FCC REPORT

(UNII)

Applicant:	Baicells Technologies Co., Ltd.
Address of Applicant:	3F, Hui Yuan Development Building, No.1 Shangdi Information Industry Base, Haidian Dist., Beijing, China

Equipment Under Test (EUT)

Product Name:	LTE UE
Model No.:	u4G-UE1000
Trade mark:	BaiCells
FCC ID:	2AG32U4GUE1000
Applicable standards:	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Date of sample receipt:	15 Aug., 2018
Date of Test:	15 Aug., to 20 Aug., 2018
Date of report issued:	21 Aug., 2018
Test Result:	PASS*

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

Authorized Signature:

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*21 Aug., 2018*	*Original*

Tested by: Carey Chen ***Date:*** *21 Aug., 2018*

Test Engineer

Reviewed by: Vimer Zhang ***Date:*** *21 Aug., 2018*

Project Engineer

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4 Test Summary

Test Item	Section	Result
Antenna requirement	15.203/15.407 (a)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.407 (a)(3)(iii)	Pass
26dB Emission Bandwidth	15.407(a)(5)	Pass
Power Spectral Density	15.407 (a)(3)(iii)	Pass
Band Edge	15.407(b)(1)	Pass
Spurious Emission	15.205/15.209	Pass
Frequency Stability	15.407(g)	Pass
Pass: The EUT complies with the essential requirements in the standard.		

5 General Information

5.1 Client Information

Applicant:	Baicells Technologies Co., Ltd.
Address of Applicant:	3F, Hui Yuan Development Building, No.1 Shangdi Information Industry Base, Haidian Dist., Beijing, China
Manufacturer:	Baicells Technologies Co., Ltd.
Address of Manufacture:	3F, Hui Yuan Development Building, No.1 Shangdi Information Industry Base, Haidian Dist., Beijing, China

5.2 General Description of E.U.T.

Product Name:	LTE UE
Model No.:	u4G-UE1000
Operation Frequency:	5150MHz-5250MHz
Operation mode:	Fixed point-to-point operation(1TX*2RX)
Modulation type:	QPSK, 16-QAM, 64-QAM
Antenna type:	Internal Antenna
Antenna gain:	15 dBi
Power supply:	DC 48
AC adapter:	Model: GRT-4800625AL Input: AC100-240V, 50/60Hz, 1A Output: DC 48V, 625mA

Test Frequency List			
10MHz Bandwidth		**20MHz Bandwidth**	
Test Channel	**Frequency**	**Test Channel**	**Frequency**
Lowest channel	5155 MHz	Lowest channel	5160 MHz
Middle channel	5200 MHz	Middle channel	5200 MHz
Highest channel	5245 MHz	Highest channel	5240 MHz

5.3 Test environment and mode

Operating Environment:	
Temperature:	Normal: 15℃ ~ 35℃, Extreme: -30℃ ~ +50℃
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1008 mbar
Voltage:	Nominal: 120Vac, Extreme: Low 102Vac, High 138Vac
Test mode:	
QPSK mode	Keep the EUT communication with simulated station in QPSK mode
16-QAM mode	Keep the EUT communication with simulated station in 16-QAM mode
64-QAM mode	Keep the EUT communication with simulated station in 64-QAM mode

Remark:

1. The EUT has been tested under continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing. The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for these modes with power adaptor, earphone and Data cable. Just the worst case position (H mode) shown in report.
2. Pre-scan all modulation mode (QPSK, 16QAM, 64QAM), and found the QPSK and 64QAM modulation mode are the worst case. So the worst case shown in report.

5.4 Description of Support Units

Test Equipment	Manufacturer	Model No.	Serial No.
/	/	/	/

5.5 Measurement Uncertainty

Parameters	Expanded Uncertainty
Radiated Emission (9kHz ~ 30MHz)	±2.76 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.28 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.72 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±2.88 dB (k=2)

5.6 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.

5.7 Laboratory Facility

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

- **FCC - Registration No.: 727551**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

- **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

5.8 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5.9 Test Instruments list

Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-16-2018	03-15-2019
Biconical Antenna	SCHWARZBECK	VUBA9117	359	06-22-2017	06-21-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-16-2018	03-15-2019
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020
EMI Test Software	AUDIX	E3	6.110919b	N/A	N/A
Pre-amplifier	HP	8447D	2944A09358	03-07-2018	03-06-2019
Pre-amplifier	CD	PAP-1G18	11804	03-07-2018	03-06-2019
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-07-2018	03-06-2019
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-07-2018	03-06-2019
Spectrum Analyzer	Agilent	N9020A	MY50510123	11-10-2017	11-09- 2018
Signal Generator	Rohde & Schwarz	SMX	835454/016	03-07-2018	03-06-2019
Signal Generator	R&S	SMR20	1008100050	03-07-2018	03-06-2019
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-07-2018	03-06-2019
Cable	MICRO-COAX	MFR64639	K10742-5	03-07-2018	03-06-2019
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-07-2018	03-06-2019
DC Power Supply	XinNuoEr	WYK-10020K	1409050110020	10-31-2017	10-30-2018
Temperature Humidity Chamber	HengPu	HPGDS-500	20140828008	09-24-2017	09-23-2018
Simulated Station	Rohde & Schwarz	CMW500	140493	06-24-2017	06-23-2018

6 Test results andMeasurement Data

6.1 Antenna requirement

Standard requirement:	FCC Part15 E Section 15.203 /407(a)

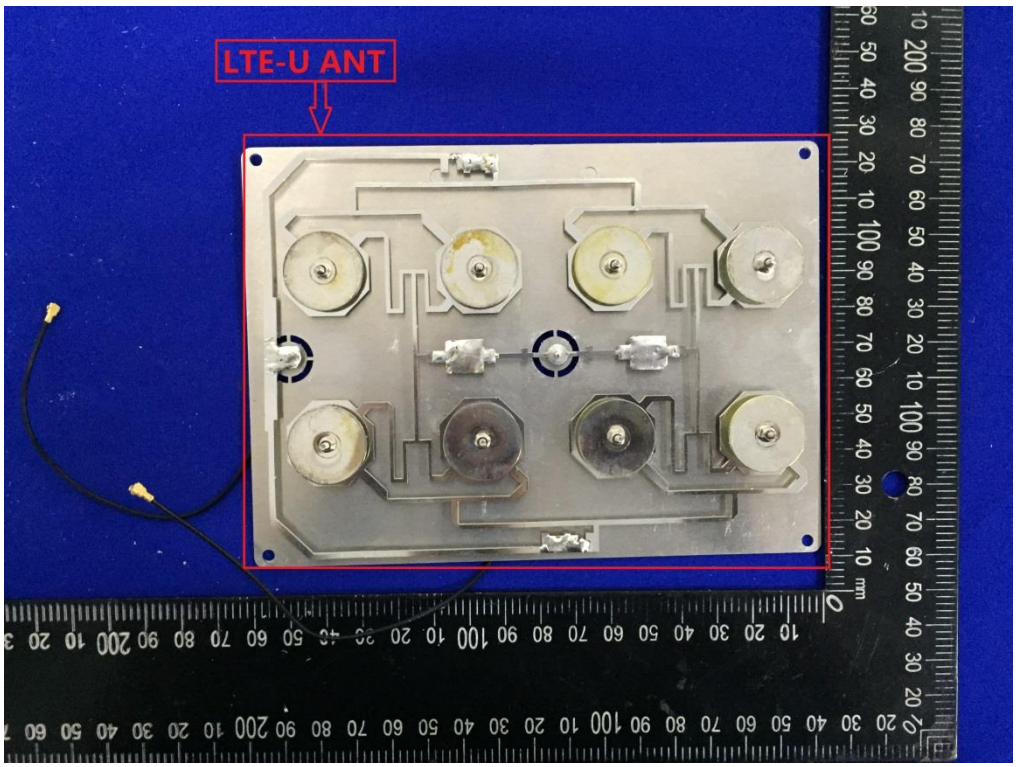
15.203 requirement:

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.

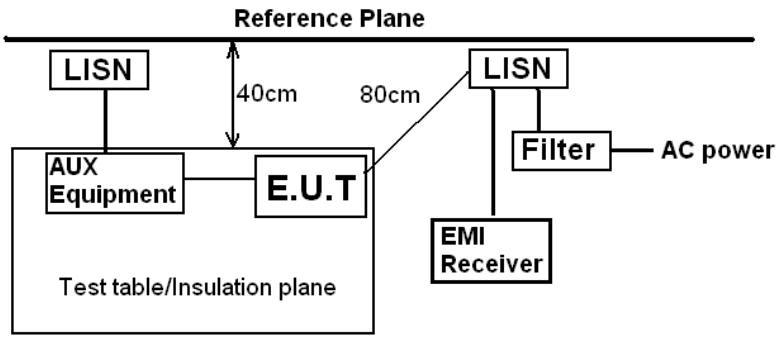
This requirementdoes not apply to carrier currentdevices or to devices operated underthe provisions of §15.211, § 15.213,§ 15.217, § 15.219, or § 15.221. Further, thisrequirement does not apply to intentionalradiators that must be professionallyinstalled, such as perimeterprotection systems and some field disturbancesensors, or to other intentionalradiators which, in accordancewith § 15.31(d), must be measured at theinstallation site. However, the installershall be responsible for ensuring thatthe proper antenna is employed so thatthe limits in this part are not exceeded.

E.U.T Antenna:	

The EUT antenna is an internal antenna which cannot replace by end-user, the best case gain of the antenna is 15 dBi.



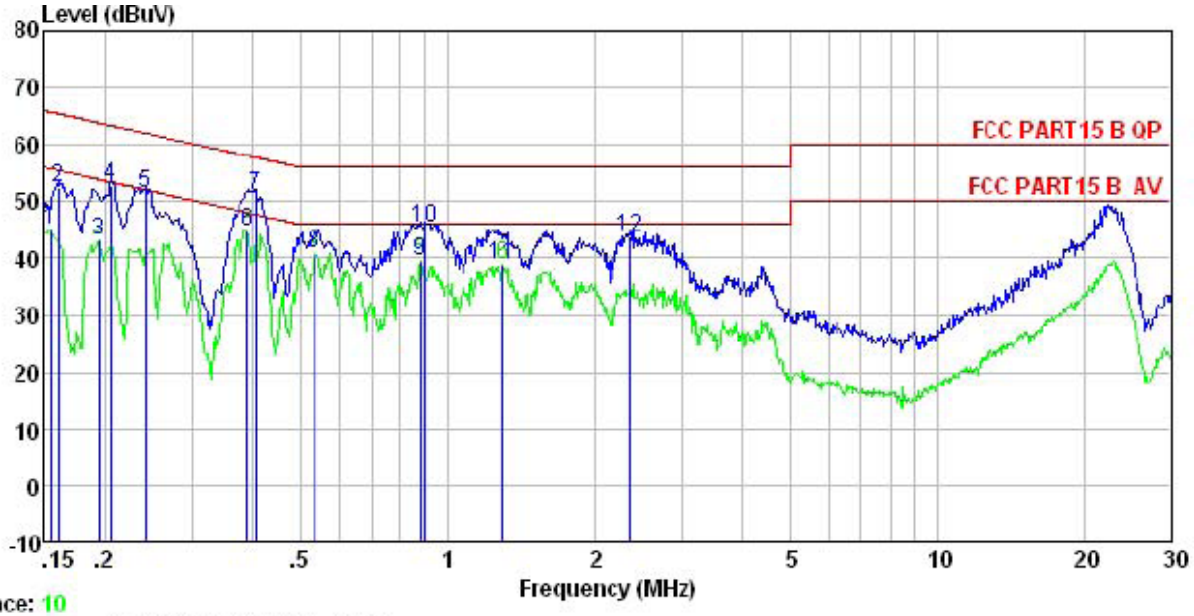
6.2 Conducted Emission

<table>
<tr><td>Test Requirement:</td><td colspan="3">FCC Part 15.207</td></tr>
<tr><td>Test Method:</td><td colspan="3">ANSI C63.4: 2014</td></tr>
<tr><td>TestFrequencyRange:</td><td colspan="3">150kHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td colspan="3">Class B</td></tr>
<tr><td>Receiver setup:</td><td colspan="3">RBW=9kHz, VBW=30kHz</td></tr>
<tr><td rowspan="6">Limit:</td><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
<tr><td colspan="3">* Decreases with the logarithm of the frequency.</td></tr>
<tr><td>Test procedure</td><td colspan="3">1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). Itprovides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.</td></tr>
<tr><td>Test setup:</td><td colspan="3"> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Instruments:</td><td colspan="3">Refer to section 5.9 for details</td></tr>
<tr><td>Test mode:</td><td colspan="3">Refer to section 5.3 for details.</td></tr>
<tr><td>Test results:</td><td colspan="3">Passed</td></tr>
</table>

Measurement Data:

Test Polarization: Line



Trace: 10

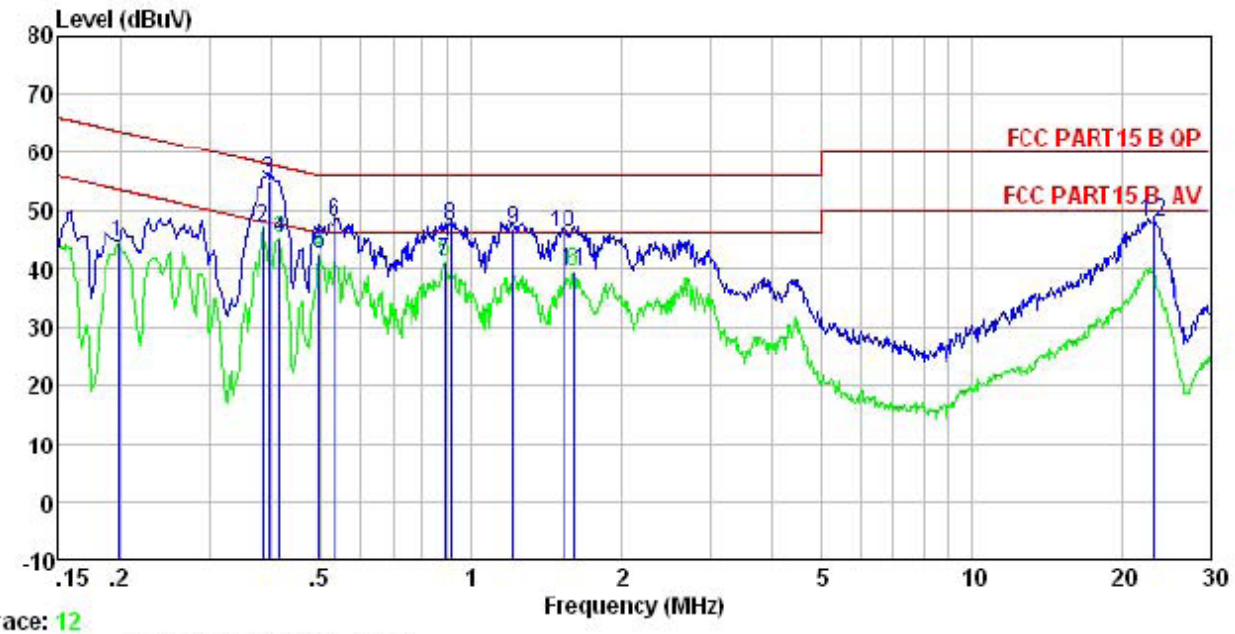
```
Site          : CCIS Shielding Room
Condition     : FCC PART15 B QP LISN LINE
EUT           : LTE UE
Model         : u4G-UE1000
Test Mode     : TX mode
Power Rating  : AC 120V/60Hz
Environment   : Temp: 23 'C Huni:56%  Atmos:101KPa
Test Engineer: Carey
Remark        :
```

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	34.01	0.18	10.78	44.97	55.78	-10.81	Average
2	0.160	41.45	0.17	10.77	52.39	65.47	-13.08	QP
3	0.194	32.14	0.15	10.76	43.05	53.84	-10.79	Average
4	0.205	41.79	0.15	10.76	52.70	63.40	-10.70	QP
5	0.240	40.41	0.14	10.75	51.30	62.08	-10.78	QP
6	0.389	34.09	0.12	10.72	44.93	48.08	-3.15	Average
7	0.406	40.33	0.12	10.72	51.17	57.73	-6.56	QP
8	0.535	30.01	0.12	10.76	40.89	46.00	-5.11	Average
9	0.880	28.47	0.13	10.83	39.43	46.00	-6.57	Average
10	0.899	34.35	0.13	10.84	45.32	56.00	-10.68	QP
11	1.296	27.91	0.13	10.90	38.94	46.00	-7.06	Average
12	2.358	32.67	0.15	10.94	43.76	56.00	-12.24	QP

Notes:

1. *An initial pre-scan was performed on the live 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.*

Test Polarization: Neutral



Trace: 12

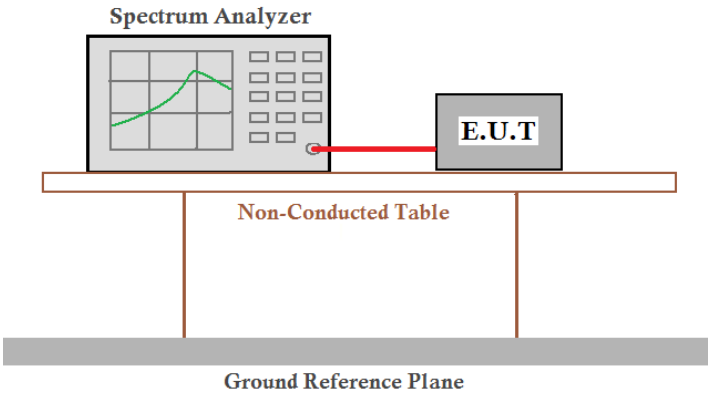
Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN NEUTRAL
EUT : LTE UE
Model : u4G-UE1000
Test Mode : TX mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: Carey
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.198	32.69	0.92	10.76	44.37	53.71	-9.34	Average
2	0.385	35.53	0.97	10.72	47.22	48.17	-0.95	Average
3	0.396	43.56	0.97	10.72	55.25	57.95	-2.70	QP
4	0.415	33.38	0.97	10.73	45.08	47.55	-2.47	Average
5	0.497	30.60	0.97	10.76	42.33	46.05	-3.72	Average
6	0.535	36.36	0.97	10.76	48.09	56.00	-7.91	QP
7	0.885	29.46	0.97	10.84	41.27	46.00	-4.73	Average
8	0.909	35.76	0.97	10.84	47.57	56.00	-8.43	QP
9	1.216	35.02	0.97	10.90	46.89	56.00	-9.11	QP
10	1.527	34.34	0.98	10.93	46.25	56.00	-9.75	QP
11	1.610	27.60	0.98	10.93	39.51	46.00	-6.49	Average
12	23.140	36.45	0.68	10.89	48.02	60.00	-11.98	QP

Notes:

1. *An initial pre-scan was performed on the live 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.*

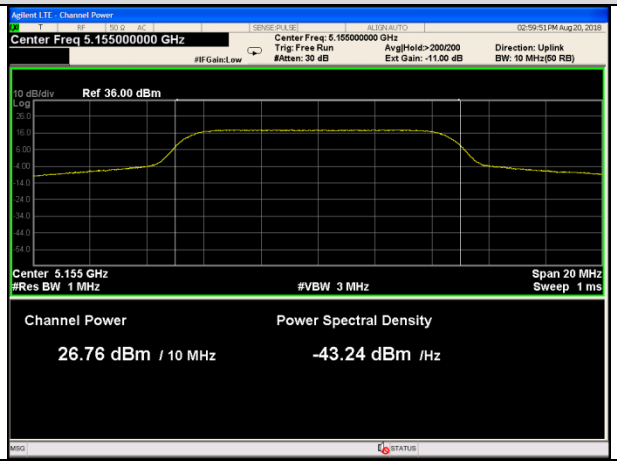
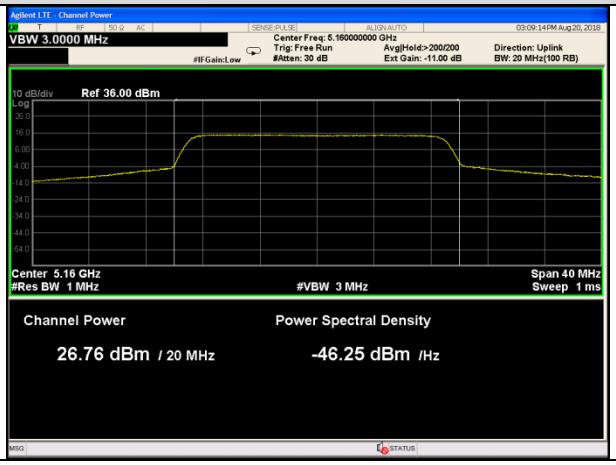
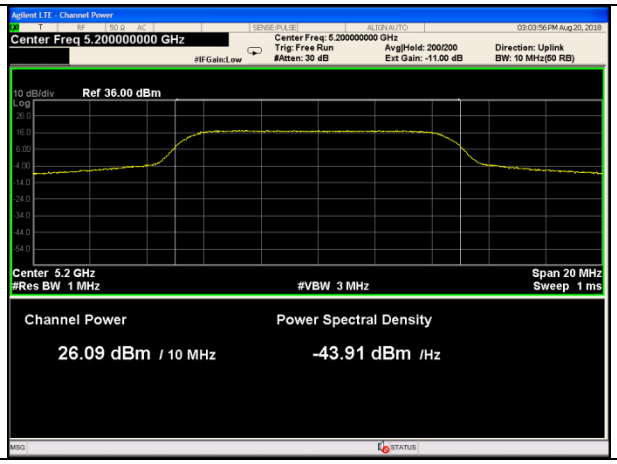
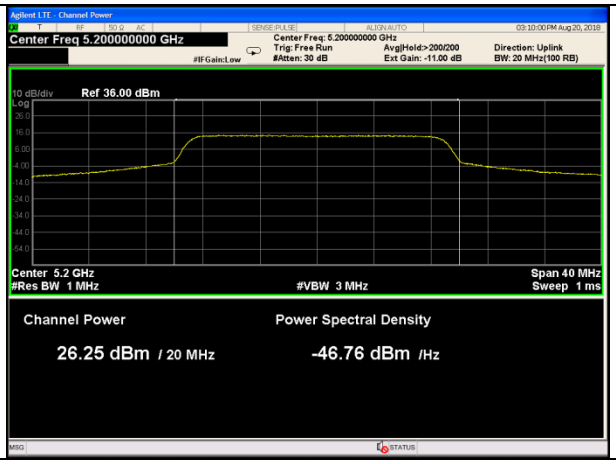
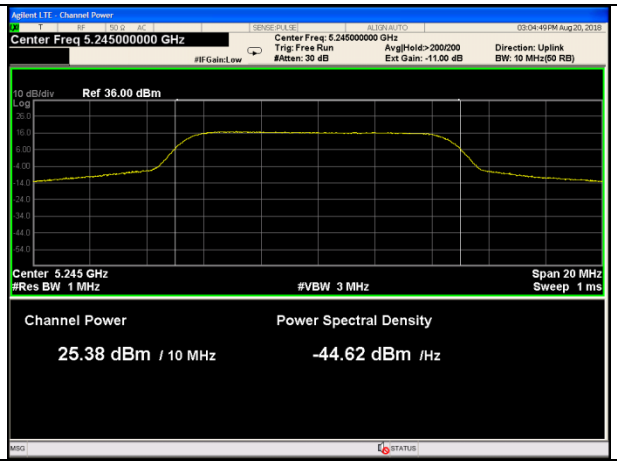
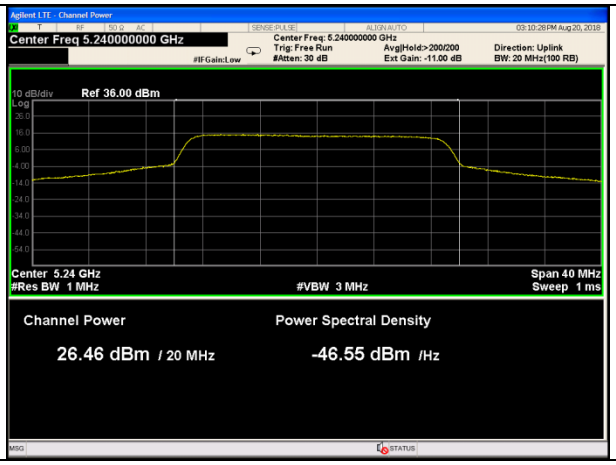
6.3 Conducted Output Power

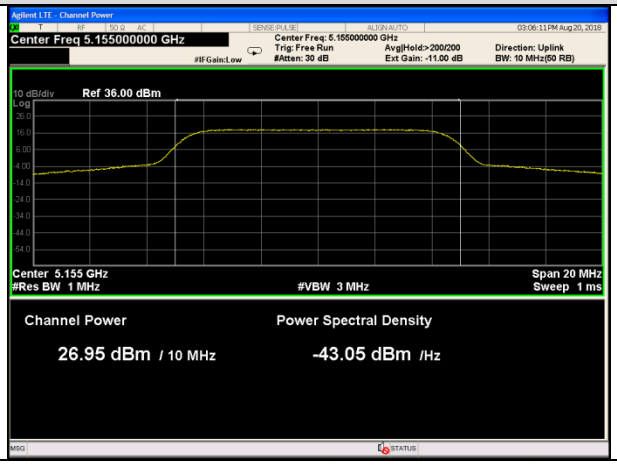
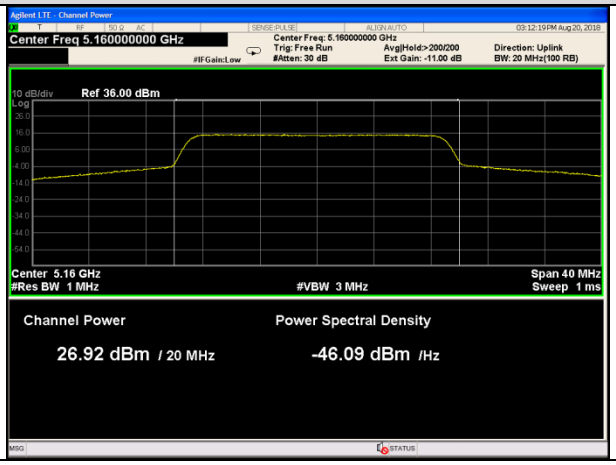
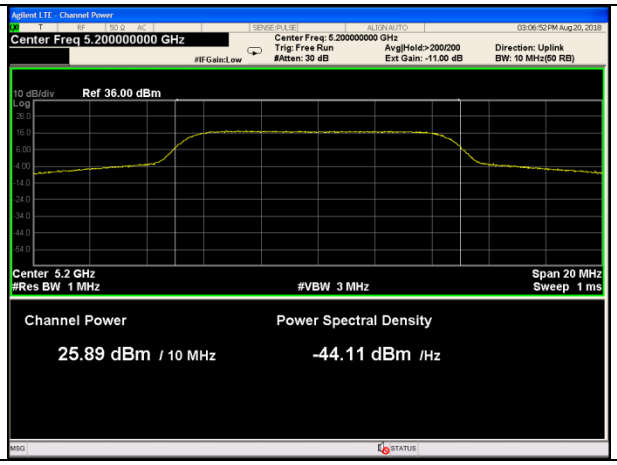
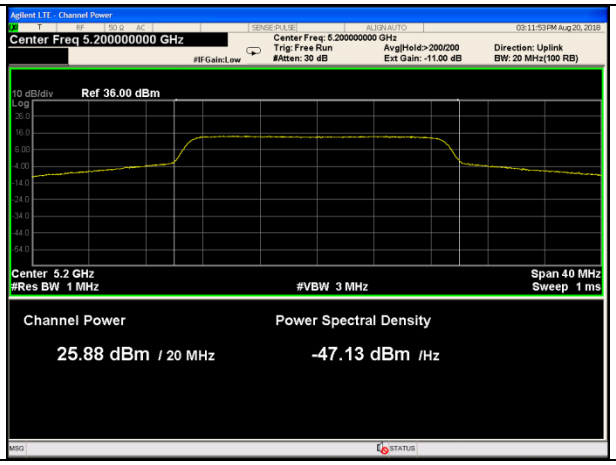
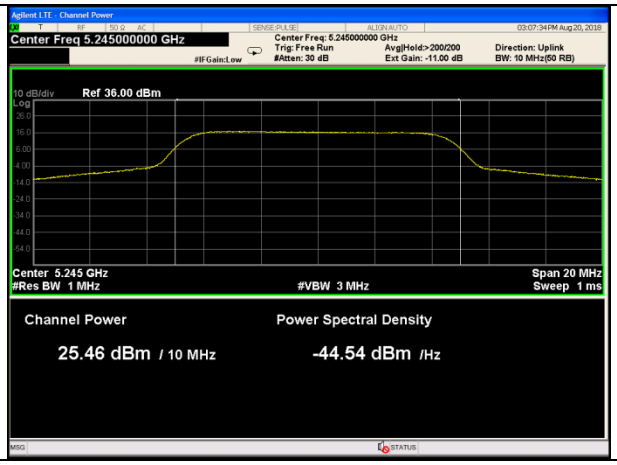
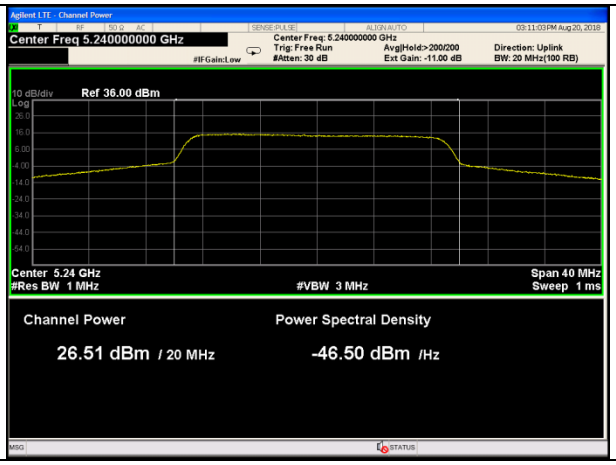
Test Requirement:	FCC Part 15.407 (a) (3)(iii)
Test Method:	ANSI C63.10: 2013 and KDB789033
Limit:	For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data:

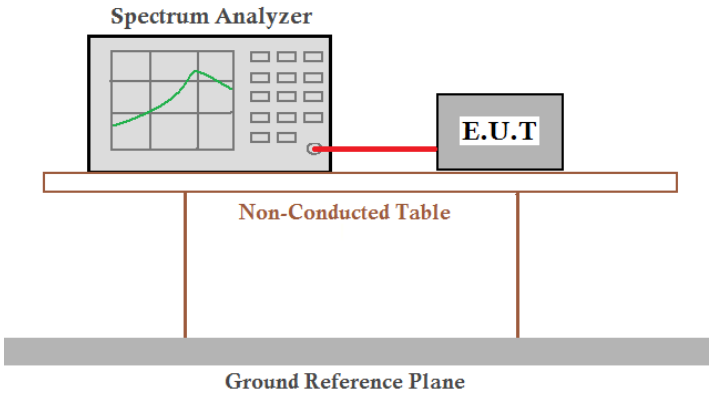
Test Channel	Bandwidth (MHz)	Modulation	Conducted Output power (dBm)	Limit (dBm)	Result
Lowest	10	QPSK	26.76	30.00	Pass
		64QAM	26.95		
Middle	10	QPSK	26.09	30.00	Pass
		64QAM	25.89		
Highest	10	QPSK	25.38	30.00	Pass
		64QAM	25.46		
Lowest	20	QPSK	26.76	30.00	Pass
		64QAM	26.92		
Middle	20	QPSK	26.25	30.00	Pass
		64QAM	25.88		
Highest	20	QPSK	26.46	30.00	Pass
		64QAM	26.51		

Test plot as follows:

QPSK	
Bandwidth=10MHz	Bandwidth=20MHz
	
Lowest channel	Lowest channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

64QAM	
Bandwidth=10MHz	Bandwidth=20MHz
	
Lowest channel	Lowest channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

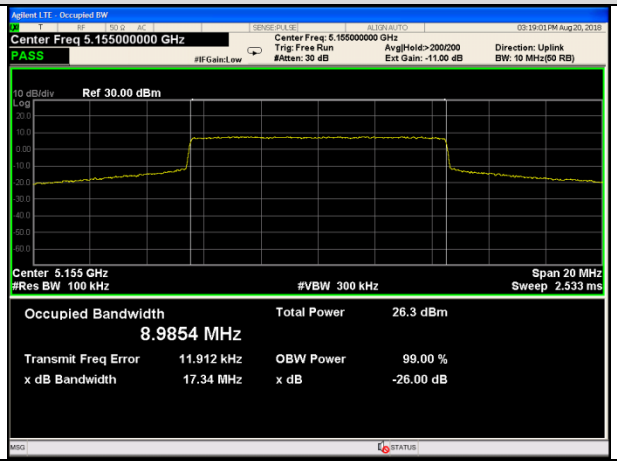
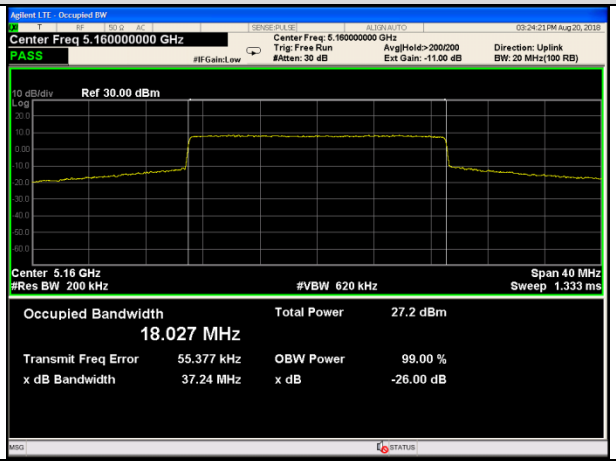
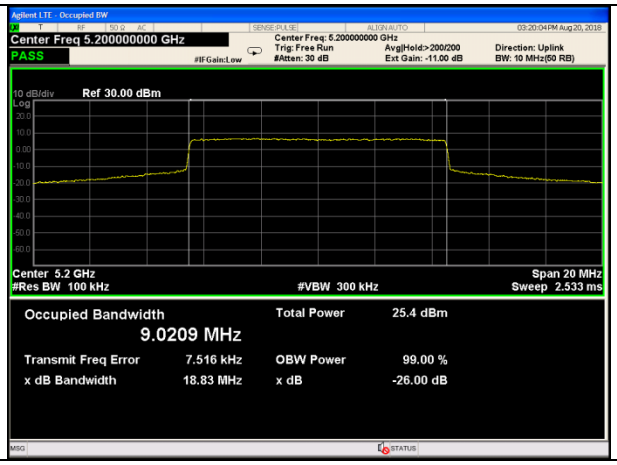
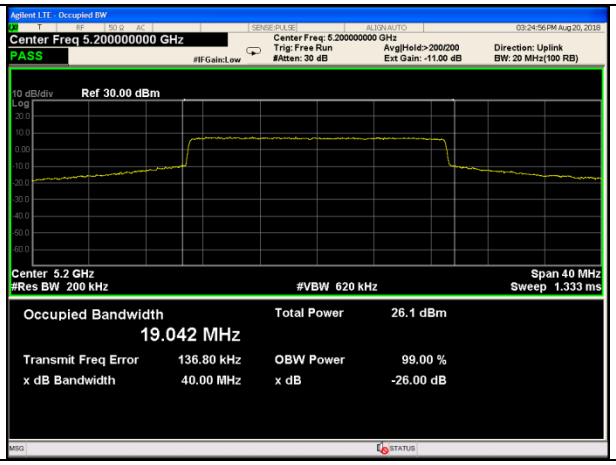
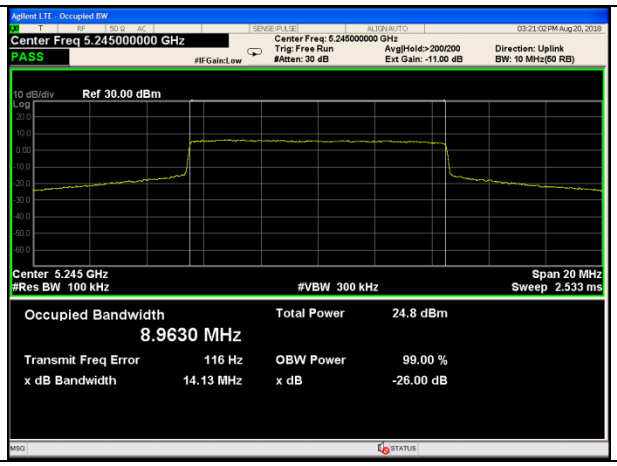
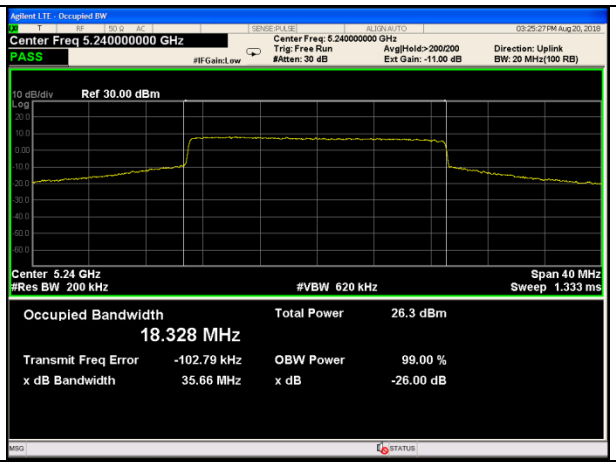
6.4 Occupy Bandwidth

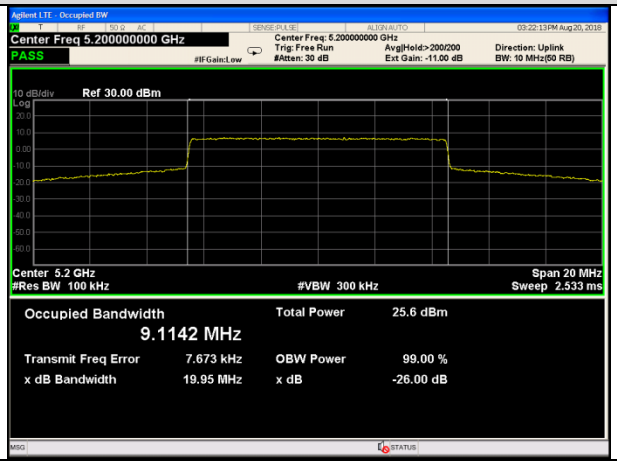
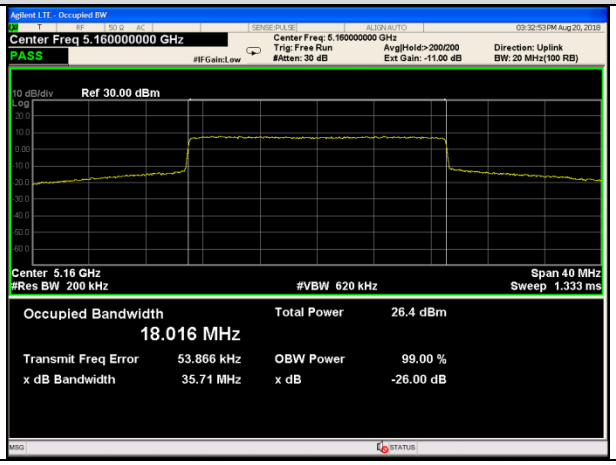
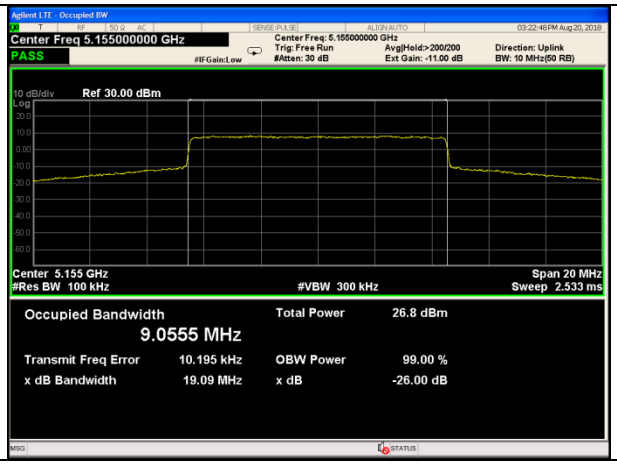
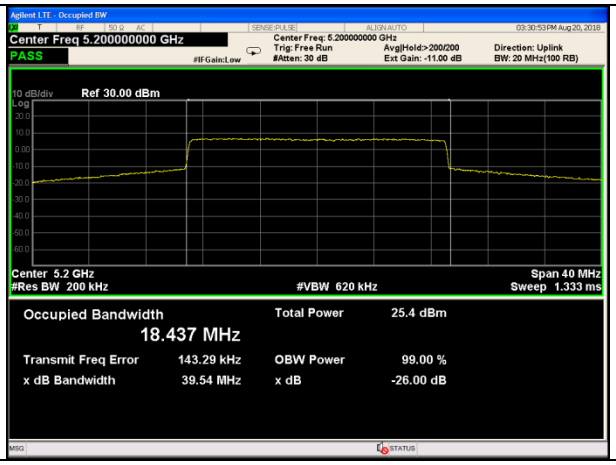
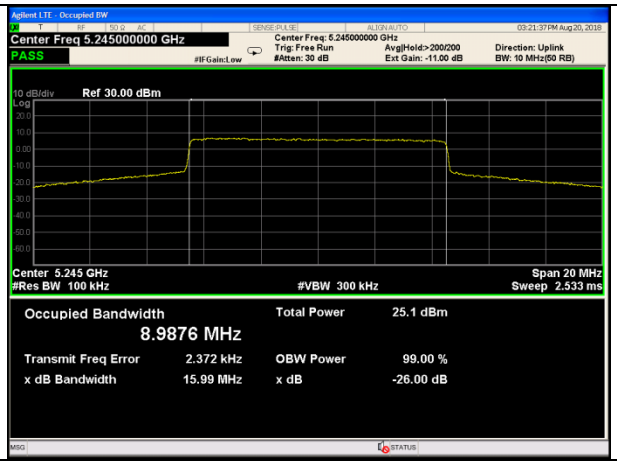
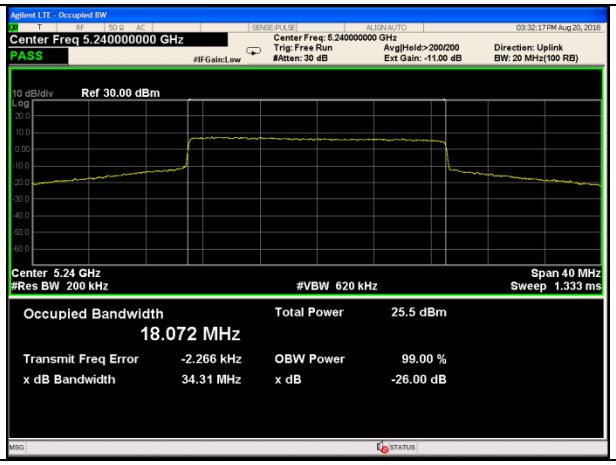
Test Requirement:	FCC Part 15.407 (a)(5)
Test Method:	ANSI C63.10:2013 and KDB 789033
Limit:	N/A(26dB Emission Bandwidth and 99% Occupy Bandwidth)
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data:

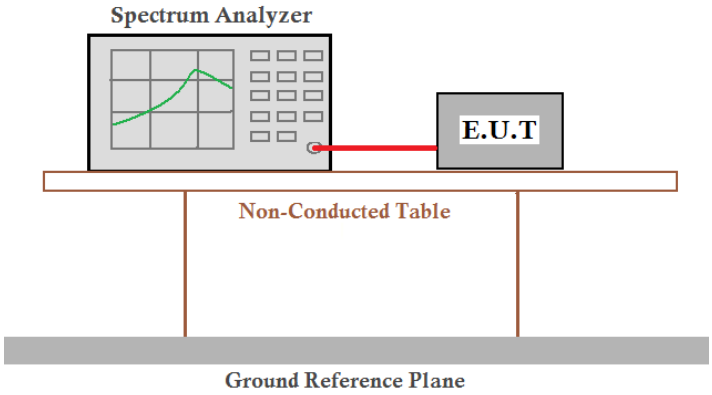
Test Channel	Bandwidth (MHz)	Modulation	26dB Occupy bandwidth (MHz)	99% Occupy bandwidth (MHz)
Lowest	10	QPSK	17.34	8.9854
		64QAM	19.95	9.1142
Middle	10	QPSK	18.83	9.0209
		64QAM	19.09	9.0555
Highest	10	QPSK	14.13	8.9630
		64QAM	15.99	8.9876
Lowest	20	QPSK	37.24	18.027
		64QAM	35.71	18.016
Middle	20	QPSK	40.00	19.042
		64QAM	39.54	18.437
Highest	20	QPSK	35.66	18.328
		64QAM	34.31	18.072

Test plot as follows:

26dB Occupy bandwidth and 99% Occupy bandwidth	
QPSK	
Bandwidth=10MHz	Bandwidth=20MHz
	
Lowest channel	Lowest channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

26dB Occupy bandwidth and 99% Occupy bandwidth	
64QAM	
Bandwidth=10MHz	Bandwidth=20MHz
	
Lowest channel	Lowest channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

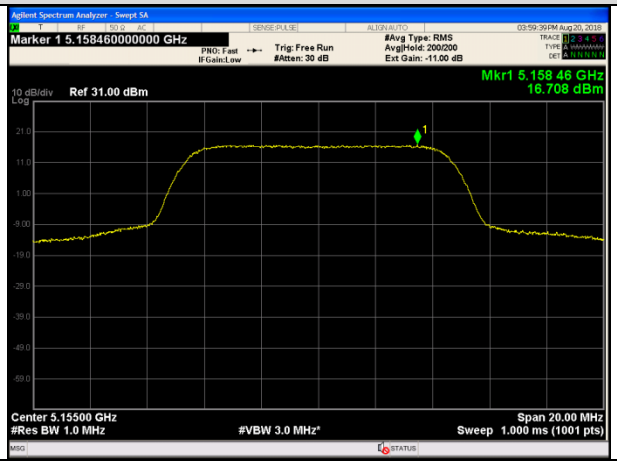
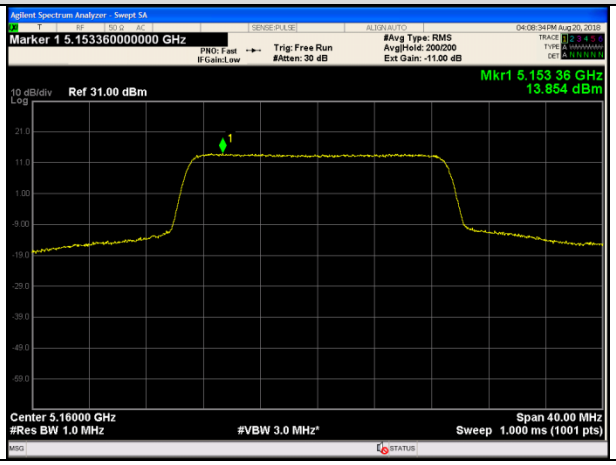
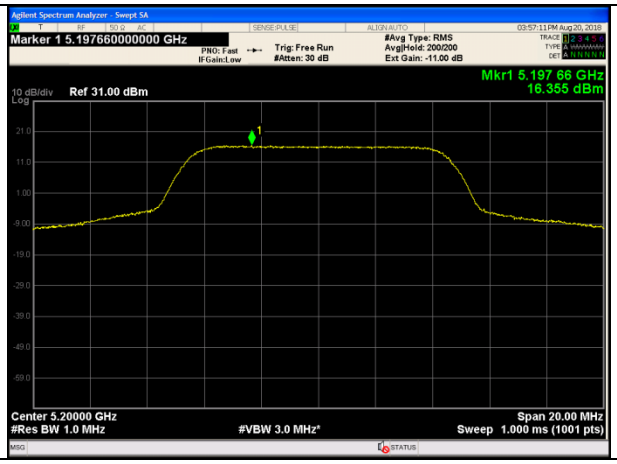
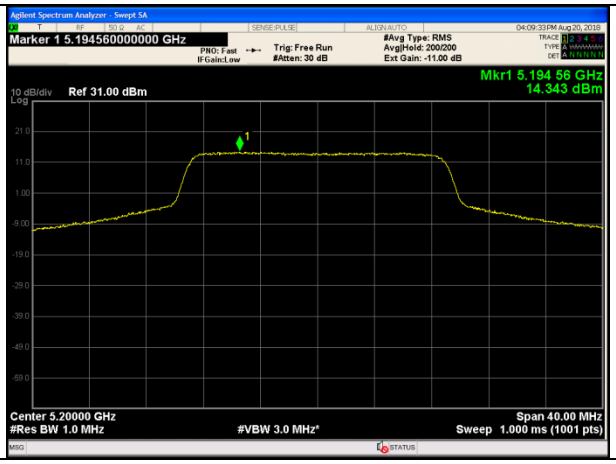
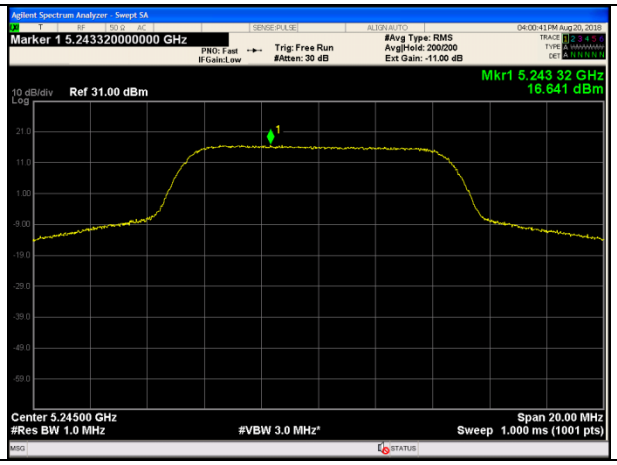
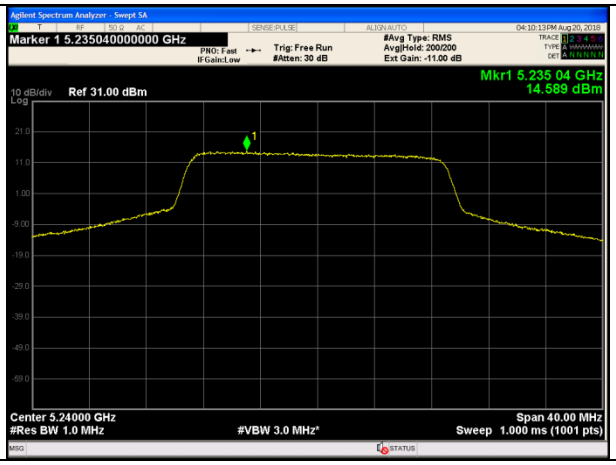
6.5 Power Spectral Density

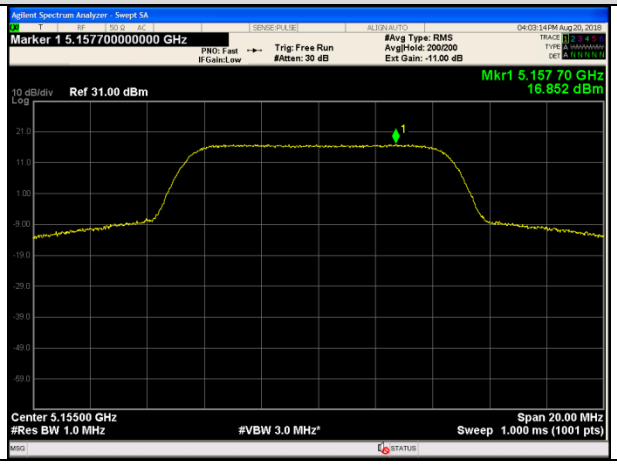
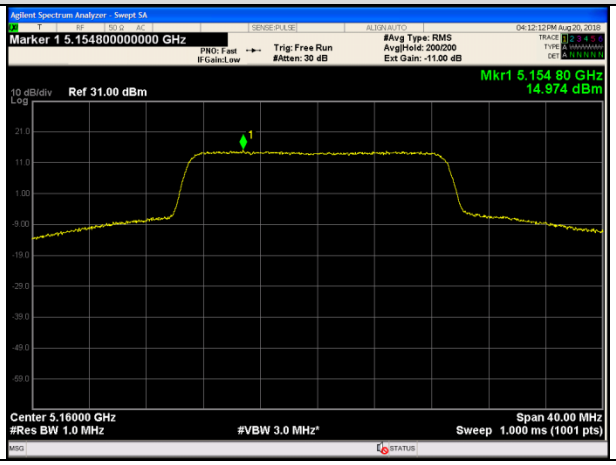
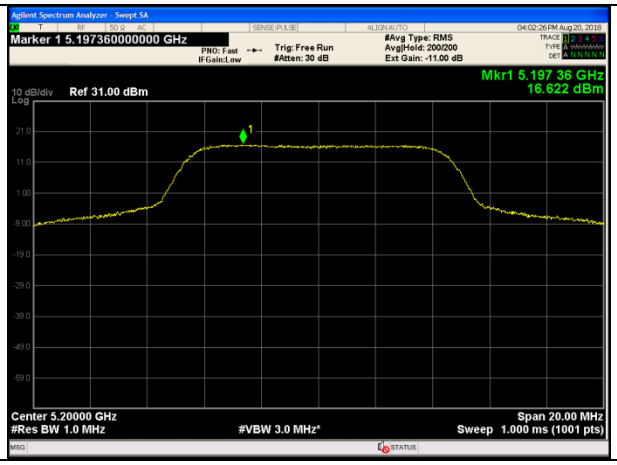
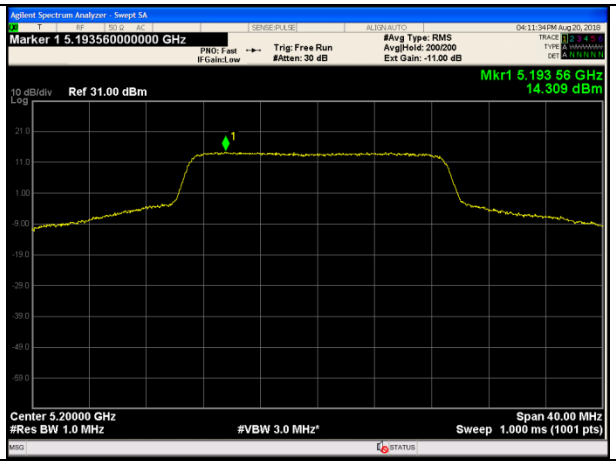
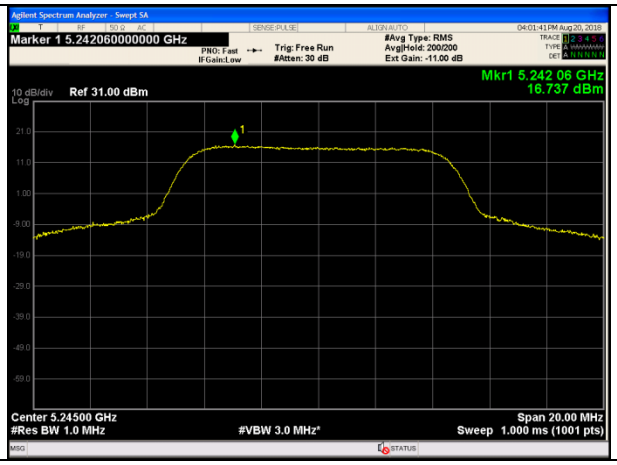
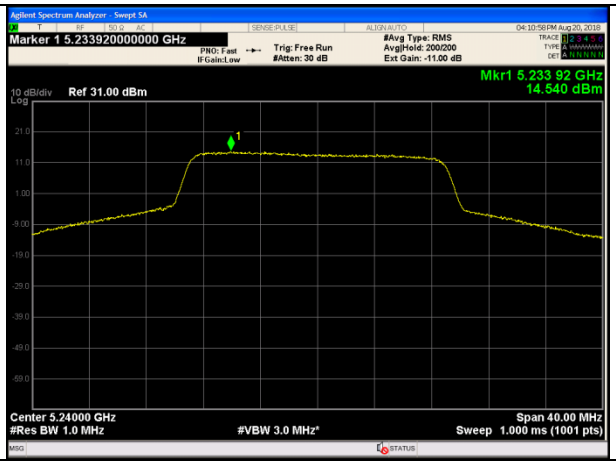
Test Requirement:	FCC Part 15.407 (a) (3)(iii)
Test Method:	ANSI C63.10:2013, KDB789033
Limit:	For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data:

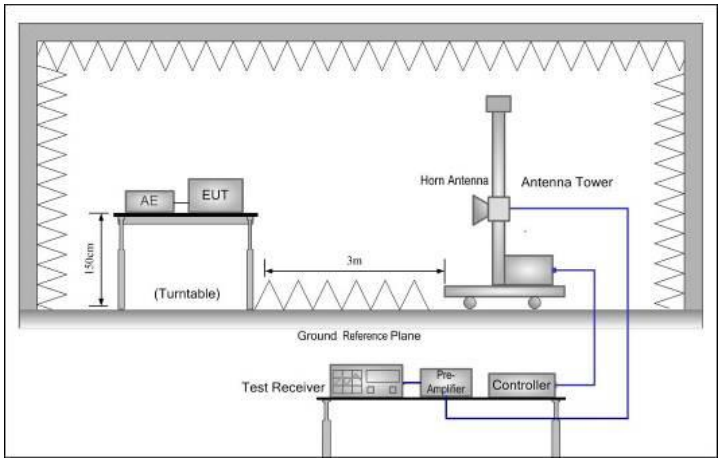
Test Channel	Bandwidth (MHz)	Modulation	PSD (dBm)	Limit (dBm)	Result
Lowest	10	QPSK	16.708	17.00	Pass
		64QAM	16.852		
Middle	10	QPSK	16.355	17.00	Pass
		64QAM	16.622		
Highest	10	QPSK	16.641	17.00	Pass
		64QAM	16.737		
Lowest	20	QPSK	13.854	17.00	Pass
		64QAM	14.974		
Middle	20	QPSK	14.343	17.00	Pass
		64QAM	14.309		
Highest	20	QPSK	14.589	17.00	Pass
		64QAM	14.540		

Test plot as follows:

QPSK	
Bandwidth=10MHz	Bandwidth=20MHz
	
Lowest channel	Lowest channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

64QAM	
Bandwidth=10MHz	Bandwidth=20MHz
	
Lowest channel	Lowest channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

6.6 Band Edge

<table>
<tr><td>Test Requirement:</td><td colspan="4">FCC Part 15.407 (b)(1)</td></tr>
<tr><td>Test Method:</td><td colspan="4">ANSI C63.10:2013 and KDB789033</td></tr>
<tr><td rowspan="4">Receiver setup:</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td rowspan="4">Limit:</td><td colspan="3">Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td colspan="3">68.20</td><td>Peak Value</td></tr>
<tr><td colspan="3">54.00</td><td>Average Value</td></tr>
<tr><td colspan="4">Remark: E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm.</td></tr>
<tr><td>Test Procedure:</td><td colspan="4">1. The EUT was placed on the top of a rotating table 1.5 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas 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 thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth 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.</td></tr>
<tr><td>Test setup:</td><td colspan="4"> 
</td></tr>
<tr><td>Test Instruments:</td><td colspan="4">Refer to section 5.9 for details</td></tr>
<tr><td>Test mode:</td><td colspan="4">Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td colspan="4">Passed</td></tr>
<tr><td>Remark:</td><td colspan="4"></td></tr>
</table>

Measurement Data (worst case):

Bandwidth=10MHz – QPSK								
Test channel: Lowest channel,								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	54.15	36.23	7.05	41.93	55.50	68.20	-12.70	Horizontal
5150.00	55.64	36.23	7.05	41.93	56.99	68.20	-11.21	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	44.36	36.23	7.05	41.93	45.71	54.00	-8.29	Horizontal
5150.00	44.28	36.23	7.05	41.93	45.63	54.00	-8.37	Vertical
Test channel: Highest channel								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	50.41	35.37	7.11	41.89	51.00	68.20	-17.20	Horizontal
5350.00	50.72	35.37	7.11	41.89	51.31	68.20	-16.89	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	39.46	35.37	7.11	41.89	40.05	54.00	-13.95	Horizontal
5350.00	39.92	35.37	7.11	41.89	40.51	54.00	-13.49	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Pre-scan QPSK and 64QAM modulation mode, and found the QPSK modulation mode is the worst case. So the worst case shown in report.*

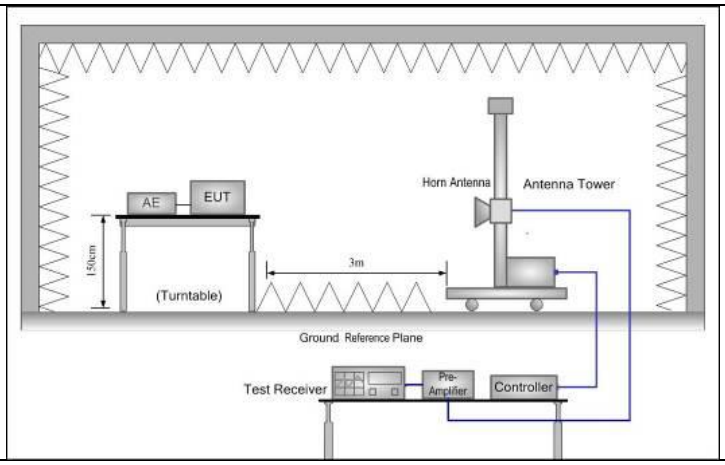
Bandwidth=20MHz – QPSK								
Test channel: Lowest channel,								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	56.42	36.23	7.05	41.93	57.77	68.20	-10.43	Horizontal
5150.00	56.25	36.23	7.05	41.93	57.60	68.20	-10.60	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	45.75	36.23	7.05	41.93	47.10	54.00	-6.90	Horizontal
5150.00	45.54	36.23	7.05	41.93	46.89	54.00	-7.11	Vertical
Test channel: Highest channel								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	50.36	35.37	7.11	41.89	50.95	68.20	-17.25	Horizontal
5350.00	50.06	35.37	7.11	41.89	50.65	68.20	-17.55	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	39.86	35.37	7.11	41.89	40.45	54.00	-13.55	Horizontal
5350.00	39.52	35.37	7.11	41.89	40.11	54.00	-13.89	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Pre-scan QPSK and 64QAM modulation mode, and found the QPSK modulation mode is the worst case. So the worst case shown in report.*

6.7 Spurious Emission

6.7.1 Restricted Band

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part 15.407 (b)(1)</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.10:2013 and KDB789033</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">4.50 GHz to 5.46 GHz</td></tr>
<tr><td>Test site:</td><td colspan="5">Measurement Distance: 3m</td></tr>
<tr><td rowspan="3">Receiver setup:</td><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
<tr><td rowspan="3">Limit:</td><td colspan="2">Frequency</td><td colspan="2">Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td colspan="2" rowspan="2">Above 1GHz</td><td colspan="2">74.00</td><td>Peak Value</td></tr>
<tr><td colspan="2">54.00</td><td>Average Value</td></tr>
<tr><td>Test Procedure:</td><td colspan="5">1. The EUT was placed on the top of a rotating table 1.5 meters above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas 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 thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</td></tr>
<tr><td>Test setup:</td><td colspan="5"> 
</td></tr>
<tr><td>Test Instruments:</td><td colspan="5">Refer to section 5.9 for details</td></tr>
<tr><td>Test mode:</td><td colspan="5">Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td colspan="5">Passed</td></tr>
</table>

Measurement Data (worst case):

Bandwidth=10MHz – QPSK								
Test channel: Lowest channel,								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	46.88	34.50	6.80	42.05	46.13	74.00	-27.87	Horizontal
4500.00	46.78	34.50	6.80	42.05	46.03	74.00	-27.97	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	36.64	34.50	6.80	42.05	35.89	54.00	-18.11	Horizontal
4500.00	36.31	34.50	6.80	42.05	35.56	54.00	-18.44	Vertical
Test channel: Highest channel								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	45.53	34.90	7.18	41.85	45.76	74.00	-28.24	Horizontal
5460.00	45.92	34.90	7.18	41.85	46.15	74.00	-27.85	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	36.12	34.90	7.18	41.85	36.35	54.00	-17.65	Horizontal
5460.00	36.92	34.90	7.18	41.85	37.15	54.00	-16.85	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Pre-scan QPSK and 64QAM modulation mode, and found the QPSK modulation mode is the worst case. So the worst case shown in report.*

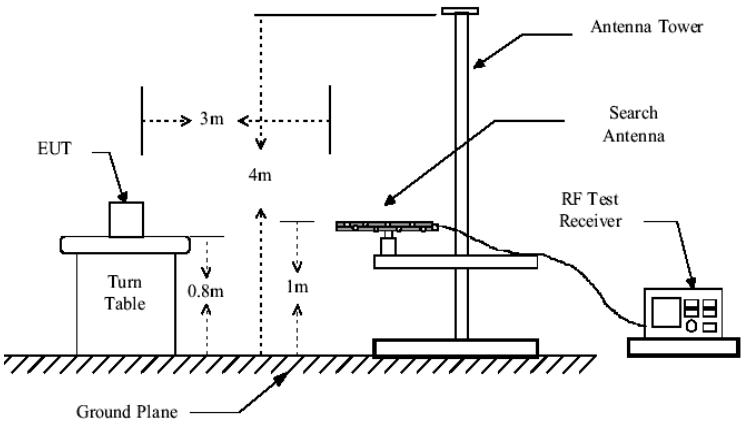
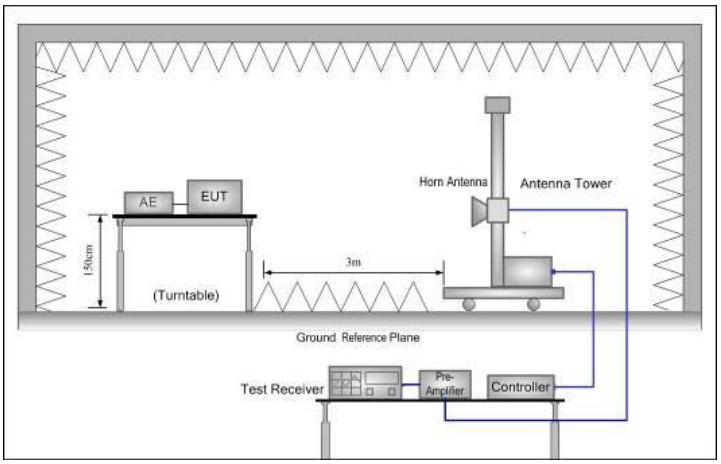
Bandwidth=20MHz – QPSK								
Test channel: Lowest channel,								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	46.97	34.50	6.80	42.05	46.22	74.00	-27.78	Horizontal
4500.00	46.26	34.50	6.80	42.05	45.51	74.00	-28.49	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	36.46	34.50	6.80	42.05	35.71	54.00	-18.29	Horizontal
4500.00	36.15	34.50	6.80	42.05	35.40	54.00	-18.60	Vertical
Test channel: Highest channel								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	45.41	34.90	7.18	41.85	45.64	74.00	-28.36	Horizontal
5460.00	45.47	34.90	7.18	41.85	45.70	74.00	-28.30	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	36.25	34.90	7.18	41.85	36.48	54.00	-17.52	Horizontal
5460.00	36.66	34.90	7.18	41.85	36.89	54.00	-17.11	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Pre-scan QPSK and 64QAM modulation mode, and found the QPSK modulation mode is the worst case. So the worst case shown in report.*

6.7.2 Unwanted Emissions out of the Restricted Bands

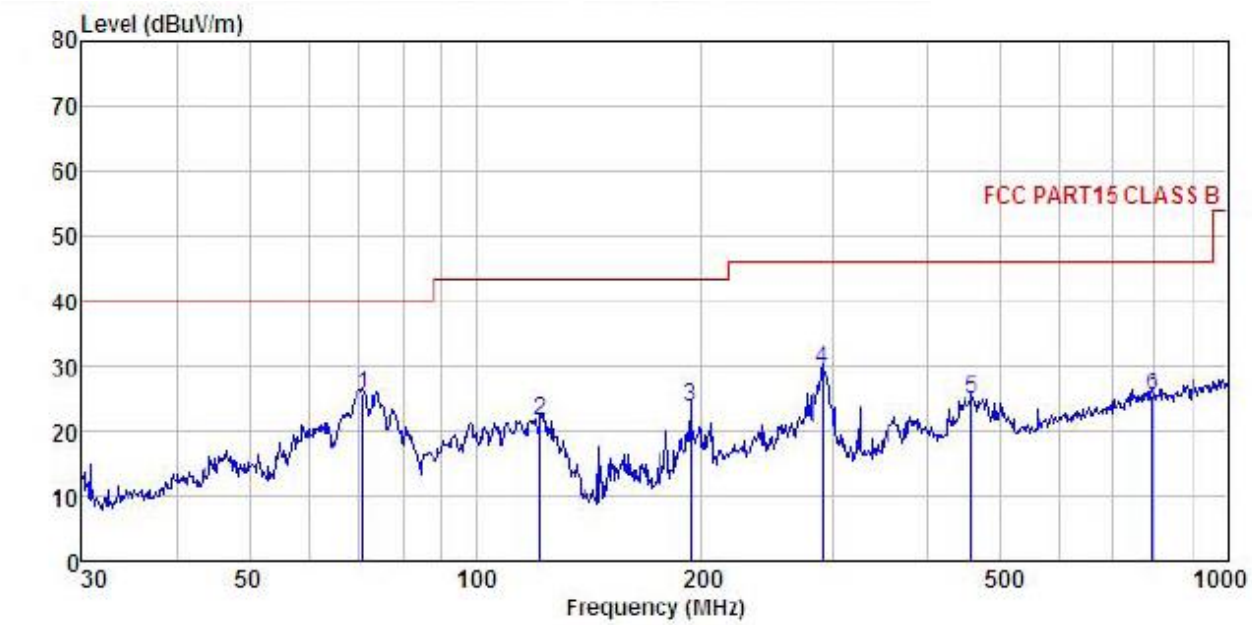
<table>
<tr><td>Test Requirement:</td><td>FCC Part 15.209, 15.407(b)(1)</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013 and KDB789033</td></tr>
<tr><td>TestFrequencyRange:</td><td>30MHz to 40GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><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>Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak 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>Frequency</td><td>Limit (dBm/MHz)</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>68.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
</table>
Remark:
1. Above 1GHz limit:
E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm.
</td></tr>
<tr><td>Test Procedure:</td><td>1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz) /1.5m(above 1GHz) above the groundat a 3 meter camber. The table was rotated 360 degrees todetermine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, whichwas 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 thenthe antenna was tuned to heights from 1 meter to 4 meters and the rotatablewas turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and SpecifiedBandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limitspecified, then testing could be stopped and the peak values of the EUT wouldbe reported. Otherwise the emissions that did not have 10dB margin would bere-tested one by one using peak, quasi-peak or average method as specified andthen reported in a data sheet.</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

Below 1GHz:

Test Polarization: Horizontal

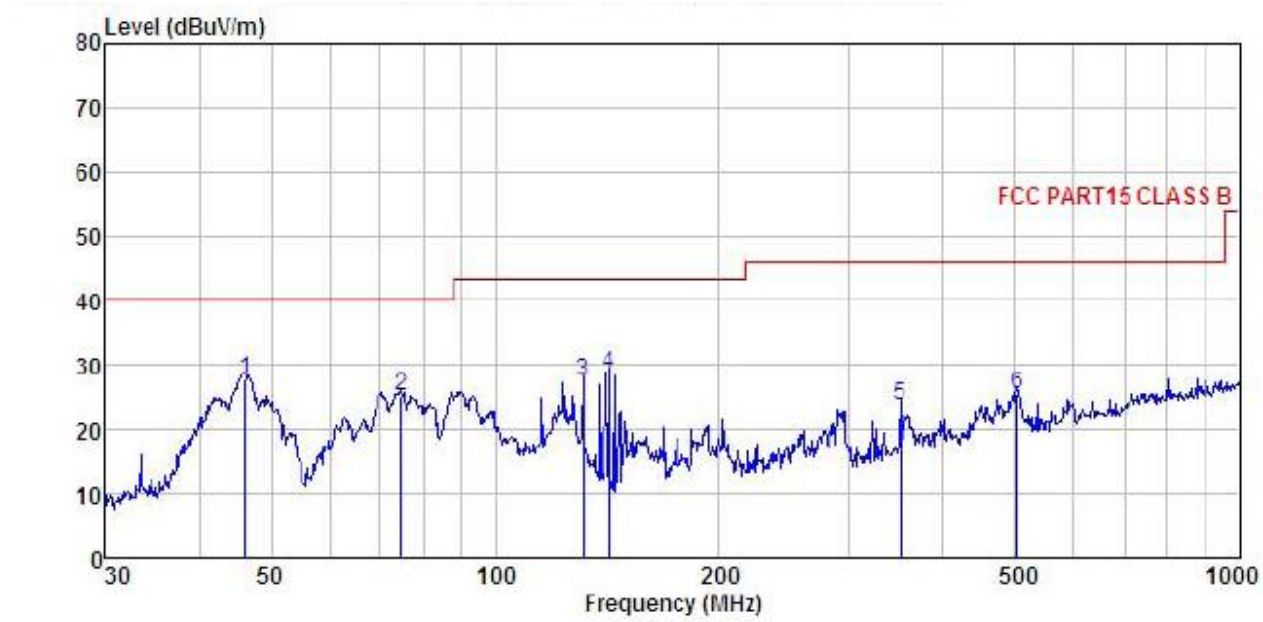


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) HORIZONTAL
EUT : LTE UE
Model : u4G-UE1000
Test mode : TX mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Huni:55%
Test Engineer: Carey
Remark :

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	71.080	44.82	8.99	1.54	29.71	25.64	40.00	-14.36	QP
2	121.976	38.99	9.89	2.19	29.38	21.69	43.50	-21.81	QP
3	193.095	38.33	11.29	2.82	28.88	23.56	43.50	-19.94	QP
4	290.017	41.53	13.54	2.91	28.47	29.51	46.00	-16.49	QP
5	457.507	34.09	16.32	3.26	28.88	24.79	46.00	-21.21	QP
6	793.396	28.19	21.00	4.35	28.23	25.31	46.00	-20.69	QP

Remark: Pre-scan QPSK and 64QAM modulation mode, and found the QPSK modulation mode is the worst case. So the worst case shown in report.

Test Polarization: Vertical



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) VERTICAL
EUT : LTE UE
Model : u4G-UE1000
Test mode : TX mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: Carey
Remark :

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	46.178	42.49	13.80	1.28	29.85	27.72	40.00	-12.28	QP
2	74.919	44.56	8.59	1.63	29.68	25.10	40.00	-14.90	QP
3	131.297	45.93	8.62	2.30	29.32	27.53	43.50	-15.97	QP
4	142.324	47.22	8.22	2.43	29.26	28.61	43.50	-14.89	QP
5	350.477	34.34	14.61	3.10	28.56	23.49	46.00	-22.51	QP
6	502.940	33.04	17.53	3.64	28.96	25.25	46.00	-20.75	QP

Remark: Pre-scan QPSK and 64QAM modulation mode, and found the QPSK modulation mode is the worst case. So the worst case shown in report.

Above 1GHz:

Bandwidth=10MHz – QPSK								
Test channel: Lowest channel,								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10310.00	47.85	40.10	9.82	41.97	55.80	68.20	-12.40	Horizontal
10310.00	49.88	40.10	9.82	41.97	57.83	68.20	-10.37	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10310.00	35.22	40.10	9.82	41.97	43.17	54.00	-10.83	Horizontal
10310.00	35.35	40.10	9.82	41.97	43.30	54.00	-10.70	Vertical
Test channel: Middle channel								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10400.00	47.36	40.00	9.85	41.95	55.26	68.20	-12.94	Horizontal
10400.00	47.92	40.00	9.85	41.95	55.82	68.20	-12.38	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10400.00	35.39	40.00	9.85	41.95	43.29	54.00	-10.71	Horizontal
10400.00	35.78	40.00	9.85	41.95	43.68	54.00	-10.32	Vertical
Test channel: Highest channel								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10490.00	47.41	39.70	9.96	41.88	55.19	68.20	-13.01	Horizontal
10490.00	47.18	39.70	9.96	41.88	54.96	68.20	-13.24	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10490.00	35.99	39.70	9.96	41.88	43.77	54.00	-10.23	Horizontal
10490.00	35.02	39.70	9.96	41.88	42.80	54.00	-11.20	Vertical

Remark:

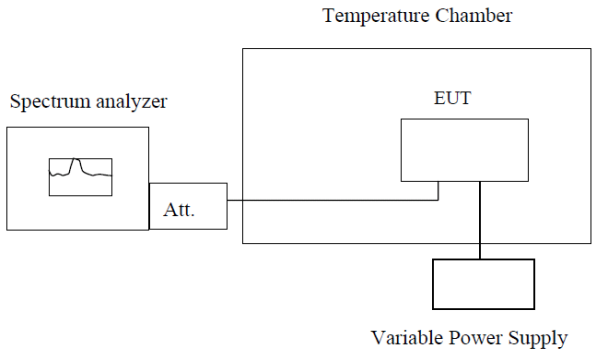
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Pre-scan QPSK and 64QAM modulation mode, and found the QPSK modulation mode is the worst case. So the worst case shown in report.*

Bandwidth=20MHz – QPSK								
Test channel: Lowest channel,								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10310.00	47.42	40.10	9.82	41.97	55.37	68.20	-12.83	Horizontal
10310.00	47.54	40.10	9.82	41.97	55.49	68.20	-12.71	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10310.00	35.28	40.10	9.82	41.97	43.23	54.00	-10.77	Horizontal
10310.00	35.19	40.10	9.82	41.97	43.14	54.00	-10.86	Vertical
Test channel: Middle channel								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10400.00	47.39	40.00	9.85	41.95	55.29	68.20	-12.91	Horizontal
10400.00	47.86	40.00	9.85	41.95	55.76	68.20	-12.44	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10400.00	35.56	40.00	9.85	41.95	43.46	54.00	-10.54	Horizontal
10400.00	35.74	40.00	9.85	41.95	43.64	54.00	-10.36	Vertical
Test channel: Highest channel								
Detector: Peak								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10490.00	47.78	39.70	9.96	41.88	55.56	68.20	-12.64	Horizontal
10490.00	47.35	39.70	9.96	41.88	55.13	68.20	-13.07	Vertical
Detector: Average								
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
10490.00	35.99	39.70	9.96	41.88	43.77	54.00	-10.23	Horizontal
10490.00	35.39	39.70	9.96	41.88	43.17	54.00	-10.83	Vertical

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *Pre-scan QPSK and 64QAM modulation mode, and found the QPSK modulation mode is the worst case. So the worst case shown in report.*

6.8 Frequency stability

Test Requirement:	FCC Part15 E Section 15.407 (g)
Limit:	Manufacturers of U-NII devices are responsible for ensuringfrequency stability such that anemission is maintained within the band of operation under all conditions of normal operation asspecified in the user's manual.
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test procedure:	1. The EUT is installed in an environment test chamber with external power source. 2. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage ofEUT. 3. A sufficient stabilization period at each temperature is used prior to each frequency measurement. 4. When temperature is stabled, measure the frequency stability. 5. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage.Change setting of chamber and external power source to complete all conditions.
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.
Test results:	Passed

Measurement Data (the worst channel):

Voltage vs. Frequency Stability:

Reference Frequency: Lowest channel=5155MHz(10MHz for QPSK)			
Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Temp(℃)	Voltage(AC/60Hz)		
20	102V	5154.995146	-0.94
	120V	5154.993628	-1.24
	138V	5154.998241	-0.34
Reference Frequency: Lowest channel=5160MHz(20MHz for QPSK)			
Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Temp(℃)	Voltage(AC/60Hz)		
20	102V	5159.995314	-0.91
	120V	5159.994826	-1.00
	138V	5159.996242	-0.73
Reference Frequency: Lowest channel=5155MHz(10MHz for 64QAM)			
Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Temp(℃)	Voltage(AC/60Hz)		
20	102V	5154.996824	-0.62
	120V	5154.997416	-0.50
	138V	5154.996256	-0.73
Reference Frequency: Lowest channel=5160MHz(20MHz for 64QAM)			
Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Temp(℃)	Voltage(AC/60Hz)		
20	102V	5159.996826	-0.62
	120V	5159.996721	-0.64
	138V	5159.994635	-1.04

Temperature vs. Frequency Stability

Reference Frequency: Lowest channel=5155MHz(10MHz for QPSK)			
Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Voltage(AC/60Hz)	Temp(℃)		
120V	-30	5154.995292	-0.91
	-20	5154.996224	-0.73
	-10	5154.993927	-1.18
	0	5154.998975	-0.20
	10	5154.995465	-0.88
	20	5154.996874	-0.61
	30	5154.994544	-1.06
	40	5154.992348	-1.48
	50	5154.996942	-0.59
Reference Frequency: Lowest channel=5160MHz(20MHz for QPSK)			
Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Voltage(AC/60Hz)	Temp(℃)		
120V	-30	5159.996525	-0.67
	-20	5159.992692	-1.42
	-10	5159.997316	-0.52
	0	5159.993642	-1.23
	10	5159.995845	-0.81
	20	5159.996341	-0.71
	30	5159.999435	-0.11
	40	5159.995124	-0.94
	50	5159.996315	-0.71
Reference Frequency: Lowest channel=5155MHz(10MHz for 64QAM)			
Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Voltage(AC/60Hz)	Temp(℃)		
120V	-30	5154.996872	-0.61
	-20	5154.992345	-1.48
	-10	5154.998765	-0.24
	0	5154.996412	-0.70
	10	5154.994522	-1.06
	20	5154.996424	-0.69
	30	5154.991548	-1.64
	40	5154.993456	-1.27
	50	5154.994872	-0.99
Reference Frequency: Lowest channel=5160MHz(20MHz for 64QAM)			
Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Voltage(AC/60Hz)	Temp(℃)		
120V	-30	5159.999645	-0.07
	-20	5159.994423	-1.08
	-10	5159.995462	-0.88
	0	5159.994567	-1.05
	10	5159.997663	-0.45
	20	5159.996742	-0.63
	30	5159.993476	-1.26
	40	5159.997635	-0.46
	50	5159.994757	-1.02