FCC REPORT

Applicant:	BESTOM TECHNOLOGY(HK) CO., LIMITED
Address of Applicant:	R718 BuildingB1, Huayuan S&TP, No.168 BY Road XiXiang Street, Shenzhen, China
Manufacturer:	GUANGZHOU JINGHUA PRECISION OPTICS CO.,LTD
Address of Manufacturer:	12 Kangda Rd.,Dongcheng Zone,Yunpu Industrial District, Huangpu,Guangzhou,China

Equipment Under Test (EUT)

Product Name:	Bestable
Model No.:	ET1020
FCC ID:	2ALBPET1020
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of sample receipt:	January 29, 2018
Date of Test:	January 30, 2018-March 08, 2018
Date of report issue:	March 09, 2018
Test Result :	PASS *

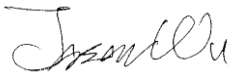
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

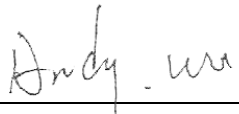
Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*March 09, 2018*	*Original*

Prepared By:  ***Date:*** *March 09, 2018*

Project Engineer

Check By:  ***Date:*** *March 09, 2018*

Reviewer

3 Contents

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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
Peak Transmit Power	15.407(a)(1)	PASS
Power Spectral Density	15.407(a)(1)	PASS
Undesirable Emission	15.407(b)(6), 15.205/15.209	PASS
Radiated Emission	15.205/15.209	PASS
Band Edge	15.205	PASS
Frequency Stability	15.407(f)	PASS

Remark:

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

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%.			
Remark: Test according to ANSI C63.10:2013 and ANSI C63.4:2014			

5 General Information

5.1 General Description of EUT

Product Name:	Bestable
Model No.:	ET1020
Test sample(s) ID:	GTS201801000240-1
Sample(s) Status:	Engineer sample
Operation Frequency:	802.11a/802.11n(HT20)/802.11ac(HT20): 5180MHz ~ 5240MHz; 802.11n(HT40)/ 802.11ac(HT40): 5190MHz ~ 5230MHz 802.11ac(HT80): 5210MHz
Channel numbers:	802.11a/802.11n(HT20)/802.11ac(HT20): 4; 802.11n(HT40)/ 802.11ac(HT40): 2 802.11ac(HT80): 1
Channel separation:	802.11a/802.11n(HT20)/802.11ac(HT20): 20MHz; 802.11n(HT40)/ 802.11ac(HT40): 40MHz 802.11ac(HT80): 80MHz
Modulation technology:	OFDM
Antenna Type:	Integral antenna
Antenna gain:	2.0 dBi(declare by Applicant)
Power supply:	Adapter Model:JHD-AP015U-050300BC1-C Input: AC 100-240V, 50/60Hz, 0.45A Output: DC 5V, 3000mA

5.2 Test mode

Transmitting mode	Keep the EUT in transmitting with modulation. EUT was test with 99% duty cycle at its maximum power control level.
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.	

5.3 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 fuly 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.

5.4 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, sBaoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.5 Description of Support Units

None.

5.6 Deviation from Standards

None.

5.7 Abnormalities from Standard Conditions

None.

5.8 Other Information Requested by the Customer

None.

5.9 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. 28 2017	June. 27 2018
4	Spectrum analyzer	Agilent	E4447A	GTS516	June. 28 2017	June. 27 2018
5	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 28 2017	June. 27 2018
6	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 28 2017	June. 27 2018
7	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June. 28 2017	June. 27 2018
8	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 28 2017	June. 27 2018
9	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
10	Coaxial Cable	GTS	N/A	GTS213	June. 28 2017	June. 27 2018
11	Coaxial Cable	GTS	N/A	GTS211	June. 28 2017	June. 27 2018
12	Coaxial cable	GTS	N/A	GTS210	June. 28 2017	June. 27 2018
13	Coaxial Cable	GTS	N/A	GTS212	June. 29 2017	June. 27 2018
14	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 28 2017	June. 27 2018
15	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June. 28 2017	June. 27 2018
16	Amplifier (18-40GHz)	MITEQ	AMF-6F-18004000-29-8P	GTS534	June. 28 2017	June. 27 2018
17	Band filter	Amindeon	82346	GTS219	June. 28 2017	June. 27 2018
18	Constant temperature and humidity box	Oregon Scientific	BA-888	GTS248	June. 28 2017	June. 27 2018
19	D.C. Power Supply	Instek	PS-3030	GTS232	June. 28 2017	June. 27 2018
20	Universal radio communication tester	Rohde & Schwarz	CMU200	GTS235	June. 28 2017	June. 27 2018
21	Splitter	Agilent	11636B	GTS237	June. 28 2017	June. 27 2018
22	Power Meter	Anritsu	ML2495A	GTS540	June. 28 2017	June. 27 2018
23	Power Sensor	Anritsu	MA2411B	GTS541	June. 28 2017	June. 27 2018

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. 28 2017	June. 27 2018
3	Pulse Limiter	R&S	ESH3-Z2	GTS224	June. 28 2017	June. 27 2018
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 28 2017	June. 27 2018
5	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 28 2017	June. 27 2018
6	Coaxial Cable	GTS	N/A	GTS227	June. 28 2017	June. 27 2018
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Thermo meter	KTJ	TA328	GTS233	June. 28 2017	June. 27 2018

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	ChangChun	DYM3	GTS257	June. 28 2017	June. 27 2018

6 Test results and Measurement Data

6.1 Antenna requirement:

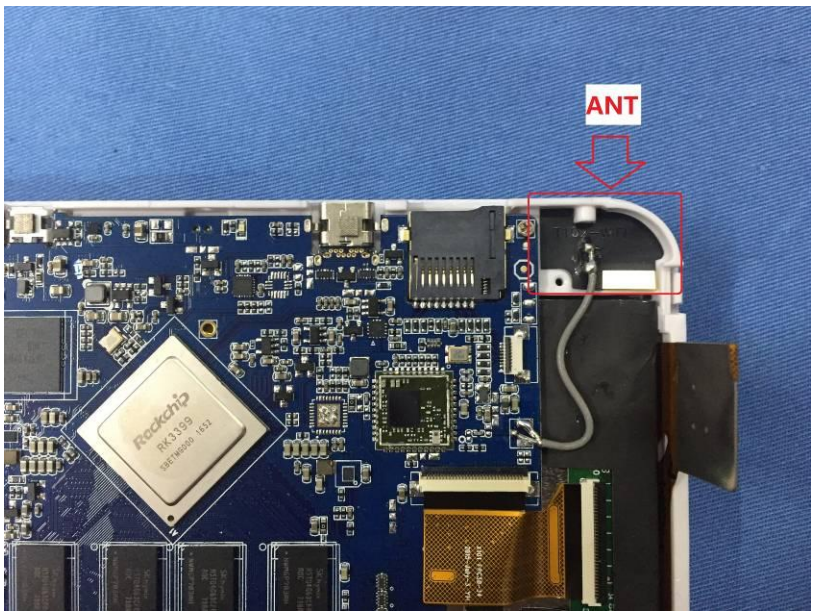
Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

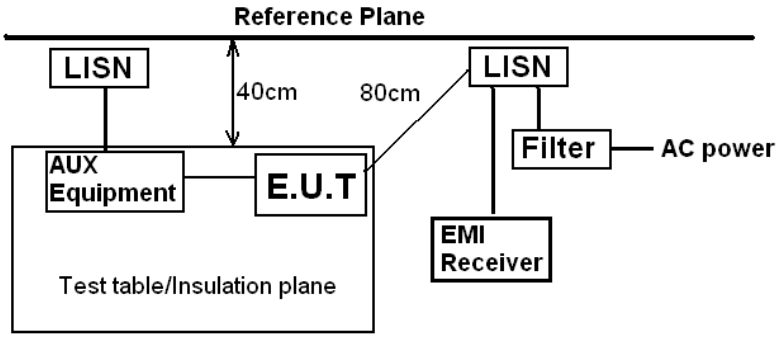
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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 2.0dBi.



6.2 Conducted Emissions

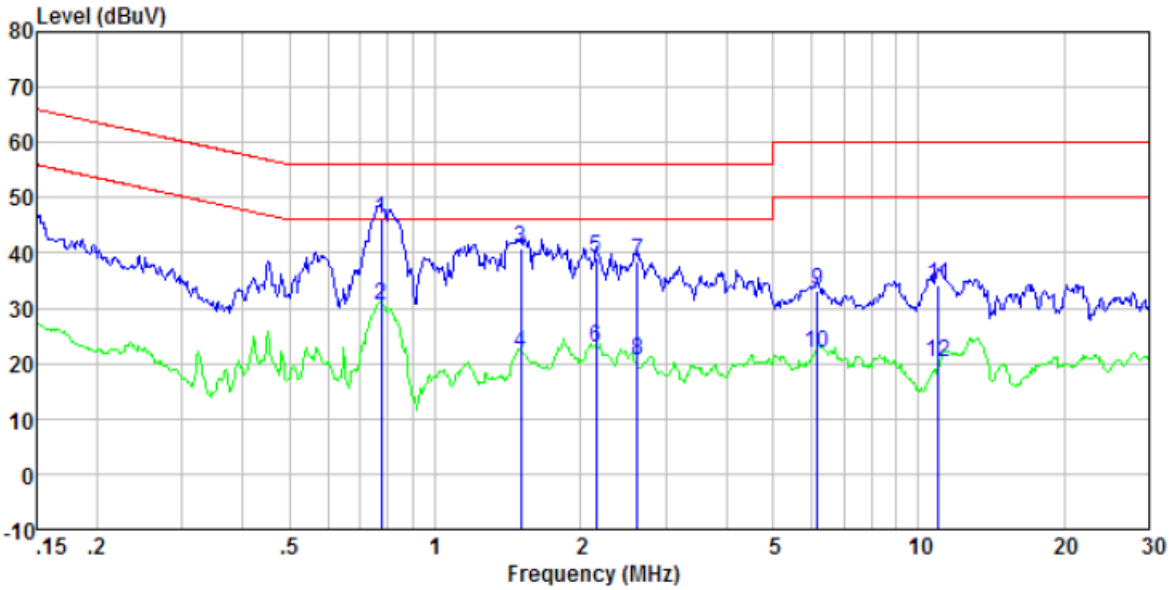
<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>150KHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td>Class B</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9KHz, VBW=30KHz</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></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.
</td></tr>
<tr><td>Test procedure</td><td>The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). 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.</td></tr>
<tr><td>Test setup:</td><td> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 5.10 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Measurement Data

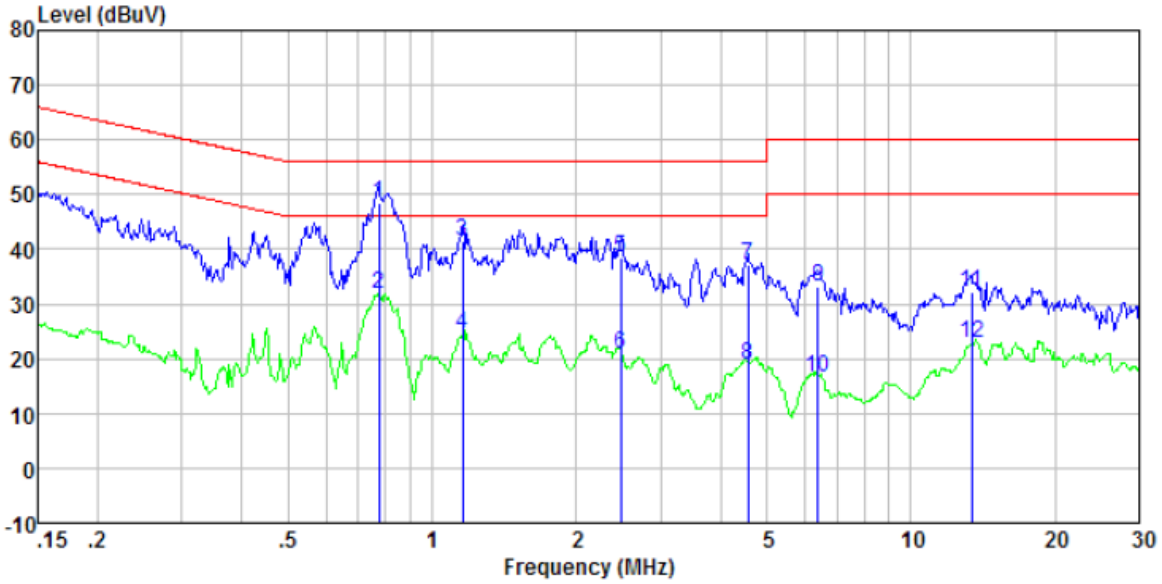
An initial pre-scan was performed on the line and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Line:



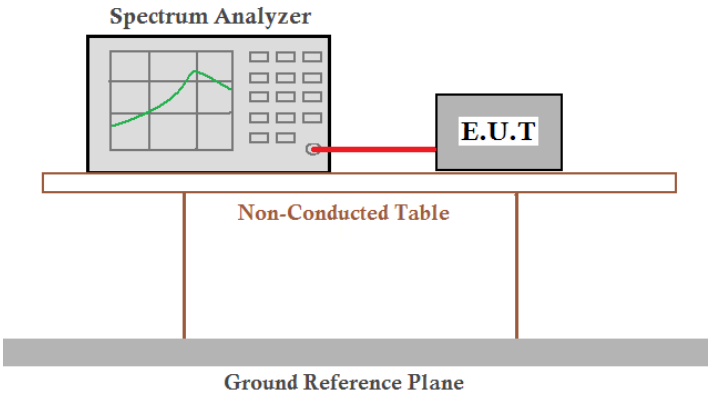
Freq	Reading level	lISN/ISN factor	Cable loss	level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.775	45.79	0.24	0.14	46.17	56.00	-9.83	QP
0.775	30.11	0.24	0.14	30.49	46.00	-15.51	Average
1.503	40.40	0.20	0.16	40.76	56.00	-15.24	QP
1.503	21.44	0.20	0.16	21.80	46.00	-24.20	Average
2.155	38.76	0.20	0.18	39.14	56.00	-16.86	QP
2.155	22.34	0.20	0.18	22.72	46.00	-23.28	Average
2.622	37.97	0.20	0.19	38.36	56.00	-17.64	QP
2.622	20.22	0.20	0.19	20.61	46.00	-25.39	Average
6.186	32.76	0.20	0.18	33.14	60.00	-26.86	QP
6.186	21.43	0.20	0.18	21.81	50.00	-28.19	Average
11.021	33.87	0.20	0.20	34.27	60.00	-25.73	QP
11.021	19.89	0.20	0.20	20.29	50.00	-29.71	Average

Neutral:



Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.775	48.21	0.24	0.14	48.59	56.00	-7.41	QP
0.775	31.32	0.24	0.14	31.70	46.00	-14.30	Average
1.160	41.09	0.20	0.16	41.45	56.00	-14.55	QP
1.160	24.08	0.20	0.16	24.44	46.00	-21.56	Average
2.474	38.00	0.20	0.18	38.38	56.00	-17.62	QP
2.474	20.53	0.20	0.18	20.91	46.00	-25.09	Average
4.574	36.63	0.20	0.17	37.00	56.00	-19.00	QP
4.574	18.54	0.20	0.17	18.91	46.00	-27.09	Average
6.386	32.81	0.20	0.18	33.19	60.00	-26.81	QP
6.386	16.13	0.20	0.18	16.51	50.00	-33.49	Average
13.408	31.80	0.20	0.21	32.21	60.00	-27.79	QP
13.408	22.34	0.20	0.21	22.75	50.00	-27.25	Average

6.3 Emission Bandwidth and 99% Occupied Bandwidth

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v01
Limit:	N/A
Test setup:	
Test procedure:	According to KDB 789033 D02 General UNII Test Procedures New Rules v01.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

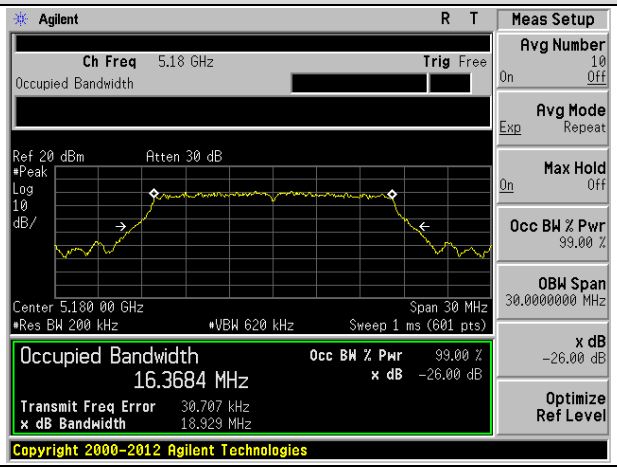
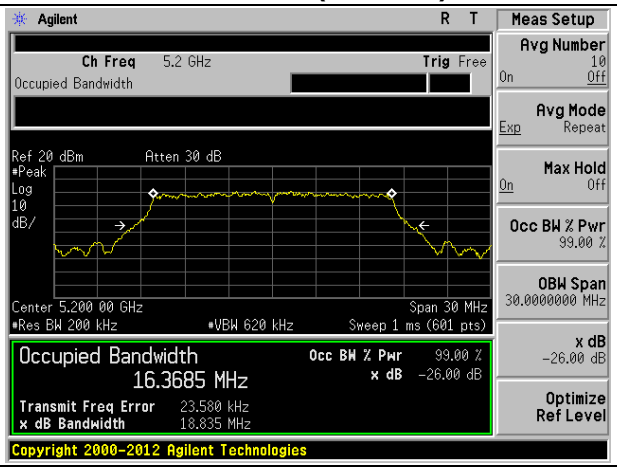
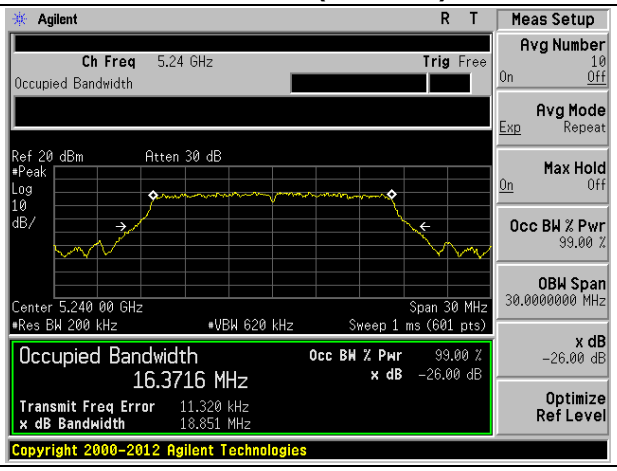
Measurement Data:

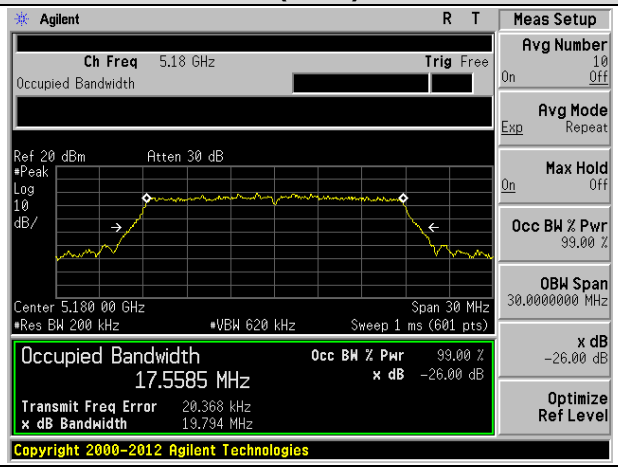
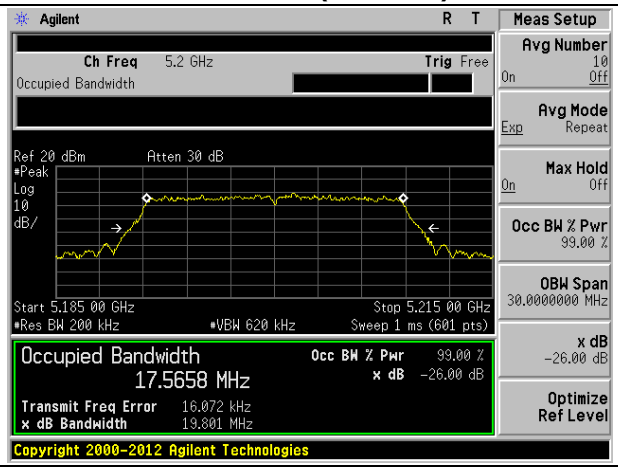
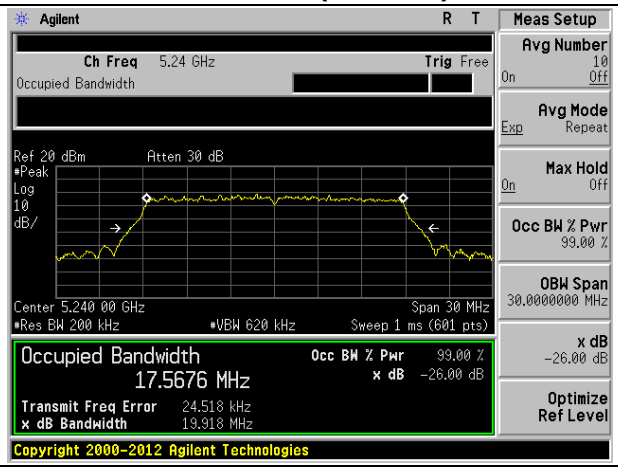
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)		
		802.11a	802.11n(HT 20)	802.11ac(HT20)	802.11a	802.11n(HT 20)	802.11ac(HT20)
36	5180.00	16.3684	17.5585	17.5660	18.929	19.794	19.966
40	5200.00	16.3685	17.5658	17.5954	18.835	19.801	19.837
48	5240.00	16.3716	17.5676	17.5614	18.851	19.918	20.002

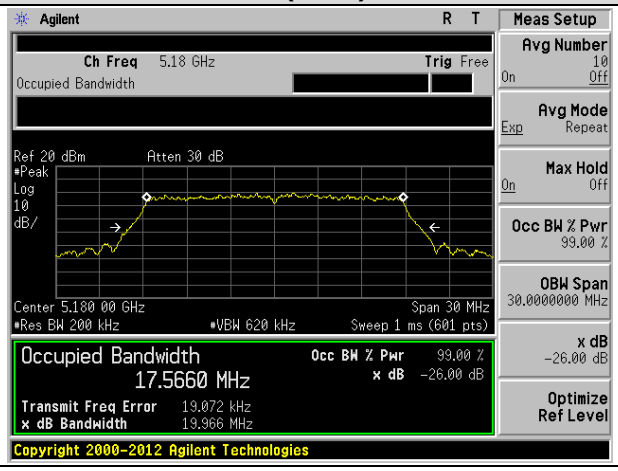
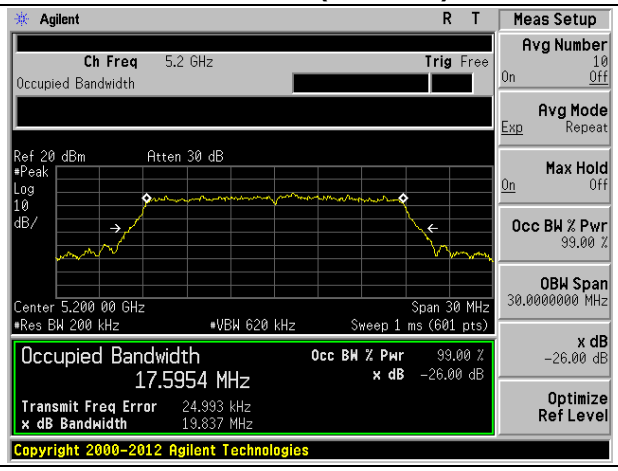
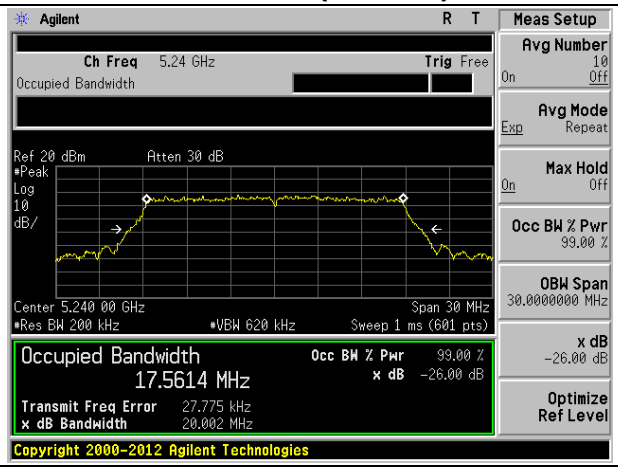
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)	
		802.11n(HT40)	802.11ac(HT40)	802.11n(HT40)	802.11ac(HT40)
38	5190.00	36.0014	36.0015	40.712	39.685
46	5230.00	35.9961	35.9582	40.096	39.803

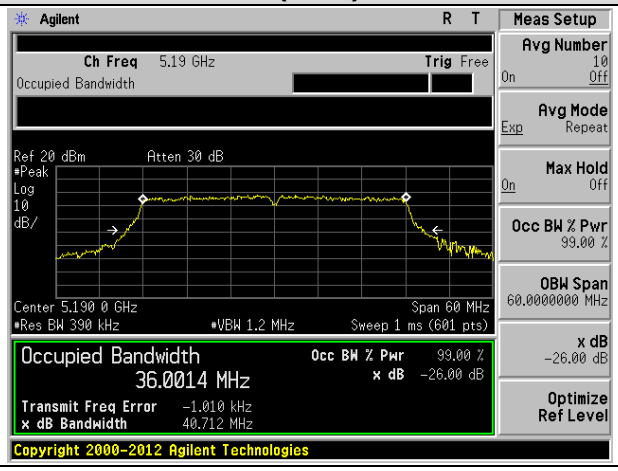
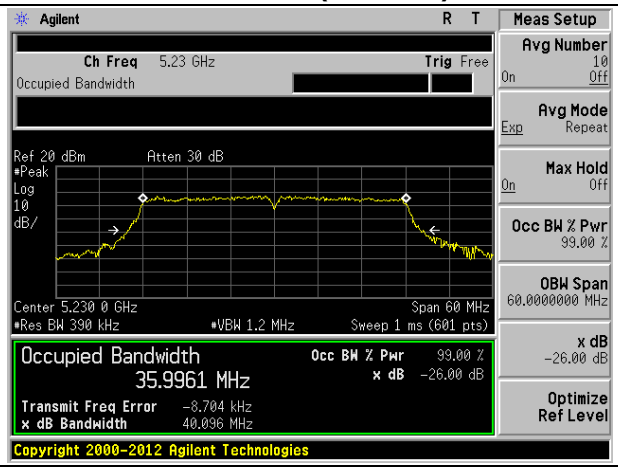
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
		802.11ac(HT80)	802.11ac(HT80)
42	5210.00	74.8774	80.882

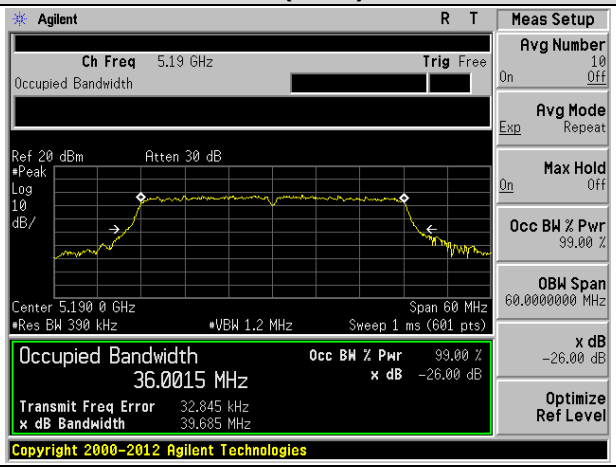
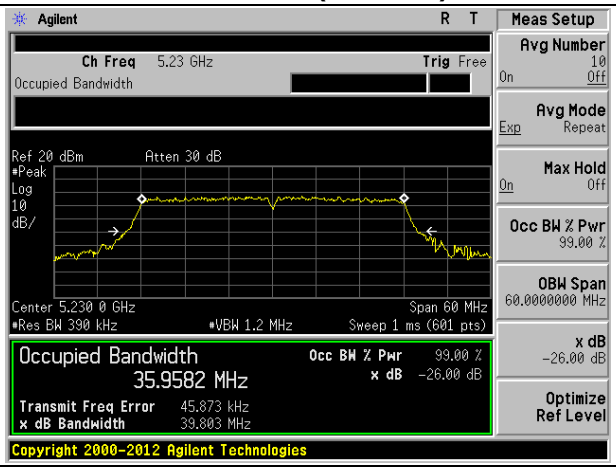
Test plots as followed:

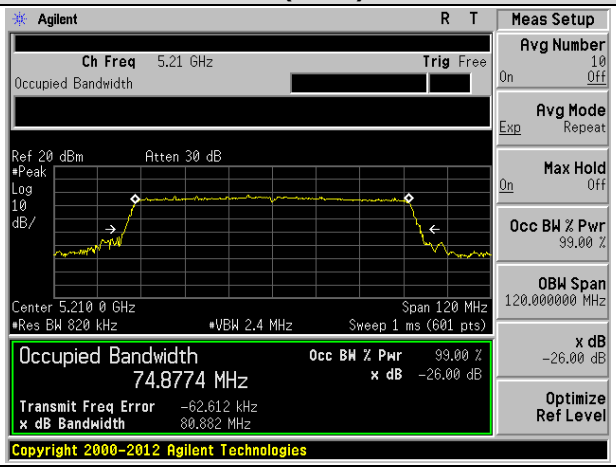
802.11a mode

Channel 36 (5180MHz)

Channel 40 (5200MHz)

Channel 48 (5240MHz)

802.11n(HT20) mode

Channel 36 (5180MHz)

Channel 40 (5200MHz)

Channel 48 (5240MHz)

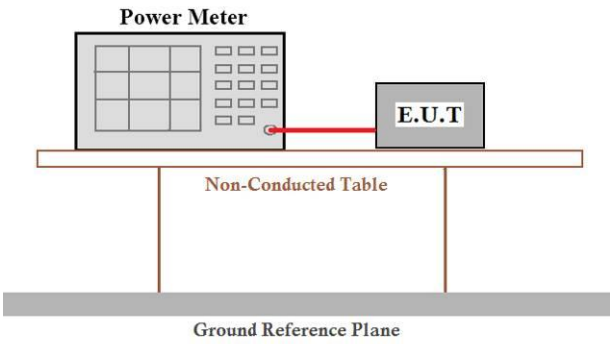
802.11ac(HT20) mode

Channel 36 (5180MHz)

Channel 40 (5200MHz)

Channel 48 (5240MHz)

802.11n(HT40) mode

Channel 38 (5190MHz)

Channel 46 (5230MHz)

802.11ac(HT40) mode

Channel 38 (5190MHz)

Channel 46 (5230MHz)

802.11ac(HT80) mode

Channel 40 (5210MHz)

6.4 Peak Transmit Power

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v01
Limit:	For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 250mW.
Test setup:	
Test procedure:	**Measurement using an RF average power meter** (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied a) The EUT is configured to transmit continuously or to transmit with a constant duty cycle. b) At all times when the EUT is transmitting, it must be transmitting at its maximum power control level. c) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five. (ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section B). (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter. (iv) Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle (e.g., 10log(1/0.25) if the duty cycle is 25 percent).
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180.00	2.36	0.04	2.40	23.98	Pass
40	5200.00	2.78	0.04	2.82	23.98	Pass
48	5240.00	2.69	0.04	2.73	23.98	Pass

802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180.00	2.35	0.04	2.39	23.98	Pass
40	5200.00	2.69	0.04	2.73	23.98	Pass
48	5240.00	2.71	0.04	2.75	23.98	Pass

802.11ac(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180.00	2.38	0.04	2.42	23.98	Pass
40	5200.00	2.72	0.04	2.76	23.98	Pass
48	5240.00	2.73	0.04	2.77	23.98	Pass

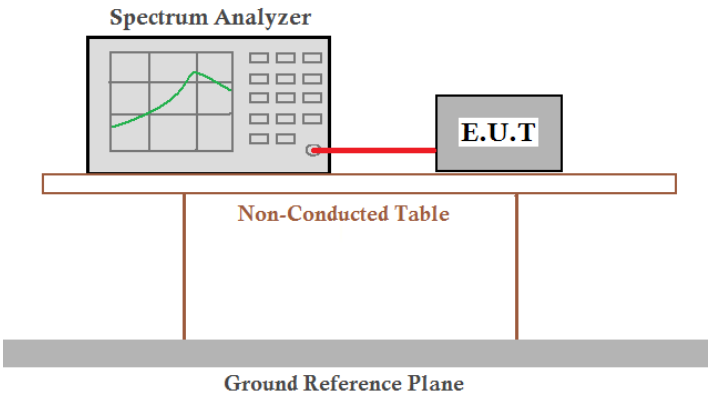
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190.00	2.29	0.04	2.33	23.98	Pass
46	5230.00	2.47	0.04	2.51	23.98	Pass

802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190.00	2.35	0.04	2.39	23.98	Pass
46	5230.00	2.50	0.04	2.54	23.98	Pass

802.11 ac(HT80)						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
42	5210.00	2.37	0.04	2.41	23.98	Pass

Note: Output Power = Measured Power + Duty Factor
Duty Factor = 10 log (1/Duty Cycle)

6.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v01
Limit:	11dBm/MHz
Test setup:	
Test procedure:	1) Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power…”. 2) Use the peak search function on the instrument to find the peak of the spectrum. 3) Make the following adjustments to the peak value of the spectrum, if applicable: a) If Method SA-2 or SA-2 Alternative was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum. b) If Method SA-3 Alternative was used and the linear mode was used in step E)2)g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging. 4) The result is the PSD.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

802.11a mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180.00	-8.00	0.04	-7.96	11	Pass
40	5200.00	-8.85	0.04	-8.81	11	Pass
48	5240.00	-8.52	0.04	-8.48	11	Pass

802.11n(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180.00	-8.73	0.04	-8.69	11	Pass
40	5200.00	-8.59	0.04	-8.55	11	Pass
48	5240.00	-8.70	0.04	-8.66	11	Pass

802.11ac(HT20) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180.00	-8.88	0.04	-8.84	11	Pass
40	5200.00	-8.66	0.04	-8.62	11	Pass
48	5240.00	-8.68	0.04	-8.64	11	Pass

802.11n(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5190.00	-11.48	0.04	-11.44	11	Pass
46	5230.00	-11.41	0.04	-11.37	11	Pass

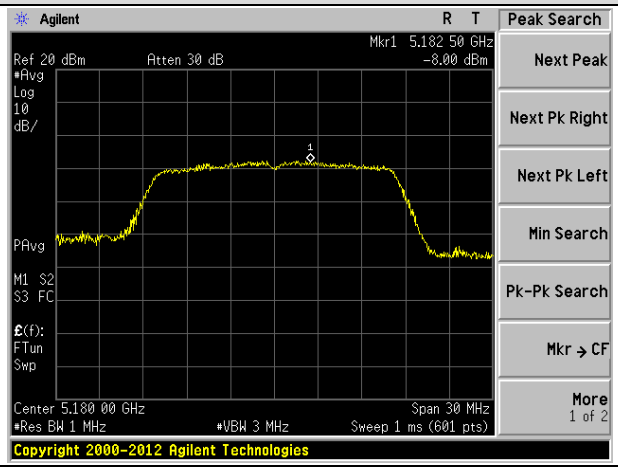
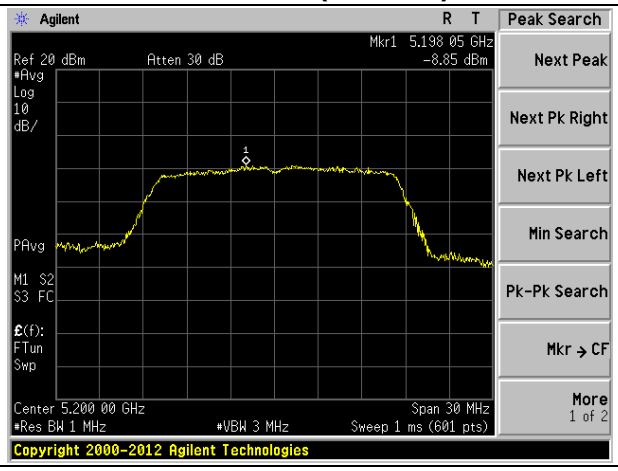
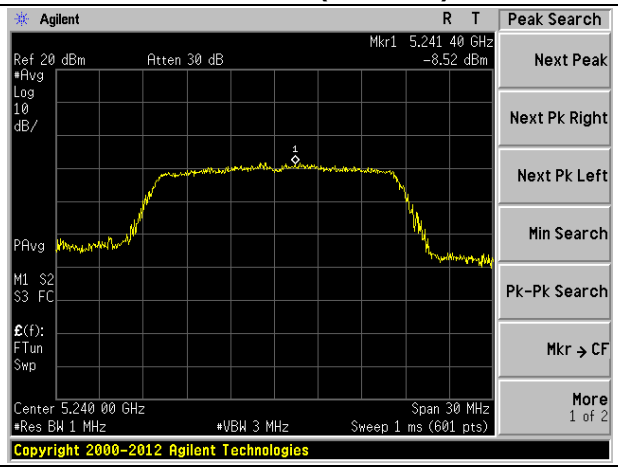
802.11ac(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5190.00	-11.76	0.04	-11.72	11	Pass
46	5230.00	-11.52	0.04	-11.48	11	Pass

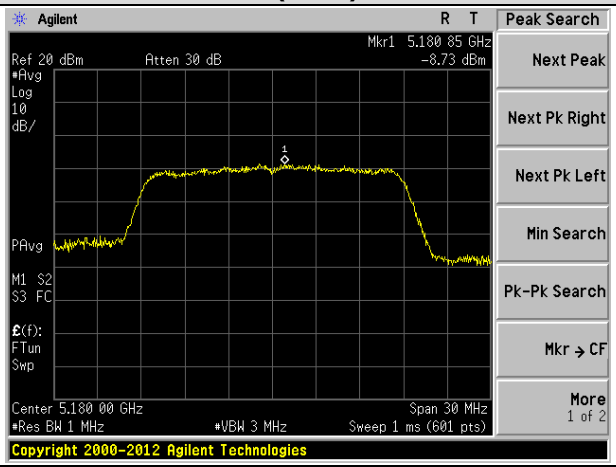
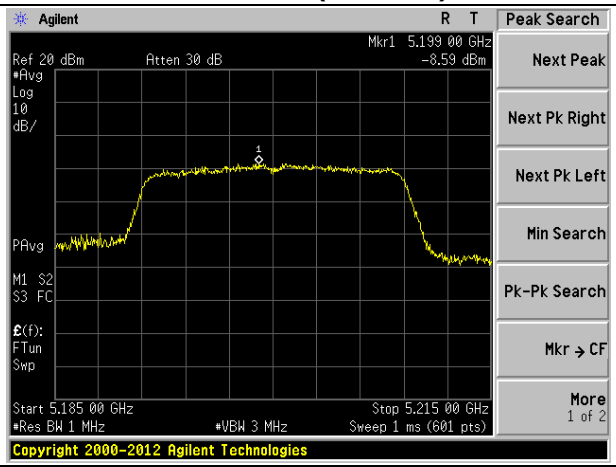
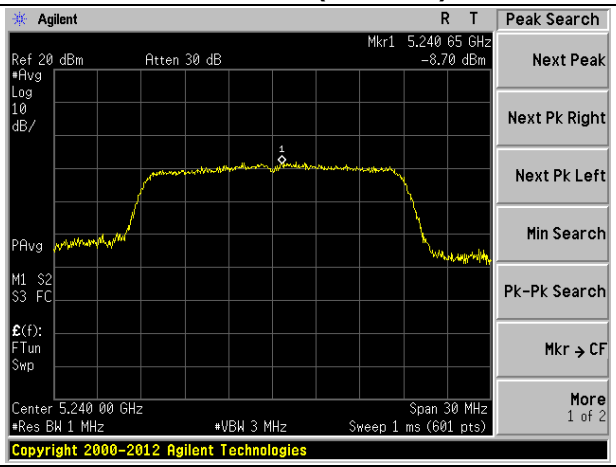
802.11ac(HT80) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5210.00	-15.02	0.04	-14.98	11	Pass

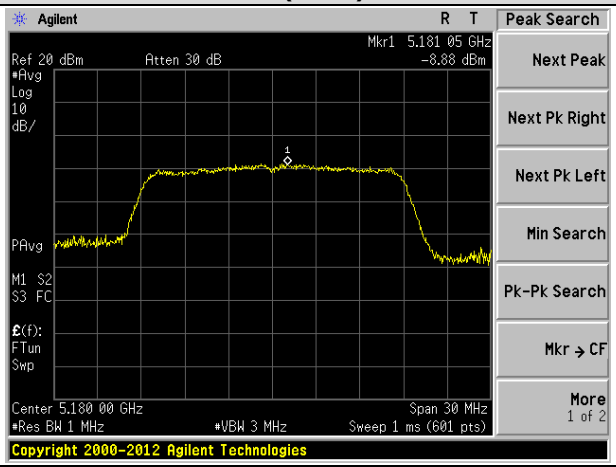
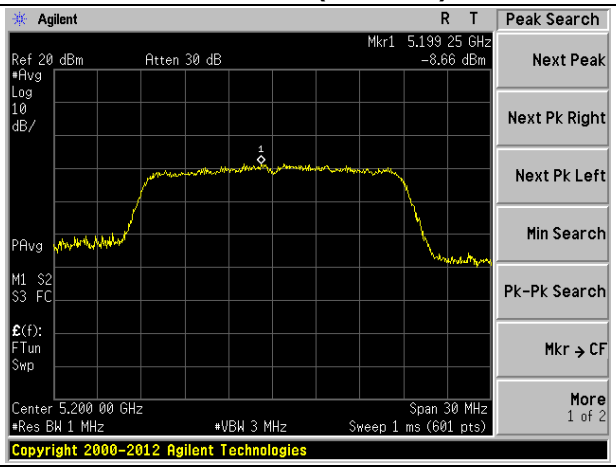
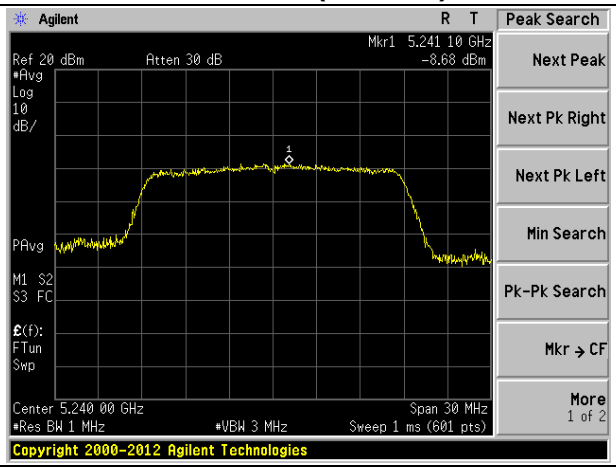
Note: Total PSD = Measured PSD + Duty Factor

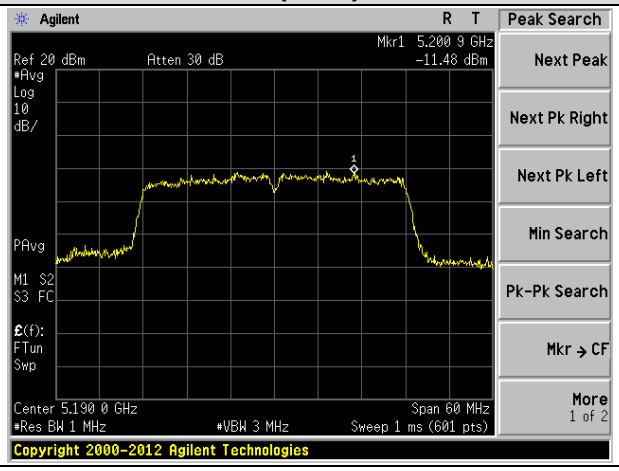
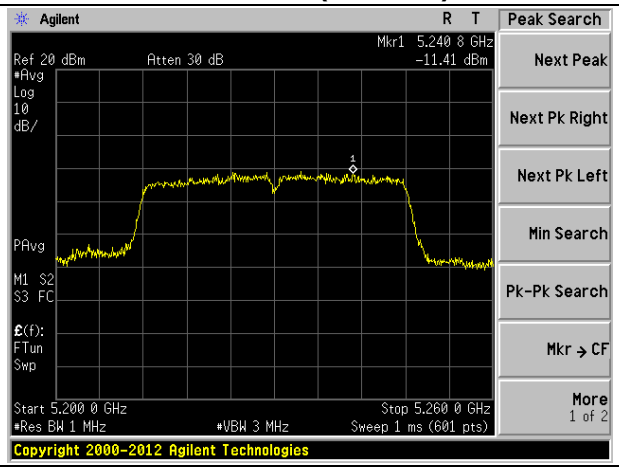
Duty Factor = 10 log (1/Duty Cycle)

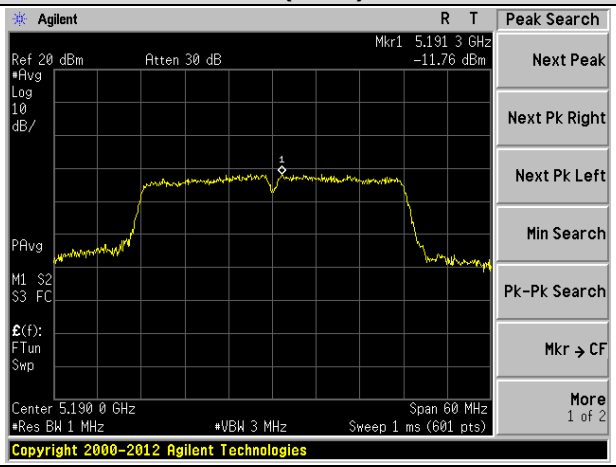
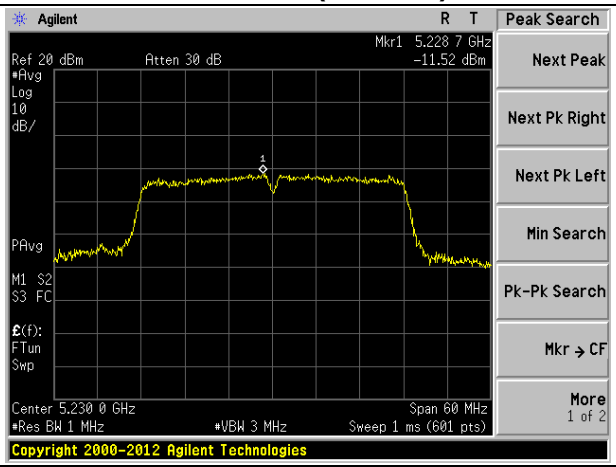
Test plots as followed:

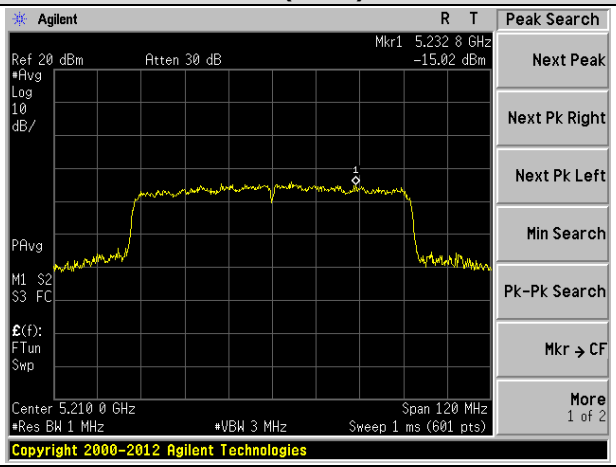
802.11a mode

Channel 36 (5180MHz)

Channel 40 (5200MHz)

Channel 48 (5240MHz)

802.11n(HT20) mode

Channel 36 (5180MHz)

Channel 40 (5200MHz)

Channel 48 (5240MHz)

802.11ac(HT20) mode

Channel 36 (5180MHz)

Channel 40 (5200MHz)

Channel 48 (5240MHz)

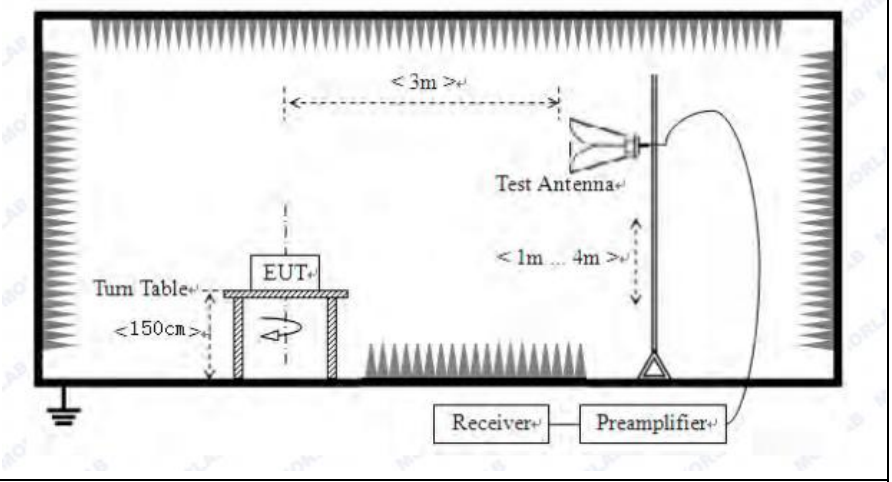
802.11n(HT40) mode

Channel 38 (5190MHz)

Channel 46 (5230MHz)

802.11ac(HT40) mode

Channel 38 (5190MHz)

Channel 46 (5230MHz)

802.11ac(HT80) mode

Channel 40 (5210MHz)

6.6 Band Edge

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407 and 5.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>68.2</td><td>Peak Value</td></tr>
</table>
Undesirable emission limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.
(3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.
</td></tr>
<tr><td>Test Procedure:</td><td>
a. The EUT was placed on the top of a rotating table 1.5 m above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. 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.
d. 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 rotable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. 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
</td></tr>
</table>

	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.
Test setup:	Above 1GHz 
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Remark:

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

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

For example, if EIRP = -27dBm

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

Measurement Data:

802.11a (HT20)					Lowest			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	47.76	32.07	8.99	37.49	51.33	68.20	-16.87	Vertical
5150.00	39.56	32.07	8.99	37.49	43.13	54.00	-10.87	Vertical
5150.00	44.76	32.07	8.99	37.49	48.33	68.20	-19.87	Horizontal
5150.00	37.11	32.07	8.99	37.49	40.68	54.00	-13.32	Horizontal

802.11a (HT20)					Highest			
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
5350.00	45.98	31.75	9.29	37.20	49.82	68.20	-18.38	Vertical
5350.00	38.15	31.75	9.29	37.20	41.99	54.00	-12.01	Vertical
5350.00	47.74	31.75	9.29	37.20	51.58	68.20	-16.62	Horizontal
5350.00	40.19	31.75	9.29	37.20	44.03	54.00	-9.97	Horizontal

802.11n (HT20)					Lowest			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	46.36	32.07	8.99	37.49	49.93	68.20	-18.27	Vertical
5150.00	37.08	32.07	8.99	37.49	40.65	54.00	-13.35	Vertical
5150.00	47.19	32.07	8.99	37.49	50.76	68.20	-17.44	Horizontal
5150.00	40.90	32.07	8.99	37.49	44.47	54.00	-9.53	Horizontal

802.11n (HT20)					Highest			
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
5350.00	47.57	31.75	9.29	37.20	51.41	68.20	-16.79	Vertical
5350.00	38.78	31.75	9.29	37.20	42.62	54.00	-11.38	Vertical
5350.00	45.76	31.75	9.29	37.20	49.60	68.20	-18.60	Horizontal
5350.00	42.89	31.75	9.29	37.20	46.73	54.00	-7.27	Horizontal

802.11ac (HT20)					Lowest			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	47.22	32.07	8.99	37.49	50.79	68.20	-17.41	Vertical
5150.00	41.82	32.07	8.99	37.49	45.39	54.00	-8.61	Vertical
5150.00	47.58	32.07	8.99	37.49	51.15	68.20	-17.05	Horizontal
5150.00	40.33	32.07	8.99	37.49	43.90	54.00	-10.10	Horizontal

802.11ac (HT20)					Highest			
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
5350.00	44.07	31.75	9.29	37.20	47.91	68.20	-20.29	Vertical
5350.00	42.70	31.75	9.29	37.20	46.54	54.00	-7.46	Vertical
5350.00	45.11	31.75	9.29	37.20	48.95	68.20	-19.25	Horizontal
5350.00	38.53	31.75	9.29	37.20	42.37	54.00	-11.63	Horizontal

802.11n (HT40)					Lowest			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	44.75	32.07	8.99	37.49	48.32	68.20	-19.88	Vertical
5150.00	40.44	32.07	8.99	37.49	44.01	54.00	-9.99	Vertical
5150.00	45.94	32.07	8.99	37.49	49.51	68.20	-18.69	Horizontal
5150.00	41.19	32.07	8.99	37.49	44.76	54.00	-9.24	Horizontal

802.11n (HT40)					Highest			
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
5350.00	45.48	31.75	9.29	37.20	49.32	68.20	-18.88	Vertical
5350.00	42.77	31.75	9.29	37.20	46.61	54.00	-7.39	Vertical
5350.00	46.31	31.75	9.29	37.20	50.15	68.20	-18.05	Horizontal
5350.00	39.18	31.75	9.29	37.20	43.02	54.00	-10.98	Horizontal

802.11ac (HT40)					Lowest			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	46.40	32.07	8.99	37.49	49.97	68.20	-18.23	Vertical
5150.00	39.85	32.07	8.99	37.49	43.42	54.00	-10.58	Vertical
5150.00	44.83	32.07	8.99	37.49	48.40	68.20	-19.80	Horizontal
5150.00	42.88	32.07	8.99	37.49	46.45	54.00	-7.55	Horizontal

802.11ac (HT40)					Highest			
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
5350.00	46.77	31.75	9.29	37.20	50.61	68.20	-17.59	Vertical
5350.00	39.74	31.75	9.29	37.20	43.58	54.00	-10.42	Vertical
5350.00	46.20	31.75	9.29	37.20	50.04	68.20	-18.16	Horizontal
5350.00	41.52	31.75	9.29	37.20	45.36	54.00	-8.64	Horizontal

802.11ac (HT80)					Lowest			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	46.91	32.07	8.99	37.49	50.48	68.20	-17.72	Vertical
5150.00	42.82	32.07	8.99	37.49	46.39	54.00	-7.61	Vertical
5150.00	44.10	32.07	8.99	37.49	47.67	68.20	-20.53	Horizontal
5150.00	42.86	32.07	8.99	37.49	46.43	54.00	-7.57	Horizontal

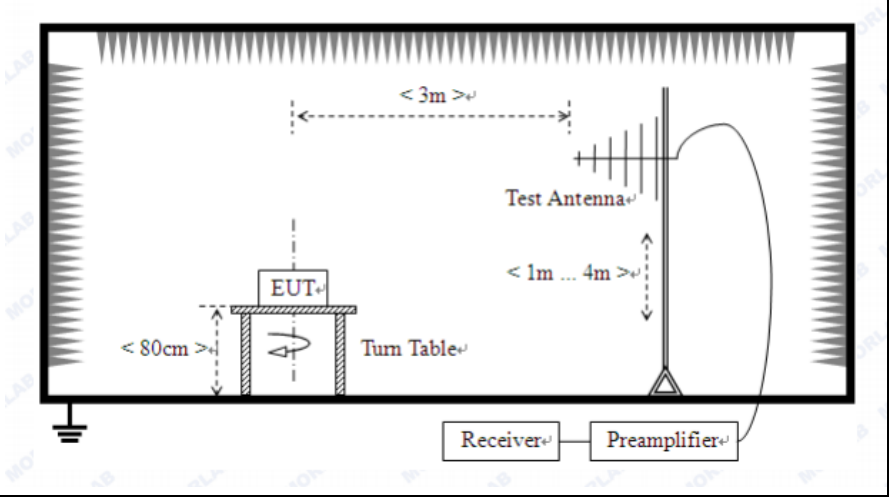
802.11ac (HT80)					Highest			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5350.00	47.70	31.75	9.29	37.20	51.54	68.20	-16.66	Vertical
5350.00	39.62	31.75	9.29	37.20	43.46	54.00	-10.54	Vertical
5350.00	45.28	31.75	9.29	37.20	49.12	68.20	-19.08	Horizontal
5350.00	38.54	31.75	9.29	37.20	42.38	54.00	-11.62	Horizontal

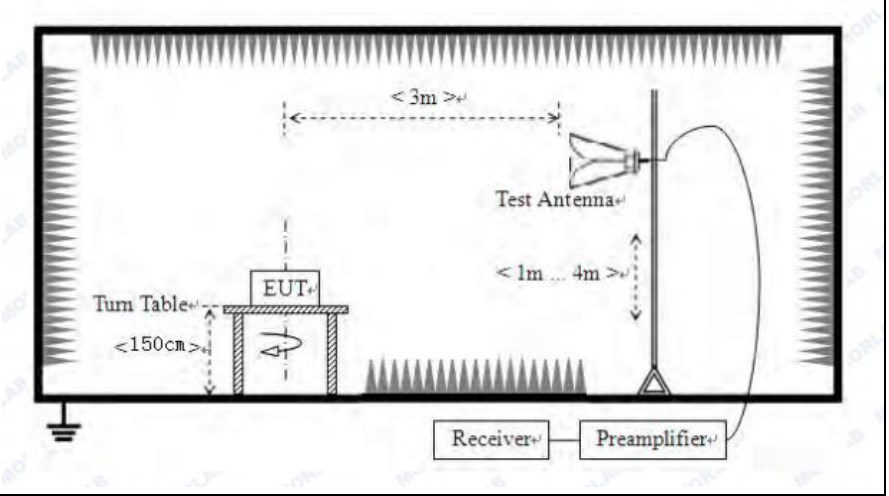
6.7 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 40GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td>Above 1GHz</td><td>68.2</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>
Substitution method was performed to determine the actual ERP emission levels of the EUT.
The following test procedure as below:

1>.Below 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 rotable 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.

2>.Above 1GHz test procedure:
1. On the test site as test setup graph above,the EUT shall be placed at the 0.8m support on the turntable and in the position closest to normal use as declared by the provider.
2. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter.The
</td></tr>
</table>

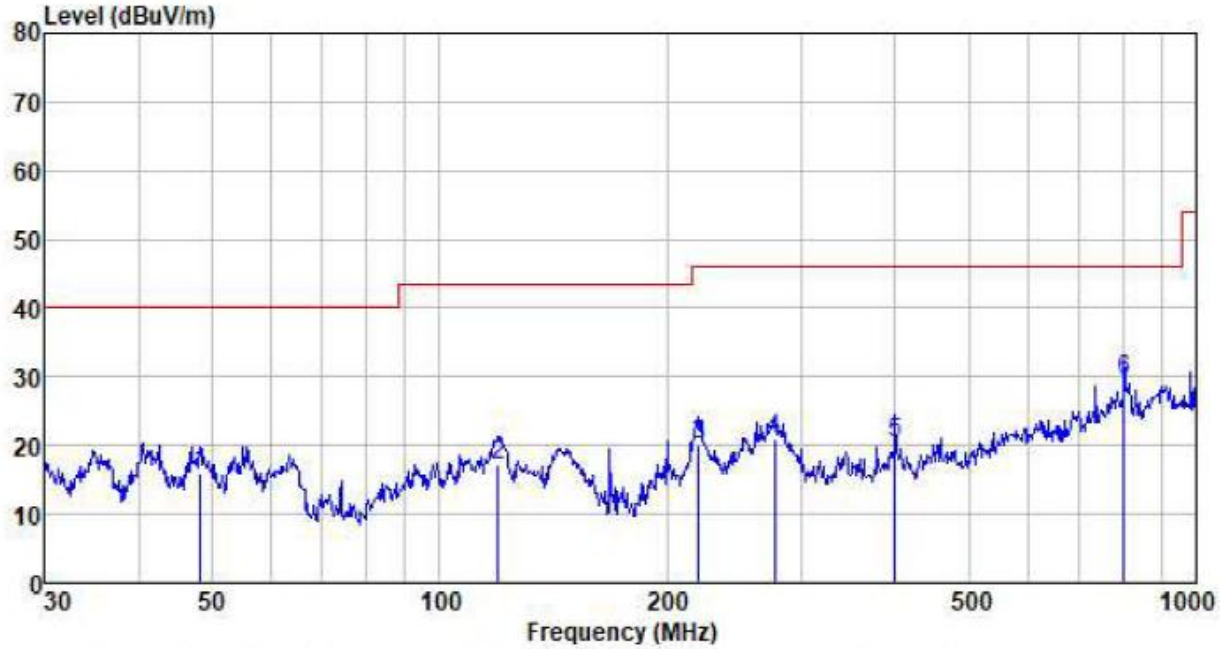
	output of the test antenna shall be connected to the measuring receiver. 3. The transmitter shall be switched on, if possible, without modulation and the measuring receiver shall be tuned to the frequency of the transmitter under test. 4. The test antenna shall be raised and lowered from 1m to 4m until a maximum signal level is detected by the measuring receiver. Then the turntable should be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver. 5. Repeat step 4 for test frequency with the test antenna polarized horizontally. 6. Remove the transmitter and replace it with a substitution antenna 7. Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends vertically polarized, and with the signal generator tuned to a particular test frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output. 8. Repeat step 7 with both antennas horizontally polarized for each test frequency. 9. Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps 7 and 8 by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula: EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi) where: Pg is the generator output power into the substitution antenna.
Test setup:	Below 1GHz 

	Above 1GHz 
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data:

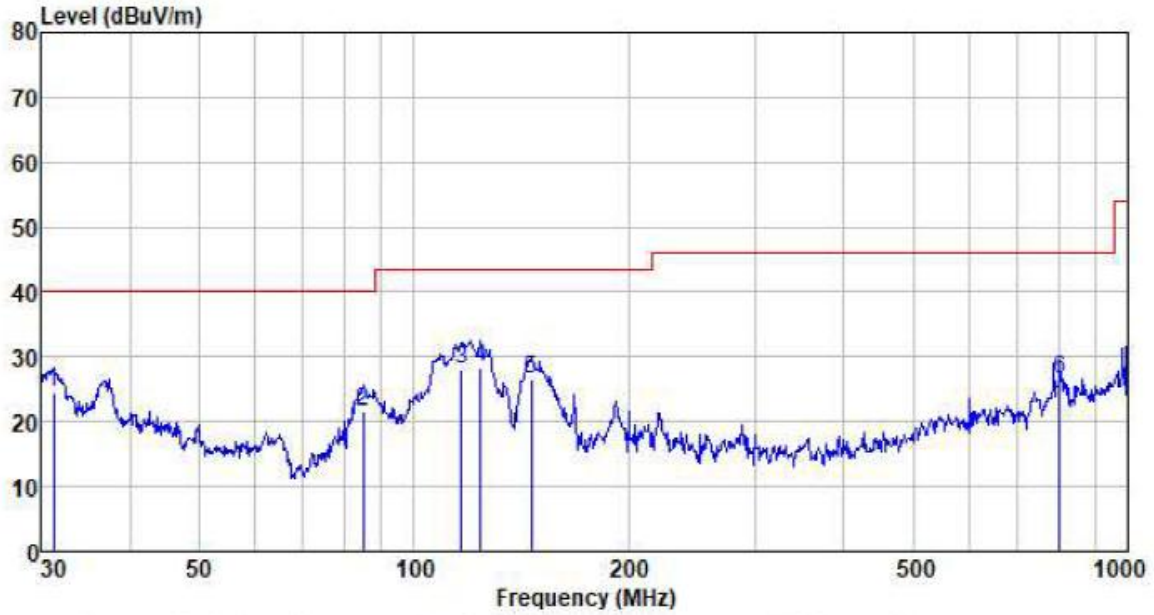
Below 1GHz

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
48.332	38.98	12.29	0.75	36.10	15.92	40.00	-24.08	QP
119.436	43.10	9.58	1.36	36.88	17.16	43.50	-26.34	QP
219.845	44.35	11.13	1.96	37.35	20.09	46.00	-25.91	QP
277.094	43.00	12.98	2.25	37.40	20.83	46.00	-25.17	QP
400.432	39.80	15.34	2.85	37.52	20.47	46.00	-25.53	QP
801.786	41.15	21.40	4.46	37.62	29.39	46.00	-16.61	QP

Vertical:



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
31.289	47.69	11.23	0.57	35.10	24.39	40.00	-15.61	QP
84.999	48.03	9.05	1.07	36.59	21.56	40.00	-18.44	QP
116.540	53.54	10.01	1.33	36.85	28.03	43.50	-15.47	QP
124.133	54.91	8.96	1.39	36.91	28.35	43.50	-15.15	QP
145.861	54.69	7.51	1.54	37.05	26.69	43.50	-16.81	QP
801.786	38.33	21.40	4.46	37.62	26.57	46.00	-19.43	QP

Above 1GHz: ALL PK VALUE

802.11a(HT20) 5180MHz

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
10360.00	31.72	39.67	14.62	32.65	53.36	68.20	-14.84	Vertical
15540.00	30.80	38.60	17.66	34.46	53.52	68.20	-14.68	Vertical
10360.00	28.10	39.67	14.62	32.65	52.98	68.20	-15.22	Horizontal
15540.00	31.43	38.60	17.66	34.46	53.14	68.20	-15.06	Horizontal

802.11a(HT20) 5200MHz

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
10400.00	32.69	39.75	14.63	32.71	53.39	68.20	-14.81	Vertical
15600.00	28.90	38.33	17.67	34.17	53.55	68.20	-14.65	Vertical
10400.00	31.16	39.75	14.63	32.71	53.01	68.20	-15.19	Horizontal
15600.00	30.73	38.33	17.67	34.17	53.17	68.20	-15.03	Horizontal

802.11a(HT20) 5240MHz

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
10480.00	29.37	39.82	14.68	32.86	53.64	68.20	-14.56	Vertical
15720.00	28.38	38.09	17.73	33.66	54.16	68.20	-14.04	Vertical
10480.00	29.57	39.82	14.68	32.86	52.98	68.20	-15.22	Horizontal
15720.00	31.25	38.09	17.73	33.66	53.50	68.20	-14.70	Horizontal

802.11n(HT20) 5180MHz

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
10360.00	29.74	39.67	14.62	32.65	53.64	68.20	-14.56	Vertical
15540.00	32.03	38.60	17.66	34.46	53.80	68.20	-14.40	Vertical
10360.00	31.57	39.67	14.62	32.65	51.82	68.20	-16.38	Horizontal
15540.00	30.53	38.60	17.66	34.46	51.98	68.20	-16.22	Horizontal

802.11n(HT20) 5200MHz

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
10400.00	30.68	39.75	14.63	32.71	53.67	68.20	-14.53	Vertical
15600.00	30.45	38.33	17.67	34.17	53.83	68.20	-14.37	Vertical
10400.00	28.01	39.75	14.63	32.71	51.85	68.20	-16.35	Horizontal
15600.00	30.40	38.33	17.67	34.17	52.01	68.20	-16.19	Horizontal

802.11n(HT20) 5240MHz

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
10480.00	31.46	39.82	14.68	32.86	53.36	68.20	-14.84	Vertical
15720.00	28.61	38.09	17.73	33.66	53.88	68.20	-14.32	Vertical
10480.00	29.72	39.82	14.68	32.86	51.82	68.20	-16.38	Horizontal
15720.00	32.74	38.09	17.73	33.66	52.34	68.20	-15.86	Horizontal

802.11ac(HT20) 5180MHz

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
10360.00	29.37	39.67	14.62	32.65	51.01	68.20	-17.19	Vertical
15540.00	29.64	38.60	17.66	34.46	51.17	68.20	-17.03	Vertical
10360.00	30.86	39.67	14.62	32.65	50.17	68.20	-18.03	Horizontal
15540.00	29.05	38.60	17.66	34.46	50.33	68.20	-17.87	Horizontal

802.11ac(HT20) 5200MHz

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
10400.00	29.32	39.75	14.63	32.71	53.96	68.20	-14.24	Vertical
15600.00	30.91	38.33	17.67	34.17	54.12	68.20	-14.08	Vertical
10400.00	32.86	39.75	14.63	32.71	50.20	68.20	-18.00	Horizontal
15600.00	28.70	38.33	17.67	34.17	50.36	68.20	-17.84	Horizontal

802.11ac(HT20) 5240MHz

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
10480.00	30.81	39.82	14.68	32.86	53.93	68.20	-14.27	Vertical
15720.00	30.04	38.09	17.73	33.66	54.45	68.20	-13.75	Vertical
10480.00	32.60	39.82	14.68	32.86	50.17	68.20	-18.03	Horizontal
15720.00	28.14	38.09	17.73	33.66	50.69	68.20	-17.51	Horizontal

802.11n(HT40) 5190MHz

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
10380.00	28.07	39.71	14.63	32.68	53.95	68.20	-14.25	Vertical
15570.00	30.81	38.46	17.67	34.32	54.10	68.20	-14.10	Vertical
10380.00	28.36	39.71	14.63	32.68	51.03	68.20	-17.17	Horizontal
15570.00	28.17	38.46	17.67	34.32	51.18	68.20	-17.02	Horizontal

802.11n(HT40) 5230MHz

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
10460.00	29.81	39.82	14.66	32.80	53.40	68.20	-14.80	Vertical
15690.00	32.58	38.09	17.71	33.81	53.71	68.20	-14.49	Vertical
10460.00	29.52	39.82	14.66	32.80	51.05	68.20	-17.15	Horizontal
15690.00	31.87	38.09	17.71	33.81	51.36	68.20	-16.84	Horizontal

802.11ac(HT40) 5190MHz

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
10380.00	31.30	39.71	14.63	32.68	53.38	68.20	-14.82	Vertical
15570.00	28.51	38.46	17.67	34.32	53.53	68.20	-14.67	Vertical
10380.00	32.45	39.71	14.63	32.68	52.06	68.20	-16.14	Horizontal
15570.00	29.19	38.46	17.67	34.32	52.21	68.20	-15.99	Horizontal

802.11ac(HT40) 5230MHz

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
10460.00	32.02	39.82	14.66	32.80	53.97	68.20	-14.23	Vertical
15690.00	29.22	38.09	17.71	33.81	54.28	68.20	-13.92	Vertical
10460.00	28.47	39.82	14.66	32.80	52.08	68.20	-16.12	Horizontal
15690.00	28.74	38.09	17.71	33.81	52.39	68.20	-15.81	Horizontal

802.11ac(HT80) 5210MHz

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
10420.00	29.20	39.82	14.66	32.80	52.15	68.20	-16.05	Vertical
15630.00	30.51	38.09	17.71	33.81	52.46	68.20	-15.74	Vertical
10420.00	30.43	39.82	14.66	32.80	51.51	68.20	-16.69	Horizontal
15630.00	29.30	38.09	17.71	33.81	51.82	68.20	-16.38	Horizontal

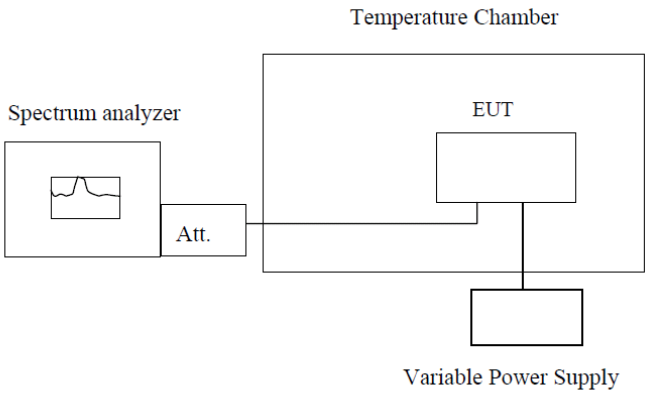
Note:

1. Level = Read Level + Antenna Factor+ Cable loss- Preamp 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.

6.8 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 5.3 for details
Test results:	Pass

Measurement data:

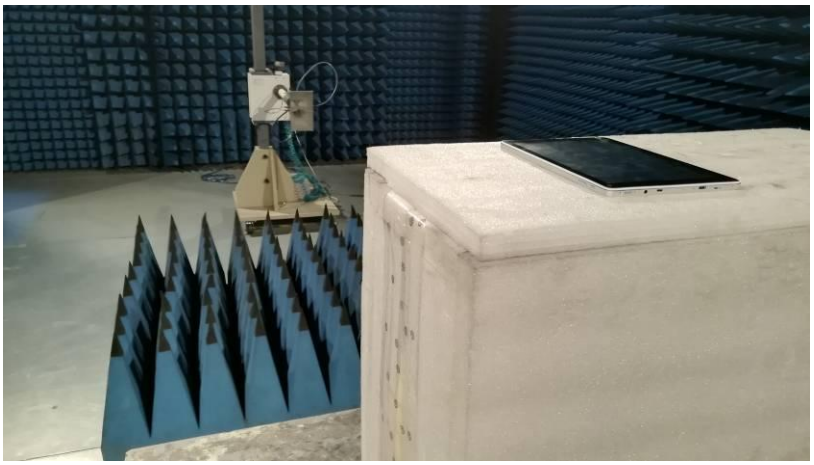
Frequency stability versus Temp.					
Power Supply: AC 120V					
Temp. (°C)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
-30	5180	5176.7488	5180.5160	5183.7260	5177.8793
	5200	5199.1386	5201.7473	5200.8412	5197.3448
	5220	5219.0090	5220.9758	5220.7575	5219.5709
	5240	5239.1636	5240.7325	5240.1506	5239.7470
-20	5180	5179.3561	5180.7383	5180.3600	5179.6413
	5200	5199.5692	5200.3045	5200.9620	5199.9748
	5220	5219.8680	5220.3013	5220.6439	5219.1349
	5240	5239.9295	5240.3028	5240.3741	5239.2708
-10	5180	5179.3996	5180.2183	5180.6315	5179.8532
	5200	5199.8920	5200.8141	5200.9500	5199.7966
	5220	5219.5064	5220.1189	5220.7271	5219.6471
	5240	5239.9626	5240.6464	5240.5996	5239.3333
0	5180	5179.8335	5180.5113	5180.4095	5179.1275
	5200	5199.8596	5200.3008	5200.0025	5199.9005
	5220	5219.4147	5220.9153	5220.5538	5219.7981
	5240	5239.9370	5240.5885	5240.7349	5239.4369
10	5180	5179.5368	5180.4009	5180.9364	5179.9455
	5200	5199.6352	5200.5831	5200.4485	5199.9921
	5220	5219.5088	5220.8929	5220.0836	5219.4635
	5240	5239.8759	5240.2084	5240.5615	5239.4856
20	5180	5179.1003	5180.0672	5180.4730	5179.9921
	5200	5199.9740	5200.3390	5200.8609	5199.9651
	5220	5219.5049	5220.4919	5220.4471	5219.2100
	5240	5239.8333	5240.9206	5240.3926	5239.5187
30	5180	5179.3840	5180.2041	5180.6625	5179.6474
	5200	5199.4420	5200.7269	5200.8239	5199.1855
	5220	5219.4758	5220.7627	5220.3177	5219.2246
	5240	5239.0659	5240.1597	5240.7116	5239.1562
40	5180	5179.1912	5180.2955	5180.1102	5179.3302
	5200	5199.2547	5200.5234	5200.0538	5199.0961
	5220	5219.6205	5220.4892	5220.4269	5219.6013
	5240	5239.5692	5240.3342	5240.3213	5239.3781
50	5180	5179.2295	5180.9327	5180.8889	5179.1525
	5200	5199.9393	5200.9141	5200.9138	5199.0126
	5220	5219.3493	5220.8062	5220.6898	5219.5626
	5240	5239.6406	5240.1488	5240.7622	5239.8054

Frequency stability versus Voltage					
Temperature: 25°C					
Power Supply (VAC)	Operating Frequency (MHz)	0 minute	2 minute	5 minute	10 minute
		Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)	Measured Frequency (MHz)
108	5180	5183.3791	5183.6788	5177.9926	5176.4968
	5200	5202.4590	5202.8061	5198.7864	5198.7023
	5220	5221.3688	5221.9002	5219.3142	5219.8271
	5240	5240.1914	5240.8922	5239.0678	5239.2990
120	5180	5180.9223	5180.6301	5179.4850	5179.9191
	5200	5200.5470	5200.3284	5199.9607	5199.5417
	5220	5220.0653	5220.9270	5219.9002	5219.6806
	5240	5240.1956	5240.2986	5239.4761	5239.5122
138	5180	5180.1662	5180.7630	5179.0073	5179.8939
	5200	5200.5668	5200.0487	5199.5081	5199.5047
	5220	5220.0879	5220.6136	5219.3370	5219.3478
	5240	5240.4508	5240.0876	5239.9707	5239.3502

Note: The worst case is FL=5176.7488MHz, FH=5240.8922MHz

7 Test Setup Photo

Radiated Emission



Conducted Emission

8 EUT Constructional Details

Reference to the test report No. GTS201801000240E01

---END---