FCC REPORT

Applicant:	Shenzhen Arashi Vision Company Limited
Address of Applicant:	6/F, Building A, Logan Century Center Haixiu Road, Bao an District, Shenzhen, Guangdong 518000, China
Manufacturer/Factory:	Shenzhen Arashi Vision Company Limited
Address of Manufacturer/Factory:	6/F, Building A, Logan Century Center Haixiu Road, Bao an District, Shenzhen, Guangdong 518000, China

Equipment Under Test (EUT)

Product Name:	Insta360 EVO
Model No.:	CINEVOX/A, CINEVOX
Trade Mark:	Insta360
FCC ID:	2AFSH-CINEVOX-A
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of sample receipt:	February 20, 2019
Date of Test:	February 20, 2019-March 05, 2019
Date of report issued:	March 06, 2019
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	*March 06, 2019*	*Original*

Prepared By:	Bill. Yuan ***Project Engineer***	***Date:***	*March 06, 2019*
Check By:	Robinson Lo ***Reviewer***	***Date:***	*March 06, 2019*

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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:	Insta360 EVO
Model No.:	CINEVOX/A, CINEVOX
Test Model No:	CINEVOX/A
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is model name for commercial purpose.	
Serial No.:	IEK5218NWJHEEB
Test sample(s) ID:	GTS201902000047-1
Sample(s) Status:	Engineer sample
Hardware version:	V1.2.1.1
Software version:	V1.0.0
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:	Integral Antenna
Antenna gain:	0dBi(declare by applicant)
Power supply:	DC 3.8V

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.

● **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.

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

● **CNAS (No. CNAS L5775)**

CNAS has accredited Global United Technology Services Co., Ltd., to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

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

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
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 20 2018	Oct. 19 2019
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 20 2018	Oct. 19 2019
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 20 2018	Oct. 19 2019
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 27 2018	June. 26 2019

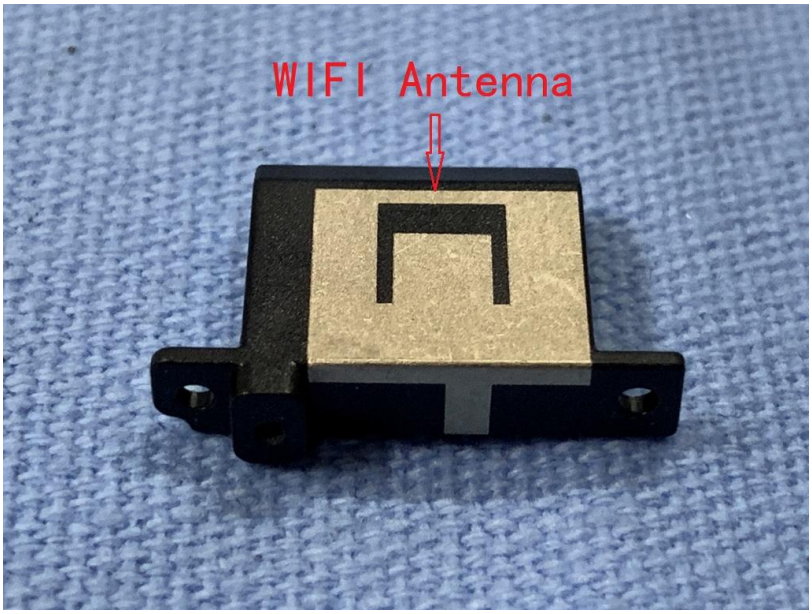
Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
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

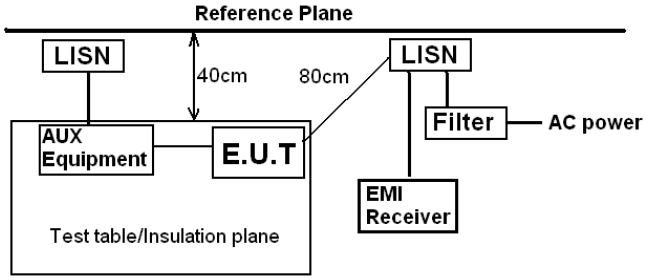
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 27 2018	June. 26 2019
2	Barometer	ChangChun	DYM3	GTS255	June. 27 2018	June. 26 2019

7 Test results and Measurement Data

7.1 Antenna requirement

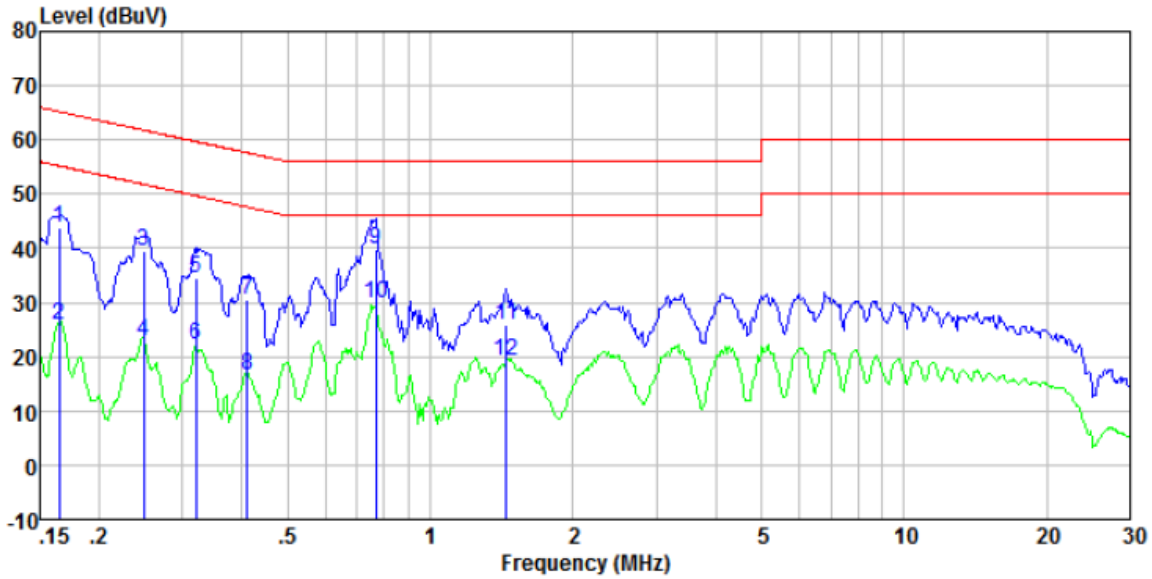
Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: *An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling 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 antenna is integral antenna. The best case gain of the antenna is 0.00dBi. 	

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

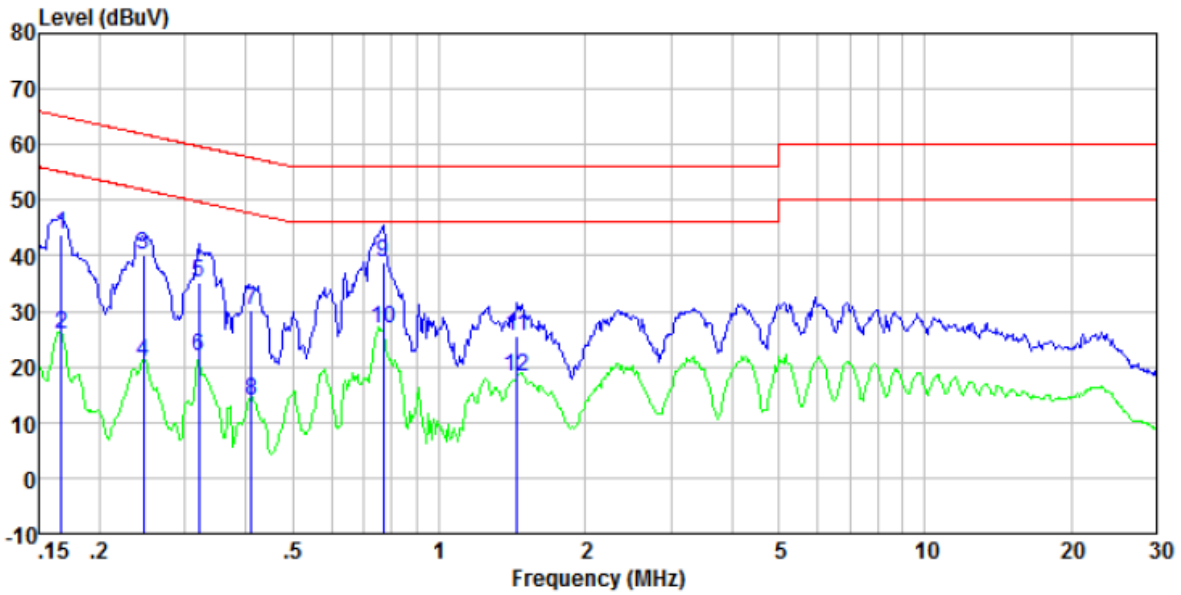
Measurement data

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
0.17	43.28	0.40	0.08	43.76	65.21	-21.45	QP
0.17	25.46	0.40	0.08	25.94	55.21	-29.27	Average
0.25	38.93	0.40	0.10	39.43	61.82	-22.39	QP
0.25	22.47	0.40	0.10	22.97	51.82	-28.85	Average
0.32	34.15	0.39	0.10	34.64	59.71	-25.07	QP
0.32	21.84	0.39	0.10	22.33	49.71	-27.38	Average
0.41	29.91	0.35	0.11	30.37	57.64	-27.27	QP
0.41	16.10	0.35	0.11	16.56	47.64	-31.08	Average
0.77	39.32	0.24	0.13	39.69	56.00	-16.31	QP
0.77	29.41	0.24	0.13	29.78	46.00	-16.22	Average
1.45	25.62	0.20	0.16	25.98	56.00	-30.02	QP
1.45	18.80	0.20	0.16	19.16	46.00	-26.84	Average

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

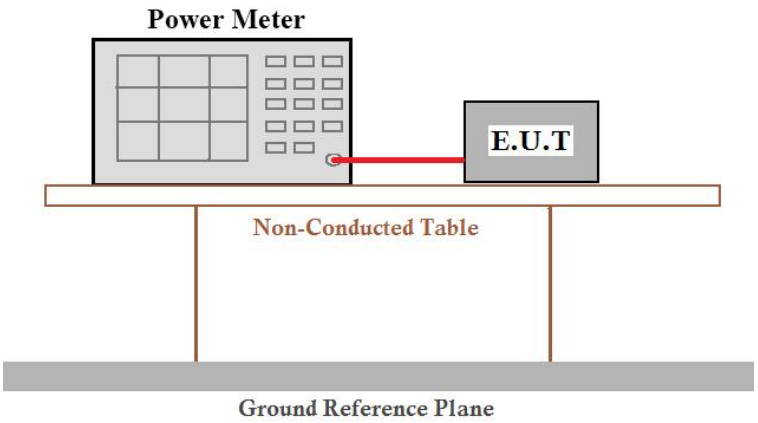


Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.17	43.31	0.40	0.08	43.79	65.12	-21.33	QP
0.17	25.26	0.40	0.08	25.74	55.12	-29.38	Average
0.25	39.72	0.40	0.10	40.22	61.86	-21.64	QP
0.25	20.49	0.40	0.10	20.99	51.86	-30.87	Average
0.32	34.59	0.39	0.10	35.08	59.71	-24.63	QP
0.32	21.46	0.39	0.10	21.95	49.71	-27.76	Average
0.41	29.63	0.35	0.11	30.09	57.64	-27.55	QP
0.41	13.60	0.35	0.11	14.06	47.64	-33.58	Average
0.77	38.54	0.24	0.13	38.91	56.00	-17.09	QP
0.77	26.37	0.24	0.13	26.74	46.00	-19.26	Average
1.45	25.10	0.20	0.16	25.46	56.00	-30.54	QP
1.45	18.01	0.20	0.16	18.37	46.00	-27.63	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

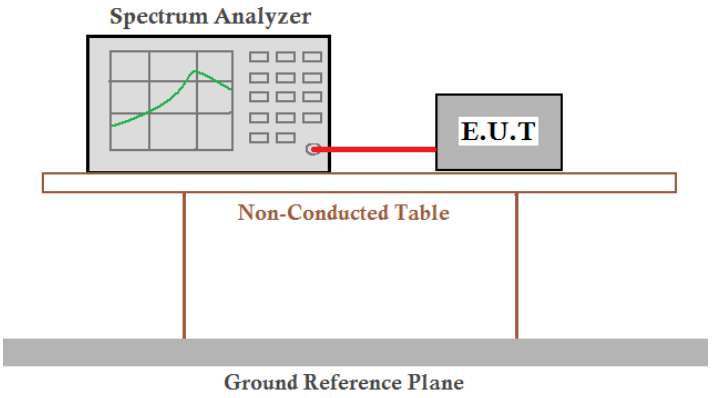
Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

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	4.83	7.88	7.06	6.78	7.05	---	30.00	Pass
Middle	6.18	9.29	8.25	---	---	1.27		
Highest	10.75	10.09	10.03	8.56	8.37	---		

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

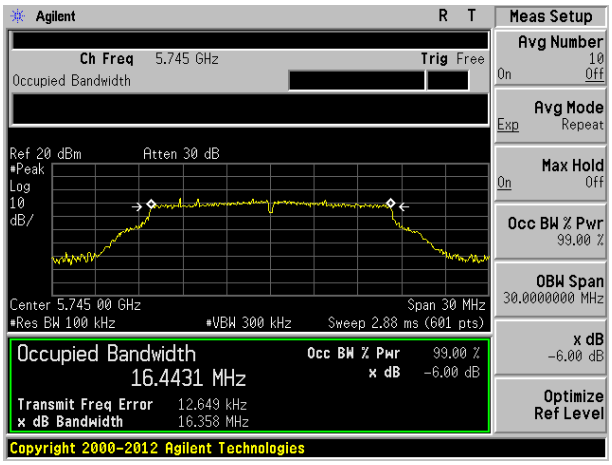
Measurement Data

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	16.358	17.347	17.307	33.853	35.161	---	>500	Pass
Middle	16.319	17.306	16.964	---	---	75.287		
Highest	16.322	17.307	17.510	35.128	15.099	---		

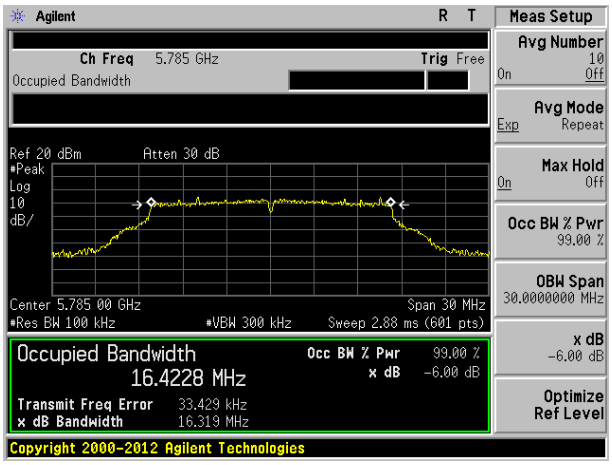
Remark: “---“ is not applicable

Test plot as follows:

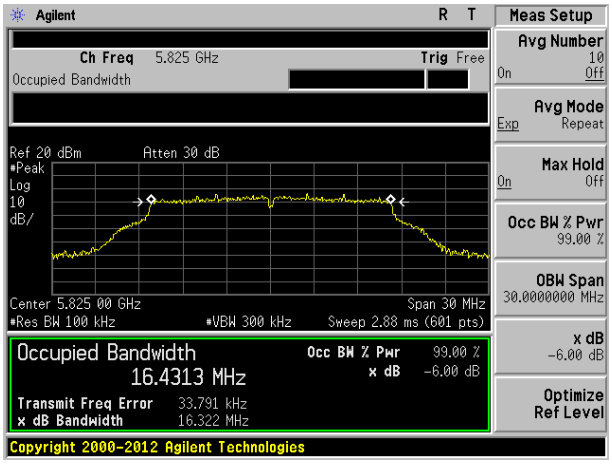
Test mode: 802.11a



Lowest channel

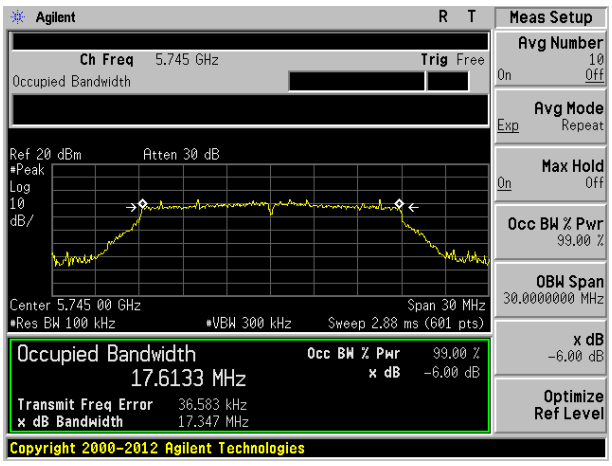


Middle channel

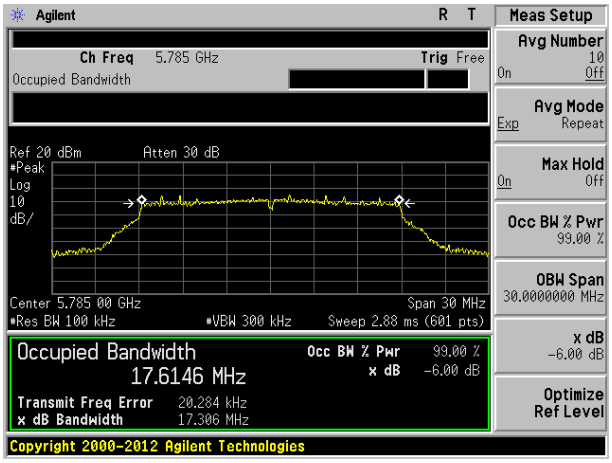


Highest channel

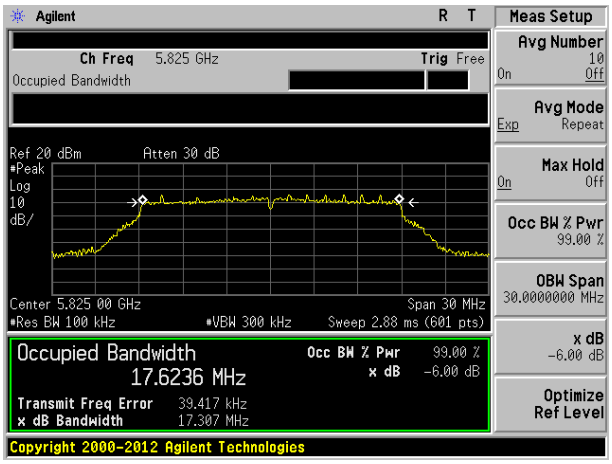
Test mode: 802.11n(HT20) @ 5.8G Band



Lowest channel

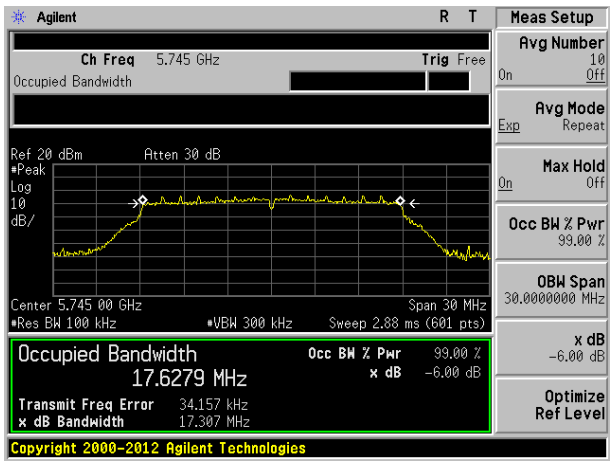


Middle channel

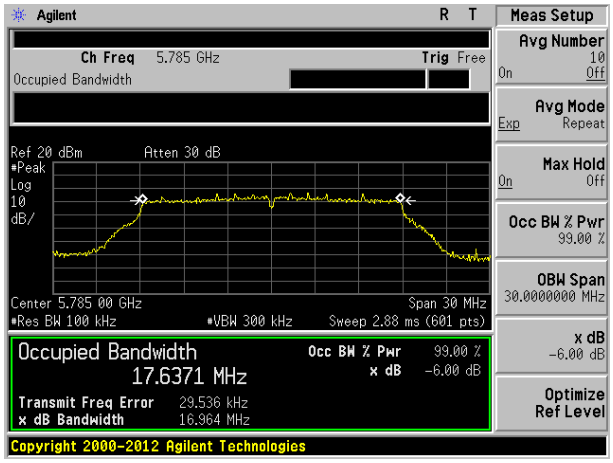


Highest channel

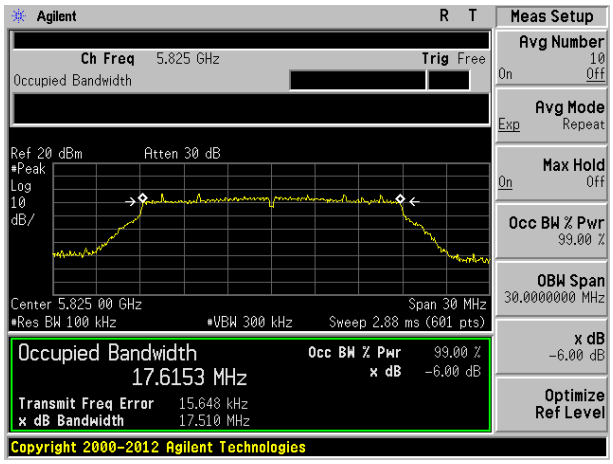
Test mode: 802.11ac(HT20) @ 5.8G Band



Lowest channel

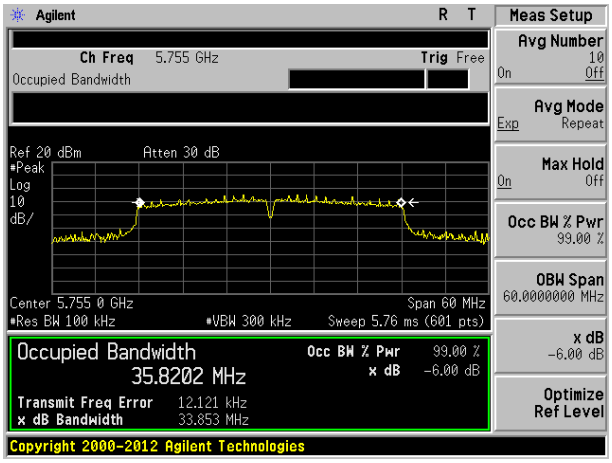


Middle channel

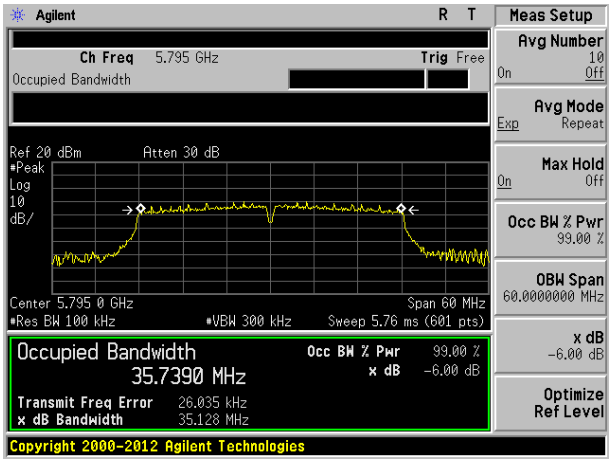


Highest channel

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

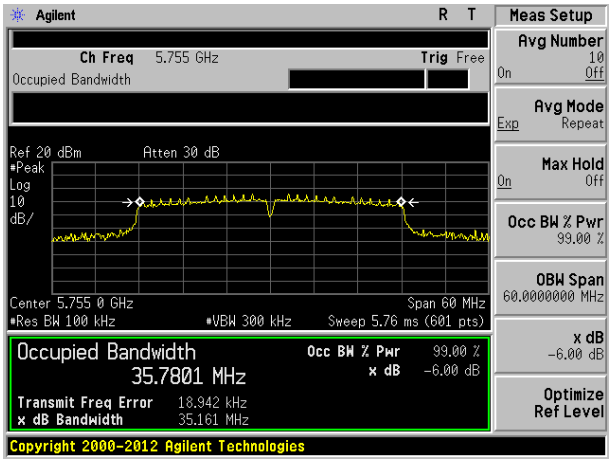


Lowest channel

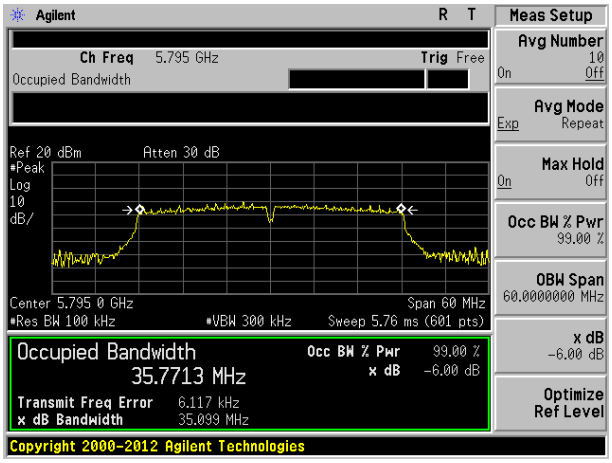


Highest channel

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

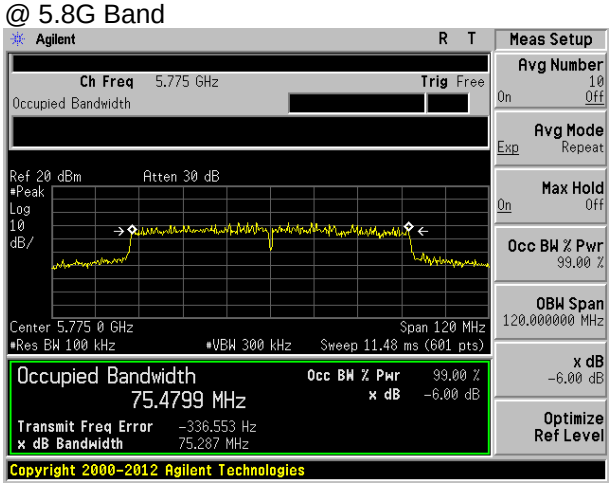


Lowest channel

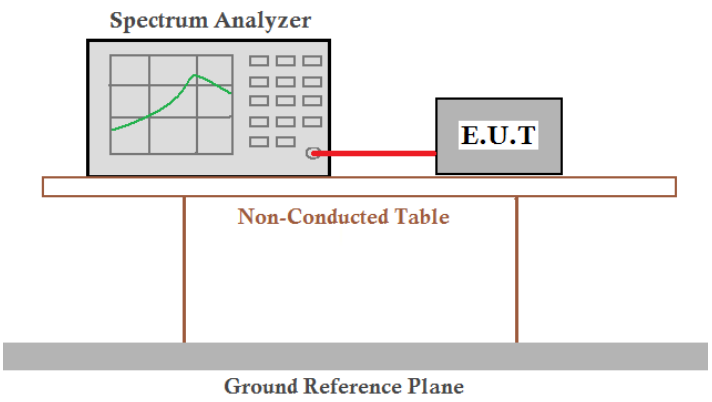


Highest channel

Test mode: 802.11ac(HT80) @ 5.8G Band



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

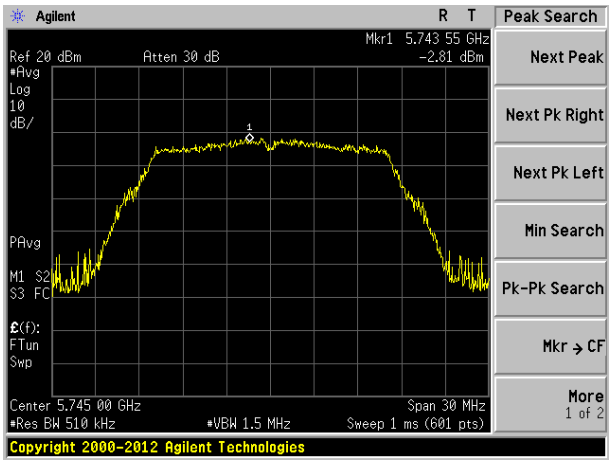
Measurement Data

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	-2.81	-2.15	-1.13	-5.50	-6.21	---	30.00	Pass
Middle	-0.23	-1.00	-0.38	---	---	-14.02		
Highest	1.10	0.88	1.07	-3.29	-3.94	---		

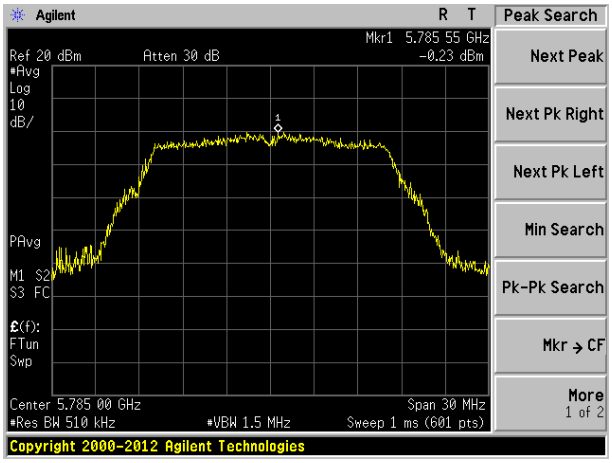
Remark: “---“ is not applicable

Test plot as follows:

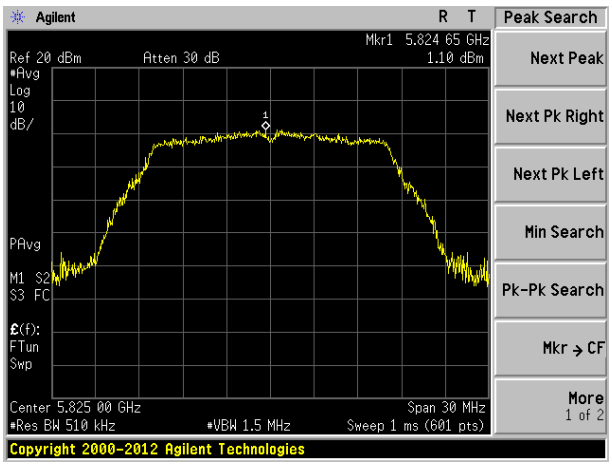
Test mode: 802.11a



Lowest channel

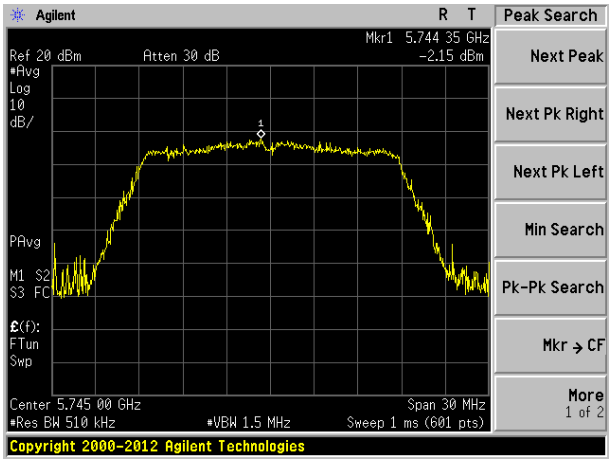


Middle channel

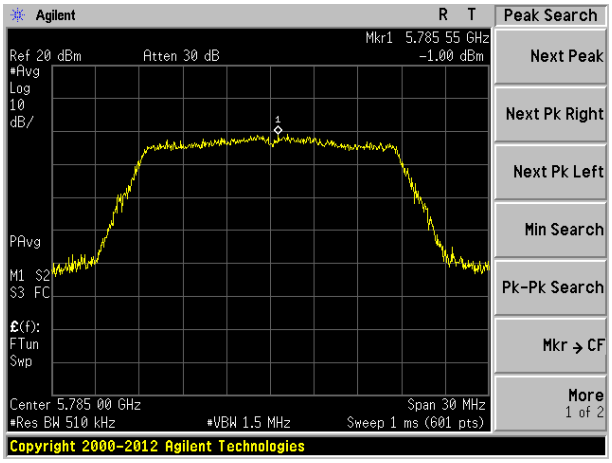


Highest channel

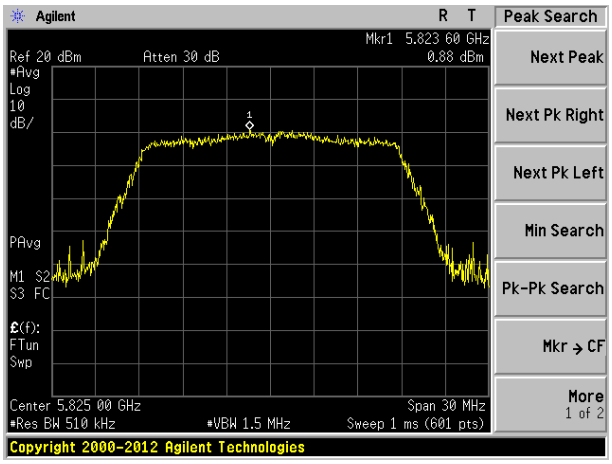
Test mode: 802.11n(HT20) @ 5.8G Band



Lowest channel

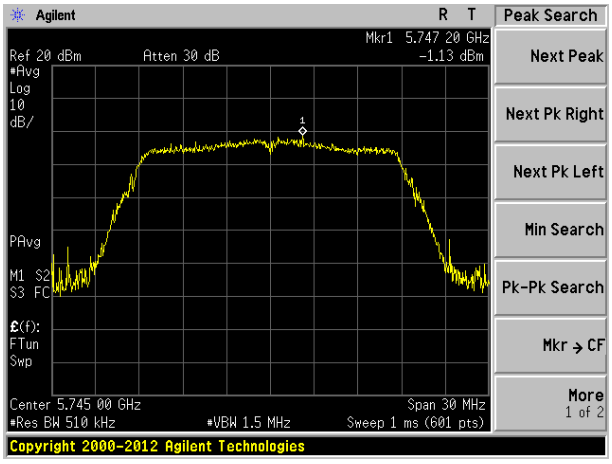


Middle channel

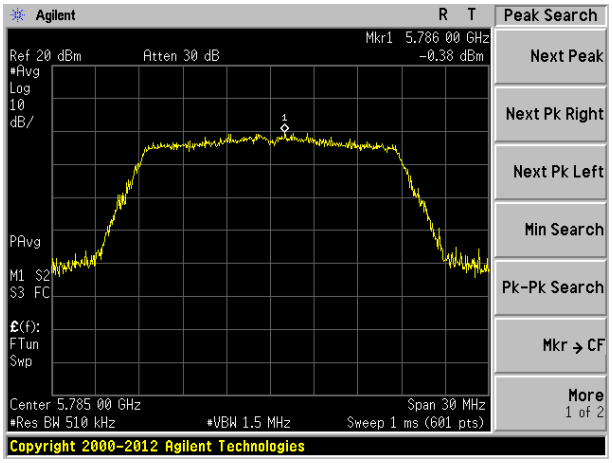


Highest channel

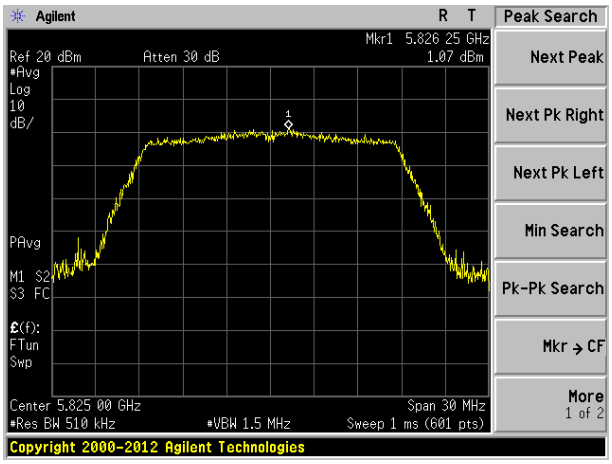
Test mode: 802.11ac(HT20)



Lowest channel

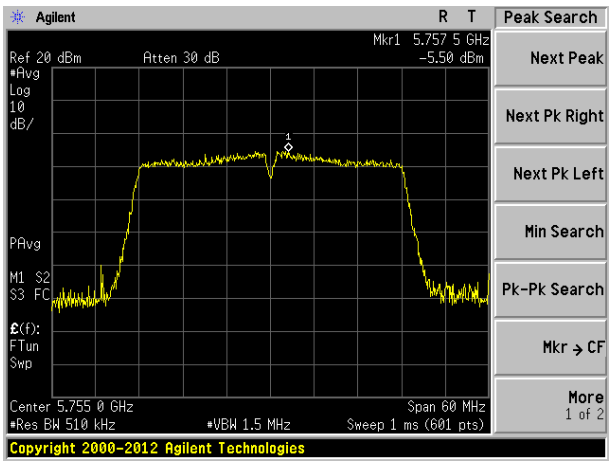


Middle channel

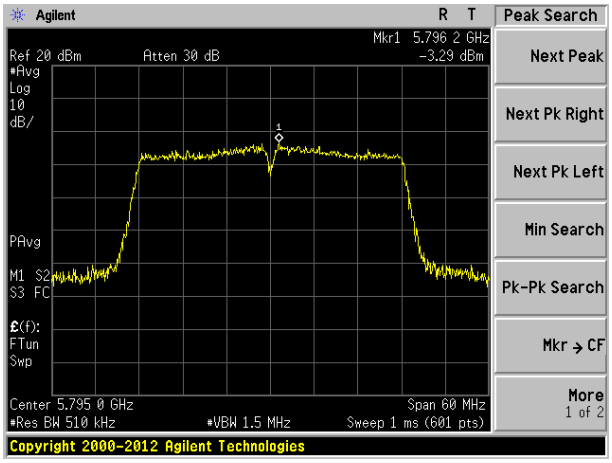


Highest channel

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

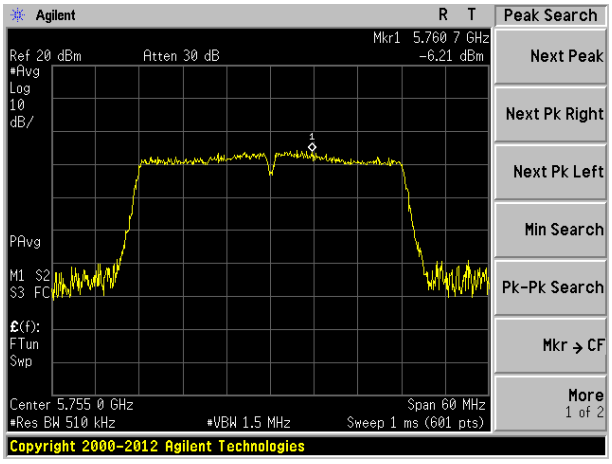


Lowest channel

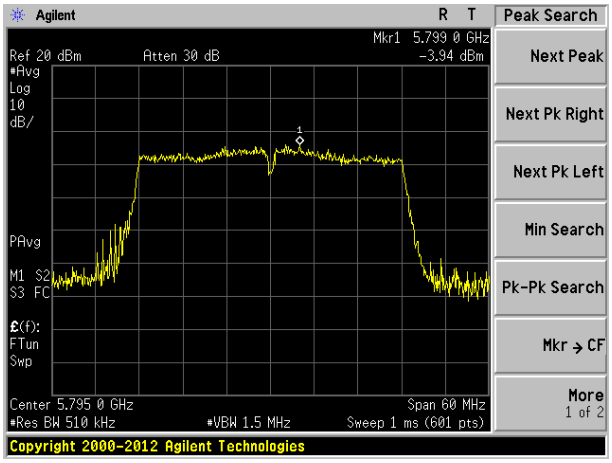


Highest channel

Test mode: 802.11ac(HT40)

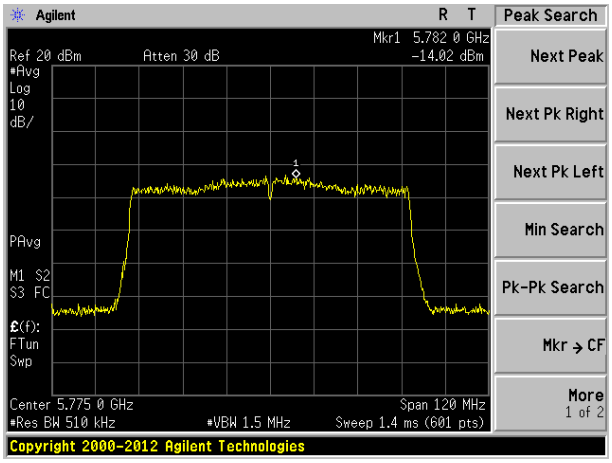


Lowest channel



Highest channel

Test mode: 802.11ac(HT80)



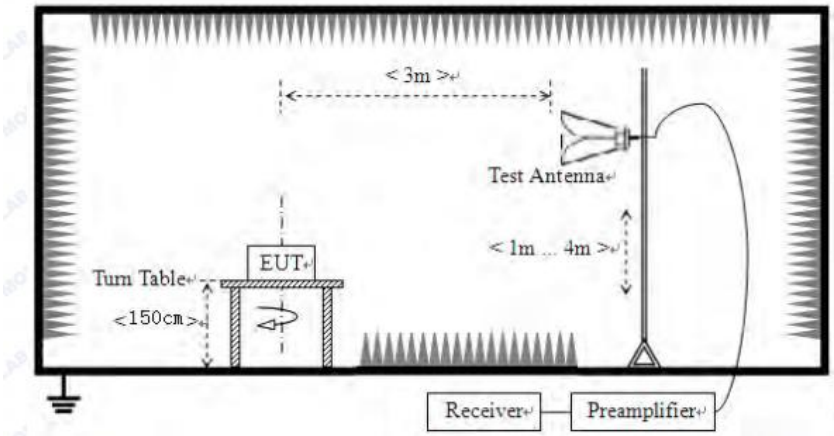
Middle channel

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:	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

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.*
3. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
4. *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:

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

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

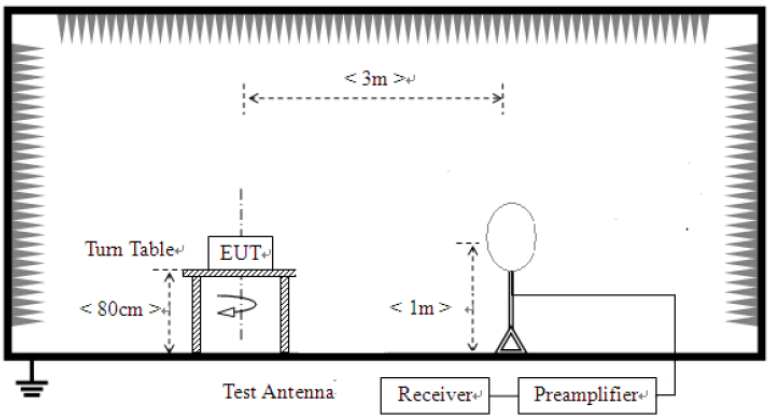
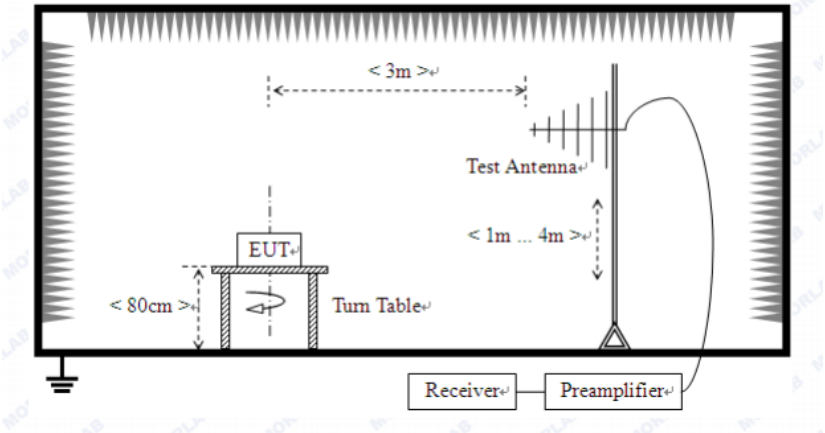
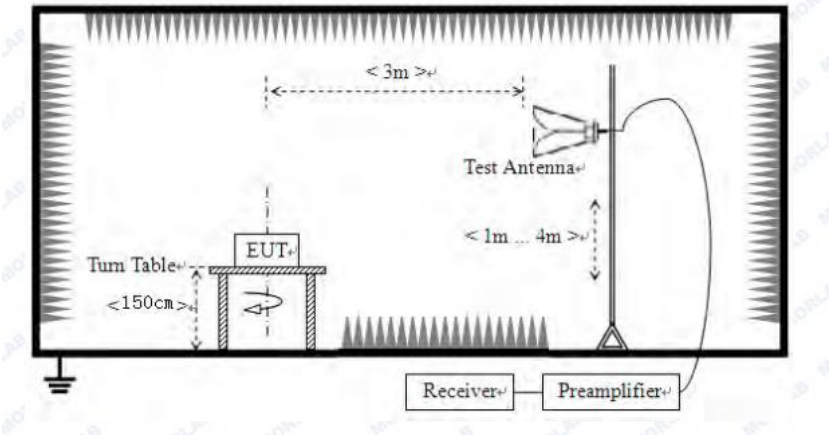
Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 40GHz
Test site:	Measurement Distance: 3m
Receiver setup:	

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 results:	Pass

Measurement Data:

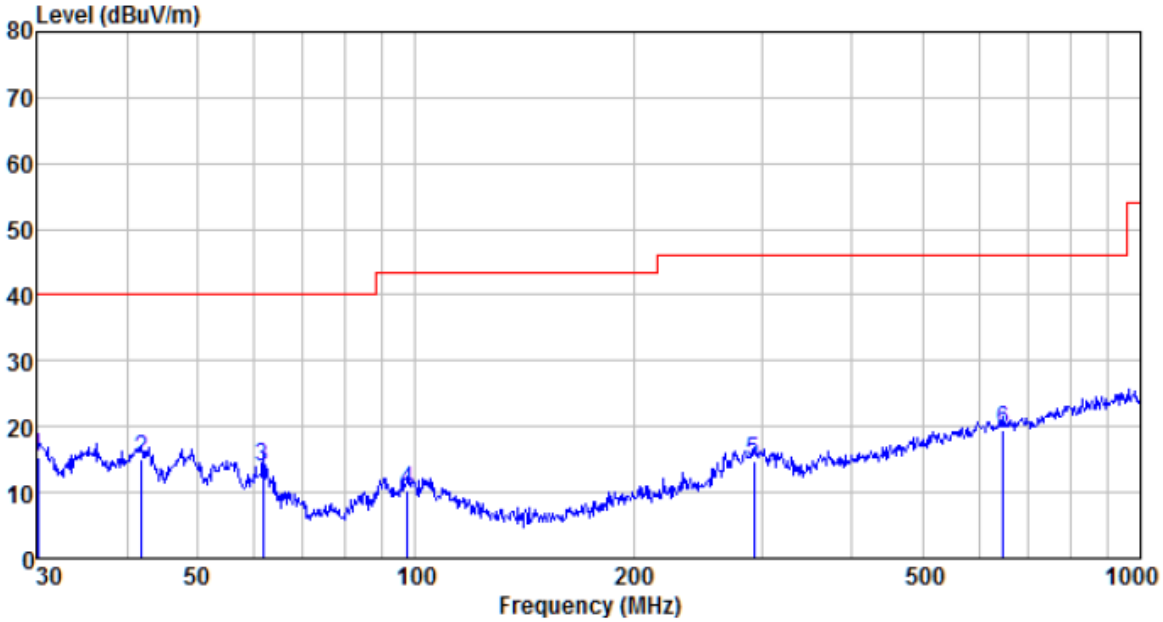
9 kHz ~ 30 MHz

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

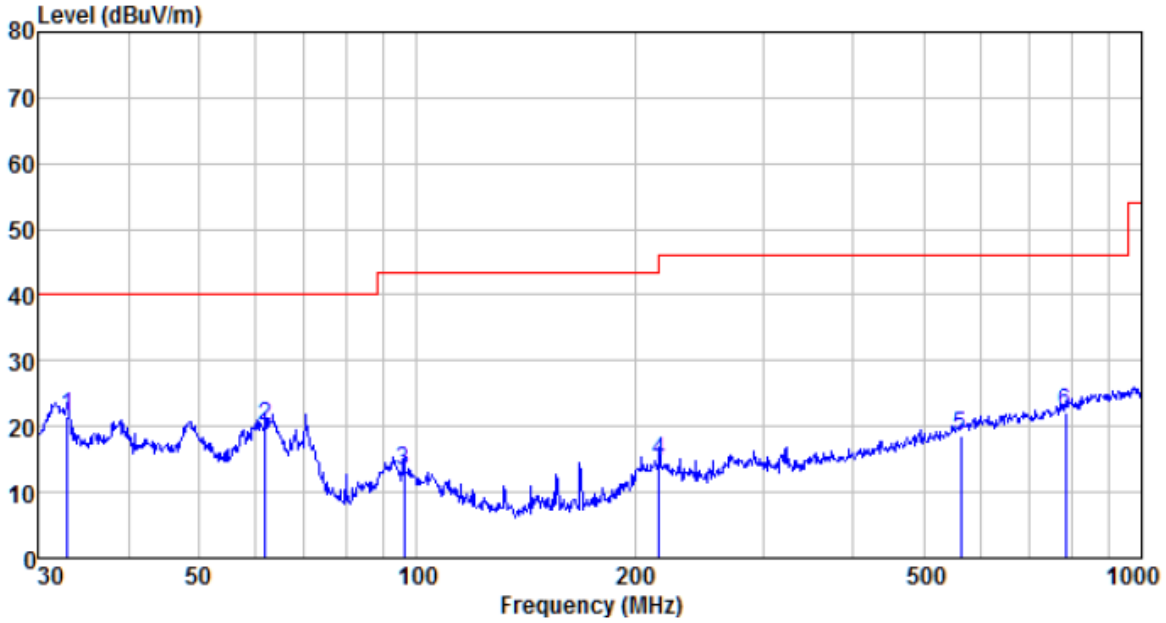
Only the data of worst case at each channel plan (nominal bandwidth =20MHz, 40MHz, 80MHz) is reported.

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
30.105	38.76	11.20	0.55	35.01	15.50	40.00	-24.50	QP
41.860	38.05	12.22	0.68	35.77	15.18	40.00	-24.82	QP
61.562	38.74	10.72	0.87	36.34	13.99	40.00	-26.01	QP
97.456	34.05	11.86	1.17	36.70	10.38	43.50	-33.12	QP
293.084	36.48	13.42	2.32	37.41	14.81	46.00	-31.19	QP
647.386	33.67	19.55	3.91	37.58	19.55	46.00	-26.45	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
32.979	44.93	11.26	0.59	35.22	21.56	40.00	-18.44	QP
61.778	44.96	10.61	0.87	36.34	20.10	40.00	-19.90	QP
96.099	37.16	11.65	1.16	36.69	13.28	43.50	-30.22	QP
216.024	39.11	11.02	1.93	37.35	14.71	46.00	-31.29	QP
562.662	33.73	18.73	3.57	37.53	18.50	46.00	-27.50	QP
785.093	34.09	21.15	4.40	37.62	22.02	46.00	-23.98	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

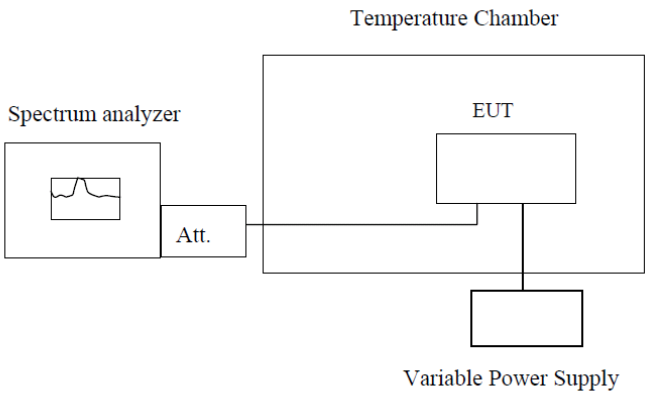
Note:

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:	 **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 3.8V					
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	5743.1351	5743.4458	5744.8182	5744.6658
	5785	5783.9461	5784.3406	5784.7227	5784.1895
	5825	5823.5773	5823.8415	5823.4400	5823.9369
-20	5745	5743.9893	5743.1756	5744.9849	5744.5324
	5785	5783.4208	5784.6577	5784.9692	5784.0032
	5825	5824.5077	5824.2601	5824.1110	5824.3678
-10	5745	5744.9504	5744.8693	5744.2660	5744.9632
	5785	5783.6778	5783.6373	5784.6172	5784.9220
	5825	5823.4262	5824.9808	5824.5613	5824.8912
0	5745	5743.4514	5743.5592	5744.6767	5744.6089
	5785	5783.6721	5784.2277	5783.7830	5783.5822
	5825	5824.9371	5824.9270	5824.8140	5823.5987
10	5745	5743.7748	5744.8594	5744.7097	5744.2268
	5785	5784.7315	5784.4503	5784.4841	5784.1082
	5825	5823.6524	5824.9068	5824.4531	5823.7650
20	5745	5744.5725	5744.9198	5744.6524	5744.0697
	5785	5784.4475	5783.4537	5784.2481	5784.9151
	5825	5823.7930	5824.4915	5824.9453	5824.7514
30	5745	5743.6029	5743.7779	5744.4965	5743.5260
	5785	5784.5188	5784.4687	5784.1451	5784.8680
	5825	5824.2652	5823.2457	5824.2130	5823.7368
40	5745	5744.0333	5743.5828	5744.7448	5744.1787
	5785	5783.2758	5783.2924	5784.8701	5783.7180
	5825	5824.5224	5824.7193	5824.4323	5824.1975
50	5745	5743.0544	5743.9136	5744.1395	5744.7188
	5785	5784.5608	5784.4079	5784.8935	5784.8616
	5825	5824.3472	5823.2153	5824.1354	5824.4498

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	5743.0260	5744.7187	5744.8327	5743.8101
	5785	5784.2269	5784.6762	5783.0639	5783.0186
	5825	5824.8566	5823.2447	5823.5507	5823.2585
3.8	5745	5744.4947	5744.6330	5744.8936	5744.1383
	5785	5784.0410	5783.0410	5784.3286	5784.3288
	5825	5823.9178	5824.7223	5823.4814	5823.8166
4.2	5745	5743.2194	5744.3603	5744.6453	5743.1604
	5785	5783.4189	5784.6332	5784.8568	5783.0887
	5825	5824.2619	5824.7863	5823.0739	5824.4406

Note: The worst case is FL=5743.0155MHz, FH=5824.9936MHz

802.11n(HT20)					
Frequency stability versus Temp.					
Power Supply: DC 3.8V					
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	5746.3159	5743.7548	5743.9279	5746.4045
	5785	5785.4698	5783.8406	5783.5010	5785.4584
	5825	5825.6069	5824.8259	5823.2934	5825.6383
-20	5745	5745.8564	5744.2576	5744.8916	5745.5739
	5785	5785.7730	5784.2033	5784.7938	5785.5820
	5825	5825.7686	5824.3978	5824.0400	5825.3840
-10	5745	5745.2924	5744.9428	5744.8473	5745.3713
	5785	5785.5512	5784.0853	5784.5690	5785.9150
	5825	5825.5224	5824.9844	5824.9882	5825.3923
0	5745	5745.2913	5744.5881	5744.9518	5745.1475
	5785	5785.2716	5784.8834	5784.5286	5785.8221
	5825	5825.3134	5824.6306	5824.9508	5825.0801
10	5745	5745.0721	5744.8804	5744.6455	5745.1396
	5785	5785.6958	5784.3425	5784.5412	5785.8237
	5825	5825.9599	5824.9949	5824.5612	5825.3311
20	5745	5745.5378	5744.3920	5744.9230	5745.5832
	5785	5785.2166	5784.5010	5784.2215	5785.9627
	5825	5825.7010	5824.1121	5824.4211	5825.2502
30	5745	5745.7632	5744.4227	5744.5475	5745.9759
	5785	5785.7342	5784.7337	5784.0155	5785.6968
	5825	5825.2262	5824.5394	5824.6397	5825.1105
40	5745	5745.8847	5744.1018	5744.2071	5745.3063
	5785	5785.3489	5784.5597	5784.6528	5785.3453
	5825	5825.8636	5824.2913	5824.9309	5825.7185
50	5745	5745.5949	5744.7417	5744.3293	5745.3710
	5785	5785.1983	5784.6470	5784.6279	5785.1963
	5825	5825.3736	5824.9487	5824.6394	5825.1711

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	5745.3472	5746.5346	5743.5894	5744.3609
	5785	5785.1319	5785.2936	5784.4671	5784.4873
	5825	5825.8688	5825.4732	5824.8029	5824.3931
3.8	5745	5745.2878	5745.8242	5744.3587	5744.2816
	5785	5785.0147	5785.6756	5784.6281	5784.1970
	5825	5825.8236	5825.4074	5824.7330	5824.1014
4.2	5745	5745.4707	5745.1306	5744.8644	5744.6470
	5785	5785.1895	5785.2233	5784.8996	5784.5138
	5825	5825.9660	5825.2318	5824.5031	5824.9976

Note: The worst case is FL=5743.1134MHz, FH=5825.9527MHz

802.11ac(HT20)					
Frequency stability versus Temp.					
Power Supply: DC 3.8V					
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	5744.2433	5744.7101	5743.5879	5743.6827
	5785	5784.9979	5784.8447	5783.7954	5784.3168
	5825	5824.8267	5824.7818	5823.3274	5824.4433
-20	5745	5744.7269	5744.6501	5743.4377	5744.9963
	5785	5784.2657	5784.4938	5783.6350	5784.4689
	5825	5824.1018	5824.1984	5824.6841	5824.1219
-10	5745	5744.7431	5744.8784	5744.0760	5744.2515
	5785	5784.4300	5784.4503	5784.8978	5784.5856
	5825	5824.5428	5824.5471	5824.0695	5824.8092
0	5745	5744.8099	5744.8023	5744.3710	5744.4669
	5785	5784.5557	5784.4156	5784.7243	5784.5985
	5825	5824.6930	5824.5533	5824.8206	5824.7260
10	5745	5744.7467	5744.5989	5744.7478	5744.6296
	5785	5784.8430	5784.2596	5784.2962	5784.2987
	5825	5824.4020	5824.6732	5824.0376	5824.4137
20	5745	5744.3126	5744.6163	5744.6736	5744.4460
	5785	5784.7262	5784.4772	5784.4590	5784.1173
	5825	5824.0214	5824.3537	5824.2343	5824.0435
30	5745	5744.5375	5744.0452	5744.5606	5744.1579
	5785	5784.7826	5784.2301	5784.4820	5784.5865
	5825	5824.5097	5824.5168	5824.3384	5824.4828
40	5745	5744.3011	5744.3825	5744.8323	5744.6662
	5785	5784.9697	5784.4664	5784.3362	5784.9535
	5825	5824.6009	5824.5495	5824.1395	5824.1910
50	5745	5744.0708	5744.0937	5744.4052	5744.6815
	5785	5784.8946	5784.9249	5784.6451	5784.0485
	5825	5824.4618	5824.3889	5824.0083	5824.4345

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	5744.8333	5744.0235	5746.0883	5745.3205
	5785	5784.8044	5784.4196	5786.8311	5785.2028
	5825	5824.4819	5824.6936	5825.8695	5825.3741
3.8	5745	5744.2093	5744.7596	5745.4439	5745.8486
	5785	5784.8670	5784.2218	5785.0330	5785.4414
	5825	5824.6796	5824.6400	5825.8475	5825.9417
4.2	5745	5744.9272	5744.2921	5745.4287	5745.4350
	5785	5784.5190	5784.8237	5785.1992	5785.2632
	5825	5824.3326	5824.2897	5825.6066	5825.0174

Note: The worst case is FL=5743.1130MHz, FH=5825.9529MHz

802.11n(HT40)					
Frequency stability versus Temp.					
Power Supply: DC 3.8V					
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	5756.8280	5754.1436	5753.3394	5756.8557
	5795	5796.0855	5794.7404	5793.5909	5795.6941
-20	5755	5755.0856	5754.8175	5754.6403	5755.1194
	5795	5795.4019	5794.3924	5794.3107	5795.2794
-10	5755	5755.1981	5754.1109	5754.7119	5755.0734
	5795	5795.7294	5794.3183	5794.1378	5795.1463
0	5755	5755.6980	5754.0014	5754.3268	5755.2151
	5795	5795.5694	5794.1982	5794.6215	5795.1067
10	5755	5755.3459	5754.7399	5754.3626	5755.3252
	5795	5795.7721	5794.6371	5794.5795	5795.3791
20	5755	5755.8803	5754.0617	5754.9017	5755.8290
	5795	5795.6365	5794.2541	5794.0043	5795.7391
30	5755	5755.0586	5754.7537	5754.8532	5755.8293
	5795	5795.1424	5794.9841	5794.4473	5795.3827
40	5755	5755.0043	5754.4365	5754.8786	5755.4145
	5795	5795.8968	5794.9603	5794.1718	5795.0809
50	5755	5755.3156	5754.2361	5754.4757	5755.3039
	5795	5795.9154	5794.9523	5794.7579	5795.7146

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	5756.0361	5753.0441	5755.4550	5753.8002
	5795	5796.0650	5793.3100	5795.5213	5793.3210
3.8	5755	5755.5286	5754.2455	5755.4441	5754.6482
	5795	5795.3613	5794.9178	5795.8146	5794.5708
4.2	5755	5755.4871	5754.8312	5755.8609	5754.6894
	5795	5795.9445	5794.5750	5795.6825	5794.9066

Note: The worst case is FL=5753.1853MHz, FH=5795.9959MHz

802.11ac(HT40)					
Frequency stability versus Temp.					
Power Supply: DC 3.8V					
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	5756.6784	5753.5081	5755.4479	5753.5180
	5795	5796.0114	5794.5308	5795.8538	5794.7353
-20	5755	5756.4054	5754.7421	5755.4127	5754.2816
	5795	5795.0413	5794.6738	5795.7752	5794.2723
-10	5755	5755.1388	5754.4477	5755.2975	5754.3440
	5795	5795.6242	5794.0550	5795.0425	5794.4519
0	5755	5755.2346	5754.5901	5755.6818	5754.6645
	5795	5795.4704	5794.5394	5795.1090	5794.0408
10	5755	5755.5796	5754.6738	5755.2445	5754.8514
	5795	5795.1700	5794.0031	5795.5980	5794.2267
20	5755	5755.3308	5754.7270	5755.6195	5754.7558
	5795	5795.5942	5794.6258	5795.0413	5794.7405
30	5755	5755.7365	5754.3315	5755.3152	5754.5600
	5795	5795.3325	5794.0510	5795.4677	5794.1778
40	5755	5755.4045	5754.5048	5755.1115	5754.7457
	5795	5795.3346	5794.9443	5795.9092	5794.1369
50	5755	5755.6890	5754.6742	5755.7365	5754.9643
	5795	5795.7967	5794.1516	5795.7281	5794.3889

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	5755.1526	5754.9034	5755.9139	5753.9845
	5795	5795.2094	5794.1903	5795.5690	5794.9635
3.8	5755	5755.6499	5754.5413	5755.6698	5754.5579
	5795	5795.7190	5794.4660	5795.5978	5794.6112
4.2	5755	5755.7837	5754.4655	5755.7932	5754.2949
	5795	5795.7477	5794.5543	5795.6898	5794.5137

Note: The worst case is FL=5753.1594MHz, FH=5796.9347MHz

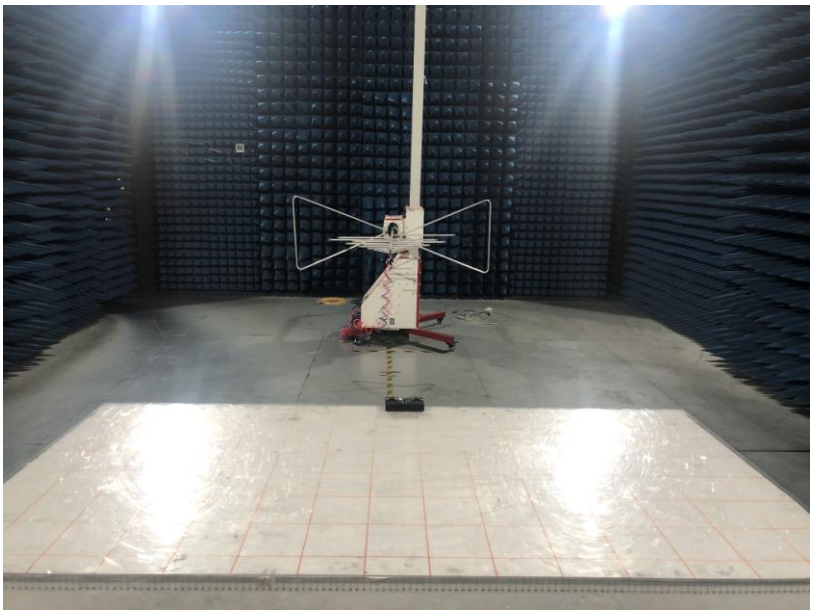
802.11ac(HT80)					
Frequency stability versus Temp.					
Power Supply: DC 3.8V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5775	5775.5151	5775.8568	5773.9975	5774.5495
-20	5775	5775.7313	5775.1601	5774.4569	5774.0231
-10	5775	5775.6396	5775.6128	5774.1914	5774.7039
0	5775	5775.5486	5775.6897	5774.6758	5774.7461
10	5775	5775.1110	5775.4457	5774.5452	5774.9732
20	5775	5775.6417	5775.1215	5774.1067	5774.4755
30	5775	5775.2268	5775.3891	5774.1800	5774.4336
40	5775	5775.1711	5775.0960	5774.9778	5774.7427
50	5775	5775.7057	5775.0368	5774.9905	5774.4273

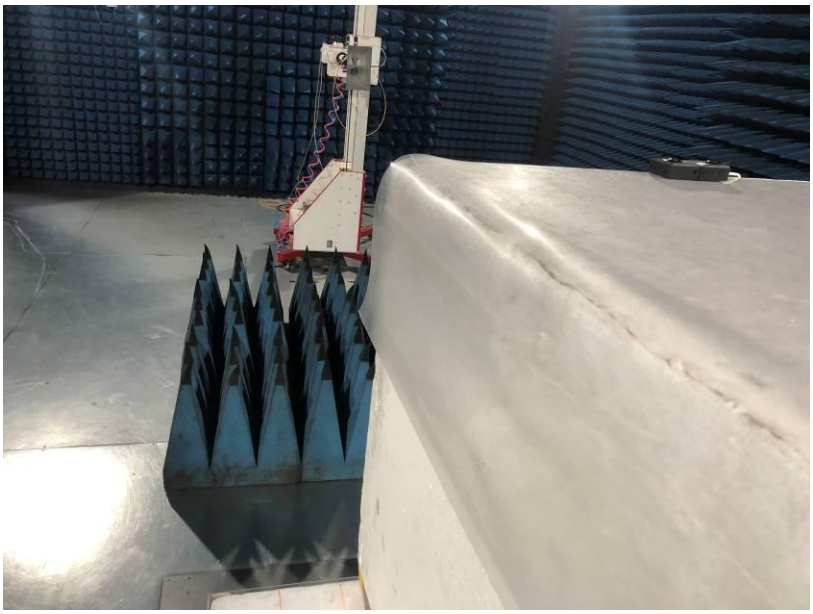
Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (Vdc)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
3.3	5775	5774.3965	5775.6137	5775.4455	5776.1979
3.8	5775	5773.5397	5776.7407	5775.8063	5775.3625
4.2	5775	5774.5042	5776.3264	5775.1704	5775.3261

Note: The worst case is FL=5773.00803MHz, FH=5776.7944MHz

8 Test Setup Photo

Radiated Emission





Conducted Emission

9 EUT Constructional Details

Reference to the test report No.: GTS201902000047F01

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