FCC

RF Test Report

Applicant	:	Netgear Incorporated
Address	:	350 East Plumeria Drive,San Jose, California, United States 95134
Product Type	:	AirCard 815S Mobile Hotspot
Trade Name	:	NETGEAR
Model Number	:	AC815S
Test Specification	:	FCC 47 CFR PART 15 SUBPART E ANSI C63.10:2013
Application Purpose	:	Original
Receive Date	:	Sep. 22, 2015
Test Period	:	Oct. 08~ Nov. 04, 2015
Issue Date	:	Dec. 18, 2015

Issue by

A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade District,
Taoyuan City 33465, Taiwan (R.O.C)
Tel：+86-3-2710188 / Fax：+86-3-2710190

Taiwan Accreditation Foundation accreditation number: 1330

Revision History

Rev.	Issue Date	Revisions	Revised By
00	Nov. 25, 2015	Initial Issue	
01	Dec. 18, 2015	Revised report information.	Peggy Chang

Verification of Compliance

Issued Date: 12/18/2015

Applicant	:	Netgear Incorporated
Address	:	350 East Plumeria Drive,San Jose, California, United States 95134
Product Type	:	AirCard 815S Mobile Hotspot
Trade Name	:	NETGEAR
Model Number	:	AC815S
FCC ID	:	PY3AC815S
EUT Rated Voltage	:	DC 5V, 1A
Test Voltage	:	120 Vac / 60 Hz ; 4.35 Vdc / 3.80 Vdc / 3.50 Vdc
Applicable Standard	:	FCC 47 CFR PART 15 SUBPART E ANSI C63.10:2013
Test Result	:	Complied
Application Purpose	:	Original
Performing Lab.	:	A Test Lab Techno Corp. No. 140-1, Changan Street, Bade District, Taoyuan City 33465, Taiwan (R.O.C) Tel：+86-3-2710188 / Fax：+86-3-2710190 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)

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1 General Information

1.1. Summary of Test Result

Standard	Item	Result	Remark
FCC			
15.407(b)(6) 15.207	AC Power Conducted Emission	PASS	---
15.407(b) 15.205 / 15.209	Transmitter Radiated Emissions	PASS	---
15.407(a)	Maximum Conducted Output Power	PASS	---
15.407(a)	26dB RF Bandwidth	Reference	---
15.407(a)	6dB RF Bandwidth	PASS	-----
15.407(a)	Peak Power Spectral Density	PASS	---
15.407(g)	Frequency Stability	PASS	---
15.407(a) 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 ~ 150KHz	2.7
	150kHz ~ 30MHz	2.8
Radiated Emission	30MHz ~ 1000MHz	6.300
	1000MHz ~ 18000MHz	5.474
	18000MHz ~ 26500MHz	5.630
	26500MHz ~ 40000MHz	5.054

2 EUT Description

Applicant	Netgear Incorporated 350 East Plumeria Drive,San Jose, California, United States 95134			
Manufacturer	Netgear Inc. Suite 168 – 10760 Shellbridge Way, Richmond, BC Canada V6X 3H1			
Product Type	AirCard 815S Mobile Hotspot			
Trade Name	NETGEAR			
Model Number	AC815S			
FCC ID	PY3AC815S			
Hardware Version	DV3.2			
Software Version	NTG9X40C_11.06.04.00			
Frequency Range	Mode	Band	Frequency Range (MHz)	Number of Channels
	IEEE 802.11a	U-NII Band I	5180 – 5240	4 Channels
		U-NII Band III	5745 – 5825	5 Channels
	IEEE 802.11ac 20 MHz	U-NII Band I	5180 – 5240	4 Channels
		U-NII Band III	5745 – 5825	5 Channels
	IEEE 802.11ac 40 MHz	U-NII Band I	5190 – 5230	2 Channels
		U-NII Band III	5755 – 5795	2 Channels
	IEEE 802.11ac 80 MHz	U-NII Band I	5210	1 Channel
		U-NII Band III	5775	1 Channel
Modulation Type	OFDM			
Antenna Type	Chip Antenna			
Antenna Max. Gain	3.0 dBi			
Antenna Delivery	2TX + 2RX			
Max. RF Output Power	Mode	Band	Max. RF Output Power (W)	
	IEEE 802.11a	U-NII Band I	0.018	
		U-NII Band III	0.017	
	IEEE 802.11ac 20 MHz	U-NII Band I	0.017	
		U-NII Band III	0.016	
	IEEE 802.11ac 40 MHz	U-NII Band I	0.016	
		U-NII Band III	0.017	
	IEEE 802.11ac 80 MHz	U-NII Band I	0.018	
		U-NII Band III	0.017	
Frequency stability specification	± 20 ppm			

Component List				
Battery	Trade Name	NETGEAR	Model Number	W-9
	3.8Vdc, 4340mAh			
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: 5VDC, 1A			

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 802.11a link mode
Mode 3: IEEE 802.11ac 20MHz link mode
Mode 4: IEEE 802.11ac 40MHz link mode
Mode 5: IEEE 802.11ac 80MHz 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: MU05BT050100-A1 is worst case to perform testing.

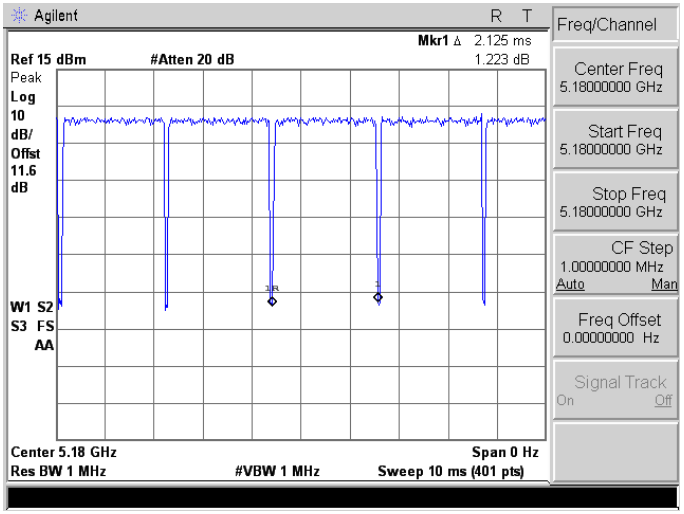
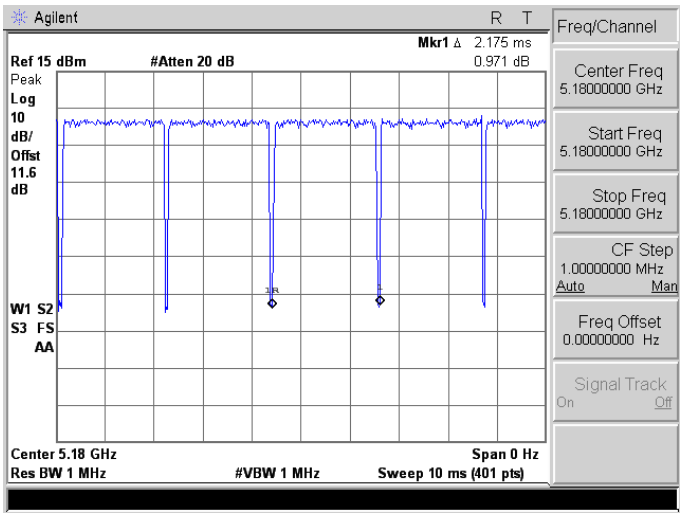
Test Mode	ANT-0	ANT-1	ANT-0+1
IEEE 802.11a link mode	V	V	V
IEEE 802.11ac 20MHz link mode	V	V	V
IEEE 802.11ac 40MHz link mode	V	V	V
IEEE 802.11ac 80MHz link mode	V	V	V

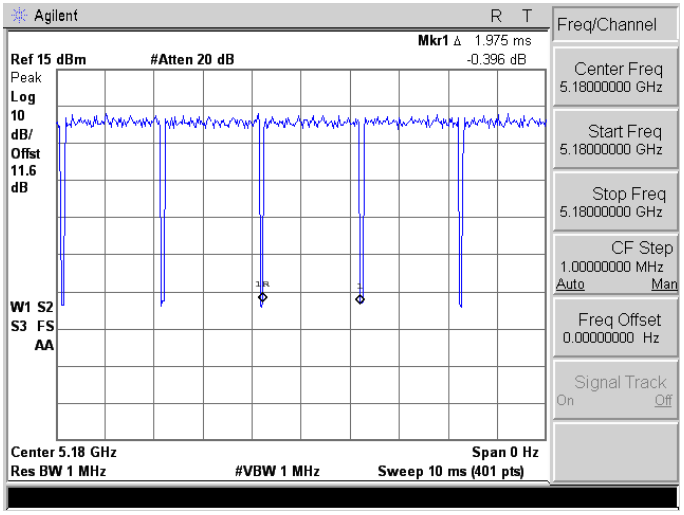
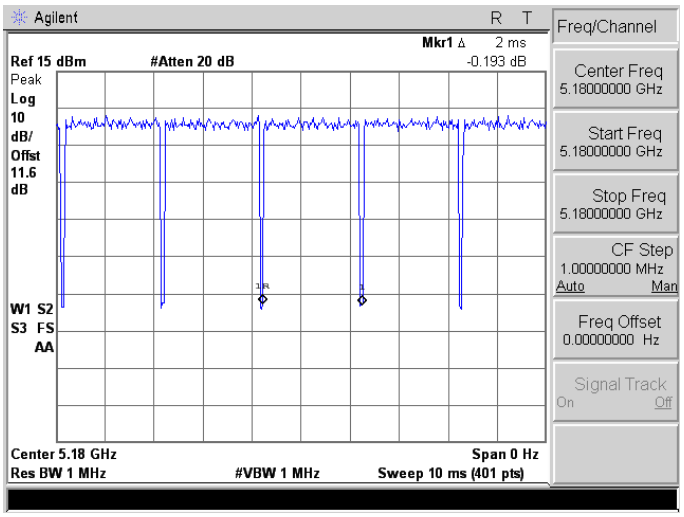
Test Mode	Band	Data Rate	Test Channel
IEEE 802.11a link mode	U-NII Band I	6M	36, 40, 48
	U-NII Band III		149,157,165
IEEE 802.11ac 20MHz link mode	U-NII Band I	13M	36, 40, 48
	U-NII Band III		149,157,165
IEEE 802.11ac 40MHz link mode	U-NII Band I	27M	38, 46
	U-NII Band III		151,159
IEEE 802.11ac 80MHz link mode	U-NII Band I	58.6M	42
	U-NII Band III		155

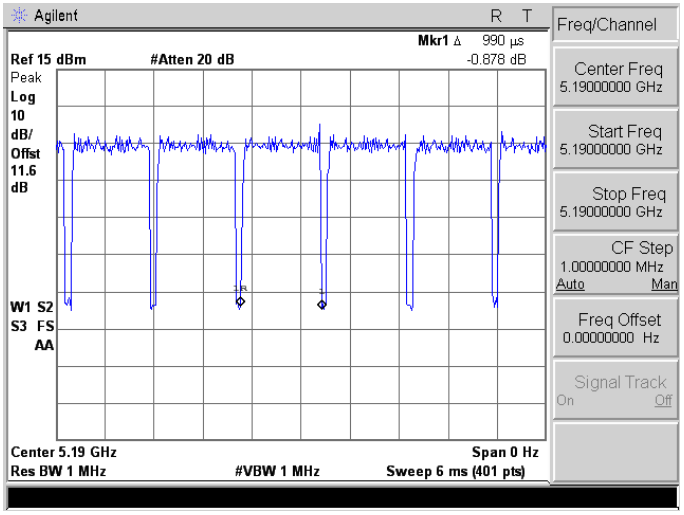
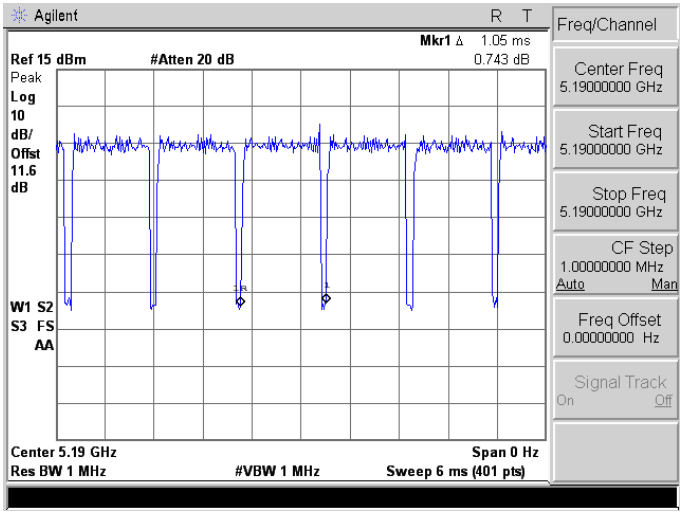
Duty cycle

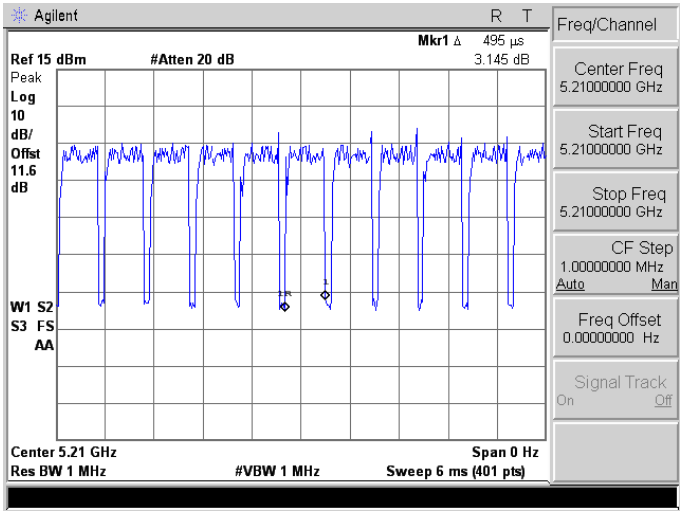
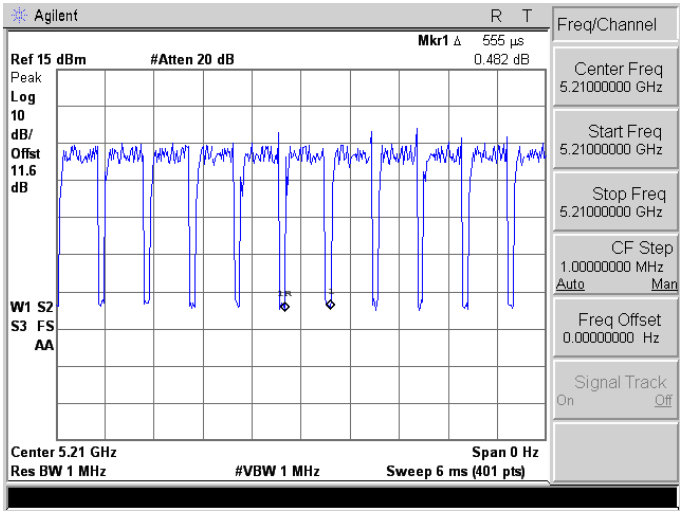
Test Mode	Frequency (MHz)	on time (ms)	on+off time (ms)	Duty cycle	Duty Factor (dB)	1/T Minimum VBW (kHz)
Mode 2: IEEE 802.11a link mode	5180.0	2.125	2.175	0.977	0.101	0.471
Mode 3: IEEE 802.11ac 20MHz link mode	5180.0	1.975	2.000	0.988	0.055	0.010
Mode 4: IEEE 802.11ac 40MHz link mode	5190.0	0.990	1.050	0.943	0.256	1.010
Mode 5: IEEE 802.11ac 80MHz link mode	5210.0	0.495	0.555	0.892	0.497	2.020

Duty Cycle Graphs

Mode 2: IEEE 802.11a link mode	
On time	
On+off time	

Mode 3: IEEE 802.11ac 20MHz link mode	
On time	
On+off time	

Mode 4: IEEE 802.11ac 40MHz link mode	
On time	
On+off time	

Mode 5: IEEE 802.11ac 80MHz link mode	
On time	
On+off time	

3.2. EUT Exercise Software

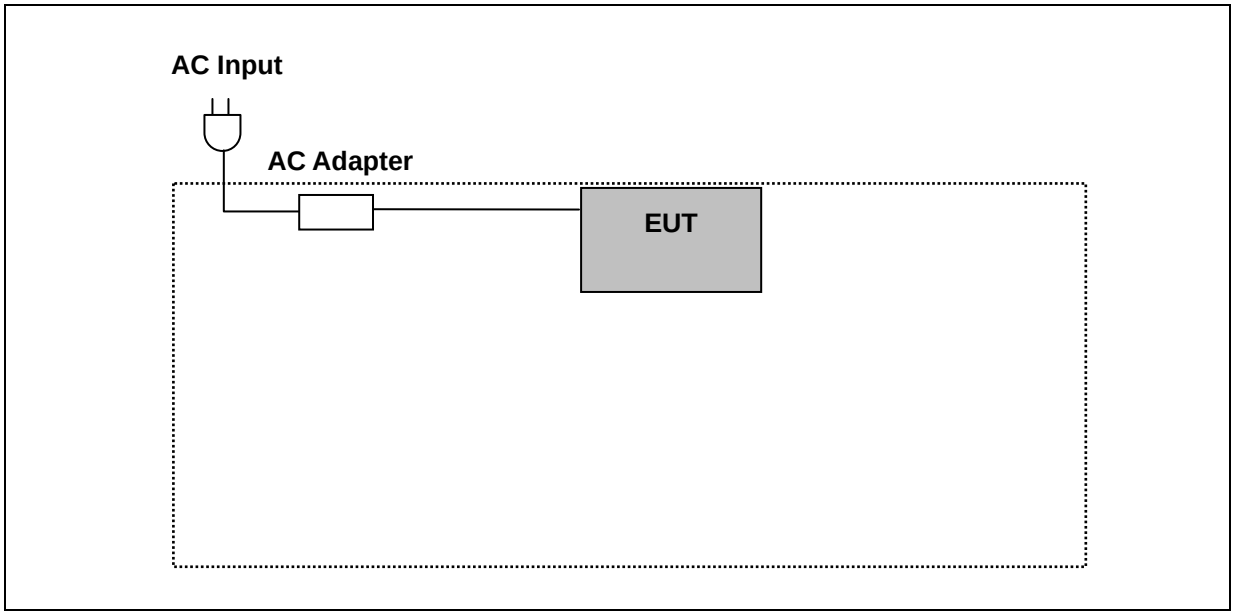
The EUT is operated in the engineering mode to fix the TX frequency for the purposes of measurement. According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

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

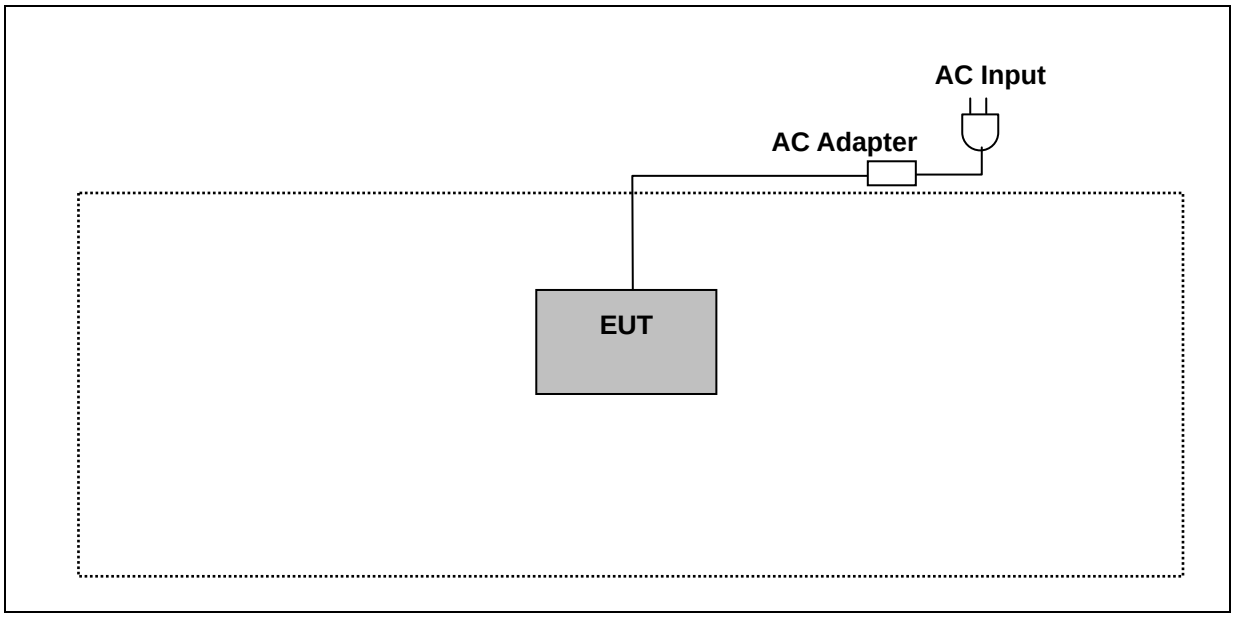
Measurement Software	
1	EZ-EMC Ver. ATL-03A1-1
2	EZ-EMC Ver ATL-ITC-3A1-1

3.3. Configuration of Test System Details

Conducted Emission



Radiated Emission



3.4. Test Site Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950

4 AC Power Conducted Emission Measurement

4.1. Limit

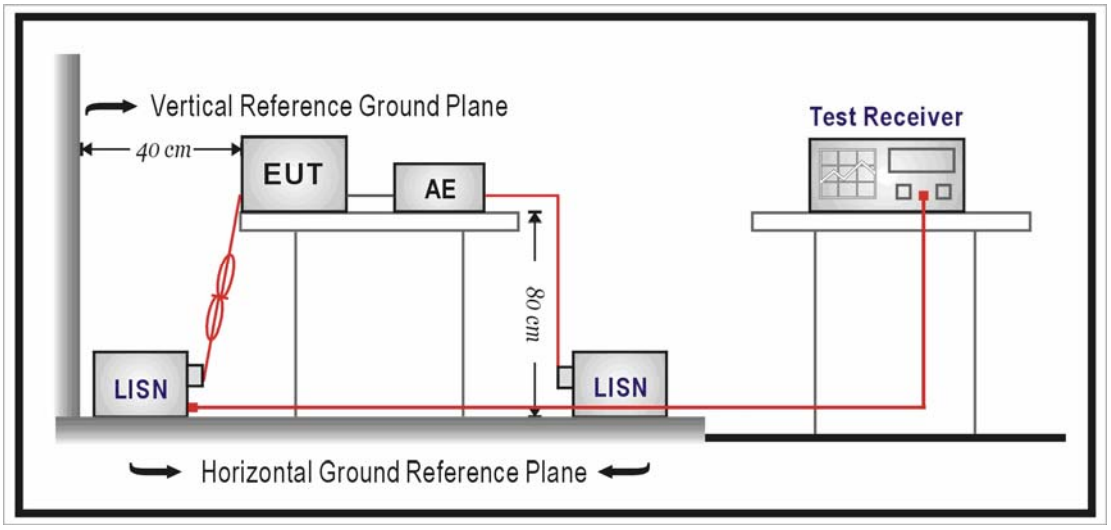
Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

4.2. Test Instruments

Describe	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Test Receiver	R&S	ESCI	100367	06/25/2015	1 year
LISN	R&S	ENV216	101040	03/10/2015	1 year
LISN	R&S	ENV216	101041	03/06/2015	1 year
Test Site	ATL	TE02	TE02	N.C.R.	-----

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

4.3. Test Setup



4.4. Test Procedure

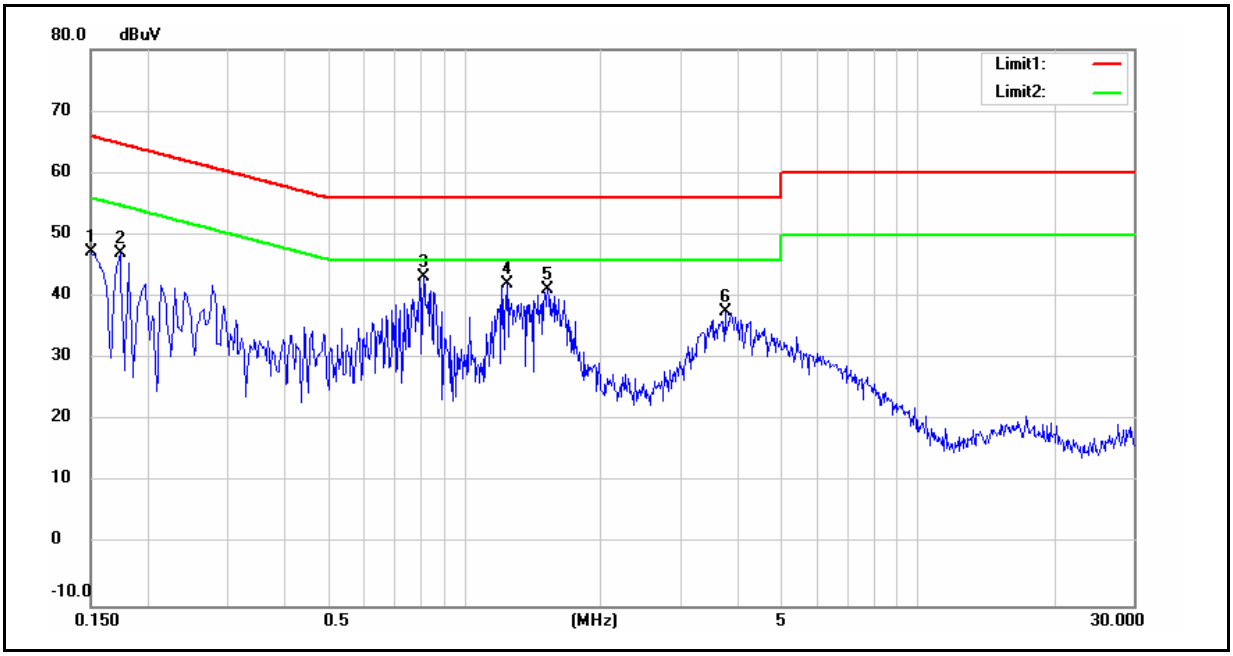
The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back wall and at least 1 meter from the sidewall.

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.

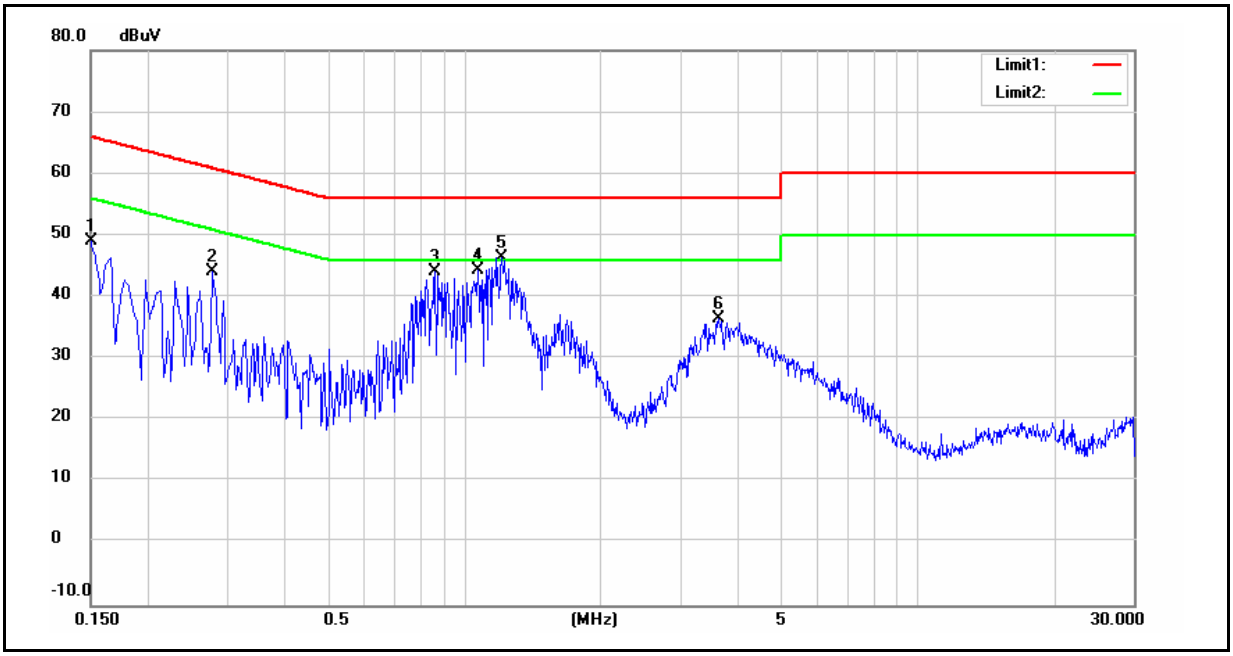
4.5. Test Result

Standard:	FCC Part 15E	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 1	Date:	10/08/2015
		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	37.18	22.35	9.69	46.87	32.04	66.00	56.00	-19.13	-23.96	Pass
2	0.1740	30.66	16.81	9.69	40.35	26.50	64.77	54.77	-24.42	-28.27	Pass
3	0.8140	26.52	23.67	9.71	36.23	33.38	56.00	46.00	-19.77	-12.62	Pass
4	1.2460	27.91	20.36	9.73	37.64	30.09	56.00	46.00	-18.36	-15.91	Pass
5	1.5300	26.40	18.66	9.75	36.15	28.41	56.00	46.00	-19.85	-17.59	Pass
6	3.7780	23.83	16.73	9.83	33.66	26.56	56.00	46.00	-22.34	-19.44	Pass

Standard:	FCC Part 15E	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 1	Date:	10/08/2015
		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	38.00	22.65	9.66	47.66	32.31	66.00	56.00	-18.34	-23.69	Pass
2	0.2780	32.84	22.10	9.66	42.50	31.76	60.88	50.88	-18.38	-19.12	Pass
3	0.8620	31.87	24.92	9.68	41.55	34.60	56.00	46.00	-14.45	-11.40	Pass
4	1.0740	30.54	23.26	9.69	40.23	32.95	56.00	46.00	-15.77	-13.05	Pass
5	1.2140	33.21	25.14	9.70	42.91	34.84	56.00	46.00	-13.09	-11.16	Pass
6	3.6460	21.37	10.44	9.80	31.17	20.24	56.00	46.00	-24.83	-25.76	Pass

5 Radiated Emission Measurement

5.1. Limit

For transmitters operating in the 5.15~5.25 GHz band: all emissions outside of the 5.15~5.35 GHz band shall not exceed an e.i.r.p. of -27dBm/MHz.

For transmitters operating in the 5.725~5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz..

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequency Range (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	10	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Note: 1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

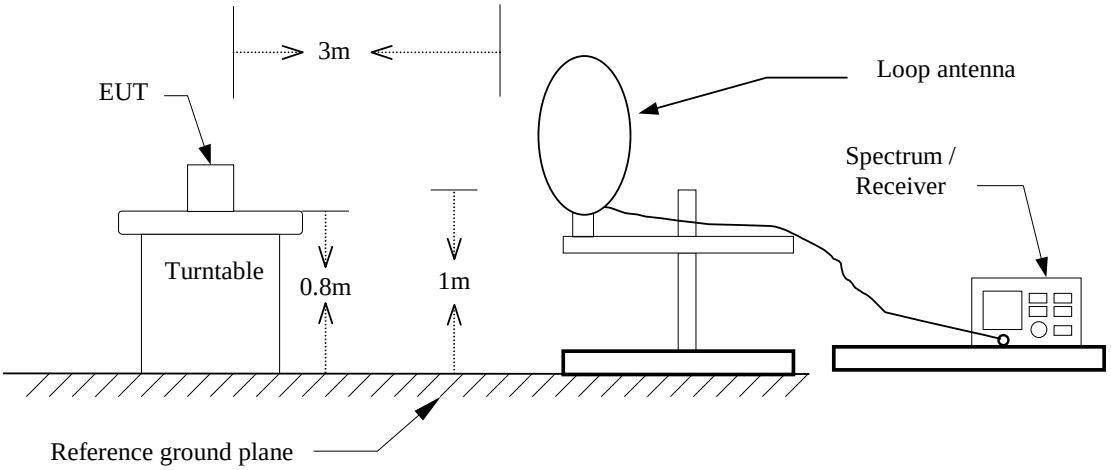
5.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	1 year
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	1 year
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2015	1 year
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2015	1 year
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	08/11/2015	1 year
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/12/2015	1 year
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	07/06/2015	1 year
Test Site	ATL	TE01	888001	08/27/2015	1 year

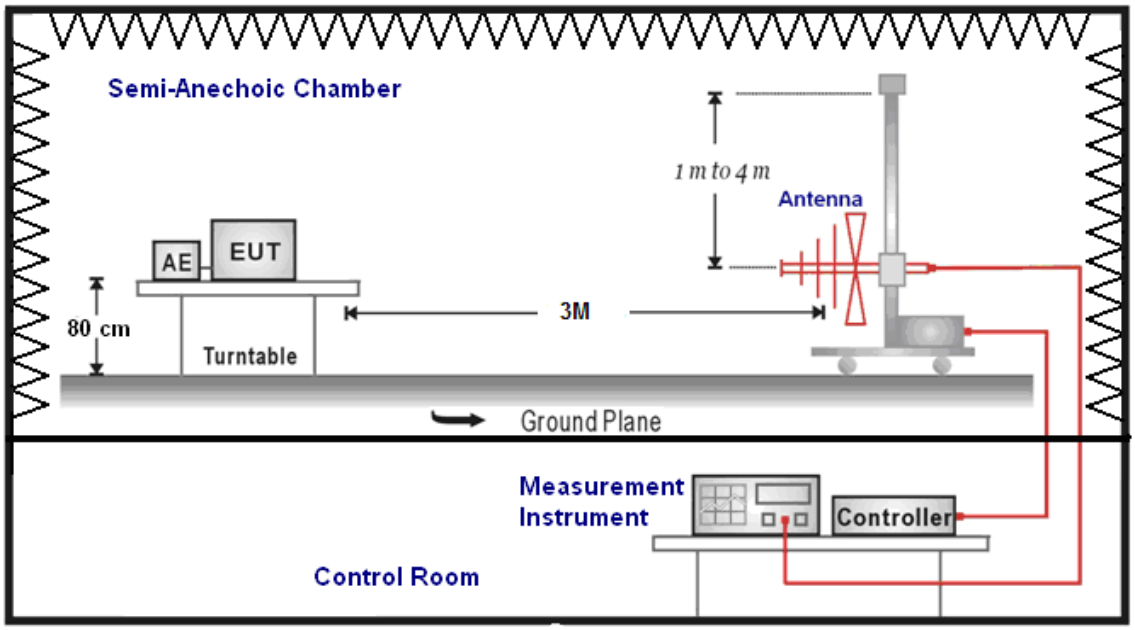
Note: N.C.R. = No Calibration Request.

5.3. Setup

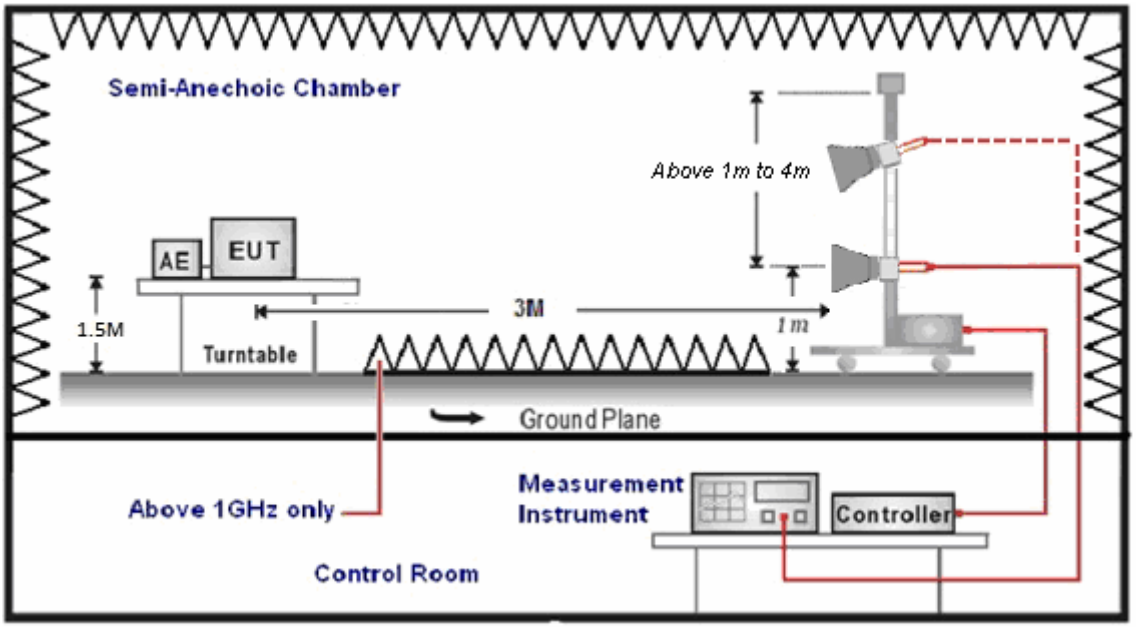
9kHz ~ 30MHz



30MHz ~ 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 40 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 restricted measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 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.

For out of band measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak 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 Trilog-Broadband Antenna (mode SB AC VULB) at 3 Meter and the ETS-Lindgren Double-Ridged Waveguide Horn antnna (model 3117) Schwarzbeck Mess-Elektronik Broadband Horn Antenna (BBHA 9170) was used in frequencies 1 – 40 GHz at a distance of 3 meter. The antenna at an angle toward the source of the emission. 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

5.5. Test Result

Below 1GHz

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 1	Date:	11/04/2015
Description:		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
253.5000	38.54	-11.22	27.32	46.00	-18.68	QP	H
455.0000	35.44	-6.21	29.23	46.00	-16.77	QP	H
571.0000	27.88	-3.93	23.95	46.00	-22.05	QP	H
655.0000	27.21	-2.44	24.77	46.00	-21.23	QP	H
773.0000	27.53	0.06	27.59	46.00	-18.41	QP	H
902.0000	27.14	2.70	29.84	46.00	-16.16	QP	H
247.0000	34.17	-11.43	22.74	46.00	-23.26	QP	V
371.5000	38.72	-7.99	30.73	46.00	-15.27	QP	V
451.0000	32.17	-6.28	25.89	46.00	-20.11	QP	V
594.0000	31.66	-3.30	28.36	46.00	-17.64	QP	V
725.0000	26.35	-0.85	25.50	46.00	-20.50	QP	V
885.5000	26.41	2.28	28.69	46.00	-17.31	QP	V

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

Above 1GHz

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/04/2015
Frequency:	5180 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2813.000	30.92	3.57	34.49	74.00	-39.51	peak	H
4577.000	26.65	9.60	36.25	74.00	-37.75	peak	H
7650.000	29.39	19.22	48.61	74.00	-25.39	peak	H
2778.000	31.26	3.44	34.70	74.00	-39.30	peak	V
4605.000	26.99	9.70	36.69	74.00	-37.31	peak	V
7671.000	28.08	19.26	47.34	74.00	-26.66	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/04/2015
Frequency:	5200 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2778.000	31.11	3.44	34.55	74.00	-39.45	peak	H
4269.000	26.50	8.59	35.09	74.00	-38.91	peak	H
7622.000	28.56	19.17	47.73	74.00	-26.27	peak	H
2771.000	32.40	3.43	35.83	74.00	-38.17	peak	V
4311.000	25.12	8.72	33.84	74.00	-40.16	peak	V
7671.000	27.88	19.26	47.14	74.00	-26.86	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/04/2015
Frequency:	5240 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2806.000	32.28	3.54	35.82	74.00	-38.18	peak	H
4591.000	27.34	9.65	36.99	74.00	-37.01	peak	H
7650.000	27.44	19.22	46.66	74.00	-27.34	peak	H
2785.000	31.71	3.47	35.18	74.00	-38.82	peak	V
4591.000	26.97	9.65	36.62	74.00	-37.38	peak	V
7601.000	26.14	19.13	45.27	74.00	-28.73	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/04/2015
Frequency:	5745 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2981.000	33.73	4.14	37.87	74.00	-36.13	peak	H
4626.000	25.51	9.79	35.30	74.00	-38.70	peak	H
6747.000	27.94	16.49	44.43	74.00	-29.57	peak	H
2995.000	31.29	4.19	35.48	74.00	-38.52	peak	V
4626.000	25.36	9.79	35.15	74.00	-38.85	peak	V
6670.000	28.89	16.28	45.17	74.00	-28.83	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/04/2015
Frequency:	5785 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3002.000	33.14	4.21	37.35	74.00	-36.65	peak	H
4591.000	26.53	9.65	36.18	74.00	-37.82	peak	H
6719.000	28.43	16.41	44.84	74.00	-29.16	peak	H
3065.000	31.64	4.42	36.06	74.00	-37.94	peak	V
4633.000	25.72	9.81	35.53	74.00	-38.47	peak	V
6719.000	27.90	16.41	44.31	74.00	-29.69	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/04/2015
Frequency:	5825 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3023.000	32.46	4.29	36.75	74.00	-37.25	peak	H
4570.000	26.40	9.57	35.97	74.00	-38.03	peak	H
6705.000	29.17	16.38	45.55	74.00	-28.45	peak	H
3002.000	31.73	4.21	35.94	74.00	-38.06	peak	V
4570.000	27.65	9.57	37.22	74.00	-36.78	peak	V
6698.000	27.12	16.36	43.48	74.00	-30.52	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/04/2015
Frequency:	5180 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2799.000	33.57	3.52	37.09	74.00	-36.91	peak	H
4633.000	26.73	9.81	36.54	74.00	-37.46	peak	H
7615.000	28.08	19.16	47.24	74.00	-26.76	peak	H
2785.000	31.13	3.47	34.60	74.00	-39.40	peak	V
4591.000	26.47	9.65	36.12	74.00	-37.88	peak	V
7643.000	27.03	19.20	46.23	74.00	-27.77	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/04/2015
Frequency:	5200 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2799.000	30.97	3.52	34.49	74.00	-39.51	peak	H
4626.000	28.57	9.79	38.36	74.00	-35.64	peak	H
7650.000	26.47	19.22	45.69	74.00	-28.31	peak	H
2806.000	31.26	3.54	34.80	74.00	-39.20	peak	V
4570.000	27.22	9.57	36.79	74.00	-37.21	peak	V
7643.000	27.53	19.20	46.73	74.00	-27.27	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/04/2015
Frequency:	5240 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2799.000	32.61	3.52	36.13	74.00	-37.87	peak	H
4619.000	26.10	9.76	35.86	74.00	-38.14	peak	H
7657.000	28.24	19.24	47.48	74.00	-26.52	peak	H
2778.000	31.92	3.44	35.36	74.00	-38.64	peak	V
4647.000	27.20	9.86	37.06	74.00	-36.94	peak	V
7622.000	27.15	19.17	46.32	74.00	-27.68	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/04/2015
Frequency:	5745 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3009.000	32.59	4.24	36.83	74.00	-37.17	peak	H
4605.000	26.99	9.70	36.69	74.00	-37.31	peak	H
6719.000	27.79	16.41	44.20	74.00	-29.80	peak	H
3009.000	30.75	4.24	34.99	74.00	-39.01	peak	V
4563.000	25.36	9.55	34.91	74.00	-39.09	peak	V
6691.000	27.55	16.33	43.88	74.00	-30.12	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/04/2015
Frequency:	5785 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3009.000	31.38	4.24	35.62	74.00	-38.38	peak	H
4570.000	26.72	9.57	36.29	74.00	-37.71	peak	H
6866.000	28.77	16.83	45.60	74.00	-28.40	peak	H
3002.000	30.81	4.21	35.02	74.00	-38.98	peak	V
4647.000	26.73	9.86	36.59	74.00	-37.41	peak	V
6705.000	28.45	16.38	44.83	74.00	-29.17	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/04/2015
Frequency:	5825 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3051.000	31.80	4.37	36.17	74.00	-37.83	peak	H
4598.000	26.85	9.68	36.53	74.00	-37.47	peak	H
6705.000	28.74	16.38	45.12	74.00	-28.88	peak	H
3009.000	32.47	4.24	36.71	74.00	-37.29	peak	V
4605.000	26.46	9.70	36.16	74.00	-37.84	peak	V
6698.000	28.63	16.36	44.99	74.00	-29.01	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 4	Date:	11/04/2015
Frequency:	5190 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2785.000	32.31	3.47	35.78	74.00	-38.22	peak	H
4570.000	25.93	9.57	35.50	74.00	-38.50	peak	H
7650.000	28.35	19.22	47.57	74.00	-26.43	peak	H
2785.000	33.42	3.47	36.89	74.00	-37.11	peak	V
4577.000	26.43	9.60	36.03	74.00	-37.97	peak	V
7622.000	27.60	19.17	46.77	74.00	-27.23	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 4	Date:	11/04/2015
Frequency:	5230 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2813.000	33.09	3.57	36.66	74.00	-37.34	peak	H
4549.000	25.52	9.49	35.01	74.00	-38.99	peak	H
7643.000	28.33	19.20	47.53	74.00	-26.47	peak	H
2806.000	31.24	3.54	34.78	74.00	-39.22	peak	V
4570.000	26.71	9.57	36.28	74.00	-37.72	peak	V
7671.000	28.56	19.26	47.82	74.00	-26.18	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 4	Date:	11/04/2015
Frequency:	5755 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3009.000	31.23	4.24	35.47	74.00	-38.53	peak	H
4605.000	25.96	9.70	35.66	74.00	-38.34	peak	H
6719.000	26.87	16.41	43.28	74.00	-30.72	peak	H
3030.000	31.03	4.31	35.34	74.00	-38.66	peak	V
4598.000	27.91	9.68	37.59	74.00	-36.41	peak	V
6705.000	28.20	16.38	44.58	74.00	-29.42	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 4	Date:	11/04/2015
Frequency:	5795 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3009.000	31.73	4.24	35.97	74.00	-38.03	peak	H
4577.000	27.27	9.60	36.87	74.00	-37.13	peak	H
6649.000	27.11	16.22	43.33	74.00	-30.67	peak	H
3023.000	34.66	4.29	38.95	74.00	-35.05	peak	V
4605.000	25.98	9.70	35.68	74.00	-38.32	peak	V
6677.000	28.36	16.30	44.66	74.00	-29.34	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 5	Date:	11/04/2015
Frequency:	5210 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2806.000	31.34	3.54	34.88	74.00	-39.12	peak	H
4577.000	26.63	9.60	36.23	74.00	-37.77	peak	H
7678.000	27.70	19.28	46.98	74.00	-27.02	peak	H
2799.000	30.99	3.52	34.51	74.00	-39.49	peak	V
4598.000	27.80	9.68	37.48	74.00	-36.52	peak	V
7657.000	28.88	19.24	48.12	74.00	-25.88	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 5	Date:	11/04/2015
Frequency:	5775 MHz	Test By:	Eric Ou Yang
Description:			

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3030.000	32.47	4.31	36.78	74.00	-37.22	peak	H
4570.000	25.98	9.57	35.55	74.00	-38.45	peak	H
6705.000	27.74	16.38	44.12	74.00	-29.88	peak	H
3002.000	30.89	4.21	35.10	74.00	-38.90	peak	V
4451.000	27.21	9.16	36.37	74.00	-37.63	peak	V
6747.000	28.57	16.49	45.06	74.00	-28.94	peak	V

Band Edge

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/03/2015
Frequency:	5180 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
5004.000	39.80	11.22	51.02	74.00	-22.98	peak	H
5150.000	38.51	11.51	50.02	74.00	-23.98	peak	H
5096.400	39.83	11.40	51.23	74.00	-22.77	peak	V
5150.000	38.79	11.51	50.30	74.00	-23.70	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/03/2015
Frequency:	5240 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
5350.000	37.80	11.92	49.72	74.00	-24.28	peak	H
5384.320	39.41	11.98	51.39	74.00	-22.61	peak	H
5350.000	37.90	11.92	49.82	74.00	-24.18	peak	V
5384.320	39.30	11.98	51.28	74.00	-22.72	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/03/2015
Frequency:	5745 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
5715.000	40.01	12.81	52.82	68.20	-15.38	peak	H
5725.000	42.76	12.84	55.60	78.20	-22.60	peak	H
5715.000	39.43	12.81	52.24	68.20	-15.96	peak	V
5725.000	45.89	12.84	58.73	78.20	-19.47	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 2	Date:	11/03/2015
Frequency:	5825 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
5850.000	40.00	13.17	53.17	78.20	-25.03	peak	H
5860.000	38.93	13.20	52.13	68.20	-16.07	peak	H
5850.000	38.96	13.17	52.13	78.20	-26.07	peak	V
5860.000	38.93	13.20	52.13	68.20	-16.07	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/03/2015
Frequency:	5180 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
5145.400	40.09	11.51	51.60	74.00	-22.40	peak	H
5150.000	38.50	11.51	50.01	74.00	-23.99	peak	H
4982.300	40.17	11.14	51.31	74.00	-22.69	peak	V
5150.000	38.63	11.51	50.14	74.00	-23.86	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/03/2015
Frequency:	5240 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
5350.000	37.41	11.92	49.33	74.00	-24.67	peak	H
5357.700	39.39	11.93	51.32	74.00	-22.68	peak	H
5350.000	36.57	11.92	48.49	74.00	-25.51	peak	V
5355.940	39.38	11.92	51.30	74.00	-22.70	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/04/2015
Frequency:	5745 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
5715.000	40.55	12.81	53.36	68.20	-14.84	peak	H
5725.000	42.18	12.84	55.02	78.20	-23.18	peak	H
5715.000	40.22	12.81	53.03	68.20	-15.17	peak	V
5725.000	41.29	12.84	54.13	78.20	-24.07	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 3	Date:	11/04/2015
Frequency:	5825 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
5850.000	40.00	13.17	53.17	78.20	-25.03	peak	H
5860.000	38.42	13.20	51.62	68.20	-16.58	peak	H
5850.000	39.73	13.17	52.90	78.20	-25.30	peak	V
5860.000	40.10	13.20	53.30	68.20	-14.90	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 4	Date:	11/03/2015
Frequency:	5190 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
5143.300	45.84	11.50	57.34	74.00	-16.66	peak	H
5143.300	36.67	11.50	48.17	54.00	-5.83	AVG	H
5150.000	45.91	11.51	57.42	74.00	-16.58	peak	H
5150.000	38.13	11.51	49.64	54.00	-4.36	AVG	H
4934.700	40.00	10.97	50.97	74.00	-23.03	peak	V
5150.000	40.18	11.51	51.69	74.00	-22.31	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 4	Date:	11/03/2015
Frequency:	5230 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
5350.000	37.21	11.92	49.13	74.00	-24.87	peak	H
5439.070	39.67	12.09	51.76	74.00	-22.24	peak	H
5350.000	37.48	11.92	49.40	74.00	-24.60	peak	V
5424.120	39.49	12.06	51.55	74.00	-22.45	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 4	Date:	11/04/2015
Frequency:	5755 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
5715.000	48.11	12.81	60.92	68.20	-7.28	peak	H
5725.000	50.63	12.84	63.47	78.20	-14.73	peak	H
5715.000	42.35	12.81	55.16	68.20	-13.04	peak	V
5725.000	44.06	12.84	56.90	78.20	-21.30	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 4	Date:	11/04/2015
Frequency:	5795 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
5850.000	38.83	13.17	52.00	78.20	-26.20	peak	H
5860.000	38.59	13.20	51.79	68.20	-16.41	peak	H
5850.000	40.09	13.17	53.26	78.20	-24.94	peak	V
5860.000	38.34	13.20	51.54	68.20	-16.66	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 5	Date:	11/03/2015
Frequency:	5210 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
5145.120	49.51	11.51	61.02	74.00	-12.98	peak	H
5145.120	36.74	11.51	48.25	54.00	-5.75	AVG	H
5150.000	49.52	11.51	61.03	74.00	-12.97	peak	H
5150.000	38.32	11.51	49.83	54.00	-4.17	AVG	H
5350.000	37.83	11.92	49.75	74.00	-24.25	peak	H
5427.360	38.43	12.07	50.50	74.00	-23.50	peak	H
5129.760	43.94	11.48	55.42	74.00	-18.58	peak	V
5129.760	32.25	11.48	43.73	54.00	-10.27	AVG	V
5150.000	43.83	11.51	55.34	74.00	-18.66	peak	V
5150.000	32.78	11.51	44.29	54.00	-9.71	AVG	V
5350.000	37.54	11.92	49.46	74.00	-24.54	peak	V
5353.440	39.61	11.92	51.53	74.00	-22.47	peak	V

Standard:	FCC Part 15E	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AC815S	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Test Mode:	Mode 5	Date:	11/04/2015
Frequency:	5755 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
5715.000	44.64	12.81	57.45	68.20	-10.75	peak	H
5725.000	45.63	12.84	58.47	78.20	-19.73	peak	H
5850.000	38.82	13.17	51.99	78.20	-26.21	peak	H
5860.000	39.15	13.20	52.35	68.20	-15.85	peak	H
5715.000	44.64	12.81	57.45	68.20	-10.75	peak	V
5725.000	45.63	12.84	58.47	78.20	-19.73	peak	V
5850.000	38.82	13.17	51.99	78.20	-26.21	peak	V
5860.000	39.15	13.20	52.35	68.20	-15.85	peak	V

6 Maximum Conducted Output Power Measurement

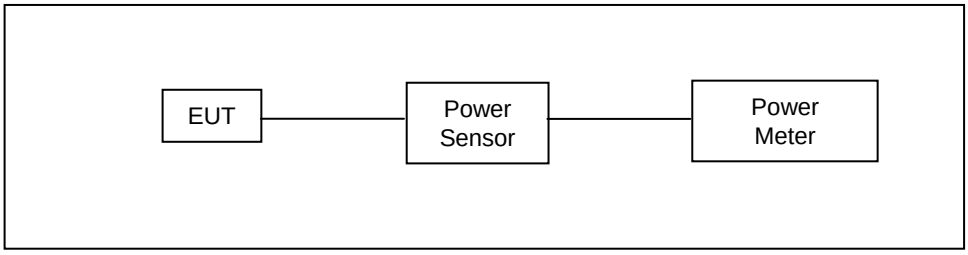
6.1. Limit

Conducted Output Power

Frequency Range (MHz)	FCC Limit
5.150 ~ 5.250 GHz	The lesser of 1W (30dBm)
5.725 ~ 5.850 GHz	The lesser of 1000mW (30dBm)

Note: Where B is the 26dB emission bandwidth in MHz.

6.2. Test Setup



6.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Power Sensor	Anritsu	MA2411B	1126022	08/24/2015	1 year
Power Meter	Anritsu	ML2495A	1135009	08/24/2015	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

6.4. Test Procedure

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

6.5. Test Result

Model Number	AC815S						
Test Item	Maximum Conducted Output Power						
Test Mode	Mode 2: IEEE 802.11a link mode						
Date of Test	10/08/2015						
Frequency (MHz)	Data Rate	ANT-0		ANT-1		ANT-0+1		FCC Limit (dBm)
		Max. Outup Power		Max. Outup Power		Max. Outup Power		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
5180	6M	9.79	0.010	9.39	0.009	**12.60**	**0.018**	< 30
5200		9.68	0.009	9.26	0.008	12.49	0.018	
5220		9.58	0.009	9.32	0.009	12.46	0.018	
5240		9.63	0.009	9.16	0.008	12.41	0.017	
5745		9.23	0.008	8.93	0.008	12.09	0.016	< 30
5765		9.25	0.008	9.00	0.008	12.14	0.016	
5785		9.29	0.008	9.07	0.008	12.19	0.017	
5805		9.39	0.009	9.13	0.008	**12.27**	**0.017**	
5825		9.30	0.009	9.16	0.008	12.24	0.017	
5180	54M	9.70	0.009	9.29	0.008	12.51	0.018	< 30
5200		9.59	0.009	9.14	0.008	12.38	0.017	
5220		9.53	0.009	9.20	0.008	12.38	0.017	
5240		9.55	0.009	9.04	0.008	12.31	0.017	
5745		9.14	0.008	8.85	0.008	12.01	0.016	< 30
5765		9.18	0.008	8.92	0.008	12.06	0.016	
5785		9.21	0.008	9.00	0.008	12.12	0.016	
5805		9.31	0.009	9.08	0.008	12.21	0.017	
5825		9.24	0.008	9.12	0.008	12.19	0.017	

Model Number	AC815S						
Test Item	Maximum Conducted Output Power						
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode						
Date of Test	10/08/2015						
Frequency (MHz)	Data Rate	ANT-0		ANT-1		ANT-0+1		FCC Limit (dBm)
		Max. Outup Power		Max. Outup Power		Max. Outup Power		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
5180	13M	9.58	0.009	9.22	0.008	**12.41**	**0.017**	< 30
5200		9.41	0.009	9.17	0.008	12.30	0.017	
5220		9.52	0.009	9.23	0.008	12.39	0.017	
5240		9.47	0.009	9.05	0.008	12.28	0.017	
5745		9.13	0.008	8.91	0.008	12.03	0.016	< 30
5765		8.93	0.008	8.88	0.008	11.92	0.016	
5785		9.08	0.008	8.97	0.008	12.04	0.016	
5805		9.19	0.008	9.07	0.008	**12.14**	**0.016**	
5825		9.10	0.008	9.04	0.008	12.08	0.016	
5180	156M	9.43	0.009	9.05	0.008	12.25	0.017	< 30
5200		9.25	0.008	8.99	0.008	12.13	0.016	
5220		9.39	0.009	9.09	0.008	12.25	0.017	
5240		9.31	0.009	8.91	0.008	12.12	0.016	
5745		9.03	0.008	8.76	0.008	11.91	0.016	< 30
5765		8.79	0.008	8.72	0.007	11.77	0.015	
5785		8.94	0.008	8.85	0.008	11.91	0.016	
5805		9.09	0.008	8.95	0.008	12.03	0.016	
5825		9.01	0.008	8.91	0.008	11.97	0.016	

Model Number	AC815S						
Test Item	Maximum Conducted Output Power						
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode						
Date of Test	10/08/2015						
Frequency (MHz)	Data Rate	ANT-0		ANT-1		ANT-0+1		FCC Limit (dBm)
		Max. Outup Power		Max. Outup Power		Max. Outup Power		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
5190	27M	9.12	0.008	8.72	0.007	11.93	0.016	< 30
5230		9.19	0.008	8.86	0.008	**12.04**	**0.016**	
5755		9.39	0.009	9.28	0.008	12.35	0.017	< 30
5795		9.42	0.009	9.33	0.009	**12.39**	**0.017**	
5190	360M	8.75	0.007	8.41	0.007	11.59	0.014	< 30
5230		8.83	0.008	8.55	0.007	11.70	0.015	
5755		9.31	0.009	9.16	0.008	12.25	0.017	< 30
5795		9.36	0.009	9.24	0.008	12.31	0.017	

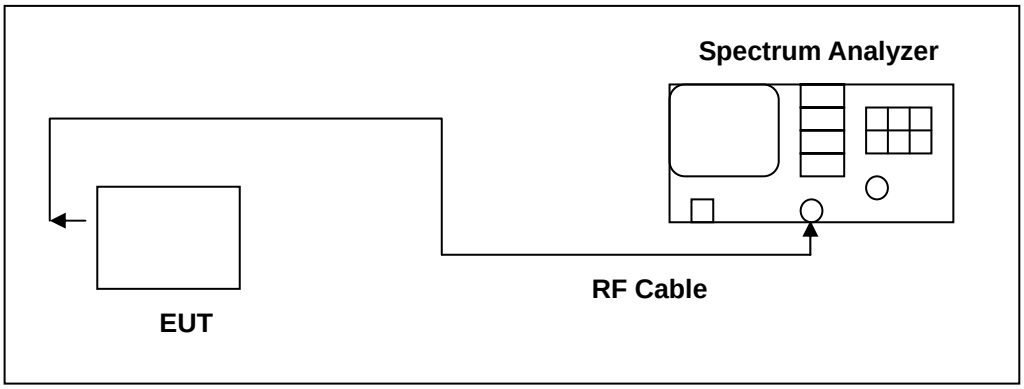
Model Number	AC815S						
Test Item	Maximum Conducted Output Power						
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode						
Date of Test	10/08/2015						
Frequency (MHz)	Data Rate	ANT-0		ANT-1		ANT-0+1		FCC Limit (dBm)
		Max. Outup Power		Max. Outup Power		Max. Outup Power		
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	
5210	58.6M	9.80	0.010	9.46	0.009	**12.64**	**0.018**	< 30
5775		9.32	0.009	9.09	0.008	12.22	0.017	< 30
5210	780M	8.59	0.007	8.28	0.007	**11.45**	**0.014**	< 30
5775		8.10	0.006	7.89	0.006	11.01	0.013	< 30

7 26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement

7.1. Limit

N/A

7.2. Test Setup



7.3. Test Instruments

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

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

7.4. Test Procedure

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

7.5. Test Result

Model Number	AC815S			
Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement			
Test Mode	Mode 2: IEEE 802.11a link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0		ANT-1	
	26dB Bandwidth (MHz)	99 % Occupied Bandwidth	26dB Bandwidth (MHz)	99 % Occupied Bandwidth
5180	19.661	16.304	19.556	16.271
5200	19.258	16.291	19.517	16.294
5240	19.592	16.312	19.855	16.274

Model Number	AC815S			
Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0		ANT-1	
	26dB Bandwidth (MHz)	99 % Occupied Bandwidth	26dB Bandwidth (MHz)	99 % Occupied Bandwidth
5180	20.403	17.388	20.427	17.409
5200	20.434	17.391	20.328	17.396
5240	20.455	17.401	20.987	17.410

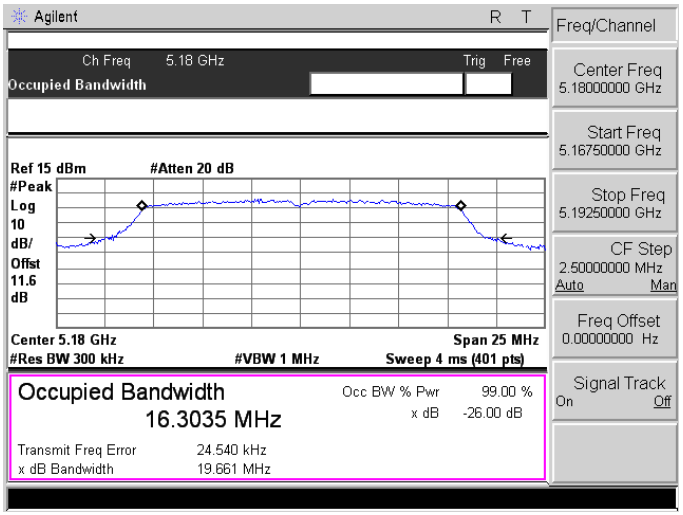
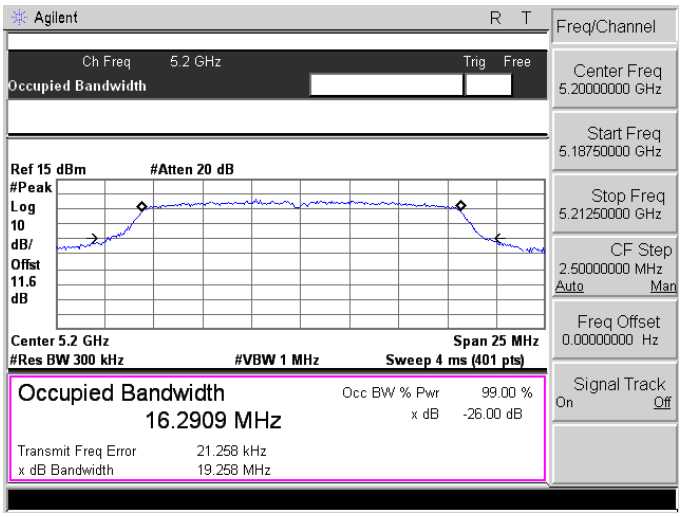
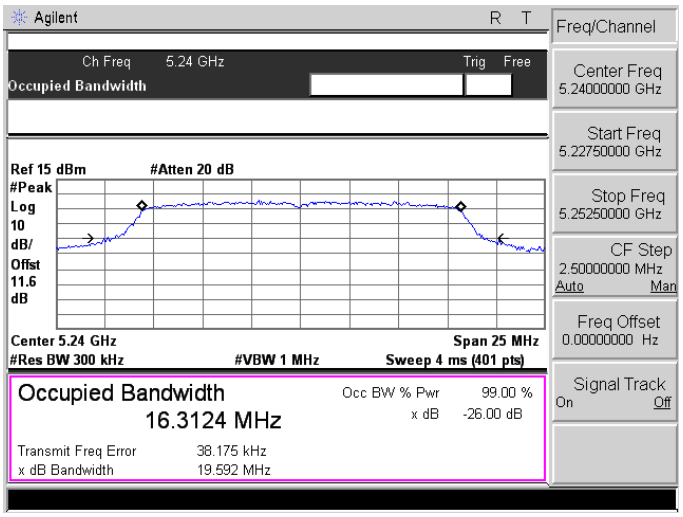
Model Number	AC815S			
Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0		ANT-1	
	26dB Bandwidth (MHz)	99 % Occupied Bandwidth	26dB Bandwidth (MHz)	99 % Occupied Bandwidth
5190	45.530	35.933	43.902	35.911
5230	44.357	35.950	42.415	35.945

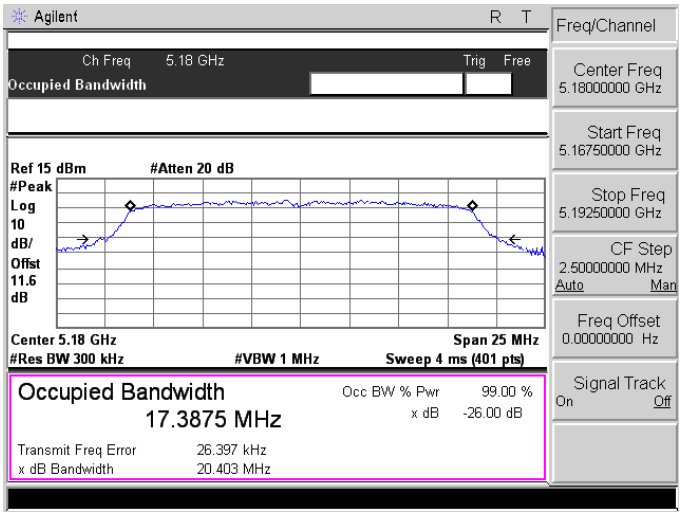
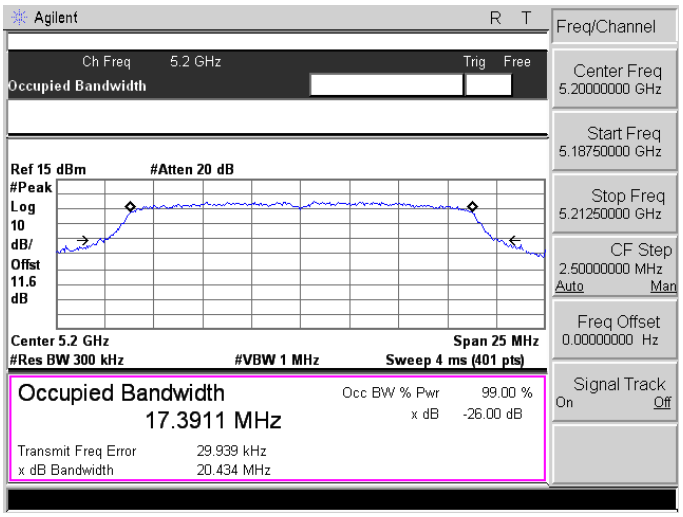
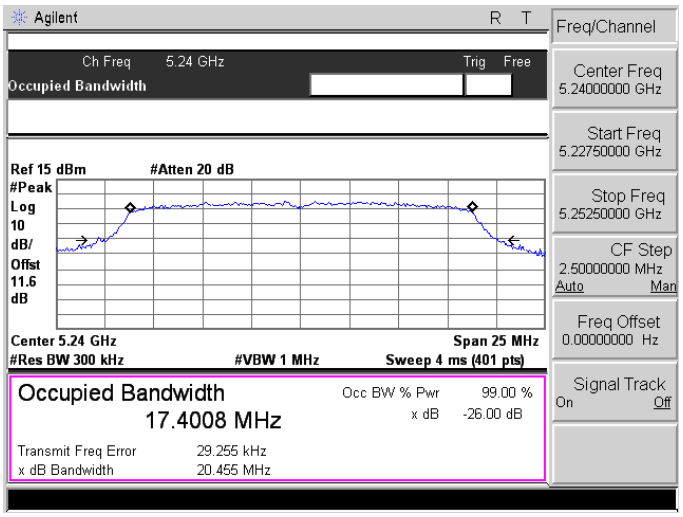
Note: The 99% occupied bandwidth not crossed 5250MHz.

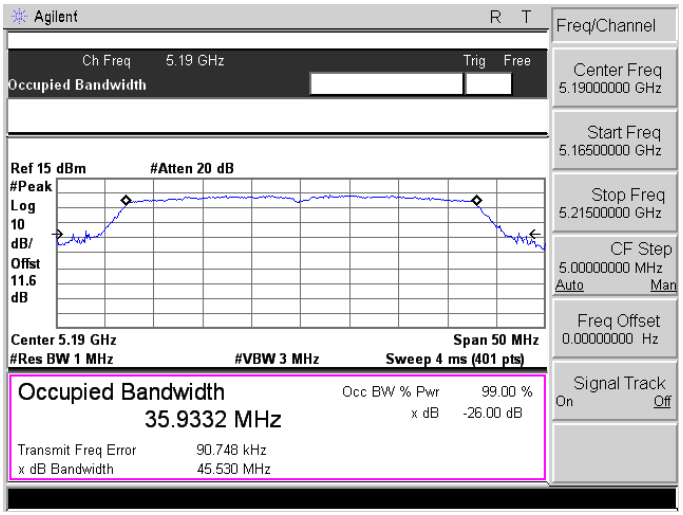
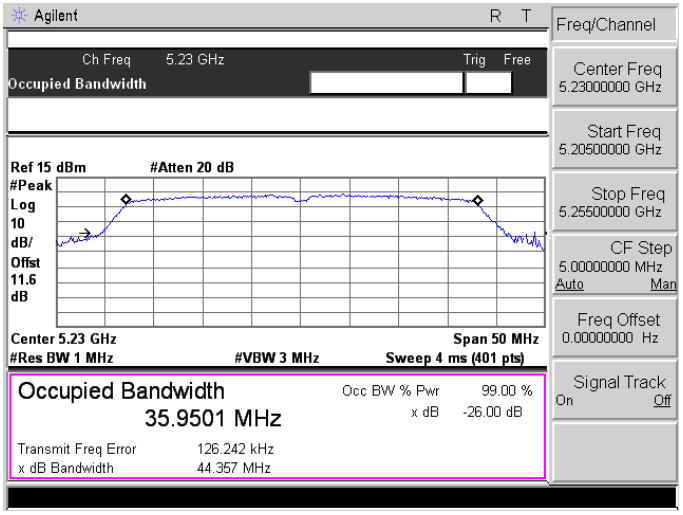
Model Number	AC815S			
Test Item	26dB RF Bandwidth & 99 % Occupied Bandwidth Measurement			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0		ANT-1	
	26dB Bandwidth (MHz)	99 % Occupied Bandwidth	26dB Bandwidth (MHz)	99 % Occupied Bandwidth
5210	81.145	74.472	81.238	74.441

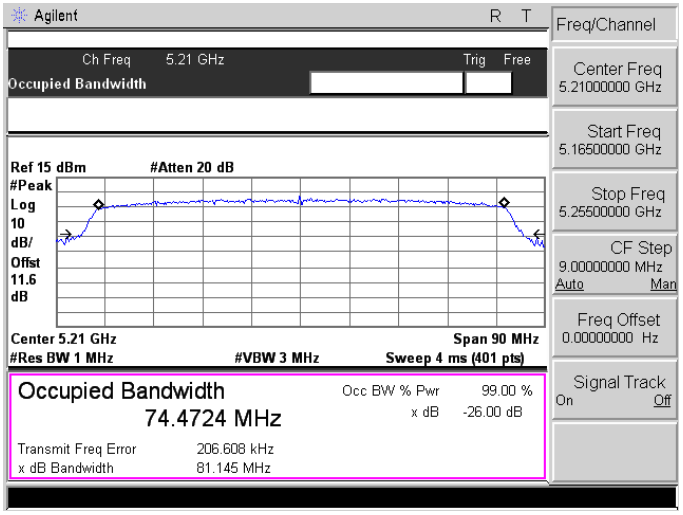
Note: The 99% occupied bandwidth not crossed 5250MHz.

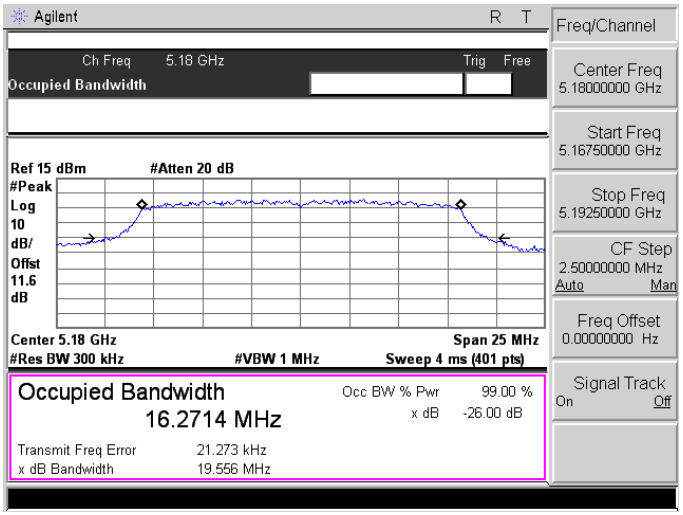
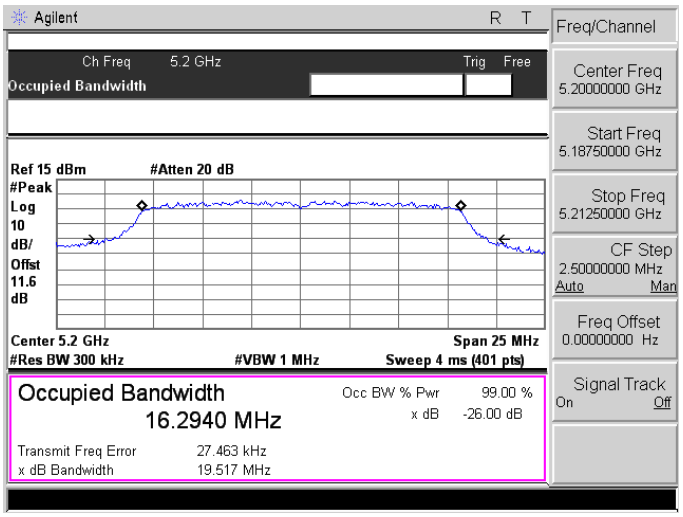
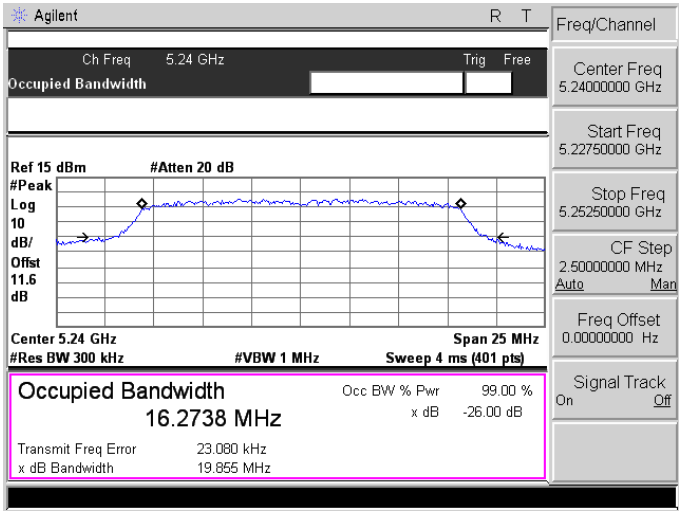
7.6. Test Graphs

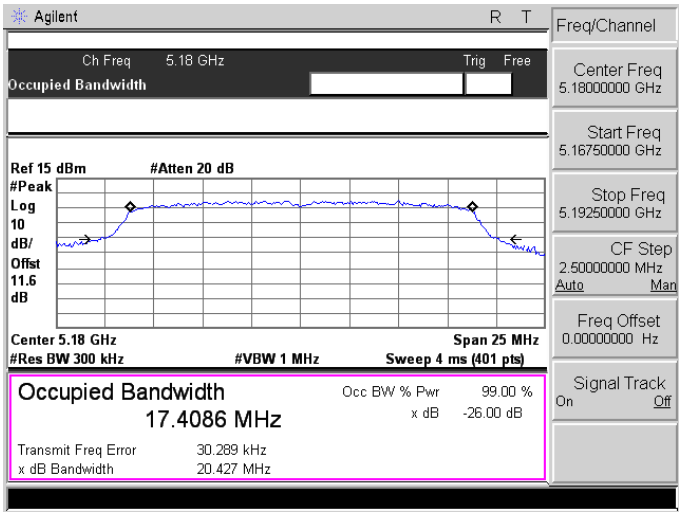
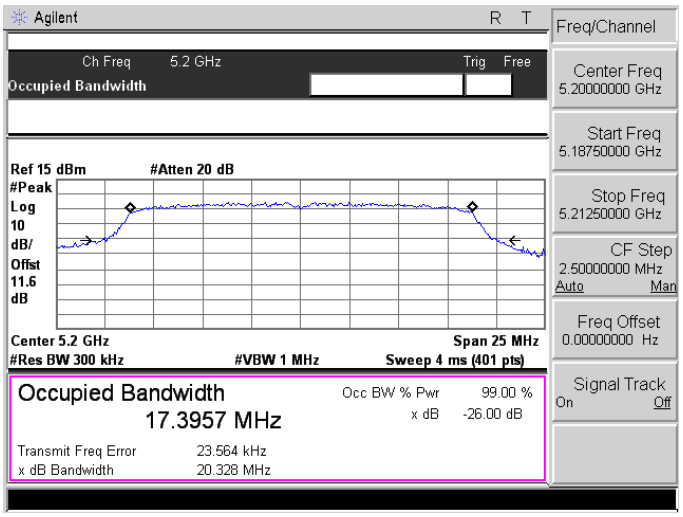
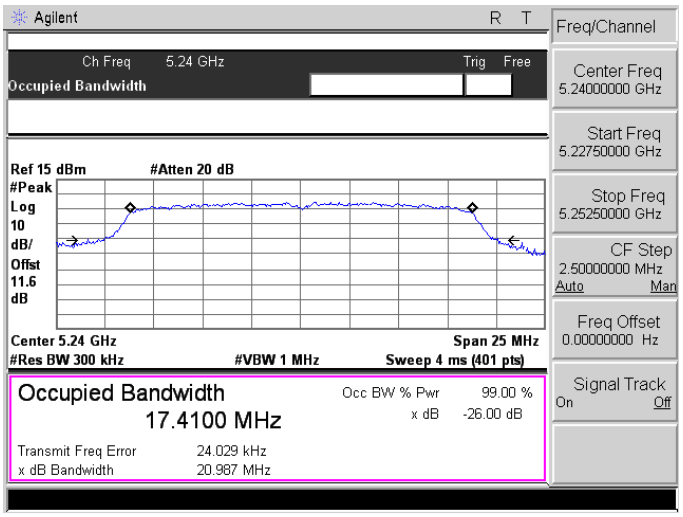
Mode 2: IEEE 802.11a link mode_ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	

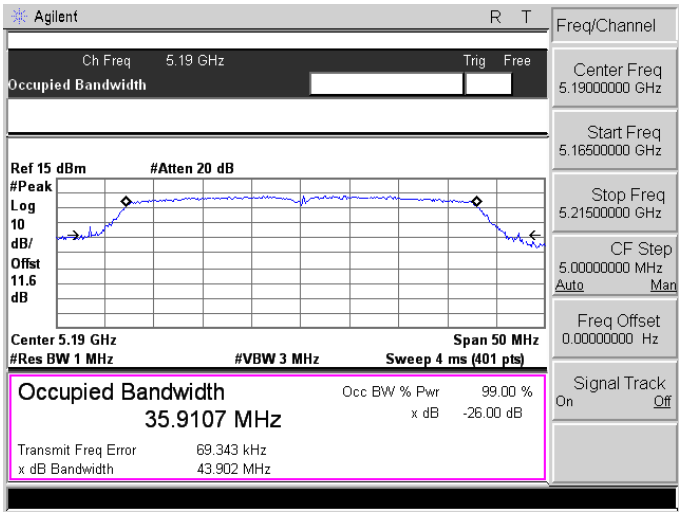
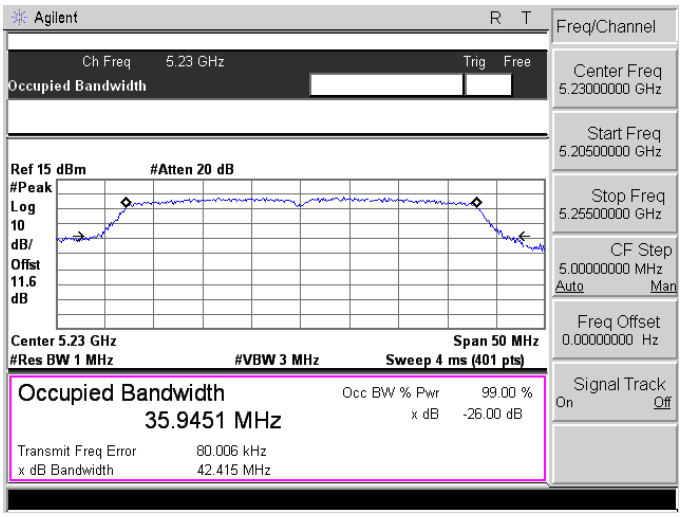
Mode 3: IEEE 802.11ac 20MHz link mode_ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	

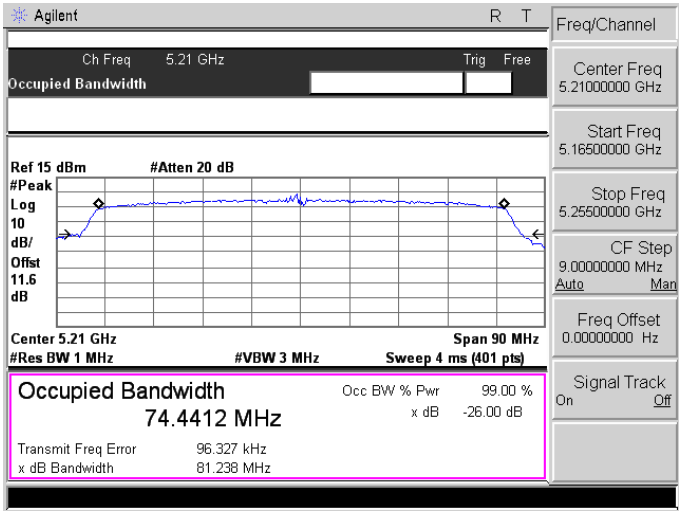
Mode 4: IEEE 802.11ac 40MHz link mode_ ANT-0	
5190 MHz	
5230 MHz	

Mode 5: IEEE 802.11ac 80MHz link mode_ ANT-0	
5210 MHz	

Mode 2: IEEE 802.11a link mode_ ANT-1	
5180 MHz	
5200 MHz	
5240 MHz	

Mode 3: IEEE 802.11ac 20MHz link mode_ ANT-1	
5180 MHz	
5200 MHz	
5240 MHz	

Mode 4: IEEE 802.11ac 40MHz link mode_ ANT-1	
5190 MHz	
5230 MHz	

Mode 5: IEEE 802.11ac 80MHz link mode_ ANT-1	
5210 MHz	

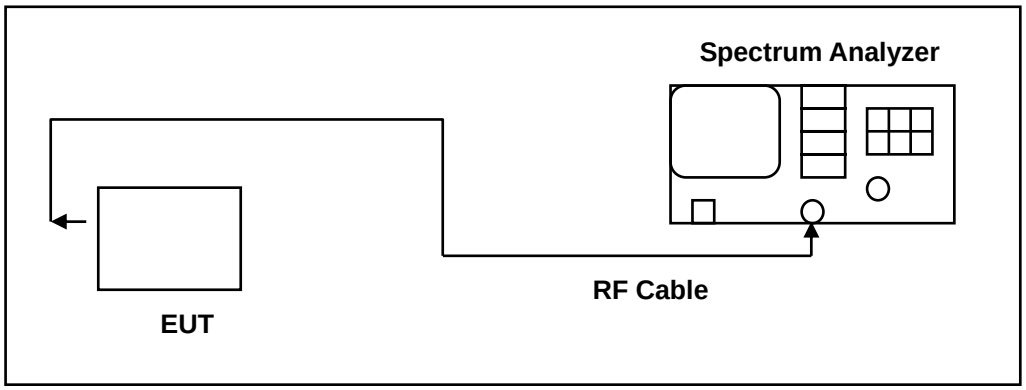
8 6dB RF Bandwidth Measurement

8.1. Limit

6dB RF Bandwidth

Systems using digital modulation techniques may operate in the 5725~5850MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

8.2. Test Setup



8.3. Test Instruments

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

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

8.4. Test Procedure

6dB RF Bandwidth

The EUT tested to UNII test procedure of KDB789033 D02 for compliance to FCC 47CFR 15.407 requirements.

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.

8.5. Test Result

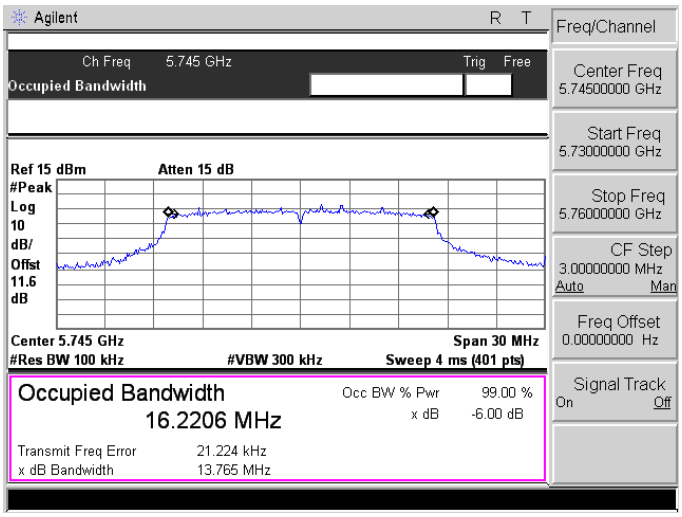
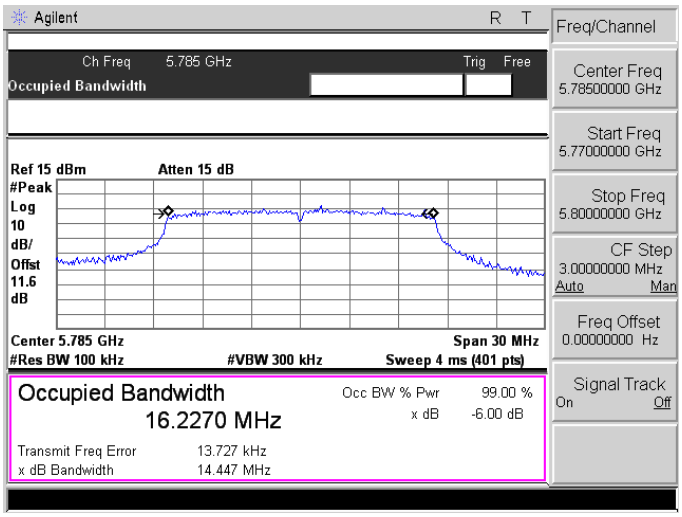
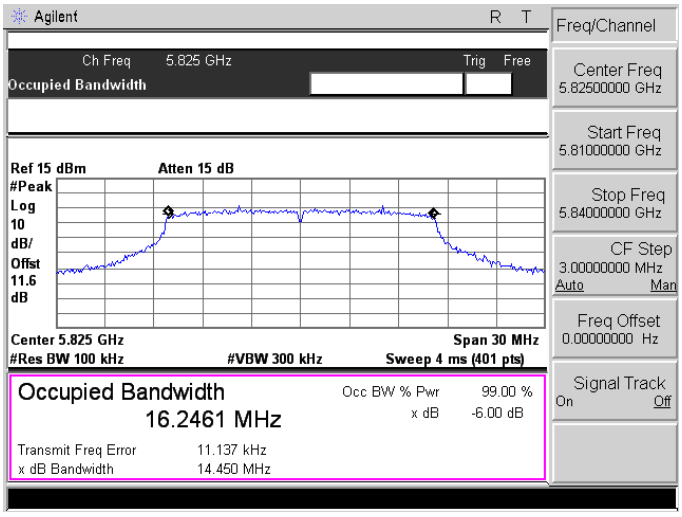
Model Number	AC815S		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 2: IEEE 802.11a link mode		
Date of Test	10/27/2015		
Frequency (MHz)	ANT-0 (kHz)	ANT-1 (kHz)	Limit (kHz)
5745	13765	14522	> 500
5785	14447	15042	> 500
5825	14450	14985	> 500

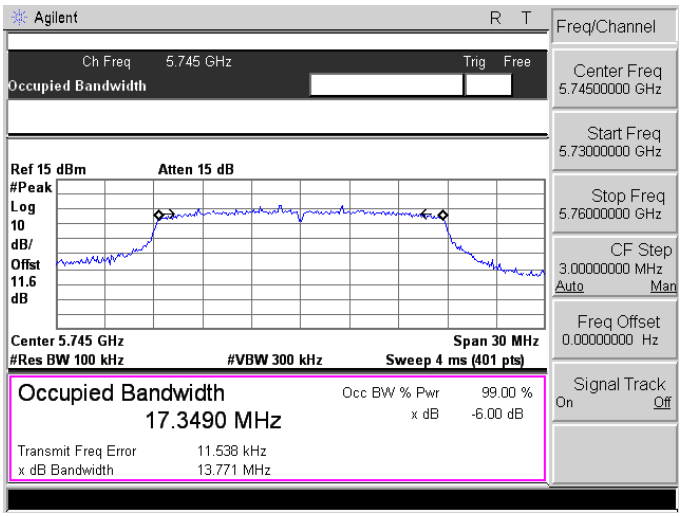
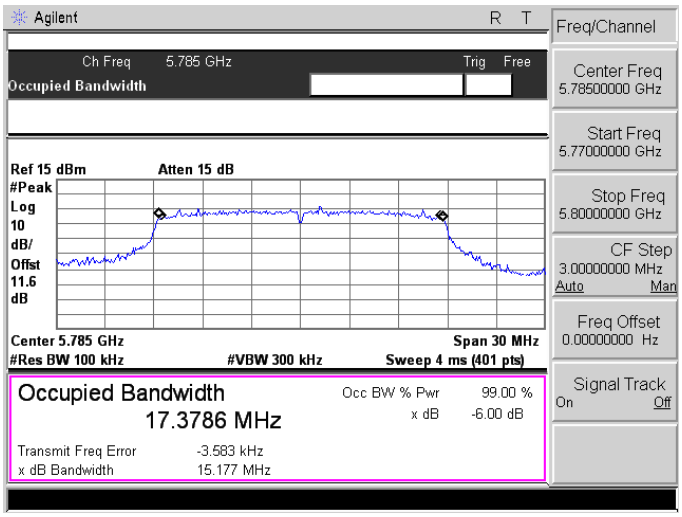
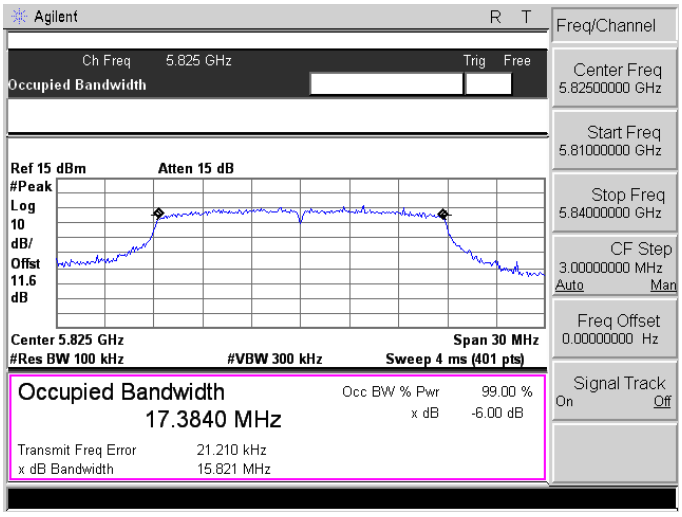
Model Number	AC815S		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode		
Date of Test	10/27/2015		
Frequency (MHz)	ANT-0 (kHz)	ANT-1 (kHz)	Limit (kHz)
5745	13771	15847	> 500
5785	15177	14759	> 500
5825	15821	15202	> 500

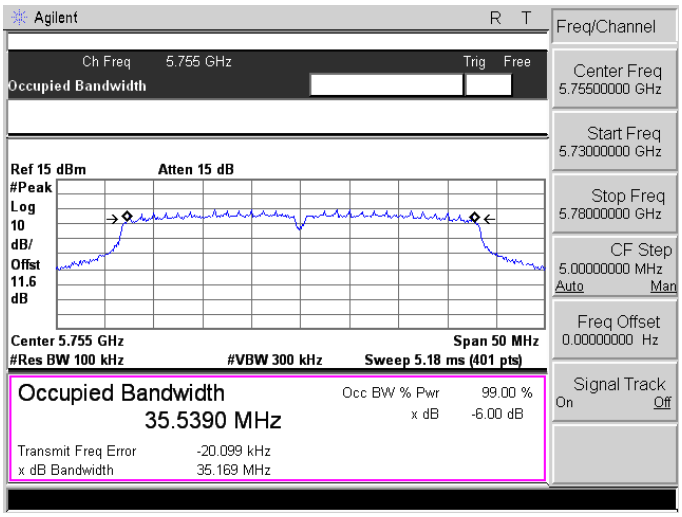
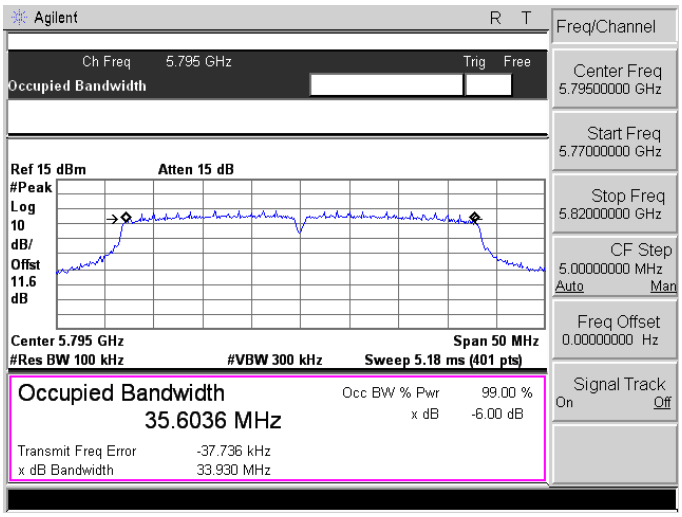
Model Number	AC815S		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode		
Date of Test	10/27/2015		
Frequency (MHz)	ANT-0 (kHz)	ANT-1 (kHz)	Limit (kHz)
5755	36169	33937	> 500
5795	33930	32846	> 500

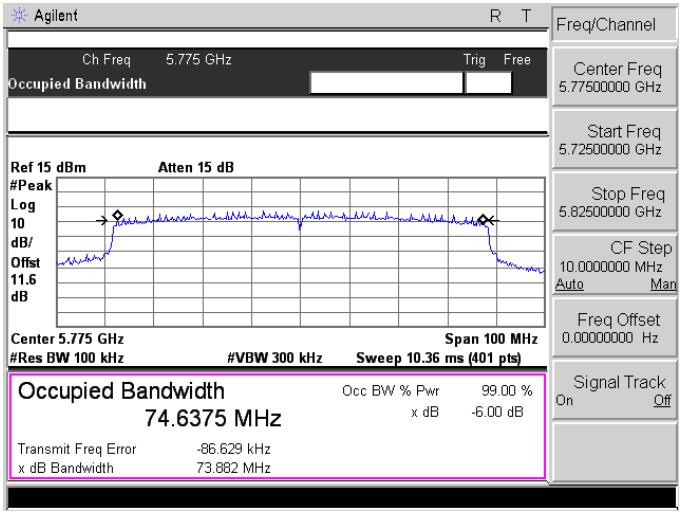
Model Number	AC815S		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode		
Date of Test	10/27/2015		
Frequency (MHz)	ANT-0 (kHz)	ANT-1 (kHz)	Limit (kHz)
5775	73882	71465	> 500

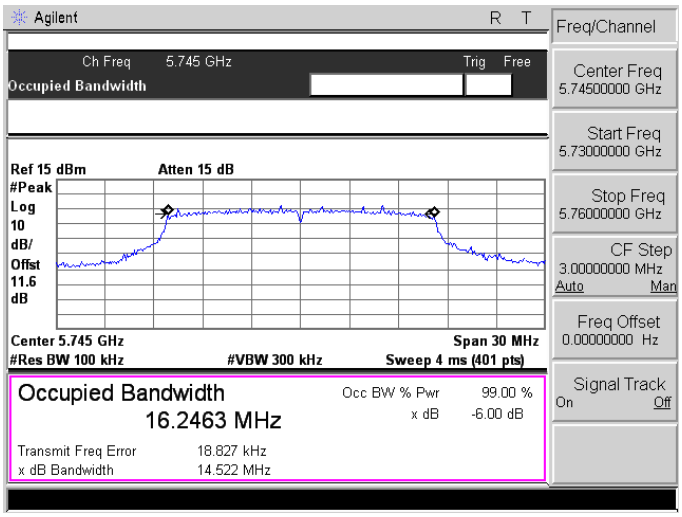
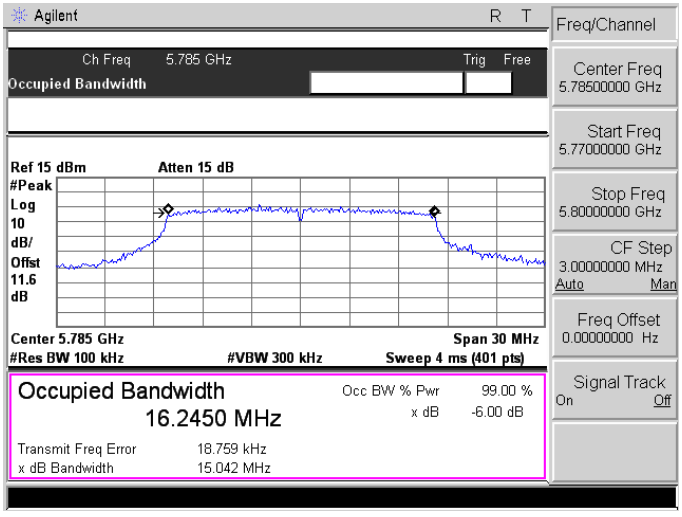
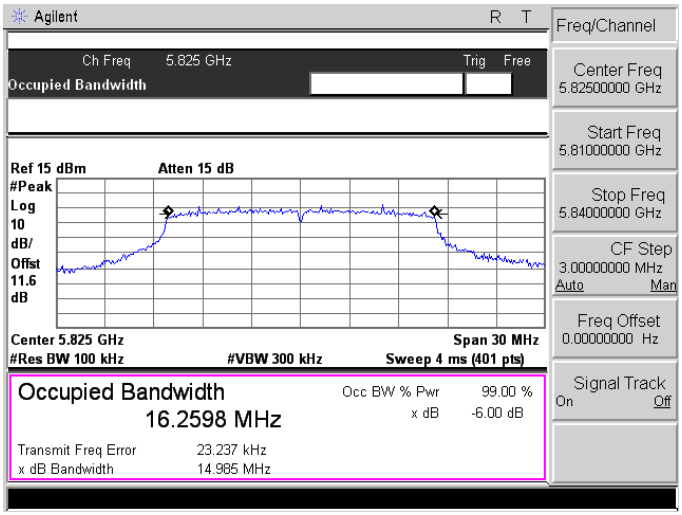
8.6. Test Graphs

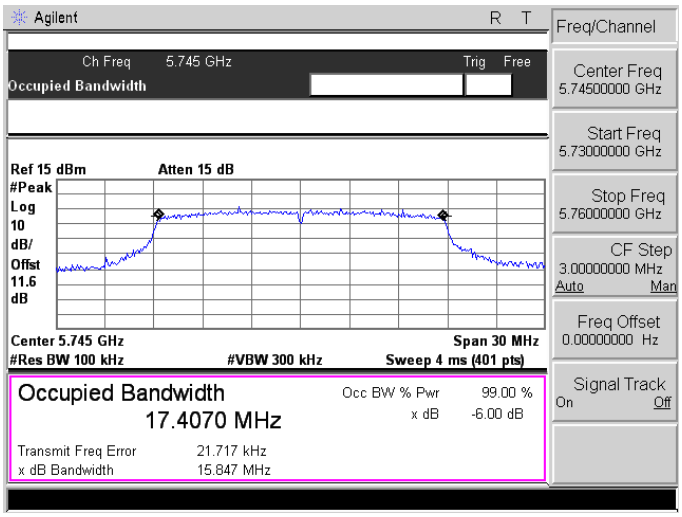
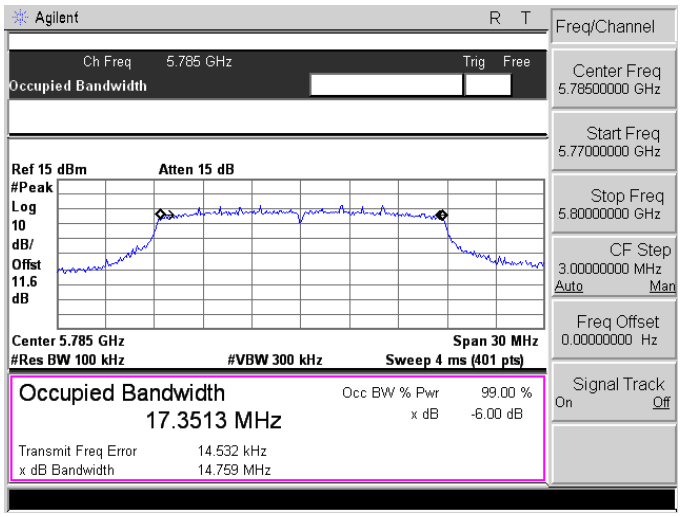
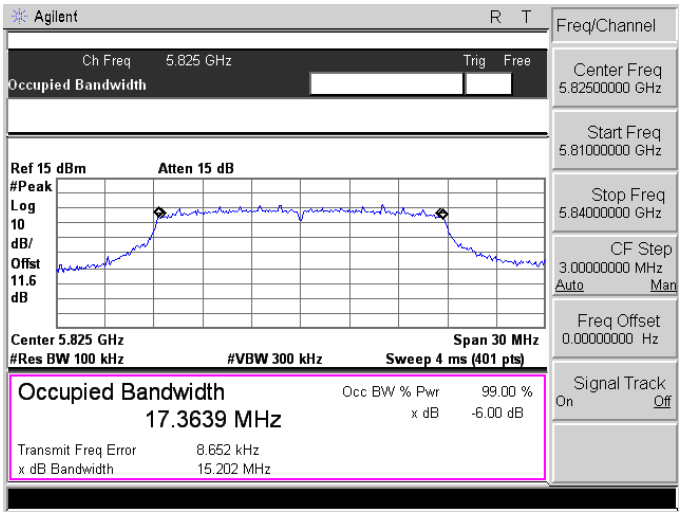
Mode 2: IEEE 802.11a link mode_ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	

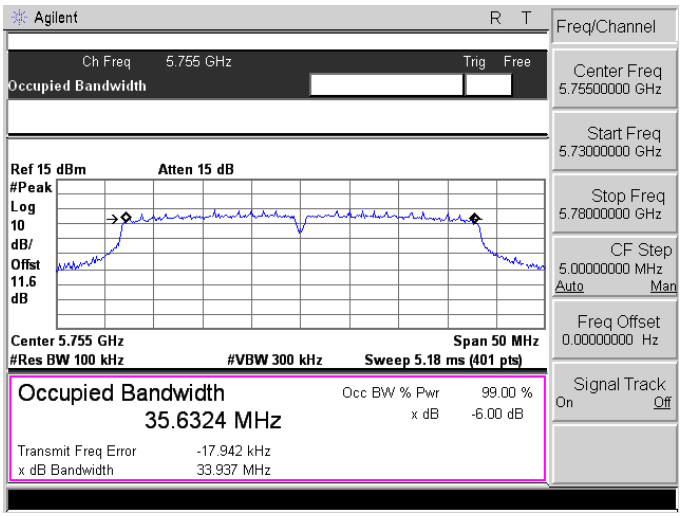
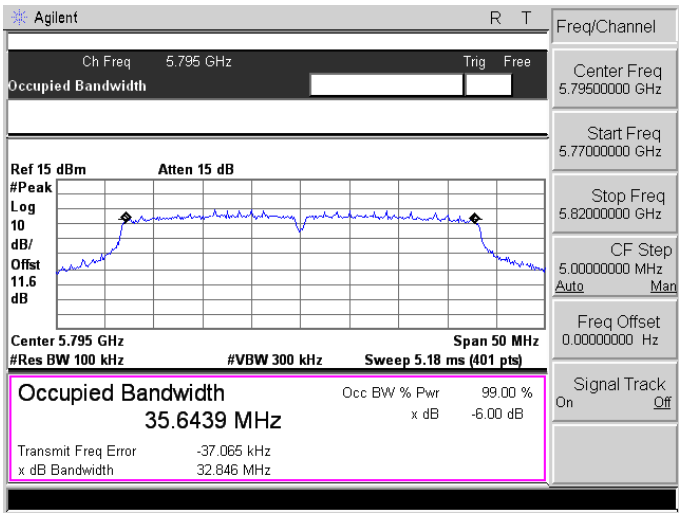
Mode 3: IEEE 802.11ac 20MHz link mode_ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	

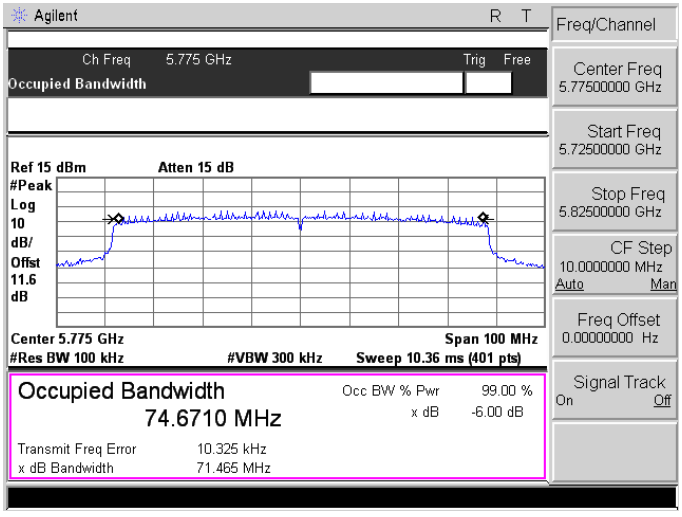
Mode 4: IEEE 802.11ac 40MHz link mode_ANT-0	
5755 MHz	
5795 MHz	

Mode 5: IEEE 802.11ac 80MHz link mode_ANT-0	
5775 MHz	

Mode 2: IEEE 802.11a link mode_ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	

Mode 3: IEEE 802.11ac 20MHz link mode_ANT-1	
5745 MHz	
5785 MHz	
5825 MHz	

Mode 4: IEEE 802.11ac 40MHz link mode_ANT-1	
5755 MHz	
5795 MHz	

Mode 5: IEEE 802.11ac 80MHz link mode_ANT-1	
5775 MHz	

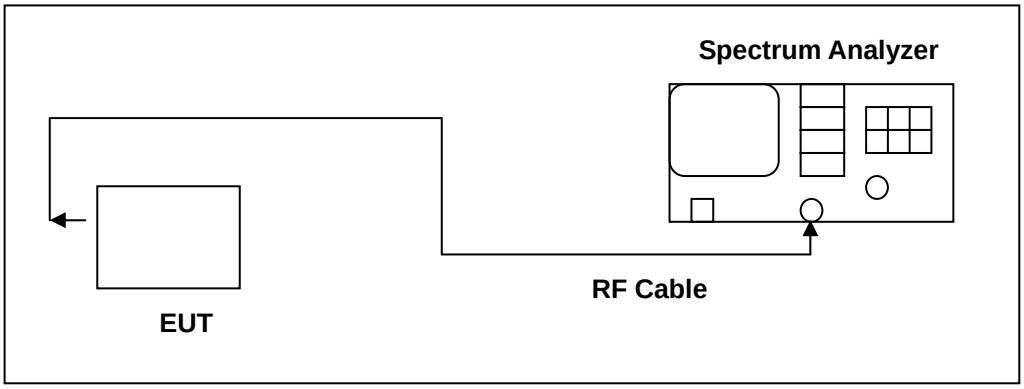
9 Peak Power Spectral Density Measurement

9.1. Limit

Conducted power spectral density

Frequency Range (MHz)	FCC Limit
5.150 ~ 5.250 GHz	17 dBm/MHz
5.725 ~ 5.850 GHz	30 dBm/500KHz

9.2. Test Setup



9.3. Test Instruments

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

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

9.4. Test Procedure

The test is performed in accordance with KDB789033: D02 General UNII Test Procedures New Rules v01, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

9.5. Test Result

Model Number	AC815S			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-3.235	0.101	-3.134	<17
5200	-3.234	0.101	-3.133	
5240	-3.343	0.101	-3.242	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-3.591	0.101	-3.490	<17
5200	-3.564	0.101	-3.463	
5240	-3.078	0.101	-2.977	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5180	-0.298			<17
5200	-0.285			
5240	-0.097			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.

Model Number	AC815S			
Test Item	Conducted power spectral density			
Test Mode	Mode 2: IEEE 802.11a link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-12.18	0.101	-5.09	< 30
5785	-12.55	0.101	-5.46	
5825	-12.65	0.101	-5.56	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-12.02	0.101	-4.93	< 30
5785	-12.53	0.101	-5.44	
5825	-12.50	0.101	-5.41	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/500KHz)
5745	-2.00			< 30
5785	-2.44			
5825	-2.47			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.

Model Number	AC815S			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-3.801	0.055	-3.746	<17
5200	-3.502	0.055	-3.447	
5240	-3.510	0.055	-3.455	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5180	-3.410	0.055	-3.355	<17
5200	-3.679	0.055	-3.624	
5240	-3.917	0.055	-3.862	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5180	-0.536			<17
5200	-0.525			
5240	-0.644			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.

Model Number	AC815S			
Test Item	Conducted power spectral density			
Test Mode	Mode 3: IEEE 802.11ac 20MHz link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-13.59	0.055	-6.55	< 30
5785	-13.10	0.055	-6.06	
5825	-13.11	0.055	-6.07	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5745	-13.10	0.055	-6.06	< 30
5785	-13.13	0.055	-6.09	
5825	-12.92	0.055	-5.88	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/500KHz)
5745	-3.28			< 30
5785	-3.06			
5825	-2.96			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.

Model Number	AC815S			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-6.015	0.256	-5.759	<17
5230	-6.432	0.256	-6.176	
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5190	-6.489	0.256	-6.233	<17
5230	-6.527	0.256	-6.271	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5190	-2.980			<17
5230	-3.213			

Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.

Model Number	AC815S			
Test Item	Conducted power spectral density			
Test Mode	Mode 4: IEEE 802.11ac 40MHz link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-16.14	0.256	-8.89	< 30
5795	-16.04	0.256	-8.79	
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/500KHz)
5755	-16.04	0.256	-8.79	< 30
5795	-15.93	0.256	-8.68	
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/500KHz)
5755	-5.83			< 30
5795	-5.73			

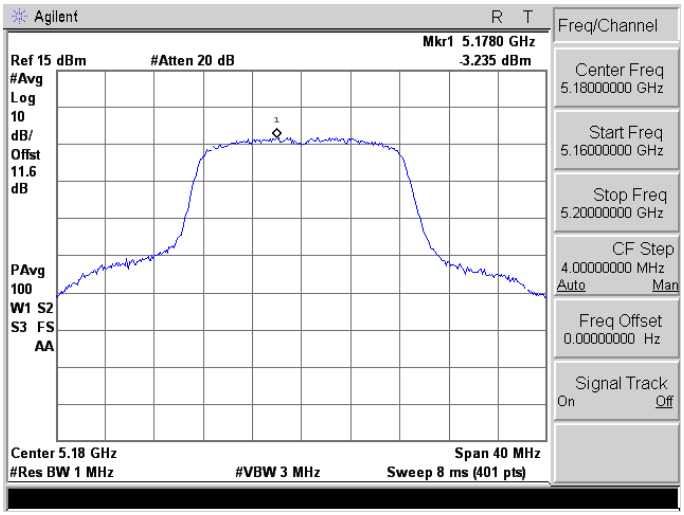
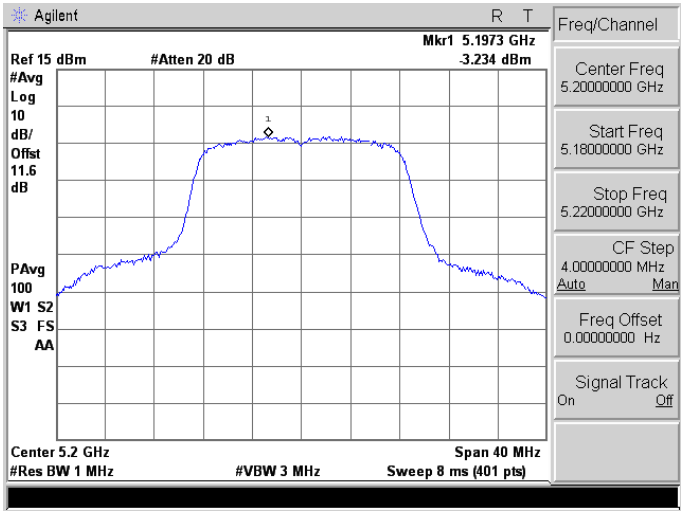
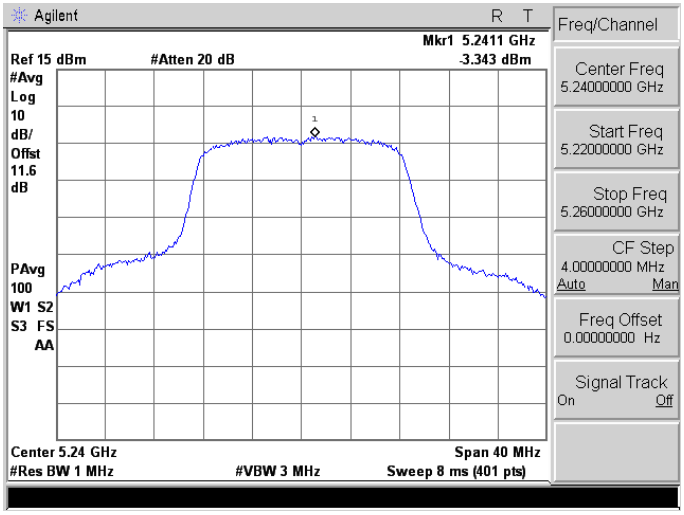
Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.

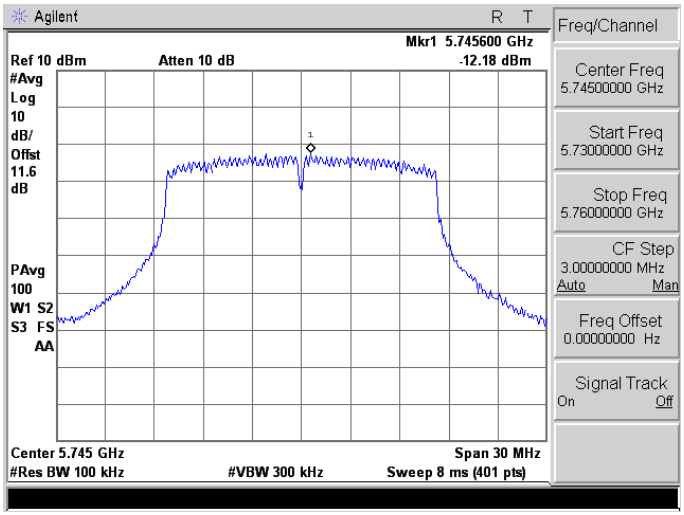
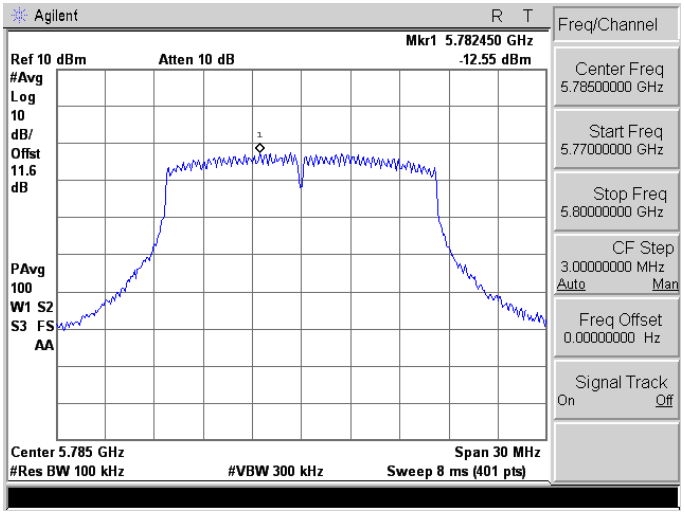
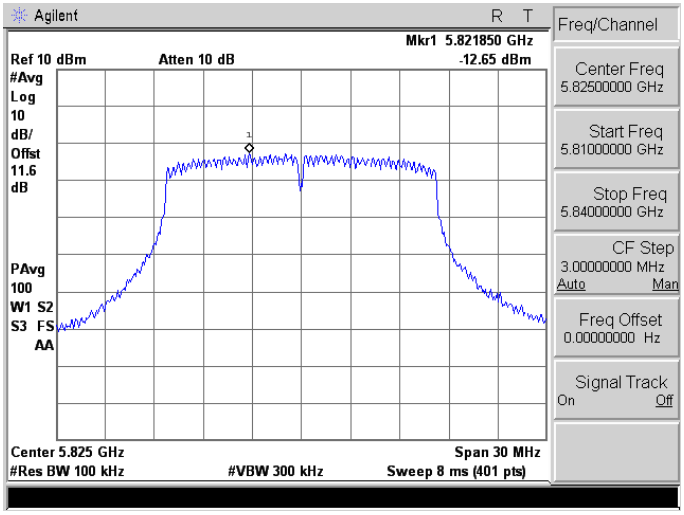
Model Number	AC815S			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-9.765	0.497	-9.268	<17
Frequency (MHz)	ANT-1			
	Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
5210	-10.370	0.497	-9.873	<17
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/MHz)			Limit (dBm/MHz)
5210	-6.550			<17

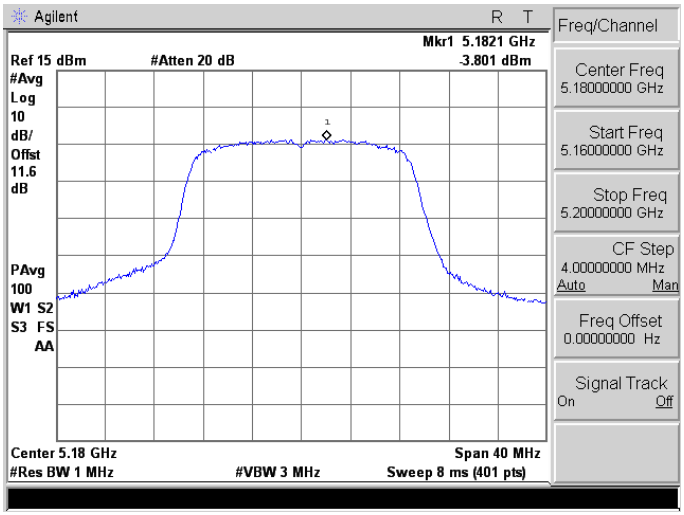
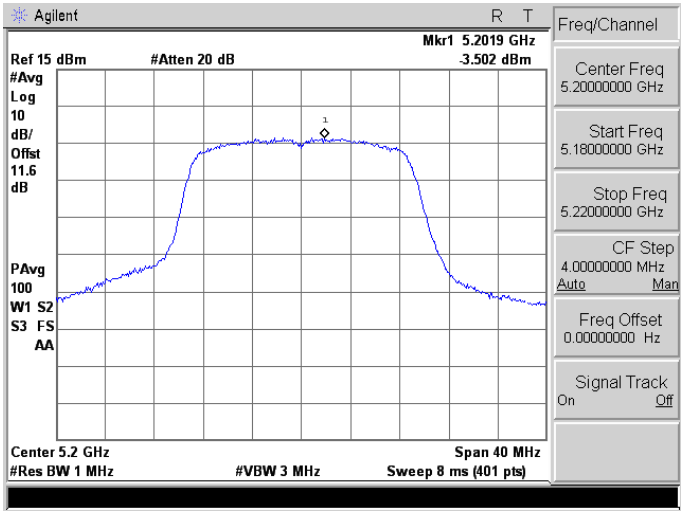
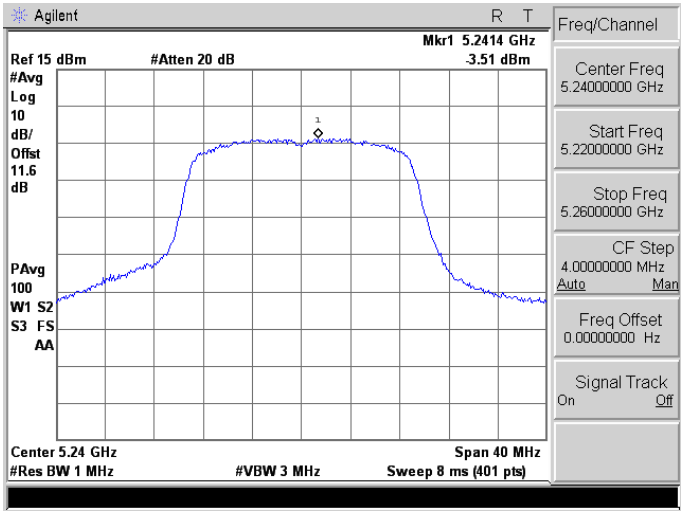
Model Number	AC815S			
Test Item	Conducted power spectral density			
Test Mode	Mode 5: IEEE 802.11ac 80MHz link mode			
Date of Test	10/28/2015			
Frequency (MHz)	ANT-0			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-19.86	0.497	-12.37	< 30
Frequency (MHz)	ANT-1			
	Measurement (dBm/100KHz)	Duty Factor (dB)	Calculated (dBm/500KHz)	Limit (dBm/MHz)
5775	-19.77	0.497	-12.28	< 30
Frequency (MHz)	ANT-0+1			
	Calculated (dBm/500KHz)			Limit (dBm/MHz)
5210	-9.32			< 30

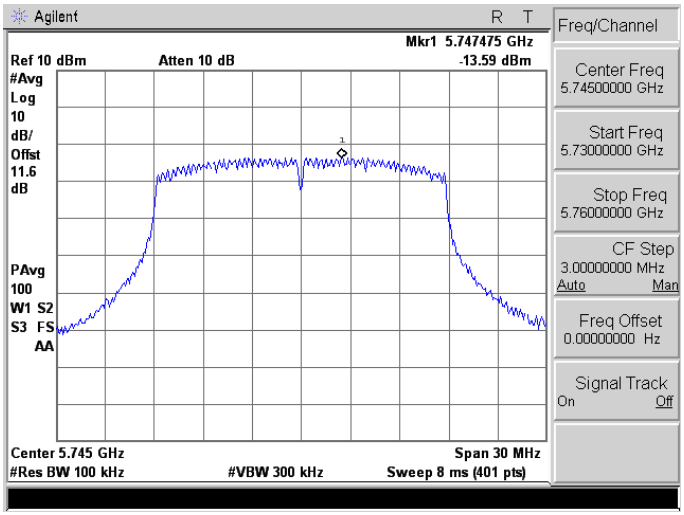
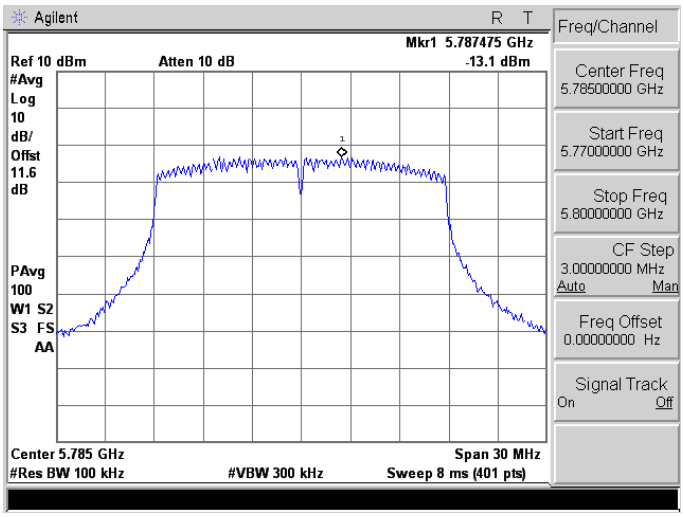
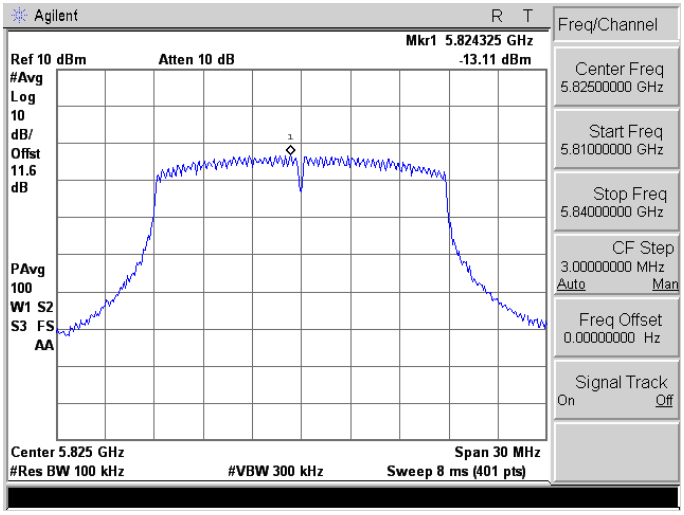
Note: Method SA-2, Power density = measured result + 10log(1/duty cycle) = measured result + duty factor.

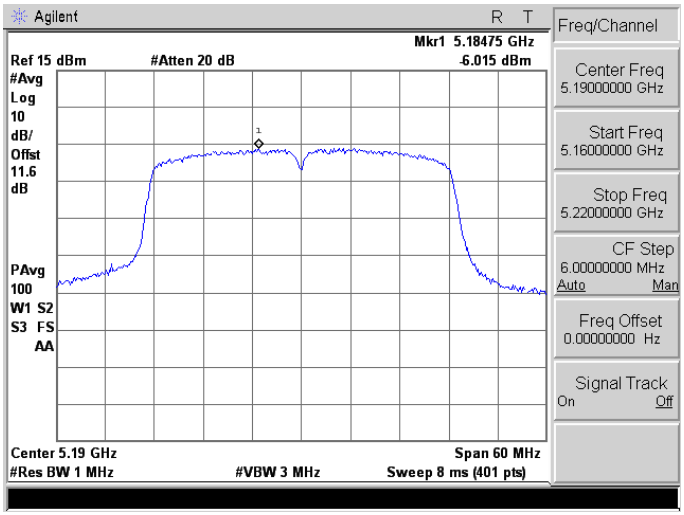
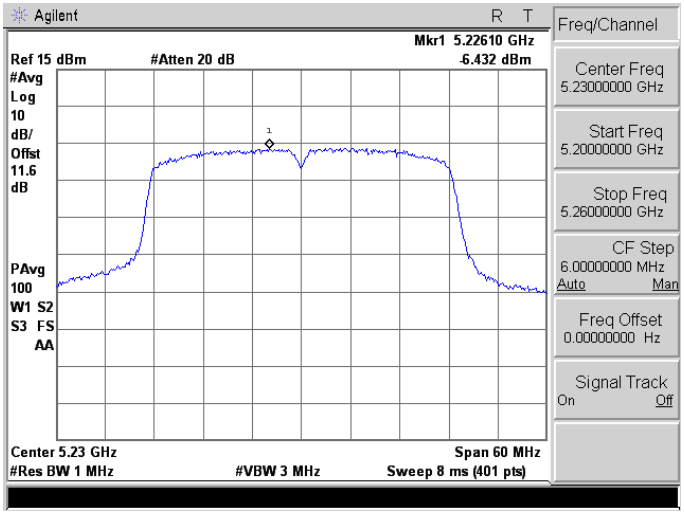
9.6. Test Graphs

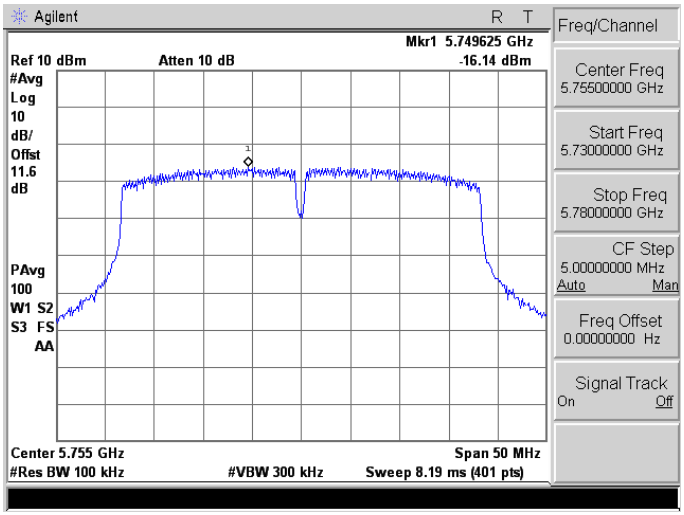
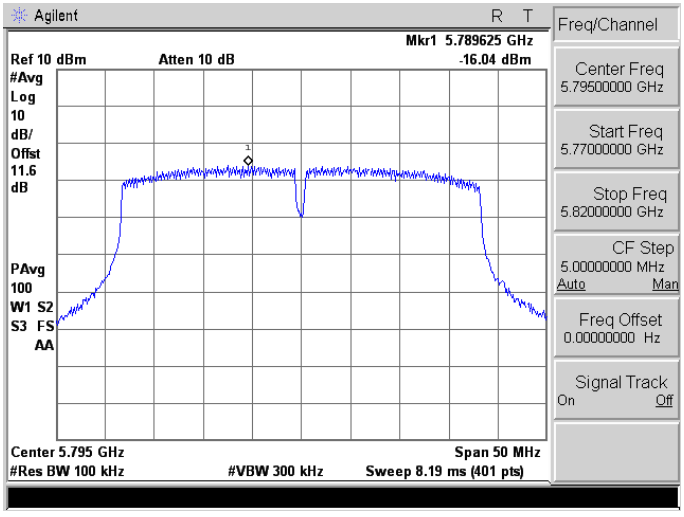
Mode 2: IEEE 802.11a link mode_ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	

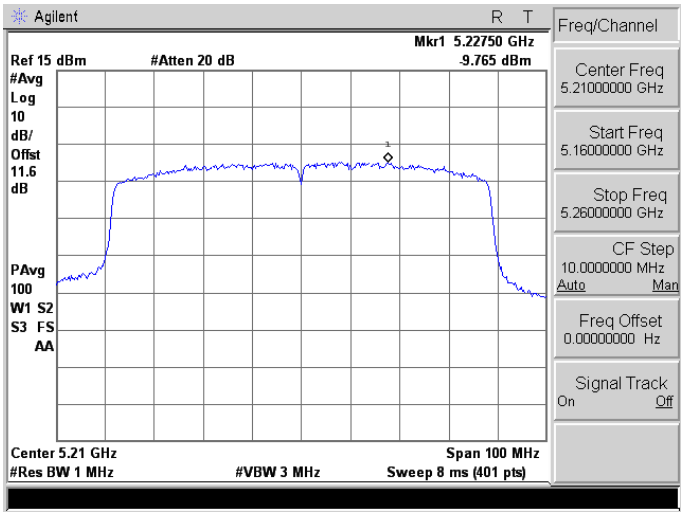
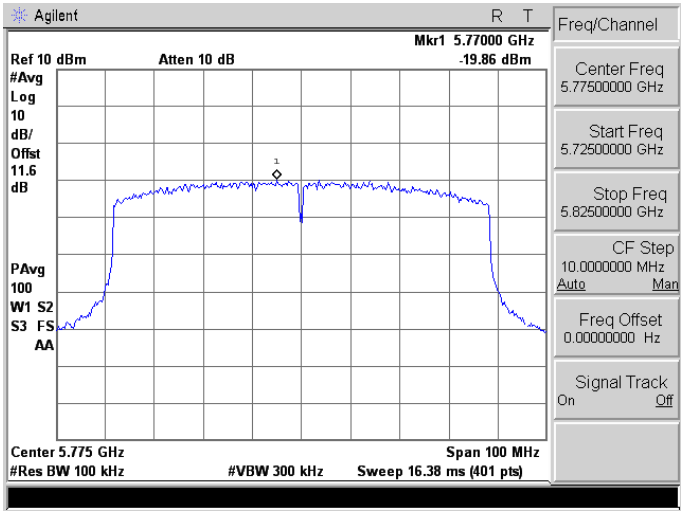
Mode 2: IEEE 802.11a link mode_ ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	

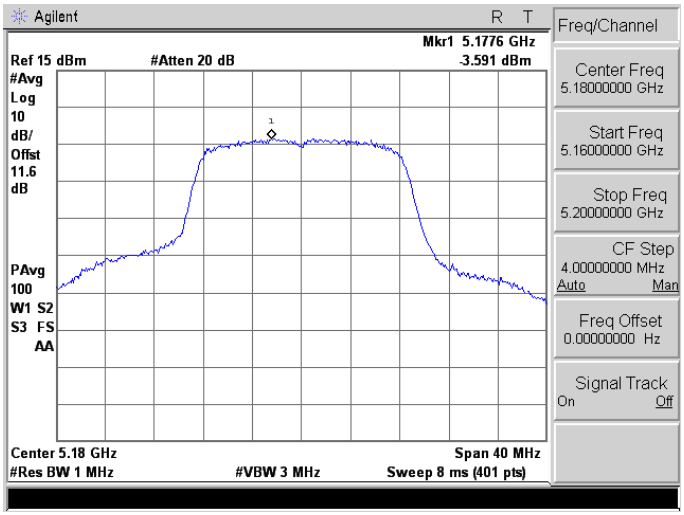
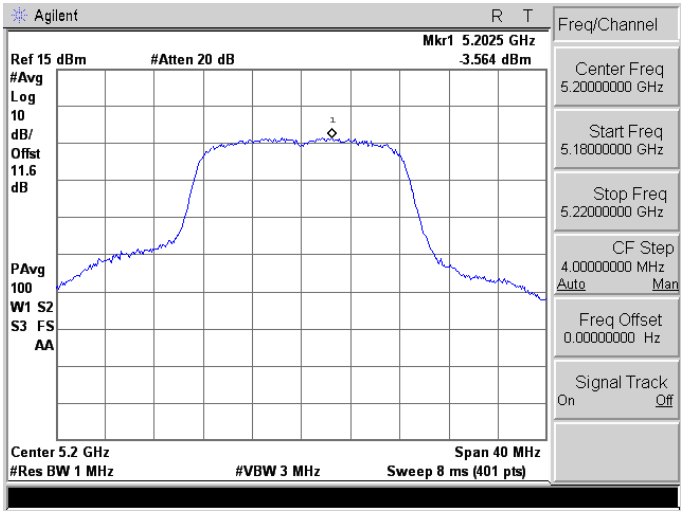
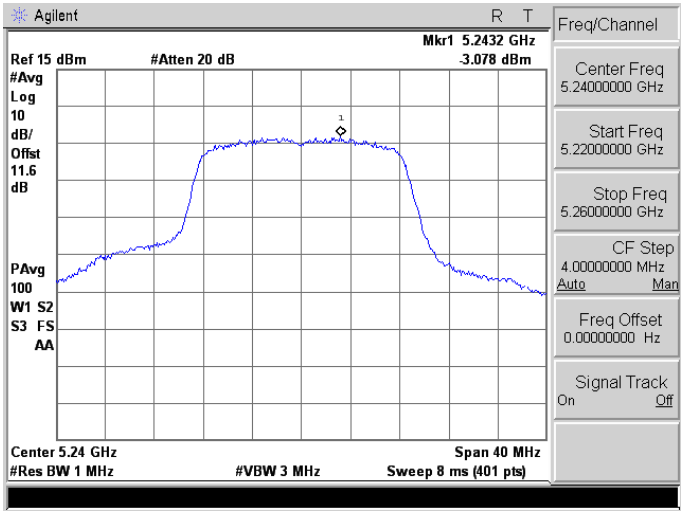
Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-0	
5180 MHz	
5200 MHz	
5240 MHz	

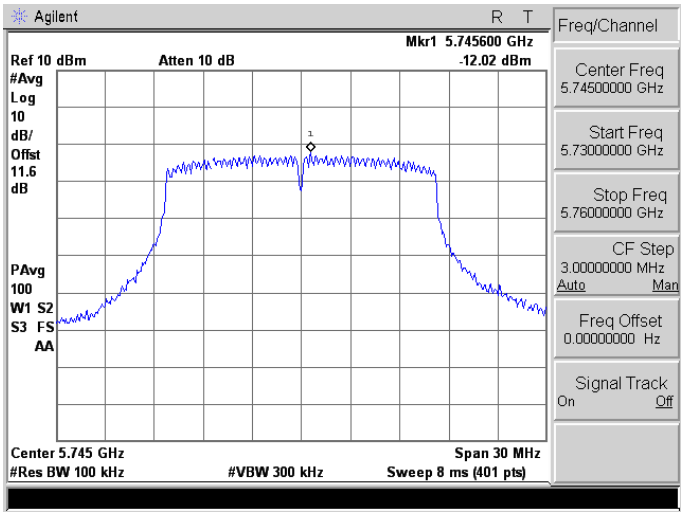
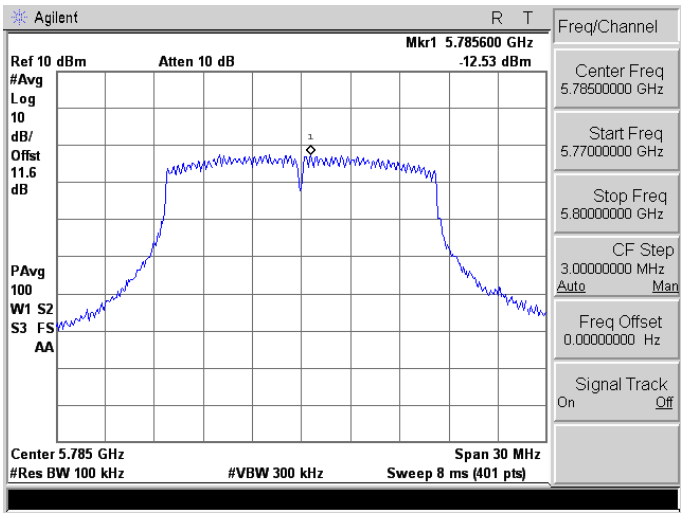
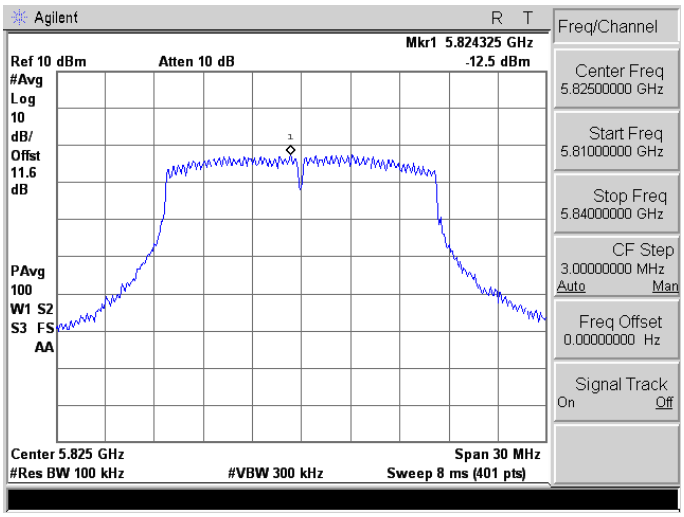
Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-0	
5745 MHz	
5785 MHz	
5825 MHz	

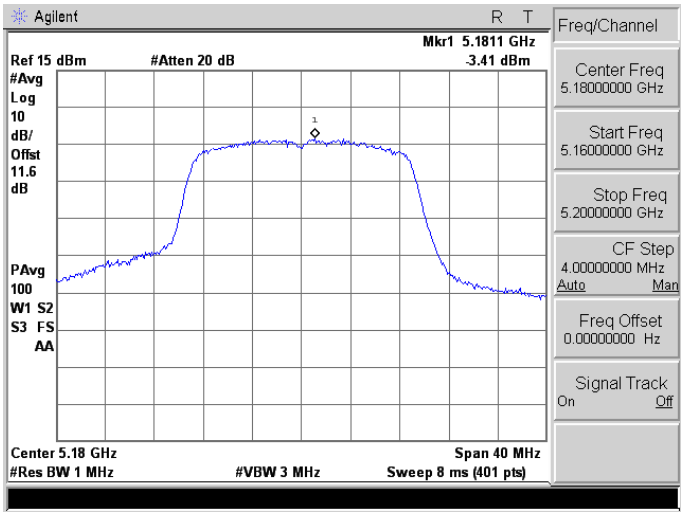
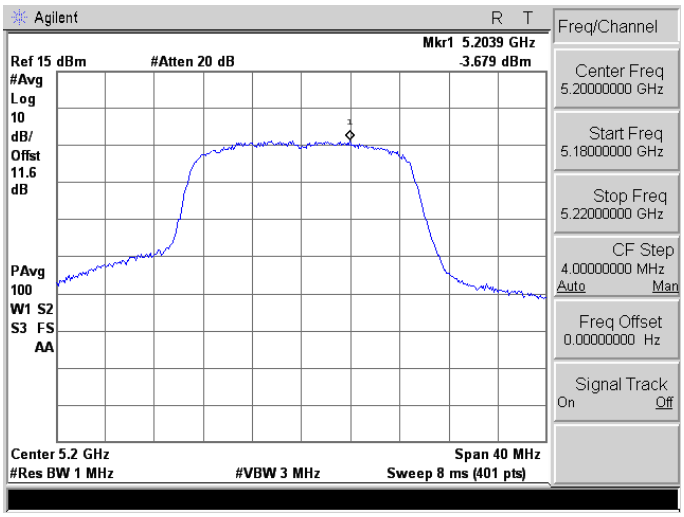
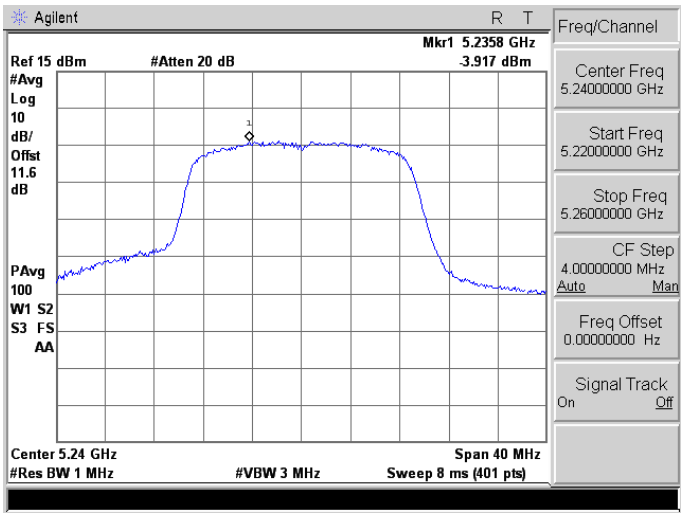
Mode 4: IEEE 802.11ac 40MHz link mode_ ANT-0	
5190 MHz	
5230 MHz	

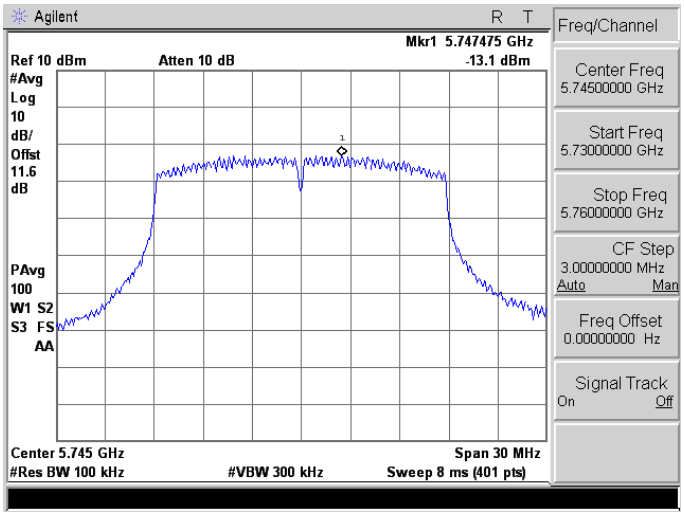
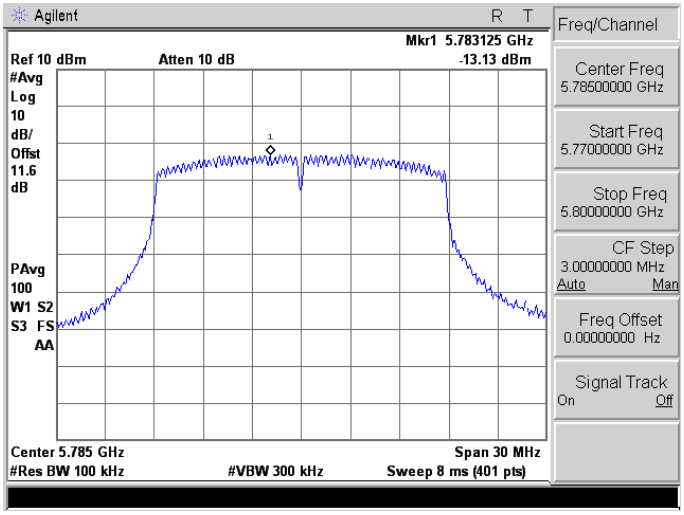
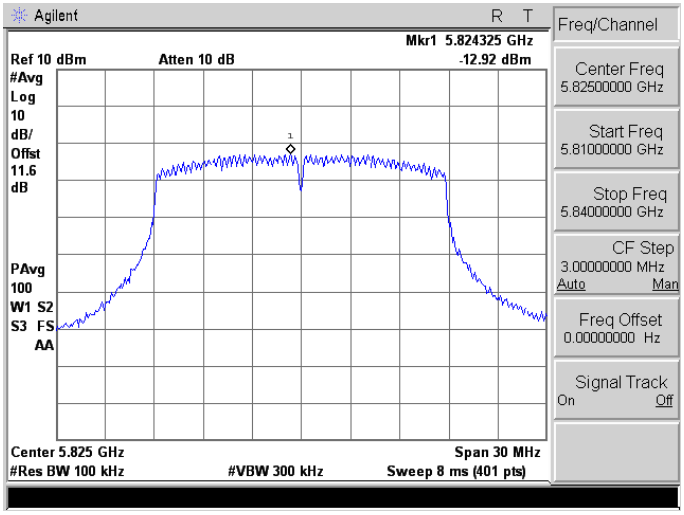
Mode 4: IEEE 802.11ac 40MHz link mode_ ANT-0	
5755 MHz	
5795 MHz	

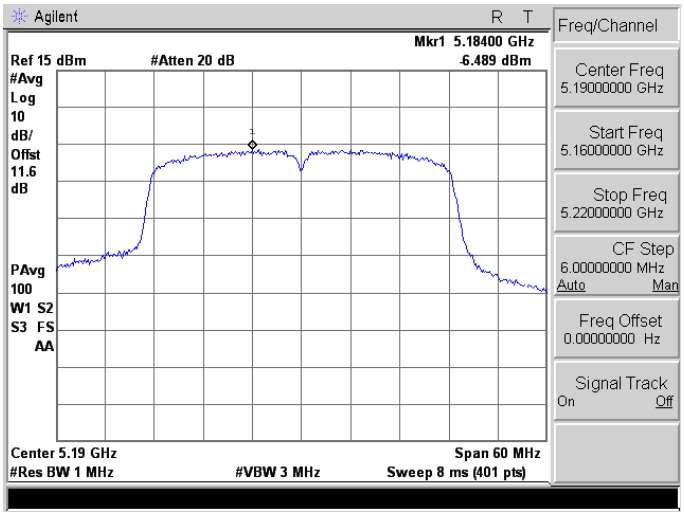
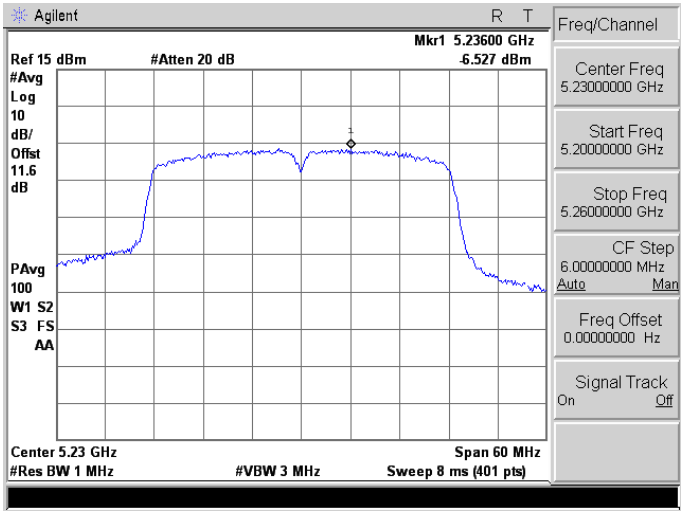
Mode 5: IEEE 802.11ac 80MHz link mode _ ANT-0	
5210 MHz	
5775 MHz	

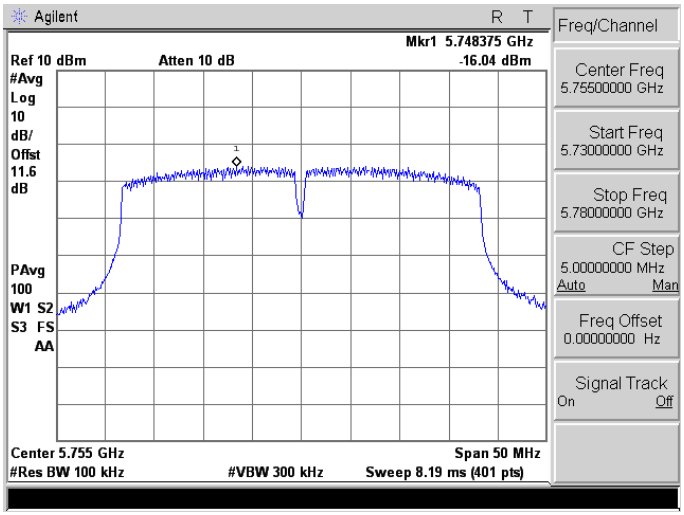
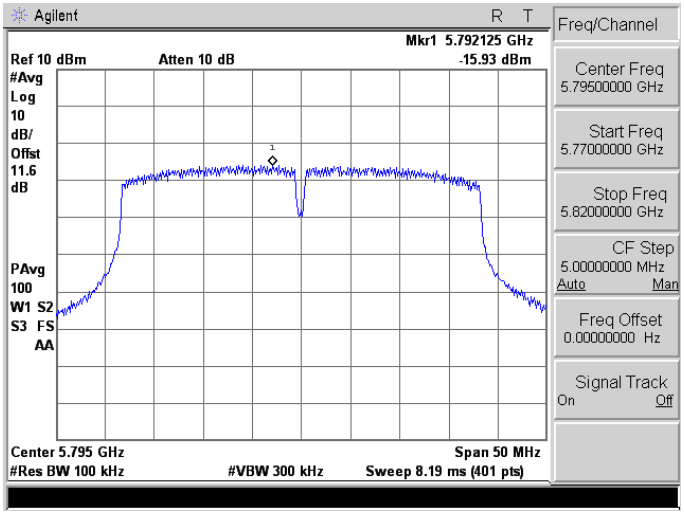
Mode 2: IEEE 802.11a link mode_ ANT-1	
5180 MHz	
5200 MHz	
5240 MHz	

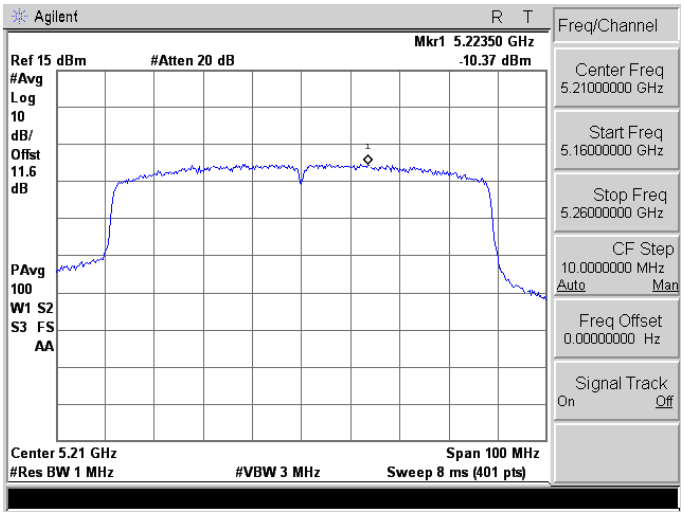
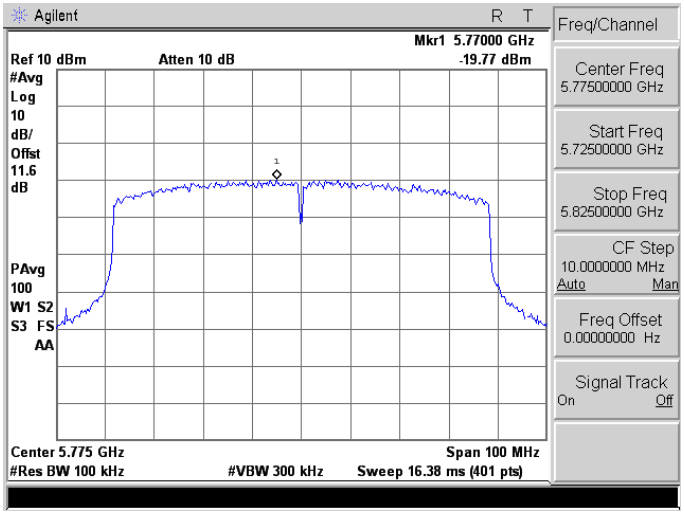
Mode 2: IEEE 802.11a link mode_ ANT-1	
5745 MHz	
5785 MHz	
5825 MHz	

Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-1	
5180 MHz	
5200 MHz	
5240 MHz	

Mode 3: IEEE 802.11ac 20MHz link mode _ ANT-1	
5745 MHz	
5785 MHz	
5825 MHz	

Mode 4: IEEE 802.11ac 40MHz link mode_ ANT-1	
5190 MHz	
5230 MHz	

Mode 4: IEEE 802.11ac 40MHz link mode_ ANT-1	
5755 MHz	
5795 MHz	

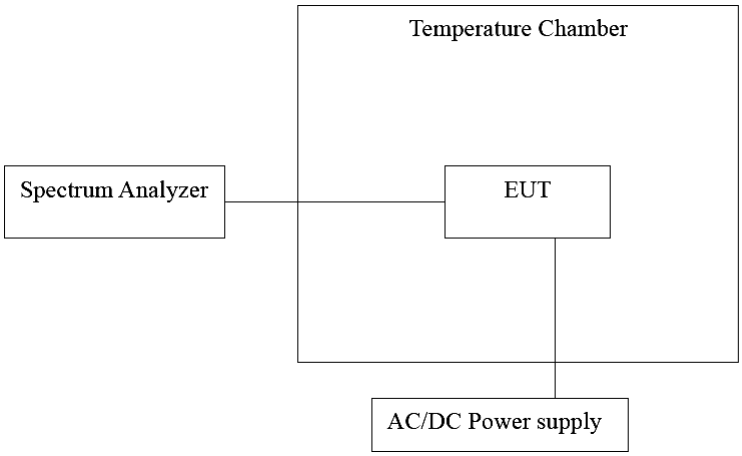
Mode 5: IEEE 802.11ac 80MHz link mode _ ANT-1	
5210 MHz	
5775 MHz	

10 Frequency Stability Measurement

10.1. Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

10.2. Test Setup



10.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Spectrum Analyzer	Agilent	E4408B	MY45107753	07/27/2015	1 year
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	04/27/2015	1 year
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

10.4. Test Procedure

1. The EUT was placed inside the environmental test chamber and powered by nominal AC/DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

10.5. Test Result

Temperature Variations

Model Number	AC815S					
Test Item	Frequency Stability					
Date of Test	10/28/2015					
Frequency	Temp. (°C)	Voltage (Vdc)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	-30	3.80	5199.9706	-29400	-5.654	Pass
	-20		5199.9708	-29200	-5.615	Pass
	-10		5199.9872	-12800	-2.462	Pass
	0		5199.9985	-1500	-0.288	Pass
	10		5200.0088	8800	1.692	Pass
	20		5200.009	9000	1.731	Pass
	30		5200.0311	31100	5.981	Pass
	40		5200.0397	39700	7.635	Pass
	50		5200.0458	45800	8.808	Pass
5785 MHz	-30	3.80	5784.9595	-40500	-7.001	Pass
	-20		5784.9648	-35200	-6.085	Pass
	-10		5784.9734	-26600	-4.598	Pass
	0		5784.9844	-15600	-2.697	Pass
	10		5784.9898	-10200	-1.763	Pass
	20		5784.997	-3000	-0.519	Pass
	30		5785.0181	18100	3.129	Pass
	40		5785.0347	34700	5.998	Pass
	50		5785.0425	42500	7.347	Pass

Note: The manufacturer's frequency stability specification is better than 20ppm.

Voltage Variations

Model Number	AC815S					
Test Item	Frequency Stability					
Date of Test	10/28/2015					
Frequency	Temp. (°C)	Voltage (Vdc)	Measured Freq. (MHz)	Delta Freq. (Hz)	Tolerance (ppm)	Result (Pass/Fail)
5200 MHz	20	4.35	5200.0007	700	0.135	Pass
		3.80	5200.0185	18500	3.558	Pass
		3.50	5200.0301	30100	5.788	Pass
5785 MHz	20	4.35	5784.9979	-2100	-0.363	Pass
		3.80	5784.998	-2000	-0.346	Pass
		3.50	5785.0128	12800	2.213	Pass

Note: The manufacturer's frequency stability specification is better than 20ppm.

11 Antenna Requirement

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 15.407 (a), 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 Antenna. And the maximum Gain of this antenna is only 3.0 dBi.