

# TEST REPORT

**Reference No.** ..... : WTS19S09068045W006  
**FCC ID** ..... : 2AIZN-X650B  
**Applicant** ..... : INFINIX MOBILITY LIMITED  
**Address** ..... : ROOM 604 6/F SOUTH TOWER WORLD, FINANCE CTR  
HARBOUR CITY 17 CANTON ROAD TST KL, Hong Kong  
**Manufacturer** ..... : SHENZHEN TECNO TECHNOLOGY CO.,LTD.  
**Address** ..... : 101, Building 24, Waijing Industrial Park, Fumin Community, Fucheng  
Street, Longhua District, Shenzhen City, P.R. China  
**Product Name** ..... : Mobile Phone  
**Model No.** ..... : X650B  
**Brand** ..... : Infinix  
**Standards** ..... : FCC CFR47 Part 15 E Section 15.407: 2018  
**Date of Receipt sample** ..... : 2019-09-29  
**Date of Test** ..... : 2019-09-30 to 2019-10-16  
**Date of Issue** ..... : 2019-10-17  
**Test Result** ..... : Pass

**Remarks:**

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company.

The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

**Prepared By:**

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## 2 Laboratories Introduction

**Waltek Services (Shenzhen) Co., Ltd** is a professional third-party testing and certification laboratory with multi-year product testing and certification experience, established strictly in accordance with ISO/IEC 17025 requirements, and accredited by ILAC (International Laboratory Accreditation Cooperation) member. A2LA (American Association for Laboratory Accreditation, the certification number is 4243.01) of USA, CNAS (China National Accreditation Service for Conformity Assessment, the registration number is L3110) of China. Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC (The Federal Communications Commission), CEC (California energy efficiency), ISED (Innovation, Science and Economic Development Canada). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as Intertek (ETL-SEMKO), TÜV Rheinland, TÜV SÜD, etc.



Waltek Services (Shenzhen) Co., Ltd is one of the largest and the most comprehensive third party testing laboratory in China. Our test capability covered four large fields: safety test. Electro Magnetic Compatibility (EMC), and energy performance, wireless radio. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

**Test Facility:****A. Accreditations for Conformity Assessment (International)**

Country/Region	Scope Covered By	Scope	Note
USA	ISO/IEC 17025	FCC ID \ DOC \ VOC	1
Canada		IC ID \ VOC	2
Japan		MIC-T \ MIC-R	-
Europe		EMCD \ RED	-
Taiwan		NCC	-
Hong Kong		OFCA	-
Australia		RCM	-
India		WPC	-
Thailand		NTC	-
Singapore		IDA	-

Note:

1. FCC Designation No.: CN1201. Test Firm Registration No.: 523476.
2. ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.

**B. TCBs and Notify Bodies Recognized Testing Laboratory.**

Recognized Testing Laboratory of ...	Notify body number
TUV Rheinland	Optional.
Intertek	
TUV SUD	
SGS	
Phoenix Testlab GmbH	0700
Element Materials Technology Warwick Ltd	0891
Timco Engineering, Inc.	1177
Eurofins Product Service GmbH	0681

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## 4 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTS19S09068 045W006	2019-09-29	2019-09-30 to 2019-10- 16	2019-10-17	original	-	Valid

## 5 General Information

### 5.1 General Description of E.U.T.

Product:	Mobile Phone
Model(s):	X650B
Model Description:	N/A
GSM Band(s):	GSM 850/900/1800/1900MHz
GPRS/EGPRS Class:	12
WCDMA Band(s):	FDD Band II/IV/V
LTE Band(s):	FDD Band 2/4/5/7
Wi-Fi Specification:	2.4G-802.11b/g/n HT20/n HT40 5G-802.11a/ n(HT20/40)/ac(HT20/40/80)
Bluetooth Version:	Bluetooth v4.0 with BLE
GPS:	Support
NFC:	N/A
Hardware Version:	H6110_V2.2
Software Version:	X650B-H6110JK-190905V224
Highest frequency (Exclude Radio):	26MHz
Storage Location:	Internal Storage
Note:	N/A

### 5.2 Details of E.U.T.

Operation Frequency:	802.11a/ n(HT20/40)/ac(HT20/40/80): 5150MHz to 5250MHz 802.11a/ n(HT20/40)/ac(HT20/40/80): 5725MHz to 5850MHz
Max. RF output power:	U-NII-1: 9.53dBm U-NII-3: 9.36dBm
Type of Modulation:	OFDM
Antenna installation:	internal permanent antenna
Antenna Gain:	U-NII-1: 1.0dBi U-NII-3: 1.0dBi
Ratings:	Battery DC 3.85V, 4900mAh DC 5V, 2.0A, charging from adapter (Adapter Input: 100-240V~50/60Hz 0.35A)
Adapter:	Manufacturer: Dongguan Aohai Power Technology CO.,LTD Model No.: A8A-050200U-US1

### 5.3 Channel List

U-NII-1 (5.15-5.25GHz)		U-NII-3 (5.725-5.85GHz)	
channel	Frequency(MHz)	channel	Frequency(MHz)
36	5180	149	5745
38	5190	151	5755
40	5200	153	5765
42	5210	155	5785
44	5220	157	5785
46	5230	159	5795
48	5240	161	5805
		165	5825

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:

For 802.11a/n(HT20)/ac(HT20):

channel	Frequency(MHz)	channel	Frequency(MHz)
36	5180	149	5745
40	5200	157	5785
48	5240	165	5825

For 802.11 n(HT40)/ac(HT40):

channel	Frequency(MHz)	channel	Frequency(MHz)
38	5190	151	5755
46	5230	159	5795

For 802.11 ac(HT80):

channel	Frequency(MHz)	channel	Frequency(MHz)
42	5210	155	5775

#### 5.4 Test Mode Description:

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product. Transmitting duty cycle is no less 98%.

The software is installed in operation system, named “RFTestTool.apk”, Version 1, date 20160518.

Test Items	Mode	Data Rate	Channel	TX/RX
Radiated Emissions	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Duty Cycle	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Band Edge	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX

6dB Bandwidth	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
26dB Bandwidth and 99% Occupied Bandwidth	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Conducted Output Power	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Power Spectral Density	802.11a	6 Mbps	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX
	802.11n(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT20)	MCS0	U-NII-1 36/40/48 U-NII-3 149/155/165	TX

	802.11ac(HT40)	MCS0	U-NII-1 38/46 U-NII-3 151/159	TX
	802.11ac(HT80)	MCS0	U-NII-1 42 U-NII-3 155	TX
Frequency Stability	Un-modulation	/	U-NII-1 36/40/48 U-NII-3 149/155/165	TX

## 6 Equipment Used during Test

### 6.1 Equipments List

Conducted Emissions Test Site 1#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	100947	2019-09-14	2020-09-13
2.	LISN	R&S	ENV216	101215	2019-09-14	2020-09-13
3.	Cable	Top	TYPE16(3.5M)	-	2019-09-14	2020-09-13
Conducted Emissions Test Site 2#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	101155	2019-09-14	2020-09-13
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	2019-09-14	2020-09-13
3.	Limiter	York	MTS-IMP-136	261115-001-0024	2019-09-14	2020-09-13
4.	Cable	LARGE	RF300	-	2019-09-14	2020-09-13
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	EMC Analyzer	Agilent	E7405A	MY45114943	2019-09-14	2020-09-13
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	2019-09-14	2020-09-13
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	2019-09-14	2020-09-13
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	2019-09-14	2020-09-13
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	2019-09-14	2020-09-13
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	2019-09-14	2020-09-13
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	2019-09-14	2020-09-13
8	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	2019-09-14	2020-09-13
3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Test Receiver	R&S	ESCI	101296	2019-09-14	2020-09-13
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2019-09-14	2020-09-13
3	Amplifier	Compliance pirection systems inc	PAP-0203	22024	2019-09-14	2020-09-13
4	Cable	HUBER+SUHNER	CBL2	525178	2019-09-14	2020-09-13
RF Conducted Testing						

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	2019-09-14	2020-09-13
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	2019-09-14	2020-09-13
3.	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	2019-09-14	2020-09-13

## 6.2 Description of Support Units

Equipment	Manufacturer	Model No.	Series No.
/	/	/	/

## 6.3 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-6}$
RF Power	$\pm 1.0$ dB
RF Power Density	$\pm 2.2$ dB
Radiated Spurious Emissions test	$\pm 5.03$ dB (30M~1000MHz)
	$\pm 5.47$ dB (1000M~25000MHz)
Conducted Spurious Emissions test	$\pm 3.64$ dB (AC mains 150KHz~30MHz)

## 6.4 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

## 7 Test Summary

Test Items	Test Requirement	Result
Conducted Emissions	15.207(a)	PASS
Radiated Emissions	15.407(a) 15.205(a) 15.209(a)	PASS
Duty Cycle	KDB 789033	--
6dB Bandwidth	15.407(a)	PASS
26 dB Emission Bandwidth & 99% Occupied Bandwidth	15.407(a)	PASS
Maximum Conducted Output Power	15.407(a)	PASS
Power Spectral Density	15.407(a)	PASS
Restricted bands around fundamental frequency	15.407(a)	PASS
Antenna Requirement	15.203	PASS
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	PASS

## 8 Conducted Emission

Test Requirement:	FCC CFR 47 Part 15 Section 15.207
Test Method:	ANSI C63.10:2013
Test Result:	PASS
Frequency Range:	150kHz to 30MHz
Class/Severity:	Class B
Limit:	66-56 dB $\mu$ V between 0.15MHz & 0.5MHz 56 dB $\mu$ V between 0.5MHz & 5MHz 60 dB $\mu$ V between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)

### 8.1 E.U.T. Operation

Operating Environment :

Temperature: 21.5 °C

Humidity: 51.9 % RH

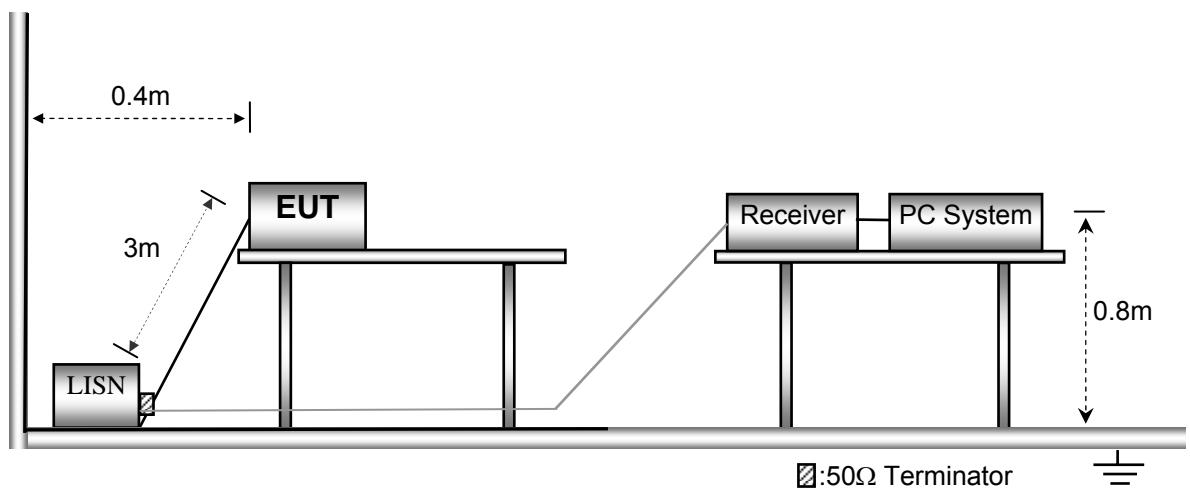
Atmospheric Pressure: 101.2kPa

EUT Operation :

The test was performed in transmitting mode, the test data were shown in the report.

### 8.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.



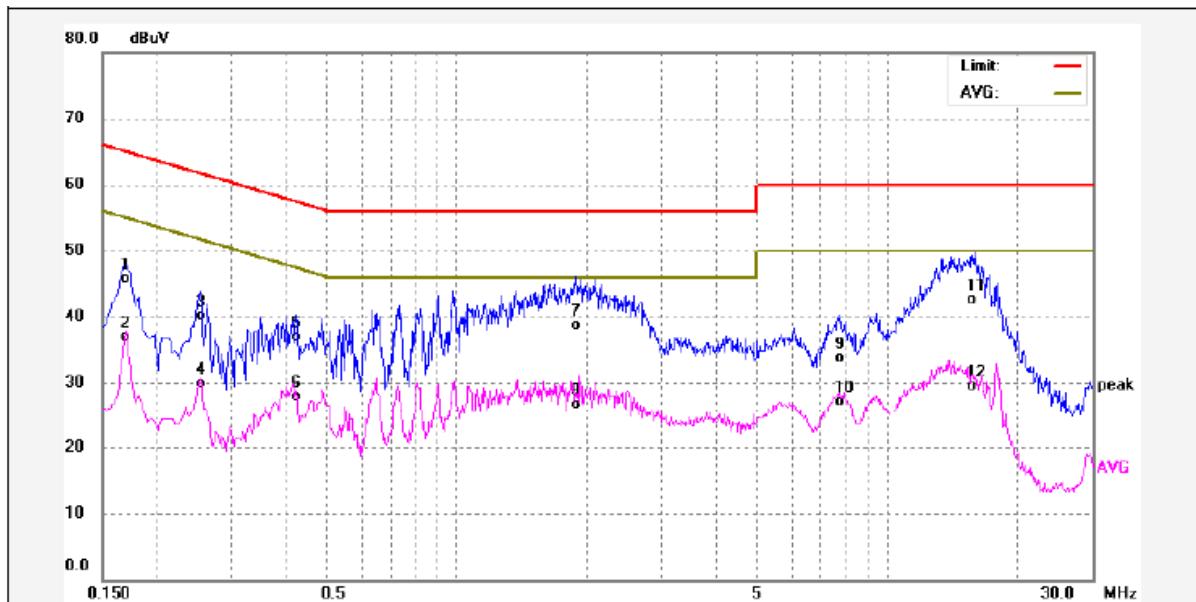
### 8.3 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

## 8.4 Conducted Emission Test Result

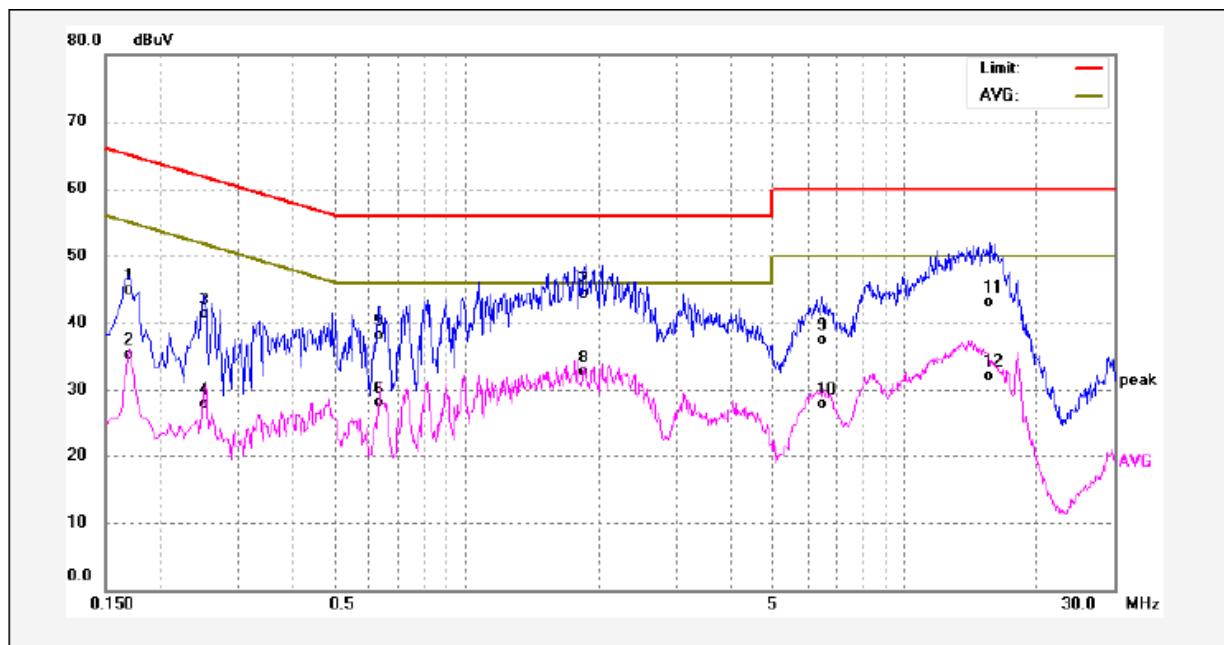
An initial pre-scan was performed on the live and neutral lines.

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1700	35.50	10.29	45.79	64.96	-19.17	QP	
2	0.1700	26.52	10.29	36.81	54.96	-18.15	AVG	
3	0.2540	29.75	10.39	40.14	61.62	-21.48	QP	
4	0.2540	19.55	10.39	29.94	51.62	-21.68	AVG	
5	0.4220	26.47	10.42	36.89	57.41	-20.52	QP	
6	0.4220	17.39	10.42	27.81	47.41	-19.60	AVG	
7	1.8900	28.25	10.54	38.79	56.00	-17.21	QP	
8	1.8900	16.20	10.54	26.74	46.00	-19.26	AVG	
9	7.8020	22.57	11.07	33.64	60.00	-26.36	QP	
10	7.8020	15.96	11.07	27.03	50.00	-22.97	AVG	
11	15.9140	31.68	10.86	42.54	60.00	-17.46	QP	
12	15.9140	18.69	10.86	29.55	50.00	-20.45	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1700	34.53	10.29	44.82	64.96	-20.14	QP	
2	0.1700	24.95	10.29	35.24	54.96	-19.72	AVG	
3	0.2500	30.93	10.39	41.32	61.75	-20.43	QP	
4	0.2500	17.52	10.39	27.91	51.75	-23.84	AVG	
5	0.6300	27.66	10.47	38.13	56.00	-17.87	QP	
6	0.6300	17.63	10.47	28.10	46.00	-17.90	AVG	
7	1.8620	33.71	10.54	44.25	56.00	-11.75	QP	
8	1.8620	22.14	10.54	32.68	46.00	-13.32	AVG	
9	6.4579	26.45	10.96	37.41	60.00	-22.59	QP	
10	6.4579	16.90	10.96	27.86	50.00	-22.14	AVG	
11	15.7139	32.26	10.86	43.12	60.00	-16.88	QP	
12	15.7139	21.32	10.86	32.18	50.00	-17.82	AVG	

## 9 Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.407

Test Method: ANSI C63.10:2013

Test Result: PASS

Measurement Distance: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Distance	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	20log <sup>(2400/F(kHz))</sup> + 80
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	20log <sup>(24000/F(kHz))</sup> + 40
1.705 ~ 30	30	30	100 * 30	20log <sup>(30)</sup> + 40
30 ~ 88	100	3	100	20log <sup>(100)</sup>
88 ~ 216	150	3	150	20log <sup>(150)</sup>
216 ~ 960	200	3	200	20log <sup>(200)</sup>
Above 960	500	3	500	20log <sup>(500)</sup>

### 9.1 EUT Operation

Operating Environment :

Temperature: 23.5 °C

Humidity: 52.1 % RH

Atmospheric Pressure: 101.2kPa

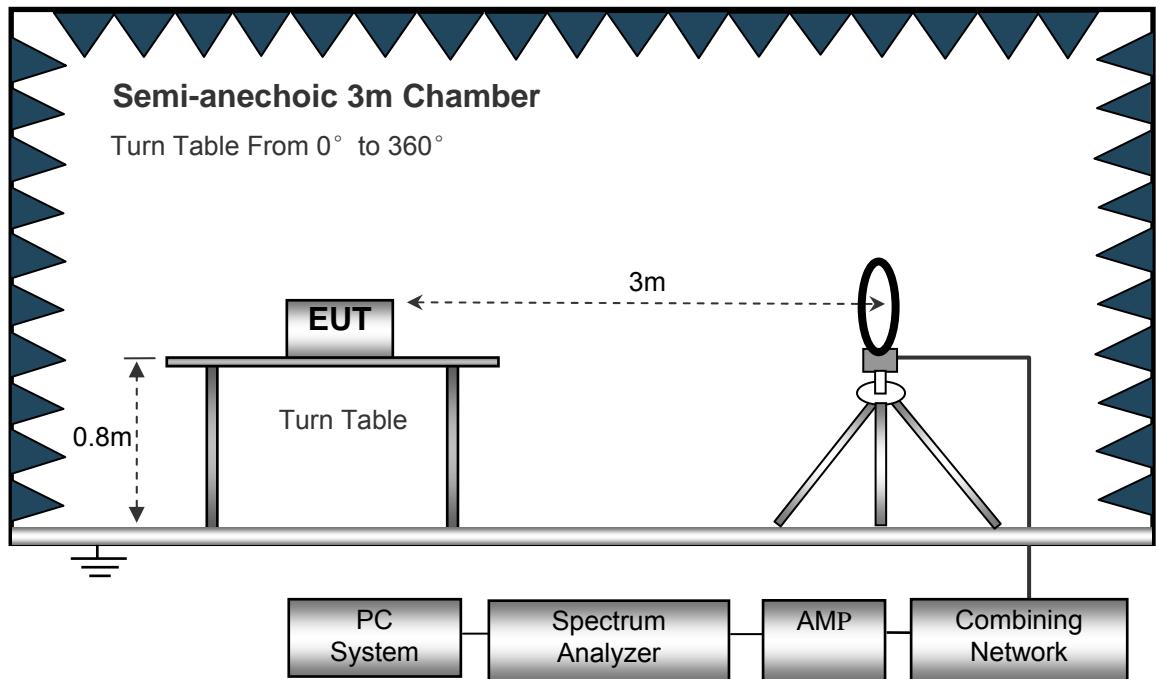
EUT Operation :

The test was performed in transmitting mode, the test data were shown in the report.

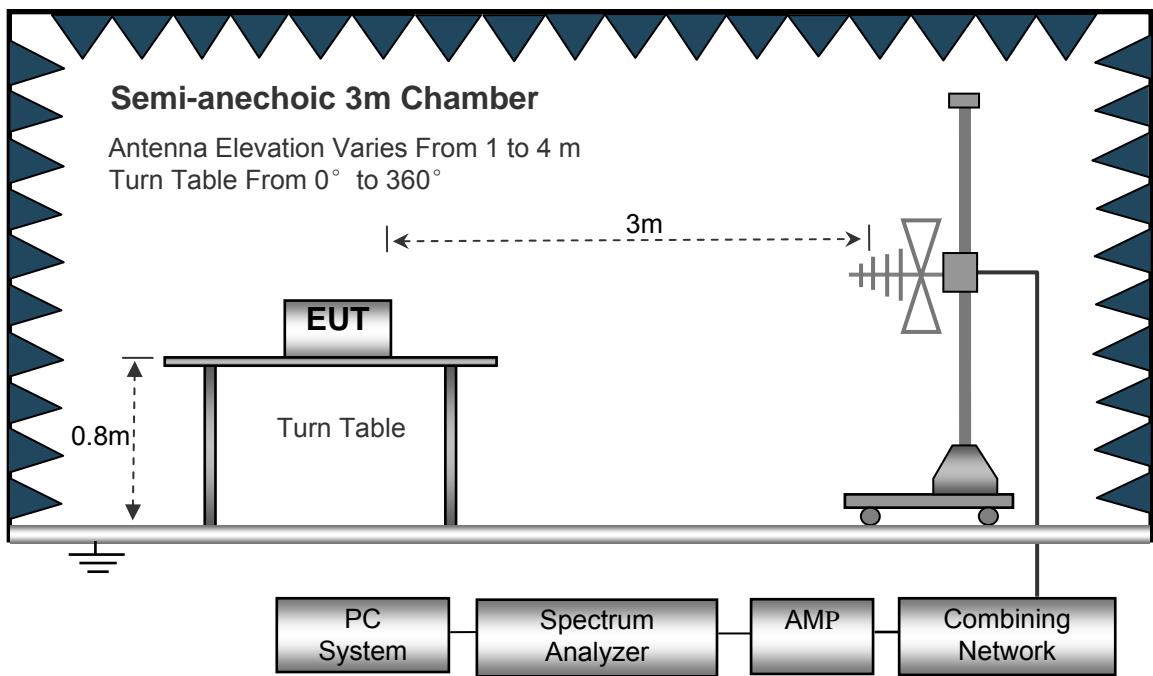
## 9.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013.

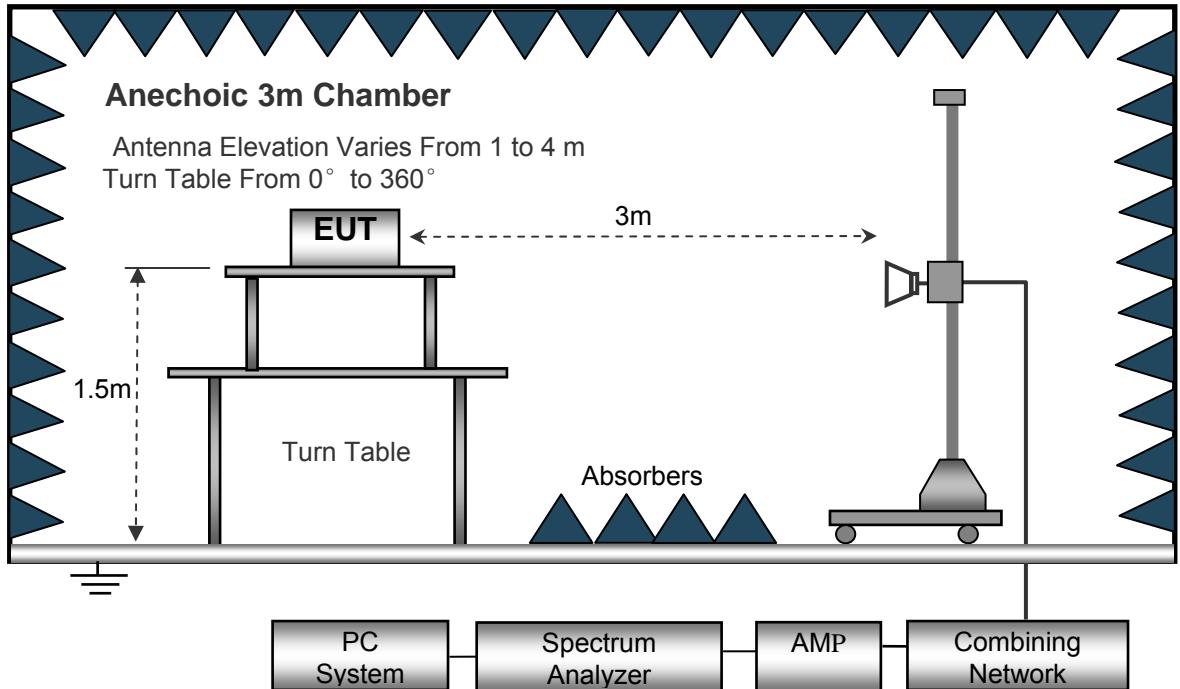
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



### 9.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed .....	Auto
IF Bandwidth.....	10kHz
Video Bandwidth.....	10kHz
Resolution Bandwidth.....	10kHz

30MHz ~ 1GHz

Sweep Speed .....	Auto
Detector .....	PK
Resolution Bandwidth.....	100kHz
Video Bandwidth.....	300kHz

Above 1GHz

Sweep Speed .....	Auto
Detector .....	PK
Resolution Bandwidth.....	1MHz
Video Bandwidth.....	3MHz
Detector .....	Ave.
Resolution Bandwidth.....	1MHz
Video Bandwidth.....	10Hz

## 9.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in X axis,so the worst data were shown as follow.
8. A 2.4GHz high –pass filter is used during radiated emissions above 1GHz measurement.

## 9.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Limit}$$

## 9.6 Summary of Test Results

**Test Frequency: 9KHz~30MHz**

Frequency (MHz)	Measurement results dB $\mu$ V @3m	Detector PK/QP	Correct factor dB/m	Extrapolatio n factor dB	Measurement results (calculated) dB $\mu$ V/m @30m	Limits dB $\mu$ V/m @30m	Margin dB
6.021	25.30	QP	21.84	40.00	7.14	29.54	-22.40
15.730	25.11	QP	21.35	40.00	6.46	29.54	-23.08
25.680	24.85	QP	20.67	40.00	5.52	29.54	-24.02
<b>U-NII-1:802.11n20 5180MHz</b>							
6.021	25.30	QP	21.84	40.00	7.14	29.54	-22.40
15.730	25.12	QP	21.35	40.00	6.47	29.54	-23.07
25.680	25.34	QP	20.67	40.00	6.01	29.54	-23.53
<b>U-NII-1:802.11ac 20 5180MHz</b>							
6.021	25.52	QP	21.84	40.00	7.36	29.54	-22.18
15.730	24.85	QP	21.35	40.00	6.20	29.54	-23.34
25.680	25.16	QP	20.67	40.00	5.83	29.54	-23.71
<b>U-NII-1:802.11n40 5190MHz</b>							
6.021	25.63	QP	21.84	40.00	7.47	29.54	-22.07
15.730	24.87	QP	21.35	40.00	6.22	29.54	-23.32
25.680	24.96	QP	20.67	40.00	5.63	29.54	-23.91
<b>U-NII-1:802.11ac40 5190MHz</b>							
6.021	25.06	QP	21.84	40.00	6.90	29.54	-22.64
15.730	24.87	QP	21.35	40.00	6.22	29.54	-23.32
25.680	24.99	QP	20.67	40.00	5.66	29.54	-23.88
<b>U-NII-1:802.11ac80 5210MHz</b>							
6.021	25.10	QP	21.84	40.00	6.94	29.54	-22.60
15.730	24.52	QP	21.35	40.00	5.87	29.54	-23.67
25.680	24.65	QP	20.67	40.00	5.32	29.54	-24.22

Frequency (MHz)	Measurement results dB $\mu$ V @3m	Detector PK/QP	Correct factor dB/m	Extrapolation factor dB	Measurement results (calculated) dB $\mu$ V/m @30m	Limits dB $\mu$ V/m @30m	Margin dB
U-NII-3 802.11a 5745MHz							
6.021	25.00	QP	21.84	40.00	6.84	29.54	-22.70
15.730	24.15	QP	21.35	40.00	5.50	29.54	-24.04
25.680	24.32	QP	20.67	40.00	4.99	29.54	-24.55
U-NII-3 802.11n20 5745MHz							
6.021	24.58	QP	21.84	40.00	6.42	29.54	-23.12
15.730	25.43	QP	21.35	40.00	6.78	29.54	-22.76
25.680	24.25	QP	20.67	40.00	4.92	29.54	-24.62
U-NII-3 802.11ac 5745MHz							
6.021	24.17	QP	21.84	40.00	6.01	29.54	-23.53
15.730	25.34	QP	21.35	40.00	6.69	29.54	-22.85
25.680	24.38	QP	20.67	40.00	5.05	29.54	-24.49
U-NII-3 802.11n40 5755MHz							
6.021	24.50	QP	21.84	40.00	6.34	29.54	-23.20
15.730	24.64	QP	21.35	40.00	5.99	29.54	-23.55
25.680	24.36	QP	20.67	40.00	5.03	29.54	-24.51
U-NII-3 802.11ac40 5755MHz							
6.021	25.28	QP	21.84	40.00	7.12	29.54	-22.42
15.730	24.37	QP	21.35	40.00	5.72	29.54	-23.82
25.680	24.19	QP	20.67	40.00	4.86	29.54	-24.68
U-NII-3 802.11ac80 5775MHz							
6.021	25.64	QP	21.84	40.00	7.48	29.54	-22.06
15.730	25.10	QP	21.35	40.00	6.45	29.54	-23.09
25.680	24.88	QP	20.67	40.00	5.55	29.54	-23.99

**Test Frequency : 30MHz ~ 18GHz**

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB $\mu$ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)
802.11a U-NII-1 Low Channel 5180MHz									
223.45	41.05	QP	115	1.3	H	-11.62	29.43	46.00	-16.57
223.45	36.26	QP	5	1.4	V	-11.62	24.64	46.00	-21.36
4513.01	50.44	PK	224	1.2	H	-2.03	48.41	74.00	-25.59
4513.01	46.32	Ave	224	1.2	H	-2.03	44.29	54.00	-9.71
5129.12	52.53	PK	269	1.6	H	-1.02	51.51	74.00	-22.49
5129.12	48.18	Ave	269	1.6	H	-1.02	47.16	54.00	-6.84
10360.00	41.08	PK	140	1.4	H	5.33	46.41	74.00	-27.59
10360.00	36.85	Ave	140	1.4	H	5.33	42.18	54.00	-11.82
802.11a U-NII-1 Middle channel 5200MHz									
223.45	40.27	QP	332	1.5	H	-11.62	28.65	46.00	-17.35
223.45	35.20	QP	79	1.9	V	-11.62	23.58	46.00	-22.42
4537.40	49.92	PK	154	1.8	H	-1.94	47.98	74.00	-26.02
4537.40	47.46	Ave	154	1.8	H	-1.94	45.52	54.00	-8.48
5147.58	51.64	PK	359	1.9	H	-1.06	50.58	74.00	-23.42
5147.58	48.93	Ave	359	1.9	H	-1.06	47.87	54.00	-6.13
10400.00	40.28	PK	352	1.3	H	5.21	45.49	74.00	-28.51
10400.00	35.61	Ave	352	1.3	H	5.21	40.82	54.00	-13.18

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Detector (PK/QP/Ave)	Turn table Angle Degree	RX Antenna		Corrected Factor	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/209/205	
				Height (m)	Polar (H/V)			Limit (dB)	Margin (dB)
802.11a U-NII-1 High channel 5240MHz									
223.45	39.45	QP	313	1.2	H	-11.62	27.83	46.00	-18.17
223.45	34.24	QP	83	1.4	V	-11.62	22.62	46.00	-23.38
4537.11	49.84	PK	7	1.8	H	-2.24	47.60	74.00	-26.40
4537.11	48.54	Ave	7	1.8	H	-2.24	46.30	54.00	-7.70
5110.05	50.76	PK	62	1.3	H	-1.09	49.67	74.00	-24.33
5110.05	48.62	Ave	62	1.3	H	-1.09	47.53	54.00	-6.47
10480.00	41.72	PK	314	1.4	H	5.14	46.86	74.00	-27.14
10480.00	35.62	Ave	314	1.4	H	5.14	40.76	54.00	-13.24
802.11a U-NII-3 Low Channel 5745MHz									
223.45	41.05	QP	36	1.6	H	-11.62	29.43	46.00	-16.57
223.45	36.26	QP	177	1.8	V	-11.62	24.64	46.00	-21.36
4526.46	50.44	PK	153	1.7	H	-2.03	48.41	74.00	-25.59
4526.46	46.32	Ave	153	1.7	H	-2.03	44.29	54.00	-9.71
5125.06	52.53	PK	280	1.7	H	-1.02	51.51	74.00	-22.49
5125.06	48.18	Ave	280	1.7	H	-1.02	47.16	54.00	-6.84
11000.00	41.08	PK	35	1.6	H	5.33	46.41	68.20	-21.79
11000.00	36.85	Ave	35	1.6	H	5.33	42.18	54.00	-11.82

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
802.11a U-NII-3 Middle channel 5785MHz									
223.45	37.86	QP	197	1.2	H	-11.62	26.24	46.00	-19.76
223.45	33.33	QP	359	1.1	V	-11.62	21.71	46.00	-24.29
4505.68	49.64	PK	301	1.1	H	-2.03	47.61	74.00	-26.39
4505.68	44.19	Ave	301	1.1	H	-2.03	42.16	54.00	-11.84
11570.00	42.39	PK	67	1.2	H	5.81	48.20	74.00	-25.80
11570.00	37.03	Ave	67	1.2	H	5.81	42.84	54.00	-11.16
5350.34	45.93	PK	234	1.9	H	-1.22	44.71	74.00	-29.29
5350.34	39.54	Ave	234	1.9	H	-1.22	38.32	54.00	-15.68
802.11a U-NII-3 High channel 5825MHz									
223.45	36.43	QP	134	1.3	H	-11.62	24.81	46.00	-21.19
223.45	33.58	QP	238	1.1	V	-11.62	21.96	46.00	-24.04
4506.47	49.90	PK	27	1.2	H	-1.84	48.06	74.00	-25.94
4506.47	45.26	Ave	27	1.2	H	-1.84	43.42	54.00	-10.58
11650.00	40.65	PK	188	1.5	H	5.84	46.49	74.00	-27.51
11650.00	36.39	Ave	188	1.5	H	5.84	42.23	54.00	-11.77
5355.40	46.85	PK	4	1.3	H	-1.30	45.55	74.00	-28.45
5355.40	38.75	Ave	4	1.3	H	-1.30	37.45	54.00	-16.55

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Detector (PK/QP/Ave)	Turn table Angle Degree	RX Antenna		Corrected Factor (dB)	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/209/205	
				Height (m)	Polar (H/V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11n(HT20) U-NII-1 Low Channel 5180MHz									
223.45	37.91	QP	161	1.6	H	-11.62	26.29	46.00	-19.71
223.45	34.78	QP	354	1.5	V	-11.62	23.16	46.00	-22.84
4501.82	48.54	PK	162	1.4	H	-2.14	46.40	74.00	-27.60
4501.82	45.07	Ave	162	1.4	H	-2.14	42.93	54.00	-11.07
5112.78	46.91	PK	258	1.3	H	-1.06	45.85	74.00	-28.15
5112.78	38.62	Ave	258	1.3	H	-1.06	37.56	54.00	-16.44
10360.00	42.12	PK	37	1.6	H	5.33	47.45	74.00	-26.55
10360.00	34.80	Ave	37	1.6	H	5.33	40.13	54.00	-13.87
802.11n(HT20) U-NII-1 Middle channel 5200MHz									
223.45	39.01	QP	173	1.6	H	-11.62	27.39	46.00	-18.61
223.45	33.92	QP	233	1.9	V	-11.62	22.30	46.00	-23.70
4536.90	49.22	PK	143	1.5	H	-2.12	47.10	74.00	-26.90
4536.90	46.16	Ave	143	1.5	H	-2.12	44.04	54.00	-9.96
5140.65	46.27	PK	228	1.6	H	-1.06	45.21	74.00	-28.79
5140.65	38.03	Ave	228	1.6	H	-1.06	36.97	54.00	-17.03
10400.00	42.80	PK	21	1.9	H	5.21	48.01	74.00	-25.99
10400.00	36.07	Ave	21	1.9	H	5.21	41.28	54.00	-12.72

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB $\mu$ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)
802.11n(HT20) U-NII-1 High channel 5240MHz									
223.45	39.96	QP	68	1.7	H	-11.62	28.34	46.00	-17.66
223.45	33.13	QP	22	1.1	V	-11.62	21.51	46.00	-24.49
4512.97	48.22	PK	257	1.6	H	-1.96	46.26	74.00	-27.74
4512.97	45.88	Ave	257	1.6	H	-1.96	43.92	54.00	-10.08
5117.00	46.13	PK	30	1.8	H	-1.06	45.07	74.00	-28.93
5117.00	37.05	Ave	30	1.8	H	-1.06	35.99	54.00	-18.01
10480.00	41.17	PK	162	1.4	H	5.14	46.31	74.00	-27.69
10480.00	36.78	Ave	162	1.4	H	5.14	41.92	54.00	-12.08
802.11n(HT20) U-NII-3 Low Channel 5745MHz									
223.45	38.74	QP	114	1.0	H	-11.62	27.12	46.00	-18.88
223.45	32.93	QP	1	1.7	V	-11.62	21.31	46.00	-24.69
4528.18	46.98	PK	330	2.0	H	-1.85	45.13	74.00	-28.87
4528.18	44.16	Ave	330	2.0	H	-1.85	42.31	54.00	-11.69
11490.00	40.72	PK	328	1.9	H	5.93	46.65	74.00	-27.35
11490.00	34.03	Ave	328	1.9	H	5.93	39.96	54.00	-14.04
5365.50	45.76	PK	114	1.5	H	-1.01	44.75	74.00	-29.25
5365.50	37.06	Ave	114	1.5	H	-1.01	36.05	54.00	-17.95

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB $\mu$ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)
802.11n(HT20) U-NII-3 Middle channel 5785MHz									
223.45	31.33	QP	308	1.0	H	-11.62	19.71	46.00	-26.29
223.45	48.10	QP	260	1.5	V	-11.62	36.48	46.00	-9.52
4503.19	46.58	PK	214	1.4	H	-2.03	44.55	74.00	-29.45
4503.19	46.64	Ave	214	1.4	H	-2.03	44.61	54.00	-9.39
11570.00	34.33	PK	199	1.1	H	5.81	40.14	68.20	-28.06
11570.00	45.38	Ave	199	1.1	H	5.81	51.19	54.00	-2.81
5351.63	45.32	PK	117	1.2	H	-1.22	44.10	74.00	-29.90
5351.63	37.81	Ave	117	1.2	H	-1.22	36.59	54.00	-17.41
802.11n(HT20) U-NII-3 High channel 5825MHz									
223.45	37.19	QP	266	1.2	H	-11.62	25.57	46.00	-20.43
223.45	32.94	QP	238	1.6	V	-11.62	21.32	46.00	-24.68
4505.36	45.70	PK	182	1.4	H	-1.97	43.73	74.00	-30.27
4505.36	43.93	Ave	182	1.4	H	-1.97	41.96	54.00	-12.04
11650.00	42.30	PK	89	1.9	H	5.84	48.14	74.00	-25.86
11650.00	35.48	Ave	89	1.9	H	5.84	41.32	54.00	-12.68
5352.16	46.88	PK	109	1.3	H	-1.12	45.76	74.00	-28.24
5352.16	39.77	Ave	109	1.3	H	-1.12	38.65	54.00	-15.35

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB $\mu$ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)
802.11n(HT40) U-NII-1 Low Channel 5190MHz									
223.45	39.25	QP	313	1.4	H	-11.62	27.63	46.00	-18.37
223.45	32.75	QP	244	1.6	V	-11.62	21.13	46.00	-24.87
4506.90	39.13	PK	6	1.8	H	-1.89	37.24	74.00	-36.76
4506.90	39.39	Ave	6	1.8	H	-1.89	37.50	54.00	-16.50
5127.16	45.66	PK	189	1.5	H	-1.06	44.60	74.00	-29.40
5127.16	39.80	Ave	189	1.5	H	-1.06	38.74	54.00	-15.26
10380.00	39.66	PK	122	1.1	H	5.26	44.92	74.00	-29.08
10380.00	34.53	Ave	122	1.1	H	5.26	39.79	54.00	-14.21
802.11n(HT40) U-NII-1 High channel 5230MHz									
223.45	40.38	QP	173	1.0	H	-11.62	28.76	46.00	-17.24
223.45	33.60	QP	197	2.0	V	-11.62	21.98	46.00	-24.02
4507.99	38.61	PK	64	1.3	H	-1.94	36.67	74.00	-37.33
4507.99	34.99	Ave	64	1.3	H	-1.94	33.05	54.00	-20.95
5148.79	47.24	PK	175	1.6	H	-1.06	46.18	74.00	-27.82
5148.79	38.33	Ave	175	1.6	H	-1.06	37.27	54.00	-16.73
10480.00	42.10	PK	98	1.2	H	5.28	47.38	74.00	-26.62
10480.00	36.23	Ave	98	1.2	H	5.28	41.51	54.00	-12.49

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.407/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dB $\mu$ V)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dB $\mu$ V/m)	(dB $\mu$ V/m)	(dB)
802.11n(HT40) U-NII-3 Low Channel 5755MHz									
223.45	41.46	QP	239	1.8	H	-11.62	29.84	74.00	-44.16
223.45	34.05	QP	233	1.7	V	-11.62	22.43	74.00	-51.57
4536.61	37.23	PK	154	1.3	H	-1.96	35.27	74.00	-38.73
4536.61	33.12	Ave	154	1.3	H	-1.96	31.16	54.00	-22.84
11510.00	39.07	PK	95	2.0	H	5.88	44.95	74.00	-29.05
11510.00	33.93	Ave	95	2.0	H	5.88	39.81	54.00	-14.19
5361.29	46.35	PK	336	1.2	H	-1.01	45.34	74.00	-28.66
5361.29	37.09	Ave	336	1.2	H	-1.01	36.08	54.00	-17.92
802.11n(HT40) U-NII-3 High channel 5795MHz									
223.45	42.24	QP	250	1.4	H	-11.62	30.62	74.00	-43.38
223.45	35.00	QP	265	1.2	V	-11.62	23.38	74.00	-50.62
4538.78	37.27	PK	98	1.1	H	-1.92	35.35	74.00	-38.65
4538.78	33.15	Ave	98	1.1	H	-1.92	31.23	54.00	-22.77
11590.00	42.07	PK	182	1.5	H	5.63	47.70	74.00	-26.30
11590.00	35.50	Ave	182	1.5	H	5.63	41.13	54.00	-12.87
5379.25	46.45	PK	256	1.7	H	-1.04	45.41	74.00	-28.59
5379.25	39.44	Ave	256	1.7	H	-1.04	38.40	54.00	-15.60

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Detector (PK/QP/Ave)	Turn table Angle Degree	RX Antenna		Corrected Factor	Corrected Amplitude (dB $\mu$ V/m)	FCC Part 15.407/209/205	
				Height (m)	Polar (H/V)			Limit (dB $\mu$ V/m)	Margin (dB)
802.11ac(HT20) U-NII-1 Low Channel 5180MHz									
223.45	38.32	QP	273	1.2	H	-11.62	26.70	46.00	-19.30
223.45	33.86	QP	43	1.4	V	-11.62	22.24	46.00	-23.76
4538.56	43.02	PK	185	1.9	H	-1.86	41.16	74.00	-32.84
4538.56	42.55	Ave	185	1.9	H	-1.86	40.69	54.00	-13.31
5121.90	45.20	PK	106	1.2	H	-1.06	44.14	74.00	-29.86
5121.90	39.37	Ave	106	1.2	H	-1.06	38.31	54.00	-15.69
10360.00	40.79	PK	180	1.6	H	5.33	46.12	74.00	-27.88
10360.00	34.62	Ave	180	1.6	H	5.33	39.95	54.00	-14.05
802.11ac(HT20) U-NII-1 Middle channel 5200MHz									
223.45	39.29	QP	246	1.2	H	-11.62	27.67	46.00	-18.33
223.45	33.82	QP	37	2.0	V	-11.62	22.20	46.00	-23.80
4526.69	43.22	PK	27	1.8	H	-1.82	41.40	74.00	-32.60
4526.69	42.56	Ave	27	1.8	H	-1.82	40.74	54.00	-13.26
5115.13	46.03	PK	195	1.5	H	-1.06	44.97	74.00	-29.03
5115.13	40.87	Ave	195	1.5	H	-1.06	39.81	54.00	-14.19
10400.00	42.18	PK	338	1.9	H	5.21	47.39	74.00	-26.61
10400.00	36.67	Ave	338	1.9	H	5.21	41.88	54.00	-12.12

Frequency (MHz)	Receiver Reading (dBμV)	Detector (PK/QP/Ave)	Turn table Angle Degree	RX Antenna		Corrected Factor	Corrected Amplitude (dBμV/m)	FCC Part 15.407/209/205	
				Height (m)	Polar (H/V)			Limit (dB)	Margin (dB)
802.11ac(HT20) U-NII-1 High channel 5240MHz									
223.45	39.24	QP	346	1.5	H	-11.62	27.62	46.00	-18.38
223.45	34.80	QP	134	1.4	V	-11.62	23.18	46.00	-22.82
4519.50	43.03	PK	167	1.4	H	-1.81	41.22	74.00	-32.78
4519.50	43.01	Ave	167	1.4	H	-1.81	41.20	54.00	-12.80
5122.32	47.31	PK	303	1.3	H	-1.06	46.25	74.00	-27.75
5122.32	40.75	Ave	303	1.3	H	-1.06	39.69	54.00	-14.31
10480.00	41.80	PK	52	1.5	H	5.14	46.94	74.00	-27.06
10480.00	35.40	Ave	52	1.5	H	5.14	40.54	54.00	-13.46
802.11ac(HT20) U-NII-3 Low Channel 5745MHz									
223.45	38.92	QP	49	1.3	H	-11.62	27.30	46.00	-18.70
223.45	34.49	QP	221	1.2	V	-11.62	22.87	46.00	-23.13
4503.04	41.31	PK	106	2.0	H	-1.92	39.39	74.00	-34.61
4503.04	41.82	Ave	106	2.0	H	-1.92	39.90	54.00	-14.10
11490.00	40.05	PK	252	1.9	H	5.93	45.98	74.00	-28.02
11490.00	33.97	Ave	252	1.9	H	5.93	39.90	54.00	-14.10
5384.27	46.11	PK	267	2.0	H	-1.03	45.08	74.00	-28.92
5384.27	38.78	Ave	267	2.0	H	-1.03	37.75	54.00	-16.25

Frequency (MHz)	Receiver Reading (dBμV)	Detector (PK/QP/Ave)	Turn table Angle Degree	RX Antenna		Corrected Factor	Corrected Amplitude (dBμV/m)	FCC Part 15.407/209/205	
				Height (m)	Polar (H/V)			Limit (dB)	Margin (dB)
802.11ac(HT20) U-NII-3 Middle channel 5785MHz									
223.45	39.73	QP	326	1.5	H	-11.62	28.11	46.00	-17.89
223.45	34.07	QP	60	1.5	V	-11.62	22.45	46.00	-23.55
4525.33	41.40	PK	25	1.5	H	-1.97	39.43	74.00	-34.57
4525.33	42.19	Ave	25	1.5	H	-1.97	40.22	54.00	-13.78
11570.00	41.71	PK	322	1.0	H	5.81	47.52	74.00	-26.48
11570.00	36.95	Ave	322	1.0	H	5.81	42.76	54.00	-11.24
5357.26	46.04	PK	211	1.2	H	-1.05	44.99	74.00	-29.01
5357.26	38.79	Ave	211	1.2	H	-1.05	37.74	54.00	-16.26
802.11ac(HT20) U-NII-3 High channel 5825MHz									
223.45	40.27	QP	300	1.3	H	-11.62	28.65	46.00	-17.35
223.45	33.48	QP	239	1.1	V	-11.62	21.86	46.00	-24.14
4535.36	41.97	PK	149	1.2	H	-1.88	40.09	74.00	-33.91
4535.36	41.84	Ave	149	1.2	H	-1.88	39.96	54.00	-14.04
11650.00	41.30	PK	332	1.8	H	5.84	47.14	74.00	-26.86
11650.00	35.69	Ave	332	1.8	H	5.84	41.53	54.00	-12.47
5360.82	46.78	PK	261	1.0	H	-1.06	45.72	74.00	-28.28
5360.82	39.90	Ave	261	1.0	H	-1.06	38.84	54.00	-15.16

Frequency (MHz)	Receiver Reading (dBμV)	Detector (PK/QP/Ave)	Turn table Angle Degree	RX Antenna		Corrected Factor	Corrected Amplitude (dBμV/m)	FCC Part 15.407/209/205	
				Height (m)	Polar (H/V)			Limit (dB)	Margin (dB)
802.11ac(HT40) U-NII-1 Low Channel 5190MHz									
223.45	36.49	QP	240	1.3	H	-11.62	24.87	46.00	-21.13
223.45	45.31	QP	345	1.9	V	-11.62	33.69	46.00	-12.31
4509.17	39.66	PK	297	1.0	H	-1.91	37.75	74.00	-36.25
4509.17	30.36	Ave	297	1.0	H	-1.91	28.45	54.00	-25.55
5110.78	44.65	PK	183	1.6	H	-1.06	43.59	74.00	-30.41
5110.78	39.00	Ave	183	1.6	H	-1.06	37.94	54.00	-16.06
10380.00	40.06	PK	328	1.5	H	5.26	45.32	74.00	-28.68
10380.00	34.81	Ave	328	1.5	H	5.26	40.07	54.00	-13.93
802.11ac(HT40) U-NII-1 High channel 5230MHz									
223.45	42.93	QP	199	1.7	H	-11.62	31.31	74.00	-42.69
223.45	34.22	QP	185	1.5	V	-11.62	22.60	74.00	-51.40
4503.44	36.59	PK	293	1.4	H	-1.93	34.66	74.00	-39.34
4503.44	31.09	Ave	293	1.4	H	-1.93	29.16	54.00	-24.84
5146.22	46.91	PK	119	1.4	H	-1.06	45.85	74.00	-28.15
5146.22	42.33	Ave	119	1.4	H	-1.06	41.27	54.00	-12.73
10460.00	40.89	PK	87	2.0	H	5.28	46.17	74.00	-27.83
10480.00	36.20	Ave	87	2.0	H	5.28	41.48	54.00	-12.52

Frequency (MHz)	Receiver Reading (dBμV)	Detector (PK/QP/Ave)	Turn table Angle Degree	RX Antenna		Corrected Factor	Corrected Amplitude (dBμV/m)	FCC Part 15.407/209/205	
				Height (m)	Polar (H/V)			Limit (dB)	Margin (dB)
802.11ac(HT40) U-NII-3 Low Channel 5755MHz									
223.45	35.53	QP	178	1.6	H	-11.62	23.91	46.00	-22.09
223.45	47.57	QP	134	1.2	V	-11.62	35.95	46.00	-10.05
4533.74	38.60	PK	356	1.1	H	-1.92	36.68	74.00	-37.32
4533.74	29.74	Ave	356	1.1	H	-1.92	27.82	54.00	-26.18
11510.00	38.48	PK	158	2.0	H	5.88	44.36	68.20	-23.84
11510.00	35.66	Ave	158	2.0	H	5.88	41.54	54.00	-12.46
5382.97	46.76	PK	329	1.8	H	-1.07	45.69	74.00	-28.31
5382.97	38.55	Ave	329	1.8	H	-1.07	37.48	54.00	-16.52
802.11ac(HT40) U-NII-3 High channel 5795MHz									
223.45	42.13	QP	24	1.6	H	-11.62	30.51	74.00	-43.49
223.45	34.98	QP	110	1.6	V	-11.62	23.36	74.00	-50.64
4524.10	34.49	PK	256	1.1	H	-1.86	32.63	74.00	-41.37
4524.10	29.45	Ave	256	1.1	H	-1.86	27.59	54.00	-26.41
11590.00	42.63	PK	347	1.1	H	5.63	48.26	74.00	-25.74
11590.00	36.04	Ave	347	1.1	H	5.63	41.67	54.00	-12.33
5386.14	45.10	PK	180	1.6	H	-1.03	44.07	74.00	-29.93
5386.14	39.76	Ave	180	1.6	H	-1.03	38.73	54.00	-15.27

Frequency (MHz)	Receiver Reading (dBμV)	Detector (PK/QP/Ave)	Turn table Angle Degree	RX Antenna		Corrected Factor	Corrected Amplitude (dBμV/m)	FCC Part 15.407/209/205	
				Height (m)	Polar (H/V)			Limit (dB)	Margin (dB)
802.11ac(HT80) U-NII-1 Low Channel 5210MHz									
223.45	47.37	QP	95	2.0	H	-11.62	35.75	46.00	-10.25
4510.22	39.02	QP	240	1.8	V	-11.62	27.40	46.00	-18.60
4512.24	28.90	PK	321	1.4	H	-1.88	27.02	74.00	-46.98
4512.24	41.40	Ave	321	1.4	H	-1.88	39.52	54.00	-14.48
5112.92	38.19	PK	221	1.6	H	-1.06	37.13	74.00	-36.87
5112.92	44.96	Ave	221	1.6	H	-1.06	43.90	54.00	-10.10
10420.00	41.76	PK	320	1.7	H	4.65	46.41	74.00	-27.59
10420.00	35.92	Ave	320	1.7	H	4.65	40.57	54.00	-13.43
802.11ac(HT80) U-NII-3 Low Channel 5775MHz									
223.45	34.12	QP	355	1.2	H	-11.62	22.50	74.00	-51.50
223.45	29.23	QP	84	1.4	V	-11.62	17.61	74.00	-56.39
4535.74	43.22	PK	192	1.6	H	-1.85	41.37	74.00	-32.63
4535.74	42.71	Ave	192	1.6	H	-1.85	40.86	54.00	-13.14
5364.28	42.71	PK	149	1.8	H	4.83	47.54	74.00	-26.46
5364.28	35.86	Ave	149	1.8	H	4.83	40.69	54.00	-13.31
11550.00	45.50	PK	82	1.1	H	-1.14	44.36	74.00	-29.64
11550.00	37.31	Ave	82	1.1	H	-1.14	36.17	54.00	-17.83

**Test Frequency: 18GHz~40GHz**

The measurements were more than 20 dB below the limit and not reported.

## 10 Duty cycle

Test Requirement: 47 CFR Part 15C 15.407  
 KDB789033 D02 General U-NII Test Procedures New Rules v02r01,  
 Section (B)

Test Method: ANSI C63.10: 2013

Test Limit: N/A

Test Result: PASS

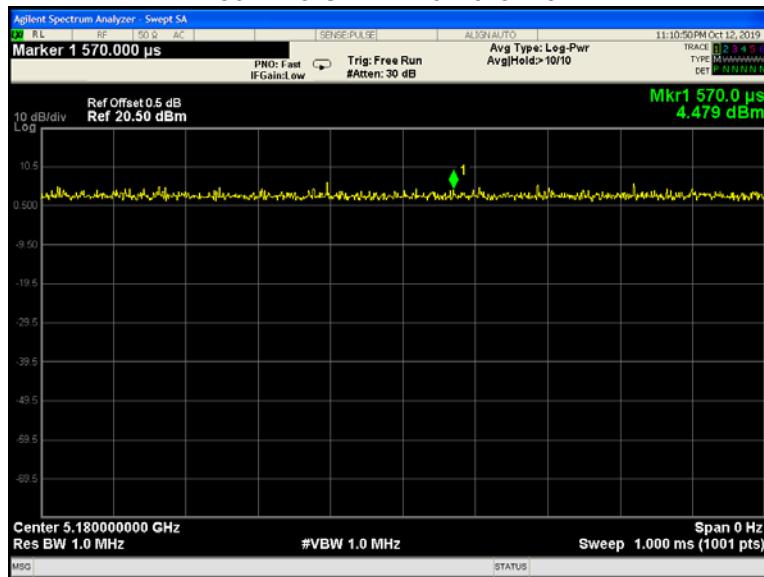
Remark: Through Pre-scan, and found 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.

### 10.1 Summary of Test Results

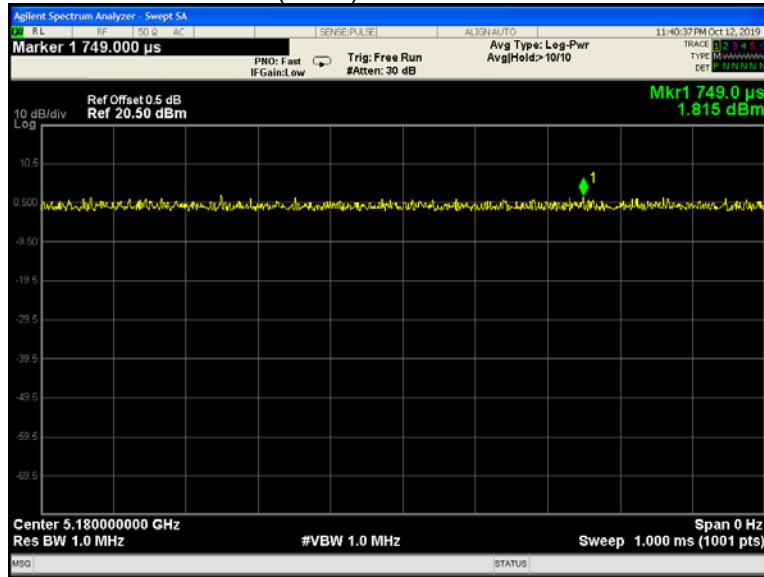
802.11a mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
36	100	100	100
149	100	100	100
802.11n(HT20) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
36	100	100	100
149	100	100	100
802.11n(HT40) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
38	100	100	100
151	100	100	100
802.11ac(HT20) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
36	100	100	100
149	100	100	100
802.11ac(HT40) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
38	100	100	100
151	100	100	100
802.11ac(HT80) mode			
channel	On time(ms)	Period(ms)	Duty Cycle(%)
42	100	100	100
155	100	100	100

Test result plots shown as follows:

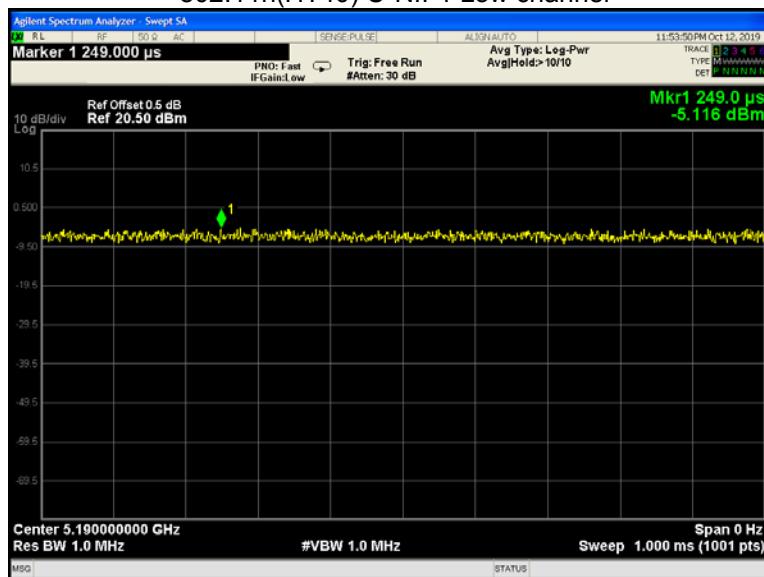
802.11a U-NII-1 Low channel



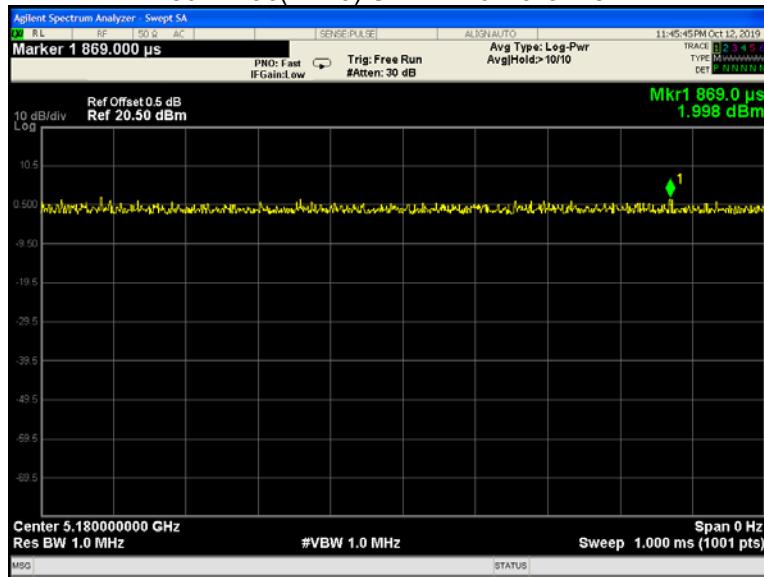
802.11n(HT20) U-NII-1 Low channel



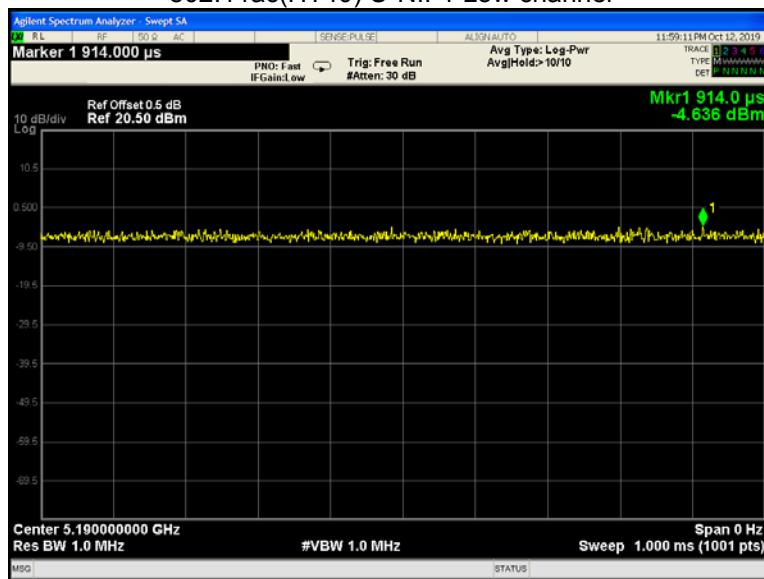
## 802.11n(HT40) U-NII-1 Low channel



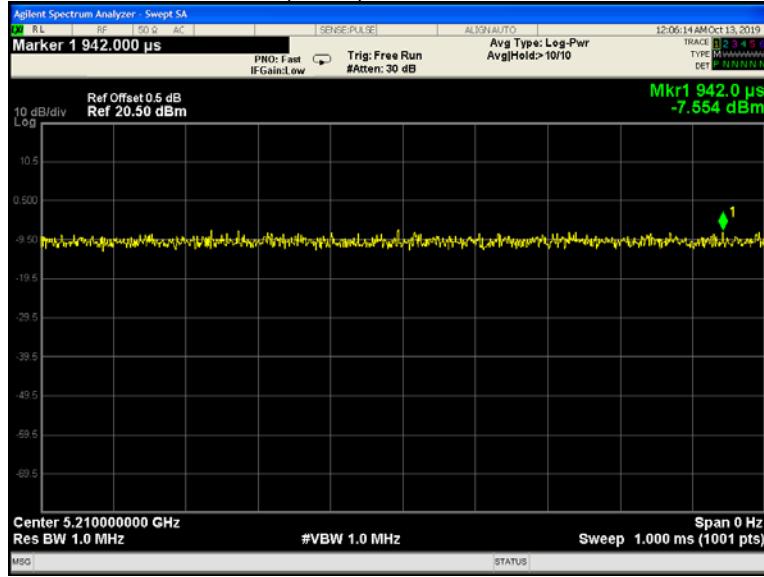
## 802.11ac(HT20) U-NII-1 Low channel



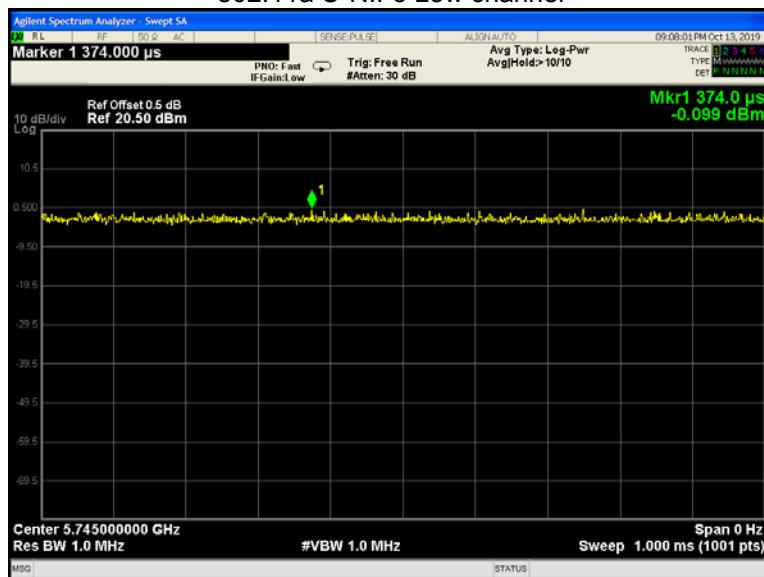
## 802.11ac(HT40) U-NII-1 Low channel



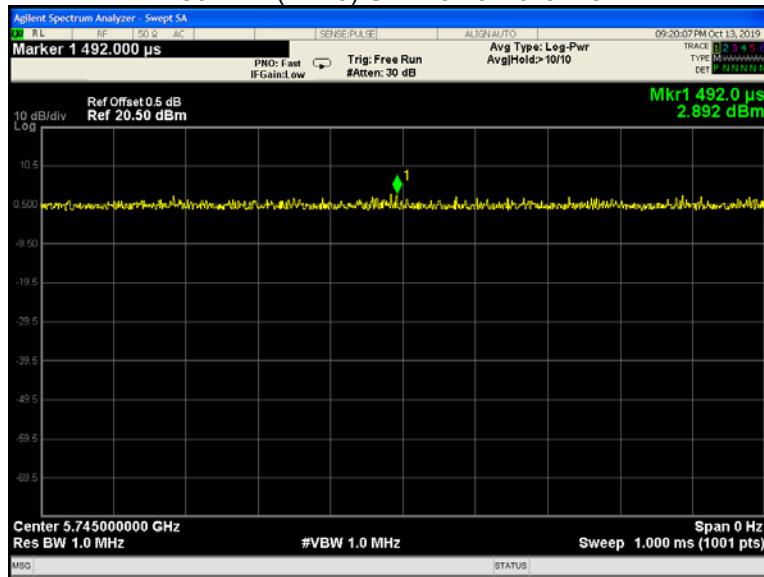
## 802.11ac(HT80) U-NII-1 Low channel



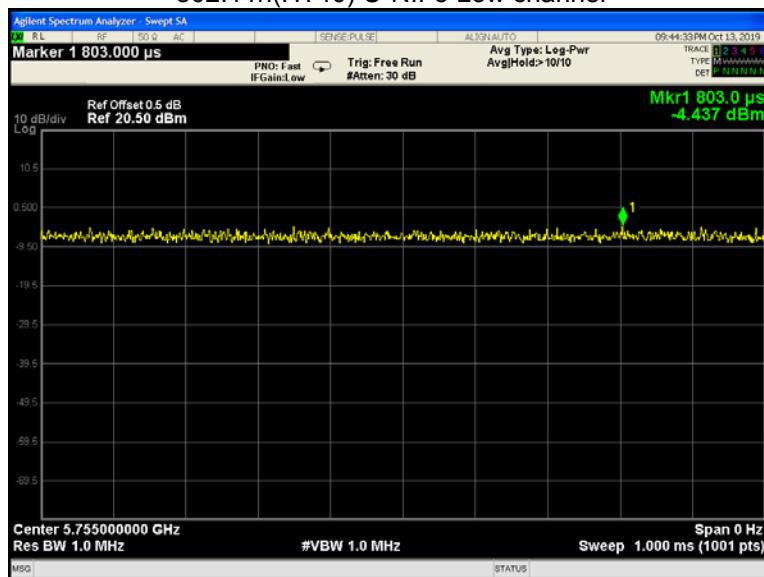
## 802.11a U-NII-3 Low channel



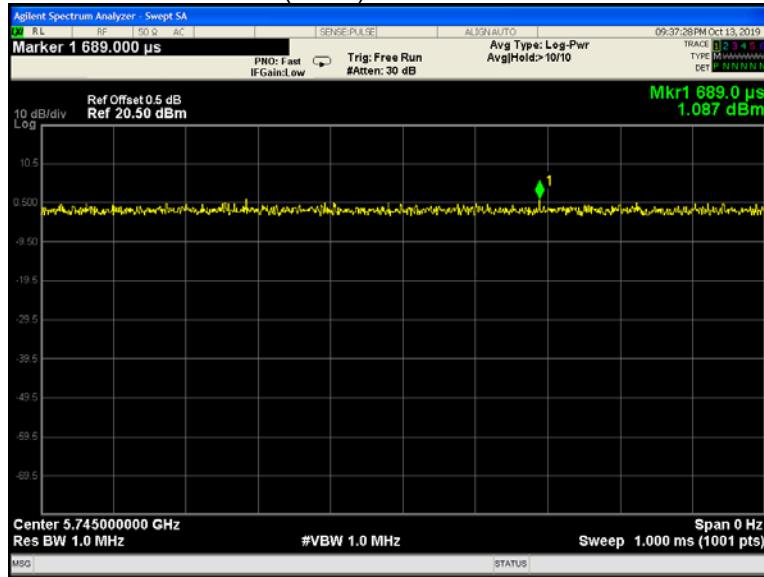
## 802.11n(HT20) U-NII-3 Low channel



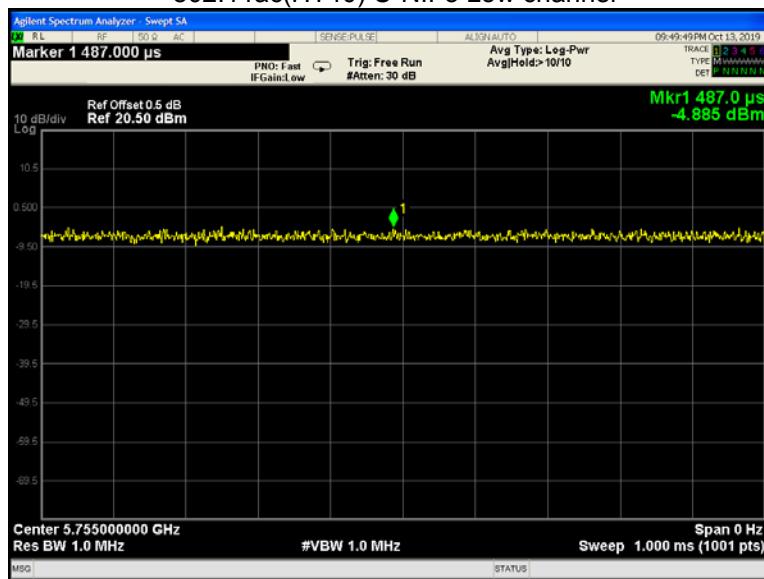
## 802.11n(HT40) U-NII-3 Low channel



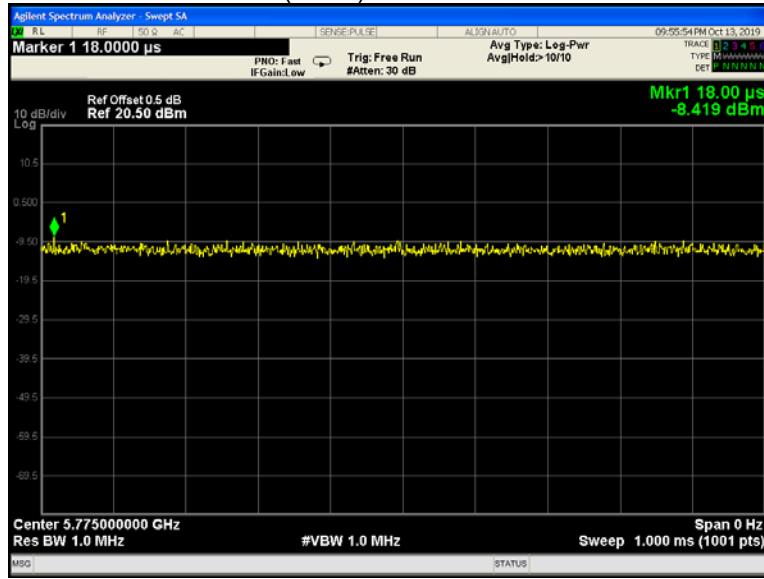
## 802.11ac(HT20) U-NII-3 Low channel



## 802.11ac(HT40) U-NII-3 Low channel



## 802.11ac(HT80) U-NII-3 Low channel



## 11 Band Edge

Test Requirement:	FCC CFR47 Part 15 Section 15.407
Test Method:	ANSI C63.10 2013
Test Limit:	(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27dBm/MHz. (2) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.
Test Result:	PASS

### 11.1 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

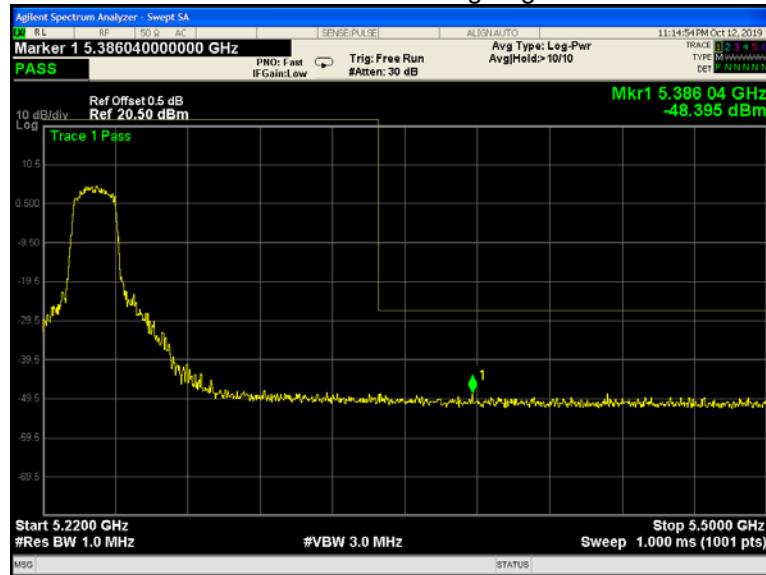
## 11.2 Test Result

Test result plots shown as follows:

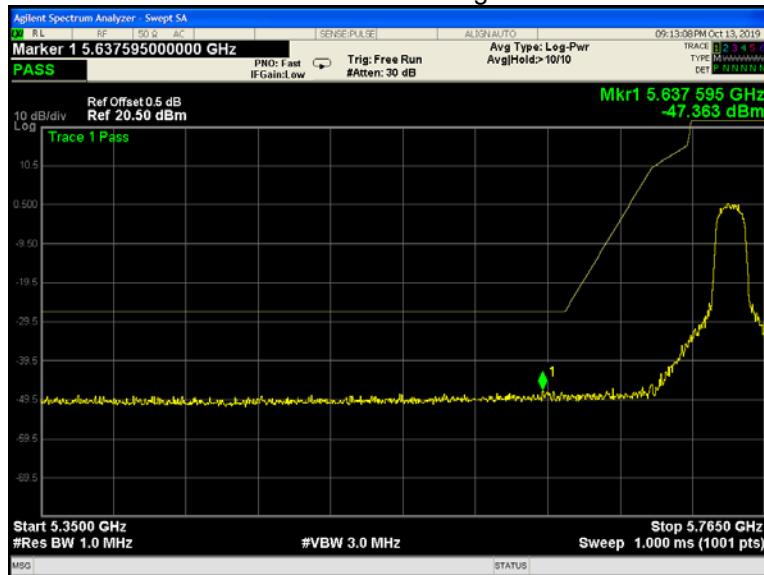
802.11a U-NII-1 Band edge-left side



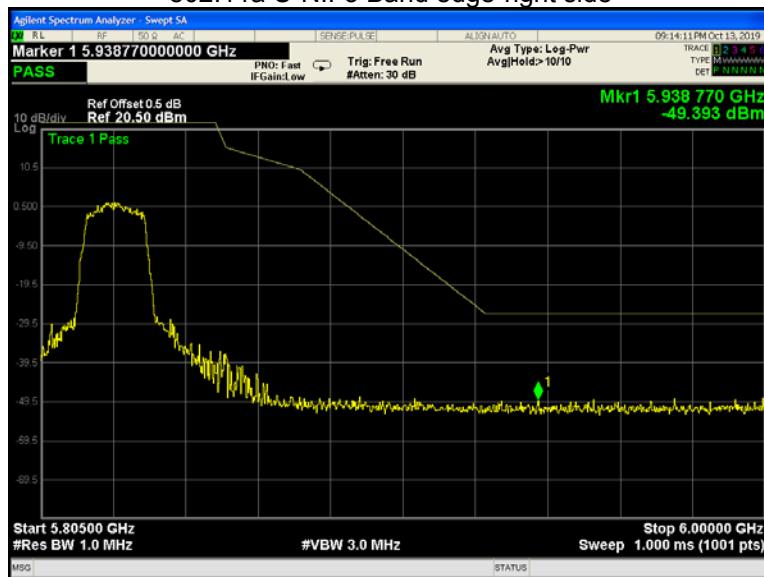
802.11a U-NII-1 Band edge-right side



## 802.11a U-NII-3 Band edge-left side



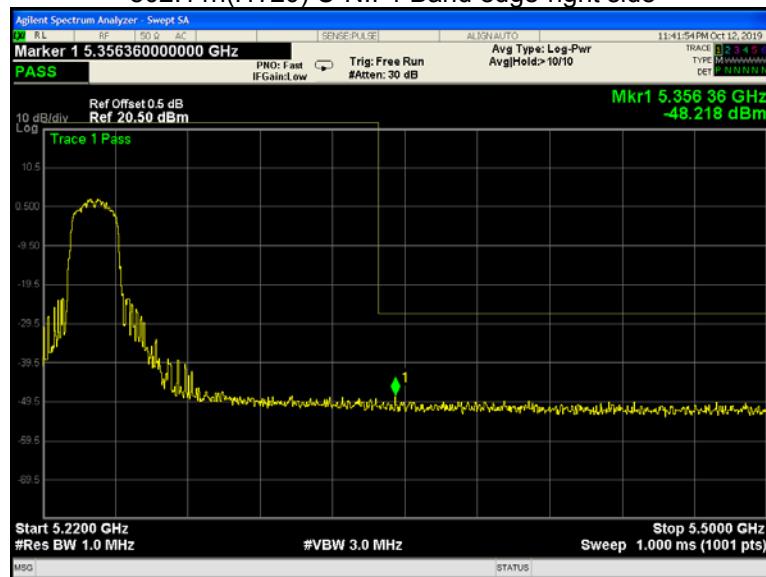
## 802.11a U-NII-3 Band edge-right side



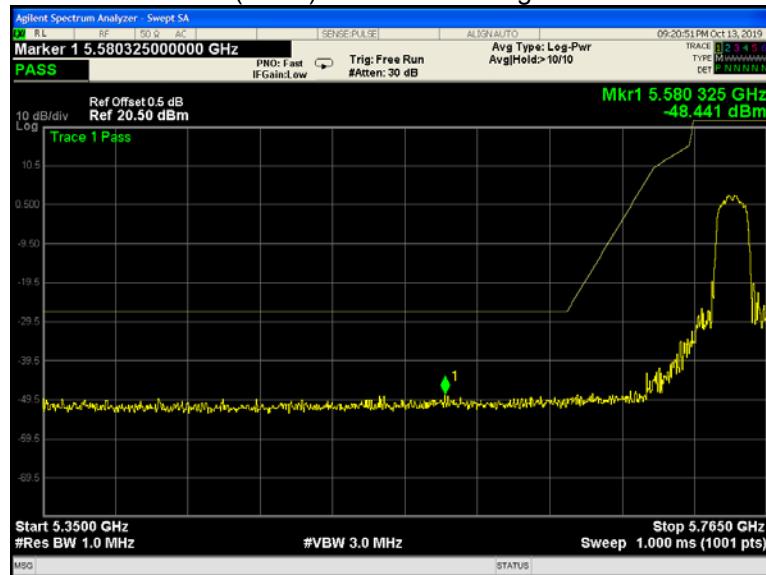
## 802.11n(HT20) U-NII-1 Band edge-left side



## 802.11n(HT20) U-NII-1 Band edge-right side



## 802.11n(HT20) U-NII-3 Band edge-left side



## 802.11n(HT20) U-NII-3 Band edge-right side



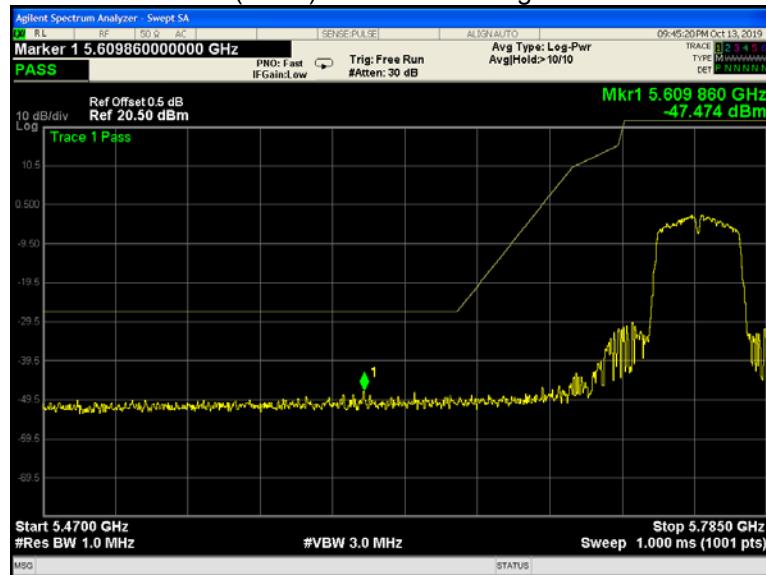
## 802.11n(HT40) U-NII-1 Band edge-left side



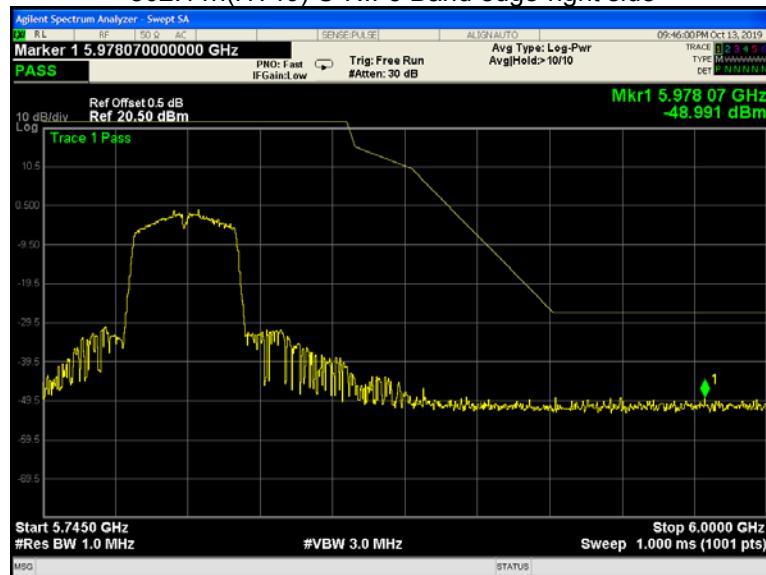
## 802.11n(HT40) U-NII-1 Band edge-right side



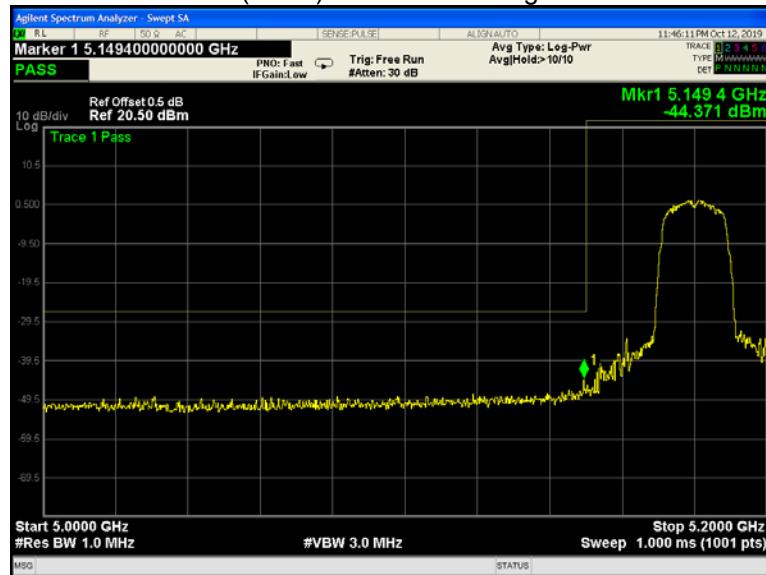
## 802.11n(HT40) U-NII-3 Band edge-left side



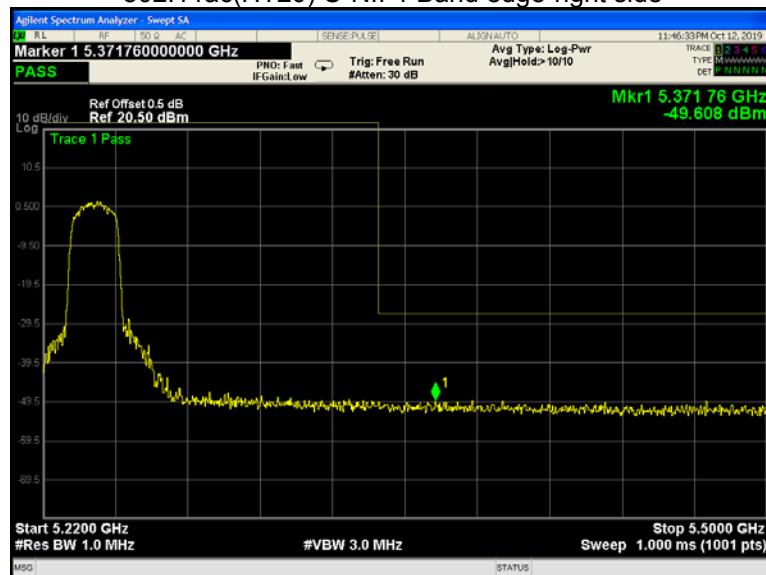
## 802.11n(HT40) U-NII-3 Band edge-right side



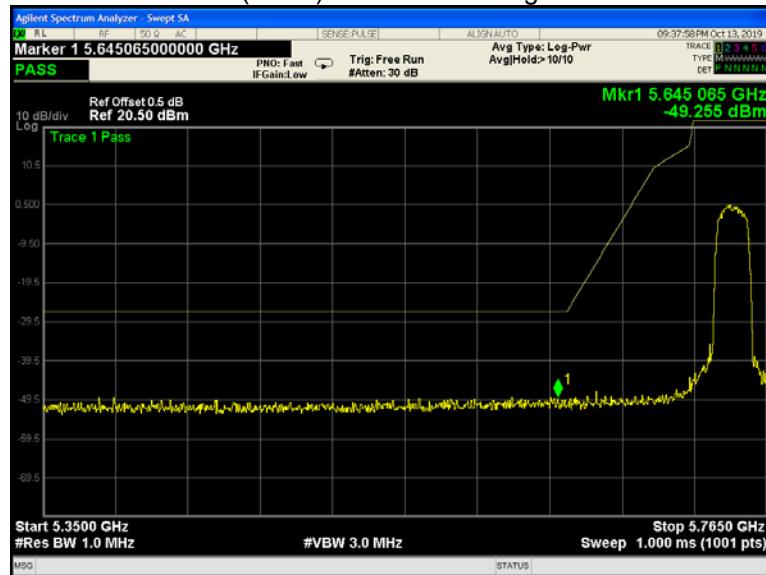
## 802.11ac(HT20) U-NII-1 Band edge-left side



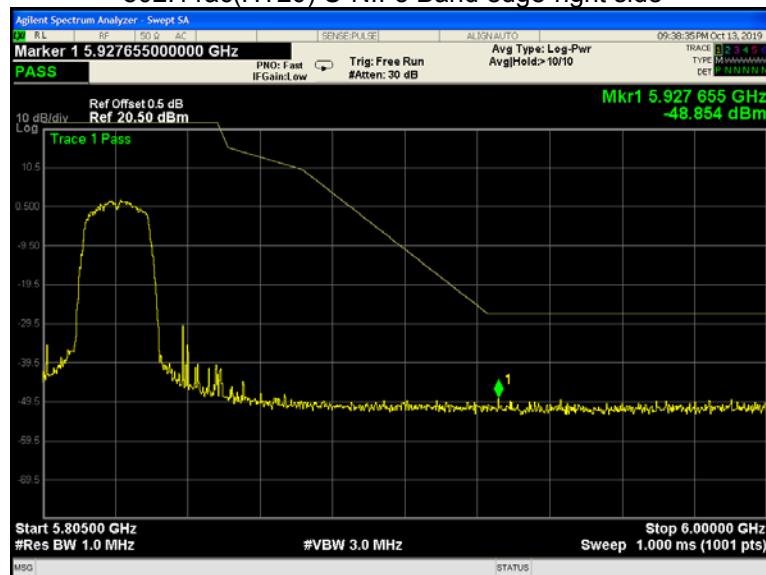
## 802.11ac(HT20) U-NII-1 Band edge-right side



## 802.11ac(HT20) U-NII-3 Band edge-left side



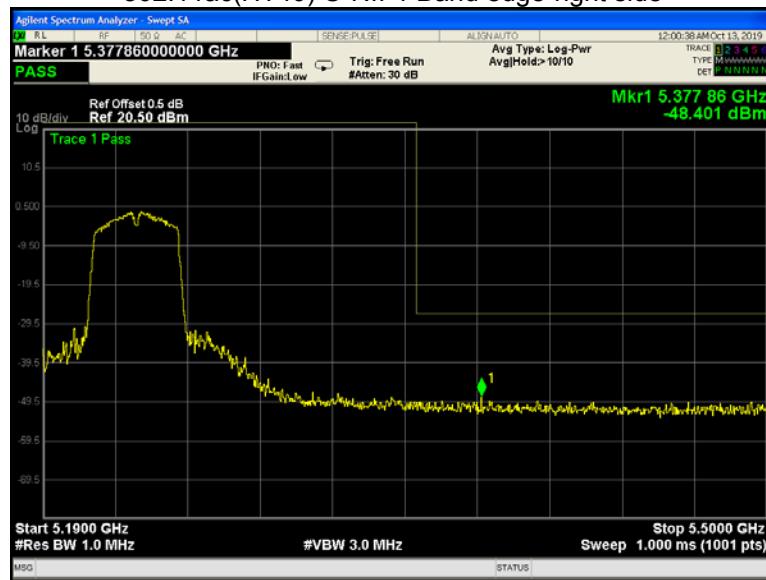
## 802.11ac(HT20) U-NII-3 Band edge-right side



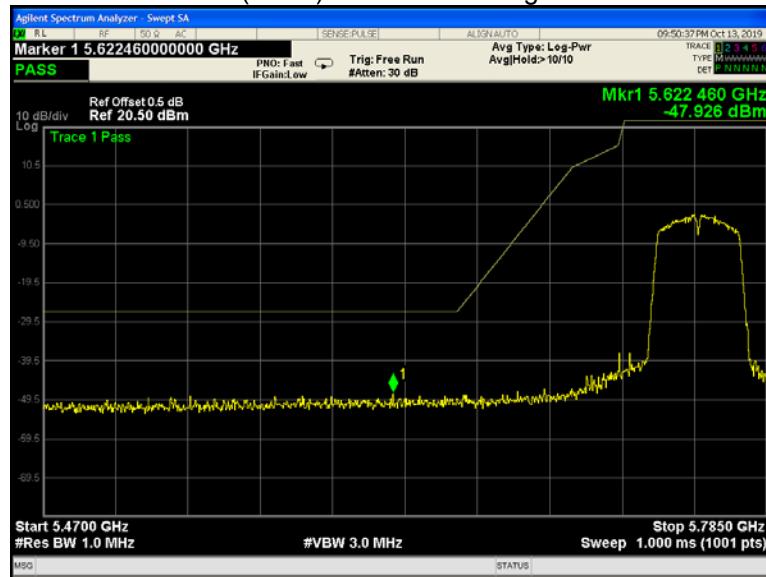
## 802.11ac(HT40) U-NII-1 Band edge-left side



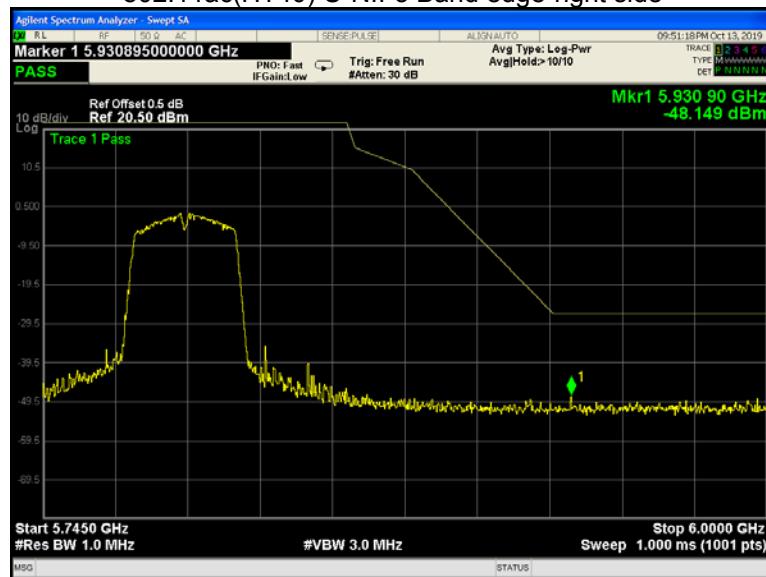
## 802.11ac(HT40) U-NII-1 Band edge-right side



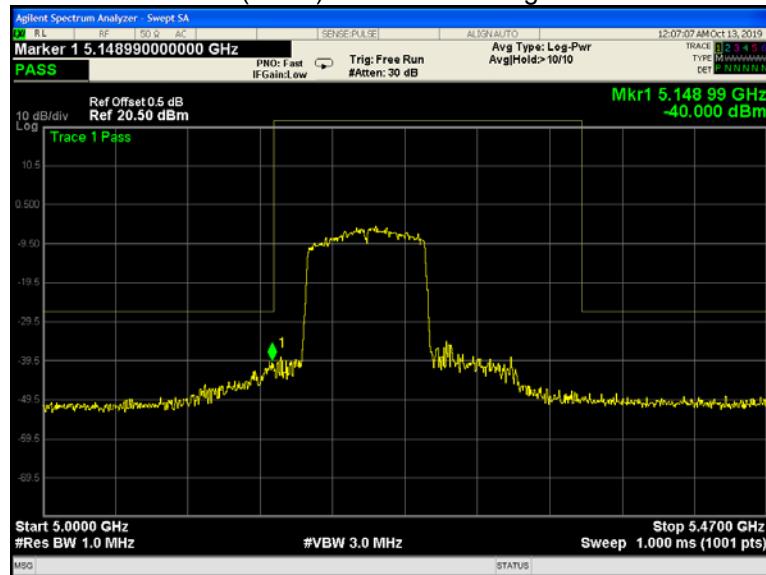
## 802.11ac(HT40) U-NII-3 Band edge-left side



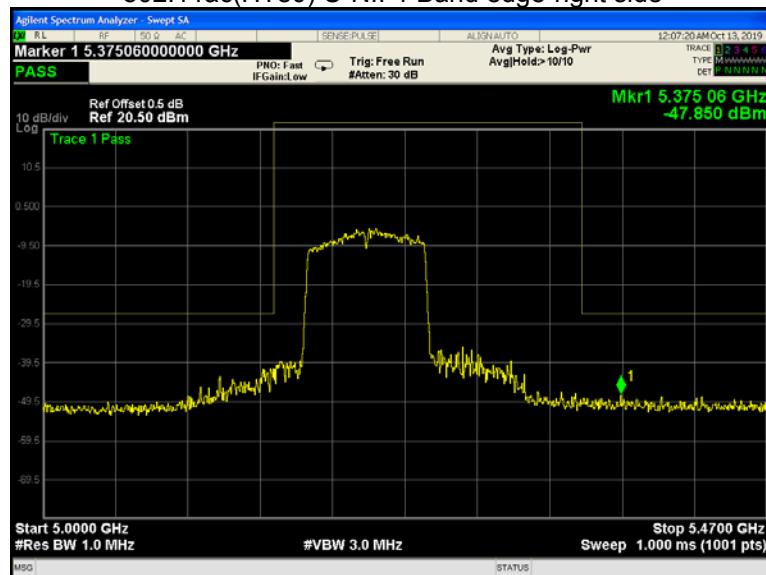
## 802.11ac(HT40) U-NII-3 Band edge-right side



## 802.11ac(HT80) U-NII-1 Band edge-left side



## 802.11ac(HT80) U-NII-1 Band edge-right side



## 802.11ac(HT80) U-NII-3 Band edge-left side



## 802.11ac(HT80) U-NII-3 Band edge-right side



## 12 6 dB Bandwidth

Test Requirement:	FCC CFR47 Part 15 Section 15.407(e) KDB662911 D01 Multiple Transmitter Output v02r01
Test Method:	KDB789033 D02 General U-NII Test Procedures New Rules v02r01 Section C
Test Limit:	$\geq 500$ kHz
Test Result:	PASS

### 12.1 Test Procedure:

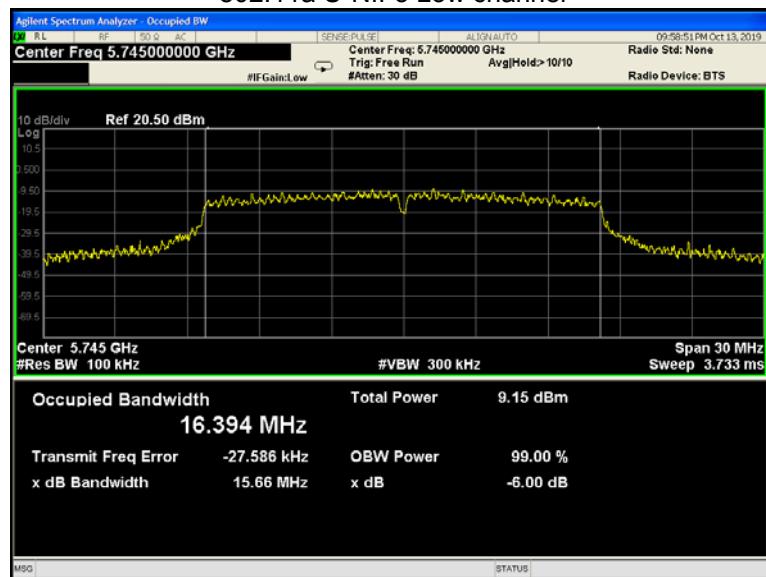
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

### 12.2 Test Result:

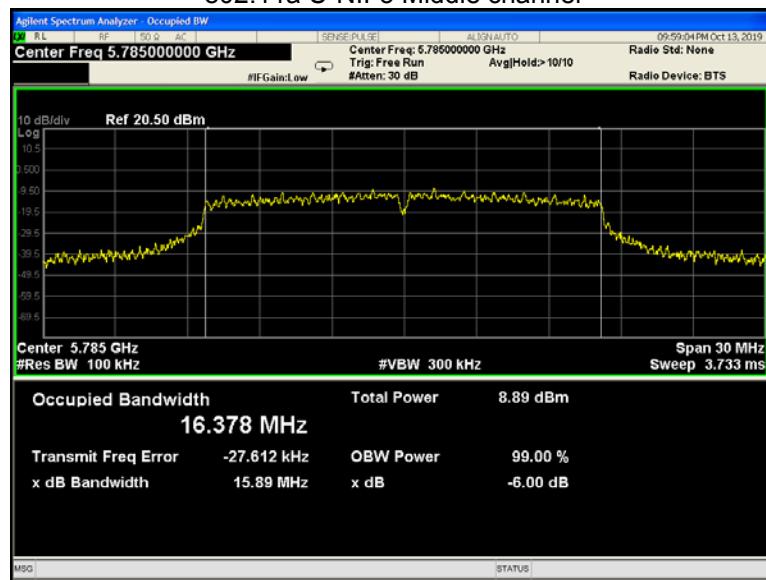
Band	Operation mode	6 dB Bandwidth (MHz)		
		Low	Middle	High
U-NII-3	802.11a	15.66	15.89	16.27
	802.11n(HT20)	15.12	15.13	16.87
	802.11n(HT40)	35.13	/	35.11
	802.11ac(HT20)	14.08	15.04	13.86
	802.11ac(HT40)	35.13	/	35.12
	802.11ac(HT80)	75.40	/	/

Test result plots shown as follows:

### 802.11a U-NII-3 Low channel



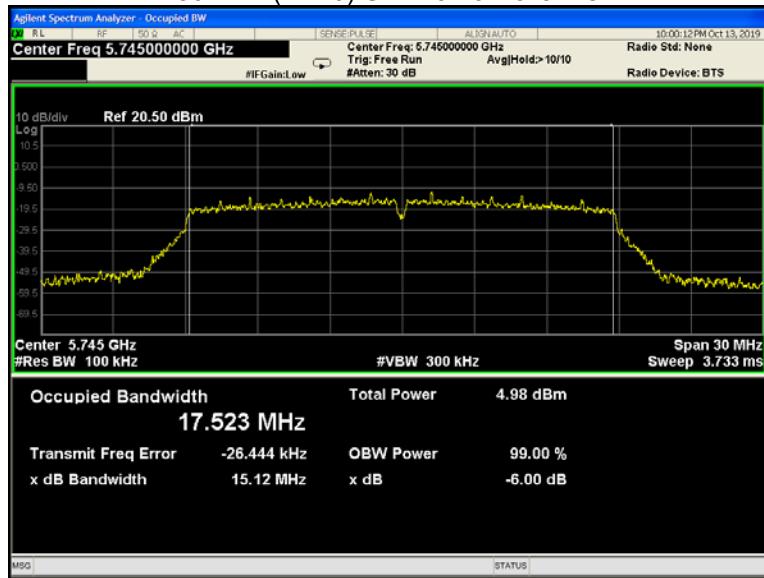
### 802.11a U-NII-3 Middle channel



## 802.11a U-NII-3 High channel



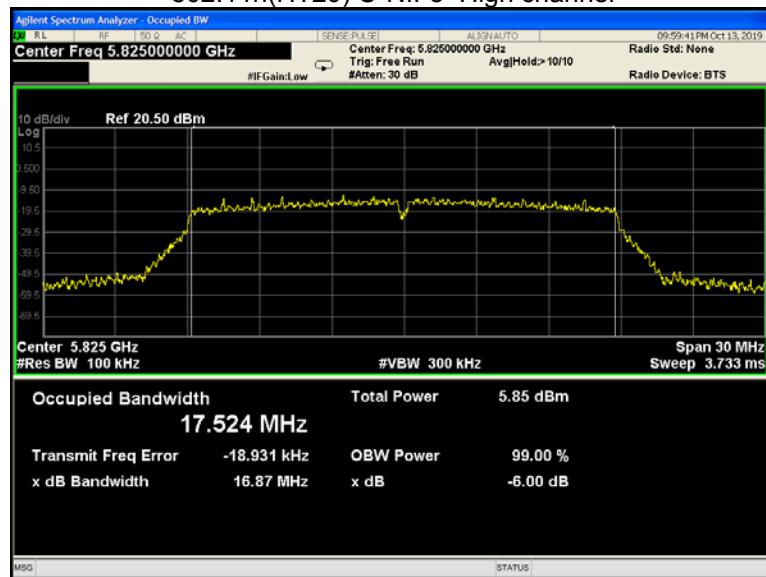
## 802.11n(HT20) U-NII-3 Low channel



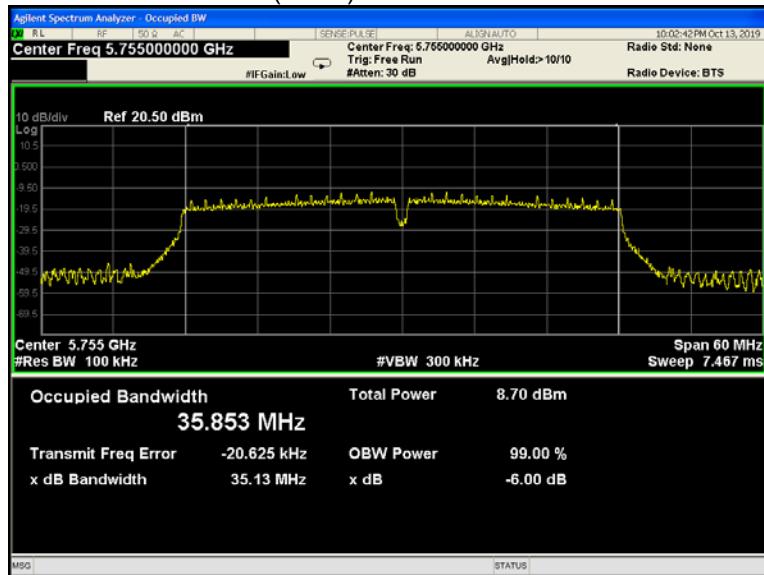
## 802.11n(HT20) U-NII-3 Middle channel



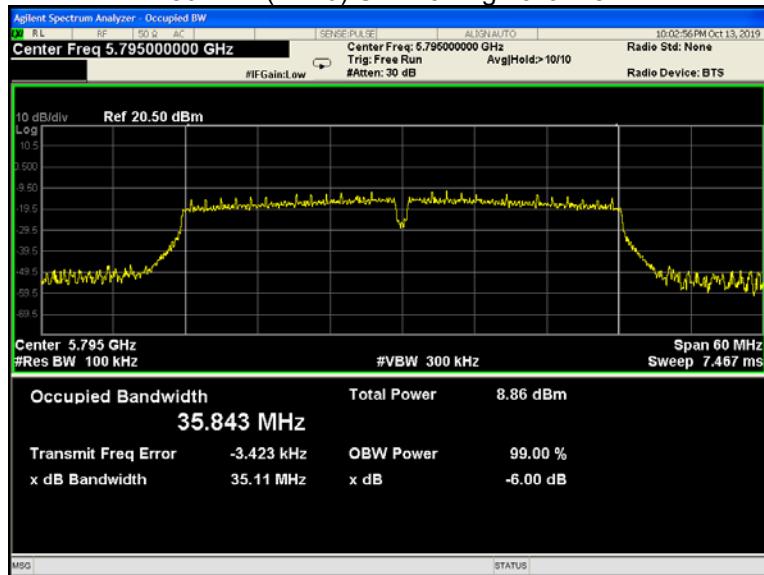
## 802.11n(HT20) U-NII-3 High channel



## 802.11n(HT40) U-NII-3 Low channel



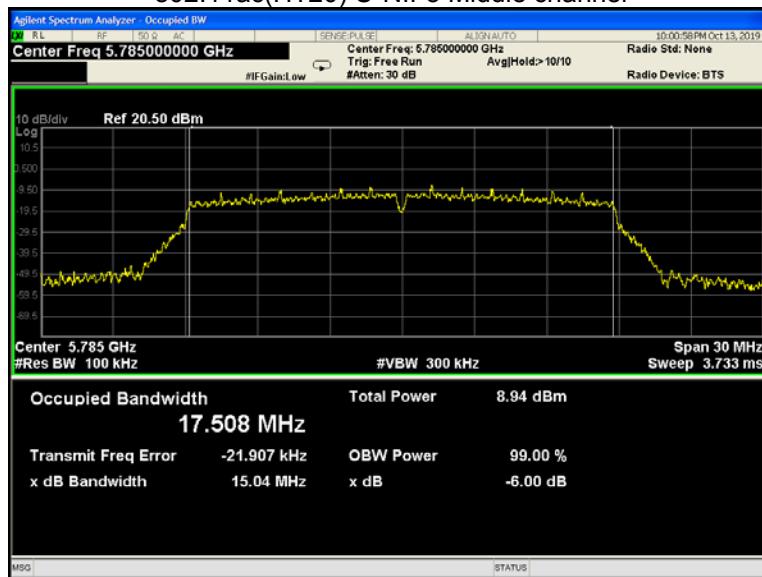
## 802.11n(HT40) U-NII-3 High channel



## 802.11ac(HT20) U-NII-3 Low channel



## 802.11ac(HT20) U-NII-3 Middle channel



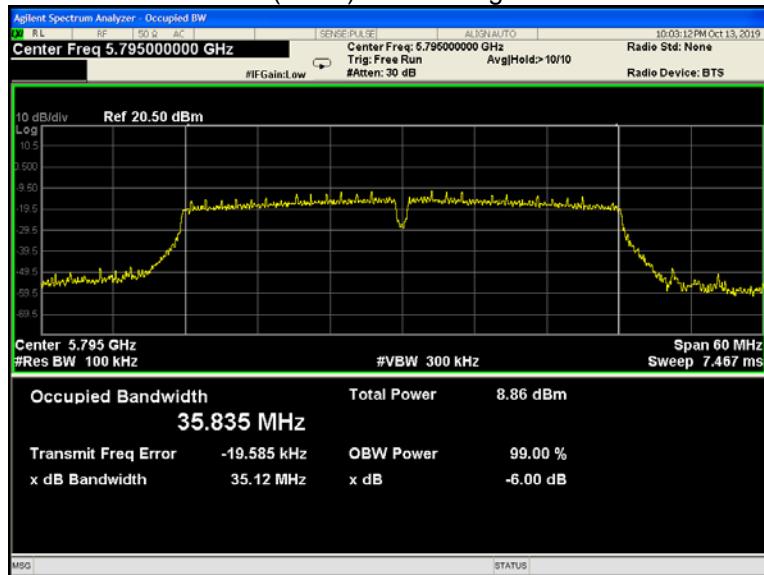
## 802.11ac(HT20) U-NII-3 High channel



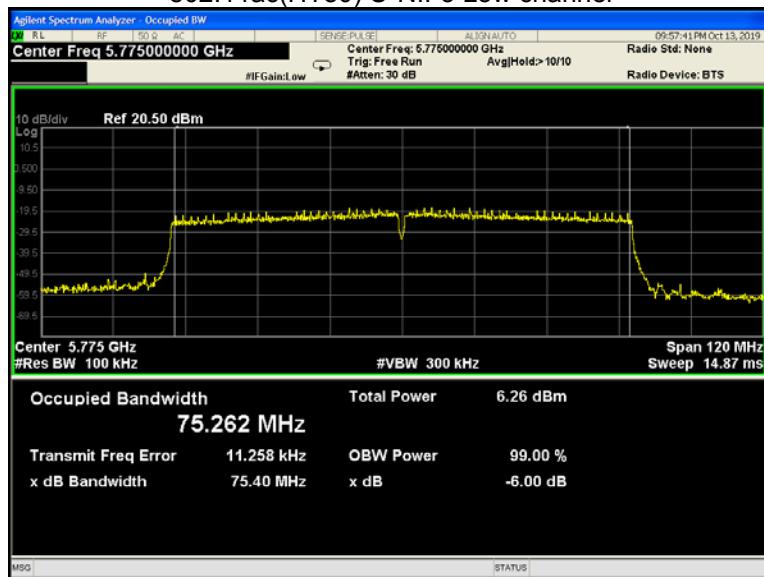
## 802.11ac(HT40) U-NII-3 Low channel



## 802.11ac(HT40) U-NII-3 High channel



## 802.11ac(HT80) U-NII-3 Low channel



## 13 26 dB Bandwidth and 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.407 (a) KDB662911 D01 Multiple Transmitter Output v02r01
Test Method:	KDB789033 D02 General U-NII Test Procedures New Rules v02r01 Section D
Test Limit:	No restriction limits
Test Result:	PASS

### 13.1 Test Procedure:

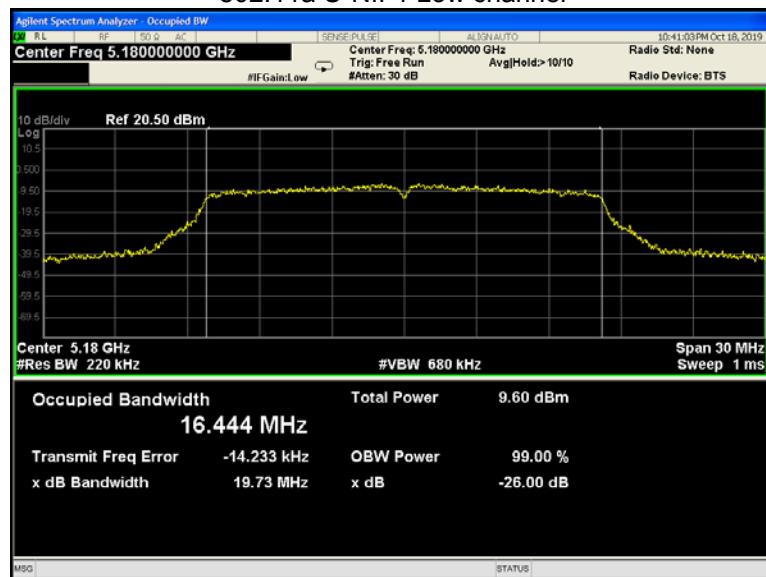
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 1% to 5% of the OBW, VBW = 3x RBW

### 13.2 Test Result:

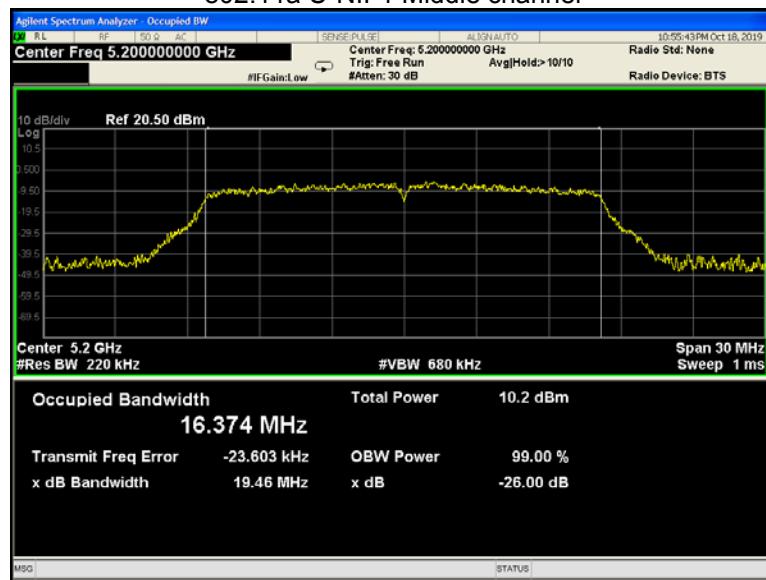
Band	Operation mode	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
		Low	Middle	High	Low	Middle	High
U-NII-1	802.11a	19.73	19.46	19.82	16.444	16.374	16.416
	802.11n(HT20)	20.18	20.09	20.00	17.541	17.551	17.567
	802.11n(HT40)	40.06	/	40.30	36.025	/	35.987
	802.11ac(HT20)	20.25	20.03	20.07	17.556	17.575	17.562
	802.11ac(HT40)	40.02	/	10.02	35.968	/	35.934
	802.11ac(HT80)	80.02	/	/	75.296	/	/
U-NII-3	802.11a	19.92	19.94	19.43	16.447	16.450	16.397
	802.11n(HT20)	20.16	20.17	20.02	17.562	17.546	17.545
	802.11n(HT40)	40.25	/	40.34	36.014	/	36.004
	802.11ac(HT20)	20.07	19.99	20.05	17.547	17.562	17.538
	802.11ac(HT40)	40.20	/	40.07	35.973	/	35.924
	802.11ac(HT80)	80.07	/	/	75.365	/	/

Test result plots shown as follows:

### 802.11a U-NII-1 Low channel



### 802.11a U-NII-1 Middle channel



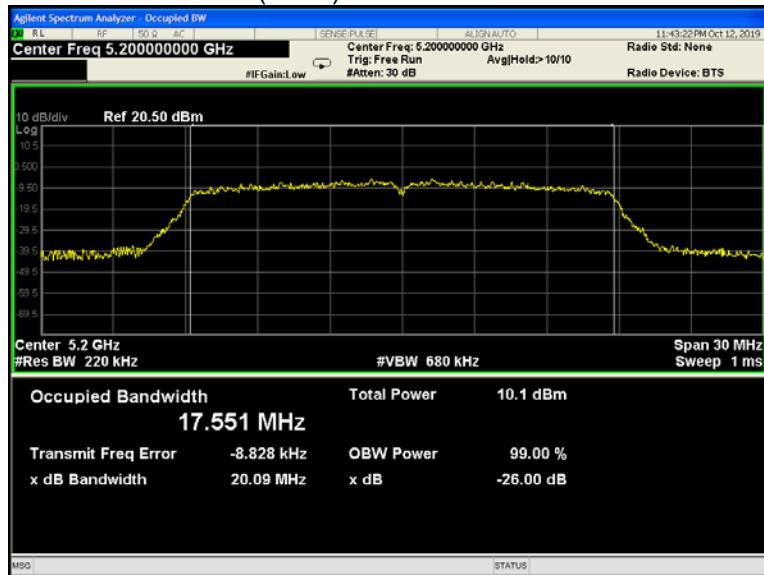
## 802.11a U-NII-1 High channel



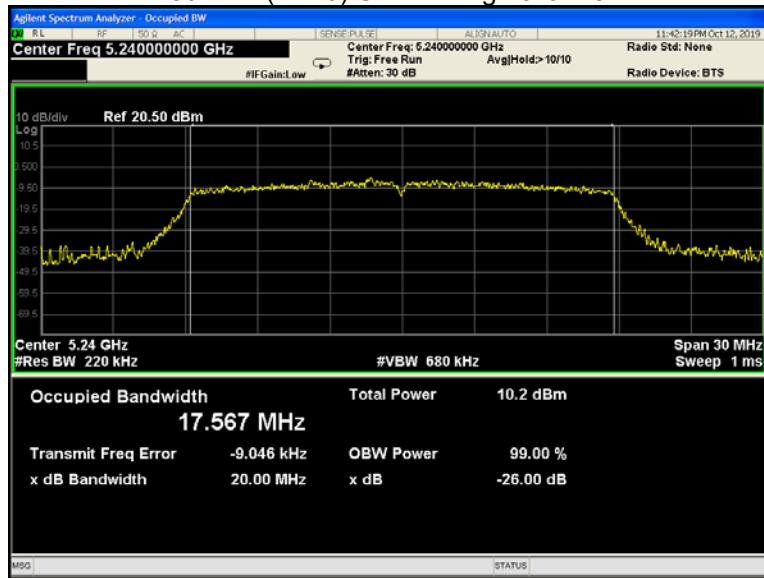
## 802.11n(HT20) U-NII-1 Low channel



## 802.11n(HT20) U-NII-1 Middle channel



## 802.11n(HT20) U-NII-1 High channel



## 802.11n(HT40) U-NII-1 Low channel



## 802.11n(HT40) U-NII-1 High channel



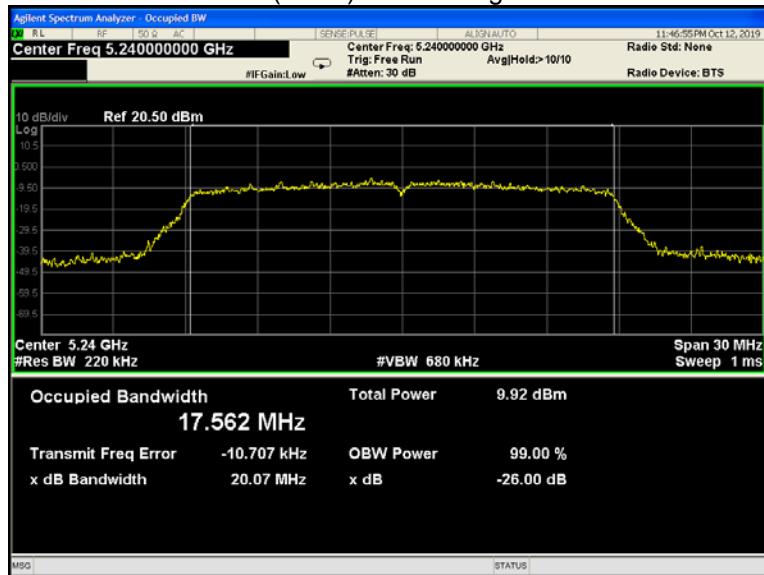
## 802.11ac(HT20) U-NII-1 Low channel



## 802.11ac(HT20) U-NII-1 Middle channel



## 802.11ac(HT20) U-NII-1 High channel



## 802.11ac(HT40) U-NII-1 Low channel



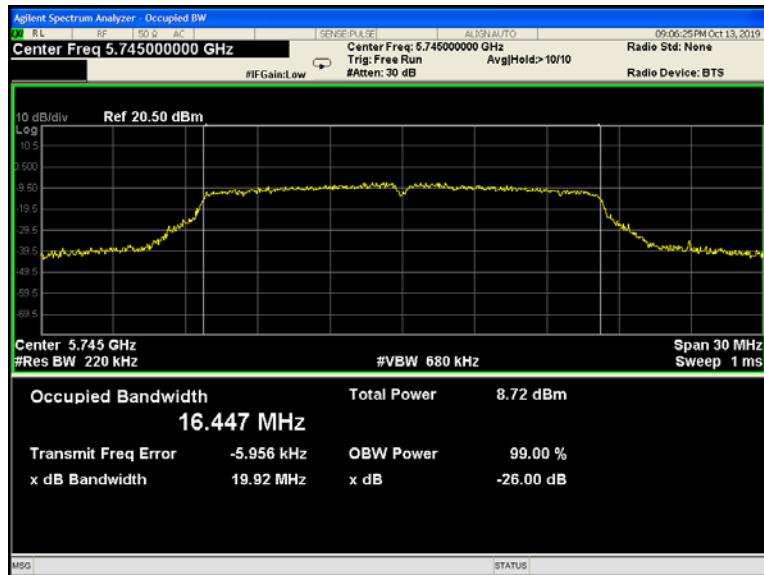
## 802.11 ac(HT40) U-NII-1 High channel



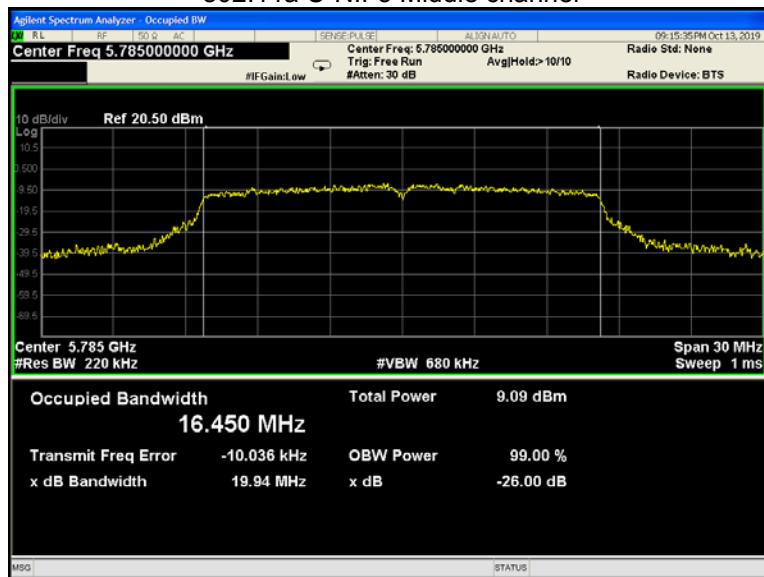
## 802.11ac(HT80) U-NII-1 Low channel



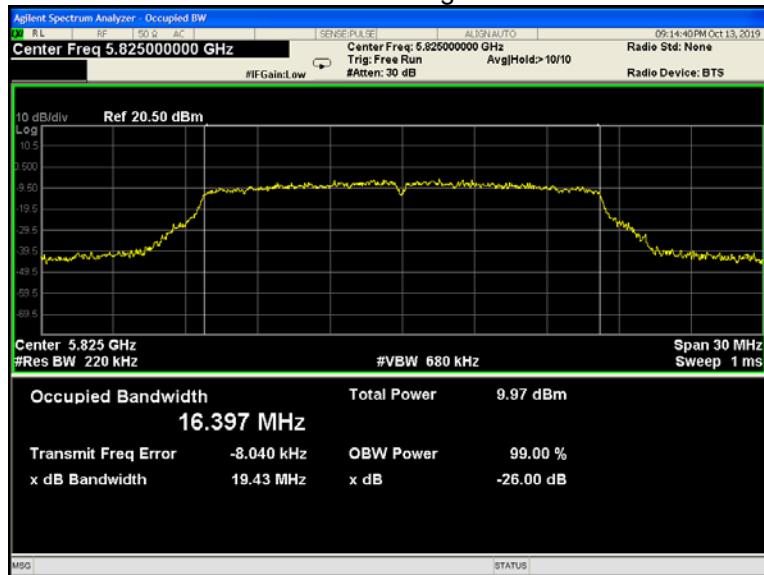
## 802.11a U-NII-3 Low channel



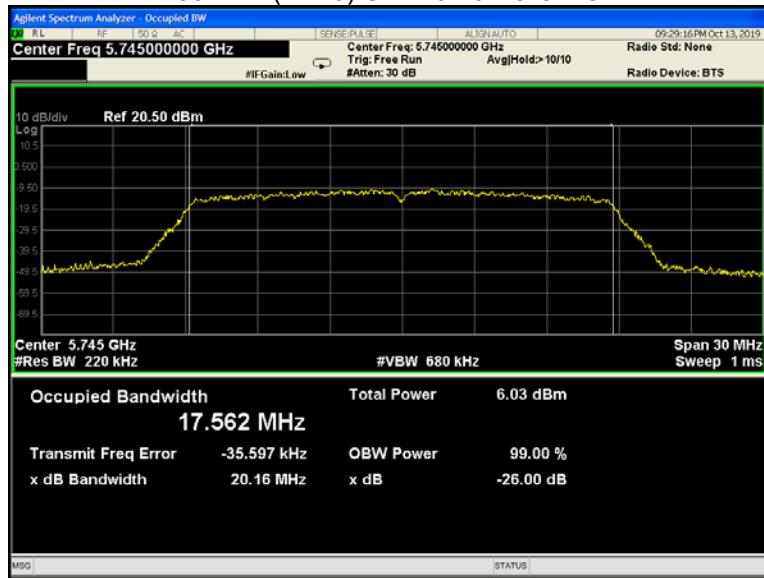
## 802.11a U-NII-3 Middle channel



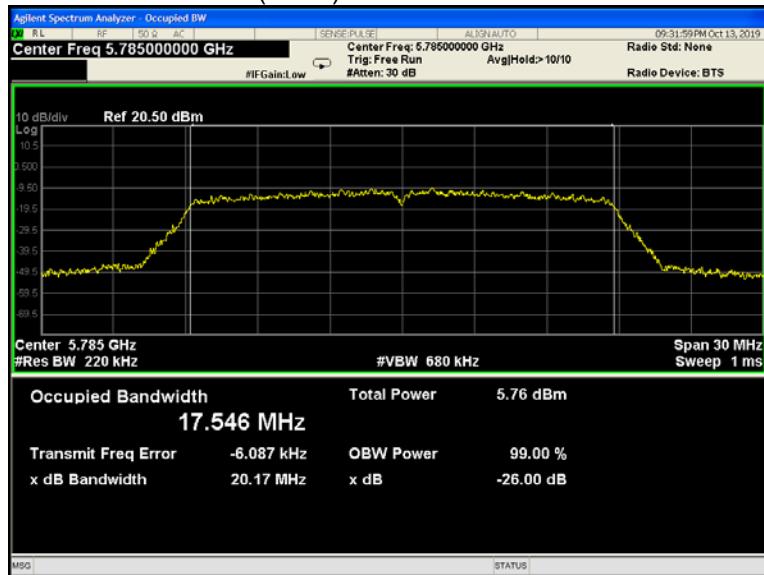
## 802.11a U-NII-3 High channel



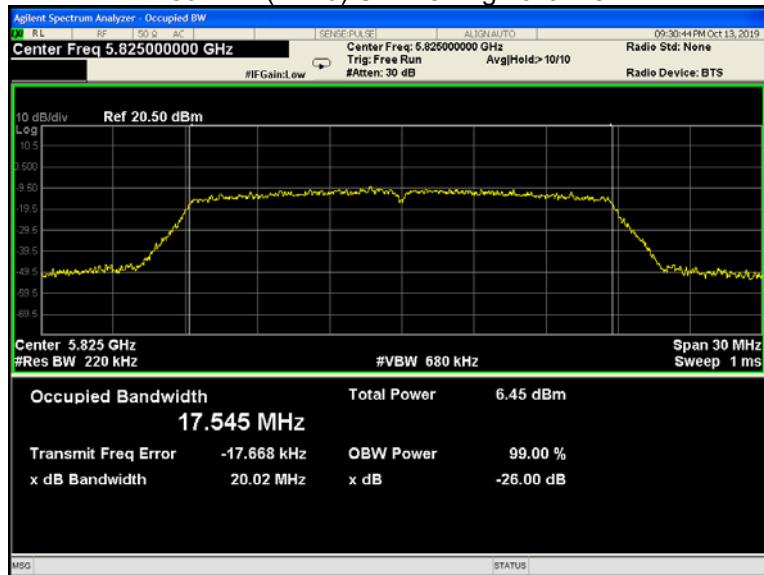
## 802.11n(HT20) U-NII-3 Low channel



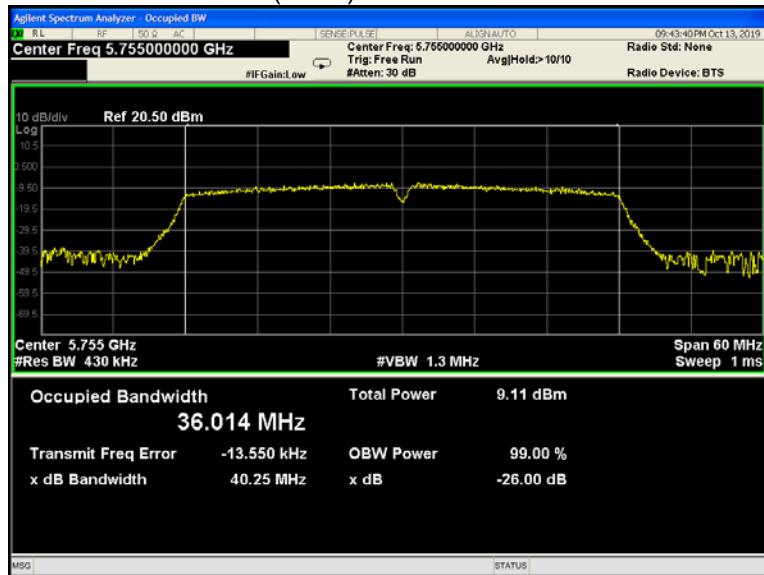
## 802.11n(HT20) U-NII-3 Middle channel



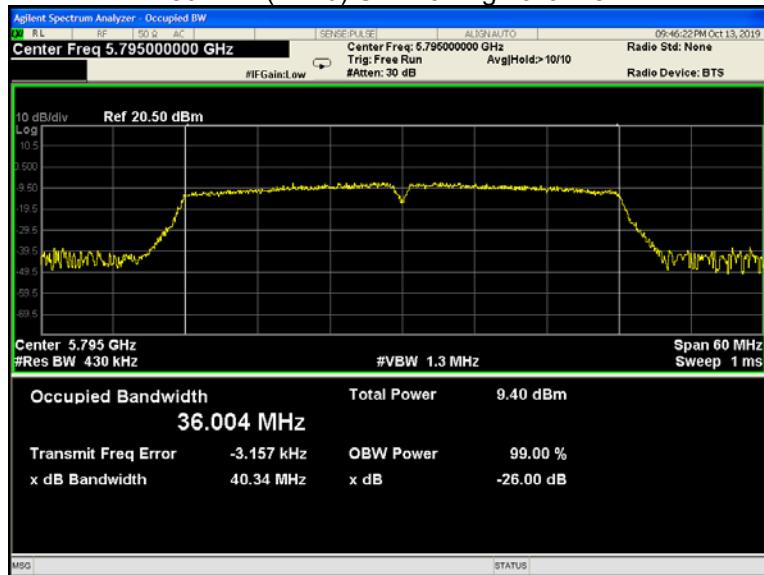
## 802.11n(HT20) U-NII-3 High channel



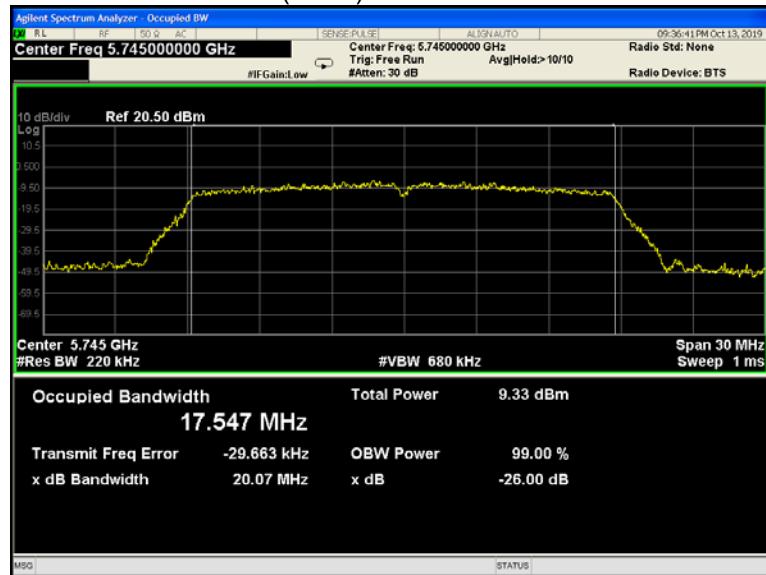
## 802.11n(HT40) U-NII-3 Low channel



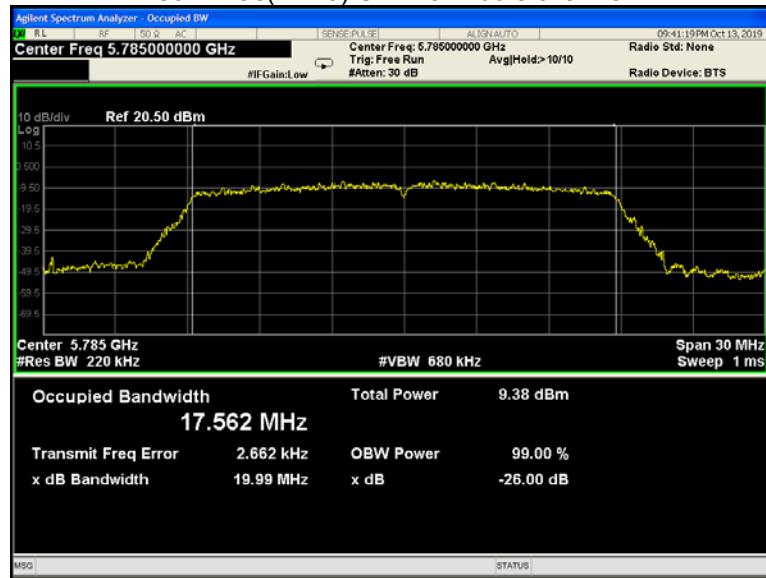
## 802.11n(HT40) U-NII-3 High channel



## 802.11ac(HT20) U-NII-3 Low channel



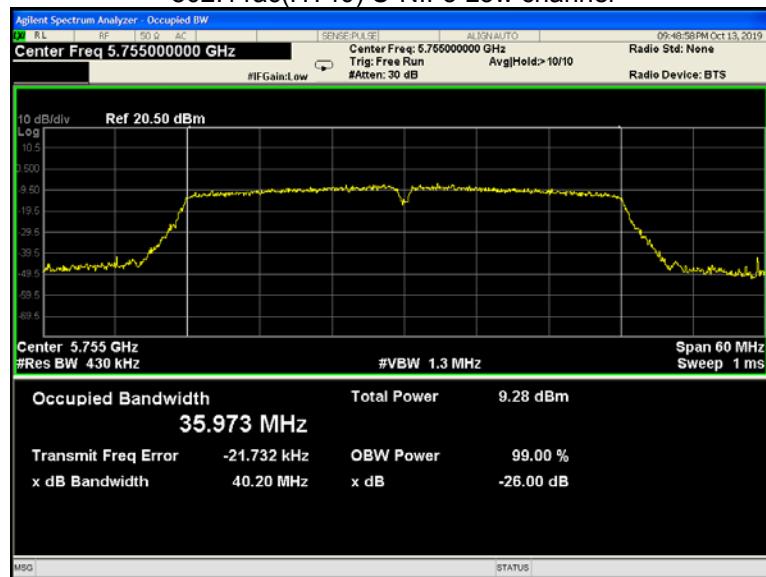
## 802.11ac(HT20) U-NII-3 Middle channel



## 802.11ac(HT20) U-NII-3 High channel



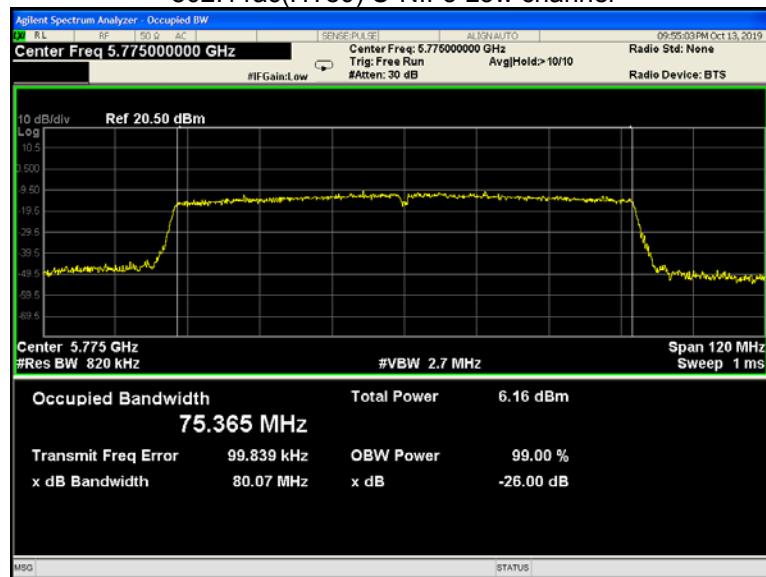
## 802.11ac(HT40) U-NII-3 Low channel



## 802.11n(HT40) U-NII-3 High channel



## 802.11ac(HT80) U-NII-3 Low channel



## 14 Conducted Output Power

Test Requirement:	FCC CFR47 Part 15 Section 15.407(a) KDB662911 D01 Multiple Transmitter Output v02r01
Test Method:	KDB789033 D02 General U-NII Test Procedures New Rules v02r01 Section E
Test Limit:	U-NII-1 250mW(24dBm) U-NII-3 1W(30dBm)
Test Result:	PASS Conducted output power= measurement power+10log(1/x)
Remark:	X is duty cycle=1, so 10log(1/1)=0 Conducted output power= measurement power

### 14.1 Test Procedure:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 1 MHz. VBW = 3 MHz. Sweep = auto; Detector Function = Peak,  
Set the span to fully encompass the DTS bandwidth.
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

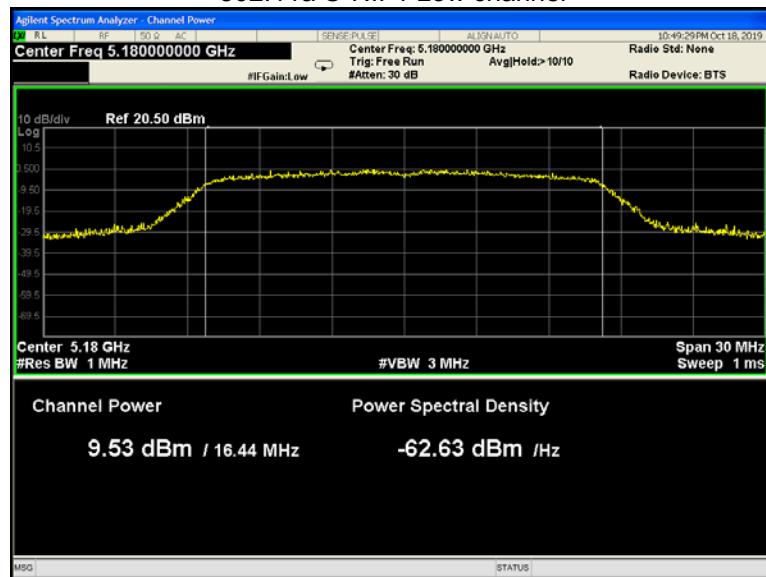
## 14.2 Test Result :

Band	Operation mode	Conducted Output Power (dBm)		
		Low	Middle	High
U-NII-1	802.11a	9.53	9.18	9.05
	802.11n(HT20)	8.87	8.85	8.79
	802.11n(HT40)	8.31	/	8.85
	802.11ac(HT20)	8.94	8.70	8.97
	802.11ac(HT40)	8.22	/	8.89
	802.11ac(HT80)	7.92	/	/
U-NII-3	802.11a	7.46	8.28	8.43
	802.11n(HT20)	4.34	4.59	5.56
	802.11n(HT40)	8.20	/	8.55
	802.11ac(HT20)	8.12	8.16	9.36
	802.11ac(HT40)	8.31	/	8.51
	802.11ac(HT80)	6.20	/	/

\* All transmit signals are completely uncorrelated with each other, Directional gain =  $G_{ANT}$  which is less than 6dBi. So the limit does not be reduced.

Test result plots shown as follows:

### 802.11a U-NII-1 Low channel



### 802.11a U-NII-1 Middle channel

