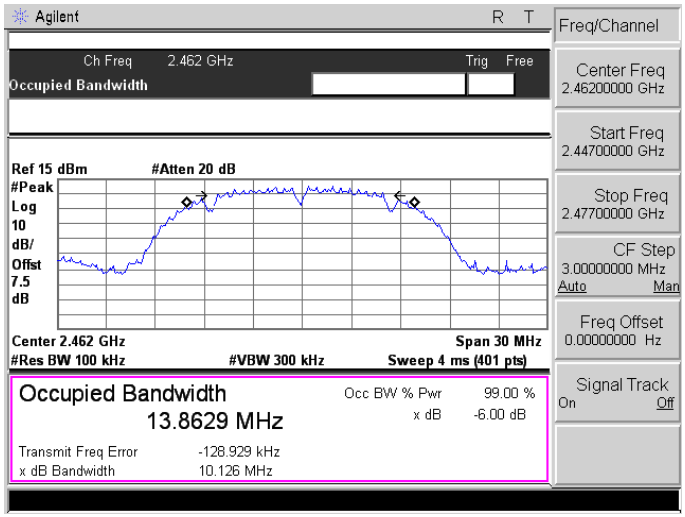
Model Number	AMG-PRO					
Test Item	6dB RF Bandwidth and 99 % Occupied Bandwidth					
Test Mode	Mode 3: IEEE 802.11g Link Mode					
Date of Test	02/04/2015				Test Site	TE05
Frequency (MHz)	6dB RF Bandwidth (MHz)		99 % Occupied Bandwidth (MHz)		6dB RF Bandwidth Limit (MHz)	
	ANT-1	ANT-2	ANT-1	ANT-2		
2412	16.389	16.405	16.8183	16.6729	> 0.500	
2437	16.434	16.390	16.7681	16.6719	> 0.500	
2462	16.384	16.382	16.6847	16.6827	> 0.500	

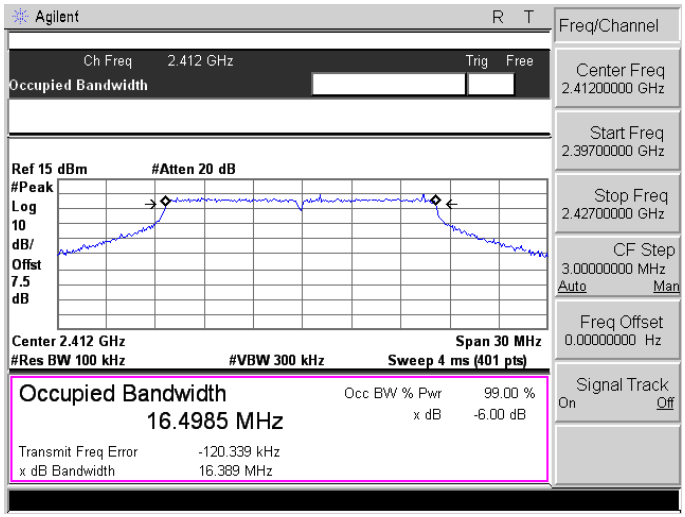
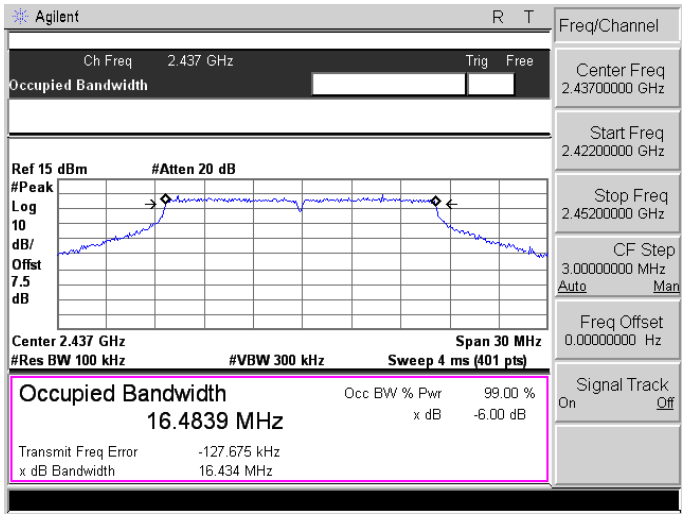
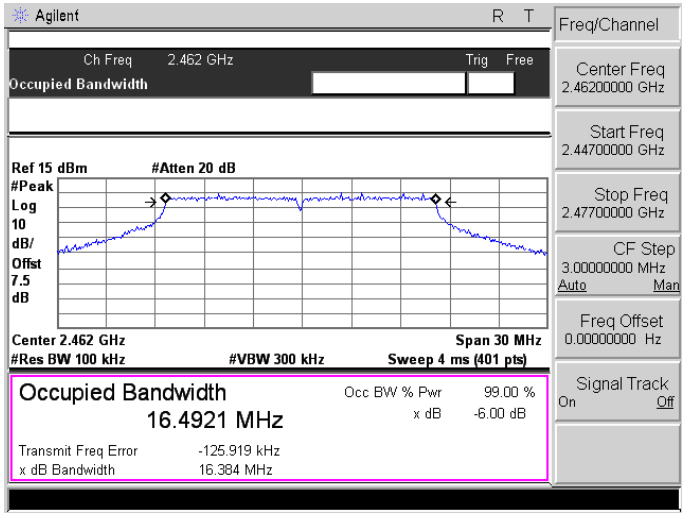
Model Number	AMG-PRO					
Test Item	6dB RF Bandwidth and 99 % Occupied Bandwidth					
Test Mode	Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode					
Date of Test	02/04/2015				Test Site	TE05
Frequency (MHz)	6dB RF Bandwidth (MHz)		99 % Occupied Bandwidth (MHz)		6dB RF Bandwidth Limit (MHz)	
	ANT-1	ANT-2	ANT-1	ANT-2		
2412	17.765	17.691	17.8766	17.8340	> 0.500	
2437	17.718	17.748	17.9220	17.8597	> 0.500	
2462	17.705	17.753	17.9130	17.8470	> 0.500	

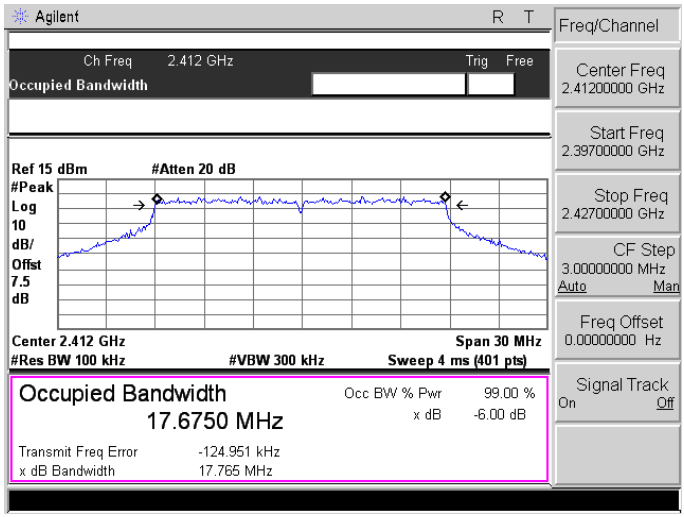
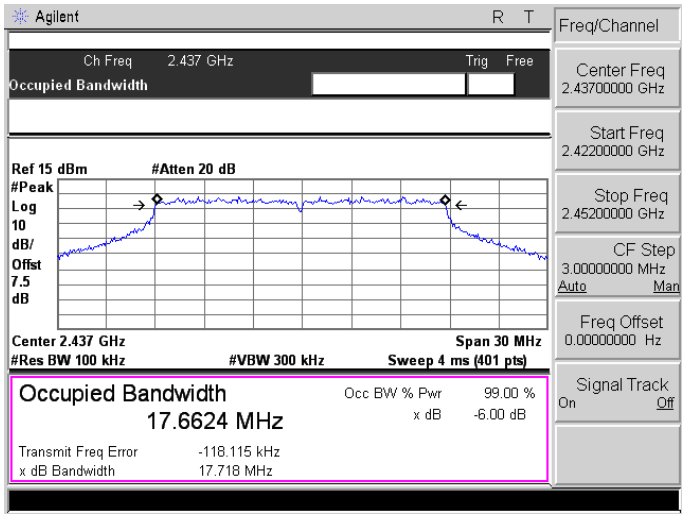
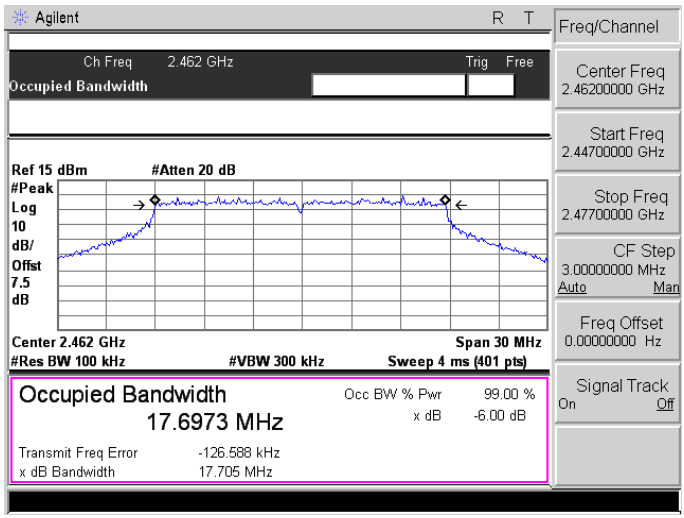
Model Number	AMG-PRO					
Test Item	6dB RF Bandwidth and 99 % Occupied Bandwidth					
Test Mode	Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode					
Date of Test	02/04/2015				Test Site	TE05
Frequency (MHz)	6dB RF Bandwidth (MHz)		99 % Occupied Bandwidth (MHz)		6dB RF Bandwidth Limit (MHz)	
	ANT-1	ANT-2	ANT-1	ANT-2		
2422	36.134	36.395	36.8806	36.7822	> 0.500	
2437	36.242	36.270	36.8726	36.7678	> 0.500	
2452	36.241	36.189	36.8981	36.8314	> 0.500	

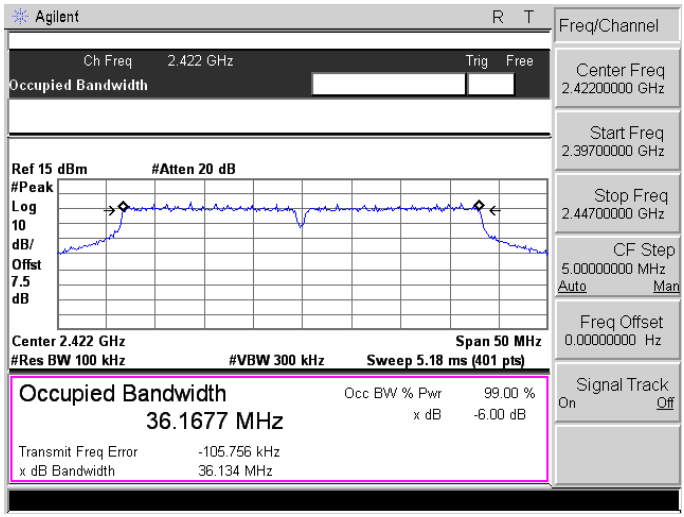
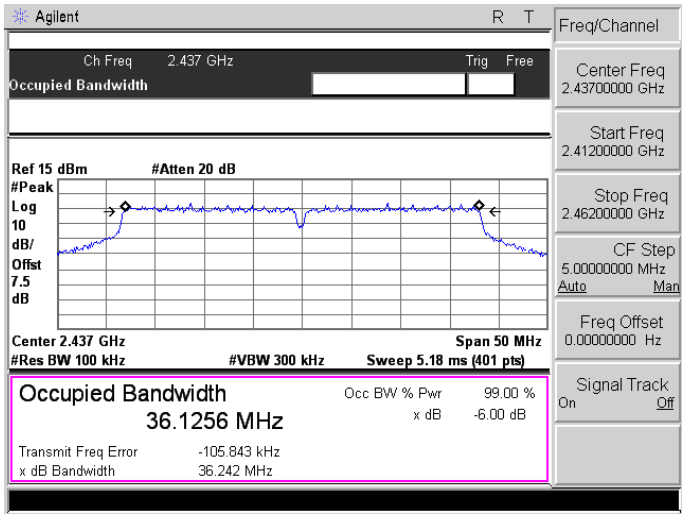
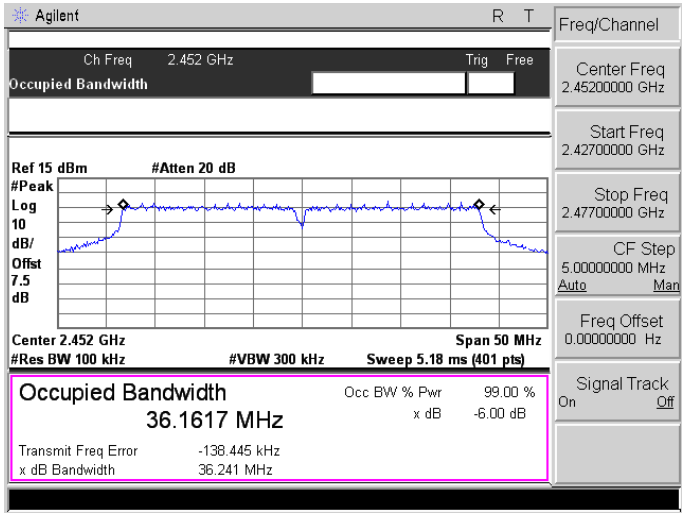
7.6. Test Graphs

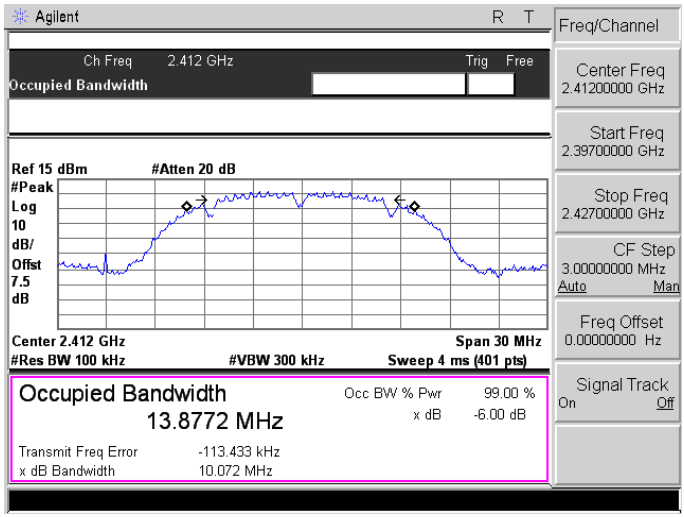
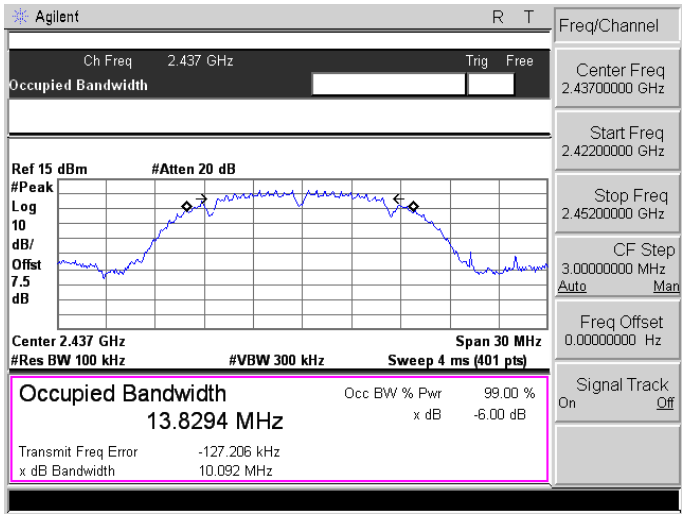
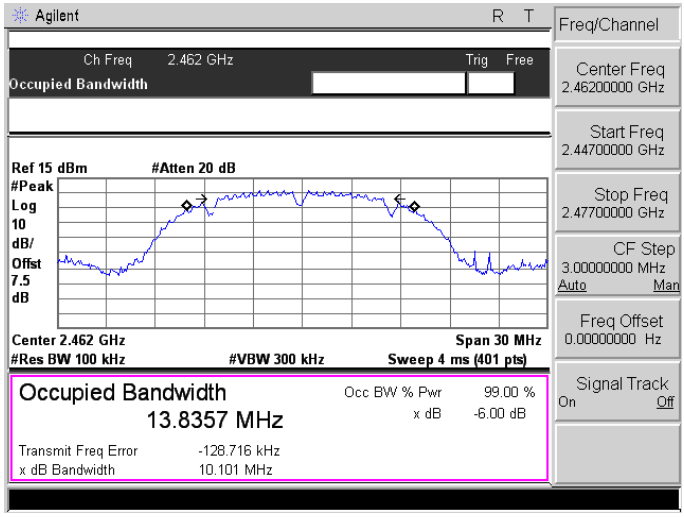
6dB RF Bandwidth

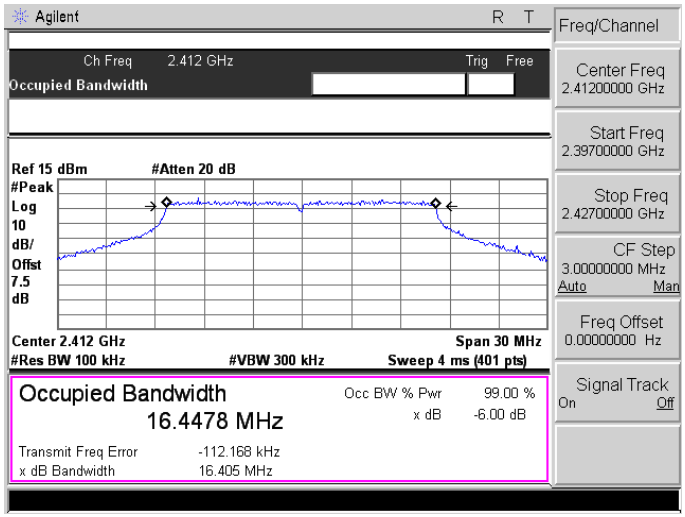
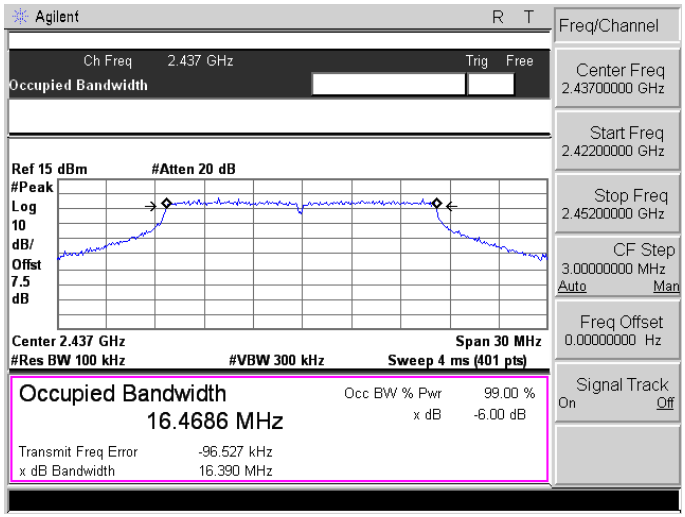
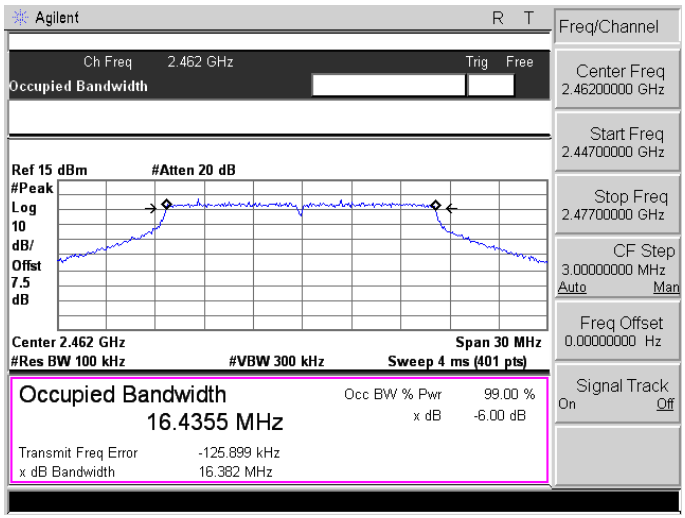
Mode 2: IEEE 802.11b Link Mode_ANT-1	
2412	
2437	
2462	

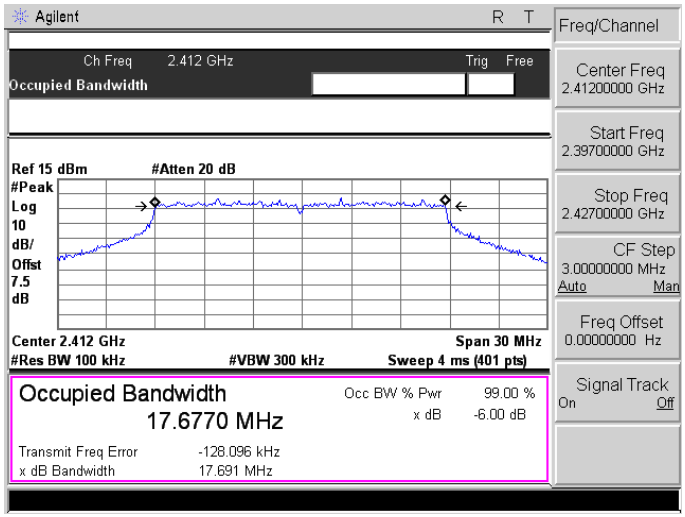
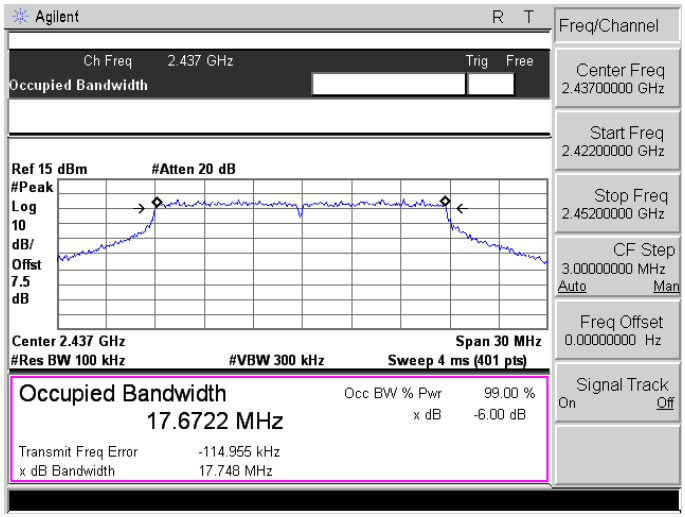
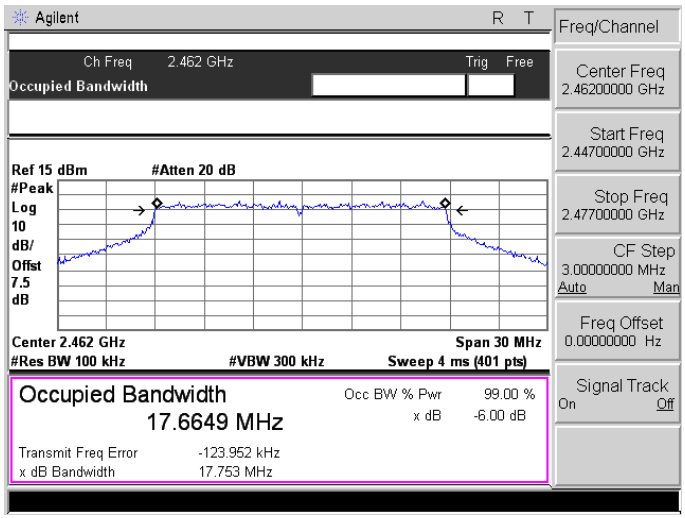
Mode 3: IEEE 802.11g Link Mode_ANT-1	
2412	
2437	
2462	

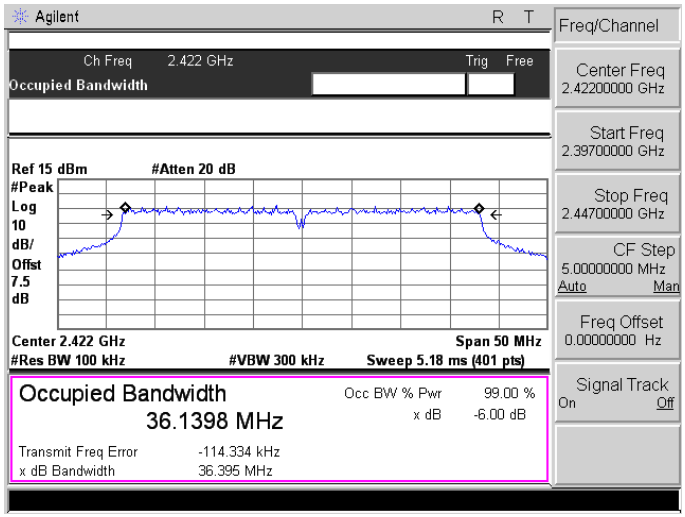
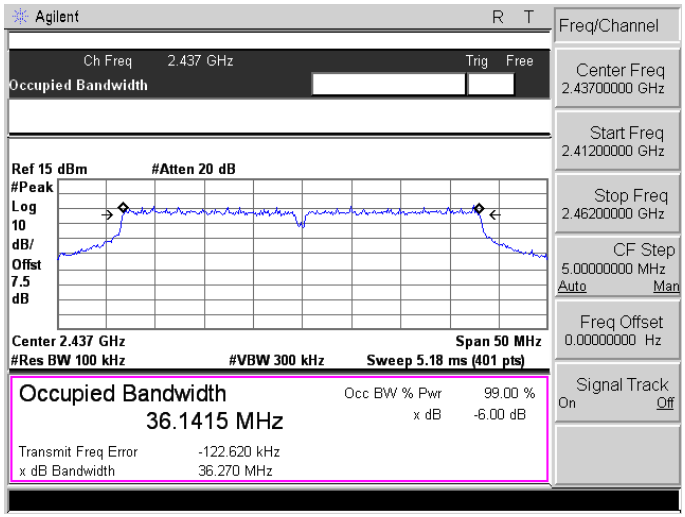
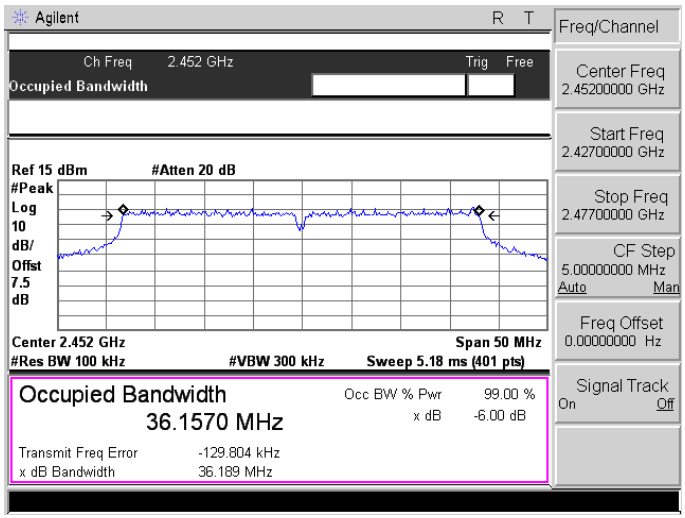
Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-1	
2412	
2437	
2462	

Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-1	
2422	
2437	
2452	

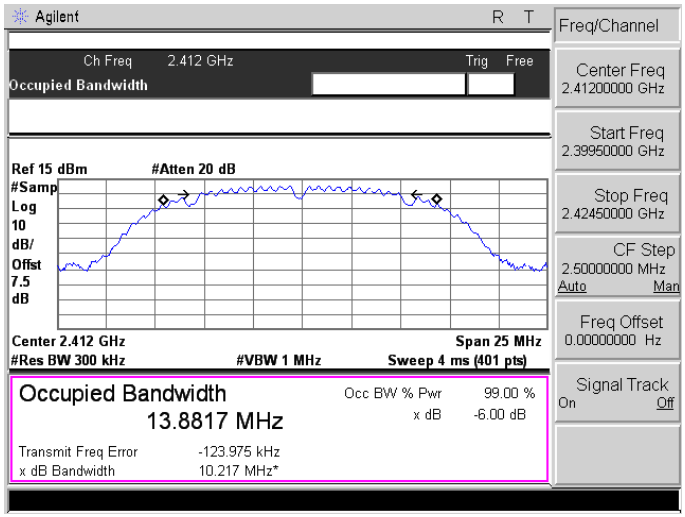
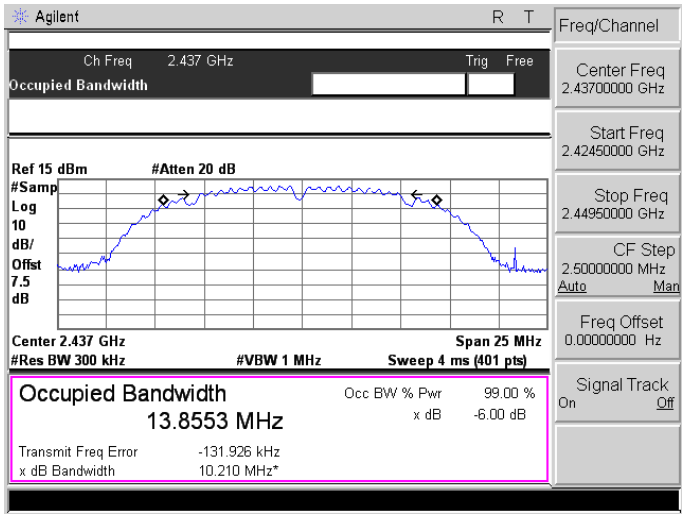
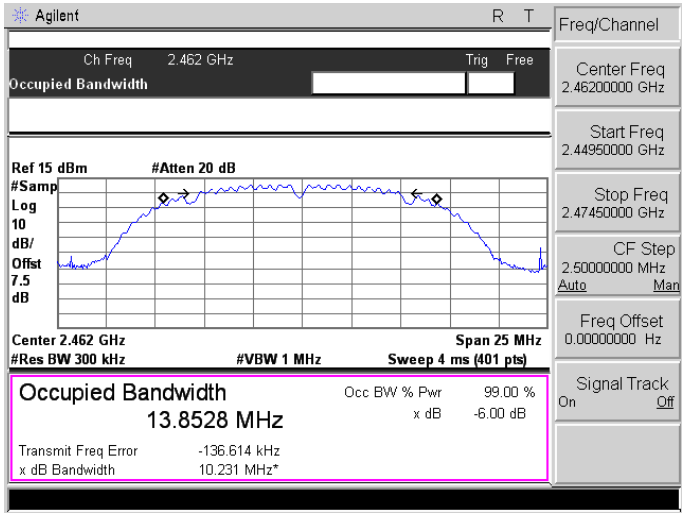
Mode 2: IEEE 802.11b Link Mode_ANT-2	
2412	
2437	
2462	

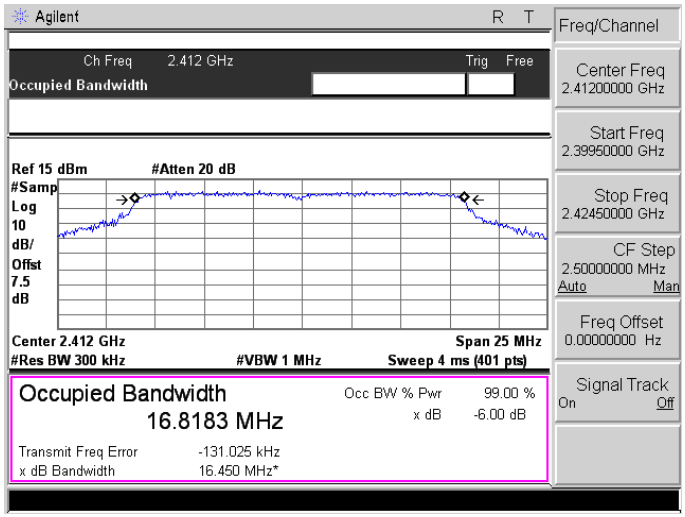
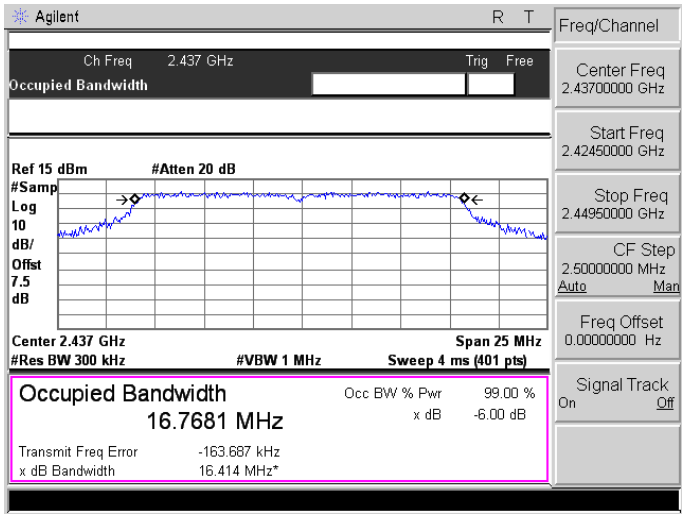
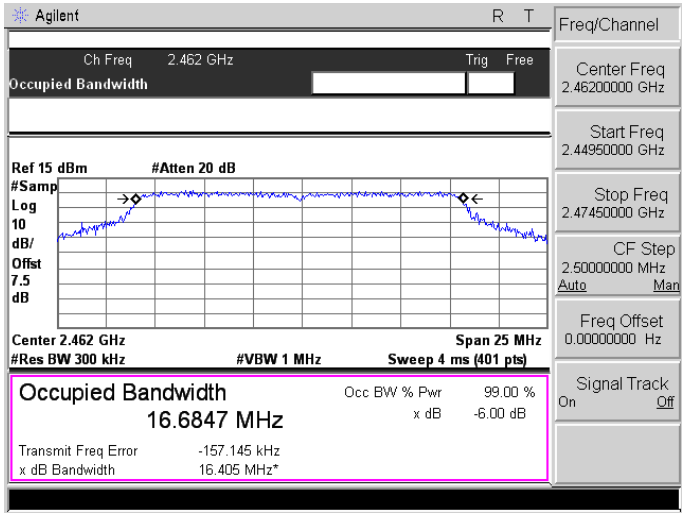
Mode 3: IEEE 802.11g Link Mode_ANT-2	
2412	
2437	
2462	

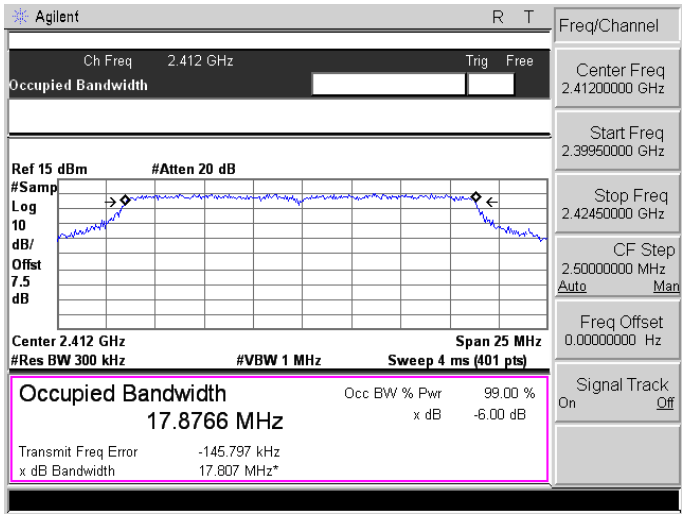
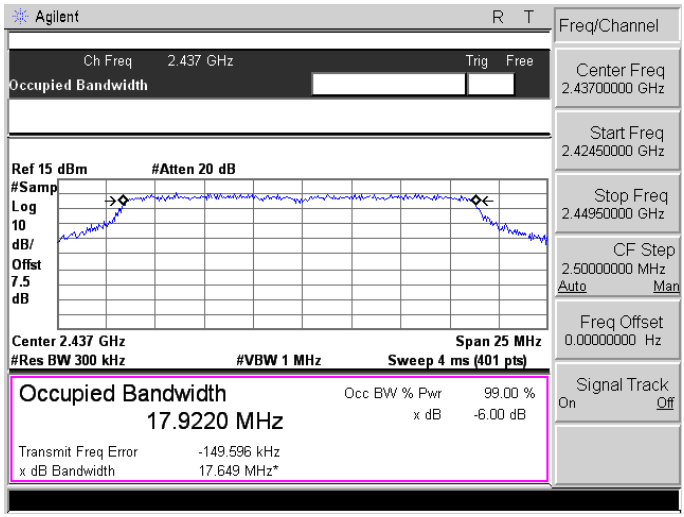
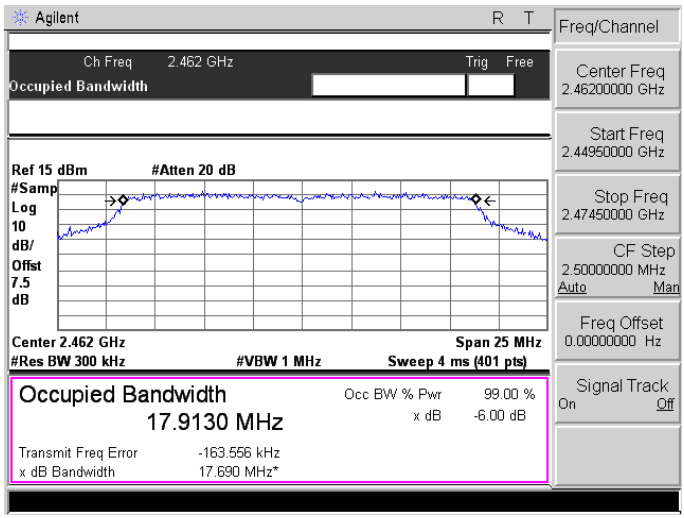
Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-2	
2412	
2437	
2462	

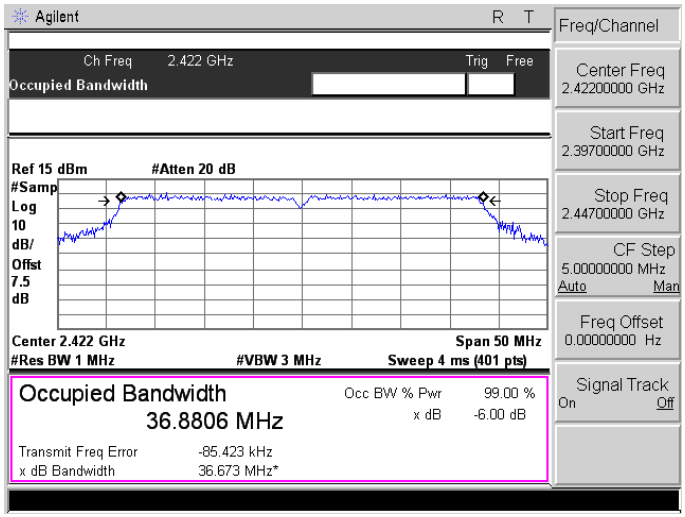
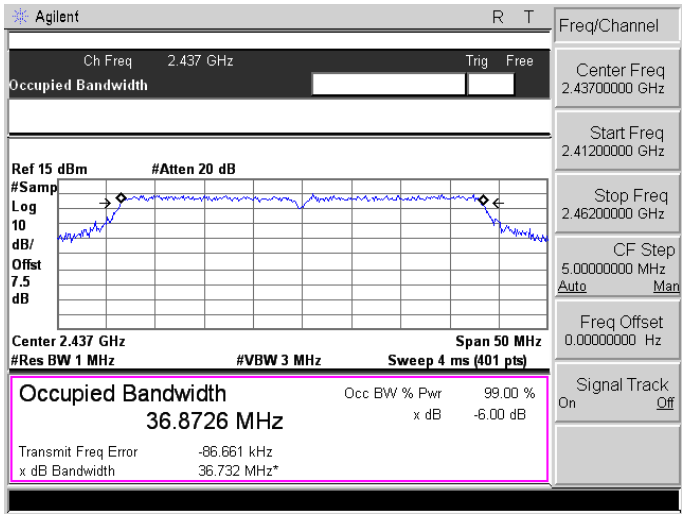
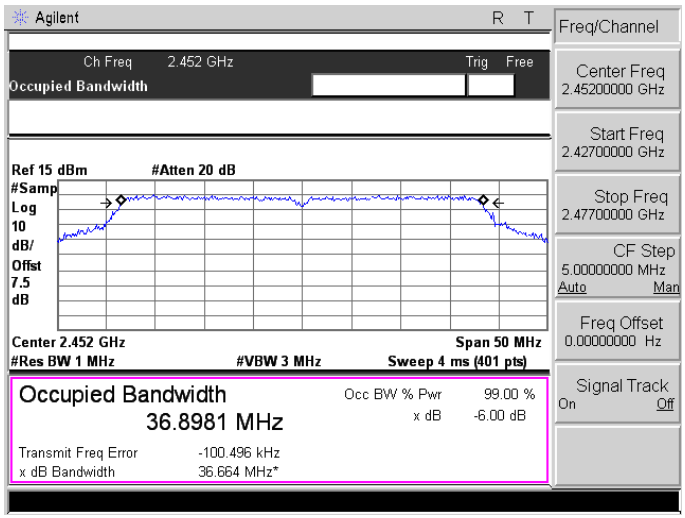
Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-2	
2422	
2437	
2452	

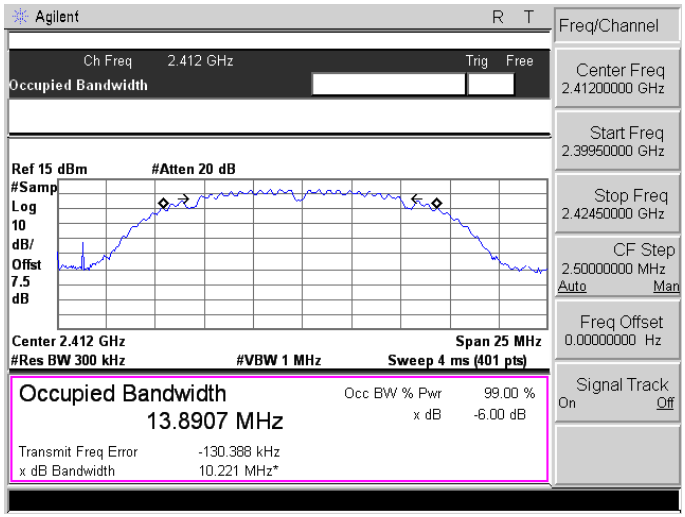
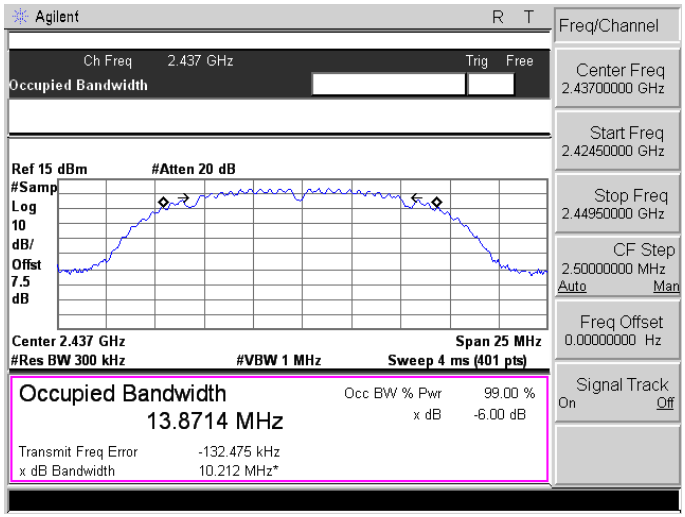
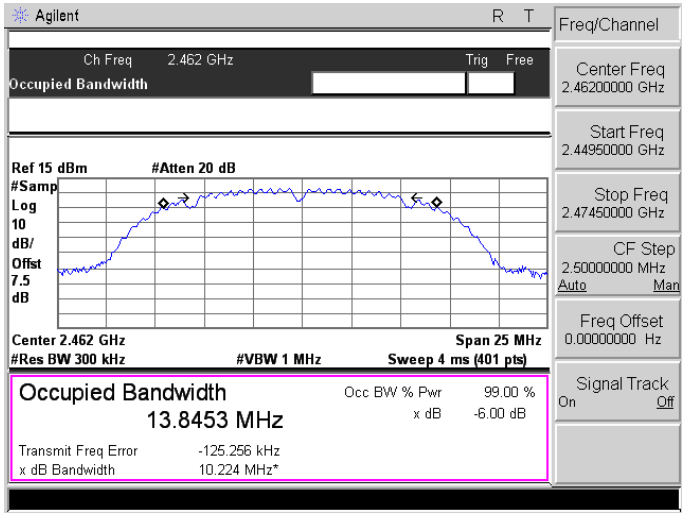
99 % Occupied Bandwidth

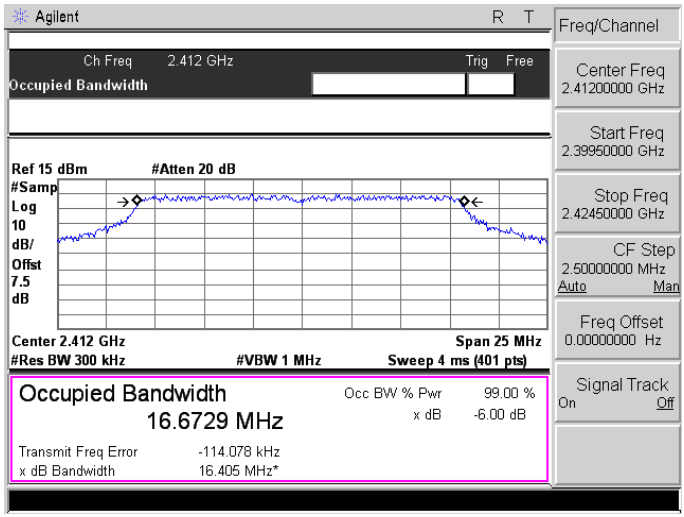
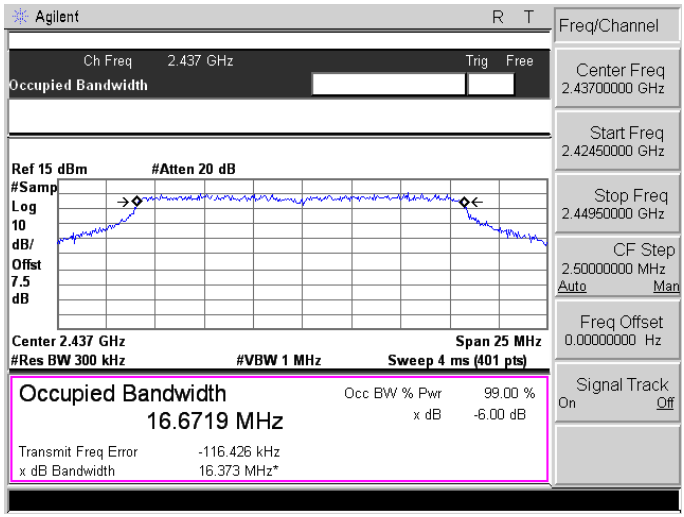
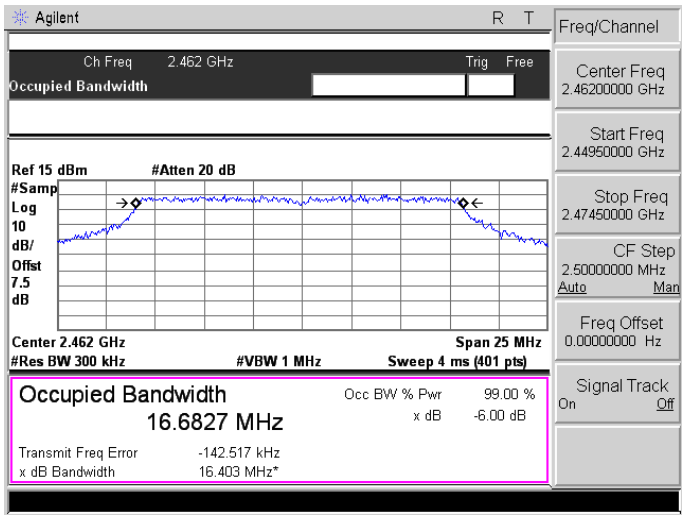
Mode 2: IEEE 802.11b Link Mode_ANT-1	
2412	
2437	
2462	

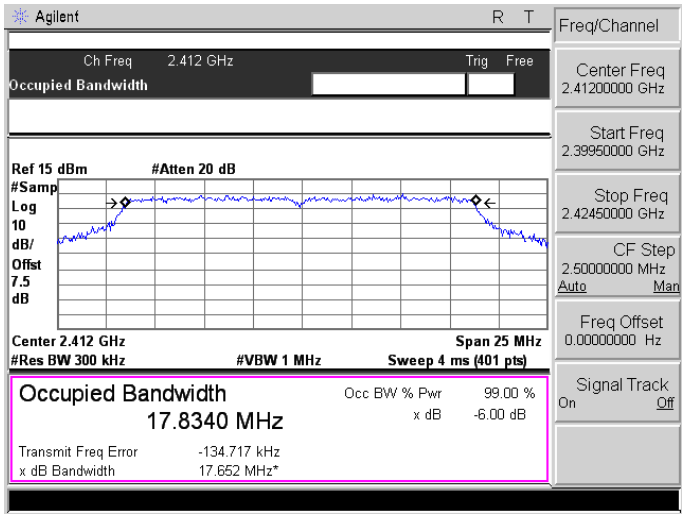
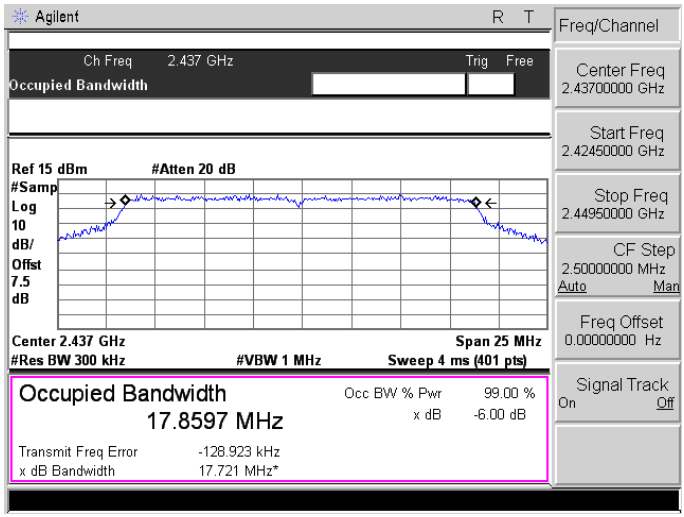
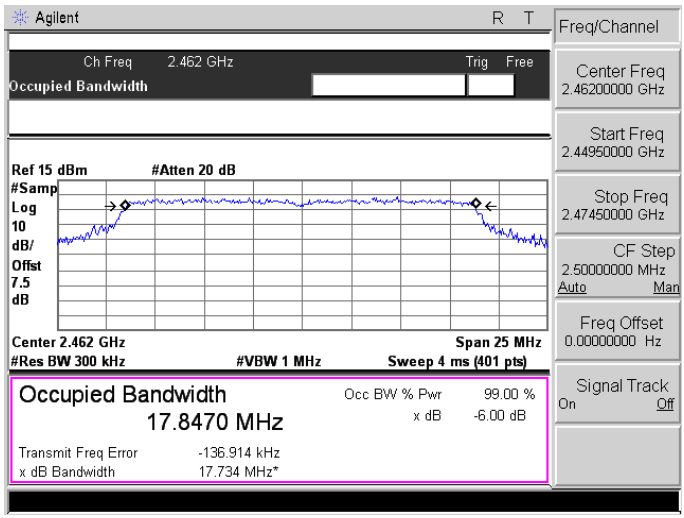
Mode 3: IEEE 802.11g Link Mode_ANT-1	
2412	
2437	
2462	

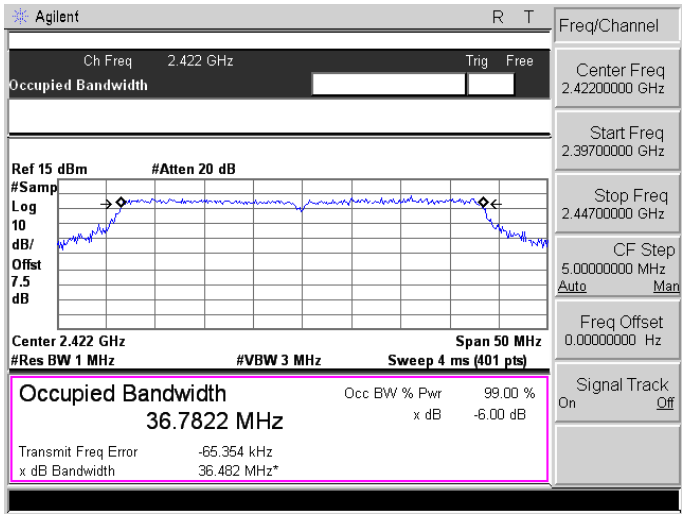
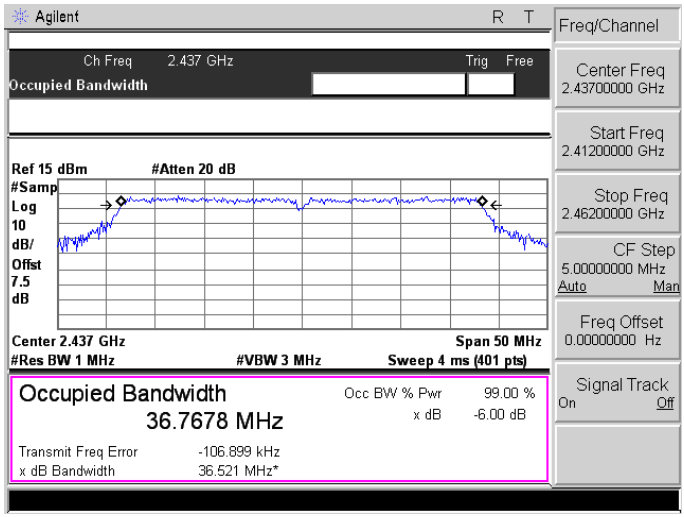
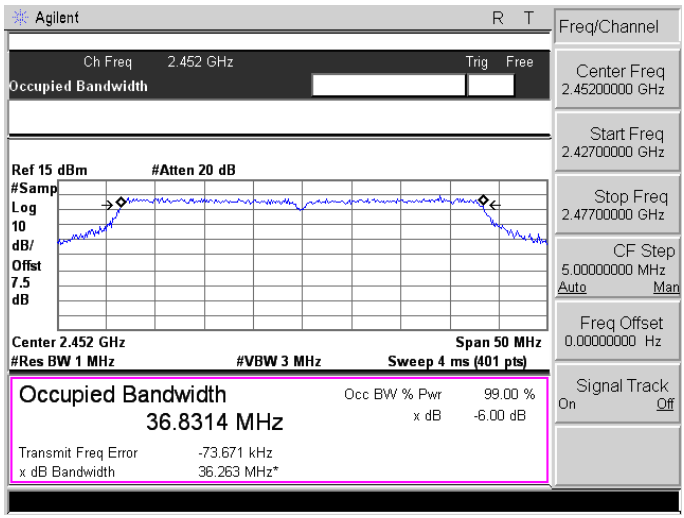
Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-1	
2412	
2437	
2462	

Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-1	
2422	
2437	
2452	

Mode 2: IEEE 802.11b Link Mode_ANT-2	
2412	
2437	
2462	

Mode 3: IEEE 802.11g Link Mode_ANT-2	
2412	
2437	
2462	

Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-2	
2412	
2437	
2462	

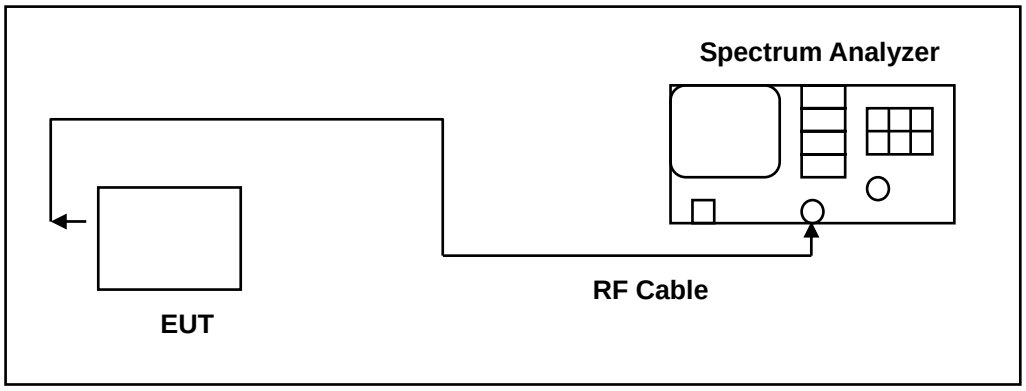
Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-2	
2422	
2437	
2452	

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 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ 3 × 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

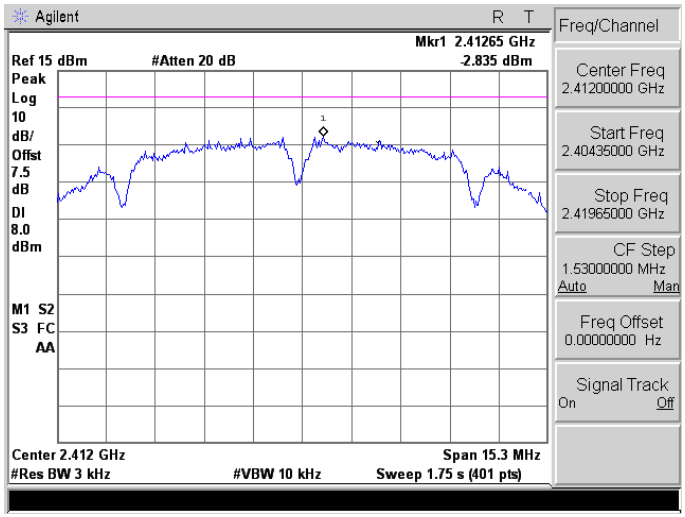
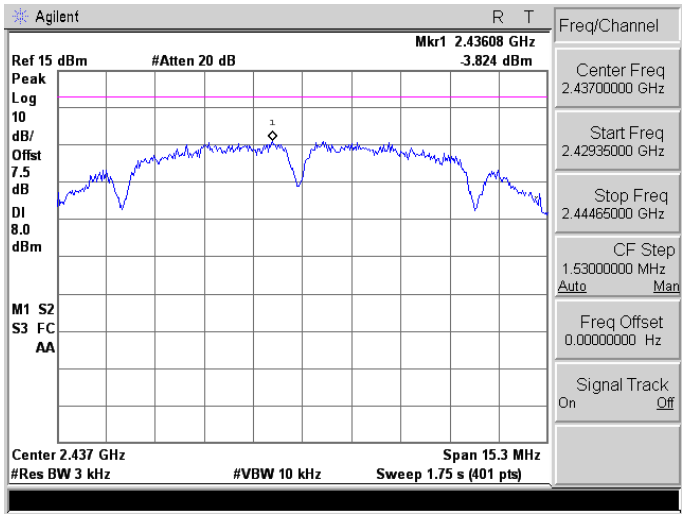
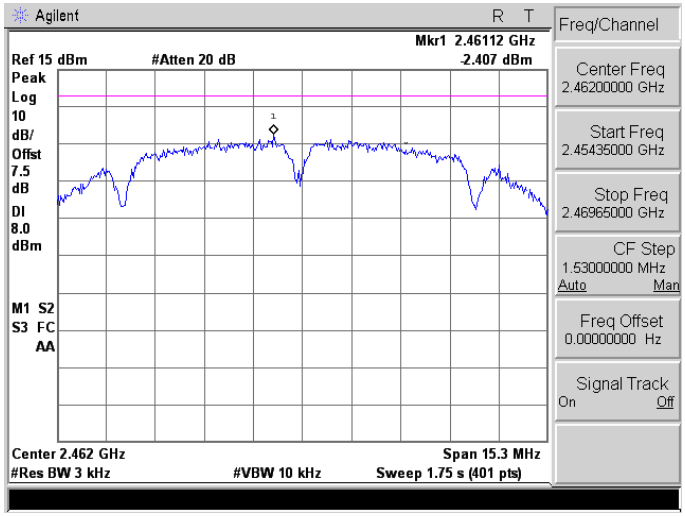
Model Number	AMG-PRO			
Test Item	Maximum Power Density			
Test Mode	Mode 2: IEEE 802.11b Link Mode			
Date of Test	02/04/2015		Test Site	TE05
Frequency (MHz)	Reading (dBm/3KHz)			Limit (dBm)
	ANT-1	ANT-2	ANT-1+2	
2412	-2.835	-5.256	-0.87	< 8
2437	-3.824	-4.200	-1.00	< 8
2462	-2.407	-5.222	-0.58	< 8

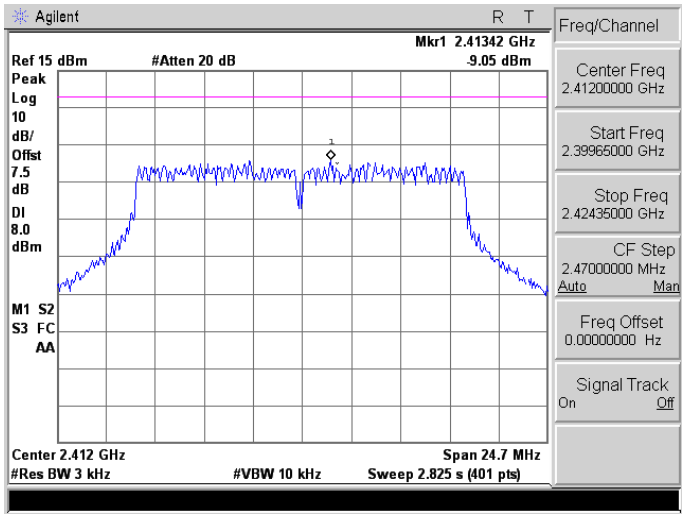
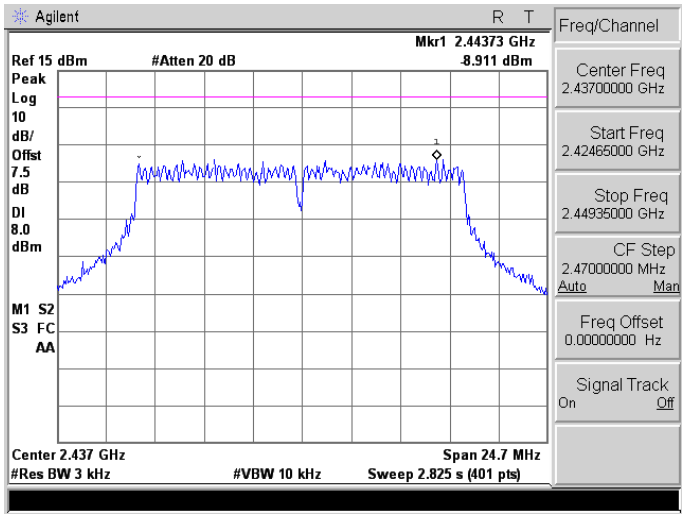
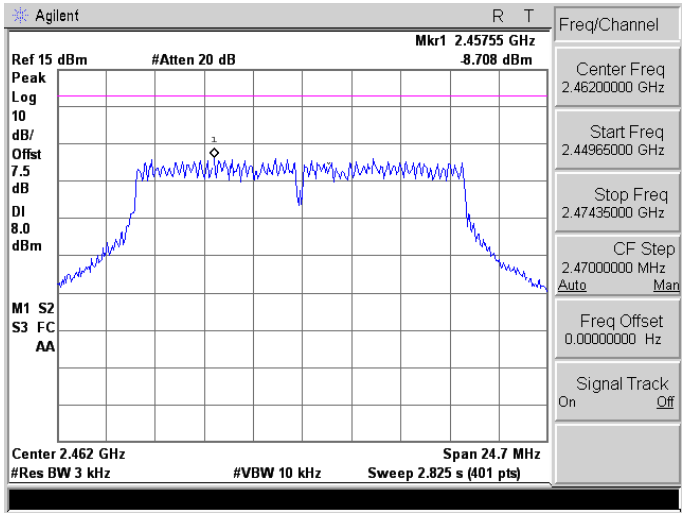
Model Number	AMG-PRO			
Test Item	Maximum Power Density			
Test Mode	Mode 3: IEEE 802.11g Link Mode			
Date of Test	02/04/2015		Test Site	TE05
Frequency (MHz)	Reading (dBm/3KHz)			Limit (dBm)
	ANT-1	ANT-2	ANT-1+2	
2412	-9.050	-10.260	-6.60	< 8
2437	-8.911	-10.250	-6.52	< 8
2462	-8.708	-10.890	-6.65	< 8

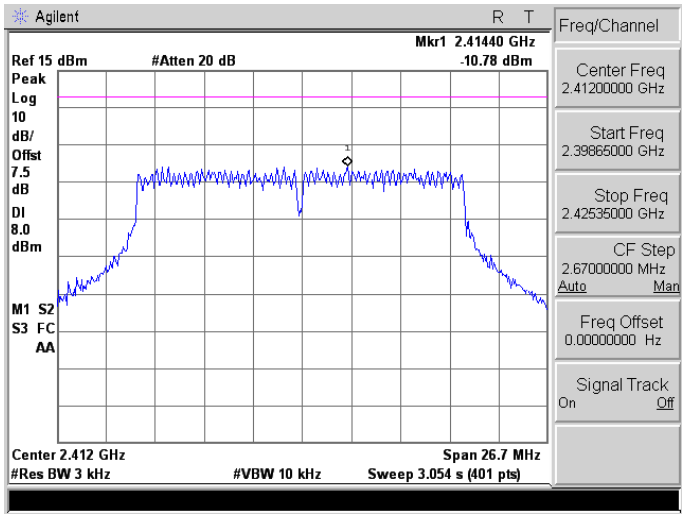
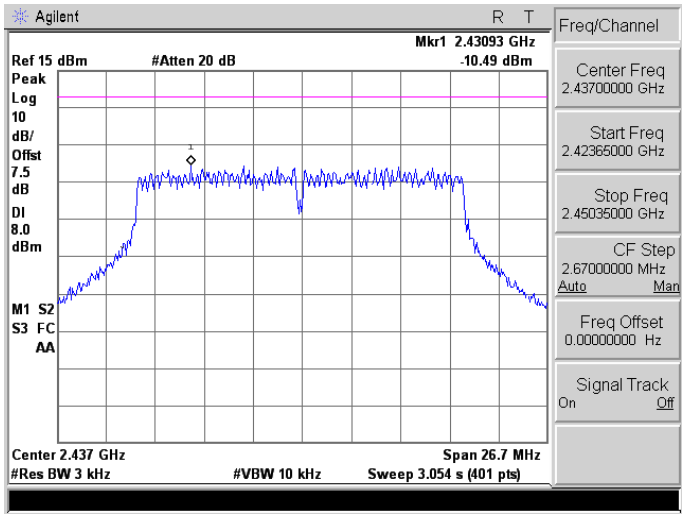
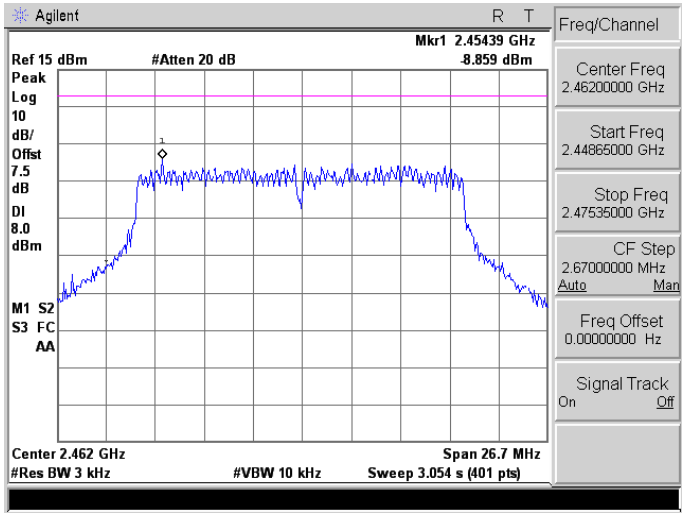
Model Number	AMG-PRO			
Test Item	Maximum Power Density			
Test Mode	Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode			
Date of Test	02/04/2015		Test Site	TE05
Frequency (MHz)	Reading (dBm/3KHz)			Limit (dBm)
	ANT-1	ANT-2	ANT-1+2	
2412	-10.780	-12.290	-8.46	< 8
2437	-10.490	-11.190	-7.82	< 8
2462	-8.859	-11.630	-7.02	< 8

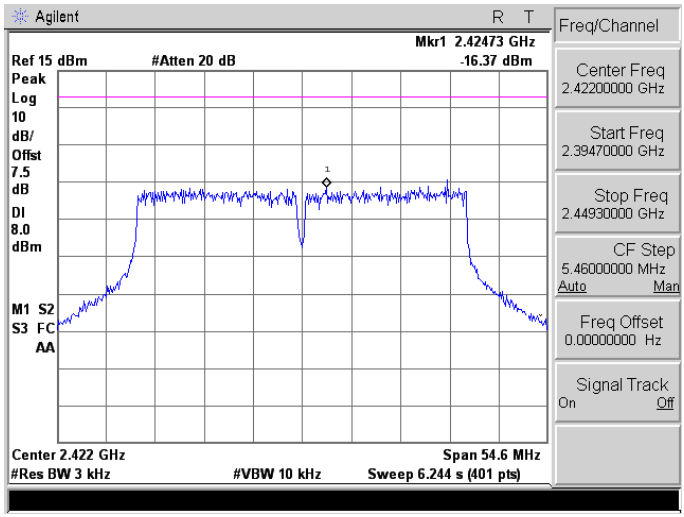
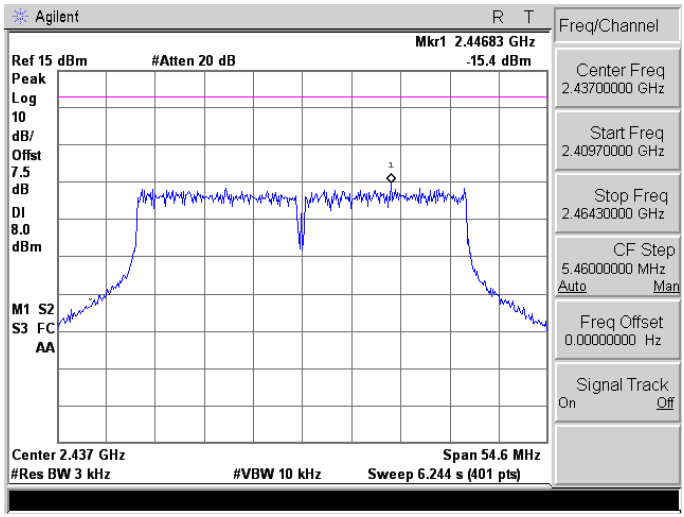
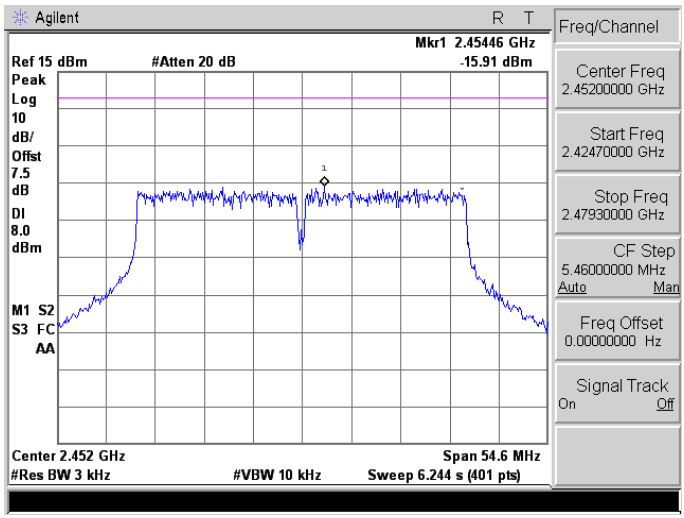
Model Number	AMG-PRO			
Test Item	Maximum Power Density			
Test Mode	Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode			
Date of Test	02/04/2015		Test Site	TE05
Frequency (MHz)	Reading (dBm/3KHz)			Limit (dBm)
	ANT-1	ANT-2	ANT-1+2	
2422	-16.370	-15.810	-13.07	< 8
2437	-15.400	-17.670	-13.38	< 8
2452	-15.910	-17.070	-13.44	< 8

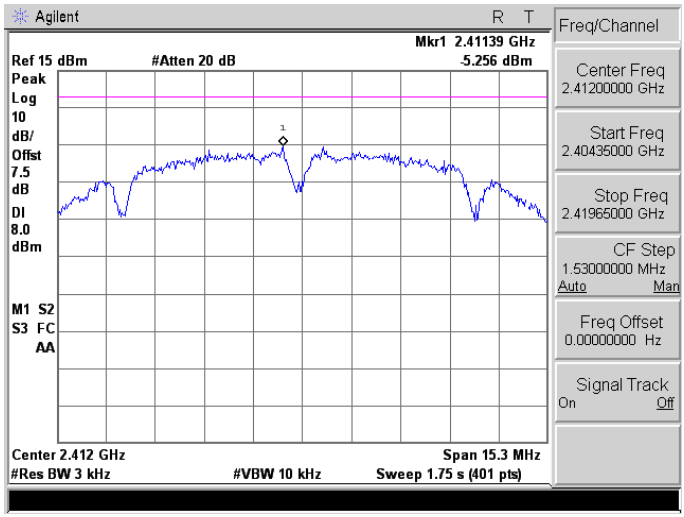
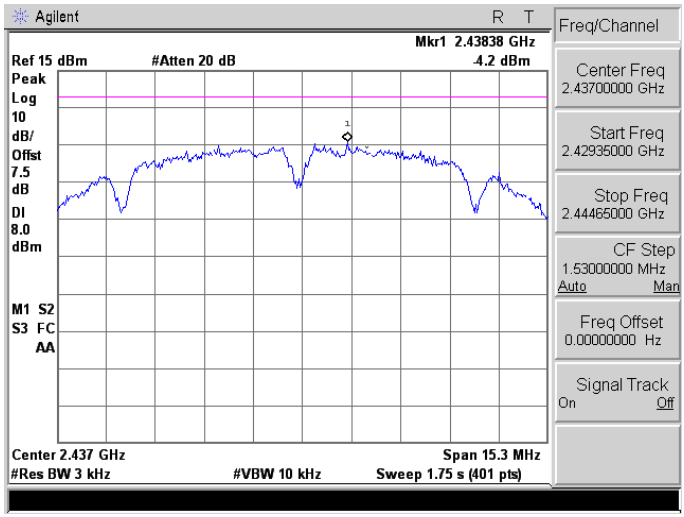
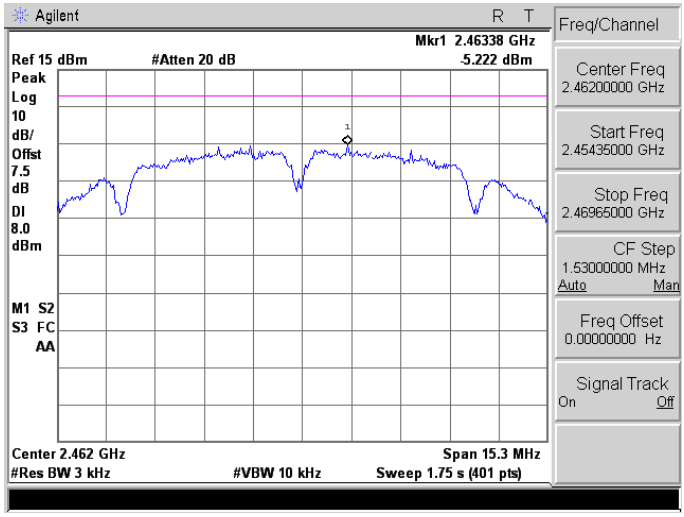
8.6. Test Graphs

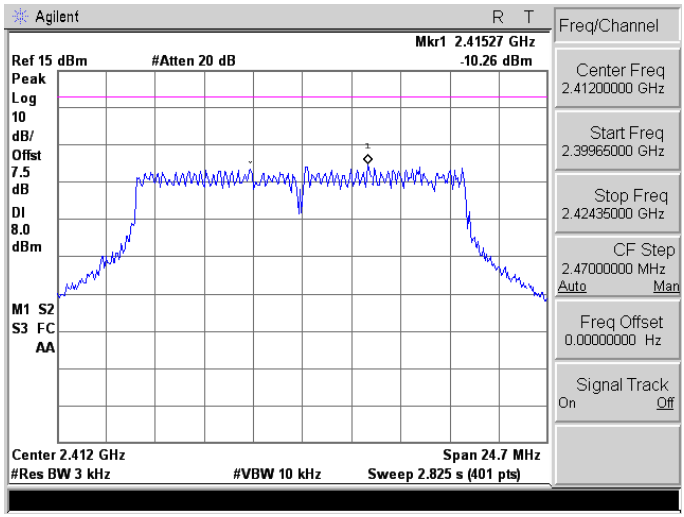
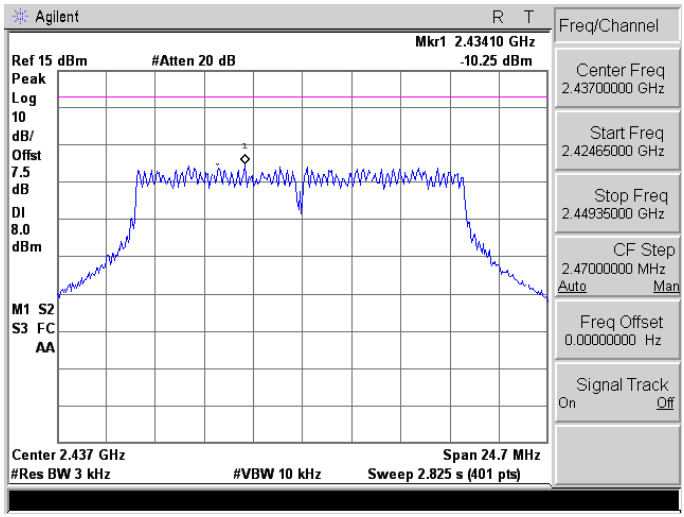
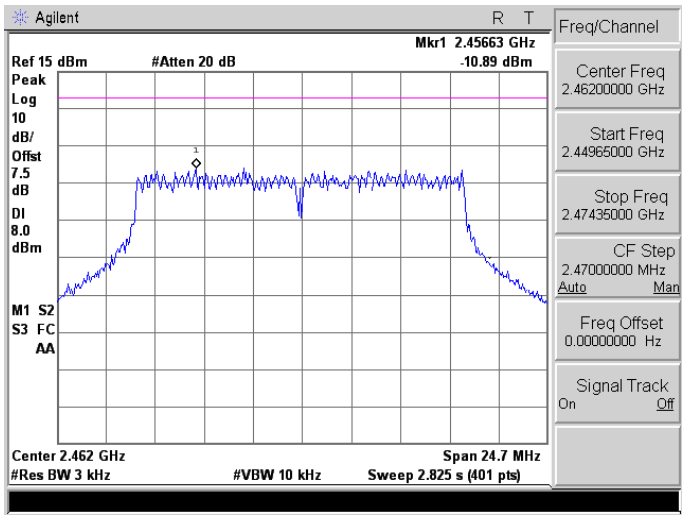
Mode 2: IEEE 802.11b Link Mode_ANT-1	
2412	
2437	
2462	

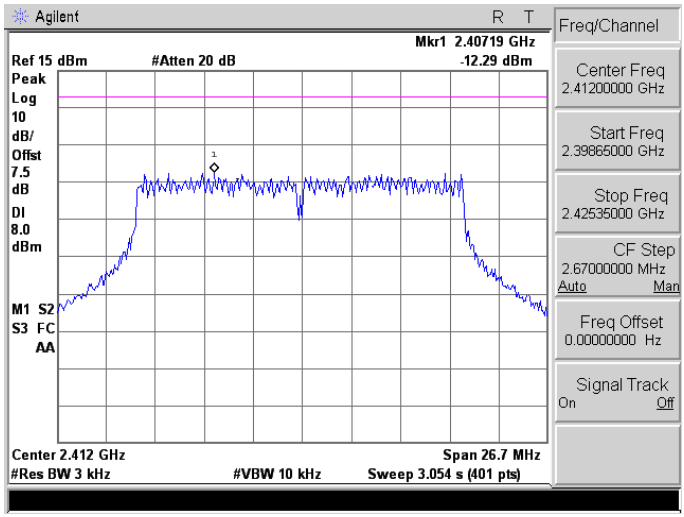
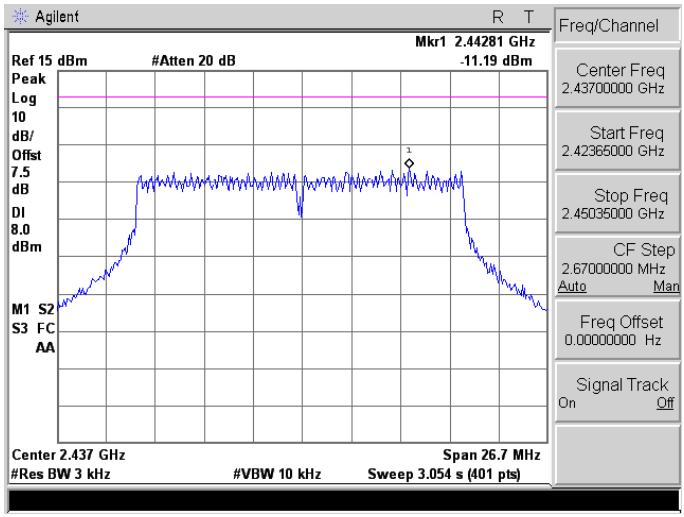
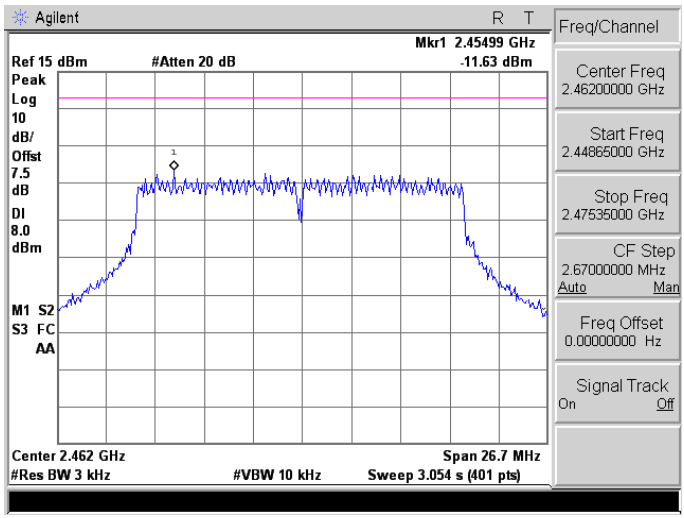
Mode 3: IEEE 802.11g Link Mode_ANT-1	
2412	
2437	
2462	

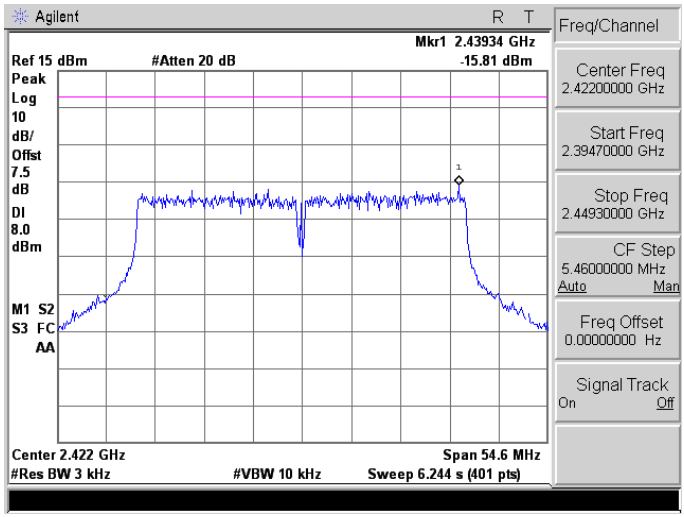
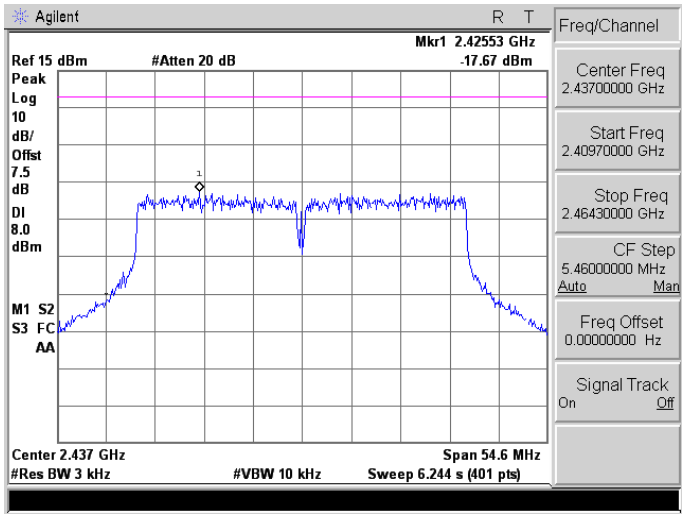
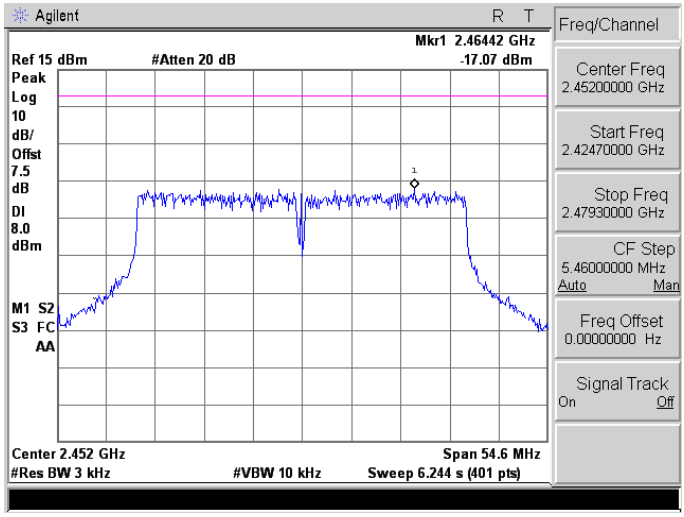
Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-1	
2412	
2437	
2462	

Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-1	
2422	
2437	
2452	

Mode 2: IEEE 802.11b Link Mode_ANT-2	
2412	
2437	
2462	

Mode 3: IEEE 802.11g Link Mode_ANT-2	
2412	
2437	
2462	

Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-2	
2412	
2437	
2462	

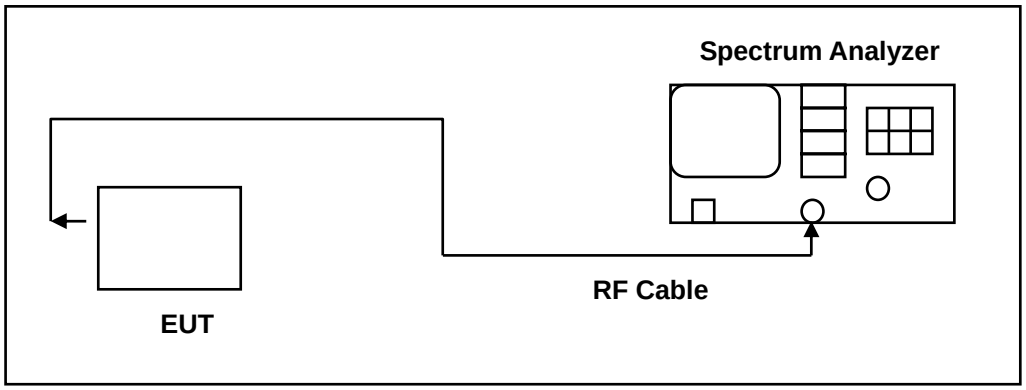
Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-2	
2422	
2437	
2452	

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	07/24/2014	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----

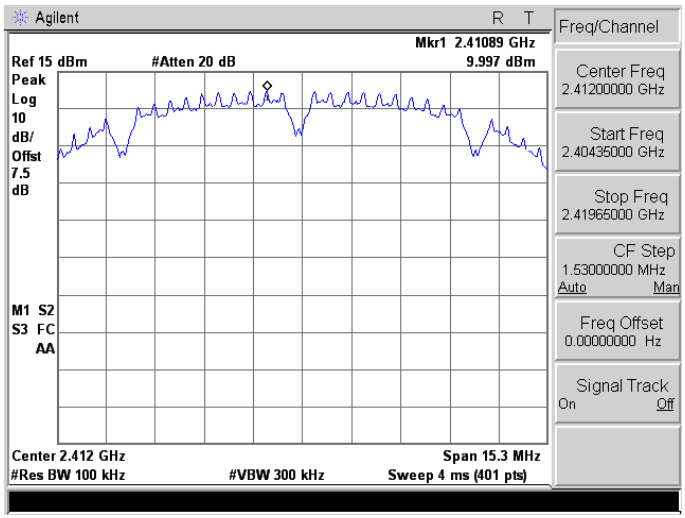
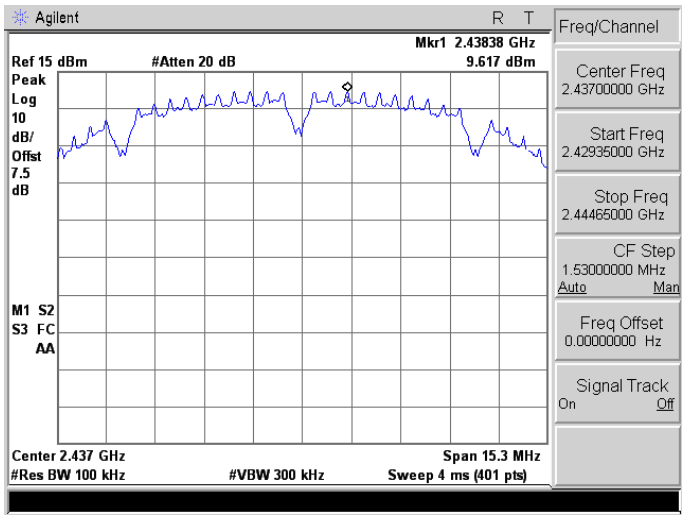
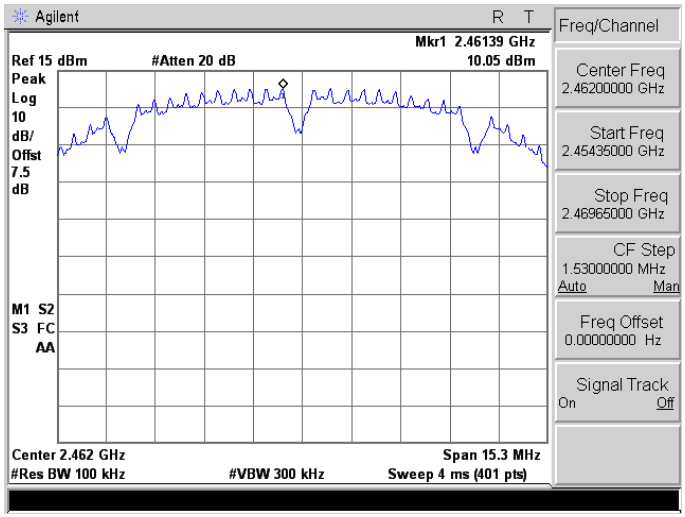
Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.
Note: N.C.R. = No Calibration Request.

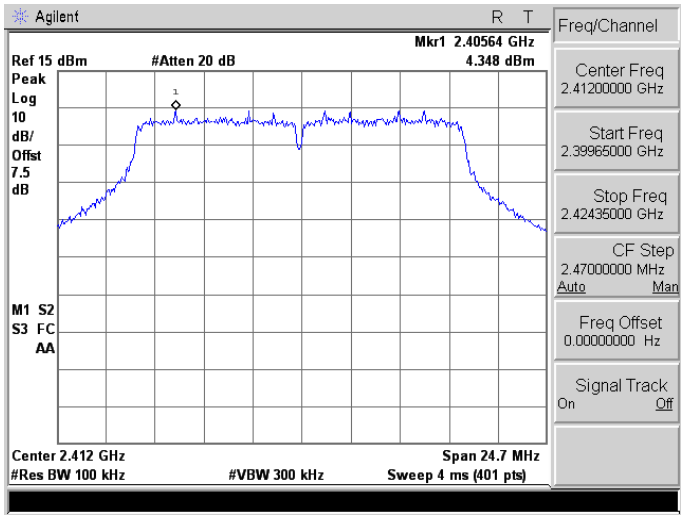
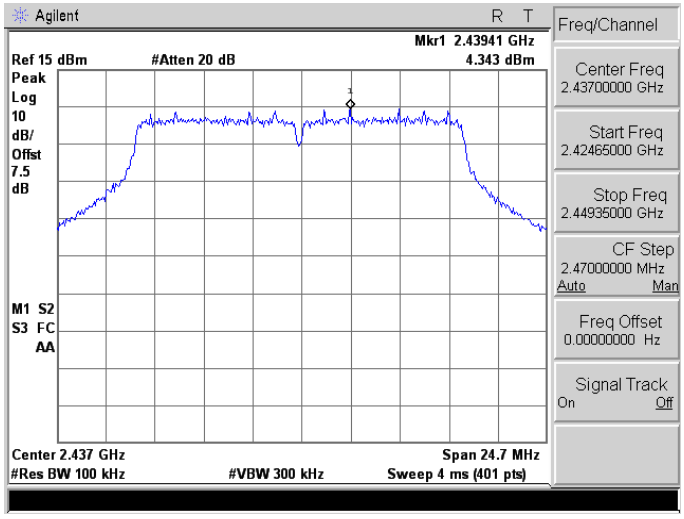
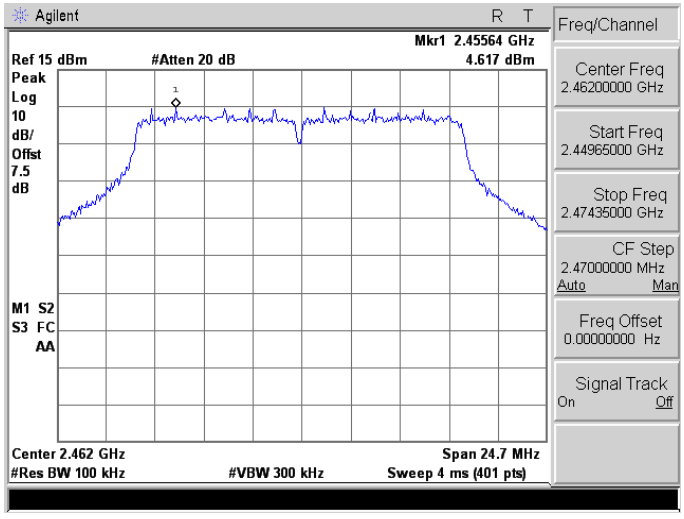
9.4. Test Procedure

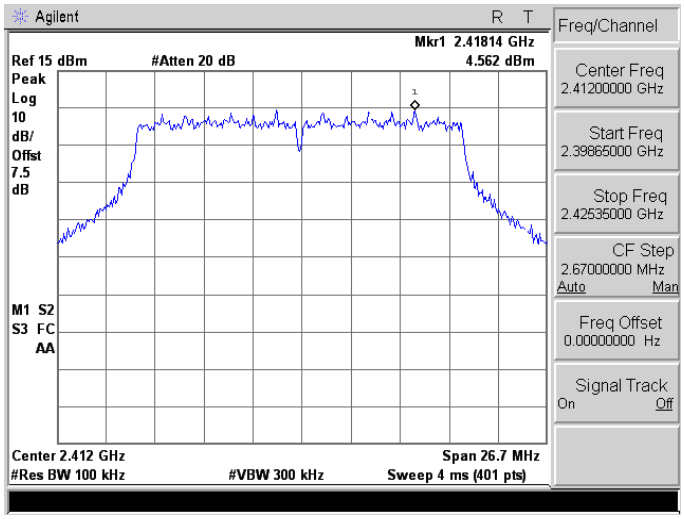
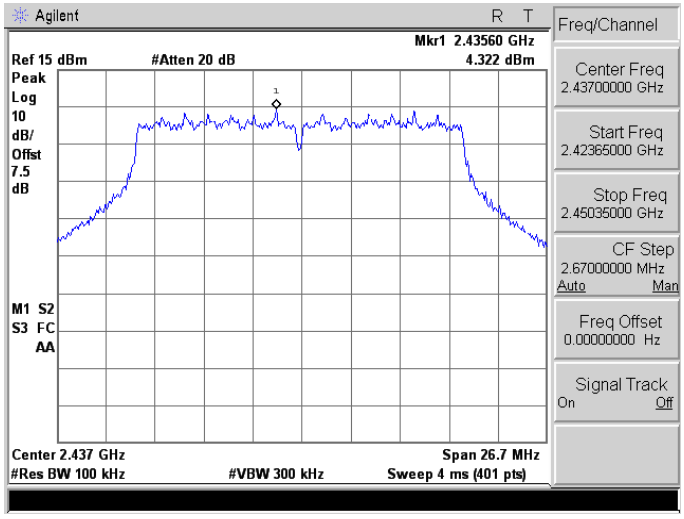
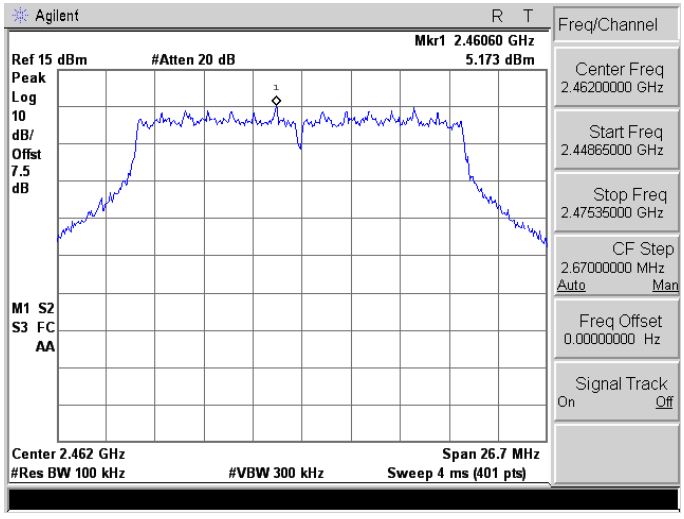
In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly 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.

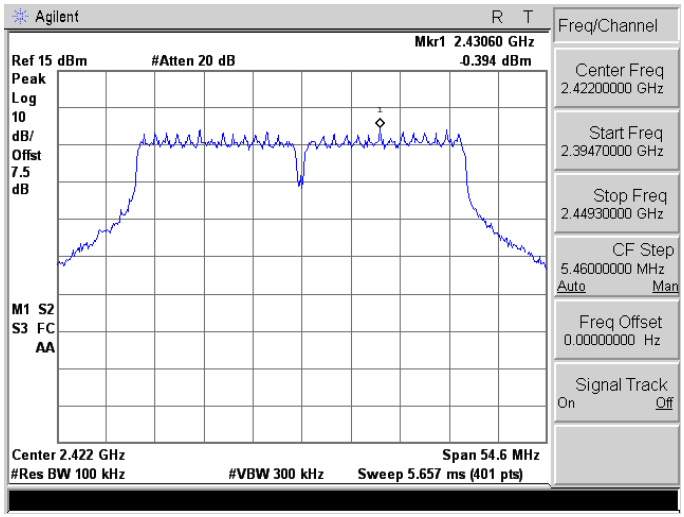
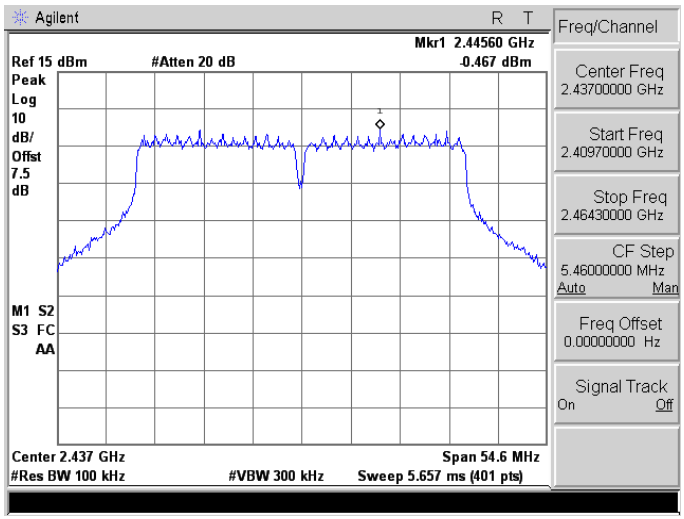
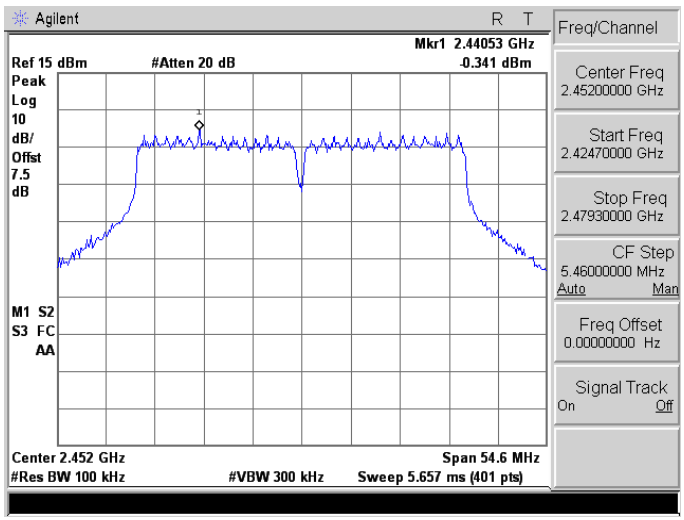
9.5. Test Graphs

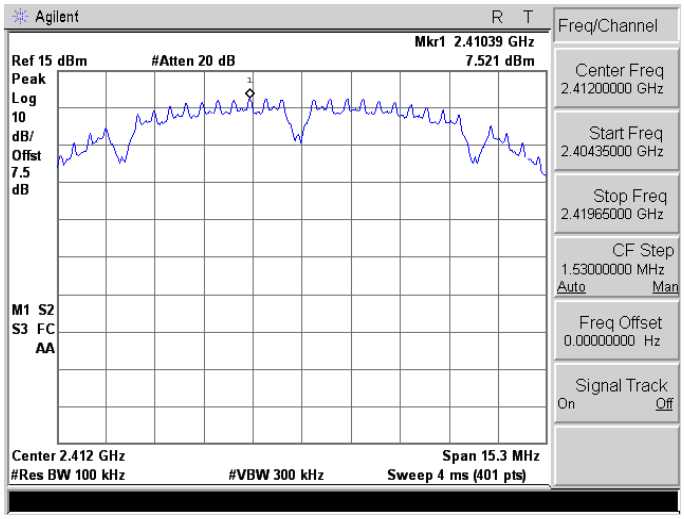
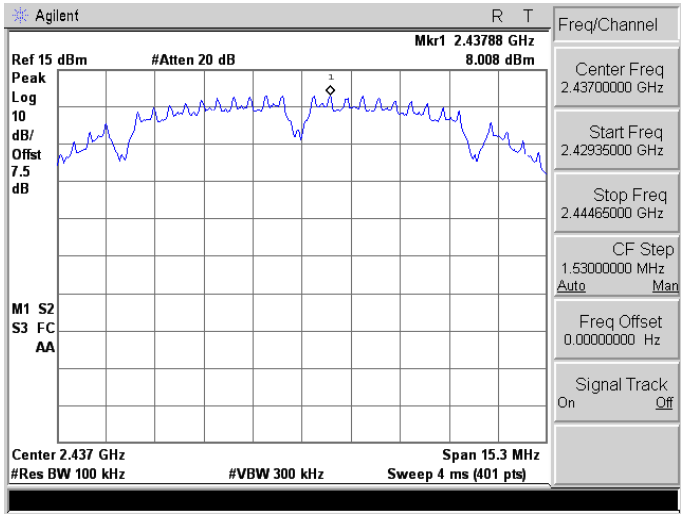
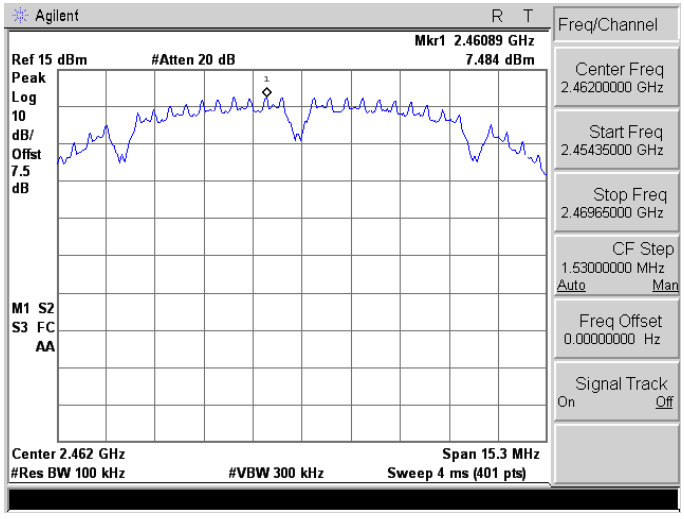
Reference level

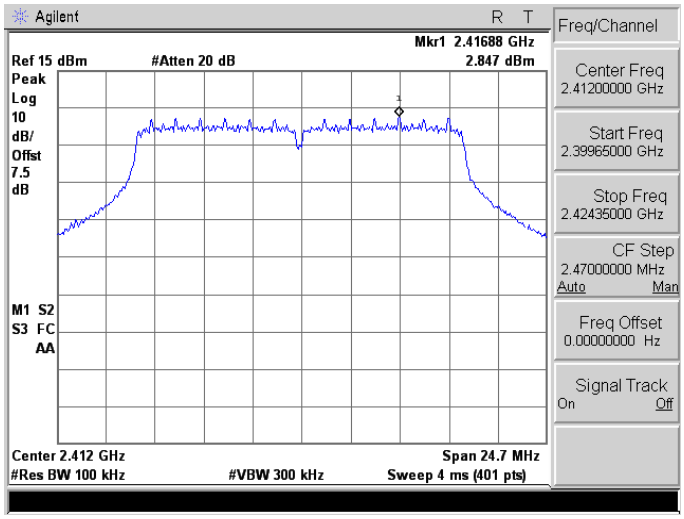
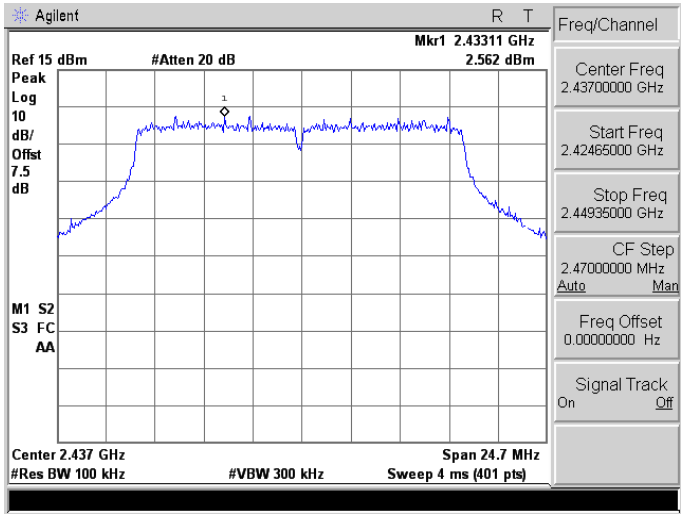
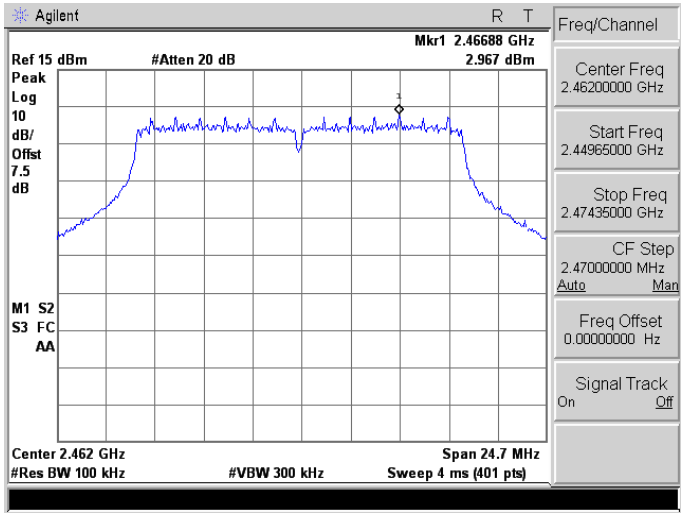
Mode 2: IEEE 802.11b Link Mode_ANT-1	
2412	
2437	
2462	

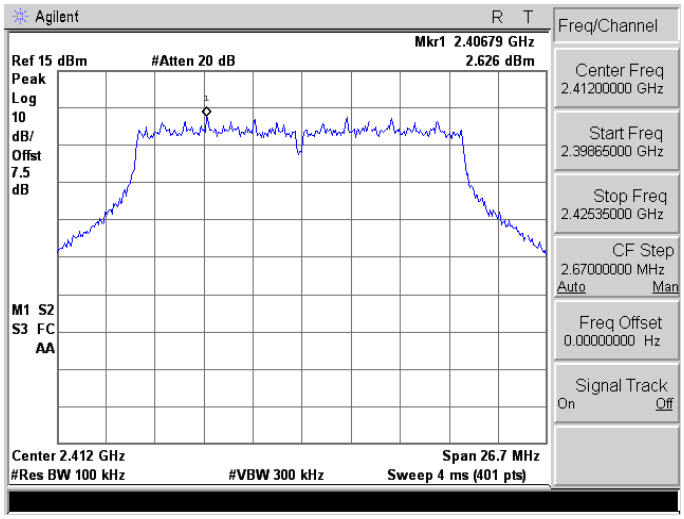
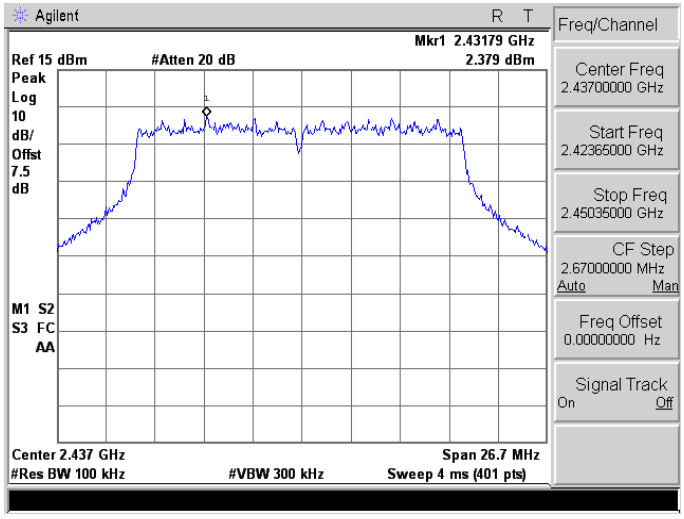
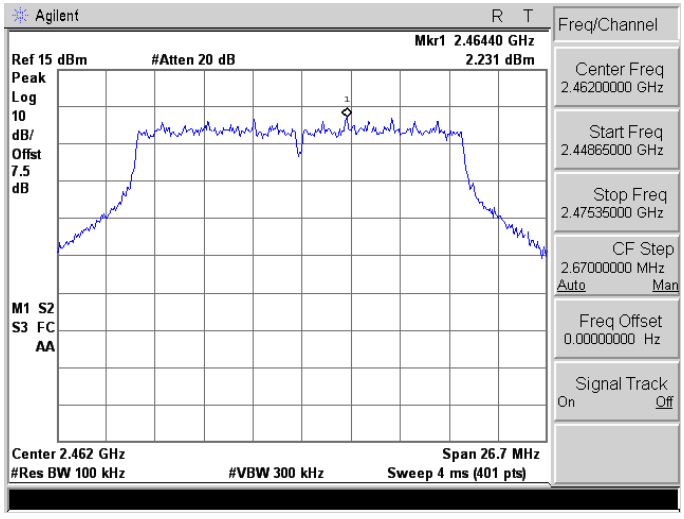
Mode 3: IEEE 802.11g Link Mode_ANT-1	
2412	
2437	
2462	

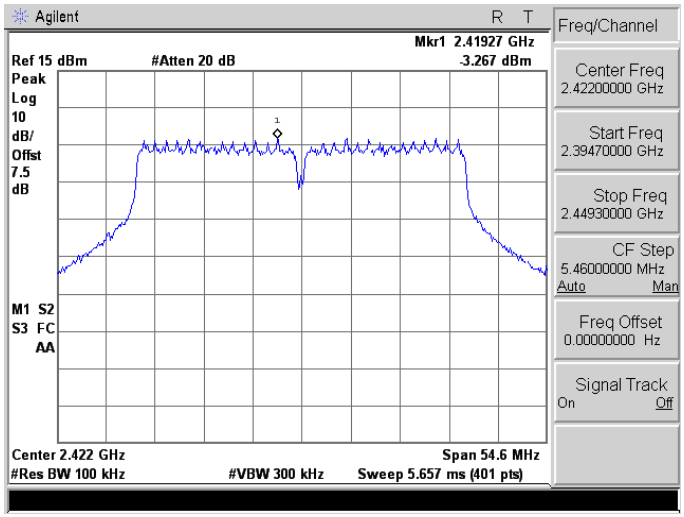
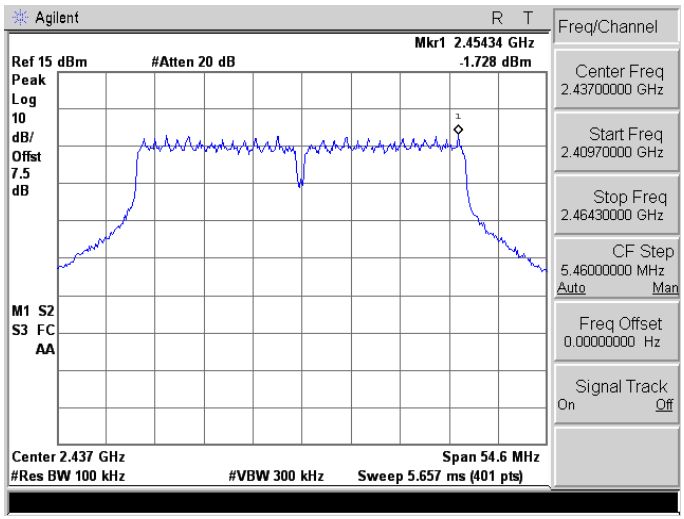
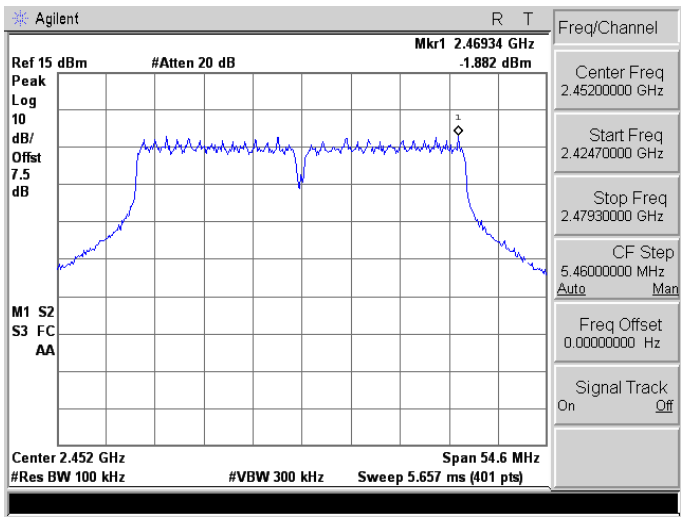
Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-1	
2412	
2437	
2462	

Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-1	
2422	
2437	
2452	

Mode 2: IEEE 802.11b Link Mode_ANT-2	
2412	
2437	
2462	

Mode 3: IEEE 802.11g Link Mode_ANT-2	
2412	
2437	
2462	

Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-2	
2412	
2437	
2462	

Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-2	
2422	
2437	
2452	

Out of Band Conducted Emissions

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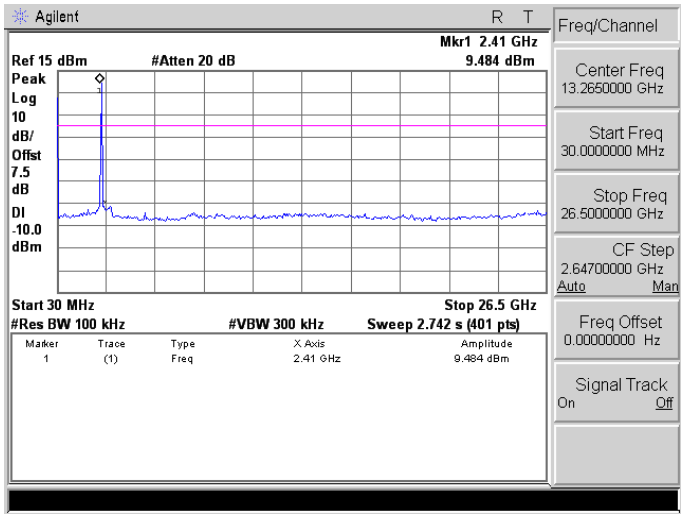
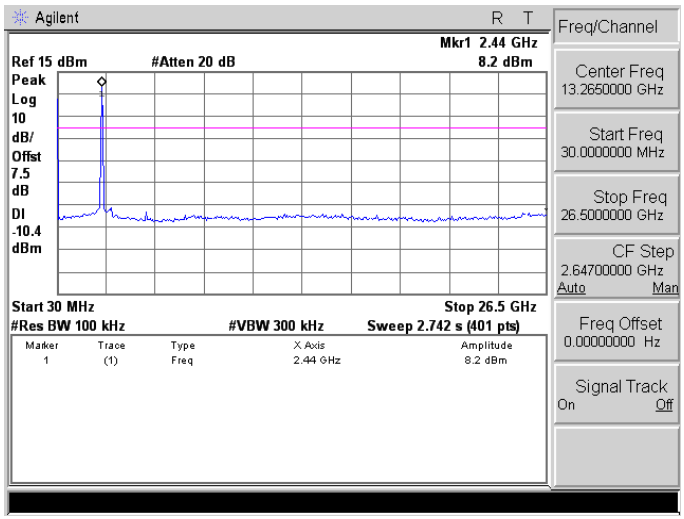
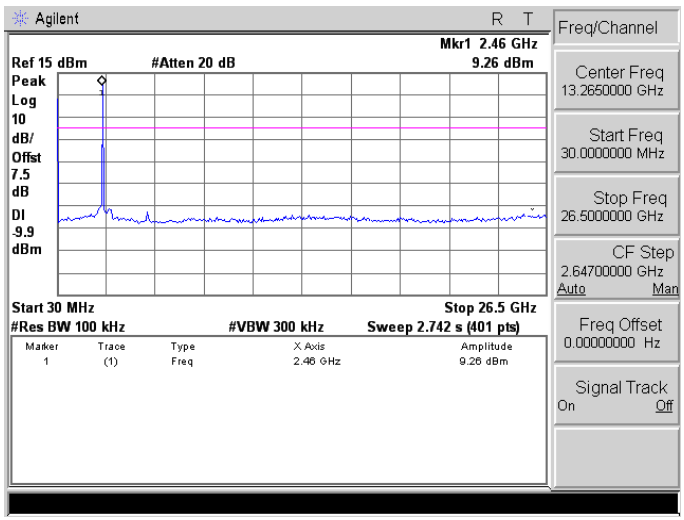
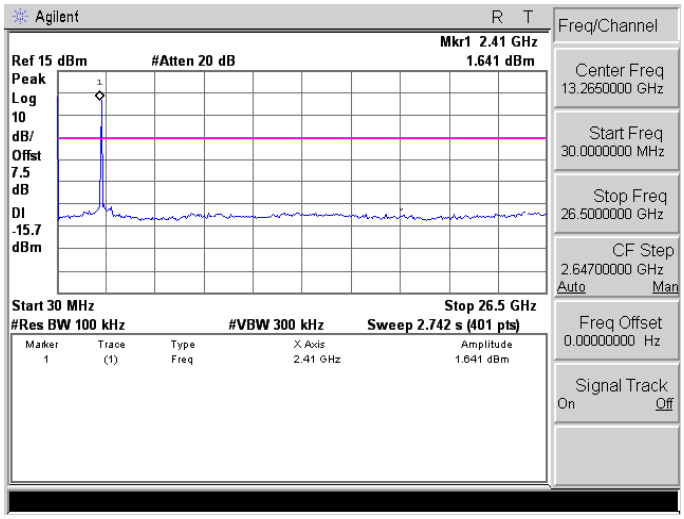
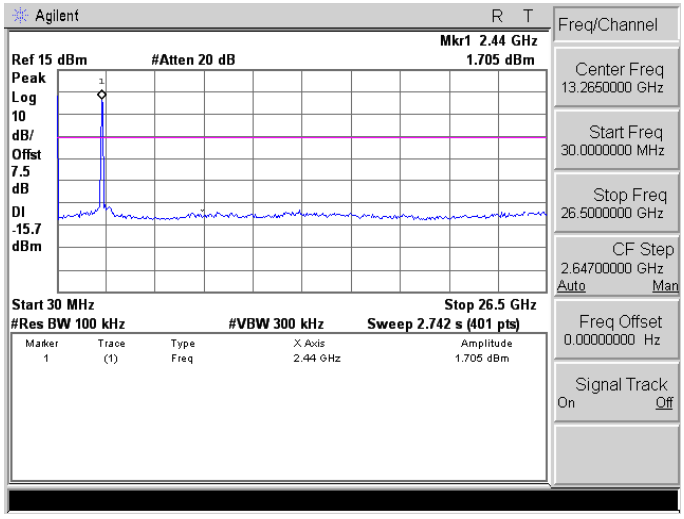
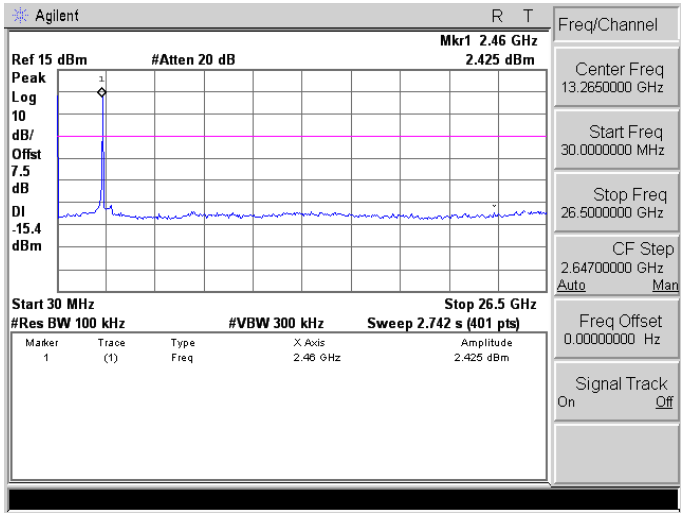
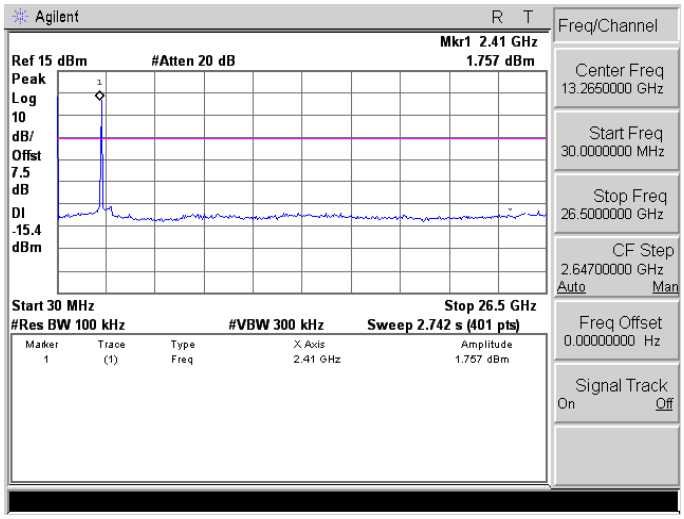
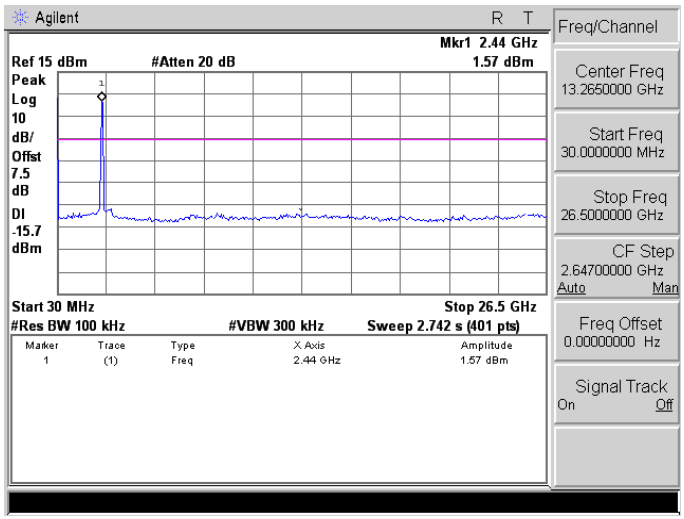
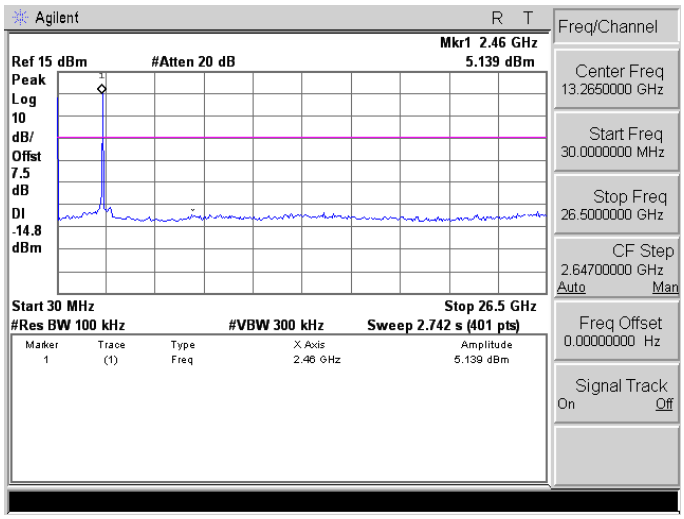
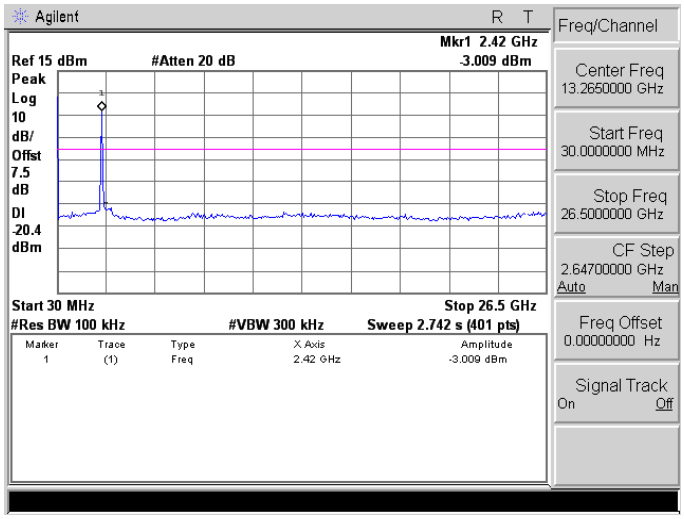
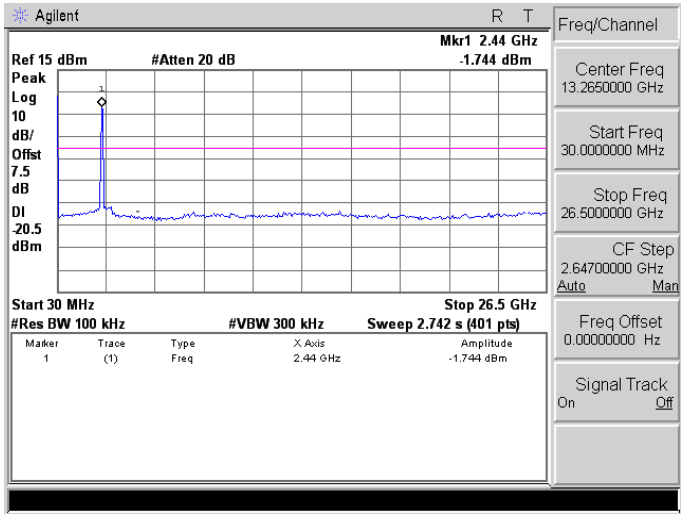
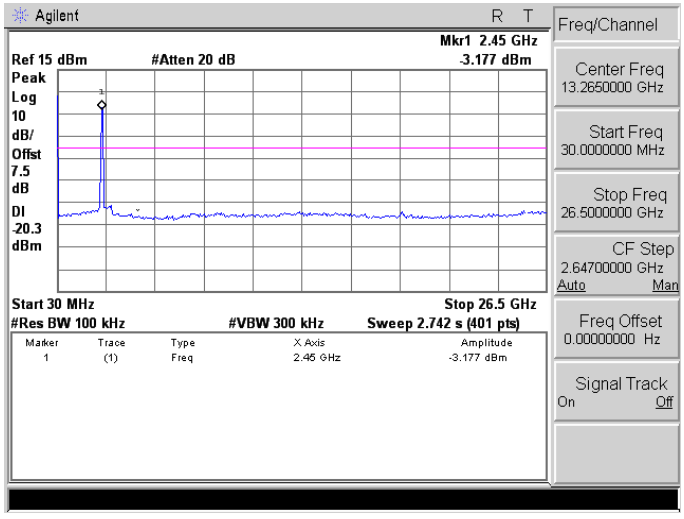
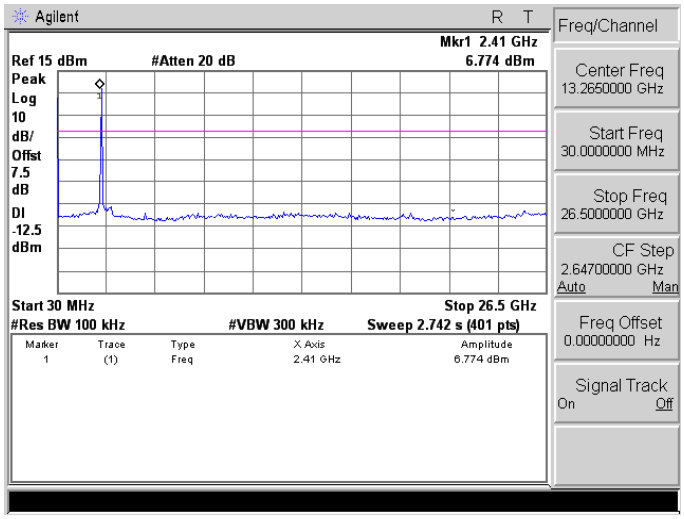
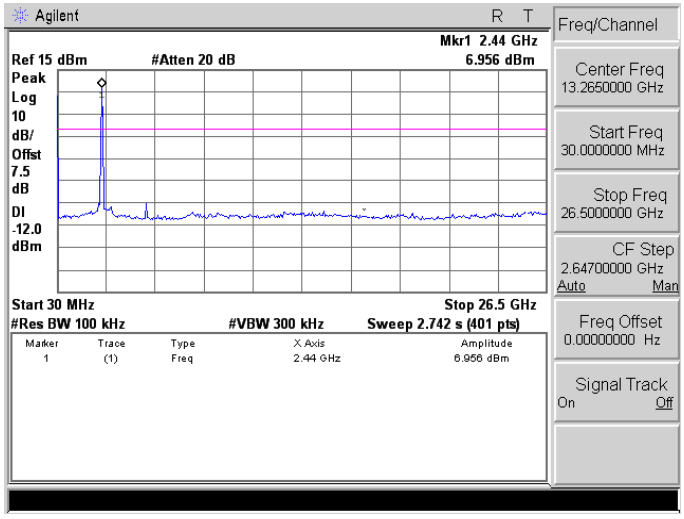
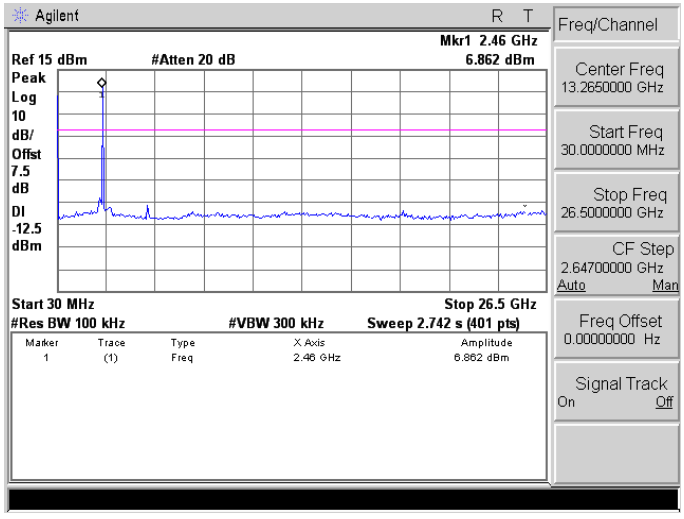
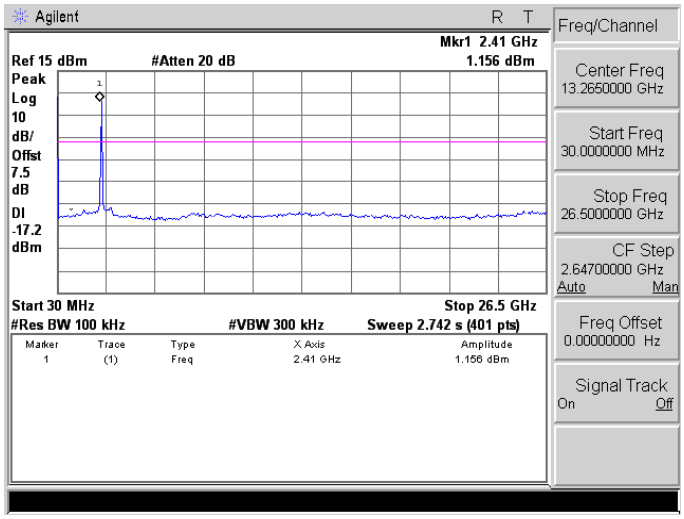
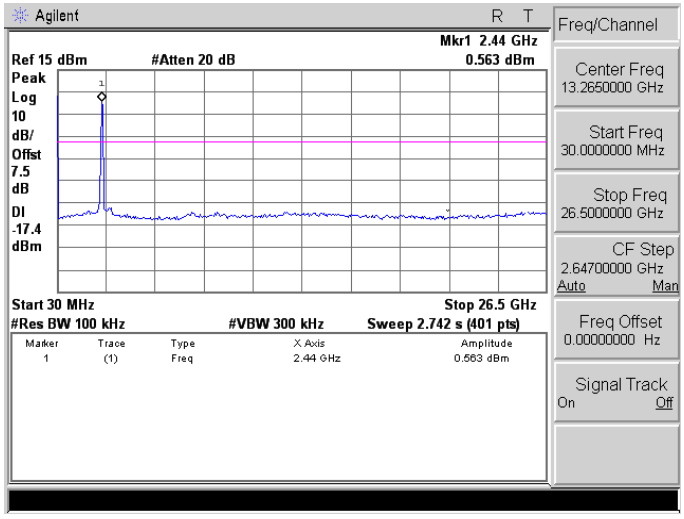
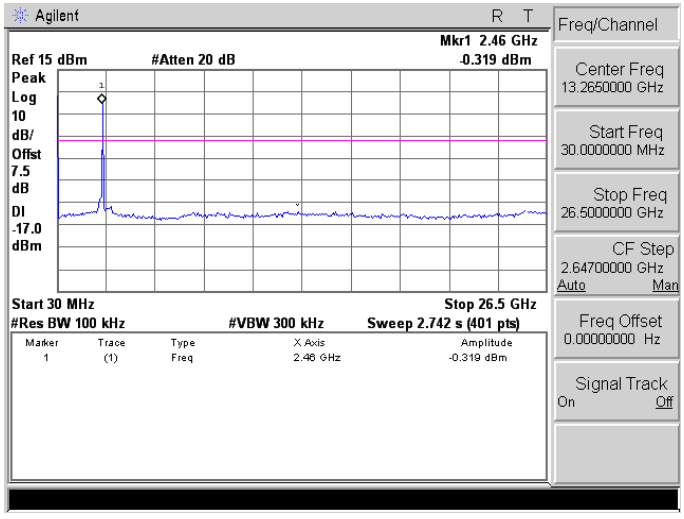
2412	
2437	
2462	

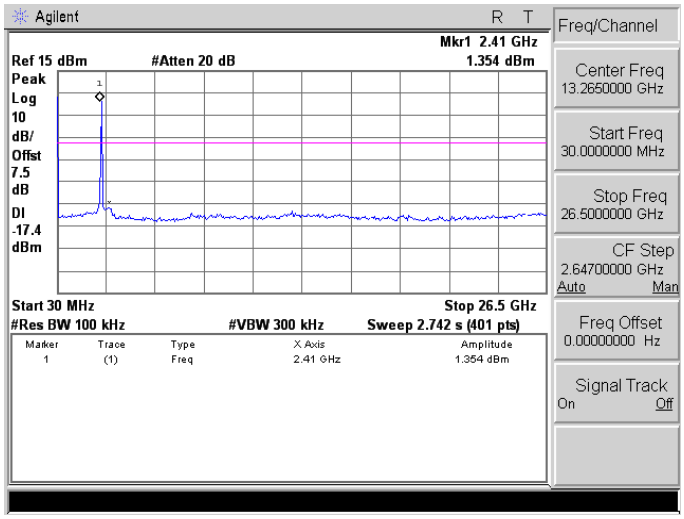
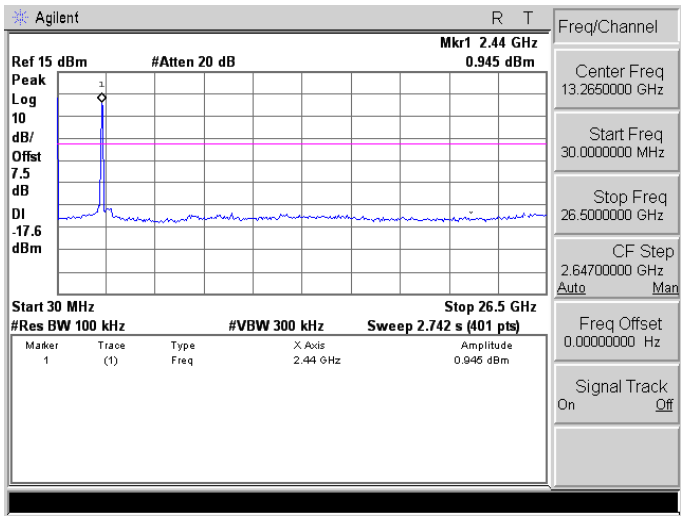
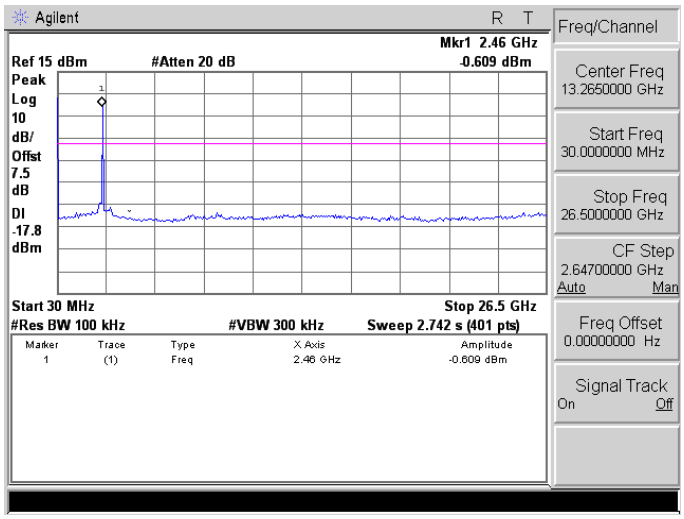
Mode 3: IEEE 802.11g Link Mode_ANT-1	
2412	
2437	
2462	

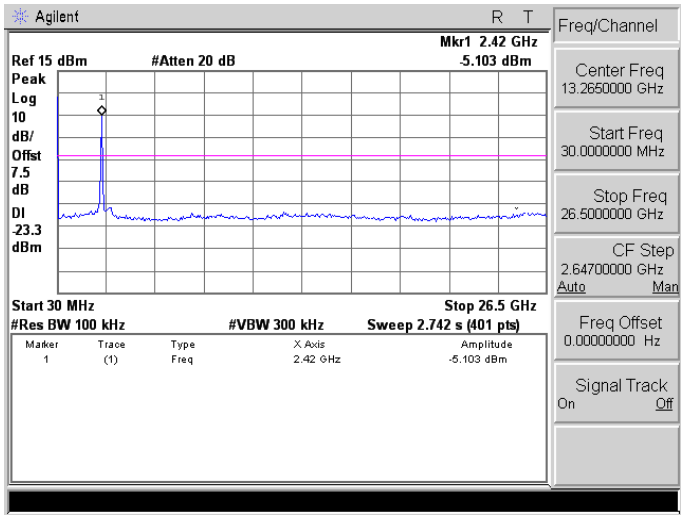
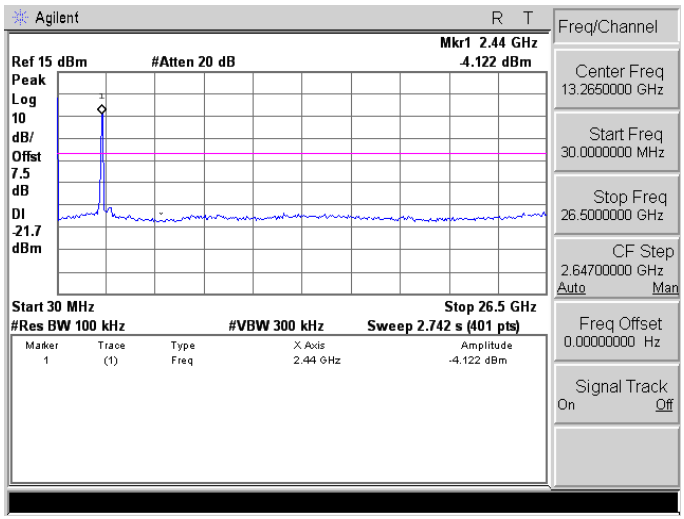
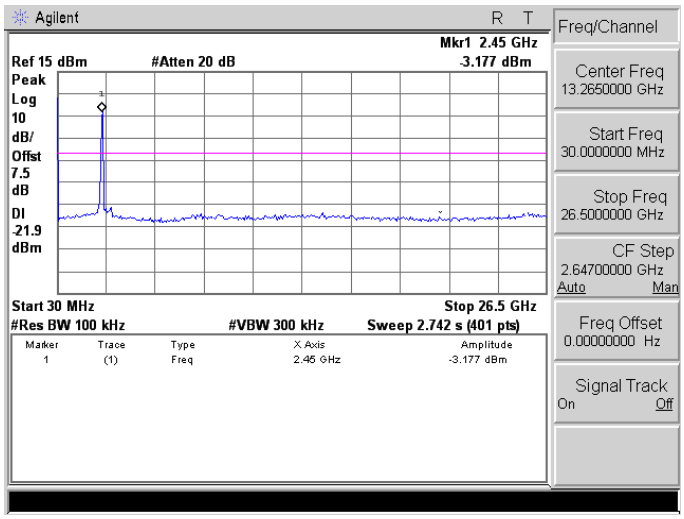
Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-1	
2412	
2437	
2462	

Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-1	
2422	
2437	
2452	

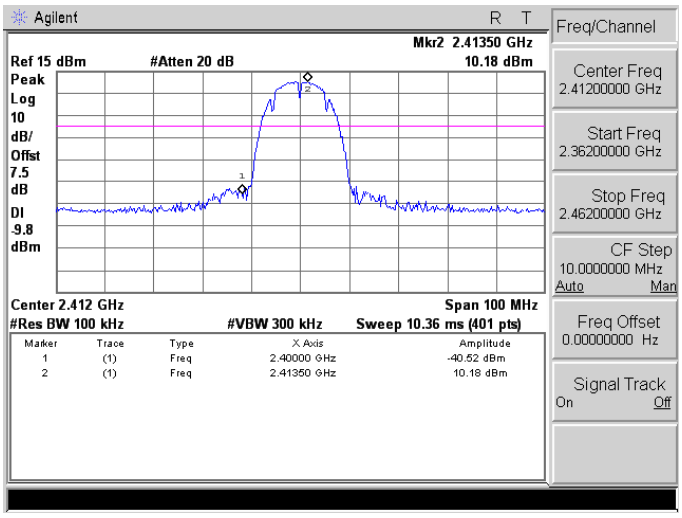
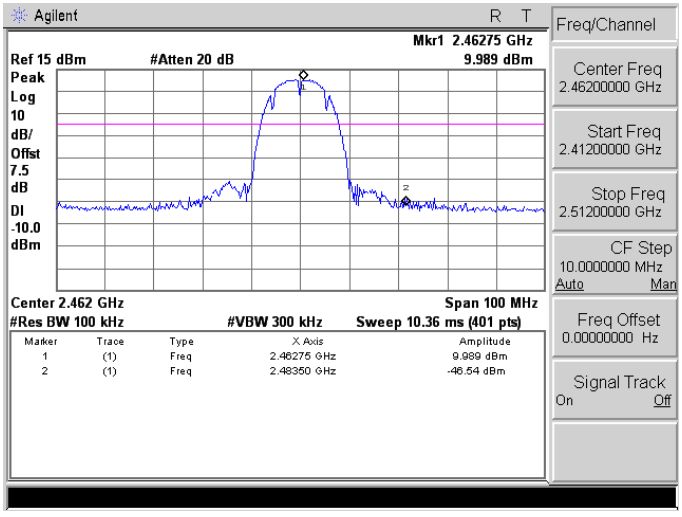
Mode 2: IEEE 802.11b Link Mode_ANT-2	
2412	
2437	
2462	

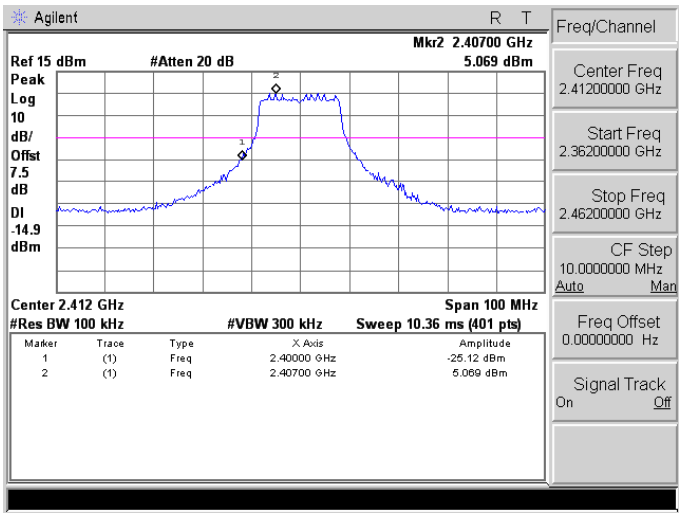
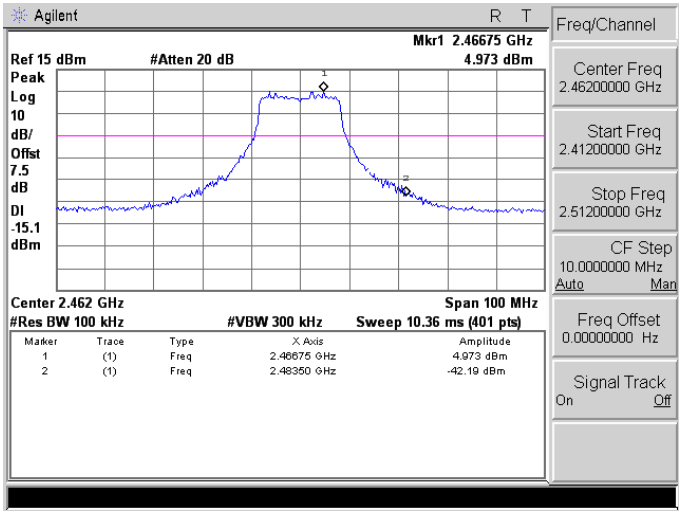
Mode 3: IEEE 802.11g Link Mode_ANT-2	
2412	
2437	
2462	

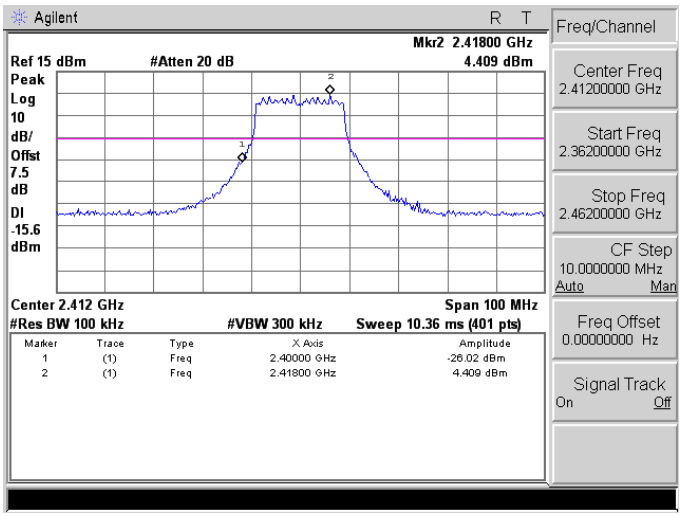
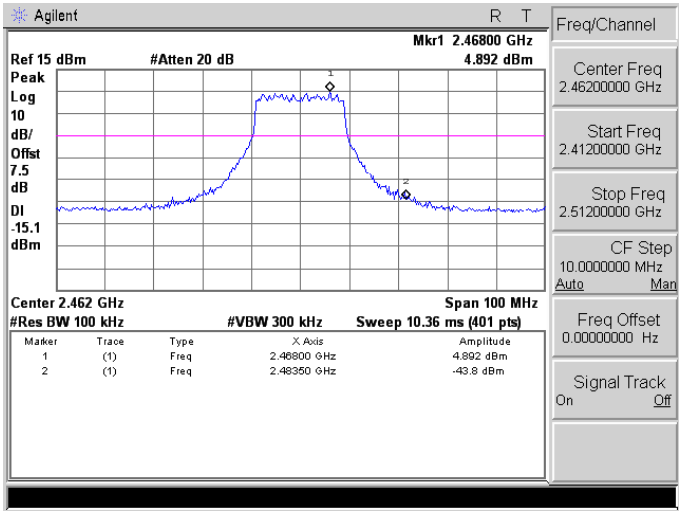
Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-2	
2412	
2437	
2462	

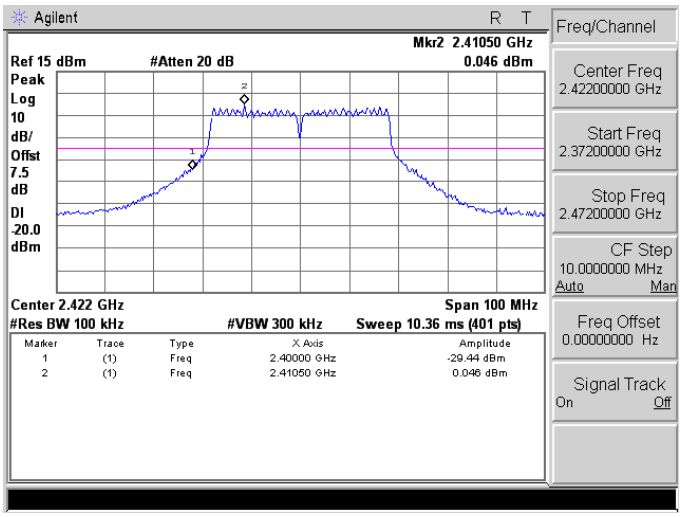
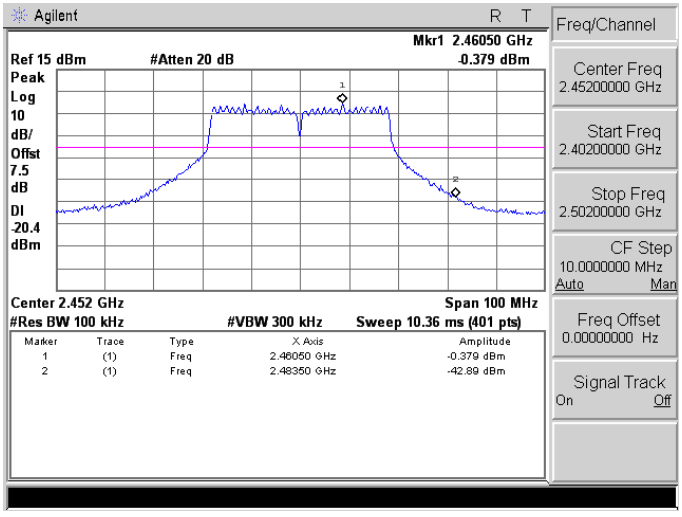
Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-2	
2422	
2437	
2452	

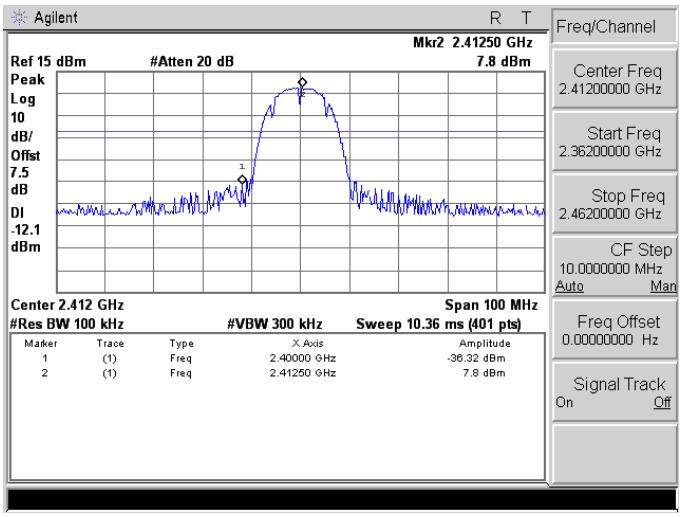
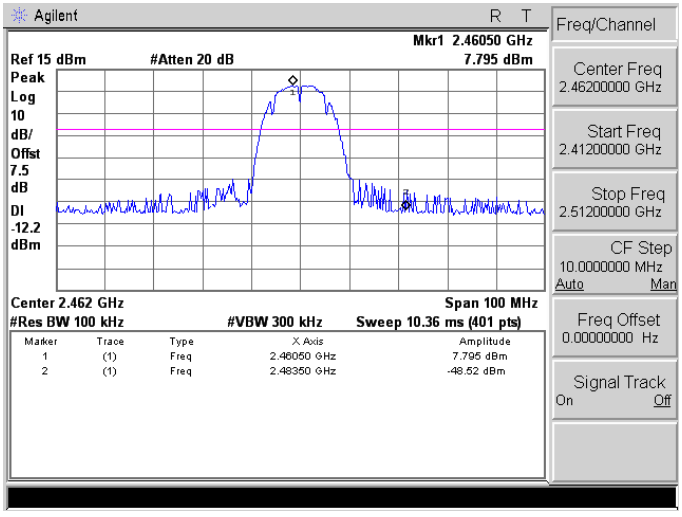
Conducted Band Edge

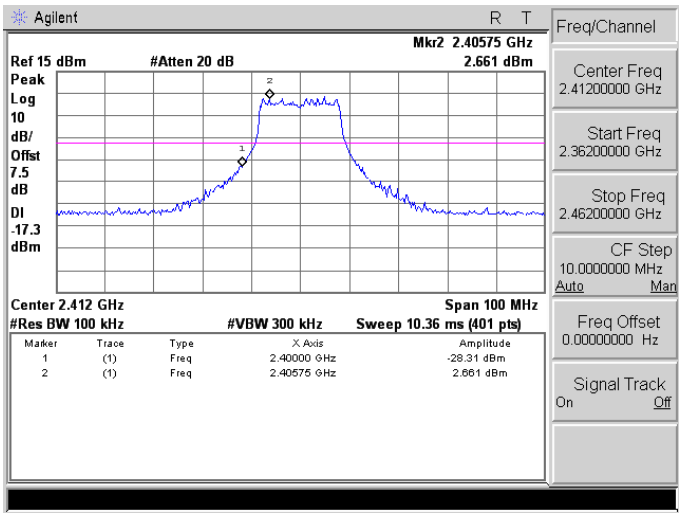
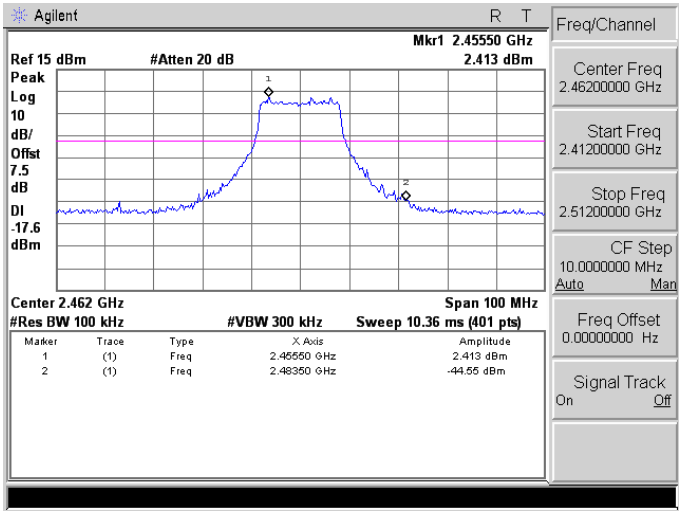
Mode 2: IEEE 802.11b Link Mode_ANT-1	
2412	
2462	

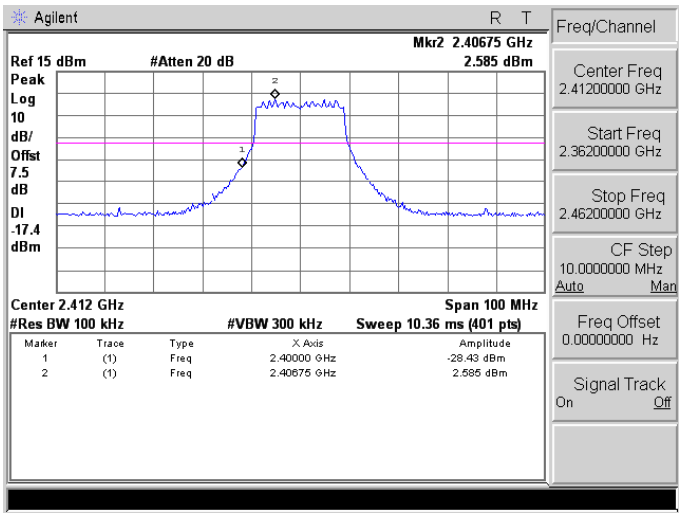
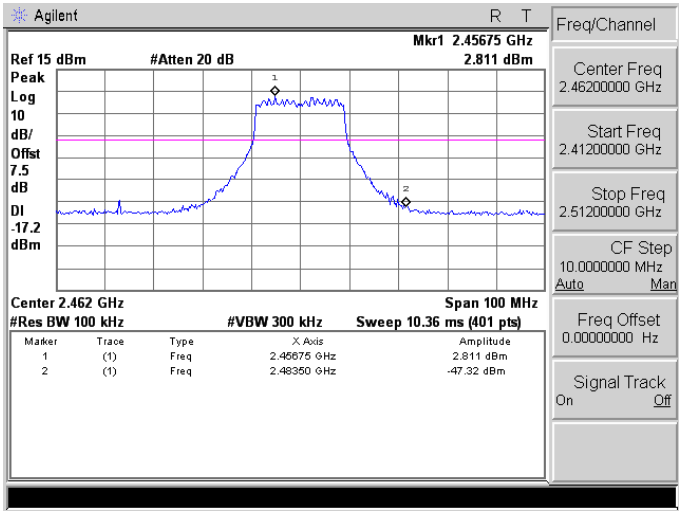
Mode 3: IEEE 802.11g Link Mode_ANT-1	
2412	
2462	

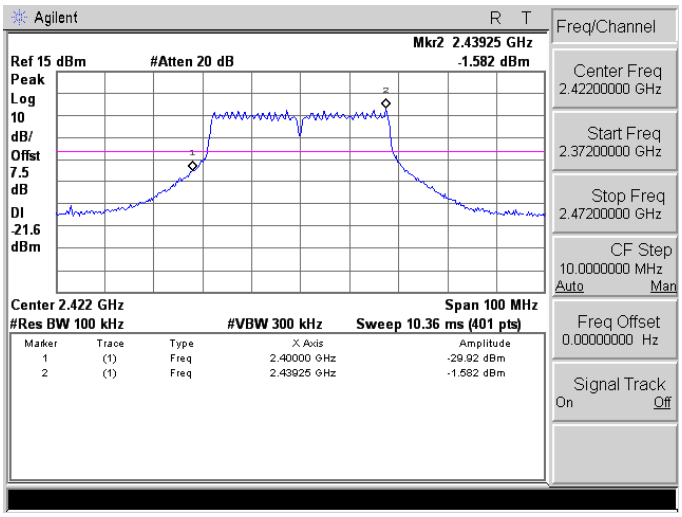
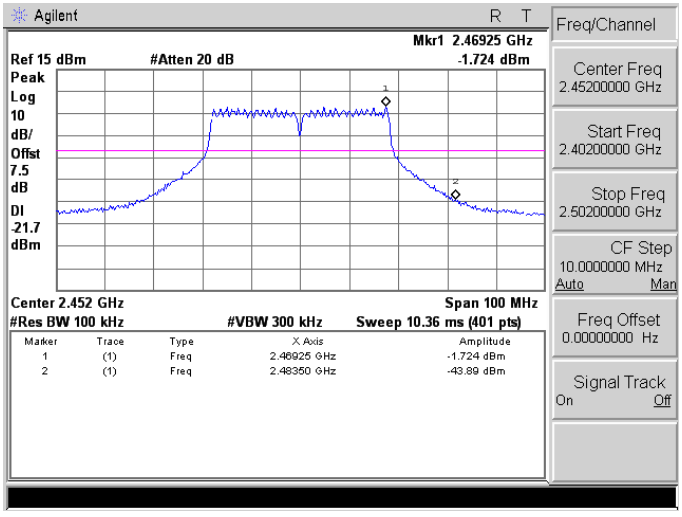
Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-1	
2412	
2462	

Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-1	
2422	
2452	

Mode 2: IEEE 802.11b Link Mode_ANT-2	
2412	
2462	

Mode 3: IEEE 802.11g Link Mode_ANT-2	
2412	
2462	

Mode 4: IEEE 802.11n 2.4GHz 20MHz Link Mode_ANT-2	
2412	
2462	

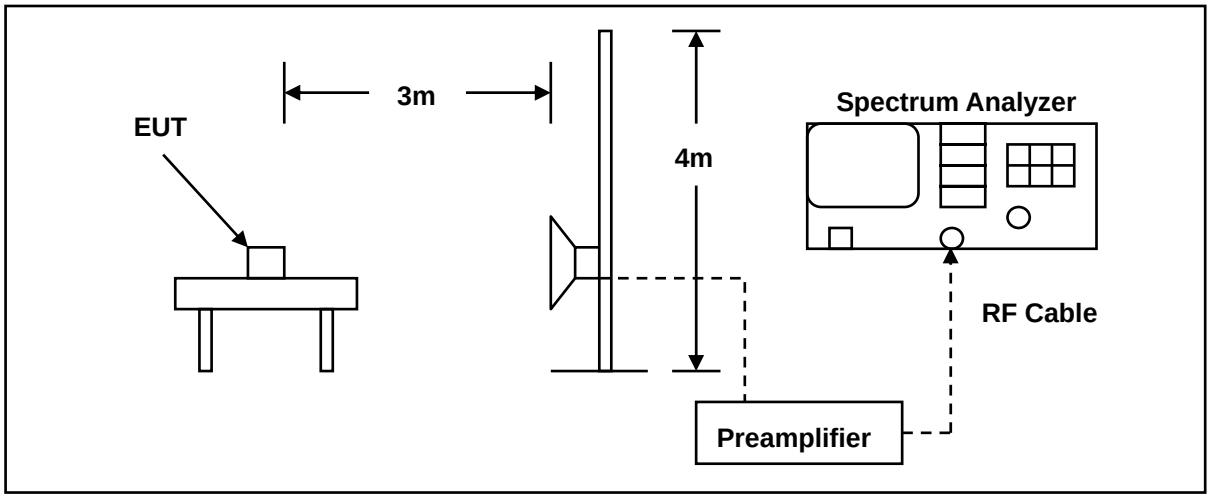
Mode 5: IEEE 802.11n 2.4GHz 40MHz Link Mode_ANT-2	
2422	
2452	

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	01/16/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2014	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/21/2014	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/11/2014	(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 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.

10.5.Test Result

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	02/01/2015
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
2385.130	71.30	-2.27	69.03	74.00	-4.97	peak	H
2385.130	47.46	-2.27	45.19	54.00	-8.81	AVG	H
2390.000	56.47	-2.24	54.23	74.00	-19.77	peak	H
2390.000	48.88	-2.24	46.64	54.00	-7.36	AVG	H
2387.110	67.32	-2.25	65.07	74.00	-8.93	peak	V
2387.110	46.42	-2.25	44.17	54.00	-9.83	AVG	V
2390.000	56.24	-2.24	54.00	74.00	-20.00	peak	V
2390.000	47.42	-2.24	45.18	54.00	-8.82	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	02/01/2015
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	56.57	-1.83	54.74	74.00	-19.26	peak	H
2483.500	49.00	-1.83	47.17	54.00	-6.83	AVG	H
2489.520	70.35	-1.80	68.55	74.00	-5.45	peak	H
2489.520	47.16	-1.80	45.36	54.00	-8.64	AVG	H
2483.500	59.30	-1.83	57.47	74.00	-16.53	peak	V
2483.500	51.59	-1.83	49.76	54.00	-4.24	AVG	V
2483.760	74.36	-1.83	72.53	74.00	-1.47	peak	V
2483.760	50.77	-1.83	48.94	54.00	-5.06	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	3	Date:	02/01/2015
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
2387.220	65.45	-2.25	63.20	74.00	-10.80	peak	H
2387.220	49.82	-2.25	47.57	54.00	-6.43	AVG	H
2390.000	63.91	-2.24	61.67	74.00	-12.33	peak	H
2390.000	52.28	-2.24	50.04	54.00	-3.96	AVG	H
2389.530	74.58	-2.25	72.33	74.00	-1.67	peak	V
2389.530	53.25	-2.25	51.00	54.00	-3.00	AVG	V
2390.000	71.39	-2.24	69.15	74.00	-4.85	peak	V
2390.000	53.76	-2.24	51.52	54.00	-2.48	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	3	Date:	02/01/2015
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	63.52	-1.83	61.69	74.00	-12.31	peak	H
2483.500	50.15	-1.83	48.32	54.00	-5.68	AVG	H
2483.760	66.03	-1.83	64.20	74.00	-9.80	peak	H
2483.760	49.74	-1.83	47.91	54.00	-6.09	AVG	H
2483.500	67.14	-1.83	65.31	74.00	-8.69	peak	V
2483.500	54.13	-1.83	52.30	54.00	-1.70	AVG	V
2484.480	69.93	-1.82	68.11	74.00	-5.89	peak	V
2484.480	52.97	-1.82	51.15	54.00	-2.85	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	4	Date:	02/01/2015
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
2389.530	69.11	-2.25	66.86	74.00	-7.14	peak	H
2389.530	53.35	-2.25	51.10	54.00	-2.90	AVG	H
2390.000	66.24	-2.24	64.00	74.00	-10.00	peak	H
2390.000	53.69	-2.24	51.45	54.00	-2.55	AVG	H
2387.110	69.69	-2.25	67.44	74.00	-6.56	peak	V
2387.110	51.16	-2.25	48.91	54.00	-5.09	AVG	V
2390.000	68.59	-2.24	66.35	74.00	-7.65	peak	V
2390.000	54.31	-2.24	52.07	54.00	-1.93	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	4	Date:	02/01/2015
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	61.81	-1.83	59.98	74.00	-14.02	peak	H
2483.500	49.39	-1.83	47.56	54.00	-6.44	AVG	H
2484.720	67.34	-1.82	65.52	74.00	-8.48	peak	H
2484.720	48.57	-1.82	46.75	54.00	-7.25	AVG	H
2483.500	67.29	-1.83	65.46	74.00	-8.54	peak	V
2483.500	53.60	-1.83	51.77	54.00	-2.23	AVG	V
2484.280	69.66	-1.82	67.84	74.00	-6.16	peak	V
2484.280	52.00	-1.82	50.18	54.00	-3.82	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	5	Date:	02/01/2015
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
2388.240	65.52	-2.25	63.27	74.00	-10.73	peak	H
2388.240	51.50	-2.25	49.25	54.00	-4.75	AVG	H
2390.000	65.63	-2.24	63.39	74.00	-10.61	peak	H
2390.000	52.51	-2.24	50.27	54.00	-3.73	AVG	H
2389.080	69.94	-2.25	67.69	74.00	-6.31	peak	V
2389.080	53.02	-2.25	50.77	54.00	-3.23	AVG	V
2390.000	71.67	-2.24	69.43	74.00	-4.57	peak	V
2390.000	53.98	-2.24	51.74	54.00	-2.26	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AMG-PRO	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	5	Date:	02/01/2015
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	65.78	-1.83	63.95	74.00	-10.05	peak	H
2483.500	50.53	-1.83	48.70	54.00	-5.30	AVG	H
2483.800	68.55	-1.83	66.72	74.00	-7.28	peak	H
2483.800	50.40	-1.83	48.57	54.00	-5.43	AVG	H
2483.500	67.18	-1.83	65.35	74.00	-8.65	peak	V
2483.500	53.25	-1.83	51.42	54.00	-2.58	AVG	V
2484.600	69.43	-1.82	67.61	74.00	-6.39	peak	V
2484.600	52.46	-1.82	50.64	54.00	-3.36	AVG	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 PIFA Antenna. And the maximum Gain of this antenna is only 1 dBi.