FCC REPORT
(UNII)

Applicant: LigoWave LLC

Address of Applicant: 138 Mountain Brook Dr Canton, GA 30115 United States

Equipment Under Test (EUT)

Product Name: Broadband Digital Transmission System

Model No.: NFT Blizzard 2ac-90 Lite

FCC ID: V2V-NFTBLZ

Applicable standards: FCC CFR Title 47 Part 15 Subpart E Section 15.407

Date of sample receipt: 11 Jan., 2018

Date of Test: 11 Jan., to 03 Aug., 2018

Date of report issued: 06 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	*06 Aug., 2018*	*Original*

Tested by: Mike.ou ***Date:*** *06 Aug., 2018*

Test Engineer

Reviewed by: Winner Zhang ***Date:*** *06 Aug., 2018*

Project Engineer

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4 Test Summary

Test Item	Section in CFR 47	Test Result
Antenna requirement	15.203 & 15.407 (a)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.407 (a) (iii) & (a) (3)	Pass
26dB Occupied Bandwidth	15.407 (a) (5)	Pass
6dB Emission Bandwidth	15.407(e)	Pass
Power Spectral Density	15.407 (a) (iii) & (a) (3)	Pass
Band Edge	15.407(b)	Pass
Spurious Emission	15.407 (b) & 15.205 & 15.209	Pass
Frequency Stability	15.407(g)	Pass
Pass: The EUT complies with the essential requirements in the standard. *N/A: N/A: Not Applicable.*		

5 General Information

5.1 Client Information

Applicant:	LigoWave LLC
Address:	138 Mountain Brook Dr Canton, GA 30115 United States
Manufacturer/ Factory:	LigoWave LLC
Address:	138 Mountain Brook Dr Canton, GA 30115 United States

5.2 General Description of E.U.T.

Product Name:	Broadband Digital Transmission System
Model No.:	NFT Blizzard 2ac-90 Lite
Operation Frequency:	Band 1: 5150MHz-5250MHz, Band 4: 5725MHz-5850MHz,
Channel numbers:	Band 1: 802.11a/802.11n20: 4, 802.11n40: 2, 802.11ac: 1 Band 4: 802.11a/802.11n20: 5, 802.11n40: 2, 802.11ac: 1
Channel separation:	802.11a/802.11n20: 20MHz, 802.11n40: 40MHz, 802.11ac: 80MHz
Modulation technology (IEEE 802.11a):	BPSK, QPSK, 16-QAM, 64-QAM
Modulation technology (IEEE 802.11n):	BPSK, QPSK, 16-QAM, 64-QAM
Data speed (IEEE 802.11a):	6Mbps, 9Mbps,12Mbps,18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Data speed (IEEE 802.11n20):	MCS0: 6.5Mbps, MCS1:13Mbps,MCS2:19.5Mbps, MCS3:26Mbps, MCS4:39Mbps, MCS5:52Mbps, MCS6:58.5Mbps, MCS7:65Mbps
Data speed (IEEE 802.11n40):	MCS0:15Mbps, MCS1:30Mbps, MCS2:45Mbps, MCS3:60Mbps, MCS4:90Mbps, MCS5:120Mbps, MCS6:135Mbps, MCS7:150Mbps
Data speed (IEEE 802.11ac):	Up to 866.6Mbps
Antenna Type:	Panel Antenna
Antenna gain:	Antenna 0: 11dBi Antenna 1: 11dBi
AC adapter :	Adapter(1) Model: G0720-480-050 Input: AC100-240V, 50/60Hz, 0.75A Output: DC 48.0V, 0.5A Adapter(2) Model: GRT-POE20-480050A Input: AC100-240V, 50/60Hz, 0.5A Output: DC 48.0V, 0.5A

Operation Frequency each of channel					
Band 1					
802.11a/802.11n(HT20)		802.11n(HT40)		802.11ac	
Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	38	5190MHz	42	5210MHz
40	5200MHz	46	5230MHz		
44	5220MHz				
48	5240MHz				
Band 4					
802.11a/802.11n(HT20)		802.11n(HT40)		802.11ac	
Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	151	5755MHz	155	5775MHz
153	5765MHz	159	5795MHz		
157	5785MHz				
161	5805MHz				
165	5825MHz				

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Band 1					
802.11a/802.11n20		802.11n40		802.11ac	
Channel	Frequency	Channel	Frequency	Channel	Frequency
Lowest channel	5180MHz	Lowest channel	5190MHz	Middle channel	5210
Middle channel	5200MHz	Highest channel	5230MHz		
Highest channel	5240MHz				
Band 4					
802.11a/802.11n20		802.11n40		802.11ac	
Channel	Frequency	Channel	Frequency	Channel	Frequency
Lowest channel	5745MHz	Lowest channel	5755MHz	Middle channel	5775MHz
Middle channel	5785MHz	Highest channel	5795MHz		
Highest channel	5825MHz				

5.3 Test environment and test mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Continuously transmitting mode	Keep the EUT in 100% duty cycle transmitting with modulation.
We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:	
Per-scan all kind of data rate, and found the follow list were the worst case.	
Mode	Data rate
802.11a	6 Mbps
802.11n20	6.5 Mbps
802.11n40	13 Mbps

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
DELL	PC	OPTIPLEX745	N/A	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC

5.5 Measurement Uncertainty

Parameters	Expanded Uncertainty
Conducted Emission (9kHz ~ 30MHz)	±2.22 dB (k=2)
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

Radiated Emission:					
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
Loop Antenna	SCHWARZBECK	FMZB1519B	00044	03-16-2018	03-15-2019
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-16-2018	03-15-2019
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-16-2018	03-15-2019
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
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

Conducted Emission:					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-07-2018	03-06-2019
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-07-2018	03-06-2019
LISN	CHASE	MN2050D	1447	03-19-2018	03-18-2019
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2017	07-20-2018
				07-21-2018	07-20-2019
Cable	HP	10503A	N/A	03-07-2018	03-06-2019
EMI Test Software	AUDIX	E3	6.110919b	N/A	N/A

6 Test results and Measurement Data

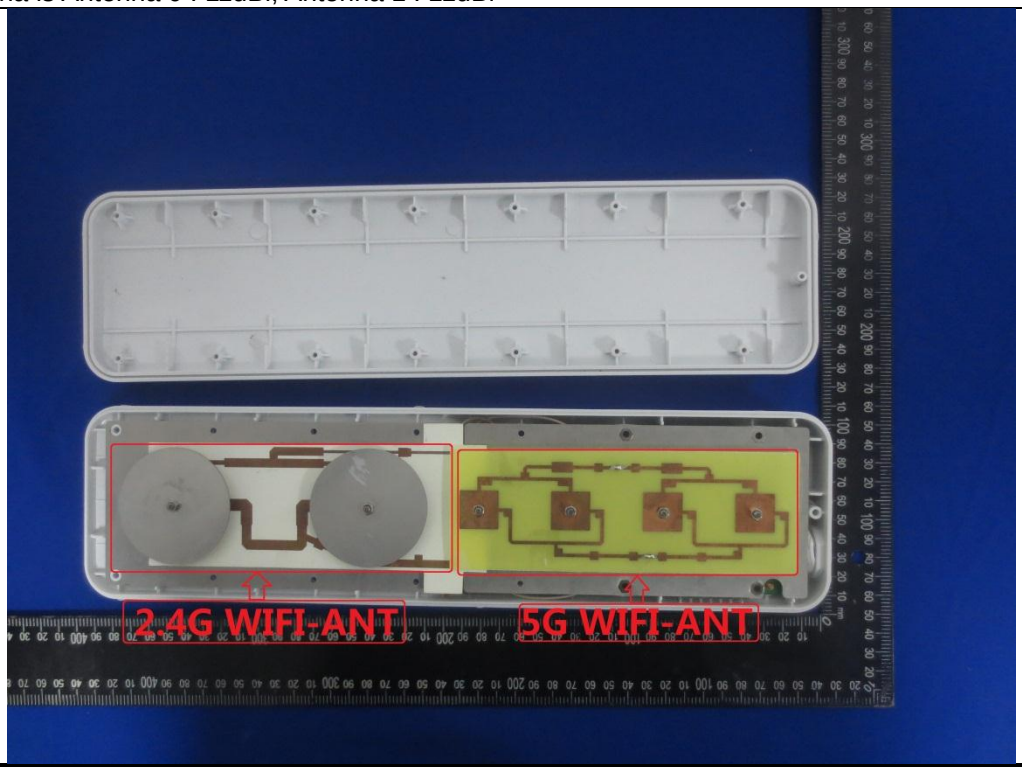
6.1 Antenna requirement

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

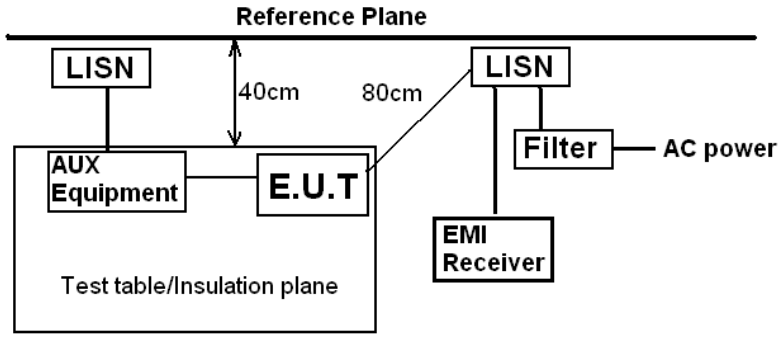
15.203 requirement:
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer 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 requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

E.U.T Antenna:	

The WiFi antenna is Panel Antenna which cannot replace by end-user, the best case gain of the antenna is Antenna 0 : 11dBi, Antenna 1 : 11dBi



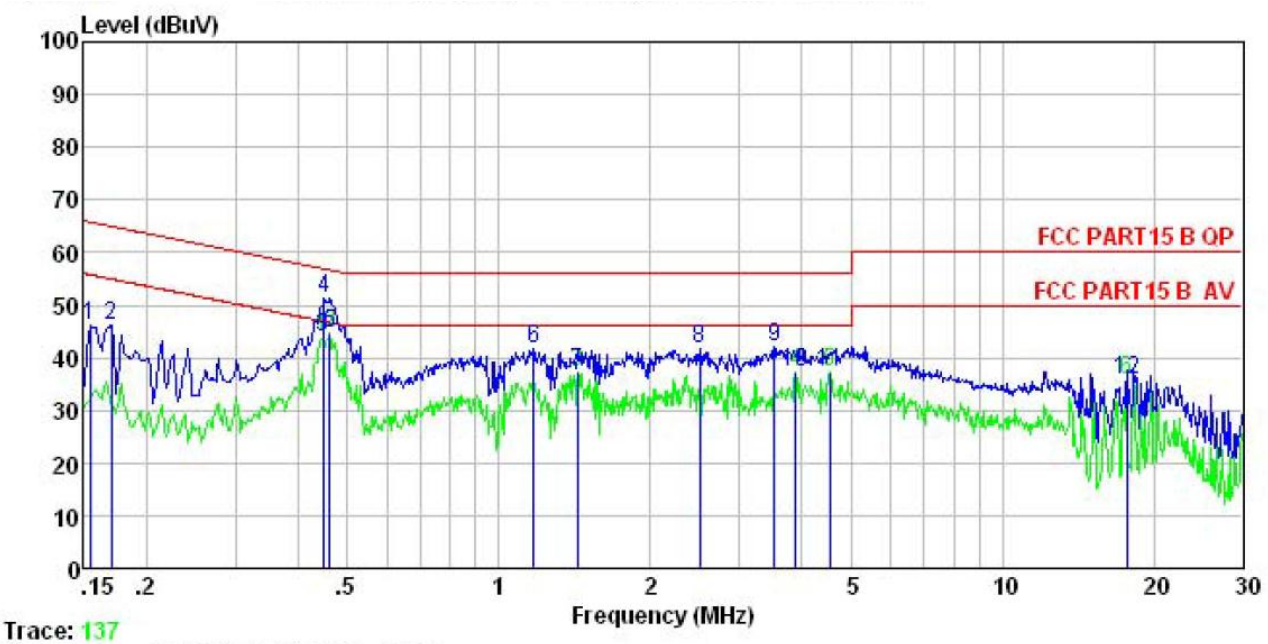
6.2 Conducted Emission

<table>
<tr><td>Test Requirement:</td><td colspan="3">FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td colspan="3">ANSI C63.10: 2013</td></tr>
<tr><td>Test Frequency Range:</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>Limit:</td><td>Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td></td><td></td><td>Quasi-peak</td><td></td></tr>
<tr><td></td><td>0.15-0.5</td><td>66 to 56*</td><td>0.15-0.5</td></tr>
<tr><td></td><td>0.5-5</td><td>56</td><td>0.5-5</td></tr>
<tr><td></td><td>5-30</td><td>60</td><td>5-30</td></tr>
<tr><td></td><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.). It provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.</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 Phase: Line



Trace: 137

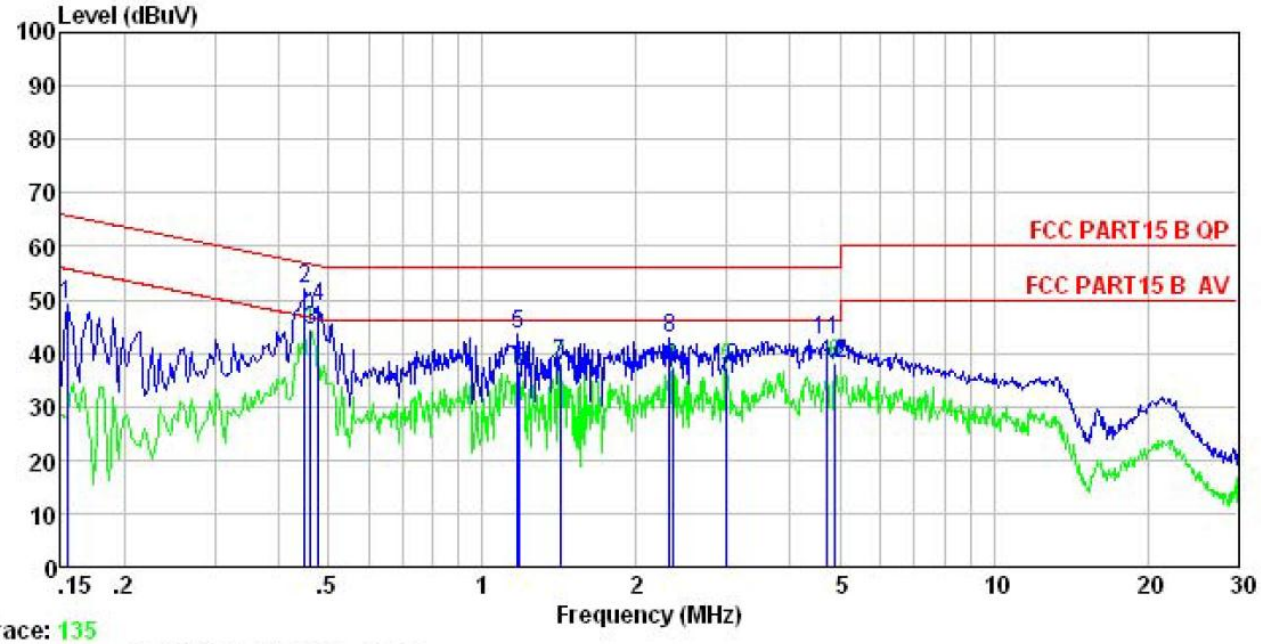
```
Site          : CCIS Shielding Room
Condition     : FCC PART15 B QP LISN LINE
EUT           : Broadband Digital Transmission System
Model         : EW-7479GSC
Test Mode     : 5G WIFI mode
Power Rating  : AC 120V/60Hz
Environment   : Temp: 23 .5'C Huni:57%  Atmos:101KPa
Test Engineer: Mike
Remark        : GRT
```

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	35.01	0.18	10.78	45.97	65.78	-19.81	QP
2	0.170	35.21	0.17	10.77	46.15	64.94	-18.79	QP
3	0.447	33.04	0.12	10.74	43.90	46.93	-3.03	Average
4	0.449	40.55	0.12	10.74	51.41	56.89	-5.48	QP
5	0.461	33.74	0.12	10.74	44.60	46.67	-2.07	Average
6	1.172	30.58	0.13	10.89	41.60	56.00	-14.40	QP
7	1.433	26.09	0.14	10.92	37.15	46.00	-8.85	Average
8	2.500	30.58	0.15	10.94	41.67	56.00	-14.33	QP
9	3.528	30.88	0.17	10.90	41.95	56.00	-14.05	QP
10	3.881	26.17	0.18	10.89	37.24	46.00	-8.76	Average
11	4.549	26.02	0.20	10.87	37.09	46.00	-8.91	Average
12	17.661	24.62	0.29	10.92	35.83	50.00	-14.17	Average

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 Phase: Neutral



Trace: 135

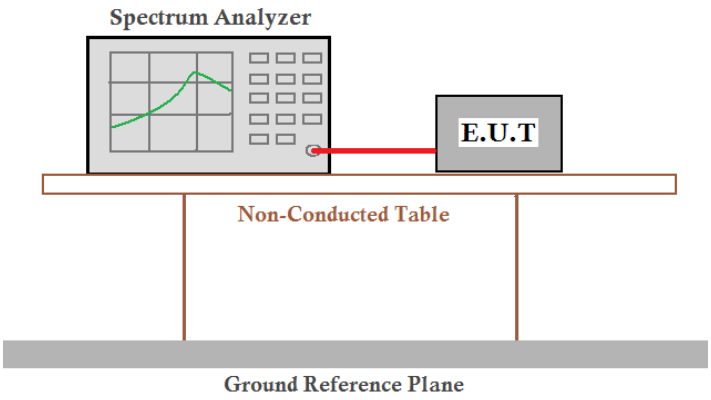
Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN NEUTRAL
EUT : Broadband Digital Transmission System
Model : EW-7479GSC
Test Mode : 5G WIFI mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 .5'C Huni:57% Atmos:101KPa
Test Engineer: Mike
Remark : GRT

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	37.25	0.98	10.78	49.01	65.78	-16.77	QP
2	0.449	40.23	0.97	10.74	51.94	56.89	-4.95	QP
3	0.461	32.67	0.97	10.74	44.38	46.67	-2.29	Average
4	0.479	36.84	0.97	10.75	48.56	56.36	-7.80	QP
5	1.172	31.78	0.97	10.89	43.64	56.00	-12.36	QP
6	1.184	24.79	0.97	10.89	36.65	46.00	-9.35	Average
7	1.418	26.04	0.98	10.92	37.94	46.00	-8.06	Average
8	2.321	31.01	0.98	10.94	42.93	56.00	-13.07	QP
9	2.358	25.50	0.98	10.94	37.42	46.00	-8.58	Average
10	3.009	25.26	0.99	10.92	37.17	46.00	-8.83	Average
11	4.721	30.62	1.01	10.86	42.49	56.00	-13.51	QP
12	4.900	26.04	1.01	10.85	37.90	46.00	-8.10	Average

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

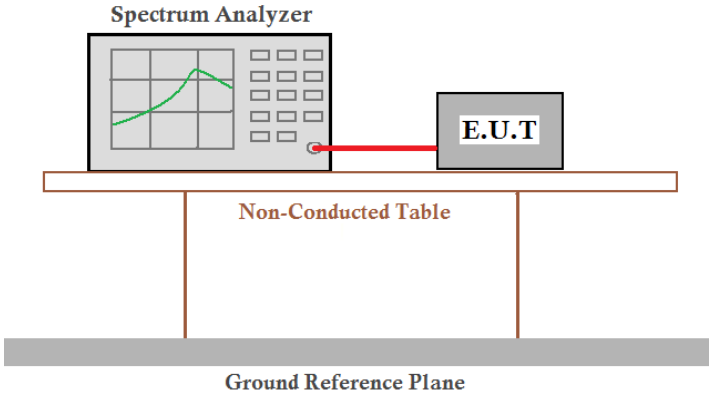
Test Requirement:	FCC Part15 E Section 15.407 (a) (iii) & (a) (3)
Test Method:	ANSI C63.10: 2013, KDB789033
Limit:	**Band 1:** 1 W (For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. 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.) **Band 4:** 1W (For the band 5.725-5.85 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 30 dBm in any 500-kHz band. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.).
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:

Band 1						
Mode	Test CH	Ant. Port	Conducted Output power(dBm)	Total power (dBm)	Limit (dBm)	Result
802.11a	Lowest	TX0	22.21	25.55	30	Pass
		TX1	22.84			
	Middle	TX0	22.21	25.72	30	Pass
		TX1	23.16			
	Highest	TX0	21.67	25.70	30	Pass
		TX1	23.51			
802.11n20	Lowest	TX0	19.40	22.57	30	Pass
		TX1	19.72			
	Middle	TX0	22.47	25.81	30	Pass
		TX1	23.10			
	Highest	TX0	21.98	25.79	30	Pass
		TX1	23.45			
802.11n40	Lowest	TX0	18.50	21.80	30	Pass
		TX1	19.06			
	Highest	TX0	18.22	22.03	30	Pass
		TX1	19.69			
802.11ac	Middle	TX0	16.51	20.14	30	Pass
		TX1	17.68			
Remark: *1. Because transmit signals are correlated,* Directional gain = $G_{ANT} + 10\log(N_{ANT})$ dBi *,So the Directional gain=11 + 10* $\log(2)$*=14 dBi* *2. The directional Gain of antenna is less than 23 dBi, so the limit of power is 30 dBm.*						

Band 4						
Mode	Test CH	Ant. Port	Conducted Output power(dBm)	Total power (dBm)	Limit (dBm)	Result
802.11a	Lowest	TX0	24.76	26.92	30	Pass
		TX1	22.84			
	Middle	TX0	25.22	27.68	30	Pass
		TX1	24.03			
	Highest	TX0	23.82	26.60	30	Pass
		TX1	23.34			
802.11n20	Lowest	TX0	24.86	26.99	30	Pass
		TX1	22.87			
	Middle	TX0	25.25	27.54	30	Pass
		TX1	23.67			
	Highest	TX0	24.04	26.67	30	Pass
		TX1	23.25			
802.11n40	Lowest	TX0	24.55	26.70	30	Pass
		TX1	22.61			
	Highest	TX0	24.57	26.90	30	Pass
		TX1	23.09			
802.11ac	Middle	TX0	22.35	24.43	30	Pass
		TX1	20.23			
Remark: However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power						

6.4 Occupy Bandwidth

Test Requirement:	FCC Part15 E Section 15.407 (a) (5) and Section 15.407 (e)
Test Method:	ANSI C63.10:2013 and KDB 789033
Limit:	Band 1: N/A(26dB Emission Bandwidth and 99% Occupy Bandwidth) Band 4: N/A(26dB Emission Bandwidth and 99% Occupy Bandwidth) Band 4: >500kHz(6dB 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:

Band 1:TX0

Test Channel	26dB Emission Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	26.155	22.215	40.790	/	N/A	N/A
Middle	22.790	22.615	/	79.620		
Highest	19.680	20.000	39.400	/		
Test Channel	99% Occupy Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	17.310	18.585	36.350	/	N/A	N/A
Middle	17.315	18.065	/	75.660		
Highest	17.810	18.905	36.370	/		

Band 1:TX1

Test Channel	26dB Emission Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	20.250	21.240	40.860	/	N/A	N/A
Middle	20.795	25.905	/	79.160		
Highest	19.555	20.000	39.730	/		
Test Channel	99% Occupy Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	16.840	18.615	36.330	/	N/A	N/A
Middle	16.835	18.430	/	75.620		
Highest	16.845	18.230	36.280	/		

Band 4:TX0

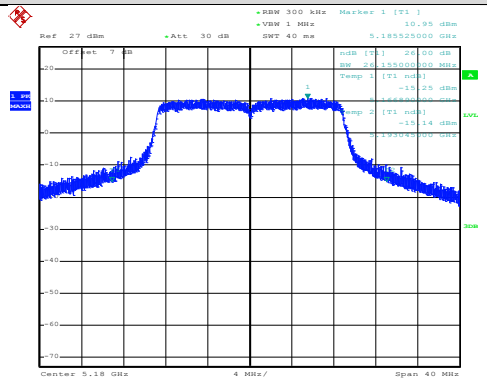
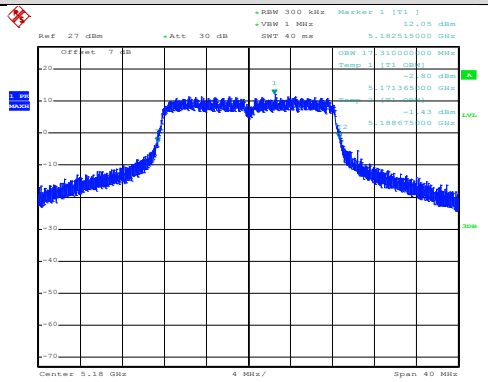
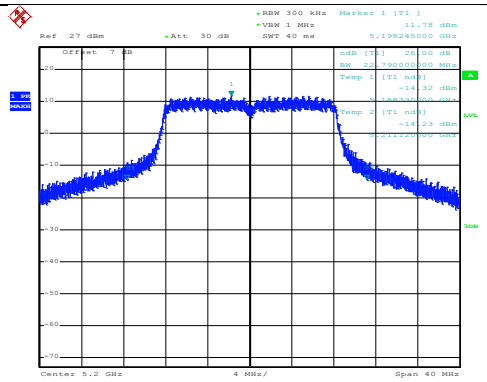
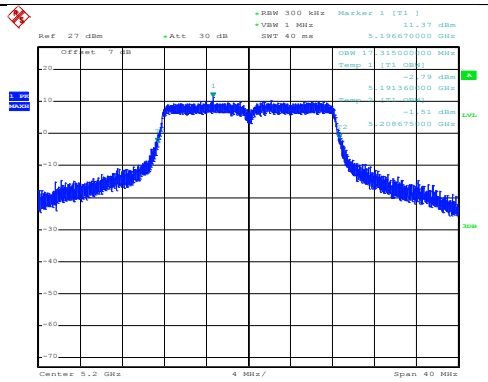
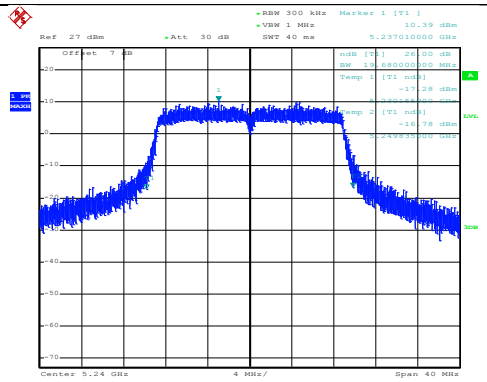
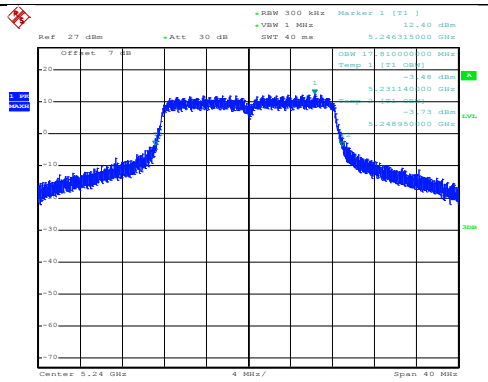
Test Channel	26dB Emission Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	19.470	20.970	39.090	/	N/A	N/A
Middle	19.675	20.590	/	79.300		
Highest	20.215	20.030	39.600	/		
Test Channel	99% Occupy Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	16.905	17.980	36.430	/	N/A	N/A
Middle	16.925	18.160	/	75.860		
Highest	16.790	18.195	36.410	/		
Test Channel	6dB Emission Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	16.56	17.44	36.00	/	>500kHz	N/A
Middle	16.56	17.44	/	76.48		
Highest	16.56	17.44	36.32	/		

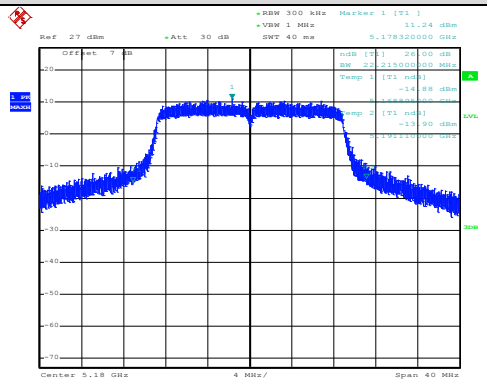
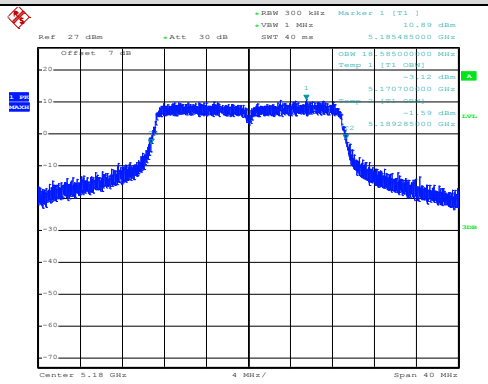
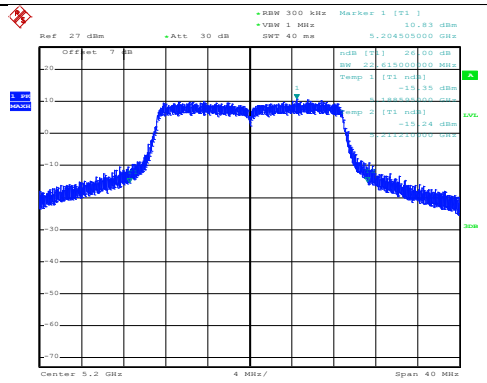
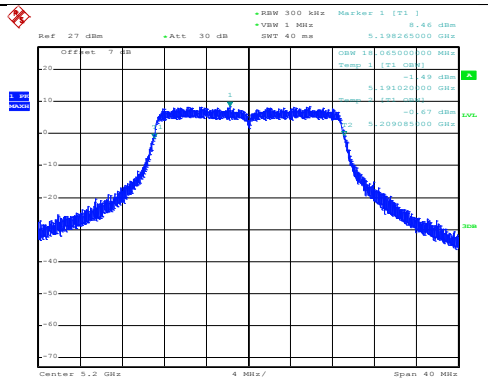
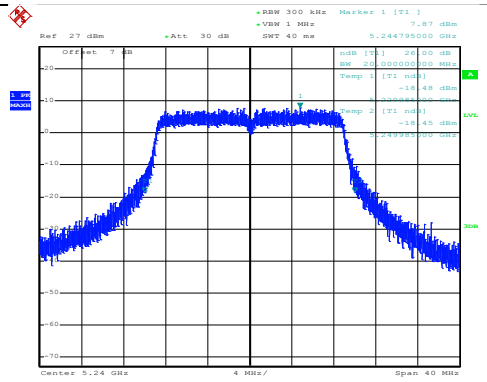
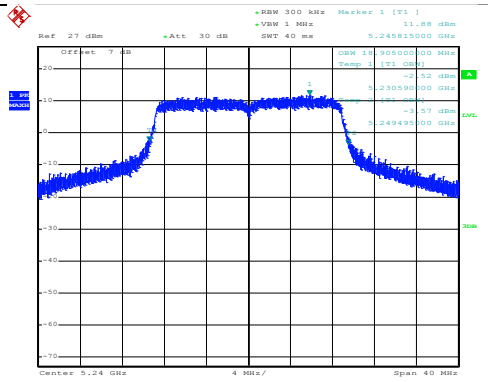
Band 4:TX1

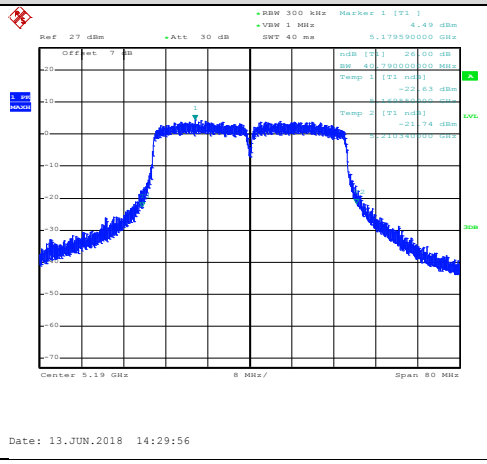
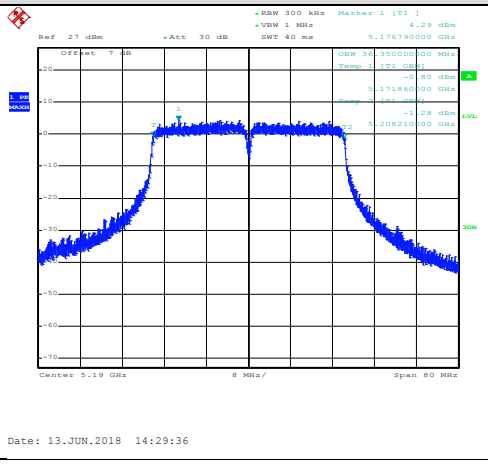
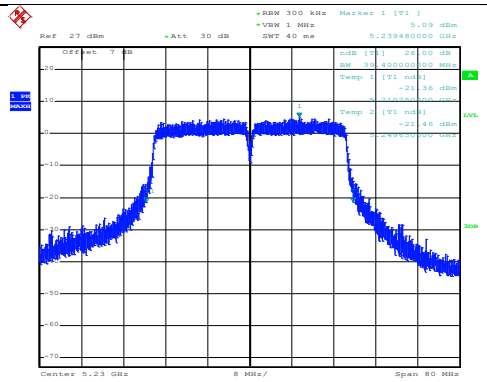
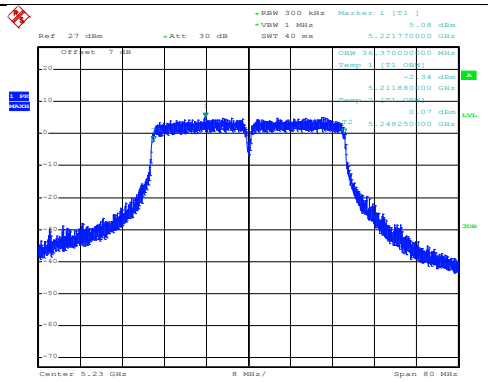
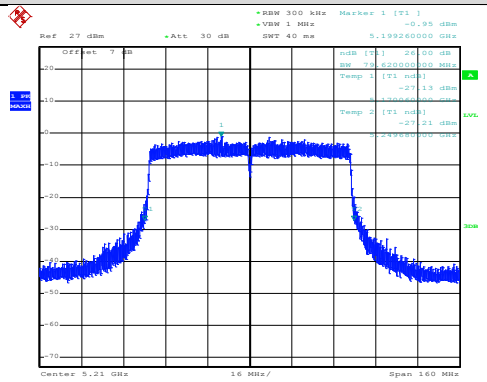
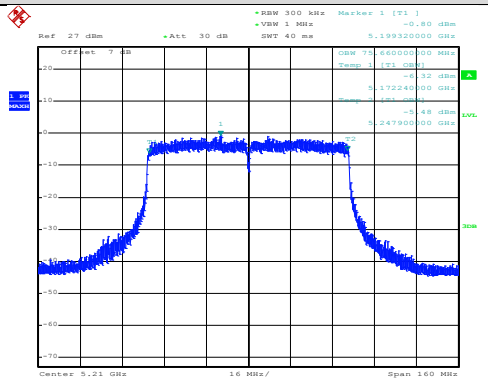
Test Channel	26dB Emission Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	19.645	20.570	39.340	/	N/A	N/A
Middle	20.460	20.735	/	78.740		
Highest	19.840	20.605	38.910	/		
Test Channel	99% Occupy Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	16.890	18.025	36.320	/	N/A	N/A
Middle	16.910	18.040	/	75.680		
Highest	16.875	18.005	36.390	/		
Test Channel	6dB Emission Bandwidth (MHz)				Limit	Result
	802.11a	802.11n20	802.11n40	802.11ac		
Lowest	16.560	17.44	36.32	/	>500kHz	N/A
Middle	16.560	17.760	/	75.200		
Highest	16.560	17.760	36.68	/		

Note: Only 80 MHz Bandwidth support by 802.11ac mode.

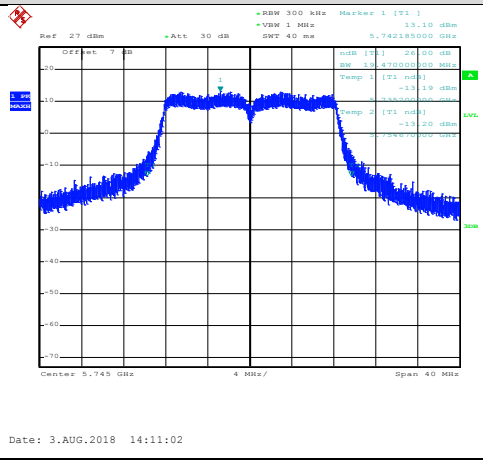
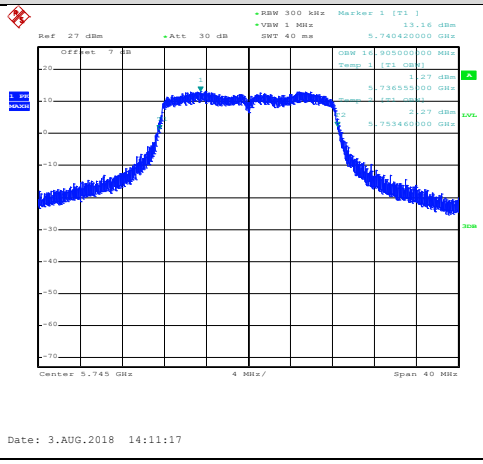
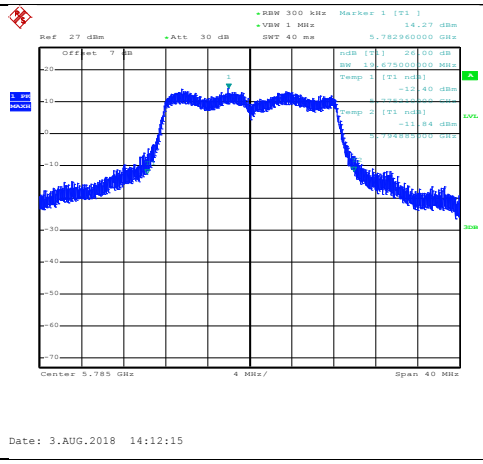
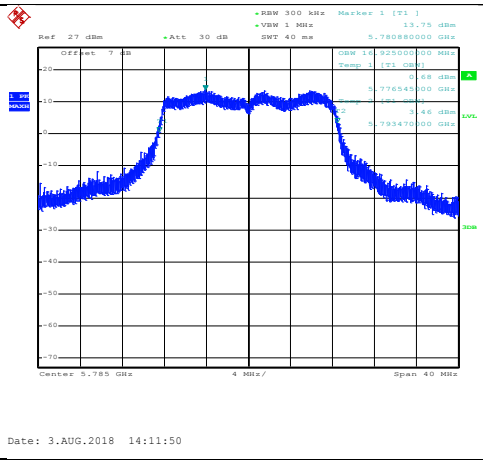
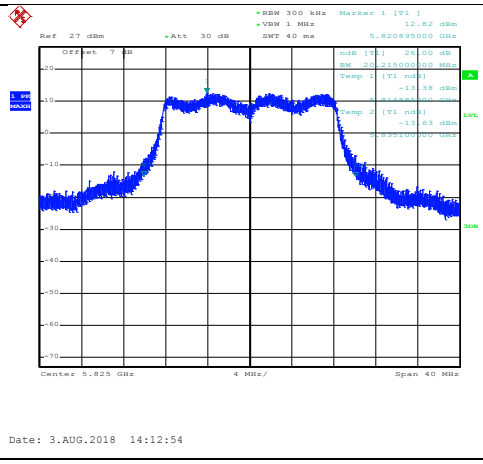
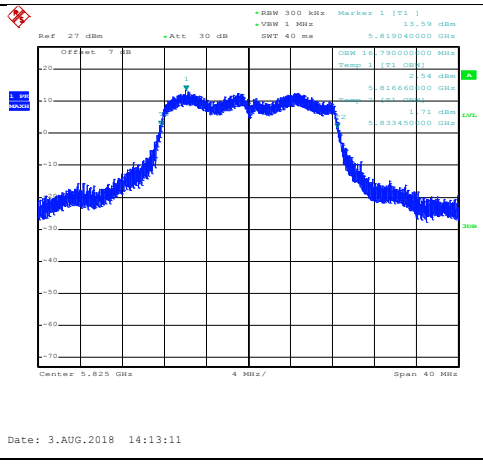
Test plot as follows:
Band 1:TX0

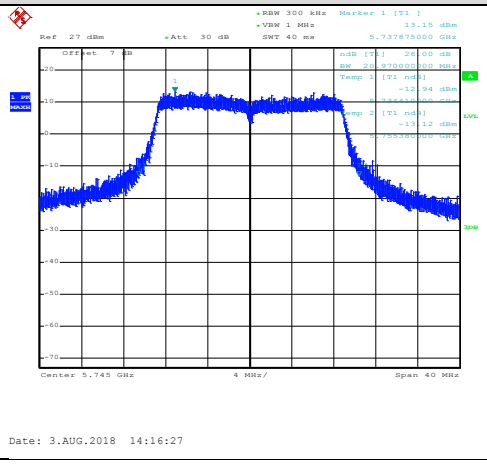
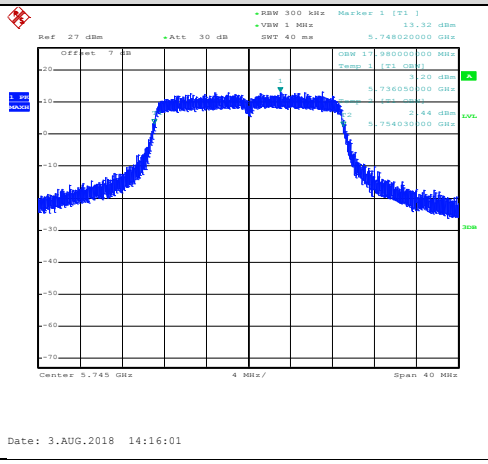
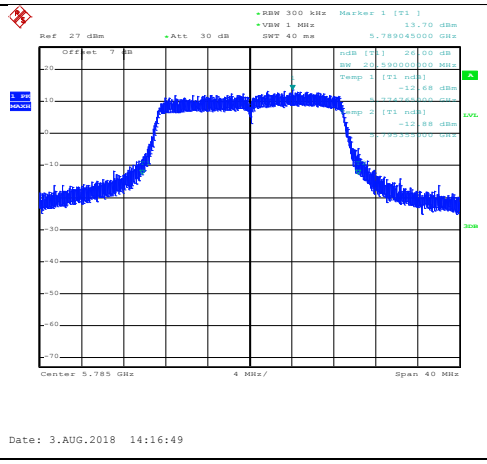
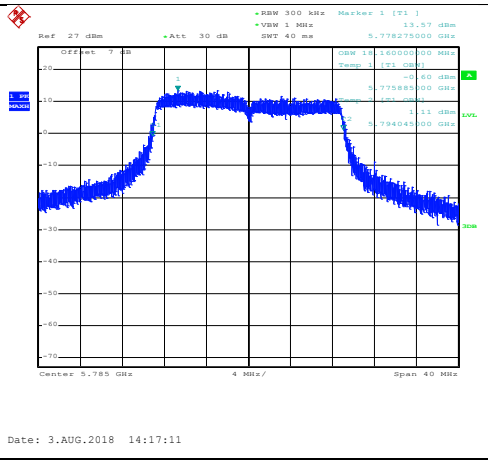
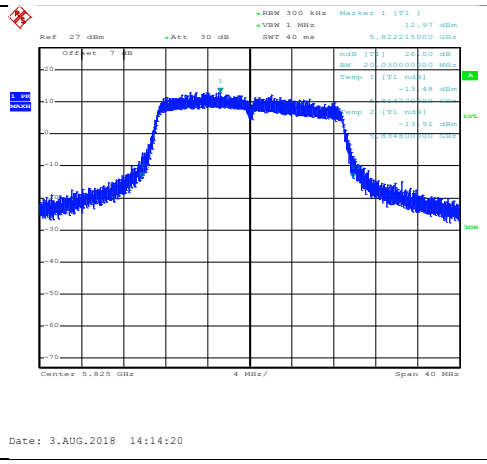
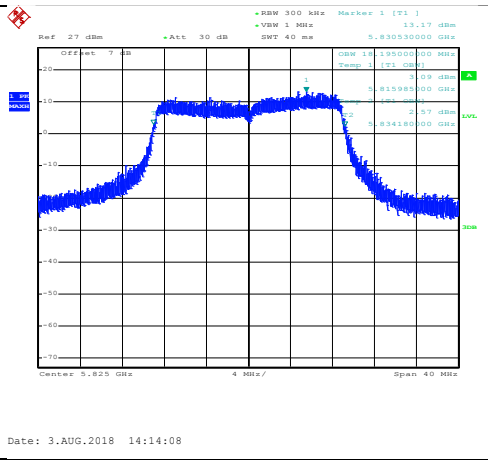
802.11a	
26 dB EBW	99% OBW
	
Date: 13.JUN.2018 14:22:35	Date: 13.JUN.2018 14:13:27
Lowest channel	
	
Date: 13.JUN.2018 14:15:33	Date: 13.JUN.2018 14:14:17
Middle channel	
	
Date: 13.JUN.2018 14:26:55	Date: 13.JUN.2018 14:17:14
Highest channel	

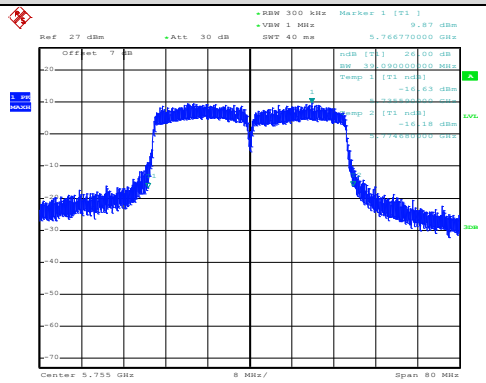
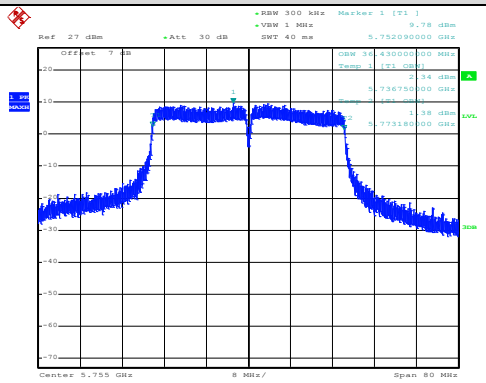
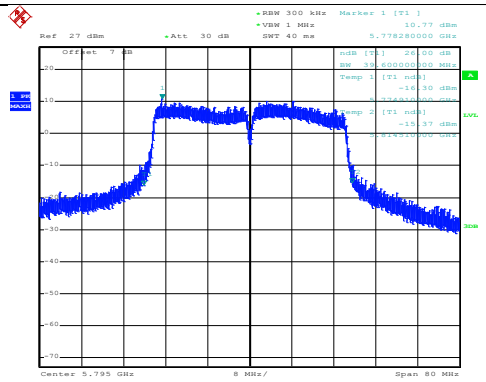
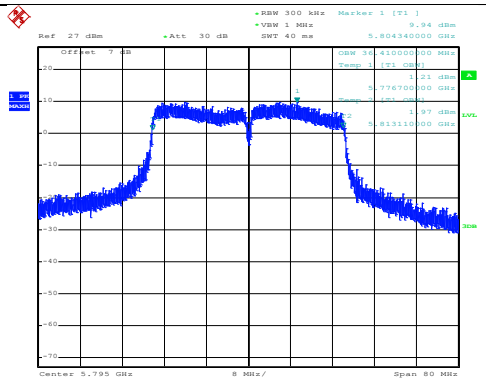
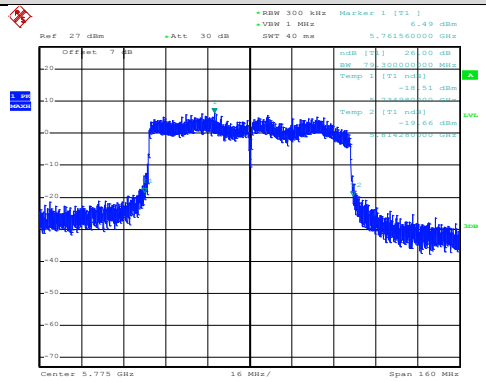
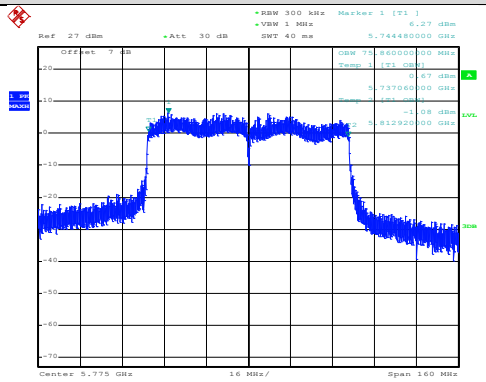
802.11n(HT20)	
26 dB EBW	99% OBW
	
Date: 13.JUN.2018 14:23:06	Date: 13.JUN.2018 14:23:30
Lowest channel	
	
Date: 13.JUN.2018 14:24:12	Date: 4.JUL.2018 18:18:23
Middle channel	
	
Date: 4.JUL.2018 18:27:55	Date: 13.JUN.2018 14:25:49
Highest channel	

802.11n(HT40)	
26 dB EBW	99% OBW
	
Date: 13.JUN.2018 14:29:56	Date: 13.JUN.2018 14:29:36
Lowest channel	
	
Date: 13.JUN.2018 14:32:04	Date: 13.JUN.2018 14:30:56
Highest channel	
802.11ac(HT80)	
26 dB EBW	99% OBW
	
Date: 13.JUN.2018 14:38:14	Date: 13.JUN.2018 14:37:50
Middle channel	

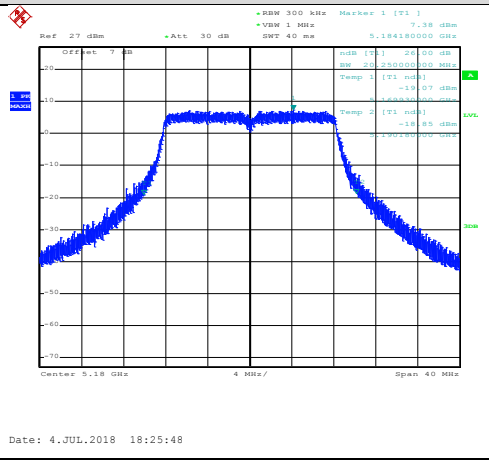
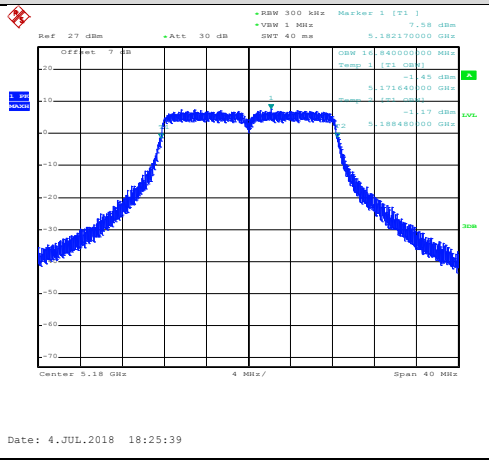
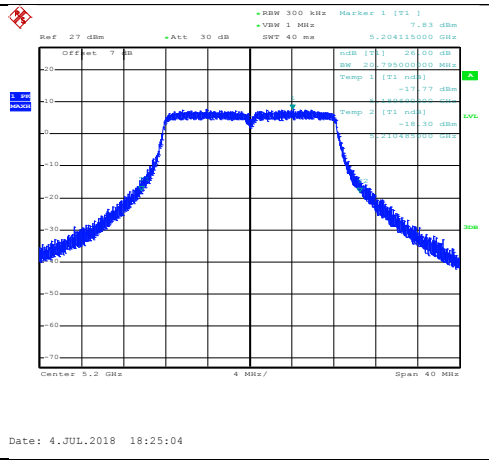
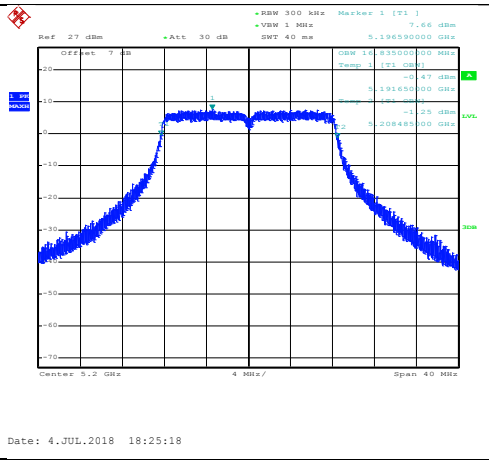
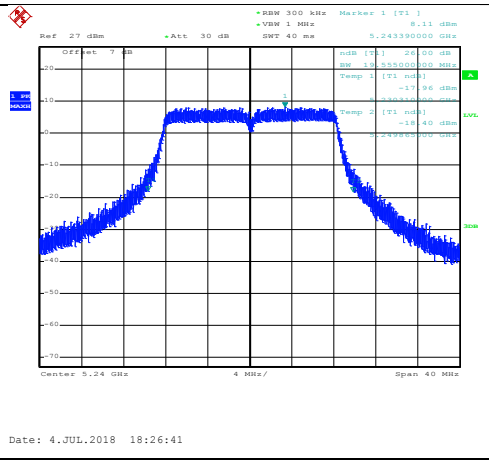
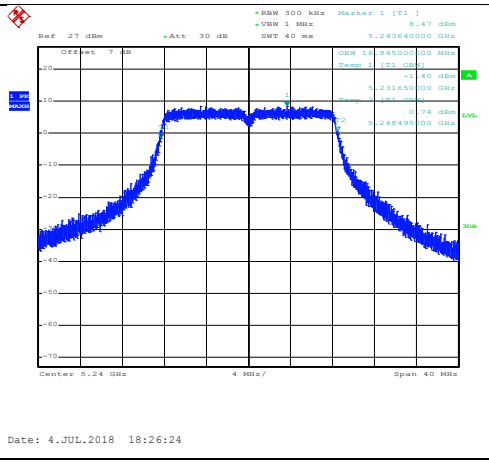
Band 4:TX0

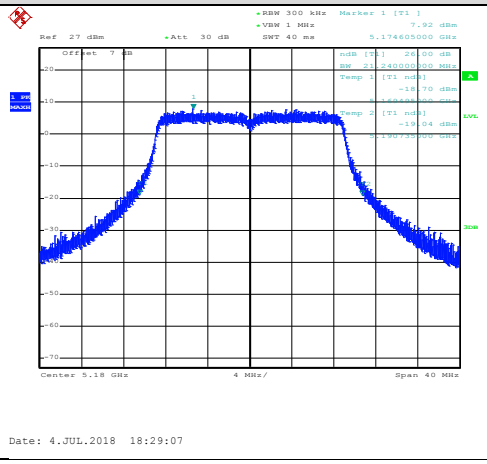
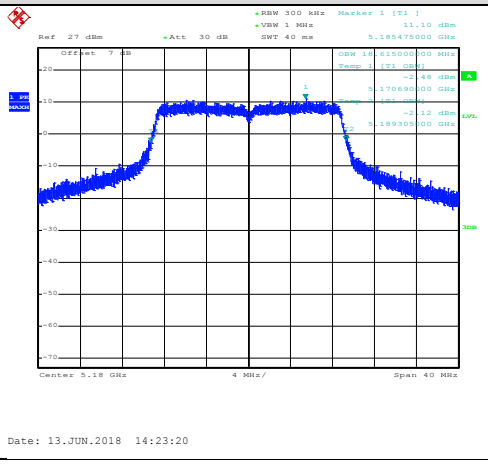
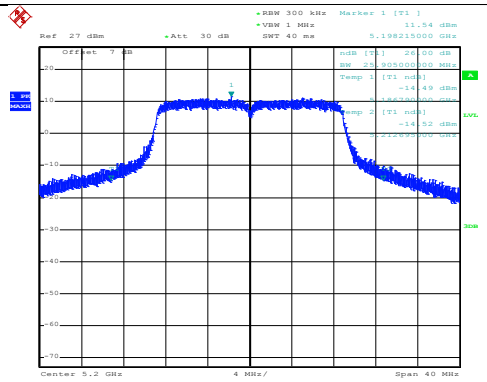
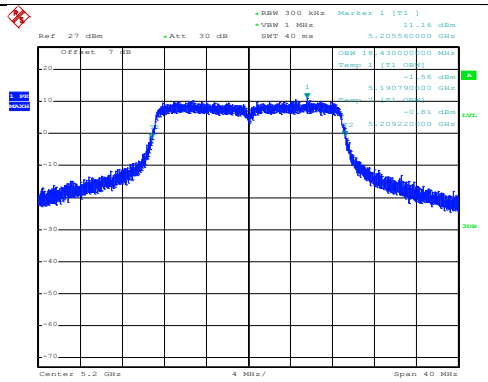
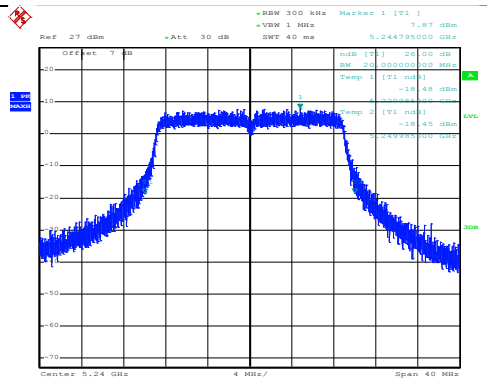
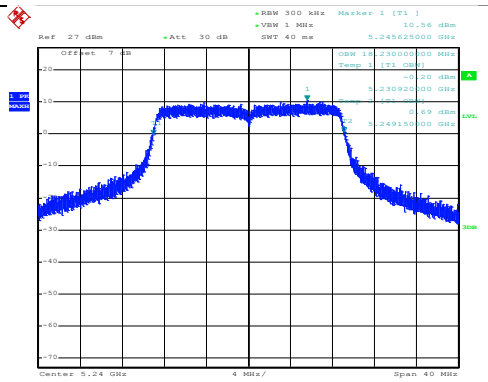
802.11a	
26 dB EBW	99% OBW
	
Date: 3.AUG.2018 14:11:02	Date: 3.AUG.2018 14:11:17
Lowest channel	
	
Date: 3.AUG.2018 14:12:15	Date: 3.AUG.2018 14:11:50
Middle channel	
	
Date: 3.AUG.2018 14:12:54	Date: 3.AUG.2018 14:13:11
Highest channel	

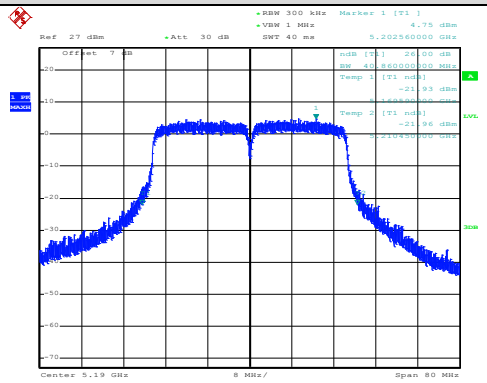
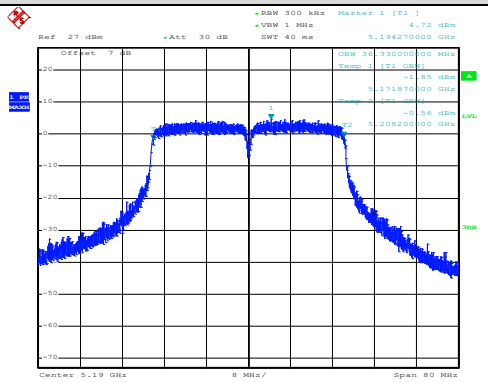
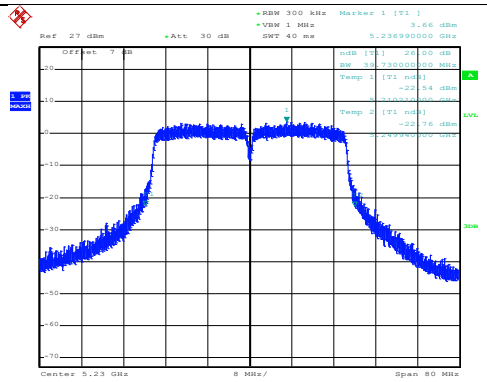
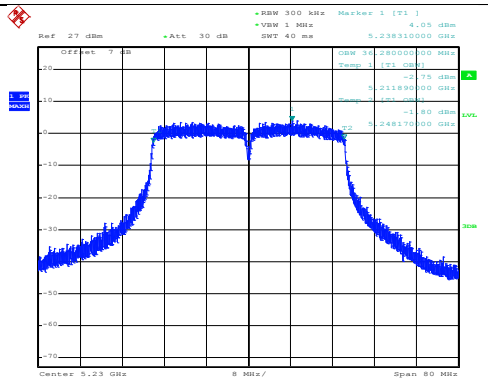
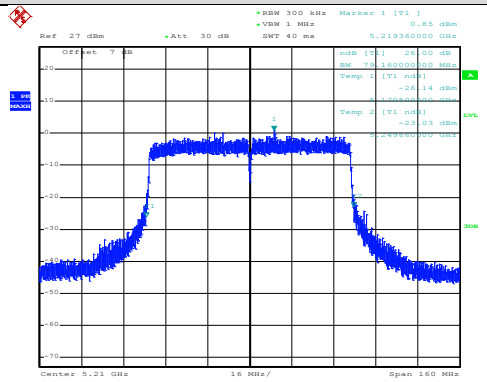
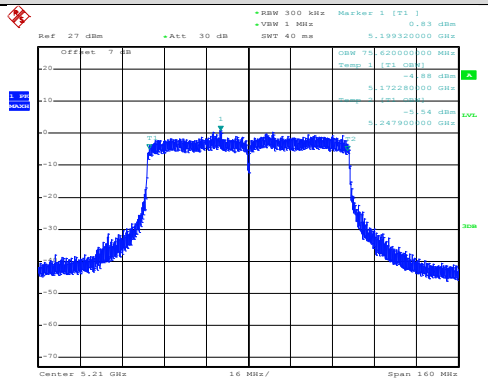
802.11n(HT20)	
26 dB EBW	99% OBW
	
Date: 3.AUG.2018 14:16:27	Date: 3.AUG.2018 14:16:01
Lowest channel	
	
Date: 3.AUG.2018 14:16:49	Date: 3.AUG.2018 14:17:11
Middle channel	
	
Date: 3.AUG.2018 14:14:20	Date: 3.AUG.2018 14:14:08
Highest channel	

802.11n(HT40)	
26 dB EBW	99% OBW
	
Date: 3.AUG.2018 14:18:08	Date: 3.AUG.2018 14:17:53
Lowest channel	
	
Date: 3.AUG.2018 14:18:45	Date: 3.AUG.2018 14:19:07
Highest channel	
802.11ac(HT80)	
26 dB EBW	99% OBW
	
Date: 3.AUG.2018 14:20:22	Date: 3.AUG.2018 14:20:03
Middle channel	

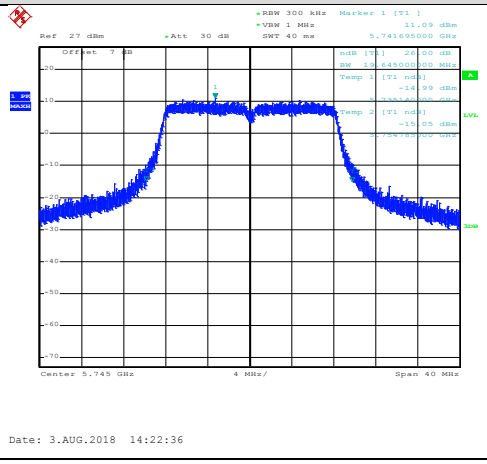
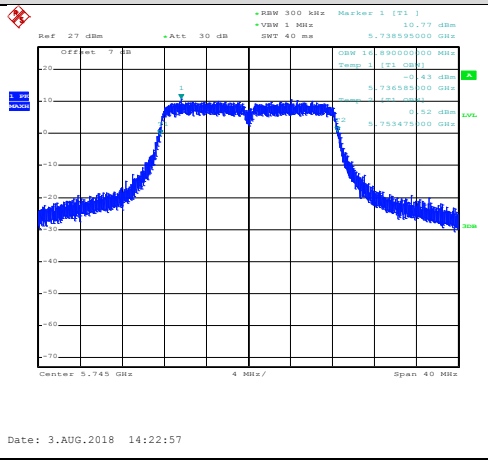
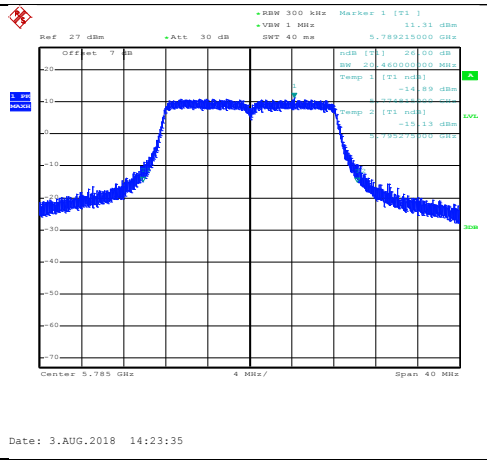
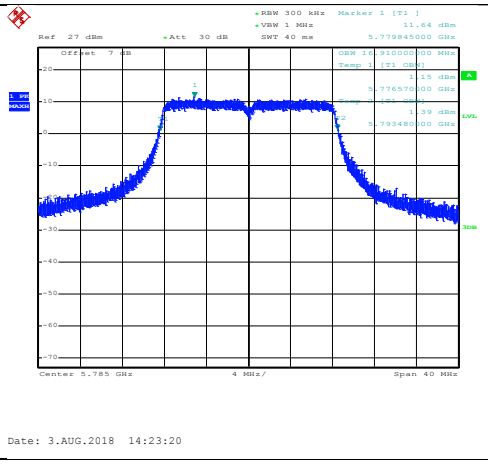
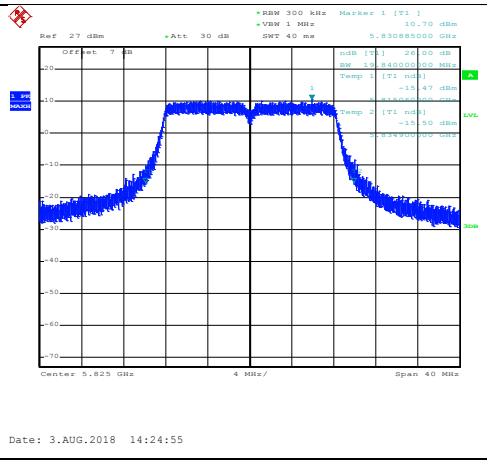
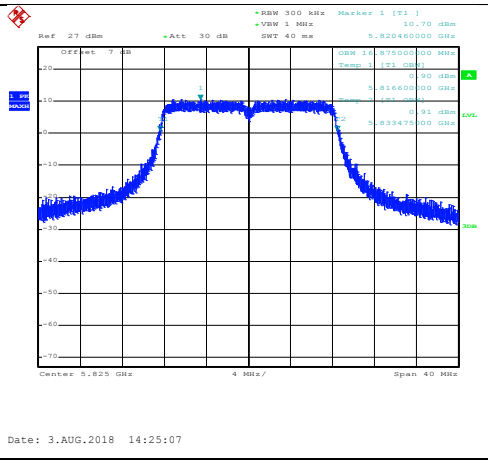
Band 1:TX1

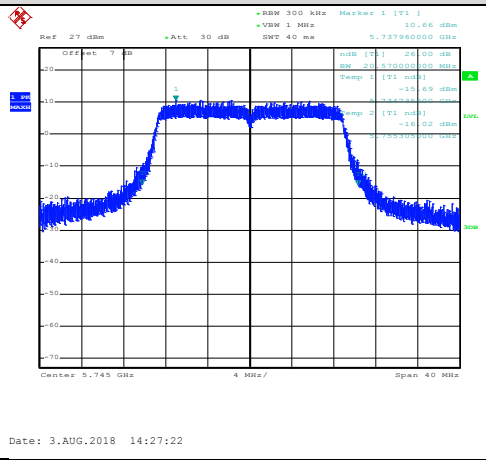
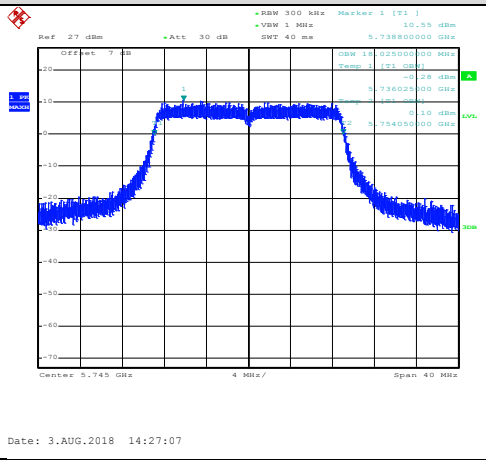
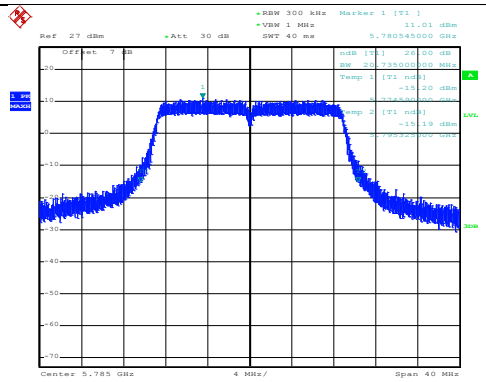
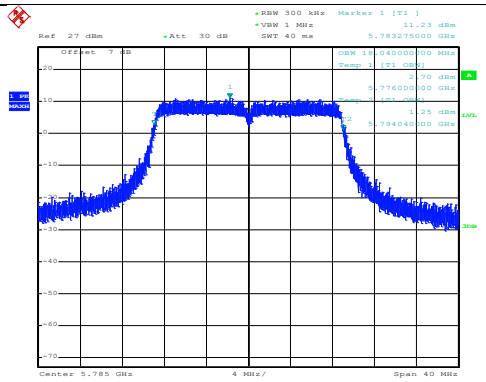
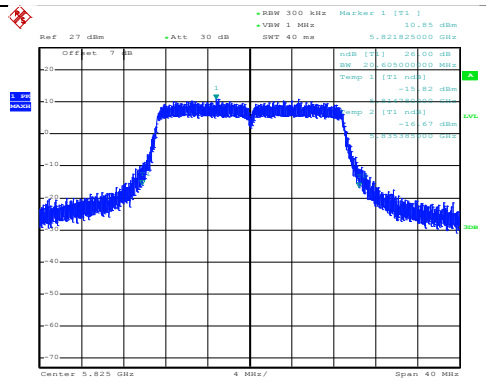
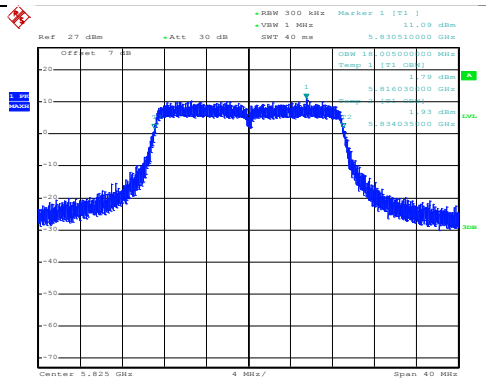
802.11a	
26 dB EBW	99% OBW
	
Date: 4.JUL.2018 18:25:48	Date: 4.JUL.2018 18:25:39
Lowest channel	
	
Date: 4.JUL.2018 18:25:04	Date: 4.JUL.2018 18:25:18
Middle channel	
	
Date: 4.JUL.2018 18:26:41	Date: 4.JUL.2018 18:26:24
Highest channel	

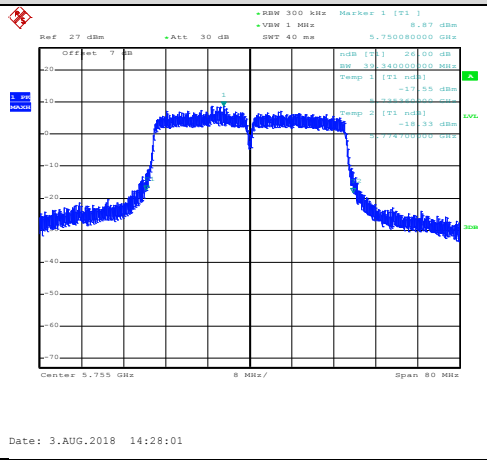
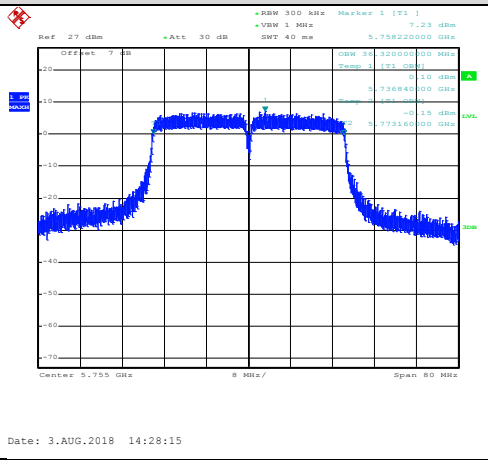
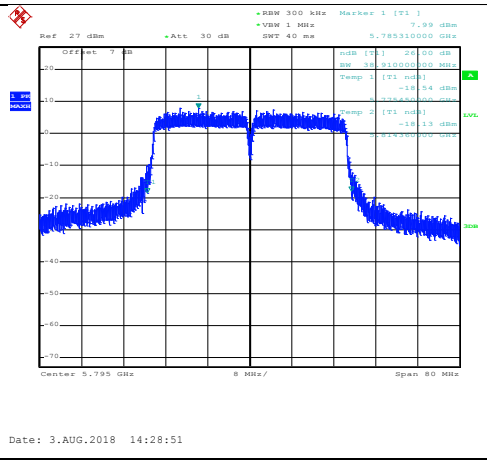
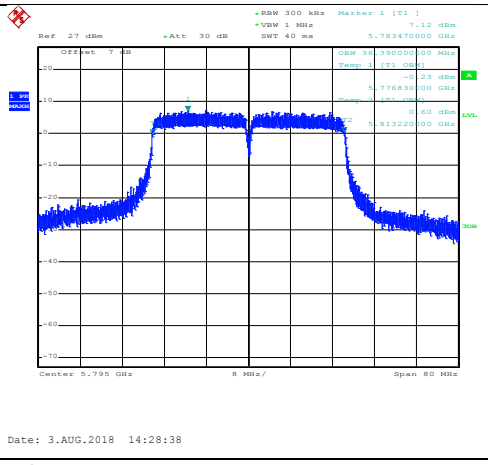
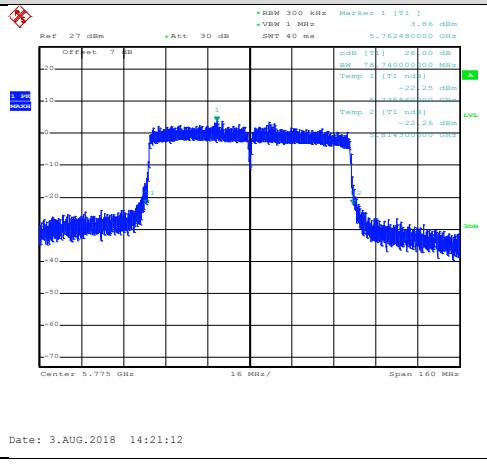
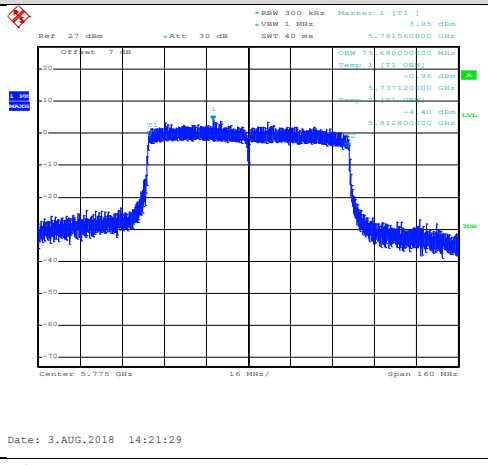
802.11n(HT20)	
26 dB EBW	99% OBW
	
Date: 4.JUL.2018 18:29:07	Date: 13.JUN.2018 14:23:20
Lowest channel	
	
Date: 13.JUN.2018 14:25:02	Date: 13.JUN.2018 14:24:00
Middle channel	
	
Date: 4.JUL.2018 18:27:55	Date: 13.JUN.2018 14:27:10
Highest channel	

802.11n(HT40)	
26 dB EBW	99% OBW
	
Date: 13.JUN.2018 14:30:19	Date: 13.JUN.2018 14:30:32
Lowest channel	
	
Date: 13.JUN.2018 14:32:20	Date: 13.JUN.2018 14:32:34
Highest channel	
802.11ac(HT80)	
26 dB EBW	99% OBW
	
Date: 13.JUN.2018 14:38:51	Date: 13.JUN.2018 14:39:07
Middle channel	

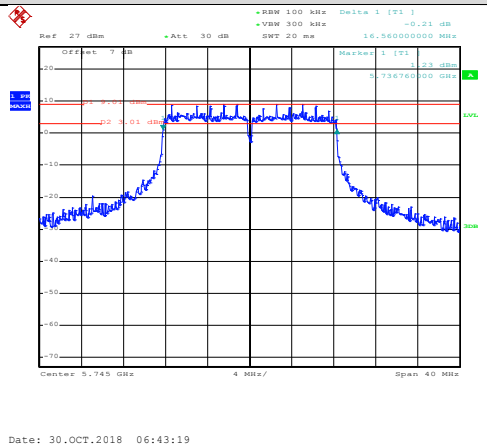
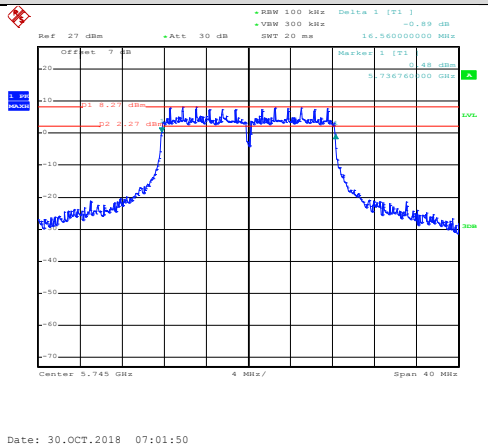
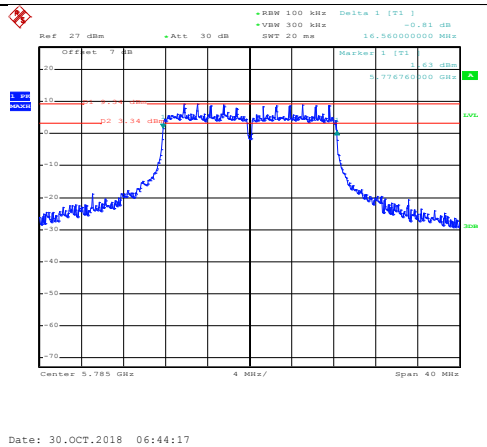
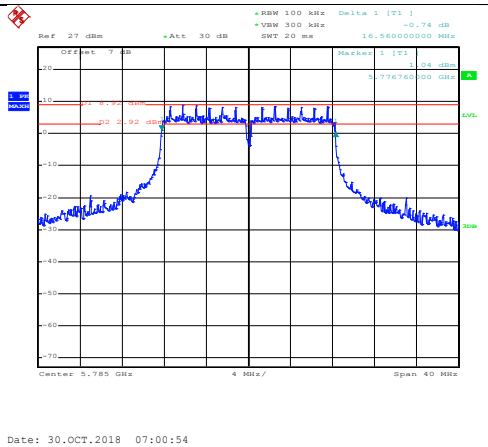
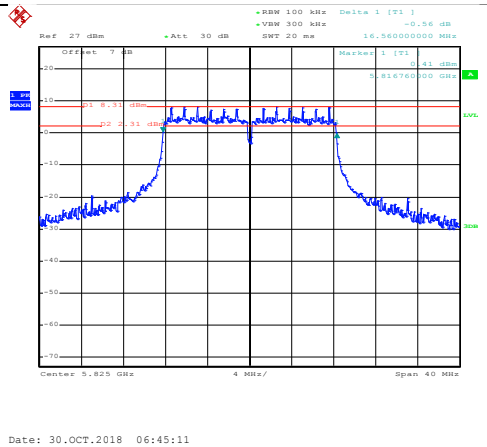
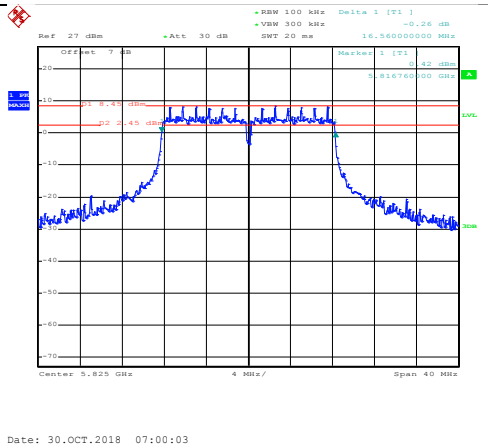
Band 4:TX1

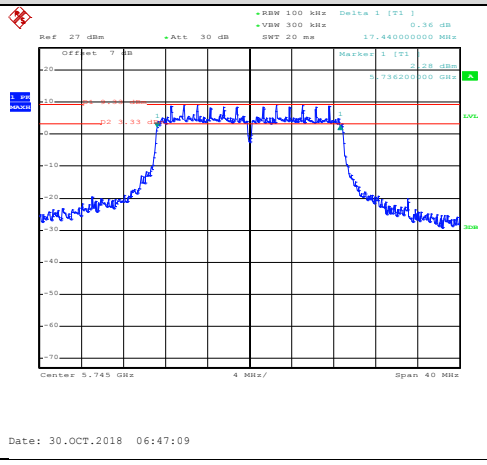
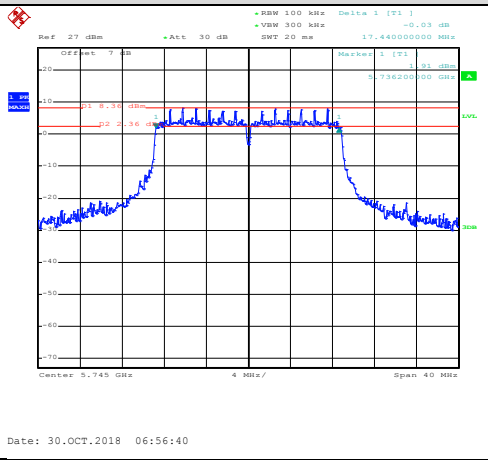
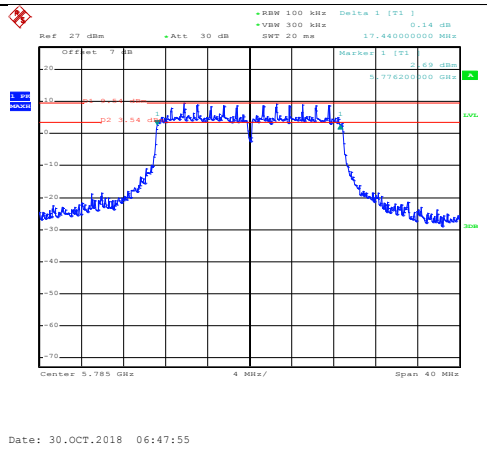
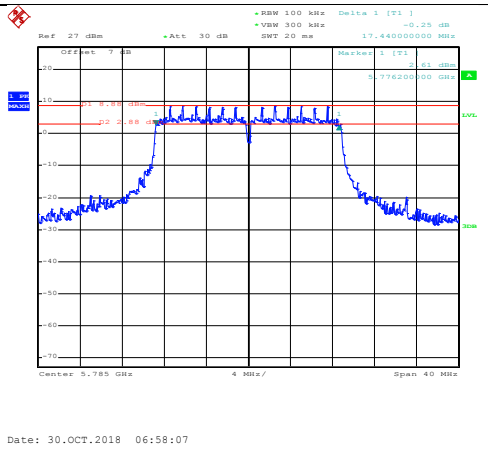
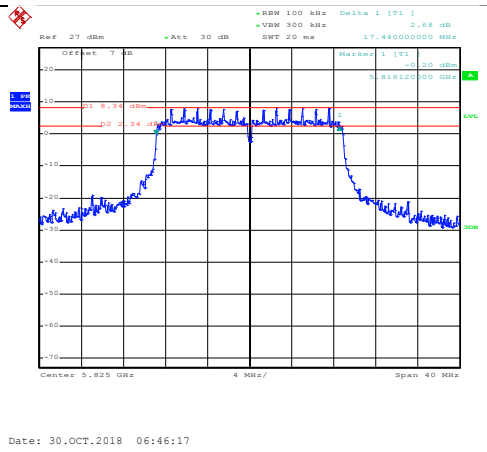
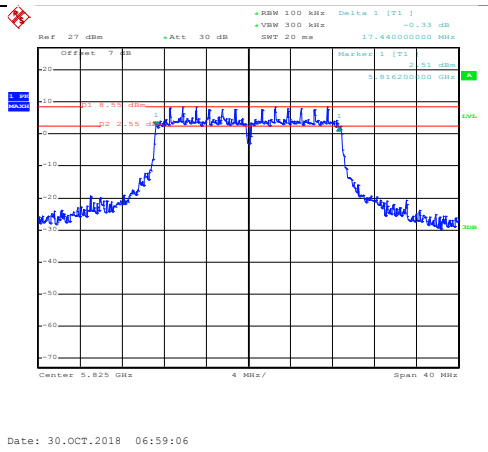
802.11a	
26 dB EBW	99% OBW
	
Date: 3.AUG.2018 14:22:36	Date: 3.AUG.2018 14:22:57
Lowest channel	
	
Date: 3.AUG.2018 14:23:35	Date: 3.AUG.2018 14:23:20
Middle channel	
	
Date: 3.AUG.2018 14:24:55	Date: 3.AUG.2018 14:25:07
Highest channel	

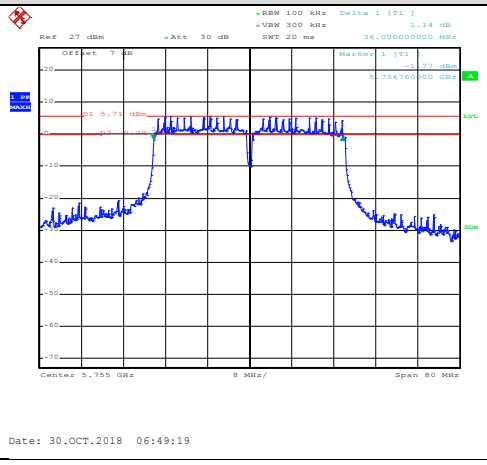
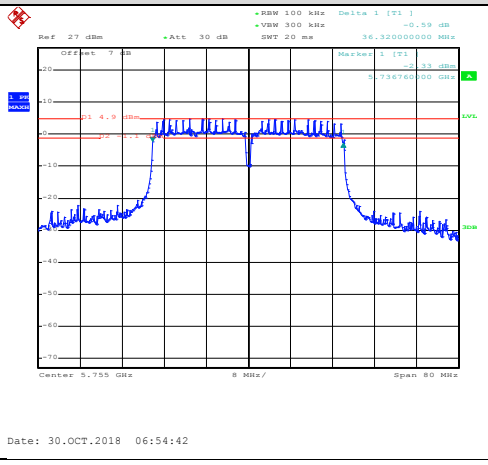
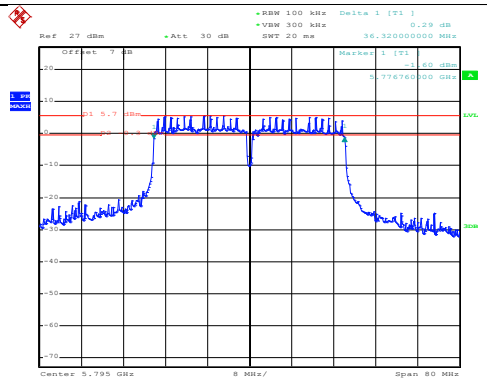
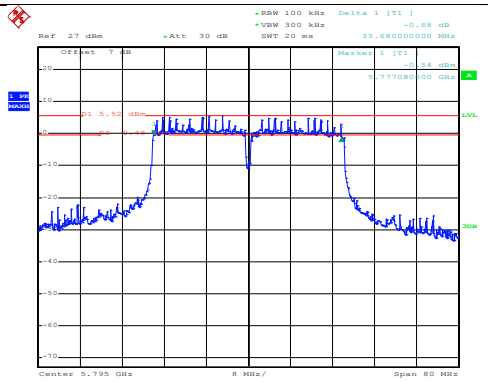
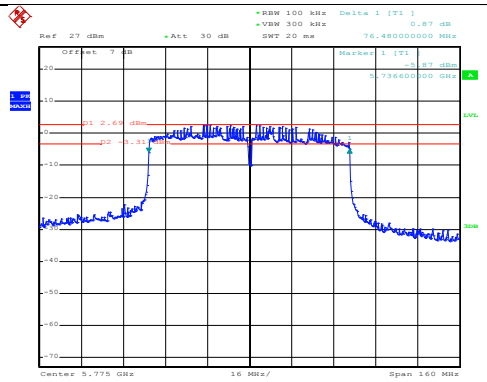
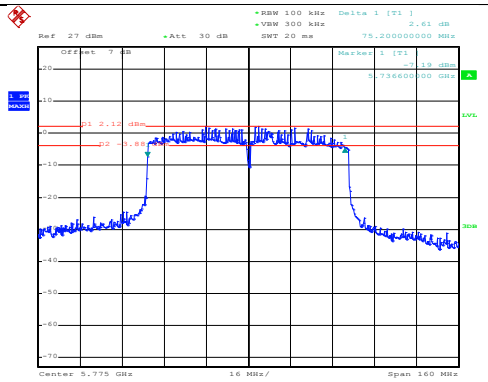
802.11n(HT20)	
26 dB EBW	99% OBW
	
Date: 3.AUG.2018 14:27:22	Date: 3.AUG.2018 14:27:07
Lowest channel	
	
Date: 3.AUG.2018 14:26:26	Date: 3.AUG.2018 14:26:42
Middle channel	
	
Date: 3.AUG.2018 14:25:58	Date: 3.AUG.2018 14:25:35
Highest channel	

802.11n(HT40)	
26 dB EBW	99% OBW
	
Lowest channel	
	
Highest channel	
802.11ac(HT80)	
26 dB EBW	99% OBW
	
Middle channel	

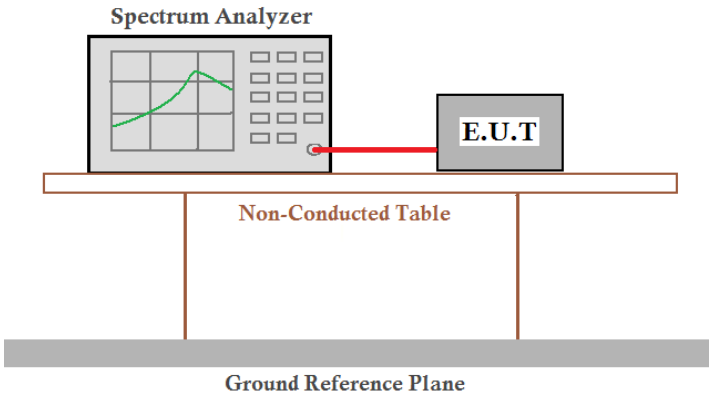
Band 4: 6 dB EBW

802.11a	
TX 0	TX1
6 dB EBW	6 dB EBW
	
Date: 30.OCT.2018 06:43:19	Date: 30.OCT.2018 07:01:50
Lowest channel	
	
Date: 30.OCT.2018 06:44:17	Date: 30.OCT.2018 07:00:54
Middle channel	
	
Date: 30.OCT.2018 06:45:11	Date: 30.OCT.2018 07:00:03
Highest channel	

802.11n-HT20	
TX 0	TX1
6 dB EBW	6 dB EBW
	
Date: 30.OCT.2018 06:47:09	Date: 30.OCT.2018 06:56:40
Lowest channel	
	
Date: 30.OCT.2018 06:47:55	Date: 30.OCT.2018 06:58:07
Middle channel	
	
Date: 30.OCT.2018 06:46:17	Date: 30.OCT.2018 06:59:06
Highest channel	

802.11n-HT40	
TX 0	TX1
6 dB EBW	6 dB EBW
	
Date: 30.OCT.2018 06:49:19	Date: 30.OCT.2018 06:54:42
Lowest channel	
	
Date: 30.OCT.2018 06:50:09	Date: 30.OCT.2018 06:55:41
Highest channel	
802.11ac	
TX 0	TX 1
	
Date: 30.OCT.2018 06:51:58	Date: 30.OCT.2018 06:53:27
Middle channel	

6.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407 (a) (iii) & (a)(3)
Test Method:	ANSI C63.10:2013, KDB 789033
Limit:	**Band 1:** 17 dBm/MHz (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.) **Band 4:** 30dBm/500kHz (The maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.)
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:

Band 1

Mode	Test Channel	Ant. Port	PSD (dBm)	Total PSD (dBm)	Limit (dBm)	Result
802.11a	Lowest	TX0	5.35	8.60	17	Pass
		TX1	5.82			
	Middle	TX0	8.18	11.47	17	Pass
		TX1	8.73			
	Highest	TX0	7.67	11.67	17	Pass
		TX1	9.46			
802.11n20	Lowest	TX0	8.59	11.80	17	Pass
		TX1	8.98			
	Middle	TX0	8.27	11.79	17	Pass
		TX1	9.24			
	Highest	TX0	8.03	11.98	17	Pass
		TX1	9.75			
802.11n40	Lowest	TX0	1.50	6.28	17	Pass
		TX1	4.52			
	Highest	TX0	3.81	7.82	17	Pass
		TX1	5.62			
802.11ac	Middle	TX0	-2.62	0.67	17	Pass
		TX1	-2.08			

Remark:

1. *Because transmit signals are correlated,* Directional gain = $G_{ANT} + 10\log(N_{ANT})$ dBi ,*So the Directional gain=11 + 10* $\log(2)$*=14 dBi*
2. *The directional Gain of antenna is less than 23 dBi , so the limit of PSD is 17 dBm.*

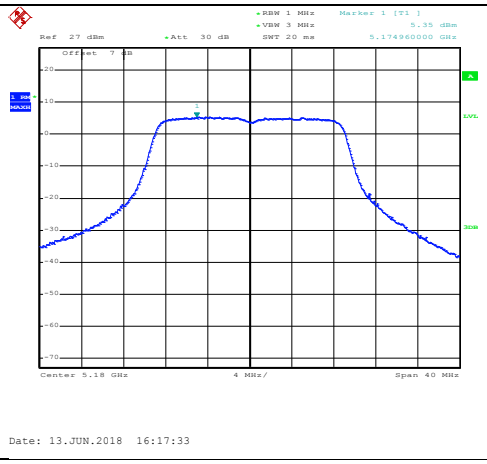
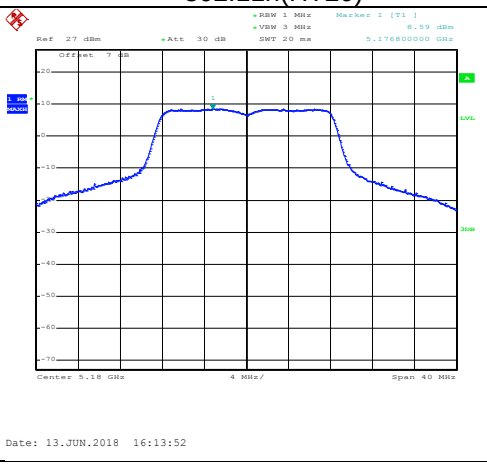
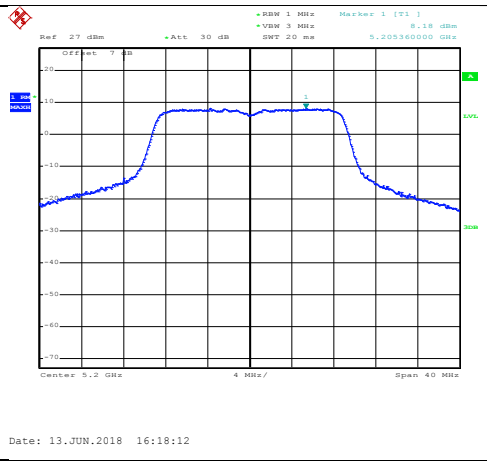
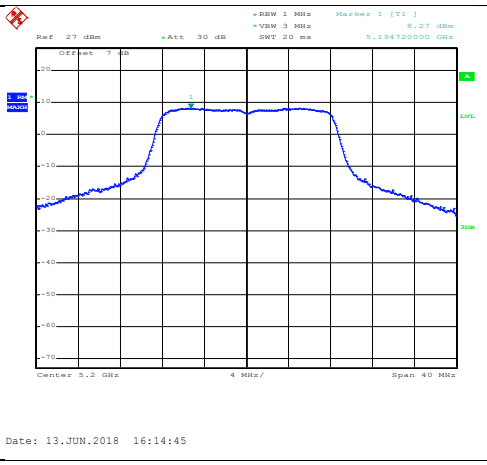
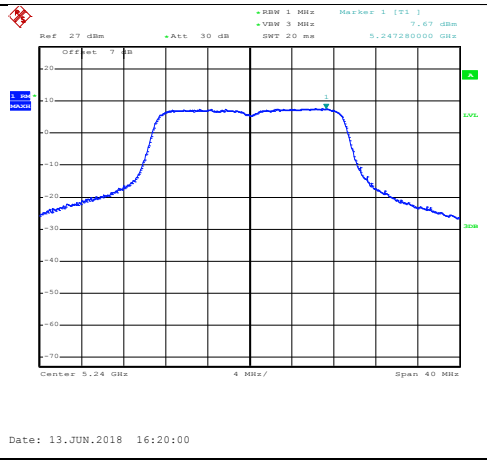
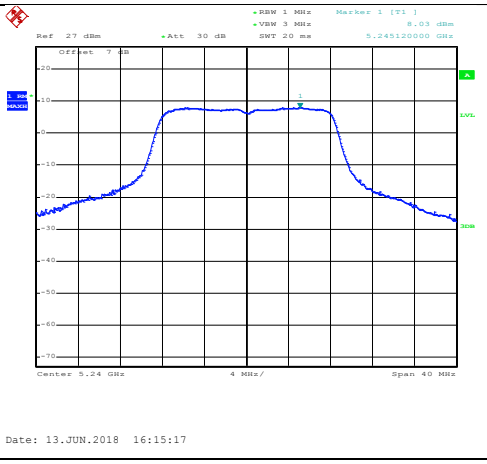
Band 4

Mode	Test Channel	Ant. Port	PSD (dBm)	Total PSD (dBm)	Limit (dBm)	Result
802.11a	Lowest	TX0	14.20	16.07	30	Pass
		TX1	11.52			
	Middle	TX0	14.64	16.70	30	Pass
		TX1	12.48			
	Highest	TX0	13.65	15.88	30	Pass
		TX1	11.91			
802.11n20	Lowest	TX0	14.39	16.38	30	Pass
		TX1	12.03			
	Middle	TX0	14.72	17.08	30	Pass
		TX1	13.31			
	Highest	TX0	14.23	16.71	30	Pass
		TX1	13.10			
802.11n40	Lowest	TX0	11.93	13.85	30	Pass
		TX1	9.38			
	Highest	TX0	11.85	13.78	30	Pass
		TX1	9.32			
802.11ac	Middle	TX0	6.37	8.02	30	Pass
		TX1	3.02			

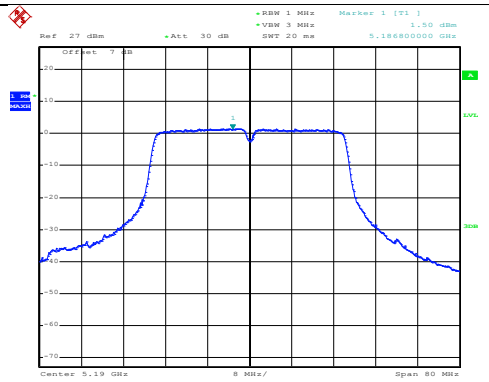
Remark:

1. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power

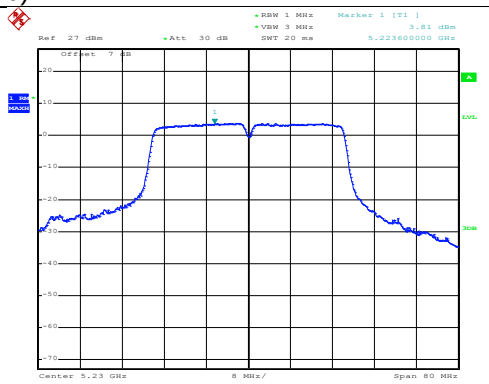
Test plot as follows:TX0

Band 1	
802.11a	802.11n(HT20)
	
Lowest channel	Middle channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

802.11n(HT40)

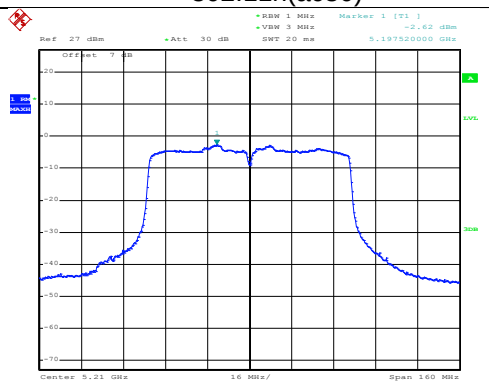


Lowest channel



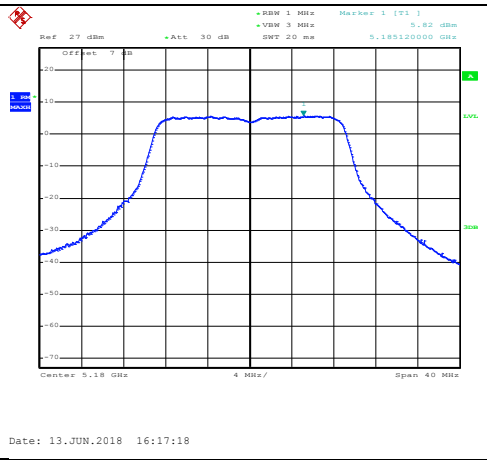
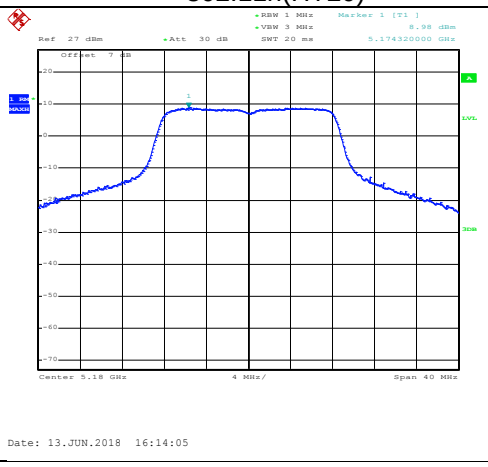
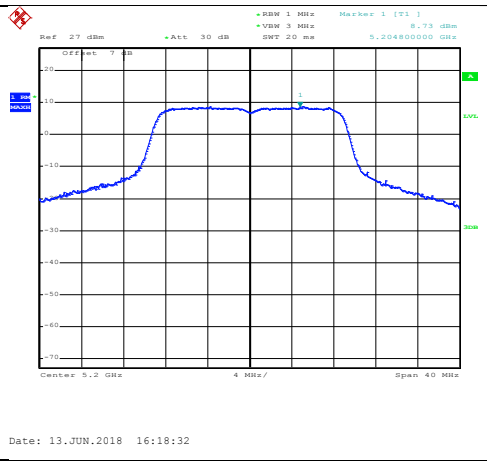
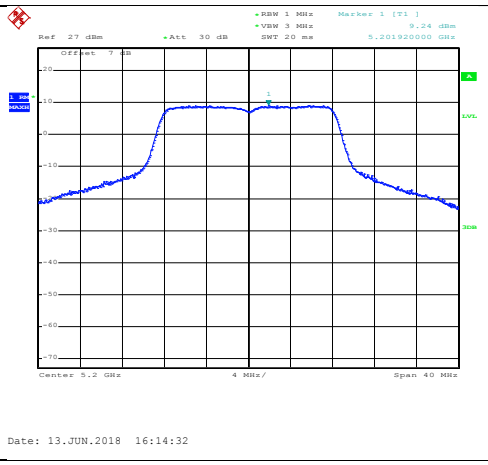
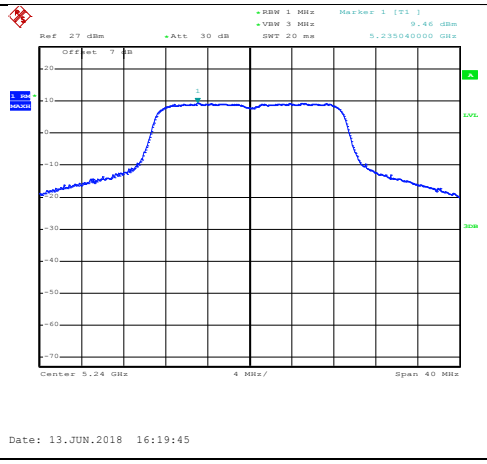
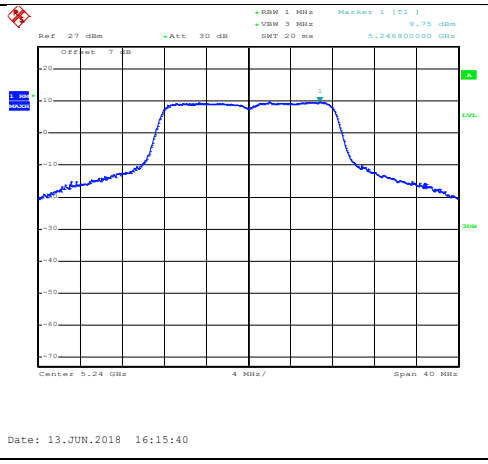
Highest channel

802.11n(ac80)

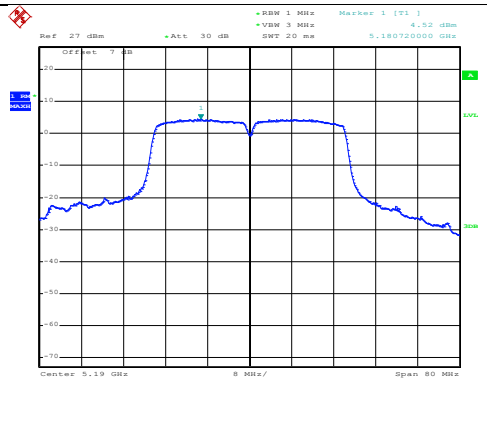


Middle channel

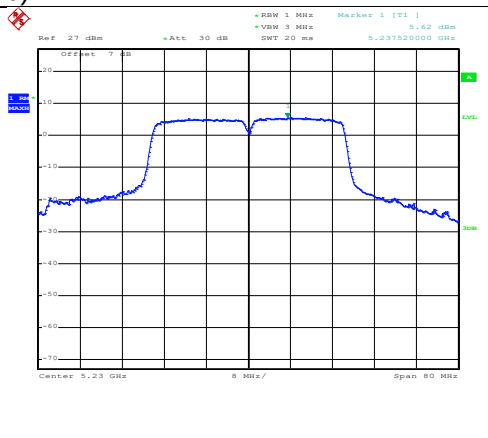
TX1

Band 1	
802.11a	802.11n(HT20)
	
Lowest channel	Middle channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

802.11n(HT40)

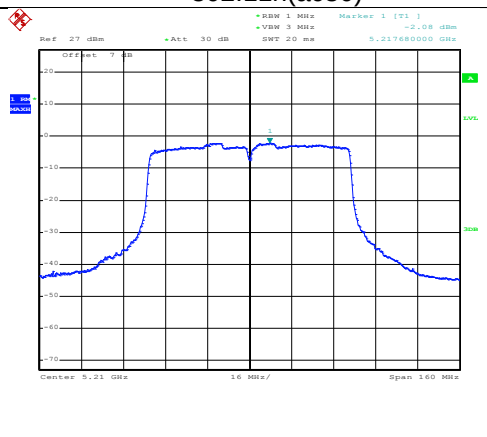


Lowest channel



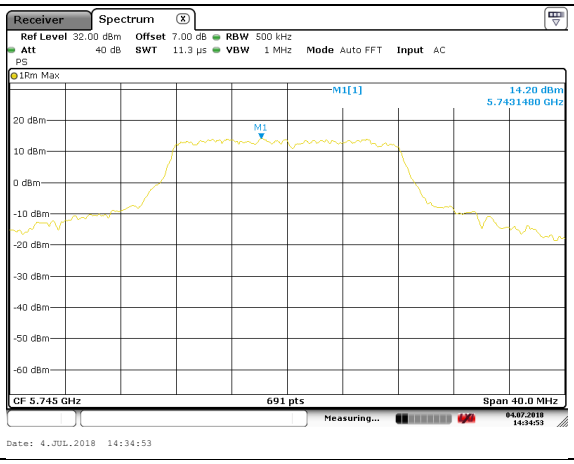
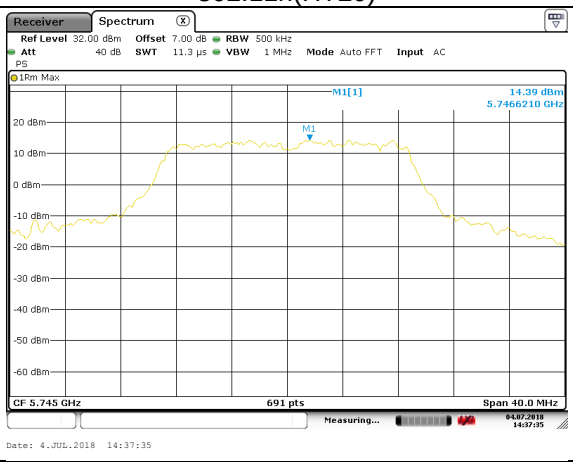
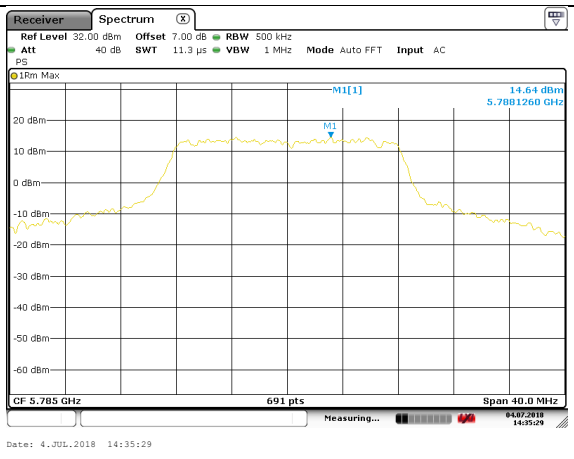
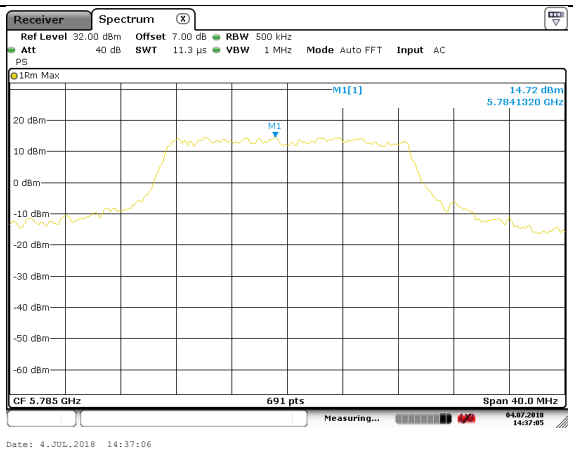
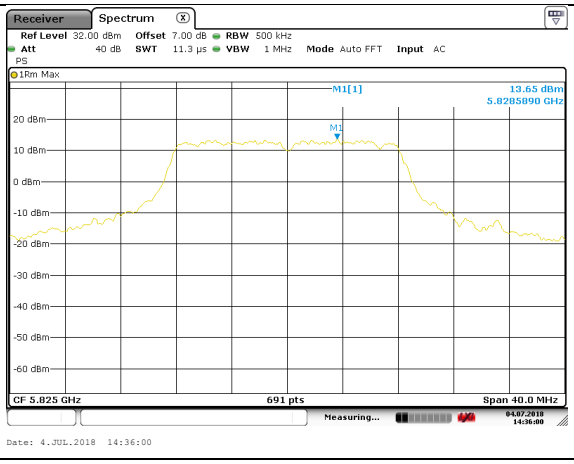
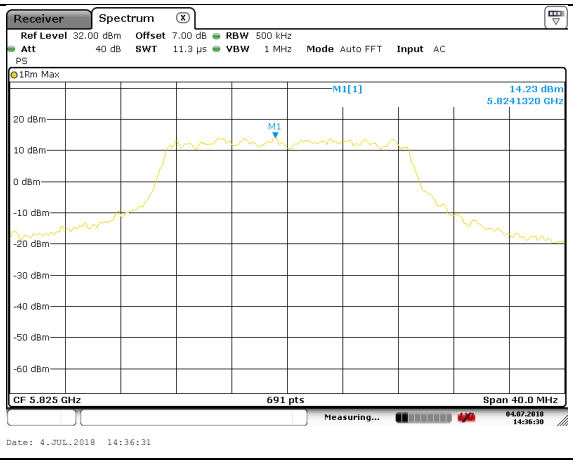
Highest channel

802.11n(ac80)

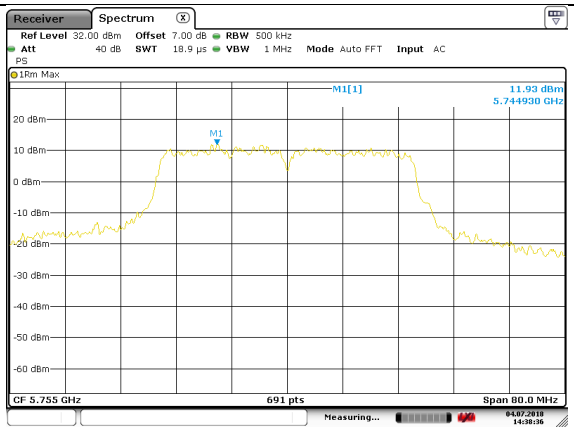


Middle channel

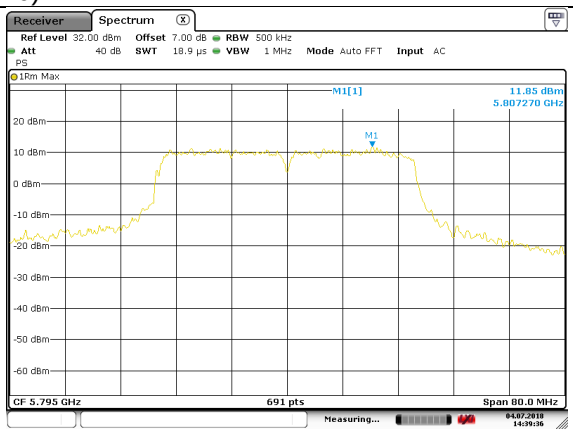
TX0

Band 4	
802.11a	802.11n(HT20)
	
Lowest channel	Middle channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

802.11n(HT40)

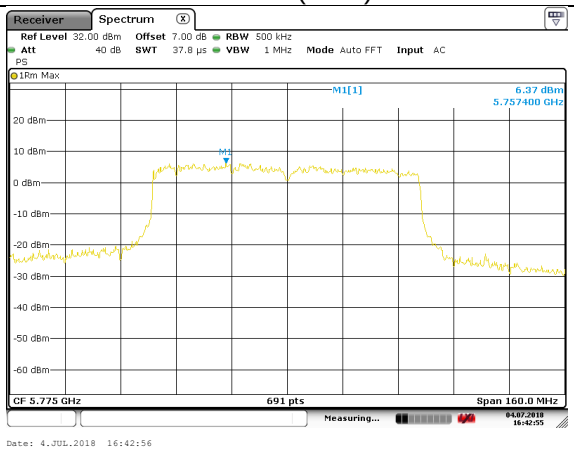


Lowest channel



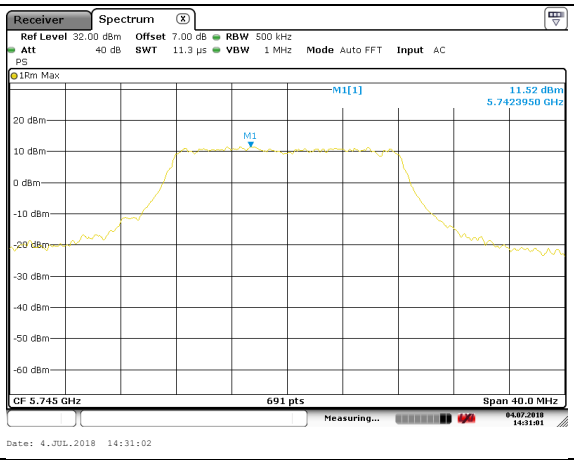
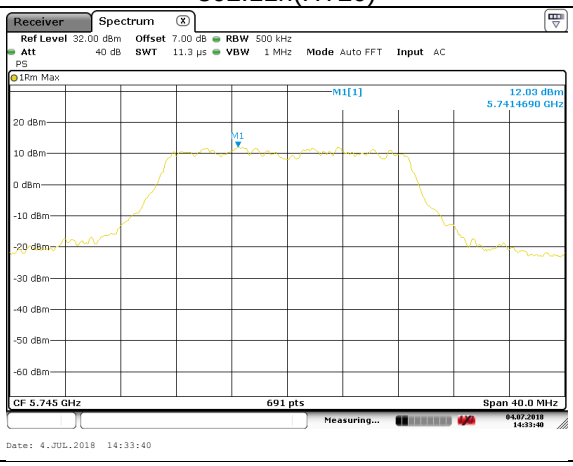
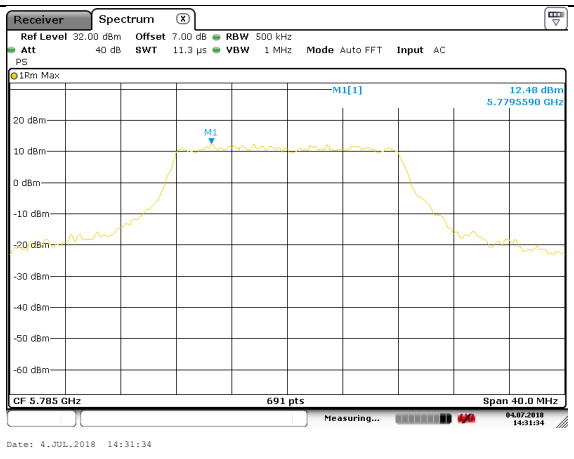
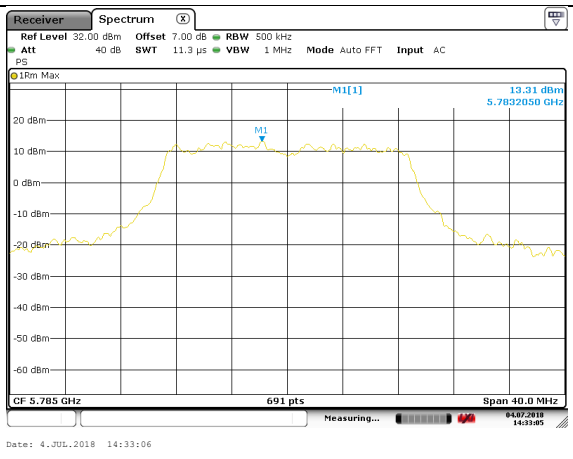
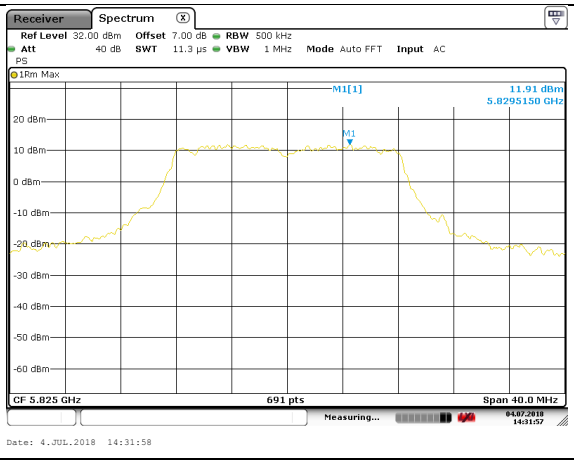
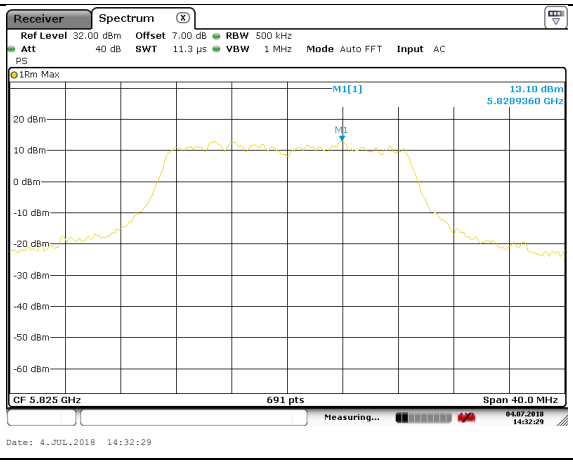
Highest channel

802.11n(ac80)

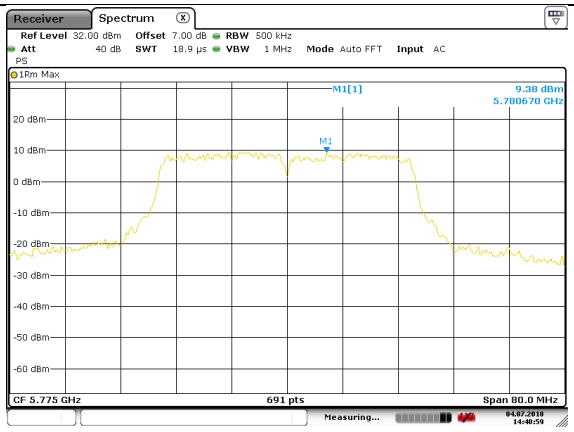


Middle channel

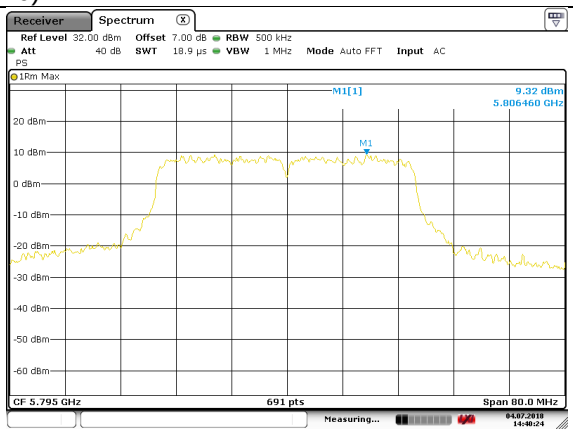
TX1

Band 4	
802.11a	802.11n(HT20)
	
Lowest channel	Middle channel
	
Middle channel	Middle channel
	
Highest channel	Highest channel

802.11n(HT40)

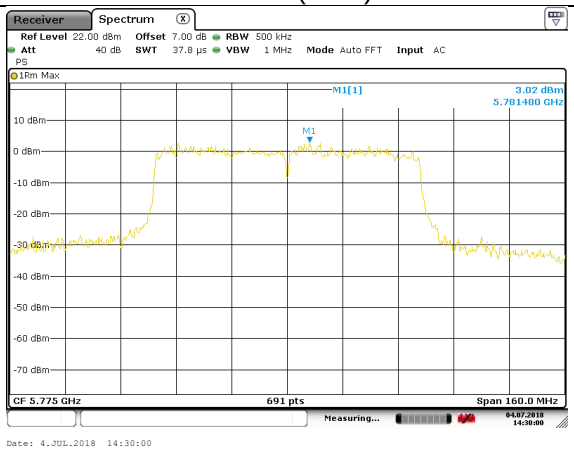


Lowest channel



Highest channel

802.11n(ac80)

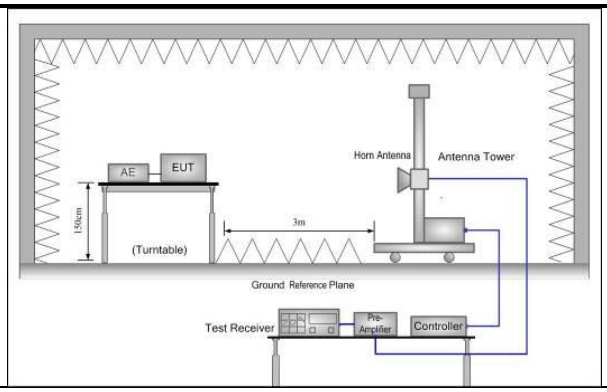


Middle channel

6.6 Band Edge

<table>
<tr><td>Test Requirement:</td><td colspan="4">FCC Part 15 E Section 15.407 (b)</td></tr>
<tr><td>Test Method:</td><td colspan="4">ANSI C63.10:2013 , KDB 789033</td></tr>
<tr><td>Receiver setup:</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td></td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
<tr><td></td><td colspan="4">Band 1 limit:
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 e.i.r.p. of −27 dBm/MHz.
Band 4 limit:
For transmitters operating in the 5.725-5.85 GHz band:
All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasinglinearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Remark:
1. Band 1 limit:
E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm.
2. Band 4 limit:
E[dBμV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm.
E[dBμV/m] = EIRP[dBm] + 95.2=105.2 dBuV/m, for EIPR[dBm]=10dBm.
E[dBμV/m] = EIRP[dBm] + 95.2=110.8 dBuV/m, for EIPR[dBm]=15.6dBm.
E[dBμV/m] = EIRP[dBm] + 95.2=122.2 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 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable 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.</td></tr>
</table>

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 (worst case):

Band 1:

Band 1 – 802.11a								
Test channel: Lowest channel								
Detector: Peak Value								
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	60.64	32.06	7.05	41.93	57.82	68.20	-10.38	Horizontal
5150.00	69.11	32.06	7.05	41.93	66.29	68.20	-1.91	Vertical
Detector: Average Value								
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	48.58	32.06	7.05	41.93	45.76	54.00	-8.24	Horizontal
5150.00	54.25	32.06	7.05	41.93	51.43	54.00	-2.57	Vertical
Test channel: Highest channel								
Detector: Peak Value								
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	60.44	32.25	7.11	41.89	57.91	68.20	-10.29	Horizontal
5350.00	54.41	32.25	7.11	41.89	51.88	68.20	-16.32	Vertical
Detector: Average Value								
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	48.64	32.25	7.11	41.89	46.11	54.00	-7.89	Horizontal
5350.00	44.21	32.25	7.11	41.89	41.68	54.00	-12.32	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.*

Band 1 – 802.11n(HT20)								
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	67.72	32.06	7.05	41.93	64.90	68.20	-3.30	Horizontal
5150.00	56.25	32.06	7.05	41.93	53.43	68.20	-14.77	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	54.21	32.06	7.05	41.93	51.39	54.00	-2.61	Horizontal
5150.00	45.23	32.06	7.05	41.93	42.41	54.00	-11.59	Vertical
Test channel: Highest channel								
Detector: Peak Value								
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	60.22	32.25	7.11	41.89	57.69	68.20	-10.51	Horizontal
5350.00	54.41	32.25	7.11	41.89	51.88	68.20	-16.32	Vertical
Detector: Average Value								
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	43.36	32.25	7.11	41.89	40.83	54.00	-13.17	Horizontal
5350.00	42.36	32.25	7.11	41.89	39.83	54.00	-14.17	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.

Band 1 – 802.11n(HT40)								
Test channel: Lowest channel								
Detector: Peak Value								
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	68.50	32.06	7.05	41.93	65.68	68.20	-2.52	Horizontal
5150.00	60.99	32.06	7.05	41.93	58.17	68.20	-10.03	Vertical
Detector: Average Value								
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	55.54	32.06	7.05	41.93	52.72	54.00	-1.28	Horizontal
5150.00	49.62	32.06	7.05	41.93	46.80	54.00	-7.20	Vertical
Test channel: Highest channel								
Detector: Peak Value								
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	55.68	32.25	7.11	41.89	53.15	68.20	-15.05	Horizontal
5350.00	53.66	32.25	7.11	41.89	51.13	68.20	-17.07	Vertical
Detector: Average Value								
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	44.21	32.25	7.11	41.89	41.68	54.00	-12.32	Horizontal
5350.00	43.46	32.25	7.11	41.89	40.93	54.00	-13.07	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.

Band 1 – 802.11ac(HT80)								
Test channel: Lowest channel								
Detector: Peak Value								
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	65.09	32.06	7.05	41.93	62.27	68.20	-5.93	Horizontal
5150.00	56.30	32.06	7.05	41.93	53.48	68.20	-14.72	Vertical
Detector: Average Value								
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	52.08	32.06	7.05	41.93	49.26	54.00	-4.74	Horizontal
5150.00	47.64	32.06	7.05	41.93	44.82	54.00	-9.18	Vertical
Test channel: Highest channel								
Detector: Peak Value								
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	53.19	32.25	7.05	41.93	50.56	68.20	-17.64	Horizontal
5350.00	52.47	32.25	7.05	41.93	49.84	68.20	-18.36	Vertical
Detector: Average Value								
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	43.19	32.25	7.05	41.93	40.56	54.00	-13.44	Horizontal
5350.00	42.61	32.25	7.05	41.93	39.98	54.00	-14.02	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.*

Band 4:

Band 4 – 802.11a								
Test channel: Lowest channel								
Detector: Peak Value								
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
5650.00	62.92	32.68	7.45	41.85	61.20	68.20	-7.00	Horizontal
5700.00	76.32	32.77	7.60	41.90	74.79	105.20	-30.41	Horizontal
5720.00	93.61	32.81	7.64	41.92	92.14	110.80	-18.66	Horizontal
5725.00	98.53	32.81	7.69	41.94	97.09	122.20	-25.11	Horizontal
5650.00	52.85	32.68	7.45	41.85	51.13	68.20	-17.07	Vertical
5700.00	67.27	32.77	7.60	41.90	65.74	105.20	-39.46	Vertical
5720.00	83.49	32.81	7.64	41.92	82.02	110.80	-28.78	Vertical
5725.00	90.41	32.81	7.69	41.94	88.97	122.20	-33.23	Vertical
Detector: Peak Value								
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
5850.00	96.07	33.04	7.45	41.85	94.71	122.20	-27.49	Horizontal
5855.00	89.17	33.05	7.60	41.90	87.92	110.80	-22.88	Horizontal
5875.00	75.09	33.08	7.64	41.92	73.89	105.20	-31.31	Horizontal
5925.00	67.56	33.17	7.69	41.94	66.48	68.20	-1.72	Horizontal
5850.00	88.59	33.04	7.45	41.85	87.23	122.20	-34.97	Vertical
5855.00	84.33	33.05	7.60	41.90	83.08	110.80	-27.72	Vertical
5875.00	70.81	33.08	7.64	41.92	69.61	105.20	-35.59	Vertical
5925.00	62.19	33.17	7.69	41.94	61.11	68.20	-7.09	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.*

Band 4 – 802.11n(HT20)								
Test channel: Lowest channel								
Detector: Peak Value								
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
5650.00	57.04	32.68	7.45	41.85	55.32	68.20	-12.88	Horizontal
5700.00	72.78	32.77	7.60	41.90	71.25	105.20	-33.95	Horizontal
5720.00	90.70	32.81	7.64	41.92	89.23	110.80	-21.57	Horizontal
5725.00	95.24	32.81	7.69	41.94	93.80	122.20	-28.40	Horizontal
5650.00	60.44	32.68	7.45	41.85	58.72	68.20	-9.48	Vertical
5700.00	78.86	32.77	7.60	41.90	77.33	105.20	-27.87	Vertical
5720.00	95.62	32.81	7.64	41.92	94.15	110.80	-16.65	Vertical
5725.00	94.74	32.81	7.69	41.94	93.30	122.20	-28.90	Vertical
Detector: Peak Value								
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
5850.00	91.61	33.04	7.45	41.85	90.25	122.20	-31.95	Horizontal
5855.00	91.49	33.05	7.60	41.90	90.24	110.80	-20.56	Horizontal
5875.00	74.86	33.08	7.64	41.92	73.66	105.20	-31.54	Horizontal
5925.00	61.43	33.17	7.69	41.94	60.35	68.20	-7.85	Horizontal
5850.00	92.40	33.04	7.45	41.85	91.04	122.20	-31.16	Vertical
5855.00	87.41	33.05	7.60	41.90	86.16	110.80	-24.64	Vertical
5875.00	80.02	33.08	7.64	41.92	78.82	105.20	-26.38	Vertical
5925.00	61.05	33.17	7.69	41.94	59.97	68.20	-8.23	Vertical

Remark:

3. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.

4. The emission levels of other frequencies are very lower than the limit and not show in test report.

Band 4 – 802.11n(HT40)								
Test channel: Lowest channel								
Detector: Peak Value								
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
5650.00	48.18	32.68	7.45	41.85	46.46	68.20	-21.74	Horizontal
5700.00	63.88	32.77	7.60	41.90	62.35	105.20	-42.85	Horizontal
5720.00	70.89	32.81	7.64	41.92	69.42	110.80	-41.38	Horizontal
5725.00	69.80	32.81	7.69	41.94	68.36	122.20	-53.84	Horizontal
5650.00	51.44	32.68	7.45	41.85	49.72	68.20	-18.48	Vertical
5700.00	66.94	32.77	7.60	41.90	65.41	105.20	-39.79	Vertical
5720.00	72.71	32.81	7.64	41.92	71.24	110.80	-39.56	Vertical
5725.00	75.21	32.81	7.69	41.94	73.77	122.20	-48.43	Vertical
Detector: Peak Value								
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
5850.00	76.48	33.04	7.45	41.85	75.12	122.20	-47.08	Horizontal
5855.00	73.66	33.05	7.60	41.90	72.41	110.80	-38.39	Horizontal
5875.00	68.55	33.08	7.64	41.92	67.35	105.20	-37.85	Horizontal
5925.00	59.42	33.17	7.69	41.94	58.34	68.20	-9.86	Horizontal
5850.00	75.89	33.04	7.45	41.85	74.53	122.20	-47.67	Vertical
5855.00	72.49	33.05	7.60	41.90	71.24	110.80	-39.56	Vertical
5875.00	69.26	33.08	7.64	41.92	68.06	105.20	-37.14	Vertical
5925.00	61.97	33.17	7.69	41.94	60.89	68.20	-7.31	Vertical

Remark:

5. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.

6. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11n(HT80)								
Test channel: Lowest channel								
Detector: Peak Value								
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
5650.00	53.53	32.68	7.45	41.85	51.81	68.20	-16.39	Horizontal
5700.00	67.96	32.77	7.60	41.90	66.43	105.20	-38.77	Horizontal
5720.00	72.09	32.81	7.64	41.92	70.62	110.80	-40.18	Horizontal
5725.00	73.15	32.81	7.69	41.94	71.71	122.20	-50.49	Horizontal
5650.00	52.09	32.68	7.45	41.85	50.37	68.20	-17.83	Vertical
5700.00	62.78	32.77	7.60	41.90	61.25	105.20	-43.95	Vertical
5720.00	67.31	32.81	7.64	41.92	65.84	110.80	-44.96	Vertical
5725.00	67.13	32.81	7.69	41.94	65.69	122.20	-56.51	Vertical
Detector: Peak Value								
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
5850.00	65.84	33.04	7.45	41.85	64.48	122.20	-57.72	Horizontal
5855.00	66.61	33.05	7.60	41.90	65.36	110.80	-45.44	Horizontal
5875.00	61.33	33.08	7.64	41.92	60.13	105.20	-45.07	Horizontal
5925.00	52.40	33.17	7.69	41.94	51.32	68.20	-16.88	Horizontal
5850.00	65.04	33.04	7.45	41.85	63.68	122.20	-58.52	Vertical
5855.00	65.35	33.05	7.60	41.90	64.10	110.80	-46.70	Vertical
5875.00	62.22	33.08	7.64	41.92	61.02	105.20	-44.18	Vertical
5925.00	54.91	33.17	7.69	41.94	53.83	68.20	-14.37	Vertical

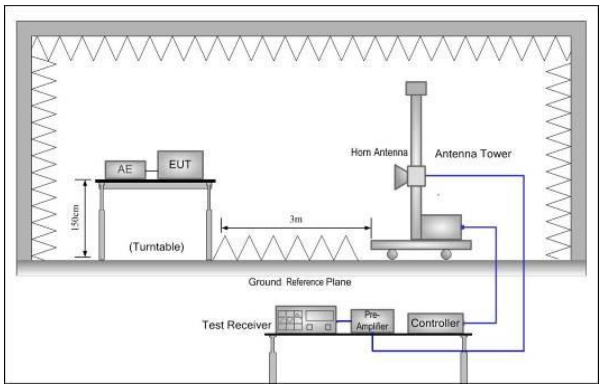
Remark:

7. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.

8. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

6.7 Spurious Emission

6.7.1 Restricted Band

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part15 E Section 15.407(b)</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.10: 2013</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">4.5 GHz to 5.15 GHz and 5.35GHz to 5.46GHz</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 ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</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):

Band 1:

Band 1 – 802.11a								
Test channel: Lowest channel								
Detector: Peak Value								
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	53.24	34.50	6.80	42.05	52.49	74.00	-21.51	Horizontal
4500.00	52.36	34.50	6.80	42.05	51.61	74.00	-22.39	Vertical
Detector: Average Value								
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	45.23	34.50	6.80	42.05	44.48	54.00	-9.52	Horizontal
4500.00	45.24	34.50	6.80	42.05	44.49	54.00	-9.51	Vertical
Test channel: Highest channel								
Detector: Peak Value								
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	54.28	34.90	7.18	41.85	54.51	74.00	-19.49	Horizontal
5460.00	54.14	34.90	7.18	41.85	54.37	74.00	-19.63	Vertical
Detector: Average Value								
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	45.16	34.90	7.18	41.85	45.39	54.00	-8.61	Horizontal
5460.00	45.22	34.90	7.18	41.85	45.45	54.00	-8.55	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.*

Band 1 – 802.11n(HT20)								
Test channel: Lowest channel								
Detector: Peak Value								
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	53.03	34.50	6.80	42.05	52.28	74.00	-21.72	Horizontal
4500.00	52.23	34.50	6.80	42.05	51.48	74.00	-22.52	Vertical
Detector: Average Value								
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	45.12	34.50	6.80	42.05	44.37	54.00	-9.63	Horizontal
4500.00	45.21	34.50	6.80	42.05	44.46	54.00	-9.54	Vertical
Test channel: Highest channel								
Detector: Peak Value								
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	54.16	34.90	7.18	41.85	54.39	74.00	-19.61	Horizontal
5460.00	54.08	34.90	7.18	41.85	54.31	74.00	-19.69	Vertical
Detector: Average Value								
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	45.12	34.90	7.18	41.85	45.35	54.00	-8.65	Horizontal
5460.00	45.13	34.90	7.18	41.85	45.36	54.00	-8.64	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.*

Band 1 – 802.11n(HT40)								
Test channel: Lowest channel								
Detector: Peak Value								
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	53.26	34.50	6.80	42.05	52.51	74.00	-21.49	Horizontal
4500.00	52.41	34.50	6.80	42.05	51.66	74.00	-22.34	Vertical
Detector: Average Value								
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	45.16	34.50	6.80	42.05	44.41	54.00	-9.59	Horizontal
4500.00	45.38	34.50	6.80	42.05	44.63	54.00	-9.37	Vertical
Test channel: Highest channel								
Detector: Peak Value								
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	54.34	34.90	7.18	41.85	54.57	74.00	-19.43	Horizontal
5460.00	54.13	34.90	7.18	41.85	54.36	74.00	-19.64	Vertical
Detector: Average Value								
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	45.28	34.90	7.18	41.85	45.51	54.00	-8.49	Horizontal
5460.00	45.36	34.90	7.18	41.85	45.59	54.00	-8.41	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.*

Band 1 – 802.11ac(HT80)								
Test channel: Lowest channel								
Detector: Peak Value								
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	53.26	34.50	6.80	42.05	52.51	74.00	-21.49	Horizontal
4500.00	52.42	34.50	6.80	42.05	51.67	74.00	-22.33	Vertical
Detector: Average Value								
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	45.19	34.50	6.80	42.05	44.44	54.00	-9.56	Horizontal
4500.00	45.36	34.50	6.80	42.05	44.61	54.00	-9.39	Vertical
Test channel: Highest channel								
Detector: Peak Value								
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	54.32	34.90	7.18	41.85	54.55	74.00	-19.45	Horizontal
5460.00	54.23	34.90	7.18	41.85	54.46	74.00	-19.54	Vertical
Detector: Average Value								
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	45.26	34.90	7.18	41.85	45.49	54.00	-8.51	Horizontal
5460.00	45.39	34.90	7.18	41.85	45.62	54.00	-8.38	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.*

Band 4:

Band 4 – 802.11a								
Test channel: Lowest channel								
Detector: Peak Value								
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	53.64	35.37	7.11	41.89	54.23	74.00	-19.77	Horizontal
5350.00	53.16	35.37	7.11	41.89	53.75	74.00	-20.25	Vertical
Detector: Average Value								
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	46.21	35.37	7.11	41.89	46.80	54.00	-7.20	Horizontal
5350.00	44.38	35.37	7.11	41.89	44.97	54.00	-9.03	Vertical
Test channel: Lowest channel								
Detector: Peak Value								
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	53.54	34.90	7.18	41.85	53.77	74.00	-20.23	Horizontal
5460.00	53.26	34.90	7.18	41.85	53.49	74.00	-20.51	Vertical
Detector: Average Value								
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	46.18	34.90	7.18	41.85	46.41	54.00	-7.59	Horizontal
5460.00	44.26	34.90	7.18	41.85	44.49	54.00	-9.51	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.*

Band 4 – 802.11n(HT20)								
Test channel: Lowest channel								
Detector: Peak Value								
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	53.49	35.37	7.11	41.89	54.08	74.00	-19.92	Horizontal
5350.00	53.24	35.37	7.11	41.89	53.83	74.00	-20.17	Vertical
Detector: Average Value								
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	46.35	35.37	7.11	41.89	46.94	54.00	-7.06	Horizontal
5350.00	44.52	35.37	7.11	41.89	45.11	54.00	-8.89	Vertical
Test channel: Lowest channel								
Detector: Peak Value								
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	53.49	34.90	7.18	41.85	53.72	74.00	-20.28	Horizontal
5460.00	53.19	34.90	7.18	41.85	53.42	74.00	-20.58	Vertical
Detector: Average Value								
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	46.21	34.90	7.18	41.85	46.44	54.00	-7.56	Horizontal
5460.00	44.36	34.90	7.18	41.85	44.59	54.00	-9.41	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.*

Band 4 – 802.11n(HT40)								
Test channel: Lowest channel								
Detector: Peak Value								
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	53.48	35.37	7.11	41.89	54.07	74.00	-19.93	Horizontal
5350.00	53.27	35.37	7.11	41.89	53.86	74.00	-20.14	Vertical
Detector: Average Value								
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	46.36	35.37	7.11	41.89	46.95	54.00	-7.05	Horizontal
5350.00	45.31	35.37	7.11	41.89	45.90	54.00	-8.10	Vertical
Test channel: Lowest channel								
Detector: Peak Value								
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	53.62	34.90	7.18	41.85	53.85	74.00	-20.15	Horizontal
5460.00	53.54	34.90	7.18	41.85	53.77	74.00	-20.23	Vertical
Detector: Average Value								
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	46.29	34.90	7.18	41.85	46.52	54.00	-7.48	Horizontal
5460.00	44.34	34.90	7.18	41.85	44.57	54.00	-9.43	Vertical

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.

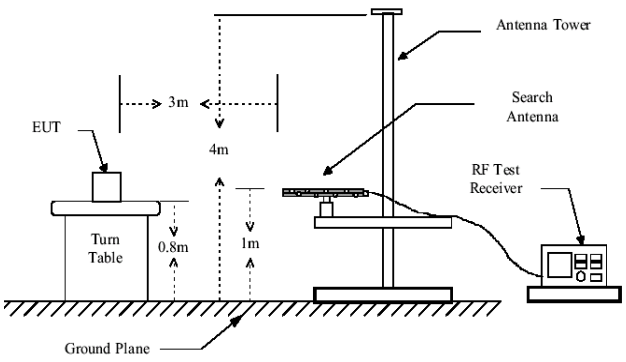
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11ac(HT80)								
Test channel: Middle channel								
Detector: Peak Value								
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	53.62	35.37	7.11	41.89	54.21	74.00	-19.79	Horizontal
5350.00	53.58	35.37	7.11	41.89	54.17	74.00	-19.83	Vertical
Detector: Average Value								
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	46.31	35.37	7.11	41.89	46.90	54.00	-7.10	Horizontal
5350.00	45.32	35.37	7.11	41.89	45.91	54.00	-8.09	Vertical
Test channel: Middle channel								
Detector: Peak Value								
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	53.66	34.90	7.18	41.85	53.89	74.00	-20.11	Horizontal
5460.00	53.64	34.90	7.18	41.85	53.87	74.00	-20.13	Vertical
Detector: Average Value								
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	46.23	34.90	7.18	41.85	46.46	54.00	-7.54	Horizontal
5460.00	44.32	34.90	7.18	41.85	44.55	54.00	-9.45	Vertical

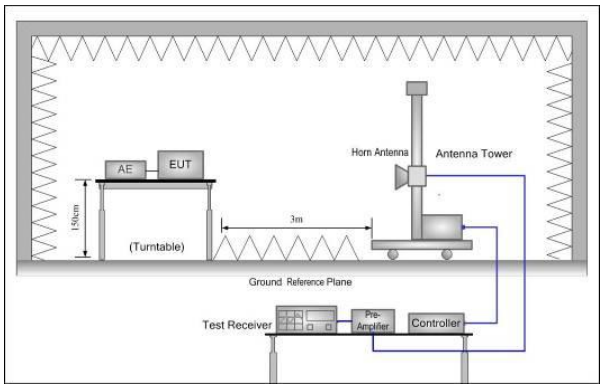
Remark:

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.*

6.7.2 Unwanted Emissions out of the Restricted Bands

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 40GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</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>RMS</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>68.20</td><td>Peak Value</td></tr>
<tr><td>54.00</td><td>Average Value</td></tr>
</table>
Remark:
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 ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz
 

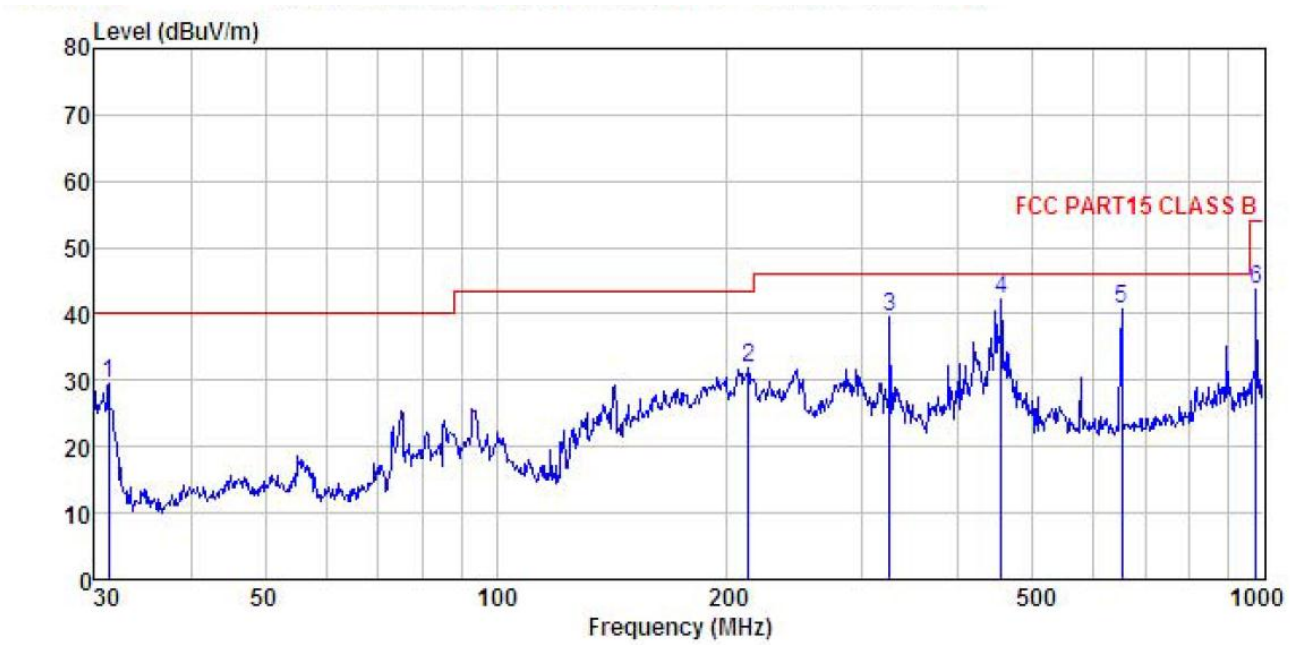
</td></tr>
</table>

	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



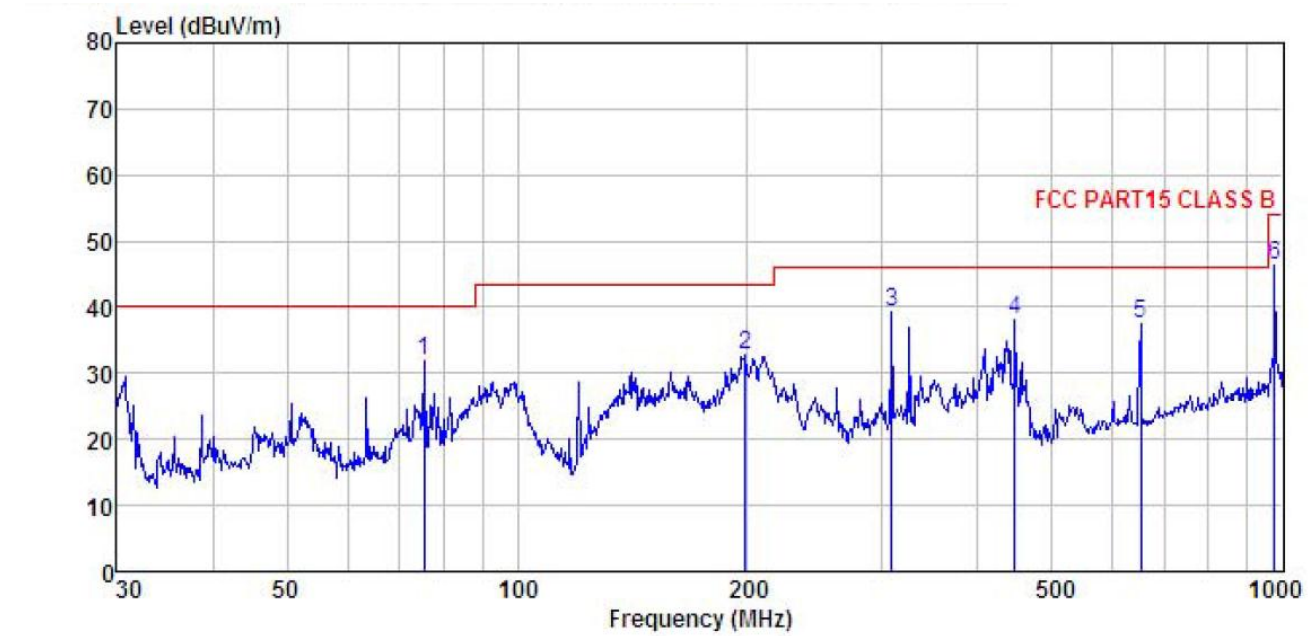
Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) HORIZONTAL
EUT : Broadband Digital Transmission System
Model : EW-7479GSC
Test mode : 5G WIFI mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: Mike
Remark : G0720

	Freq	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	31.289	47.72	10.90	0.85	29.97	29.50	40.00	-10.50	QP
2	213.015	45.76	12.01	2.85	28.75	31.87	43.50	-11.63	QP
3	325.596	50.94	14.13	3.02	28.51	39.58	46.00	-6.42	QP
4	454.310	51.50	16.23	3.23	28.88	42.08	46.00	-3.92	QP
5	651.942	45.77	19.80	3.87	28.77	40.67	46.00	-5.33	QP
6	975.753	44.17	22.61	4.34	27.57	43.55	54.00	-10.45	QP

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.*

Test Polarization: Vertical



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) VERTICAL
EUT : Broadband Digital Transmission System
Model : EW-7479GSC
Test mode : 5G WIFI mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Mike
Remark : G0720

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	75.446	51.54	8.54	1.63	29.68	32.03	40.00	-7.97	
2	198.588	47.18	11.46	2.86	28.84	32.66	43.50	-10.84	
3	308.913	50.95	13.79	2.97	28.47	39.24	46.00	-6.76	
4	446.414	47.80	16.06	3.19	28.86	38.19	46.00	-7.81	
5	651.942	42.51	19.80	3.87	28.77	37.41	46.00	-8.59	
6	975.753	46.92	22.61	4.34	27.57	46.30	54.00	-7.70	

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.*

Above 1GHz:
Band 1:

Band 1 – 802.11a								
Test channel: Lowest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	49.65	40.10	9.82	41.97	57.60	68.20	-10.60	Vertical
10360.00	48.37	40.10	9.82	41.97	56.32	68.20	-11.88	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	40.23	40.10	9.82	41.97	48.18	54.00	-5.82	Vertical
10360.00	38.62	40.10	9.82	41.97	46.57	54.00	-7.43	Horizontal
Test channel: Middle channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	48.57	40.00	9.85	41.95	56.47	68.20	-11.73	Vertical
10400.00	49.37	40.00	9.85	41.95	57.27	68.20	-10.93	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	38.62	40.00	9.85	41.95	46.52	54.00	-7.48	Vertical
10400.00	39.61	40.00	9.85	41.95	47.51	54.00	-6.49	Horizontal
Test channel: Highest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	48.36	39.70	9.96	41.88	56.14	68.20	-12.06	Vertical
10480.00	47.23	39.70	9.96	41.88	55.01	68.20	-13.19	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	37.85	39.70	9.96	41.88	45.63	54.00	-8.37	Vertical
10480.00	37.68	39.70	9.96	41.88	45.46	54.00	-8.54	Horizontal

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.*

Band 1 – 802.11n(HT20)								
Test channel: Lowest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	49.58	40.10	9.82	41.97	57.53	68.20	-10.67	Vertical
10360.00	49.36	40.10	9.82	41.97	57.31	68.20	-10.89	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.00	41.53	40.10	9.82	41.97	49.48	54.00	-4.52	Vertical
10360.00	40.68	40.10	9.82	41.97	48.63	54.00	-5.37	Horizontal
Test channel: Middle channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	46.89	40.00	9.85	41.95	54.79	68.20	-13.41	Vertical
10400.00	47.33	40.00	9.85	41.95	55.23	68.20	-12.97	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	37.96	40.00	9.85	41.95	45.86	54.00	-8.14	Vertical
10400.00	37.79	40.00	9.85	41.95	45.69	54.00	-8.31	Horizontal
Test channel: Highest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	48.11	39.70	9.96	41.88	55.89	68.20	-12.31	Vertical
10480.00	47.83	39.70	9.96	41.88	55.61	68.20	-12.59	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.00	38.53	39.70	9.96	41.88	46.31	54.00	-7.69	Vertical
10480.00	37.86	39.70	9.96	41.88	45.64	54.00	-8.36	Horizontal

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.*

Band 1 – 802.11n(HT40)								
Test channel: Lowest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	49.64	40.00	9.85	41.95	57.54	68.20	-10.66	Vertical
10380.00	48.36	40.00	9.85	41.95	56.26	68.20	-11.94	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.00	39.96	40.00	9.85	41.95	47.86	54.00	-6.14	Vertical
10380.00	38.64	40.00	9.85	41.95	46.54	54.00	-7.46	Horizontal
Test channel: Middle channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	49.57	39.80	9.92	41.90	57.39	68.20	-10.81	Vertical
10460.00	48.23	39.80	9.92	41.90	56.05	68.20	-12.15	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.00	38.66	39.80	9.92	41.90	46.48	54.00	-7.52	Vertical
10460.00	38.58	39.80	9.92	41.90	46.40	54.00	-7.60	Horizontal
Test channel: Highest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.00	49.64	40.00	9.85	41.95	57.54	68.20	-10.66	Vertical
10420.00	48.52	40.00	9.85	41.95	56.42	68.20	-11.78	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.00	38.83	40.00	9.85	41.95	46.73	54.00	-7.27	Vertical
10420.00	38.62	40.00	9.85	41.95	46.52	54.00	-7.48	Horizontal

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.*

Band 4:

Band 4 – 802.11a								
Test channel: Lowest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	49.25	41.50	10.81	42.29	59.27	74.00	-14.73	Vertical
11490.00	48.63	41.50	10.81	42.29	58.65	74.00	-15.35	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	39.28	41.50	10.81	42.29	49.30	54.00	-4.70	Vertical
11490.00	38.15	41.50	10.81	42.29	48.17	54.00	-5.83	Horizontal
Test channel: Middle channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	49.23	41.38	10.78	42.27	59.12	74.00	-14.88	Vertical
11570.00	48.36	41.38	10.78	42.27	58.25	74.00	-15.75	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	39.12	41.38	10.78	42.27	49.01	54.00	-4.99	Vertical
11570.00	38.53	41.38	10.78	42.27	48.42	54.00	-5.58	Horizontal
Test channel: Highest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	49.19	41.26	10.76	42.26	58.95	74.00	-15.05	Vertical
11650.00	48.22	41.26	10.76	42.26	57.98	74.00	-16.02	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	39.67	41.26	10.76	42.26	49.43	54.00	-4.57	Vertical
11650.00	38.83	41.26	10.76	42.26	48.59	54.00	-5.41	Horizontal

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.*

Band 4 – 802.11n(HT20)								
Test channel: Lowest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	49.16	41.50	10.81	42.29	59.18	74.00	-14.82	Vertical
11490.00	49.11	41.50	10.81	42.29	59.13	74.00	-14.87	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11490.00	39.18	41.50	10.81	42.29	49.20	54.00	-4.80	Vertical
11490.00	39.29	41.50	10.81	42.29	49.31	54.00	-4.69	Horizontal
Test channel: Middle channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	48.36	41.38	10.78	42.27	58.25	74.00	-15.75	Vertical
11570.00	48.43	41.38	10.78	42.27	58.32	74.00	-15.68	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11570.00	38.19	41.38	10.78	42.27	48.08	54.00	-5.92	Vertical
11570.00	38.62	41.38	10.78	42.27	48.51	54.00	-5.49	Horizontal
Test channel: Highest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	48.96	41.26	10.76	42.26	58.72	74.00	-15.28	Vertical
11650.00	48.77	41.26	10.76	42.26	58.53	74.00	-15.47	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11650.00	38.81	41.26	10.76	42.26	48.57	54.00	-5.43	Vertical
11650.00	38.27	41.26	10.76	42.26	48.03	54.00	-5.97	Horizontal

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.*

Band 4 – 802.11n(HT40)								
Test channel: Lowest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11510.00	48.89	41.50	10.81	42.29	58.91	74.00	-15.09	Vertical
11510.00	48.12	41.50	10.81	42.29	58.14	74.00	-15.86	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11510.00	38.58	41.50	10.81	42.29	48.60	54.00	-5.40	Vertical
11510.00	38.85	41.50	10.81	42.29	48.87	54.00	-5.13	Horizontal
Test channel: Highest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11590.00	48.36	41.32	10.77	42.27	58.18	74.00	-15.82	Vertical
11590.00	48.22	41.32	10.77	42.27	58.04	74.00	-15.96	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11590.00	37.59	41.32	10.77	42.27	47.41	54.00	-6.59	Vertical
11590.00	38.44	41.32	10.77	42.27	48.26	54.00	-5.74	Horizontal

Remark:

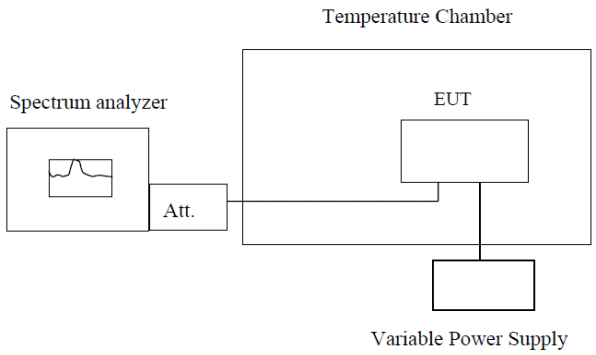
1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Band 4 – 802.11ac(HT80)								
Test channel: Middle channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11550.00	49.83	41.50	10.81	42.29	59.85	74.00	-14.15	Vertical
11550.00	48.22	41.50	10.81	42.29	58.24	74.00	-15.76	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11550.00	37.68	41.50	10.81	42.29	47.70	54.00	-6.30	Vertical
11550.00	38.52	41.50	10.81	42.29	48.54	54.00	-5.46	Horizontal

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.*

6.8 Frequency stability

Test Requirement:	FCC Part15 E Section 15.407 (g)
Limit:	Manufacturers 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 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
Test results:	Passed

Measurement Data (the worst channel):

Band 1:

Voltage vs. Frequency Stability (Lowest channel=5180MHz)

Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Temp(℃)	Voltage(ac)		
20	102V	5179.997643	0.45
	120V	5179.974779	4.87
	138V	5179.963951	6.96

Temperature vs. Frequency Stability (Lowest channel=5180MHz)

Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Voltage(ac)	Temp(℃)		
120V	-20	5179.987033	2.50
	-10	5179.995377	0.89
	0	5179.968421	6.10
	10	5179.987556	2.40
	20	5179.996681	0.64
	30	5179.974290	4.96
	40	5179.963775	6.99
	50	5179.974929	4.84

Band 4:

Voltage vs. Frequency Stability (Lowest channel=5745MHz)

Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Temp(℃)	Voltage(ac)		
20	102V	5744.974766	4.39
	120V	5744.993381	1.15
	138V	5744.998588	0.25

Temperature vs. Frequency Stability (Lowest channel=5745MHz)

Test conditions		Frequency(MHz)	Max. Deviation (ppm)
Voltage(ac)	Temp(℃)		
120V	-20	5744.994798	0.91
	-10	5744.993693	1.10
	0	5744.994771	0.91
	10	5744.985355	2.55
	20	5744.993864	1.07
	30	5744.994481	0.96
	40	5744.999347	0.11
	50	5744.992458	1.31