



# RF TEST REPORT

**Report No.:** 20230917G12965X-W6

**Product Name:** METAVERTU 2 5G digital mobile phone

**Model No.:** VTL-202301

**FCC ID:** 2A6IQ-VTL202301

**IC:** 28629-VTL202301

**Applicant:** VERTU INTERNATIONAL CORPORATION LIMITED

**Address:** Chase Business Centre 39-41 Chase Side London England N14 5BP

**Dates of Testing:** 09/29/2023 - 11/23/2023

**Issued by:** CCIC Southern Testing Co., Ltd.

**Lab Location:** Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China.

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### Test Report

**Product** .....: METAVERTU 2 5G digital mobile phone

**Brand Name**.....: VERTU

**Trade Name** .....: VERTU

**Applicant**.....: VERTU INTERNATIONAL CORPORATION LIMITED

**Applicant Address** .....: Chase Business Centre 39-41 Chase Side London  
England N14 5BP

**Manufacturer** .....: Chengdu Vertu Business and Service Management Co.,  
Ltd

**Manufacturer Address** .....: 1601,16th Floor, No. 1577 Middle Section of Tianfu  
Avenue, Chengdu High-tech Zone, China (Sichuan) Pilot  
Free Trade Zone

**Test Standards** .....: 47 CFR Part 15 Subpart E 15.407  
ANSI C63.10-2013  
RSS-Gen Issue 5, Feb 2021  
RSS-247 Issue 3, Aug 2023

**Test Result**.....: Pass

**Tested by** .....: Kim Li 2023.11.27  
Kim Li, Test Engineer

**Reviewed by** .....: Chris You 2023.11.27  
Chris You, Senior Engineer

**Approved by** .....: Yang Fan 2023.11.27  
Yang Fan, Manager



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Change History		
Issue	Date	Reason for change
1.0	2023.11.27	First edition



## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	METAVERTU 2 5G digital mobile phone
Model No.	VTL-202301
Hardware Version	P10
Software Version	13.0.0_6.01.01.01
EUT supports Radios application	WLAN5.0GHz 802.11a/n/ac/ax
Product Type	Client devices
Modulation Type	802.11a/n: OFDM (BPSK/QPSK/16QAM/64QAM) 802.11ac: OFDM (BPSK/QPSK/16QAM/64QAM/256QAM) 802.11ax: OFDMA (BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM)
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6 Mbps 802.11n: up to 300 Mbps (2x2MIMO) 802.11ac: up to 1733.333 Mbps (2x2MIMO) 802.11ax: up to 2401.961 Mbps (2x2MIMO)
Frequency Range	UNII-1: 5150 ~ 5250MHz UNII-2a: 5250 ~ 5350MHz UNII-2c: 5470 ~ 5725MHz UNII-3: 5725 ~ 5850MHz
Channel Bandwidth	802.11a: 20MHz 802.11n: 20MHz/40MHz 802.11ac/ax: 20MHz/40MHz/80MHz/160MHz
Channel Number	UNII-1: 4 for 802.11a, 802.11n(HT20), 802.11ac(VHT20), 802.11ax(HE20) 2 for 802.11n(HT40), 802.11ac(VHT40), 802.11ax(HE40) 1 for 802.11ac(VHT80), 802.11ax(HE80) UNII-2a: 4 for 802.11a, 802.11n(HT20), 802.11ac(VHT20), 802.11ax(HE20) 2 for 802.11n(HT40), 802.11ac(VHT40), 802.11ax(HE40) 1 for 802.11ac(VHT80), 802.11ax(HE80) 1 for 802.11ac(VHT160), 802.11ax(HE160) UNII-2c: 8 for 802.11a, 802.11n(HT20), 802.11ac(VHT20), 802.11ax(HE20) 3 for 802.11n(HT40), 802.11ac(VHT40), 802.11ax(HE40) 1 for 802.11ac(VHT80), 802.11ax(HE80) 1 for 802.11ac(VHT160), 802.11ax(HE160) UNII-3: 5 for 802.11a, 802.11n(HT20), 802.11ac(VHT20), 802.11ax(HE20) 2 for 802.11n(HT40), 802.11ac(VHT40), 802.11ax(HE40)



	1 for 802.11ac(VHT80), 802.11ax(HE80)
Antenna Type	Internal Antenna
Antenna Gain	UNII-1/ UNII-2a/ UNII-2c: Antenna 9: -4.15dBi; Antenna 10: -1.25dBi UNII-3: Antenna 9: -0.33dBi; Antenna 10: -1.81dBi
Output Power (Max.)	UNII-1: 15.38dBm UNII-2a: 15.27dBm UNII-2c: 15.56dBm UNII-3: 15.83dBm
Test Control Software	QRCT 4.0
Power supply	Rechargeable Li-ion Polymer Battery DC3.89V/5100mAh

Note 1: The information of antenna gain and cable loss is provided by the manufacturer and our lab is not responsible for the accuracy of the antenna gain and cable loss information.



## 1.2. Test Standards and Results

The purpose of the report is to conduct testing according to the following FCC/IC certification standards:

No.	Identity	Document Title
1	47 CFR Part 15 Subpart E §15.407	Radio Frequency Devices
2	KDB789033 D02 General UNII Test Procedures New Rules v02r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
3	KDB 662911 D01 Multiple Transmitter Output v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band
4	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
5	RSS-Gen Issue 5, Feb 2021	General Requirements for Compliance of Radio Apparatus
6	RSS-247 Issue 3, Aug 2023	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

Test detailed items/section required by FCC/IC rules and results are as below:

No.	FCC Rule	IC Rule	Description	Result
1	15.203 15.407(a)	RSS-GEN, 6.8	Antenna Requirement	PASS
2	15.407(a)(1)(iv) 15.407 (a)(2) 15.407(a)(3)(i)	RSS-247, 6.2.1.1 RSS-247, 6.2.2.1 RSS-247, 6.2.3.1 RSS-247, 6.2.4.1	Maximum Conducted Output Power	PASS
3	15.407(a)(12)	RSS-GEN, 6.7	26dB Emission Bandwidth 99% Occupied Bandwidth	PASS
4	15.407(e)	RSS-247, 6.2.4.1	6dB Emission Bandwidth	PASS
5	15.407(a)(1)(iv) 15.407 (a)(2) 15.407(a)(3)(i)	RSS-247, 6.2.1.1 RSS-247, 6.2.2.1 RSS-247, 6.2.3.1 RSS-247, 6.2.4.1	Power spectral density (PSD)	PASS
6	15.207	RSS-GEN, 8.8	AC Power Line Conducted Emission	PASS
7	15.205 15.209 15.407(b)(1) 15.407(b)(2) 15.407(b)(3) 15.407(b)(4)	RSS-GEN, 6.13 RSS-GEN, 8.10 RSS-247, 6.2.1.2 RSS-247, 6.2.2.2 RSS-247, 6.2.3.2 RSS-247, 6.2.4.2	Radiated Band Edges and Spurious Emission	PASS
8	15.407(g)	RSS-GEN, 6.11	Frequency Stability	PASS

### 1.3. Channel List

#### Operated band in 5150 MHz ~ 5250MHz

4 channels are provided for 802.11a, 802.11n-HT20, 802.11ac-VHT20 and 802.11ax-HE20.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	44	5220
40	5200	48	5240

2 channels are provided for 802.11n-HT40, 802.11ac-VHT40 and 802.11ax-HE40.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
38	5190	46	5230

1 channels are provided for 802.11ac-VHT80 and 802.11ax-HE80.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
42	5210	/	/

#### Operated band in 5250 MHz ~ 5350MHz

4 channels are provided for 802.11a, 802.11n-HT20, 802.11ac-VHT20 and 802.11ax-HE20.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
52	5260	60	5300
56	5280	64	5320

2 channels are provided for 802.11n-HT40, 802.11ac-VHT40 and 802.11ax-HE40.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
54	5270	62	5310

1 channels are provided for 802.11ac-VHT80 and 802.11ax-HE80.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
58	5290	/	/

1 channels are provided for 802.11ac-VHT160 and 802.11ax-HE160.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
50	5250	/	/



### Operated band in 5470 MHz ~ 5725MHz

11 channels are provided for 802.11a, 802.11n-HT20, 802.11ac-VHT20 and 802.11ax-HE20.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
100	5500	116	5580
104	5520	132	5660
108	5540	136	5680
112	5560	140	5700

5 channels are provided for 802.11n-HT40, 802.11ac-VHT40 and 802.11ax-HE40.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
102	5510	134	5670
110	5550	/	/

2 channels are provided for 802.11ac-VHT80 and 802.11ax-HE80.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
106	5530	/	/

1 channels are provided for 802.11ac-VHT160 and 802.11ax-HE160.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
114	5570	/	/

### Operated band in 5725 MHz ~ 5850MHz

5 channels are provided for 802.11a, 802.11n-HT20, 802.11ac-VHT20, 802.11ax-HE20.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

2 channels are provided for 802.11n-HT40, 802.11ac-VHT40, 802.11ax-HE40.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
151	5755	159	5795

1 channel are provided for 802.11ac-VHT80, 802.11ax-HE80.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
155	5775	/	/

## 1.4. Test environment and mode

During the measurement, the environmental conditions were within the listed ranges:

Operating Environment	
Temperature	15°C - 35°C
Humidity	30% -60%
Atmospheric Pressure	86KPa-106KPa
Test mode:	
Continuously transmitting mode	Keeps the EUT in 100% duty cycle transmitting with modulation in SISO, duty cycle factor is not required.

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:

For Frequency band 5150 ~ 5250 MHz				
Test Mode	Frequency(MHz)			Data rate
	LCH	MCH	HCH	
802.11a	5180	5220	5240	6 Mbps
802.11n-HT20/ac-VHT20/ax-HE20				MCS 0
802.11n-HT40/ac-VHT40/ax-HE40	5190	/	5230	MCS 0
802.11ac-VHT80/ax-HE80	5210	/	/	MCS 0

Note: After scanning all modulation types and data rates for all test patterns, the above list was found to be the worst case.

For Frequency band 5250 ~ 5350 MHz				
Test Mode	Frequency(MHz)			Data rate
	LCH	MCH	HCH	
802.11a	5260	5300	5320	6 Mbps
802.11n-HT20/ac-VHT20/ax-HE20				MCS 0
802.11n-HT40/ac-VHT40/ax-HE40	5270	/	5310	MCS 0
802.11ac-VHT80/ax-HE80	5290	/	/	MCS 0
802.11ac-VHT160/ax-HE160	/	5250	/	MCS 0

Note: After scanning all modulation types and data rates for all test patterns, the above list was found to be the worst case.



For Frequency band 5470 ~ 5725 MHz				
Test Mode	Frequency(MHz)			Data rate
	LCH	MCH	HCH	
802.11a	5500	5580	5700	6 Mbps
802.11n-HT20/ac-VHT20/ax-HE20				MCS 0
802.11n-HT40/ac-VHT40/ax-HE40	5510	5550	5670	MCS 0
802.11ac-VHT80/ax-HE80	5530	/	/	MCS 0
802.11ac-VHT160/ax-HE160	/	5570	/	MCS 0

Note: After scanning all modulation types and data rates for all test patterns, the above list was found to be the worst case.

For Frequency band 5725 ~ 5850 MHz				
Test Mode	Frequency(MHz)			Data rate
	LCH	MCH	HCH	
802.11a	5745	5785	5825	6 Mbps
802.11n-HT20/ac-VHT20/ax-HE20				MCS 0
802.11n-HT40/ac-VHT40/ax-HE40	5755	/	5795	MCS 0
802.11ac-VHT80/ax-HE80	5775	/	/	MCS 0

Note: After scanning all modulation types and data rates for all test patterns, the above list was found to be the worst case.



To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation modes or test configuration modes mentioned above was evaluated respectively.

Pretest Test Mode	Description
Mode 1	TX 802.11a SISO Mode
Mode 2	TX 802.11n-HT20 SISO Mode
Mode 3	TX 802.11n-HT40 SISO Mode
Mode 4	TX 802.11ac-VHT20 SISO Mode
Mode 5	TX 802.11ac-VHT40 SISO Mode
Mode 6	TX 802.11ac-VHT80 SISO Mode
Mode 7	TX 802.11ac-VHT160 SISO Mode
Mode 8	TX 802.11ax-HE20 SISO Mode
Mode 9	TX 802.11ax-HE40 SISO Mode
Mode 10	TX 802.11ax-HE80 SISO Mode
Mode 11	TX 802.11ax-HE160 SISO Mode
Mode 12	TX 802.11n-HT20 2*2MIMO Mode
Mode 13	TX 802.11n-HT40 2*2MIMO Mode
Mode 14	TX 802.11ac-VHT20 2*2MIMO Mode
Mode 15	TX 802.11ac-VHT40 2*2MIMO Mode
Mode 16	TX 802.11ac-VHT80 2*2MIMO Mode
Mode 17	TX 802.11ac-VHT160 2*2MIMO Mode
Mode 18	TX 802.11ax-HE20 2*2MIMO Mode
Mode 19	TX 802.11ax-HE40 2*2MIMO Mode
Mode 20	TX 802.11ax-HE80 2*2MIMO Mode
Mode 21	TX 802.11ax-HE160 2*2MIMO Mode
Mode 22	TX Mode



The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test	
Final Test Mode	Description
Mode 22	TX Mode
For Radiated Test	
Final Test Mode	Description
Mode 1	TX 802.11a SISO Mode
Mode 2	TX 802.11n-HT20 SISO Mode
Mode 3	TX 802.11n-HT40 SISO Mode
Mode 4	TX 802.11ac-VHT20 SISO Mode
Mode 5	TX 802.11ac-VHT40 SISO Mode
Mode 6	TX 802.11ac-VHT80 SISO Mode
Mode 7	TX 802.11ac-VHT160 SISO Mode
Mode 8	TX 802.11ax-HE20 SISO Mode
Mode 9	TX 802.11ax-HE40 SISO Mode
Mode 10	TX 802.11ax-HE80 SISO Mode
Mode 11	TX 802.11ax-HE160 SISO Mode
Mode 12	TX 802.11n-HT20 2*2MIMO Mode
Mode 13	TX 802.11n-HT40 2*2MIMO Mode
Mode 14	TX 802.11ac-VHT20 2*2MIMO Mode
Mode 15	TX 802.11ac-VHT40 2*2MIMO Mode
Mode 16	TX 802.11ac-VHT80 2*2MIMO Mode
Mode 17	TX 802.11ac-VHT160 2*2MIMO Mode
Mode 18	TX 802.11ax-HE20 2*2MIMO Mode
Mode 19	TX 802.11ax-HE40 2*2MIMO Mode
Mode 20	TX 802.11ax-HE80 2*2MIMO Mode
Mode 21	TX 802.11ax-HE160 2*2MIMO Mode
Mode 22	TX Mode

### 1.5. Table for Supporting Units

No.	Equipment	Brand Name	Model Name	Manufacturer	Serial No.	Note
1	Laptop	HP	TPN-Q221	HP	5CD14347QB	FCC DOC



## **1.6. Laboratory Facilities**

### **FCC-Registration No.: 406086**

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN1283, valid time is until June 30, 2025.

### **ISED Registration: 11185A-1**

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until June 30, 2025.

### **A2LA Code: 5721.01**

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025.

## 2. 47 CFR Part 15E Requirements

### 2.1. Antenna requirement

#### 2.1.1. Applicable Standard

According to FCC 15.203, 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 shall be considered sufficient to comply with the provisions of this section.

According to FCC 15.407(a)(1): For client devices in the 5.15-5.25 GHz band, If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to FCC 15.407(a)(2): For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to FCC 15.407(a)(3): For the band 5.725-5.850 GHz, If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to RSS GEN 6.8, The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

#### 2.1.2. Antenna Information

**Antenna Category:** Internal Antenna

A internal Antenna was soldered to the antenna port of EUT via an adaptor cable, can't be removed.

##### Antenna General Information:

No.	EUT	Operating frequency range	Ant. Type	Number of antennas	Ant. Gain
1	METAVERTU 2 5G digital mobile phone	UNII-1, UNII-2a, UNII-2c	Internal	2	Ant 9: -4.15dBi
					Ant 10: -1.25dBi
2		UNII-3	Internal	2	Ant 9: -0.33dBi
					Ant 10: -1.81dBi



**2.1.3. Result: comply**

The EUT has two permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.



## 2.2. Maximum Conducted Output Power

### 2.2.1. Limit of Maximum Conducted Output Power

#### FCC Part 15.407(a):

The maximum conducted output power should not exceed:

Band	EUT Category	Limit
U-NII-1	<input type="checkbox"/> Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21dBm) at any elevation angle above 30 degrees as measured from the horizon)
	<input type="checkbox"/> Fixed point-to-point Access device	1 Watt (30 dBm)
	<input type="checkbox"/> Indoor Access Point	1 Watt (30 dBm)
	<input checked="" type="checkbox"/> Mobile and portable client device	250mW (24 dBm)
U-NII-2A	<input checked="" type="checkbox"/>	250mW (24 dBm) or 11dBm+10logB* Whichever is less.
U-NII-2C	<input checked="" type="checkbox"/>	250mW (24 dBm) or 11dBm+10logB* Whichever is less.
U-NII-3	<input checked="" type="checkbox"/>	1 Watt (30 dBm)

Note: B\* is the 26 dB emission bandwidth in MHz.

#### RSS-247, 6:

The maximum conducted output power should not exceed:

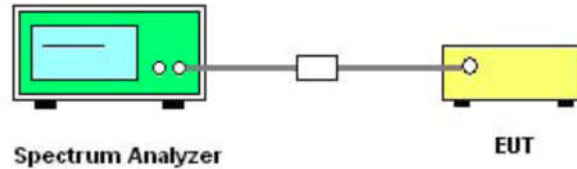
Band	EUT Category	Limit
U-NII-1	<input type="checkbox"/> For OEM devices installed in vehicles	Max. e.i.r.p $\leq$ 30mW(14.77dBm) or 1.76+10log <sub>10</sub> B* Whichever is less.
	<input checked="" type="checkbox"/> Equipment other than OEM equipment	Max. e.i.r.p $\leq$ 200mW(23dBm) or 10+10log <sub>10</sub> B* Whichever is less.
U-NII-2A U-NII-2C	<input type="checkbox"/> For OEM devices installed in vehicles	Max. e.i.r.p $\leq$ 30mW(14.77dBm) or 1.76+10log <sub>10</sub> B* Whichever is less.(U-NII-2A only)
	<input checked="" type="checkbox"/> Equipment other than OEM equipment	Max. Cop $\leq$ 250mW(24Bm) or 11+10log <sub>10</sub> B* Whichever is less. Max. e.i.r.p $\leq$ 1W(30Bm) or 17+10log <sub>10</sub> B* Whichever is less.
U-NII-3	<input checked="" type="checkbox"/>	1 Watt (30 dBm)

Note: B\* is the 99% emission bandwidth in MHz.

### 2.2.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

### 2.2.3. Test Setup



### 2.2.4. Test Procedures

1. The testing follows the of KDB 789033 D02 v02r01 Section II.E.2.b and ANSI C63.10-2013 Section 12.3.2.2.
2. The RF output of EUT was connected to spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Power is calculated by integrating over the spectrum of the entire 99% OBW signal using the instrument's band power measurement feature.
4. Set span to encompass the entire 99% OBW of the signal.
5. Set RBW = 1MHz, VBW  $\geq$  3MHz, Sweep time = Auto, Detector = power averaging (RMS).
6. Number of points in sweep  $\geq 2 \times$  span / RBW.
7. Trace average at least 100 traces in power averaging (rms) mode.
8. Replace the EUT center frequency and repeat steps 3~7.



### **2.2.5. Test Results of Maximum Conducted Output Power**

Please refer to APPENDIX A for detail

## 2.3. Power spectral density (PSD)

### 2.3.1. Limit of Power Spectral Density

#### FCC Part 15.407(a)

The maximum power spectral density should not exceed:

Band	EUT Category	Limit
U-NII-1	<input type="checkbox"/> Outdoor Access Point	17 dBm/MHz
	<input type="checkbox"/> Fixed point-to-point Access device	
	<input type="checkbox"/> Indoor Access Point	
	<input checked="" type="checkbox"/> Mobile and portable client device	11 dBm/MHz
U-NII-2A	<input checked="" type="checkbox"/>	11 dBm/MHz
U-NII-2C	<input checked="" type="checkbox"/>	11 dBm/MHz
U-NII-3	<input checked="" type="checkbox"/>	30dBm/500kHz

#### RSS-247, 6:

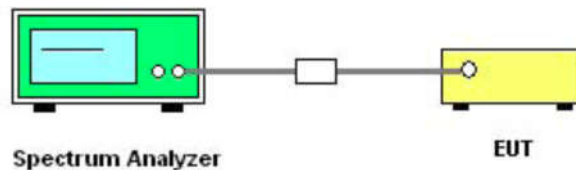
The maximum power spectral density should not exceed:

Band	EUT Category	Limit
U-NII-1	<input checked="" type="checkbox"/> Equipment other than OEM equipment	10 dBm/MHz (EIRP)
U-NII-2A	<input checked="" type="checkbox"/>	11 dBm/MHz
U-NII-2C	<input checked="" type="checkbox"/>	11 dBm/MHz
U-NII-3	<input checked="" type="checkbox"/>	30dBm/500kHz

### 2.3.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

### 2.3.3. Test Setup



### 2.3.4. Test Procedures

1. The testing follows the of KDB 789033 D02 v02r01 Section II.F and ANSI C63.10-2013 Section 12.5.
2. The RF output of EUT was connected to spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set span to encompass the entire 99% OBW of the signal.
4. For U-NII-1, U-NII-2a, U-NII-2c Band: Set RBW = 1MHz, VBW  $\geq$  3MHz, Sweep time = Auto,



Detector = power averaging (RMS).

5. For U-NII-3 Band: Set RBW = 500kHz, VBW  $\geq$  2MHz, Sweep time = Auto, Detector = power averaging (RMS).
6. Number of points in sweep  $\geq 2 \times$  span / RBW.
7. Trace average at least 100 traces in power averaging (rms) mode.
8. Use the peak search function on the instrument to find the peak of the spectrum.
9. Replace the EUT center frequency and repeat steps 3~8.

### **2.3.5. Test Result of Power Spectral Density**

Please refer to APPENDIX A for detail

## 2.4. 26dB Emission Bandwidth and 99% Occupied Bandwidth

### 2.4.1. Limit of 26dB Emission Bandwidth and 99% Occupied Bandwidth

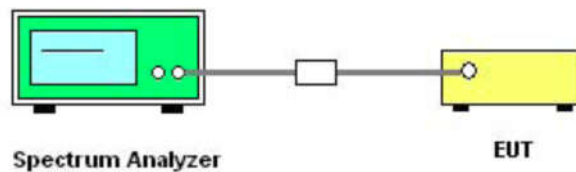
26dB Emission Bandwidth and 99% Occupied Bandwidth no Bandwidth limit.

The minimum 6dB bandwidth of U-NII-3 shall be at least 500 kHz.

### 2.4.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

### 2.4.3. Test Description



### 2.4.4. Test Procedures

1. The testing follows the of KDB 789033 D02 v02r01 Section II.C.D and ANSI C63.10-2013 Section 12.4.
2. The RF output of EUT was connected to spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Use the spectrum analyzer “Channel Bandwidth” function to easurement the 26dB EBW, 6dB EBW and 99% OBW.
4. Set center frequency to the nominal EUT channel center frequency.
5. Set span = 1.5 times to 5.0 times the OBW or EBW.
6. For 26dB EBW and 99% OBW Measurement:  
Set RBW = approximately 1% EBW or 1.5 times to 5.0 times the OBW,  $VBW \geq 3 \times RBW$ .
7. For 6dB EBW Measurement:  
Set RBW =100kHz,  $VBW \geq 3 \times RBW$ .
8. Set Detector = Peak, Trace mode = max hold and Sweep time = auto couple.
9. Allow the trace to stabilize.
10. Replace the EUT center frequency and repeat steps 3~9.



#### **2.4.5. Test Results of 26dB Emission Bandwidth and 99% Occupied Bandwidth**

Please refer to APPENDIX A for detail

## 2.5. Frequency Stability

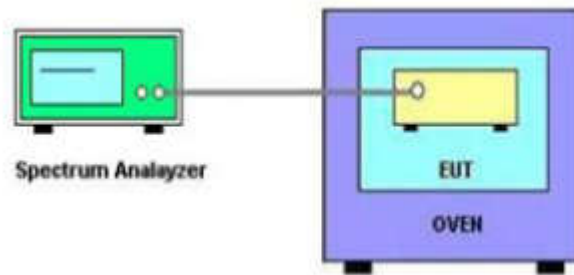
### 2.5.1. Limit of Frequency Stability

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 users manual.

### 2.5.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

### 2.5.3. Test Setup



### 2.5.4. Test Procedures

1. The testing follows the of KDB 789033 D02 v02r01 Section II.A.3 and ANSI C63.10-2013 Section 6.8.
2. The EUT is installed in an environment test chamber with external power source, was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set the chamber to operate at 50°C and external power source to output at nominal voltage of EUT.
5. A sufficient stabilization period at each temperatures in used prior to each frequency measurement.
6. The test shall be performed under -30°C to 50°C and 85% to 115% of the nominal voltage. Change setting of chamber and external power source to complete all conditions.
7. Replace the EUT center frequency and repeat steps 3~6.





### **2.5.5. Test Result of Frequency Stability**

Please refer to APPENDIX A for detail

## 2.6. Radiated Band Edge and Spurious Emission

### 2.6.1. Limit of Radiated Band Edges and Spurious Emission

Radiated emission which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ )	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level ( $\mu\text{V/m}$ ).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

#### Limits of unwanted emission out of the restricted bands

FCC Part 15.407(b)			
Frequency Band (MHz)	Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength @3m (dB $\mu\text{V/m}$ )
5150 - 5250	Outside of the 5.15~5.35 GHz	-27	68.2
5725 - 5850	< 5650	-27	68.2
	5650~5700	-27~10	68.2~105.2
	5700~5720	10~15.6	105.2~110.8
	5720~5725	15.6~27	110.8~122.2
	5850~5855	27~15.6	122.2~110.8
	5855~5875	15.6~10	110.8~105.2
	5875~5925	10~-27	105.2~68.2
	> 5925	-27	68.2

Note:

- 1)  $\text{EIRP}[\text{dBm}] = \text{E}[\text{dB}\mu\text{V/m}] + 20 \log(d[\text{m}]) - 104.77$ , d is the measurement distance in m.
- 2)  $\text{E}[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2 = 68.2 \text{ dBuV/m}$ , for  $\text{EIRP}[\text{dBm}] = -27\text{dBm}$ .  
 $\text{E}[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2 = 105.2 \text{ dBuV/m}$ , for  $\text{EIRP}[\text{dBm}] = 10\text{dBm}$ .  
 $\text{E}[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2 = 110.8 \text{ dBuV/m}$ , for  $\text{EIRP}[\text{dBm}] = 15.6\text{dBm}$ .  
 $\text{E}[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2 = 122.2 \text{ dBuV/m}$ , for  $\text{EIRP}[\text{dBm}] = 27\text{dBm}$ .



Applicable To	Limit	
KDB 789033 D02 General UNII Test Procedures New Rules v02r01	Field Strength at 3m	
	PK: 68.2(dBμV/m)	AV: 54 (dBμV/m)

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	( <sup>2</sup> )
13.36-13.41	/	/	/

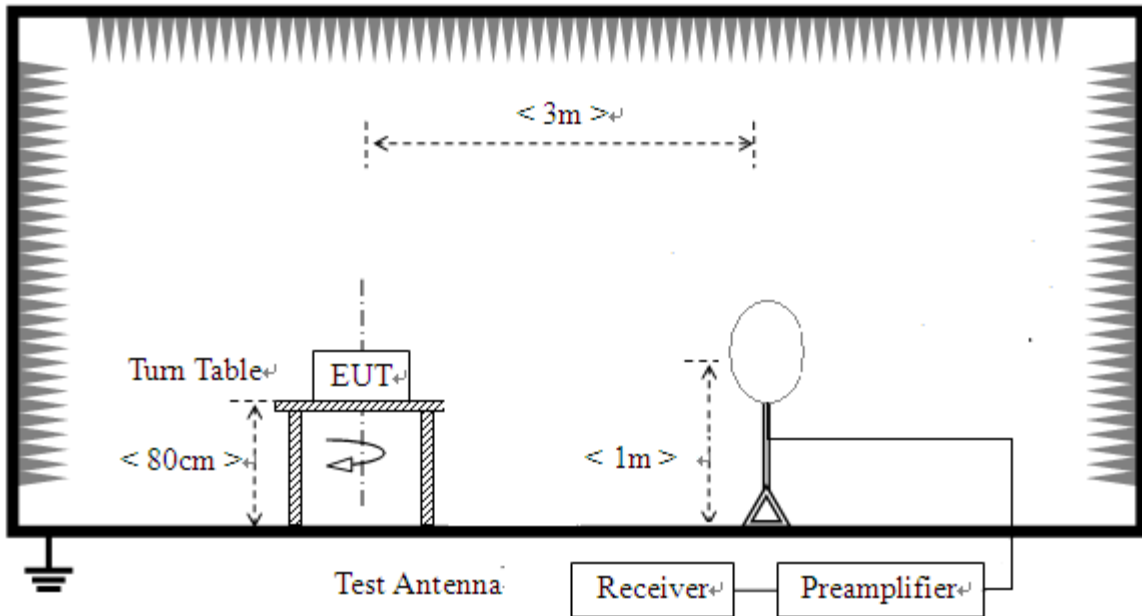
Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.  
<sup>2</sup>Above 38.6.

### 2.6.2. Measuring Instruments

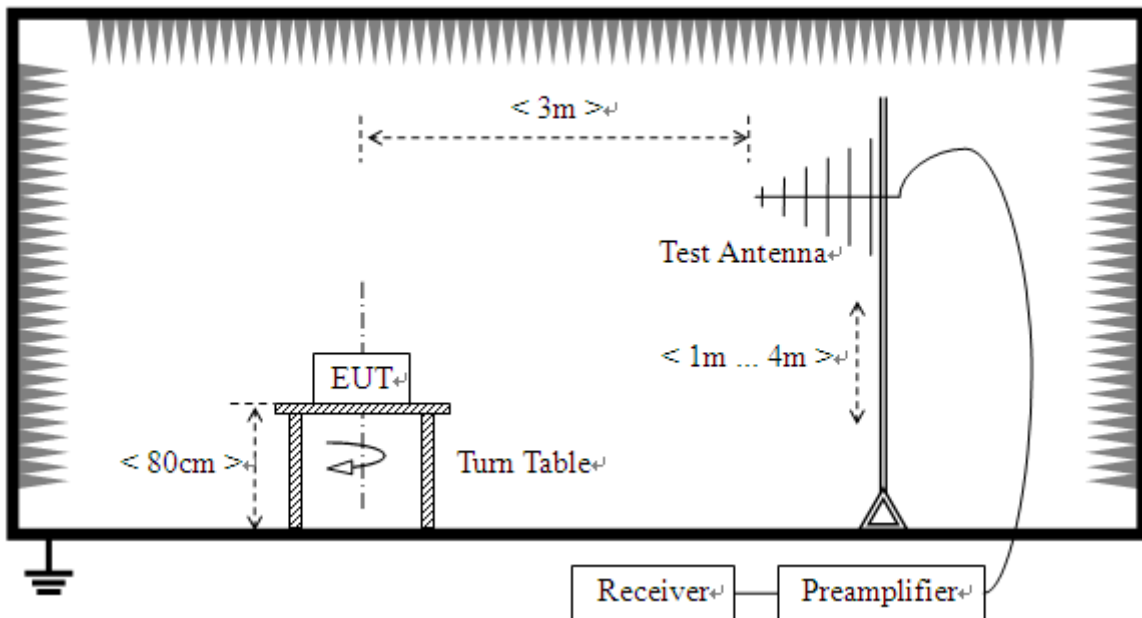
The measuring equipment is listed in the section 3 of this test report.

### 2.6.3. Test Setup

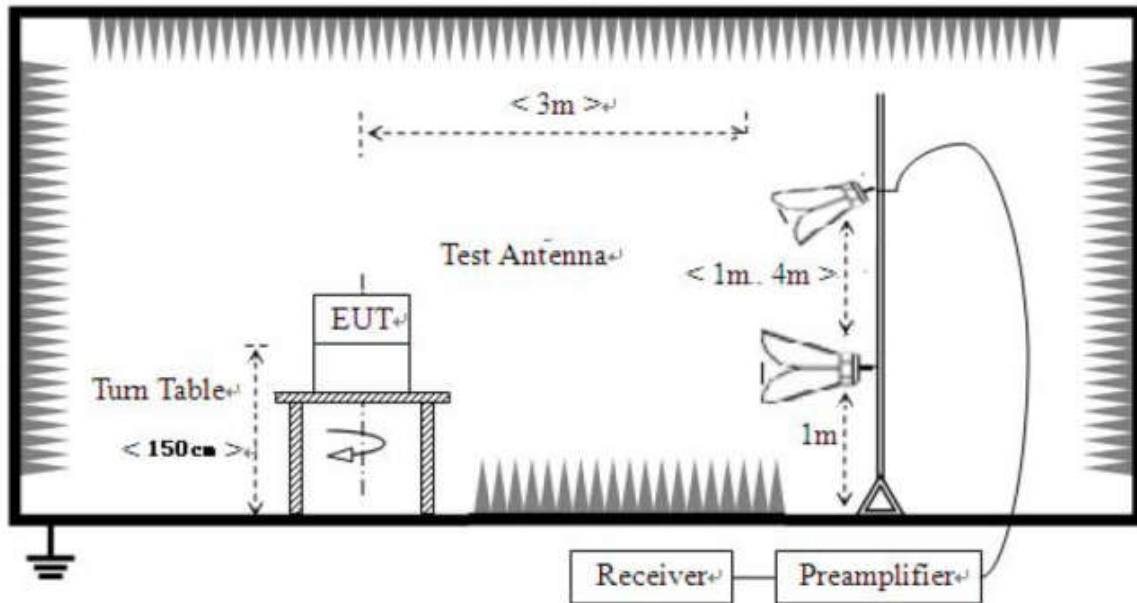
For radiated emissions from 9 kHz to 30 MHz



For radiated emissions from 30MHz to 1GHz



### For radiated emissions above 1GHz



#### 2.6.4. Test Procedures

1. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. 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 height of antenna 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 table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
6. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for

Quasi-peak detection (QP) at frequency below 1 GHz.

2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor ( $10 \log(1/\text{duty cycle})$ ).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.
5. Only worst-Case mode data provide here, 802.11a (20MHz) 5180MHz for Below 1GHz.

### **2.6.5. Test Result of Radiated Band Edge and Spurious Emission**

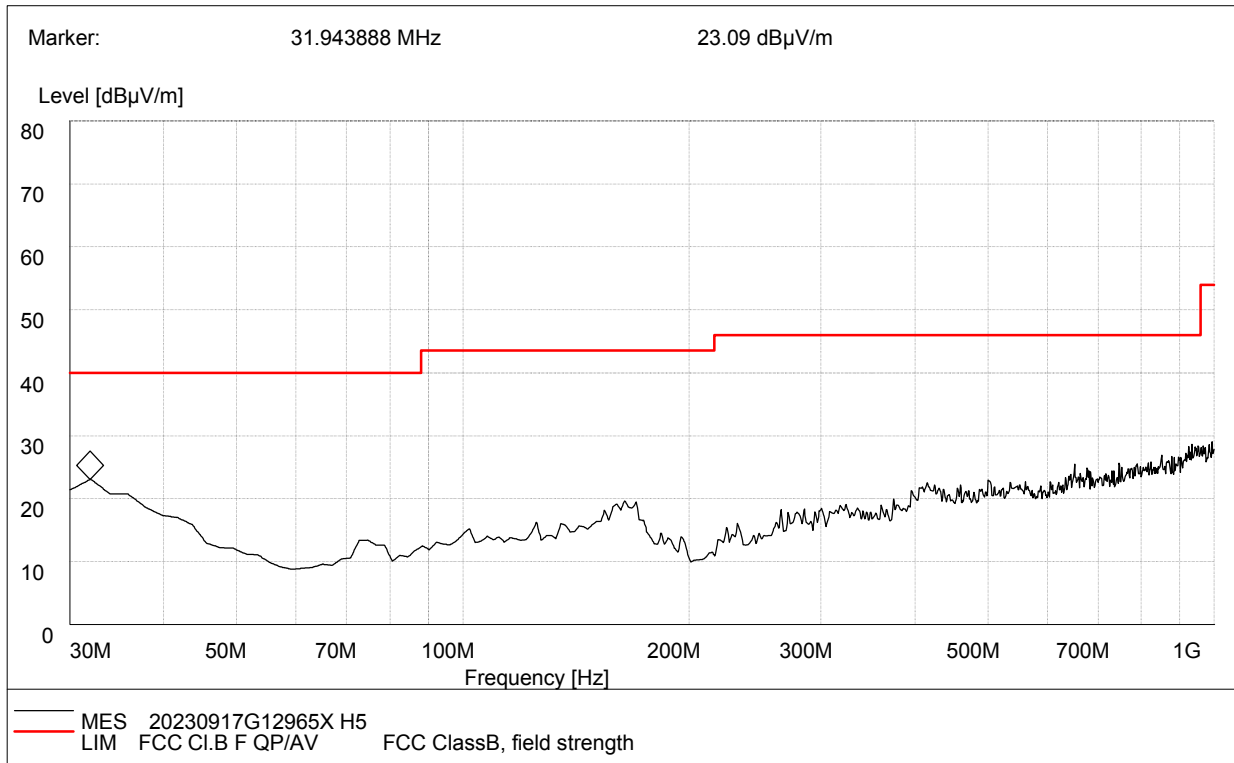
NOTE 1: For 9 kHz to 30MHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

NOTE 2: For 30MHz to 1GHz, All of the EUT Configure mode were tested and found 802.11a 5180MHz (ANT10) channel is the worst mode, the worst case is recorded in this report.

NOTE 3: For 1GHz to 40GHz, All EUT configuration modes were tested, and this report only reflects the worst-case low channel and high channel of 20M bandwidth/40M bandwidth/80M bandwidth.

NOTE 4: Antenna height and turntable angle are the worst positions, the worst case is recorded in this report.

**For 30MHz to 1000 MHz**

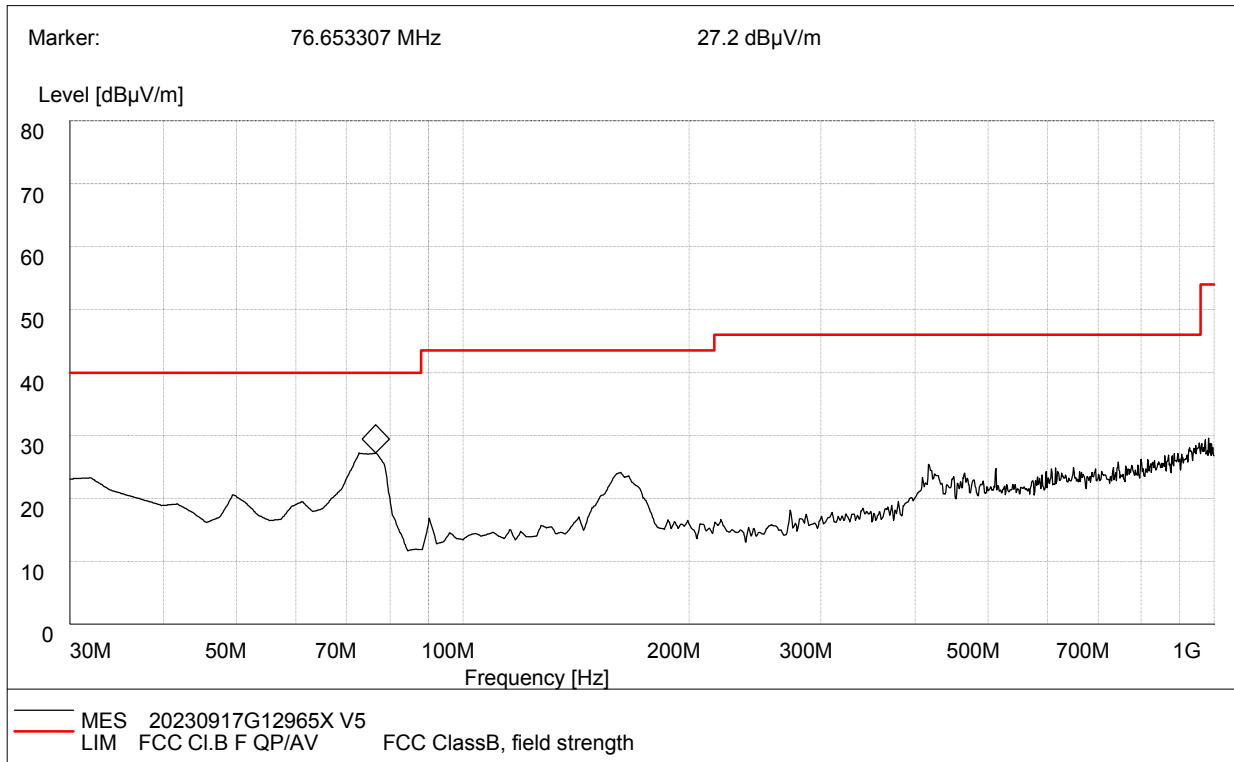


Frequency (MHz)	QuasiPeak (dB µ V/m)	Bandwidth (kHz)	Corr.Factor (dB/m)	Antenna height (cm)	Limit (dB µ V/m)	Margin (dB)	Polarity
31.950000	22.09	120.000	19.3	100.0	40.0	17.91	Horizontal
74.830000	13.38	120.000	6.8	100.0	40.0	26.62	Horizontal
164.120000	18.68	120.000	12.5	100.0	43.5	24.82	Horizontal
170.320000	18.33	120.000	11.9	100.0	43.5	25.17	Horizontal
414.890000	21.52	120.000	17.9	100.0	46.0	24.48	Horizontal
652.040000	24.51	120.000	19.9	100.0	46.0	21.49	Horizontal

**Test Result : Pass**

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB).
3. Margin value = Limit value - Emission Level.
4. The other emission levels were very low against the limit.



Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Bandwidth (kHz)	Corr.Factor (dB/m)	Antenna height (cm)	Limit (dB $\mu$ V/m)	Margin (dB)	Polarity
32.040000	22.25	120.000	19.3	100.0	40.0	17.75	Vertical
76.320000	26.20	120.000	6.8	100.0	40.0	13.80	Vertical
142.740000	16.05	120.000	12.6	100.0	43.5	27.45	Vertical
162.620000	23.11	120.000	12.5	100.0	43.5	20.39	Vertical
416.830000	24.40	120.000	17.9	100.0	46.0	21.60	Vertical
650.010000	23.89	120.000	21.8	100.0	46.0	22.11	Vertical

**Test Result : Pass**

Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB).
3. Margin value = Limit value - Emission Level.
4. The other emission levels were very low against the limit.



**For 1GHz to 40 GHz**

U-NII-1_802.11a_5180MHz - ANT10									
Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5150.00	47.50	68.20	-20.70	1.60	220	47.06	0.44	Horizontal	Peak
5150.00	39.02	54.00	-14.98	1.60	220	38.58	0.44	Horizontal	Average
10360.00	53.33	68.20	-14.87	1.60	220	42.87	10.46	Horizontal	Peak
10360.00	43.49	54.00	-10.51	1.60	220	33.03	10.46	Horizontal	Average
5150.00	47.22	68.20	-20.98	1.70	180	46.78	0.44	Vertical	Peak
5150.00	39.14	54.00	-14.86	1.70	180	38.70	0.44	Vertical	Average
10360.00	52.71	68.20	-15.49	1.70	180	42.25	10.46	Vertical	Peak
10360.00	43.55	54.00	-10.45	1.70	180	33.09	10.46	Vertical	Average

U-NII-1_802.11a_5240MHz - ANT10									
Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5350.00	46.65	68.20	-21.55	1.60	220	46.40	0.25	Horizontal	Peak
5350.00	39.20	54.00	-14.80	1.60	220	38.95	0.25	Horizontal	Average
10480.00	54.16	68.20	-14.04	1.60	220	43.16	11.00	Horizontal	Peak
10480.00	44.38	54.00	-9.62	1.60	220	33.38	11.00	Horizontal	Average
5350.00	48.24	68.20	-19.96	1.70	180	47.99	0.25	Vertical	Peak
5350.00	37.77	54.00	-16.23	1.70	180	37.52	0.25	Vertical	Average
10480.00	53.15	68.20	-15.05	1.70	180	42.15	11.00	Vertical	Peak
10480.00	44.09	54.00	-9.91	1.70	180	33.09	11.00	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

**U-NII-1\_802.11n-HT40\_5190MHz - 2x2 MIMO**

Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5150.00	47.66	68.20	-20.54	1.60	220	47.22	0.44	Horizontal	Peak
5150.00	39.28	54.00	-14.72	1.60	220	38.84	0.44	Horizontal	Average
10380.00	53.60	68.20	-14.60	1.60	220	43.07	10.53	Horizontal	Peak
10380.00	43.34	54.00	-10.66	1.60	220	32.81	10.53	Horizontal	Average
5150.00	47.52	68.20	-20.68	1.70	180	47.08	0.44	Vertical	Peak
5150.00	38.71	54.00	-15.29	1.70	180	38.27	0.44	Vertical	Average
10380.00	52.95	68.20	-15.25	1.70	180	42.42	10.53	Vertical	Peak
10380.00	43.45	54.00	-10.55	1.70	180	32.92	10.53	Vertical	Average

**U-NII-1\_802.11n-HT40\_5230MHz - 2x2 MIMO**

Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5350.00	46.41	68.20	-21.79	1.60	220	46.16	0.25	Horizontal	Peak
5350.00	39.12	54.00	-14.88	1.60	220	38.87	0.25	Horizontal	Average
10460.00	54.05	68.20	-14.15	1.60	220	43.14	10.91	Horizontal	Peak
10460.00	43.94	54.00	-10.06	1.60	220	33.03	10.91	Horizontal	Average
5350.00	47.77	68.20	-20.43	1.70	180	47.52	0.25	Vertical	Peak
5350.00	37.37	54.00	-16.63	1.70	180	37.12	0.25	Vertical	Average
10460.00	53.18	68.20	-15.02	1.70	180	42.27	10.91	Vertical	Peak
10460.00	43.61	54.00	-10.39	1.70	180	32.70	10.91	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

**U-NII-1\_802.11ac-VHT80\_5210MHz - 2x2 MIMO**

Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5150.00	47.21	68.20	-20.99	1.60	220	46.77	0.44	Horizontal	Peak
5150.00	38.84	54.00	-15.16	1.60	220	38.40	0.44	Horizontal	Average
5350.00	47.07	68.20	-21.13	1.60	220	46.82	0.25	Horizontal	Peak
5350.00	38.80	54.00	-15.20	1.60	220	38.55	0.25	Horizontal	Average
10420.00	52.85	68.20	-15.35	1.60	220	42.14	10.71	Horizontal	Peak
10420.00	43.08	54.00	-10.92	1.60	220	32.37	10.71	Horizontal	Average
5150.00	46.81	68.20	-21.39	1.70	180	46.37	0.44	Vertical	Peak
5150.00	38.98	54.00	-15.02	1.70	180	38.54	0.44	Vertical	Average
5350.00	48.14	68.20	-20.06	1.70	180	47.89	0.25	Vertical	Peak
5350.00	37.79	54.00	-16.21	1.70	180	37.54	0.25	Vertical	Average
10420.00	53.03	68.20	-15.17	1.70	180	42.32	10.71	Vertical	Peak
10420.00	43.74	54.00	-10.26	1.70	180	33.03	10.71	Vertical	Average

**Remark:**

1.  $Emission\ Level(dBuV/m) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB)$
3.  $Margin\ value = Emission\ Level - Limit\ value$
4. *The emission levels of other frequencies are very lower than the limit and not show in test report.*



U-NII-2A_802.11a_5260MHz - ANT10									
Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5150.00	47.21	68.20	-20.99	1.50	170	46.77	0.44	Horizontal	Peak
5150.00	38.96	54.00	-15.04	1.50	170	38.52	0.44	Horizontal	Average
10520.00	52.84	68.20	-15.36	1.50	170	41.66	11.18	Horizontal	Peak
10520.00	43.44	54.00	-10.56	1.50	170	32.26	11.18	Horizontal	Average
5150.00	47.05	68.20	-21.15	1.30	210	46.61	0.44	Vertical	Peak
5150.00	38.94	54.00	-15.06	1.30	210	38.50	0.44	Vertical	Average
10520.00	52.83	68.20	-15.37	1.30	210	41.65	11.18	Vertical	Peak
10520.00	43.91	54.00	-10.09	1.30	210	32.73	11.18	Vertical	Average

U-NII-2A_802.11a_5320MHz - ANT10									
Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5350.00	46.64	68.20	-21.56	1.50	170	46.39	0.25	Horizontal	Peak
5350.00	39.42	54.00	-14.58	1.50	170	39.17	0.25	Horizontal	Average
10640.00	53.95	68.20	-14.25	1.50	170	42.63	11.32	Horizontal	Peak
10640.00	43.88	54.00	-10.12	1.50	170	32.56	11.32	Horizontal	Average
5350.00	48.34	68.20	-19.86	1.30	210	48.09	0.25	Vertical	Peak
5350.00	38.03	54.00	-15.97	1.30	210	37.78	0.25	Vertical	Average
10640.00	52.74	68.20	-15.46	1.30	210	41.42	11.32	Vertical	Peak
10640.00	44.19	54.00	-9.81	1.30	210	32.87	11.32	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

**U-NII-2A\_802.11n-HT40\_5270MHz - 2x2 MIMO**

Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5150.00	46.98	68.20	-21.22	1.50	170	46.54	0.44	Horizontal	Peak
5150.00	38.54	54.00	-15.46	1.50	170	38.10	0.44	Horizontal	Average
10540.00	52.49	68.20	-15.71	1.50	170	41.23	11.26	Horizontal	Peak
10540.00	43.89	54.00	-10.11	1.50	170	32.63	11.26	Horizontal	Average
5150.00	47.33	68.20	-20.87	1.30	210	46.89	0.44	Vertical	Peak
5150.00	39.28	54.00	-14.72	1.30	210	38.84	0.44	Vertical	Average
10540.00	52.72	68.20	-15.48	1.30	210	41.46	11.26	Vertical	Peak
10540.00	44.13	54.00	-9.87	1.30	210	32.87	11.26	Vertical	Average

**U-NII-2A\_802.11n-HT40\_5310MHz - 2x2 MIMO**

Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5350.00	46.36	68.20	-21.84	1.50	170	46.11	0.25	Horizontal	Peak
5350.00	39.41	54.00	-14.59	1.50	170	39.16	0.25	Horizontal	Average
10620.00	53.74	68.20	-14.46	1.50	170	42.33	11.41	Horizontal	Peak
10620.00	44.05	54.00	-9.95	1.50	170	32.64	11.41	Horizontal	Average
5350.00	48.07	68.20	-20.13	1.30	210	47.82	0.25	Vertical	Peak
5350.00	37.84	54.00	-16.16	1.30	210	37.59	0.25	Vertical	Average
10620.00	52.32	68.20	-15.88	1.30	210	40.91	11.41	Vertical	Peak
10620.00	43.70	54.00	-10.30	1.30	210	32.29	11.41	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

**U-NII-2A\_802.11ac-VHT80\_5290MHz - 2x2 MIMO**

Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5150.00	47.00	68.20	-21.20	1.50	170	46.56	0.44	Horizontal	Peak
5150.00	38.76	54.00	-15.24	1.50	170	38.32	0.44	Horizontal	Average
5350.00	47.09	68.20	-21.11	1.50	170	46.84	0.25	Horizontal	Peak
5350.00	38.67	54.00	-15.33	1.50	170	38.42	0.25	Horizontal	Average
10580.00	52.98	68.20	-15.22	1.50	170	41.54	11.44	Horizontal	Peak
10580.00	42.63	54.00	-11.37	1.50	170	31.19	11.44	Horizontal	Average
5150.00	46.83	68.20	-21.37	1.30	210	46.39	0.44	Vertical	Peak
5150.00	39.39	54.00	-14.61	1.30	210	38.95	0.44	Vertical	Average
5350.00	47.67	68.20	-20.53	1.30	210	47.42	0.25	Vertical	Peak
5350.00	37.50	54.00	-16.50	1.30	210	37.25	0.25	Vertical	Average
10580.00	52.67	68.20	-15.53	1.30	210	41.23	11.44	Vertical	Peak
10580.00	43.59	54.00	-10.41	1.30	210	32.15	11.44	Vertical	Average

**Remark:**

1.  $Emission\ Level(dBuV/m) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2.  $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB)$
3.  $Margin\ value = Emission\ Level - Limit\ value$
4. The emission levels of other frequencies are very lower than the limit and not show in test report.



## U-NII-2A\_802.11ax-HE160\_5250MHz - 2x2 MIMO

Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5150.00	47.96	68.20	-20.24	1.50	170	47.52	0.44	Horizontal	Peak
5150.00	38.67	54.00	-15.33	1.50	170	38.23	0.44	Horizontal	Average
5350.00	50.23	68.20	-17.97	1.50	170	49.98	0.25	Horizontal	Peak
5350.00	39.03	54.00	-14.97	1.50	170	38.78	0.25	Horizontal	Average
10500.00	53.44	68.20	-14.76	1.50	170	42.35	11.09	Horizontal	Peak
10500.00	43.67	54.00	-10.33	1.50	170	32.58	11.09	Horizontal	Average
5150.00	47.79	68.20	-20.41	1.30	210	47.35	0.44	Vertical	Peak
5150.00	38.32	54.00	-15.68	1.30	210	37.88	0.44	Vertical	Average
5350.00	48.68	68.20	-19.52	1.30	210	48.43	0.25	Vertical	Peak
5350.00	39.66	54.00	-14.34	1.30	210	39.41	0.25	Vertical	Average
10500.00	52.78	68.20	-15.42	1.30	210	41.69	11.09	Vertical	Peak
10500.00	44.53	54.00	-9.47	1.30	210	33.44	11.09	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.



U-NII-2C_802.11a_5500MHz - ANT10									
Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5470.00	47.50	68.20	-20.70	1.40	210	47.54	-0.04	Horizontal	Peak
5470.00	38.23	54.00	-15.77	1.40	210	38.27	-0.04	Horizontal	Average
11000.00	53.16	68.20	-15.04	1.40	210	41.74	11.42	Horizontal	Peak
11000.00	44.16	54.00	-9.84	1.40	210	32.74	11.42	Horizontal	Average
5470.00	47.22	68.20	-20.98	1.70	260	47.26	-0.04	Vertical	Peak
5470.00	38.31	54.00	-15.69	1.70	260	38.35	-0.04	Vertical	Average
11000.00	52.60	68.20	-15.60	1.70	260	41.18	11.42	Vertical	Peak
11000.00	44.03	54.00	-9.97	1.70	260	32.61	11.42	Vertical	Average

U-NII-2C_802.11a_5700MHz - ANT10									
Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5725.00	49.42	68.20	-18.78	1.40	210	48.12	1.30	Horizontal	Peak
5725.00	38.71	54.00	-15.29	1.40	210	37.41	1.30	Horizontal	Average
11400.00	54.78	68.20	-13.42	1.40	210	43.31	11.47	Horizontal	Peak
11400.00	44.62	54.00	-9.38	1.40	210	33.15	11.47	Horizontal	Average
5725.00	49.05	68.20	-19.15	1.70	260	47.75	1.30	Vertical	Peak
5725.00	39.32	54.00	-14.68	1.70	260	38.02	1.30	Vertical	Average
11400.00	53.35	68.20	-14.85	1.70	260	41.88	11.47	Vertical	Peak
11400.00	44.47	54.00	-9.53	1.70	260	33.00	11.47	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.





U-NII-2C_802.11n-HT40_5510MHz - 2x2 MIMO									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5470.00	47.57	68.20	-20.63	1.40	210	47.61	-0.04	Horizontal	Peak
5470.00	38.13	54.00	-15.87	1.40	210	38.17	-0.04	Horizontal	Average
11020.00	53.28	68.20	-14.92	1.40	210	41.82	11.46	Horizontal	Peak
11020.00	43.86	54.00	-10.14	1.40	210	32.40	11.46	Horizontal	Average
5470.00	47.67	68.20	-20.53	1.70	260	47.71	-0.04	Vertical	Peak
5470.00	38.52	54.00	-15.48	1.70	260	38.56	-0.04	Vertical	Average
11020.00	52.52	68.20	-15.68	1.70	260	41.06	11.46	Vertical	Peak
11020.00	43.81	54.00	-10.19	1.70	260	32.35	11.46	Vertical	Average

U-NII-2C_802.11n-HT40_5670MHz - 2x2 MIMO									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5725.00	49.89	68.20	-18.31	1.40	210	48.59	1.30	Horizontal	Peak
5725.00	38.54	54.00	-15.46	1.40	210	37.24	1.30	Horizontal	Average
11340.00	54.31	68.20	-13.89	1.40	210	42.89	11.42	Horizontal	Peak
11340.00	44.21	54.00	-9.79	1.40	210	32.79	11.42	Horizontal	Average
5725.00	48.66	68.20	-19.54	1.70	260	47.36	1.30	Vertical	Peak
5725.00	39.19	54.00	-14.81	1.70	260	37.89	1.30	Vertical	Average
11340.00	53.67	68.20	-14.53	1.70	260	42.25	11.42	Vertical	Peak
11340.00	44.93	54.00	-9.07	1.70	260	33.51	11.42	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

**U-NII-2C\_802.11ac-VHT80\_5530MHz - 2x2 MIMO**

Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5470.00	47.99	68.20	-20.21	1.40	210	48.03	-0.04	Horizontal	Peak
5470.00	37.96	54.00	-16.04	1.40	210	38.00	-0.04	Horizontal	Average
5725.00	49.31	68.20	-18.89	1.40	210	48.01	1.30	Horizontal	Peak
5725.00	38.85	54.00	-15.15	1.40	210	37.55	1.30	Horizontal	Average
11060.00	52.98	68.20	-15.22	1.40	210	41.45	11.53	Horizontal	Peak
11060.00	44.44	54.00	-9.56	1.40	210	32.91	11.53	Horizontal	Average
5470.00	47.65	68.20	-20.55	1.70	260	47.69	-0.04	Vertical	Peak
5470.00	38.62	54.00	-15.38	1.70	260	38.66	-0.04	Vertical	Average
5725.00	49.14	68.20	-19.06	1.70	260	47.84	1.30	Vertical	Peak
5725.00	39.55	54.00	-14.45	1.70	260	38.25	1.30	Vertical	Average
11060.00	52.50	68.20	-15.70	1.70	260	40.97	11.53	Vertical	Peak
11060.00	43.71	54.00	-10.29	1.70	260	32.18	11.53	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.



## U-NII-2C\_802.11ax-HE160\_5570MHz - 2x2 MIMO

Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5470.00	47.71	68.20	-20.49	1.40	210	47.75	-0.04	Horizontal	Peak
5470.00	38.67	54.00	-15.33	1.40	210	38.71	-0.04	Horizontal	Average
5725.00	49.80	68.20	-18.40	1.40	210	48.50	1.30	Horizontal	Peak
5725.00	39.14	54.00	-14.86	1.40	210	37.84	1.30	Horizontal	Average
11140.00	53.44	68.20	-14.76	1.40	210	42.09	11.35	Horizontal	Peak
11140.00	44.14	54.00	-9.86	1.40	210	32.79	11.35	Horizontal	Average
5470.00	47.35	68.20	-20.85	1.70	260	47.39	-0.04	Vertical	Peak
5470.00	38.61	54.00	-15.39	1.70	260	38.65	-0.04	Vertical	Average
5725.00	49.03	68.20	-19.17	1.70	260	47.73	1.30	Vertical	Peak
5725.00	39.76	54.00	-14.24	1.70	260	38.46	1.30	Vertical	Average
11140.00	52.74	68.20	-15.46	1.70	260	41.39	11.35	Vertical	Peak
11140.00	44.43	54.00	-9.57	1.70	260	33.08	11.35	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.



**U-NII-3\_802.11a\_5745MHz - ANT10**

Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5650.00	51.18	68.20	-17.02	1.50	180	50.38	0.80	Horizontal	Peak
5700.00	51.09	105.20	-54.11	1.50	180	49.85	1.24	Horizontal	Peak
5720.00	53.19	110.80	-57.61	1.50	180	51.91	1.28	Horizontal	Peak
5725.00	53.20	122.20	-69.00	1.50	180	51.90	1.30	Horizontal	Peak
11490.00	52.64	68.20	-15.56	1.50	180	41.09	11.55	Horizontal	Peak
11490.00	43.67	54.00	-10.33	1.50	180	32.12	11.55	Horizontal	Average
5650.00	52.34	68.20	-15.86	1.40	210	51.54	0.80	Vertical	Peak
5700.00	53.69	105.20	-51.51	1.40	210	52.45	1.24	Vertical	Peak
5720.00	50.71	110.80	-60.09	1.40	210	49.43	1.28	Vertical	Peak
5725.00	52.10	122.20	-70.10	1.40	210	50.80	1.30	Vertical	Peak
11490.00	55.24	68.20	-12.96	1.40	210	43.69	11.55	Vertical	Peak
11490.00	43.35	54.00	-10.65	1.40	210	31.80	11.55	Vertical	Average

**U-NII-3\_802.11a\_5825MHz - ANT10**

Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5850.00	51.13	122.20	-71.07	1.50	180	49.31	1.82	Horizontal	Peak
5855.00	50.92	110.80	-59.88	1.50	180	49.07	1.85	Horizontal	Peak
5875.00	52.09	105.20	-53.11	1.50	180	50.11	1.98	Horizontal	Peak
5925.00	51.73	68.20	-16.47	1.50	180	49.61	2.12	Horizontal	Peak
11650.00	53.04	68.20	-15.16	1.50	180	41.40	11.64	Horizontal	Peak
11650.00	43.81	54.00	-10.19	1.50	180	32.17	11.64	Horizontal	Average
5850.00	52.69	122.20	-69.51	1.40	210	50.87	1.82	Vertical	Peak
5855.00	51.90	110.80	-58.90	1.40	210	50.05	1.85	Vertical	Peak
5875.00	51.70	105.20	-53.50	1.40	210	49.72	1.98	Vertical	Peak
5925.00	53.67	68.20	-14.53	1.40	210	51.55	2.12	Vertical	Peak
11650.00	56.43	68.20	-11.77	1.40	210	44.79	11.64	Vertical	Peak
11650.00	43.17	54.00	-10.83	1.40	210	31.53	11.64	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.



**U-NII-3\_802.11n-HT40\_5755MHz - 2x2 MIMO**

Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5650.00	51.33	68.20	-16.87	1.50	180	50.53	0.80	Horizontal	Peak
5700.00	51.47	105.20	-53.73	1.50	180	50.23	1.24	Horizontal	Peak
5720.00	53.14	110.80	-57.66	1.50	180	51.86	1.28	Horizontal	Peak
5725.00	52.86	122.20	-69.34	1.50	180	51.56	1.30	Horizontal	Peak
11510.00	52.20	68.20	-16.00	1.50	180	40.64	11.56	Horizontal	Peak
11510.00	43.36	54.00	-10.64	1.50	180	31.80	11.56	Horizontal	Average
5650.00	52.15	68.20	-16.05	1.40	210	51.35	0.80	Vertical	Peak
5700.00	53.75	105.20	-51.45	1.40	210	52.51	1.24	Vertical	Peak
5720.00	50.49	110.80	-60.31	1.40	210	49.21	1.28	Vertical	Peak
5725.00	51.76	122.20	-70.44	1.40	210	50.46	1.30	Vertical	Peak
11510.00	55.70	68.20	-12.50	1.40	210	44.14	11.56	Vertical	Peak
11510.00	43.60	54.00	-10.40	1.40	210	32.04	11.56	Vertical	Average

**U-NII-3\_802.11n-HT40\_5795MHz - 2x2 MIMO**

Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5850.00	50.69	122.20	-71.51	1.50	180	48.87	1.82	Horizontal	Peak
5855.00	50.46	110.80	-60.34	1.50	180	48.61	1.85	Horizontal	Peak
5875.00	51.72	105.20	-53.48	1.50	180	49.74	1.98	Horizontal	Peak
5925.00	51.84	68.20	-16.36	1.50	180	49.72	2.12	Horizontal	Peak
11590.00	53.07	68.20	-15.13	1.50	180	41.56	11.51	Horizontal	Peak
11590.00	43.72	54.00	-10.28	1.50	180	32.21	11.51	Horizontal	Average
5850.00	52.91	122.20	-69.29	1.40	210	51.09	1.82	Vertical	Peak
5855.00	52.18	110.80	-58.62	1.40	210	50.33	1.85	Vertical	Peak
5875.00	51.73	105.20	-53.47	1.40	210	49.75	1.98	Vertical	Peak
5925.00	54.00	68.20	-14.20	1.40	210	51.88	2.12	Vertical	Peak
11590.00	56.58	68.20	-11.62	1.40	210	45.07	11.51	Vertical	Peak
11590.00	43.10	54.00	-10.90	1.40	210	31.59	11.51	Vertical	Average

*Remark:*

1. *Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)*
2. *Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)*
3. *Margin value = Emission Level – Limit value*
4. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

**U-NII-3\_802.11ac-VHT80\_5775MHz - 2x2 MIMO**

Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5650.00	51.64	68.20	-16.56	1.50	180	50.84	0.80	Horizontal	Peak
5700.00	51.29	105.20	-53.91	1.50	180	50.05	1.24	Horizontal	Peak
5720.00	53.42	110.80	-57.38	1.50	180	52.14	1.28	Horizontal	Peak
5725.00	53.04	122.20	-69.16	1.50	180	51.74	1.30	Horizontal	Peak
5850.00	51.53	122.20	-70.67	1.50	180	49.71	1.82	Horizontal	Peak
5855.00	50.59	110.80	-60.21	1.50	180	48.74	1.85	Horizontal	Peak
5875.00	52.51	105.20	-52.69	1.50	180	50.53	1.98	Horizontal	Peak
5925.00	51.83	68.20	-16.37	1.50	180	49.71	2.12	Horizontal	Peak
11550.00	52.98	68.20	-15.22	1.50	180	41.44	11.54	Horizontal	Peak
11550.00	43.41	54.00	-10.59	1.50	180	31.87	11.54	Horizontal	Average
5650.00	51.85	68.20	-16.35	1.40	210	51.05	0.80	Vertical	Peak
5700.00	53.34	105.20	-51.86	1.40	210	52.10	1.24	Vertical	Peak
5720.00	50.99	110.80	-59.81	1.40	210	49.71	1.28	Vertical	Peak
5725.00	52.21	122.20	-69.99	1.40	210	50.91	1.30	Vertical	Peak
5850.00	52.27	122.20	-69.93	1.40	210	50.45	1.82	Vertical	Peak
5855.00	51.77	110.80	-59.03	1.40	210	49.92	1.85	Vertical	Peak
5875.00	51.94	105.20	-53.26	1.40	210	49.96	1.98	Vertical	Peak
5925.00	53.58	68.20	-14.62	1.40	210	51.46	2.12	Vertical	Peak
11550.00	55.35	68.20	-12.85	1.40	210	43.81	11.54	Vertical	Peak
11550.00	43.40	54.00	-10.60	1.50	210	31.86	11.54	Vertical	Average

**Remark:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.

## 2.7. AC Power Line Conducted Emission

### 2.7.1. Limit of AC Power Line Conducted Emission

FCC Part 15.207:

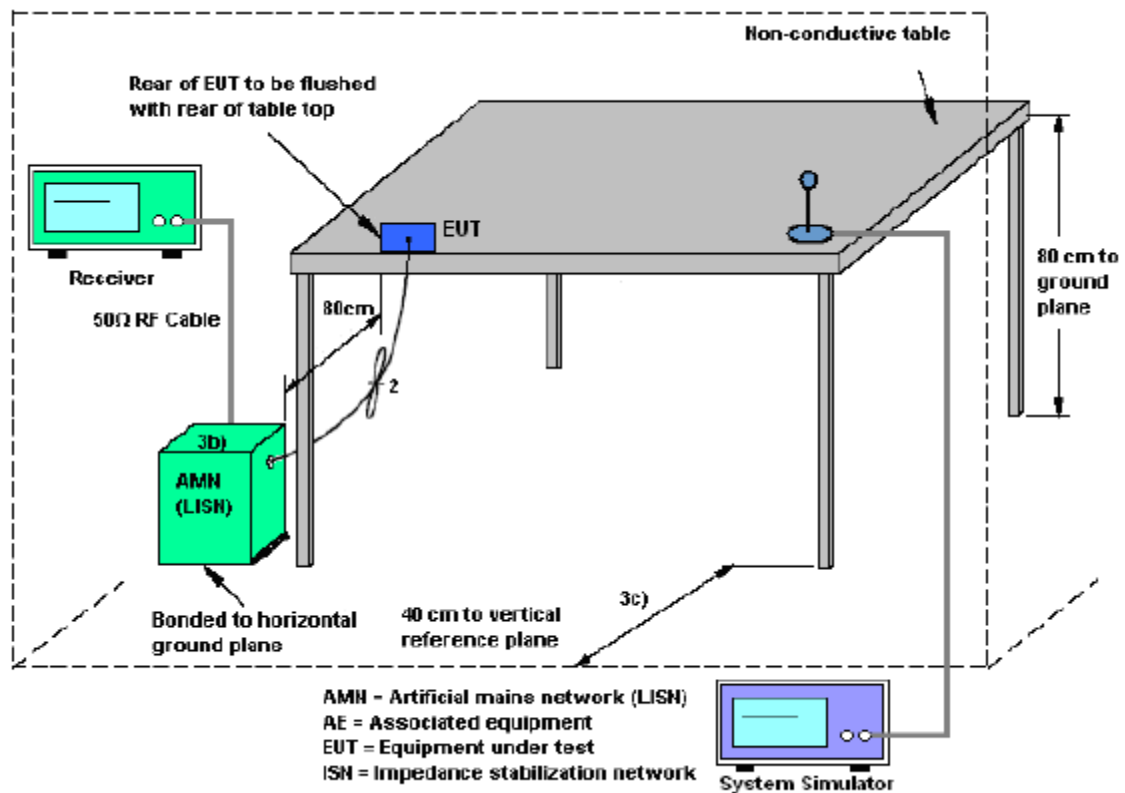
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

### 2.7.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

### 2.7.3. Test Setup



#### **2.7.4. Test Procedures**

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

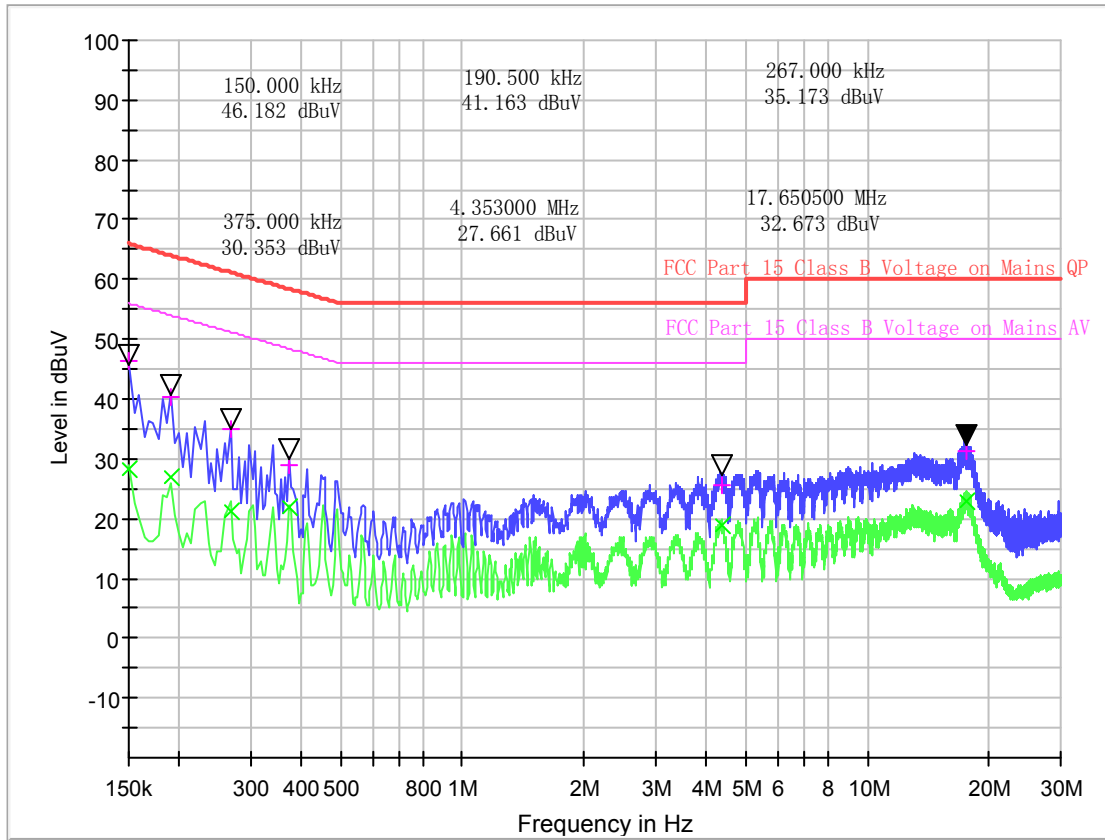
#### **2.7.5. Test Result of AC Power Line Conducted Emission**

NOTE 1: The EUT configuration of the emission tests is 5G WLAN Link + USB Cable (Charging from Adapter).

NOTE 2: All of the EUT Configure mode were tested and found 802.11a 5180MHz (ANT10) channel is the worst mode, the worst case is recorded in this report.



### Line Phase

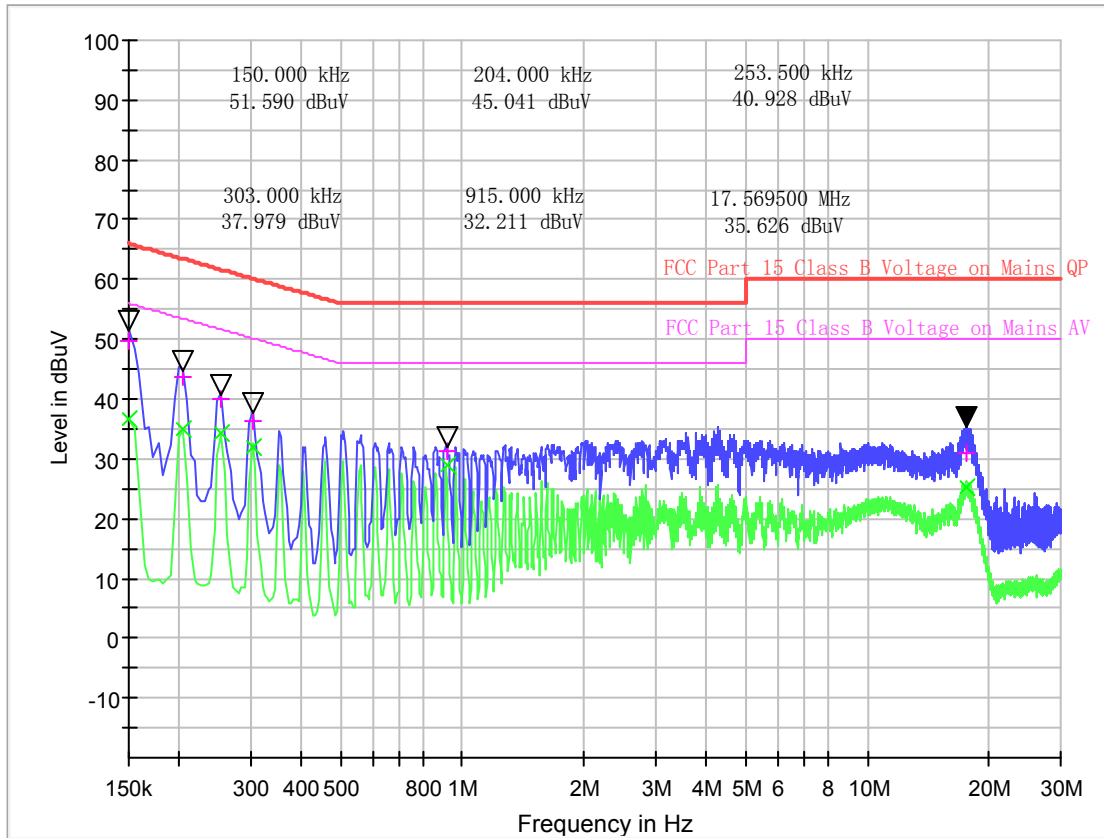


Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Corr.Factor (dB)	Margin - QPK	Limit - QPK	Margin - AV	Limit - AV (dBμV)
0.150000	46.44	28.33	10.4	19.56	66.0	27.67	56.0
0.190500	40.34	26.94	10.5	23.67	64.0	27.07	54.0
0.267000	34.94	21.16	10.5	26.27	61.2	30.05	51.2
0.375000	28.78	21.84	10.5	29.61	58.4	26.55	48.4
4.353000	25.49	18.95	10.3	30.51	56.0	27.05	46.0
17.650500	31.42	23.06	11.1	28.58	60.0	26.94	50.0

**Test Result : Pass**

Note: Final Level = Receiver Read level + Correction factor.

### Neutral Phase



Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Corr.Factor (dB)	Margin - QPK	Limit - QPK	Margin - AV	Limit - AV (dBμV)
0.150000	49.76	36.55	10.6	16.24	66.0	19.45	56.0
0.204000	43.82	35.04	10.6	19.63	63.4	18.41	53.4
0.253500	39.90	34.27	10.6	21.74	61.6	17.37	51.6
0.303000	36.45	31.83	10.6	23.71	60.2	18.33	50.2
0.915000	31.12	28.80	10.5	24.88	56.0	17.20	46.0
17.569500	30.79	25.11	11.1	29.21	60.0	24.89	50.0

**Test Result : Pass**

Note: Final Level = Receiver Read level + Correction factor.



### 3. List of measuring equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Receiver	ROHDE&SCHWARZ	ESW26	A180502935	2023.06.08	2024.06.07
2	5M Anechoic Chamber	Albatross	SAC-5MAC 12.8x6.8x6.4m	A0304210	2022.06.09	2025.06.08
3	Loop Antenna	Schwarz beck	HFH2-Z2	A0304220	2022.05.02	2025.05.01
4	Broadband antenna (30MHz~1GHz)	R&S	HL562	A0304224	2023.06.08	2026.06.07
5	EMI Horn Ant. (1-18G)	ETC	1209	A150402241	2021.01.02	2024.01.01
6	Horn antenna (18GHz~26.5GHz)	AR	AT4510	A0804450	2023.06.01	2026.05.31
7	Amplifier 30M~1GHz	MILMEGA	80RF1000-1000	A140101634	2022.12.13	2023.12.12
8	Amplifier 1G~18GHz	MILMEGA	AS0104R-800/400	A160302517	2022.12.13	2023.12.12
9	Spectrum Analyzer	KEYSIGHT	N9030A	A160702554	2023.02.20	2024.02.19
10	Test Receiver	R&S	ESIB7	A0501375	2023.03.16	2024.03.15
11	Broadband Ant.	ETC	2786	A150402240	2021.09.16	2024.03.03
12	3M Anechoic Chamber	Albatross	SAC-3MAC 9*6*6m	A0412375	2019.03.26	2024.03.25
13	Constant Temperature Humidity Chamber	ESPEC	SU-642	A150802409	2023.03.18	2024.03.17
14	Test Receiver	KEYSIGHT	N9038A	A141202036	2023.06.12	2024.06.11
15	LISN	ROHDE&SCHWARZ	ENV216	A140701847	2023.06.08	2024.06.07



#### 4. Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013. All the measurement uncertainty value were shown with a coverage  $K=2$  to indicate 95% level of confidence . The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

##### Uncertainty of AC Power Line Conducted Emission Measurement (150kHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	2.8dB
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##### Uncertainty of Radiated Emission Measurement (9kHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	3.5dB
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##### Uncertainty of Radiated Emission Measurement (30MHz~1GHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	3.91dB
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##### Uncertainty of Radiated Emission Measurement (1GHz~18GHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	4.5dB
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##### Uncertainty of Radiated Emission Measurement (18GHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	4.9dB
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##### Uncertainty of RF Conducted Measurement (9kHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%( $U=2U_c(y)$ )	1.2dB
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**Appendix A****Output power  
Test Result and Data**

U-NII-1 AVGSA Output Power								
Mode	Frequency (MHz)	Ant	Power (dBm)	Total Power (dBm)	Total EIRP (dBm)	FCC Limit (dBm)	IC EIRP Limit (dBm)	Result
802.11n (20MHz)	5180	Ant9	12.24	14.69	15.24	24	22.58	Pass
802.11n (20MHz)	5180	Ant10	11.03					
802.11n (20MHz)	5220	Ant9	12.19	14.74	15.29	24	22.57	Pass
802.11n (20MHz)	5220	Ant10	11.22					
802.11n (20MHz)	5240	Ant9	12.16	14.80	15.35	24	22.58	Pass
802.11n (20MHz)	5240	Ant10	11.39					
802.11n (40MHz)	5190	Ant9	12.22	14.58	15.13	24	23.00	Pass
802.11n (40MHz)	5190	Ant10	10.81					
802.11n (40MHz)	5230	Ant9	12.35	14.70	15.24	24	23.00	Pass
802.11n (40MHz)	5230	Ant10	10.90					
802.11ac (20MHz)	5180	Ant9	12.17	14.64	15.19	24	22.55	Pass
802.11ac (20MHz)	5180	Ant10	11.02					
802.11ac (20MHz)	5220	Ant9	12.14	14.80	15.34	24	22.59	Pass
802.11ac (20MHz)	5220	Ant10	11.40					
802.11ac (20MHz)	5240	Ant9	12.17	14.85	15.40	24	22.59	Pass
802.11ac (20MHz)	5240	Ant10	11.48					
802.11ac (40MHz)	5190	Ant9	12.18	14.60	15.15	24	23.00	Pass
802.11ac (40MHz)	5190	Ant10	10.91					
802.11ac (40MHz)	5230	Ant9	12.27	14.70	15.25	24	23.00	Pass
802.11ac (40MHz)	5230	Ant10	11.02					
802.11ac (80MHz)	5210	Ant9	11.02	13.44	13.99	24	23.00	Pass
802.11ac (80MHz)	5210	Ant10	9.75					
802.11a (20MHz)	5180	Ant9	15.34	/	11.19	24	22.37	Pass
802.11a (20MHz)	5180	Ant10	13.28	/	12.03	24	22.36	Pass
802.11a (20MHz)	5220	Ant9	15.38	/	11.23	24	22.36	Pass
802.11a (20MHz)	5220	Ant10	13.30	/	12.05	24	22.35	Pass
802.11a (20MHz)	5240	Ant9	15.29	/	11.14	24	22.35	Pass
802.11a (20MHz)	5240	Ant10	13.41	/	12.16	24	22.33	Pass



802.11ax (20MHz)	5180	Ant9	12.40	14.83	15.38	24	22.82	Pass
802.11ax (20MHz)	5180	Ant10	11.15					
802.11ax (20MHz)	5220	Ant9	12.32	14.89	15.44	24	22.82	Pass
802.11ax (20MHz)	5220	Ant10	11.40					
802.11ax (20MHz)	5240	Ant9	12.36	14.97	15.52	24	22.81	Pass
802.11ax (20MHz)	5240	Ant10	11.51					
802.11ax (40MHz)	5190	Ant9	11.95	14.41	14.96	24	23.00	Pass
802.11ax (40MHz)	5190	Ant10	10.76					
802.11ax (40MHz)	5230	Ant9	12.24	14.69	15.24	24	23.00	Pass
802.11ax (40MHz)	5230	Ant10	11.03					
802.11ax (80MHz)	5210	Ant9	11.19	13.59	14.14	24	23.00	Pass
802.11ax (80MHz)	5210	Ant10	9.87					

Note:

- 1) ANT9 and ANT10 is 2\*2MIMO.
- 2) Antenna Gain: Ant9: -4.15dBi; ANT10: -1.25dBi.
- 3) Directional Gain: 0.55dBi.
- 4) Total Power =  $10 \cdot \log \{10^{(\text{Ant 9 PSD}/10)} + 10^{(\text{Ant 10 PSD}/10)}\}$ .
- 5) Total EIRP = Total Power + Directional Gain.



U-NII-2a AVGSA Output Power									
Mode	Frequency (MHz)	Ant	Power (dBm)	Total Power (dBm)	Total EIRP (dBm)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Result
802.11n (20MHz)	5260	Ant9	12.33	14.85	15.39	24.00	23.58	29.58	Pass
802.11n (20MHz)	5260	Ant10	11.28						
802.11n (20MHz)	5300	Ant9	12.18	14.73	15.28	24.00	23.59	29.59	Pass
802.11n (20MHz)	5300	Ant10	11.21						
802.11n (20MHz)	5320	Ant9	11.88	14.49	15.04	24.00	23.58	29.58	Pass
802.11n (20MHz)	5320	Ant10	11.04						
802.11n (40MHz)	5270	Ant9	10.85	13.44	13.99	24.00	24.00	30.00	Pass
802.11n (40MHz)	5270	Ant10	9.97						
802.11n (40MHz)	5310	Ant9	10.70	13.31	13.86	24.00	24.00	30.00	Pass
802.11n (40MHz)	5310	Ant10	9.86						
802.11ac (20MHz)	5260	Ant9	12.04	14.69	15.23	24.00	23.59	29.59	Pass
802.11ac (20MHz)	5260	Ant10	11.28						
802.11ac (20MHz)	5300	Ant9	12.02	14.63	15.18	24.00	23.57	29.57	Pass
802.11ac (20MHz)	5300	Ant10	11.18						
802.11ac (20MHz)	5320	Ant9	11.78	14.44	14.98	24.00	23.57	29.57	Pass
802.11ac (20MHz)	5320	Ant10	11.04						
802.11ac (40MHz)	5270	Ant9	10.88	13.44	13.99	24.00	24.00	30.00	Pass
802.11ac (40MHz)	5270	Ant10	9.93						
802.11ac (40MHz)	5310	Ant9	10.77	13.33	13.87	24.00	24.00	30.00	Pass
802.11ac (40MHz)	5310	Ant10	9.81						
802.11ac (80MHz)	5290	Ant9	9.60	11.98	12.53	24.00	24.00	30.00	Pass
802.11ac (80MHz)	5290	Ant10	8.23						
802.11ac (160MHz)	5250	Ant9	8.97	11.50	12.04	24.00	24.00	30.00	Pass
802.11ac (160MHz)	5250	Ant10	7.94						
802.11a (20MHz)	5260	Ant9	15.20	/	11.05	24.00	23.40	29.40	Pass
802.11a (20MHz)	5260	Ant10	13.37	/	12.12	24.00	23.35	29.35	Pass
802.11a (20MHz)	5300	Ant9	15.27	/	11.12	24.00	23.39	29.39	Pass
802.11a (20MHz)	5300	Ant10	13.19	/	11.94	24.00	23.34	29.34	Pass
802.11a (20MHz)	5320	Ant9	14.98	/	10.83	24.00	23.40	29.40	Pass
802.11a (20MHz)	5320	Ant10	13.18	/	11.93	24.00	23.35	29.35	Pass



802.11ax (160MHz)	5250	Ant9	9.25	11.73	12.28	24.00	24.00	30.00	Pass
802.11ax (160MHz)	5250	Ant10	8.11						
802.11ax (20MHz)	5260	Ant9	12.20	14.79	15.34	24.00	23.82	29.82	Pass
802.11ax (20MHz)	5260	Ant10	11.31						
802.11ax (20MHz)	5300	Ant9	12.10	14.71	15.25	24.00	23.83	29.83	Pass
802.11ax (20MHz)	5300	Ant10	11.25						
802.11ax (20MHz)	5320	Ant9	11.87	14.51	15.06	24.00	23.82	29.82	Pass
802.11ax (20MHz)	5320	Ant10	11.09						
802.11ax (40MHz)	5270	Ant9	11.15	13.59	14.14	24.00	24.00	30.00	Pass
802.11ax (40MHz)	5270	Ant10	9.93						
802.11ax (40MHz)	5310	Ant9	10.83	13.36	13.91	24.00	24.00	30.00	Pass
802.11ax (40MHz)	5310	Ant10	9.82						
802.11ax (80MHz)	5290	Ant9	9.74	12.16	12.71	24.00	24.00	30.00	Pass
802.11ax (80MHz)	5290	Ant10	8.46						

Note:

- 1) ANT9 and ANT10 is 2\*2MIMO.
- 2) Antenna Gain: Ant9: -4.15dBi; ANT10: -1.25dBi.
- 3) Directional Gain: 0.55dBi.
- 4) Total Power =  $10 \cdot \log \{ 10^{(\text{Ant 9 PSD}/10)} + 10^{(\text{Ant 10 PSD}/10)} \}$ .
- 5) Total EIRP = Total Power + Directional Gain.





U-NII-2c AVGSA Output Power									
Mode	Frequency (MHz)	Ant	Power (dBm)	Total Power (dBm)	Total EIRP (dBm)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Result
802.11n (20MHz)	5500	Ant9	12.14	14.55	15.10	24.00	23.57	29.57	Pass
802.11n (20MHz)	5500	Ant10	10.85						
802.11n (20MHz)	5580	Ant9	12.26	14.74	15.29	24.00	23.58	29.58	Pass
802.11n (20MHz)	5580	Ant10	11.12						
802.11n (20MHz)	5700	Ant9	12.56	14.90	15.45	24.00	23.57	29.57	Pass
802.11n (20MHz)	5700	Ant10	11.10						
802.11n (40MHz)	5510	Ant9	10.68	13.23	13.78	24.00	24.00	30.00	Pass
802.11n (40MHz)	5510	Ant10	9.70						
802.11n (40MHz)	5550	Ant9	10.84	13.31	13.86	24.00	24.00	30.00	Pass
802.11n (40MHz)	5550	Ant10	9.69						
802.11n (40MHz)	5670	Ant9	11.45	13.65	14.20	24.00	24.00	30.00	Pass
802.11n (40MHz)	5670	Ant10	9.65						
802.11ac (20MHz)	5500	Ant9	12.08	14.51	15.06	24.00	23.57	29.57	Pass
802.11ac (20MHz)	5500	Ant10	10.83						
802.11ac (20MHz)	5580	Ant9	12.26	14.75	15.29	24.00	23.59	29.59	Pass
802.11ac (20MHz)	5580	Ant10	11.14						
802.11ac (20MHz)	5700	Ant9	12.57	14.89	15.43	24.00	23.58	29.58	Pass
802.11ac (20MHz)	5700	Ant10	11.05						
802.11ac (40MHz)	5510	Ant9	10.64	13.18	13.73	24.00	24.00	30.00	Pass
802.11ac (40MHz)	5510	Ant10	9.65						
802.11ac (40MHz)	5550	Ant9	10.84	13.30	13.84	24.00	24.00	30.00	Pass
802.11ac (40MHz)	5550	Ant10	9.65						
802.11ac (40MHz)	5670	Ant9	11.53	13.72	14.27	24.00	24.00	30.00	Pass
802.11ac (40MHz)	5670	Ant10	9.70						
802.11ac (80MHz)	5530	Ant9	9.52	12.01	12.56	24.00	24.00	30.00	Pass
802.11ac (80MHz)	5530	Ant10	8.41						
802.11ac (160MHz)	5570	Ant9	9.01	11.31	11.86	24.00	24.00	30.00	Pass
802.11ac (160MHz)	5570	Ant10	7.46						
802.11a (20MHz)	5500	Ant9	15.16	/	11.01	24.00	23.42	29.42	Pass
802.11a (20MHz)	5500	Ant10	12.91	/	11.66	24.00	23.35	29.35	Pass



802.11a (20MHz)	5580	Ant9	15.47	/	11.32	24.00	23.41	29.41	Pass
802.11a (20MHz)	5580	Ant10	13.14	/	11.89	24.00	23.34	29.34	Pass
802.11a (20MHz)	5700	Ant9	15.56	/	11.41	24.00	23.41	29.41	Pass
802.11a (20MHz)	5700	Ant10	13.07	/	11.82	24.00	23.35	29.35	Pass
802.11ax (160MHz)	5570	Ant9	9.32	11.62	12.17	24.00	24.00	30.00	Pass
802.11ax (160MHz)	5570	Ant10	7.76						
802.11ax (20MHz)	5500	Ant9	11.99	14.42	14.97	24.00	23.83	29.83	Pass
802.11ax (20MHz)	5500	Ant10	10.74						
802.11ax (20MHz)	5580	Ant9	12.28	14.81	15.35	24.00	23.82	29.82	Pass
802.11ax (20MHz)	5580	Ant10	11.25						
802.11ax (20MHz)	5700	Ant9	12.28	14.74	15.29	24.00	23.83	29.83	Pass
802.11ax (20MHz)	5700	Ant10	11.11						
802.11ax (40MHz)	5510	Ant9	10.56	13.13	13.68	24.00	24.00	30.00	Pass
802.11ax (40MHz)	5510	Ant10	9.64						
802.11ax (40MHz)	5550	Ant9	10.78	13.26	13.81	24.00	24.00	30.00	Pass
802.11ax (40MHz)	5550	Ant10	9.65						
802.11ax (40MHz)	5670	Ant9	11.46	13.64	14.19	24.00	24.00	30.00	Pass
802.11ax (40MHz)	5670	Ant10	9.61						
802.11ax (80MHz)	5530	Ant9	9.67	12.22	12.77	24.00	24.00	30.00	Pass
802.11ax (80MHz)	5530	Ant10	8.69						

Note:

- 1) ANT9 and ANT10 is 2\*2MIMO.
- 2) Antenna Gain: Ant9: -4.15dBi; ANT10: -1.25dBi.
- 3) Directional Gain: 0.55dBi.
- 4) Total Power =  $10 \cdot \log \{ 10^{(Ant\ 9\ PSD/10)} + 10^{(Ant\ 10\ PSD/10)} \}$ .
- 5) Total EIRP = Total Power + Directional Gain.



U-NII-3 AVGSA Output Power						
Mode	Frequency (MHz)	Ant	Max Power (dBm)	Total Power (dBm)	FCC&IC Limit (dBm)	Result
802.11n (20MHz)	5745	Ant9	12.87	14.86	30.00	Pass
802.11n (20MHz)	5745	Ant10	10.50			
802.11n (20MHz)	5785	Ant9	12.64	14.73	30.00	Pass
802.11n (20MHz)	5785	Ant10	10.56			
802.11n (20MHz)	5825	Ant9	12.38	14.67	30.00	Pass
802.11n (20MHz)	5825	Ant10	10.80			
802.11n (40MHz)	5755	Ant9	11.32	13.26	30.00	Pass
802.11n (40MHz)	5755	Ant10	8.82			
802.11n (40MHz)	5795	Ant9	11.19	13.05	30.00	Pass
802.11n (40MHz)	5795	Ant10	8.47			
802.11ac (20MHz)	5745	Ant9	12.65	14.70	30.00	Pass
802.11ac (20MHz)	5745	Ant10	10.45			
802.11ac (20MHz)	5785	Ant9	12.48	14.62	30.00	Pass
802.11ac (20MHz)	5785	Ant10	10.52			
802.11ac (20MHz)	5825	Ant9	12.34	14.63	30.00	Pass
802.11ac (20MHz)	5825	Ant10	10.75			
802.11ac (40MHz)	5755	Ant9	11.23	13.31	30.00	Pass
802.11ac (40MHz)	5755	Ant10	9.11			
802.11ac (40MHz)	5795	Ant9	11.14	13.29	30.00	Pass
802.11ac (40MHz)	5795	Ant10	9.21			
802.11ac (80MHz)	5775	Ant9	9.87	11.90	30.00	Pass
802.11ac (80MHz)	5775	Ant10	7.63			
802.11a (20MHz)	5745	Ant9	15.83	/	30.00	Pass
802.11a (20MHz)	5745	Ant10	12.65	/	30.00	Pass
802.11a (20MHz)	5785	Ant9	15.75	/	30.00	Pass
802.11a (20MHz)	5785	Ant10	12.64	/	30.00	Pass
802.11a (20MHz)	5825	Ant9	15.60	/	30.00	Pass
802.11a (20MHz)	5825	Ant10	12.92	/	30.00	Pass
802.11ax (20MHz)	5745	Ant9	12.64	14.74	30.00	Pass
802.11ax (20MHz)	5745	Ant10	10.57			
802.11ax (20MHz)	5785	Ant9	12.49	14.68	30.00	Pass
802.11ax (20MHz)	5785	Ant10	10.66			



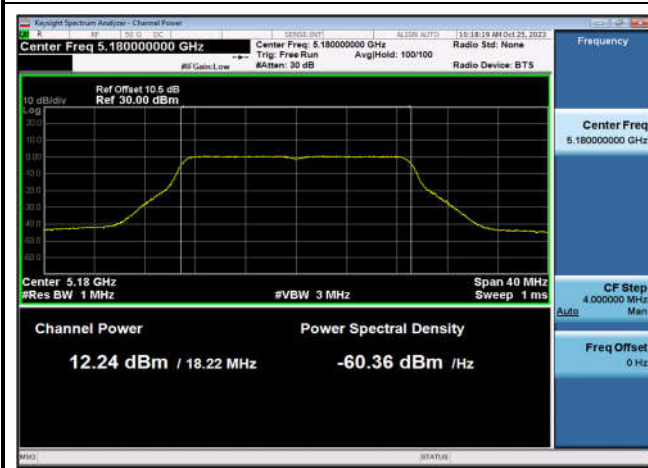
802.11ax (20MHz)	5825	Ant9	12.35	14.67	30.00	Pass
802.11ax (20MHz)	5825	Ant10	10.84			
802.11ax (40MHz)	5755	Ant9	11.31	13.34	30.00	Pass
802.11ax (40MHz)	5755	Ant10	9.07			
802.11ax (40MHz)	5795	Ant9	11.28	13.37	30.00	Pass
802.11ax (40MHz)	5795	Ant10	9.18			
802.11ax (80MHz)	5775	Ant9	10.08	12.12	30.00	Pass
802.11ax (80MHz)	5775	Ant10	7.86			

## Note:

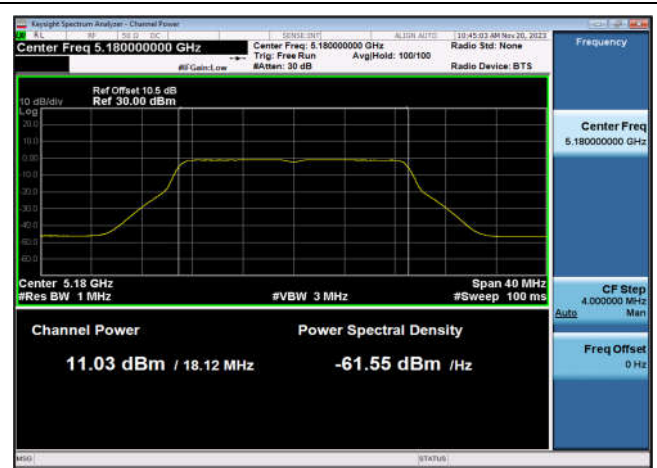
- 1) ANT9 and ANT10 is 2\*2MIMO.
- 2) Antenna Gain: Ant9: -0.33dBi; ANT10: -1.81dBi.
- 3) Directional Gain: 2.00dBi.
- 4) Total Power =  $10 \cdot \log \{10^{(\text{Ant 9 PSD}/10)} + 10^{(\text{Ant 10 PSD}/10)}\}$ .

### Test plots

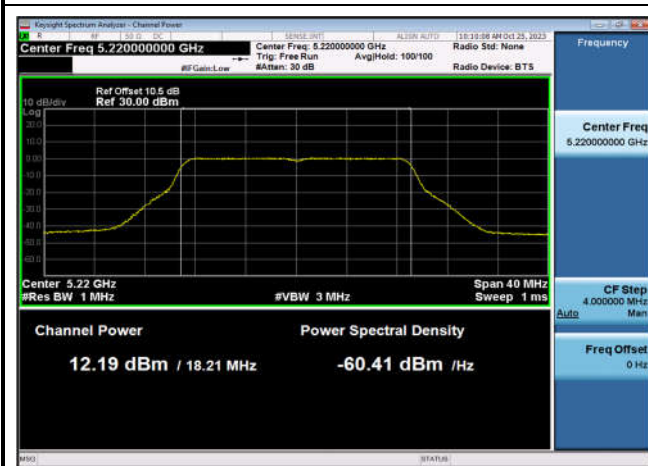
U-NII-1 Output Power-802.11n(20MHz)  
,5180MHz,Ant9



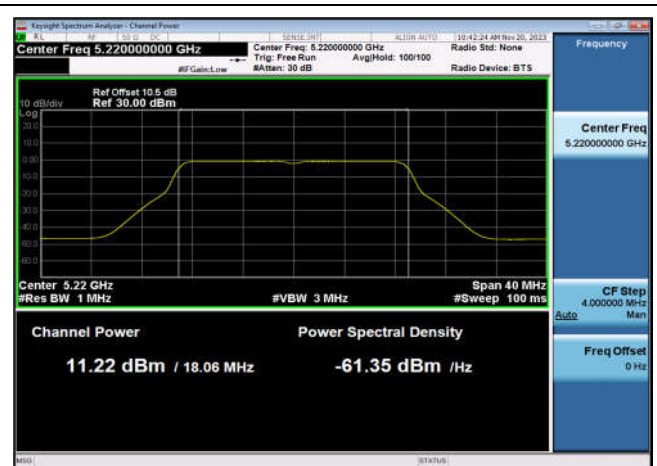
U-NII-1 Output Power-802.11n(20MHz)  
,5180MHz,Ant10



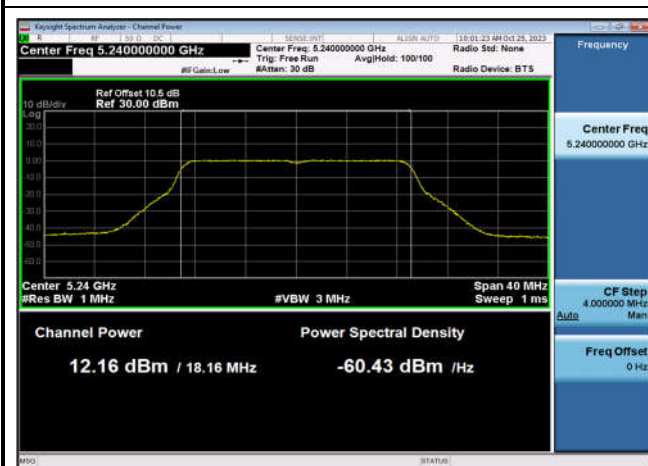
U-NII-1 Output Power-802.11n(20MHz)  
,5220MHz,Ant9



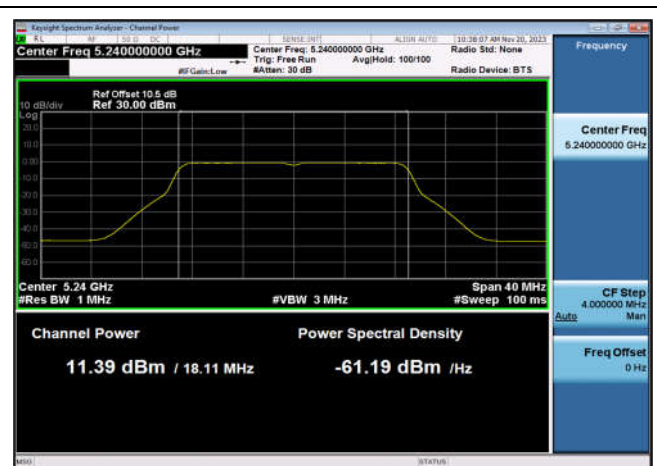
U-NII-1 Output Power-802.11n(20MHz)  
,5220MHz,Ant10



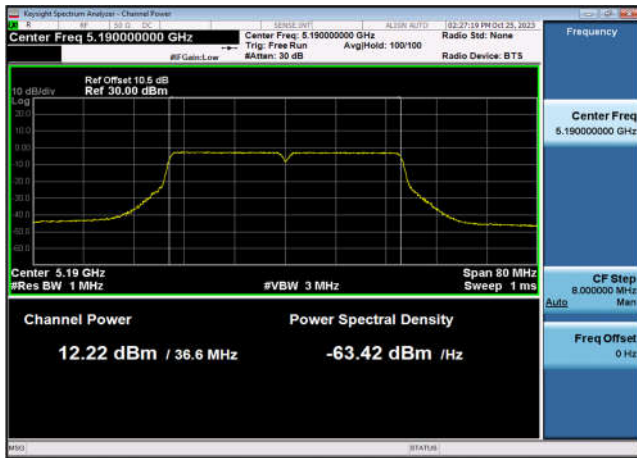
U-NII-1 Output Power-802.11n(20MHz)  
,5240MHz,Ant9



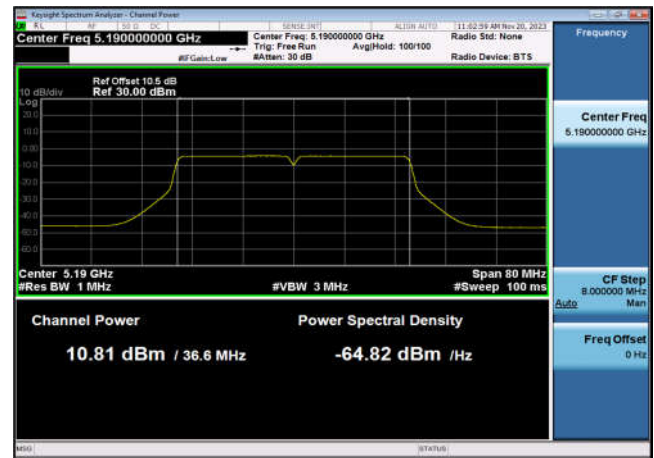
U-NII-1 Output Power-802.11n(20MHz)  
,5240MHz,Ant10



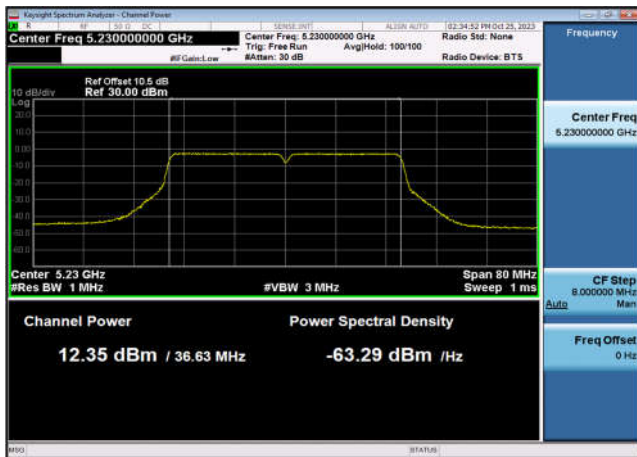
U-NII-1 Output Power-802.11n(40MHz)  
,5190MHz,Ant9



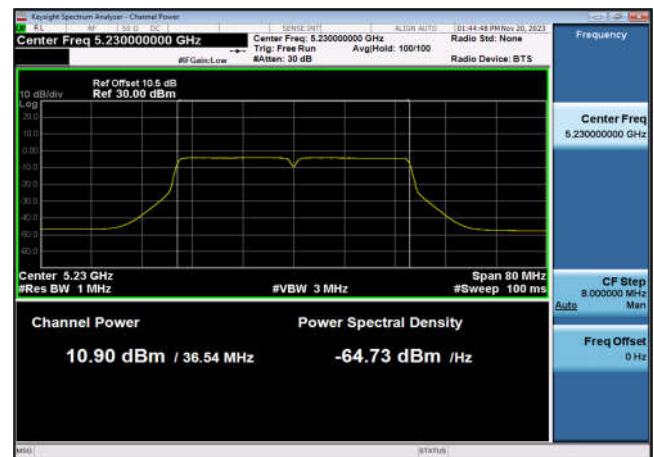
U-NII-1 Output Power-802.11n(40MHz)  
,5190MHz,Ant10



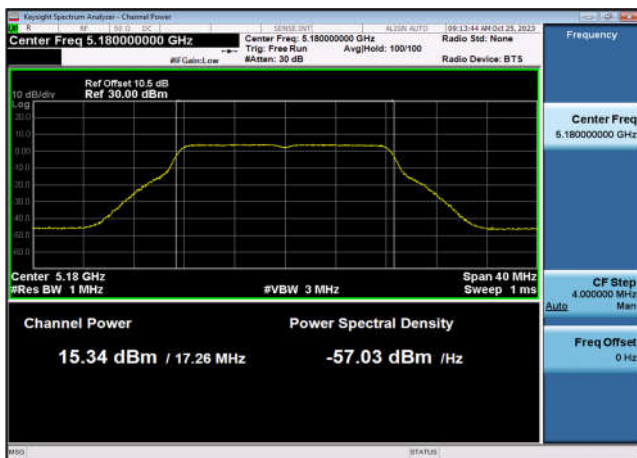
U-NII-1 Output Power-802.11n(40MHz)  
,5230MHz,Ant9



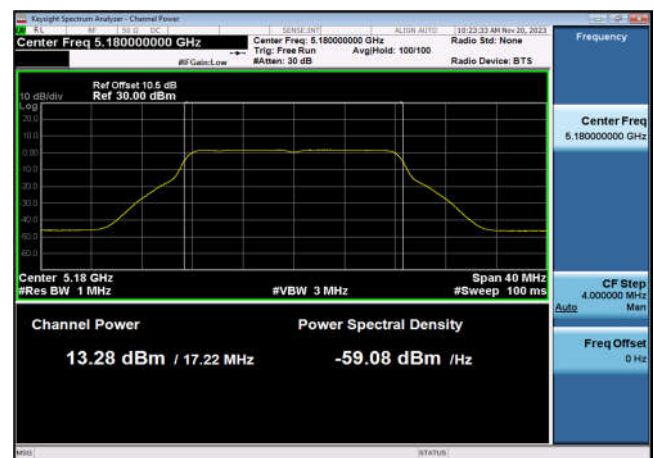
U-NII-1 Output Power-802.11n(40MHz)  
,5230MHz,Ant10



U-NII-1 Output Power-802.11a(20MHz)  
,5180MHz,Ant9

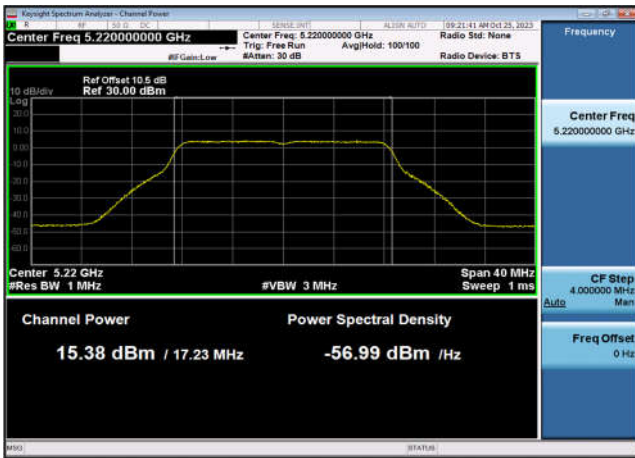


U-NII-1 Output Power-802.11a(20MHz)  
,5180MHz,Ant10

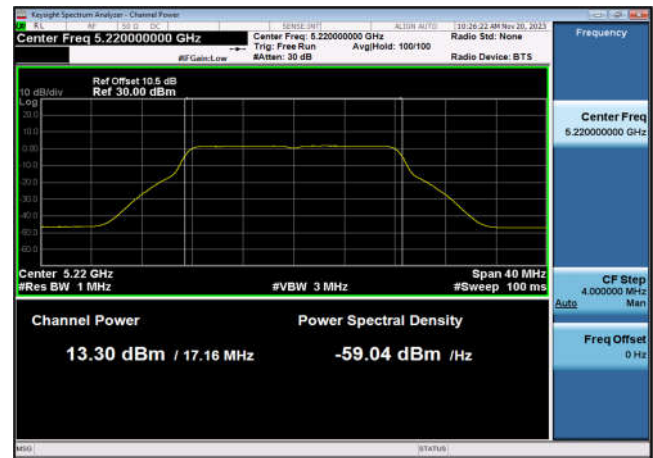




U-NII-1 Output Power-802.11a(20MHz)  
,5220MHz,Ant9



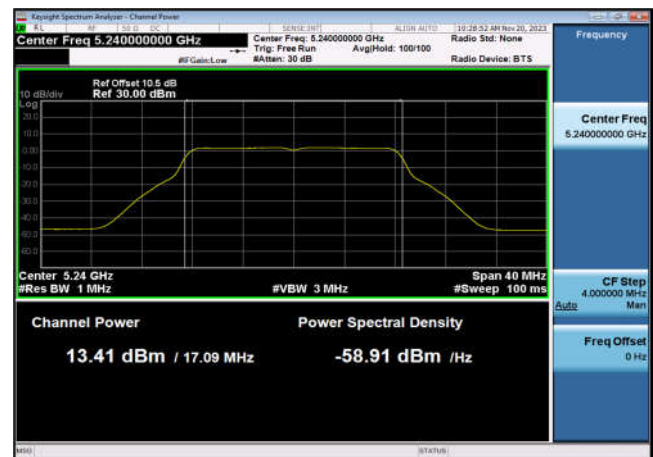
U-NII-1 Output Power-802.11a(20MHz)  
,5220MHz,Ant10



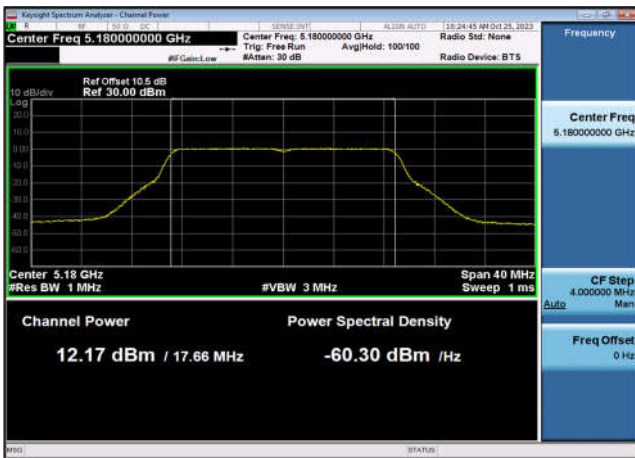
U-NII-1 Output Power-802.11a(20MHz)  
,5240MHz,Ant9



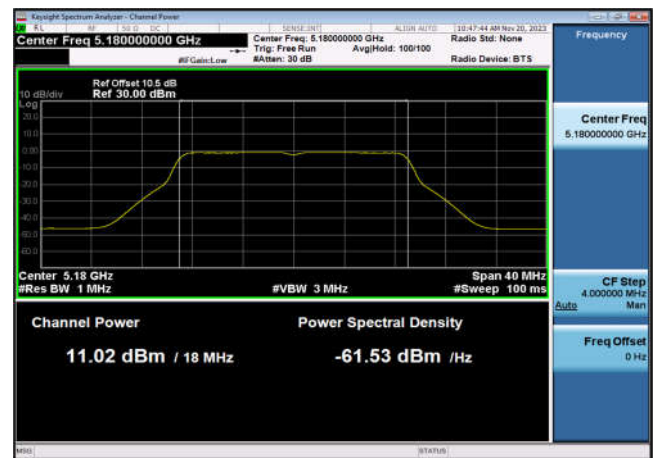
U-NII-1 Output Power-802.11a(20MHz)  
,5240MHz,Ant10



U-NII-1 Output Power-802.11ac(20MHz)  
,5180MHz,Ant9

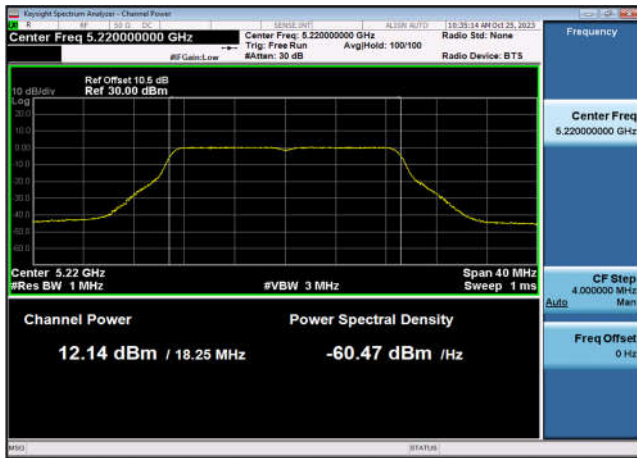


U-NII-1 Output Power-802.11ac(20MHz)  
,5180MHz,Ant10

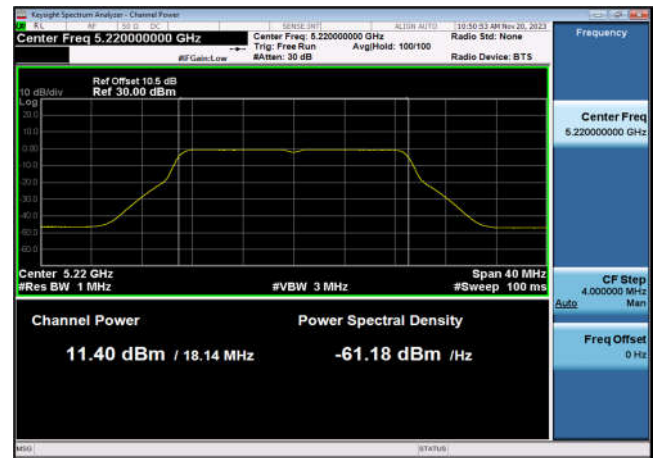




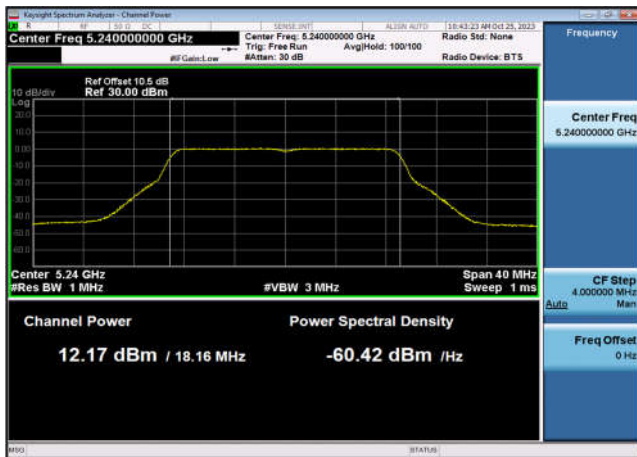
U-NII-1 Output Power-802.11ac(20MHz)  
,5220MHz,Ant9



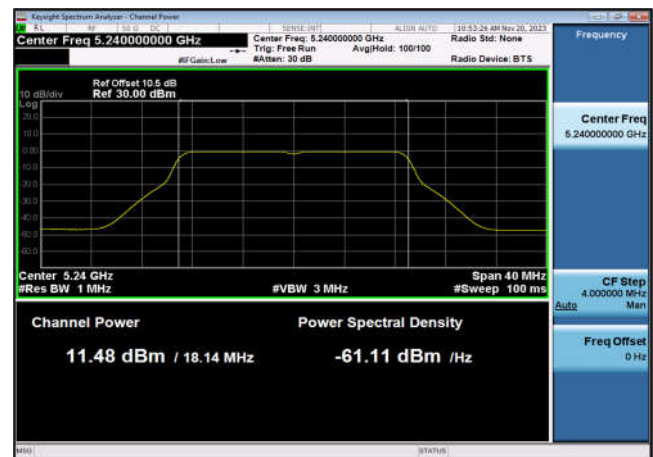
U-NII-1 Output Power-802.11ac(20MHz)  
,5220MHz,Ant10



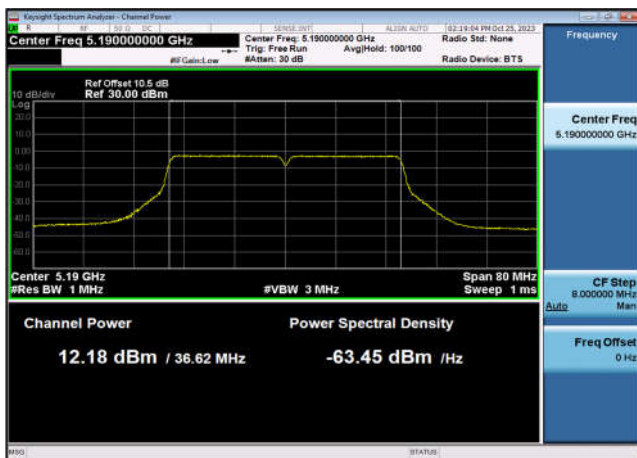
U-NII-1 Output Power-802.11ac(20MHz)  
,5240MHz,Ant9



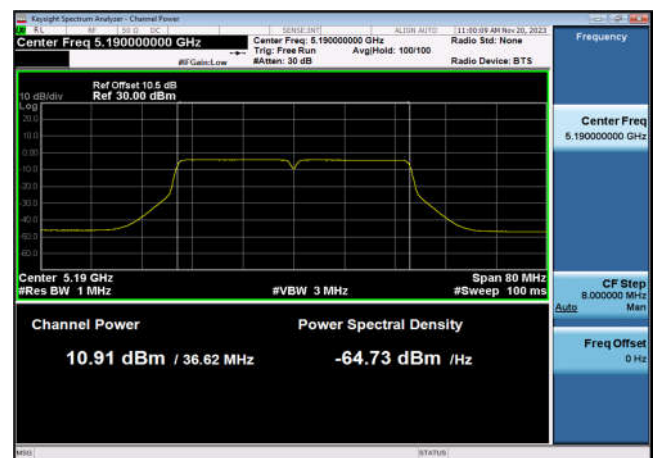
U-NII-1 Output Power-802.11ac(20MHz)  
,5240MHz,Ant10



U-NII-1 Output Power-802.11ac(40MHz)  
,5190MHz,Ant9

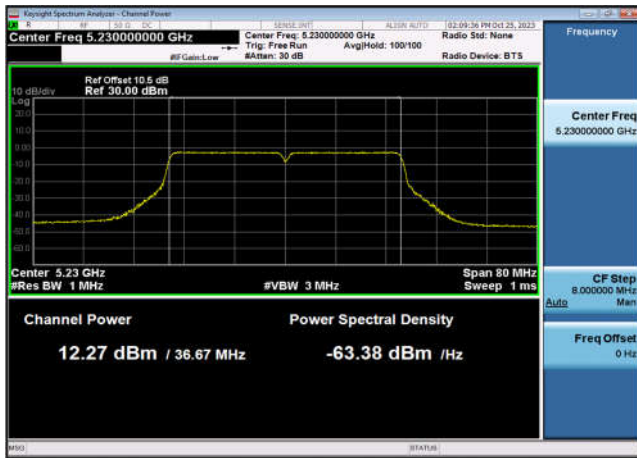


U-NII-1 Output Power-802.11ac(40MHz)  
,5190MHz,Ant10

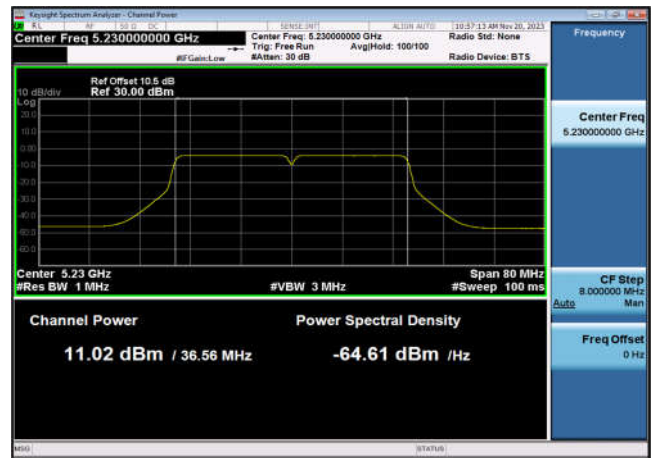




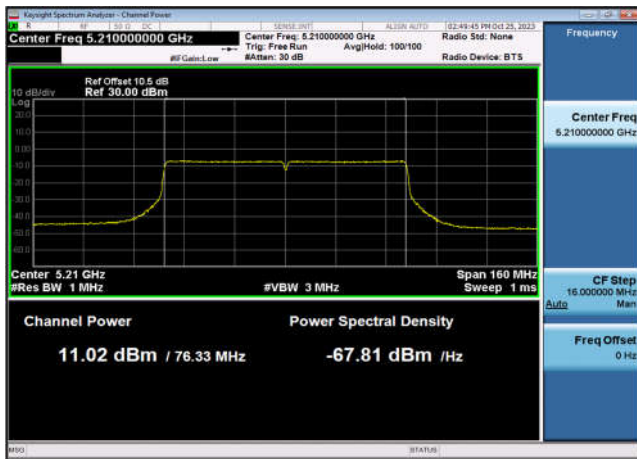
U-NII-1 Output Power-802.11ac(40MHz)  
,5230MHz,Ant9



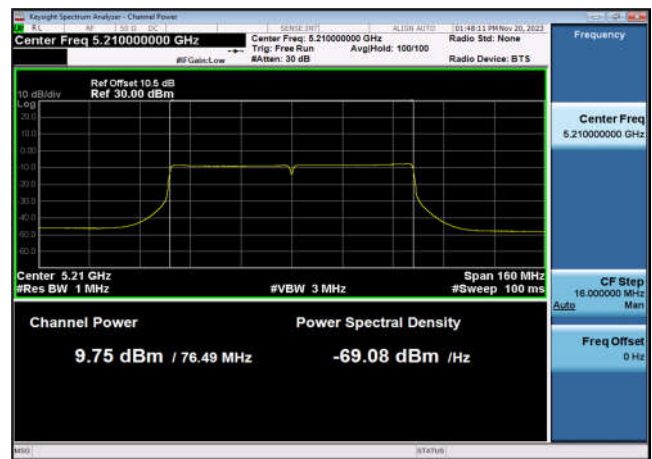
U-NII-1 Output Power-802.11ac(40MHz)  
,5230MHz,Ant10



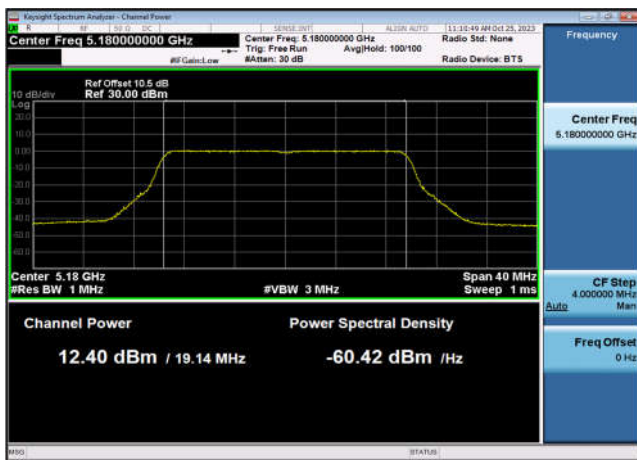
U-NII-1 Output Power-802.11ac(80MHz)  
,5210MHz,Ant9



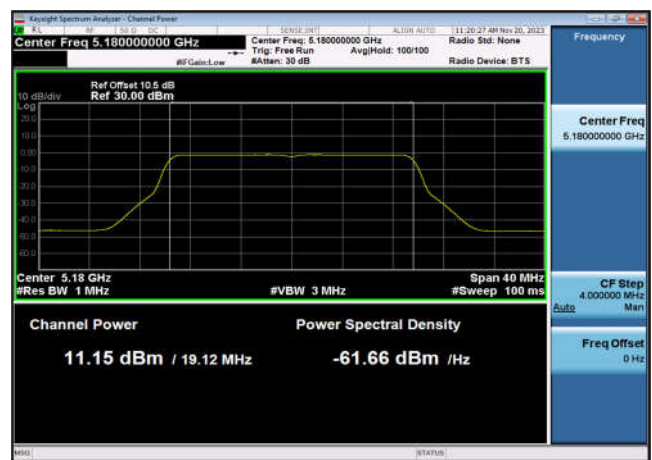
U-NII-1 Output Power-802.11ac(80MHz)  
,5210MHz,Ant10



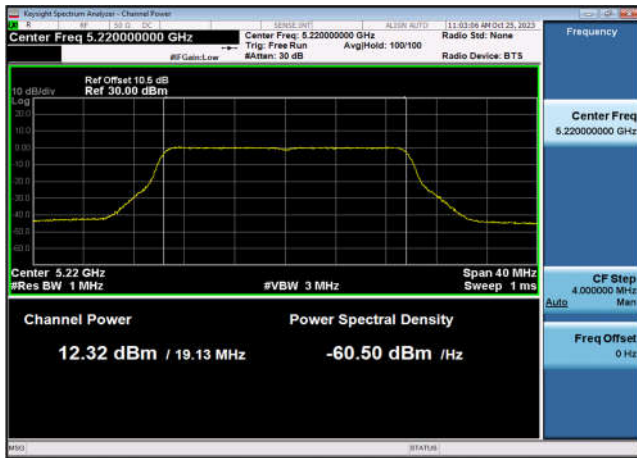
U-NII-1 Output Power-802.11ax(20MHz)  
,5180MHz,Ant9



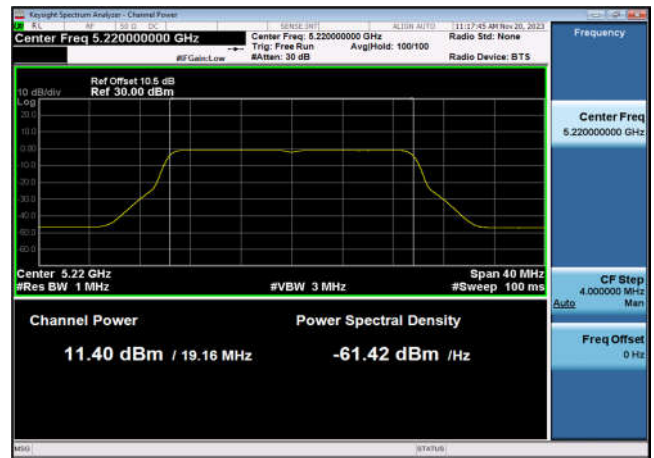
U-NII-1 Output Power-802.11ax(20MHz)  
,5180MHz,Ant10



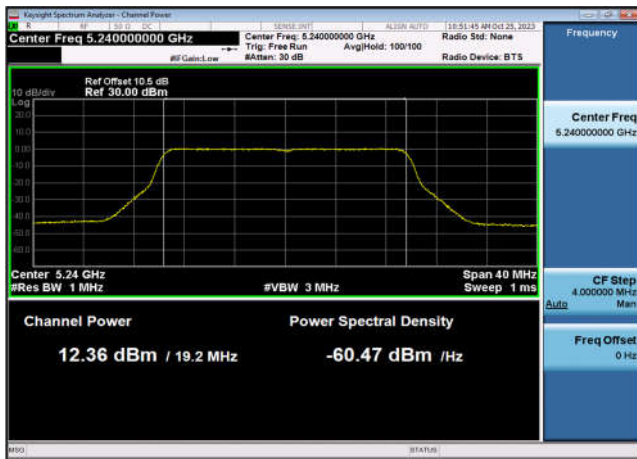
U-NII-1 Output Power-802.11ax(20MHz)  
,5220MHz,Ant9



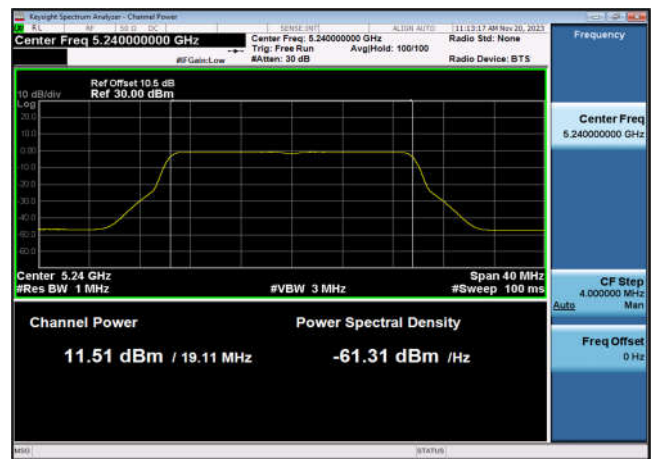
U-NII-1 Output Power-802.11ax(20MHz)  
,5220MHz,Ant10



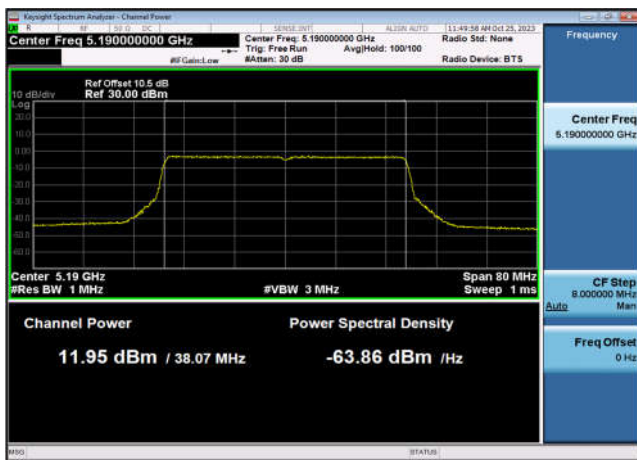
U-NII-1 Output Power-802.11ax(20MHz)  
,5240MHz,Ant9



U-NII-1 Output Power-802.11ax(20MHz)  
,5240MHz,Ant10



U-NII-1 Output Power-802.11ax(40MHz)  
,5190MHz,Ant9

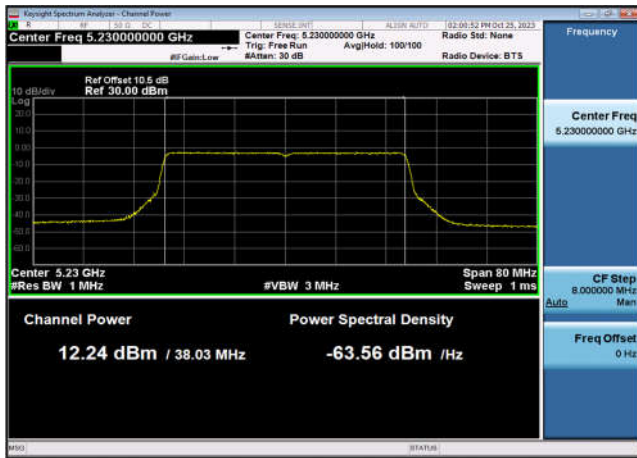


U-NII-1 Output Power-802.11ax(40MHz)  
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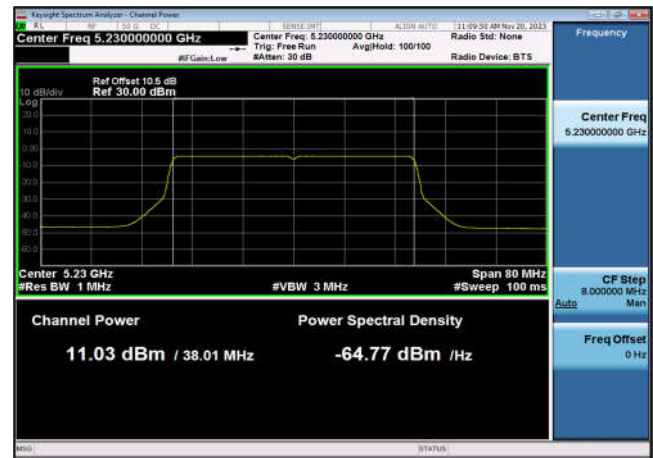




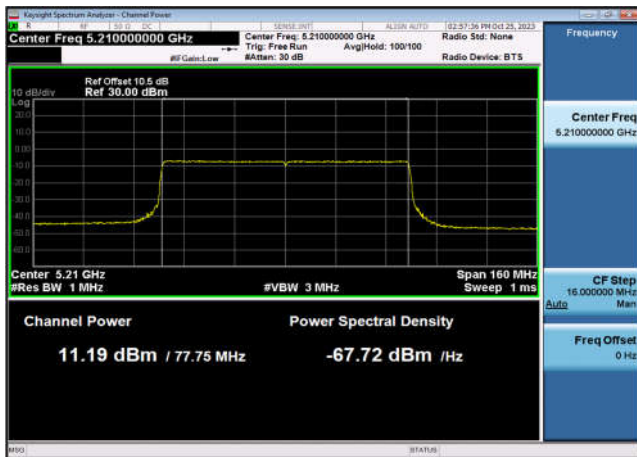
U-NII-1 Output Power-802.11ax(40MHz)  
,5230MHz,Ant9



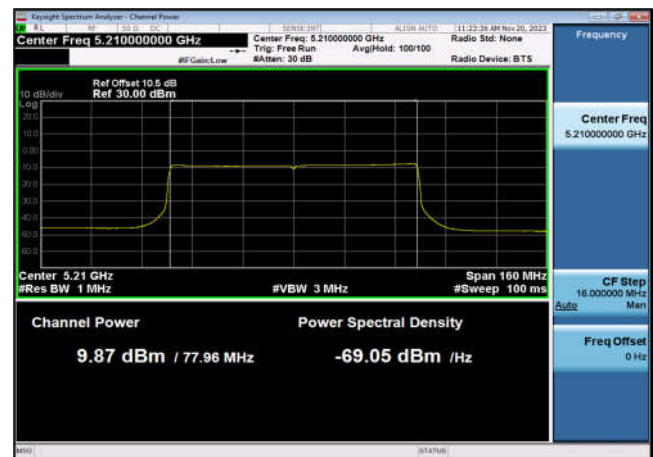
U-NII-1 Output Power-802.11ax(40MHz)  
,5230MHz,Ant10



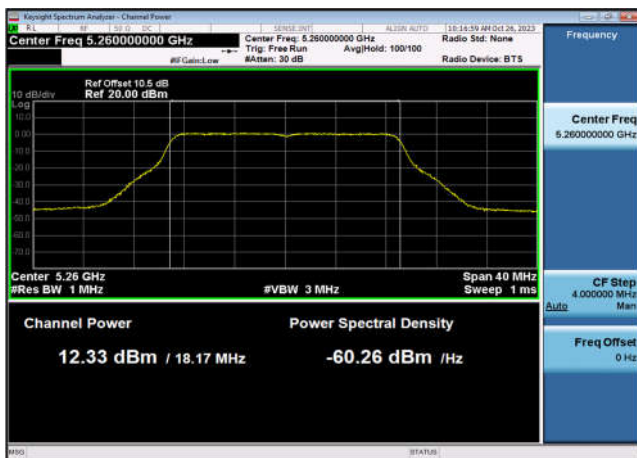
U-NII-1 Output Power-802.11ax(80MHz)  
,5210MHz,Ant9



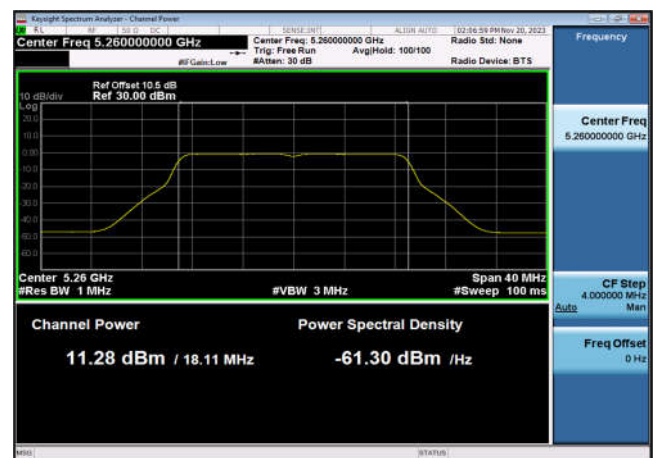
U-NII-1 Output Power-802.11ax(80MHz)  
,5210MHz,Ant10



U-NII-2a Output Power-802.11n(20MHz)  
,5260MHz,Ant9

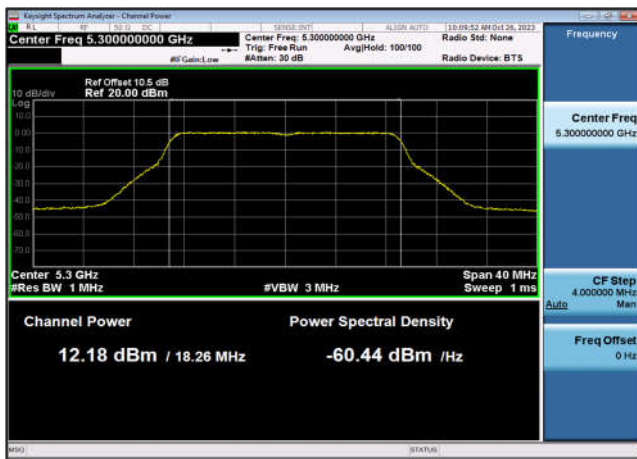


U-NII-2a Output Power-802.11n(20MHz)  
,5260MHz,Ant10

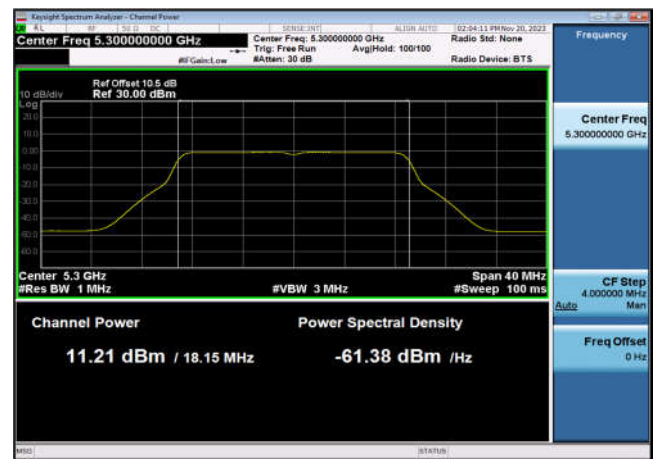




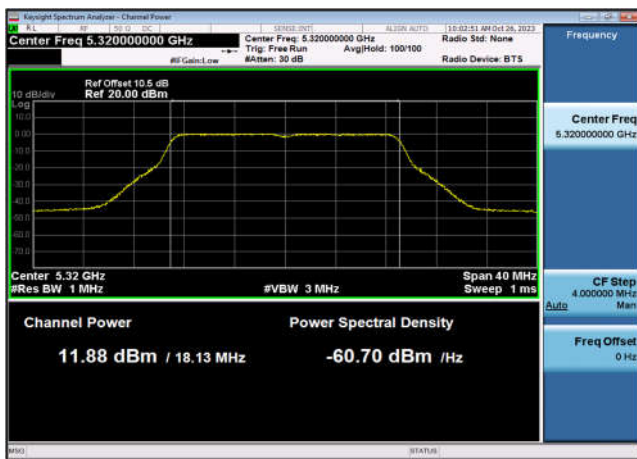
U-NII-2a Output Power-802.11n(20MHz)  
,5300MHz,Ant9



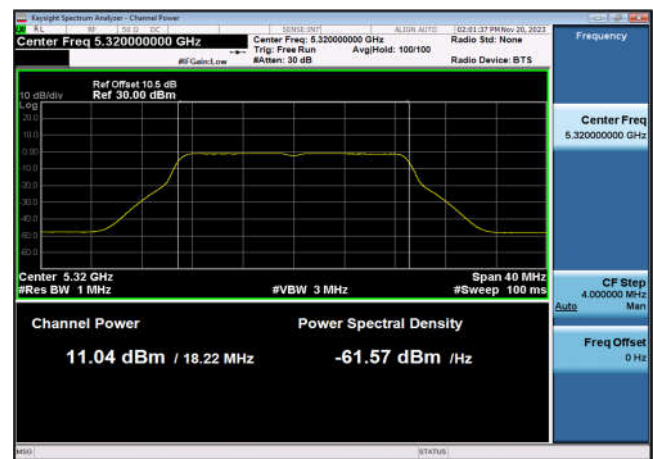
U-NII-2a Output Power-802.11n(20MHz)  
,5300MHz,Ant10



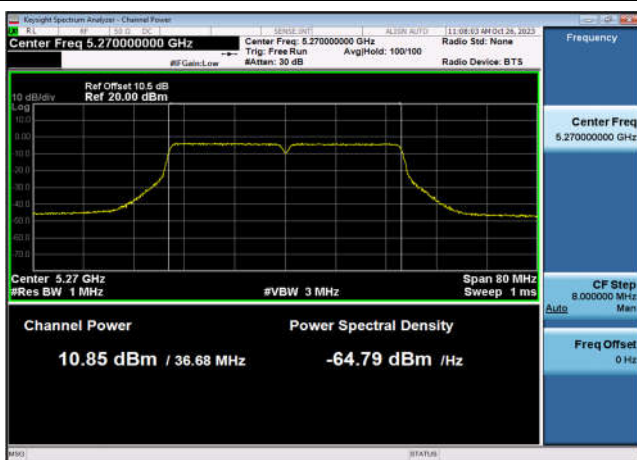
U-NII-2a Output Power-802.11n(20MHz)  
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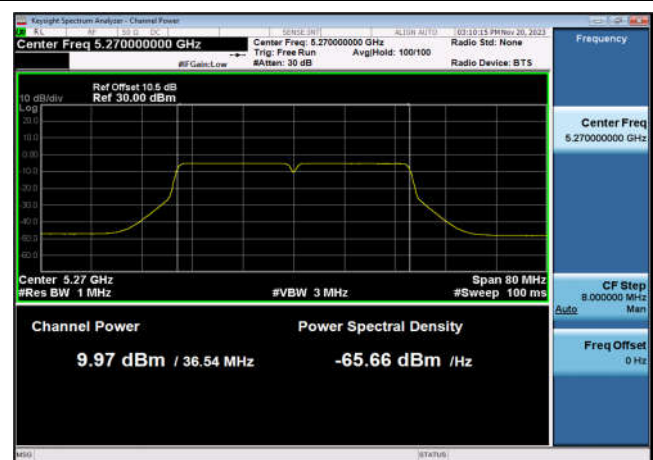
U-NII-2a Output Power-802.11n(20MHz)  
,5320MHz,Ant10



U-NII-2a Output Power-802.11n(40MHz)  
,5270MHz,Ant9



U-NII-2a Output Power-802.11n(40MHz)  
,5270MHz,Ant10

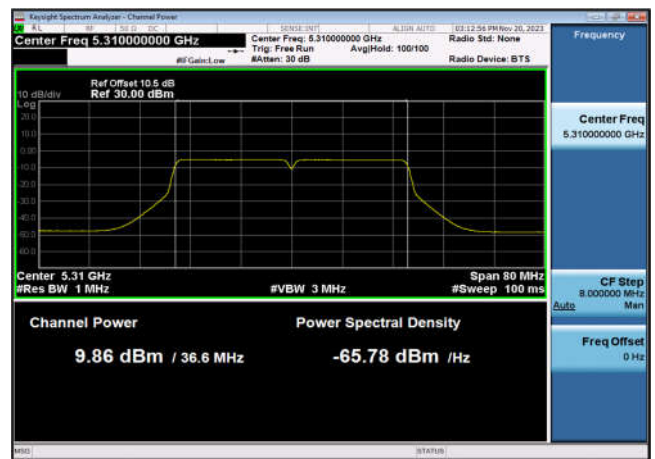




U-NII-2a Output Power-802.11n(40MHz)  
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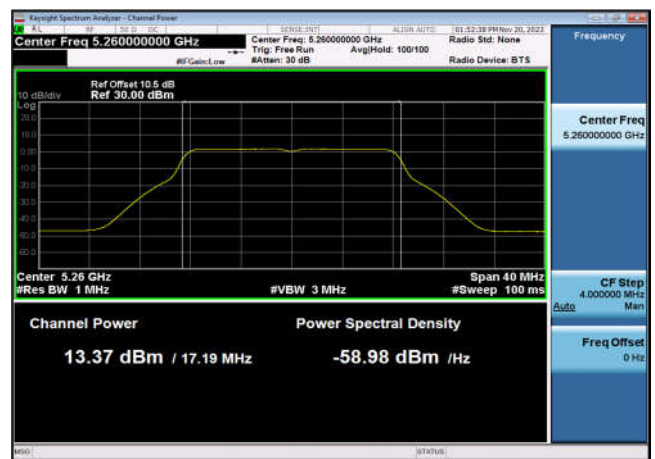
U-NII-2a Output Power-802.11n(40MHz)  
,5310MHz,Ant10



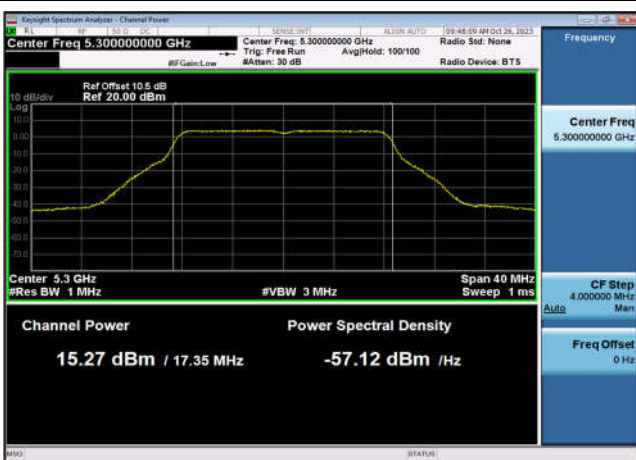
U-NII-2a Output Power-802.11a(20MHz)  
,5260MHz,Ant9



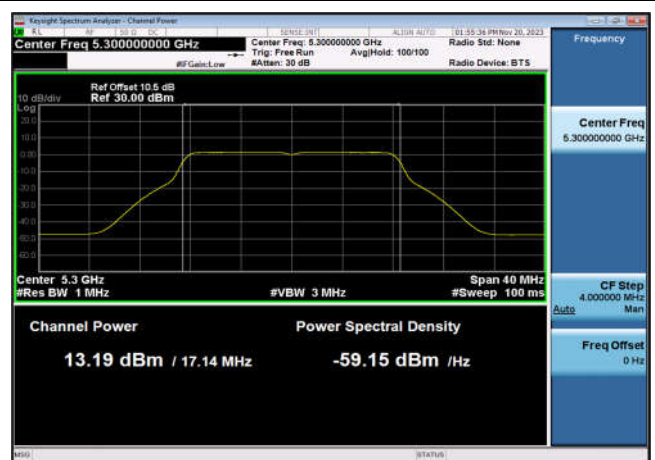
U-NII-2a Output Power-802.11a(20MHz)  
,5260MHz,Ant10



U-NII-2a Output Power-802.11a(20MHz)  
,5300MHz,Ant9



U-NII-2a Output Power-802.11a(20MHz)  
,5300MHz,Ant10

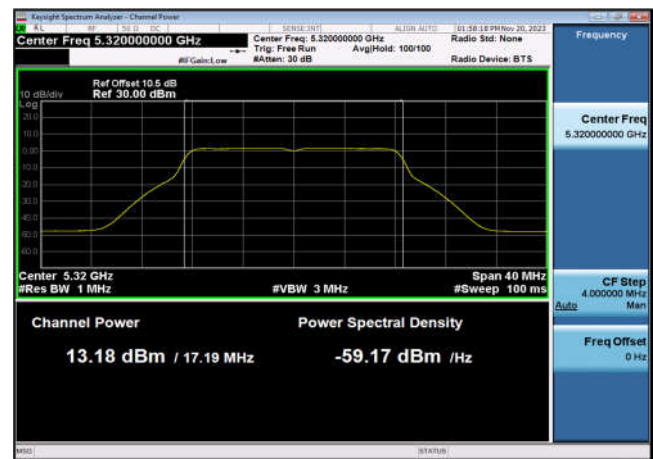




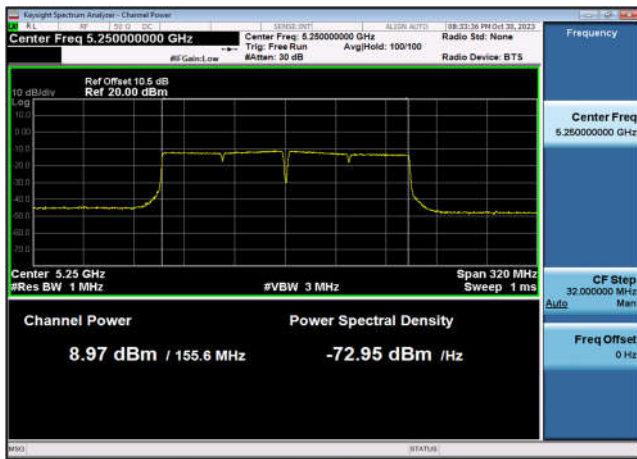
U-NII-2a Output Power-802.11a(20MHz)  
,5320MHz,Ant9



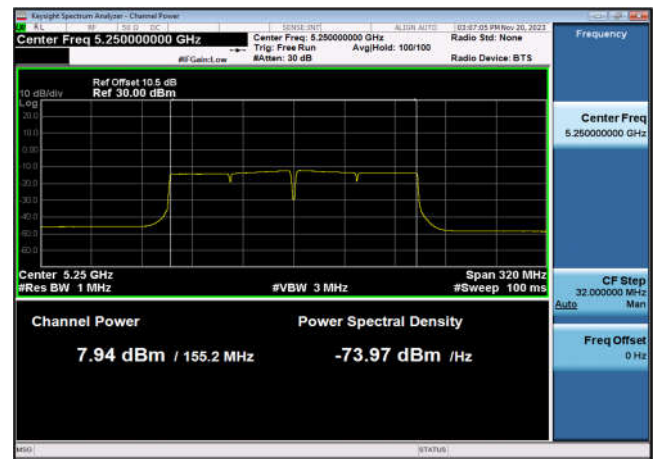
U-NII-2a Output Power-802.11a(20MHz)  
,5320MHz,Ant10



U-NII-2a Output Power-802.11ac(160MHz)  
,5250MHz,Ant9



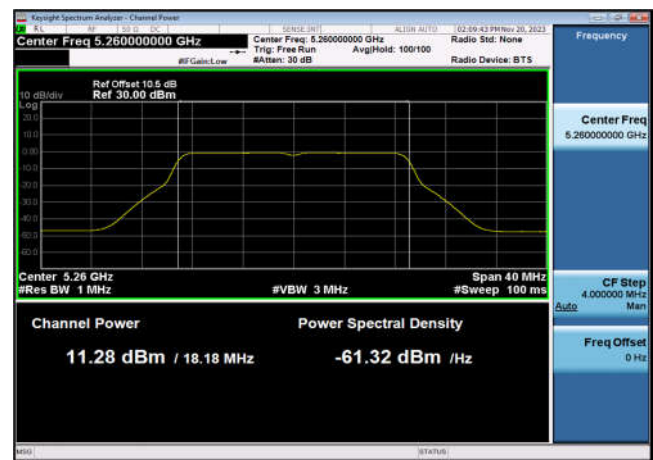
U-NII-2a Output Power-802.11ac(160MHz)  
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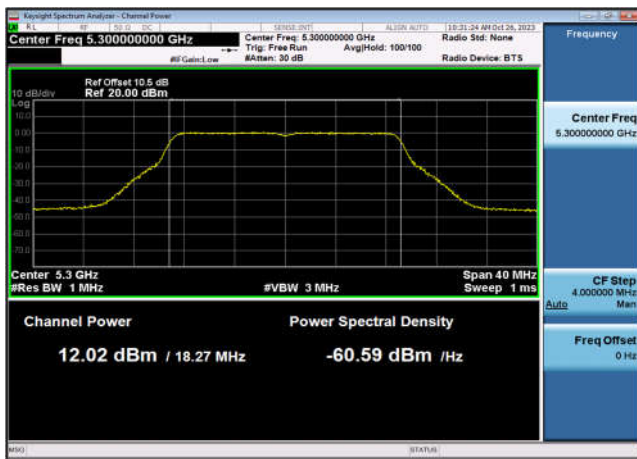
U-NII-2a Output Power-802.11ac(20MHz)  
,5260MHz,Ant9



U-NII-2a Output Power-802.11ac(20MHz)  
,5260MHz,Ant10



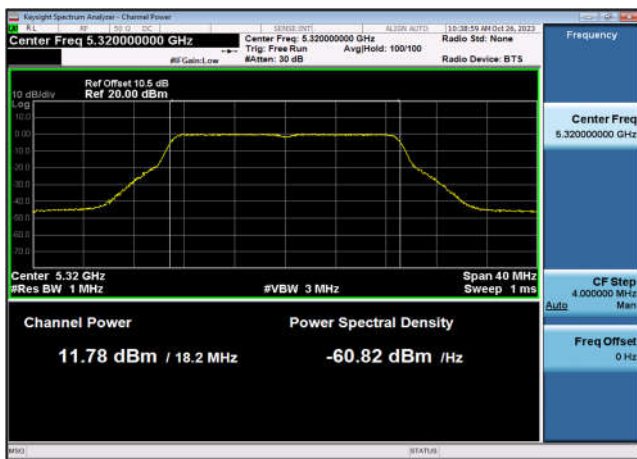
U-NII-2a Output Power-802.11ac(20MHz)  
,5300MHz,Ant9



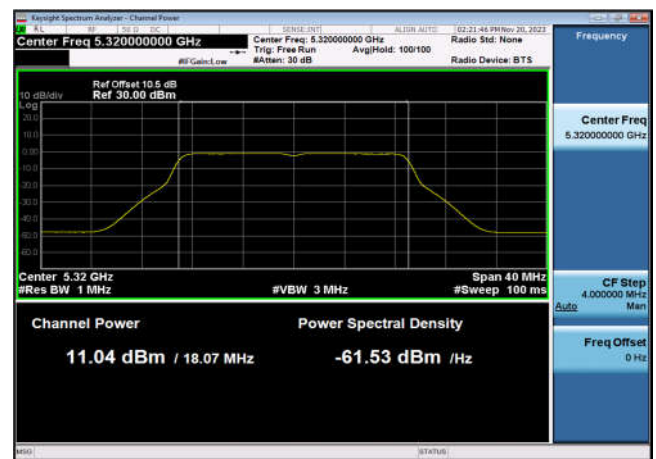
U-NII-2a Output Power-802.11ac(20MHz)  
,5300MHz,Ant10



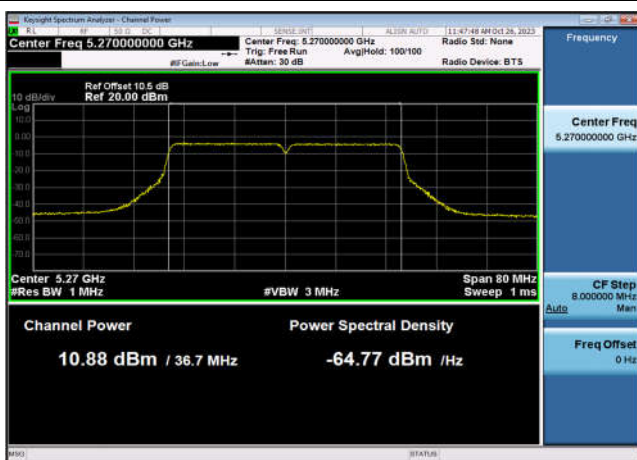
U-NII-2a Output Power-802.11ac(20MHz)  
,5320MHz,Ant9



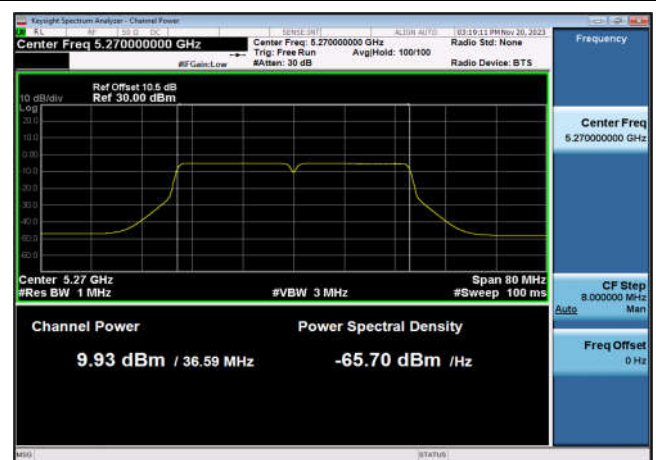
U-NII-2a Output Power-802.11ac(20MHz)  
,5320MHz,Ant10



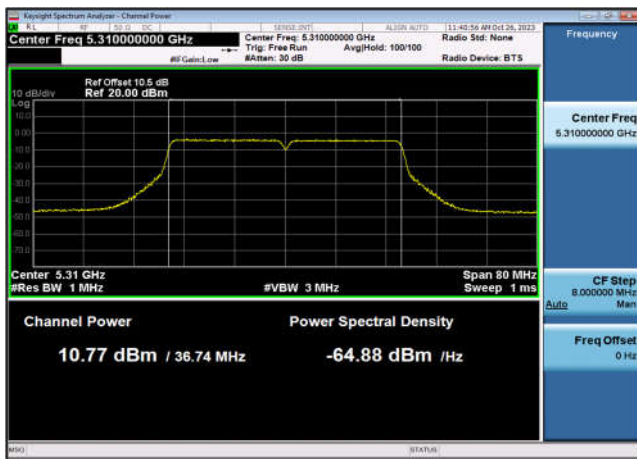
U-NII-2a Output Power-802.11ac(40MHz)  
,5270MHz,Ant9



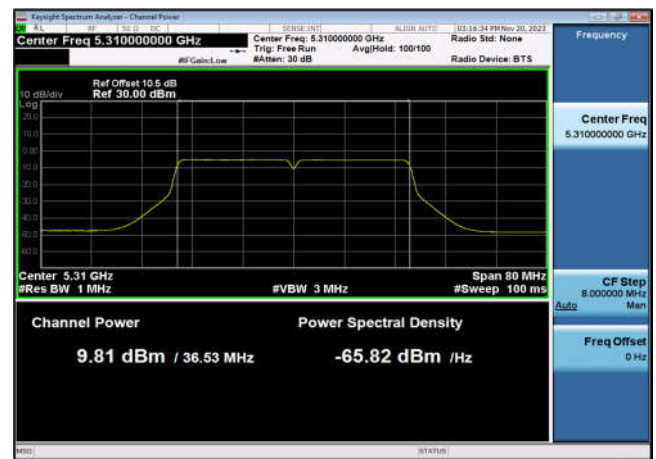
U-NII-2a Output Power-802.11ac(40MHz)  
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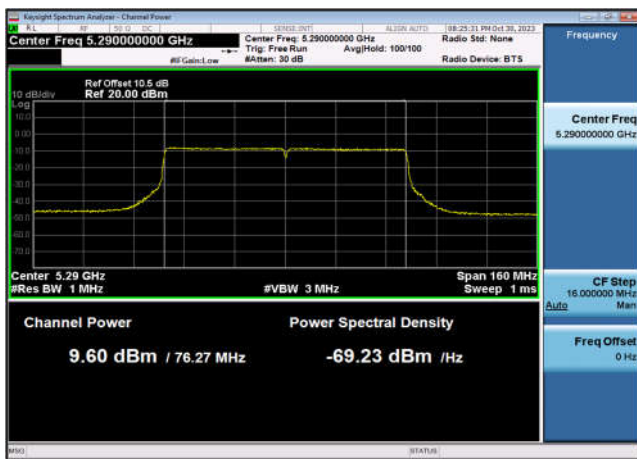
U-NII-2a Output Power-802.11ac(40MHz)  
,5310MHz,Ant9



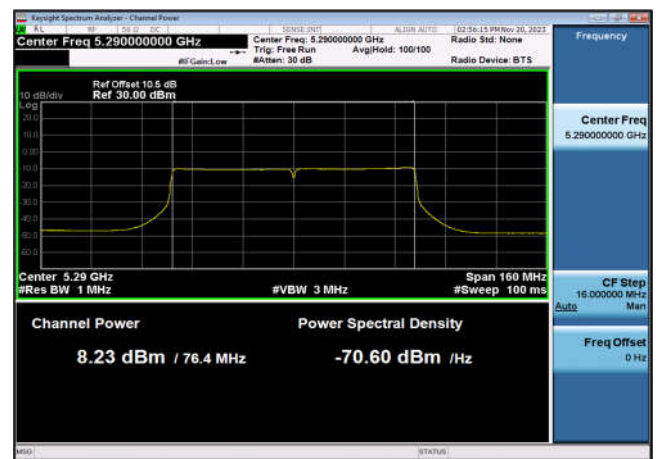
U-NII-2a Output Power-802.11ac(40MHz)  
,5310MHz,Ant10



U-NII-2a Output Power-802.11ac(80MHz)  
,5290MHz,Ant9



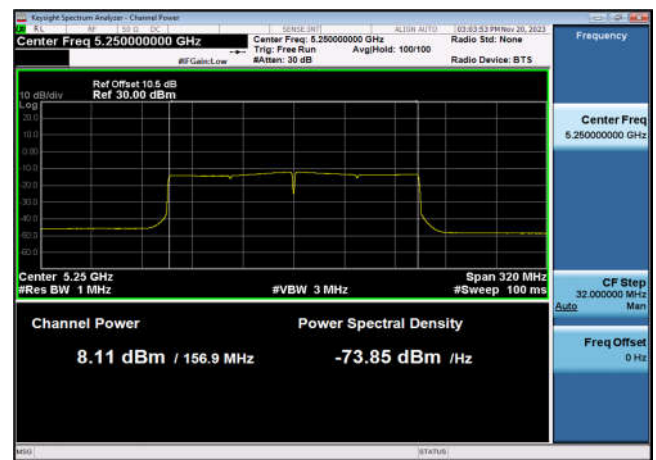
U-NII-2a Output Power-802.11ac(80MHz)  
,5290MHz,Ant10



U-NII-2a Output Power-802.11ax(160MHz)  
,5250MHz,Ant9



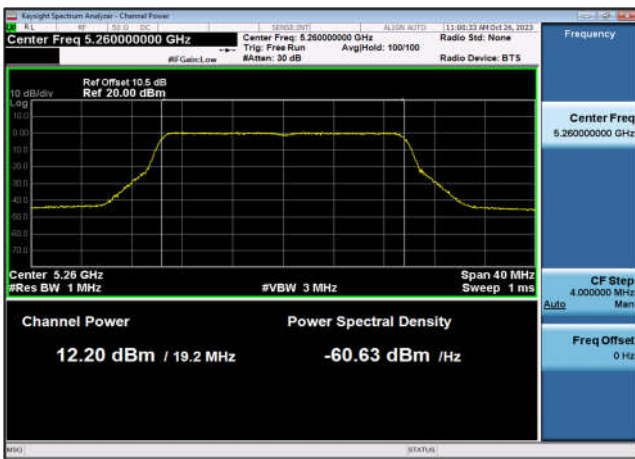
U-NII-2a Output Power-802.11ax(160MHz)  
,5250MHz,Ant10



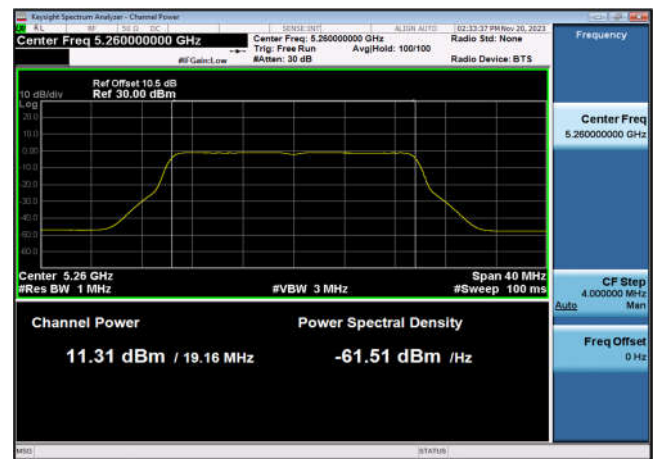




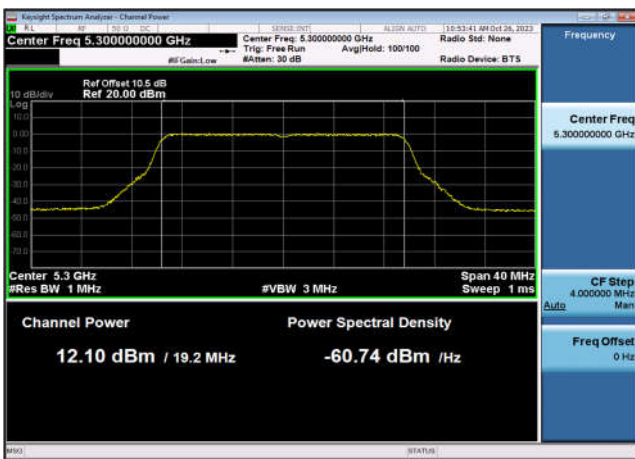
U-NII-2a Output Power-802.11ax(20MHz)  
,5260MHz,Ant9



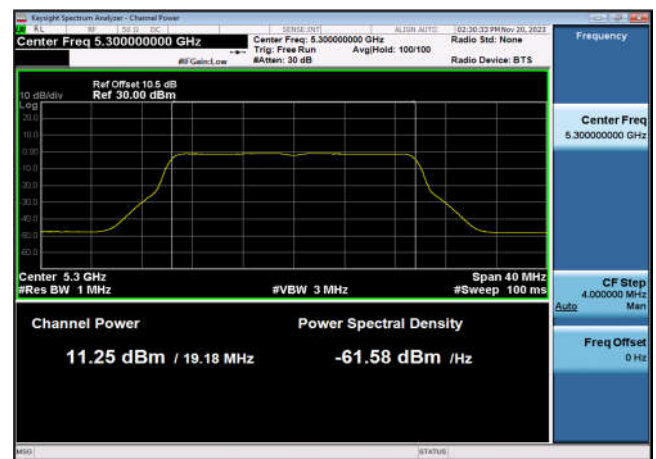
U-NII-2a Output Power-802.11ax(20MHz)  
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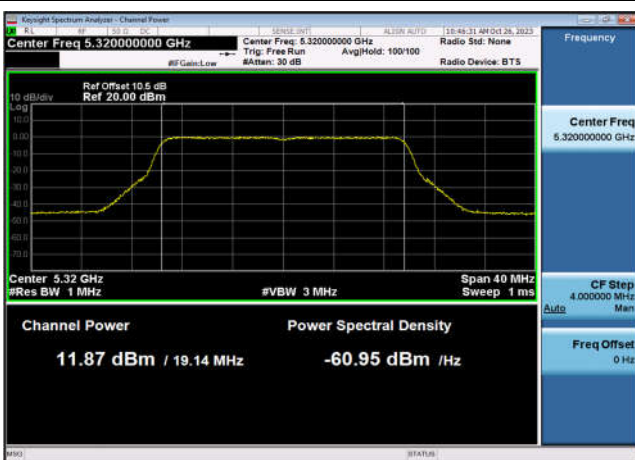
U-NII-2a Output Power-802.11ax(20MHz)  
,5300MHz,Ant9



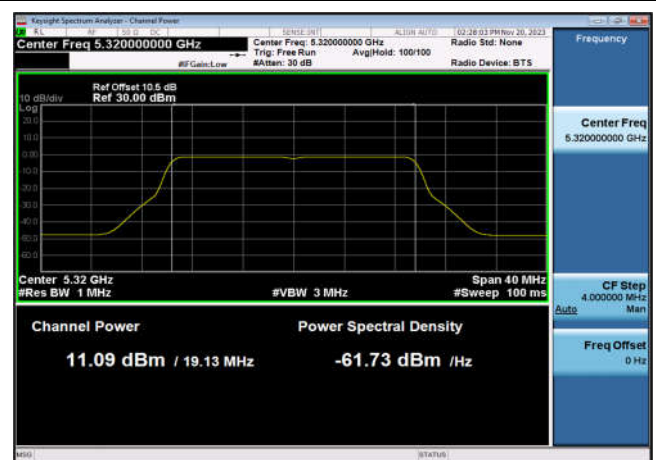
U-NII-2a Output Power-802.11ax(20MHz)  
,5300MHz,Ant10



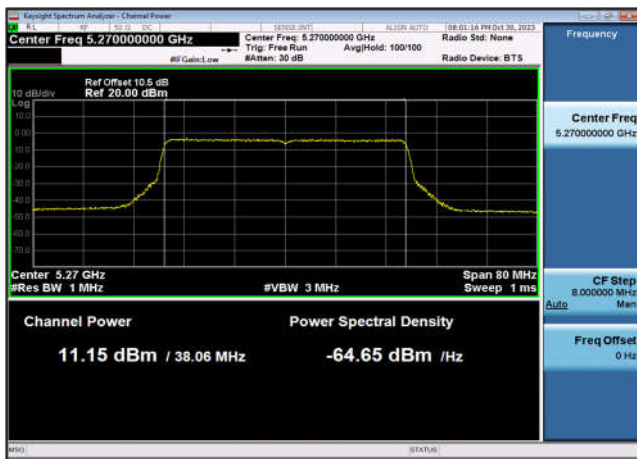
U-NII-2a Output Power-802.11ax(20MHz)  
,5320MHz,Ant9



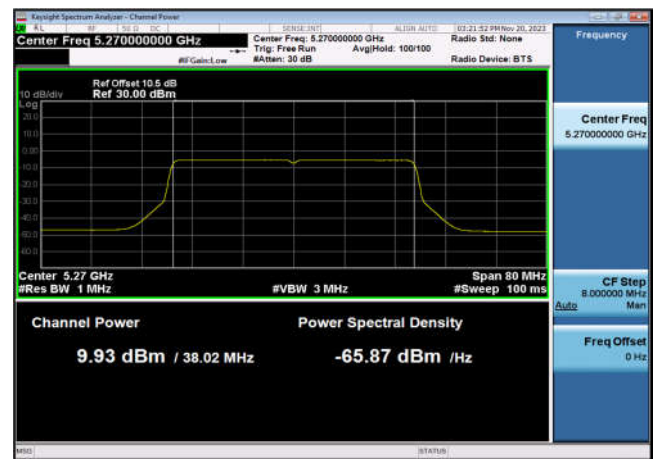
U-NII-2a Output Power-802.11ax(20MHz)  
,5320MHz,Ant10



U-NII-2a Output Power-802.11ax(40MHz)  
,5270MHz,Ant9



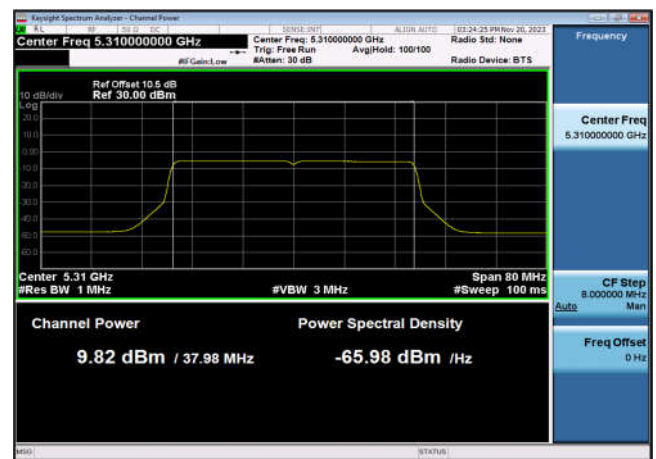
U-NII-2a Output Power-802.11ax(40MHz)  
,5270MHz,Ant10



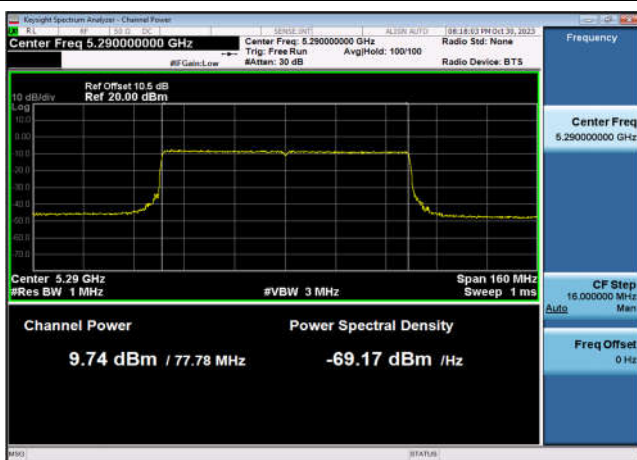
U-NII-2a Output Power-802.11ax(40MHz)  
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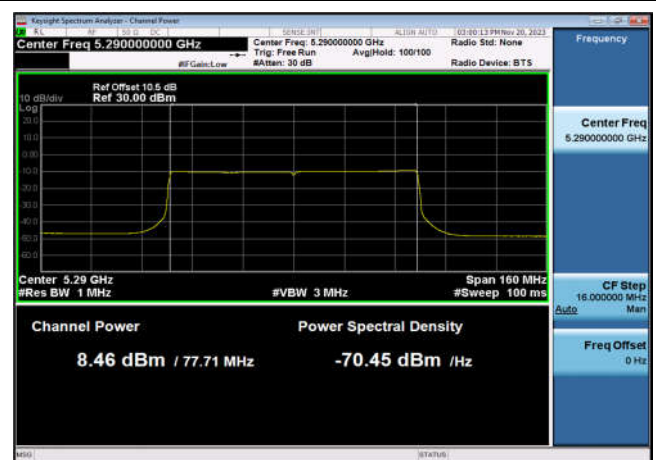
U-NII-2a Output Power-802.11ax(40MHz)  
,5310MHz,Ant10



U-NII-2a Output Power-802.11ax(80MHz)  
,5290MHz,Ant9



U-NII-2a Output Power-802.11ax(80MHz)  
,5290MHz,Ant10

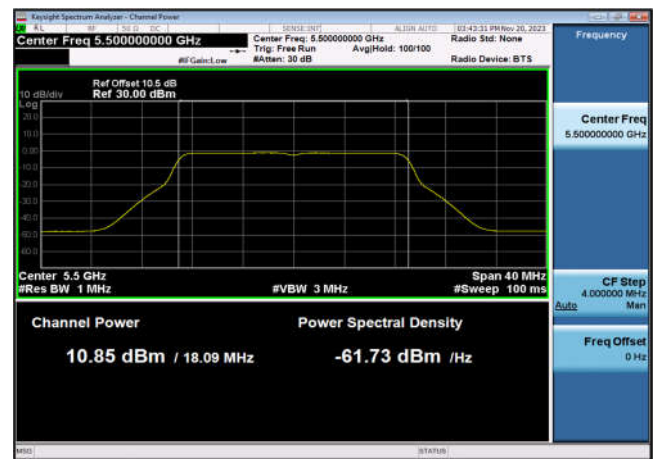




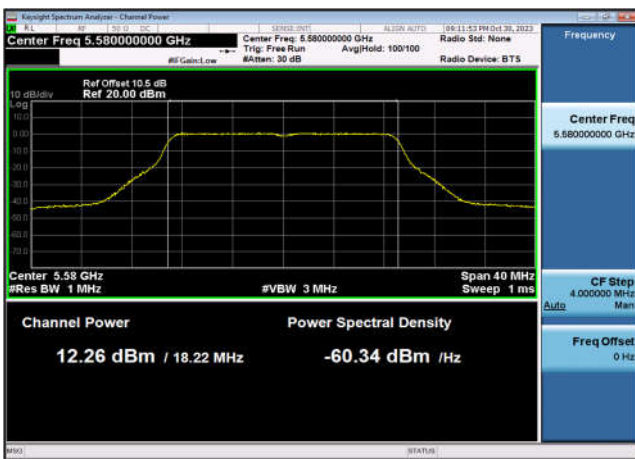
U-NII-2c Output Power-802.11n(20MHz)  
,5500MHz,Ant9



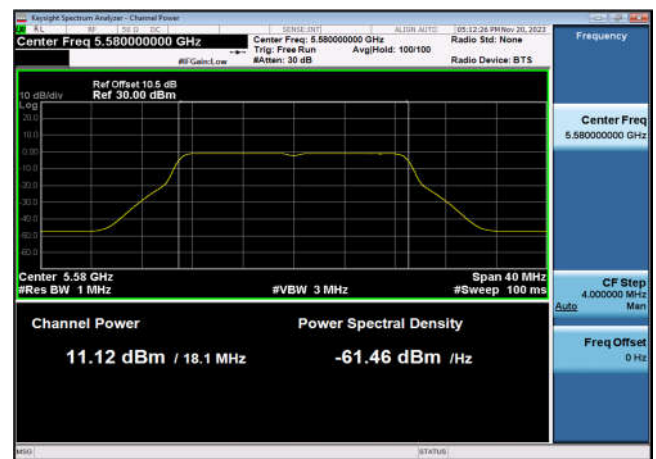
U-NII-2c Output Power-802.11n(20MHz)  
,5500MHz,Ant10



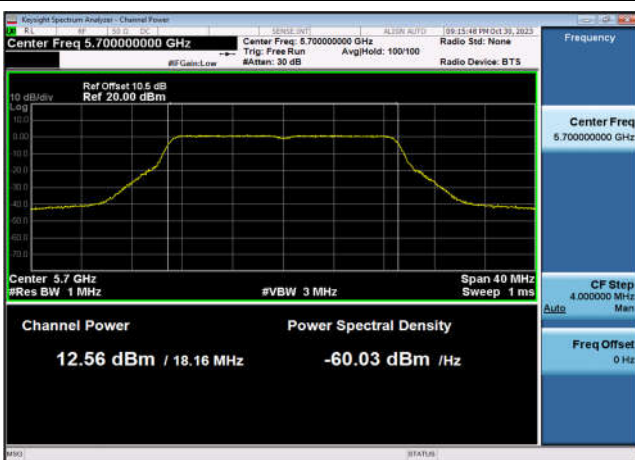
U-NII-2c Output Power-802.11n(20MHz)  
,5580MHz,Ant9



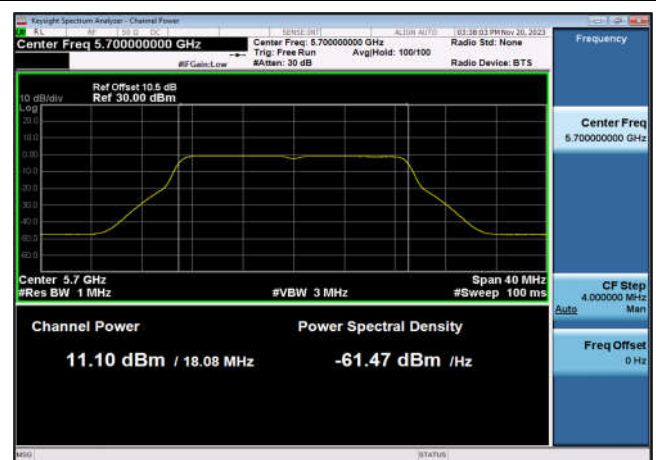
U-NII-2c Output Power-802.11n(20MHz)  
,5580MHz,Ant10



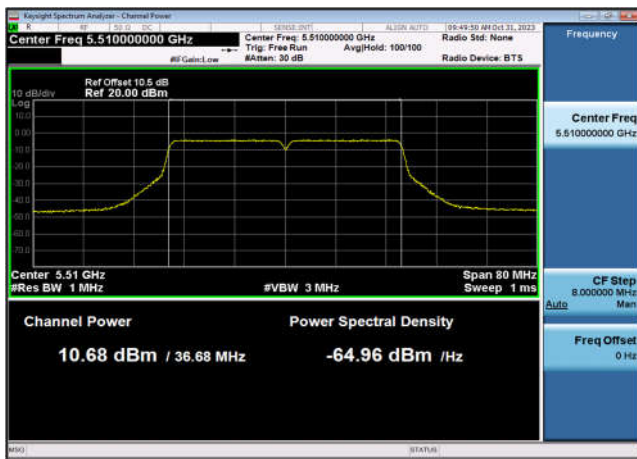
U-NII-2c Output Power-802.11n(20MHz)  
,5700MHz,Ant9



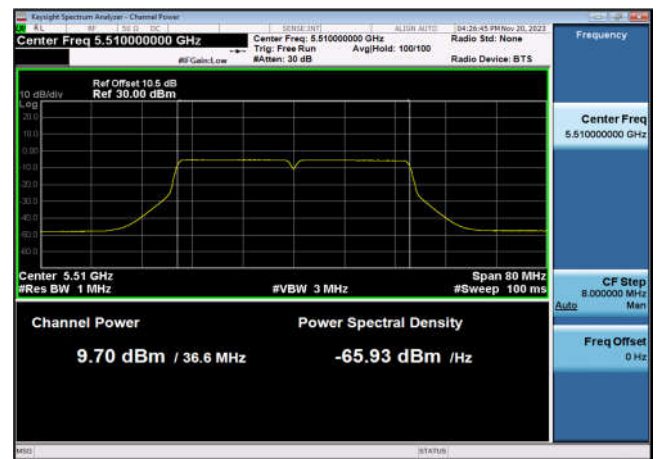
U-NII-2c Output Power-802.11n(20MHz)  
,5700MHz,Ant10



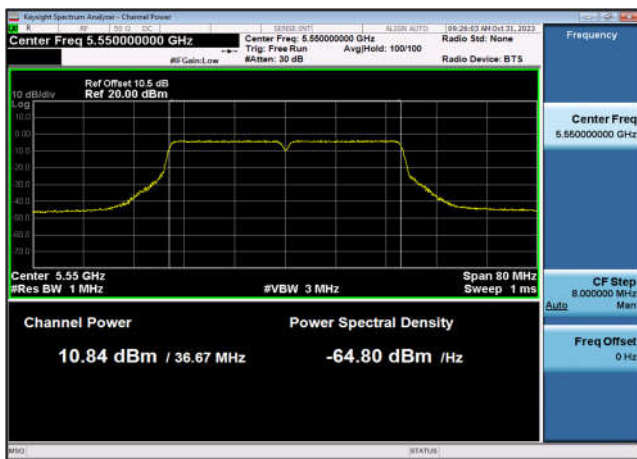
U-NII-2c Output Power-802.11n(40MHz)  
,5510MHz,Ant9



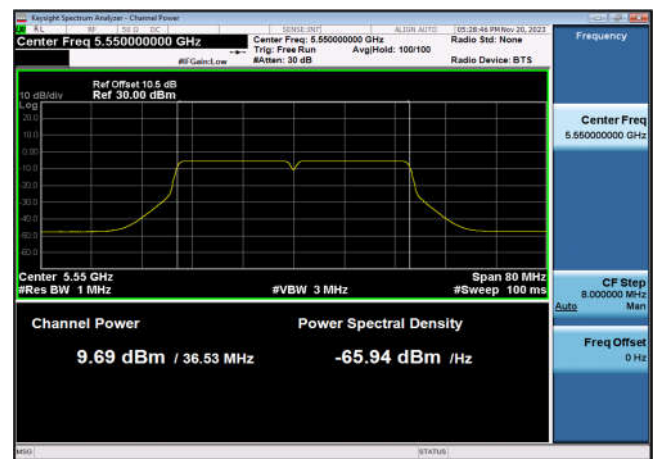
U-NII-2c Output Power-802.11n(40MHz)  
,5510MHz,Ant10



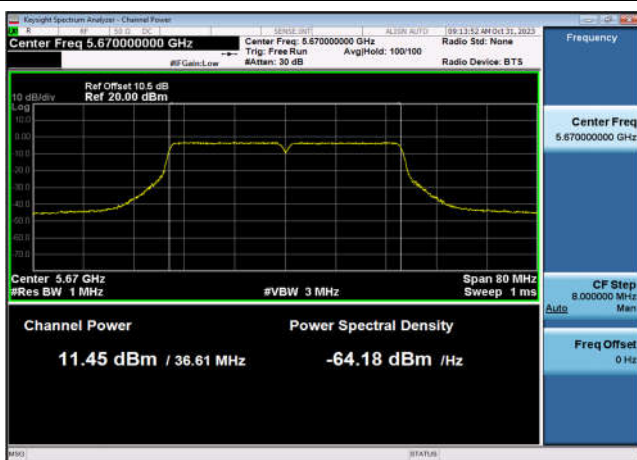
U-NII-2c Output Power-802.11n(40MHz)  
,5550MHz,Ant9



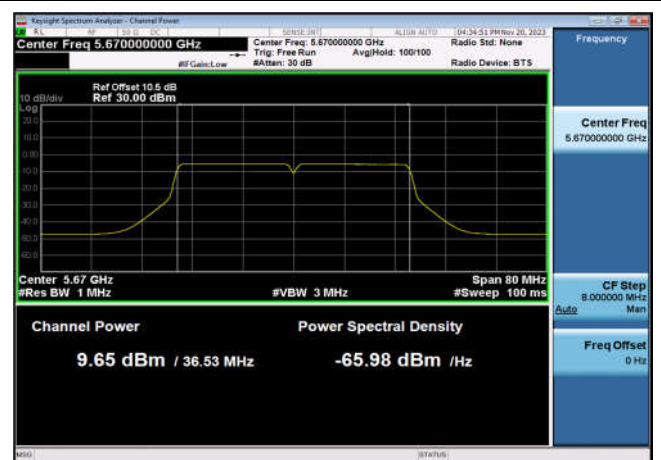
U-NII-2c Output Power-802.11n(40MHz)  
,5550MHz,Ant10



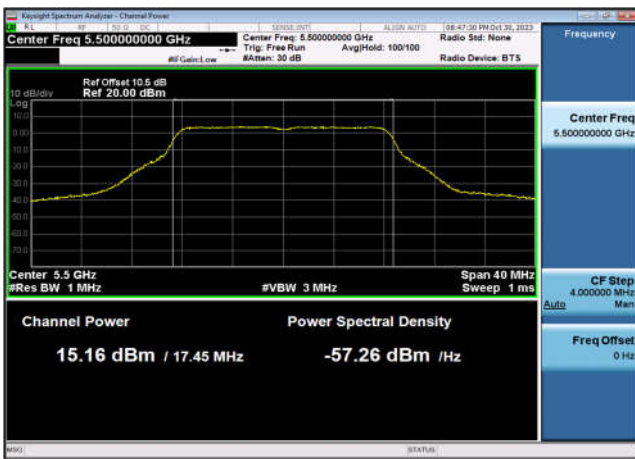
U-NII-2c Output Power-802.11n(40MHz)  
,5670MHz,Ant9



U-NII-2c Output Power-802.11n(40MHz)  
,5670MHz,Ant10



U-NII-2c Output Power-802.11a(20MHz)  
,5500MHz,Ant9



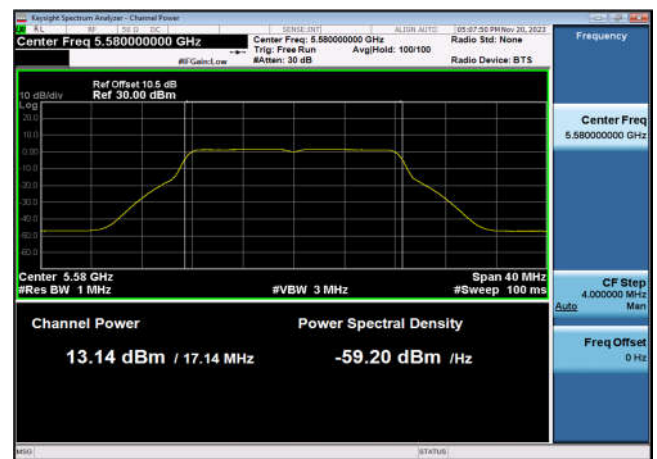
U-NII-2c Output Power-802.11a(20MHz)  
,5500MHz,Ant10



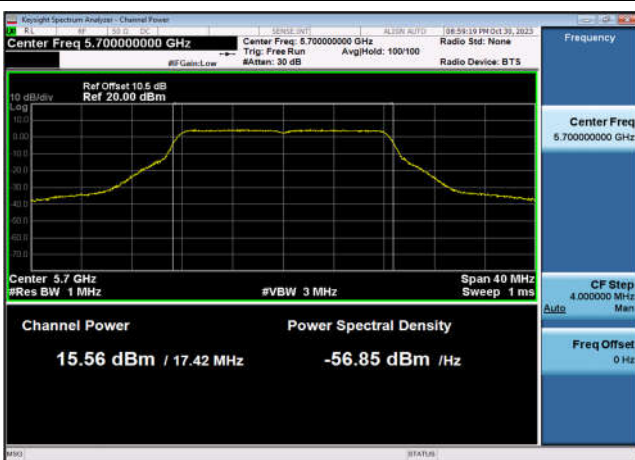
U-NII-2c Output Power-802.11a(20MHz)  
,5580MHz,Ant9



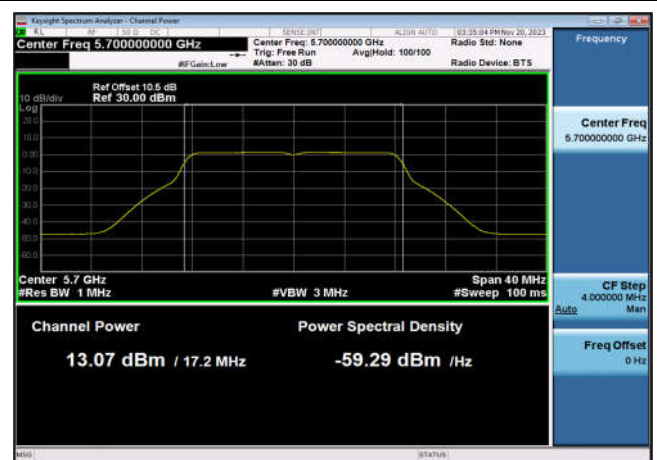
U-NII-2c Output Power-802.11a(20MHz)  
,5580MHz,Ant10



U-NII-2c Output Power-802.11a(20MHz)  
,5700MHz,Ant9

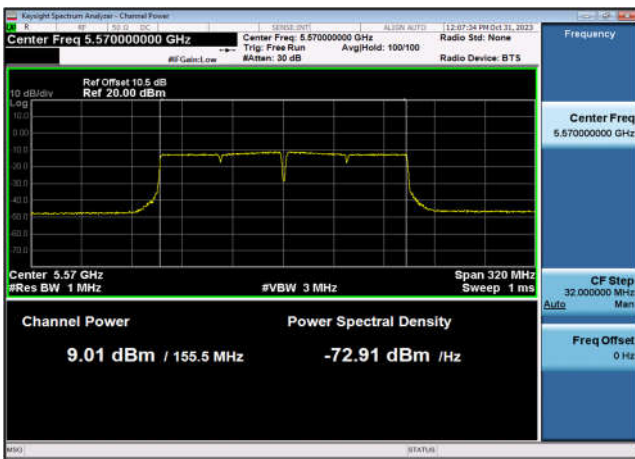


U-NII-2c Output Power-802.11a(20MHz)  
,5700MHz,Ant10

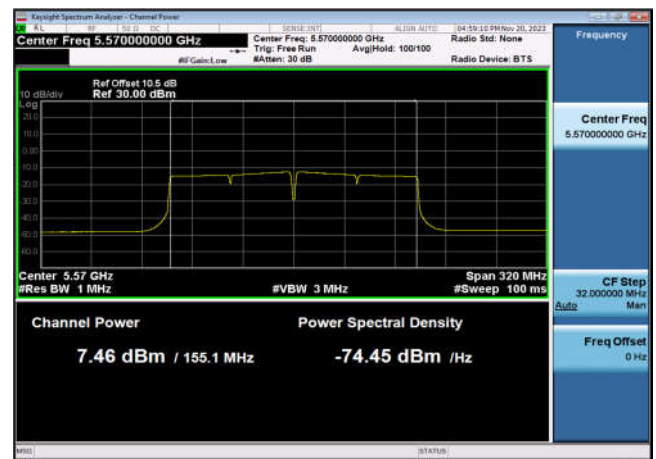




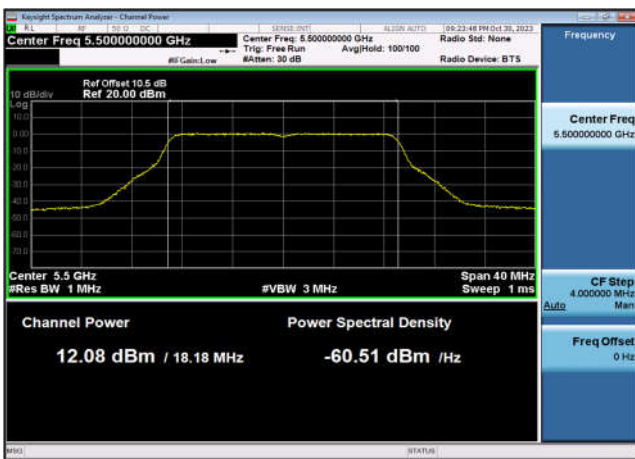
U-NII-2c Output Power-802.11ac(160MHz),5570MHz,Ant9



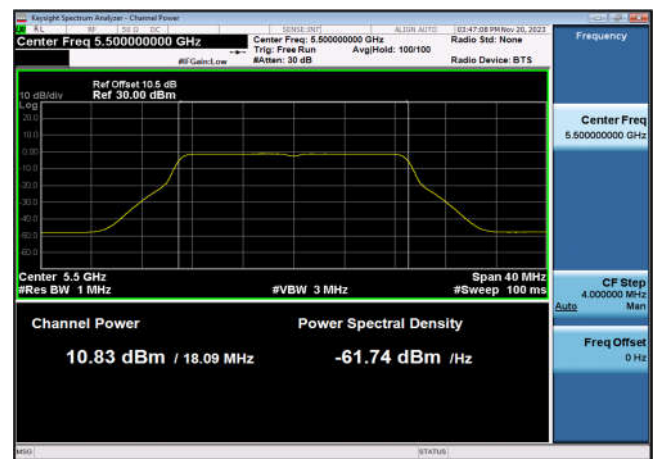
U-NII-2c Output Power-802.11ac(160MHz),5570MHz,Ant10



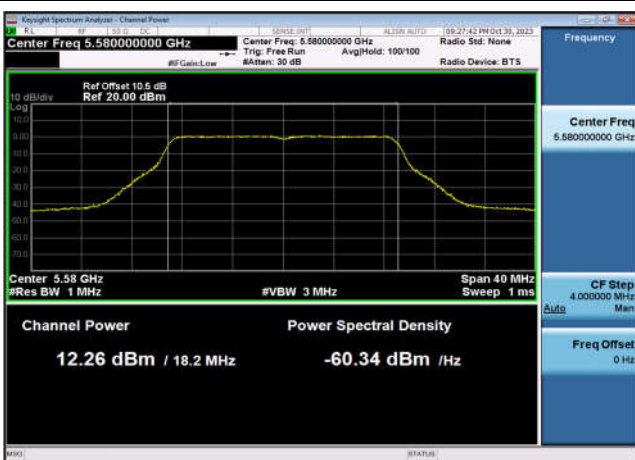
U-NII-2c Output Power-802.11ac(20MHz),5500MHz,Ant9



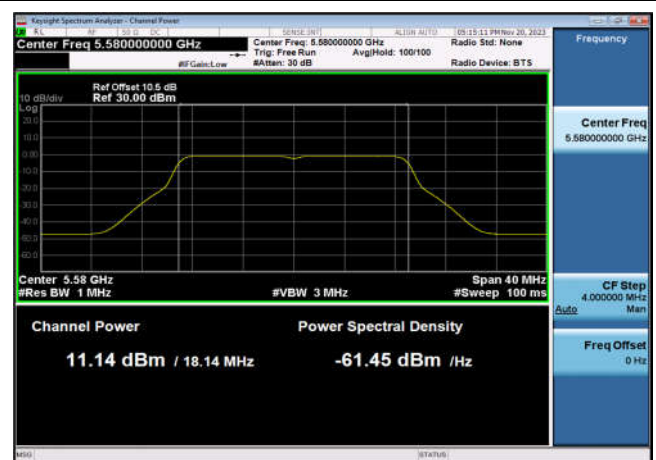
U-NII-2c Output Power-802.11ac(20MHz),5500MHz,Ant10



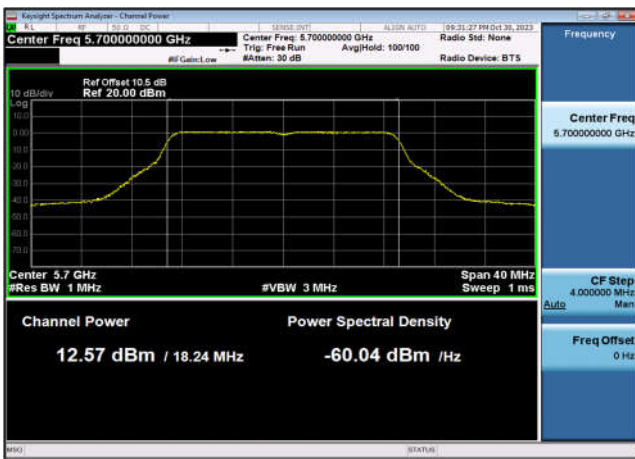
U-NII-2c Output Power-802.11ac(20MHz),5580MHz,Ant9



U-NII-2c Output Power-802.11ac(20MHz),5580MHz,Ant10



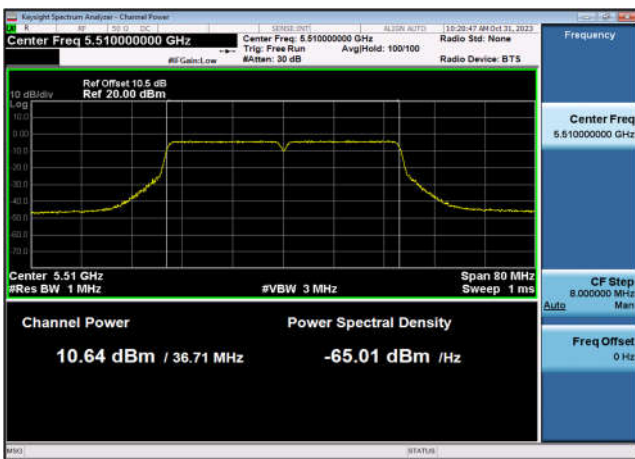
U-NII-2c Output Power-802.11ac(20MHz)  
,5700MHz,Ant9



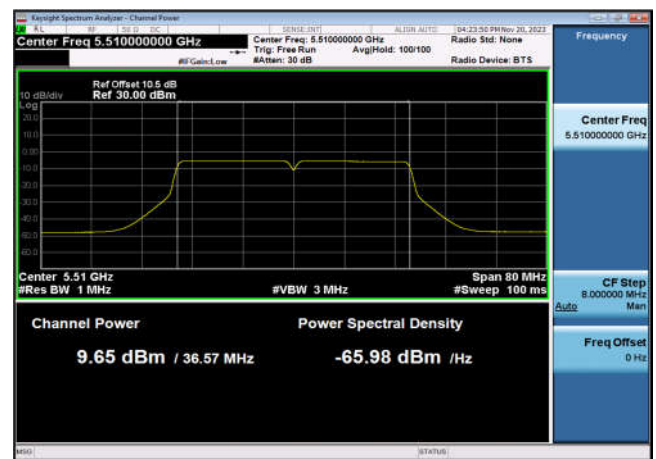
U-NII-2c Output Power-802.11ac(20MHz)  
,5700MHz,Ant10



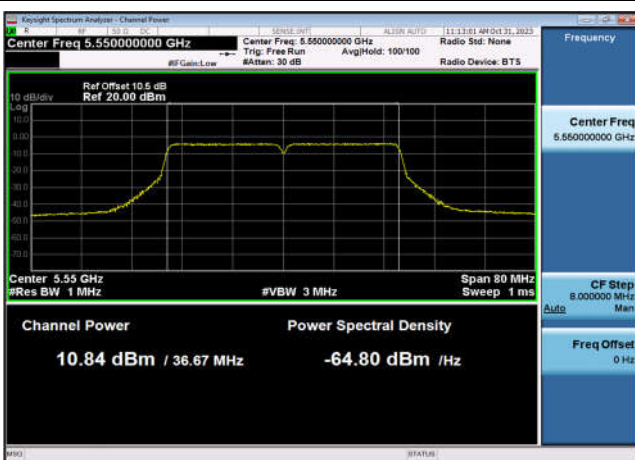
U-NII-2c Output Power-802.11ac(40MHz)  
,5510MHz,Ant9



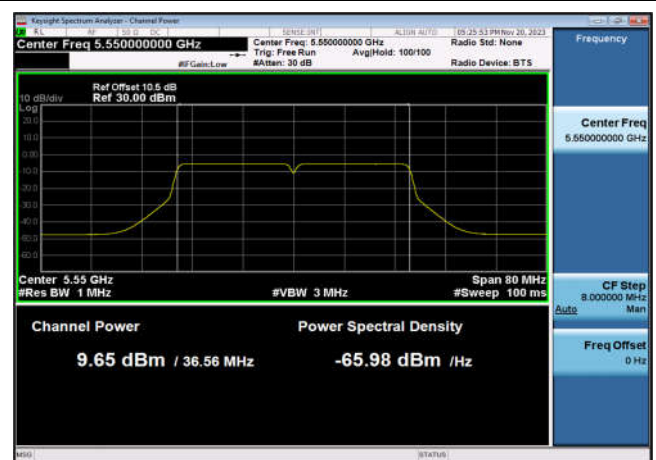
U-NII-2c Output Power-802.11ac(40MHz)  
,5510MHz,Ant10



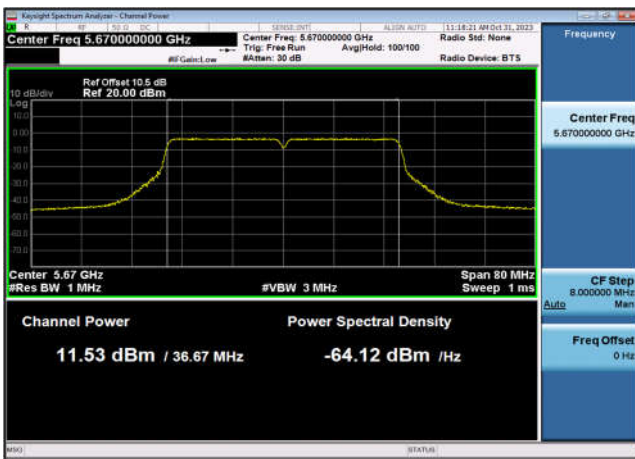
U-NII-2c Output Power-802.11ac(40MHz)  
,5550MHz,Ant9



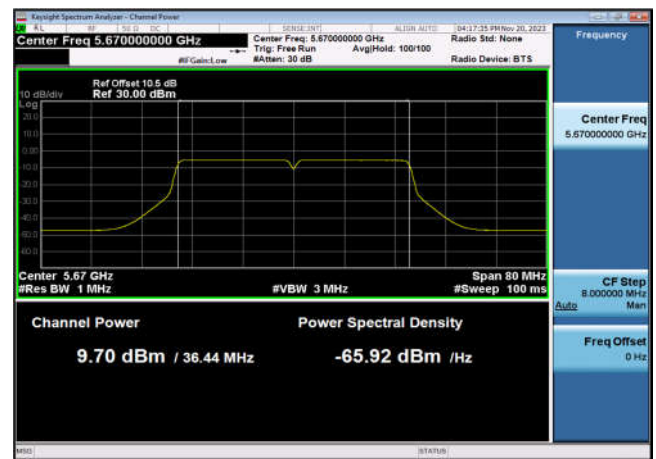
U-NII-2c Output Power-802.11ac(40MHz)  
,5550MHz,Ant10



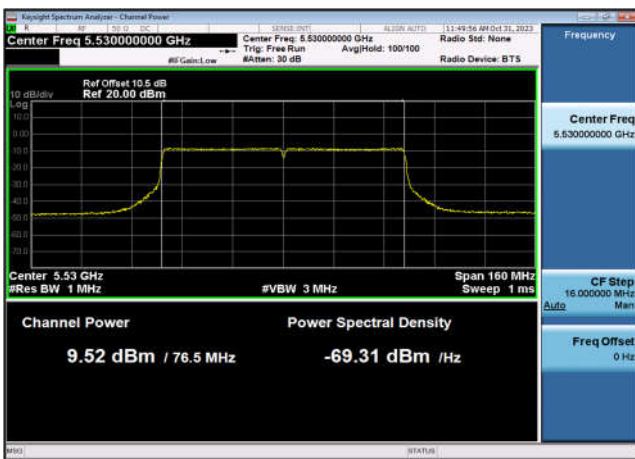
U-NII-2c Output Power-802.11ac(40MHz)  
,5670MHz,Ant9



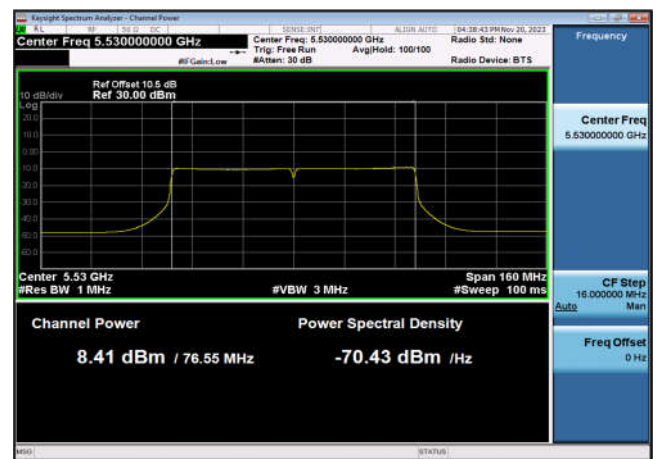
U-NII-2c Output Power-802.11ac(40MHz)  
,5670MHz,Ant10



U-NII-2c Output Power-802.11ac(80MHz)  
,5530MHz,Ant9



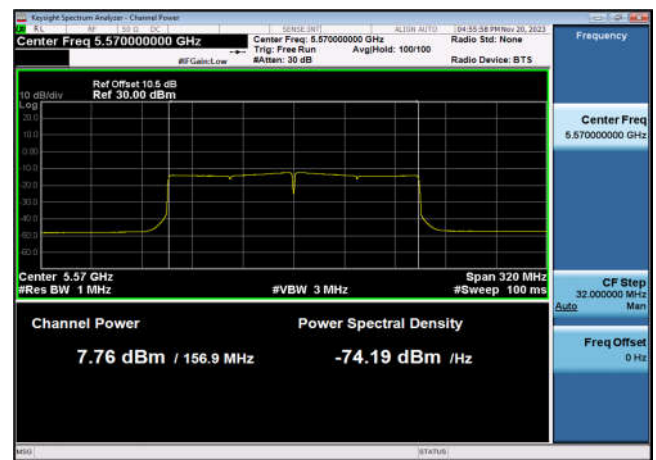
U-NII-2c Output Power-802.11ac(80MHz)  
,5530MHz,Ant10



U-NII-2c Output Power-802.11ax(160MHz)  
,5570MHz,Ant9

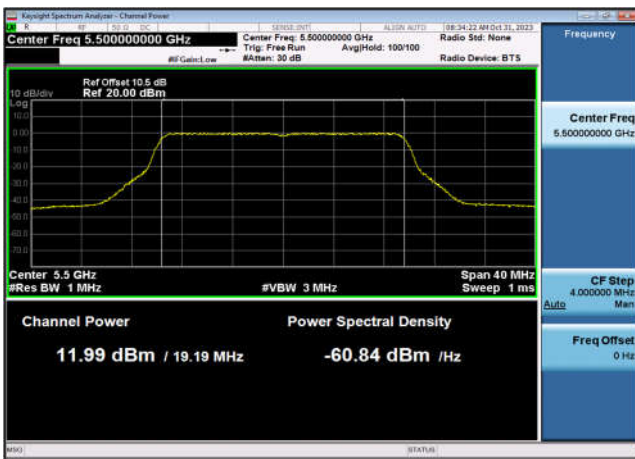


U-NII-2c Output Power-802.11ax(160MHz)  
,5570MHz,Ant10

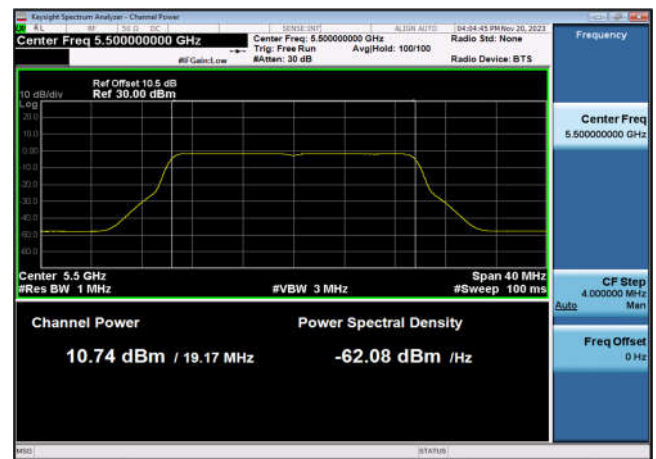




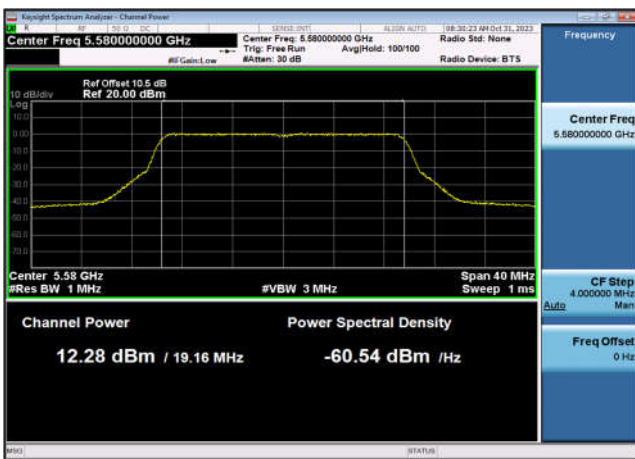
U-NII-2c Output Power-802.11ax(20MHz)  
,5500MHz,Ant9



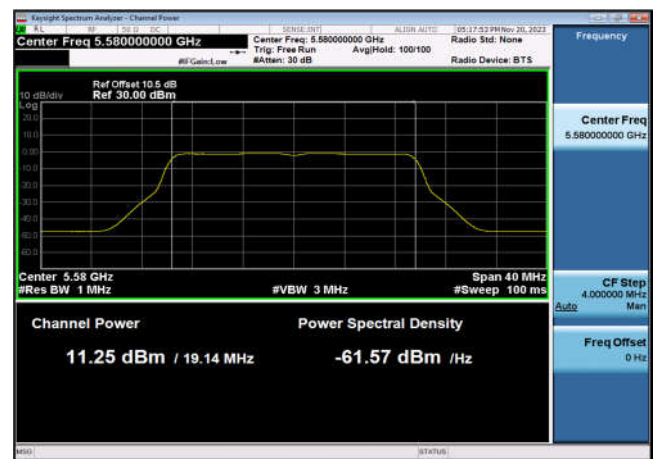
U-NII-2c Output Power-802.11ax(20MHz)  
,5500MHz,Ant10



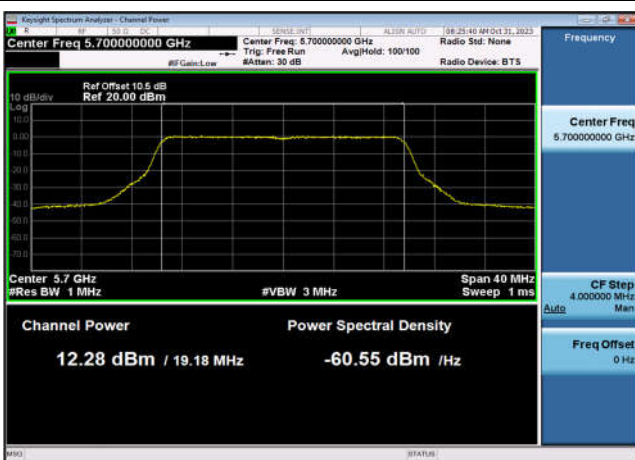
U-NII-2c Output Power-802.11ax(20MHz)  
,5580MHz,Ant9



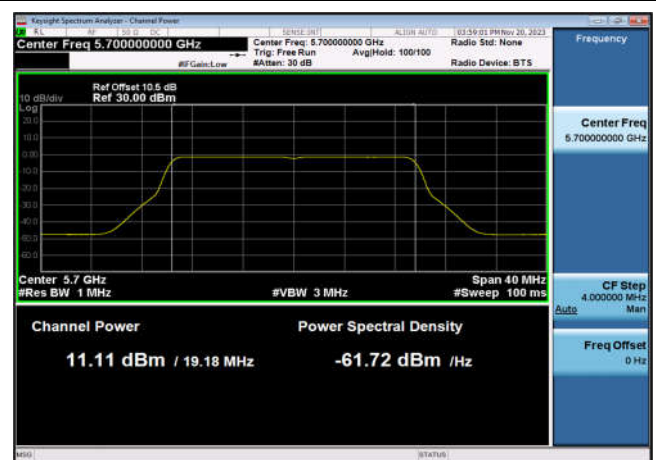
U-NII-2c Output Power-802.11ax(20MHz)  
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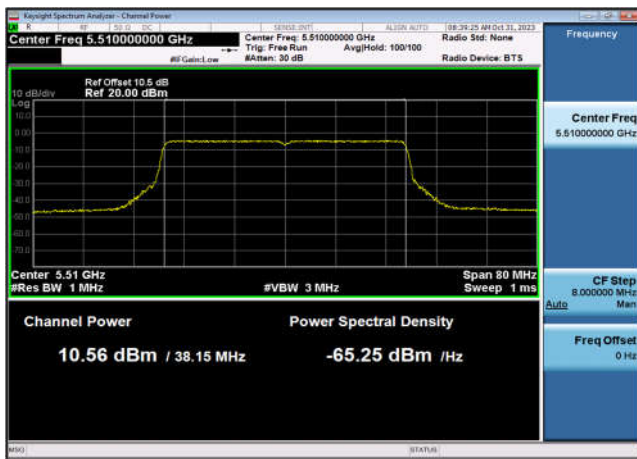
U-NII-2c Output Power-802.11ax(20MHz)  
,5700MHz,Ant9



U-NII-2c Output Power-802.11ax(20MHz)  
,5700MHz,Ant10



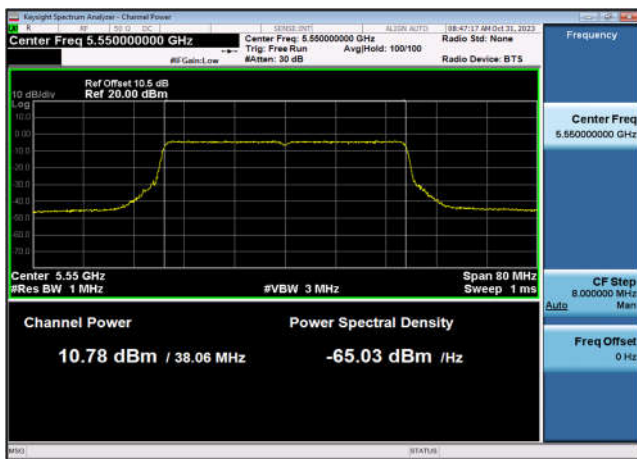
U-NII-2c Output Power-802.11ax(40MHz)  
,5510MHz,Ant9



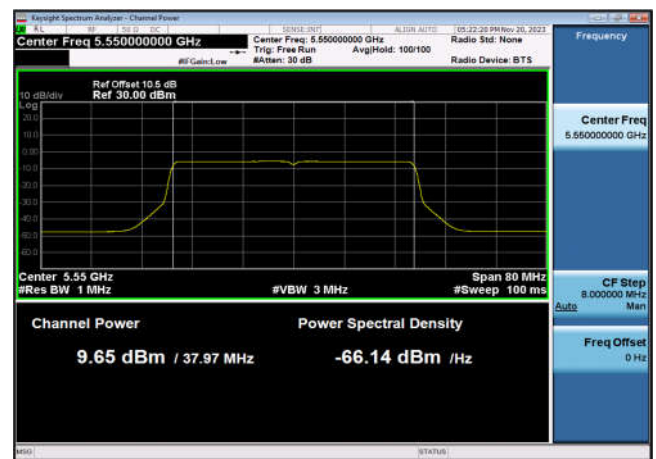
U-NII-2c Output Power-802.11ax(40MHz)  
,5510MHz,Ant10



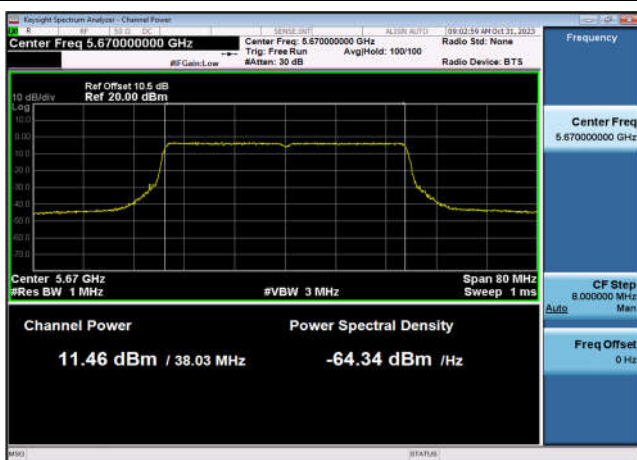
U-NII-2c Output Power-802.11ax(40MHz)  
,5550MHz,Ant9



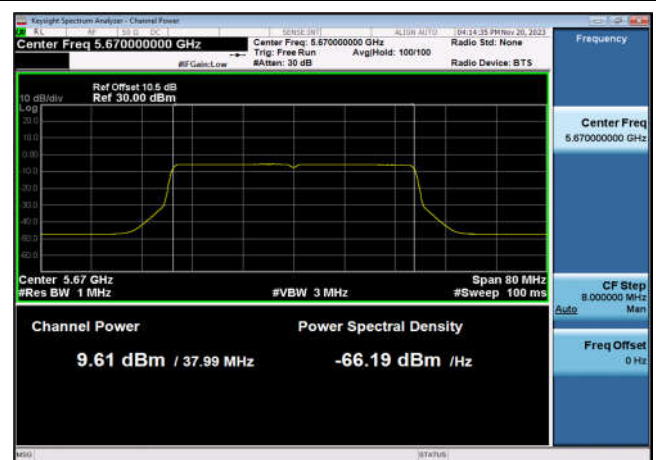
U-NII-2c Output Power-802.11ax(40MHz)  
,5550MHz,Ant10



U-NII-2c Output Power-802.11ax(40MHz)  
,5670MHz,Ant9



U-NII-2c Output Power-802.11ax(40MHz)  
,5670MHz,Ant10

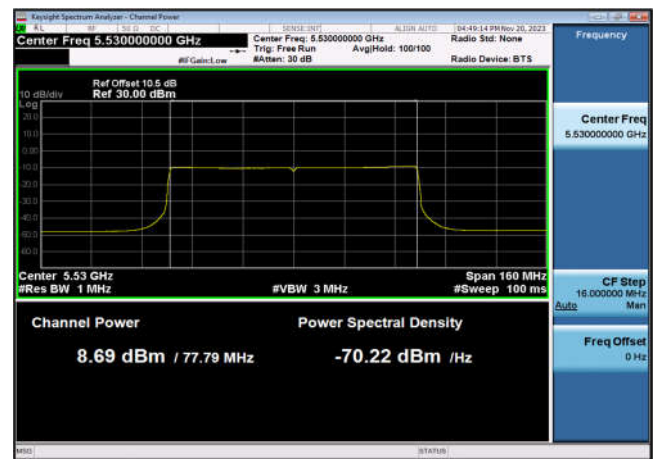




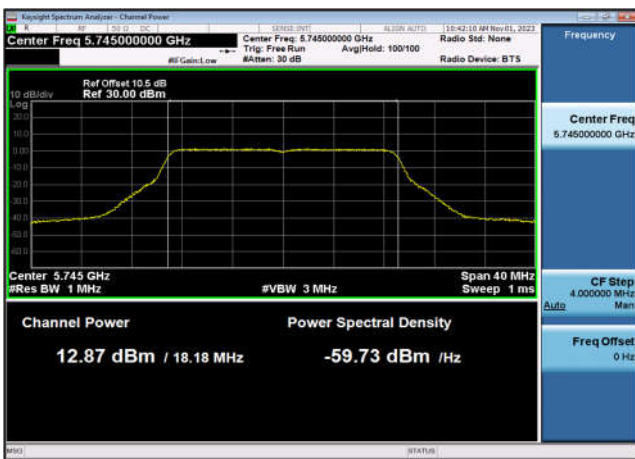
U-NII-2c Output Power-802.11ax(80MHz)  
,5530MHz,Ant9



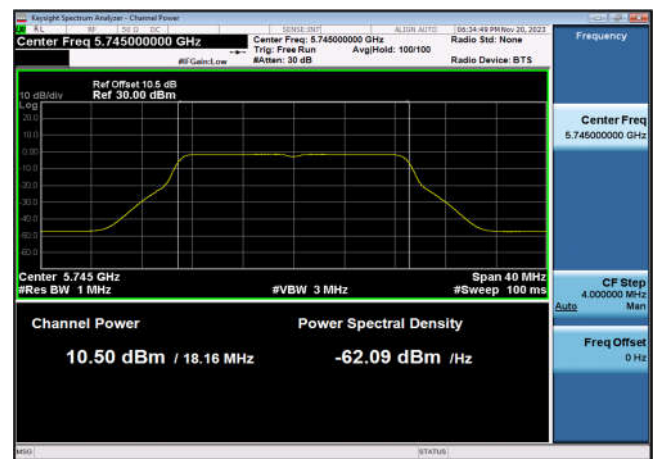
U-NII-2c Output Power-802.11ax(80MHz)  
,5530MHz,Ant10



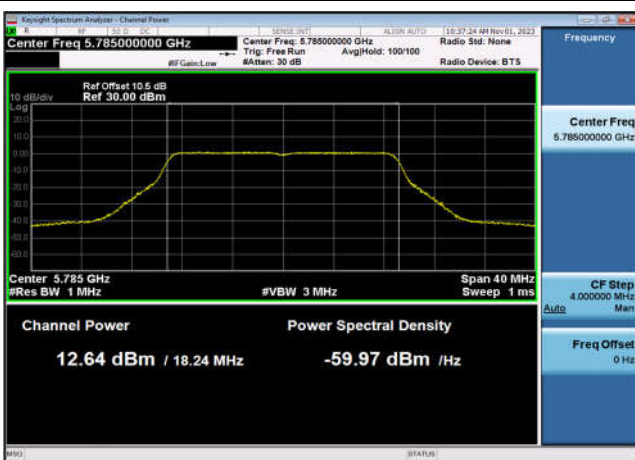
U-NII-3 Output Power-802.11n(20MHz)  
,5745MHz,Ant9



U-NII-3 Output Power-802.11n(20MHz)  
,5745MHz,Ant10



U-NII-3 Output Power-802.11n(20MHz)  
,5785MHz,Ant9



U-NII-3 Output Power-802.11n(20MHz)  
,5785MHz,Ant10

