FCC REPORT

Applicant:	Shenzhen Konka Mobility Co.,Ltd
Address of Applicant:	NO.7 Shantou Street, Overseas Chinese Town, Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen Scope Corporation Limited
Address of Manufacturer:	12-13F, Block C2, Nanshan Zhiyuan, No 1001, Xueyuan Road, Nanshan District, Shenzhen, China
Factory:	Youke Digital Technology(Hui zhou)Co.,Ltd
Address of Factory:	Queens Village,Zhelong Town, Huiyang District,Huizhou City, China

Equipment Under Test (EUT)

Product Name:	Notebook
Model No.:	N119A, N119X, N118X, N116X, N109X, N108X, N106X, N139X, N159X(X=A-Z,Xonly indicate the different client modeland color)
FCC ID:	2AQYRSCOK1
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of sample receipt:	July 16, 2018
Date of Test:	July 16, 2018-August 07, 2018
Date of report issued:	August 08, 2018
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	*August 08, 2018*	*Original*

Prepared By: Bill. Yuan ***Date:*** *August 08, 2018*

Project Engineer

Check By: Andy. Wu ***Date:*** *August 08, 2018*

Reviewer

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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
Frequency Stability	15.407(g)	Pass

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

Remark: Test according to 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 General Description of EUT

Product Name:	Notebook
Model No.:	N119A, N119X, N118X, N116X, N109X, N108X, N106X, N139X, N159X(X=A-Z,Xonly indicate the different client modeland color)
Test Model No:	N119A
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are color and model name for commercial purpose.	
Serial No.:	NP116-000001
Test sample(s) ID:	GTS201808000042-1
Sample(s) Status:	Engineer sample
Hardware version:	INET-X116J-REV10 SMTBOMV01
Software version:	OS: Windows 10 HOME 64bit V1803（OS Build 17134.191） BIOS:M07x.WX116J.NLNASIL01
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: 5 802.11n(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:	Internal Antenna
Antenna gain:	Main Antenna: 2.00dBi (Max.), for TX/RX (Bluetooth and WLAN) Aux Antenna: 2.00dBi(Max.), for TX/RX (Bluetooth and WLAN) Two antennas cannot synchronous transmission.
Power supply:	Adapter : Model:JHD-AP036U-120250AA-A Input: AC100-240V, 50/60Hz, 1.2A Output: DC 12V, 2500mA Battery: Model: HW-4580140 2P DC 7.6V, 6500mAh

Operation Frequency each of channel @ 5.8G Band							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	153	5765MHz	155	5775MHz
157	5785MHz	159	5795MHz	161	5805MHz	163	5815MHz
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		
	802.11 a/n/ac(HT20)	802.11 n/ac(HT40)	802.11ac(HT80)
Lowest channel	5745	5755	
Middle channel	5785		5775
Highest channel	5825	5795	

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

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:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

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

5.3 Description of Support Units

None.

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.:381383**

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 381383, January 08, 2018.

● **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.

5.5 Test Location

All tests were performed at:

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

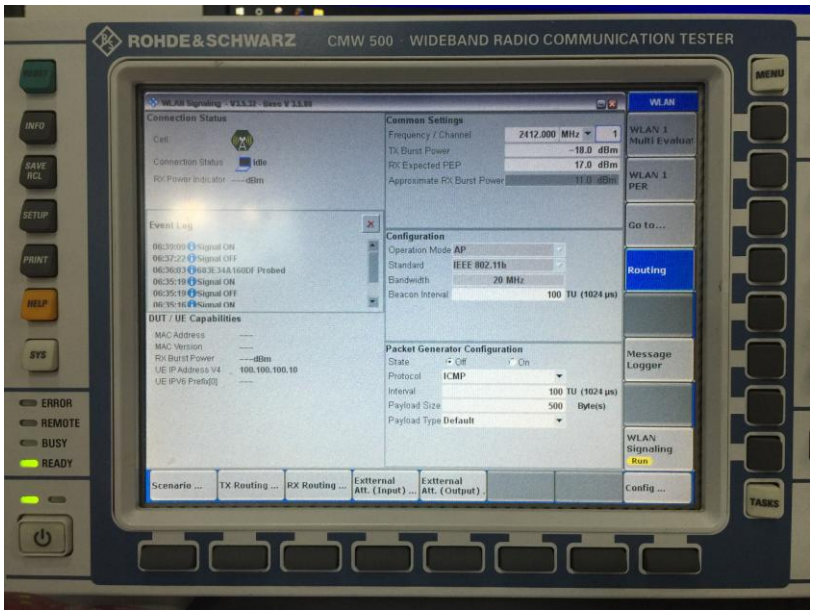
Tel: 0755-27798480

Fax: 0755-27798960

5.6 Additional Instructions

EUT Fixed Frequency Settings:

Power level setup			
Support Units	Description	Manufacturer	Model
	Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500
Mode	Channel	Frequency (MHz)	Level Set
OFDM	CH149	5745	TX level : default
	CH151	5755	
	CH155	5775	
	CH157	5785	
	CH159	5795	
	CH165	5825	



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. 27 2018	June. 26 2019
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 27 2018	June. 26 2019
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 27 2018	June. 26 2019
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 27 2018	June. 26 2019
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 27 2018	June. 26 2019
9	Coaxial Cable	GTS	N/A	GTS211	June. 27 2018	June. 26 2019
10	Coaxial cable	GTS	N/A	GTS210	June. 27 2018	June. 26 2019
11	Coaxial Cable	GTS	N/A	GTS212	June. 27 2018	June. 26 2019
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 27 2018	June. 26 2019
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 27 2018	June. 26 2019
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 27 2018	June. 26 2019
15	Band filter	Amindeon	82346	GTS219	June. 27 2018	June. 26 2019
16	Power Meter	Anritsu	ML2495A	GTS540	June. 27 2018	June. 26 2019
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 27 2018	June. 26 2019
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 27 2018	June. 26 2019
19	Splitter	Agilent	11636B	GTS237	June. 27 2018	June. 26 2019
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 27 2018	June. 26 2019

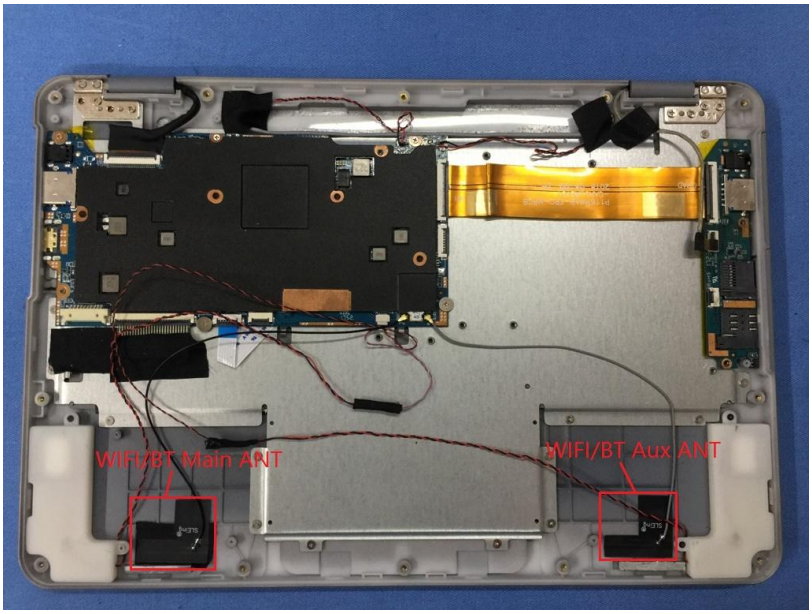
Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 27 2018	June. 26 2019
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 27 2018	June. 26 2019
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 27 2018	June. 26 2019
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 27 2018	June. 26 2019

Conducted:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 27 2018	June. 26 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 27 2018	June. 26 2019
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 27 2018	June. 26 2019
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 27 2018	June. 26 2019
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 27 2018	June. 26 2019
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 27 2018	June. 26 2019
8	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
9	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 27 2018	June. 26 2019

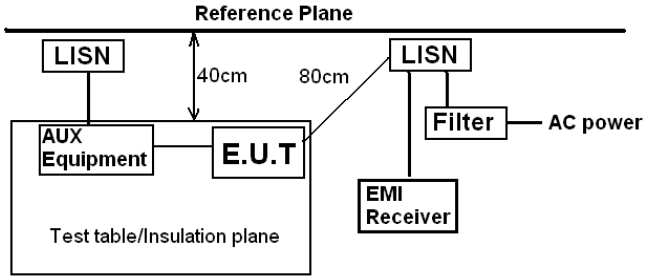
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 27 2018	June. 26 2019
2	Barometer	ChangChun	DYM3	GTS255	June. 27 2018	June. 26 2019

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 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, 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.*	
E.U.T Antenna:	
The Main and Aux antenna is integral antenna, the best case gain of the antenna is 2.00dBi. *Two antennas cannot synchronous transmission.*  	

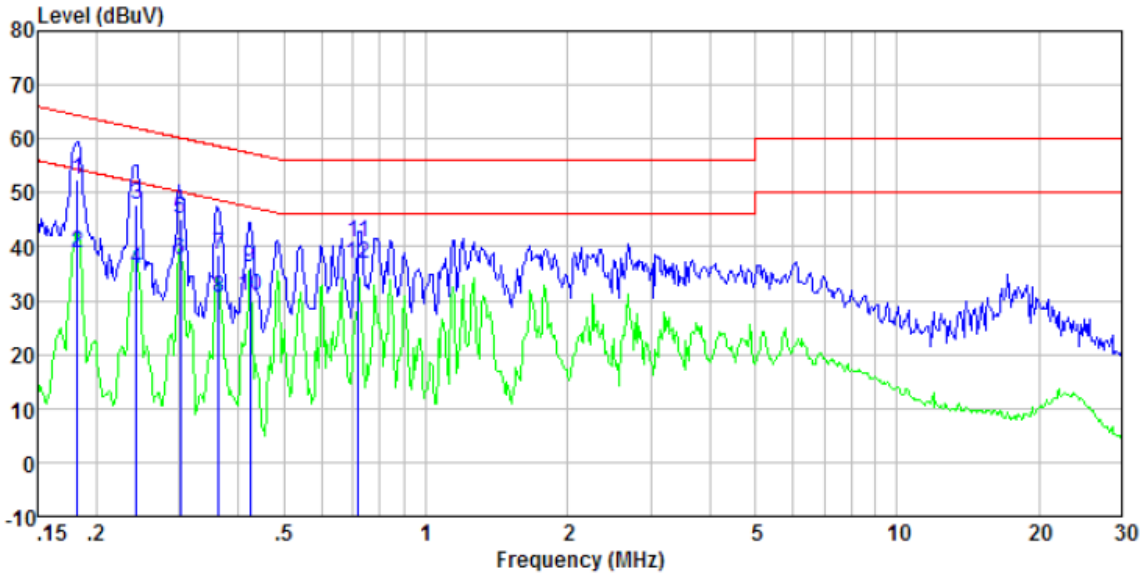
7.2 Conducted Emissions

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><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><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></table> * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	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 5.2 for details
Test results:	Pass

Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

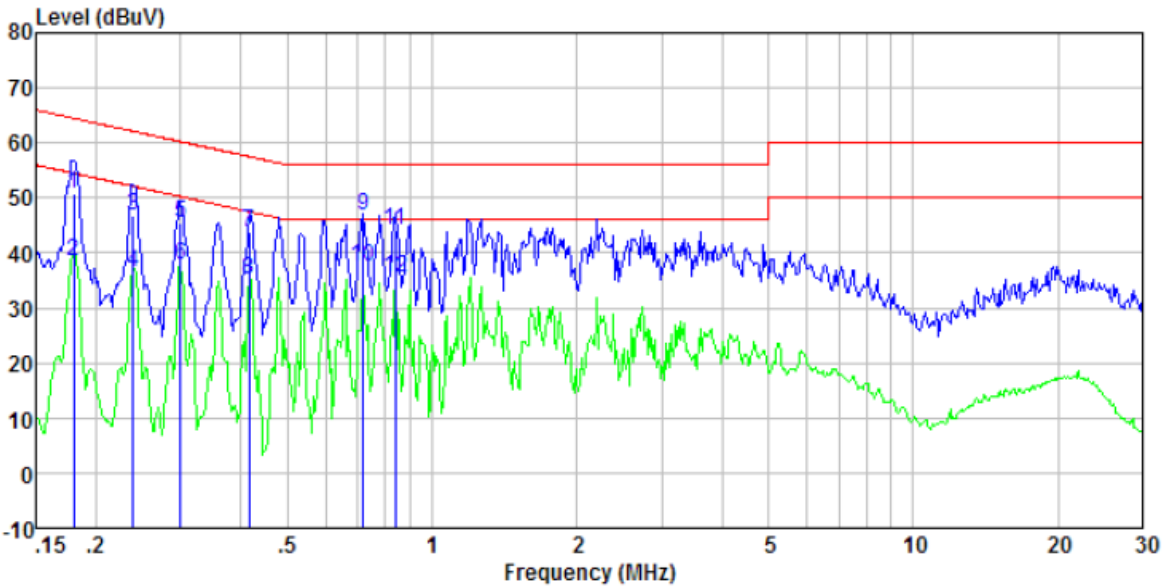
Measurement data

Mode:	**Transmitting mode**	**Test by:**	**Bill**
Temp./Hum.(%H):	**26℃/56%RH**	**Probe:**	**Line**



Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.18	52.07	0.40	0.10	52.57	64.37	-11.80	QP
0.18	38.47	0.40	0.10	38.97	54.37	-15.40	Average
0.24	47.27	0.40	0.11	47.78	62.00	-14.22	QP
0.24	35.34	0.40	0.11	35.85	52.00	-16.15	Average
0.30	44.65	0.40	0.10	45.15	60.19	-15.04	QP
0.30	37.06	0.40	0.10	37.56	50.19	-12.63	Average
0.36	37.93	0.37	0.10	38.40	58.65	-20.25	QP
0.36	29.95	0.37	0.10	30.42	48.65	-18.23	Average
0.42	35.70	0.34	0.11	36.15	57.37	-21.22	QP
0.42	30.53	0.34	0.11	30.98	47.37	-16.39	Average
0.72	40.45	0.26	0.13	40.84	56.00	-15.16	QP
0.72	36.56	0.26	0.13	36.95	46.00	-9.05	Average

Mode:	**Transmitting mode**	**Test by:**	**Bill**
Temp./Hum.(%H):	**26℃/56%RH**	**Probe:**	**Neutral**

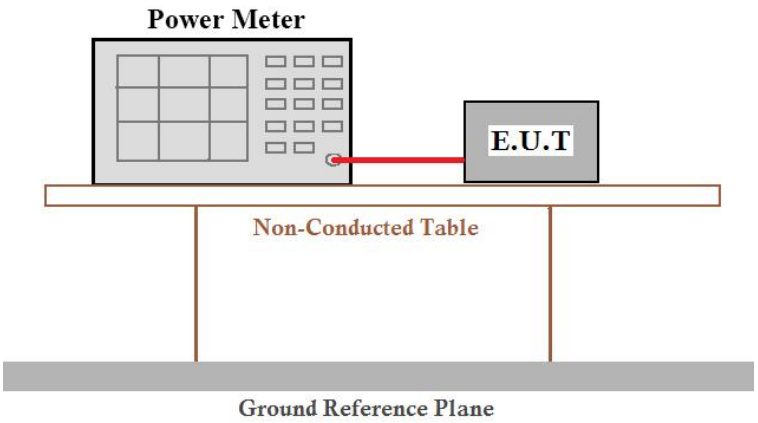


Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.18	50.43	0.40	0.10	50.93	64.50	-13.57	QP
0.18	37.86	0.40	0.10	38.36	54.50	-16.14	Average
0.24	46.22	0.40	0.11	46.73	62.13	-15.40	QP
0.24	36.04	0.40	0.11	36.55	52.13	-15.58	Average
0.30	45.04	0.40	0.10	45.54	60.24	-14.70	QP
0.30	37.49	0.40	0.10	37.99	50.24	-12.25	Average
0.42	43.19	0.34	0.11	43.64	57.51	-13.87	QP
0.42	34.83	0.34	0.11	35.28	47.51	-12.23	Average
0.72	46.25	0.26	0.13	46.64	56.00	-9.36	QP
0.72	37.11	0.26	0.13	37.50	46.00	-8.50	Average
0.84	43.81	0.23	0.14	44.18	56.00	-11.82	QP
0.84	35.12	0.23	0.14	35.49	46.00	-10.51	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 KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Aux Antenna:

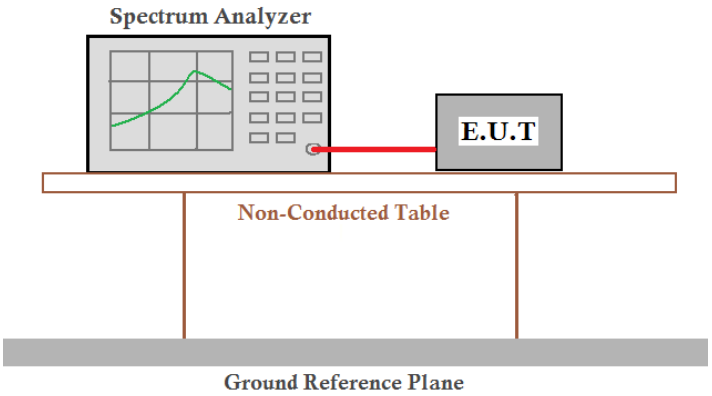
Test CH	Peak Output Power (dBm)						Limit(dBm)	Result
	802.11a	802.11n (HT20)	802.11ac (HT20)	802.11n (HT40)	802.11ac (HT40)	802.11ac (HT80)		
Lowest	7.39	7.33	7.36	7.25	7.22	---	30.00	Pass
Middle	7.37	7.36	7.34	---	---	6.02		
Highest	7.34	7.35	7.36	7.24	7.26	---		

Main Antenna:

Test CH	Peak Output Power (dBm)						Limit(dBm)	Result
	802.11a	802.11n (HT20)	802.11ac (HT20)	802.11n (HT40)	802.11ac (HT40)	802.11ac (HT80)		
Lowest	7.42	7.41	7.35	7.24	7.21	---	30.00	Pass
Middle	7.37	7.49	7.39	---	---	6.07		
Highest	7.39	7.44	7.37	7.27	7.25	---		

Remark: “---“is not applicable

7.4 Channel Bandwidth

Test Requirement:	FCC Part15 E Section 15.407(e)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Aux Antenna:

5.8G Band								
Test CH	Channel Bandwidth (MHz)						Limit (KHz)	Result
	802.11a	802.11n(HT20)	802.11ac(HT20)	802.11n(HT40)	802.11ac(HT40)	802.11ac(HT80)		
Lowest	15.159	15.177	15.190	35.207	35.141	---	>500	Pass
Middle	15.189	15.177	15.377	---	---	75.448		
Highest	15.068	15.072	15.088	35.215	33.961	---		

Main Antenna:

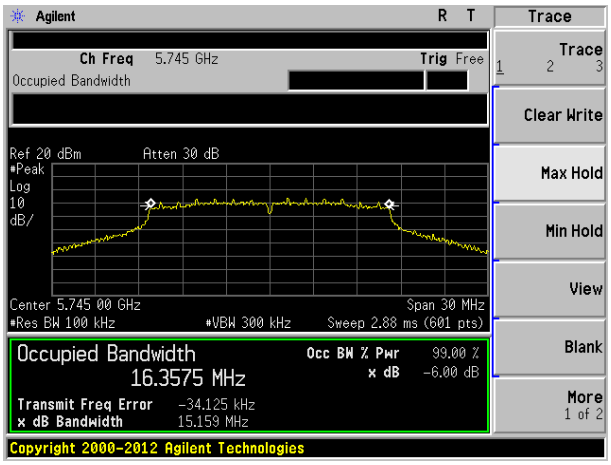
5.8G Band								
Test CH	Channel Bandwidth (MHz)						Limit (KHz)	Result
	802.11a	802.11n(HT20)	802.11ac(HT20)	802.11n(HT40)	802.11ac(HT40)	802.11ac(HT80)		
Lowest	15.187	15.204	15.115	35.224	35.227	---	>500	Pass
Middle	15.154	15.165	15.132	---	---	75.441		
Highest	15.184	15.183	15.186	35.223	35.218	---		

Remark: “---“is not applicable

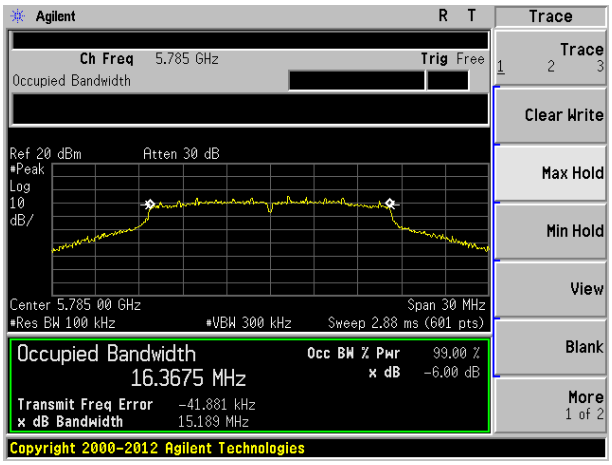
Test plot as follows:

Aux Antenna:

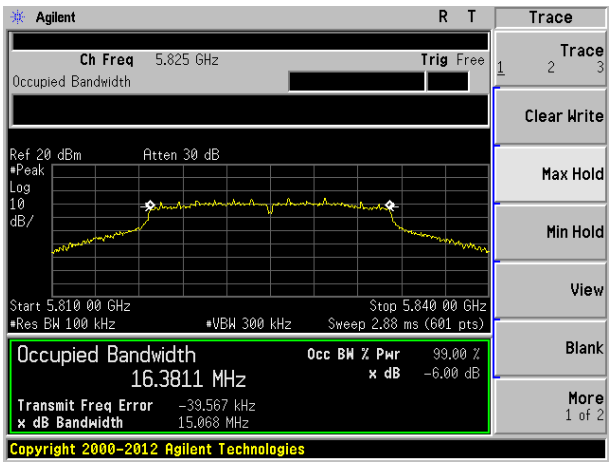
Test mode: 802.11a



Lowest channel

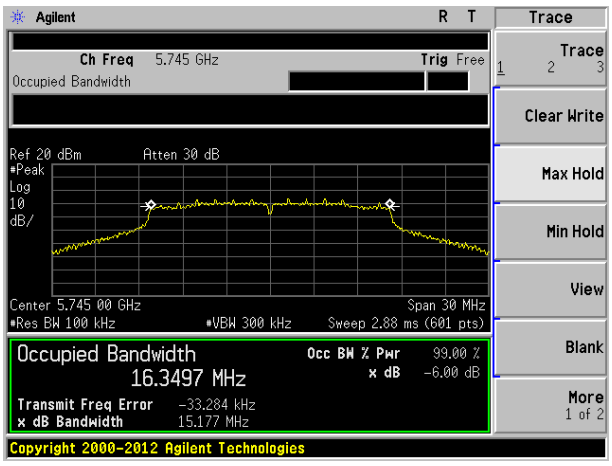


Middle channel

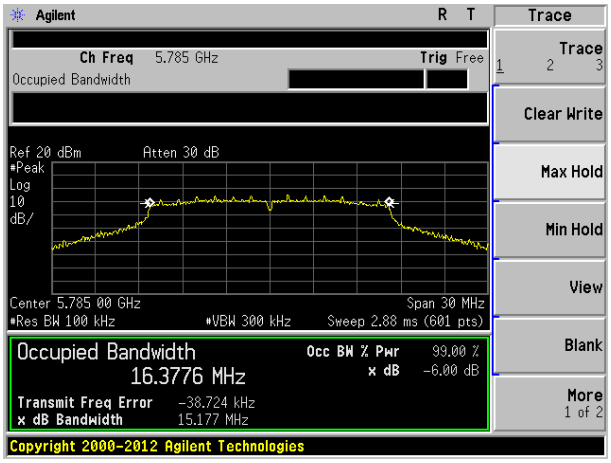


Highest channel

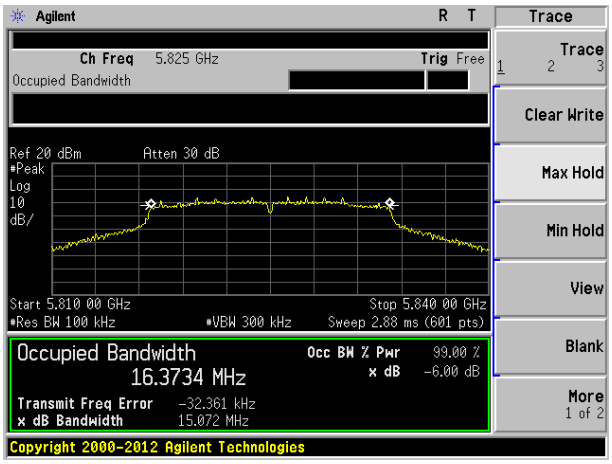
Test mode: 802.11n(HT20)



Lowest channel

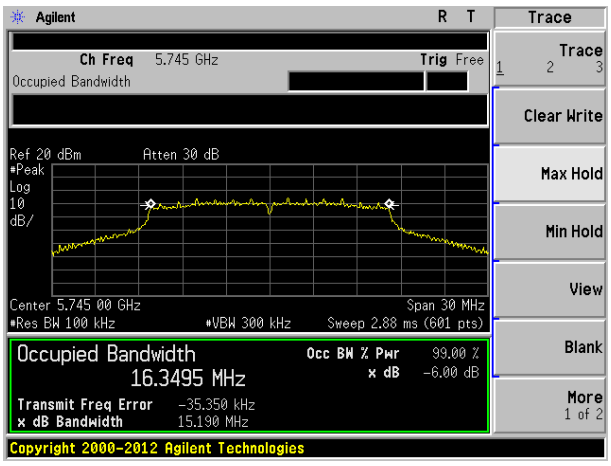


Middle channel

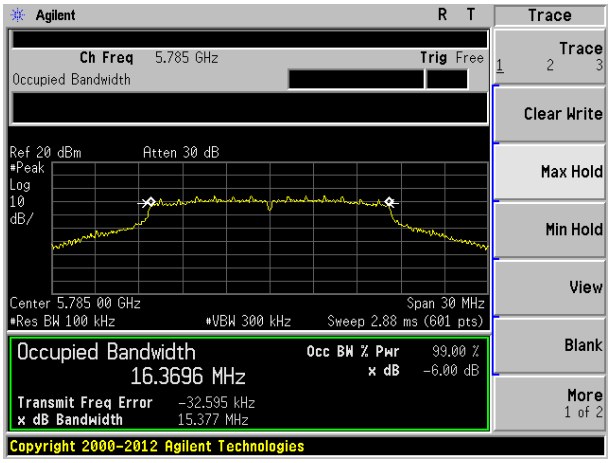


Highest channel

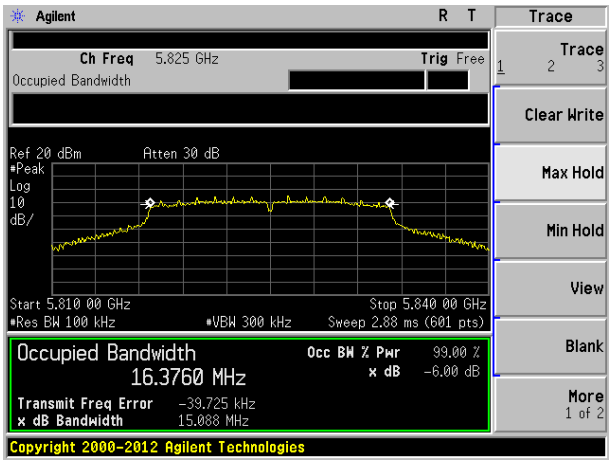
Test mode: 802.11ac(HT20)



Lowest channel

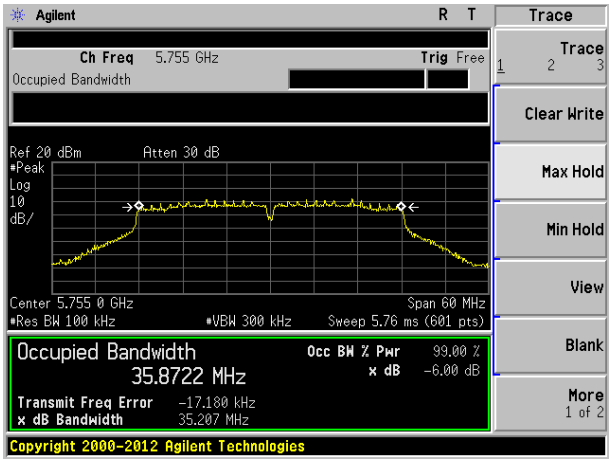


Middle channel

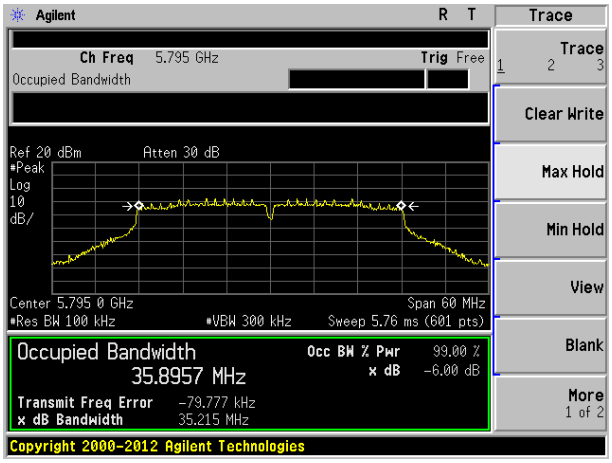


Highest channel

Test mode: 802.11n(HT40)

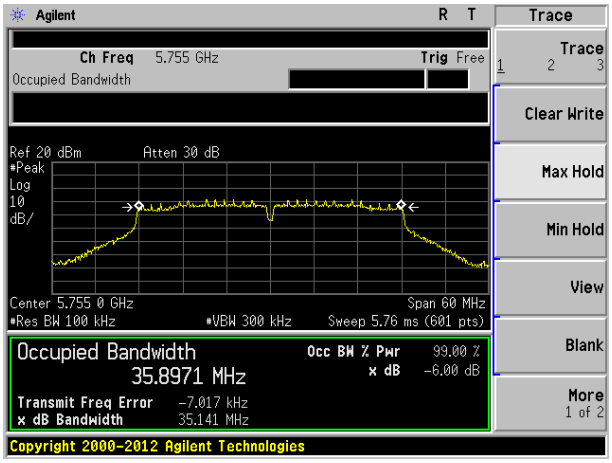


Lowest channel

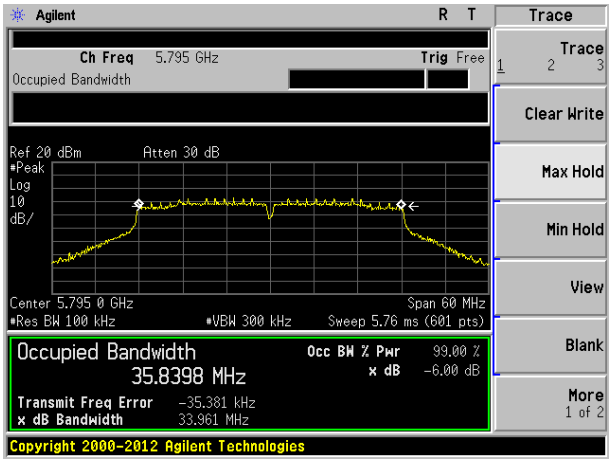


Highest channel

Test mode: 802.11ac(HT40)

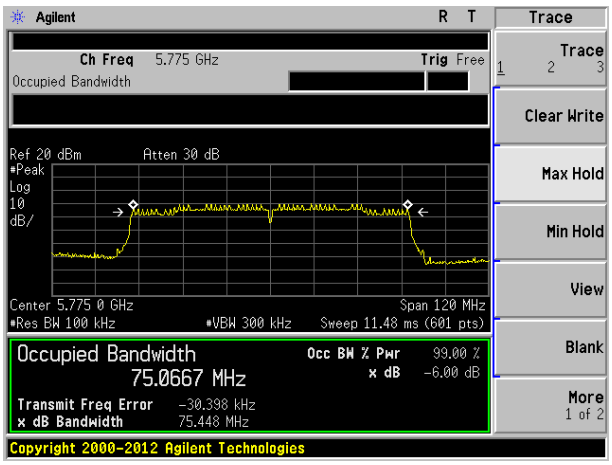


Lowest channel



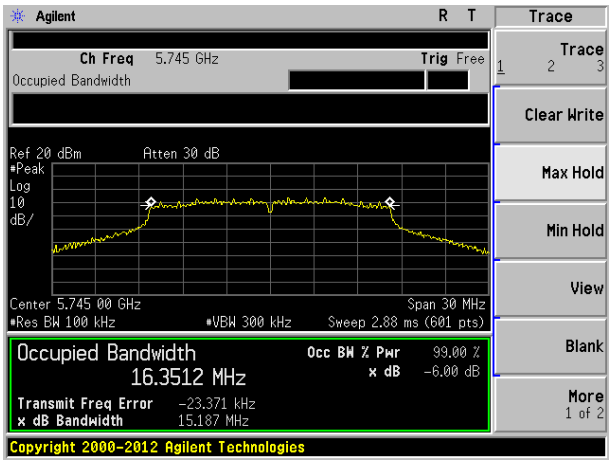
Highest channel

Test mode: 802.11ac(HT80)

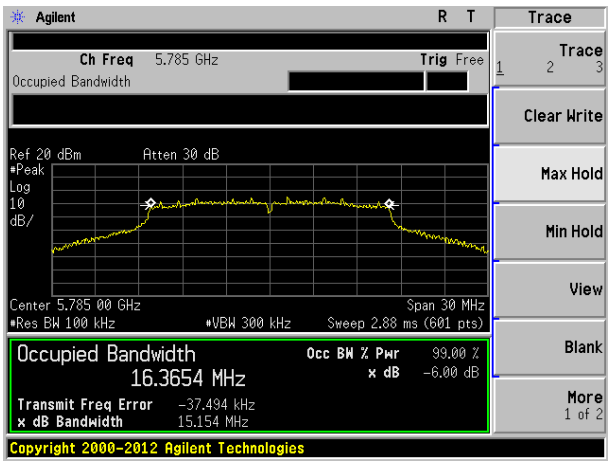


Main Antenna:

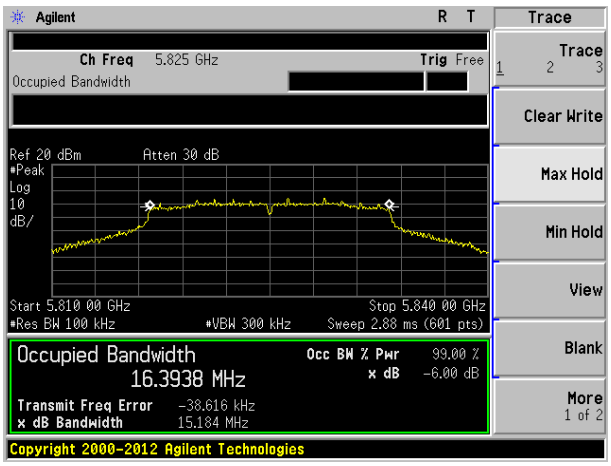
Test mode: 802.11a



Lowest channel

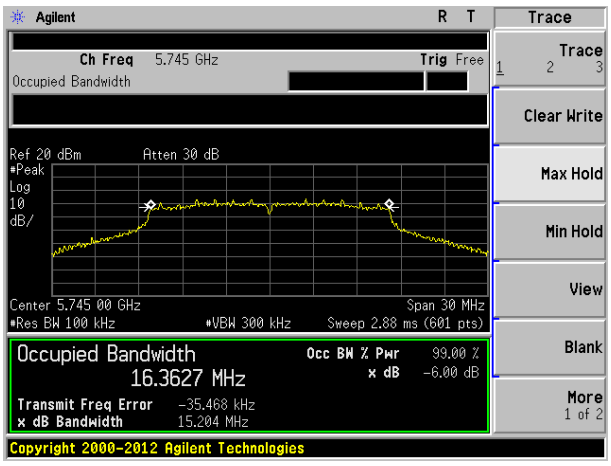


Middle channel

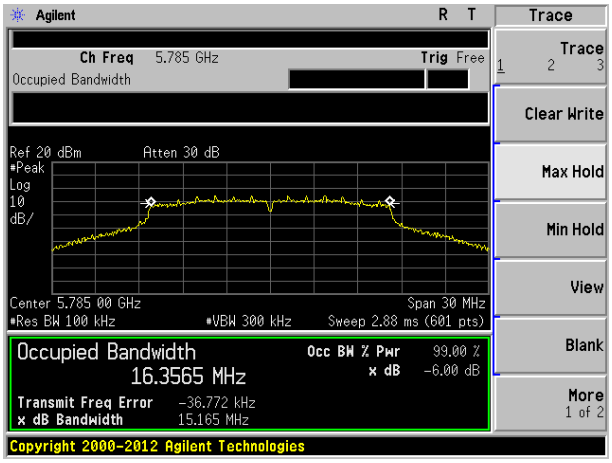


Highest channel

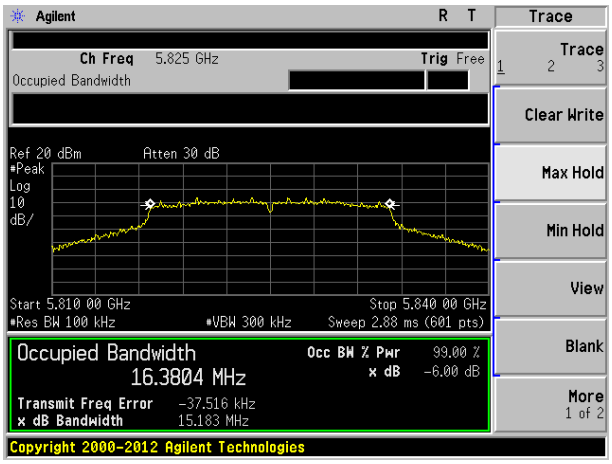
Test mode: 802.11n(HT20)



Lowest channel

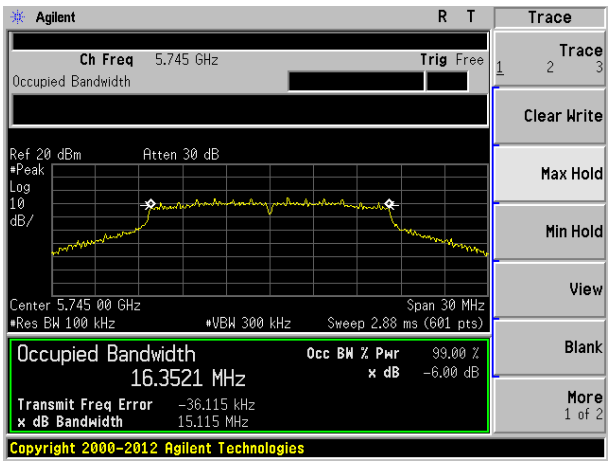


Middle channel

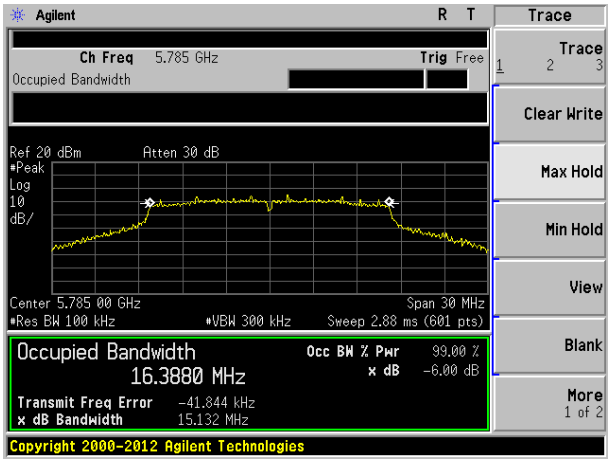


Highest channel

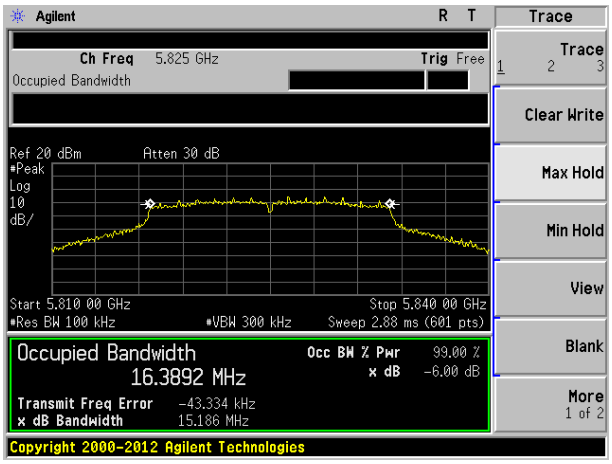
Test mode: 802.11ac(HT20)



Lowest channel

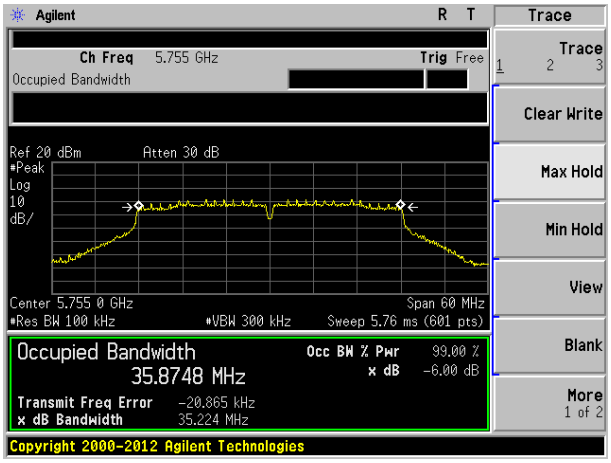


Middle channel

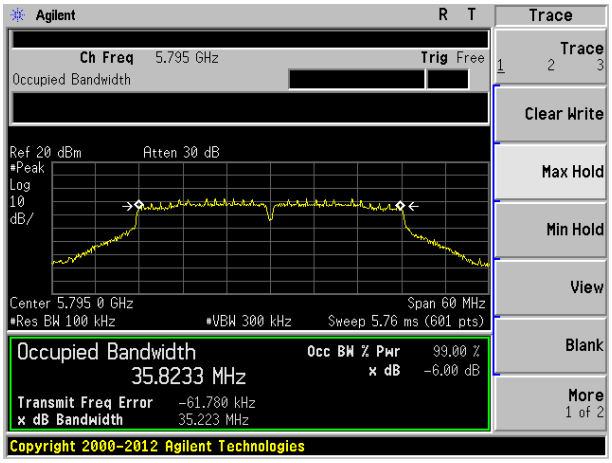


Highest channel

Test mode: 802.11n(HT40)

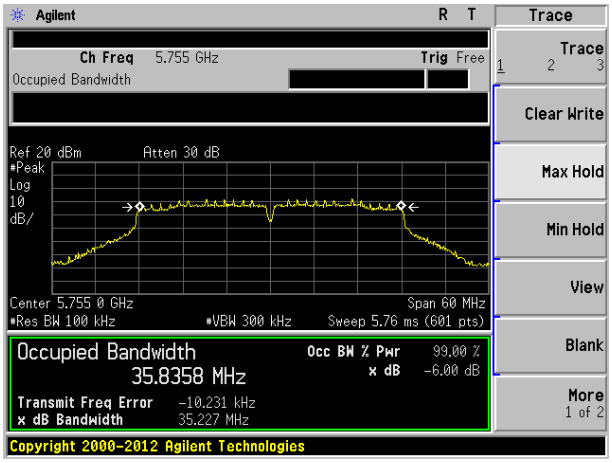


Lowest channel

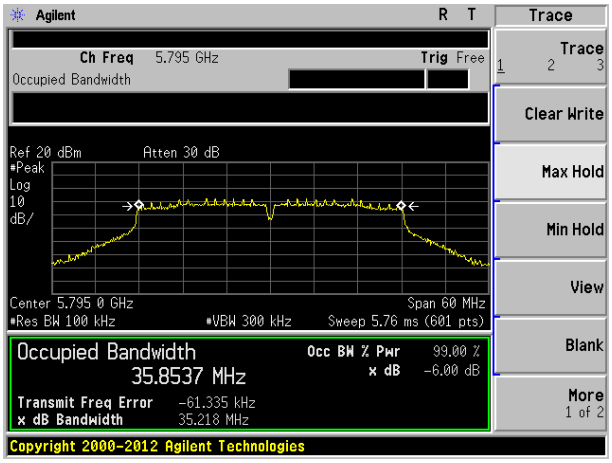


Highest channel

Test mode: 802.11ac(HT40)

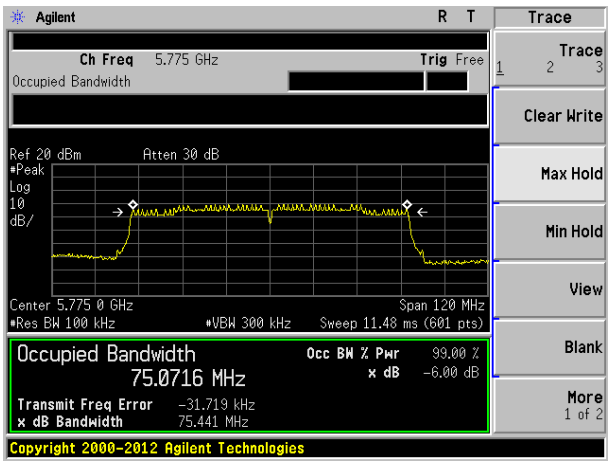


Lowest channel

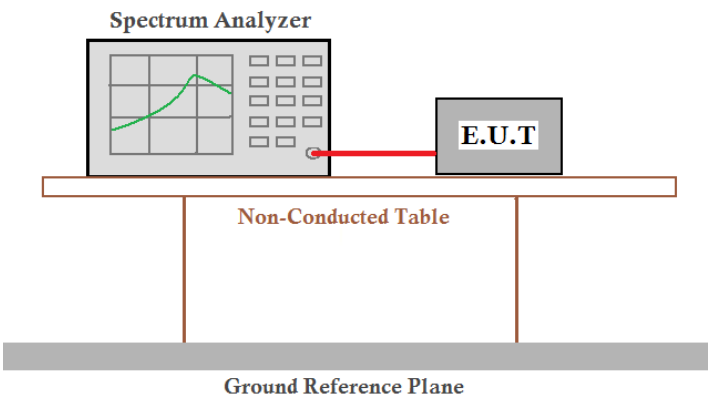


Highest channel

Test mode: 802.11ac(HT80)



7.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Aux Antenna:

5.8G Band								
Test CH	Power Spectral Density (dBm)						Limit (dBm/500kHz)	Result
	802.11a	802.11n(HT20)	802.11ac(HT20)	802.11n(HT40)	802.11ac(HT40)	802.11ac(HT80)		
Lowest	-1.13	-1.02	-0.56	-6.08	-6.41	---	30.00	Pass
Middle	-0.23	-1.84	-1.77	---	---	-11.65		
Highest	-1.43	-1.58	-1.69	-6.34	-6.58	---		

Main Antenna:

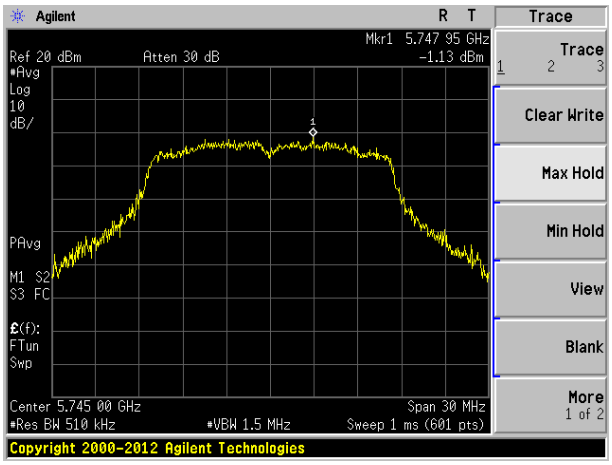
5.8G Band								
Test CH	Power Spectral Density (dBm)						Limit (dBm/500kHz)	Result
	802.11a	802.11n(HT20)	802.11ac(HT20)	802.11n(HT40)	802.11ac(HT40)	802.11ac(HT80)		
Lowest	-1.88	-1.75	-2.08	-6.25	-6.53	---	30.00	Pass
Middle	-0.91	-0.84	-1.41	---	---	-11.02		
Highest	-1.72	-1.65	-1.11	-6.44	-6.18	---		

Remark: “---“is not applicable

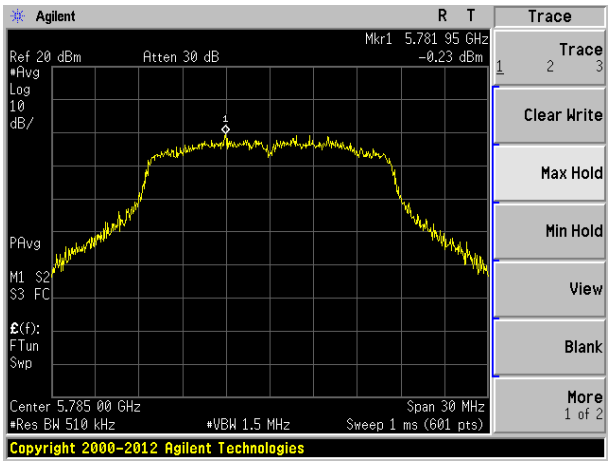
Test plot as follows:

Aux Antenna:

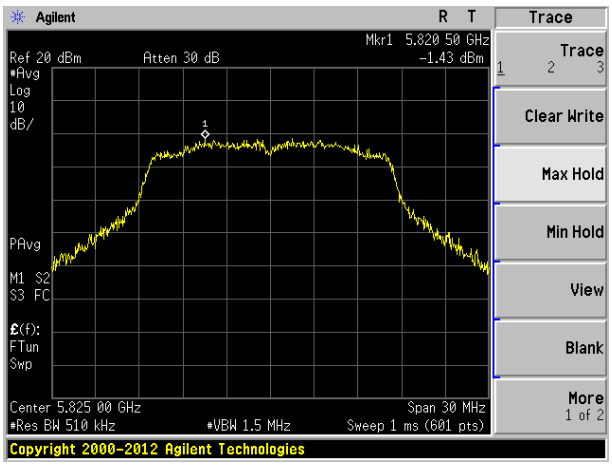
Test mode: 802.11a



Lowest channel

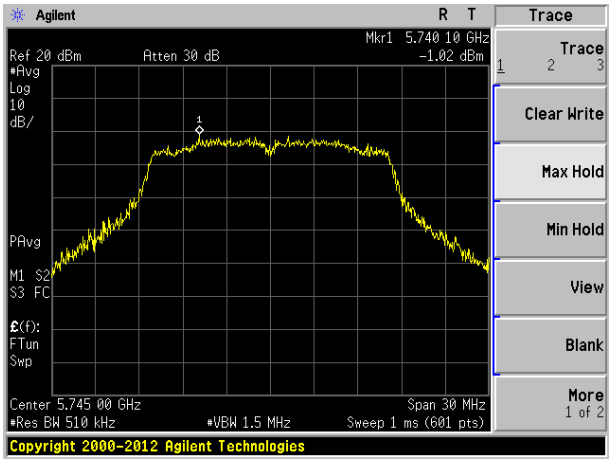


Middle channel

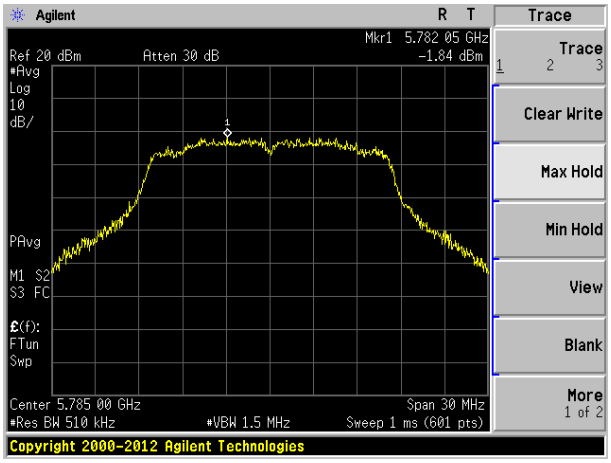


Highest channel

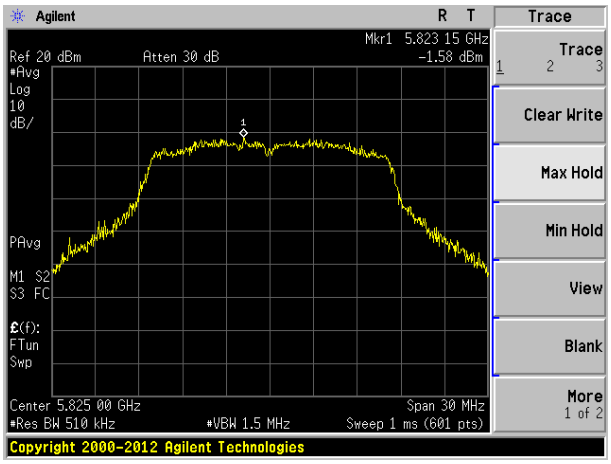
Test mode: 802.11n(HT20)



Lowest channel

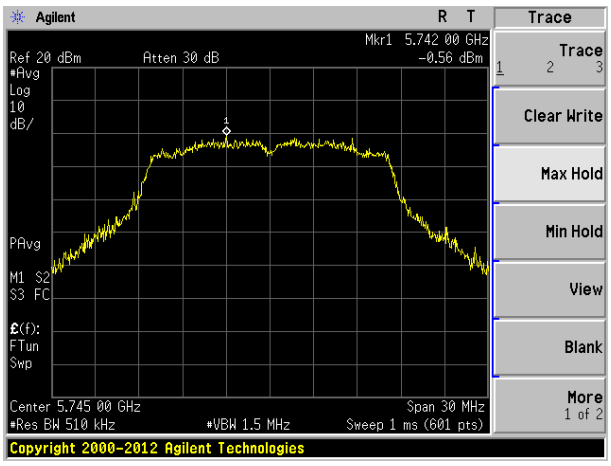


Middle channel

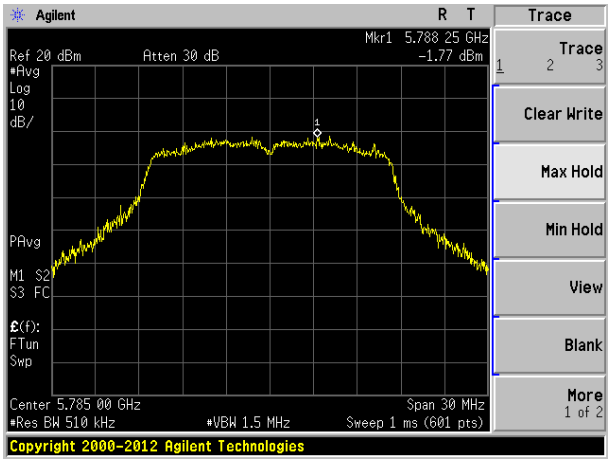


Highest channel

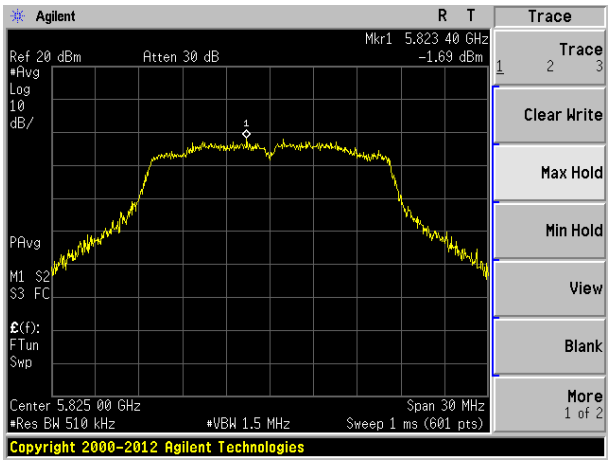
Test mode: 802.11ac(HT20)



Lowest channel

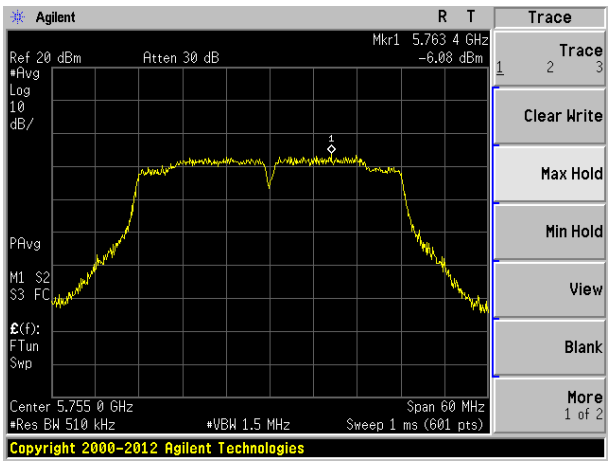


Middle channel

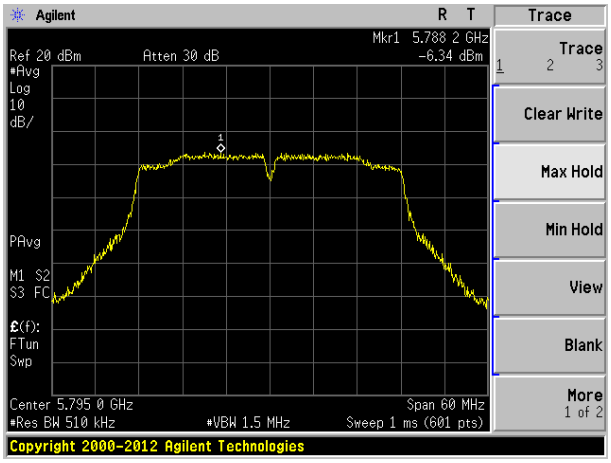


Highest channel

Test mode: 802.11n(HT40)

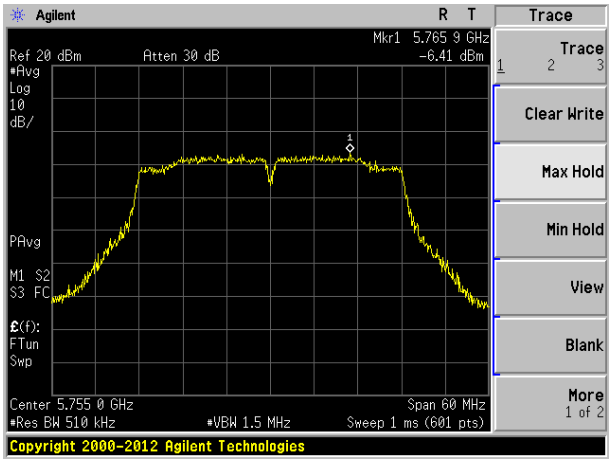


Lowest channel

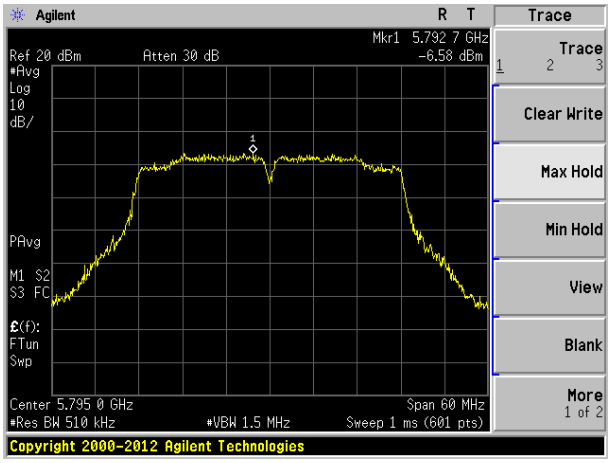


Highest channel

Test mode: 802.11ac(HT40)

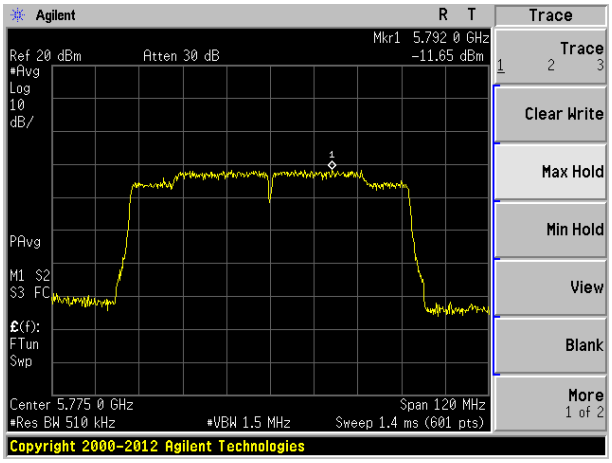


Lowest channel



Highest channel

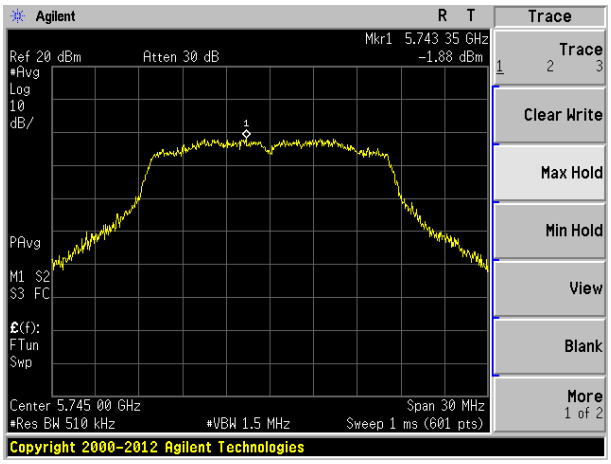
Test mode: 802.11ac(HT80)



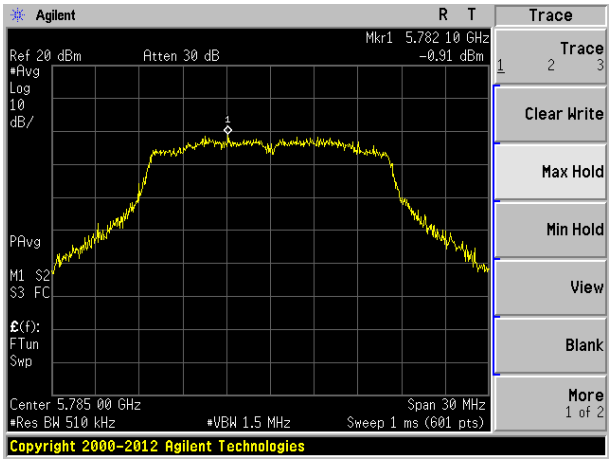
Middle channel

Main Antenna:

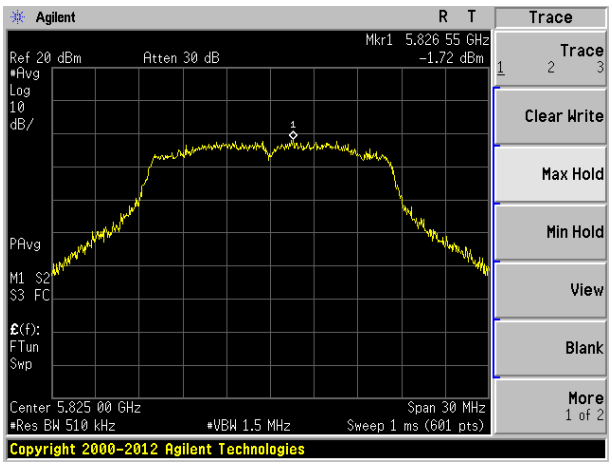
Test mode: 802.11a



Lowest channel

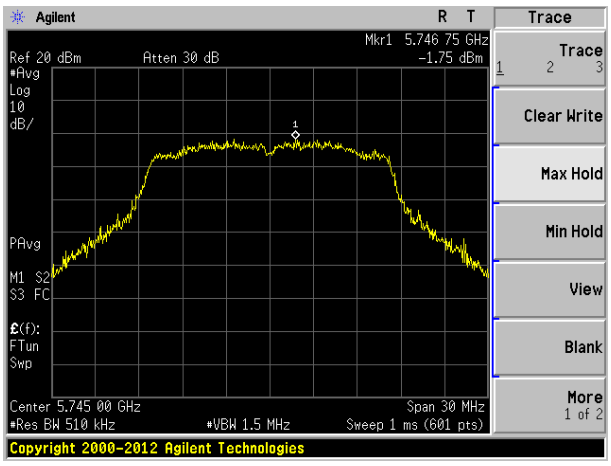


Middle channel

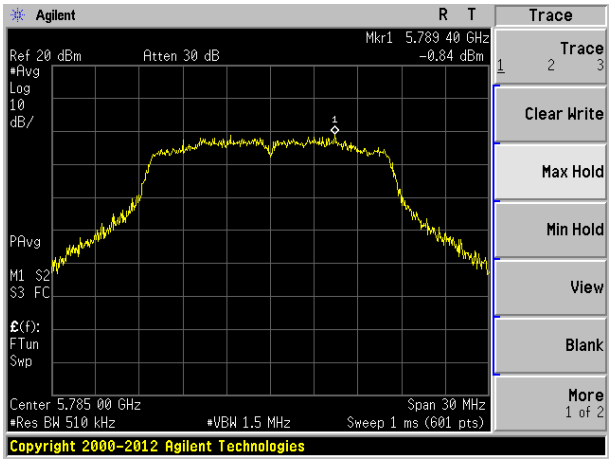


Highest channel

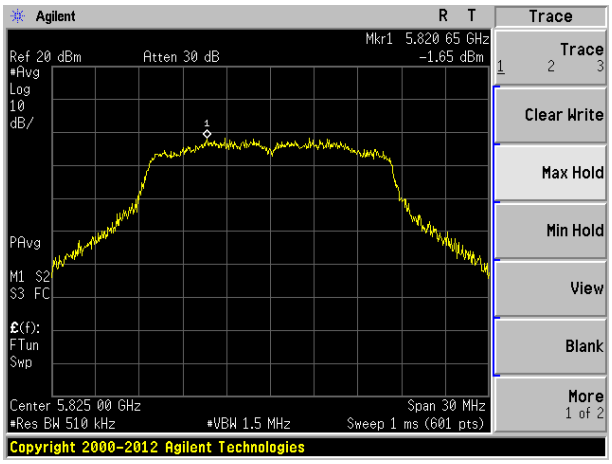
Test mode: 802.11n(HT20)



Lowest channel

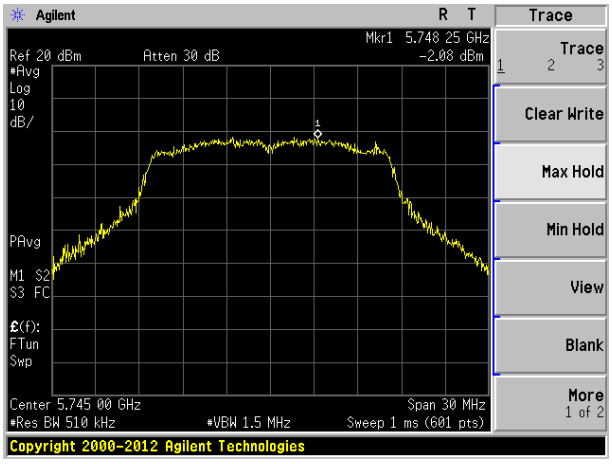


Middle channel

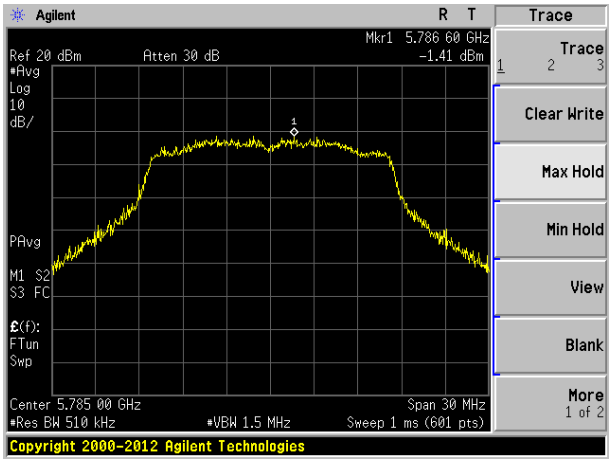


Highest channel

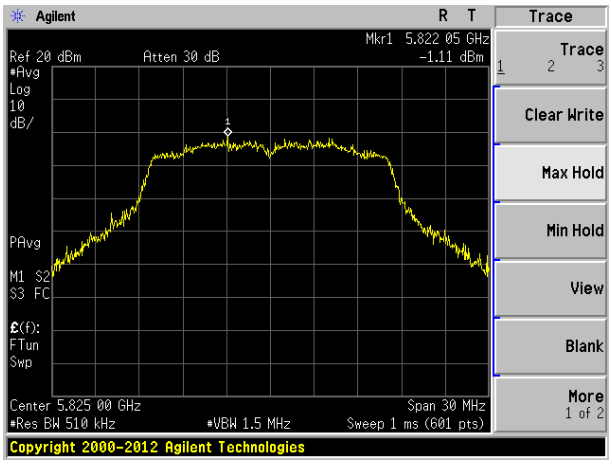
Test mode: 802.11ac(HT20)



Lowest channel

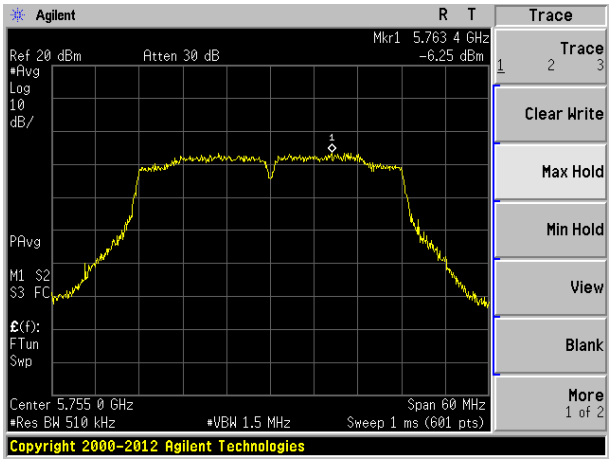


Middle channel

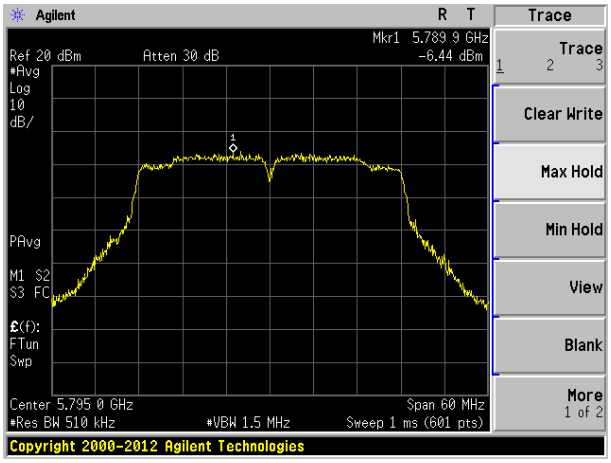


Highest channel

Test mode: 802.11n(HT40)

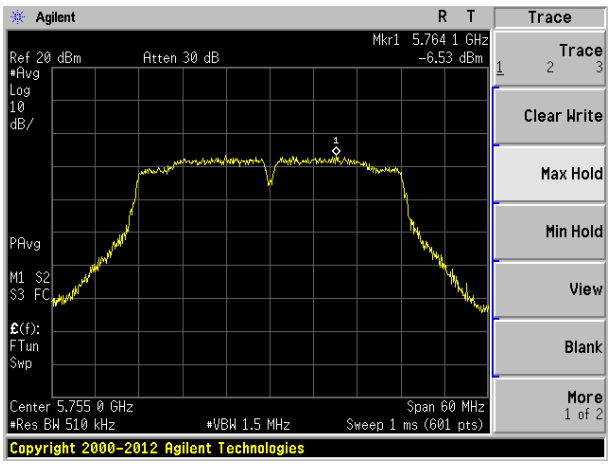


Lowest channel

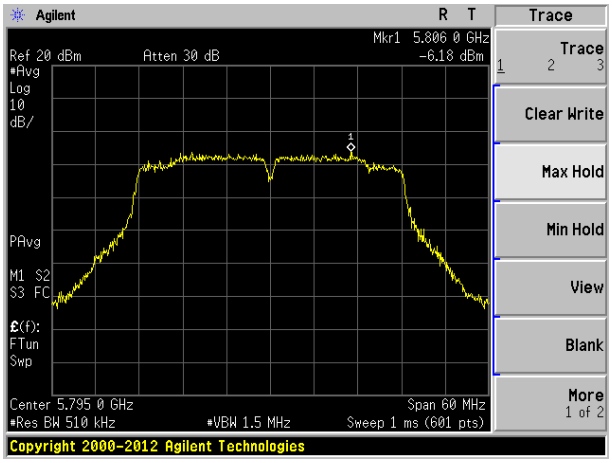


Highest channel

Test mode: 802.11ac(HT40)

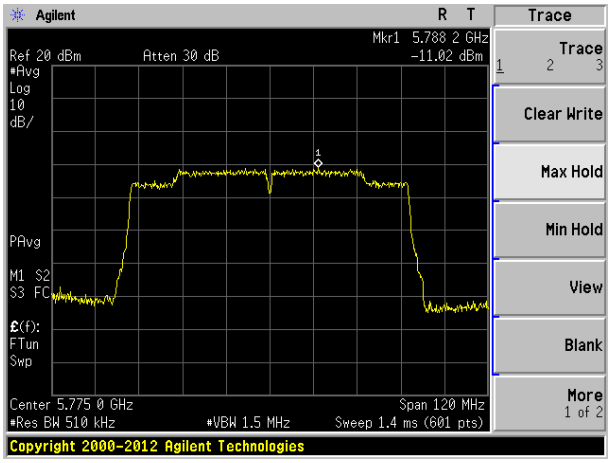


Lowest channel



Highest channel

Test mode: 802.11ac(HT80)



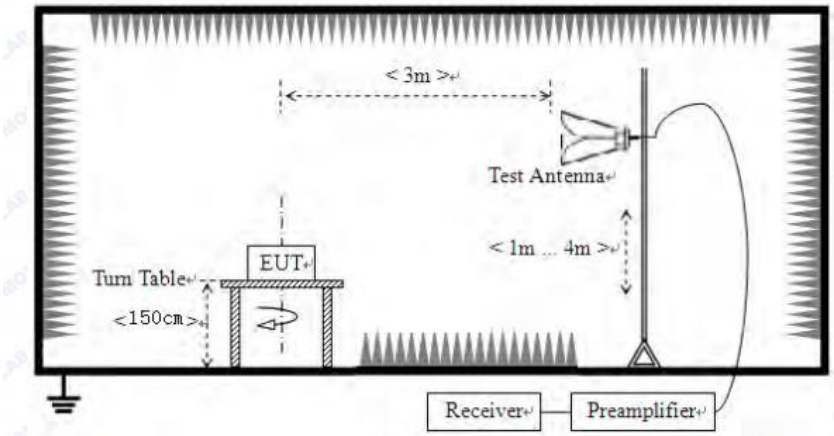
Middle channel

7.6 Band edge

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:	9kHz 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	RMS

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:	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 5.2 for details
Test results:	Pass

Remarks:

1. *Only the worst case Main Antenna test data..*
2. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
5. *According to KDB 789033 D02v02r01 section G) 1) d),for measurements above 1000 MHz @3m distance, the limit of field strength is computed as follows:*

   E[dBuV/m] = EIRP[dBm] + 95.2;

   E[dBuV/m] = -27 + 95.2 = 68.2dBuV/m.

   E[dBuV/m] = 10 + 95.2 = 105.2dBuV/m.

   E[dBuV/m] = 15.6 + 95.2 = 110.8dBuV/m.

   E[dBuV/m] = 27 + 95.2 = 122.2dBuV/m

Measurement data:

IEEE 802.11a								
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
5650.00	38.13	32.36	9.72	23.83	56.38	68.20	-11.82	Horizontal
5700.00	38.54	32.50	9.79	23.84	56.99	105.20	-48.21	Horizontal
5720.00	38.71	32.53	9.81	23.85	57.20	110.80	-53.60	Horizontal
5725.00	46.40	32.53	9.83	23.86	64.90	122.20	-57.30	Horizontal
5850.00	43.17	32.70	9.99	23.87	61.99	122.20	-60.21	Horizontal
5855.00	36.18	32.72	9.99	23.88	55.01	110.80	-55.79	Horizontal
5875.00	38.97	32.74	10.04	23.89	57.86	105.20	-47.34	Horizontal
5925.00	38.30	32.80	10.11	23.90	57.31	68.20	-10.89	Horizontal
5650.00	37.70	32.36	9.72	23.83	55.95	68.20	-12.25	Vertical
5700.00	36.96	32.50	9.79	23.84	55.41	105.20	-49.79	Vertical
5720.00	37.62	32.53	9.81	23.85	56.11	110.80	-54.69	Vertical
5725.00	45.18	32.53	9.83	23.86	63.68	122.20	-58.52	Vertical
5850.00	42.63	32.70	9.99	23.87	61.45	122.20	-60.75	Vertical
5855.00	36.40	32.72	9.99	23.88	55.23	110.80	-55.57	Vertical
5875.00	37.26	32.74	10.04	23.89	56.15	105.20	-49.05	Vertical
5925.00	37.80	32.80	10.11	23.90	56.81	68.20	-11.39	Vertical

IEEE 802.11n HT20								
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
5650.00	37.26	32.36	9.72	23.83	55.51	68.20	-12.69	Horizontal
5700.00	38.06	32.50	9.79	23.84	56.51	105.20	-48.69	Horizontal
5720.00	38.21	32.53	9.81	23.85	56.70	110.80	-54.10	Horizontal
5725.00	45.93	32.53	9.83	23.86	64.43	122.20	-57.77	Horizontal
5850.00	42.72	32.70	9.99	23.87	61.54	122.20	-60.66	Horizontal
5855.00	37.83	32.72	9.99	23.88	56.66	110.80	-54.14	Horizontal
5875.00	37.32	32.74	10.04	23.89	56.21	105.20	-48.99	Horizontal
5925.00	37.22	32.80	10.11	23.90	56.23	68.20	-11.97	Horizontal
5650.00	37.97	32.36	9.72	23.83	56.22	68.20	-11.98	Vertical
5700.00	38.01	32.50	9.79	23.84	56.46	105.20	-48.74	Vertical
5720.00	36.85	32.53	9.81	23.85	55.34	110.80	-55.46	Vertical
5725.00	45.39	32.53	9.83	23.86	63.89	122.20	-58.31	Vertical
5850.00	42.45	32.70	9.99	23.87	61.27	122.20	-60.93	Vertical
5855.00	37.26	32.72	9.99	23.88	56.09	110.80	-54.71	Vertical
5875.00	37.63	32.74	10.04	23.89	56.52	105.20	-48.68	Vertical
5925.00	37.11	32.80	10.11	23.90	56.12	68.20	-12.08	Vertical

IEEE 802.11ac HT20								
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
5650.00	37.57	32.36	9.72	23.83	55.82	68.20	-12.38	Horizontal
5700.00	37.51	32.50	9.79	23.84	55.96	105.20	-49.24	Horizontal
5720.00	37.33	32.53	9.81	23.85	55.82	110.80	-54.98	Horizontal
5725.00	45.30	32.53	9.83	23.86	63.80	122.20	-58.40	Horizontal
5850.00	42.08	32.70	9.99	23.87	60.90	122.20	-61.30	Horizontal
5855.00	37.78	32.72	9.99	23.88	56.61	110.80	-54.19	Horizontal
5875.00	37.22	32.74	10.04	23.89	56.11	105.20	-49.09	Horizontal
5925.00	37.23	32.80	10.11	23.90	56.24	68.20	-11.96	Horizontal
5650.00	37.38	32.36	9.72	23.83	55.63	68.20	-12.57	Vertical
5700.00	37.60	32.50	9.79	23.84	56.05	105.20	-49.16	Vertical
5720.00	37.84	32.53	9.81	23.85	56.33	110.80	-54.47	Vertical
5725.00	46.22	32.53	9.83	23.86	64.72	122.20	-57.48	Vertical
5850.00	43.01	32.70	9.99	23.87	61.83	122.20	-60.37	Vertical
5855.00	37.44	32.72	9.99	23.88	56.27	110.80	-54.53	Vertical
5875.00	37.41	32.74	10.04	23.89	56.30	105.20	-48.90	Vertical
5925.00	37.55	32.80	10.11	23.90	56.56	68.20	-11.64	Vertical

IEEE 802.11n HT40								
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
5650.00	36.75	32.36	9.72	23.83	55.00	68.20	-13.20	Horizontal
5700.00	36.93	32.50	9.79	23.84	55.38	105.20	-49.82	Horizontal
5720.00	36.96	32.53	9.81	23.85	55.45	110.80	-55.35	Horizontal
5725.00	39.83	32.53	9.83	23.86	58.33	122.20	-63.87	Horizontal
5850.00	39.24	32.70	9.99	23.87	58.06	122.20	-64.14	Horizontal
5855.00	36.74	32.72	9.99	23.88	55.57	110.80	-55.23	Horizontal
5875.00	36.55	32.74	10.04	23.89	55.44	105.20	-49.76	Horizontal
5925.00	37.22	32.80	10.11	23.90	56.23	68.20	-11.97	Horizontal
5650.00	36.87	32.36	9.72	23.83	55.12	68.20	-13.08	Vertical
5700.00	36.51	32.50	9.79	23.84	54.96	105.20	-50.24	Vertical
5720.00	37.26	32.53	9.81	23.85	55.75	110.80	-55.05	Vertical
5725.00	45.04	32.53	9.83	23.86	63.54	122.20	-58.66	Vertical
5850.00	41.61	32.70	9.99	23.87	60.43	122.20	-61.77	Vertical
5855.00	36.95	32.72	9.99	23.88	55.78	110.80	-55.02	Vertical
5875.00	37.10	32.74	10.04	23.89	55.99	105.20	-49.21	Vertical
5925.00	36.50	32.80	10.11	23.90	55.51	68.20	-12.69	Vertical

IEEE 802.11ac HT40								
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
5650.00	37.57	32.36	9.72	23.83	55.82	68.20	-12.38	Horizontal
5700.00	37.22	32.50	9.79	23.84	55.67	105.20	-49.53	Horizontal
5720.00	37.28	32.53	9.81	23.85	55.77	110.80	-55.03	Horizontal
5725.00	45.81	32.53	9.83	23.86	64.31	122.20	-57.89	Horizontal
5850.00	42.55	32.70	9.99	23.87	61.37	122.20	-60.83	Horizontal
5855.00	37.42	32.72	9.99	23.88	56.25	110.80	-54.55	Horizontal
5875.00	37.24	32.74	10.04	23.89	56.13	105.20	-49.07	Horizontal
5925.00	37.51	32.80	10.11	23.90	56.52	68.20	-11.68	Horizontal
5650.00	37.60	32.36	9.72	23.83	55.85	68.20	-12.36	Vertical
5700.00	37.45	32.50	9.79	23.84	55.90	105.20	-49.30	Vertical
5720.00	37.98	32.53	9.81	23.85	56.47	110.80	-54.33	Vertical
5725.00	45.59	32.53	9.83	23.86	64.09	122.20	-58.11	Vertical
5850.00	42.30	32.70	9.99	23.87	61.12	122.20	-61.08	Vertical
5855.00	38.08	32.72	9.99	23.88	56.91	110.80	-53.89	Vertical
5875.00	37.27	32.74	10.04	23.89	56.16	105.20	-49.04	Vertical
5925.00	37.97	32.80	10.11	23.90	56.98	68.20	-11.22	Vertical

IEEE 802.11ac HT80								
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
5650.00	37.29	32.36	9.72	23.83	55.54	68.20	-12.66	Horizontal
5700.00	36.62	32.50	9.79	23.84	55.07	105.20	-50.13	Horizontal
5720.00	36.53	32.53	9.81	23.85	55.02	110.80	-55.78	Horizontal
5725.00	45.51	32.53	9.83	23.86	64.01	122.20	-58.19	Horizontal
5850.00	42.04	32.70	9.99	23.87	60.86	122.20	-61.34	Horizontal
5855.00	36.62	32.72	9.99	23.88	55.45	110.80	-55.35	Horizontal
5875.00	36.61	32.74	10.04	23.89	55.50	105.20	-49.70	Horizontal
5925.00	36.85	32.80	10.11	23.90	55.86	68.20	-12.34	Horizontal
5650.00	37.07	32.36	9.72	23.83	55.32	68.20	-12.88	Vertical
5700.00	37.33	32.50	9.79	23.84	55.78	105.20	-49.42	Vertical
5720.00	37.20	32.53	9.81	23.85	55.69	110.80	-55.11	Vertical
5725.00	44.85	32.53	9.83	23.86	63.35	122.20	-58.85	Vertical
5850.00	41.84	32.70	9.99	23.87	60.66	122.20	-61.54	Vertical
5855.00	37.22	32.72	9.99	23.88	56.05	110.80	-54.75	Vertical
5875.00	36.43	32.74	10.04	23.89	55.32	105.20	-49.88	Vertical
5925.00	37.27	32.80	10.11	23.90	56.28	68.20	-11.92	Vertical

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:	9kHz to 40GHz
Test site:	Measurement Distance: 3m

Receiver setup:

Frequency	Detector	RBW	VBW	Value
9kHz-150KHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	AV	1MHz	3MHz	Average Value

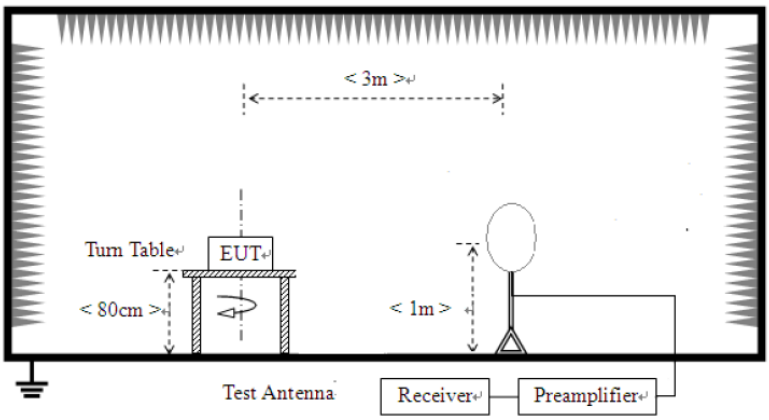
Limit:

Frequency	Limit (uV/m)	Value	Measurement Distance
0.009MHz-0.490MHz	2400/F(KHz)	QP	300m
0.490MHz-1.705MHz	24000/F(KHz)	QP	300m
1.705MHz-30MHz	30	QP	30m
30MHz-88MHz	100	QP	3m
88MHz-216MHz	150	QP	
216MHz-960MHz	200	QP	
960MHz-1GHz	500	QP	

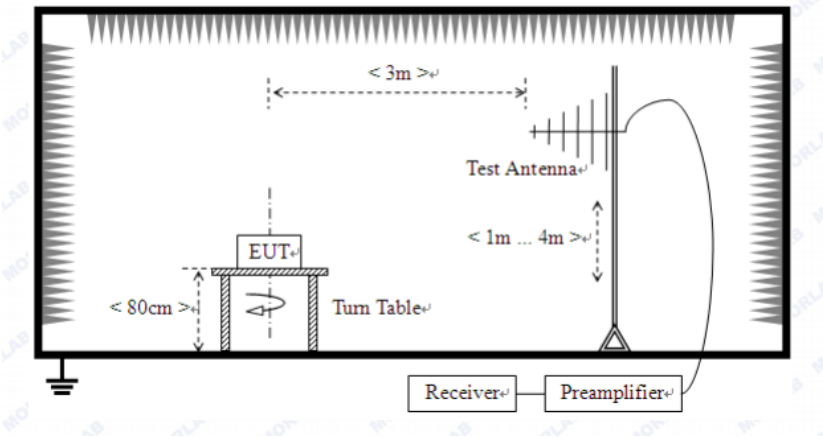
Frequency	Limit (dBm/MHz)	Remark
Above 1GHz	-27.0	Peak Value

Test setup:

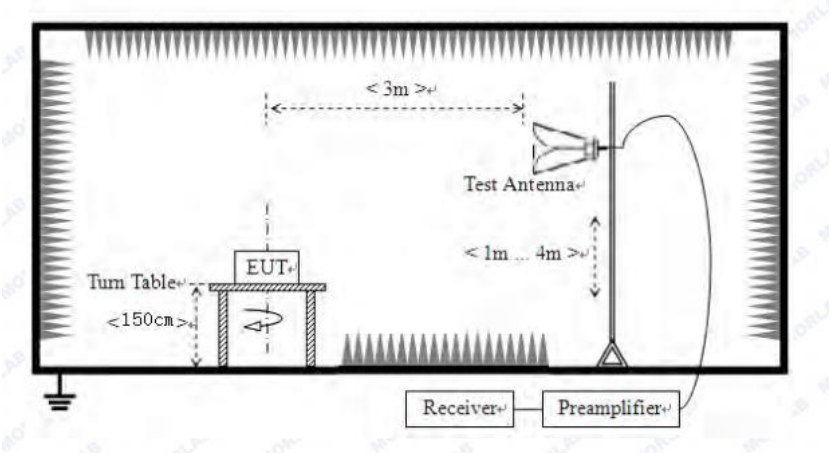
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



Test Procedure:	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.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test voltage:	AC120V 60Hz
Test results:	Pass

Remarks:

1. *Only the worst case Main Antenna test data.*
2. *Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.*

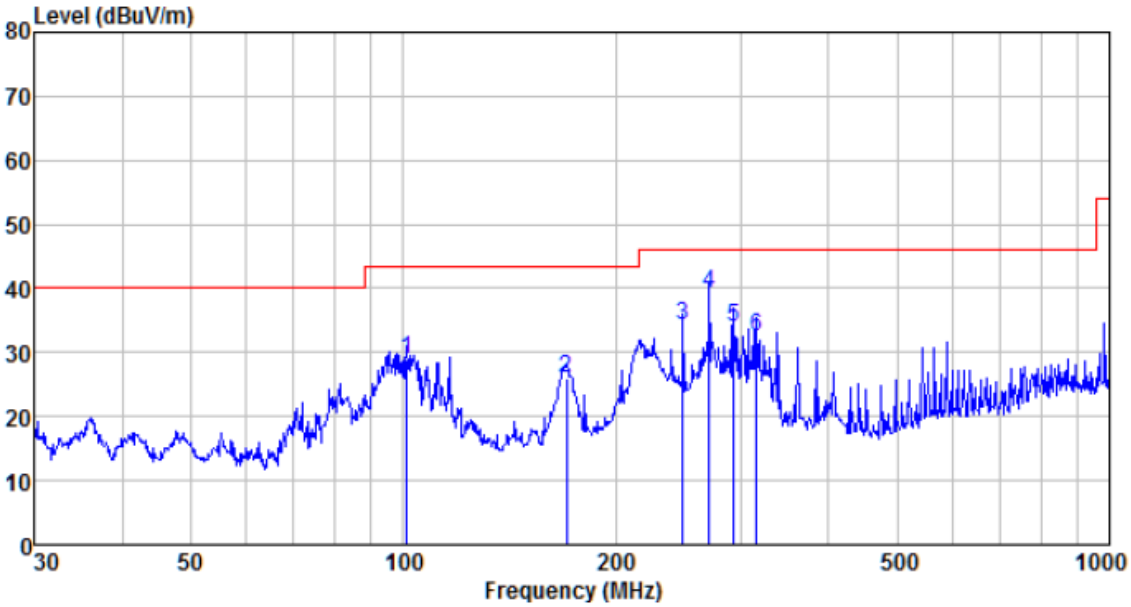
Measurement Data:

9 kHz ~ 30 MHz

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

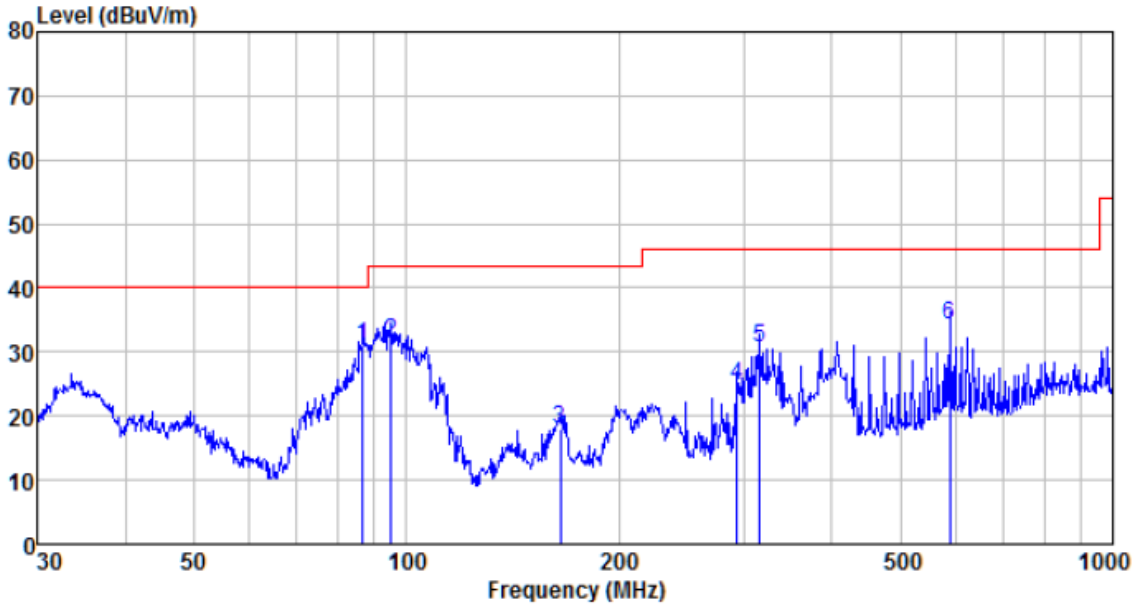
Below 1GHz

Mode:	**Transmitting mode**	**Test by:**	**Bill**
Temp./Hum.(%H):	**26℃/56%RH**	**Polarziation:**	**Horizontal**



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
101.289	52.51	12.04	1.20	36.73	29.02	43.50	-14.48	QP
170.195	53.10	8.50	1.69	37.19	26.10	43.50	-17.40	QP
248.552	57.26	12.11	2.12	37.38	34.11	46.00	-11.89	QP
271.325	61.51	12.80	2.23	37.40	39.14	46.00	-6.86	QP
294.114	55.48	13.45	2.33	37.42	33.84	46.00	-12.16	QP
316.589	53.45	13.93	2.45	37.44	32.39	46.00	-13.61	QP

Mode:	**Transmitting mode**	**Test by:**	**Bill**
Temp./Hum.(%H):	**26℃/56%RH**	**Polarziation:**	**Vertical**



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
86.807	56.77	9.68	1.08	36.61	30.92	40.00	-9.08	QP
95.093	55.55	11.52	1.15	36.68	31.54	43.50	-11.96	QP
164.908	45.23	8.40	1.66	37.16	18.13	43.50	-25.37	QP
294.114	46.36	13.45	2.33	37.42	24.72	46.00	-21.28	QP
316.589	51.86	13.93	2.45	37.44	30.80	46.00	-15.20	QP
586.844	48.85	19.23	3.67	37.54	34.21	46.00	-11.79	QP

Above 1GHz:

802.11a,11n(HT20),11ac(HT20),11n(HT40),11ac(HT40),11ac(HT80) all have been tested,
Only the data of worst case at each channel plan (nominal bandwidth =20MHz, 40MHz, 80MHz) is reported.

Test mode:		802.11a		Test channel:		lowest	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11490	21.99	21.64	43.63	54(Note3)	-10.37	PK
V	17235	22.53	21.80	44.33	54(Note3)	-9.67	PK
H	11490	23.19	21.83	45.02	54(Note3)	-8.98	PK
H	17235	21.62	21.67	43.29	54(Note3)	-10.71	PK

Test mode:		802.11a		Test channel:		Middle	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11570	24.34	21.64	45.98	54(Note3)	-8.02	PK
V	17355	24.94	21.80	46.74	54(Note3)	-7.26	PK
H	11570	25.30	21.83	47.13	54(Note3)	-6.87	PK
H	17355	26.67	21.67	48.34	54(Note3)	-5.66	PK

Test mode:		802.11a		Test channel:		Highest	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11650	22.13	21.64	43.77	54(Note3)	-10.23	PK
V	17475	21.71	21.80	43.51	54(Note3)	-10.49	PK
H	11650	20.93	21.83	42.76	54(Note3)	-11.24	PK
H	17475	21.32	21.67	42.99	54(Note3)	-11.01	PK

Test mode:		802.11ac(HT40)		Test channel:		Lowest	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11510	22.85	21.67	44.52	54(Note3)	-9.48	PK
V	17265	21.92	21.83	43.75	54(Note3)	-10.25	PK
H	11510	21.42	21.67	43.09	54(Note3)	-10.91	PK
H	17265	22.56	21.83	44.39	54(Note3)	-9.61	PK

Test mode:		802.11ac(HT40)		Test channel:		Highest	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11590	22.14	21.67	43.81	54(Note3)	-10.19	PK
V	17385	21.99	21.83	43.82	54(Note3)	-10.18	PK
H	11590	22.62	21.67	44.29	54(Note3)	-9.71	PK
H	17385	22.48	21.83	44.31	54(Note3)	-9.69	PK

Test mode:		802.11ac(HT80)		Test channel:		Middle	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11550	21.03	21.65	42.68	54(Note3)	-11.32	PK
V	17325	20.90	21.81	42.71	54(Note3)	-11.29	PK
H	11550	21.26	21.65	42.91	54(Note3)	-11.09	PK
H	17325	22.39	21.81	44.20	54(Note3)	-9.80	PK

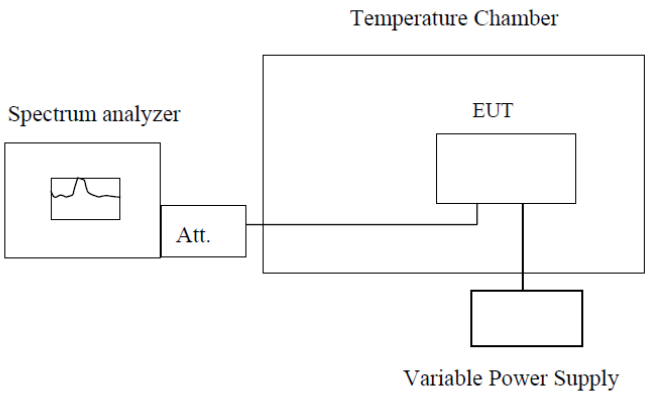
Notes:

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:	 **Note :** Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement data:

802.11a					
Frequency stability versus Temp.					
Power Supply: DC 7.6V					
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	5743.3602	5743.7291	5743.8836	5743.4765
	5785	5783.9519	5784.4800	5784.9822	5783.1829
	5825	5823.0404	5824.3863	5823.9061	5823.5111
-20	5745	5744.7392	5744.3593	5744.1631	5744.9563
	5785	5784.2254	5783.2155	5784.9481	5784.9905
	5825	5824.4817	5823.7646	5824.0979	5824.2659
-10	5745	5743.8629	5743.9364	5744.2436	5744.3286
	5785	5784.1240	5783.1037	5784.2738	5784.2831
	5825	5823.7068	5824.4884	5824.1065	5824.1033
0	5745	5743.6770	5743.9365	5744.2027	5744.6726
	5785	5784.1253	5783.4615	5783.4217	5784.6063
	5825	5823.4753	5824.3149	5824.9376	5823.4992
10	5745	5744.0881	5743.2952	5743.1814	5744.9472
	5785	5783.9934	5784.4989	5784.1000	5784.6453
	5825	5824.6193	5824.9199	5824.3896	5824.2973
20	5745	5744.8074	5743.9514	5744.5276	5744.9337
	5785	5784.6259	5784.1385	5784.7205	5783.0457
	5825	5824.6701	5823.6551	5824.2749	5824.5963
30	5745	5744.1910	5744.0237	5744.1178	5744.0302
	5785	5784.6201	5784.7627	5783.8480	5783.4763
	5825	5823.9727	5823.3640	5824.8498	5824.2713
40	5745	5743.8191	5744.8450	5743.3314	5743.7490
	5785	5784.5766	5783.3311	5784.6731	5784.7385
	5825	5824.4811	5824.0327	5824.0490	5823.5338
50	5745	5744.9058	5743.4716	5744.4225	5744.0936
	5785	5784.5201	5784.5314	5784.7995	5784.9627
	5825	5823.0477	5824.3148	5824.4924	5824.6150

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)
6.9	5745	5744.6741	5744.0192	5743.8752	5743.1849
	5785	5783.5971	5784.3877	5783.6201	5784.8703
	5825	5824.2570	5824.6030	5823.2923	5823.5263
7.6	5745	5743.0620	5744.1160	5743.9548	5744.6540
	5785	5783.1667	5784.0056	5783.4703	5784.8279
	5825	5824.1610	5824.9538	5824.9053	5823.5778
8.7	5745	5744.5946	5743.5166	5743.9507	5744.6027
	5785	5783.5411	5783.9341	5783.3328	5783.2370
	5825	5824.8929	5824.1836	5823.5778	5825.8521

Note: The worst case is FL=5743.0620MHz, FH=5825.8521MHz

802.11n(HT20)					
Frequency stability versus Temp.					
Power Supply: DC 7.6V					
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	5745.7845	5744.8000	5743.2359	5746.9795
	5785	5785.9971	5784.2325	5784.6277	5785.3736
	5825	5825.0850	5824.9917	5824.6845	5825.9810
-20	5745	5745.6252	5744.7281	5744.9412	5745.7124
	5785	5785.9133	5784.8957	5784.3736	5785.7093
	5825	5825.5233	5824.3828	5824.8358	5825.8370
-10	5745	5745.6747	5744.3481	5744.0915	5745.6636
	5785	5785.2398	5784.4860	5784.2748	5785.1294
	5825	5825.6440	5824.7681	5824.1200	5825.0710
0	5745	5745.5618	5744.2162	5744.1238	5745.8244
	5785	5785.2646	5784.1543	5784.4042	5785.7442
	5825	5825.6831	5824.4840	5824.9592	5825.5529
10	5745	5745.5434	5744.4526	5744.9637	5745.0625
	5785	5785.1008	5784.4358	5784.3502	5785.5925
	5825	5825.0711	5824.7945	5824.0378	5825.1242
20	5745	5745.3390	5744.3144	5744.3389	5745.0320
	5785	5785.7270	5784.2336	5784.7161	5785.3232
	5825	5825.1290	5824.2064	5824.4550	5825.5561
30	5745	5745.5419	5744.7252	5744.4490	5745.8229
	5785	5785.5039	5784.5174	5784.3879	5785.1821
	5825	5825.8203	5824.5977	5824.8211	5825.0732
40	5745	5745.8650	5744.5172	5744.4366	5745.6066
	5785	5785.9597	5784.0047	5784.4858	5785.7576
	5825	5825.8586	5824.9696	5824.2811	5825.0499
50	5745	5745.1137	5744.4936	5744.8230	5745.2656
	5785	5785.5529	5784.2142	5784.9555	5785.5549
	5825	5825.3386	5824.7526	5824.2925	5825.8094

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)
6.9	5745	5746.7021	5745.6973	5744.5670	5743.1335
	5785	5785.1472	5785.8414	5784.0113	5784.4019
	5825	5825.3834	5825.7105	5824.3576	5824.6881
7.6	5745	5745.2704	5745.7608	5744.8943	5744.8838
	5785	5785.4295	5785.2942	5784.6774	5784.9372
	5825	5825.7640	5825.3646	5824.9957	5824.2456
8.7	5745	5745.1167	5745.8985	5744.4692	5744.6493
	5785	5785.8865	5785.1060	5784.1852	5784.8507
	5825	5825.9593	5825.6939	5824.1021	5824.7351

Note: The worst case is FL=5743.1335MHz, FH=5825.9593MHz

802.11ac(HT20)					
Frequency stability versus Temp.					
Power Supply: DC 7.6V					
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	5744.8470	5744.3935	5744.7962	5744.9932
	5785	5784.0946	5784.7392	5784.3178	5784.6261
	5825	5824.0333	5824.0421	5824.0777	5824.0402
-20	5745	5744.9418	5744.8634	5744.1482	5744.6953
	5785	5784.3299	5784.5280	5784.0802	5784.4349
	5825	5824.9140	5824.8862	5824.7538	5824.5723
-10	5745	5744.9882	5744.4378	5744.1554	5744.3667
	5785	5784.4067	5784.0967	5784.2143	5784.6158
	5825	5824.5551	5824.3218	5824.3190	5824.9894
0	5745	5744.0187	5744.6872	5744.9619	5744.8466
	5785	5784.5382	5784.9154	5784.5587	5784.7706
	5825	5824.6866	5824.0546	5824.8634	5824.5236
10	5745	5744.0102	5744.0430	5744.5930	5744.9784
	5785	5784.1718	5784.9057	5784.7707	5784.6615
	5825	5824.1062	5824.9036	5824.3551	5824.9862
20	5745	5744.5654	5744.7487	5744.3750	5744.4420
	5785	5784.4450	5784.1022	5784.4419	5784.9403
	5825	5824.0889	5824.4663	5824.9494	5824.8074
30	5745	5744.0920	5744.0710	5744.6915	5744.8889
	5785	5784.9805	5784.0402	5784.8948	5784.4465
	5825	5824.2572	5824.0923	5824.6404	5824.7067
40	5745	5744.5627	5744.5151	5744.3391	5744.3863
	5785	5784.8046	5784.6906	5784.2275	5784.6406
	5825	5824.8894	5824.2015	5824.2504	5824.4358
50	5745	5744.4694	5744.0369	5744.5526	5744.3110
	5785	5784.7905	5784.0698	5784.9286	5784.3305
	5825	5824.1994	5824.0882	5824.3158	5824.2507

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)
6.9	5745	5743.1120	5744.5804	5745.2944	5746.9272
	5785	5784.6853	5784.1990	5785.7239	5785.9764
	5825	5824.1447	5824.0319	5825.0378	5825.6594
7.6	5745	5744.4726	5744.3086	5745.1217	5745.3084
	5785	5784.4330	5784.7676	5785.4918	5785.3448
	5825	5824.9948	5824.2279	5825.2681	5825.4999
8.7	5745	5744.3126	5744.9177	5745.7289	5745.7664
	5785	5784.9964	5784.6402	5785.1728	5785.1674
	5825	5824.1343	5825.9729	5825.5436	5825.2345

Note: The worst case is FL=5743.1120MHz, FH=5825.9729MHz

802.11n(HT40)					
Frequency stability versus Temp.					
Power Supply: DC 7.6V					
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	5755.4544	5753.1320	5754.6749	5755.5151
	5795	5795.8617	5793.5675	5794.4775	5795.2970
-20	5755	5755.4579	5754.1926	5754.9046	5755.6198
	5795	5795.6564	5794.1856	5794.5743	5795.0345
-10	5755	5755.7337	5754.9551	5754.6544	5755.5944
	5795	5795.4049	5794.3554	5794.4715	5795.1973
0	5755	5755.7410	5754.9158	5754.3525	5755.9628
	5795	5795.8110	5794.8505	5794.6679	5795.8666
10	5755	5755.4574	5754.5983	5754.2410	5755.3570
	5795	5795.2026	5794.1064	5794.2704	5795.7469
20	5755	5755.7519	5754.5854	5754.6412	5755.6614
	5795	5795.9482	5794.5277	5794.3738	5795.9518
30	5755	5755.6768	5754.5925	5754.0488	5755.2619
	5795	5795.4759	5794.4720	5794.8310	5795.7611
40	5755	5755.1863	5754.6132	5754.1981	5755.7024
	5795	5795.7150	5794.7849	5794.6426	5795.6003
50	5755	5755.0252	5754.9680	5754.3110	5755.6276
	5795	5795.0149	5794.3488	5794.3535	5795.0044

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)
6.9	5755	5755.7612	5753.0786	5755.6234	5754.5331
	5795	5795.8366	5793.2919	5795.0715	5794.6895
7.6	5755	5755.9643	5754.9884	5755.7192	5754.8212
	5795	5795.6075	5794.7853	5795.5181	5794.6547
8.7	5755	5755.0360	5754.1583	5755.7208	5754.3114
	5795	5795.9859	5794.0747	5795.8072	5794.9821

Note: The worst case is FL=5753.0786MHz, FH=5795.9859MHz

802.11ac(HT40)					
Frequency stability versus Temp.					
Power Supply: DC 7.6V					
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	5756.1848	5753.8632	5756.4413	5753.9015
	5795	5796.5473	5793.1306	5796.0560	5794.9284
-20	5755	5756.6190	5754.1379	5756.2390	5754.7017
	5795	5796.5382	5794.3540	5796.1918	5794.4622
-10	5755	5755.8996	5754.1796	5756.1301	5754.6958
	5795	5795.4740	5794.0920	5795.4507	5794.5479
0	5755	5755.0217	5754.8007	5755.9989	5754.6040
	5795	5795.8946	5794.4728	5795.5334	5794.1360
10	5755	5755.5406	5754.1435	5755.2118	5754.5088
	5795	5795.3782	5794.9936	5795.7693	5794.6941
20	5755	5755.8699	5754.2241	5755.6146	5754.7937
	5795	5795.1245	5794.1111	5795.6234	5794.7122
30	5755	5755.8461	5754.0913	5755.7654	5754.0366
	5795	5795.3093	5794.5566	5795.8208	5794.9857
40	5755	5755.7460	5754.0689	5755.0122	5754.2095
	5795	5795.0712	5794.0513	5795.3096	5794.5768
50	5755	5755.7483	5754.9593	5755.3856	5754.6654
	5795	5795.6584	5794.1838	5795.5362	5794.0003

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)
6.9	5755	5756.0083	5753.1042	5756.3658	5754.8614
	5795	5796.4033	5793.0957	5796.6631	5794.6296
7.6	5755	5756.2411	5753.5755	5755.9591	5754.2799
	5795	5795.0121	5793.4896	5795.3514	5794.8596
8.7	5755	5755.2167	5754.1591	5755.8091	5754.2573
	5795	5795.8028	5794.4984	5796.7317	5794.2929

Note: The worst case is FL=5753.1042MHz, FH=5796.7317MHz

802.11ac(HT80)					
Frequency stability versus Temp.					
Power Supply: DC 7.6V					
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	5775.8707	5775.8660	5774.8923	5774.6426
-20	5775	5775.6005	5775.0217	5774.7034	5774.4570
-10	5775	5775.7697	5775.6796	5774.6234	5774.3968
0	5775	5775.4504	5775.7558	5774.2371	5774.9069
10	5775	5775.1117	5775.9706	5774.4719	5774.4605
20	5775	5775.8133	5775.5685	5774.3704	5774.3767
30	5775	5775.3520	5775.5641	5774.9559	5774.6300
40	5775	5775.2976	5775.2914	5774.3466	5774.4777
50	5775	5775.0500	5775.2165	5774.9905	5774.3966

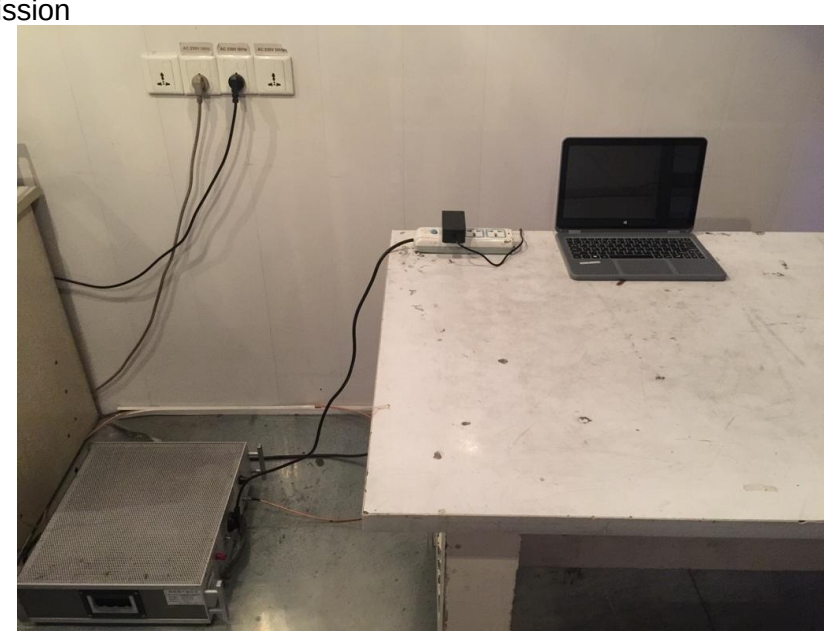
Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (Vdc)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
6.9	5775	5774.4300	5776.6882	5775.5620	5775.4041
7.6	5775	5774.6544	5776.3438	5776.5893	5775.4110
8.7	5775	5773.1083	5776.8215	5776.3815	5776.7198

Note: The worst case is FL=5773.1083MHz, FH=5776.8215MHz

8 Test Setup Photo

Radiated Emission

Conducted Emission



9 EUT Constructional Details

Reference to the test report No. GTS201808000042F01

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