FCC REPORT

Applicant:	Autel Intelligent Tech. Corp., Ltd.
Address of Applicant:	7th-8th, 10th Floor, Bldg. B1, Zhiyuan, Xueyuan Rd. Xili, Nanshan, Shenzhen 518055, China
Manufacturer:	Autel Intelligent Tech. Corp., Ltd.
Address of Manufacturer:	7th-8th, 10th Floor, Bldg. B1, Zhiyuan, Xueyuan Rd. Xili, Nanshan, Shenzhen 518055, China
Factory 1:	Autel Intelligent Technology Corp.,Ltd.
Address of Factory 1:	6th Floor,Building 1,Yanxiang Zhigu,NO.11 Gaoxin West Rd,Guangming New District, Shenzhen City, Guangdong Province,China.
Factory 2:	AUTEL VIETNAM COMPANY LIMITED
Address of Factory 2:	4th Floor, Factory#6, Land#CN1, An Duong Industrial Zone, Hong Phong Township, An Duong County, Hai Phong, Viet Nam

Equipment Under Test (EUT)

Product Name:	MaxiFlash VCI
Model No.:	MaxiFlash VCI
Trade Mark:	Autel
FCC ID:	WQ818MXFULTRA
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of sample receipt:	September 25, 2019
Date of Test:	September 25-29, 2019
Date of report issue:	September 29, 2019
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	*September 29, 2019*	*Original*

Prepared By:  ***Date:*** *September 29, 2019*

Project Engineer

Check By:  ***Date:*** *September 29, 2019*

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	15.407(b)(1)	PASS
Frequency Stability	15.407(g)	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	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

<table>
<tr><td>Product Name:</td><td>MaxiFlash VCI</td></tr>
<tr><td>Model No.:</td><td>MaxiFlash VCI</td></tr>
<tr><td>Serial No.:</td><td>123456789101112</td></tr>
<tr><td>Hardware Version:</td><td>V3</td></tr>
<tr><td>Software Version:</td><td>V1.01.05</td></tr>
<tr><td>Test sample(s) ID:</td><td>GTS201909000204-1</td></tr>
<tr><td>Sample(s) Status:</td><td>Engineer sample</td></tr>
<tr><td>Operation Frequency:</td><td>
<table>
<tr><th>Band</th><th>Mode</th><th>Frequency Range(MHz)</th><th>Number of channels</th></tr>
<tr><td rowspan="3">U-NII Band I</td><td>IEEE 802.11a</td><td>5180-5240</td><td>4</td></tr>
<tr><td>IEEE 802.11n 20MHz</td><td>5180-5240</td><td>4</td></tr>
<tr><td>IEEE 802.11n 40MHz</td><td>5190-5230</td><td>2</td></tr>
</table>
</td></tr>
<tr><td>Modulation technology:</td><td>OFDM
802.11a/n</td></tr>
<tr><td>Antenna Type:</td><td>Integral Antenna</td></tr>
<tr><td>Antenna gain:</td><td>2.6dBi</td></tr>
<tr><td>Power supply:</td><td>Adapter
Model: A361-1203000DI
Input: AC 100-240V, 50/60Hz, 1.5A
Output: DC 12V, 3000mA</td></tr>
</table>

Channel list for 802.11a/n(HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	40	5200MHz	44	5220MHz	48	5240MHz

Channel list for 802.11n(HT40)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz				

5.2 Test mode

Transmitting mode	Keep the EUT in transmitting with modulation..

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

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

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

Mode	Data rate
802.11a/n(HT20)	6/6.5 Mbps
802.11n(HT40)	13.5 Mbps

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 fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

● **IC —Registration No.: 9079A**

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

● **NVLAP (LAB CODE:600179-0)**

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

5.4 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, 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 Additional Instructions

Test Software	Special test command provided by manufacturer
Power level setup	Default

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 26 2019	June. 25 2020
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 26 2019	June. 25 2020
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 26 2019	June. 25 2020
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 26 2019	June. 25 2020
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 26 2019	June. 25 2020
9	Coaxial Cable	GTS	N/A	GTS211	June. 26 2019	June. 25 2020
10	Coaxial cable	GTS	N/A	GTS210	June. 26 2019	June. 25 2020
11	Coaxial Cable	GTS	N/A	GTS212	June. 26 2019	June. 25 2020
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 26 2019	June. 25 2020
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 26 2019	June. 25 2020
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 26 2019	June. 25 2020
15	Band filter	Amindeon	82346	GTS219	June. 26 2019	June. 25 2020
16	Power Meter	Anritsu	ML2495A	GTS540	June. 26 2019	June. 25 2020
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 26 2019	June. 25 2020
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 26 2019	June. 25 2020
19	Splitter	Agilent	11636B	GTS237	June. 26 2019	June. 25 2020
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 26 2019	June. 25 2020
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 20 2018	Oct. 19 2019
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 20 2018	Oct. 19 2019
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 20 2018	Oct. 19 2019
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 26 2019	June. 25 2020

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.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 26 2019	June. 25 2020
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 26 2019	June. 25 2020
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 26 2019	June. 25 2020
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 26 2019	June. 25 2020
9	ISN	SCHWARZBECK	NTFM 8158	GTD565	June. 26 2019	June. 25 2020

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 26 2019	June. 25 2020
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 26 2019	June. 25 2020
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 26 2019	June. 25 2020
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 26 2019	June. 25 2020
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 26 2019	June. 25 2020
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 26 2019	June. 25 2020
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 26 2019	June. 25 2020
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 26 2019	June. 25 2020

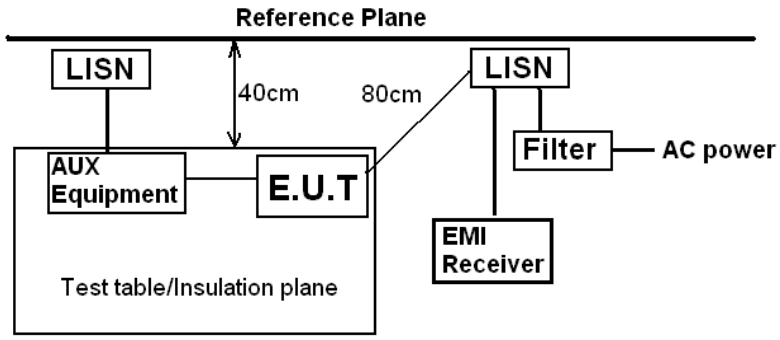
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 26 2019	June. 25 2020
2	Barometer	ChangChun	DYM3	GTS255	June. 26 2019	June. 25 2020

7 Test results and Measurement Data

7.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: *An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.*	
E.U.T Antenna:	
The antennas are integral antenna, the best case gain of the antennas are 2.6dBi, reference to the appendix II for details	

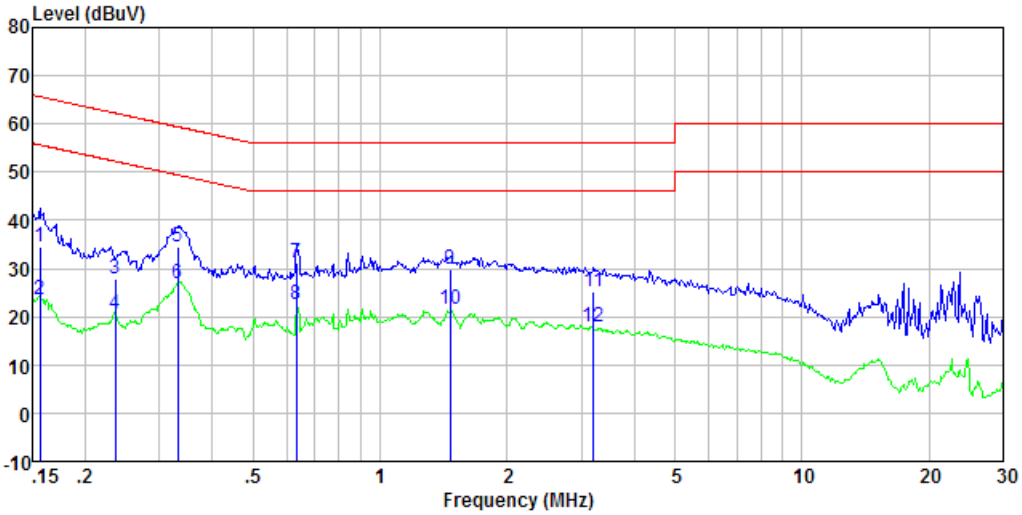
7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz
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 5.2 for details
Test environment:	Temp.: 25 °C / Humid.: 52% / Press.: 1012mbar
Test voltage:	AC 120V, 60Hz
Test results:	Pass

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

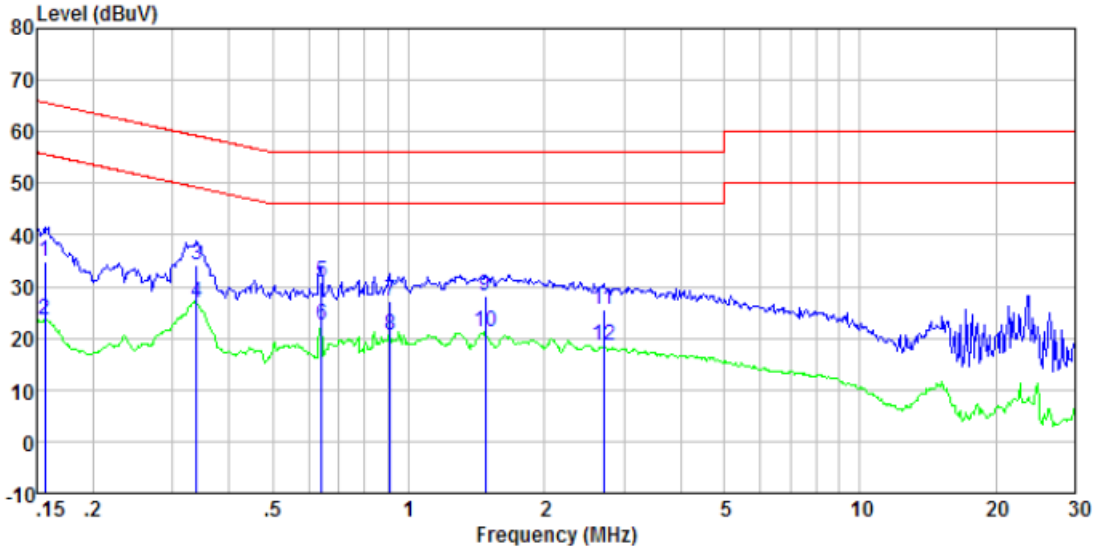
Measurement data:

Line:



Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.16	33.86	0.40	0.08	34.34	65.65	-31.31	QP
0.16	23.02	0.40	0.08	23.50	55.65	-32.15	Average
0.24	27.33	0.40	0.11	27.84	62.26	-34.42	QP
0.24	20.13	0.40	0.11	20.64	52.26	-31.62	Average
0.33	33.94	0.38	0.10	34.42	59.40	-24.98	QP
0.33	26.25	0.38	0.10	26.73	49.40	-22.67	Average
0.63	30.62	0.28	0.12	31.02	56.00	-24.98	QP
0.63	22.16	0.28	0.12	22.56	46.00	-23.44	Average
1.46	29.44	0.20	0.16	29.80	56.00	-26.20	QP
1.46	21.25	0.20	0.16	21.61	46.00	-24.39	Average
3.21	24.80	0.20	0.19	25.19	56.00	-30.81	QP
3.21	17.40	0.20	0.19	17.79	46.00	-28.21	Average

Neutral:

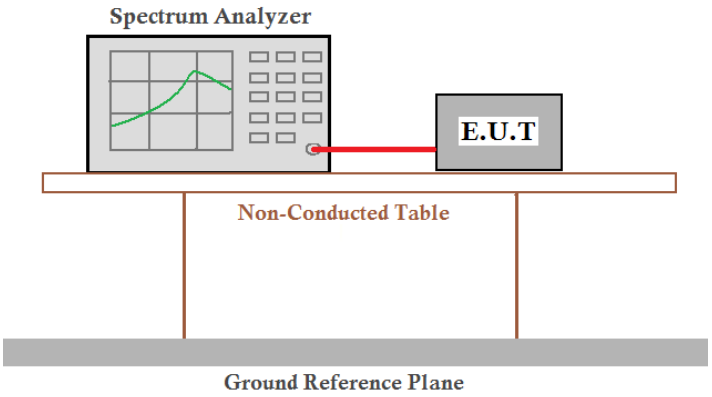


Freq MHz	Reading level dBuV	LISN/ISN factor dB/m	Cable loss dB	Level dBuV	Limit level dBuV	Over limit dB	Remark
0.16	34.39	0.40	0.08	34.87	65.65	-30.78	QP
0.16	23.02	0.40	0.08	23.50	55.65	-32.15	Average
0.34	33.82	0.38	0.10	34.30	59.22	-24.92	QP
0.34	26.30	0.38	0.10	26.78	49.22	-22.44	Average
0.64	30.37	0.27	0.12	30.76	56.00	-25.24	QP
0.64	22.01	0.27	0.12	22.40	46.00	-23.60	Average
0.91	26.87	0.22	0.14	27.23	56.00	-28.77	QP
0.91	20.29	0.22	0.14	20.65	46.00	-25.35	Average
1.48	27.88	0.20	0.16	28.24	56.00	-27.76	QP
1.48	20.88	0.20	0.16	21.24	46.00	-24.76	Average
2.71	25.26	0.20	0.19	25.65	56.00	-30.35	QP
2.71	18.09	0.20	0.19	18.48	46.00	-27.52	Average

Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss*

7.3 Emission Bandwidth and 99% Occupied Bandwidth

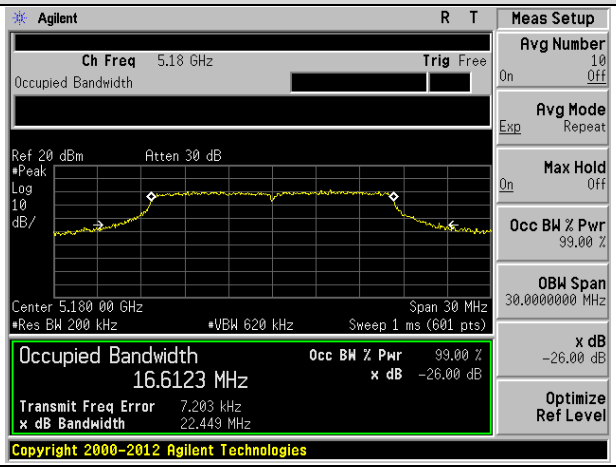
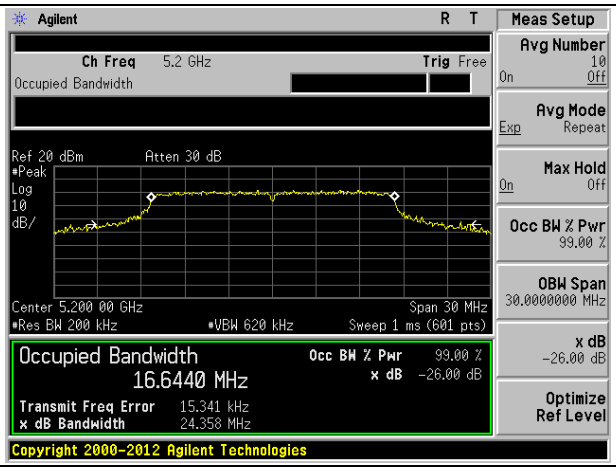
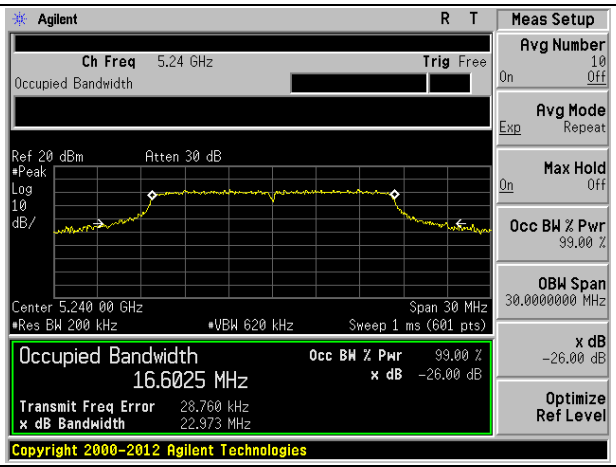
Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	N/A
Test setup:	
Test procedure:	According to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

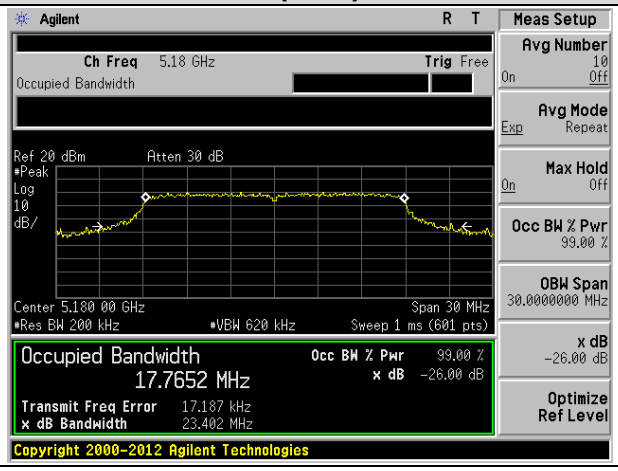
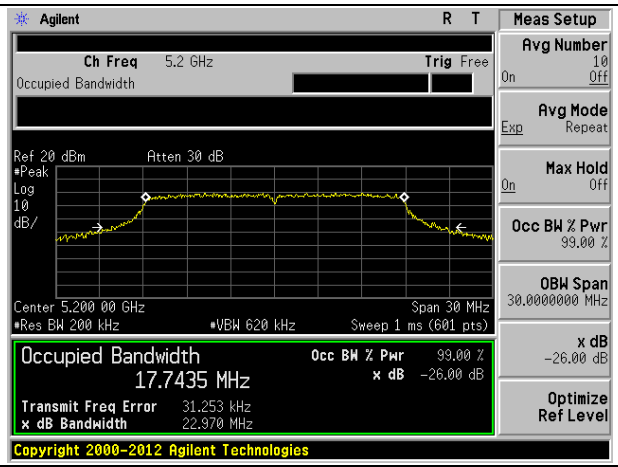
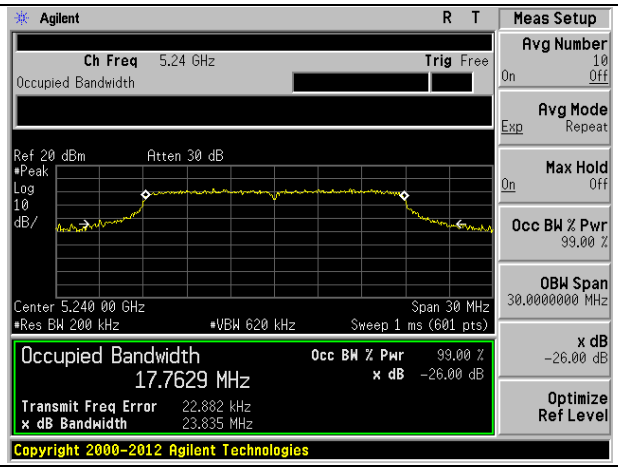
Measurement Data:

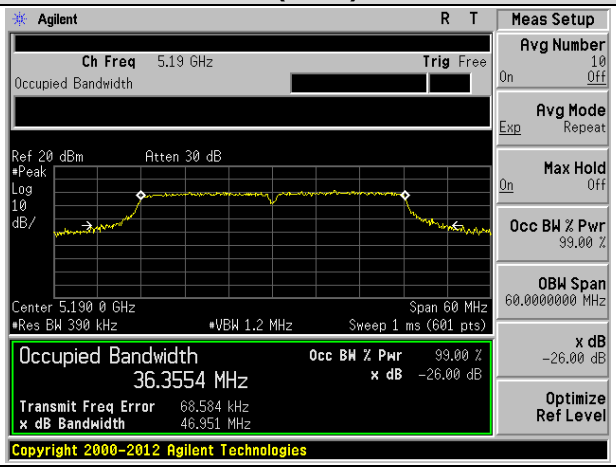
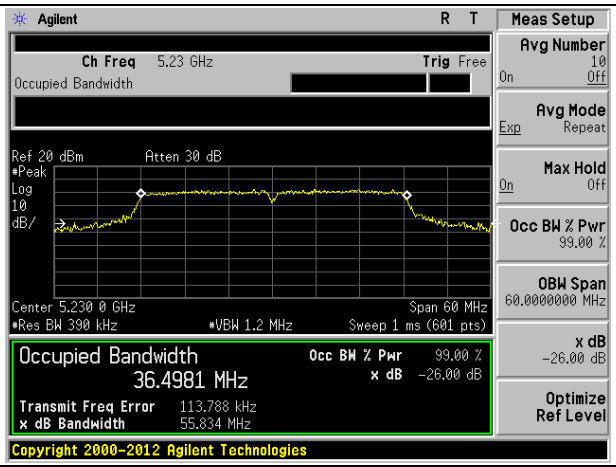
CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)		26dB Occupied Bandwidth (MHz)	
		802.11a	802.11n(HT20)	802.11a	802.11n(HT20)
36	5180	16.6123	17.7652	22.449	23.402
40	5200	16.6440	17.7435	24.358	22.970
48	5240	16.6025	17.7629	22.973	23.835

CH. No.	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Occupied Bandwidth (MHz)
		802.11n(HT40)	802.11n(HT40)
38	5190	36.3554	46.951
46	5230	36.4981	55.834

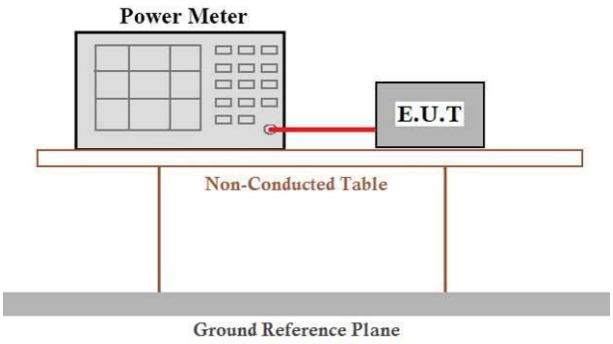
Test plots as followed:

802.11a mode

5180

5200

5240

802.11n(HT20) mode

5180

5200

5240

802.11n(HT40) mode

5190

5230

7.4 Peak Transmit Power

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407</td></tr>
<tr><td>Test Method:</td><td>KDB 789033 D02 General U-NII Test Procedures New Rules v02r01</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency band (MHz)</th><th>Limit</th></tr>
<tr><td rowspan="2">5150-5250</td><td>≤1W(30dBm) for master device</td></tr>
<tr><td>≤250mW(23.98dBm) for client device</td></tr>
<tr><td>5250-5350</td><td>≤250mW(23.98dBm) for client device or 11dBm+10logB*</td></tr>
<tr><td>5470-5725</td><td>≤250mW(23.98dBm) for client device or 11dBm+10logB*</td></tr>
<tr><td colspan="2">Remark: *Where B is the 26dB emission bandwidth in MHz.
The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test procedure:</td><td>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).</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 5.2 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Measurement Data

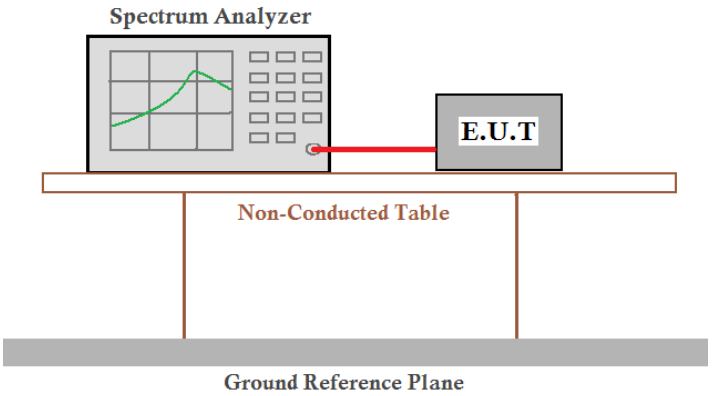
Modulation	Duty cycle	Duty Factor
802.11a	98.8%	0.05
802.11n(HT20)	98.8%	0.05
802.11n(HT40)	97.5%	0.11

802.11a mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180	14.78	0.05	14.83	23.98	Pass
40	5200	15.73	0.05	15.78	23.98	Pass
48	5240	16.24	0.05	16.29	23.98	Pass
802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
36	5180	14.61	0.05	14.66	23.98	Pass
40	5200	14.03	0.05	14.08	23.98	Pass
48	5240	15.39	0.05	15.44	23.98	Pass
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured Power (dBm)	Duty Factor	Output Power (dBm)	Limit (dBm)	Result
38	5190	15.09	0.11	15.20	23.98	Pass
46	5230	16.33	0.11	16.44	23.98	Pass

Note: Output Power = Measured Power + Duty Factor

Duty Factor = 10 log (1/Duty Cycle)

7.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	<table><tr><td>Frequency band (MHz)</td><td>Limit</td></tr><tr><td rowspan="2">5150-5250</td><td>≤17dBm in 1MHz for master device</td></tr><tr><td>≤11dBm in 1MHz for client device</td></tr><tr><td>5250-5350</td><td>≤11dBm in 1MHz for client device</td></tr><tr><td>5470-5725</td><td>≤11dBm in 1MHz for client device</td></tr><tr><td colspan="2">Remark: The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test.</td></tr></table>
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 5.2 for details
Test results:	Pass

Measurement Data

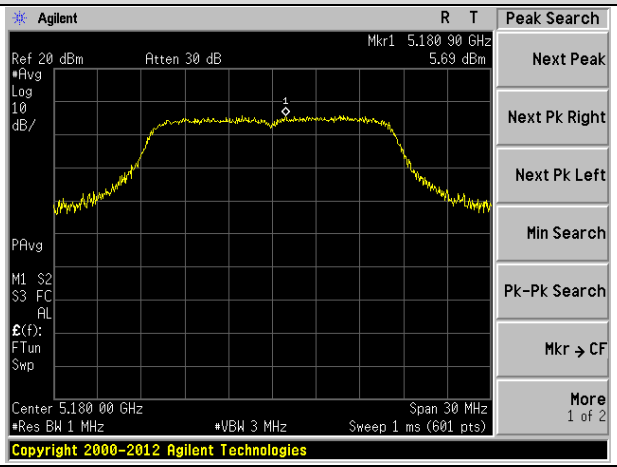
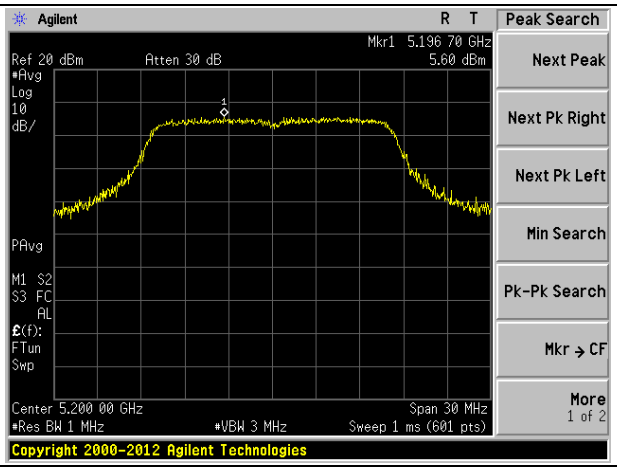
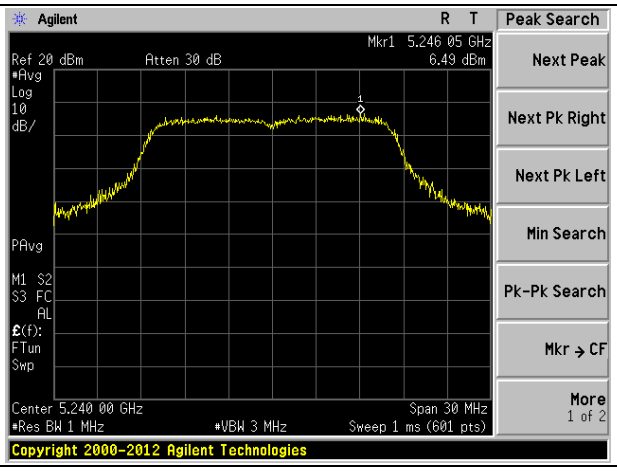
Modulation	Duty cycle	Duty Factor
802.11a	98.8%	0.05
802.11n(HT20)	98.8%	0.05
802.11n(HT40)	97.5%	0.11

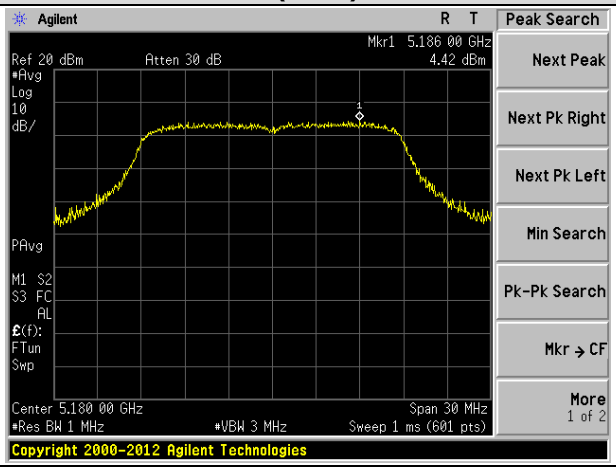
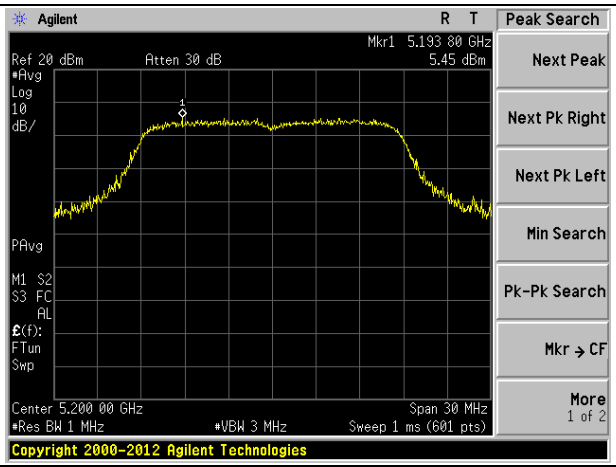
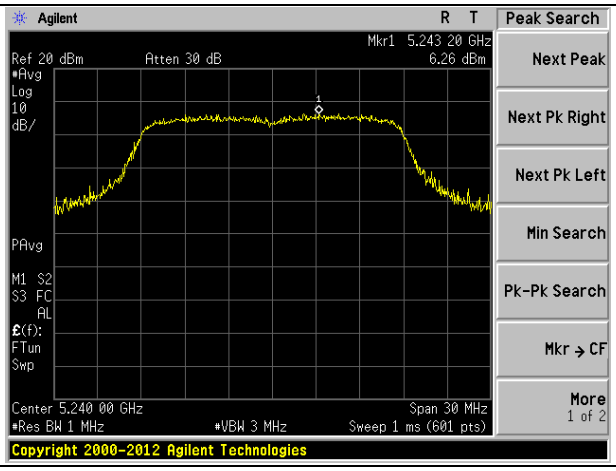
802.11a mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
36	5180	5.69	0.05	5.74	11	Pass
40	5200	5.60	0.05	5.65	11	Pass
48	5240	6.49	0.05	6.54	11	Pass
802.11n(HT20) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
36	5180	4.42	0.05	4.47	11	Pass
40	5200	5.45	0.05	4.50	11	Pass
48	5240	6.26	0.05	6.31	11	Pass
802.11n(HT40) mode						
CH No.	Frequency (MHz)	Measured PSD (dBm/MHz)	Duty Factor	Total PSD Power(dBm/MHz)	Limit (dBm/MHz)	Result
38	5190	2.05	0.11	2.16	11	Pass
46	5230	3.65	0.11	3.76	11	Pass

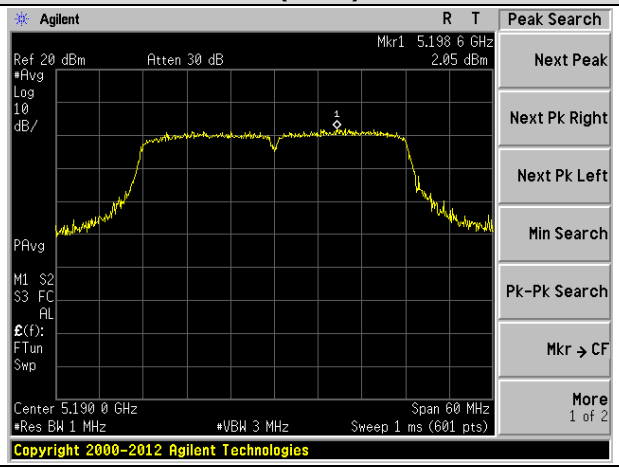
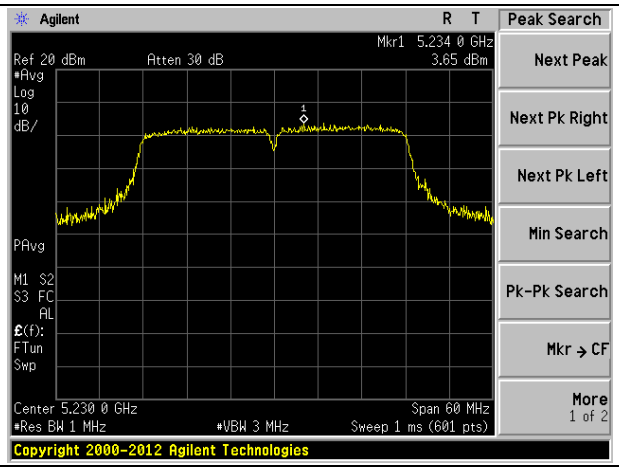
Note: Output Power = Measured Power + Duty Factor

Duty Factor = 10 log (1/Duty Cycle)

Test plots as followed:

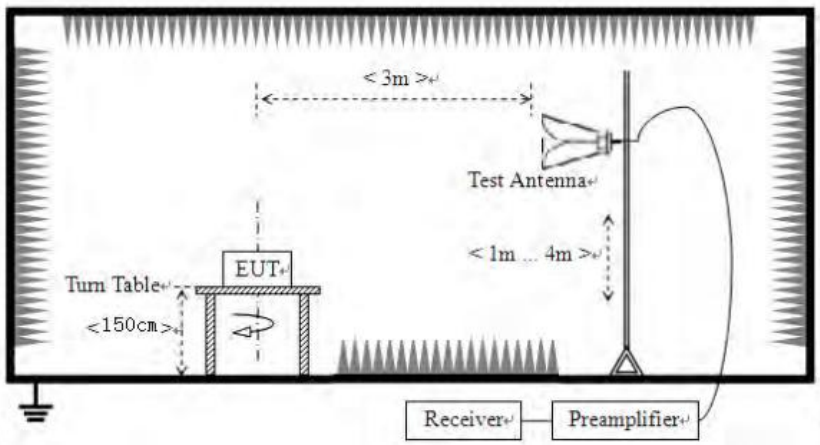
802.11a mode

5180

5200

5240

802.11n(HT20) mode

5180

5200

5240

802.11n(HT40) mode

5190

5210

7.6 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:	For radiated emissions above 1GHz 
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remarks:

1. *Only the worst case Main Antenna test data.*
2. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
5. *According to KDB 789033 D02 v02r01 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					PK			
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	43.28	32.07	8.99	37.49	46.85	68.20	-21.35	Horizontal
5350.00	45.06	31.75	9.29	37.20	48.90	68.20	-19.30	Horizontal
5150.00	46.30	32.07	8.99	37.49	49.87	68.20	-18.33	Vertical
5350.00	43.15	31.75	9.29	37.20	46.99	68.20	-21.21	Vertical

802.11a					AV			
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	37.22	32.07	8.99	37.49	40.79	54.00	-13.21	Horizontal
5350.00	32.39	31.75	9.29	37.20	36.23	54.00	-17.77	Horizontal
5150.00	35.40	32.07	8.99	37.49	38.97	54.00	-15.03	Vertical
5350.00	31.85	31.75	9.29	37.20	35.69	54.00	-18.31	Vertical

802.11n(HT20)					PK			
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	46.63	32.07	8.99	37.49	50.20	68.20	-18.00	Horizontal
5350.00	46.94	31.75	9.29	37.20	50.78	68.20	-17.42	Horizontal
5150.00	42.36	32.07	8.99	37.49	45.93	68.20	-22.27	Vertical
5350.00	44.81	31.75	9.29	37.20	48.65	68.20	-19.55	Vertical

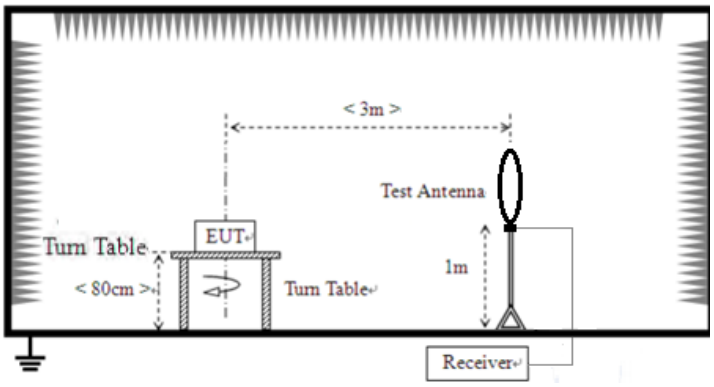
802.11n(HT20)					AV			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	33.50	32.07	8.99	37.49	37.07	54.00	-16.93	Horizontal
5350.00	34.34	31.75	9.29	37.20	38.18	54.00	-15.82	Horizontal
5150.00	34.24	32.07	8.99	37.49	37.81	54.00	-16.19	Vertical
5350.00	31.43	31.75	9.29	37.20	35.27	54.00	-18.73	Vertical

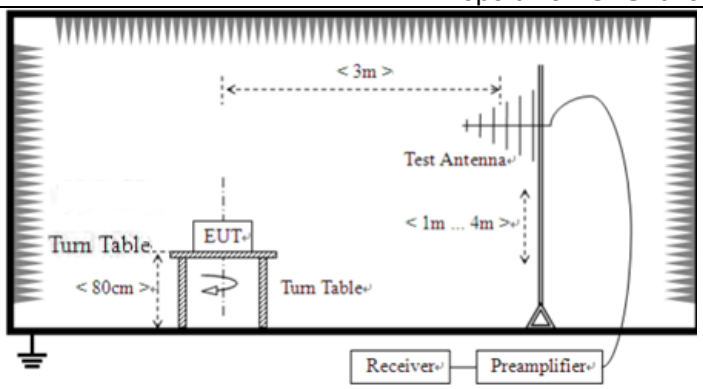
802.11n(HT40)				PK				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	46.07	32.07	8.99	37.49	49.64	68.20	-18.56	Horizontal
5350.00	42.40	31.75	9.29	37.20	46.24	68.20	-21.96	Horizontal
5150.00	44.78	32.07	8.99	37.49	48.35	68.20	-19.85	Vertical
5350.00	43.61	31.75	9.29	37.20	47.45	68.20	-20.75	Vertical

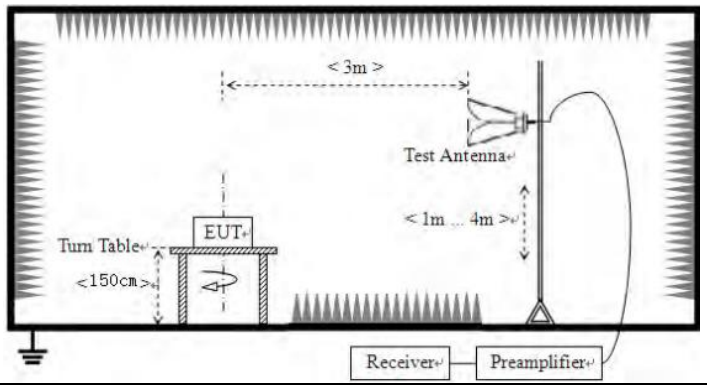
802.11n(HT40)				AV				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
5150.00	33.39	32.07	8.99	37.49	36.96	54.00	-17.04	Horizontal
5350.00	33.38	31.75	9.29	37.20	37.22	54.00	-16.78	Horizontal
5150.00	31.19	32.07	8.99	37.49	34.76	54.00	-19.24	Vertical
5350.00	37.01	31.75	9.29	37.20	40.85	54.00	-13.15	Vertical

7.7 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>9kHz 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>9kHz-150KHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak Value</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><th>Frequency</th><th>Limit (uV/m)</th><th>Value</th><th>Measurement Distance</th></tr>
<tr><td>0.009MHz-0.490MHz</td><td>2400/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>0.490MHz-1.705MHz</td><td>24000/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>1.705MHz-30MHz</td><td>30</td><td>QP</td><td>30m</td></tr>
<tr><td>30MHz-88MHz</td><td>100</td><td>QP</td><td rowspan="6">3m</td></tr>
<tr><td>88MHz-216MHz</td><td>150</td><td>QP</td></tr>
<tr><td>216MHz-960MHz</td><td>200</td><td>QP</td></tr>
<tr><td>960MHz-1GHz</td><td>500</td><td>QP</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>Average</td></tr>
<tr><td>5000</td><td>Peak</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:</td></tr>
</table>

	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 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:	For radiated emissions from 9kHz to 30MHz  For radiated emissions from 30MHz to1GHz

<table>
<tr><td></td><td colspan="6"> 

For radiated emissions above 1GHz

</td></tr>
<tr><td>Test Instruments:</td><td colspan="6">Refer to section 5.10 for details</td></tr>
<tr><td>Test mode:</td><td colspan="6">Refer to section 5.2 for details</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test voltage:</td><td colspan="6">AC 120V, 60Hz</td></tr>
<tr><td>Test results:</td><td colspan="6">Pass</td></tr>
</table>

Remarks:

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

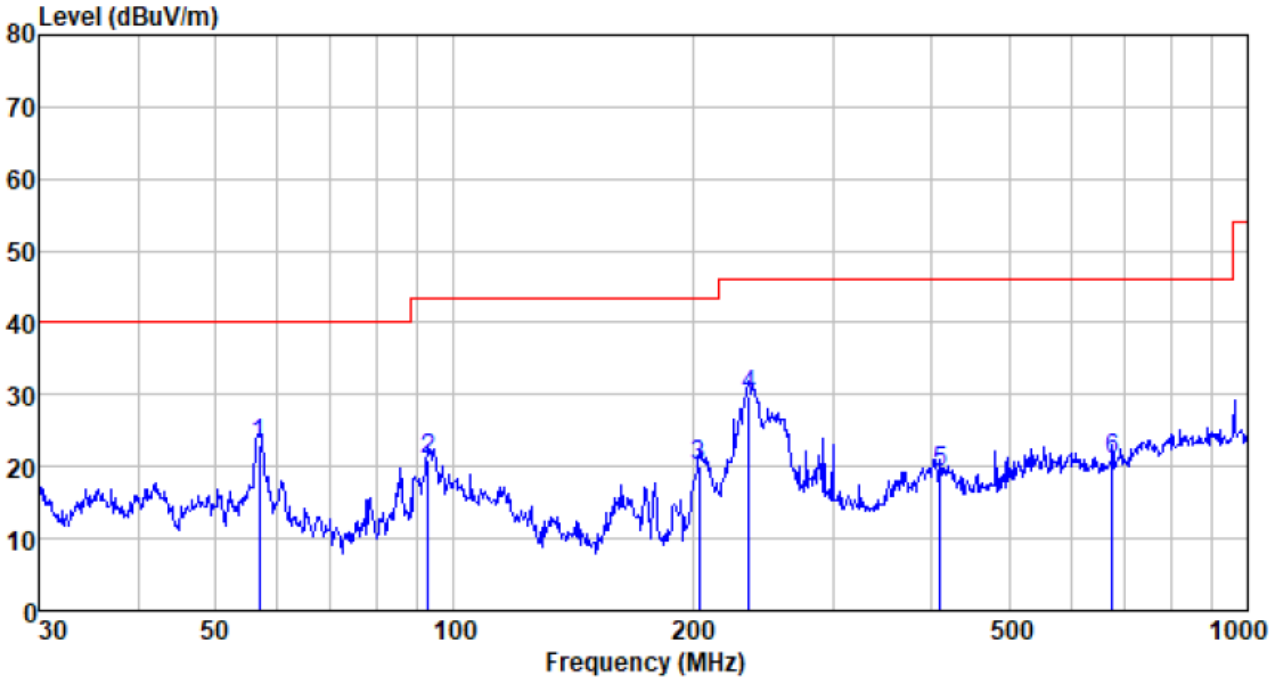
Measurement Data:

9 kHz ~ 30 MHz

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

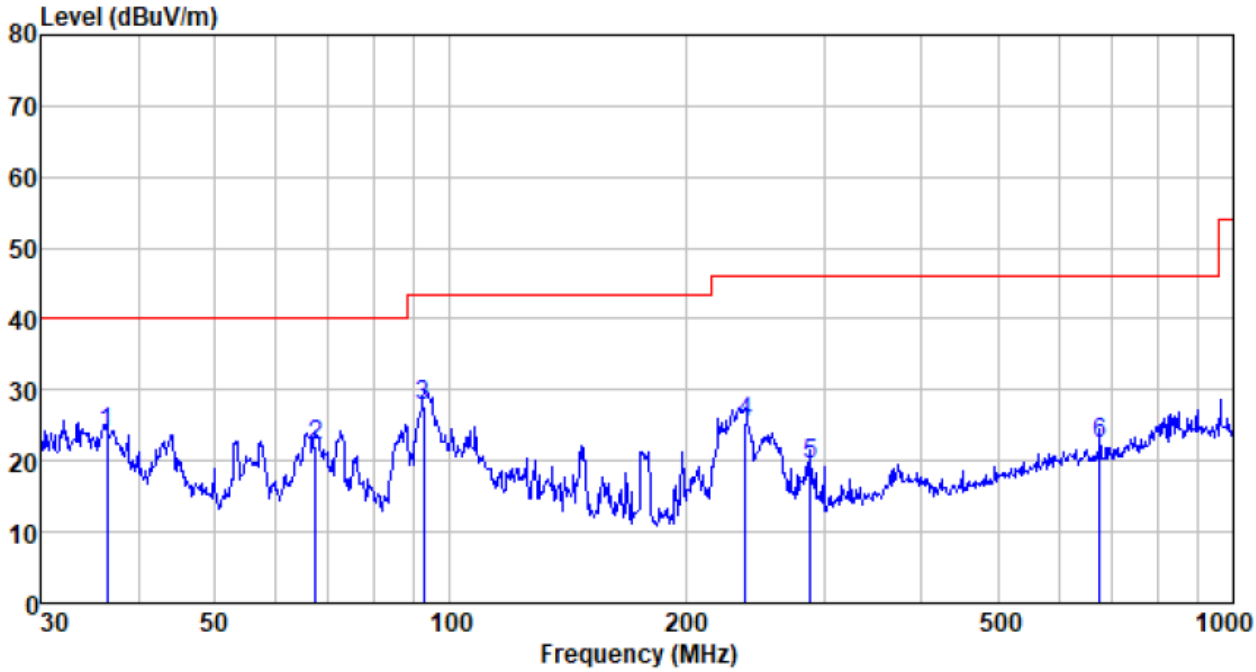
30MHz~ 1GHz

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
56.792	46.80	11.60	0.83	36.28	22.95	40.00	-17.05	QP
92.787	45.23	11.11	1.13	36.66	20.81	43.50	-22.69	QP
203.523	44.96	10.55	1.86	37.33	20.04	43.50	-23.46	QP
234.991	53.47	11.67	2.05	37.37	29.82	46.00	-16.18	QP
410.383	38.13	15.54	2.91	37.52	19.06	46.00	-26.94	QP
675.208	35.07	19.58	4.00	37.61	21.04	46.00	-24.96	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	
36.509	47.05	11.61	0.62	35.45	23.83	40.00	-16.17	QP
67.438	49.36	8.42	0.92	36.41	22.29	40.00	-17.71	QP
92.462	52.37	11.04	1.13	36.66	27.88	43.50	-15.62	QP
238.310	48.98	11.78	2.06	37.37	25.45	46.00	-20.55	QP
287.990	41.28	13.27	2.31	37.41	19.45	46.00	-26.55	QP
675.208	36.44	19.58	4.00	37.61	22.41	46.00	-23.59	QP

Above 1GHz:

802.11a 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	32.18	39.67	14.62	32.65	53.82	74.00	-20.18	Vertical
15540.00	32.06	38.60	17.66	34.46	53.86	74.00	-20.14	Vertical
10360.00	31.22	39.67	14.62	32.65	52.86	74.00	-21.14	Horizontal
15540.00	31.75	38.60	17.66	34.46	53.55	74.00	-20.45	Horizontal

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	22.69	39.67	14.62	32.65	44.33	54.00	-9.67	Vertical
15540.00	22.54	38.60	17.66	34.46	44.34	54.00	-9.66	Vertical
10360.00	20.03	39.67	14.62	32.65	41.67	54.00	-12.33	Horizontal
15540.00	21.50	38.60	17.66	34.46	43.30	54.00	-10.70	Horizontal

802.11a 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	33.55	39.75	14.63	32.71	55.22	74.00	-18.78	Vertical
15600.00	36.92	38.33	17.67	34.17	58.75	74.00	-15.25	Vertical
10400.00	32.42	39.75	14.63	32.71	54.09	74.00	-19.91	Horizontal
15600.00	35.89	38.33	17.67	34.17	57.72	74.00	-16.28	Horizontal

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	19.06	39.75	14.63	32.71	40.73	54.00	-13.27	Vertical
15600.00	21.32	38.33	17.67	34.17	43.15	54.00	-10.85	Vertical
10400.00	20.59	39.75	14.63	32.71	42.26	54.00	-11.74	Horizontal
15600.00	22.57	38.33	17.67	34.17	44.40	54.00	-9.60	Horizontal

802.11a 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	32.66	39.82	14.68	32.86	54.30	74.00	-19.70	Vertical
15720.00	34.89	38.09	17.73	33.66	57.05	74.00	-16.95	Vertical
10480.00	36.93	39.82	14.68	32.86	58.57	74.00	-15.43	Horizontal
15720.00	37.26	38.09	17.73	33.66	59.42	74.00	-14.58	Horizontal

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	20.12	39.82	14.68	32.86	41.76	54.00	-12.24	Vertical
15720.00	20.32	38.09	17.73	33.66	42.48	54.00	-11.52	Vertical
10480.00	20.55	39.82	14.68	32.86	42.19	54.00	-11.81	Horizontal
15720.00	21.16	38.09	17.73	33.66	43.32	54.00	-10.68	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	33.96	39.67	14.62	32.65	55.60	74.00	-18.40	Vertical
15540.00	31.55	38.60	17.66	34.46	53.35	74.00	-20.65	Vertical
10360.00	34.20	39.67	14.62	32.65	55.84	74.00	-18.16	Horizontal
15540.00	31.69	38.60	17.66	34.46	53.49	74.00	-20.51	Horizontal

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	20.23	39.67	14.62	32.65	41.87	54.00	-12.13	Vertical
15540.00	21.52	38.60	17.66	34.46	43.32	54.00	-10.68	Vertical
10360.00	20.47	39.67	14.62	32.65	42.11	54.00	-11.89	Horizontal
15540.00	19.44	38.60	17.66	34.46	41.24	54.00	-12.76	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	36.85	39.75	14.63	32.71	58.52	74.00	-15.48	Vertical
15600.00	35.27	38.33	17.67	34.17	57.10	74.00	-16.90	Vertical
10400.00	34.46	39.75	14.63	32.71	56.13	74.00	-17.87	Horizontal
15600.00	32.03	38.33	17.67	34.17	53.86	74.00	-20.14	Horizontal

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	18.92	39.75	14.63	32.71	40.59	54.00	-13.41	Vertical
15600.00	21.11	38.33	17.67	34.17	42.94	54.00	-11.06	Vertical
10400.00	22.30	39.75	14.63	32.71	43.97	54.00	-10.03	Horizontal
15600.00	20.54	38.33	17.67	34.17	42.37	54.00	-11.63	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	34.20	39.82	14.68	32.86	55.84	74.00	-18.16	Vertical
15720.00	36.50	38.09	17.73	33.66	58.66	74.00	-15.34	Vertical
10480.00	35.24	39.82	14.68	32.86	56.88	74.00	-17.12	Horizontal
15720.00	33.83	38.09	17.73	33.66	55.99	74.00	-18.01	Horizontal

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	32.04	39.82	14.68	32.86	53.68	54.00	-0.32	Vertical
15720.00	19.01	38.09	17.73	33.66	41.17	54.00	-12.83	Vertical
10480.00	19.20	39.82	14.68	32.86	40.84	54.00	-13.16	Horizontal
15720.00	21.35	38.09	17.73	33.66	43.51	54.00	-10.49	Horizontal

802.11nHT40) 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	32.08	39.71	14.63	32.68	53.74	74.00	-20.26	Vertical
15570.00	34.20	38.46	17.67	34.32	56.01	74.00	-17.99	Vertical
10380.00	34.36	39.71	14.63	32.68	56.02	74.00	-17.98	Horizontal
15570.00	31.67	38.46	17.67	34.32	53.48	74.00	-20.52	Horizontal

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	22.81	39.71	14.63	32.68	44.47	54.00	-9.53	Vertical
15570.00	20.93	38.46	17.67	34.32	42.74	54.00	-11.26	Vertical
10380.00	22.74	39.71	14.63	32.68	44.40	54.00	-9.60	Horizontal
15570.00	21.66	38.46	17.67	34.32	43.47	54.00	-10.53	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	32.04	39.75	14.65	32.74	53.70	74.00	-20.30	Vertical
15690.00	31.55	38.33	17.69	34.03	53.54	74.00	-20.46	Vertical
10460.00	36.73	39.75	14.65	32.74	58.39	74.00	-15.61	Horizontal
15690.00	31.42	38.33	17.69	34.03	53.41	74.00	-20.59	Horizontal

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	22.47	39.75	14.65	32.74	44.13	54.00	-9.87	Vertical
15690.00	21.44	38.33	17.69	34.03	43.43	54.00	-10.57	Vertical
10460.00	20.69	39.75	14.65	32.74	42.35	54.00	-11.65	Horizontal
15690.00	19.65	38.33	17.69	34.03	41.64	54.00	-12.36	Horizontal

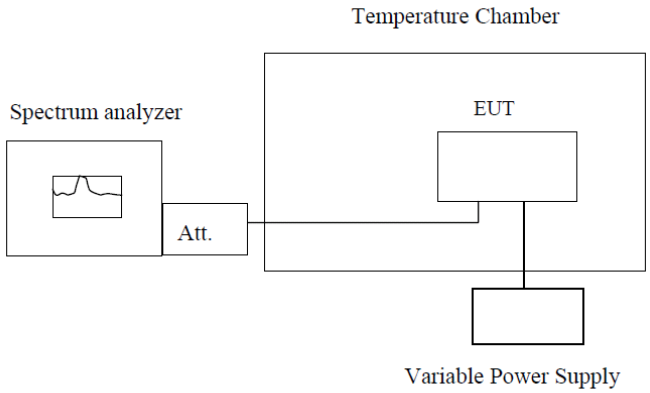
Notes:

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.

7.8 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
Limit:	Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified
Test Procedure:	The EUT was setup to ANSI C63.4, 2003; tested to 2.1055 for compliance to FCC Part 15.407(g) requirements.
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remark: Set the EUT transmits at un-modulation mode to test frequency stability.

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	5179.7646	5180.8815	5180.2705	5179.6418
	5200	5199.4872	5200.1055	5200.5315	5199.9823
	5220	5219.7095	5220.6524	5220.9496	5219.6479
	5240	5239.2963	5240.4310	5240.0092	5239.7446
-20	5180	5179.8276	5180.5030	5180.9769	5179.0865
	5200	5199.3756	5200.6310	5200.5716	5199.8541
	5220	5219.5952	5220.2383	5220.2889	5219.5507
	5240	5239.0893	5240.4851	5240.0849	5239.5153
-10	5180	5179.2209	5180.1078	5180.8534	5179.4301
	5200	5199.8270	5200.8259	5200.5173	5199.6901
	5220	5219.3580	5220.3894	5220.0287	5219.1182
	5240	5239.0594	5240.1287	5240.6888	5239.2267
0	5180	5179.0554	5180.8657	5180.2977	5179.9691
	5200	5199.0105	5200.3698	5200.3883	5199.4074
	5220	5219.8524	5220.3428	5220.3905	5219.6854
	5240	5239.1081	5240.4252	5240.3016	5239.1718
10	5180	5179.5299	5180.9468	5180.2530	5179.6416
	5200	5199.9112	5200.3712	5200.4803	5199.3160
	5220	5219.9425	5220.4836	5220.9965	5219.8450
	5240	5239.5541	5240.5253	5240.9193	5239.2885
20	5180	5179.7511	5180.7722	5180.8588	5179.6043
	5200	5199.0494	5200.7761	5200.6971	5199.1437
	5220	5219.0254	5220.5952	5220.1770	5219.5521
	5240	5239.4198	5240.2247	5240.6717	5239.3120
30	5180	5179.0071	5180.2711	5180.6756	5179.1446
	5200	5199.1598	5200.8203	5200.8627	5199.7042
	5220	5219.2536	5220.7404	5220.5780	5219.2036
	5240	5239.1262	5240.9057	5240.1707	5239.0957
40	5180	5179.6294	5180.3967	5180.5541	5179.1590
	5200	5199.5145	5200.3364	5200.0695	5199.8257
	5220	5219.8963	5220.7050	5220.5055	5219.8385
	5240	5239.1447	5240.2387	5240.1770	5239.5842
50	5180	5179.3273	5180.6238	5180.5815	5179.5786
	5200	5199.8059	5200.9050	5200.3674	5199.6980
	5220	5219.4145	5220.9072	5220.8600	5219.2440
	5240	5239.3660	5240.7473	5240.7982	5239.3433

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	5180.6591	5180.3411	5179.8752	5179.9422
	5200	5200.4924	5200.3165	5199.5534	5199.2467
	5220	5220.5574	5220.5455	5219.0361	5219.6620
	5240	5240.5335	5240.2967	5239.8974	5239.2077
120	5180	5180.5713	5180.4331	5179.7043	5179.6116
	5200	5200.7343	5200.0894	5199.2957	5199.7507
	5220	5220.4361	5220.5414	5219.3478	5219.2187
	5240	5240.2583	5240.4065	5239.8864	5239.7505
132	5180	5180.7395	5180.1059	5179.6060	5179.3292
	5200	5200.1674	5200.3075	5199.8125	5199.7991
	5220	5220.7508	5220.1100	5219.5477	5219.6935
	5240	5240.7983	5240.3735	5239.1278	5239.7335

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

---END---