

FCC REPORT

Applicant: Quantum Creations LLC.

Address of Applicant: 16410 NE 19th Avenue Suite 102 North, Miami Beach, Florida
United States 33162

Equipment Under Test (EUT)

Product Name: PC Stick

Model No.: A-1063-AAP, A-1063-AAP-1, A-1063-AAP-2, A-1063-AAP-3,
A-1063-AAP-4, A-1063-AAP-5, A-1063-AAP-6,
A-1063-AAP-7, A-1063-AAP-8

Trade Mark: Azulle

FCC ID: 2AFJI20161063

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.407:2015

Date of sample receipt: August 25, 2016

Date of Test: August 26-September 02, 2016

Date of report issued: September 07, 2016

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

A circular logo for GTS (Global United Technology Services Co., Ltd.) is overlaid with a handwritten signature. The logo contains the text 'GTS', 'GLOBAL UNITED TECHNOLOGY SERVICES CO., LTD.', and 'LABORATORY TESTING'. The signature is written in black ink and appears to read 'Robinson Lo'.

Robinson Lo

Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

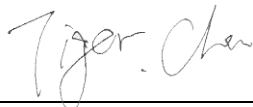
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2 Version

Version No.	Date	Description
00	September 07, 2016	Original

Prepared By:

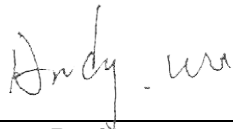


Date:

September 07, 2016

Project Engineer

Check By:



Date:

September 07, 2016

Reviewer

3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION.....	2
3 CONTENTS	3
4 TEST SUMMARY	4
4.1 MEASUREMENT UNCERTAINTY	4
5 GENERAL INFORMATION.....	5
5.1 CLIENT INFORMATION	5
5.2 GENERAL DESCRIPTION OF EUT	5
5.3 TEST MODE	7
5.4 DESCRIPTION OF SUPPORT UNITS	7
5.5 TEST FACILITY.....	7
5.6 TEST LOCATION	7
6 TEST INSTRUMENTS LIST	8
7 TEST RESULTS AND MEASUREMENT DATA.....	9
7.1 ANTENNA REQUIREMENT	9
7.2 CONDUCTED EMISSIONS	10
7.3 CONDUCTED PEAK OUTPUT POWER.....	13
7.4 CHANNEL BANDWIDTH	15
7.5 POWER SPECTRAL DENSITY	23
7.6 BAND EDGES.....	31
7.6.1 Radiated Emission Method.....	31
7.7 SPURIOUS EMISSION.....	39
7.7.1 Radiated Emission Method.....	39
7.8 FREQUENCY STABILITY	45
8 TEST SETUP PHOTO.....	53
9 EUT CONSTRUCTIONAL DETAILS	54

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.407(a)(3)	Pass
Channel Bandwidth	15.407(e)	Pass
Power Spectral Density	15.407(a)(3)	Pass
Band Edge	15.407(b)(4)	Pass
Spurious Emission	15.205/15.209/15.407(b)(4)	Pass

Pass: The EUT complies with the essential requirements in the standard.

Test according to ANSI C63.4-2014 ,ANSI C63.10-2013

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 40GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 Client Information

Applicant:	Quantum Creations LLC.
Address of Applicant:	16410 NE 19th Avenue Suite 102 North, Miami Beach, Florida United States 33162
Manufacturer:	SHENZHEN MELE STAR TECHNOLOGY LIMITED
Address of Manufacturer:	3F,Bldg#1,28 Cuijing Road, Pingshan New District, Shenzhen, PR China.
Factory:	Shenzhen MeLE Precision Technology Limited
Address of Factory:	3F East,Bldg#1,28 Cuijing Road, Pingshan New District, Shenzhen, PR China.

5.2 General Description of EUT

Product Name:	PC Stick
Model No.:	A-1063-AAP, A-1063-AAP-1, A-1063-AAP-2, A-1063-AAP-3, A-1063-AAP-4, A-1063-AAP-5, A-1063-AAP-6, A-1063-AAP-7, A-1063-AAP-8
Operation Frequency:	802.11a/802.11n(HT20)/802.11ac(HT20) @5.8G Band: 5745MHz ~ 5825MHz 802.11n(HT40)/ 802.11ac(HT40) @ 5.8G Band: 5755MHz ~ 5795MHz 802.11ac(HT80): 5775MHz
Channel numbers:	802.11a/802.11n(HT20)/802.11ac(HT20) @5.8G Band: 6 802.11n(HT40)/ 802.11ac(HT40) @ 5.8G Band: 2 802.11ac(HT80): 1
Channel bandwidth:	802.11a/802.11n(HT20)/802.11ac(HT20) : 20MHz 802.11n(HT40)/802.11ac(HT40) : 40MHz 802.11ac(HT80): 80MHz
Modulation technology:	802.11a/802.11n(H20)/802.11n(H40)/802.11ac(HT20)/802.11ac(HT40) /802.11ac(HT80): Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	ANT 1: FPCB Antenna ANT 2: Integral Antenna
Antenna gain:	ANT 1: 0.5dBi ANT 2: 3.7dBi
Power supply:	SWITCHING ADAPTER: Model No.:FJ-SW0503000N Input: AC 100~240V~50/60Hz 0.6A Max Output: DC 5V 3A

Remark : 802.11n(H20)/802.11n(H40)/802.11ac(HT20)/802.11ac(HT40) /802.11ac(HT80): MIMO MODE ONLY
802.11a:SISO MODE ONLY

Operation Frequency each of channel @ 5.8G Band							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	153	5765MHz	155	5775MHz	157	5785MHz
161	5805MHz	165	5825MHz				

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (MHz)		
	5.8G Band		
	802.11a 802.11n(HT20) 802.11ac(HT20)	802.11n(HT40) 802.11ac(HT40)	802.11ac(HT80)
Lowest channel	5745	5755	5765
Middle channel	5785	5795	5775
Highest channel	5825	5795	5805

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
<p><i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, the duty cycle>98%, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i></p>	

<p>We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:</p>	
<p>Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.</p>	
Mode	Data rate
802.11a	6Mbps
802.11n(HT20)	6.5Mbps
802.11n(HT40)	13Mbps
802.11ac(HT20)	6.5Mbps
802.11ac(HT40)	13.5Mbps
802.11ac(HT80)	29.3Mbps

5.4 Description of Support Units

None.

5.5 Test Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● FCC —Registration No.: 600491 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016. ● Industry Canada (IC) —Registration No.: 9079A-2 The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

5.6 Test Location

<p>All tests were performed at:</p> <p>Global United Technology Services Co., Ltd. No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China Tel: 0755-27798480 Fax: 0755-27798960</p>
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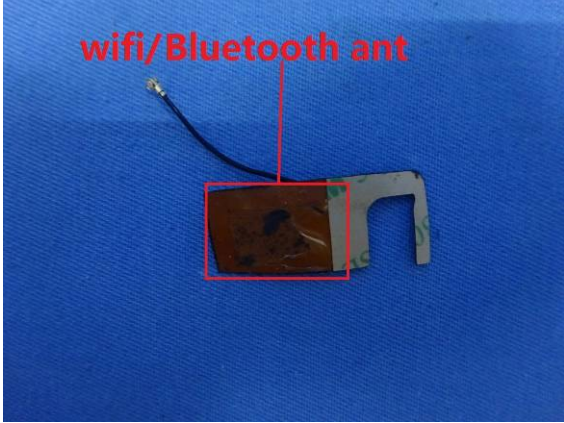
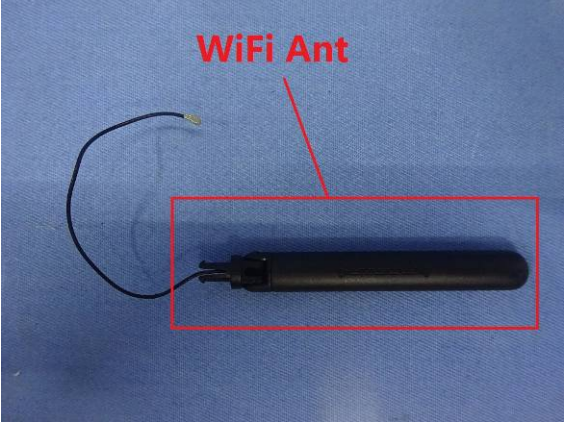
6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 29 2016	June. 28 2017
4	Spectrum analyzer	Agilent	E4447A	GTS516	June. 29 2016	June. 28 2017
5	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 29 2016	June. 28 2017
6	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 29 2016	June. 28 2017
7	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June. 29 2016	June. 28 2017
8	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 29 2016	June. 28 2017
9	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
10	Coaxial Cable	GTS	N/A	GTS213	June. 29 2016	June. 28 2017
11	Coaxial Cable	GTS	N/A	GTS211	June. 29 2016	June. 28 2017
12	Coaxial cable	GTS	N/A	GTS210	June. 29 2016	June. 28 2017
13	Coaxial Cable	GTS	N/A	GTS212	June. 29 2016	June. 28 2017
14	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 29 2016	June. 28 2017
15	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June. 29 2016	June. 28 2017
16	Amplifier (18-40GHz)	MITEQ	AMF-6F-18004000-29-8P	GTS534	June. 29 2016	June. 28 2017
17	Band filter	Amindeon	82346	GTS219	June. 29 2016	June. 28 2017
18	Constant temperature and humidity box	Oregon Scientific	BA-888	GTS248	June. 29 2016	June. 28 2017
19	D.C. Power Supply	Instek	PS-3030	GTS232	June. 29 2016	June. 28 2017
20	Universal radio communication tester	Rohde & Schwarz	CMU200	GTS235	June. 29 2016	June. 28 2017
21	Splitter	Agilent	11636B	GTS237	June. 29 2016	June. 28 2017
22	Power Meter	Anritsu	ML2495A	GTS540	June. 29 2016	June. 28 2017
23	Power Sensor	Anritsu	MA2411B	GTS541	June. 29 2016	June. 28 2017

Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May 16 2014	May 15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June 29 2016	June 28 2017
3	Pulse Limiter	R&S	ESH3-Z2	GTS224	June 29 2016	June 28 2017
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 29 2016	June 28 2017
5	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June 29 2016	June 28 2017
6	Coaxial Cable	GTS	N/A	GTS227	June 29 2016	June 28 2017
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Thermo meter	KTJ	TA328	GTS233	June 29 2016	June 28 2017

7 Test results and Measurement Data

7.1 Antenna requirement

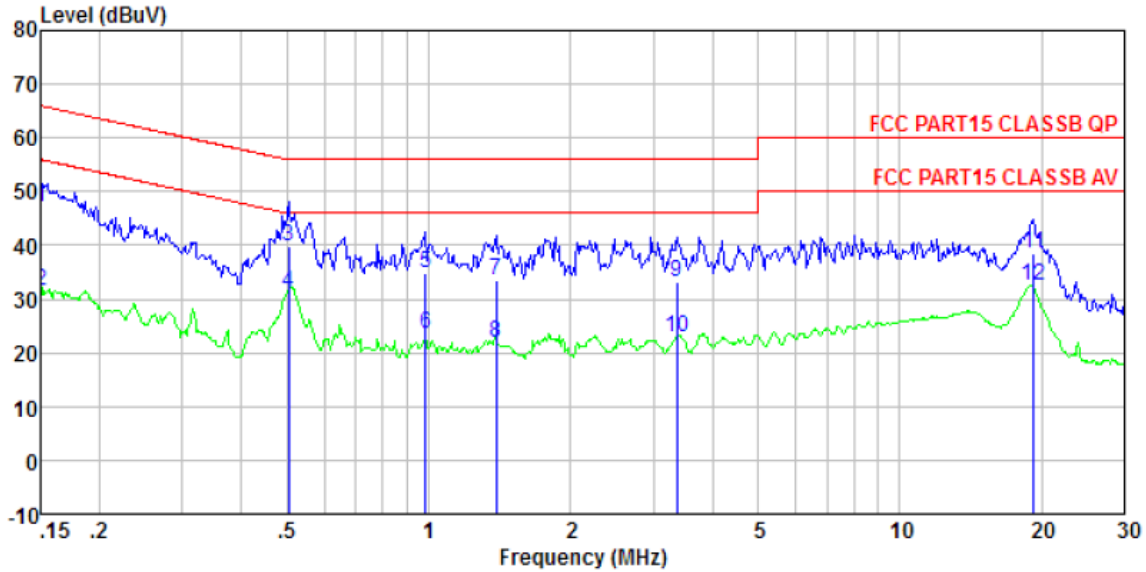
Standard requirement:	FCC Part15 C Section 15.203
<p>15.203 requirement:</p> <p><i>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, 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.</i></p>	
E.U.T Antenna:	
<p>The antenna is Integral antenna. The best case gain of the antenna is 3.7dBi.</p>	
ANT1	ANT2
	
<p>Directional Gain Calculations is below:</p> <p>The same digital data are transmitted from the two antennas in a given symbol period, thus the antennas is categorization as correlated.</p> <p>Accroding to KDB 662911 D01 Multiple Transmitter Output v02r01 Section F)2)a)(i), the Directional Gain = $G_{ANT} + 10\log(2)$ dBi = 3.7 + 3.01 dBi =6.71dBi.</p>	

7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10:2013														
Test Frequency Range:	150KHz to 30MHz														
Class / Severity:	Class B														
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto														
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBuV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15-0.5</td> <td>66 to 56*</td> <td>56 to 46*</td> </tr> <tr> <td>0.5-5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <p>* Decreases with the logarithm of the frequency.</p>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test setup:	<p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>														
Test procedure:	<ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement. 														
Test Instruments:	Refer to section 6.0 for details														
Test mode:	Refer to section 5.3 for details														
Test results:	Pass														

Measurement data

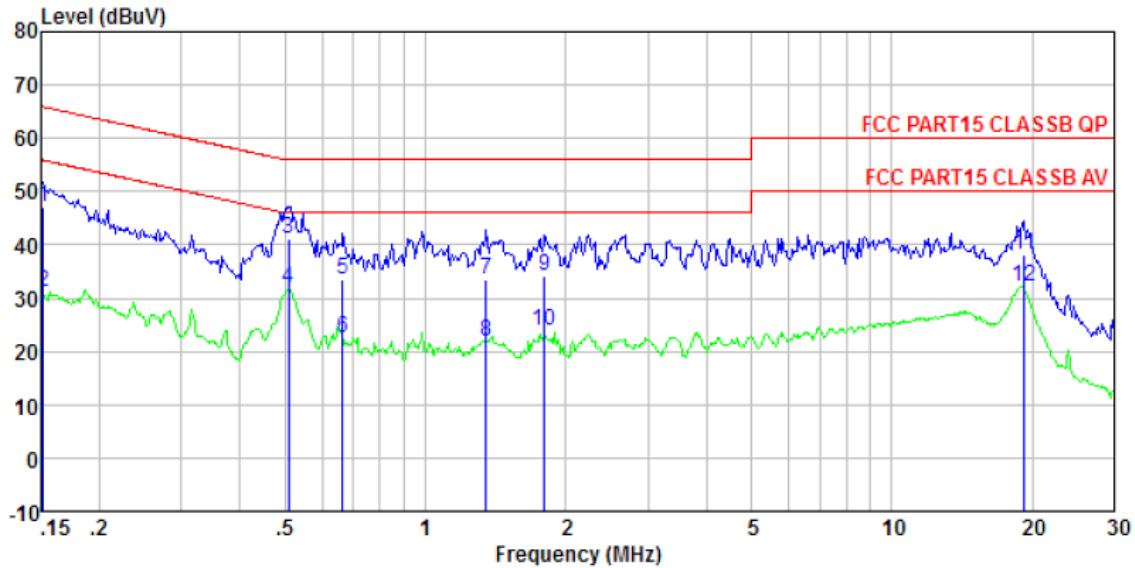
Line:



Site : Shielded room
 Condition : FCC PART15 CLASSB QP LISN-2013 LINE
 Job No. : 0121
 Test mode : 5.8G Transmitting mode
 Test Engineer: Boy

	Freq	Read Level	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	46.84	0.00	0.12	47.11	66.00	-18.89	QP
2	0.150	31.37	0.00	0.12	31.64	56.00	-24.36	Average
3	0.505	39.60	0.00	0.11	39.83	56.00	-16.17	QP
4	0.505	31.05	0.00	0.11	31.28	46.00	-14.72	Average
5	0.984	34.48	0.00	0.13	34.75	56.00	-21.25	QP
6	0.984	23.21	0.00	0.13	23.48	46.00	-22.52	Average
7	1.388	33.32	0.00	0.13	33.57	56.00	-22.43	QP
8	1.388	21.74	0.00	0.13	21.99	46.00	-24.01	Average
9	3.364	32.95	0.00	0.15	33.28	56.00	-22.72	QP
10	3.364	22.62	0.00	0.15	22.95	46.00	-23.05	Average
11	19.224	37.75	0.00	0.22	38.53	60.00	-21.47	QP
12	19.224	31.76	0.00	0.22	32.54	50.00	-17.46	Average

Neutral:



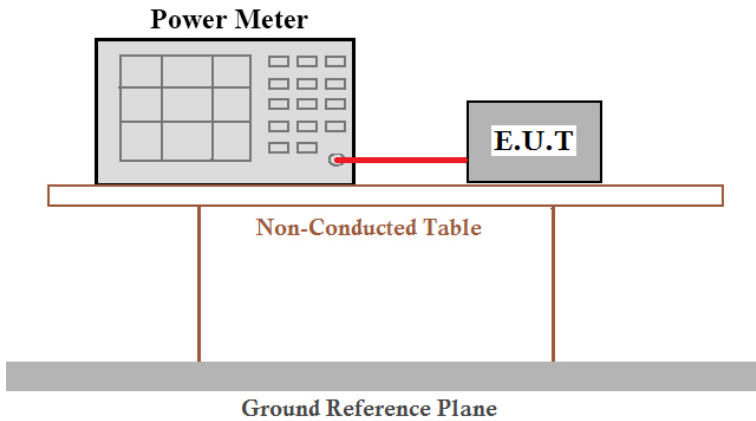
Site : Shielded room
 Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL
 Job No. : 0121
 Test mode : 5.8G Transmitting mode
 Test Engineer: Boy

	Read	Aux	Cable	Limit	Over	
Freq	Level	Factor	Loss	Line	Limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB
1	0.152	46.87	0.00	0.12	47.06	65.91 -18.85 QP
2	0.152	31.02	0.00	0.12	31.21	55.91 -24.70 Average
3	0.510	40.98	0.00	0.11	41.15	56.00 -14.85 QP
4	0.510	31.57	0.00	0.11	31.74	46.00 -14.26 Average
5	0.665	33.42	0.00	0.13	33.62	56.00 -22.38 QP
6	0.665	22.28	0.00	0.13	22.48	46.00 -23.52 Average
7	1.352	33.41	0.00	0.13	33.63	56.00 -22.37 QP
8	1.352	21.58	0.00	0.13	21.80	46.00 -24.20 Average
9	1.800	33.98	0.00	0.14	34.21	56.00 -21.79 QP
10	1.800	23.53	0.00	0.14	23.76	46.00 -22.24 Average
11	19.224	37.46	0.00	0.22	38.16	60.00 -21.84 QP
12	19.224	31.46	0.00	0.22	32.16	50.00 -17.84 Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.3 Conducted Peak Output Power

Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB789033 D02 General UNII Test Procedures New Rules v01
Limit:	29.29 dBm
Test setup:	 <p>The diagram illustrates the test setup. A Power Meter is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which sits on a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

5.8G Band

ANT: 1

Test CH	Peak Output Power (dBm)	Limit(dBm)	Result
	802.11a (SISO)		
Lowest	6.97	30	Pass
Middle	5.98		
Highest	5.86		

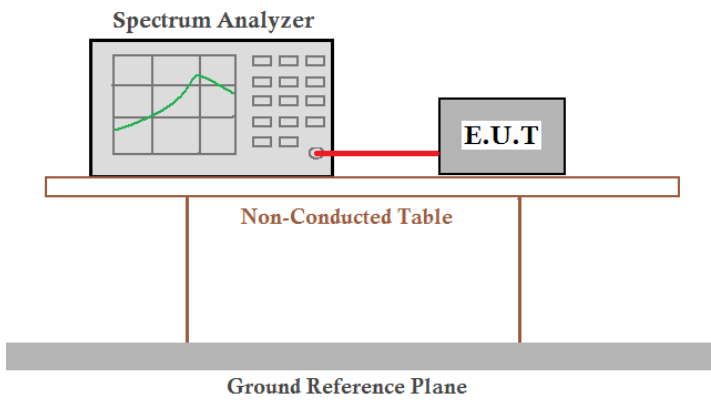
ANT: 2

Test CH	Peak Output Power (dBm)	Limit(dBm)	Result
	802.11a (SISO)		
Lowest	7.02	30	Pass
Middle	5.88		
Highest	5.77		

ANT1 + ANT2:

Test mode	Channel	Read Level (dBm)		Read Level (mW)	Total Peak Output Power (mW)	Total Peak Output Power (dBm)	Limit (dBm)	Result
802.11n (HT20) (MIMO)	Lowest	ANT1	5.13	3.26	6.44	8.09	30	Pass
		ANT2	5.02	3.18				
	Middle	ANT1	4.82	3.03	6.36	8.03		
		ANT2	5.22	3.33				
	Highest	ANT1	6.62	4.59	8.88	9.48		
		ANT2	6.32	4.29				
802.11ac(HT20) (MIMO)	Lowest	ANT1	5.97	3.95	7.90	8.98		
		ANT2	5.97	3.95				
	Middle	ANT1	6.55	4.52	8.29	9.18		
		ANT2	5.76	3.77				
	Highest	ANT1	4.31	2.69	5.41	7.33		
		ANT2	4.33	2.71				
802.11n (HT40) (MIMO)	Lowest	ANT1	5.67	3.69	6.82	8.34		
		ANT2	4.96	3.13				
	Highest	ANT1	5.24	3.34	7.62	8.82		
		ANT2	6.31	4.28				
802.11ac(HT40) (MIMO)	Lowest	ANT1	5.91	3.90	7.79	8.91		
		ANT2	5.90	3.89				
	Highest	ANT1	5.81	3.81	8.62	9.35		
		ANT2	6.82	4.81				
802.11ac(HT80) (MIMO)	Middle	ANT1	4.53	2.84	6.36	8.04		
		ANT2	5.47	3.52				

7.4 Channel Bandwidth

Test Requirement:	FCC Part15 E Section 15.407(e)
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v01
Limit:	>500KHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer and an E.U.T (Equipment Under Test) are positioned on a Non-Conducted Table. A red line indicates the connection between the Spectrum Analyzer and the E.U.T. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

Antenna 1:

5.8G Band								
Test CH	Channel Bandwidth (MHz)						Limit (KHz)	Result
	802.11a	802.11n(H T20)	802.11ac(HT20)	802.11n(H T40)	802.11ac(HT40)	802.11ac(HT80)		
Lowest	16.352	17.334	17.597	36.040	36.006	N/A	>500	Pass
Middle	16.345	17.528	17.644	N/A	N/A	75.140		
Highest	16.373	17.301	17.609	36.022	35.727	N/A		

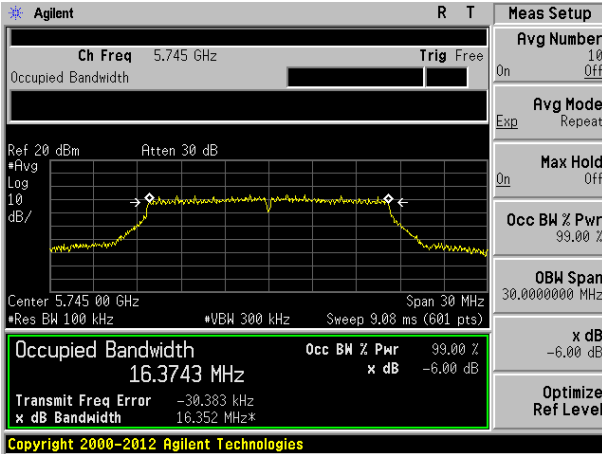
Antenna 2:

5.8G Band								
Test CH	Channel Bandwidth (MHz)						Limit (KHz)	Result
	802.11a	802.11n(H T20)	802.11ac(HT20)	802.11n(H T40)	802.11ac(HT40)	802.11ac(HT80)		
Lowest	16.347	17.573	17.597	35.479	36.035	N/A	>500	Pass
Middle	16.364	17.574	17.556	N/A	N/A	75.297		
Highest	16.353	17.563	17.558	36.053	35.849	N/A		

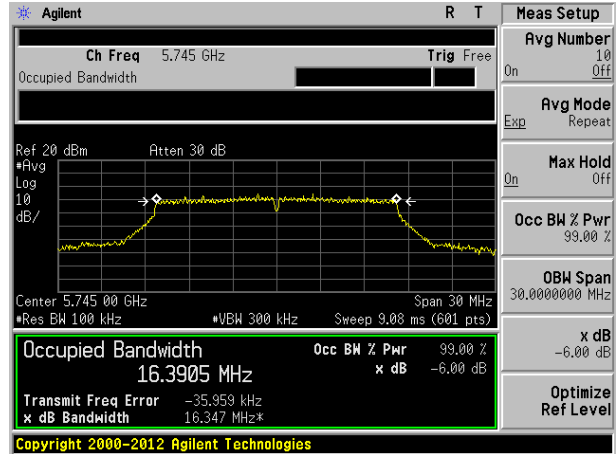
Test plot as follows:

Test mode: 802.11a

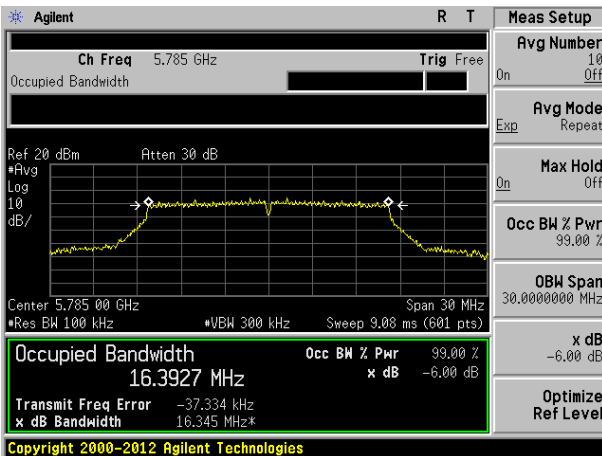
Antenna 1:	Antenna 2:
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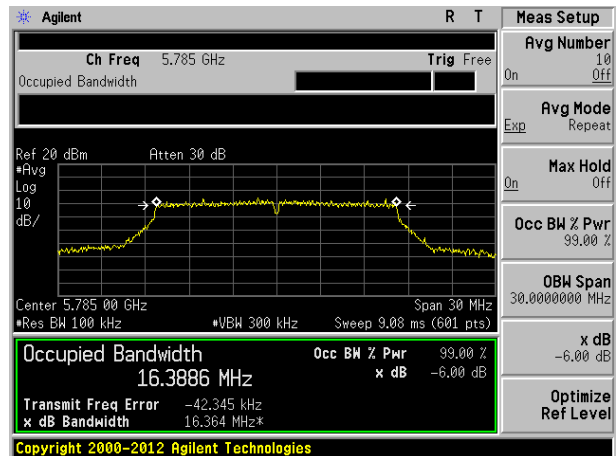
Lowest channel



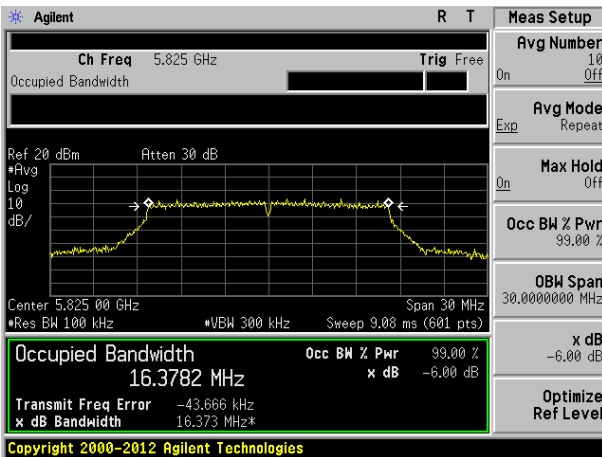
Lowest channel



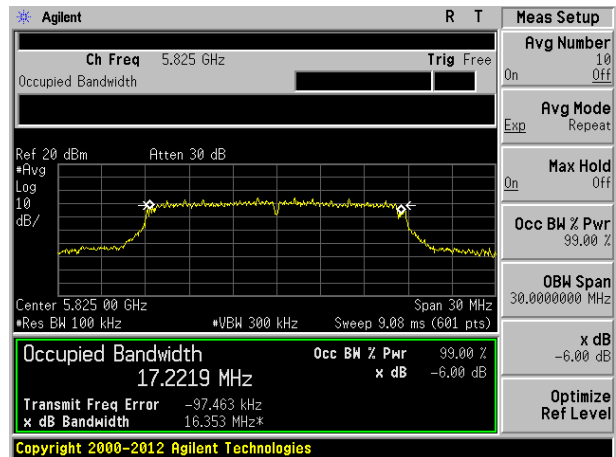
Middle channel



Middle channel



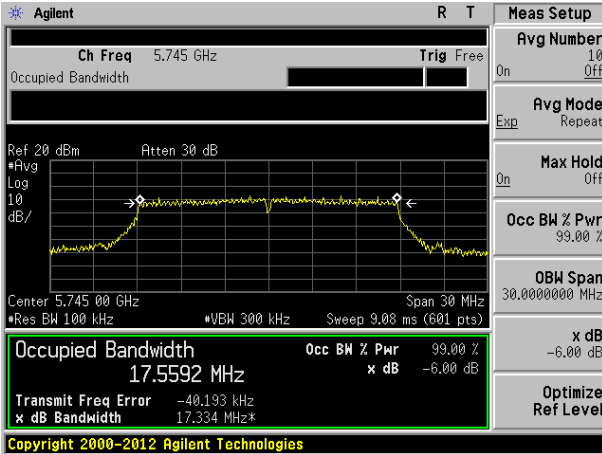
Highest channel



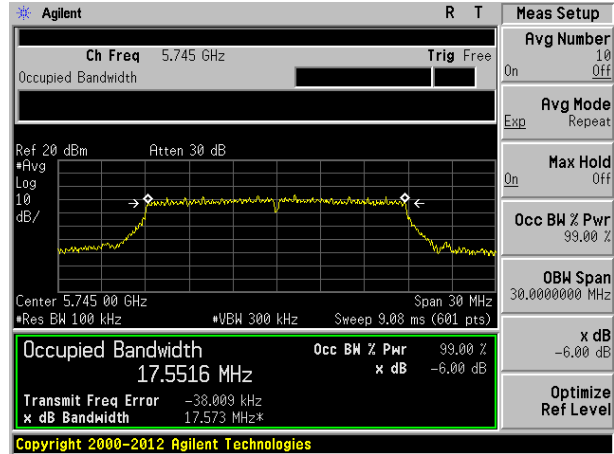
Highest channel

Test mode: 802.11n(HT20) @ 5.8G Band

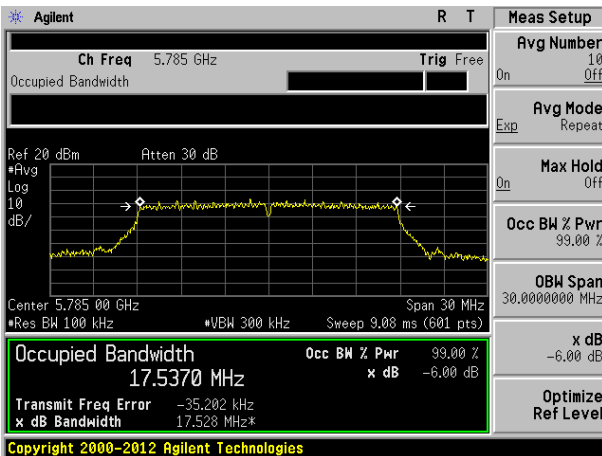
Antenna 1:	Antenna 2:
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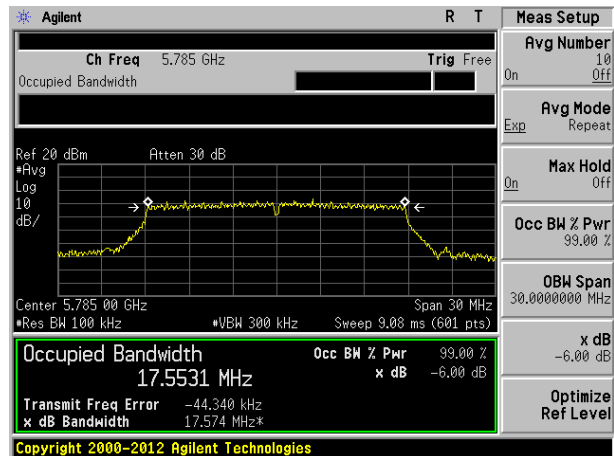
Lowest channel



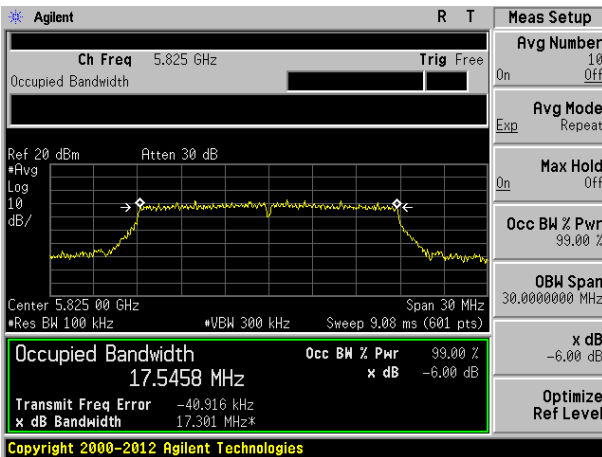
Lowest channel



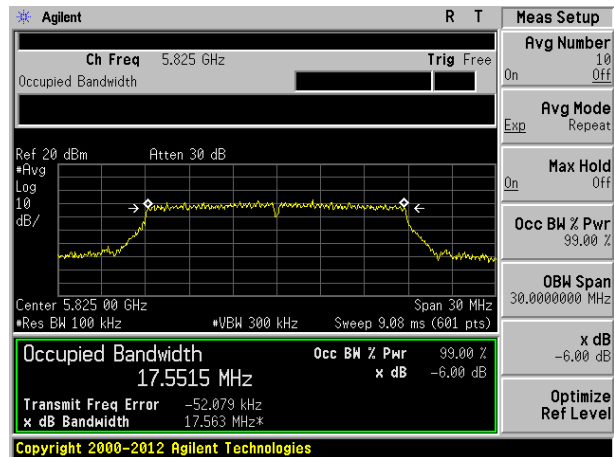
Middle channel



Middle channel



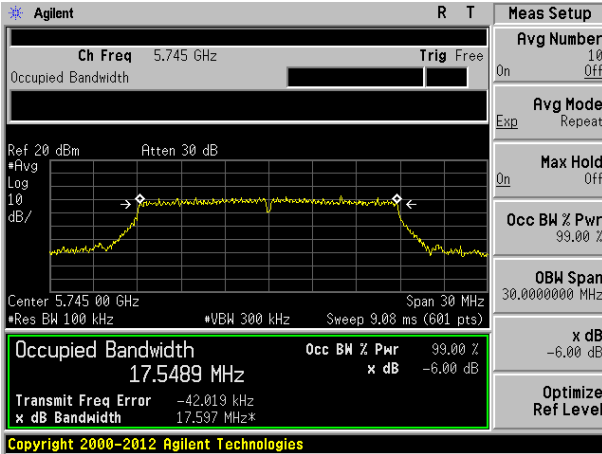
Highest channel



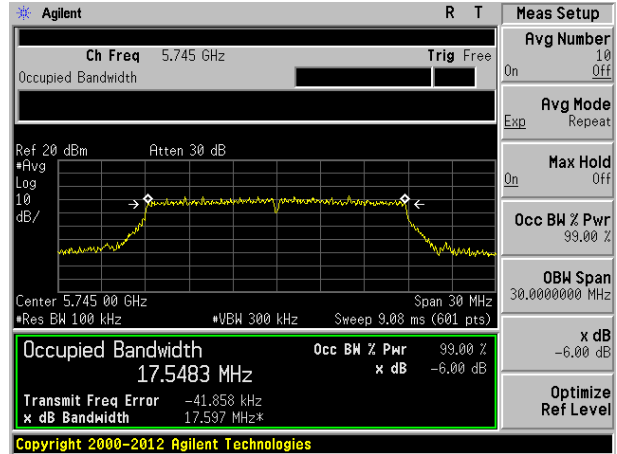
Highest channel

Test mode: 802.11ac(HT20)

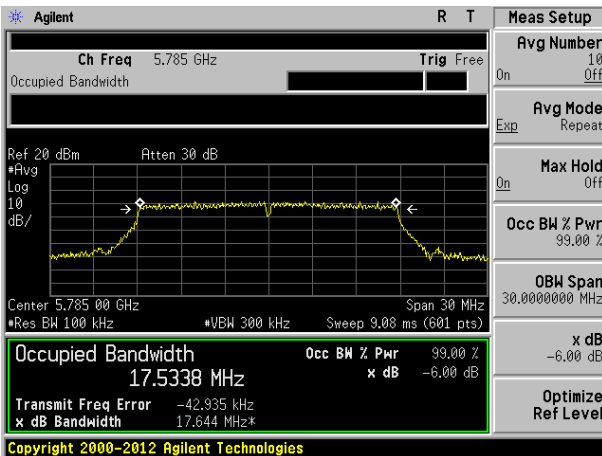
Antenna 1:	Antenna 2:
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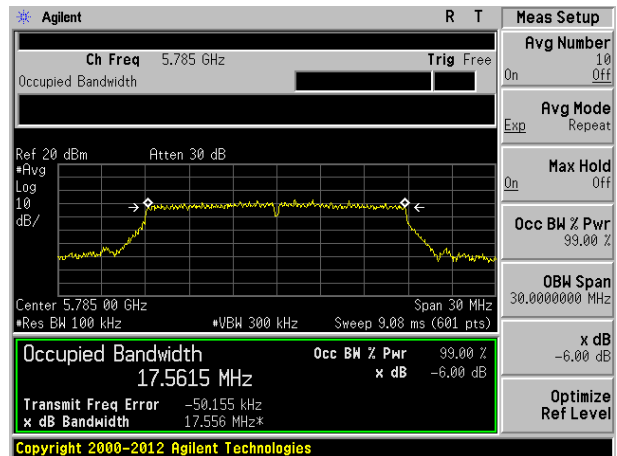
Lowest channel



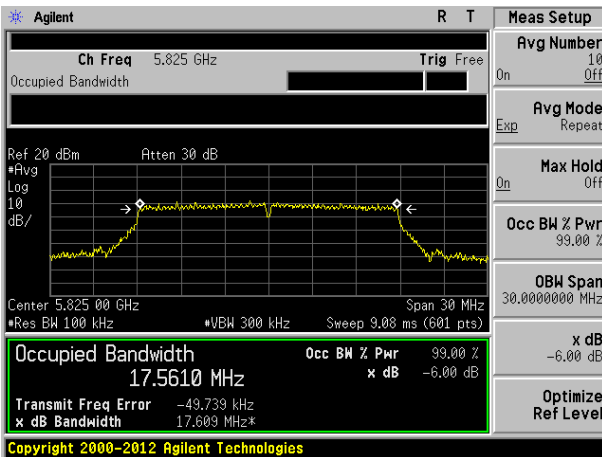
Lowest channel



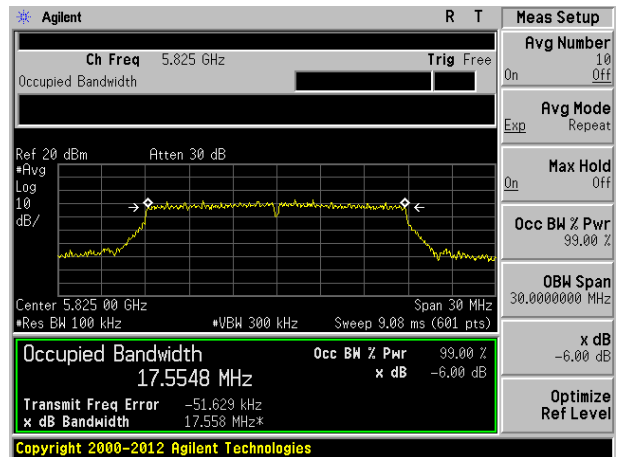
Middle channel



Middle channel



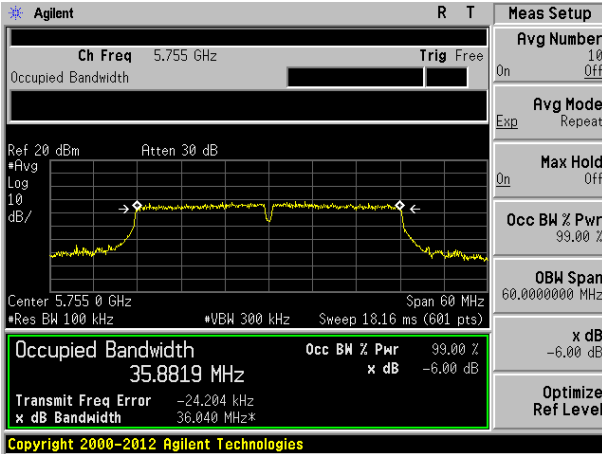
Highest channel



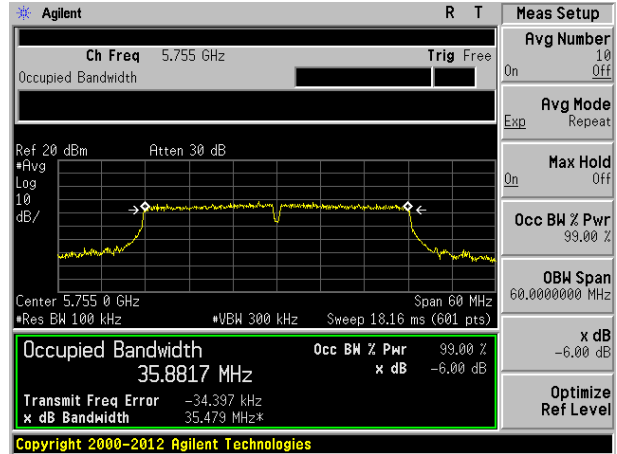
Highest channel

Test mode: 802.11n(HT40) @ 5.8G Band

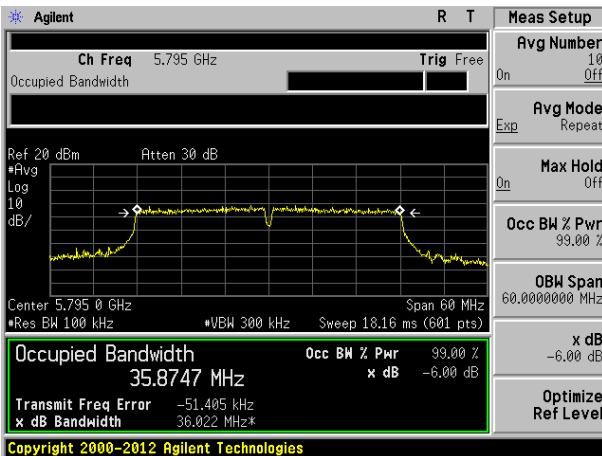
Antenna 1:	Antenna 2:
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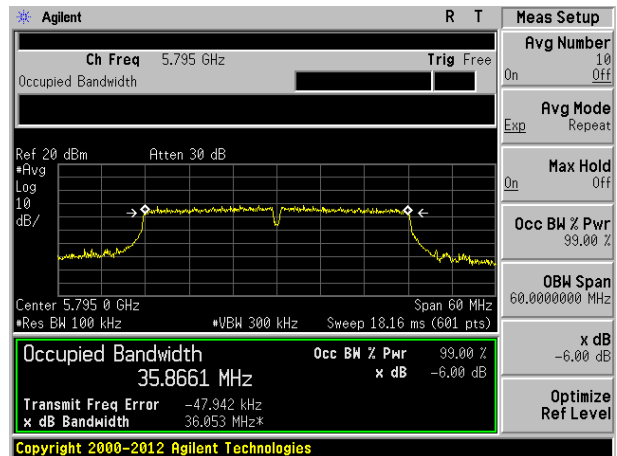
Lowest channel



Lowest channel



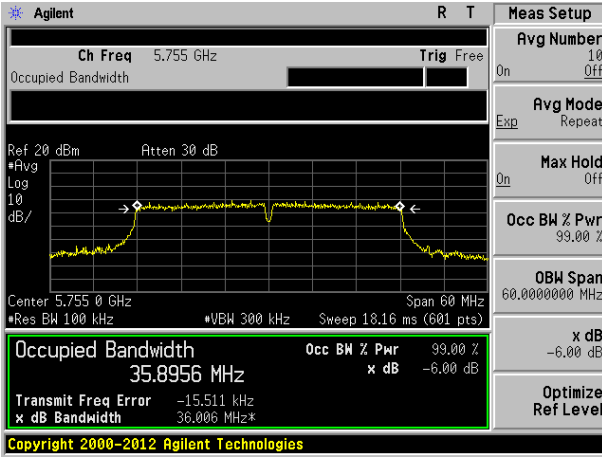
Highest channel



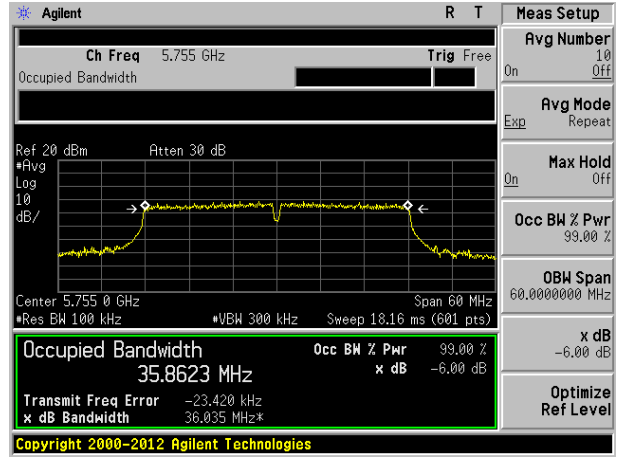
Highest channel

Test mode: 802.11ac(HT40)

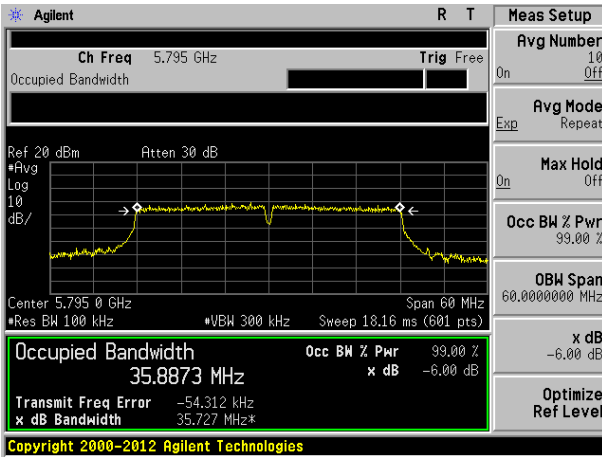
Antenna 1:	Antenna 2:
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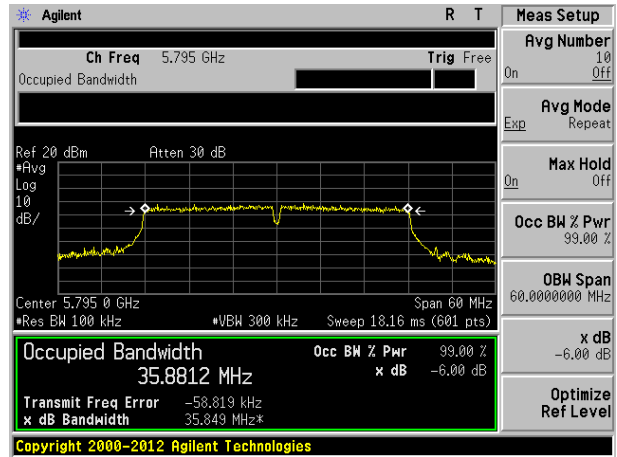
Lowest channel



Lowest channel



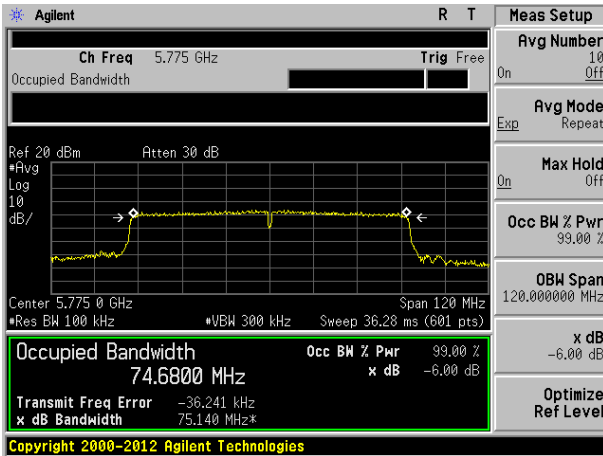
Highest channel



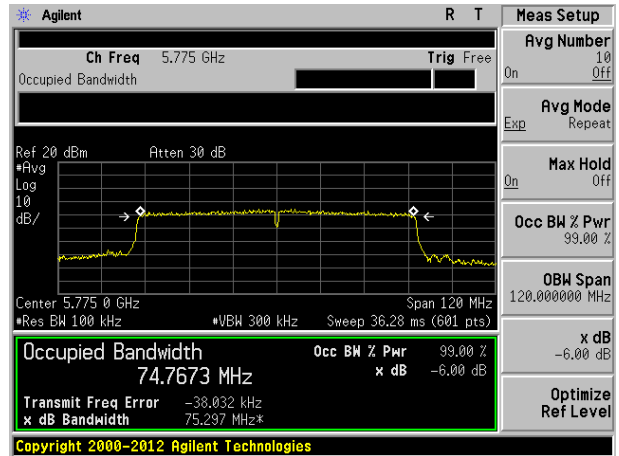
Highest channel

Test mode: 802.11ac(HT80)

Antenna 1: Antenna 2:

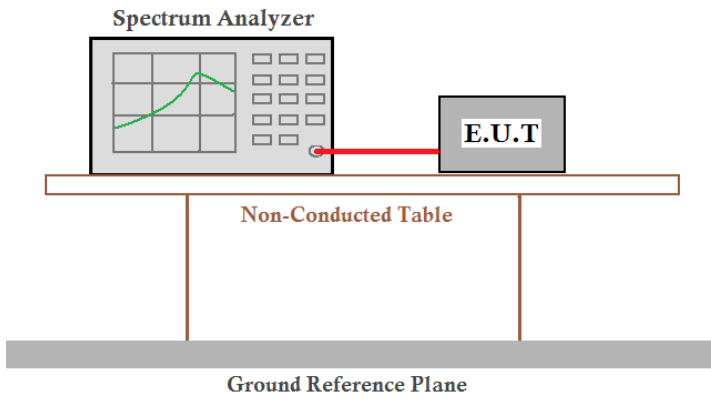


Middle channel



Middle channel

7.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	KDB789033 D02 General UNII Test Procedures New Rules v01
Limit:	29.29dBm
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

5.8G Band				
Test CH	Power Spectral Density (dBm)			Result
	802.11a(SISO)(dBm)		Limit (dBm)	
Lowest	ANT 1	0.90	30	Pass
	ANT 2	1.30		
Middle	ANT 1	0.81		
	ANT 2	1.23		
Highest	ANT 1	0.43		
	ANT 2	0.45		

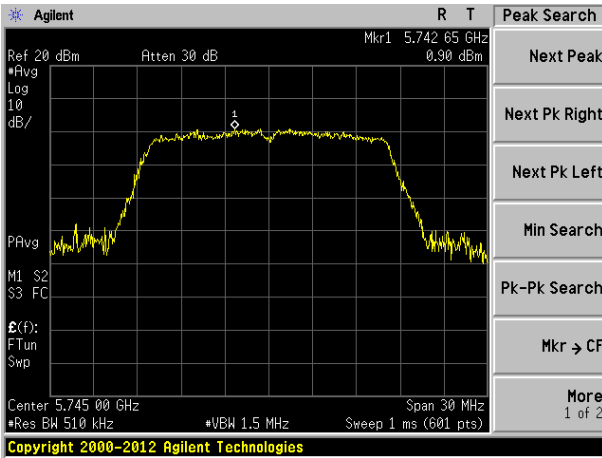
Antenna 1+Antenna 2:

5.8G Band						
Test mode	Channel	Read Level (dBm)	Read Level (mW)	Total PSD (dBm)	Limit (dBm)	Result
802.11n (HT20) (MIMO)	Lowest	ANT1	-0.19	0.96	2.96	30
		ANT2	-0.09	1.02		
	Middle	ANT1	0.18	1.04	2.90	
		ANT2	-0.42	0.91		
	Highest	ANT1	-0.31	0.93	2.75	
		ANT2	-0.49	0.95		
802.11ac(HT20) (MIMO)	Lowest	ANT1	-0.21	0.95	2.65	
		ANT2	-0.51	0.89		
	Middle	ANT1	0.08	1.02	2.93	
		ANT2	-0.25	0.94		
	Highest	ANT1	-0.59	0.87	2.58	
		ANT2	-0.27	0.94		
802.11n (HT40) (MIMO)	Lowest	ANT1	-3.39	0.46	-0.11	
		ANT2	-2.86	0.52		
	Highest	ANT1	-3.38	0.46	-0.21	
		ANT2	-3.07	0.49		
802.11ac(HT40) (MIMO)	Lowest	ANT1	-3.06	0.49	-0.05	
		ANT2	-3.07	0.49		
	Highest	ANT1	-2.79	0.53	0.14	
		ANT2	-2.95	0.51		
802.11ac(HT80) (MIMO)	Middle	ANT1	-7.43	0.18	-4.05	
		ANT2	-6.72	0.21		

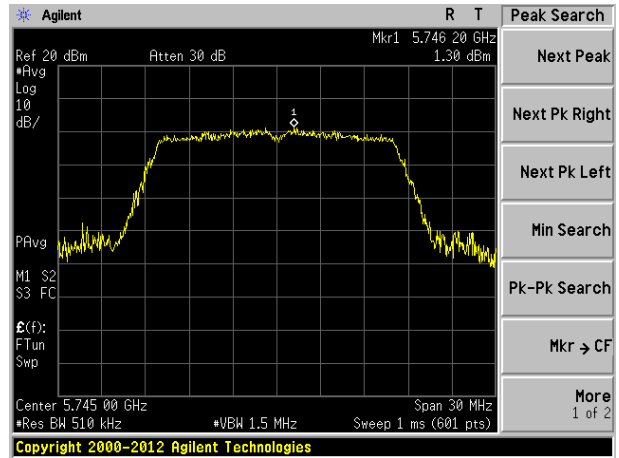
Test plot as follows:

Test mode: 802.11a

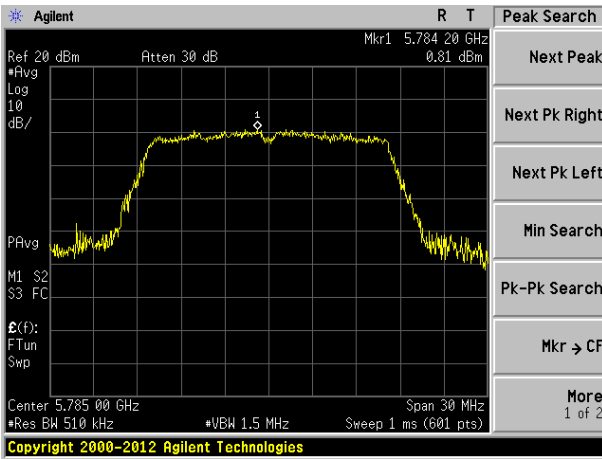
Antenna 1:	Antenna 2:
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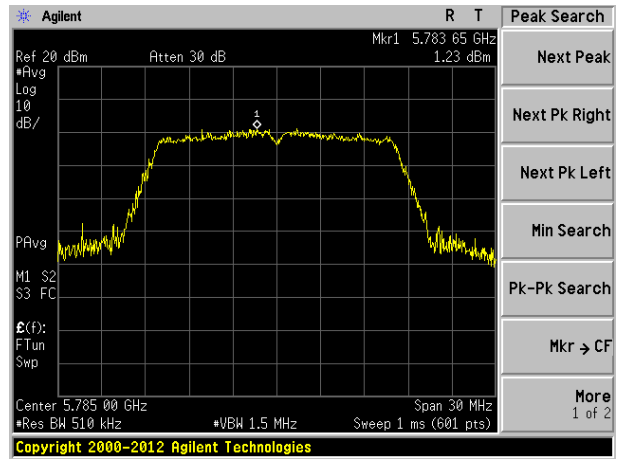
Lowest channel



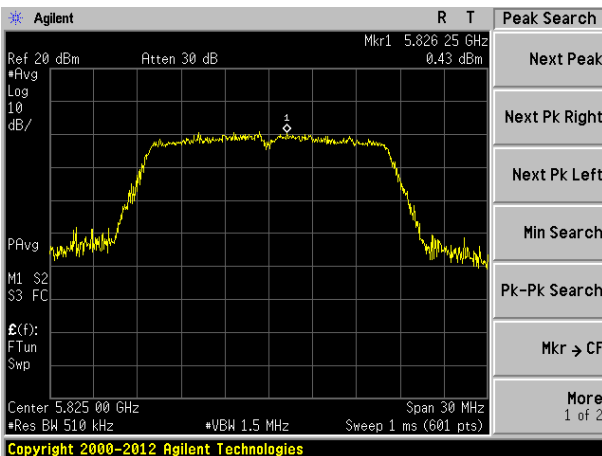
Lowest channel



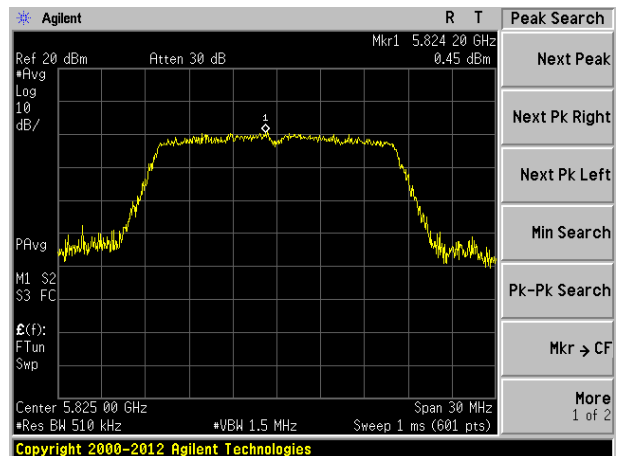
Middle channel



Middle channel



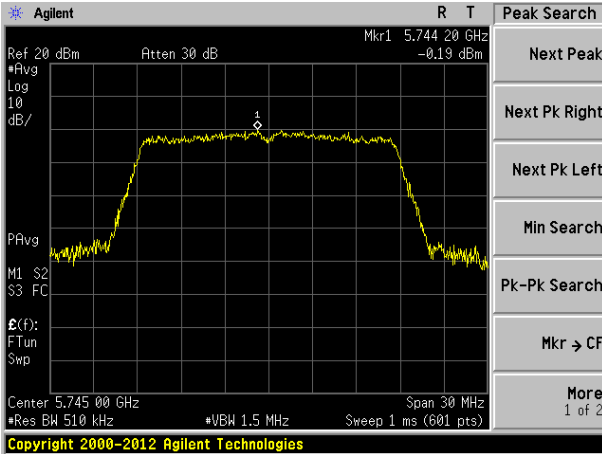
Highest channel



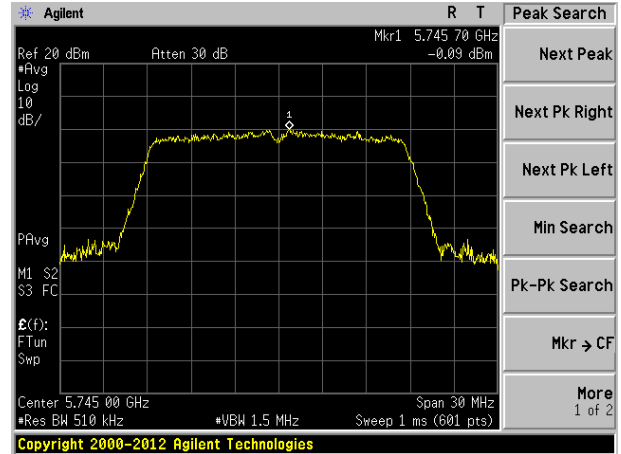
Highest channel

Test mode: 802.11n(HT20) @ 5.8G Band

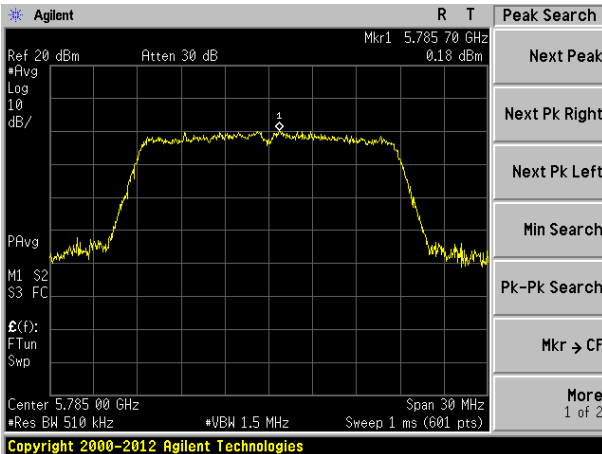
Antenna 1: Antenna 2:



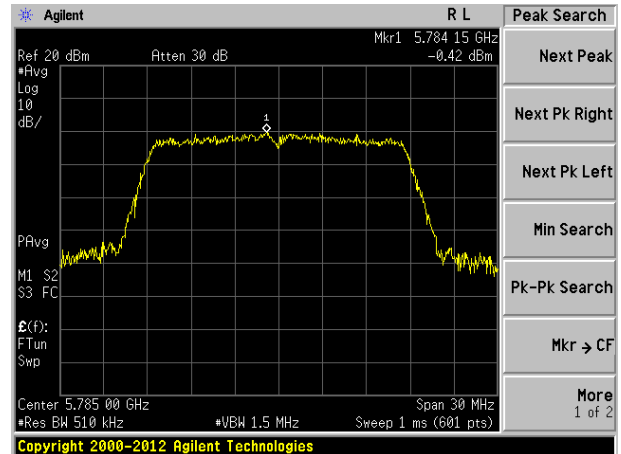
Lowest channel



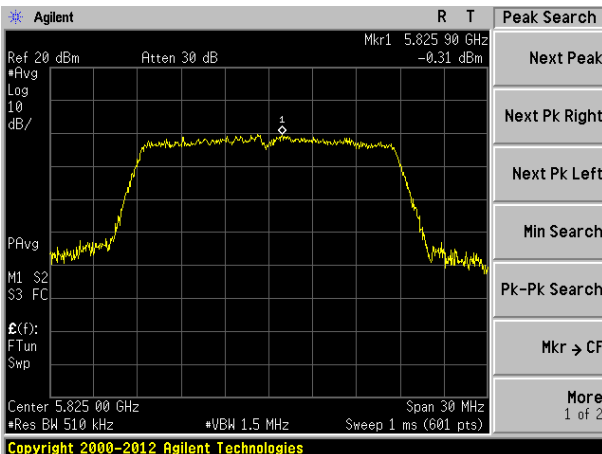
Lowest channel



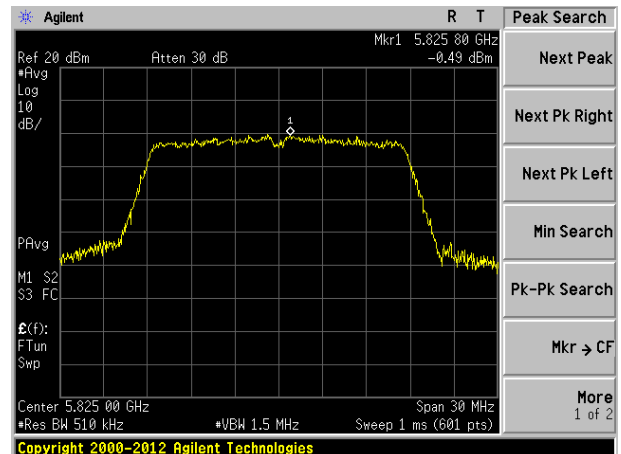
Middle channel



Middle channel



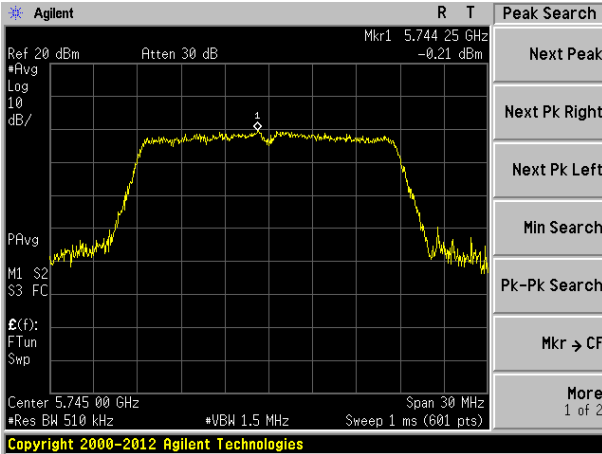
Highest channel



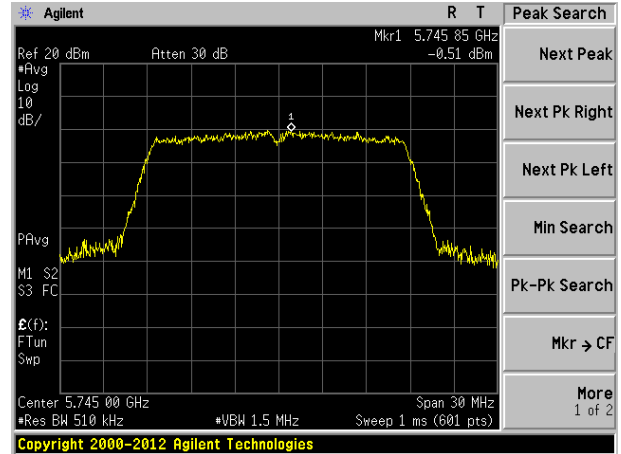
Highest channel

Test mode: 802.11ac(HT20)

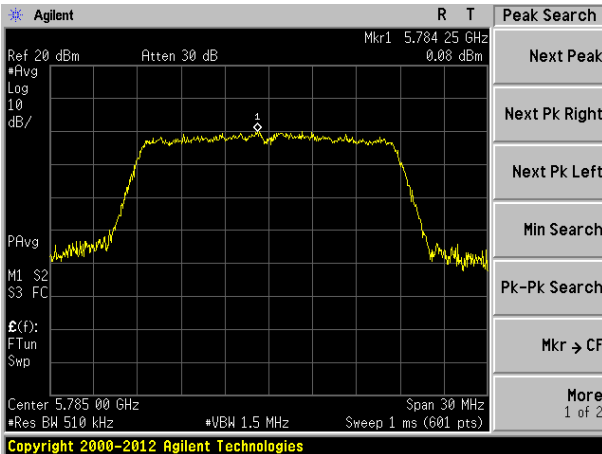
Antenna 1: Antenna 2:



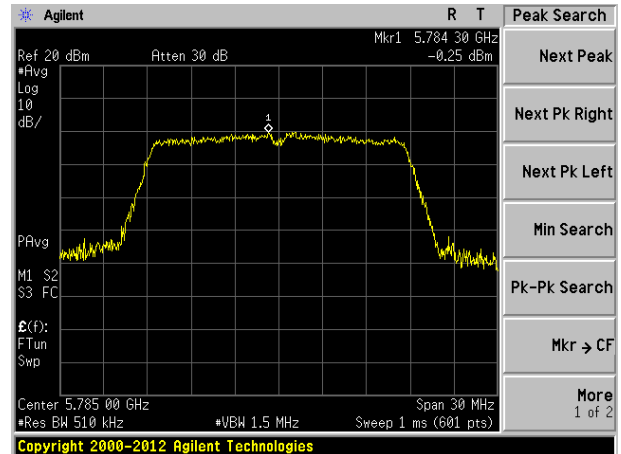
Lowest channel



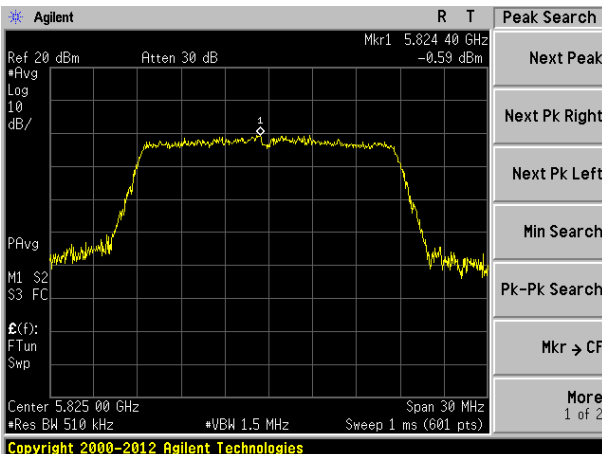
Lowest channel



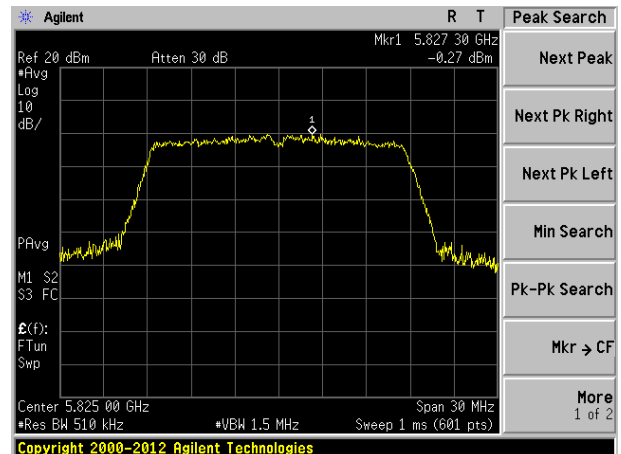
Middle channel



Middle channel



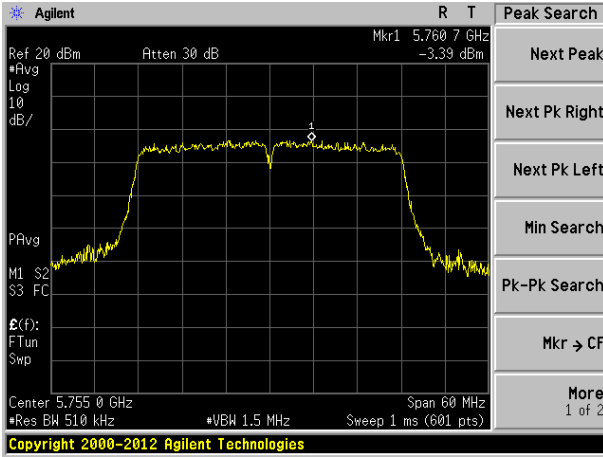
Highest channel



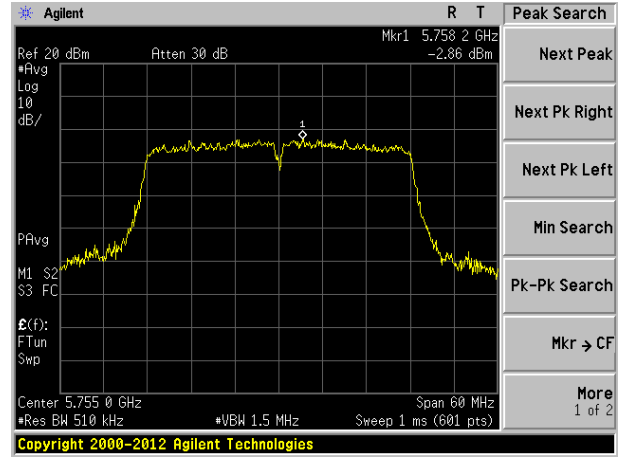
Highest channel

Test mode: 802.11n(HT40) @ 5.8G Band

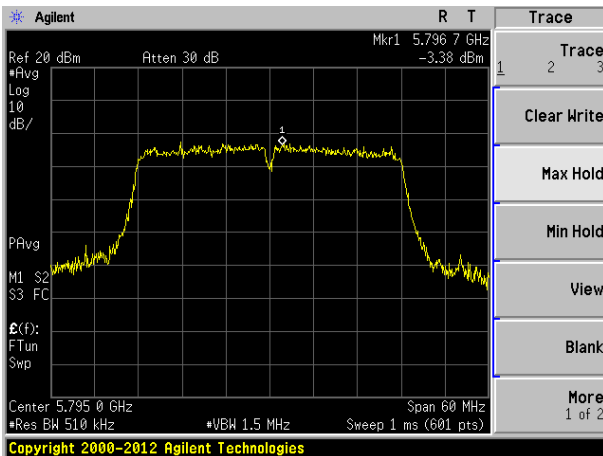
Antenna 1: Antenna 2:



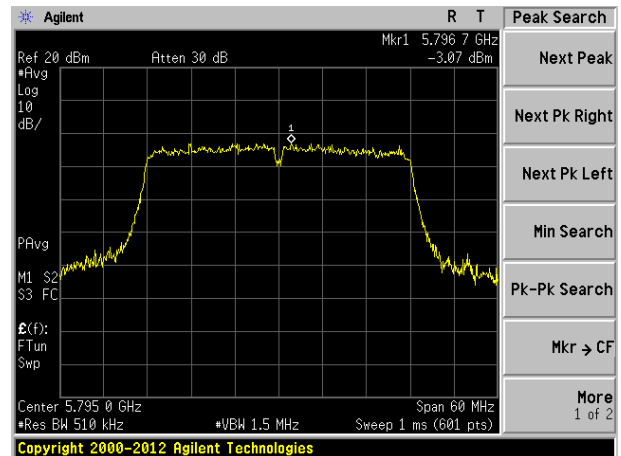
Lowest channel



Lowest channel



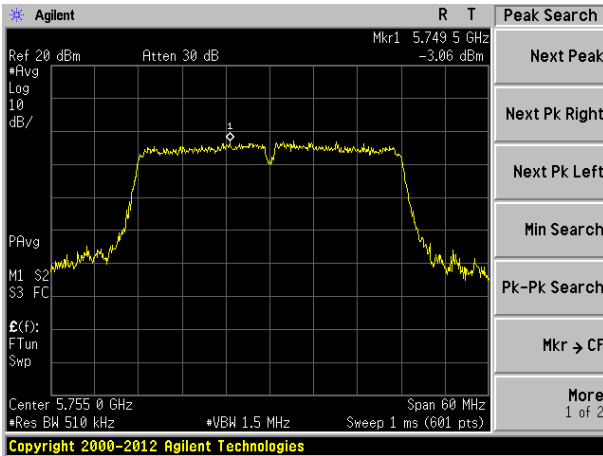
Highest channel



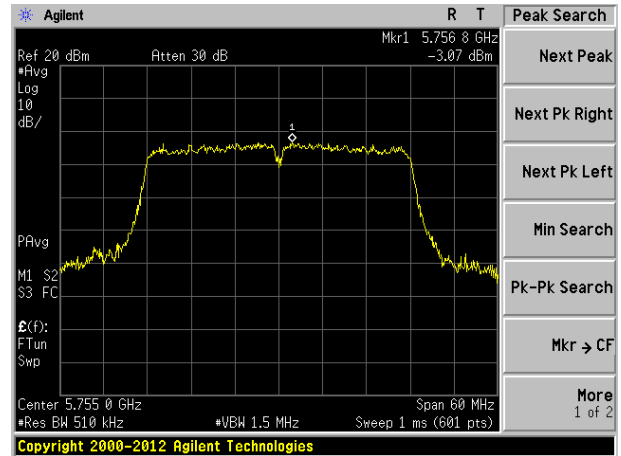
Highest channel

Test mode: 802.11ac(HT40)

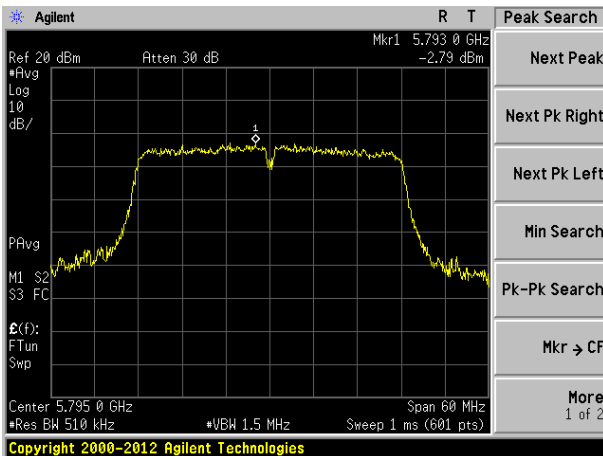
Antenna 1: Antenna 2:



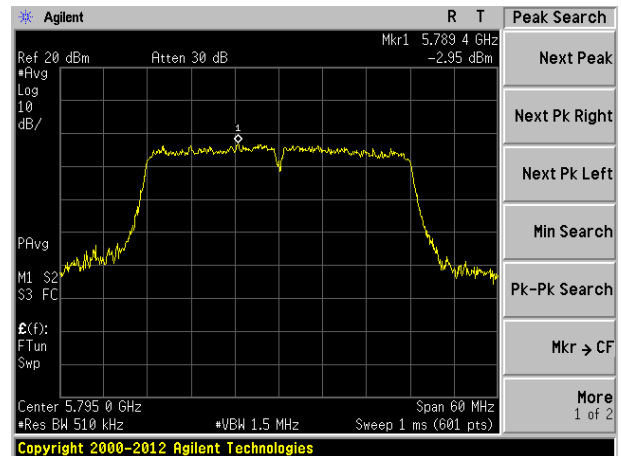
Lowest channel



Lowest channel



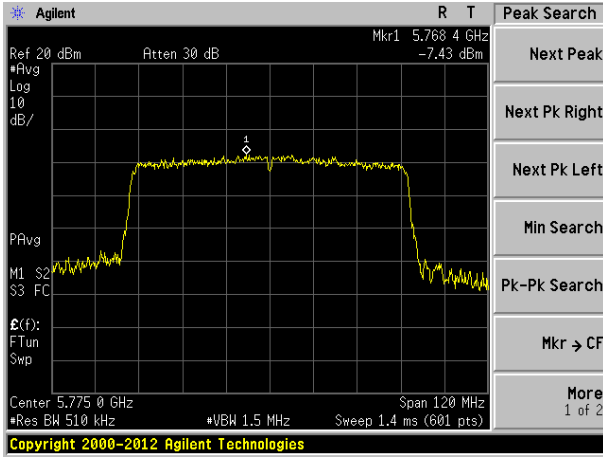
Highest channel



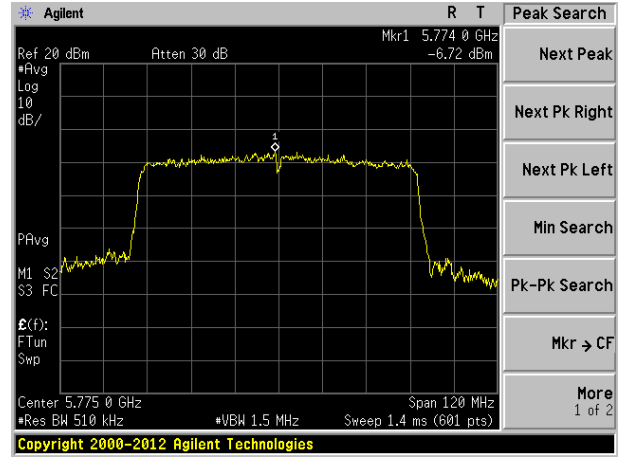
Highest channel

Test mode: 802.11ac(HT80)

Antenna 1: Antenna 2:



Middle channel



Middle channel

7.6 Band edges

7.6.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	30MHz to 40GHz, only worse case is reported				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	Above 1GHz	Peak	1MHz	3MHz	Peak
RMS		1MHz	3MHz	AV	
Limit:	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.				
Test setup:					
Test Procedure:	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report. 				

Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data:

Remark: The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.

Remark:

According to KDB 789033 D02V01 section G) 1) (d), for For measurements above 1000 MHz @ 3m distance, the limit of field strength is computed as follows:

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2;$$

For example, if EIRP = -27dBm

$$E[\text{dBuV/m}] = -27 + 95.2 = 68.2\text{dBuV/m}.$$

ANT1:

Only the data of worst case at each channel plan (nominal bandwidth =20MHz) is reported

Test mode:	802.11a	Test channel:	Lowest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	50.02	32.68	9.97	23.86	51.17	68.2	-17.03	Horizontal
5725.00	51.74	32.68	9.97	23.86	52.89	68.2	-15.31	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	37.39	32.68	9.97	23.86	38.54	54.00	-15.46	Horizontal
5725.00	34.43	32.68	9.97	23.86	35.58	54.00	-18.42	Vertical

Test mode:	802.11a	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	46.41	32.70	9.99	23.87	47.57	68.2	-20.63	Horizontal
5850.00	48.29	32.70	9.99	23.87	49.45	68.2	-18.75	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	34.15	32.70	9.99	23.87	35.31	54.00	-18.69	Horizontal
5850.00	36.08	32.70	9.99	23.87	37.24	54.00	-16.76	Vertical

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
- The emission levels of other frequencies are very lower than the limit and not show in test report.

ANT2:

Only the data of worst case at each channel plan (nominal bandwidth =20MHz) is reported

Test mode:	802.11a	Test channel:	Lowest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	49.67	32.68	9.97	23.86	50.82	68.20	-17.38	Horizontal
5725.00	51.32	32.68	9.97	23.86	52.47	68.20	-15.73	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	37.05	32.68	9.97	23.86	38.20	54.00	-15.80	Horizontal
5725.00	34.13	32.68	9.97	23.86	35.28	54.00	-18.72	Vertical

Test mode:	802.11a	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	45.99	32.70	9.99	23.87	47.15	68.20	-21.05	Horizontal
5850.00	47.90	32.70	9.99	23.87	49.06	68.20	-19.14	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	33.80	32.70	9.99	23.87	34.96	54.00	-19.04	Horizontal
5850.00	35.68	32.70	9.99	23.87	36.84	54.00	-17.16	Vertical

Remark:

3. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor

The emission levels of other frequencies are very lower than the limit and not show in test report.

ANT1 + ANT2:

Only the data of worst case at each channel plan (nominal bandwidth =20MHz, 40MHz, 80MHz) is reported

Test mode:	802.11n(HT20) @ 5.8G Band	Test channel:	Lowest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	40.68	32.68	9.97	23.86	41.83	68.2	-26.37	Horizontal
5725.00	42.93	32.68	9.97	23.86	44.08	68.2	-24.12	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	31.83	32.68	9.97	23.86	32.98	54.00	-21.02	Horizontal
5725.00	32.52	32.68	9.97	23.86	33.67	54.00	-20.33	Vertical

Test mode:	802.11n(HT20) @ 5.8G Band	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	40.24	32.70	9.99	23.87	41.40	68.2	-26.8	Horizontal
5850.00	41.69	32.70	9.99	23.87	42.85	68.2	-25.35	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	30.04	32.70	9.99	23.87	31.20	54.00	-22.80	Horizontal
5850.00	30.32	32.70	9.99	23.87	31.48	54.00	-22.52	Vertical

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode:	802.11ac(HT20)	Test channel:	Lowest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	49.33	32.68	9.97	23.86	50.48	68.2	-17.72	Horizontal
5725.00	50.94	32.68	9.97	23.86	52.09	68.2	-16.11	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	28.32	32.68	9.97	23.86	29.47	54.00	-24.53	Horizontal
5725.00	29.39	32.68	9.97	23.86	30.54	54.00	-23.46	Vertical

Test mode:	802.11ac(HT20)	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	48.77	32.74	10.04	23.87	49.94	68.2	-18.26	Horizontal
5850.00	50.78	32.74	10.04	23.87	51.95	68.2	-16.25	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	28.64	32.74	10.04	23.87	29.81	54.00	-24.19	Horizontal
5850.00	29.26	32.74	10.04	23.87	30.43	54.00	-23.57	Vertical

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode:	802.11n(HT40) @ 5.8G Band	Test channel:	Lowest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	50.48	32.53	9.83	23.84	51.62	68.2	-16.58	Horizontal
5725.00	49.40	32.53	9.83	23.84	50.54	68.2	-17.66	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	31.37	32.53	9.83	23.84	32.51	54.00	-21.49	Horizontal
5725.00	29.50	32.53	9.83	23.84	30.64	54.00	-23.36	Vertical

Test mode:	802.11n(HT40) @ 5.8G Band	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	47.25	32.7	9.99	23.87	48.41	68.2	-19.79	Horizontal
5850.00	51.16	32.7	9.99	23.87	52.32	68.2	-15.88	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	29.86	32.7	9.99	23.87	31.02	54.00	-22.98	Horizontal
5850.00	29.15	32.7	9.99	23.87	30.31	54.00	-23.69	Vertical

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test mode:	802.11ac(HT40)	Test channel:	Lowest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	54.75	32.53	9.83	23.84	55.89	68.2	-12.31	Horizontal
5725.00	50.02	32.53	9.83	23.84	51.16	68.2	-17.04	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	40.01	32.53	9.83	23.84	41.15	54.00	-12.85	Horizontal
5725.00	39.96	32.53	9.83	23.84	41.10	54.00	-12.90	Vertical

Test mode:	802.11ac(HT40)	Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	48.57	32.7	9.99	23.87	49.73	68.2	-18.47	Horizontal
5850.00	51.94	32.7	9.99	23.87	53.10	68.2	-15.1	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5850.00	39.21	32.7	9.99	23.87	40.37	54.00	-13.63	Horizontal
5850.00	41.46	32.7	9.99	23.87	42.62	54.00	-11.38	Vertical

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode:	802.11ac(HT80)	Test channel:	Middle
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	44.10	32.53	9.83	23.84	45.24	68.2	-22.96	Horizontal
5850.00	48.80	32.7	9.99	23.87	49.96	68.2	-18.24	Vertical

AV value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5725.00	28.47	32.53	9.83	23.84	29.61	54.00	-24.39	Horizontal
5850.00	29.13	32.7	9.99	23.87	30.29	54.00	-23.71	Vertical

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7.7 Spurious Emission

7.7.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	30MHz to 40GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		RMS	1MHz	3MHz	AV Value
Limit:	Frequency	Limit (dBuV/m @3m)			Remark
	30MHz-88MHz	40.0			Quasi-peak Value
	88MHz-216MHz	43.5			Quasi-peak Value
	216MHz-960MHz	46.0			Quasi-peak Value
	Above 960MHz	54.0			Quasi-peak Value
	Above 1000MHz	74.0			Peak Value
	Above 1000MHz	54.0			Avg Value
Test setup:	Below 1GHz				
Above 1GHz					

	<p>The diagram illustrates the test setup within an anechoic chamber. An EUT (Electromagnetic Under Test) is placed on a turn table with a diameter of 150 cm. The turn table is positioned 3 meters away from a test antenna. The test antenna is mounted on a variable-height antenna tower, with the height adjustable between 1 meter and 4 meters. The antenna is connected to a receiver and preamplifier system. The chamber walls are lined with absorbers to minimize reflections.</p>
<p>Test Procedure:</p>	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
<p>Test Instruments:</p>	<p>Refer to section 6.0 for details</p>
<p>Test mode:</p>	<p>Refer to section 5.3 for details</p>
<p>Test results:</p>	<p>Pass</p>

Measurement Data

■ Below 1GHz

ANT1:

Only the data of worst case at each channel plan (nominal bandwidth =20MHz) is reported.

Test mode:		802.11a(SISO)			Test channel:		lowest	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
35.25	47.06	14.39	0.61	30.07	31.99	40.00	-8.01	Vertical
78.97	44.80	10.43	1.02	29.80	26.45	40.00	-13.55	Vertical
127.22	47.14	11.32	1.41	29.53	30.34	43.50	-13.16	Vertical
211.53	41.04	12.93	1.91	29.31	26.57	43.50	-16.93	Vertical
383.93	39.64	16.68	2.78	29.57	29.53	46.00	-16.47	Vertical
599.32	41.41	20.45	3.72	29.30	36.28	46.00	-9.72	Vertical
55.81	42.80	14.97	0.82	29.95	28.64	40.00	-11.36	Horizontal
104.17	35.07	14.78	1.23	29.67	21.41	43.50	-22.09	Horizontal
209.31	43.17	12.87	1.89	29.29	28.64	43.50	-14.86	Horizontal
317.70	38.17	15.31	2.45	29.90	26.03	46.00	-19.97	Horizontal
389.36	49.17	16.83	2.80	29.55	39.25	46.00	-6.75	Horizontal
513.63	47.32	18.89	3.36	29.30	40.27	46.00	-5.73	Horizontal

ANT2:

Only the data of worst case at each channel plan (nominal bandwidth =20MHz) is reported.

Test mode:		802.11a(SISO)			Test channel:		lowest	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
41.42	43.26	15.57	0.68	30.04	29.47	40.00	-10.53	Vertical
85.30	43.87	12.45	1.07	29.77	27.62	40.00	-12.38	Vertical
143.83	45.46	10.22	1.53	29.44	27.77	43.50	-15.73	Vertical
216.78	40.39	13.10	1.94	29.36	26.07	46.00	-19.93	Vertical
389.36	38.11	16.83	2.80	29.55	28.19	46.00	-17.81	Vertical
570.61	40.07	19.93	3.60	29.30	34.30	46.00	-11.70	Vertical
57.39	41.40	14.85	0.84	29.94	27.15	40.00	-12.85	Horizontal
122.83	36.64	12.00	1.38	29.55	20.47	43.50	-23.03	Horizontal
203.52	42.85	12.67	1.86	29.23	28.15	43.50	-15.35	Horizontal
294.11	37.65	14.95	2.33	29.97	24.96	46.00	-21.04	Horizontal
428.02	48.98	17.51	2.99	29.44	40.04	46.00	-5.96	Horizontal
560.69	45.03	19.77	3.56	29.30	39.06	46.00	-6.94	Horizontal

ANT1 + ANT2:

Only the data of worst case at each channel plan (nominal bandwidth =20MHz, 40MHz, 80MHz) is reported.

Test mode		802.11n(HT20)(MIMO)			Test channel:		lowest	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
32.41	46.12	14.32	0.58	30.09	30.93	40.00	-9.07	Vertical
52.95	46.58	15.11	0.80	29.98	32.51	40.00	-7.49	Vertical
91.50	43.45	14.24	1.12	29.74	29.07	43.50	-14.43	Vertical
143.83	49.19	10.22	1.53	29.44	31.50	43.50	-12.00	Vertical
235.82	42.47	13.88	2.05	29.53	28.87	46.00	-17.13	Vertical
455.91	42.77	17.58	3.11	29.38	34.08	46.00	-11.92	Vertical
56.00	42.12	14.95	0.83	29.95	27.95	40.00	-12.05	Horizontal
142.32	48.10	10.21	1.52	29.44	30.39	43.50	-13.11	Horizontal
256.52	54.72	14.06	2.16	29.70	41.24	46.00	-4.76	Horizontal
341.98	50.59	16.15	2.58	29.77	39.55	46.00	-6.45	Horizontal
428.02	50.61	17.51	2.99	29.44	41.67	46.00	-4.33	Horizontal
599.32	46.54	20.45	3.72	29.30	41.41	46.00	-4.59	Horizontal
Test mode		802.11ac(HT40)(MIMO)			Test channel:		lowest	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
51.48	45.99	15.19	0.79	29.99	31.98	40.00	-8.02	Vertical
90.86	41.37	14.07	1.12	29.74	26.82	43.50	-16.68	Vertical
170.79	42.77	11.03	1.69	29.31	26.18	43.50	-17.32	Vertical
207.12	40.60	12.80	1.88	29.27	26.01	43.50	-17.49	Vertical
397.63	37.79	17.01	2.84	29.51	28.13	46.00	-17.87	Vertical
684.75	40.46	20.75	4.04	29.21	36.04	46.00	-9.96	Vertical
54.84	41.62	15.02	0.82	29.96	27.50	40.00	-12.50	Horizontal
78.97	42.36	10.43	1.02	29.80	24.01	40.00	-15.99	Horizontal
228.49	41.61	13.57	2.01	29.47	27.72	46.00	-18.28	Horizontal
341.98	44.52	16.15	2.58	29.77	33.48	46.00	-12.52	Horizontal
379.91	50.88	16.59	2.76	29.59	40.64	46.00	-5.36	Horizontal
599.32	43.78	20.45	3.72	29.30	38.65	46.00	-7.35	Horizontal
Test mode		802.11ac(HT80)(MIMO)			Test channel:		Middle	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
48.67	47.38	15.34	0.76	30.01	33.47	40.00	-6.53	Vertical
85.30	48.64	12.45	1.07	29.77	32.39	40.00	-7.61	Vertical
142.32	49.01	10.21	1.52	29.44	31.30	43.50	-12.20	Vertical
170.79	51.13	11.03	1.69	29.31	34.54	43.50	-8.96	Vertical
370.70	51.15	16.51	2.72	29.64	40.74	46.00	-5.26	Vertical
599.32	45.28	20.45	3.72	29.30	40.15	46.00	-5.85	Vertical
55.03	43.96	15.02	0.82	29.96	29.84	40.00	-10.16	Horizontal
143.83	45.89	10.22	1.53	29.44	28.20	43.50	-15.30	Horizontal
227.69	47.30	13.51	2.01	29.46	33.36	46.00	-12.64	Horizontal
284.98	50.81	14.75	2.29	29.90	37.95	46.00	-8.05	Horizontal
428.02	48.51	17.51	2.99	29.44	39.57	46.00	-6.43	Horizontal
633.91	43.25	20.58	3.85	29.27	38.41	46.00	-7.59	Horizontal

■ **Above 1GHz**

ANT 1:

Only the data of worst case at each channel plan (nominal bandwidth =20MHz) is reported.

Test mode:		802.11a(SISO)			Test channel:		lowest	
Antenna Pol.	Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	
V	11510.00	28.63	21.64	50.27	54(Note3)	-3.73	PK	
V	17265.00	26.36	21.80	48.16	54(Note3)	-5.84	PK	
H	11510.00	26.43	21.83	48.26	54(Note3)	-5.74	PK	
H	17265.00	25.23	21.67	46.90	54(Note3)	-7.10	PK	

REMARK: LOW,MID ,HIGH CHANNEL ALL HAVE BEEN TESTED , ONLY WORSE CASE LOW CHANNEL IS RERORTED

ANT 2:

Only the data of worst case at each channel plan (nominal bandwidth =20MHz) is reported.

Test mode:		802.11a(SISO)			Test channel:		lowest	
Antenna Pol.	Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	
V	11570.00	26.46	21.64	48.10	54(Note3)	-5.90	PK	
V	17355.00	25.15	21.80	46.95	54(Note3)	-7.05	PK	
H	11570.00	22.81	21.83	44.64	54(Note3)	-9.36	PK	
H	17355.00	23.47	21.67	45.14	54(Note3)	-8.86	PK	

REMARK: LOW,MID ,HIGH CHANNEL ALL HAVE BEEN TESTED , ONLY WORSE CASE LOW CHANNEL IS RERORTED

ANT 1+ANT2:

Only the data of worst case at each channel plan (nominal bandwidth =20MHz, 40MHz, 80MHz) is reported.

Test mode:		802.11n(HT20)(MIMO)			Test channel:		Lowest	
Antenna Pol.	Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	
V	11510.00	28.02	21.67	49.69	54(Note3)	-4.31	PK	
V	17265.00	26.63	21.83	48.46	54(Note3)	-5.54	PK	
H	11510.00	27.16	21.67	48.83	54(Note3)	-5.17	PK	
H	17265.00	26.43	21.83	48.26	54(Note3)	-5.74	PK	

REMARK: LOW,MID ,HIGH CHANNEL ALL HAVE BEEN TESTED , ONLY WORSE CASE LOW CHANNEL IS RERORTED

Test mode:		802.11ac(HT40)(MIMO)			Test channel:		Lowest	
Antenna Pol.	Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	
V	11590.00	28.72	21.67	50.39	54(Note3)	-3.61	PK	
V	17385.00	26.85	21.83	48.68	54(Note3)	-5.32	PK	
H	11590.00	27.88	21.67	49.55	54(Note3)	-4.45	PK	
H	17385.00	28.45	21.83	50.28	54(Note3)	-3.72	PK	

REMARK: LOW,MID ,HIGH CHANNEL ALL HAVE BEEN TESTED , ONLY WORSE CASE LOW CHANNEL IS RERORTED

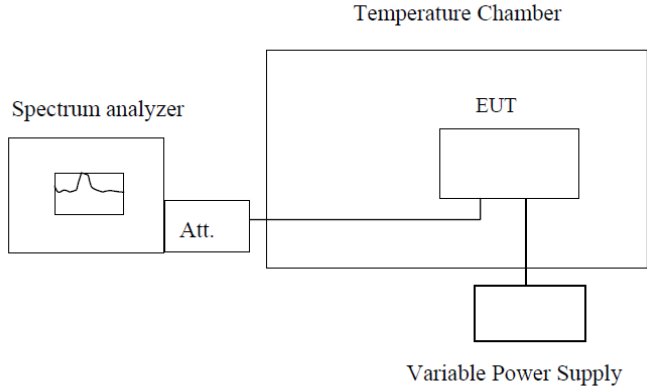
Test mode:		802.11ac(HT80)(MIMO)			Test channel:		Middle	
Antenna Pol.	Frequency (MHz)	Reading Level	Factor	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector	
V	11550.00	26.25	21.65	47.90	54(Note3)	-6.10	PK	
V	17325.00	24.38	21.81	46.19	54(Note3)	-7.81	PK	
H	11550.00	23.72	21.65	45.37	54(Note3)	-8.63	PK	
H	17325.00	23.18	21.81	44.99	54(Note3)	-9.01	PK	

REMARK: LOW,MID ,HIGH CHANNEL ALL HAVE BEEN TESTED , ONLY WORSE CASE MID CHANNEL IS RERORTED

Note:

1. Measure Level = Reading Level + Factor.
2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

7.8 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
Limit:	Manufactures 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
Test Procedure:	The EUT was setup to ANSI C63.4, 2003; tested to 2.1055 for compliance to FCC Part 15.407(g) requirements.
Test setup:	 <p style="text-align: center;">Note : Measurement setup for testing on Antenna connector</p>
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data:

ANT1:

802.11a(SISO)					
Frequency stability versus Temp.					
Power Supply: DC 3.7V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5745	5743.8318	5744.3531	5741.7389	5743.5388
	5785	5783.6029	5782.7220	5782.4867	5783.8293
	5825	5822.6967	5821.2348	5824.8414	5823.1438
-20	5745	5742.5234	5743.3403	5744.9316	5744.0949
	5785	5784.9199	5782.4148	5784.4803	5784.6468
	5825	5823.3533	5823.9791	5824.8734	5824.1109
-10	5745	5743.8596	5741.7166	5744.1032	5744.8046
	5785	5782.5906	5781.3505	5784.3286	5784.3055
	5825	5824.1470	5821.4779	5824.9460	5824.1067
0	5745	5744.3504	5743.6458	5744.7419	5744.5636
	5785	5784.4731	5782.9593	5783.0247	5783.2463
	5825	5822.4833	5823.5963	5824.9390	5824.3477
10	5745	5744.0846	5742.8412	5742.6233	5744.0601
	5785	5782.4940	5782.5655	5782.9200	5784.6451
	5825	5824.6194	5823.7811	5824.6730	5824.4316
20	5745	5741.6632	5744.0099	5744.8962	5743.3219
	5785	5784.8326	5781.9454	5784.5551	5784.2602
	5825	5822.9328	5822.7598	5822.5716	5822.7609
30	5745	5744.7858	5743.0077	5744.9816	5744.6115
	5785	5782.5915	5781.4691	5784.4282	5784.1903
	5825	5823.6022	5824.8679	5824.4114	5824.4928
40	5745	5744.6321	5743.2798	5743.6538	5742.3862
	5785	5783.0204	5781.0680	5784.9609	5784.7580
	5825	5823.3424	5821.7964	5823.8215	5824.8661
50	5745	5743.6212	5742.3795	5744.1566	5744.4834
	5785	5782.3128	5783.3268	5783.7422	5782.7443
	5825	5824.6274	5823.0377	5824.6826	5824.9489

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
3.3	5745	5742.9697	5742.9407	5744.2563	5744.2511
	5785	5782.6152	5782.0072	5783.6949	5782.0761
	5825	5824.7549	5821.9438	5821.6516	5824.9287
3.7	5745	5741.6469	5742.4645	5741.0701	5743.8568
	5785	5782.7327	5782.3473	5783.1023	5783.0011
	5825	5823.3101	5823.5824	5824.7955	5823.3828
4.1	5745	5742.8067	5743.8142	5742.5775	5742.0507
	5785	5782.3728	5784.8863	5781.2999	5783.3656
	5825	5822.6525	5824.2399	5821.4558	5824.5270

ANT2:

802.11a(SISO)					
Frequency stability versus Temp.					
Power Supply: DC 3.7V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5745	5743.8665	5743.2786	5744.7441	5744.7012
	5785	5784.6864	5783.6345	5784.2559	5784.6470
	5825	5823.0869	5824.1515	5824.4154	5823.0363
-20	5745	5744.4895	5743.8742	5744.1961	5744.0206
	5785	5783.5575	5784.2058	5784.7344	5784.4433
	5825	5824.7493	5823.8612	5824.3381	5824.6818
-10	5745	5743.9431	5744.0759	5744.6452	5744.5886
	5785	5783.4423	5784.0925	5784.0898	5784.6895
	5825	5824.8960	5823.7920	5824.1045	5824.6897
0	5745	5744.5591	5744.7730	5744.7134	5744.4951
	5785	5784.5480	5783.7216	5784.2199	5783.2843
	5825	5824.7932	5823.0495	5824.8891	5824.5887
10	5745	5743.7268	5743.9172	5744.0315	5744.0012
	5785	5784.1287	5783.1117	5784.5798	5784.0030
	5825	5823.1444	5824.5068	5824.3575	5823.2310
20	5745	5743.2686	5743.4203	5744.9251	5744.0395
	5785	5783.1235	5784.7715	5783.9085	5784.3584
	5825	5823.3827	5824.2101	5823.7724	5823.9172
30	5745	5743.1215	5743.2343	5744.2349	5744.9716
	5785	5783.1151	5784.3997	5784.5667	5784.5829
	5825	5824.7949	5823.5896	5824.8239	5824.1358
40	5745	5744.6619	5743.0584	5744.6229	5744.5925
	5785	5783.3956	5783.4276	5784.3459	5784.1613
	5825	5823.9806	5824.1893	5824.8712	5824.3409
50	5745	5743.6417	5744.3857	5744.9956	5744.5517
	5785	5784.3446	5783.6908	5784.4302	5784.4015
	5825	5824.6657	5824.8850	5823.1761	5823.1082

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
3.3	5745	5744.1836	5744.6024	5743.6408	5743.3958
	5785	5784.8670	5783.2134	5784.8249	5784.6440
	5825	5824.0006	5823.2693	5824.1169	5823.0595
3.7	5745	5744.8470	5744.5103	5743.3482	5743.2944
	5785	5784.0183	5783.9415	5783.2535	5784.3694
	5825	5823.4730	5823.5501	5823.0389	5823.1387
4.1	5745	5744.4609	5743.7413	5743.6215	5743.9656
	5785	5783.4265	5783.1446	5784.0365	5783.3823
	5825	5823.5709	5824.7581	5823.4625	5824.3503

Note: The worst case in ANT1 and ANT2 SISO mode is FL=5741.0701MHz, FH=5824.9489MHz

ANT1+ ANT2:

802.11n(HT20)(MIMO)					
Frequency stability versus Temp.					
Power Supply: DC 3.7V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5745	5747.1831	5744.0791	5743.8392	5747.6476
	5785	5787.8606	5784.1531	5784.9883	5786.2674
	5825	5826.5761	5824.4130	5824.1687	5825.7440
-20	5745	5746.1278	5744.4113	5744.1864	5745.0187
	5785	5786.4484	5784.2721	5784.2555	5785.0800
	5825	5826.2159	5824.2760	5824.7351	5825.1737
-10	5745	5746.2677	5744.6409	5744.8054	5745.7360
	5785	5786.4707	5784.0945	5784.6409	5785.0802
	5825	5825.0749	5824.7369	5824.8799	5825.1125
0	5745	5745.1347	5744.7821	5744.6471	5745.1468
	5785	5785.3047	5784.7186	5784.6649	5785.0604
	5825	5825.5638	5824.9283	5824.9426	5825.9464
10	5745	5745.4768	5744.6509	5744.1867	5745.9674
	5785	5785.3392	5784.3451	5784.5157	5785.4826
	5825	5825.8280	5824.0321	5824.9598	5825.9144
20	5745	5745.6986	5744.4618	5744.8449	5745.9975
	5785	5785.3428	5784.0467	5784.1711	5785.5595
	5825	5825.4090	5824.1521	5824.4610	5825.5034
30	5745	5745.8296	5744.1480	5744.8846	5745.0212
	5785	5785.5027	5784.5652	5784.4321	5785.9987
	5825	5825.7772	5824.0329	5824.3295	5825.8521
40	5745	5745.1937	5744.1119	5744.6948	5745.0000
	5785	5785.7968	5784.2090	5784.3656	5785.7887
	5825	5825.2010	5824.6806	5824.4360	5825.5698
50	5745	5745.1314	5744.2320	5744.6569	5745.2404
	5785	5785.6502	5784.6345	5784.2466	5785.7259
	5825	5825.3476	5824.9718	5824.2413	5825.2820

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
3.3	5745	5746.0904	5746.3360	5742.9903	5742.8481
	5785	5786.3293	5785.8849	5783.4552	5782.7035
	5825	5826.0635	5825.4156	5823.4353	5823.8786
3.7	5745	5745.8840	5745.6587	5743.5913	5744.9804
	5785	5785.2044	5785.2523	5784.7018	5784.2023
	5825	5825.9223	5825.9469	5824.5435	5824.3932
4.1	5745	5745.6551	5745.2407	5744.9952	5744.7619
	5785	5785.5886	5785.9816	5784.0202	5784.7582
	5825	5825.7821	5825.4295	5824.8829	5824.1427

Note: The worst case in MIMO mode is FL=5742.8481MHz, FH=5826.5761MHz

802.11ac(HT20) (MIMO)					
Frequency stability versus Temp.					
Power Supply: DC 3.7V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5745	5741.6090	5744.2495	5741.0300	5743.6164
	5785	5782.7045	5784.2185	5782.5545	5783.5884
	5825	5824.7794	5824.1934	5823.7457	5824.3493
-20	5745	5744.6356	5744.7726	5743.6984	5744.6554
	5785	5784.9163	5784.0609	5784.9899	5784.5516
	5825	5824.3741	5824.9108	5824.7351	5824.4188
-10	5745	5744.5339	5744.5174	5744.2077	5744.2885
	5785	5784.5422	5784.3537	5784.8009	5784.2716
	5825	5824.6280	5824.7526	5824.7404	5824.3799
0	5745	5744.3964	5744.9110	5744.0392	5744.3101
	5785	5784.8494	5784.3651	5784.3860	5784.3353
	5825	5824.8097	5824.4383	5824.3176	5824.6109
10	5745	5744.8359	5744.9742	5744.3687	5744.0570
	5785	5784.0610	5784.7133	5784.2688	5784.1265
	5825	5824.1613	5824.3158	5824.7925	5824.5861
20	5745	5744.2988	5744.0097	5744.5758	5744.3311
	5785	5784.8024	5784.6696	5784.3226	5784.3514
	5825	5824.2383	5824.5359	5824.4879	5824.9498
30	5745	5744.4829	5744.5543	5744.4333	5744.1536
	5785	5784.9252	5784.0528	5784.6401	5784.7316
	5825	5824.8836	5824.1065	5824.4783	5824.4899
40	5745	5744.6349	5744.1816	5744.2121	5744.6746
	5785	5784.8950	5784.9036	5784.9050	5784.3983
	5825	5824.8795	5824.3613	5824.2134	5824.8276
50	5745	5744.5297	5744.1742	5744.0753	5744.5598
	5785	5784.5471	5784.2583	5784.4391	5784.2947
	5825	5824.1608	5824.1283	5824.2411	5824.2285

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
3.3	5745	5742.3553	5742.0518	5747.0377	5747.7534
	5785	5783.4203	5782.9548	5785.7084	5786.0382
	5825	5824.3192	5823.6257	5825.9996	5826.5766
3.7	5745	5744.2982	5744.1078	5745.4793	5746.7442
	5785	5784.5460	5784.5572	5785.2584	5786.5977
	5825	5824.3231	5824.2266	5825.1061	5825.8331
4.1	5745	5744.6210	5744.3234	5745.8580	5745.5809
	5785	5784.0547	5784.5007	5785.1336	5785.6914
	5825	5824.5718	5824.1288	5825.5667	5825.6110

Note: The worst case in MIMO mode is FL=5741.0300MHz, FH=5826.5766MHz

802.11n(HT40) (MIMO)					
Frequency stability versus Temp.					
Power Supply: DC 3.7V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5755	5755.1329	5752.4902	5752.5891	5756.6263
	5795	5795.2137	5793.7152	5793.5203	5795.3105
-20	5755	5755.6319	5754.8676	5753.2213	5755.0104
	5795	5795.7663	5794.6590	5794.8174	5795.7312
-10	5755	5755.6278	5754.9203	5754.2304	5755.5256
	5795	5795.7221	5794.6044	5794.3056	5795.8709
0	5755	5755.5288	5754.6872	5754.4579	5755.3716
	5795	5795.7172	5794.9227	5794.7460	5795.9256
10	5755	5755.5756	5754.2690	5754.2862	5755.1002
	5795	5795.7922	5794.3509	5794.5067	5795.9406
20	5755	5755.1327	5754.1988	5754.7427	5755.5750
	5795	5795.0588	5794.7198	5794.5410	5795.2590
30	5755	5755.8855	5754.1674	5754.6243	5755.2351
	5795	5795.5299	5794.6309	5794.8600	5795.4906
40	5755	5755.2026	5754.1414	5754.9928	5755.2602
	5795	5795.5569	5794.6045	5794.2624	5795.4861
50	5755	5755.0579	5754.3564	5754.4280	5755.2255
	5795	5795.5597	5794.6965	5794.9078	5795.2017

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
3.3	5755	5757.5518	5753.4138	5755.7250	5754.0061
	5795	5797.8966	5794.2689	5795.1343	5794.0550
3.7	5755	5757.1491	5754.8147	5755.9939	5754.1053
	5795	5796.3155	5794.1233	5795.8679	5794.2409
4.1	5755	5755.3833	5754.5111	5755.6131	5754.7150
	5795	5795.0137	5794.6585	5795.2969	5794.4971

Note: The worst case in MIMO mode is FL=5752.4902MHz, FH=5797.8966MHz

802.11ac(HT40) (MIMO)					
Frequency stability versus Temp.					
Power Supply: DC 3.7V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5755	5755.8349	5751.6473	5758.5574	5753.4836
	5795	5795.5347	5793.0890	5795.6690	5793.3605
-20	5755	5755.6680	5753.6200	5755.4987	5753.5711
	5795	5795.5068	5793.0886	5795.7035	5793.5378
-10	5755	5755.5407	5754.9062	5755.7480	5753.9599
	5795	5795.1827	5794.1149	5795.1446	5793.5342
0	5755	5755.5104	5754.8318	5755.3808	5754.3556
	5795	5795.8322	5794.1442	5795.2876	5794.5773
10	5755	5755.4745	5754.3358	5755.7851	5754.1145
	5795	5795.3717	5794.0619	5795.3578	5794.6024
20	5755	5755.4541	5754.0238	5755.1236	5754.1189
	5795	5795.2591	5794.1993	5795.6608	5794.4294
30	5755	5755.9969	5754.6412	5755.1247	5754.5095
	5795	5795.7041	5794.2844	5795.5743	5794.3812
40	5755	5755.0764	5754.3284	5755.6754	5754.9975
	5795	5795.1497	5794.1612	5795.3569	5794.4402
50	5755	5755.9844	5754.9079	5755.4161	5754.6002
	5795	5795.4029	5794.1904	5795.7690	5794.2796

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
3.3	5755	5758.3231	5753.7816	5755.0412	5754.2210
	5795	5798.0449	5794.0905	5795.9225	5794.2844
3.7	5755	5756.1800	5754.7707	5755.8338	5754.0172
	5795	5796.7801	5794.2397	5795.2943	5794.8680
4.1	5755	5755.7047	5754.9055	5755.2082	5754.8597
	5795	5795.9566	5794.8443	5795.4541	5794.7483

Note: The worst case in MIMO mode is FL=5751.6473MHz, FH=5798.0449MHz

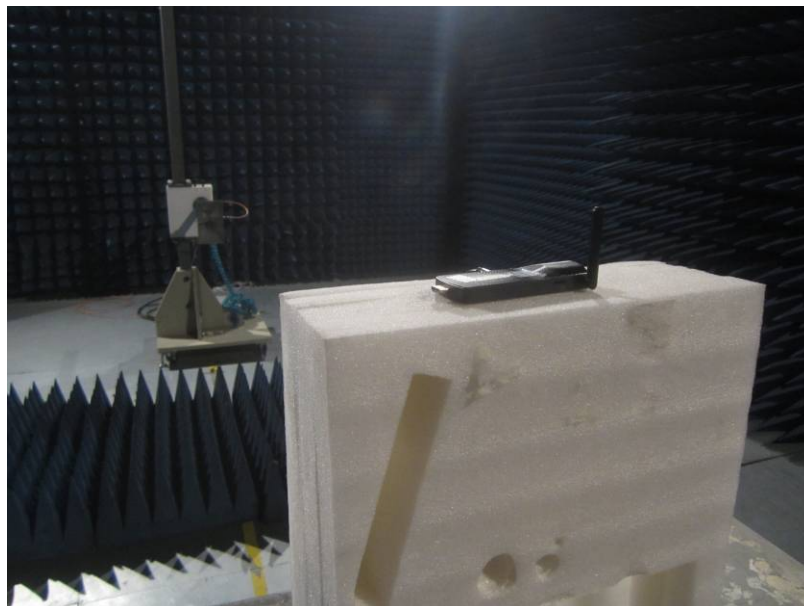
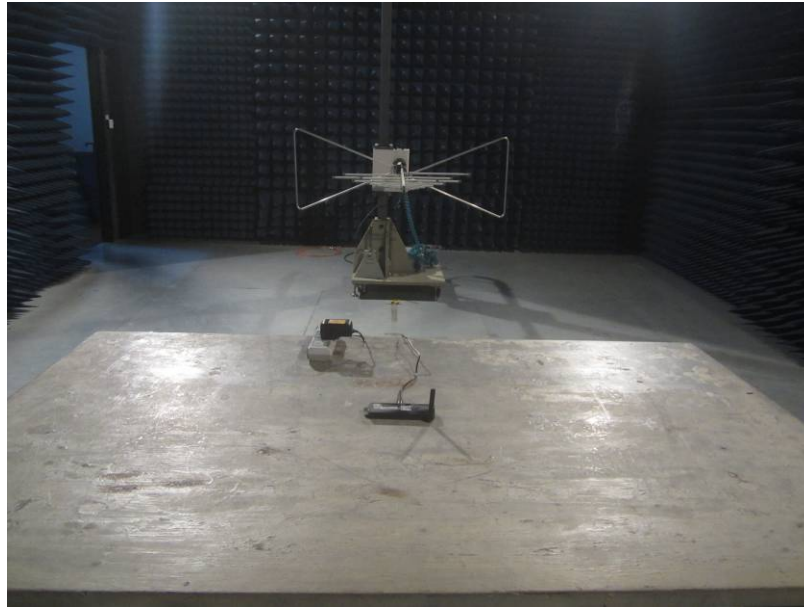
802.11ac(HT80)(MIMO)					
Frequency stability versus Temp.					
Power Supply: DC 3.7V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5775	5775.3812	5775.1222	5774.2688	5773.9088
-20	5775	5775.4995	5775.8239	5774.3282	5773.5163
-10	5775	5775.5498	5775.6940	5774.8174	5773.6424
0	5775	5775.5294	5775.9793	5774.8590	5774.9031
10	5775	5775.7769	5775.1818	5774.5575	5774.5177
20	5775	5775.6325	5775.5574	5774.3269	5774.2614
30	5775	5775.2301	5775.8757	5774.0359	5774.1085
40	5775	5775.2755	5775.6289	5774.4655	5774.7608
50	5775	5775.2553	5775.0939	5774.9905	5774.4925

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VDC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
3.3	5775	5773.6848	5777.5108	5777.7646	5776.1990
3.7	5775	5773.7014	5777.8090	5777.8193	5775.4322
4.1	5775	5773.1627	5775.3726	5777.6555	5776.5021

Note: The worst case in MIMO mode is FL=5777.8193MHz, FH=5773.1627MHz

8 Test Setup Photo

Radiated Emission



Conducted Emission



9 EUT Constructional Details

Reference to the test report No. GTS201608000121E01

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