



TEST REPORT

FCC ID: 2AAD8-U0639

Applicant : HAOLIYUAN(SHENZHEN) ELECTRONIC CO.,LTD
Address : 3/F, Building A1, Junfeng Industrial Park, Yonghe Road, Fuyong, Bao'an District, Shenzhen, Guangdong, China

Equipment under Test (EUT):

Name : 802.11ac Wireless USB Adapter
Model : U0639, WU636

Standards : FCC PART 15, SUBPART C : 2015 (Section 15.407)
RSS-247 ISSUE 2 Feb 2017
ANSI C63.4:2014 ; ANSI C63.10:2013

Report No. : T1870620 02
Date of Test : April 25, 2017 - May 10, 2017
Date of Issue : May 10, 2017

Test Result :	PASS *
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* In the configuration tested, the EUT complied with the standards specified above

Authorized Signature

A handwritten signature in black ink, appearing to read "Mark Zhu".

(Mark Zhu)
General Manager

The manufacturer should ensure that all the products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Alpha Product Testing Co., Ltd. Or test done by Shenzhen Alpha Product Testing Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Alpha Product Testing Co., Ltd. Approvals in writing.

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TEST REPORT VERIFICATION

Applicant : HAOLIYUAN(SHENZHEN) ELECTRONIC CO.,LTD
Manufacturer : HAOLIYUAN(SHENZHEN) ELECTRONIC CO.,LTD
EUT Description : 802.11ac Wireless USB Adapter

(A) Model No. : U0639, WU636
(B) Trademark : N/A
(C) Ratings Supply : DC 5V from USB Port
(D) Test Voltage : DC 5V from USB Port

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart C 2015, ANSI C63.4-2014

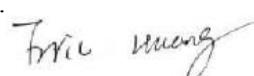
The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....

Eric Huang
Test Engineer



Approved by (name + signature).....

Simple Guan
Project Manager



Date of issue.....

May 10, 2017

1 General Information

1.1 Description of Device (EUT)

Trade Name	: N/A
EUT	: 802.11ac Wireless USB Adapter
Model No.	U0639, WU636
DIFF.	: N/A
Antenna Type	: External Antenna with reversed polarity Non standards unique antenna port : 5dBi
Operation Frequency	: IEEE 802.11n HT20: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11n HT40: 5190MHz-5230MHz, 5755MHz-5795MHz IEEE 802.11a: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11ac: 5210MHz, 5775MHz IEEE 802.11n HT20 5.2GHz band: 4 Channels IEEE 802.11n HT20 5.8GHz band: 5 Channels IEEE 802.11n HT40 5.2GHz band: 2 Channels
Channel number	: IEEE 802.11n HT40 5.8GHz band: 2 Channels IEEE 802.11a 5.2GHz band: 4 Channels IEEE 802.11a 5.8GHz band: 5 Channels IEEE 802.11ac: 1 channel for 5.2 GHz & 5.8 GHz band
Modulation type	: IEEE 802.11n: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM(256 QAM)
Power Supply	: DC 5V from USB Port
Applicant	: HAOLIYUAN(SHENZHEN) ELECTRONIC CO., LTD
Address	: 3/F, Building A1, Junfeng Industrial Park, Yonghe Road, Fuyong, Bao'an District, Shenzhen, Guangdong, China
Manufacturer	: HAOLIYUAN(SHENZHEN) ELECTRONIC CO., LTD
Address	: 3/F, Building A1, Junfeng Industrial Park, Yonghe Road, Fuyong, Bao'an District, Shenzhen, Guangdong, China

1.2 Description of Test Facility

Shenzhen Alpha Product Testing Co., Ltd
 Building B, East Area of Nanchang Second, Industrial Zone, Gushu 2nd Road,
 Bao'an, Shenzhen, China

March 25, 2015 File on Federal Communication Commission
 Registration Number: 203110

July 18, 2014 Certificated by IC
 Registration Number: 12135A

2 EMC Equipment List

Equipment	Manufacture	Model No.	Serial No.	Last cal. Due to	Cal Interval
3m Semi-Anechoic	CHENYU	N/A	N/A	2017.01.18	2Year
Spectrum analyzer	Agilent	E4407B	MY46185649	2017.01.16	1Year
Receiver	R&S	ESPI	101873	2017.01.16	1Year
Receiver	R&S	ESCI	101165	2017.01.16	1Year
Bilog Antenna	SCHWARZBECK	VULB 9168	VULB9168-438	2017.01.18	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2017.01.20	2Year
Cable	Resenberger	N/A	No.1	2017.01.16	1Year
Cable	SCHWARZBECK	N/A	No.2	2017.01.16	1Year
Cable	SCHWARZBECK	N/A	No.3	2017.01.16	1Year
Pre-amplifier	HP	HP8347A	2834A00455	2017.01.18	1Year
Pre-amplifier	Agilent	8449B	3008A02664	2017.01.18	1Year
vector Signal Generator	Agilent	N5182A	MY49060042	2016.11.16	1 Year
vector Signal Generator	Agilent	E4438C	US44271917	2016.11.16	1 Year
X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54080020	2016.11.16	1 Year
X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54110001	2016.11.16	1 Year

Signal Analyzer	Agilent	N9020A	MY48030494	2016.11.16	1 Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126466	2017.01.16	1 Year
L.I.S.N.#2	ROHDE&SCHWABERZ	ENV216	101043	2017.01.16	1 Year

3 Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The test procedure used was ANSI Standard ANSI C63.4:2014 using a 50 u H LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25°C with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard ANSI C63.4:2014 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3MHz above 1 GHz. The ambient temperature of the EUT was 25°C with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

$$\text{Freq (MHz) METER READING} + \text{ACF} + \text{CABLE} = \text{FS}$$

$$33.20 \text{ dBuV} + 10.36 \text{ dB} + 0.9 \text{ dB} = 44.46 \text{ dBuV/m @ 3m}$$

ANSI STANDARD ANSI C63.4:2014 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard ANSI C63.4:2014 10.1.7 with the EUT 40 cm from the vertical ground wall.

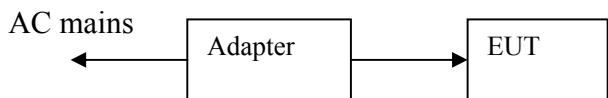
4 Summary of Measurement

4.1 Summary of test result

Test Item	Test Requirement	Standards Paragraph	Result
Spurious Emission	FCC PART 15 : 2015 IC RSS-247	Section 15.407(b)&15.209	Compliance
Conduction Emission	FCC PART 15 : 2015 IC RSS Gen	Section 15.207	Compliance
Bandwidth Test	FCC PART 15 : 2015 IC RSS-247	Section 15.407(a)	Compliance
Peak Power	FCC PART 15 : 2015 IC RSS-247	Section 15.407(a)	Compliance
Power Density	FCC PART 15 : 2015 IC RSS-247	Section 15.407(a)	Compliance
Undesirable emission	FCC PART 15 : 2015 IC RSS-247	Section 15.407(b)	Compliance
Antenna Requirement	FCC PART 15 : 2015 IC RSS Gen	Section 15.203	Compliance

Note: The EUT has been tested as an independent unit. And Continual Transmitting in maximum power (The adapter be used during Test)

4.2 Test connection



4.3 Assistant equipment used for test

Description	:	Notebook
Manufacturer	:	ACER
Model No.	:	ZQT

4.4 Test mode

Dutycycle :100% Keeping TX mode			
Mode	Data rate (Mbps) see Note	Channel	Frequency (MHz)
IEEE 802.11n HT20	6.5	CH36	5180
	6.5	CH40	5200
	6.5	CH48	5240
IEEE 802.11n HT40	13.5	CH38	5190
	13.5	CH46	5230
IEEE 802.11a	6	CH36	5180
	6	CH40	5200
	6	CH48	5240
IEEE 802.11ac	433.3	CH42	5210
Note: According exploratory test and product specification EUT will have maximum output power in those data rate, so those data rate were used for all test.			

Dutycycle :100% Keeping TX mode			
Mode	data rate (Mbps)(see Note)	Channel	Frequency (MHz)
IEEE 802.11 n/HT20 with 5.8G	6.5	CH149	5745
	6.5	CH157	5785
	6.5	CH165	5825
IEEE 802.11 n/HT40 with 5.8G	13.5	CH151	5755
	13.5	CH159	5795
IEEE 802.11a with 5.8G	6	CH149	5745
	6	CH157	5785
	6	CH165	5825
IEEE 802.11ac with 5.8G	433.3	CH155	5775
Note: According exploratory test, EUT will have maximum output power in those data rate. so those data rate were used for all test.			

4.5 Channel list

For IEEE 802.11 a with 5.2G			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH36	5180	CH44	5220
CH40	5200	CH48	5240

For IEEE 802.11 n/HT20 with 5.2G			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH36	5180	CH44	5220
CH40	5200	CH48	5240

For IEEE 802.11 n/HT40 with 5.2G			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH38	5190	CH46	5230

For IEEE 802.11 ac with 5.2G			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH42	5210		

For IEEE 802.11 a with 5.8G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH149	5745	CH157	5785	CH165	5825
CH153	5765	CH161	5805		

For IEEE 802.11n/HT20 with 5.8G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH149	5745	CH157	5785	CH165	5825
CH153	5765	CH161	5805		

For IEEE 802.11n/HT40 with 5.8G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH151	5755	CH159	5795		

For IEEE 802.11 ac with 5.8G					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH155	5775				

4.6 Test Conditions

Temperature range	21-25°C
Humidity range	40-75%
Pressure range	86-106kPa

4.7 Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.71dB	
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.90 dB	Polarize: V
	3.92dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	4.26 dB	Polarize: H
	4.28 dB	Polarize: V
Uncertainty for conducted RF Power	0.16dB	

5 Spurious Emission

5.1 Radiation Emission

5.1.1 Radiation Emission Limits(15.209)

Frequencies (MHz)	Field Strength (micorvolts/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

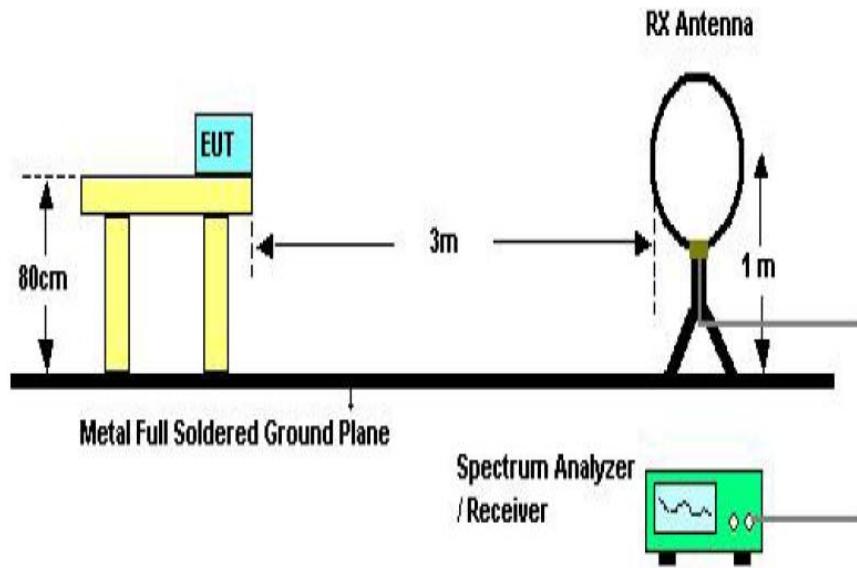
Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

NOTE:

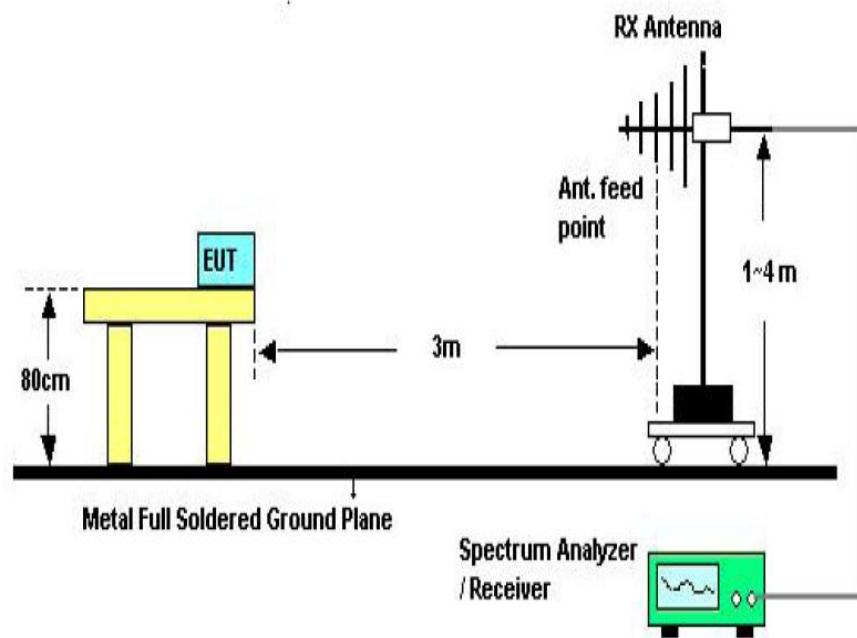
- The tighter limit applies at the band edges.
- Emission Level(dB uV/m)=20log Emission Level(Uv/m)

5.1.2 Test Setup

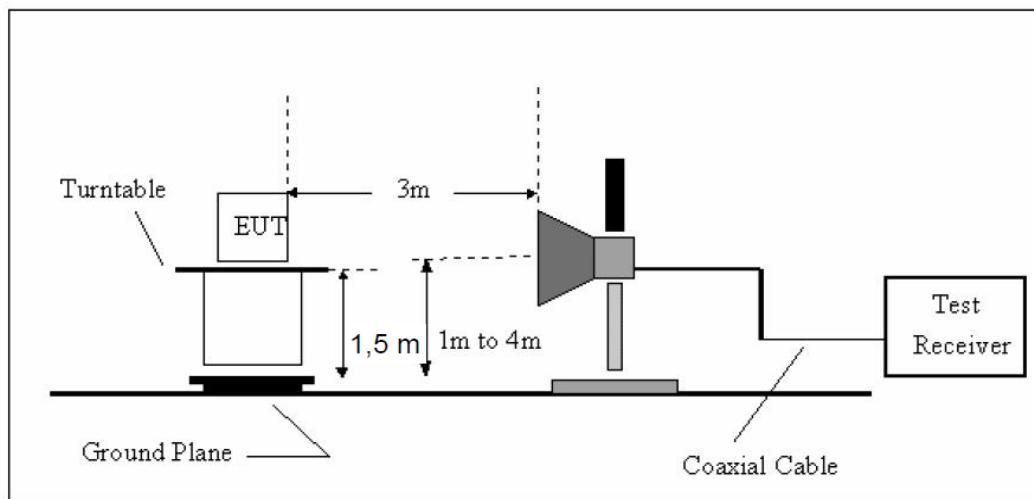
See the next page



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

5.1.3 Test Procedure

- a) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground, The table was rotated 360 degrees to determine the position of the highest radiation
- b) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.
- c) The initial step in collecting conducted emission data is a spectrum analyzer Peak detector mode pre-scanning the measurement frequency range. Significant Peaks are then marked. and then Qusia Peak Detector mode premeasured
- d) If Peak value comply with QP limit Below 1GHz. The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.
- e) For the actual test configuration, please see the test setup photo.

5.1.4 Test Equipment Setting For emission test Result

9KHz~150KHz	RBW 200Hz	VBW1KHz
150KHz~30MHz	RBW 9KHz	VBW 30KHz
30MHZ~1GHz	RBW 120KHz	VBW 300KHz
Above 1GHz	RBW 1MHz	VBW 3MHz

5.1.5 Test Condition

MIMO Continual Transmitting in maximum power.

5.1.6 Test Result

We have scanned the 9KHz from 25GHz to the EUT.

Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Site: LAB	Polarization: Vertical	Temperature: 23.5
Limit: FCC Part15 Class B Radiation	Power: DC 5V	Humidity: 51 %
EUT: 802.11ac Wireless USB Adapter	Distance: 3m	
M/N: U0639		
Mode:		
Note:		

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin	Antenna Height	Table Degree		
										MHz	dBuV
											dB
1		32.9791	9.66	13.44	23.10	40.00	-16.90	peak			
2	*	137.4201	22.71	13.67	36.38	43.50	-7.12	peak			
3		277.0935	19.89	12.92	32.81	46.00	-13.19	peak			
4		316.5889	18.52	13.79	32.31	46.00	-13.69	peak			
5		519.0648	11.79	17.84	29.63	46.00	-16.37	peak			
6		912.8619	11.93	23.36	35.29	46.00	-10.71	peak			

Site: LAB	Polarization: Horizontal	Temperature: 23.5
Limit: FCC Part15 Class B Radiation	Power: DC 5V	Humidity: 51 %
EUT: 802.11ac Wireless USB Adapter	Distance: 3m	
M/N: U0639		
Model:		
Note:		

Radiated Emission Measurement



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Antenna Height cm		Table Degree Comment
								Detector	cm	
1		37.6796	7.59	13.82	21.41	40.00	-18.59	peak		
2		133.6186	17.49	13.45	30.94	43.50	-12.56	peak		
3		183.2005	18.78	11.76	30.54	43.50	-12.96	peak		
4		210.0482	22.63	10.69	33.32	43.50	-10.18	peak		
5	*	289.0020	28.64	13.11	41.75	46.00	-4.25	peak		
6		520.8881	14.18	17.92	32.10	46.00	-13.90	peak		

Remark1: All modes and channels have been tested and only worst data of 802.11a, 5180MHz are listed in this report.

From 1G-25GHz
IEEE 802.11a with 5.2G

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	V	45.24	---	2.36	47.6	---	74	/	26.4	Peak
15540	V	44.32	---	4.52	48.84	---	74	/	25.16	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	H	46.05	---	2.36	48.41	---	74	/	25.59	Peak
15540	H	44.38	---	4.52	48.9	---	74	/	25.1	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	V	47.04	---	2.36	49.4	---	74	/	24.6	Peak
15600	V	42.39	---	4.52	46.91	---	74	/	27.09	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	H	46.38	---	2.36	48.74	---	74	/	25.26	Peak
15600	H	47.05	---	4.52	51.57	---	74	/	22.43	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	V	45.54	---	2.36	47.9	---	74	/	26.1	Peak
15720	V	44.37	---	4.52	48.89	---	74	/	25.11	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	H	46.92	---	2.36	49.28	---	74	/	24.72	Peak
15720	H	35.46	---	4.52	39.98	---	54	/	14.02	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 5.2G

EUT	802.11ac Wireless USB Adapter			Model Name	U0639					
Temperature	26°C			Relative Humidity	56%					
Pressure	960hPa			Test voltage	DC 5V from USB Port					
Test Mode	TX Low									
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	V	47.27	---	2.36	49.63	---	74	/	24.37	Peak
15540	V	44.68	---	4.52	49.2	---	74	/	24.8	Peak
N/A										

EUT	802.11ac Wireless USB Adapter			Model Name	U0639			
Temperature	26°C			Relative Humidity	56%			
Pressure	960hPa			Test voltage	DC 5V from USB Port			
Test Mode	TX Low							

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10360	H	47.6	---	2.36	49.96	---	74	/	24.04	Peak
15540	H	45.84	---	4.52	50.36	---	74	/	23.64	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	V	47.53	---	2.36	49.89	---	74	/	24.11	Peak
15600	V	47.29	---	4.52	51.81	---	74	/	22.19	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10400	H	46.42	---	2.36	48.78	---	74	/	25.22	Peak
15600	H	48.24	---	4.52	52.76	---	74	/	21.24	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	V	48.7	---	2.36	51.06	---	74	/	22.94	Peak
15720	V	47.47	---	4.52	51.99	---	74	/	22.01	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10480	H	48.05	---	2.36	50.41	---	74	/	23.59	Peak
15720	H	46.93	---	4.52	51.45	---	74	/	22.55	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT40 with 5.2G

EUT	802.11ac Wireless USB Adapter			Model Name	U0639					
Temperature	26°C			Relative Humidity	56%					
Pressure	960hPa			Test voltage	DC 5V from USB Port					
Test Mode	TX Low									
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
10380	V	48.66	---	2.36	51.02	---	74	/	22.98	Peak
15570	V	47.91	---	4.52	52.43	---	74	/	21.57	Peak
N/A										

EUT	802.11ac Wireless USB Adapter			Model Name	U0639		
Temperature	26°C			Relative Humidity	56%		
Pressure	960hPa			Test voltage	DC 5V from USB Port		
Test Mode	TX Low						

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
10380	H	46.21	---	2.36	48.57	---	74	/	25.43	Peak
15570	H	47.82	---	4.52	52.34	---	74	/	21.66	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10460	V	47.12	---	2.36	49.48	---	74	/	24.52	Peak
15690	V	45.32	---	4.52	49.84	---	74	/	24.16	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10460	H	48.21	---	2.36	50.57	---	74	/	23.43	Peak
15690	H	48.55	---	4.52	53.07	---	74	/	20.93	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11ac with 5.2G

EUT		802.11ac Wireless USB Adapter			Model Name		U0639			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 5V from USB Port			
Test Mode		TX								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
10460	V	45.35	---	2.42	47.77	---	74	/	26.23	Peak
15570	V	45.24	---	4.52	49.76	---	74	/	24.24	Peak
N/A										

EUT		802.11ac Wireless USB Adapter			Model Name		U0639		
Temperature		26°C			Relative Humidity		56%		
Pressure		960hPa			Test voltage		DC 5V from USB Port		
Test Mode		MIMO TX							

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
10460	H	45.29	---	2.42	47.71	---	74	/	26.29	Peak
15570	H	46.07	---	4.52	50.59	---	74	/	23.41	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

From 1G-25GHz:
IEEE 802.11a with 5.8G

EUT		802.11ac Wireless USB Adapter			Model Name		U0639			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 5V from USB Port			
Test Mode		TX Low								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
11490	V	47.24	---	2.36	49.6	---	74	/	24.4	Peak
17235	V	46.82	---	4.52	51.34	---	74	/	22.66	Peak
N/A										

EUT		802.11ac Wireless USB Adapter			Model Name		U0639		
Temperature		26°C			Relative Humidity		56%		
Pressure		960hPa			Test voltage		DC 5V from USB Port		
Test Mode		TX Low							

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
		Peak (dBuV/m)	AV (dBuV/m)							
11490	H	46.43	---	2.36	48.79	---	74	/	25.21	Peak
17235	H	46.04	---	4.52	50.56	---	74	/	23.44	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	V	47.27	---	2.36	49.63	---	74	/	24.37	Peak
17355	V	46.91	---	4.52	51.43	---	74	/	22.57	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	H	46.97	---	2.36	49.33	---	74	/	24.67	Peak
17355	H	47.02	---	4.52	51.54	---	74	/	22.46	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	V	47.45	---	2.36	49.81	---	74	/	24.19	Peak
17475	V	48.58	---	4.52	53.1	---	74	/	20.9	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	H	48.61	---	2.36	50.97	---	74	/	23.03	Peak
17475	H	37.07	---	4.52	41.59	---	54	/	12.41	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 5.8G

EUT	802.11ac Wireless USB Adapter			Model Name		U0639				
Temperature	26°C			Relative Humidity		56%				
Pressure	960hPa			Test voltage		DC 5V from USB Port				
Test Mode	TX Low									
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
11490	V	48.49	---	2.36	50.85	---	74	/	23.15	Peak
17235	V	48.04	---	4.52	52.56	---	74	/	21.44	Peak
N/A										

EUT	802.11ac Wireless USB Adapter			Model Name		U0639		
Temperature	26°C			Relative Humidity		56%		
Pressure	960hPa			Test voltage		DC 5V from USB Port		
Test Mode	TX Low							

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11490	H	48.72	---	2.36	51.08	---	74	/	22.92	Peak
17235	H	48.66	---	4.52	53.18	---	74	/	20.82	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	V	48.75	---	2.36	51.11	---	74	/	22.89	Peak
17355	V	48.28	---	4.52	52.8	---	74	/	21.2	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11570	H	48.59	---	2.36	50.95	---	74	/	23.05	Peak
17355	H	47.15	---	4.52	51.67	---	74	/	22.33	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	V	48.27	---	2.36	50.63	---	74	/	23.37	Peak
17475	V	47.75	---	4.52	52.27	---	74	/	21.73	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11650	H	48.15	---	2.36	50.51	---	74	/	23.49	Peak
17475	H	48.48	---	4.52	53	---	74	/	21	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT40 with 5.8G

EUT	802.11ac Wireless USB Adapter			Model Name		U0639				
Temperature	26°C			Relative Humidity		56%				
Pressure	960hPa			Test voltage		DC 5V from USB Port				
Test Mode	TX Low									
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
11510	V	48.02	---	2.36	50.38	---	74	/	23.62	Peak
17265	V	48.37	---	4.52	52.89	---	74	/	21.11	Peak
N/A										

EUT	802.11ac Wireless USB Adapter			Model Name		U0639		
Temperature	26°C			Relative Humidity		56%		
Pressure	960hPa			Test voltage		DC 5V from USB Port		
Test Mode	TX Low							

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
11510	H	48.94	---	2.36	51.3	---	74	/	22.7	Peak
17265	H	48.77	---	4.52	53.29	---	74	/	20.71	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11590	V	49.05	---	2.36	51.41	---	74	/	22.59	Peak
17385	V	48.13	---	4.52	52.65	---	74	/	21.35	Peak
N/A										

EUT	802.11ac Wireless USB Adapter	Model Name	U0639
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V from USB Port
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11590	H	49.09	---	2.36	51.45	---	74	/	22.55	Peak
17385	H	48.55	---	4.52	53.07	---	74	/	20.93	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11ac with 5.8G

EUT		802.11ac Wireless USB Adapter			Model Name		U0639			
Temperature		26°C			Relative Humidity		56%			
Pressure		960hPa			Test voltage		DC 5V from USB Port			
Test Mode		TX								
Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11550	V	48.62	---	2.38	51	---	74	/	23	Peak
17265	V	48.49	---	4.52	53.01	---	74	/	20.99	Peak
N/A										

EUT		802.11ac Wireless USB Adapter			Model Name		U0639		
Temperature		26°C			Relative Humidity		56%		
Pressure		960hPa			Test voltage		DC 5V from USB Port		
Test Mode		TX							

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV/ m)	AV Reading (dBuV/ m)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
11550	H	48.37	---	2.38	50.75	---	74	/	23.25	Peak
17265	H	48.14	---	4.52	52.66	---	74	/	21.34	Peak
N/A										

Notes: AV Means AV detector test data, Peak Means Peak detector test data.

Emissions attenuated more than 20 dB below the permissible value are not reported.

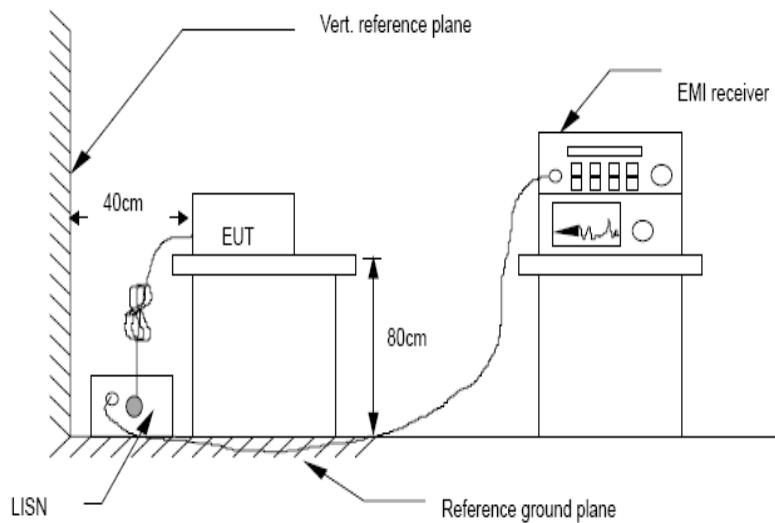
6 POWER LINE CONDUCTED EMISSION

6.1 Conducted Emission Limits(15.207)

Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

- Notes:
1. *Decreasing linearly with logarithm of frequency.
 2. The lower limit shall apply at the transition frequencies.
 3. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

6.2 Test Setup



6.3 Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4:2014 on Conducted Emission Measurement.

The bandwidth of test receiver is set at 9 kHz.

6.4 Test Results

TX MODE

Worse case is reported only

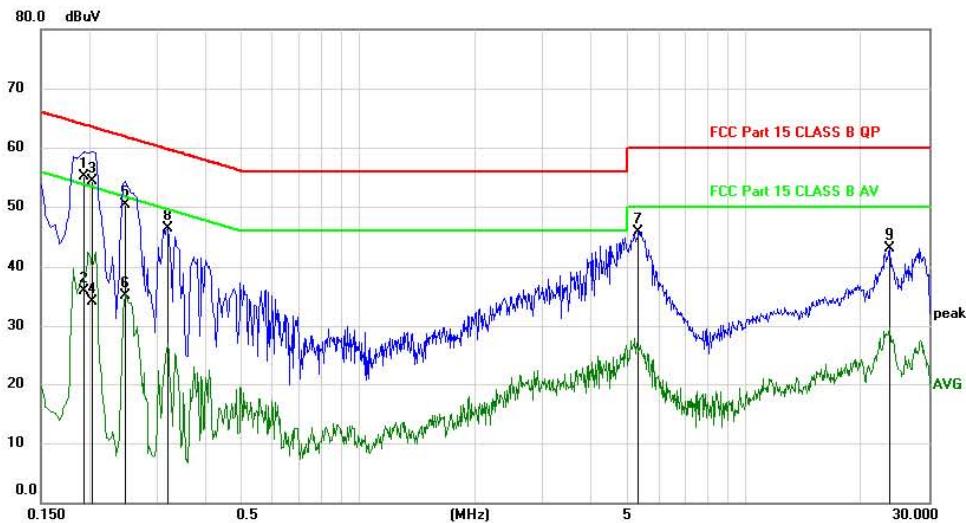
PASS

Detailed information please see the following page.

Site: LAB Phase: **N** Temperature: 24.2
 Limit: FCC Part 15 CLASS B QP Power: DC 5V Humidity: 53 %
 EUT: 802.11ac Wireless USB Adapter
 M/N: U0639
 Mode:
 Note:

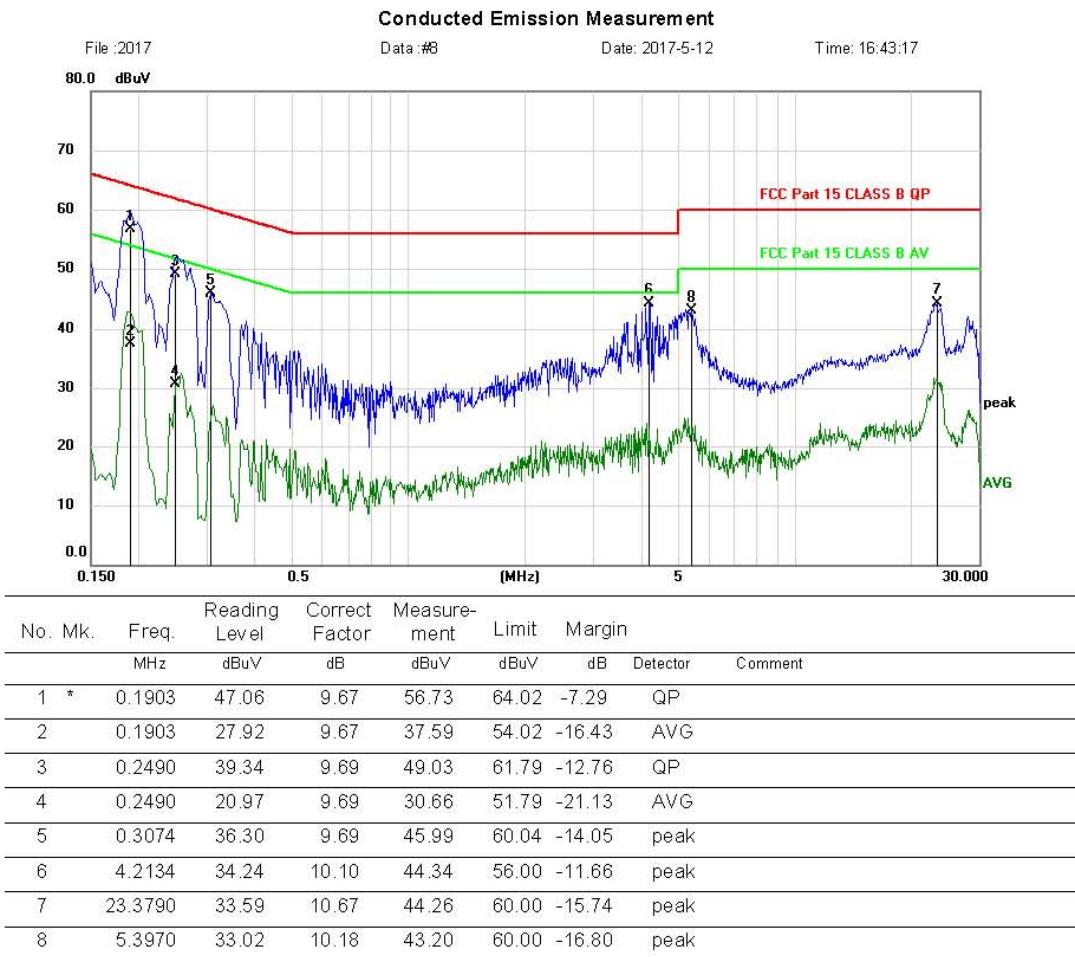
Conducted Emission Measurement

File: 2017 Data #: 7 Date: 2017-5-12 Time: 16:40:09



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit		Margin dB	Detector	Comment
						dBuV	dB			
1	*	0.1949	45.37	9.67	55.04	63.83	-8.79	QP		
2		0.1949	26.24	9.67	35.91	53.83	-17.92	AVG		
3		0.2040	44.56	9.67	54.23	63.45	-9.22	QP		
4		0.2040	24.42	9.67	34.09	53.45	-19.36	AVG		
5		0.2489	40.63	9.69	50.32	61.79	-11.47	QP		
6		0.2489	25.51	9.69	35.20	51.79	-16.59	AVG		
7		5.3250	35.54	10.17	45.71	60.00	-14.29	peak		
8		0.3209	36.54	9.70	46.24	59.68	-13.44	peak		
9		23.7480	32.47	10.69	43.16	60.00	-16.84	peak		

Site: LAB	Phase: L1	Temperature: 24.2
Limit: FCC Part 15 CLASS B QP	Power: DC 5V	Humidity: 53 %
EUT: 802.11ac Wireless USB Adapter		
M/N: U0639		
Mode:		
Note:		



7 Conducted Maximum Output Power

7.1 Test limit

Band 5150-5250MHz

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

7.2 Test Procedure

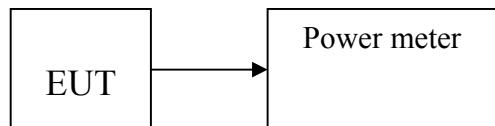
7.2.1 Place the EUT on the table and set it in transmitting mode.

7.2.2 Connect the EUT's antenna port to peak power meter by 20dB attenuator.

7.2.3 Measure out each mode and each bands peak output power of EUT.

Note: The cable loss and attenuator loss were offset into measure device as amplitude offset.

7.3 Test Setup



7.4 Test Results

PASS

Detailed information please see the following page.

5.2G Band

EUT: 802.11ac Wireless USB Adapter		M/N: U0639				
Test date: 2017-05-10		Test site: RF site		Tested by: Simple Guan		
Mode	Frequency (MHz)	Ant Port	PK Output power(dBm)		Limit (dBm)	Result
IEEE 802.11 a with 5.2G	CH36:5180	0	7.90	7.90	23	Pass
		1	/			
	CH40:5200	0	7.84	7.84	23	Pass
		1	/			
	CH48:5240	0	7.82	7.82	23	Pass
		1	/			
IEEE 802.11 n/HT20 with 5.2G	CH36:5180	0	7.53	7.53	23	Pass
		1	/			
	CH40:5200	0	7.67	7.67	23	Pass
		1	/			
	CH48:5240	0	7.80	7.80	23	Pass
		1	/			
IEEE 802.11 n/HT40 with 5.2G	CH38:5190	0	7.26	7.26	23	Pass
		1	/			
	CH46:5230	0	7.35	7.35	23	Pass
		1	/			
IEEE 802.11 ac with 5.2G	CH42:5210	0	7.52	7.52	23	Pass
		1	/			

5.8G Band

EUT: 802.11ac Wireless USB Adapter		M/N: U0639				
Test date: 2017-05-10		Test site: RF site				
		Tested by: Simple Guan				
Mode	Frequency (MHz)	Ant Port	PK Output power(dBm)	Limit (dBm)	Result	
IEEE 802.11 a with 5.8G	CH149:5745	0	7.89	7.89	30	Pass
		1	/			
	CH157:5785	0	7.85	7.85	30	Pass
		1	/			
	CH165:5825	0	7.73	7.73	30	Pass
		1	/			
IEEE 802.11 n/HT20 with 5.8G	CH149:5745	0	7.81	7.81	30	Pass
		1	/			
	CH157:5785	0	7.84	7.84	30	Pass
		1	/			
	CH165:5825	0	7.54	7.54	30	Pass
		1	/			
IEEE 802.11 n/HT40 with 5.8G	CH151:5755	0	7.65	7.65	30	Pass
		1	/			
	CH159:5795	0	7.48	7.48	30	Pass
		1	/			
IEEE 802.11 ac with 5.8G	CH155:5775	0	7.31	7.31	30	Pass
		1	/			

8 PEAK POWER SPECTRAL DENSITY

8.1 Test limit

Band 5150-5250MHz

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

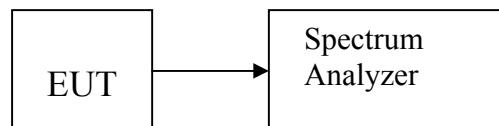
Band 5725-5850MHz

The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band

8.2 Method of measurement

- 8.2.1 Place the EUT on the table and set it in transmitting mode.
- 8.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 8.2.3 Record the max reading.
- 8.2.4 Repeat the above procedure until the measurements for all frequencies are completed.

8.3 Test Setup



8.4 Test Results

PASS.

Detailed information please see the following page.

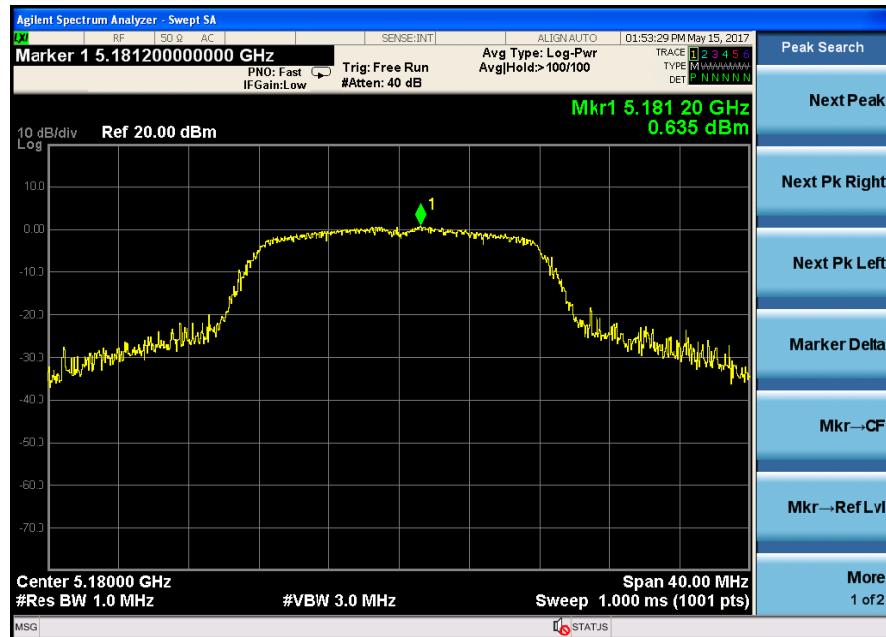
5.2G Band

EUT: 802.11ac Wireless USB Adapter		M/N: U0639				
Test date: 2017-05-10		Test site: RF site		Tested by: Simple Guan		
Mode	Frequency (MHz)	Ant Port	PK Output power(dBm)		Limit (dBm)	Result
IEEE 802.11 a with 5.2G	CH36:5180	0	0.635	0.635	11	Pass
		1	/			
	CH40:5200	0	-0.912	-0.912	11	Pass
		1	/			
	CH48:5240	0	0.336	0.336	11	Pass
		1	/			
IEEE 802.11 n/HT20 with 5.2G	CH36:5180	0	-0.676	-0.676	11	Pass
		1	/			
	CH40:5200	0	0.372	0.372	11	Pass
		1	/			
	CH48:5240	0	-0.272	-0.272	11	Pass
		1	/			
IEEE 802.11 n/HT40 with 5.2G	CH38:5190	0	-2.336	-2.336	11	Pass
		1	/			
	CH46:5230	0	-3.001	-3.001	11	Pass
		1	/			
IEEE 802.11 ac with 5.2G	CH42:5210	0	-0.202	-0.202	11	Pass
		1	/			

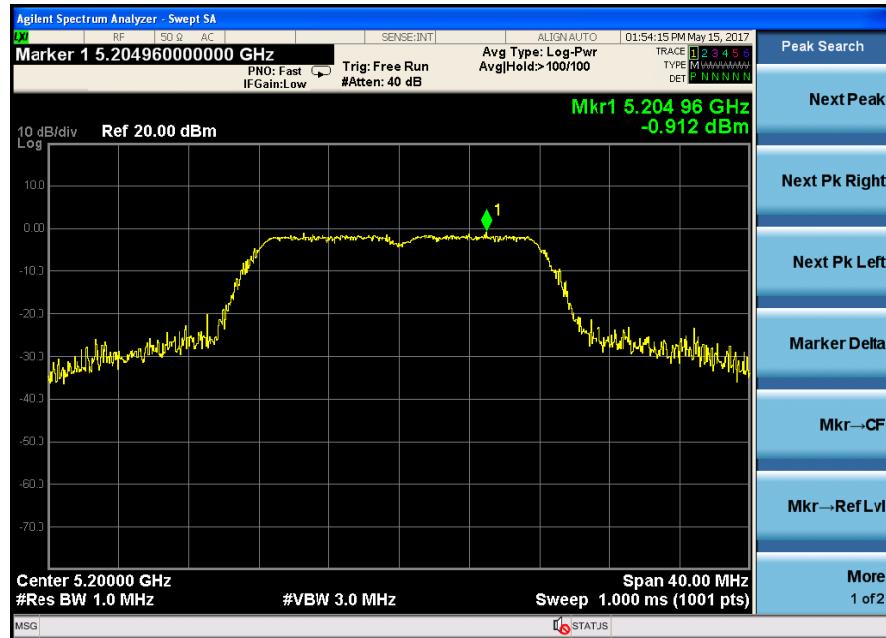
5.8G Band

EUT: 802.11ac Wireless USB Adapter		M/N: U0639				
Test date: 2017-05-10		Test site: RF site		Tested by: Simple Guan		
Mode	Frequency (MHz)	Ant Port	PK Output power(dBm)		Limit (dBm)	Result
IEEE 802.11 a with 5.8G	CH149:5745	0	-1.631	-1.631	30	Pass
		1	/			
	CH157:5785	0	-1.406	-1.406	30	Pass
		1	/			
	CH165:5825	0	-0.303	-0.303	30	Pass
		1	/			
IEEE 802.11 n/HT20 with 5.8G	CH149:5745	0	-0.599	-0.599	30	Pass
		1	/			
	CH157:5785	0	-0.133	-0.133	30	Pass
		1	/			
	CH165:5825	0	-0.459	-0.459	30	Pass
		1	/			
IEEE 802.11 n/HT40 with 5.8G	CH151:5755	0	-2.630	-2.630	30	Pass
		1	/			
	CH159:5795	0	-2.791	-2.791	30	Pass
		1	/			
IEEE 802.11 ac with 5.8G	CH155:5755	0	-5.301	-5.301	30	Pass
		1	/			

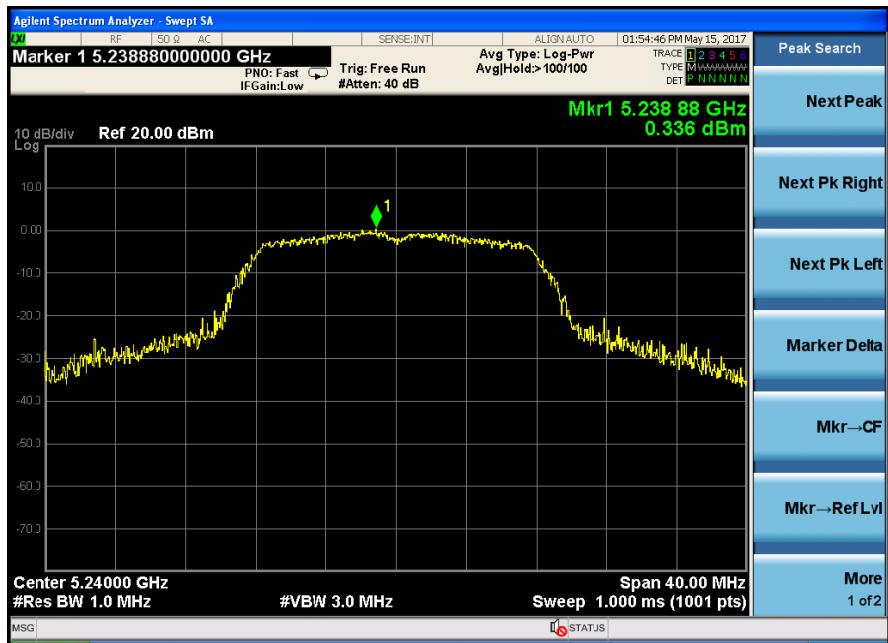
5.2G Band:
CH Low :



CH Mid:

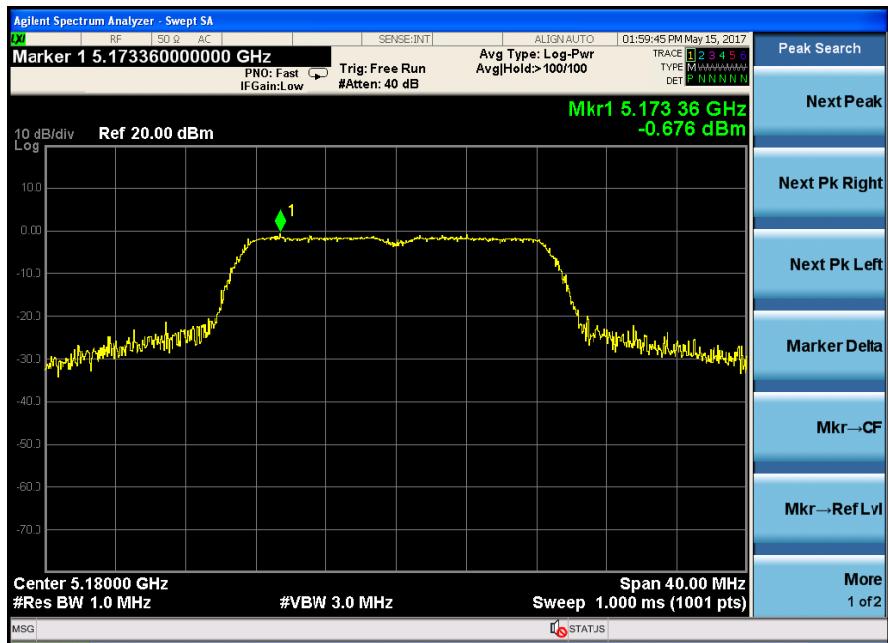


CH Hig:

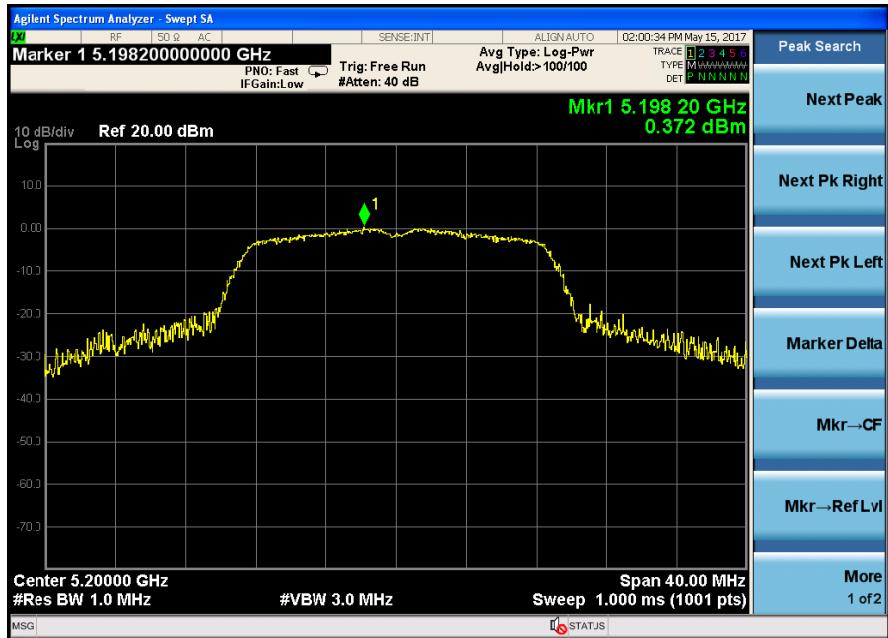


IEEE 802.11n HT20:

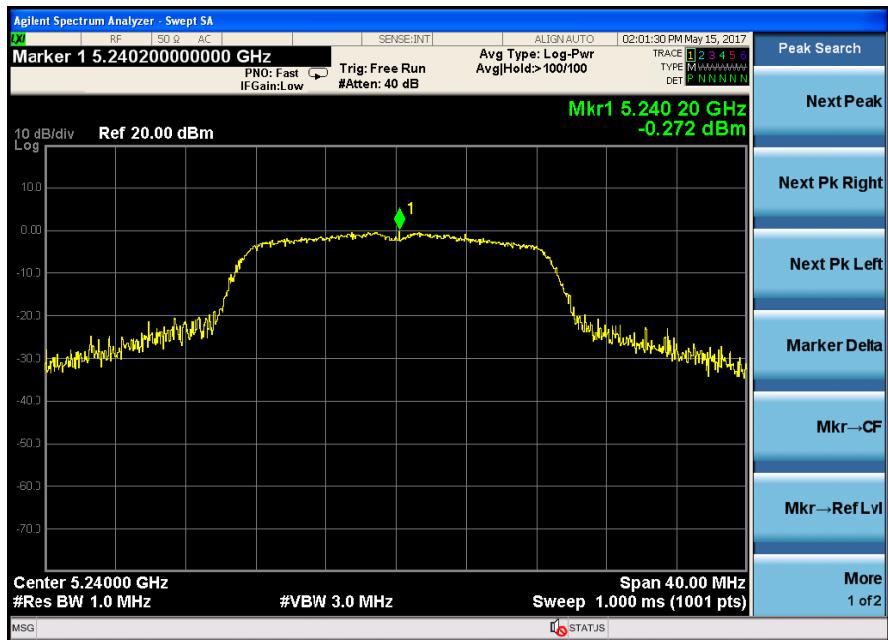
CH Low :



CH Mid:

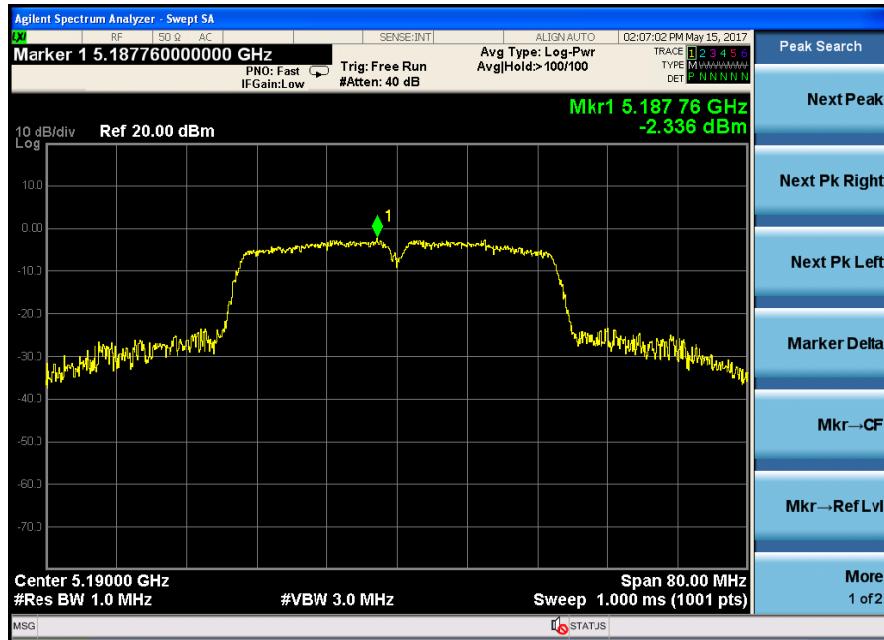


CH Hig:

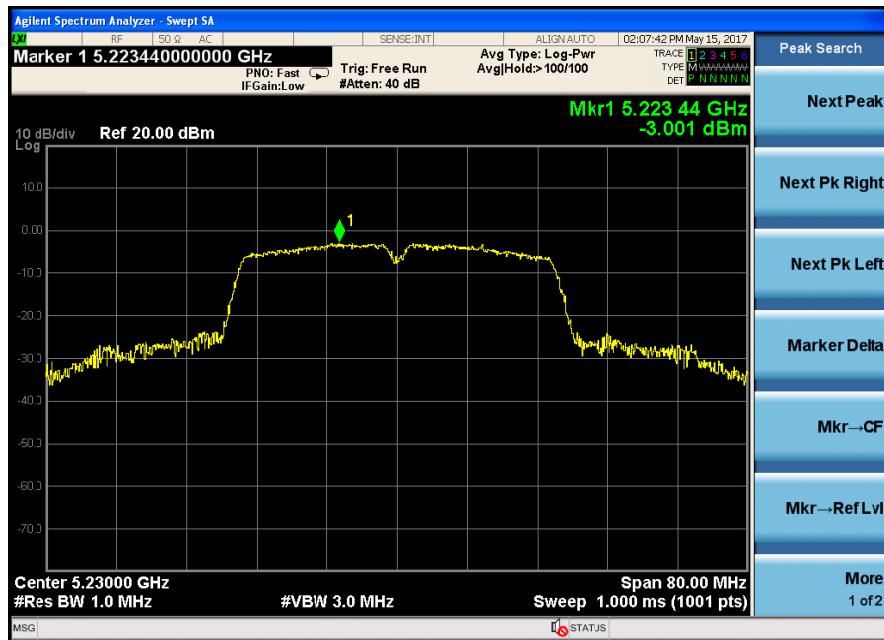


IEEE 802.11n HT40:

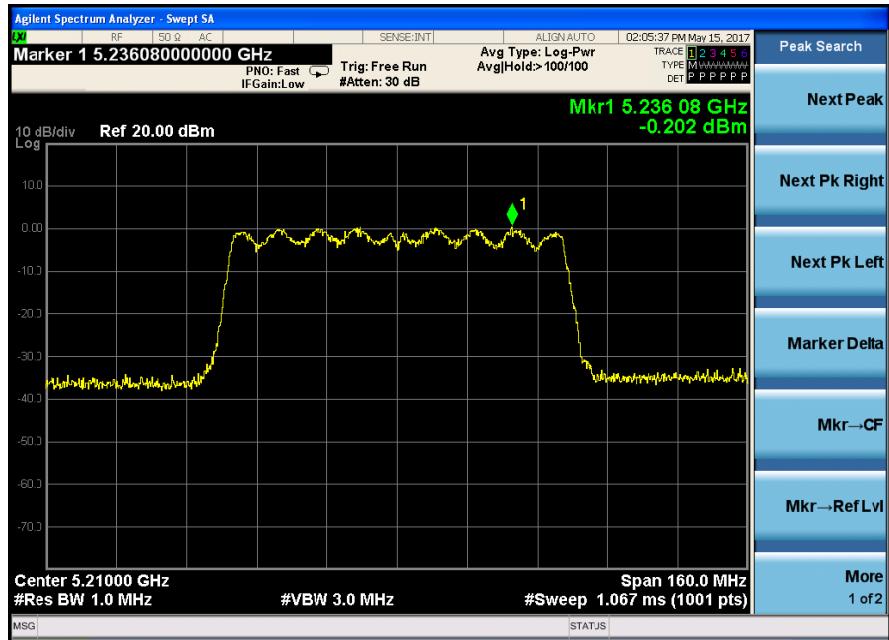
CH Low :



CH Hig:



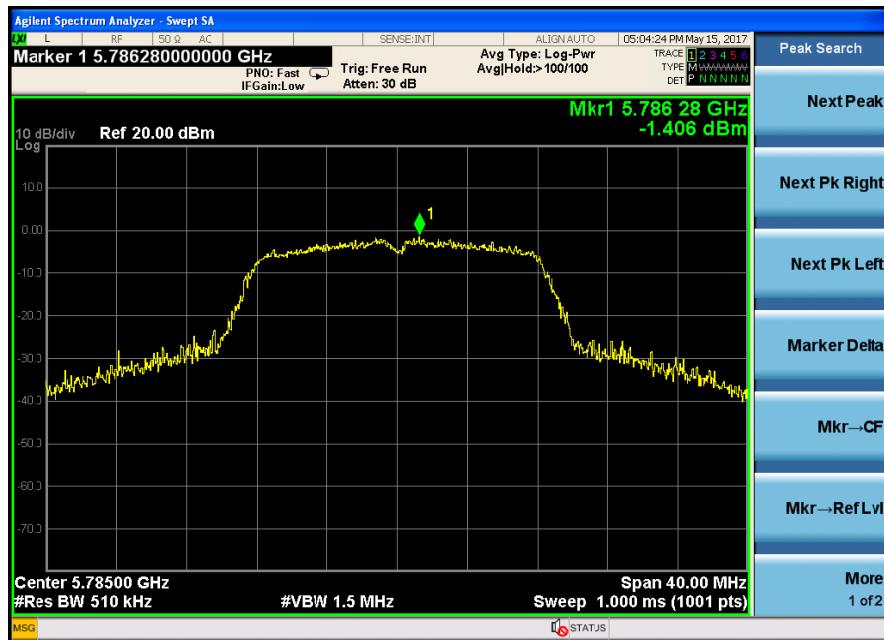
IEEE 802.11ac:



5.8G Band
IEEE 802.11a :
CH Low :



CH Mid:

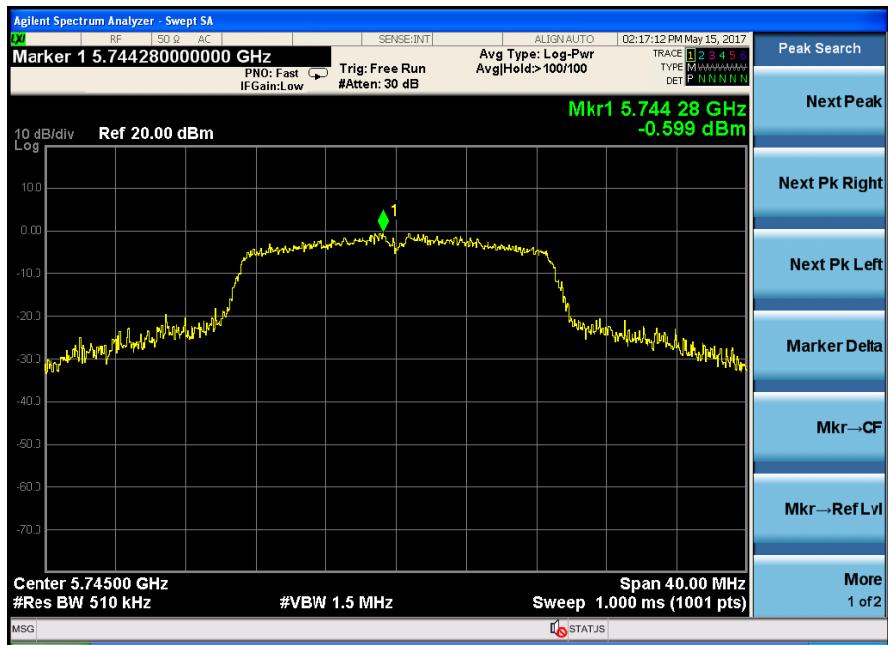


CH Hig:

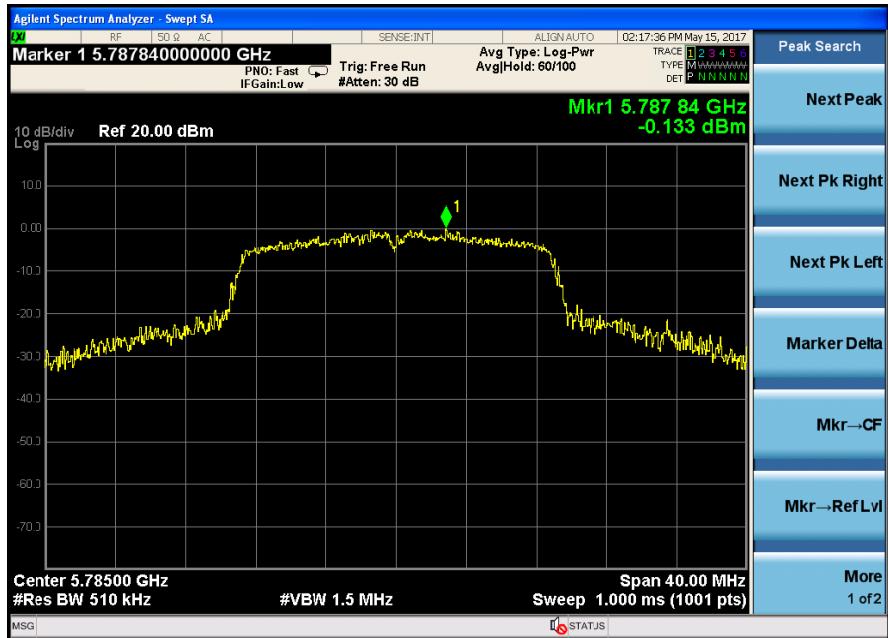


IEEE 802.11n HT20 :

CH Low :



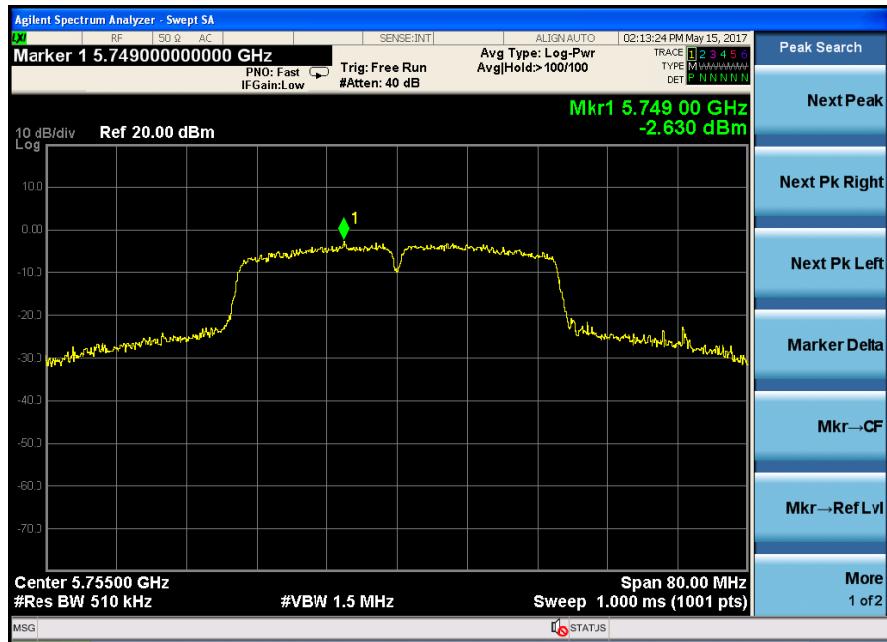
CH Mid:



CH Hig:



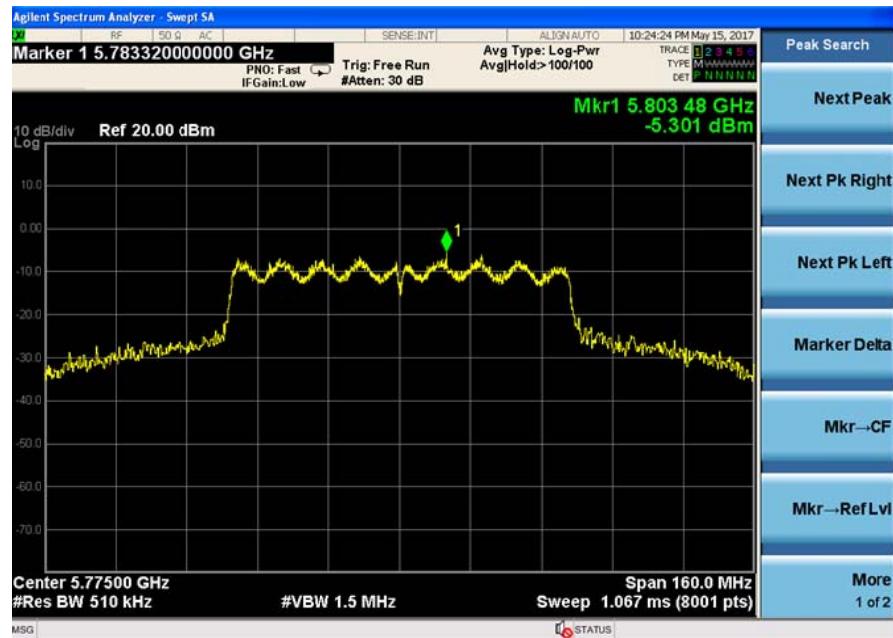
IEEE 802.11n HT40 :
CH Low :



CH Hig:



IEEE 802.11ac :



Remark: A RBW of 500KHz cannot be set for the Spectrum Analyzer, and the results of RBW 510KHz are worse than RBW of 500KHz, therefore, if results of the RBW 510KHz complies with limit, results of RBW 500KHz are deemed to comply with limit

9 Bandwidth

9.1 Test limit

Please refer section 15.407

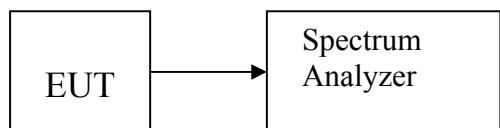
For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

9.2 Method of measurement

- a) The bandwidth is measured at an amplitude level reduced 26dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.
- b) The test receiver set RBW = 1-5 % EBW, VBW \geq 3RBW, Sweep time set auto, detail see the test plot.

9.3 Test Setup



9.4 Test Results

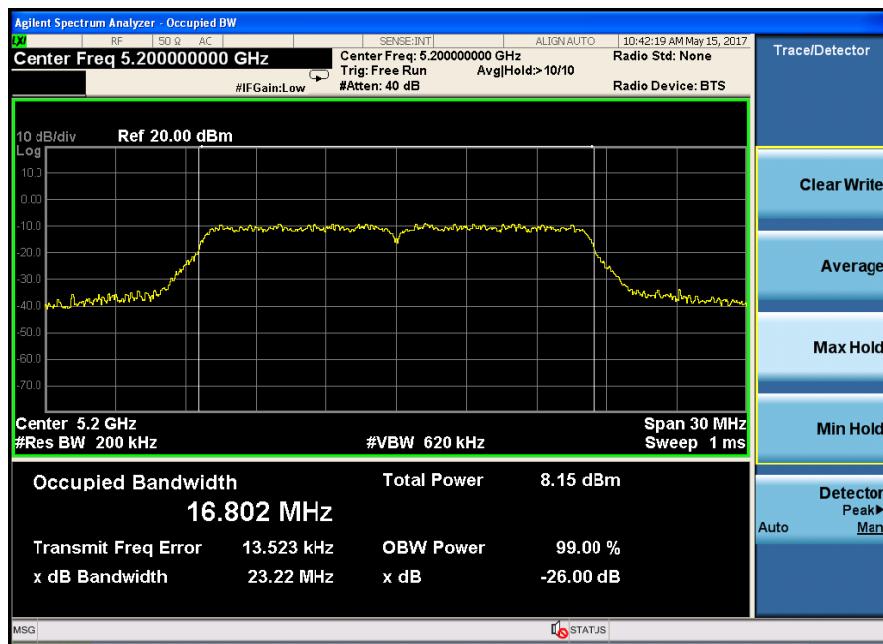
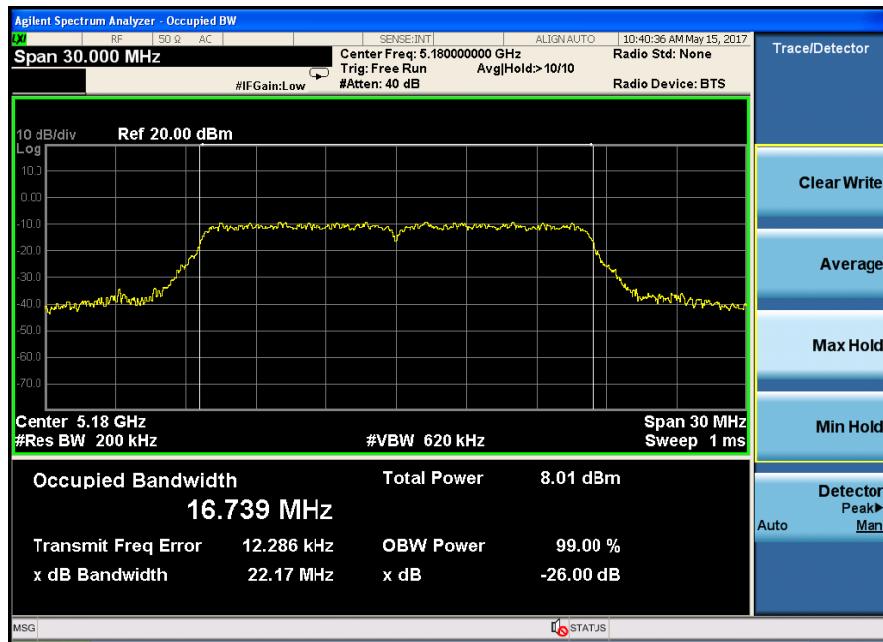
PASS.

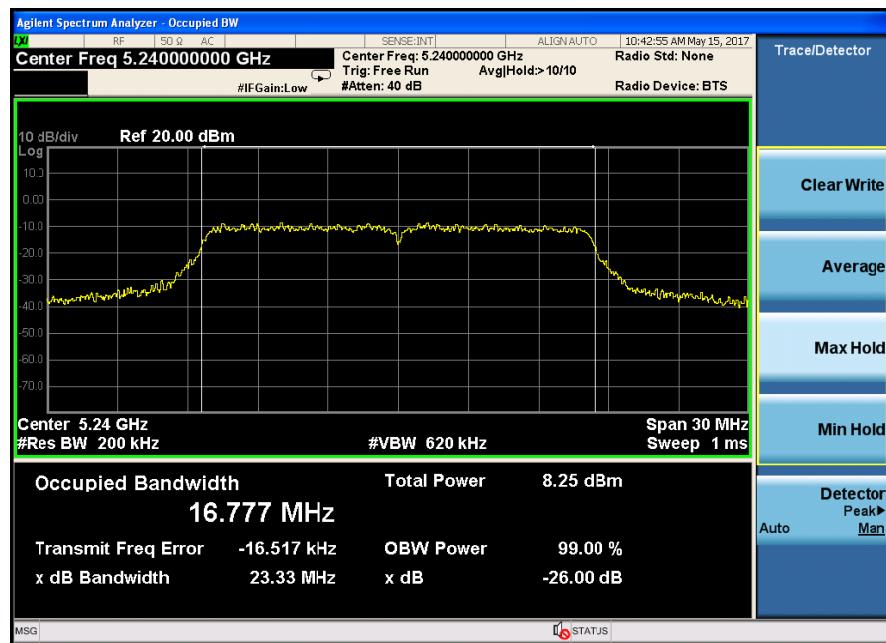
Detailed information please see the following page.

5.2G

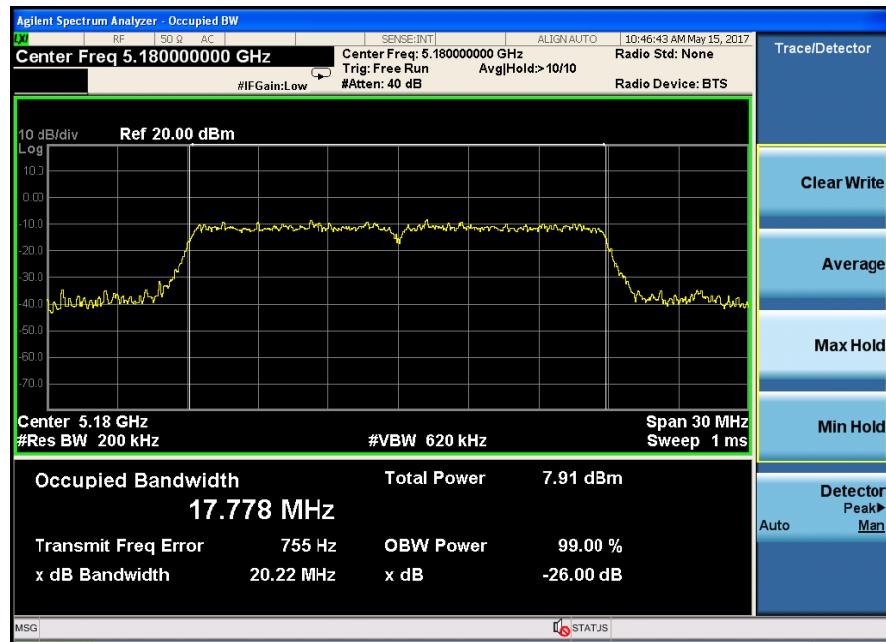
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11a:					
Low	5180	22.17	16.739	/	PASS
Mid	5200	23.22	16.802	/	PASS
High	5240	23.33	16.777	/	PASS
IEEE 802.11n/HT20:					
Low	5180	20.22	17.778	/	PASS
Mid	5200	24.03	17.809	/	PASS
High	5240	25.20	17.772	/	PASS
IEEE 802.11n/HT40:					
Low	5190	64.44	36.337	/	PASS
High	5230	65.47	36.419	/	PASS
IEEE 802.11ac:					
	5210	78.41	75.706	/	PASS

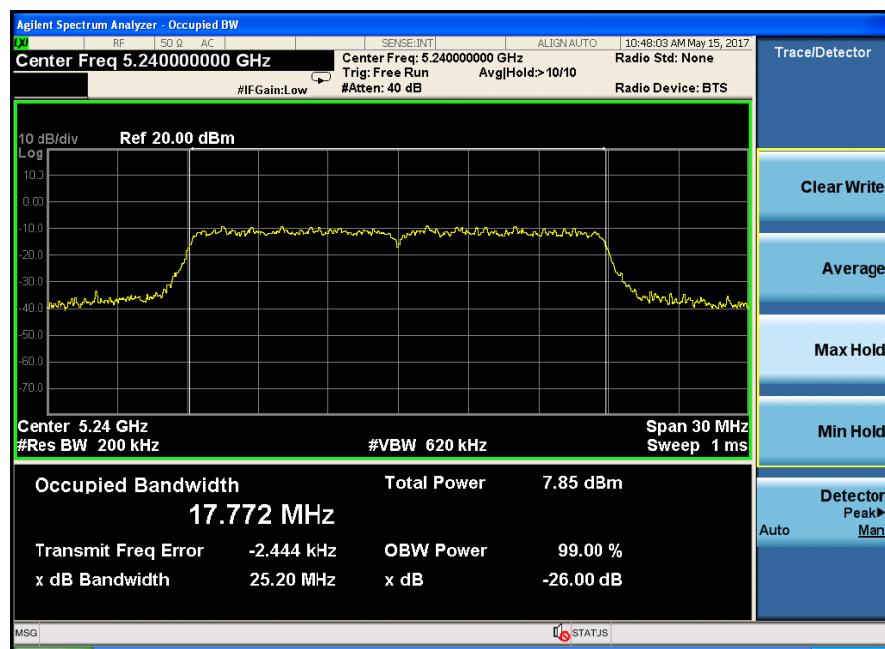
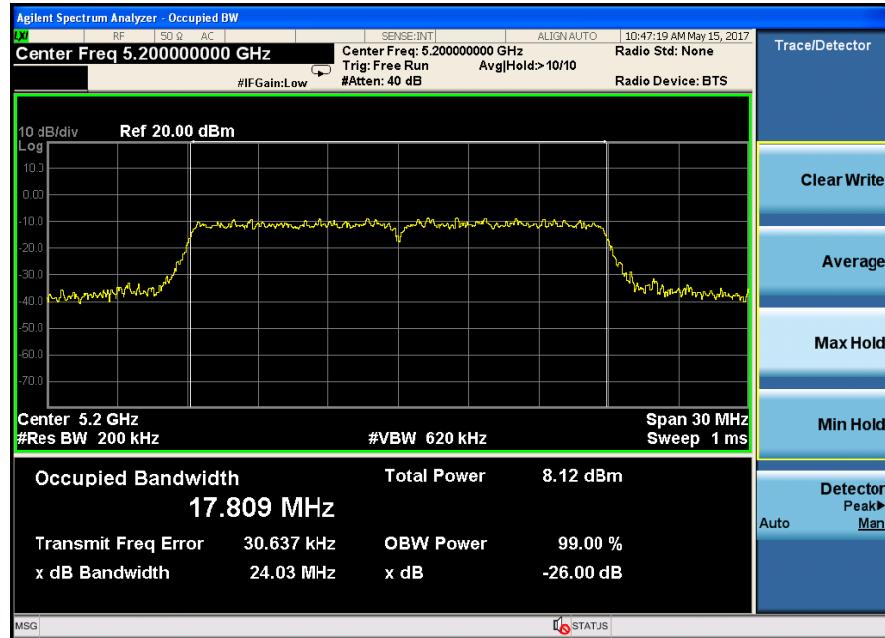
IEEE 802.11a



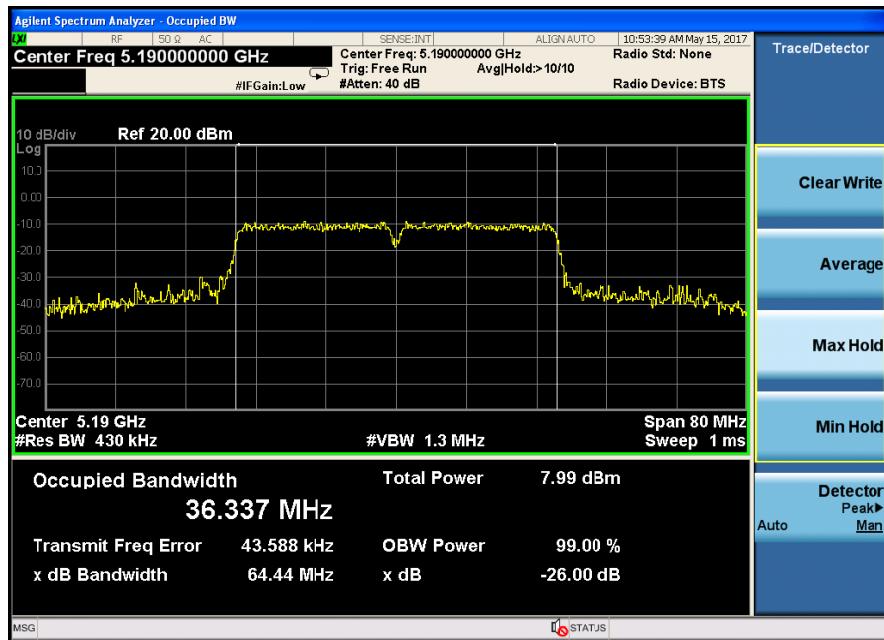


IEEE 802.11n HT20:

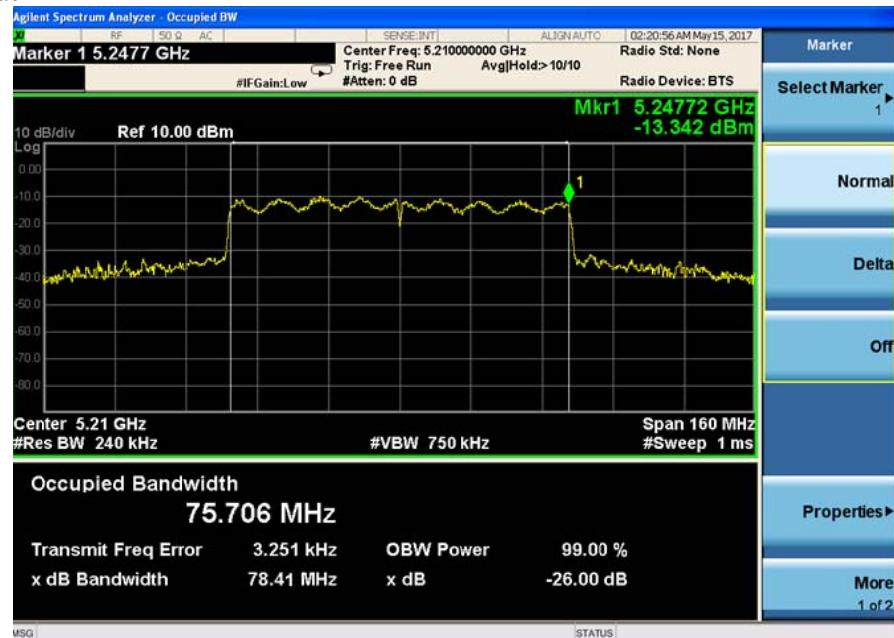




IEEE 802.11n HT40:

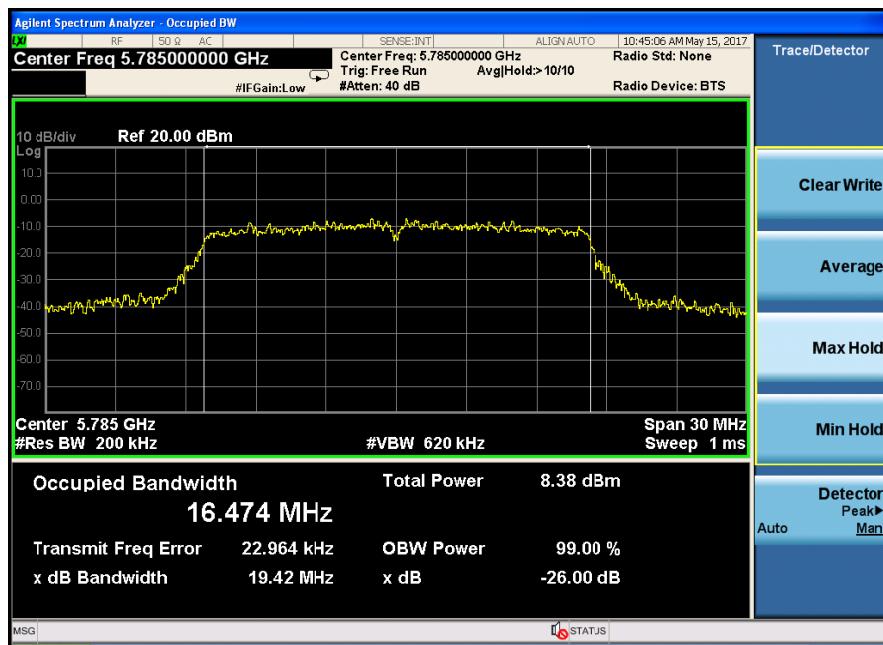
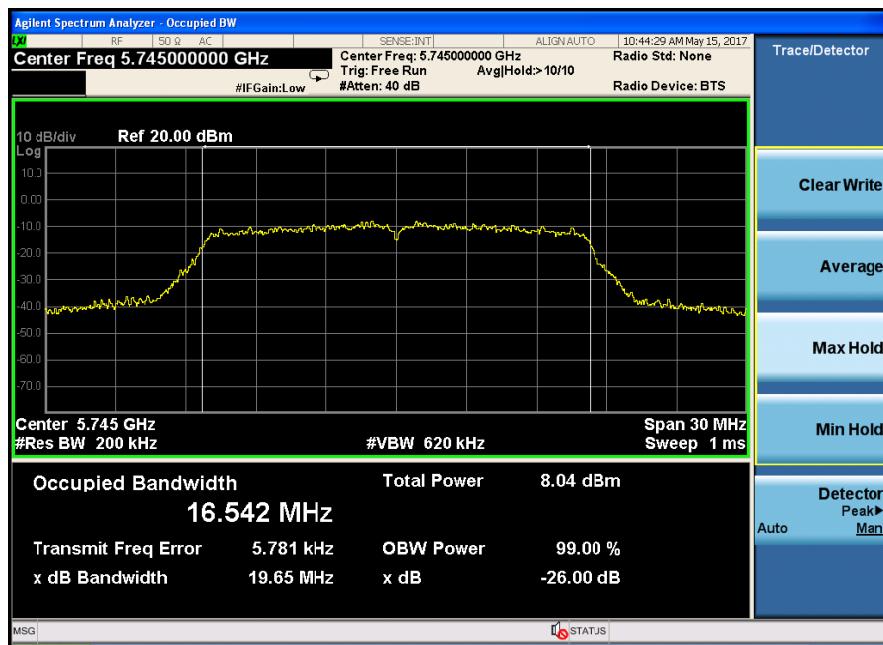


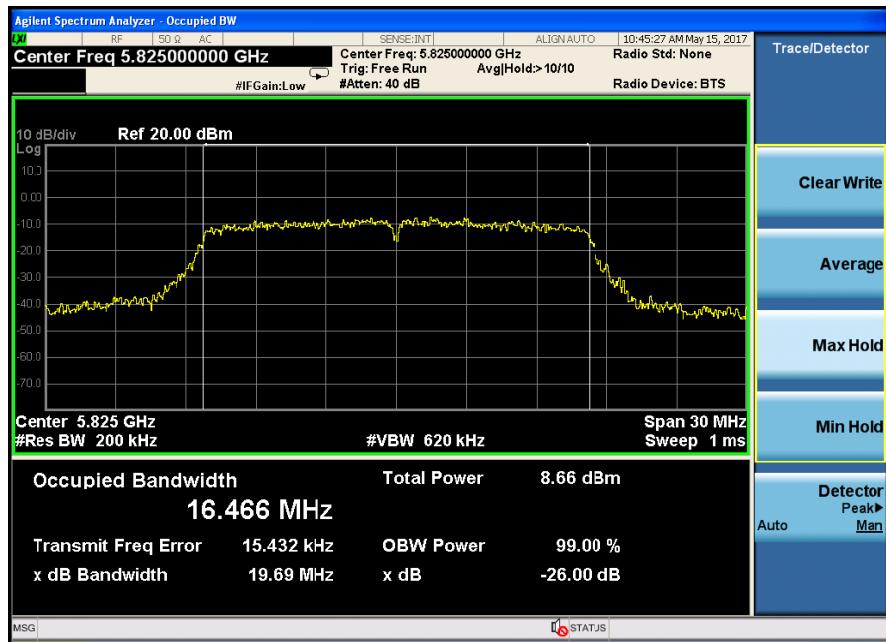
IEEE 802.11ac



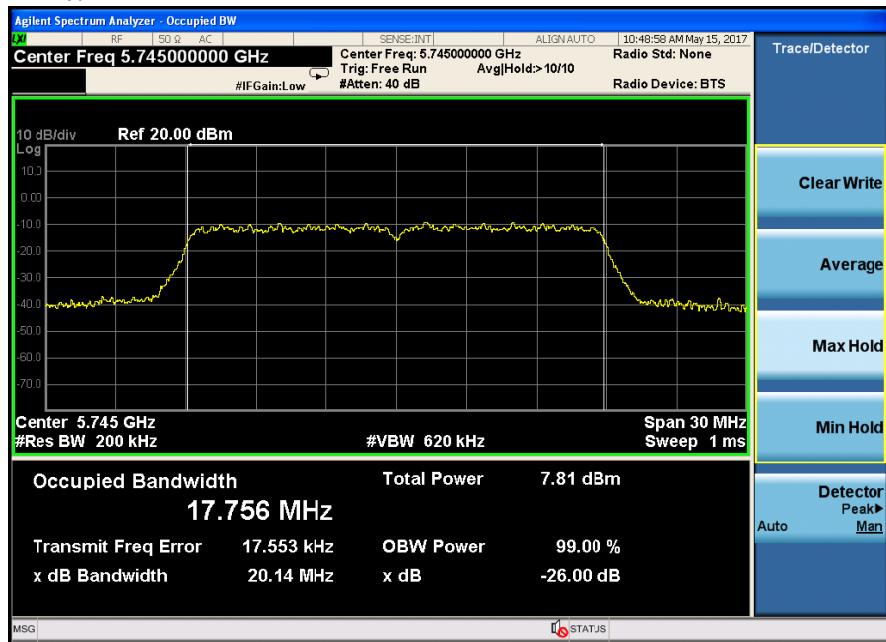
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11a:					
Low	5745	19.65	16.542	/	PASS
Mid	5785	19.42	16.474	/	PASS
High	5825	19.69	16.466	/	PASS
IEEE 802.11n/HT20:					
Low	5745	20.14	17.756	/	PASS
Mid	5785	20.22	17.773	/	PASS
High	5825	20.01	17.711	/	PASS
IEEE 802.11n/HT40:					
Low	5755	64.44	36.337	/	PASS
High	5795	65.47	36.419	/	PASS
IEEE 802.11ac:					
	5775	84.90	75.817	/	PASS

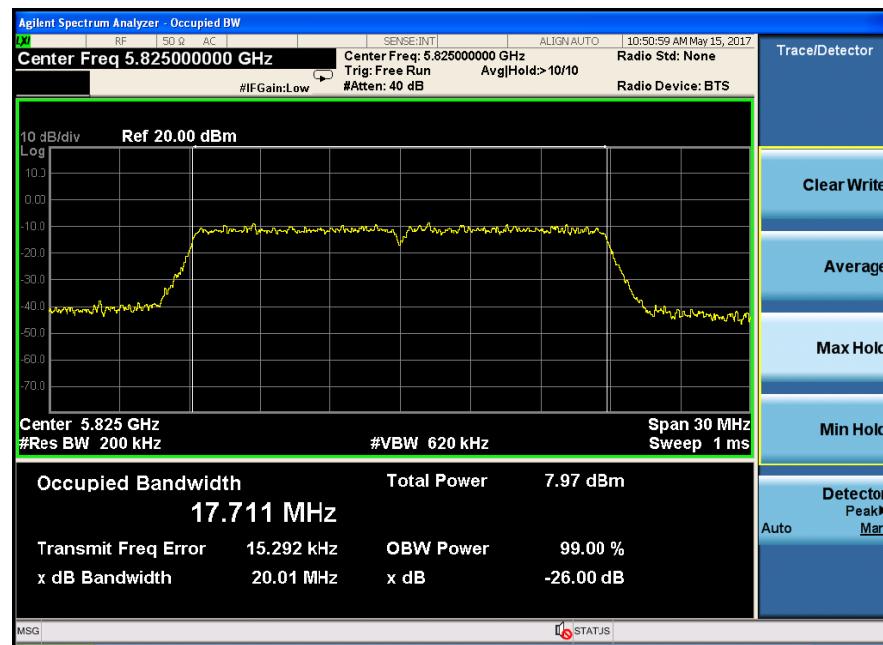
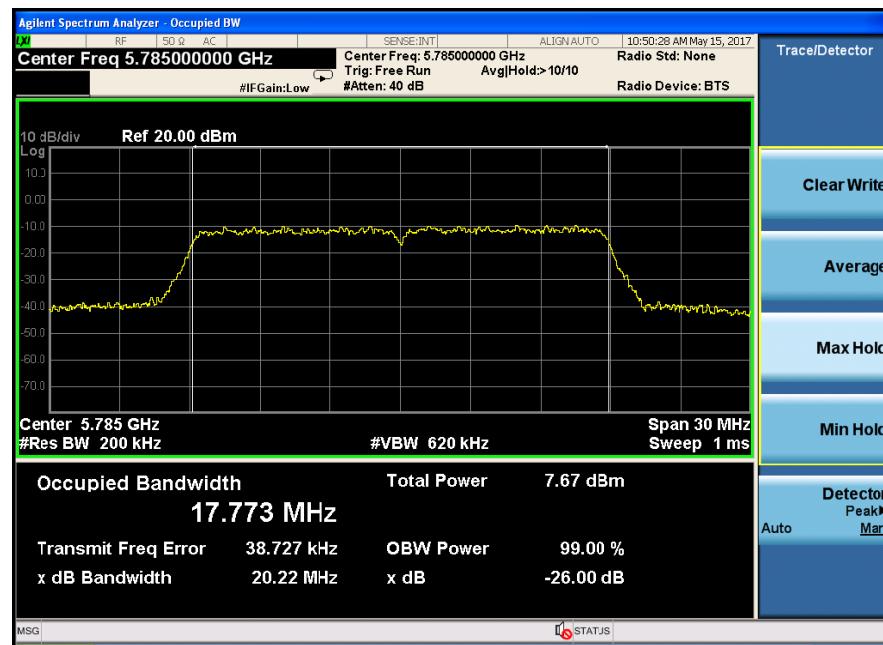
IEEE 802.11a



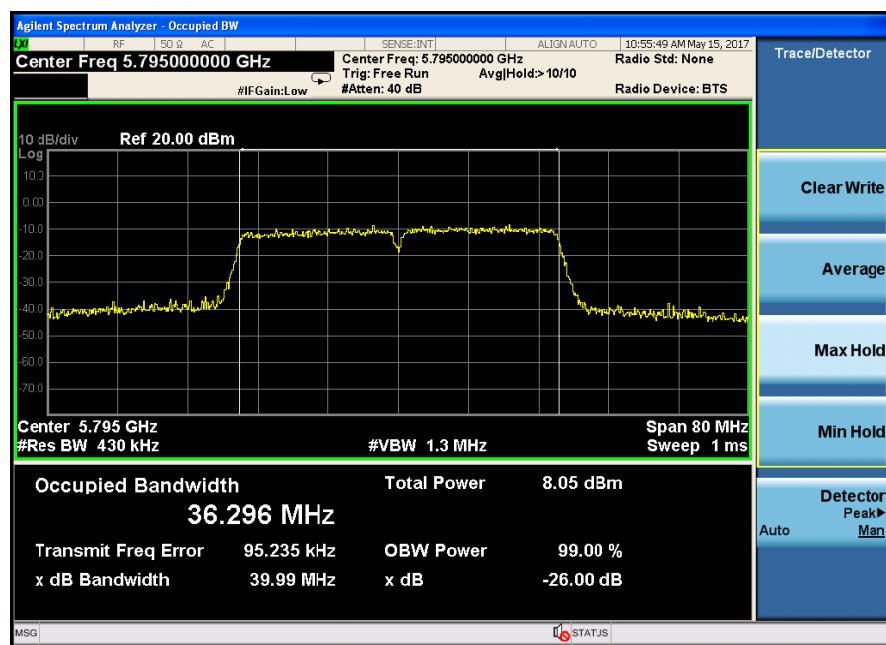
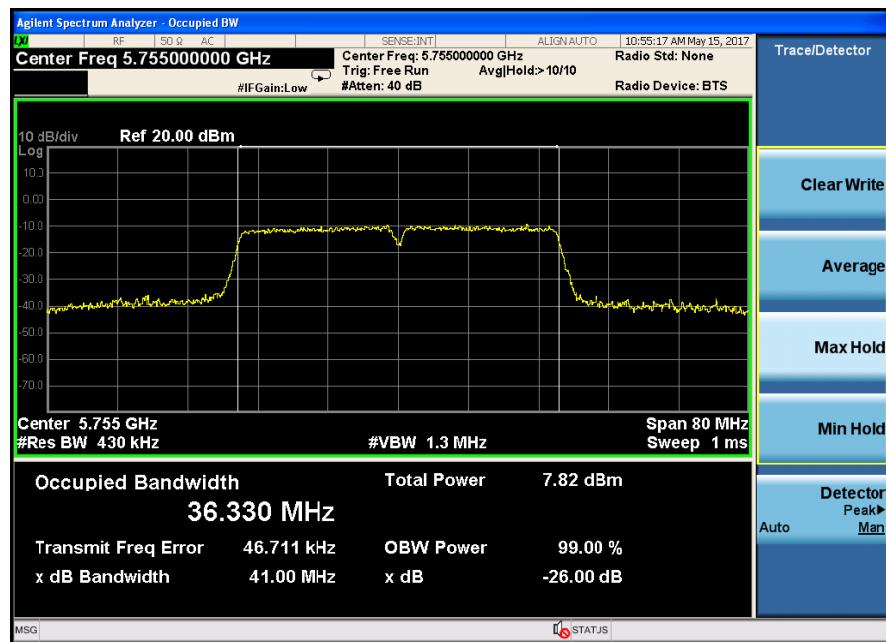


IEEE 802.11n HT20:

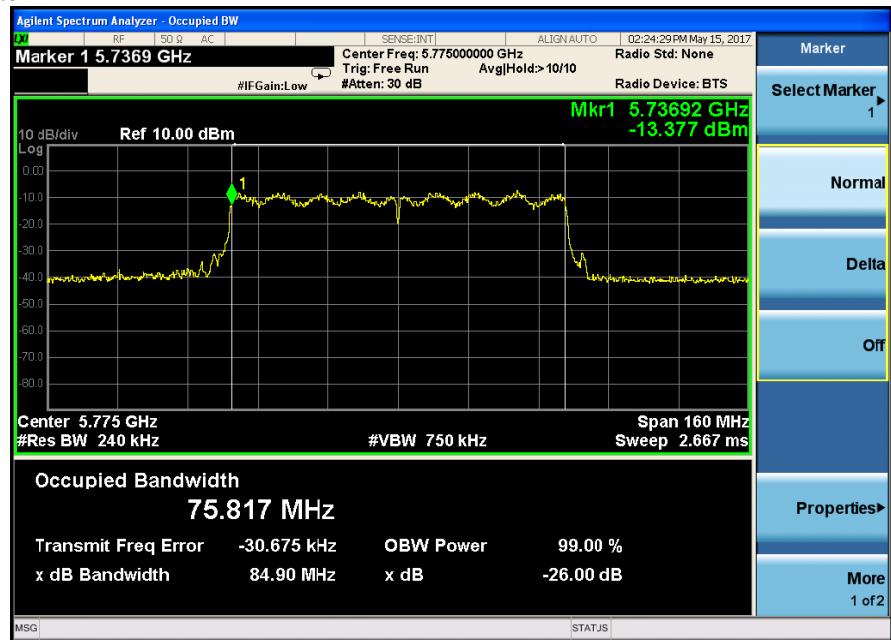




IEEE 802.11n HT40:

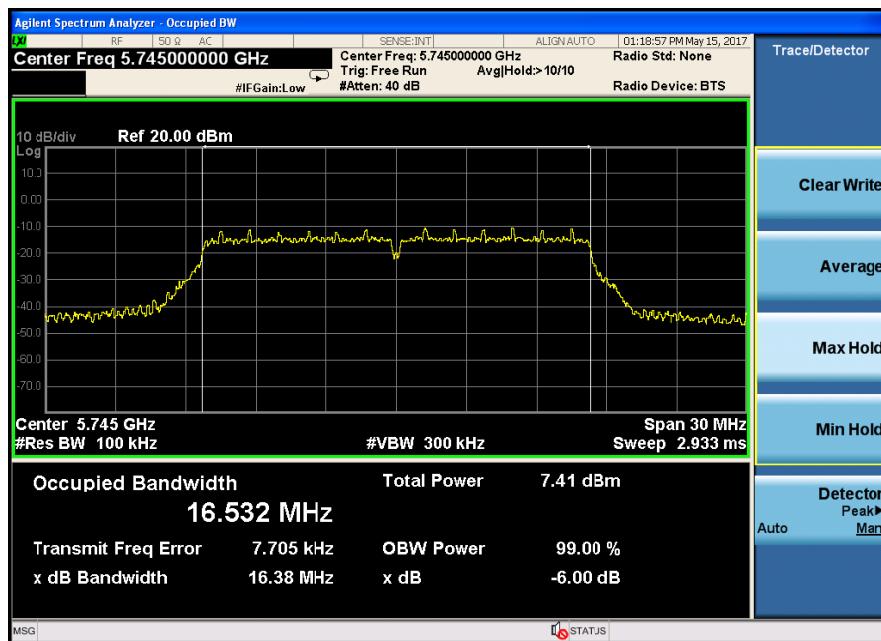


IEEE 802.11ac

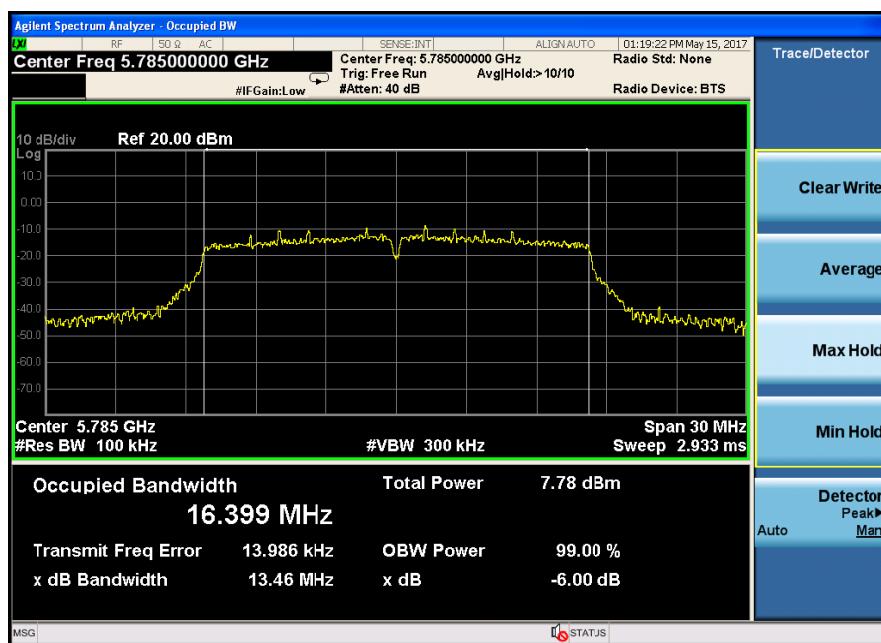


Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11a:					
Low	5745	16.38	16.532	0.5	PASS
Mid	5785	13.46	16.399	0.5	PASS
High	5825	15.62	16.408	0.5	PASS
IEEE 802.11n/HT20:					
Low	5745	17.60	17.668	0.5	PASS
Mid	5785	17.62	17.668	0.5	PASS
High	5825	17.62	17.677	0.5	PASS
IEEE 802.11n/HT40:					
Low	5755	36.10	36.114	0.5	PASS
High	5795	35.85	36.149	0.5	PASS
IEEE 802.11ac:					
	5775	76.32	75.732	0.5	PASS

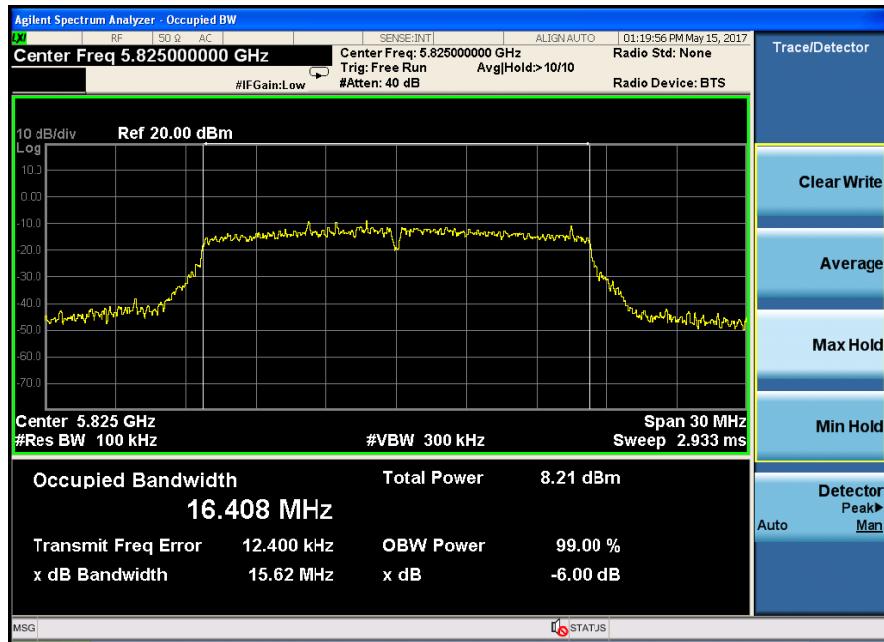
IEEE 802.11a with 5.8G:
CH Low :



CH Mid :

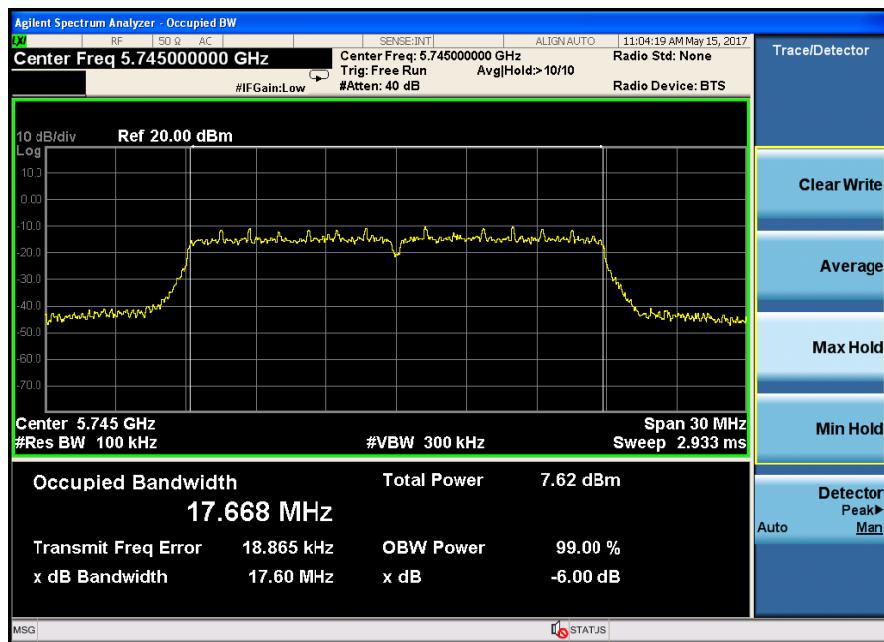


CH High :

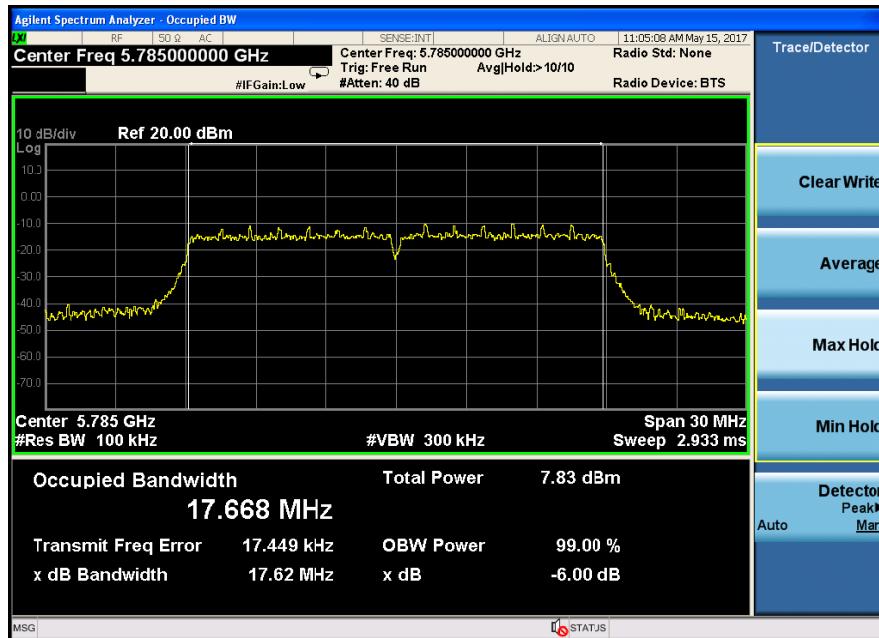


IEEE 802.11n HT20:

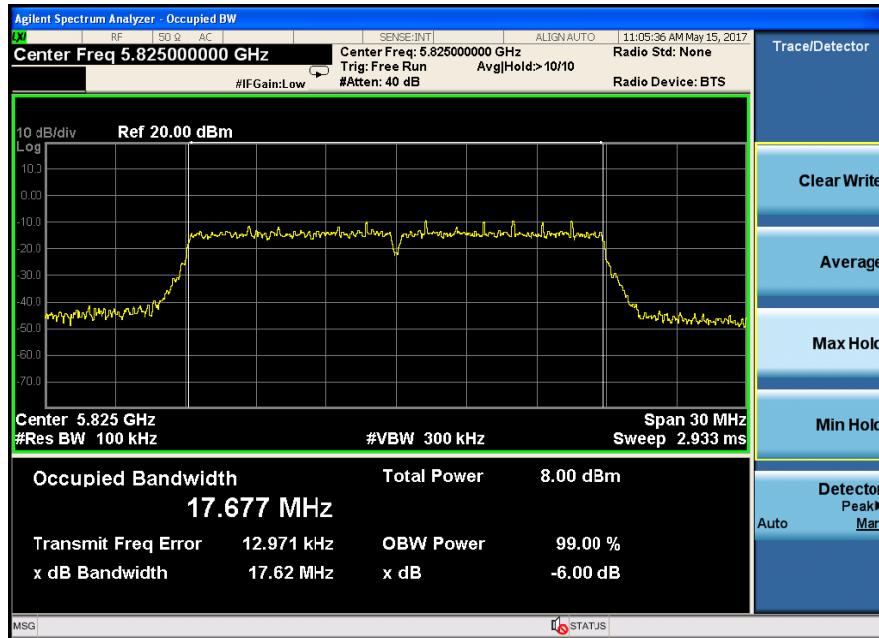
CH Low :



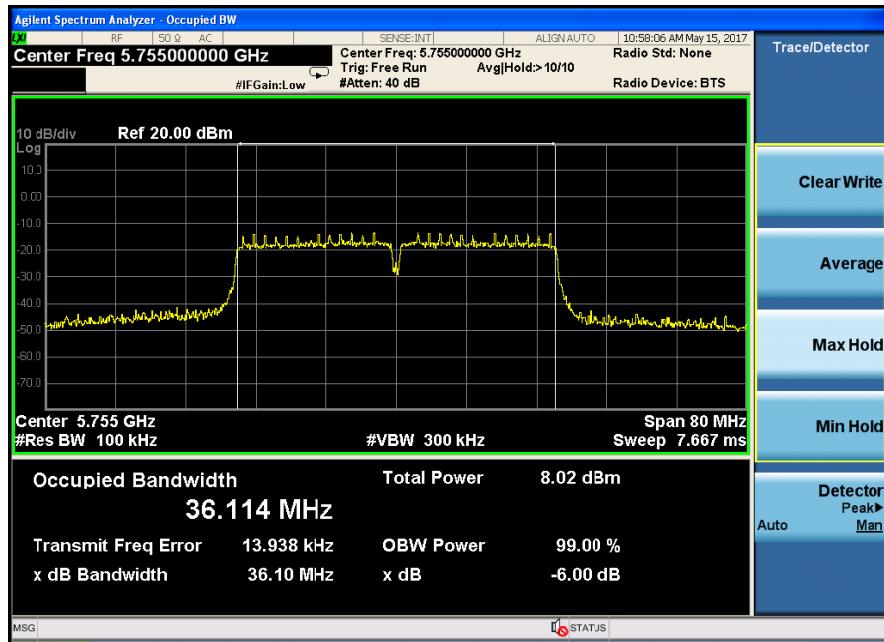
CH Mid :



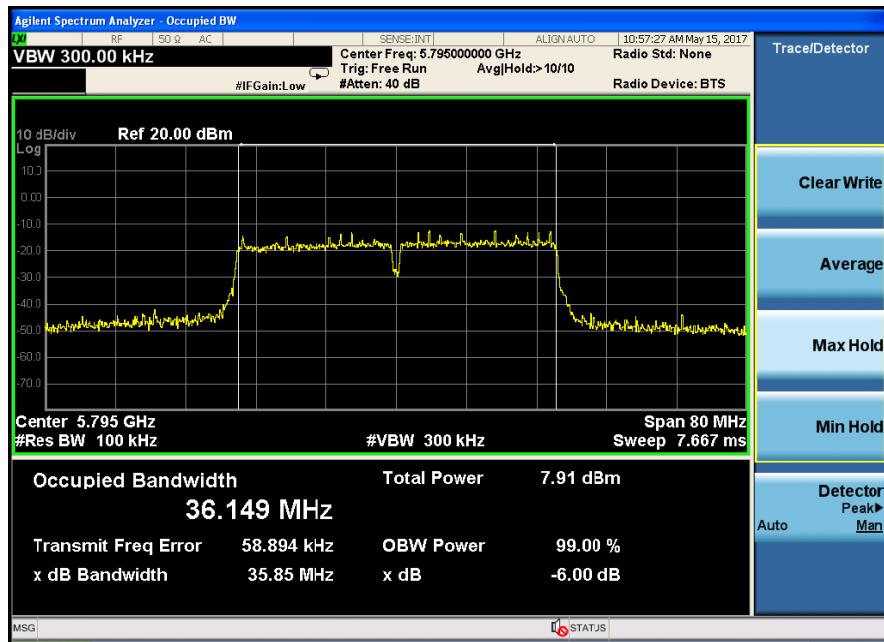
CH High :



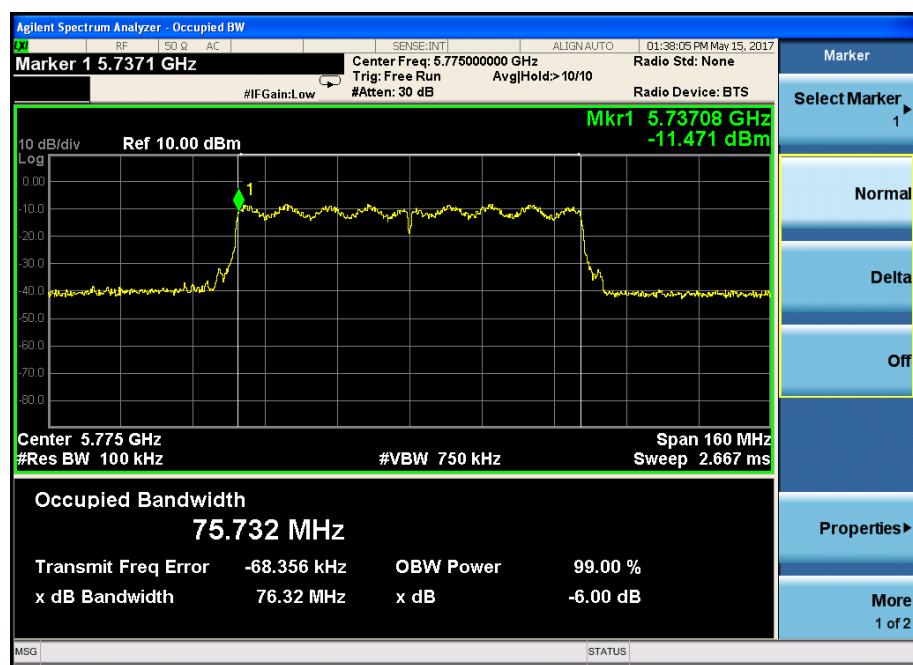
IEEE 802.11n/HT40:
CH Low :



CH High :



IEEE 802.11ac:



10 Undesirable emission

10.1 Test limit

Except as shown in paragraph (7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) 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 -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) 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.
- (5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- (6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
- (7) The provisions of §15.205 apply to intentional radiators operating under this section.
- (8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits

10.2 Test Procedure

- 12.2.1 Put the EUT on a 0.8m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission
- 12.2.2 Check the spurious emissions out of band.
- 12.2.3 RBW 1MHz ,VBW 3MHz ,peak detector for peak value , RBW 1MHz ,VBW 3MHz , RMS detector for AV value.

10.3 Test Setup

Same as 5.2.2.

10.4 Test Result

PASS.

Detailed information please see the following page.

5.2G Band

Radiated Method:

IEEE 802.11a CH LOW

Band Edge Test result													
EUT: 802.11ac Wireless USB Adapter				M/N: U0639									
Power: DC 5V from USB Port													
Test date: 2017-05-10 Test site: 3m Chamber Tested by: Simple Guan													
Test mode: TX Low													
Antenna polarity: Vertical													
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark					
5150	43.21	31.65	5.92	33.9	46.88	68.2	21.32	PK					
--	--	--	--	--	--	--	--	--					
--	--	--	--	--	--	--	--	--					
--	--	--	--	--	--	--	--	--					
Antenna Polarity: Horizontal													
5150	42.59	31.65	5.92	33.9	46.26	68.2	21.94	PK					
--	--	--	--	--	--	--	--	--					
--	--	--	--	--	--	--	--	--					
--	--	--	--	--	--	--	--	--					

Note:

1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK

2, Result = Read level + Antenna factor + cable loss-Amp factor

3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Note: According to KDB 789033, EIRP **[dBm]** = E **[dBuV/m]** -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11a CH High

Band Edge Test result														
EUT: 802.11ac Wireless USB Adapter				M/N: U0639										
Power: DC 5V from USB Port														
Test date: 2017-05-10			Test site: 3m Chamber			Tested by: Simple Guan								
Test mode: TX High														
Antenna polarity: Vertical														
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark						
5350	43.74	31.73	6.05	33.73	47.79	68.2	20.41	PK						
--	--	--	--	--	--	--	--	--						
Antenna Polarity: Horizontal														
5350	45.63	31.73	6.05	33.73	49.68	68.2	18.52	PK						
--	--	--	--	--	--	--	--	--						
Note:														
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK														
2, Result = Read level + Antenna factor + cable loss-Amp factor														
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.														

Note: According to KDB 789033, EIRP **【dBm】** =E **【dBuV/m】** -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11n HT20 CH Low

Band Edge Test result													
EUT: 802.11ac Wireless USB Adapter				M/N: U0639									
Power: DC 5V from USB Port													
Test date: 2017-05-10 Test site: 3m Chamber Tested by: Simple Guan													
Test mode: TX Low													
Antenna polarity: Vertical													
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark					
5150	47.28	31.65	5.92	33.9	50.95	68.2	17.25	PK					
--	--	--	--	--	--	--	--	--					
Antenna Polarity: Horizontal													
5150	43.51	31.65	5.92	33.9	47.18	68.2	21.02	PK					
--	--	--	--	--	--	--	--	--					
Note:													
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK													
2, Result = Read level + Antenna factor + cable loss-Amp factor													
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.													

Note: According to KDB 789033, EIRP **[dBm]** = E **[dBuV/m]** -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11n HT20 CH High

Band Edge Test result												
EUT: 802.11ac Wireless USB Adapter				M/N: U0639								
Power: DC 5V from USB Port												
Test date: 2017-05-10					Test site: 3m Chamber		Tested by: Simple Guan					
Test mode: TX High												
Antenna polarity: Vertical												
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark				
5350	43.72	31.73	6.05	33.73	47.77	68.2	20.43	PK				
--	--	--	--	--	--	--	--	--				
Antenna Polarity: Horizontal												
5350	42.24	31.73	6.05	33.73	46.29	68.2	21.91	PK				
--	--	--	--	--	--	--	--	--				
Note:												
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK												
2, Result = Read level + Antenna factor + cable loss-Amp factor												
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.												

Note: According to KDB 789033, EIRP **【dBm】** =E **【dBuV/m】** -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11n HT40 CH Low

Band Edge Test result												
EUT: 802.11ac Wireless USB Adapter				M/N: U0639								
Power: DC 5V from USB Port												
Test date: 2017-05-10					Test site: 3m Chamber		Tested by: Simple Guan					
Test mode: TX Low												
Antenna polarity: Vertical												
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark				
5150	43.51	31.65	5.92	33.9	47.18	68.2	21.02	PK				
--	--	--	--	--	--	--	--	--				
Antenna Polarity: Horizontal												
5150	42.78	31.65	5.92	33.9	46.45	68.2	21.75	PK				
--	--	--	--	--	--	--	--	--				
Note:												
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK												
2, Result = Read level + Antenna factor + cable loss-Amp factor												
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.												

Note: According to KDB 789033, EIRP **[dBm]** =E **[dBuV/m]** -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11n HT40 CH High

Band Edge Test result													
EUT: 802.11ac Wireless USB Adapter				M/N: U0639									
Power: DC 5V from USB Port													
Test date: 2017-05-10 Test site: 3m Chamber Tested by: Simple Guan													
Test mode: TX High													
Antenna polarity: Vertical													
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark					
5350	44.97	31.73	6.05	33.73	49.02	68.2	19.18	PK					
--	--	--	--	--	--	--	--	--					
Antenna Polarity: Horizontal													
5350	42.05	31.73	6.05	33.73	46.1	68.2	22.1	PK					
--	--	--	--	--	--	--	--	--					
Note:													
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK													
2, Result = Read level + Antenna factor + cable loss-Amp factor													
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.													

Note: According to KDB 789033, EIRP **【dBm】** = E **【dBuV/m】** -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

IEEE 802.11ac

Band Edge Test result												
EUT: 802.11ac Wireless USB Adapter				M/N: U0639								
Power: DC 5V from USB Port												
Test date: 2017-05-10				Test site: 3m Chamber				Tested by: Simple Guan				
Test mode: TX Low												
Antenna polarity: Vertical												
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark				
5150	44.18	31.65	5.92	33.9	47.85	68.2	20.35	PK				
5350	42.06	31.73	6.05	33.73	46.11	68.2	22.09	PK				
--	--	--	--	--	--	--	--	--				
Antenna Polarity: Horizontal												
5150	42.53	31.65	5.92	33.9	46.2	68.2	22	PK				
5350	41.47	31.73	6.05	33.73	45.52	68.2	22.68	PK				
--	--	--	--	--	--	--	--	--				
Note:												
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK												
2, Result = Read level + Antenna factor + cable loss-Amp factor												
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.												

Note: According to KDB 789033, EIRP **【dBm】** =E **【dBuV/m】** -95.2, thus, limit for 5150MHz band is -27+95.2=68.2 dBuV/m.

5.8G Band

Radiated Method:

IEEE 802.11a CH LOW

Band Edge Test result													
EUT: 802.11ac Wireless USB Adapter				M/N: U0639									
Power: DC 5V from USB Port													
Test date: 2017-05-10 Test site: 3m Chamber Tested by: Simple Guan													
Test mode: TX Low													
Antenna polarity: Vertical													
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark					
5460	43.89	31.81	6.11	33.68	48.13	68.2	20.07	PK					
5725	42.35	32.17	6.26	33.58	47.2	78.2	31	PK					
--	--	--	--	--	--	--	--	--					
Antenna Polarity: Horizontal													
5460	41.57	31.81	6.11	33.68	45.81	68.2	22.39	PK					
5725	42.89	32.17	6.26	33.58	47.74	78.2	30.46	PK					
--	--	--	--	--	--	--	--	--					
Note:													
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK													
2, Result = Read level + Antenna factor + cable loss-Amp factor													
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.													

Note: According to KDB 789033, EIRP [dBm] = E [dBuV/m] -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11a CH High

Band Edge Test result													
EUT: 802.11ac Wireless USB Adapter				M/N: U0639									
Power: DC 5V from USB Port													
Test date: 2017-05-10 Test site: 3m Chamber Tested by: Simple Guan													
Test mode: TX High													
Antenna polarity: Vertical													
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark					
5850	41.73	32.5	6.33	33.64	46.92	78.2	31.28	PK					
--	--	--	--	--	--	--	--	--					
Antenna Polarity: Horizontal													
5850	42.14	32.5	6.33	33.64	47.33	78.2	30.87	PK					
--	--	--	--	--	--	--	--	--					

Note:

1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK

2, Result = Read level + Antenna factor + cable loss-Amp factor

3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Note: According to KDB 789033, EIRP 【dBm】 = E 【dBuV/m】 -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11n HT20 CH Low

Band Edge Test result													
EUT: 802.11ac Wireless USB Adapter				M/N: U0639									
Power: DC 5V from USB Port													
Test date: 2017-05-10 Test site: 3m Chamber Tested by: Simple Guan													
Test mode: TX Low													
Antenna polarity: Vertical													
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark					
5460	41.76	31.81	6.11	33.68	46	68.2	22.2	PK					
5725	42.83	32.17	6.26	33.58	47.68	78.2	30.52	PK					
--	--	--	--	--	--	--	--	--					
Antenna Polarity: Horizontal													
5460	41.07	31.81	6.11	33.68	45.31	68.2	22.89	PK					
5725	42.43	32.17	6.26	33.58	47.28	78.2	30.92	PK					
--	--	--	--	--	--	--	--	--					
Note:													
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK													
2, Result = Read level + Antenna factor + cable loss-Amp factor													
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.													

Note: According to KDB 789033, EIRP [dBm] = E [dBuV/m] -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11n HT20 CH High

Band Edge Test result												
EUT: 802.11ac Wireless USB Adapter				M/N: U0639								
Power: DC 5V from USB Port												
Test date: 2017-05-10					Test site: 3m Chamber		Tested by: Simple Guan					
Test mode: TX High												
Antenna polarity: Vertical												
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark				
5850	43.16	32.5	6.33	33.64	48.35	78.2	29.85	PK				
--	--	--	--	--	--	--	--	--				
Antenna Polarity: Horizontal												
5850	42.09	32.5	6.33	33.64	47.28	78.2	30.92	PK				
--	--	--	--	--	--	--	--	--				
Note:												
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK												
2, Result = Read level + Antenna factor + cable loss-Amp factor												
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.												

Note: According to KDB 789033, EIRP **【dBm】** = E **【dBuV/m】** -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11n HT40 CH Low

Band Edge Test result												
EUT: 802.11ac Wireless USB Adapter				M/N: U0639								
Power: DC 5V from USB Port												
Test date: 2017-05-10				Test site: 3m Chamber				Tested by: Simple Guan				
Test mode: TX Low												
Antenna polarity: Vertical												
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark				
5460	41.54	31.81	6.11	33.68	45.78	68.2	22.42	PK				
5725	43.37	32.17	6.26	33.58	48.22	78.2	29.98	PK				
--	--	--	--	--	--	--	--	--				
Antenna Polarity: Horizontal												
5460	41.56	31.81	6.11	33.68	45.8	68.2	22.4	PK				
5725	43.25	32.17	6.26	33.58	48.1	78.2	30.1	PK				
--	--	--	--	--	--	--	--	--				
Note:												
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK												
2, Result = Read level + Antenna factor + cable loss-Amp factor												
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.												

Note: According to KDB 789033, EIRP **【dBm】** = E **【dBuV/m】** -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11n HT40 CH High

Band Edge Test result													
EUT: 802.11ac Wireless USB Adapter				M/N: U0639									
Power: DC 5V from USB Port													
Test date: 2017-05-10 Test site: 3m Chamber Tested by: Simple Guan													
Test mode: TX High													
Antenna polarity: Vertical													
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark					
5850	41.35	32.5	6.33	33.64	46.54	78.2	31.66	PK					
--	--	--	--	--	--	--	--	--					
Antenna Polarity: Horizontal													
5850	48.31	32.5	6.33	33.64	53.5	78.2	24.7	PK					
--	--	--	--	--	--	--	--	--					
Note:													
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK													
2, Result = Read level + Antenna factor + cable loss-Amp factor													
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.													

Note: According to KDB 789033, EIRP **【dBm】** = E **【dBuV/m】** -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

IEEE 802.11ac

Band Edge Test result													
EUT: 802.11ac Wireless USB Adapter				M/N: U0639									
Power: DC 5V from USB Port													
Test date: 2017-05-10		Test site: 3m Chamber		Tested by: Simple Guan									
Test mode: TX Low													
Antenna polarity: Vertical													
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(d B)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark					
5460	42.67	31.81	6.11	33.68	46.91	68.2	21.29	PK					
5725	43.35	32.17	6.26	33.58	48.2	78.2	30	PK					
5850	43.39	32.5	6.33	33.64	48.58	78.2	29.62	PK					
--	--	--	--	--	--	--	--	--					
Antenna Polarity: Horizontal													
5460	41.63	31.81	6.11	33.68	45.87	68.2	22.33	PK					
5725	42.32	32.17	6.26	33.58	47.17	78.2	31.03	PK					
5850	43.41	32.5	6.33	33.64	48.6	78.2	29.6	PK					
--	--	--	--	--	--	--	--	--					
Note:													
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK													
2, Result = Read level + Antenna factor + cable loss-Amp factor													
3, All the other emissions not reported were too low to read and deemed to comply with FCC limit.													

Note: According to KDB 789033, EIRP **【dBm】** =E **【dBuV/m】** -95.2, thus, limit for 5460MHz is -27+95.2=68.2 dBuV/m. Limit for 5725MHz is -17+95.2=78.2 dBuV/m.

11 Frequency stability

11.1 Test 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 user's manual.

11.2 Result

EUT: 802.11ac Wireless USB Adapter M/N: U0639					
Power: DC 5V from USB Port					
Ambient Temperature: 23°C	Relative Humidity: 60%				
Test date: 2017-05-10	Test site: RF site		Tested by: Simple Guan		
Conclusion: PASS					
Mode	Voltage (V)	FH _L (5180MHz)	Deviation (KHz)	FH _H (5240MHz)	Deviation (KHz)
5.2G Band	132 V	5179.990	10	5239.990	10
	120 V	5179.990	10	5239.990	10
	108 V	5179.990	10	5239.990	10
5.8G Band	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
	132 V	5744.985	15	5824.985	15
	120 V	5744.985	15	5824.985	15
	108 V	5744.985	15	5824.985	15

Mode	Temperature (°C)	FH _L (5180MHz)	Deviation (KHz)	FH _H (5240MHz)	Deviation (KHz)
5.2G Band	-30	5179.947	53	5239.958	42
	-20	5179.952	48	5239.971	29
	-10	5179.949	51	5239.956	44
	0	5179.946	54	5239.967	33
	10	5179.969	31	5239.974	26
	20	5179.958	42	5239.962	38
	30	5179.960	40	5239.942	58
	40	5179.968	32	5239.941	59
	50	5179.967	33	5239.956	44
Mode	Temperature (°C)	FH _L (5745MHz)	Deviation (KHz)	FH _H (5825MHz)	Deviation (KHz)
5.8G Band	-30	5744.958	42	5824.943	57
	-20	5744.951	49	5824.935	65
	-10	5744.947	53	5824.955	45
	0	5744.959	41	5824.944	56
	10	5744.950	50	5824.961	39
	20	5744.964	36	5824.958	42
	30	5744.959	41	5824.969	31
	40	5744.964	36	5824.956	44
	50	5744.952	48	5824.949	51

12 Antenna Requirement

12.1 Standard Requirement

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

12.2 Antenna Connected Construction

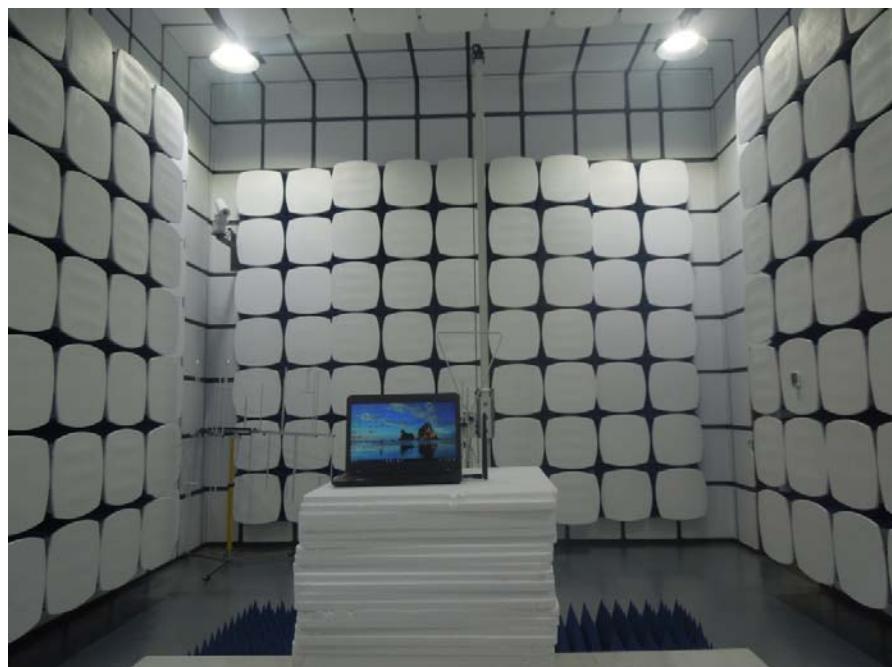
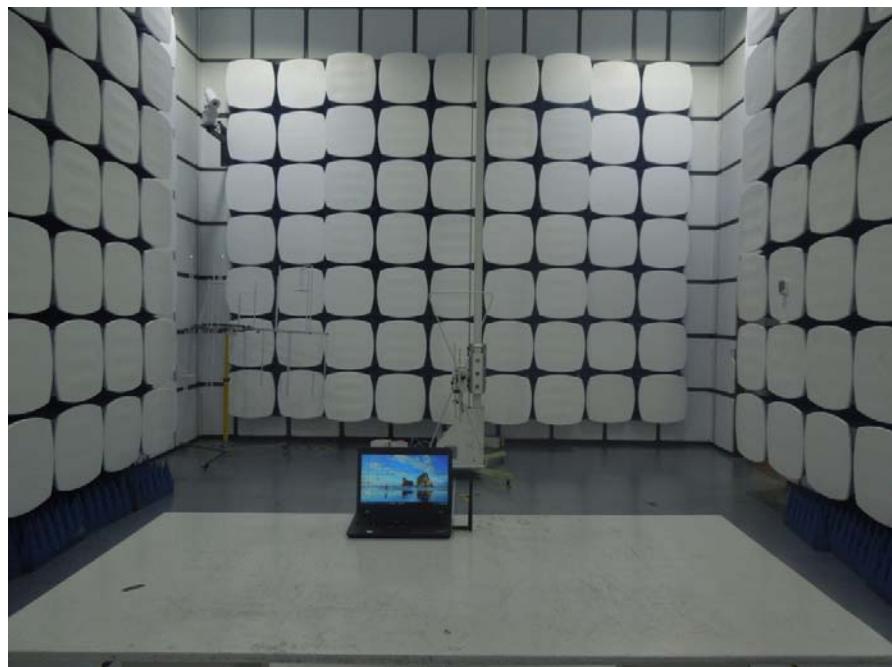
The antenna connector is unique antenna and no consideration of replacement.
Please see EUT photo for details.

12.3 Result

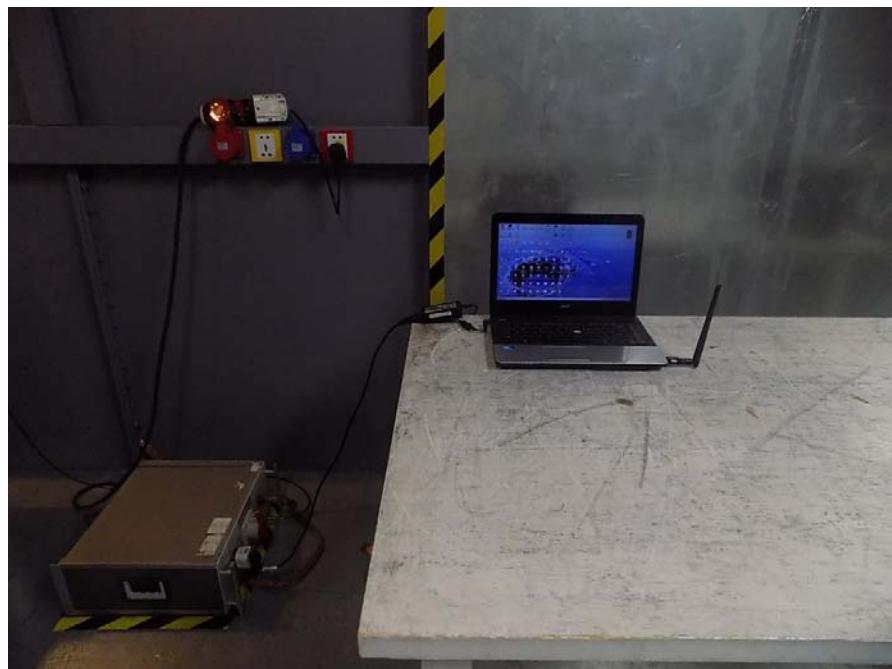
The EUT antenna is unique Antenna. It comply with the standard requirement.

13 Test setup photo

13.1 Photos of Radiated emission



13.2 Photos of Conducted Emission test



14 Photographs of EUT



-----END OF THE REPORT-----