FCC REPORT

Applicant:	Quantum Creations LLC.
Address of Applicant:	15705 NW 13th Ave, Miami Gardens, Miami, Florida 33169, United States
Manufacturer/Factory:	Shenzhen Mele Star Technology Ltd.
Address of Manufacturer/Factory:	1F, Bldg#1, 28 Cuijing Road, Pingshan District, Shenzhen, PR China.

Equipment Under Test (EUT)

Product Name:	MINI PC
Model No.:	A-1153-AB3, A-1153-AB3-1, A-1153-AB3-2, A-1153-AB3-3, A-1153-AB3-4, A-1153-AB3-5, A-1153-AB3-6, A-1153-AB3-7,A-1153-AB3-8, A-1153-AB3-9
Trade Mark:	AZULLE®
FCC ID:	2AFJI20171153
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.407:2017
Date of sample receipt:	July 03, 2017
Date of Test:	July 04-10, 2017
Date of report issue:	July 11, 2017
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	*July 11, 2017*	*Original*

Prepared By: Bill. Yuan ***Date:*** *July 11, 2017*

Project Engineer

Check By: Andy. wu ***Date:*** *July 11, 2017*

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)	N/A

Remark:

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

Frequency Stability： The manufacturer stated in the user's manual.

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:	MINI PC
Model No.:	A-1153-AB3, A-1153-AB3-1, A-1153-AB3-2, A-1153-AB3-3, A-1153-AB3-4, A-1153-AB3-5, A-1153-AB3-6, A-1153-AB3-7, A-1153-AB3-8, A-1153-AB3-9
Test Model No:	A-1153-AB3
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are color and model name for commercial purpose.	
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:	2.0dBi
Power supply:	SWITCHING ADAPTER MODEL:ADS-25D-12 12024E INPUT: AC 100-240V, 50/60Hz, Max 0.7A OUTPUT: DC 12V, 2.0A

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.: 600491**

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 600491, June 22, 2016.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

5.4 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:

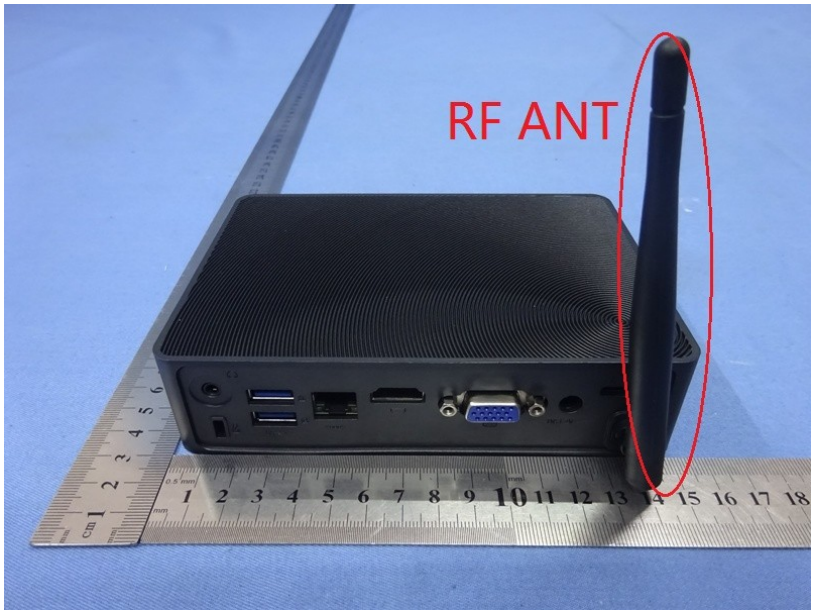
Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

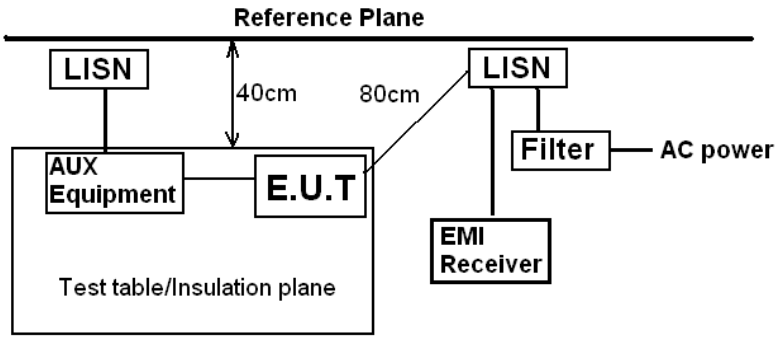
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit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



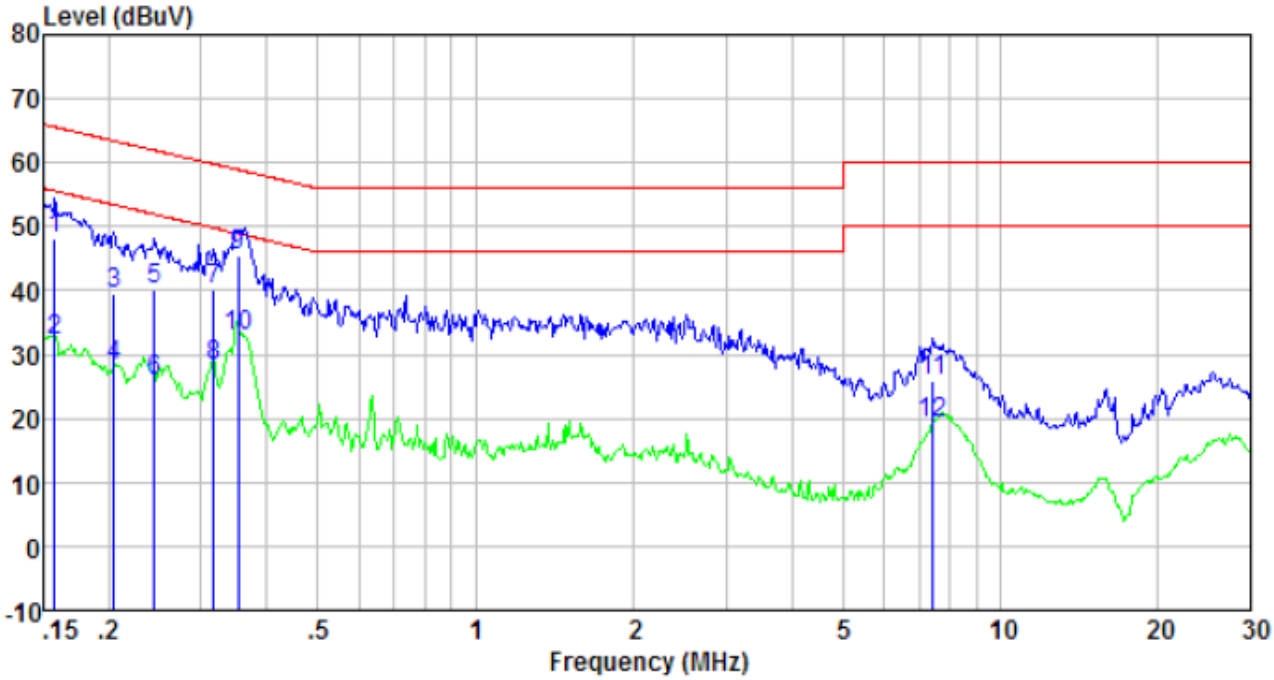
6.2 Conducted Emissions

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
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test procedure	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.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

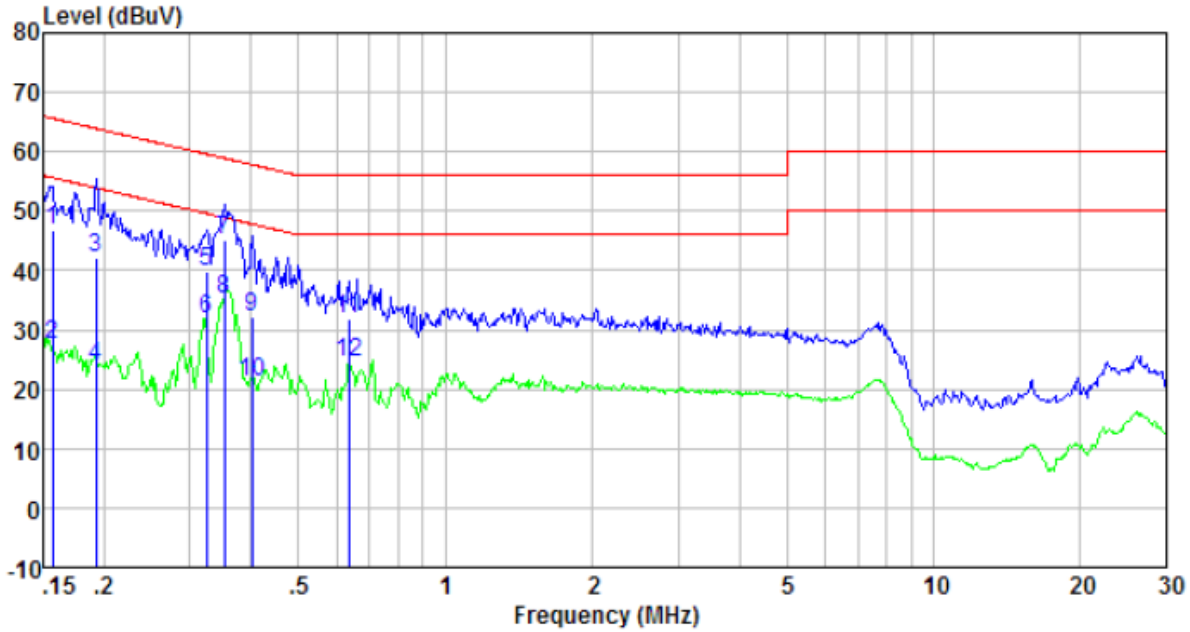
An initial pre-scan was performed on the line and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Line:



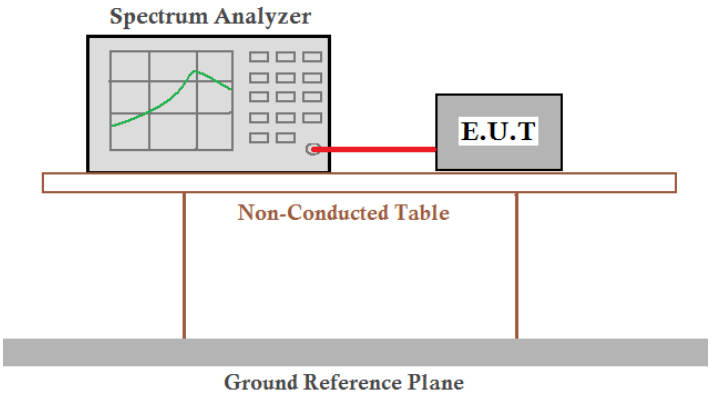
Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.157	47.71	0.42	0.12	48.25	65.60	-17.35	QP
0.157	31.51	0.42	0.12	32.05	55.60	-23.55	Average
0.204	38.99	0.43	0.13	39.55	63.45	-23.90	QP
0.204	27.56	0.43	0.13	28.12	53.45	-25.33	Average
0.244	39.65	0.44	0.11	40.20	61.95	-21.75	QP
0.244	25.42	0.44	0.11	25.97	51.95	-25.98	Average
0.317	39.60	0.44	0.10	40.14	59.80	-19.66	QP
0.317	27.63	0.44	0.10	28.17	49.80	-21.63	Average
0.352	44.83	0.43	0.10	45.36	58.91	-13.55	QP
0.352	32.38	0.43	0.10	32.91	48.91	-16.00	Average
7.446	25.60	0.22	0.18	26.00	60.00	-34.00	QP
7.446	18.91	0.22	0.18	19.31	50.00	-30.69	Average

Neutral:



Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.156	46.23	0.41	0.12	46.76	65.65	-18.89	QP
0.156	27.07	0.41	0.12	27.60	55.65	-28.05	Average
0.192	41.68	0.41	0.13	42.22	63.93	-21.71	QP
0.192	23.48	0.41	0.13	24.02	53.93	-29.91	Average
0.323	39.40	0.41	0.10	39.91	59.62	-19.71	QP
0.323	31.47	0.41	0.10	31.98	49.62	-17.64	Average
0.352	44.70	0.41	0.10	45.21	58.91	-13.70	QP
0.352	34.54	0.41	0.10	35.05	48.91	-13.86	Average
0.402	31.63	0.39	0.11	32.13	57.81	-25.68	QP
0.402	20.56	0.39	0.11	21.06	47.81	-26.75	Average
0.634	31.62	0.26	0.13	32.01	56.00	-23.99	QP
0.634	24.30	0.26	0.13	24.69	46.00	-21.31	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

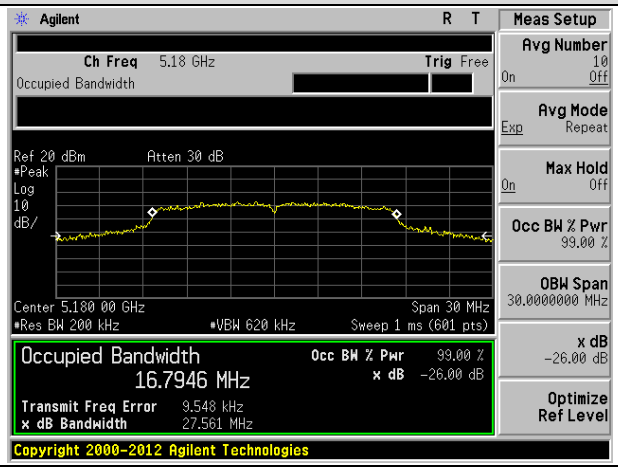
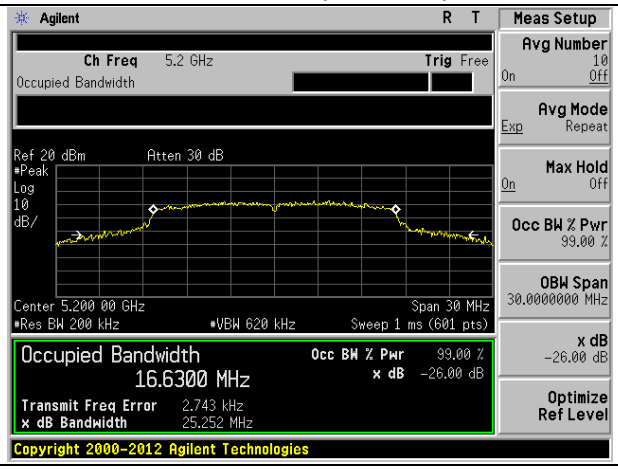
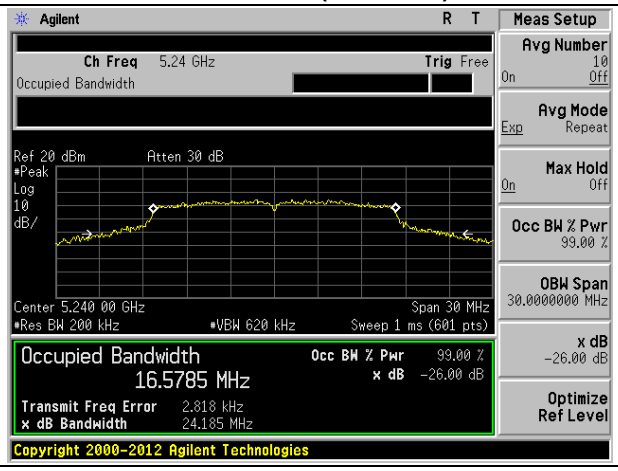
Measurement Data:

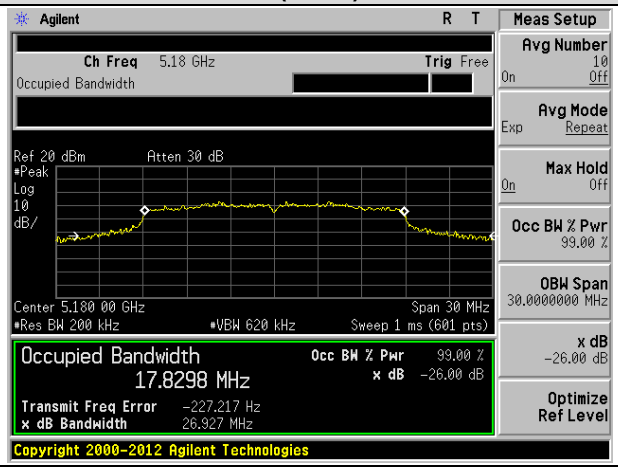
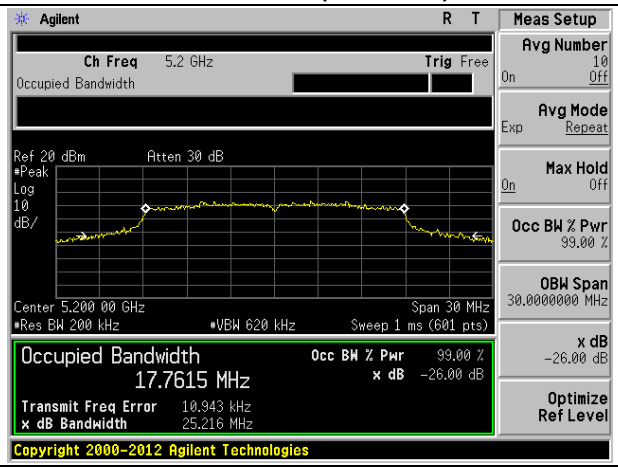
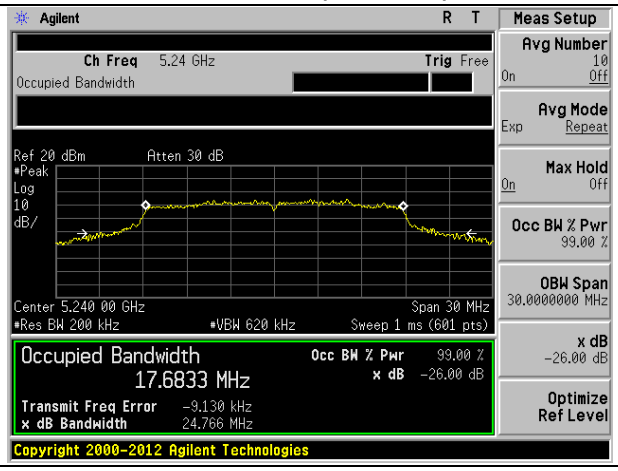
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)			26dB Occupied Bandwidth (MHz)		
		802.11a	802.11n(HT 20)	802.11ac(HT20)	802.11a	802.11n(HT 20)	802.11ac(HT20)
36	5180.00	16.795	17.830	17.749	27.561	26.927	21.378
40	5200.00	16.630	17.762	17.733	25.252	25.216	21.036
48	5240.00	16.579	17.683	17.736	24.185	24.766	21.583

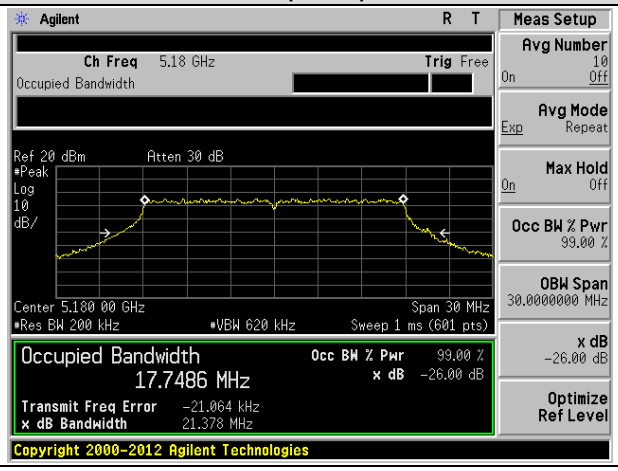
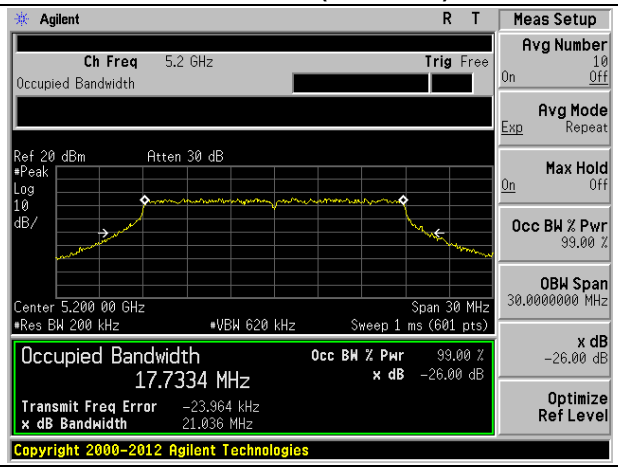
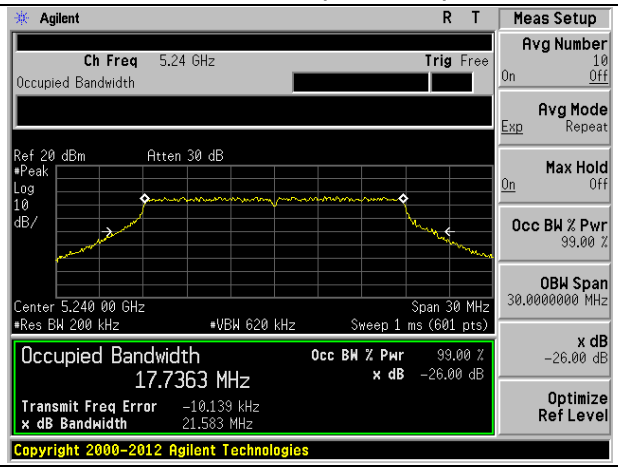
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)	
		802.11n(HT40)	802.11ac(HT40)	802.11n(HT40)	802.11ac(HT40)
38	5190.00	36.081	35.964	45.585	41.416
46	5230.00	36.153	36.117	49.068	43.027

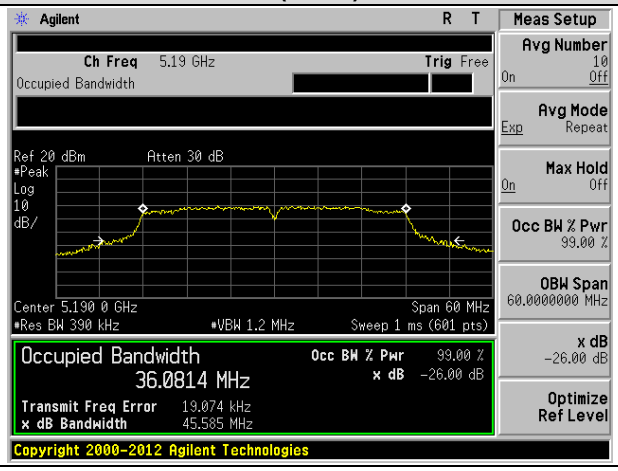
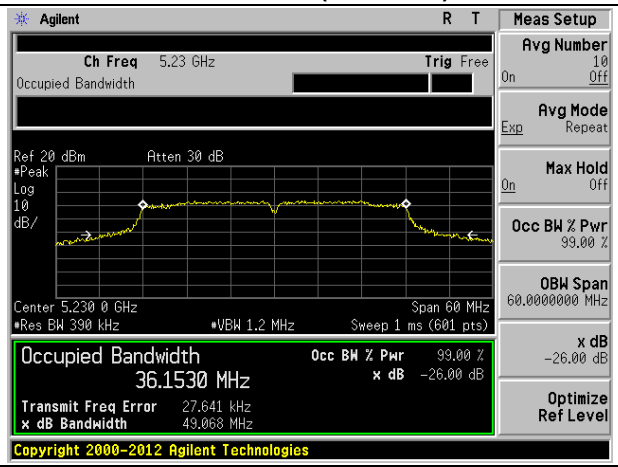
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
		802.11ac(HT80)	802.11ac(HT80)
42	5210.00	75.657	79.587

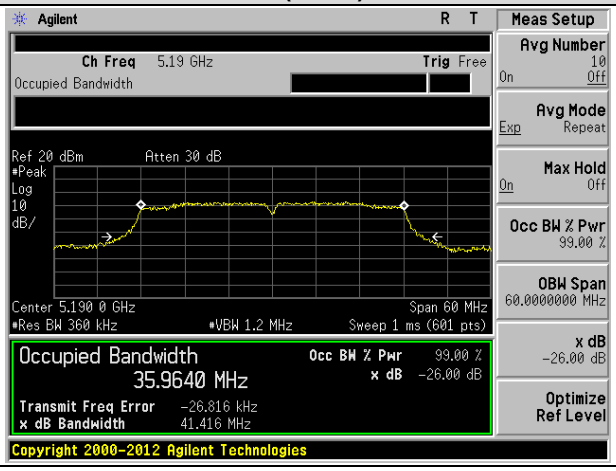
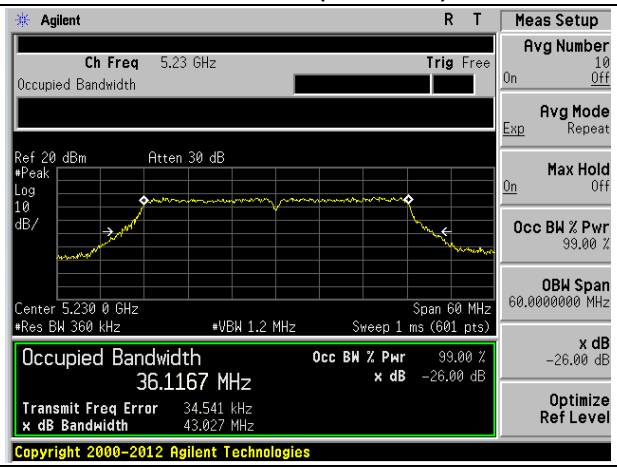
Test plots as followed:

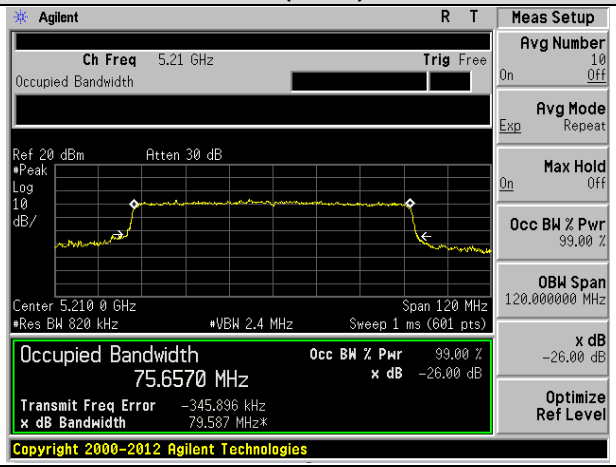
802.11a mode

Channel 36 (5180MHz)

Channel 40 (5200MHz)

Channel 48 (5240MHz)

802.11n(HT20) mode

Channel 36 (5180MHz)

Channel 40 (5200MHz)

Channel 48 (5240MHz)

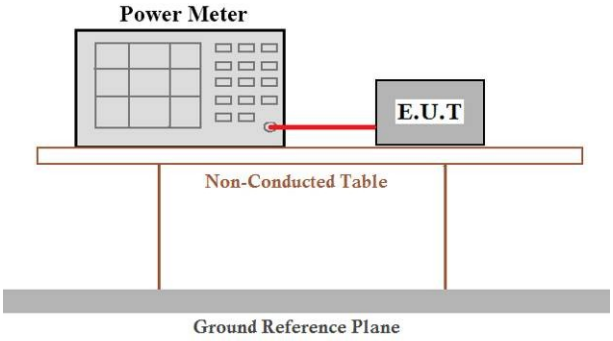
802.11ac(HT20) mode

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	11.45	0.04	11.49	23.98	Pass
40	5200.00	11.82	0.04	11.86	23.98	Pass
48	5240.00	11.45	0.04	11.49	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	9.66	0.04	9.70	23.98	Pass
40	5200.00	9.80	0.04	9.84	23.98	Pass
48	5240.00	10.05	0.04	10.09	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	8.61	0.04	8.65	23.98	Pass
40	5200.00	8.53	0.04	8.57	23.98	Pass
48	5240.00	8.55	0.04	8.59	23.98	Pass

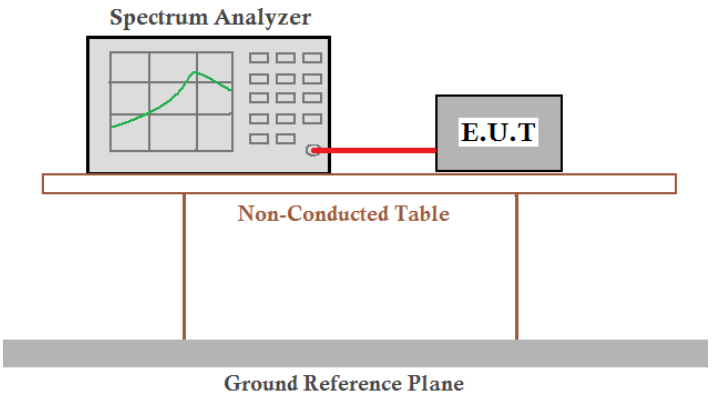
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190.00	8.60	0.04	8.64	23.98	Pass
46	5230.00	8.31	0.04	8.35	23.98	Pass

802.11 ac(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190.00	7.45	0.04	7.49	23.98	Pass
46	5230.00	8.11	0.04	8.68	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	5.22	0.04	5.26	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	0.31	0.04	0.35	11	Pass
40	5200.00	1.01	0.04	1.05	11	Pass
48	5240.00	1.92	0.04	1.96	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	-0.10	0.04	-0.06	11	Pass
40	5200.00	0.71	0.04	0.75	11	Pass
48	5240.00	2.24	0.04	2.26	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	-4.50	0.04	-4.46	11	Pass
40	5200.00	-2.87	0.04	-2.83	11	Pass
48	5240.00	-2.09	0.04	-2.05	11	Pass

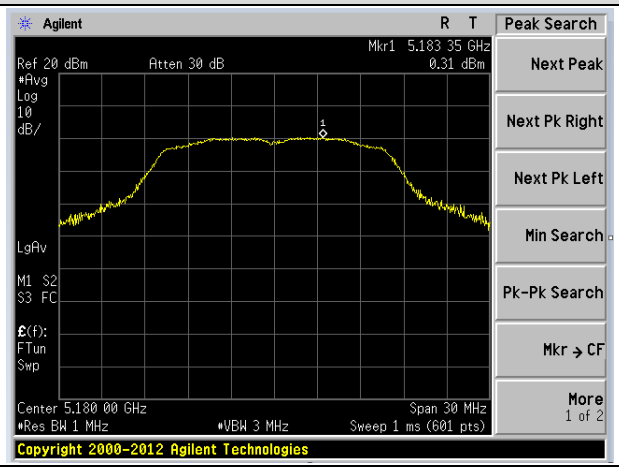
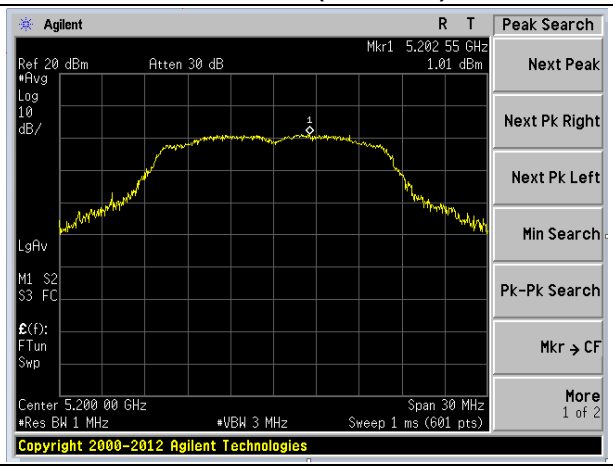
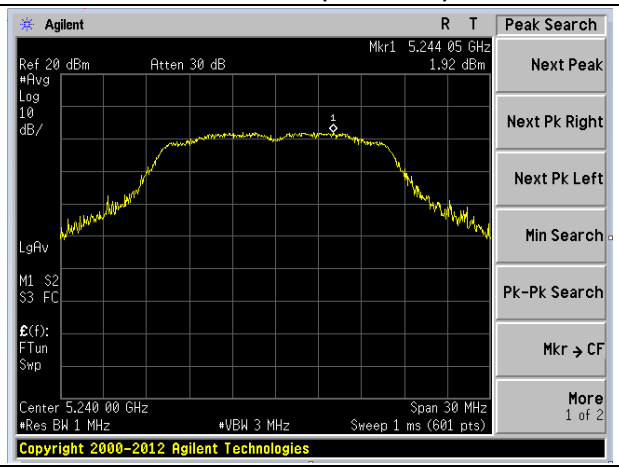
802.11n(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5190.00	-4.73	0.04	-4.69	11	Pass
46	5230.00	-0.35	0.04	-0.31	11	Pass

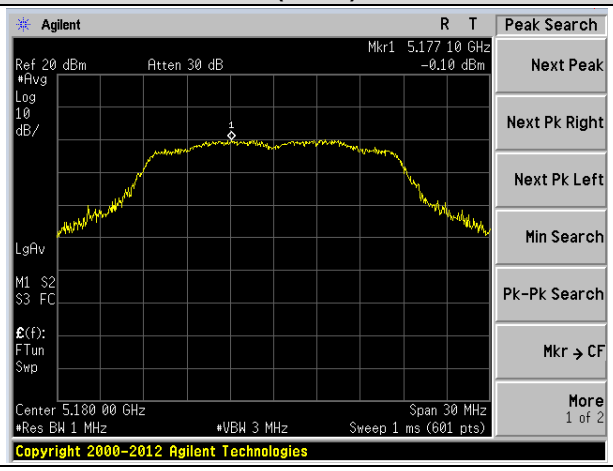
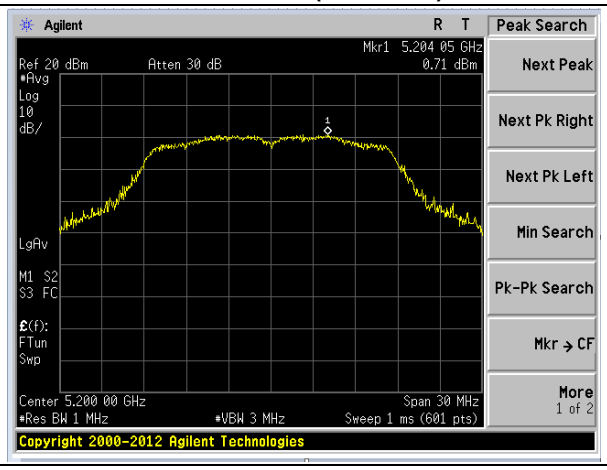
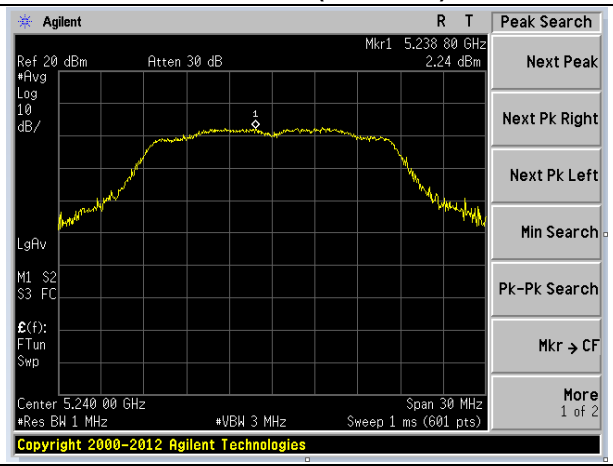
802.11ac(HT40) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5190.00	-2.38	0.04	-2.34	11	Pass
46	5230.00	-2.66	0.04	-2.62	11	Pass

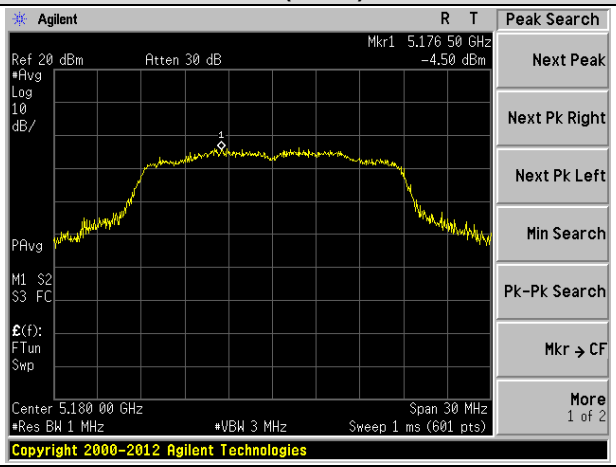
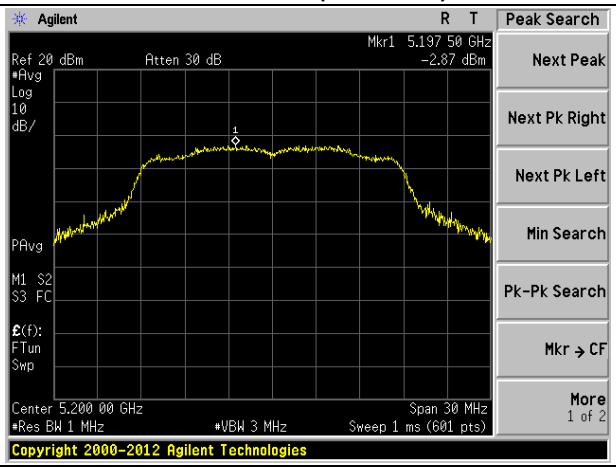
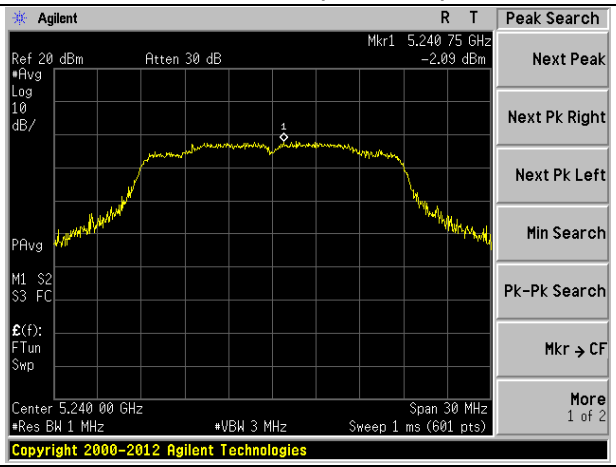
802.11ac(HT80) mode						
Channel No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
38	5210.00	-11.04	0.04	-11.00	11	Pass

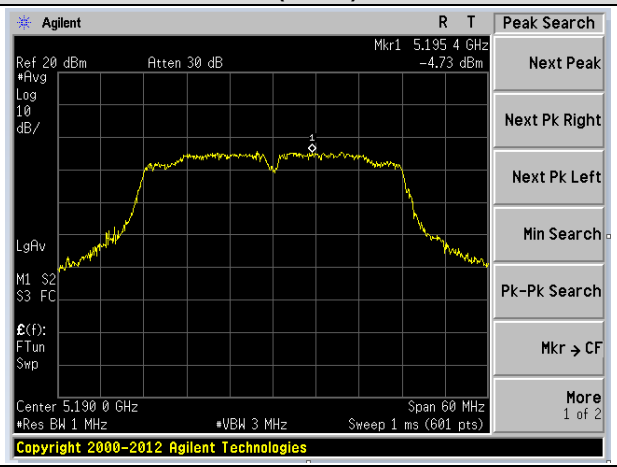
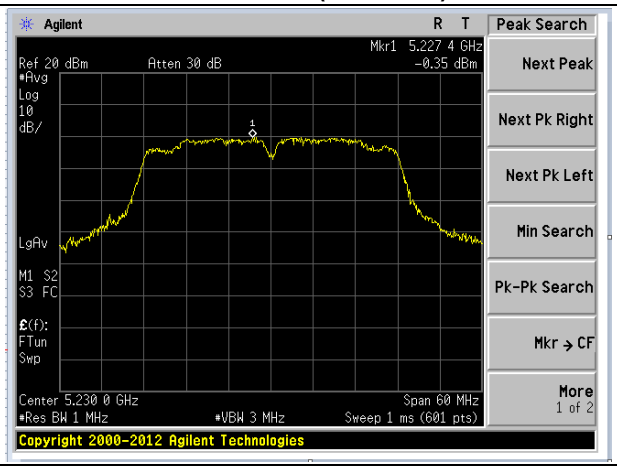
Note: Total PSD = Measured PSD + Duty Factor
Duty Factor = 10 log (1/Duty Cycle)

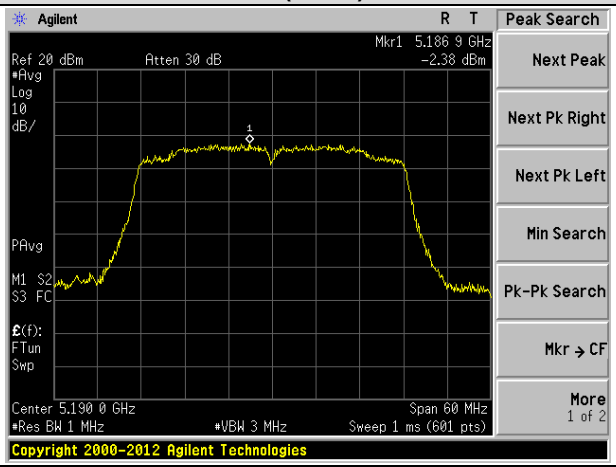
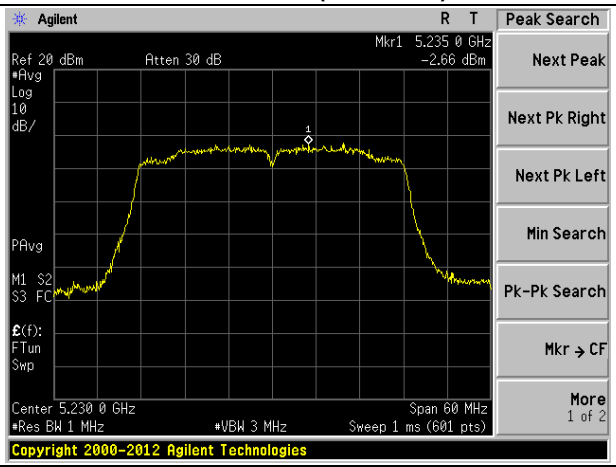
Test plots as followed:

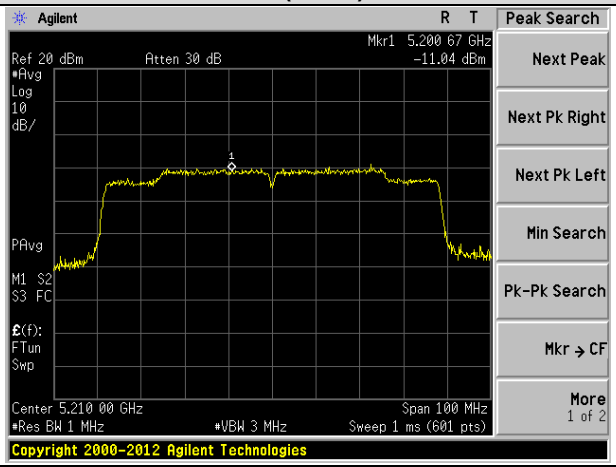
802.11a mode

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)

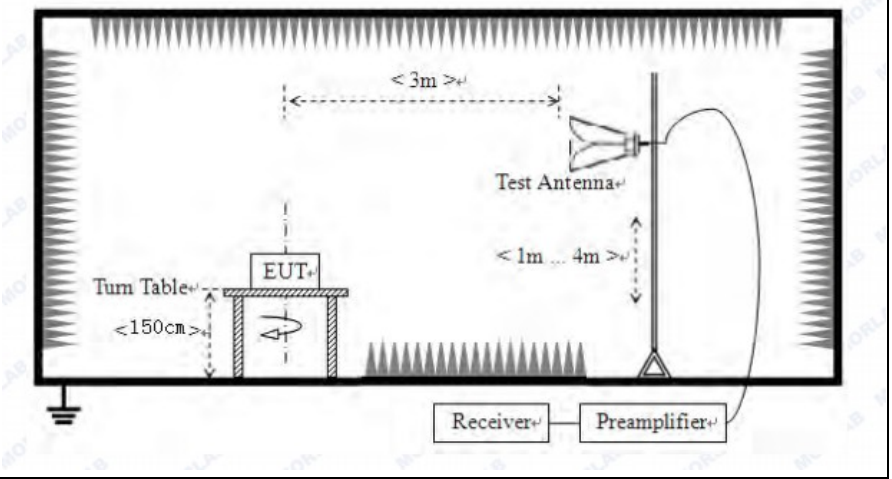
802.11n(HT40) mode

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><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></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>AV</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></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:

Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.52	17.18	51.70	68.20	-16.50	PK
V	5150.00	36.87	17.18	54.05	68.20	-14.15	PK

Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.12	17.18	42.30	54.00	-11.70	AV
V	5150.00	27.39	17.18	44.57	54.00	-9.43	AV

Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	33.19	17.18	50.37	68.20	-17.83	PK
V	5350.00	34.75	17.18	51.93	68.20	-16.27	PK

Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	24.01	17.18	41.19	54.00	-12.81	AV
V	5350.00	25.17	17.18	42.35	54.00	-11.65	AV

Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	33.41	17.18	50.59	68.20	-17.61	PK
V	5150.00	35.69	17.18	52.87	68.20	-15.33	PK

Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.36	17.18	42.54	54.00	-11.46	AV
V	5150.00	25.98	17.18	43.16	54.00	-10.84	AV

Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	34.67	17.18	51.85	68.20	-16.35	PK
V	5350.00	35.81	17.18	52.99	68.20	-15.21	PK

Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	24.22	17.18	41.40	54.00	-12.60	AV
V	5350.00	25.75	17.18	42.93	54.00	-11.07	AV

Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.12	17.18	51.30	68.20	-16.90	PK
V	5150.00	35.24	17.18	52.42	68.20	-15.78	PK
Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	24.69	17.18	41.87	54.00	-12.13	AV
V	5150.00	25.32	17.18	42.50	54.00	-11.50	AV
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	32.22	17.18	49.40	68.20	-18.80	PK
V	5350.00	35.67	17.18	52.85	68.20	-15.35	PK
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	26.21	17.18	43.39	54.00	-10.61	AV
V	5350.00	25.88	17.18	43.06	54.00	-10.94	AV

Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.67	17.20	51.87	68.20	-16.33	PK
V	5150.00	35.82	17.20	53.02	68.20	-15.18	PK
Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	24.35	17.20	41.55	54.00	-12.45	AV
V	5150.00	25.81	17.20	43.01	54.00	-10.99	AV
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	34.29	17.20	51.49	68.20	-16.71	PK
V	5350.00	35.66	17.20	52.86	68.20	-15.34	PK
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	25.59	17.18	42.77	54.00	-11.23	AV
V	5350.00	27.41	17.18	44.59	54.00	-9.41	AV

Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.36	17.20	51.56	68.20	-16.64	PK
V	5150.00	35.42	17.20	52.62	68.20	-15.58	PK

Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.02	17.18	42.20	54.00	-11.80	AV
V	5150.00	27.30	17.18	44.48	54.00	-9.52	AV

Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	34.29	17.20	51.49	68.20	-16.71	PK
V	5350.00	35.66	17.20	52.86	68.20	-15.34	PK

Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	24.35	17.20	41.55	54.00	-12.45	AV
V	5350.00	25.81	17.20	43.01	54.00	-10.99	AV

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	33.95	17.20	51.15	68.20	-17.05	PK
V	5150.00	35.02	17.20	52.22	68.20	-15.98	PK

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.03	17.18	42.21	54.00	-11.79	AV
V	5150.00	27.15	17.18	44.33	54.00	-9.67	AV

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	34.67	17.20	51.87	68.20	-16.33	PK
V	5350.00	35.82	17.20	53.02	68.20	-15.18	PK

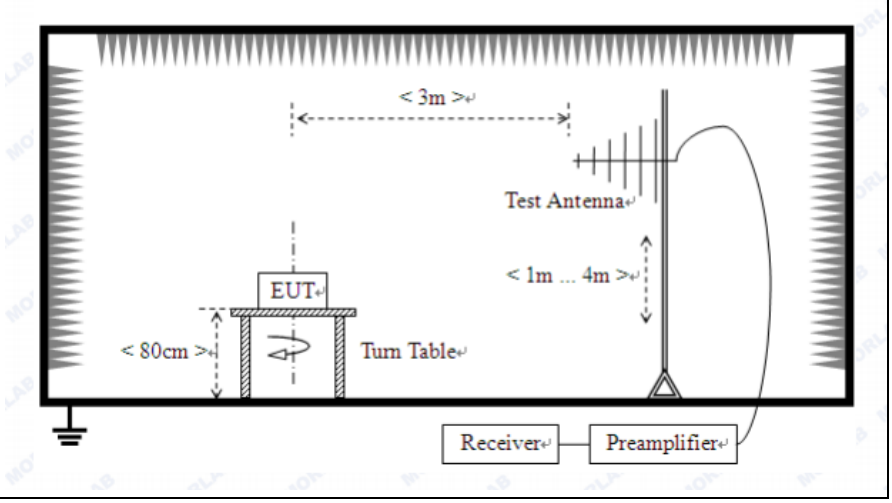
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	24.64	17.20	41.84	54.00	-12.16	AV
V	5350.00	25.37	17.20	42.57	54.00	-11.43	AV

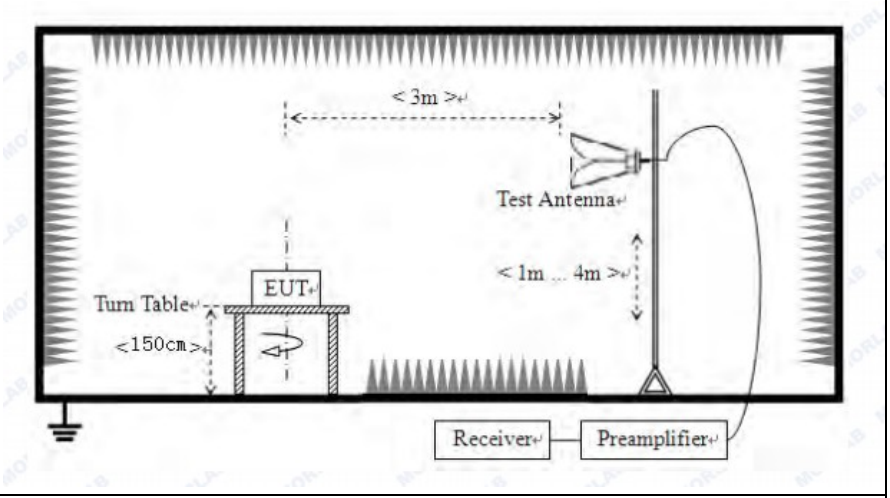
6.7 Radiated Emission

<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>AV</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

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
33.10	47.96	11.25	0.59	30.08	29.72	40.00	-10.28	Vertical
54.45	40.98	11.93	0.81	29.96	23.76	40.00	-16.24	Vertical
120.28	46.47	9.40	1.36	29.57	27.66	43.50	-15.84	Vertical
172.00	42.64	8.50	1.70	29.31	23.53	43.50	-19.97	Vertical
440.20	36.35	16.29	3.05	29.41	26.28	46.00	-19.72	Vertical
860.04	32.82	21.83	4.69	29.14	30.20	46.00	-15.80	Vertical
64.21	35.39	8.73	0.90	29.89	15.13	40.00	-24.87	Horizontal
99.53	33.27	11.73	1.19	29.70	16.49	43.50	-27.01	Horizontal
269.43	44.94	12.53	2.22	29.79	29.90	46.00	-16.10	Horizontal
350.48	36.06	14.50	2.62	29.73	23.45	46.00	-22.55	Horizontal
627.27	35.14	19.43	3.83	29.27	29.13	46.00	-16.87	Horizontal
955.44	40.60	22.54	5.06	29.10	39.10	46.00	-6.90	Horizontal

Above 1GHz:

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	30.11	39.67	14.62	32.65	51.75	68.20	-16.45	Vertical
15540	30.08	38.60	17.66	34.46	51.88	68.20	-16.32	Vertical
10360	31.59	39.67	14.62	32.65	53.23	68.20	-14.97	Horizontal
15540	31.20	38.60	17.66	34.46	53.00	68.20	-15.20	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	29.63	39.67	14.62	32.65	51.27	68.20	-16.93	Vertical
15600	30.89	38.60	17.66	34.46	52.69	68.20	-15.51	Vertical
10400	28.55	39.67	14.62	32.65	50.19	68.20	-18.01	Horizontal
15600	30.69	38.60	17.66	34.46	52.49	68.20	-15.71	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	27.99	39.67	14.62	32.65	49.63	68.20	-18.57	Vertical
15720	30.25	38.60	17.66	34.46	52.05	68.20	-16.15	Vertical
10480	29.83	39.67	14.62	32.65	51.47	68.20	-16.73	Horizontal
15720	29.82	38.60	17.66	34.46	51.62	68.20	-16.58	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	28.69	39.67	14.62	32.65	50.33	68.20	-17.87	Vertical
15540	31.25	38.60	17.66	34.46	53.05	68.20	-15.15	Vertical
10360	29.93	39.67	14.62	32.65	51.57	68.20	-16.63	Horizontal
15540	29.10	38.60	17.66	34.46	50.90	68.20	-17.30	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	30.02	39.67	14.62	32.65	51.66	68.20	-16.54	Vertical
15600	32.06	38.60	17.66	34.46	53.86	68.20	-14.34	Vertical
10400	30.81	39.67	14.62	32.65	52.45	68.20	-15.75	Horizontal
15600	30.56	38.60	17.66	34.46	52.36	68.20	-15.84	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	32.08	39.67	14.62	32.65	53.72	68.20	-14.48	Vertical
15720	31.42	38.60	17.66	34.46	53.22	68.20	-14.98	Vertical
10480	30.97	39.67	14.62	32.65	52.61	68.20	-15.59	Horizontal
15720	31.66	38.60	17.66	34.46	53.46	68.20	-14.74	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	31.25	39.67	14.62	32.65	52.89	68.20	-15.31	Vertical
15540	30.11	38.60	17.66	34.46	51.91	68.20	-16.29	Vertical
10360	29.86	39.67	14.62	32.65	51.50	68.20	-16.70	Horizontal
15540	30.78	38.60	17.66	34.46	52.58	68.20	-15.62	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	30.83	39.67	14.62	32.65	52.47	68.20	-15.73	Vertical
15600	31.13	38.60	17.66	34.46	52.93	68.20	-15.27	Vertical
10400	30.29	39.67	14.62	32.65	51.93	68.20	-16.27	Horizontal
15600	31.52	38.60	17.66	34.46	53.32	68.20	-14.88	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	31.57	39.67	14.62	32.65	53.21	68.20	-14.99	Vertical
15720	30.13	38.60	17.66	34.46	51.93	68.20	-16.27	Vertical
10480	28.29	39.67	14.62	32.65	49.93	68.20	-18.27	Horizontal
15720	30.49	38.60	17.66	34.46	52.29	68.20	-15.91	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	31.45	39.67	14.62	32.65	53.09	68.20	-15.11	Vertical
15570	30.66	38.60	17.66	34.46	52.46	68.20	-15.74	Vertical
10380	30.98	39.67	14.62	32.65	52.62	68.20	-15.58	Horizontal
15570	31.32	38.60	17.66	34.46	53.12	68.20	-15.08	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	29.36	39.82	14.66	32.8	51.04	68.20	-17.16	Vertical
15690	27.83	38.09	17.71	33.81	49.82	68.20	-18.38	Vertical
10460	31.59	39.82	14.66	32.8	53.27	68.20	-14.93	Horizontal
15690	29.52	38.09	17.71	33.81	51.51	68.20	-16.69	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	30.25	39.67	14.62	32.65	51.89	68.20	-16.31	Vertical
15570	31.11	38.60	17.66	34.46	52.91	68.20	-15.29	Vertical
10380	30.36	39.67	14.62	32.65	52.00	68.20	-16.20	Horizontal
15570	30.89	38.60	17.66	34.46	52.69	68.20	-15.51	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	29.89	39.67	14.62	32.65	51.53	68.20	-16.67	Vertical
15690	30.68	38.60	17.66	34.46	52.48	68.20	-15.72	Vertical
10460	31.57	39.67	14.62	32.65	53.21	68.20	-14.99	Horizontal
15690	31.62	38.60	17.66	34.46	53.42	68.20	-14.78	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	31.05	39.67	14.62	32.65	52.69	68.20	-15.51	Vertical
15630	31.09	38.60	17.66	34.46	52.89	68.20	-15.31	Vertical
10420	31.27	39.67	14.62	32.65	52.91	68.20	-15.29	Horizontal
15630	31.62	38.60	17.66	34.46	53.42	68.20	-14.78	Horizontal

Note:

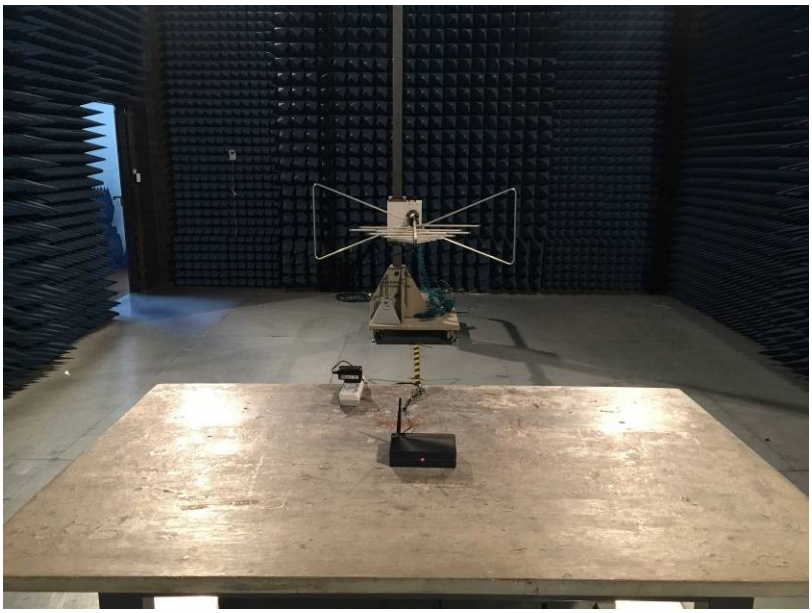
1. Level = Read Level + Antenna Factor+ Cable loss- Preamp Factor.

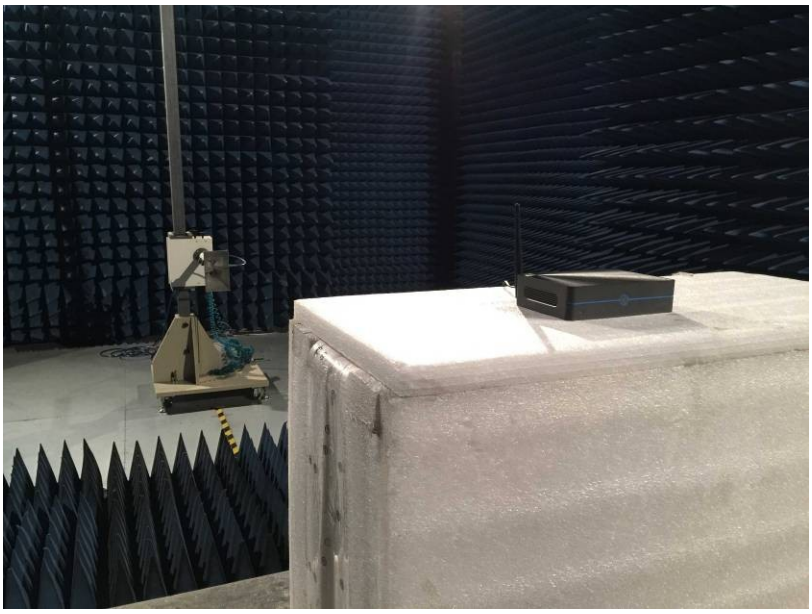
2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.

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.

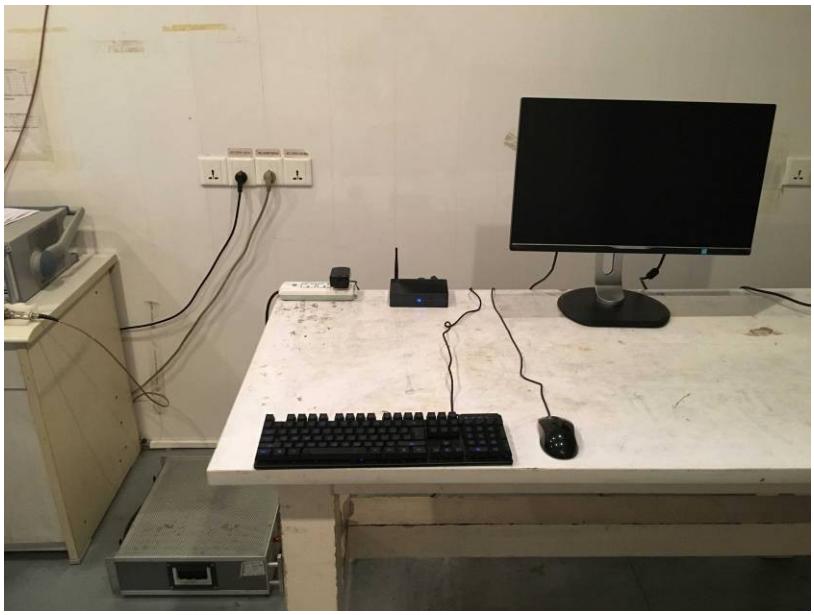
7 Test Setup Photo

Radiated Emission





Conducted Emission



8 EUT Constructional Details

Reference to the test report No. GTS201708000157E01

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